

**Heuristic Approaches to Scheduling Problems in a  
Flexible Job Shop Environment**

**By**

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**A Dissertation Submitted to the  
Graduate School in Partial Fulfillment of the  
Requirements for the Degree of**

**MASTER OF SCIENCE**

**Department: Energy Engineering  
Major: Energy Engineering  
(Energy and Power Systems)**

**Izmir Institute of Technology  
Izmir, Turkey**

**January, 2004**

# ABSTRACT

Modern production factories, to obtain high profits, usually maximize their profits through streamlining their productivity. This goal can be achieved, among others, by optimal or almost optimal scheduling of jobs in production process. Scheduling is a key factor for manufacturing productivity and energy save. Effective scheduling can improve on-time delivery of products, reduce inventory, reduce processing times, and utilize bottleneck resources, therefore energy is saved as a result.

Process plants typically produce a family of related products that require similar processing techniques. The most important problem encountered in such manufacturing systems is scheduling of operations so that demand is fulfilled within a pre-described time horizon imposed by production planning. The typical scheduling operation that process plants involve can be formulated as a general job shop scheduling problem. Due to production flexibility, it is possible to generate many feasible process plans for each job. The two functions, process planning and scheduling are tightly interwoven with each other. The optimality of scheduling depends on the result of process planning. The integration of process planning and scheduling is therefore important for an efficient utilization of manufacturing resources.

In this study, we present real cases taken from manufacturing industry, which were modeled and solved using theoretical tools of scheduling theory. According to this idea, this study was motivated by the design and implementation of a flexible job shop scheduling system for the manufacturing of Teba Oven's Press Workshop.

The manufacturing is characterized by significant machine setup times, strict local capacities, the option of choosing a few alternative processing routes, and long horizon as compared to the time resolution required by the scheduling models. Our goal is thus to obtain near-optimal schedules with quantifiable quality in computationally efficient manner. For achieving this goal, dispatching rules and shifting bottleneck heuristics are used, and solution methodology based on a combined dynamic programming. The methods have been implemented by using the object-oriented generic programming, LEKIN [43], and the outputs show that the methods generate high-quality schedules in a timely fashion to achieve on-time delivery of products and low in work-in-process inventory. Finally, the integrated treatment of machines and buffers facilitates the smooth flow of parts through the system.

## ÖZ

Modern üretim merkezleri, genellikle verimlilik düzeylerini arttırarak, kar oranlarını maksimum düzeye ulaştırmaya çalışırlar. Diğer yöntemlerin dışında bu amaca, işlerin üretim sürecinde en uygun şekilde çizelgelenmesiyle ulaşılabilir. Çizelgeleme, üretim verimliliği ve enerji kazancı için kilit bir ögedir. Etkili bir çizelgeleme ile, ürünlerin doğru zamanda dağıtımını geliştirilir, stok azaltılır, imalat süresi kısaltılır, kısıtlı kaynakların yararlılığı arttırılır, sonuç olarak enerji korunumu sağlanır.

Üretim birimleri, benzer teknik özelliklere sahip ürünleri gruplayarak üretirler. Üretim sisteminde karşılaşılan en önemli problem, operasyonların çizelgelenmesidir. Bu yüzden talep üretim planlamasının belirlediği iş takvimine göre yerine getirilir. Fabrikaların uyguladığı tipik bir çizelgeleme operasyonu genel bir iş atölyesi problemi olarak formülize edilebilir. Üretim esnekliği izin verdiği ölçüde, her iş için bir çok uygulanabilir üretim planı oluşturabilir. İşleyiş planlaması ve çizelgeleme birbiriyle sıkı sıkıya örtüşür. Uygulanabilir bir çizelgeleme, işleyiş planının sonucu olarak ortaya çıkar. Üretim kaynaklarından verimli bir şekilde faydalanabilmek için işleyiş planlaması ve çizelgeleme bir arada çalışmalıdır.

Bu çalışmamızda, üretim endüstrisinden modellenmiş, çizelgeleme teorisine ait araçlarla çözümlenmiş gerçek olayları inceliyoruz. Bu amaç doğrultusunda, Teba Fırın Atölyesi'nde üretim için, esnek iş atölyesi çizelgeleme sisteminin dizayn ve uygulaması yapılmıştır.

İmalat, makine hazırlık süresi, kısıtlı kapasitesi, alternatifli işleyiş rotası seçme opsiyonu ve çizelgeleme modelinin ihtiyacı olan zaman uzunluğuna göre tanımlanır. Bu doğrultuda amacımız, en uygun ve verimli çizelgeleri oluşturmaktır. Bu amacımıza ulaşmak için, sezgisel yöntemler kullanılmıştır ve çözüm yolu dinamik programlamaya dayanmaktadır. Metotlar nesneye yönelik genel programlardan biri olan Lakin'de uygulanmıştır ve sonuçlar metotların zamansal olarak yüksek kalitede, ürünlerin zamanında dağıtılabılır ve düşük üretim arası stokuna sahip çizelgeler oluşturduğunu göstermiştir. Sonuç olarak, makinelerin işleyişinde sağlanan bu düzen, sistemin kesintisiz bir akışla çalışmasını sağlar.

## **ACKNOWLEDGEMENT**

I would like to thank to Asst. Prof. Dr. M. Arslan Örnek from Dokuz Eylül University, Faculty of Engineering and his research assistants Emrah Edis from DEU and Esra Ekinci from IYTE for their helpful comments and suggestions. This study was supported in part by Teba – Günköl Company. Also I would like to thank to KPK-Press Workshop, Product Planning and Product Support Sections of Günköl.

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# **Chapter 1.**

## **INTRODUCTION**

Scheduling problems arise whenever a common set of resources such as labor, material and equipment must be used to make a variety of different products during the same period of time.

A proper allocation of resources may be machines in a workshop, runways at an airport, crews at a construction site, or processing units in a computing environment. Tasks may be operations in a workshop, takeoffs and landing at an airport, stages in a construction project, or computer programs to be executed. Each task may have a priority level, an earliest possible starting time, and a due date. The objectives may also take many forms, such as minimizing the time to complete all tasks or minimizing the number of tasks completed after their committed due dates.

### **1.1. Objective of the thesis**

#### **1.1.1. Problem Definition**

In our study each part of our workshop has alternative process plans and each operation can be performed on alternative machines. Schedules are influenced by many factors such as product priorities, job precedence, due-date requirements, release dates, workshop daily working-hour program, machine capabilities, machine availabilities, production levels, operation precedence, resource requirements and resource availabilities.

Different classes of jobs go through the workshop. A job class is characterized by its route in its production line, its processing requirements and its factors as listed above. The problem we address is how to optimally allocate production services (the resources) to machining centers so as to minimize the total Work-In-Process in the entire system.

### **1.1.2. Analysis of the Problem**

This study involves a number of distinct tasks, including collecting the data of workshop's product list, revealing the relationships between performances of machining centers and the amounts of resources allocated, presenting methods of comparison for allocating the resources to the individual machining centers optimally, evaluating and selecting the developed software system, and testing the system.

Precedence relationship structures exist among all these tasks; some can be done in parallel concurrently whereas others can not start until certain prior tasks are completed. The goal is complete the entire study in minimum time.

The most important problems of scheduling operation tackled by operation research is the job shop problem that consists of scheduling a set of jobs on a set of machines with the objective to minimize the makespan, i.e. The maximum of the completion time for processing all jobs, subject to the constraint that each job has a specified processing order through the machines and that each machine can process at most one job in each time.

### **1.1.3. Objective functions**

Scheduling not only provides a coherent process to manage the problems but also provides a good estimate for its completion time, reveals which tasks are critical, and determines the actual duration of the entire problem. Some machines may require setups to prepare them for incoming jobs [21]. The setup time often depends on the configurations of the lot just completed and the lot about to start.

Developing a production schedule involves determining the flow of parts and assignments of tools on each machine that will result in the completion of a part and determining the start-time and finish-time of each operation at its allocated machine. This schedule achieves such performance criteria as minimizing the makespan (minimizing the time required to complete all jobs), minimizing the maximum tardiness (minimizing the largest difference between completion times and due dates), and minimizing the total processing time. Note that the technological sequence of operations within each part is preserved and that the ordering of operations on the machines has been selected so as to achieve the desired objective.

The number of orders in the system is often in the hundreds, and each order has its own release date and committed shipping or due date. The scheduler's objective is to meet as many of the committed shipping dates as possible while maximizing throughput [22]. When a machine completes processing of an operation, the next operation starts immediately if it's ready. Otherwise the machine becomes idle. This latter goal is achieved by maximizing equipment utilization, especially of the bottleneck machines. Minimization of idle times and setup times is thus required.

#### **1.1.4. How to reach a solution?**

The schedule rules are used to select an operation to be processed from a set of operations waiting for service using priority rules, and heuristics whenever the machine becomes available. The plant operator will take into consideration the objectives derived in the production planning case and subsequently will assign products and times to machines so that production will be achieved within the specific time horizon. Moreover, in the case of process plants, out-of-program orders may come up that demand rapid fulfillment. The procedure of assigning products and defining sequence of operations to machine that typically involve a series of different pretreatment and process operations is called operations scheduling [2]. One of the most important problems of operations scheduling tackled by operations research is the job shop problem. Job shop scheduling problems consist of set of jobs on a set of machines with the objective to minimize the makespan (the maximum of the completion time for processing all jobs), i.e., and subject to the constraints that each job has specified processing order through the machines and each machine has to process at most one job in each time.

Each instance of job shop scheduling problem is defined by a set of jobs, a set of machines and a set of operations. Each job consists of sequence of operations, each of which has to be performed on a given machine for a given time. A schedule is an allocation of the operations to time intervals on machines. The problem is to arrange the schedule which minimizes the makespan, the maximum of completion times for processing all jobs subject to the following constraints [25];

- The precedence of the operations given by each job is to be respected,
- Each machine can be performed at most one task at a time,
- The operations can not be interrupted

### **1.1.5. Benefits of the thesis**

Scheduling is especially critical for multi-product and small-lot production, where many products are required to be manufactured in small quantities to meet the diverse and likely time-varying demand. Different manufacturing requirements of various products and the existence of multiple and time-varying bottleneck resources make the scheduling task extremely difficult.

The integrated treatment of machines and buffer facilitates the smooth flow of parts through the system. The embedded routing selection mechanism also balances the load among candidate routes.

The methods have been implemented using the object-oriented generic programming, LEKIN, and the outputs show that the methods generate high-quality schedules in a timely fashion to achieve on-time delivery of products and low in work-in-process inventory (inventory occurred while waiting process of following operation). Reducing computational requirements with modeling accuracy and reaching high scheduling performance enables the resolution of long horizon problems with controllable computational requirements.

## **1.2. Background of the thesis**

Job shop production requires a planning and control system to effectively coordinate all the activities necessary to manufacture a wide range of products in order to meet fluctuating demand. The most widely used system in practice is Material Requirement Planning (MRP).

The MRP process translates a Master Production Schedule (MPS) for finished products into a net time-phased material requirements plan for intermediate products and raw materials by using Bills of Material (BOM), inventory data, and fixed parameters of batch sizes and lead times [20]. MRP relates inventory planning to production scheduling, assuming unlimited available capacity. MRP includes additional functions of capacity requirement planning (CRP) function, and sales and operations planning along with control functions of operations planning, along with control functions of operations scheduling, vendor scheduling and shop floor control. The BOM is primarily responsible for MPS, MRP, and inventory management, and the routing is responsible for CRP, operations scheduling and shop floor control.

As a result, considerable computer resources and human effort are required to maintain feasible MPS and MRP with realistic capacity report; a situation which is quite often unachievable. Schedules in project scheduling suggested tools and techniques for managing limited capacity during the implementation of project activities and thus today there are many techniques which are widely used in practice and incorporated in the project scheduling software packages. For example, Oracle, SAP R/3, i.e. production planning and control system tracks capacity and identifies bottleneck resources but is limited in providing revised schedules. Also IBM offers a software product called Production Resource Manager that provides the capability to obtain solutions for constrained and capacitated MRP [19].

In our study, we address the problem of scheduling a set of flexible jobs in a job-shop environment with its constraints. The study is organized as follows. In the second section, we have introduced Manufacturing Planning Control System and its framework. Also we mention the place of the Scheduling in MPC systems and its framework. Moreover we've introduced scheduling with their models, objectives, and methodologies. The third section deals with the problem statement as well as our approach to the problem definitions and solutions. In addition to this, we've given brief information about our application area and its process. Finally, Section four concludes and points out areas of future research. Furthermore, we've introduced our methodology tool kit, LEKIN generic software system, which we've used in the implementations.



## **Chapter 2.**

# **LITERATURE SURVEY**

### **2.1. Manufacturing Planning and Control (MPC) Systems**

#### 2.1.1. A review of the concepts related to MPC Systems;

Both the MPC system and the manufacturing process are designed to meet the dictates of the marketplace and to support overall company strategy. The MPC system does not make decisions or manage the operations, managers or system engineers perform these activities. The system provides the support for them to do so wisely.

Typical management activities supported by the MPC system [1] include;

- Plan capacity requirements and availability to meet marketplace needs.
- Plan for materials to arrive on time in the right quantities needed for product process.
- Ensure utilization of capital equipment and other facilities which is appropriated.
- Maintain appropriated inventories of raw materials; work in process, and finished goods in the correct locations.
- Schedule production activities so people and equipment are working on the correct things.
- Track material, people, customer's orders, equipment and the other resources in the factory.
- Communicate with customers and suppliers on specific issues and long term relationships.
- Meet customer requirements in a dynamic environment that may be difficult to anticipate.
- Respond when things go wrong and unexpected problem arise.
- Provide information to other functions on the physical and financial implications of the manufacturing activities.

In many companies, manufacturing planning and control has been a big problem. These companies are characterized by poor customer service, excessive inventories and inappropriate manufacturing.

The major levels in the manufacturing planning and control (MPC) systems [1] are;

- Strategic business plan
- Production plan (sales and operations plan)
- Master production schedule
- Material requirements plan
- Purchasing and production activity control

The plan gives general direction about how the company hopes to achieve these objectives. It's based on long-range forecasts and involves participation from marketing, finance, production and engineering. In turn, the plan provides direction and coordination among marketing production, financial and engineering plans.

#### **2.1.1.1. Strategic business plan;**

The game plan is top management's responsibility. It should always be consistent with strategic plans, departmental budgets and the firm's capabilities. Manufacturing plans, an integral part of the game plan, specify the production output required to achieve the overall objectives.

Manufacturing planning and control encompasses three distinct aspect or phases [3]. The first phase is creating the overall manufacturing plan for the manufacturing part of the company game plan. It must be stated in production terms, such as end items or product options. The second phase is performing the detailed planning of material and capacity needs to support the overall plans. The third and the final MPC phase is executing these plans on the shop floor and in purchasing.

#### **2.1.1.2. Production Planning;**

Production must be able to meet the demand of the marketplace. It's important to find the most productive way. It has to establish correct quantities. And make certain that capacity is available to meet these priorities. It involves; "Forecasting", "Master

Planning”, “Material Requirements Planning” and “Capacity Planning” [4]. There are some subjects applied through the production planning.

- Implementation and Control;

It’s responsible for putting into action and achieving the plans made by production planning. These responsibilities are accomplished through production activity control and purchasing.

- Capacity Management;

At each level in the manufacturing planning and control system, the priority plan must be tested against the available resources and capacity of the manufacturing system. It’s sufficient to understand that the basic process is calculating the capacity needed to manufacture the priority plan and of finding methods to make that capacity available.

- Inventory Management;

Inventories are materials and suppliers carried on hand either for sale on to provide material or supplies to the production process. They’re part of the planning process and provide a buffer against the differences in demand rates and production rates.

- Priority;

It relates to which and how many products are needed. The marketplace establishes the priorities.

- Capacity;

It is the capability of manufacturing to produce goods and services. Eventually it depends on the resources of the company (the machinery, labor, and financial resources, and the availability of a material from supplier)

- Marketing;

It is responsible for analyzing the marketplace and deciding the response. The markets to be served, the products supplied, desired levels of customer service, pricing promotion strategies, i.e.

- Finance;

It is responsible for deciding the sources and use of funds available to the firm, cash flows, profits, returning on investment and budgets.

- Engineering:

It is responsible for research, development and design of the products or modifications to existing ones. Engineering must work along with marketing and production to produce designs for products that have great opportunity for selling in the marketplace.

- Physical Supply / Distribution:

It includes all the activities involved in moving goods, from the supplier to the beginning of the production process, and from the end of the production process to the consumer. By grouping all activities like transportation, distribution inventory, ware housing, packaging, materials handling, order entry, it's involved in the movement and storage goods into one department, the firm has a better opportunity to provide maximum service at minimum cost and increase profit. The overall concern of materials management is the balance between priority and capacity. The marketplace sets demand. Material management must plan the firm's priorities (what goods to make and when) to meet that demand. Capacity is the ability of the system to produce or to deliver goods. Priority and capacity must be planned and controlled to meet customer demand at minimum cost.

### **2.1.1.3. The Master Production Schedule (MPS):**

The master production schedule is a disaggregated version of the production plan. That is, it states which end items or product options manufacturing will build in the future [5]. MPS is a plan for the production of individual end items. It breaks down the production plan to show, for each period, the quantity of each end item to be made. MPS forms a basic communication link with the manufacturing. It's stated in product specifications, in part numbers for which bills of material exist. Usually the plans are reviewed and changed weekly and monthly.

On a day-to-day basis, marketing and production are coordinated through the MPS in terms of order promising. This is the activity by which customer order requests receive shipment dates. The MPS provides the basis for making these decisions effectively, as long as manufacturing executes the MPS according to plan. When customer orders create a backlog and require promise dates that are unacceptable from

marketing viewpoint, trade-off conditions are established for making changes. The most profound of these trade-offs are between production and marketing in terms of exact product definition in the MPS.

Since the MPS becomes the basis for the manufacturing budget, it follows that financial budgets should be integrated with the production planning/MPS activities.

#### **2.1.1.4. The Material Requirement Planning (MRP);**

The material Requirement Planning (MRP) determines the period-by period (time phased) plans for all components parts and raw materials required to produce all the products in the MPS [1]. This material plan can thereafter be utilized in the detailed capacity planning systems to compute labor or machine center capacity required to manufacture all the component parts. Firms produce a wide variety of products within many component parts. Detailed material planning involves calculating requirements for thousands of parts and components, by using a formal logic called MRP. It determines plans for all component parts and raw material required to produce all the products in the MPS. It shows the quantities needed and when manufacturing intends to make or use them. This material plan can thereafter be utilized in the detailed capacity planning systems to compute labor or machine center capacity required to manufacture all the component parts. Purchasing and Production Activity Control use the MRP to decide purchasing or manufacturing of specific items [6]. The level detail is high. The MRP establishes when the component parts are needed to make each end item. The planning horizon is at least as long as the combined purchase and manufacturing lead times. As with the MPS, it usually extends from 1 to 18 months. Several other supporting activities are shown in the front end, engine and back end of the system as well. MPS is a plan for end items or product options as offered to the customers. MRP is the detailed planning process for components to support the MPS.

#### **2.1.1.5. Purchasing and Production Activity Control (PAC);**

PAC represents the implementation and control phase of the production planning and control system [6]. Purchasing is responsible for establishing and controlling the flow of raw materials into the factory. Production activity control is responsible for planning and controlling the flow of work through the factory. The planning horizon is

very short, perhaps from a day to month. The level of detail is high since it's concerned with individual components workstations, and orders. Plans are reviewed and revised daily.

Purchased parts require an analogous detailed schedule. In essence, purchasing is the procurement of outside-work-center capacity. It must be planned and scheduled well to minimize final customers overall cost. Good purchasing systems typically separate the procurement activity from routine order release and follow-up. Procurement, a highly professional job, involves contracting for vendor capacity and establishing ground rules for order release and order follow-up. A final activity tied to execution is the measurement of actual results. As products are manufactured, the rate of production and timing of specific completion can be compared to plans. As shipments are made to customers, measures of actual customer service can be obtained. As capacity is used, it too can be compared to plans.

### 2.1.2. An MPC System Framework

In any firms, manufacturing planning and control encompasses three distinct aspects or phases [1]. The first phase is called "Front End" which the overall manufacturing plan is created in. It must be stated in production terms; such as end items or product options. The second phase is called "Engine" in which the detailed planning of material and capacity needs to support the overall plans is performed. The third and final MPC phase is called "Back End" in which these plans on the shop floor and in purchasing are executed. Figure 2.1 depicts these three phases. A simplified schematic of a modern MPC system shows the skeletal framework for all the required activities.

#### 2.1.2.1. **Front End;**

Front End is the set of activities and systems for overall direction setting. This phase establishes the company objectives for manufacturing planning and control.

- **Demand Management;**

Demand management encompasses forecasting customer end product demand, order entry, order promising, accommodated interplant and inters company demand,

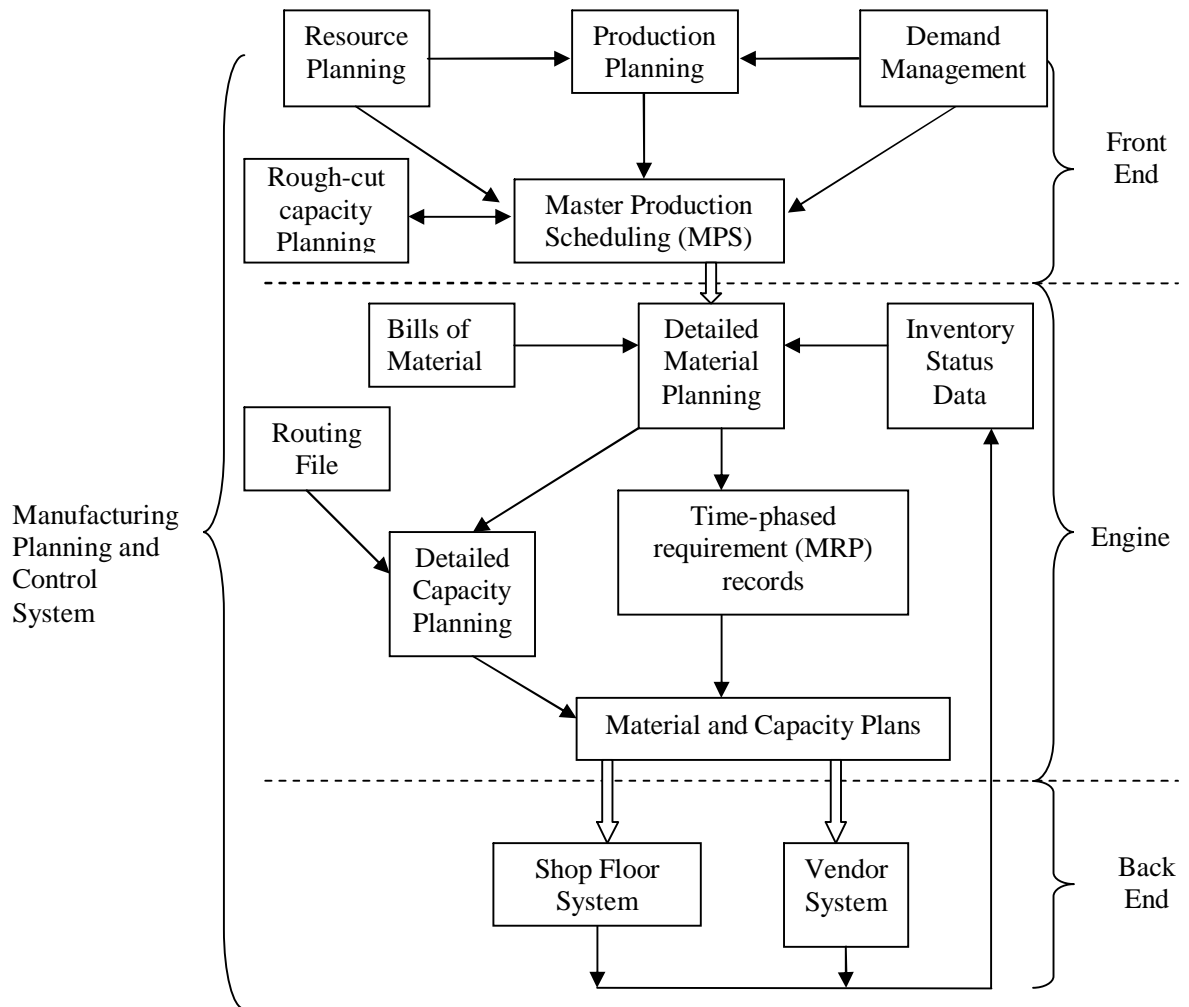


Figure 2.1 - A simplified schematic of a modern MPC system

and spare parts requirements [1]. Demand management coordinates all activities of the business that place demands on manufacturing capacity. Manufacturing must provide the opportunity to produce the goods needed. It's concerned more with the demand for the specific kinds of capacity needed to make the products than with the demand for the product. Inventory levels remain stable while production varies to meet demand. The advantage to the chase strategy is that inventories can be kept to minimum. Goods are made when demand occurs and are not stockpiled. Thus the costs associated with carrying inventories are avoided. Companies calculate their total demand over the time span of the plan, and on the average, produce enough to meet it. Subcontracting means production at the level of minimum demand, and meeting any additional demand through subcontracting. Subcontracting can mean buying the extra amounts demanded

or turning away extra demand. Major advantage of this strategy is cost.

- Production Planning:

Production planning sets the general levels of production and inventories over the planning horizon [1]. Its prime purpose is to establish production rates, which will accomplish the objectives of the strategic business plan. Inventory levels are set according to backlogs (unfilled customer orders) and market demands. It must be extended for the future plans according to the enough labor, facilities equipment, and materials. Typically this period is 1 to 18 months and can be done in monthly and sometimes weekly periods.

- Resource Planning:

Resource planning provides the capacity necessary to produce the required product now and in the future [1]. Resource planning provides the basis for managing the match between manufacturing plans and capacity. It is directly linked to the production planning module. It's the most highly aggregated and longest-range capacity planning decisions. Resource planning typically involves converting monthly, quarterly, or even annual data from the production plan into aggregate resources such as gross labor-hours, floor space and machine-hours.

- Rough-cut capacity planning:

Rough-cut capacity planning involves an analysis of the master production schedule to determine the existence of manufacturing facilities that represent potential bottlenecks in production flow. It provides a rough evaluation of potential capacity problems from a particular MPS [1].

- The Master Production Schedule (MPS):

The detailed plan or schedule produced by the MPS drives the entire engine and back-end system, as well as the rough-cut capacity [1]. Inputs to the MPS are



production plan, the forecast for individual end items, sales orders, inventories, and existing capacity. Whereas the production plan was based upon families of products, the MPS is developed for individual end items. MPS is the end result of the process. The resultant capacity needs must be coordinated with the MPS on an ongoing basis. The aggregate plan constrains the MPS, since the sum of the detailed MPS quantities must always equal the whole dictated by the production plan.

#### **2.1.2.2. Engine;**

Engine, is the set of systems for accomplishing the detailed material and capacity planning. The master production schedule feeds directly into the detailed material planning module. Firms with a limited product range can specify rates of production for developing these plans. However, for firms producing wide variety of products with many components is so difficult that detailed material planning can involve calculating requirements for thousands of parts and components, using a formal logic called Material Requirements Planning (MRP).

- The Material Requirement Planning (MRP);

An MRP system serves a central role in material planning into the detailed individual steps necessary to accomplish those plans [9]. It provides information for developing capacity plans, and it links to the systems that actually get the production accomplished. MRP is also seen as a dynamic priority-setting scheme so shop-floor and vendor operations could do a better job of execution. In addition to master production schedule inputs, MRP requires two other basic inputs. A bills of material shows, for each part number, what other part numbers are required as direct components. The second basic input to MRP is inventory status. To know how many materials to make for a given number of products, we must know how many are on hand, how many have already allocated to existing needs, and how many have already been ordered the MRP.

- Bills of Material (BOM);

BOM is a listing of all the subassemblies, intermediates, parts and raw materials that go into making the parent assembly showing the quantities of each required to make an

assembly [1]. It shows all the parts required to make one of the items. Each part or item has only one part number. A specific number is unique to one part and is not assigned to any other part. Thus, if a particular number appears on two different bills of material, the part so identified is the same. A part is defined by its form, fit or function. If any of these changes, then it's not the same part and it must have a different part number. BOM shows the components that go into making the parent. The steps or process used to make the parent or the components is recorded in a routing file.

- Capacity Planning (CP):

CP starts from an overall plan of resources, proceeding to a rough-cut evaluation of a particular master production schedules' capacity implications, moving to a detailed evaluation of capacity requirements based on detailed material plans, then continuing to finite loading procedures, and ending with input / output techniques to help monitor the plans [10]. The MPS is a primary information source for rough-cut capacity planning. A particular master schedule's rough-cut capacity requirements can be estimated by several techniques. Capacity Planning uses Overall Planning Factors (CPOF), capacity bills or resource profiles [7]. These techniques provide information for modifying the resources levels or material plan to ensure execution of the master production schedule. CPOF is the simplest technique and based only an accounting data. The other, Capacity Bills requires more detailed product information. And the third one, Resource Profiles adds a further dimension-specific timing of capacity requirement. For firms using material requirements planning to prepare detailed material plans, a much more detailed capacity plan is possible using the capacity requirements planning (CRP) technique. To provide this detail, time-phased material plans produced by the MRP system from the basis for calculating time-phased capacity requirements. Data files used by the CRP technique include work-in-process, routing, scheduled receipts, and planned orders. Information provided by the CRP technique can be used to determine capacity needs for both key machine centers and labor skills, typically covering planning horizon of several weeks to a year.

In firms using MRP system, execution of the detailed material and capacity plans involves the scheduling of machine and other work centers [7]. In these factories, scheduling must reflect such routine events as starting and completing orders for parts and any problem conditions, such as breakdowns or absenteeism. These schedules must

usually be updated at least once per day in factories with complex manufacturing processes for producing parts and components.

The key for keeping the MPC system matched to evolving company needs is to ensure system activities are synchronized and focused on the firm's strategy [7]. This ensures the detailed MPC decision making is in harmony with the company's game plan. Cost pressures have translated into reductions of all manufacturing cost components from material and labor to overhead and energy. Winning requires flexibility and responsiveness in dealing with evermore customer demands. Clearly, these pressures and responses require changes in both the MPC system and underlying manufacturing process. Process responses include automation, simplification and production cells for cellular manufacturing [14].

### **2.1.2.3. Back End;**

Back End depicts the execution systems. The shop-floor control systems establish priorities for all shop orders at each work center therefore the orders can be properly scheduled. Purchasing systems provide detailed planning information for vendor scheduling. This information relates to existing purchase orders as well as to planned purchase orders. The MPS produces the right input for the development of detailed material and capacity plans which in turn provides the right input to the execution systems.

- Shop-floor Control System;

Shop-floor control system accounts for the current status of all work-in-process in the shop, so only the capacity needed to complete the remaining work on open shop orders is considered in calculating required work center capacities [6].

- Vendor system;

Vendor system is managed by the customer demands in the vendor's plant with its MPC system [6]. The MPC relationship is largely through information exchanged between vendor and customer, often from the back-end activities of the customer directly to the vendor's MPC system. The objectives of vendor scheduling are, keeping

the orders lined up with the correct due dates from the material plan. This means the vendor must have a continually updated set of relative priority data. A typical approach to providing this information is a weekly updated report reflecting the current set of circumstances in the customer's plant and, sometimes, the final customer requirements that dictate them.

- **Inventory Status;**

Inventory status requires input information as the resource profile procedure plus information (BOM, Routing, Time Standards, Lead Times) on MRP-planned orders from the current status of open shop orders (MRP-scheduled receipts) at individual work centers [11].

### **2.1.3. Inputs to the Manufacturing Planning and Control System**

#### **2.1.3.1. Production Description;**

It shows how the product will appear at Bills of Material. These documents as used in materials management describes the components used to make the product and the subassemblies at various stages of manufacture [1].

#### **2.1.3.2. Process Specifications;**

It describes the steps necessary to make the end product [1]. They're a step-by-step set of instructions describing how the product is made. This information is usually recorded on a route sheet or in a routing file. In these files, there are operations required to make the product, sequence of operations, equipment and accessories required and standard time requirements to perform each operation.

#### **2.1.3.3. The Time Needed To Perform Operations;**

It is usually expressed in standard time which is taken by an average operator working at a nominal pace to perform a task. It's needed to schedule work through the plant, load the plant, make delivery promises and cost the product [1].

- Available Facilities:

Manufacturing planning and control must know which plant, equipment and labor will be available to process work. This information is usually found in the work center file.

- Quantities Required:

This information will come from forecasts, customer orders, order to replace finished-goods inventory and the material requirements plan.

## **2.1.4. Developed Phases in Integrated MPC Systems**

### **2.1.4.1. Sales and Operations Planning (SOP);**

The strategic business plan integrates the plans of all the departments in an organization and is normally updated annually. However, these plans should be updated as time progresses so that the latest forecasts and market and economic conditions are taken account. SOP is a continually process for the strategic business plan, and it coordinates the various departments [11]. While operations represent supply, marketing represent demand. The process starts with the sales plan, and then assesses market potential and forecast future demand. SOP is medium range and includes the marketing production, engineering and finance plans.

### **2.1.4.2. Manufacturing Resources Planning (MRP II);**

The strategic business plan incorporates the plans of marketing, finance and production. Marketing must agree that its plans are realistic and attainable. Finance must agree that its plans are desirable from a financial point of view, and production must agree that it can meet the required demand. MRPII is the full integrated planning and control system [1]. It provides coordination between marketing and production. Marketing, finance, and production agree on a total workable plan expressed in the production plan. Marketing and production must work together on a weekly and daily

basis to adjust the plan as changes occur. Order sizes may need to be changed, orders cancelled and delivery dates adjusted. These kinds of changes are made through the master production schedule. Marketing managers and production managers may change MPS to meet changes in forecast demand.

#### **2.1.4.3. Enterprise Resources Planning (ERP);**

An accounting oriented information system for identifying and planning the enterprise wide resources is needed for customer orders. To fully operate, there must be applications for planning, scheduling, costing and so forth, to all layers in an organization, work centers, sites, divisions and corporation [1].

#### **2.1.5. Scheduling In Manufacturing**

Orders that are released in a manufacturing setting have to be translated into jobs with associated due dates. These jobs often have to be processed on the machines in a work center in a given order or sequence. The processing of jobs may sometimes be delayed if certain machines are busy, and preemptions may occur when high-priority jobs arrive at machines and have to be processed at once. Unexpected events on the shop floor, such as machine breakdowns or longer-than-expected processing times, also have to be taken into account, since they may have a major impact on the schedules. Developing a detailed schedule of the tasks to be performed helps maintain efficiency and control of operations [12].

Three primary objectives or goals apply to scheduling problems [13]. The first goal is due date (completion time of a job). We typically want to avoid late job completion. The second goal is flow time (the time a job has to spend while processing). This objective is to minimize time a job spends in the system, from opening of a shop order until it's closed. The final goal concerns work center utilization. We want to fully utilize the capacity of expensive equipment and personnel.

Modern factories often employ elaborate manufacturing information systems involving a central computer and database. Local area networks of personal computers, workstations, and data entry terminals are connected to this central computer, which

may be used either to retrieve data from database or to enter new data. Scheduling is usually done on one of these personal computers or workstations [17].

The algorithms used in a service environments are often completely different from these used in manufacturing setting [13]. However, scheduling in both environments must be coordinated with other decision-making functions, usually within elaborate information systems. The information system in a service environment typically relies on extensive database that contain all the relevant information on the availability of resources and potential customers.

In a job shop most manufacturing orders follow a distinct routing. In addition, there are usually no forecasts, so a customer order triggers the demand. Furthermore, since the MPS always satisfies the exact requirement, there is no finished goods inventory and projected on hand balances are always zero. The MPS for a given time bucket would be equal to the customer orders in the same time bucket. The product structure record (also called BOM) is used to determine the number of parts needed for each master scheduled item. Once the MRP runs, the capacity requirements planning (CRP) is done to schedule the work center capacity without overloading the work center resources. Typically in a job shop no lot sizing rules are used (except lot for lot) and the size of the planned order release is the same as the net requirement. However, if multiple orders exist for an item, they can be aggregated to minimize the setup times [19].

In a job shop each customer order can be considered a project and the planned order receipt time of the end item in the BOM corresponds to the start-finish of an activity in the project network [19]. The planned order receipt time of the end item is then the deadline for the project. When there are multiple orders outstanding the corresponding project consists of sub-projects, each with its own deadline. The material processing times correspond to activity durations and the parent-child relationship is the BOM corresponds to precedence relationships among activities in a project network.

#### **2.1.5.1. A Scheduling Framework**

There are many ways to think about scheduling, as well as different kinds of scheduling problems and decisions. Before we talk about scheduling and its models, it's useful to first develop a brief framework for scheduling. We can define a schedule as a plan with reference to the sequence of and time allocated for each item or operation

necessary to complete the item [24]. This definition let us think of a schedule that has a series of sequential steps, or a routing. The entire sequence of operations, the necessary sequential constraint, the time estimates for each operation, and the required resource capacities for each operation are inputs to developing the detailed plan or schedule. This also allows us to think of component part scheduling based on product structures, with scheduling of components for subassemblies and in turn, subassemblies to support end-item assembly [12]. The detailed material planning module breaks down end-item schedules to subassembly and component schedules. Material plans also establish the associated resource capacity requirements.

Other facet of a framework for scheduling relates to work center capacities. Our consideration is the extent to which capacities are fixed or variable. This is analogous to the alternative routing issue. The extent to which capacity for a particular work center can be increased or decreased and the time delay to change the capacity both affect scheduling performance. An additional issue in work center capacity is to focus attention on a subset of work centers; the bottlenecks. If we can more intensely utilize the bottleneck work centers capacities, we can improve overall schedule performance in several ways [15]. Conversely, utilization of bottlenecks is not a high-priority action. Attempts to increase non-bottleneck utilization usually increase work-in-process inventories and average flow times.

One popular system that's widely used is the material requirements planning (MRP) system. After a schedule has been setup, all raw materials and resources must be available at the specified times. The ready dates of all jobs have to be determined jointly by the production planning and scheduling systems and the MRP system. The MRP system keeps track of the inventory of each part. Furthermore, the system determines the timing of the purchases of each material. In doing so, the MRP system uses techniques such as lot sizing and lot scheduling that is similar to using in scheduling system [12].

We can also view scheduling as a process; that is someone prepares a schedule either for when an end item will be completed or for which jobs are to be completed during a specified time by the work center of interest [24]. This implies repetition of the scheduling task. We prepare schedule, observe actual performance and reschedule as uncertain events become resolved (e.g. forecasts of customer order become actual customer orders, planned results become actual results.)



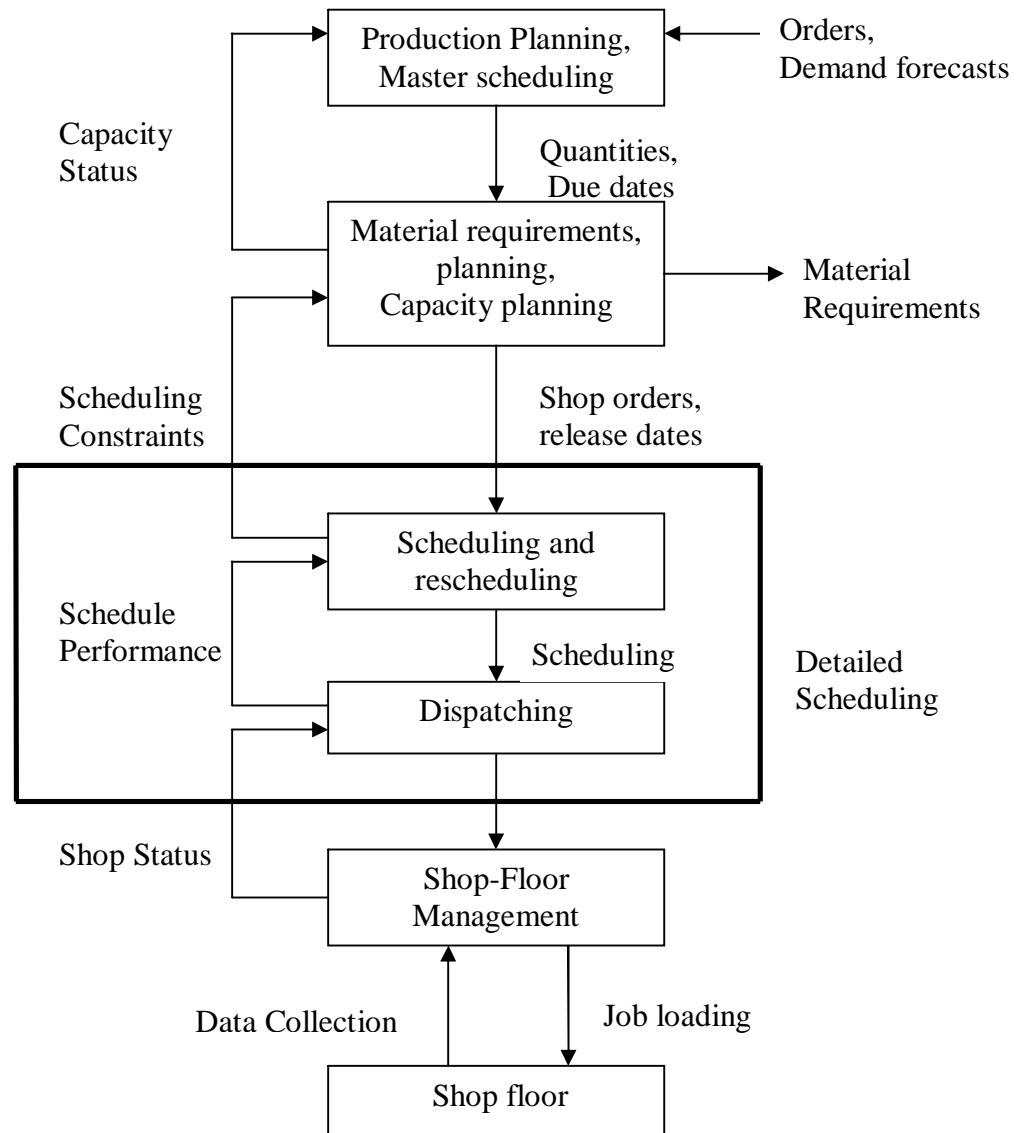


Figure 2.2 - Information flow diagram in a manufacturing system.

Large-scale problems are usually treated with heuristic procedures called dispatching, or sequencing rules [16]. These are logical rules for choosing which available job to select for processing at a particular machine center. In using dispatching rules, scheduling decisions are made sequentially rather than all at once. Simulation studies of large-scale, scheduling problems are again mainly based on dispatching rules. There are a substantial number of these studies, and the MPC professional must understand certain basic conclusions. Some results are quite counterintuitive.

The shop floor is not the only part of the organization that affects the scheduling process. It's also affected by the production planning process, which handles medium-long-term planning for the entire organization. This process aims to optimize the firm's overall product mix and long-term resource allocation based on inventory levels, demand forecasts, and resource requirements [6]. Decisions made at this higher planning level may affect the scheduling process directly.

Production planning strategies in the case of most manufacturing systems decide upon certain operational variables that account for the level of production, the fulfillment of customer orders and the level of warehouse stock in specific periods within a time planning horizon [18]. The information flow of a typical manufacturing system is shown in Figure 2.2 - Information flow diagram in a manufacturing system

#### **2.1.5.2. Heuristic methods for job shop scheduling**

As a matter of fact, only small size instances of the job shop problem can be solved with a reduced computational time by exact algorithms. Contrary, for large instances important results have been recently achieved by heuristic methods, some of them based on a local search methods [17]. Local search methods start from a solution and strive for successive improvements, by means of neighborhood examination, using an appropriate function termed as move. Generally, heuristic methods were developed for solving specific problems, thus can hardly be used to solve other types of problems where the formulation is different even marginally, from the problem for which a heuristic was initially designed. Furthermore, the computational time related to heuristic methods is definitely lower than those of any mathematical programming approach applied in the same size optimization problem. Nevertheless, the lack of their flexibility when the formulation of the problem changes their unsuitability for experimentation, and the fact that they were not able to produce high quality solutions very often, led researchers to the production of new higher level methods. These methods were based on generic principles for developing heuristics that were capable of solving a wide range of problems more efficiently [18]. Such methods are those belonging to the so-termed meta-heuristic class of algorithms, where the optimization is transferred to finding best tuning of their parameters.

A part from generic principles that govern every meta-heuristic, some problem specific principles have also to be defined. These principles are;

- The selection of the initial solution,
- The definition of the neighborhood of a current solution of the problem,
- The evaluation of the solution of the problem (objective function)

In the case of the job shop problem, these principles are interrupted as follows;

- The initial solution of a meta-heuristic can be selected stochastically from the solution space  $S$  of the problem examined, or systematically, following a specific construction heuristic methods.
- Regarding the second specific principle of a meta-heuristic, the neighborhood of a current solution is defined by the moves used to conduct local search.

## 2.2. Scheduling

### 2.2.1. Its role and Impact

Production scheduling concerns the efficient allocation of resources overtime for the manufacture of goods. Scheduling is one of the most difficult aspects of such manufacturing systems. Scheduling is a decision-making process that plays an important role in most manufacturing and service industries. The scheduling function in a company uses mathematical techniques or heuristic methods to allocate limited resources to the processing of tasks.

### 2.2.2. Model Characteristics

Manufacturing and service systems are characterized by many factors; the number of machines or resources, their configuration and characteristics, the level of automation, the type of material-handling system, and so on. The differences in all these characteristics give rise to a large number of scheduling models. If we overview the class of models;

The first class of model contains the project scheduling model [25]. Project scheduling is important in large multistage projects. A project, such as the construction of a special piece of equipment or the development of a software package, typically consists of a number of activities or jobs, some of which may be subject to precedence constraints. Jobs that are subject to precedence constraints can not be started until certain other jobs have been completed. A basic assumption is that an unlimited number of machines are available, so that a job can start as soon as all its predecessors have been completed. The objective is to minimize the completion time of the last job, commonly referred to as the makespan. It's also useful to find the set of jobs that determines the makespan, as these jobs are critical and can not be delayed without delaying the completion of the overall project.

The second class of model comprises the job shop models [29]. In a job shop, a job typically consists of a number of operations that have to be performed on different machines. The machines are set up in a certain configuration, and each job follows its own route through the system. The jobs have to be scheduled to minimize one or more

objectives, such as the makespan or the number of late jobs. Job shops are prevalent in industries that make customized industrial hardware but they also occur frequently in the service industries.

The third class focuses on production systems with automated material handling [27]. In these settings a job also consists of a number of operations. A material-handling or conveyor system controls the movement of the jobs and the timing of their processing on the various machines. These environments include flexible manufacturing systems, flexible assembly systems, and paced assembly lines. The objective is typically to maximize throughput. These models are important in the automotive industry as well as in the microelectronics industry.

The fourth class of models involves lot scheduling [28]. These models are used for medium and long-term production planning control. In contrast to the first three classes, the production and demand processes in the class are continuous. Lot scheduling models handle a variety of different products. When a machine switches from one product to another, a changeover cost is incurred. The goal is usually to minimize total inventory and changeover costs. These models are important in the process industries, and retail industry.

The fifth class consists of two subclasses that are strongly related mathematically reservation systems and timetabling models [2]. In contrast to the models in the other categories, the starting and completion times of jobs in reservation systems are fixed in advance. It may not be possible to process all the available jobs, and the scheduler's task is to decide whether or not to process any given job. The objective is typically to process as many jobs as possible. The timetabling models are related to the reservation models, but there are some basic differences. In timetabling models the starting and completion times of the jobs are not fixed in advance, but in order to process a job, a certain set of tools is required. This factor implies that two jobs that require the same tool can not be processed at the same time. The objective in timetabling is to process all jobs and to minimize the makespan.

The sixth and the last class contain the workforce scheduling models [2]. These models are somewhat different from the first five classes and do not fit in a framework of a machine scheduling models. In the real world, workforce scheduling and machine scheduling are often intertwined, since the scheduling of the machines may depend on the assignment of the shifts.

## 2.2.3. Machine Configurations

### 2.2.3.1. Single-Machine Models;

Numerous production systems give rise to single-machine models [2]. For instance, if a single bottleneck occurs in a multiple-machine environment, then the job sequence at the bottleneck typically determines the performance of the entire system. In the case all upstream and downstream operations are scheduled often the bottleneck is scheduled. This approach implies that the original problem first has to be reduced to a single machine scheduling machine.

Single-machine models are also important in decomposition approaches, where scheduling problems in complicated environments are broken down into a number of smaller, single machine scheduling problems. Single-machine models have been thoroughly analyzed under all kinds of special conditions and constraints and with many different objective functions. The result is a body of rules that, although easy to identify and apply, often provide optimal solutions in the single-machine environment.

### 2.2.3.2. Parallel-Machine Models;

A bank of machines in parallel is a generalization of the single-machine model. Many production environments consist of a number of stages or work centers, each with a number of machines in parallel. The machines at a work center may be identical so that whatever a job arrives, it may be processed on any one of the available machines. Parallel-machine models are important for the same reason that single-machine models do; if one particular work center is a bottleneck, then the schedule at that work center will determine the performance of the entire system. That bottleneck can often be modeled as a bank of parallel-machines and analyzed on its own [2].

Some machines may be older than others and may operate at a lower speed, or one machine may be better maintained and able to do higher quality work than another. In this case some jobs may be processed on any of the  $m$  machines in parallel, while others may be processed only on a specific subset of the  $m$  machines.

### 2.2.3.3. Flow Shop Models;

In many manufacturing or assembly environments, jobs have to be undergone multiple operations on a number of different machines. If the routes of all jobs are identical, that's all jobs visit the same machine in the same order, the environment is referred to as a flow shop [2]. The machines are set up in a series and whenever a job completes its processing on one machine it joins the queue at the next. The sequence of the jobs may vary from machine to machine, since jobs may be re-sequenced between machines. In some flow shops, if a job does not need processing at a particular machine, it may bypass that machine and go ahead of the jobs being processed or waiting for processing there. A generalization of the flow shop is the flexible flow shop, which consists of a number of stages in series with a number of machines in parallel at each stage [27]. Jobs are processed at each stage on any one of the parallel machines. See Figure 2.3 - Flexible Flow Shop)

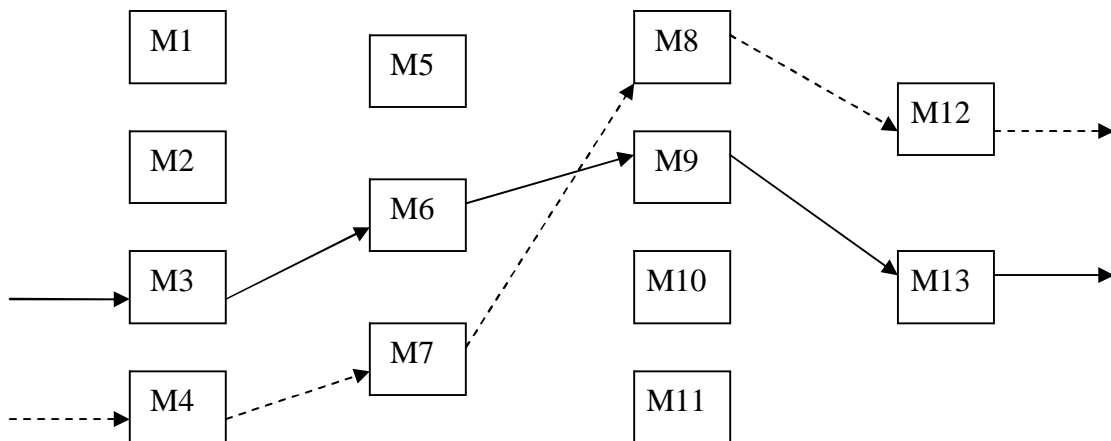


Figure 2.3 - Flexible Flow Shop

### 2.2.3.4. Job Shop Models;

In multi operation shops jobs often have different routes. This environment is referred to as a job shop, which is a generalization of a flow shop [29]. A flow shop is a job shop in which each and every job has the same route [2]. The simplest job shop models assume that a job may be processed on a particular machine at most once on its route

through the system. These shops are said to be subject to recirculation, which significantly increases the complexity of the model. See Figure 2.4 - Job Shop. A generalization of the job shop is the flexible job shop with work centers that have multiple machines in parallel. The flexible job shop with recirculation is the most complex machine environment and the routes of the jobs are order specific and require recirculation. In our study this model has been developed and applied in such an environment.

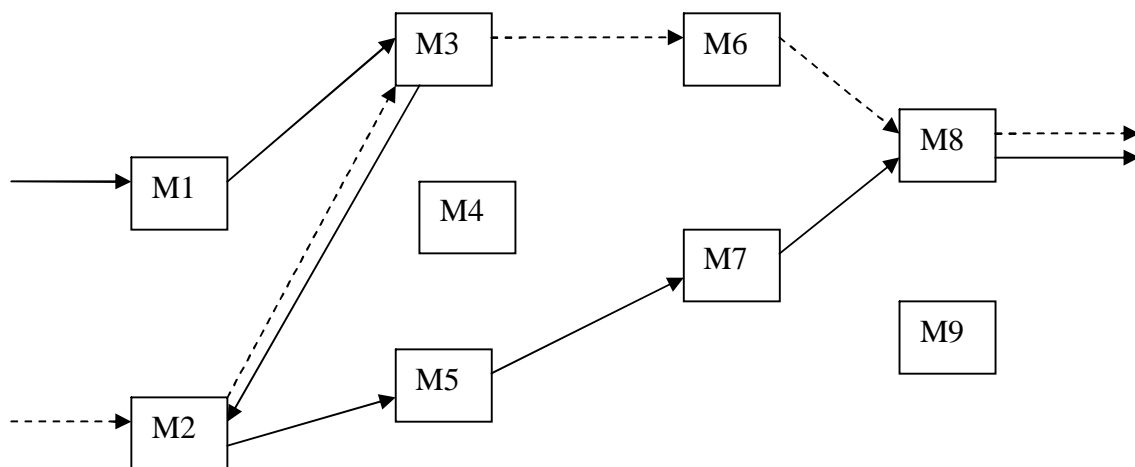


Figure 2.4 - Job Shop

#### 2.2.4. Processing Characteristics and Constraints

Job processing has many distinctive characteristics and is often subject to constraints that are peculiar. This section describes some of the most common processing characteristics and constraints.

##### - Preemptions:

Often during the processing of a job, some event occur that requires the job to be interrupted in favor of a different job, or instance, when a high priority rush order arrives at the machine. The job taken off the machine is preempted [40]. The processing already done on the preemption is referred to as preemptive resume. According to another form of preemption, the processing already done on the preempted job is lost. This form is referred to as preemptive repeat.



- Precedence (Priority) Constraints:

In scheduling problems a job often can start only after a given set of other jobs has been completed [29]. Precedence constraints may have a specific structure graph. It may take the form of a set of chains or a tree.

- Routing Constraints:

Routing constraints specify the route a job takes through a system. A given job may consist of a number of operations that must be processed on specified machines in a given sequence. An individual job that does not need processing at a particular stage however may be allowed to bypass this stage and go on to the next [29]. The information specifying the stages a job has to visit and those it can skip is embedded in the routing constraints.

- Storage-Space and Waiting-Time Constraints:

In many production systems, especially those that produce bulky items, the amount of space available for Work-In-Process Inventory is limited. These constraints put an upper bound on the number of jobs waiting for a machine. Storage space constraints in flow shops can cause blocking when the storage space (buffer), between two successive machines is limited, is full, upstream machine is not allowed to release its last completed job into the buffer [31].

- Material-Handling Constraints:

Modern assembly systems that often have material-handling systems convey the jobs from one work center to another. The level of automation of the material-handling system depends on the level of automation of work centers [2]. A material-handling system enforces strong dependencies between starting times of operations and the completion times of their predecessors. Moreover, the presence of a material-handling system often limits the amount of buffer space, which in turn limits the amount of work-in-process (WIP) [27]. The processing times at the workstations affect the configuration of the line, its pace, and the number of operations assigned to each station.

- Sequence-Dependent Setup Times and Costs;

Machines often have to be reconfigured or cleaned between jobs. This process is known as a changeover or setup. If the length of the setup depends on the job just completed and on the one about to be started, then the setup times are sequence-dependent [30]. Besides taking valuable machine time, setups also involve costs in the form of labor, waste of raw material and so on.

- Make-To-Stock and Make-To-Order;

A manufacturing facility may opt to keep in stock items for which there is a steady demand and no risk of obsolescence. This decision to make-to-stock affects the scheduling process because items that have to be produced for inventory do not have tight due dates [1].

In the case of such a deterministic demand process, the production lot size is determined by a trade-off between setup costs and inventory holding costs [23]. Whenever the inventory drops to zero, the facility replenishes its stock. In the case of stochastic demand process, the facility produces enough to replenish its in-stock supply when the inventory drops to a certain level. The inventory level that triggers production depends on the uncertainty in the demand pattern, whereas the amount produced depends on the setup costs and inventory holding costs.

Make-to-order jobs, conversely, have a specific due dates, and the amount produced is determined by the customer [2]. Many production facilities operate partly according to make-to-stock and partly according to make-to-order.

- Machine-Eligibility Constraints;

In a parallel-machine environment, job  $j$  may often not be processed on just any of the available machines, but rather must be processed on a machine belonging to a specific subset  $M_j$  of the machines [26]. This situation arises when the  $m$  machines in parallel are not identical.

- Tooling Constraints and Resource Constraints;

Machines frequently require one or more tools to process the jobs they handle. Those tools may be of various types, some with only limited availability [25]. In a parallel-machine environment jobs have to be scheduled so that their tooling requirements are

met. When a machine requires only one type of tool and there is  $R$  of them, they're a resource. A common resource in practice is personnel. A shop may have only a few operators trained to handle specific machines. Jobs that need to be processed on this machine must wait until one of these operators is available. At this point machine scheduling and personnel scheduling start sharing common ground.

- Personnel Scheduling Constraints;

Personnel scheduling and shift assignments may face many constraints. They are commonly of a form in which people must work a specified number of consecutive days off. However, there are many different types of shifts as well as many ways of rotating them.

### 2.2.5. Dispatching Rules

Some scheduling problems are intrinsically very hard. They can not be formulated as linear programs, and no simple rules or algorithms yield optimal solutions in a limited amount of computer time. These problems are called NP-hard (Non-Polynomial) [2]. It may be possible to formulate these problems as integer or disjunctive programs [34], but solving these to optimality may require an enormous amount of computer time.

A dispatching rule is a rule that prioritizes all the jobs that are waiting for processing on a machine [33]. The prioritization scheme may take into account the jobs attributes and the machines attributes, as well as the current time. Whenever a machine has been freed, a dispatching rule inspects the waiting jobs and selects the job with the highest priority.

#### 2.2.5.1. Notation;

- Basic notations;

Processing time ( $p_{ij}$ ); the processing time  $p_{ij}$  represents the time job  $j$  has to spend on machine  $i$ . ( $p_j$  is used for identical machines).

Release (ready) date ( $r_j$ ); the earliest time at which job  $j$  can start its processing.

Due date ( $d_j$ ); the due date  $d_j$  of job  $j$  represents the committed shipping or completion date. (The date the job is promised to the customer).

Weight ( $w_j$ ); the weight  $w_j$  of job  $j$  is a priority factor, denoting the importance of job  $j$  relative to other jobs in the system. It may represent the cost of keeping the jobs in the system.

Completion time ( $C_{ij}$ ); the completion time  $C_{ij}$  is the time job  $j$  is completed on machine  $i$ . ( $C_j$  refers to the time job  $j$  leaves the system).

- Objective functions;

Throughput time objectives;      Total completion time;  $\sum C_j$   
   Total weighted completion time;  $\sum w_j \cdot C_j$   
   Flow time;  $F_j = C_j - r_j$   
   Total flow time;  $\sum C_j$   
   Total weighted flow time;  $\sum w_j \cdot C_j$   
   Makespan ( $C_{max}$ );  $C_{max} = \max (C_1, \dots, C_n)$ ; the time last  
   job leaves the system.

Due date ( $d_j$ ) related objectives; Job lateness;  $L_j = C_j - d_j$   
   Maximum lateness;  $L_{max} = \max (L_1, \dots, L_n)$   
   Tardiness;  $T_j = \max (C_j - d_j, 0)$   
   Total tardiness;  $\sum T_j$   
   Total weighted tardiness;  $\sum w_j \cdot T_j$   
   Number of tardy jobs;  $U_j = \{ \text{if } C_j > d_j \text{ then } 1 \text{ otherwise } 0 \}$   
   Total number of tardy jobs;  $\sum U_j$   
   Total weighted number of tardy jobs;  $\sum w_j \cdot U_j$

Dispatching rules can be classified in various ways.

**2.2.5.2. Static–Dynamic Dispatching Rules;**

A distinction can be made between static and dynamic rules. Static rules are not time-dependent. They are just a function of the job data, the machine data, or both. The Dynamic Rules are time-dependent. One of the dynamic rules is the minimum slack first

(MS) rule, which orders jobs according to their remaining slack. This remaining slack is defined as  $\max(d_j - p_j - t, 0)$  where  $d_j$  is the due date,  $p_j$  is the processing time, and  $t$  is the current time.

### 2.2.5.3. Basic Dispatching Rules;

Basic dispatching rule is classified from other dispatching rules according to the information they're based on. A local rule uses only information pertaining to either the queue, where the job is waiting or machine (or work center) where the job is queued. A global rule may use information pertaining to other machines, such as the processing time of the job on the next machine on its route, or the current queue length at that machine. And there're many other basic dispatching rules [2];

- Earliest Due Date (EDD);

EDD is a simple rule for optimizing the Maximum Tardiness. It does not take job weights into account. It is optimal only for single machine and zero release dates.

- First Come – First Served (FCFS);

FCFS schedules the jobs in the order of their release dates. This rule optimizes the Total Weighted Flow Time. Generally it's not a well optimizer.

- Longest Processing Time first (LPT);

LPT is optimizing Makespan for some settings. This rule orders the jobs in decreasing times. When there are machines in parallel, this rule tends to balance the workload over the machines and try to equalize the load of different machines. It's advantageous to keep jobs with short processing times for later because these jobs are useful at the end for balancing the workload.

- Minimum slack first (MS) rule;

If the machine is freed, the job with the minimum slack is scheduled next. This rule tends to minimize due date related objectives. It's a variation of EDD. This rule also optimizes the Maximum Tardiness.

- Shortest Processing Time first (SPT);

This rule is optimizing Total Flow Time for some settings. This rule orders the jobs in increasing times.

- Weighted shortest processing time first (WSPT) rule;

WSPT is a weighted version of SPT. This rule optimizes Total Weighted Flow Time for some settings. Whenever a machine is freed, the job with the highest ratio of weighted ( $w_j$ ) over processing time ( $p_j$ ) is scheduled next. This rule tends to minimize the weighted sum of the completion times ( $\sum w_j.c_j$ )

- Critical Ratio (CR);

It schedules jobs according to the ratio of the time left until the due date and the remaining processing time. This rule is a compromise between EDD and LPT.

- Service in random order (SIRO) rule;

According to this rule, whenever a machine is freed, the next job is selected at random from those waiting for processing.

- Earliest release date first (ERD) rule;

Whenever a machine is freed, the job with the earliest due date is selected to be processed next. This rule tends to minimize the maximum lateness among the jobs waiting for processing.

- Shortest setup time first (SST) rule;

Whenever a machine is freed, this rule selects for processing the job with the shortest setup time.

- Least flexible job first (LFJ) rule;

This rule is used when there are a number of non identical machines in parallel and the jobs are subject to machine-eligibility constraints. It selects as the next job the one at the head of the longest string of processing times in the precedence-constraints graph.

- Longest number of successors (LNS) rule;

This rule may also be used when the jobs are subject to precedence constraints. It selects as the next job the one that has the longest number of jobs following it.

- Shortest queue at the next operation (SQNO) rule;

This rule is used in job shops. Whenever a machine is freed, the job with the shortest queue at the next machine on its route is selected for processing.

Basic dispatching rules are useful when one attempts to find a reasonably good schedule with regard to a single objective such as the makespan, the sum of the completion times, or the maximum lateness. However in practice, objectives are often very complicated. A realistic objective may be a combination of several basic objectives, and it may also be a function of time or a function of the set of jobs waiting for processing [2]. Sorting the jobs on the basis of one or two parameters may not be acceptable schedules. More elaborate dispatching rules that consider a number of parameters can address more complicated objective functions.

#### **2.2.5.4. Composite Dispatching Rule;**

Composite dispatching rule is a ranking expression that combines a number of basic dispatching rules. An attribute is any property associated with either a job or a machine; it may be constant or time-dependent [33]. Examples of job attributes are weight, processing time, and due date. Examples of machine attributes are speed, the number of jobs waiting for processing, and the total amount of processing that is waiting in queue. The extent to which a given attribute affects the overall priority of a job is determined by the basic rule that uses it and a scaling parameter. Each basic rule in the composite dispatching rule has its own scaling parameter that is chosen to properly scale the contribution of the basic rule to the total ranking expression. The scaling parameters may be fixed by the designer of the rule, or they may be variable and a function of the particular job set to be scheduled, they require the competition of some job set statistics that characterize the particular scheduling instance as accurately

as possible [2]. These statistics, which are also called factors, usually do not depend on the schedule and can be computed easily from the given job and machine attributes.

The apparent tardiness cost (ATC) heuristic is a composite dispatching rule that combines WSPT and MS [2]. MS rule selects at time  $t$ , the job with the minimum slack  $\max(d_j - p_j - t, 0)$ . Under the ATC rule jobs are scheduled one at a time, that is, every time the machine becomes free, a ranking index is computed for each remaining job. The job with the highest ranking index is then selected to be processed next. This index is a function of the time  $t$  when the machine becomes free and the  $p_j$ , and  $d_j$  of the remaining jobs. It's defined as;

$$I_j(t) = \frac{w_j}{p_j} \exp\left(-\frac{\max(d_j - p_j - t, 0)}{K \cdot \bar{p}}\right)$$

Where  $K$  is the scaling parameter, which can be determined empirically,  $\bar{p}$  is the average of the processing times of the remaining jobs. If  $K$  is very large, the ATC rule reduces to WSPT. If  $K$  is very small and there are overdue jobs, the rule reduces to WSPT applied to the overdue jobs. To obtain good schedules, the value of  $K$  must be appropriate for the particular instance of the problem. This value can be determined by first performing a statistical analysis of the particular scheduling instance under consideration. The due dates tightness factor  $t$  is defined as;  $t = 1 - \left(\bar{d}/C_{\max}\right)$ , where

$\bar{d}$  is the average of the due dates. Values of  $t$  close to 1 indicate that the due dates are tight, and values close to 0 indicate that the due dates are loose. The due date range factor  $R$  is defined as;

$$R = \frac{(d_{\max} - d_{\min})}{C_{\max}}$$

A high value of  $R$  indicates a narrow range of due dates. A significant amount of experimental research has been done to establish the relationships between the scaling parameter  $K$  and the factors  $t$  and  $R$ . One then determines the value of  $K$  as a function of these characterizing factors as well as the particular machine environment.

Several generalizations of the ATC rule have been developed to take release dates or sequence-dependent set up times into account [2]. For example, the apparent tardiness cost with setups (ATCS) rule is designed for the following problem. There



are  $n$  jobs and a single machine. The jobs are subject to sequence-dependent setups  $s_{jk}$ . The objective is once again to minimize the sum of the weighted tardiness. The priority of any job  $j$  depends on the job just completed when the machine is freed. WSPT, MS and SST are in a single ranking index. The rule calculates the index of job  $j$  upon the completion of job  $\mathbf{I}$  at time  $t$  as;

$$I_j(t, \mathbf{I}) = \frac{w_j}{p_j} \exp\left(-\frac{\max(d_j - p_j - t, 0)}{K_1 \cdot \bar{p}}\right) \exp\left(-\frac{S_{\mathbf{I}j}}{K_2 \bar{s}}\right)$$

Where;  $\bar{s} \rightarrow$  the average of the setup times of the jobs remaining to be scheduled.

$K_1$  denotes the due date related scaling parameter

$K_2$  denotes the setup time related scaling parameter

$K_1$  and  $K_2$  scaling parameters can be regarded as a function of three factors;

i)  $t$  ; The due date tightness factor;  $t = 1 - \left(\frac{\bar{d}}{C_{\max}}\right)$

ii)  $R$ , The due date range factor;  $R = (d_{\max} - d_{\min}) / C_{\max}$

iii)  $h$ , The setup time severity factor;  $h = \frac{\bar{s}}{\bar{p}}$

An estimate for the makespan on a single machine can be;

$$\hat{C}_{\max} = \sum_{j=1}^n p_j + n \cdot \bar{s}$$

This quantity is likely to overestimate the makespan, as the final schedule will take advantage of setup times that are lower than average.

Also the following rules can be used for selecting values for  $K_1$  and  $K_2$  scaling parameters:

$$K_1 = 4,5 + R, \quad \text{for } R \leq 0,5$$

$$K_1 = 6 - 2R, \quad \text{for } R \geq 0,5$$

$$K_2 = t / (2 / \sqrt{h})$$

The ATCS rule can be easily applied to scheduling problems with parallel machines; that is,  $m$  identical machines in parallel,  $n$  jobs subject to sequence dependent setups, and the total weighted tardiness as the objective to be minimized. Of course the parameters  $K_1$  and  $K_2$  have to be determined as a function of  $t, R, h$  and  $m$ .

## 2.2.6. Makespan objective based techniques

### 2.2.6.1. Project Scheduling With Precedence Constraints:

The setting may be regarded as a parallel-machine environment with an unlimited number of machines. This implies that whenever all the predecessors of a job have been completed that job can start with its processing. The objective is to minimize the makespan while adhering to the precedence constraints [2]. This type of problem is called project scheduling problem. The precedence relationships between the jobs are the basic constraints of the project scheduling problem. The precedence constraints may take out in two formats;

- **Job on arc format;**

The arcs in the precedence graph represent the jobs, and nodes represent the milestones or epochs. A disadvantage of job on arc format is the necessity of so-called dummy jobs that have zero processing times, which are needed to enforce precedence constraints that other wise would not have been enforceable. The number of dummy jobs required to enforce the proper precedence in a job on arc representation of a large project can be substantial and may increase the total number of jobs by as much as 10 percent. See Figure 2.5 - (a) Job on arc format.

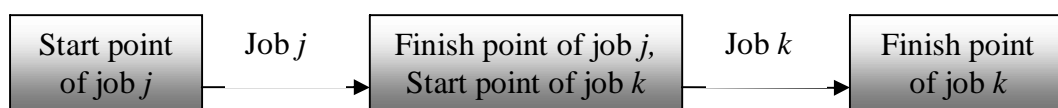


Figure 2.5 - (a) Job on arc format

- **Job on node format;**

The nodes in the precedence graph represent the jobs, and the connecting arcs represent the precedence relationships between the jobs. If job  $j$  is followed by job  $k$ , then the precedence formats graph takes the form as depicted in Figure 2.6 - (b) Job on node format.

An advantage of the job on node format is that nodes may be depicted as rectangles and the horizontal lines of the rectangle can be used as a time axis that corresponds to the processing time of the job. If job  $k$  is allowed to start after half of job  $j$  has been completed, then the arc establishing this precedence relationship can emanate from the midpoint of a horizontal line of the rectangles.

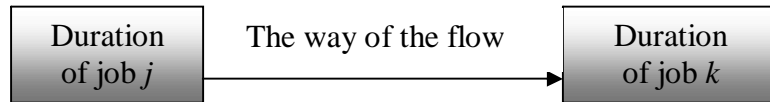


Figure 2.6 - (b) Job on node format

### 2.2.6.2. Project Scheduling With Resource Constraints:

A more general version assumes that a job's processing requires, besides an available machine, additional resources such as tools, fixtures, or personnel. Each of these resources has a limited availability. If the processing of a number of jobs overlaps in time, then the sum of their demand for any given resource should not exceed the total amount available. Therefore, at a certain point in time, two jobs, both being allowed to start as far as the precedence constraints are concerned, cannot be processed simultaneously because of the resource constraints. The objective is again to minimize the makespan. This type of problem is referred to as a resource-constrained project scheduling problem [25].

To formulate this problem as an integer program, assume all processing times to be fixed and integer. The amount of resource  $i$  that job  $j$  needs during the interval  $[t-1, t]$ ,

$$\text{is } R_{ij} \sum_{u=t}^{t+p_j-1} x_{ju} .$$

Let  $H$  denote an upper bound on the makespan. A simple, but not very tight, bound can

be obtained by setting  $H = \sum_{j=1}^n p_j$ . So the completion time of job  $j$  can be expressed

as  $\sum_{t=1}^H t \cdot x_{jt}$ , and the makespan as  $\sum_{t=1}^H t \cdot x_{n+1,t}$ . The objective of the integer program is to

minimize the makespan again.

The basic project scheduling problem without resource constraints is from a computational point of view easy. Optimal solutions can be obtained relatively fast. These types of scheduling problems frequently occur in the management of large projects. Such projects include real estate developments, software developments, construction of power generation centers, or launching of a spacecraft.

### **2.2.6.3 Critical Path Method (CPM);**

The processing time of job  $j$  is fixed and equal to  $p_j$ . Start time is 0 with the processing of all jobs that have no predecessors. Every time a job starts processing after all jobs whose predecessors have all been completed.

$$C'_j = S'_j + P_j$$

Where,  $C'_j$  denotes the earliest possible completion time of job  $j$ .

$S'_j$  denotes the earliest possible starting time of job  $j$ .

A job can start its processing only when all its predecessors have been completed. So the earliest starting time of a job equals the maximum of the earliest completion times of all its predecessors. This algorithm is referred to as the forward procedure. Each job starts its processing at its earliest possible starting time and is completed at its earliest possible completion time. It may be possible to delay the start of some of the jobs without increasing the makespan [2].

The other algorithm referred as backward procedure, determines the latest possible starting times and completion times of all the jobs, assuming the makespan is minimized.  $C_{max}$  is an output of the forward procedure and uses as an input parameter for backward procedure [2].

$$S''_j = C''_j - P_j$$

Where,  $C''_j$  denotes the latest possible completion time of job  $j$ .

$S''_j$  denotes the latest possible starting time of job  $j$ .

A job of which the earliest starting time is earlier than the latest starting time is referred to as a slack job. The difference between a job's latest completion time and earliest possible completion time is the amount of slack, also referred to as float. A job of which the earliest starting time is equal to the latest starting time is referred to as a critical job. A Critical Path (CP) is a chain of jobs, beginning with a job that starts at time 0 and ending with a job that completes its processing at  $C_{max}$  [2]. A project can have more than one critical path, and critical paths may partially overlap. According to CP rule, whenever a machine is freed, the job at the head of the longest string has the highest priority. In the CPM, one has to make sure that the job at the head of the longest string is never delayed. In the implementation of the method; through the forward procedure, in the connections, the node which has biggest latest finish time of the connectors is selected. Therefore, flow progresses processing orderly, while the node which have smaller finish time are waiting. In the backward procedure, in the connections, the node which has smallest earliest start time of the connectors is selected. Therefore the earliest start time of the project can be determined. In the conclusion, the chain of nodes, which have equal Latest and Earliest Time, and Latest and Earliest Finish time, states CP. The Figure 2.7 - The node in CPM depicts the node and its partitions.

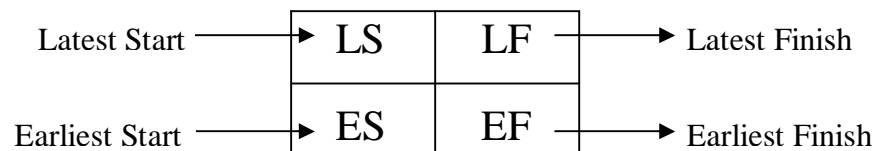


Figure 2.7 - The node in CPM.

## 2.2.7. Disjunctive Programming

### 2.2.7.1. The Disjunctive Graph;

The job shop scheduling problem requires finding an optimal order of all tasks on the machines, resulting in a schedule with the minimal length. In the disjunctive graph model, this is equivalent to select one arc in each disjunction, i.e. to turn each undirected disjunctive edge into a directed conjunctive one.

By fixing directions of all disjunctive edges, the execution order of all conflicting tasks requiring the same machine is determined and a complete schedule is obtained. The resulting graph has to be acyclic and if it's optimal, the length of the longest from the source to the sink is minimum. This longest path determines the makespan; it's the duration of the longest chain of tasks in a job shop [34].

The disjunctive graph contains all information in order to describe a partial or complete solution of the job shop scheduling problem, so its proper representation significantly influences the efficiency of the algorithm solving the problem [39].

Also sub-schedule of every operation on the longest path for a tardy job is fixed to determine the completion time of the job at each successor node [39]. The number of successor nodes typically corresponds to the number of tardy jobs at the searching node. If the completion time of non-tardy job is fixed and mini-max tardiness problem subject to fixed sub-schedules is solved at a successor node, then the same schedule as at the searching node or a worse one is obtained. Therefore, the completion time of a tardy job is fixed at each successor node. Furthermore, even if the sub-schedule of the final operation for a tardy job is fixed, the sub-schedule of every operation on the path for the job is the same in the obtained schedule.

#### **2.2.7.2. Disjunctive Programming;**

A job shop problem is considered with  $n$  jobs and  $m$  machines. Each job has to be processed by a set of machines in a given order, and there's no recirculation. The processing of job  $j$  on machine  $i$  is referred to as operation  $(i, j)$ , and its duration is  $p_{ij}$ . The objective is to minimize the makespan;  $C_{\max}$ .

The conjunctive (solid) arcs  $A$  represent the routes of the jobs. If arc  $(i, j) \rightarrow (k, j)$  is part of  $A$ , then job  $j$  has to be processed on machine  $i$  before being processed on machine  $k$ ; that is, operation  $(i, j)$  precedes operation  $(k, j)$ . Two operations that belong to different jobs and that have to be processed on the same machine are connected to another by two disjunctive (broken) arcs going in opposite directions. The problem of minimizing the makespan is reduced to finding a selection of disjunctive arcs that minimizes the length of the longest path (CP) [34].

The disjunctive programming formulations is closely related to the disjunctive graph representation of the job shop.

Let  $y_{ij}$  denotes the starting time of operation  $(i, j)$

$N$  denotes the set of all operation  $(i, j)$

Set  $A$  denotes the set of all routing constraints  $(i, j) \rightarrow (k, j)$  that require job  $j$  to be processed on machine  $i$ , before it's processed on machine  $k$ .

Objective is again minimizes  $C_{\max}$

Subject to;  $y_{kj} - y_{ij} \geq p_{ij}$  , for all  $(i, j) \rightarrow (k, j)$

$$C_{\max} - y_{ij} \geq p_{ij} , \text{ for all } (i, j) \in N$$

$$y_{ij} - y_{il} \geq p_{il} \text{ or } y_{il} - y_{ij} \geq p_{ij} , \text{ for all } (i, j) \leftrightarrow (i, l)$$

$$y_{ij} \geq 0 , \text{ for all } (i, j) \in N$$

In these formulations the first set of constraints ensures that operation  $(k, j)$  cannot start before operation  $(i, j)$  is completed. Disjunctive constraints ensures that some ordering exist among operations of different jobs have to be processed on the same machine. So this formulation is referred to as the disjunctive programming formulation [34].

A feasible schedule is called active if it cannot be altered in any way, so that some operation is completed earlier and no other operation is completed later. A schedule being active implies that when a job arrives at a machine, this job is processed as early as possible according to the prescribed sequence [2]. Non-active schedule has an idle period between the processing of two operations.

A branching scheme that is often used is based on the generation of all active schedules [39].  $\Omega$  , denotes the set of all operations whose predecessors have already been scheduled.  $r_{ij}$  denotes the earliest possible starting time of operation  $(i, j)$  in  $\Omega$  . Set  $\Omega'$  is a subset of set  $\Omega$  .

Current partial schedule is  $t(\Omega) = \min \{ r_{ij} + p_{ij} \}$ .  $i^*$  , denotes the machine on which the minimum achieved  $\{ r_{i^*j} < t(\Omega) \}$ . In branching;  $\Omega'$  denotes the set of all operations  $(i^*, j)$ .

The number of branches is equal to the number of operations in  $\Omega'$  . With this algorithm one can generate the entire tree, and the nodes at the very bottom of the tree correspond to all the active schedules. The disjunctive arcs  $(i^*, j) \rightarrow (i^*, k)$  then have to be added to machine  $i^*$  for all operations  $(i^*, k)$  still to be scheduled on machine  $i^*$  .

However, machine  $i$  is forced to process its operations one after another. First, compute the earliest possible starting times  $r_{ij}$  of all operations  $(i, j)$  on machine  $i$ ; that is, determine the length of the longest path from the source the node  $(i, j)$ . Second, for each operation  $(i, j)$  on machine  $i$ , compute the minimum amount of time needed between the completion of operation  $(i, j)$ .

### **2.2.7.3. Non-Preemptive Disjunctive Scheduling;**

Given a set of resources with a given capacities, a set of activities with given durations and resource requirements, and a set of temporal constraints between activities, a “pure” scheduling problem consists of deciding when to execute each activity, so that both temporal constraints and resource constraints are satisfied. In disjunctive scheduling, each resource can execute at most one activity at a time. In cumulative scheduling, a resource can run several activities in parallel, provided that the resource capacity is not exceeded. In non-preemptive scheduling, activities can not be interrupted. Each activity  $A$  must execute without interruption from its start time to its end time. In preemptive scheduling, problem can be encoded efficiently as a constraint satisfaction. Two variables,  $EST_A$  and  $EET_A$  are called the earliest start time of  $start(A)$  and the earliest end time of  $end(A)$ . Similarly, the greatest values in the domains of  $start(A)$  and  $end(A)$  are called the latest start time,  $LST_A$  and the latest end time,  $LET_A$ . The duration of the activity is an additional variable, defined as the difference between the end time and the start time of the activity [40].

A common mechanism to propagate resource constraints in the non-preemptive case relies on an explicit data structure called “timetable” to maintain information about resource utilization and resource availability over time. Resource constraints are propagated in two directions; from resources to activities, to update activity time bounds (earliest and latest start and end times) according to the availability of resources; and from activities to resources, to update the timetables according to the time bounds of activities.



#### **2.2.7.4. The Preemptive Job-Shop Scheduling Problem;**

The preemptive job-shop scheduling problems, and the variant of the job-shop scheduling problem, are developed for the branch and bound procedure. All activities are interruptible. More precisely, one is given a set of jobs and a set of machines. Each job consists of a set of activities to be processed in a given order. Each activity is given an integer processing time and a machine on which it has to be processed. A machine can process at most one activity at a time. Activities may be interrupted at any time, an unlimited number of times. The problem is to find a schedule, i.e. a set of execution times for each activity that minimizes the makespan, i.e., the time at which all activities are finished [40].

The resource constraints start as each machine  $M$  can execute at most one activity at a time. These constraints are the most complex to propagate. Two constraint propagation techniques are developed [32].

The first technique relies on resource timetables and applies to both “disjunctive” resources, which can execute only one activity at a time, and “cumulative” resources of capacity  $M > 1$ . A timetable is maintained for each resource, in order to keep track of the required and available capacity at any time  $t$ . Propagation occurs both from activities to resource timetables, and from resource timetables to activities.

- From activities to resources: When an activity is known to execute at time  $t$ , this activity requires its resources at time  $t$ . The timetable of each required resource can consequently be updated.

- From resources to activities: The resource timetable is used to incrementally update time bounds of activities. The earliest end time of each activity is updated to ensure that between its earliest start time and its earliest end time, there are enough “free” time intervals on the resource to let the activity execute. Needless to say, if the resource timetable proves that the activity cannot start before time  $t$ , its earliest start time is updated and the timetable mechanism is iterated. A similar technique is used to update the latest start time and the latest end time of the activity.

The second resource constraint propagation technique relies on edge-finding. It reasons about the order in which several activities can execute on a given resource. Edge-finding, initially developed for non-preemptive disjunctive scheduling consists of determining whether an activity  $A$  can, cannot, or must, execute before a set of activities, which require the same resource. Two types of conclusions can be drawn;

new ordering relations (“edges” in the graph representing the possible ordering of activities) and new time-bounds, i.e., strengthened earliest and latest start and end times of activities. The preemptive case is more complex since several activities can preempt one another.

#### **2.2.7.5. The Shifting Bottleneck Heuristic;**

The structure of the shifting bottleneck heuristic shows the relationship between the bottleneck concept and more combinational concepts such as critical (longest) path and maximum lateness. A critical path indicates the location and the timing of a bottleneck.

In the shifting bottleneck heuristic,  $M$  denotes the set of all  $m$  machines. From the description of the iteration of the heuristic, it's assumed that in previous iterations, a selection of disjunctive arcs has been fixed for a subset  $M_o$  of machines. To determine which machine should be included next in  $M_o$ , an attempt is made to determine which unscheduled machine causes in one sense or another severest disruption. To do so, the original directed graph is modified by deleting all disjunctive arcs of the machines yet to be scheduled (that is the machines in set  $M-M_o$ ) and keeping only the relevant disjunctive arcs of the machines in set  $M_o$  (one from every pair). Call this graph  $G'$ . Deleting all disjunctive arcs of specific machines implies that all operations on this machine, which originally were supposed to be done on this machine one after another, now may be done in parallel.

In the single-machine problem that has to be solved in the shifting bottleneck heuristic, the operations on a given machine may have to be subject to a special type of precedence constraints. It may be that an operation on a machine still to be scheduled must be processed after certain other operations have been completed on that machine. These precedence constraints may be necessary because of the sequences of the operations on the machines already scheduled. Without these constraints, the shifting bottleneck heuristic may end up in a situation where there is a cycle in the disjunctive graph and the corresponding schedule is infeasible.

The shifting bottleneck heuristic can be adopted and applied to more general models than the job shop model considered here; these models include recirculation as well as multiple machines at every stage.

## 2.2.8. Objectives and Performance Measures

In a given job shop environment with a finite number of jobs, there are  $n$  jobs and a certain objective function has to be minimized. Each job follows a predetermined route, visiting a number of machines. In some models a job may visit each machine at most once, and in other models a job may visit each machine more than once. These job shop problems are NP-hard and cannot be formulated as linear programs. However, they can be formulated either as integer programs or as disjunctive programs.

### 2.2.8.1. Throughput and Makespan Objectives;

The throughput of a facility, which is equivalent to the output rate, is frequently determined by bottleneck machines, that is, the machines having the lowest capacity relative to their demand. Thus maximizing a facility's throughput rate is often equivalent to maximizing the throughput rate at these bottlenecks. This goal can be achieved in a number of ways [27]. First, the scheduler must try to ensure that the bottleneck machine is never idle, which may require always having some jobs in queue waiting for the machine. Second, if there are sequence-dependent setup times on the bottleneck machine, the scheduler has to sequence the jobs in a way that minimizes the sum of the setup times, or equivalently the average setup time.

The makespan is important when the number of jobs is finite. Heuristics that tend to minimize the makespan in a machine environment with finite number of jobs also tend to maximize the throughput rate when the flow of jobs is constant over time [32]. The makespan is denoted by " $C_{max}$ " and is defined as the time the last job leaves the system, where  $C_j$  is the completion time of job  $j$ .

$$C_{max} = \max (C_1, \dots, C_n)$$

### 2.2.8.2. Due Date Related Objectives;

Several important objectives are related to due dates. First, the scheduler is often concerned with minimizing the maximum lateness.  $d_j$  denotes the due date of job  $j$ , so the lateness of job  $j$  is  $L_j = C_j - d_j$

Another important due date related objective is number of tardy jobs. A due date related objective that addresses this concern is the total tardiness or equivalently, the average tardiness [35]. The tardiness of job  $j$ , is defined as;  $T_j = \max(C_j - d_j, 0)$  and

objective function as;  $\sum_{j=1}^n T_j$

Suppose the different jobs carry different weight priorities. The weight of job  $j$  is  $w_j$ . The larger the weight of the job, the more important it is. Then a more general version of the objective function is the total weighted tardiness [36];

$$\sum_{j=1}^n w_j.T_j$$

Minimizing the total weighted tardiness would be fairly suitable objective in such an environment, even through a production manager may still be concerned with the number of late jobs.

### **2.2.8.3. Total Weighted Tardiness;**

If we consider job shop scheduling problem, we have to minimize the total weighted tardiness ( $\sum w_j.T_j$ ) with job specific due dates and delay penalties [36]. It's subject to constraint set ensures that  $T_j$  is equal to  $(C_j-d_j)$ . That we also have to perform a heuristic algorithm based on the tree search procedure is developed for solving these problems. A certain job shop scheduling to minimize the maximum tardiness subject to fixed sub-schedules is solved to each node of the search tree, and the successor nodes are generated, where the sub-schedules of the operations are fixed. Thus, a schedule is obtained at each node, and the sub-optimum solution is determined among the obtained schedule. A delay penalty is charged if a job is completed after due date that has been promised to a customer. This penalty is assumed to be constant over time and includes cost of lost future sales or changed orders and rush shipping cost. A certain job shop scheduling to minimize the maximum tardiness subject to fixed sub-schedule is solved at each node of the search tree in the proposed algorithm. The longest path for every tardy job at a searching node is found, and the sub-schedule of every operation on the longest path of a tardy job is fixed at each successor node.

#### **2.2.8.4. The Total Weighted Tardiness in a Flexible Job Shop with Setups;**

There are number of stages in series with several machines in parallel at each stage. The jobs that have to be processed are characterized by their processing times, their due dates (committed shipping dates), and their physical characteristics, which are usually determined by one or more parameters [31]. When one job is completed on a given machine and another has to start, a setup is required. The setup time depends on both jobs. It has several objectives. One is meet the due dates. This objective is more or less equivalent to the sum of the weighted tardiness ( $\sum w_j T_j$ ). Another important objective is the maximization of throughput. This objective is related to the minimization of the sum of setup times, especially for machines at the bottleneck stage. The third objective is the minimization of the Work-In-Process Inventory. So the decision-making process is not that easy. The decision depends on machine utilization, available storage space, and other factors. As a consequence, the final schedules are the result of compromises between the three objectives.

When a machine at the bottleneck stage is freed, various machines statistics may be considered and possibly updated in order to determine which job goes next [38]. First, we need to determine the remaining capacity of the machines over the planning horizon. Second, we determine how much must be produced on this machine over the planning horizon. If this amount is less than the remaining capacity, other jobs may be considered as well; that is, the pool of jobs from which a job can be selected may be enlarged. The job selection process may be determined by rules that are more elaborate than the ATCS rule [2]. The rules may be based on the following criteria;

- The set up time of the job
- The due date of the job
- The flexibility of the job which the number of machines can go on.
- The processing time of the job.

The shorter the setup and closer the due date, the higher the priority. The more machines the job can be processed on, the lower the priority. If a machine usually operates at a very high speed, there is a preference to put longer jobs on this machine. After a job is selected, the statistics with regard to the machine, as well as those with regard to the buckets, have to be updated, that is, the remaining capacity of the machine,

the contents of the buckets, and so on. In the case of two bottlenecks, the procedure starts with the bottleneck that is the most downstream [38]. After sequencing the jobs at this bottleneck, the procedure sequences the jobs at the second bottleneck.

The disjunctive graph formulation for the job shop problem without recirculation also extends to the job shop problem with recirculation [34]. If two operations of the same job have to be performed on the same machine, a precedence relationship is given. These two operations are connected by conjunctive arcs. The bounding mechanism is based on the solution of a similar non-preemptive single-machine with the jobs subject to delayed precedence constraints. Precedence constraints are now also imposed by the fact that different operations of the same job may require processing on the same machine. The sub-problem now becomes a non-preemptive, parallel-machine scheduling problem with the jobs subject to different release dates and the total weighted tardiness as the objective to be minimized.

#### **2.2.8.5. The Shifting Bottleneck Heuristic and the Makespan;**

One of the most successful heuristic procedures developed for the minimization of the makespan in a job shop is the shifting bottleneck heuristic [38]. The graph  $G'$  has one or more critical paths that determine the corresponding makespan. And this make-span is called  $C_{\max}(M_0)$ .

The problem is NP-hard. The minimum  $L_{\max}$  of the single-machine problem corresponding to machine  $i$  is denoted by  $L_{\max}(i)$  and is a measure of a criticality of machine  $i$ . After solving all these single-machine problems, machine with the longest maximum lateness is chosen. Among the remaining machines, this machine is in a sense the most critical or the bottleneck and therefore the one to be included next in  $M_0$ .

$$C_{\max}(M_0 \cup k) \geq C_{\max}(M_0) + L_{\max}(k)$$

Before starting the next iteration and determining the next machine to be scheduled, an additional step may be done within the current iteration [2]. This step re-sequences all the machines in the original set  $M_0$  to see whether the makespan can be reduced. The maximum lateness gives an indication of the amount by which the makespan increases if a machine is added to the set of machines already scheduled.

### 2.2.8.6. Shifting Bottleneck Heuristic and the Total Weighted Tardiness;

It's described as an approach for the job shop without recirculation with the total weighted tardiness  $\sum_{j=1}^n w_j \cdot T_j$  as the objective. The disjunctive graph representation of the problem is different from that of the makespan minimization problem. In the makespan problem only the completion time of the last job to leave the system is important. There is, therefore, a single sink in the disjunctive graph [34]. In the weighted tardiness problem, the completion time of all  $n$  jobs is important.  $d_{ij}^k$  denotes the local due date. The local due date ( $d_{ij}^k$ ) can be computed by considering the longest path from operation  $(i,j)$  to the sink corresponding to job  $k$ , that is  $V_k$ . If operation  $(i,j)$  is completed after  $d_{ij}^k$ , then job  $k$ 's overall completion time is postponed resulting in penalty [2]. If the completion of job  $k$ ;  $C_k$  is already past the due date  $d_k$  of job  $k$ , any increase in the completion time increases the penalty at a rate of  $w_k$ . Because operation  $(i,j)$  is subject to  $n$  local due dates, which implies that operation  $(i,j)$  is subject to a piecewise linear cost function  $h_{ij}$ . See in Figure 2.8 - Cost function  $h_{ij}$  of operation  $(i,j)$  in single-machine sub-problem.

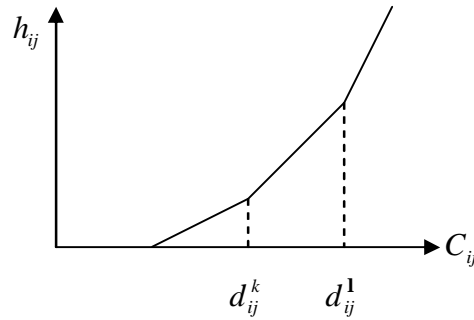


Figure 2.8 - Cost function  $h_{ij}$  of operation  $(i,j)$  in single-machine sub-problem.

One can come up with several composite priority index functions for this complicated cost function [2]. A reasonably effective function assigns to operation  $(i,j)$  the priority value;

$$I_{i,j}(t) = \sum_{k=1}^n \frac{w_k}{p_{ij}} \exp\left(-\frac{(d_{ij}^k - p_{ij} + (r_{ij} - t))}{K \cdot \bar{p}}\right)$$

$t$  denotes the earliest time at which machine  $i$  can be used,  $K$  is a scaling parameter and  $\bar{p}$  is the integer part of the average length of the operations to be processed on machine  $i$ . By using this composite dispatching rule, we can obtain an effective schedule for machine  $i$ .

However this process does not yet complete the iteration. The original bottleneck approach suggests that rescheduling all the machines in the original set  $M_0$  is advantageous. This rescheduling may result in different and better schedules. After this step has been completed, the entire process repeats itself and the next iteration is started. If it turns out that in this case the heuristic does not yield an optimal solution then the optimal solution can be obtained with more elaborate versions of this heuristic [18]. These versions make use of backtracking techniques as well as machine optimization.

### **2.2.9. General Solution Methodology**

Similar to the pricing concept of a market economy, NP-hard coupling constraints (e.g., machine and buffer capacity constraints) are replaced by the payment of certain prices for the use of a machine or a buffer at each enumeration step. The original problem can thus be decomposed into smaller sub-problems. These sub-problems are much easier to solve as compared to the original problem, and solutions can be efficiently obtained by using “dynamic programming”. These prices or multipliers are iteratively adjusted based on the degree of constraint violations following again the market economy concept (i.e., increase the prices for over-utilized time units and reduce the prices for under-utilized time units) [37]. Sub-problems are then re-solved based on the new set of multipliers. In mathematical terms, a “dual function” is maximized in this multiplier updating process, and values of the dual function are lower bounds to the optimal feasible cost. At the termination of such price updating iterations, a few constraints may still be violated. Simple heuristics are then applied to adjust sub-problem solutions to form a feasible schedule satisfying all constraints. Heuristics can also be run after selected optimization iterations to check convergence status or to generate more candidate feasible schedules [18]. Optimization and heuristics thus operate in a synergistic fashion to generate effective schedules. The quality of the



feasible schedule can be quantitatively evaluated by comparing its cost to the largest lower bound provided by the dual function. The method has been successfully used in the scheduling of identical machines and standard job shops. The special features of the system considered here, however, complicate the formation and resolution of the sub-problems. Complications are caused by the existence of both enumeration and resolution increments, group-dependent setups, and unspecified buffering and run processing times.

### **2.2.10. Heuristics**

The updating of multipliers is stopped after a fixed computation time, or a fixed number of iterations have been executed. Since machine capacity and group constraints have been relaxed, solutions of sub-problems, when put together, generally do not constitute a feasible schedule. A heuristic procedure is used to adjust sub-problem solutions to form a feasible schedule following. A list of operations is first created by arranging all operations in the ascending order of their beginning times. Operations are then scheduled on their assigned machines as machines become available [18]. If machine capacity constraints are violated at time  $t$ , a greedy heuristic based on the incremental change in  $J$  determines which operation should begin at that time slot, and which ones should be delayed.

Setup is determined based on a machine's status. A buffering operation ends when the successor operation begins [37]. If the successor operation can begin at the same time as the buffering operation begins, the buffering operation is skipped. Finally, if the buffer is full and all the subsequent machine types are busy, the task will stay on and tie up the current machine until the buffer or one of the subsequent machine types is available.

## **Chapter 3.**

### **PROBLEM IMPLEMENTATION**

#### **3.1. Application Area**

We choose TEBA Company for application area because TEBA Company has a famous worldwide background and have extensive opportunities within the production area. Teba Company is head-quartered in İzmir, Turkey; the Teba group of companies has positioned in Germany, England, China, India, Russia and France. In the United States, Teba operates under the product name of Customair and the corporate name of Worldsel. The three main product fields for Teba are household appliances, mechanical contracting and industrial type air conditioning.

Teba has sales and marketing companies operating abroad in the name of; TEMA in Scandinavia, TEMA in China and Norway, WELTCO in France and Germany, WORLDSSEL in USA, and WORLDSCO in UK. Also they have sales and marketing companies located in Turkey as a name of; BOSAŞ Bakım Onarım Servis A.Ş., ENTE Taahüt A.Ş., GÜNKOL Güneş Enerjisi ve Klima Sanayi A.Ş., TEBA I.S.K. A.Ş., and TÜMAŞ Tüketim Mamülleri ve Pazarlama A.Ş. More information about Teba Company and its institutions can be received from their web site [42].

Güncol Güneş Enerjisi ve Klima Sanayi A.Ş. distinguishes from other Teba Company institutions in some ways. First, it has an extensive production area, which constitutes of a flow of following workshops that is formed by machine-parks. Second, it has coordination between all the workshops by using an extensive database system. Finally it fits to all our requirements through out the thesis. We have studied in the press workshop of Güncol.

Besides Teba, Güncol produces goods and products for almost 150 different world brands. 60 of the production of Güncol are produced for the brand name of Teba. 95% of the total production of Güncol is being exported by Tema to over 80 countries at in all parts of Europe, North and South America, Far East and Australia. Teba itself is responsible from nearly all the exports of Turkey in the field of cooking appliances by

the export of the goods produced at the Günköl premises. Günköl works with a capacity of 57,000 units of oven per month. Günköl is able to sell and export technology to countries, which are known to be famous for having advanced technology with the help of the certificates it holds which are famous worldwide. Thus, it adds a value to the brand name Teba.

### **3.2. Process, Schedule and Facility Design**

Product designers specify what the end product is to be in terms of dimensions, material composition, and perhaps packaging. Process planners determine how the product will be produced. The production planner specifies the production quantities and schedules the production equipment. Facilities planners are dependent on timely and accurate input from product, process, and schedule designers to carry out his task effectively. Therefore the success of the firm is dependent on having an efficient production system. Hence, it is essential that product designs, process selections, production schedules, and facilities plans be mutually supportive. Frequently, organization creates teams with product, process, scheduling and facilities design planners and with personnel from marketing, purchasing, and accounting to address the design process in an integrated, simultaneously, or concurrent way. Customer and supplier representatives are often involved in this process. These teams are referred to as concurrent or simultaneous engineering teams and reduce the design cycle time, improve the design process, and eliminate engineering changes. Teba Companies implementing this integrated approach have reported impressive results in cost, quality, productivity, sales, customer, satisfaction, delivery time, inventories, space and handling requirements, and building size, among others.

#### **3.2.1. Process Design;**

Günköl is vertically integrated firm that purchases raw materials and proceeds through a multitude of refining, processing, and assembly steps to obtain a finished product, to another vendor firm that purchases components and assembles finished products. Therefore, it is obvious that the scope and magnitude of activities within

manufacturing facility are dependent on the decisions concerning the level of vertical integration. Such decisions are often referred to as “make-or-buy” decisions or “sourcing” decisions [41]. Make-or-buy decisions are typically managerial decision requiring input from finance, industrial engineering, marketing, process engineering, purchasing, and perhaps human resources, among others. A bill of materials is often referred to as a structured parts list, as it contains the same information as a parts list plus information on the structure of the product. Input into the process selection consists of a description of what is to be accomplished. The outputs from the process selection are the processes, equipment, and raw materials required for the in-house production of products. Output is generally given in the form of a route sheet. Route sheets provide information on production methods and assembly charts indicate how components are combined, neither provides an overall understanding of the flow within the facility.

### **3.2.2. Schedule Design;**

Schedule design decisions determine the quantity and the timing of the production. Production quantity decisions are referred to as lot size decisions; determining starting and processing times are referred to as production scheduling. These determinations are obtained from market forecasts. Schedule design decisions impact machine selection, number of machines, number of shifts, number of employees, space requirements, storage equipment, material handle equipment, personnel requirements, storage policies, unit load design, building size, and so on. Consequently, schedule planners in Günköl interface continuously with marketing and sales personnel and with the largest customers to provide the based information possible to facility design planners. In planning the facility, information is needed concerning production volumes, trends, and the predictability of future demands for the products to be produced. The more specific the inputs from product, process, and schedule designs, the greater the likelihood of optimizing the facility and meeting the needs of manufacturing. Schedule design determines the number of each equipment type required to meet the production schedule. Specification of process requirements typically occurs in three phases. The first phase determines the quantity of components that must be produced, including

scrap allowance, in order to meet the market estimate. The second phase determines the equipment requirements for each operation, and the third phase combines the operation requirements to obtain overall equipment requirements [41].

### **3.2.3. Facilities Planning Process;**

Facilities planning determine how an activity's tangible fixed assets best support achieving the activity's objective. For a manufacturing firm, like Teba A.Ş. i.e., facility planning involves the determination of how the manufacturing facility best supports production. It's convenient to divide a facility into its location and its design components. The location of the facility refers to its placement with respect to customer, suppliers and the other facilities with which it interfaces. Also, the location includes its placement and orientation on a specific plot of land. The design components of a facility consist of the structural systems, the enclosure systems, the lighting/electrical/communication systems, the life safety systems, and the sanitation systems. The layout consists of all equipment, machinery, and the furnishings within the building envelope; and the handling system consists of the mechanisms needed to satisfy the required facility interactions [41].

One of the most effective methods for increasing plant productivity and reducing costs is to reduce or eliminate all activities that are unnecessary or wasteful. A facilities design should accomplish this goal in terms of material handling, personnel and equipment utilization, reduced inventories, and increased quality. If an organization continually updates its production operations to be as efficient and effective as possible, then there must be continuous relay out and rearrangement.

Energy conservation is another major motivation for the redesign of a facility. Energy has become an important and expensive raw material. Equipment, procedures, and materials for conserving energy are introduced to the industrial marketplace as fast as they can be developed.

### **3.3. Process at Teba – Günköl Company**

In Günköl, there are two companies which take orders and transmit them to Günköl. These companies are Tema which takes orders from abroad and Tümaş which takes domestic orders. These companies transmit the orders to Günköl.

#### **3.3.1. Production planning:**

If the order consists of a new product then the sales department publishes a form about the new ordered products within their contents. The ones which have opportunity to produce are accepted, and the bills of material (BOM) are prepared. This BOM is prepared by inspiring a similar content of a product. Consequently, the bills of material of a new ordered product will be completed, and the new defined order will join to the material requirement planning (MRP) system by planning department. The system is updated and new product version is announced. So it becomes ready for trial production. Routes are constituted in the MRP records for only products not for the purchasing materials.

If the receiving order is for an existing product, then it will be ordered to the production planning department. Production planning department prepares master demand schedule (MDS) from previous orders. This order is added to the master planning schedule (MPS) which includes further then the four weeks definite plan. From MPS reports, the numbers of ordered products are compared with the inventory and the system decides the requirement of materials with scrap tolerance. Afterwards, MRP is prepared from MPS, and the number of resource materials and their lead times which were stated in BOM.

Definite planned products are entered to Oracle Database System by planning group. Resource material demands are obtained by the information in the database. And these demands turn into supply by reducing from the inventory, while MRP is running. Procuring group inquires these working MRP reports by considering the provider and advised order release date. By the way these reported materials cause demand to the related contractor.

### **3.3.2. MRP in production system;**

As a main thought at Günköl, four weeks planning is made for the products from the system in respect of forecasts, and definite orders. High production variety, breakdowns during the process and scraps cause the need of plan revisions continuously. As a matter of fact MRP should be run frequently. In Günköl, long term MRP runs for three days, and short term MRP runs for two days in a week. Long term MRP updates the planning till the last due date appear, meanwhile short term MRP updates the planning for first six days period. Short term MRP is used for within workshops to program purchasing and to plan jobs, whereas long term MRP is used to show the plans in all workshops.

If there is existing any deviation or problem in the production plan, manufacturing supporting department investigates the resource component of the product by the help of BOM, and tries to get rid of the problem by giving new orders or contracting with the corresponding department and the provider. If the problem gets bigger then the provider may be changed.

Orders and exception messages are sent to relevant departments with the help of Oracle Database System. Then these departments take the responsibility of the process, and finally after solving the problems, departments send a reply to the department where the problem had occurred.

Materials which have more priority in planning must be scheduled first of all. The products which are scheduled in the production planning must be prepared until the due date. Therefore at this point a “bottleneck” occurs, and by the procurement of this critical material, process is reassured.

### **3.3.3. Process Flow at Günköl;**

A flow process may be described in terms of the subject of flow, the resources that bring about flow, and the communications that coordinate the resources. The subject is the item to be processed. The resources that bring about flow are the processing and transporting facilities required to accomplish the required flow. The communications that coordinate the resources include the procedures that facilitate the management of the flow process. The perspective adopted for a flow process depends on the breadth of

subjects, resources, and communications that exist in a particular situation. Flow relationships are quite important to the facilities planner, who views flow as the movement of goods, materials, energy, information, and/or people [41]. Flow requirements are reduced with external and internal deliveries to points of use, storage of inventories in decentralized storage areas close to points of use. The flow process is typically referred to as a materials management system, which the materials, parts, and supplies are purchased by a firm and required for the production of its product.

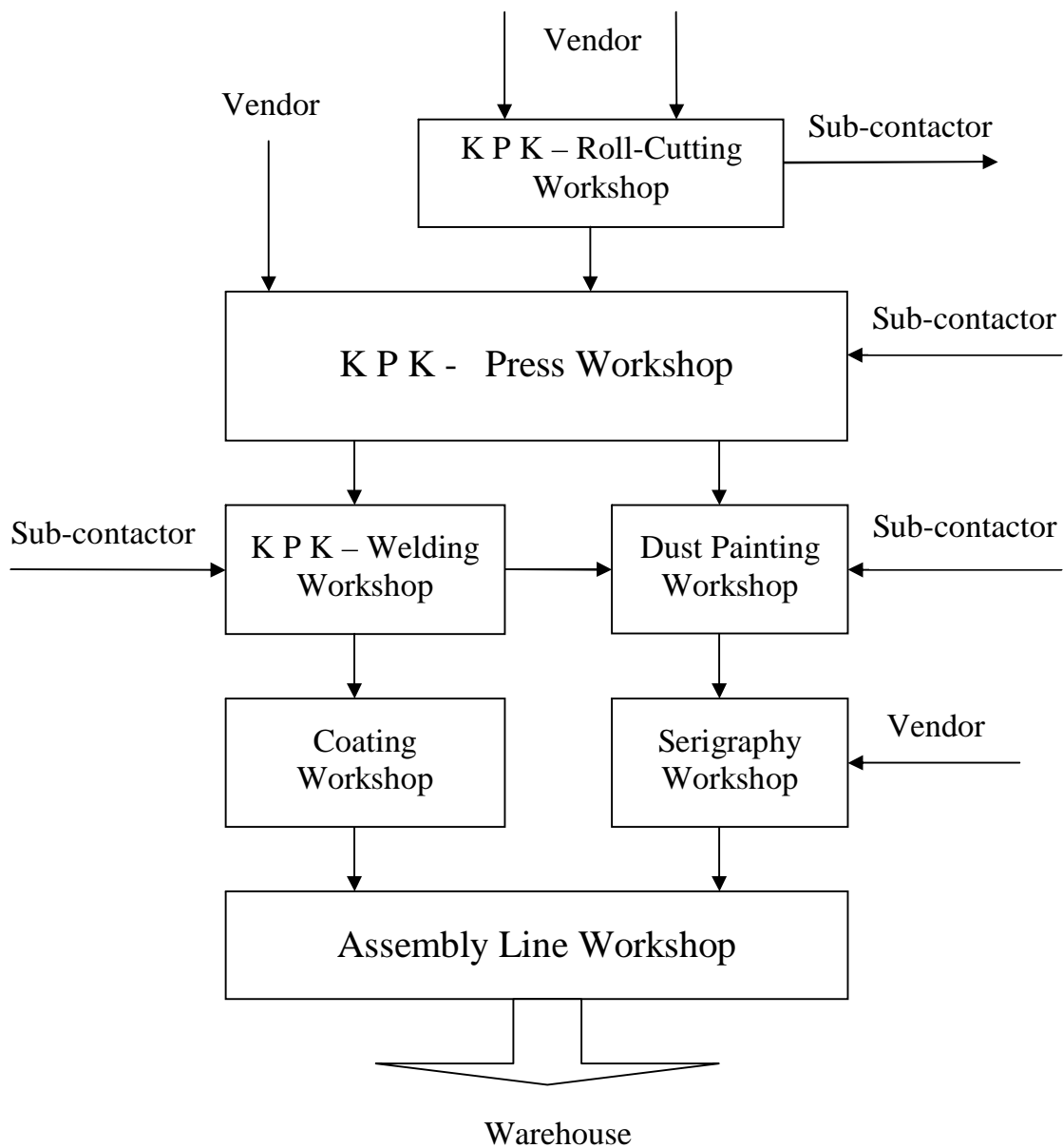


Figure 3.1 - Günköl General Layout and Process Flow



The resources of material management systems include; the production control and purchasing functions, the vendors, and material handling equipment required moving the materials, parts and supplies, and the storage functions

At Günköl, resources usually supply from well-known industrial companies as Erdemir Demir-Çelik, Borçelik i.e. Afterwards items which are produced by subcontractors are processed according to the machine production and capacity availability. The equipment for the same other complex product are produced within the factory workshops. There are twelve material providers for Günköl. Especially these materials consist of rolls of sheets. These rolls of sheets are cut and converted into different sizes of plain sheets as required orders. Roll-cutting process is done by considering the required material size which is processed in Günköl workshop or subcontractors. See in Figure 3.1 - Günköl General Layout and Process Flow.

Some plain sheets are distributed to the subcontractors and the remaining sheets are used in the press workshop. These subcontractor companies may completely work for Günköl as if its own workshops or they may use some of their capacity for Günköl. The purposes of distribution of the sheets to the subcontractors are;

- 1) To lower the unit price of material by purchasing in large amounts.
- 2) The wholesale reduces the risk of variation of material quality.

Therefore Günköl pays only for the workmanship to the subcontractors. The products for subcontractor and press workshop process are gone into following workshop's processes according to sequence order and time of the material planning department reports.

The process runs according to orders by using the bills of material of the product. In the sequence of process, each material receives a new name codes as a product of workshops. And these new codes are stated on the bills of material. According to the production workshop, these codes end with some special characters as A, K, P, E11 i.e. which symbolizes the production state. The meanings of these characters are;

A; completed roll-cutting process material

P; completed press process material

K; completed welding process material

E; completed enameled process material

S; completed serigraphy process material

Press process is done in two ways; main sheet shaping with the help of hydraulic process and shaping with eccentric presses which need limited motion availability.

Some materials are using in the operations of press process more than once. After the last operation is done in the press workshops, “p” letter is added to the product code.

Welding process may occur by combining the press products with centre welding. Materials which are combined by more than one welding process get into coating process according to their color alternatives with the endurance to heat and scratching. In the coating process, first the sheets are hanged to the hooks and after injected coat dust, materials are coated in 700 - 800°C furnace. Consequently, surfaces are obtained heat and shock resistance.

White color is sprayed before the other color is injected otherwise there will be difference between the other coating materials.

After the coating process, products are checked for quality control because products which are not coated appropriately or damaged may cause rust and corrosion and this will cause the material useless in the future. So the uncoated materials are reworked by hanging to hooks after injection of coating dust according to their colors.

Material planning department distributes the products according to bills of material facility process after arranging by considering order quantity. Foreman who are responsible for such process, organize the work distribution, timing, transportation of the products, and resources and activities of forklifts in this situation. Foreman observes the production and interferes if necessary.

And at the end, semi-products are reached to the Assembly Line Workshop. These products are distributed to the lines of workshop according to their sub-production plans. Definitely ordered products are transferred from MRP reports to the production plan and constitutes the process orders for each line. Moreover, material requirement list is also planned. The required materials should be in the inventory at the appropriate time. If there is an absence of material, then it can be changed with an alternative material from the inventory or the production continues by shipping the absent materials process if it's possible or the process stops until the material is present. These missing materials are called critical materials. Afterwards, MRP reports an exception massage.

Products receive specific codes according to their process in production line, properties and exporting country they will be shipped to. For example, TFC for double compound, GB for England, F for France i.e. All determined process product reports are entered to the Oracle Database by the line database workers. Most of the ready materials enter to the system from the assembly lines through the process. This variety brings into

existence the less reliability to the inventory end breakdowns during the procurement period. It may cause problems for production planning and process flow.

Press workshop supplies different dimensional and kind plain sheets as a resource from roll cutting workshop, sub-contactors and vendors. See in Figure 3.1. After these materials are processed within several operations, are sent to welding or dust painting workshops. There are 98 workers, 5 foremen, 2 system operators and two engineers working in three shifts, 8 hours per day, and 6 days in a week. This workshop always focuses on the improvement of efficiency, utilization and technology. This decision makes Teba exalt to the head of the durable consumer goods industry.

Press workshop of Günköl accommodates different dimensional and functional 43 machines. This machine park consists of hydraulic and eccentric presses, semi-automatic heavy hydraulic presses, guillotine, bend sets, and skirt-cutting machines. See Figure 3.2 - K P K – Pres Workshop Layout and Flow Diagram.

Flows through the line may be specified in a quantitative manner or a qualitative manner. Qualitative measures may range from an absolute necessity that two machines be close to each other to a preference that two machines not close to each other. Quantitative measures may include minute per pieces. The workshop has very extensive actual movement of materials, products, information, and people flowing between machines, so it makes wide communication and organizational interrelations, a qualitative measure of flow will typically serve as the basis for the arrangement of machines. Flow measurements can be listed as the matrix charts.

Motion studies and ergonomics considerations are important in establishing the flow within press workshop. Flow within this workshop is simultaneous, symmetrical, natural, rhythmical, and habitual. Their motions of the machines should begin and end together, at the same time, and should not be idle at the same instant except during rest periods. All the lines of the workshop should be working in coordination.

At Günköl, flow within machines and within workstations can be enriched and enlarged by training the operators for the different types of machine abilities. These multifunctional operators can work on more than one machine if needed and can get involved in support and continuous improvement functions like quality, basic maintenance, material handling, record keeping, performance measurement tracking, and teamwork.

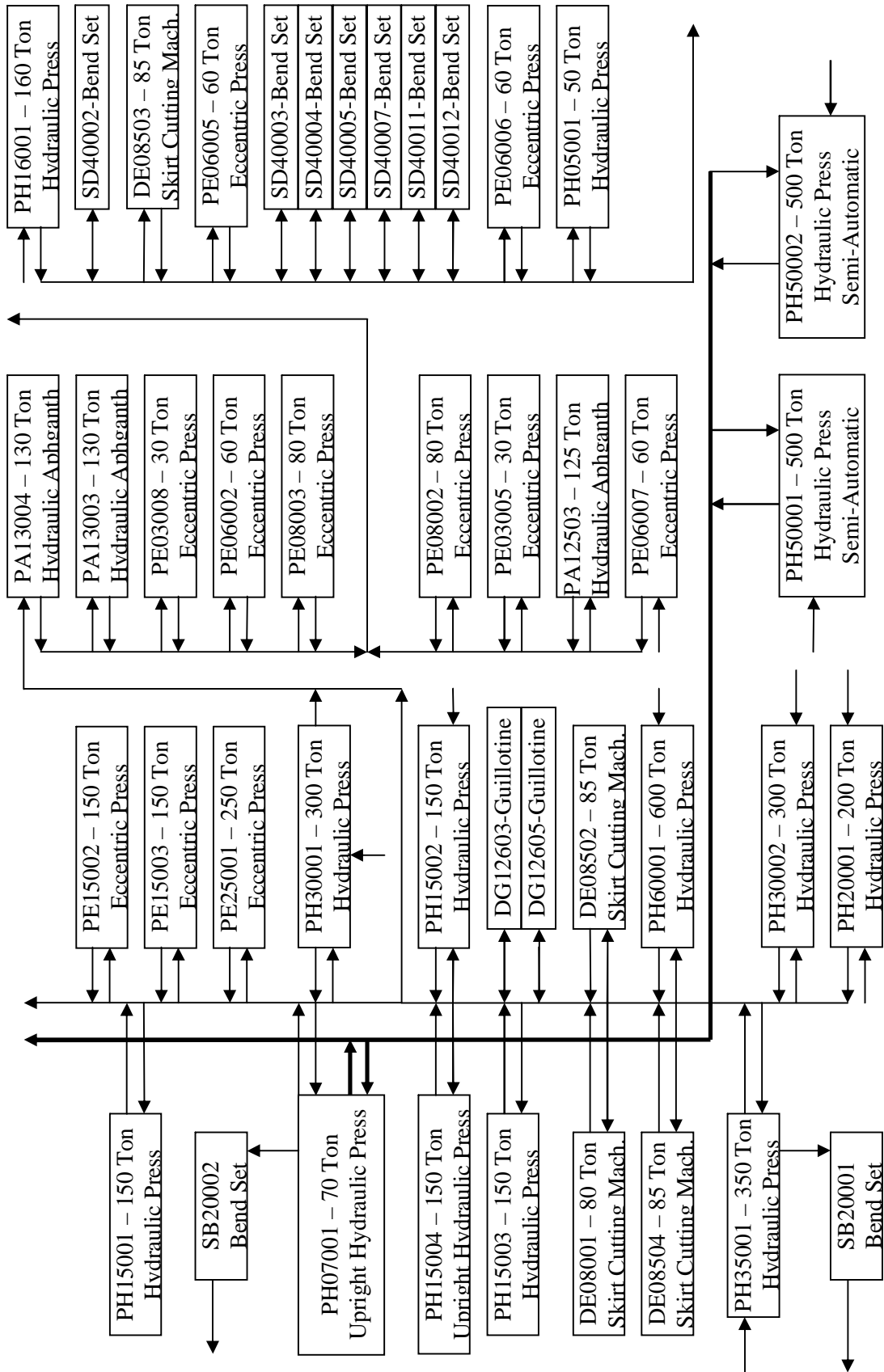


Figure 3.2 - K P K – Pres Workshop Layout and Flow Diagram

### 3.4. Implementation of Job Shop Scheduling Model and Numerical Solution of the Problems

The job-shop scheduling problem is one of the most basic models in scheduling theory. An instance of the problem is specified by a set of  $m$  machines  $\{M_1, M_2, M_3 \dots M_m\}$  and a set of  $n$  jobs  $\{j_1, j_2 \dots j_n\}$ . Each of jobs  $j_j$  is sequenced on  $n_j$  operations.  $J_j = (O_{j,1}, O_{j,2}, \dots, O_{j,n_j})$ . Each operation  $O_{j,k}$  has to be processed on a specified machine  $M_{j,k}$  uninterruptedly for  $p_{j,k}$  time units. We assume that distinct operations of the same job require different machines.

In our implementations we follow some certain solution methodology levels as;

#### 3.4.1. Data Collection;

In order to perform the data for implementation of the scheduling problems, we made a detailed study at the press workshop. First we've examined all the drafting of the processes for each product. Because of some products are out of process, we've picked these products from the others. Furthermore, new products and its operations were determined and included to the product list. Consequently, we updated all the data product list of press workshop (See Appendix [C]). This list contains product code, product definition, element value, component code, operations name, and also production lathe, related workstation number of the lathe, production mould code, setup time in minute, process time in minute per unit of the related operations of the product, and number of worker to use. There are 962 different types of products listed and these products have different kind and number of operations. Beside, these products contain duplicate machine processes.

#### 3.4.2. Grouping the parallel machines;

Our application workshop accommodates different types of hydraulic and eccentric presses, semi-automatic heavy hydraulic presses, guillotine, bend sets, and skirt-cutting machines of totally 43 machines. Machines are settled down according to their type of operations and its products. Machines which have same type of operations with the same type products constitute groups, which are called workstations. We've constituted

20 workstations from the machine park. The workstation contains same type of machines, like hydraulic presses, eccentric presses or skirt cutting machines, i.e. which have the same ability to process on the same kind of product. Same kind of operations on the certain products can be processed at any of the workstation's parallel machines in an available time period. Setup time, process time and number of worker to use are equal for the product processes at these parallel machines. For Example, first workstation is consisted of PH35001, PH30002, PH60001, and PH20001 hydraulic presses. These hydraulic presses make stroking, peripheral cutting, skirt leveling, flanging, evacuation, i.e. types of operations to the TFB, TFC, TFG, TFU, TOA, TOM, and OC, i.e. types products. Also same types of products are settled down in the same line of the workshop facilities. For example, 13, 14, 15, 16, and 18<sup>th</sup> workstations are settled in the same production line to produce all TOE and some TFL and TOA type products. See Figure 3.2. There are four different production lines allocated. First line is consists of 1, 2, 3, 4, 5, 6, 7, 17 and 19<sup>th</sup> workstations. Second line is consists of 8, 9, 10, 11, and 12<sup>th</sup> workstations. The third one is consists of 13, 14, 15, 16, and 18<sup>th</sup> workstations. And the last production line is consists of 20<sup>th</sup> workstation and PH07001 upright hydraulic press from the first product line. Also in some processes, any operation can use a machine from outer production line. But most of the processes are done in the same production line. Therefore, time and energy are saved on the movement phases of processes. Materials, products and moulds are transferred by the help of forklifts.

### **3.4.3. Assessment of the data and Software implementation;**

Our approach has been implemented in LEKIN Educational Version on a PC with 900 MHz. CPU. Numerical testing has been performed to compare the objectives of the dispatching rule and shifting bottleneck heuristics. Both of the heuristics presented for the construction of feasible solutions were tested, while the best feasible cost obtained by the heuristics is reported. Our goal is to find good schedules for problems of large size in a short computation time rather than to find an optimal schedule in several hours. LEKIN has its own advantages, particularly on its computational efficiency and its flexibility to deal with a wider range of job shop scheduling problems with routing flexibility.

If we scrutinize the processes in the workshop, there are many multi-operation jobs which have different routes. Jobs may be processed at a given machine several times on its route through the system. A generalization of this environment is referred as flexible job shop model, as we indicated before. Therefore, at the beginning of the LEKIN implementation, we have chosen flexible job shop model from the table [App.A.3].

We've prepared Machine Park from the workstation list data [App.A.3.1]. In this list first we've determined the number or code of the workstation in the work-center ID division. Also we've given a sample name for the workstation in the comments division. Then we've determined the number of machines, ability date, and beginning status of setup group in turn in order. Ability date of all the workstations is taken zero for our implementations. Also the color as the symbol of the workstation in the Gantt chart may be determined or take as a program default. Setup matrix port is common for all the workstations, because of the status, we had determined before, are same for all the machines. Machine Park is substructure and is used statically for different types of job combinations.

As we can see from the product list, most of the machines need 20 minute as the setup time. But only 20<sup>th</sup> workstation's machines need 30 minute for setups. This provides two alternatives for the status data for the LEKIN implementation.

Subsequently the job pool has to be prepared according to the implementation. In the workshop, there are 117 different route of jobs are processed. Beside, the unit order, weight, and release and due date differences make variation between same routed jobs.

In the preparation of job, we have determined the number or code in the job ID section [App.A.3.1]. Also we have given a sample name in the comments division. Then we establish the release date, due date, and weight of the job by integer numbers. Also we can establish the color for the symbol of the workstation in the Gantt chart. Then the route of the job has to be verified. Because of Lekin's format, the times have to be given in integer numbers. So we have to calculate all the time units in the integer form. We have determined the processing time by multiplying the order unit and processing time per unit.

<b>Daily Working-Hour Program</b>												
<b>Hours</b>	00:00	02:00	02:15	04:00	05:00	06:45	07:00	08:00				
	08:00	10:00	10:15	12:00	13:00	14:45	15:00	16:00	16:15	17:00	17:15	18:00
	16:00	18:00	18:15	20:00	21:00	22:45	23:00	24:00				
<b>Working and Resting Time Periods</b>	<b>Work. (120 min.)</b>	<b>Rest. (15 min.)</b>	<b>Work (105 min.)</b>	<b>Rest (60 min.)</b>	<b>Work (105 min.)</b>	<b>Rest (15 min.)</b>	<b>Work (60 min.)</b>	<b>Rest Time (15 min.)</b>	<b>Over Time Work (45 min)</b>	<b>Rest Time (15 min.)</b>	<b>Over Time Work (45 min.)</b>	

Table 3.1

Daily working hours of the workshop working and resting program is shown in the Table 3.1. There are three shifts; each one has 390 min. for working time. Totally, there are 1170 min. daily workings and extra 90 min. over time working per a day. Consequently, there is 6630 min. per a week for working time except over time working. Also weekly hours are shown in the integer form as minute in the Table 3.2.

<b>Weekly Time in Integer Form (Minute)</b>							
		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<b>HOURS</b>	00:00	0	1170	2340	3510	4680	5850
	02:00	120	1290	2460	3630	4800	5970
	04:00	225	1395	2565	3735	4905	6075
	06:45	330	1500	2670	3840	5010	6180
	08:00	390	1560	2730	3900	5070	6240
	10:00	510	1680	2850	4020	5190	6360
	12:00	615	1785	2955	4125	5295	6465
	14:45	720	1890	3060	4230	5400	6570
	16:00	780	1950	3120	4290	5460	6630
	18:00	900	2070	3240	4410	5580	
	20:00	1005	2175	3345	4515	5685	
	22:45	1110	2280	3450	4620	5790	
00:00	1170	2340	3510	4680	5850		

Table 3.2



## 3.5. Problem 1

### 3.5.1. Problem definition:

In our first implementation, we designed a comprehensive problem to compare the objectives of the basic and composite dispatching rule performances. Weekly order period is examined for 50 flexible job shop problems and 20 workstations. In the order, there are 50 jobs in 44 different kinds of routes. In these first 44 jobs, there are 1000 units of product ordered to be ready on its due date. For these jobs, the tardiness weights of all parts are set to 1. Although, the last 6 jobs are ordered as 1500 units of product and tardiness weights set to 2. However the amount of the units can be entered to the Job Pool Data by multiplying with unit processing times. The data of the Machine Park and Job Pool for the problem 1 can be seen from the Appendix B.1.

### 3.5.2. List of the objectives:

As we indicated before, an objective is also referred as objective function or a criterion. It's an integer function defined on the set of valid schedules. The whole idea of scheduling is to find a schedule that minimizes a given objective. Our application supports 7 various objectives and their comparisons. These 7 objectives are listed as;

- The makespan ( $C_{\max}$ ) – The maximum job completion time
- The maximum Tardiness ( $T_{\max}$ )
- The total number of Late Jobs ( $\sum U_1$ )
- The total Flow Time ( $\sum C_1$ ) – The sum of job completion times
- The total Tardiness ( $\sum T_1$ )
- The total Weighted Flow Time ( $\sum w_1 C_1$ ) – The weighted sum of job completion time
- The total Weighted Tardiness ( $\sum w_1 T_1$ )

Remark that; in the scheduling literature, Maximum Tardiness is often referred to as Maximum Lateness and denoted as ( $L_{\max}$ ). These two objectives are practically equivalent.

### **3.5.3. Determining the scheduling procedures;**

We've tested 8 different dispatching rule heuristics. These rules are listed as;

- Apparent Tardiness Cost with Setups (ATCS)
- Earliest Due Date (EDD)
- Minimum Slack (MS)
- First Come – First Served (FCFS)
- Longest Processing Time first (LPT)
- Shortest Processing Time first (SPT)
- Weighted Shortest Processing Time first (WSPT)
- Critical Ratio (CR)

### **3.5.4. Solution of the problem and table of the results;**

The system runs according to certain procedures. System starts with an empty schedule and selects a machine which is to be the first, depending on the dispatching rule. If several machines become available simultaneously, take the one with the highest number of waiting operations. Then on the chosen machine, reduce the number of waiting operations by applying the dominance rule: "If operation A can be finished before operation B is released, it does not take operation B into account". By using the chosen dispatching rule, it computes an index for all non-dominated waiting operations. The operation with minimum index value is scheduled on the machine. It means three things; first, the scheduled operation is no longer considered anywhere. Second, another operation may be released and is added to the pool of waiting operations. Third, the machine is considered unavailable until the time the operation finishes. And it repeats this process until all operations are scheduled.

In the ATCS dispatching rule implementation, we've determined scaling parameters as  $k_1$  as 4, and  $k_2$  as 3 from calculations as given before.

After running the system for certain dispatching rule heuristics and objectives, the result schedules are determined and shown in the Gantt chart and sequence window for each rule implementation. These sequences for each rule are shown in the Appendix B.1.

The results of the job shop scheduling problem 1 can be compared according to the certain dispatching rule heuristics from the Table 3.3. This table shows the list of logged schedules with their certain objectives values.

Schedule	$C_{\max}$	$T_{\max}$	$\sum U_1$	$\sum C_1$	$\sum T_1$	$\sum w_1 C_1$	$\sum w_1 T_1$
<b>ATCS</b> ( $k_1=4, k_2=3$ )	5062	2053	11	89420	4731	109309	4731
<b>CR</b>	4600	242	17	91141	959	111277	981
<b>EDD</b>	4600	507	12	89901	1700	110694	1971
<b>FCFS</b>	4600	1367	15	87066	4351	106555	4828
<b>LPT</b>	4015	3400	24	100364	21428	114485	21428
<b>MS</b>	4600	45	8	91026	161	111962	161
<b>SPT</b>	5062	2053	16	86931	14527	107106	15298
<b>WSPT</b>	5062	2053	18	89184	19613	103550	19613

Table 3.3

### 3.5.5. Comparison of the results and concluding remarks;

In this first implementation, we tested the performances of comprehensive problem for the objectives of the certain dispatching rule heuristics. According to the results of problem 1;

- For the makespan ( $C_{\max}$ ) objective; LPT dispatching rule heuristic shows the best performance, however it shows the worst performance for the other objectives.
- For the maximum tardiness ( $T_{\max}$ ) objective; MS dispatching rule heuristic shows the best performance, and then CR dispatching rule heuristic follows this performance respectively.
- For the total number of late jobs ( $\sum U_1$ ) objective; MS dispatching rule heuristic shows the best performance with any discussion.

- For the total flow time ( $\sum C_1$ ) objective; SPT dispatching rule heuristic shows the best performance, and then FCFS dispatching rule heuristic follows this performance respectively. However, these heuristics shows the worse performance for the other objectives except ( $\sum w_1 C_1$ ).
- For the total tardiness ( $\sum T_1$ ) objective; MS dispatching rule heuristic shows the best performance, and then CR dispatching rule heuristic follows this performance respectively.
- For the total weighted flow time ( $\sum w_1 C_1$ ) objective; WSPT dispatching rule heuristic shows the best performance, and then FCFS and SPT dispatching rule heuristics follow this performance respectively.
- For the total weighted tardiness ( $\sum w_1 T_1$ ) objective; MS dispatching rule heuristic shows the best performance, and then CR dispatching rule heuristic follows this performance respectively.

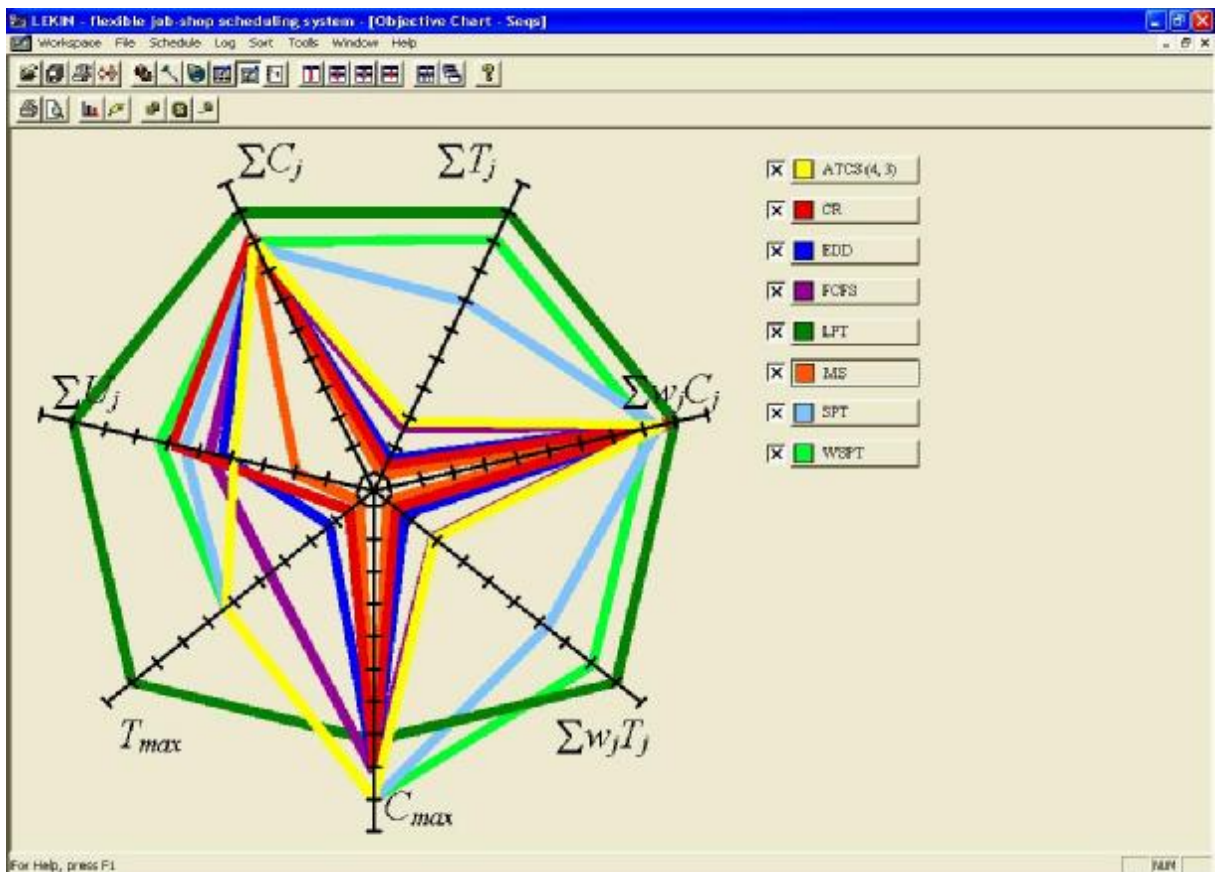


Figure 3.3.

And in general, MS and CR are the most successful dispatching rules for the given objectives. Although ATCS(( $k_1=4, k_2=3$ ) and EDD dispatching rule heuristics can not show the best performance on any objectives, they show the optimum performances for all. FCFS, ATCS(4,3), SPT, WSPT, and LPT show the worse optimal performances. Also, performance chart of objectives can be driven according to these results (Figure 3.3).

## 3.6. Problem 2

### 3.6.1. Problem definition;

In our second implementation, we designed a medium-size problem to compare the objectives of the certain dispatching rule performances and some shifting bottleneck procedure performances. Two days limited order period is examined for 15 flexible job shop problems and 7 workstations. These 15 jobs are in 13 different kinds of routes. The processing time of each operation (i,j) on an alternative machine type is set to nominal processing time multiplied by a rate. In all jobs, there are 1000 units of product ordered to be ready on its due date. Almost for all flexible jobs, the tardiness weights are set to 1. However 1, 3, 4, 5, and 12<sup>th</sup> jobs have the tardiness weight as 2. As the problem 1, the number of the units is entered to the job pool data by multiplying with unit processing times. The data of the Machine Park and Job Pool for the problem 2 can be seen from the Appendix B.2.

### 3.6.2 List of the objectives;

The job-shop scheduling problem aims at finding a feasible schedule that minimizes the given objectives. Our application supports 7 various objectives and their comparisons. These 7 objectives are listed as;

- The makespan (  $C_{\max}$  ) – The maximum job completion time
- The maximum Tardiness (  $T_{\max}$  )
- The total number of Late Jobs (  $\sum U_1$  )

- The total Flow Time ( $\sum C_1$ ) – The sum of job completion times
- The total Tardiness ( $\sum T_1$ )
- The total Weighted Flow Time ( $\sum w_1 C_1$ ) – The weighted sum of job completion time
- The total Weighted Tardiness ( $\sum w_1 T_1$ )

### **3.6.3 Determining the scheduling procedures;**

We've tested 8 different dispatching rule heuristics and 6 shifting bottleneck heuristics with different objectives. These rules are listed as;

- Shifting Bottleneck Heuristic with Makespan objective
- Shifting Bottleneck Heuristic with Maximum Tardiness objective
- Shifting Bottleneck Heuristic with Total Flow time objective
- Shifting Bottleneck Heuristic with Total Tardiness objective
- Shifting Bottleneck Heuristic with Total Weighted Flow time objective
- Shifting Bottleneck Heuristic with Total Weighted Tardiness objective
- Apparent Tardiness Cost with Setups (ATCS)
- Earliest Due Date (EDD)
- Minimum Slack (MS);
- First Come – First Served (FCFS)
- Longest Processing Time first (LPT);
- Shortest Processing Time first (SPT)
- Critical Ratio (CR)
- Weighted Shortest Processing Time first (WSPT)

### **3.6.4 Solution of the problem and table of the results;**

System implementation runs just like the first problem. The system runs according to certain procedures. System starts with an empty schedule and selects a machine which is to be the first, depending on the dispatching rule. If several machines become available simultaneously, take the one with the highest number of waiting operations. Then on the chosen machine, reduce the number of waiting operations by applying the dominance rule. And it repeats all processes until all operations are scheduled.

In the ATCS dispatching rule implementation, we've determined scaling parameters as  $k_1$  as 2, and  $k_2$  as 1 after calculations as given before.

The famous Shifting Bottleneck Procedure repeatedly reschedules all operations on some machines with the aim of improving the schedule. Also optimization is applied.

Schedule	$C_{\max}$	$T_{\max}$	$\sum U_1$	$\sum C_1$	$\sum T_1$	$\sum w_1 C_1$	$\sum w_1 T_1$
<b>ATCS</b> ( $k_1=2, k_2=1$ )	2541	651	2	18280	835	24722	835
<b>CR</b>	2541	471	2	18797	835	25332	835
<b>EDD</b>	2557	487	1	17021	487	24760	974
<b>FCFS</b>	2063	893	2	17438	1068	24079	1068
<b>SB Routine</b> ( $C_{\max}$ )	2063	893	2	18162	1068	24646	1068
<b>SB Routine</b> ( $T_{\max}$ )	2541	471	2	18148	835	24793	835
<b>SB Routine</b> ( $\sum C_1$ )	2557	487	2	16401	525	23970	1012
<b>SB Routine</b> ( $\sum T_1$ )	2557	487	1	17584	487	25213	974
<b>SB Routine</b> ( $\sum w \cdot C_1$ )	2541	471	3	17201	905	23164	905
<b>SB Routine</b> ( $\sum w \cdot T_1$ )	2541	471	2	18025	709	24670	709
<b>LPT</b>	2063	893	3	18925	1465	25600	1862
<b>MS</b>	2541	471	2	18148	835	24793	835
<b>SPT</b>	2557	1249	2	17144	1736	26052	3472
<b>WSPT</b>	2541	651	4	18299	1187	24860	1447

Table 3.4.

After running the system for certain dispatching rule heuristics and objectives, the result schedules are determined and shown in the Gantt chart and sequence window for each rule implementation. These sequences for each rule are shown in the Appendix 3.2.

The results of the job shop scheduling problem 2 can be compared according to the certain dispatching rule and shifting bottleneck heuristics with different kinds of objectives from the Table 3.4. This table shows the list of logged schedules with their certain objectives values.

### **3.6.5 Comparison of the results and concluding remarks:**

In this second implementation, we tested the performances of medium-sized problem for the objectives of the certain dispatching rule and some shifting bottleneck heuristics. According to the results of problem 2;

- For the makespan ( $C_{\max}$ ) objective; FCFS and LPT dispatching rule heuristics and SB Routine ( $C_{\max}$ ) Heuristic show the best performance.
- For the maximum tardiness ( $T_{\max}$ ) objective; CR and MS dispatching rule heuristics, and SB Routine ( $T_{\max}$ ) and SB Routine ( $\sum w \cdot C_1$ ) heuristics show the best performance, and then EDD dispatching rule heuristic, and SB Routine ( $\sum C_1$ ) and SB Routine ( $\sum T_1$ ) heuristics closely follow this performance.
- For the total number of late jobs ( $\sum U_1$ ) objective; EDD dispatching rule, and SB Routine ( $\sum T_1$ ) heuristics show the best performance with any discussion.
- For the total flow time ( $\sum C_1$ ) objective; SB Routine ( $\sum C_1$ ) heuristic shows the best performance, and then EDD, SPT, and SB Routine ( $\sum w \cdot C_1$ ) heuristics follow this performance respectively.
- For the total tardiness ( $\sum T_1$ ) objective; EDD dispatching rule, and SB Routine ( $\sum T_1$ ) heuristics show the best performance, and then SB Routine ( $\sum C_1$ ) heuristic closely follows this performance.
- For the total weighted flow time ( $\sum w_1 C_1$ ) objective; SB Routine ( $\sum w \cdot C_1$ ) heuristic shows the best performance, and then SB Routine ( $\sum C_1$ ) and FCFS dispatching rule heuristics follow this performance respectively.



- For the total weighted tardiness ( $\sum w_j T_j$ ) objective; SB Routine ( $\sum w \cdot T_j$ ) heuristic shows the best performance with any discussion. And then ATCS( $k_1=2, k_2=1$ ), CR and MS dispatching rules and SB Routine ( $T_{max}$ ) heuristics follow this performance respectively.

For this problem; it can easily seen that SB Heuristics show the best performances for the certain objectives. Also these heuristics generally show the optimum performances for the other objectives. Although it was seen that, certain dispatching rule heuristics could reach these performances, they could not show the same performance for the other objectives as well. Also, performance chart of objectives can be driven according to these results (Figure 3.2).

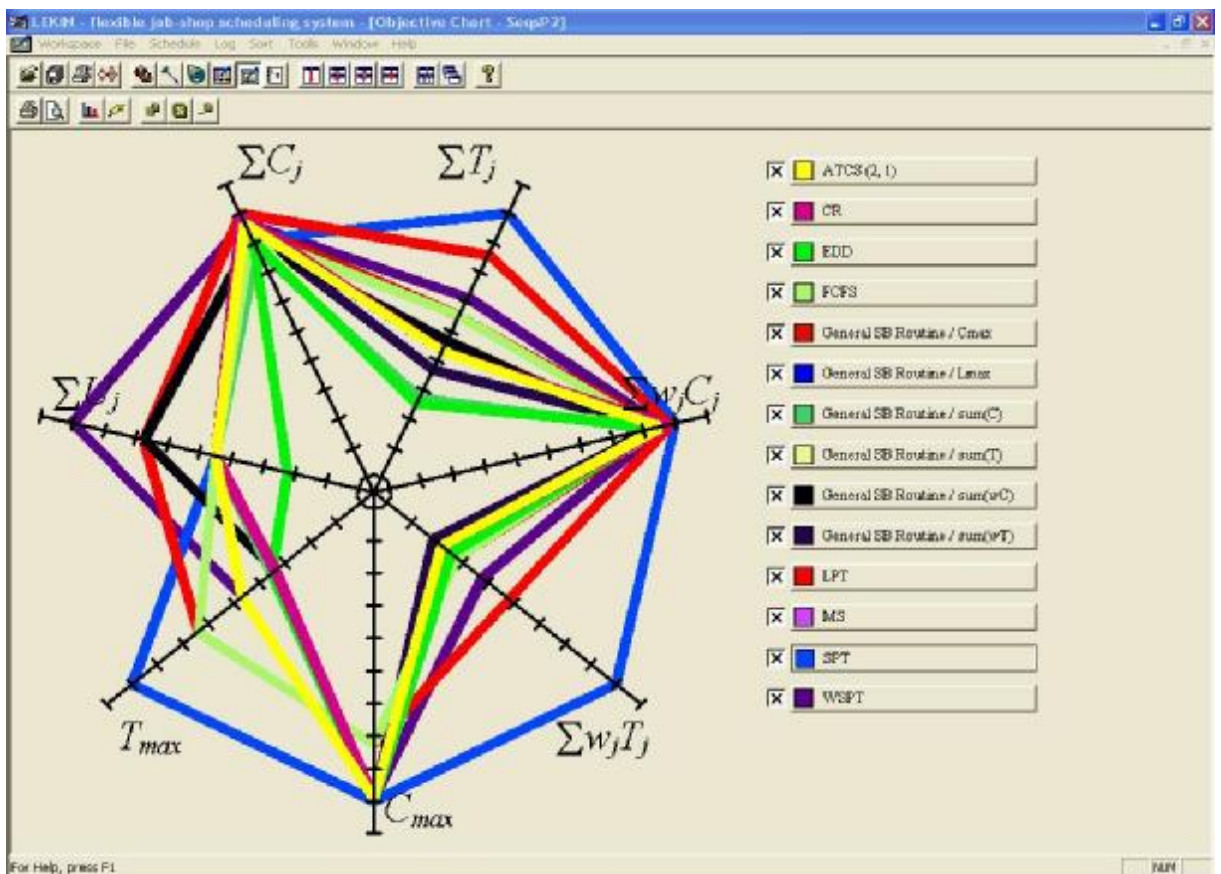


Figure 3.4.

## **Chapter 4.**

# **CONCLUSION**

In this study, we've proposed a structure and methodology to schedule jobs through the machine park for the company selected. We studied on a Flexible Job-shop Scheduling Model. Scheduling operations focus on the customized problem of meeting demand in the form of orders that are related to the character of each plant, and assigning jobs to machines so that certain precedence and operational constraints are satisfied.

We addressed using of Generic database programs. It's important that routing and loading decisions be studied together. We presented integrated scheduling models to load and route parts and tools to machines. We then reached a schedule schemes that can get from the output of the integrated scheduling models and generated comprehensive data schedule to reveal comparisons of the objective functions so that optimal scheduling can be carried out for these procedures. The embedded routing selection mechanism also balances the load among candidate routes. Reducing computational requirements with modeling accuracy and reaching high scheduling performance enables the resolution of long horizon problems with controllable computational requirements.

Our system tested successfully with dispatching rules and extremely shifting bottleneck heuristics on flexible job-shop. Both heuristics significantly improve every result of the rules used there. Nine heuristic search strategies, combined with six different propagation constraint techniques, have been implemented and compared for the certain seven scheduling objectives. The used basic heuristic algorithms divide the problem into many stages and therefore can be easily adopted solve more complicated problems such as dynamic arrivals, machine breakdown, or other factors that affect job status over time. Mention that, the solution methodologies were generated for the uninterruptible operations.

According to the various comparisons above, we conclude that the proposed procedures for the first problem, MS and CR dispatching rules have most robustness and effectiveness in finding an optimal schedule and considering the number of alternative schedules. But in the second problem, certain objectives of shifting bottleneck rules give the best performances with different dispatching rules.

