AMOS Business Suite

Version 10.3.00

M&P User Guide

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Your AMOS Support Network

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CHAPTER 1

Maintenance

Maintenance information in AMOS is organised according to your physical installation: the ship, assembly line or plant. With AMOS you can plan, schedule, carry out and report the maintenance work at your installation.

This chapter includes the following topics:

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Component Types

A Component Type[1] is like a general template for all the individual components eventually created from it. Once a new Component based on a type is registered at a site, it inherits information from the Component Type window. Each individual component record created from a type can be modified to apply to a specific component in use at an installation.

You can define new component types as needed. A component type record is not complete until you add other information to it, like:

- Jobs to be performed on the component type
- Parts which make up the component type
- Counters and measure points linked to the component type

Remember that you can also visualise and work with component types in the **Maintenance > Component Types Hierarchy** window.

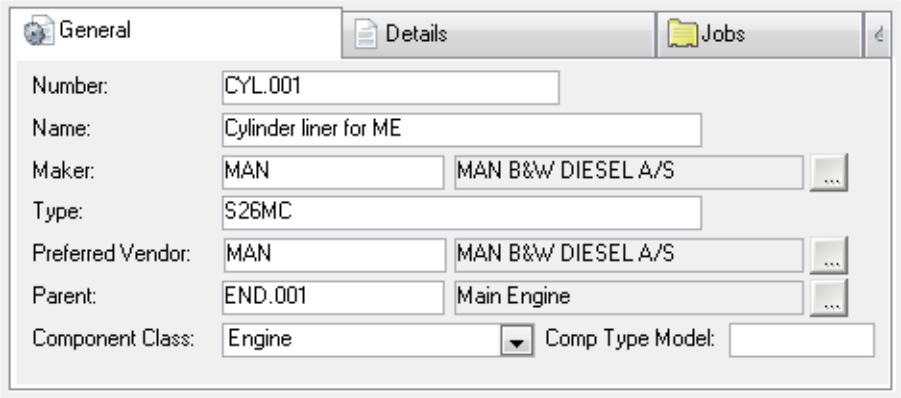
Defining a Component Type

You can define new component types as needed:

1. Go to **Maintenance > Component Types**. Click **Filter** or **New** in the filter to go straight to the window.
2. Click the **New** button in the toolbar.
3. Enter a unique **Number** and **Name** for the component type. These are used to look up the type information later on in the Component window.

   EXAMPLE

   CYL.001, Cylinder Liner for ME

   When components of the type called Cylinder Liner for ME are registered, each one will be assigned a unique number to differentiate it from other instances of the same type: CYL.001.001, CYL.001.002, etc.

4. Enter the other information on the General tab and **Save** the record.

Maker	Manufacturer of this particular type. Once selected, address and other details become available at **Options > Maker**.

[1] To use the Component Type functionality in AMOS, set the 'Use Component Types' parameter to TRUE.

Preferred Vendor	Vendor you buy this type of component from. Once selected, address and other details become available at **Options > Preferred Vendor**.
Parent	If the component type belongs to another component type, set a parent component to organise a hierarchy. Example: 'Main Engine' is the parent component type to another engine.
Component Class	Component classes are a way of grouping components. Example: classify groups of machinery like Diesel Motors, or group everything belonging to the Main Engine.

Working with Component Types

Here are some more tasks and information related to creating new component types.

Copying a Component Type

If you need a new component type and a similar one already exists, you can copy the existing component type and then make minor changes like entering a new number. To copy an existing component type:

1. Select the component type to copy.
2. Go to **Options > Copy**.
3. Select the items in the original record to duplicate, and enter a new **Component Type number**.
4. Click **OK** to return to the main window.
5. **Save** the new component type.

Component Type Jobs

Click the **New** and **View** buttons in the Jobs tab to open the Component Type Jobs window. When you add or change jobs in the Component Type Jobs window, AMOS will ask if you want to apply the details to all existing components of the type.

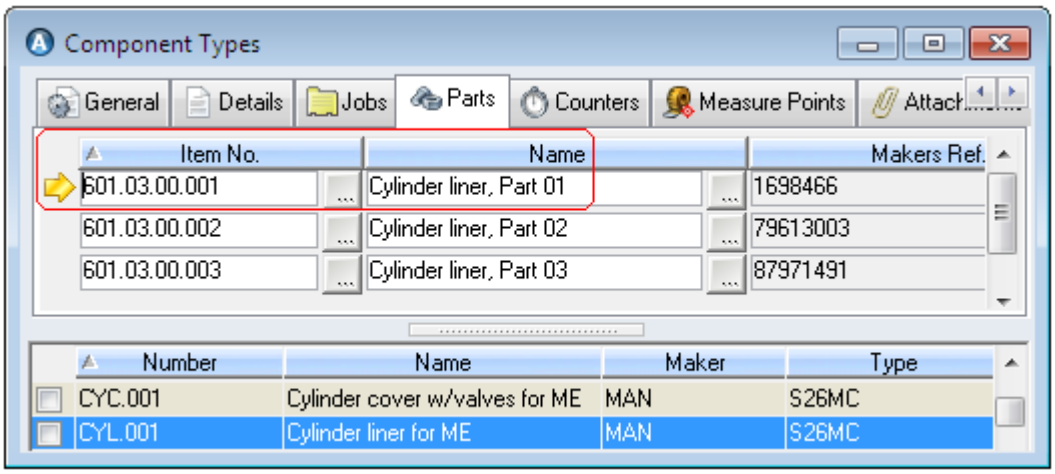
Component Type Parts

A component type is made up of parts - that is, stock items.

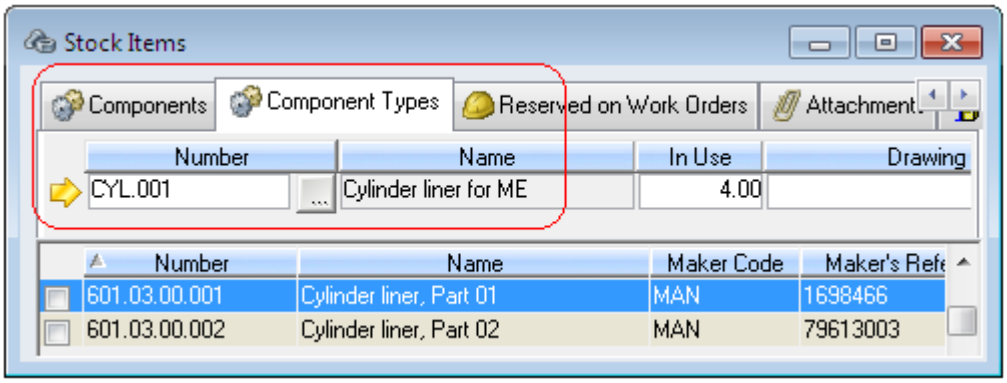
1. Click the **New** button in the Parts tab to add a part.
2. Select a line and click the **View** button to open the Stock Type window for that part.
3. Click the **Add. Info** button to open a Details window.
4. Click **Copy List** to copy the listed parts[1] and then paste them to another program like Word or Notepad, etc.

In the Components Types window shown below stock item 601.03.00.001 is a part of component type CYL.001:

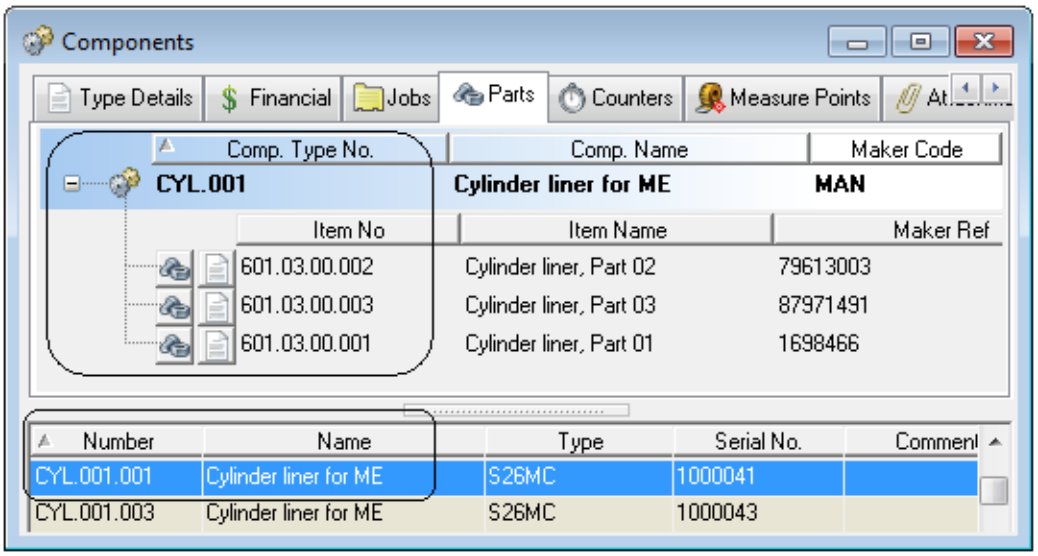
[1] Selecting 'Copy List' from the Edit menu copies all columns and values from the list part of the window. Clicking the Copy List button only copies the contents of the Parts tab.



In the Stock Items window, you'll see the component type(s) a stock item is a part of. In the illustration below, component type CYL.001 appears in the tab for stock item 601.03.00.001:



If two different stock items can be used interchangeably in the same component type, add the alternate part's number to the **Alternative No.** field. When you create a component from a type, the component will inherit parts and alternatives from the type:



Component Type Counters/Measure Points

Click the **New** button in the Counters/Measure Points tabs to link counters and measure points to a component type. These can be inherited onto components.

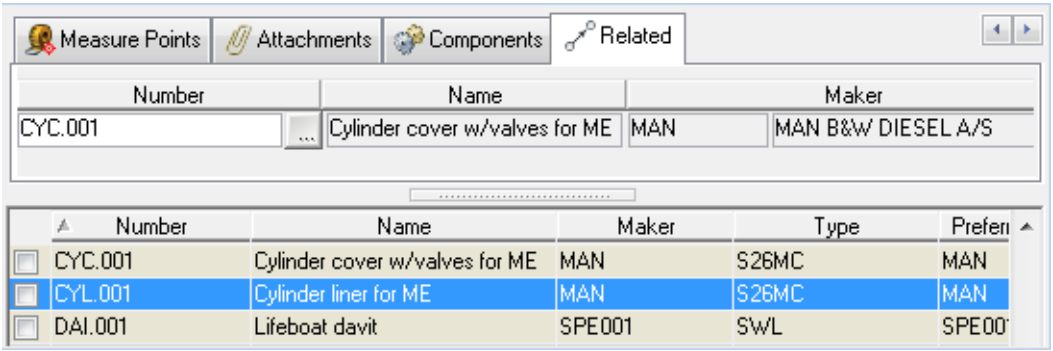
When you define a new counter[1]/measure point[2] here you can enter some basic starting information with it. Updates are made in the Components window (depending on access) or directly in the Update windows.

Counters and measure points are only available for selection on component/type jobs if they have been listed on the component/type itself, first.

