Solving the 5 difficult problems the manufacturing business faces with TPiCS

It's not wonder that you might think, "How could no more than 1 or 2 million yen systems do such a thing?" Of course, you can't solve the "difficult problems" just because you bought TPiCS-X. You have to understand the basic concepts of production control we are proposing and to put them in practice. That road is never smooth, but it surely leads to real solutions.

1. The Production for Short-term Delivery and Ready for Whatever Changes Come Along

In TPiCS-X, you can change even the schedule that has been released for an order depending on the situation. Not only that, TPiCS-X performs the MRP calculations including order-released schedules as well.

It does them, simulating whether or not this production (these sales orders) will be feasible based on the order-released schedules.

Since TPiCS-X performs the MRP calculations based on all the unfinished schedules of today and in the past with the current inventory as a starting point, you will be able to tell whether or not the production for today and for tomorrow that supports today's sales orders will be possible. In TPiCS-X, you make the production schedule over simulation, and go along to make arrangements for parts and materials.

On the contrary, the general MRP systems don't take care of the rest as the system afterwards once they are finished with calculating the required quantities by inventory allocations and lot-sizing, and issuing orders. So, we had to use the calculator to figure out the immediate schedule changes and whether the parts necessary for tomorrow's production would be really sufficient.

With TPiCS-X, you can leave everything of the production schedule to the system. But, in order to leave everything to the system (let the system calculate,) the data to let the system calculate must be something meaningful. Not to mention the stock quantities and the master records the system keeps, the order-released Schedule data also have to be maintained properly. We call this the "schedule management." We will achieve the production for short-term delivery while doing the schedule management.

Other than this, in order to achieve the production for short-term delivery, there are also problems like "the leveling," "instructions to the factory floor" and "suppliers." Refer to "Solving the 5 difficult problems the manufacturing business faces with TPiCS" for those problems.

2. Achieving to Make the Factory Floor Observable

There are two aspects in "making it observable:"
① By the improvements of the factory floor representing 5S's,
② You can tell if you look at the screens of the system.

Making it observable by the system will be able to be achieved on its own by the above "schedule management" being performed repeatedly.

3. Reducing Delays in Shipment

You cannot prevent delays in shipment due to disasters, such as earthquakes and lightning strikes, and big accidents from happening even if you use TPiCS-X, but, as far as the troubles in production due to "mistakes," "omissions" and "oversight" in regular work, you will build a scheme where you can foresee those troubles by performing the above "schedule management" to reduce them.

4. Reducing Inventory

We consider inventory to be categorized into the following two by the source of occurrence:
①Dead stock due to mistake, miscalculation and engineering change,
② Operating inventory that occurs in day-to-day production activities.

Further analyzing the cause of the dead stock, we find multiple factors that are occurring intricately on top of another many times, and we cannot find easy countermeasures. Regarding this problem, too, the answer would be "down-to-earth improvement."

There's a mechanism in TPiCS-X to reflect the design information, including even the engineering change, in the production information accurately, promptly and easily. This can solve the half of this problem.

Since the degree of accuracy for probability is out of range of TPiCS-X, you think about keeping the damage minimized even if you have miscalculations. In order to do that, you are going to make the lot size small and shorten the purchasing lead-time. But there are other problems in this method. Refer to "Solving the 5 difficult problems the manufacturing business faces with TPiCS" for those problems.

We consider the operating inventory by separating it into the following two:

②-1. Inventory that is caused by that the person in charge of arrangements has made adjustments for the quantity to purchase with "seat-of-the-pants" in consideration of handling changes,

②-2. Inventory that occurs inevitably from coming into the factory to going out of there.

Since you can set up the "buffer to handle changes" in TPiCS-X, inventory by adjustments in purchasing is not a work to rely on the "seat-of-the-pants" any more, but you reduce inventory by changing it to the work managed by the system.

Inventory from coming into the factory to going out of there can be controlled by the "delivery/mfg. lead-times" and the "lot size."

In the state of the "schedule management" having been achieved, you can tell a critical point at which you will not able to produce as planned when you make these settings smaller. This is where the bottleneck for inventory reduction lies, so you must improve it.

5. Handling Delays in Engineering Change and Release of Drawing

The essence of difficulty and toughness of the production control lies in "change and alteration." And the source is the "change in quantity and period when anticipation turns to the actual demand" and the "engineering change."

TPiCS-X has the "Structure Information Conversion Option" (something we touched in inventory reduction) that provides you with the function to reflect an engineering change in the production information, and, in addition to that, you can also issue a cancel or additional order by directly verifying with something that has already been arranged.

TPiCS4.1lineup

Supports the manufacturing industry all the way from mass production to individual order specification:

Mfg. No. System of f-MRP

It can handle both of the functions of "f-MRP", which is strong in repetitive production, and "Mfg. No. Control", which is directed to the individual order production, and mixed management of them is possible. You can specify how to manage in units of products, intermediate units, parts and materials like making arrangements for products and intermediate products from fixed sales orders and managing parts and materials, in which commonality is high, using f-MRP.

### Repetitive Production System

It is suitable for the production where repetition is high and the production where there are many common parts. While responding to changes in the sales orders and forecast, you can reduce the impact of the production of products, intermediate processes, and the procurement of parts and materials.

Mfg. No. Control System

It is suitable for the production of high-mix low-volume and with less change of schedule. It is easy to understand the relationship between each instruction and sales order by the schedule connected with the mfg. no. from the product to the intermediate process, the first process and the raw materials.

Schematic Diagram Of System Functions
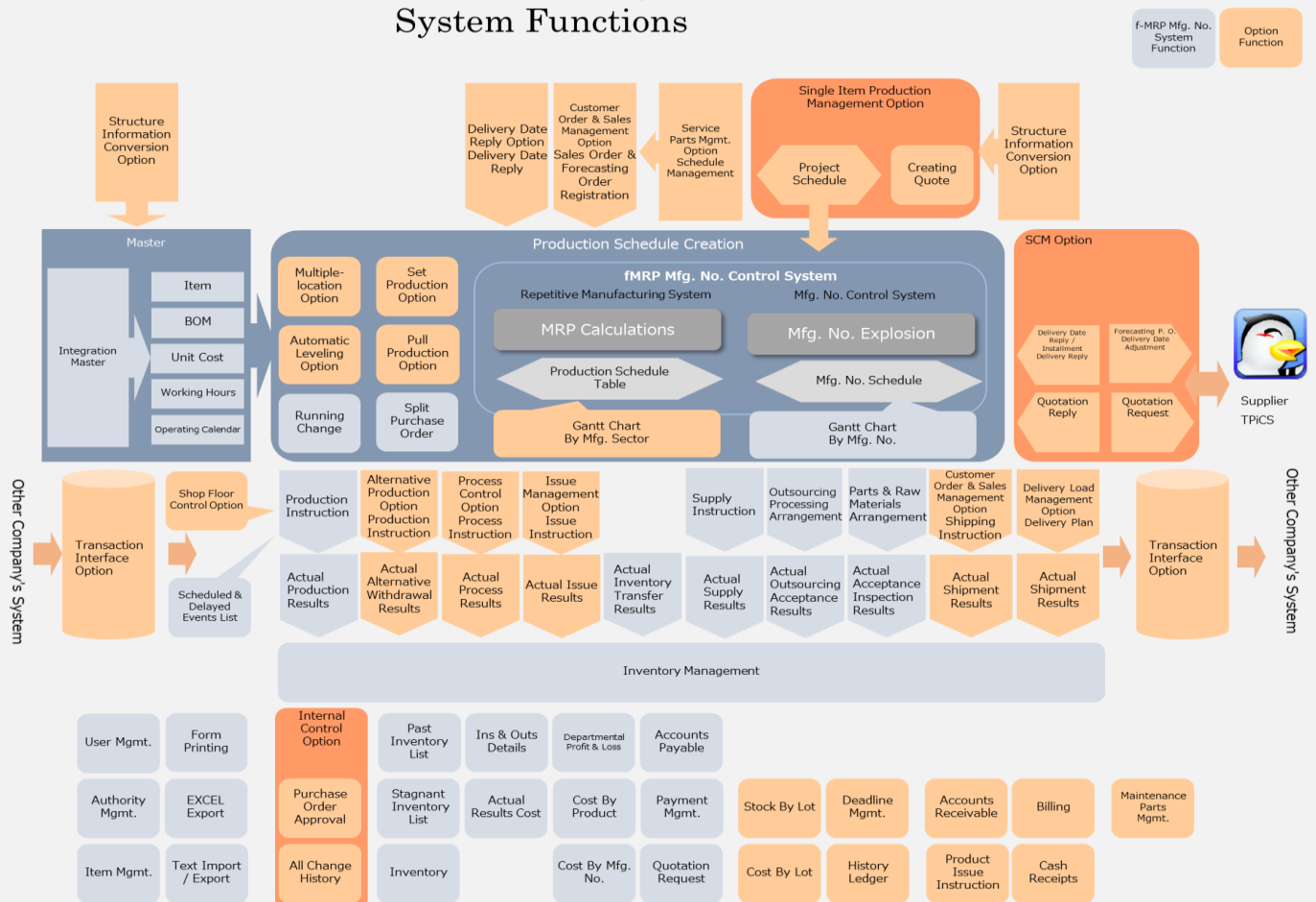
f-MRP Mfg. No. System

Following the most recent schedule change, the f-MRP Mfg. No. System of TPiCS realizes the stable production by f-MRP that has added the concept of buffer to the existing MRP based on the assumption that there's repeatability to some extent.
Also, you can set up the Mfg. No. Control associated with the production schedule for customer orders and products, the f-MRP Control and the Mfg. No. Control for each product, part, material and intermediate process. So, you could have a mixed operation like using the Mfg. No. Control up to the intermediate process for arrangements for products, and the f-MRP Control, which is tolerant of changes, for those for parts and materials.

Function to Create the Production Schedule (f-MRP)

・TPiCS realizes the "prompt, inexpensive, responsive, but stable production" through its own f-MRP function.

・ Using the sales plan and the production schedule for products as a starting point, TPiCS automatically creates the schedules for production and arrangements up to intermediate units and end raw materials according to the bill of materials, the mfg. lead-time, the lot size, etc.

When you use the Customer Order & Sales Management Option, it's also possible to operate the system to make the production schedule according to the customer order and forecasting information, and to automatically make the production schedule where the production is in time for the shipment, which is a starting point, in the environment where there's no customer order or forecasting information like responding to short-term or immediate deliveries, and make arrangements for intermediate processes, parts and materials from there.

・TPiCS makes the production schedule by adding something already purchased, something delayed in supplier's delivery and something delayed in operation to the current stock at the time of the MRP calculations. Multiple storage locations can be registered, and it's also possible to combine them for the calculation and to set them to the storage location not subject to the calculation.

・ It's possible to register operating calendars. With them, you can make the production schedule for the initial process in accordance with the calendar of your outsourcing processing company, and, when you are using the Customer Order & Sales Management Option, you can make the shipping and production schedules in accordance with the operating calendars of your customers.