A generic database program, LEKIN gives an effective user interface module. Therefore we realize the real-time presentation of our solution schedules and evaluate them for various aspects. The system itself contains a number of scheduling algorithms and heuristics and is designed to allow the user to link and test his or her heuristics and compare their performances with the heuristics and algorithms that are embedded in the system. Furthermore, it is capable of dealing with the sequence-dependent setup times in all types of machine environments. In addition to those advantages, a problem occurs when setup times are considered. It can be easily seen from the Gantt Chart Sequence solutions that setup facility waits for finishing the preceding operations. It's a deficiency of the software implementation results in excess tardiness of some jobs. This problem can be solved by a manual effort. First all the tardy jobs are searched from the Gantt Chart Sequence. Then for operations which have no precedence tasks, we make these operations begin earlier by an amount of setup time. And then this applies to all following tasks. Therefore, the performance of our objective functions is improved.

We believe that the system we use should prove valuable for future studies in the field of flexible job-shop scheduling problems. One of possible directions of future research is to extend the obtained data to the general multi operation flexible job shop and to develop other efficient heuristics with better performance guarantees for these kinds of problems.

## REFERENCES

- [1] T.E. Vollmann; W.L. Berry; and D.C. Whybark “Manufacturing planning and control systems”; Irwin/McGraw-Hill Companies (1997)
- [2] M. Pinedo; X. Chao “Operations Scheduling with applications in manufacturing and services”; Irwin/McGraw-Hill Companies (1999)
- [3] J. Slomp ; W.H. Zijm “A manufacturing planning and control system for a flexible manufacturing system”; Robotics and Computer Integrated Manufacturing , 10, pp. 109-114 (1993)
- [4] F. Klocke; M. Fallbohmer; A. Kopner; G Trommer. “Methods and tools supporting modular process design” Robotics and computer Integrating Manufacturing, 16, (2000) pp. 411-423
- [5] S. Lamouri; A. Thomas; “The two level master production schedule and planning bills in a just in time MRP context” Production Economics, 64, pp. 409-415 (2000)
- [6] R. Maglica; “Improving the PAC shop-floor control architecture to better support implementation”; Computers in Industry, vol. 33, Issues 2-3, September 1997, Pages 317-322,
- [7] W.L. Berry; T. Schmitt; and T.E. Vollmann “Capacity Planning Techniques for Manufacturing Control Systems: Information Requirements and Organizational Features” Journals of operations management 3 no 1 (Nov. 1982)
- [8] W.O. Rom; O.I. Tukul; and J.R. Muscatella “MRP in a job shop environment using a resource constrained project scheduling model” Omega, 30, pp.275-286 (2002)
- [9] J.C. Ho; Y.L. Chang “An integrated MRP and JIT framework” Computers and Industrial Engineering, 41, pp. 173-183 (2001)

- [10] Y.A. Hosni; A. Alsebase; "Capacity Planning in a job shop environment" Decision Science Journal 21, no 2 (Spring 1990) pp. 253-262
- [11] D. Kisperska-Moron; "Responsibility for inventory decisions in Polish manufacturing companies"; International Journal of Production Economics, 81, pp.129-139 (2002)
- [12] C.H. Yeh; "Schedule based production" J. Production Economics, 51, pp. 235-242 (1997)
- [13] M.A. Gamila, and S. Motavalli "A modeling technique for loading and scheduling problems in FMS." Robotics and Computer-Integrated Manufacturing, 19, pp. 45-54 (2003)
- [14] A. Rolstedos "Production Planning in Cellular Manufacturing Environment" Computers in Industry, 8, pp. 151-156 (1987)
- [15] L.H. Su; P. Chang and E.S. Lee "A heuristic for scheduling general job shops to minimize maximum lateness" Mathematical and Computer Modeling, 27, pp. 1-15 (1998)
- [16] K. Shanker; and Y.S. Tzen "A loading and Dispatching Problem in a Random Flexible Manufacturing System" International Journal of Production research 23, no 3; pp. 579-595 (1985)
- [17] G. Economakos; P. Oikonomokos; I. Poulakis; G. Papakonstantinou and S. Georgoulis "Handling advanced scheduling heuristics under a hardware compiler generation environment" Knowledge-based Systems 15, pp. 3-11 (2002)
- [18] C.D. Tarantilis; and C.T. Kiranoudis; "A list-based threshold accepting method for job shop scheduling problems"; International Journal of Production Economics, 77 pp. 159-171 (2002)

- [19] W.O. Rom; O.I. Tukul; and J.R. Muscatello; "MRP in a job shop environment using a resource constraint project scheduling model"; *Omega*, 30 pp. 275-286 (2002)
- [20] J. Orlicky; "Material Requirements Planning" McGraw Hill, pp.292 (1975)
- [21] R.J. Wittrock "Scheduling Parallel Machines with Major and Minor Setup Times" *International Journal of Flexible Manufacturing Systems* 2, pp. 329-341 (1990)
- [22] J. Grabowski; J. Pempera "Sequencing of jobs in some production system" Technical University of Wroclaw, Institute of Engineering Cybernetics, Janiszewskiego, Poland.(1998)
- [23] F.B. Talbot "Resource Constrained Project Scheduling with Time-Resource Trade-offs: The Non-preemptive Case" *Management Science* 28, pp.1197-1210 (1982)
- [24] H. Kerzner "Project Management: A Systems Approach to Planning, Scheduling and Controlling" 5<sup>th</sup> ed. Van Nostrand Reinhold. (1994)
- [25] F. Salewski; A. Schirmer; A. Drexel "Project Scheduling under Resource and Mode Identity Constraints: Model, Complexity, Methods, and Application" *European Journal Of Operational Research*, 102, pp.88-110 (1997)
- [26] G. Ulusoy; S. Karabatli "Sixth International Workshop on Project Management and Scheduling" *European Journal of Operational Research* 127, pp. 217-219 (2000)
- [27] H.F. Lee and K.E. Stecke "Production planning for flexible flow systems with limited machine flexibility" *IIE Transactions* 30, pp. 669-684 (1996)
- [28] G. Dobson "The Economic Lot-Scheduling Problem: Achieving Feasibility Using Time-Varying Lot Sizes" *Operations Research* 35, pp. 764-771 (1987)
- [29] S. Seshadri; M. Pinedo "Optimal allocation of resources in a job shop environment" *IIE Transactions*, 31, pp. 195-206 (1997)

- [30] M. Laguna “A heuristic for production scheduling and inventory control in the presence of sequence-dependent setup times” *IIE Transactions*, 31, pp. 125-134 (1997)
- [31] S. Benjaafar; D. Gupta “Workload allocation in multi-product, multi-facility production systems with setup times” *IIE Transactions* (1999) 31, pp. 339-352
- [32] C.L. Pape; P. Baptiste “Heuristic Control of a Constraint-Based Algorithm for the Preemptive Job-Shop Scheduling Problem” *Journal of Heuristics*, 5, pp. 305–325 (1999)
- [33] F.T.S. Chan; H.K. Chan; H.C.W. Lau; R.W.L. Ip “Analysis of dynamic dispatching rules for a flexible manufacturing system” *Journal of Materials Processing Technology*, 138, pp. 325-331 (2003)
- [34] J. Blazewicz; E. Pesch; M. Sterna “The disjunctive graph machine representation of the job shop scheduling problem” *European Journal of Operations Research*, 127, pp. 317-331 (2000)
- [35] D.C. Mattfeld; C. Bierwirth “An efficient genetic algorithm for job shop scheduling with tardiness objectives” *European Journal of Operational Research* (2003)
- [36] M. Asano; H. Ohta “A heuristic for job shop scheduling to minimize total weighted tardiness” *Computers and Industry Engineering*, 42, pp. 137-147 (2002)
- [37] P.B. Luh; L.Gou; Yuanhui Zhang “Job shop scheduling with group-dependent setups, finite buffers, and long time horizon” *Annals of Operations Research* 76, pp.233-259 (1998)
- [38] M. Pinedo; M. Singer “A Shifting Bottleneck Heuristic for Minimizing the Total Weighted Tardiness in a Job Shop” *Naval Research Logistics* 46 (1999)
- [39] M. Singer; M. Pinedo “A computational study of branch and bound techniques for minimizing the total weighted tardiness in job shops” *II E Transactions* 30, pp.109-118 (1998)

[40] C.L. Pape; P.Baptiste “Resource Constraints for Preemptive Job-Shop Scheduling”  
An International Journal, 3, pp. 263–287 (1998)

[41] Facilities Planning by J.A. Tompkins, J.A. White, Y.A. Bozer, J.M.A. Tanchoco.  
Chapters 1, 2 and 3, pp. 13-15, pp.31-33, pp.36-38, pp.46-48, pp.80-84, pp.98-101

[42] Web site of Teba Company; [www.teba.com](http://www.teba.com), [www.teba.com/uk](http://www.teba.com/uk)

[43] © LEKIN Educational Shareware Version 2.4, Licensed by Feldman and Pinedo  
2001. Web site for download or buy the registered © LEKIN Industrial version;  
[www.stern.nyu.edu/om/faculty/lekin](http://www.stern.nyu.edu/om/faculty/lekin)



# APPENDICES

## APPENDIX A. Generic Software Systems and LEKIN

### A.1. Generic systems;

Most generic scheduling systems have scheduling routines to generate a first schedule for the user. The automated scheduling capabilities generally consist of a number of different dispatching rules that are basically sorting routines [2]. These rules are usually the same as the priority rules as SPT, LPT, WSPT, EDD, i.e. Some generic scheduling systems have more complicated scheduling procedures, such as forward loading or backward loading. Forward loading implies that the jobs are inserted one at a time. Backward loading implies that the schedule is generated starting from the back of the schedule, that is from the due dates, working its way towards the current time.

Some of the more sophisticated automated scheduling procedures first identify the bottleneck work center(s) or machine(s); they compute time windows during which jobs have to be processed on these machines, and then they schedule the jobs on these machines through some algorithmic procedure. After the bottlenecks are scheduled, the procedure schedules the remaining machines through either forward loading or backward loading.

The scheduling system has to be integrated into the information system of the organization, which can be formidable task. A scheduling system may receive information from a higher-level planning system that determines the appropriate actions for the medium and long term with respect to shift schedules.

The scheduling system itself consists of various modules. These modules play a crucial role in the functionality of the system. Significant effort is required to make a factory's database suitable for input to the scheduling system. Those of fundamental importance are;

- The database, object base, and knowledge base modules;

Making a database accurate, consistent, and complete often involves the design of a series of tests the data must pass before it can be used. A database management module may also be able to manipulate the data; perform various forms of statistical analysis;

and enable the scheduler; through some user interface; to see data in graphical data in graphical form. A knowledge base contains, in one format or another, a list of rules to be followed in given situations and possibly a list of objects representing orders and resources.

- The schedule generation modules;

A schedule generation module contains a suitable model with objective functions, constraints, and rules, as well as heuristics and algorithms.

- The user interface modules;

User interface modules are important especially in the implementation process. It's often take the form of an electronic Gantt Chart with tables and graphs that enable the scheduler to edit the schedule generated by the system and take last minute information into account.

## **A.2. The schedule generation module;**

The schedule generation module may provide the user with a number of computational and algorithms. Such a library of procedures within the schedule generation module will require its own user interface, enabling the scheduler to select the appropriate algorithm or even design an entirely new procedure.

The different forms of schedule manipulation interfaces depend on the level of detail as well as on the planning horizon being considered, namely as;

- The Gantt chart interface.
- The dispatch-list interface.
- The capacity buckets interface.
- The throughput diagram interface.

The Gantt-chart is the usual horizontal bar chart, with the x-axis representing the time and y-axis, the various machines. A Gantt chart indicates the number of late jobs as well as their respective tardiness. The number of late jobs and the total amount of tardiness indicate the deficiency in capacity. The Gantt chart is thus a good indicator of the available capacity in the short term when the number of jobs is limited. The schedule generated and displayed in the Gantt chart is a so-called semi-active schedule.

A semi-active schedule is characterized by the fact that the start time of any operation of any given job on any given machine is determined by either the completion of the processing operation of the same job on a different machine or the completion of an operation of a different machine or the completion of an operation of a different job on the same machine. Though, Gantt charts do have disadvantages, especially when there are many jobs and machines. It may be hard to recognize which bar or rectangle corresponds to which job.

The second form of user interface displaying schedule information is the dispatch list interface. With this type of display, scheduler can see a list of jobs to be processed on each machine in the order in which they're to be processed. Schedulers also want to have editing capabilities so they can change the sequence in which jobs are processed on a machine or move a job from one machine to another. The disadvantage of the dispatch-list interface is that the scheduler does not have a good view of the schedule relative to time. The user may not see immediately which jobs are going to be late, which machine is idle most of the time, so on.

The third form of user interface is the capacity buckets interface. The time axis is partitioned into a number of time slots or buckets. Buckets may correspond to days, weeks, or months. The Capacity buckets are useful when the scheduler is performing medium or long-term planning. The bucket size may be either a week or a month, and a total period covered 3 or 4 months.

The fourth form of user interface is the input-output diagram or throughput diagram interface, which is often to interest when the production is made to stock. These diagrams describe the total amount of orders received, the total amount produced, and the total amount shipped, cumulatively over time. The difference between the first two curves, at any point in time, is the total amount of orders waiting for processing, and the difference between the second and the third curve equals the total amount of finished goods in inventory. This type of interface specifies neither the number of late jobs nor their respective tardiness. It does provide scheduler with information regarding machine utilization and work in process (WIP).

### **A.3. A Generic Job Shop Scheduling System; LEKIN**

The Lekin System has been designed specifically for job scheduling in a number of different machine environments, including parallel machines, (flexible) flow shops, and (flexible) job shops. The system supports sequence-dependent setup times on all the machines. The system also has a calendar that enables the user to determine the number of shifts assigned to each machine and to enter maintenance periods and holidays.

The system consists of a database module with a tool kit and a user interface module. This module is developed in C<sup>++</sup>, and the code is portable to any platform with an ANSI C<sup>++</sup> compiler. The database module with the tool kit (DB-TK) has been designed using object-oriented methodology. The database module manages the data and functions as a repository for the heuristics. After a sequence has been generated, the information is sent to the user interface module, which can display it in a number of ways.

The database class is designed for data management. It contains information about the machines, the jobs and the schedules. All these objects are developed from the basic data management class which facilitates the development process. The class of scheduling graphs is based on the disjunctive graph representation that is used in various scheduling heuristics. Each node in such a graph represents an operation, and the arcs represent the precedence constraints. The graphs are used to verify feasibility and determine the starting times and completion times of operations. The DB-TK is the main tool for generating schedules. The class of scheduling tools is basically a kit for the development of scheduling heuristics.

In our study, we use the educational version of LEKIN [43]. The educational version of LEKIN is a scheduling system in a teaching tool for job shop scheduling. The system has been designed for use in Windows 95, 98, 2000, XP and Windows NT environment. The system itself contains a number of scheduling algorithms and heuristics and is designed to allow the user to link and test his or her heuristics and compare their performances with the heuristics and algorithms that are embedded in the system. The LEKIN system can handle a number of machine environments, namely as;

- i. Single machine
- ii. Parallel machines
- iii. Flow shop
- iv. Flexible flow shop
- v. Job shop
- vi. Flexible job shop

Furthermore, it is capable of dealing with the sequence-dependent setup times in all the environments listed above. The system can handle up to 50 jobs, up to 20 work centers or workstations, and up to 60 machines at each workstation.

The system contains a number of algorithms for several of the machine environments and objective functions. These algorithms include;

- Dispatching rules
- Heuristics of the shifting bottleneck type
- Local search techniques
- A heuristic for the flexible flow shop with the total weighted tardiness as objective (SB-LS)

The dispatching rules include EDD and WSPT. The way these dispatching rules are applied in a single-machine environment and in a parallel-machine environment is standard. However, they also can be applied in the more complicated machine environments such as the flexible flow shop and the flexible job shop.

Each time a machine is freed the system checks which jobs have to go on that machine next. The system then uses the following data for the priority rules; the due date of a candidate job is the due date at which that job has to leave the system. The processing time that is entered in the WSPT rule is the sum of the processing times of all the remaining operations of that job.

The system has a general-purpose routine of the shifting bottleneck type that can be applied to each one of the machine environments and every objective function. The system has also a specialized routine for the flexible flow shop with the total weighted tardiness as objective; this routine is a combination of a shifting bottleneck routine and a local search (SB-LS). If the user selects the shifting-bottleneck or the local search option, then the user has to select also the objective to minimize. When the user selects

the local search option and the objective, a window appears in which to enter the number of seconds for the local search to run.

Whenever the user generates a schedule for a particular data set, the schedule is stored in a log book. The system automatically assigns an appropriate name to every schedule generated. To compare the different schedules, the user has to click on log book. The user can change the name of each schedule and give each schedule a different name for future reference.

More advanced users also can link their own algorithms from the external systems to the system. This feature allows the developer of a new algorithm to test an algorithm using the interactive Gantt chart features of the system. After a new algorithm has been added, it is included as one of the heuristics under the Schedule menu of LEKIN.

### **A.3.1. Data entry;**

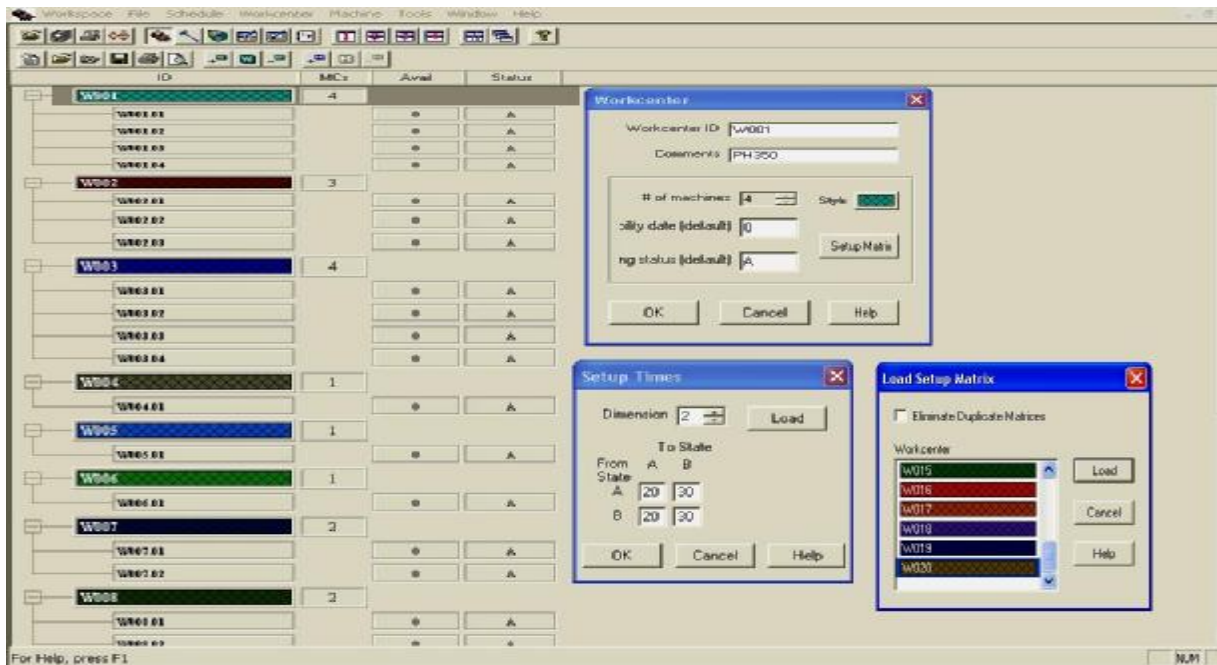
When the user selects a machine environment, then he has to enter all the necessary machine data and job data manually. However, the user also has the option of opening existing file in this window. An existing data files contains data with regard to one of the machine environments and a set of jobs. The user can open such an existing file, make changes in the file, and work with the modified file. At the end of the session, the user may save the modified file under a new name.

In the dialog box, the user has to enter the detailed information with regard to the jobs release dates, due dates, priorities or weights, routing and processing times of the various operations. If the job requires sequence-dependent setup times, then the machine settings that are required for the processing have to be entered.

If there are setup times, the relevant data have to be entered together with all the other job and machine data at the very beginning of a session. Each operation has a single parameter or attribute, which is represented by a letter, for example, A, B, C...Z. This parameter represents the machine setting is required for processing that operation. When the user enters the data for each machine, the user has to fill in a setup time matrix for that machine. The setup time matrix for a machine specifies the time that it takes to change that machine from one setting to another. The setup time matrixes of all the machines at any given workstation have to be the same if the machines at a workstation are assumed to be identical. See Picture A.1.

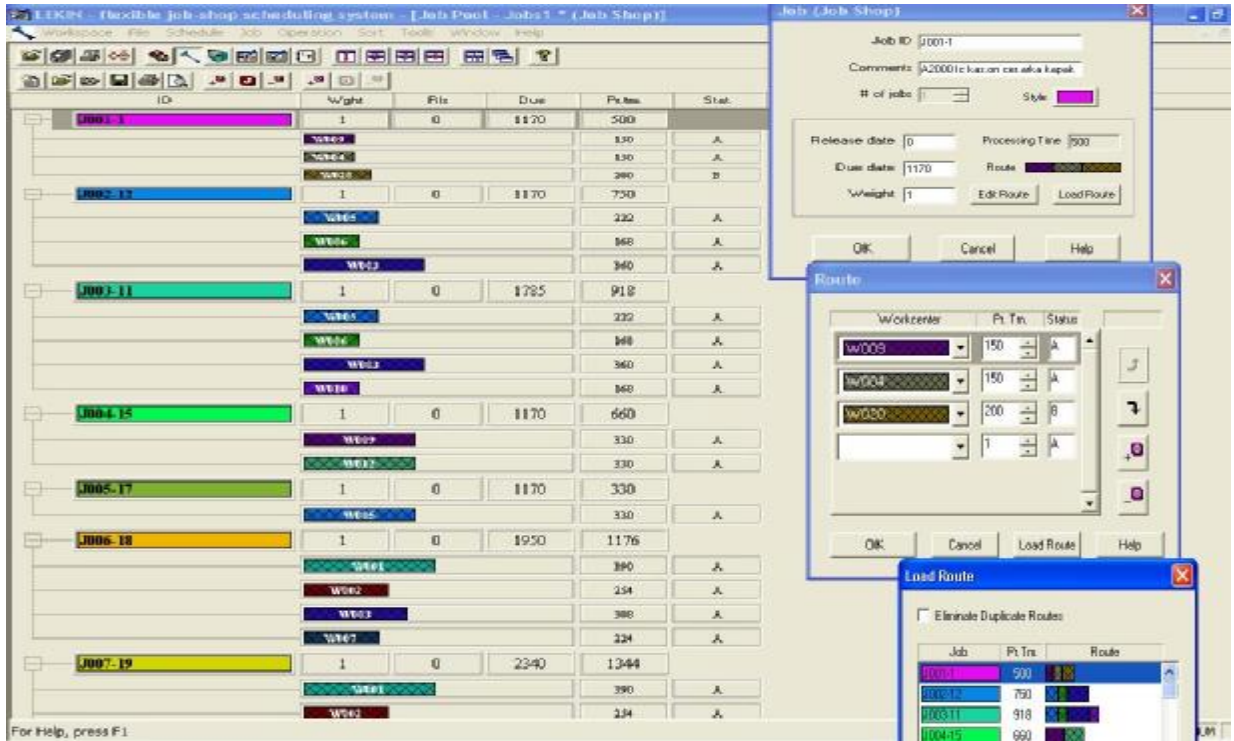
After the user has entered the data set, all the information is displayed in the machine park window (See Picture A.1) and the job pool window (See Picture A.2). After the user has opened an existing file, then the sequence window (See Picture A.3) and the Gantt chart window (See Picture A.5) may display information pertaining to a sequence that had been generated during an earlier session. The user can select schedules either from the Gantt chart window by clicking on schedule and selecting a heuristic or algorithm from the drop-down menu (See Picture A.4). A schedule is then generated and displayed in both the sequence window and the Gantt chart window (See Picture A.6).

The Machine Park Window displays all the information regarding the workstations and the machines. This information is organized in the format of a tree. This window first shows a list of all the workstations. If the user clicks on a workstation, the individual machines of the workstation appear (See Picture A.1.).



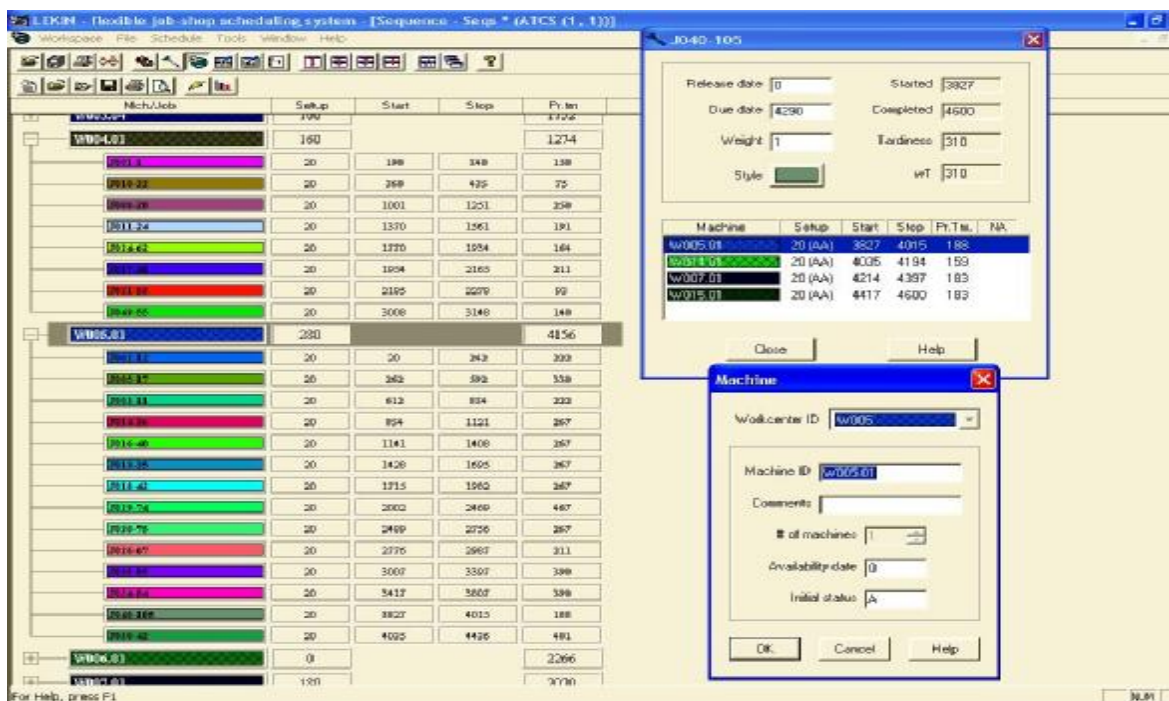
Picture A.1

Job Pool Window contains the starting time, completion time, and more information with regard to the jobs is also organized in the form of a tree. First the jobs are listed. If the user clicks on a specific job, then immediately list of various operations that belong to that job appear (See Picture A.2).



Picture A.2

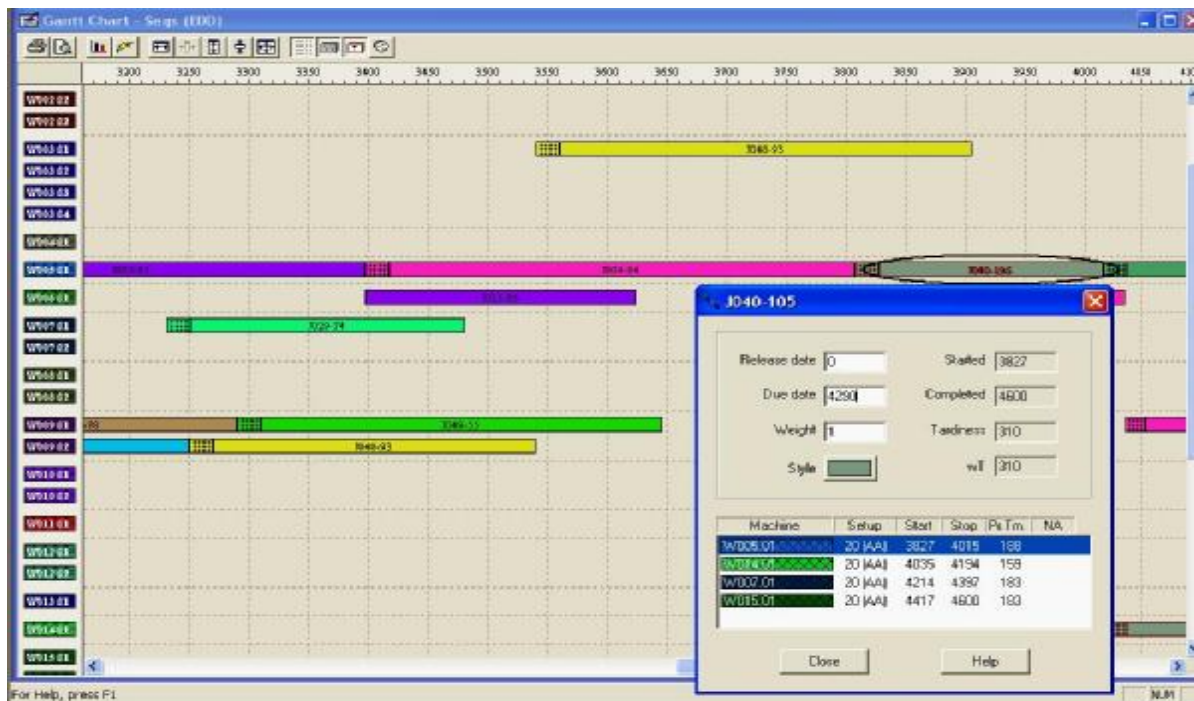
The Sequence Window contains the list of jobs in the order in which they are processed on each machine. The presentation here also has a tree structure. First all the machines are listed. When the user clicks on a machine, then all the operations that are processed on that machine appear in the sequence in which they are processed. At the bottom of this sequence window, a summary of the various performance measures of the current schedule is given (See Picture A.3).



Picture A.3



The Gantt chart window has a button that activates a window where the user can see the current values of all objectives. The user also clicks on an operation and a window pops up displaying the detailed information with regard to the corresponding job (See Picture A5).



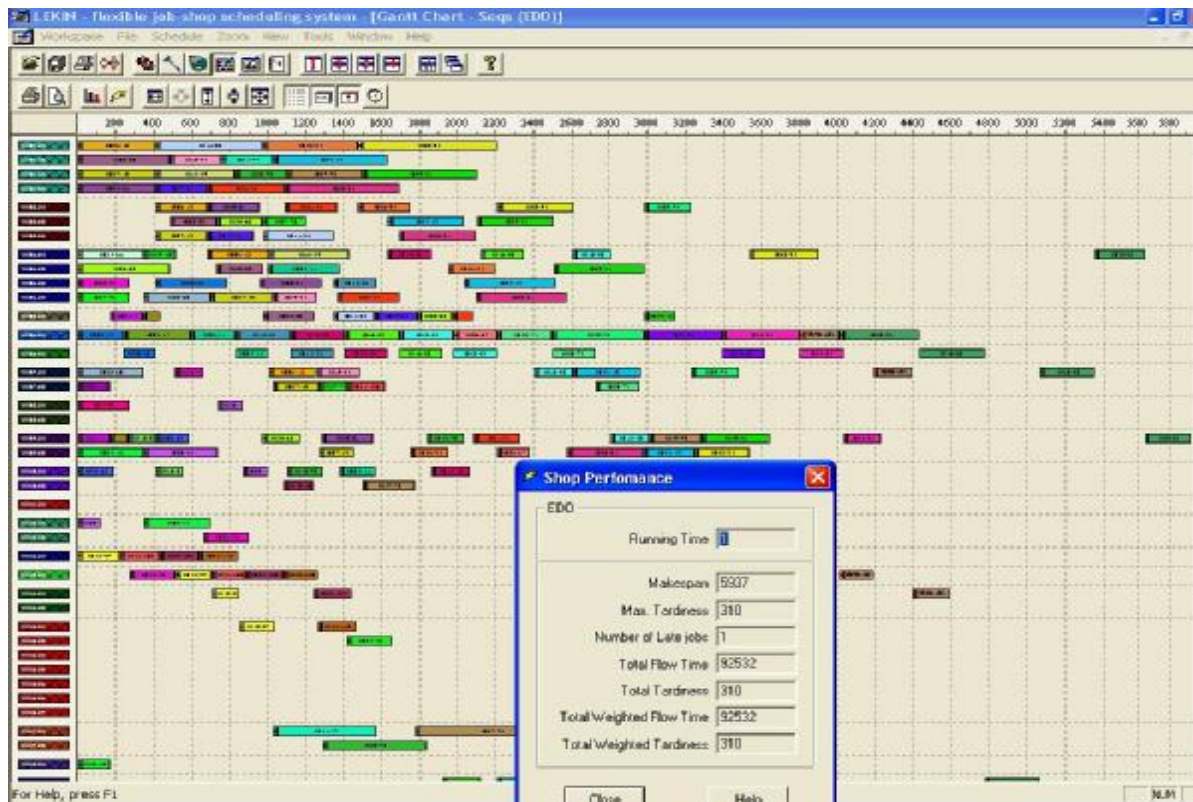
Picture A5

### A.3.2. Implementation with sample models and Use of the system

When the system is setup for the first time, the machine environment information has to be entered. The machine environment may consist of a number of work centers, and each work center may consist of a single machine or a number of machines in parallel. After the work center information has been entered, the data regarding the various machines have to be entered. A setup matrix is available in case the machines require setups when changing from one job to another. Then the job data have to be entered. The job routes and machine assignments have to be specified in routing window. The route is specified through the use of node and arcs.

After all the required information has been entered, a schedule can be generated in one of three ways;

- Manually; the user can construct an entire schedule manually, from the Gantt chart window (See Picture A.4) by dragging and dropping jobs. The user can also generate a schedule with any of the ready-made algorithms from the systems library. The system also allows the user to develop custom heuristics and link these to the system. This library facilitates the development of customized priority rules and customized heuristics of the shifting-bottleneck type.



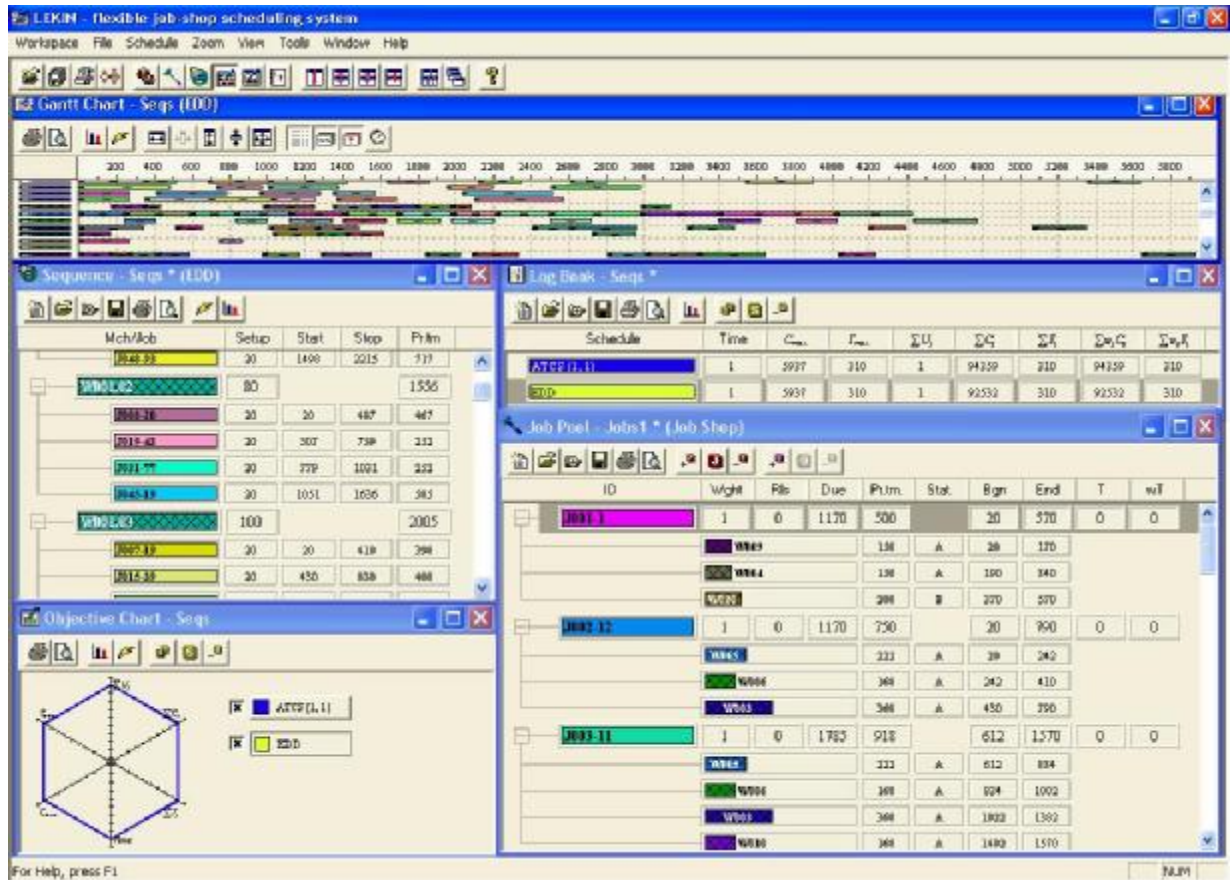
Picture A.4

- With one of the heuristics or algorithms from the system library; the sequence on each machine, including details such as setup, duration, starting times, and completion times is displayed in the sequence window along with various shop performance indexes. The system can display the schedule in the form of Gantt chart.

- With a heuristic or algorithm developed by the user and linked to the system; user generated schedules can be stored in a log book, which can hold many schedules. The schedules in the log book can be compared to one another with respect to a number of performance measures with the reasons of make-span, maximum lateness, total weighted tardiness, total weighted completion time and number of late jobs.

The schedules stored in the log book can be compared by clicking on the performance measures button. The user may then select one or more objectives. If the user selects a single objective, a bar chart compares the schedules stored in the log book with respect to that objective (See picture A.6).

Picture A.6



If the user wants to compare the schedules with regard to two objectives, an (x; y) – coordinate system appears and each schedule is represented by a dot. If the user selects three or more objectives, then a multidimensional graph displays the performance measures of the schedules stored in the log book.

Machine Park - Pl.mch (Flexible Workcenters)

ID	MCs	Avail	Status
<b>W01 - PH350</b>	4		
M01.1.PH35001		0	A
M01.2.PH30002		0	A
M01.3.PH60001		0	A
M01.4.PH20001		0	A
<b>W02 - DE085</b>	3		
M02.1.DE08001		0	A
M02.2.DE08502		0	A
M02.3.DE08504		0	A
<b>W03 - PH150</b>	4		
M03.1.PH15001		0	A
M03.2.PH15002		0	A
M03.3.PH15003		0	A
M03.4.PH15004		0	A
<b>W04 - PH070</b>	1		
M04.1.PH07001		0	A
<b>W05 - PH300</b>	1		
M05.1.PH30001		0	A
<b>W06 - PE250</b>	1		
M06.1.PE25001		0	A
<b>W07 - PE150</b>	2		
M07.1.PE15002		0	A
M07.2.PE15003		0	A
<b>W08 - PA130</b>	2		
M08.1.PA13003		0	A
M08.2.PA13004		0	A
<b>W09 - PE080</b>	2		
M09.1.PE08002		0	A
M09.1.PE08003		0	A
<b>W10 - PE030</b>	2		
M10.1.PE03005		0	A
M10.2.PE03008		0	A
<b>W11 - PA125</b>	1		
M11.1.PA12502		0	A

Machine Park - Pl.mch (Flexible Workcenters)

ID	MCs	Avail	Status
<b>W12 - PE060</b>	2		
M12.1.PE06002		0	A
M12.2.PE06007		0	A
<b>W13 - PH160</b>	1		
M13.1.PH16001		0	A
<b>W14 - DE08503</b>	1		
M14.1.DE08503		0	A
<b>W15 - PE06005</b>	2		
M15.1.PE06005		0	A
M15.2.PE06006		0	A
<b>W16 - SD400</b>	7		
M16.1.SD40002		0	A
M16.2.SD40003		0	A
M16.3.SD40004		0	A
M16.4.SD40005		0	A
M16.5.SD40007		0	A
M16.6.SD40011		0	A
M16.7.SD40012		0	A
<b>W17 - SB200</b>	2		
M17.1.SB20001-		0	A
M17.2.SB20002		0	A
<b>W18 - PH050</b>	1		
M18.1.PH05001		0	A
<b>W19 - DG126</b>	2		
M19.1.DG12603		0	A
M19.2.DG12605		0	A
<b>W20 - 500T PH</b>	2		
M20.1.PH50001		0	B
M20.2.PH50002		0	B

Job Pool - P1.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.
<b>J001-1</b>	1	0	780	500	
		W09 - PE080		150	A
		W04 - PH070		150	A
		W20 - 500T PH		200	B
<b>J002-12</b>	1	0	780	750	
		W05 - PH300		222	A
		W06 - PE250		168	A
		W03 - PH150		360	A
<b>J003-11</b>	1	0	2460	918	
		W05 - PH300		222	A
		W06 - PE250		168	A
		W03 - PH150		360	A
		W10 - PE030		168	A
<b>J004-15</b>	1	0	720	660	
		W09 - PE080		330	A
		W12 - PE060		330	A
<b>J005-17</b>	1	0	615	330	
		W05 - PH300		330	A
<b>J006-18</b>	1	0	1290	1176	
		W01 - PH350		390	A
		W02 - DE085		254	A
		W03 - PH150		308	A
		W07 - PE150		224	A
<b>J007-19</b>	1	0	1890	1344	
		W01 - PH350		390	A
		W02 - DE085		254	A
		W03 - PH150		308	A
		W07 - PE150		224	A
		W09 - PE080		168	A



Job Pool - P1.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.
<b>J008-20</b>	1	0	1290	1171	
				467	A
				224	A
				230	A
				250	A
<b>J009-21</b>	1	0	1560	1204	
				390	A
				254	A
				308	A
				252	A
<b>J010-22</b>	1	0	615	250	
				75	A
				75	A
				100	B
<b>J011-24</b>	1	0	1560	1091	
				550	A
				350	A
				191	A
<b>J012-26</b>	1	0	780	250	
				125	A
				125	A
<b>J013-35</b>	1	0	2175	705	
				267	A
				227	A
				211	A
<b>J014-36</b>	1	0	1785	885	
				267	A
				227	A
				211	A
				180	A

Job Pool - Pl.job (Job Shop)























ID	Wght	Rls	Due	Pr.tm.	Stat.
<b>J015-39</b>	1	0	1395	800	
				400	A
				400	A
<b>J016-40</b>	1	0	2175	885	
				267	A
				227	A
				180	A
				211	A
<b>J017-41</b>	1	0	2175	687	
				252	A
				224	A
				211	A
<b>J018-42</b>	1	0	3009	1214	
				267	A
				227	A
				180	A
				180	A
				180	A
				180	A
<b>J019-43</b>	1	0	1560	674	
				252	A
				211	A
				211	A
<b>J020-44</b>	1	0	900	692	
				101	A
				371	A
				110	A
				110	A



Job Pool - Pl.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.
<b>J021-55</b>	1	0	2565	1269	
				W01 - PH350	390 A
				W02 - DE085	254 A
				W03 - PH150	308 A
				W04 - PH070	93 A
				W09 - PE080	224 A
<b>J022-60</b>	1	0	900	660	
				W07 - PE150	330 A
				W03 - PH150	330 A
<b>J023-61</b>	1	0	615	330	
				W03 - PH150	330 A
<b>J024-62</b>	1	0	2238	1035	
				W03 - PH150	467 A
				W02 - DE085	224 A
				W09 - PE080	180 A
				W04 - PH070	164 A
<b>J025-65</b>	1	0	780	331	
				W10 - PE030	170 A
				W09 - PE080	161 A
<b>J026-67</b>	1	0	3162	362	
				W05 - PH300	211 A
				W09 - PE080	151 A
<b>J027-70</b>	1	0	1785	810	
				W03 - PH150	252 A
				W02 - DE085	211 A
				W07 - PE150	125 A
				W16 - SD400	222 A

Job Pool - Pl.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.
<b>J028-72</b>	1	0	900	825	
		W03 - PH150		252	A
		W14 - DE08503		224	A
		W07 - PE150		125	A
		W12 - PE060		224	A
<b>J029-74</b>	1	0	2955	921	
		W05 - PH300		467	A
		W02 - DE085		224	A
		W07 - PE150		230	A
<b>J030-75</b>	1	0	3240	705	
		W05 - PH300		267	A
		W06 - PE250		227	A
		W07 - PE150		211	A
<b>J031-77</b>	1	0	1680	777	
		W01 - PH350		252	A
		W17 - SB200		525	A
<b>J032-78</b>	1	0	1950	1123	
		W01 - PH350		252	A
		W10 - PE030		172	A
		W17 - SB200		525	A
		W09 - PE080		174	A
<b>J033-79</b>	1	0	615	211	
		W20 - 500T PH		211	B
<b>J034-84</b>	1	0	4230	797	
		W05 - PH300		390	A
		W06 - PE250		227	A
		W09 - PE080		180	A
<b>J035-85</b>	1	0	3630	617	
		W05 - PH300		390	A
		W06 - PE250		227	A

Job Pool - Pl.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.
<b>J036-93</b>	1	0	2340	1142	
				478	A
				254	A
				180	A
				230	A
<b>J037-95</b>	1	0	615	252	
				252	A
<b>J038-97</b>	1	0	1110	669	
				201	A
				171	A
				126	A
				171	A
<b>J039-102</b>	1	0	615	304	
				152	A
				152	A
<b>J040-105</b>	1	0	4680	713	
				188	A
				159	A
				183	A
				183	A
<b>J041-106</b>	1	0	1680	530	
				188	A
				159	A
				183	A
<b>J042-108</b>	1	0	1290	684	
				188	A
				180	A
				136	A
				180	A

Job Pool - Pl.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.
<b>J043-110</b>	1	0	1290	530	
				188	A
				159	A
				183	A
<b>J044-116</b>	1	0	615	151	
				151	A
<b>J045-19</b>	2	0	3345	2166	
				150	A
				585	A
				381	A
				462	A
				336	A
				252	A
<b>J046-21</b>	2	0	3060	1806	
				585	A
				381	A
				462	A
				378	A
<b>J047-78</b>	2	0	3630	1685	
				378	A
				258	A
				788	A
				261	A
<b>J048-93</b>	2	0	3900	1713	
				717	A
				381	A
				270	A
				345	A

Job Pool - P1.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.
<b>J049-55</b>	2	0	3840	1904	
				585	A
				381	A
				462	A
				140	A
				336	A
<b>J050-18</b>	2	0	4680	1764	
				585	A
				381	A
				462	A
				336	A

Job Pool - P1.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J001-1</b>	1	0	780	500		20	590	0	0
				W09 - PE080	150	A	20	170	
				W04 - PH070	150	A	210	360	
				W20 - 500T PH	200	B	390	590	
<b>J002-12</b>	1	0	780	750		370	1160	380	380
				W05 - PH300	222	A	370	592	
				W06 - PE250	168	A	612	780	
				W03 - PH1	360	A	800	1160	
<b>J003-11</b>	1	0	2460	918		1473	2456	0	0
				W05 - PH300	222	A	1473	1695	
				W06 - PE250	168	A	1720	1888	
				W03 - PH1	360	A	1908	2268	
				W10 - PE030	168	A	2288	2456	
<b>J004-15</b>	1	0	720	660		190	870	150	150
				W09 - PE08	330	A	190	520	
				W12 - PE06	330	A	540	870	
<b>J005-17</b>	1	0	615	330		20	350	0	0
				W05 - PH30	330	A	20	350	
<b>J006-18</b>	1	0	1290	1176		20	1256	0	0
				W01 - PH	390	A	20	410	
				W02 - DE085	254	A	430	684	
				W03 - PH15	308	A	704	1012	
				W07 - PE150	224	A	1032	1256	
<b>J007-19</b>	1	0	1890	1344		850	3120	1230	1230
				W01 - PH	390	A	850	1240	
				W02 - DE085	254	A	1842	2096	
				W03 - PH15	308	A	2324	2632	
				W07 - PE150	224	A	2680	2904	
				W09 - PE080	168	A	2952	3120	

Job Pool - Pl.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J008-20</b>	1	0	1290	1171		20	1251	0	0
				467	A	20	487		
				224	A	507	731		
				230	A	751	981		
				250	A	1001	1251		
<b>J009-21</b>	1	0	1560	1204		440	1704	144	144
				390	A	440	830		
				254	A	850	1104		
				308	A	1124	1432		
				252	A	1452	1704		
<b>J010-22</b>	1	0	615	250		20	320	0	0
				75	A	20	95		
				75	A	115	190		
				100	B	220	320		
<b>J011-24</b>	1	0	1560	1091		430	1561	1	1
				550	A	430	980		
				350	A	1000	1350		
				191	A	1370	1561		
<b>J012-26</b>	1	0	780	250		20	290	0	0
				125	A	20	145		
				125	A	165	290		
<b>J013-35</b>	1	0	2175	705		899	1644	0	0
				267	A	899	1166		
				227	A	1186	1413		
				211	A	1433	1644		
<b>J014-36</b>	1	0	1785	885		612	1557	0	0
				267	A	612	879		
				227	A	899	1126		
				211	A	1146	1357		
				180	A	1377	1557		

Job Pool - Pl.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J015-39</b>	1	0	1395	800		20	840	0	0
				400	A	20	420		
				400	A	440	840		
<b>J016-40</b>	1	0	2175	885		1186	2131	0	0
				267	A	1186	1453		
				227	A	1473	1700		
				180	A	1720	1900		
				211	A	1920	2131		
<b>J017-41</b>	1	0	2175	687		507	1792	0	0
				252	A	507	759		
				224	A	779	1003		
				211	A	1581	1792		
<b>J018-42</b>	1	0	3009	1214		3748	5062	2053	2053
				267	A	3748	4015		
				227	A	4035	4262		
				180	A	4282	4462		
				180	A	4482	4662		
				180	A	4682	4862		
				180	A	4882	5062		
<b>J019-43</b>	1	0	1560	674		20	812	0	0
				252	A	20	272		
				211	A	370	581		
				211	A	601	812		
<b>J020-44</b>	1	0	900	692		20	1022	122	122
				101	A	20	121		
				371	A	391	762		
				110	A	782	892		
				110	A	912	1022		



Job Pool - Pl.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J021-55</b>	1	0	2565	1269		1384	2932	367	367
				W01 - PH	390	A	1384	1774	
				W02 - DE085	254	A	1794	2048	
				W03 - PH150	308	A	2267	2575	
				W04 - PH070	93	A	2595	2688	
				W09 - PE080	224	A	2708	2932	
<b>J022-60</b>	1	0	900	660		20	700	0	0
				W07 - PE15	330	A	20	350	
				W03 - PH15	330	A	370	700	
<b>J023-61</b>	1	0	615	330		20	350	0	0
				W03 - PH15	330	A	20	350	
<b>J024-62</b>	1	0	2238	1035		1032	2127	0	0
				W03 - PH15	467	A	1032	1499	
				W02 - DE085	224	A	1519	1743	
				W09 - PE080	180	A	1763	1943	
				W04 - PH070	164	A	1963	2127	
<b>J025-65</b>	1	0	780	331		20	371	0	0
				W10 - PE030	170	A	20	190	
				W09 - PE080	161	A	210	371	
<b>J026-67</b>	1	0	3162	362		1715	2114	0	0
				W05 - PH300	211	A	1715	1926	
				W09 - PE080	151	A	1963	2114	
<b>J027-70</b>	1	0	1785	810		20	1048	0	0
				W03 - PH150	252	A	20	272	
				W02 - DE085	211	A	292	503	
				W07 - PE150	125	A	681	806	
				W16 - SD400	222	A	826	1048	

Job Pool - P1.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J028-72</b>	1	0	900	825		20	905	5	5
				W03 - PH150	252	A	20	272	
				W14 - DE0850	224	A	292	516	
				W07 - PE150	125	A	536	661	
				W12 - PE060	224	A	681	905	
<b>J029-74</b>	1	0	2955	921		1946	2907	0	0
				W05 - PH300	467	A	1946	2413	
				W02 - DE085	224	A	2433	2657	
				W07 - PE150	230	A	2677	2907	
<b>J030-75</b>	1	0	3240	705		2433	3178	0	0
				W05 - PH300	267	A	2433	2700	
				W06 - PE250	227	A	2720	2947	
				W07 - PE150	211	A	2967	3178	
<b>J031-77</b>	1	0	1680	777		292	1089	0	0
				W01 - PH350	252	A	292	544	
				W17 - SB200	525	A	564	1089	
<b>J032-78</b>	1	0	1950	1123		564	1747	0	0
				W01 - PH350	252	A	564	816	
				W10 - PE030	172	A	836	1008	
				W17 - SB200	525	A	1028	1553	
				W09 - PE080	174	A	1573	1747	
<b>J033-79</b>	1	0	615	211		30	241	0	0
				W20 - 500T PH	211	B	30	241	
<b>J034-84</b>	1	0	4230	797		3130	3967	0	0
				W05 - PH	390	A	3130	3520	
				W06 - PE250	227	A	3540	3767	
				W09 - PE080	180	A	3787	3967	
<b>J035-85</b>	1	0	3630	617		2720	3357	0	0
				W05 - PH	390	A	2720	3110	
				W06 - PE250	227	A	3130	3357	

Job Pool - Pl.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J036-93</b>	1	0	2340	1142		1000	2467	127	127
				478	A	1000	1478		
				254	A	1763	2017		
				180	A	2037	2217		
				230	A	2237	2467		
<b>J037-95</b>	1	0	615	252		20	272	0	0
				252	A	20	272		
<b>J038-97</b>	1	0	1110	669		20	1044	0	0
				201	A	20	221		
				171	A	536	707		
				126	A	727	853		
				171	A	873	1044		
<b>J039-102</b>	1	0	615	304		20	444	0	0
				152	A	20	172		
				152	A	292	444		
<b>J040-105</b>	1	0	4680	713		3540	4313	0	0
				188	A	3540	3728		
				159	A	3748	3907		
				183	A	3927	4110		
				183	A	4130	4313		
<b>J041-106</b>	1	0	1680	530		657	1468	0	0
				188	A	657	845		
				159	A	1106	1265		
				183	A	1285	1468		
<b>J042-108</b>	1	0	1290	684		449	1442	152	152
				188	A	449	637		
				180	A	906	1086		
				136	A	1106	1242		
				180	A	1262	1442		

Job Pool - Pl.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J043-110</b>	1	0	1290	530		241	1089	0	0
				188	A	241	429		
				159	A	727	886		
				183	A	906	1089		
<b>J044-116</b>	1	0	615	151		20	171	0	0
				151	A	20	171		
<b>J045-19</b>	2	0	3345	2166		380	2932	0	0
				150	A	380	530		
				585	A	836	1421		
				381	A	1441	1822		
				462	A	1842	2304		
				336	A	2324	2660		
				252	A	2680	2932		
<b>J046-21</b>	2	0	3060	1806		779	2645	0	0
				585	A	779	1364		
				381	A	1384	1765		
				462	A	1785	2247		
				378	A	2267	2645		
<b>J047-78</b>	2	0	3630	1685		1260	3213	0	0
				378	A	1260	1638		
				258	A	1658	1916		
				788	A	1936	2724		
				261	A	2952	3213		
<b>J048-93</b>	2	0	3900	1713		1498	3868	0	0
				717	A	1498	2215		
				381	A	2235	2616		
				270	A	3233	3503		
				345	A	3523	3868		

Job Pool - Pl.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J049-55</b>	2	0	3840	1904		1441	3495	0	0
				585	A	1441	2026		
				381	A	2116	2497		
				462	A	2517	2979		
				140	A	2999	3139		
				336	A	3159	3495		
<b>J050-18</b>	2	0	4680	1764		1658	3736	0	0
				585	A	1658	2243		
				381	A	2517	2898		
				462	A	2918	3380		
				336	A	3400	3736		

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M01.1.PH35001</b>	100			1926
J019-43	20	20	272	252
J031-77	20	292	544	252
J032-78	20	564	816	252
J045-19	20	836	1421	585
J049-55	20	1441	2026	585
<b>M01.2.PH30002</b>	100			2143
J015-39	20	20	420	400
J009-21	20	440	830	390
J007-19	20	850	1240	390
J047-78	20	1260	1638	378
J050-18	20	1658	2243	585
<b>M01.3.PH60001</b>	80			1694
J008-20	20	20	487	467
J017-41	20	507	759	252
J046-21	20	779	1364	585
J021-55	20	1384	1774	390
<b>M01.4.PH20001</b>	80			2135
J006-18	20	20	410	390
J011-24	20	430	980	550
J036-93	20	1000	1478	478
J048-93	20	1498	2215	717
<b>M02.1.DE08001</b>	100			1276
J008-20	20	507	731	224
J011-24	20	1000	1350	350
J024-62	20	1519	1743	224
J036-93	20	1763	2017	254
J029-74	20	2433	2657	224
<b>M02.2.DE08502</b>	100			1524
J006-18	20	430	684	254
J009-21	20	850	1104	254
J046-21	20	1384	1765	381
J021-55	20	1794	2048	254
J048-93	20	2235	2616	381
<b>M02.3.DE08504</b>	120			1832
J027-70	20	292	503	211
J017-41	20	779	1003	224
J045-19	20	1441	1822	381
J007-19	20	1842	2096	254
J049-55	20	2116	2497	381
J050-18	20	2517	2898	381

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M03.1.PH15001</b>	180			2744
J023-61	20	20	350	330
J019-43	20	370	581	211
J006-18	20	704	1012	308
J024-62	20	1032	1499	467
J016-40	20	1920	2131	211
J036-93	20	2237	2467	230
J050-18	20	2918	3380	462
J048-93	20	3523	3868	345
J018-42	20	4682	4862	180
<b>M03.2.PH15002</b>	140			1826
J028-72	20	20	272	252
J039-102	20	292	444	152
J008-20	20	751	981	230
J014-36	20	1146	1357	211
J013-35	20	1433	1644	211
J046-21	20	1785	2247	462
J021-55	20	2267	2575	308
<b>M03.3.PH15003</b>	100			1712
J027-70	20	20	272	252
J022-60	20	370	700	330
J002-12	20	800	1160	360
J045-19	20	1842	2304	462
J007-19	20	2324	2632	308
<b>M03.4.PH15004</b>	80			1530
J015-39	20	440	840	400
J009-21	20	1124	1432	308
J003-11	20	1908	2268	360
J049-55	20	2517	2979	462
<b>M04.1.PH07001</b>	180			1424
J010-22	20	115	190	75
J001-1	20	210	360	150
J045-19	20	380	530	150
J008-20	20	1001	1251	250
J011-24	20	1370	1561	191
J017-41	20	1581	1792	211
J024-62	20	1963	2127	164
J021-55	20	2595	2688	93
J049-55	20	2999	3139	140

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M05.1.PH30001</b>	260			3755
J005-17	20	20	350	330
J002-12	20	370	592	222
J014-36	20	612	879	267
J013-35	20	899	1166	267
J016-40	20	1186	1453	267
J003-11	20	1473	1695	222
J026-67	20	1715	1926	211
J029-74	20	1946	2413	467
J030-75	20	2433	2700	267
J035-85	20	2720	3110	390
J034-84	20	3130	3520	390
J040-105	20	3540	3728	188
J018-42	20	3748	4015	267
<b>M06.1.PE25001</b>	180			1925
J002-12	20	612	780	168
J014-36	20	899	1126	227
J013-35	20	1186	1413	227
J016-40	20	1473	1700	227
J003-11	20	1720	1888	168
J030-75	20	2720	2947	227
J035-85	20	3130	3357	227
J034-84	20	3540	3767	227
J018-42	20	4035	4262	227
<b>M07.1.PE15002</b>	220			2278
J044-116	20	20	171	151
J028-72	20	536	661	125
J027-70	20	681	806	125
J006-18	20	1032	1256	224
J041-106	20	1285	1468	183
J045-19	20	2324	2660	336
J007-19	20	2680	2904	224
J030-75	20	2967	3178	211
J050-18	20	3400	3736	336
J040-105	20	3927	4110	183
J018-42	20	4482	4662	180
<b>M07.2.PE15003</b>	60			771
J022-60	20	20	350	330
J019-43	20	601	812	211
J029-74	20	2677	2907	230
<b>M08.1.PA13003</b>	40			185
J010-22	20	20	95	75
J020-44	20	782	892	110
<b>M08.2.PA13004</b>	20			252
J037-95	20	20	272	252

























Mch/Job	Setup	Start	Stop	Pr.tm
<b>M09.1.PE08002</b>	240			2706
J012-26	20	20	145	125
J025-65	20	210	371	161
J020-44	20	391	762	371
J009-21	20	1452	1704	252
J024-62	20	1763	1943	180
J026-67	20	1963	2114	151
J046-21	20	2267	2645	378
J021-55	20	2708	2932	224
J007-19	20	2952	3120	168
J049-55	20	3159	3495	336
J034-84	20	3787	3967	180
J018-42	20	4882	5062	180
<b>M09.1.PE08003</b>	140			1617
J001-1	20	20	170	150
J004-15	20	190	520	330
J032-78	20	1573	1747	174
J036-93	20	2037	2217	180
J045-19	20	2680	2932	252
J047-78	20	2952	3213	261
J048-93	20	3233	3503	270
<b>M10.1.PE03005</b>	120			977
J012-26	20	165	290	125
J020-44	20	912	1022	110
J042-108	20	1106	1242	136
J014-36	20	1377	1557	180
J047-78	20	1658	1916	258
J003-11	20	2288	2456	168
<b>M10.2.PE03008</b>	40			342
J025-65	20	20	190	170
J032-78	20	836	1008	172
<b>M11.1.PA12502</b>	0			0
<b>M12.1.PE06002</b>	40			431
J020-44	20	20	121	101
J004-15	20	540	870	330
<b>M12.2.PE06007</b>	20			224
J028-72	20	681	905	224
<b>M13.1.PH16001</b>	80			765
J038-97	20	20	221	201
J043-110	20	241	429	188
J042-108	20	449	637	188
J041-106	20	657	845	188

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M14.1.DE08503</b>	120			1052
J028-72	20	292	516	224
J038-97	20	536	707	171
J043-110	20	727	886	159
J042-108	20	906	1086	180
J041-106	20	1106	1265	159
J040-105	20	3748	3907	159
<b>M15.1.PE06005</b>	60			489
J038-97	20	727	853	126
J042-108	20	1262	1442	180
J040-105	20	4130	4313	183
<b>M15.2.PE06006</b>	0			0
<b>M16.1.SD40002</b>	20			171
J038-97	20	873	1044	171
<b>M16.2.SD40003</b>	20			222
J027-70	20	826	1048	222
<b>M16.3.SD40004</b>	20			183
J043-110	20	906	1089	183
<b>M16.4.SD40005</b>	0			0
<b>M16.5.SD40007</b>	0			0
<b>M16.6.SD40011</b>	0			0
<b>M16.7.SD40012</b>	0			0
<b>M17.1.SB20001</b>	40			1313
J031-77	20	564	1089	525
J047-78	20	1936	2724	788
<b>M17.2.SB20002</b>	20			525
J032-78	20	1028	1553	525
<b>M18.1.PH05001</b>	20			152
J039-102	20	20	172	152
<b>M19.1.DG12603</b>	40			360
J016-40	20	1720	1900	180
J018-42	20	4282	4462	180
<b>M19.2.DG12605</b>	0			0
<b>M20.1.PH50001</b>	60			300
J010-22	30	220	320	100
J001-1	30	390	590	200
<b>M20.2.PH50002</b>	30			211
J033-79	30	30	241	211

Mch/Job	Setup	Start	Stop	Pr.tm
<b>Summary</b>				
<i>Time</i>		1		
<i>C<sub>max</sub></i>		5062		
<i>T<sub>max</sub></i>		2053		
<i>SU<sub>j</sub></i>		11		
<i>SC<sub>j</sub></i>		89420		
<i>ST<sub>j</sub></i>		4731		
<i>Sw<sub>j</sub>C<sub>j</sub></i>		109309		
<i>Sw<sub>j</sub>T<sub>j</sub></i>		4731		



Job Pool - P1.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J001-1</b>	1	0	780	500		20	570	0	0
	 W09 - PE080			150	A	20	170		
	 W04 - PH070			150	A	190	340		
	 W20 - 500T PH			200	B	370	570		
<b>J002-12</b>	1	0	780	750		20	810	30	30
	 W05 - PH300			222	A	20	242		
	 W06 - PE250			168	A	262	430		
	 W03 - PH1			360	A	450	810		
<b>J003-11</b>	1	0	2460	918		1186	2164	0	0
	 W05 - PH300			222	A	1186	1408		
	 W06 - PE250			168	A	1428	1596		
	 W03 - PH1			360	A	1616	1976		
	 W10 - PE030			168	A	1996	2164		
<b>J004-15</b>	1	0	720	660		20	700	0	0
	 W09 - PE08			330	A	20	350		
	 W12 - PE06			330	A	370	700		
<b>J005-17</b>	1	0	615	330		262	592	0	0
	 W05 - PH30			330	A	262	592		
<b>J006-18</b>	1	0	1290	1176		20	1256	0	0
	 W01 - PH			390	A	20	410		
	 W02 - DE085			254	A	430	684		
	 W03 - PH15			308	A	704	1012		
	 W07 - PE150			224	A	1032	1256		
<b>J007-19</b>	1	0	1890	1344		20	1718	0	0
	 W01 - PH			390	A	20	410		
	 W02 - DE085			254	A	704	958		
	 W03 - PH15			308	A	978	1286		
	 W07 - PE150			224	A	1306	1530		
	 W09 - PE080			168	A	1550	1718		

Job Pool - Pl.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J008-20</b>	1	0	1290	1171		20	1251	0	0
				467	A	20	487		
				224	A	507	731		
				230	A	751	981		
				250	A	1001	1251		
<b>J009-21</b>	1	0	1560	1204		20	1410	0	0
				390	A	20	410		
				254	A	430	684		
				308	A	830	1138		
				252	A	1158	1410		
<b>J010-22</b>	1	0	615	250		20	565	0	0
				75	A	20	95		
				75	A	360	435		
				100	B	465	565		
<b>J011-24</b>	1	0	1560	1091		430	1561	1	1
				550	A	430	980		
				350	A	1000	1350		
				191	A	1370	1561		
<b>J012-26</b>	1	0	780	250		370	640	0	0
				125	A	370	495		
				125	A	515	640		
<b>J013-35</b>	1	0	2175	705		1428	2321	146	146
				267	A	1428	1695		
				227	A	1863	2090		
				211	A	2110	2321		
<b>J014-36</b>	1	0	1785	885		612	1569	0	0
				267	A	612	879		
				227	A	899	1126		
				211	A	1158	1369		
				180	A	1389	1569		

Job Pool - Pl.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J015-39</b>	1	0	1395	800		430	1401	6	6
				400	A	430	830		
				400	A	1001	1401		
<b>J016-40</b>	1	0	2175	885		899	2274	99	99
				267	A	899	1166		
				227	A	1616	1843		
				180	A	1863	2043		
				211	A	2063	2274		
<b>J017-41</b>	1	0	2175	687		1498	2225	50	50
				252	A	1498	1750		
				224	A	1770	1994		
				211	A	2014	2225		
<b>J018-42</b>	1	0	3009	1214		1715	3233	224	224
				267	A	1715	1982		
				227	A	2110	2337		
				180	A	2357	2537		
				180	A	2557	2737		
				180	A	2757	2937		
				180	A	3053	3233		
<b>J019-43</b>	1	0	1560	674		850	1564	4	4
				252	A	850	1102		
				211	A	1122	1333		
				211	A	1353	1564		
<b>J020-44</b>	1	0	900	692		20	821	0	0
				101	A	20	121		
				371	A	190	561		
				110	A	581	691		
				110	A	711	821		

Job Pool - Pl.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J021-55</b>	1	0	2565	1269		1112	2582	17	17
			<b>W01 - PH</b>	390	A	1112	1502		
			<b>W02 - DE085</b>	254	A	1522	1776		
			<b>W03 - PH150</b>	308	A	1796	2104		
			<b>W04 - PH070</b>	93	A	2245	2338		
			<b>W09 - PE080</b>	224	A	2358	2582		
<b>J022-60</b>	1	0	900	660		20	700	0	0
			<b>W07 - PE15</b>	330	A	20	350		
			<b>W03 - PH15</b>	330	A	370	700		
<b>J023-61</b>	1	0	615	330		20	350	0	0
			<b>W03 - PH15</b>	330	A	20	350		
<b>J024-62</b>	1	0	2238	1035		20	1745	0	0
			<b>W03 - PH15</b>	467	A	20	487		
			<b>W02 - DE085</b>	224	A	751	975		
			<b>W09 - PE080</b>	180	A	995	1175		
			<b>W04 - PH070</b>	164	A	1581	1745		
<b>J025-65</b>	1	0	780	331		20	676	0	0
			<b>W10 - PE030</b>	170	A	20	190		
			<b>W09 - PE080</b>	161	A	515	676		
<b>J026-67</b>	1	0	3162	362		2776	3404	242	242
			<b>W05 - PH300</b>	211	A	2776	2987		
			<b>W09 - PE080</b>	151	A	3253	3404		
<b>J027-70</b>	1	0	1785	810		20	1302	0	0
			<b>W03 - PH150</b>	252	A	20	272		
			<b>W02 - DE085</b>	211	A	704	915		
			<b>W07 - PE150</b>	125	A	935	1060		
			<b>W16 - SD400</b>	222	A	1080	1302		



Job Pool - P1.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J028-72</b>	1	0	900	825		20	905	5	5
			<b>W03 - PH150</b>	252	A	20	272		
			<b>W14 - DE0850</b>	224	A	292	516		
			<b>W07 - PE150</b>	125	A	536	661		
			<b>W12 - PE060</b>	224	A	681	905		
<b>J029-74</b>	1	0	2955	921		2002	2963	8	8
			<b>W05 - PH300</b>	467	A	2002	2469		
			<b>W02 - DE085</b>	224	A	2489	2713		
			<b>W07 - PE150</b>	230	A	2733	2963		
<b>J030-75</b>	1	0	3240	705		2489	3234	0	0
			<b>W05 - PH300</b>	267	A	2489	2756		
			<b>W06 - PE250</b>	227	A	2776	3003		
			<b>W07 - PE150</b>	211	A	3023	3234		
<b>J031-77</b>	1	0	1680	777		702	1499	0	0
			<b>W01 - PH350</b>	252	A	702	954		
			<b>W17 - SB200</b>	525	A	974	1499		
<b>J032-78</b>	1	0	1950	1123		430	1613	0	0
			<b>W01 - PH350</b>	252	A	430	682		
			<b>W10 - PE030</b>	172	A	702	874		
			<b>W17 - SB200</b>	525	A	894	1419		
			<b>W09 - PE080</b>	174	A	1439	1613		
<b>J033-79</b>	1	0	615	211		30	241	0	0
			<b>W20 - 500T PH</b>	211	B	30	241		
<b>J034-84</b>	1	0	4230	797		3417	4254	24	24
			<b>W05 - PH300</b>	390	A	3417	3807		
			<b>W06 - PE250</b>	227	A	3827	4054		
			<b>W09 - PE080</b>	180	A	4074	4254		
<b>J035-85</b>	1	0	3630	617		3007	3644	14	14
			<b>W05 - PH300</b>	390	A	3007	3397		
			<b>W06 - PE250</b>	227	A	3417	3644		

Job Pool - Pl.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J036-93</b>	1	0	2340	1142		1000	2354	14	14
				478	A	1000	1478		
				254	A	1498	1752		
				180	A	1772	1952		
				230	A	2124	2354		
<b>J037-95</b>	1	0	615	252		20	272	0	0
				252	A	20	272		
<b>J038-97</b>	1	0	1110	669		20	1044	0	0
				201	A	20	221		
				171	A	536	707		
				126	A	727	853		
				171	A	873	1044		
<b>J039-102</b>	1	0	615	304		20	522	0	0
				152	A	20	172		
				152	A	370	522		
<b>J040-105</b>	1	0	4680	713		3827	4600	0	0
				188	A	3827	4015		
				159	A	4035	4194		
				183	A	4214	4397		
				183	A	4417	4600		
<b>J041-106</b>	1	0	1680	530		657	1733	53	53
				188	A	657	845		
				159	A	1106	1265		
				183	A	1550	1733		
<b>J042-108</b>	1	0	1290	684		241	1263	0	0
				188	A	241	429		
				180	A	727	907		
				136	A	927	1063		
				180	A	1083	1263		

Job Pool - P1.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J043-110</b>	1	0	1290	530		449	1289	0	0
				188	A	449	637		
				159	A	927	1086		
				183	A	1106	1289		
<b>J044-116</b>	1	0	615	151		20	171	0	0
				151	A	20	171		
<b>J045-19</b>	2	0	3345	2166		20	2603	0	0
				150	A	20	170		
				585	A	507	1092		
				381	A	1112	1493		
				462	A	1513	1975		
				336	A	1995	2331		
				252	A	2351	2603		
<b>J046-21</b>	2	0	3060	1806		974	3033	0	0
				585	A	974	1559		
				381	A	1772	2153		
				462	A	2173	2635		
				378	A	2655	3033		
<b>J047-78</b>	2	0	3630	1685		1522	3267	0	0
				378	A	1522	1900		
				258	A	1920	2178		
				788	A	2198	2986		
				261	A	3006	3267		
<b>J048-93</b>	2	0	3900	1713		1579	3922	22	44
				717	A	1579	2296		
				381	A	2316	2697		
				270	A	3287	3557		
				345	A	3577	3922		

Job Pool - Pl.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J049-55</b>	2	0	3840	1904		1122	3760	0	0
				585	A	1122	1707		
				381	A	1796	2177		
				462	A	2294	2756		
				140	A	2776	2916		
				336	A	3424	3760		
<b>J050-18</b>	2	0	4680	1764		1727	3551	0	0
				585	A	1727	2312		
				381	A	2332	2713		
				462	A	2733	3195		
				336	A	3215	3551		

Sequence - Seqs \* (CR)

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M01.1.PH35001</b>	80			1670
J006-18	20	20	410	390
J011-24	20	430	980	550
J036-93	20	1000	1478	478
J017-41	20	1498	1750	252
<b>M01.2.PH30002</b>	80			1820
J008-20	20	20	487	467
J045-19	20	507	1092	585
J021-55	20	1112	1502	390
J047-78	20	1522	1900	378
<b>M01.3.PH60001</b>	100			2212
J009-21	20	20	410	390
J015-39	20	430	830	400
J019-43	20	850	1102	252
J049-55	20	1122	1707	585
J050-18	20	1727	2312	585
<b>M01.4.PH20001</b>	100			2196
J007-19	20	20	410	390
J032-78	20	430	682	252
J031-77	20	702	954	252
J046-21	20	974	1559	585
J048-93	20	1579	2296	717
<b>M02.1.DE08001</b>	100			1306
J006-18	20	430	684	254
J007-19	20	704	958	254
J011-24	20	1000	1350	350
J017-41	20	1770	1994	224
J029-74	20	2489	2713	224
<b>M02.2.DE08502</b>	100			1464
J008-20	20	507	731	224
J024-62	20	751	975	224
J036-93	20	1498	1752	254
J046-21	20	1772	2153	381
J048-93	20	2316	2697	381
<b>M02.3.DE08504</b>	120			1862
J009-21	20	430	684	254
J027-70	20	704	915	211
J045-19	20	1112	1493	381
J021-55	20	1522	1776	254
J049-55	20	1796	2177	381
J050-18	20	2332	2713	381

Sequence - Seqs \* (CR)

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M03.1.PH15001</b>	160			2478
J028-72	20	20	272	252
J002-12	20	450	810	360
J009-21	20	830	1138	308
J014-36	20	1158	1369	211
J003-11	20	1616	1976	360
J046-21	20	2173	2635	462
J018-42	20	2757	2937	180
J048-93	20	3577	3922	345
<b>M03.2.PH15002</b>	140			2136
J023-61	20	20	350	330
J039-102	20	370	522	152
J006-18	20	704	1012	308
J019-43	20	1122	1333	211
J045-19	20	1513	1975	462
J016-40	20	2063	2274	211
J049-55	20	2294	2756	462
<b>M03.3.PH15003</b>	120			2097
J024-62	20	20	487	467
J008-20	20	751	981	230
J015-39	20	1001	1401	400
J021-55	20	1796	2104	308
J036-93	20	2124	2354	230
J050-18	20	2733	3195	462
<b>M03.4.PH15004</b>	80			1101
J027-70	20	20	272	252
J022-60	20	370	700	330
J007-19	20	978	1286	308
J013-35	20	2110	2321	211
<b>M04.1.PH07001</b>	180			1424
J045-19	20	20	170	150
J001-1	20	190	340	150
J010-22	20	360	435	75
J008-20	20	1001	1251	250
J011-24	20	1370	1561	191
J024-62	20	1581	1745	164
J017-41	20	2014	2225	211
J021-55	20	2245	2338	93
J049-55	20	2776	2916	140

Sequence - Seqs \* (CR)

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M05.1.PH30001</b>	260			3755
J002-12	20	20	242	222
J005-17	20	262	592	330
J014-36	20	612	879	267
J016-40	20	899	1166	267
J003-11	20	1186	1408	222
J013-35	20	1428	1695	267
J018-42	20	1715	1982	267
J029-74	20	2002	2469	467
J030-75	20	2489	2756	267
J026-67	20	2776	2987	211
J035-85	20	3007	3397	390
J034-84	20	3417	3807	390
J040-105	20	3827	4015	188
<b>M06.1.PE25001</b>	180			1925
J002-12	20	262	430	168
J014-36	20	899	1126	227
J003-11	20	1428	1596	168
J016-40	20	1616	1843	227
J013-35	20	1863	2090	227
J018-42	20	2110	2337	227
J030-75	20	2776	3003	227
J035-85	20	3417	3644	227
J034-84	20	3827	4054	227
<b>M07.1.PE15002</b>	160			1800
J022-60	20	20	350	330
J028-72	20	536	661	125
J006-18	20	1032	1256	224
J019-43	20	1353	1564	211
J045-19	20	1995	2331	336
J018-42	20	2557	2737	180
J030-75	20	3023	3234	211
J040-105	20	4214	4397	183
<b>M07.2.PE15003</b>	120			1249
J044-116	20	20	171	151
J027-70	20	935	1060	125
J007-19	20	1306	1530	224
J041-106	20	1550	1733	183
J029-74	20	2733	2963	230
J050-18	20	3215	3551	336
<b>M08.1.PA13003</b>	40			362
J037-95	20	20	272	252
J020-44	20	581	691	110
<b>M08.2.PA13004</b>	20			75
J010-22	20	20	95	75

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M09.1.PE08002</b>	240			2665
J004-15	20	20	350	330
J012-26	20	370	495	125
J025-65	20	515	676	161
J009-21	20	1158	1410	252
J007-19	20	1550	1718	168
J036-93	20	1772	1952	180
J021-55	20	2358	2582	224
J046-21	20	2655	3033	378
J018-42	20	3053	3233	180
J026-67	20	3253	3404	151
J049-55	20	3424	3760	336
J034-84	20	4074	4254	180
<b>M09.1.PE08003</b>	140			1658
J001-1	20	20	170	150
J020-44	20	190	561	371
J024-62	20	995	1175	180
J032-78	20	1439	1613	174
J045-19	20	2351	2603	252
J047-78	20	3006	3267	261
J048-93	20	3287	3557	270
<b>M10.1.PE03005</b>	120			1041
J025-65	20	20	190	170
J012-26	20	515	640	125
J032-78	20	702	874	172
J042-108	20	927	1063	136
J014-36	20	1389	1569	180
J047-78	20	1920	2178	258
<b>M10.2.PE03008</b>	40			278
J020-44	20	711	821	110
J003-11	20	1996	2164	168
<b>M11.1.PA12502</b>	0			0
<b>M12.1.PE06002</b>	40			431
J020-44	20	20	121	101
J004-15	20	370	700	330
<b>M12.2.PE06007</b>	20			224
J028-72	20	681	905	224
<b>M13.1.PH16001</b>	80			765
J038-97	20	20	221	201
J042-108	20	241	429	188
J043-110	20	449	637	188
J041-106	20	657	845	188

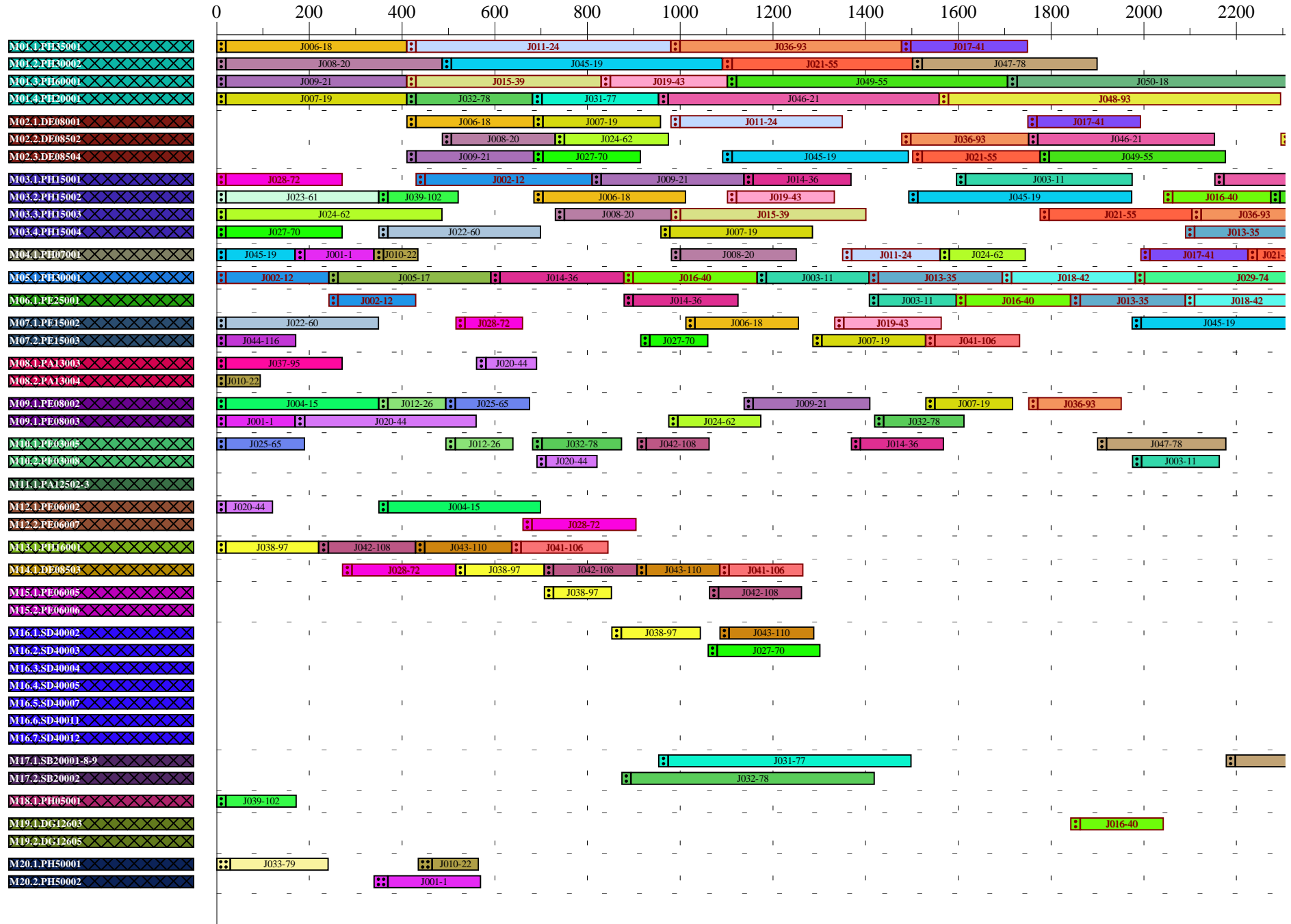


Sequence - Seqs \* (CR)

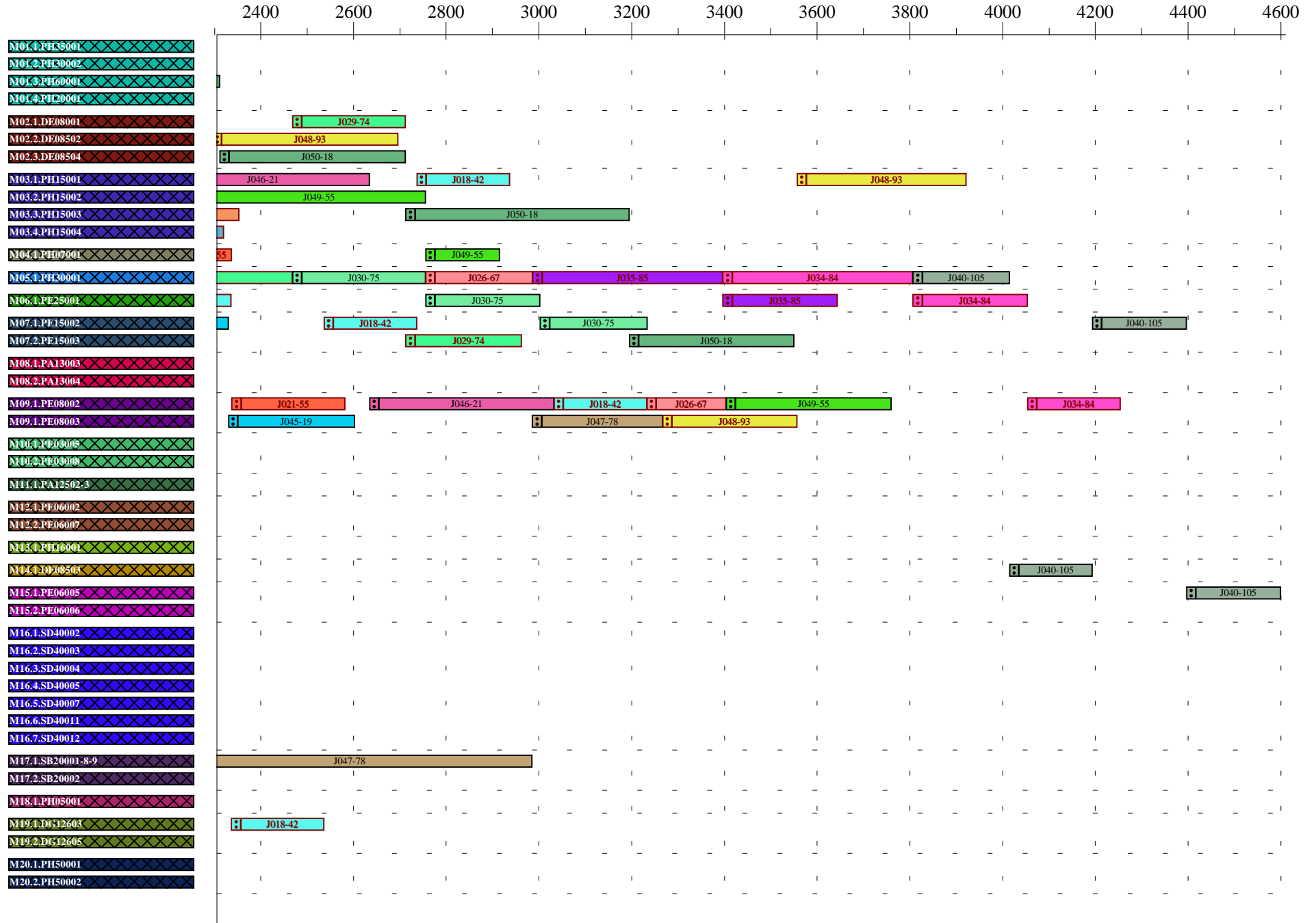
Mch/Job	Setup	Start	Stop	Pr.tm
<b>M14.1.DE08503</b>	120			1052
<b>J028-72</b>	20	292	516	224
<b>J038-97</b>	20	536	707	171
<b>J042-108</b>	20	727	907	180
<b>J043-110</b>	20	927	1086	159
<b>J041-106</b>	20	1106	1265	159
<b>J040-105</b>	20	4035	4194	159
<b>M15.1.PE06005</b>	60			489
<b>J038-97</b>	20	727	853	126
<b>J042-108</b>	20	1083	1263	180
<b>J040-105</b>	20	4417	4600	183
<b>M15.2.PE06006</b>	0			0
<b>M16.1.SD40002</b>	40			354
<b>J038-97</b>	20	873	1044	171
<b>J043-110</b>	20	1106	1289	183
<b>M16.2.SD40003</b>	20			222
<b>J027-70</b>	20	1080	1302	222
<b>M16.3.SD40004</b>	0			0
<b>M16.4.SD40005</b>	0			0
<b>M16.5.SD40007</b>	0			0
<b>M16.6.SD40011</b>	0			0
<b>M16.7.SD40012</b>	0			0
<b>M17.1.SB20001</b>	40			1313
<b>J031-77</b>	20	974	1499	525
<b>J047-78</b>	20	2198	2986	788
<b>M17.2.SB20002</b>	20			525
<b>J032-78</b>	20	894	1419	525
<b>M18.1.PH05001</b>	20			152
<b>J039-102</b>	20	20	172	152
<b>M19.1.DG12603</b>	40			360
<b>J016-40</b>	20	1863	2043	180
<b>J018-42</b>	20	2357	2537	180
<b>M19.2.DG12605</b>	0			0
<b>M20.1.PH50001</b>	60			311
<b>J033-79</b>	30	30	241	211
<b>J010-22</b>	30	465	565	100
<b>M20.2.PH50002</b>	30			200
<b>J001-1</b>	30	370	570	200

Mch/Job	Setup	Start	Stop	Pr.tm
<b>Summary</b>				
<i>Time</i>		1		
<i>C<sub>max</sub></i>		4600		
<i>T<sub>max</sub></i>		242		
<i>SU<sub>j</sub></i>		17		
<i>SC<sub>j</sub></i>		91141		
<i>ST<sub>j</sub></i>		959		
<i>Sw<sub>j</sub>C<sub>j</sub></i>		111277		
<i>Sw<sub>j</sub>T<sub>j</sub></i>		981		























Gantt Chart - Seqs (CR)



Gantt Chart - Seqs (CR)



Job Pool - P1.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J001-1</b>	1	0	780	500		20	590	0	0
	 W09 - PE080			150	A	20	170		
	 W04 - PH070			150	A	210	360		
	 W20 - 500T PH			200	B	390	590		
<b>J002-12</b>	1	0	780	750		370	1160	380	380
	 W05 - PH300			222	A	370	592		
	 W06 - PE250			168	A	612	780		
	 W03 - PH1			360	A	800	1160		
<b>J003-11</b>	1	0	2460	918		1473	2456	0	0
	 W05 - PH300			222	A	1473	1695		
	 W06 - PE250			168	A	1720	1888		
	 W03 - PH1			360	A	1908	2268		
	 W10 - PE030			168	A	2288	2456		
<b>J004-15</b>	1	0	720	660		20	700	0	0
	 W09 - PE08			330	A	20	350		
	 W12 - PE06			330	A	370	700		
<b>J005-17</b>	1	0	615	330		20	350	0	0
	 W05 - PH30			330	A	20	350		
<b>J006-18</b>	1	0	1290	1176		20	1256	0	0
	 W01 - PH			390	A	20	410		
	 W02 - DE085			254	A	430	684		
	 W03 - PH15			308	A	704	1012		
	 W07 - PE150			224	A	1032	1256		
<b>J007-19</b>	1	0	1890	1344		507	1931	41	41
	 W01 - PH			390	A	507	897		
	 W02 - DE085			254	A	917	1171		
	 W03 - PH15			308	A	1191	1499		
	 W07 - PE150			224	A	1519	1743		
	 W09 - PE080			168	A	1763	1931		

Job Pool - Pl.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J008-20</b>	1	0	1290	1171		20	1251	0	0
				467	A	20	487		
				224	A	507	731		
				230	A	751	981		
				250	A	1001	1251		
<b>J009-21</b>	1	0	1560	1204		20	1440	0	0
				390	A	20	410		
				254	A	430	684		
				308	A	860	1168		
				252	A	1188	1440		
<b>J010-22</b>	1	0	615	250		20	320	0	0
				75	A	20	95		
				75	A	115	190		
				100	B	220	320		
<b>J011-24</b>	1	0	1560	1091		430	1561	1	1
				550	A	430	980		
				350	A	1000	1350		
				191	A	1370	1561		
<b>J012-26</b>	1	0	780	250		190	460	0	0
				125	A	190	315		
				125	A	335	460		
<b>J013-35</b>	1	0	2175	705		899	1644	0	0
				267	A	899	1166		
				227	A	1186	1413		
				211	A	1433	1644		
<b>J014-36</b>	1	0	1785	885		612	1557	0	0
				267	A	612	879		
				227	A	899	1126		
				211	A	1146	1357		
				180	A	1377	1557		

Job Pool - Pl.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J015-39</b>	1	0	1395	800		20	840	0	0
				400	A	20	420		
				400	A	440	840		
<b>J016-40</b>	1	0	2175	885		1186	2131	0	0
				267	A	1186	1453		
				227	A	1473	1700		
				180	A	1720	1900		
				211	A	1920	2131		
<b>J017-41</b>	1	0	2175	687		712	1792	0	0
				252	A	712	964		
				224	A	984	1208		
				211	A	1581	1792		
<b>J018-42</b>	1	0	3009	1214		2202	3516	507	507
				267	A	2202	2469		
				227	A	2489	2716		
				180	A	2736	2916		
				180	A	2936	3116		
				180	A	3136	3316		
				180	A	3336	3516		
<b>J019-43</b>	1	0	1560	674		430	1443	0	0
				252	A	430	682		
				211	A	1001	1212		
				211	A	1232	1443		
<b>J020-44</b>	1	0	900	692		20	1001	101	101
				101	A	20	121		
				371	A	370	741		
				110	A	761	871		
				110	A	891	1001		

Job Pool - Pl.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J021-55</b>	1	0	2565	1269		974	2376	0	0
				W01 - PH	390	A	974	1364	
				W02 - DE085	254	A	1384	1638	
				W03 - PH150	308	A	1658	1966	
				W04 - PH070	93	A	1986	2079	
				W09 - PE080	224	A	2152	2376	
<b>J022-60</b>	1	0	900	660		20	700	0	0
				W07 - PE15	330	A	20	350	
				W03 - PH15	330	A	370	700	
<b>J023-61</b>	1	0	615	330		20	350	0	0
				W03 - PH15	330	A	20	350	
<b>J024-62</b>	1	0	2238	1035		1232	2327	89	89
				W03 - PH15	467	A	1232	1699	
				W02 - DE085	224	A	1719	1943	
				W09 - PE080	180	A	1963	2143	
				W04 - PH070	164	A	2163	2327	
<b>J025-65</b>	1	0	780	331		20	496	0	0
				W10 - PE030	170	A	20	190	
				W09 - PE080	161	A	335	496	
<b>J026-67</b>	1	0	3162	362		2489	2871	0	0
				W05 - PH300	211	A	2489	2700	
				W09 - PE080	151	A	2720	2871	
<b>J027-70</b>	1	0	1785	810		20	1302	0	0
				W03 - PH150	252	A	20	272	
				W02 - DE085	211	A	704	915	
				W07 - PE150	125	A	935	1060	
				W16 - SD400	222	A	1080	1302	



Job Pool - P1.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J028-72</b>	1	0	900	825		20	905	5	5
				W03 - PH150	252	A	20	272	
				W14 - DE0850	224	A	292	516	
				W07 - PE150	125	A	536	661	
				W12 - PE060	224	A	681	905	
<b>J029-74</b>	1	0	2955	921		1715	2676	0	0
				W05 - PH30	467	A	1715	2182	
				W02 - DE085	224	A	2202	2426	
				W07 - PE150	230	A	2446	2676	
<b>J030-75</b>	1	0	3240	705		2720	3465	225	225
				W05 - PH300	267	A	2720	2987	
				W06 - PE250	227	A	3007	3234	
				W07 - PE150	211	A	3254	3465	
<b>J031-77</b>	1	0	1680	777		440	1237	0	0
				W01 - PH350	252	A	440	692	
				W17 - SB200	525	A	712	1237	
<b>J032-78</b>	1	0	1950	1123		702	1932	0	0
				W01 - PH350	252	A	702	954	
				W10 - PE030	172	A	1021	1193	
				W17 - SB200	525	A	1213	1738	
				W09 - PE080	174	A	1758	1932	
<b>J033-79</b>	1	0	615	211		30	241	0	0
				W20 - 500T PH	211	B	30	241	
<b>J034-84</b>	1	0	4230	797		3417	4254	24	24
				W05 - PH	390	A	3417	3807	
				W06 - PE250	227	A	3827	4054	
				W09 - PE080	180	A	4074	4254	
<b>J035-85</b>	1	0	3630	617		3007	3644	14	14
				W05 - PH	390	A	3007	3397	
				W06 - PE250	227	A	3417	3644	

Job Pool - P1.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J036-93</b>	1	0	2340	1142		917	2382	42	42
<b>J037-95</b>	1	0	615	252		20	272	0	0
<b>J038-97</b>	1	0	1110	669		20	1044	0	0
<b>J039-102</b>	1	0	615	304		20	444	0	0
<b>J040-105</b>	1	0	4680	713		3827	4600	0	0
<b>J041-106</b>	1	0	1680	530		657	1468	0	0
<b>J042-108</b>	1	0	1290	684		241	1263	0	0

Job Pool - P1.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J043-110</b>	1	0	1290	530		449	1289	0	0
				188	A	449	637		
				159	A	927	1086		
				183	A	1106	1289		
<b>J044-116</b>	1	0	615	151		20	171	0	0
				151	A	20	171		
<b>J045-19</b>	2	0	3345	2166		380	3241	0	0
				150	A	380	530		
				585	A	1000	1585		
				381	A	1689	2070		
				462	A	2151	2613		
				336	A	2633	2969		
				252	A	2989	3241		
<b>J046-21</b>	2	0	3060	1806		984	2919	0	0
				585	A	984	1569		
				381	A	1658	2039		
				462	A	2059	2521		
				378	A	2541	2919		
<b>J047-78</b>	2	0	3630	1685		1384	3200	0	0
				378	A	1384	1762		
				258	A	1782	2040		
				788	A	2060	2848		
				261	A	2939	3200		
<b>J048-93</b>	2	0	3900	1713		1589	4171	271	542
				717	A	1589	2306		
				381	A	2326	2707		
				270	A	3536	3806		
				345	A	3826	4171		

Job Pool - P1.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J049-55</b>	2	0	3840	1904		1415	3597	0	0
				585	A	1415	2000		
				381	A	2059	2440		
				462	A	2460	2922		
				140	A	2942	3082		
				336	A	3261	3597		
<b>J050-18</b>	2	0	4680	1764		1605	3665	0	0
				585	A	1605	2190		
				381	A	2446	2827		
				462	A	2847	3309		
				336	A	3329	3665		

Sequence - Seqs \* (EDD)

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M01.1.PH35001</b>	80			2110
J006-18	20	20	410	390
J011-24	20	430	980	550
J045-19	20	1000	1585	585
J050-18	20	1605	2190	585
<b>M01.2.PH30002</b>	80			1920
J008-20	20	20	487	467
J007-19	20	507	897	390
J036-93	20	917	1395	478
J049-55	20	1415	2000	585
<b>M01.3.PH60001</b>	100			2206
J015-39	20	20	420	400
J031-77	20	440	692	252
J017-41	20	712	964	252
J046-21	20	984	1569	585
J048-93	20	1589	2306	717
<b>M01.4.PH20001</b>	100			1662
J009-21	20	20	410	390
J019-43	20	430	682	252
J032-78	20	702	954	252
J021-55	20	974	1364	390
J047-78	20	1384	1762	378
<b>M02.1.DE08001</b>	120			1705
J006-18	20	430	684	254
J027-70	20	704	915	211
J017-41	20	984	1208	224
J036-93	20	1415	1669	254
J045-19	20	1689	2070	381
J048-93	20	2326	2707	381
<b>M02.2.DE08502</b>	100			1590
J008-20	20	507	731	224
J011-24	20	1000	1350	350
J021-55	20	1384	1638	254
J046-21	20	1658	2039	381
J049-55	20	2059	2440	381
<b>M02.3.DE08504</b>	100			1337
J009-21	20	430	684	254
J007-19	20	917	1171	254
J024-62	20	1719	1943	224
J029-74	20	2202	2426	224
J050-18	20	2446	2827	381

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M03.1.PH15001</b>	160			2374
J023-61	20	20	350	330
J006-18	20	704	1012	308
J014-36	20	1146	1357	211
J021-55	20	1658	1966	308
J036-93	20	2152	2382	230
J049-55	20	2460	2922	462
J018-42	20	3136	3316	180
J048-93	20	3826	4171	345
<b>M03.2.PH15002</b>	160			2447
J028-72	20	20	272	252
J039-102	20	292	444	152
J008-20	20	751	981	230
J019-43	20	1001	1212	211
J024-62	20	1232	1699	467
J016-40	20	1920	2131	211
J045-19	20	2151	2613	462
J050-18	20	2847	3309	462
<b>M03.3.PH15003</b>	100			1610
J027-70	20	20	272	252
J022-60	20	370	700	330
J002-12	20	800	1160	360
J007-19	20	1191	1499	308
J003-11	20	1908	2268	360
<b>M03.4.PH15004</b>	80			1381
J015-39	20	440	840	400
J009-21	20	860	1168	308
J013-35	20	1433	1644	211
J046-21	20	2059	2521	462
<b>M04.1.PH07001</b>	180			1424
J010-22	20	115	190	75
J001-1	20	210	360	150
J045-19	20	380	530	150
J008-20	20	1001	1251	250
J011-24	20	1370	1561	191
J017-41	20	1581	1792	211
J021-55	20	1986	2079	93
J024-62	20	2163	2327	164
J049-55	20	2942	3082	140

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M05.1.PH30001</b>	260			3755
J005-17	20	20	350	330
J002-12	20	370	592	222
J014-36	20	612	879	267
J013-35	20	899	1166	267
J016-40	20	1186	1453	267
J003-11	20	1473	1695	222
J029-74	20	1715	2182	467
J018-42	20	2202	2469	267
J026-67	20	2489	2700	211
J030-75	20	2720	2987	267
J035-85	20	3007	3397	390
J034-84	20	3417	3807	390
J040-105	20	3827	4015	188
<b>M06.1.PE25001</b>	180			1925
J002-12	20	612	780	168
J014-36	20	899	1126	227
J013-35	20	1186	1413	227
J016-40	20	1473	1700	227
J003-11	20	1720	1888	168
J018-42	20	2489	2716	227
J030-75	20	3007	3234	227
J035-85	20	3417	3644	227
J034-84	20	3827	4054	227
<b>M07.1.PE15002</b>	180			1711
J044-116	20	20	171	151
J028-72	20	536	661	125
J006-18	20	1032	1256	224
J041-106	20	1285	1468	183
J007-19	20	1519	1743	224
J029-74	20	2446	2676	230
J018-42	20	2936	3116	180
J030-75	20	3254	3465	211
J040-105	20	4214	4397	183
<b>M07.2.PE15003</b>	100			1338
J022-60	20	20	350	330
J027-70	20	935	1060	125
J019-43	20	1232	1443	211
J045-19	20	2633	2969	336
J050-18	20	3329	3665	336
<b>M08.1.PA13003</b>	40			185
J010-22	20	20	95	75
J020-44	20	761	871	110
<b>M08.2.PA13004</b>	20			252
J037-95	20	20	272	252

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M09.1.PE08002</b>	200			2570
J004-15	20	20	350	330
J020-44	20	370	741	371
J009-21	20	1188	1440	252
J007-19	20	1763	1931	168
J024-62	20	1963	2143	180
J046-21	20	2541	2919	378
J047-78	20	2939	3200	261
J018-42	20	3336	3516	180
J048-93	20	3536	3806	270
J034-84	20	4074	4254	180
<b>M09.1.PE08003</b>	180			1753
J001-1	20	20	170	150
J012-26	20	190	315	125
J025-65	20	335	496	161
J032-78	20	1758	1932	174
J036-93	20	1952	2132	180
J021-55	20	2152	2376	224
J026-67	20	2720	2871	151
J045-19	20	2989	3241	252
J049-55	20	3261	3597	336
<b>M10.1.PE03005</b>	140			1183
J025-65	20	20	190	170
J012-26	20	335	460	125
J020-44	20	891	1001	110
J032-78	20	1021	1193	172
J014-36	20	1377	1557	180
J047-78	20	1782	2040	258
J003-11	20	2288	2456	168
<b>M10.2.PE03008</b>	20			136
J042-108	20	927	1063	136
<b>M11.1.PA12502</b>	0			0
<b>M12.1.PE06002</b>	40			431
J020-44	20	20	121	101
J004-15	20	370	700	330
<b>M12.2.PE06007</b>	20			224
J028-72	20	681	905	224
<b>M13.1.PH16001</b>	80			765
J038-97	20	20	221	201
J042-108	20	241	429	188
J043-110	20	449	637	188
J041-106	20	657	845	188

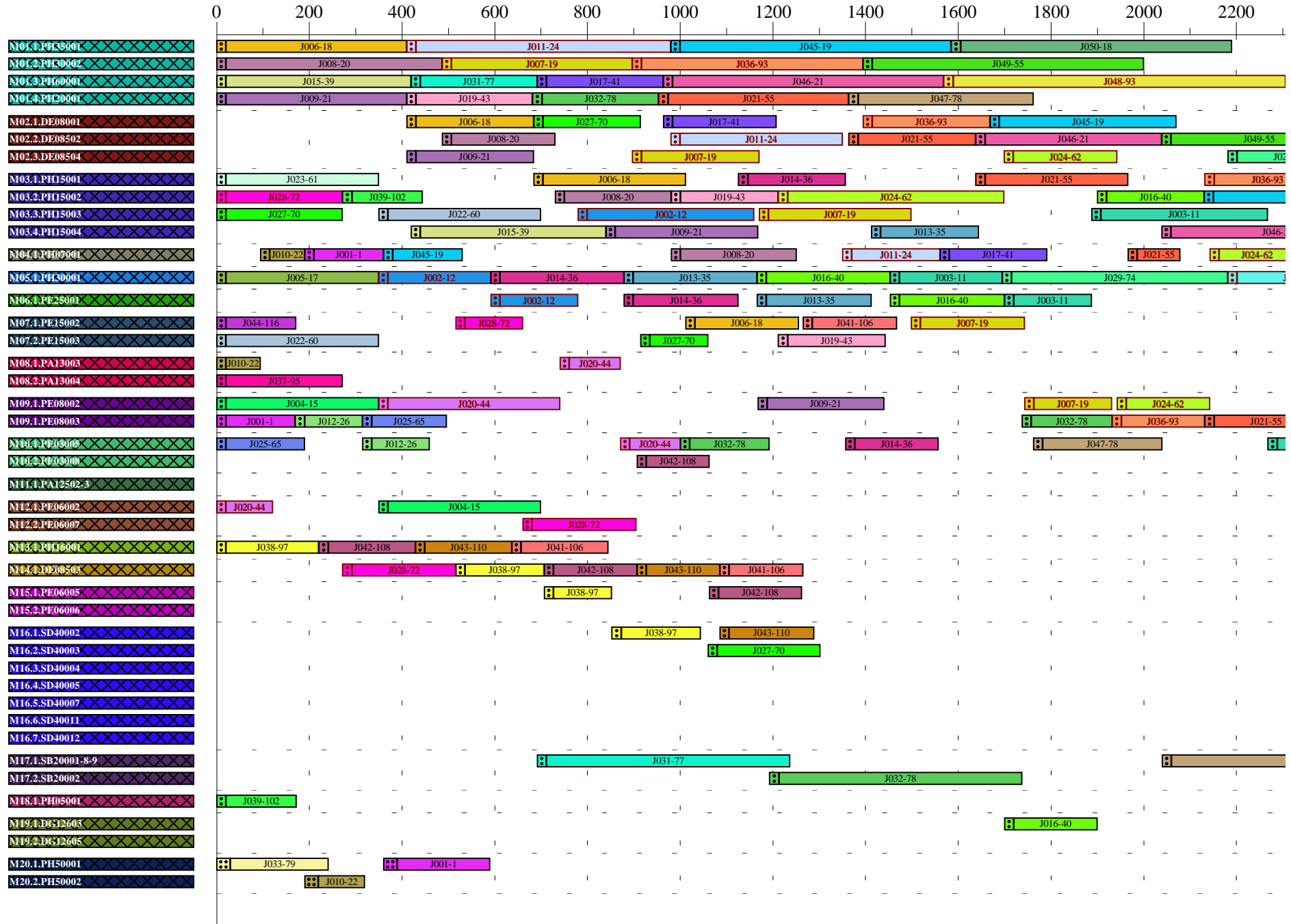


Sequence - Seqs \* (EDD)

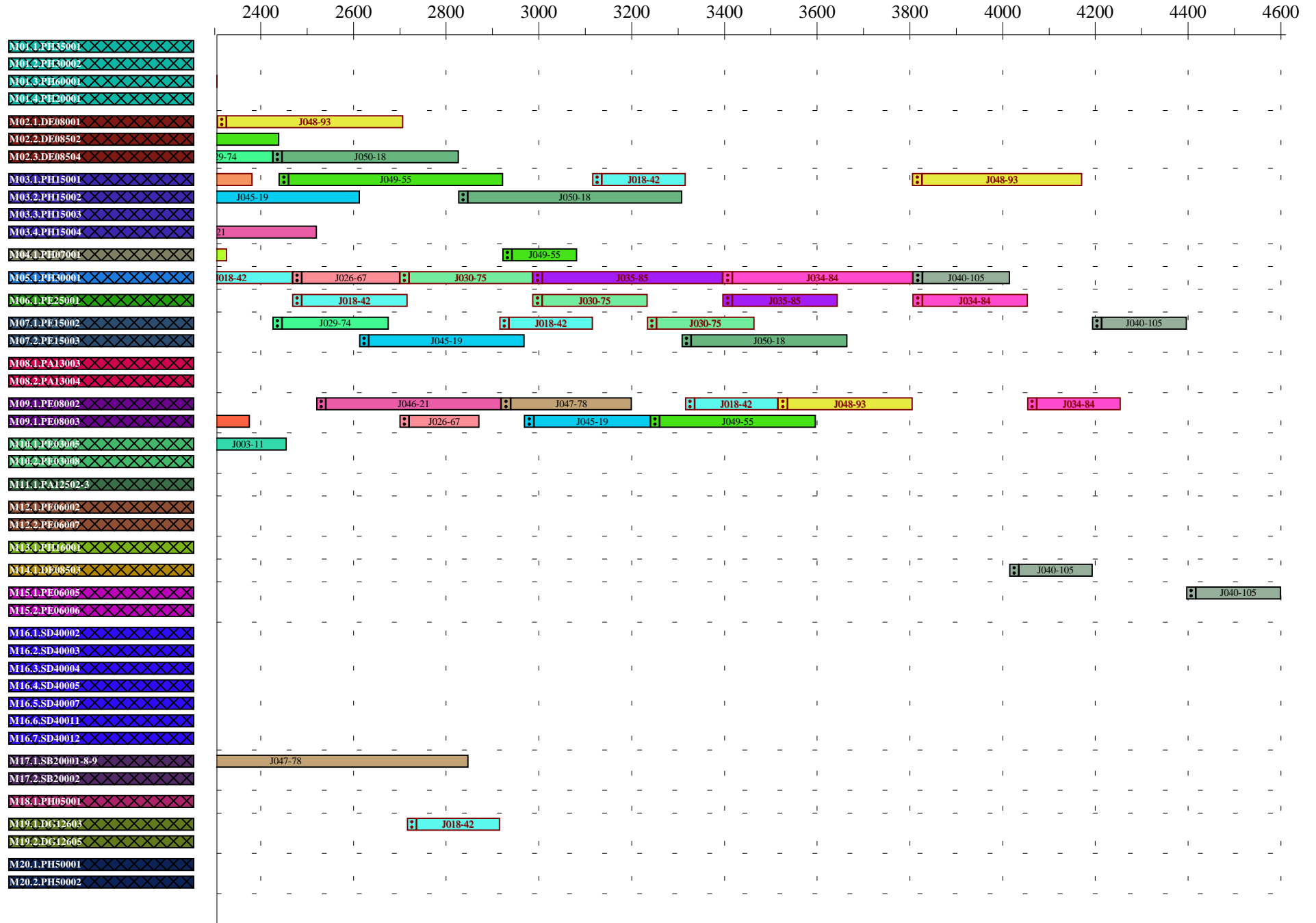
Mch/Job	Setup	Start	Stop	Pr.tm
<b>M14.1.DE08503</b>	120			1052
J028-72	20	292	516	224
J038-97	20	536	707	171
J042-108	20	727	907	180
J043-110	20	927	1086	159
J041-106	20	1106	1265	159
J040-105	20	4035	4194	159
<b>M15.1.PE06005</b>	60			489
J038-97	20	727	853	126
J042-108	20	1083	1263	180
J040-105	20	4417	4600	183
<b>M15.2.PE06006</b>	0			0
<b>M16.1.SD40002</b>	40			354
J038-97	20	873	1044	171
J043-110	20	1106	1289	183
<b>M16.2.SD40003</b>	20			222
J027-70	20	1080	1302	222
<b>M16.3.SD40004</b>	0			0
<b>M16.4.SD40005</b>	0			0
<b>M16.5.SD40007</b>	0			0
<b>M16.6.SD40011</b>	0			0
<b>M16.7.SD40012</b>	0			0
<b>M17.1.SB20001</b>	40			1313
J031-77	20	712	1237	525
J047-78	20	2060	2848	788
<b>M17.2.SB20002</b>	20			525
J032-78	20	1213	1738	525
<b>M18.1.PH05001</b>	20			152
J039-102	20	20	172	152
<b>M19.1.DG12603</b>	40			360
J016-40	20	1720	1900	180
J018-42	20	2736	2916	180
<b>M19.2.DG12605</b>	0			0
<b>M20.1.PH50001</b>	60			411
J033-79	30	30	241	211
J001-1	30	390	590	200
<b>M20.2.PH50002</b>	30			100
J010-22	30	220	320	100

Mch/Job	Setup	Start	Stop	Pr.tm
<b>Summary</b>				
<i>Time</i>		1		
<i>C<sub>max</sub></i>		4600		
<i>T<sub>max</sub></i>		507		
<i>SU<sub>j</sub></i>		12		
<i>SC<sub>j</sub></i>		89901		
<i>ST<sub>j</sub></i>		1700		
<i>Sw<sub>j</sub>C<sub>j</sub></i>		110694		
<i>Sw<sub>j</sub>T<sub>j</sub></i>		1971		

Gantt Chart - Seqs (EDD)



Gantt Chart - Seqs (EDD)



Job Pool - P1.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J001-1</b>	1	0	780	500		20	665	0	0
	W09 - PE080			150	A	20	170		
	W04 - PH070			150	A	285	435		
	W20 - 500T PH			200	B	465	665		
<b>J002-12</b>	1	0	780	750		20	810	30	30
	W05 - PH300			222	A	20	242		
	W06 - PE250			168	A	262	430		
	W03 - PH1			360	A	450	810		
<b>J003-11</b>	1	0	2460	918		262	1240	0	0
	W05 - PH300			222	A	262	484		
	W06 - PE250			168	A	504	672		
	W03 - PH1			360	A	692	1052		
	W10 - PE030			168	A	1072	1240		
<b>J004-15</b>	1	0	720	660		20	700	0	0
	W09 - PE08			330	A	20	350		
	W12 - PE06			330	A	370	700		
<b>J005-17</b>	1	0	615	330		1652	1982	1367	1367
	W05 - PH30			330	A	1652	1982		
<b>J006-18</b>	1	0	1290	1176		20	1256	0	0
	W01 - PH			390	A	20	410		
	W02 - DE085			254	A	430	684		
	W03 - PH15			308	A	704	1012		
	W07 - PE150			224	A	1032	1256		
<b>J007-19</b>	1	0	1890	1344		20	1470	0	0
	W01 - PH			390	A	20	410		
	W02 - DE085			254	A	430	684		
	W03 - PH15			308	A	720	1028		
	W07 - PE150			224	A	1058	1282		
	W09 - PE080			168	A	1302	1470		

Job Pool - Pl.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J008-20</b>	1	0	1290	1171		20	1706	416	416
				467	A	20	487		
				224	A	704	928		
				230	A	1061	1291		
				250	A	1456	1706		
<b>J009-21</b>	1	0	1560	1204		20	1612	52	52
				390	A	20	410		
				254	A	523	777		
				308	A	1032	1340		
				252	A	1360	1612		
<b>J010-22</b>	1	0	615	250		20	395	0	0
				75	A	20	95		
				75	A	190	265		
				100	B	295	395		
<b>J011-24</b>	1	0	1560	1091		430	1917	357	357
				550	A	430	980		
				350	A	1000	1350		
				191	A	1726	1917		
<b>J012-26</b>	1	0	780	250		190	460	0	0
				125	A	190	315		
				125	A	335	460		
<b>J013-35</b>	1	0	2175	705		504	1283	0	0
				267	A	504	771		
				227	A	791	1018		
				211	A	1072	1283		
<b>J014-36</b>	1	0	1785	885		791	1736	0	0
				267	A	791	1058		
				227	A	1078	1305		
				211	A	1325	1536		
				180	A	1556	1736		

Job Pool - Pl.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J015-39</b>	1	0	1395	800		430	1448	53	53
				400	A	430	830		
				400	A	1048	1448		
<b>J016-40</b>	1	0	2175	885		1078	2023	0	0
				267	A	1078	1345		
				227	A	1365	1592		
				180	A	1612	1792		
				211	A	1812	2023		
<b>J017-41</b>	1	0	2175	687		430	1252	0	0
				252	A	430	682		
				224	A	797	1021		
				211	A	1041	1252		
<b>J018-42</b>	1	0	3009	1214		1365	2679	0	0
				267	A	1365	1632		
				227	A	1652	1879		
				180	A	1899	2079		
				180	A	2099	2279		
				180	A	2299	2479		
				180	A	2499	2679		
<b>J019-43</b>	1	0	1560	674		507	1487	0	0
				252	A	507	759		
				211	A	830	1041		
				211	A	1276	1487		
<b>J020-44</b>	1	0	900	692		20	966	66	66
				101	A	20	121		
				371	A	335	706		
				110	A	726	836		
				110	A	856	966		

Job Pool - Pl.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J021-55</b>	1	0	2565	1269		702	2274	0	0
				W01 - PH	390	A	702	1092	
				W02 - DE085	254	A	1112	1366	
				W03 - PH150	308	A	1386	1694	
				W04 - PH070	93	A	1937	2030	
				W09 - PE080	224	A	2050	2274	
<b>J022-60</b>	1	0	900	660		20	700	0	0
				W07 - PE15	330	A	20	350	
				W03 - PH15	330	A	370	700	
<b>J023-61</b>	1	0	615	330		20	350	0	0
				W03 - PH15	330	A	20	350	
<b>J024-62</b>	1	0	2238	1035		20	1436	0	0
				W03 - PH15	467	A	20	487	
				W02 - DE085	224	A	704	928	
				W09 - PE080	180	A	948	1128	
				W04 - PH070	164	A	1272	1436	
<b>J025-65</b>	1	0	780	331		20	531	0	0
				W10 - PE030	170	A	20	190	
				W09 - PE080	161	A	370	531	
<b>J026-67</b>	1	0	3162	362		2002	2384	0	0
				W05 - PH300	211	A	2002	2213	
				W09 - PE080	151	A	2233	2384	
<b>J027-70</b>	1	0	1785	810		20	890	0	0
				W03 - PH150	252	A	20	272	
				W02 - DE085	211	A	292	503	
				W07 - PE150	125	A	523	648	
				W16 - SD400	222	A	668	890	

























Job Pool - P1.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J028-72</b>	1	0	900	825		20	1045	145	145
			<b>W03 - PH150</b>	252	A	20	272		
			<b>W14 - DE0850</b>	224	A	432	656		
			<b>W07 - PE150</b>	125	A	676	801		
			<b>W12 - PE060</b>	224	A	821	1045		
<b>J029-74</b>	1	0	2955	921		2233	3194	239	239
			<b>W05 - PH30</b>	467	A	2233	2700		
			<b>W02 - DE085</b>	224	A	2720	2944		
			<b>W07 - PE150</b>	230	A	2964	3194		
<b>J030-75</b>	1	0	3240	705		2720	3565	325	325
			<b>W05 - PH300</b>	267	A	2720	2987		
			<b>W06 - PE250</b>	227	A	3007	3234		
			<b>W07 - PE150</b>	211	A	3354	3565		
<b>J031-77</b>	1	0	1680	777		779	1576	0	0
			<b>W01 - PH350</b>	252	A	779	1031		
			<b>W17 - SB200</b>	525	A	1051	1576		
<b>J032-78</b>	1	0	1950	1123		850	2122	172	172
			<b>W01 - PH350</b>	252	A	850	1102		
			<b>W10 - PE030</b>	172	A	1211	1383		
			<b>W17 - SB200</b>	525	A	1403	1928		
			<b>W09 - PE080</b>	174	A	1948	2122		
<b>J033-79</b>	1	0	615	211		30	241	0	0
			<b>W20 - 500T PH</b>	211	B	30	241		
<b>J034-84</b>	1	0	4230	797		3007	3844	0	0
			<b>W05 - PH</b>	390	A	3007	3397		
			<b>W06 - PE250</b>	227	A	3417	3644		
			<b>W09 - PE080</b>	180	A	3664	3844		
<b>J035-85</b>	1	0	3630	617		3417	4054	424	424
			<b>W05 - PH</b>	390	A	3417	3807		
			<b>W06 - PE250</b>	227	A	3827	4054		

Job Pool - Pl.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J036-93</b>	1	0	2340	1142		1000	2202	0	0
				478	A	1000	1478		
				254	A	1498	1752		
				180	A	1772	1952		
				230	A	1972	2202		
<b>J037-95</b>	1	0	615	252		20	272	0	0
				252	A	20	272		
<b>J038-97</b>	1	0	1110	669		20	749	0	0
				201	A	20	221		
				171	A	241	412		
				126	A	432	558		
				171	A	578	749		
<b>J039-102</b>	1	0	615	304		20	444	0	0
				152	A	20	172		
				152	A	292	444		
<b>J040-105</b>	1	0	4680	713		3827	4600	0	0
				188	A	3827	4015		
				159	A	4035	4194		
				183	A	4214	4397		
				183	A	4417	4600		
<b>J041-106</b>	1	0	1680	530		241	1038	0	0
				188	A	241	429		
				159	A	676	835		
				183	A	855	1038		
<b>J042-108</b>	1	0	1290	684		449	1391	101	101
				188	A	449	637		
				180	A	855	1035		
				136	A	1055	1191		
				180	A	1211	1391		

Job Pool - P1.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J043-110</b>	1	0	1290	530		657	1417	127	127
		<b>W13 - PH160</b>	188	A	657	845			
		<b>W14 - DE08503</b>	159	A	1055	1214			
		<b>W16 - SD400</b>	183	A	1234	1417			
<b>J044-116</b>	1	0	615	151		20	171	0	0
		<b>W07 - PE150</b>	151	A	20	171			
<b>J045-19</b>	2	0	3345	2166		20	3822	477	954
		<b>W04 - PH070</b>	150	A	20	170			
		<b>W01 - PH350</b>	585	A	1656	2241			
		<b>W02 - DE0</b>	381	A	2261	2642			
		<b>W03 - PH15</b>	462	A	2662	3124			
		<b>W07 - PE15</b>	336	A	3214	3550			
		<b>W09 - PE080</b>	252	A	3570	3822			
<b>J046-21</b>	2	0	3060	1806		1051	2962	0	0
		<b>W01 - PH350</b>	585	A	1051	1636			
		<b>W02 - DE0</b>	381	A	1656	2037			
		<b>W03 - PH15</b>	462	A	2057	2519			
		<b>W09 - PE0</b>	378	A	2584	2962			
<b>J047-78</b>	2	0	3630	1685		1112	2960	0	0
		<b>W01 - PH3</b>	378	A	1112	1490			
		<b>W10 - PE030</b>	258	A	1510	1768			
		<b>W17 - SB200</b>	788	A	1788	2576			
		<b>W09 - PE080</b>	261	A	2699	2960			
<b>J048-93</b>	2	0	3900	1713		1122	2929	0	0
		<b>W01 - PH350</b>	717	A	1122	1839			
		<b>W02 - DE0</b>	381	A	1859	2240			
		<b>W09 - PE080</b>	270	A	2294	2564			
		<b>W03 - PH15</b>	345	A	2584	2929			

Job Pool - P1.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J049-55</b>	2	0	3840	1904		1498	3482	0	0
				585	A	1498	2083		
				381	A	2103	2484		
				462	A	2504	2966		
				140	A	2986	3126		
				336	A	3146	3482		
<b>J050-18</b>	2	0	4680	1764		1510	3334	0	0
				585	A	1510	2095		
				381	A	2115	2496		
				462	A	2516	2978		
				336	A	2998	3334		

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M01.1.PH35001</b>	80			2003
J006-18	20	20	410	390
J011-24	20	430	980	550
J036-93	20	1000	1478	478
J049-55	20	1498	2083	585
<b>M01.2.PH30002</b>	80			1759
J007-19	20	20	410	390
J015-39	20	430	830	400
J032-78	20	850	1102	252
J048-93	20	1122	1839	717
<b>M01.3.PH60001</b>	100			2141
J008-20	20	20	487	467
J019-43	20	507	759	252
J031-77	20	779	1031	252
J046-21	20	1051	1636	585
J045-19	20	1656	2241	585
<b>M01.4.PH20001</b>	100			1995
J009-21	20	20	410	390
J017-41	20	430	682	252
J021-55	20	702	1092	390
J047-78	20	1112	1490	378
J050-18	20	1510	2095	585
<b>M02.1.DE08001</b>	160			2183
J027-70	20	292	503	211
J009-21	20	523	777	254
J017-41	20	797	1021	224
J021-55	20	1112	1366	254
J036-93	20	1498	1752	254
J048-93	20	1859	2240	381
J045-19	20	2261	2642	381
J029-74	20	2720	2944	224
<b>M02.2.DE08502</b>	100			1590
J006-18	20	430	684	254
J008-20	20	704	928	224
J011-24	20	1000	1350	350
J046-21	20	1656	2037	381
J049-55	20	2103	2484	381
<b>M02.3.DE08504</b>	60			859
J007-19	20	430	684	254
J024-62	20	704	928	224
J050-18	20	2115	2496	381

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M03.1.PH15001</b>	140			2386
J023-61	20	20	350	330
J022-60	20	370	700	330
J007-19	20	720	1028	308
J015-39	20	1048	1448	400
J016-40	20	1812	2023	211
J046-21	20	2057	2519	462
J048-93	20	2584	2929	345
<b>M03.2.PH15002</b>	140			2121
J024-62	20	20	487	467
J003-11	20	692	1052	360
J013-35	20	1072	1283	211
J014-36	20	1325	1536	211
J036-93	20	1972	2202	230
J018-42	20	2299	2479	180
J049-55	20	2504	2966	462
<b>M03.3.PH15003</b>	120			1790
J027-70	20	20	272	252
J039-102	20	292	444	152
J006-18	20	704	1012	308
J009-21	20	1032	1340	308
J021-55	20	1386	1694	308
J050-18	20	2516	2978	462
<b>M03.4.PH15004</b>	100			1515
J028-72	20	20	272	252
J002-12	20	450	810	360
J019-43	20	830	1041	211
J008-20	20	1061	1291	230
J045-19	20	2662	3124	462
<b>M04.1.PH07001</b>	180			1424
J045-19	20	20	170	150
J010-22	20	190	265	75
J001-1	20	285	435	150
J017-41	20	1041	1252	211
J024-62	20	1272	1436	164
J008-20	20	1456	1706	250
J011-24	20	1726	1917	191
J021-55	20	1937	2030	93
J049-55	20	2986	3126	140

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M05.1.PH30001</b>	260			3755
J002-12	20	20	242	222
J003-11	20	262	484	222
J013-35	20	504	771	267
J014-36	20	791	1058	267
J016-40	20	1078	1345	267
J018-42	20	1365	1632	267
J005-17	20	1652	1982	330
J026-67	20	2002	2213	211
J029-74	20	2233	2700	467
J030-75	20	2720	2987	267
J034-84	20	3007	3397	390
J035-85	20	3417	3807	390
J040-105	20	3827	4015	188
<b>M06.1.PE25001</b>	180			1925
J002-12	20	262	430	168
J003-11	20	504	672	168
J013-35	20	791	1018	227
J014-36	20	1078	1305	227
J016-40	20	1365	1592	227
J018-42	20	1652	1879	227
J030-75	20	3007	3234	227
J034-84	20	3417	3644	227
J035-85	20	3827	4054	227
<b>M07.1.PE15002</b>	180			1916
J022-60	20	20	350	330
J027-70	20	523	648	125
J028-72	20	676	801	125
J041-106	20	855	1038	183
J007-19	20	1058	1282	224
J018-42	20	2099	2279	180
J029-74	20	2964	3194	230
J045-19	20	3214	3550	336
J040-105	20	4214	4397	183
<b>M07.2.PE15003</b>	100			1133
J044-116	20	20	171	151
J006-18	20	1032	1256	224
J019-43	20	1276	1487	211
J050-18	20	2998	3334	336
J030-75	20	3354	3565	211
<b>M08.1.PA13003</b>	40			185
J010-22	20	20	95	75
J020-44	20	726	836	110
<b>M08.2.PA13004</b>	20			252
J037-95	20	20	272	252

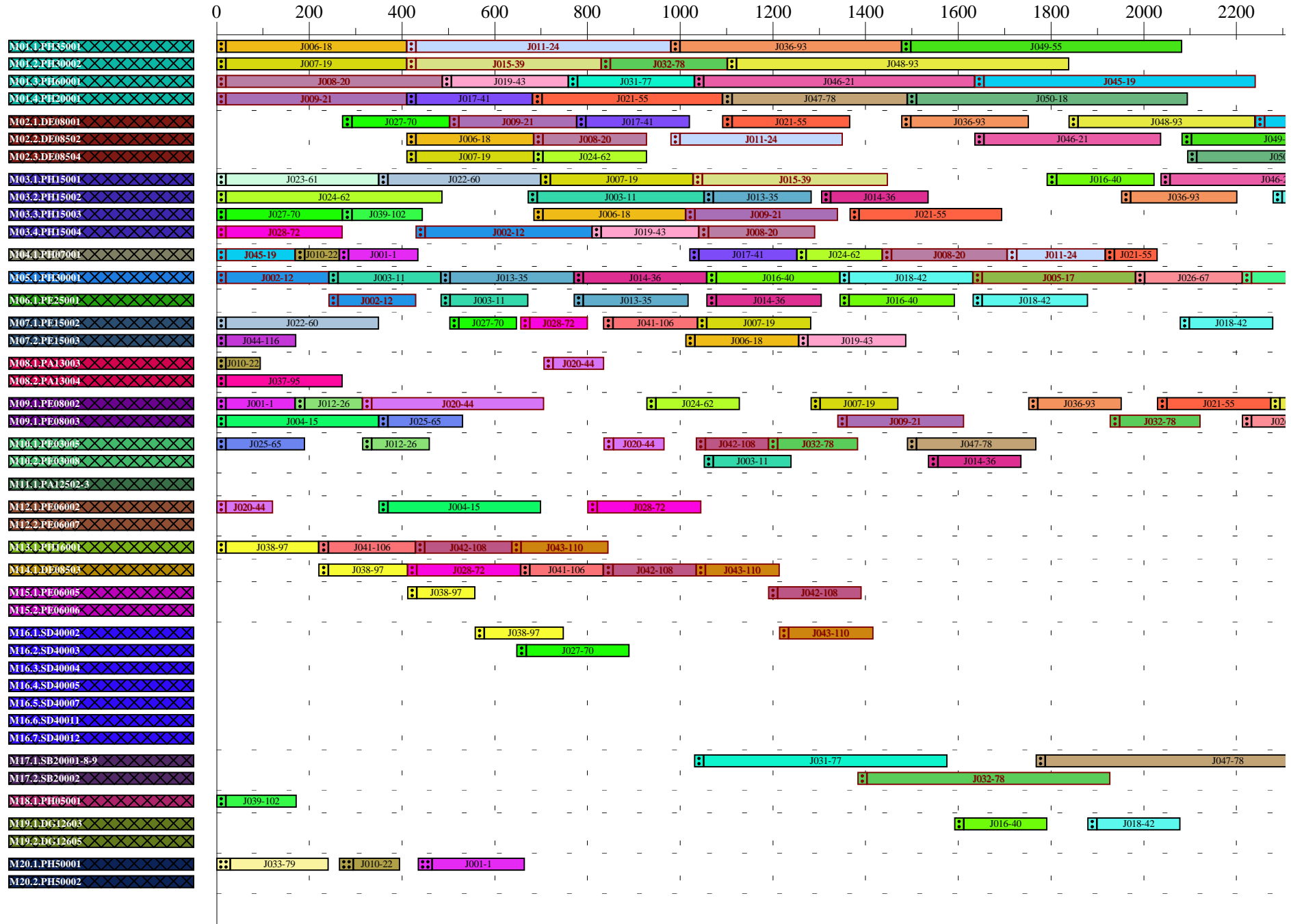
Mch/Job	Setup	Start	Stop	Pr.tm
<b>M09.1.PE08002</b>	220			2634
J001-1	20	20	170	150
J012-26	20	190	315	125
J020-44	20	335	706	371
J024-62	20	948	1128	180
J007-19	20	1302	1470	168
J036-93	20	1772	1952	180
J021-55	20	2050	2274	224
J048-93	20	2294	2564	270
J046-21	20	2584	2962	378
J049-55	20	3146	3482	336
J045-19	20	3570	3822	252
<b>M09.1.PE08003</b>	160			1689
J004-15	20	20	350	330
J025-65	20	370	531	161
J009-21	20	1360	1612	252
J032-78	20	1948	2122	174
J026-67	20	2233	2384	151
J018-42	20	2499	2679	180
J047-78	20	2699	2960	261
J034-84	20	3664	3844	180
<b>M10.1.PE03005</b>	120			971
J025-65	20	20	190	170
J012-26	20	335	460	125
J020-44	20	856	966	110
J042-108	20	1055	1191	136
J032-78	20	1211	1383	172
J047-78	20	1510	1768	258
<b>M10.2.PE03008</b>	40			348
J003-11	20	1072	1240	168
J014-36	20	1556	1736	180
<b>M11.1.PA12502</b>	0			0
<b>M12.1.PE06002</b>	60			655
J020-44	20	20	121	101
J004-15	20	370	700	330
J028-72	20	821	1045	224
<b>M12.2.PE06007</b>	0			0
<b>M13.1.PH16001</b>	80			765
J038-97	20	20	221	201
J041-106	20	241	429	188
J042-108	20	449	637	188
J043-110	20	657	845	188



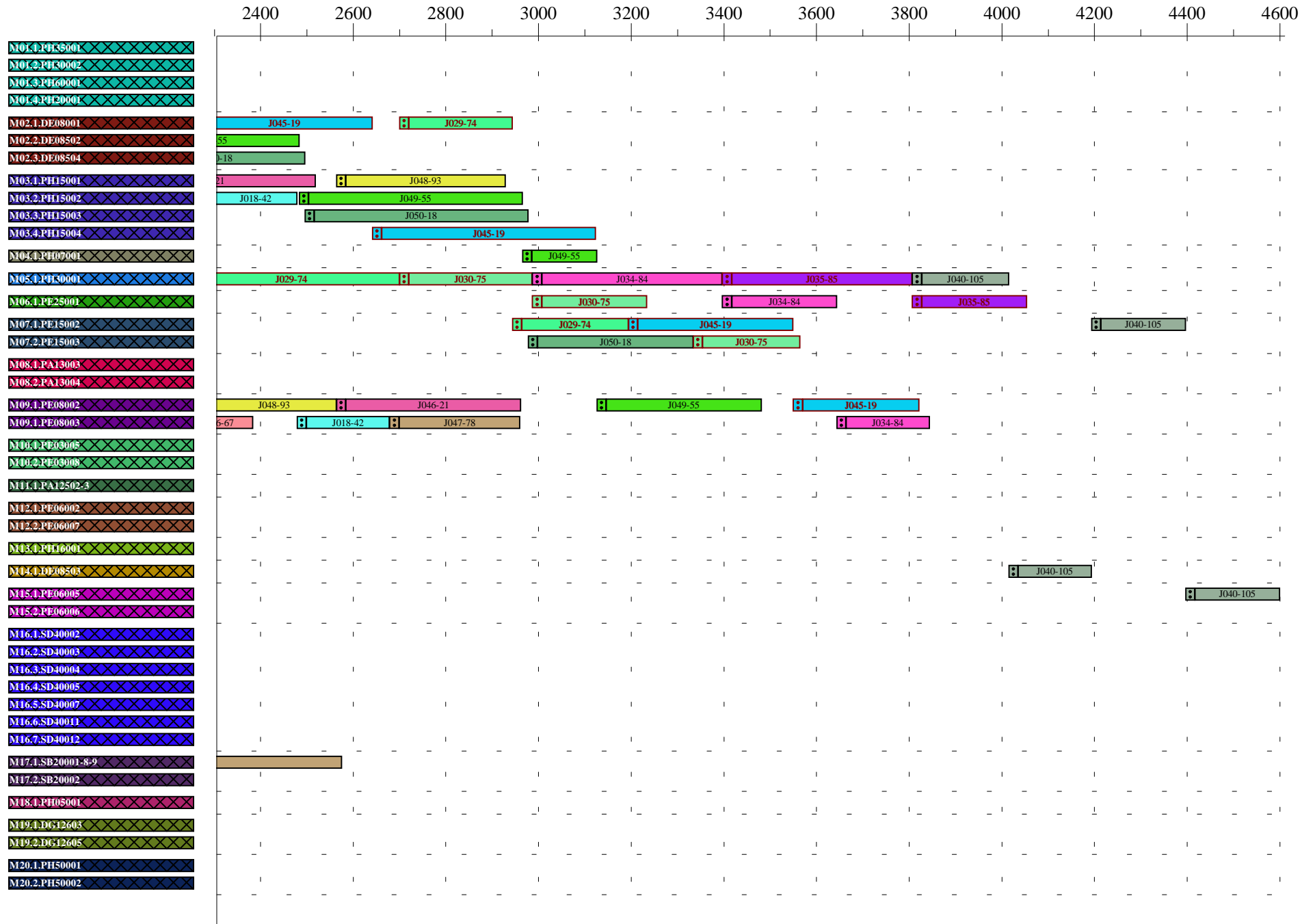
Mch/Job	Setup	Start	Stop	Pr.tm
<b>M14.1.DE08503</b>	120			1052
J038-97	20	241	412	171
J028-72	20	432	656	224
J041-106	20	676	835	159
J042-108	20	855	1035	180
J043-110	20	1055	1214	159
J040-105	20	4035	4194	159
<b>M15.1.PE06005</b>	60			489
J038-97	20	432	558	126
J042-108	20	1211	1391	180
J040-105	20	4417	4600	183
<b>M15.2.PE06006</b>	0			0
<b>M16.1.SD40002</b>	40			354
J038-97	20	578	749	171
J043-110	20	1234	1417	183
<b>M16.2.SD40003</b>	20			222
J027-70	20	668	890	222
<b>M16.3.SD40004</b>	0			0
<b>M16.4.SD40005</b>	0			0
<b>M16.5.SD40007</b>	0			0
<b>M16.6.SD40011</b>	0			0
<b>M16.7.SD40012</b>	0			0
<b>M17.1.SB20001</b>	40			1313
J031-77	20	1051	1576	525
J047-78	20	1788	2576	788
<b>M17.2.SB20002</b>	20			525
J032-78	20	1403	1928	525
<b>M18.1.PH05001</b>	20			152
J039-102	20	20	172	152
<b>M19.1.DG12603</b>	40			360
J016-40	20	1612	1792	180
J018-42	20	1899	2079	180
<b>M19.2.DG12605</b>	0			0
<b>M20.1.PH50001</b>	90			511
J033-79	30	30	241	211
J010-22	30	295	395	100
J001-1	30	465	665	200
<b>M20.2.PH50002</b>	0			0

Mch/Job	Setup	Start	Stop	Pr.tm
<b>Summary</b>				
<i>Time</i>		1		
<i>C<sub>max</sub></i>		4600		
<i>T<sub>max</sub></i>		1367		
<i>SU<sub>j</sub></i>		15		
<i>SC<sub>j</sub></i>		87066		
<i>ST<sub>j</sub></i>		4351		
<i>Sw<sub>j</sub>C<sub>j</sub></i>		106555		
<i>Sw<sub>j</sub>T<sub>j</sub></i>		4828		























Gantt Chart - Seqs (FCFS)



Gantt Chart - Seqs (FCFS)



Job Pool - P1.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J001-1</b>	1	0	780	500		20	570	0	0
	 <b>W09 - PE080</b>			150	A	20	170		
	 <b>W04 - PH070</b>			150	A	190	340		
	 <b>W20 - 500T PH</b>			200	B	370	570		
<b>J002-12</b>	1	0	780	750		2020	2810	2030	2030
	 <b>W05 - PH300</b>			222	A	2020	2242		
	 <b>W06 - PE250</b>			168	A	2262	2430		
	 <b>W03 - PH1</b>			360	A	2450	2810		
<b>J003-11</b>	1	0	2460	918		794	2576	116	116
	 <b>W05 - PH300</b>			222	A	794	1016		
	 <b>W06 - PE250</b>			168	A	1036	1204		
	 <b>W03 - PH1</b>			360	A	2028	2388		
	 <b>W10 - PE030</b>			168	A	2408	2576		
<b>J004-15</b>	1	0	720	660		20	700	0	0
	 <b>W09 - PE08</b>			330	A	20	350		
	 <b>W12 - PE06</b>			330	A	370	700		
<b>J005-17</b>	1	0	615	330		3685	4015	3400	3400
	 <b>W05 - PH30</b>			330	A	3685	4015		
<b>J006-18</b>	1	0	1290	1176		1035	2662	1372	1372
	 <b>W01 - PH</b>			390	A	1035	1425		
	 <b>W02 - DE085</b>			254	A	1631	1885		
	 <b>W03 - PH15</b>			308	A	1905	2213		
	 <b>W07 - PE150</b>			224	A	2438	2662		
<b>J007-19</b>	1	0	1890	1344		625	3123	1233	1233
	 <b>W01 - PH</b>			390	A	625	1015		
	 <b>W02 - DE085</b>			254	A	1152	1406		
	 <b>W03 - PH15</b>			308	A	1426	1734		
	 <b>W07 - PE150</b>			224	A	1754	1978		
	 <b>W09 - PE080</b>			168	A	2955	3123		

Job Pool - Pl.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J008-20</b>	1	0	1290	1171		1167	2535	1245	1245
<b>J009-21</b>	1	0	1560	1204		1023	2514	954	954
<b>J010-22</b>	1	0	615	250		20	565	0	0
<b>J011-24</b>	1	0	1560	1091		1445	2977	1417	1417
<b>J012-26</b>	1	0	780	250		370	640	0	0
<b>J013-35</b>	1	0	2175	705		2470	3215	1040	1040
<b>J014-36</b>	1	0	1785	885		1036	2696	911	911

Job Pool - P1.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J015-39</b>	1	0	1395	800		1654	2633	1238	1238
				400	A	1654	2054		
				400	A	2233	2633		
<b>J016-40</b>	1	0	2175	885		1323	2864	689	689
				267	A	1323	1590		
				227	A	1610	1837		
				180	A	1857	2037		
				211	A	2653	2864		
<b>J017-41</b>	1	0	2175	687		1728	2766	591	591
				252	A	1728	1980		
				224	A	2002	2226		
				211	A	2555	2766		
<b>J018-42</b>	1	0	3009	1214		20	1334	0	0
				267	A	20	287		
				227	A	307	534		
				180	A	554	734		
				180	A	754	934		
				180	A	954	1134		
				180	A	1154	1334		
<b>J019-43</b>	1	0	1560	674		1977	2893	1333	1333
				252	A	1977	2229		
				211	A	2249	2460		
				211	A	2682	2893		
<b>J020-44</b>	1	0	900	692		20	821	0	0
				101	A	20	121		
				371	A	190	561		
				110	A	581	691		
				110	A	711	821		

Job Pool - Pl.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J021-55</b>	1	0	2565	1269		757	2758	193	193
			<b>W01 - PH</b>	390	A	757	1147		
			<b>W02 - DE085</b>	254	A	1426	1680		
			<b>W03 - PH150</b>	308	A	1700	2008		
			<b>W04 - PH070</b>	93	A	2028	2121		
			<b>W09 - PE080</b>	224	A	2534	2758		
<b>J022-60</b>	1	0	900	660		20	700	0	0
			<b>W07 - PE15</b>	330	A	20	350		
			<b>W03 - PH15</b>	330	A	370	700		
<b>J023-61</b>	1	0	615	330		20	350	0	0
			<b>W03 - PH15</b>	330	A	20	350		
<b>J024-62</b>	1	0	2238	1035		20	1115	0	0
			<b>W03 - PH15</b>	467	A	20	487		
			<b>W02 - DE085</b>	224	A	507	731		
			<b>W09 - PE080</b>	180	A	751	931		
			<b>W04 - PH070</b>	164	A	951	1115		
<b>J025-65</b>	1	0	780	331		20	676	0	0
			<b>W10 - PE030</b>	170	A	20	190		
			<b>W09 - PE080</b>	161	A	515	676		
<b>J026-67</b>	1	0	3162	362		3454	3836	674	674
			<b>W05 - PH300</b>	211	A	3454	3665		
			<b>W09 - PE080</b>	151	A	3685	3836		
<b>J027-70</b>	1	0	1785	810		20	890	0	0
			<b>W03 - PH150</b>	252	A	20	272		
			<b>W02 - DE085</b>	211	A	292	503		
			<b>W07 - PE150</b>	125	A	523	648		
			<b>W16 - SD400</b>	222	A	668	890		



Job Pool - Pl.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J028-72</b>	1	0	900	825		20	905	5	5
<b>J029-74</b>	1	0	2955	921		307	2418	0	0
<b>J030-75</b>	1	0	3240	705		2757	3502	262	262
<b>J031-77</b>	1	0	1680	777		1705	2634	954	954
<b>J032-78</b>	1	0	1950	1123		1433	2952	1002	1002
<b>J033-79</b>	1	0	615	211		30	241	0	0
<b>J034-84</b>	1	0	4230	797		1610	2935	0	0
<b>J035-85</b>	1	0	3630	617		3044	3681	51	51

Job Pool - Pl.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J036-93</b>	1	0	2340	1142		1230	2746	406	406
				478	A	1230	1708		
				254	A	1728	1982		
				180	A	2002	2182		
				230	A	2516	2746		
<b>J037-95</b>	1	0	615	252		20	272	0	0
				252	A	20	272		
<b>J038-97</b>	1	0	1110	669		228	1244	134	134
				201	A	228	429		
				171	A	736	907		
				126	A	927	1053		
				171	A	1073	1244		
<b>J039-102</b>	1	0	615	304		20	444	0	0
				152	A	20	172		
				152	A	292	444		
<b>J040-105</b>	1	0	4680	713		2262	3035	0	0
				188	A	2262	2450		
				159	A	2470	2629		
				183	A	2649	2832		
				183	A	2852	3035		
<b>J041-106</b>	1	0	1680	530		449	1289	0	0
				188	A	449	637		
				159	A	927	1086		
				183	A	1106	1289		
<b>J042-108</b>	1	0	1290	684		20	1072	0	0
				188	A	20	208		
				180	A	536	716		
				136	A	736	872		
				180	A	892	1072		

Job Pool - P1.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT	
<b>J043-110</b>	1	0	1290	530		657	1468	178	178	
				W13 - PH160	188	A	657	845		
				W14 - DE08503	159	A	1106	1265		
				W16 - SD400	183	A	1285	1468		
<b>J044-116</b>	1	0	615	151		20	171	0	0	
				W07 - PE150	151	A	20	171		
<b>J045-19</b>	2	0	3345	2166		20	2735	0	0	
				W04 - PH070	150	A	20	170		
				W01 - PH350	585	A	625	1210		
				W02 - DE0	381	A	1230	1611		
				W03 - PH15	462	A	1631	2093		
				W07 - PE15	336	A	2113	2449		
				W09 - PE080	252	A	2483	2735		
<b>J046-21</b>	2	0	3060	1806		20	1886	0	0	
				W01 - PH350	585	A	20	605		
				W02 - DE0	381	A	625	1006		
				W03 - PH15	462	A	1026	1488		
				W09 - PE0	378	A	1508	1886		
<b>J047-78</b>	2	0	3630	1685		625	2463	0	0	
				W01 - PH3	378	A	625	1003		
				W10 - PE030	258	A	1023	1281		
				W17 - SB200	788	A	1301	2089		
				W09 - PE080	261	A	2202	2463		
<b>J048-93</b>	2	0	3900	1713		20	2825	0	0	
				W01 - PH350	717	A	20	737		
				W02 - DE0	381	A	1026	1407		
				W09 - PE080	270	A	1427	1697		
				W03 - PH15	345	A	2480	2825		

