

Enterprise by HansaWorld MRP



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INTRODUCTION

Enterprise by HansaWorld's MRP module is designed to facilitate the planning of productions and purchase orders for the component items that are needed for production and sale of finished goods. At the same time it allows for the comparison between sales forecasts and actual sales.

The MRP module is suitable for both retail and production companies, offering the following main functions:

Retail companies:

- definition of the sales forecast, either as a total for the company or breakdown by department, by branch or by sales person
- comparison between the sales forecast and the actual sales
- purchase order planning
- creating purchase orders from purchase order plan
- definition of the required inventory levels

Production companies:

- definition of sales forecast, either as a total for the company or breakdown by department, by branch, by factory or by sales person
- comparison between the sales forecast and the actual sales
- production planning and creating production orders from production plans
- purchase order planning for components and creating purchase orders from purchase order plans
- definition of the required inventory levels for both finished goods items and components items

The companies that produce to stock inventory get the most benefit out of this module. Companies that produce to order, i.e. tailored items per customer order, can use a combination of MRP and the creation of Productions from Sales Orders to finalize the process. HansaWorld's MRP module also allows usage of multi level recipes as well as productions using routings. The usage of routing does not require any additional setup nor change the workflow of the MRP module.

This training will cover both retail and production workflows.

As is the case with all modules in Enterprise by HansaWorld, the MRP module is fully integrated with the rest of the system.

The main benefits of using the MRP module can be summarized with one word – efficiency:

- Sales forecast entry and comparison with actual sales
- Efficient production planning process;
- Efficient purchase order planning;
- Efficient inventory management;
- Just-in-time information for decision making process

Before we start with our course, let's check some concepts:

MRP (Material Requirements Planning)- An MRP system provides answers to 3 main questions:

1. What needs to be produced
2. How many need to be produced

3. When the production must take place.

This is done while keeping the lowest cost.

The target of an MRP system is to:

1. Ensure that materials and products are available for production and delivery to customers
2. Maintain the lowest possible inventory levels
3. Plan manufacturing activities, purchases and delivery schedules

To meet these targets, the company should meet the following requirements:

1. The data in the MRP system must be accurate and correct. Errors in the inventory data will cause incorrect output from the MRP system.
2. Recipes, also known as Bills of Materials (BOM), must be set up correctly. Outputs are based on the information found here.
3. Purchase orders management must be efficient and accurate. The sales forecast must reflect the estimated sales and it can be adjusted as needed.

The company needs to enter and maintain proper inputs in the MRP system. The output is a recommended activity level, for both productions and for purchases.

HansaWorld's MRP module does not take the factory capacity into consideration when suggesting the production plans (i.e. it assumes infinite capacity). It is up to the MRP manager to consider factors that are not reflected in the system, such as market environment, production capacities, and then be able to make the appropriate decisions based on these factors.

JIT (Just-in-time): with this inventory policy, the raw materials or components must only be purchased when they are needed for production, intending to keep the inventory levels at a minimum, and by doing so, reducing the costs.

BOM (Bills of Materials or Recipes): is a list all components needed to produce a finished good or sub assembly, including all in-(input) and out- (output) items. It can also have extra information, like instructions for production, duration times, machines needed etc.

There are three types of production companies:

1. Companies producing to stock inventory, usually producing a large quantity of items with a small unit value;
2. Companies producing to order, usually small quantities with a high unit value;
3. A combination of both of the above.

The example used in this training material covers the type of company which produces to stock inventory. Companies producing to Order would use the routine "Create Planned records" in the Sales Orders module to generate Production Orders from Orders, instead of using the MRP module. Companies that produce both to stock inventory and to order, can use the MRP module for the 'produce to stock inventory' part of the production and purchase planning, and then combine that with the workflow for 'produce to order'. For details on the 'produce to order process', please see the production training material.

The examples we are inspecting are linear, whereas in a real business environment several combinations can occur..

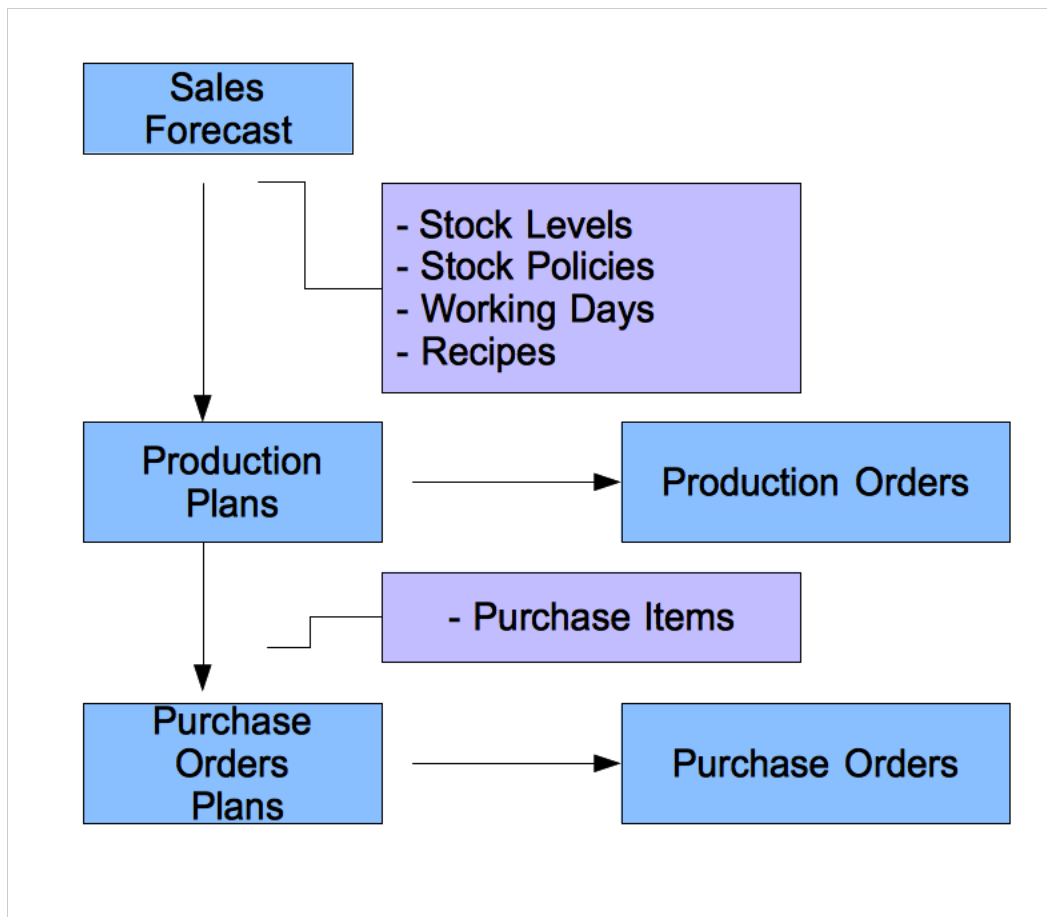
It is required that the trainee should know how to work with the logistics process (sales and purchases) and production module, prior to taking the current MRP module training.

WORK FLOW

For our course, we will use the example of a company that produces finished goods items for sales and that also purchases and resells retail items. With this example we cover several different types of the companies that can benefit from using this module.

Firstly, it is required to define the variables for the MRP:

- The Inventory policies need to be setup for retail items, finished goods and components items. This is done in order to maintain the inventory at a safe level, making sure the company always has items available to sell according to the forecast.
- Default purchase items must be created, recipes must be defined, the working days and the machines available for production must also be set up.
- The Sales manager defines the sales forecast for different items (retail items and finished goods).
- Based on this basic information entered in the system it is then possible to let the system create suggestions for Production Plans and Purchase Orders Plans.
- The image below illustrates this workflow, where the production plans and purchase orders plans are generated based on the Sales Forecast, inventory policies and forecast settings.



Find below a brief description of the workflow.

Step 1: In the Forecast Settings setting, enter a Number of Periods. This figure will be used to calculate average quantities of predicted sales per day. The period can be set to Months or Weeks.

For example, if the period is a Month and the Number of Periods is six, average predicted sales per day figures will be calculated from the Sales Forecasts for the next six months. This means that you should ensure you always have Sales Forecasts for each Item for at least the next six months.

Step 2: In the Number of Work Days setting, enter the number of sales days in each month in each year. These figures will also be used to calculate average predicted sales per day figures. Again, you should maintain this setting well ahead of time, so that the average calculation remains accurate.

If you will be producing items for sales, you should also enter the number of production days in each month in each year. These figures will be used when calculating stock levels.

Step 3: Enter the minimum and maximum inventory levels of each finished goods item and its components item in the inventory Policies setting, expressed as a number of days of sales.

Step 4: Enter the predicted sales of each sellable Item in the Sales Forecast register. To activate a Sales Forecast record, mark it as OK and save it.

Step 5: If you will be producing Items for sale, run "Create Production Plans" Maintenance routine periodically. This will create a Production Plan specifying the quantity of each Item you need to produce to meet the requirements as per the Sales Forecast and the Inventory Policies. Inspect this record, amending the quantities if necessary, and then mark it as OK and save it. To preview the Production Plan that will be created by the Maintenance routine, you can run the "Create Production Plan – Preview" report prior to running the maintenance routine.

Step 6: You will also need to run the "Create Purchase Order Plan" Maintenance routine periodically. This will create a Purchase Order Plan specifying the quantity of each Item you need to purchase to meet the Sales Forecast, the Inventory Policy and the components you need to produce the Items in the Production Plan in step 5. Inspect this record, amend the quantities if necessary and specify Needed Dates on any rows where they are missing, and then mark it as OK and save it. To preview the Purchase Order Plan that will be created by the Maintenance routine, run the "Create Purchase Order Plan – Preview" report prior to running the maintenance routine.

Step 7: When you are sure the Production Plan is correct, create a Production or Production Order from it. You can do this by opening the Production Plan and selecting "Create Productions" from the Operations menu. If you have more than one Production Plan, you can use the "Create Productions" maintenance routine. You can specify whether these functions should create Productions or Production Orders using the Generate Planned options in the Production Settings in the Production module.

Step 8: When you are sure that the Purchase Order Plan is correct, create Purchase Orders from it. You can do this by opening the Purchase Order Plan and selecting "Create Purchase Orders" from the Operations menu. If you have more than one Purchase Order Plan, you can use the "Create Purchase Orders" maintenance routine.

Step 9: Ensure that the Sales Forecast register is always up-to-date (depending on the Number of Months), and regularly repeat steps 5-8.

BACKGROUND INFORMATION AND SETTING IT UP

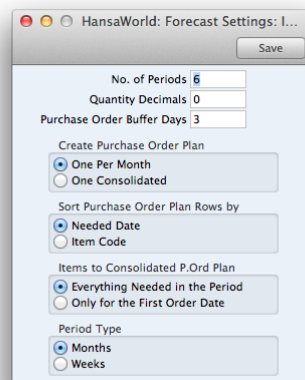
Before we start with the process itself, let's start by defining the required settings.

Forecast Settings

This setting is the first one that needs to be set up, and it will determine all the planning policy in the company. Based on this setting, the average number of sales per day used for the inventory policy will be calculated. This setting also sets the number of periods to be planned ahead, in either months or weeks.

Before completing this set up, decide on the period that will be used for MRP: months or weeks. This decision depends on the product cycle and how the company defines and controls the forecasts, purchase process and production process. The most common usage is by months.

For example, a company that issues purchase orders for three months in advance and the items take a month to produce, the number of periods should be long enough to cover all the required purchases and productions. In this example the minimum period would be 4 months. Productions for August would required that they be planned for in July and the purchase orders to be sent in May.



Number of Periods: Specify a number of periods used to calculate the figures of average predicted sales per day. For example, if the Number of periods is six and the period type is set to months, average predicted sales per day figures will be calculated from the Sales Forecasts for the next six months. This will mean you should ensure you always have Sales Forecasts for each Item for at least the next six months. Please refer to the inventory policy section for more details. If this field is blank, the number of periods will be assumed to be 1.

Quantity Decimals: Specify the number of decimals to be used in the forecasting reports.

Purchase Order Buffer Days: This field allows to group more items to the same purchase order, instead of sending out several smaller purchase orders on different dates.

If this field is blank or contains a 0, all purchase order plan rows will contain an order date which is calculated back from the needed date and using the number of delivery days defined on Default Purchase Items. This may create a situation where you order several items from the same supplier and every purchase order contains very few items, as the order dates are all different.

For example, if you set 5 days in the Buffer Days field, then the "Create Purchase Order Plan" maintenance finds all items that are supposed to go on that "Purchase Order Plan" record, sorts them by order date and finds the earliest order date and adds 5 days to get a period. It then finds all item rows with order date within that period and uses the earliest order date for all of these items. After that, it finds all remaining items that are supposed to go to the "Purchase Order Plan" record, sorts by order date again, finds the earliest order date and adds 5 days to get the period, finds all item rows falling into this period and uses that earliest date as the order date for all of these items. This process is repeated until the last row is planned.

The delivery days and needed date in the purchase order plan are not affected by buffer days.

One Per Month: This option creates one “Purchase Order Plan” record per month. This is the option used more commonly.

One Consolidated: This option creates one “Purchase Order Plan” record that is valid for all future months.

Sort Purchase Order Plan rows by: Needed Date or Item Code. This option determines how the rows in the “Purchase Order Plan” are listed.

Items to Consolidated P.Ord Plan:

Everything Needed in the Period: If this option is selected and you run the “Create Purchase Order Plan” maintenance for 6 months, and if the same item is needed in different months, you will get different rows for this item in the “Purchase Order Plan per month. This is the option used more commonly.

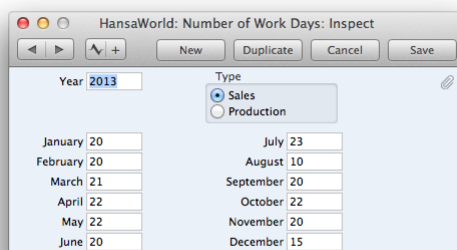
Only for the First Order Date: If this option is selected and you run the “Create Purchase Order Plan” maintenance for 6 months, then it finds for each item the first month it should be ordered and skips all the rest of the times this item should be ordered.

Period Type: Months/Weeks: Set the period that you want the MRP to run. If you define Months, your Sales Forecasts have to be entered in months, if you select weeks, all your Sales Forecasts need to be entered in weeks. When you run the maintenance routines to create planned records, those planned records will be created for the same type of period.

Number of Working Days

The number of working days should be set up in advance according to the number of periods in the Forecast setting. For example, if you have defined 6 months in the Forecast setting, you need to have defined the Number of Work Days for 6 months in advance as well, in order to get accurate calculations.

If this setting is blank, the Number of Working days will be assumed as 1. This means that the company will plan exactly the same quantity that is required by the Sales Forecast.



Specify the normal number of working days for the company in this setting. Exceptions will be handled in the setting “Bank Holidays for Sales Forecast”. This might be needed for example if the factory plant located in London has different holidays than a factory plant located in Cape Town.

Year: specify the calendar year that the number of refers to.

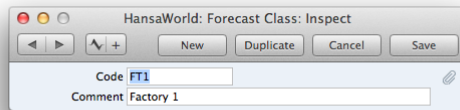
Type: select one of the options, sales or production. The number of days specified on each month applies to the type selected.

No of production days: specify the number of produceable days per month, this will be used in the production/purchase plan maintenance.