Journaling Function (Warning Information)

In the MRP calculations, a schedule change one ought to pay attention to like "falling below the purchasing lead-time", which is derived from various situation changes such as a new customer order, a delivery date change, a change in quantity of customer order,

a cancel order, and defective goods of intermediate process, will be displayed in the journal.

The production schedule table works with the journal. So, you can display the former from the latter to make adjustments for the production schedule, confirm the information of suppliers, and make sure of the status of the structures and the master tables.

Running Change Function

All you need to do is register old and new codes for a part in the Engineering Change Master, and that will automatically switch the old code to the new one for the purchase by calculating when to consume the stock that currently exists and what has been on order.

It automatically responds to changes in the production schedule and inventory. When the actual results for the parent are entered, the minus (withdrawal) of the used child parts is also automatically switched. You can also directly specify the part switch date. (Bill Of Materials)

・ Gantt Chart By Mfg. Sector Option

As a result of the MRP calculations, you can check the workload of the manufacturing department from the created production schedule and adjust the plan on the Gantt Chart By Mfg. Sector.

・ Automatic Leveling Option

It's possible to perform the automatic allocation by the production capacity, the standard operating time, the quantity and the allocation priority of the work center.

・ Multiple-location Option

It is possible to set up a production schedule in which products and units are automatically split by ratio at multiple manufacturing locations, or to produce in-house usually, but if the production limit is exceeded, partially outsource production to cooperating company. You can also make a production schedule that arbitrarily allocates manufacturing locations.

f-MRP Mfg. No. System

Function to Create the Production Schedule

| f-MRP mfg. | repetitive | mfg. no. |

- The Mfg. No. Control of TPiCS allows for the following 3 control methods:

B-Seiban: This is a basic method. The arrangement schedules that are connected to product, intermediate unit, material and part through the mfg. no. will be created from the mfg. no. schedule according to the product structure through the mfg. no. explosion. You can change the product structure for each mfg. no. schedule.

S-Seiban: This is the mfg. no. control of precedent arrangements. You can arrange and produce the intermediate unit with the preceding mfg. no. attached, and allocate it to the final mfg. no. to produce the product.

F-Seiban: This is the mfg. no. control of f-MRP. It is a management method that calculates the required amount by f-MRP, which is flexible to fluctuations in demand, and links the created Schedule Detail with mfg. nos.

In the Mfg. No. Control as well, TPiCS presents very advanced mfg. no. control functions:
- It provides the lot-sizing.
- You can set up in such a way that you allocate all of the quantity you performed the lot-sizing on or only the required quantity of it to the mfg. no.
- You can automatically allocate to the Purchase Order data you are arranging.
- You can automatically release/re-allocate something insufficient/ excessive from/to the mfg. no. due to defects and good yield.
- It manages revisions, and you can select the stock to allocate.

Structure Change Function

- Two ways of changing the product structure by mfg. no. are prepared:

① Way to use the option code
You can register a part to be used in the option code in the Bill of Materials, and change the structure by specifying the option in the Mfg. No. Schedule and exploding it.

② Way to change the structure after the mfg. no. explosion
You can change the product structure of the data that was exploded for the mfg. nos. An addition and a deletion are easily made by mfg. no. all the time. You can change only the data of the mfg. no. without affecting any master tables.

Cost Aggregation By Mfg. No. Function
- You can calculate unfinished work as the predetermined cost and manage budget and actual amounts in contradistinction to the standard cost.
- You can include a part that was calculated by f-MRP as well in the Cost By Mfg. No.

Gantt Chart By Mfg. No. Display Function
- You can display child parts that have the association with the mfg. no. and the progress status of each process.
- You can tell at a glance if the preceding process is finished, or if inventory is available for f-MRP parts, and consequently whether or not it's possible to start now.
- You can change the plan date by drag & drop.
- You can issue change slips for changes, and if linked with the SCM option, you can automatically send the changes by e-mail to parts suppliers and outsourcing companies.
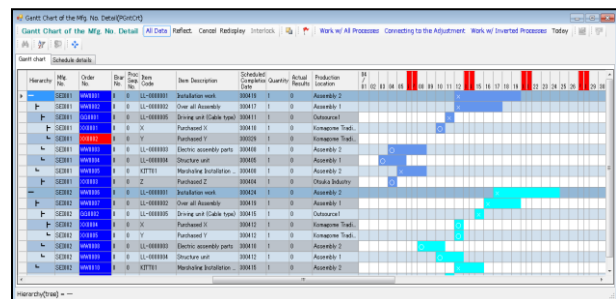
Mixed Management of f-MRP and the Mfg. No. Control

You can specify whether you'll go with f-MRP or the Mfg. No. Control by item in TPiCS. By this, for parts and materials that are too late to be exploded for mfg. nos. and be arranged after the customer orders come, you can make arrangements based on the forecasting orders using f-MRP that is tolerant of changes. And for intermediate units and products, you can issue mfg. orders with the final mfg. nos.
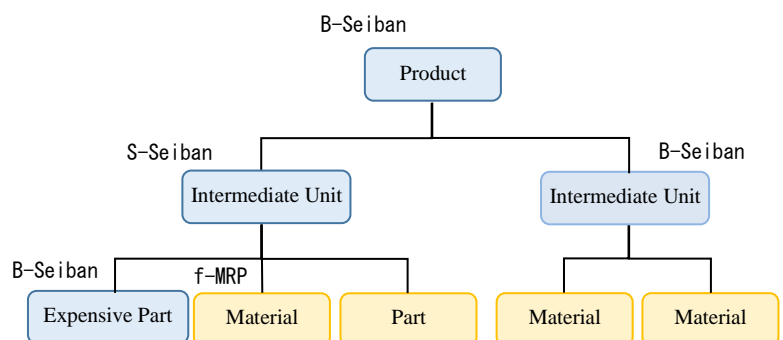
Shared Function Of Each System

● Form Issuing Function

Work Order Form, Purchase Order Form, Outsourcing Order Form, Transfer (Supply) Order Form

This allows you to issue orders based on the MRP calculations, the mfg. no. explosion and the manual entry.

Setting the Least Expensive Supplier Automatically

You register different unit prices in the Unit Cost Master depending on the supplier, time, quantity, and urgency, and when creating the Schedule Detail, TPiCS TPiCS can look at the time, quantity, etc., search for the cheapest supplier that meets the conditions, set it in the Schedule Detail and issue a purchase order form.

Purchasing with Supplier's Part No.

You can purchase using supplier's part no. (catalog no., etc.)

Parallel Purchase

You can issue purchase orders that have been split according to the ratio to multiple suppliers. Also, if the quantity exceeds the upper limit, you can purchase the exceeded portion to other suppliers.

E-mail Transmission

The purchase order by e-mail is possible.

Form Design Change

The form design created by Excel is prepared, the Excel form design is displayed with the Print button, the data written from TPiCS is read and automatically printed.

The design includes a one-item-per-page form suitable for work instructions, a work instruction with child parts to be used, a multiple-items-per-page form suitable for purchase order form, etc. and can be adjusted with Excel function. You can also change and add design according to the paper

Writing Lot Nos. Clearly for Raw Materials To Be Used (Mfg. Traceability Option)

In the work order, you can specify the lot number of the raw materials used.

Identification Tag

At the same time as the work order form, the outsourcing order form, etc., you can print the required number of identification tags according to the setting of quantity of contents.

Issuance of the Delayed Event List

You can also issue the delayed purchase order list and work order list, but instead of responding after delivery time delay, in order to prevent delays in delivery, for example, next week, it can be issued for each supplier as a list of schedule of acceptance.

Quotation Request

You can issue the Quotation Request Form for parts with no unit price. With this function, you can create a purchase order form compliant with the Subcontract Act.

Supported Excel

Microsoft Excel 2010   Microsoft Excel 2013
Microsoft Excel 2016   Microsoft Excel 2019
Office 365 (desktop application Excel only)

● Actual Results Management

Actual Production Results Entry

When you enter the actual results for an intermediate unit that's manufactured using parts and materials, inventory of the intermediate unit increases and that of the material decreases because of being automatically withdrawn. For the withdrawal, a suitable way varies depending on the production method for parts and materials. For example, in the actual assembly results when the completed quantity is small relative to the planned quantity, parts are put in according to the planned quantity, but in the case of disposal due to damages, it is necessary to withdraw by the quantity of inputs, but in the case of partial completion due to production delay, it is good to withdraw the same amount as the completed quantity. Also, if it is a liquid product, you may want to adjust the withdrawal amount each time you enter actual results. Such a withdrawal method can be set for each management point such as parts, intermediate unit, product, etc. You can enter the actual results time for each operator, work party, machine and process, and summarize it by each of these elements.

Entering the Hours Worked of Actual Results

You can enter the quantity in real time for the next process in the Actual Results Entry, and enter the hours worked of actual results on the dedicated form later. It's also possible to distribute the total of hours worked of each work party to multiple actual work results, and to automatically set it as each actual results time.

Actual Receiving Results, Actual Acceptance Results

You can also enter two levels of actual results, actual receiving results of receipt confirmation and actual acceptance results to be inspected and subject to payment. It is displayed on the accounts payable according to the actual acceptance results.

Shared Function Of Each System

Actual Results Cost

You can take over the unit price purchased of the Purchase data to the actual results and change the unit price purchased of actual results at the time of entering the actual results. Also, in the actual work results entry, the hours worked of actual results and the processing cost rate are reflected in the actual results cost.

Inventory can be evaluated using the real-time moving average method, monthly moving average method (monthly gross average method), final unit price method, gross average method, or lower-of-cost-or-market method.

Entering In Block

If you can produce as planned everyday, it's natural that you want to save time for the entry. In this case, you can automatically set the temporary actual results quantity in the schedules that are scheduled to be completed today, and enter only the Schedule Detail for which you could not produce as planned. Thus, you can enter the actual results in block.

Entering the Lot Name (Mfg. Traceability Option)

When you are required to enter a lot no. at the time of receiving something because, for example, it's an important raw material, the Lot Name Required is the setting for you.

You can specify which raw material (lot no.) you used at the time of entering the actual production results, and you can go back to view that data any time you want. It's possible to record a mfg. history as necessary from the point in time of receiving to that of production completion (shipment.)

Inventory Management

Inventory List

Inventory can be managed by actual receiving results, actual production results, automatic withdrawals due to actual results of the first process, inventory transfers, and transfers between warehouses due to issues. In addition, it is possible to grasp inventory value, the number of ins and outs for the current month, the fina withdrawal date, the final goods receipt date, etc. for each item such as raw material, intermediate unit, supply-to, product, etc.

You can manage multiple inventory locations by specifying the goods receipt location at the time of goods receipt, and specifying the goods issue location at the time of goods issue.

You can use the Traceability Control Option to manage in-process inventory for each goods receipt lot.

You can display and print parts that were not used for a specified period in "Stagnant Inventory List."

Physical Inventory

You adjust the "current inventory" to the inventory actual quantity that exists at the storage location by performing stocktaking processing at the end of the period or the end of the month.

