



# Manufacturing Management

Make sure

Shopfloor Manufacturing	Manufacturing Planning	Manufacturing Scheduler	Laboratory
Quality Management			



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# Manufacturing Management

## Make more with less

Take control of quality with our flexible suite of manufacturing tools, designed to cater to almost any industry. From trimming the fat on the factory floor to bulking up production volume, you can ensure your operations are ship-shape.

Plan your production properly with paperless reports of manufacturing resources and raw materials, and comprehensive feedback on consumption and production results.

Test, record and compare purchased and manufactured products against private and government specifications to make sure you're always dealing with the best.

View your entire operations at a glance to maximise your manufacturing resources to reduce product cycle time and meet your deadlines with ease. Support continuous improvement and make sure you meet your certification requirements through tighter process control.

Analyse the performance of your Manufacturing processes using the integrated Pronto Xi Intelligence functionality. Access a range of prebuilt reports or develop your own across Bill of Materials (BoMs), Master Production Scheduling (MPS), Material Requirements Planning (MRP) and Work Orders to ensure you have the information available when you need it most.

### Made to measure

Manufacturing processes can vary greatly between industries – and even within the same company – as products pass through various production stages, all requiring different planning and control methods.

Pronto Xi Manufacturing Management modules have the flexibility to support most manufacturing processes, including high-volume production, lean manufacturing environments and mass customisation.

All of the modules also integrate seamlessly with other Pronto Xi modules, providing a comprehensive yet focused view of your business.

**Pronto Xi Shopfloor Manufacturing** offers a high degree of management flexibility for your shopfloor. You can have Bill of Material (BoM) maintenance with various methods of processing and recording production as it moves through the factory.

The **Manufacturing Planning** sub-module provides tools such as Master Production Scheduling (MPS), Material Requirements Planning (MRP) and Capacity Requirements Planning (CRP).

**Pronto Xi Manufacturing Scheduler** offers high visibility of workload versus available capacity and allows you to manually or systematically manage sequences and optimise work.

**Pronto Xi Laboratory** can improve your manufacturing quality management process by allowing you to record test results accurately and manage product grades efficiently.

**Pronto Xi Quality Management** supports continuous improvement, tighter process control, increased auditability and certification requirements.

# Pronto Xi Shopfloor Manufacturing

## Trim the fat

Keep your manufacturing operations in shape, whether you're planning to treat them lean or looking to bulk up high volume output.

To allow for a high degree of flexibility, Shopfloor Manufacturing includes a sub-module called Manufacturing Planning. Together, these modules will streamline your:

- **Product data management** – Item control, single and multiple BoM, routing, work centres, product configurator, kitting
- **Shopfloor control** – Work orders, production feedback, alternative routings, subcontract operations, costing and general ledger posting
- **Manufacturing processes** – Make to Stock, Repetitive, Batch, Make to Order, Assemble to Order, Configure to Order, Engineer to Order
- **Planning** – Materials, capacity, exception reporting, subcontracting, sales and operations planning, Planning BoMs, Super Bills, rough-cut capacity planning
- **Quality control** – Traceability by lot, batch and serial number
- **Costing** – Standard, average, actual, First-In-First-Out (FIFO) and more

### Manufacturing workflow

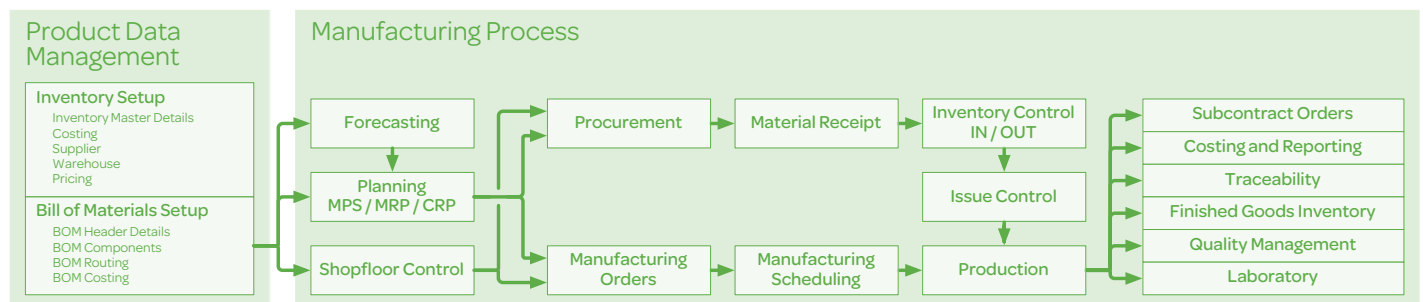
Shopfloor Manufacturing adapts easily to different production environments. This is because MPS, MRP and CRP (as well as Sales and Operations Planning using Planning BoMs and Super Bills) all support Make to Stock operations.

