

- The Materials and Resource Planning (MRP) Modules provide a wide variety of functions for planning and controlling production and the corresponding materials consumption. The MRP Module comprises three sub-modules, giving the customer the flexibility to use either the basic MRP functionality, or to expand to include the complete range of functions as required.



MRP Module

MRP I

The MRP I Module contains the basic functions for planning production and the corresponding materials consumption. Production can be created independently or created on the basis of proposals from the stock requirement calculation. The module supports three variants: unit of measurement variants, item variants, and production variants.

Variants

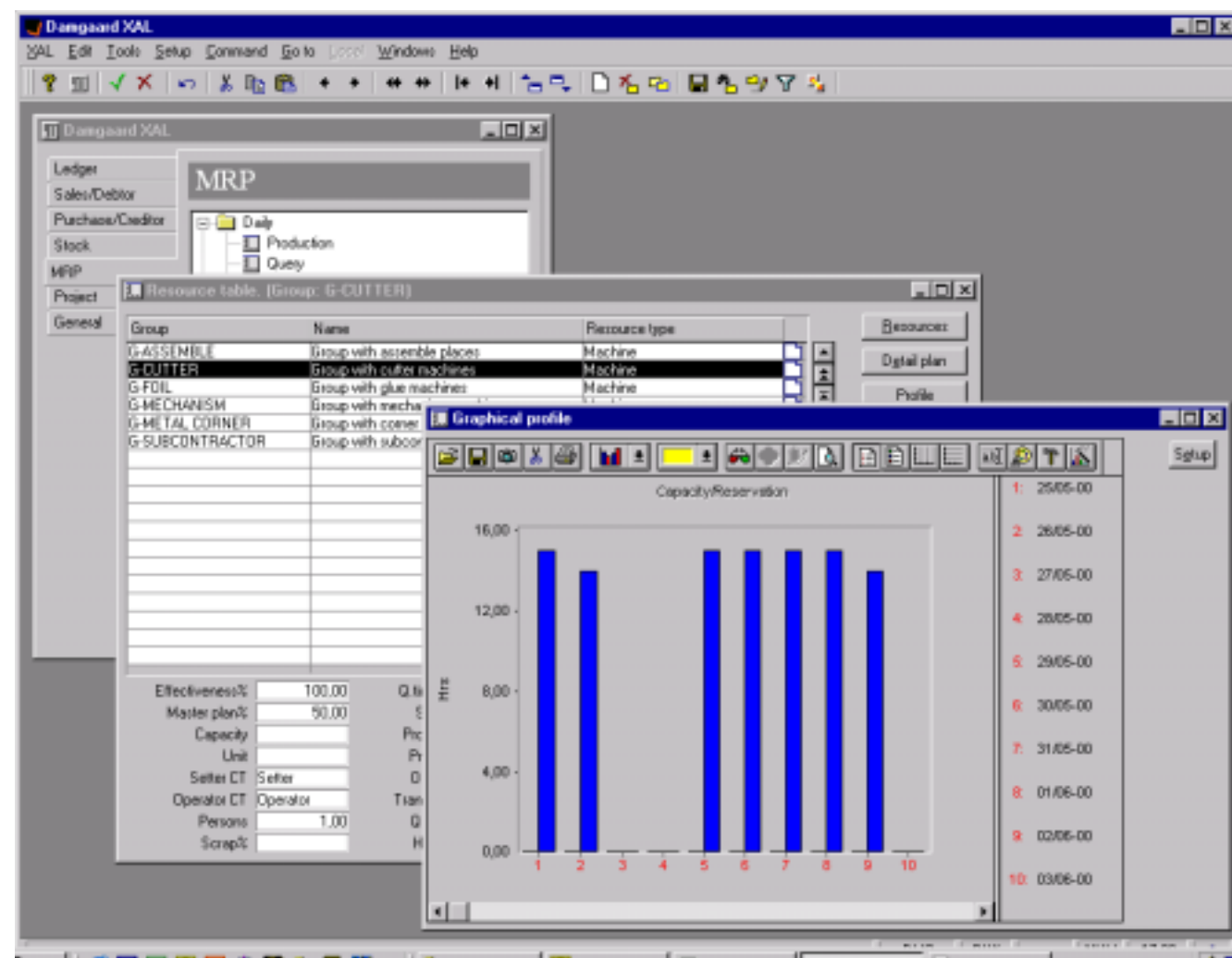
Consumption of raw materials is calculated on the basis of the dimensions of the finished stock item, through use of unit of measurement variants. The use of item variants means that the same bill of materials can be used for several different items. The use of production variants ensures that individual product differences can be specified when orders are created.