TPiCS also supports temporary stocktaking and cycle counting, which is not a simultaneous stocktaking but a partial inventory.

Since Actual Inventory Results data for inventory differences are created when inventory differences are made, it is easy to aggregate how much the inventory difference is.

Function of the Quantity Conversion

For the planned quantity of the production schedule table, the planned quantity can be converted according to the unit displayed on the slip, the display of the Inventory List can be converted, the Bill Of Materials can be converted, and the unit can be changed for display for each product, intermediate unit and member.

For example, you can calculate the purchase order quantity of liquid material as 400 liters, and when you place an order, you can convert it to 2 cans per drum can (200 liters) unit. Conversion can then be returned at the time of 2 canned actual goods receipt results, and it can be reflected to stock at 400 liters.

Cost Control

Cost Summary Table By Product

How much it cost to produce each item this month is aggregated and displayed based on the Actual Results data.

Cost By Department, Summary Table of Profit & Loss

Considering what the following process has used the sales, the profit and loss by department is aggregated and displayed.

Cost Summary Table By Mfg. No. (f-MRP Mfg. No., Mfg. No. Control System)

You can view costs by contrasting the standard cost with the forecast for actual results including the unfinished predetermined cost.

Function of the Re-calculation of the Actual Results Unit Cost

If you calculate the actual results unit cost using the moving-average method, you can re-calculate it by reprocessing all the Actual Results data in the order of their date, starting with the value of the beginning of the month.

Supply Management

Managing paid and free supplies is possible.

Shared Function Of Each System

● Master Maintenance

There are many masters in the master of TPiCS such as the Item Master, where you register parts, raw materials, products, intermediate units, partial processing consignment (plating, heat treatment, painting, assembly, etc.) to a cooperating company, the Bill Of Materials, where you build parent-child relationships of items, the Unit Cost Master, the Working Hours Master, etc. Maintenance of the master is indispensable in order to make the production schedule suitable for daily changing production.The Integration Master, which you can examine and edit at the production meeting which gathered relevant departments, is prepared as the standard function while confirming the overall picture by putting together the masters which are the main of these management.

When creating a new product, you will create a product structure with the Integration Master from the BOM, and items that have already been registered can be used as common items with the Item Master data displayed. If you use the Integration Master in this way, you can build a Master with BOM image of each product and reflect it on each master. You can change from either each master or Integration Master, Outlined master registration can be done from the Integration Master, and details can be done from each master for each department in charge.

Shared Function Of Each System

Authority Mgmt., User Mgmt.

Role Management (Authority Management)

You can freely set the operable range of the business person like "The person in charge of planning operations can update all Item Master's records and the Bill Of Materials and execute the MRP calculations." and "The entry person of actual acceptance results can only enter actual material acceptance results."

User Management

You can set up a role for the user. A combined setting like the planning operation and the purchasing operation, and a grouped setting containing multiple users are possible.

It's also possible to manage using the login user of Windows.

Adding User Fields,

Entry Form Design Change Function

You can add your own management fields to many forms such as master, Schedule Detail, actual results, etc.

Like the existing TPiCS fields, the added user fields can be displayed in the grid and detail sections, searched, narrowed down, and entered, and data can also be selected from registered pull-down lists and entered. You can make detailed settings such as font size, back color setting, IME setting, display, hide, tab cursor order, display order, etc. You can also change the name of the grit titles of existing fields, so It can be set with the package function to the form tailored to the user.

In addition, by registering the SQL statement, it is possible to refer to and display the user field set for the master in the Schedule data, circulate the value and write it in the Actual Results data, and also refer to the fields of Sales Management System of another company if it is possible to refer to them from the database server.
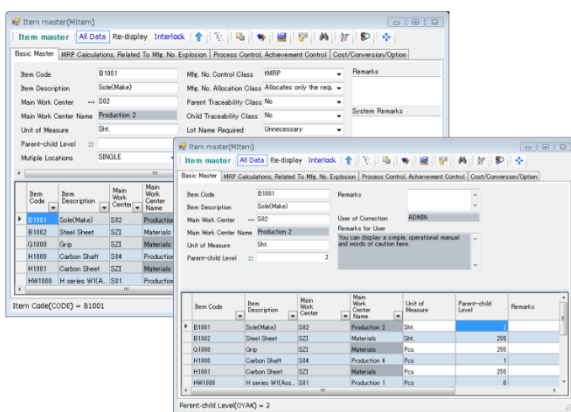
Accounts Payable & Receivable Ledgers

Accounts Payable Ledger (Accounts Payable Detail)

When you enter the actual acceptance results, you can enter the amount purchased, the supplier, etc., and that will be reflected in the accounts payable.

You can export data of the Accounts Payable Detail and the Accounts Receivable Detail according to the "import format for the journal data" of almost all the general accounting systems for the PC.

Accounts Receivable Ledger (Accounts Receivable Detail) - Customer Order & Sales Management Option

The Actual Shipping Results Entry reflects the sales amount in the Accounts Receivable Detail.

Payment Management

You can aggregate the data that are subject to payment from the Actual Acceptance Results data, create a payment schedule according to the closing date and and manage the actual payment results.

Since you can specify a payee different from the destination of the purchase order form, it is also possible to make the supplier of the parts a branch office and make the payee the head office of the supplier.

Operating Calendar

You can register a calendar that has different holidays and operating time.

There's no limit to the number of calendars.

Managing shifts like day shift and night shift is also possible. (Max. 24 shifts)

You can specify the calendars to be used for factories, processes, suppliers, outsourcing companies, etc.

You can set up the settings with different particle sizes, such as by day shift and night shift for this month, in a unit of days for the next month and in a unit of weeks for the month after next, in one calendar, and create a production schedule in accordance with them.

Capability Calendar

You can set the capability of the production location that changes every day to the capability calendar. The daily production load factor can be checked with the Gantt Chart By Mfg. Sector by the capability calendar, and it is also possible to level a load in combination with the Automatic Leveling Option. Every Wednesday's capability is lowered for planning maintenance of production equipment. It can be used for checking the number of part-time workers and workloads that change every day.

Shared Function Of Each System

● Automatic Execution Function

You can automatically do the same operations, for example, for the import of transaction data and the monthly processing, as you would do manually by preparing the commands for the fixed form processing as a script file.

For example, you could import the Sales Order data in the lunch break everyday followed by the automatic execution of the MRP calculations, the Schedule Detail creation, and the order creation.

● Function of Data Search, Filtering & Filtering & Sorting

Equal search, partial match search, leading match search, and above, below and negative searches can be done in almost all forms and items. In addition, there is a quick search function that searches as soon as you enter the search value into the keyboard, and you can display the necessary data while checking from time to time. You can narrow down by AND or OR condition under multiple narrowing conditions.

You can sort by double clicking on the grid title line.

● Interface Linked to Other Systems

Text Import & Export

You can import and export data of all the tables --- which are the master tables, the transaction data such as Schedule Detail and the already purchased data, the Inventory List and the summary data such as Cost Summary By Item and Cost Summary By Department --- in text file format.

Transaction Data Text Import

The updates of related tables occur at the same time as you import the text file as well as you would operate the entry form such as Sales Order, Schedule Detail, Actual Work Results 、Actual Shipping Results, Actual Issues Results and Inventory Transfer. In the case of importing the Sales Order data, the imported data will also be reflected in the production schedule table at the same time as the registration of the Sales Order data.

Transaction Automatic Import & Export (Transaction Interface Option)

If you assume frequent data imports on a text file basis, it will be difficult to deal with import errors because of data inconsistencies. In the Transaction Interface Option, if an import error occurs, the error description is written in the table and the status control is performed. So, cooperation becomes easy to do. Also, it's possible to automatically write transaction data you manipulated on the form of TPiCS to the write-out table. This allows you to perform the two-way cooperation with a third-party system.
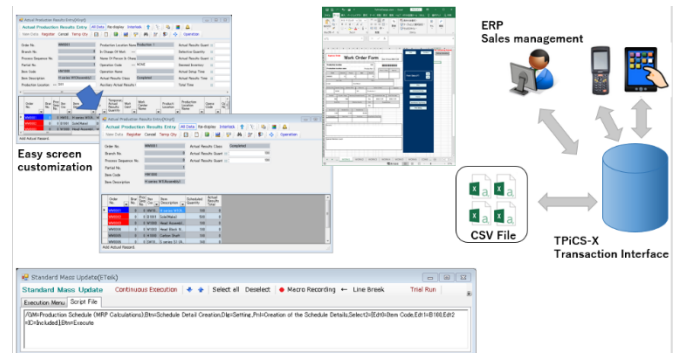
Option

Customer Order & Sales

From The Sales And Forecasting Order Data To The Production Schedule

- You can create the shipping schedule of TPiCS from the Sales Order data and perform the MRP calculations right away.
- You can make arrangements for parts and materials based on the forecasting schedule by working together with the f-MRP function. Even if the forecasting schedule changes, you can advance to the next MRP calculations without doing anything since it's based on the f-MRP function.
- In receiving an order for the product that requires the mfg. no. control, you can create a Mfg. No. Schedule or allocate a sales order to the preceding Mfg. No. Schedule upon entry of the sales order. If the scheduled quantity to be allocated is insufficient, you can automatically create a Mfg. No. Schedule with as much as the insufficient quantity.
- It's possible to import the order and delivery instruction data that come from the Internet.
- The file to be imported is in CSV format.
- You can import sales orders from the system like EDI and ERP via the Transaction Interface Option.
- It completely supports the daily delivery instructions.
- You can reconcile and delete the forecasting data against the firm Sales Order data you are reading in.
- It's possible not to reflect them in the production schedule as backorders.
- It's possible to respond to the customer-order-receiving style of the Full Choice Option Production.
- You can enter whatever level of the product structure for the Sales Order data. By this function, you could manage the OEM shipments and the repair parts at the stage of the intermediate products and the parts. The MRP calculations would take into account those required quantities.

Forecasting Data

- In the case that the firm delivery instruction data are coming on a daily basis like the automobile industry, you can read them in while you had the forecasting data reconciled and deleted in the order of their delivery date for the same item and delivery location.
- The processing of forecasting orders is available, separately from that of firm orders.
- You can delete the forecasting data periodically and read in new data again.

Shipping Instructions

- You can issue the shipping instructions up to the set number of days ahead from today based on the scheduled shipping date of the Sales Order data.
- You can issue the shipping slip by narrowing down to only the products of which stock was available at the time of issuing the shipping instructions.

Actual Shipping Results

- A warning message is displayed if the current inventory of the product falls below 0 at the time of entering the actual shipping results.
- For shipping schedule, you can enter the actual shipping results and the actual results of acceptance completion after an arrival at customer's site with the separate statuses. In the Inventory List, product inventory is withdrawn and you can confirm it as the quantity of non-acceptance at customer's site. You can reflect an event in the Accounts Receivable Detail at the time of shipment, or at the time of acceptance at customer's site.
- When combined with the Traceability option, it's possible to associate up to the intermediate process and the actual shipping results with the lot numbers of raw materials that were used, and to retrieve the used lot from the actual shipping results and the ship-to from the lot number.