Job Pool - P1.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J049-55</b>	2	0	3840	1904		20	2242	0	0
				585	A	20	605		
				381	A	625	1006		
				462	A	1026	1488		
				140	A	1508	1648		
				336	A	1906	2242		
<b>J050-18</b>	2	0	4680	1764		20	1970	0	0
				585	A	20	605		
				381	A	751	1132		
				462	A	1152	1614		
				336	A	1634	1970		

Sequence - Seqs \* (LPT)

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M01.1.PH35001</b>	80			1900
J049-55	20	20	605	585
J045-19	20	625	1210	585
J036-93	20	1230	1708	478
J017-41	20	1728	1980	252
<b>M01.2.PH30002</b>	120			2109
J046-21	20	20	605	585
J047-78	20	625	1003	378
J009-21	20	1023	1413	390
J032-78	20	1433	1685	252
J031-77	20	1705	1957	252
J019-43	20	1977	2229	252
<b>M01.3.PH60001</b>	80			1915
J050-18	20	20	605	585
J007-19	20	625	1015	390
J006-18	20	1035	1425	390
J011-24	20	1445	1995	550
<b>M01.4.PH20001</b>	80			1974
J048-93	20	20	737	717
J021-55	20	757	1147	390
J008-20	20	1167	1634	467
J015-39	20	1654	2054	400
<b>M02.1.DE08001</b>	120			1561
J024-62	20	507	731	224
J050-18	20	751	1132	381
J007-19	20	1152	1406	254
J021-55	20	1426	1680	254
J008-20	20	1700	1924	224
J029-74	20	1944	2168	224
<b>M02.2.DE08502</b>	100			1577
J027-70	20	292	503	211
J049-55	20	625	1006	381
J045-19	20	1230	1611	381
J006-18	20	1631	1885	254
J011-24	20	2015	2365	350
<b>M02.3.DE08504</b>	100			1494
J046-21	20	625	1006	381
J048-93	20	1026	1407	381
J009-21	20	1433	1687	254
J036-93	20	1728	1982	254
J017-41	20	2002	2226	224

Sequence - Seqs \* (LPT)

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M03.1.PH15001</b>	120			2158
J024-62	20	20	487	467
J049-55	20	1026	1488	462
J045-19	20	1631	2093	462
J019-43	20	2249	2460	211
J048-93	20	2480	2825	345
J013-35	20	3004	3215	211
<b>M03.2.PH15002</b>	120			2072
J028-72	20	20	272	252
J022-60	20	370	700	330
J046-21	20	1026	1488	462
J021-55	20	1700	2008	308
J003-11	20	2028	2388	360
J002-12	20	2450	2810	360
<b>M03.3.PH15003</b>	140			1845
J027-70	20	20	272	252
J039-102	20	292	444	152
J050-18	20	1152	1614	462
J009-21	20	1707	2015	308
J008-20	20	2035	2265	230
J014-36	20	2285	2496	211
J036-93	20	2516	2746	230
<b>M03.4.PH15004</b>	120			1737
J023-61	20	20	350	330
J018-42	20	954	1134	180
J007-19	20	1426	1734	308
J006-18	20	1905	2213	308
J015-39	20	2233	2633	400
J016-40	20	2653	2864	211
<b>M04.1.PH07001</b>	180			1424
J045-19	20	20	170	150
J001-1	20	190	340	150
J010-22	20	360	435	75
J024-62	20	951	1115	164
J049-55	20	1508	1648	140
J021-55	20	2028	2121	93
J008-20	20	2285	2535	250
J017-41	20	2555	2766	211
J011-24	20	2786	2977	191

Sequence - Seqs \* (LPT)

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M05.1.PH30001</b>	260			3755
J018-42	20	20	287	267
J029-74	20	307	774	467
J003-11	20	794	1016	222
J014-36	20	1036	1303	267
J016-40	20	1323	1590	267
J034-84	20	1610	2000	390
J002-12	20	2020	2242	222
J040-105	20	2262	2450	188
J013-35	20	2470	2737	267
J030-75	20	2757	3024	267
J035-85	20	3044	3434	390
J026-67	20	3454	3665	211
J005-17	20	3685	4015	330
<b>M06.1.PE25001</b>	180			1925
J018-42	20	307	534	227
J003-11	20	1036	1204	168
J014-36	20	1323	1550	227
J016-40	20	1610	1837	227
J002-12	20	2262	2430	168
J034-84	20	2450	2677	227
J013-35	20	2757	2984	227
J030-75	20	3044	3271	227
J035-85	20	3454	3681	227
<b>M07.1.PE15002</b>	160			1772
J022-60	20	20	350	330
J028-72	20	536	661	125
J018-42	20	754	934	180
J041-106	20	1106	1289	183
J007-19	20	1754	1978	224
J045-19	20	2113	2449	336
J040-105	20	2649	2832	183
J030-75	20	3291	3502	211
<b>M07.2.PE15003</b>	120			1277
J044-116	20	20	171	151
J027-70	20	523	648	125
J050-18	20	1634	1970	336
J029-74	20	2188	2418	230
J006-18	20	2438	2662	224
J019-43	20	2682	2893	211
<b>M08.1.PA13003</b>	40			362
J037-95	20	20	272	252
J020-44	20	581	691	110
<b>M08.2.PA13004</b>	20			75
J010-22	20	20	95	75

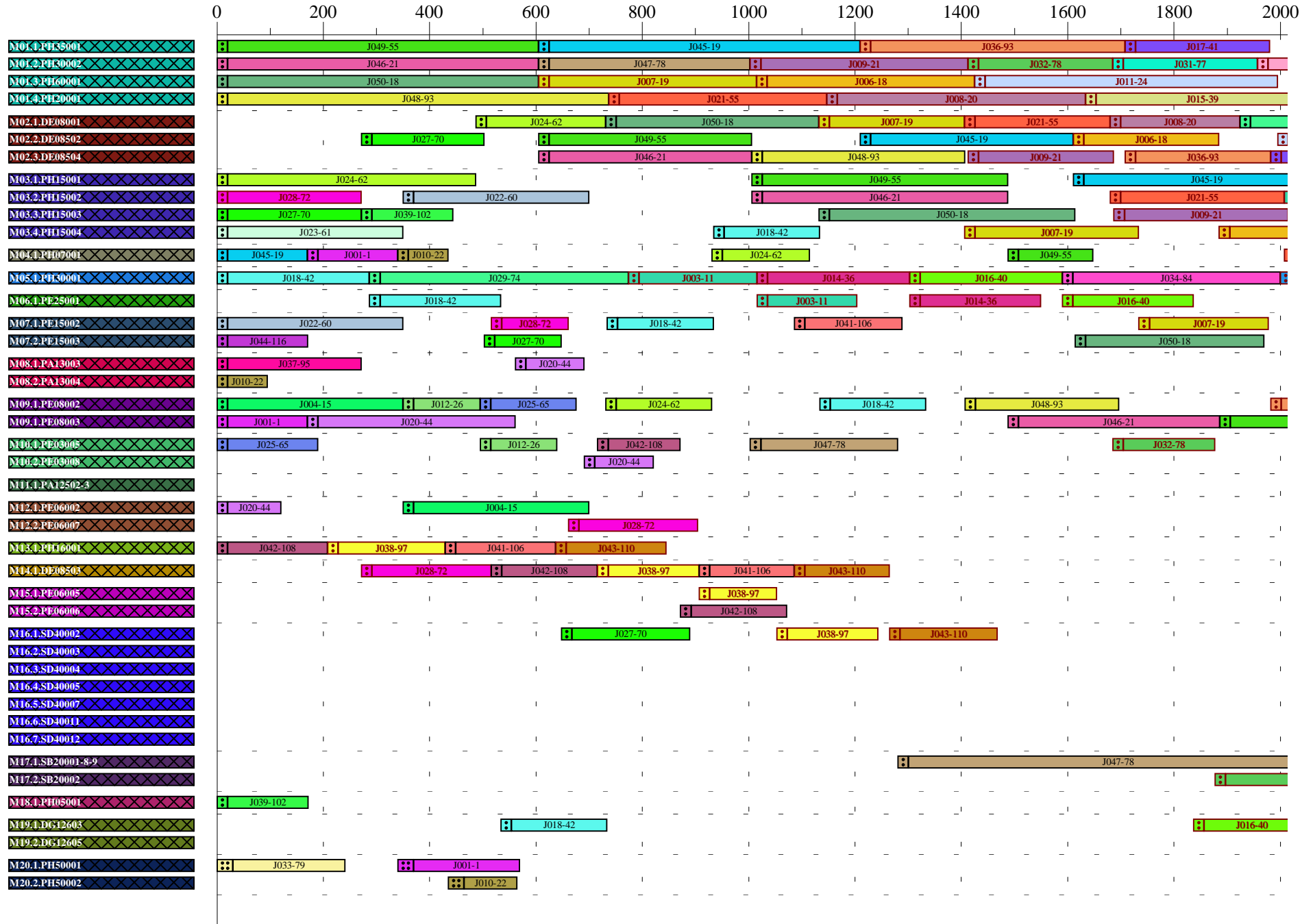
Mch/Job	Setup	Start	Stop	Pr.tm
<b>M09.1.PE08002</b>	240			2438
J004-15	20	20	350	330
J012-26	20	370	495	125
J025-65	20	515	676	161
J024-62	20	751	931	180
J018-42	20	1154	1334	180
J048-93	20	1427	1697	270
J036-93	20	2002	2182	180
J047-78	20	2202	2463	261
J045-19	20	2483	2735	252
J034-84	20	2755	2935	180
J007-19	20	2955	3123	168
J026-67	20	3685	3836	151
<b>M09.1.PE08003</b>	140			1885
J001-1	20	20	170	150
J020-44	20	190	561	371
J046-21	20	1508	1886	378
J049-55	20	1906	2242	336
J009-21	20	2262	2514	252
J021-55	20	2534	2758	224
J032-78	20	2778	2952	174
<b>M10.1.PE03005</b>	120			1041
J025-65	20	20	190	170
J012-26	20	515	640	125
J042-108	20	736	872	136
J047-78	20	1023	1281	258
J032-78	20	1705	1877	172
J014-36	20	2516	2696	180
<b>M10.2.PE03008</b>	40			278
J020-44	20	711	821	110
J003-11	20	2408	2576	168
<b>M11.1.PA12502</b>	0			0
<b>M12.1.PE06002</b>	40			431
J020-44	20	20	121	101
J004-15	20	370	700	330
<b>M12.2.PE06007</b>	20			224
J028-72	20	681	905	224
<b>M13.1.PH16001</b>	80			765
J042-108	20	20	208	188
J038-97	20	228	429	201
J041-106	20	449	637	188
J043-110	20	657	845	188



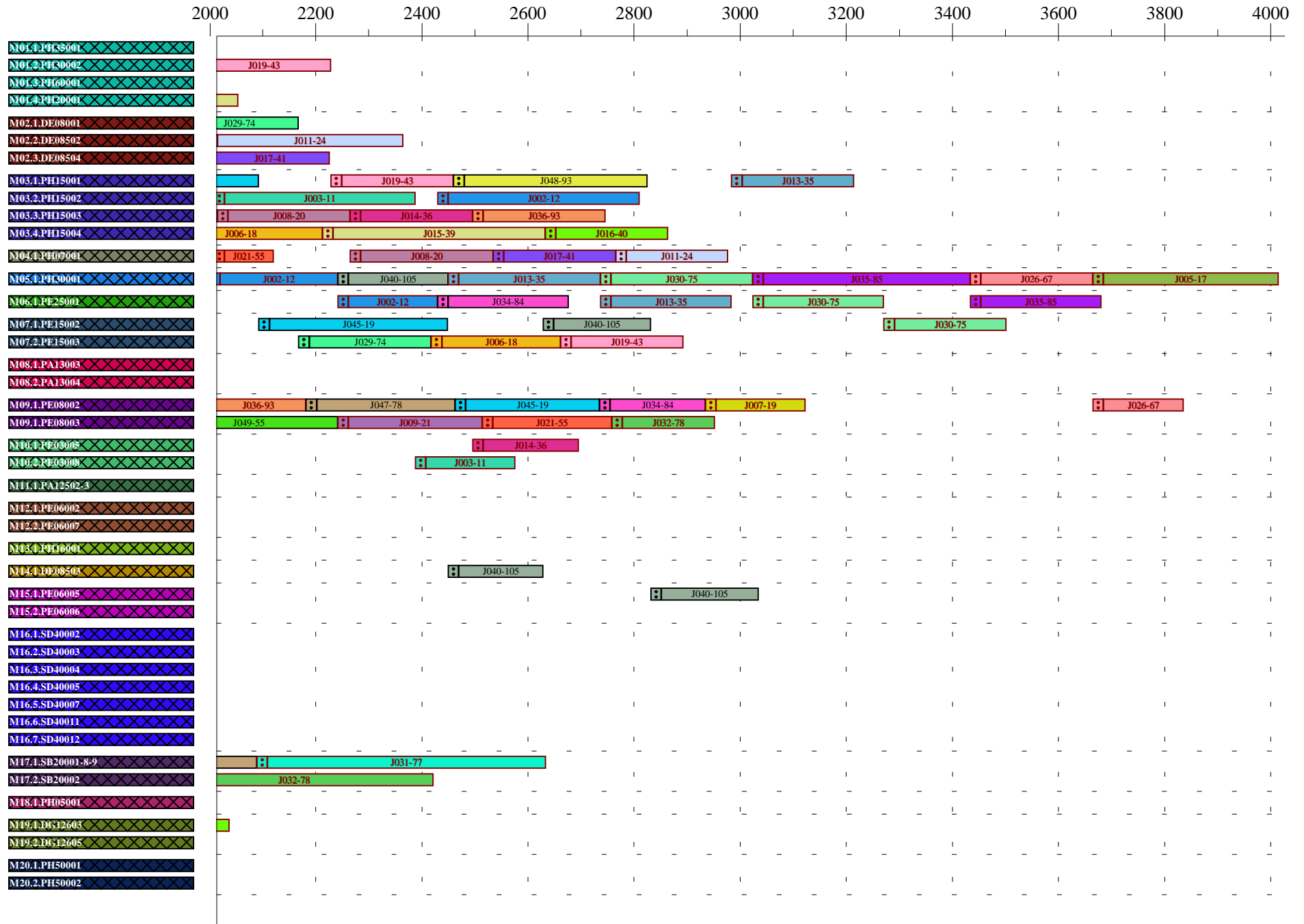
Mch/Job	Setup	Start	Stop	Pr.tm
<b>M14.1.DE08503</b>	120			1052
J028-72	20	292	516	224
J042-108	20	536	716	180
J038-97	20	736	907	171
J041-106	20	927	1086	159
J043-110	20	1106	1265	159
J040-105	20	2470	2629	159
<b>M15.1.PE06005</b>	40			309
J038-97	20	927	1053	126
J040-105	20	2852	3035	183
<b>M15.2.PE06006</b>	20			180
J042-108	20	892	1072	180
<b>M16.1.SD40002</b>	60			576
J027-70	20	668	890	222
J038-97	20	1073	1244	171
J043-110	20	1285	1468	183
<b>M16.2.SD40003</b>	0			0
<b>M16.3.SD40004</b>	0			0
<b>M16.4.SD40005</b>	0			0
<b>M16.5.SD40007</b>	0			0
<b>M16.6.SD40011</b>	0			0
<b>M16.7.SD40012</b>	0			0
<b>M17.1.SB20001</b>	40			1313
J047-78	20	1301	2089	788
J031-77	20	2109	2634	525
<b>M17.2.SB20002</b>	20			525
J032-78	20	1897	2422	525
<b>M18.1.PH05001</b>	20			152
J039-102	20	20	172	152
<b>M19.1.DG12603</b>	40			360
J018-42	20	554	734	180
J016-40	20	1857	2037	180
<b>M19.2.DG12605</b>	0			0
<b>M20.1.PH50001</b>	60			411
J033-79	30	30	241	211
J001-1	30	370	570	200
<b>M20.2.PH50002</b>	30			100
J010-22	30	465	565	100

Mch/Job	Setup	Start	Stop	Pr.tm
<b>Summary</b>				
<i>Time</i>		1		
<i>C<sub>max</sub></i>		4015		
<i>T<sub>max</sub></i>		3400		
<i>SU<sub>j</sub></i>		24		
<i>SC<sub>j</sub></i>		100364		
<i>ST<sub>j</sub></i>		21428		
<i>Sw<sub>j</sub>C<sub>j</sub></i>		114485		
<i>Sw<sub>j</sub>T<sub>j</sub></i>		21428		























Gantt Chart - Seqs (LPT)



Gantt Chart - Seqs (LPT)



Job Pool - P1.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J001-1</b>	1	0	780	500		20	570	0	0
	 <b>W09 - PE080</b>			150	A	20	170		
	 <b>W04 - PH070</b>			150	A	190	340		
	 <b>W20 - 500T PH</b>			200	B	370	570		
<b>J002-12</b>	1	0	780	750		20	810	30	30
	 <b>W05 - PH300</b>			222	A	20	242		
	 <b>W06 - PE250</b>			168	A	262	430		
	 <b>W03 - PH1</b>			360	A	450	810		
<b>J003-11</b>	1	0	2460	918		1473	2456	0	0
	 <b>W05 - PH300</b>			222	A	1473	1695		
	 <b>W06 - PE250</b>			168	A	1720	1888		
	 <b>W03 - PH1</b>			360	A	1908	2268		
	 <b>W10 - PE030</b>			168	A	2288	2456		
<b>J004-15</b>	1	0	720	660		20	700	0	0
	 <b>W09 - PE08</b>			330	A	20	350		
	 <b>W12 - PE06</b>			330	A	370	700		
<b>J005-17</b>	1	0	615	330		262	592	0	0
	 <b>W05 - PH30</b>			330	A	262	592		
<b>J006-18</b>	1	0	1290	1176		20	1256	0	0
	 <b>W01 - PH</b>			390	A	20	410		
	 <b>W02 - DE085</b>			254	A	430	684		
	 <b>W03 - PH15</b>			308	A	704	1012		
	 <b>W07 - PE150</b>			224	A	1032	1256		
<b>J007-19</b>	1	0	1890	1344		430	1875	0	0
	 <b>W01 - PH</b>			390	A	430	820		
	 <b>W02 - DE085</b>			254	A	840	1094		
	 <b>W03 - PH15</b>			308	A	1114	1422		
	 <b>W07 - PE150</b>			224	A	1463	1687		
	 <b>W09 - PE080</b>			168	A	1707	1875		

Job Pool - Pl.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J008-20</b>	1	0	1290	1171		20	1251	0	0
				467	A	20	487		
				224	A	507	731		
				230	A	751	981		
				250	A	1001	1251		
<b>J009-21</b>	1	0	1560	1204		20	1410	0	0
				390	A	20	410		
				254	A	430	684		
				308	A	830	1138		
				252	A	1158	1410		
<b>J010-22</b>	1	0	615	250		20	565	0	0
				75	A	20	95		
				75	A	360	435		
				100	B	465	565		
<b>J011-24</b>	1	0	1560	1091		20	1462	0	0
				550	A	20	570		
				350	A	704	1054		
				191	A	1271	1462		
<b>J012-26</b>	1	0	780	250		370	640	0	0
				125	A	370	495		
				125	A	515	640		
<b>J013-35</b>	1	0	2175	705		1186	1931	0	0
				267	A	1186	1453		
				227	A	1473	1700		
				211	A	1720	1931		
<b>J014-36</b>	1	0	1785	885		612	1643	0	0
				267	A	612	879		
				227	A	899	1126		
				211	A	1232	1443		
				180	A	1463	1643		

Job Pool - P1.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J015-39</b>	1	0	1395	800		430	1250	0	0
				400	A	430	830		
				400	A	850	1250		
<b>J016-40</b>	1	0	2175	885		899	1844	0	0
				267	A	899	1166		
				227	A	1186	1413		
				180	A	1433	1613		
				211	A	1633	1844		
<b>J017-41</b>	1	0	2175	687		1272	2001	0	0
				252	A	1272	1524		
				224	A	1546	1770		
				211	A	1790	2001		
<b>J018-42</b>	1	0	3009	1214		1715	3029	20	20
				267	A	1715	1982		
				227	A	2002	2229		
				180	A	2249	2429		
				180	A	2449	2629		
				180	A	2649	2829		
				180	A	2849	3029		
<b>J019-43</b>	1	0	1560	674		590	1443	0	0
				252	A	590	842		
				211	A	1001	1212		
				211	A	1232	1443		
<b>J020-44</b>	1	0	900	692		20	821	0	0
				101	A	20	121		
				371	A	190	561		
				110	A	581	691		
				110	A	711	821		

Job Pool - P1.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J021-55</b>	1	0	2565	1269		862	2610	45	45
			<b>W01 - PH</b>	390	A	862	1252		
			<b>W02 - DE085</b>	254	A	1272	1526		
			<b>W03 - PH150</b>	308	A	1546	1854		
			<b>W04 - PH070</b>	93	A	2273	2366		
			<b>W09 - PE080</b>	224	A	2386	2610		
<b>J022-60</b>	1	0	900	660		20	700	0	0
			<b>W07 - PE15</b>	330	A	20	350		
			<b>W03 - PH15</b>	330	A	370	700		
<b>J023-61</b>	1	0	615	330		20	350	0	0
			<b>W03 - PH15</b>	330	A	20	350		
<b>J024-62</b>	1	0	2238	1035		1158	2253	15	15
			<b>W03 - PH15</b>	467	A	1158	1625		
			<b>W02 - DE085</b>	224	A	1645	1869		
			<b>W09 - PE080</b>	180	A	1889	2069		
			<b>W04 - PH070</b>	164	A	2089	2253		
<b>J025-65</b>	1	0	780	331		20	676	0	0
			<b>W10 - PE030</b>	170	A	20	190		
			<b>W09 - PE080</b>	161	A	515	676		
<b>J026-67</b>	1	0	3162	362		2776	3158	0	0
			<b>W05 - PH300</b>	211	A	2776	2987		
			<b>W09 - PE080</b>	151	A	3007	3158		
<b>J027-70</b>	1	0	1785	810		20	1349	0	0
			<b>W03 - PH150</b>	252	A	20	272		
			<b>W02 - DE085</b>	211	A	751	962		
			<b>W07 - PE150</b>	125	A	982	1107		
			<b>W16 - SD400</b>	222	A	1127	1349		



Job Pool - P1.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J028-72</b>	1	0	900	825		20	905	5	5
				W03 - PH150	252	A	20	272	
				W14 - DE0850	224	A	292	516	
				W07 - PE150	125	A	536	661	
				W12 - PE060	224	A	681	905	
<b>J029-74</b>	1	0	2955	921		2002	2963	8	8
				W05 - PH30	467	A	2002	2469	
				W02 - DE085	224	A	2489	2713	
				W07 - PE150	230	A	2733	2963	
<b>J030-75</b>	1	0	3240	705		2489	3234	0	0
				W05 - PH300	267	A	2489	2756	
				W06 - PE250	227	A	2776	3003	
				W07 - PE150	211	A	3023	3234	
<b>J031-77</b>	1	0	1680	777		779	1576	0	0
				W01 - PH350	252	A	779	1031	
				W17 - SB200	525	A	1051	1576	
<b>J032-78</b>	1	0	1950	1123		507	1752	0	0
				W01 - PH350	252	A	507	759	
				W10 - PE030	172	A	841	1013	
				W17 - SB200	525	A	1033	1558	
				W09 - PE080	174	A	1578	1752	
<b>J033-79</b>	1	0	615	211		30	241	0	0
				W20 - 500T PH	211	B	30	241	
<b>J034-84</b>	1	0	4230	797		3417	4254	24	24
				W05 - PH	390	A	3417	3807	
				W06 - PE250	227	A	3827	4054	
				W09 - PE080	180	A	4074	4254	
<b>J035-85</b>	1	0	3630	617		3007	3644	14	14
				W05 - PH	390	A	3007	3397	
				W06 - PE250	227	A	3417	3644	

Job Pool - P1.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J036-93</b>	1	0	2340	1142		840	2325	0	0
				478	A	840	1318		
				254	A	1338	1592		
				180	A	1895	2075		
				230	A	2095	2325		
<b>J037-95</b>	1	0	615	252		20	272	0	0
				252	A	20	272		
<b>J038-97</b>	1	0	1110	669		20	1044	0	0
				201	A	20	221		
				171	A	536	707		
				126	A	727	853		
				171	A	873	1044		
<b>J039-102</b>	1	0	615	304		20	444	0	0
				152	A	20	172		
				152	A	292	444		
<b>J040-105</b>	1	0	4680	713		3827	4600	0	0
				188	A	3827	4015		
				159	A	4035	4194		
				183	A	4214	4397		
				183	A	4417	4600		
<b>J041-106</b>	1	0	1680	530		657	1468	0	0
				188	A	657	845		
				159	A	1106	1265		
				183	A	1285	1468		
<b>J042-108</b>	1	0	1290	684		241	1263	0	0
				188	A	241	429		
				180	A	727	907		
				136	A	927	1063		
				180	A	1083	1263		

Job Pool - P1.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J043-110</b>	1	0	1290	530		449	1289	0	0
				188	A	449	637		
				159	A	927	1086		
				183	A	1106	1289		
<b>J044-116</b>	1	0	615	151		20	171	0	0
				151	A	20	171		
<b>J045-19</b>	2	0	3345	2166		20	3301	0	0
				150	A	20	170		
				585	A	1051	1636		
				381	A	1790	2171		
				462	A	2191	2653		
				336	A	2673	3009		
				252	A	3049	3301		
<b>J046-21</b>	2	0	3060	1806		850	2873	0	0
				585	A	850	1435		
				381	A	1612	1993		
				462	A	2013	2475		
				378	A	2495	2873		
<b>J047-78</b>	2	0	3630	1685		1455	3582	0	0
				378	A	1455	1833		
				258	A	1853	2111		
				788	A	2131	2919		
				261	A	3321	3582		
<b>J048-93</b>	2	0	3900	1713		1544	3813	0	0
				717	A	1544	2261		
				381	A	2281	2662		
				270	A	3178	3448		
				345	A	3468	3813		

Job Pool - P1.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J049-55</b>	2	0	3840	1904		1338	3804	0	0
				585	A	1338	1923		
				381	A	1943	2324		
				462	A	2344	2806		
				140	A	2826	2966		
				336	A	3468	3804		
<b>J050-18</b>	2	0	4680	1764		1656	3563	0	0
				585	A	1656	2241		
				381	A	2344	2725		
				462	A	2745	3207		
				336	A	3227	3563		

Sequence - Seqs \* (MS)

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M01.1.PH35001</b>	80			1843
J006-18	20	20	410	390
J007-19	20	430	820	390
J036-93	20	840	1318	478
J049-55	20	1338	1923	585
<b>M01.2.PH30002</b>	100			2141
J008-20	20	20	487	467
J032-78	20	507	759	252
J031-77	20	779	1031	252
J045-19	20	1051	1636	585
J050-18	20	1656	2241	585
<b>M01.3.PH60001</b>	80			1753
J009-21	20	20	410	390
J015-39	20	430	830	400
J046-21	20	850	1435	585
J047-78	20	1455	1833	378
<b>M01.4.PH20001</b>	100			2161
J011-24	20	20	570	550
J019-43	20	590	842	252
J021-55	20	862	1252	390
J017-41	20	1272	1524	252
J048-93	20	1544	2261	717
<b>M02.1.DE08001</b>	100			1367
J006-18	20	430	684	254
J007-19	20	840	1094	254
J036-93	20	1338	1592	254
J046-21	20	1612	1993	381
J029-74	20	2489	2713	224
<b>M02.2.DE08502</b>	120			1675
J008-20	20	507	731	224
J027-70	20	751	962	211
J021-55	20	1272	1526	254
J017-41	20	1546	1770	224
J045-19	20	1790	2171	381
J048-93	20	2281	2662	381
<b>M02.3.DE08504</b>	100			1590
J009-21	20	430	684	254
J011-24	20	704	1054	350
J024-62	20	1645	1869	224
J049-55	20	1943	2324	381
J050-18	20	2344	2725	381

Sequence - Seqs \* (MS)

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M03.1.PH15001</b>	160			2353
J028-72	20	20	272	252
J002-12	20	450	810	360
J009-21	20	830	1138	308
J024-62	20	1158	1625	467
J013-35	20	1720	1931	211
J036-93	20	2095	2325	230
J018-42	20	2649	2829	180
J048-93	20	3468	3813	345
<b>M03.2.PH15002</b>	120			2076
J023-61	20	20	350	330
J006-18	20	704	1012	308
J007-19	20	1114	1422	308
J021-55	20	1546	1854	308
J003-11	20	1908	2268	360
J049-55	20	2344	2806	462
<b>M03.3.PH15003</b>	160			2191
J027-70	20	20	272	252
J039-102	20	292	444	152
J008-20	20	751	981	230
J019-43	20	1001	1212	211
J014-36	20	1232	1443	211
J016-40	20	1633	1844	211
J046-21	20	2013	2475	462
J050-18	20	2745	3207	462
<b>M03.4.PH15004</b>	60			1192
J022-60	20	370	700	330
J015-39	20	850	1250	400
J045-19	20	2191	2653	462
<b>M04.1.PH07001</b>	180			1424
J045-19	20	20	170	150
J001-1	20	190	340	150
J010-22	20	360	435	75
J008-20	20	1001	1251	250
J011-24	20	1271	1462	191
J017-41	20	1790	2001	211
J024-62	20	2089	2253	164
J021-55	20	2273	2366	93
J049-55	20	2826	2966	140

Sequence - Seqs \* (MS)

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M05.1.PH30001</b>	260			3755
J002-12	20	20	242	222
J005-17	20	262	592	330
J014-36	20	612	879	267
J016-40	20	899	1166	267
J013-35	20	1186	1453	267
J003-11	20	1473	1695	222
J018-42	20	1715	1982	267
J029-74	20	2002	2469	467
J030-75	20	2489	2756	267
J026-67	20	2776	2987	211
J035-85	20	3007	3397	390
J034-84	20	3417	3807	390
J040-105	20	3827	4015	188
<b>M06.1.PE25001</b>	180			1925
J002-12	20	262	430	168
J014-36	20	899	1126	227
J016-40	20	1186	1413	227
J013-35	20	1473	1700	227
J003-11	20	1720	1888	168
J018-42	20	2002	2229	227
J030-75	20	2776	3003	227
J035-85	20	3417	3644	227
J034-84	20	3827	4054	227
<b>M07.1.PE15002</b>	160			1666
J022-60	20	20	350	330
J028-72	20	536	661	125
J006-18	20	1032	1256	224
J041-106	20	1285	1468	183
J018-42	20	2449	2629	180
J029-74	20	2733	2963	230
J030-75	20	3023	3234	211
J040-105	20	4214	4397	183
<b>M07.2.PE15003</b>	120			1383
J044-116	20	20	171	151
J027-70	20	982	1107	125
J019-43	20	1232	1443	211
J007-19	20	1463	1687	224
J045-19	20	2673	3009	336
J050-18	20	3227	3563	336
<b>M08.1.PA13003</b>	40			362
J037-95	20	20	272	252
J020-44	20	581	691	110
<b>M08.2.PA13004</b>	20			75
J010-22	20	20	95	75

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M09.1.PE08002</b>	220			2313
J004-15	20	20	350	330
J012-26	20	370	495	125
J025-65	20	515	676	161
J009-21	20	1158	1410	252
J007-19	20	1707	1875	168
J036-93	20	1895	2075	180
J021-55	20	2386	2610	224
J018-42	20	2849	3029	180
J045-19	20	3049	3301	252
J047-78	20	3321	3582	261
J034-84	20	4074	4254	180
<b>M09.1.PE08003</b>	160			2010
J001-1	20	20	170	150
J020-44	20	190	561	371
J032-78	20	1578	1752	174
J024-62	20	1889	2069	180
J046-21	20	2495	2873	378
J026-67	20	3007	3158	151
J048-93	20	3178	3448	270
J049-55	20	3468	3804	336
<b>M10.1.PE03005</b>	140			1183
J025-65	20	20	190	170
J012-26	20	515	640	125
J020-44	20	711	821	110
J032-78	20	841	1013	172
J014-36	20	1463	1643	180
J047-78	20	1853	2111	258
J003-11	20	2288	2456	168
<b>M10.2.PE03008</b>	20			136
J042-108	20	927	1063	136
<b>M11.1.PA12502</b>	0			0
<b>M12.1.PE06002</b>	40			431
J020-44	20	20	121	101
J004-15	20	370	700	330
<b>M12.2.PE06007</b>	20			224
J028-72	20	681	905	224
<b>M13.1.PH16001</b>	80			765
J038-97	20	20	221	201
J042-108	20	241	429	188
J043-110	20	449	637	188
J041-106	20	657	845	188

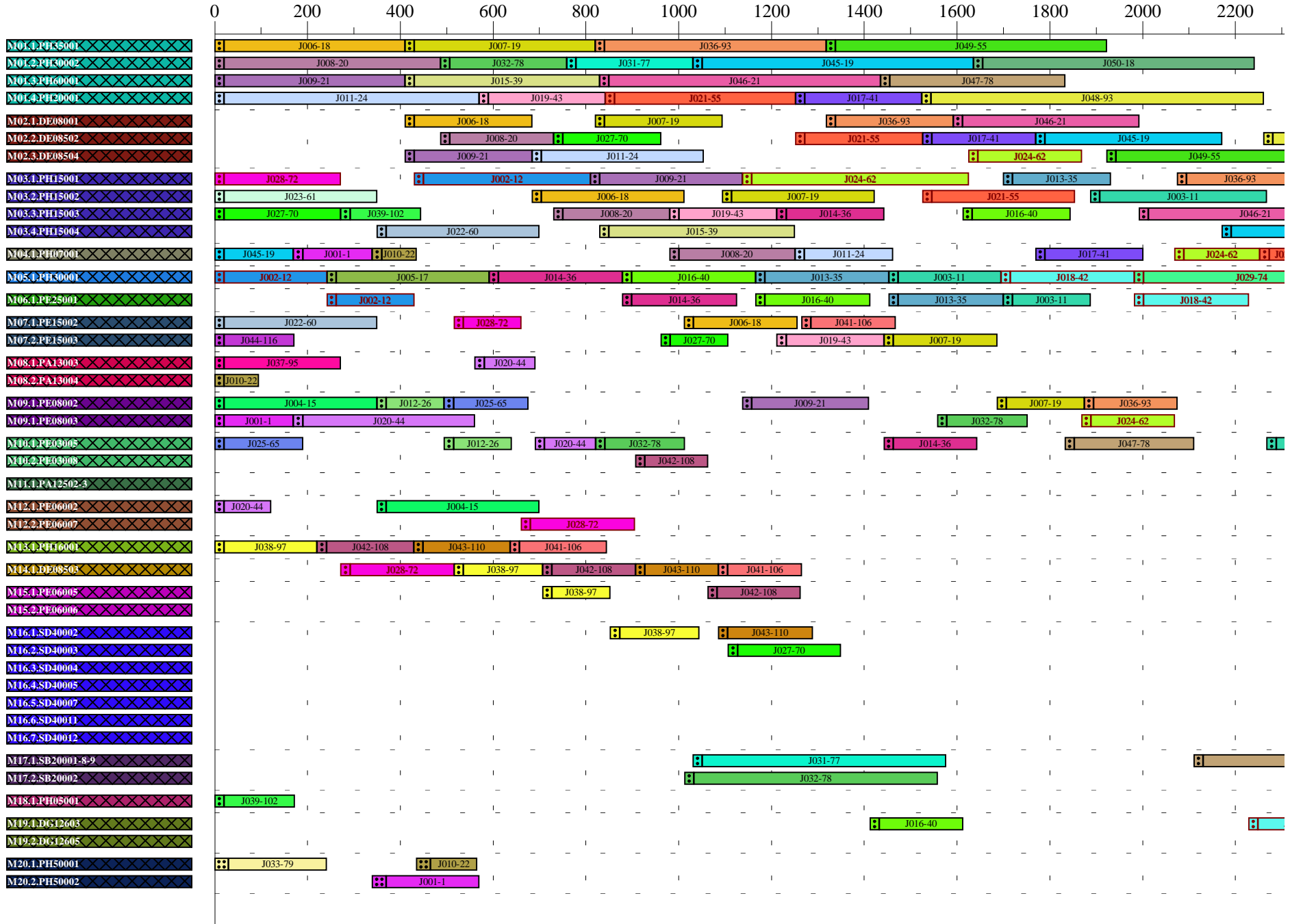


Sequence - Seqs \* (MS)

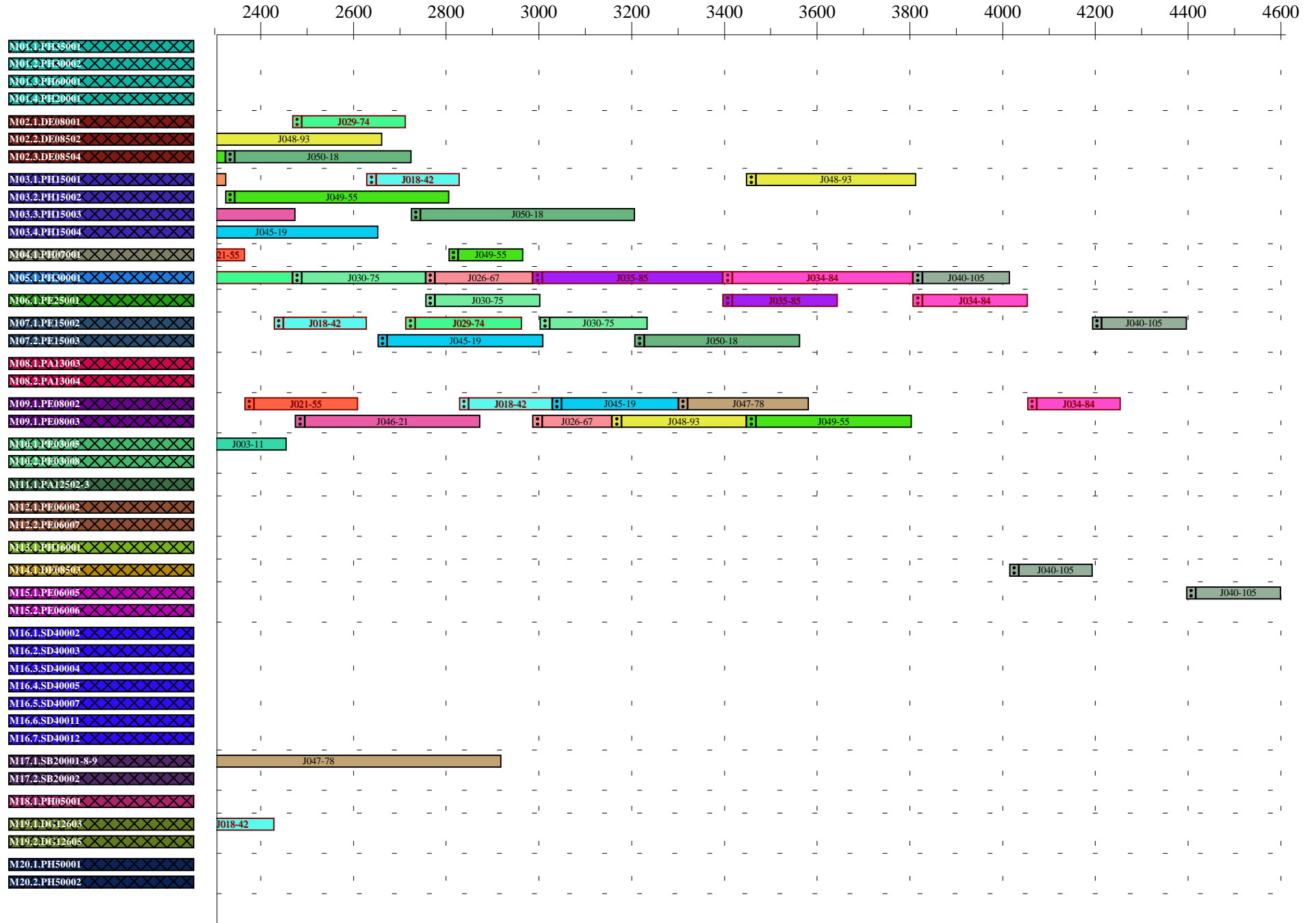
Mch/Job	Setup	Start	Stop	Pr.tm
<b>M14.1.DE08503</b>	120			1052
J028-72	20	292	516	224
J038-97	20	536	707	171
J042-108	20	727	907	180
J043-110	20	927	1086	159
J041-106	20	1106	1265	159
J040-105	20	4035	4194	159
<b>M15.1.PE06005</b>	60			489
J038-97	20	727	853	126
J042-108	20	1083	1263	180
J040-105	20	4417	4600	183
<b>M15.2.PE06006</b>	0			0
<b>M16.1.SD40002</b>	40			354
J038-97	20	873	1044	171
J043-110	20	1106	1289	183
<b>M16.2.SD40003</b>	20			222
J027-70	20	1127	1349	222
<b>M16.3.SD40004</b>	0			0
<b>M16.4.SD40005</b>	0			0
<b>M16.5.SD40007</b>	0			0
<b>M16.6.SD40011</b>	0			0
<b>M16.7.SD40012</b>	0			0
<b>M17.1.SB20001</b>	40			1313
J031-77	20	1051	1576	525
J047-78	20	2131	2919	788
<b>M17.2.SB20002</b>	20			525
J032-78	20	1033	1558	525
<b>M18.1.PH05001</b>	20			152
J039-102	20	20	172	152
<b>M19.1.DG12603</b>	40			360
J016-40	20	1433	1613	180
J018-42	20	2249	2429	180
<b>M19.2.DG12605</b>	0			0
<b>M20.1.PH50001</b>	60			311
J033-79	30	30	241	211
J010-22	30	465	565	100
<b>M20.2.PH50002</b>	30			200
J001-1	30	370	570	200

Mch/Job	Setup	Start	Stop	Pr.tm
<b>Summary</b>				
<i>Time</i>		1		
<i>C<sub>max</sub></i>		4600		
<i>T<sub>max</sub></i>		45		
<i>SU<sub>j</sub></i>		8		
<i>SC<sub>j</sub></i>		91026		
<i>ST<sub>j</sub></i>		161		
<i>Sw<sub>j</sub>C<sub>j</sub></i>		111962		
<i>Sw<sub>j</sub>T<sub>j</sub></i>		161		























Gantt Chart - Seqs (MS)



Gantt Chart - Seqs (MS)



Job Pool - P1.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J001-1</b>	1	0	780	500		20	590	0	0
	 <b>W09 - PE080</b>			150	A	20	170		
	 <b>W04 - PH070</b>			150	A	210	360		
	 <b>W20 - 500T PH</b>			200	B	390	590		
<b>J002-12</b>	1	0	780	750		1793	2583	1803	1803
	 <b>W05 - PH300</b>			222	A	1793	2015		
	 <b>W06 - PE250</b>			168	A	2035	2203		
	 <b>W03 - PH1</b>			360	A	2223	2583		
<b>J003-11</b>	1	0	2460	918		3019	4002	1542	1542
	 <b>W05 - PH300</b>			222	A	3019	3241		
	 <b>W06 - PE250</b>			168	A	3266	3434		
	 <b>W03 - PH1</b>			360	A	3454	3814		
	 <b>W10 - PE030</b>			168	A	3834	4002		
<b>J004-15</b>	1	0	720	660		581	1261	541	541
	 <b>W09 - PE08</b>			330	A	581	911		
	 <b>W12 - PE06</b>			330	A	931	1261		
<b>J005-17</b>	1	0	615	330		20	350	0	0
	 <b>W05 - PH30</b>			330	A	20	350		
<b>J006-18</b>	1	0	1290	1176		564	2021	731	731
	 <b>W01 - PH</b>			390	A	564	954		
	 <b>W02 - DE085</b>			254	A	1195	1449		
	 <b>W03 - PH15</b>			308	A	1469	1777		
	 <b>W07 - PE150</b>			224	A	1797	2021		
<b>J007-19</b>	1	0	1890	1344		927	2516	626	626
	 <b>W01 - PH</b>			390	A	927	1317		
	 <b>W02 - DE085</b>			254	A	1469	1723		
	 <b>W03 - PH15</b>			308	A	1776	2084		
	 <b>W07 - PE150</b>			224	A	2104	2328		
	 <b>W09 - PE080</b>			168	A	2348	2516		

Job Pool - Pl.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J008-20</b>	1	0	1290	1171		440	1898	608	608
				467	A	440	907		
				224	A	1064	1288		
				230	A	1308	1538		
				250	A	1648	1898		
<b>J009-21</b>	1	0	1560	1204		790	2094	534	534
				390	A	790	1180		
				254	A	1232	1486		
				308	A	1514	1822		
				252	A	1842	2094		
<b>J010-22</b>	1	0	615	250		20	320	0	0
				75	A	20	95		
				75	A	115	190		
				100	B	220	320		
<b>J011-24</b>	1	0	1560	1091		292	1423	0	0
				550	A	292	842		
				350	A	862	1212		
				191	A	1232	1423		
<b>J012-26</b>	1	0	780	250		20	290	0	0
				125	A	20	145		
				125	A	165	290		
<b>J013-35</b>	1	0	2175	705		1011	1756	0	0
				267	A	1011	1278		
				227	A	1298	1525		
				211	A	1545	1756		
<b>J014-36</b>	1	0	1785	885		2445	3390	1605	1605
				267	A	2445	2712		
				227	A	2732	2959		
				211	A	2979	3190		
				180	A	3210	3390		

Job Pool - P1.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J015-39</b>	1	0	1395	800		20	840	0	0
				400	A	20	420		
				400	A	440	840		
<b>J016-40</b>	1	0	2175	885		2732	3677	1502	1502
				267	A	2732	2999		
				227	A	3019	3246		
				180	A	3266	3446		
				211	A	3466	3677		
<b>J017-41</b>	1	0	2175	687		20	747	0	0
				252	A	20	272		
				224	A	292	516		
				211	A	536	747		
<b>J018-42</b>	1	0	3009	1214		3748	5062	2053	2053
				267	A	3748	4015		
				227	A	4035	4262		
				180	A	4282	4462		
				180	A	4482	4662		
				180	A	4682	4862		
				180	A	4882	5062		
<b>J019-43</b>	1	0	1560	674		20	734	0	0
				252	A	20	272		
				211	A	292	503		
				211	A	523	734		
<b>J020-44</b>	1	0	900	692		20	821	0	0
				101	A	20	121		
				371	A	190	561		
				110	A	581	691		
				110	A	711	821		

Job Pool - Pl.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J021-55</b>	1	0	2565	1269		862	2255	0	0
				W01 - PH	390	A	862	1252	
				W02 - DE085	254	A	1308	1562	
				W03 - PH150	308	A	1582	1890	
				W04 - PH070	93	A	1918	2011	
				W09 - PE080	224	A	2031	2255	
<b>J022-60</b>	1	0	900	660		20	700	0	0
				W07 - PE15	330	A	20	350	
				W03 - PH15	330	A	370	700	
<b>J023-61</b>	1	0	615	330		20	350	0	0
				W03 - PH15	330	A	20	350	
<b>J024-62</b>	1	0	2238	1035		464	1628	0	0
				W03 - PH15	467	A	464	931	
				W02 - DE085	224	A	951	1175	
				W09 - PE080	180	A	1264	1444	
				W04 - PH070	164	A	1464	1628	
<b>J025-65</b>	1	0	780	331		20	371	0	0
				W10 - PE030	170	A	20	190	
				W09 - PE080	161	A	210	371	
<b>J026-67</b>	1	0	3162	362		370	752	0	0
				W05 - PH300	211	A	370	581	
				W09 - PE080	151	A	601	752	
<b>J027-70</b>	1	0	1785	810		20	977	0	0
				W03 - PH150	252	A	20	272	
				W02 - DE085	211	A	292	503	
				W07 - PE150	125	A	610	735	
				W16 - SD400	222	A	755	977	



Job Pool - P1.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J028-72</b>	1	0	900	825		20	1678	778	778
				W03 - PH150	252	A	20	272	
				W14 - DE0850	224	A	1065	1289	
				W07 - PE150	125	A	1309	1434	
				W12 - PE060	224	A	1454	1678	
<b>J029-74</b>	1	0	2955	921		3261	4222	1267	1267
				W05 - PH30	467	A	3261	3728	
				W02 - DE085	224	A	3748	3972	
				W07 - PE150	230	A	3992	4222	
<b>J030-75</b>	1	0	3240	705		1298	2043	0	0
				W05 - PH300	267	A	1298	1565	
				W06 - PE250	227	A	1585	1812	
				W07 - PE150	211	A	1832	2043	
<b>J031-77</b>	1	0	1680	777		20	817	0	0
				W01 - PH350	252	A	20	272	
				W17 - SB200	525	A	292	817	
<b>J032-78</b>	1	0	1950	1123		292	1475	0	0
				W01 - PH350	252	A	292	544	
				W10 - PE030	172	A	564	736	
				W17 - SB200	525	A	756	1281	
				W09 - PE080	174	A	1301	1475	
<b>J033-79</b>	1	0	615	211		30	241	0	0
				W20 - 500T PH	211	B	30	241	
<b>J034-84</b>	1	0	4230	797		2035	2872	0	0
				W05 - PH	390	A	2035	2425	
				W06 - PE250	227	A	2445	2672	
				W09 - PE080	180	A	2692	2872	
<b>J035-85</b>	1	0	3630	617		601	1238	0	0
				W05 - PH	390	A	601	991	
				W06 - PE250	227	A	1011	1238	

Job Pool - Pl.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J036-93</b>	1	0	2340	1142		292	1494	0	0
				478	A	292	770		
				254	A	790	1044		
				180	A	1064	1244		
				230	A	1264	1494		
<b>J037-95</b>	1	0	615	252		20	272	0	0
				252	A	20	272		
<b>J038-97</b>	1	0	1110	669		436	1165	55	55
				201	A	436	637		
				171	A	657	828		
				126	A	848	974		
				171	A	994	1165		
<b>J039-102</b>	1	0	615	304		20	444	0	0
				152	A	20	172		
				152	A	292	444		
<b>J040-105</b>	1	0	4680	713		1585	2427	0	0
				188	A	1585	1773		
				159	A	1793	1952		
				183	A	2041	2224		
				183	A	2244	2427		
<b>J041-106</b>	1	0	1680	530		20	590	0	0
				188	A	20	208		
				159	A	228	387		
				183	A	407	590		
<b>J042-108</b>	1	0	1290	684		657	1401	111	111
				188	A	657	845		
				180	A	865	1045		
				136	A	1065	1201		
				180	A	1221	1401		

Job Pool - P1.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT	
<b>J043-110</b>	1	0	1290	530		228	798	0	0	
				W13 - PH160	188	A	228	416		
				W14 - DE08503	159	A	436	595		
				W16 - SD400	183	A	615	798		
<b>J044-116</b>	1	0	615	151		20	171	0	0	
				W07 - PE150	151	A	20	171		
<b>J045-19</b>	2	0	3345	2166		767	3973	628	1256	
				W04 - PH070	150	A	767	917		
				W01 - PH350	585	A	1877	2462		
				W02 - DE0	381	A	2482	2863		
				W03 - PH15	462	A	2883	3345		
				W07 - PE15	336	A	3365	3701		
				W09 - PE080	252	A	3721	3973		
<b>J046-21</b>	2	0	3060	1806		1337	3203	143	286	
				W01 - PH350	585	A	1337	1922		
				W02 - DE0	381	A	1942	2323		
				W03 - PH15	462	A	2343	2805		
				W09 - PE0	378	A	2825	3203		
<b>J047-78</b>	2	0	3630	1685		974	2719	0	0	
				W01 - PH3	378	A	974	1352		
				W10 - PE030	258	A	1372	1630		
				W17 - SB200	788	A	1650	2438		
				W09 - PE080	261	A	2458	2719		
<b>J048-93</b>	2	0	3900	1713		1200	3527	0	0	
				W01 - PH350	717	A	1200	1917		
				W02 - DE0	381	A	1937	2318		
				W09 - PE080	270	A	2892	3162		
				W03 - PH15	345	A	3182	3527		

Job Pool - P1.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J049-55</b>	2	0	3840	1904		1372	3657	0	0
				585	A	1372	1957		
				381	A	2278	2659		
				462	A	2679	3141		
				140	A	3161	3301		
				336	A	3321	3657		
<b>J050-18</b>	2	0	4680	1764		1272	3096	0	0
				585	A	1272	1857		
				381	A	1877	2258		
				462	A	2278	2740		
				336	A	2760	3096		

Sequence - Seqs \* (SPT)

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M01.1.PH35001</b>	100			2362
J019-43	20	20	272	252
J011-24	20	292	842	550
J021-55	20	862	1252	390
J050-18	20	1272	1857	585
J045-19	20	1877	2462	585
<b>M01.2.PH30002</b>	100			1857
J017-41	20	20	272	252
J032-78	20	292	544	252
J006-18	20	564	954	390
J047-78	20	974	1352	378
J049-55	20	1372	1957	585
<b>M01.3.PH60001</b>	80			1837
J031-77	20	20	272	252
J036-93	20	292	770	478
J009-21	20	790	1180	390
J048-93	20	1200	1917	717
<b>M01.4.PH20001</b>	80			1842
J015-39	20	20	420	400
J008-20	20	440	907	467
J007-19	20	927	1317	390
J046-21	20	1337	1922	585
<b>M02.1.DE08001</b>	120			1814
J017-41	20	292	516	224
J011-24	20	862	1212	350
J009-21	20	1232	1486	254
J048-93	20	1937	2318	381
J045-19	20	2482	2863	381
J029-74	20	3748	3972	224
<b>M02.2.DE08502</b>	120			1705
J027-70	20	292	503	211
J036-93	20	790	1044	254
J008-20	20	1064	1288	224
J021-55	20	1308	1562	254
J050-18	20	1877	2258	381
J049-55	20	2278	2659	381
<b>M02.3.DE08504</b>	80			1113
J024-62	20	951	1175	224
J006-18	20	1195	1449	254
J007-19	20	1469	1723	254
J046-21	20	1942	2323	381

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M03.1.PH15001</b>	160			2615
J023-61	20	20	350	330
J015-39	20	440	840	400
J036-93	20	1264	1494	230
J009-21	20	1514	1822	308
J002-12	20	2223	2583	360
J049-55	20	2679	3141	462
J048-93	20	3182	3527	345
J018-42	20	4682	4862	180
<b>M03.2.PH15002</b>	160			2274
J027-70	20	20	272	252
J039-102	20	292	444	152
J024-62	20	464	931	467
J013-35	20	1545	1756	211
J007-19	20	1776	2084	308
J050-18	20	2278	2740	462
J014-36	20	2979	3190	211
J016-40	20	3466	3677	211
<b>M03.3.PH15003</b>	140			2404
J028-72	20	20	272	252
J022-60	20	370	700	330
J008-20	20	1308	1538	230
J021-55	20	1582	1890	308
J046-21	20	2343	2805	462
J045-19	20	2883	3345	462
J003-11	20	3454	3814	360
<b>M03.4.PH15004</b>	40			519
J019-43	20	292	503	211
J006-18	20	1469	1777	308
<b>M04.1.PH07001</b>	180			1424
J010-22	20	115	190	75
J001-1	20	210	360	150
J017-41	20	536	747	211
J045-19	20	767	917	150
J011-24	20	1232	1423	191
J024-62	20	1464	1628	164
J008-20	20	1648	1898	250
J021-55	20	1918	2011	93
J049-55	20	3161	3301	140

Sequence - Seqs \* (SPT)

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M05.1.PH30001</b>	260			3755
J005-17	20	20	350	330
J026-67	20	370	581	211
J035-85	20	601	991	390
J013-35	20	1011	1278	267
J030-75	20	1298	1565	267
J040-105	20	1585	1773	188
J002-12	20	1793	2015	222
J034-84	20	2035	2425	390
J014-36	20	2445	2712	267
J016-40	20	2732	2999	267
J003-11	20	3019	3241	222
J029-74	20	3261	3728	467
J018-42	20	3748	4015	267
<b>M06.1.PE25001</b>	180			1925
J035-85	20	1011	1238	227
J013-35	20	1298	1525	227
J030-75	20	1585	1812	227
J002-12	20	2035	2203	168
J034-84	20	2445	2672	227
J014-36	20	2732	2959	227
J016-40	20	3019	3246	227
J003-11	20	3266	3434	168
J018-42	20	4035	4262	227
<b>M07.1.PE15002</b>	200			2073
J044-116	20	20	171	151
J041-106	20	407	590	183
J027-70	20	610	735	125
J028-72	20	1309	1434	125
J006-18	20	1797	2021	224
J040-105	20	2041	2224	183
J050-18	20	2760	3096	336
J045-19	20	3365	3701	336
J029-74	20	3992	4222	230
J018-42	20	4482	4662	180
<b>M07.2.PE15003</b>	80			976
J022-60	20	20	350	330
J019-43	20	523	734	211
J030-75	20	1832	2043	211
J007-19	20	2104	2328	224
<b>M08.1.PA13003</b>	40			185
J010-22	20	20	95	75
J020-44	20	581	691	110
<b>M08.2.PA13004</b>	20			252
J037-95	20	20	272	252

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M09.1.PE08002</b>	240			2435
J012-26	20	20	145	125
J025-65	20	210	371	161
J026-67	20	601	752	151
J036-93	20	1064	1244	180
J024-62	20	1264	1444	180
J009-21	20	1842	2094	252
J007-19	20	2348	2516	168
J034-84	20	2692	2872	180
J048-93	20	2892	3162	270
J049-55	20	3321	3657	336
J045-19	20	3721	3973	252
J018-42	20	4882	5062	180
<b>M09.1.PE08003</b>	140			1888
J001-1	20	20	170	150
J020-44	20	190	561	371
J004-15	20	581	911	330
J032-78	20	1301	1475	174
J021-55	20	2031	2255	224
J047-78	20	2458	2719	261
J046-21	20	2825	3203	378
<b>M10.1.PE03005</b>	120			1039
J012-26	20	165	290	125
J032-78	20	564	736	172
J042-108	20	1065	1201	136
J047-78	20	1372	1630	258
J014-36	20	3210	3390	180
J003-11	20	3834	4002	168
<b>M10.2.PE03008</b>	40			280
J025-65	20	20	190	170
J020-44	20	711	821	110
<b>M11.1.PA12502</b>	0			0
<b>M12.1.PE06002</b>	60			655
J020-44	20	20	121	101
J004-15	20	931	1261	330
J028-72	20	1454	1678	224
<b>M12.2.PE06007</b>	0			0
<b>M13.1.PH16001</b>	80			765
J041-106	20	20	208	188
J043-110	20	228	416	188
J038-97	20	436	637	201
J042-108	20	657	845	188

























Mch/Job	Setup	Start	Stop	Pr.tm
<b>M14.1.DE08503</b>	120			1052
J041-106	20	228	387	159
J043-110	20	436	595	159
J038-97	20	657	828	171
J042-108	20	865	1045	180
J028-72	20	1065	1289	224
J040-105	20	1793	1952	159
<b>M15.1.PE06005</b>	60			489
J038-97	20	848	974	126
J042-108	20	1221	1401	180
J040-105	20	2244	2427	183
<b>M15.2.PE06006</b>	0			0
<b>M16.1.SD40002</b>	40			354
J043-110	20	615	798	183
J038-97	20	994	1165	171
<b>M16.2.SD40003</b>	20			222
J027-70	20	755	977	222
<b>M16.3.SD40004</b>	0			0
<b>M16.4.SD40005</b>	0			0
<b>M16.5.SD40007</b>	0			0
<b>M16.6.SD40011</b>	0			0
<b>M16.7.SD40012</b>	0			0
<b>M17.1.SB20001</b>	40			1313
J031-77	20	292	817	525
J047-78	20	1650	2438	788
<b>M17.2.SB20002</b>	20			525
J032-78	20	756	1281	525
<b>M18.1.PH05001</b>	20			152
J039-102	20	20	172	152
<b>M19.1.DG12603</b>	40			360
J016-40	20	3266	3446	180
J018-42	20	4282	4462	180
<b>M19.2.DG12605</b>	0			0
<b>M20.1.PH50001</b>	60			411
J033-79	30	30	241	211
J001-1	30	390	590	200
<b>M20.2.PH50002</b>	30			100
J010-22	30	220	320	100

Mch/Job	Setup	Start	Stop	Pr.tm
<b>Summary</b>				
<i>Time</i>		1		
<i>C<sub>max</sub></i>		5062		
<i>T<sub>max</sub></i>		2053		
<i>SU<sub>j</sub></i>		16		
<i>SC<sub>j</sub></i>		86931		
<i>ST<sub>j</sub></i>		14527		
<i>Sw<sub>j</sub>C<sub>j</sub></i>		107106		
<i>Sw<sub>j</sub>T<sub>j</sub></i>		15298		



Job Pool - P1.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J001-1</b>	1	0	780	500		20	590	0	0
		<b>W09 - PE080</b>		150	A	20	170		
		<b>W04 - PH070</b>		150	A	210	360		
		<b>W20 - 500T PH</b>		200	B	390	590		
<b>J002-12</b>	1	0	780	750		1793	2583	1803	1803
		<b>W05 - PH300</b>		222	A	1793	2015		
		<b>W06 - PE250</b>		168	A	2035	2203		
		<b>W03 - PH1</b>		360	A	2223	2583		
<b>J003-11</b>	1	0	2460	918		3019	4002	1542	1542
		<b>W05 - PH300</b>		222	A	3019	3241		
		<b>W06 - PE250</b>		168	A	3266	3434		
		<b>W03 - PH1</b>		360	A	3454	3814		
		<b>W10 - PE030</b>		168	A	3834	4002		
<b>J004-15</b>	1	0	720	660		581	1261	541	541
		<b>W09 - PE08</b>		330	A	581	911		
		<b>W12 - PE06</b>		330	A	931	1261		
<b>J005-17</b>	1	0	615	330		20	350	0	0
		<b>W05 - PH30</b>		330	A	20	350		
<b>J006-18</b>	1	0	1290	1176		1542	2977	1687	1687
		<b>W01 - PH</b>		390	A	1542	1932		
		<b>W02 - DE085</b>		254	A	1969	2223		
		<b>W03 - PH15</b>		308	A	2425	2733		
		<b>W07 - PE150</b>		224	A	2753	2977		
<b>J007-19</b>	1	0	1890	1344		1804	3456	1566	1566
		<b>W01 - PH</b>		390	A	1804	2194		
		<b>W02 - DE085</b>		254	A	2243	2497		
		<b>W03 - PH15</b>		308	A	2701	3009		
		<b>W07 - PE150</b>		224	A	3029	3253		
		<b>W09 - PE080</b>		168	A	3288	3456		

Job Pool - Pl.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J008-20</b>	1	0	1290	1171		1317	2723	1433	1433
<b>J009-21</b>	1	0	1560	1204		1599	3305	1745	1745
<b>J010-22</b>	1	0	615	250		20	320	0	0
<b>J011-24</b>	1	0	1560	1091		1029	2160	600	600
<b>J012-26</b>	1	0	780	250		20	290	0	0
<b>J013-35</b>	1	0	2175	705		1011	1756	0	0
<b>J014-36</b>	1	0	1785	885		2445	3390	1605	1605

Job Pool - P1.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J015-39</b>	1	0	1395	800		20	840	0	0
				400	A	20	420		
				400	A	440	840		
<b>J016-40</b>	1	0	2175	885		2732	3677	1502	1502
				267	A	2732	2999		
				227	A	3019	3246		
				180	A	3266	3446		
				211	A	3466	3677		
<b>J017-41</b>	1	0	2175	687		20	747	0	0
				252	A	20	272		
				224	A	292	516		
				211	A	536	747		
<b>J018-42</b>	1	0	3009	1214		3748	5062	2053	2053
				267	A	3748	4015		
				227	A	4035	4262		
				180	A	4282	4462		
				180	A	4482	4662		
				180	A	4682	4862		
				180	A	4882	5062		
<b>J019-43</b>	1	0	1560	674		20	734	0	0
				252	A	20	272		
				211	A	292	503		
				211	A	523	734		
<b>J020-44</b>	1	0	900	692		20	821	0	0
				101	A	20	121		
				371	A	190	561		
				110	A	581	691		
				110	A	711	821		

Job Pool - Pl.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J021-55</b>	1	0	2565	1269		1793	3268	703	703
			<b>W01 - PH</b>	390	A	1793	2183		
			<b>W02 - DE085</b>	254	A	2203	2457		
			<b>W03 - PH150</b>	308	A	2603	2911		
			<b>W04 - PH070</b>	93	A	2931	3024		
			<b>W09 - PE080</b>	224	A	3044	3268		
<b>J022-60</b>	1	0	900	660		20	700	0	0
			<b>W07 - PE15</b>	330	A	20	350		
			<b>W03 - PH15</b>	330	A	370	700		
<b>J023-61</b>	1	0	615	330		20	350	0	0
			<b>W03 - PH15</b>	330	A	20	350		
<b>J024-62</b>	1	0	2238	1035		464	1906	0	0
			<b>W03 - PH15</b>	467	A	464	931		
			<b>W02 - DE085</b>	224	A	1298	1522		
			<b>W09 - PE080</b>	180	A	1542	1722		
			<b>W04 - PH070</b>	164	A	1742	1906		
<b>J025-65</b>	1	0	780	331		20	371	0	0
			<b>W10 - PE030</b>	170	A	20	190		
			<b>W09 - PE080</b>	161	A	210	371		
<b>J026-67</b>	1	0	3162	362		370	752	0	0
			<b>W05 - PH300</b>	211	A	370	581		
			<b>W09 - PE080</b>	151	A	601	752		
<b>J027-70</b>	1	0	1785	810		20	977	0	0
			<b>W03 - PH150</b>	252	A	20	272		
			<b>W02 - DE085</b>	211	A	292	503		
			<b>W07 - PE150</b>	125	A	610	735		
			<b>W16 - SD400</b>	222	A	755	977		

Job Pool - Pl.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J028-72</b>	1	0	900	825		20	1678	778	778
<b>J029-74</b>	1	0	2955	921		3261	4222	1267	1267
<b>J030-75</b>	1	0	3240	705		1298	2043	0	0
<b>J031-77</b>	1	0	1680	777		20	817	0	0
<b>J032-78</b>	1	0	1950	1123		1045	2231	281	281
<b>J033-79</b>	1	0	615	211		30	241	0	0
<b>J034-84</b>	1	0	4230	797		2035	3009	0	0
<b>J035-85</b>	1	0	3630	617		601	1238	0	0



Job Pool - P1.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J036-93</b>	1	0	2340	1142		1295	2681	341	341
<b>J037-95</b>	1	0	615	252		20	272	0	0
<b>J038-97</b>	1	0	1110	669		436	1165	55	55
<b>J039-102</b>	1	0	615	304		20	444	0	0
<b>J040-105</b>	1	0	4680	713		1585	2449	0	0
<b>J041-106</b>	1	0	1680	530		20	590	0	0
<b>J042-108</b>	1	0	1290	684		657	1401	111	111

Job Pool - P1.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J043-110</b>	1	0	1290	530		228	798	0	0
				188	A	228	416		
				159	A	436	595		
				183	A	615	798		
<b>J044-116</b>	1	0	615	151		20	171	0	0
				151	A	20	171		
<b>J045-19</b>	2	0	3345	2166		767	3033	0	0
				150	A	767	917		
				585	A	937	1522		
				381	A	1542	1923		
				462	A	1943	2405		
				336	A	2425	2761		
				252	A	2781	3033		
<b>J046-21</b>	2	0	3060	1806		440	2306	0	0
				585	A	440	1025		
				381	A	1045	1426		
				462	A	1446	1908		
				378	A	1928	2306		
<b>J047-78</b>	2	0	3630	1685		292	2037	0	0
				378	A	292	670		
				258	A	690	948		
				788	A	968	1756		
				261	A	1776	2037		
<b>J048-93</b>	2	0	3900	1713		292	2065	0	0
				717	A	292	1009		
				381	A	1029	1410		
				270	A	1430	1700		
				345	A	1720	2065		

Job Pool - P1.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J049-55</b>	2	0	3840	1904		690	2809	0	0
				585	A	690	1275		
				381	A	1430	1811		
				462	A	1831	2293		
				140	A	2313	2453		
				336	A	2473	2809		
<b>J050-18</b>	2	0	4680	1764		292	2116	0	0
				585	A	292	877		
				381	A	897	1278		
				462	A	1298	1760		
				336	A	1780	2116		

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M01.1.PH35001</b>	100			2083
J019-43	20	20	272	252
J047-78	20	292	670	378
J049-55	20	690	1275	585
J036-93	20	1295	1773	478
J021-55	20	1793	2183	390
<b>M01.2.PH30002</b>	80			1909
J017-41	20	20	272	252
J048-93	20	292	1009	717
J011-24	20	1029	1579	550
J009-21	20	1599	1989	390
<b>M01.3.PH60001</b>	80			1812
J031-77	20	20	272	252
J050-18	20	292	877	585
J045-19	20	937	1522	585
J006-18	20	1542	1932	390
<b>M01.4.PH20001</b>	100			2094
J015-39	20	20	420	400
J046-21	20	440	1025	585
J032-78	20	1045	1297	252
J008-20	20	1317	1784	467
J007-19	20	1804	2194	390
<b>M02.1.DE08001</b>	120			1718
J017-41	20	292	516	224
J048-93	20	1029	1410	381
J049-55	20	1430	1811	381
J036-93	20	1831	2085	254
J009-21	20	2105	2359	254
J029-74	20	3748	3972	224
<b>M02.2.DE08502</b>	120			1674
J027-70	20	292	503	211
J050-18	20	897	1278	381
J024-62	20	1298	1522	224
J011-24	20	1599	1949	350
J006-18	20	1969	2223	254
J007-19	20	2243	2497	254
<b>M02.3.DE08504</b>	80			1240
J046-21	20	1045	1426	381
J045-19	20	1542	1923	381
J008-20	20	1943	2167	224
J021-55	20	2203	2457	254

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M03.1.PH15001</b>	160			2583
J023-61	20	20	350	330
J015-39	20	440	840	400
J050-18	20	1298	1760	462
J049-55	20	1831	2293	462
J036-93	20	2451	2681	230
J007-19	20	2701	3009	308
J016-40	20	3466	3677	211
J018-42	20	4682	4862	180
<b>M03.2.PH15002</b>	160			2455
J027-70	20	20	272	252
J039-102	20	292	444	152
J024-62	20	464	931	467
J048-93	20	1720	2065	345
J002-12	20	2223	2583	360
J021-55	20	2603	2911	308
J014-36	20	2979	3190	211
J003-11	20	3454	3814	360
<b>M03.3.PH15003</b>	100			1814
J028-72	20	20	272	252
J022-60	20	370	700	330
J046-21	20	1446	1908	462
J045-19	20	1943	2405	462
J006-18	20	2425	2733	308
<b>M03.4.PH15004</b>	80			960
J019-43	20	292	503	211
J013-35	20	1545	1756	211
J008-20	20	2187	2417	230
J009-21	20	2437	2745	308
<b>M04.1.PH07001</b>	180			1424
J010-22	20	115	190	75
J001-1	20	210	360	150
J017-41	20	536	747	211
J045-19	20	767	917	150
J024-62	20	1742	1906	164
J011-24	20	1969	2160	191
J049-55	20	2313	2453	140
J008-20	20	2473	2723	250
J021-55	20	2931	3024	93

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M05.1.PH30001</b>	260			3755
J005-17	20	20	350	330
J026-67	20	370	581	211
J035-85	20	601	991	390
J013-35	20	1011	1278	267
J030-75	20	1298	1565	267
J040-105	20	1585	1773	188
J002-12	20	1793	2015	222
J034-84	20	2035	2425	390
J014-36	20	2445	2712	267
J016-40	20	2732	2999	267
J003-11	20	3019	3241	222
J029-74	20	3261	3728	467
J018-42	20	3748	4015	267
<b>M06.1.PE25001</b>	180			1925
J035-85	20	1011	1238	227
J013-35	20	1298	1525	227
J030-75	20	1585	1812	227
J002-12	20	2035	2203	168
J034-84	20	2445	2672	227
J014-36	20	2732	2959	227
J016-40	20	3019	3246	227
J003-11	20	3266	3434	168
J018-42	20	4035	4262	227
<b>M07.1.PE15002</b>	180			1890
J044-116	20	20	171	151
J041-106	20	407	590	183
J027-70	20	610	735	125
J028-72	20	1309	1434	125
J050-18	20	1780	2116	336
J045-19	20	2425	2761	336
J007-19	20	3029	3253	224
J029-74	20	3992	4222	230
J018-42	20	4482	4662	180
<b>M07.2.PE15003</b>	100			1159
J022-60	20	20	350	330
J019-43	20	523	734	211
J030-75	20	1832	2043	211
J040-105	20	2063	2246	183
J006-18	20	2753	2977	224
<b>M08.1.PA13003</b>	40			185
J010-22	20	20	95	75
J020-44	20	581	691	110
<b>M08.2.PA13004</b>	20			252
J037-95	20	20	272	252

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M09.1.PE08002</b>	240			2410
J012-26	20	20	145	125
J025-65	20	210	371	161
J026-67	20	601	752	151
J048-93	20	1430	1700	270
J047-78	20	1776	2037	261
J032-78	20	2057	2231	174
J036-93	20	2251	2431	180
J049-55	20	2473	2809	336
J034-84	20	2829	3009	180
J021-55	20	3044	3268	224
J007-19	20	3288	3456	168
J018-42	20	4882	5062	180
<b>M09.1.PE08003</b>	140			1913
J001-1	20	20	170	150
J020-44	20	190	561	371
J004-15	20	581	911	330
J024-62	20	1542	1722	180
J046-21	20	1928	2306	378
J045-19	20	2781	3033	252
J009-21	20	3053	3305	252
<b>M10.1.PE03005</b>	120			891
J012-26	20	165	290	125
J020-44	20	711	821	110
J042-108	20	1065	1201	136
J032-78	20	1317	1489	172
J014-36	20	3210	3390	180
J003-11	20	3834	4002	168
<b>M10.2.PE03008</b>	40			428
J025-65	20	20	190	170
J047-78	20	690	948	258
<b>M11.1.PA12502</b>	0			0
<b>M12.1.PE06002</b>	60			655
J020-44	20	20	121	101
J004-15	20	931	1261	330
J028-72	20	1454	1678	224
<b>M12.2.PE06007</b>	0			0
<b>M13.1.PH16001</b>	80			765
J041-106	20	20	208	188
J043-110	20	228	416	188
J038-97	20	436	637	201
J042-108	20	657	845	188

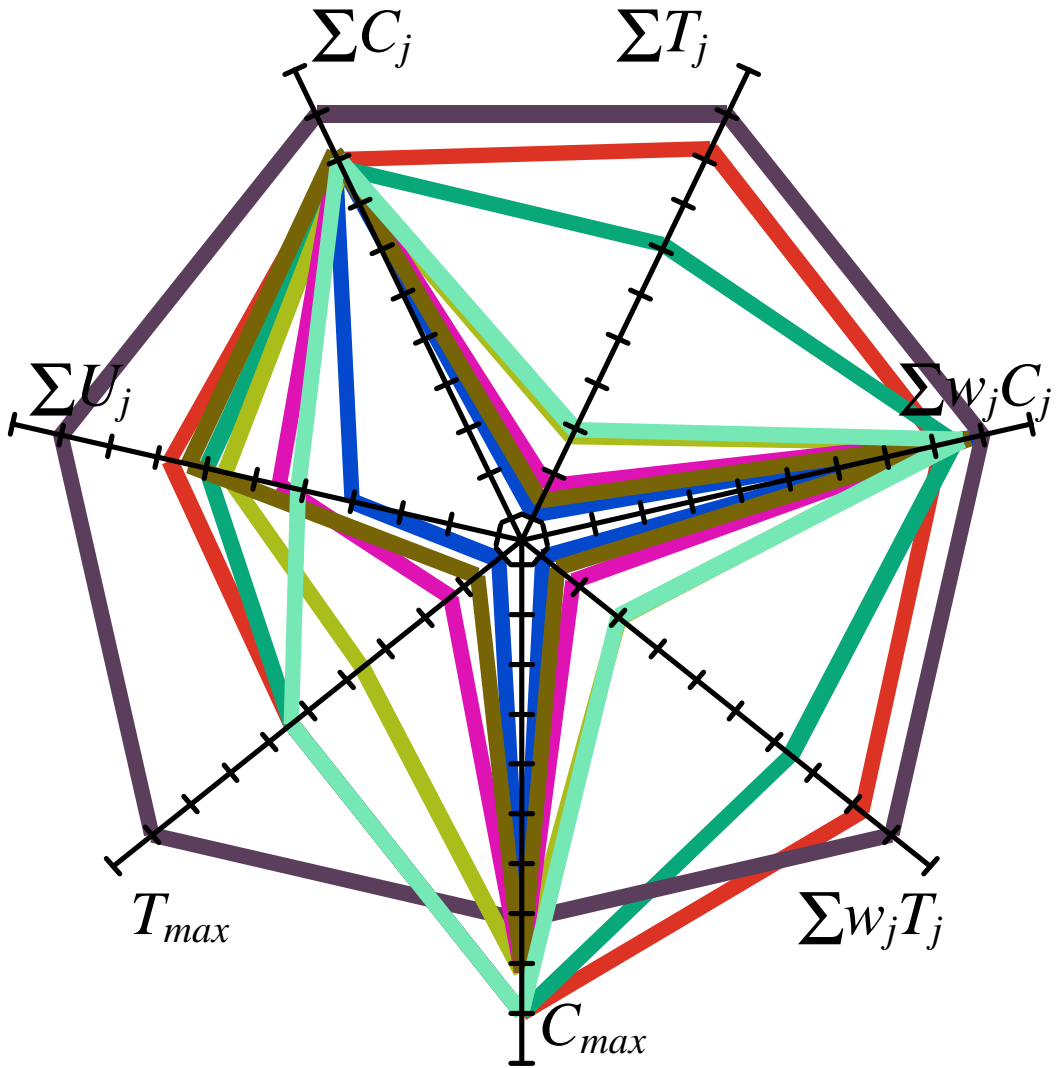
Mch/Job	Setup	Start	Stop	Pr.tm
<b>M14.1.DE08503</b>	120			1052
J041-106	20	228	387	159
J043-110	20	436	595	159
J038-97	20	657	828	171
J042-108	20	865	1045	180
J028-72	20	1065	1289	224
J040-105	20	1793	1952	159
<b>M15.1.PE06005</b>	60			489
J038-97	20	848	974	126
J042-108	20	1221	1401	180
J040-105	20	2266	2449	183
<b>M15.2.PE06006</b>	0			0
<b>M16.1.SD40002</b>	40			354
J043-110	20	615	798	183
J038-97	20	994	1165	171
<b>M16.2.SD40003</b>	20			222
J027-70	20	755	977	222
<b>M16.3.SD40004</b>	0			0
<b>M16.4.SD40005</b>	0			0
<b>M16.5.SD40007</b>	0			0
<b>M16.6.SD40011</b>	0			0
<b>M16.7.SD40012</b>	0			0
<b>M17.1.SB20001</b>	40			1313
J031-77	20	292	817	525
J047-78	20	968	1756	788
<b>M17.2.SB20002</b>	20			525
J032-78	20	1509	2034	525
<b>M18.1.PH05001</b>	20			152
J039-102	20	20	172	152
<b>M19.1.DG12603</b>	40			360
J016-40	20	3266	3446	180
J018-42	20	4282	4462	180
<b>M19.2.DG12605</b>	0			0
<b>M20.1.PH50001</b>	60			411
J033-79	30	30	241	211
J001-1	30	390	590	200
<b>M20.2.PH50002</b>	30			100
J010-22	30	220	320	100



Mch/Job	Setup	Start	Stop	Pr.tm
<b>Summary</b>				
<i>Time</i>		1		
<i>C<sub>max</sub></i>		5062		
<i>T<sub>max</sub></i>		2053		
<i>SU<sub>j</sub></i>		18		
<i>SC<sub>j</sub></i>		89184		
<i>ST<sub>j</sub></i>		19613		
<i>Sw<sub>j</sub>C<sub>j</sub></i>		103550		
<i>Sw<sub>j</sub>T<sub>j</sub></i>		19613		



Objective Chart - Seqs



- ⊠ ATCS (4, 3)
- ⊠ CR
- ⊠ EDD
- ⊠ FCFS
- ⊠ LPT
- ⊠ MS
- ⊠ SPT
- ⊠ WSPT

Log Book - Seqs \*

Schedule	Time	$C_{max}$	$T_{max}$	$\sum U_j$	$\sum C_j$	$\sum T_j$	$\sum w_j C_j$	$\sum w_j T_j$
ATCS (4, 3)	1	5062	2053	11	89420	4731	109309	4731
CR	1	4600	242	17	91141	959	111277	981
EDD	1	4600	507	12	89901	1700	110694	1971
FCFS	1	4600	1367	15	87066	4351	106555	4828
LPT	1	4015	3400	24	100364	21428	114485	21428
MS	1	4600	45	8	91026	161	111962	161
SPT	1	5062	2053	16	86931	14527	107106	15298
WSPT	1	5062	2053	18	89184	19613	103550	19613

Machine Park - P2.mch (Flexible Workcenters)

ID	MCs	Avail	Status
<b>W01 - PH350</b>	4		
M01.1.PH35001		0	A
M01.2.PH30002		0	A
M01.3.PH60001		0	A
M01.4.PH20001		0	A
<b>W02 - DE085</b>	3		
M02.1.DE08001		0	A
M02.2.DE08502		0	A
M02.3.DE08504		0	A
<b>W03 - PH150</b>	4		
M03.1.PH15001		0	A
M03.2.PH15002		0	A
M03.3.PH15003		0	A
M03.4.PH15004		0	A
<b>W04 - PH070</b>	1		
M04.1.PH07001		0	A
<b>W05 - PH300</b>	1		
M05.1.PH30001		0	A
<b>W06 - PE250</b>	1		
M06.1.PE25001		0	A
<b>W07 - PE150</b>	2		
M07.1.PE15002		0	A
M07.2.PE15003		0	A

Job Pool - P2.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.
<b>J001-12</b>	2	0	900	750	
				W05 - PH300	222 A
				W06 - PE250	168 A
				W03 - PH150	360 A
<b>J002-17</b>	1	0	1170	330	
				W05 - PH300	330 A
<b>J003-18</b>	2	0	1560	1176	
				W01 - PH350	390 A
				W02 - DE085	254 A
				W03 - PH150	308 A
				W07 - PE150	224 A
<b>J004-20</b>	2	0	1890	1171	
				W01 - PH350	467 A
				W02 - DE085	224 A
				W03 - PH150	230 A
				W04 - PH070	250 A
<b>J005-24</b>	2	0	1785	1091	
				W01 - PH350	550 A
				W02 - DE085	350 A
				W04 - PH070	191 A
<b>J006-35</b>	1	0	2070	705	
				W05 - PH300	267 A
				W06 - PE250	227 A
				W03 - PH150	211 A
<b>J007-39</b>	1	0	1395	800	
				W01 - PH350	400 A
				W03 - PH150	400 A

Job Pool - P2.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.
<b>J008-41</b>	1	0	1560	687	
				W01 - PH350	252 A
				W02 - DE085	224 A
				W04 - PH070	211 A
<b>J009-43</b>	1	0	1560	674	
				W01 - PH350	252 A
				W03 - PH150	211 A
				W07 - PE150	211 A
<b>J010-60</b>	1	0	900	660	
				W07 - PE150	330 A
				W03 - PH150	330 A
<b>J011-61</b>	1	0	1170	330	
				W03 - PH150	330 A
<b>J012-74</b>	2	0	2070	921	
				W05 - PH300	467 A
				W02 - DE085	224 A
				W07 - PE150	230 A
<b>J013-75</b>	1	0	1890	705	
				W05 - PH300	267 A
				W06 - PE250	227 A
				W07 - PE150	211 A
<b>J014-85</b>	1	0	1785	617	
				W05 - PH300	390 A
				W06 - PE250	227 A
<b>J015-116</b>	1	0	615	151	
				W07 - PE150	151 A

Job Pool - P2.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J001-12</b>	2	0	900	750		20	810	0	0
				W05 - PH30	222	A	20	242	
				W06 - PE250	168	A	262	430	
				W03 - PH150	360	A	450	810	
<b>J002-17</b>	1	0	1170	330		262	592	0	0
				W05 - PH30	330	A	262	592	
<b>J003-18</b>	2	0	1560	1176		20	1256	0	0
				W01 - PH350	390	A	20	410	
				W02 - DE0	254	A	430	684	
				W03 - PH1	308	A	704	1012	
				W07 - PE15	224	A	1032	1256	
<b>J004-20</b>	2	0	1890	1171		20	1652	0	0
				W01 - PH350	467	A	20	487	
				W02 - DE08	224	A	507	731	
				W03 - PH15	230	A	751	981	
				W04 - PH0	250	A	1402	1652	
<b>J005-24</b>	2	0	1785	1091		20	1151	0	0
				W01 - PH350	550	A	20	570	
				W02 - DE08	350	A	590	940	
				W04 - PH070	191	A	960	1151	
<b>J006-35</b>	1	0	2070	705		1509	2254	184	184
				W05 - PH	267	A	1509	1776	
				W06 - PE25	227	A	1796	2023	
				W03 - PH150	211	A	2043	2254	
<b>J007-39</b>	1	0	1395	800		20	840	0	0
				W01 - PH350	400	A	20	420	
				W03 - PH150	400	A	440	840	



Job Pool - P2.job (Job Shop)

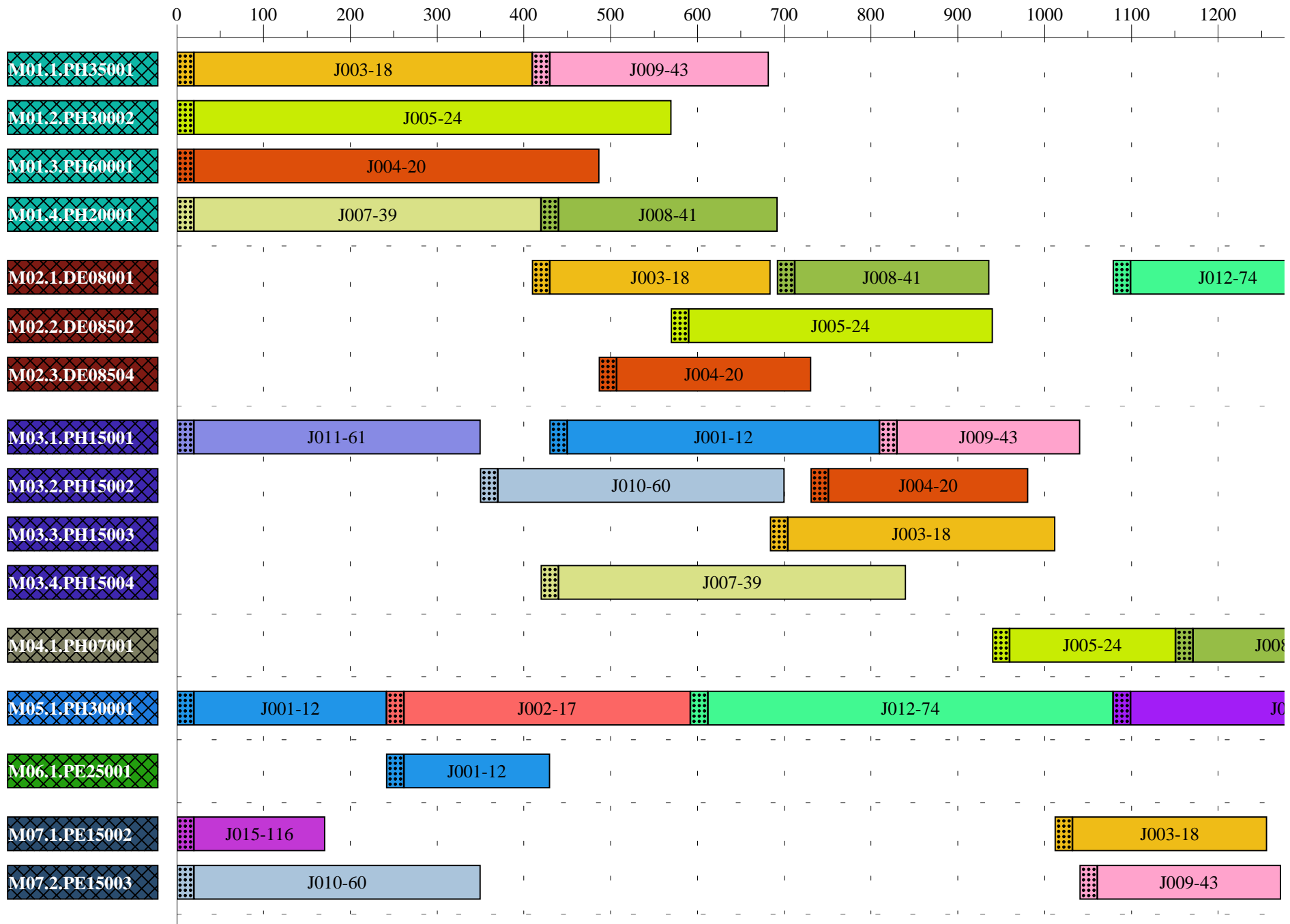
ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J008-41</b>	1	0	1560	687		440	1382	0	0
				W01 - PH3	252	A	440	692	
				W02 - DE08	224	A	712	936	
				W04 - PH07	211	A	1171	1382	
<b>J009-43</b>	1	0	1560	674		430	1272	0	0
				W01 - PH3	252	A	430	682	
				W03 - PH15	211	A	830	1041	
				W07 - PE15	211	A	1061	1272	
<b>J010-60</b>	1	0	900	660		20	700	0	0
				W07 - PE15	330	A	20	350	
				W03 - PH15	330	A	370	700	
<b>J011-61</b>	1	0	1170	330		20	350	0	0
				W03 - PH15	330	A	20	350	
<b>J012-74</b>	2	0	2070	921		612	1573	0	0
				W05 - PH300	467	A	612	1079	
				W02 - DE08	224	A	1099	1323	
				W07 - PE15	230	A	1343	1573	
<b>J013-75</b>	1	0	1890	705		1796	2541	651	651
				W05 - PH3	267	A	1796	2063	
				W06 - PE25	227	A	2083	2310	
				W07 - PE15	211	A	2330	2541	
<b>J014-85</b>	1	0	1785	617		1099	1736	0	0
				W05 - PH300	390	A	1099	1489	
				W06 - PE25	227	A	1509	1736	
<b>J015-116</b>	1	0	615	151		20	171	0	0
				W07 - PE15	151	A	20	171	

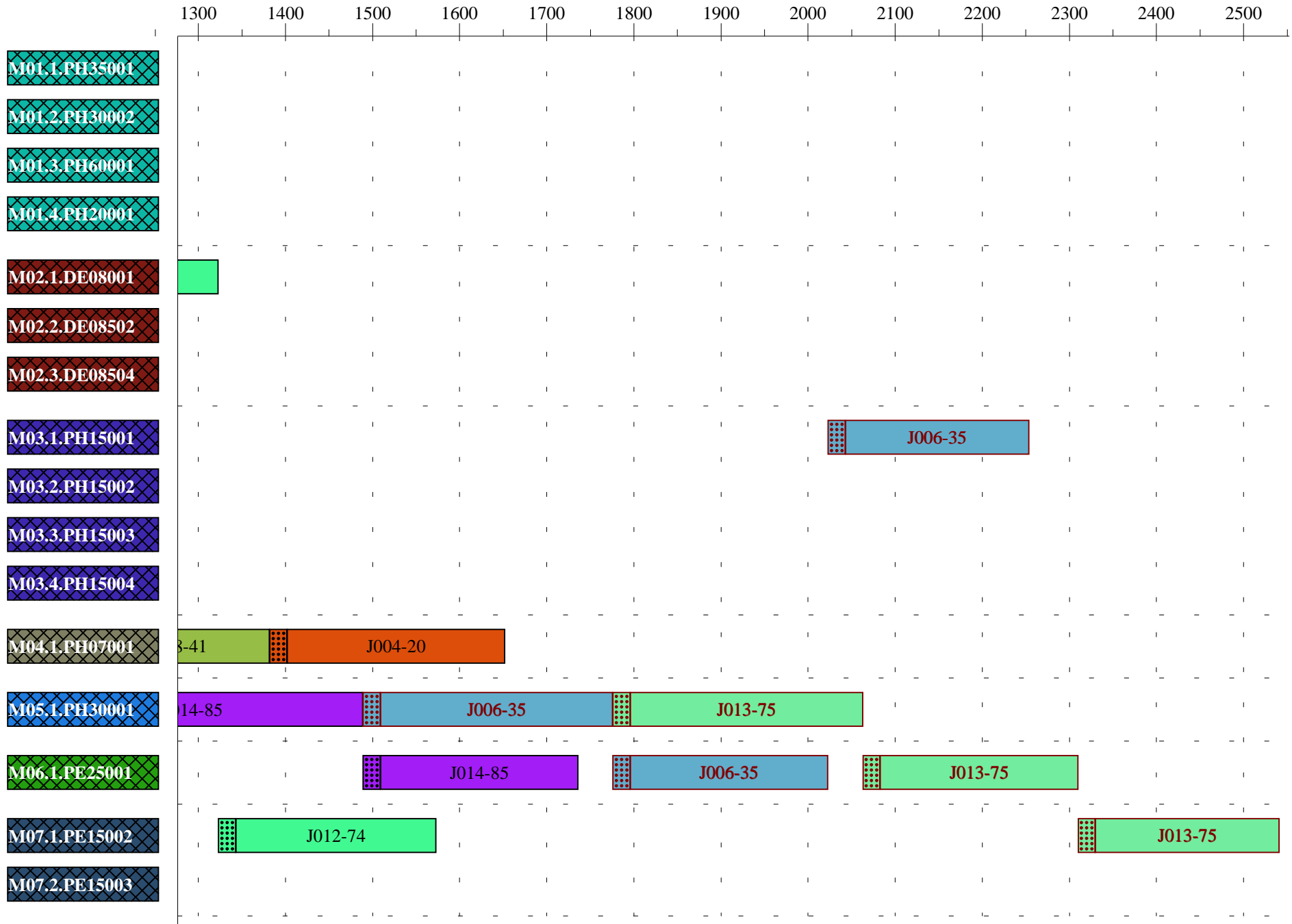
Mch/Job	Setup	Start	Stop	Pr.tm
<b>M01.1.PH35001</b>	40			642
J003-18	20	20	410	390
J009-43	20	430	682	252
<b>M01.2.PH30002</b>	20			550
J005-24	20	20	570	550
<b>M01.3.PH60001</b>	20			467
J004-20	20	20	487	467
<b>M01.4.PH20001</b>	40			652
J007-39	20	20	420	400
J008-41	20	440	692	252
<b>M02.1.DE08001</b>	60			702
J003-18	20	430	684	254
J008-41	20	712	936	224
J012-74	20	1099	1323	224
<b>M02.2.DE08502</b>	20			350
J005-24	20	590	940	350
<b>M02.3.DE08504</b>	20			224
J004-20	20	507	731	224
<b>M03.1.PH15001</b>	80			1112
J011-61	20	20	350	330
J001-12	20	450	810	360
J009-43	20	830	1041	211
J006-35	20	2043	2254	211
<b>M03.2.PH15002</b>	40			560
J010-60	20	370	700	330
J004-20	20	751	981	230
<b>M03.3.PH15003</b>	20			308
J003-18	20	704	1012	308
<b>M03.4.PH15004</b>	20			400
J007-39	20	440	840	400
<b>M04.1.PH07001</b>	60			652
J005-24	20	960	1151	191
J008-41	20	1171	1382	211
J004-20	20	1402	1652	250
<b>M05.1.PH30001</b>	120			1943
J001-12	20	20	242	222
J002-17	20	262	592	330
J012-74	20	612	1079	467
J014-85	20	1099	1489	390
J006-35	20	1509	1776	267
J013-75	20	1796	2063	267

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M06.1.PE25001</b>	80			849
J001-12	20	262	430	168
J014-85	20	1509	1736	227
J006-35	20	1796	2023	227
J013-75	20	2083	2310	227
<b>M07.1.PE15002</b>	80			816
J015-116	20	20	171	151
J003-18	20	1032	1256	224
J012-74	20	1343	1573	230
J013-75	20	2330	2541	211
<b>M07.2.PE15003</b>	40			541
J010-60	20	20	350	330
J009-43	20	1061	1272	211

**Summary**

<i>Time</i>	1
<i>C<sub>max</sub></i>	2541
<i>T<sub>max</sub></i>	651
<i>SU<sub>j</sub></i>	2
<i>SC<sub>j</sub></i>	18280
<i>ST<sub>j</sub></i>	835
<i>Sw<sub>j</sub>C<sub>j</sub></i>	24722
<i>Sw<sub>j</sub>T<sub>j</sub></i>	835





Job Pool - P2.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J001-12</b>	2	0	900	750		20	810	0	0
				W05 - PH30	222	A	20	242	
				W06 - PE250	168	A	262	430	
				W03 - PH150	360	A	450	810	
<b>J002-17</b>	1	0	1170	330		749	1079	0	0
				W05 - PH30	330	A	749	1079	
<b>J003-18</b>	2	0	1560	1176		20	1256	0	0
				W01 - PH350	390	A	20	410	
				W02 - DE0	254	A	430	684	
				W03 - PH1	308	A	704	1012	
				W07 - PE15	224	A	1032	1256	
<b>J004-20</b>	2	0	1890	1171		20	1427	0	0
				W01 - PH350	467	A	20	487	
				W02 - DE08	224	A	507	731	
				W03 - PH15	230	A	830	1060	
				W04 - PH0	250	A	1177	1427	
<b>J005-24</b>	2	0	1785	1091		20	1638	0	0
				W01 - PH350	550	A	20	570	
				W02 - DE08	350	A	704	1054	
				W04 - PH070	191	A	1447	1638	
<b>J006-35</b>	1	0	2070	705		1796	2541	471	471
				W05 - PH3	267	A	1796	2063	
				W06 - PE25	227	A	2083	2310	
				W03 - PH150	211	A	2330	2541	
<b>J007-39</b>	1	0	1395	800		20	1120	0	0
				W01 - PH350	400	A	20	420	
				W03 - PH150	400	A	720	1120	

Job Pool - P2.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J008-41</b>	1	0	1560	687		430	1157	0	0
				W01 - PH3	252	A	430	682	
				W02 - DE08	224	A	702	926	
				W04 - PH07	211	A	946	1157	
<b>J009-43</b>	1	0	1560	674		440	1154	0	0
				W01 - PH3	252	A	440	692	
				W03 - PH15	211	A	712	923	
				W07 - PE15	211	A	943	1154	
<b>J010-60</b>	1	0	900	660		20	700	0	0
				W07 - PE15	330	A	20	350	
				W03 - PH15	330	A	370	700	
<b>J011-61</b>	1	0	1170	330		20	350	0	0
				W03 - PH15	330	A	20	350	
<b>J012-74</b>	2	0	2070	921		262	1404	0	0
				W05 - PH300	467	A	262	729	
				W02 - DE08	224	A	751	975	
				W07 - PE15	230	A	1174	1404	
<b>J013-75</b>	1	0	1890	705		1509	2254	364	364
				W05 - PH3	267	A	1509	1776	
				W06 - PE25	227	A	1796	2023	
				W07 - PE15	211	A	2043	2254	
<b>J014-85</b>	1	0	1785	617		1099	1736	0	0
				W05 - PH300	390	A	1099	1489	
				W06 - PE25	227	A	1509	1736	
<b>J015-116</b>	1	0	615	151		20	171	0	0
				W07 - PE15	151	A	20	171	

Sequence - Seqs \* (CR)

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M01.1.PH35001</b>	40			642
J003-18	20	20	410	390
J008-41	20	430	682	252
<b>M01.2.PH30002</b>	20			467
J004-20	20	20	487	467
<b>M01.3.PH60001</b>	20			550
J005-24	20	20	570	550
<b>M01.4.PH20001</b>	40			652
J007-39	20	20	420	400
J009-43	20	440	692	252
<b>M02.1.DE08001</b>	40			604
J003-18	20	430	684	254
J005-24	20	704	1054	350
<b>M02.2.DE08502</b>	20			224
J008-41	20	702	926	224
<b>M02.3.DE08504</b>	40			448
J004-20	20	507	731	224
J012-74	20	751	975	224
<b>M03.1.PH15001</b>	80			1131
J011-61	20	20	350	330
J001-12	20	450	810	360
J004-20	20	830	1060	230
J006-35	20	2330	2541	211
<b>M03.2.PH15002</b>	40			730
J010-60	20	370	700	330
J007-39	20	720	1120	400
<b>M03.3.PH15003</b>	20			308
J003-18	20	704	1012	308
<b>M03.4.PH15004</b>	20			211
J009-43	20	712	923	211
<b>M04.1.PH07001</b>	60			652
J008-41	20	946	1157	211
J004-20	20	1177	1427	250
J005-24	20	1447	1638	191
<b>M05.1.PH30001</b>	120			1943
J001-12	20	20	242	222
J012-74	20	262	729	467
J002-17	20	749	1079	330
J014-85	20	1099	1489	390
J013-75	20	1509	1776	267
J006-35	20	1796	2063	267

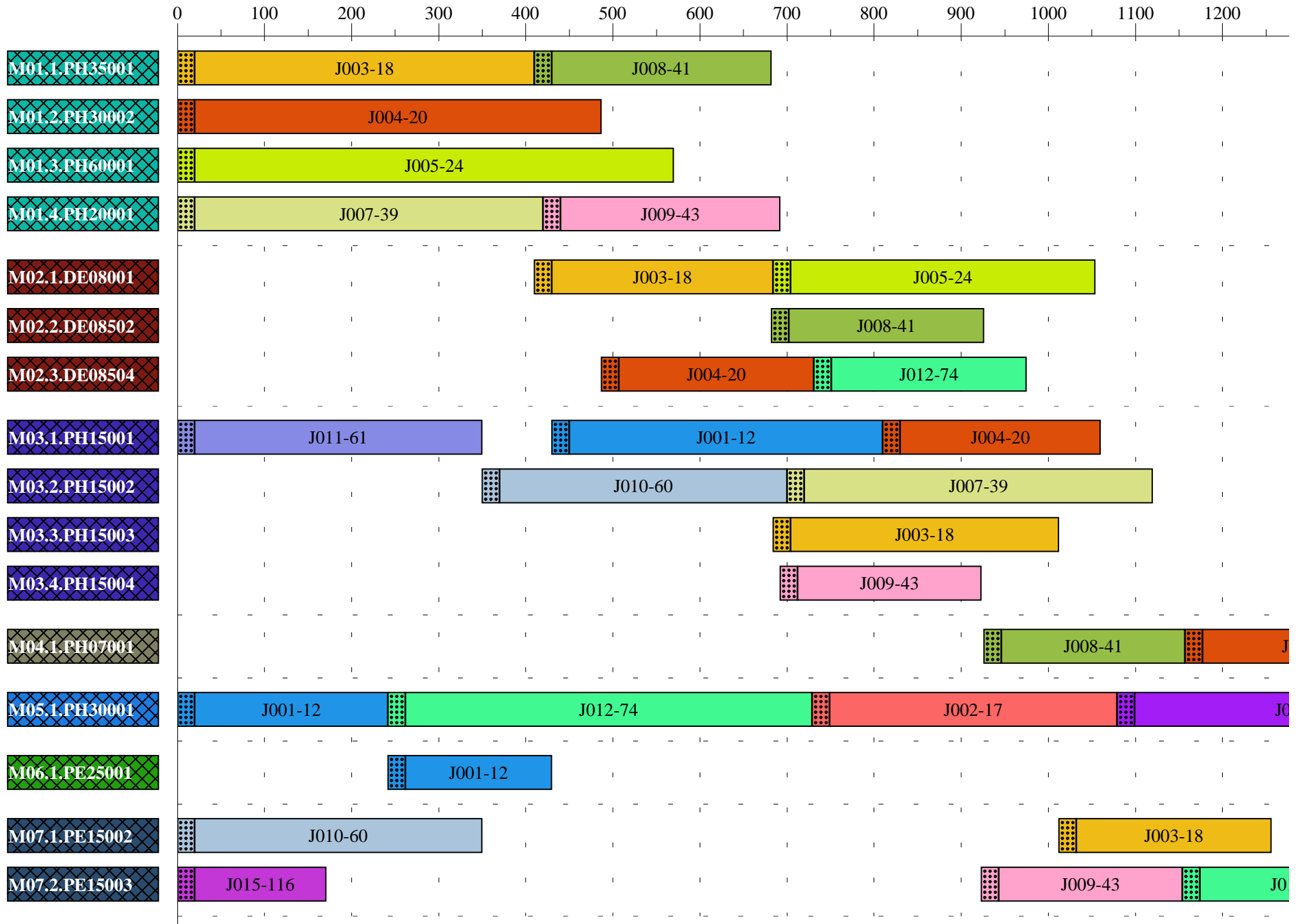


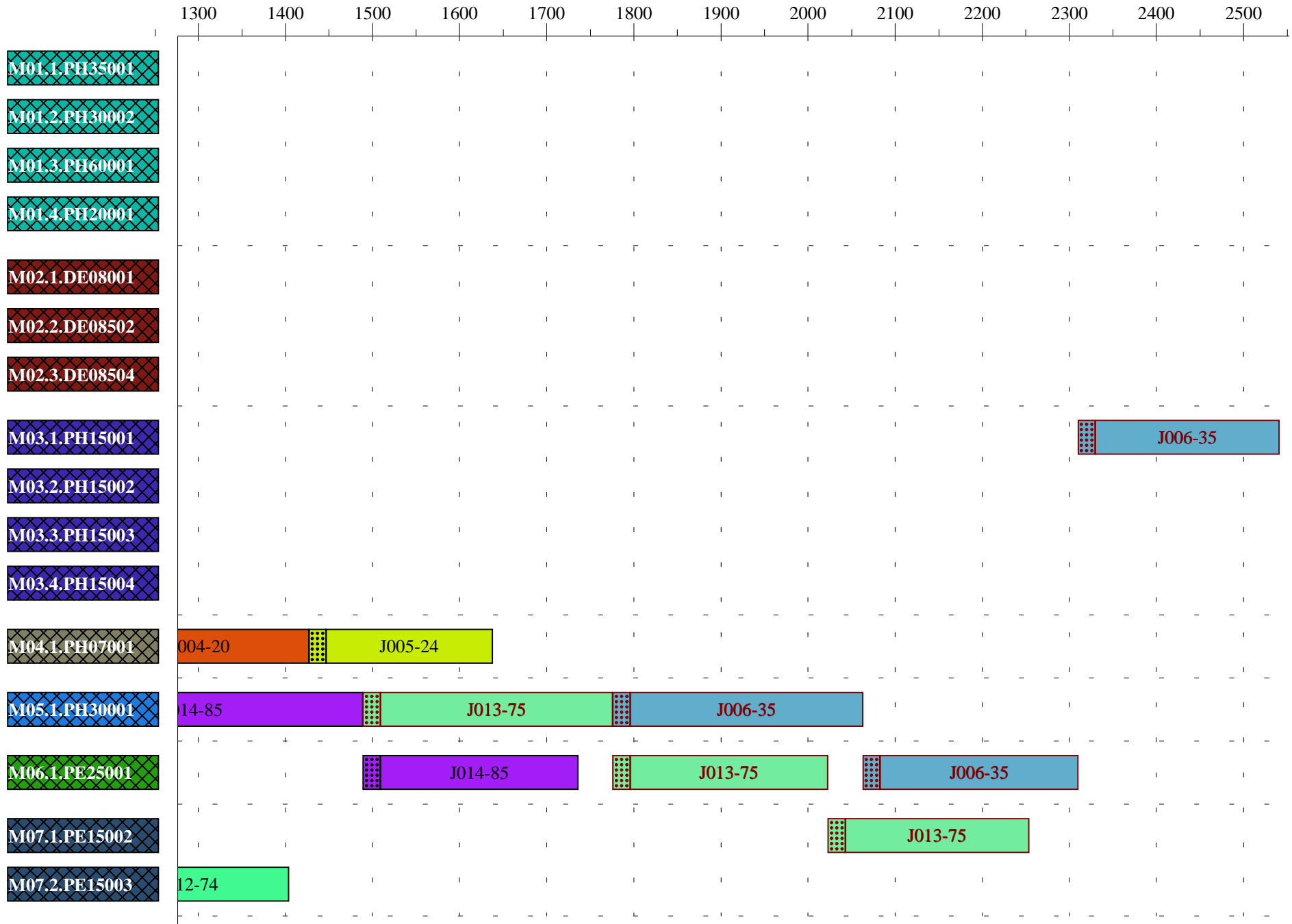
Mch/Job	Setup	Start	Stop	Pr.tm
<b>M06.1.PE25001</b>	80			849
J001-12	20	262	430	168
J014-85	20	1509	1736	227
J013-75	20	1796	2023	227
J006-35	20	2083	2310	227
<b>M07.1.PE15002</b>	60			765
J010-60	20	20	350	330
J003-18	20	1032	1256	224
J013-75	20	2043	2254	211
<b>M07.2.PE15003</b>	60			592
J015-116	20	20	171	151
J009-43	20	943	1154	211
J012-74	20	1174	1404	230

**Summary**

<i>Time</i>	1
$C_{max}$	2541
$T_{max}$	471
$SU_j$	2
$SC_j$	18797
$ST_j$	835
$Sw_jC_j$	25332
$Sw_jT_j$	835

Gantt Chart - Seqs (CR)





Job Pool - P2.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J001-12</b>	2	0	900	750		20	810	0	0
				W05 - PH30	222	A	20	242	
				W06 - PE250	168	A	262	430	
				W03 - PH150	360	A	450	810	
<b>J002-17</b>	1	0	1170	330		262	592	0	0
				W05 - PH30	330	A	262	592	
<b>J003-18</b>	2	0	1560	1176		20	1256	0	0
				W01 - PH350	390	A	20	410	
				W02 - DE0	254	A	430	684	
				W03 - PH1	308	A	704	1012	
				W07 - PE15	224	A	1032	1256	
<b>J004-20</b>	2	0	1890	1171		292	1693	0	0
				W01 - PH350	467	A	292	759	
				W02 - DE08	224	A	779	1003	
				W03 - PH15	230	A	1023	1253	
				W04 - PH0	250	A	1443	1693	
<b>J005-24</b>	2	0	1785	1091		292	1423	0	0
				W01 - PH350	550	A	292	842	
				W02 - DE08	350	A	862	1212	
				W04 - PH070	191	A	1232	1423	
<b>J006-35</b>	1	0	2070	705		1309	2054	0	0
				W05 - PH	267	A	1309	1576	
				W06 - PE25	227	A	1596	1823	
				W03 - PH150	211	A	1843	2054	
<b>J007-39</b>	1	0	1395	800		20	840	0	0
				W01 - PH350	400	A	20	420	
				W03 - PH150	400	A	440	840	

Job Pool - P2.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J008-41</b>	1	0	1560	687		20	747	0	0
				W01 - PH3	252	A	20	272	
				W02 - DE08	224	A	292	516	
				W04 - PH07	211	A	536	747	
<b>J009-43</b>	1	0	1560	674		20	812	0	0
				W01 - PH3	252	A	20	272	
				W03 - PH15	211	A	370	581	
				W07 - PE15	211	A	601	812	
<b>J010-60</b>	1	0	900	660		20	700	0	0
				W07 - PE15	330	A	20	350	
				W03 - PH15	330	A	370	700	
<b>J011-61</b>	1	0	1170	330		20	350	0	0
				W03 - PH15	330	A	20	350	
<b>J012-74</b>	2	0	2070	921		1596	2557	487	974
				W05 - PH300	467	A	1596	2063	
				W02 - DE08	224	A	2083	2307	
				W07 - PE15	230	A	2327	2557	
<b>J013-75</b>	1	0	1890	705		1022	1767	0	0
				W05 - PH3	267	A	1022	1289	
				W06 - PE25	227	A	1309	1536	
				W07 - PE15	211	A	1556	1767	
<b>J014-85</b>	1	0	1785	617		612	1249	0	0
				W05 - PH300	390	A	612	1002	
				W06 - PE25	227	A	1022	1249	
<b>J015-116</b>	1	0	615	151		20	171	0	0
				W07 - PE15	151	A	20	171	

Sequence - Seqs \* (EDD)

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M01.1.PH35001</b>	20			400
J007-39	20	20	420	400
<b>M01.2.PH30002</b>	20			390
J003-18	20	20	410	390
<b>M01.3.PH60001</b>	40			802
J009-43	20	20	272	252
J005-24	20	292	842	550
<b>M01.4.PH20001</b>	40			719
J008-41	20	20	272	252
J004-20	20	292	759	467
<b>M02.1.DE08001</b>	60			828
J003-18	20	430	684	254
J005-24	20	862	1212	350
J012-74	20	2083	2307	224
<b>M02.2.DE08502</b>	40			448
J008-41	20	292	516	224
J004-20	20	779	1003	224
<b>M02.3.DE08504</b>	0			0
<b>M03.1.PH15001</b>	80			1060
J011-61	20	20	350	330
J009-43	20	370	581	211
J003-18	20	704	1012	308
J006-35	20	1843	2054	211
<b>M03.2.PH15002</b>	40			560
J010-60	20	370	700	330
J004-20	20	1023	1253	230
<b>M03.3.PH15003</b>	20			360
J001-12	20	450	810	360
<b>M03.4.PH15004</b>	20			400
J007-39	20	440	840	400
<b>M04.1.PH07001</b>	60			652
J008-41	20	536	747	211
J005-24	20	1232	1423	191
J004-20	20	1443	1693	250
<b>M05.1.PH30001</b>	120			1943
J001-12	20	20	242	222
J002-17	20	262	592	330
J014-85	20	612	1002	390
J013-75	20	1022	1289	267
J006-35	20	1309	1576	267
J012-74	20	1596	2063	467

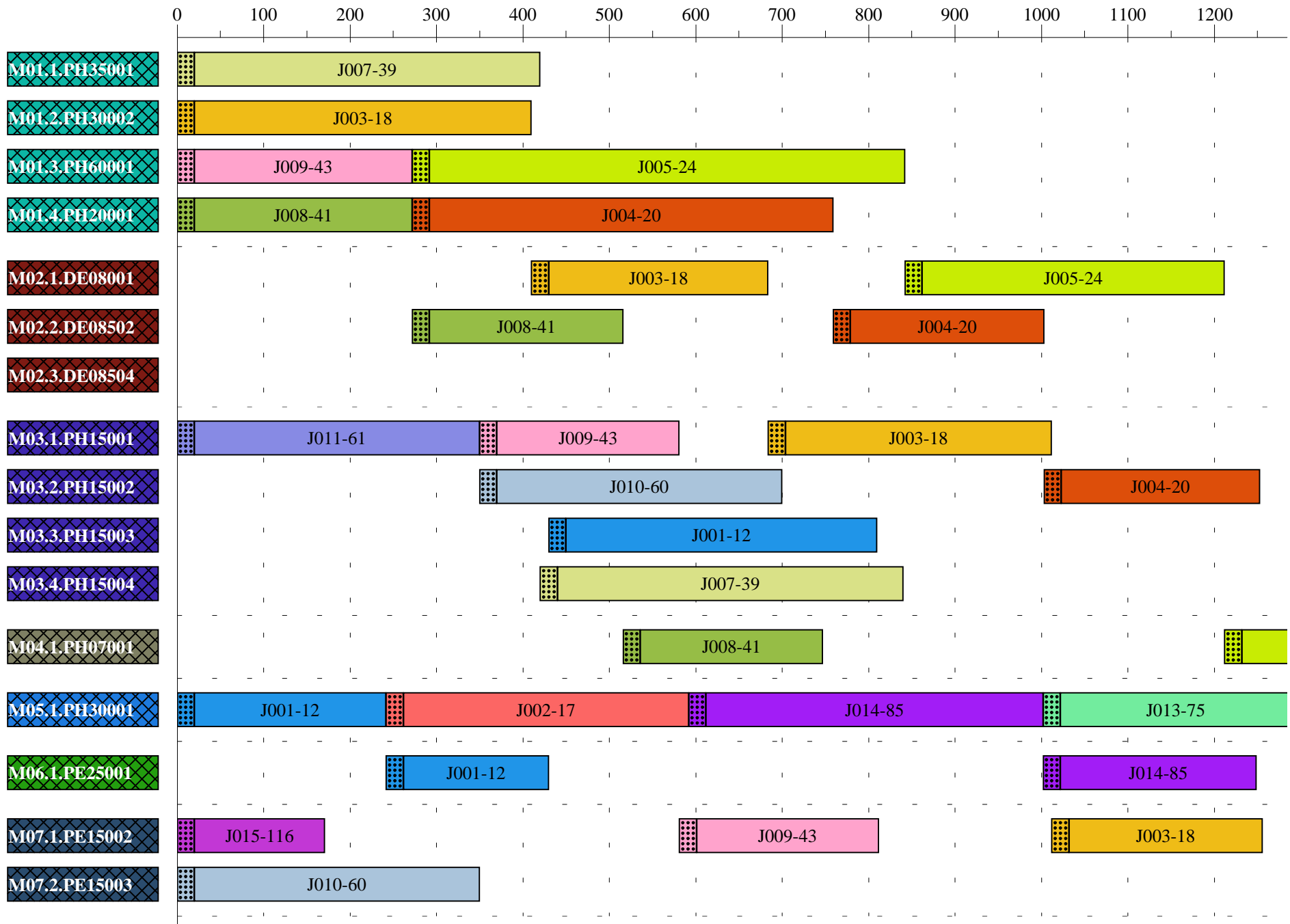
Sequence - Seqs \* (EDD)

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M06.1.PE25001</b>	80			849
J001-12	20	262	430	168
J014-85	20	1022	1249	227
J013-75	20	1309	1536	227
J006-35	20	1596	1823	227
<b>M07.1.PE15002</b>	100			1027
J015-116	20	20	171	151
J009-43	20	601	812	211
J003-18	20	1032	1256	224
J013-75	20	1556	1767	211
J012-74	20	2327	2557	230
<b>M07.2.PE15003</b>	20			330
J010-60	20	20	350	330

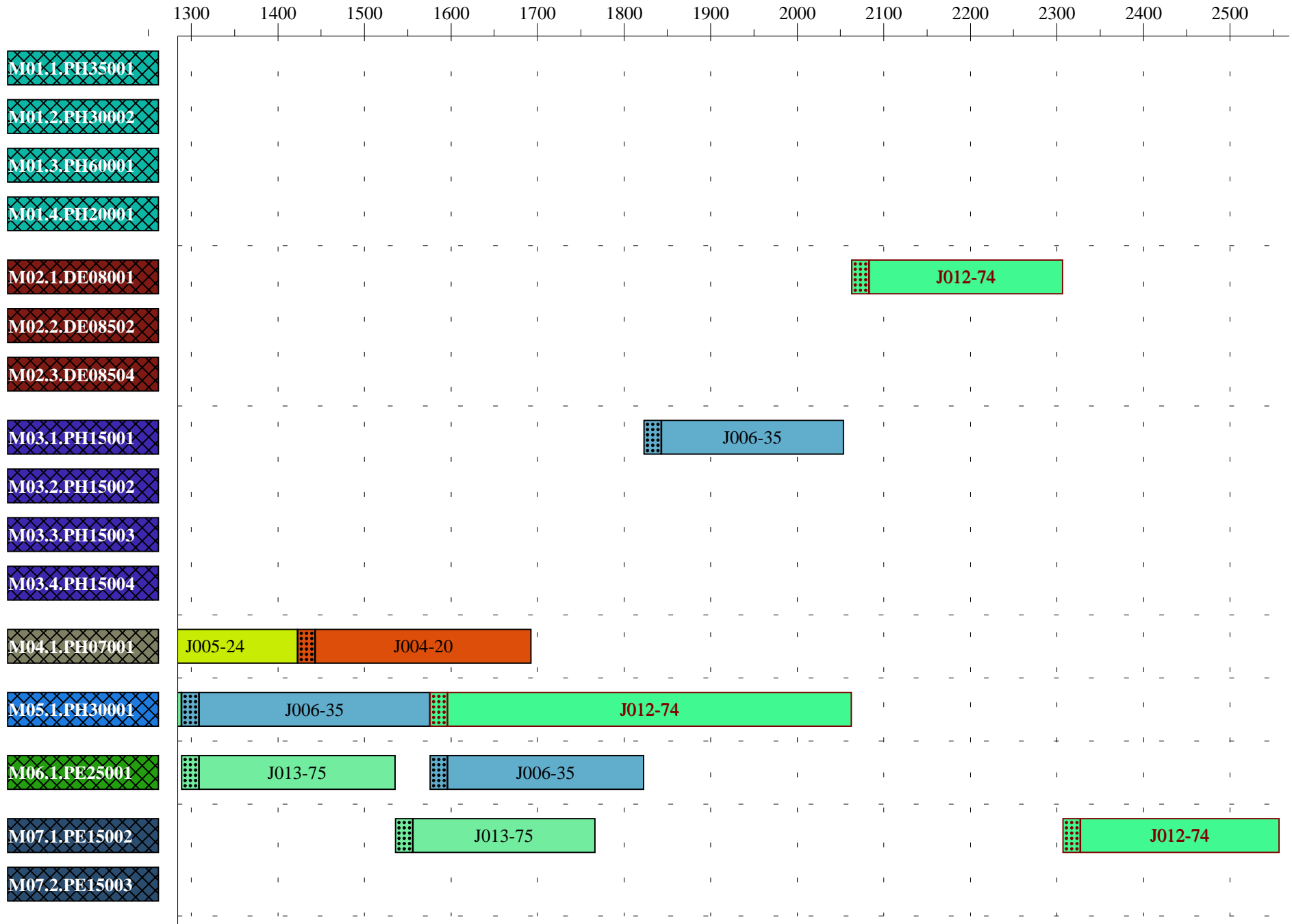
Summary

<i>Time</i>	1
<i>C<sub>max</sub></i>	2557
<i>T<sub>max</sub></i>	487
<i>SU<sub>j</sub></i>	1
<i>SC<sub>j</sub></i>	17021
<i>ST<sub>j</sub></i>	487
<i>Sw<sub>j</sub>C<sub>j</sub></i>	24760
<i>Sw<sub>j</sub>T<sub>j</sub></i>	974

Gantt Chart - Segs (EDD)







Job Pool - P2.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J001-12</b>	2	0	900	750		20	810	0	0
				W05 - PH30	222	A	20	242	
				W06 - PE250	168	A	262	430	
				W03 - PH150	360	A	450	810	
<b>J002-17</b>	1	0	1170	330		1733	2063	893	893
				W05 - PH30	330	A	1733	2063	
<b>J003-18</b>	2	0	1560	1176		20	1256	0	0
				W01 - PH350	390	A	20	410	
				W02 - DE0	254	A	430	684	
				W03 - PH1	308	A	704	1012	
				W07 - PE15	224	A	1032	1256	
<b>J004-20</b>	2	0	1890	1171		20	1427	0	0
				W01 - PH350	467	A	20	487	
				W02 - DE08	224	A	507	731	
				W03 - PH15	230	A	751	981	
				W04 - PH0	250	A	1177	1427	
<b>J005-24</b>	2	0	1785	1091		292	1638	0	0
				W01 - PH350	550	A	292	842	
				W02 - DE08	350	A	862	1212	
				W04 - PH070	191	A	1447	1638	
<b>J006-35</b>	1	0	2070	705		262	1041	0	0
				W05 - PH	267	A	262	529	
				W06 - PE25	227	A	549	776	
				W03 - PH150	211	A	830	1041	
<b>J007-39</b>	1	0	1395	800		20	840	0	0
				W01 - PH350	400	A	20	420	
				W03 - PH150	400	A	440	840	

Job Pool - P2.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J008-41</b>	1	0	1560	687		430	1157	0	0
				W01 - PH3	252	A	430	682	
				W02 - DE08	224	A	702	926	
				W04 - PH07	211	A	946	1157	
<b>J009-43</b>	1	0	1560	674		20	734	0	0
				W01 - PH3	252	A	20	272	
				W03 - PH15	211	A	292	503	
				W07 - PE15	211	A	523	734	
<b>J010-60</b>	1	0	900	660		20	700	0	0
				W07 - PE15	330	A	20	350	
				W03 - PH15	330	A	370	700	
<b>J011-61</b>	1	0	1170	330		20	350	0	0
				W03 - PH15	330	A	20	350	
<b>J012-74</b>	2	0	2070	921		549	1510	0	0
				W05 - PH300	467	A	549	1016	
				W02 - DE08	224	A	1036	1260	
				W07 - PE15	230	A	1280	1510	
<b>J013-75</b>	1	0	1890	705		1036	1781	0	0
				W05 - PH3	267	A	1036	1303	
				W06 - PE25	227	A	1323	1550	
				W07 - PE15	211	A	1570	1781	
<b>J014-85</b>	1	0	1785	617		1323	1960	175	175
				W05 - PH300	390	A	1323	1713	
				W06 - PE25	227	A	1733	1960	
<b>J015-116</b>	1	0	615	151		20	171	0	0
				W07 - PE15	151	A	20	171	

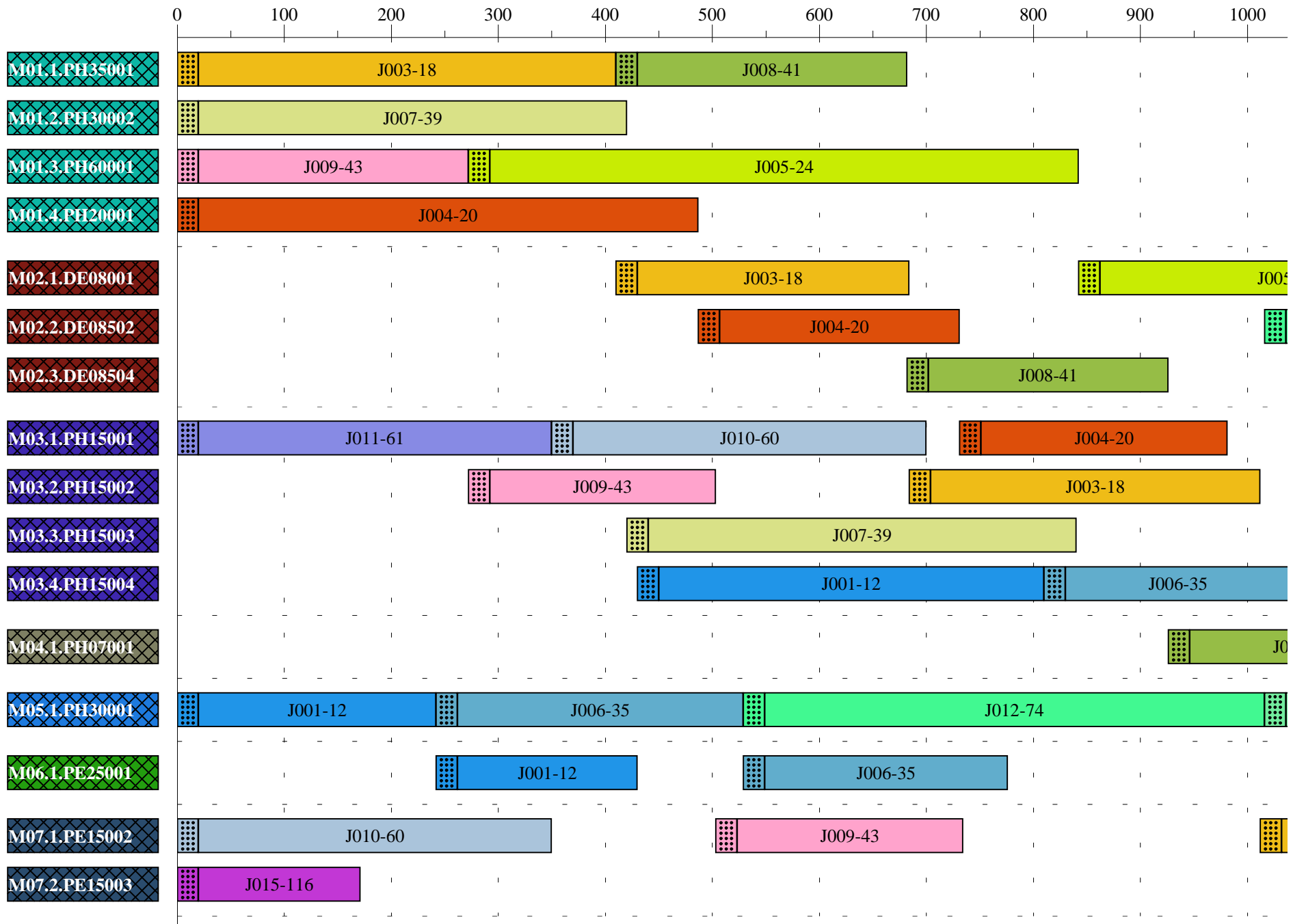
Mch/Job	Setup	Start	Stop	Pr.tm
<b>M01.1.PH35001</b>	40			642
J003-18	20	20	410	390
J008-41	20	430	682	252
<b>M01.2.PH30002</b>	20			400
J007-39	20	20	420	400
<b>M01.3.PH60001</b>	40			802
J009-43	20	20	272	252
J005-24	20	292	842	550
<b>M01.4.PH20001</b>	20			467
J004-20	20	20	487	467
<b>M02.1.DE08001</b>	40			604
J003-18	20	430	684	254
J005-24	20	862	1212	350
<b>M02.2.DE08502</b>	40			448
J004-20	20	507	731	224
J012-74	20	1036	1260	224
<b>M02.3.DE08504</b>	20			224
J008-41	20	702	926	224
<b>M03.1.PH15001</b>	60			890
J011-61	20	20	350	330
J010-60	20	370	700	330
J004-20	20	751	981	230
<b>M03.2.PH15002</b>	40			519
J009-43	20	292	503	211
J003-18	20	704	1012	308
<b>M03.3.PH15003</b>	20			400
J007-39	20	440	840	400
<b>M03.4.PH15004</b>	40			571
J001-12	20	450	810	360
J006-35	20	830	1041	211
<b>M04.1.PH07001</b>	60			652
J008-41	20	946	1157	211
J004-20	20	1177	1427	250
J005-24	20	1447	1638	191
<b>M05.1.PH30001</b>	120			1943
J001-12	20	20	242	222
J006-35	20	262	529	267
J012-74	20	549	1016	467
J013-75	20	1036	1303	267
J014-85	20	1323	1713	390
J002-17	20	1733	2063	330

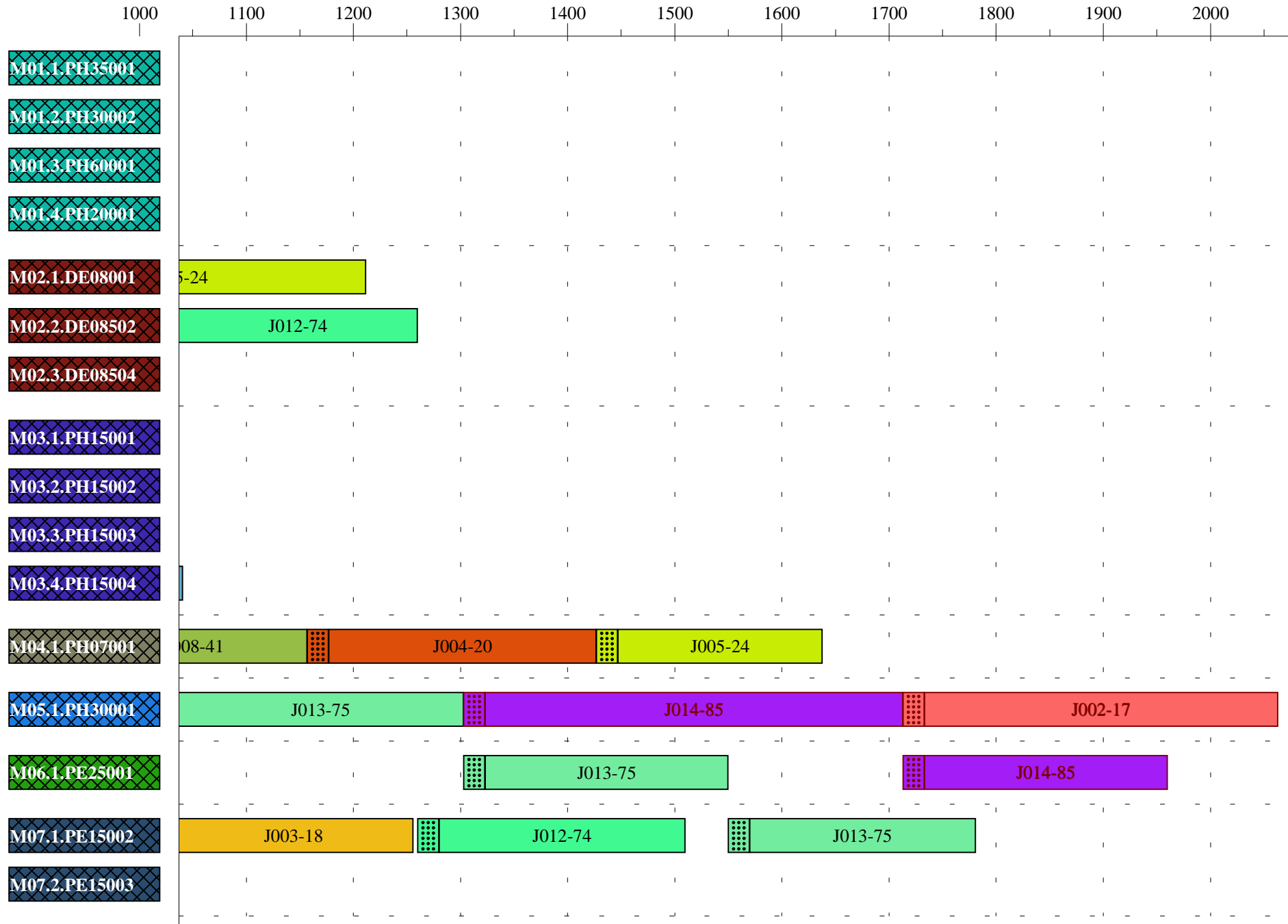
Mch/Job	Setup	Start	Stop	Pr.tm
<b>M06.1.PE25001</b>	80			849
J001-12	20	262	430	168
J006-35	20	549	776	227
J013-75	20	1323	1550	227
J014-85	20	1733	1960	227
<b>M07.1.PE15002</b>	100			1206
J010-60	20	20	350	330
J009-43	20	523	734	211
J003-18	20	1032	1256	224
J012-74	20	1280	1510	230
J013-75	20	1570	1781	211
<b>M07.2.PE15003</b>	20			151
J015-116	20	20	171	151

Summary

<i>Time</i>	1
$C_{max}$	2063
$T_{max}$	893
$SU_j$	2
$SC_j$	17438
$ST_j$	1068
$Sw_jC_j$	24079
$Sw_jT_j$	1068

Gantt Chart - Seqs (FCFS)





Job Pool - P2.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J001-12</b>	2	0	900	750		20	810	0	0
				W05 - PH30	222	A	20	242	
				W06 - PE250	168	A	262	430	
				W03 - PH150	360	A	450	810	
<b>J002-17</b>	1	0	1170	330		1733	2063	893	893
				W05 - PH30	330	A	1733	2063	
<b>J003-18</b>	2	0	1560	1176		20	1256	0	0
				W01 - PH350	390	A	20	410	
				W02 - DE0	254	A	430	684	
				W03 - PH1	308	A	704	1012	
				W07 - PE15	224	A	1032	1256	
<b>J004-20</b>	2	0	1890	1171		20	1638	0	0
				W01 - PH350	467	A	20	487	
				W02 - DE08	224	A	507	731	
				W03 - PH15	230	A	830	1060	
				W04 - PH0	250	A	1388	1638	
<b>J005-24</b>	2	0	1785	1091		20	1368	0	0
				W01 - PH350	550	A	20	570	
				W02 - DE08	350	A	704	1054	
				W04 - PH070	191	A	1177	1368	
<b>J006-35</b>	1	0	2070	705		1036	1781	0	0
				W05 - PH	267	A	1036	1303	
				W06 - PE25	227	A	1323	1550	
				W03 - PH150	211	A	1570	1781	
<b>J007-39</b>	1	0	1395	800		20	840	0	0
				W01 - PH350	400	A	20	420	
				W03 - PH150	400	A	440	840	



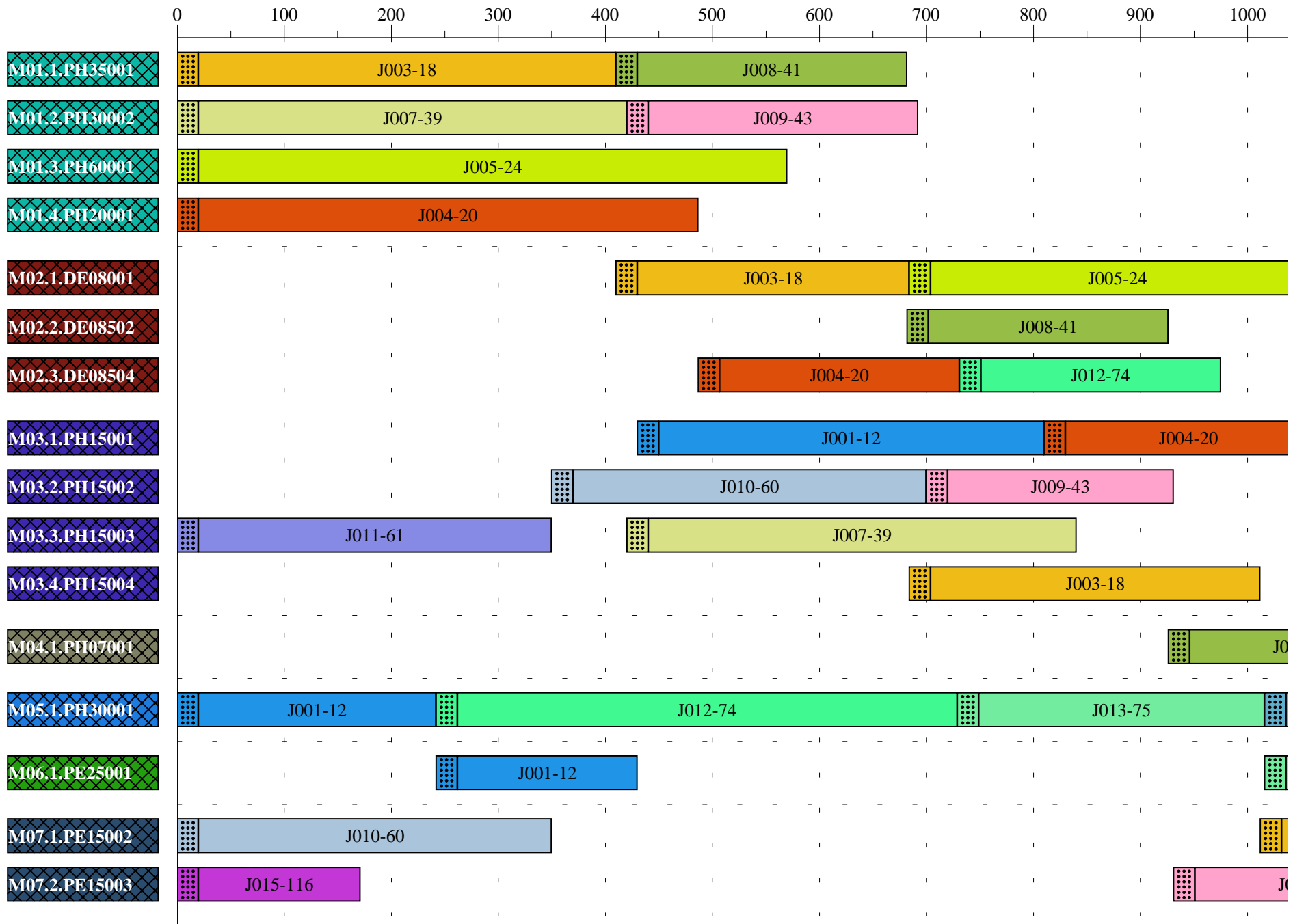
Job Pool - P2.job (Job Shop)

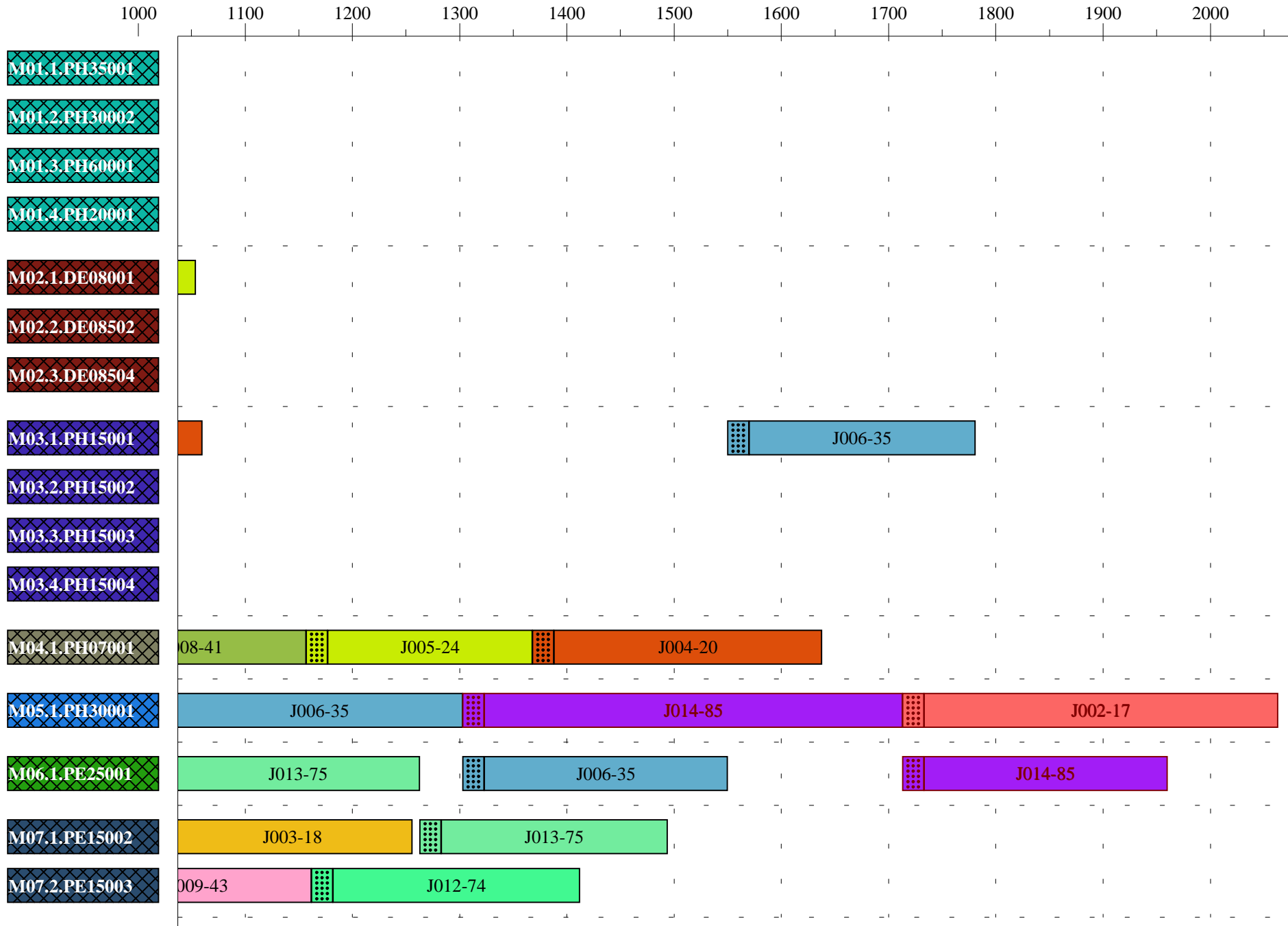
ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J008-41</b>	1	0	1560	687		430	1157	0	0
				W01 - PH3	252	A	430	682	
				W02 - DE08	224	A	702	926	
				W04 - PH07	211	A	946	1157	
<b>J009-43</b>	1	0	1560	674		440	1162	0	0
				W01 - PH3	252	A	440	692	
				W03 - PH15	211	A	720	931	
				W07 - PE15	211	A	951	1162	
<b>J010-60</b>	1	0	900	660		20	700	0	0
				W07 - PE15	330	A	20	350	
				W03 - PH15	330	A	370	700	
<b>J011-61</b>	1	0	1170	330		20	350	0	0
				W03 - PH15	330	A	20	350	
<b>J012-74</b>	2	0	2070	921		262	1412	0	0
				W05 - PH300	467	A	262	729	
				W02 - DE08	224	A	751	975	
				W07 - PE15	230	A	1182	1412	
<b>J013-75</b>	1	0	1890	705		749	1494	0	0
				W05 - PH3	267	A	749	1016	
				W06 - PE25	227	A	1036	1263	
				W07 - PE15	211	A	1283	1494	
<b>J014-85</b>	1	0	1785	617		1323	1960	175	175
				W05 - PH300	390	A	1323	1713	
				W06 - PE25	227	A	1733	1960	
<b>J015-116</b>	1	0	615	151		20	171	0	0
				W07 - PE15	151	A	20	171	

Sequence - Seqs \* (General SB Routine / Cmax)

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M01.1.PH35001</b>	40			642
J003-18	20	20	410	390
J008-41	20	430	682	252
<b>M01.2.PH30002</b>	40			652
J007-39	20	20	420	400
J009-43	20	440	692	252
<b>M01.3.PH60001</b>	20			550
J005-24	20	20	570	550
<b>M01.4.PH20001</b>	20			467
J004-20	20	20	487	467
<b>M02.1.DE08001</b>	40			604
J003-18	20	430	684	254
J005-24	20	704	1054	350
<b>M02.2.DE08502</b>	20			224
J008-41	20	702	926	224
<b>M02.3.DE08504</b>	40			448
J004-20	20	507	731	224
J012-74	20	751	975	224
<b>M03.1.PH15001</b>	60			801
J001-12	20	450	810	360
J004-20	20	830	1060	230
J006-35	20	1570	1781	211
<b>M03.2.PH15002</b>	40			541
J010-60	20	370	700	330
J009-43	20	720	931	211
<b>M03.3.PH15003</b>	40			730
J011-61	20	20	350	330
J007-39	20	440	840	400
<b>M03.4.PH15004</b>	20			308
J003-18	20	704	1012	308
<b>M04.1.PH07001</b>	60			652
J008-41	20	946	1157	211
J005-24	20	1177	1368	191
J004-20	20	1388	1638	250
<b>M05.1.PH30001</b>	120			1943
J001-12	20	20	242	222
J012-74	20	262	729	467
J013-75	20	749	1016	267
J006-35	20	1036	1303	267
J014-85	20	1323	1713	390
J002-17	20	1733	2063	330

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M06.1.PE25001</b>	80			849
J001-12	20	262	430	168
J013-75	20	1036	1263	227
J006-35	20	1323	1550	227
J014-85	20	1733	1960	227
<b>M07.1.PE15002</b>	60			765
J010-60	20	20	350	330
J003-18	20	1032	1256	224
J013-75	20	1283	1494	211
<b>M07.2.PE15003</b>	60			592
J015-116	20	20	171	151
J009-43	20	951	1162	211
J012-74	20	1182	1412	230
<b>Summary</b>				
<i>Time</i>		18		
<i>C<sub>max</sub></i>		2063		
<i>T<sub>max</sub></i>		893		
<i>SU<sub>j</sub></i>		2		
<i>SC<sub>j</sub></i>		18162		
<i>ST<sub>j</sub></i>		1068		
<i>Sw<sub>j</sub>C<sub>j</sub></i>		24646		
<i>Sw<sub>j</sub>T<sub>j</sub></i>		1068		





Job Pool - P2.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J001-12</b>	2	0	900	750		20	810	0	0
				W05 - PH30	222	A	20	242	
				W06 - PE250	168	A	262	430	
				W03 - PH150	360	A	450	810	
<b>J002-17</b>	1	0	1170	330		262	592	0	0
				W05 - PH30	330	A	262	592	
<b>J003-18</b>	2	0	1560	1176		20	1256	0	0
				W01 - PH350	390	A	20	410	
				W02 - DE0	254	A	430	684	
				W03 - PH1	308	A	704	1012	
				W07 - PE15	224	A	1032	1256	
<b>J004-20</b>	2	0	1890	1171		20	1638	0	0
				W01 - PH350	467	A	20	487	
				W02 - DE08	224	A	507	731	
				W03 - PH15	230	A	830	1060	
				W04 - PH0	250	A	1388	1638	
<b>J005-24</b>	2	0	1785	1091		20	1368	0	0
				W01 - PH350	550	A	20	570	
				W02 - DE08	350	A	704	1054	
				W04 - PH070	191	A	1177	1368	
<b>J006-35</b>	1	0	2070	705		1796	2541	471	471
				W05 - PH	267	A	1796	2063	
				W06 - PE25	227	A	2083	2310	
				W03 - PH150	211	A	2330	2541	
<b>J007-39</b>	1	0	1395	800		20	840	0	0
				W01 - PH350	400	A	20	420	
				W03 - PH150	400	A	440	840	