To support lean manufacturing processes, production can be controlled with or without work orders. Raw materials usage is controlled through traditional stock issue functions, automatic back-flushing of materials, or any combination of these.

Production results can be captured in real-time using bar-code readers, radio frequency (RF) units, or via traditional desktops. Multi-level batch, lot and serial number tracking are fully supported throughout the entire system, as well as external time and attendance model integration.

Pronto Xi provides sales order kitting and manufacturing of kit items, as well as a powerful configurator module, so Make to Stock, Make to Order, Assemble to Order and Mass Customisation operations are all supported.

Choose your kit items from a predefined list, and have them shipped as a kit or, after some assembly, a finished product.



Manufacturing work flow



## Product data management

A manufacturing system is controlled by the characteristics of the individual item master and associated records. Items can be set as 'normal' saleable inventory items, manufactured products, raw material (not for resale), kit, labour, special or indent.

Planning parameters determine the replenishment algorithms for the MRP or reorder system, and minimum inventory settings provide separate replenishment levels by warehouse. Product lifecycle management is performed through a number of condition flags and time periods.

Item control includes lot, batch and serial tracking data. Extra detail records store other crucial information such as export details, chemical or HazChem classification and production drawings (references)

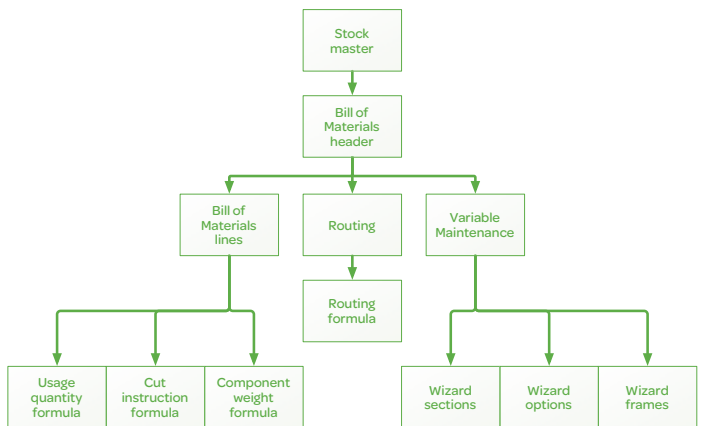


See all information related to the bill of materials, including descriptions, costing, versions, planning details, routing details and more

## Bill of Materials (BoM)

Pronto Xi Bill of Materials supports up to 50 levels of sub assembly bill structures required to produce the parent assembly, displaying quantities of each of these items and managing costs, work centres and routing processes by Warehouse.

Different types of bills can be built to meet product lifecycles – from planning to configured to super bills – that manage all variations of configurable products in Make, Assemble or Engineer to Order environments.



BoM structure

Create and store versions of the same bill from factory to factory, as well as version types. These can be managed through a combination of BoM effective date, version control, Engineering Change Order (ECO) or user-controlled flags. Pronto Xi will also handle designators, split-fills, calculated component quantities and other industry-specific solutions.

A BoM can be costed in different ways, including Standard Cost, Average Cost, FIFO and Warehouse Level. For added flexibility, you can vary the costing methods for different items so that, for example, Standard Cost may be set for a stock item whereas FIFO or Average Cost can be set for a warehouse item.

Furthermore, having the ability to add either fixed or average costs such as overhead operating costs per unit will improve accuracy of the true BoM cost.