Slip Form

- The shipping slip, the packing slip, the invoice and the accounts receivable ledger are available.
- The order list, and the scheduled shipments and the delayed shipments with a date specified are available.

Selling Price Registration

- The system operation where the selling price varies depending on the ordered quantity or period is supported.

Billing, Cash Receipt Management

- The cash receipt management where you reconcile individual invoices is possible.
- Registering and displaying the overseas customer information in the native language is possible.
- You can export the accounts receivable details for some accounting systems.
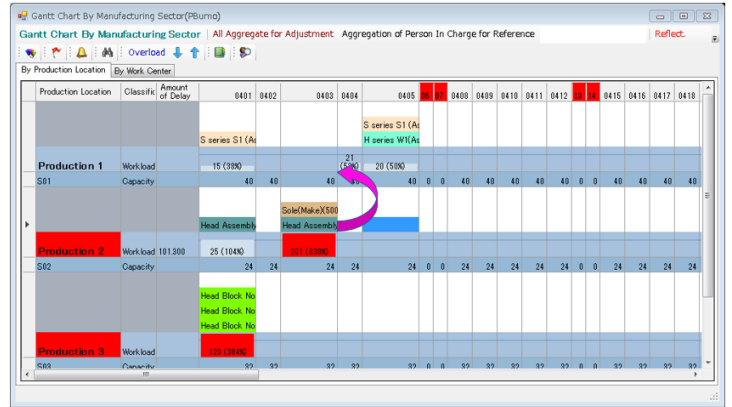
Option

Gantt Chart By Mfg. Sector

You can display the Gantt Chart that has been aggregated for each department based on the production schedule made by the MRP calculations and the mfg. no.

In the Gantt chart, the schedule that is over the production capacity of the department is displayed in red, so you can grasp the plan with high load. You can move the plan to other departments by drag & drop, adjust the plan back and forth, divide the plan and adjust the quantity. In addition, you can adjust the intermediate processes and materials in parent-child relationship with products in conjunction by drag and drop.

In the most recent plan, it is possible to aggregate from the Schedule Detail in which detailed production location was set, and when you register the machine in the production location, you can assign the work to the machine and adjust the schedule.

Multiple Locations

In the Multiple Locations Option, you can make a production schedule for multiple mfg. locations to one item according to their own parameters of the mfg. lead-time, the purchasing lead-time and the lot size.

With this function, you can make a schedule that will meet more complex situations. For example, you could make a production schedule to entrust to outsourcing depending on the workload of the mfg. department although you normally produce internally, make a production schedule to distribute the production volume to 2 places in the mfg. department according to the ratio, and make separate schedules for supplies for multiple outsourcing companies. Also, you can simulate and adjust the bottleneck process from the journal that's been displayed because of the sales order with a short-term delivery date by changing it with a drag-and-drop in combination with the Gantt Chart By Mfg. Sector.
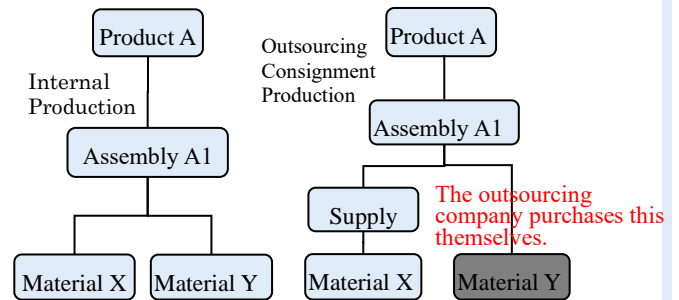
Process Control

You can manage the instructions and the actual results by exploding to the detailed process based on the Schedule Detail that was created from the production schedule made by the MRP calculations and the mfg. no. explosion.

By changing the routing code, you can re-do the explosion of the detailed process, as required, that was exploded according to the master tables at the time of creating the Schedule Detail. For example, you could register the routing when you used the old machine beforehand, changing the routing code of the original process when the load is high, and print the process order form where a setup is added to the regular order of operations.

The process is both possible for an operation for the use of only instructing work to the factory floor and for an operation where the actual results entry is required for working time and progress management of actual results. You can confirm and adjust the load by using the Gantt Chart By Mfg. Sector together.
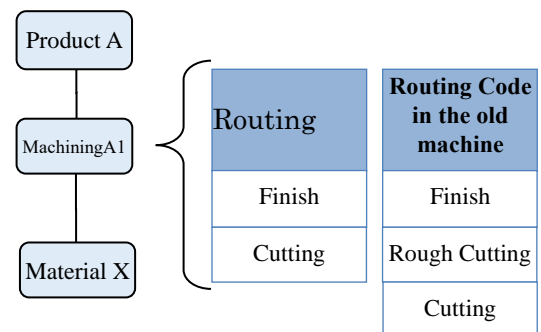
Option

Issue Management Option

f-MRP mfg. no. | repetitive prod. | mfg. no.

You can issue picking instructions from the warehouse to the production site.

The issues will be summarized by item, issue-from and issue-to. (For the mfg. no. controlled items, they will be summarized by mfg. no. in addition to the above.)

You can register the lot sizes for arrangements and issues separately.

If the current inventory doesn't satisfy the required quantity of the issue-to, some indication will be printed in the issues list so that you will know the insufficient quantity.

When a part you were unable to issue because of the stock insufficiency has been delivered, it will automatically be shown on the next issues list. Thus, you will be free from the extra, cumbersome management.

Product Goods Issue Instructions, Actual Results

By using the Customer Order & Sales Management option and the Issue Management option together, you can issue product issue instructions from the product warehouse to the shipping workplace before shipping and manage the actual results.

Pull Production

f-MRP mfg. no. | repetitive prod. | mfg. no.

The mfg. lead-time is taken into consideration for internal processes to make a schedule for products in the MRP calculations, but you make arrangements for the required quantity of parts and materials using the MRP calculations, and for the instructions for internal processes, the work instruction can be given to the preceding process step according the timing of a group leader on the factory floor who's responsible for producing products.

The process step to follow brings the required quantity from the stock of the preceding process step, which in turn produces the portion that has been used and become insufficient. Thus, you can achieve a behavior like so called "kanban."

Use the Schedule Detail Manual Entry form or the Shop Floor Control Option for the instruction to the preceding process step

One-item Production

f-MRP mfg. no. | repetitive prod. | mfg. no.

In the case of the discrete production, since they make a different product for each customer's order, their application is not the kind like they would put the master tables in order beforehand and perform the uniform processing like the repetitive production. Because of that, the systems for the production control, where you had to put the master tables in order beforehand, used to be very hard to use. In order to solve these problems, TPiCS has strengthened its function to accommodate various operation methods. Even for individual production, not all products are individually designed, but common parts and repair parts may be arranged by repetitive manufacturing function and incorporated into one-item production configuration. It is possible to use repetitive production function depending on the product, or to manage mixed fine-grained management using the Mfg. No. Control.

This is a function with the assumption of a case where you will operate the system without predefining any master tables due to the "one-time-only production" because the product specification will change in each customer order.

・ By a very high operability, you can arrange while registering work and parts to be used each time.
・ You can copy a similar mfg. no. in the past and change it to make a new one for use.
・ The drawings get released like an early summer rain and you can arrange things, starting with what you need and it's possible among them.
・ If patterning is possible to some degree, you can use it as the base to which you can add some modifications.
・ You can perform addition, modification and deletion seamlessly due to the engineering change by working together with the "Structure Information Conversion Option" and reflect them in the arrangements promptly.
・ You can use the general-purpose units and parts that have repeatability.
・ You can issue the "Quotation" to your customer.
・ You can issue the "Quotation Request Slip" to your supplier and a transaction that conforms to the Subcontract Act is possible. (The competitive quotations are also possible.)
・ You can manage a part that has become unnecessary because of the engineering change or something, and let other projects use it.
・ This option requires that you purchase the "Mfg. No. Control system."

Option

Structure Information Conversion

"Product structure information" and "change information" of the design are read as structure information in the CSV file from the parts table managed by CAD and Microsoft Excel, and are reflected in the production information of TPiCS. Coordinate processing can be done with one data, so design changes will be reflected on production thoroughly and quickly.

・ You can register the work, such as supply and outsourcing processing, that doesn't exist in the engineering BOM in the manufacturing BOM.
・ Even design changes made from the design BOM to the manufacturing BOM can be quickly reflected in the arrangement.
・ This option displays a portion of engineering change with the status or in color   so that any omission of the processing can be protected.
・ If you use this option in combination with the One-item Production Option, you can reflect the engineering change in the arrangement data seamlessly.

Taking advantage of the CAD data

Because the customer's needs have diversified and the life cycle of the merchandise has also shortened, it has become more important than ever even for the discrete production to shorten the cycle of customer order, design and production.

So, in order to make things in rapid cycle, you've come up with an idea to make arrangements for the production using the engineering information. But the structure information of the products the engineers think of (E-BOM) and the structure information the people of the mfg. department think of (M-BOM) are different often times, and it is general that the E-BOM gets changed to the structure information for the production with an interpretation of human being added. Then, if there's an engineering change, it becomes impossible to change it directly in the system and reflect it in the arrangements. That's why the human being has reflected engineering changes by comparing the E-BOM and the M-BOM one by one with his eyes.

But if there's an engineering change and you use the "Structure Information Conversion Option" of TPiCS, it will be possible by just clicking the button a several times to find out something unnecessary or something that needs an additional arrangement from the data that have already been arranged (purchased) to create a cancel order and to make an order for additional arrangement even if there's a difference between the two of the structure information. With this function, the production control business for the discrete production should be very easy.
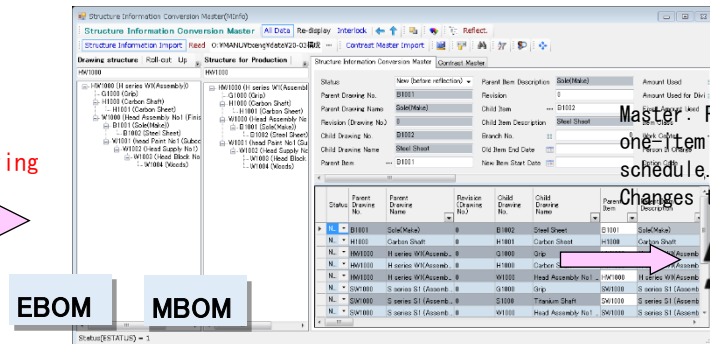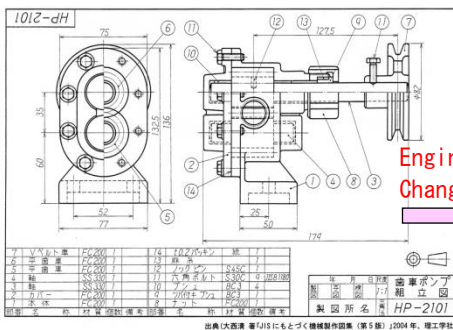
Set Production

This adjusts the schedules of multiple parts or products that are designated as the same group so that they will always be made at the same time.