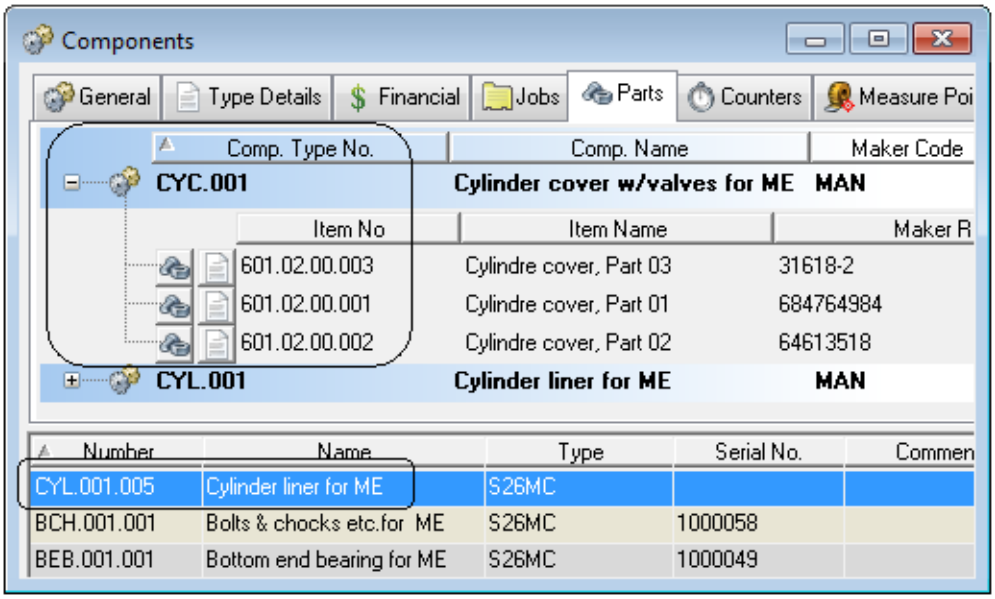
See "Scheduling Jobs" on page 47 for more information.

Related Component Types

Select a component type and list any other types it is 'related to' in the Related tab. In the illustration below, CYC.001 is related to CYL.001:



When you create a component from this component type, the related types (and their parts) are inherited. In the illustration below, CYL.001 has been registered as a component at an installation. The related type CYC.001 appears in the Parts tab:



[1]Setting an Average or flagging Calculate Average on Component Type level counters can be applied to all related component counters, and can also be changed on Component level, it is possible to use the standard method, calculating the average from the start dateor the extended one where it is possible to customize it modifying the DB function "GetAverageCountRateExtended"

[2]The Operational Values - Unit, and Set/Min/Max Values - defined on Component Type level measure points can be applied to all related component measure points, and can also be changed on Component/Job level.

Creating a Component from a Component Type

There are two ways to create a component from a component type:

Register a component type as a component, from the Component Types window. This causes the component to inherit ALL registered type information including jobs, counters and measure points. Manually add individual details such as number, serial no., location etc.

See "Registering a Component Type as a Component" below.

OR

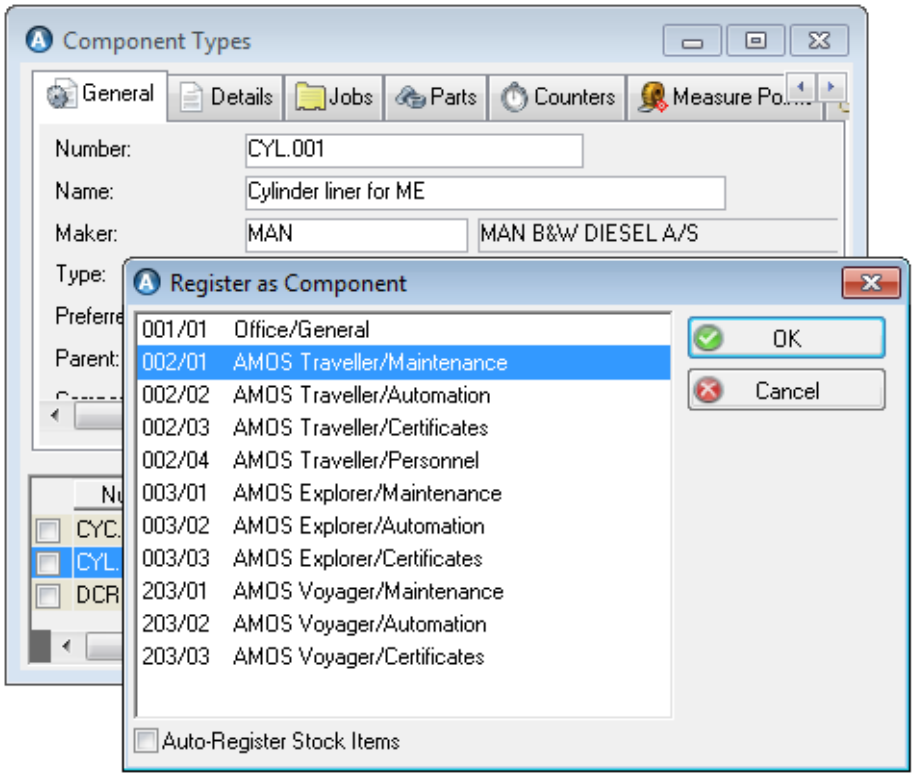
Create a new record directly in the Components window. This ONLY inherits the General tab and Related/Parts tab information from the type. Manually edit the information where necessary and add the remaining details.

See "Creating Components in the Components Window" on page 8.

Registering a Component Type as a Component

Registering a component type as a component at an installation from the Component Types window transfers all of the component type's details to the new component record:

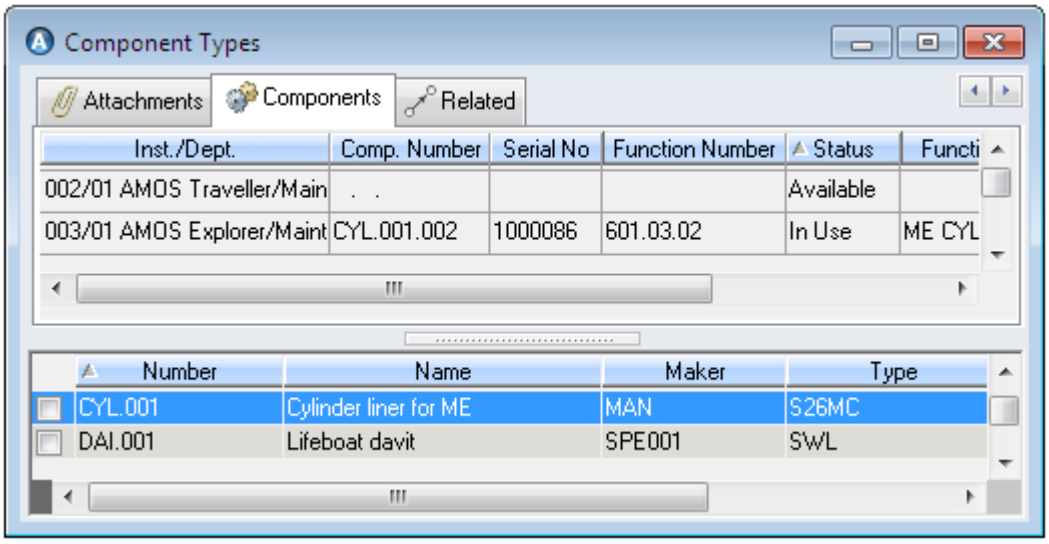
1. Go to **Maintenance > Component Types**. Select a component type in the window.
2. Go to **Options > Register as Component**.
3. Select an installation/department to register the type at:



> **T i p**
>
> Hold the **CTRL** key and click in the list to select multiple installations/departments to register the component at in one go.

If you flag the **Auto-Register Stock Items** box, stock items tied to the type which are not already defined at an installation will be added at the same time as the component registration.

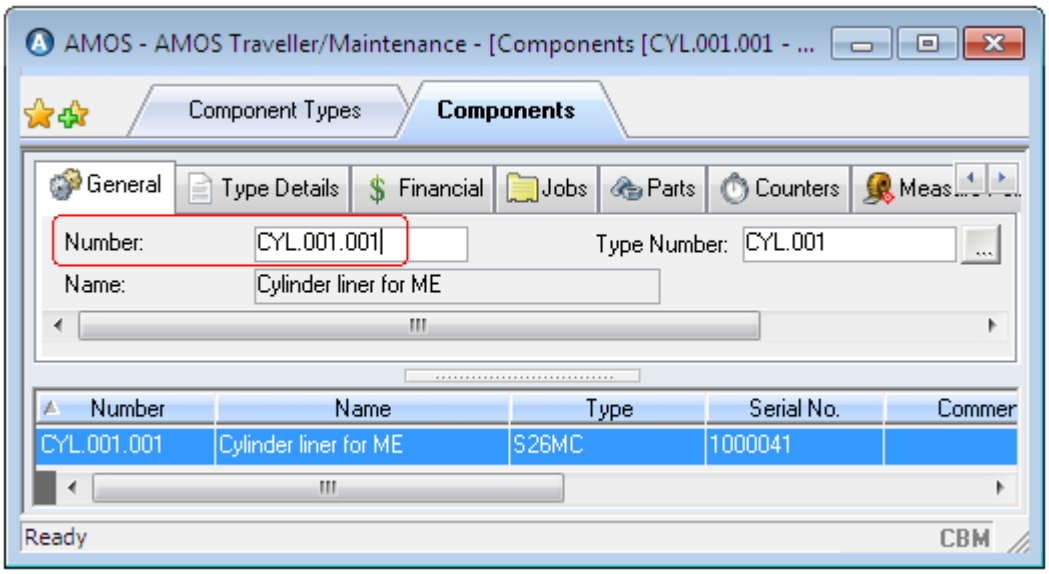
4. Click **OK** to return to the Component Types window.
5. Go to **Edit > Refresh** or press **F5** and then open the Components tab. The installation you've just registered the component at is now listed in this tab:



The remaining details in this tab will be updated later, once they have been added in the Component window. When the component is installed on a function the **Function** and **Status** fields here will also change .

The new record(s) you've created will be available in the Components window for the selected installation(s).

6. Go to **Maintenance > Components** or double-click on the line in the Components tab to open the Components window.
7. Enter a unique number for each instance of the component. The illustration below shows the newly registered component in the Components window, with a unique **Number** assigned:



Edit the component wherever necessary to tailor it to the individual installation and use - for example, add jobs specific to this particular component only, etc.

8. **Save** the changes.

Components

A component is any physical unit that you will perform a maintenance job on. A component may be made up of other smaller components. At the lowest level components have parts- a part is the smallest physical unit that you would normally replace at one time.