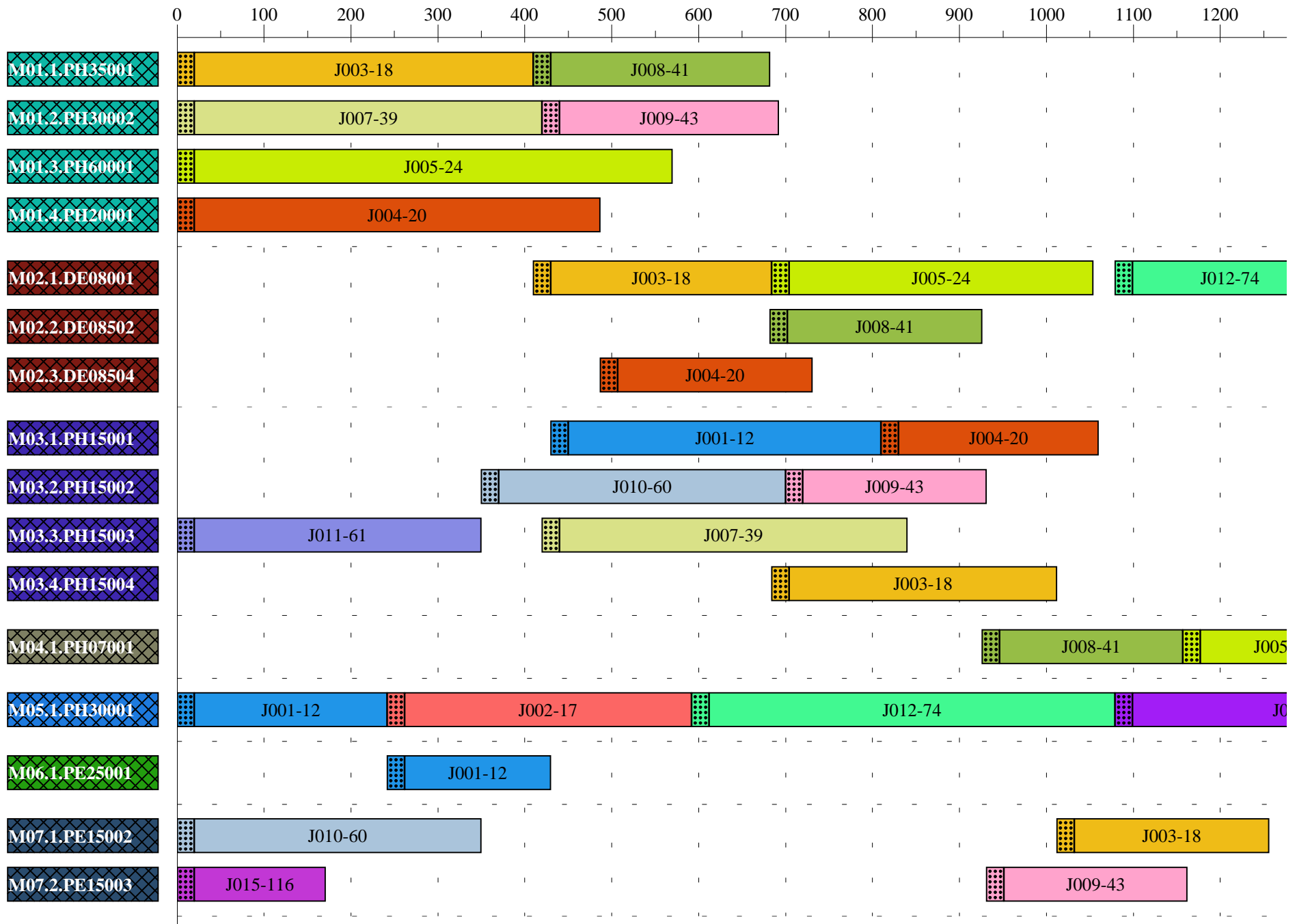
Job Pool - P2.job (Job Shop)

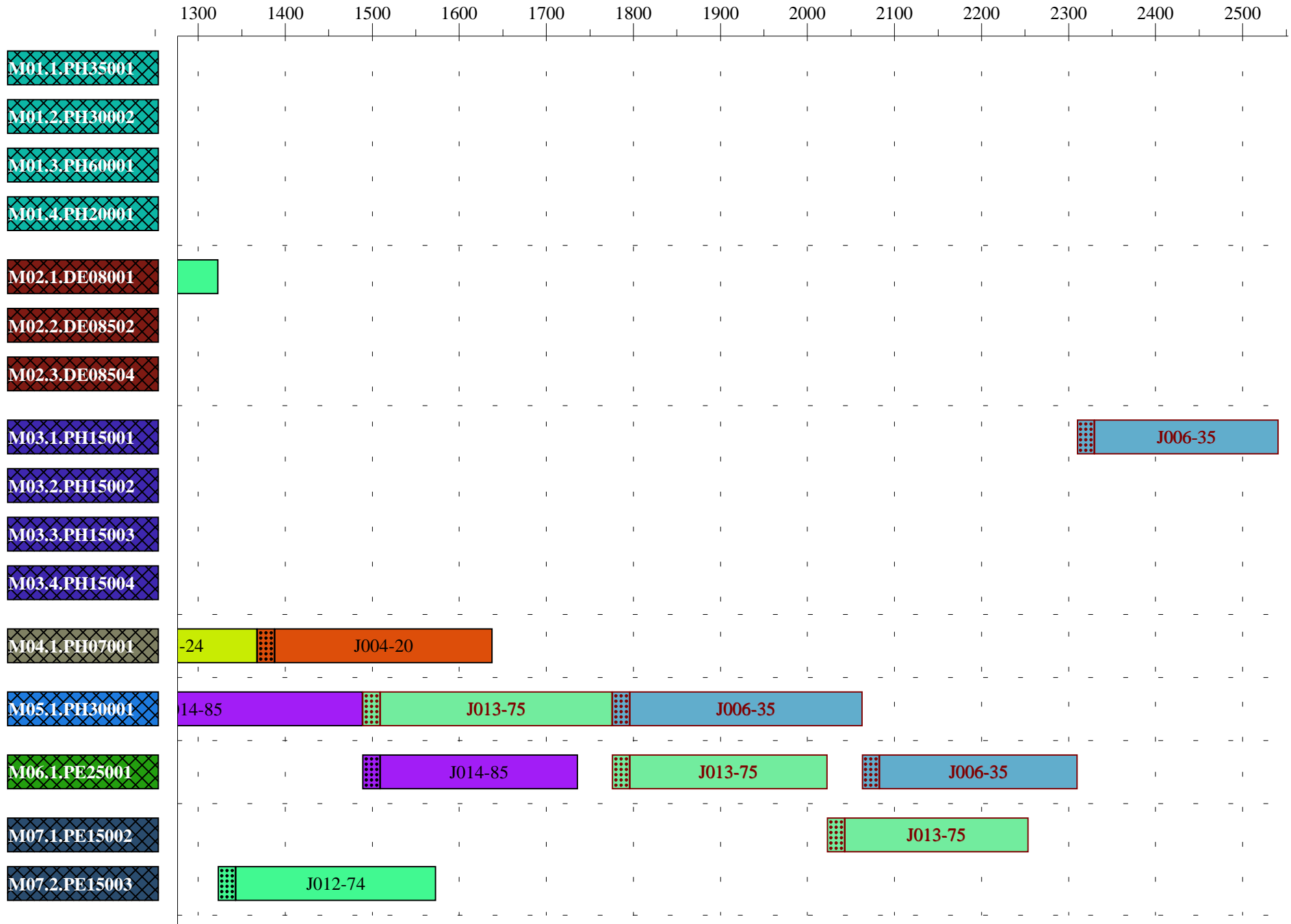
ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J008-41</b>	1	0	1560	687		430	1157	0	0
				W01 - PH3	252	A	430	682	
				W02 - DE08	224	A	702	926	
				W04 - PH07	211	A	946	1157	
<b>J009-43</b>	1	0	1560	674		440	1162	0	0
				W01 - PH3	252	A	440	692	
				W03 - PH15	211	A	720	931	
				W07 - PE15	211	A	951	1162	
<b>J010-60</b>	1	0	900	660		20	700	0	0
				W07 - PE15	330	A	20	350	
				W03 - PH15	330	A	370	700	
<b>J011-61</b>	1	0	1170	330		20	350	0	0
				W03 - PH15	330	A	20	350	
<b>J012-74</b>	2	0	2070	921		612	1573	0	0
				W05 - PH300	467	A	612	1079	
				W02 - DE08	224	A	1099	1323	
				W07 - PE15	230	A	1343	1573	
<b>J013-75</b>	1	0	1890	705		1509	2254	364	364
				W05 - PH3	267	A	1509	1776	
				W06 - PE25	227	A	1796	2023	
				W07 - PE15	211	A	2043	2254	
<b>J014-85</b>	1	0	1785	617		1099	1736	0	0
				W05 - PH300	390	A	1099	1489	
				W06 - PE25	227	A	1509	1736	
<b>J015-116</b>	1	0	615	151		20	171	0	0
				W07 - PE15	151	A	20	171	

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M01.1.PH35001</b>	40			642
J003-18	20	20	410	390
J008-41	20	430	682	252
<b>M01.2.PH30002</b>	40			652
J007-39	20	20	420	400
J009-43	20	440	692	252
<b>M01.3.PH60001</b>	20			550
J005-24	20	20	570	550
<b>M01.4.PH20001</b>	20			467
J004-20	20	20	487	467
<b>M02.1.DE08001</b>	60			828
J003-18	20	430	684	254
J005-24	20	704	1054	350
J012-74	20	1099	1323	224
<b>M02.2.DE08502</b>	20			224
J008-41	20	702	926	224
<b>M02.3.DE08504</b>	20			224
J004-20	20	507	731	224
<b>M03.1.PH15001</b>	60			801
J001-12	20	450	810	360
J004-20	20	830	1060	230
J006-35	20	2330	2541	211
<b>M03.2.PH15002</b>	40			541
J010-60	20	370	700	330
J009-43	20	720	931	211
<b>M03.3.PH15003</b>	40			730
J011-61	20	20	350	330
J007-39	20	440	840	400
<b>M03.4.PH15004</b>	20			308
J003-18	20	704	1012	308
<b>M04.1.PH07001</b>	60			652
J008-41	20	946	1157	211
J005-24	20	1177	1368	191
J004-20	20	1388	1638	250
<b>M05.1.PH30001</b>	120			1943
J001-12	20	20	242	222
J002-17	20	262	592	330
J012-74	20	612	1079	467
J014-85	20	1099	1489	390
J013-75	20	1509	1776	267
J006-35	20	1796	2063	267



Mch/Job	Setup	Start	Stop	Pr.tm
<b>M06.1.PE25001</b>	80			849
J001-12	20	262	430	168
J014-85	20	1509	1736	227
J013-75	20	1796	2023	227
J006-35	20	2083	2310	227
<b>M07.1.PE15002</b>	60			765
J010-60	20	20	350	330
J003-18	20	1032	1256	224
J013-75	20	2043	2254	211
<b>M07.2.PE15003</b>	60			592
J015-116	20	20	171	151
J009-43	20	951	1162	211
J012-74	20	1343	1573	230
<b>Summary</b>				
<i>Time</i>		6		
<i>C<sub>max</sub></i>		2541		
<i>T<sub>max</sub></i>		471		
<i>SU<sub>j</sub></i>		2		
<i>SC<sub>j</sub></i>		18148		
<i>ST<sub>j</sub></i>		835		
<i>Sw<sub>j</sub>C<sub>j</sub></i>		24793		
<i>Sw<sub>j</sub>T<sub>j</sub></i>		835		





Job Pool - P2.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J001-12</b>	2	0	900	750		20	810	0	0
				W05 - PH30	222	A	20	242	
				W06 - PE250	168	A	262	430	
				W03 - PH150	360	A	450	810	
<b>J002-17</b>	1	0	1170	330		836	1166	0	0
				W05 - PH30	330	A	836	1166	
<b>J003-18</b>	2	0	1560	1176		292	1528	0	0
				W01 - PH350	390	A	292	682	
				W02 - DE0	254	A	702	956	
				W03 - PH1	308	A	976	1284	
				W07 - PE15	224	A	1304	1528	
<b>J004-20</b>	2	0	1890	1171		292	1523	0	0
				W01 - PH350	467	A	292	759	
				W02 - DE08	224	A	779	1003	
				W03 - PH15	230	A	1023	1253	
				W04 - PH0	250	A	1273	1523	
<b>J005-24</b>	2	0	1785	1091		20	1151	0	0
				W01 - PH350	550	A	20	570	
				W02 - DE08	350	A	590	940	
				W04 - PH070	191	A	960	1151	
<b>J006-35</b>	1	0	2070	705		262	1007	0	0
				W05 - PH	267	A	262	529	
				W06 - PE25	227	A	549	776	
				W03 - PH150	211	A	796	1007	
<b>J007-39</b>	1	0	1395	800		20	840	0	0
				W01 - PH350	400	A	20	420	
				W03 - PH150	400	A	440	840	

Job Pool - P2.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J008-41</b>	1	0	1560	687		20	747	0	0
				W01 - PH3	252	A	20	272	
				W02 - DE08	224	A	292	516	
				W04 - PH07	211	A	536	747	
<b>J009-43</b>	1	0	1560	674		20	734	0	0
				W01 - PH3	252	A	20	272	
				W03 - PH15	211	A	292	503	
				W07 - PE15	211	A	523	734	
<b>J010-60</b>	1	0	900	660		20	700	0	0
				W07 - PE15	330	A	20	350	
				W03 - PH15	330	A	370	700	
<b>J011-61</b>	1	0	1170	330		20	350	0	0
				W03 - PH15	330	A	20	350	
<b>J012-74</b>	2	0	2070	921		1596	2557	487	974
				W05 - PH300	467	A	1596	2063	
				W02 - DE08	224	A	2083	2307	
				W07 - PE15	230	A	2327	2557	
<b>J013-75</b>	1	0	1890	705		549	1294	0	0
				W05 - PH3	267	A	549	816	
				W06 - PE25	227	A	836	1063	
				W07 - PE15	211	A	1083	1294	
<b>J014-85</b>	1	0	1785	617		1186	1823	38	38
				W05 - PH300	390	A	1186	1576	
				W06 - PE25	227	A	1596	1823	
<b>J015-116</b>	1	0	615	151		20	171	0	0
				W07 - PE150	151	A	20	171	

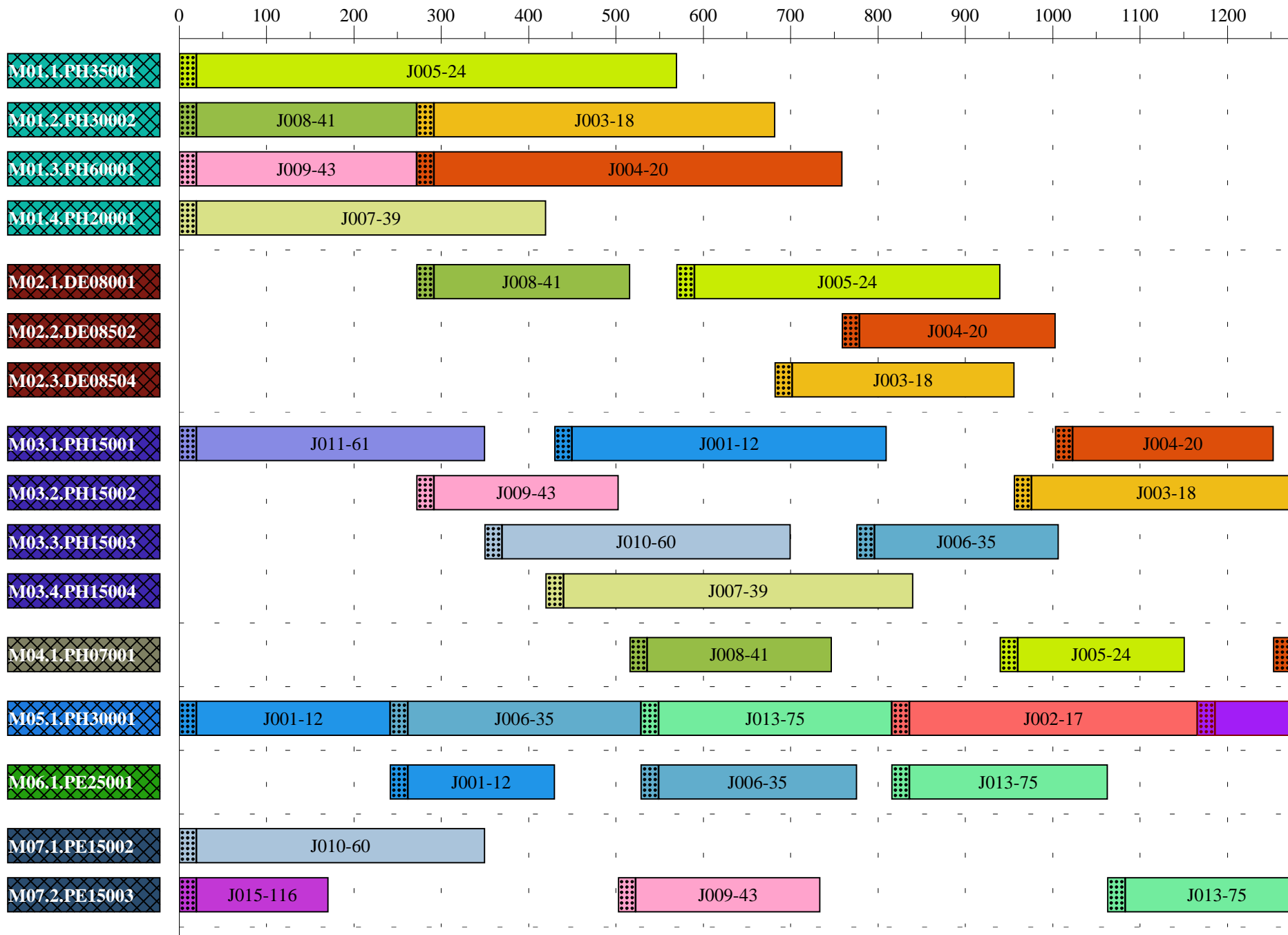
Mch/Job	Setup	Start	Stop	Pr.tm
<b>M01.1.PH35001</b>	20			550
J005-24	20	20	570	550
<b>M01.2.PH30002</b>	40			642
J008-41	20	20	272	252
J003-18	20	292	682	390
<b>M01.3.PH60001</b>	40			719
J009-43	20	20	272	252
J004-20	20	292	759	467
<b>M01.4.PH20001</b>	20			400
J007-39	20	20	420	400
<b>M02.1.DE08001</b>	60			798
J008-41	20	292	516	224
J005-24	20	590	940	350
J012-74	20	2083	2307	224
<b>M02.2.DE08502</b>	20			224
J004-20	20	779	1003	224
<b>M02.3.DE08504</b>	20			254
J003-18	20	702	956	254
<b>M03.1.PH15001</b>	60			920
J011-61	20	20	350	330
J001-12	20	450	810	360
J004-20	20	1023	1253	230
<b>M03.2.PH15002</b>	40			519
J009-43	20	292	503	211
J003-18	20	976	1284	308
<b>M03.3.PH15003</b>	40			541
J010-60	20	370	700	330
J006-35	20	796	1007	211
<b>M03.4.PH15004</b>	20			400
J007-39	20	440	840	400
<b>M04.1.PH07001</b>	60			652
J008-41	20	536	747	211
J005-24	20	960	1151	191
J004-20	20	1273	1523	250
<b>M05.1.PH30001</b>	120			1943
J001-12	20	20	242	222
J006-35	20	262	529	267
J013-75	20	549	816	267
J002-17	20	836	1166	330
J014-85	20	1186	1576	390
J012-74	20	1596	2063	467

Sequence - Seqs \* (General SB Routine / sum(C))

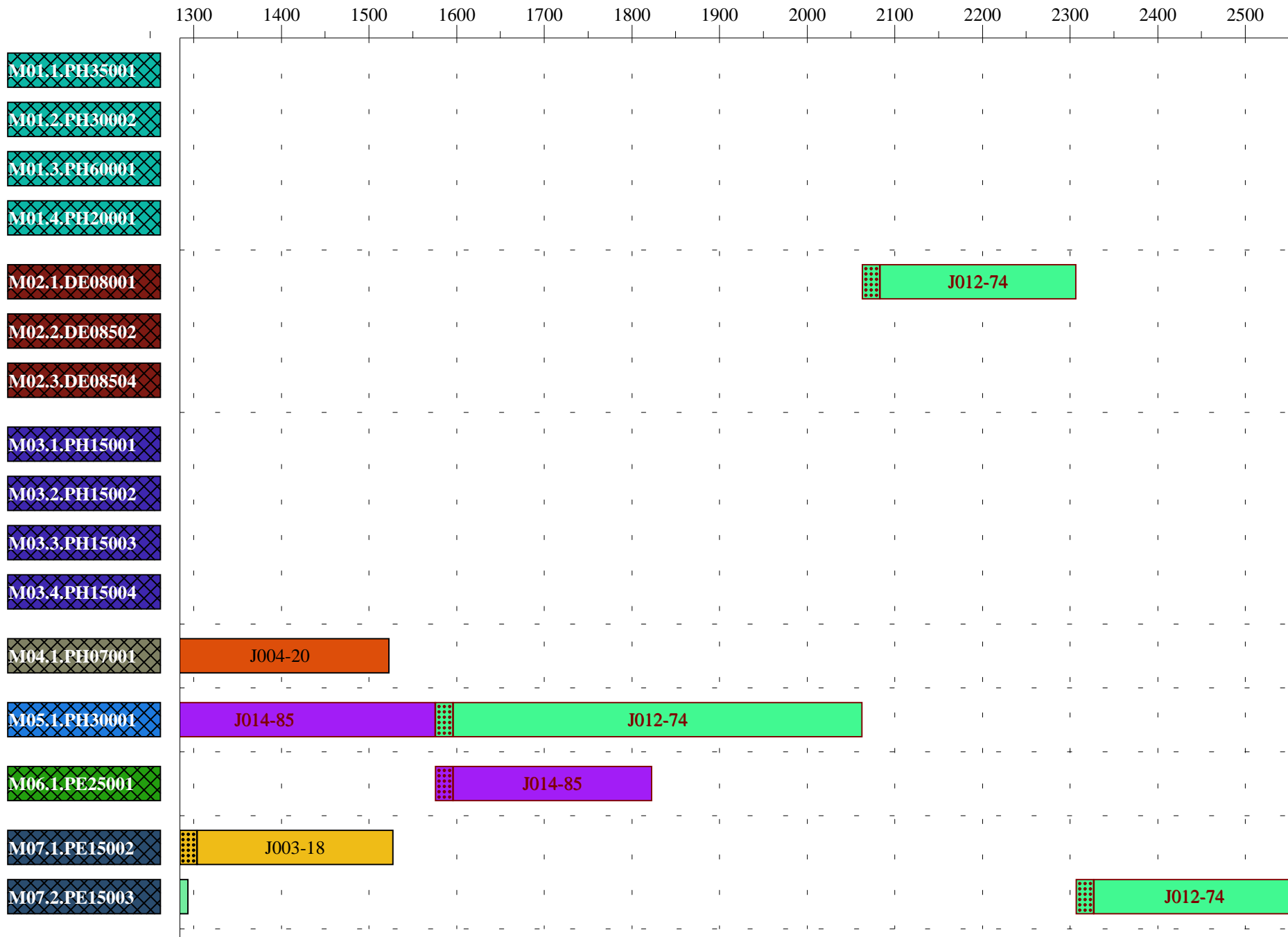
Mch/Job	Setup	Start	Stop	Pr.tm
<b>M06.1.PE25001</b>	80			849
J001-12	20	262	430	168
J006-35	20	549	776	227
J013-75	20	836	1063	227
J014-85	20	1596	1823	227
<b>M07.1.PE15002</b>	40			554
J010-60	20	20	350	330
J003-18	20	1304	1528	224
<b>M07.2.PE15003</b>	80			803
J015-116	20	20	171	151
J009-43	20	523	734	211
J013-75	20	1083	1294	211
J012-74	20	2327	2557	230

Summary

<i>Time</i>	25
<i>C<sub>max</sub></i>	2557
<i>T<sub>max</sub></i>	487
<i>SU<sub>j</sub></i>	2
<i>SC<sub>j</sub></i>	16401
<i>ST<sub>j</sub></i>	525
<i>Sw<sub>j</sub>C<sub>j</sub></i>	23970
<i>Sw<sub>j</sub>T<sub>j</sub></i>	1012







Job Pool - P2.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J001-12</b>	2	0	900	750		20	810	0	0
				W05 - PH30	222	A	20	242	
				W06 - PE250	168	A	262	430	
				W03 - PH150	360	A	450	810	
<b>J002-17</b>	1	0	1170	330		262	592	0	0
				W05 - PH30	330	A	262	592	
<b>J003-18</b>	2	0	1560	1176		20	1256	0	0
				W01 - PH350	390	A	20	410	
				W02 - DE0	254	A	430	684	
				W03 - PH1	308	A	704	1012	
				W07 - PE15	224	A	1032	1256	
<b>J004-20</b>	2	0	1890	1171		20	1638	0	0
				W01 - PH350	467	A	20	487	
				W02 - DE08	224	A	507	731	
				W03 - PH15	230	A	830	1060	
				W04 - PH0	250	A	1388	1638	
<b>J005-24</b>	2	0	1785	1091		20	1368	0	0
				W01 - PH350	550	A	20	570	
				W02 - DE08	350	A	704	1054	
				W04 - PH070	191	A	1177	1368	
<b>J006-35</b>	1	0	2070	705		1309	2054	0	0
				W05 - PH	267	A	1309	1576	
				W06 - PE25	227	A	1596	1823	
				W03 - PH150	211	A	1843	2054	
<b>J007-39</b>	1	0	1395	800		20	840	0	0
				W01 - PH350	400	A	20	420	
				W03 - PH150	400	A	440	840	

Job Pool - P2.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J008-41</b>	1	0	1560	687		430	1157	0	0
				W01 - PH3	252	A	430	682	
				W02 - DE08	224	A	702	926	
				W04 - PH07	211	A	946	1157	
<b>J009-43</b>	1	0	1560	674		440	1162	0	0
				W01 - PH3	252	A	440	692	
				W03 - PH15	211	A	720	931	
				W07 - PE15	211	A	951	1162	
<b>J010-60</b>	1	0	900	660		20	700	0	0
				W07 - PE15	330	A	20	350	
				W03 - PH15	330	A	370	700	
<b>J011-61</b>	1	0	1170	330		20	350	0	0
				W03 - PH15	330	A	20	350	
<b>J012-74</b>	2	0	2070	921		1596	2557	487	974
				W05 - PH300	467	A	1596	2063	
				W02 - DE08	224	A	2083	2307	
				W07 - PE15	230	A	2327	2557	
<b>J013-75</b>	1	0	1890	705		612	1393	0	0
				W05 - PH3	267	A	612	879	
				W06 - PE25	227	A	899	1126	
				W07 - PE15	211	A	1182	1393	
<b>J014-85</b>	1	0	1785	617		899	1536	0	0
				W05 - PH300	390	A	899	1289	
				W06 - PE25	227	A	1309	1536	
<b>J015-116</b>	1	0	615	151		20	171	0	0
				W07 - PE150	151	A	20	171	

Sequence - Seqs \* (General SB Routine / sum(T))

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M01.1.PH35001</b>	40			642
J003-18	20	20	410	390
J008-41	20	430	682	252
<b>M01.2.PH30002</b>	40			652
J007-39	20	20	420	400
J009-43	20	440	692	252
<b>M01.3.PH60001</b>	20			550
J005-24	20	20	570	550
<b>M01.4.PH20001</b>	20			467
J004-20	20	20	487	467
<b>M02.1.DE08001</b>	60			828
J003-18	20	430	684	254
J005-24	20	704	1054	350
J012-74	20	2083	2307	224
<b>M02.2.DE08502</b>	20			224
J008-41	20	702	926	224
<b>M02.3.DE08504</b>	20			224
J004-20	20	507	731	224
<b>M03.1.PH15001</b>	60			752
J010-60	20	370	700	330
J009-43	20	720	931	211
J006-35	20	1843	2054	211
<b>M03.2.PH15002</b>	60			920
J011-61	20	20	350	330
J001-12	20	450	810	360
J004-20	20	830	1060	230
<b>M03.3.PH15003</b>	20			400
J007-39	20	440	840	400
<b>M03.4.PH15004</b>	20			308
J003-18	20	704	1012	308
<b>M04.1.PH07001</b>	60			652
J008-41	20	946	1157	211
J005-24	20	1177	1368	191
J004-20	20	1388	1638	250
<b>M05.1.PH30001</b>	120			1943
J001-12	20	20	242	222
J002-17	20	262	592	330
J013-75	20	612	879	267
J014-85	20	899	1289	390
J006-35	20	1309	1576	267
J012-74	20	1596	2063	467

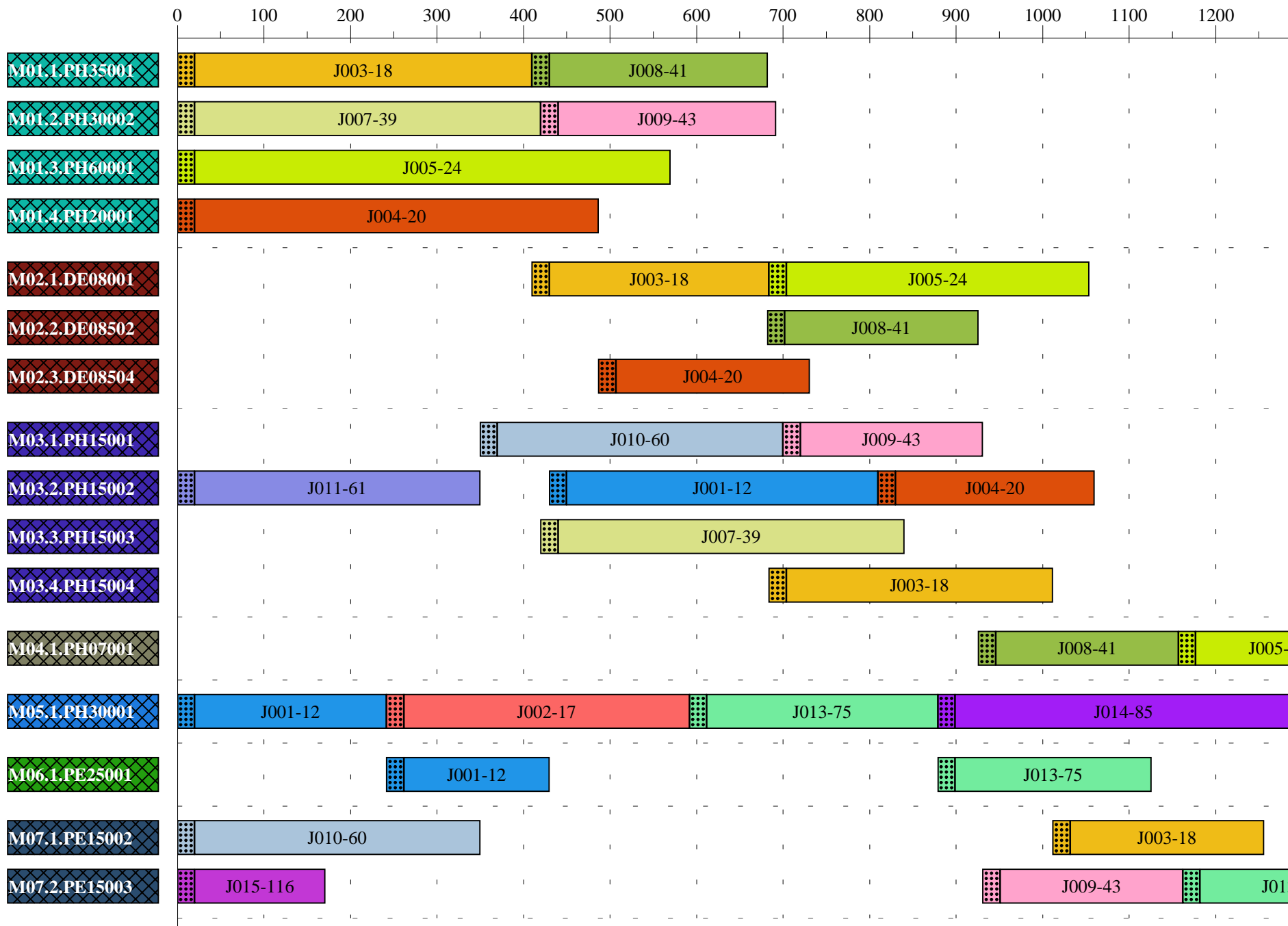
Sequence - Seqs \* (General SB Routine / sum(T))

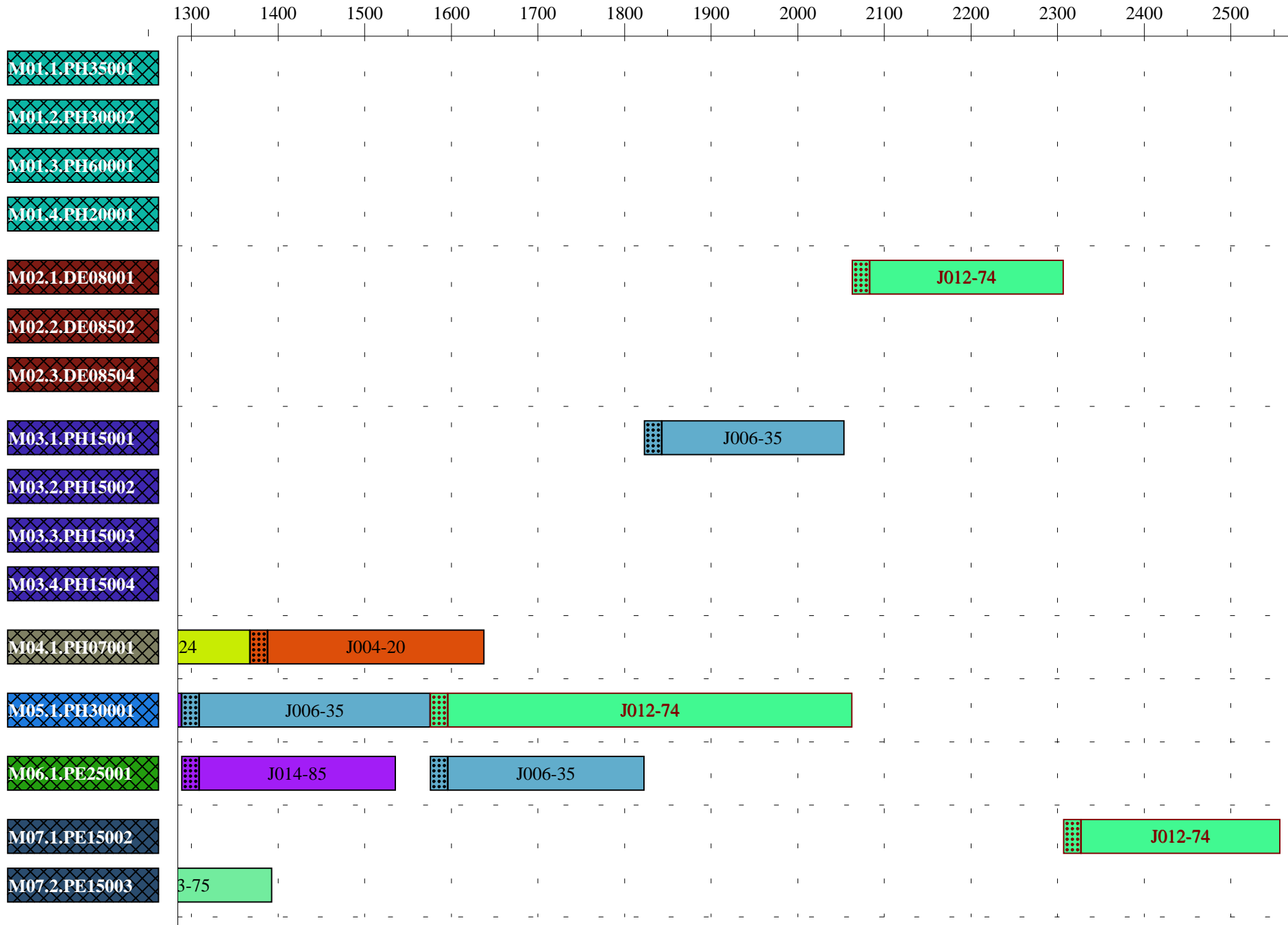
Mch/Job	Setup	Start	Stop	Pr.tm
<b>M06.1.PE25001</b>	80			849
J001-12	20	262	430	168
J013-75	20	899	1126	227
J014-85	20	1309	1536	227
J006-35	20	1596	1823	227
<b>M07.1.PE15002</b>	60			784
J010-60	20	20	350	330
J003-18	20	1032	1256	224
J012-74	20	2327	2557	230
<b>M07.2.PE15003</b>	60			573
J015-116	20	20	171	151
J009-43	20	951	1162	211
J013-75	20	1182	1393	211

Summary

<i>Time</i>	6
<i>C<sub>max</sub></i>	2557
<i>T<sub>max</sub></i>	487
<i>SU<sub>j</sub></i>	1
<i>SC<sub>j</sub></i>	17584
<i>ST<sub>j</sub></i>	487
<i>Sw<sub>j</sub>C<sub>j</sub></i>	25213
<i>Sw<sub>j</sub>T<sub>j</sub></i>	974

Gantt Chart - Seqs (General SB Routine / sum(T))





Job Pool - P2.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J001-12</b>	2	0	900	750		20	810	0	0
				W05 - PH30	222	A	20	242	
				W06 - PE250	168	A	262	430	
				W03 - PH150	360	A	450	810	
<b>J002-17</b>	1	0	1170	330		1036	1366	196	196
				W05 - PH30	330	A	1036	1366	
<b>J003-18</b>	2	0	1560	1176		20	1256	0	0
				W01 - PH350	390	A	20	410	
				W02 - DE0	254	A	430	684	
				W03 - PH1	308	A	704	1012	
				W07 - PE15	224	A	1032	1256	
<b>J004-20</b>	2	0	1890	1171		292	1523	0	0
				W01 - PH350	467	A	292	759	
				W02 - DE08	224	A	779	1003	
				W03 - PH15	230	A	1023	1253	
				W04 - PH0	250	A	1273	1523	
<b>J005-24</b>	2	0	1785	1091		20	1151	0	0
				W01 - PH350	550	A	20	570	
				W02 - DE08	350	A	590	940	
				W04 - PH070	191	A	960	1151	
<b>J006-35</b>	1	0	2070	705		1796	2541	471	471
				W05 - PH3	267	A	1796	2063	
				W06 - PE25	227	A	2083	2310	
				W03 - PH150	211	A	2330	2541	
<b>J007-39</b>	1	0	1395	800		292	1112	0	0
				W01 - PH350	400	A	292	692	
				W03 - PH150	400	A	712	1112	

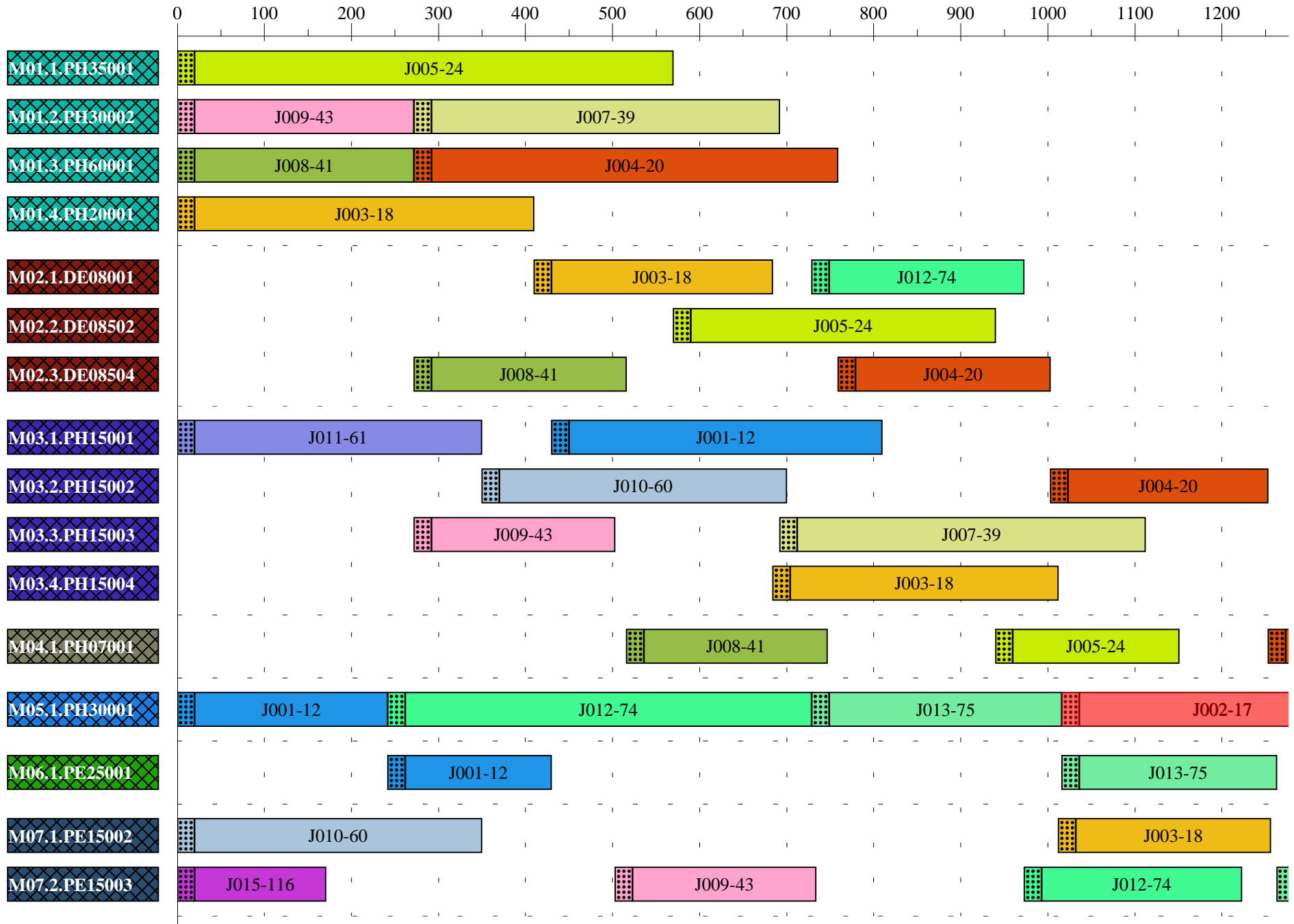


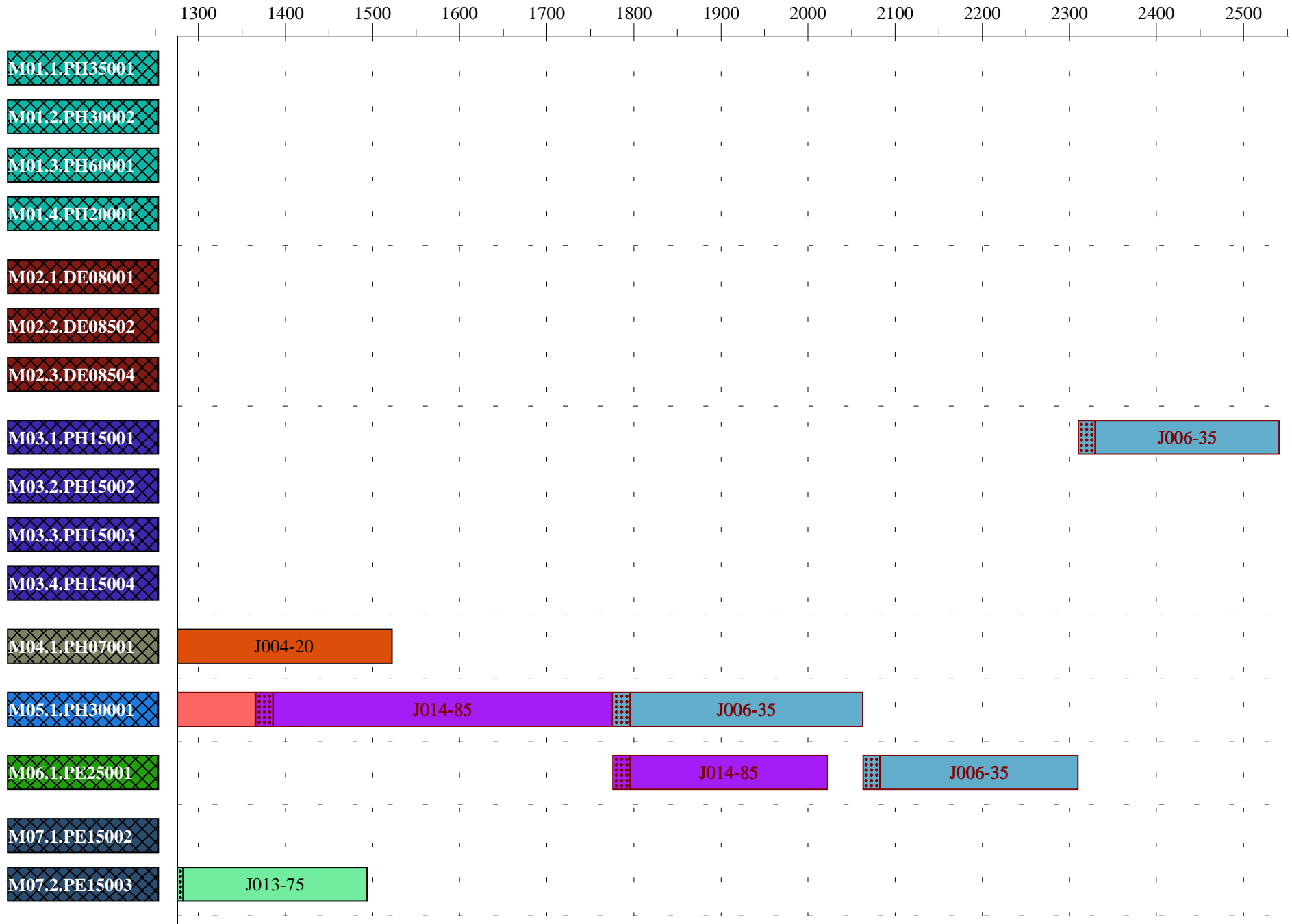
Job Pool - P2.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J008-41</b>	1	0	1560	687		20	747	0	0
				W01 - PH3	252	A	20	272	
				W02 - DE08	224	A	292	516	
				W04 - PH07	211	A	536	747	
<b>J009-43</b>	1	0	1560	674		20	734	0	0
				W01 - PH3	252	A	20	272	
				W03 - PH15	211	A	292	503	
				W07 - PE15	211	A	523	734	
<b>J010-60</b>	1	0	900	660		20	700	0	0
				W07 - PE15	330	A	20	350	
				W03 - PH15	330	A	370	700	
<b>J011-61</b>	1	0	1170	330		20	350	0	0
				W03 - PH15	330	A	20	350	
<b>J012-74</b>	2	0	2070	921		262	1223	0	0
				W05 - PH300	467	A	262	729	
				W02 - DE08	224	A	749	973	
				W07 - PE15	230	A	993	1223	
<b>J013-75</b>	1	0	1890	705		749	1494	0	0
				W05 - PH3	267	A	749	1016	
				W06 - PE25	227	A	1036	1263	
				W07 - PE15	211	A	1283	1494	
<b>J014-85</b>	1	0	1785	617		1386	2023	238	238
				W05 - PH300	390	A	1386	1776	
				W06 - PE25	227	A	1796	2023	
<b>J015-116</b>	1	0	615	151		20	171	0	0
				W07 - PE15	151	A	20	171	

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M01.1.PH35001</b>	20			550
<b>J005-24</b>	20	20	570	550
<b>M01.2.PH30002</b>	40			652
<b>J009-43</b>	20	20	272	252
<b>J007-39</b>	20	292	692	400
<b>M01.3.PH60001</b>	40			719
<b>J008-41</b>	20	20	272	252
<b>J004-20</b>	20	292	759	467
<b>M01.4.PH20001</b>	20			390
<b>J003-18</b>	20	20	410	390
<b>M02.1.DE08001</b>	40			478
<b>J003-18</b>	20	430	684	254
<b>J012-74</b>	20	749	973	224
<b>M02.2.DE08502</b>	20			350
<b>J005-24</b>	20	590	940	350
<b>M02.3.DE08504</b>	40			448
<b>J008-41</b>	20	292	516	224
<b>J004-20</b>	20	779	1003	224
<b>M03.1.PH15001</b>	60			901
<b>J011-61</b>	20	20	350	330
<b>J001-12</b>	20	450	810	360
<b>J006-35</b>	20	2330	2541	211
<b>M03.2.PH15002</b>	40			560
<b>J010-60</b>	20	370	700	330
<b>J004-20</b>	20	1023	1253	230
<b>M03.3.PH15003</b>	40			611
<b>J009-43</b>	20	292	503	211
<b>J007-39</b>	20	712	1112	400
<b>M03.4.PH15004</b>	20			308
<b>J003-18</b>	20	704	1012	308
<b>M04.1.PH07001</b>	60			652
<b>J008-41</b>	20	536	747	211
<b>J005-24</b>	20	960	1151	191
<b>J004-20</b>	20	1273	1523	250
<b>M05.1.PH30001</b>	120			1943
<b>J001-12</b>	20	20	242	222
<b>J012-74</b>	20	262	729	467
<b>J013-75</b>	20	749	1016	267
<b>J002-17</b>	20	1036	1366	330
<b>J014-85</b>	20	1386	1776	390
<b>J006-35</b>	20	1796	2063	267

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M06.1.PE25001</b>	80			849
J001-12	20	262	430	168
J013-75	20	1036	1263	227
J014-85	20	1796	2023	227
J006-35	20	2083	2310	227
<b>M07.1.PE15002</b>	40			554
J010-60	20	20	350	330
J003-18	20	1032	1256	224
<b>M07.2.PE15003</b>	80			803
J015-116	20	20	171	151
J009-43	20	523	734	211
J012-74	20	993	1223	230
J013-75	20	1283	1494	211
<b>Summary</b>				
<i>Time</i>		19		
<i>C<sub>max</sub></i>		2541		
<i>T<sub>max</sub></i>		471		
<i>SU<sub>j</sub></i>		3		
<i>SC<sub>j</sub></i>		17201		
<i>ST<sub>j</sub></i>		905		
<i>Sw<sub>j</sub>C<sub>j</sub></i>		23164		
<i>Sw<sub>j</sub>T<sub>j</sub></i>		905		





Job Pool - P2.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J001-12</b>	2	0	900	750		20	810	0	0
				W05 - PH30	222	A	20	242	
				W06 - PE250	168	A	262	430	
				W03 - PH150	360	A	450	810	
<b>J002-17</b>	1	0	1170	330		262	592	0	0
				W05 - PH30	330	A	262	592	
<b>J003-18</b>	2	0	1560	1176		20	1256	0	0
				W01 - PH350	390	A	20	410	
				W02 - DE0	254	A	430	684	
				W03 - PH1	308	A	704	1012	
				W07 - PE15	224	A	1032	1256	
<b>J004-20</b>	2	0	1890	1171		20	1638	0	0
				W01 - PH350	467	A	20	487	
				W02 - DE08	224	A	507	731	
				W03 - PH15	230	A	830	1060	
				W04 - PH0	250	A	1388	1638	
<b>J005-24</b>	2	0	1785	1091		20	1368	0	0
				W01 - PH350	550	A	20	570	
				W02 - DE08	350	A	704	1054	
				W04 - PH070	191	A	1177	1368	
<b>J006-35</b>	1	0	2070	705		1796	2541	471	471
				W05 - PH	267	A	1796	2063	
				W06 - PE25	227	A	2083	2310	
				W03 - PH150	211	A	2330	2541	
<b>J007-39</b>	1	0	1395	800		20	840	0	0
				W01 - PH350	400	A	20	420	
				W03 - PH150	400	A	440	840	

Job Pool - P2.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT	
<b>J008-41</b>	1	0	1560	687		430	1157	0	0	
				W01 - PH3	252	A	430	682		
				W02 - DE08	224	A	702	926		
				W04 - PH07	211	A	946	1157		
<b>J009-43</b>	1	0	1560	674		440	1162	0	0	
				W01 - PH3	252	A	440	692		
				W03 - PH15	211	A	720	931		
				W07 - PE15	211	A	951	1162		
<b>J010-60</b>	1	0	900	660		20	700	0	0	
				W07 - PE15	330	A	20	350		
				W03 - PH15	330	A	370	700		
<b>J011-61</b>	1	0	1170	330		20	350	0	0	
				W03 - PH15	330	A	20	350		
<b>J012-74</b>	2	0	2070	921		612	1573	0	0	
				W05 - PH300	467	A	612	1079		
				W02 - DE08	224	A	1099	1323		
				W07 - PE15	230	A	1343	1573		
<b>J013-75</b>	1	0	1890	705		1099	1844	0	0	
				W05 - PH3	267	A	1099	1366		
				W06 - PE25	227	A	1386	1613		
				W07 - PE15	211	A	1633	1844		
<b>J014-85</b>	1	0	1785	617		1386	2023	238	238	
				W05 - PH300	390	A	1386	1776		
				W06 - PE25	227	A	1796	2023		
<b>J015-116</b>	1	0	615	151		20	171	0	0	
				W07 - PE15	151	A	20	171		

Sequence - Seqs \* (General SB Routine / sum(wT))

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M01.1.PH35001</b>	40			642
J003-18	20	20	410	390
J008-41	20	430	682	252
<b>M01.2.PH30002</b>	40			652
J007-39	20	20	420	400
J009-43	20	440	692	252
<b>M01.3.PH60001</b>	20			550
J005-24	20	20	570	550
<b>M01.4.PH20001</b>	20			467
J004-20	20	20	487	467
<b>M02.1.DE08001</b>	60			828
J003-18	20	430	684	254
J005-24	20	704	1054	350
J012-74	20	1099	1323	224
<b>M02.2.DE08502</b>	20			224
J008-41	20	702	926	224
<b>M02.3.DE08504</b>	20			224
J004-20	20	507	731	224
<b>M03.1.PH15001</b>	60			752
J010-60	20	370	700	330
J009-43	20	720	931	211
J006-35	20	2330	2541	211
<b>M03.2.PH15002</b>	60			920
J011-61	20	20	350	330
J001-12	20	450	810	360
J004-20	20	830	1060	230
<b>M03.3.PH15003</b>	20			400
J007-39	20	440	840	400
<b>M03.4.PH15004</b>	20			308
J003-18	20	704	1012	308
<b>M04.1.PH07001</b>	60			652
J008-41	20	946	1157	211
J005-24	20	1177	1368	191
J004-20	20	1388	1638	250
<b>M05.1.PH30001</b>	120			1943
J001-12	20	20	242	222
J002-17	20	262	592	330
J012-74	20	612	1079	467
J013-75	20	1099	1366	267
J014-85	20	1386	1776	390
J006-35	20	1796	2063	267

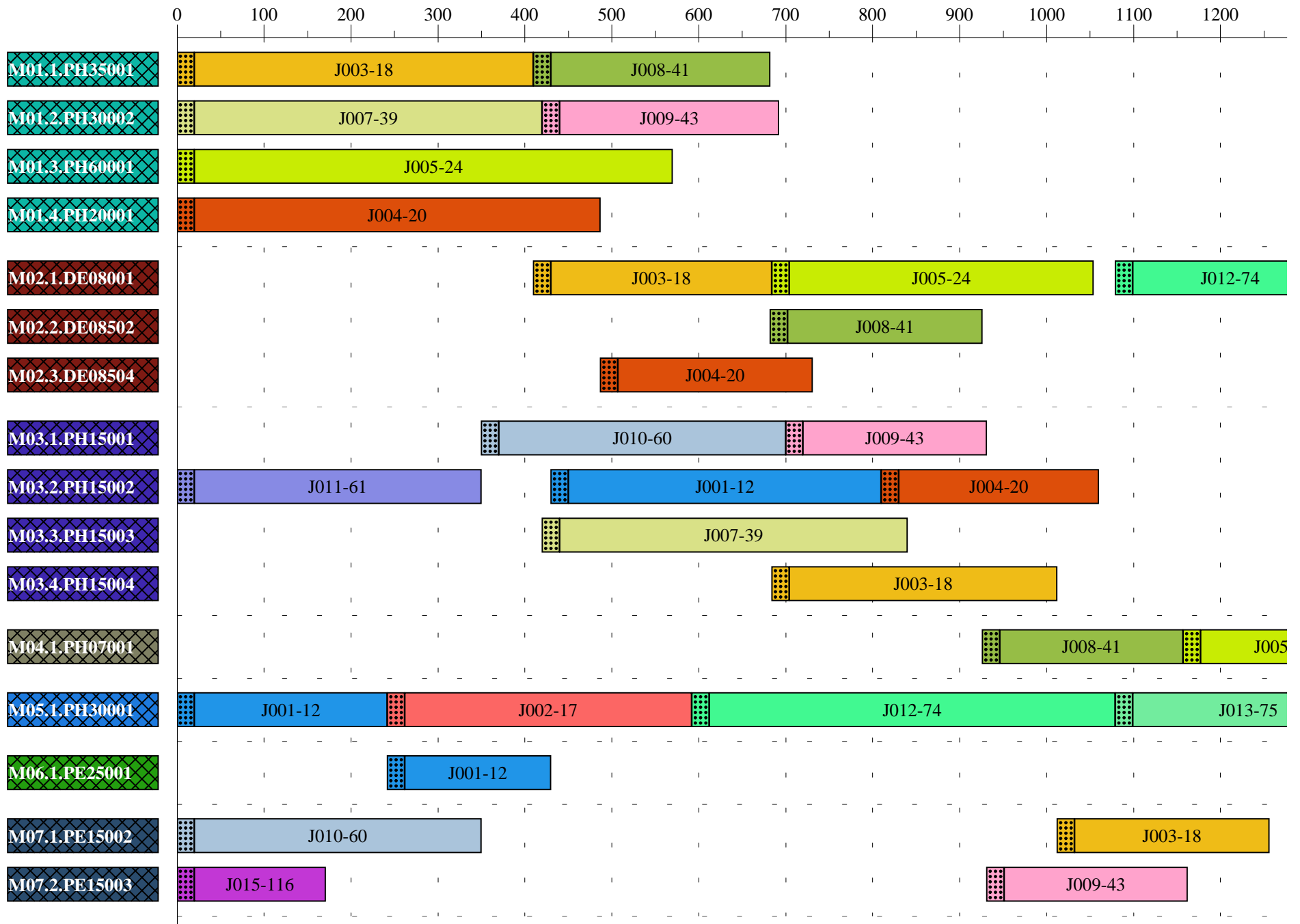


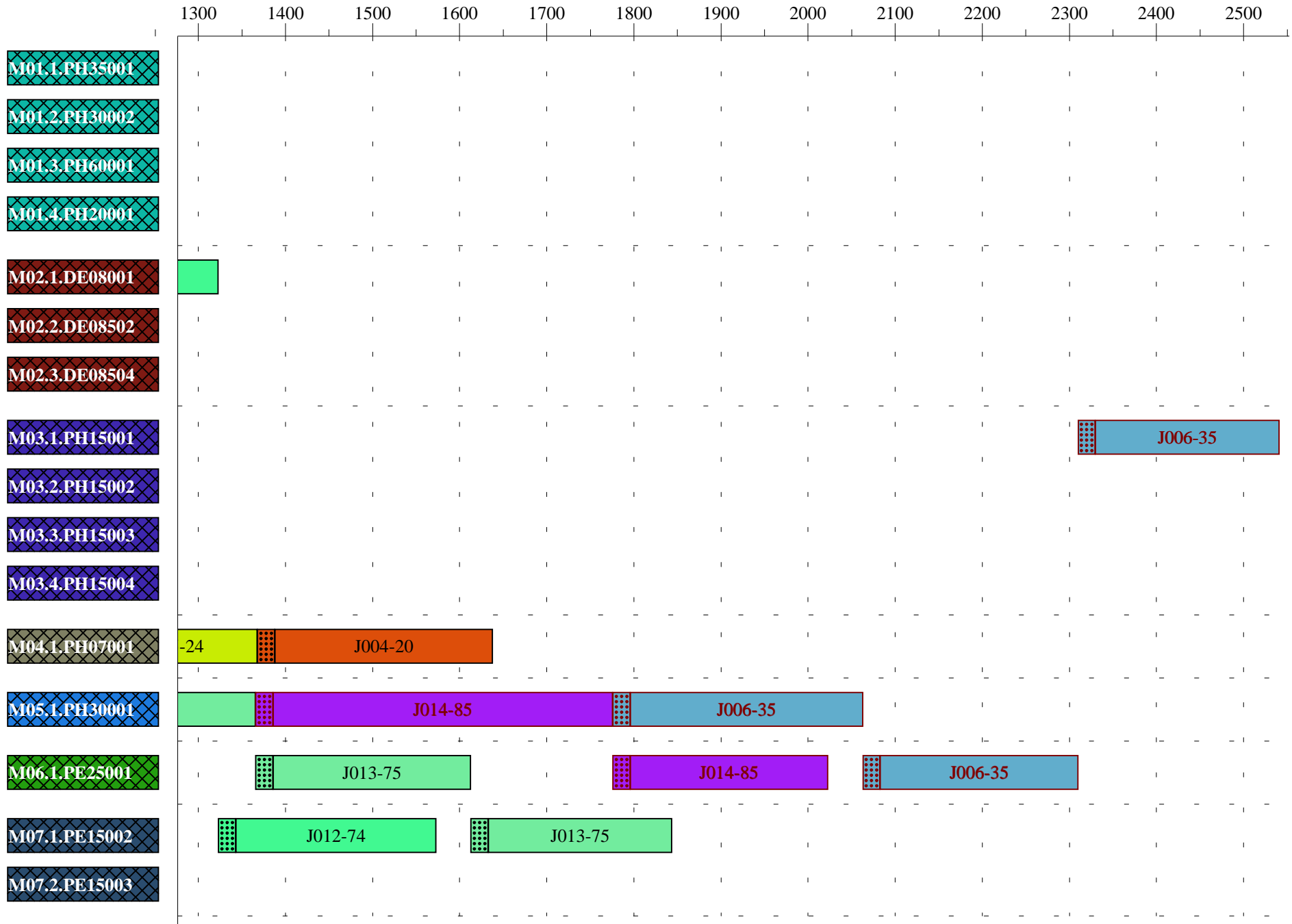
Sequence - Seqs \* (General SB Routine / sum(wT))

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M06.1.PE25001</b>	80			849
J001-12	20	262	430	168
J013-75	20	1386	1613	227
J014-85	20	1796	2023	227
J006-35	20	2083	2310	227
<b>M07.1.PE15002</b>	80			995
J010-60	20	20	350	330
J003-18	20	1032	1256	224
J012-74	20	1343	1573	230
J013-75	20	1633	1844	211
<b>M07.2.PE15003</b>	40			362
J015-116	20	20	171	151
J009-43	20	951	1162	211

Summary

<i>Time</i>	6
<i>C<sub>max</sub></i>	2541
<i>T<sub>max</sub></i>	471
<i>SU<sub>j</sub></i>	2
<i>SC<sub>j</sub></i>	18025
<i>ST<sub>j</sub></i>	709
<i>Sw<sub>j</sub>C<sub>j</sub></i>	24670
<i>Sw<sub>j</sub>T<sub>j</sub></i>	709





Job Pool - P2.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J001-12</b>	2	0	900	750		507	1297	397	794
<b>J002-17</b>	1	0	1170	330		1733	2063	893	893
<b>J003-18</b>	2	0	1560	1176		20	1256	0	0
<b>J004-20</b>	2	0	1890	1171		20	1251	0	0
<b>J005-24</b>	2	0	1785	1091		20	1693	0	0
<b>J006-35</b>	1	0	2070	705		749	1494	0	0
<b>J007-39</b>	1	0	1395	800		20	840	0	0

Job Pool - P2.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J008-41</b>	1	0	1560	687		430	1482	0	0
				W01 - PH3	252	A	430	682	
				W02 - DE08	224	A	751	975	
				W04 - PH07	211	A	1271	1482	
<b>J009-43</b>	1	0	1560	674		440	1409	0	0
				W01 - PH3	252	A	440	692	
				W03 - PH15	211	A	720	931	
				W07 - PE15	211	A	1198	1409	
<b>J010-60</b>	1	0	900	660		20	700	0	0
				W07 - PE15	330	A	20	350	
				W03 - PH15	330	A	370	700	
<b>J011-61</b>	1	0	1170	330		20	350	0	0
				W03 - PH15	330	A	20	350	
<b>J012-74</b>	2	0	2070	921		20	1178	0	0
				W05 - PH300	467	A	20	487	
				W02 - DE08	224	A	704	928	
				W07 - PE15	230	A	948	1178	
<b>J013-75</b>	1	0	1890	705		1036	1781	0	0
				W05 - PH3	267	A	1036	1303	
				W06 - PE25	227	A	1323	1550	
				W07 - PE15	211	A	1570	1781	
<b>J014-85</b>	1	0	1785	617		1323	1960	175	175
				W05 - PH300	390	A	1323	1713	
				W06 - PE25	227	A	1733	1960	
<b>J015-116</b>	1	0	615	151		20	171	0	0
				W07 - PE15	151	A	20	171	

Sequence - Seqs \* (LPT)

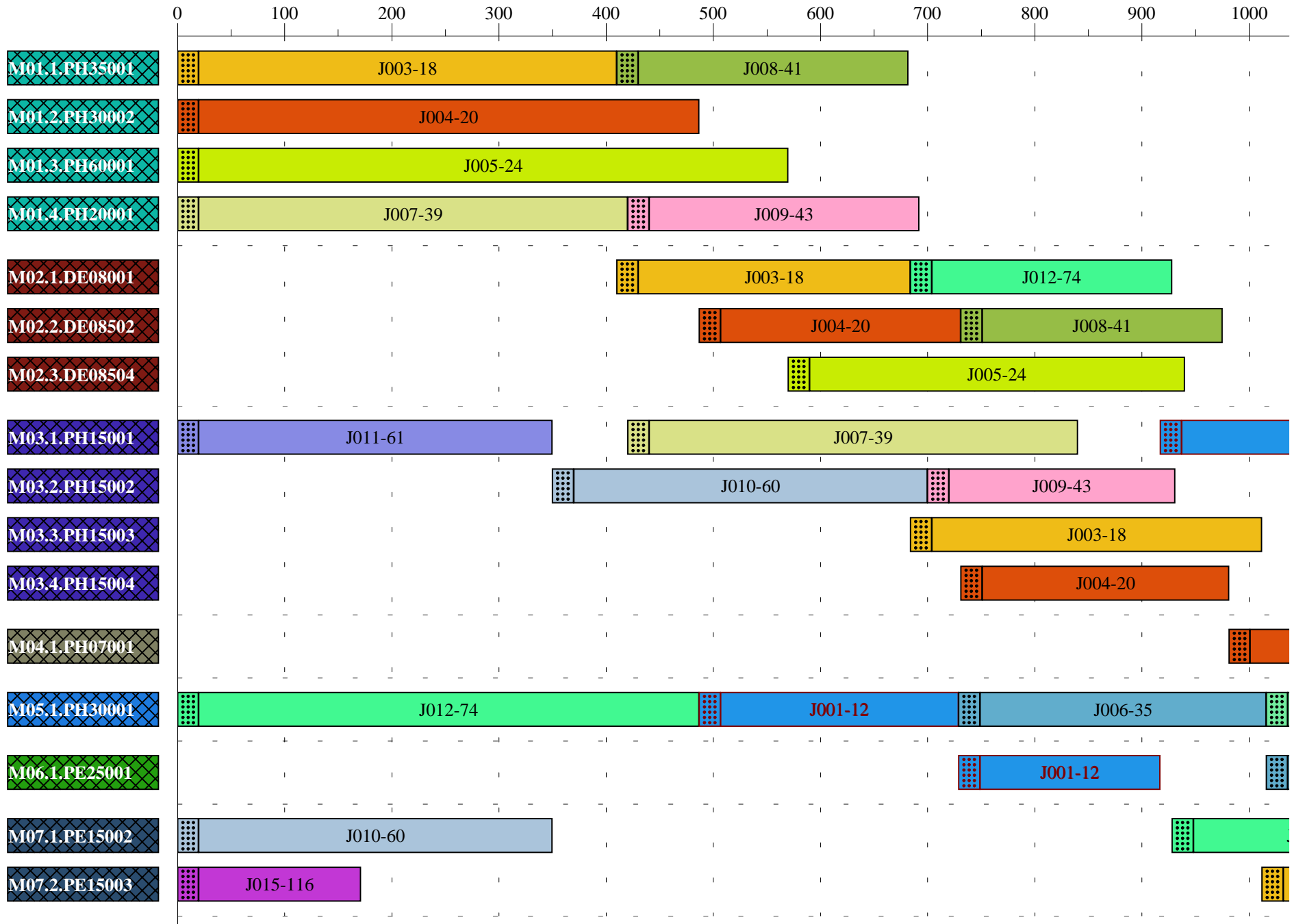
Mch/Job	Setup	Start	Stop	Pr.tm
<b>M01.1.PH35001</b>	40			642
J003-18	20	20	410	390
J008-41	20	430	682	252
<b>M01.2.PH30002</b>	20			467
J004-20	20	20	487	467
<b>M01.3.PH60001</b>	20			550
J005-24	20	20	570	550
<b>M01.4.PH20001</b>	40			652
J007-39	20	20	420	400
J009-43	20	440	692	252
<b>M02.1.DE08001</b>	40			478
J003-18	20	430	684	254
J012-74	20	704	928	224
<b>M02.2.DE08502</b>	40			448
J004-20	20	507	731	224
J008-41	20	751	975	224
<b>M02.3.DE08504</b>	20			350
J005-24	20	590	940	350
<b>M03.1.PH15001</b>	60			1090
J011-61	20	20	350	330
J007-39	20	440	840	400
J001-12	20	937	1297	360
<b>M03.2.PH15002</b>	60			752
J010-60	20	370	700	330
J009-43	20	720	931	211
J006-35	20	1283	1494	211
<b>M03.3.PH15003</b>	20			308
J003-18	20	704	1012	308
<b>M03.4.PH15004</b>	20			230
J004-20	20	751	981	230
<b>M04.1.PH07001</b>	60			652
J004-20	20	1001	1251	250
J008-41	20	1271	1482	211
J005-24	20	1502	1693	191
<b>M05.1.PH30001</b>	120			1943
J012-74	20	20	487	467
J001-12	20	507	729	222
J006-35	20	749	1016	267
J013-75	20	1036	1303	267
J014-85	20	1323	1713	390
J002-17	20	1733	2063	330

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M06.1.PE25001</b>	80			849
J001-12	20	749	917	168
J006-35	20	1036	1263	227
J013-75	20	1323	1550	227
J014-85	20	1733	1960	227
<b>M07.1.PE15002</b>	80			982
J010-60	20	20	350	330
J012-74	20	948	1178	230
J009-43	20	1198	1409	211
J013-75	20	1570	1781	211
<b>M07.2.PE15003</b>	40			375
J015-116	20	20	171	151
J003-18	20	1032	1256	224

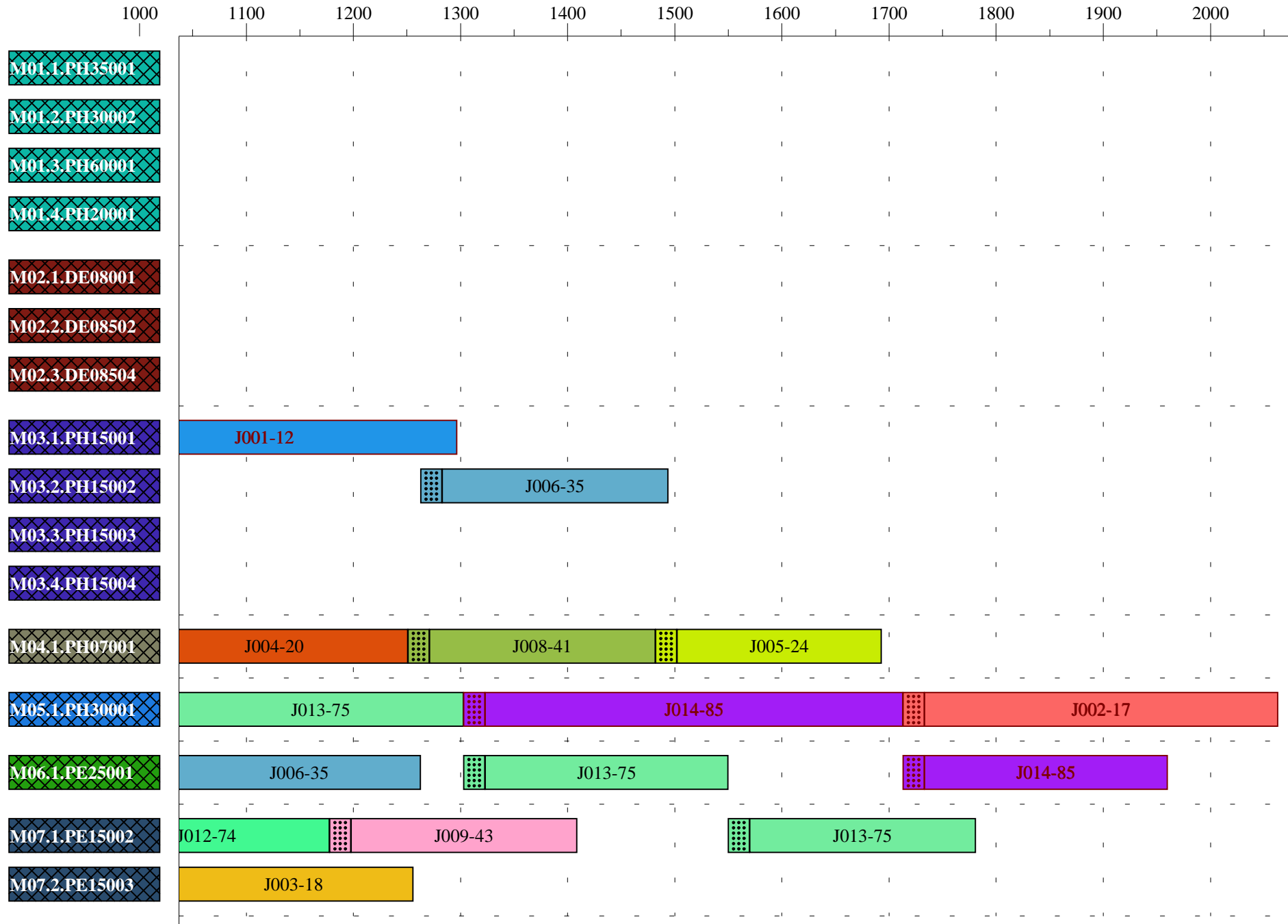
Summary

<i>Time</i>	1
<i>C<sub>max</sub></i>	2063
<i>T<sub>max</sub></i>	893
<i>SU<sub>j</sub></i>	3
<i>SC<sub>j</sub></i>	18925
<i>ST<sub>j</sub></i>	1465
<i>Sw<sub>j</sub>C<sub>j</sub></i>	25600
<i>Sw<sub>j</sub>T<sub>j</sub></i>	1862

Gantt Chart - Seqs (LPT)







Job Pool - P2.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J001-12</b>	2	0	900	750		20	810	0	0
				W05 - PH30	222	A	20	242	
				W06 - PE250	168	A	262	430	
				W03 - PH150	360	A	450	810	
<b>J002-17</b>	1	0	1170	330		262	592	0	0
				W05 - PH30	330	A	262	592	
<b>J003-18</b>	2	0	1560	1176		20	1256	0	0
				W01 - PH350	390	A	20	410	
				W02 - DE0	254	A	430	684	
				W03 - PH1	308	A	704	1012	
				W07 - PE15	224	A	1032	1256	
<b>J004-20</b>	2	0	1890	1171		20	1638	0	0
				W01 - PH350	467	A	20	487	
				W02 - DE08	224	A	507	731	
				W03 - PH15	230	A	830	1060	
				W04 - PH0	250	A	1388	1638	
<b>J005-24</b>	2	0	1785	1091		20	1368	0	0
				W01 - PH350	550	A	20	570	
				W02 - DE08	350	A	704	1054	
				W04 - PH070	191	A	1177	1368	
<b>J006-35</b>	1	0	2070	705		1796	2541	471	471
				W05 - PH3	267	A	1796	2063	
				W06 - PE25	227	A	2083	2310	
				W03 - PH150	211	A	2330	2541	
<b>J007-39</b>	1	0	1395	800		20	840	0	0
				W01 - PH350	400	A	20	420	
				W03 - PH150	400	A	440	840	

Job Pool - P2.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT	
<b>J008-41</b>	1	0	1560	687		430	1157	0	0	
				W01 - PH3	252	A	430	682		
				W02 - DE08	224	A	702	926		
				W04 - PH07	211	A	946	1157		
<b>J009-43</b>	1	0	1560	674		440	1162	0	0	
				W01 - PH3	252	A	440	692		
				W03 - PH15	211	A	720	931		
				W07 - PE15	211	A	951	1162		
<b>J010-60</b>	1	0	900	660		20	700	0	0	
				W07 - PE15	330	A	20	350		
				W03 - PH15	330	A	370	700		
<b>J011-61</b>	1	0	1170	330		20	350	0	0	
				W03 - PH15	330	A	20	350		
<b>J012-74</b>	2	0	2070	921		612	1573	0	0	
				W05 - PH300	467	A	612	1079		
				W02 - DE08	224	A	1099	1323		
				W07 - PE15	230	A	1343	1573		
<b>J013-75</b>	1	0	1890	705		1509	2254	364	364	
				W05 - PH3	267	A	1509	1776		
				W06 - PE25	227	A	1796	2023		
				W07 - PE15	211	A	2043	2254		
<b>J014-85</b>	1	0	1785	617		1099	1736	0	0	
				W05 - PH300	390	A	1099	1489		
				W06 - PE25	227	A	1509	1736		
<b>J015-116</b>	1	0	615	151		20	171	0	0	
				W07 - PE150	151	A	20	171		

Sequence - Seqs \* (MS)

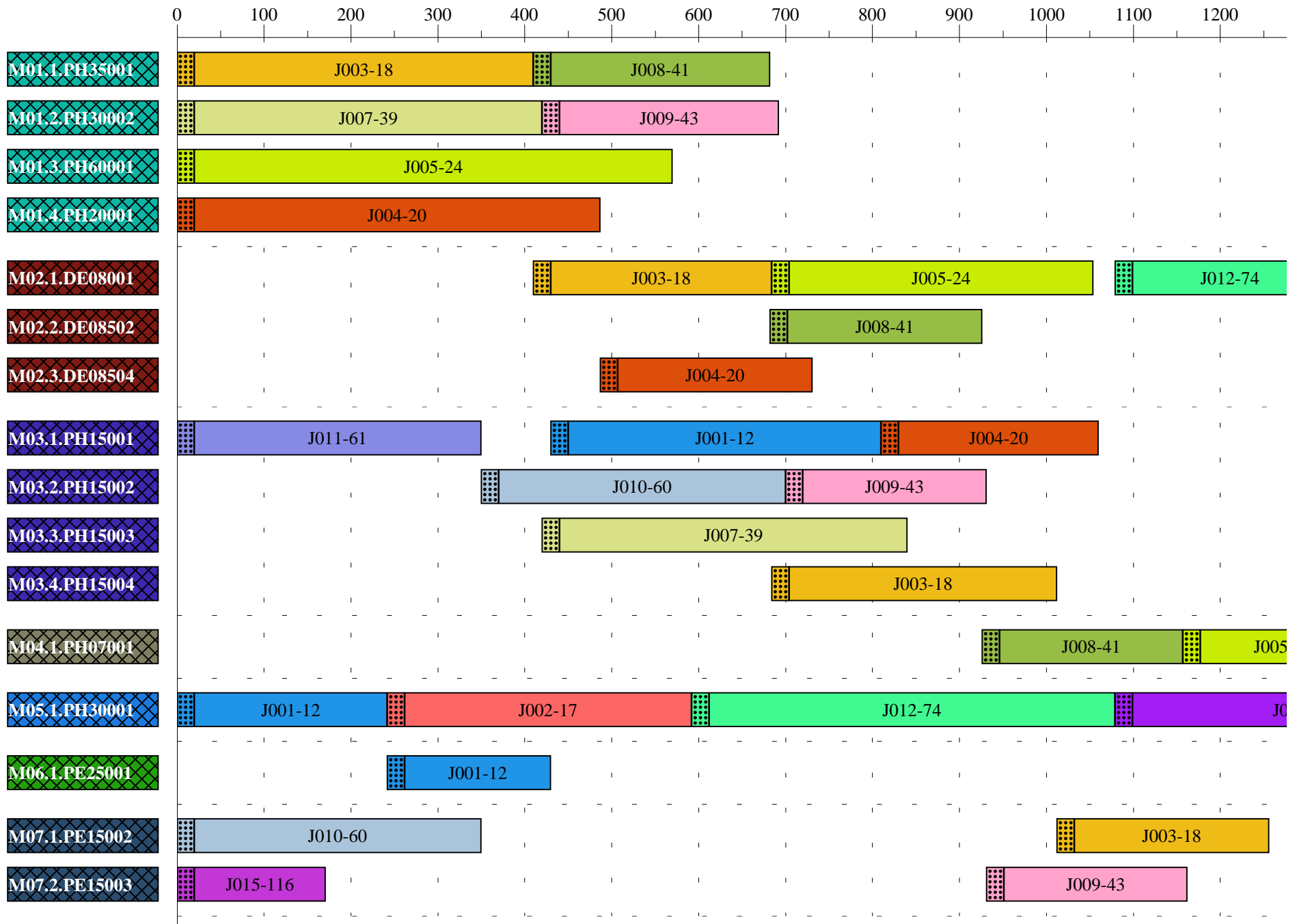
Mch/Job	Setup	Start	Stop	Pr.tm
<b>M01.1.PH35001</b>	40			642
J003-18	20	20	410	390
J008-41	20	430	682	252
<b>M01.2.PH30002</b>	40			652
J007-39	20	20	420	400
J009-43	20	440	692	252
<b>M01.3.PH60001</b>	20			550
J005-24	20	20	570	550
<b>M01.4.PH20001</b>	20			467
J004-20	20	20	487	467
<b>M02.1.DE08001</b>	60			828
J003-18	20	430	684	254
J005-24	20	704	1054	350
J012-74	20	1099	1323	224
<b>M02.2.DE08502</b>	20			224
J008-41	20	702	926	224
<b>M02.3.DE08504</b>	20			224
J004-20	20	507	731	224
<b>M03.1.PH15001</b>	80			1131
J011-61	20	20	350	330
J001-12	20	450	810	360
J004-20	20	830	1060	230
J006-35	20	2330	2541	211
<b>M03.2.PH15002</b>	40			541
J010-60	20	370	700	330
J009-43	20	720	931	211
<b>M03.3.PH15003</b>	20			400
J007-39	20	440	840	400
<b>M03.4.PH15004</b>	20			308
J003-18	20	704	1012	308
<b>M04.1.PH07001</b>	60			652
J008-41	20	946	1157	211
J005-24	20	1177	1368	191
J004-20	20	1388	1638	250
<b>M05.1.PH30001</b>	120			1943
J001-12	20	20	242	222
J002-17	20	262	592	330
J012-74	20	612	1079	467
J014-85	20	1099	1489	390
J013-75	20	1509	1776	267
J006-35	20	1796	2063	267

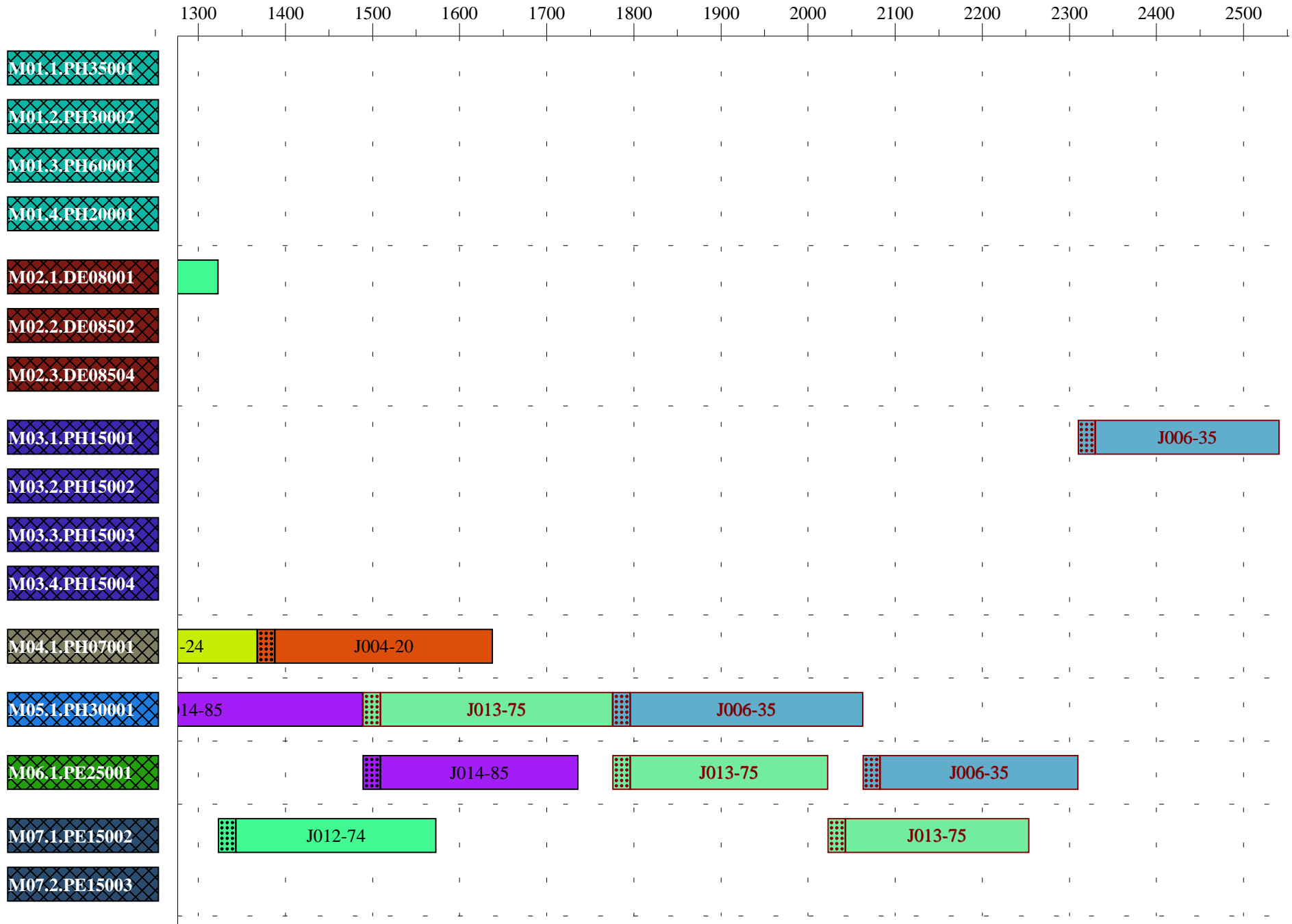
Mch/Job	Setup	Start	Stop	Pr.tm
<b>M06.1.PE25001</b>	80			849
J001-12	20	262	430	168
J014-85	20	1509	1736	227
J013-75	20	1796	2023	227
J006-35	20	2083	2310	227
<b>M07.1.PE15002</b>	80			995
J010-60	20	20	350	330
J003-18	20	1032	1256	224
J012-74	20	1343	1573	230
J013-75	20	2043	2254	211
<b>M07.2.PE15003</b>	40			362
J015-116	20	20	171	151
J009-43	20	951	1162	211

Summary

<i>Time</i>	1
<i>C<sub>max</sub></i>	2541
<i>T<sub>max</sub></i>	471
<i>SU<sub>j</sub></i>	2
<i>SC<sub>j</sub></i>	18148
<i>ST<sub>j</sub></i>	835
<i>Sw<sub>j</sub>C<sub>j</sub></i>	24793
<i>Sw<sub>j</sub>T<sub>j</sub></i>	835

Gantt Chart - Seqs (MS)





Job Pool - P2.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J001-12</b>	2	0	900	750		1354	2149	1249	2498
				W05 - PH30	222	A	1354	1576	
				W06 - PE250	168	A	1601	1769	
				W03 - PH150	360	A	1789	2149	
<b>J002-17</b>	1	0	1170	330		20	350	0	0
				W05 - PH30	330	A	20	350	
<b>J003-18</b>	2	0	1560	1176		292	1528	0	0
				W01 - PH350	390	A	292	682	
				W02 - DE0	254	A	702	956	
				W03 - PH1	308	A	976	1284	
				W07 - PE15	224	A	1304	1528	
<b>J004-20</b>	2	0	1890	1171		292	1523	0	0
				W01 - PH350	467	A	292	759	
				W02 - DE08	224	A	779	1003	
				W03 - PH15	230	A	1023	1253	
				W04 - PH0	250	A	1273	1523	
<b>J005-24</b>	2	0	1785	1091		20	1151	0	0
				W01 - PH350	550	A	20	570	
				W02 - DE08	350	A	590	940	
				W04 - PH070	191	A	960	1151	
<b>J006-35</b>	1	0	2070	705		780	1525	0	0
				W05 - PH	267	A	780	1047	
				W06 - PE25	227	A	1067	1294	
				W03 - PH150	211	A	1314	1525	
<b>J007-39</b>	1	0	1395	800		20	840	0	0
				W01 - PH350	400	A	20	420	
				W03 - PH150	400	A	440	840	



Job Pool - P2.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J008-41</b>	1	0	1560	687		20	747	0	0
				W01 - PH3	252	A	20	272	
				W02 - DE08	224	A	292	516	
				W04 - PH07	211	A	536	747	
<b>J009-43</b>	1	0	1560	674		20	734	0	0
				W01 - PH3	252	A	20	272	
				W03 - PH15	211	A	292	503	
				W07 - PE15	211	A	523	734	
<b>J010-60</b>	1	0	900	660		20	700	0	0
				W07 - PE15	330	A	20	350	
				W03 - PH15	330	A	370	700	
<b>J011-61</b>	1	0	1170	330		20	350	0	0
				W03 - PH15	330	A	20	350	
<b>J012-74</b>	2	0	2070	921		1596	2557	487	974
				W05 - PH300	467	A	1596	2063	
				W02 - DE08	224	A	2083	2307	
				W07 - PE15	230	A	2327	2557	
<b>J013-75</b>	1	0	1890	705		1067	1812	0	0
				W05 - PH3	267	A	1067	1334	
				W06 - PE25	227	A	1354	1581	
				W07 - PE15	211	A	1601	1812	
<b>J014-85</b>	1	0	1785	617		370	1007	0	0
				W05 - PH300	390	A	370	760	
				W06 - PE25	227	A	780	1007	
<b>J015-116</b>	1	0	615	151		20	171	0	0
				W07 - PE15	151	A	20	171	

Sequence - Seqs \* (SPT)

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M01.1.PH35001</b>	40			719
J009-43	20	20	272	252
J004-20	20	292	759	467
<b>M01.2.PH30002</b>	40			642
J008-41	20	20	272	252
J003-18	20	292	682	390
<b>M01.3.PH60001</b>	20			400
J007-39	20	20	420	400
<b>M01.4.PH20001</b>	20			550
J005-24	20	20	570	550
<b>M02.1.DE08001</b>	60			798
J008-41	20	292	516	224
J005-24	20	590	940	350
J012-74	20	2083	2307	224
<b>M02.2.DE08502</b>	20			224
J004-20	20	779	1003	224
<b>M02.3.DE08504</b>	20			254
J003-18	20	702	956	254
<b>M03.1.PH15001</b>	100			1531
J011-61	20	20	350	330
J007-39	20	440	840	400
J004-20	20	1023	1253	230
J006-35	20	1314	1525	211
J001-12	20	1789	2149	360
<b>M03.2.PH15002</b>	40			638
J010-60	20	370	700	330
J003-18	20	976	1284	308
<b>M03.3.PH15003</b>	20			211
J009-43	20	292	503	211
<b>M03.4.PH15004</b>	0			0
<b>M04.1.PH07001</b>	60			652
J008-41	20	536	747	211
J005-24	20	960	1151	191
J004-20	20	1273	1523	250
<b>M05.1.PH30001</b>	120			1943
J002-17	20	20	350	330
J014-85	20	370	760	390
J006-35	20	780	1047	267
J013-75	20	1067	1334	267
J001-12	20	1354	1576	222
J012-74	20	1596	2063	467

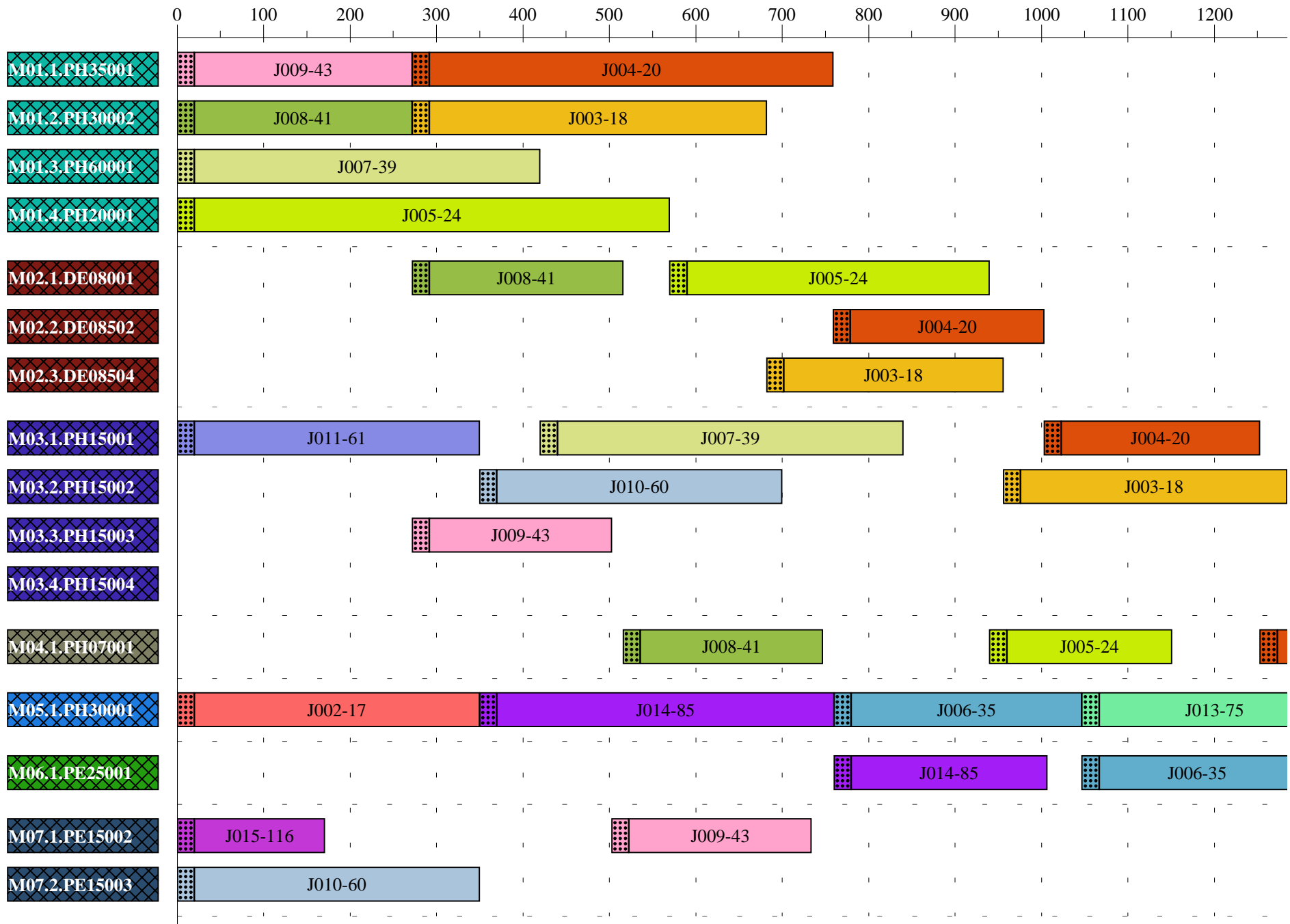
Sequence - Seqs \* (SPT)

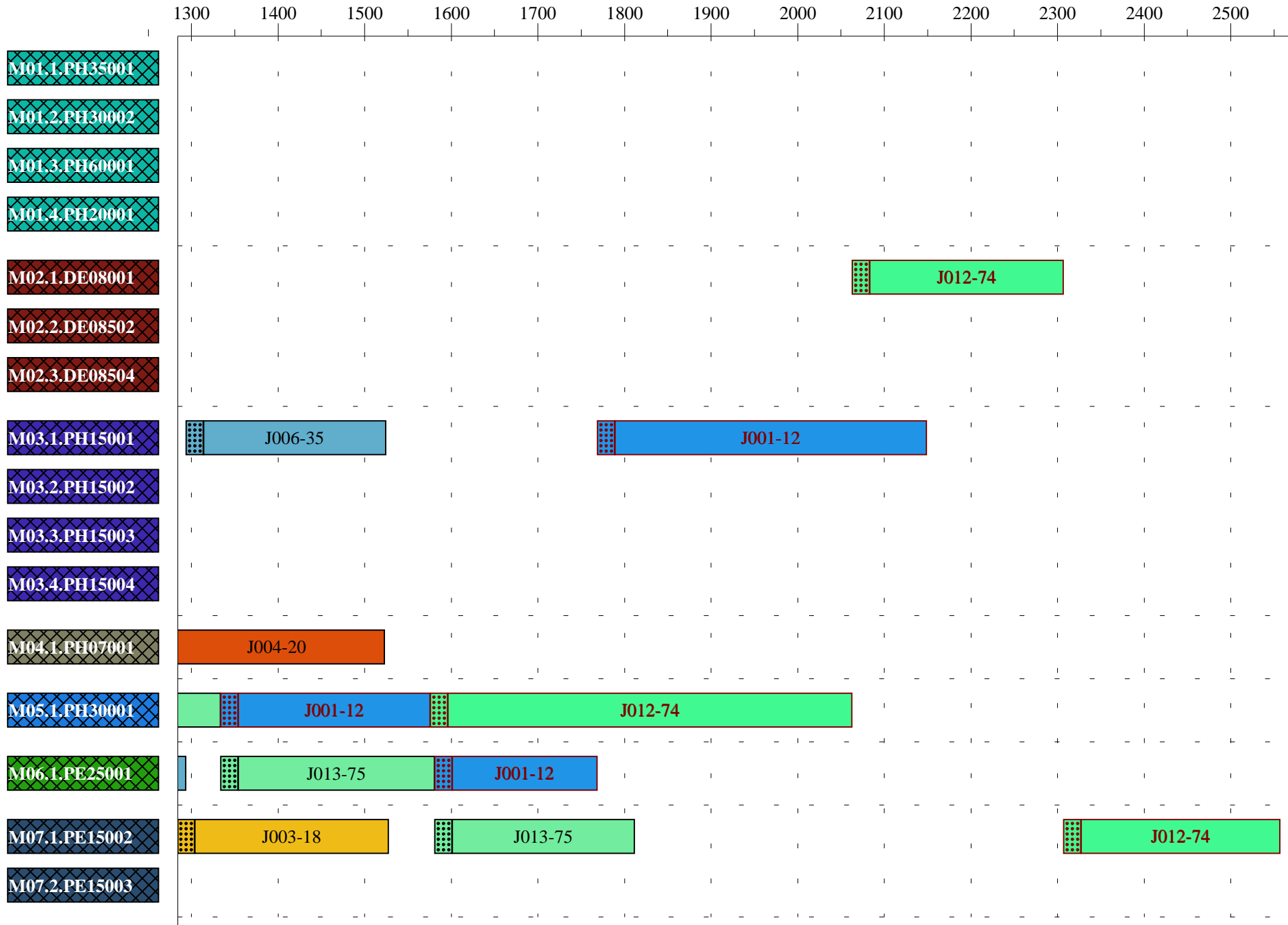
Mch/Job	Setup	Start	Stop	Pr.tm
<b>M06.1.PE25001</b>	80			849
J014-85	20	780	1007	227
J006-35	20	1067	1294	227
J013-75	20	1354	1581	227
J001-12	20	1601	1769	168
<b>M07.1.PE15002</b>	100			1027
J015-116	20	20	171	151
J009-43	20	523	734	211
J003-18	20	1304	1528	224
J013-75	20	1601	1812	211
J012-74	20	2327	2557	230
<b>M07.2.PE15003</b>	20			330
J010-60	20	20	350	330

Summary

<i>Time</i>	1
<i>C<sub>max</sub></i>	2557
<i>T<sub>max</sub></i>	1249
<i>SU<sub>j</sub></i>	2
<i>SC<sub>j</sub></i>	17144
<i>ST<sub>j</sub></i>	1736
<i>Sw<sub>j</sub>C<sub>j</sub></i>	26052
<i>Sw<sub>j</sub>T<sub>j</sub></i>	3472

Gantt Chart - Segs (SPT)





Job Pool - P2.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J001-12</b>	2	0	900	750		370	1160	260	520
				W05 - PH30	222	A	370	592	
				W06 - PE250	168	A	612	780	
				W03 - PH150	360	A	800	1160	
<b>J002-17</b>	1	0	1170	330		20	350	0	0
				W05 - PH30	330	A	20	350	
<b>J003-18</b>	2	0	1560	1176		20	1256	0	0
				W01 - PH350	390	A	20	410	
				W02 - DE0	254	A	430	684	
				W03 - PH1	308	A	704	1012	
				W07 - PE15	224	A	1032	1256	
<b>J004-20</b>	2	0	1890	1171		20	1421	0	0
				W01 - PH350	467	A	20	487	
				W02 - DE08	224	A	507	731	
				W03 - PH15	230	A	751	981	
				W04 - PH0	250	A	1171	1421	
<b>J005-24</b>	2	0	1785	1091		20	1151	0	0
				W01 - PH350	550	A	20	570	
				W02 - DE08	350	A	590	940	
				W04 - PH070	191	A	960	1151	
<b>J006-35</b>	1	0	2070	705		1509	2254	184	184
				W05 - PH	267	A	1509	1776	
				W06 - PE25	227	A	1796	2023	
				W03 - PH150	211	A	2043	2254	
<b>J007-39</b>	1	0	1395	800		430	1250	0	0
				W01 - PH350	400	A	430	830	
				W03 - PH150	400	A	850	1250	

Job Pool - P2.job (Job Shop)

ID	Wght	Rls	Due	Pr.tm.	Stat.	Bgn	End	T	wT
<b>J008-41</b>	1	0	1560	687		292	1652	92	92
				W01 - PH3	252	A	292	544	
				W02 - DE08	224	A	704	928	
				W04 - PH07	211	A	1441	1652	
<b>J009-43</b>	1	0	1560	674		20	734	0	0
				W01 - PH3	252	A	20	272	
				W03 - PH15	211	A	292	503	
				W07 - PE15	211	A	523	734	
<b>J010-60</b>	1	0	900	660		20	700	0	0
				W07 - PE15	330	A	20	350	
				W03 - PH15	330	A	370	700	
<b>J011-61</b>	1	0	1170	330		20	350	0	0
				W03 - PH15	330	A	20	350	
<b>J012-74</b>	2	0	2070	921		612	1573	0	0
				W05 - PH300	467	A	612	1079	
				W02 - DE08	224	A	1099	1323	
				W07 - PE15	230	A	1343	1573	
<b>J013-75</b>	1	0	1890	705		1796	2541	651	651
				W05 - PH3	267	A	1796	2063	
				W06 - PE25	227	A	2083	2310	
				W07 - PE15	211	A	2330	2541	
<b>J014-85</b>	1	0	1785	617		1099	1736	0	0
				W05 - PH300	390	A	1099	1489	
				W06 - PE25	227	A	1509	1736	
<b>J015-116</b>	1	0	615	151		20	171	0	0
				W07 - PE15	151	A	20	171	

Mch/Job	Setup	Start	Stop	Pr.tm
<b>M01.1.PH35001</b>	20			550
J005-24	20	20	570	550
<b>M01.2.PH30002</b>	20			467
J004-20	20	20	487	467
<b>M01.3.PH60001</b>	40			790
J003-18	20	20	410	390
J007-39	20	430	830	400
<b>M01.4.PH20001</b>	40			504
J009-43	20	20	272	252
J008-41	20	292	544	252
<b>M02.1.DE08001</b>	40			574
J005-24	20	590	940	350
J012-74	20	1099	1323	224
<b>M02.2.DE08502</b>	20			224
J004-20	20	507	731	224
<b>M02.3.DE08504</b>	40			478
J003-18	20	430	684	254
J008-41	20	704	928	224
<b>M03.1.PH15001</b>	60			901
J011-61	20	20	350	330
J001-12	20	800	1160	360
J006-35	20	2043	2254	211
<b>M03.2.PH15002</b>	40			730
J010-60	20	370	700	330
J007-39	20	850	1250	400
<b>M03.3.PH15003</b>	40			441
J009-43	20	292	503	211
J004-20	20	751	981	230
<b>M03.4.PH15004</b>	20			308
J003-18	20	704	1012	308
<b>M04.1.PH07001</b>	60			652
J005-24	20	960	1151	191
J004-20	20	1171	1421	250
J008-41	20	1441	1652	211
<b>M05.1.PH30001</b>	120			1943
J002-17	20	20	350	330
J001-12	20	370	592	222
J012-74	20	612	1079	467
J014-85	20	1099	1489	390
J006-35	20	1509	1776	267
J013-75	20	1796	2063	267

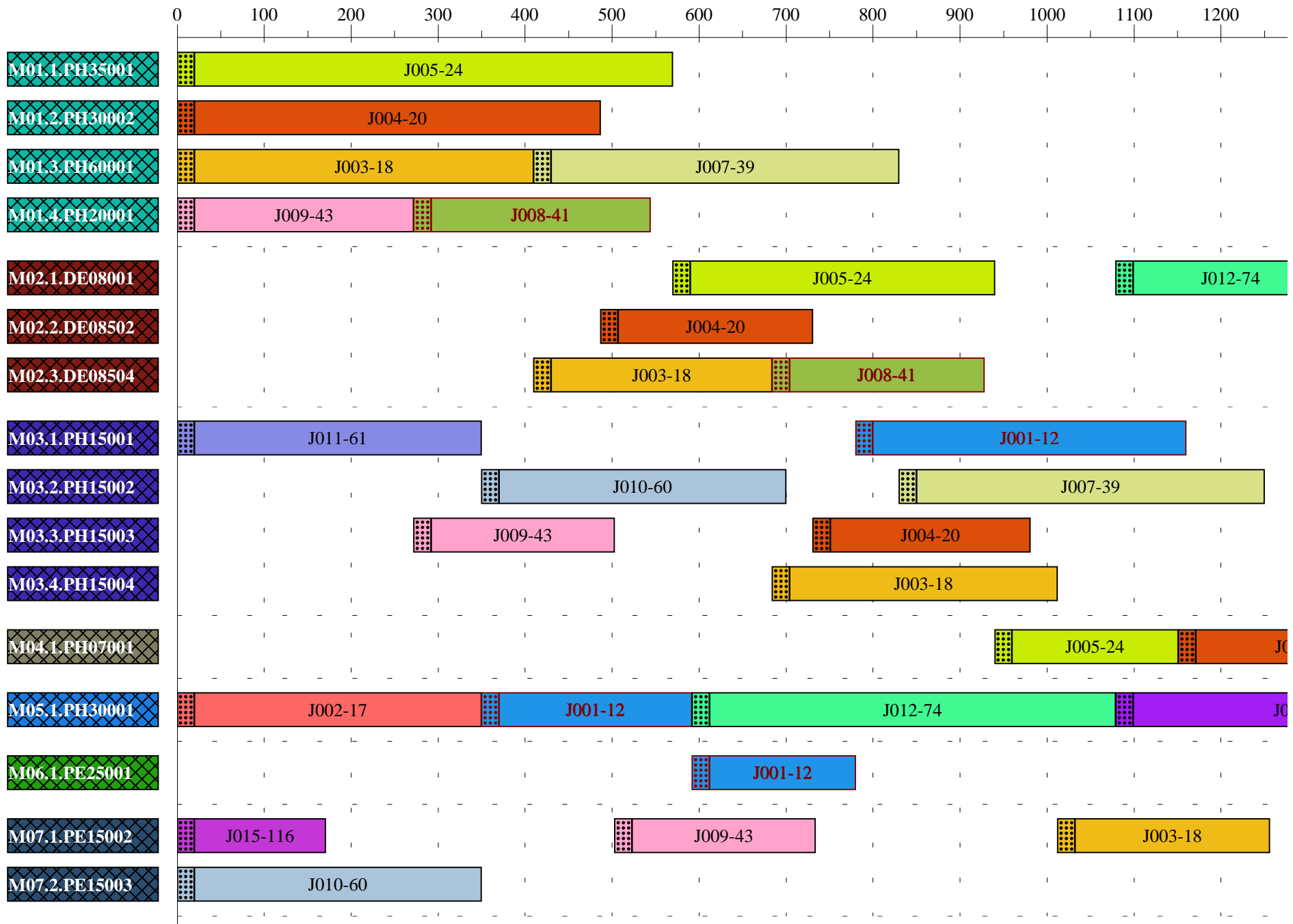


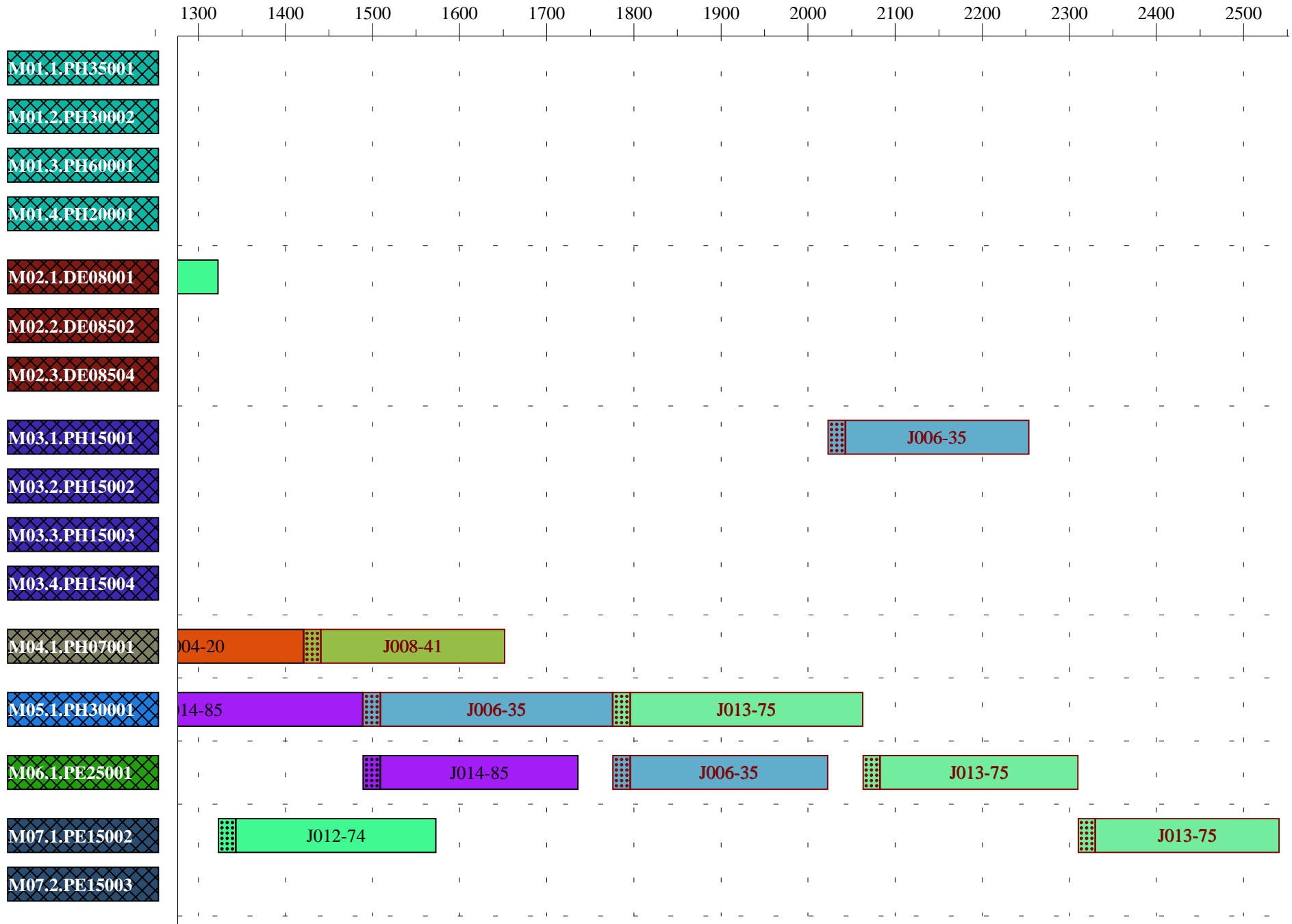
Mch/Job	Setup	Start	Stop	Pr.tm
<b>M06.1.PE25001</b>	80			849
J001-12	20	612	780	168
J014-85	20	1509	1736	227
J006-35	20	1796	2023	227
J013-75	20	2083	2310	227
<b>M07.1.PE15002</b>	100			1027
J015-116	20	20	171	151
J009-43	20	523	734	211
J003-18	20	1032	1256	224
J012-74	20	1343	1573	230
J013-75	20	2330	2541	211
<b>M07.2.PE15003</b>	20			330
J010-60	20	20	350	330

Summary

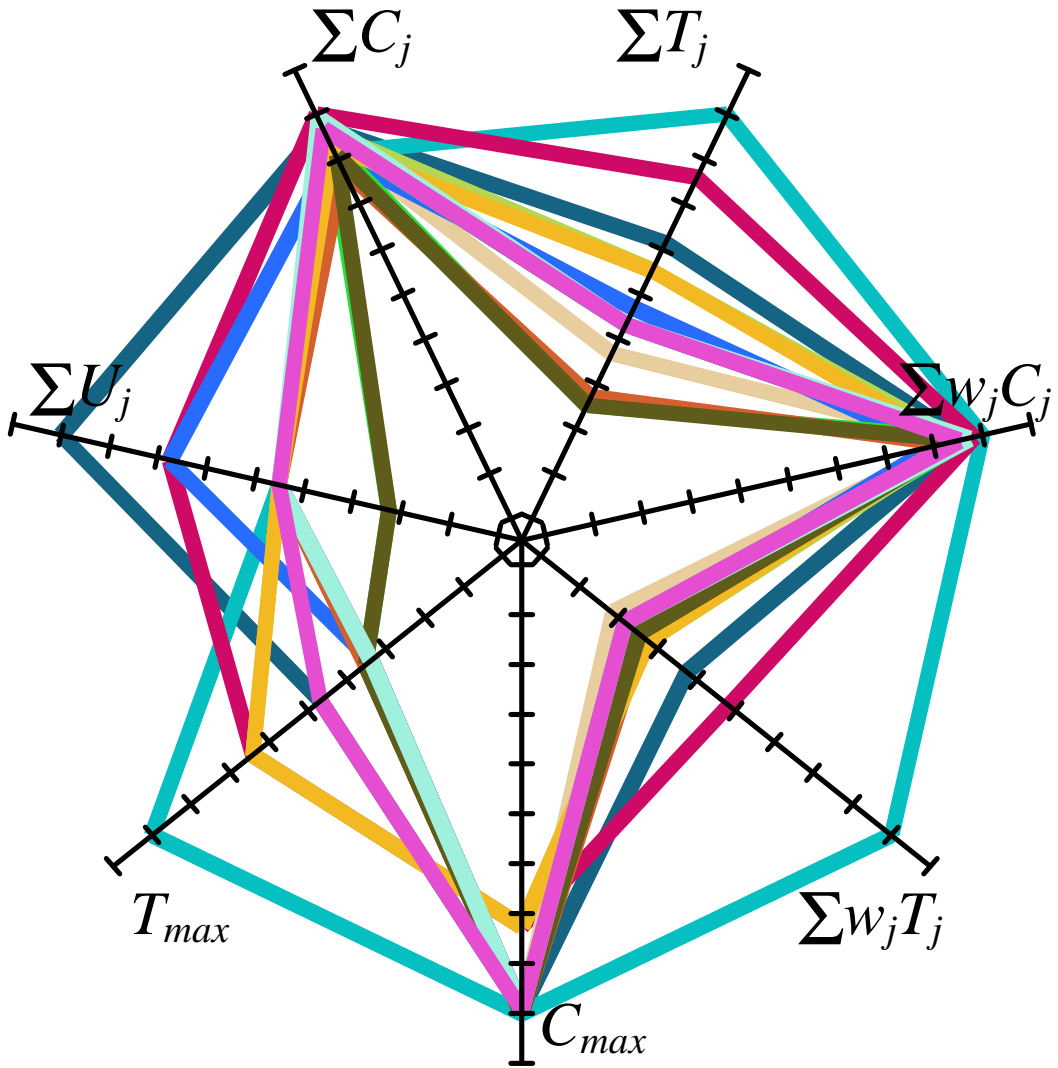
<i>Time</i>	1
<i>C<sub>max</sub></i>	2541
<i>T<sub>max</sub></i>	651
<i>SU<sub>j</sub></i>	4
<i>SC<sub>j</sub></i>	18299
<i>ST<sub>j</sub></i>	1187
<i>Sw<sub>j</sub>C<sub>j</sub></i>	24860
<i>Sw<sub>j</sub>T<sub>j</sub></i>	1447

Gantt Chart - Seqs (WSPT)





Objective Chart - Seqs



- |   |                              |   |                              |
|---|------------------------------|---|------------------------------|
| ⊠ | ATCS (2, 1)                  | ⊠ | General SB Routine / sum(wT) |
| ⊠ | CR                           | ⊠ | LPT                          |
| ⊠ | EDD                          | ⊠ | MS                           |
| ⊠ | FCFS                         | ⊠ | SPT                          |
| ⊠ | General SB Routine / Cmax    | ⊠ | WSPT                         |
| ⊠ | General SB Routine / Lmax    |   |                              |
| ⊠ | General SB Routine / sum(C)  |   |                              |
| ⊠ | General SB Routine / sum(T)  |   |                              |
| ⊠ | General SB Routine / sum(wC) |   |                              |

Log Book - Seqs \*

Schedule	Time	$C_{max}$	$T_{max}$	$\Sigma U_j$	$\Sigma C_j$	$\Sigma T_j$	$\Sigma w_j C_j$	$\Sigma w_j T_j$
ATCS (2, 1)	1	2541	651	2	18280	835	24722	835
CR	1	2541	471	2	18797	835	25332	835
EDD	1	2557	487	1	17021	487	24760	974
FCFS	1	2063	893	2	17438	1068	24079	1068
General SB Ro	18	2063	893	2	18162	1068	24646	1068
General SB Ro	6	2541	471	2	18148	835	24793	835
	25	2557	487	2	16401	525	23970	1012
	6	2557	487	1	17584	487	25213	974
	19	2541	471	3	17201	905	23164	905
	6	2541	471	2	18025	709	24670	709
LPT	1	2063	893	3	18925	1465	25600	1862
MS	1	2541	471	2	18148	835	24793	835
SPT	1	2557	1249	2	17144	1736	26052	3472
WSPT	1	2541	651	4	18299	1187	24860	1447

## Appendix C - Products and Their Operations List

Product Code	Product Definition	Element Value	Component Code	Op. Order no	Operation Name	Group	Lathe Name	Mould Code	Worker	Setup Time (min.)	Process Time (min./unit)
1100013P	A2000 İÇ KASET ÖN ÇERÇEVE	AO-R0001	11411A01	10	Cutting Wart	9	PE08003	K10132	1	20	0,15
1100013P	A2000 İÇ KASET ÖN ÇERÇEVE	AO-R0001	11411A01	20	Decoupling vapor cap	4	PH07001	K64092	1	20	0,15
1100013P	A2000 İÇ KASET ÖN ÇERÇEVE	AO-R0001	11411A01	30	Curling Head Frame	20	500T HP.	K40579	2	30	0,2
11411P	A2000 İÇ KASET ÖN ÇERÇEVE	AO-R0001	11411A01	10	Cutting wart	9	PE08003	K10132	1	20	0,15
11411P	A2000 İÇ KASET ÖN ÇERÇEVE	AO-R0001	11411A01	20	Decoupling Vapor Cap	4	PH07001	K64092	1	20	0,15
11411P	A2000 İÇ KASET ÖN ÇERÇEVE	AO-R0001	11411A01	30	Curling Front Frame	20	500T HP.	K40579	2	30	0,2
11460P	A2000 İÇ KASET ÖN ÇERÇEVE	AO-R0001	11411A01	10	Cutting wart	9	PE08003	K10132	1	20	0,15
11460P	A2000 İÇ KASET ÖN ÇERÇEVE	AO-R0001	11411A01	20	Decoupling Vapor Cap	4	PH07001	K64092	1	20	0,15
11460P	A2000 İÇ KASET ÖN ÇERÇEVE	AO-R0001	11411A01	30	Curling Front Frame	20	500T HP.	K40579	2	30	0,2
1100007P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	10	First Stroking	20	500T HP.	K20148	2	30	0,3
1100007P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	20	Second Stroking	20	500T HP.	K20155	2	30	0,3
1100007P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	30	Third Stroking	20	500T HP.	K20149	2	30	0,3
1100007P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	40	Peripheral Cutting	20	500T HP.	K19182	2	30	0,2
1100007P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	50	Core Detachment	20	500T HP.	K12078	2	30	0,2
1100008P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	10	First Stroking	20	500T HP.	K20148	2	30	0,3
1100008P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	20	Second Stroking	20	500T HP.	K20155	2	30	0,3
1100008P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	30	Third Stroking	20	500T HP.	K20149	2	30	0,3
1100008P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	40	Peripheral Cutting	20	500T HP.	K19182	2	30	0,2
1100008P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	50	Core Detachment	20	500T HP.	K12078	2	30	0,2
1100009P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	10	First Stroking	20	500T HP.	K20148	2	30	0,3
1100009P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	20	Second Stroking	20	500T HP.	K20155	2	30	0,3
1100009P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	30	Third Stroking	20	500T HP.	K20149	2	30	0,3
1100009P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	40	Peripheral Cutting	20	500T HP.	K19182	2	30	0,2
1100009P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	50	Core Detachment	20	500T HP.	K12078	2	30	0,2
1100012P	B2000 İÇ KASET ARKA KAPAK	AO-R0002	11405A	10	Stroking	20	500T HP.	TK20004	2	30	0,3
1100012P	B2000 İÇ KASET ARKA KAPAK	AO-R0002	11405A	20	Peripheral Cutting	20	500T HP.	TK19004	2	30	0,15
1100012P	B2000 İÇ KASET ARKA KAPAK	AO-R0002	11405A	30	Core Detachment	20	500T HP.	TK12002	2	30	0,2
1100021P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	10	First Stroking	20	500T HP.	K20148	2	30	0,3
1100021P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	20	Second Stroking	20	500T HP.	K20155	2	30	0,3
1100021P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	30	Third Stroking	20	500T HP.	K20149	2	30	0,3
1100021P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	40	Peripheral Cutting	20	500T HP.	K19182	2	30	0,2
1100021P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	50	Core Detachment	20	500T HP.	K12078	2	30	0,2
1100030P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	10	First Stroking	20	500T HP.	K20148	2	30	0,3
1100030P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	20	Second Stroking	20	500T HP.	K20155	2	30	0,3
1100030P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	30	Third Stroking	20	500T HP.	K20149	2	30	0,3
1100030P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	40	Peripheral Cutting	20	500T HP.	K19182	2	30	0,2
1100030P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	50	Core Detachment	20	500T HP.	K12078	2	30	0,2
1100031P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	10	First Stroking	20	500T HP.	K20148	2	30	0,3

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1100031P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	20	Second Stroking	20	500T HP.	K20155	2	30	0,3
1100031P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	30	Third Stroking	20	500T HP.	K20149	2	30	0,3
1100031P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	40	Peripheral Cutting	20	500T HP.	K19182	2	30	0,2
1100031P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	50	Core Detachment	20	500T HP.	K12078	2	30	0,2
1100033P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	10	First Stroking	20	500T HP.	K20148	2	30	0,3
1100033P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	20	Second Stroking	20	500T HP.	K20155	2	30	0,3
1100033P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	30	Third Stroking	20	500T HP.	K20149	2	30	0,3
1100033P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	40	Peripheral Cutting	20	500T HP.	K19182	2	30	0,2
1100033P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	50	Core Detachment	20	500T HP.	K12078	2	30	0,2
1100034P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	10	First Stroking	20	500T HP.	K20148	2	30	0,3
1100034P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	20	Second Stroking	20	500T HP.	K20155	2	30	0,3
1100034P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	30	Third Stroking	20	500T HP.	K20149	2	30	0,3
1100034P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	40	Peripheral Cutting	20	500T HP.	K19182	2	30	0,2
1100034P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	50	Core Detachment	20	500T HP.	K12078	2	30	0,2
1100035P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	10	First Stroking	20	500T HP.	K20148	2	30	0,3
1100035P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	20	Second Stroking	20	500T HP.	K20155	2	30	0,3
1100035P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	30	Third Stroking	20	500T HP.	K20149	2	30	0,3
1100035P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	40	Peripheral Cutting	20	500T HP.	K19182	2	30	0,2
1100035P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	50	Core Detachment	20	500T HP.	K12078	2	30	0,2
1100037P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	10	First Stroking	20	500T HP.	K20148	2	30	0,3
1100037P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	20	Second Stroking	20	500T HP.	K20155	2	30	0,3
1100037P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	30	Third Stroking	20	500T HP.	K20149	2	30	0,3
1100037P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	40	Peripheral Cutting	20	500T HP.	K19182	2	30	0,2
1100037P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	50	Core Detachment	20	500T HP.	K12078	2	30	0,2
1100041P	B2000 İÇ KASET ARKA KAPAK	AO-R0002	11405A	10	Stroking	20	500T HP.	TK20004	2	30	0,3
1100041P	B2000 İÇ KASET ARKA KAPAK	AO-R0002	11405A	20	Peripheral Cutting	20	500T HP.	TK19004	2	30	0,15
1100041P	B2000 İÇ KASET ARKA KAPAK	AO-R0002	11405A	30	Core Detachment	20	500T HP.	TK12002	2	30	0,2
11406P	B2000 İÇ KASET ARKA KAPAK (FANLI, ÇEVLI)	AO-R0002	11405A	10	Stroking	20	500T HP.	TK20004	2	30	0,3
11406P	B2000 İÇ KASET ARKA KAPAK (FANLI, ÇEVLI)	AO-R0002	11405A	20	Peripheral Cutting	20	500T HP.	TK19004	2	30	0,15
11406P	B2000 İÇ KASET ARKA KAPAK (FANLI, ÇEVLI)	AO-R0002	11405A	30	Core Detachment	20	500T HP.	TK12002	2	30	0,2
11407P	B2000 İÇ KASET ARKA KAPAK (FANSIZ, ÇEVSIZ)	AO-R0002	11405A	10	Stroking	20	500T HP.	TK20004	2	30	0,3
11407P	B2000 İÇ KASET ARKA KAPAK (FANSIZ, ÇEVSIZ)	AO-R0002	11405A	20	Peripheral Cutting	20	500T HP.	TK19004	2	30	0,15
11407P	B2000 İÇ KASET ARKA KAPAK (FANSIZ, ÇEVSIZ)	AO-R0002	11405A	30	Core Detachment	20	500T HP.	TK12002	2	30	0,2
11408P	B2000 İÇ KASET ARKA KAPAK (FANLI)	AO-R0002	11405A	10	Stroking	20	500T HP.	TK20004	2	30	0,3
11408P	B2000 İÇ KASET ARKA KAPAK (FANLI)	AO-R0002	11405A	20	Peripheral Cutting	20	500T HP.	TK19004	2	30	0,15
11408P	B2000 İÇ KASET ARKA KAPAK (FANLI)	AO-R0002	11405A	30	Core Detachment	20	500T HP.	TK12002	2	30	0,2
11409P	B2000 İÇ KASET ARKA KAPAK (ÇEVLI)	AO-R0002	11405A	10	Stroking	20	500T HP.	TK20004	2	30	0,3
11409P	B2000 İÇ KASET ARKA KAPAK (ÇEVLI)	AO-R0002	11405A	20	Peripheral Cutting	20	500T HP.	TK19004	2	30	0,15
11409P	B2000 İÇ KASET ARKA KAPAK (ÇEVLI)	AO-R0002	11405A	30	Core Detachment	20	500T HP.	TK12002	2	30	0,2
11412P	A2000 İÇ KASET ARKA KAPAK(FANLI,ÇEVIRMEI)	AO-R0002	11411A	10	First Stroking	20	500T HP.	K20148	2	30	0,3
11412P	A2000 İÇ KASET ARKA KAPAK(FANLI,ÇEVIRMEI)	AO-R0002	11411A	20	Second Stroking	20	500T HP.	K20155	2	30	0,3
11412P	A2000 İÇ KASET ARKA KAPAK(FANLI,ÇEVIRMEI)	AO-R0002	11411A	30	Third Stroking	20	500T HP.	K20149	2	30	0,3
11412P	A2000 İÇ KASET ARKA KAPAK(FANLI,ÇEVIRMEI)	AO-R0002	11411A	40	Peripheral Cutting	20	500T HP.	K19182	2	30	0,2
11412P	A2000 İÇ KASET ARKA KAPAK(FANLI,ÇEVIRMEI)	AO-R0002	11411A	50	Core Detachment	20	500T HP.	K12078	2	30	0,2

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11413P	A2000 İÇ KASET ARKA KAPAK(FANSIZ,ÇEVİRME SİZ)	AO-R0002	11411A	10	First Stroking	20	500T HP.	K20148	2	30	0,3
11413P	A2000 İÇ KASET ARKA KAPAK(FANSIZ,ÇEVİRME SİZ)	AO-R0002	11411A	20	Second Stroking	20	500T HP.	K20155	2	30	0,3
11413P	A2000 İÇ KASET ARKA KAPAK(FANSIZ,ÇEVİRME SİZ)	AO-R0002	11411A	30	Third Stroking	20	500T HP.	K20149	2	30	0,3
11413P	A2000 İÇ KASET ARKA KAPAK(FANSIZ,ÇEVİRME SİZ)	AO-R0002	11411A	40	Peripheral Cutting	20	500T HP.	K19182	2	30	0,2
11413P	A2000 İÇ KASET ARKA KAPAK(FANSIZ,ÇEVİRME SİZ)	AO-R0002	11411A	50	Core Detechment	20	500T HP.	K12078	2	30	0,2
11414P	A2000 İÇ KASET ARKA KAPAK(FANLI)	AO-R0002	11411A	10	First Stroking	20	500T HP.	K20148	2	30	0,3
11414P	A2000 İÇ KASET ARKA KAPAK(FANLI)	AO-R0002	11411A	20	Second Stroking	20	500T HP.	K20155	2	30	0,3
11414P	A2000 İÇ KASET ARKA KAPAK(FANLI)	AO-R0002	11411A	30	Third Stroking	20	500T HP.	K20149	2	30	0,3
11414P	A2000 İÇ KASET ARKA KAPAK(FANLI)	AO-R0002	11411A	40	Peripheral Cutting	20	500T HP.	K19182	2	30	0,2
11414P	A2000 İÇ KASET ARKA KAPAK(FANLI)	AO-R0002	11411A	50	Core Detechment	20	500T HP.	K12078	2	30	0,2
11415P	A2000 İÇ KASET ARKA KAPAK(ÇEVİRME Lİ)	AO-R0002	11411A	10	First Stroking	20	500T HP.	K20148	2	30	0,3
11415P	A2000 İÇ KASET ARKA KAPAK(ÇEVİRME Lİ)	AO-R0002	11411A	20	Second Stroking	20	500T HP.	K20155	2	30	0,3
11415P	A2000 İÇ KASET ARKA KAPAK(ÇEVİRME Lİ)	AO-R0002	11411A	30	Third Stroking	20	500T HP.	K20149	2	30	0,3
11415P	A2000 İÇ KASET ARKA KAPAK(ÇEVİRME Lİ)	AO-R0002	11411A	40	Peripheral Cutting	20	500T HP.	K19182	2	30	0,2
11415P	A2000 İÇ KASET ARKA KAPAK(ÇEVİRME Lİ)	AO-R0002	11411A	50	Core Detechment	20	500T HP.	K12078	2	30	0,2
11446P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	10	First Stroking	20	500T HP.	K20148	2	30	0,3
11446P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	20	Second Stroking	20	500T HP.	K20155	2	30	0,3
11446P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	30	Third Stroking	20	500T HP.	K20149	2	30	0,3
11446P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	40	Peripheral Cutting	20	500T HP.	K19182	2	30	0,2
11446P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	50	Core Detechment	20	500T HP.	K12078	2	30	0,2
11447P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	10	First Stroking	20	500T HP.	K20148	2	30	0,3
11447P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	20	Second Stroking	20	500T HP.	K20155	2	30	0,3
11447P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	30	Third Stroking	20	500T HP.	K20149	2	30	0,3
11447P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	40	Peripheral Cutting	20	500T HP.	K19182	2	30	0,2
11447P	A2000 İÇ KASET ÖN ÇERÇEVE ARKA KAPAK	AO-R0002	11411A	50	Core Detechment	20	500T HP.	K12078	2	30	0,2
02644P	A2000 DİJİTAL TİMERLİ PANO (1.ESTETİK/OCAKLI)	AO-R0004	02644A	10	Stroking	1	PH300	K20150	2	20	0,4
02644P	A2000 DİJİTAL TİMERLİ PANO (1.ESTETİK/OCAKLI)	AO-R0004	02644A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02644P	A2000 DİJİTAL TİMERLİ PANO (1.ESTETİK/OCAKLI)	AO-R0004	02644A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02644P	A2000 DİJİTAL TİMERLİ PANO (1.ESTETİK/OCAKLI)	AO-R0004	02644A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02644P	A2000 DİJİTAL TİMERLİ PANO (1.ESTETİK/OCAKLI)	AO-R0004	02644A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02644P	A2000 DİJİTAL TİMERLİ PANO (1.ESTETİK/OCAKLI)	AO-R0004	02644A	60	Decoupling Timer Hook	9	PE080	K70088	1	20	0,2
02645P	A2000 DİJİTAL TİMERLİ İNOX PANO (1.ESTETİK/OCAKLI)	AO-R0004	02645A	10	Stroking	1	PH300	K20150	2	20	0,4
02645P	A2000 DİJİTAL TİMERLİ İNOX PANO (1.ESTETİK/OCAKLI)	AO-R0004	02645A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02645P	A2000 DİJİTAL TİMERLİ İNOX PANO (1.ESTETİK/OCAKLI)	AO-R0004	02645A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02645P	A2000 DİJİTAL TİMERLİ İNOX PANO (1.ESTETİK/OCAKLI)	AO-R0004	02645A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02645P	A2000 DİJİTAL TİMERLİ İNOX PANO (1.ESTETİK/OCAKLI)	AO-R0004	02645A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02645P	A2000 DİJİTAL TİMERLİ İNOX PANO (1.ESTETİK/OCAKLI)	AO-R0004	02645A	60	Edge Curling	9	PE080	K70088	1	20	0,2
02646P	A2000 RUSTİK TİMERLİ PANO (1.ESTETİK/OCAKLI)	AO-R0004	02644A	10	Stroking	1	PH300	K20150	2	20	0,4
02646P	A2000 RUSTİK TİMERLİ PANO (1.ESTETİK/OCAKLI)	AO-R0004	02644A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02646P	A2000 RUSTİK TİMERLİ PANO (1.ESTETİK/OCAKLI)	AO-R0004	02644A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02646P	A2000 RUSTİK TİMERLİ PANO (1.ESTETİK/OCAKLI)	AO-R0004	02644A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02646P	A2000 RUSTİK TİMERLİ PANO (1.ESTETİK/OCAKLI)	AO-R0004	02644A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02646P	A2000 RUSTİK TİMERLİ PANO (1.ESTETİK/OCAKLI)	AO-R0004	02644A	60	Decoupling Rustic Timer Hook	9	PE080	K70087	1	20	0,2
02647P	A2000 RUSTİK TİMERLİ İNOX PANO (1.ESTETİK/OCAKLI)	AO-R0004	02645A	10	Stroking	1	PH300	K20150	2	20	0,4



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02647P	A2000 RUSTİK TİMERLİ INOX PANO (1.ESTETİK/OCAKLI)	AO-R0004	02645A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02647P	A2000 RUSTİK TİMERLİ INOX PANO (1.ESTETİK/OCAKLI)	AO-R0004	02645A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02647P	A2000 RUSTİK TİMERLİ INOX PANO (1.ESTETİK/OCAKLI)	AO-R0004	02645A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02647P	A2000 RUSTİK TİMERLİ INOX PANO (1.ESTETİK/OCAKLI)	AO-R0004	02645A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02647P	A2000 RUSTİK TİMERLİ INOX PANO (1.ESTETİK/OCAKLI)	AO-R0004	02645A	60	Decoupling Rustic Timer Hook	9	PE080	K70087	1	20	0,2
02657P	A2000 Tİ MERSİZ PANO (1.ESTETİK/OCAKLI)	AO-R0004	02644A	10	Stroking	1	PH300	K20150	2	20	0,4
02657P	A2000 Tİ MERSİZ PANO (1.ESTETİK/OCAKLI)	AO-R0004	02644A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02657P	A2000 Tİ MERSİZ PANO (1.ESTETİK/OCAKLI)	AO-R0004	02644A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02657P	A2000 Tİ MERSİZ PANO (1.ESTETİK/OCAKLI)	AO-R0004	02644A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02657P	A2000 Tİ MERSİZ PANO (1.ESTETİK/OCAKLI)	AO-R0004	02644A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02658P	A2000 Tİ MERSİZ INOX PANO (1.ESTETİK/OCAKLI)	AO-R0004	02645A	10	Stroking	1	PH300	K20150	2	20	0,4
02658P	A2000 Tİ MERSİZ INOX PANO (1.ESTETİK/OCAKLI)	AO-R0004	02645A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02658P	A2000 Tİ MERSİZ INOX PANO (1.ESTETİK/OCAKLI)	AO-R0004	02645A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02658P	A2000 Tİ MERSİZ INOX PANO (1.ESTETİK/OCAKLI)	AO-R0004	02645A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02658P	A2000 Tİ MERSİZ INOX PANO (1.ESTETİK/OCAKLI)	AO-R0004	02645A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02663P	A2000 MEKANİK TİMERLİ PANO (1.ESTETİK/OCAKLI)	AO-R0004	02644A	10	Stroking	1	PH300	K20150	2	20	0,4
02663P	A2000 MEKANİK TİMERLİ PANO (1.ESTETİK/OCAKLI)	AO-R0004	02644A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02663P	A2000 MEKANİK TİMERLİ PANO (1.ESTETİK/OCAKLI)	AO-R0004	02644A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02663P	A2000 MEKANİK TİMERLİ PANO (1.ESTETİK/OCAKLI)	AO-R0004	02644A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02663P	A2000 MEKANİK TİMERLİ PANO (1.ESTETİK/OCAKLI)	AO-R0004	02644A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02664P	A2000 MEKANİK TİMERLİ INOX PANO (1.ESTETİK/OCAKLI)	AO-R0004	02645A	10	Stroking	1	PH300	K20150	2	20	0,4
02664P	A2000 MEKANİK TİMERLİ INOX PANO (1.ESTETİK/OCAKLI)	AO-R0004	02645A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02664P	A2000 MEKANİK TİMERLİ INOX PANO (1.ESTETİK/OCAKLI)	AO-R0004	02645A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02664P	A2000 MEKANİK TİMERLİ INOX PANO (1.ESTETİK/OCAKLI)	AO-R0004	02645A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02664P	A2000 MEKANİK TİMERLİ INOX PANO (1.ESTETİK/OCAKLI)	AO-R0004	02645A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02667P	A2000 DİJİTAL TİMERLİ PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02644A	10	Stroking	1	PH300	K20150	2	20	0,4
02667P	A2000 DİJİTAL TİMERLİ PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02644A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02667P	A2000 DİJİTAL TİMERLİ PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02644A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02667P	A2000 DİJİTAL TİMERLİ PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02644A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02667P	A2000 DİJİTAL TİMERLİ PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02644A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02667P	A2000 DİJİTAL TİMERLİ PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02644A	60	Decoupling Timer Hook	9	PE080	K70088	1	20	0,2
02668P	A2000 DİJİTAL TİMERLİ INOX PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02645A	10	Stroking	1	PH300	K20150	2	20	0,4
02668P	A2000 DİJİTAL TİMERLİ INOX PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02645A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02668P	A2000 DİJİTAL TİMERLİ INOX PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02645A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02668P	A2000 DİJİTAL TİMERLİ INOX PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02645A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02668P	A2000 DİJİTAL TİMERLİ INOX PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02645A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02668P	A2000 DİJİTAL TİMERLİ INOX PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02645A	60	Decoupling Timer Hook	9	PE080	K70088	1	20	0,2
02669P	A2000 RUSTİK TİMERLİ PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02644A	10	Stroking	1	PH300	K20150	2	20	0,4
02669P	A2000 RUSTİK TİMERLİ PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02644A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02669P	A2000 RUSTİK TİMERLİ PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02644A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02669P	A2000 RUSTİK TİMERLİ PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02644A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02669P	A2000 RUSTİK TİMERLİ PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02644A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02669P	A2000 RUSTİK TİMERLİ PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02644A	60	Decoupling Rustic Timer Hook	9	PE080	K70087	1	20	0,2
02670P	A2000 RUSTİK TİMERLİ INOX PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02645A	10	Stroking	1	PH300	K20150	2	20	0,4

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02670P	A2000 RUSTİK TİMERLİ INOX PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02645A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02670P	A2000 RUSTİK TİMERLİ INOX PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02645A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02670P	A2000 RUSTİK TİMERLİ INOX PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02645A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02670P	A2000 RUSTİK TİMERLİ INOX PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02645A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02670P	A2000 RUSTİK TİMERLİ INOX PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02645A	60	Decoupling Rustic Timer Hook	9	PE080	K70087	1	20	0,2
02671P	A2000 MEKANİK TİMERLİ PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02644A	10	Stroking	1	PH300	K20150	2	20	0,4
02671P	A2000 MEKANİK TİMERLİ PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02644A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02671P	A2000 MEKANİK TİMERLİ PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02644A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02671P	A2000 MEKANİK TİMERLİ PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02644A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02671P	A2000 MEKANİK TİMERLİ PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02644A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02672P	A2000 MEKANİK TİMERLİ INOX PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02645A	10	Stroking	1	PH300	K20150	2	20	0,4
02672P	A2000 MEKANİK TİMERLİ INOX PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02645A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02672P	A2000 MEKANİK TİMERLİ INOX PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02645A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02672P	A2000 MEKANİK TİMERLİ INOX PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02645A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02672P	A2000 MEKANİK TİMERLİ INOX PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02645A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02673P	A2000 Tİ MERSİZ PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02644A	10	Stroking	1	PH300	K20150	2	20	0,4
02673P	A2000 Tİ MERSİZ PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02644A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02673P	A2000 Tİ MERSİZ PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02644A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02673P	A2000 Tİ MERSİZ PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02644A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02673P	A2000 Tİ MERSİZ PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02644A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02674P	A2000 Tİ MERSİZ INOX PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02645A	10	Stroking	1	PH300	K20150	2	20	0,4
02674P	A2000 Tİ MERSİZ INOX PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02645A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02674P	A2000 Tİ MERSİZ INOX PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02645A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02674P	A2000 Tİ MERSİZ INOX PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02645A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02674P	A2000 Tİ MERSİZ INOX PANO (1.ESTETİK/OCAKSIZ)	AO-R0004	02645A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02683P	A2000 DİJİTAL TİMERLİ PANO (1.ESTETİK/OCAKLI/ÇOCUK KİLİTLİ)	AO-R0004	02644A	10	Stroking	1	PH300	K20150	2	20	0,4
02683P	A2000 DİJİTAL TİMERLİ PANO (1.ESTETİK/OCAKLI/ÇOCUK KİLİTLİ)	AO-R0004	02644A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02683P	A2000 DİJİTAL TİMERLİ PANO (1.ESTETİK/OCAKLI/ÇOCUK KİLİTLİ)	AO-R0004	02644A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02683P	A2000 DİJİTAL TİMERLİ PANO (1.ESTETİK/OCAKLI/ÇOCUK KİLİTLİ)	AO-R0004	02644A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02683P	A2000 DİJİTAL TİMERLİ PANO (1.ESTETİK/OCAKLI/ÇOCUK KİLİTLİ)	AO-R0004	02644A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02683P	A2000 DİJİTAL TİMERLİ PANO (1.ESTETİK/OCAKLI/ÇOCUK KİLİTLİ)	AO-R0004	02644A	60	Decoupling Timer Hook	9	PE080	K70088	1	20	0,2
02684P	A2000 DİJİTAL TİMERLİ INOX PANO (1.ESTETİK/OCAKLI/ÇOCUK KİLİTLİ)	AO-R0004	02645A	10	Stroking	1	PH300	K20150	2	20	0,4
02684P	A2000 DİJİTAL TİMERLİ INOX PANO (1.ESTETİK/OCAKLI/ÇOCUK KİLİTLİ)	AO-R0004	02645A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02684P	A2000 DİJİTAL TİMERLİ INOX PANO (1.ESTETİK/OCAKLI/ÇOCUK KİLİTLİ)	AO-R0004	02645A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02684P	A2000 DİJİTAL TİMERLİ INOX PANO (1.ESTETİK/OCAKLI/ÇOCUK KİLİTLİ)	AO-R0004	02645A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02684P	A2000 DİJİTAL TİMERLİ INOX PANO (1.ESTETİK/OCAKLI/ÇOCUK KİLİTLİ)	AO-R0004	02645A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02684P	A2000 DİJİTAL TİMERLİ INOX PANO (1.ESTETİK/OCAKLI/ÇOCUK KİLİTLİ)	AO-R0004	02645A	60	Decoupling Timer Hook	9	PE080	K70088	1	20	0,2
02685P	A2000 Tİ MERSİZ PANO (1.ESTETİK/OCAKLI/ÇOCUK KİLİTLİ)	AO-R0004	02644A	10	Stroking	1	PH300	K20150	2	20	0,4
02685P	A2000 Tİ MERSİZ PANO (1.ESTETİK/OCAKLI/ÇOCUK KİLİTLİ)	AO-R0004	02644A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02685P	A2000 Tİ MERSİZ PANO (1.ESTETİK/OCAKLI/ÇOCUK KİLİTLİ)	AO-R0004	02644A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02685P	A2000 Tİ MERSİZ PANO (1.ESTETİK/OCAKLI/ÇOCUK KİLİTLİ)	AO-R0004	02644A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02685P	A2000 Tİ MERSİZ PANO (1.ESTETİK/OCAKLI/ÇOCUK KİLİTLİ)	AO-R0004	02644A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02686P	A2000 Tİ MERSİZ INOX PANO (1.ESTETİK/OCAKLI/ÇOCUK KİLİTLİ)	AO-R0004	02645A	10	Stroking	1	PH300	K20150	2	20	0,4
02686P	A2000 Tİ MERSİZ INOX PANO (1.ESTETİK/OCAKLI/ÇOCUK KİLİTLİ)	AO-R0004	02645A	20	Cutting Slope	2	DE085	K30082	1	20	0,8