・ If you were to process a part   the right side of which is different from the left and both are made at the same time in one mold, for example, you would always have to produce each of them with the same quantity at the same time regardless of the ordered quantity. In this case, you will be able to make a schedule for them with the same quantity each at the same time in the MRP calculations.
・ In the case of having a by-product generated, you can let the schedules of multiple products created at the same time according to a specified ratio.
・ When you change a daily schedule with a drag-and-drop to the production schedule table, you will always be able to change daily schedules all together for the items that are designated as the set production group, and reflect the results in the Gantt Chart By Mfg. Sector at the same time.
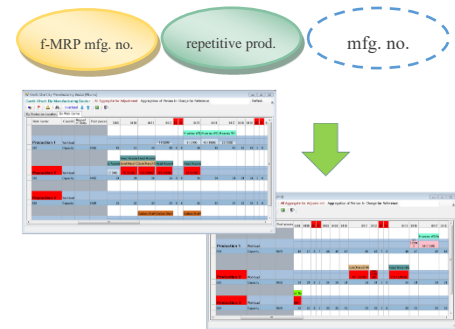
Option

Automatic Leveling

With this option, you can produce things for sales orders to be shipped at the end of the month ahead of schedule, and make a production schedule taking into account the load on the ability of the bottleneck process.

You can perform the leveling process that represents the "equally-allocated production" where the daily production is equally allocated with respect to the total number of one week.

・ The amount of work and the load factor are aggregated based on the calculation results of the parent hierarchy for each hierarchical level of the structure in the MRP calculations. If　there is something where the load factor is more than the set value, the appropriate schedule will be moved to the front and rear.
   The move will target only the undetermined schedule.
   The MRP calculations will continue based on the schedule after leveling for child parts under it.
・ The processing of "front-loading" and "back-loading" is possible.
・ For each production line, you can set the necessity and the reference load factor of leveling.
・ You will be able to set the items of interest in the "leveling priority" of the Item Master.
・ The processing of "equally-allocated production" will also be calculated for each parent-child level.
   After inventory allocation and the catch-up calculation by lead-time, you make a plan to produce evenly for each week and item. For small production items, you calculate in such a way as to make a plan as early as possible in the week.

Manufacturing Traceability

his is an option that allows you to track the actual results of production assembly and processing from shipped product lot names and track lot names of procured raw materials and parts.

In addition to tracking raw materials from products, it is also possible to track shipping destinations based on the lot name of the raw material in question.

You can respond to lot traceability required by ISO9000, PL Law, Pharmaceutical Affairs Law, etc.

Also, you can manage expiration dates for raw materials and work-in-process inventory.

・ You are going to enter the lot numbers for raw materials if necessary (setting) at the time of receiving them. (Can be designated as mandatory.)
・ You can register the internal lot numbers and their association with the lot numbers for the raw materials that have been used at the time of entering the actual results for internal processing.
   If there's something that needs the traceability control among the raw materials to be used, TPiCS automatically allocates that in "FIFO" first. Afterward, since a window that lets you confirm the allocated raw materials opens automatically, you can correct them there as needed.
・ One product or process can use a raw material that contains multiple lots and one raw material can be used by multiple products or processes. That is, handling many-to-many relationship is possible.
・ You can also manage all the moves within the factory such as issuing partially and returning to the warehouse after raw materials in stock.
・ Since you get to know the price purchased of the raw materials that have been used, and the operator and the hours worked when there was work, you can figure out the net cost of each of the lots produced using the "Cost By Lot" form.
・ For raw materials and goods in-process requiring "expiration date management", you can print a list of items that are about to expire and discard them all at once.
・ You can perform the MRP calculations taking into consideration the expiration date after the completion of the product and after receipt of intermediate products and raw materials used.
・ You can instruct about the "raw materials to be used" on the work order form. The instructed raw materials are temporarily allocated and then withdrawn automatically at the Actual Completion Results Entry for the parent. You can also change them halfway.

Internal Control

It is an option to record approval of high purchase order and all table changes, and to prevent fraudulent work processing.

・ You can have a correction history for all tables written out to the dedicated table.
・ In the issue of the purchase order, you can target only the data that has been approved by the Purchase Order Approval Authority.
   The Approver, the Approval Date and the Approval Key (encryption) are written in the approved data, and if you modify the order contents after approval, the approval will be invalidated.
・ You can record long operation logs.

Option

Internal Control

This is the system to perform the process control for the factory floor and we'd like those who wish in the following way to use:

"I want to put out the sound schedule with a pile of load since the people on the factory floor complain if I cannot manage the load when I give instructions to them."
"I have no control over the people on the fatory floor because they are doing their way. I want to manage them somehow using the computer."
"Time of setup is different by the order in which to produce. I want to make a schedule where time-consuming setup is as little as possible."
"There are multiple machines at each process step and the ability is a little different from machine to another. We have things we can make and we can't make depending on the product we are going to make. In the situation like this, I want to make a plan that is as efficient as possible."
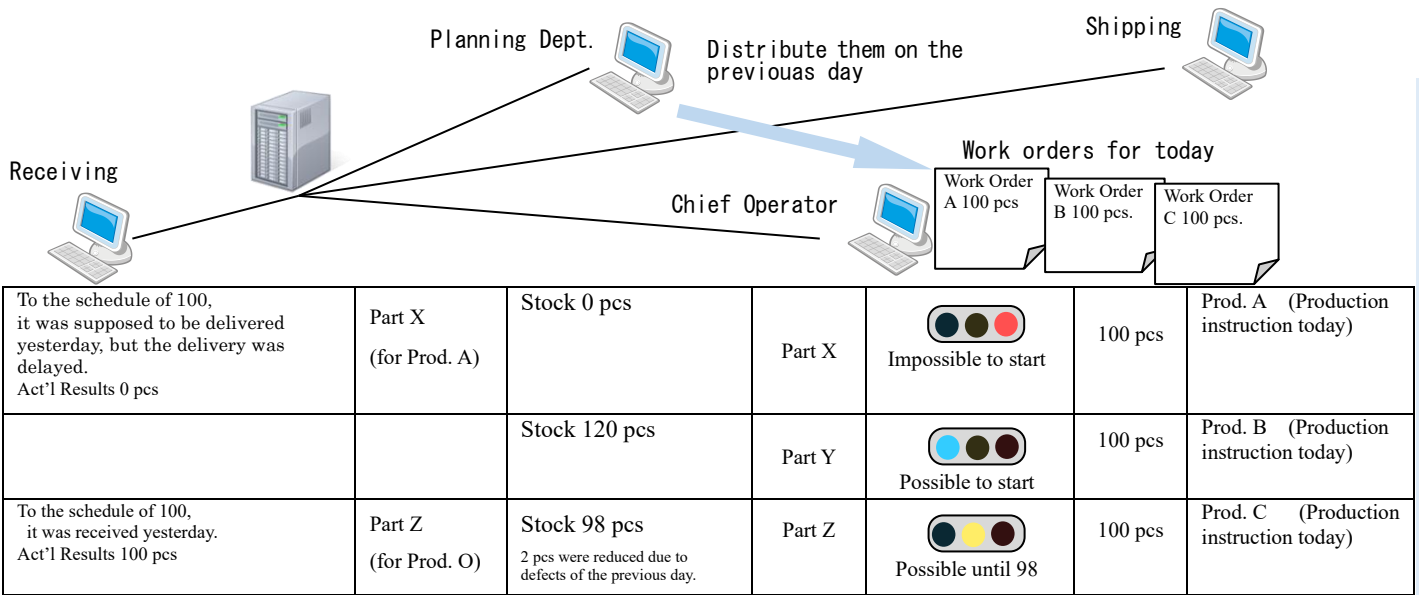"Each time an inquiry about the delivery date comes from our customers, I can't give them an answer without going to the factory floor. I wish I could tell that by looking at the screen of the computer."

"We arrange for parts by MRP system but we can not respond to demand fluctuations because we can not improve a can of worms. In order to respond to the era of rapid change, We want a system that can quickly make inter-process schedule backed by the parts."

· You will see a list of work for today and tomorrow on the screen of the foreman or group leader of the factory floor, or the person in charge of the shipping field. (It's important to limit the list to 2 to 3 days worth of work.)
· When the office changes the plan, it is instantly reflected on everyone's screen, and among them, those that do not have the necessary parts and those that have not completed the previous process and those that can be started at any time are displayed, as can be seen at a glance.
The priority can be rearranged by dragging in the order you want, regardless of the delivery date, so if it is not yet possible to start, you check the material and the backing of the previous process with the Previous Process button, and write in the message so that the operator can know which one should be given priority.
If you press the Previous Process button with data that cannot be started, the window will tell you which process, which child parts are missing, and what the plan is like.
· You can demonstrate the daily production level (quota) apart from the results of the MRP calculations. This allows you to hold the required level of leveling of production schedule.

· Press the Start button after determining the work to do next from that screen. When you are finished, press the Register button to be able to register the actual results.
· When you press the Start button, you can even tell from the process step to follow what time the preceding process step started.
· When you register the actual results, that work will be gone from the Instruct A Schedule screen.
In other words, it will stay on the screen until you register the actual results.
· Since it's possible to use different colors by the work and working methods when you display the work that must be done, you can think of the order of efficient work in consideration of the setup by choosing the work with a similar color.
· When you register the actual results in the screen of the Shop Floor Control, it will be reflected in the stock quantity, etc. of TPiCS in the office at the same time.
· The actual results entered at the preceding process step will be reflected in the Signal To Start screen of the process step to follow right away and the display in red on the screen will be gone.
· In the evening you can print the daily report and the not-yet-done list for today using a PC in the office without bothering anybody.

The Shop Floor Control Option is not for directly responding to the needs that emerge on the surface like this, but is intended to achieve the "true management" soil improvement-wise, and is the system for the factory floor to be able to make correct judgments, not to enter the actual results for the purpose of collecting them, by solving the problem that exists behind it or removing clutter on the way to that problem.

Option

To the schedule of 100, it was supposed to be delivered yesterday, but the delivery was delayed. Act'l Results 0 pcs	Part X (for Prod. A)	Stock 0 pcs	Part X	Impossible to start	100 pcs	Prod. A (Production instruction today)
		Stock 120 pcs	Part Y	Possible to start	100 pcs	Prod. B (Production instruction today)
To the schedule of 100, it was received yesterday. Act'l Results 100 pcs	Part Z (for Prod. O)	Stock 98 pcs 2 pcs were reduced due to defects of the previous day.	Part Z	Possible until 98	100 pcs	Prod. C (Production instruction today)

Alternative Production Option

This is an option that allows you to change the parts, materials, and intermediate units used for production from the standard structures even after the production schedule is created. To change the item used after finalizing the production schedule, you need to maintain plan and actual results data. The Alternative Production option makes the procedure easier and allow for more flexibility in temporarily changing the raw materials used.