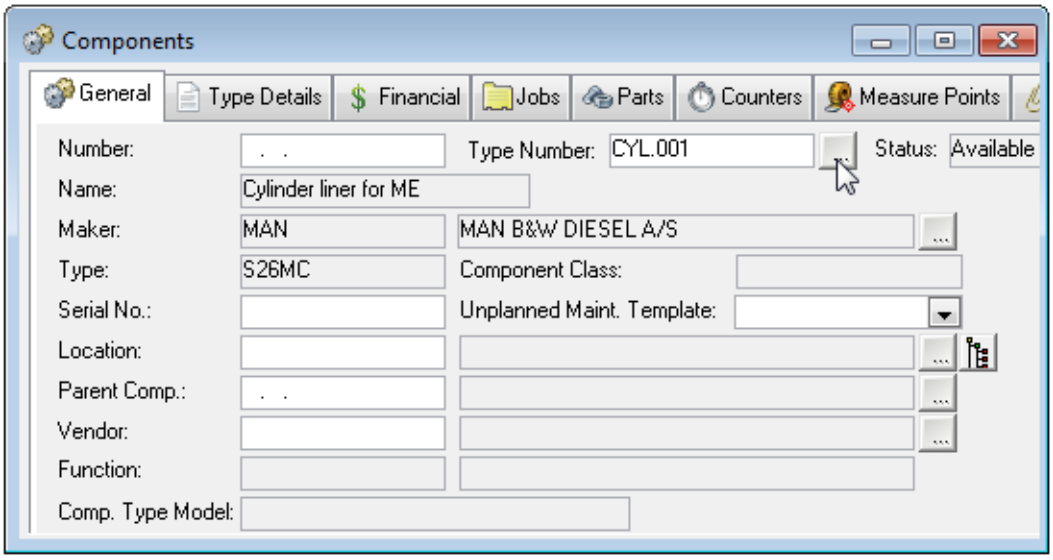
Over time as components are installed on functions, various jobs are assigned, work orders carried out and reported on, and history created, the related information will be stored and updated in the Components window.

Remember that you can also visualise and work with components in the **Maintenance > Components Hierarchy** window.

Creating Components in the Components Window

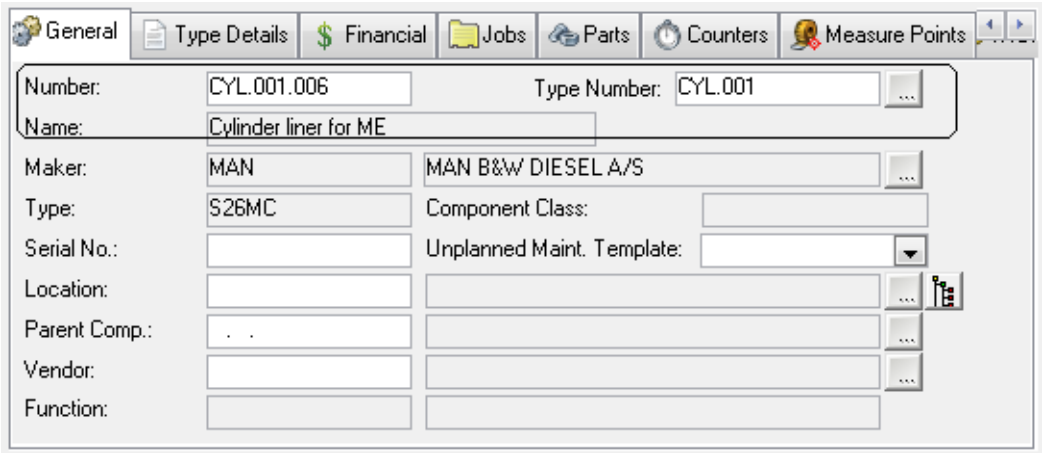
You can create new components in the Components window as needed; or, if a similar component already exists and all you want to do is make a minor change like enter a new number, you can copy the existing component. Your new component will inherit certain details belonging to the component type it is based on.

1. Go to **Maintenance > Components**.
2. Click **New** and on the General tab select a **Type Number**:



   Only the General tab and Related/Parts tab information will be inherited from the component type. Basic details will appear such as **Name** and **Maker**.

3. Enter a unique **Number** and **Serial No.** for this component:



4. **Save** the record.

Copying an Existing Component

1. Open the Components window and select the component to copy.
2. Go to **Options > Copy**. The Copy Component dialog opens.
3. Select the items in the original record to duplicate, and enter a new and unique **Component Number**.
4. Click **OK** to return to the main window and view the duplicated record.
5. You can make changes to the copied component like for any other new record - add jobs, parts, etc. - and **Save** the new component.

Component Status

A component's **Status** is indicated on the General tab: the status is set to 'In Use' when the component has been installed on a function or 'Available' if it has not been installed.

To change the status of a component, go to **Options > Change Status**. Check the 'Change status of sub-components also' checkbox to automatically change the status when the status of the parent component is changed.

If you change a component's status to 'Transferred' and a quantity of any item(s) listed in the Stock Wanted window was required for that component, AMOS will prompt you to choose to:

- keep the required item and its quantity in the list, and remove the reference to the transferred component, or
- clear the required quantity, and remove the reference to the transferred component.

All changes to a component's status are automatically logged: go to **Options > Component Status Log** for a selected component's status changes, or go to **Maintenance > Component Status Log** to see status changes for all components.

Component Locations

Installing a component on a function changes the component's **Location** to match the function's location. Changes to the function location update the component location. Select a component and open the **Functions Performed** tab to see a record of all functions the component has been installed on/removed from.

If the component is currently installed on a function, you can see the function field details in the read-only **Function Performing** tab.

Component Archives

Access three different kinds of archive information on components transferred in from other departments (if the parameter Create Component Archive on Transfer In is set to TRUE) at **Options > Archive >** . The

three Archive windows contain historical data from departments that previously owned the particular component. The windows are read only and show which department created each record.

Component Counters

The Counters tab in the Components window may already contain counters from the component type. You can change this inherited information, and you can add other counters directly to the tab.

Adding or changing counters in the Components window only applies to the selected component - these changes will not affect the component type or any other components of the same type.

Select a component and use the **New** and **Delete** buttons in the Counters tab to add or remove counters. Counters are only available for selection on component/type jobs if they have been listed on the component/type itself, first.

See "Scheduling Jobs" on page 47 for information about how AMOS uses counters to schedule maintenance.

See "Update Counters in the Components Window" on page 175 for information about updating counters from the Components window Counters tab.

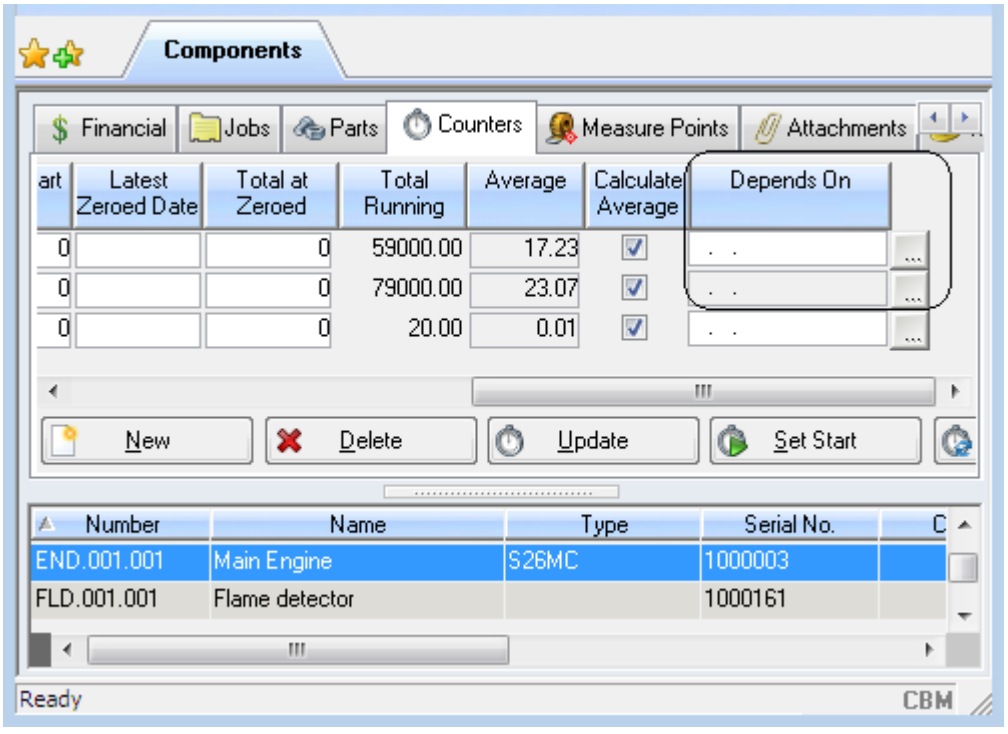
Counters Dependent on Other Components' Counters

Some components may be dependent on other components' running times.

> **EXAMPLE**
>
> An engine has 10 pistons, each piston will run for the same amount of time as the others, and all will run for the same amount of time as the engine in which they are fitted. It would be a waste of time to have to update each piston counter separately. The piston counter fields can therefore be linked to the counter field for the engine by entering the engine's component number in the Depends On field at the right side of the Components window Counters tab.

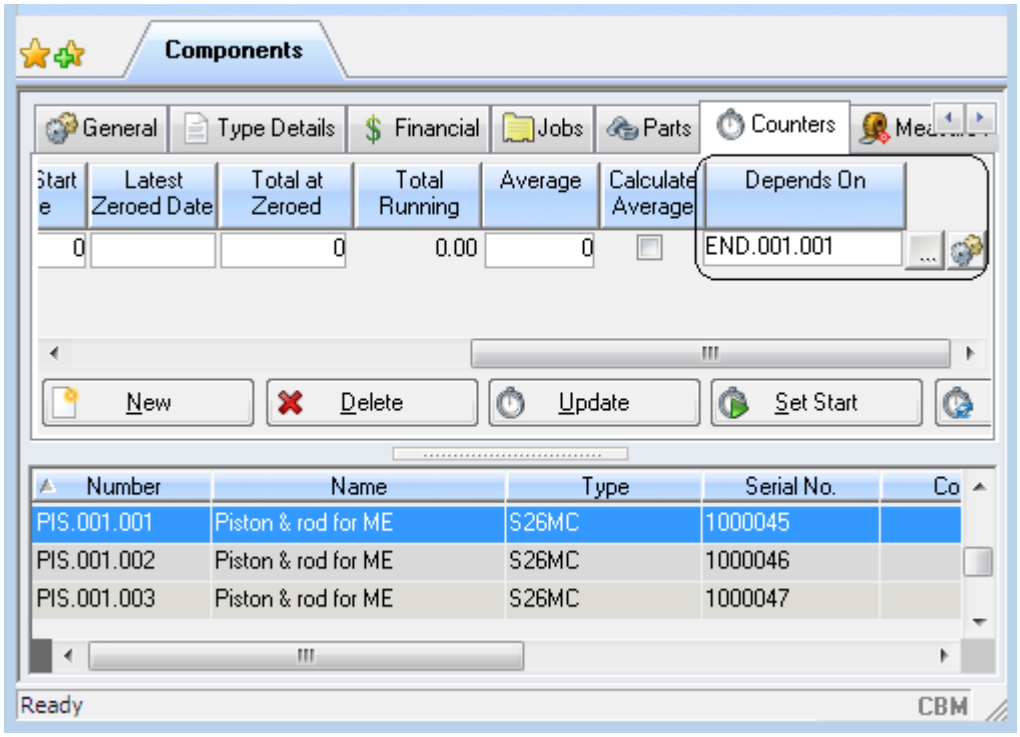
To view a counter dependency:

Go to **Maintenance > Components** to open the Components window. Select a component that is likely to include other components, like the Main Engine, and open the Counters tab:



Notice the **Depends On** field towards the right of the upper part of the tab. As the engine is the 'mother' component for all its parts, the engine's counter does not depend on anything else. Also, the **Date Read** field will include the date the counter was last updated.