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02686P	A2000 TİMERSİZ INOX PANO (1.ESTETİK/OCAKLI/ÇOCUK KILI)	AO-R0004	02645A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02686P	A2000 TİMERSİZ INOX PANO (1.ESTETİK/OCAKLI/ÇOCUK KILI)	AO-R0004	02645A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02686P	A2000 TİMERSİZ INOX PANO (1.ESTETİK/OCAKLI/ÇOCUK KILI)	AO-R0004	02645A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02690P	A2000 OCAKSIZ 4. ESTETİK TİMERSİZ PANO	AO-R0004	02644A	10	Stroking	1	PH300	K20150	2	20	0,4
02690P	A2000 OCAKSIZ 4. ESTETİK TİMERSİZ PANO	AO-R0004	02644A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02690P	A2000 OCAKSIZ 4. ESTETİK TİMERSİZ PANO	AO-R0004	02644A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02690P	A2000 OCAKSIZ 4. ESTETİK TİMERSİZ PANO	AO-R0004	02644A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02690P	A2000 OCAKSIZ 4. ESTETİK TİMERSİZ PANO	AO-R0004	02644A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02691P	A2000 OCAKSIZ 4. ESTETİK MEKANİK TİMERLİ PANO	AO-R0004	02644A	10	Stroking	1	PH300	K20150	2	20	0,4
02691P	A2000 OCAKSIZ 4. ESTETİK MEKANİK TİMERLİ PANO	AO-R0004	02644A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02691P	A2000 OCAKSIZ 4. ESTETİK MEKANİK TİMERLİ PANO	AO-R0004	02644A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02691P	A2000 OCAKSIZ 4. ESTETİK MEKANİK TİMERLİ PANO	AO-R0004	02644A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02691P	A2000 OCAKSIZ 4. ESTETİK MEKANİK TİMERLİ PANO	AO-R0004	02644A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02692P	A2000 OCAKSIZ 4. ESTETİK TİMERSİZ INOX PANO	AO-R0004	02645A	10	Stroking	1	PH300	K20150	2	20	0,4
02692P	A2000 OCAKSIZ 4. ESTETİK TİMERSİZ INOX PANO	AO-R0004	02645A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02692P	A2000 OCAKSIZ 4. ESTETİK TİMERSİZ INOX PANO	AO-R0004	02645A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02692P	A2000 OCAKSIZ 4. ESTETİK TİMERSİZ INOX PANO	AO-R0004	02645A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02692P	A2000 OCAKSIZ 4. ESTETİK TİMERSİZ INOX PANO	AO-R0004	02645A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02693P	A2000 OCAKSIZ 4. ESTETİK MEKANİK TİMERLİ INOX PANO	AO-R0004	02645A	10	Stroking	1	PH300	K20150	2	20	0,4
02693P	A2000 OCAKSIZ 4. ESTETİK MEKANİK TİMERLİ INOX PANO	AO-R0004	02645A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02693P	A2000 OCAKSIZ 4. ESTETİK MEKANİK TİMERLİ INOX PANO	AO-R0004	02645A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02693P	A2000 OCAKSIZ 4. ESTETİK MEKANİK TİMERLİ INOX PANO	AO-R0004	02645A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02693P	A2000 OCAKSIZ 4. ESTETİK MEKANİK TİMERLİ INOX PANO	AO-R0004	02645A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02694P	A2000 OCAKSIZ 5. ESTETİK DİJİTAL TİMERLİ PANO	AO-R0004	02644A	10	Stroking	1	PH300	K20150	2	20	0,4
02694P	A2000 OCAKSIZ 5. ESTETİK DİJİTAL TİMERLİ PANO	AO-R0004	02644A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02694P	A2000 OCAKSIZ 5. ESTETİK DİJİTAL TİMERLİ PANO	AO-R0004	02644A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02694P	A2000 OCAKSIZ 5. ESTETİK DİJİTAL TİMERLİ PANO	AO-R0004	02644A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02694P	A2000 OCAKSIZ 5. ESTETİK DİJİTAL TİMERLİ PANO	AO-R0004	02644A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02694P	A2000 OCAKSIZ 5. ESTETİK DİJİTAL TİMERLİ PANO	AO-R0004	02644A	60	Decoupling Timer Hook	9	PE080	K70088	1	20	0,2
02695P	A2000 OCAKSIZ 5. ESTETİK DİJİTAL TİMERLİ INOX PANO	AO-R0004	02645A	10	Stroking	1	PH300	K20150	2	20	0,4
02695P	A2000 OCAKSIZ 5. ESTETİK DİJİTAL TİMERLİ INOX PANO	AO-R0004	02645A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02695P	A2000 OCAKSIZ 5. ESTETİK DİJİTAL TİMERLİ INOX PANO	AO-R0004	02645A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02695P	A2000 OCAKSIZ 5. ESTETİK DİJİTAL TİMERLİ INOX PANO	AO-R0004	02645A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02695P	A2000 OCAKSIZ 5. ESTETİK DİJİTAL TİMERLİ INOX PANO	AO-R0004	02645A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02695P	A2000 OCAKSIZ 5. ESTETİK DİJİTAL TİMERLİ INOX PANO	AO-R0004	02645A	60	Decoupling Timer Hook	9	PE080	K70088	1	20	0,2
02730P	A2000 DİJİTAL TİMERLİ INOX PANO	AO-R0004	02645A	10	Stroking	1	PH300	K20150	2	20	0,4
02730P	A2000 DİJİTAL TİMERLİ INOX PANO	AO-R0004	02645A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02730P	A2000 DİJİTAL TİMERLİ INOX PANO	AO-R0004	02645A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02730P	A2000 DİJİTAL TİMERLİ INOX PANO	AO-R0004	02645A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02730P	A2000 DİJİTAL TİMERLİ INOX PANO	AO-R0004	02645A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02731P	A2000 DİJİTAL TİMERLİ INOX PANO	AO-R0004	02645A	10	Stroking	1	PH300	K20150	2	20	0,4
02731P	A2000 DİJİTAL TİMERLİ INOX PANO	AO-R0004	02645A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02731P	A2000 DİJİTAL TİMERLİ INOX PANO	AO-R0004	02645A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02731P	A2000 DİJİTAL TİMERLİ INOX PANO	AO-R0004	02645A	40	Bottom Draining	4	PH070	K11290	1	20	0,3

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02731P	A2000 DİJİTAL TİMERLİ INOX PANO	AO-R0004	02645A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02731P	A2000 DİJİTAL TİMERLİ INOX PANO	AO-R0004	02645A	60	Decoupling Timer Hook	9	PE080	K70088	1	20	0,2
12457P	A2000 CAM PANO DIŞ PANOSU (1. ESTETİK/3 SAĞ-3 SOL)	AO-R0006	02644A	10	Stroking	1	PH300	K20150	2	20	0,4
12457P	A2000 CAM PANO DIŞ PANOSU (1. ESTETİK/3 SAĞ-3 SOL)	AO-R0006	02644A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
12457P	A2000 CAM PANO DIŞ PANOSU (1. ESTETİK/3 SAĞ-3 SOL)	AO-R0006	02644A	30	Draining	3	PH150	K12080	1	20	0,3
12457P	A2000 CAM PANO DIŞ PANOSU (1. ESTETİK/3 SAĞ-3 SOL)	AO-R0006	02644A	40	Curling	3	PH150	K40614	1	20	0,3
12457P	A2000 CAM PANO DIŞ PANOSU (1. ESTETİK/3 SAĞ-3 SOL)	AO-R0006	02644A	50	Bottom Draining	4	PH070	K11290	1	20	0,3
12459P	A2000 CAM PANO DIŞ PANOSU INOX (1. ESTETİK/3 SAĞ-3 SOL)	AO-R0006	02645A	10	Stroking	1	PH300	K20150	2	20	0,4
12459P	A2000 CAM PANO DIŞ PANOSU INOX (1. ESTETİK/3 SAĞ-3 SOL)	AO-R0006	02645A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
12459P	A2000 CAM PANO DIŞ PANOSU INOX (1. ESTETİK/3 SAĞ-3 SOL)	AO-R0006	02645A	30	Draining	3	PH150	K12080	1	20	0,3
12459P	A2000 CAM PANO DIŞ PANOSU INOX (1. ESTETİK/3 SAĞ-3 SOL)	AO-R0006	02645A	40	Curling	3	PH150	K40614	1	20	0,3
12459P	A2000 CAM PANO DIŞ PANOSU INOX (1. ESTETİK/3 SAĞ-3 SOL)	AO-R0006	02645A	50	Bottom Draining	4	PH070	K11290	1	20	0,3
02648P	A2000 DİJİTAL TİMERLİ PANO (3.ESTETİK/OCAKLI)	AO-R0021	02644A	10	Stroking	1	PH300	K20150	2	20	0,4
02648P	A2000 DİJİTAL TİMERLİ PANO (3.ESTETİK/OCAKLI)	AO-R0021	02644A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02648P	A2000 DİJİTAL TİMERLİ PANO (3.ESTETİK/OCAKLI)	AO-R0021	02644A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02648P	A2000 DİJİTAL TİMERLİ PANO (3.ESTETİK/OCAKLI)	AO-R0021	02644A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02648P	A2000 DİJİTAL TİMERLİ PANO (3.ESTETİK/OCAKLI)	AO-R0021	02644A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02648P	A2000 DİJİTAL TİMERLİ PANO (3.ESTETİK/OCAKLI)	AO-R0021	02644A	60	Decoupling Timer Hook	9	PE080	K70088	1	20	0,2
02649P	A2000 DİJİTAL TİMERLİ INOX PANO (3.ESTETİK/OCAKLI)	AO-R0021	02645A	10	Stroking	1	PH300	K20150	2	20	0,4
02649P	A2000 DİJİTAL TİMERLİ INOX PANO (3.ESTETİK/OCAKLI)	AO-R0021	02645A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02649P	A2000 DİJİTAL TİMERLİ INOX PANO (3.ESTETİK/OCAKLI)	AO-R0021	02645A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02649P	A2000 DİJİTAL TİMERLİ INOX PANO (3.ESTETİK/OCAKLI)	AO-R0021	02645A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02649P	A2000 DİJİTAL TİMERLİ INOX PANO (3.ESTETİK/OCAKLI)	AO-R0021	02645A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02649P	A2000 DİJİTAL TİMERLİ INOX PANO (3.ESTETİK/OCAKLI)	AO-R0021	02645A	60	Decoupling Timer Hook	9	PE080	K70088	1	20	0,2
02650P	A2000 RUSTİK TİMERLİ PANO (3.ESTETİK/OCAKLI)	AO-R0021	02644A	10	Stroking	1	PH300	K20150	2	20	0,4
02650P	A2000 RUSTİK TİMERLİ PANO (3.ESTETİK/OCAKLI)	AO-R0021	02644A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02650P	A2000 RUSTİK TİMERLİ PANO (3.ESTETİK/OCAKLI)	AO-R0021	02644A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02650P	A2000 RUSTİK TİMERLİ PANO (3.ESTETİK/OCAKLI)	AO-R0021	02644A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02650P	A2000 RUSTİK TİMERLİ PANO (3.ESTETİK/OCAKLI)	AO-R0021	02644A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02650P	A2000 RUSTİK TİMERLİ PANO (3.ESTETİK/OCAKLI)	AO-R0021	02644A	60	Decoupling Rustic Timer Hook	9	PE080	K70087	1	20	0,2
02651P	A2000 RUSTİK TİMERLİ INOX PANO (3.ESTETİK/OCAKLI)	AO-R0021	02645A	10	Stroking	1	PH300	K20150	2	20	0,4
02651P	A2000 RUSTİK TİMERLİ INOX PANO (3.ESTETİK/OCAKLI)	AO-R0021	02645A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02651P	A2000 RUSTİK TİMERLİ INOX PANO (3.ESTETİK/OCAKLI)	AO-R0021	02645A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02651P	A2000 RUSTİK TİMERLİ INOX PANO (3.ESTETİK/OCAKLI)	AO-R0021	02645A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02651P	A2000 RUSTİK TİMERLİ INOX PANO (3.ESTETİK/OCAKLI)	AO-R0021	02645A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02651P	A2000 RUSTİK TİMERLİ INOX PANO (3.ESTETİK/OCAKLI)	AO-R0021	02645A	60	Decoupling Rustic Timer Hook	9	PE080	K70087	1	20	0,2
02659P	A2000 TİMERSİZ PANO (3.ESTETİK/OCAKLI)	AO-R0021	02644A	10	Stroking	1	PH300	K20150	2	20	0,4
02659P	A2000 TİMERSİZ PANO (3.ESTETİK/OCAKLI)	AO-R0021	02644A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02659P	A2000 TİMERSİZ PANO (3.ESTETİK/OCAKLI)	AO-R0021	02644A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02659P	A2000 TİMERSİZ PANO (3.ESTETİK/OCAKLI)	AO-R0021	02644A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02659P	A2000 TİMERSİZ PANO (3.ESTETİK/OCAKLI)	AO-R0021	02644A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02660P	A2000 TİMERSİZ INOX PANO (3.ESTETİK/OCAKLI)	AO-R0021	02645A	10	Stroking	1	PH300	K20150	2	20	0,4
02660P	A2000 TİMERSİZ INOX PANO (3.ESTETİK/OCAKLI)	AO-R0021	02645A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02660P	A2000 TİMERSİZ INOX PANO (3.ESTETİK/OCAKLI)	AO-R0021	02645A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3

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02660P	A2000 Tİ MERSİZ İNOX PANO (3.ESTETİK/OCAKLI)	AO-R0021	02645A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02660P	A2000 Tİ MERSİZ İNOX PANO (3.ESTETİK/OCAKLI)	AO-R0021	02645A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02665P	A2000 MEKANİK TİMERLİ PANO (3.ESTETİK/OCAKLI)	AO-R0021	02644A	10	Stroking	1	PH300	K20150	2	20	0,4
02665P	A2000 MEKANİK TİMERLİ PANO (3.ESTETİK/OCAKLI)	AO-R0021	02644A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02665P	A2000 MEKANİK TİMERLİ PANO (3.ESTETİK/OCAKLI)	AO-R0021	02644A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02665P	A2000 MEKANİK TİMERLİ PANO (3.ESTETİK/OCAKLI)	AO-R0021	02644A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02665P	A2000 MEKANİK TİMERLİ PANO (3.ESTETİK/OCAKLI)	AO-R0021	02644A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02666P	A2000 MEKANİK TİMERLİ İNOX PANO (3.ESTETİK/OCAKLI)	AO-R0021	02645A	10	Stroking	1	PH300	K20150	2	20	0,4
02666P	A2000 MEKANİK TİMERLİ İNOX PANO (3.ESTETİK/OCAKLI)	AO-R0021	02645A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02666P	A2000 MEKANİK TİMERLİ İNOX PANO (3.ESTETİK/OCAKLI)	AO-R0021	02645A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02666P	A2000 MEKANİK TİMERLİ İNOX PANO (3.ESTETİK/OCAKLI)	AO-R0021	02645A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02666P	A2000 MEKANİK TİMERLİ İNOX PANO (3.ESTETİK/OCAKLI)	AO-R0021	02645A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02675P	A2000 DİJİTAL TİMERLİ PANO (3. ESTETİK / OCAKSIZ)	AO-R0021	02644A	10	Stroking	1	PH300	K20150	2	20	0,4
02675P	A2000 DİJİTAL TİMERLİ PANO (3. ESTETİK / OCAKSIZ)	AO-R0021	02644A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02675P	A2000 DİJİTAL TİMERLİ PANO (3. ESTETİK / OCAKSIZ)	AO-R0021	02644A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02675P	A2000 DİJİTAL TİMERLİ PANO (3. ESTETİK / OCAKSIZ)	AO-R0021	02644A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02675P	A2000 DİJİTAL TİMERLİ PANO (3. ESTETİK / OCAKSIZ)	AO-R0021	02644A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02675P	A2000 DİJİTAL TİMERLİ PANO (3. ESTETİK / OCAKSIZ)	AO-R0021	02644A	60	Decoupling Timer Hook	9	PE080	K70088	1	20	0,2
02676P	A2000 DİJİTAL TİMERLİ İNOX PANO (3. ESTETİK/OCAKSIZ)	AO-R0021	02645A	10	Stroking	1	PH300	K20150	2	20	0,4
02676P	A2000 DİJİTAL TİMERLİ İNOX PANO (3. ESTETİK/OCAKSIZ)	AO-R0021	02645A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02676P	A2000 DİJİTAL TİMERLİ İNOX PANO (3. ESTETİK/OCAKSIZ)	AO-R0021	02645A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02676P	A2000 DİJİTAL TİMERLİ İNOX PANO (3. ESTETİK/OCAKSIZ)	AO-R0021	02645A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02676P	A2000 DİJİTAL TİMERLİ İNOX PANO (3. ESTETİK/OCAKSIZ)	AO-R0021	02645A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02676P	A2000 DİJİTAL TİMERLİ İNOX PANO (3. ESTETİK/OCAKSIZ)	AO-R0021	02645A	60	Decoupling Timer Hook	9	PE080	K70088	1	20	0,2
02677P	A2000 RUSTİK TİMERLİ PANO (3. ESTETİK/OCAKSIZ)	AO-R0021	02644A	10	Stroking	1	PH300	K20150	2	20	0,4
02677P	A2000 RUSTİK TİMERLİ PANO (3. ESTETİK/OCAKSIZ)	AO-R0021	02644A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02677P	A2000 RUSTİK TİMERLİ PANO (3. ESTETİK/OCAKSIZ)	AO-R0021	02644A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02677P	A2000 RUSTİK TİMERLİ PANO (3. ESTETİK/OCAKSIZ)	AO-R0021	02644A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02677P	A2000 RUSTİK TİMERLİ PANO (3. ESTETİK/OCAKSIZ)	AO-R0021	02644A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02677P	A2000 RUSTİK TİMERLİ PANO (3. ESTETİK/OCAKSIZ)	AO-R0021	02644A	60	Decoupling Rustic Timer Hook	9	PE080	K70087	1	20	0,2
02678P	A2000 RUSTİK TİMERLİ İNOX PANO (3.ESTETİK/OCAKSIZ)	AO-R0021	02645A	10	Stroking	1	PH300	K20150	2	20	0,4
02678P	A2000 RUSTİK TİMERLİ İNOX PANO (3.ESTETİK/OCAKSIZ)	AO-R0021	02645A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02678P	A2000 RUSTİK TİMERLİ İNOX PANO (3.ESTETİK/OCAKSIZ)	AO-R0021	02645A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02678P	A2000 RUSTİK TİMERLİ İNOX PANO (3.ESTETİK/OCAKSIZ)	AO-R0021	02645A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02678P	A2000 RUSTİK TİMERLİ İNOX PANO (3.ESTETİK/OCAKSIZ)	AO-R0021	02645A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02678P	A2000 RUSTİK TİMERLİ İNOX PANO (3.ESTETİK/OCAKSIZ)	AO-R0021	02645A	60	Decoupling Rustic Timer Hook	9	PE080	K70087	1	20	0,2
02679P	A2000 MEKANİK TİMERLİ PANO (3.ESTETİK/OCAKSIZ)	AO-R0021	02644A	10	Stroking	1	PH300	K20150	2	20	0,4
02679P	A2000 MEKANİK TİMERLİ PANO (3.ESTETİK/OCAKSIZ)	AO-R0021	02644A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02679P	A2000 MEKANİK TİMERLİ PANO (3.ESTETİK/OCAKSIZ)	AO-R0021	02644A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02679P	A2000 MEKANİK TİMERLİ PANO (3.ESTETİK/OCAKSIZ)	AO-R0021	02644A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02679P	A2000 MEKANİK TİMERLİ PANO (3.ESTETİK/OCAKSIZ)	AO-R0021	02644A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02680P	A2000 MEKANİK TİMERLİ İNOX PANO (3.ESTETİK/OCAKSIZ)	AO-R0021	02645A	10	Stroking	1	PH300	K20150	2	20	0,4
02680P	A2000 MEKANİK TİMERLİ İNOX PANO (3.ESTETİK/OCAKSIZ)	AO-R0021	02645A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02680P	A2000 MEKANİK TİMERLİ İNOX PANO (3.ESTETİK/OCAKSIZ)	AO-R0021	02645A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3

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02680P	A2000 MEKANİK TİMERLİ INOX PANO (3.ESTETİK/OCAKSIZ)	AO-R0021	02645A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02680P	A2000 MEKANİK TİMERLİ INOX PANO (3.ESTETİK/OCAKSIZ)	AO-R0021	02645A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02681P	A2000 Tİ MERSİZ PANO (3.ESTETİK/OCAKSIZ)	AO-R0021	02644A	10	Stroking	1	PH300	K20150	2	20	0,4
02681P	A2000 Tİ MERSİZ PANO (3.ESTETİK/OCAKSIZ)	AO-R0021	02644A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02681P	A2000 Tİ MERSİZ PANO (3.ESTETİK/OCAKSIZ)	AO-R0021	02644A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02681P	A2000 Tİ MERSİZ PANO (3.ESTETİK/OCAKSIZ)	AO-R0021	02644A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02681P	A2000 Tİ MERSİZ PANO (3.ESTETİK/OCAKSIZ)	AO-R0021	02644A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
02682P	A2000 Tİ MERSİZ INOX PANO (3.ESTETİK/OCAKSIZ)	AO-R0021	02645A	10	Stroking	1	PH300	K20150	2	20	0,4
02682P	A2000 Tİ MERSİZ INOX PANO (3.ESTETİK/OCAKSIZ)	AO-R0021	02645A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
02682P	A2000 Tİ MERSİZ INOX PANO (3.ESTETİK/OCAKSIZ)	AO-R0021	02645A	30	Draining Switch Hook	3	PH150	K19183	1	20	0,3
02682P	A2000 Tİ MERSİZ INOX PANO (3.ESTETİK/OCAKSIZ)	AO-R0021	02645A	40	Bottom Draining	4	PH070	K11290	1	20	0,3
02682P	A2000 Tİ MERSİZ INOX PANO (3.ESTETİK/OCAKSIZ)	AO-R0021	02645A	50	Countersinking Switch Hook	3	PH150	K60021	1	20	0,18
12458P	A2000 CAM PANO DIŞ PANOSU (3. ESTETİK/4 SAĞ-2 SOL)	AO-R0023	02644A	10	Stroking	1	PH300	K20150	2	20	0,4
12458P	A2000 CAM PANO DIŞ PANOSU (3. ESTETİK/4 SAĞ-2 SOL)	AO-R0023	02644A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
12458P	A2000 CAM PANO DIŞ PANOSU (3. ESTETİK/4 SAĞ-2 SOL)	AO-R0023	02644A	30	Draining	3	PH150	K12080	1	20	0,3
12458P	A2000 CAM PANO DIŞ PANOSU (3. ESTETİK/4 SAĞ-2 SOL)	AO-R0023	02644A	40	Curling	3	PH150	K40614	1	20	0,3
12458P	A2000 CAM PANO DIŞ PANOSU (3. ESTETİK/4 SAĞ-2 SOL)	AO-R0023	02644A	50	Bottom Draining	4	PH070	K11290	1	20	0,3
12460P	A2000 CAM PANO DIŞ PANOSU INOX (3. ESTETİK/4 SAĞ-2 SOL)	AO-R0023	02645A	10	Stroking	1	PH300	K20150	2	20	0,4
12460P	A2000 CAM PANO DIŞ PANOSU INOX (3. ESTETİK/4 SAĞ-2 SOL)	AO-R0023	02645A	20	Cutting Slope	2	DE085	K30082	1	20	0,8
12460P	A2000 CAM PANO DIŞ PANOSU INOX (3. ESTETİK/4 SAĞ-2 SOL)	AO-R0023	02645A	30	Draining	3	PH150	K12080	1	20	0,3
12460P	A2000 CAM PANO DIŞ PANOSU INOX (3. ESTETİK/4 SAĞ-2 SOL)	AO-R0023	02645A	40	Curling	3	PH150	K40614	1	20	0,3
12460P	A2000 CAM PANO DIŞ PANOSU INOX (3. ESTETİK/4 SAĞ-2 SOL)	AO-R0023	02645A	50	Bottom Draining	4	PH070	K11290	1	20	0,3
04047P	A2000 PASLANMAZ U ADD ON (SAC)	AO-R0031	04047A	10	Draining	6	PE250	K10180	1	20	0,3
11405P	B2000 İÇ KASET ÖN ÇERÇEVE	BO-R0001	11405A01	10	Curling Front Frame	20	500T HP.	TK40002	2	30	0,2
1100010P	A2000 İÇ KASET GÖVDE(RAFLI)	BO-R0002	11410A	10	Stroking	20	500T HP.	TK20008	2	30	0,3
1100010P	A2000 İÇ KASET GÖVDE(RAFLI)	BO-R0002	11410A	20	Peripheral Cutting	20	500T HP.	TK19005	2	30	0,25
1100010P	A2000 İÇ KASET GÖVDE(RAFLI)	BO-R0002	11410A	30	Flanging	20	500T HP.	TK40004	2	30	0,3
11410P	A2000 İÇ KASET GÖVDE(RAFLI)	BO-R0002	11410A	10	Stroking	20	500T HP.	TK20008	2	30	0,3
11410P	A2000 İÇ KASET GÖVDE(RAFLI)	BO-R0002	11410A	20	Peripheral Cutting	20	500T HP.	TK19005	2	30	0,25
11410P	A2000 İÇ KASET GÖVDE(RAFLI)	BO-R0002	11410A	30	Flanging	20	500T HP.	TK40004	2	30	0,3
11436P	A2000 İÇ KASET GÖVDE(RAFLI)	BO-R0002	11410A	10	Stroking	20	500T HP.	TK20008	2	30	0,3
11436P	A2000 İÇ KASET GÖVDE(RAFLI)	BO-R0002	11410A	20	Peripheral Cutting	20	500T HP.	TK19005	2	30	0,25
11436P	A2000 İÇ KASET GÖVDE(RAFLI)	BO-R0002	11410A	30	Flanging	20	500T HP.	TK40004	2	30	0,3
11439P	A2000 İÇ KASET GÖVDE(RAFLI)	BO-R0002	11410A	10	Stroking	20	500T HP.	TK20008	2	30	0,3
11439P	A2000 İÇ KASET GÖVDE(RAFLI)	BO-R0002	11410A	20	Peripheral Cutting	20	500T HP.	TK19005	2	30	0,25
11439P	A2000 İÇ KASET GÖVDE(RAFLI)	BO-R0002	11410A	30	Flanging	20	500T HP.	TK40004	2	30	0,3
11417P	B2000 GAZLI İÇ KASET GÖVDE,P (RAFLI)	BO-R0005	11410A	10	Stroking	20	500T HP.	TK20008	2	30	0,3
11417P	B2000 GAZLI İÇ KASET GÖVDE,P (RAFLI)	BO-R0005	11410A	20	Peripheral Cutting	20	500T HP.	TK19005	2	30	0,25
11417P	B2000 GAZLI İÇ KASET GÖVDE,P (RAFLI)	BO-R0005	11410A	30	Flanging	20	500T HP.	TK40004	2	30	0,3
11452P	B2000 GAZLI İÇ KASET GÖVDE,P (RAFLI)	BO-R0005	11410A	10	Stroking	20	500T HP.	TK20008	2	30	0,3
11452P	B2000 GAZLI İÇ KASET GÖVDE,P (RAFLI)	BO-R0005	11410A	20	Peripheral Cutting	20	500T HP.	TK19005	2	30	0,25
11452P	B2000 GAZLI İÇ KASET GÖVDE,P (RAFLI)	BO-R0005	11410A	30	Flanging	20	500T HP.	TK40004	2	30	0,3
1100014P	A2000 İÇ KASET GÖVDE(TEL RAFLI)	BO-R0006	11410A	10	Stroking	20	500T HP.	TK20008	2	30	0,3



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01470P	B2000 4ELEKTRİKLİ INOX PLEYT	BO-R0007	01445A	50	Flanging	20	500T HP.	TK40007	2	30	0,4
01471P	B2000 3 ELEKTRİKLİ INOX PLEYT	BO-R0007	01445A	10	Stroking	20	500T HP.	TK20003	2	30	0,45
01471P	B2000 3 ELEKTRİKLİ INOX PLEYT	BO-R0007	01445A	20	Peripheral Cutting	20	500T HP.	TK19003	2	30	0,25
01471P	B2000 3 ELEKTRİKLİ INOX PLEYT	BO-R0007	01445A	30	Leveling Slope	20	500T HP.	TK40001	2	30	0,3
01471P	B2000 3 ELEKTRİKLİ INOX PLEYT	BO-R0007	01445A	50	Flanging	20	500T HP.	TK40007	2	30	0,4
01480P	B2000 4 GAZLIHIFLAME PLEYT INOX	GO-R0048	01445A	10	Stroking	20	500T HP.	TK20003	2	30	0,45
01480P	B2000 4 GAZLIHIFLAME PLEYT INOX	GO-R0048	01445A	20	Peripheral Cutting	20	500T HP.	TK19003	2	30	0,25
01480P	B2000 4 GAZLIHIFLAME PLEYT INOX	GO-R0048	01445A	30	Leveling Slope	20	500T HP.	TK40001	2	30	0,3
01480P	B2000 4 GAZLIHIFLAME PLEYT INOX	GO-R0048	01445A	40	Flanging	20	500T HP.	TK40007	2	30	0,4
1100011P	B2000 GAZLI İÇ KASET ARKA KAPAK	BO-R0008	11405A	10	Stroking	20	500T HP.	TK20004	2	30	0,3
1100011P	B2000 GAZLI İÇ KASET ARKA KAPAK	BO-R0008	11405A	20	Peripheral Cutting	20	500T HP.	TK19004	2	30	0,15
1100011P	B2000 GAZLI İÇ KASET ARKA KAPAK	BO-R0008	11405A	30	Core Detachment	20	500T HP.	TK12002	2	30	0,2
1100020P	B2000 GAZLI İÇ KASET ARKA KAPAK	BO-R0008	11405A	10	Stroking	20	500T HP.	TK20004	2	30	0,3
1100020P	B2000 GAZLI İÇ KASET ARKA KAPAK	BO-R0008	11405A	20	Peripheral Cutting	20	500T HP.	TK19004	2	30	0,15
1100020P	B2000 GAZLI İÇ KASET ARKA KAPAK	BO-R0008	11405A	30	Core Detachment	20	500T HP.	TK12002	2	30	0,2
11416P	B2000 GAZLI İÇ KASET ARKA KAPAK	BO-R0008	11405A	10	Stroking	20	500T HP.	TK20004	2	30	0,3
11416P	B2000 GAZLI İÇ KASET ARKA KAPAK	BO-R0008	11405A	20	Peripheral Cutting	20	500T HP.	TK19004	2	30	0,15
11416P	B2000 GAZLI İÇ KASET ARKA KAPAK	BO-R0008	11405A	30	Core Detachment	20	500T HP.	TK12002	2	30	0,2
11432P	B2000 GAZLI İÇ KASET ARKA KAPAK	BO-R0008	11405A	10	Stroking	20	500T HP.	TK20004	2	30	0,3
11432P	B2000 GAZLI İÇ KASET ARKA KAPAK	BO-R0008	11405A	20	Peripheral Cutting	20	500T HP.	TK19004	2	30	0,15
11432P	B2000 GAZLI İÇ KASET ARKA KAPAK	BO-R0008	11405A	30	Core Detachment	20	500T HP.	TK12002	2	30	0,2
11448P	B2000 GAZLI İÇ KASET ARKA KAPAK(GRİ Lİ, LAMBASI Z, ÇEVİRİ)	BO-R0008	11405A	10	Stroking	20	500T HP.	TK20004	2	30	0,3
11448P	B2000 GAZLI İÇ KASET ARKA KAPAK(GRİ Lİ, LAMBASI Z, ÇEVİRİ)	BO-R0008	11405A	20	Peripheral Cutting	20	500T HP.	TK19004	2	30	0,15
11448P	B2000 GAZLI İÇ KASET ARKA KAPAK(GRİ Lİ, LAMBASI Z, ÇEVİRİ)	BO-R0008	11405A	30	Core Detachment	20	500T HP.	TK12002	2	30	0,2
11449P	B2000 GAZLI İÇ KASET ARKA KAPAK(GRİ Lİ, LAMBASI Z)	BO-R0008	11405A	10	Stroking	20	500T HP.	TK20004	2	30	0,3
11449P	B2000 GAZLI İÇ KASET ARKA KAPAK(GRİ Lİ, LAMBASI Z)	BO-R0008	11405A	20	Peripheral Cutting	20	500T HP.	TK19004	2	30	0,15
11449P	B2000 GAZLI İÇ KASET ARKA KAPAK(GRİ Lİ, LAMBASI Z)	BO-R0008	11405A	30	Core Detachment	20	500T HP.	TK12002	2	30	0,2
11450P	B2000 GAZLI İÇ KASET ARKA KAPAK(GRİ LİSİZ, LAMBASI Z)	BO-R0008	11405A	10	Stroking	20	500T HP.	TK20004	2	30	0,3
11450P	B2000 GAZLI İÇ KASET ARKA KAPAK(GRİ LİSİZ, LAMBASI Z)	BO-R0008	11405A	20	Peripheral Cutting	20	500T HP.	TK19004	2	30	0,15
11450P	B2000 GAZLI İÇ KASET ARKA KAPAK(GRİ LİSİZ, LAMBASI Z)	BO-R0008	11405A	30	Core Detachment	20	500T HP.	TK12002	2	30	0,2
11451P	B2000 GAZLI İÇ KASET ARKA KAPAK(GRİ LİSİZ, LAMBALI)	BO-R0008	11405A	10	Stroking	20	500T HP.	TK20004	2	30	0,3
11451P	B2000 GAZLI İÇ KASET ARKA KAPAK(GRİ LİSİZ, LAMBALI)	BO-R0008	11405A	20	Peripheral Cutting	20	500T HP.	TK19004	2	30	0,15
11451P	B2000 GAZLI İÇ KASET ARKA KAPAK(GRİ LİSİZ, LAMBALI)	BO-R0008	11405A	30	Core Detachment	20	500T HP.	TK12002	2	30	0,2
01427P	B2000 CERAN PLEYT	BO-R0020	01436A	10	Stroking	20	500T HP.	TK20003	2	30	0,45
01427P	B2000 CERAN PLEYT	BO-R0020	01436A	20	Peripheral Cutting	20	500T HP.	TK19003	2	30	0,25
01427P	B2000 CERAN PLEYT	BO-R0020	01436A	30	Leveling Slope	20	500T HP.	TK40001	2	30	0,3
01427P	B2000 CERAN PLEYT	BO-R0020	01436A	40	Flanging	20	500T HP.	TK40007	2	30	0,4
01427P	B2000 CERAN PLEYT	BO-R0020	01436A	50	Draining Core	20	500T HP.	K12079	2	30	0,25
01427P	B2000 CERAN PLEYT	BO-R0020	01436A	60	Curling Core	20	500T HP.	K40599	2	30	0,25
01438P	B2000 CERAN PLEYT INOX	BO-R0020	01445A	10	Stroking	20	500T HP.	TK20003	2	30	0,45
01438P	B2000 CERAN PLEYT INOX	BO-R0020	01445A	20	Peripheral Cutting	20	500T HP.	TK19003	2	30	0,25
01438P	B2000 CERAN PLEYT INOX	BO-R0020	01445A	30	Leveling Slope	20	500T HP.	TK40001	2	30	0,3
01438P	B2000 CERAN PLEYT INOX	BO-R0020	01445A	40	Flanging	20	500T HP.	TK40007	2	30	0,4
01438P	B2000 CERAN PLEYT INOX	BO-R0020	01445A	50	Draining Core	20	500T HP.	K12079	2	30	0,25



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01438P	B2000 CERAN PLEYT INOX	BO-R0020	01445A	60	Curling Core	20	500T HP.	K40599	2	30	0,25
11443P	A2000 İÇ KASET GÖVDE(RAFLI-KATEDRAL)	BO-R0034	11410A	10	Stroking	20	500T HP.	TK20008	2	30	0,3
11443P	A2000 İÇ KASET GÖVDE(RAFLI-KATEDRAL)	BO-R0034	11410A	20	Peripheral Cutting	20	500T HP.	TK19005	2	30	0,25
11443P	A2000 İÇ KASET GÖVDE(RAFLI-KATEDRAL)	BO-R0034	11410A	30	Flanging	20	500T HP.	TK40004	2	30	0,3
11443P	A2000 İÇ KASET GÖVDE(RAFLI-KATEDRAL)	BO-R0034	11410A	40	Decoupling Catedral Hole	4	PH07001	K11284	1	20	0,25
11230P	TFA İC K ARKA K.,P(FANSIZ,CEVSI Z,GENI S SOG FANLI ,MOTOR	FA-R1004	11066A	10	Stroking	5	PH30001	K21002	2	20	0,222
11230P	TFA İC K ARKA K.,P(FANSIZ,CEVSI Z,GENI S SOG FANLI ,MOTOR	FA-R1004	11066A	20	Peripheral Cutting	6	PE250	K19112	1	20	0,168
11230P	TFA İC K ARKA K.,P(FANSIZ,CEVSI Z,GENI S SOG FANLI ,MOTOR	FA-R1004	11066A	30	Curling	3	PH150	K40130	1	20	0,36
11231P	TFA TURBOLU,CEVSI Z,BACALI ,GENI S SOG FANLI İC KASET AR	FA-R1004	11066A	10	Stroking	5	PH30001	K21002	2	20	0,222
11231P	TFA TURBOLU,CEVSI Z,BACALI ,GENI S SOG FANLI İC KASET AR	FA-R1004	11066A	20	Peripheral Cutting	6	PE250	K19112	1	20	0,168
11231P	TFA TURBOLU,CEVSI Z,BACALI ,GENI S SOG FANLI İC KASET AR	FA-R1004	11066A	30	Curling	3	PH150	K40130	1	20	0,36
11231P	TFA TURBOLU,CEVSI Z,BACALI ,GENI S SOG FANLI İC KASET AR	FA-R1004	11066A	40	Enlarging Motor Cap	10	PE030	YOK	1	20	0,168
11232P	TFA İC K. ARKA K.,P(FANSIZ,CEVSI Z,LAMBASI Z,GENI S SOG FA	FA-R1004	11066A	10	Stroking	5	PH30001	K21002	2	20	0,222
11232P	TFA İC K. ARKA K.,P(FANSIZ,CEVSI Z,LAMBASI Z,GENI S SOG FA	FA-R1004	11066A	20	Peripheral Cutting	6	PE250	K19112	1	20	0,168
11232P	TFA İC K. ARKA K.,P(FANSIZ,CEVSI Z,LAMBASI Z,GENI S SOG FA	FA-R1004	11066A	30	Curling	3	PH150	K40130	1	20	0,36
11232P	TFA İC K. ARKA K.,P(FANSIZ,CEVSI Z,LAMBASI Z,GENI S SOG FA	FA-R1004	11066A	40	Enlarging Motor Cap	10	PE030	YOK	1	20	0,168
11234P	TFA İC K. ARKA K.,P(FANLI ,CEVİ RMELİ ,BACALI ,GENI S SOG FAI	FA-R1004	11066A	10	Stroking	5	PH30001	K21002	2	20	0,222
11234P	TFA İC K. ARKA K.,P(FANLI ,CEVİ RMELİ ,BACALI ,GENI S SOG FAI	FA-R1004	11066A	20	Peripheral Cutting	6	PE250	K19112	1	20	0,168
11234P	TFA İC K. ARKA K.,P(FANLI ,CEVİ RMELİ ,BACALI ,GENI S SOG FAI	FA-R1004	11066A	30	Curling	3	PH150	K40130	1	20	0,36
11234P	TFA İC K. ARKA K.,P(FANLI ,CEVİ RMELİ ,BACALI ,GENI S SOG FAI	FA-R1004	11066A	40	Enlarging Motor Cap	10	PE030	YOK	1	20	0,168
11289P	TFA İC K ARKA K.,P(FASI ,CEVSI Z, SOG FANLI ,MOTOR TASI YICI	FA-R1004	11066A	10	Stroking	5	PH30001	K21002	2	20	0,222
11289P	TFA İC K ARKA K.,P(FASI ,CEVSI Z, SOG FANLI ,MOTOR TASI YICI	FA-R1004	11066A	20	Peripheral Cutting	6	PE250	K19112	1	20	0,168
11289P	TFA İC K ARKA K.,P(FASI ,CEVSI Z, SOG FANLI ,MOTOR TASI YICI	FA-R1004	11066A	30	Curling	3	PH150	K40130	1	20	0,36
11290P	TFA İC K ARKA K.,P(FANSIZ,CEVSI Z,FAN PERD,MOT TASI YICI S	FA-R1004	11066A	10	Stroking	5	PH30001	K21002	2	20	0,222
11290P	TFA İC K ARKA K.,P(FANSIZ,CEVSI Z,FAN PERD,MOT TASI YICI S	FA-R1004	11066A	20	Peripheral Cutting	6	PE250	K19112	1	20	0,168
11290P	TFA İC K ARKA K.,P(FANSIZ,CEVSI Z,FAN PERD,MOT TASI YICI S	FA-R1004	11066A	30	Curling	3	PH150	K40130	1	20	0,36
11291P	TFA İC K. ARKA K.,P(FANSIZ,CEVSI Z,LAMBASI Z,MOT TASI YICI	FA-R1004	11066A	10	Stroking	5	PH30001	K21002	2	20	0,222
11291P	TFA İC K. ARKA K.,P(FANSIZ,CEVSI Z,LAMBASI Z,MOT TASI YICI	FA-R1004	11066A	20	Peripheral Cutting	6	PE250	K19112	1	20	0,168
11291P	TFA İC K. ARKA K.,P(FANSIZ,CEVSI Z,LAMBASI Z,MOT TASI YICI	FA-R1004	11066A	30	Curling	3	PH150	K40130	1	20	0,36
11309P	TFA TURBOSUZ CEVLI BACALI İC KASET ARKA KAPAK Sİ Sİ RME	FA-R1004	11066A	10	Stroking	5	PH30001	K21002	2	20	0,222
11309P	TFA TURBOSUZ CEVLI BACALI İC KASET ARKA KAPAK Sİ Sİ RME	FA-R1004	11066A	20	Peripheral Cutting	6	PE250	K19112	1	20	0,168
11309P	TFA TURBOSUZ CEVLI BACALI İC KASET ARKA KAPAK Sİ Sİ RME	FA-R1004	11066A	30	Curling	3	PH150	K40130	1	20	0,36
11310P	TFA TURBOLU CEVSI Z BACALI İC KASET ARKA KAPAK Sİ Sİ RME	FA-R1004	11066A	10	Stroking	5	PH30001	K21002	2	20	0,222
11310P	TFA TURBOLU CEVSI Z BACALI İC KASET ARKA KAPAK Sİ Sİ RME	FA-R1004	11066A	20	Peripheral Cutting	6	PE250	K19112	1	20	0,168
11310P	TFA TURBOLU CEVSI Z BACALI İC KASET ARKA KAPAK Sİ Sİ RME	FA-R1004	11066A	30	Curling	3	PH150	K40130	1	20	0,36
11311P	TFA FANLI ,CEVSI Z,TURBO TI JSI Z,BACALI İC K ARKA KFK Sİ Sİ H	FA-R1004	11066A	10	Stroking	5	PH30001	K21002	2	20	0,222
11311P	TFA FANLI ,CEVSI Z,TURBO TI JSI Z,BACALI İC K ARKA KFK Sİ Sİ H	FA-R1004	11066A	20	Peripheral Cutting	6	PE250	K19112	1	20	0,168
11311P	TFA FANLI ,CEVSI Z,TURBO TI JSI Z,BACALI İC K ARKA KFK Sİ Sİ H	FA-R1004	11066A	30	Curling	3	PH150	K40130	1	20	0,36
11313P	TFA FANLI CEVLI BACALI İC K ARKA K(Sİ Sİ RMELİ )	FA-R1004	11066A	10	Stroking	5	PH30001	K21002	2	20	0,222
11313P	TFA FANLI CEVLI BACALI İC K ARKA K(Sİ Sİ RMELİ )	FA-R1004	11066A	20	Peripheral Cutting	6	PE250	K19112	1	20	0,168
11313P	TFA FANLI CEVLI BACALI İC K ARKA K(Sİ Sİ RMELİ )	FA-R1004	11066A	30	Curling	3	PH150	K40130	1	20	0,36
11314P	TFA TURBOSUZ,CEVLI ,BACALI FAN PERDELI İC K ARKA K(Sİ Sİ	FA-R1004	11066A	10	Stroking	5	PH30001	K21002	2	20	0,222
11314P	TFA TURBOSUZ,CEVLI ,BACALI FAN PERDELI İC K ARKA K(Sİ Sİ	FA-R1004	11066A	20	Peripheral Cutting	6	PE250	K19112	1	20	0,168

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11314P	TFA TURBOSUZ, CEVLI, BACALI FAN PERDELI IC K ARKA K(SI SIRMELI)	FA-R1004	11066A	30	Curling	3	PH150	K40130	1	20	0,36
11315P	TFA FANSIZ, CEVLI, BACASIZ IC K ARKA K(SI SIRMELI)	FA-R1004	11066A	10	Stroking	5	PH30001	K21002	2	20	0,222
11315P	TFA FANSIZ, CEVLI, BACASIZ IC K ARKA K(SI SIRMELI)	FA-R1004	11066A	20	Peripheral Cutting	6	PE250	K19112	1	20	0,168
11315P	TFA FANSIZ, CEVLI, BACASIZ IC K ARKA K(SI SIRMELI)	FA-R1004	11066A	30	Curling	3	PH150	K40130	1	20	0,36
11316P	TFA FANLI CEVSIZ BACASIZ IC K ARKA K(SI SIRMELI)	FA-R1004	11066A	10	Stroking	5	PH30001	K21002	2	20	0,222
11316P	TFA FANLI CEVSIZ BACASIZ IC K ARKA K(SI SIRMELI)	FA-R1004	11066A	20	Peripheral Cutting	6	PE250	K19112	1	20	0,168
11316P	TFA FANLI CEVSIZ BACASIZ IC K ARKA K(SI SIRMELI)	FA-R1004	11066A	30	Curling	3	PH150	K40130	1	20	0,36
11317P	TFA FANLI CEVSIZ TURBO TIJSIZ BACASIZ IC K ARK K(SI SIRMELI)	FA-R1004	11066A	10	Stroking	5	PH30001	K21002	2	20	0,222
11317P	TFA FANLI CEVSIZ TURBO TIJSIZ BACASIZ IC K ARK K(SI SIRMELI)	FA-R1004	11066A	20	Peripheral Cutting	6	PE250	K19112	1	20	0,168
11317P	TFA FANLI CEVSIZ TURBO TIJSIZ BACASIZ IC K ARK K(SI SIRMELI)	FA-R1004	11066A	30	Curling	3	PH150	K40130	1	20	0,36
11318P	TFA FANLI CEVLI BACASIZ IC KASET ARKA KAPAK(SI SIRMELI)	FA-R1004	11066A	10	Stroking	5	PH30001	K21002	2	20	0,222
11318P	TFA FANLI CEVLI BACASIZ IC KASET ARKA KAPAK(SI SIRMELI)	FA-R1004	11066A	20	Peripheral Cutting	6	PE250	K19112	1	20	0,168
11318P	TFA FANLI CEVLI BACASIZ IC KASET ARKA KAPAK(SI SIRMELI)	FA-R1004	11066A	30	Curling	3	PH150	K40130	1	20	0,36
11330P	TFA FANLI CEVSIZ LIM TERMLI CIFT TERMOSTAT BULBLI IC K	FA-R1004	11066A	10	Stroking	5	PH30001	K21002	2	20	0,222
11330P	TFA FANLI CEVSIZ LIM TERMLI CIFT TERMOSTAT BULBLI IC K	FA-R1004	11066A	20	Peripheral Cutting	6	PE250	K19112	1	20	0,168
11330P	TFA FANLI CEVSIZ LIM TERMLI CIFT TERMOSTAT BULBLI IC K	FA-R1004	11066A	30	Curling	3	PH150	K40130	1	20	0,36
11331P	TFA IC K ARKA K., P(FANSIZ, CEVIRMELE, BACALI, LIMI T TERMLI)	FA-R1004	11066A	10	Stroking	5	PH30001	K21002	2	20	0,222
11331P	TFA IC K ARKA K., P(FANSIZ, CEVIRMELE, BACALI, LIMI T TERMLI)	FA-R1004	11066A	20	Peripheral Cutting	6	PE250	K19112	1	20	0,168
11331P	TFA IC K ARKA K., P(FANSIZ, CEVIRMELE, BACALI, LIMI T TERMLI)	FA-R1004	11066A	30	Curling	3	PH150	K40130	1	20	0,36
11361P	TFA TURBOLU/CEVSIZ/GRILLISI Z/BACALI IC KASET ARKA KAPA	FA-R1004	11066A	10	Stroking	5	PH30001	K21002	2	20	0,222
11361P	TFA TURBOLU/CEVSIZ/GRILLISI Z/BACALI IC KASET ARKA KAPA	FA-R1004	11066A	20	Peripheral Cutting	6	PE250	K19112	1	20	0,168
11361P	TFA TURBOLU/CEVSIZ/GRILLISI Z/BACALI IC KASET ARKA KAPA	FA-R1004	11066A	30	Curling	3	PH150	K40130	1	20	0,36
02005P	TFA10 PANO,P	FA-R1012	02005A	10	Peripheral cutting and Draining	3	PH150	K19113	1	20	0,225
02005P	TFA10 PANO,P	FA-R1012	02005A	20	First Curling	3	PH150	K40131	1	20	0,252
02005P	TFA10 PANO,P	FA-R1012	02005A	30	Second Curling	3	PH150	K40132	1	20	0,352
02013P	TFA60-51 PANO,P	FA-R1012	02005A	10	Peripheral cutting and Draining	3	PH150	K19113	1	20	0,225
02013P	TFA60-51 PANO,P	FA-R1012	02005A	20	First Curling	3	PH150	K40131	1	20	0,252
02013P	TFA60-51 PANO,P	FA-R1012	02005A	30	Second Curling	3	PH150	K40132	1	20	0,352
02013P	TFA60-51 PANO,P	FA-R1012	02005A	40	Draining Digital Timer Hook	9	PE080	K12011	1	20	0,11
02014P	TFA60 PANO,P	FA-R1012	02005A	10	Peripheral cutting and Draining	3	PH150	K19113	1	20	0,225
02014P	TFA60 PANO,P	FA-R1012	02005A	20	First Curling	3	PH150	K40131	1	20	0,252
02014P	TFA60 PANO,P	FA-R1012	02005A	30	Second Curling	3	PH150	K40132	1	20	0,352
02015P	TFA64-51\66-51 PANO,P	FA-R1012	02005A	10	Peripheral cutting and Draining	3	PH150	K19113	1	20	0,225
02015P	TFA64-51\66-51 PANO,P	FA-R1012	02005A	20	First Curling	3	PH150	K40131	1	20	0,252
02015P	TFA64-51\66-51 PANO,P	FA-R1012	02005A	30	Second Curling	3	PH150	K40132	1	20	0,352
02015P	TFA64-51\66-51 PANO,P	FA-R1012	02005A	40	Second Curling	9	PE080	K12011	1	20	0,11
02020P	TFA60 MEKANIK TIMERLI PANO,P	FA-R1012	02005A	10	Peripheral cutting and Draining	3	PH150	K19113	1	20	0,225
02020P	TFA60 MEKANIK TIMERLI PANO,P	FA-R1012	02005A	20	First Curling	3	PH150	K40131	1	20	0,252
02020P	TFA60 MEKANIK TIMERLI PANO,P	FA-R1012	02005A	30	Second Curling	3	PH150	K40132	1	20	0,352
02021P	TFA64-66 PANO,P	FA-R1012	02005A	10	Second Curling	3	PH150	K19113	1	20	0,225
02021P	TFA64-66 PANO,P	FA-R1012	02005A	20	First Curling	3	PH150	K40131	1	20	0,252
02021P	TFA64-66 PANO,P	FA-R1012	02005A	30	Second Curling	3	PH150	K40132	1	20	0,352
02022P	TFA14\16\34\36 PANO,P	FA-R1012	02005A	10	Peripheral cutting and Draining	3	PH150	K19113	1	20	0,225

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02022P	TFA14\16\34\36 PANO,P	FA-R1012	02005A	20	First Curling	3	PH150	K40131	1	20	0,252
02022P	TFA14\16\34\36 PANO,P	FA-R1012	02005A	30	Second Curling	3	PH150	K40132	1	20	0,352
02032P	TFA60-31 PANO ÇOCUK KİLİTLİ	FA-R1012	02005A	10	Peripheral cutting and Draining	3	PH150	K19113	1	20	0,225
02032P	TFA60-31 PANO ÇOCUK KİLİTLİ	FA-R1012	02005A	20	First Curling	3	PH150	K40131	1	20	0,252
02032P	TFA60-31 PANO ÇOCUK KİLİTLİ	FA-R1012	02005A	30	Second Curling	3	PH150	K40132	1	20	0,352
02032P	TFA60-31 PANO ÇOCUK KİLİTLİ	FA-R1012	02005A	40	Decoupling Locking Button	9	PE080	K11205	1	20	0,11
02034P	F64\F66-81 PANO,P (ANALOGUE)	FA-R1012	02005A	10	Peripheral cutting and Draining	3	PH150	K19113	1	20	0,225
02034P	F64\F66-81 PANO,P (ANALOGUE)	FA-R1012	02005A	20	First Curling	3	PH150	K40131	1	20	0,252
02034P	F64\F66-81 PANO,P (ANALOGUE)	FA-R1012	02005A	30	Second Curling	3	PH150	K40132	1	20	0,352
02034P	F64\F66-81 PANO,P (ANALOGUE)	FA-R1012	02005A	40	Decoupling Analog Timer Box	9	PE080	K11108	1	20	0,11
02039P	TFA64\66-31 PANO GOVDESI,P	FA-R1012	02005A	10	Peripheral cutting and Draining	3	PH150	K19113	1	20	0,225
02039P	TFA64\66-31 PANO GOVDESI,P	FA-R1012	02005A	20	First Curling	3	PH150	K40131	1	20	0,252
02039P	TFA64\66-31 PANO GOVDESI,P	FA-R1012	02005A	30	Second Curling	3	PH150	K40132	1	20	0,352
02053P	TFA10\30\40\50-31 PANO,P	FA-R1012	02005A	10	Peripheral cutting and Draining	3	PH150	K19113	1	20	0,225
02053P	TFA10\30\40\50-31 PANO,P	FA-R1012	02005A	20	First Curling	3	PH150	K40131	1	20	0,252
02053P	TFA10\30\40\50-31 PANO,P	FA-R1012	02005A	30	Second Curling	3	PH150	K40132	1	20	0,352
02350P	TFA PANO, DKP	FA-R1012	02005A	10	Peripheral cutting and Draining	3	PH150	K19113	1	20	0,225
02350P	TFA PANO, DKP	FA-R1012	02005A	20	First Curling	3	PH150	K40131	1	20	0,252
02350P	TFA PANO, DKP	FA-R1012	02005A	30	Second Curling	3	PH150	K40132	1	20	0,352
02350P	TFA PANO, DKP	FA-R1012	02005A	40	Decoupling Locking Button	9	PE080	K11205	1	20	0,11
02366P	TFA60-91 RUSTIK TİMERLİ PANO,P	FA-R1012	02005A	10	Peripheral cutting and Draining	3	PH150	K19113	1	20	0,225
02366P	TFA60-91 RUSTIK TİMERLİ PANO,P	FA-R1012	02005A	20	First Curling	3	PH150	K40131	1	20	0,252
02366P	TFA60-91 RUSTIK TİMERLİ PANO,P	FA-R1012	02005A	30	Second Curling	3	PH150	K40132	1	20	0,352
02366P	TFA60-91 RUSTIK TİMERLİ PANO,P	FA-R1012	02005A	40	Second Curling	9	PE080	K64082	1	20	0,11
04019P	TFA-TFB INOX CAM UST BANDI,P	FA-R1024	04019A	10	Draining	9	PE080	K10061	1	20	0,33
04019P	TFA-TFB INOX CAM UST BANDI,P	FA-R1024	04019A	20	Curling	12	PE060	K40204	1	20	0,33
04018P	TFA-TFB INOX CAM ALT BANDI,P	FA-R1025	04018A	10	Draining	9	PE080	K10062	1	20	0,33
04018P	TFA-TFB INOX CAM ALT BANDI,P	FA-R1025	04018A	20	Curling	12	PE060	K40204	1	20	0,33
02080P	TFA60-51 PANO,P (INOX)	FA-R1030	02080A	10	Peripheral cutting and Draining	3	PH150	K19106	1	20	0,225
02080P	TFA60-51 PANO,P (INOX)	FA-R1030	02080A	20	First Curling	3	PH150	K40199	1	20	0,252
02080P	TFA60-51 PANO,P (INOX)	FA-R1030	02080A	30	Second Curling	3	PH150	K40200	1	20	0,352
02080P	TFA60-51 PANO,P (INOX)	FA-R1030	02080A	40	Draining Digital Timer Hook	9	PE080	K12011	1	20	0,11
02080P	TFA60-51 PANO,P (INOX)	FA-R1030	02080A	50	Drilling Timer Hole Holder	9	PE080	K11179	1	20	0,11
02081P	TFA60-31 PANO,P (INOX)	FA-R1030	02080A	10	Peripheral cutting and Draining	3	PH150	K19106	1	20	0,225
02081P	TFA60-31 PANO,P (INOX)	FA-R1030	02080A	20	First Curling	3	PH150	K40199	1	20	0,252
02081P	TFA60-31 PANO,P (INOX)	FA-R1030	02080A	30	Second Curling	3	PH150	K40200	1	20	0,352
02082P	TFA PANO,P (INOX)	FA-R1030	02080A	10	Peripheral cutting and Draining	3	PH150	K19106	1	20	0,225
02082P	TFA PANO,P (INOX)	FA-R1030	02080A	20	First Curling	3	PH150	K40199	1	20	0,252
02082P	TFA PANO,P (INOX)	FA-R1030	02080A	30	Second Curling	3	PH150	K40200	1	20	0,352
02082P	TFA PANO,P (INOX)	FA-R1030	02080A	40	Decoupling Locking Button	9	PE080	K11205	1	20	0,11
02082P	TFA PANO,P (INOX)	FA-R1030	02080A	50	Draining Digital Timer Hook	9	PE080	K12011	1	20	0,11
02186P	TFA60 PANO,P (INOX)	FA-R1030	02080A	10	Peripheral cutting and Draining	3	PH150	K19106	1	20	0,225
02186P	TFA60 PANO,P (INOX)	FA-R1030	02080A	20	First Curling	3	PH150	K40199	1	20	0,252

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02186P	TFA60 PANO,P (INOX)	FA-R1030	02080A	30	Second Curling	3	PH150	K40200	1	20	0,352
02187P	TFA14-34-44-54 PANO,P (INOX)	FA-R1030	02080A	10	Peripheral cutting and Draining	3	PH150	K19106	1	20	0,225
02187P	TFA14-34-44-54 PANO,P (INOX)	FA-R1030	02080A	20	First Curling	3	PH150	K40199	1	20	0,252
02187P	TFA14-34-44-54 PANO,P (INOX)	FA-R1030	02080A	30	Second Curling	3	PH150	K40200	1	20	0,352
02188P	TFA64\66-31 PANO,P (INOX)	FA-R1030	02080A	10	Peripheral cutting and Draining	3	PH150	K19106	1	20	0,225
02188P	TFA64\66-31 PANO,P (INOX)	FA-R1030	02080A	20	First Curling	3	PH150	K40199	1	20	0,252
02188P	TFA64\66-31 PANO,P (INOX)	FA-R1030	02080A	30	Second Curling	3	PH150	K40200	1	20	0,352
02189P	TFA64\66 PANO,P (INOX)	FA-R1030	02080A	10	Peripheral cutting and Draining	3	PH150	K19106	1	20	0,225
02189P	TFA64\66 PANO,P (INOX)	FA-R1030	02080A	20	First Curling	3	PH150	K40199	1	20	0,252
02189P	TFA64\66 PANO,P (INOX)	FA-R1030	02080A	30	Second Curling	3	PH150	K40200	1	20	0,352
02190P	TFA64\66-81 PANO,P (INOX)	FA-R1030	02080A	10	Peripheral cutting and Draining	3	PH150	K19106	1	20	0,225
02190P	TFA64\66-81 PANO,P (INOX)	FA-R1030	02080A	20	First Curling	3	PH150	K40199	1	20	0,252
02190P	TFA64\66-81 PANO,P (INOX)	FA-R1030	02080A	30	Second Curling	3	PH150	K40200	1	20	0,352
02190P	TFA64\66-81 PANO,P (INOX)	FA-R1030	02080A	40	Decoupling Analog Timer Box	9	PE080	K11177	1	20	0,11
02194P	TFA64\66-51 PANO,P (INOX)	FA-R1030	02080A	10	Peripheral cutting and Draining	3	PH150	K19106	1	20	0,225
02194P	TFA64\66-51 PANO,P (INOX)	FA-R1030	02080A	20	First Curling	3	PH150	K40199	1	20	0,252
02194P	TFA64\66-51 PANO,P (INOX)	FA-R1030	02080A	30	Second Curling	3	PH150	K40200	1	20	0,352
02194P	TFA64\66-51 PANO,P (INOX)	FA-R1030	02080A	40	Draining Digital Timer Hook	9	PE080	K12011	1	20	0,11
02194P	TFA64\66-51 PANO,P (INOX)	FA-R1030	02080A	50	Drilling Timer Hole Holder	9	PE080	K11179	1	20	0,11
04025P	TFA/TFB CAM UST BANDI INOX ,P (BORU KULPLU)	FA-R1036	04025A	10	Draining	9	PE080	K10061	1	20	0,33
04025P	TFA/TFB CAM UST BANDI INOX ,P (BORU KULPLU)	FA-R1036	04025A	20	Curling	12	PE060	K40204	1	20	0,33
04030P	TFA/TFB CAM UST BANDI DKP ,P (BORU KULPLU)	FA-R1036	04030A	10	Draining	9	PE080	K10061	1	20	0,33
04030P	TFA/TFB CAM UST BANDI DKP ,P (BORU KULPLU)	FA-R1036	04030A	20	Curling	12	PE060	K40204	1	20	0,33
04026P	TFA/TFB CAM ALT BANDI INOX ,P(BORU KULPLU)	FA-R1037	04026A	10	Draining	9	PE080	K10062	1	20	0,33
04026P	TFA/TFB CAM ALT BANDI INOX ,P(BORU KULPLU)	FA-R1037	04026A	20	Curling	12	PE060	K40204	1	20	0,33
04031P	TFA/TFB CAM ALT BANDI DKP ,P(BORU KULPLU)	FA-R1037	04031A	10	Draining	9	PE080	K10062	1	20	0,33
04031P	TFA/TFB CAM ALT BANDI DKP ,P(BORU KULPLU)	FA-R1037	04031A	20	Curling	12	PE060	K40204	1	20	0,33
02484P	TFA60-51 ÇERÇEVESİZ PANO (DKP)	FA-R1044	02479A	10	Peripheral cutting and Draining	3	PH150	K19157	1	20	0,225
02484P	TFA60-51 ÇERÇEVESİZ PANO (DKP)	FA-R1044	02479A	20	First Curling	3	PH150	K40294	1	20	0,252
02484P	TFA60-51 ÇERÇEVESİZ PANO (DKP)	FA-R1044	02479A	30	Second Curling	3	PH150	K40288	1	20	0,352
02497P	TFA60-51 ÇERÇEVESİZ PANO (INOX)	FA-R1044	02502A	10	Peripheral cutting and Draining	3	PH150	K19157	1	20	0,225
02497P	TFA60-51 ÇERÇEVESİZ PANO (INOX)	FA-R1044	02502A	20	First Curling	3	PH150	K40294	1	20	0,252
02497P	TFA60-51 ÇERÇEVESİZ PANO (INOX)	FA-R1044	02502A	30	Second Curling	3	PH150	K40288	1	20	0,352
02498P	TFA60-31 ÇERÇEVESİZ PANO (INOX)	FA-R1044	02502A	10	Peripheral cutting and Draining	3	PH150	K19157	1	20	0,225
02498P	TFA60-31 ÇERÇEVESİZ PANO (INOX)	FA-R1044	02502A	20	First Curling	3	PH150	K40294	1	20	0,252
02498P	TFA60-31 ÇERÇEVESİZ PANO (INOX)	FA-R1044	02502A	30	Second Curling	3	PH150	K40288	1	20	0,352
02498P	TFA60-31 ÇERÇEVESİZ PANO (INOX)	FA-R1044	02502A	40	Draining Digital Timer Hook	9	PE080	K12011	1	20	0,11
04038P	TFA/B KOMPLE INOX CAM BANDI	FA-R1052	04038A	10	Peripheral cutting and Draining	5	PH30001	K13089	2	20	0,33
01032P	TFB 3G+ 1E PLEYT GOVDESİ ,P	FB-R1009	01032A	10	Stroking	1	PH350	K20001	2	20	0,39
01032P	TFB 3G+ 1E PLEYT GOVDESİ ,P	FB-R1009	01032A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01032P	TFB 3G+ 1E PLEYT GOVDESİ ,P	FB-R1009	01032A	30	Decoupling Pipe Hole	3	PH150	K12001	1	20	0,308
01032P	TFB 3G+ 1E PLEYT GOVDESİ ,P	FB-R1009	01032A	40	Decoupling Shutter Ground	7	PE150	K70008	1	20	0,224
01052P	TFB 3G+ 1E PLEYT,P (CAM OCAK KAPAKLI)	FB-R1009	01032A	10	Stroking	1	PH350	K20001	2	20	0,39

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01052P	TFB 3G+ 1E PLEYT,P (CAM OCAK KAPAKLI)	FB-R1009	01032A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01052P	TFB 3G+ 1E PLEYT,P (CAM OCAK KAPAKLI)	FB-R1009	01032A	30	Decoupling Pipe Hole	3	PH150	K12001	1	20	0,308
01052P	TFB 3G+ 1E PLEYT,P (CAM OCAK KAPAKLI)	FB-R1009	01032A	40	Decoupling Shutter Ground	7	PE150	K70008	1	20	0,224
01153P	TFB 3G 1E PLEYT,P(SONME EMNI YETLI-CAM KAPAKLI)	FB-R1009	01032A	10	Stroking	1	PH350	K20001	2	20	0,39
01153P	TFB 3G 1E PLEYT,P(SONME EMNI YETLI-CAM KAPAKLI)	FB-R1009	01032A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01153P	TFB 3G 1E PLEYT,P(SONME EMNI YETLI-CAM KAPAKLI)	FB-R1009	01032A	30	Decoupling Pipe Hole	3	PH150	K12001	1	20	0,308
01153P	TFB 3G 1E PLEYT,P(SONME EMNI YETLI-CAM KAPAKLI)	FB-R1009	01032A	40	Decoupling Shutter Ground	7	PE150	K70008	1	20	0,224
01295P	TFB 3G 1E PLEYT,P	FB-R1009	01032A	10	Stroking	1	PH350	K20001	2	20	0,39
01295P	TFB 3G 1E PLEYT,P	FB-R1009	01032A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01295P	TFB 3G 1E PLEYT,P	FB-R1009	01032A	30	Decoupling Pipe Hole	3	PH150	K12001	1	20	0,308
01295P	TFB 3G 1E PLEYT,P	FB-R1009	01032A	40	Decoupling Shutter Ground	7	PE150	K70008	1	20	0,224
01295P	TFB 3G 1E PLEYT,P	FB-R1009	01032A	50	Decoupling Hinge Hole	9	PE080	K11216	1	20	0,168
01377P	TFB 3G+ 1E PLEYT,P(INOX-SÖN.EMN-CAM OCAK KAPAKLI/4 A)	FB-R1009	01277A	10	Stroking	1	PH600	K20001	2	20	0,39
01377P	TFB 3G+ 1E PLEYT,P(INOX-SÖN.EMN-CAM OCAK KAPAKLI/4 A)	FB-R1009	01277A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01377P	TFB 3G+ 1E PLEYT,P(INOX-SÖN.EMN-CAM OCAK KAPAKLI/4 A)	FB-R1009	01277A	30	Decoupling Pipe Hole	3	PH150	K12001	1	20	0,308
01377P	TFB 3G+ 1E PLEYT,P(INOX-SÖN.EMN-CAM OCAK KAPAKLI/4 A)	FB-R1009	01277A	40	Draining Shutter Ground	7	PE150	K62020	1	20	0,25
01377P	TFB 3G+ 1E PLEYT,P(INOX-SÖN.EMN-CAM OCAK KAPAKLI/4 A)	FB-R1009	01277A	50	Countersinking Shutter Hook	9	PE080	K64093	1	20	0,25
01378P	TFB 3G+ 1E PLEYT,P(INOX-CAM OCAK KAPAKLI/6 ADET BAĞ.K)	FB-R1009	01277A	10	Stroking	1	PH600	K20001	2	20	0,39
01378P	TFB 3G+ 1E PLEYT,P(INOX-CAM OCAK KAPAKLI/6 ADET BAĞ.K)	FB-R1009	01277A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01378P	TFB 3G+ 1E PLEYT,P(INOX-CAM OCAK KAPAKLI/6 ADET BAĞ.K)	FB-R1009	01277A	30	Decoupling Pipe Hole	3	PH150	K12001	1	20	0,308
01378P	TFB 3G+ 1E PLEYT,P(INOX-CAM OCAK KAPAKLI/6 ADET BAĞ.K)	FB-R1009	01277A	40	Draining Shutter Ground	7	PE150	K62020	1	20	0,25
01378P	TFB 3G+ 1E PLEYT,P(INOX-CAM OCAK KAPAKLI/6 ADET BAĞ.K)	FB-R1009	01277A	50	Countersinking Shutter Hook	9	PE080	K64093	1	20	0,25
03024P	TFB FIRIN KAPAGI GOVDESI, P(SABIT IC CAMLI)	FB-R1024	03024A	10	Stroking	1	PH350	K20003	2	20	0,467
03024P	TFB FIRIN KAPAGI GOVDESI, P(SABIT IC CAMLI)	FB-R1024	03024A	20	Cutting Slope	2	DE085	K30001	1	20	0,224
03024P	TFB FIRIN KAPAGI GOVDESI, P(SABIT IC CAMLI)	FB-R1024	03024A	30	Draining Core	3	PH150	K12004	1	20	0,23
03024P	TFB FIRIN KAPAGI GOVDESI, P(SABIT IC CAMLI)	FB-R1024	03024A	40	Top and Bottom Countersinking	4	PH07001	K60010	1	20	0,25
02009P	TFB66 G.PANO ÇOCUK KİLİTLİ 6mm ÇEKMELE	FB-R1026	02074A	10	Peripheral cutting and Draining	3	PH150	K19006	1	20	0,225
02009P	TFB66 G.PANO ÇOCUK KİLİTLİ 6mm ÇEKMELE	FB-R1026	02074A	20	First Curling	3	PH150	K40072	1	20	0,252
02009P	TFB66 G.PANO ÇOCUK KİLİTLİ 6mm ÇEKMELE	FB-R1026	02074A	30	Second Curling	3	PH150	K40089	1	20	0,352
02009P	TFB66 G.PANO ÇOCUK KİLİTLİ 6mm ÇEKMELE	FB-R1026	02074A	40	Decoupling Locking Button	9	PE080	K11205	1	20	0,11
02012P	TFB66 PANO,P	FB-R1026	02074A	10	Peripheral cutting and Draining	3	PH150	K19006	1	20	0,225
02012P	TFB66 PANO,P	FB-R1026	02074A	20	First Curling	3	PH150	K40072	1	20	0,252
02012P	TFB66 PANO,P	FB-R1026	02074A	30	Second Curling	3	PH150	K40089	1	20	0,352
02012P	TFB66 PANO,P	FB-R1026	02074A	40	Cutting Ceran Wart	19	DG12603	DG12603	1	20	0,11
02017P	TFB66-51 PANO,P	FB-R1026	02074A	10	Peripheral cutting and Draining	3	PH150	K19006	1	20	0,225
02017P	TFB66-51 PANO,P	FB-R1026	02074A	20	First Curling	3	PH150	K40072	1	20	0,252
02017P	TFB66-51 PANO,P	FB-R1026	02074A	30	Second Curling	3	PH150	K40089	1	20	0,352
02017P	TFB66-51 PANO,P	FB-R1026	02074A	40	Cutting Ceran Wart	19	DG12603	DG12603	1	20	0,11
02074P	TFB12\32\42\52 PANO,P	FB-R1026	02074A	10	Peripheral cutting and Draining	3	PH150	K19006	1	20	0,225
02074P	TFB12\32\42\52 PANO,P	FB-R1026	02074A	20	First Curling	3	PH150	K40072	1	20	0,252
02074P	TFB12\32\42\52 PANO,P	FB-R1026	02074A	30	Second Curling	3	PH150	K40089	1	20	0,352
02076P	TFB14\34\44\54\ 16\36\46\56 (12\32\42 /52 ÇAKMAKSIZ)PANO	FB-R1026	02074A	10	Peripheral cutting and Draining	3	PH150	K19006	1	20	0,225
02076P	TFB14\34\44\54\ 16\36\46\56 (12\32\42 /52 ÇAKMAKSIZ)PANO	FB-R1026	02074A	20	First Curling	3	PH150	K40072	1	20	0,252
02076P	TFB14\34\44\54\ 16\36\46\56 (12\32\42 /52 ÇAKMAKSIZ)PANO	FB-R1026	02074A	30	Second Curling	3	PH150	K40089	1	20	0,352

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02088P	TFB62-51 PANO,P	FB-R1026	02074A	10	Peripheral cutting and Draining	3	PH150	K19006	1	20	0,225
02088P	TFB62-51 PANO,P	FB-R1026	02074A	20	First Curling	3	PH150	K40072	1	20	0,252
02088P	TFB62-51 PANO,P	FB-R1026	02074A	30	Second Curling	3	PH150	K40089	1	20	0,352
02088P	TFB62-51 PANO,P	FB-R1026	02074A	40	Draining Digital Timer Hook	9	PE080	K12011	1	20	0,11
02100P	TFB14-31\64 (14 AYRI TERMOSTATLI) PANO,P	FB-R1026	02074A	10	Peripheral cutting and Draining	3	PH150	K19006	1	20	0,225
02100P	TFB14-31\64 (14 AYRI TERMOSTATLI) PANO,P	FB-R1026	02074A	20	First Curling	3	PH150	K40072	1	20	0,252
02100P	TFB14-31\64 (14 AYRI TERMOSTATLI) PANO,P	FB-R1026	02074A	30	Second Curling	3	PH150	K40089	1	20	0,352
02114P	TFB11\31\41\51 PANO,P	FB-R1026	02074A	10	Peripheral cutting and Draining	3	PH150	K19006	1	20	0,225
02114P	TFB11\31\41\51 PANO,P	FB-R1026	02074A	20	First Curling	3	PH150	K40072	1	20	0,252
02114P	TFB11\31\41\51 PANO,P	FB-R1026	02074A	30	Second Curling	3	PH150	K40089	1	20	0,352
02116P	TFB42-51\52-51 PANO,P	FB-R1026	02074A	10	Peripheral cutting and Draining	3	PH150	K19006	1	20	0,225
02116P	TFB42-51\52-51 PANO,P	FB-R1026	02074A	20	First Curling	3	PH150	K40072	1	20	0,252
02116P	TFB42-51\52-51 PANO,P	FB-R1026	02074A	30	Second Curling	3	PH150	K40089	1	20	0,352
02116P	TFB42-51\52-51 PANO,P	FB-R1026	02074A	40	Draining Digital Timer Hook	9	PE080	K12011	1	20	0,11
02117P	TFB61(11\31-31) PANO,P	FB-R1026	02074A	10	Peripheral cutting and Draining	3	PH150	K19006	1	20	0,225
02117P	TFB61(11\31-31) PANO,P	FB-R1026	02074A	20	First Curling	3	PH150	K40072	1	20	0,252
02117P	TFB61(11\31-31) PANO,P	FB-R1026	02074A	30	Second Curling	3	PH150	K40089	1	20	0,352
02121P	TFB12-31\62 PANO,P	FB-R1026	02074A	10	Peripheral cutting and Draining	3	PH150	K19006	1	20	0,225
02121P	TFB12-31\62 PANO,P	FB-R1026	02074A	20	First Curling	3	PH150	K40072	1	20	0,252
02121P	TFB12-31\62 PANO,P	FB-R1026	02074A	30	Second Curling	3	PH150	K40089	1	20	0,352
02348P	TFB14\34\44\54(12\32\42\52 ÇAKMAKSIZ) PANO,P(KİLİTLİ TIF)	FB-R1026	02074A	10	Peripheral cutting and Draining	3	PH150	K19006	1	20	0,225
02348P	TFB14\34\44\54(12\32\42\52 ÇAKMAKSIZ) PANO,P(KİLİTLİ TIF)	FB-R1026	02074A	20	First Curling	3	PH150	K40072	1	20	0,252
02348P	TFB14\34\44\54(12\32\42\52 ÇAKMAKSIZ) PANO,P(KİLİTLİ TIF)	FB-R1026	02074A	30	Second Curling	3	PH150	K40089	1	20	0,352
02348P	TFB14\34\44\54(12\32\42\52 ÇAKMAKSIZ) PANO,P(KİLİTLİ TIF)	FB-R1026	02074A	40	Decoupling Locking Button	9	PE080	K11205	1	20	0,11
02508P	TFB61((11-31\31-31) INOX GÖMME PANO,P	FB-R1026	02508A	10	Peripheral cutting and Draining	3	PH150	K19006	1	20	0,225
02508P	TFB61((11-31\31-31) INOX GÖMME PANO,P	FB-R1026	02508A	20	First Curling	3	PH150	K40072	1	20	0,252
02508P	TFB61((11-31\31-31) INOX GÖMME PANO,P	FB-R1026	02508A	30	Second Curling	3	PH150	K40089	1	20	0,352
02515P	TFB INOX PANO	FB-R1026	02508A	10	Peripheral cutting and Draining	3	PH150	K19006	1	20	0,225
02515P	TFB INOX PANO	FB-R1026	02508A	20	First Curling	3	PH150	K40072	1	20	0,252
02515P	TFB INOX PANO	FB-R1026	02508A	30	Second Curling	3	PH150	K40089	1	20	0,352
02524P	TFB INOX PANO	FB-R1026	02508A	10	Peripheral cutting and Draining	3	PH150	K19006	1	20	0,225
02524P	TFB INOX PANO	FB-R1026	02508A	20	First Curling	3	PH150	K40072	1	20	0,252
02524P	TFB INOX PANO	FB-R1026	02508A	30	Second Curling	3	PH150	K40089	1	20	0,352
02537P	TFB14-31\64 PANO(14 AYRI TERMOSTATLI),P (KİLİTLİ)	FB-R1026	02074A	10	Peripheral cutting and Draining	3	PH150	K19006	1	20	0,225
02537P	TFB14-31\64 PANO(14 AYRI TERMOSTATLI),P (KİLİTLİ)	FB-R1026	02074A	20	First Curling	3	PH150	K40072	1	20	0,252
02537P	TFB14-31\64 PANO(14 AYRI TERMOSTATLI),P (KİLİTLİ)	FB-R1026	02074A	30	Second Curling	3	PH150	K40089	1	20	0,352
02537P	TFB14-31\64 PANO(14 AYRI TERMOSTATLI),P (KİLİTLİ)	FB-R1026	02074A	40	Decoupling Locking Button	9	PE080	K11205	1	20	0,11
02560P	TFB66-31 PANO,P	FB-R1026	02074A	10	Peripheral cutting and Draining	3	PH150	K19006	1	20	0,225
02560P	TFB66-31 PANO,P	FB-R1026	02074A	20	First Curling	3	PH150	K40072	1	20	0,252
02560P	TFB66-31 PANO,P	FB-R1026	02074A	30	Second Curling	3	PH150	K40089	1	20	0,352
02560P	TFB66-31 PANO,P	FB-R1026	02074A	40	Cutting Ceran Wart	19	DG12603	DG12603	1	20	0,11
02990P	TFB61(11\31-31) GÖMME PANO..ÇOCUK KİLİTLİ	FB-R1026	02074A	10	Peripheral cutting and Draining	3	PH150	K19006	1	20	0,225
02990P	TFB61(11\31-31) GÖMME PANO..ÇOCUK KİLİTLİ	FB-R1026	02074A	20	First Curling	3	PH150	K40072	1	20	0,252
02990P	TFB61(11\31-31) GÖMME PANO..ÇOCUK KİLİTLİ	FB-R1026	02074A	30	Second Curling	3	PH150	K40089	1	20	0,352

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02990P	TFB61(11/31-31) GÖMME PANO..ÇOCUK KİLİTLİ	FB-R1026	02074A	40	Decoupling Locking Button	9	PE080	K11205	1	20	0,11
01046P	TFB 4 GAZLI PLEYT,P	FB-R1033	01032A	10	Stroking	1	PH600	K20103	2	20	0,39
01046P	TFB 4 GAZLI PLEYT,P	FB-R1033	01032A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01046P	TFB 4 GAZLI PLEYT,P	FB-R1033	01032A	30	Decoupling Pipe Hole and Shu	3	PH150	K11255	1	20	0,308
01046P	TFB 4 GAZLI PLEYT,P	FB-R1033	01032A	40	Decoupling Glass Cover Conn	9	PE080	K70008	1	20	0,224
01057P	TFB 4 GAZLI PLEYT,P (PANJURSUZ)	FB-R1033	01032A	10	Stroking	1	PH600	K20103	2	20	0,39
01057P	TFB 4 GAZLI PLEYT,P (PANJURSUZ)	FB-R1033	01032A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01057P	TFB 4 GAZLI PLEYT,P (PANJURSUZ)	FB-R1033	01032A	30	Decoupling Pipe Hole	3	PH150	K11255	1	20	0,308
01058P	TFB 4 GAZLI PLEYT,P (CAM OCAK KAPAKLI)	FB-R1033	01032A	10	Stroking	1	PH600	K20103	2	20	0,39
01058P	TFB 4 GAZLI PLEYT,P (CAM OCAK KAPAKLI)	FB-R1033	01032A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01058P	TFB 4 GAZLI PLEYT,P (CAM OCAK KAPAKLI)	FB-R1033	01032A	30	Decoupling Pipe Hole and Shu	3	PH150	K11255	1	20	0,308
01058P	TFB 4 GAZLI PLEYT,P (CAM OCAK KAPAKLI)	FB-R1033	01032A	40	Decoupling Glass Cover Conn	9	PE080	K70008	1	20	0,224
01154P	TFB 4G PLEYT,P(SONME EMNİ YETLİ)	FB-R1033	01032A	10	Stroking	1	PH600	K20103	2	20	0,39
01154P	TFB 4G PLEYT,P(SONME EMNİ YETLİ)	FB-R1033	01032A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01154P	TFB 4G PLEYT,P(SONME EMNİ YETLİ)	FB-R1033	01032A	30	Decoupling Pipe Hole and Shu	3	PH150	K11255	1	20	0,308
01154P	TFB 4G PLEYT,P(SONME EMNİ YETLİ)	FB-R1033	01032A	40	Decoupling Glass Cover Conn	9	PE080	K70008	1	20	0,224
01195P	TFB 4G PLEYT,P(ESKİ TIP YAG KORUMA SAÇLI-USA	FB-R1033	01032A	10	Stroking	1	PH600	K20103	2	20	0,39
01195P	TFB 4G PLEYT,P(ESKİ TIP YAG KORUMA SAÇLI-USA	FB-R1033	01032A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01195P	TFB 4G PLEYT,P(ESKİ TIP YAG KORUMA SAÇLI-USA	FB-R1033	01032A	30	Decoupling Pipe Hole and Shu	3	PH150	K11255	1	20	0,308
01195P	TFB 4G PLEYT,P(ESKİ TIP YAG KORUMA SAÇLI-USA	FB-R1033	01032A	40	Decoupling Glass Cover Conn	9	PE080	K70008	1	20	0,224
01292P	TFB 4G PLEYT,P(SONME EMNİ YETLİ-YENİ MENTEŞE YUVALI)	FB-R1033	01032A	10	Stroking	1	PH600	K20103	2	20	0,39
01292P	TFB 4G PLEYT,P(SONME EMNİ YETLİ-YENİ MENTEŞE YUVALI)	FB-R1033	01032A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01292P	TFB 4G PLEYT,P(SONME EMNİ YETLİ-YENİ MENTEŞE YUVALI)	FB-R1033	01032A	30	Decoupling Pipe Hole	3	PH150	K11255	1	20	0,308
01293P	TFB 4 GAZLI PLEYT,P (PANJURSUZ)	FB-R1033	01032A	10	Stroking	1	PH600	K20103	2	20	0,39
01293P	TFB 4 GAZLI PLEYT,P (PANJURSUZ)	FB-R1033	01032A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01293P	TFB 4 GAZLI PLEYT,P (PANJURSUZ)	FB-R1033	01032A	30	Decoupling Pipe Hole	3	PH150	K11255	1	20	0,308
01303P	TFB 4 GAZLI SÖNME EMNİ YETLİ PLEYT,P(INOX)	FB-R1033	01277A	10	Stroking	1	PH600	K20002	2	20	0,39
01303P	TFB 4 GAZLI SÖNME EMNİ YETLİ PLEYT,P(INOX)	FB-R1033	01277A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01303P	TFB 4 GAZLI SÖNME EMNİ YETLİ PLEYT,P(INOX)	FB-R1033	01277A	30	Decoupling Pipe Hole	3	PH150	K11254	1	20	0,308
01303P	TFB 4 GAZLI SÖNME EMNİ YETLİ PLEYT,P(INOX)	FB-R1033	01277A	40	Decoupling Shutter Ground	9	PE080	K70008	1	20	0,25
01307P	TFB 4G PLEYT,P (INOX-)	FB-R1033	01277A	10	Stroking	1	PH600	K20002	2	20	0,39
01307P	TFB 4G PLEYT,P (INOX-)	FB-R1033	01277A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01307P	TFB 4G PLEYT,P (INOX-)	FB-R1033	01277A	30	Decoupling Pipe Hole	3	PH150	K11254	1	20	0,308
01307P	TFB 4G PLEYT,P (INOX-)	FB-R1033	01277A	40	Decoupling Shutter Ground	9	PE080	K70008	1	20	0,25
01369P	TFB 4G SÖN.EMN. PLEYT,P (INOX-OCAK KAP.SİZ-YENİ MENTE	FB-R1033	01277A	10	Stroking	1	PH600	K20002	2	20	0,39
01369P	TFB 4G SÖN.EMN. PLEYT,P (INOX-OCAK KAP.SİZ-YENİ MENTE	FB-R1033	01277A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01369P	TFB 4G SÖN.EMN. PLEYT,P (INOX-OCAK KAP.SİZ-YENİ MENTE	FB-R1033	01277A	30	Decoupling Pipe Hole	3	PH150	K11254	1	20	0,308
01371P	TFB 4G PLEYT,P(INOX-OCAK KAP.Lİ-YENİ MENTEŞE YUVALI)	FB-R1033	01277A	10	Stroking	1	PH600	K20002	2	20	0,39
01371P	TFB 4G PLEYT,P(INOX-OCAK KAP.Lİ-YENİ MENTEŞE YUVALI)	FB-R1033	01277A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01371P	TFB 4G PLEYT,P(INOX-OCAK KAP.Lİ-YENİ MENTEŞE YUVALI)	FB-R1033	01277A	30	Decoupling Pipe Hole	3	PH150	K11254	1	20	0,308
01373P	TFB 4G PLEYT,P (INOX-)	FB-R1033	01277A	10	Stroking	1	PH600	K20002	2	20	0,39
01373P	TFB 4G PLEYT,P (INOX-)	FB-R1033	01277A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01373P	TFB 4G PLEYT,P (INOX-)	FB-R1033	01277A	30	Decoupling Pipe Hole	3	PH150	K11254	1	20	0,308

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01373P	TFB 4G PLEYT,P (INOX-)	FB-R1033	01277A	40	Decoupling Shutter Ground	9	PE080	K70008	1	20	0,224
01379P	TFB 4 GAZLI PLEYT,P (CAM OCAK KAPAKLI/KOMPLE SÖNME E)	FB-R1033	01032A	10	Stroking	1	PH600	K20103	2	20	0,39
01379P	TFB 4 GAZLI PLEYT,P (CAM OCAK KAPAKLI/KOMPLE SÖNME E)	FB-R1033	01032A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01379P	TFB 4 GAZLI PLEYT,P (CAM OCAK KAPAKLI/KOMPLE SÖNME E)	FB-R1033	01032A	30	Decoupling Pipe Hole	3	PH150	K11255	1	20	0,308
01379P	TFB 4 GAZLI PLEYT,P (CAM OCAK KAPAKLI/KOMPLE SÖNME E)	FB-R1033	01032A	40	Decoupling Shutter Ground	9	PE080	K70008	1	20	0,224
01406P	TFB 4G PLEYT,P (INOX-SÖN.EMIN-CAM OCAK KAPAKLI/4 ADET)	FB-R1033	01277A	10	Stroking	1	PH600	K20002	2	20	0,39
01406P	TFB 4G PLEYT,P (INOX-SÖN.EMIN-CAM OCAK KAPAKLI/4 ADET)	FB-R1033	01277A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01406P	TFB 4G PLEYT,P (INOX-SÖN.EMIN-CAM OCAK KAPAKLI/4 ADET)	FB-R1033	01277A	30	Decoupling Pipe Hole	3	PH150	K11254	1	20	0,308
01406P	TFB 4G PLEYT,P (INOX-SÖN.EMIN-CAM OCAK KAPAKLI/4 ADET)	FB-R1033	01277A	40	Decoupling Shutter Ground	9	PE080	K70008	1	20	0,224
03050P	TFA/TFB FIRIN KAPAK GOVDE.,P (EGZOST ÇIKI SLI\SOKULE.İC)	FB-R1053	03051A	10	Stroking	1	PH350	K20097	2	20	0,467
03050P	TFA/TFB FIRIN KAPAK GOVDE.,P (EGZOST ÇIKI SLI\SOKULE.İC)	FB-R1053	03051A	20	Cutting Slope	2	DE085	K30048	1	20	0,224
03050P	TFA/TFB FIRIN KAPAK GOVDE.,P (EGZOST ÇIKI SLI\SOKULE.İC)	FB-R1053	03051A	30	Draining Core	3	PH150	K12057	1	20	0,23
03050P	TFA/TFB FIRIN KAPAK GOVDE.,P (EGZOST ÇIKI SLI\SOKULE.İC)	FB-R1053	03051A	40	Decoupling Side Shutter	4	PH07001	K11162	1	20	0,15
03050P	TFA/TFB FIRIN KAPAK GOVDE.,P (EGZOST ÇIKI SLI\SOKULE.İC)	FB-R1053	03051A	50	Bottom Countersinking	4	PH07001	K11161	1	20	0,25
03050P	TFA/TFB FIRIN KAPAK GOVDE.,P (EGZOST ÇIKI SLI\SOKULE.İC)	FB-R1053	03051A	60	Top Countersinking	4	PH07001	K11161	1	20	0,25
15049P	TFB OCAK YAG KORUMA ELEMANI,P (YENİ TIP)	FB-R1059	15031A	10	Stroking	1	PH350	K20068	2	20	0,55
15049P	TFB OCAK YAG KORUMA ELEMANI,P (YENİ TIP)	FB-R1059	15031A	20	Cutting Slope	2	DE085	K30036	1	20	0,35
15049P	TFB OCAK YAG KORUMA ELEMANI,P (YENİ TIP)	FB-R1059	15031A	30	Draining and Drilling Hole	4	PH07001	K11128	1	20	0,191
01043P	TFB 3 ELEKTRIKLI PLEYT,P	FB-R1065	01032A	10	Stroking	1	PH350	K20033	2	20	0,39
01043P	TFB 3 ELEKTRIKLI PLEYT,P	FB-R1065	01032A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01043P	TFB 3 ELEKTRIKLI PLEYT,P	FB-R1065	01032A	30	Head Draining and Decoupling	3	PH150	K11253	1	20	0,308
01043P	TFB 3 ELEKTRIKLI PLEYT,P	FB-R1065	01032A	40	Decoupling Glass Cover Conn	9	PE080	K70008	1	20	0,224
01044P	TFB 4 ELEKTRIKLI PLEYT,P	FB-R1065	01032A	10	Stroking	1	PH350	K20033	2	20	0,39
01044P	TFB 4 ELEKTRIKLI PLEYT,P	FB-R1065	01032A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01044P	TFB 4 ELEKTRIKLI PLEYT,P	FB-R1065	01032A	30	Head Draining and Decoupling	3	PH150	K11253	1	20	0,308
01044P	TFB 4 ELEKTRIKLI PLEYT,P	FB-R1065	01032A	40	Decoupling Glass Cover Conn	9	PE080	K70008	1	20	0,224
01063P	TFB 4 ELEKTRIKLI PLEYT,P (CAM OCAK KAPAKLI)	FB-R1065	01032A	10	Stroking	1	PH350	K20033	2	20	0,39
01063P	TFB 4 ELEKTRIKLI PLEYT,P (CAM OCAK KAPAKLI)	FB-R1065	01032A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01063P	TFB 4 ELEKTRIKLI PLEYT,P (CAM OCAK KAPAKLI)	FB-R1065	01032A	30	Head Draining and Decoupling	3	PH150	K11253	1	20	0,308
01063P	TFB 4 ELEKTRIKLI PLEYT,P (CAM OCAK KAPAKLI)	FB-R1065	01032A	40	Decoupling Glass Cover Conn	9	PE080	K70008	1	20	0,224
01259P	TFB 3E PLEYT,P (YENİ TIP MENTEŞE YUVALI)	FB-R1065	01032A	10	Stroking	1	PH350	K20033	2	20	0,39
01259P	TFB 3E PLEYT,P (YENİ TIP MENTEŞE YUVALI)	FB-R1065	01032A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01259P	TFB 3E PLEYT,P (YENİ TIP MENTEŞE YUVALI)	FB-R1065	01032A	30	Head Draining and Decoupling	3	PH150	K11253	1	20	0,308
01260P	TFB 4E PLEYT,P (YENİ TIP MENTEŞE YUVALI)	FB-R1065	01032A	10	Stroking	1	PH350	K20033	2	20	0,39
01260P	TFB 4E PLEYT,P (YENİ TIP MENTEŞE YUVALI)	FB-R1065	01032A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01260P	TFB 4E PLEYT,P (YENİ TIP MENTEŞE YUVALI)	FB-R1065	01032A	30	Head Draining and Decoupling	3	PH150	K11253	1	20	0,308
01306P	TFB 4E PLEYT (INOX/CAM OCAK KAPAKLI)	FB-R1065	01277A	10	Stroking	1	PH600	K20033	2	20	0,39
01306P	TFB 4E PLEYT (INOX/CAM OCAK KAPAKLI)	FB-R1065	01277A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01306P	TFB 4E PLEYT (INOX/CAM OCAK KAPAKLI)	FB-R1065	01277A	30	Draining Head Ground	3	PH150	K11253	1	20	0,308
01306P	TFB 4E PLEYT (INOX/CAM OCAK KAPAKLI)	FB-R1065	01277A	40	Countersinking Shutter Hook	9	PE080	K64093	1	20	0,089
01306P	TFB 4E PLEYT (INOX/CAM OCAK KAPAKLI)	FB-R1065	01277A	50	Decoupling Shutter Ground	9	PE080	K70008	1	20	0,25
01370P	TFB 4E PLEYT,P (INOX-OCAK KAP.LI-YENİ MENTEŞE YUVALI)	FB-R1065	01277A	10	Stroking	1	PH600	K20033	2	20	0,39
01370P	TFB 4E PLEYT,P (INOX-OCAK KAP.LI-YENİ MENTEŞE YUVALI)	FB-R1065	01277A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01370P	TFB 4E PLEYT,P (INOX-OCAK KAP.LI-YENİ MENTEŞE YUVALI)	FB-R1065	01277A	30	Draining Head Ground	3	PH150	K11253	1	20	0,308



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01370P	TFB 4E PLEYT,P(INOX-OCAK KAP.LI-YENİ MENTEŞE YUVALI)	FB-R1065	01277A	40	Draining Shutter Ground	9	PE080	K62020	1	20	0,089
01370P	TFB 4E PLEYT,P(INOX-OCAK KAP.LI-YENİ MENTEŞE YUVALI)	FB-R1065	01277A	50	Draining Pannel	9	PE080	K64093	1	20	0,25
01405P	TFB 4E PLEYT (INOX/CAM OCAK KAPAKLI)	FB-R1065	01277A	10	Stroking	1	PH600	K20033	2	20	0,39
01405P	TFB 4E PLEYT (INOX/CAM OCAK KAPAKLI)	FB-R1065	01277A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01405P	TFB 4E PLEYT (INOX/CAM OCAK KAPAKLI)	FB-R1065	01277A	30	Draining Head Ground	3	PH150	K11253	1	20	0,308
15031P	TFB OCAK YAG KORUMA ELEMANI ,P (YENI TIP)	FB-R1078	15031A	10	Stroking	1	PH350	K20068	2	20	0,55
15031P	TFB OCAK YAG KORUMA ELEMANI ,P (YENI TIP)	FB-R1078	15031A	20	Cutting Slope	2	DE085	K30036	1	20	0,35
15031P	TFB OCAK YAG KORUMA ELEMANI ,P (YENI TIP)	FB-R1078	15031A	30	Draining and Drilling Hole	4	PH07001	K11128	1	20	0,191
12053P	TFB16\66 PANO TAKVI YE ELEMANI ,P	FB-R1079	12053A	10	Curling	9	PE080	K40034	1	20	0,125
12053P	TFB16\66 PANO TAKVI YE ELEMANI ,P	FB-R1079	12053A	20	Draining for vary objective	10	PE030	K11155	1	20	0,125
02115P	TFB21 G.PANO LAM.LI ÇAK.LI VEYA ÇAK.LI/LAM.ÇEV. ORTAK B	FB-R1090	02074A	10	Peripheral cutting and Draining	3	PH150	K19127	1	20	0,121
02115P	TFB21 G.PANO LAM.LI ÇAK.LI VEYA ÇAK.LI/LAM.ÇEV. ORTAK B	FB-R1090	02074A	20	First Curling	3	PH150	K41010	1	20	0,121
02115P	TFB21 G.PANO LAM.LI ÇAK.LI VEYA ÇAK.LI/LAM.ÇEV. ORTAK B	FB-R1090	02074A	30	Second Curling	3	PH150	K70053	1	20	0,15
02152P	TFB21 GOMME PANO 9mm ÇAK.LI/LAMBA CEVIRME ORTAK BU	FB-R1090	02074A	10	Peripheral cutting and Draining	3	PH150	K19127	1	20	0,121
02152P	TFB21 GOMME PANO 9mm ÇAK.LI/LAMBA CEVIRME ORTAK BU	FB-R1090	02074A	20	First Curling	3	PH150	K41010	1	20	0,121
02152P	TFB21 GOMME PANO 9mm ÇAK.LI/LAMBA CEVIRME ORTAK BU	FB-R1090	02074A	30	Second Curling	3	PH150	K70053	1	20	0,15
02153P	TFB GAZLI INOX PANO	FB-R1090	02508A	10	Peripheral cutting and Draining	3	PH150	K19127	1	20	0,121
02153P	TFB GAZLI INOX PANO	FB-R1090	02508A	20	First Curling	3	PH150	K41010	1	20	0,121
02153P	TFB GAZLI INOX PANO	FB-R1090	02508A	30	Second Curling	3	PH150	K70053	1	20	0,15
02159P	TFB21 PANO,P (LAMBALI\ÇAKMAKLI\CEVIRME/9mm)	FB-R1090	02074A	10	Peripheral cutting and Draining	3	PH150	K19127	1	20	0,121
02159P	TFB21 PANO,P (LAMBALI\ÇAKMAKLI\CEVIRME/9mm)	FB-R1090	02074A	20	First Curling	3	PH150	K41010	1	20	0,121
02159P	TFB21 PANO,P (LAMBALI\ÇAKMAKLI\CEVIRME/9mm)	FB-R1090	02074A	30	Second Curling	3	PH150	K70053	1	20	0,15
02471P	TFB12/32/42/52 GÖMME PANO,P(RUSTİK-9MM)	FB-R1090	02074A	10	Peripheral cutting and Draining	3	PH150	K19127	1	20	0,121
02471P	TFB12/32/42/52 GÖMME PANO,P(RUSTİK-9MM)	FB-R1090	02074A	20	First Curling	3	PH150	K41010	1	20	0,121
02471P	TFB12/32/42/52 GÖMME PANO,P(RUSTİK-9MM)	FB-R1090	02074A	30	Second Curling	3	PH150	K70053	1	20	0,15
02516P	TFB21 INOX GÖMME PANO,P (9mm)	FB-R1090	02508A	10	Peripheral cutting and Draining	3	PH150	K19127	1	20	0,121
02516P	TFB21 INOX GÖMME PANO,P (9mm)	FB-R1090	02508A	20	First Curling	3	PH150	K41010	1	20	0,121
02516P	TFB21 INOX GÖMME PANO,P (9mm)	FB-R1090	02508A	30	Second Curling	3	PH150	K70053	1	20	0,15
02713P	TFB61-31..11/31-31 AYRI TERMOSTATLI GÖMME PANO	FB-R1090	02074A	10	Peripheral cutting and Draining	3	PH150	K19127	1	20	0,121
02713P	TFB61-31..11/31-31 AYRI TERMOSTATLI GÖMME PANO	FB-R1090	02074A	20	First Curling	3	PH150	K41010	1	20	0,121
02713P	TFB61-31..11/31-31 AYRI TERMOSTATLI GÖMME PANO	FB-R1090	02074A	30	Second Curling	3	PH150	K70053	1	20	0,15
02991P	TFB21 GÖMME PANO..ÇOCUK KILI TLİ	FB-R1090	02074A	10	Peripheral cutting and Draining	3	PH150	K19127	1	20	0,121
02991P	TFB21 GÖMME PANO..ÇOCUK KILI TLİ	FB-R1090	02074A	20	First Curling	3	PH150	K41010	1	20	0,121
02991P	TFB21 GÖMME PANO..ÇOCUK KILI TLİ	FB-R1090	02074A	30	Second Curling	3	PH150	K70053	1	20	0,15
02991P	TFB21 GÖMME PANO..ÇOCUK KILI TLİ	FB-R1090	02074A	40	Decoupling Locking Button	9	PE080	K11205	1	20	0,125
02992P	TFB21 GÖMME PANO LAM.LI ÇAK.SIZ VEYA ÇAK.SIZ/LAM.ÇEV.	FB-R1090	02074A	10	Peripheral cutting and Draining	3	PH150	K19127	1	20	0,121
02992P	TFB21 GÖMME PANO LAM.LI ÇAK.SIZ VEYA ÇAK.SIZ/LAM.ÇEV.	FB-R1090	02074A	20	First Curling	3	PH150	K41010	1	20	0,121
02992P	TFB21 GÖMME PANO LAM.LI ÇAK.SIZ VEYA ÇAK.SIZ/LAM.ÇEV.	FB-R1090	02074A	30	Second Curling	3	PH150	K70053	1	20	0,15
01075P	TFB 3G 1E,HI-FLAME,SONME EMNI YETLI PLEYT,P(CAM KAPAK)	FB-R1093	01032A	10	Stroking	1	PH600	K20103	2	20	0,39
01075P	TFB 3G 1E,HI-FLAME,SONME EMNI YETLI PLEYT,P(CAM KAPAK)	FB-R1093	01032A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01075P	TFB 3G 1E,HI-FLAME,SONME EMNI YETLI PLEYT,P(CAM KAPAK)	FB-R1093	01032A	30	Decoupling Pipe Hole and Shu	3	PH150	K11255	1	20	0,308
01075P	TFB 3G 1E,HI-FLAME,SONME EMNI YETLI PLEYT,P(CAM KAPAK)	FB-R1093	01032A	40	Decoupling Glass Cover Conn	9	PE080	K70008	1	20	0,224
01165P	TFB 3G 1E,HI-FLAME,PLEYT,P ( CAM KAPAKLI)	FB-R1093	01032A	10	Stroking	1	PH600	K20103	2	20	0,39

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01165P	TFB 3G 1E, HI-FLAME, PLEYT, P ( CAM KAPAKLI )	FB-R1093	01032A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01165P	TFB 3G 1E, HI-FLAME, PLEYT, P ( CAM KAPAKLI )	FB-R1093	01032A	30	Decoupling Pipe Hole and Shu	3	PH150	K11255	1	20	0,308
01165P	TFB 3G 1E, HI-FLAME, PLEYT, P ( CAM KAPAKLI )	FB-R1093	01032A	40	Decoupling Glass Cover Conn	9	PE080	K70008	1	20	0,224
01166P	TFB 3G 1E, HI-FLAME, PLEYT, P ( CAM KAPAKLI )	FB-R1093	01032A	10	Stroking	1	PH600	K20103	2	20	0,39
01166P	TFB 3G 1E, HI-FLAME, PLEYT, P ( CAM KAPAKLI )	FB-R1093	01032A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01166P	TFB 3G 1E, HI-FLAME, PLEYT, P ( CAM KAPAKLI )	FB-R1093	01032A	30	Decoupling Pipe Hole and Shu	3	PH150	K11255	1	20	0,308
01166P	TFB 3G 1E, HI-FLAME, PLEYT, P ( CAM KAPAKLI )	FB-R1093	01032A	40	Decoupling Glass Cover Conn	9	PE080	K70008	1	20	0,224
01286P	TFB 3G 1E, HI-FLAME, PLEYT, P ( CAM KAPAKLI )	FB-R1093	01032A	10	Stroking	1	PH600	K20103	2	20	0,39
01286P	TFB 3G 1E, HI-FLAME, PLEYT, P ( CAM KAPAKLI )	FB-R1093	01032A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01286P	TFB 3G 1E, HI-FLAME, PLEYT, P ( CAM KAPAKLI )	FB-R1093	01032A	30	dec	3	PH150	K11255	1	20	0,308
01286P	TFB 3G 1E, HI-FLAME, PLEYT, P ( CAM KAPAKLI )	FB-R1093	01032A	40	Decoupling Glass Cover Conn	9	PE080	K70008	1	20	0,224
01287P	TFB 3G 1E, HI-FLAME, PLEYT, P ( CAM KAPAKLI )	FB-R1093	01032A	10	Stroking	1	PH600	K20103	2	20	0,39
01287P	TFB 3G 1E, HI-FLAME, PLEYT, P ( CAM KAPAKLI )	FB-R1093	01032A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01287P	TFB 3G 1E, HI-FLAME, PLEYT, P ( CAM KAPAKLI )	FB-R1093	01032A	30	Decoupling Pipe Hole and Shu	3	PH150	K11255	1	20	0,308
01287P	TFB 3G 1E, HI-FLAME, PLEYT, P ( CAM KAPAKLI )	FB-R1093	01032A	40	Decoupling Glass Cover Conn	9	PE080	K70008	1	20	0,224
01304P	TFB 3G 1E, HI-FLAME, PLEYT, P	FB-R1093	01032A	10	Stroking	1	PH600	K20103	2	20	0,39
01304P	TFB 3G 1E, HI-FLAME, PLEYT, P	FB-R1093	01032A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01304P	TFB 3G 1E, HI-FLAME, PLEYT, P	FB-R1093	01032A	30	Decoupling Pipe Hole and Shu	3	PH150	K11255	1	20	0,308
01368P	TFB 3G 1E, HI-FLAME, PLEYT, P	FB-R1093	01032A	10	Stroking	1	PH600	K20103	2	20	0,39
01368P	TFB 3G 1E, HI-FLAME, PLEYT, P	FB-R1093	01032A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01368P	TFB 3G 1E, HI-FLAME, PLEYT, P	FB-R1093	01032A	30	Decoupling Pipe Hole and Shu	3	PH150	K11255	1	20	0,308
01423P	TFB 3G+ 1E PLEYT, P (INOX HI-FLAME-SÖN. EMN-CAM OCAK KAPAKLI)	FB-R1093	01277A	10	Stroking	1	PH600	K20103	2	20	0,39
01423P	TFB 3G+ 1E PLEYT, P (INOX HI-FLAME-SÖN. EMN-CAM OCAK KAPAKLI)	FB-R1093	01277A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01423P	TFB 3G+ 1E PLEYT, P (INOX HI-FLAME-SÖN. EMN-CAM OCAK KAPAKLI)	FB-R1093	01277A	30	Decoupling Pipe Hole and Shu	3	PH150	K11255	1	20	0,308
01423P	TFB 3G+ 1E PLEYT, P (INOX HI-FLAME-SÖN. EMN-CAM OCAK KAPAKLI)	FB-R1093	01277A	40	Decoupling Glass Cover Conn	9	PE080	K70008	1	20	0,224
01135P	TFB 4 GAZLI, HI-FLAME, PLEYT, P (CAM KAPAKLI)	FB-R1094	01032A	10	Stroking	1	PH350	K20103	2	20	0,39
01135P	TFB 4 GAZLI, HI-FLAME, PLEYT, P (CAM KAPAKLI)	FB-R1094	01032A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01135P	TFB 4 GAZLI, HI-FLAME, PLEYT, P (CAM KAPAKLI)	FB-R1094	01032A	30	Decoupling Pipe Hole	3	PH150	K11258	1	20	0,308
01135P	TFB 4 GAZLI, HI-FLAME, PLEYT, P (CAM KAPAKLI)	FB-R1094	01032A	40	Decoupling Glass Cover Conn	9	PE080	K70008	1	20	0,224
01136P	TFB 4 GAZLI, HI-FLAME, PLEYT, P (CAM KAPAKLI)	FB-R1094	01032A	10	Stroking	1	PH350	K20103	2	20	0,39
01136P	TFB 4 GAZLI, HI-FLAME, PLEYT, P (CAM KAPAKLI)	FB-R1094	01032A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01136P	TFB 4 GAZLI, HI-FLAME, PLEYT, P (CAM KAPAKLI)	FB-R1094	01032A	30	Decoupling Pipe Hole	3	PH150	K11258	1	20	0,308
01136P	TFB 4 GAZLI, HI-FLAME, PLEYT, P (CAM KAPAKLI)	FB-R1094	01032A	40	Decoupling Glass Cover Conn	9	PE080	K70008	1	20	0,224
01137P	TFB 4G, KOMPLETE SON. EMN. HI-FLAME PLEYT, (CAM KAPAKLI)	FB-R1094	01032A	10	Stroking	1	PH350	K20103	2	20	0,39
01137P	TFB 4G, KOMPLETE SON. EMN. HI-FLAME PLEYT, (CAM KAPAKLI)	FB-R1094	01032A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01137P	TFB 4G, KOMPLETE SON. EMN. HI-FLAME PLEYT, (CAM KAPAKLI)	FB-R1094	01032A	30	Decoupling Pipe Hole	3	PH150	K11258	1	20	0,308
01137P	TFB 4G, KOMPLETE SON. EMN. HI-FLAME PLEYT, (CAM KAPAKLI)	FB-R1094	01032A	40	Decoupling Glass Cover Conn	9	PE080	K70008	1	20	0,224
01277P	TFB 4 GAZLI PLEYT, P (INOX-YENİ HI-FLAME, CAM OCAK KAPAKLI)	FB-R1094	01277A	10	Stroking	1	PH600	K20103	2	20	0,39
01277P	TFB 4 GAZLI PLEYT, P (INOX-YENİ HI-FLAME, CAM OCAK KAPAKLI)	FB-R1094	01277A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01277P	TFB 4 GAZLI PLEYT, P (INOX-YENİ HI-FLAME, CAM OCAK KAPAKLI)	FB-R1094	01277A	30	Decoupling Pipe Hole	3	PH150	K11258	1	20	0,308
01277P	TFB 4 GAZLI PLEYT, P (INOX-YENİ HI-FLAME, CAM OCAK KAPAKLI)	FB-R1094	01277A	40	Draining Shutter Ground	7	PE150	K62020	1	20	0,093
01277P	TFB 4 GAZLI PLEYT, P (INOX-YENİ HI-FLAME, CAM OCAK KAPAKLI)	FB-R1094	01277A	50	Countersinking Shutter Hook	7	PE150	K64093	1	20	0,2
01289P	TFB 4G, YENİ HI-FLAME PLEYT, P	FB-R1094	01032A	10	Stroking	1	PH350	K20103	2	20	0,39
01289P	TFB 4G, YENİ HI-FLAME PLEYT, P	FB-R1094	01032A	20	Cutting Slope	2	DE085	K30002	1	20	0,254

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01289P	TFB 4G,YENİ HI -FLAME PLEYT,P	FB-R1094	01032A	30	Decoupling Pipe Hole	3	PH150	K11258	1	20	0,308
01289P	TFB 4G,YENİ HI -FLAME PLEYT,P	FB-R1094	01032A	40	Decoupling Glass Cover Conn	9	PE080	K70008	1	20	0,224
01296P	TFB 4G,YENİ HI -FLAME PLEYT,P	FB-R1094	01032A	10	Stroking	1	PH350	K20103	2	20	0,39
01296P	TFB 4G,YENİ HI -FLAME PLEYT,P	FB-R1094	01032A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01296P	TFB 4G,YENİ HI -FLAME PLEYT,P	FB-R1094	01032A	30	Decoupling Pipe Hole	3	PH150	K11258	1	20	0,308
01305P	TFB 4G,YENİ HI -FLAME PLEYT,P(CAM KAPAKLI)	FB-R1094	01032A	10	Stroking	1	PH350	K20103	2	20	0,39
01305P	TFB 4G,YENİ HI -FLAME PLEYT,P(CAM KAPAKLI)	FB-R1094	01032A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01305P	TFB 4G,YENİ HI -FLAME PLEYT,P(CAM KAPAKLI)	FB-R1094	01032A	30	Decoupling Pipe Hole	3	PH150	K11258	1	20	0,308
01305P	TFB 4G,YENİ HI -FLAME PLEYT,P(CAM KAPAKLI)	FB-R1094	01032A	40	Decoupling Glass Cover Conn	9	PE080	K70008	1	20	0,224
01340P	TFB 4 GAZLI PLEYT,P(INOX-YENİ HI -FLAME,CAM KP-ARKA SOL)	FB-R1094	01277A	10	Stroking	1	PH600	K20103	2	20	0,39
01340P	TFB 4 GAZLI PLEYT,P(INOX-YENİ HI -FLAME,CAM KP-ARKA SOL)	FB-R1094	01277A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01340P	TFB 4 GAZLI PLEYT,P(INOX-YENİ HI -FLAME,CAM KP-ARKA SOL)	FB-R1094	01277A	30	Decoupling Pipe Hole	3	PH150	K11258	1	20	0,308
01340P	TFB 4 GAZLI PLEYT,P(INOX-YENİ HI -FLAME,CAM KP-ARKA SOL)	FB-R1094	01277A	40	Draining Shutter Ground	7	PE150	K62020	1	20	0,93
01340P	TFB 4 GAZLI PLEYT,P(INOX-YENİ HI -FLAME,CAM KP-ARKA SOL)	FB-R1094	01277A	50	Countersinking Shutter Hook	7	PE150	K64093	1	20	0,2
01341P	TFB 4G,YENİ HI -FLAME PLEYT,P (ARKA SOL KUCUK BEKLI)	FB-R1094	01032A	10	Stroking	1	PH350	K20103	2	20	0,39
01341P	TFB 4G,YENİ HI -FLAME PLEYT,P (ARKA SOL KUCUK BEKLI)	FB-R1094	01032A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01341P	TFB 4G,YENİ HI -FLAME PLEYT,P (ARKA SOL KUCUK BEKLI)	FB-R1094	01032A	30	Decoupling Pipe Hole	3	PH150	K11258	1	20	0,308
01341P	TFB 4G,YENİ HI -FLAME PLEYT,P (ARKA SOL KUCUK BEKLI)	FB-R1094	01032A	40	Decoupling Glass Cover Conn	9	PE080	K70008	1	20	0,224
01344P	TFB 4G,YENİ HI -FLAME PLEYT,P	FB-R1094	01032A	10	Stroking	1	PH350	K20103	2	20	0,39
01344P	TFB 4G,YENİ HI -FLAME PLEYT,P	FB-R1094	01032A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01344P	TFB 4G,YENİ HI -FLAME PLEYT,P	FB-R1094	01032A	30	Decoupling Pipe Hole	3	PH150	K11258	1	20	0,308
01344P	TFB 4G,YENİ HI -FLAME PLEYT,P	FB-R1094	01032A	40	Decoupling Glass Cover Conn	9	PE080	K70008	1	20	0,224
01372P	TFB 4G,YENİ HI -FLAME PLEYT,P (ARKA SOL KUCUK BEKLI -YENI)	FB-R1094	01032A	10	Stroking	1	PH350	K20103	2	20	0,39
01372P	TFB 4G,YENİ HI -FLAME PLEYT,P (ARKA SOL KUCUK BEKLI -YENI)	FB-R1094	01032A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01372P	TFB 4G,YENİ HI -FLAME PLEYT,P (ARKA SOL KUCUK BEKLI -YENI)	FB-R1094	01032A	30	Decoupling Pipe Hole	3	PH150	K11258	1	20	0,308
01395P	TFB 4 GAZLI PLEYT,P(INOX-YENİ HI -FLAME,SÖN.EMNİ YETLİ,C)	FB-R1094	01277A	10	Stroking	1	PH600	K20103	2	20	0,39
01395P	TFB 4 GAZLI PLEYT,P(INOX-YENİ HI -FLAME,SÖN.EMNİ YETLİ,C)	FB-R1094	01277A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01395P	TFB 4 GAZLI PLEYT,P(INOX-YENİ HI -FLAME,SÖN.EMNİ YETLİ,C)	FB-R1094	01277A	30	Decoupling Pipe Hole	3	PH150	K11258	1	20	0,308
01395P	TFB 4 GAZLI PLEYT,P(INOX-YENİ HI -FLAME,SÖN.EMNİ YETLİ,C)	FB-R1094	01277A	40	Draining Shutter Ground	7	PE150	K62020	1	20	0,93
01395P	TFB 4 GAZLI PLEYT,P(INOX-YENİ HI -FLAME,SÖN.EMNİ YETLİ,C)	FB-R1094	01277A	50	Countersinking Shutter Hook	7	PE150	K64093	1	20	0,2
01424P	TFB 4G,YENİ HI -FLAME PLEYT,P(CAM KAPAKLI)	FB-R1094	01032A	10	Stroking	1	PH350	K20103	2	20	0,39
01424P	TFB 4G,YENİ HI -FLAME PLEYT,P(CAM KAPAKLI)	FB-R1094	01032A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01424P	TFB 4G,YENİ HI -FLAME PLEYT,P(CAM KAPAKLI)	FB-R1094	01032A	30	Decoupling Pipe Hole	3	PH150	K11258	1	20	0,308
01424P	TFB 4G,YENİ HI -FLAME PLEYT,P(CAM KAPAKLI)	FB-R1094	01032A	40	Decoupling Glass Cover Conn	9	PE080	K70008	1	20	0,224
12221P	TFB ALUMINYUM PASTA TEPSİ Sİ,P	FB-R1095	12221A	10	Stroking	3	PH150	K20086	1	20	1
12221P	TFB ALUMINYUM PASTA TEPSİ Sİ,P	FB-R1095	12221A	20	Peripheral Cutting	7	PE150	K13042	1	20	1
12221P	TFB ALUMINYUM PASTA TEPSİ Sİ,P	FB-R1095	12221A	30	Bending	7	PE150	K40209	1	20	1
02195P	TFB21-31 ROZETLİ EGİK PANO ÇAK.LI LAMBA ÇEV.ORTAK BUT	FB-R1099	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02195P	TFB21-31 ROZETLİ EGİK PANO ÇAK.LI LAMBA ÇEV.ORTAK BUT	FB-R1099	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02195P	TFB21-31 ROZETLİ EGİK PANO ÇAK.LI LAMBA ÇEV.ORTAK BUT	FB-R1099	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02294P	TFB 21E/21-1E ROZETLİ EGİK PANO,P	FB-R1099	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02294P	TFB 21E/21-1E ROZETLİ EGİK PANO,P	FB-R1099	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02294P	TFB 21E/21-1E ROZETLİ EGİK PANO,P	FB-R1099	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02295P	TFB21/21-1 ROZETLİ EGİK PANO,P	FB-R1099	02281A	10	Stroking	3	PH150	K21048	1	20	0,211

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02295P	TFB21/21-1 ROZETLI EGİK PANO,P	FB-R1099	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02295P	TFB21/21-1 ROZETLI EGİK PANO,P	FB-R1099	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02403P	TFB21/21-1 ROZETLI EGİK PANO,P(KİLİTLİ TIP)	FB-R1099	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02403P	TFB21/21-1 ROZETLI EGİK PANO,P(KİLİTLİ TIP)	FB-R1099	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02403P	TFB21/21-1 ROZETLI EGİK PANO,P(KİLİTLİ TIP)	FB-R1099	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02403P	TFB21/21-1 ROZETLI EGİK PANO,P(KİLİTLİ TIP)	FB-R1099	02281A	40	Decoupling Locking Button	9	PE080	K11205	1	20	0,125
02413P	TFB21/21-1 ROZETLI EGİK PANO,P(LAMBASIZ)	FB-R1099	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02413P	TFB21/21-1 ROZETLI EGİK PANO,P(LAMBASIZ)	FB-R1099	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02413P	TFB21/21-1 ROZETLI EGİK PANO,P(LAMBASIZ)	FB-R1099	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02488P	TFB EGİK PANO, DKP	FB-R1099	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02488P	TFB EGİK PANO, DKP	FB-R1099	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02488P	TFB EGİK PANO, DKP	FB-R1099	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02488P	TFB EGİK PANO, DKP	FB-R1099	02281A	40	Decoupling Locking Button	9	PE080	K11205	1	20	0,125
02493P	TFB EGİK PANO DKP	FB-R1099	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02493P	TFB EGİK PANO DKP	FB-R1099	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02493P	TFB EGİK PANO DKP	FB-R1099	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02494P	TFB EGİK PANO DKP	FB-R1099	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02494P	TFB EGİK PANO DKP	FB-R1099	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02494P	TFB EGİK PANO DKP	FB-R1099	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02570P	TFB EGİK PANO INOX	FB-R1099	02490A	10	Stroking	3	PH150	K21048	1	20	0,211
02570P	TFB EGİK PANO INOX	FB-R1099	02490A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02570P	TFB EGİK PANO INOX	FB-R1099	02490A	30	Curling	3	PH150	K40170	1	20	0,211
02583P	TFB21/21-1 INOX ROZETLI PANO	FB-R1099	02490A	10	Stroking	3	PH150	K21048	1	20	0,211
02583P	TFB21/21-1 INOX ROZETLI PANO	FB-R1099	02490A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02583P	TFB21/21-1 INOX ROZETLI PANO	FB-R1099	02490A	30	Curling	3	PH150	K40170	1	20	0,211
02712P	TFB21-31 INOX ROZETLI EGİK PANO ÇAK.LI/LAMBA ÇEV.ORTA	FB-R1099	02490A	10	Stroking	3	PH150	K21048	1	20	0,211
02712P	TFB21-31 INOX ROZETLI EGİK PANO ÇAK.LI/LAMBA ÇEV.ORTA	FB-R1099	02490A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02712P	TFB21-31 INOX ROZETLI EGİK PANO ÇAK.LI/LAMBA ÇEV.ORTA	FB-R1099	02490A	30	Curling	3	PH150	K40170	1	20	0,211
02724P	TFB21E /21-1E INOX ROZETLI EGİK PANO,P	FB-R1099	02490A	10	Stroking	3	PH150	K21048	1	20	0,211
02724P	TFB21E /21-1E INOX ROZETLI EGİK PANO,P	FB-R1099	02490A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02724P	TFB21E /21-1E INOX ROZETLI EGİK PANO,P	FB-R1099	02490A	30	Curling	3	PH150	K40170	1	20	0,211
02162P	TFB22 LENSLİ ROZETLI EGİK PANO ÇAK.LI/LAMBA ÇEVİ RME C	FB-R1102	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02162P	TFB22 LENSLİ ROZETLI EGİK PANO ÇAK.LI/LAMBA ÇEVİ RME C	FB-R1102	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02162P	TFB22 LENSLİ ROZETLI EGİK PANO ÇAK.LI/LAMBA ÇEVİ RME C	FB-R1102	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02250P	TFB11-31-41-51 ROZETLI LENSLİ PANO,T (ÇAKMAKSIZ/KENDİ)	FB-R1102	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02250P	TFB11-31-41-51 ROZETLI LENSLİ PANO,T (ÇAKMAKSIZ/KENDİ)	FB-R1102	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02250P	TFB11-31-41-51 ROZETLI LENSLİ PANO,T (ÇAKMAKSIZ/KENDİ)	FB-R1102	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02400P	TFB EGİK PANO, DKP	FB-R1102	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02400P	TFB EGİK PANO, DKP	FB-R1102	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02400P	TFB EGİK PANO, DKP	FB-R1102	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02411P	TFB22-31 LENSLİ ROZETLI EGİK PANO ÇAK.LI/LAMBA ÇEV.ORTA	FB-R1102	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02411P	TFB22-31 LENSLİ ROZETLI EGİK PANO ÇAK.LI/LAMBA ÇEV.ORTA	FB-R1102	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02411P	TFB22-31 LENSLİ ROZETLI EGİK PANO ÇAK.LI/LAMBA ÇEV.ORTA	FB-R1102	02281A	30	Curling	3	PH150	K40170	1	20	0,211

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02416P	TFB11/31/41/51 LENSİ ROZETLİ EGİK PANO,P	FB-R1102	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02416P	TFB11/31/41/51 LENSİ ROZETLİ EGİK PANO,P	FB-R1102	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02416P	TFB11/31/41/51 LENSİ ROZETLİ EGİK PANO,P	FB-R1102	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02417P	TFB12/32/42/52 LENSİ ROZETLİ EGİK PANO,P	FB-R1102	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02417P	TFB12/32/42/52 LENSİ ROZETLİ EGİK PANO,P	FB-R1102	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02417P	TFB12/32/42/52 LENSİ ROZETLİ EGİK PANO,P	FB-R1102	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02418P	TFB14/34/44/54/16/36/46/56 (12/32/42/52 ÇAKMAKSIZ) LENSİ	FB-R1102	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02418P	TFB14/34/44/54/16/36/46/56 (12/32/42/52 ÇAKMAKSIZ) LENSİ	FB-R1102	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02418P	TFB14/34/44/54/16/36/46/56 (12/32/42/52 ÇAKMAKSIZ) LENSİ	FB-R1102	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02419P	TFB61(11-31/31-31) LENSİ ROZETLİ EGİK PANO,P	FB-R1102	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02419P	TFB61(11-31/31-31) LENSİ ROZETLİ EGİK PANO,P	FB-R1102	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02419P	TFB61(11-31/31-31) LENSİ ROZETLİ EGİK PANO,P	FB-R1102	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02420P	TFB62/12-31 LENSİ ROZETLİ EGİK PANO,P	FB-R1102	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02420P	TFB62/12-31 LENSİ ROZETLİ EGİK PANO,P	FB-R1102	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02420P	TFB62/12-31 LENSİ ROZETLİ EGİK PANO,P	FB-R1102	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02421P	TFB64/66/(14/16-31 / 14/16 AYRI TERM.) LENSİ ROZETLİ EGI	FB-R1102	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02421P	TFB64/66/(14/16-31 / 14/16 AYRI TERM.) LENSİ ROZETLİ EGI	FB-R1102	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02421P	TFB64/66/(14/16-31 / 14/16 AYRI TERM.) LENSİ ROZETLİ EGI	FB-R1102	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02422P	TFB61-31 (TFB11/31/51-31 AYRI TERMOSTATLI İSTENİRSE) LI	FB-R1102	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02422P	TFB61-31 (TFB11/31/51-31 AYRI TERMOSTATLI İSTENİRSE) LI	FB-R1102	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02422P	TFB61-31 (TFB11/31/51-31 AYRI TERMOSTATLI İSTENİRSE) LI	FB-R1102	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02423P	TFB13 LENSİ ROZETLİ EGİK PANO,P	FB-R1102	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02423P	TFB13 LENSİ ROZETLİ EGİK PANO,P	FB-R1102	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02423P	TFB13 LENSİ ROZETLİ EGİK PANO,P	FB-R1102	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02424P	TFB64-31 (14/34/44/54-31 AYRI TERM./62-31 KEN. ÇAKMAKLI)	FB-R1102	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02424P	TFB64-31 (14/34/44/54-31 AYRI TERM./62-31 KEN. ÇAKMAKLI)	FB-R1102	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02424P	TFB64-31 (14/34/44/54-31 AYRI TERM./62-31 KEN. ÇAKMAKLI)	FB-R1102	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02425P	TFB61-51 LENSİ ROZETLİ EGİK PANO,P	FB-R1102	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02425P	TFB61-51 LENSİ ROZETLİ EGİK PANO,P	FB-R1102	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02425P	TFB61-51 LENSİ ROZETLİ EGİK PANO,P	FB-R1102	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02425P	TFB61-51 LENSİ ROZETLİ EGİK PANO,P	FB-R1102	02281A	40	Draining Digital Timer Hook	9	PE080	K12011	1	20	0,125
02426P	TFB62-51 LENSİ ROZETLİ EGİK PANO,P	FB-R1102	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02426P	TFB62-51 LENSİ ROZETLİ EGİK PANO,P	FB-R1102	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02426P	TFB62-51 LENSİ ROZETLİ EGİK PANO,P	FB-R1102	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02426P	TFB62-51 LENSİ ROZETLİ EGİK PANO,P	FB-R1102	02281A	40	Decoupling button cap	9	PE080	K11175	1	20	0,125
02427P	TFB 64-51/66-51 (62-51 KEN.ÇAKMAKLI) LENSİ ROZETLİ EGI	FB-R1102	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02427P	TFB 64-51/66-51 (62-51 KEN.ÇAKMAKLI) LENSİ ROZETLİ EGI	FB-R1102	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02427P	TFB 64-51/66-51 (62-51 KEN.ÇAKMAKLI) LENSİ ROZETLİ EGI	FB-R1102	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02427P	TFB 64-51/66-51 (62-51 KEN.ÇAKMAKLI) LENSİ ROZETLİ EGI	FB-R1102	02281A	40	Draining Digital Timer Hook	9	PE080	K12011	1	20	0,125
02428P	TFB42-51 LENSİ ROZETLİ EGİK PANO,P	FB-R1102	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02428P	TFB42-51 LENSİ ROZETLİ EGİK PANO,P	FB-R1102	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02428P	TFB42-51 LENSİ ROZETLİ EGİK PANO,P	FB-R1102	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02428P	TFB42-51 LENSİ ROZETLİ EGİK PANO,P	FB-R1102	02281A	40	Draining Digital Timer Hook	9	PE080	K12011	1	20	0,125

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02430P	TFB22 CEVIRMELE LENSLE ROZETLE EGİK PANO,P	FB-R1102	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02430P	TFB22 CEVIRMELE LENSLE ROZETLE EGİK PANO,P	FB-R1102	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02430P	TFB22 CEVIRMELE LENSLE ROZETLE EGİK PANO,P	FB-R1102	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02430P	TFB22 CEVIRMELE LENSLE ROZETLE EGİK PANO,P	FB-R1102	02281A	40	Decoupling button cap	9	PE080	K11175	1	20	0,125
02431P	TFB21 CEVIRMELE LENSLE ROZETLE EGİK PANO,P	FB-R1102	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02431P	TFB21 CEVIRMELE LENSLE ROZETLE EGİK PANO,P	FB-R1102	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02431P	TFB21 CEVIRMELE LENSLE ROZETLE EGİK PANO,P	FB-R1102	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02431P	TFB21 CEVIRMELE LENSLE ROZETLE EGİK PANO,P	FB-R1102	02281A	40	Decoupling button cap	9	PE080	K11175	1	20	0,125
02432P	TFB21-31 LENSLE ROZETLE EGİK PANO,P(CEVIRMELE)	FB-R1102	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02432P	TFB21-31 LENSLE ROZETLE EGİK PANO,P(CEVIRMELE)	FB-R1102	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02432P	TFB21-31 LENSLE ROZETLE EGİK PANO,P(CEVIRMELE)	FB-R1102	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02432P	TFB21-31 LENSLE ROZETLE EGİK PANO,P(CEVIRMELE)	FB-R1102	02281A	40	Decoupling button cap	9	PE080	K11175	1	20	0,125
02436P	TFB64/66/(14/16-31 / 14/16 AYRI TERM.) LENSLE ROZETLE EGİK PANO,P	FB-R1102	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02436P	TFB64/66/(14/16-31 / 14/16 AYRI TERM.) LENSLE ROZETLE EGİK PANO,P	FB-R1102	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02436P	TFB64/66/(14/16-31 / 14/16 AYRI TERM.) LENSLE ROZETLE EGİK PANO,P	FB-R1102	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02436P	TFB64/66/(14/16-31 / 14/16 AYRI TERM.) LENSLE ROZETLE EGİK PANO,P	FB-R1102	02281A	40	Decoupling Locking Button	9	PE080	K11205	1	20	0,125
02461P	TFB62-51 LENSLE ROZETLE EGİK PANO,P (KILITLI)	FB-R1102	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02461P	TFB62-51 LENSLE ROZETLE EGİK PANO,P (KILITLI)	FB-R1102	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02461P	TFB62-51 LENSLE ROZETLE EGİK PANO,P (KILITLI)	FB-R1102	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02461P	TFB62-51 LENSLE ROZETLE EGİK PANO,P (KILITLI)	FB-R1102	02281A	40	Draining Digital Timer Hook	9	PE080	K12011	1	20	0,125
02461P	TFB62-51 LENSLE ROZETLE EGİK PANO,P (KILITLI)	FB-R1102	02281A	50	Decoupling Locking Button	9	PE080	K11205	1	20	0,125
02462P	TFB EGİK PANO,P	FB-R1102	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02462P	TFB EGİK PANO,P	FB-R1102	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02462P	TFB EGİK PANO,P	FB-R1102	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02462P	TFB EGİK PANO,P	FB-R1102	02281A	40	Decoupling Locking Button	9	PE080	K11205	1	20	0,125
02463P	TFB11/31/41/51 LENSLE ROZETLE EGİK PANO,P (KILITLI)	FB-R1102	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02463P	TFB11/31/41/51 LENSLE ROZETLE EGİK PANO,P (KILITLI)	FB-R1102	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02463P	TFB11/31/41/51 LENSLE ROZETLE EGİK PANO,P (KILITLI)	FB-R1102	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02463P	TFB11/31/41/51 LENSLE ROZETLE EGİK PANO,P (KILITLI)	FB-R1102	02281A	40	Decoupling Locking Button	9	PE080	K11205	1	20	0,125
02464P	TFB12/32/42/52 LENSLE ROZETLE EGİK PANO,P (KILITLI)	FB-R1102	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02464P	TFB12/32/42/52 LENSLE ROZETLE EGİK PANO,P (KILITLI)	FB-R1102	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02464P	TFB12/32/42/52 LENSLE ROZETLE EGİK PANO,P (KILITLI)	FB-R1102	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02464P	TFB12/32/42/52 LENSLE ROZETLE EGİK PANO,P (KILITLI)	FB-R1102	02281A	40	Decoupling Locking Button	9	PE080	K11205	1	20	0,125
02469P	TFB62-31 LENSLE ROZETLE PANO,P	FB-R1102	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02469P	TFB62-31 LENSLE ROZETLE PANO,P	FB-R1102	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02469P	TFB62-31 LENSLE ROZETLE PANO,P	FB-R1102	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02470P	TFB22-31 CEVIRMELE LENSLE ROZETLE EGİK PANO,P	FB-R1102	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02470P	TFB22-31 CEVIRMELE LENSLE ROZETLE EGİK PANO,P	FB-R1102	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02470P	TFB22-31 CEVIRMELE LENSLE ROZETLE EGİK PANO,P	FB-R1102	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02470P	TFB22-31 CEVIRMELE LENSLE ROZETLE EGİK PANO,P	FB-R1102	02281A	40	Decoupling button cap	9	PE080	K11175	1	20	0,125
02474P	TFB14/34/44/54/16/36/46/56-51(12/32/42/52-51 ÇAKMAKSIZ)	FB-R1102	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02474P	TFB14/34/44/54/16/36/46/56-51(12/32/42/52-51 ÇAKMAKSIZ)	FB-R1102	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02474P	TFB14/34/44/54/16/36/46/56-51(12/32/42/52-51 ÇAKMAKSIZ)	FB-R1102	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02474P	TFB14/34/44/54/16/36/46/56-51(12/32/42/52-51 ÇAKMAKSIZ)	FB-R1102	02281A	40	Draining Digital Timer Hook	9	PE080	K12011	1	20	0,125

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02475P	TFB61 LENSLI ROZETLI EGİK PANO,P(ÇAKMAKSIZ/KENDİNDE)	FB-R1102	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02475P	TFB61 LENSLI ROZETLI EGİK PANO,P(ÇAKMAKSIZ/KENDİNDE)	FB-R1102	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02475P	TFB61 LENSLI ROZETLI EGİK PANO,P(ÇAKMAKSIZ/KENDİNDE)	FB-R1102	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02476P	TFB EGİK PANO DKP	FB-R1102	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02476P	TFB EGİK PANO DKP	FB-R1102	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02476P	TFB EGİK PANO DKP	FB-R1102	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02476P	TFB EGİK PANO DKP	FB-R1102	02281A	40	Draining Digital Timer Hook	9	PE080	K12011	1	20	0,125
02489P	TFB14/34/44/54/16/36/46/56 (12/32/42/52 ÇAK.SIZ) INOX LEN	FB-R1102	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02489P	TFB14/34/44/54/16/36/46/56 (12/32/42/52 ÇAK.SIZ) INOX LEN	FB-R1102	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02489P	TFB14/34/44/54/16/36/46/56 (12/32/42/52 ÇAK.SIZ) INOX LEN	FB-R1102	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02489P	TFB14/34/44/54/16/36/46/56 (12/32/42/52 ÇAK.SIZ) INOX LEN	FB-R1102	02281A	40	Decoupling Lens Hook	9	PE080	K11211	1	20	0,125
02490P	TFB61-51 INOX LENSLI ROZETLI EGİK PANO,P	FB-R1102	02490A	10	Stroking	3	PH150	K21048	1	20	0,211
02490P	TFB61-51 INOX LENSLI ROZETLI EGİK PANO,P	FB-R1102	02490A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02490P	TFB61-51 INOX LENSLI ROZETLI EGİK PANO,P	FB-R1102	02490A	30	Curling	3	PH150	K40170	1	20	0,211
02490P	TFB61-51 INOX LENSLI ROZETLI EGİK PANO,P	FB-R1102	02490A	40	Draining Digital Timer Hook	9	PE080	K12011	1	20	0,125
02490P	TFB61-51 INOX LENSLI ROZETLI EGİK PANO,P	FB-R1102	02490A	50	Decoupling Lens Hook	9	PE080	K11211	1	20	0,18
02511P	TFB64/66 (14/16 AYRI TERM/ 14/16-31)INOX LENSLI ROZETLI	FB-R1102	02490A	10	Stroking	3	PH150	K21048	1	20	0,211
02511P	TFB64/66 (14/16 AYRI TERM/ 14/16-31)INOX LENSLI ROZETLI	FB-R1102	02490A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02511P	TFB64/66 (14/16 AYRI TERM/ 14/16-31)INOX LENSLI ROZETLI	FB-R1102	02490A	30	Curling	3	PH150	K40170	1	20	0,211
02511P	TFB64/66 (14/16 AYRI TERM/ 14/16-31)INOX LENSLI ROZETLI	FB-R1102	02490A	40	Decoupling Lens Hook	9	PE080	K11211	1	20	0,18
02517P	TFB66/64-51 INOX LENSLI ROZETLI EGİK PANO,P	FB-R1102	02490A	10	Stroking	3	PH150	K21048	1	20	0,211
02517P	TFB66/64-51 INOX LENSLI ROZETLI EGİK PANO,P	FB-R1102	02490A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02517P	TFB66/64-51 INOX LENSLI ROZETLI EGİK PANO,P	FB-R1102	02490A	30	Curling	3	PH150	K40170	1	20	0,211
02517P	TFB66/64-51 INOX LENSLI ROZETLI EGİK PANO,P	FB-R1102	02490A	40	Draining Digital Timer Hook	9	PE080	K12011	1	20	0,125
02517P	TFB66/64-51 INOX LENSLI ROZETLI EGİK PANO,P	FB-R1102	02490A	50	Decoupling Lens Hook	9	PE080	K11211	1	20	0,18
02533P	TFB64/66-51(62-51 KEN.ÇAKMAKLI) INOX LENSLI ROZETLI EGİK	FB-R1102	02490A	10	Stroking	3	PH150	K21048	2	20	0,211
02533P	TFB64/66-51(62-51 KEN.ÇAKMAKLI) INOX LENSLI ROZETLI EGİK	FB-R1102	02490A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02533P	TFB64/66-51(62-51 KEN.ÇAKMAKLI) INOX LENSLI ROZETLI EGİK	FB-R1102	02490A	30	Curling	3	PH150	K40170	1	20	0,211
02533P	TFB64/66-51(62-51 KEN.ÇAKMAKLI) INOX LENSLI ROZETLI EGİK	FB-R1102	02490A	40	Draining Digital Timer Hook	9	PE080	K12011	1	20	0,18
02533P	TFB64/66-51(62-51 KEN.ÇAKMAKLI) INOX LENSLI ROZETLI EGİK	FB-R1102	02490A	50	Decoupling Locking Button	9	PE080	K11205	1	20	0,125
02533P	TFB64/66-51(62-51 KEN.ÇAKMAKLI) INOX LENSLI ROZETLI EGİK	FB-R1102	02490A	60	Decoupling Lens Hook	9	PE080	K11211	1	20	0,18
02535P	TFB11/31/41/51 LENSLI ROZETLI EGİK PANO,P(KİLİTLİ/ÇAKM	FB-R1102	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02535P	TFB11/31/41/51 LENSLI ROZETLI EGİK PANO,P(KİLİTLİ/ÇAKM	FB-R1102	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02535P	TFB11/31/41/51 LENSLI ROZETLI EGİK PANO,P(KİLİTLİ/ÇAKM	FB-R1102	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02535P	TFB11/31/41/51 LENSLI ROZETLI EGİK PANO,P(KİLİTLİ/ÇAKM	FB-R1102	02281A	40	Decoupling Locking Button	9	PE080	K11205	1	20	0,125
02536P	TFB61-51 LENSLI ROZETLI EGİK PANO,P(ÇAKMAKSIZ-KİLİTLİ)	FB-R1102	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02536P	TFB61-51 LENSLI ROZETLI EGİK PANO,P(ÇAKMAKSIZ-KİLİTLİ)	FB-R1102	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02536P	TFB61-51 LENSLI ROZETLI EGİK PANO,P(ÇAKMAKSIZ-KİLİTLİ)	FB-R1102	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02536P	TFB61-51 LENSLI ROZETLI EGİK PANO,P(ÇAKMAKSIZ-KİLİTLİ)	FB-R1102	02281A	40	Draining Digital Timer Hook	9	PE080	K12011	1	20	0,125
02536P	TFB61-51 LENSLI ROZETLI EGİK PANO,P(ÇAKMAKSIZ-KİLİTLİ)	FB-R1102	02281A	50	Decoupling Locking Button	9	PE080	K11205	1	20	0,18
02538P	TFB14/34/44/54-51/16/36/46/56-51(12/32/42/52-51 ÇAKMAKSI	FB-R1102	02490A	10	Stroking	3	PH150	K21048	1	20	0,211
02538P	TFB14/34/44/54-51/16/36/46/56-51(12/32/42/52-51 ÇAKMAKSI	FB-R1102	02490A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02538P	TFB14/34/44/54-51/16/36/46/56-51(12/32/42/52-51 ÇAKMAKSI	FB-R1102	02490A	30	Curling	3	PH150	K40170	1	20	0,211
02538P	TFB14/34/44/54-51/16/36/46/56-51(12/32/42/52-51 ÇAKMAKSI	FB-R1102	02490A	40	Draining Digital Timer Hook	9	PE080	K12011	1	20	0,18

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02538P	TFB14/34/44/54-51/16/36/46/56-51(12/32/42/52-51 ÇAKMAKSI	FB-R1102	02490A	50	Decoupling Locking Button	9	PE080	K11205	1	20	0,125
02538P	TFB14/34/44/54-51/16/36/46/56-51(12/32/42/52-51 ÇAKMAKSI	FB-R1102	02490A	60	Decoupling Lens Hook	9	PE080	K11211	1	20	0,18
02585P	TFB62/12-31 INOX LENSİ ROZETLİ EGİK PANO,P	FB-R1102	02490A	10	Stroking	3	PH150	K21048	1	20	0,211
02585P	TFB62/12-31 INOX LENSİ ROZETLİ EGİK PANO,P	FB-R1102	02490A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02585P	TFB62/12-31 INOX LENSİ ROZETLİ EGİK PANO,P	FB-R1102	02490A	30	Curling	3	PH150	K40170	1	20	0,211
02585P	TFB62/12-31 INOX LENSİ ROZETLİ EGİK PANO,P	FB-R1102	02490A	40	Decoupling Lens Hook	9	PE080	K11211	1	20	0,125
02627P	TFB12/32/42/52 INOX LENSİ ROZETLİ EGİK PANO,P/KİLİTLİ	FB-R1102	02490A	10	Stroking	3	PH150	K21048	1	20	0,211
02627P	TFB12/32/42/52 INOX LENSİ ROZETLİ EGİK PANO,P/KİLİTLİ	FB-R1102	02490A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02627P	TFB12/32/42/52 INOX LENSİ ROZETLİ EGİK PANO,P/KİLİTLİ	FB-R1102	02490A	30	Curling	3	PH150	K40170	1	20	0,211
02627P	TFB12/32/42/52 INOX LENSİ ROZETLİ EGİK PANO,P/KİLİTLİ	FB-R1102	02490A	40	Decoupling Locking Button	9	PE080	K11205	1	20	0,125
02627P	TFB12/32/42/52 INOX LENSİ ROZETLİ EGİK PANO,P/KİLİTLİ	FB-R1102	02490A	50	Decoupling Lens Hook	9	PE080	K11211	1	20	0,18
02636P	TFB14/34/44/54/16/36/46/56-51(12/32/42/52-51 ÇAK.SIZ) INO	FB-R1102	02490A	10	Stroking	3	PH150	K21048	1	20	0,211
02636P	TFB14/34/44/54/16/36/46/56-51(12/32/42/52-51 ÇAK.SIZ) INO	FB-R1102	02490A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02636P	TFB14/34/44/54/16/36/46/56-51(12/32/42/52-51 ÇAK.SIZ) INO	FB-R1102	02490A	30	Curling	3	PH150	K40170	1	20	0,211
02636P	TFB14/34/44/54/16/36/46/56-51(12/32/42/52-51 ÇAK.SIZ) INO	FB-R1102	02490A	40	Decoupling Lens Hook	9	PE080	K11211	1	20	0,125
02702P	TFB EGİK PANO INOX	FB-R1102	02490A	10	Stroking	3	PH150	K21048	1	20	0,211
02702P	TFB EGİK PANO INOX	FB-R1102	02490A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02702P	TFB EGİK PANO INOX	FB-R1102	02490A	30	Curling	3	PH150	K40170	1	20	0,211
02702P	TFB EGİK PANO INOX	FB-R1102	02490A	40	Draining Digital Timer Hook	9	PE080	K12011	1	20	0,125
02702P	TFB EGİK PANO INOX	FB-R1102	02490A	50	Decoupling Lens Hook	9	PE080	K11211	1	20	0,18
02711P	TFB64-31 INOX 14/34/44-31 AYRI TERM./62-31 KEN.ÇAKMAKL	FB-R1102	02490A	10	Stroking	3	PH150	K21048	1	20	0,211
02711P	TFB64-31 INOX 14/34/44-31 AYRI TERM./62-31 KEN.ÇAKMAKL	FB-R1102	02490A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02711P	TFB64-31 INOX 14/34/44-31 AYRI TERM./62-31 KEN.ÇAKMAKL	FB-R1102	02490A	30	Curling	3	PH150	K40170	1	20	0,211
02711P	TFB64-31 INOX 14/34/44-31 AYRI TERM./62-31 KEN.ÇAKMAKL	FB-R1102	02490A	40	Decoupling Lens Hook	9	PE080	K11211	1	20	0,125
02714P	TFB61-31(TFB11/31/51-31 AYRI TERM.Lİ )LENSİ ROZETLİ EG	FB-R1102	02490A	10	Stroking	3	PH150	K21048	1	20	0,211
02714P	TFB61-31(TFB11/31/51-31 AYRI TERM.Lİ )LENSİ ROZETLİ EG	FB-R1102	02490A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02714P	TFB61-31(TFB11/31/51-31 AYRI TERM.Lİ )LENSİ ROZETLİ EG	FB-R1102	02490A	30	Curling	3	PH150	K40170	1	20	0,211
02714P	TFB61-31(TFB11/31/51-31 AYRI TERM.Lİ )LENSİ ROZETLİ EG	FB-R1102	02490A	40	Decoupling Lens Hook	9	PE080	K11211	1	20	0,125
02740P	TFB61 LENSİ ROZETLİ EGİK PANO..ÇOÇUK KİLİTLİ	FB-R1102	02281A	10	Stroking	3	PH150	K21048	1	20	0,211
02740P	TFB61 LENSİ ROZETLİ EGİK PANO..ÇOÇUK KİLİTLİ	FB-R1102	02281A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02740P	TFB61 LENSİ ROZETLİ EGİK PANO..ÇOÇUK KİLİTLİ	FB-R1102	02281A	30	Curling	3	PH150	K40170	1	20	0,211
02740P	TFB61 LENSİ ROZETLİ EGİK PANO..ÇOÇUK KİLİTLİ	FB-R1102	02281A	40	Decoupling Locking Button	9	PE080	K11205	1	20	0,125
02836P	TFB EGİK PANO INOX	FB-R1102	02490A	10	Stroking	3	PH150	K21048	1	20	0,211
02836P	TFB EGİK PANO INOX	FB-R1102	02490A	20	Peripheral Cutting	3	PH150	K13098	1	20	0,222
02836P	TFB EGİK PANO INOX	FB-R1102	02490A	30	Curling	3	PH150	K40170	1	20	0,211
02836P	TFB EGİK PANO INOX	FB-R1102	02490A	40	Draining Digital Timer Hook	9	PE080	K12011	1	20	0,125
02836P	TFB EGİK PANO INOX	FB-R1102	02490A	50	Decoupling Lens Hook	9	PE080	K11211	1	20	0,18
03051P	TFB/A FIRİN KAPAGI ,P(BORU KULPLU/SOKULEBİLİR CAM)	FB-R1108	03051A	10	Stroking	1	PH350	K20097	2	20	0,467
03051P	TFB/A FIRİN KAPAGI ,P(BORU KULPLU/SOKULEBİLİR CAM)	FB-R1108	03051A	20	Cutting Slope	2	DE085	K30053	1	20	0,224
03051P	TFB/A FIRİN KAPAGI ,P(BORU KULPLU/SOKULEBİLİR CAM)	FB-R1108	03051A	30	Draining Core	3	PH150	K12057	1	20	0,23
03051P	TFB/A FIRİN KAPAGI ,P(BORU KULPLU/SOKULEBİLİR CAM)	FB-R1108	03051A	40	Decoupling Side Shutter	4	PH07001	K11162	1	20	0,15
03051P	TFB/A FIRİN KAPAGI ,P(BORU KULPLU/SOKULEBİLİR CAM)	FB-R1108	03051A	50	Bottom Countersinking	4	PH07001	K11161	1	20	0,25
03051P	TFB/A FIRİN KAPAGI ,P(BORU KULPLU/SOKULEBİLİR CAM)	FB-R1108	03051A	60	Top Countersinking	4	PH07001	K11161	1	20	0,25
03100P	TFB FIRİN KAPAGI PANJURSUZ,P(BORU KULPLU/SOKULEBİLİR	FB-R1108	03051A	10	Stroking	1	PH350	K20097	2	20	0,467