No of sales days: specify the number of days in sales per month, this will be used in the production/purchase plan maintenance. These numbers of days will be used when calculating the estimated sales per day and the inventory policies.

Forecast Classes

Here you can specify the codes you want to classify your Sales Forecast by. The most common Sales Forecast class used is Salesman. You can run the "Sales Forecast Accuracy" report by the Forecast Class, and if it matches the salesman code, the report compares the Forecast with the actual sales of that Salesman. Other commonly used classes are either per Branch or per Factory.

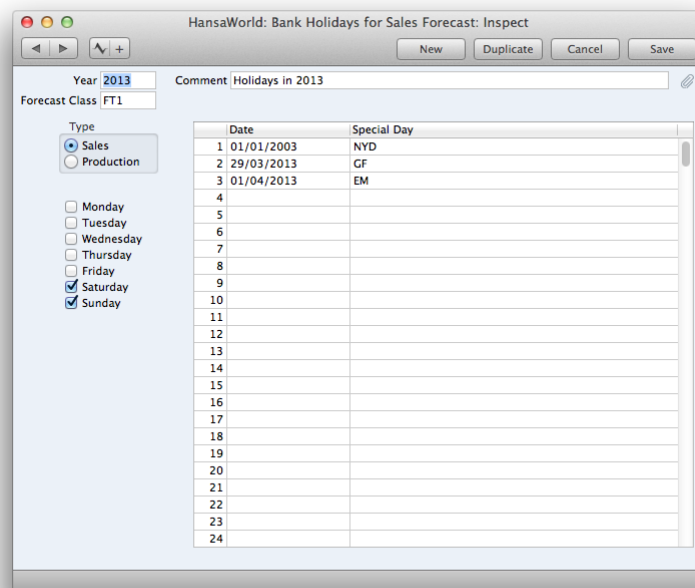


Code: specify the code. If you are going to use Forecast Class as salesman, then make sure you enter exactly the same code as on the person card. Paste special is not available.

Description: enter a description for your sales forecast class.

Bank Holidays for Sales Forecast

Here you can define the different bank holidays for the different branches or factories.



This setting is similar to the existing one in the system module, with the required adjustments.

Year: set the calendar year that the bank holidays refers to.

Forecast Class: this is used when the company has several branches using different working days, and the Forecast Classes are set up as Branches. You can then set up different bank holidays per branch. When doing the calculations for planned records these days are taken into consideration as non-working days.

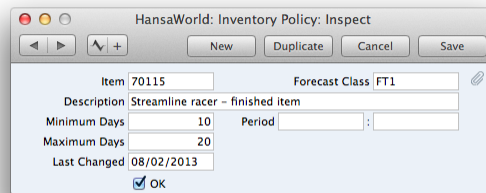
Type: Sales or production – you can set up different bank holidays for sales or production by a separate record per corresponding type option. If the same bank holidays apply to both Sales and Production, then create two entries – one for either option. Select the weekdays that the company is going to be closed, and for each date paste special to the Special Days setting.

Inventory Policies

Inventory Policies: specify the minimum inventory level and maximum inventory level per item, per period, in quantity per number of sales days. In case this setting is blank, the system will assume that the quantity we want to have in inventory is zero, and the production plan created will be the same qty as the sales forecast quantity.

Inventory Policies allow setting up different levels per item and per Forecast Class (for example, per salesman, per branch, depending on how Forecast Class is defined). It also supports different levels for different seasons.

Inventory policies should be defined for all items: retail items, finished goods and component items.



Item: paste special to item register. Create one record per sales item and also for component items.

Forecast Class: If the company wants to keep different inventory levels in different factory plants and the Forecast Classes are set up as different factories, then separate inventory policy per each Forecast Class can be created.

Minimum days: When the inventory level will go lower than this quantity, it will trigger the need for a new delivery.

Maximum days: This will allow controlling the maximum inventory level; this quantity will be used to determine what quantity should be received.

Period: if a inventory policy applies only to a particular period, for example in case of seasonal items, enter the period here. If the same inventory policy applies all year around, leave the period blank.

Last Changed: this date will be updated automatically by the system, to a date the record was changed last time.

OK: You need to OK a Inventory Policy record, for it to be used in the calculations.

Number Series – Purchase Orders Plans

Each record in the purchase order plan register has its own unique identifying number, based on a sequential series. When you enter a new record, the next number in the series will be used. If required, you can have a number of such sequences running concurrently, perhaps representing different years.

This setting is used to define these sequences, or number series. The different series cannot overlap. If you leave the setting empty, purchase order plans numbers will start at 1 and continue consecutively.

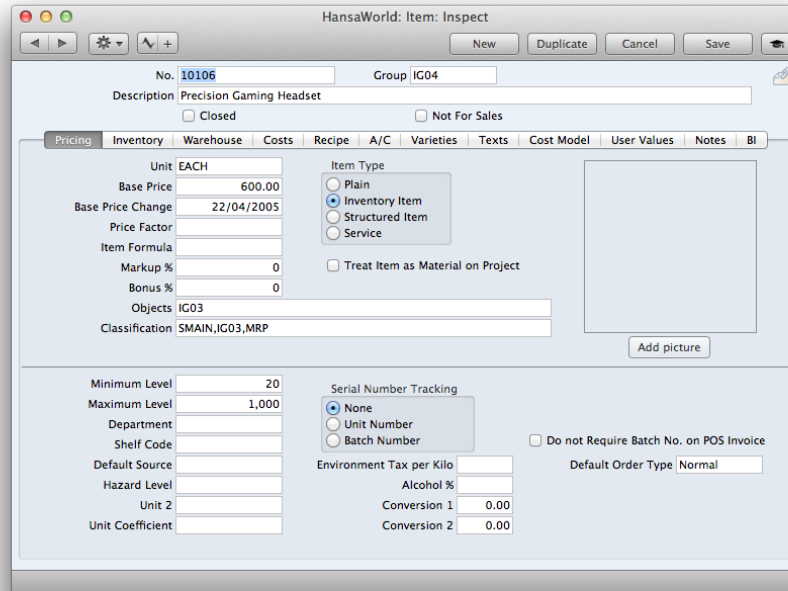
Number Series – Sales Forecast

Use these settings to define the number sequences for sales forecast, in a similar manner as described above.

Items

In the Item register you should enter all the items you sell, purchase and produce in the company, including the items used as components in the production.

Find below the relevant fields on the Item record, that need to be filled in when using the MRP Module.



Item: Enter the unique identifier code you are assigning to this item.

Group: Paste special to Item group setting. You can then use the Item Group as a selection in several reports.

Description: Enter the description of the item.

Unit: Paste Special to Units setting, specify the unit that the Base price refers.

Base Price: Enter the basic sales price for the item in this field. The price must be in your local currency.

Item Type: The Item should be of type "Inventory Item".

Recipe

Before entering a recipe, the final item produced with the recipe should be entered in the items register.

You can only use items with Inventory Type on Recipes used in the MRP module. Structured Items are not used with MRP module.

Specify a recipe for this item on the "recipe" tab. The recipe could either be defined using the recipe register as described below and pasted on the Item card here using Paste Special; or you can create a new Recipe using the operations menu option "Create Recipe". If the operations menu function is used, the recipe number will be similar to that of the item and the out-item will automatically be entered. In addition, when the recipe is saved, the recipe code will be pasted automatically in the recipe field on the item record.

To define a new recipe in the Recipes register in the production module, click the [Recipes] button in the master control panel or select 'recipes' from the registers menu. Click the [New] button in the button bar to create a new recipe record.

Recipe: New

Code: 70130 Comment: Streamlined racer-Final Assembly

Normal Prod Qty: 1 Time to Setup: 00:30:00 Language: _____

Min Prod Qty: 1 Days to Produce: _____ Closed

Fixed Assembly Days: _____ Hours to Produce: 3.00 Minutes: 10 Seconds: _____

Res. mgr. Colour: Strawberry Number Produced: 1

Standard Batch: _____ Extra Prod Qty: _____

Default Routing: _____

Instructions: _____

Item	Specification	In	Out	Unit	Rel.	I-cost	W-cost
1	70113	Streamline racer - wheels	2.00			372.00	
2	70114	Streamline racer - saddle	1.00	EACH		125.00	36.66666
3	70130	Streamline racer - finished item		1.00	EACH	1,352.50	
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							

Locked Cost of In-Items: 905.667 Value of Out-Items: 1,352.5

Code: The code for the recipe can be up to 20 characters long. For simplicity reasons it is recommended, that the Recipe code used is similar to the item code of the produced Item.

Comment: Enter a description of the produced item.

Normal Prod Qty: This field is only used if the result of the recipe is an inventory item. Specify here how many times the recipe is to be used in a single production record. For example, if the output quantity of the recipe is two (entered on the last row of the matrix) and Normal Production Quantity is set to five, the result of a Production of this Recipe will be ten units of the output item being added to inventory.

This field should be set to one if the output item or any of the components are serial numbered at unit level.

Min Prod Qty: This field is only used if the result of the recipe is a inventory item. It is the minimum number of applications of the Recipe in a single record in the production register.

Fixed Assembly Days, Days to Assemble Each Unit: These fields are only used if the result of the recipe is a inventory item. The "days to produce" is the time required to build a single Item (i.e. it is the work time that is carried out to produce one unit, many times per production run). The "fixed assembly days" is a constant figure irrespective of the quantity being built (i.e. it is the work time that is carried out once per production run).

For example, the recipe might represent the assembly of an item from several components. The time taken to retrieve the set of components from the store, order the raw materials and set up the assembly line is the same, irrespective of the quantity being built. This time it is entered to the "fixed assembly days" field. The remainder of the production time is taken up by assembling the components, polishing, painting and quality control.

This information will be used by the 'create production plans' maintenance routine in the MRP module. This function creates productions plans whose dates are calculated from the Forecast date and these lead times from the appropriate recipes. This ensures that the productions are started as late as possible, so that the goods are built just before they are expected to be required for sales.

Standard Batch: This field must contain a value. Define here the quantity that is usually produced when creating productions from production orders. If the quantity varies for each batch produced, then enter Standard Batch Quantity as 1.

Instructions: Use these three lines to record instructions about how the recipe should be used. These instructions will be copied to production orders.

Flip A

Item: On the first rows enter all the component items, followed by the finished goods item.

Specification: Enterprise by HansaWorld fills in the item description, when the Item code is pasted.

In: Enter the quantity of each component required in making or building the finished goods item. Do not enter any in quantity for the finished goods item on the last line.

Separate rows each with a quantity of one should be used for multiple quantities of items that carry serial numbers at unit level.

In a general ledger transaction generated from production records using this recipe, the credit amount will be taken from the Production rows with "in quantity" (i.e. input items or component items).

Out: This field contains the quantity of assembled items that can be made from the components listed above. Usually, this will be just one, and it must be one if the recipe relates to an item.

In a general ledger transaction generated from production record using this recipe, the debit amount will be taken from the Production rows with an "out quantity" (i.e. output Items or finished goods items).

Rel.: Relativity. This field is only used if the result of the recipe is that more than one item will be assembled (i.e. with different item numbers). In each row representing an output Item, enter a percentage figure. When the input cost of each production record is calculated according to the Inventory Valuation Method, the total cost of the components will be distributed to the output items according to the percentages entered here.

I-cost: Input cost value (per unit). If the row contains an input item, enter the unit cost price for the item. The default will be the cost price from the item record. The cost shown in this field is NOT the same as the inventory value according to the Inventory Valuation Method. You can update this cost using the 'update recipes' maintenance routine.

If the row contains an output item (i.e. the assembled Item), enter the unit cost value of that item. This will usually be the sum of the cost prices of the input items, taking quantities into account. Again, the default will be the cost price from the item record.

The total input costs are shown in the cost field in the footer, while the total output costs are shown in the value field.

W-cost: Work cost value (per unit produced). Enter a work cost for inputs and/or outputs. Usually, this will be cost of the labour required to build the assembled item.

You should only specify a work cost if the result of the recipe is an inventory item that you will build using the production register.

You should enter the work cost on a row featuring an input item, as shown in the illustration above. This ensures the work cost will correctly be credited to the production W-cost account in a general ledger transaction generated from production record using this recipe. If you enter the work cost on an output row, the work cost will be debited to the production W-cost account.

Work cost values are included in both the cost and value fields in the footer. This field is automatically calculated using the formula: (time to setup + hours to produce) * work cost per hour from production setting.

Flip B

Description: Any notes about the item can be recorded here.

Recipe: This field shows whether the item is an assembly (i.e. it is one with a recipe specified on its 'recipe' card. This is updated automatically by Enterprise by HansaWorld and cannot be changed.

Locked: Once you are certain that the recipe is correct, you should check this box to prevent further changes.

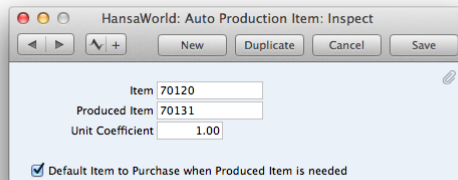
Cost: This field contains the sum of the costs of the input items ($W\text{-cost} + (I\text{-cost} * In\ qty)$). If the assembled item is an inventory item, you must transfer this value to the cost price field on the 'costs' card of the item record for the assembled item, either manually or using the 'update recipes' maintenance routine in the production module.

Value: This field contains the sum of the costs of the output items ($W\text{-Cost} + (I\text{-Cost} * Out\ Qty)$).

Auto Production Items

This setting will be useful if you have Recipes in which you can substitute various different component Items to produce the same final Item. For example, you have to use tube for the production of your bikes, but you can buy from different suppliers, with different item codes, though the end result of your production will be the same regardless of the item you order. Your generic item (or produced item) will then be “a tube”..

When creating the recipe you will use then the generic item “tube”, when you create the purchase orders you need then to specify exactly the item you need to order.



Item: Enter here a specific Item that you can use when a Recipe calls for a generic Item. Following the example used in this description, you should enter the Item representing Tube Brand A or Tube Brand B here.

Produced Item: Specify the generic Item here (in the example, the Item for Generic tube). It is likely you will need to enter several Auto Production Item records for the same Produced Item, with different Items specified in the field above

Unit Coefficient: If the two Items supplied are used in different Units, enter the ratio between them here. The ratio should represent how many Produced Items can be made from one Item. For example, if you measure the Produced Item in multiples of 1 kg, and the Item is supplied in 100 kg , enter “100” here.

If the unit is the same, enter 1.

If you subsequently need to order 110 of the Produced Item, enter “110” as the Suggested Quantity or Adjusted Quantity in a “Purchase Order Plan”. When you create a Purchase Order, the Order Quantity will be 1,1 (110/100, rounded up to the nearest whole number).

Default Item to Purchase when Produced Item is needed: If you have several Auto Production Item records for the same Produced Item, use this checkbox to choose which one is to be treated as the Default Auto Production Item. This is the Item that you prefer to purchase when the Recipe calls for the generic Item. For example, you can use this checkbox to signify your preference to purchase Brand A tube over Brand B tube.

When you include the Produced Item in a Purchase Order Plan (either yourself or remotely through the “Create Purchase Order Plan” maintenance routine), the Default Auto Production Item will determine the Item that will be placed in the Item to Order field on flip C of the Purchase Order Plan row. You will be able to change the Item to Order, but only to another Item that has been connected to the Produced Item in this setting. When you create a Purchase Order from the Purchase Plan, the Item to Order is the Item that will be purchased. This Item’s Default Purchase Item will determine the Supplier, pricing and other details.