In multi-factory manufacturing operations Pronto Xi delivers BoM Cost roll-up by production factory, and where the same BoM exists across multiple factories a cost simulation feature considers source warehouse mapping to ensure more accuracy across your production factories.

### Routing, operations and work centres

These are the sequential steps, operations, equipment and the respective setup and run times required to make a particular product. This information, together with the associated labour and overhead costs, is used to support:

- Discrete manufacturing
- Rate-based production
- Parallel routing
- Multiple cavity tooling
- Alternative routing streams
- Subcontracting operations

If there is no production capacity reporting required, labour and overhead costs can be recorded via Labour and Special Items rather than using the Pronto Xi routing.

Bills of material and routings can also be maintained separately. You can easily define or change component information for bills or operation details with ease. A bill of material or routing can be created as new or modified based on an existing version. Revisions are time-stamped, so you can determine the latest for multiple revisions defined on the same date.



Step through each screen to build unique customer solutions

### Product configuration with Sales Configurator

Powerful configuration and kitting features support Make to Order, Assemble to Order and Engineer to Order industries. Straightforward features and option scenarios are easily implemented through a kit BoM.

The Pronto Xi Sales Configurator provides sales personnel with an easy to use, wizard based interface designed to step the user through item configuration, BoM creation and quoting. The Sales Configurator acts as a virtual salesperson allowing users to build a tailored solution based on a set of components and characteristics defined within the configurable BoM, the outcome of this process will be the generation of a Sales Order or Quotation Order. The Sales Configurator also allows you to create unlimited BoM variations based on a generic BoM, which is a Master Bill (or master recipe) that is designed for every possible permutation of an item, with built-in constraints for product and manufacturing processes.

When you issue a quotation for a configured item, you can build the item up-front or when the quotation has been accepted by your customer. This reduces the administrative requirement of managing the lifecycle of many discrete inventory items if the quotation is rejected.

Tools are available to calculate materials usage and production times, including setup, costs and prices. Because relationships between various parameters are typically linear and arithmetic, you can use lookup tables to provide links for any unique parameter relationships that may exist.

This simplified approach takes away the complexity found in more traditional item configuration processes. You can navigate a series of radio buttons designed to prompt users for responses to pre-defined variables. Visualise each component of the configuration easily by utilising the free space available within the wizard screens to display a series of pictures throughout the stages of configuration.

The Sales Configurator is seamlessly linked to the Pronto Xi Project module, allowing users to create Projects and attach configured BoMs. Pronto Xi Engineer to Order (ETO) applies individual engineering design or significant customisation to satisfy a customer's unique specification. As an integrated solution, Pronto Xi Project can take on most ETO requirements, including the costing and tracking of all transactions for ETO work to be completed.

With in-built flexibility and general visualisation of all stages, Project achieves best practice within the industry. You can create orders from Manufacturing, Sales Configurator, or general Manufactured Bills of Materials (BoM), or simply raise general material requisitions or purchase orders.





Review the progress of work orders, compare with the dates and details of the bill of materials.

## Managing shopfloor processes

### Work orders

Work orders are typically used to manage the planning, execution, raw materials consumption and feedback of production results.

In a lean manufacturing environment, Pronto Xi offers orderless and paperless recording of production, using back-flush methods for raw materials consumption and progressive crediting of labour and overhead 'hours earned'.

Special work order types and processes are available for disassembly-type industries and other special operations such as rework, repack and others.

### Production feedback

Production results can be recorded using standard production feedback tools, or one of a large number of industry-specific production entry methods.

### Alternative routing

Shopfloor Manufacturing allows you to select a specific route from a predefined range on the day of actual production. Changes to the Route ID can also be made against an open Work Order, whether at 'Firm Planned' or 'Committed' status. This provides greater flexibility if quick changes to individual Work Orders are needed when production has not yet commenced. Lot, batch and serial tracking are supported for finished goods as well as components or raw materials.

### Subcontracting

With the subcontracting functionality, you can raise purchase orders at various times throughout the lifecycle of the work order.

The completion of a subcontractor process can be controlled by either standard purchasing goods receipt or work order production entry.

The integrity of stock control of goods produced and payment for subcontracting services is fully preserved without any compromise to inventory integrity such as double-handling and creation of dummy items.