Select one of the main engine pistons in the list and open the Counters tab:



Note the **Depends On** field; this part depends for its counter on the main engine. Its current value will be incremented by the same amount and the **Date Read** value will be inherited from that of the main engine.

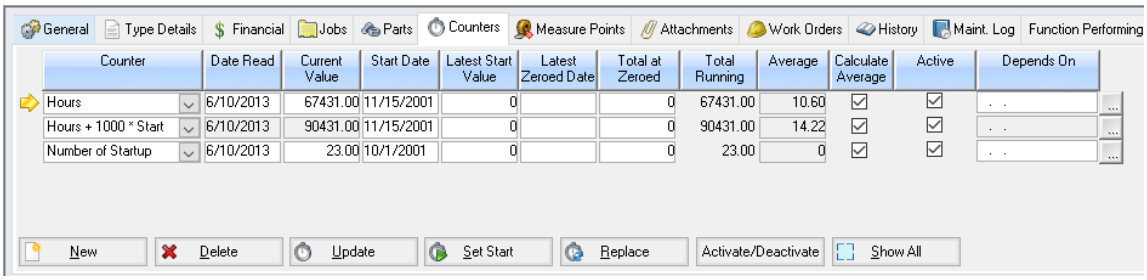
Click the  to go back to the Counters tab for the Main Engine which this part depends on.

Note: To change the values on this counter directly from the Components window Counters tab (i.e. independently of the main engine counter it depends on), you need to have access to Counters; Update/Set Start - Counters with Dependency.

Counters Deactivation/Reactivation

It could be necessary to define that a Component Counter (same for Measure Point) is no longer Active, in order to hide but preserving all historical information and references the Counter or Measure Point might have.

Go to **Maintenance > Components** to open the Components window and move to the Counters tab: where you get **Activation/Deactivation** button



Deactivation

1. Select the Counter and Clicking **Activate / Deactivate** Button
2. If Counter has dependencies the following message appears



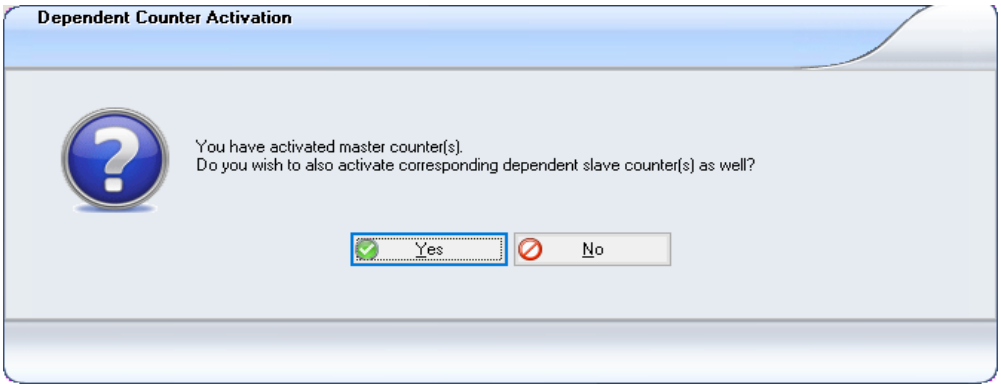
3. Click OK
4. The Counter disappears from the tab as well as it is deactivated.

The Deactivation of the counter automatically deactivate the counter in the Jobs based on that counter, although the Job is still Active.

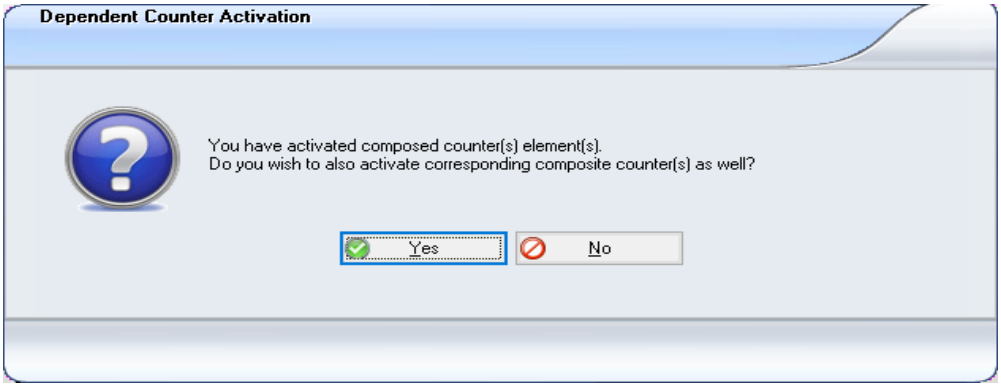
This mean that the status of eventually work orders triggered by that deactivated counter changes to **Cancelled**

Activation

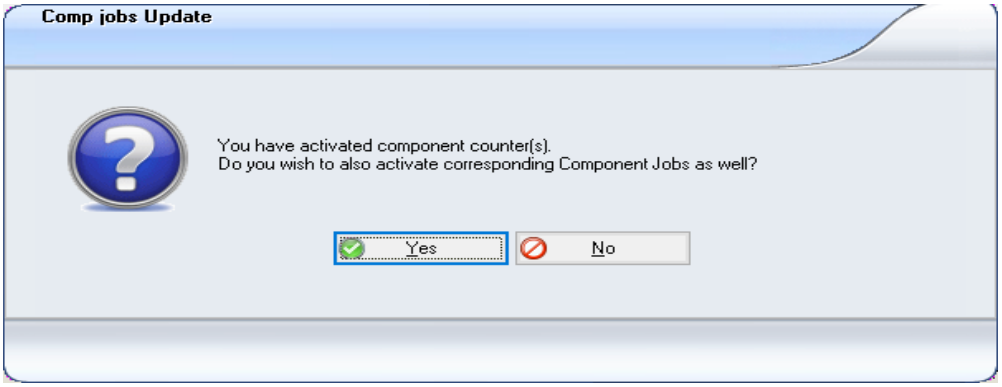
1. To reactivate a deactivated counter, click**Show All** Button and it appears greyed out
2. Select the Counter and click on **Activate / Deactivate** Button
3. If Counter has dependent slaves, the system proposes to reactivate also those ones



4. If Counter has connected Composite Counters, the system proposes to reactivate also those ones



5. If counters have connected Jobs, the system proposes to reactivate those as well.



System reactivate only the deactivated counter on the Component Jobs based counter and don't reactivate a NON-Active Component Job based counter.

Component Measure Points

The Measure Points tab in the Components window may already contain measure points from the Component Type. You can change this inherited information, and you can add other measure points directly to the tab.

Adding or changing measure points in the Components window only applies to the selected component - these changes will not affect the component type or any other components of the same type. Select a component and use the **New** and **Delete** buttons in the Measure Points tab to add or remove measure points.

Measure points are only available for selection on component/type jobs if they have been listed on the component/type itself, first.

See "Scheduling Jobs" on page 47 for information about how AMOS uses measure points to schedule maintenance.

Functions

Components move around, but functions do not.

> **EXAMPLE**
>
> In a 6-cylinder internal combustion engine, Piston 3 is a function. There can also be a component called piston 3 - today. However, that physical component may be taken out, cleaned and put back into the piston 4 position, and the component name then becomes piston 4.

When you define a new function or install/remove a component, etc., in the Functions window the same information appears in the Functions Hierarchy (**Maintenance > Functions Hierarchy**) also, and vice versa. The Functions Hierarchy window also contains all the information belonging to the component installed on each function.

Working with Functions

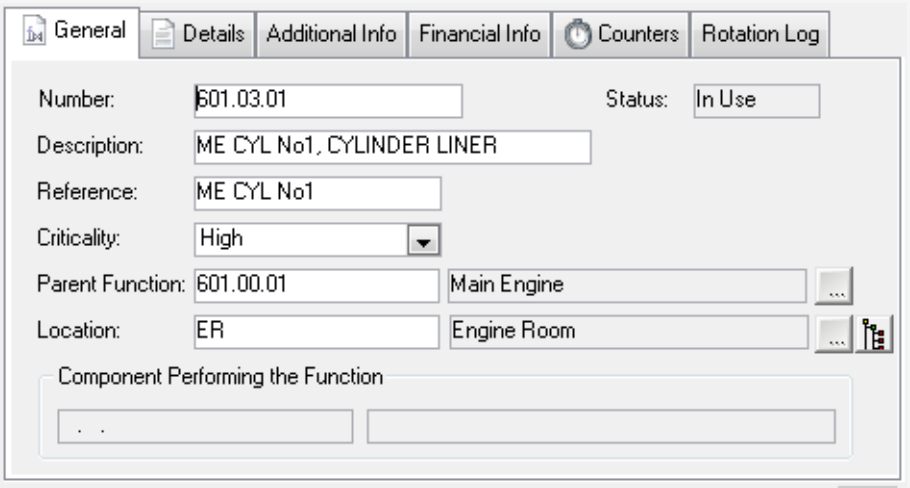
Use the Functions window or the Functions Hierarchy window to create and maintain a list of all Functions at an installation. Then, install and remove components as necessary.

Creating a New Function

To create a new function in the Functions window:

1. Go to **Maintenance > Functions**. Click **Filter** in the filter.
2. Click **New** on the Functions window toolbar.
3. Enter a **Number** and **Description** for the function.

   The **Status** shown on the window is the function's status. The status of any component installed on the function is shown in the Component window.
4. Use the **Parent Function** lookup to create a hierarchy - select another function which this one falls under.