The MRP I Module retrieves data from the production table and the production bill of materials. The production table contains information such as production number, finished stock item number and stock inflow location, production quantity and delivery date, variant codes for stock items and production variants, and finished stock item dimensions for unit of measurement variants.

Production

Production runs can be created with automatic reservation and automatic requisition of raw materials. Alternatively, the user may choose to enter the actual

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Capacity load profiles are presented graphically.

materials consumption manually.

The following functions are available for production:

- Cost estimation
- Planning
- Release
- Start
- Report as finished
- Post-calculation of cost price

Bill Of Materials

The materials used in the production are specified in a bill of materials. The bill of material is copied either

from the main data in the Stock module or from another production. The bill of material also can be independently created for each production.

The following functions are available in the bill of materials:

- Phantom stock items (i.e. automatic expansion into lower level bills of material)
- Unit of measurement variant specification incl. corresponding calculation formulae
- Automatic creation of lower level production runs
- Rounding up of consumption

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Production

- Returned stock items, negative stock item consumption
- Replacement stock items by line
- Validity intervals
- Variant-dependent stock item consumption

Futures and Action

Futures and actions support decision-making in production by attracting attention to specific situations that require action.

The future settings are set in the Stock module, and calculate the effects of raw material requirements not being met in time. Delays are transferred to production and sales orders, where they create the basis for deciding between an alternative raw materials supplier and re-planning of production.

The action setting is used to determine the actions, which ideally can be executed for the current order volume. For example, if a sales order is deferred for later delivery, the action setting ensures that production and purchases also are deferred in order to minimize stock holdings.

Reports

The MRP I module contains a number of reports. Among these are cost estimates/post-calculation of cost price, production overviews, and pick lists.

MRP II

Navision XAL lets you control and master plan production, and the resulting resource consumption. The system provides a wide range of functions for capacity control, for example, to create and output both long-term and short-term semi-graphical capacity

load profiles. With the MRP II module, data can be retrieved from the production routes that either can be created for each production run or copied from the base data description or from other production runs.

Production routes ensure optimal work planning, and include the following functions:

- Route networks
- Concurrent operations
- Processing time, setup time, transport time and queue time
- Scrap percentage
- Replacement stock items
- Variant-dependent operations
- Resources or resource groups

Production Routes

The volume of production orders or parts thereof can be planned in detail at any time. Production runs can be planned forwards or backwards, using both limited and unlimited materials and capacity.

The production route can be set up in such a way that the master planning function plans and reserves capacities for resource groups. Detail planning, however, will examine the load for individual resources within each resource group. The MRP III Module automatically selects the resource that can best help to achieve the shortest possible throughput time.

If several critical resources have been defined in a production run, e.g. a machine, an employee and a tool, detail planning ensures that all three resources are available simultaneously.