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03100P	TFB FIRIN KAPAGI PANJURSUZ,P(BORU KULPLU/SOKULEBILI)	FB-R1108	03051A	20	Cutting Slope	2	DE085	K30053	1	20	0,224
03100P	TFB FIRIN KAPAGI PANJURSUZ,P(BORU KULPLU/SOKULEBILI)	FB-R1108	03051A	30	Draining Core	3	PH150	K12057	1	20	0,23
03100P	TFB FIRIN KAPAGI PANJURSUZ,P(BORU KULPLU/SOKULEBILI)	FB-R1108	03051A	40	Decoupling Side Shutter	4	PH07001	K11162	1	20	0,15
03100P	TFB FIRIN KAPAGI PANJURSUZ,P(BORU KULPLU/SOKULEBILI)	FB-R1108	03051A	50	Bottom Countersinking	4	PH07001	K11161	1	20	0,25
11066P	TFB IC KASET ARKA KAPAK,P (FANSI Z,CEVIRMESI Z)	FB-R1129	11066A	10	Stroking	5	PH30001	K21002	2	20	0,267
11066P	TFB IC KASET ARKA KAPAK,P (FANSI Z,CEVIRMESI Z)	FB-R1129	11066A	20	Peripheral Cutting	6	PE250	K13048	1	20	0,227
11066P	TFB IC KASET ARKA KAPAK,P (FANSI Z,CEVIRMESI Z)	FB-R1129	11066A	30	Curling	3	PH150	K40009	1	20	0,211
11155P	TFB IC KASET ARKA KAPAK,P(CEVIRMESI Z,FAN PERDELI)	FB-R1129	11066A	10	Stroking	5	PH30001	K21002	2	20	0,267
11155P	TFB IC KASET ARKA KAPAK,P(CEVIRMESI Z,FAN PERDELI)	FB-R1129	11066A	20	Peripheral Cutting	6	PE250	K13048	1	20	0,227
11155P	TFB IC KASET ARKA KAPAK,P(CEVIRMESI Z,FAN PERDELI)	FB-R1129	11066A	30	Curling	3	PH150	K40009	1	20	0,211
11182P	TFB IC KASET ARKA KAPAK,P (FANSI Z,CEVIRMESI Z,LAMBASIZ)	FB-R1129	11066A	10	Stroking	5	PH30001	K21002	2	20	0,267
11182P	TFB IC KASET ARKA KAPAK,P (FANSI Z,CEVIRMESI Z,LAMBASIZ)	FB-R1129	11066A	20	Peripheral Cutting	6	PE250	K13048	1	20	0,227
11182P	TFB IC KASET ARKA KAPAK,P (FANSI Z,CEVIRMESI Z,LAMBASIZ)	FB-R1129	11066A	30	Curling	3	PH150	K40009	1	20	0,211
11237P	TFB IC KASET ARKA KAPAK,P	FB-R1129	11066A	10	Stroking	5	PH30001	K21002	2	20	0,267
11237P	TFB IC KASET ARKA KAPAK,P	FB-R1129	11066A	20	Peripheral Cutting	6	PE250	K13048	1	20	0,227
11237P	TFB IC KASET ARKA KAPAK,P	FB-R1129	11066A	30	Curling	3	PH150	K40009	1	20	0,211
11257P	TFB21 LAMLI,CEVLI,YENI BRU IC KASET ARKA KAPAK,P (TERM	FB-R1129	11066A	10	Stroking	5	PH30001	K21002	2	20	0,267
11257P	TFB21 LAMLI,CEVLI,YENI BRU IC KASET ARKA KAPAK,P (TERM	FB-R1129	11066A	20	Peripheral Cutting	6	PE250	K13048	1	20	0,227
11257P	TFB21 LAMLI,CEVLI,YENI BRU IC KASET ARKA KAPAK,P (TERM	FB-R1129	11066A	30	Curling	3	PH150	K40009	1	20	0,211
11277P	TFB21 IC KASET ARKA KAPAK,P(GAZLI/LAMBASIZ/YENI BRULO	FB-R1129	11066A	10	Stroking	5	PH30001	K21002	2	20	0,267
11277P	TFB21 IC KASET ARKA KAPAK,P(GAZLI/LAMBASIZ/YENI BRULO	FB-R1129	11066A	20	Peripheral Cutting	6	PE250	K13048	1	20	0,227
11277P	TFB21 IC KASET ARKA KAPAK,P(GAZLI/LAMBASIZ/YENI BRULO	FB-R1129	11066A	30	Curling	3	PH150	K40009	1	20	0,211
11278P	TFB 21 IC KASET ARKA KAPAK,P(GAZLI/LAMBALI/YENI BRULO	FB-R1129	11066A	10	Stroking	5	PH30001	K21002	2	20	0,267
11278P	TFB 21 IC KASET ARKA KAPAK,P(GAZLI/LAMBALI/YENI BRULO	FB-R1129	11066A	20	Peripheral Cutting	6	PE250	K13048	1	20	0,227
11278P	TFB 21 IC KASET ARKA KAPAK,P(GAZLI/LAMBALI/YENI BRULO	FB-R1129	11066A	30	Curling	3	PH150	K40009	1	20	0,211
11295P	TFB FANLI IC KASET ARKA KAPAK (CEVIRMEI, LIMI T TERM.,T	FB-R1129	11066A	10	Stroking	5	PH30001	K21002	2	20	0,267
11295P	TFB FANLI IC KASET ARKA KAPAK (CEVIRMEI, LIMI T TERM.,T	FB-R1129	11066A	20	Peripheral Cutting	6	PE250	K13048	1	20	0,227
11295P	TFB FANLI IC KASET ARKA KAPAK (CEVIRMEI, LIMI T TERM.,T	FB-R1129	11066A	30	Curling	3	PH150	K40009	1	20	0,211
11296P	TFB21 LAMLI,CEVLI,YENI BRU IC KASET ARKA KAPAK,P (SISIR	FB-R1129	11066A	10	Stroking	5	PH30001	K21002	2	20	0,267
11296P	TFB21 LAMLI,CEVLI,YENI BRU IC KASET ARKA KAPAK,P (SISIR	FB-R1129	11066A	20	Peripheral Cutting	6	PE250	K13048	1	20	0,227
11296P	TFB21 LAMLI,CEVLI,YENI BRU IC KASET ARKA KAPAK,P (SISIR	FB-R1129	11066A	30	Curling	3	PH150	K40009	1	20	0,211
11297P	TFB FANLI,CEVSIZ,LIM.TERMLI IC KASET ARKA KAPAK (SISIR	FB-R1129	11066A	10	Stroking	5	PH30001	K21002	2	20	0,267
11297P	TFB FANLI,CEVSIZ,LIM.TERMLI IC KASET ARKA KAPAK (SISIR	FB-R1129	11066A	20	Peripheral Cutting	6	PE250	K13048	1	20	0,227
11297P	TFB FANLI,CEVSIZ,LIM.TERMLI IC KASET ARKA KAPAK (SISIR	FB-R1129	11066A	30	Curling	3	PH150	K40009	1	20	0,211
11298P	TFB FANLI TURBO TIJSIZ IC KASET ARKA KAPAK (SISIRMEI)	FB-R1129	11066A	10	Stroking	5	PH30001	K21002	2	20	0,267
11298P	TFB FANLI TURBO TIJSIZ IC KASET ARKA KAPAK (SISIRMEI)	FB-R1129	11066A	20	Peripheral Cutting	6	PE250	K13048	1	20	0,227
11298P	TFB FANLI TURBO TIJSIZ IC KASET ARKA KAPAK (SISIRMEI)	FB-R1129	11066A	30	Curling	3	PH150	K40009	1	20	0,211
11299P	TFB FANLI IC KASET ARKA KAPAK (CEVIRMEI, LIMI T TERM.,T	FB-R1129	11066A	10	Stroking	5	PH30001	K21002	2	20	0,267
11299P	TFB FANLI IC KASET ARKA KAPAK (CEVIRMEI, LIMI T TERM.,T	FB-R1129	11066A	20	Peripheral Cutting	6	PE250	K13048	1	20	0,227
11299P	TFB FANLI IC KASET ARKA KAPAK (CEVIRMEI, LIMI T TERM.,T	FB-R1129	11066A	30	Curling	3	PH150	K40009	1	20	0,211
11300P	TFB FANLI,CEVLI,LIM. TERMLI,IC K ARKA KAPAK (SISIRMEI)	FB-R1129	11066A	10	Stroking	5	PH30001	K21002	2	20	0,267
11300P	TFB FANLI,CEVLI,LIM. TERMLI,IC K ARKA KAPAK (SISIRMEI)	FB-R1129	11066A	20	Peripheral Cutting	6	PE250	K13048	1	20	0,227
11300P	TFB FANLI,CEVLI,LIM. TERMLI,IC K ARKA KAPAK (SISIRMEI)	FB-R1129	11066A	30	Curling	3	PH150	K40009	1	20	0,211

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11301P	TFB FANLI,CEVLI IC KASET ARKA KAPAK (SISI RMELI)	FB-R1129	11066A	10	Stroking	5	PH30001	K21002	2	20	0,267
11301P	TFB FANLI,CEVLI IC KASET ARKA KAPAK (SISI RMELI)	FB-R1129	11066A	20	Peripheral Cutting	6	PE250	K13048	1	20	0,227
11301P	TFB FANLI,CEVLI IC KASET ARKA KAPAK (SISI RMELI)	FB-R1129	11066A	30	Curling	3	PH150	K40009	1	20	0,211
11302P	TFB FANLI CEVSIZ IC KASET ARKA KAPAK (SISI RMELI)	FB-R1129	11066A	10	Stroking	5	PH30001	K21002	2	20	0,267
11302P	TFB FANLI CEVSIZ IC KASET ARKA KAPAK (SISI RMELI)	FB-R1129	11066A	20	Peripheral Cutting	6	PE250	K13048	1	20	0,227
11302P	TFB FANLI CEVSIZ IC KASET ARKA KAPAK (SISI RMELI)	FB-R1129	11066A	30	Curling	3	PH150	K40009	1	20	0,211
11303P	TFB FANSIZ,CEVIRMEI IC KASET ARKA KAPAK (SISI RMELI)	FB-R1129	11066A	10	Stroking	5	PH30001	K21002	2	20	0,267
11303P	TFB FANSIZ,CEVIRMEI IC KASET ARKA KAPAK (SISI RMELI)	FB-R1129	11066A	20	Peripheral Cutting	6	PE250	K13048	1	20	0,227
11303P	TFB FANSIZ,CEVIRMEI IC KASET ARKA KAPAK (SISI RMELI)	FB-R1129	11066A	30	Curling	3	PH150	K40009	1	20	0,211
11304P	TFB FANSIZ LAM.SIZ IC KASET ARKA KAPAK (CEVIRMEI)	FB-R1129	11066A	10	Stroking	5	PH30001	K21002	2	20	0,267
11304P	TFB FANSIZ LAM.SIZ IC KASET ARKA KAPAK (CEVIRMEI)	FB-R1129	11066A	20	Peripheral Cutting	6	PE250	K13048	1	20	0,227
11304P	TFB FANSIZ LAM.SIZ IC KASET ARKA KAPAK (CEVIRMEI)	FB-R1129	11066A	30	Curling	3	PH150	K40009	1	20	0,211
11305P	TFB FANLI CEVSIZ GRILSIZ IC KASET ARKA KAPAK (SISI RMELI)	FB-R1129	11066A	10	Stroking	5	PH30001	K21002	2	20	0,267
11305P	TFB FANLI CEVSIZ GRILSIZ IC KASET ARKA KAPAK (SISI RMELI)	FB-R1129	11066A	20	Peripheral Cutting	6	PE250	K13048	1	20	0,227
11305P	TFB FANLI CEVSIZ GRILSIZ IC KASET ARKA KAPAK (SISI RMELI)	FB-R1129	11066A	30	Curling	3	PH150	K40009	1	20	0,211
11306P	TFB FANSIZ CEVLI FAN PERDELI IC KASET ARKA KAPAK(SISI R	FB-R1129	11066A	10	Stroking	5	PH30001	K21002	2	20	0,267
11306P	TFB FANSIZ CEVLI FAN PERDELI IC KASET ARKA KAPAK(SISI R	FB-R1129	11066A	20	Peripheral Cutting	6	PE250	K13048	1	20	0,227
11306P	TFB FANSIZ CEVLI FAN PERDELI IC KASET ARKA KAPAK(SISI R	FB-R1129	11066A	30	Curling	3	PH150	K40009	1	20	0,211
11307P	TFB FANLI LAM.SIZ GRILSIZ IC KASET ARKA KAPAK (SISI RMELI)	FB-R1129	11066A	10	Stroking	5	PH30001	K21002	2	20	0,267
11307P	TFB FANLI LAM.SIZ GRILSIZ IC KASET ARKA KAPAK (SISI RMELI)	FB-R1129	11066A	20	Peripheral Cutting	6	PE250	K13048	1	20	0,227
11307P	TFB FANLI LAM.SIZ GRILSIZ IC KASET ARKA KAPAK (SISI RMELI)	FB-R1129	11066A	30	Curling	3	PH150	K40009	1	20	0,211
11308P	TFB FANLI IC KASET ARKA KAPAK (CEVIRMEI ,BACASIZ)	FB-R1129	11066A	10	Stroking	5	PH30001	K21002	2	20	0,267
11308P	TFB FANLI IC KASET ARKA KAPAK (CEVIRMEI ,BACASIZ)	FB-R1129	11066A	20	Peripheral Cutting	6	PE250	K13048	1	20	0,227
11308P	TFB FANLI IC KASET ARKA KAPAK (CEVIRMEI ,BACASIZ)	FB-R1129	11066A	30	Curling	3	PH150	K40009	1	20	0,211
11327P	TFB LAM.SIZ IC KASET ARKA KAPAK (GAZLI ,Y.BROLÜRLÜ,FAN	FB-R1129	11066A	10	Stroking	5	PH30001	K21002	2	20	0,267
11327P	TFB LAM.SIZ IC KASET ARKA KAPAK (GAZLI ,Y.BROLÜRLÜ,FAN	FB-R1129	11066A	20	Peripheral Cutting	6	PE250	K13048	1	20	0,227
11327P	TFB LAM.SIZ IC KASET ARKA KAPAK (GAZLI ,Y.BROLÜRLÜ,FAN	FB-R1129	11066A	30	Curling	3	PH150	K40009	1	20	0,211
11328P	TFB IC KASET ARKA KAPAK (LAMBALI ,GAZLI ,Y.BROLURLU,FA	FB-R1129	11066A	10	Stroking	5	PH30001	K21002	2	20	0,267
11328P	TFB IC KASET ARKA KAPAK (LAMBALI ,GAZLI ,Y.BROLURLU,FA	FB-R1129	11066A	20	Peripheral Cutting	6	PE250	K13048	1	20	0,227
11328P	TFB IC KASET ARKA KAPAK (LAMBALI ,GAZLI ,Y.BROLURLU,FA	FB-R1129	11066A	30	Curling	3	PH150	K40009	1	20	0,211
11329P	TFB21 LAMLI,CEVLI,YENI BRU IC KASET ARKA KAPAK,P (SISI R	FB-R1129	11066A	10	Stroking	5	PH30001	K21002	2	20	0,267
11329P	TFB21 LAMLI,CEVLI,YENI BRU IC KASET ARKA KAPAK,P (SISI R	FB-R1129	11066A	20	Peripheral Cutting	6	PE250	K13048	1	20	0,227
11329P	TFB21 LAMLI,CEVLI,YENI BRU IC KASET ARKA KAPAK,P (SISI R	FB-R1129	11066A	30	Curling	3	PH150	K40009	1	20	0,211
11363P	TFB İÇ KASET ARKA KAPAK (FANSIZ/CEVIRMESIZ/BACASIZ/LA	FB-R1129	11066A	10	Stroking	5	PH30001	K21002	2	20	0,267
11363P	TFB İÇ KASET ARKA KAPAK (FANSIZ/CEVIRMESIZ/BACASIZ/LA	FB-R1129	11066A	20	Peripheral Cutting	6	PE250	K13048	1	20	0,227
11363P	TFB İÇ KASET ARKA KAPAK (FANSIZ/CEVIRMESIZ/BACASIZ/LA	FB-R1129	11066A	30	Curling	3	PH150	K40009	1	20	0,211
11363P	TFB İÇ KASET ARKA KAPAK (FANSIZ/CEVIRMESIZ/BACASIZ/LA	FB-R1129	11066A	40	Decoupling pole hole	10	PE030	K11233	1	20	0,18
11364P	TFB İÇ KASET ARKA KAPAK (FANSIZ/CEVIRMESIZ/BACASIZ/AB	FB-R1129	11066A	10	Stroking	5	PH30001	K21002	2	20	0,267
11364P	TFB İÇ KASET ARKA KAPAK (FANSIZ/CEVIRMESIZ/BACASIZ/AB	FB-R1129	11066A	20	Peripheral Cutting	6	PE250	K13048	1	20	0,227
11364P	TFB İÇ KASET ARKA KAPAK (FANSIZ/CEVIRMESIZ/BACASIZ/AB	FB-R1129	11066A	30	Curling	3	PH150	K40009	1	20	0,211
11364P	TFB İÇ KASET ARKA KAPAK (FANSIZ/CEVIRMESIZ/BACASIZ/AB	FB-R1129	11066A	40	Decoupling pole hole	10	PE030	K11233	1	20	0,18
11223P	TFB IC KASET ARKA KAPAK,P	FB-R1130	11066A	10	Stroking	5	PH30001	K21002	2	20	0,267
11223P	TFB IC KASET ARKA KAPAK,P	FB-R1130	11066A	20	Peripheral Cutting	6	PE250	K13048	1	20	0,227

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11223P	TFB IC KASET ARKA KAPAK,P	FB-R1130	11066A	30	Curling	3	PH150	K40009	1	20	0,211
03069P	TFB/A FIRIN KAPAGI ,P(GOBEK BOSALTMASIZ/BORU KULPLU/S	FB-R1142	03051A	10	Stroking	1	PH350	K20003	2	20	0,467
03069P	TFB/A FIRIN KAPAGI ,P(GOBEK BOSALTMASIZ/BORU KULPLU/S	FB-R1142	03051A	20	Cutting Slope	2	DE085	K30002	1	20	0,224
03069P	TFB/A FIRIN KAPAGI ,P(GOBEK BOSALTMASIZ/BORU KULPLU/S	FB-R1142	03051A	30	Draining Core	3	PH150	K12004	1	20	0,23
03069P	TFB/A FIRIN KAPAGI ,P(GOBEK BOSALTMASIZ/BORU KULPLU/S	FB-R1142	03051A	40	Top and Bottom Countersinkir	4	PH07001	K60010	1	20	0,25
03103P	TFB/TFA SANDVIC IC FIRIN KAPAGI ,P (IÇ CAMSIZ)	FB-R1146	03103A	10	Stroking	1	PH350	K20130	2	20	0,467
03103P	TFB/TFA SANDVIC IC FIRIN KAPAGI ,P (IÇ CAMSIZ)	FB-R1146	03103A	20	Cutting Slope	2	DE085	K30068	1	20	0,224
03103P	TFB/TFA SANDVIC IC FIRIN KAPAGI ,P (IÇ CAMSIZ)	FB-R1146	03103A	30	Top and Bottom Countersinkir	4	PH07001	K60010	1	20	0,25
03104P	TFB/TFA SANDVIC IC FIRIN KAPAGI ,P	FB-R1146	03103A	10	Stroking	1	PH350	K20130	2	20	0,467
03104P	TFB/TFA SANDVIC IC FIRIN KAPAGI ,P	FB-R1146	03103A	20	Cutting Slope	2	DE085	K30068	1	20	0,224
03104P	TFB/TFA SANDVIC IC FIRIN KAPAGI ,P	FB-R1146	03103A	30	Draining Core	3	PH150	K12072	1	20	0,23
03104P	TFB/TFA SANDVIC IC FIRIN KAPAGI ,P	FB-R1146	03103A	40	Top and Bottom Countersinkir	4	PH07001	K60010	1	20	0,25
01338P	TFB 4G PLEYT, (USA YENI YAG KORUMA SAÇLI)	FB-R1161	01032A	10	Stroking	1	PH600	K20103	2	20	0,39
01338P	TFB 4G PLEYT, (USA YENI YAG KORUMA SAÇLI)	FB-R1161	01032A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01338P	TFB 4G PLEYT, (USA YENI YAG KORUMA SAÇLI)	FB-R1161	01032A	30	Decoupling Pipe Hole	3	PH150	K11255	1	20	0,308
01338P	TFB 4G PLEYT, (USA YENI YAG KORUMA SAÇLI)	FB-R1161	01032A	40	Draining Pole Hole	9	PE080	K11089	1	20	0,25
01338P	TFB 4G PLEYT, (USA YENI YAG KORUMA SAÇLI)	FB-R1161	01032A	50	Coutersinking Pole Cap	9	PE080	K64087	1	20	0,25
01364P	TFB 4G PLEYT,INOX (USA YENI YAG KORUMA SAÇLI)	FB-R1161	01277A	10	Stroking	1	PH600	K20002	2	20	0,39
01364P	TFB 4G PLEYT,INOX (USA YENI YAG KORUMA SAÇLI)	FB-R1161	01277A	20	Cutting Slope	2	DE085	K30002	1	20	0,254
01364P	TFB 4G PLEYT,INOX (USA YENI YAG KORUMA SAÇLI)	FB-R1161	01277A	30	Decoupling Pipe Hole	3	PH150	K11254	1	20	0,308
01364P	TFB 4G PLEYT,INOX (USA YENI YAG KORUMA SAÇLI)	FB-R1161	01277A	40	Draining Pole Hole	9	PE080	K11089	1	20	0,25
01364P	TFB 4G PLEYT,INOX (USA YENI YAG KORUMA SAÇLI)	FB-R1161	01277A	50	Coutersinking Pole Cap	9	PE080	K64087	1	20	0,25
11352P	TFB IC KASET ARKA KAPAK	FB-R1162	11066A	10	Stroking	5	PH30001	K21002	2	20	0,267
11352P	TFB IC KASET ARKA KAPAK	FB-R1162	11066A	20	Peripheral Cutting	6	PE250	K13048	1	20	0,227
11352P	TFB IC KASET ARKA KAPAK	FB-R1162	11066A	30	Curling	3	PH150	K40009	1	20	0,211
11352P	TFB IC KASET ARKA KAPAK	FB-R1162	11066A	40	Decoupling pole hole	10	PE030	K11233	1	20	0,18
11353P	TFB IC KASET ARKA KAPAK	FB-R1162	11066A	10	Stroking	5	PH30001	K21002	2	20	0,267
11353P	TFB IC KASET ARKA KAPAK	FB-R1162	11066A	20	Peripheral Cutting	6	PE250	K13048	1	20	0,227
11353P	TFB IC KASET ARKA KAPAK	FB-R1162	11066A	30	Curling	3	PH150	K40009	1	20	0,211
11353P	TFB IC KASET ARKA KAPAK	FB-R1162	11066A	40	Decoupling pole hole	10	PE030	K11233	1	20	0,18
01388P	TFB 4 SPİRAL İSİTİCİLİ PLEYT	FB-R1175	01388A	10	Stroking	1	PH350	K20037	2	20	0,77
01388P	TFB 4 SPİRAL İSİTİCİLİ PLEYT	FB-R1175	01388A	20	Peripheral Cutting	1	PH350	K10351	1	20	0,448
01388P	TFB 4 SPİRAL İSİTİCİLİ PLEYT	FB-R1175	01388A	30	Leveling Slope	1	PH350	K20037	2	20	0,448
01388P	TFB 4 SPİRAL İSİTİCİLİ PLEYT	FB-R1175	01388A	40	Head Rolling	1	PH350	K70083	1	20	0,448
01388P	TFB 4 SPİRAL İSİTİCİLİ PLEYT	FB-R1175	01388A	50	Decoupling Hinge Hole	4	PH07001	K11281	1	20	0,164
01388P	TFB 4 SPİRAL İSİTİCİLİ PLEYT	FB-R1175	01388A	60	Flanging	1	PH350	K40683	2	20	0,77
01466P	TFB 18 SPİRAL İSİTİCİLİ PLEYT (INOX)	FB-R1175	01388A	10	Stroking	1	PH350	K20037	2	20	0,77
01466P	TFB 18 SPİRAL İSİTİCİLİ PLEYT (INOX)	FB-R1175	01388A	20	Peripheral Cutting	1	PH350	K10351	1	20	0,448
01466P	TFB 18 SPİRAL İSİTİCİLİ PLEYT (INOX)	FB-R1175	01388A	30	Leveling Slope	1	PH350	K20037	2	20	0,448
01466P	TFB 18 SPİRAL İSİTİCİLİ PLEYT (INOX)	FB-R1175	01388A	40	Head Rolling	1	PH350	K70083	1	20	0,448
01466P	TFB 18 SPİRAL İSİTİCİLİ PLEYT (INOX)	FB-R1175	01388A	50	Decoupling Hinge Hole	4	PH07001	K11281	1	20	0,164
01466P	TFB 18 SPİRAL İSİTİCİLİ PLEYT (INOX)	FB-R1175	01388A	60	Flanging	1	PH350	K40683	2	20	0,77
01394P	TFB214 PLEYT SECURİT	FB-R1182	01032A	10	Stroking	1	PH350	K20033	2	20	0,77
01394P	TFB214 PLEYT SECURİT	FB-R1182	01032A	20	Cutting Slope	2	DE085	K30002	1	20	0,448

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01394P	TFB214 PLEYT SECURİ T	FB-R1182	01032A	30	Draining Core	3	PH150	K12074	2	20	0,448
01394P	TFB214 PLEYT SECURİ T	FB-R1182	01032A	40	Decoupling Shutter Ground	9	PE080	K70008	1	20	0,448
01394P	TFB214 PLEYT SECURİ T	FB-R1182	01032A	50	Decoupling Hinge Hole	9	PE080	K11216	1	20	0,164
02710P	TFB18 DERİN PANO..LAMBALI..AVANTI	FB-R1189	02688A	10	Stroking	1	PH350	K20217	2	20	0,33
02710P	TFB18 DERİN PANO..LAMBALI..AVANTI	FB-R1189	02688A	20	Peripheral Cutting	3	PH150	K10326	1	20	0,224
02710P	TFB18 DERİN PANO..LAMBALI..AVANTI	FB-R1189	02688A	30	Leveling and Curling	3	PH150	K20217	1	20	0,33
02710P	TFB18 DERİN PANO..LAMBALI..AVANTI	FB-R1189	02688A	40	Draining Switch Hook	3	PH150	K10327	1	20	0,224
02729P	TFB18 DERİN PANO..LAMBASIZ..AVANTI	FB-R1189	02688A	10	Stroking	1	PH350	K20217	2	20	0,33
02729P	TFB18 DERİN PANO..LAMBASIZ..AVANTI	FB-R1189	02688A	20	Peripheral Cutting	3	PH150	K10326	1	20	0,224
02729P	TFB18 DERİN PANO..LAMBASIZ..AVANTI	FB-R1189	02688A	30	Leveling and Curling	3	PH150	K20217	1	20	0,33
02729P	TFB18 DERİN PANO..LAMBASIZ..AVANTI	FB-R1189	02688A	40	Draining Switch Hook	3	PH150	K10327	1	20	0,224
02756P	TFB18 INOX DERİN PANO.LAMBALI..AVANTI	FB-R1189	02686A	10	Stroking	1	PH350	K20217	2	20	0,33
02756P	TFB18 INOX DERİN PANO.LAMBALI..AVANTI	FB-R1189	02686A	20	Peripheral Cutting	3	PH150	K10326	1	20	0,224
02756P	TFB18 INOX DERİN PANO.LAMBALI..AVANTI	FB-R1189	02686A	30	Leveling and Curling	3	PH150	K20217	1	20	0,33
02756P	TFB18 INOX DERİN PANO.LAMBALI..AVANTI	FB-R1189	02686A	40	Draining Switch Hook	3	PH150	K10327	1	20	0,224
08115P	TFC DIŞ KASET ARKA KAPAK(ELEKTRİKLİ)	FC-R1010	08115A	10	Peripheral cutting and Draining	1	PH350	K19160	1	20	0,4
08115P	TFC DIŞ KASET ARKA KAPAK(ELEKTRİKLİ)	FC-R1010	08115A	20	Curling	3	PH150	K40473	1	20	0,4
08116P	TFC DIŞ KASET ARKA KAPAK(FİRİN ELK,FANLI..OCAK GAZLI)	FC-R1010	08115A	10	Peripheral cutting and Draining	1	PH350	K19160	1	20	0,4
08116P	TFC DIŞ KASET ARKA KAPAK(FİRİN ELK,FANLI..OCAK GAZLI)	FC-R1010	08115A	20	Curling	3	PH150	K40473	1	20	0,4
08118P	TFC DIŞ KASET ARKA KAPAK(ELEKTRİKLİ,FANLI)	FC-R1010	08115A	10	Peripheral cutting and Draining	1	PH350	K19160	1	20	0,4
08118P	TFC DIŞ KASET ARKA KAPAK(ELEKTRİKLİ,FANLI)	FC-R1010	08115A	20	Curling	3	PH150	K40473	1	20	0,4
11338P	TFC_1__ALT İÇ KASET ARKA KAPAK(FANSIZ)	FC-R1017	11045A	10	Stroking	5	PH30001	K21026	2	20	0,267
11338P	TFC_1__ALT İÇ KASET ARKA KAPAK(FANSIZ)	FC-R1017	11045A	20	Peripheral Cutting	6	PE250	K13061	1	20	0,227
11338P	TFC_1__ALT İÇ KASET ARKA KAPAK(FANSIZ)	FC-R1017	11045A	30	Guillotine Cutting	19	DG12605	DG12605	1	20	0,18
11338P	TFC_1__ALT İÇ KASET ARKA KAPAK(FANSIZ)	FC-R1017	11045A	40	Curling	3	PH150	K40030	1	20	0,211
11354P	TFC ALT İÇ KASET ARKA KAPAK	FC-R1017	11045A	10	Stroking	5	PH30001	K21026	2	20	0,267
11354P	TFC ALT İÇ KASET ARKA KAPAK	FC-R1017	11045A	20	Peripheral Cutting	6	PE250	K13061	1	20	0,227
11354P	TFC ALT İÇ KASET ARKA KAPAK	FC-R1017	11045A	30	Guillotine Cutting	19	DG12605	DG12605	1	20	0,18
11354P	TFC ALT İÇ KASET ARKA KAPAK	FC-R1017	11045A	40	Curling	3	PH150	K40030	1	20	0,211
11374P	TFC ALT İÇ KASET ARKA KAPAK (LAMBASIZ,FANSIZ)	FC-R1017	11045A	10	Stroking	5	PH30001	K21026	2	20	0,267
11374P	TFC ALT İÇ KASET ARKA KAPAK (LAMBASIZ,FANSIZ)	FC-R1017	11045A	20	Peripheral Cutting	6	PE250	K13061	1	20	0,227
11374P	TFC ALT İÇ KASET ARKA KAPAK (LAMBASIZ,FANSIZ)	FC-R1017	11045A	30	Guillotine Cutting	19	DG12605	DG12605	1	20	0,18
11374P	TFC ALT İÇ KASET ARKA KAPAK (LAMBASIZ,FANSIZ)	FC-R1017	11045A	40	Curling	3	PH150	K40030	1	20	0,211
03113P	TFC SANDVIÇ FİRİN ALT DIŞ KAPAK	FC-R1030	03113A	10	Stroking	1	PH350	K20146	2	20	0,25
03113P	TFC SANDVIÇ FİRİN ALT DIŞ KAPAK	FC-R1030	03113A	20	Cutting Slope	2	DE085	K30074	1	20	0,2
03113P	TFC SANDVIÇ FİRİN ALT DIŞ KAPAK	FC-R1030	03113A	30	Coutersinking and Drilling Hole	4	PH07001	K10087	1	20	0,2
11384P	TFC GAZLI İÇ KASET ARKA KAPAK(LAMBASIZ)	FC-R1035	11045A	10	Stroking	5	PH30001	K21026	2	20	0,267
11384P	TFC GAZLI İÇ KASET ARKA KAPAK(LAMBASIZ)	FC-R1035	11045A	20	Peripheral Cutting	6	PE250	K13061	1	20	0,227
11384P	TFC GAZLI İÇ KASET ARKA KAPAK(LAMBASIZ)	FC-R1035	11045A	30	Guillotine Cutting	19	DG12605	DG12605	1	20	0,18
11384P	TFC GAZLI İÇ KASET ARKA KAPAK(LAMBASIZ)	FC-R1035	11045A	40	Decoupling pole hole	7	PE150	K11237	1	20	0,18
11384P	TFC GAZLI İÇ KASET ARKA KAPAK(LAMBASIZ)	FC-R1035	11045A	50	Bending	3	PH150	K40030	1	20	0,18
11384P	TFC GAZLI İÇ KASET ARKA KAPAK(LAMBASIZ)	FC-R1035	11045A	60	Slopping Pole Cap	9	PE080	K64196	1	20	0,18
11385P	TFC GAZLI İÇ KASET ARKA KAPAK(LAMBASIZ)	FC-R1035	11045A	10	Stroking	5	PH30001	K21026	2	20	0,267
11385P	TFC GAZLI İÇ KASET ARKA KAPAK(LAMBASIZ)	FC-R1035	11045A	20	Peripheral Cutting	6	PE250	K13061	1	20	0,227

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11385P	TFC GAZLI IÇ KASET ARKA KAPAK(LAMBASI Z)	FC-R1035	11045A	30	Guillotine Cutting	19	DG12605	DG12605	1	20	0,18
11385P	TFC GAZLI IÇ KASET ARKA KAPAK(LAMBASI Z)	FC-R1035	11045A	40	Decoupling pole hole	7	PE150	K11237	1	20	0,18
11385P	TFC GAZLI IÇ KASET ARKA KAPAK(LAMBASI Z)	FC-R1035	11045A	50	Bending	3	PH150	K40030	1	20	0,18
11385P	TFC GAZLI IÇ KASET ARKA KAPAK(LAMBASI Z)	FC-R1035	11045A	60	Slopping Pole Cap	9	PE080	K64196	1	20	0,18
08134P	TFC GAZLI FIRIN DIŞ KASET ARKA KAPAK	FC-R1041	08115A	10	Peripheral cutting and Draining	1	PH350	K19160	2	20	0,25
08134P	TFC GAZLI FIRIN DIŞ KASET ARKA KAPAK	FC-R1041	08115A	20	Curling	3	PH150	K40473	1	20	0,2
08134P	TFC GAZLI FIRIN DIŞ KASET ARKA KAPAK	FC-R1041	08115A	30	Draining Hole	7	PE150	K11275	1	20	0,2
03115P	TFC SANDVIÇ FIRIN ÜST DIŞ KAPAK	FC-R1128	03115A	10	Stroking	1	PH350	K20146	2	20	0,25
03115P	TFC SANDVIÇ FIRIN ÜST DIŞ KAPAK	FC-R1128	03115A	20	Cutting Slope	2	DE085	K30074	1	20	0,2
03115P	TFC SANDVIÇ FIRIN ÜST DIŞ KAPAK	FC-R1128	03115A	30	Coutersinking and Drilling Hole	4	PH07001	K10087	1	20	0,2
04043P	TFC ALT FIRIN KAPAK ÜST BANDI	FC-R1151	04043A	10	Draining	12	PE060	K10119	1	20	0,101
04043P	TFC ALT FIRIN KAPAK ÜST BANDI	FC-R1151	04043A	20	Curling	9	PE080	K40556	1	20	0,371
04043P	TFC ALT FIRIN KAPAK ÜST BANDI	FC-R1151	04043A	30	Shutting	8	PA130	K64081	1	20	0,1
04043P	TFC ALT FIRIN KAPAK ÜST BANDI	FC-R1151	04043A	40	Crushing	10	PE030	K63014	1	20	0,1
04044P	TFC ALT FIRIN KAPAK ALT BANDI	FC-R1151	04043A	10	Draining	12	PE060	K10119	1	20	0,101
04044P	TFC ALT FIRIN KAPAK ALT BANDI	FC-R1151	04043A	20	Curling	9	PE080	K40556	1	20	0,371
04044P	TFC ALT FIRIN KAPAK ALT BANDI	FC-R1151	04043A	30	Shutting	8	PA130	K64081	1	20	0,1
04044P	TFC ALT FIRIN KAPAK ALT BANDI	FC-R1151	04043A	40	Crushing	10	PE030	K64081	1	20	0,1
04042P	TFC ÜST FIRIN KAPAK BANDI	FC-R1152	04042A	10	Draining	12	PE060	K64081	1	20	0,101
04042P	TFC ÜST FIRIN KAPAK BANDI	FC-R1152	04042A	20	Curling	9	PE080	K64081	1	20	0,371
04042P	TFC ÜST FIRIN KAPAK BANDI	FC-R1152	04042A	30	Shutting	8	PA130	K64081	1	20	0,1
04042P	TFC ÜST FIRIN KAPAK BANDI	FC-R1152	04042A	40	Crushing	10	PE030	K63014	1	20	0,1
02011P	TFG13-14 DUZ PANO	FG-R1005	02068A	10	Peripheral cutting and Draining	3	PH150	K19027	1	20	0,225
02011P	TFG13-14 DUZ PANO	FG-R1005	02068A	20	Cutting wart	19	DG12603	DG12603	1	20	0,252
02011P	TFG13-14 DUZ PANO	FG-R1005	02068A	30	Curling	3	PH150	K40034	1	20	0,264
02024P	TFG13 PANO,P (TEK SINYAL LAMBALI)	FG-R1005	02068A	10	Peripheral cutting and Draining	3	PH150	K19027	1	20	0,225
02024P	TFG13 PANO,P (TEK SINYAL LAMBALI)	FG-R1005	02068A	20	Curling	3	PH150	K40034	1	20	0,264
02026P	TFG14 PANO,P (TEK SINYAL LAMBALI\TFR14)	FG-R1005	02068A	10	Peripheral cutting and Draining	3	PH150	K19027	1	20	0,225
02026P	TFG14 PANO,P (TEK SINYAL LAMBALI\TFR14)	FG-R1005	02068A	20	Curling	3	PH150	K40034	1	20	0,264
02093P	TFG14\34\44\54 PANO GOVDESI,P	FG-R1005	02068A	10	Peripheral cutting and Draining	3	PH150	K19027	1	20	0,225
02093P	TFG14\34\44\54 PANO GOVDESI,P	FG-R1005	02068A	20	Curling	3	PH150	K40034	1	20	0,264
02097P	TFG13 PANO GOVDESI,P	FG-R1005	02068A	10	Peripheral cutting and Draining	3	PH150	K19027	1	20	0,225
02097P	TFG13 PANO GOVDESI,P	FG-R1005	02068A	20	Curling	3	PH150	K40034	1	20	0,264
02139P	TFG14\34\44\54\ PANO,P (BUTONLU\EKONOMIK)	FG-R1005	02068A	10	Peripheral cutting and Draining	3	PH150	K19027	1	20	0,225
02139P	TFG14\34\44\54\ PANO,P (BUTONLU\EKONOMIK)	FG-R1005	02068A	20	Curling	3	PH150	K40034	1	20	0,264
02472P	TFG14 PANO (INOX)	FG-R1005	02472A	10	Peripheral cutting and Draining	3	PH150	K19027	1	20	0,225
02472P	TFG14 PANO (INOX)	FG-R1005	02472A	20	Curling	3	PH150	K40034	1	20	0,264
02096P	TFG64 PANO GOVDESI,P	FG-R1010	02068A	10	Peripheral cutting and Draining	3	PH150	K19124	1	20	0,225
02096P	TFG64 PANO GOVDESI,P	FG-R1010	02068A	20	Cutting wart	19	DG12603	DG12603	1	20	0,252
02096P	TFG64 PANO GOVDESI,P	FG-R1010	02068A	30	Curling	3	PH150	K40034	1	20	0,264
02099P	TFG66 PANO,P	FG-R1010	02068A	10	Peripheral cutting and Draining	3	PH150	K19124	1	20	0,225
02099P	TFG66 PANO,P	FG-R1010	02068A	20	Cutting wart	19	DG12603	DG12603	1	20	0,252
02099P	TFG66 PANO,P	FG-R1010	02068A	30	Curling	3	PH150	K40034	1	20	0,264

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01031P	TFG 4 GAZLI PLEYT,P (SONME EMNİYETLİ)	FG-R1011	01086A	10	Stroking	1	PH350	K20009	2	20	0,39
01031P	TFG 4 GAZLI PLEYT,P (SONME EMNİYETLİ)	FG-R1011	01086A	20	Cutting Slope	2	DE085	K30028	1	20	0,254
01031P	TFG 4 GAZLI PLEYT,P (SONME EMNİYETLİ)	FG-R1011	01086A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11251	1	20	0,308
01031P	TFG 4 GAZLI PLEYT,P (SONME EMNİYETLİ)	FG-R1011	01086A	40	Decoupling Connection hole+C	9	PE080	K11062	1	20	0,224
01037P	TFG 4 GAZLI PLEYT,P	FG-R1011	01086A	10	Stroking	1	PH350	K20009	2	20	0,39
01037P	TFG 4 GAZLI PLEYT,P	FG-R1011	01086A	20	Cutting Slope	2	DE085	K30028	1	20	0,254
01037P	TFG 4 GAZLI PLEYT,P	FG-R1011	01086A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11251	1	20	0,308
01037P	TFG 4 GAZLI PLEYT,P	FG-R1011	01086A	40	Decoupling Connection hole+C	9	PE080	K11062	1	20	0,224
01084P	TFG 4 GAZLI PLEYT,P (CAM OCAK KAPAKLI)	FG-R1011	01086A	10	Stroking	1	PH350	K20009	2	20	0,39
01084P	TFG 4 GAZLI PLEYT,P (CAM OCAK KAPAKLI)	FG-R1011	01086A	20	Cutting Slope	2	DE085	K30028	1	20	0,254
01084P	TFG 4 GAZLI PLEYT,P (CAM OCAK KAPAKLI)	FG-R1011	01086A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11251	1	20	0,308
01084P	TFG 4 GAZLI PLEYT,P (CAM OCAK KAPAKLI)	FG-R1011	01086A	40	Decoupling Connection hole+C	9	PE080	K11062	1	20	0,224
01107P	TFG 4 GAZLI PLEYT,P(CAM 0.KAPAKLI / SONME EMNİYETLİ)	FG-R1011	01086A	10	Stroking	1	PH350	K20009	2	20	0,39
01107P	TFG 4 GAZLI PLEYT,P(CAM 0.KAPAKLI / SONME EMNİYETLİ)	FG-R1011	01086A	20	Cutting Slope	2	DE085	K30028	1	20	0,254
01107P	TFG 4 GAZLI PLEYT,P(CAM 0.KAPAKLI / SONME EMNİYETLİ)	FG-R1011	01086A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11251	1	20	0,308
01107P	TFG 4 GAZLI PLEYT,P(CAM 0.KAPAKLI / SONME EMNİYETLİ)	FG-R1011	01086A	40	Decoupling Connection hole+C	9	PE080	K11062	1	20	0,224
01169P	TFG 4 GAZLI PLEYT,P (ESKI TIP YAG KORUMA SAÇLI)	FG-R1011	01086A	10	Stroking	1	PH350	K20009	2	20	0,39
01169P	TFG 4 GAZLI PLEYT,P (ESKI TIP YAG KORUMA SAÇLI)	FG-R1011	01086A	20	Cutting Slope	2	DE085	K30028	1	20	0,254
01169P	TFG 4 GAZLI PLEYT,P (ESKI TIP YAG KORUMA SAÇLI)	FG-R1011	01086A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11251	1	20	0,308
01169P	TFG 4 GAZLI PLEYT,P (ESKI TIP YAG KORUMA SAÇLI)	FG-R1011	01086A	40	Decoupling Connection hole+C	9	PE080	K11062	1	20	0,224
01263P	TFG 4G PLEYT (INOX)	FG-R1011	01263A	10	Stroking	1	PH350	K20045	2	20	0,39
01263P	TFG 4G PLEYT (INOX)	FG-R1011	01263A	20	Cutting Slope	2	DE085	K30028	1	20	0,254
01263P	TFG 4G PLEYT (INOX)	FG-R1011	01263A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11251	1	20	0,308
01263P	TFG 4G PLEYT (INOX)	FG-R1011	01263A	40	Decoupling Connection hole+C	9	PE080	K11062	1	20	0,224
01264P	TFG 4G PLEYT (INOX/CAM OCAK KAPAKLI)	FG-R1011	01263A	10	Stroking	1	PH350	K20045	2	20	0,39
01264P	TFG 4G PLEYT (INOX/CAM OCAK KAPAKLI)	FG-R1011	01263A	20	Cutting Slope	2	DE085	K30028	1	20	0,254
01264P	TFG 4G PLEYT (INOX/CAM OCAK KAPAKLI)	FG-R1011	01263A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11251	1	20	0,308
01264P	TFG 4G PLEYT (INOX/CAM OCAK KAPAKLI)	FG-R1011	01263A	40	Decoupling Connection hole+C	9	PE080	K11062	1	20	0,224
01267P	TFG 4G PLEYT (YENİ MENTEŞE YUVALI)	FG-R1011	01086A	10	Stroking	1	PH350	K20009	2	20	0,39
01267P	TFG 4G PLEYT (YENİ MENTEŞE YUVALI)	FG-R1011	01086A	20	Cutting Slope	2	DE085	K30028	1	20	0,254
01267P	TFG 4G PLEYT (YENİ MENTEŞE YUVALI)	FG-R1011	01086A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11251	1	20	0,308
01268P	TFG 4G PLEYT	FG-R1011	01086A	10	Stroking	1	PH350	K20009	2	20	0,39
01268P	TFG 4G PLEYT	FG-R1011	01086A	20	Cutting Slope	2	DE085	K30028	1	20	0,254
01268P	TFG 4G PLEYT	FG-R1011	01086A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11251	1	20	0,308
01275P	TFG 4G PLEYT (INOX)	FG-R1011	01263A	10	Stroking	1	PH350	K20045	2	20	0,39
01275P	TFG 4G PLEYT (INOX)	FG-R1011	01263A	20	Cutting Slope	2	DE085	K30028	1	20	0,254
01275P	TFG 4G PLEYT (INOX)	FG-R1011	01263A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11251	1	20	0,308
01408P	TFG 4G PLEYT (INOX/SÖNME EMN./OCAK KAPAKSIZ)	FG-R1011	01263A	10	Stroking	1	PH350	K20045	2	20	0,39
01408P	TFG 4G PLEYT (INOX/SÖNME EMN./OCAK KAPAKSIZ)	FG-R1011	01263A	20	Cutting Slope	2	DE085	K30028	1	20	0,254
01408P	TFG 4G PLEYT (INOX/SÖNME EMN./OCAK KAPAKSIZ)	FG-R1011	01263A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11251	1	20	0,308
01451P	TFG 4G PLEYT (INOX)	FG-R1011	01263A	10	Stroking	1	PH350	K20045	2	20	0,39
01451P	TFG 4G PLEYT (INOX)	FG-R1011	01263A	20	Cutting Slope	2	DE085	K30028	1	20	0,254
01451P	TFG 4G PLEYT (INOX)	FG-R1011	01263A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11251	1	20	0,308
01451P	TFG 4G PLEYT (INOX)	FG-R1011	01263A	40	Decoupling Connection hole+C	9	PE080	K11062	1	20	0,224

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01452P	TFG 4G PLEYT (INOX)	FG-R1011	01263A	10	Stroking	1	PH350	K20045	2	20	0,39
01452P	TFG 4G PLEYT (INOX)	FG-R1011	01263A	20	Cutting Slope	2	DE085	K30028	1	20	0,254
01452P	TFG 4G PLEYT (INOX)	FG-R1011	01263A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11251	1	20	0,308
01452P	TFG 4G PLEYT (INOX)	FG-R1011	01263A	40	Decoupling Connection hole+C	9	PE080	K11062	1	20	0,224
01034P	TFG 4 ELEKTRIKLI PLEYT,P	FG-R1012	01086A	10	Stroking	1	PH350	K20009	2	20	0,39
01034P	TFG 4 ELEKTRIKLI PLEYT,P	FG-R1012	01086A	20	Cutting Slope	2	DE085	K30008	1	20	0,254
01034P	TFG 4 ELEKTRIKLI PLEYT,P	FG-R1012	01086A	30	Draining, Hinging, and Shutter	3	PH150	K11252	1	20	0,308
01034P	TFG 4 ELEKTRIKLI PLEYT,P	FG-R1012	01086A	40	Decoupling Connection hole+C	9	PE080	K11062	1	20	0,224
01038P	TFG 3 ELEKTRIKLI PLEYT GOVDESI,P	FG-R1012	01086A	10	Stroking	1	PH350	K20009	2	20	0,39
01038P	TFG 3 ELEKTRIKLI PLEYT GOVDESI,P	FG-R1012	01086A	20	Cutting Slope	2	DE085	K30008	1	20	0,254
01038P	TFG 3 ELEKTRIKLI PLEYT GOVDESI,P	FG-R1012	01086A	30	Draining, Hinging, and Shutter	3	PH150	K11252	1	20	0,308
01038P	TFG 3 ELEKTRIKLI PLEYT GOVDESI,P	FG-R1012	01086A	40	Decoupling Connection hole+C	9	PE080	K11062	1	20	0,224
01085P	TFG 4 ELEKTRIKLI PLEYT,P (CAM OCAK KAPAKLI)	FG-R1012	01086A	10	Stroking	1	PH350	K20009	2	20	0,39
01085P	TFG 4 ELEKTRIKLI PLEYT,P (CAM OCAK KAPAKLI)	FG-R1012	01086A	20	Cutting Slope	2	DE085	K30008	1	20	0,254
01085P	TFG 4 ELEKTRIKLI PLEYT,P (CAM OCAK KAPAKLI)	FG-R1012	01086A	30	Draining, Hinging, and Shutter	3	PH150	K11252	1	20	0,308
01085P	TFG 4 ELEKTRIKLI PLEYT,P (CAM OCAK KAPAKLI)	FG-R1012	01086A	40	Decoupling Connection hole+C	9	PE080	K11062	1	20	0,224
01257P	TFG 4E PLEYT,P (YENI TIP MENTESE YUVALI)	FG-R1012	01086A	10	Stroking	1	PH350	K20009	2	20	0,39
01257P	TFG 4E PLEYT,P (YENI TIP MENTESE YUVALI)	FG-R1012	01086A	20	Cutting Slope	2	DE085	K30008	1	20	0,254
01257P	TFG 4E PLEYT,P (YENI TIP MENTESE YUVALI)	FG-R1012	01086A	30	Draining, Hinging, and Shutter	3	PH150	K11252	1	20	0,308
01258P	TFG 4E PLEYT,P	FG-R1012	01086A	10	Stroking	1	PH350	K20009	2	20	0,39
01258P	TFG 4E PLEYT,P	FG-R1012	01086A	20	Cutting Slope	2	DE085	K30008	1	20	0,254
01258P	TFG 4E PLEYT,P	FG-R1012	01086A	30	Draining, Hinging, and Shutter	3	PH150	K11252	1	20	0,308
01020P	TFG 3G+ 1E PLEYT GOVDESI,P	FG-R1013	01086A	10	Stroking	1	PH350	K20035	2	20	0,39
01020P	TFG 3G+ 1E PLEYT GOVDESI,P	FG-R1013	01086A	20	Cutting Slope	2	DE085	K30008	1	20	0,254
01020P	TFG 3G+ 1E PLEYT GOVDESI,P	FG-R1013	01086A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11251	1	20	0,308
01020P	TFG 3G+ 1E PLEYT GOVDESI,P	FG-R1013	01086A	40	Draining Head Ground	9	PE080	K12070	1	20	0,18
01020P	TFG 3G+ 1E PLEYT GOVDESI,P	FG-R1013	01086A	50	Decoupling Connection hole+C	9	PE080	K11062	1	20	0,18
01068P	TFG 3 GAZLI PLEYT,P	FG-R1013	01086A	10	Stroking	1	PH350	K20035	2	20	0,39
01068P	TFG 3 GAZLI PLEYT,P	FG-R1013	01086A	20	Cutting Slope	2	DE085	K30008	1	20	0,254
01068P	TFG 3 GAZLI PLEYT,P	FG-R1013	01086A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11251	1	20	0,308
01068P	TFG 3 GAZLI PLEYT,P	FG-R1013	01086A	40	Decoupling Connection hole+C	9	PE080	K11062	1	20	0,18
01082P	TFG 3G+ 1E PLEYT,P (SONME EMNI YETLI)	FG-R1013	01086A	10	Stroking	1	PH350	K20035	2	20	0,39
01082P	TFG 3G+ 1E PLEYT,P (SONME EMNI YETLI)	FG-R1013	01086A	20	Cutting Slope	2	DE085	K30008	1	20	0,254
01082P	TFG 3G+ 1E PLEYT,P (SONME EMNI YETLI)	FG-R1013	01086A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11251	1	20	0,308
01082P	TFG 3G+ 1E PLEYT,P (SONME EMNI YETLI)	FG-R1013	01086A	40	Draining Head Ground	9	PE080	K12070	1	20	0,16
01082P	TFG 3G+ 1E PLEYT,P (SONME EMNI YETLI)	FG-R1013	01086A	50	Decoupling Connection hole+C	9	PE080	K11062	1	20	0,18
01083P	TFG 3G+ 1E PLEYT,P (CAM OCAK KAPAKLI)	FG-R1013	01086A	10	Stroking	1	PH350	K20035	2	20	0,39
01083P	TFG 3G+ 1E PLEYT,P (CAM OCAK KAPAKLI)	FG-R1013	01086A	20	Cutting Slope	2	DE085	K30008	1	20	0,254
01083P	TFG 3G+ 1E PLEYT,P (CAM OCAK KAPAKLI)	FG-R1013	01086A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11251	1	20	0,308
01083P	TFG 3G+ 1E PLEYT,P (CAM OCAK KAPAKLI)	FG-R1013	01086A	40	Draining Head Ground	9	PE080	K12070	1	20	0,16
01083P	TFG 3G+ 1E PLEYT,P (CAM OCAK KAPAKLI)	FG-R1013	01086A	50	Decoupling Connection hole+C	9	PE080	K11062	1	20	0,18
01108P	TFG 3G+ 1E PLEYT,P	FG-R1013	01086A	10	Stroking	1	PH350	K20035	2	20	0,39
01108P	TFG 3G+ 1E PLEYT,P	FG-R1013	01086A	20	Cutting Slope	2	DE085	K30008	1	20	0,254
01108P	TFG 3G+ 1E PLEYT,P	FG-R1013	01086A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11251	1	20	0,308

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01108P	TFG 3G+ 1E PLEYT,P	FG-R1013	01086A	40	Decoupling Connection hole+0	9	PE080	K11062	1	20	0,18
01109P	TFG 3G+ 1E PLEYT,P (CAM O.KAPAKLI/SONME EMNİ YETLİ)	FG-R1013	01086A	10	Stroking	1	PH350	K20035	2	20	0,39
01109P	TFG 3G+ 1E PLEYT,P (CAM O.KAPAKLI/SONME EMNİ YETLİ)	FG-R1013	01086A	20	Cutting Slope	2	DE085	K30008	1	20	0,254
01109P	TFG 3G+ 1E PLEYT,P (CAM O.KAPAKLI/SONME EMNİ YETLİ)	FG-R1013	01086A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11251	1	20	0,308
01109P	TFG 3G+ 1E PLEYT,P (CAM O.KAPAKLI/SONME EMNİ YETLİ)	FG-R1013	01086A	40	Draining Head Ground	9	PE080	K12070	1	20	0,16
01109P	TFG 3G+ 1E PLEYT,P (CAM O.KAPAKLI/SONME EMNİ YETLİ)	FG-R1013	01086A	50	Decoupling Connection hole+0	9	PE080	K11062	1	20	0,18
01269P	TFG 3G+ 1E PLEYT (YENİ MENTEŞE YUVALI)	FG-R1013	01086A	10	Stroking	1	PH350	K20035	2	20	0,39
01269P	TFG 3G+ 1E PLEYT (YENİ MENTEŞE YUVALI)	FG-R1013	01086A	20	Cutting Slope	2	DE085	K30008	1	20	0,254
01269P	TFG 3G+ 1E PLEYT (YENİ MENTEŞE YUVALI)	FG-R1013	01086A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11251	1	20	0,308
01269P	TFG 3G+ 1E PLEYT (YENİ MENTEŞE YUVALI)	FG-R1013	01086A	40	Draining Head Ground	9	PE080	K12070	1	20	0,224
01270P	TFG 3G+ 1E PLEYT,P	FG-R1013	01086A	10	Stroking	1	PH350	K20035	2	20	0,39
01270P	TFG 3G+ 1E PLEYT,P	FG-R1013	01086A	20	Cutting Slope	2	DE085	K30008	1	20	0,254
01270P	TFG 3G+ 1E PLEYT,P	FG-R1013	01086A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11251	1	20	0,308
01271P	TFG 3G+ 1E PLEYT,P	FG-R1013	01086A	10	Stroking	1	PH350	K20035	2	20	0,39
01271P	TFG 3G+ 1E PLEYT,P	FG-R1013	01086A	20	Cutting Slope	2	DE085	K30008	1	20	0,254
01271P	TFG 3G+ 1E PLEYT,P	FG-R1013	01086A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11251	1	20	0,308
01271P	TFG 3G+ 1E PLEYT,P	FG-R1013	01086A	40	Draining Head Ground	9	PE080	K12070	1	20	0,224
01272P	TFG 3G PLEYT (SÖN.EMNİ YETLİ/YENİ MENTEŞE YUVALI)	FG-R1013	01086A	10	Stroking	1	PH350	K20035	2	20	0,39
01272P	TFG 3G PLEYT (SÖN.EMNİ YETLİ/YENİ MENTEŞE YUVALI)	FG-R1013	01086A	20	Cutting Slope	2	DE085	K30008	1	20	0,254
01272P	TFG 3G PLEYT (SÖN.EMNİ YETLİ/YENİ MENTEŞE YUVALI)	FG-R1013	01086A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11251	1	20	0,308
01465P	TFG 3G 1E PLEYT (INOX/CAM OCAK KAPAKLI)	FG-R1013	01263A	10	Stroking	1	PH350	K20035	2	20	0,39
01465P	TFG 3G 1E PLEYT (INOX/CAM OCAK KAPAKLI)	FG-R1013	01263A	20	Cutting Slope	2	DE085	K30008	1	20	0,254
01465P	TFG 3G 1E PLEYT (INOX/CAM OCAK KAPAKLI)	FG-R1013	01263A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11251	1	20	0,308
01465P	TFG 3G 1E PLEYT (INOX/CAM OCAK KAPAKLI)	FG-R1013	01263A	40	Draining Head Ground	9	PE080	K12070	1	20	0,16
01465P	TFG 3G 1E PLEYT (INOX/CAM OCAK KAPAKLI)	FG-R1013	01263A	50	Decoupling Connection hole+0	9	PE080	K11062	1	20	0,18
11045P	TFG 1C KASET ARKA KAPAK,P (FANSIZ/CEVİ RMESİZ)	FG-R1026	11045A	10	Stroking	5	PH30001	K21026	2	20	0,267
11045P	TFG 1C KASET ARKA KAPAK,P (FANSIZ/CEVİ RMESİZ)	FG-R1026	11045A	20	Peripheral Cutting	6	PE250	K13061	1	20	0,227
11045P	TFG 1C KASET ARKA KAPAK,P (FANSIZ/CEVİ RMESİZ)	FG-R1026	11045A	30	Curling	3	PH150	K40030	1	20	0,211
11055P	TFG 1C KASET ARKA KAPAK,P	FG-R1026	11045A	10	Stroking	5	PH30001	K21026	2	20	0,267
11055P	TFG 1C KASET ARKA KAPAK,P	FG-R1026	11045A	20	Peripheral Cutting	6	PE250	K13061	1	20	0,227
11055P	TFG 1C KASET ARKA KAPAK,P	FG-R1026	11045A	30	Curling	3	PH150	K40030	1	20	0,211
11056P	TFG 1C KASET ARKA KAPAK,P (CEVİ RMELİ)	FG-R1026	11045A	10	Stroking	5	PH30001	K21026	2	20	0,267
11056P	TFG 1C KASET ARKA KAPAK,P (CEVİ RMELİ)	FG-R1026	11045A	20	Peripheral Cutting	6	PE250	K13061	1	20	0,227
11056P	TFG 1C KASET ARKA KAPAK,P (CEVİ RMELİ)	FG-R1026	11045A	30	Curling	3	PH150	K40030	1	20	0,211
11057P	TFG 1C KASET ARKA KAPAK,P (FANLI/CEVİ RMELİ)	FG-R1026	11045A	10	Stroking	5	PH30001	K21026	2	20	0,267
11057P	TFG 1C KASET ARKA KAPAK,P (FANLI/CEVİ RMELİ)	FG-R1026	11045A	20	Peripheral Cutting	6	PE250	K13061	1	20	0,227
11057P	TFG 1C KASET ARKA KAPAK,P (FANLI/CEVİ RMELİ)	FG-R1026	11045A	30	Curling	3	PH150	K40030	1	20	0,211
11076P	TFR 1C KASET ARKA KAPAK,P (D.P.FANSIZ/CEVİ RMESİZ/LAMB)	FG-R1026	11045A	10	Stroking	5	PH30001	K21026	2	20	0,267
11076P	TFR 1C KASET ARKA KAPAK,P (D.P.FANSIZ/CEVİ RMESİZ/LAMB)	FG-R1026	11045A	20	Peripheral Cutting	6	PE250	K13061	1	20	0,227
11076P	TFR 1C KASET ARKA KAPAK,P (D.P.FANSIZ/CEVİ RMESİZ/LAMB)	FG-R1026	11045A	30	Curling	3	PH150	K40030	1	20	0,211
11120P	TFR 1C KASET ARKA KAPAK,P (FANSIZ/CEVİ RMESİZ/LAMBASIZ)	FG-R1026	11045A	10	Stroking	5	PH30001	K21026	2	20	0,267
11120P	TFR 1C KASET ARKA KAPAK,P (FANSIZ/CEVİ RMESİZ/LAMBASIZ)	FG-R1026	11045A	20	Peripheral Cutting	6	PE250	K13061	1	20	0,227
11120P	TFR 1C KASET ARKA KAPAK,P (FANSIZ/CEVİ RMESİZ/LAMBASIZ)	FG-R1026	11045A	30	Curling	3	PH150	K40030	1	20	0,211



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11143P	TFG İC KASET ARKA KAPAK,P	FG-R1026	11045A	10	Stroking	5	PH30001	K21026	2	20	0,267
11143P	TFG İC KASET ARKA KAPAK,P	FG-R1026	11045A	20	Peripheral Cutting	6	PE250	K13061	1	20	0,227
11143P	TFG İC KASET ARKA KAPAK,P	FG-R1026	11045A	30	Curling	3	PH150	K40030	1	20	0,211
11179P	TFG İC KASET ARKA KAPAK,P (FANSI Zİ ÇEVİ RMESİ Zİ LAMBASI Zİ	FG-R1026	11045A	10	Stroking	5	PH30001	K21026	2	20	0,267
11179P	TFG İC KASET ARKA KAPAK,P (FANSI Zİ ÇEVİ RMESİ Zİ LAMBASI Zİ	FG-R1026	11045A	20	Peripheral Cutting	6	PE250	K13061	1	20	0,227
11179P	TFG İC KASET ARKA KAPAK,P (FANSI Zİ ÇEVİ RMESİ Zİ LAMBASI Zİ	FG-R1026	11045A	30	Curling	3	PH150	K40030	1	20	0,211
11181P	TFG İC KASET ARKA KAPAK,P (FANSI Zİ ÇEVİ RMESİ Zİ FAN PERD	FG-R1026	11045A	10	Stroking	5	PH30001	K21026	2	20	0,267
11181P	TFG İC KASET ARKA KAPAK,P (FANSI Zİ ÇEVİ RMESİ Zİ FAN PERD	FG-R1026	11045A	20	Peripheral Cutting	6	PE250	K13061	1	20	0,227
11181P	TFG İC KASET ARKA KAPAK,P (FANSI Zİ ÇEVİ RMESİ Zİ FAN PERD	FG-R1026	11045A	30	Curling	3	PH150	K40030	1	20	0,211
11254P	TFG21 İC KASET ARKA KAPAK,P (YENİ BRULORLU/LAMBALI)	FG-R1026	11045A	10	Stroking	5	PH30001	K21026	2	20	0,267
11254P	TFG21 İC KASET ARKA KAPAK,P (YENİ BRULORLU/LAMBALI)	FG-R1026	11045A	20	Peripheral Cutting	6	PE250	K13061	1	20	0,227
11254P	TFG21 İC KASET ARKA KAPAK,P (YENİ BRULORLU/LAMBALI)	FG-R1026	11045A	30	Curling	3	PH150	K40030	1	20	0,211
11255P	TFG21 İC KASET ARKA KAPAK,P (YENİ BRULORLU/LAMBASI Zİ	FG-R1026	11045A	10	Stroking	5	PH30001	K21026	2	20	0,267
11255P	TFG21 İC KASET ARKA KAPAK,P (YENİ BRULORLU/LAMBASI Zİ	FG-R1026	11045A	20	Peripheral Cutting	6	PE250	K13061	1	20	0,227
11255P	TFG21 İC KASET ARKA KAPAK,P (YENİ BRULORLU/LAMBASI Zİ	FG-R1026	11045A	30	Curling	3	PH150	K40030	1	20	0,211
11256P	TFG21 İC KASET ARKA KAPAK,P (YENİ BRULORLU/LAMBALI/ÇE	FG-R1026	11045A	10	Stroking	5	PH30001	K21026	2	20	0,267
11256P	TFG21 İC KASET ARKA KAPAK,P (YENİ BRULORLU/LAMBALI/ÇE	FG-R1026	11045A	20	Peripheral Cutting	6	PE250	K13061	1	20	0,227
11256P	TFG21 İC KASET ARKA KAPAK,P (YENİ BRULORLU/LAMBALI/ÇE	FG-R1026	11045A	30	Curling	3	PH150	K40030	1	20	0,211
11321P	TFG21 İC KASET ARKA KAPAK,P	FG-R1026	11045A	10	Stroking	5	PH30001	K21026	2	20	0,267
11321P	TFG21 İC KASET ARKA KAPAK,P	FG-R1026	11045A	20	Peripheral Cutting	6	PE250	K13061	1	20	0,227
11321P	TFG21 İC KASET ARKA KAPAK,P	FG-R1026	11045A	30	Curling	3	PH150	K40030	1	20	0,211
11322P	TFG21 İC KASET ARKA KAPAK,P	FG-R1026	11045A	10	Stroking	5	PH30001	K21026	2	20	0,267
11322P	TFG21 İC KASET ARKA KAPAK,P	FG-R1026	11045A	20	Peripheral Cutting	6	PE250	K13061	1	20	0,227
11322P	TFG21 İC KASET ARKA KAPAK,P	FG-R1026	11045A	30	Curling	3	PH150	K40030	1	20	0,211
11323P	TFG21 İC KASET ARKA KAPAK,P	FG-R1026	11045A	10	Stroking	5	PH30001	K21026	2	20	0,267
11323P	TFG21 İC KASET ARKA KAPAK,P	FG-R1026	11045A	20	Peripheral Cutting	6	PE250	K13061	1	20	0,227
11323P	TFG21 İC KASET ARKA KAPAK,P	FG-R1026	11045A	30	Curling	3	PH150	K40030	1	20	0,211
11357P	TFG İÇ KASET ARKA KAPAK (FANSI Zİ ÇEVİ RMESİ Zİ BACASI Zİ A	FG-R1026	11045A	10	Stroking	5	PH30001	K21026	2	20	0,267
11357P	TFG İÇ KASET ARKA KAPAK (FANSI Zİ ÇEVİ RMESİ Zİ BACASI Zİ A	FG-R1026	11045A	20	Peripheral Cutting	6	PE250	K13061	1	20	0,227
11357P	TFG İÇ KASET ARKA KAPAK (FANSI Zİ ÇEVİ RMESİ Zİ BACASI Zİ A	FG-R1026	11045A	30	Curling	3	PH150	K40030	1	20	0,211
11358P	TFG İÇ KASET ARKA KAPAK (FANSI Zİ ÇEVİ RMESİ Zİ BACASI Zİ L	FG-R1026	11045A	10	Stroking	5	PH30001	K21026	2	20	0,267
11358P	TFG İÇ KASET ARKA KAPAK (FANSI Zİ ÇEVİ RMESİ Zİ BACASI Zİ L	FG-R1026	11045A	20	Peripheral Cutting	6	PE250	K13061	1	20	0,227
11358P	TFG İÇ KASET ARKA KAPAK (FANSI Zİ ÇEVİ RMESİ Zİ BACASI Zİ L	FG-R1026	11045A	30	Curling	3	PH150	K40030	1	20	0,211
15054P	TFG OCAK İSİ KORUYUCU PERDESI ,P	FG-R1061	15054A	10	Draining	12	PE060	K10022	1	20	0,101
15054P	TFG OCAK İSİ KORUYUCU PERDESI ,P	FG-R1061	15054A	30	Rear Curling	11	PA125	PA12503	1	20	0,3
15054P	TFG OCAK İSİ KORUYUCU PERDESI ,P	FG-R1061	15054A	40	Crushing	11	PA125	PA12502	1	20	0,3
15054P	TFG OCAK İSİ KORUYUCU PERDESI ,P	FG-R1061	15054A	50	Curling Front Frame	11	PA125	PA12503	1	20	0,3
15054P	TFG OCAK İSİ KORUYUCU PERDESI ,P	FG-R1061	15054A	60	Crushing	11	PA125	PA12502	1	20	0,3
15054P	TFG OCAK İSİ KORUYUCU PERDESI ,P	FG-R1061	15054A	70	Last Curling	11	PA125	PA12503	1	20	0,3
15055P	TFB OCAK İSİ KORUYUCU PERDESI ,P	FG-R1061	15054A	10	Draining	12	PE060	K10022	1	20	0,101
15055P	TFB OCAK İSİ KORUYUCU PERDESI ,P	FG-R1061	15054A	30	Rear Curling	11	PA125	PA12503	1	20	0,3
15055P	TFB OCAK İSİ KORUYUCU PERDESI ,P	FG-R1061	15054A	40	Crushing	11	PA125	PA12502	1	20	0,3
15055P	TFB OCAK İSİ KORUYUCU PERDESI ,P	FG-R1061	15054A	50	Curling Front Frame	11	PA125	PA12503	1	20	0,3
15055P	TFB OCAK İSİ KORUYUCU PERDESI ,P	FG-R1061	15054A	60	Crushing	11	PA125	PA12502	1	20	0,3

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15055P	TFB OCAK ISI KORUYUCU PERDESI,P	FG-R1061	15054A	70	Last Curling	11	PA125	PA12503	1	20	0,3
02063P	TFG14\34\44\54 GOMME TIP PANO,P	FG-R1067	02068A	10	Peripheral cutting and Draining	3	PH150	K10022	1	20	0,25
02063P	TFG14\34\44\54 GOMME TIP PANO,P	FG-R1067	02068A	20	First Curling	3	PH150	K21038	1	20	0,6
02063P	TFG14\34\44\54 GOMME TIP PANO,P	FG-R1067	02068A	30	Second Curling	3	PH150	K40020	1	20	0,3
02065P	TFG64 GOMME TIP PANO,P	FG-R1067	02068A	10	Peripheral cutting and Draining	3	PH150	K10022	1	20	0,25
02065P	TFG64 GOMME TIP PANO,P	FG-R1067	02068A	20	First Curling	3	PH150	K21038	1	20	0,6
02065P	TFG64 GOMME TIP PANO,P	FG-R1067	02068A	30	Second Curling	3	PH150	K40020	1	20	0,3
02066P	TFG66 GOMME TIP PANO,P	FG-R1067	02068A	10	Peripheral cutting and Draining	3	PH150	K10022	1	20	0,25
02066P	TFG66 GOMME TIP PANO,P	FG-R1067	02068A	20	First Curling	3	PH150	K21038	1	20	0,6
02066P	TFG66 GOMME TIP PANO,P	FG-R1067	02068A	30	Second Curling	3	PH150	K40020	1	20	0,3
02066P	TFG66 GOMME TIP PANO,P	FG-R1067	02068A	40	Cutting Ceran Wart	19	DG12603	DG12603	1	20	0,18
02343P	TFG14 PANO,P (GOMME\BUTONLU)	FG-R1067	02068A	10	Peripheral cutting and Draining	3	PH150	K10022	1	20	0,25
02343P	TFG14 PANO,P (GOMME\BUTONLU)	FG-R1067	02068A	20	First Curling	3	PH150	K21038	1	20	0,6
02343P	TFG14 PANO,P (GOMME\BUTONLU)	FG-R1067	02068A	30	Second Curling	3	PH150	K40020	1	20	0,3
02343P	TFG14 PANO,P (GOMME\BUTONLU)	FG-R1067	02068A	40	Decoupling button cap	9	PE080	K11178	1	20	0,18
02442P	TFG13 GOMME PANO,P (KILITLI)	FG-R1067	02068A	10	Peripheral cutting and Draining	3	PH150	K10022	1	20	0,25
02442P	TFG13 GOMME PANO,P (KILITLI)	FG-R1067	02068A	20	First Curling	3	PH150	K21038	1	20	0,6
02442P	TFG13 GOMME PANO,P (KILITLI)	FG-R1067	02068A	30	Second Curling	3	PH150	K40020	1	20	0,3
02442P	TFG13 GOMME PANO,P (KILITLI)	FG-R1067	02068A	40	Decoupling Locking Button	9	PE080	K11205	1	20	0,18
02465P	TFG11/31/41/51 GOMME PANO,P (CAKMAKSIZ)	FG-R1067	02068A	10	Peripheral cutting and Draining	3	PH150	K10022	1	20	0,25
02465P	TFG11/31/41/51 GOMME PANO,P (CAKMAKSIZ)	FG-R1067	02068A	20	First Curling	3	PH150	K21038	1	20	0,6
02465P	TFG11/31/41/51 GOMME PANO,P (CAKMAKSIZ)	FG-R1067	02068A	30	Second Curling	3	PH150	K40020	1	20	0,3
02581P	TFG64 GOMME TIP PANO,P (KILITLI)	FG-R1067	02068A	10	Peripheral cutting and Draining	3	PH150	K10022	1	20	0,25
02581P	TFG64 GOMME TIP PANO,P (KILITLI)	FG-R1067	02068A	20	First Curling	3	PH150	K21038	1	20	0,6
02581P	TFG64 GOMME TIP PANO,P (KILITLI)	FG-R1067	02068A	30	Second Curling	3	PH150	K40020	1	20	0,3
02581P	TFG64 GOMME TIP PANO,P (KILITLI)	FG-R1067	02068A	40	Decoupling Locking Button	9	PE080	K11205	1	20	0,18
02582P	TFG66 GOMME TIP PANO,P (KILITLI)	FG-R1067	02068A	10	Peripheral cutting and Draining	3	PH150	K10022	1	20	0,25
02582P	TFG66 GOMME TIP PANO,P (KILITLI)	FG-R1067	02068A	20	First Curling	3	PH150	K21038	1	20	0,6
02582P	TFG66 GOMME TIP PANO,P (KILITLI)	FG-R1067	02068A	30	Second Curling	3	PH150	K40020	1	20	0,3
02582P	TFG66 GOMME TIP PANO,P (KILITLI)	FG-R1067	02068A	40	Decoupling Locking Button	9	PE080	K11205	1	20	0,18
02582P	TFG66 GOMME TIP PANO,P (KILITLI)	FG-R1067	02068A	50	Cutting Ceran Wart	19	DG12603	DG12603	1	20	0,18
02625P	TFG66-31 GOMME, MEK.TIMERLI TIP PANO	FG-R1067	02068A	10	Peripheral cutting and Draining	3	PH150	K10022	1	20	0,25
02625P	TFG66-31 GOMME, MEK.TIMERLI TIP PANO	FG-R1067	02068A	20	First Curling	3	PH150	K21038	1	20	0,6
02625P	TFG66-31 GOMME, MEK.TIMERLI TIP PANO	FG-R1067	02068A	30	Second Curling	3	PH150	K40020	1	20	0,3
02625P	TFG66-31 GOMME, MEK.TIMERLI TIP PANO	FG-R1067	02068A	40	Cutting Ceran Wart	19	DG12603	DG12603	1	20	0,18
02634P	TFG GOMME TIP PANO,P	FG-R1067	02068A	10	Peripheral cutting and Draining	3	PH150	K10022	1	20	0,25
02634P	TFG GOMME TIP PANO,P	FG-R1067	02068A	20	First Curling	3	PH150	K21038	1	20	0,6
02634P	TFG GOMME TIP PANO,P	FG-R1067	02068A	30	Second Curling	3	PH150	K40020	1	20	0,3
02635P	TFG GOMME TIP PANO,P	FG-R1067	02068A	10	Peripheral cutting and Draining	3	PH150	K10022	1	20	0,25
02635P	TFG GOMME TIP PANO,P	FG-R1067	02068A	20	First Curling	3	PH150	K21038	1	20	0,6
02635P	TFG GOMME TIP PANO,P	FG-R1067	02068A	30	Second Curling	3	PH150	K40020	1	20	0,3
02697P	TFG64/14 AYRI TERMOSTATLI GOMME TIP PANO. KILITLI TIP	FG-R1067	02068A	10	Peripheral cutting and Draining	3	PH150	K10022	1	20	0,25
02697P	TFG64/14 AYRI TERMOSTATLI GOMME TIP PANO. KILITLI TIP	FG-R1067	02068A	20	First Curling	3	PH150	K21038	1	20	0,6
02697P	TFG64/14 AYRI TERMOSTATLI GOMME TIP PANO. KILITLI TIP	FG-R1067	02068A	30	Second Curling	3	PH150	K40020	1	20	0,3

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02697P	TFG64/14 AYRI TERMOSTATLI GOMME TIP PANO. KİLİTLİ TIP	FG-R1067	02068A	40	Decoupling Locking Button	9	PE080	K11205	1	20	0,18
02698P	TFG13-31/13 AYRI TERMOSTATLI GOMME PANO. KİLİTLİ TIP	FG-R1067	02068A	10	Peripheral cutting and Draining	3	PH150	K10022	1	20	0,25
02698P	TFG13-31/13 AYRI TERMOSTATLI GOMME PANO. KİLİTLİ TIP	FG-R1067	02068A	20	First Curling	3	PH150	K21038	1	20	0,6
02698P	TFG13-31/13 AYRI TERMOSTATLI GOMME PANO. KİLİTLİ TIP	FG-R1067	02068A	30	Second Curling	3	PH150	K40020	1	20	0,3
02698P	TFG13-31/13 AYRI TERMOSTATLI GOMME PANO. KİLİTLİ TIP	FG-R1067	02068A	40	Decoupling Locking Button	9	PE080	K11205	1	20	0,18
07063P	TFB/TFG DİS KASET TEKMELİ KLİ SOL YAN KAPAK,P(INOX)	FG-R1081	07062A	10	Draining and Ribbing	1	PH350	K07067	2	20	0,25
07063P	TFB/TFG DİS KASET TEKMELİ KLİ SOL YAN KAPAK,P(INOX)	FU-R1012	07062A	20	Draining Pannel Ground	9	PE080	YOK	1	20	0,25
07063P	TFB/TFG DİS KASET TEKMELİ KLİ SOL YAN KAPAK,P(INOX)	FU-R1012	07062A	30	Corner Draining	10	PE030	K10023	1	20	0,18
07063P	TFB/TFG DİS KASET TEKMELİ KLİ SOL YAN KAPAK,P(INOX)	FU-R1012	07062A	40	Curling	17	SB20002	SB20002	1	20	0,525
07063P	TFB/TFG DİS KASET TEKMELİ KLİ SOL YAN KAPAK,P(INOX)	FU-R1012	07062A	50	Last Curling	9	PE080	K40039	1	20	0,174
11045P	TFG21 İÇ KASET ARKA KAPAK (FANSIZ, ÇEVİRME SİZ,)	FG-R1087	11045A	10	Stroking	5	PH30001	K21026	2	20	0,267
11045P	TFG21 İÇ KASET ARKA KAPAK (FANSIZ, ÇEVİRME SİZ,)	FG-R1087	11045A	20	Peripheral Cutting	6	PE250	K13061	1	20	0,227
11045P	TFG21 İÇ KASET ARKA KAPAK (FANSIZ, ÇEVİRME SİZ,)	FG-R1087	11045A	30	Curling	3	PH150	K40030	1	20	0,211
11181P	TFG21 İÇ KASET ARKA KAPAK (FANSIZ, ÇEVİRME SİZ,FAN PER	FG-R1087	11045A	10	Stroking	5	PH30001	K21026	2	20	0,267
11181P	TFG21 İÇ KASET ARKA KAPAK (FANSIZ, ÇEVİRME SİZ,FAN PER	FG-R1087	11045A	20	Peripheral Cutting	6	PE250	K13061	1	20	0,227
11181P	TFG21 İÇ KASET ARKA KAPAK (FANSIZ, ÇEVİRME SİZ,FAN PER	FG-R1087	11045A	30	Curling	3	PH150	K40030	1	20	0,211
11255P	TFG21 İÇ KASET ARKA KAPAK (GAZLI, LAMBALI, FAN PERDELİ)	FG-R1087	11045A	10	Stroking	5	PH30001	K21026	2	20	0,267
11255P	TFG21 İÇ KASET ARKA KAPAK (GAZLI, LAMBALI, FAN PERDELİ)	FG-R1087	11045A	20	Peripheral Cutting	6	PE250	K13061	1	20	0,227
11255P	TFG21 İÇ KASET ARKA KAPAK (GAZLI, LAMBALI, FAN PERDELİ)	FG-R1087	11045A	30	Curling	3	PH150	K40030	1	20	0,211
11345P	TFG İÇ KASET ARKA KAPAK (FANLI/ŞİŞİRMELİ)	FG-R1087	11045A	10	Stroking	5	PH30001	K21026	2	20	0,267
11345P	TFG İÇ KASET ARKA KAPAK (FANLI/ŞİŞİRMELİ)	FG-R1087	11045A	20	Peripheral Cutting	6	PE250	K13061	1	20	0,227
11345P	TFG İÇ KASET ARKA KAPAK (FANLI/ŞİŞİRMELİ)	FG-R1087	11045A	30	Curling	3	PH150	K40030	1	20	0,211
11346P	TFG İÇ KASET ARKA KAPAK (FANSIZ/ÇEVİRME Lİ/FAN PERDELİ)	FG-R1087	11045A	10	Stroking	5	PH30001	K21026	2	20	0,267
11346P	TFG İÇ KASET ARKA KAPAK (FANSIZ/ÇEVİRME Lİ/FAN PERDELİ)	FG-R1087	11045A	20	Peripheral Cutting	6	PE250	K13061	1	20	0,227
11346P	TFG İÇ KASET ARKA KAPAK (FANSIZ/ÇEVİRME Lİ/FAN PERDELİ)	FG-R1087	11045A	30	Curling	3	PH150	K40030	1	20	0,211
11347P	TFG İÇ KASET ARKA KAPAK (FANLI/ÇEVİRME Lİ/ŞİŞİRMELİ)	FG-R1087	11045A	10	Stroking	5	PH30001	K21026	2	20	0,267
11347P	TFG İÇ KASET ARKA KAPAK (FANLI/ÇEVİRME Lİ/ŞİŞİRMELİ)	FG-R1087	11045A	20	Peripheral Cutting	6	PE250	K13061	1	20	0,227
11347P	TFG İÇ KASET ARKA KAPAK (FANLI/ÇEVİRME Lİ/ŞİŞİRMELİ)	FG-R1087	11045A	30	Curling	3	PH150	K40030	1	20	0,211
11348P	TFG İÇ KASET ARKA KAPAK (FANLI/ÇEVİRME Lİ/LİMİT TERMOŞ	FG-R1087	11045A	10	Stroking	5	PH30001	K21026	2	20	0,267
11348P	TFG İÇ KASET ARKA KAPAK (FANLI/ÇEVİRME Lİ/LİMİT TERMOŞ	FG-R1087	11045A	20	Peripheral Cutting	6	PE250	K13061	1	20	0,227
11348P	TFG İÇ KASET ARKA KAPAK (FANLI/ÇEVİRME Lİ/LİMİT TERMOŞ	FG-R1087	11045A	30	Curling	3	PH150	K40030	1	20	0,211
11349P	TFG21 İÇ KASET ARKA KAPAK (YENİ BRULORLU/LAMBALI/ÇEV	FG-R1087	11045A	10	Stroking	5	PH30001	K21026	2	20	0,267
11349P	TFG21 İÇ KASET ARKA KAPAK (YENİ BRULORLU/LAMBALI/ÇEV	FG-R1087	11045A	20	Peripheral Cutting	6	PE250	K13061	1	20	0,227
11349P	TFG21 İÇ KASET ARKA KAPAK (YENİ BRULORLU/LAMBALI/ÇEV	FG-R1087	11045A	30	Curling	3	PH150	K40030	1	20	0,211
11350P	TFG İÇ KASET ARKA KAPAK (FANLI/ÇEVİRME Lİ/ŞİŞİRMELİ)	FG-R1087	11045A	10	Stroking	5	PH30001	K21026	2	20	0,267
11350P	TFG İÇ KASET ARKA KAPAK (FANLI/ÇEVİRME Lİ/ŞİŞİRMELİ)	FG-R1087	11045A	20	Peripheral Cutting	6	PE250	K13061	1	20	0,227
11350P	TFG İÇ KASET ARKA KAPAK (FANLI/ÇEVİRME Lİ/ŞİŞİRMELİ)	FG-R1087	11045A	30	Curling	3	PH150	K40030	1	20	0,211
11356P	TFG İÇ KASET ARKA KAPAK,P (FANLI/LAMBASIZ/ŞİŞİRMELİ)	FG-R1087	11045A	10	Stroking	5	PH30001	K21026	2	20	0,267
11356P	TFG İÇ KASET ARKA KAPAK,P (FANLI/LAMBASIZ/ŞİŞİRMELİ)	FG-R1087	11045A	20	Peripheral Cutting	6	PE250	K13061	1	20	0,227
11356P	TFG İÇ KASET ARKA KAPAK,P (FANLI/LAMBASIZ/ŞİŞİRMELİ)	FG-R1087	11045A	30	Curling	3	PH150	K40030	1	20	0,211
11360P	TFG İÇ KASET ARKA KAPAK,P (FANLI/TURBO İSİTİCİSİZ/ŞİŞİR	FG-R1087	11045A	10	Stroking	5	PH30001	K21026	2	20	0,267
11360P	TFG İÇ KASET ARKA KAPAK,P (FANLI/TURBO İSİTİCİSİZ/ŞİŞİR	FG-R1087	11045A	20	Peripheral Cutting	6	PE250	K13061	1	20	0,227
11360P	TFG İÇ KASET ARKA KAPAK,P (FANLI/TURBO İSİTİCİSİZ/ŞİŞİR	FG-R1087	11045A	30	Curling	3	PH150	K40030	1	20	0,211

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12052P	TFG16\66 PANO TAKVI YE ELEMANI ,P	FG-R1111	12052A	10	Draining	10	PE030	K10010	2	20	0,267
12052P	TFG16\66 PANO TAKVI YE ELEMANI ,P	FG-R1111	12052A	20	Curling	9	PE080	K40034	1	20	0,227
12052P	TFG16\66 PANO TAKVI YE ELEMANI ,P	FG-R1111	12052A	30	Draining for vary objective	10	PE030	K11155	1	20	0,211
02035P	TFG21 EKONOMIK PANO,P (CAKMAKSI Z\LAMBASI Z)	FG-R1116	02068A	10	Peripheral cutting and Draining	3	PH150	K13057	1	20	0,225
02035P	TFG21 EKONOMIK PANO,P (CAKMAKSI Z\LAMBASI Z)	FG-R1116	02068A	20	First Curling	3	PH150	K21038	1	20	0,252
02035P	TFG21 EKONOMIK PANO,P (CAKMAKSI Z\LAMBASI Z)	FG-R1116	02068A	30	Second Curling	3	PH150	K40020	1	20	0,352
02036P	TFG21 NORMAL PANO,S (CAKMAKLI \LAMBALI)	FG-R1116	02068A	10	Peripheral cutting and Draining	3	PH150	K13057	1	20	0,225
02036P	TFG21 NORMAL PANO,S (CAKMAKLI \LAMBALI)	FG-R1116	02068A	20	First Curling	3	PH150	K21038	1	20	0,252
02036P	TFG21 NORMAL PANO,S (CAKMAKLI \LAMBALI)	FG-R1116	02068A	30	Second Curling	3	PH150	K40020	1	20	0,352
02068P	TFG12\32\42\52 PANO,P	FG-R1116	02068A	10	Peripheral cutting and Draining	3	PH150	K13057	1	20	0,225
02068P	TFG12\32\42\52 PANO,P	FG-R1116	02068A	20	First Curling	3	PH150	K21038	1	20	0,252
02068P	TFG12\32\42\52 PANO,P	FG-R1116	02068A	30	Second Curling	3	PH150	K40020	1	20	0,352
02130P	TFG22\22-1 PANO,P (LAMBALI \CAKMAKLI \TEK SI NYALLI)	FG-R1116	02068A	10	Peripheral cutting and Draining	3	PH150	K13057	1	20	0,225
02130P	TFG22\22-1 PANO,P (LAMBALI \CAKMAKLI \TEK SI NYALLI)	FG-R1116	02068A	20	First Curling	3	PH150	K21038	1	20	0,252
02130P	TFG22\22-1 PANO,P (LAMBALI \CAKMAKLI \TEK SI NYALLI)	FG-R1116	02068A	30	Second Curling	3	PH150	K40020	1	20	0,352
02133P	TFG25E,25-1E PANO,P (CAKMAKSI Z\LAMBASI Z)	FG-R1116	02018A	10	Peripheral cutting and Draining	3	PH150	K13057	1	20	0,225
02133P	TFG25E,25-1E PANO,P (CAKMAKSI Z\LAMBASI Z)	FG-R1116	02018A	20	First Curling	3	PH150	K21038	1	20	0,252
02133P	TFG25E,25-1E PANO,P (CAKMAKSI Z\LAMBASI Z)	FG-R1116	02018A	30	Second Curling	3	PH150	K40020	1	20	0,352
02137P	TFG61-31 PANO,P	FG-R1116	02068A	10	Peripheral cutting and Draining	3	PH150	K13057	1	20	0,225
02137P	TFG61-31 PANO,P	FG-R1116	02068A	20	First Curling	3	PH150	K21038	1	20	0,252
02137P	TFG61-31 PANO,P	FG-R1116	02068A	30	Second Curling	3	PH150	K40020	1	20	0,352
02171P	TFG22 PANO,P (LAMBALI \CAKMAKLI \CEVIRMEI \CI FT SI NYALLI)	FG-R1116	02068A	10	Peripheral cutting and Draining	3	PH150	K13057	1	20	0,225
02171P	TFG22 PANO,P (LAMBALI \CAKMAKLI \CEVIRMEI \CI FT SI NYALLI)	FG-R1116	02068A	20	First Curling	3	PH150	K21038	1	20	0,252
02171P	TFG22 PANO,P (LAMBALI \CAKMAKLI \CEVIRMEI \CI FT SI NYALLI)	FG-R1116	02068A	30	Second Curling	3	PH150	K40020	1	20	0,352
02171P	TFG22 PANO,P (LAMBALI \CAKMAKLI \CEVIRMEI \CI FT SI NYALLI)	FG-R1116	02068A	40	Decoupling button cap	9	PE080	K11178	1	20	0,18
02183P	TFG12-32-42-52 PANO,P (CAKMAKSI Z)	FG-R1116	02068A	10	Peripheral cutting and Draining	3	PH150	K13057	1	20	0,225
02183P	TFG12-32-42-52 PANO,P (CAKMAKSI Z)	FG-R1116	02068A	20	First Curling	3	PH150	K21038	1	20	0,252
02183P	TFG12-32-42-52 PANO,P (CAKMAKSI Z)	FG-R1116	02068A	30	Second Curling	3	PH150	K40020	1	20	0,352
02336P	TFG64-31 PANO,P	FG-R1116	02068A	10	Peripheral cutting and Draining	3	PH150	K13057	1	20	0,225
02336P	TFG64-31 PANO,P	FG-R1116	02068A	20	First Curling	3	PH150	K21038	1	20	0,252
02336P	TFG64-31 PANO,P	FG-R1116	02068A	30	Second Curling	3	PH150	K40020	1	20	0,352
02546P	TFG21 NORMAL PANO (CAKMAKLI \LAMBALI), (COPRECCI /TERI)	FG-R1116	02068A	10	Peripheral cutting and Draining	3	PH150	K13057	1	20	0,225
02546P	TFG21 NORMAL PANO (CAKMAKLI \LAMBALI), (COPRECCI /TERI)	FG-R1116	02068A	20	First Curling	3	PH150	K21038	1	20	0,252
02546P	TFG21 NORMAL PANO (CAKMAKLI \LAMBALI), (COPRECCI /TERI)	FG-R1116	02068A	30	Second Curling	3	PH150	K40020	1	20	0,352
02551P	TFG21 EKONOMIK PANO,P (CAKMAKSI Z\LAMBASI Z\COPRECCI	FG-R1116	02068A	10	Peripheral cutting and Draining	3	PH150	K13057	1	20	0,225
02551P	TFG21 EKONOMIK PANO,P (CAKMAKSI Z\LAMBASI Z\COPRECCI	FG-R1116	02068A	20	First Curling	3	PH150	K21038	1	20	0,252
02551P	TFG21 EKONOMIK PANO,P (CAKMAKSI Z\LAMBASI Z\COPRECCI	FG-R1116	02068A	30	Second Curling	3	PH150	K40020	1	20	0,352
02554P	TFG22\22-1 PANO,P (LAMBALI \CAKMAKLI \TEK SI NYALLI /COPR	FG-R1116	02068A	10	Peripheral cutting and Draining	3	PH150	K13057	1	20	0,225
02554P	TFG22\22-1 PANO,P (LAMBALI \CAKMAKLI \TEK SI NYALLI /COPR	FG-R1116	02068A	20	First Curling	3	PH150	K21038	1	20	0,252
02554P	TFG22\22-1 PANO,P (LAMBALI \CAKMAKLI \TEK SI NYALLI /COPR	FG-R1116	02068A	30	Second Curling	3	PH150	K40020	1	20	0,352
02584P	TFG61-31 PANO (INOX)	FG-R1116	02472A	10	Peripheral cutting and Draining	3	PH150	K13057	1	20	0,225
02584P	TFG61-31 PANO (INOX)	FG-R1116	02472A	20	First Curling	3	PH150	K21038	1	20	0,252
02584P	TFG61-31 PANO (INOX)	FG-R1116	02472A	30	Second Curling	3	PH150	K40020	1	20	0,352

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02594P	TFU21 DÜZ PANO LAM.SIZ CEV.SIZ ÇAK.SIZ COPRECİ MUSLUK	FG-R1116	02068A	10	Peripheral cutting and Draining	3	PH150	K13057	1	20	0,225
02594P	TFU21 DÜZ PANO LAM.SIZ CEV.SIZ ÇAK.SIZ COPRECİ MUSLUK	FG-R1116	02068A	20	First Curling	3	PH150	K21038	1	20	0,252
02594P	TFU21 DÜZ PANO LAM.SIZ CEV.SIZ ÇAK.SIZ COPRECİ MUSLUK	FG-R1116	02068A	30	Second Curling	3	PH150	K40020	1	20	0,352
02595P	TFU25 DÜZ PANO LAM.SIZ CEV.SIZ ÇAK.SIZ COPRECİ MUSLUK	FG-R1116	02068A	10	Peripheral cutting and Draining	3	PH150	K13057	1	20	0,225
02595P	TFU25 DÜZ PANO LAM.SIZ CEV.SIZ ÇAK.SIZ COPRECİ MUSLUK	FG-R1116	02068A	20	First Curling	3	PH150	K21038	1	20	0,252
02595P	TFU25 DÜZ PANO LAM.SIZ CEV.SIZ ÇAK.SIZ COPRECİ MUSLUK	FG-R1116	02068A	30	Second Curling	3	PH150	K40020	1	20	0,352
11125P	TFG21-1 IC KASET UST KAPAK,P (grillsiz)	FG-R1119	11125A	10	Stroking	3	PH150	K20062	2	20	0,49
11125P	TFG21-1 IC KASET UST KAPAK,P (grillsiz)	FG-R1119	11125A	20	Peripheral Cutting	6	PE250	K13021	1	20	0,173
11125P	TFG21-1 IC KASET UST KAPAK,P (grillsiz)	FG-R1119	11125A	30	Decoupling Brolure Hole Exit	4	PH07001	K11190	1	20	0,115
11125P	TFG21-1 IC KASET UST KAPAK,P (grillsiz)	FG-R1119	11125A	40	Draining Pole Cap	4	PH07001	K11141	1	20	0,1
11125P	TFG21-1 IC KASET UST KAPAK,P (grillsiz)	FG-R1119	11125A	50	Curling Pole Cap	4	PH07001	K64031	1	20	0,077
15027P	TFG-TFS YAG KORUMA ELEMANI,P (YENİ TIP)	FG-R1124	15027A	10	Stroking	1	PH350	K20067	2	20	0,55
15027P	TFG-TFS YAG KORUMA ELEMANI,P (YENİ TIP)	FG-R1124	15027A	20	Cutting Slope	2	DE085	K30035	1	20	0,35
15027P	TFG-TFS YAG KORUMA ELEMANI,P (YENİ TIP)	FG-R1124	15027A	30	Drilling hole and Draining	4	PH07001	K11121	1	20	0,191
02134P	TFG64-51 PANO,P	FG-R1128	02068A	10	Peripheral cutting and Draining	3	PH150	K10057	1	20	0,224
02134P	TFG64-51 PANO,P	FG-R1128	02068A	20	First Curling	3	PH150	K21038	1	20	0,224
02134P	TFG64-51 PANO,P	FG-R1128	02068A	30	Second Curling	3	PH150	K40020	1	20	0,224
02134P	TFG64-51 PANO,P	FG-R1128	02068A	40	Draining Digital Timer Hook	9	PE080	K11211	1	20	0,18
02134P	TFG64-51 PANO,P	FG-R1128	02068A	50	Cutting wart	19	DG12603	DG12603	1	20	0,18
02140P	TFG66-51 PANO,P	FG-R1128	02068A	10	Peripheral cutting and Draining	3	PH150	K10057	1	20	0,224
02140P	TFG66-51 PANO,P	FG-R1128	02068A	20	First Curling	3	PH150	K21038	1	20	0,224
02140P	TFG66-51 PANO,P	FG-R1128	02068A	30	Second Curling	3	PH150	K40020	1	20	0,224
02140P	TFG66-51 PANO,P	FG-R1128	02068A	40	Draining Digital Timer Hook	9	PE080	K11211	1	20	0,18
02140P	TFG66-51 PANO,P	FG-R1128	02068A	50	Cutting wart	19	DG12603	DG12603	1	20	0,18
01339P	TFG 3G+ 1E PLEYT (YENİ HI-FLAME)	FG-R1141	01086A	10	Stroking	1	PH350	K20093	2	20	0,39
01339P	TFG 3G+ 1E PLEYT (YENİ HI-FLAME)	FG-R1141	01086A	20	Cutting Slope	2	DE085	K30045	1	20	0,254
01339P	TFG 3G+ 1E PLEYT (YENİ HI-FLAME)	FG-R1141	01086A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11256	1	20	0,308
01339P	TFG 3G+ 1E PLEYT (YENİ HI-FLAME)	FG-R1141	01086A	40	Decoupling Connection hole+C	9	PE080	K12055	1	20	0,224
01365P	TFG 3G+ 1E PLEYT (YENİ HI-FLAME/YENİ MENTEŞE YUVALI)	FG-R1141	01086A	10	Stroking	1	PH350	K20093	2	20	0,39
01365P	TFG 3G+ 1E PLEYT (YENİ HI-FLAME/YENİ MENTEŞE YUVALI)	FG-R1141	01086A	20	Cutting Slope	2	DE085	K30045	1	20	0,254
01365P	TFG 3G+ 1E PLEYT (YENİ HI-FLAME/YENİ MENTEŞE YUVALI)	FG-R1141	01086A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11256	1	20	0,308
01374P	TFG 3G+ 1E PLEYT (YENİ HI-FLAME/CAM OCAK KAPAKLI)	FG-R1141	01086A	10	Stroking	1	PH350	K20093	2	20	0,39
01374P	TFG 3G+ 1E PLEYT (YENİ HI-FLAME/CAM OCAK KAPAKLI)	FG-R1141	01086A	20	Cutting Slope	2	DE085	K30045	1	20	0,254
01374P	TFG 3G+ 1E PLEYT (YENİ HI-FLAME/CAM OCAK KAPAKLI)	FG-R1141	01086A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11256	1	20	0,308
01374P	TFG 3G+ 1E PLEYT (YENİ HI-FLAME/CAM OCAK KAPAKLI)	FG-R1141	01086A	40	Decoupling Connection hole+C	9	PE080	K12055	1	20	0,224
01119P	TFG 4 GAZLI HI FLAME PLEYT	FG-R1142	01086A	10	Stroking	1	PH350	K20093	2	20	0,39
01119P	TFG 4 GAZLI HI FLAME PLEYT	FG-R1142	01086A	20	Cutting Slope	2	DE085	K30045	1	20	0,254
01119P	TFG 4 GAZLI HI FLAME PLEYT	FG-R1142	01086A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11257	1	20	0,308
01119P	TFG 4 GAZLI HI FLAME PLEYT	FG-R1142	01086A	40	Decoupling Connection hole+C	9	PE080	K12055	1	20	0,224
01145P	TFG 4 GAZLI HI FLAME PLEYT	FG-R1142	01086A	10	Stroking	1	PH350	K20093	2	20	0,39
01145P	TFG 4 GAZLI HI FLAME PLEYT	FG-R1142	01086A	20	Cutting Slope	2	DE085	K30045	1	20	0,254
01145P	TFG 4 GAZLI HI FLAME PLEYT	FG-R1142	01086A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11257	1	20	0,308
01145P	TFG 4 GAZLI HI FLAME PLEYT	FG-R1142	01086A	40	Decoupling Connection hole+C	9	PE080	K12055	1	20	0,224
01148P	TFG 4 GAZLI PLEYT,P(CAM KAPAKLI/HI-FLAME/SONME EMNİY)	FG-R1142	01086A	10	Stroking	1	PH350	K20093	2	20	0,39

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01148P	TFG 4 GAZLI PLEYT,P(CAM KAPAKLI/HI-FLAME/SONME EMNİY)	FG-R1142	01086A	20	Cutting Slope	2	DE085	K30045	1	20	0,254
01148P	TFG 4 GAZLI PLEYT,P(CAM KAPAKLI/HI-FLAME/SONME EMNİY)	FG-R1142	01086A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11257	1	20	0,308
01148P	TFG 4 GAZLI PLEYT,P(CAM KAPAKLI/HI-FLAME/SONME EMNİY)	FG-R1142	01086A	40	Decoupling Connection hole+C	9	PE080	K12055	1	20	0,224
01149P	TFG 4 GAZLI PLEYT,P (CAM KAPAKLI/HI-FLAME )	FG-R1142	01086A	10	Stroking	1	PH350	K20093	2	20	0,39
01149P	TFG 4 GAZLI PLEYT,P (CAM KAPAKLI/HI-FLAME )	FG-R1142	01086A	20	Cutting Slope	2	DE085	K30045	1	20	0,254
01149P	TFG 4 GAZLI PLEYT,P (CAM KAPAKLI/HI-FLAME )	FG-R1142	01086A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11257	1	20	0,308
01149P	TFG 4 GAZLI PLEYT,P (CAM KAPAKLI/HI-FLAME )	FG-R1142	01086A	40	Decoupling Connection hole+C	9	PE080	K12055	1	20	0,224
01273P	TFG 4 GAZLI HI FLAME PLEYT	FG-R1142	01086A	10	Stroking	1	PH350	K20093	2	20	0,39
01273P	TFG 4 GAZLI HI FLAME PLEYT	FG-R1142	01086A	20	Cutting Slope	2	DE085	K30045	1	20	0,254
01273P	TFG 4 GAZLI HI FLAME PLEYT	FG-R1142	01086A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11257	1	20	0,308
01274P	TFG 4G PLEYT (HI-FLAME/SÖN.EMİNİ YETLİ/YENİ MENTEŞE YU)	FG-R1142	01020A	10	Stroking	1	PH350	K20093	2	20	0,39
01274P	TFG 4G PLEYT (HI-FLAME/SÖN.EMİNİ YETLİ/YENİ MENTEŞE YU)	FG-R1142	01020A	20	Cutting Slope	2	DE085	K30045	1	20	0,254
01274P	TFG 4G PLEYT (HI-FLAME/SÖN.EMİNİ YETLİ/YENİ MENTEŞE YU)	FG-R1142	01020A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11257	1	20	0,308
01278P	TFG 4 GAZLI PLEYT,P (YENİ HI-FLAME)	FG-R1142	01086A	10	Stroking	1	PH350	K20093	2	20	0,39
01278P	TFG 4 GAZLI PLEYT,P (YENİ HI-FLAME)	FG-R1142	01086A	20	Cutting Slope	2	DE085	K30045	1	20	0,254
01278P	TFG 4 GAZLI PLEYT,P (YENİ HI-FLAME)	FG-R1142	01086A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11257	1	20	0,308
01278P	TFG 4 GAZLI PLEYT,P (YENİ HI-FLAME)	FG-R1142	01086A	40	Decoupling Connection hole+C	9	PE080	K12055	1	20	0,224
01279P	TFG 4 GAZLI PLEYT,P (SONME EMNİYETLİ/YENİ HI GHFLAME)	FG-R1142	01086A	10	Stroking	1	PH350	K20093	2	20	0,39
01279P	TFG 4 GAZLI PLEYT,P (SONME EMNİYETLİ/YENİ HI GHFLAME)	FG-R1142	01086A	20	Cutting Slope	2	DE085	K30045	1	20	0,254
01279P	TFG 4 GAZLI PLEYT,P (SONME EMNİYETLİ/YENİ HI GHFLAME)	FG-R1142	01086A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11257	1	20	0,308
01279P	TFG 4 GAZLI PLEYT,P (SONME EMNİYETLİ/YENİ HI GHFLAME)	FG-R1142	01086A	40	Decoupling Connection hole+C	9	PE080	K12055	1	20	0,224
01280P	TFG 4 GAZLI PLEYT,P (CAM KAPAKLI/YENİ HI-FLAME )	FG-R1142	01086A	10	Stroking	1	PH350	K20093	2	20	0,39
01280P	TFG 4 GAZLI PLEYT,P (CAM KAPAKLI/YENİ HI-FLAME )	FG-R1142	01086A	20	Cutting Slope	2	DE085	K30045	1	20	0,254
01280P	TFG 4 GAZLI PLEYT,P (CAM KAPAKLI/YENİ HI-FLAME )	FG-R1142	01086A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11257	1	20	0,308
01280P	TFG 4 GAZLI PLEYT,P (CAM KAPAKLI/YENİ HI-FLAME )	FG-R1142	01086A	40	Decoupling Connection hole+C	9	PE080	K12055	1	20	0,224
01281P	TFG 4 GAZLI PLEYT,P(CAM KAPAKLI/YENİ HI-FLAME/SONME E	FG-R1142	01086A	10	Stroking	1	PH350	K20093	2	20	0,39
01281P	TFG 4 GAZLI PLEYT,P(CAM KAPAKLI/YENİ HI-FLAME/SONME E	FG-R1142	01086A	20	Cutting Slope	2	DE085	K30045	1	20	0,254
01281P	TFG 4 GAZLI PLEYT,P(CAM KAPAKLI/YENİ HI-FLAME/SONME E	FG-R1142	01086A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11257	1	20	0,308
01281P	TFG 4 GAZLI PLEYT,P(CAM KAPAKLI/YENİ HI-FLAME/SONME E	FG-R1142	01086A	40	Decoupling Connection hole+C	9	PE080	K12055	1	20	0,224
01282P	TFG 4 GAZLI PLEYT,P (YENİ HI-FLAME/YENİ MENTEŞE YUVALI)	FG-R1142	01086A	10	Stroking	1	PH350	K20093	2	20	0,39
01282P	TFG 4 GAZLI PLEYT,P (YENİ HI-FLAME/YENİ MENTEŞE YUVALI)	FG-R1142	01086A	20	Cutting Slope	2	DE085	K30045	1	20	0,254
01282P	TFG 4 GAZLI PLEYT,P (YENİ HI-FLAME/YENİ MENTEŞE YUVALI)	FG-R1142	01086A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11257	1	20	0,308
01283P	TFG 4 GAZLI PLEYT,P (SONME EMNİYETLİ/YENİ HI GHFLAME/Y	FG-R1142	01086A	10	Stroking	1	PH350	K20093	2	20	0,39
01283P	TFG 4 GAZLI PLEYT,P (SONME EMNİYETLİ/YENİ HI GHFLAME/Y	FG-R1142	01086A	20	Cutting Slope	2	DE085	K30045	1	20	0,254
01283P	TFG 4 GAZLI PLEYT,P (SONME EMNİYETLİ/YENİ HI GHFLAME/Y	FG-R1142	01086A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11257	1	20	0,308
01288P	TFG 4 GAZLI PLEYT,P (INOX/YENİ HI-FLAME)	FG-R1142	01263A	10	Stroking	1	PH350	K20093	2	20	0,39
01288P	TFG 4 GAZLI PLEYT,P (INOX/YENİ HI-FLAME)	FG-R1142	01263A	20	Cutting Slope	2	DE085	K30045	1	20	0,254
01288P	TFG 4 GAZLI PLEYT,P (INOX/YENİ HI-FLAME)	FG-R1142	01263A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11257	1	20	0,308
01288P	TFG 4 GAZLI PLEYT,P (INOX/YENİ HI-FLAME)	FG-R1142	01263A	40	Draining Shutter Ground	4	PH07001	K62020	1	20	0,093
01288P	TFG 4 GAZLI PLEYT,P (INOX/YENİ HI-FLAME)	FG-R1142	01263A	50	Countersinking Shutter Hook	9	PE080	K64093	1	20	0,224
01342P	TFG 4 GAZLI PLEYT,P (INOX/YENİ HI-FLAME/CAM KAPAKLI/AL	FG-R1142	01263A	10	Stroking	1	PH350	K20093	2	20	0,39
01342P	TFG 4 GAZLI PLEYT,P (INOX/YENİ HI-FLAME/CAM KAPAKLI/AL	FG-R1142	01263A	20	Cutting Slope	2	DE085	K30045	1	20	0,254
01342P	TFG 4 GAZLI PLEYT,P (INOX/YENİ HI-FLAME/CAM KAPAKLI/AL	FG-R1142	01263A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11257	1	20	0,308
01342P	TFG 4 GAZLI PLEYT,P (INOX/YENİ HI-FLAME/CAM KAPAKLI/AL	FG-R1142	01263A	40	Draining Shutter Ground	4	PH07001	K62020	1	20	0,093

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01342P	TFG 4 GAZLI PLEYT,P (INOX/YENİ HI-FLAME/CAM KAPAKLI/AL	FG-R1142	01263A	50	Countersinking Shutter Hook	9	PE080	K64093	1	20	0,224
01343P	TFG 4 GAZLI PLEYT,P (YENİ HI-FLAME/ALTERNATİF KÜÇÜK BE	FG-R1142	01086A	10	Stroking	1	PH350	K20093	2	20	0,39
01343P	TFG 4 GAZLI PLEYT,P (YENİ HI-FLAME/ALTERNATİF KÜÇÜK BE	FG-R1142	01086A	20	Cutting Slope	2	DE085	K30045	1	20	0,254
01343P	TFG 4 GAZLI PLEYT,P (YENİ HI-FLAME/ALTERNATİF KÜÇÜK BE	FG-R1142	01086A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11257	1	20	0,308
01425P	TFG 4 GAZLI HI FLAME PLEYT	FG-R1142	01086A	10	Stroking	1	PH350	K20093	2	20	0,39
01425P	TFG 4 GAZLI HI FLAME PLEYT	FG-R1142	01086A	20	Cutting Slope	2	DE085	K30045	1	20	0,254
01425P	TFG 4 GAZLI HI FLAME PLEYT	FG-R1142	01086A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11257	1	20	0,308
01425P	TFG 4 GAZLI HI FLAME PLEYT	FG-R1142	01086A	40	Decoupling Connection hole+C	9	PE080	K12055	1	20	0,18
03049P	TFG FIRIN KAPAGI GOVDESI,P (BORU KULPLU)	FG-R1145	03047A	10	Stroking	1	PH350	K20069	2	20	0,467
03049P	TFG FIRIN KAPAGI GOVDESI,P (BORU KULPLU)	FG-R1145	03047A	20	Cutting Slope	2	DE085	K30047	1	20	0,224
03049P	TFG FIRIN KAPAGI GOVDESI,P (BORU KULPLU)	FG-R1145	03047A	30	Draining Core	3	PH150	K12059	1	20	0,23
03049P	TFG FIRIN KAPAGI GOVDESI,P (BORU KULPLU)	FG-R1145	03047A	40	Decoupling Side Shutter	4	PH07001	K11162	1	20	0,15
03049P	TFG FIRIN KAPAGI GOVDESI,P (BORU KULPLU)	FG-R1145	03047A	50	Decoupling Top Shutter	4	PH07001	K11161	1	20	0,25
03049P	TFG FIRIN KAPAGI GOVDESI,P (BORU KULPLU)	FG-R1145	03047A	60	Decoupling Bottom Shutter	4	PH07001	K11161	1	20	0,25
03094P	TFG FIRIN KAPAGI GOVDESI,P (BORU KULPLU/ÜST PANJURSU	FG-R1145	03047A	10	Stroking	1	PH350	K20069	2	20	0,467
03094P	TFG FIRIN KAPAGI GOVDESI,P (BORU KULPLU/ÜST PANJURSU	FG-R1145	03047A	20	Cutting Slope	2	DE085	K30047	1	20	0,224
03094P	TFG FIRIN KAPAGI GOVDESI,P (BORU KULPLU/ÜST PANJURSU	FG-R1145	03047A	30	Draining Core	3	PH150	K12059	1	20	0,23
03094P	TFG FIRIN KAPAGI GOVDESI,P (BORU KULPLU/ÜST PANJURSU	FG-R1145	03047A	40	Decoupling Side Shutter	4	PH07001	K11162	1	20	0,15
03094P	TFG FIRIN KAPAGI GOVDESI,P (BORU KULPLU/ÜST PANJURSU	FG-R1145	03047A	50	Decoupling Bottom Shutter	4	PH07001	K11161	1	20	0,25
02217P	TFG14/34/44/54/16/36/46/56/12/32/42/52 ÇAKMAKSIZ ROZETL	FG-R1149	02255A	10	Stroking	3	PH150	K20102	1	20	0,211
02217P	TFG14/34/44/54/16/36/46/56/12/32/42/52 ÇAKMAKSIZ ROZETL	FG-R1149	02255A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02217P	TFG14/34/44/54/16/36/46/56/12/32/42/52 ÇAKMAKSIZ ROZETL	FG-R1149	02255A	30	Curling	3	PH150	K40234	1	20	0,211
02217P	TFG14/34/44/54/16/36/46/56/12/32/42/52 ÇAKMAKSIZ ROZETL	FG-R1149	02255A	40	Decoupling Locking Button	9	PE080	K11205	1	20	0,18
02262P	TFG21/21-1 ROZETLI PANO,P	FG-R1149	02255A	10	Stroking	3	PH150	K20102	1	20	0,211
02262P	TFG21/21-1 ROZETLI PANO,P	FG-R1149	02255A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02262P	TFG21/21-1 ROZETLI PANO,P	FG-R1149	02255A	30	Curling	3	PH150	K40234	1	20	0,211
02263P	TFG21E/21-1E ROZETLI PANO,P (ÇAKMAKSIZ/LAMBASIZ)	FG-R1149	02255A	10	Stroking	3	PH150	K20102	1	20	0,211
02263P	TFG21E/21-1E ROZETLI PANO,P (ÇAKMAKSIZ/LAMBASIZ)	FG-R1149	02255A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02263P	TFG21E/21-1E ROZETLI PANO,P (ÇAKMAKSIZ/LAMBASIZ)	FG-R1149	02255A	30	Curling	3	PH150	K40234	1	20	0,211
02266P	TFG25E/25-1E ROZETLI PANO,P (ÇAKMAKSIZ/LAMBASIZ)	FG-R1149	02255A	10	Stroking	3	PH150	K20102	1	20	0,211
02266P	TFG25E/25-1E ROZETLI PANO,P (ÇAKMAKSIZ/LAMBASIZ)	FG-R1149	02255A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02266P	TFG25E/25-1E ROZETLI PANO,P (ÇAKMAKSIZ/LAMBASIZ)	FG-R1149	02255A	30	Curling	3	PH150	K40234	1	20	0,211
02267P	TFG25/25-1 ROZETLI PANO,P (LAMBASIZ)	FG-R1149	02255A	10	Stroking	3	PH150	K20102	1	20	0,211
02267P	TFG25/25-1 ROZETLI PANO,P (LAMBASIZ)	FG-R1149	02255A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02267P	TFG25/25-1 ROZETLI PANO,P (LAMBASIZ)	FG-R1149	02255A	30	Curling	3	PH150	K40234	1	20	0,211
02344P	TFG21/21-1 ROZETLI PANO,P (ÇAKMAKLI/LAMBASIZ)	FG-R1149	02255A	10	Stroking	3	PH150	K20102	1	20	0,211
02344P	TFG21/21-1 ROZETLI PANO,P (ÇAKMAKLI/LAMBASIZ)	FG-R1149	02255A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02344P	TFG21/21-1 ROZETLI PANO,P (ÇAKMAKLI/LAMBASIZ)	FG-R1149	02255A	30	Curling	3	PH150	K40234	1	20	0,211
02407P	TFG ROZETLI PANO,P (EĞİK PANO)	FG-R1149	02255A	10	Stroking	3	PH150	K20102	1	20	0,211
02407P	TFG ROZETLI PANO,P (EĞİK PANO)	FG-R1149	02255A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02407P	TFG ROZETLI PANO,P (EĞİK PANO)	FG-R1149	02255A	30	Curling	3	PH150	K40234	1	20	0,211
02407P	TFG ROZETLI PANO,P (EĞİK PANO)	FG-R1149	02255A	40	Decoupling Locking Button	9	PE080	K41205	1	20	0,18
02412P	TFG64/66 ROZETLI PANO,P (KILITLI)	FG-R1149	02255A	10	Stroking	3	PH150	K20102	1	20	0,211
02412P	TFG64/66 ROZETLI PANO,P (KILITLI)	FG-R1149	02255A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222

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02412P	TFG64/66 ROZETLİ PANO,P (KILITLI)	FG-R1149	02255A	30	Curling	3	PH150	K40234	1	20	0,211
02412P	TFG64/66 ROZETLİ PANO,P (KILITLI)	FG-R1149	02255A	40	Decoupling Locking Button	9	PE080	K11205	1	20	0,18
02491P	TFG21E/21-1E ROZETLİ/EĞİK PANO (USA)	FG-R1149	02255A	10	Stroking	3	PH150	K20102	1	20	0,211
02491P	TFG21E/21-1E ROZETLİ/EĞİK PANO (USA)	FG-R1149	02255A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02491P	TFG21E/21-1E ROZETLİ/EĞİK PANO (USA)	FG-R1149	02255A	30	Curling	3	PH150	K40234	1	20	0,211
02492P	TFG21 ROZETLİ/EĞİK PANO (USA)	FG-R1149	02255A	10	Stroking	3	PH150	K20102	1	20	0,211
02492P	TFG21 ROZETLİ/EĞİK PANO (USA)	FG-R1149	02255A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02492P	TFG21 ROZETLİ/EĞİK PANO (USA)	FG-R1149	02255A	30	Curling	3	PH150	K40234	1	20	0,211
02520P	TFG21 ROZETLİ/EĞİK PANO (INOX/USA)	FG-R1149	02520A	10	Stroking	3	PH150	K20102	1	20	0,211
02520P	TFG21 ROZETLİ/EĞİK PANO (INOX/USA)	FG-R1149	02520A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02520P	TFG21 ROZETLİ/EĞİK PANO (INOX/USA)	FG-R1149	02520A	30	Curling	3	PH150	K40234	1	20	0,211
02522P	TFG21 ROZETLİ/EĞİK PANO (INOX/ÇAKMAKSI Z/LAMBASIZ)	FG-R1149	02520A	10	Stroking	3	PH150	K20102	1	20	0,211
02522P	TFG21 ROZETLİ/EĞİK PANO (INOX/ÇAKMAKSI Z/LAMBASIZ)	FG-R1149	02520A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02522P	TFG21 ROZETLİ/EĞİK PANO (INOX/ÇAKMAKSI Z/LAMBASIZ)	FG-R1149	02520A	30	Curling	3	PH150	K40234	1	20	0,211
02529P	TFG21 ROZETLİ/EĞİK PANO (INOX)	FG-R1149	02520A	10	Stroking	3	PH150	K20102	1	20	0,211
02529P	TFG21 ROZETLİ/EĞİK PANO (INOX)	FG-R1149	02520A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02529P	TFG21 ROZETLİ/EĞİK PANO (INOX)	FG-R1149	02520A	30	Curling	3	PH150	K40234	1	20	0,211
02544P	TFG21/21-1 ROZETLİ PANO COPRECCI/ TERMOSTATSIZ,SÖN.F	FG-R1149	02255A	10	Stroking	3	PH150	K20102	1	20	0,211
02544P	TFG21/21-1 ROZETLİ PANO COPRECCI/ TERMOSTATSIZ,SÖN.F	FG-R1149	02255A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02544P	TFG21/21-1 ROZETLİ PANO COPRECCI/ TERMOSTATSIZ,SÖN.F	FG-R1149	02255A	30	Curling	3	PH150	K40234	1	20	0,211
02547P	TFG21/21-1 ROZETLİ PANO,P (CAKMAKLI/LAMBASIZ/COPPRECC	FG-R1149	02255A	10	Stroking	3	PH150	K20102	1	20	0,211
02547P	TFG21/21-1 ROZETLİ PANO,P (CAKMAKLI/LAMBASIZ/COPPRECC	FG-R1149	02255A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02547P	TFG21/21-1 ROZETLİ PANO,P (CAKMAKLI/LAMBASIZ/COPPRECC	FG-R1149	02255A	30	Curling	3	PH150	K40234	1	20	0,211
02548P	TFG21E/21-1E ROZETLİ PANO,P (CAKMAKSI Z/LAMBASIZ/COPR	FG-R1149	02255A	10	Stroking	3	PH150	K20102	1	20	0,211
02548P	TFG21E/21-1E ROZETLİ PANO,P (CAKMAKSI Z/LAMBASIZ/COPR	FG-R1149	02255A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02548P	TFG21E/21-1E ROZETLİ PANO,P (CAKMAKSI Z/LAMBASIZ/COPR	FG-R1149	02255A	30	Curling	3	PH150	K40234	1	20	0,211
02552P	TFG21 ROZETLİ/EĞİK PANO (INOX/ÇAKMAKSI Z/LAMBASIZ/CO	FG-R1149	02520A	10	Stroking	3	PH150	K20102	1	20	0,211
02552P	TFG21 ROZETLİ/EĞİK PANO (INOX/ÇAKMAKSI Z/LAMBASIZ/CO	FG-R1149	02520A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02552P	TFG21 ROZETLİ/EĞİK PANO (INOX/ÇAKMAKSI Z/LAMBASIZ/CO	FG-R1149	02520A	30	Curling	3	PH150	K40234	1	20	0,211
02553P	TFG21 ROZETLİ/EĞİK PANO (INOX/COPRECCI)	FG-R1149	02520A	10	Stroking	3	PH150	K20102	1	20	0,211
02553P	TFG21 ROZETLİ/EĞİK PANO (INOX/COPRECCI)	FG-R1149	02520A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02553P	TFG21 ROZETLİ/EĞİK PANO (INOX/COPRECCI)	FG-R1149	02520A	30	Curling	3	PH150	K40234	1	20	0,211
02555P	TFG25/25-1 ROZETLİ PANO,P (LAMBASIZ/COPRECCI)	FG-R1149	02255A	10	Stroking	3	PH150	K20102	1	20	0,211
02555P	TFG25/25-1 ROZETLİ PANO,P (LAMBASIZ/COPRECCI)	FG-R1149	02255A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02555P	TFG25/25-1 ROZETLİ PANO,P (LAMBASIZ/COPRECCI)	FG-R1149	02255A	30	Curling	3	PH150	K40234	1	20	0,211
02576P	TFG13 ROZETLİ,AYRI TERMOSTATLI PANO,P(KILITLI)	FG-R1149	02255A	10	Stroking	3	PH150	K20102	1	20	0,211
02576P	TFG13 ROZETLİ,AYRI TERMOSTATLI PANO,P(KILITLI)	FG-R1149	02255A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02576P	TFG13 ROZETLİ,AYRI TERMOSTATLI PANO,P(KILITLI)	FG-R1149	02255A	30	Curling	3	PH150	K40234	1	20	0,211
02576P	TFG13 ROZETLİ,AYRI TERMOSTATLI PANO,P(KILITLI)	FG-R1149	02255A	40	Decoupling Locking Button	9	PE080	K11205	1	20	0,18
02699P	TFG21/21-1 ROZETLİ PANO COPRECCI/ TERM.SIZ.SÖN.EMNİY	FG-R1149	02255A	10	Stroking	3	PH150	K20102	1	20	0,211
02699P	TFG21/21-1 ROZETLİ PANO COPRECCI/ TERM.SIZ.SÖN.EMNİY	FG-R1149	02255A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02699P	TFG21/21-1 ROZETLİ PANO COPRECCI/ TERM.SIZ.SÖN.EMNİY	FG-R1149	02255A	30	Curling	3	PH150	K40234	1	20	0,211
02699P	TFG21/21-1 ROZETLİ PANO COPRECCI/ TERM.SIZ.SÖN.EMNİY	FG-R1149	02255A	40	Decoupling Locking Button	9	PE080	K11205	1	20	0,18



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15087P	TFG USA OCAK YAĞ KORUMA ELEMANI	FG-R1176	15087A	10	Stroking	1	PH350	K20120	2	20	0,55
15087P	TFG USA OCAK YAĞ KORUMA ELEMANI	FG-R1176	15087A	20	Cutting Slope	2	DE085	K30035	1	20	0,35
15087P	TFG USA OCAK YAĞ KORUMA ELEMANI	FG-R1176	15087A	30	Decoupling Shutter Ground	4	PH07001	K11225	1	20	0,3
15087P	TFG USA OCAK YAĞ KORUMA ELEMANI	FG-R1176	15087A	40	Draining and Drilling Hole	4	PH07001	K11266	1	20	0,191
15088P	TFB USA OCAK YAĞ KORUMA ELEMANI ,P (YENI ESTETİK UYG)	FG-R1176	15088A	10	Stroking	1	PH350	K20068	2	20	0,55
15088P	TFB USA OCAK YAĞ KORUMA ELEMANI ,P (YENI ESTETİK UYG)	FG-R1176	15088A	20	Cutting Slope	2	DE085	K30055	1	20	0,35
15088P	TFB USA OCAK YAĞ KORUMA ELEMANI ,P (YENI ESTETİK UYG)	FG-R1176	15088A	30	Decoupling Shutter Ground	4	PH07001	K11225	1	20	0,3
15088P	TFB USA OCAK YAĞ KORUMA ELEMANI ,P (YENI ESTETİK UYG)	FG-R1176	15088A	40	Draining and Drilling Hole	4	PH07001	K11266	1	20	0,191
15091P	TFG18 USA OCAK YAĞ KORUMA ELEMANI	FG-R1176	15087A	10	Stroking	1	PH350	K20120	2	20	0,55
15091P	TFG18 USA OCAK YAĞ KORUMA ELEMANI	FG-R1176	15087A	20	Cutting Slope	2	DE085	K30035	1	20	0,35
15091P	TFG18 USA OCAK YAĞ KORUMA ELEMANI	FG-R1176	15087A	30	Decoupling Shutter Ground	4	PH07001	K11225	1	20	0,3
15091P	TFG18 USA OCAK YAĞ KORUMA ELEMANI	FG-R1176	15087A	40	Draining and Drilling Hole	4	PH07001	K11266	1	20	0,191
15091P	TFG18 USA OCAK YAĞ KORUMA ELEMANI	FG-R1176	15087A	50	Decoupling Hole for American	4	PH07001	K11245	1	20	0,18
15094P	TFG USA OCAK YAĞ KORUMA ELEMANI	FG-R1176	15088A	10	Stroking	1	PH350	K20068	2	20	0,55
15094P	TFG USA OCAK YAĞ KORUMA ELEMANI	FG-R1176	15088A	20	Cutting Slope	2	DE085	K30055	1	20	0,35
15094P	TFG USA OCAK YAĞ KORUMA ELEMANI	FG-R1176	15088A	30	Decoupling Shutter Ground	4	PH07001	K11225	1	20	0,3
15094P	TFG USA OCAK YAĞ KORUMA ELEMANI	FG-R1176	15088A	40	Draining and Drilling Hole	4	PH07001	K11266	1	20	0,191
15094P	TFG USA OCAK YAĞ KORUMA ELEMANI	FG-R1176	15088A	50	Decoupling Hole for American	4	PH07001	K11245	1	20	0,18
11293P	TFB/TFG21 IC KASET UST KAPAK,P (KENDİNDEN SEGMANLI)	FG-R1182	11144A	10	Stroking	3	PH150	K20013	1	20	0,362
11293P	TFB/TFG21 IC KASET UST KAPAK,P (KENDİNDEN SEGMANLI)	FG-R1182	11144A	20	Peripheral Cutting	6	PE250	K13021	1	20	0,227
11293P	TFB/TFG21 IC KASET UST KAPAK,P (KENDİNDEN SEGMANLI)	FG-R1182	11144A	30	Decoupling Brolure Hole Exit	4	PH07001	K11190	1	20	0,196
11293P	TFB/TFG21 IC KASET UST KAPAK,P (KENDİNDEN SEGMANLI)	FG-R1182	11144A	40	Decoupling Brolure Hole	4	PH07001	K11181	1	20	0,196
11293P	TFB/TFG21 IC KASET UST KAPAK,P (KENDİNDEN SEGMANLI)	FG-R1182	11144A	50	Draining Pole Cap	4	PH07001	K11141	1	20	0,196
11293P	TFB/TFG21 IC KASET UST KAPAK,P (KENDİNDEN SEGMANLI)	FG-R1182	11144A	60	Curling Pole Cap	4	PH07001	K64031	1	20	0,196
11368P	TFB/TFG21 IC KASET UST KAPAK,P DERİN	FG-R1182	11144A	10	Stroking	3	PH150	K20013	1	20	0,362
11368P	TFB/TFG21 IC KASET UST KAPAK,P DERİN	FG-R1182	11144A	20	Peripheral Cutting	6	PE250	K13021	1	20	0,227
11368P	TFB/TFG21 IC KASET UST KAPAK,P DERİN	FG-R1182	11144A	30	Decoupling Brolure Hole Exit	4	PH07001	K11190	1	20	0,196
11368P	TFB/TFG21 IC KASET UST KAPAK,P DERİN	FG-R1182	11144A	40	Decoupling Brolure Hole	4	PH07001	K11181	1	20	0,196
11368P	TFB/TFG21 IC KASET UST KAPAK,P DERİN	FG-R1182	11144A	50	Draining Pole Cap	4	PH07001	K11141	1	20	0,196
11368P	TFB/TFG21 IC KASET UST KAPAK,P DERİN	FG-R1182	11144A	60	Curling Pole Cap	4	PH07001	K64031	1	20	0,196
02256P	TFG13 LENSLİ ROZETLİ PANO.P	FG-R1188	02255A	10	Stroking	3	PH150	K20102	1	20	0,211
02256P	TFG13 LENSLİ ROZETLİ PANO.P	FG-R1188	02255A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02256P	TFG13 LENSLİ ROZETLİ PANO.P	FG-R1188	02255A	30	Curling	3	PH150	K40234	1	20	0,211
02257P	TFG/R13 TEK SINYAL LAMBALI LENSLİ ROZETLİ PANO,P	FG-R1188	02255A	10	Stroking	3	PH150	K20102	1	20	0,211
02257P	TFG/R13 TEK SINYAL LAMBALI LENSLİ ROZETLİ PANO,P	FG-R1188	02255A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02257P	TFG/R13 TEK SINYAL LAMBALI LENSLİ ROZETLİ PANO,P	FG-R1188	02255A	30	Curling	3	PH150	K40234	1	20	0,211
02258P	TFG/R14(TFG11/31/41/51 ÇAK.SİZ)TEK SİN.L.LENSLİ ROZET.P	FG-R1188	02255A	10	Stroking	3	PH150	K20102	1	20	0,211
02258P	TFG/R14(TFG11/31/41/51 ÇAK.SİZ)TEK SİN.L.LENSLİ ROZET.P	FG-R1188	02255A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02258P	TFG/R14(TFG11/31/41/51 ÇAK.SİZ)TEK SİN.L.LENSLİ ROZET.P	FG-R1188	02255A	30	Curling	3	PH150	K40234	1	20	0,211
02271P	TFG11/31/41/51-31/61 LENSLİ ROZETLİ PANO,P	FG-R1188	02255A	10	Stroking	3	PH150	K20102	1	20	0,211
02271P	TFG11/31/41/51-31/61 LENSLİ ROZETLİ PANO,P	FG-R1188	02255A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02271P	TFG11/31/41/51-31/61 LENSLİ ROZETLİ PANO,P	FG-R1188	02255A	30	Curling	3	PH150	K40234	1	20	0,211
02272P	TFG LENSLİ PANO	FG-R1188	02255A	10	Stroking	3	PH150	K20102	1	20	0,211
02272P	TFG LENSLİ PANO	FG-R1188	02255A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222

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02272P	TFG LENSİ PANO	FG-R1188	02255A	30	Curling	3	PH150	K40234	1	20	0,211
02273P	TFG22/22-1 LENSİ ROZETLİ PANO (CEVİRME/LAMBA BİRLEŞİ)	FG-R1188	02255A	10	Stroking	3	PH150	K20102	1	20	0,211
02273P	TFG22/22-1 LENSİ ROZETLİ PANO (CEVİRME/LAMBA BİRLEŞİ)	FG-R1188	02255A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02273P	TFG22/22-1 LENSİ ROZETLİ PANO (CEVİRME/LAMBA BİRLEŞİ)	FG-R1188	02255A	30	Curling	3	PH150	K40234	1	20	0,211
02274P	TFG LENSİ PANO	FG-R1188	02255A	10	Stroking	3	PH150	K20102	1	20	0,211
02274P	TFG LENSİ PANO	FG-R1188	02255A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02274P	TFG LENSİ PANO	FG-R1188	02255A	30	Curling	3	PH150	K40234	1	20	0,211
02275P	TFG LENSİ PANO	FG-R1188	02255A	10	Stroking	3	PH150	K20102	1	20	0,211
02275P	TFG LENSİ PANO	FG-R1188	02255A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02275P	TFG LENSİ PANO	FG-R1188	02255A	30	Curling	3	PH150	K40234	1	20	0,211
02276P	TFG LENSİ PANO	FG-R1188	02255A	10	Stroking	3	PH150	K20102	1	20	0,211
02276P	TFG LENSİ PANO	FG-R1188	02255A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02276P	TFG LENSİ PANO	FG-R1188	02255A	30	Curling	3	PH150	K40234	1	20	0,211
02277P	TFG22/22-1 LENSİ ROZETLİ PANO,P (CEVİRME)	FG-R1188	02255A	10	Stroking	3	PH150	K20102	1	20	0,211
02277P	TFG22/22-1 LENSİ ROZETLİ PANO,P (CEVİRME)	FG-R1188	02255A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02277P	TFG22/22-1 LENSİ ROZETLİ PANO,P (CEVİRME)	FG-R1188	02255A	30	Curling	3	PH150	K40234	1	20	0,211
02277P	TFG22/22-1 LENSİ ROZETLİ PANO,P (CEVİRME)	FG-R1188	02255A	40	Decoupling button cap	9	PE080	K11178	1	20	0,18
02363P	TFG14\34\44\54\16\36\46 ÇAKMAKSIZ LENSİ ROZETLİ PANO.	FG-R1188	02255A	10	Stroking	3	PH150	K20102	1	20	0,211
02363P	TFG14\34\44\54\16\36\46 ÇAKMAKSIZ LENSİ ROZETLİ PANO.	FG-R1188	02255A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02363P	TFG14\34\44\54\16\36\46 ÇAKMAKSIZ LENSİ ROZETLİ PANO.	FG-R1188	02255A	30	Curling	3	PH150	K40234	1	20	0,211
02363P	TFG14\34\44\54\16\36\46 ÇAKMAKSIZ LENSİ ROZETLİ PANO.	FG-R1188	02255A	40	Decoupling Locking Button	9	PE080	K11205	1	20	0,18
02364P	TFG64\66 LENSİ ROZETLİ, KILITLI PANO,P	FG-R1188	02255A	10	Stroking	3	PH150	K20102	1	20	0,211
02364P	TFG64\66 LENSİ ROZETLİ, KILITLI PANO,P	FG-R1188	02255A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02364P	TFG64\66 LENSİ ROZETLİ, KILITLI PANO,P	FG-R1188	02255A	30	Curling	3	PH150	K40234	1	20	0,211
02364P	TFG64\66 LENSİ ROZETLİ, KILITLI PANO,P	FG-R1188	02255A	40	Decoupling Locking Button	9	PE080	K11205	1	20	0,18
02394P	TFG14\34\44\54\16\36\46\56\12\32\42\52(CAK.SIZ) LENSİ ROZETLİ PANO,P	FG-R1188	02255A	10	Stroking	3	PH150	K20102	1	20	0,211
02394P	TFG14\34\44\54\16\36\46\56\12\32\42\52(CAK.SIZ) LENSİ ROZETLİ PANO,P	FG-R1188	02255A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02394P	TFG14\34\44\54\16\36\46\56\12\32\42\52(CAK.SIZ) LENSİ ROZETLİ PANO,P	FG-R1188	02255A	30	Curling	3	PH150	K40234	1	20	0,211
02395P	TFG11\31\41\51 LENSİ ROZETLİ PANO,P	FG-R1188	02255A	10	Stroking	3	PH150	K20102	1	20	0,211
02395P	TFG11\31\41\51 LENSİ ROZETLİ PANO,P	FG-R1188	02255A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02395P	TFG11\31\41\51 LENSİ ROZETLİ PANO,P	FG-R1188	02255A	30	Curling	3	PH150	K40234	1	20	0,211
02396P	TFG62..(32-31) LENSİ ROZETLİ PANO,P	FG-R1188	02255A	10	Stroking	3	PH150	K20102	1	20	0,211
02396P	TFG62..(32-31) LENSİ ROZETLİ PANO,P	FG-R1188	02255A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02396P	TFG62..(32-31) LENSİ ROZETLİ PANO,P	FG-R1188	02255A	30	Curling	3	PH150	K40234	1	20	0,211
02397P	TFG12\32\42\52 LENSİ ROZETLİ PANO,P	FG-R1188	02255A	10	Stroking	3	PH150	K20102	1	20	0,211
02397P	TFG12\32\42\52 LENSİ ROZETLİ PANO,P	FG-R1188	02255A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02397P	TFG12\32\42\52 LENSİ ROZETLİ PANO,P	FG-R1188	02255A	30	Curling	3	PH150	K40234	1	20	0,211
02398P	TFG64\TFG66 LENSİ ROZETLİ PANO,P	FG-R1188	02255A	10	Stroking	3	PH150	K20102	1	20	0,211
02398P	TFG64\TFG66 LENSİ ROZETLİ PANO,P	FG-R1188	02255A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02398P	TFG64\TFG66 LENSİ ROZETLİ PANO,P	FG-R1188	02255A	30	Curling	3	PH150	K40234	1	20	0,211
02523P	TFG14 LENSİ ROZETLİ PANO (INOX)	FG-R1188	02520A	10	Stroking	3	PH150	K20102	1	20	0,211
02523P	TFG14 LENSİ ROZETLİ PANO (INOX)	FG-R1188	02520A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02523P	TFG14 LENSİ ROZETLİ PANO (INOX)	FG-R1188	02520A	30	Curling	3	PH150	K40234	1	20	0,211

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02523P	TFG14 LENSLİ ROZETLİ PANO (INOX)	FG-R1188	02520A	40	Decoupling Signal Lamp	9	PE080	K11211	1	20	0,18
02528P	TFG LENSLİ EĞİK PANO	FG-R1188	02255A	10	Stroking	3	PH150	K20102	1	20	0,211
02528P	TFG LENSLİ EĞİK PANO	FG-R1188	02255A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02528P	TFG LENSLİ EĞİK PANO	FG-R1188	02255A	30	Curling	3	PH150	K40234	1	20	0,211
02568P	TFG64/66 LENSLİ ROZETLİ PANO (INOX)	FG-R1188	02520A	10	Stroking	3	PH150	K20102	1	20	0,211
02568P	TFG64/66 LENSLİ ROZETLİ PANO (INOX)	FG-R1188	02520A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02568P	TFG64/66 LENSLİ ROZETLİ PANO (INOX)	FG-R1188	02520A	30	Curling	3	PH150	K40234	1	20	0,211
02568P	TFG64/66 LENSLİ ROZETLİ PANO (INOX)	FG-R1188	02520A	40	Decoupling Signal Lamp	9	PE080	K11211	1	20	0,18
02569P	TFG14/34/44/54 LENSLİ ROZETLİ BUTONLU EKONOMİK PANO	FG-R1188	02255A	10	Stroking	3	PH150	K20102	1	20	0,211
02569P	TFG14/34/44/54 LENSLİ ROZETLİ BUTONLU EKONOMİK PANO	FG-R1188	02255A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02569P	TFG14/34/44/54 LENSLİ ROZETLİ BUTONLU EKONOMİK PANO	FG-R1188	02255A	30	Curling	3	PH150	K40234	1	20	0,211
02569P	TFG14/34/44/54 LENSLİ ROZETLİ BUTONLU EKONOMİK PANO	FG-R1188	02255A	40	Decoupling button cap	9	PE080	K11178	1	20	0,18
02572P	TFG11/31/41/51-31/61 LENSLİ ROZETLİ/EĞİK PANO (INOX)	FG-R1188	02520A	10	Stroking	3	PH150	K20102	1	20	0,211
02572P	TFG11/31/41/51-31/61 LENSLİ ROZETLİ/EĞİK PANO (INOX)	FG-R1188	02520A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02572P	TFG11/31/41/51-31/61 LENSLİ ROZETLİ/EĞİK PANO (INOX)	FG-R1188	02520A	30	Curling	3	PH150	K40234	1	20	0,211
02572P	TFG11/31/41/51-31/61 LENSLİ ROZETLİ/EĞİK PANO (INOX)	FG-R1188	02520A	40	Decoupling Signal Lamp	9	PE080	K11211	1	20	0,18
02586P	TFG11/31/41/51 LENSLİ ROZETLİ/EĞİK PANO (INOX/ÇAKMAK)	FG-R1188	02520A	10	Stroking	3	PH150	K20102	1	20	0,211
02586P	TFG11/31/41/51 LENSLİ ROZETLİ/EĞİK PANO (INOX/ÇAKMAK)	FG-R1188	02520A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02586P	TFG11/31/41/51 LENSLİ ROZETLİ/EĞİK PANO (INOX/ÇAKMAK)	FG-R1188	02520A	30	Curling	3	PH150	K40234	1	20	0,211
02586P	TFG11/31/41/51 LENSLİ ROZETLİ/EĞİK PANO (INOX/ÇAKMAK)	FG-R1188	02520A	40	Decoupling Signal Lamp	9	PE080	K11211	1	20	0,18
02590P	TFG11/31/41/51 LENSLİ ROZETLİ/EĞİK PANO (INOX)	FG-R1188	02520A	10	Stroking	3	PH150	K20102	1	20	0,211
02590P	TFG11/31/41/51 LENSLİ ROZETLİ/EĞİK PANO (INOX)	FG-R1188	02520A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02590P	TFG11/31/41/51 LENSLİ ROZETLİ/EĞİK PANO (INOX)	FG-R1188	02520A	30	Curling	3	PH150	K40234	1	20	0,211
02590P	TFG11/31/41/51 LENSLİ ROZETLİ/EĞİK PANO (INOX)	FG-R1188	02520A	40	Decoupling Signal Lamp	9	PE080	K11211	1	20	0,18
02696P	TFG13 AYRI TERMOSTATLI LENSLİ ROZETLİ PANO. KİLİTLİ Tİ	FG-R1188	02255A	10	Stroking	3	PH150	K20102	1	20	0,211
02696P	TFG13 AYRI TERMOSTATLI LENSLİ ROZETLİ PANO. KİLİTLİ Tİ	FG-R1188	02255A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02696P	TFG13 AYRI TERMOSTATLI LENSLİ ROZETLİ PANO. KİLİTLİ Tİ	FG-R1188	02255A	30	Curling	3	PH150	K40234	1	20	0,211
02696P	TFG13 AYRI TERMOSTATLI LENSLİ ROZETLİ PANO. KİLİTLİ Tİ	FG-R1188	02255A	40	Decoupling Locking Button	9	PE080	K11205	1	20	0,18
02754P	TFG62..(32-31) INOX LENSLİ ROZETLİ PANO,P	FG-R1188	02520A	10	Stroking	3	PH150	K20102	1	20	0,211
02754P	TFG62..(32-31) INOX LENSLİ ROZETLİ PANO,P	FG-R1188	02520A	20	Peripheral Cutting	3	PH150	K13065	1	20	0,222
02754P	TFG62..(32-31) INOX LENSLİ ROZETLİ PANO,P	FG-R1188	02520A	30	Curling	3	PH150	K40234	1	20	0,211
02754P	TFG62..(32-31) INOX LENSLİ ROZETLİ PANO,P	FG-R1188	02520A	40	Decoupling Signal Lamp	9	PE080	K11211	1	20	0,18
11339P	TFB/TFG21 IC KASET UST KAPAK,P (KENDİNDEN SEGMANLI/US)	FG-R1196	11144A	10	Stroking	3	PH150	K20013	1	20	0,362
11339P	TFB/TFG21 IC KASET UST KAPAK,P (KENDİNDEN SEGMANLI/US)	FG-R1196	11144A	20	Peripheral Cutting	6	PE250	K13021	1	20	0,227
11339P	TFB/TFG21 IC KASET UST KAPAK,P (KENDİNDEN SEGMANLI/US)	FG-R1196	11144A	30	Decoupling Brolure Hole Exit	4	PH07001	K11190	1	20	0,196
11339P	TFB/TFG21 IC KASET UST KAPAK,P (KENDİNDEN SEGMANLI/US)	FG-R1196	11144A	40	Decoupling Brolure Hole	4	PH07001	K11181	1	20	0,196
11339P	TFB/TFG21 IC KASET UST KAPAK,P (KENDİNDEN SEGMANLI/US)	FG-R1196	11144A	50	Draining Pole Cap	4	PH07001	K11141	1	20	0,196
11339P	TFB/TFG21 IC KASET UST KAPAK,P (KENDİNDEN SEGMANLI/US)	FG-R1196	11144A	60	Curling Pole Cap	4	PH07001	K64031	1	20	0,196
11254P	TFG21 IC KASET ARKA KAPAK,P (/USA)	FG-R1197	11045A	10	Stroking	5	PH30001	K21026	2	20	0,267
11254P	TFG21 IC KASET ARKA KAPAK,P (/USA)	FG-R1197	11045A	20	Peripheral Cutting	6	PE250	K13061	1	20	0,227
11254P	TFG21 IC KASET ARKA KAPAK,P (/USA)	FG-R1197	11045A	30	Curling	3	PH150	K40030	1	20	0,211
11336P	TFG21 IC KASET ARKA KAPAK,P (YENİ BRULORLU/LAMBALI/US)	FG-R1197	11045A	10	Stroking	5	PH30001	K21026	2	20	0,267
11336P	TFG21 IC KASET ARKA KAPAK,P (YENİ BRULORLU/LAMBALI/US)	FG-R1197	11045A	20	Peripheral Cutting	6	PE250	K13061	1	20	0,227
11336P	TFG21 IC KASET ARKA KAPAK,P (YENİ BRULORLU/LAMBALI/US)	FG-R1197	11045A	30	Curling	3	PH150	K40030	1	20	0,211