> **EXAMPLE**
>
> The function Main Engine is a parent to the function ME CYL No1, Cylinder Liner:
>
> 
>

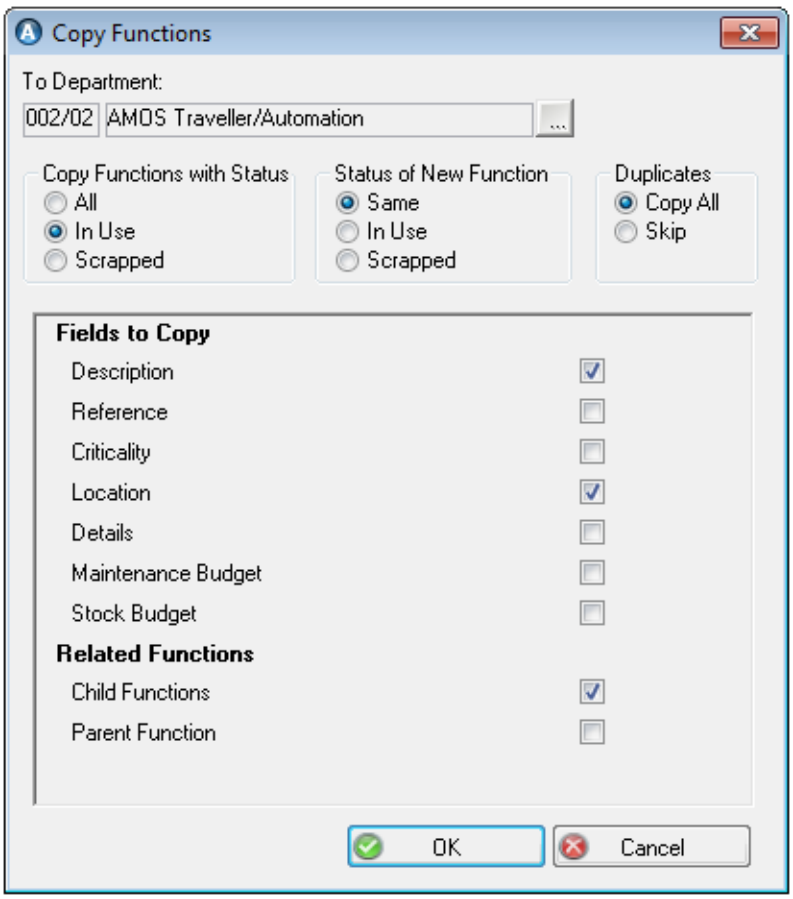
> **Tip**
>
> Parent and sub functions are easily viewed in the Functions Hierarchy window where they are displayed in folders forming a tree structure. Information about the selected function appears in the top right side of the window and all the information from the Components window about the component installed in the selected function appears in the window's tabs. Select **Options > Toggle Numbers** to hide/display function numbers in the hierarchy.

5. Use the lookup to set the function's **Location**.
6. **Save** the function.

Copying Functions to Other Departments

To copy an existing function from one department to another:

1. Go to **Options > Copy Functions**. Lookup the **Department** to copy to.



2. Choose the functions to copy: **All** of them, or only those which are **In Use** or **Scrapped**.
3. Set the status to apply to all new functions resulting from the copy: **Same** as the original, **In Use**, or **Scrapped**.
4. Flag the information you want copied with each function.

   Note the options **Child Functions** and **Parent Function**. Flagging either or both will include any child or parent functions of the function(s) being copied, in the copying action. It means that some duplicates could be created.

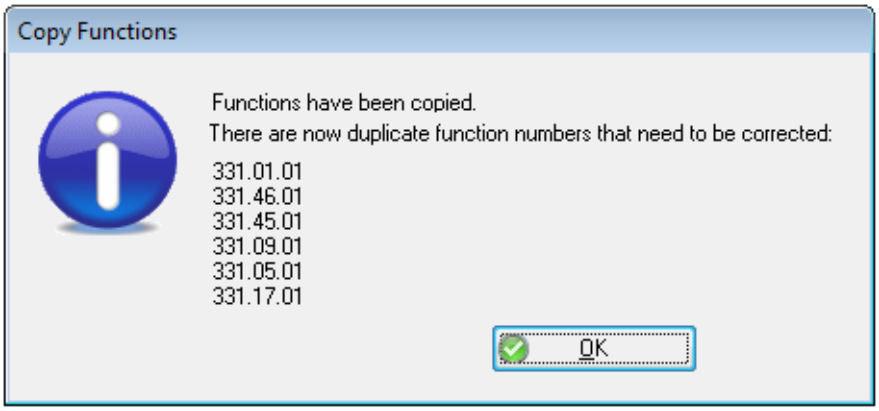
5. Click **OK**. Switch departments and open the Functions window to see the new records.

Copying Functions - Handling Duplicate Function Numbers

It is possible the number on any of the functions you are copying might already exist in the destination department. AMOS will follow the setting you select in the **Duplicates** section of the dialog:

- **Copy All** regardless of any resulting duplicated number(s). You can also choose to include referenced parent and child functions in the copy action. This might result in duplicated numbers.
- **Skip** duplicates. They will not be copied. If you choose skip, you cannot include any referenced parent and child functions in the copy action.

When copying functions results in duplicated function numbers at the destination department, AMOS will present a list of these duplicates and prompt you to change them:



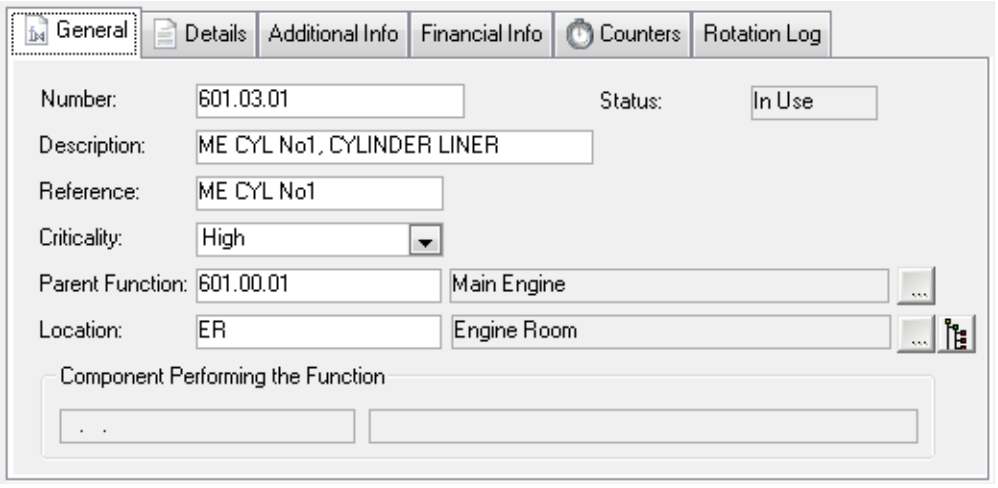
Changing Function Status

When a function is no longer required you cannot simply delete it in case it has any history or rotations associated with it. Instead, you can set a status on an empty function itself, in the same way as you can set a status on a component. You cannot change the status on a function which currently has a component installed on it.

> **EXAMPLE**
>
> To stop an obsolete function appearing in the Functions window or Hierarchy, set the function's status to scrapped.

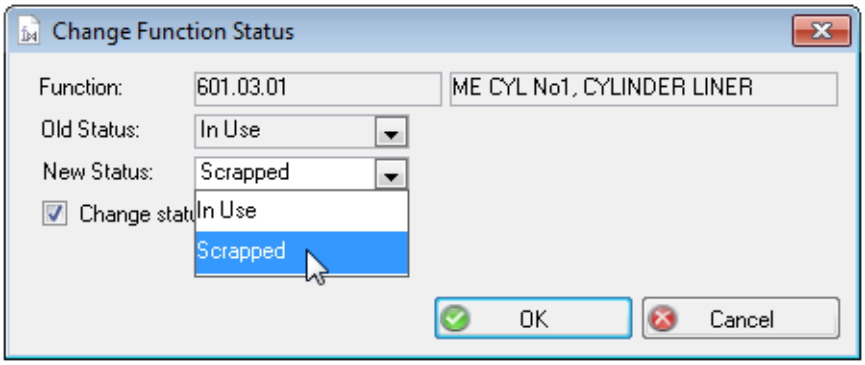
To change status on a function:

1. Open the Functions window or the Function Hierarchy.
2. Select an empty function:

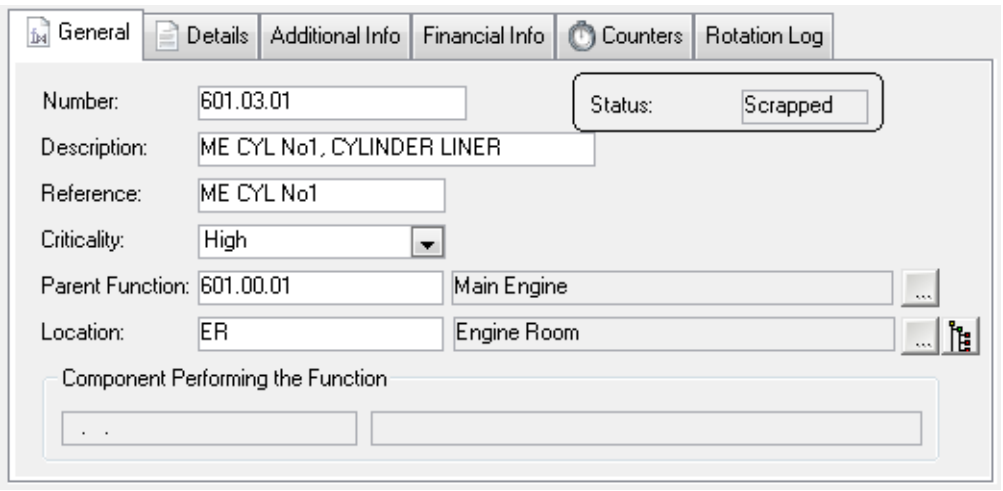


In the illustration above, no component is installed on the function, and the function status is currently 'In Use'.

3. Go to **Options > Change Status**. In the dialog that opens, select a **New Status**:



4. If the function you selected has any sub-functions, either:
   - manually move the sub-functions before changing the parent function's status; or
   - set the sub-function(s)' status to scrapped as well by checking **Change status of sub-functions also** on the Change Function Status dialog.
5. Click **OK** to return to the main window with the status now updated:



Installing a Component on a Function

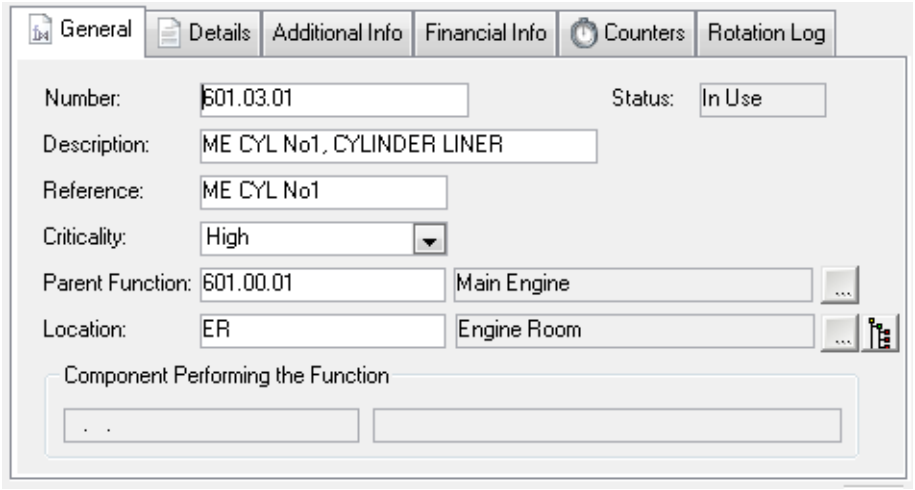
As long as no component is currently installed on the selected function, the **Install Component** option and button are available and the **Remove Component** option and button are greyed out.