## Manufacturing processes

Various processes make it easy to manage your Make to Stock, Repetitive and Batch Production functions, which together form a vital hub of supply chain management in the modern manufacturing organisation. These processes include:

- Materials planning via forecasting
- Sales orders and stock replenishment policies
- Automatic creation of work orders and purchase orders
- Initiating subcontract operations
- Creation of vendor schedules
- Capacity planning of actual production
- Release of shopfloor documentation
- Reporting of production results

Discrete manufacturing, rate-based production, parallel routing, multiple cavity tooling, alternative routing streams and subcontract operations are all supported. Other standard features include Make to Order, Assemble to Order, Configure to Order and Engineer to Order manufacturing.

## Quality control

### Traceability

Pronto Xi Manufacturing provides an extensive range of traceability tools. Manufactured goods, as well as purchased raw materials, can be tracked by manufacturing batch or lot. Raw materials and components can be lot-tracked by their purchase order number if required. Serial numbered items can be recorded and tracked at various user-controllable transaction points.

### QA-hold, use-by date

Purchased or manufactured items can be nominated to require Quality Assurance (QA) inspection before formal acceptance into saleable items. Following QA inspection, items can be either fully or partially accepted, rejected or returned.

In many process industries, shelf-life is an important issue. Pronto Xi will automatically generate use-by dates for product labels and other documentation.

## Costing and General Ledger posting

Manufacturing cost calculations and postings to Pronto Xi General Ledger can be controlled in a number of ways. Costs can be generated from standard costs, single and multiple BoMs and routings, or alternatively from actual labour and machine time reporting, posting actual cash costs to the work order, or processing timesheet records.

The General Ledger account structure can be user-defined to attribute costs and variances to a factory, department, item group or work centre. Any update of product costs and inventory will be handled according to the system cost selected by the user.

Manufacturing modules can be linked to Pronto Xi Payroll by recording the times from the work order against the employee code.



# Manufacturing Planning

## Good making time

Pronto Xi Manufacturing Planning provides a range of tools that optimise materials and capacity planning over single or multiple sites, and match the level of complexity required by the business.

By using a combination of Actual Orders, Forecasts, Distribution Requirements Planning (DRP), Days Cover, or the Min/Max Replenishment Logic, Pronto Xi makes it easy to aggregate demand from a network of distribution centres.

Production Planning, MPS, MRP, DRP, Super BoMs, Planning BoMs and supply/demand data from the inventory and distribution system are used to create a list of planned work orders.

Once verified, planned work orders are automatically converted to a work order or purchase order in bulk, grouped by product or other operational requirements. MRP exception messages are generated by the system, while factory loading capacity and materials information can be displayed graphically via Manufacturing Scheduler.



Forecast material requirements and plan work orders with ease

### Production Planning (PP)

Production Planning, Super BoMs and Planning BoMs facilitate the sales and operations planning process. The Production Plan sets the overall level of manufacturing output and other activities to best satisfy the current and projected levels of sales and forecasts.

Production Plans can be entered by quantity or dollars at the planning group level, and exploded via a Super BoM and bill of resource to help establish and develop production rates, support plans for material procurements and workforce requirements.

### Master Production Scheduling (MPS)

This is the anticipated build plan for critical manufactured items that drive the overall manufacturing plan. It includes the projected on-hand inventory and the available-to-promise quantity as represented by demand, forecast and backlog.

The MPS sets out the quantity of each manufactured item that you plan to manufacture each month, up to 12 months in advance.

### Rough-cut Capacity Planning (RCCP)

RCCP enables you to convert the MPS into requirements for key resources such as labour, machines, warehouse space and suppliers' capabilities.

### Material Requirements Planning (MRP)

MRP plans the release of recommended replenishment orders at the appropriate date in the current working time bucket to satisfy the demand for items when they become due.

Planned work orders are a result of the time phasing of demand management and the net requirement for items is exploded through all levels of their BoM to determine the gross requirements at each level. Applying lead-time and adjusting for on-hand and on-order quantities at each level determines the timing and quantity of purchasing and manufacturing.