For example, it is suitable for cases where you replace parts that are not on time for the specified delivery date with available alternatives and produce, or you use up the raw materials first which are going to be wasted because the expiration date is near instead of the raw materials normally used.

Switching between items can be done at the planning stage or at the time of entering actual results after work. This makes it possible to deal with both cases where the change of the used item is confirmed before production and cases where the change is determined by on-site judgment during the work.

Also, you can replace the entire quantity or a partial quantity with a substitute for the originally planned quantity.

Transaction Interface Option

This is an option for performing automatic linking in both directions by importing data of another system into TPiCS and writing processing done by TPiCS to a linkage table.

For example, the Actual Receiving Results data, the Issues data, and the Actual Work Results data registered at the handy terminal are automatically imported by TPiCS to the Transaction Import table and can be processed in the same way as entered from the TPiCS form. In addition, a table for transfer is prepared for the Actual Shipping Results data entered into TPiCS in conjunction with ERP and Sales Mmanagement System, data is automatically added to the Transaction Export table at the same time as data entry, and you can grasp updated data of TPiCS. When you check to prevent double data transfer, it may be necessary to update TPiCS data. At this time, if you update directly to the Actual Shipping Results table, you will need to check the effect on TPiCS processing, but if it is the Transaction Export table, since only data is added from TPiCS, it is possible to update the transferred items easily.

It can also be used for linkage of the following applications:
- Import of the EDI data and the Forecast data with customers
- Coordination with production scheduler that adjusts machine production on a time basis
- Import of the Actual Results data collected from the machining center
- Coordination with POP terminals for collecting actual results, handy terminals and smart devices. Linkage with actual receiving results and actual work results using RFID
- Coordination with the Cost Management System that distributed and aggregated overhead costs
- Linkage with ERP, the Sales Management System, and the Accounting System
- Linkage with the workflow system for purchase order approval

Option

Delivery Load Management Option

f-MRP mfg. no. | repetitive prod. | mfg. no.

You can automatically create delivery schedule from product shipment to delivery destination and issue the loading slip.
When you select the loadable items on the basis of the shipping schedule, the load weight limit and volume restriction of a truck is created from the weight and volume of the product after packing. In addition, a delivery plan that automatically distributes the loaded items for each delivery area registered in the master is created.
Please use it in conjunction with the Customer Order and Sales Management Option.

SCM Option

f-MRP mfg. no. | repetitive prod. | mfg. no.

The SCM Option is an option to strongly cooperate with suppliers and cooperating companies requesting production   to realize production that responds promptly to fluctuations in forecasting order finalization and a sudden, irregular sales order from customers.
You can send purchase order and forecasting order information to the business partner from the supply chain host, and at a cooperating company you will receive it using the supply chain terminal. In addition to simply sending and receiving order information, you can also reply whether or not to deliver according to the designated delivery date from a cooperating company. If it is impossible, you can also reply with partial deliveries. Since sending and receiving is a mechanism of e-mail, it can be used if dedicated e-mail address can be prepared.
In order to realize fast cycle production, as internal improvement progresses, it will become necessary to have the purchase order lead-time of the cooperating company shortened in order to further improve. At this time it is difficult in one way, and when the production of the cooperating company can not really make it in time, you will make the purchase order lead-time that is established on trust relationship by receiving this. Since TPiCS has a concept of buffer called basic stock, partial delivery is alright if it can be covered with this. If it can not be covered, it can be displayed in the journal and you can judge whether you want to ask the customer to change the delivery date. It is easy if you follow the exchange of one purchase order data, but you must solve the problem in a large amount of data that changes from day to day, such as the situation of cooperating companies, the situation inside the company, and the change of the the product plan using the same parts.
Although you can use the supply chain terminal for free, upgrading to TPiCS seamlessly connects from the supply chain terminal to sales order and MRPcalculations and demonstrates its true value.

Delivery Date Reply Option

f-MRP mfg. no. | repetitive prod. | mfg. no.
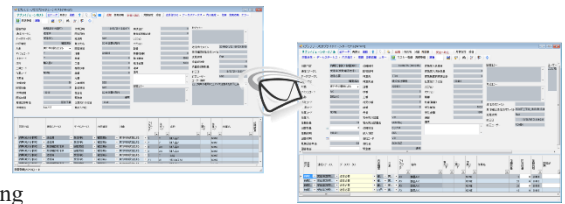
When your customer   asks you for the delivery date reply and if you confirm the inventory and the on-site progress and the answer is given after several days, the situation of the customer may change. In the Delivery Date Reply Option, of course, you can answer "Yes, possible" or "No, impossible" according to the requested delivery date, but even if it can not be done, you can respond schedules that can be handled by partial deliveries.
Calculated inventory of the required day is determined from the sales order and   shipment plan, the production plan, and the remaining quantity of lots of the production plan in order from the product level. In the case of shortage, the calculated inventory is examined by drawing child parts to be used and intermediate units, and finally the calculated inventory of the end member is examined. In the case where the calculated inventory of the parts is insufficient, conversely this time, the parent's plan is adjusted from the plan that keeps the purchase order lead-time, the schedule of the intermediate unit and the production schedule of the product are determined and the deadlines that can be handled to customers are calculated.
You can specify only the quantity and can answer which deadline you can deal with.
After calculation, you can create Sales Order data and Schedule Detail data directly from the Reply Request data and the Reply Detail data, and you can reflect it in the next delivery date reply calculation.

Service Parts Management Option

f-MRP mfg. no. | repetitive prod. | mfg. no.

After shipping the product to the customer, the Service Part Management Option is an option that performs:
① Guide on the end of useful life of service parts and maintenance parts,
② Creation and arrangements of forecasting plans for applicable parts,
and that makes it possible to deliver to customers immediately without deranging the production schedule of the product by receiving sales orders of the service parts by regularly urging parts exchange instead of the customer placing a purchase order for repair parts in a hurry after breakdown.
Concretely speaking, you will manage parts that will need to be replaced within a few years from the shipped products as service parts and you can confirm the replacement to the customer at the timing when the service parts are needed after several years from the shipped actual results and manage the additional order only for the service parts.

Usage Environment Example

◆ Client-server Environment
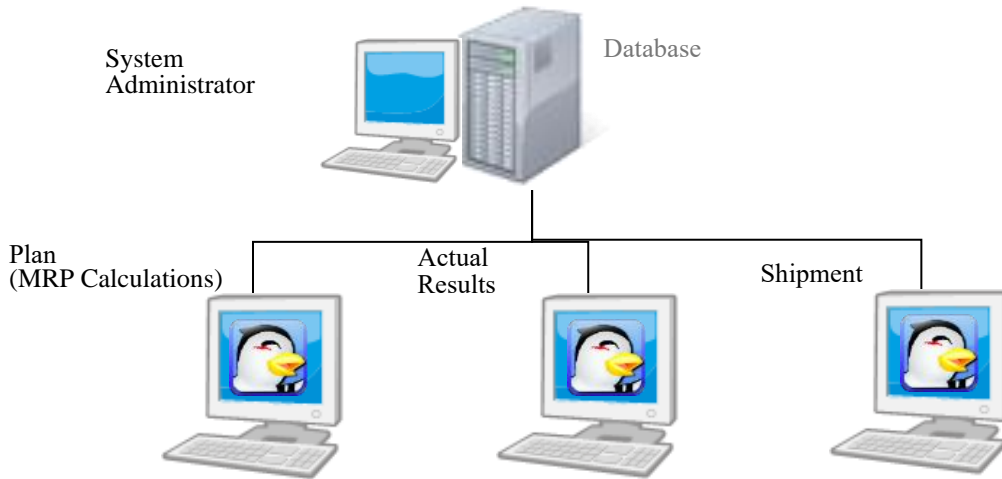
System
Administrator

Database

Plan
(MRP Calculations)

Actual
Results

Shipment

Server	
OS	: Windows Server (Microsoft.Net 4.7.1 required)
Database	: SQLServer or Oracle
TPiCS	: License Management Service
	It is possible to do the MRP calculations at the server.
Hardware	: Database hardware requirement or higher
Client	
OS	: Windows 10, etc. Windows client OS
	(Microsoft.Net 4.7.1 required）
TPiCS	: TPiCS system
Hardware	: Since the clients for the MRP calculations and the mfg. no. explosion use more CPU and memory resources, it is desirable that it has 8GB memory and the CPU core is high speed with 30,000 item counts. 4GB memory is required for the operation of Actual Results Entry.

f-MRP is the registered trademark of TPiCS Laboratory, Inc.
Acquired Patent No.: 3055993, 3923509, 4203465, 4268151, 4679091, 4691382, 4884685. Intellectual Ownership Rights Registered No.: 026300, 026301, 026302.

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◆ Application Server Environment
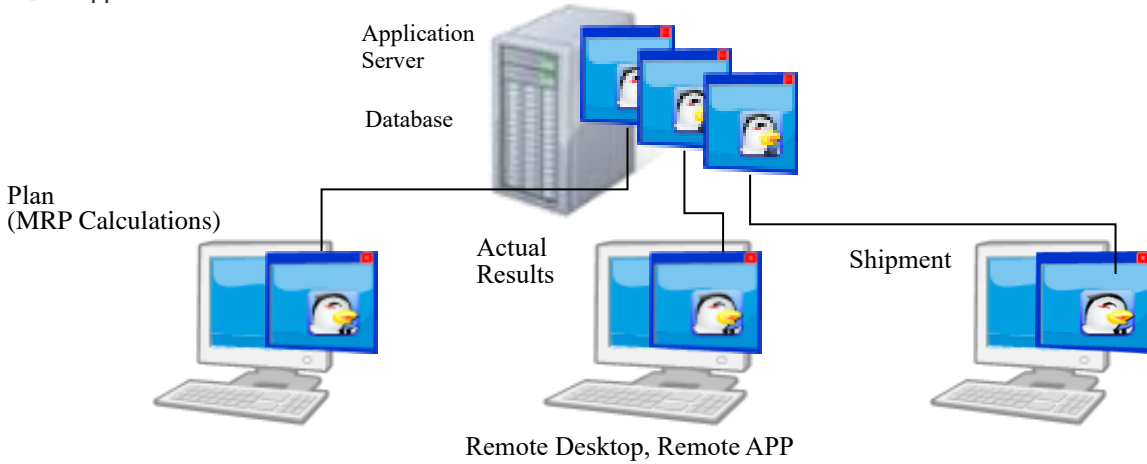
Server

OS	:	Windows Server (Microsoft.Net 4.7.1 required)
		It is possible to do the MRP calculations at the server.
		Windows Remote Desktop Service CAL (RDS CAL) is required separately for each connected client to build a Windows Remote Desktop Server and Remote APP environment.
Database	:	SQLServer or Oracle
TPiCS	:	License Management Service
		It is possible to do the MRP calculations at the server.
Hardware	:	16 GB or more memory is desirable with 30,000 item counts and 5 remote desktop connections.