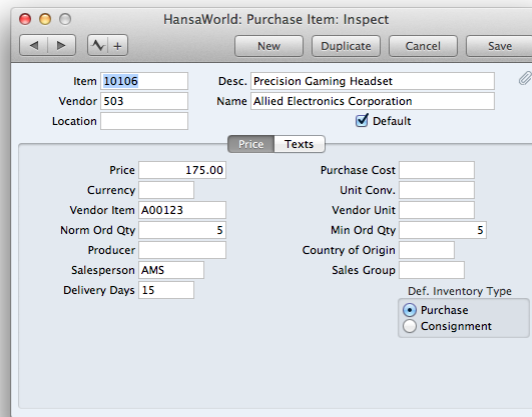
You can only have one Default Auto Production Item for a particular Produced Item (generic Item).

Settings in other modules

Purchase Order>>Register>>Purchase Items

For each item you resell, an item card must be created (inventory item). It is also required to have a default purchase Item set up.

Create the Default Purchase Item from the item record operations menu or just create directly in the Purchase Item register.



Item: Select a code from the item register. You can have several purchase items for the same item if you order it from different suppliers.

Supplier: paste special to supplier register

Default: only one item/supplier combination can be set as default. Make sure you have a Default Purchase Item for all items that you need to order.

Location: leave it blank, this field is not used with MRP

Price: Enter the purchase price for the Item offered by this Supplier. This figure is per Supplier Unit.

Purchase Cost: the extra cost associated with a purchase transaction for this Item from this Supplier. When a Goods Receipt is created from a Purchase Order in which this Purchase Item has been used, any value entered here will be transferred to the Customs field on the Goods Receipt.

Currency: If the Price (above) is recorded in a Currency other than the local Currency, record that Currency here.

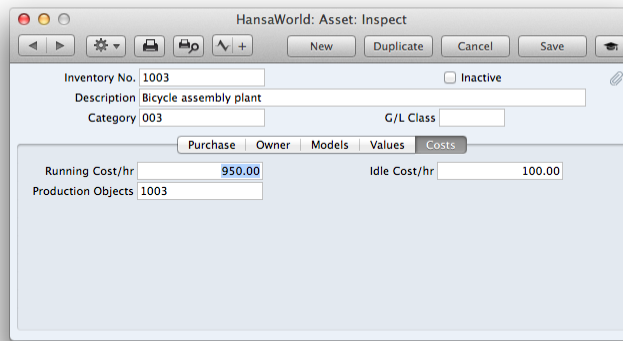
Unit Conv./Supplier Unit: These fields are used when the Item is purchased from this supplier in a different Unit to your main inventory keeping unit.

Norm Ord Qty/Min Ord Qty: When creating Purchase Order from "Purchase Order Plans", the system will check these quantities to create the Purchase Orders. If the normal order quantity is set, the Purchase Order quantities will be multiples of this quantity. If the Minimum Order Quantity is set and the needed quantity is less than that, the Minimum Order Quantity will be ordered.

Assets >> Registers>> Assets

Create an asset record for each machine. The minimum information you will need for using this Asset for MRP and Production modules include the asset code (make sure this code is not used for Display Groups or Persons), the description, and the costs per hour and objects on the costs tab.

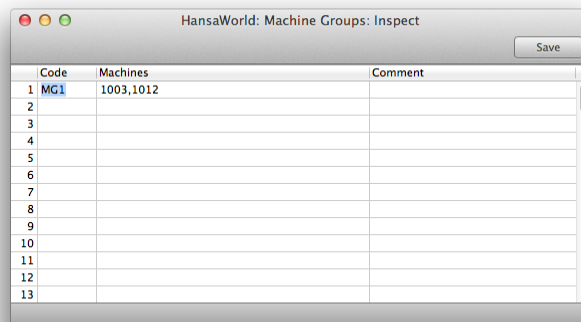
Please note that for MRP and Production purposes, you might want to enter a group of machines instead of individual machines.



Production >> Settings >> Machine Groups

This setting allows you to group the different machines of your company. These groups might represent the different recipes that the machines can produce, types of work, or various departments of your company. The Machine Groups are used in the graphical Resource Planner. Production orders will be shown in the Resource Planner, per Machine Group and within each group per machine.

Each machine should have its own record in the asset register in the assets module. This register will allow you to account for each machine's depreciation. Please refer to the 'Assets' manual for details. You should record each machine in the asset register before setting up the machine groups.



Double-clicking 'Machine Groups' in the 'Settings' list in the production module opens the machine group window listing the machine groups that have already been entered. To add a new record, simply enter its details on the first blank line and click [Save] to save and close. Click the close box to close without saving changes.

Code: Specify a unique identification code for each machine group. Use a code that makes it easy to distinguish machine groups from other records in the Resource Planner, but do not use a code that is the same as a machine code (asset code) or person's signature (initials).

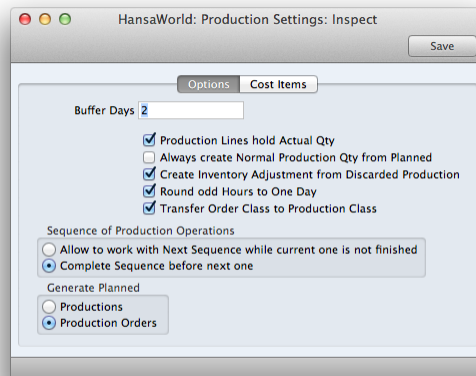
Machines: Use the "paste special" function to enter the asset code of each machine (asset) that belongs to the Machine Group, separated by commas.

Number Series – Productions Orders

Use these settings to define the number sequences for Production Orders.

Production Settings

This setting contains different options controlling various functions of the Production module.



Buffer Days: Enter here the number of days that assembled items must be in inventory before the planned delivery date from sales orders. This will be applied when using the maintenance routine “Create Planned Records” in the sales order module and “Create Production Plans” in the MRP module.

Production Lines hold actual Qty: If this option is selected, then pasting a recipe on the production record, the quantity on the Production rows will be the calculated as the Qty in Production record header * Qty from the Recipe.

This option is useful, if a different quantity is used during production than the estimated quantity on the Recipe and we want to make this correction on the Production record.

Create Inventory Depreciation from Discarded Production: When we finish a production we have the possibility to discard the items. For example when the produced items are not compliant with quality control and need to be removed from inventory, the Production record is marked as Finished but Discarded, and the system creates an OK’ed Inventory Depreciation record automatically, to write these faulty items off.

Generate Planned: Select here whether running the maintenance routines “Create Planned Records” in Sales Orders module and “Create Productions” in MRP module should create Productions or Production Orders records.. For better workflow, it is recommended to set this option to “Production Orders”.

Production >> Registers >> Machine Hours

This register is used to determine the “Start Date” of the production plans. This register is also used for the availability of machine groups. If a certain machine group will be in production during a certain time per day on specified days, this is setup here.

For example, if the machine group is available between 08:00 and 16:00 from Monday to Thursday and between 08:00 and 14:00 on Friday, you need to enter start at 8:00 for 8 hours for Mondays to Thursdays, and start at 8:00 for 6 hours on Fridays.

If the machine group is not available during the weekends, then you define start at 0:00 for 0 hours for Saturdays and Sundays.

HansaWorld: Machine Hours: Inspect

Navigation: < > +

Buttons: New Duplicate Cancel Save

No.

Group Color

Machine

Description

Monday Start	<input type="text" value="08:00:00"/>	for	<input type="text" value="8.0"/>	hours
Tuesday Start	<input type="text" value="08:00:00"/>	for	<input type="text" value="8.0"/>	hours
Wednesday Start	<input type="text" value="08:00:00"/>	for	<input type="text" value="8.0"/>	hours
Thursday Start	<input type="text" value="08:00:00"/>	for	<input type="text" value="8.0"/>	hours
Friday Start	<input type="text" value="08:00:00"/>	for	<input type="text" value="6.0"/>	hours
Saturday Start	<input type="text" value="00:00:00"/>	for	<input type="text" value="0.0"/>	hours
Sunday Start	<input type="text" value="00:00:00"/>	for	<input type="text" value="0.0"/>	hours

STARTING WORK

Now that we have set our system up according to the requirements for the work flow, we need to define the Sales Forecast for retail items and create the purchase orders on time, in order to be able to supply our customers maintaining the lowest possible inventory level.

Review of the workflow:

1. Definition of Sales Forecast
2. Production Plans Process
 - 2.1 Run "Create Production Plans – Preview" report
 - 2.2 Run "Create Production Plans" maintenance routine
 - 2.3 Revise the Productions Plans
 - 2.4 Run "Create Productions" maintenance routine
- 3 Purchase Order Process
 - 3.1 Run "Create Purchase Order Plans - Preview" report
 - 3.2 Run "Create Purchase Orders Plans" maintenance routine
 - 3.3 Revise the Purchase Orders Plans
 - 3.4 Run "Create Purchase Orders" maintenance routine
 - 3.5 Follow up on created Purchase Orders
4. Sales Forecast Accuracy

Let's start by setting up the Sales Forecast. The Sales Forecast is usually prepared by the sales department of the company.

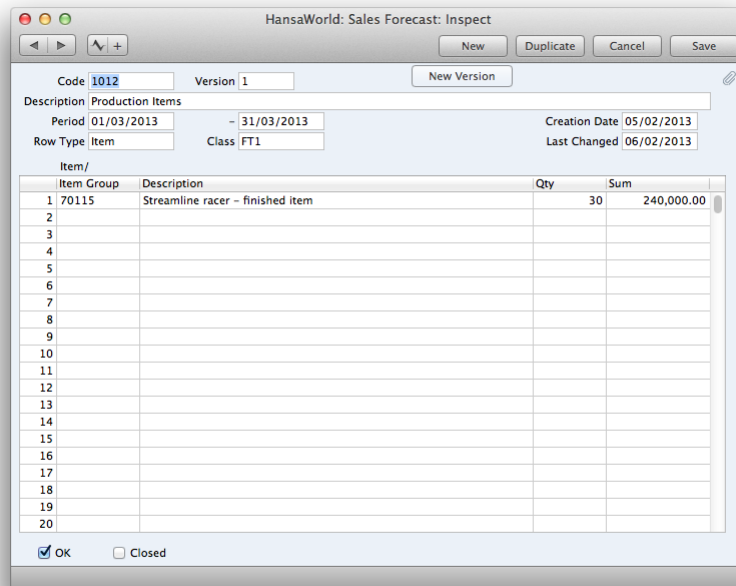
Sales Forecast

The whole sales forecast of the company is entered in this register. Only sales items should be entered. In case of production companies, only the finished goods items should be entered. The system will handle the components from the recipes and sub-recipes automatically.

Make sure you have a purchase item with a default supplier defined for retail items, and that you have a recipe defined on the item card for production items.

The system assumes that the items can be produced if they have a recipe defined on the item card, and purchased if they have a default purchase item set up. When generating purchase order plans, the system will ignore these items that can be produced.

Create a new Sales Forecast record, one per Period and Forecast Class combination.



Number: The number of the Sales Forecast. The default is the first free number in the number sequence

Version, [New Version]: Please see “Revision/Correction of Sales Forecast” section below for more details for this.

Description: Enter a short description for the Sales Forecast.

One suggestion is to describe the Items included in the Sales Forecast: the Description is shown in the Sales Forecasts: Browse window, so this will allow you to find Forecasts for particular Items relatively easily. Information such as Dates and Class are shown separately in the browse window, so it is not so necessary to repeat this information in the Description.

Period Paste Special: Choose date

Use these two fields to specify the Start and End Dates of the period covered by the Sales Forecast record. The default Start Date is the first day of the current period, and the default End Date of the current period – dependent on what Period Type is set up in Sales Forecast Setting. In our example we have set it to Months. If you change the Start Date, the End Date will be updated automatically to the last day of the current period. For example, if the current date is the 8th February, when creating new sales forecast, the start date becomes 1.2.2013 and last date 28.2.2013. If you change the start date to 1.3.2013, the end date will automatically become 31.3.2013.

If the Period Type in the Sales Forecast Settings is set as Weeks, then the same logic applies, considering always a full week.

The first day of the week (Sunday, Monday, etc) will be taken from the Weeks setting in System Module.

You should set up one or more Sales Forecast records per Period and Forecast Class combination, without repeating Items or Item Groups on different Sales Forecast records for the same Period and Forecast Class combination. You would use Forecast Classes for example if you would like to predict sales of the same Item made separately by different production factories.

Row Type Paste Special: Choices of possible entries

Use this field to specify whether you will use the Sales Forecast record to predict sales of individual Items or of all Items of particular Item Group. Use “Paste Special” to select the appropriate option here.

If a Sales Forecast record is set up using Item Groups, you can only use it for the subsequent Analysis of Forecast against actual sales, using the report “Sales Forecast Accuracy”. This report compares the Sales Forecast records against the actual sales by both quantities and values. In this case the Sales Forecast Class would best be setup per Salesman, allowing the analysis per Salesman.

If you also want to use the Sales Forecast records to plan Productions and Purchases for the Items you expect to sell, then the Sales Forecast must be set up per Items, not per Item Group.

Class: Select the appropriate Forecast Class code. Please see the Period section above for usage of Forecast Class on Sales Forecast records.

Creation Date: This field automatically records when the Sales Forecast record was added to your HansaWorld Enterprise database and this field cannot be changed by the user.

Last Changed: This field is updated automatically whenever you save any changes in the Sales Forecast record.

Use the grid to list the sales for each Item or Item Group that you predict for the Period.

Item/Item Group Paste Special: Item or Item Group registers

If you have set Row Type in Sales Forecast header to "Item Group" then list the Item Group whose sales you are predicting in this column here. If you have set the Row Type to "Item" then list the Items in this column. Please note that for MRP it is required that Sales Forecasts are entered per Items, and not per Item Group.

Description Default taken from: Item or Item Group

This field displays the Description of the Item or the Name of the Item Group entered.

Qty: Specify the predicted sales quantity for all Items for the Period.

Sum: If the first column contains an Item code, this field is calculated automatically as the total sales value when you enter the Qty, using the formula Qty * Base Price from Item card. You can change this figure if you anticipate a change in Base Price, or a higher volume of discounted sales planned in the Period. If the first column contains an Item Group, the sales value will not be calculated automatically, so you will need to enter one manually.

OK: When the Sales Forecast record is complete and correct, approve it by marking it as OK and saving it. This will make it available to reports and to the purchase and production planning functions. Un-OK'ed Sales Forecast records are not included in any of the reports, nor are they included in the calculations for purchase and production planning functions.

Once you have approved a Sales Forecast record, you will no longer be able to edit it. If you find it contains a mistake, use the [New Version] button to correct the mistake, as described above.

You can use Access Groups to control which users can approve Sales Forecasts. To prevent a user from approving Sales Forecasts, set their access/level to the Action "OKing Sales Forecast" as None.

Closed: Marking a Sales Forecast as Closed and saving it will remove it from MRP reports and from the purchase and production planning functions.

If you create a new version of a Sales Forecast, the old one will be marked as Closed automatically when you approve the new one.

Revision/Correction of the Sales Forecast

You cannot change a Sales Forecast after you have approved it (marked it as OK and saved it). If you need to change a Sales Forecast, open it and click the [New Version] button. A new Sales Forecast record will be created, with the same Number as the original record but with the Version incremented by one. When you mark the new Forecast as OK and save it, the old one will be marked as Closed automatically, rendering it inactive. This allows you to build up and maintain a forecast history.