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Resources

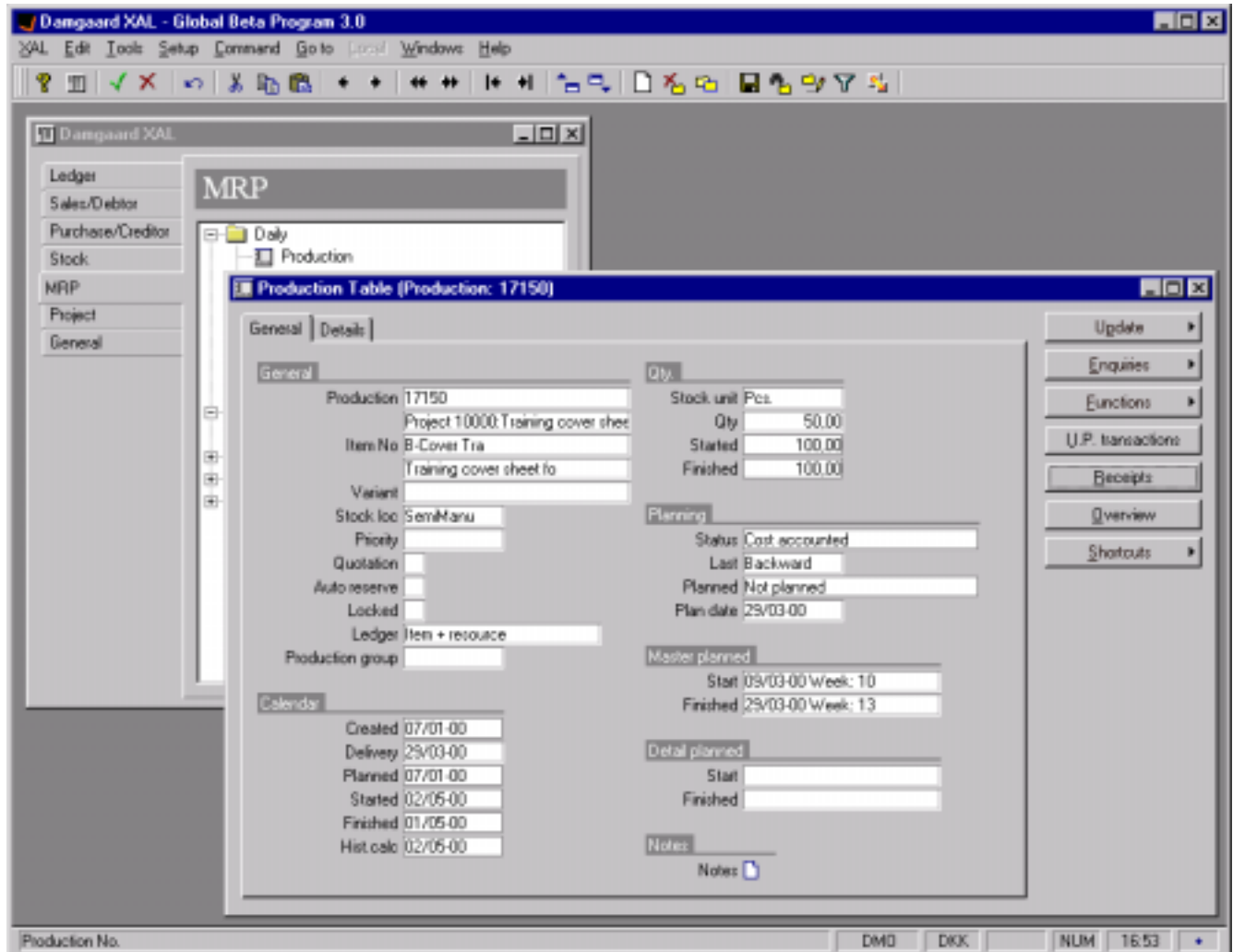
Capacities can be created as either resource groups or as resources, which are included in specific resource groups. Resources can be machines, tools, human resources or sub-suppliers.

For every resource, the user also can specify:

- Efficiency rates
- Capacity calendar with deviations
- Proposed times and alternative capacity specifications
- Maintenance parameters

Master Planning

Load profiles can be displayed for any period of time. On the basis of the selected allocation parameters, the sales budget can be broken down into long-term requirements for resource capacity, operator capacity and setup capacity. Requirements can be displayed as semi-graphical load profiles summed up by day, week or month. Master planning of production runs means that a possible delivery date can be calculated at the time an order is received. Master planning includes a range of options like 'plan from' or 'plan back from' a given date, planning with limited and



With Navision XAL, production is managed on all levels. Put together the solution that fits your production management needs.