With MRP you can:

- Create planned work order requirements for components and sub-assemblies
- Produce a list of suggested purchases to satisfy the known demand
- Plan the completion dates for these work orders by using lead time
- Print released planned orders and exception reports

### Capacity Requirements Planning (CRP)

CRP creates a detailed plan by department or work centre based on the constraints as defined by the factory/work centre calendar of resource availability. Techniques employed by the CRP process for producing a detailed plan of all open work orders and planned requirements from MRP are finite scheduling and infinite scheduling.

# Pronto Xi Laboratory

## Make the grade

Test, record and compare your purchased and manufactured products to make sure you're always dealing with the best.

Pronto Xi Laboratory gives you the power to make reprocessing decisions quickly and confidently.

Record and track quality or test criteria of purchased and manufactured products, and lower operating costs by identifying the lowest complying set of products for any given requirement. Grade tested product batches, then classify graded products depending on desired usage, release or future development.

Laboratory also creates official certification documents to product specifications for customers and government agencies.

### Test results

Laboratory makes it easy to handle numerous types of test results. If you are manufacturing the product, the test results are always 'actual' results.

For purchased products, results can be entered based on a sample or the Certificate of Analysis provided by the supplier. Actual results can be entered separately and compared against the supplier's sample or Certificate of Analysis. Grading or classification can be done based on all types of results.

As each batch passes through its test procedures, you can enter the results obtained along with related notes.

Once the test results are entered, the batch can be reclassified. If all classification criteria are met, Laboratory will automatically classify the batch in the highest possible grade. Reclassified batches are only added to stock and become available for sale if the new classification is flagged as usable.

### Audit

Classification changes, as well as test result changes, are fully audited.

### Batches requiring testing

Laboratory provides a screen displaying all nonclassified lots and batches you have recently manufactured or received from your supplier. You can use this screen to edit test results and classify these batches.

### Selection and despatch

When a sales order is processed from a customer requiring a specific grade, you can only select lots that meet the specifications for that grade or a higher grade.

Laboratory highlights the lowest possible complying batch that meets requirements so that higher-grade lots aren't unnecessarily selected or despatched.

Regardless of customer requirements, only saleable grades are available for selection during the despatch process.

### Analysis certificates

Products that have passed your quality tests as claimed can be automatically issued with a Certificate of Analysis. The layout and test results that are printed on the Certificate of Analysis can be tailored to your organisation's needs.

# Pronto Xi Manufacturing Scheduler

## Track and yield

Oversee what's getting done and who's doing it to make sure you've got the right hands in the right places.

### Visual scheduling

Using a Windows-based drag and drop application, Pronto Xi Manufacturing Scheduler simplifies scheduling and planning for work centres where many jobs are processed simultaneously.

You can manage variations in the current schedule, see when priorities have changed (or a work centre is unavailable) and see the available options for resolution. Manufacturing Scheduler also provides visual warnings when work orders are late or when scheduling conflicts occur within a work centre.

### Flexible planning tool

Manufacturing Scheduler is an electronic whiteboard scheduler used in conjunction with Pronto Xi Capacity Resource Planning (CRP). CRP information downloaded from Pronto Xi includes the calendar, work centre and work order data.

For each work centre, the operations can be moved to a new production slot with a simple drag and drop. Operations can be sorted based on multiple criteria. Once the order of the jobs is set, Manufacturing Scheduler automatically sequences each operation one after another.

Operations or entire work centres can be locked once the scheduling has been completed. Locked operations are taken into account according to your settings if you re-run Pronto Xi CRP.

### Optimisation

As a visual management tool, Manufacturing Scheduler allows you to easily manage your workload to factory capacity constraints with the use of CRP. You can refine the timing of product batches during weekly production cycles and, for added flexibility, sequence and optimise work based on user-definable parameters.

Alternative schedules can be developed and saved as 'what if' scenarios before the data is submitted back to Pronto Xi where all relevant elements are updated.

### Gantt view

All operations of a selected product can be sorted by the routing sequence in a Gantt chart format. In this view, operations can be analysed as per the work order routing sequence by displaying links between operations. This simplifies the maintenance and optimisation of production schedules.