Client

OS	:	Windows Remote Desktop Client requirements
TPiCS	:	TPiCS system

◆ Virtual Server Environment
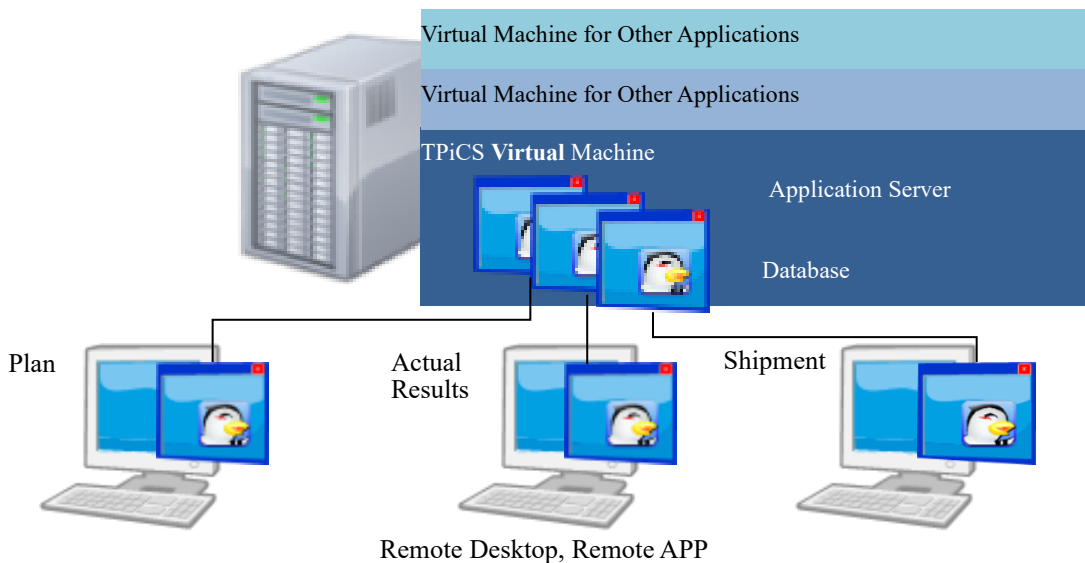
Server	:	Windows HyperV, vmware, vSphere, etc.
Virtual machine	:	Like application server environment hardware

◆ Cloud Environment

TPiCS Virtual Machine

Application Server

Database

Plan

Actual
Results

Shipment

Remote Desktop, Remote APP
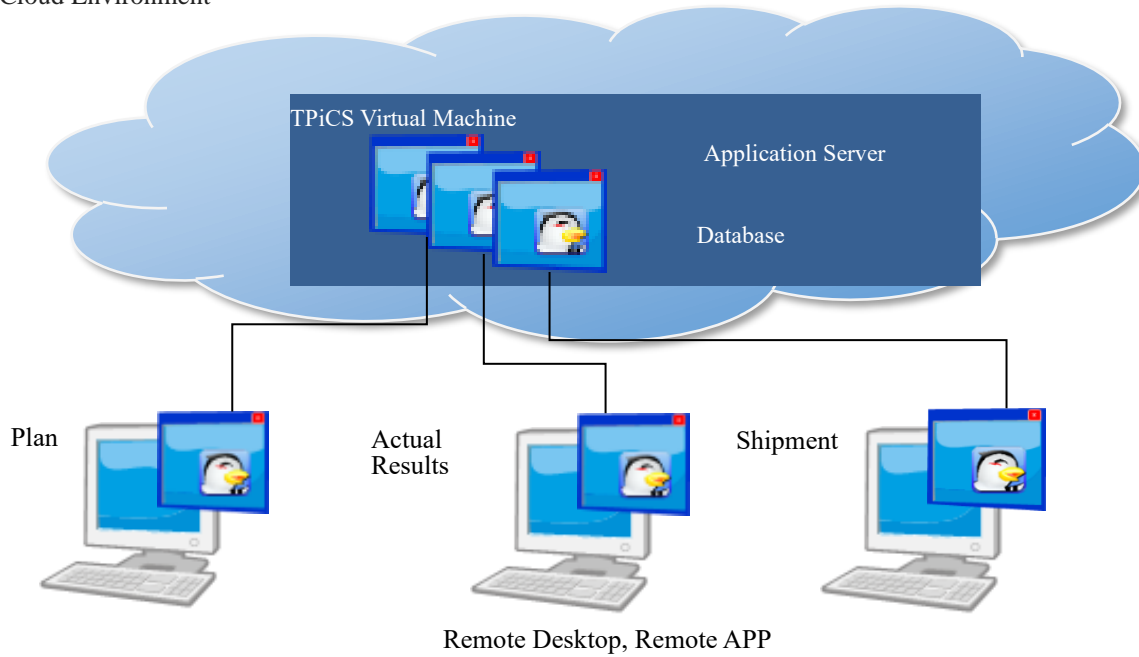
Virtual Server		
Cloud		Sakura's cloud, Windows Azure, Amazon EC2, etc.
OS	:	Windows Server (Microsoft.Net 4.7.1 required)
Database	:	SQLServer or Oracle
TPiCS	:	TPiCS system
		License Management Service
Virtual machine	:	For 30,000 item counts and 5 Remote Desktop connections, high-speed virtual CPU of 2 cores or more and 16 GB or more virtual memory is preferable.
Client		
OS	:	Windows Remote Desktop Client requirements

Ver. 4.1 System Purchase (On-premises Type)

You can choose from the usage methods of the "system purchase" and the "usage fee" of monthly or annual payment.

● System Purchase

This is a buy-in type purchase method suitable for introduction to an in-house server. Once you pay, the software can be used permanently.

By using the maintenance service at the time of purchase, it is possible to inquire to the support center and apply monthly update.

You can add operational licenses and language licenses according to the increase in operation personnel due to addition of options and stable operation in accordance with the change of production form after several years from system purchase.

◆ System

The f-MRP Mfg. No. is a system that can do both f-MRP (MRP calculations) and Mfg. No. (Mfg. No. Explosion).

If only f-MRP is sufficient, please purchase Repetitive Manufacturing System, and if only mfg. no. is sufficient, purchase Mfg. No. Control System.

◆ Option

If you purchase additional options on your system, you can use the options on all clients (within the operational license).

◆ License

Operational License

Since it is a simultaneous operational user license, TPiCS itself can be installed on any number of PCs, and simultaneous operation up to the number of licenses purchased is possible.

Multiple Facilities License

When you manage the masters, the Schedule data, and the Aactual Results data in multiple factories and facilities with separate databases, and manage users and authorities at one place, the Multiple Facilities License is required for each additional facility. If the MRP calculations or Mfg. No. Explosion is required at the same time at multiple Facilities, the MRP Calculations License and the Mfg. No. & One-item Production License are required.

MRP Calculations Additional License

This is necessary when you perform the MRP calculations at the same time for each facility by using the Multiple Facilities License.

Mfg. No. & One-item Production Explosion Additional License

In the f-MRP Mfg. No. system and the Mfg. No. Control system, there is a license with which you can perform the Mfg. No Explosion on 2 clients at the same time. If two or more clients require Mfg. No Explosion, this license is required.

◆ Language License

If you purchase an additional language license on your system, you can switch between Japanese and foreign languages with all clients (within the operational license). You can also purchase and apply multiple language licenses.

System	Package	Annual standard
f-MRP Mfg. No. System	¥ 1,500,000	¥225,000
Repetitive Manufacturing	¥ 1,000,000	¥150,000
Mfg. No. Control System	¥ 1,000,000	¥150,000
Option	Package	Annual standard
Multiple Locations Option　*1	¥200,000	¥30,000
Pull Production Option　*1	¥100,000	¥15,000
Automatic Leveling Option　*1	¥200,000	¥30,000
Set Production Option　*1	¥100,000	¥15,000
Gantt Chart By Mfg. Sector	¥300,000	¥45,000
Customer Order & Sales	¥500,000	¥75,000
One-item Production Option	¥200,000	¥30,000
Structure Information	¥200,000	¥30,000
Process Control Option	¥100,000	¥15,000
Issues Management Option	¥100,000	¥15,000
Shop Floor Control Option	¥300,000	¥45,000
Internal Control Option	¥300,000	¥45,000
Traceability Option	¥300,000	¥45,000
Delivery Loading Management	¥300,000	¥45,000
Service Parts Management	¥300,000	¥45,000
SCM Option	¥500,000	¥75,000
Transaction Interface	¥300,000	¥45,000
Delivery Date Reply Option	¥300,000	¥45,000
Alternative Production	¥200,000	¥30,000
License	Package	Annual Standard
Operational License	¥100,000	¥3,000
MRP Calculations Additional	¥500,000	¥75,000
Mfg. No. & One-item Production	¥300,000	¥45,000
Multiple Facilities License	¥300,000	¥45,000
Language License	Package	Annual Standard
English License	¥200,000	¥30,000
Simplified Chinese License	¥200,000	¥30,000
Traditional Chinese License	¥200,000	¥30,000
Vietnamese License	¥200,000	¥30,000

These are the prices excluding tax as of January 30, 2020.

*1 This cannot be used in the Mfg. No. Control system.

Ver. 4.1 Monthly or Annual System Usage Fee (Subscription Type)

You can choose from the usage methods of the "system purchase" and the "usage fee" of monthly or annual payment.

🔵 Monthly Usage Fee, Annual Usage

This is a method of paying by separating the period suitable for use in a cloud server environment.

Monthly Usage Fee

You can change from the following month if you notify us of changes, such as adding options in accordance with step up of operations, deleting unnecessary options, and changing the number of operational licenses according to the increase / decrease of operation staff, by 25th of every month. Monthly standard maintenance service is included in the usage fee.

Annual Usage Fee

Since monthly usage fee is paid in advance by a year, you can use TPiCS at a discount from the monthly usage fee.

Even in the middle of the month, you can add operational licenses and options by paying for the remaining months.

As well as monthly fee, annual standard maintenance service is included.

Supported OS and database are the same as on premise type.

🔵 TPiCS Cloud Server

We will lend you a cloud server for for free on which you can try TPiCS demo version based on "Sakura Cloud" of Sakura Internet Co., Ltd. for 3 weeks at TPiCS Laboratory.

You can use it immediately without worrying about Remote Desktop of Windows Server, RemoteAPP setting, SQL Server installation, etc.

Since Office's SAL is a server provided in Sakura's cloud, Excel can also be used on the server,   andTPiCS's Excel form design printing also allows you to print the work order form on the local printer with the printer redirection function of Remote Desktop Connection.

The cloud environment can be used for not only the trial use of the demo version but also actual operation by paying the monthly or annual usage fee of TPiCS and   Sakura's cloud server usage fee (monthly system only). For continuous use, it is necessary to change the contract of TPiCS cloud server to customer's contract, and after switching is completed, server specification change, etc. becomes possible.

Sakura's Cloud Server Spec "Ishikari Region"
(¥13,255/month)
https://cloud.sakura.ad.jp for price and details.