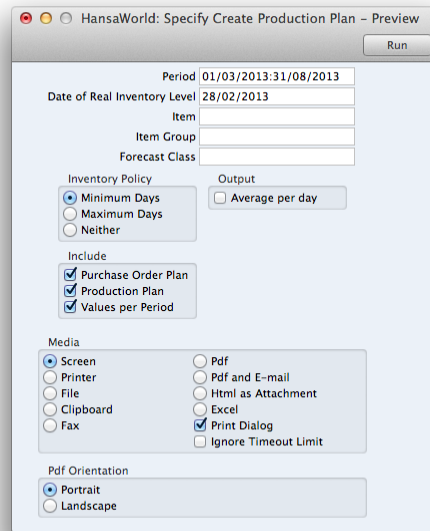
Production Plans Process

Once the Sales Forecast is defined, we can now start the production plan process. The period that we should run Production Plans for, depends on the production and purchase order lead times. For example, if the production and purchase order cycle is less than a month, then it is enough to plan productions for one month in advance. For example, in May you would run the Production plans for June. If the production cycle is longer, then it is required to adjust the period accordingly.

When running the preview report, it is always possible to select a longer period, to have medium term information.

Create Production Plan – Preview Report

Based on the Ok'ed Sales Forecast and the other variables for Production Plans, this report gives information on how much the company needs to produce per period. Running the report before creating the Production Plan records, allows the production manager to get information, which allows them to make some decisions prior to creating of the Production Plans. For example, in case of shortage in the capacity of the factory to produce all that is required, it is possible to take the required actions, such as arrange for overtime, subcontract labour, purchase order some of the component items, or even adjust the sales forecast.



The screenshot shows a dialog box titled "HansaWorld: Specify Create Production Plan - Preview" with a "Run" button. The fields and options are as follows:

- Period:** 01/03/2013:31/08/2013
- Date of Real Inventory Level:** 28/02/2013
- Item:** (empty field)
- Item Group:** (empty field)
- Forecast Class:** (empty field)
- Inventory Policy:**
 - Minimum Days
 - Maximum Days
 - Neither
- Output:**
 - Average per day
- Include:**
 - Purchase Order Plan
 - Production Plan
 - Values per Period
- Media:**
 - Screen
 - Printer
 - File
 - Clipboard
 - Fax
 - Pdf
 - Pdf and E-mail
 - Html as Attachment
 - Excel
 - Print Dialog
 - Ignore Timeout Limit
- Pdf Orientation:**
 - Portrait
 - Landscape

Period: Insert the period of the Production Plan you are interested in.

Date of Real Stock Level: Insert the date your inventory is accurate to or today's date. This date has to be before the start date of the period from the Period field above.

Item Paste Special: to Item Register

Specify the Item if you want to check the Production plan for a specific Item only.

Item Group Paste Special: Item Group Register

Specify the Item Group if you want to check the Production plan for Items of a specific Item Group.

This selection can be useful, if there are different managers responsible for production of different groups of items, they can then run the report including only items they are responsible for.

Forecast Class Paste Special: To Forecast Class setting

If a Forecast Class is specified, the information related to that specific Forecast class only will be included in the report.

If the Forecast Class defines a specific branch, we can check the Productions Plans only for that specific branch.

Inventory Policy: Select "Minimum days" if you would like to include the minimum days of the Inventory Policy setting for each Item, or "Maximum days" if you would like to include the maximum days of the Inventory Policy setting for each item.

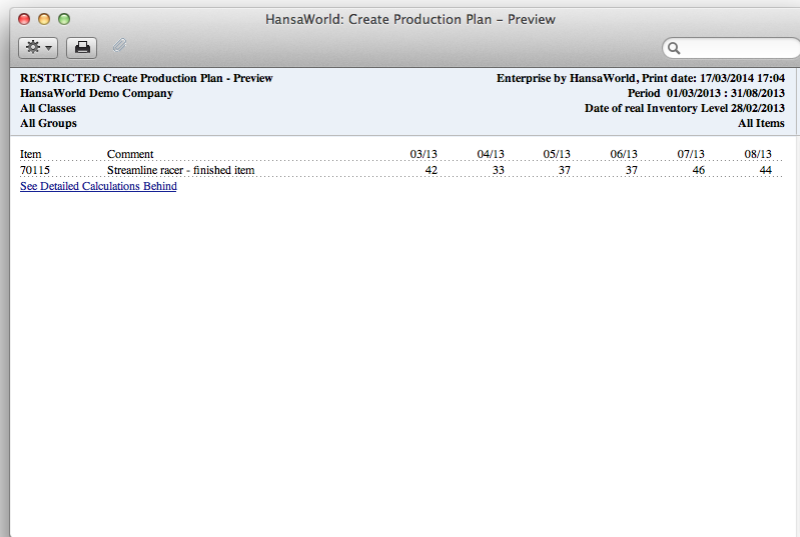
Include: You can select between Purchase Orders Plans and Production Plans.

Production Plan: By selecting include "Production Plan" the system will include Production Plans already created that affect the period. For example, if you have 100 units of a certain item in your Production Plan, when running this report, the system will discount these 100 units, regardless if the productions are already created or not.

Purchase Orders Plan: The logic of this field is the same as for Production Plan.

Values per Period: If this checkbox is on, the values presented are for each period. If this checkbox is off, the values listed are accumulated from the first period until the last period selected.

Average Per day: This option lists the Values per period/number of Production days from Working Days setting.



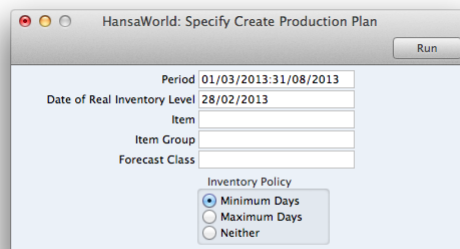
Item	Comment	03/13	04/13	05/13	06/13	07/13	08/13
70115	Streamline racer - finished item	42	33	37	37	46	44

This is an example of the output of the report. The detailed calculations formulae will be explained in the end of this training material.

Create Production Plan Maintenance

Once the Production manager decides that the “Production Plan” is correct, he then runs the maintenance routine “Create Production Plans”. In the specify window of this maintenance routine the same data as in the previous report should be specified.

The fields in this specify window work exactly in the same way as in the previous report, there are just less options.



Period: 01/03/2013:31/08/2013
 Date of Real Inventory Level: 28/02/2013
 Item:
 Item Group:
 Forecast Class:
 Inventory Policy:
 Minimum Days
 Maximum Days
 Neither

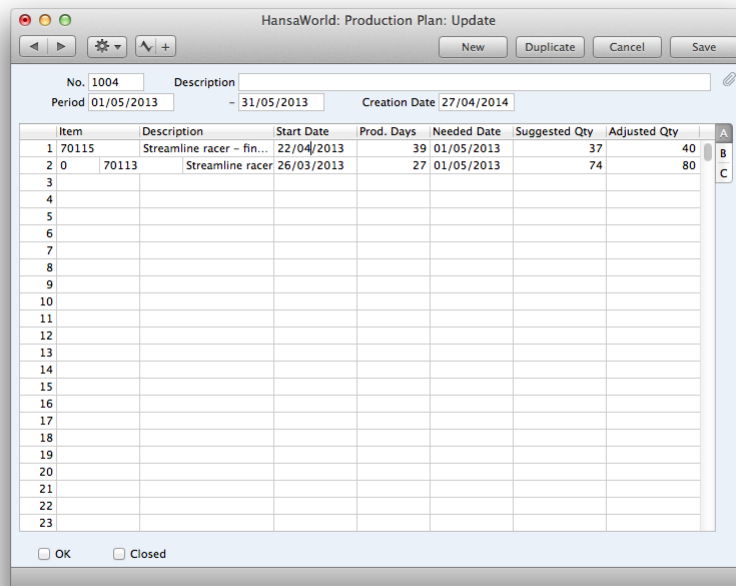
This routine creates the Production Plans for the main item and sub-items according to the recipes that are in a “not OK’ed” status. The production manager should then analyze and adjust the Production Plans if required, either by creating some additional records manually, or adjust the records created by the maintenance routine. Find the details for this register in the next paragraph.

Production Plan Register

The Production Plan records are created for inventory items from the Sales Forecast that have a recipe specified on the item card.

If the production manager agrees with the quantities suggested by the system, then there is no need to make any adjustment to the Production plans created. If they do not agree with the suggested quantities, then they can override the suggested quantities by entering a new quantity in the “Adjusted Qty” field. When we adjust the quantity for a finish good item, all the sub-items are automatically adjusted, to meet the needs for the production of the main item.

Find below an explanation of the different fields on a Production Plan record.



Item	Description	Start Date	Prod. Days	Needed Date	Suggested Qty	Adjusted Qty
1	70115 Streamline racer - fin...	22/04/2013	39	01/05/2013	37	40
2	0 Streamline racer	26/03/2013	27	01/05/2013	74	80
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						

No.: The number of the Production Plan record. This field defaults to the first free number in the number sequence specified in the Number Series - Production Plans setting. You may change this number, but not to one that has already been used. If you are working in a multi-user environment, the Production Plan Number is assigned when you first save the Production Plan record.

Description: Enter a description of the Production Plan, to be shown in the “Production Plan: Browse window. You can leave this field blank.

Period: If you are entering a Production Plan manually, use these two fields to specify the Start and End Dates of the period covered by the Production Plan record. Start Date should be the first day of the period and the default End Date is either one calendar month later, if the Period Type is set to “Month” in Forecast Settings, or one week later, if the Period Type is set to “Week”. If you change the Start Date, the End Date will be updated automatically. You can then change it if necessary.

You can enter more than one Production Plan record for the same Period, but each Item or Item Group can only be specified on one Production Plan record for the same Period.

When you use the “Create Production Plan” Maintenance routine to create the Production Plan from a Sales Forecast, the Period from the Sales Forecast is used on the Production Plan created. If you have more than one Sales Forecast for the same Period (with different Items and/or different Classes), they will be combined into a single Production Plan. For example, if you have two Sales Forecast records for June, the two for June will be included in a single Production Plan for June. However, if the number of rows is not enough for all the required items, then more than one Production Plans for the same period will be generated automatically.

Creation Date: This field automatically records when the Production Plan record was added to your Enterprise by HansaWorld database and cannot be changed.

Use the grid to list the Items that you need to produce during the Period. In the case of a Production Plan created by the "Create Production Plan" maintenance routine, the Items and quantities will be calculated based on the Sales Forecast for the same Period.

Flip A

Item Paste Special: Item register

Specify an Item to plan its Production. This must be a inventory Item with a Recipe (i.e. an Item that you can build using a Production).

If the Item is one that is built from sub-assemblies (i.e. the Recipe contains at least one Item that itself has a Recipe), the Item Numbers of the sub-assemblies will be listed on the rows below, indented to show that they are sub-assemblies. This is shown in the illustration above.

Description: Default taken from Item

This field shows the Description of the Item, pasted automatically from the Item register.

Start Date: This is the date the production of this item should start. It is calculated by subtracting the Production Days from the Needed Date, taking also the Buffer Days specified in Production Settings into account.

Prod. Days: The number of days required to produce the Item. This is calculated using the Time to Setup, Fixed Assembly Days, Time to Produce, and the Days to Produce in the Recipe, and the Suggested or Adjusted Qty.

In case of a manually entering a Production Plan, the Prod. Days and the Start Date will be calculated when you enter the Suggested or Adjusted Qty.

Needed Date: The date when the Item is required by. This is the last date of the Period of the Production Plan and it cannot be changed.

On the row of a sub-assembly, the Needed Date is entered as the Start Date from the row above (i.e. the date the sub-assembly should be ready, to allow work on the next level assembly to begin).

Suggested Qty, Adjusted Qty: In case the Production Plan is created by the "Create Production Plan" Maintenance routine, this field will contain the quantity of the Item that you need to build in order to satisfy the Sales Forecast for the relevant Period, taking the inventory level at the beginning of the Period and Inventory Policy for the Item into account.

In the case of a Production Plan that you are entering manually, enter the quantity of the Item that you believe you need to build during the Period.

You cannot change the Suggested Qty after you have saved the Production Plan for the first time. If you need to change the Suggested Qty, enter the new figure in the Adjusted Qty field. You will not be able to specify a Suggested Qty for an Item added to a Production Plan after it has been saved: again, use the Adjusted Qty field.

When creating a Production from the Production Plan row, the quantity used on the Production will be the Adjusted Qty, or if that is blank, then the Suggested Qty from Production Plan row is used.

Flip B

Sug. Date: In the case of a Production Plan created by the "Create Production Plan" maintenance routine, this field will contain the date the record was created, shown for information only. You can change this date if necessary.

Adj. Date: Each time you enter an Adjusted Qty, the date of the adjustment will be placed here automatically.

Flip C

Prod. No: When you create a Production or Production Order from the Production Plan, the Production Number or Production Order Number will be entered here automatically.

Recipe: The Recipe that will be used to build the Item will be shown here, taken from the Item record. This is for information only and cannot be changed.

Footer

OK: When the Production Plan record is complete and correct, approve it by marking it as OK and saving it. When you use the “Create Productions” maintenance routine to create “Productions” or “Production Orders” from “Production Plans”, you will have the option to create them from approved “Production Plans” only.

When you create “Productions” or “Production Orders” from a “Production Plan” using either the “Create Productions” Operations menu function or the “Create Productions” Maintenance routine, the “Production Plan” will be marked as OK automatically.

Once you have approved a “Production Plan” record, you will no longer be able to change it.

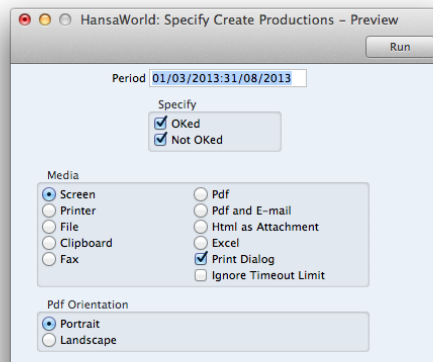
You can use Access Groups to control which Users can approve Production Plans. To do this, set the access to the Action “OKing Production Plan” to None. You should also consider denying access to the “Create Productions” maintenance routine, because otherwise somebody unable to approve Production Plans will still be able to create Productions or Production Orders from Production Plans that have not been marked as OK.

Closed: You can mark a Production Plan as Closed and save it to cancel it. The “Create Productions” maintenance routine will exclude Closed Production Plans when creating Productions or Production Orders

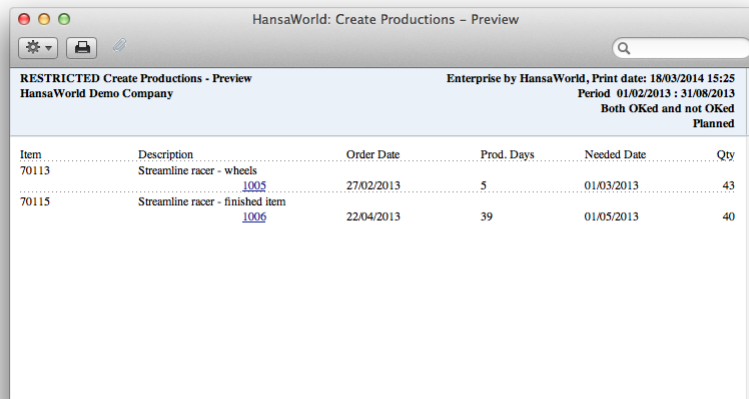
Create Productions Process

Create Productions - Preview Report

After the Production Plan is created and accepted, it is required to analyze the information and confirm that the suggestions are correct or they require adjustments. The adjustments are not necessarily because of wrong data in the database (like wrong inventory, wrong information regarding recipes, etc), but mainly due to the current business environment conditions, such as market conditions or a good business opportunity.