### Printing and reporting

Manufacturing Scheduler data (including routing sequence, work centre and work order data) can be exported to a Microsoft Excel spreadsheet template to report and print the production plan.



Manufacturing scheduler

# Pronto Xi Quality Management

## Quality control

Make sure your products survive with the fittest through flexible and comprehensive quality management procedures.

Pronto Xi Quality Management supports continuous improvement and quality management through tighter process control, increased auditing capabilities and certification requirements.

### Management overview

Give your managers an overall view of the status of audits, corrective actions, suggestions and complaints.

### Document register

Record and maintain documents with the Document Register. Although suitable for any type of document, the register is normally used to record internal documents. Details of a document recorded include its location on the network, who authorised it and which department is responsible for it.

### Drawing index

Catalogue technical drawings, blueprints, files or construction details with the Drawing Index.

Details of the physical location of drawings and blueprints as well as where files are located can be entered and maintained. The drawings can be accessed over the network and opened with an appropriate viewer.

### Technical library

Record and maintain a complete library register of standard reference works, technical bulletins, magazines and periodicals and any other technical publication used by your organisation with the Technical Library facility.

Complaints Log any complaint or request for action – either received from a customer or generated internally.

Brief descriptions can be recorded with a complaint, along with the name of the department, or even the employee affected by the complaint.

If the complaint regards an inventory item, the item code may be entered so that the complaint records are specific to the one item. You may then enter detailed notes about the nature of the complaint for further action.

Complaints are linked to corrective action logs. Complaints can be reviewed by customer or by inventory item for Pronto Xi Accounts Receivable and Inventory. A customer invoice can also be flagged as 'in dispute' and a debtor complaint raised.

### Help/Action list

A Help/Action list system allows you to review and maintain the Log/List/Corrective Action details. Logged problems are assigned to specific staff for action. When the complaint has been resolved, the resolution is recorded for future reference.

Using the action list, you can also implement an electronic 'suggestion box' and use it as a Corrective Action Request (CAR). A comprehensive reporting facility is also available.



### Technical bulletins

Technical bulletins can be viewed, maintained and searched for issue by your organisation. This maintains a separate record of the bulletins you have issued, showing the date of issue, the date it became effective and the author.

### Audit schedule control

As a part of your organisation's Quality Standard Certification, it is necessary to conduct regular audits of your procedures. With Quality Management you can schedule the audits as appropriate, maintain details of necessary corrective actions that have been identified, and then ensure each action is performed.

### Calibration register

The calibration register makes it easy to maintain your equipment calibration records, with automated warnings if a calibration is overdue. You can specify how frequently calibrations are needed on each piece of equipment, the method to be used and the level of accuracy required.

### Access to other quality facilities

Quality Management is integrated with other Pronto Xi modules.

#### Product batch/lot search

You can perform enquiries to search for and trace product batches/lots, and view and edit quality information for specific products. This includes information about products that have failed quality procedures and/or have been scrapped.

#### Engineering Change Orders

An Engineering Change Order (ECO) Register allows you to control the updating of a bill of material (BoM) or product specification through a formalised process. Instigated by a customer call or by service, manufacturing, or research and development staff, these specification changes are monitored and released for action via an approval process; therefore a complete historical record of all ECOs is maintained for future retrieval.

#### Vendor performance analysis

You can monitor the performance of vendors to ensure they are meeting your standards and/or contractual obligations.

#### Laboratory

Access the Laboratory module from within Quality Management to monitor test results and ensure product consistency.

## The right call

We're always ready to adapt Pronto Xi to perfectly fit your unique requirements.

For more information on what we can do for your business, contact us at 1300 PRONTO (1300 77 66 86) or find us at: [www.pronto.net](http://www.pronto.net)







info@pronto.net  
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### Tailor-made business software solutions.

Pronto Software has been developing award-winning business management software for 40 years. With in-built intelligence, flexibility and an easy-to-use interface, its flagship product, Pronto Xi, enables users to discover rich business insights.

Pronto believes in the power of actively listening to clients, adapting our product to meet their needs and finally revealing the best solution. It's how we continually surpass client expectations, delivering moments of utter surprise and delight.