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11336P	TFG21 IC KASET ARKA KAPAK,P (YENI BRULORLU/LAMBALI/US	FG-R1197	11045A	40	Decoupling pole hole	10	PE030	K11233	1	20	0,18
11337P	TFG21 IC KASET ARKA KAPAK,P (YENI BRULORLU/LAMBASIZ/U	FG-R1197	11045A	10	Stroking	5	PH30001	K21026	2	20	0,267
11337P	TFG21 IC KASET ARKA KAPAK,P (YENI BRULORLU/LAMBASIZ/U	FG-R1197	11045A	20	Peripheral Cutting	6	PE250	K13061	1	20	0,227
11337P	TFG21 IC KASET ARKA KAPAK,P (YENI BRULORLU/LAMBASIZ/U	FG-R1197	11045A	30	Curling	3	PH150	K40030	1	20	0,211
11337P	TFG21 IC KASET ARKA KAPAK,P (YENI BRULORLU/LAMBASIZ /	FG-R1197	11045A	40	Decoupling pole hole	10	PE030	K11233	1	20	0,18
03071P	TFG FIRIN KAPAGI ,P (IC CAM SILIKON YAPI STIRMALI)	FG-R1204	03047A	10	Stroking	1	PH350	K20010	2	20	0,39
03071P	TFG FIRIN KAPAGI ,P (IC CAM SILIKON YAPI STIRMALI)	FG-R1204	03047A	20	Cutting Slope	2	DE085	K30007	1	20	0,254
03071P	TFG FIRIN KAPAGI ,P (IC CAM SILIKON YAPI STIRMALI)	FG-R1204	03047A	30	Draining Core	3	PH150	K12008	1	20	0,23
03071P	TFG FIRIN KAPAGI ,P (IC CAM SILIKON YAPI STIRMALI)	FG-R1204	03047A	40	Coutersinking and Drilling Hole	3	PH150	K19029	1	20	0,25
04028P	TFG CAM ALT BANDI (INOX/BORU KULPLU)	FG-R1207	04028A	10	Draining	7	PE150	K11089	1	20	0,33
04028P	TFG CAM ALT BANDI (INOX/BORU KULPLU)	FG-R1207	04028A	20	Curling	3	PH150	K40295	1	20	0,33
04032P	TFG CAM UST BANDI DKP ,P (BORU KULPLU)	FG-R1207	04032A	10	Draining	7	PE150	K11089	1	20	0,33
04032P	TFG CAM UST BANDI DKP ,P (BORU KULPLU)	FG-R1207	04032A	20	Curling	3	PH150	K40295	1	20	0,33
04033P	TFG CAM ALT BANDI DKP (BORU KULPLU)	FG-R1207	04033A	10	Draining	7	PE150	K11089	1	20	0,33
04033P	TFG CAM ALT BANDI DKP (BORU KULPLU)	FG-R1207	04033A	20	Curling	3	PH150	K40295	1	20	0,33
04029P	TFG CAM ÜST BANDI (INOX) (BORU KULPLU)	FG-R1217	04029A	10	Draining	7	PE150	K11089	1	20	0,33
04029P	TFG CAM ÜST BANDI (INOX) (BORU KULPLU)	FG-R1217	04029A	20	Curling	3	PH150	K40295	1	20	0,33
01334P	TFG 4 GAZLI PLEYT (USA)	FG-R1220	01086A	10	Stroking	1	PH350	K20009	2	20	0,39
01334P	TFG 4 GAZLI PLEYT (USA)	FG-R1220	01086A	20	Cutting Slope	2	DE085	K30028	1	20	0,254
01334P	TFG 4 GAZLI PLEYT (USA)	FG-R1220	01086A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11251	1	20	0,308
01334P	TFG 4 GAZLI PLEYT (USA)	FG-R1220	01086A	40	Decoupling Pole Hole	7	PE150	K11089	1	20	0,93
01334P	TFG 4 GAZLI PLEYT (USA)	FG-R1220	01086A	50	Coutersinking Pole Cap	7	PE150	K64093	1	20	0,2
01357P	TFG 4 GAZLI PLEYT (INOX/USA)	FG-R1220	01263A	10	Stroking	1	PH350	K20045	2	20	0,39
01357P	TFG 4 GAZLI PLEYT (INOX/USA)	FG-R1220	01263A	20	Cutting Slope	2	DE085	K30028	1	20	0,254
01357P	TFG 4 GAZLI PLEYT (INOX/USA)	FG-R1220	01263A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11251	1	20	0,308
01357P	TFG 4 GAZLI PLEYT (INOX/USA)	FG-R1220	01263A	40	Decoupling Pole Hole	7	PE150	K11089	1	20	0,93
01357P	TFG 4 GAZLI PLEYT (INOX/USA)	FG-R1220	01263A	50	Coutersinking Pole Cap	7	PE150	K64093	1	20	0,2
01262P	TFG 4E PLEYT (INOX)	FG-R1221	01262A	10	Stroking	1	PH350	K20059	2	20	0,39
01262P	TFG 4E PLEYT (INOX)	FG-R1221	01262A	20	Cutting Slope	2	DE085	K30028	1	20	0,254
01262P	TFG 4E PLEYT (INOX)	FG-R1221	01262A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11252	1	20	0,308
01262P	TFG 4E PLEYT (INOX)	FG-R1221	01262A	40	Decoupling Connection hole+C	9	PE080	K11062	1	20	0,224
01265P	TFG 4E PLEYT (INOX/CAM OCAK KAPAKLI)	FG-R1221	01262A	10	Stroking	1	PH350	K20059	2	20	0,39
01265P	TFG 4E PLEYT (INOX/CAM OCAK KAPAKLI)	FG-R1221	01262A	20	Cutting Slope	2	DE085	K30028	1	20	0,254
01265P	TFG 4E PLEYT (INOX/CAM OCAK KAPAKLI)	FG-R1221	01262A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11252	1	20	0,308
01265P	TFG 4E PLEYT (INOX/CAM OCAK KAPAKLI)	FG-R1221	01262A	40	Decoupling Connection hole+C	9	PE080	K11062	1	20	0,224
01276P	TFG 4E PLEYT (INOX/DELIKSIZ)	FG-R1221	01262A	10	Stroking	1	PH350	K20059	2	20	0,39
01276P	TFG 4E PLEYT (INOX/DELIKSIZ)	FG-R1221	01262A	20	Cutting Slope	2	DE085	K30028	1	20	0,254
01276P	TFG 4E PLEYT (INOX/DELIKSIZ)	FG-R1221	01262A	30	Decoupling Pipe, Hinge, and S	3	PH150	K11252	1	20	0,308
02496P	TFG61-51 PANO (INOX)	FG-R1224	02472A	10	Peripheral cutting and Draining	3	PH150	K13057	1	20	0,224
02496P	TFG61-51 PANO (INOX)	FG-R1224	02472A	20	First Curling	3	PH150	K21038	1	20	0,252
02496P	TFG61-51 PANO (INOX)	FG-R1224	02472A	30	Second Curling	3	PH150	K40020	1	20	0,352
02496P	TFG61-51 PANO (INOX)	FG-R1224	02472A	40	Draining Digital Timer Hook	9	PE080	K11229	1	20	0,18
01375P	TFG 4 SİRAL İSİTİCİLİ PLEYT	FG-R1233	01375A	10	Stroking	1	PH350	K20037	2	20	0,77

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01375P	TFG 4 SİRAL İSİTİCİLİ PLEYT	FG-R1233	01375A	20	Peripheral Cutting	1	PH350	K10350	1	20	0,448
01375P	TFG 4 SİRAL İSİTİCİLİ PLEYT	FG-R1233	01375A	30	Leveling Slope	1	PH350	K20037	2	20	0,448
01375P	TFG 4 SİRAL İSİTİCİLİ PLEYT	FG-R1233	01375A	40	Head Rolling	1	PH350	K70083	1	20	0,448
01375P	TFG 4 SİRAL İSİTİCİLİ PLEYT	FG-R1233	01375A	50	Decoupling Hinge Hole	4	PH07001	K11281	1	20	0,164
01375P	TFG 4 SİRAL İSİTİCİLİ PLEYT	FG-R1233	01375A	60	Flanging	1	PH350	K40676	2	20	0,77
01467P	TFG 18 SİRAL İSİTİCİLİ PLEYT (INOX)	FG-R1233	01467A	10	Stroking	1	PH350	K20037	2	20	0,77
01467P	TFG 18 SİRAL İSİTİCİLİ PLEYT (INOX)	FG-R1233	01467A	20	Peripheral Cutting	1	PH350	K10350	1	20	0,448
01467P	TFG 18 SİRAL İSİTİCİLİ PLEYT (INOX)	FG-R1233	01467A	30	Leveling Slope	1	PH350	K20037	2	20	0,448
01467P	TFG 18 SİRAL İSİTİCİLİ PLEYT (INOX)	FG-R1233	01467A	40	Head Rolling	1	PH350	K70083	1	20	0,448
01467P	TFG 18 SİRAL İSİTİCİLİ PLEYT (INOX)	FG-R1233	01467A	50	Decoupling Hinge Hole	4	PH07001	K11281	1	20	0,164
01467P	TFG 18 SİRAL İSİTİCİLİ PLEYT (INOX)	FG-R1233	01467A	60	Flanging	1	PH350	K40676	2	20	0,77
04039P	TFG KOMPLE İNOX CAM BANDI	FG-R1242	04039A	10	Peripheral cutting and Draining	3	PH150	K13091	2	20	0,33
01391P	TFG214 PLEYT	FG-R1248	01086A	10	Stroking	1	PH350	K20009	2	20	0,39
01391P	TFG214 PLEYT	FG-R1248	01086A	20	Cutting Slope	2	DE085	K30008	1	20	0,254
01391P	TFG214 PLEYT	FG-R1248	01086A	30	Draining Full Core	3	PH150	K12073	1	20	0,308
02709P	TFG18 DERİN PANO..LAMBALI..AVANTI	FG-R1260	02687A	10	Stroking	1	PH350	K20223	2	20	0,33
02709P	TFG18 DERİN PANO..LAMBALI..AVANTI	FG-R1260	02687A	20	Peripheral Cutting	3	PH150	K10346	1	20	0,224
02709P	TFG18 DERİN PANO..LAMBALI..AVANTI	FG-R1260	02687A	30	Leveling and Curling	3	PH150	K20223	1	20	0,33
02709P	TFG18 DERİN PANO..LAMBALI..AVANTI	FG-R1260	02687A	40	Draining Switch Hook	3	PH150	K10347	1	20	0,224
02728P	TFG18 DERİN PANO..LAMBASIZ..AVANTI	FG-R1260	02687A	10	Stroking	1	PH350	K20223	2	20	0,33
02728P	TFG18 DERİN PANO..LAMBASIZ..AVANTI	FG-R1260	02687A	20	Peripheral Cutting	3	PH150	K10346	1	20	0,224
02728P	TFG18 DERİN PANO..LAMBASIZ..AVANTI	FG-R1260	02687A	30	Leveling and Curling	3	PH150	K20223	1	20	0,33
02728P	TFG18 DERİN PANO..LAMBASIZ..AVANTI	FG-R1260	02687A	40	Draining Switch Hook	3	PH150	K10347	1	20	0,224
02755P	TFG18 İNOX DERİN PANO.LAMBALI..AVANTI	FG-R1260	02685A	10	Stroking	1	PH350	K20223	2	20	0,33
02755P	TFG18 İNOX DERİN PANO.LAMBALI..AVANTI	FG-R1260	02685A	20	Peripheral Cutting	3	PH150	K10346	1	20	0,224
02755P	TFG18 İNOX DERİN PANO.LAMBALI..AVANTI	FG-R1260	02685A	30	Leveling and Curling	3	PH150	K20223	1	20	0,33
02755P	TFG18 İNOX DERİN PANO.LAMBALI..AVANTI	FG-R1260	02685A	40	Draining Switch Hook	3	PH150	K10347	1	20	0,224
03136P	TFG28 GEA İZGARA BÖLMESİ KAPAĞI ARKA S/	FG-R1274	03136A	10	Stroking	1	PH200	K20211	1	20	0,467
03136P	TFG28 GEA İZGARA BÖLMESİ KAPAĞI ARKA S/	FG-R1274	03136A	20	Cutting Slope	2	DE085	K30100	1	20	0,224
03136P	TFG28 GEA İZGARA BÖLMESİ KAPAĞI ARKA S/	FG-R1274	03136A	30	Drilling and Coutersinking	3	PH150	K10300	1	20	0,24
03136P	TFG28 GEA İZGARA BÖLMESİ KAPAĞI ARKA S/	FG-R1274	03136A	40	Drilling and Crushing	4	PH07001	K10301	1	20	0,25
03139P	TFG28 GEA İZGARA BÖLMESİ DIŞ KAPAĞI		03115A	10	Stroking	1	PH350	K20146	2	20	0,25
03139P	TFG28 GEA İZGARA BÖLMESİ DIŞ KAPAĞI		03115A	20	Cutting Slope	2	DE085	K30074	1	20	0,2
03139P	TFG28 GEA İZGARA BÖLMESİ DIŞ KAPAĞI		03115A	30	Drilling	4	PH07001	K10087	1	20	0,2
03141P	TFB28 GEA İZGARA BÖLMESİ DIŞ KAPAĞI	FB-R1198	03141A	10	Stroking	1	PH200	K20212	2	20	0,39
03141P	TFB28 GEA İZGARA BÖLMESİ DIŞ KAPAĞI	FB-R1198	03141A	20	Cutting Slope	2	DE085	K30102	1	20	0,254
03141P	TFB28 GEA İZGARA BÖLMESİ DIŞ KAPAĞI	FB-R1198	03141A	30	Drilling	3	PH150	K10302	1	20	0,308
03142P	TFB28 GEA İZGARA BÖLMESİ KAPAĞI ARKA S/	FB-R1199	03142A	10	Stroking	1	PH200	K20212	1	20	0,467
03142P	TFB28 GEA İZGARA BÖLMESİ KAPAĞI ARKA S/	FB-R1199	03142A	20	Cutting Slope	2	DE085	K30100	1	20	0,225
03142P	TFB28 GEA İZGARA BÖLMESİ KAPAĞI ARKA S/	FB-R1199	03142A	30	Drilling and Coutersinking	3	PH150	K10300	1	20	0,23
03142P	TFB28 GEA İZGARA BÖLMESİ KAPAĞI ARKA S/	FB-R1199	03142A	40	Drilling and Crushing	4	PH07001	K10301	1	20	0,25
03143P	TFB28 GEA SANDVIC FIRIN DIŞ KAPAĞI	FB-R1206	03143A	10	Stroking	3	PH150	K20184	1	20	0,467
03143P	TFB28 GEA SANDVIC FIRIN DIŞ KAPAĞI	FB-R1206	03143A	20	Cutting Slope	2	DE085	K30089	1	20	0,224
03143P	TFB28 GEA SANDVIC FIRIN DIŞ KAPAĞI	FB-R1206	03143A	30	Drilling and Coutersinking	9	PE080	K10238	1	20	0,18

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03143P	TFB28 GEA SANDVIC FIRIN DIŞ KAPAĞI	FB-R1206	03143A	40	Decoupling Shutter Ground	4	PH07001	K10239	1	20	0,164
11010P	TFL IC KASET ON CERCEVE\ARKA KAPAK,P	FL-R1004	11010A	10	Stroking	3	PH150	K20125	1	20	0,3
11010P	TFL IC KASET ON CERCEVE\ARKA KAPAK,P	FL-R1004	11010A	20	Peripheral Cutting	6	PE250	K19045	1	20	0,3
11010P	TFL IC KASET ON CERCEVE\ARKA KAPAK,P	FL-R1004	11010A	30	Cutting Slope	14	DE08503	K30022	1	20	0,3
11010P	TFL IC KASET ON CERCEVE\ARKA KAPAK,P	FL-R1004	11010A	40	Edge Curling	9	PE080	K50001	1	20	0,3
11010P	TFL IC KASET ON CERCEVE\ARKA KAPAK,P	FL-R1004	11010A	50	Full Curling	3	PH150	K40097	1	20	0,3
11010P	TFL IC KASET ON CERCEVE\ARKA KAPAK,P	FL-R1004	11010A	60	First Wallcurling	11	PA125	PA12503	1	20	0,3
11010P	TFL IC KASET ON CERCEVE\ARKA KAPAK,P	FL-R1004	11010A	70	Second Wallcurling	11	PA125	PA12503	1	20	0,3
11077P	TFL13 IC KASET ON CERCEVE\ARKA KAPAK,P	FL-R1004	11010A	10	Stroking	3	PH150	K20125	1	20	0,3
11077P	TFL13 IC KASET ON CERCEVE\ARKA KAPAK,P	FL-R1004	11010A	20	Peripheral Cutting	6	PE250	K19045	1	20	0,3
11077P	TFL13 IC KASET ON CERCEVE\ARKA KAPAK,P	FL-R1004	11010A	30	Cutting Slope	14	DE08503	K30022	1	20	0,3
11077P	TFL13 IC KASET ON CERCEVE\ARKA KAPAK,P	FL-R1004	11010A	40	Edge Curling	9	PE080	K50001	1	20	0,3
11077P	TFL13 IC KASET ON CERCEVE\ARKA KAPAK,P	FL-R1004	11010A	50	Full Curling	3	PH150	K40097	1	20	0,3
11077P	TFL13 IC KASET ON CERCEVE\ARKA KAPAK,P	FL-R1004	11010A	60	First Wallcurling	11	PA125	PA12503	1	20	0,3
11077P	TFL13 IC KASET ON CERCEVE\ARKA KAPAK,P	FL-R1004	11010A	70	Second Wallcurling	11	PA125	PA12503	1	20	0,3
11149P	TFL FIRIN CERC\ARKA KAPAK,P (FANLI)	FL-R1004	11010A	10	Stroking	3	PH150	K20125	1	20	0,3
11149P	TFL FIRIN CERC\ARKA KAPAK,P (FANLI)	FL-R1004	11010A	20	Peripheral Cutting	6	PE250	K19045	1	20	0,3
11149P	TFL FIRIN CERC\ARKA KAPAK,P (FANLI)	FL-R1004	11010A	30	Cutting Slope	14	DE08503	K30022	1	20	0,3
11149P	TFL FIRIN CERC\ARKA KAPAK,P (FANLI)	FL-R1004	11010A	40	Edge Curling	9	PE080	K50001	1	20	0,3
11149P	TFL FIRIN CERC\ARKA KAPAK,P (FANLI)	FL-R1004	11010A	50	Full Curling	3	PH150	K40097	1	20	0,3
11149P	TFL FIRIN CERC\ARKA KAPAK,P (FANLI)	FL-R1004	11010A	60	First Wallcurling	11	PA125	PA12503	1	20	0,3
11149P	TFL FIRIN CERC\ARKA KAPAK,P (FANLI)	FL-R1004	11010A	70	Second Wallcurling	11	PA125	PA12503	1	20	0,3
11157P	TFL IC KASET ON CERC\ARKA KAPAK,P (KAPALI TIP CONTALF	FL-R1004	11010A	10	Stroking	3	PH150	K20125	1	20	0,3
11157P	TFL IC KASET ON CERC\ARKA KAPAK,P (KAPALI TIP CONTALF	FL-R1004	11010A	20	Peripheral Cutting	6	PE250	K19045	1	20	0,3
11157P	TFL IC KASET ON CERC\ARKA KAPAK,P (KAPALI TIP CONTALF	FL-R1004	11010A	30	Cutting Slope	14	DE08503	K30022	1	20	0,3
11157P	TFL IC KASET ON CERC\ARKA KAPAK,P (KAPALI TIP CONTALF	FL-R1004	11010A	40	Edge Curling	9	PE080	K50001	1	20	0,3
11157P	TFL IC KASET ON CERC\ARKA KAPAK,P (KAPALI TIP CONTALF	FL-R1004	11010A	50	Full Curling	3	PH150	K40097	1	20	0,3
11157P	TFL IC KASET ON CERC\ARKA KAPAK,P (KAPALI TIP CONTALF	FL-R1004	11010A	60	First Wallcurling	11	PA125	PA12503	1	20	0,3
11157P	TFL IC KASET ON CERC\ARKA KAPAK,P (KAPALI TIP CONTALF	FL-R1004	11010A	70	Second Wallcurling	11	PA125	PA12503	1	20	0,3
11170P	TFL FIRIN CERCEVE\ARKA KAPAK,P (FANLI\MAJESTIC)	FL-R1004	11010A	10	Stroking	3	PH150	K20125	1	20	0,3
11170P	TFL FIRIN CERCEVE\ARKA KAPAK,P (FANLI\MAJESTIC)	FL-R1004	11010A	20	Peripheral Cutting	6	PE250	K19045	1	20	0,3
11170P	TFL FIRIN CERCEVE\ARKA KAPAK,P (FANLI\MAJESTIC)	FL-R1004	11010A	30	Cutting Slope	14	DE08503	K30022	1	20	0,3
11170P	TFL FIRIN CERCEVE\ARKA KAPAK,P (FANLI\MAJESTIC)	FL-R1004	11010A	40	Edge Curling	9	PE080	K50001	1	20	0,3
11170P	TFL FIRIN CERCEVE\ARKA KAPAK,P (FANLI\MAJESTIC)	FL-R1004	11010A	50	Full Curling	3	PH150	K40097	1	20	0,3
11170P	TFL FIRIN CERCEVE\ARKA KAPAK,P (FANLI\MAJESTIC)	FL-R1004	11010A	60	First Wallcurling	11	PA125	PA12503	1	20	0,3
11170P	TFL FIRIN CERCEVE\ARKA KAPAK,P (FANLI\MAJESTIC)	FL-R1004	11010A	70	Second Wallcurling	11	PA125	PA12503	1	20	0,3
11198P	TFL IC KASET ON CERCEVE\ARKA KAPAK (KAPALI TIP CONTALF	FL-R1004	11010A	10	Stroking	3	PH150	K20125	1	20	0,3
11198P	TFL IC KASET ON CERCEVE\ARKA KAPAK (KAPALI TIP CONTALF	FL-R1004	11010A	20	Peripheral Cutting	6	PE250	K19045	1	20	0,3
11198P	TFL IC KASET ON CERCEVE\ARKA KAPAK (KAPALI TIP CONTALF	FL-R1004	11010A	30	Cutting Slope	14	DE08503	K30022	1	20	0,3
11198P	TFL IC KASET ON CERCEVE\ARKA KAPAK (KAPALI TIP CONTALF	FL-R1004	11010A	40	Edge Curling	9	PE080	K50001	1	20	0,3
11198P	TFL IC KASET ON CERCEVE\ARKA KAPAK (KAPALI TIP CONTALF	FL-R1004	11010A	50	Full Curling	3	PH150	K40097	1	20	0,3
11198P	TFL IC KASET ON CERCEVE\ARKA KAPAK (KAPALI TIP CONTALF	FL-R1004	11010A	60	First Wallcurling	11	PA125	PA12503	1	20	0,3
11198P	TFL IC KASET ON CERCEVE\ARKA KAPAK (KAPALI TIP CONTALF	FL-R1004	11010A	70	Second Wallcurling	11	PA125	PA12503	1	20	0,3
11199P	TFL13 IC KASET ON CERCEVE\ARKA KAPAK (KAPALI TIP CONT	FL-R1004	11010A	10	Stroking	3	PH150	K20125	1	20	0,3

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11199P	TFL13 IC KASET ON CERCEVE\ARKA KAPAK (KAPALI TIP CONT	FL-R1004	11010A	20	Peripheral Cutting	6	PE250	K19045	1	20	0,3
11199P	TFL13 IC KASET ON CERCEVE\ARKA KAPAK (KAPALI TIP CONT	FL-R1004	11010A	30	Cutting Slope	14	DE08503	K30022	1	20	0,3
11199P	TFL13 IC KASET ON CERCEVE\ARKA KAPAK (KAPALI TIP CONT	FL-R1004	11010A	40	Edge Curling	9	PE080	K50001	1	20	0,3
11199P	TFL13 IC KASET ON CERCEVE\ARKA KAPAK (KAPALI TIP CONT	FL-R1004	11010A	50	Full Curling	3	PH150	K40097	1	20	0,3
11199P	TFL13 IC KASET ON CERCEVE\ARKA KAPAK (KAPALI TIP CONT	FL-R1004	11010A	60	First Wallcurling	11	PA125	PA12503	1	20	0,3
11199P	TFL13 IC KASET ON CERCEVE\ARKA KAPAK (KAPALI TIP CONT	FL-R1004	11010A	70	Second Wallcurling	11	PA125	PA12503	1	20	0,3
11286P	TFL IC KASET ON CERCEVE ARKA KAPAK(YANA ACILIR KAPAK/	FL-R1005	11010A	10	Stroking	3	PH150	K20125	1	20	0,3
11286P	TFL IC KASET ON CERCEVE ARKA KAPAK(YANA ACILIR KAPAK/	FL-R1005	11010A	20	Peripheral Cutting	6	PE250	K19045	1	20	0,3
11286P	TFL IC KASET ON CERCEVE ARKA KAPAK(YANA ACILIR KAPAK/	FL-R1005	11010A	30	Cutting Slope	14	DE08503	K30022	1	20	0,3
11286P	TFL IC KASET ON CERCEVE ARKA KAPAK(YANA ACILIR KAPAK/	FL-R1005	11010A	40	Edge Curling	9	PE080	K50001	1	20	0,3
11286P	TFL IC KASET ON CERCEVE ARKA KAPAK(YANA ACILIR KAPAK/	FL-R1005	11010A	50	Full Curling	3	PH150	K40097	1	20	0,3
11286P	TFL IC KASET ON CERCEVE ARKA KAPAK(YANA ACILIR KAPAK/	FL-R1005	11010A	60	First Wallcurling	11	PA125	PA12503	1	20	0,3
11286P	TFL IC KASET ON CERCEVE ARKA KAPAK(YANA ACILIR KAPAK/	FL-R1005	11010A	70	Second Wallcurling	11	PA125	PA12503	1	20	0,3
02006P	TFL PANO DUZ,CIFT DELIK,CIFT SINYAL	FL-R1030	02002A	10	Draining	10	PE030	K19088	1	20	0,17
02006P	TFL PANO DUZ,CIFT DELIK,CIFT SINYAL	FL-R1030	02002A	20	Draining Switch Hook	10	PE030	K11039	1	20	0,18
02006P	TFL PANO DUZ,CIFT DELIK,CIFT SINYAL	FL-R1030	02002A	30	Curling	9	PE080	K70036	1	20	0,161
02008P	TFL PANO DUZ,DORT DELIK,CIFT SINYAL	FL-R1030	02002A	10	Draining	10	PE030	K19088	1	20	0,17
02008P	TFL PANO DUZ,DORT DELIK,CIFT SINYAL	FL-R1030	02002A	20	Draining Switch Hook	10	PE030	K11039	1	20	0,18
02008P	TFL PANO DUZ,DORT DELIK,CIFT SINYAL	FL-R1030	02002A	30	Curling	9	PE080	K70036	1	20	0,161
02144P	TFL PANO DUZ,CIFT DELIK,CIFT SINYAL,BUTONLU	FL-R1030	02002A	10	Draining	10	PE030	K19088	1	20	0,17
02144P	TFL PANO DUZ,CIFT DELIK,CIFT SINYAL,BUTONLU	FL-R1030	02002A	20	Curling	9	PE080	K70036	1	20	0,161
02145P	TFL PANO DUZ,DORT DELIK,CIFT SINYAL,BUTONLU,KILITLI	FL-R1030	02002A	10	Draining	10	PE030	K19088	1	20	0,17
02145P	TFL PANO DUZ,DORT DELIK,CIFT SINYAL,BUTONLU,KILITLI	FL-R1030	02002A	20	Curling	9	PE080	K70036	1	20	0,161
02454P	L3211\L4211 DUZ PANO,P (4 SALT.2 SINYAL, 2 BUTON,EKONC	FL-R1030	02002A	10	Draining	10	PE030	K19088	1	20	0,17
02454P	L3211\L4211 DUZ PANO,P (4 SALT.2 SINYAL, 2 BUTON,EKONC	FL-R1030	02002A	20	Decoupling button cap	10	PE030	K11151	1	20	0,18
02454P	L3211\L4211 DUZ PANO,P (4 SALT.2 SINYAL, 2 BUTON,EKONC	FL-R1030	02002A	30	Curling	9	PE080	K70036	1	20	0,161
07008P	TFL DIS KASET SOL YAN KAPAK,P. (0.80)	FL-R1039	07007A	10	Draining	12	PE060	K19141	1	20	0,2
07008P	TFL DIS KASET SOL YAN KAPAK,P. (0.80)	FL-R1039	07007A	20	Edge Curling	9	PE080	K50002	1	20	0,25
07008P	TFL DIS KASET SOL YAN KAPAK,P. (0.80)	FL-R1039	07007A	30	Crushing	10	PE030	K63005	1	20	0,25
07008P	TFL DIS KASET SOL YAN KAPAK,P. (0.80)	FL-R1039	07007A	40	Full Curling	9	PE080	K40041	1	20	0,25
07014P	TFL SOL YAN KAPAK,P	FL-R1039	07013A	10	Draining	12	PE060	K19141	1	20	0,2
07014P	TFL SOL YAN KAPAK,P	FL-R1039	07013A	20	Edge Curling	9	PE080	K50002	1	20	0,25
07014P	TFL SOL YAN KAPAK,P	FL-R1039	07013A	30	Crushing	10	PE030	K63005	1	20	0,25
07014P	TFL SOL YAN KAPAK,P	FL-R1039	07013A	40	Full Curling	9	PE080	K40041	1	20	0,25
07061P	TFL DIS KASET SOL YAN KAPAK (0.80/ESTETİK)	FL-R1039	07007A	10	Draining	12	PE060	K19141	1	20	0,2
07061P	TFL DIS KASET SOL YAN KAPAK (0.80/ESTETİK)	FL-R1039	07007A	20	Edge Curling	9	PE080	K50002	1	20	0,25
07061P	TFL DIS KASET SOL YAN KAPAK (0.80/ESTETİK)	FL-R1039	07007A	30	Crushing	10	PE030	K63005	1	20	0,25
07061P	TFL DIS KASET SOL YAN KAPAK (0.80/ESTETİK)	FL-R1039	07007A	40	Full Curling	9	PE080	K40041	1	20	0,25
01001P	TFL0 PLEYT GOVDESI,P	FL-R1040	01001A	10	Stroking	5	PH30001	K20074	2	20	0,2
01001P	TFL0 PLEYT GOVDESI,P	FL-R1040	01001A	20	Cutting Slope	9	PE080	K30046	1	20	0,15
01028P	TFL13 PLEYT (AL.PROFIL),P	FL-R1042	03110101	10	Draining	5	PH30001	K19111	1	20	0,18
08003P	TFL DIS KASET ARKA KAPAK,P (0720)	FL-R1047	08003A	10	Stroking	3	PH150	K21013	1	20	0,225
08003P	TFL DIS KASET ARKA KAPAK,P (0720)	FL-R1047	08003A	20	Peripheral Cutting	3	PH150	K13013	1	20	0,264

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08105P	LUX DIS KASET ARKA KAPAK,P (TERM.KUTULU\K.SAR.AYAKLI	FL-R1048	08003A	10	Stroking	3	PH150	K21013	1	20	0,2
08105P	LUX DIS KASET ARKA KAPAK,P (TERM.KUTULU\K.SAR.AYAKLI	FL-R1048	08003A	20	Peripheral Cutting	3	PH150	K13013	1	20	0,25
08106P	LUX DIS KASET ARKA KAPAK,P (TERM.KUTULU\0700\K.SARMA	FL-R1048	08003A	10	Stroking	3	PH150	K21013	1	20	0,224
08106P	LUX DIS KASET ARKA KAPAK,P (TERM.KUTULU\0700\K.SARMA	FL-R1048	08003A	20	Decoupling Pole Hole	10	PE030	K11155	1	20	0,18
08106P	LUX DIS KASET ARKA KAPAK,P (TERM.KUTULU\0700\K.SARMA	FL-R1048	08003A	30	Peripheral Cutting	3	PH150	K13013	1	20	0,252
09001P	TFL ALT KAI DE GOVDESI,P (YENI AYAK\0700\0720)	FL-R1050	09001A	10	Draining	7	PE150	K19125	1	20	0,151
09001P	TFL ALT KAI DE GOVDESI,P (YENI AYAK\0700\0720)	FL-R1050	09001A	20	Curling	3	PH150	K41001	1	20	0,183
01004P	TFL2 PLEYT,P (0700)	FL-R1051	01001A	10	Front Draining	6	PE250	K19051	1	20	0,15
01004P	TFL2 PLEYT,P (0700)	FL-R1051	01001A	20	Stroking	5	PH30001	K20074	2	20	0,2
01004P	TFL2 PLEYT,P (0700)	FL-R1051	01001A	30	Cutting Slope	9	PE080	K30046	1	20	0,15
01004P	TFL2 PLEYT,P (0700)	FL-R1051	01001A	40	Head Draing	9	PE080	K12019	1	20	0,175
03029P	TFL YANA ACILIR FIRIN DIS CAM KAPAGI,P	FL-R1064	03029A	10	Stroking	3	PH150	K20046	1	20	0,25
03029P	TFL YANA ACILIR FIRIN DIS CAM KAPAGI,P	FL-R1064	03029A	20	Cutting Slope	2	DE080	K30029	1	20	0,2
03029P	TFL YANA ACILIR FIRIN DIS CAM KAPAGI,P	FL-R1064	03029A	30	Draining Core	7	PE150	K12045	1	20	0,125
03029P	TFL YANA ACILIR FIRIN DIS CAM KAPAGI,P	FL-R1064	03029A	40	Decoupling Cable Hole	16	SD10003	SD10003	1	20	0,22
07007P	TFL DIS KASET SAG YAN KAPAK,P. (0.80)	FL-R1070	07007A	10	Draining	12	PE060	K19141	1	20	0,224
07007P	TFL DIS KASET SAG YAN KAPAK,P. (0.80)	FL-R1070	07007A	20	Edge Curling	9	PE080	K50002	1	20	0,252
07007P	TFL DIS KASET SAG YAN KAPAK,P. (0.80)	FL-R1070	07007A	30	Crushing	10	PE030	K63005	1	20	0,252
07007P	TFL DIS KASET SAG YAN KAPAK,P. (0.80)	FL-R1070	07007A	40	Full Curling	9	PE080	K40040	1	20	0,252
07013P	TFL SAG YAN KAPAK,P	FL-R1070	07013A	10	Draining	12	PE060	K19141	1	20	0,2
07013P	TFL SAG YAN KAPAK,P	FL-R1070	07013A	20	Edge Curling	9	PE080	K50002	1	20	0,25
07013P	TFL SAG YAN KAPAK,P	FL-R1070	07013A	30	Crushing	10	PE030	K63005	1	20	0,25
07013P	TFL SAG YAN KAPAK,P	FL-R1070	07013A	40	Full Curling	9	PE080	K40040	1	20	0,25
01003P	TFL1 PLEYT,P	FL-R1077	01001A	10	Front Draining	6	PE250	K19051	1	20	0,15
01003P	TFL1 PLEYT,P	FL-R1077	01001A	20	Stroking	5	PH30001	K20074	2	20	0,2
01003P	TFL1 PLEYT,P	FL-R1077	01001A	30	Cutting Slope	9	PE080	K30046	1	20	0,15
01003P	TFL1 PLEYT,P	FL-R1077	01001A	40	Head Draing	9	PE080	K12019	1	20	0,175
09082P	LUX FIRIN ALT KAI DE (YENI ESTETIK/3*AWG16)	FL-R1081	09043A	10	Draining	7	PE150	K10051	1	20	0,151
09082P	LUX FIRIN ALT KAI DE (YENI ESTETIK/3*AWG16)	FL-R1081	09043A	20	Curling	3	PH150	K40180	1	20	0,183
09083P	LUX FIRIN ALT KAI DE	FL-R1081	09043A	10	Draining	7	PE150	K10051	1	20	0,151
09083P	LUX FIRIN ALT KAI DE	FL-R1081	09043A	20	Curling	3	PH150	K40180	1	20	0,183
07022P	TFL DIS KASET SAG YAN KAPAK,P (ESTETIK)	FL-R1095	07013A	10	Draining	12	PE060	K19141	1	20	0,224
07022P	TFL DIS KASET SAG YAN KAPAK,P (ESTETIK)	FL-R1095	07013A	20	Edge Curling	9	PE080	K50002	1	20	0,252
07022P	TFL DIS KASET SAG YAN KAPAK,P (ESTETIK)	FL-R1095	07013A	30	Crushing	10	PE030	K63005	1	20	0,252
07022P	TFL DIS KASET SAG YAN KAPAK,P (ESTETIK)	FL-R1095	07013A	40	Full Curling	9	PE080	K40040	1	20	0,252
08053P	LUX FIRIN ARKA KAPAK,P (TURBOLU\120V)	FL-R1097	08053A	10	Stroking	5	PH30001	K20072	1	20	0,224
08053P	LUX FIRIN ARKA KAPAK,P (TURBOLU\120V)	FL-R1097	08053A	20	Peripheral Cutting	5	PH30001	K13032	1	20	0,252
08108P	LUX FIRIN ARKA KAPAK,P (TERM.KUTULU\TURBOLU\BACALI 7	FL-R1097	08053A	10	Stroking	5	PH30001	K20072	1	20	0,224
08108P	LUX FIRIN ARKA KAPAK,P (TERM.KUTULU\TURBOLU\BACALI 7	FL-R1097	08053A	20	Peripheral Cutting	5	PH30001	K13032	1	20	0,252
08109P	LUX FIRIN ARKA KAPAK (TERM.KUTULUFAN\230V\DESTEK PA	FL-R1097	08053A	10	Stroking	5	PH30001	K20072	1	20	0,224
08109P	LUX FIRIN ARKA KAPAK (TERM.KUTULUFAN\230V\DESTEK PA	FL-R1097	08053A	20	Peripheral Cutting	5	PH30001	K13032	1	20	0,252
02001P	TFL PANO DUZ,TEK DELIK,TEK SINYAL	FL-R1099	02002A	10	Draining	10	PE030	K19088	1	20	0,17
02001P	TFL PANO DUZ,TEK DELIK,TEK SINYAL	FL-R1099	02002A	20	Curling	9	PE080	K70036	1	20	0,161



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02003P	TFL PANO DUZ,UC DELIK,TEK SINYAL	FL-R1099	02002A	10	Draining	10	PE030	K19088	1	20	0,17
02003P	TFL PANO DUZ,UC DELIK,TEK SINYAL	FL-R1099	02002A	20	Curling	9	PE080	K70036	1	20	0,161
02004P	TFL PANO DUZ,UC DELIK,CIFT SINYAL	FL-R1099	02002A	10	Draining	10	PE030	K19088	1	20	0,17
02004P	TFL PANO DUZ,UC DELIK,CIFT SINYAL	FL-R1099	02002A	20	Curling	9	PE080	K70036	1	20	0,161
02147P	TFL PANO DUZ,UC DELIK,CFT SINYAL,BUTONLU,KILITLI	FL-R1099	02002A	10	Draining	10	PE030	K19088	1	20	0,17
02147P	TFL PANO DUZ,UC DELIK,CFT SINYAL,BUTONLU,KILITLI	FL-R1099	02002A	20	Curling	9	PE080	K70036	1	20	0,161
02457P	L3210\L4210 DUZ PANO,P (3 SALT.2 SINYAL,2 BUTON,EKONO	FL-R1099	02002A	10	Draining	10	PE030	K19088	1	20	0,17
02457P	L3210\L4210 DUZ PANO,P (3 SALT.2 SINYAL,2 BUTON,EKONO	FL-R1099	02002A	20	Decoupling button cap	10	PE030	K11151	1	20	0,18
02457P	L3210\L4210 DUZ PANO,P (3 SALT.2 SINYAL,2 BUTON,EKONO	FL-R1099	02002A	30	Curling	9	PE080	K70036	1	20	0,161
02010P	TFL PANO GOMME,DORT DELIK,CIFT SINYAL	FL-R1101	02002A	10	Draining	10	PE030	K19089	1	20	0,17
02010P	TFL PANO GOMME,DORT DELIK,CIFT SINYAL	FL-R1101	02002A	20	Curling	9	PE080	K70037	1	20	0,161
02148P	TFL PANO GOMME,CIFT DELIK,CIFT SINYAL	FL-R1101	02002A	10	Draining	10	PE030	K19089	1	20	0,17
02148P	TFL PANO GOMME,CIFT DELIK,CIFT SINYAL	FL-R1101	02002A	20	Curling	9	PE080	K70037	1	20	0,161
02201P	TFL PANO GOMME,DORT DELIK,CFT SINYAL,BUTONLU	FL-R1101	02002A	10	Draining	10	PE030	K19089	1	20	0,17
02201P	TFL PANO GOMME,DORT DELIK,CFT SINYAL,BUTONLU	FL-R1101	02002A	20	Curling	9	PE080	K70037	1	20	0,161
02455P	L3211\L4211 GOMME PANO,P (4 SALT.2 SINYAL, 2 BUTON,EKONO	FL-R1101	02002A	10	Draining	10	PE030	K19089	1	20	0,17
02455P	L3211\L4211 GOMME PANO,P (4 SALT.2 SINYAL, 2 BUTON,EKONO	FL-R1101	02002A	20	Curling	9	PE080	K70037	1	20	0,161
02510P	TFL PANO GOMME,CIFT DELIK,CIFT SINYAL,BUTONLU	FL-R1101	02002A	10	Draining	10	PE030	K19089	1	20	0,17
02510P	TFL PANO GOMME,CIFT DELIK,CIFT SINYAL,BUTONLU	FL-R1101	02002A	20	Curling	9	PE080	K70037	1	20	0,161
07023P	TFL DIS KASET SOL KAPAK,P (ESTETIK)	FL-R1102	07013A	10	Draining	12	PE060	K19141	1	20	0,224
07023P	TFL DIS KASET SOL KAPAK,P (ESTETIK)	FL-R1102	07013A	20	Edge Curling	9	PE080	K50002	1	20	0,252
07023P	TFL DIS KASET SOL KAPAK,P (ESTETIK)	FL-R1102	07013A	30	Crushing	10	PE030	K63005	1	20	0,252
07023P	TFL DIS KASET SOL KAPAK,P (ESTETIK)	FL-R1102	07013A	40	Full Curling	9	PE080	K40041	1	20	0,252
07060P	TFL DIS KASET SAG YAN KAPAK (0.80/ESTETIK)	FL-R1102	07007A	10	Draining	12	PE060	K19141	1	20	0,224
07060P	TFL DIS KASET SAG YAN KAPAK (0.80/ESTETIK)	FL-R1102	07007A	20	Edge Curling	9	PE080	K50002	1	20	0,252
07060P	TFL DIS KASET SAG YAN KAPAK (0.80/ESTETIK)	FL-R1102	07007A	30	Crushing	10	PE030	K63005	1	20	0,252
07060P	TFL DIS KASET SAG YAN KAPAK (0.80/ESTETIK)	FL-R1102	07007A	40	Full Curling	9	PE080	K40040	1	20	0,252
02149P	TFL PANO ESTETIK,CIFT DELIK,CIFT SINYAL	FL-R1103	02002A	10	Draining	10	PE030	K19088	1	20	0,17
02149P	TFL PANO ESTETIK,CIFT DELIK,CIFT SINYAL	FL-R1103	02002A	20	Curling	9	PE080	K70036	1	20	0,161
02150P	TFL PANO ESTETIK,DORT DELIK,CIFT SINYAL	FL-R1103	02002A	10	Draining	10	PE030	K19088	1	20	0,17
02150P	TFL PANO ESTETIK,DORT DELIK,CIFT SINYAL	FL-R1103	02002A	20	Curling	9	PE080	K70036	1	20	0,161
02151P	TFL PANO ESTETIK,CIFT DELIK,CIFT SINYAL,BUTONLU	FL-R1103	02002A	10	Draining	10	PE030	K19088	1	20	0,17
02151P	TFL PANO ESTETIK,CIFT DELIK,CIFT SINYAL,BUTONLU	FL-R1103	02002A	20	Curling	9	PE080	K70036	1	20	0,161
02156P	TFL PANO ESTETIK,TEK DELIK,TEK SINYAL,BUTONLU	FL-R1103	02002A	10	Draining	10	PE030	K19088	1	20	0,17
02156P	TFL PANO ESTETIK,TEK DELIK,TEK SINYAL,BUTONLU	FL-R1103	02002A	20	Curling	9	PE080	K70036	1	20	0,161
02157P	TFL PANO ESTETIK,DORT DELIK,CIFT SINYAL,BUTONLU	FL-R1103	02002A	10	Draining	10	PE030	K19088	1	20	0,17
02157P	TFL PANO ESTETIK,DORT DELIK,CIFT SINYAL,BUTONLU	FL-R1103	02002A	20	Curling	9	PE080	K70036	1	20	0,161
02174P	TFL PANO ESTETIK,DORT DELIK,TEK SINYAL	FL-R1103	02002A	10	Draining	10	PE030	K19088	1	20	0,17
02174P	TFL PANO ESTETIK,DORT DELIK,TEK SINYAL	FL-R1103	02002A	20	Curling	9	PE080	K70036	1	20	0,161
02175P	TFL PANO ESTETIK,TEK DELIK,TEK SINYAL	FL-R1103	02002A	10	Draining	10	PE030	K19088	1	20	0,17
02175P	TFL PANO ESTETIK,TEK DELIK,TEK SINYAL	FL-R1103	02002A	20	Curling	9	PE080	K70036	1	20	0,161
02176P	TFL PANO ESTETIK,UC DELIK,TEK SINYAL	FL-R1103	02002A	10	Draining	10	PE030	K19088	1	20	0,17
02176P	TFL PANO ESTETIK,UC DELIK,TEK SINYAL	FL-R1103	02002A	20	Curling	9	PE080	K70036	1	20	0,161

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02456P	L3211\L4211 ESTETIK PANO,P (4 SALT.2 SINYAL,2 BUTON,EKG)	FL-R1103	02002A	10	Draining	10	PE030	K19088	1	20	0,17
02456P	L3211\L4211 ESTETIK PANO,P (4 SALT.2 SINYAL,2 BUTON,EKG)	FL-R1103	02002A	20	Curling	9	PE080	K70036	1	20	0,161
02456P	L3211\L4211 ESTETIK PANO,P (4 SALT.2 SINYAL,2 BUTON,EKG)	FL-R1103	02002A	30	Decoupling button cap	10	PE030	K11151	1	20	0,18
02060P	L4230\L5230 PANO,P (ESTETIK,CIFT SINYAL,BUTON)	FL-R1105	02002A	10	Draining	10	PE030	K19088	1	20	0,17
02060P	L4230\L5230 PANO,P (ESTETIK,CIFT SINYAL,BUTON)	FL-R1105	02002A	20	Curling	9	PE080	K70036	1	20	0,161
02154P	TFL PANO ESTETIK,UC DELIK,CIFT SINYAL	FL-R1105	02002A	10	Draining	10	PE030	K19088	1	20	0,17
02154P	TFL PANO ESTETIK,UC DELIK,CIFT SINYAL	FL-R1105	02002A	20	Curling	9	PE080	K70036	1	20	0,161
02459P	L3210\L4210 ESTETIK PANO,P (3 SALT.2 SINYAL,2 BUTON,EKG)	FL-R1105	02002A	10	Draining	10	PE030	K19088	1	20	0,17
02459P	L3210\L4210 ESTETIK PANO,P (3 SALT.2 SINYAL,2 BUTON,EKG)	FL-R1105	02002A	20	Curling	9	PE080	K70036	1	20	0,161
02459P	L3210\L4210 ESTETIK PANO,P (3 SALT.2 SINYAL,2 BUTON,EKG)	FL-R1105	02002A	30	Decoupling button cap	10	PE030	K11151	1	20	0,18
02143P	TFL PANO DUZ,UC DELIK,CIFT SINYAL,KILI TLJ	FL-R1124	02002A	10	Draining	10	PE030	K19088	1	20	0,17
02143P	TFL PANO DUZ,UC DELIK,CIFT SINYAL,KILI TLJ	FL-R1124	02002A	20	Curling	9	PE080	K70036	1	20	0,161
02002P	TFL PANO GOMME,UC DELIK,CIFT SINYAL	FL-R1131	02002A	10	Draining	10	PE030	K19088	1	20	0,17
02002P	TFL PANO GOMME,UC DELIK,CIFT SINYAL	FL-R1131	02002A	20	Curling	9	PE080	K70036	1	20	0,161
02181P	TFL PANO GOMME,TEK DELIK,CIFT SINYAL	FL-R1131	02002A	10	Draining	10	PE030	K19088	1	20	0,17
02181P	TFL PANO GOMME,TEK DELIK,CIFT SINYAL	FL-R1131	02002A	20	Curling	9	PE080	K70036	1	20	0,161
02184P	TFL PANO GOMME,TEK DELIK,TEK SINYAL	FL-R1131	02002A	10	Draining	10	PE030	K19088	1	20	0,17
02184P	TFL PANO GOMME,TEK DELIK,TEK SINYAL	FL-R1131	02002A	20	Curling	9	PE080	K70036	1	20	0,161
02200P	TFL PANO GOMME,UC DELIK,CIFT SINYAL,BUTONLU	FL-R1131	02002A	10	Draining	10	PE030	K19088	1	20	0,17
02200P	TFL PANO GOMME,UC DELIK,CIFT SINYAL,BUTONLU	FL-R1131	02002A	20	Curling	9	PE080	K70036	1	20	0,161
03042P	TFL FIRIN KAPAGI,P (CIFT CAM/ORTALANMIS)	FL-R1138	03001A	10	Stroking	3	PH150	K20105	1	20	0,252
03042P	TFL FIRIN KAPAGI,P (CIFT CAM/ORTALANMIS)	FL-R1138	03001A	20	Cutting Slope	14	DE08503	K30055	1	20	0,224
03042P	TFL FIRIN KAPAGI,P (CIFT CAM/ORTALANMIS)	FL-R1138	03001A	30	Draining Core and Countersink	7	PE150	K12061	1	20	0,125
03042P	TFL FIRIN KAPAGI,P (CIFT CAM/ORTALANMIS)	FL-R1138	03001A	40	Decoupling Hinge Hole	12	PE060	K12013	1	20	0,224
03045P	TFL FIRIN KAPAK GOVDESI,P(CIFT CAM/ORTALANMIS)	FL-R1138	03001A	10	Stroking	3	PH150	K20105	1	20	0,252
03045P	TFL FIRIN KAPAK GOVDESI,P(CIFT CAM/ORTALANMIS)	FL-R1138	03001A	20	Cutting Slope	14	DE08503	K30055	1	20	0,224
03045P	TFL FIRIN KAPAK GOVDESI,P(CIFT CAM/ORTALANMIS)	FL-R1138	03001A	30	Draining Core and Countersink	7	PE150	K12061	1	20	0,125
03045P	TFL FIRIN KAPAK GOVDESI,P(CIFT CAM/ORTALANMIS)	FL-R1138	03001A	40	Decoupling	12	PE060	K12013	1	20	0,224
03055P	TFL FIRIN KAPAK GOVDESI,P (TEK CAMLI/ORTALANMIS)	FL-R1140	03001A	10	Stroking	3	PH150	K20105	1	20	0,252
03055P	TFL FIRIN KAPAK GOVDESI,P (TEK CAMLI/ORTALANMIS)	FL-R1140	03001A	20	Cutting Slope	14	DE08503	K30055	1	20	0,224
03055P	TFL FIRIN KAPAK GOVDESI,P (TEK CAMLI/ORTALANMIS)	FL-R1140	03001A	30	Draining Core and Countersink	7	PE150	K12061	1	20	0,125
03055P	TFL FIRIN KAPAK GOVDESI,P (TEK CAMLI/ORTALANMIS)	FL-R1140	03001A	40	Decoupling Hinge Hole	12	PE060	K12013	1	20	0,224
03061P	TFL YANDAN AÇILIR FIRIN KAPAK GOVDESI (ORTALANMIS),P	FL-R1145	03001A	10	Stroking	3	PH150	K20105	1	20	0,252
03061P	TFL YANDAN AÇILIR FIRIN KAPAK GOVDESI (ORTALANMIS),P	FL-R1145	03001A	20	Cutting Slope	14	DE08503	K30055	1	20	0,224
03061P	TFL YANDAN AÇILIR FIRIN KAPAK GOVDESI (ORTALANMIS),P	FL-R1145	03001A	30	Draining Core	3	PH150	K12061	1	20	0,125
03061P	TFL YANDAN AÇILIR FIRIN KAPAK GOVDESI (ORTALANMIS),P	FL-R1145	03001A	40	Drilling Side Hole	6	PE250	K60015	1	20	0,224
02453P	L1210 PANO,P (ESTETIK,TEK DELIK,CIFT SINYAL,3 BUTON,EKG)	FL-R1147	02002A	10	Draining	10	PE030	K19088	1	20	0,17
02453P	L1210 PANO,P (ESTETIK,TEK DELIK,CIFT SINYAL,3 BUTON,EKG)	FL-R1147	02002A	20	Curling	9	PE080	K70036	1	20	0,161
02453P	L1210 PANO,P (ESTETIK,TEK DELIK,CIFT SINYAL,3 BUTON,EKG)	FL-R1147	02002A	30	Decoupling button cap	10	PE030	K11151	1	20	0,18
02452P	L1210 PANO,P (GOMME,TEK DELIK,CIFT SINYAL,3 BUTON,EKG)	FL-R1148	02002A	10	Draining	10	PE030	K19088	1	20	0,17
02452P	L1210 PANO,P (GOMME,TEK DELIK,CIFT SINYAL,3 BUTON,EKG)	FL-R1148	02002A	20	Curling	9	PE080	K70036	1	20	0,161
02452P	L1210 PANO,P (GOMME,TEK DELIK,CIFT SINYAL,3 BUTON,EKG)	FL-R1148	02002A	30	Decoupling button cap	10	PE030	K11151	1	20	0,18
02451P	L1210 PANO,P (ESTETIK,TEK DELIK,CIFT SINYAL,3 BUTON,EKG)	FL-R1149	02002A	10	Draining	10	PE030	K19088	1	20	0,17

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02451P	L1210 PANO,P (ESTETIK TEK DELIKI CIFT SINY.13 BUTON MEKO	FL-R1149	02002A	20	Curling	9	PE080	K70036	1	20	0,161
02451P	L1210 PANO,P (ESTETIK TEK DELIKI CIFT SINY.13 BUTON MEKO	FL-R1149	02002A	30	Decoupling button cap	10	PE030	K11151	1	20	0,18
01053P	TFR/S 3 ELEKTRIKLI PLEYT,P (YAG KORUMALI)	FS-R1018	01047A	10	Stroking	1	PH350	K20009	2	20	0,39
01053P	TFR/S 3 ELEKTRIKLI PLEYT,P (YAG KORUMALI)	FS-R1018	01047A	20	Cutting Slope	2	DE085	K30008	1	20	0,254
01053P	TFR/S 3 ELEKTRIKLI PLEYT,P (YAG KORUMALI)	FS-R1018	01047A	30	Draining, Hinging, and Shutter	3	PH150	K11252	1	20	0,308
01053P	TFR/S 3 ELEKTRIKLI PLEYT,P (YAG KORUMALI)	FS-R1018	01047A	40	Decoupling Shutter Ground	9	PE080	K62009	1	20	0,25
01055P	TFR/S 4 ELEKTRIKLI PLEYT,P	FS-R1018	01047A	10	Stroking	1	PH350	K20059	2	20	0,39
01055P	TFR/S 4 ELEKTRIKLI PLEYT,P	FS-R1018	01047A	20	Cutting Slope	2	DE085	K30031	1	20	0,254
01055P	TFR/S 4 ELEKTRIKLI PLEYT,P	FS-R1018	01047A	30	Draining Head Ground	3	PH150	K12060	1	20	0,308
01055P	TFR/S 4 ELEKTRIKLI PLEYT,P	FS-R1018	01047A	40	Decoupling Shutter Ground	9	PE080	K62009	1	20	0,25
01060P	TFS/R 3 ELEKTRIKLI PLEYT,P	FS-R1018	01047A	10	Stroking	1	PH350	K20059	2	20	0,39
01060P	TFS/R 3 ELEKTRIKLI PLEYT,P	FS-R1018	01047A	20	Cutting Slope	2	DE085	K30031	1	20	0,254
01060P	TFS/R 3 ELEKTRIKLI PLEYT,P	FS-R1018	01047A	30	Draining Head Ground	3	PH150	K12060	1	20	0,308
01060P	TFS/R 3 ELEKTRIKLI PLEYT,P	FS-R1018	01047A	40	Decoupling Shutter Ground	9	PE080	K62009	1	20	0,25
01061P	TFR/S ELEKTRIKLI PLEYT,P (YAG KORUMALI)	FS-R1018	01047A	10	Stroking	1	PH350	K20059	2	20	0,39
01061P	TFR/S ELEKTRIKLI PLEYT,P (YAG KORUMALI)	FS-R1018	01047A	20	Cutting Slope	2	DE085	K30031	1	20	0,254
01061P	TFR/S ELEKTRIKLI PLEYT,P (YAG KORUMALI)	FS-R1018	01047A	30	Draining Head Ground	3	PH150	K12060	1	20	0,308
01061P	TFR/S ELEKTRIKLI PLEYT,P (YAG KORUMALI)	FS-R1018	01047A	40	Decoupling Shutter Ground	9	PE080	K62009	1	20	0,25
01156P	TFU21 PLEYT,P	FU-R1001	01156A	10	Stroking	1	PH350	K20108	2	20	0,39
01156P	TFU21 PLEYT,P	FU-R1001	01156A	20	Cutting Slope	2	DE085	K30058	1	20	0,254
01156P	TFU21 PLEYT,P	FU-R1001	01156A	30	Draining Pipe Hole	3	PH150	K11191	1	20	0,308
01162P	TFU21 SONME EMNİYETLİ PLEYT,P	FU-R1001	01156A	10	Stroking	1	PH350	K20108	2	20	0,39
01162P	TFU21 SONME EMNİYETLİ PLEYT,P	FU-R1001	01156A	20	Cutting Slope	2	DE085	K30058	1	20	0,254
01162P	TFU21 SONME EMNİYETLİ PLEYT,P	FU-R1001	01156A	30	Draining Pipe Hole	3	PH150	K11191	1	20	0,308
01163P	TFU25 PLEYT,P	FU-R1001	01156A	10	Stroking	1	PH350	K20108	2	20	0,39
01163P	TFU25 PLEYT,P	FU-R1001	01156A	20	Cutting Slope	2	DE085	K30058	1	20	0,254
01163P	TFU25 PLEYT,P	FU-R1001	01156A	30	Draining Pipe Hole	3	PH150	K11191	1	20	0,308
01412P	TFU 50* 50 PLEYT	FU-R1001	01156A	10	Stroking	1	PH350	K20108	2	20	0,39
01412P	TFU 50* 50 PLEYT	FU-R1001	01156A	20	Cutting Slope	2	DE085	K30058	1	20	0,254
01412P	TFU 50* 50 PLEYT	FU-R1001	01156A	30	Draining Pipe Hole	3	PH150	K11191	1	20	0,308
03059P	TFU SANDVIC FIRIN KAPAGI DIS,P	FU-R1003	03059A	10	Stroking	5	PH30001	K20109	2	20	0,467
03059P	TFU SANDVIC FIRIN KAPAGI DIS,P	FU-R1003	03059A	20	Cutting Slope	2	DE080	K30059	1	20	0,224
03059P	TFU SANDVIC FIRIN KAPAGI DIS,P	FU-R1003	03059A	30	Decoupling Core and Counter	7	PE150	K12069	1	20	0,23
03089P	TFG/U SANDVIC FIRIN KAPAGI DIS,P (DIS CAMSI Z/DÜZ)	FU-R1003	03059A	10	Stroking	5	PH30001	K20109	2	20	0,467
03089P	TFG/U SANDVIC FIRIN KAPAGI DIS,P (DIS CAMSI Z/DÜZ)	FU-R1003	03059A	20	Cutting Slope	2	DE080	K30059	1	20	0,224
03089P	TFG/U SANDVIC FIRIN KAPAGI DIS,P (DIS CAMSI Z/DÜZ)	FU-R1003	03059A	30	Decoupling Core and Counter	7	PE150	K12069	1	20	0,23
11270P	TFU IC KASET ARKA KAPAK,P(GRILLI,CEV.LI)	FU-R1005	11270A	10	Stroking	5	PH30001	K20113	2	20	0,267
11270P	TFU IC KASET ARKA KAPAK,P(GRILLI,CEV.LI)	FU-R1005	11270A	20	Peripheral Cutting	6	PE250	K13071	1	20	0,227
11270P	TFU IC KASET ARKA KAPAK,P(GRILLI,CEV.LI)	FU-R1005	11270A	30	Curling	7	PE150	K40030	1	20	0,211
11274P	TFU IC KASET ARKA KAPAK,P(GRILLI SI Z,CEV. SI Z)	FU-R1005	11270A	10	Stroking	5	PH30001	K20113	2	20	0,267
11274P	TFU IC KASET ARKA KAPAK,P(GRILLI SI Z,CEV. SI Z)	FU-R1005	11270A	20	Peripheral Cutting	6	PE250	K13071	1	20	0,227
11274P	TFU IC KASET ARKA KAPAK,P(GRILLI SI Z,CEV. SI Z)	FU-R1005	11270A	30	Curling	7	PE150	K40030	1	20	0,211
11276P	TFU IC KASET ARKA KAPAK,P(GRILLI,CEV. SI Z)	FU-R1005	11270A	10	Stroking	5	PH30001	K20113	2	20	0,267

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11276P	TFU İC KASET ARKA KAPAK,P(GRILLI ,CEV.SİZ)	FU-R1005	11270A	20	Peripheral Cutting	6	PE250	K13071	1	20	0,227
11276P	TFU İC KASET ARKA KAPAK,P(GRILLI ,CEV.SİZ)	FU-R1005	11270A	30	Curling	7	PE150	K40030	1	20	0,211
11283P	TFU İC KASET ARKA KAPAK,P(TERMLI ,GRILSİZ)	FU-R1005	11270A	10	Stroking	5	PH30001	K20113	2	20	0,267
11283P	TFU İC KASET ARKA KAPAK,P(TERMLI ,GRILSİZ)	FU-R1005	11270A	20	Peripheral Cutting	6	PE250	K13071	1	20	0,227
11283P	TFU İC KASET ARKA KAPAK,P(TERMLI ,GRILSİZ)	FU-R1005	11270A	30	Curling	7	PE150	K40030	1	20	0,211
11285P	TFU İC KASET ARKA KAPAK,P(TERMLI ,GRILLI ,CEVİRMESİZ)	FU-R1005	11270A	10	Stroking	5	PH30001	K20113	2	20	0,267
11285P	TFU İC KASET ARKA KAPAK,P(TERMLI ,GRILLI ,CEVİRMESİZ)	FU-R1005	11270A	20	Peripheral Cutting	6	PE250	K13071	1	20	0,227
11285P	TFU İC KASET ARKA KAPAK,P(TERMLI ,GRILLI ,CEVİRMESİZ)	FU-R1005	11270A	30	Curling	7	PE150	K40030	1	20	0,211
11326P	TFU İC KASET ARKA KAPAK,P(TERMOSTATLI , GRILLI ,CEVİRMESİZ)	FU-R1005	11270A	10	First Stroking	5	PH30001	K20112	2	20	0,267
11326P	TFU İC KASET ARKA KAPAK,P(TERMOSTATLI , GRILLI ,CEVİRMESİZ)	FU-R1005	11270A	20	Second Stroking	5	PH30001	K20113	2	20	0,267
11326P	TFU İC KASET ARKA KAPAK,P(TERMOSTATLI , GRILLI ,CEVİRMESİZ)	FU-R1005	11270A	30	Peripheral Cutting	6	PE250	K13071	1	20	0,227
11326P	TFU İC KASET ARKA KAPAK,P(TERMOSTATLI , GRILLI ,CEVİRMESİZ)	FU-R1005	11270A	40	Curling	7	PE150	K40030	1	20	0,211
11391P	TFU KATEDRAL BRULORLU İÇ KASET ARKA KAPAK(TERMLI ,GR	FU-R1005	11270A	10	Second Stroking	5	PH30001	K20113	2	20	0,267
11391P	TFU KATEDRAL BRULORLU İÇ KASET ARKA KAPAK(TERMLI ,GR	FU-R1005	11270A	20	Peripheral Cutting	6	PE250	K13071	1	20	0,227
11391P	TFU KATEDRAL BRULORLU İÇ KASET ARKA KAPAK(TERMLI ,GR	FU-R1005	11270A	30	Curling	7	PE150	K40030	1	20	0,211
11394P	TFU KATEDRAL BRULORLU İC KASET ARKA KAPAK,P	FU-R1005	11045A	10	Second Stroking	5	PH30001	K20113	2	20	0,267
11394P	TFU KATEDRAL BRULORLU İC KASET ARKA KAPAK,P	FU-R1005	11045A	20	Peripheral Cutting	6	PE250	K13071	1	20	0,227
11394P	TFU KATEDRAL BRULORLU İC KASET ARKA KAPAK,P	FU-R1005	11045A	30	Curling	7	PE150	K40030	1	20	0,211
11395P	TFU KATEDRAL BRULORLU İC KASET ARKA KAPAK,P(TERMOST	FU-R1005	11045A	10	Second Stroking	5	PH30001	K20113	2	20	0,267
11395P	TFU KATEDRAL BRULORLU İC KASET ARKA KAPAK,P(TERMOST	FU-R1005	11045A	20	Peripheral Cutting	6	PE250	K13071	1	20	0,227
11395P	TFU KATEDRAL BRULORLU İC KASET ARKA KAPAK,P(TERMOST	FU-R1005	11045A	30	Curling	7	PE150	K40030	1	20	0,211
11396P	TFU KATEDRAL BRULORLU İC KASET ARKA KAPAK,P	FU-R1005	11045A	10	Second Stroking	5	PH30001	K20113	2	20	0,267
11396P	TFU KATEDRAL BRULORLU İC KASET ARKA KAPAK,P	FU-R1005	11045A	20	Peripheral Cutting	6	PE250	K13071	1	20	0,227
11396P	TFU KATEDRAL BRULORLU İC KASET ARKA KAPAK,P	FU-R1005	11045A	30	Curling	7	PE150	K40030	1	20	0,211
11397P	TFU KATEDRAL BRULORLU İC KASET ARKA KAPAK,P	FU-R1005	11045A	10	Second Stroking	5	PH30001	K20113	2	20	0,267
11397P	TFU KATEDRAL BRULORLU İC KASET ARKA KAPAK,P	FU-R1005	11045A	20	Peripheral Cutting	6	PE250	K13071	1	20	0,227
11397P	TFU KATEDRAL BRULORLU İC KASET ARKA KAPAK,P	FU-R1005	11045A	30	Curling	7	PE150	K40030	1	20	0,211
11398P	TFU KATEDRAL BRULORLU İC KASET ARKA KAPAK,P	FU-R1005	11045A	10	Second Stroking	5	PH30001	K20113	2	20	0,267
11398P	TFU KATEDRAL BRULORLU İC KASET ARKA KAPAK,P	FU-R1005	11045A	20	Peripheral Cutting	6	PE250	K13071	1	20	0,227
11398P	TFU KATEDRAL BRULORLU İC KASET ARKA KAPAK,P	FU-R1005	11045A	30	Curling	7	PE150	K40030	1	20	0,211
01199P	TFU 50*60 4G SAC OC.KAPLI PLEYT,P	FU-R1008	01086A	10	Stroking	1	PH350	K20199	2	20	0,39
01199P	TFU 50*60 4G SAC OC.KAPLI PLEYT,P	FU-R1008	01086A	20	Cutting Slope	2	DE085	K30062	1	20	0,254
01199P	TFU 50*60 4G SAC OC.KAPLI PLEYT,P	FU-R1008	01086A	30	Draining Pipe Hole	3	PH150	K11191	1	20	0,308
01199P	TFU 50*60 4G SAC OC.KAPLI PLEYT,P	FU-R1008	01086A	40	Countersinking Hinge	9	PE080	K11216	1	20	0,18
01200P	TFU 50*60 4G SAC OC.KAPLI ,SNM.EMN. PLEYT,P	FU-R1008	01086A	10	Stroking	1	PH350	K20199	2	20	0,39
01200P	TFU 50*60 4G SAC OC.KAPLI ,SNM.EMN. PLEYT,P	FU-R1008	01086A	20	Cutting Slope	2	DE085	K30062	1	20	0,254
01200P	TFU 50*60 4G SAC OC.KAPLI ,SNM.EMN. PLEYT,P	FU-R1008	01086A	30	Draining Pipe Hole	3	PH150	K11191	1	20	0,308
01200P	TFU 50*60 4G SAC OC.KAPLI ,SNM.EMN. PLEYT,P	FU-R1008	01086A	40	Decoupling Hinge Hole	9	PE080	K11216	1	20	0,18
01201P	TFU 50*60 4G CAM OC.KAPLI , PLEYT,P	FU-R1008	01086A	10	Stroking	1	PH350	K20199	2	20	0,39
01201P	TFU 50*60 4G CAM OC.KAPLI , PLEYT,P	FU-R1008	01086A	20	Cutting Slope	2	DE085	K30062	1	20	0,254
01201P	TFU 50*60 4G CAM OC.KAPLI , PLEYT,P	FU-R1008	01086A	30	Draining Pipe Hole	3	PH150	K11191	1	20	0,308
01202P	TFU 50*60 4G, CAM OC.KAPLI ,SNM.EMN. PLEYT,P	FU-R1008	01197A	10	Stroking	1	PH350	K20199	2	20	0,39
01202P	TFU 50*60 4G, CAM OC.KAPLI ,SNM.EMN. PLEYT,P	FU-R1008	01197A	20	Cutting Slope	2	DE085	K30062	1	20	0,254

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01202P	TFU 50*60 4G, CAM OC.KAPLI ,SNM.EMN. PLEYT,P	FU-R1008	01197A	30	Draining Pipe Hole	3	PH150	K11191	1	20	0,308
01205P	TFU 50*60 3G SAC OC.KAPLI PLEYT	FU-R1008	01197A	10	Stroking	1	PH350	K20199	2	20	0,39
01205P	TFU 50*60 3G SAC OC.KAPLI PLEYT	FU-R1008	01197A	20	Cutting Slope	2	DE085	K30062	1	20	0,254
01205P	TFU 50*60 3G SAC OC.KAPLI PLEYT	FU-R1008	01197A	30	Draining Pipe Hole	3	PH150	K11191	1	20	0,308
01205P	TFU 50*60 3G SAC OC.KAPLI PLEYT	FU-R1008	01197A	40	Decoupling Hinge Hole	9	PE080	K11216	1	20	0,18
01206P	TFU 50*60 3G SAC OC.KAPLI ,SNM.EMN. PLEYT	FU-R1008	01086A	10	Stroking	1	PH350	K20199	2	20	0,39
01206P	TFU 50*60 3G SAC OC.KAPLI ,SNM.EMN. PLEYT	FU-R1008	01086A	20	Cutting Slope	2	DE085	K30062	1	20	0,254
01206P	TFU 50*60 3G SAC OC.KAPLI ,SNM.EMN. PLEYT	FU-R1008	01086A	30	Draining Pipe Hole	3	PH150	K11191	1	20	0,308
01206P	TFU 50*60 3G SAC OC.KAPLI ,SNM.EMN. PLEYT	FU-R1008	01086A	40	Decoupling Hinge Hole	9	PE080	K11216	1	20	0,18
01207P	TFU 50*60 3G CAM OC.KAPLI PLEYT	FU-R1008	01197A	10	Stroking	1	PH350	K20199	2	20	0,39
01207P	TFU 50*60 3G CAM OC.KAPLI PLEYT	FU-R1008	01197A	20	Cutting Slope	2	DE085	K30062	1	20	0,254
01207P	TFU 50*60 3G CAM OC.KAPLI PLEYT	FU-R1008	01197A	30	Draining Pipe Hole	3	PH150	K11191	1	20	0,308
01208P	TFU 50*60 3G CAM OC.KAPLI ,SNM.EMN. PLEYT	FU-R1008	01197A	10	Stroking	1	PH350	K20199	2	20	0,39
01208P	TFU 50*60 3G CAM OC.KAPLI ,SNM.EMN. PLEYT	FU-R1008	01197A	20	Cutting Slope	2	DE085	K30062	1	20	0,254
01208P	TFU 50*60 3G CAM OC.KAPLI ,SNM.EMN. PLEYT	FU-R1008	01197A	30	Draining Pipe Hole	3	PH150	K11191	1	20	0,308
01421P	TFC 4 GAZLI 50*60 PLEYT	FU-R1008	01086A	10	Stroking	1	PH350	K20199	2	20	0,39
01421P	TFC 4 GAZLI 50*60 PLEYT	FU-R1008	01086A	20	Cutting Slope	2	DE085	K30062	1	20	0,254
01421P	TFC 4 GAZLI 50*60 PLEYT	FU-R1008	01086A	30	Draining Pipe Hole	3	PH150	K11191	1	20	0,308
01422P	TFC 4 GAZLI SÖNME EMNİ YETLİ 50*60 PLEYT	FU-R1008	01086A	10	Stroking	1	PH350	K20199	2	20	0,39
01422P	TFC 4 GAZLI SÖNME EMNİ YETLİ 50*60 PLEYT	FU-R1008	01086A	20	Cutting Slope	2	DE085	K30062	1	20	0,254
01422P	TFC 4 GAZLI SÖNME EMNİ YETLİ 50*60 PLEYT	FU-R1008	01086A	30	Draining Pipe Hole	3	PH150	K11191	1	20	0,308
01469P	TFU 4G PLEYT (INOX/CAM OCAK KAPAKLI)	FU-R1008	01263A	10	Stroking	1	PH350	K20199	2	20	0,39
01469P	TFU 4G PLEYT (INOX/CAM OCAK KAPAKLI)	FU-R1008	01263A	20	Cutting Slope	2	DE085	K30062	1	20	0,254
01469P	TFU 4G PLEYT (INOX/CAM OCAK KAPAKLI)	FU-R1008	01263A	30	Draining Pipe Hole	3	PH150	K11191	1	20	0,308
07011P	TFB.TFG DIS KASET SAG YAN KAPAK,P	FU-R1011	07011A	10	Draining and Ribbing	1	PH350	K70066	2	20	0,25
07011P	TFB.TFG DIS KASET SAG YAN KAPAK,P	FU-R1011	07011A	20	Bending Set	17	SB20001	SB20001	1	20	0,525
07012P	TFB.TFG DIS KASET SOL YAN KAPAK,P	FU-R1011	07011A	10	Draining and Ribbing	1	PH350	K70067	2	20	0,25
07012P	TFB.TFG DIS KASET SOL YAN KAPAK,P	FU-R1011	07011A	20	Bending Set	17	SB20001	SB20001	1	20	0,525
07018P	TFG.TFB DIS KASET SAG YAN KAPAK,P (SEMCO)	FU-R1011	07042A	10	Draining and Ribbing	1	PH350	K70066	2	20	0,25
07018P	TFG.TFB DIS KASET SAG YAN KAPAK,P (SEMCO)	FU-R1011	07042A	20	Bending Set	17	SB20001	SB20001	1	20	0,525
07019P	TFG.TFB DIS KASET SOL YAN KAPAK,P (SEMCO)	FU-R1011	07042A	10	Draining and Ribbing	1	PH350	K70067	2	20	0,25
07019P	TFG.TFB DIS KASET SOL YAN KAPAK,P (SEMCO)	FU-R1011	07042A	20	Bending Set	17	SB20001	SB20001	1	20	0,525
07046P	TFU DIS KASET SAG YAN KAPAK,P(OCAK KAPAKLI ,TEKMELIKS)	FU-R1011	07042A	10	Draining and Ribbing	1	PH350	K70066	2	20	0,25
07046P	TFU DIS KASET SAG YAN KAPAK,P(OCAK KAPAKLI ,TEKMELIKS)	FU-R1011	07042A	20	Bending Set	17	SB20001	SB20001	1	20	0,525
07047P	TFU DIS KASET SOL YAN KAPAK,P(OCAK KAPAKLI ,TEKMELIKS)	FU-R1011	07042A	10	Draining and Ribbing	1	PH350	K70067	2	20	0,25
07047P	TFU DIS KASET SOL YAN KAPAK,P(OCAK KAPAKLI ,TEKMELIKS)	FU-R1011	07042A	20	Bending Set	17	SB20001	SB20001	1	20	0,525
07048P	TFU DIS KASET SAG YAN KAPAK,P(OCAK KAPAKSIZ ,TEKMELIK)	FU-R1011	07042A	10	Draining and Ribbing	1	PH350	K70066	2	20	0,25
07048P	TFU DIS KASET SAG YAN KAPAK,P(OCAK KAPAKSIZ ,TEKMELIK)	FU-R1011	07042A	20	Bending Set	17	SB20001	SB20001	1	20	0,525
07049P	TFU DIS KASET SOL YAN KAPAK,P(OCAK KAPAKSIZ ,TEKMELIK)	FU-R1011	07042A	10	Draining and Ribbing	1	PH350	K70067	2	20	0,25
07049P	TFU DIS KASET SOL YAN KAPAK,P(OCAK KAPAKSIZ ,TEKMELIK)	FU-R1011	07042A	20	Bending Set	17	SB20001	SB20001	1	20	0,525
07064P	TFB.TFG DIS KASET SAG YAN KAPAK,P(INOX)	FU-R1011	07062A	10	Draining and Ribbing	1	PH350	K07067	2	20	0,25
07064P	TFB.TFG DIS KASET SAG YAN KAPAK,P(INOX)	FU-R1011	07062A	20	Curling	17	SB20002	SB20002	1	20	0,525
07065P	TFB.TFG DIS KASET SOL YAN KAPAK,P(INOX)	FU-R1011	07062A	10	Draining and Ribbing	1	PH350	K07067	2	20	0,25

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07065P	TFB\TFG DIS KASET SOL YAN KAPAK,P(INOX)	FU-R1011	07062A	20	Curling	17	SB20002	SB20002	1	20	0,525
07009P	TFB\TFG DIS KASET TEKMEI.KLI SAG YAN KAPAK,P	FU-R1012	07011A	10	Draining and Ribbing	1	PH350	K70066	2	20	0,25
07009P	TFB\TFG DIS KASET TEKMEI.KLI SAG YAN KAPAK,P	FU-R1012	07011A	20	Corner Draining	10	PE030	K10023	1	20	0,172
07009P	TFB\TFG DIS KASET TEKMEI.KLI SAG YAN KAPAK,P	FU-R1012	07011A	30	Bending Set	17	SB20001	SB20001	1	20	0,525
07009P	TFB\TFG DIS KASET TEKMEI.KLI SAG YAN KAPAK,P	FU-R1012	07011A	40	Last Curling	9	PE080	K40038	1	20	0,174
07010P	TFB\TFG DIS KASET TEKMEI.KLI SOL YAN KAPAK,P	FU-R1012	07011A	10	Draining and Ribbing	1	PH350	K70067	2	20	0,25
07010P	TFB\TFG DIS KASET TEKMEI.KLI SOL YAN KAPAK,P	FU-R1012	07011A	20	Corner Draining	10	PE030	K10023	1	20	0,172
07010P	TFB\TFG DIS KASET TEKMEI.KLI SOL YAN KAPAK,P	FU-R1012	07011A	30	Bending Set	17	SB20001	SB20001	1	20	0,525
07010P	TFB\TFG DIS KASET TEKMEI.KLI SOL YAN KAPAK,P	FU-R1012	07011A	40	Last Curling	9	PE080	K40039	1	20	0,174
07042P	TFU DIS KASET SAG YAN KAPAK,P(OCAK KAPAKLI ,TEKMEI.KLI	FU-R1012	07042A	10	Draining and Ribbing	1	PH350	K70066	2	20	0,25
07042P	TFU DIS KASET SAG YAN KAPAK,P(OCAK KAPAKLI ,TEKMEI.KLI	FU-R1012	07042A	20	Corner Draining	10	PE030	K10023	1	20	0,172
07042P	TFU DIS KASET SAG YAN KAPAK,P(OCAK KAPAKLI ,TEKMEI.KLI	FU-R1012	07042A	30	Bending Set	17	SB20001	SB20001	1	20	0,525
07042P	TFU DIS KASET SAG YAN KAPAK,P(OCAK KAPAKLI ,TEKMEI.KLI	FU-R1012	07042A	40	Last Curling	9	PE080	K40038	1	20	0,174
07043P	TFU DIS KASET SOL YAN KAPAK,P(OCAK KAPAKLI ,TEKMEI.KLI	FU-R1012	07042A	10	Draining and Ribbing	1	PH350	K70067	2	20	0,25
07043P	TFU DIS KASET SOL YAN KAPAK,P(OCAK KAPAKLI ,TEKMEI.KLI	FU-R1012	07042A	20	Corner Draining	10	PE030	K10023	1	20	0,172
07043P	TFU DIS KASET SOL YAN KAPAK,P(OCAK KAPAKLI ,TEKMEI.KLI	FU-R1012	07042A	30	Bending Set	17	SB20001	SB20001	1	20	0,525
07043P	TFU DIS KASET SOL YAN KAPAK,P(OCAK KAPAKLI ,TEKMEI.KLI	FU-R1012	07042A	40	Last Curling	9	PE080	K40039	1	20	0,174
07044P	TFU DIS KASET SAG YAN KAPAK,P(OCAK KAPAKSI,Z,TEKMEI.K	FU-R1012	07042A	10	Draining and Ribbing	1	PH350	K70066	2	20	0,25
07044P	TFU DIS KASET SAG YAN KAPAK,P(OCAK KAPAKSI,Z,TEKMEI.K	FU-R1012	07042A	20	Corner Draining	10	PE030	K10023	1	20	0,172
07044P	TFU DIS KASET SAG YAN KAPAK,P(OCAK KAPAKSI,Z,TEKMEI.K	FU-R1012	07042A	30	Bending Set	17	SB20001	SB20001	1	20	0,525
07044P	TFU DIS KASET SAG YAN KAPAK,P(OCAK KAPAKSI,Z,TEKMEI.K	FU-R1012	07042A	40	Last Curling	9	PE080	K40038	1	20	0,174
07045P	TFU DIS KASET SOL YAN KAPAK,P(OCAK KAPAKSI,Z,TEKMEI.K	FU-R1012	07042A	10	Draining and Ribbing	1	PH350	K70067	2	20	0,25
07045P	TFU DIS KASET SOL YAN KAPAK,P(OCAK KAPAKSI,Z,TEKMEI.K	FU-R1012	07042A	20	Corner Draining	10	PE030	K10023	1	20	0,172
07045P	TFU DIS KASET SOL YAN KAPAK,P(OCAK KAPAKSI,Z,TEKMEI.K	FU-R1012	07042A	30	Bending Set	17	SB20001	SB20001	1	20	0,525
07045P	TFU DIS KASET SOL YAN KAPAK,P(OCAK KAPAKSI,Z,TEKMEI.K	FU-R1012	07042A	40	Last Curling	9	PE080	K40039	1	20	0,174
07062P	TFB\TFG DIS KASET TEKMEI.KLI SAG YAN KAPAK,P(INOX)	FU-R1012	07062A	10	Draining and Ribbing	1	PH350	K07066	2	20	0,25
07062P	TFB\TFG DIS KASET TEKMEI.KLI SAG YAN KAPAK,P(INOX)	FU-R1012	07062A	20	Draining Pannel Ground	9	PE080	YOK	1	20	0,25
07062P	TFB\TFG DIS KASET TEKMEI.KLI SAG YAN KAPAK,P(INOX)	FU-R1012	07062A	30	Corner Draining	10	PE030	K10023	1	20	0,18
07062P	TFB\TFG DIS KASET TEKMEI.KLI SAG YAN KAPAK,P(INOX)	FU-R1012	07062A	40	Curling	17	SB20002	SB20002	1	20	0,525
07062P	TFB\TFG DIS KASET TEKMEI.KLI SAG YAN KAPAK,P(INOX)	FU-R1012	07062A	50	Last Curling	9	PE080	K40038	1	20	0,174
07068P	TFG61-51 DIS KASET TEKMEI.KLI SAG YAN KAPAK,P(INOX)	FU-R1012	07062A	10	Draining and Ribbing	1	PH350	K07066	2	20	0,25
07068P	TFG61-51 DIS KASET TEKMEI.KLI SAG YAN KAPAK,P(INOX)	FU-R1012	07062A	20	Corner Draining	10	PE030	K10023	1	20	0,172
07068P	TFG61-51 DIS KASET TEKMEI.KLI SAG YAN KAPAK,P(INOX)	FU-R1012	07062A	30	Curling	17	SB20002	SB20002	1	20	0,525
07068P	TFG61-51 DIS KASET TEKMEI.KLI SAG YAN KAPAK,P(INOX)	FU-R1012	07062A	40	Last Curling	9	PE080	K40038	1	20	0,174
0100001P	Y GAZLI PLEYT (INOX)	FY-R0008	01461A	10	Stroking	20	500T HP.	TK20007	2	30	0,45
0100001P	Y GAZLI PLEYT (INOX)	FY-R0008	01461A	20	Peripheral Cutting	20	500T HP.	TK19007	2	30	0,25
0100001P	Y GAZLI PLEYT (INOX)	FY-R0008	01461A	30	Leveling Slope	20	500T HP.	TK40006	2	30	0,3
0100001P	Y GAZLI PLEYT (INOX)	FY-R0008	01461A	40	Flanging	20	500T HP.	TK75002	2	30	0,4
0100002P	Y GAZLI PLEYT (INOX)	FY-R0008	01461A	10	Stroking	20	500T HP.	TK20007	2	30	0,45
0100002P	Y GAZLI PLEYT (INOX)	FY-R0008	01461A	20	Peripheral Cutting	20	500T HP.	TK19007	2	30	0,25
0100002P	Y GAZLI PLEYT (INOX)	FY-R0008	01461A	30	Leveling Slope	20	500T HP.	TK40006	2	30	0,3
0100002P	Y GAZLI PLEYT (INOX)	FY-R0008	01461A	40	Flanging	20	500T HP.	TK75002	2	30	0,4
01457P	Y GAZLI PLEYT (4 GAZLI, SE SIZ)	FY-R0008	01457A	10	Stroking	20	500T HP.	TK20007	2	30	0,45
01457P	Y GAZLI PLEYT (4 GAZLI, SE SIZ)	FY-R0008	01457A	20	Peripheral Cutting	20	500T HP.	TK19007	2	30	0,25

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01457P	Y GAZLI PLEYT (4 GAZLI, SE SİZ)	FY-R0008	01457A	30	Leveling Slope	20	500T HP.	TK40006	2	30	0,3
01457P	Y GAZLI PLEYT (4 GAZLI, SE SİZ)	FY-R0008	01457A	40	Flanging	20	500T HP.	TK75002	2	30	0,4
01458P	Y GAZLI PLEYT	FY-R0008	01457A	10	Stroking	20	500T HP.	TK20007	2	30	0,45
01458P	Y GAZLI PLEYT	FY-R0008	01457A	20	Peripheral Cutting	20	500T HP.	TK19007	2	30	0,25
01458P	Y GAZLI PLEYT	FY-R0008	01457A	30	Leveling Slope	20	500T HP.	TK40006	2	30	0,3
01458P	Y GAZLI PLEYT	FY-R0008	01457A	40	Flanging	20	500T HP.	TK75002	2	30	0,4
01459P	Y GAZLI PLEYT	FY-R0008	01457A	10	Stroking	20	500T HP.	TK20007	2	30	0,45
01459P	Y GAZLI PLEYT	FY-R0008	01457A	20	Peripheral Cutting	20	500T HP.	TK19007	2	30	0,25
01459P	Y GAZLI PLEYT	FY-R0008	01457A	30	Leveling Slope	20	500T HP.	TK40006	2	30	0,3
01459P	Y GAZLI PLEYT	FY-R0008	01457A	40	Flanging	20	500T HP.	TK75002	2	30	0,4
01460P	Y GAZLI PLEYT	FY-R0008	01457A	10	Stroking	20	500T HP.	TK20007	2	30	0,45
01460P	Y GAZLI PLEYT	FY-R0008	01457A	20	Peripheral Cutting	20	500T HP.	TK19007	2	30	0,25
01460P	Y GAZLI PLEYT	FY-R0008	01457A	30	Leveling Slope	20	500T HP.	TK40006	2	30	0,3
01460P	Y GAZLI PLEYT	FY-R0008	01457A	40	Flanging	20	500T HP.	TK75002	2	30	0,4
01461P	Y GAZLI PLEYT (INOX)	FY-R0008	01461A	10	Stroking	20	500T HP.	TK20007	2	30	0,45
01461P	Y GAZLI PLEYT (INOX)	FY-R0008	01461A	20	Peripheral Cutting	20	500T HP.	TK19007	2	30	0,25
01461P	Y GAZLI PLEYT (INOX)	FY-R0008	01461A	30	Leveling Slope	20	500T HP.	TK40006	2	30	0,3
01461P	Y GAZLI PLEYT (INOX)	FY-R0008	01461A	40	Flanging	20	500T HP.	TK75002	2	30	0,4
01462P	Y GAZLI PLEYT (INOX)	FY-R0008	01461A	10	Stroking	20	500T HP.	TK20007	2	30	0,45
01462P	Y GAZLI PLEYT (INOX)	FY-R0008	01461A	20	Peripheral Cutting	20	500T HP.	TK19007	2	30	0,25
01462P	Y GAZLI PLEYT (INOX)	FY-R0008	01461A	30	Leveling Slope	20	500T HP.	TK40006	2	30	0,3
01462P	Y GAZLI PLEYT (INOX)	FY-R0008	01461A	40	Flanging	20	500T HP.	TK75002	2	30	0,4
01463P	Y GAZLI PLEYT (INOX)	FY-R0008	01461A	10	Stroking	20	500T HP.	TK20007	2	30	0,45
01463P	Y GAZLI PLEYT (INOX)	FY-R0008	01461A	20	Peripheral Cutting	20	500T HP.	TK19007	2	30	0,25
01463P	Y GAZLI PLEYT (INOX)	FY-R0008	01461A	30	Leveling Slope	20	500T HP.	TK40006	2	30	0,3
01463P	Y GAZLI PLEYT (INOX)	FY-R0008	01461A	40	Flanging	20	500T HP.	TK75002	2	30	0,4
01464P	Y GAZLI PLEYT	FY-R0008	01457A	10	Stroking	20	500T HP.	TK20007	2	30	0,45
01464P	Y GAZLI PLEYT	FY-R0008	01457A	20	Peripheral Cutting	20	500T HP.	TK19007	2	30	0,25
01464P	Y GAZLI PLEYT	FY-R0008	01457A	30	Leveling Slope	20	500T HP.	TK40006	2	30	0,3
01464P	Y GAZLI PLEYT	FY-R0008	01457A	40	Flanging	20	500T HP.	TK75002	2	30	0,4
11445P	Y GAZLI İÇ KASET GÖVDE	FY-R0038	11367A	10	Stroking	20	500T HP.	TK20005	2	30	0,3
11445P	Y GAZLI İÇ KASET GÖVDE	FY-R0038	11367A	20	Peripheral Cutting	20	500T HP.	TK19005	2	30	0,25
11445P	Y GAZLI İÇ KASET GÖVDE	FY-R0038	11367A	30	Flanging	20	500T HP.	TK40004	2	30	0,3
03130P	Y GAZLI SANDVIÇ DIŞ KAPAK	FY-R0041	03130A	10	Stroking	1	PH350	K20170	2	20	0,39
03130P	Y GAZLI SANDVIÇ DIŞ KAPAK	FY-R0041	03130A	20	Cutting Slope	2	DE085	K30085	1	20	0,254
03130P	Y GAZLI SANDVIÇ DIŞ KAPAK	FY-R0041	03130A	30	Draining	3	PH150	K10196	1	20	0,308
03132P	Y GAZLI SANDVIÇ DIŞ KAPAK	FY-R0041	03130A	10	Drawing	1	PH350	K20170	2	20	0,39
03132P	Y GAZLI SANDVIÇ DIŞ KAPAK	FY-R0041	03130A	20	Cutting Slope	2	DE085	K30085	1	20	0,254
03132P	Y GAZLI SANDVIÇ DIŞ KAPAK	FY-R0041	03130A	30	Draining	3	PH150	K10196	1	20	0,308
07086P	Y GAZLI DIŞ KASET YAN KAPAK	FY-R0010	07086A	10	Draining	5	PH30001	K10195	2	20	0,225
07086P	Y GAZLI DIŞ KASET YAN KAPAK	FY-R0010	07086A	20	Curling	5	PH30001	K40664	2	20	0,252
1100015P	G2000 İÇ KASET ÖN ÇERÇEVE	GO-R0003	11365A	10	Drilling Front Frame Hole	3	PH150	K10201	1	20	0,33
11365P	G2000 İÇ KASET ÖN ÇERÇEVE	GO-R0003	11365A01	10	Curling Front Frame	20	500T HP.	TK41001	2	30	0,2

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11367P	G2000 İÇ KASET GÖVDE	GO-R0006	11367A	10	Stroking	20	500T HP.	TK20005	2	30	0,3
11367P	G2000 İÇ KASET GÖVDE	GO-R0006	11367A	20	Peripheral Cutting	20	500T HP.	TK19005	2	30	0,25
11367P	G2000 İÇ KASET GÖVDE	GO-R0006	11367A	30	Flanging	20	500T HP.	TK40004	2	30	0,3
11399P	G2000 İÇ KASET GÖVDE	GO-R0006	11367A	10	Stroking	20	500T HP.	TK20005	2	30	0,3
11399P	G2000 İÇ KASET GÖVDE	GO-R0006	11367A	20	Peripheral Cutting	20	500T HP.	TK19005	2	30	0,25
11399P	G2000 İÇ KASET GÖVDE	GO-R0006	11367A	30	Flanging	20	500T HP.	TK40004	2	30	0,3
11366P	G2000 İÇ KASET ARKA KAPAK(FANLI,ÇEVLI)	GO-R0007	11365A	10	Stroking	20	500T HP.	TK20002	2	30	0,3
11366P	G2000 İÇ KASET ARKA KAPAK(FANLI,ÇEVLI)	GO-R0007	11365A	20	Peripheral Cutting	20	500T HP.	TK19002	2	30	0,15
11366P	G2000 İÇ KASET ARKA KAPAK(FANLI,ÇEVLI)	GO-R0007	11365A	30	Core Detachment	20	500T HP.	TK12001	2	30	0,2
11375P	G2000 İÇ KASET ARKA KAPAK(FANSIZ,ÇEVSIZ)	GO-R0007	11365A	10	Stroking	20	500T HP.	TK20002	2	30	0,3
11375P	G2000 İÇ KASET ARKA KAPAK(FANSIZ,ÇEVSIZ)	GO-R0007	11365A	20	Peripheral Cutting	20	500T HP.	TK19002	2	30	0,15
11375P	G2000 İÇ KASET ARKA KAPAK(FANSIZ,ÇEVSIZ)	GO-R0007	11365A	30	Core Detachment	20	500T HP.	TK12001	2	30	0,2
11376P	G2000 İÇ KASET ARKA KAPAK(FANLI)	GO-R0007	11365A	10	Stroking	20	500T HP.	TK20002	2	30	0,3
11376P	G2000 İÇ KASET ARKA KAPAK(FANLI)	GO-R0007	11365A	20	Peripheral Cutting	20	500T HP.	TK19002	2	30	0,15
11376P	G2000 İÇ KASET ARKA KAPAK(FANLI)	GO-R0007	11365A	30	Core Detachment	20	500T HP.	TK12001	2	30	0,2
11377P	G2000 İÇ KASET ARKA KAPAK(ÇEVLI)	GO-R0007	11365A	10	Stroking	20	500T HP.	TK20002	2	30	0,3
11377P	G2000 İÇ KASET ARKA KAPAK(ÇEVLI)	GO-R0007	11365A	20	Peripheral Cutting	20	500T HP.	TK19002	2	30	0,15
11377P	G2000 İÇ KASET ARKA KAPAK(ÇEVLI)	GO-R0007	11365A	30	Core Detachment	20	500T HP.	TK12001	2	30	0,2
11428P	G2000 İÇ KASET ARKA KAPAK(FANLI,ÇEVLI,TURBO TIJSIZ)	GO-R0007	11365A	10	Stroking	20	500T HP.	TK20002	2	30	0,3
11428P	G2000 İÇ KASET ARKA KAPAK(FANLI,ÇEVLI,TURBO TIJSIZ)	GO-R0007	11365A	20	Peripheral Cutting	20	500T HP.	TK19002	2	30	0,15
11428P	G2000 İÇ KASET ARKA KAPAK(FANLI,ÇEVLI,TURBO TIJSIZ)	GO-R0007	11365A	30	Core Detachment	20	500T HP.	TK12001	2	30	0,2
11429P	G2000 İÇ KASET ARKA KAPAK(FANLI,TURBO TIJSIZ)	GO-R0007	11365A	10	Stroking	20	500T HP.	TK20002	2	30	0,3
11429P	G2000 İÇ KASET ARKA KAPAK(FANLI,TURBO TIJSIZ)	GO-R0007	11365A	20	Peripheral Cutting	20	500T HP.	TK19002	2	30	0,15
11429P	G2000 İÇ KASET ARKA KAPAK(FANLI,TURBO TIJSIZ)	GO-R0007	11365A	30	Core Detachment	20	500T HP.	TK12001	2	30	0,2
11457P	G2000 İÇ KASET ARKA KAPAK(FANSIZ,ÇEVSIZ,FAN PERDELI)	GO-R0007	11365A	10	Stroking	20	500T HP.	TK20002	2	30	0,3
11457P	G2000 İÇ KASET ARKA KAPAK(FANSIZ,ÇEVSIZ,FAN PERDELI)	GO-R0007	11365A	20	Peripheral Cutting	20	500T HP.	TK19002	2	30	0,15
11457P	G2000 İÇ KASET ARKA KAPAK(FANSIZ,ÇEVSIZ,FAN PERDELI)	GO-R0007	11365A	30	Core Detachment	20	500T HP.	TK12001	2	30	0,2
07070P	G2000 DIŞ KASET SAĞ YAN KAPAK	GO-R0022	07070A	10	Draining	1	PH350	K10102	2	20	0,25
07070P	G2000 DIŞ KASET SAĞ YAN KAPAK	GO-R0022	07070A	20	Curling	17	SB20008	SB20008	2	20	0,525
07071P	G2000 DIŞ KASET SOL YAN KAPAK	GO-R0022	07070A	10	Draining	1	PH350	K10102	2	20	0,25
07071P	G2000 DIŞ KASET SOL YAN KAPAK	GO-R0022	07070A	20	Curling	17	SB20008	SB20008	2	20	0,525
07072P	G2000 DIŞ KASET SAĞ YAN KAPAK INOX	GO-R0022	07072A	10	Draining	1	PH350	K10102	2	20	0,25
07072P	G2000 DIŞ KASET SAĞ YAN KAPAK INOX	GO-R0022	07072A	20	Curling	17	SB20008	SB20008	2	20	0,525
07073P	G2000 DIŞ KASET SOL YAN KAPAK INOX	GO-R0022	07072A	10	Draining	1	PH350	K10102	2	20	0,25
07073P	G2000 DIŞ KASET SOL YAN KAPAK INOX	GO-R0022	07072A	20	Curling	17	SB20009	SB20009	2	20	0,525
01389P	G2000 4 ELEKTRIKLI PLEYT	GO-R0024	01393A	10	Stroking	20	500T HP.	TK20001	2	30	0,45
01389P	G2000 4 ELEKTRIKLI PLEYT	GO-R0024	01393A	20	Peripheral Cutting	20	500T HP.	TK19001	2	30	0,25
01389P	G2000 4 ELEKTRIKLI PLEYT	GO-R0024	01393A	30	Leveling Slope	20	500T HP.	TK70001	2	30	0,3
01389P	G2000 4 ELEKTRIKLI PLEYT	GO-R0024	01393A	40	Flanging	20	500T HP.	TK40003	2	30	0,4
01390P	G2000 4 ELEKTRIKLI INOX PLEYT	GO-R0024	01390A	10	Stroking	20	500T HP.	TK20001	2	30	0,45
01390P	G2000 4 ELEKTRIKLI INOX PLEYT	GO-R0024	01390A	20	Peripheral Cutting	20	500T HP.	TK19001	2	30	0,25
01390P	G2000 4 ELEKTRIKLI INOX PLEYT	GO-R0024	01390A	30	Leveling Slope	20	500T HP.	TK70001	2	30	0,3
01390P	G2000 4 ELEKTRIKLI INOX PLEYT	GO-R0024	01390A	40	Flanging	20	500T HP.	TK40003	2	30	0,4



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01393P	G2000 4 ELEKTRİKLİ PLEYT	GO-R0024	01393A	10	Stroking	20	500T HP.	TK20001	2	30	0,45
01393P	G2000 4 ELEKTRİKLİ PLEYT	GO-R0024	01393A	20	Peripheral Cutting	20	500T HP.	TK19001	2	30	0,25
01393P	G2000 4 ELEKTRİKLİ PLEYT	GO-R0024	01393A	30	Leveling Slope	20	500T HP.	TK70001	2	30	0,3
01393P	G2000 4 ELEKTRİKLİ PLEYT	GO-R0024	01393A	40	Flanging	20	500T HP.	TK40003	2	30	0,4
01411P	G2000 4 ELEKTRİKLİ INOX PLEYT	GO-R0024	01390A	10	Stroking	20	500T HP.	TK20001	2	30	0,45
01411P	G2000 4 ELEKTRİKLİ INOX PLEYT	GO-R0024	01390A	20	Peripheral Cutting	20	500T HP.	TK19001	2	30	0,25
01411P	G2000 4 ELEKTRİKLİ INOX PLEYT	GO-R0024	01390A	30	Leveling Slope	20	500T HP.	TK70001	2	30	0,3
01411P	G2000 4 ELEKTRİKLİ INOX PLEYT	GO-R0024	01390A	40	Flanging	20	500T HP.	TK40003	2	30	0,4
01456P	G2000 4 ELEKTRİKLİ INOX PLEYT	GO-R0024	01390A	10	Stroking	20	500T HP.	TK20001	2	30	0,45
01456P	G2000 4 ELEKTRİKLİ INOX PLEYT	GO-R0024	01390A	20	Peripheral Cutting	20	500T HP.	TK19001	2	30	0,25
01456P	G2000 4 ELEKTRİKLİ INOX PLEYT	GO-R0024	01390A	30	Leveling Slope	20	500T HP.	TK70001	2	30	0,3
01456P	G2000 4 ELEKTRİKLİ INOX PLEYT	GO-R0024	01390A	40	Flanging	20	500T HP.	TK40003	2	30	0,4
01430P	G2000 4 GAZLI PLEYT,P(YENİ BEKLERE UYGUN)	GO-R0028	01393A	10	Stroking	20	500T HP.	TK20001	2	30	0,45
01430P	G2000 4 GAZLI PLEYT,P(YENİ BEKLERE UYGUN)	GO-R0028	01393A	20	Peripheral Cutting	20	500T HP.	TK19001	2	30	0,25
01430P	G2000 4 GAZLI PLEYT,P(YENİ BEKLERE UYGUN)	GO-R0028	01393A	30	Leveling Slope	20	500T HP.	TK70001	2	30	0,3
01430P	G2000 4 GAZLI PLEYT,P(YENİ BEKLERE UYGUN)	GO-R0028	01393A	40	Flanging	20	500T HP.	TK40003	2	30	0,4
01431P	G2000 3 GAZLI PLEYT,P(YENİ BEKLERE UYGUN)	GO-R0029	01393A	10	Stroking	20	500T HP.	TK20001	2	30	0,45
01431P	G2000 3 GAZLI PLEYT,P(YENİ BEKLERE UYGUN)	GO-R0029	01393A	20	Peripheral Cutting	20	500T HP.	TK19001	2	30	0,25
01431P	G2000 3 GAZLI PLEYT,P(YENİ BEKLERE UYGUN)	GO-R0029	01393A	30	Leveling Slope	20	500T HP.	TK70001	2	30	0,3
01431P	G2000 3 GAZLI PLEYT,P(YENİ BEKLERE UYGUN)	GO-R0029	01393A	40	Flanging	20	500T HP.	TK40003	2	30	0,4
01434P	G2000 3G+ 1E PLEYT(YENİ BEKLERE UYGUN)	GO-R0029	01393A	10	Stroking	20	500T HP.	TK20001	2	30	0,45
01434P	G2000 3G+ 1E PLEYT(YENİ BEKLERE UYGUN)	GO-R0029	01393A	20	Peripheral Cutting	20	500T HP.	TK19001	2	30	0,25
01434P	G2000 3G+ 1E PLEYT(YENİ BEKLERE UYGUN)	GO-R0029	01393A	30	Leveling Slope	20	500T HP.	TK70001	2	30	0,3
01434P	G2000 3G+ 1E PLEYT(YENİ BEKLERE UYGUN)	GO-R0029	01393A	40	Flanging	20	500T HP.	TK40003	2	30	0,4
01419P	G2000 CERAN PLEYT	GO-R0039	01419A	10	Stroking	20	500T HP.	TK20001	2	30	0,45
01419P	G2000 CERAN PLEYT	GO-R0039	01419A	20	Peripheral Cutting	20	500T HP.	TK19001	2	30	0,25
01419P	G2000 CERAN PLEYT	GO-R0039	01419A	30	Leveling Slope	20	500T HP.	TK70001	2	30	0,3
01419P	G2000 CERAN PLEYT	GO-R0039	01419A	40	Flanging	20	500T HP.	TK40003	2	30	0,4
01419P	G2000 CERAN PLEYT	GO-R0039	01419A	50	Draining Core	20	500T HP.	K12074	2	30	0,25
01419P	G2000 CERAN PLEYT	GO-R0039	01419A	60	Curling Core	20	500T HP.	K40527	2	30	0,25
01420P	G2000 CERAN INOX PLEYT	GO-R0039	01390A	10	Stroking	20	500T HP.	TK20001	2	30	0,45
01420P	G2000 CERAN INOX PLEYT	GO-R0039	01390A	20	Peripheral Cutting	20	500T HP.	TK19001	2	30	0,25
01420P	G2000 CERAN INOX PLEYT	GO-R0039	01390A	30	Leveling Slope	20	500T HP.	TK70001	2	30	0,3
01420P	G2000 CERAN INOX PLEYT	GO-R0039	01390A	40	Flanging	20	500T HP.	TK40003	2	30	0,4
01420P	G2000 CERAN INOX PLEYT	GO-R0039	01390A	50	Draining Core	20	500T HP.	K12074	2	30	0,25
01420P	G2000 CERAN INOX PLEYT	GO-R0039	01390A	60	Curling Core	20	500T HP.	K40527	2	30	0,25
11379P	G2000 GAZLI İÇ KASET GÖVDE,P	GO-R0049	11367A	10	Stroking	20	500T HP.	TK20005	2	30	0,3
11379P	G2000 GAZLI İÇ KASET GÖVDE,P	GO-R0049	11367A	20	Peripheral Cutting	20	500T HP.	TK19005	2	30	0,25
11379P	G2000 GAZLI İÇ KASET GÖVDE,P	GO-R0049	11367A	30	Flanging	20	500T HP.	TK40004	2	30	0,3
11382P	G2000 KOMBİNE(GAZLI FIRIN, ELEKTRİKLİ GRİL) İÇ KASET GÖVDE,P	GO-R0049	11367A	10	Stroking	20	500T HP.	TK20005	2	30	0,3
11382P	G2000 KOMBİNE(GAZLI FIRIN, ELEKTRİKLİ GRİL) İÇ KASET GÖVDE,P	GO-R0049	11367A	20	Peripheral Cutting	20	500T HP.	TK19005	2	30	0,25
11382P	G2000 KOMBİNE(GAZLI FIRIN, ELEKTRİKLİ GRİL) İÇ KASET GÖVDE,P	GO-R0049	11367A	30	Flanging	20	500T HP.	TK40004	2	30	0,3
1100037P	Y GAZLI İÇ KASET ARKA KAPAK (GRİLLİ,LAMBALI)	GO-R0051	11365A	10	Stroking	20	500T HP.	TK20002	2	30	0,3
1100037P	Y GAZLI İÇ KASET ARKA KAPAK (GRİLLİ,LAMBALI)	GO-R0051	11365A	20	Peripheral Cutting	20	500T HP.	TK19002	2	30	0,15

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1100037P	Y GAZLI İÇ KASET ARKA KAPAK (GRİLLİ, LAMBALI)	GO-R0051	11365A	30	Core Detachment	20	500T HP.	TK12001	2	30	0,2
1100037P	Y GAZLI İÇ KASET ARKA KAPAK (GRİLLİ, LAMBALI)	GO-R0051	11365A	40	Drilling Grill Hole	3	PH150	K10201	2	20	0,2
1100038P	Y GAZLI İÇ KASET ARKA KAPAK (GRİLLİ, LAMBALI)	GO-R0051	11365A	10	Stroking	20	500T HP.	TK20002	2	30	0,3
1100038P	Y GAZLI İÇ KASET ARKA KAPAK (GRİLLİ, LAMBALI)	GO-R0051	11365A	20	Peripheral Cutting	20	500T HP.	TK19002	2	30	0,15
1100038P	Y GAZLI İÇ KASET ARKA KAPAK (GRİLLİ, LAMBALI)	GO-R0051	11365A	30	Core Detachment	20	500T HP.	TK12001	2	30	0,2
1100038P	Y GAZLI İÇ KASET ARKA KAPAK (GRİLLİ, LAMBALI)	GO-R0051	11365A	40	Drilling Grill Hole	3	PH150	K10201	2	20	0,2
1100040P	G2000 GAZLI İÇ KASET ARKA KAPAK	GO-R0051	11365A	10	Stroking	20	500T HP.	TK20002	2	30	0,3
1100040P	G2000 GAZLI İÇ KASET ARKA KAPAK	GO-R0051	11365A	20	Peripheral Cutting	20	500T HP.	TK19002	2	30	0,15
1100040P	G2000 GAZLI İÇ KASET ARKA KAPAK	GO-R0051	11365A	30	Core Detachment	20	500T HP.	TK12001	2	30	0,2
11381P	G2000 GAZLI İÇ KASET ARKA KAPAK (GRİLLİ, ÇEVİRİMLİ, LAMBALI)	GO-R0051	11365A	10	Stroking	20	500T HP.	TK20002	2	30	0,3
11381P	G2000 GAZLI İÇ KASET ARKA KAPAK (GRİLLİ, ÇEVİRİMLİ, LAMBALI)	GO-R0051	11365A	20	Peripheral Cutting	20	500T HP.	TK19002	2	30	0,15
11381P	G2000 GAZLI İÇ KASET ARKA KAPAK (GRİLLİ, ÇEVİRİMLİ, LAMBALI)	GO-R0051	11365A	30	Core Detachment	20	500T HP.	TK12001	2	30	0,2
11404P	G2000 GAZLI İÇ KASET ARKA KAPAK (GRİLLİ, ÇEVİRİMSİZ, LAMBALI)	GO-R0051	11365A	10	Stroking	20	500T HP.	TK20002	2	30	0,3
11404P	G2000 GAZLI İÇ KASET ARKA KAPAK (GRİLLİ, ÇEVİRİMSİZ, LAMBALI)	GO-R0051	11365A	20	Peripheral Cutting	20	500T HP.	TK19002	2	30	0,15
11404P	G2000 GAZLI İÇ KASET ARKA KAPAK (GRİLLİ, ÇEVİRİMSİZ, LAMBALI)	GO-R0051	11365A	30	Core Detachment	20	500T HP.	TK12001	2	30	0,2
11419P	G2000 GAZLI İÇ KASET ARKA KAPAK (GRİLLİ, ÇEVİRİMLİ, LAMBALI)	GO-R0051	11365A	10	Stroking	20	500T HP.	TK20002	2	30	0,3
11419P	G2000 GAZLI İÇ KASET ARKA KAPAK (GRİLLİ, ÇEVİRİMLİ, LAMBALI)	GO-R0051	11365A	20	Peripheral Cutting	20	500T HP.	TK19002	2	30	0,15
11419P	G2000 GAZLI İÇ KASET ARKA KAPAK (GRİLLİ, ÇEVİRİMLİ, LAMBALI)	GO-R0051	11365A	30	Core Detachment	20	500T HP.	TK12001	2	30	0,2
11420P	G2000 GAZLI İÇ KASET ARKA KAPAK	GO-R0051	11365A	10	Stroking	20	500T HP.	TK20002	2	30	0,3
11420P	G2000 GAZLI İÇ KASET ARKA KAPAK	GO-R0051	11365A	20	Peripheral Cutting	20	500T HP.	TK19002	2	30	0,15
11420P	G2000 GAZLI İÇ KASET ARKA KAPAK	GO-R0051	11365A	30	Core Detachment	20	500T HP.	TK12001	2	30	0,2
11421P	G2000 GAZLI İÇ KASET ARKA KAPAK (GRİLSİZ, ÇEVİRİMSİZ, LAMBALI)	GO-R0051	11365A	10	Stroking	20	500T HP.	TK20002	2	30	0,3
11421P	G2000 GAZLI İÇ KASET ARKA KAPAK (GRİLSİZ, ÇEVİRİMSİZ, LAMBALI)	GO-R0051	11365A	20	Peripheral Cutting	20	500T HP.	TK19002	2	30	0,15
11421P	G2000 GAZLI İÇ KASET ARKA KAPAK (GRİLSİZ, ÇEVİRİMSİZ, LAMBALI)	GO-R0051	11365A	30	Core Detachment	20	500T HP.	TK12001	2	30	0,2
11424P	G2000 GAZLI İÇ KASET ARKA KAPAK (GRİLSİZ, ÇEVİRİMSİZ, LAMBALI)	GO-R0051	11365A	10	Stroking	20	500T HP.	TK20002	2	30	0,3
11424P	G2000 GAZLI İÇ KASET ARKA KAPAK (GRİLSİZ, ÇEVİRİMSİZ, LAMBALI)	GO-R0051	11365A	20	Peripheral Cutting	20	500T HP.	TK19002	2	30	0,15
11424P	G2000 GAZLI İÇ KASET ARKA KAPAK (GRİLSİZ, ÇEVİRİMSİZ, LAMBALI)	GO-R0051	11365A	30	Core Detachment	20	500T HP.	TK12001	2	30	0,2
01417P	G2000 4 GAZLI HIGH FLAME PLEYT, P(1K, 2O, 1HF/HOLLANDA)	GO-R0053	01393A	10	Stroking	20	500T HP.	TK20001	2	30	0,45
01417P	G2000 4 GAZLI HIGH FLAME PLEYT, P(1K, 2O, 1HF/HOLLANDA)	GO-R0053	01393A	20	Peripheral Cutting	20	500T HP.	TK19001	2	30	0,25
01417P	G2000 4 GAZLI HIGH FLAME PLEYT, P(1K, 2O, 1HF/HOLLANDA)	GO-R0053	01393A	30	Draining Pipe Hole	3	PH150	K12109	1	20	0,25
01417P	G2000 4 GAZLI HIGH FLAME PLEYT, P(1K, 2O, 1HF/HOLLANDA)	GO-R0053	01393A	40	Leveling Slope	20	500T HP.	TK70001	2	30	0,3
01417P	G2000 4 GAZLI HIGH FLAME PLEYT, P(1K, 2O, 1HF/HOLLANDA)	GO-R0053	01393A	60	Flanging	20	500T HP.	TK40003	2	30	0,4
01418P	G2000 4 GAZLI HIGH FLAME INOX PLEYT, P(1HF 2O 1K/HOLLANDA)	GO-R0053	01390A	10	Stroking	20	500T HP.	TK20001	2	30	0,45
01418P	G2000 4 GAZLI HIGH FLAME INOX PLEYT, P(1HF 2O 1K/HOLLANDA)	GO-R0053	01390A	20	Peripheral Cutting	20	500T HP.	TK19001	2	30	0,25
01418P	G2000 4 GAZLI HIGH FLAME INOX PLEYT, P(1HF 2O 1K/HOLLANDA)	GO-R0053	01390A	30	Leveling Slope	20	500T HP.	TK70001	2	30	0,3
01418P	G2000 4 GAZLI HIGH FLAME INOX PLEYT, P(1HF 2O 1K/HOLLANDA)	GO-R0053	01390A	50	Flanging	20	500T HP.	TK40003	2	30	0,4
01432P	G2000 4 GAZLI HIGH FLAME PLEYT, P(1K, 2O, 1HF/HOLLANDA)	GO-R0053	01393A	10	Stroking	20	500T HP.	TK20001	2	30	0,45
01432P	G2000 4 GAZLI HIGH FLAME PLEYT, P(1K, 2O, 1HF/HOLLANDA)	GO-R0053	01393A	20	Peripheral Cutting	20	500T HP.	TK19001	2	30	0,25
01432P	G2000 4 GAZLI HIGH FLAME PLEYT, P(1K, 2O, 1HF/HOLLANDA)	GO-R0053	01393A	30	Leveling Slope	20	500T HP.	TK70001	2	30	0,3
01432P	G2000 4 GAZLI HIGH FLAME PLEYT, P(1K, 2O, 1HF/HOLLANDA)	GO-R0053	01393A	50	Flanging	20	500T HP.	TK40003	2	30	0,4
01479P	G2000 4 GAZLI HIGH FLAME INOX PLEYT, P(1HF 2O 1K/HOLLANDA)	GO-R0053	01390A	10	Stroking	20	500T HP.	TK20001	2	30	0,45
01479P	G2000 4 GAZLI HIGH FLAME INOX PLEYT, P(1HF 2O 1K/HOLLANDA)	GO-R0053	01390A	20	Peripheral Cutting	20	500T HP.	TK19001	2	30	0,25
01479P	G2000 4 GAZLI HIGH FLAME INOX PLEYT, P(1HF 2O 1K/HOLLANDA)	GO-R0053	01390A	30	Leveling Slope	20	500T HP.	TK70001	2	30	0,3

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01479P	G2000 4 GAZLI HIGH FLAME INOX PLEYT,P(1HF 2O 1K/HOLLALI)	GO-R0053	01390A	50	Flanging	20	500T HP.	TK40003	2	30	0,4
01481P	G2000 4 GAZLI HIGH FLAME PLEYT,P( 1K, 2O, 1HF/HOLLANDA)	GO-R0053	01393A	10	Stroking	20	500T HP.	TK20001	2	30	0,45
01481P	G2000 4 GAZLI HIGH FLAME PLEYT,P( 1K, 2O, 1HF/HOLLANDA)	GO-R0053	01393A	20	Peripheral Cutting	20	500T HP.	TK19001	2	30	0,25
01481P	G2000 4 GAZLI HIGH FLAME PLEYT,P( 1K, 2O, 1HF/HOLLANDA)	GO-R0053	01393A	30	Draining Pipe Hole	3	PH150	K12109	1	20	0,25
01481P	G2000 4 GAZLI HIGH FLAME PLEYT,P( 1K, 2O, 1HF/HOLLANDA)	GO-R0053	01393A	40	Leveling Slope	20	500T HP.	TK70001	2	30	0,3
01481P	G2000 4 GAZLI HIGH FLAME PLEYT,P( 1K, 2O, 1HF/HOLLANDA)	GO-R0053	01393A	60	Flanging	20	500T HP.	TK40003	2	30	0,4
01482P	G2000 4 GAZLI HIGH FLAME INOX PLEYT,P(1HF 2O 1K/HOLLALI)	GO-R0053	01390A	10	Stroking	20	500T HP.	TK20001	2	30	0,45
01482P	G2000 4 GAZLI HIGH FLAME INOX PLEYT,P(1HF 2O 1K/HOLLALI)	GO-R0053	01390A	20	Peripheral Cutting	20	500T HP.	TK19001	2	30	0,25
01482P	G2000 4 GAZLI HIGH FLAME INOX PLEYT,P(1HF 2O 1K/HOLLALI)	GO-R0053	01390A	30	Draining Pipe Hole	3	PH150	K12109	1	20	0,25
01482P	G2000 4 GAZLI HIGH FLAME INOX PLEYT,P(1HF 2O 1K/HOLLALI)	GO-R0053	01390A	40	Leveling Slope	20	500T HP.	TK70001	2	30	0,3
01482P	G2000 4 GAZLI HIGH FLAME INOX PLEYT,P(1HF 2O 1K/HOLLALI)	GO-R0053	01390A	60	Flanging	20	500T HP.	TK40003	2	30	0,4
1100017P	G2000 İÇ KASET GÖVDE	GO-R0063	11367A	10	Stroking	20	500T HP.	TK20005	2	30	0,3
1100017P	G2000 İÇ KASET GÖVDE	GO-R0063	11367A	20	Peripheral Cutting	20	500T HP.	TK19005	2	30	0,25
1100017P	G2000 İÇ KASET GÖVDE	GO-R0063	11367A	30	Flanging	20	500T HP.	TK40004	2	30	0,3
11427P	G2000 İÇ KASET GÖVDE(TEL RAFLI/PERDESİZ/LAMBALI)	GO-R0063	11367A	10	Stroking	20	500T HP.	TK20005	2	30	0,3
11427P	G2000 İÇ KASET GÖVDE(TEL RAFLI/PERDESİZ/LAMBALI)	GO-R0063	11367A	20	Peripheral Cutting	20	500T HP.	TK19005	2	30	0,25
11427P	G2000 İÇ KASET GÖVDE(TEL RAFLI/PERDESİZ/LAMBALI)	GO-R0063	11367A	30	Flanging	20	500T HP.	TK40004	2	30	0,3
11430P	G2000 İÇ KASET GÖVDE	GO-R0063	11367A	10	Stroking	20	500T HP.	TK20005	2	30	0,3
11430P	G2000 İÇ KASET GÖVDE	GO-R0063	11367A	20	Peripheral Cutting	20	500T HP.	TK19005	2	30	0,25
11430P	G2000 İÇ KASET GÖVDE	GO-R0063	11367A	30	Flanging	20	500T HP.	TK40004	2	30	0,3
11431P	G2000 İÇ KASET GÖVDE(TEL RAFSIZ/KATALİTİK PERDELİ/LAM	GO-R0063	11367A	10	Stroking	20	500T HP.	TK20005	2	30	0,3
11431P	G2000 İÇ KASET GÖVDE(TEL RAFSIZ/KATALİTİK PERDELİ/LAM	GO-R0063	11367A	20	Peripheral Cutting	20	500T HP.	TK19005	2	30	0,25
11431P	G2000 İÇ KASET GÖVDE(TEL RAFSIZ/KATALİTİK PERDELİ/LAM	GO-R0063	11367A	30	Flanging	20	500T HP.	TK40004	2	30	0,3
07074P	G2000 DIŞ KASET SAĞ YAN KAPAK 90 CM LİK	GO-R0069	07074A	10	Draining	1	PH350	K10101	2	20	0,2
07074P	G2000 DIŞ KASET SAĞ YAN KAPAK 90 CM LİK	GO-R0069	07074A	20	Curling	1	PH350	K40544	2	20	0,33
07074P	G2000 DIŞ KASET SAĞ YAN KAPAK 90 CM LİK	GO-R0069	07074A	30	Bending	4	PH070	K11269	1	20	0,5
07074P	G2000 DIŞ KASET SAĞ YAN KAPAK 90 CM LİK	GO-R0069	07074A	40	Z - Curling	4	PH070	K11271	1	20	0,5
07075P	G2000 DIŞ KASET SOL YAN KAPAK 90 CM LİK	GO-R0069	07074A	10	Draining	1	PH350	K10101	2	20	0,2
07075P	G2000 DIŞ KASET SOL YAN KAPAK 90 CM LİK	GO-R0069	07074A	20	Curling	1	PH350	K40579	2	20	0,33
07075P	G2000 DIŞ KASET SOL YAN KAPAK 90 CM LİK	GO-R0069	07074A	30	Bending	4	PH070	K11269	1	20	0,5
07075P	G2000 DIŞ KASET SOL YAN KAPAK 90 CM LİK	GO-R0069	07074A	40	Z - Curling	4	PH070	K11271	1	20	0,5
07076P	G2000 DIŞ KASET SAĞ YAN KAPAK 90 CM LİK INOX	GO-R0069	07076A	10	Draining	1	PH350	K10101	2	20	0,2
07076P	G2000 DIŞ KASET SAĞ YAN KAPAK 90 CM LİK INOX	GO-R0069	07076A	20	Curling	1	PH350	K40544	2	20	0,33
07076P	G2000 DIŞ KASET SAĞ YAN KAPAK 90 CM LİK INOX	GO-R0069	07076A	30	Bending	4	PH070	K11269	1	20	0,5
07076P	G2000 DIŞ KASET SAĞ YAN KAPAK 90 CM LİK INOX	GO-R0069	07076A	40	Z - Curling	4	PH070	K11271	1	20	0,5
07077P	G2000 DIŞ KASET SOL YAN KAPAK 90 CM LİK INOX	GO-R0069	07076A	10	Draining	1	PH350	K10101	2	20	0,2
07077P	G2000 DIŞ KASET SOL YAN KAPAK 90 CM LİK INOX	GO-R0069	07076A	20	Curling	1	PH350	K40579	2	20	0,33
07077P	G2000 DIŞ KASET SOL YAN KAPAK 90 CM LİK INOX	GO-R0069	07076A	30	Bending	4	PH070	K11269	1	20	0,5
07077P	G2000 DIŞ KASET SOL YAN KAPAK 90 CM LİK INOX	GO-R0069	07076A	40	Z - Curling	4	PH070	K11271	1	20	0,5
11403P	G2000 KATEDRAL BRULORLU İÇ KASET GÖVDE	GO-R0122	11367A	10	Stroking	20	500T HP.	TK20005	2	30	0,3
11403P	G2000 KATEDRAL BRULORLU İÇ KASET GÖVDE	GO-R0122	11367A	20	Peripheral Cutting	20	500T HP.	TK19005	2	30	0,25
11403P	G2000 KATEDRAL BRULORLU İÇ KASET GÖVDE	GO-R0122	11367A	30	Flanging	20	500T HP.	TK40004	2	30	0,3
11403P	G2000 KATEDRAL BRULORLU İÇ KASET GÖVDE	GO-R0122	11367A	50	Decoupling Catedral Hole	4	PH07001	K11284	1	20	0,25
01015P	TFA14\64 PLEYT,P	OA-R1028	01015A	10	Stroking	1	PH350	K20049	2	20	0,39

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01015P	TFA14\64 PLEYT,P	OA-R1028	01015A	20	Cutting Slope	2	DE085	K30037	1	20	0,254
01015P	TFA14\64 PLEYT,P	OA-R1028	01015A	30	Draining Head Ground	3	PH150	K12023	1	20	0,308
12141P	TOA11AUS01 ALT KAPAK ISI KORUMASI,P	OA-R1036	12141A	10	Draining	7	PE150	K10046	1	20	0,151
12141P	TOA11AUS01 ALT KAPAK ISI KORUMASI,P	OA-R1036	12141A	20	Curling	3	PE030	K40168	1	20	0,183
01098P	TOA36\O26 PLEYT GOVDESI CERCEVESI,P (PASLANMAZ)	OA-R1047	01098A	10	Stroking	1	PH350	K20076	2	20	0,333
01098P	TOA36\O26 PLEYT GOVDESI CERCEVESI,P (PASLANMAZ)	OA-R1047	01098A	20	Cutting Slope	2	DE085	K30041	1	20	0,224
01098P	TOA36\O26 PLEYT GOVDESI CERCEVESI,P (PASLANMAZ)	OA-R1047	01098A	30	Draining Core	3	PH150	K12053	1	20	0,23
01098P	TOA36\O26 PLEYT GOVDESI CERCEVESI,P (PASLANMAZ)	OA-R1047	01098A	40	Corner Draining	4	PH07001	K10063	1	20	0,3
01098P	TOA36\O26 PLEYT GOVDESI CERCEVESI,P (PASLANMAZ)	OA-R1047	01098A	50	Bending Slope	3	PH150	K40194	1	20	0,18
01100P	TOA36\O26 PLEYT GOVDESI CERCEVESI,P (DKP)	OA-R1047	01100A	10	Stroking	1	PH350	K20076	2	20	0,333
01100P	TOA36\O26 PLEYT GOVDESI CERCEVESI,P (DKP)	OA-R1047	01100A	20	Cutting Slope	2	DE085	K30041	1	20	0,224
01100P	TOA36\O26 PLEYT GOVDESI CERCEVESI,P (DKP)	OA-R1047	01100A	30	Draining Core	3	PH150	K12053	1	20	0,23
01100P	TOA36\O26 PLEYT GOVDESI CERCEVESI,P (DKP)	OA-R1047	01100A	40	Corner Draining	4	PH07001	K10063	1	20	0,3
01100P	TOA36\O26 PLEYT GOVDESI CERCEVESI,P (DKP)	OA-R1047	01100A	50	Bending Slope	3	PH150	K40194	1	20	0,18
01099P	TOA36 PLEYT GOVDESI,P (GALVANIZ)	OA-R1048	01099A	10	Stroking	5	PH30001	K20051	2	20	0,39
01099P	TOA36 PLEYT GOVDESI,P (GALVANIZ)	OA-R1048	01099A	20	Peripheral Cutting	6	PE250	K13039	1	20	0,227
01099P	TOA36 PLEYT GOVDESI,P (GALVANIZ)	OA-R1048	01099A	30	Decoupling Clemence Hole	9	PE080	K11065	1	20	0,18
01101P	O26 PLEYT GOVDESI,P (GALVANIZ)	OA-R1049	01099A	10	Stroking	5	PH30001	K20051	2	20	0,39
01101P	O26 PLEYT GOVDESI,P (GALVANIZ)	OA-R1049	01099A	20	Peripheral Cutting	6	PE250	K13039	1	20	0,227
01064P	TFA 4 ELEKTRIKLI PLEYT,P (PASLANMAZ)	OA-R1051	01064A	10	Stroking	1	PH350	K20076	2	20	0,39
01064P	TFA 4 ELEKTRIKLI PLEYT,P (PASLANMAZ)	OA-R1051	01064A	20	Cutting Slope	2	DE085	K30041	1	20	0,254
01064P	TFA 4 ELEKTRIKLI PLEYT,P (PASLANMAZ)	OA-R1051	01064A	30	Draining Head Ground	3	PH150	K12023	1	20	0,23
01064P	TFA 4 ELEKTRIKLI PLEYT,P (PASLANMAZ)	OA-R1051	01064A	40	Bending Head Hook	3	PH150	K60011	1	20	0,25
12203P	O26 ALT KAPAK ISI KORUMASI,P	OA-R1095	12141A	10	Draining	7	PE150	K10046	1	20	0,15
12203P	O26 ALT KAPAK ISI KORUMASI,P	OA-R1095	12141A	20	Curling	10	PE030	K40168	1	20	0,183
12203P	O26 ALT KAPAK ISI KORUMASI,P	OA-R1095	12141A	30	Coutersinking	10	PE030	K60018	1	20	0,183
12202P	O14 ALT KAPAK ISI KORUMASI,P	OA-R1096	12141A	10	Draining	7	PE150	K10046	1	20	0,15
12202P	O14 ALT KAPAK ISI KORUMASI,P	OA-R1096	12141A	20	Curling	10	PE030	K40168	1	20	0,183
12202P	O14 ALT KAPAK ISI KORUMASI,P	OA-R1096	12141A	30	Coutersinking	10	PE030	K60018	1	20	0,183
01178P	TOA21 PLEYT,P (HIGH FLAME /KOPLE SONME EMN.)	OA-R1099	01086A	10	Stroking	1	PH600	K20065	2	20	0,478
01178P	TOA21 PLEYT,P (HIGH FLAME /KOPLE SONME EMN.)	OA-R1099	01086A	20	Cutting Slope	2	DE085	K30072	1	20	0,254
01178P	TOA21 PLEYT,P (HIGH FLAME /KOPLE SONME EMN.)	OA-R1099	01086A	30	Draining Pipe and Pannel Box	3	PH150	K11197	1	20	0,23
01178P	TOA21 PLEYT,P (HIGH FLAME /KOPLE SONME EMN.)	OA-R1099	01086A	40	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,18
01178P	TOA21 PLEYT,P (HIGH FLAME /KOPLE SONME EMN.)	OA-R1099	01086A	50	Corner Draining	16	SD40007	SD40007	1	20	0,33
01178P	TOA21 PLEYT,P (HIGH FLAME /KOPLE SONME EMN.)	OA-R1099	01086A	60	Bending Slope	3	PH150	K30039	1	20	0,23
01180P	TOA21 PLEYT,P (HIGH FLAME/SONME EMN.SI.Z)	OA-R1099	01086A	10	Stroking	1	PH600	K20065	2	20	0,478
01180P	TOA21 PLEYT,P (HIGH FLAME/SONME EMN.SI.Z)	OA-R1099	01086A	20	Cutting Slope	2	DE085	K30072	1	20	0,254
01180P	TOA21 PLEYT,P (HIGH FLAME/SONME EMN.SI.Z)	OA-R1099	01086A	30	Draining Pipe and Pannel Box	3	PH150	K11197	1	20	0,23
01180P	TOA21 PLEYT,P (HIGH FLAME/SONME EMN.SI.Z)	OA-R1099	01086A	40	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,18
01180P	TOA21 PLEYT,P (HIGH FLAME/SONME EMN.SI.Z)	OA-R1099	01086A	50	Corner Draining	16	SD40007	SD40007	1	20	0,33
01180P	TOA21 PLEYT,P (HIGH FLAME/SONME EMN.SI.Z)	OA-R1099	01086A	60	Bending Slope	3	PH150	K30039	1	20	0,23
01172P	TOA4/TOM4 PLEYT,P (ESTETIK BEK GR.ICIN)	OA-R1116	01025A	10	Stroking	1	PH600	K20040	2	20	0,39
01172P	TOA4/TOM4 PLEYT,P (ESTETIK BEK GR.ICIN)	OA-R1116	01025A	20	Cutting Slope	2	DE085	K30025	1	20	0,254
01172P	TOA4/TOM4 PLEYT,P (ESTETIK BEK GR.ICIN)	OA-R1116	01025A	30	Decoupling Pipe Hole	3	PH150	K11067	1	20	0,308

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01172P	TOA4/TOM4 PLEYT,P (ESTETIK BEK GR.ICIN)	OA-R1116	01025A	40	Draining Pannel Ground	9	PE080	K11066	1	20	0,224
01403P	TOA4/TOM4 PLEYT,P (ESTETIK BEK GR.ICIN)SPRA CONTROL	OA-R1116	01025A	10	Stroking	1	PH600	K20040	2	20	0,39
01403P	TOA4/TOM4 PLEYT,P (ESTETIK BEK GR.ICIN)SPRA CONTROL	OA-R1116	01025A	20	Cutting Slope	2	DE085	K30025	1	20	0,254
01403P	TOA4/TOM4 PLEYT,P (ESTETIK BEK GR.ICIN)SPRA CONTROL	OA-R1116	01025A	30	Decoupling Pipe Hole	3	PH150	K11067	1	20	0,308
01403P	TOA4/TOM4 PLEYT,P (ESTETIK BEK GR.ICIN)SPRA CONTROL	OA-R1116	01025A	40	Draining Pannel Ground	9	PE080	K11066	1	20	0,18
01403P	TOA4/TOM4 PLEYT,P (ESTETIK BEK GR.ICIN)SPRA CONTROL	OA-R1116	01025A	50	Draining Lighter Hook	9	PE080	K11289	1	20	0,25
01215P	TOA21 PLEYT,P (KENARLAMALI)	OA-R1138	01086A	10	Stroking	1	PH600	K20065	2	20	0,478
01215P	TOA21 PLEYT,P (KENARLAMALI)	OA-R1138	01086A	20	Cutting Slope	2	DE085	K30072	1	20	0,254
01215P	TOA21 PLEYT,P (KENARLAMALI)	OA-R1138	01086A	30	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,23
01215P	TOA21 PLEYT,P (KENARLAMALI)	OA-R1138	01086A	40	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,18
01215P	TOA21 PLEYT,P (KENARLAMALI)	OA-R1138	01086A	50	Corner Draining	16	SD40007	SD40007	1	20	0,33
01215P	TOA21 PLEYT,P (KENARLAMALI)	OA-R1138	01086A	60	Bending Slope	3	PH150	K30039	1	20	0,23
01216P	TOA21 PLEYT,P (CAKMAKSIZ/KENARLAMALI)	OA-R1138	01086A	10	Stroking	1	PH600	K20065	2	20	0,478
01216P	TOA21 PLEYT,P (CAKMAKSIZ/KENARLAMALI)	OA-R1138	01086A	20	Cutting Slope	2	DE085	K30072	1	20	0,254
01216P	TOA21 PLEYT,P (CAKMAKSIZ/KENARLAMALI)	OA-R1138	01086A	30	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,23
01216P	TOA21 PLEYT,P (CAKMAKSIZ/KENARLAMALI)	OA-R1138	01086A	40	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,18
01216P	TOA21 PLEYT,P (CAKMAKSIZ/KENARLAMALI)	OA-R1138	01086A	50	Corner Draining	16	SD40007	SD40007	1	20	0,33
01216P	TOA21 PLEYT,P (CAKMAKSIZ/KENARLAMALI)	OA-R1138	01086A	60	Bending Slope	3	PH150	K30039	1	20	0,23
01217P	TOA21 PLEYT,P (SONME EMVNI YETLI/KENARLAMALI)	OA-R1138	01086A	10	Stroking	1	PH600	K20065	2	20	0,478
01217P	TOA21 PLEYT,P (SONME EMVNI YETLI/KENARLAMALI)	OA-R1138	01086A	20	Cutting Slope	2	DE085	K30072	1	20	0,254
01217P	TOA21 PLEYT,P (SONME EMVNI YETLI/KENARLAMALI)	OA-R1138	01086A	30	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,23
01217P	TOA21 PLEYT,P (SONME EMVNI YETLI/KENARLAMALI)	OA-R1138	01086A	40	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,18
01217P	TOA21 PLEYT,P (SONME EMVNI YETLI/KENARLAMALI)	OA-R1138	01086A	50	Corner Draining	16	SD40007	SD40007	1	20	0,33
01217P	TOA21 PLEYT,P (SONME EMVNI YETLI/KENARLAMALI)	OA-R1138	01086A	60	Bending Slope	3	PH150	K30039	1	20	0,23
01218P	TOA21 PLEYT,P (SONME EMVNI YETLI/CAKMAKSIZ/KENARLAMALI)	OA-R1138	01086A	10	Stroking	1	PH600	K20065	2	20	0,478
01218P	TOA21 PLEYT,P (SONME EMVNI YETLI/CAKMAKSIZ/KENARLAMALI)	OA-R1138	01086A	20	Cutting Slope	2	DE085	K30072	1	20	0,254
01218P	TOA21 PLEYT,P (SONME EMVNI YETLI/CAKMAKSIZ/KENARLAMALI)	OA-R1138	01086A	30	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,23
01218P	TOA21 PLEYT,P (SONME EMVNI YETLI/CAKMAKSIZ/KENARLAMALI)	OA-R1138	01086A	40	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,18
01218P	TOA21 PLEYT,P (SONME EMVNI YETLI/CAKMAKSIZ/KENARLAMALI)	OA-R1138	01086A	50	Corner Draining	16	SD40007	SD40007	1	20	0,33
01218P	TOA21 PLEYT,P (SONME EMVNI YETLI/CAKMAKSIZ/KENARLAMALI)	OA-R1138	01086A	60	Bending Slope	3	PH150	K30039	1	20	0,23
01310P	TOA21 PLEYT,P (KENARLAMALI\MOLVENO CAKMAK)	OA-R1138	01086A	10	Stroking	1	PH600	K20065	2	20	0,478
01310P	TOA21 PLEYT,P (KENARLAMALI\MOLVENO CAKMAK)	OA-R1138	01086A	20	Cutting Slope	2	DE085	K30072	1	20	0,254
01310P	TOA21 PLEYT,P (KENARLAMALI\MOLVENO CAKMAK)	OA-R1138	01086A	30	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,23
01310P	TOA21 PLEYT,P (KENARLAMALI\MOLVENO CAKMAK)	OA-R1138	01086A	40	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,18
01310P	TOA21 PLEYT,P (KENARLAMALI\MOLVENO CAKMAK)	OA-R1138	01086A	50	Corner Draining	16	SD40007	SD40007	1	20	0,33
01310P	TOA21 PLEYT,P (KENARLAMALI\MOLVENO CAKMAK)	OA-R1138	01086A	60	Bending Slope	3	PH150	K30039	1	20	0,23
01311P	TOA21 PLEYT,P (SONME EMVNI YETLI/KENARLAMALI\MOLVENO)	OA-R1138	01086A	10	Stroking	1	PH600	K20065	2	20	0,478
01311P	TOA21 PLEYT,P (SONME EMVNI YETLI/KENARLAMALI\MOLVENO)	OA-R1138	01086A	20	Cutting Slope	2	DE085	K30072	1	20	0,254
01311P	TOA21 PLEYT,P (SONME EMVNI YETLI/KENARLAMALI\MOLVENO)	OA-R1138	01086A	30	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,23
01311P	TOA21 PLEYT,P (SONME EMVNI YETLI/KENARLAMALI\MOLVENO)	OA-R1138	01086A	40	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,18
01311P	TOA21 PLEYT,P (SONME EMVNI YETLI/KENARLAMALI\MOLVENO)	OA-R1138	01086A	50	Corner Draining	16	SD40007	SD40007	1	20	0,33
01311P	TOA21 PLEYT,P (SONME EMVNI YETLI/KENARLAMALI\MOLVENO)	OA-R1138	01086A	60	Bending Slope	3	PH150	K30039	1	20	0,23
01219P	TOA21 PLEYT,P (INOX/KENARLAMALI)	OA-R1139	01088A	10	Stroking	1	PH600	K12067	2	20	0,39
01219P	TOA21 PLEYT,P (INOX/KENARLAMALI)	OA-R1139	01088A	20	Cutting Slope	2	DE085	K30034	1	20	0,254

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01219P	TOA21 PLEYT,P (INOX/KENARLAMALI)	OA-R1139	01088A	30	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,308
01219P	TOA21 PLEYT,P (INOX/KENARLAMALI)	OA-R1139	01088A	40	Countersinking Pannel	9	PE080	K11212	1	20	0,18
01219P	TOA21 PLEYT,P (INOX/KENARLAMALI)	OA-R1139	01088A	50	Embossing	9	PE080	K64083	1	20	0,25
01220P	TOA21 PLEYT,P (PASLANMAZ/SONME EMNİYETLİ/KENARLAMA)	OA-R1139	01088A	10	Stroking	1	PH600	K12067	2	20	0,478
01220P	TOA21 PLEYT,P (PASLANMAZ/SONME EMNİYETLİ/KENARLAMA)	OA-R1139	01088A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01220P	TOA21 PLEYT,P (PASLANMAZ/SONME EMNİYETLİ/KENARLAMA)	OA-R1139	01088A	30	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,23
01220P	TOA21 PLEYT,P (PASLANMAZ/SONME EMNİYETLİ/KENARLAMA)	OA-R1139	01088A	40	Countersinking Pannel	9	PE080	K11212	1	20	0,18
01220P	TOA21 PLEYT,P (PASLANMAZ/SONME EMNİYETLİ/KENARLAMA)	OA-R1139	01088A	50	Embossing	9	PE080	K64083	1	20	0,18
01231P	TOA21 PLEYT,P (PASLANMAZ/KENARLAMALI/CAKMAKSIZ)	OA-R1139	01088A	10	Stroking	1	PH600	K12067	2	20	0,478
01231P	TOA21 PLEYT,P (PASLANMAZ/KENARLAMALI/CAKMAKSIZ)	OA-R1139	01088A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01231P	TOA21 PLEYT,P (PASLANMAZ/KENARLAMALI/CAKMAKSIZ)	OA-R1139	01088A	30	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,23
01231P	TOA21 PLEYT,P (PASLANMAZ/KENARLAMALI/CAKMAKSIZ)	OA-R1139	01088A	40	Countersinking Pannel	9	PE080	K11212	1	20	0,18
01231P	TOA21 PLEYT,P (PASLANMAZ/KENARLAMALI/CAKMAKSIZ)	OA-R1139	01088A	50	Embossing	9	PE080	K64083	1	20	0,18
01232P	TOA21 PLEYT,P (PASLANMAZ/KENARLAMALI/CAKMAKSIZ/SON)	OA-R1139	01086A	10	Stroking	1	PH600	K12067	2	20	0,478
01232P	TOA21 PLEYT,P (PASLANMAZ/KENARLAMALI/CAKMAKSIZ/SON)	OA-R1139	01086A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01232P	TOA21 PLEYT,P (PASLANMAZ/KENARLAMALI/CAKMAKSIZ/SON)	OA-R1139	01086A	30	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,23
01232P	TOA21 PLEYT,P (PASLANMAZ/KENARLAMALI/CAKMAKSIZ/SON)	OA-R1139	01086A	40	Countersinking Pannel	9	PE080	K11212	1	20	0,18
01232P	TOA21 PLEYT,P (PASLANMAZ/KENARLAMALI/CAKMAKSIZ/SON)	OA-R1139	01086A	50	Embossing	9	PE080	K64083	1	20	0,18
01426P	TOA21 PLEYT,P (INOX,KENARLAMALI,CAKMAKLI,KABARTMASI)	OA-R1139	01088A	10	Stroking	1	PH600	K12067	2	20	0,478
01426P	TOA21 PLEYT,P (INOX,KENARLAMALI,CAKMAKLI,KABARTMASI)	OA-R1139	01088A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01426P	TOA21 PLEYT,P (INOX,KENARLAMALI,CAKMAKLI,KABARTMASI)	OA-R1139	01088A	30	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,23
01426P	TOA21 PLEYT,P (INOX,KENARLAMALI,CAKMAKLI,KABARTMASI)	OA-R1139	01088A	40	Countersinking Pannel	9	PE080	K11212	1	20	0,18
01426P	TOA21 PLEYT,P (INOX,KENARLAMALI,CAKMAKLI,KABARTMASI)	OA-R1139	01088A	50	Embossing	9	PE080	K64083	1	20	0,18
01502P	TOA21 PLEYT	OA-R1254	01086A	10	Stroking	1	PH350	K20065	2	20	0,478
01502P	TOA21 PLEYT	OA-R1254	01086A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01502P	TOA21 PLEYT	OA-R1254	01086A	30	Draining Pipe Hole	3	PH150	K12067	1	20	0,23
01502P	TOA21 PLEYT	OA-R1254	01086A	40	Draining Pannel Ground	9	PE080	YOK	1	20	0,18
01502P	TOA21 PLEYT	OA-R1254	01086A	50	Corner Draining	16	SD40002	SD40002	1	20	0,33
01502P	TOA21 PLEYT	OA-R1254	01086A	60	Bending Slope	3	PH150	K30039	1	20	0,23
01503P	TOA21 INOX PLEYT	OA-R1254	01088A	10	Stroking	1	PH350	K20065	2	20	0,39
01503P	TOA21 INOX PLEYT	OA-R1254	01088A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01503P	TOA21 INOX PLEYT	OA-R1254	01088A	30	Draining Pipe Hole	3	PH150	K12067	1	20	0,308
01503P	TOA21 INOX PLEYT	OA-R1254	01088A	40	Draining Pannel Ground	9	PE080	YOK	1	20	0,224
09084P	TOA41/42 ALT KAPAK,P	OA-R1148	09085A	10	Draining	5	PH30001	K13016	2	20	0,25
09084P	TOA41/42 ALT KAPAK,P	OA-R1148	09085A	20	Decoupling Pole Hole	10	PE030	K11235	1	20	0,18
09084P	TOA41/42 ALT KAPAK,P	OA-R1148	09085A	30	First Curling	5	PH30001	K40108	2	20	0,3
09084P	TOA41/42 ALT KAPAK,P	OA-R1148	09085A	40	Second Curling	3	PH150	K40495	1	20	0,3
01233P	TOA24 PLEYT,P (INOX/GOTTAK TIPI SALTER BOSALTMALI)	OA-R1154	01088A	10	Stroking	1	PH600	K20067	2	20	0,39
01233P	TOA24 PLEYT,P (INOX/GOTTAK TIPI SALTER BOSALTMALI)	OA-R1154	01088A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01233P	TOA24 PLEYT,P (INOX/GOTTAK TIPI SALTER BOSALTMALI)	OA-R1154	01088A	30	Draining Head Ground	3	PH150	K19079	1	20	0,308
01233P	TOA24 PLEYT,P (INOX/GOTTAK TIPI SALTER BOSALTMALI)	OA-R1154	01088A	40	Draining Switch Hook	9	PE080	K11217	1	20	0,18
01233P	TOA24 PLEYT,P (INOX/GOTTAK TIPI SALTER BOSALTMALI)	OA-R1154	01088A	50	Embossing	9	PE080	K64083	1	20	0,25
01234P	TOA24 PLEYT,P (INOX/EGO TIPI SALTER BOSALTMALI)	OA-R1154	01088A	10	Stroking	1	PH600	K20067	2	20	0,39
01234P	TOA24 PLEYT,P (INOX/EGO TIPI SALTER BOSALTMALI)	OA-R1154	01088A	20	Cutting Slope	2	DE085	K30034	1	20	0,254