The Install and Remove buttons - only Install is active

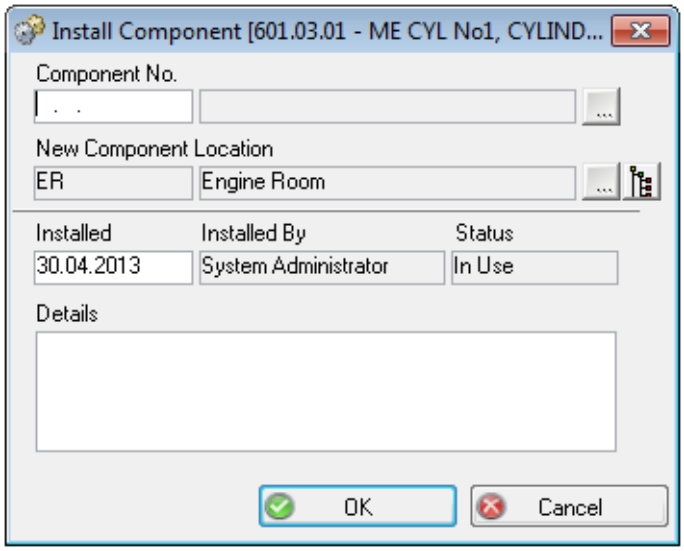
To install a component onto a function:

1. Open the Functions window or the Functions Hierarchy and select a function:

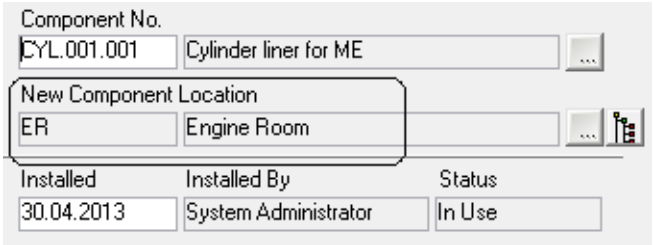


2. There are three ways to open the Install Component dialog:

   - click the **Install** button; or
   - right-click on the window and select Install Component; or
   - go to **Options > Install Component**.



3. Lookup a **Component**. Notice that the **New Component Location** is the same as the function's location:

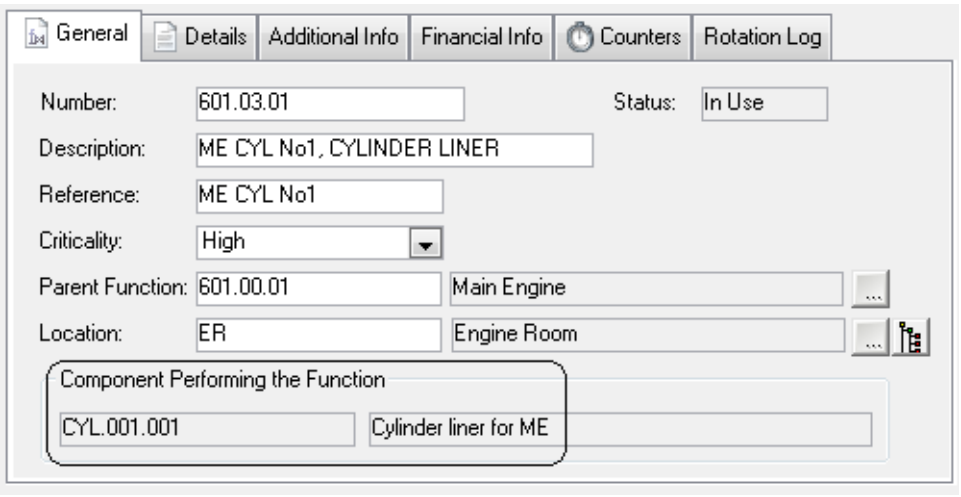


When you install a component on a function, the component's location shown in the Component window changes to match the function's location. If the function location is changed at any time, the component location will change as well.

4. Add any **Details** and click **OK** to return to the Functions window.

> **Note:** Round jobs can depend on functions: some jobs can be performed as part of a round only if the component the job belongs to is currently installed on a particular function. If this is the case, you will be notified that round jobs have been activated or deactivated.

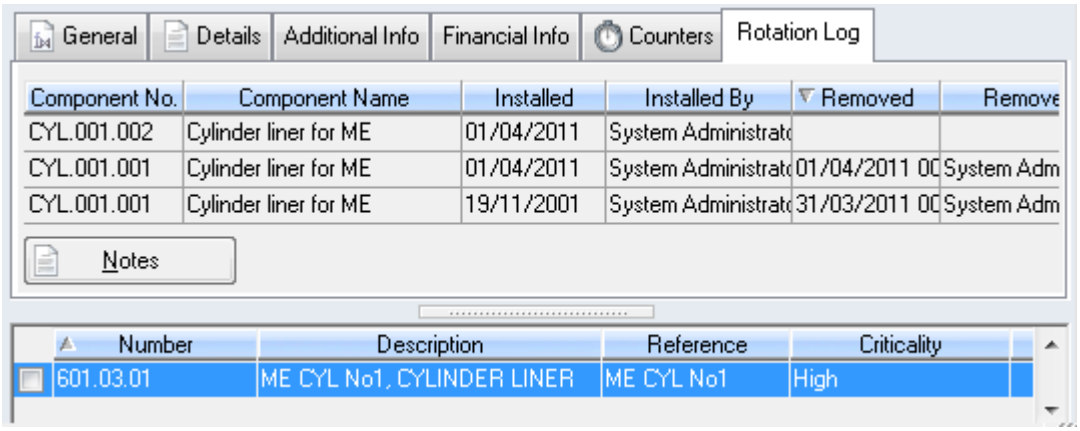
5. The component you just selected will appear in the **Component Performing the Function** field:



You can also see details from the Component window fields for the component currently performing any function in the read-only **Installed Component** tab.

6. **Save** the window.

Install and remove operations are recorded in the Rotation Log tab. Select any function and open the tab to view a list of the components installed in and removed from that function. The rotation log is automatically updated when changes are made in the Functions Hierarchy as well:



To see any comments registered in the **Details** field during installation or removal of a component on a function, select a line and click the **Notes** button.

Information about installed components is available from the Function Hierarchy Options menu at **Options > Component**and at **Options > History**.

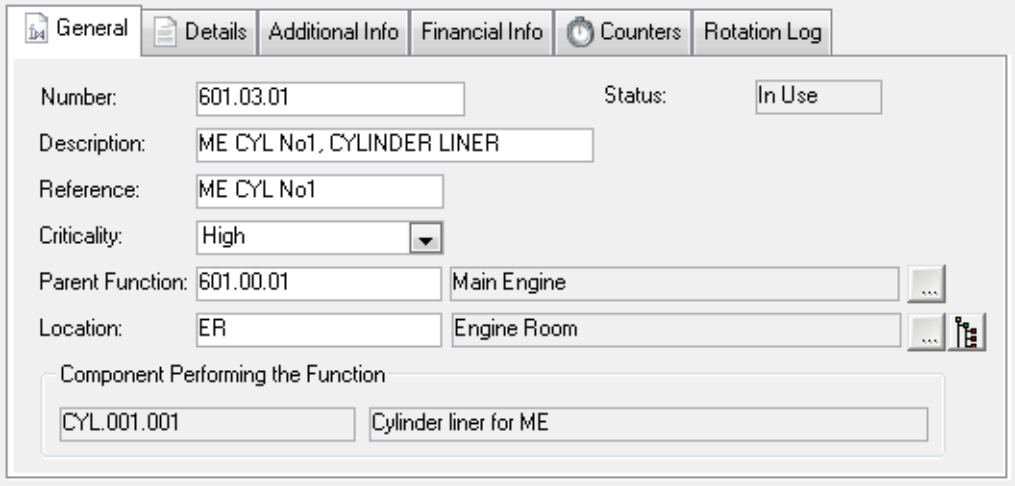
Removing a Component from a Function

Installed components can be removed from the Functions window and from the Functions Hierarchy window. As long as a component is currently installed on the selected function, the **Install Component** option and button are greyed out and the **Remove Component** option and button are available.

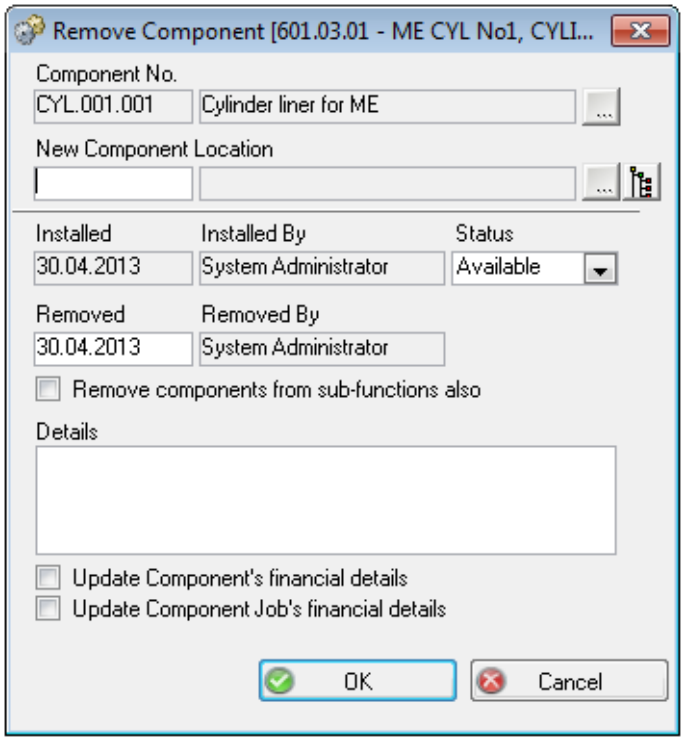
The Install and Remove buttons - only Remove is active

To remove a component from a function:

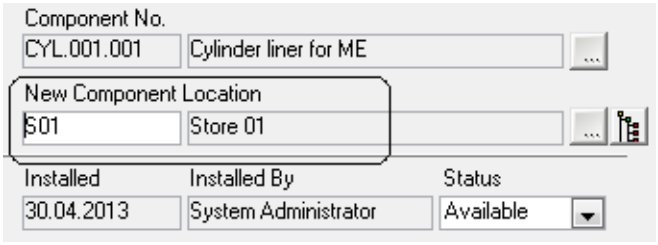
1. Open the Functions window or the Functions Hierarchy and select a function:



2. There are three ways to open the Remove Component dialog:
   - click the **Remove** button; or
   - right-click on the window and select Remove Component; or
   - go to **Options > Remove Component**.