Specify the date you want to review your Production plans in the period. This period will include all rows from the Production Plans register, where both the start date and the needed date are included in the specified period. At this stage, always include oked and non oked “Production Plans”, we want to check the suggested numbers before oking them. All rows that do not contain a production number will be then included in this report.



RESTRICED Create Productions - Preview
HansaWorld Demo Company

Enterprise by HansaWorld, Print date: 18/03/2014 15:25
Period 01/02/2013 : 31/08/2013
Both OKed and not OKed
Planned

Item	Description	Order Date	Prod. Days	Needed Date	Qty
70113	Streamline racer - wheels 1005	27/02/2013	5	01/03/2013	43
70115	Streamline racer - finished item 1006	22/04/2013	39	01/05/2013	40

The report will list items that need to be produced, both the finished good items and sub-recipe items.

To make any adjustments, just click on the "Production Plan" number in the report window to open it, enter the adjusted quantity, and save the record without "oking" it. Recalculate the report to include the changes made. You might need to to more adjustments.

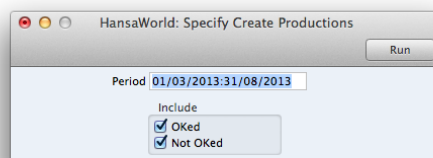
When this task is finished, then the next step is to create Productions.

Create Productions Maintenance

Specify the period you were working on and you want to create Productions for in the specify window of this maintenance routine. The period depends on the lead times and production cycle. For example, if you create Production orders monthly, then it is enough to enter a period of one month.

Include oked and non oked. All non oked Productions Plans that have Productions for that period will automatically be oked.

In case the managers want to approve the production plans manually, select only the Oked option in the specify window.



HansaWorld: Specify Create Productions

Run

Period

Include

Oked

Not OKed

This operation has several actions:

- It creates not oked Productions or Productions Orders in the Production module, depending on which option for Generate Planned Records was selected in the Production Settings.
 - Due Date date will be taken from the needed date field on the Production Plan
 - Should Start date will be taken from the start date field on the Production Plan
- Production Plans, that have rows with start date included in the selected period, will be oked
- Created Production order number is automatically entered on the Production plan, flip C.

You can run the Production Plan Info report from the operations menu of the Production plan, to see all Productions or Production orders created from this record, with option to drill down to these records if needed.

Important: do not amend or delete any Productions or Production Orders. Any changes made on these records will not be reflected in the MRP.

If you need to make any changes, you need to cancel the Production order and the Production plan by marking both of them as Closed, and create new records. Alternatively create an extra Production Plan record and generate new Production Orders from there.

Purchase Orders Plans Process

The Purchase Order Plan process can be started after the “Production Orders” are generated in the Production module, or right after the Production Plan is approved.

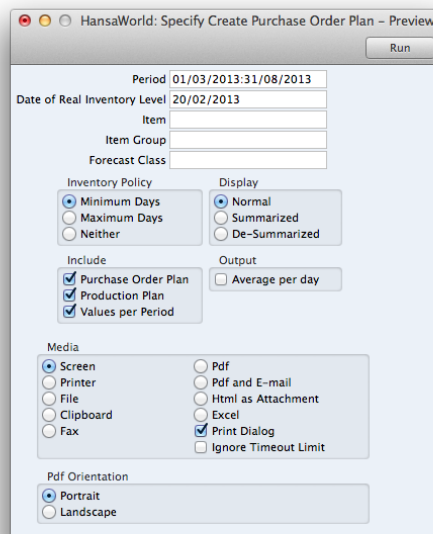
To create Purchase Order Plans or preview the details in the report prior to that, it is required that the Productions Plans are created and oked. The timing for that is dependent on the company and it has to be agreed upon with the managers.

The period for which the Purchase Order plans should be run depends on the lead times given by the suppliers. For example, if it is enough to replenish my inventory one month in advance, then in May, I run the Purchase Orders plans for June. If the lead time is longer, then it is required to adjust the period accordingly.

When running the report, it is always possible to select a longer period, to have medium term information.

Create Purchase Order Plan - Preview Report

This report gives information about the deficiencies, based on the sales forecast, inventory levels, inventory policies and outstanding purchase orders.



The screenshot shows a dialog box titled "HansaWorld: Specify Create Purchase Order Plan - Preview". It includes a "Run" button in the top right corner. The configuration options are as follows:

- Period:** 01/03/2013:31/08/2013
- Date of Real Inventory Level:** 20/02/2013
- Item:** (empty field)
- Item Group:** (empty field)
- Forecast Class:** (empty field)
- Inventory Policy:**
 - Minimum Days
 - Maximum Days
 - Neither
- Display:**
 - Normal
 - Summarized
 - De-Summarized
- Include:**
 - Purchase Order Plan
 - Production Plan
 - Values per Period
- Output:**
 - Average per day
- Media:**
 - Screen
 - Printer
 - File
 - Clipboard
 - Fax
 - Pdf
 - Pdf and E-mail
 - Html as Attachment
 - Excel
 - Print Dialog
 - Ignore Timeout Limit
- Pdf Orientation:**
 - Portrait
 - Landscape

Period: Insert the period you want to see the Purchase Order Plan for.

Date of Real Inventory Level: Insert the date your inventory is accurate as or today’s date. This date has to be before the start date of the period from the previous field.

Item Paste Special: to Item Register

Specify an Item if you want to check the Purchase Order plans only for a specific item.

Item Group Paste Special: Item Group Register

Specify an Item Group if you want to check the Purchase Order plans only for a specific item group.

When there are several managers in the company responsible for different item groups, this selection can be useful.

Forecast Class Paste Special: To Forecast Class setting

Specifying a Forecast Class, will list the information related to that specified Forecast class only.

For example if the Forecast Class defines a specific branch, we can check the “Purchase Order Plans” only for that specific branch.

Stock Policy: he values displayed will be according to the inventory policy selected.

For example, if you select “Minimum days” the system will check the minimum days for that particular Item in the Inventory policy setting.

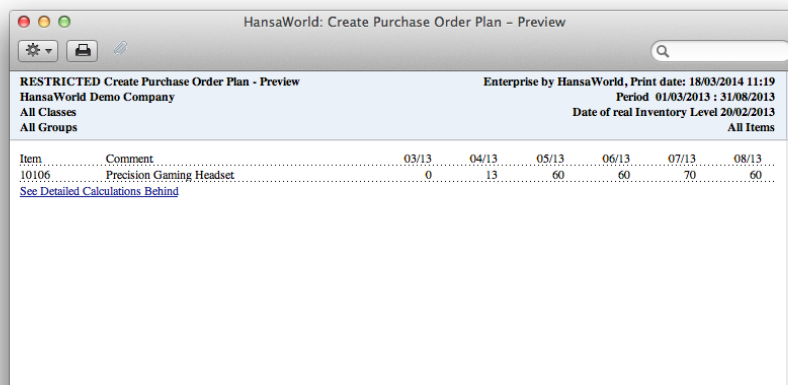
Include: You can select between Purchase Order Plans and Production Plans.

Purchase Order Plan: By Selecting include “Purchase Order Plan” the system will include the Purchase Order Plans already created that can affect the period. For example, if you have 100 units of a certain item in your Purchase Order Plan, then this report will subtract the not received units from these 100 units. These calculations will include all outstanding Purchase Orders created in the system, regardless if they were created from the Purchase Order Plans or raised manually in the Purchase Orders register.

Production Plan: Same logic as Purchase Order Plan, applies also to Production Plan option. For Retail companies, leaving that checkbox on, does not have any effect.

Values per Period: if this checkbox is on, the values presented are for each period. If this checkbox is off, the values listed are accumulated from the first period until the last period selected.

this option lists the Values per period/number of Production days from Working Days setting. Average per day will the number of production days for retail and finished goods items.



Item	Comment	03/13	04/13	05/13	06/13	07/13	08/13
10106	Precision Gaming Headset	0	13	60	60	70	60

[See Detailed Calculations Behind](#)

Running this report before running the maintenance routine, gives the information about the purchase order plans that will be created, including the quantities per item, and the manager can take some decisions already.

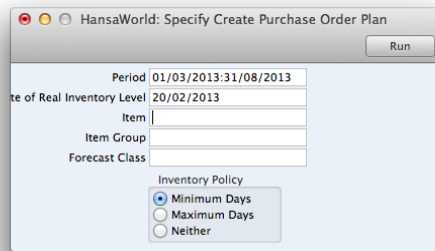
The manager can revise the “Sales Forecast” if required by creating a new version. If the manager agrees with the suggested numbers, he can then move on to the next step and run the “Create Purchase Order Plan” Maintenance.

Create Purchase Order Plan Maintenance

This maintenance routine will generate Purchase Order Plans, based in the options specified.

There are a fewer options in the maintenance routine specify window compared to the preview report.

The information in the specify window should be the same that was specified when running the preview report and that the manager was happy with.



In case the sales forecast was reviewed and this maintenance routine is run another time, all purchase orders plans for the period that do not have a purchase order assigned yet are closed first, and new purchase order plans are created.

This maintenance routine creates "Purchase Order Plan" records.

Purchase Order Plan Register

If required, you can enter a Purchase Order Plan manually. However, usually these records are generated using the maintenance routine "Create Purchase Order Plans".

The maintenance creates Purchase Order Plan records in non oked status, giving the managers the option to analyze and make adjustments if required, or accept the suggested quantities.

The manager should always analyze this information, adjust the suggested quantities if required, and accept the plan.

The "Purchase Order Plan" records are created only for these items that are included in the Sales Forecast, and that have a default purchase item set up, and that do not have a recipe on the Item card.

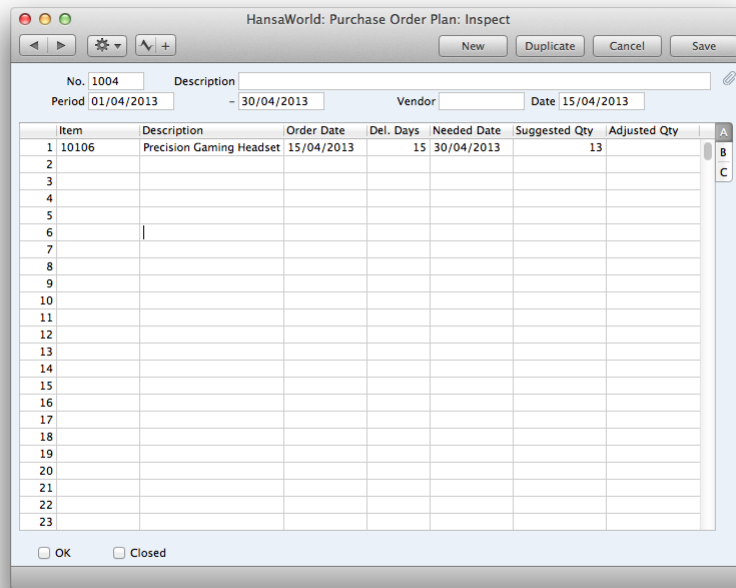
If the purchase manager does not agree with the quantities suggested by the system, he can enter a required quantity in "Adjusted Qty" field on the Production plan.

To buy the item suggested from a different supplier, in the flip B, just paste special to a different supplier. The lead times will be adjusted automatically according to the delivery days from the purchase item register for that supplier.

Another adjustment that is possible to do is split the line. For example, the system suggest to buy 50 units of a certain item from the default supplier. That month the manager can get a better agreement for 30 units from a second supplier. He can just highlight the line he wants to split, and select the option "Split Line" from the operation menu., Then enter how much is required in the "Adjust.Qty" field. This "Split Line" function can be used for any other situation when the whole suggested quantity is not ordered in one go, for example different supplier, different dates, etc.

When the "Purchase Order Plan" is approved, the maintenance routine "Create Purchase Orders" can be run. This maintenance routine is explained with more detail in a later paragraph of this training material.

Find below the explanation of the different fields on the "Purchase Order Plan" record.



No.: The number of the Purchase Order Plan. The default is the first free number in the number sequence specified in the Number Series - Purchase Order Plans setting. You may change this number, but not to one that has already been used. If you are working in a multi-user environment, the Purchase Order Plan Number is assigned when you first save the Purchase Order Plan.

Description: Enter a description of the Purchase Order Plan, to be shown in the "Purchase Order Plans: Browse window. You can leave this field blank.

Period Paste Special: Choose date

When you use the "Create Purchase Order Plan" maintenance routine to create the Purchase Order Plan records from the Sales Forecast, the Period will be copied from that Sales Forecast. If you have more than one Sales Forecast for the same Period (with different Items and/or different Classes), they will be combined into a single Purchase Order Plan.

It is also possible to create the Purchase Order Plans manually, for example, when some additional adjustment without revision of the Sales Forecast and Production Plans is required. In this case, use these two fields to specify the Start and End Dates of the period covered by the Purchase Order Plan record. If the Period Type in the Forecast setting is selected as Months, the default Start Date is the current date, and the default End Date is one calendar month later. If you change the Start Date, the End Date will be updated automatically, again to be one calendar month later. You can then change it if necessary.

It is recommended that you begin every Period on the first day of a month, and every Period should be a whole month or a number of whole months in duration.

If the period type in the Forecast settings is selected as Weeks, the the same logic applies, but with week period.

You can use the same Period in more than one "Purchase Order Plan" record, providing there is no common Item.

Supplier Paste Special: Suppliers in Contact Register

When you create Purchase Order Plans using the maintenance routine, this field will be blank. You can leave it blank, or select a supplier from the contact register. Below there are the details of this field.

When you create Purchase Orders from a "Purchase Order Plan", the Supplier will be selected as follows:

1. If you enter a Supplier in a particular Purchase Order Plan row (flip B), that Supplier will be used, providing there is a Purchase Item set up for this Item and Supplier combination. Pricing will be taken from that Purchase Item.

2. If the Supplier field on Purchase Order Plan row (flip B) is blank or there is no Purchase Item set up for this item and Supplier combination, the Supplier specified in Purchase Order Plan header will be used, providing there is a Purchase Item for the Item/Supplier combination. Pricing will be taken from that Purchase Item.
3. If both Supplier fields are empty and/or there are no Purchase Items set up for those Suppliers, the Supplier and pricing will be taken from the Default Purchase Item for the Item, if there is one.

If an Item has no Purchase Items at all, it will not be included in any Purchase Orders that you create from the Purchase Order Plan.

Date: This field automatically records the earliest Order Date used in the Purchase Order Plan rows and cannot be changed.

Item Paste Special: Item register

These are the Items to plan its purchase. This must be an inventory Item with a Purchase Item (Items without Purchase Items will not be included in any Purchase Orders created from the Purchase Order Plan). When generating the Purchase Order Plans from the maintenance routine, all items that do not contain a recipe in the item card, will be included in this register.