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01234P	TOA24 PLEYT,P (INOX/EGO TIPI SALTER BOSALTMALI)	OA-R1154	01088A	30	Draining Head Ground	3	PH150	K19079	1	20	0,308
01234P	TOA24 PLEYT,P (INOX/EGO TIPI SALTER BOSALTMALI)	OA-R1154	01088A	40	Draining Switch Hook	9	PE080	K11217	1	20	0,224
01235P	TOA24 PLEYT,P (GOTTAK TIPI SALTER BOSALTMALI)	OA-R1155	01086A	10	Stroking	1	PH600	K20067	2	20	0,478
01235P	TOA24 PLEYT,P (GOTTAK TIPI SALTER BOSALTMALI)	OA-R1155	01086A	20	Cutting Slope	2	DE085	K30072	1	20	0,254
01235P	TOA24 PLEYT,P (GOTTAK TIPI SALTER BOSALTMALI)	OA-R1155	01086A	30	Head Draing	3	PH150	K19079	1	20	0,23
01235P	TOA24 PLEYT,P (GOTTAK TIPI SALTER BOSALTMALI)	OA-R1155	01086A	40	Draining Switch Hook	9	PE080	K11217	1	20	0,18
01235P	TOA24 PLEYT,P (GOTTAK TIPI SALTER BOSALTMALI)	OA-R1155	01086A	50	Corner Draining	16	SD40007	SD40007	1	20	0,33
01235P	TOA24 PLEYT,P (GOTTAK TIPI SALTER BOSALTMALI)	OA-R1155	01086A	60	Bending Slope	3	PH150	K30039	1	20	0,23
01236P	TOA24 PLEYT,P (EGO TIPI SALTER BOSALTMALI)	OA-R1155	01086A	10	Stroking	1	PH600	K20067	2	20	0,478
01236P	TOA24 PLEYT,P (EGO TIPI SALTER BOSALTMALI)	OA-R1155	01086A	20	Cutting Slope	2	DE085	K30072	1	20	0,254
01236P	TOA24 PLEYT,P (EGO TIPI SALTER BOSALTMALI)	OA-R1155	01086A	30	Head Draing	3	PH150	K19079	1	20	0,23
01236P	TOA24 PLEYT,P (EGO TIPI SALTER BOSALTMALI)	OA-R1155	01086A	40	Draining Switch Hook	9	PE080	K11217	1	20	0,18
01236P	TOA24 PLEYT,P (EGO TIPI SALTER BOSALTMALI)	OA-R1155	01086A	50	Corner Draining	16	SD40007	SD40007	1	20	0,33
01236P	TOA24 PLEYT,P (EGO TIPI SALTER BOSALTMALI)	OA-R1155	01086A	60	Bending Slope	3	PH150	K30039	1	20	0,23
01237P	TOA22 PLEYT,P (EGO SALTER BOSALTMALI)	OA-R1156	01086A	10	Stroking	1	PH600	K20066	2	20	0,478
01237P	TOA22 PLEYT,P (EGO SALTER BOSALTMALI)	OA-R1156	01086A	20	Cutting Slope	2	DE085	K30072	1	20	0,254
01237P	TOA22 PLEYT,P (EGO SALTER BOSALTMALI)	OA-R1156	01086A	30	Head Draing	9	PE080	K12070	1	20	0,23
01237P	TOA22 PLEYT,P (EGO SALTER BOSALTMALI)	OA-R1156	01086A	40	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,25
01237P	TOA22 PLEYT,P (EGO SALTER BOSALTMALI)	OA-R1156	01086A	50	Countersinking Pannel	9	PE080	K11212	1	20	0,25
01237P	TOA22 PLEYT,P (EGO SALTER BOSALTMALI)	OA-R1156	01086A	60	Draining Switch Hook	9	PE080	K11217	1	20	0,18
01237P	TOA22 PLEYT,P (EGO SALTER BOSALTMALI)	OA-R1156	01086A	70	Corner Draining	16	SD40007	SD40007	1	20	0,33
01237P	TOA22 PLEYT,P (EGO SALTER BOSALTMALI)	OA-R1156	01086A	80	Bending Slope	3	PH150	K30039	1	20	0,23
01238P	TOA22 PLEYT,P (CAKMAKSI Z/EGO SALTER BOSALTMALI)	OA-R1156	01086A	10	Stroking	1	PH600	K20066	2	20	0,478
01238P	TOA22 PLEYT,P (CAKMAKSI Z/EGO SALTER BOSALTMALI)	OA-R1156	01086A	20	Cutting Slope	2	DE085	K30072	1	20	0,254
01238P	TOA22 PLEYT,P (CAKMAKSI Z/EGO SALTER BOSALTMALI)	OA-R1156	01086A	30	Head Draing	9	PE080	K12070	1	20	0,23
01238P	TOA22 PLEYT,P (CAKMAKSI Z/EGO SALTER BOSALTMALI)	OA-R1156	01086A	40	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,25
01238P	TOA22 PLEYT,P (CAKMAKSI Z/EGO SALTER BOSALTMALI)	OA-R1156	01086A	50	Countersinking Pannel	9	PE080	K11212	1	20	0,25
01238P	TOA22 PLEYT,P (CAKMAKSI Z/EGO SALTER BOSALTMALI)	OA-R1156	01086A	60	Draining Switch Hook	9	PE080	K11217	1	20	0,18
01238P	TOA22 PLEYT,P (CAKMAKSI Z/EGO SALTER BOSALTMALI)	OA-R1156	01086A	70	Corner Draining	16	SD40007	SD40007	1	20	0,33
01238P	TOA22 PLEYT,P (CAKMAKSI Z/EGO SALTER BOSALTMALI)	OA-R1156	01086A	80	Bending Slope	3	PH150	K30039	1	20	0,23
01239P	TOA22 PLEYT,P (SONME EMN./EGO SALTER BOSALTMALI)	OA-R1156	01086A	10	Stroking	1	PH600	K20066	2	20	0,478
01239P	TOA22 PLEYT,P (SONME EMN./EGO SALTER BOSALTMALI)	OA-R1156	01086A	20	Cutting Slope	2	DE085	K30072	1	20	0,254
01239P	TOA22 PLEYT,P (SONME EMN./EGO SALTER BOSALTMALI)	OA-R1156	01086A	30	Head Draing	9	PE080	K12070	1	20	0,23
01239P	TOA22 PLEYT,P (SONME EMN./EGO SALTER BOSALTMALI)	OA-R1156	01086A	40	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,25
01239P	TOA22 PLEYT,P (SONME EMN./EGO SALTER BOSALTMALI)	OA-R1156	01086A	50	Countersinking Pannel	9	PE080	K11212	1	20	0,25
01239P	TOA22 PLEYT,P (SONME EMN./EGO SALTER BOSALTMALI)	OA-R1156	01086A	60	Draining Switch Hook	9	PE080	K11217	1	20	0,18
01239P	TOA22 PLEYT,P (SONME EMN./EGO SALTER BOSALTMALI)	OA-R1156	01086A	70	Corner Draining	16	SD40007	SD40007	1	20	0,33
01239P	TOA22 PLEYT,P (SONME EMN./EGO SALTER BOSALTMALI)	OA-R1156	01086A	80	Bending Slope	3	PH150	K30039	1	20	0,23
01240P	TOA22 PLEYT,P (GOTTAK SALTER BOSALTMALI)	OA-R1156	01086A	10	Stroking	1	PH600	K20066	2	20	0,478
01240P	TOA22 PLEYT,P (GOTTAK SALTER BOSALTMALI)	OA-R1156	01086A	20	Cutting Slope	2	DE085	K30072	1	20	0,254
01240P	TOA22 PLEYT,P (GOTTAK SALTER BOSALTMALI)	OA-R1156	01086A	30	Head Draing	9	PE080	K12070	1	20	0,23
01240P	TOA22 PLEYT,P (GOTTAK SALTER BOSALTMALI)	OA-R1156	01086A	40	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,25
01240P	TOA22 PLEYT,P (GOTTAK SALTER BOSALTMALI)	OA-R1156	01086A	50	Countersinking Pannel	9	PE080	K11212	1	20	0,25
01240P	TOA22 PLEYT,P (GOTTAK SALTER BOSALTMALI)	OA-R1156	01086A	60	Draining Switch Hook	9	PE080	K11217	1	20	0,18

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01240P	TOA22 PLEYT,P (GOTTAK SALTER BOSALTMALI)	OA-R1156	01086A	70	Corner Draining	16	SD40007	SD40007	1	20	0,33
01240P	TOA22 PLEYT,P (GOTTAK SALTER BOSALTMALI)	OA-R1156	01086A	80	Bending Slope	3	PH150	K30039	1	20	0,23
01241P	TOA22 PLEYT,P (CAKMAKSIZ/GOTTAK SALTER BOSALTMALI)	OA-R1156	01086A	10	Stroking	1	PH600	K20066	2	20	0,478
01241P	TOA22 PLEYT,P (CAKMAKSIZ/GOTTAK SALTER BOSALTMALI)	OA-R1156	01086A	20	Cutting Slope	2	DE085	K30072	1	20	0,254
01241P	TOA22 PLEYT,P (CAKMAKSIZ/GOTTAK SALTER BOSALTMALI)	OA-R1156	01086A	30	Head Draing	9	PE080	K12070	1	20	0,23
01241P	TOA22 PLEYT,P (CAKMAKSIZ/GOTTAK SALTER BOSALTMALI)	OA-R1156	01086A	40	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,25
01241P	TOA22 PLEYT,P (CAKMAKSIZ/GOTTAK SALTER BOSALTMALI)	OA-R1156	01086A	50	Countersinking Pannel	9	PE080	K11212	1	20	0,25
01241P	TOA22 PLEYT,P (CAKMAKSIZ/GOTTAK SALTER BOSALTMALI)	OA-R1156	01086A	60	Draining Switch Hook	9	PE080	K11217	1	20	0,18
01241P	TOA22 PLEYT,P (CAKMAKSIZ/GOTTAK SALTER BOSALTMALI)	OA-R1156	01086A	70	Corner Draining	16	SD40007	SD40007	1	20	0,33
01241P	TOA22 PLEYT,P (CAKMAKSIZ/GOTTAK SALTER BOSALTMALI)	OA-R1156	01086A	80	Bending Slope	3	PH150	K30039	1	20	0,23
01242P	TOA22 PLEYT,P (SONME EMNI YETLI/GOTTAK SALTER BOSALT	OA-R1156	01086A	10	Stroking	1	PH600	K20066	2	20	0,478
01242P	TOA22 PLEYT,P (SONME EMNI YETLI/GOTTAK SALTER BOSALT	OA-R1156	01086A	20	Cutting Slope	2	DE085	K30072	1	20	0,254
01242P	TOA22 PLEYT,P (SONME EMNI YETLI/GOTTAK SALTER BOSALT	OA-R1156	01086A	30	Head Draing	9	PE080	K12070	1	20	0,23
01242P	TOA22 PLEYT,P (SONME EMNI YETLI/GOTTAK SALTER BOSALT	OA-R1156	01086A	40	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,25
01242P	TOA22 PLEYT,P (SONME EMNI YETLI/GOTTAK SALTER BOSALT	OA-R1156	01086A	50	Countersinking Pannel	9	PE080	K11212	1	20	0,25
01242P	TOA22 PLEYT,P (SONME EMNI YETLI/GOTTAK SALTER BOSALT	OA-R1156	01086A	60	Draining Switch Hook	9	PE080	K11217	1	20	0,18
01242P	TOA22 PLEYT,P (SONME EMNI YETLI/GOTTAK SALTER BOSALT	OA-R1156	01086A	70	Corner Draining	16	SD40007	SD40007	1	20	0,33
01242P	TOA22 PLEYT,P (SONME EMNI YETLI/GOTTAK SALTER BOSALT	OA-R1156	01086A	80	Bending Slope	3	PH150	K30039	1	20	0,23
01316P	TOA22 PLEYT,P (EGO SALTER BOSALTMALI\MOLVENO CAKMA	OA-R1156	01086A	10	Stroking	1	PH600	K20066	2	20	0,478
01316P	TOA22 PLEYT,P (EGO SALTER BOSALTMALI\MOLVENO CAKMA	OA-R1156	01086A	20	Cutting Slope	2	DE085	K30072	1	20	0,254
01316P	TOA22 PLEYT,P (EGO SALTER BOSALTMALI\MOLVENO CAKMA	OA-R1156	01086A	30	Head Draing	9	PE080	K12070	1	20	0,23
01316P	TOA22 PLEYT,P (EGO SALTER BOSALTMALI\MOLVENO CAKMA	OA-R1156	01086A	40	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,25
01316P	TOA22 PLEYT,P (EGO SALTER BOSALTMALI\MOLVENO CAKMA	OA-R1156	01086A	50	Countersinking Pannel	9	PE080	K11212	1	20	0,25
01316P	TOA22 PLEYT,P (EGO SALTER BOSALTMALI\MOLVENO CAKMA	OA-R1156	01086A	60	Draining Switch Hook	9	PE080	K11217	1	20	0,18
01316P	TOA22 PLEYT,P (EGO SALTER BOSALTMALI\MOLVENO CAKMA	OA-R1156	01086A	70	Corner Draining	16	SD40007	SD40007	1	20	0,33
01316P	TOA22 PLEYT,P (EGO SALTER BOSALTMALI\MOLVENO CAKMA	OA-R1156	01086A	80	Bending Slope	3	PH150	K30039	1	20	0,23
01317P	TOA22 PLEYT,P (SONME EMN./EGO SALTER BOSALTMALI\MOL	OA-R1156	01086A	10	Stroking	1	PH600	K20066	2	20	0,478
01317P	TOA22 PLEYT,P (SONME EMN./EGO SALTER BOSALTMALI\MOL	OA-R1156	01086A	20	Cutting Slope	2	DE085	K30072	1	20	0,254
01317P	TOA22 PLEYT,P (SONME EMN./EGO SALTER BOSALTMALI\MOL	OA-R1156	01086A	30	Head Draing	9	PE080	K12070	1	20	0,23
01317P	TOA22 PLEYT,P (SONME EMN./EGO SALTER BOSALTMALI\MOL	OA-R1156	01086A	40	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,25
01317P	TOA22 PLEYT,P (SONME EMN./EGO SALTER BOSALTMALI\MOL	OA-R1156	01086A	50	Countersinking Pannel	9	PE080	K11212	1	20	0,25
01317P	TOA22 PLEYT,P (SONME EMN./EGO SALTER BOSALTMALI\MOL	OA-R1156	01086A	60	Draining Switch Hook	9	PE080	K11217	1	20	0,18
01317P	TOA22 PLEYT,P (SONME EMN./EGO SALTER BOSALTMALI\MOL	OA-R1156	01086A	70	Corner Draining	16	SD40007	SD40007	1	20	0,33
01317P	TOA22 PLEYT,P (SONME EMN./EGO SALTER BOSALTMALI\MOL	OA-R1156	01086A	80	Bending Slope	3	PH150	K30039	1	20	0,23
01318P	TOA22 PLEYT,P (GOTTAK SALTER BOSALTMALI\MOLVENO CAI	OA-R1156	01086A	10	Stroking	1	PH600	K20066	2	20	0,478
01318P	TOA22 PLEYT,P (GOTTAK SALTER BOSALTMALI\MOLVENO CAI	OA-R1156	01086A	20	Cutting Slope	2	DE085	K30072	1	20	0,254
01318P	TOA22 PLEYT,P (GOTTAK SALTER BOSALTMALI\MOLVENO CAI	OA-R1156	01086A	30	Head Draing	9	PE080	K12070	1	20	0,23
01318P	TOA22 PLEYT,P (GOTTAK SALTER BOSALTMALI\MOLVENO CAI	OA-R1156	01086A	40	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,25
01318P	TOA22 PLEYT,P (GOTTAK SALTER BOSALTMALI\MOLVENO CAI	OA-R1156	01086A	50	Countersinking Pannel	9	PE080	K11212	1	20	0,25
01318P	TOA22 PLEYT,P (GOTTAK SALTER BOSALTMALI\MOLVENO CAI	OA-R1156	01086A	60	Draining Switch Hook	9	PE080	K11217	1	20	0,18
01318P	TOA22 PLEYT,P (GOTTAK SALTER BOSALTMALI\MOLVENO CAI	OA-R1156	01086A	70	Corner Draining	16	SD40007	SD40007	1	20	0,33
01318P	TOA22 PLEYT,P (GOTTAK SALTER BOSALTMALI\MOLVENO CAI	OA-R1156	01086A	80	Bending Slope	3	PH150	K30039	1	20	0,23
01319P	TOA22 PLEYT,P (SONME EMNYTLI/GOTTAK SALTER BOSALTM	OA-R1156	01086A	10	Stroking	1	PH600	K20066	2	20	0,478
01319P	TOA22 PLEYT,P (SONME EMNYTLI/GOTTAK SALTER BOSALTM	OA-R1156	01086A	20	Cutting Slope	2	DE085	K30072	1	20	0,254



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01319P	TOA22 PLEYT,P (SONME EMNYTLI/GOTTAK SALTER BOSALTM)	OA-R1156	01086A	30	Head Draing	9	PE080	K12070	1	20	0,23
01319P	TOA22 PLEYT,P (SONME EMNYTLI/GOTTAK SALTER BOSALTM)	OA-R1156	01086A	40	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,25
01319P	TOA22 PLEYT,P (SONME EMNYTLI/GOTTAK SALTER BOSALTM)	OA-R1156	01086A	50	Countersinking Pannel	9	PE080	K11212	1	20	0,25
01319P	TOA22 PLEYT,P (SONME EMNYTLI/GOTTAK SALTER BOSALTM)	OA-R1156	01086A	60	Draining Switch Hook	9	PE080	K11217	1	20	0,18
01319P	TOA22 PLEYT,P (SONME EMNYTLI/GOTTAK SALTER BOSALTM)	OA-R1156	01086A	70	Corner Draining	16	SD40007	SD40007	1	20	0,33
01319P	TOA22 PLEYT,P (SONME EMNYTLI/GOTTAK SALTER BOSALTM)	OA-R1156	01086A	80	Bending Slope	3	PH150	K30039	1	20	0,23
01243P	TOA22 PLEYT,P (INOX/EGO SALTER BOSALTMALI)	OA-R1157	01088A	10	Stroking	1	PH600	K20066	2	20	0,478
01243P	TOA22 PLEYT,P (INOX/EGO SALTER BOSALTMALI)	OA-R1157	01088A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01243P	TOA22 PLEYT,P (INOX/EGO SALTER BOSALTMALI)	OA-R1157	01088A	30	Head Draing	9	PE080	K12070	1	20	0,23
01243P	TOA22 PLEYT,P (INOX/EGO SALTER BOSALTMALI)	OA-R1157	01088A	40	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,25
01243P	TOA22 PLEYT,P (INOX/EGO SALTER BOSALTMALI)	OA-R1157	01088A	50	Countersinking Pannel	9	PE080	K11212	1	20	0,25
01243P	TOA22 PLEYT,P (INOX/EGO SALTER BOSALTMALI)	OA-R1157	01088A	60	Draining Switch Hook	9	PE080	K11217	1	20	0,18
01243P	TOA22 PLEYT,P (INOX/EGO SALTER BOSALTMALI)	OA-R1157	01088A	70	Embossing	9	PE080	K64085	1	20	0,18
01244P	TOA22 PLEYT,P (INOX/SON.EMINI YETLI/EGO SALTER BOSALTM)	OA-R1157	01088A	10	Stroking	1	PH600	K20066	2	20	0,478
01244P	TOA22 PLEYT,P (INOX/SON.EMINI YETLI/EGO SALTER BOSALTM)	OA-R1157	01088A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01244P	TOA22 PLEYT,P (INOX/SON.EMINI YETLI/EGO SALTER BOSALTM)	OA-R1157	01088A	30	Head Draing	9	PE080	K12070	1	20	0,23
01244P	TOA22 PLEYT,P (INOX/SON.EMINI YETLI/EGO SALTER BOSALTM)	OA-R1157	01088A	40	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,25
01244P	TOA22 PLEYT,P (INOX/SON.EMINI YETLI/EGO SALTER BOSALTM)	OA-R1157	01088A	50	Countersinking Pannel	9	PE080	K11212	1	20	0,25
01244P	TOA22 PLEYT,P (INOX/SON.EMINI YETLI/EGO SALTER BOSALTM)	OA-R1157	01088A	60	Draining Switch Hook	9	PE080	K11217	1	20	0,18
01244P	TOA22 PLEYT,P (INOX/SON.EMINI YETLI/EGO SALTER BOSALTM)	OA-R1157	01088A	70	Embossing	9	PE080	K64085	1	20	0,18
01245P	TOA22 PLEYT,P (INOX/GOTTAK SALTER BOSALTMALI)	OA-R1157	01088A	10	Stroking	1	PH600	K20066	2	20	0,478
01245P	TOA22 PLEYT,P (INOX/GOTTAK SALTER BOSALTMALI)	OA-R1157	01088A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01245P	TOA22 PLEYT,P (INOX/GOTTAK SALTER BOSALTMALI)	OA-R1157	01088A	30	Head Draing	9	PE080	K12070	1	20	0,23
01245P	TOA22 PLEYT,P (INOX/GOTTAK SALTER BOSALTMALI)	OA-R1157	01088A	40	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,25
01245P	TOA22 PLEYT,P (INOX/GOTTAK SALTER BOSALTMALI)	OA-R1157	01088A	50	Countersinking Pannel	9	PE080	K11212	1	20	0,25
01245P	TOA22 PLEYT,P (INOX/GOTTAK SALTER BOSALTMALI)	OA-R1157	01088A	60	Draining Switch Hook	9	PE080	K11217	1	20	0,18
01245P	TOA22 PLEYT,P (INOX/GOTTAK SALTER BOSALTMALI)	OA-R1157	01088A	70	Embossing	9	PE080	K64085	1	20	0,18
01246P	TOA22 PLEYT,P (INOX/SON.EMINI YETLI/GOTTAK SALTER BOS)	OA-R1157	01088A	10	Stroking	1	PH600	K20066	2	20	0,478
01246P	TOA22 PLEYT,P (INOX/SON.EMINI YETLI/GOTTAK SALTER BOS)	OA-R1157	01088A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01246P	TOA22 PLEYT,P (INOX/SON.EMINI YETLI/GOTTAK SALTER BOS)	OA-R1157	01088A	30	Head Draing	9	PE080	K12070	1	20	0,23
01246P	TOA22 PLEYT,P (INOX/SON.EMINI YETLI/GOTTAK SALTER BOS)	OA-R1157	01088A	40	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,25
01246P	TOA22 PLEYT,P (INOX/SON.EMINI YETLI/GOTTAK SALTER BOS)	OA-R1157	01088A	50	Countersinking Pannel	9	PE080	K11212	1	20	0,25
01246P	TOA22 PLEYT,P (INOX/SON.EMINI YETLI/GOTTAK SALTER BOS)	OA-R1157	01088A	60	Draining Switch Hook	9	PE080	K11217	1	20	0,18
01246P	TOA22 PLEYT,P (INOX/SON.EMINI YETLI/GOTTAK SALTER BOS)	OA-R1157	01088A	70	Embossing	9	PE080	K64085	1	20	0,18
01312P	TOA22 PLEYT,P (INOX/EGO SALTER BOSALTMALI\MOLVENO C)	OA-R1157	01088A	10	Stroking	1	PH600	K20066	2	20	0,478
01312P	TOA22 PLEYT,P (INOX/EGO SALTER BOSALTMALI\MOLVENO C)	OA-R1157	01088A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01312P	TOA22 PLEYT,P (INOX/EGO SALTER BOSALTMALI\MOLVENO C)	OA-R1157	01088A	30	Head Draing	9	PE080	K12070	1	20	0,23
01312P	TOA22 PLEYT,P (INOX/EGO SALTER BOSALTMALI\MOLVENO C)	OA-R1157	01088A	40	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,25
01312P	TOA22 PLEYT,P (INOX/EGO SALTER BOSALTMALI\MOLVENO C)	OA-R1157	01088A	50	Countersinking Pannel	9	PE080	K11212	1	20	0,25
01312P	TOA22 PLEYT,P (INOX/EGO SALTER BOSALTMALI\MOLVENO C)	OA-R1157	01088A	60	Draining Switch Hook	9	PE080	K11217	1	20	0,18
01312P	TOA22 PLEYT,P (INOX/EGO SALTER BOSALTMALI\MOLVENO C)	OA-R1157	01088A	70	Embossing	9	PE080	K64085	1	20	0,18
01313P	TOA22 PLEYT,P (INOX/SON.EMINI YETLI/EGO SALTER BOSALTM)	OA-R1157	01088A	10	Stroking	1	PH600	K20066	2	20	0,478
01313P	TOA22 PLEYT,P (INOX/SON.EMINI YETLI/EGO SALTER BOSALTM)	OA-R1157	01088A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01313P	TOA22 PLEYT,P (INOX/SON.EMINI YETLI/EGO SALTER BOSALTM)	OA-R1157	01088A	30	Head Draing	9	PE080	K12070	1	20	0,23

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01313P	TOA22 PLEYT,P (INOX/SON.EMINI YETLI/EGO SALTER BOSALTM	OA-R1157	01088A	40	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,25
01313P	TOA22 PLEYT,P (INOX/SON.EMINI YETLI/EGO SALTER BOSALTM	OA-R1157	01088A	50	Countersinking Pannel	9	PE080	K11212	1	20	0,25
01313P	TOA22 PLEYT,P (INOX/SON.EMINI YETLI/EGO SALTER BOSALTM	OA-R1157	01088A	60	Draining Switch Hook	9	PE080	K11217	1	20	0,18
01313P	TOA22 PLEYT,P (INOX/SON.EMINI YETLI/EGO SALTER BOSALTM	OA-R1157	01088A	70	Embossing	9	PE080	K64085	1	20	0,18
01314P	TOA22 PLEYT,P (INOX/GOTTAK SALTER BOSALTMALI\MOLVEN	OA-R1157	01088A	10	Stroking	1	PH600	K20066	2	20	0,478
01314P	TOA22 PLEYT,P (INOX/GOTTAK SALTER BOSALTMALI\MOLVEN	OA-R1157	01088A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01314P	TOA22 PLEYT,P (INOX/GOTTAK SALTER BOSALTMALI\MOLVEN	OA-R1157	01088A	30	Head Draing	9	PE080	K12070	1	20	0,23
01314P	TOA22 PLEYT,P (INOX/GOTTAK SALTER BOSALTMALI\MOLVEN	OA-R1157	01088A	40	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,25
01314P	TOA22 PLEYT,P (INOX/GOTTAK SALTER BOSALTMALI\MOLVEN	OA-R1157	01088A	50	Countersinking Pannel	9	PE080	K11212	1	20	0,25
01314P	TOA22 PLEYT,P (INOX/GOTTAK SALTER BOSALTMALI\MOLVEN	OA-R1157	01088A	60	Draining Switch Hook	9	PE080	K11217	1	20	0,18
01314P	TOA22 PLEYT,P (INOX/GOTTAK SALTER BOSALTMALI\MOLVEN	OA-R1157	01088A	70	Embossing	9	PE080	K64085	1	20	0,18
01315P	TOA22 PLEYT,P (INOX/SON.EMINI YETLI/GOTTAK SALTER BOS	OA-R1157	01088A	10	Stroking	1	PH600	K20066	2	20	0,478
01315P	TOA22 PLEYT,P (INOX/SON.EMINI YETLI/GOTTAK SALTER BOS	OA-R1157	01088A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01315P	TOA22 PLEYT,P (INOX/SON.EMINI YETLI/GOTTAK SALTER BOS	OA-R1157	01088A	30	Head Draing	9	PE080	K12070	1	20	0,23
01315P	TOA22 PLEYT,P (INOX/SON.EMINI YETLI/GOTTAK SALTER BOS	OA-R1157	01088A	40	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,25
01315P	TOA22 PLEYT,P (INOX/SON.EMINI YETLI/GOTTAK SALTER BOS	OA-R1157	01088A	50	Countersinking Pannel	9	PE080	K11212	1	20	0,25
01315P	TOA22 PLEYT,P (INOX/SON.EMINI YETLI/GOTTAK SALTER BOS	OA-R1157	01088A	60	Draining Switch Hook	9	PE080	K11217	1	20	0,18
01315P	TOA22 PLEYT,P (INOX/SON.EMINI YETLI/GOTTAK SALTER BOS	OA-R1157	01088A	70	Embossing	9	PE080	K64085	1	20	0,18
09088P	OC016 ALT KAPAK	OA-R1159	09085A	10	Draining	5	PH30001	K13016	2	20	0,25
09088P	OC016 ALT KAPAK	OA-R1159	09085A	20	Decoupling Clemence Hole	10	PE030	K11264	1	20	0,18
09088P	OC016 ALT KAPAK	OA-R1159	09085A	30	First Curling	5	PH30001	K40108	2	20	0,33
09088P	OC016 ALT KAPAK	OA-R1159	09085A	40	Second Curling	3	PH150	K40495	1	20	0,33
09103P	OC046/47 ALT KAPAK	OA-R1159	09088A	10	Draining	5	PH30001	K13016	2	20	0,25
09103P	OC046/47 ALT KAPAK	OA-R1159	09088A	20	Decoupling Clemence Hole	10	PE030	K11264	1	20	0,18
09103P	OC046/47 ALT KAPAK	OA-R1159	09088A	30	First Curling	5	PH30001	K40108	2	20	0,33
09103P	OC046/47 ALT KAPAK	OA-R1159	09088A	40	Second Curling	3	PH150	K40495	1	20	0,33
09104P	OC006 ALT KAPAK	OA-R1159	09085A	10	Draining	5	PH30001	K13016	2	20	0,33
09104P	OC006 ALT KAPAK	OA-R1159	09085A	20	First Curling	5	PH30001	K40108	2	20	0,33
09104P	OC006 ALT KAPAK	OA-R1159	09085A	30	Second Curling	3	PH150	K40495	1	20	0,33
09105P	OC007 ALT KAPAK	OA-R1159	09085A	10	Draining	5	PH30001	K13016	2	20	0,33
09105P	OC007 ALT KAPAK	OA-R1159	09085A	20	First Curling	5	PH30001	K40108	2	20	0,33
09105P	OC007 ALT KAPAK	OA-R1159	09085A	30	Second Curling	3	PH150	K40495	1	20	0,33
01247P	TOA7 PLEYT,P (YENI EST./GOTTAK SALTER BOSALTMALI)	OA-R1160	01025A	10	Stroking	1	PH600	K20040	2	20	0,323
01247P	TOA7 PLEYT,P (YENI EST./GOTTAK SALTER BOSALTMALI)	OA-R1160	01025A	20	Cutting Slope	2	DE085	K30025	1	20	0,224
01247P	TOA7 PLEYT,P (YENI EST./GOTTAK SALTER BOSALTMALI)	OA-R1160	01025A	30	Draining Head Electricity Hook	9	PE080	K12070	1	20	0,238
01247P	TOA7 PLEYT,P (YENI EST./GOTTAK SALTER BOSALTMALI)	OA-R1160	01025A	40	Decoupling Pipe Hole	3	PH150	K11067	1	20	0,23
01247P	TOA7 PLEYT,P (YENI EST./GOTTAK SALTER BOSALTMALI)	OA-R1160	01025A	50	Draining Pannel Ground	9	PE080	K11066	1	20	0,251
01247P	TOA7 PLEYT,P (YENI EST./GOTTAK SALTER BOSALTMALI)	OA-R1160	01025A	60	Draining Switch Hook	9	PE080	K11218	1	20	0,18
01404P	TOA7 PLEYT (YENI EST./GOTTAK SALTER BOSALTMALI\SPRA C	OA-R1160	01025A	10	Stroking	1	PH600	K20040	2	20	0,323
01404P	TOA7 PLEYT (YENI EST./GOTTAK SALTER BOSALTMALI\SPRA C	OA-R1160	01025A	20	Cutting Slope	2	DE085	K30025	1	20	0,224
01404P	TOA7 PLEYT (YENI EST./GOTTAK SALTER BOSALTMALI\SPRA C	OA-R1160	01025A	30	Draining Head Electricity Hook	9	PE080	K12070	1	20	0,238
01404P	TOA7 PLEYT (YENI EST./GOTTAK SALTER BOSALTMALI\SPRA C	OA-R1160	01025A	40	Decoupling Pipe Hole	3	PH150	K11067	1	20	0,23
01404P	TOA7 PLEYT (YENI EST./GOTTAK SALTER BOSALTMALI\SPRA C	OA-R1160	01025A	50	Draining Pannel Ground	9	PE080	K11066	1	20	0,251
01404P	TOA7 PLEYT (YENI EST./GOTTAK SALTER BOSALTMALI\SPRA C	OA-R1160	01025A	60	Draining Switch Hook	9	PE080	K11218	1	20	0,18

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01404P	TOA7 PLEYT (YENİ EST./GOTTAK SALTER BOSALTMAL)İSPRA C	OA-R1160	01025A	70	Draining Lighter Hook	9	PE080	K11289	1	20	0,18
01248P	TOA11 PLEYT,P (GOTTAK SALTER BOSALTMAL)	OA-R1161	01025A	10	Stroking	1	PH600	K20040	2	20	0,478
01248P	TOA11 PLEYT,P (GOTTAK SALTER BOSALTMAL)	OA-R1161	01025A	20	Cutting Slope	2	DE085	K30025	1	20	0,254
01248P	TOA11 PLEYT,P (GOTTAK SALTER BOSALTMAL)	OA-R1161	01025A	30	Draining Switch Hook	9	PE080	K11218	1	20	0,18
01248P	TOA11 PLEYT,P (GOTTAK SALTER BOSALTMAL)	OA-R1161	01025A	40	Draining Head Ground	3	PH150	K12014	1	20	0,23
01376P	OC - 004 PLEYT (INOX)	OA-R1182	01376A	10	Stroking	1	PH350	K20131	2	20	0,477
01376P	OC - 004 PLEYT (INOX)	OA-R1182	01376A	20	Peripheral cutting and Draining	1	PH350	K19161	2	20	0,224
01376P	OC - 004 PLEYT (INOX)	OA-R1182	01376A	30	Curling Slope	1	PH350	K20131	2	20	0,241
01376P	OC - 004 PLEYT (INOX)	OA-R1182	01376A	40	First Edge Curling	4	PH07001	K40552	1	20	0,964
01376P	OC - 004 PLEYT (INOX)	OA-R1182	01376A	50	Second Edge Curling	4	PH07001	K40559	1	20	0,964
01376P	OC - 004 PLEYT (INOX)	OA-R1182	01376A	60	Bending Slope	3	PH150	K40553	1	20	0,477
01380P	TOA22 PLEYT (YENİ HIGH FLAME)	OA-R1188	01086A	10	Stroking	1	PH600	K20066	2	20	0,478
01380P	TOA22 PLEYT (YENİ HIGH FLAME)	OA-R1188	01086A	20	Cutting Slope	2	DE085	K30072	1	20	0,254
01380P	TOA22 PLEYT (YENİ HIGH FLAME)	OA-R1188	01086A	30	Draining Head Electricity Hook	9	PE080	K12070	1	20	0,23
01380P	TOA22 PLEYT (YENİ HIGH FLAME)	OA-R1188	01086A	40	Draining Pipe and Pannel Box	3	PH150	K11197	1	20	0,25
01380P	TOA22 PLEYT (YENİ HIGH FLAME)	OA-R1188	01086A	50	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,25
01380P	TOA22 PLEYT (YENİ HIGH FLAME)	OA-R1188	01086A	60	Draining Switch Hook	9	PE080	K11217	1	20	0,18
01380P	TOA22 PLEYT (YENİ HIGH FLAME)	OA-R1188	01086A	70	Corner Draining	16	SD40007	SD40007	1	20	0,33
01380P	TOA22 PLEYT (YENİ HIGH FLAME)	OA-R1188	01086A	80	Bending Slope	3	PH150	K30039	1	20	0,23
01381P	TOA22 PLEYT (YENİ HIGH FLAME/KOMPLE SONME EMN.)	OA-R1188	01086A	10	Stroking	1	PH600	K20066	2	20	0,478
01381P	TOA22 PLEYT (YENİ HIGH FLAME/KOMPLE SONME EMN.)	OA-R1188	01086A	20	Cutting Slope	2	DE085	K30072	1	20	0,254
01381P	TOA22 PLEYT (YENİ HIGH FLAME/KOMPLE SONME EMN.)	OA-R1188	01086A	30	Draining Head Electricity Hook	9	PE080	K12070	1	20	0,23
01381P	TOA22 PLEYT (YENİ HIGH FLAME/KOMPLE SONME EMN.)	OA-R1188	01086A	40	Draining Pipe and Pannel Box	3	PH150	K11197	1	20	0,25
01381P	TOA22 PLEYT (YENİ HIGH FLAME/KOMPLE SONME EMN.)	OA-R1188	01086A	50	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,25
01381P	TOA22 PLEYT (YENİ HIGH FLAME/KOMPLE SONME EMN.)	OA-R1188	01086A	60	Draining Switch Hook	9	PE080	K11217	1	20	0,18
01381P	TOA22 PLEYT (YENİ HIGH FLAME/KOMPLE SONME EMN.)	OA-R1188	01086A	70	Corner Draining	16	SD40007	SD40007	1	20	0,33
01381P	TOA22 PLEYT (YENİ HIGH FLAME/KOMPLE SONME EMN.)	OA-R1188	01086A	80	Bending Slope	3	PH150	K30039	1	20	0,23
01382P	TOA22 PLEYT (YENİ HIGH FLAME/MOLVENO ÇAKMAK)	OA-R1188	01086A	10	Stroking	1	PH600	K20066	2	20	0,478
01382P	TOA22 PLEYT (YENİ HIGH FLAME/MOLVENO ÇAKMAK)	OA-R1188	01086A	20	Cutting Slope	2	DE085	K30072	1	20	0,254
01382P	TOA22 PLEYT (YENİ HIGH FLAME/MOLVENO ÇAKMAK)	OA-R1188	01086A	30	Draining Head Electricity Hook	9	PE080	K12070	1	20	0,23
01382P	TOA22 PLEYT (YENİ HIGH FLAME/MOLVENO ÇAKMAK)	OA-R1188	01086A	40	Draining Pipe and Pannel Box	3	PH150	K11197	1	20	0,25
01382P	TOA22 PLEYT (YENİ HIGH FLAME/MOLVENO ÇAKMAK)	OA-R1188	01086A	50	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,25
01382P	TOA22 PLEYT (YENİ HIGH FLAME/MOLVENO ÇAKMAK)	OA-R1188	01086A	60	Draining Switch Hook	9	PE080	K11217	1	20	0,18
01382P	TOA22 PLEYT (YENİ HIGH FLAME/MOLVENO ÇAKMAK)	OA-R1188	01086A	70	Corner Draining	16	SD40007	SD40007	1	20	0,33
01382P	TOA22 PLEYT (YENİ HIGH FLAME/MOLVENO ÇAKMAK)	OA-R1188	01086A	80	Bending Slope	3	PH150	K30039	1	20	0,23
01383P	TOA22 PLEYT (YENİ HIGH FLAME/KOMPLE SONME EMN./MOL)	OA-R1188	01086A	10	Stroking	1	PH600	K20066	2	20	0,478
01383P	TOA22 PLEYT (YENİ HIGH FLAME/KOMPLE SONME EMN./MOL)	OA-R1188	01086A	20	Cutting Slope	2	DE085	K30072	1	20	0,254
01383P	TOA22 PLEYT (YENİ HIGH FLAME/KOMPLE SONME EMN./MOL)	OA-R1188	01086A	30	Draining Head Electricity Hook	9	PE080	K12070	1	20	0,23
01383P	TOA22 PLEYT (YENİ HIGH FLAME/KOMPLE SONME EMN./MOL)	OA-R1188	01086A	40	Draining Pipe and Pannel Box	3	PH150	K11197	1	20	0,25
01383P	TOA22 PLEYT (YENİ HIGH FLAME/KOMPLE SONME EMN./MOL)	OA-R1188	01086A	50	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,25
01383P	TOA22 PLEYT (YENİ HIGH FLAME/KOMPLE SONME EMN./MOL)	OA-R1188	01086A	60	Draining Switch Hook	9	PE080	K11217	1	20	0,18
01383P	TOA22 PLEYT (YENİ HIGH FLAME/KOMPLE SONME EMN./MOL)	OA-R1188	01086A	70	Corner Draining	16	SD40007	SD40007	1	20	0,33
01383P	TOA22 PLEYT (YENİ HIGH FLAME/KOMPLE SONME EMN./MOL)	OA-R1188	01086A	80	Bending Slope	3	PH150	K30039	1	20	0,23
13105P	OC016 ALT KAPAK DESTEK SADI (L PARÇA)	OA-R1214	13105A	10	Curling	8	PA130	PA13004	1	20	0,25

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01453P	TOA51 PLEYT	OA-R1224	01025A	10	Stroking	1	PH600	K20107	2	20	0,39
01453P	TOA51 PLEYT	OA-R1224	01025A	20	Cutting Slope	2	DE085	K30025	1	20	0,254
01453P	TOA51 PLEYT	OA-R1224	01025A	30	Decoupling Pipe Hole	3	PH150	K12067	1	20	0,308
09114P	OC72/73 REGLER VE YATAY DEVRE KONTROL ALT KAPAK	OA-R1226	09114A	10	Stroking	1	PH350	K21075	2	20	0,333
09114P	OC72/73 REGLER VE YATAY DEVRE KONTROL ALT KAPAK	OA-R1226	09114A	20	Peripheral Cutting	1	PH350	K10205	2	20	0,333
09114P	OC72/73 REGLER VE YATAY DEVRE KONTROL ALT KAPAK	OA-R1226	09114A	30	Curling	1	PH350	K40668	2	20	0,333
09115P	OC74 FIRINDAN KUMANDALI ALT KAPAK	OA-R1226	09114A	10	Stroking	1	PH350	K21075	2	20	0,333
09115P	OC74 FIRINDAN KUMANDALI ALT KAPAK	OA-R1226	09114A	20	Peripheral Cutting	1	PH350	K10205	2	20	0,333
09115P	OC74 FIRINDAN KUMANDALI ALT KAPAK	OA-R1226	09114A	30	Curling	1	PH350	K40668	2	20	0,333
09122P	OC ALT KAPAK	OA-R1226	09114A	10	Stroking	1	PH350	K21075	2	20	0,333
09122P	OC ALT KAPAK	OA-R1226	09114A	20	Peripheral Cutting	1	PH350	K10205	2	20	0,333
09122P	OC ALT KAPAK	OA-R1226	09114A	30	Curling	1	PH350	K40668	2	20	0,333
09123P	OC ALT KAPAK	OA-R1226	09114A	10	Stroking	1	PH350	K21075	2	20	0,333
09123P	OC ALT KAPAK	OA-R1226	09114A	20	Peripheral Cutting	1	PH350	K10205	2	20	0,333
09123P	OC ALT KAPAK	OA-R1226	09114A	30	Curling	1	PH350	K40668	2	20	0,333
01454P	TOA52 PLEYT	OA-R1230	01025A	10	Stroking	1	PH600	K20107	2	20	0,39
01454P	TOA52 PLEYT	OA-R1230	01025A	20	Cutting Slope	2	DE085	K30025	1	20	0,254
01454P	TOA52 PLEYT	OA-R1230	01025A	30	Decoupling Pipe Hole	3	PH150	K12067	1	20	0,308
01454P	TOA52 PLEYT	OA-R1230	01025A	40	Draining Head Ground	9	PE080	K12070	1	20	0,18
01454P	TOA52 PLEYT	OA-R1230	01025A	50	Draining Switch Hook	9	PE080	K11218	1	20	0,25
01011P	TOE1 PLEYT GOVDESI,P	OE-R1001	01011A	10	Stroking	13	PH160	K20024	1	20	0,188
01011P	TOE1 PLEYT GOVDESI,P	OE-R1001	01011A	20	Cutting Slope	14	DE08503	K30015	1	20	0,171
01011P	TOE1 PLEYT GOVDESI,P	OE-R1001	01011A	30	Head Draing	15	PE06005	K12033	1	20	0,077
01011P	TOE1 PLEYT GOVDESI,P	OE-R1001	01011A	40	Draining Switch Hook	16	SD40003	SD40003	1	20	0,14
01012P	TOE2 PLEYT GOVDESI,P	OE-R1003	01012A	10	Stroking	13	PH160	K20022	1	20	0,188
01012P	TOE2 PLEYT GOVDESI,P	OE-R1003	01012A	20	Edge Cutting	15	PE06005	K20002	1	20	0,236
01012P	TOE2 PLEYT GOVDESI,P	OE-R1003	01012A	30	Cutting Slope	14	DE08503	K31001	1	20	0,189
01012P	TOE2 PLEYT GOVDESI,P	OE-R1003	01012A	40	Head Draing	9	PE080	K12022	1	20	0,075
01012P	TOE2 PLEYT GOVDESI,P	OE-R1003	01012A	50	Draining Switch Hook	16	SD40003	SD40003	1	20	0,183
01012P	TOE2 PLEYT GOVDESI,P	OE-R1003	01012A	60	Decoupling Signal Lamp	16	SD40005	SD40005	1	20	0,183
01012P	TOE2 PLEYT GOVDESI,P	OE-R1003	01012A	70	Decoupling Shutter Ground	16	SD40012	SD40012	1	20	0,183
01012P	TOE2 PLEYT GOVDESI,P	OE-R1003	01012A	80	Decoupling Ventilation Mouth	16	SD40011	SD40011	1	20	0,183
01045P	TOE3 SINYAL LAMBALI GOVDE,P	OE-R1004	01013A	10	Stroking	13	PH160	K20023	1	20	0,188
01045P	TOE3 SINYAL LAMBALI GOVDE,P	OE-R1004	01013A	20	Cutting Slope	14	DE08503	K31002	1	20	0,2
01045P	TOE3 SINYAL LAMBALI GOVDE,P	OE-R1004	01013A	30	Head Draing	9	PE080	K12021	1	20	0,075
01045P	TOE3 SINYAL LAMBALI GOVDE,P	OE-R1004	01013A	40	Decoupling Cable Hole	16	SD40003	SD40003	1	20	0,183
01045P	TOE3 SINYAL LAMBALI GOVDE,P	OE-R1004	01013A	50	Draining Switch Hook	16	SD40003	SD40003	1	20	0,183
01045P	TOE3 SINYAL LAMBALI GOVDE,P	OE-R1004	01013A	60	Decoupling Signal Lamp	16	SD40005	SD40005	1	20	0,183
01045P	TOE3 SINYAL LAMBALI GOVDE,P	OE-R1004	01013A	70	Decoupling Shutter Ground	16	SD40012	SD40012	1	20	0,183
01013P	TOE3 PLEYT GOVDESI,P	OE-R1005	01013A	10	Stroking	13	PH160	K20023	1	20	0,188
01013P	TOE3 PLEYT GOVDESI,P	OE-R1005	01013A	20	Cutting Slope	14	DE08503	K31002	1	20	0,2
01013P	TOE3 PLEYT GOVDESI,P	OE-R1005	01013A	30	Head Draing	9	PE080	K12021	1	20	0,075
01013P	TOE3 PLEYT GOVDESI,P	OE-R1005	01013A	40	Decoupling Cable Hole	16	SD40003	SD40003	1	20	0,183
01013P	TOE3 PLEYT GOVDESI,P	OE-R1005	01013A	50	Draining Switch Hook	16	SD40003	SD40003	1	20	0,183

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01013P	TOE3 PLEYT GOVDESI,P	OE-R1005	01013A	60	Decoupling Shutter Ground	16	SD40012	SD40012	1	20	0,183
01029P	TOE3 PLEYT GOVDESI,P (KAPAKLI\SINYAL LAMBALI)	OE-R1006	01013A	10	Stroking	13	PH160	K20023	1	20	0,188
01029P	TOE3 PLEYT GOVDESI,P (KAPAKLI\SINYAL LAMBALI)	OE-R1006	01013A	20	Cutting Slope	14	DE08503	K31002	1	20	0,2
01029P	TOE3 PLEYT GOVDESI,P (KAPAKLI\SINYAL LAMBALI)	OE-R1006	01013A	30	Head Draing	9	PE080	K12021	1	20	0,075
01029P	TOE3 PLEYT GOVDESI,P (KAPAKLI\SINYAL LAMBALI)	OE-R1006	01013A	40	Decoupling Cable Hole	16	SD40003	SD40003	1	20	0,183
01029P	TOE3 PLEYT GOVDESI,P (KAPAKLI\SINYAL LAMBALI)	OE-R1006	01013A	50	Draining Switch Hook	16	SD40003	SD40003	1	20	0,183
01029P	TOE3 PLEYT GOVDESI,P (KAPAKLI\SINYAL LAMBALI)	OE-R1006	01013A	60	Decoupling Cover Hole	18	PH050	K11032	1	20	0,125
01029P	TOE3 PLEYT GOVDESI,P (KAPAKLI\SINYAL LAMBALI)	OE-R1006	01013A	70	Decoupling Signal Lamp	16	SD40005	SD40005	1	20	0,183
01029P	TOE3 PLEYT GOVDESI,P (KAPAKLI\SINYAL LAMBALI)	OE-R1006	01013A	80	Decoupling Shutter Ground	16	SD40012	SD40012	1	20	0,183
09005P	TOE1 ALT KAPAK GOVDESI,P	OE-R1008	09005A	10	Draining	18	PH050	K11119	1	20	0,15
09005P	TOE1 ALT KAPAK GOVDESI,P	OE-R1008	09005A	20	Curling	3	PH150	K21017	1	20	0,15
09013P	TOE3 ALT KAPAK,P (0700\DELIKLI)	OE-R1012	09007A	10	Stroking	13	PH160	K21020	1	20	0,188
09013P	TOE3 ALT KAPAK,P (0700\DELIKLI)	OE-R1012	09007A	20	Peripheral Cutting	7	PE150	K13007	1	20	0,159
09013P	TOE3 ALT KAPAK,P (0700\DELIKLI)	OE-R1012	09007A	30	Decoupling Shutter Ground	6	PE250	K11077	1	20	0,083
01022P	TOE3 PLEYT GOVDESI,P (KAPAKLI)	OE-R1024	01013A	10	Stroking	13	PH160	K20023	1	20	0,188
01022P	TOE3 PLEYT GOVDESI,P (KAPAKLI)	OE-R1024	01013A	20	Cutting Slope	14	DE08503	K31002	1	20	0,2
01022P	TOE3 PLEYT GOVDESI,P (KAPAKLI)	OE-R1024	01013A	30	Head Draing	9	PE080	K12021	1	20	0,075
01022P	TOE3 PLEYT GOVDESI,P (KAPAKLI)	OE-R1024	01013A	40	Decoupling Cable Hole	16	SD40003	SD40003	1	20	0,183
01022P	TOE3 PLEYT GOVDESI,P (KAPAKLI)	OE-R1024	01013A	50	Decoupling Cover Hole	18	PH050	K11032	1	20	0,125
01022P	TOE3 PLEYT GOVDESI,P (KAPAKLI)	OE-R1024	01013A	60	Decoupling Shutter Ground	16	SD40012	SD40012	1	20	0,183
01005P	TOE3 PLEYT GOVDESI,P (VDE 0700)	OE-R1025	01013A	10	Stroking	13	PH160	K20023	1	20	0,188
01005P	TOE3 PLEYT GOVDESI,P (VDE 0700)	OE-R1025	01013A	20	Cutting Slope	14	DE08503	K31002	1	20	0,2
01005P	TOE3 PLEYT GOVDESI,P (VDE 0700)	OE-R1025	01013A	30	Head Draing	9	PE080	K12021	1	20	0,075
01005P	TOE3 PLEYT GOVDESI,P (VDE 0700)	OE-R1025	01013A	40	Draining Switch Hook	16	SD40003	SD40003	1	20	0,183
01005P	TOE3 PLEYT GOVDESI,P (VDE 0700)	OE-R1025	01013A	50	Decoupling Shutter Ground	16	SD40012	SD40012	1	20	0,183
01024P	TOE3 PLEYT GOVDESI,P (0700\SINYAL LAMBALI)	OE-R1026	01013A	10	Stroking	13	PH160	K20023	1	20	0,188
01024P	TOE3 PLEYT GOVDESI,P (0700\SINYAL LAMBALI)	OE-R1026	01013A	20	Cutting Slope	14	DE08503	K31002	1	20	0,2
01024P	TOE3 PLEYT GOVDESI,P (0700\SINYAL LAMBALI)	OE-R1026	01013A	30	Head Draing	9	PE080	K12021	1	20	0,075
01024P	TOE3 PLEYT GOVDESI,P (0700\SINYAL LAMBALI)	OE-R1026	01013A	40	Draining Switch Hook	16	SD40003	SD40003	1	20	0,183
01024P	TOE3 PLEYT GOVDESI,P (0700\SINYAL LAMBALI)	OE-R1026	01013A	50	Decoupling Signal Lamp	16	SD40005	SD40005	1	20	0,183
01024P	TOE3 PLEYT GOVDESI,P (0700\SINYAL LAMBALI)	OE-R1026	01013A	60	Decoupling Shutter Ground	16	SD40012	SD40012	1	20	0,183
01041P	TOE6 PLEYT GOVDESI,P	OE-R1027	01041A	10	Stroking	13	PH160	K20025	1	20	0,188
01041P	TOE6 PLEYT GOVDESI,P	OE-R1027	01041A	20	Cutting Slope	14	DE08503	K30016	1	20	0,171
01041P	TOE6 PLEYT GOVDESI,P	OE-R1027	01041A	30	Head Draing	15	PE06005	K12026	1	20	0,126
01041P	TOE6 PLEYT GOVDESI,P	OE-R1027	01041A	40	Draining Swith and Cable Hood	16	SD40004	SD40004	1	20	0,17
01042P	TOE6 PLEYT GOVDESI,P (KAPAKLI)	OE-R1027	01041A	10	Stroking	13	PH160	K20025	1	20	0,188
01042P	TOE6 PLEYT GOVDESI,P (KAPAKLI)	OE-R1027	01041A	20	Cutting Slope	14	DE08503	K30016	1	20	0,163
01042P	TOE6 PLEYT GOVDESI,P (KAPAKLI)	OE-R1027	01041A	30	Head Draing	15	PE06005	K12026	1	20	0,126
01042P	TOE6 PLEYT GOVDESI,P (KAPAKLI)	OE-R1027	01041A	40	Draining Swith and Cable Hood	16	SD40004	SD40004	1	20	0,17
01042P	TOE6 PLEYT GOVDESI,P (KAPAKLI)	OE-R1027	01041A	50	Decoupling Cover Hole	18	PH050	K11099	1	20	0,138
09028P	TOE6 ALT KAPAK GOVDESI,P	OE-R1028	09028A	10	Stroking	5	PH30001	K20019	1	20	0,148
09028P	TOE6 ALT KAPAK GOVDESI,P	OE-R1028	09028A	20	Cutting Slope	14	DE08503	K30026	1	20	0,159
09028P	TOE6 ALT KAPAK GOVDESI,P	OE-R1028	09028A	30	Decoupling Shutter Ground	7	PE150	K62014	1	20	0,183
09028P	TOE6 ALT KAPAK GOVDESI,P	OE-R1028	09028A	40	Edge Curling	15	PE06005	K40095	1	20	0,183

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01040P	TOE5 PLEYT GOVDESI,P	OE-R1032	01040A	10	Stroking	13	PH160	K20026	1	20	0,188
01040P	TOE5 PLEYT GOVDESI,P	OE-R1032	01040A	20	Cutting Slope	14	DE08503	K30017	1	20	0,171
01040P	TOE5 PLEYT GOVDESI,P	OE-R1032	01040A	30	Head Draing	15	PE06005	K12024	1	20	0,125
01040P	TOE5 PLEYT GOVDESI,P	OE-R1032	01040A	40	Decoupling Cable Hole	16	SD40003	SD40003	1	20	0,17
01039P	TOE4 PLEYT GOVDESI,P	OE-R1033	01039A	10	Stroking	13	PH160	K20027	1	20	0,188
01039P	TOE4 PLEYT GOVDESI,P	OE-R1033	01039A	20	Cutting Slope	14	DE08503	K30018	1	20	0,171
01039P	TOE4 PLEYT GOVDESI,P	OE-R1033	01039A	30	Head Draing	15	PE06005	K12024	1	20	0,125
01039P	TOE4 PLEYT GOVDESI,P	OE-R1033	01039A	40	Decoupling Cable Hole	16	SD40003	SD40003	1	20	0,17
09027P	TOE5 ALT KAPAK GOVDESI,P	OE-R1034	09027A01	10	Stroking	13	PH160	K20020	1	20	0,188
09027P	TOE5 ALT KAPAK GOVDESI,P	OE-R1034	09027A01	20	Cutting Slope	14	DE08503	K31003	1	20	0,159
09027P	TOE5 ALT KAPAK GOVDESI,P	OE-R1034	09027A01	30	Decoupling Shutter Ground	7	PE150	K62013	1	20	0,183
09026P	TOE4 ALT KAPAK GOVDESI,P	OE-R1035	09027A01	10	Stroking	13	PH160	K20021	1	20	0,188
09026P	TOE4 ALT KAPAK GOVDESI,P	OE-R1035	09027A01	20	Cutting Slope	14	DE08503	K31004	1	20	0,159
09026P	TOE4 ALT KAPAK GOVDESI,P	OE-R1035	09027A01	30	Decoupling Shutter Ground	7	PE150	K62012	1	20	0,183
09022P	TOE7 ALT KAPAK GOVDESI,P	OE-R1038	09022A	10	Draining	15	PE06005	K19072	1	20	0,15
09022P	TOE7 ALT KAPAK GOVDESI,P	OE-R1038	09022A	20	Curling	15	PE06005	K21023	1	20	0,15
01033P	TOE7 MINI UFO GOVDESI,P	OE-R1039	01033A	10	Stroking	13	PH160	K20028	1	20	0,188
01033P	TOE7 MINI UFO GOVDESI,P	OE-R1039	01033A	20	Cutting Slope	14	DE08503	K30019	1	20	0,18
01033P	TOE7 MINI UFO GOVDESI,P	OE-R1039	01033A	30	Head Draing	10	PE030	K12027	1	20	0,136
01033P	TOE7 MINI UFO GOVDESI,P	OE-R1039	01033A	40	Decoupling Cable Hole	15	PE06005	K11068	1	20	0,18
01021P	TOE2 GOVDE,P (VDE 0700)	OE-R1045	01012A	10	Stroking	13	PH160	K20022	1	20	0,188
01021P	TOE2 GOVDE,P (VDE 0700)	OE-R1045	01012A	20	Edge Cutting	15	PE06005	K20002	1	20	0,236
01021P	TOE2 GOVDE,P (VDE 0700)	OE-R1045	01012A	30	Cutting Slope	14	DE08503	K31001	1	20	0,189
01021P	TOE2 GOVDE,P (VDE 0700)	OE-R1045	01012A	40	Head Draing	9	PE080	K12022	1	20	0,075
01021P	TOE2 GOVDE,P (VDE 0700)	OE-R1045	01012A	50	Decoupling Cable Hole	16	SD40001	SD40001	1	20	0,183
01021P	TOE2 GOVDE,P (VDE 0700)	OE-R1045	01012A	60	Decoupling Shutter Ground	16	SD40012	SD40012	1	20	0,183
01021P	TOE2 GOVDE,P (VDE 0700)	OE-R1045	01012A	70	Decoupling Ventilation Mouth	16	SD40011	SD40011	1	20	0,183
01030P	TOE2 PLEYT GOVDESI,P (0700\SI NYAL LAMBALI)	OE-R1046	01012A	10	Stroking	13	PH160	K20022	1	20	0,188
01030P	TOE2 PLEYT GOVDESI,P (0700\SI NYAL LAMBALI)	OE-R1046	01012A	20	Edge Cutting	15	PE06005	K20002	1	20	0,236
01030P	TOE2 PLEYT GOVDESI,P (0700\SI NYAL LAMBALI)	OE-R1046	01012A	30	Cutting Slope	14	DE08503	K31001	1	20	0,189
01030P	TOE2 PLEYT GOVDESI,P (0700\SI NYAL LAMBALI)	OE-R1046	01012A	40	Head Draing	9	PE080	K12022	1	20	0,075
01030P	TOE2 PLEYT GOVDESI,P (0700\SI NYAL LAMBALI)	OE-R1046	01012A	50	Draining Switch Hook	16	SD40003	SD40003	1	20	0,183
01030P	TOE2 PLEYT GOVDESI,P (0700\SI NYAL LAMBALI)	OE-R1046	01012A	60	Decoupling Signal Lamp	16	SD40005	SD40005	1	20	0,183
01030P	TOE2 PLEYT GOVDESI,P (0700\SI NYAL LAMBALI)	OE-R1046	01012A	70	Decoupling Shutter Ground	16	SD40012	SD40012	1	20	0,183
01030P	TOE2 PLEYT GOVDESI,P (0700\SI NYAL LAMBALI)	OE-R1046	01012A	80	Decoupling Ventilation Mouth	16	SD40011	SD40011	1	20	0,183
03032P	TOE6 OCAK KAPAGI,P	OE-R1052	03032A	10	Stroking	13	PH160	K20038	1	20	0,188
03032P	TOE6 OCAK KAPAGI,P	OE-R1052	03032A	20	Cutting Slope	14	DE08503	K30027	1	20	0,159
03032P	TOE6 OCAK KAPAGI,P	OE-R1052	03032A	30	Decoupling Cover Hole	16	SD40001	SD40001	1	20	0,183
01050P	TOE12 PLEYT,P	OE-R1054	01050A	10	Stroking	13	PH160	K20022	1	20	0,188
01050P	TOE12 PLEYT,P	OE-R1054	01050A	20	Cutting Slope	14	DE08503	K31005	1	20	0,161
01050P	TOE12 PLEYT,P	OE-R1054	01050A	30	Head Draing	15	PE06005	K12022	1	20	0,075
01050P	TOE12 PLEYT,P	OE-R1054	01050A	40	Edge Cutting	15	PE06005	K40002	1	20	0,091
01050P	TOE12 PLEYT,P	OE-R1054	01050A	50	Decoupling Shutter Ground	18	PH050	K62002	1	20	0,14
01050P	TOE12 PLEYT,P	OE-R1054	01050A	60	Decoupling Cable Hole	18	PH050	K11113	1	20	0,14

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01050P	TOE12 PLEYT,P	OE-R1054	01050A	70	Draining Switch Hook	18	PH050	K11197	1	20	0,183
01051P	TOE13 PLEYT,P	OE-R1057	01051A	10	Stroking	13	PH160	K20023	1	20	0,188
01051P	TOE13 PLEYT,P	OE-R1057	01051A	20	Cutting Slope	14	DE08503	K31006	1	20	0,161
01051P	TOE13 PLEYT,P	OE-R1057	01051A	30	Head Draing	15	PE06005	K12021	1	20	0,075
01051P	TOE13 PLEYT,P	OE-R1057	01051A	40	Decoupling Shutter Ground	15	PE06005	K62021	1	20	0,091
01051P	TOE13 PLEYT,P	OE-R1057	01051A	50	Decoupling Cable Hole	18	PH050	K11113	1	20	0,14
01051P	TOE13 PLEYT,P	OE-R1057	01051A	60	Draining Switch Hook	18	PH050	K11197	1	20	0,14
01051P	TOE13 PLEYT,P	OE-R1057	01051A	70	Decoupling Signal Lamp	18	PH050	K11107	1	20	0,183
01161P	TOE13 PLEYT,P (SINYAL LAMBASIZ)	OE-R1057	01051A	10	Stroking	13	PH160	K20023	1	20	0,188
01161P	TOE13 PLEYT,P (SINYAL LAMBASIZ)	OE-R1057	01051A	20	Cutting Slope	14	DE08503	K31006	1	20	0,161
01161P	TOE13 PLEYT,P (SINYAL LAMBASIZ)	OE-R1057	01051A	30	Head Draing	15	PE06005	K12021	1	20	0,08
01161P	TOE13 PLEYT,P (SINYAL LAMBASIZ)	OE-R1057	01051A	40	Decoupling Shutter Ground	15	PE06005	K62021	1	20	0,091
01161P	TOE13 PLEYT,P (SINYAL LAMBASIZ)	OE-R1057	01051A	50	Decoupling Cable Hole	18	PH050	K11113	1	20	0,14
01161P	TOE13 PLEYT,P (SINYAL LAMBASIZ)	OE-R1057	01051A	60	Draining Switch Hook	18	PH050	K11197	1	20	0,14
09029P	TOE11 ALT KAPAK,P	OE-R1062	09005A	10	Draining	15	PE06005	K11119	1	20	0,15
09029P	TOE11 ALT KAPAK,P	OE-R1062	09005A	20	Curling	15	PE06005	K21017	1	20	0,15
01016P	TOE2 GOVDE,P (SINYAL LAMBALI\EGO SALTER)	OE-R1075	01012A	10	Stroking	13	PH160	K20022	1	20	0,188
01016P	TOE2 GOVDE,P (SINYAL LAMBALI\EGO SALTER)	OE-R1075	01012A	20	Edge Cutting	15	PE06005	K20002	1	20	0,236
01016P	TOE2 GOVDE,P (SINYAL LAMBALI\EGO SALTER)	OE-R1075	01012A	30	Cutting Slope	14	DE08503	K31001	1	20	0,189
01016P	TOE2 GOVDE,P (SINYAL LAMBALI\EGO SALTER)	OE-R1075	01012A	40	Head Draing	9	PE080	K12022	1	20	0,075
01016P	TOE2 GOVDE,P (SINYAL LAMBALI\EGO SALTER)	OE-R1075	01012A	50	Draining Switch Hook	16	SD40003	SD40003	1	20	0,183
01016P	TOE2 GOVDE,P (SINYAL LAMBALI\EGO SALTER)	OE-R1075	01012A	60	Decoupling Cable Hole	16	SD40001	SD40001	1	20	0,183
01016P	TOE2 GOVDE,P (SINYAL LAMBALI\EGO SALTER)	OE-R1075	01012A	70	Decoupling Signal Lamp	16	SD40005	SD40005	1	20	0,183
01016P	TOE2 GOVDE,P (SINYAL LAMBALI\EGO SALTER)	OE-R1075	01012A	80	Decoupling Shutter Ground	16	SD40012	SD40012	1	20	0,183
01016P	TOE2 GOVDE,P (SINYAL LAMBALI\EGO SALTER)	OE-R1075	01012A	90	Decoupling Ventilation Mouth	16	SD40011	SD40011	1	20	0,183
01065P	TOE13 PLEYT GOVDESI,P (KAPAKLI)	OE-R1082	01051A	10	Stroking	13	PH160	K20023	1	20	0,188
01065P	TOE13 PLEYT GOVDESI,P (KAPAKLI)	OE-R1082	01051A	20	Cutting Slope	14	DE08503	K31006	1	20	0,161
01065P	TOE13 PLEYT GOVDESI,P (KAPAKLI)	OE-R1082	01051A	30	Head Draing	15	PE06005	K12021	1	20	0,075
01065P	TOE13 PLEYT GOVDESI,P (KAPAKLI)	OE-R1082	01051A	40	Decoupling Shutter Ground	15	PE06005	K62021	1	20	0,091
01065P	TOE13 PLEYT GOVDESI,P (KAPAKLI)	OE-R1082	01051A	50	Decoupling Cable Hole	18	PH050	K11113	1	20	0,14
01065P	TOE13 PLEYT GOVDESI,P (KAPAKLI)	OE-R1082	01051A	60	Draining Switch Hook	18	PH050	K11197	1	20	0,14
01065P	TOE13 PLEYT GOVDESI,P (KAPAKLI)	OE-R1082	01051A	70	Decoupling Signal Lamp	18	PH050	K11107	1	20	0,14
01065P	TOE13 PLEYT GOVDESI,P (KAPAKLI)	OE-R1082	01051A	80	Decoupling Cover Hole	18	PH050	K11099	1	20	0,14
01250P	TOE13 GOVDE,P (SINYAL LAMBASIZ\KAPAKLI)	OE-R1082	01051A	10	Stroking	13	PH160	K20023	1	20	0,188
01250P	TOE13 GOVDE,P (SINYAL LAMBASIZ\KAPAKLI)	OE-R1082	01051A	20	Cutting Slope	14	DE08503	K31006	1	20	0,161
01250P	TOE13 GOVDE,P (SINYAL LAMBASIZ\KAPAKLI)	OE-R1082	01051A	30	Head Draing	15	PE06005	K12021	1	20	0,75
01250P	TOE13 GOVDE,P (SINYAL LAMBASIZ\KAPAKLI)	OE-R1082	01051A	40	Decoupling Shutter Ground	15	PE06005	K62021	1	20	0,091
01250P	TOE13 GOVDE,P (SINYAL LAMBASIZ\KAPAKLI)	OE-R1082	01051A	50	Decoupling Cable Hole	18	PH050	K11113	1	20	0,14
01250P	TOE13 GOVDE,P (SINYAL LAMBASIZ\KAPAKLI)	OE-R1082	01051A	60	Draining Switch Hook	18	PH050	K11197	1	20	0,14
01250P	TOE13 GOVDE,P (SINYAL LAMBASIZ\KAPAKLI)	OE-R1082	01051A	70	Decoupling Cover Hole	18	PH050	K11099	1	20	0,183
01066P	TOE11 GOVDE,P	OE-R1092	01011A	10	Stroking	13	PH160	K20024	1	20	0,188
01066P	TOE11 GOVDE,P	OE-R1092	01011A	20	Cutting Slope	14	DE08503	K30015	1	20	0,17
01066P	TOE11 GOVDE,P	OE-R1092	01011A	30	Head Draing	15	PE06005	K12003	1	20	0,073
01066P	TOE11 GOVDE,P	OE-R1092	01011A	40	Decoupling Shutter Ground	15	PE06005	K60002	1	20	0,079

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01066P	TOE11 GOVDE,P	OE-R1092	01011A	50	Decoupling Cable Hole	18	PH050	K11113	1	20	0,093
01066P	TOE11 GOVDE,P	OE-R1092	01011A	60	Decoupling Signal Lamp	18	PH050	K11197	1	20	0,093
01186P	TOE11 GOVDE,P (SINYAL LAMBASIZ)	OE-R1092	01011A	10	Stroking	13	PH160	K20024	1	20	0,188
01186P	TOE11 GOVDE,P (SINYAL LAMBASIZ)	OE-R1092	01011A	20	Cutting Slope	14	DE08503	K30015	1	20	0,17
01186P	TOE11 GOVDE,P (SINYAL LAMBASIZ)	OE-R1092	01011A	30	Head Draing	15	PE06005	K12003	1	20	0,073
01186P	TOE11 GOVDE,P (SINYAL LAMBASIZ)	OE-R1092	01011A	40	Decoupling Shutter Ground	15	PE06005	K60002	1	20	0,079
01186P	TOE11 GOVDE,P (SINYAL LAMBASIZ)	OE-R1092	01011A	50	Decoupling Cable Hole	18	PH050	K11113	1	20	0,093
01014P	TOE3 GÖVDE (0700/TIMERLI/SINYALLI)	OE-R1111	01013A	10	Stroking	13	PH160	K20023	1	20	0,188
01014P	TOE3 GÖVDE (0700/TIMERLI/SINYALLI)	OE-R1111	01013A	20	Cutting Slope	14	DE08503	K31002	1	20	0,2
01014P	TOE3 GÖVDE (0700/TIMERLI/SINYALLI)	OE-R1111	01013A	30	Head Draing	9	PE080	K12021	1	20	0,075
01014P	TOE3 GÖVDE (0700/TIMERLI/SINYALLI)	OE-R1111	01013A	40	Draining Switch Hook	16	SD40003	SD40003	1	20	0,183
01014P	TOE3 GÖVDE (0700/TIMERLI/SINYALLI)	OE-R1111	01013A	50	Decoupling Timer Hook	18	PH050	K11043	1	20	0,125
01014P	TOE3 GÖVDE (0700/TIMERLI/SINYALLI)	OE-R1111	01013A	60	Decoupling Cover Hole	18	PH050	K11032	1	20	0,125
01014P	TOE3 GÖVDE (0700/TIMERLI/SINYALLI)	OE-R1111	01013A	70	Decoupling Signal Lamp	16	SD40005	SD40005	1	20	0,183
01014P	TOE3 GÖVDE (0700/TIMERLI/SINYALLI)	OE-R1111	01013A	80	Decoupling Shutter Ground	16	SD40012	SD40012	1	20	0,183
01049P	TOE3 GÖVDE (0700/TIMERLI)	OE-R1111	01013A	10	Stroking	13	PH160	K20023	1	20	0,188
01049P	TOE3 GÖVDE (0700/TIMERLI)	OE-R1111	01013A	20	Cutting Slope	14	DE08503	K31002	1	20	0,2
01049P	TOE3 GÖVDE (0700/TIMERLI)	OE-R1111	01013A	30	Head Draing	9	PE080	K12021	1	20	0,075
01049P	TOE3 GÖVDE (0700/TIMERLI)	OE-R1111	01013A	40	Draining Switch Hook	16	SD40003	SD40003	1	20	0,183
01049P	TOE3 GÖVDE (0700/TIMERLI)	OE-R1111	01013A	50	Decoupling Timer Hook	18	PH050	K11043	1	20	0,125
01049P	TOE3 GÖVDE (0700/TIMERLI)	OE-R1111	01013A	60	Decoupling Shutter Ground	16	SD40012	SD40012	1	20	0,183
01096P	TOE3 PLEYT GOVDESI,P (TIMERLI/SINYAL LAMBALI)	OE-R1111	01013A	10	Stroking	13	PH160	K20023	1	20	0,188
01096P	TOE3 PLEYT GOVDESI,P (TIMERLI/SINYAL LAMBALI)	OE-R1111	01013A	20	Cutting Slope	14	DE08503	K31002	1	20	0,2
01096P	TOE3 PLEYT GOVDESI,P (TIMERLI/SINYAL LAMBALI)	OE-R1111	01013A	30	Head Draing	9	PE080	K12021	1	20	0,075
01096P	TOE3 PLEYT GOVDESI,P (TIMERLI/SINYAL LAMBALI)	OE-R1111	01013A	40	Draining Switch Hook	16	SD40003	SD40003	1	20	0,183
01096P	TOE3 PLEYT GOVDESI,P (TIMERLI/SINYAL LAMBALI)	OE-R1111	01013A	50	Decoupling Timer Hook	18	PH050	K11043	1	20	0,125
01096P	TOE3 PLEYT GOVDESI,P (TIMERLI/SINYAL LAMBALI)	OE-R1111	01013A	60	Decoupling Signal Lamp	16	SD40005	SD40005	1	20	0,183
01096P	TOE3 PLEYT GOVDESI,P (TIMERLI/SINYAL LAMBALI)	OE-R1111	01013A	70	Decoupling Shutter Ground	16	SD40012	SD40012	1	20	0,183
01110P	TOE1 PLEYT GÖVDESI,P (120V)	OE-R1116	01011A	10	Stroking	13	PH160	K20024	1	20	0,188
01110P	TOE1 PLEYT GÖVDESI,P (120V)	OE-R1116	01011A	20	Cutting Slope	14	DE08503	K30015	1	20	0,2
01110P	TOE1 PLEYT GÖVDESI,P (120V)	OE-R1116	01011A	30	Head Draing	15	PE06005	K12033	1	20	0,075
01110P	TOE1 PLEYT GÖVDESI,P (120V)	OE-R1116	01011A	40	Decoupling Cable Hole	16	SD40001	SD40001	1	20	0,183
01110P	TOE1 PLEYT GÖVDESI,P (120V)	OE-R1116	01011A	50	Draining Switch Hook	16	SD40003	SD40003	1	20	0,183
01111P	TOE2 PLEYT GOVDESI,P(120V)	OE-R1117	01012A	10	Stroking	13	PH160	K20022	1	20	0,188
01111P	TOE2 PLEYT GOVDESI,P(120V)	OE-R1117	01012A	20	Edge Cutting	15	PE06005	K20002	1	20	0,236
01111P	TOE2 PLEYT GOVDESI,P(120V)	OE-R1117	01012A	30	Cutting Slope	14	DE08503	K31001	1	20	0,189
01111P	TOE2 PLEYT GOVDESI,P(120V)	OE-R1117	01012A	40	Head Draing	9	PE080	K12022	1	20	0,075
01111P	TOE2 PLEYT GOVDESI,P(120V)	OE-R1117	01012A	50	Draining Switch Hook	16	SD40003	SD40003	1	20	0,183
01111P	TOE2 PLEYT GOVDESI,P(120V)	OE-R1117	01012A	60	Decoupling Cable Hole	16	SD40001	SD40001	1	20	0,183
01111P	TOE2 PLEYT GOVDESI,P(120V)	OE-R1117	01012A	70	Decoupling Shutter Ground	16	SD40012	SD40012	1	20	0,183
01111P	TOE2 PLEYT GOVDESI,P(120V)	OE-R1117	01012A	80	Decoupling Ventilation Mouth	16	SD40011	SD40011	1	20	0,183
09008P	TOA\TOM-4\7 ALT KAPAK GOVDESI,P	OM-R1002	09076A	10	Stroking	1	PH350	K21024	2	20	0,474
09008P	TOA\TOM-4\7 ALT KAPAK GOVDESI,P	OM-R1002	09076A	20	Peripheral Cutting	3	PH150	K19076	1	20	0,308
09008P	TOA\TOM-4\7 ALT KAPAK GOVDESI,P	OM-R1002	09076A	30	Curling	3	PH150	K40175	1	20	0,224



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09008P	TOA\TOM-4\7 ALT KAPAK GOVDESI, P	OM-R1002	09076A	40	Draining G.T.B. Cap	4	PH07001	K11036	1	20	0,196
09008P	TOA\TOM-4\7 ALT KAPAK GOVDESI, P	OM-R1002	09076A	50	Draining Clemence Hook	9	PE080	K11037	1	20	0,18
09038P	TOA4 ALT KAPAK,P (KLEMENSSIZ ÇAKMAKSIZ)	OM-R1003	09076A	10	Stroking	1	PH350	K21024	2	20	0,474
09038P	TOA4 ALT KAPAK,P (KLEMENSSIZ ÇAKMAKSIZ)	OM-R1003	09076A	20	Peripheral Cutting	3	PH150	K19076	1	20	0,308
09038P	TOA4 ALT KAPAK,P (KLEMENSSIZ ÇAKMAKSIZ)	OM-R1003	09076A	30	Curling	3	PH150	K40175	1	20	0,224
09038P	TOA4 ALT KAPAK,P (KLEMENSSIZ ÇAKMAKSIZ)	OM-R1003	09076A	40	Draining G.T.B. Cap	4	PH07001	K11036	1	20	0,196
01221P	TOM21 PLEYT,P (KENARLAMALI)	OM-R1015	01086A	10	Stroking	1	PH600	K20065	2	20	0,39
01221P	TOM21 PLEYT,P (KENARLAMALI)	OM-R1015	01086A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01221P	TOM21 PLEYT,P (KENARLAMALI)	OM-R1015	01086A	30	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,308
01221P	TOM21 PLEYT,P (KENARLAMALI)	OM-R1015	01086A	40	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,224
01222P	TOM21 PLEYT,P (SONME EMNI YETLI /KENARLAMALI)	OM-R1015	01086A	10	Stroking	1	PH600	K20065	2	20	0,39
01222P	TOM21 PLEYT,P (SONME EMNI YETLI /KENARLAMALI)	OM-R1015	01086A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01222P	TOM21 PLEYT,P (SONME EMNI YETLI /KENARLAMALI)	OM-R1015	01086A	30	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,308
01222P	TOM21 PLEYT,P (SONME EMNI YETLI /KENARLAMALI)	OM-R1015	01086A	40	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,224
01223P	TOM21 PLEYT,P (ÇAKMAKSIZ /SON.EMNI YETLI /KENARLAMALI)	OM-R1015	01086A	10	Stroking	1	PH600	K20065	2	20	0,39
01223P	TOM21 PLEYT,P (ÇAKMAKSIZ /SON.EMNI YETLI /KENARLAMALI)	OM-R1015	01086A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01223P	TOM21 PLEYT,P (ÇAKMAKSIZ /SON.EMNI YETLI /KENARLAMALI)	OM-R1015	01086A	30	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,308
01223P	TOM21 PLEYT,P (ÇAKMAKSIZ /SON.EMNI YETLI /KENARLAMALI)	OM-R1015	01086A	40	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,224
01308P	TOM21 PLEYT,P (KENARLAMALI\MOLVENO ÇAKMAK)	OM-R1015	01086A	10	Stroking	1	PH600	K20065	2	20	0,39
01308P	TOM21 PLEYT,P (KENARLAMALI\MOLVENO ÇAKMAK)	OM-R1015	01086A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01308P	TOM21 PLEYT,P (KENARLAMALI\MOLVENO ÇAKMAK)	OM-R1015	01086A	30	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,308
01308P	TOM21 PLEYT,P (KENARLAMALI\MOLVENO ÇAKMAK)	OM-R1015	01086A	40	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,224
01309P	TOM21 PLEYT,P (SONME EMNI YETLI /KENARLAMALI\MOLVENO)	OM-R1015	01086A	10	Stroking	1	PH600	K20065	2	20	0,39
01309P	TOM21 PLEYT,P (SONME EMNI YETLI /KENARLAMALI\MOLVENO)	OM-R1015	01086A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01309P	TOM21 PLEYT,P (SONME EMNI YETLI /KENARLAMALI\MOLVENO)	OM-R1015	01086A	30	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,308
01309P	TOM21 PLEYT,P (SONME EMNI YETLI /KENARLAMALI\MOLVENO)	OM-R1015	01086A	40	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,224
01396P	TOM21 PLEYT,P (KENARLAMALI, CAM OCAK KAPAKLI)	OM-R1015	01086A	10	Stroking	1	PH600	K20065	2	20	0,39
01396P	TOM21 PLEYT,P (KENARLAMALI, CAM OCAK KAPAKLI)	OM-R1015	01086A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01396P	TOM21 PLEYT,P (KENARLAMALI, CAM OCAK KAPAKLI)	OM-R1015	01086A	30	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,308
01396P	TOM21 PLEYT,P (KENARLAMALI, CAM OCAK KAPAKLI)	OM-R1015	01086A	40	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,224
01397P	TOM21 PLEYT,P (SONME EMNI YETLI /KENARLAMALI /CAM OCAK)	OM-R1015	01086A	10	Stroking	1	PH600	K20065	2	20	0,39
01397P	TOM21 PLEYT,P (SONME EMNI YETLI /KENARLAMALI /CAM OCAK)	OM-R1015	01086A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01397P	TOM21 PLEYT,P (SONME EMNI YETLI /KENARLAMALI /CAM OCAK)	OM-R1015	01086A	30	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,308
01397P	TOM21 PLEYT,P (SONME EMNI YETLI /KENARLAMALI /CAM OCAK)	OM-R1015	01086A	40	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,224
01398P	TOM21 PLEYT,P (ÇAKMAKSIZ /SON.EMNI YETLI /KENARLAMALI /)	OM-R1015	01086A	10	Stroking	1	PH600	K20065	2	20	0,39
01398P	TOM21 PLEYT,P (ÇAKMAKSIZ /SON.EMNI YETLI /KENARLAMALI /)	OM-R1015	01086A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01398P	TOM21 PLEYT,P (ÇAKMAKSIZ /SON.EMNI YETLI /KENARLAMALI /)	OM-R1015	01086A	30	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,308
01398P	TOM21 PLEYT,P (ÇAKMAKSIZ /SON.EMNI YETLI /KENARLAMALI /)	OM-R1015	01086A	40	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,224
01399P	TOM21 PLEYT,P (KENARLAMALI\MOLVENO ÇAKMAK /CAM OCAK)	OM-R1015	01086A	10	Stroking	1	PH600	K20065	2	20	0,39
01399P	TOM21 PLEYT,P (KENARLAMALI\MOLVENO ÇAKMAK /CAM OCAK)	OM-R1015	01086A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01399P	TOM21 PLEYT,P (KENARLAMALI\MOLVENO ÇAKMAK /CAM OCAK)	OM-R1015	01086A	30	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,308
01399P	TOM21 PLEYT,P (KENARLAMALI\MOLVENO ÇAKMAK /CAM OCAK)	OM-R1015	01086A	40	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,224
01400P	TOM21 PLEYT,P (SONME EMNI YETLI /KENARLAMALI\MOLVENO)	OM-R1015	01086A	10	Stroking	1	PH600	K20065	2	20	0,39
01400P	TOM21 PLEYT,P (SONME EMNI YETLI /KENARLAMALI\MOLVENO)	OM-R1015	01086A	20	Cutting Slope	2	DE085	K30034	1	20	0,254

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01400P	TOM21 PLEYT,P (SONME EMNI YETLI /KENARLAMALI \MOLVENC	OM-R1015	01086A	30	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,308
01400P	TOM21 PLEYT,P (SONME EMNI YETLI /KENARLAMALI \MOLVENC	OM-R1015	01086A	40	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,224
01230P	TOM22 PLEYT,P (SONME EMNI YETLI /KENARLAMALI )	OM-R1016	01086A	10	Stroking	1	PH600	K20066	2	20	0,478
01230P	TOM22 PLEYT,P (SONME EMNI YETLI /KENARLAMALI )	OM-R1016	01086A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01230P	TOM22 PLEYT,P (SONME EMNI YETLI /KENARLAMALI )	OM-R1016	01086A	30	Decoupling Pipe Hole	3	PH150	K12067	1	20	0,23
01230P	TOM22 PLEYT,P (SONME EMNI YETLI /KENARLAMALI )	OM-R1016	01086A	40	Draining Head Ground	9	PE080	K12070	1	20	0,33
01230P	TOM22 PLEYT,P (SONME EMNI YETLI /KENARLAMALI )	OM-R1016	01086A	50	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,18
01230P	TOM22 PLEYT,P (SONME EMNI YETLI /KENARLAMALI )	OM-R1016	01086A	60	Draining Switch Hook	9	PE080	K11217	1	20	0,18
01256P	TOM22 PLEYT,P (HI-FLAME/KOMPLE SON.EMN./GOTTAK SALI	OM-R1020	01086A	10	Stroking	1	PH600	K20066	2	20	0,478
01256P	TOM22 PLEYT,P (HI-FLAME/KOMPLE SON.EMN./GOTTAK SALI	OM-R1020	01086A	20	Cutting Slope	2	DE085	K30072	1	20	0,254
01256P	TOM22 PLEYT,P (HI-FLAME/KOMPLE SON.EMN./GOTTAK SALI	OM-R1020	01086A	30	Draining Head Ground	9	PE080	K12070	1	20	0,33
01256P	TOM22 PLEYT,P (HI-FLAME/KOMPLE SON.EMN./GOTTAK SALI	OM-R1020	01086A	40	Draining Pipe and Pannel Box	3	PH150	K11197	1	20	0,23
01256P	TOM22 PLEYT,P (HI-FLAME/KOMPLE SON.EMN./GOTTAK SALI	OM-R1020	01086A	50	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,18
01256P	TOM22 PLEYT,P (HI-FLAME/KOMPLE SON.EMN./GOTTAK SALI	OM-R1020	01086A	60	Draining Switch Hook	9	PE080	K11217	1	20	0,18
01255P	TOM22 PLEYT,P (GOTTAK SALTER BOSALTMALI )	OM-R1021	01086A	10	Stroking	1	PH600	K20066	2	20	0,478
01255P	TOM22 PLEYT,P (GOTTAK SALTER BOSALTMALI )	OM-R1021	01086A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01255P	TOM22 PLEYT,P (GOTTAK SALTER BOSALTMALI )	OM-R1021	01086A	30	Draining Head Ground	9	PE080	K12070	1	20	0,33
01255P	TOM22 PLEYT,P (GOTTAK SALTER BOSALTMALI )	OM-R1021	01086A	40	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,23
01255P	TOM22 PLEYT,P (GOTTAK SALTER BOSALTMALI )	OM-R1021	01086A	50	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,18
01255P	TOM22 PLEYT,P (GOTTAK SALTER BOSALTMALI )	OM-R1021	01086A	60	Draining Switch Hook	9	PE080	K11217	1	20	0,18
01332P	TOM22 PLEYT,P (GOTTAK SALTER BOSALTMALI \MOLVENO CA	OM-R1021	01086A	10	Stroking	1	PH600	K20066	2	20	0,478
01332P	TOM22 PLEYT,P (GOTTAK SALTER BOSALTMALI \MOLVENO CA	OM-R1021	01086A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01332P	TOM22 PLEYT,P (GOTTAK SALTER BOSALTMALI \MOLVENO CA	OM-R1021	01086A	30	Draining Head Ground	9	PE080	K12070	1	20	0,33
01332P	TOM22 PLEYT,P (GOTTAK SALTER BOSALTMALI \MOLVENO CA	OM-R1021	01086A	40	Draining Pipe and Pannel Box	3	PH150	K12067	1	20	0,23
01332P	TOM22 PLEYT,P (GOTTAK SALTER BOSALTMALI \MOLVENO CA	OM-R1021	01086A	50	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,18
01332P	TOM22 PLEYT,P (GOTTAK SALTER BOSALTMALI \MOLVENO CA	OM-R1021	01086A	60	Draining Switch Hook	9	PE080	K11217	1	20	0,18
01290P	TOM21 PLEYT KENARLAMALI YENI HI-FLAME	OM-R1022	01086A	10	Stroking	1	PH600	K20065	2	20	0,478
01290P	TOM21 PLEYT KENARLAMALI YENI HI-FLAME	OM-R1022	01086A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01290P	TOM21 PLEYT KENARLAMALI YENI HI-FLAME	OM-R1022	01086A	30	Decoupling Pipe Hole	3	PH150	K11197	1	20	0,23
01290P	TOM21 PLEYT KENARLAMALI YENI HI-FLAME	OM-R1022	01086A	40	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,18
01297P	TOM21 PLEYT KENARLAMALI SÖNME EMN. YENİ HI-FLAME	OM-R1022	01086A	10	Stroking	1	PH600	K20065	2	20	0,478
01297P	TOM21 PLEYT KENARLAMALI SÖNME EMN. YENİ HI-FLAME	OM-R1022	01086A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01297P	TOM21 PLEYT KENARLAMALI SÖNME EMN. YENİ HI-FLAME	OM-R1022	01086A	30	Decoupling Pipe Hole	3	PH150	K11197	1	20	0,23
01297P	TOM21 PLEYT KENARLAMALI SÖNME EMN. YENİ HI-FLAME	OM-R1022	01086A	40	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,18
01333P	TOM21 PLEYT KENARLAMALI YENI HI-FLAME MOLVENO ÇAKM	OM-R1022	01086A	10	Stroking	1	PH600	K20065	2	20	0,478
01333P	TOM21 PLEYT KENARLAMALI YENI HI-FLAME MOLVENO ÇAKM	OM-R1022	01086A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01333P	TOM21 PLEYT KENARLAMALI YENI HI-FLAME MOLVENO ÇAKM	OM-R1022	01086A	30	Decoupling Pipe Hole	3	PH150	K11197	1	20	0,23
01333P	TOM21 PLEYT KENARLAMALI YENI HI-FLAME MOLVENO ÇAKM	OM-R1022	01086A	40	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,18
01291P	TOM21 PLEYT ( YENİ HI-FLAME INOX)	OM-R1024	01088A	10	Stroking	1	PH600	K20065	2	20	0,39
01291P	TOM21 PLEYT ( YENİ HI-FLAME INOX)	OM-R1024	01088A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01291P	TOM21 PLEYT ( YENİ HI-FLAME INOX)	OM-R1024	01088A	30	Draining Pipe and Pannel Box	3	PH150	K11197	1	20	0,308
01291P	TOM21 PLEYT ( YENİ HI-FLAME INOX)	OM-R1024	01088A	40	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,18
01291P	TOM21 PLEYT ( YENİ HI-FLAME INOX)	OM-R1024	01088A	50	Embossing	9	PE080	K64083	1	20	0,25
01298P	TOM21 PLEYT ( YENİ HI-FLAME INOX)	OM-R1024	01088A	10	Stroking	1	PH600	K20065	2	20	0,39

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01298P	TOM21 PLEYT ( YENİ HI-FLAME INOX)	OM-R1024	01088A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01298P	TOM21 PLEYT ( YENİ HI-FLAME INOX)	OM-R1024	01088A	30	Draining Pipe and Pannel Box	3	PH150	K11197	1	20	0,308
01298P	TOM21 PLEYT ( YENİ HI-FLAME INOX)	OM-R1024	01088A	40	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,18
01298P	TOM21 PLEYT ( YENİ HI-FLAME INOX)	OM-R1024	01088A	50	Embossing	9	PE080	K64083	1	20	0,25
01326P	TOM21 PLEYT ( YENİ HI-FLAME INOX)	OM-R1024	01088A	10	Stroking	1	PH600	K20065	2	20	0,39
01326P	TOM21 PLEYT ( YENİ HI-FLAME INOX)	OM-R1024	01088A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01326P	TOM21 PLEYT ( YENİ HI-FLAME INOX)	OM-R1024	01088A	30	Draining Pipe and Pannel Box	3	PH150	K11197	1	20	0,308
01326P	TOM21 PLEYT ( YENİ HI-FLAME INOX)	OM-R1024	01088A	40	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,18
01326P	TOM21 PLEYT ( YENİ HI-FLAME INOX)	OM-R1024	01088A	50	Embossing	9	PE080	K64083	1	20	0,25
01327P	TOM21 PLEYT (KENARLAMALI SÖNME EMN. YENİ HI-FLAME INOX)	OM-R1024	01088A	10	Stroking	1	PH600	K20065	2	20	0,39
01327P	TOM21 PLEYT (KENARLAMALI SÖNME EMN. YENİ HI-FLAME INOX)	OM-R1024	01088A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01327P	TOM21 PLEYT (KENARLAMALI SÖNME EMN. YENİ HI-FLAME INOX)	OM-R1024	01088A	30	Draining Pipe and Pannel Box	3	PH150	K11197	1	20	0,308
01327P	TOM21 PLEYT (KENARLAMALI SÖNME EMN. YENİ HI-FLAME INOX)	OM-R1024	01088A	40	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,18
01327P	TOM21 PLEYT (KENARLAMALI SÖNME EMN. YENİ HI-FLAME INOX)	OM-R1024	01088A	50	Embossing	9	PE080	K64083	1	20	0,25
01300P	TOM22 PLEYT (INOX)	OM-R1025	01088A	10	Stroking	1	PH600	K20066	2	20	0,478
01300P	TOM22 PLEYT (INOX)	OM-R1025	01088A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01300P	TOM22 PLEYT (INOX)	OM-R1025	01088A	30	Draining Head Ground	9	PE080	K12070	1	20	0,238
01300P	TOM22 PLEYT (INOX)	OM-R1025	01088A	40	Decoupling Pipe Hole	3	PH150	K11197	1	20	0,23
01300P	TOM22 PLEYT (INOX)	OM-R1025	01088A	50	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,251
01300P	TOM22 PLEYT (INOX)	OM-R1025	01088A	60	Draining Switch Hook	9	PE080	K11217	1	20	0,18
01300P	TOM22 PLEYT (INOX)	OM-R1025	01088A	70	Embossing	9	PE080	K64085	1	20	0,18
01302P	TOM22 PLEYT (INOX)	OM-R1025	01088A	10	Stroking	1	PH600	K20066	2	20	0,478
01302P	TOM22 PLEYT (INOX)	OM-R1025	01088A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01302P	TOM22 PLEYT (INOX)	OM-R1025	01088A	30	Draining Head Ground	9	PE080	K12070	1	20	0,238
01302P	TOM22 PLEYT (INOX)	OM-R1025	01088A	40	Decoupling Pipe Hole	3	PH150	K11197	1	20	0,23
01302P	TOM22 PLEYT (INOX)	OM-R1025	01088A	50	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,251
01302P	TOM22 PLEYT (INOX)	OM-R1025	01088A	60	Draining Switch Hook	9	PE080	K11217	1	20	0,18
01302P	TOM22 PLEYT (INOX)	OM-R1025	01088A	70	Embossing	9	PE080	K64085	1	20	0,18
01328P	TOM22 PLEYT (INOX)	OM-R1025	01088A	10	Stroking	1	PH600	K20066	2	20	0,478
01328P	TOM22 PLEYT (INOX)	OM-R1025	01088A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01328P	TOM22 PLEYT (INOX)	OM-R1025	01088A	30	Draining Head Ground	9	PE080	K12070	1	20	0,238
01328P	TOM22 PLEYT (INOX)	OM-R1025	01088A	40	Decoupling Pipe Hole	3	PH150	K11197	1	20	0,23
01328P	TOM22 PLEYT (INOX)	OM-R1025	01088A	50	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,251
01328P	TOM22 PLEYT (INOX)	OM-R1025	01088A	60	Draining Switch Hook	9	PE080	K11217	1	20	0,18
01328P	TOM22 PLEYT (INOX)	OM-R1025	01088A	70	Embossing	9	PE080	K64085	1	20	0,18
01329P	TOM22 PLEYT (INOX)	OM-R1025	01088A	10	Stroking	1	PH600	K20066	2	20	0,478
01329P	TOM22 PLEYT (INOX)	OM-R1025	01088A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01329P	TOM22 PLEYT (INOX)	OM-R1025	01088A	30	Draining Head Ground	9	PE080	K12070	1	20	0,238
01329P	TOM22 PLEYT (INOX)	OM-R1025	01088A	40	Decoupling Pipe Hole	3	PH150	K11197	1	20	0,23
01329P	TOM22 PLEYT (INOX)	OM-R1025	01088A	50	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,251
01329P	TOM22 PLEYT (INOX)	OM-R1025	01088A	60	Draining Switch Hook	9	PE080	K11217	1	20	0,18
01329P	TOM22 PLEYT (INOX)	OM-R1025	01088A	70	Embossing	9	PE080	K64085	1	20	0,18
01358P	TOM21 PLEYT (INOX)\KNRLMALI\KUQUK BEG\YENİ HI-FLAME\INOX)	OM-R1026	01088A	10	Stroking	1	PH600	K20065	2	20	0,39
01358P	TOM21 PLEYT (INOX)\KNRLMALI\KUQUK BEG\YENİ HI-FLAME\INOX)	OM-R1026	01088A	20	Cutting Slope	2	DE085	K30034	1	20	0,254

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01358P	TOM21 PLEYT (INOX\KNRLMALI\KUCUK BEGYENİ HI-FLAME\	OM-R1026	01088A	30	Decoupling Pipe Hole	3	PH150	K11197	1	20	0,308
01358P	TOM21 PLEYT (INOX\KNRLMALI\KUCUK BEGYENİ HI-FLAME\	OM-R1026	01088A	40	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,18
01358P	TOM21 PLEYT (INOX\KNRLMALI\KUCUK BEGYENİ HI-FLAME\	OM-R1026	01088A	50	Embossing	9	PE080	K64083	1	20	0,25
01402P	TOM21 PLEYT (INOX\KNRLMALI\KCK BEGYENİ HI-FLAME\MOI	OM-R1026	01088A	10	Stroking	1	PH600	K20065	2	20	0,39
01402P	TOM21 PLEYT (INOX\KNRLMALI\KCK BEGYENİ HI-FLAME\MOI	OM-R1026	01088A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01402P	TOM21 PLEYT (INOX\KNRLMALI\KCK BEGYENİ HI-FLAME\MOI	OM-R1026	01088A	30	Decoupling Pipe Hole	3	PH150	K11197	1	20	0,308
01402P	TOM21 PLEYT (INOX\KNRLMALI\KCK BEGYENİ HI-FLAME\MOI	OM-R1026	01088A	40	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,18
01402P	TOM21 PLEYT (INOX\KNRLMALI\KCK BEGYENİ HI-FLAME\MOI	OM-R1026	01088A	50	Embossing	9	PE080	K64083	1	20	0,25
01359P	TOM21 PLEYT (KENARLAMALI\KUCUK BEGYENİ HI-FLAME)	OM-R1027	01086A	10	Stroking	1	PH600	K20065	2	20	0,39
01359P	TOM21 PLEYT (KENARLAMALI\KUCUK BEGYENİ HI-FLAME)	OM-R1027	01086A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01359P	TOM21 PLEYT (KENARLAMALI\KUCUK BEGYENİ HI-FLAME)	OM-R1027	01086A	30	Draining Pipe and Pannel Box	3	PH150	K11197	1	20	0,308
01359P	TOM21 PLEYT (KENARLAMALI\KUCUK BEGYENİ HI-FLAME)	OM-R1027	01086A	40	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,224
01401P	TOM21 PLEYT (KNRLMALI\KUCUK BEGYENİ HI-FLAME\MOLVE	OM-R1027	01086A	10	Stroking	1	PH600	K20065	2	20	0,39
01401P	TOM21 PLEYT (KNRLMALI\KUCUK BEGYENİ HI-FLAME\MOLVE	OM-R1027	01086A	20	Cutting Slope	2	DE085	K30034	1	20	0,254
01401P	TOM21 PLEYT (KNRLMALI\KUCUK BEGYENİ HI-FLAME\MOLVE	OM-R1027	01086A	30	Draining Pipe and Pannel Box	3	PH150	K11197	1	20	0,308
01401P	TOM21 PLEYT (KNRLMALI\KUCUK BEGYENİ HI-FLAME\MOLVE	OM-R1027	01086A	40	Countersinking Pannel Ground	9	PE080	K11212	1	20	0,224
0200053P	A2000 OCAKSIZ EMAYE DIŞ PANO (FANSIZ ÜRÜNLERDE)	AO-R0049	02646A	10	Stroking	1	PH300	K20150	2	20	0,39
0200053P	A2000 OCAKSIZ EMAYE DIŞ PANO (FANSIZ ÜRÜNLERDE)	AO-R0049	02646A	20	Cutting Slope	2	DE085	K30082	1	20	0,254
0200053P	A2000 OCAKSIZ EMAYE DIŞ PANO (FANSIZ ÜRÜNLERDE)	AO-R0049	02646A	30	Drilling, Countersinking, and S	3	PH150	K10334	1	20	0,308
0200054P	A2000 OCAKLI DIŞ PANO (FANSIZ ÜRÜNLERDE)	AO-R0049	02646A	10	Stroking	1	PH300	K20150	2	20	0,39
0200054P	A2000 OCAKLI DIŞ PANO (FANSIZ ÜRÜNLERDE)	AO-R0049	02646A	20	Cutting Slope	2	DE085	K30082	1	20	0,254
0200054P	A2000 OCAKLI DIŞ PANO (FANSIZ ÜRÜNLERDE)	AO-R0049	02646A	30	Drilling, Countersinking, and S	3	PH150	K10334	1	20	0,308
0200055P	A2000 OCAKSIZ TİMERLİ DIŞ PANO (FANSIZ ÜRÜNLERDE)	AO-R0049	02646A	10	Stroking	1	PH300	K20150	2	20	0,39
0200055P	A2000 OCAKSIZ TİMERLİ DIŞ PANO (FANSIZ ÜRÜNLERDE)	AO-R0049	02646A	20	Cutting Slope	2	DE085	K30082	1	20	0,254
0200055P	A2000 OCAKSIZ TİMERLİ DIŞ PANO (FANSIZ ÜRÜNLERDE)	AO-R0049	02646A	30	Drilling, Countersinking, and S	3	PH150	K10334	1	20	0,308
0200056P	A2000 OCAKLI TİMERLİ DIŞ PANO (FANSIZ ÜRÜNLERDE)	AO-R0049	02646A	10	Stroking	1	PH300	K20150	2	20	0,39
0200056P	A2000 OCAKLI TİMERLİ DIŞ PANO (FANSIZ ÜRÜNLERDE)	AO-R0049	02646A	20	Cutting Slope	2	DE085	K30082	1	20	0,254
0200056P	A2000 OCAKLI TİMERLİ DIŞ PANO (FANSIZ ÜRÜNLERDE)	AO-R0049	02646A	30	Drilling, Countersinking, and S	3	PH150	K10334	1	20	0,308
0200057P	A2000 OCAKSIZ DIŞ PANO INOX(FANSIZ ÜRÜNLERDE)	AO-R0049	02645A	10	Stroking	1	PH300	K20150	2	20	0,467
0200057P	A2000 OCAKSIZ DIŞ PANO INOX(FANSIZ ÜRÜNLERDE)	AO-R0049	02645A	20	Cutting Slope	2	DE085	K30082	1	20	0,224
0200057P	A2000 OCAKSIZ DIŞ PANO INOX(FANSIZ ÜRÜNLERDE)	AO-R0049	02645A	30	Drilling, Countersinking, and S	3	PH150	K10334	1	20	0,23
0200057P	A2000 OCAKSIZ DIŞ PANO INOX(FANSIZ ÜRÜNLERDE)	AO-R0049	02645A	40	Top Countersinking	4	PH07001	K10335	1	20	0,25
0200058P	A2000 OCAKLI DIŞ PANO INOX (FANSIZ ÜRÜNLERDE)	AO-R0049	02645A	10	Stroking	1	PH300	K20150	2	20	0,467
0200058P	A2000 OCAKLI DIŞ PANO INOX (FANSIZ ÜRÜNLERDE)	AO-R0049	02645A	20	Cutting Slope	2	DE085	K30082	1	20	0,224
0200058P	A2000 OCAKLI DIŞ PANO INOX (FANSIZ ÜRÜNLERDE)	AO-R0049	02645A	30	Drilling, Countersinking, and S	3	PH150	K10334	1	20	0,23
0200058P	A2000 OCAKLI DIŞ PANO INOX (FANSIZ ÜRÜNLERDE)	AO-R0049	02645A	40	Top Countersinking	4	PH07001	K10335	1	20	0,25
0200059P	A2000 OCAKLI TİMMERLİ DIŞ PANO INOX (FANSIZ ÜRÜNLERD	AO-R0049	02645A	10	Stroking	1	PH300	K20150	2	20	0,467
0200059P	A2000 OCAKLI TİMMERLİ DIŞ PANO INOX (FANSIZ ÜRÜNLERD	AO-R0049	02645A	20	Cutting Slope	2	DE085	K30082	1	20	0,224
0200059P	A2000 OCAKLI TİMMERLİ DIŞ PANO INOX (FANSIZ ÜRÜNLERD	AO-R0049	02645A	30	Drilling, Countersinking, and S	3	PH150	K10334	1	20	0,23
0200059P	A2000 OCAKLI TİMMERLİ DIŞ PANO INOX (FANSIZ ÜRÜNLERD	AO-R0049	02645A	40	Top Countersinking	4	PH07001	K10335	1	20	0,25
0200060P	A2000 OCAKSIZ TİMERLİ DIŞ PANO INOX (FANSIZ ÜRÜNLERD	AO-R0049	02645A	10	Stroking	1	PH300	K20150	2	20	0,467
0200060P	A2000 OCAKSIZ TİMERLİ DIŞ PANO INOX (FANSIZ ÜRÜNLERD	AO-R0049	02645A	20	Cutting Slope	2	DE085	K30082	1	20	0,224
0200060P	A2000 OCAKSIZ TİMERLİ DIŞ PANO INOX (FANSIZ ÜRÜNLERD	AO-R0049	02645A	30	Drilling, Countersinking, and S	3	PH150	K10334	1	20	0,23
0200060P	A2000 OCAKSIZ TİMERLİ DIŞ PANO INOX (FANSIZ ÜRÜNLERD	AO-R0049	02645A	40	Top Countersinking	4	PH07001	K10335	1	20	0,25

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0200096P	A2000 OCAKSIZ TOZBOYA DIŞ PANO (FANSIZ ÜRÜNLERDE)	AO-R0049	02644A	10	Stroking	1	PH300	K20150	2	20	0,467
0200096P	A2000 OCAKSIZ TOZBOYA DIŞ PANO (FANSIZ ÜRÜNLERDE)	AO-R0049	02644A	20	Cutting Slope	2	DE085	K30082	1	20	0,224
0200096P	A2000 OCAKSIZ TOZBOYA DIŞ PANO (FANSIZ ÜRÜNLERDE)	AO-R0049	02644A	30	Drilling, Countersinking, and S	3	PH150	K10334	1	20	0,23
0200096P	A2000 OCAKSIZ TOZBOYA DIŞ PANO (FANSIZ ÜRÜNLERDE)	AO-R0049	02644A	40	Top Countersinking	4	PH07001	K10335	1	20	0,25
01468P	TFG28 GEA GAZLI PLEYT	FG-R1266	01375A	10	Stroking	1	PH300	K20177	2	20	0,477
01468P	TFG28 GEA GAZLI PLEYT	FG-R1266	01375A	20	Peripheral Cutting	1	PH350	K10207	2	20	0,224
01468P	TFG28 GEA GAZLI PLEYT	FG-R1266	01375A	30	Leveling Slope	1	PH350	K40670	2	20	0,24
01468P	TFG28 GEA GAZLI PLEYT	FG-R1266	01375A	40	Countersinking	4	PH07001	K10217	1	20	0,164
01468P	TFG28 GEA GAZLI PLEYT	FG-R1266	01375A	50	Countersinking Shutter Hook	4	PH07001	K10208	1	20	0,164
01468P	TFG28 GEA GAZLI PLEYT	FG-R1266	01375A	60	Flanging	3	PH150	K40676	1	20	0,477
01476P	TFB28 GEA GAZLI PLEYT	FB-R1193	01388A	10	Stroking	1	PH300	K20178	2	20	0,477
01476P	TFB28 GEA GAZLI PLEYT	FB-R1193	01388A	20	Peripheral Cutting	1	PH350	K10215	2	20	0,224
01476P	TFB28 GEA GAZLI PLEYT	FB-R1193	01388A	30	Leveling Slope	1	PH350	K40673	2	20	0,24
01476P	TFB28 GEA GAZLI PLEYT	FB-R1193	01388A	40	Decoupling Hinge Hole	4	PH07001	K10216	1	20	0,164
01476P	TFB28 GEA GAZLI PLEYT	FB-R1193	01388A	50	Countersinking Shutter Hook	4	PH07001	K10208	1	20	0,164
01476P	TFB28 GEA GAZLI PLEYT	FB-R1193	01388A	60	Flanging	3	PH150	K40683	2	20	0,477
0200023P	TFB28 GEA GAZLI PANO	FB-R1201	02688A	10	Stroking	1	PH350	K20182	2	20	0,33
0200023P	TFB28 GEA GAZLI PANO	FB-R1201	02688A	20	Peripheral Cutting	3	PH150	K10229	1	20	0,224
0200023P	TFB28 GEA GAZLI PANO	FB-R1201	02688A	30	Leveling and Curling	3	PH150	K20182	1	20	0,33
0200023P	TFB28 GEA GAZLI PANO	FB-R1201	02688A	40	Draining Switch Hook	3	PH150	K10317	1	20	0,224
02688P	TFB18 DERİN PANO (GEA)	FB-R1186	02688A	10	Stroking	1	PH350	K20182	2	20	0,33
02688P	TFB18 DERİN PANO (GEA)	FB-R1186	02688A	20	Peripheral Cutting	3	PH150	K10229	1	20	0,224
02688P	TFB18 DERİN PANO (GEA)	FB-R1186	02688A	30	Leveling and Curling	3	PH150	K20182	1	20	0,33
02688P	TFB18 DERİN PANO (GEA)	FB-R1186	02688A	40	Draining Switch Hook	3	PH150	K10231	1	20	0,224
0200001P	TFG28 GEA GAZLI PANO	FG-R1283	02687A	10	Stroking	1	PH350	K20181	2	20	0,33
0200001P	TFG28 GEA GAZLI PANO	FG-R1283	02687A	20	Peripheral Cutting	3	PH150	K10228	1	20	0,224
0200001P	TFG28 GEA GAZLI PANO	FG-R1283	02687A	30	Leveling and Curling	3	PH150	K20181	1	20	0,33
0200001P	TFG28 GEA GAZLI PANO	FG-R1283	02687A	40	Draining Switch Hook	3	PH150	K10317	1	20	0,224
02687P	TFG18 DERİN PANO (GEA)	FG-R1256	02687A	10	Stroking	1	PH350	K20181	2	20	0,33
02687P	TFG18 DERİN PANO (GEA)	FG-R1256	02687A	20	Peripheral Cutting	3	PH150	K10228	1	20	0,224
02687P	TFG18 DERİN PANO (GEA)	FG-R1256	02687A	30	Leveling and Curling	3	PH150	K20181	1	20	0,33
02687P	TFG18 DERİN PANO (GEA)	FG-R1256	02687A	40	Draining Switch Hook	3	PH150	K10230	1	20	0,224
04048P	A2000 INOX SAC SAĞ DÜZ ADD ON (FİRİN KAPAK CAMI İÇİN)	AO-R0049	04048A	10	Draining	7	PE150	K10348	1	20	0,151
04051P	A2000 INOX SAC SOL DÜZ ADD ON (FİRİN KAPAK CAMI İÇİN)	AO-R0049	04048A	10	Draining	7	PE150	K10348	1	20	0,151
04065P	A2000 DÜZ INOX SAC PANO ADD ON	AO-R0049	04065A	10	Draining	7	PE150	K10235	1	20	0,151
09127P	OC66/76 ALT KAPAK ,GAZLI STANDART (OC6601/04,7601/04/0	OA-R1235	09127A	10	Stroking	1	PH350	K20163	2	20	0,4
09127P	OC66/76 ALT KAPAK ,GAZLI STANDART (OC6601/04,7601/04/0	OA-R1235	09127A	20	Peripheral Cutting	1	PH350	K10179	2	20	0,2
09129P	OC66 ALT KAPAK ,GAZLI,STANDART SET ÜSTÜ (OC6611,6614)	OA-R1235	09127A	10	Stroking	1	PH350	K20163	2	20	0,4
09129P	OC66 ALT KAPAK ,GAZLI,STANDART SET ÜSTÜ (OC6611,6614)	OA-R1235	09127A	20	Peripheral Cutting	1	PH350	K10179	2	20	0,2
09130P	OC66/76 ALT KAPAK ,HI FLAME (OC6602/03/7602/03)	OA-R1235	09127A	10	Stroking	1	PH350	K20163	2	20	0,4
09130P	OC66/76 ALT KAPAK ,HI FLAME (OC6602/03/7602/03)	OA-R1235	09127A	20	Peripheral Cutting	1	PH350	K10179	2	20	0,2
09131P	OC66 ALT KAPAK HI FLAME SET ÜSTÜ (OC6612/13)	OA-R1235	09127A	10	Stroking	1	PH350	K20163	2	20	0,4
09131P	OC66 ALT KAPAK HI FLAME SET ÜSTÜ (OC6612/13)	OA-R1235	09127A	20	Peripheral Cutting	1	PH350	K10179	2	20	0,2

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09132P	OC7607 4 GAZ,1 ELK ALT KAPAK	OA-R1235	09127A	10	Stroking	1	PH350	K20163	2	20	0,4
09132P	OC7607 4 GAZ,1 ELK ALT KAPAK	OA-R1235	09127A	20	Peripheral Cutting	1	PH350	K10179	2	20	0,2
09133P	OC66 ALT KAPAK ELEKTRİKLİ (OC6605)	OA-R1235	09127A	10	Stroking	1	PH350	K20163	2	20	0,4
09133P	OC66 ALT KAPAK ELEKTRİKLİ (OC6605)	OA-R1235	09127A	20	Peripheral Cutting	1	PH350	K10179	2	20	0,2
01484P	OC7601 PLEYT	OA-R1242	01484A	10	Stroking	1	PH300	K20187	2	20	0,39
01484P	OC7601 PLEYT	OA-R1242	01484A	20	Cutting Slope	2	DE085	K30091	1	20	0,254
01484P	OC7601 PLEYT	OA-R1242	01484A	30	Peripheral Cutting	3	PH150	K10245	2	20	0,308
0100026P	OC7601 PLEYT ,ÇAKMAKSIZ	OA-R1242	01484A	10	Stroking	1	PH300	K20187	2	20	0,39
0100026P	OC7601 PLEYT ,ÇAKMAKSIZ	OA-R1242	01484A	20	Cutting Slope	2	DE085	K30091	1	20	0,254
0100026P	OC7601 PLEYT ,ÇAKMAKSIZ	OA-R1242	01484A	30	Peripheral Cutting	3	PH150	K10245	2	20	0,308
0100027P	OC7601 PLEYT ,INOX	OA-R1242	0100027A	10	Stroking	1	PH300	K20187	2	20	0,39
0100027P	OC7601 PLEYT ,INOX	OA-R1242	0100027A	20	Cutting Slope	2	DE085	K30091	1	20	0,254
0100027P	OC7601 PLEYT ,INOX	OA-R1242	0100027A	30	Peripheral Cutting	3	PH150	K10245	2	20	0,308
0100028P	OC7601 PLEYT ,INOX ,ÇAKMAKSIZ	OA-R1242	0100027A	10	Stroking	1	PH300	K20187	2	20	0,39
0100028P	OC7601 PLEYT ,INOX ,ÇAKMAKSIZ	OA-R1242	0100027A	20	Cutting Slope	2	DE085	K30091	1	20	0,254
0100028P	OC7601 PLEYT ,INOX ,ÇAKMAKSIZ	OA-R1242	0100027A	30	Peripheral Cutting	3	PH150	K10245	2	20	0,308
0100029P	OC7602 PLEYT	OA-R1243	01484A	10	Stroking	1	PH300	K20187	2	20	0,39
0100029P	OC7602 PLEYT	OA-R1243	01484A	20	Cutting Slope	2	DE085	K30091	1	20	0,254
0100029P	OC7602 PLEYT	OA-R1243	01484A	30	Peripheral Cutting	3	PH150	K10245	2	20	0,308
0100030P	OC7602 PLEYT ,ÇAKMAKSIZ	OA-R1243	01484A	10	Stroking	1	PH300	K20187	2	20	0,39
0100030P	OC7602 PLEYT ,ÇAKMAKSIZ	OA-R1243	01484A	20	Cutting Slope	2	DE085	K30091	1	20	0,254
0100030P	OC7602 PLEYT ,ÇAKMAKSIZ	OA-R1243	01484A	30	Peripheral Cutting	3	PH150	K10245	2	20	0,308
0100031P	OC7602 PLEYT ,INOX	OA-R1243	0100027A	10	Stroking	1	PH300	K20187	2	20	0,39
0100031P	OC7602 PLEYT ,INOX	OA-R1243	0100027A	20	Cutting Slope	2	DE085	K30091	1	20	0,254
0100031P	OC7602 PLEYT ,INOX	OA-R1243	0100027A	30	Peripheral Cutting	3	PH150	K10245	2	20	0,308
0100032P	OC7602 PLEYT ,INOX ,ÇAKMAKSIZ	OA-R1243	0100027A	10	Stroking	1	PH300	K20187	2	20	0,39
0100032P	OC7602 PLEYT ,INOX ,ÇAKMAKSIZ	OA-R1243	0100027A	20	Cutting Slope	2	DE085	K30091	1	20	0,254
0100032P	OC7602 PLEYT ,INOX ,ÇAKMAKSIZ	OA-R1243	0100027A	30	Peripheral Cutting	3	PH150	K10245	2	20	0,308
0100033P	OC7603 PLEYT	OA-R1244	01484A	10	Stroking	1	PH300	K20187	2	20	0,39
0100033P	OC7603 PLEYT	OA-R1244	01484A	20	Cutting Slope	2	DE085	K30091	1	20	0,254
0100033P	OC7603 PLEYT	OA-R1244	01484A	30	Peripheral Cutting	3	PH150	K10245	2	20	0,308
0100034P	OC7603 PLEYT ,ÇAKMAKSIZ	OA-R1244	01484A	10	Stroking	1	PH300	K20187	2	20	0,39
0100034P	OC7603 PLEYT ,ÇAKMAKSIZ	OA-R1244	01484A	20	Cutting Slope	2	DE085	K30091	1	20	0,254
0100034P	OC7603 PLEYT ,ÇAKMAKSIZ	OA-R1244	01484A	30	Peripheral Cutting	3	PH150	K10245	2	20	0,308
0100035P	OC7603 PLEYT ,INOX	OA-R1244	0100027A	10	Stroking	1	PH300	K20187	2	20	0,39
0100035P	OC7603 PLEYT ,INOX	OA-R1244	0100027A	20	Cutting Slope	2	DE085	K30091	1	20	0,254
0100035P	OC7603 PLEYT ,INOX	OA-R1244	0100027A	30	Peripheral Cutting	3	PH150	K10245	2	20	0,308
0100048P	OC7603 PLEYT ,INOX ,ÇAKMAKSIZ	OA-R1244	0100027A	10	Stroking	1	PH300	K20187	2	20	0,39
0100048P	OC7603 PLEYT ,INOX ,ÇAKMAKSIZ	OA-R1244	0100027A	20	Cutting Slope	2	DE085	K30091	1	20	0,254
0100048P	OC7603 PLEYT ,INOX ,ÇAKMAKSIZ	OA-R1244	0100027A	30	Peripheral Cutting	3	PH150	K10245	2	20	0,308
0100043P	OC7607 PLEYT INOX,ÇAKMAKSIZ	OA-R1247	0100027A	10	Stroking	1	PH300	K20187	2	20	0,39
0100043P	OC7607 PLEYT INOX,ÇAKMAKSIZ	OA-R1247	0100027A	20	Cutting Slope	2	DE085	K30091	1	20	0,254
0100043P	OC7607 PLEYT INOX,ÇAKMAKSIZ	OA-R1247	0100027A	30	Peripheral Cutting	3	PH150	K10245	2	20	0,308

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0100044P	OC7607 PLEYT,INOX	OA-R1247	0100027A	10	Stroking	1	PH300	K20187	2	20	0,39
0100044P	OC7607 PLEYT,INOX	OA-R1247	0100027A	20	Cutting Slope	2	DE085	K30091	1	20	0,254
0100044P	OC7607 PLEYT,INOX	OA-R1247	0100027A	30	Peripheral Cutting	3	PH150	K10245	2	20	0,308
0100045P	OC7607 PLEYT, ÇAKMAKSIZ	OA-R1247	01484A	10	Stroking	1	PH300	K20187	2	20	0,39
0100045P	OC7607 PLEYT, ÇAKMAKSIZ	OA-R1247	01484A	20	Cutting Slope	2	DE085	K30091	1	20	0,254
0100045P	OC7607 PLEYT, ÇAKMAKSIZ	OA-R1247	01484A	30	Peripheral Cutting	3	PH150	K10245	2	20	0,308
0100046P	OC7607 PLEYT	OA-R1246	01484A	10	Stroking	1	PH300	K20187	2	20	0,39
0100046P	OC7607 PLEYT	OA-R1246	01484A	20	Cutting Slope	2	DE085	K30091	1	20	0,254
0100046P	OC7607 PLEYT	OA-R1246	01484A	30	Peripheral Cutting	3	PH150	K10245	2	20	0,308
0100040P	OC7606 PLEYT	OA-R1246	01484A	10	Stroking	1	PH300	K20187	2	20	0,39
0100040P	OC7606 PLEYT	OA-R1246	01484A	20	Cutting Slope	2	DE085	K30091	1	20	0,254
0100040P	OC7606 PLEYT	OA-R1246	01484A	30	Peripheral Cutting	3	PH150	K10245	2	20	0,308
0100041P	OC7606 PLEYT, ÇAKMAKSIZ	OA-R1246	01484A	10	Stroking	1	PH300	K20187	2	20	0,39
0100041P	OC7606 PLEYT, ÇAKMAKSIZ	OA-R1246	01484A	20	Cutting Slope	2	DE085	K30091	1	20	0,254
0100041P	OC7606 PLEYT, ÇAKMAKSIZ	OA-R1246	01484A	30	Peripheral Cutting	3	PH150	K10245	2	20	0,308
0100042P	OC7606 PLEYT,INOX	OA-R1246	0100027A	10	Stroking	1	PH300	K20187	2	20	0,39
0100042P	OC7606 PLEYT,INOX	OA-R1246	0100027A	20	Cutting Slope	2	DE085	K30091	1	20	0,254
0100042P	OC7606 PLEYT,INOX	OA-R1246	0100027A	30	Peripheral Cutting	3	PH150	K10245	2	20	0,308
0100047P	OC7606 PLEYT,INOX,ÇAKMAKSIZ	OA-R1246	0100027A	10	Stroking	1	PH300	K20187	2	20	0,39
0100047P	OC7606 PLEYT,INOX,ÇAKMAKSIZ	OA-R1246	0100027A	20	Cutting Slope	2	DE085	K30091	1	20	0,254
0100047P	OC7606 PLEYT,INOX,ÇAKMAKSIZ	OA-R1246	0100027A	30	Peripheral Cutting	3	PH150	K10245	2	20	0,308
0100036P	OC7604 PLEYT	OA-R1245	01484A	10	Stroking	1	PH300	K20187	2	20	0,39
0100036P	OC7604 PLEYT	OA-R1245	01484A	20	Cutting Slope	2	DE085	K30091	1	20	0,254
0100036P	OC7604 PLEYT	OA-R1245	01484A	30	Peripheral Cutting	3	PH150	K10245	2	20	0,308
0100037P	OC7604 PLEYT, ÇAKMAKSIZ	OA-R1245	01484A	10	Stroking	1	PH300	K20187	2	20	0,39
0100037P	OC7604 PLEYT, ÇAKMAKSIZ	OA-R1245	01484A	20	Cutting Slope	2	DE085	K30091	1	20	0,254
0100037P	OC7604 PLEYT, ÇAKMAKSIZ	OA-R1245	01484A	30	Peripheral Cutting	3	PH150	K10245	2	20	0,308
0100038P	OC7604 PLEYT,INOX	OA-R1245	0100027A	10	Stroking	1	PH300	K20187	2	20	0,39
0100038P	OC7604 PLEYT,INOX	OA-R1245	0100027A	20	Cutting Slope	2	DE085	K30091	1	20	0,254
0100038P	OC7604 PLEYT,INOX	OA-R1245	0100027A	30	Peripheral Cutting	3	PH150	K10245	2	20	0,308
0100039P	OC7604 PLEYT,INOX,ÇAKMAKSIZ	OA-R1245	0100027A	10	Stroking	1	PH300	K20187	2	20	0,39
0100039P	OC7604 PLEYT,INOX,ÇAKMAKSIZ	OA-R1245	0100027A	20	Cutting Slope	2	DE085	K30091	1	20	0,254
0100039P	OC7604 PLEYT,INOX,ÇAKMAKSIZ	OA-R1245	0100027A	30	Peripheral Cutting	3	PH150	K10245	2	20	0,308
01490P	OC6604 PLEYT	OA-R1240	01483A	10	Stroking	1	PH300	K20186	2	20	0,39
01490P	OC6604 PLEYT	OA-R1240	01483A	20	Cutting Slope	2	DE085	K30090	1	20	0,254
01490P	OC6604 PLEYT	OA-R1240	01483A	30	Peripheral Cutting	3	PH150	K10244	2	20	0,308
01491P	OC6604 INOX PLEYT	OA-R1240	01487A	10	Stroking	1	PH300	K20186	2	20	0,39
01491P	OC6604 INOX PLEYT	OA-R1240	01487A	20	Cutting Slope	2	DE085	K30090	1	20	0,254
01491P	OC6604 INOX PLEYT	OA-R1240	01487A	30	Peripheral Cutting	3	PH150	K10244	2	20	0,308
01497P	OC6604 INOX PLEYT (ÇAKMAKSIZ / KENDİNDEN ÇAKMAKLI)	OA-R1240	01487A	10	Stroking	1	PH300	K20186	2	20	0,39
01497P	OC6604 INOX PLEYT (ÇAKMAKSIZ / KENDİNDEN ÇAKMAKLI)	OA-R1240	01487A	20	Cutting Slope	2	DE085	K30090	1	20	0,254
01497P	OC6604 INOX PLEYT (ÇAKMAKSIZ / KENDİNDEN ÇAKMAKLI)	OA-R1240	01487A	30	Peripheral Cutting	3	PH150	K10244	2	20	0,308
0100017P	OC6604 PLEYT CAM OCAK KAPAKLI	OA-R1240	01483A	10	Stroking	1	PH300	K20186	2	20	0,39

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0100017P	OC6604 PLEYT CAM OCAK KAPAKLI	OA-R1240	01483A	20	Cutting Slope	2	DE085	K30090	1	20	0,254
0100017P	OC6604 PLEYT CAM OCAK KAPAKLI	OA-R1240	01483A	30	Peripheral Cutting	3	PH150	K10244	2	20	0,308
0100018P	OC6604 PLEYT, INOX CAM OCAK KAPAKLI	OA-R1240	01487A	10	Stroking	1	PH300	K20186	2	20	0,39
0100018P	OC6604 PLEYT, INOX CAM OCAK KAPAKLI	OA-R1240	01487A	20	Cutting Slope	2	DE085	K30090	1	20	0,254
0100018P	OC6604 PLEYT, INOX CAM OCAK KAPAKLI	OA-R1240	01487A	30	Peripheral Cutting	3	PH150	K10244	2	20	0,308
0100019P	OC6604 PLEYT, INOX, ÇAKMAKSIZ CAM OCAK KAPAKLI	OA-R1240	01487A	10	Stroking	1	PH300	K20186	2	20	0,39
0100019P	OC6604 PLEYT, INOX, ÇAKMAKSIZ CAM OCAK KAPAKLI	OA-R1240	01487A	20	Cutting Slope	2	DE085	K30090	1	20	0,254
0100019P	OC6604 PLEYT, INOX, ÇAKMAKSIZ CAM OCAK KAPAKLI	OA-R1240	01487A	30	Peripheral Cutting	3	PH150	K10244	2	20	0,308
0100020P	OC6604 PLEYT, ÇAKMAKSIZ CAM OCAK KAPAKLI	OA-R1240	01483A	10	Stroking	1	PH300	K20186	2	20	0,39
0100020P	OC6604 PLEYT, ÇAKMAKSIZ CAM OCAK KAPAKLI	OA-R1240	01483A	20	Cutting Slope	2	DE085	K30090	1	20	0,254
0100020P	OC6604 PLEYT, ÇAKMAKSIZ CAM OCAK KAPAKLI	OA-R1240	01483A	30	Peripheral Cutting	3	PH150	K10244	2	20	0,308
0100024P	OC6604 PLEYT, ÇAKMAKSIZ	OA-R1240	01483A	10	Stroking	1	PH300	K20186	2	20	0,39
0100024P	OC6604 PLEYT, ÇAKMAKSIZ	OA-R1240	01483A	20	Cutting Slope	2	DE085	K30090	1	20	0,254
0100024P	OC6604 PLEYT, ÇAKMAKSIZ	OA-R1240	01483A	30	Peripheral Cutting	3	PH150	K10244	2	20	0,308
01483P	OC6601 PLEYT	OA-R1237	01483A	10	Stroking	1	PH300	K20186	2	20	0,39
01483P	OC6601 PLEYT	OA-R1237	01483A	20	Cutting Slope	2	DE085	K30090	1	20	0,254
01483P	OC6601 PLEYT	OA-R1237	01483A	30	Peripheral Cutting	3	PH150	K10244	2	20	0,308
01485P	OC6601 INOX PLEYT	OA-R1237	01487A	10	Stroking	1	PH300	K20186	2	20	0,39
01485P	OC6601 INOX PLEYT	OA-R1237	01487A	20	Cutting Slope	2	DE085	K30090	1	20	0,254
01485P	OC6601 INOX PLEYT	OA-R1237	01487A	30	Peripheral Cutting	3	PH150	K10244	2	20	0,308
01494P	OC6601 INOX PLEYT (ÇAKMAKSIZ / KENDİNDEN ÇAKMAKLI)	OA-R1237	01487A	10	Stroking	1	PH300	K20186	2	20	0,39
01494P	OC6601 INOX PLEYT (ÇAKMAKSIZ / KENDİNDEN ÇAKMAKLI)	OA-R1237	01487A	20	Cutting Slope	2	DE085	K30090	1	20	0,254
01494P	OC6601 INOX PLEYT (ÇAKMAKSIZ / KENDİNDEN ÇAKMAKLI)	OA-R1237	01487A	30	Peripheral Cutting	3	PH150	K10244	2	20	0,308
0100003P	OC6601 PLEYT, ÇAKMAKSIZ	OA-R1237	01483A	10	Stroking	1	PH300	K20186	2	20	0,39
0100003P	OC6601 PLEYT, ÇAKMAKSIZ	OA-R1237	01483A	20	Cutting Slope	2	DE085	K30090	1	20	0,254
0100003P	OC6601 PLEYT, ÇAKMAKSIZ	OA-R1237	01483A	30	Peripheral Cutting	3	PH150	K10244	2	20	0,308
0100004P	OC6601 PLEYT CAM OCAK KAPAKLI	OA-R1237	01483A	10	Stroking	1	PH300	K20186	2	20	0,39
0100004P	OC6601 PLEYT CAM OCAK KAPAKLI	OA-R1237	01483A	20	Cutting Slope	2	DE085	K30090	1	20	0,254
0100004P	OC6601 PLEYT CAM OCAK KAPAKLI	OA-R1237	01483A	30	Peripheral Cutting	3	PH150	K10244	2	20	0,308
0100005P	OC6601 PLEYT, INOX CAM OCAK KAPAKLI	OA-R1237	01487A	10	Stroking	1	PH300	K20186	2	20	0,39
0100005P	OC6601 PLEYT, INOX CAM OCAK KAPAKLI	OA-R1237	01487A	20	Cutting Slope	2	DE085	K30090	1	20	0,254
0100005P	OC6601 PLEYT, INOX CAM OCAK KAPAKLI	OA-R1237	01487A	30	Peripheral Cutting	3	PH150	K10244	2	20	0,308
0100006P	OC6601 PLEYT, INOX, ÇAKMAKSIZ CAM OCAK KAPAKLI	OA-R1237	01487A	10	Stroking	1	PH300	K20186	2	20	0,39
0100006P	OC6601 PLEYT, INOX, ÇAKMAKSIZ CAM OCAK KAPAKLI	OA-R1237	01487A	20	Cutting Slope	2	DE085	K30090	1	20	0,254
0100006P	OC6601 PLEYT, INOX, ÇAKMAKSIZ CAM OCAK KAPAKLI	OA-R1237	01487A	30	Peripheral Cutting	3	PH150	K10244	2	20	0,308
0100007P	OC6601 PLEYT, ÇAKMAKSIZ CAM OCAK KAPAKLI	OA-R1237	01483A	10	Stroking	1	PH300	K20186	2	20	0,39
0100007P	OC6601 PLEYT, ÇAKMAKSIZ CAM OCAK KAPAKLI	OA-R1237	01483A	20	Cutting Slope	2	DE085	K30090	1	20	0,254
0100007P	OC6601 PLEYT, ÇAKMAKSIZ CAM OCAK KAPAKLI	OA-R1237	01483A	30	Peripheral Cutting	3	PH150	K10244	2	20	0,308
01486P	OC6602 PLEYT	OA-R1238	01483A	10	Stroking	1	PH300	K20186	2	20	0,39
01486P	OC6602 PLEYT	OA-R1238	01483A	20	Cutting Slope	2	DE085	K30090	1	20	0,254
01486P	OC6602 PLEYT	OA-R1238	01483A	30	Peripheral Cutting	3	PH150	K10244	2	20	0,308
01487P	OC6602 INOX PLEYT	OA-R1238	01487A	10	Stroking	1	PH300	K20186	2	20	0,39
01487P	OC6602 INOX PLEYT	OA-R1238	01487A	20	Cutting Slope	2	DE085	K30090	1	20	0,254



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01487P	OC6602 INOX PLEYT	OA-R1238	01487A	30	Peripheral Cutting	3	PH150	K10244	2	20	0,308
01495P	OC6602 INOX PLEYT (ÇAKMAKSIZ / KENDİNDEN ÇAKMAKLI)	OA-R1238	01487A	10	Stroking	1	PH300	K20186	2	20	0,39
01495P	OC6602 INOX PLEYT (ÇAKMAKSIZ / KENDİNDEN ÇAKMAKLI)	OA-R1238	01487A	20	Cutting Slope	2	DE085	K30090	1	20	0,254
01495P	OC6602 INOX PLEYT (ÇAKMAKSIZ / KENDİNDEN ÇAKMAKLI)	OA-R1238	01487A	30	Peripheral Cutting	3	PH150	K10244	2	20	0,308
0100008P	OC6602 PLEYT, ÇAKMAKSIZ	OA-R1238	01483A	10	Stroking	1	PH300	K20186	2	20	0,39
0100008P	OC6602 PLEYT, ÇAKMAKSIZ	OA-R1238	01483A	20	Cutting Slope	2	DE085	K30090	1	20	0,254
0100008P	OC6602 PLEYT, ÇAKMAKSIZ	OA-R1238	01483A	30	Peripheral Cutting	3	PH150	K10244	2	20	0,308
0100009P	OC6602 PLEYT CAM OCAK KAPAKLI	OA-R1238	01483A	10	Stroking	1	PH300	K20186	2	20	0,39
0100009P	OC6602 PLEYT CAM OCAK KAPAKLI	OA-R1238	01483A	20	Cutting Slope	2	DE085	K30090	1	20	0,254
0100009P	OC6602 PLEYT CAM OCAK KAPAKLI	OA-R1238	01483A	30	Peripheral Cutting	3	PH150	K10244	2	20	0,308
0100010P	OC6602 PLEYT, INOX CAM OCAK KAPAKLI	OA-R1238	01487A	10	Stroking	1	PH300	K20186	2	20	0,39
0100010P	OC6602 PLEYT, INOX CAM OCAK KAPAKLI	OA-R1238	01487A	20	Cutting Slope	2	DE085	K30090	1	20	0,254
0100010P	OC6602 PLEYT, INOX CAM OCAK KAPAKLI	OA-R1238	01487A	30	Peripheral Cutting	3	PH150	K10244	2	20	0,308
0100011P	OC6602 PLEYT, INOX, ÇAKMAKSIZ CAM OCAK KAPAKLI	OA-R1238	01487A	10	Stroking	1	PH300	K20186	2	20	0,39
0100011P	OC6602 PLEYT, INOX, ÇAKMAKSIZ CAM OCAK KAPAKLI	OA-R1238	01487A	20	Cutting Slope	2	DE085	K30090	1	20	0,254
0100011P	OC6602 PLEYT, INOX, ÇAKMAKSIZ CAM OCAK KAPAKLI	OA-R1238	01487A	30	Peripheral Cutting	3	PH150	K10244	2	20	0,308
0100012P	OC6602 PLEYT, ÇAKMAKSIZ CAM OCAK KAPAKLI	OA-R1238	01483A	10	Stroking	1	PH300	K20186	2	20	0,39
0100012P	OC6602 PLEYT, ÇAKMAKSIZ CAM OCAK KAPAKLI	OA-R1238	01483A	20	Cutting Slope	2	DE085	K30090	1	20	0,254
0100012P	OC6602 PLEYT, ÇAKMAKSIZ CAM OCAK KAPAKLI	OA-R1238	01483A	30	Peripheral Cutting	3	PH150	K10244	2	20	0,308
01488P	OC6603 PLEYT	OA-R1239	01483A	10	Stroking	1	PH300	K20186	2	20	0,39
01488P	OC6603 PLEYT	OA-R1239	01483A	20	Cutting Slope	2	DE085	K30090	1	20	0,254
01488P	OC6603 PLEYT	OA-R1239	01483A	30	Peripheral Cutting	3	PH150	K10244	2	20	0,308
01489P	OC6603 INOX PLEYT	OA-R1239	01487A	10	Stroking	1	PH300	K20186	2	20	0,39
01489P	OC6603 INOX PLEYT	OA-R1239	01487A	20	Cutting Slope	2	DE085	K30090	1	20	0,254
01489P	OC6603 INOX PLEYT	OA-R1239	01487A	30	Peripheral Cutting	3	PH150	K10244	2	20	0,308
01496P	OC6603 INOX PLEYT (ÇAKMAKSIZ / KENDİNDEN ÇAKMAKLI)	OA-R1239	01487A	10	Stroking	1	PH300	K20186	2	20	0,39
01496P	OC6603 INOX PLEYT (ÇAKMAKSIZ / KENDİNDEN ÇAKMAKLI)	OA-R1239	01487A	20	Cutting Slope	2	DE085	K30090	1	20	0,254
01496P	OC6603 INOX PLEYT (ÇAKMAKSIZ / KENDİNDEN ÇAKMAKLI)	OA-R1239	01487A	30	Peripheral Cutting	3	PH150	K10244	2	20	0,308
0100013P	OC6603 PLEYT CAM OCAK KAPAKLI	OA-R1239	01483A	10	Stroking	1	PH300	K20186	2	20	0,39
0100013P	OC6603 PLEYT CAM OCAK KAPAKLI	OA-R1239	01483A	20	Cutting Slope	2	DE085	K30090	1	20	0,254
0100013P	OC6603 PLEYT CAM OCAK KAPAKLI	OA-R1239	01483A	30	Peripheral Cutting	3	PH150	K10244	2	20	0,308
0100014P	OC6603 PLEYT, INOX CAM OCAK KAPAKLI	OA-R1239	01487A	10	Stroking	1	PH300	K20186	2	20	0,39
0100014P	OC6603 PLEYT, INOX CAM OCAK KAPAKLI	OA-R1239	01487A	20	Cutting Slope	2	DE085	K30090	1	20	0,254
0100014P	OC6603 PLEYT, INOX CAM OCAK KAPAKLI	OA-R1239	01487A	30	Peripheral Cutting	3	PH150	K10244	2	20	0,308
0100015P	OC6603 PLEYT, INOX, ÇAKMAKSIZ CAM OCAK KAPAKLI	OA-R1239	01487A	10	Stroking	1	PH300	K20186	2	20	0,39
0100015P	OC6603 PLEYT, INOX, ÇAKMAKSIZ CAM OCAK KAPAKLI	OA-R1239	01487A	20	Cutting Slope	2	DE085	K30090	1	20	0,254
0100015P	OC6603 PLEYT, INOX, ÇAKMAKSIZ CAM OCAK KAPAKLI	OA-R1239	01487A	30	Peripheral Cutting	3	PH150	K10244	2	20	0,308
0100016P	OC6603 PLEYT, ÇAKMAKSIZ CAM OCAK KAPAKLI	OA-R1239	01483A	10	Stroking	1	PH300	K20186	2	20	0,39
0100016P	OC6603 PLEYT, ÇAKMAKSIZ CAM OCAK KAPAKLI	OA-R1239	01483A	20	Cutting Slope	2	DE085	K30090	1	20	0,254
0100016P	OC6603 PLEYT, ÇAKMAKSIZ CAM OCAK KAPAKLI	OA-R1239	01483A	30	Peripheral Cutting	3	PH150	K10244	2	20	0,308
0100023P	OC6603 PLEYT, ÇAKMAKSIZ	OA-R1239	01483A	10	Stroking	1	PH300	K20186	2	20	0,39
0100023P	OC6603 PLEYT, ÇAKMAKSIZ	OA-R1239	01483A	20	Cutting Slope	2	DE085	K30090	1	20	0,254
0100023P	OC6603 PLEYT, ÇAKMAKSIZ	OA-R1239	01483A	30	Peripheral Cutting	3	PH150	K10244	2	20	0,308

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01492P	OC6605 PLEYT	OA-R1241	01487A	10	Stroking	1	PH300	K20186	2	20	0,39
01492P	OC6605 PLEYT	OA-R1241	01487A	20	Cutting Slope	2	DE085	K30090	1	20	0,254
01492P	OC6605 PLEYT	OA-R1241	01487A	30	Peripheral Cutting	3	PH150	K10244	2	20	0,308
01493P	OC6605 INOX PLEYT	OA-R1241	01487A	10	Stroking	1	PH300	K20186	2	20	0,39
01493P	OC6605 INOX PLEYT	OA-R1241	01487A	20	Cutting Slope	2	DE085	K30090	1	20	0,254
01493P	OC6605 INOX PLEYT	OA-R1241	01487A	30	Peripheral Cutting	3	PH150	K10244	2	20	0,308
0100021P	OC6605 PLEYT CAM OCAK KAPAKLI	OA-R1241	01483A	10	Stroking	1	PH300	K20186	2	20	0,39
0100021P	OC6605 PLEYT CAM OCAK KAPAKLI	OA-R1241	01483A	20	Cutting Slope	2	DE085	K30090	1	20	0,254
0100021P	OC6605 PLEYT CAM OCAK KAPAKLI	OA-R1241	01483A	30	Peripheral Cutting	3	PH150	K10244	2	20	0,308
0100022P	OC6605 PLEYT, INOX, CAM OCAK KAPAKLI	OA-R1241	01487A	10	Stroking	1	PH300	K20186	2	20	0,39
0100022P	OC6605 PLEYT, INOX, CAM OCAK KAPAKLI	OA-R1241	01487A	20	Cutting Slope	2	DE085	K30090	1	20	0,254
0100022P	OC6605 PLEYT, INOX, CAM OCAK KAPAKLI	OA-R1241	01487A	30	Peripheral Cutting	3	PH150	K10244	2	20	0,308
01472P	B2000 KAHVE GÖZLÜ 4 ELEKTRİKLİ PLEYT (1 KG-1ÇAP210-1ÇAP210)	BO-R0038	01436A	10	Stroking	20	500T HP.	TK20003	2	30	0,45
01472P	B2000 KAHVE GÖZLÜ 4 ELEKTRİKLİ PLEYT (1 KG-1ÇAP210-1ÇAP210)	BO-R0038	01436A	20	Peripheral Cutting	20	500T HP.	TK19003	2	30	0,25
01472P	B2000 KAHVE GÖZLÜ 4 ELEKTRİKLİ PLEYT (1 KG-1ÇAP210-1ÇAP210)	BO-R0038	01436A	30	Head Draing	3	PH150	K10173	1	20	0,25
01472P	B2000 KAHVE GÖZLÜ 4 ELEKTRİKLİ PLEYT (1 KG-1ÇAP210-1ÇAP210)	BO-R0038	01436A	40	Leveling Slope	20	500T HP.	TK40001	2	30	0,3
01472P	B2000 KAHVE GÖZLÜ 4 ELEKTRİKLİ PLEYT (1 KG-1ÇAP210-1ÇAP210)	BO-R0038	01436A	50	Flanging	20	500T HP.	TK40007	2	30	0,4
0100025P	B2000 KAHVE GÖZLÜ 4 ELEKTRİKLİ INOX PLEYT (1 KG-1ÇAP210-1ÇAP210)	BO-R0038	01445A	10	Stroking	20	500T HP.	TK20003	2	30	0,45
0100025P	B2000 KAHVE GÖZLÜ 4 ELEKTRİKLİ INOX PLEYT (1 KG-1ÇAP210-1ÇAP210)	BO-R0038	01445A	20	Peripheral Cutting	20	500T HP.	TK19003	2	30	0,25
0100025P	B2000 KAHVE GÖZLÜ 4 ELEKTRİKLİ INOX PLEYT (1 KG-1ÇAP210-1ÇAP210)	BO-R0038	01445A	30	Head Draing	3	PH150	K10173	1	20	0,25
0100025P	B2000 KAHVE GÖZLÜ 4 ELEKTRİKLİ INOX PLEYT (1 KG-1ÇAP210-1ÇAP210)	BO-R0038	01445A	40	Leveling Slope	20	500T HP.	TK40001	2	30	0,3
0100025P	B2000 KAHVE GÖZLÜ 4 ELEKTRİKLİ INOX PLEYT (1 KG-1ÇAP210-1ÇAP210)	BO-R0038	01445A	50	Flanging	20	500T HP.	TK40007	2	30	0,4
01475P	B2000 220mm KAFALI 4 ELEKTRİKLİ PLEYT (1ÇAP220-2ÇAP145)	BO-R0052	01436A	10	Stroking	20	500T HP.	TK20003	2	30	0,45
01475P	B2000 220mm KAFALI 4 ELEKTRİKLİ PLEYT (1ÇAP220-2ÇAP145)	BO-R0052	01436A	20	Peripheral Cutting	20	500T HP.	TK19003	2	30	0,25
01475P	B2000 220mm KAFALI 4 ELEKTRİKLİ PLEYT (1ÇAP220-2ÇAP145)	BO-R0052	01436A	30	Head Draing	3	PH150	K10173	1	20	0,25
01475P	B2000 220mm KAFALI 4 ELEKTRİKLİ PLEYT (1ÇAP220-2ÇAP145)	BO-R0052	01436A	40	Leveling Slope	20	500T HP.	TK40001	2	30	0,3
01475P	B2000 220mm KAFALI 4 ELEKTRİKLİ PLEYT (1ÇAP220-2ÇAP145)	BO-R0052	01436A	50	Flanging	20	500T HP.	TK40007	2	30	0,4
01477P	B2000 220mm KAFALI 4 ELEKTRİKLİ INOX PLEYT (1ÇAP220-2ÇAP145)	BO-R0052	01445A	10	Stroking	20	500T HP.	TK20003	2	30	0,45
01477P	B2000 220mm KAFALI 4 ELEKTRİKLİ INOX PLEYT (1ÇAP220-2ÇAP145)	BO-R0052	01445A	20	Peripheral Cutting	20	500T HP.	TK19003	2	30	0,25
01477P	B2000 220mm KAFALI 4 ELEKTRİKLİ INOX PLEYT (1ÇAP220-2ÇAP145)	BO-R0052	01445A	30	Head Draing	3	PH150	K10173	1	20	0,25
01477P	B2000 220mm KAFALI 4 ELEKTRİKLİ INOX PLEYT (1ÇAP220-2ÇAP145)	BO-R0052	01445A	40	Leveling Slope	20	500T HP.	TK40001	2	30	0,3
01477P	B2000 220mm KAFALI 4 ELEKTRİKLİ INOX PLEYT (1ÇAP220-2ÇAP145)	BO-R0052	01445A	50	Flanging	20	500T HP.	TK40007	2	30	0,4