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Production

unlimited capacity, and planning with or without consideration of the availability of materials.

Availability checks can be carried out on the basis of the stock levels or the futures setting. The master planned capacity requirements can be displayed semi-graphically, and form the basis for capacity adjustments. The MRP II Module also contains functions for managing sub-suppliers. External operations can be planned in the same way as internal operations. Paperwork, purchase orders, delivery notes and pick lists can be printed, and the financial consequences can be linked back to the relevant production runs.

Worksheets

Revisions to production runs are made via the consumption worksheet, in which the user can record and check the number of hours, quantity of goods produced, number of errors, quantity reported as finished, and cause of errors.

Reports

The following reports can be created in the MRP II Module:

- Route cards and job cards
- Operation reports and maintenance reports
- Documentation for sub-supplier control

MRP III

The MRP III Module is used to detail plan production runs, including the creation of precise plans for the production process.

Gantt Charts

With the advanced Gantt diagram function, you can display the current production plan for a selected period. Using a mouse, the user can bring forward or move back a production run directly on the screen.

Similarly, operations can be moved to alternative resources and production runs can be locked, once planning has ended. The user can simulate the production run using different plans. Gantt tables can be defined separately for individual planners or production managers, so that only resources for a particular department are shown. The setup time can be defined using sequence groups. Both manual and automatic functions are incorporated, which ensure that jobs that do not require any setup are planned and executed in sequence.

Detail Planning

The consequences of detail planning are displayed as requirement profiles for resource capacity, operator capacity and setup capacity.

The setup capacity is calculated in accordance with the planned job sequence. Break times can be defined for each resource in the production run. The detail planning function then can be used to calculate and print a start and end time for individual jobs.

The detail planned capacity requirements form the basis for short-term capacity adjustments and also can be displayed semi-graphically.

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Production

List of Functions

- Forecast scheduling
- Budgeting of goods
- Distribution ratios
- Simulation tools
- Operations scheduling (materials and capacity)
- Master Scheduling
- Job scheduling
- Job scheduling profile
- Action priority
- Future settings
- Resources and resource groups
- Resource calendars and resource task groups
- Production routes and operations
- Bills of material in unlimited numbers of levels
- Route network
- Logical configuration rules
- Full tracking capacity of concurrent changes
- Cost groups
- Price calculation and costing
- Planning
- Production release, start and reported-as-finished
- Back flushing
- Capacity load monitoring
- Gantt planning
- Inquiry and simulation tools
- Worksheets for recurring tasks (Report-as-finished, job card, picking list, route card, and more)
- Production groups
- Production pools
- Production jobs
- Authorization of routes
- Cost category for quantity, setup time and process time
- Measurement conversion factor
- Queuing time before and after
- Transport time
- Item configuration
- Production configuration
- Manufactured item number and default inventory location
- Configuration codes and dimensions
- Costing
- Customized configurations with associated calculation factors
- Alternatives per line
- Configuration dependent goods consumption
- Picking lists
- Concurrent operations
- Process time, setup time, transport and queue time
- Scrap percentage
- Phantom goods, i.e. automatic explosion of bills of material
- Automatic setup of production on lower levels
- Capacity calculation of machines, tools, human resources and subcontractors
- Efficiency percentage
- Capacity calendar with associated deviations
- Proposal time and alternative capacity specification
- Documents for subcontractor monitoring

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Production

Navision XAL – An Integrated Business Solution

All modules of Navision XAL are tightly integrated, and work together to form the heartbeat of your company.

The MRP modules links into the stock and general ledger modules, and has interfaces to sales and purchase orders as well. Functionality described in this fact sheet is contained in the following modules:

- MRP I, Material Control
- MRP II, Master Planning
- MRP III, Detail Planning

For more information on Navision XAL integrated business solution, please also see the other brochures.

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