Use the grid to list the Items that you need to order during the Period. In case the Purchase Order Plan records are created by the "Create Purchase Order Plan" maintenance routine, the Items and quantities will be the same as in the "Create Purchase Orders Plan – Preview" report.

To add rows to a Purchase Order Plan, click in any field in the first blank row and enter appropriate details. To remove a row, click on the row number on the left of the row and press the Backspace key. To insert a row between existing rows, click on the row number where the insertion is to be made and press Return.

You can also bring Items into a Purchase Order Plan by paste special on the first free Item field, and selecting a range of Items in the Paste Item window by clicking the mouse while holding down the Shift key, and then dragging and dropping them to the Item field in the first empty Purchase Order Plan.

Description: This field shows the description of the Item, brought in from the Item record.

Order Date: The date you should order the Item, calculated by subtracting the Del. Days in the Default purchase Items from the Needed Date.

Del. Days: The number of days the Supplier requires to deliver the Item to you. This is taken from the Delivery Days field in the relevant Purchase Item (i.e. the Purchase Item for the Item with the Supplier specified on flip B or in the header, or the Default Purchase Item for the Item).

Needed Date: The date when the Item is required by. This must be the last date within of the Period of the Purchase Order Plan and cannot be changed.

Suggested Qty/Adjusted Qty: When we create the Purchase Order Plan using "Create Purchase Order Plans" maintenance routine, the Suggested Quantity field will contain the quantity of the Item that you need to purchase in order to satisfy the Sales Forecast for the relevant Period. If you want to adjust the quantity suggested by the system, enter the value in the Adjusted Qty field.

Supplier Paste Special: Suppliers in Contact Register

When the Purchase Order Plan is created using the "Create Purchase Order Plan" maintenance routine, the Supplier field is blank, however, for calculation of the Delivery Days, the default supplier for that item is used. If you want to create the Purchase Order for the Default supplier, you can leave this Supplier field blank.

Del.Days: The delivery days shown are for the default supplier specified in the previous field.

Item to Order >> Paste Special >> Item register

This field is used only for Auto Production Items in production.

OK: When the Purchase Order Plan record is complete and correct, approve it by marking it as OK and saving it.

When you use the "Create Purchase Orders" maintenance routine to create Purchase Orders, the respective Purchase Order Plans will be marked as OK automatically.

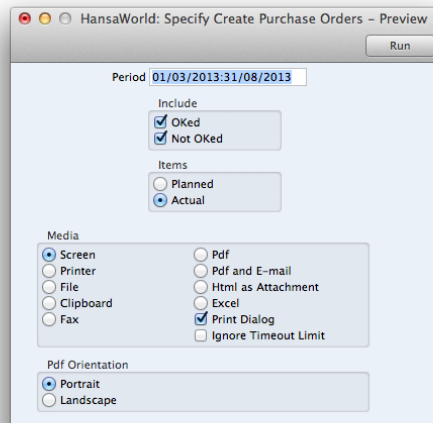
Closed: If you mark a Purchase Order Plan as Closed and save it, the "Create Purchase Orders" maintenance routine will exclude this Purchase Order Plan when creating Purchase Orders.

Purchase Orders Process

Create Purchase Orders Preview Report

After creating the "Purchase Orders Plans" the purchase manager needs to analyze the suggestions by the system and take the decision either to adjust or accept these.

The adjustments might be necessary not because of any wrong data in the database (such as wrong inventory, wrong information regarding lead times, etc.), but mainly due to current conditions, such as market conditions or a good business opportunity.

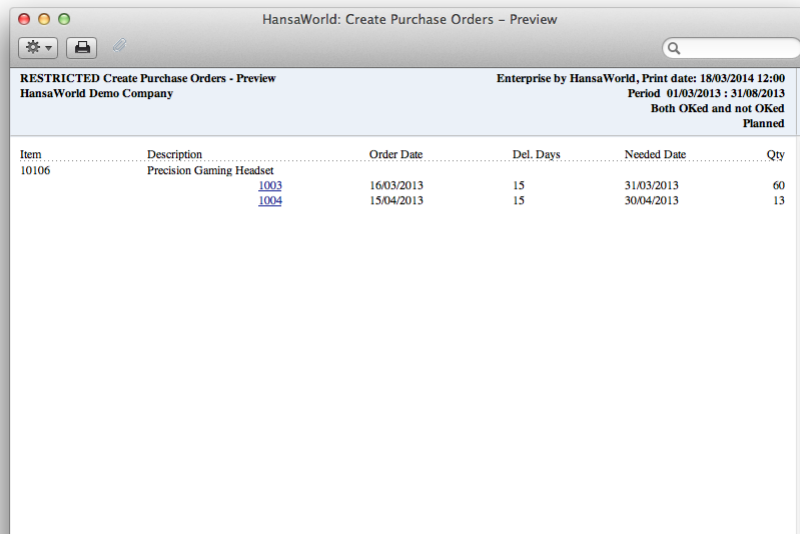


Specify the date you want to review your "Purchase Order Plans" in the period. This period will include all rows from the "Purchase Order Plan" register, that have an Order Date included in the specified period. Include Oked and non Oked "Purchase Order Plans" records. All rows that do not contain a purchase order number will be then included in this report.

The option "Planned" shows the items that the system suggested on the Purchase Order Plan matrix lines, showing the generic items.

The option "Actual" shows the items you want to order from suppliers. It reads through the purchase order plan matrix lines and shows the item from the item column, if the column "item to order" is blank. If "Item to Order" is specified, it will show that item instead. For example you do not want to order from the supplier any of the generic items.

The selection of which item to display will be taken from Auto Production Items setting.



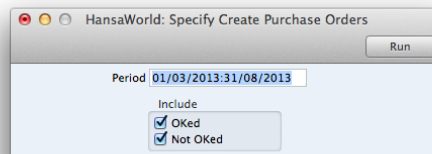
Item	Description	Order Date	Del. Days	Needed Date	Qty
10106	Precision Gaming Headset				
	1003	16/03/2013	15	31/03/2013	60
	1004	15/04/2013	15	30/04/2013	13

The report will list all the lines that need to be ordered per item. When this task is finished, the next step is to create purchase orders.

Create Purchase Orders Maintenance

Specify the period you were working on and you want to create purchase orders for in the inspect window of this maintenance routine. The period depends on the lead times and purchase cycle. For example, if you create purchase orders monthly, it is enough to enter a period of one month. If the purchase orders have to be placed 6 months in advance, then the period needs to be 6 months as well.

Include Oked and not Oked. All not Oked purchase order plans, that have orders for that period will automatically be Oked.



Period:

Include

Oked

Not Oked

This operation has several actions:

- It creates not Oked "Purchase Orders" in the Purchase Orders register
 - the purchase order date will be taken from the order date field
 - the purchase order planned delivery will be taken from the needed date field
 - the purchase order plans that have rows with an order date included in the selected period will be Oked
 - the purchase order number will be inserted in the flip C of the Purchase Order Plan
- You can run the Purchase Order plan info report from the operations menu of the Purchase Order Plan: This report, lists all purchase orders connected with this Purchase Order Plan record with the drill down feature.

Important: do not amend or delete any purchase order. Any changes will not be reflected in the MRP.

If you need to make any changes, you need to close the purchase order, close the purchase order plan, and create new Purchase Order Plans and Purchase Order records.

Follow up on the purchase Orders: Expected Arrivals Report

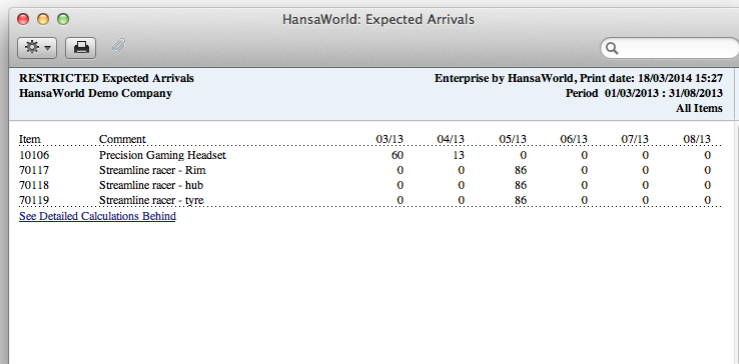
Once the purchase Orders are Oked and sent to the suppliers from the Purchase Order module, we can follow up on the quantities per item that we expect to arrive, per month in the MRP module.

The report Expected Arrivals shows, in monthly columns, how much of different items we are supposed to receive according to the purchase order plan.

The option "actual" shows the items where generic items are translated into specific items.

The option "planned" shows the generic items as they are on purchase order plan.

The selection of which item to display will be taken from Auto Production Items setting.



RESTRICTED Expected Arrivals
HansaWorld Demo Company

Enterprise by HansaWorld, Print date: 18/03/2014 15:27
Period 01/03/2013 : 31/08/2013
All Items

Item	Comment	03/13	04/13	05/13	06/13	07/13	08/13
10106	Precision Gaming Headset	60	13	0	0	0	0
70117	Streamline racer - Rim	0	0	86	0	0	0
70118	Streamline racer - hub	0	0	86	0	0	0
70119	Streamline racer - tyre	0	0	86	0	0	0

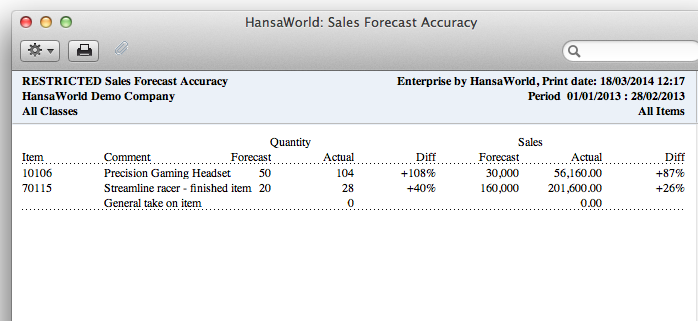
[See Detailed Calculations Behind](#)

Sales Forecast Accuracy Report

One of the benefits of the MRP Module is the possibility of comparing the Sales Forecast with the actual sales. This can be done for the whole company or per sales person (when the Forecast Class code is the same as the sales person code).

Specify the period you want to analyze, and you can select a specific item or sales forecast class.

You can then run the report comparing actual sales with sales forecast, by quantities, by values or both.



RESTRICTED Sales Forecast Accuracy
HansaWorld Demo Company

Enterprise by HansaWorld, Print date: 18/03/2014 12:17
Period 01/01/2013 : 28/02/2013
All Classes

Item	Comment	Quantity			Sales		
		Forecast	Actual	Diff	Forecast	Actual	Diff
10106	Precision Gaming Headset	50	104	+108%	30,000	56,160.00	+87%
70115	Streamline racer - finished item	20	28	+40%	160,000	201,600.00	+26%
	General take on item		0			0.00	

REPORTS

Introduction

As in all modules you can print a report from the MRP module by clicking on the 'Reports' icon in the master control panel and double-clicking the appropriate report in the list.

Some of the reports available in this module were already described during the workflow process above.

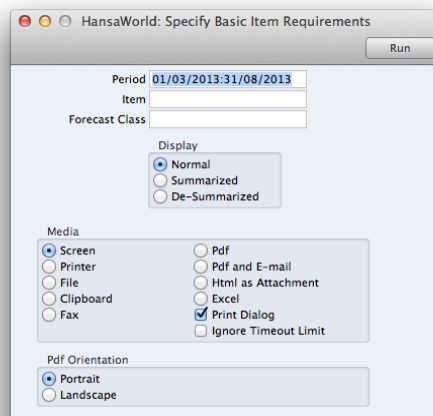
The following reports are also available in the MRP module

Basic Item Requirements

This report lists the items that are required based on the "Sales Forecast" records.

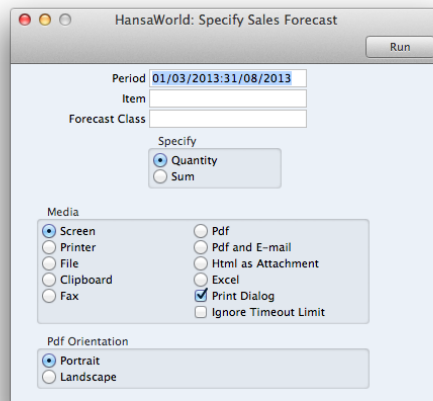
While the "Sales Forecast Report" lists only the forecasted items, the basic item requirements lists both sales items and components items. Regarding the components, we can list:

- | | |
|--------------|---|
| Normal | Shows all items that have requirements: specific items and generic items |
| Summarized | Checks the setting Auto Production Items and converts specific items to generic items |
| Desummarised | Checks the setting Auto Production Items and converts generic items to specific items |



Sales Forecast

This report lists data from the "Sales Forecast" register according to the selections in the specify window. This report only includes Oked and not closed Sales Forecast records.

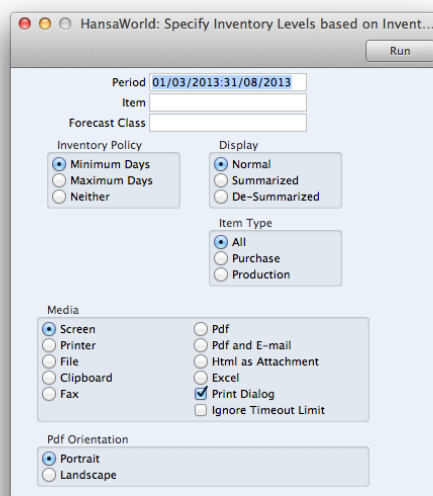


Inventory Levels based on Inventory Policy

This report gives you information about how much you should have in your inventory at a given date based on your “Sales Forecast” and “Inventory Policies”. We can select the Item Type, all or

Purchase Lists only these items from the sales forecast that have a purchase Item and do not have a recipe on the item card.

Production Lists only these items from the sales forecast that have a recipe on the item card, regardless if they do or do not have a purchase item set up.



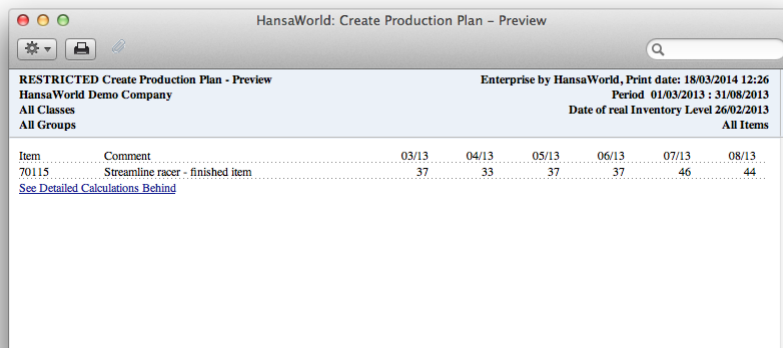
Inventory List

This report is the same as the one available in the inventory module. For details, please refer to the training material for Inventory module.

FORMULAE

The following examples illustrate the forecasting formula. This formula will calculate the quantity of each Item you need to produce or buy each month to satisfy forecasted sales. In case of Items that you need to produce (using Productions), the calculation will be used by the Create Production Plan - Preview report and the "Create Production Plan" maintenance routine. In case of Items that you need to buy for resale, the calculation will be used by the Create Purchase Order Plan - Preview report and the "Create Purchase Order Plan" maintenance routine. This will include purchasing requirements for components for the Items that you will produce yourself: this requires that you run the "Create Production Plan" maintenance routine for a particular period and approve the resulting Production Plan(s) before running "Create Purchase Order Plan".