CPU	2core
Memory	4GB
SSD	100G
OS	Windows Server 2019 Datacenter Edition Office 2019
Remote Desktop	Number of connected clients 1 (¥3,300/month per additional user)
Database	SQL Server2019 Express Edition

This is Sakura's cloud price as of 10/31/2019.

System	Monthly	Annual
f-MRP Mfg. No. System	¥61,364	¥675,000
Repetitive Manufacturing	¥40,909	¥450,000
Mfg. No. Control System	¥40,909	¥450,000
Option	Monthly	Annual
Multiple Locations Option *1	¥8,182	¥90,000
Pull Production Option *1	¥4,091	¥45,000
Automatic Leveling Option *1	¥8,182	¥90,000
Set Production Option *1	¥4,091	¥45,000
Gantt Chart By Mfg. Sector	¥12,273	¥135,000
Customer Order & Sales	¥20,454	¥225,000
One-item Production Option	¥8,182	¥90,000
Structure Information	¥8,182	¥90,000
Process Control Option	¥4,091	¥45,000
Issues Management Option	¥4,091	¥45,000
Shop Floor Control Option	¥12,273	¥135,000
Internal Control Option	¥12,273	¥135,000
Traceability Option	¥12,273	¥135,000
Delivery Loading Management	¥12,273	¥135,000
Service Parts Management	¥12,273	¥135,000
SCM Option	¥20,454	¥225,000
Transaction Interface	¥12,273	¥135,000
Delivery Date Reply Option	¥12,273	¥135,000
Alternative Production	¥8,182	¥90,000
License	Monthly	Annual
Operational License	¥3,000	¥33,000
MRP Calculations Additional	¥20,454	¥225,000
Mfg. No. & One-item Production	¥12,723	¥135,000
Multiple facilities License	¥12,723	¥135,000
Language License	Monthly	Annual
English License	¥8,182	¥90,000
Simplified Chinese License	¥8,182	¥90,000
Traditional Chinese License	¥8,182	¥90,000
Vietnamese License	¥8,182	¥90,000

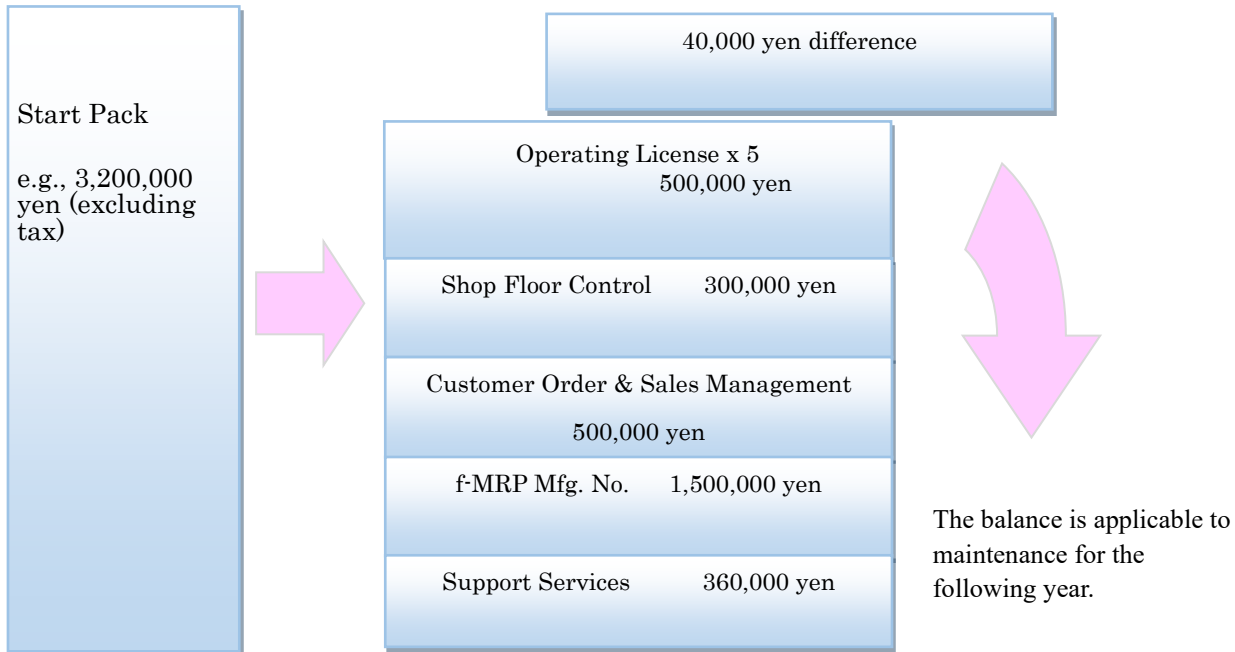These are the prices excluding tax as of January 30, 2020.
*1 This cannot be used in the Mfg. No. Control system.

Start Pack, Version Upgrade

🔵 Start Pack

At the time of purchase	One year later, the decision of the system to be used

Start Pack

e.g., 3,200,000 yen (excluding tax)

➡️

40,000 yen difference

Operating License x 5	500,000 yen
Shop Floor Control	300,000 yen
Customer Order & Sales Management	500,000 yen
f-MRP Mfg. No.	1,500,000 yen
Support Services	360,000 yen

The balance is applicable to maintenance for the following year.

It is a difficult task to figure out all the functions of TPiCS and decide what kind of management is suitable before purchasing. Therefore, even if you get to know the function that was necessary when you decide on the operation method and you understand that you can handle it with the option of TPiCS, because it is difficult for additional applications to be submitted to the company, you may be operating in a labor-intensive manner.

When you purchase TPiCS with the start pack, you can use all the options for one year, and there is no upper limit on the number of client licenses. Try it thoroughly in a year and you can decide the options and licenses to use one year later. After 1 year, if the usage option and the number of licenses falls below the start pack purchase price, you can assign the difference to the maintenance service of the following year.

Minimum Purchase Price: 1,253,000 yen (excluding tax)
* Including support service fee

Support service of 15% of purchase price determined is necessary from the time of purchase.

🔵 Version Upgrade

30% of the total system price (1/5 of the operational license) of 4.1 is the upgrade price.

Version Upgrade Work

Version upgrade function is available in the system from 4.0. We will show you how to solve inconsistent data that becomes obstacle when version upgrade is executed and support conversion from version 4.0 or earlier. For cost and details, please visit our website.

● Operating Environment

OS

Windows 10 (64bit), Windows 8.1 (64bit)

Windows 7 SP1 (64/32bit)

Windows Server 2019 (64bit)

Windows Server 2016 (64bit)

Windows Server 2012 R2 (64bit), Windows Server 2012 (64bit), Windows Server 2008 R2 SP1 (64bit)

It works in the environment supported by Microsoft .Net 4.7.1. Please use 64bit OS when the data size increases.

Supported Database

Microsoft SQL Server 2019

Microsoft SQL Server 2017

Microsoft SQL Server 2016

Microsoft SQL Server 2014

Oracle 12cR2

Oracle 12cR1

Oracle 11gR2

* The evaluation database SQL Server 2014 Express Edition is attached, but purchase of a separate database is necessary for this operation.

● Maintenance Service

You can choose from three service menus according to your needs. The maintenance rate is calculated by the purchased system price (the operational license is 1/5 of the list price) to determine the maintenance service price.

①Annual Standard Maintenance (price: 15% of system price per year)

・ Inquiries by telephone or email are free,

・ Remote support using the Internet is free,

・ Analysis and verification with use'r data is free,

・ Our company's workshop fee and business trip support are 40% discount,

・ Free upgrade fee,

・ Use of remote license authentication,

・Lending (for 3 months) of hard key for function verification,

・ Separate hard key for test environment (for 1 client only environment in which you can perform the MRP calculations and the mfg. no. explosion).

②Annual Program Maintenance (price: 10% of system price per year)

This can be used only via the system intergrator of TPiCS.

・ Direct inquiries from users are chargedm,

・ Version up costs are 30% discount,

・ Use of remote license authentication.

③Annual Reassuring Maintenance (price: 30% of system price per year)

・ Our staff visits 4 times a year (transportation expenses, etc. are charged separately),

・ Increased discount rate for workshop fee and business trip support (50% discount).

The others are the same as Standard Maintenance.

Support, Workshop

● Support (excluding tax)

If the maintenance service has expired, you will be charged for each question, but you can contact us.

Support By Phone, E-mail, etc.   ¥15,000/case

We will respond to the contents on TPiCS functions and usage and the questions about operation using TPiCS.

Remote Support   ¥45,000/case

We will do the support while checking the situation by remotely accessing the user's computer screen from the support center.

Users may not be able to use because user's connection environment to the Internet and executable permissions of remote

software, etc. are required.

Analysis and Verification w/ Usr's Data   ¥75,000/case

We will verify by keeping a backup of the data operated by the user.

Support Center Contact Information
TEL: 03-5395-4228
E-Mail: support@tpics.co.jp

Purchase Consultation
TEL: 03-5395-0055
E-Mail: tpics0@tpics.co.jp

 <Reception Time>
Weekdays: 10:00 - 12:00, 13:00 - 17:00

● Workshop

Holding Workshops (with maintenance service discount)
We have a fee-based workshop every month at Sugamo, Tokyo.
Come join us for the purpose of checkpng the production control method of systematic TPiCS which is difficult to grasp in the sales stage and the general requirements definition phase, combining the skill level of the introduction team that gathered power and the knowledge of production, and mastering knowledge of production control by replacement of personnel in continuous operation.
In addition to our workshops, the advanced system integrators and the general system integrators also hold fee-based or free workshops and introduction seminars from time to time.
(Please see the TPiCS homepage for the scheduled dates.)

Workshop Curriculum at Sugamo Venue

Business Course (3 days)   ¥50,000 (tax not included)
Preparation
   Operation Method, Outline of TPiCS, Issuance of Slip, Actual Results Entry
Detailed Description of Each Function
   MRP Calculations, Processing Flow and Table,
   How to make a master and its Concept,
   Multiple Locations, Cost Control, Monthly Update (Monthly Closing Process)
Preparation for Actual Operation
   Operation at the time of Initial Introduction
Option
   Customer Order and Sales Management, Mfg. No. Control, One-item Production Control, Automatic Leveling, Set Production, Shop Floor Control, Mfg. Traceability, Structure Information Conversion, Transaction Interface, Process Control, Issues Management, Internal Control, Delivery Load Management, Gantt Chart By Mfg. Sector

Individual Production Course (1 day)

¥20,000 (tax not included)

Mfg. No. Control
   Overview and combination of B-Seiban, S-Seiban and F-Seiban. Changing Specifications for Each Mfg. No., Cost Details of Mfg. No., Inventory of Mfg. No.
One-item Production Control
   Project Schedule and Schedule Detail, Registration from Fixed Pattern
   One-item Production linked with Structure Information Conversion, Operation and Setting of Gantt Chart

System Course (1 day)   ¥20,000 (tax not included)
Operation Method Details, System Operation, Custom Setting

There are discounts for those who use Reassuring Maintenance and Standard Maintenance Service.