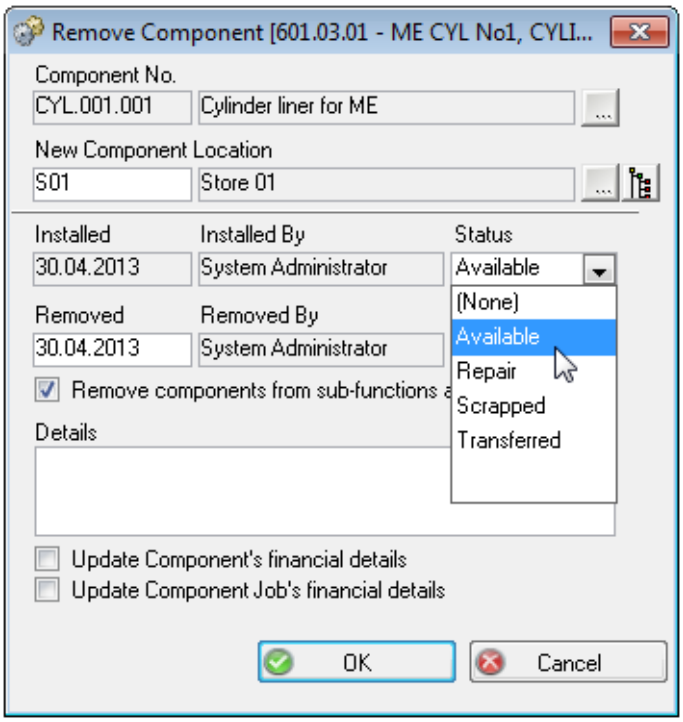


3. Select a **New Location** for the component to be removed to. This updates the **Location** field on the Component window:



If the function you've selected is a parent function, checking the **Remove components from sub-functions also** box removes all components installed on sub-functions. Rotation Log entries are made for these components also.

4. Select a **Status**for the component you are removing, which also indicates a reason for the removal:

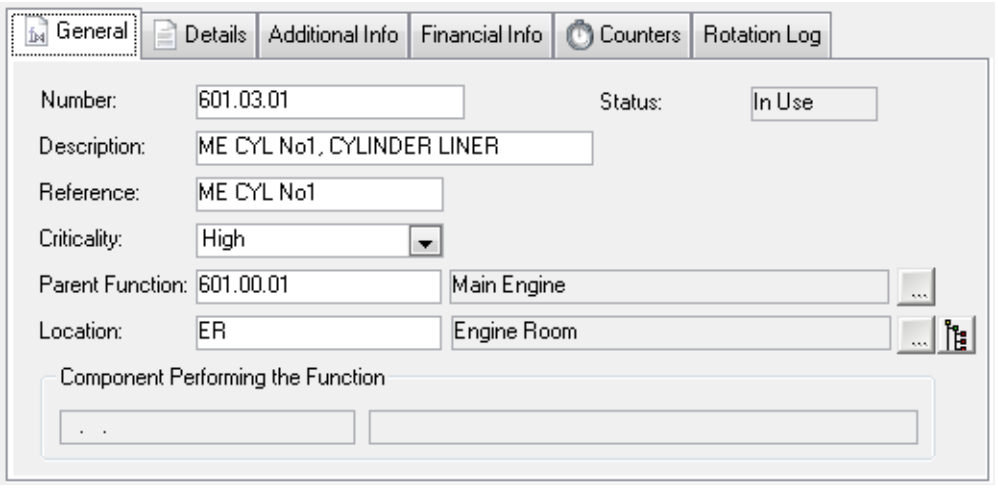


If you set status Scrapped or Transferred, all outstanding work orders are cancelled unless already reported as started. Work can still be reported against already started work orders until they are reported as completed.

5. Add any **Details** and click **OK** to return to the Functions window.

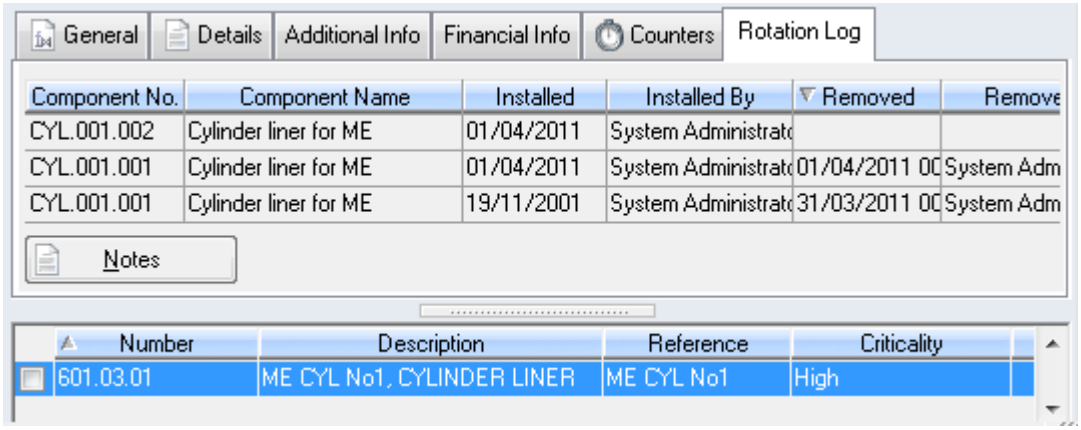
> **Note:** Round jobs can depend on functions: some jobs can be performed as part of a round only if the component the job belongs to is currently installed on a particular function. If this is the case, you will be notified that round jobs have been activated or deactivated.

6. Notice the **Component Performing the Function** field is now empty:



7. **Save** the window. You can install a new component on the same function: now the **Install** button and Install Component menu option are available again.

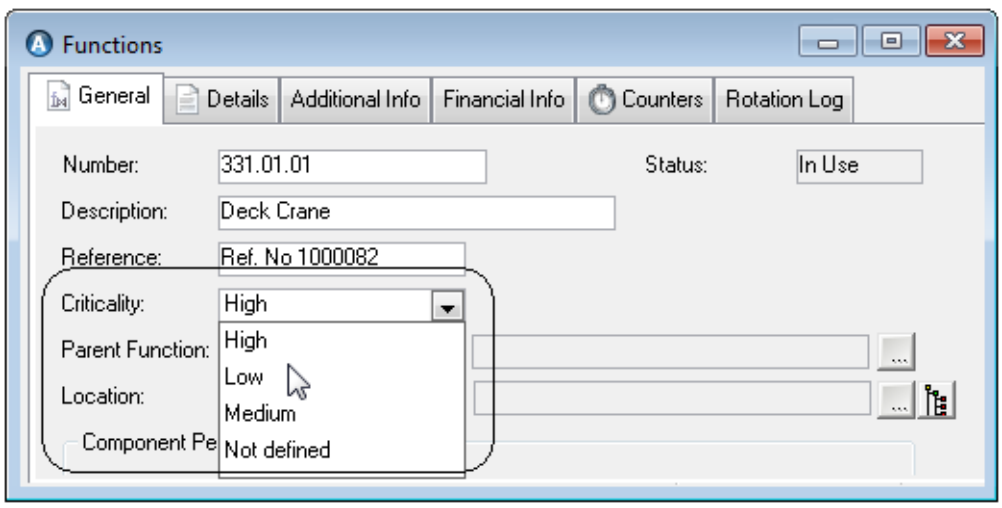
Install and remove operations are recorded in the Rotation Log tab. Select any function and open the tab to view a list of the components installed in and removed from that function. The rotation log is automatically updated when changes are made in the Functions Hierarchy as well:



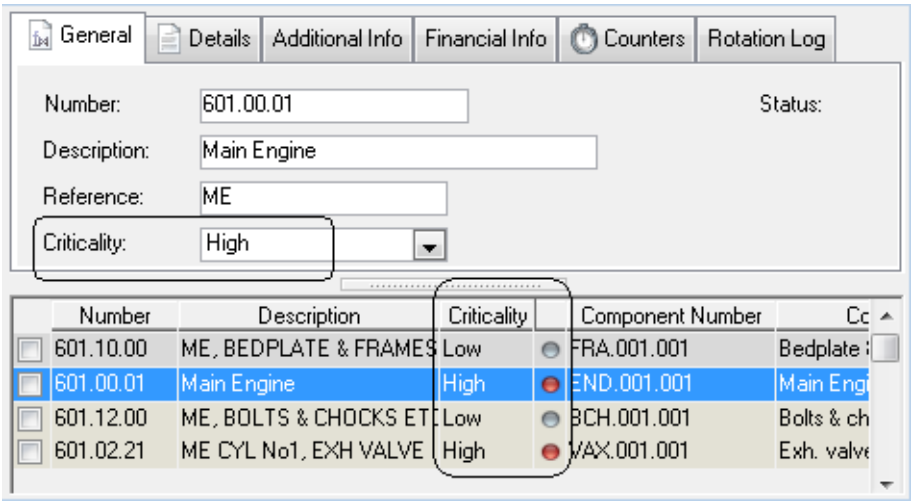
To see any comments registered in the **Details** field during installion or removal of a component on a function, select a line and click the **Notes** button.

Function Criticality

The Functions/Hierarchy windows both contain a field for applying a degree of **Criticality** to a function:



The criticality degree shows up with a colour-coded indicator in the Functions window list view:

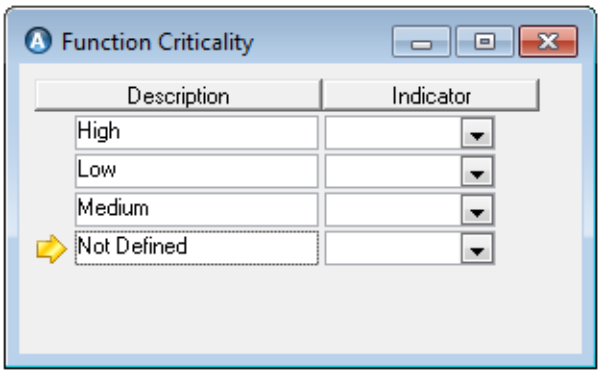


Indicators appear in the Functions Hierarchy next to every function, and will also appear with functions wherever they are listed throughout the system. Once function criticality is in use, you can filter by degrees of criticality in the Functions window and other relevant Maintenance and Stock windows.

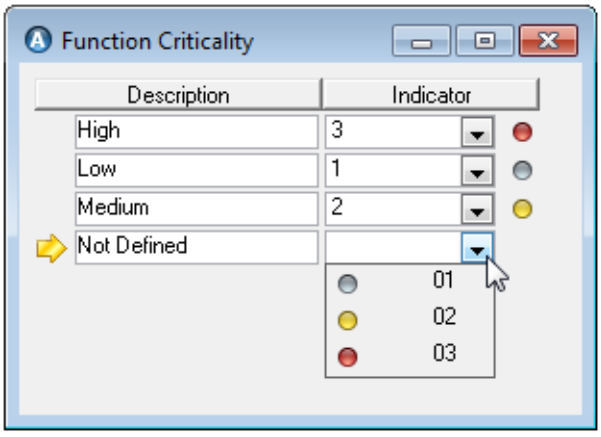
To use criticality degrees, first define a list of available degrees in the Function Criticality register. Then apply the degrees to your functions in the Functions/Hierarchy windows.