Production Plan Formula

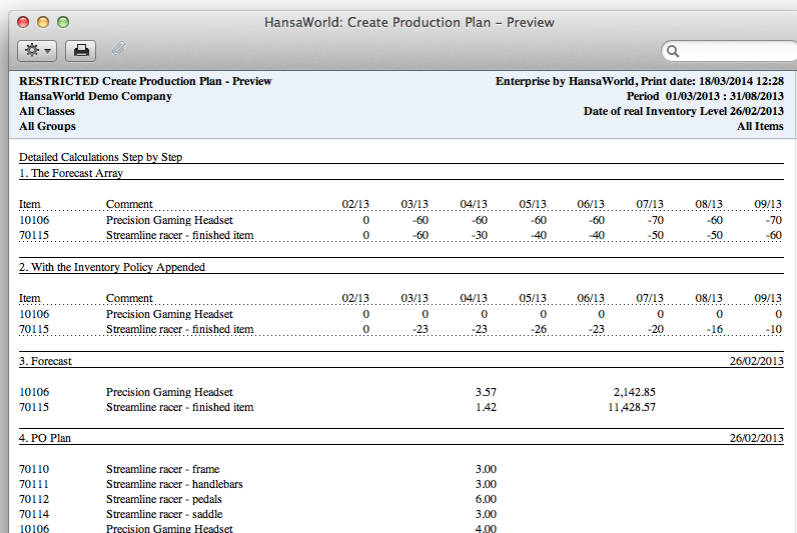


Item	Comment	03/13	04/13	05/13	06/13	07/13	08/13
70115	Streamline racer - finished item	37	33	37	37	46	44

[See Detailed Calculations Behind](#)

Below is an example of "Create Production Plan - Preview" report

Click the [See Detailed Calculations Behind] text button to see the calculation in detail. This report is presented in several parts, as it is too long it does not fit in once single window. The sections of the detailed report (from 1 to 15) are presented separately. In the report itself, it shows the formulae. Find below a more detailed explanation for some of the sections of this report.



Item	Comment	02/13	03/13	04/13	05/13	06/13	07/13	08/13	09/13
10106	Precision Gaming Headset	0	-60	-60	-60	-60	-70	-60	-70
70115	Streamline racer - finished item	0	-60	-30	-40	-40	-50	-50	-60

Item	Comment	02/13	03/13	04/13	05/13	06/13	07/13	08/13	09/13
10106	Precision Gaming Headset	0	0	0	0	0	0	0	0
70115	Streamline racer - finished item	0	-23	-23	-26	-23	-20	-16	-10

Item	Comment	02/13	03/13	04/13	05/13	06/13	07/13	08/13	09/13
10106	Precision Gaming Headset			3.57		2,142.85			
70115	Streamline racer - finished item			1.42		11,428.57			

Item	Comment	02/13	03/13	04/13	05/13	06/13	07/13	08/13	09/13
70110	Streamline racer - frame			3.00					
70111	Streamline racer - handlebars			3.00					
70112	Streamline racer - pedals			6.00					
70114	Streamline racer - saddle			3.00					
10106	Precision Gaming Headset			4.00					

This detailed report is divided into the following sections:

The Forecast Array: This section displays sales forecasts for Items, taken from approved records in the Sales Forecast register. This section includes the month before and the month after the report period.

With the Inventory Policy Appended: The Inventory Policies setting contains minimum and maximum inventory levels for each Item, expressed as a number of days worth of sales. This section of the report uses the Inventory Policies setting to calculate the quantity that should remain in inventory at the end of the month. When you produce the report or run the Maintenance function, you will be able to specify whether this calculation will use the minimum or maximum inventory level in the setting. Please refer to the “Inventory Policy – Average Sales Per Day” for details of this calculation.

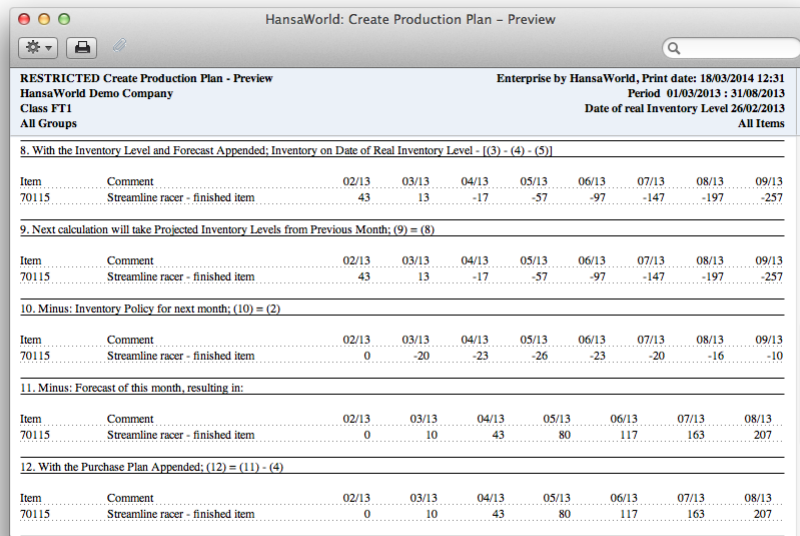
If an Item has no Inventory Policy, this section will repeat the Sales Forecast figures for this Item.

Current Inventory: This section shows the actual inventory level of each Item at the beginning of the report period.

If the inventory level at the beginning of the report period is not known (perhaps you are producing the report ahead of time or you are not up-to-date in entering inventory transactions), when you run the report you need to specify the date when you know the inventory figure to be accurate. The inventory level for the beginning of the report period will be calculated by subtracting the relevant Sales Forecast figure from the actual inventory level, and adding the relevant figures from Production and Purchase Order Plans.

For example, the report period begins on March 1st, and you know that the inventory level figure for an Item is correct as of February 26th. Enter this date as the Date of Real Inventory Level in the report specification window. Extra sections will be inserted in the detailed report above the “Current Inventory” section to display the following calculations. Two days of sales will be estimated from the Sales Forecast record for February, and will be subtracted from the inventory level figure. Two days production will be estimated from the Production Plan record for February and two days Goods Receipts will be estimated from the Purchase Order Plan record for February, and these figures will be added to the inventory level.

With the Inventory Level and Forecast Appended: This section shows the inventory level at the end of the month, calculated by subtracting the Sales Forecast for that month from the inventory level at the beginning of that month.



Enterprise by HansaWorld, Print date: 18/03/2014 12:31
 Period 01/03/2013 : 31/08/2013
 Date of real Inventory Level 26/02/2013
 All Items

8. With the Inventory Level and Forecast Appended; Inventory on Date of Real Inventory Level - [(3) - (4) - (5)]

Item	Comment	02/13	03/13	04/13	05/13	06/13	07/13	08/13	09/13
70115	Streamline racer - finished item	43	13	-17	-57	-97	-147	-197	-257

9. Next calculation will take Projected Inventory Levels from Previous Month; (9) = (8)

Item	Comment	02/13	03/13	04/13	05/13	06/13	07/13	08/13	09/13
70115	Streamline racer - finished item	43	13	-17	-57	-97	-147	-197	-257

10. Minus: Inventory Policy for next month; (10) = (2)

Item	Comment	02/13	03/13	04/13	05/13	06/13	07/13	08/13	09/13
70115	Streamline racer - finished item	0	-20	-23	-26	-23	-20	-16	-10

11. Minus: Forecast of this month, resulting in:

Item	Comment	02/13	03/13	04/13	05/13	06/13	07/13	08/13
70115	Streamline racer - finished item	0	10	43	80	117	163	207

12. With the Purchase Plan Appended; (12) = (11) - (4)

Item	Comment	02/13	03/13	04/13	05/13	06/13	07/13	08/13
70115	Streamline racer - finished item	0	10	43	80	117	163	207

With the Purchase Plan Appended: If there already is an approved Purchase Order Plan for the Item for the month in question, then this section will show the quantity in that Purchase Order Plan subtracted from the previous figure.

This suggests that a subsequent running of the “Create Purchase Order Plan” Maintenance function will create a second Purchase Order Plan for the Item for the month in question, effectively updating the original Purchase Order Plan. In fact, the maintenance routine will mark the original Purchase Order Plan as Closed and will create a new Purchase Order Plan for the entire requirement.

With the Production Plan Appended: This section is similar to the previous one, but applies to existing Production

Plans.Final Results:

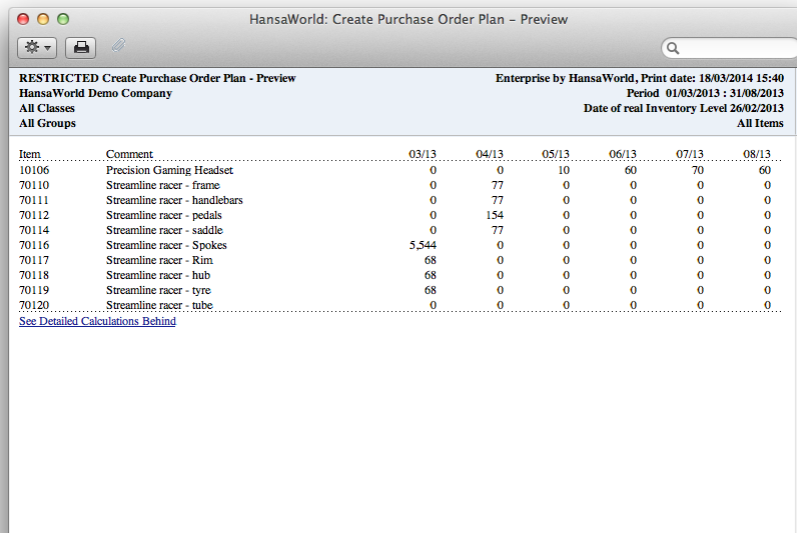
15. 15. Final Results								
Item	Comment	02/13	03/13	04/13	05/13	06/13	07/13	08/13
70115	Streamline racer - finished item	0	7	33	37	37	46	44

This section shows the quantity that you need to produce.

The figures in this section are cumulative. For example, the April figure of 33 includes the March total of 7. When you run the "Create Production Plan" maintenance routine for April, the quantity in the resulting Production Plan will be $33 - 7 = 26$.

Purchase Order Plan Formula

Below is an example of "Create Purchase Order Plan - Preview" report



Enterprise by HansaWorld, Print date: 18/03/2014 15:40
 HansaWorld Demo Company
 Period 01/03/2013 : 31/08/2013
 Date of real Inventory Level 26/02/2013
 All Items

Item	Comment	03/13	04/13	05/13	06/13	07/13	08/13
10106	Precision Gaming Headset	0	0	10	60	70	60
70110	Streamline racer - frame	0	77	0	0	0	0
70111	Streamline racer - handlebars	0	77	0	0	0	0
70112	Streamline racer - pedals	0	154	0	0	0	0
70114	Streamline racer - saddle	0	77	0	0	0	0
70116	Streamline racer - Spokes	5,544	0	0	0	0	0
70117	Streamline racer - Rim	68	0	0	0	0	0
70118	Streamline racer - hub	68	0	0	0	0	0
70119	Streamline racer - tyre	68	0	0	0	0	0
70120	Streamline racer - tube	0	0	0	0	0	0

[See Detailed Calculations Behind](#)

Click the [See Detailed Calculations Behind] text button to see the calculation in detail.

This report is presented in several parts, since is too long does not fit in one single report window.

The sections of the detailed report (from 1 to 15) are presented separately.

In the report itself, it shows the formulae. Find below a more detailed explanation for some of the sections of the formula.

This detailed report is divided into the following sections:

HansaWorld: Create Purchase Order Plan - Preview

RESTRICTED Create Purchase Order Plan - Preview Enterprise by HansaWorld, Print date: 18/03/2014 14:35
HansaWorld Demo Company Period 01/03/2013 : 31/08/2013
All Classes Date of real Inventory Level 26/02/2013
All Groups All Items

Detailed Calculations Step by Step

1. The Forecast Array

Item	Comment	02/13	03/13	04/13	05/13	06/13	07/13	08/13	09/13
10106	Precision Gaming Headset	0	-60	-60	-60	-60	-70	-60	-70
70115	Streamline racer - finished item	0	-60	-30	-40	-40	-50	-50	-60

2. With the Inventory Policy Appended

Item	Comment	02/13	03/13	04/13	05/13	06/13	07/13	08/13	09/13
10106	Precision Gaming Headset	0	0	0	0	0	0	0	0
70115	Streamline racer - finished item	0	-23	-23	-26	-23	-20	-16	-10

3. Forecast 26/02/2013

10106	Precision Gaming Headset	3.57	2,142.85
70115	Streamline racer - finished item	1.42	11,428.57

4. PO Plan 26/02/2013

70110	Streamline racer - frame	3.00
70111	Streamline racer - handlebars	3.00
70112	Streamline racer - pedals	6.00
70114	Streamline racer - saddle	3.00
10106	Precision Gaming Headset	4.00

5. Prod Plan 26/02/2013

70115	Streamline racer - finished item	3.00
70113	Streamline racer - wheels	6.00

6. Forecast plus Production and Purchase Plan (used in the next step) for period 26/02/2013 - 28/02/2013; (6) = (3) + (4) + (5) 26/02/2013

10106	Precision Gaming Headset	-0.00	2,143.00
70115	Streamline racer - finished item	-2.00	11,429.00

7. Current Inventory on 26/02/2013 - Forecast 26/02/2013 until 28/02/2013; (7) = Inventory on Date of Real Inventory Level - (6) 26/02/2013

The Forecast Array (1): This section displays sales forecasts for Items, taken from approved records in the Sales Forecast register. This section includes the month before and the month after the report period.

With the Inventory Policy Appended (2): The Inventory Policies setting contains minimum and maximum inventory levels for each Item, expressed as a number of days worth of sales. This section of the report uses the Inventory Policies setting to calculate the quantity that should remain in inventory at the end of the month. When you produce the report or run the maintenance routine, you will be able to specify whether this calculation will use the minimum or maximum inventory level in the setting. Please refer to the Inventory Policy – Average Sales Per day for details of this calculation.

If an Item has no Inventory Policy, this section will repeat the Sales Forecast figures for the Item.

HansaWorld: Create Purchase Order Plan - Preview

Enterprise by HansaWorld, Print date: 18/03/2014 15:42
HansaWorld Demo Company
Period 01/03/2013 - 31/08/2013
All Classes Date of real Inventory Level 26/02/2013
All Groups All Items

7. Current Inventory on 26/02/2013 3. Forecast 26/02/2013 until 28/02/2013; (7) = Inventory on Date of Real Inventory Level - (6) 26/02/2013

10106	Precision Gaming Headset								93.00
70115	Streamline racer - finished item								43.00

With the Raw Materials needed from the Production Plan appended

Item	Comment	02/13	03/13	04/13	05/13	06/13	07/13	08/13	09/13
10106	Precision Gaming Headset	93	-60	-60	-60	-60	-70	-60	-70
70110	Streamline racer - frame	5	0	-80	0	0	0	0	0
70111	Streamline racer - handlebars	5	0	-80	0	0	0	0	0
70112	Streamline racer - pedals	10	0	-160	0	0	0	0	0
70114	Streamline racer - saddle	5	0	-80	0	0	0	0	0
70115	Streamline racer - finished item	43	-60	-30	-40	-40	-50	-50	-60
70116	Streamline racer - Spokes	216	-5,760	0	0	0	0	0	0
70117	Streamline racer - Rim	92	-160	0	0	0	0	0	0
70118	Streamline racer - hub	92	-160	0	0	0	0	0	0
70119	Streamline racer - tyre	92	-160	0	0	0	0	0	0
70120	Streamline racer - tube	420	-160	0	0	0	0	0	0

8. With the Inventory Level and Forecast Appended; Inventory on Date of Real Inventory Level - [(3) - (4) - (5)]

Item	Comment	02/13	03/13	04/13	05/13	06/13	07/13	08/13	09/13
10106	Precision Gaming Headset	93	33	-27	-87	-147	-217	-277	-347
70110	Streamline racer - frame	5	0	-80	0	0	0	0	0
70111	Streamline racer - handlebars	5	0	-80	0	0	0	0	0
70112	Streamline racer - pedals	10	0	-160	0	0	0	0	0
70114	Streamline racer - saddle	5	0	-80	0	0	0	0	0
70115	Streamline racer - finished item	43	-17	-47	-87	-127	-177	-227	-287
70116	Streamline racer - Spokes	216	-5,544	0	0	0	0	0	0
70117	Streamline racer - Rim	92	-68	0	0	0	0	0	0
70118	Streamline racer - hub	92	-68	0	0	0	0	0	0
70119	Streamline racer - tyre	92	-68	0	0	0	0	0	0
70120	Streamline racer - tube	420	260	0	0	0	0	0	0

Current Inventory: This section shows the actual inventory level of each Item at the beginning of the report period.

If the inventory level at the beginning of the report period is not known (perhaps you are running the report ahead of time or you are not up-to-date in entering inventory transactions), when you run the report you need to specify the date when you know the inventory figure to be accurate. The inventory level for the beginning of the report period will be calculated by subtracting the relevant Sales Forecast figure from the actual inventory level and adding the relevant figures from Production and Purchase Order Plan.

For example, the report period begins on March 1st, and you know that the inventory level figure for an Item is correct as of February 26th. Enter this date as the Date of Real Inventory Level in the report specification window. Extra sections will be inserted in the detailed report above the "Current Inventory" section to display the following calculations. Two days of sales will be estimated from the Sales Forecast record for February, and will be subtracted from the inventory level figure. Two days production will be estimated from the Production Plan record for February and two days of Goods Receipts will be estimated from the Purchase Order Plan record for February, and these figures will be added to the inventory level.

With the Raw Materials needed from the Production Plan appended: If you already have an approved Production Plan for the same period, this section will list the components and quantities that should be purchased to satisfy that Production Plan.

With the Inventory Level and Forecast Appended: This section shows the inventory level at the end of the month, calculated by subtracting the Inventory Policy figure (ANABELA: should be Sales Forecast figure?) for that month from the inventory level at the beginning of that month.

HansaWorld: Create Purchase Order Plan - Preview

RESTRICTED Create Purchase Order Plan - Preview Enterprise by HansaWorld, Print date: 18/03/2014 15:44
HansaWorld Demo Company Period 01/03/2013 : 31/08/2013
All Classes Date of real Inventory Level 26/02/2013
All Groups All Items

12. With the Purchase Plan Appended; (12) = (11) - (4)

Item	Comment	02/13	03/13	04/13	05/13	06/13	07/13	08/13	09/13
10106	Precision Gaming Headset	-97	-97	-50	10	70	140	200	270
70110	Streamline racer - frame	-8	0	77	0	0	0	0	0
70111	Streamline racer - handlebars	-8	0	77	0	0	0	0	0
70112	Streamline racer - pedals	-16	0	154	0	0	0	0	0
70114	Streamline racer - saddle	-8	0	77	0	0	0	0	0
70115	Streamline racer - finished item	-43	40	73	110	147	193	237	287
70116	Streamline racer - Spokes	-216	5,544	0	0	0	0	0	0
70117	Streamline racer - Rim	-92	68	0	0	0	0	0	0
70118	Streamline racer - hub	-92	68	0	0	0	0	0	0
70119	Streamline racer - tyre	-92	68	0	0	0	0	0	0
70120	Streamline racer - tube	-420	-260	0	0	0	0	0	0

13. With the Production Plan Appended; (13) = (12) - (5)

Item	Comment	02/13	03/13	04/13	05/13	06/13	07/13	08/13	09/13
10106	Precision Gaming Headset	-97	-97	-50	10	70	140	200	270
70110	Streamline racer - frame	-8	0	77	0	0	0	0	0
70111	Streamline racer - handlebars	-8	0	77	0	0	0	0	0
70112	Streamline racer - pedals	-16	0	154	0	0	0	0	0
70114	Streamline racer - saddle	-8	0	77	0	0	0	0	0
70115	Streamline racer - finished item	-46	37	70	67	64	110	154	204
70116	Streamline racer - Spokes	-216	5,544	0	0	0	0	0	0
70117	Streamline racer - Rim	-92	68	0	0	0	0	0	0
70118	Streamline racer - hub	-92	68	0	0	0	0	0	0
70119	Streamline racer - tyre	-92	68	0	0	0	0	0	0
70120	Streamline racer - tube	-420	-260	0	0	0	0	0	0

With the Purchase Plan Appended: If there already is an approved Purchase Order Plan for the Item for the month in question, this section will show the quantity in that Purchase Order Plan subtracted from the previous figure.

This suggests that a subsequent running of the "Create Purchase Order Plan" Maintenance function will create a second Purchase Order Plan for the Item for the month in question, effectively updating the original Purchase Order Plan. In fact the maintenance routine will mark the original Purchase Order Plan as Closed and will create a new Purchase Order Plan for the entire requirement.

With the Production Plan Appended: This section is similar to the previous one, but applies to existing Production Plans.

HansaWorld: Create Purchase Order Plan - Preview

RESTRICTED Create Purchase Order Plan - Preview Enterprise by HansaWorld, Print date: 18/03/2014 15:44
HansaWorld Demo Company Period 01/03/2013 : 31/08/2013
All Classes Date of real Inventory Level 26/02/2013
All Groups All Items

14. But first appending assumed correct monthly plans

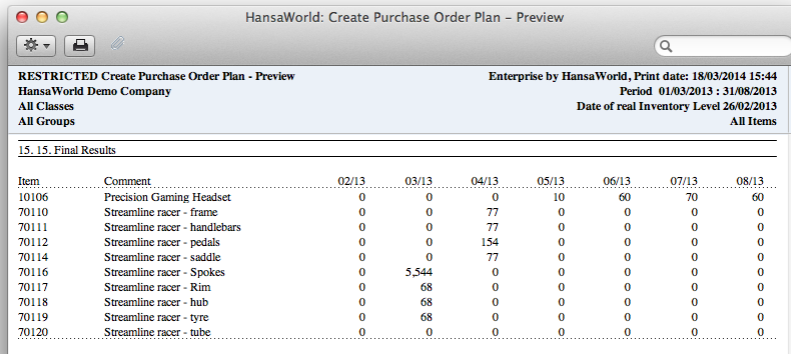
Item	Comment	02/13	03/13	04/13	05/13	06/13	07/13	08/13	09/13
10106	Precision Gaming Headset	-97	0	0	10	60	70	60	70
70110	Streamline racer - frame	-8	0	77	0	0	0	0	0
70111	Streamline racer - handlebars	-8	0	77	0	0	0	0	0
70112	Streamline racer - pedals	-16	0	154	0	0	0	0	0
70114	Streamline racer - saddle	-8	0	77	0	0	0	0	0
70115	Streamline racer - finished item	-46	37	33	-3	-3	46	44	50
70116	Streamline racer - Spokes	-216	5,544	0	0	0	0	0	0
70117	Streamline racer - Rim	-92	68	0	0	0	0	0	0
70118	Streamline racer - hub	-92	68	0	0	0	0	0	0
70119	Streamline racer - tyre	-92	68	0	0	0	0	0	0
70120	Streamline racer - tube	-420	0	0	0	0	0	0	0

After existing Purchase Orders

Item	Comment	02/13	03/13	04/13	05/13	06/13	07/13	08/13	09/13
10106	Precision Gaming Headset	-97	0	0	10	60	70	60	70
70110	Streamline racer - frame	-8	0	77	0	0	0	0	0
70111	Streamline racer - handlebars	-8	0	77	0	0	0	0	0
70112	Streamline racer - pedals	-16	0	154	0	0	0	0	0
70114	Streamline racer - saddle	-8	0	77	0	0	0	0	0
70115	Streamline racer - finished item	-46	37	33	-3	-3	46	44	50
70116	Streamline racer - Spokes	-216	5,544	0	0	0	0	0	0
70117	Streamline racer - Rim	-92	68	0	0	0	0	0	0
70118	Streamline racer - hub	-92	68	0	0	0	0	0	0
70119	Streamline racer - tyre	-92	68	0	0	0	0	0	0
70120	Streamline racer - tube	-420	0	0	0	0	0	0	0

Existing Purchase Orders: If there already are Purchase Orders for the Item with Planned Delivery Dates that fall in the month in question, this section will show the quantity in those Purchase Orders subtracted from the previous figure.

Final Results:



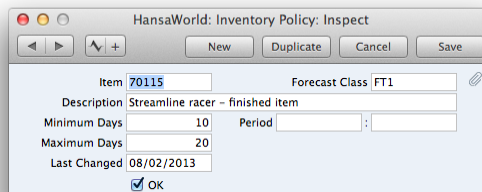
Item	Comment	02/13	03/13	04/13	05/13	06/13	07/13	08/13
10106	Precision Gaming Headset	0	0	0	10	60	70	60
70110	Streamline racer - frame	0	0	77	0	0	0	0
70111	Streamline racer - handlebars	0	0	77	0	0	0	0
70112	Streamline racer - pedals	0	0	154	0	0	0	0
70114	Streamline racer - saddle	0	0	77	0	0	0	0
70116	Streamline racer - Spokes	0	5,544	0	0	0	0	0
70117	Streamline racer - Rim	0	68	0	0	0	0	0
70118	Streamline racer - hub	0	68	0	0	0	0	0
70119	Streamline racer - tyre	0	68	0	0	0	0	0
70120	Streamline racer - tube	0	0	0	0	0	0	0

This section shows the quantity that you need to purchase.

The figures in this section are cumulative. For example, the June figure of 60 for Item 10106 includes the May total of 10. When you run the "Create Production Plan" maintenance routine for June, the quantity in the resulting Production Plan will be $60 - 10 = 50$.

Inventory Policy - Average Sales per Day

The Inventory Policies setting allows you to specify minimum and maximum inventory levels for each Item, expressed as a number of days worth of sales. In the example illustrated below, we have specified that we want to keep ten days worth of sales in inventory



Item: **70115** Forecast Class: **FT1**

Description: Streamline racer - finished item

Minimum Days: **10** Period: [] : []

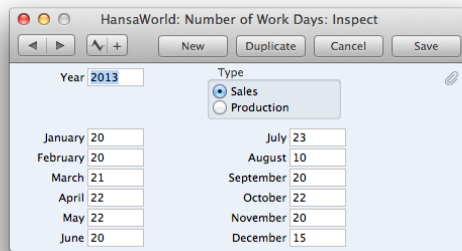
Maximum Days: **20**

Last Changed: **08/02/2013**

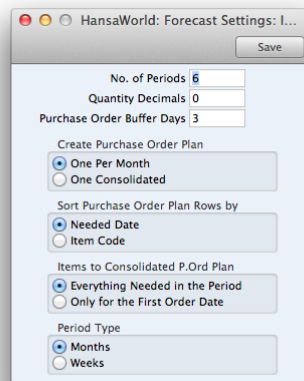
OK

Calculating the quantity you will sell in ten days requires the following information:

1. The Sales Forecast for the Item
2. The Number of Work Days setting should contain the number of sales days in each month.



3. The Forecast Settings should contain the number of months that you want to be used in the calculation.



In this example, the Number of Months is six. This means that the estimated sales per day will be calculated using the sales forecasts for the next six months. The formula is:

Forecast + Forecast + ... Forecast

$\frac{\text{Month 1} + \text{Month 2} + \dots + \text{Month } n}{\text{Days in } + \dots + \text{Days in}}$ x Inventory Policy

Days in + Days in + ... Days in

Month 1 Month 2 Month n

where n is the Number of Months.

As per our example, we need to keep sufficient inventory for ten days worth of sales. The following formula will calculate this figure for March for Item 70115

$$\frac{60 + 45 + 40 + 40 + 50 + 50}{21 + 22 + 22 + 20 + 23 + 10} \times 10$$

$$21 + 22 + 22 + 20 + 23 + 10$$

Estimated sales per day therefore is 2,41, so ten days sales will be 24, rounded to the nearest whole number.

When making the calculation, you will be able to choose whether to use the minimum or the maximum inventory level, or to ignore the Inventory Policy setting and base the calculation on the Sales Forecast alone.

A large Number of Months figure will result in an average sales per day figure that is relatively unaffected by seasonal variations. However, specifying a large Number of Months figure will mean that you should ensure that you have Sales Forecasts for at least that number of months ahead of your reporting periods, to maintain accuracy in the calculation. For example, if a report covers the period from March to August and the Number of Months is six, this requires you to enter Sales Forecasts until February the following year, at least six months ahead. The Number of Work Days setting should also have entries at least until February the following year. If you only have Sales Forecasts until December, the average sales per day figure will not be correct because it will be calculated by dividing four months Sales Forecast figures by six months sales days.

APPENDIX

Terminology between different versions of English language

The language used in this material is American English. There can be slight differences between other versions of the English language, which can lead to confusions. This table should help to clear these up. Sorted alphabetically

British	USA	Canada	Australia + New Zealand	Singapore
Cheque	Check	Cheque	Cheque	Cheque
Colour/coloured	Color/colored	Colour/coloured	Colour/coloured	Colour/coloured
Credit Note(CN)	Credit Memo (CN)	Credit Memo (CM)	Credit Note (CN)	Credit Note
Dialogue	Dialog			
Instalment	Installment			
Jewellery	Jewelry	Jewellery	Jewellery	Jewellery
Licence (noun)	License	Licence	Licence	Licence
Mileage Claim	Miles	Way Lists	Mileage Claim	Mileage Claim
Miles	Miles	KM	KM	KM
Mobile	Cell	Mobile	Mobile	Mobile
Nominal Ledger (NL)	General Ledger (GL)	General Ledger (GL)	General Ledger (GL)	General Ledger (GL)
Post Code	ZIP Code	Post Code	Post Code	Post Code
Profit and Loss Statement	Income Statement	Income Statement	Statement of Profit or Loss	Statement of Profit or Loss
Purchase Ledger	Payable (PL = AP)	Payable (PL = AP)	Purchase Ledger	Purchase Ledger
Sales Ledger	Receivable (SL=AR)	Receivable (SL=AR)	Sales Ledger	Sales Ledger
Salesman	Salesperson	Salesperson	Salesman	Salesperson
Stock	Inventory	Inventory	Stock	Inventory
Stocktake	Inventory Count	Inventory Count	Stocktake	Inventory Count
Stock Depreciation	Inventory Adjustment	Inventory Adjustment	Stock Depreciation	Inventory Adjustment
Supplier	Vendor	Vendor	Supplier	Vendor
Turnover	Revenue	Revenue	Revenue	Revenue
VAT	Sales Tax or Tax	Tax (or GST/PST)	GST	GST/SST/HST