Defining a List of Criticality Degrees

1. Go to **File > Open Register > Maintenance > Function Criticality**.
2. Click **New** and enter a list of **Descriptions**:



3. Choose a colour-coded **Indicator** to apply to each one:

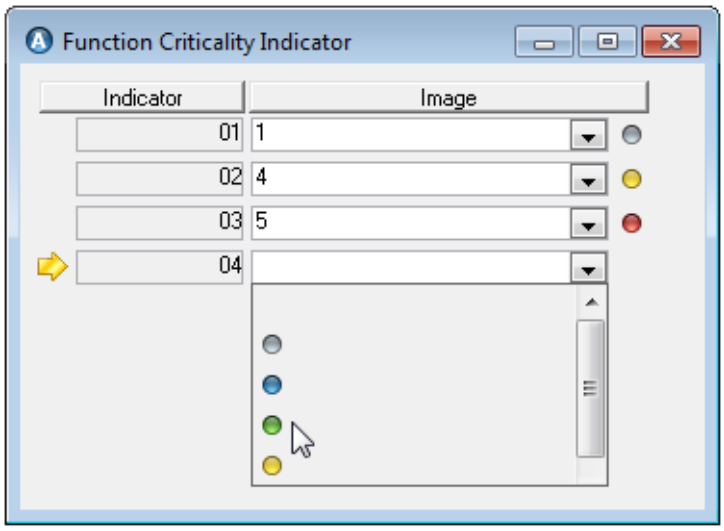


4. **Save** the register. The criticality descriptions can now be applied on functions in the Functions/Hierarchy windows.

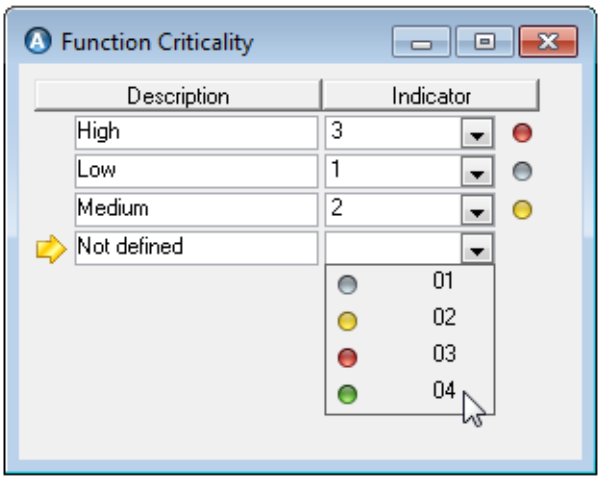
(Optional) Defining Indicator Icons

To define additional or different indicator icons:

1. Go to **File > Open Register > Maintenance > Function Criticality Indicator**.
2. Click **New** and then select an **Image** from the list:



3. **Save** and exit the register. The indicators saved here will become available in the Function Criticality register, for pairing with the degrees of criticality:



Function Counters

Linking counters to functions allows you to record cumulative counter readings for a function regardless of the component(s) performing it. Whenever a component installed in the function has its counter reading updated, the function counter is also incremented by the same amount as the component.

- To add function counters in the Function window, open the Counters tab there and click the **New** button.
- To add function counters in the Functions Hierarchy, go to **Maintenance > Functions Hierarchy > Options > Function Counters**.

If required, you can alter a function counter at any time without affecting the counters on component installed in the function.

Maintenance Jobs

Jobs are regular maintenance on components. Every component needs regular, predictable maintenance jobs which will be performed over and over again throughout the lifetime of your installation. Each job contains a job description to describe how the work is to be carried out, and information about the intervals at which it should be performed.

There are two ways to create maintenance jobs - define them at component type level which can then apply to all instances of that component type; or, define jobs on individual component level.

Here are some tasks related to maintenance jobs in AMOS:

1. Define new jobs.
    - See "Component Type Jobs" below about creating component type jobs and applying them to components.
    - See "Component Jobs" on page 28 about the changes you might make on component jobs.
2. Schedule the jobs. See "Scheduling Jobs" on page 47.
3. Create initial work orders for new jobs manually or automatically. See "Initial Work Orders for Scheduled Jobs" on page 56 about creating the initial work order for a new job manually or automatically.

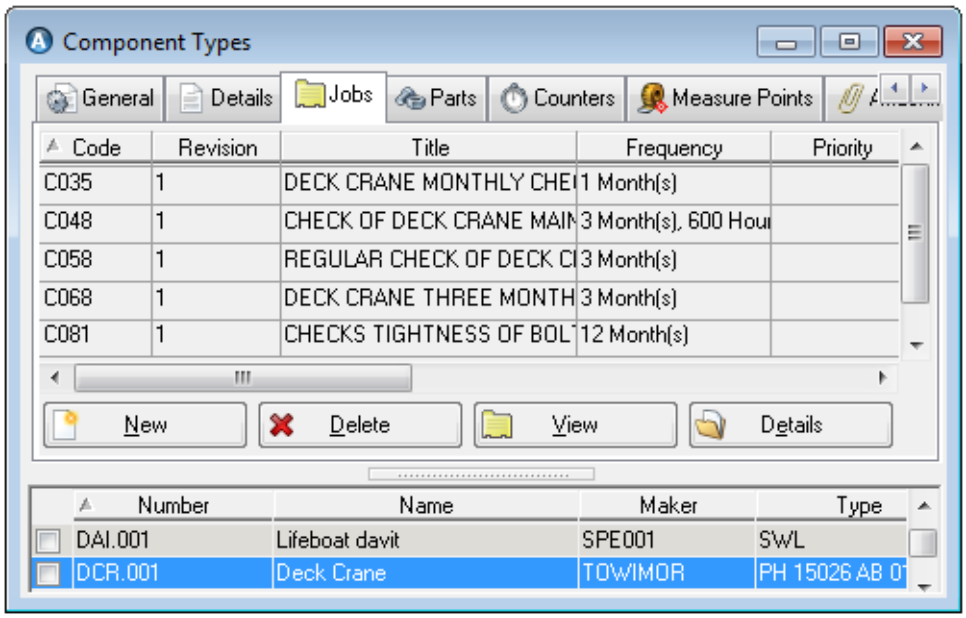
Component Type Jobs

If you have a job that should apply to every single component of a certain type, open the Jobs window at Component Type level and create it there. You can modify the details later on individual components.

- When you define a new Component Type Job you can choose to apply it to any individual components based on the type.
- If you edit an existing component type job, you can reflect these changes onto individual components also.
- When you register a component type as a component, the new component will inherit the 'Type Jobs' too.

Defining a Component Type Job and Applying it to Components

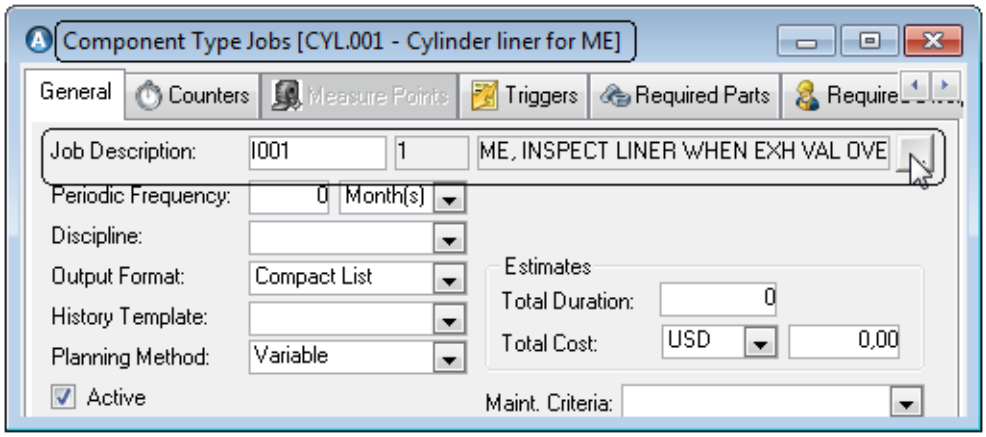
1. Go to **Maintenance > Component Types** and select a component type. Click on the Jobs tab:



Any jobs already linked to the selected component type are listed here.

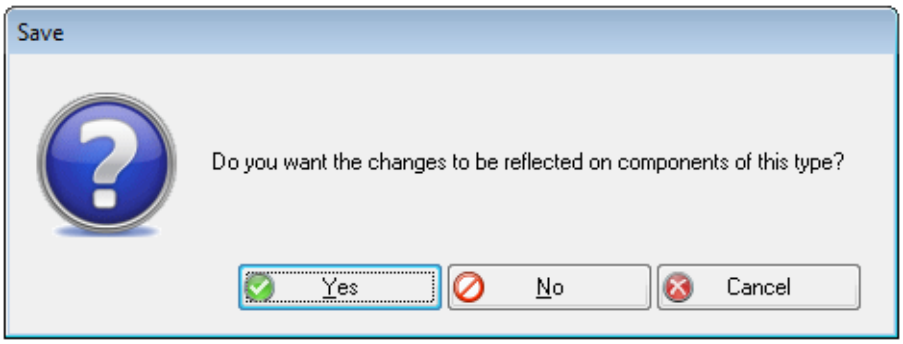
- Click **Details** to see the job description for the selected job.
- Click **Delete** to remove the selected job if necessary. Deleting a component type job also deletes all inherited component jobs.
- Click **View** to see the selected job's complete details.

2. Click the **New** button in the Jobs tab to open the Component Type Jobs window.
3. Lookup a **Job Description**:



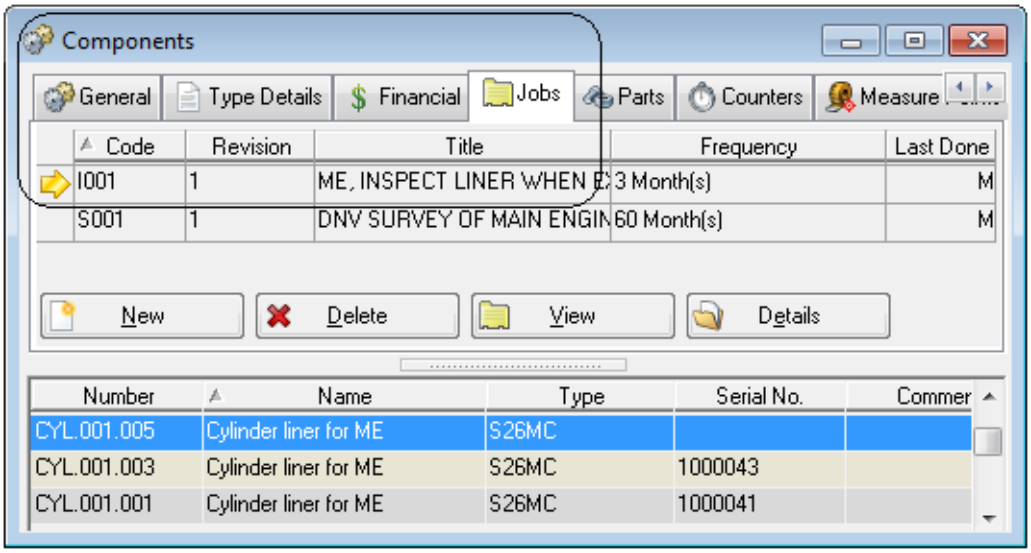
4. Fill in the details for the job.
5. Check[1] the **Active** box to make the job active and available for inclusion on work orders.
6. **Save** the job.
7. When you save a component type job you have the option to apply the job with all its information to all existing components of this type registered in the Components window throughout your organisation:

[1] Uncheck the Active box if you do not want an individual work order created for a job which will be part of a round work order.



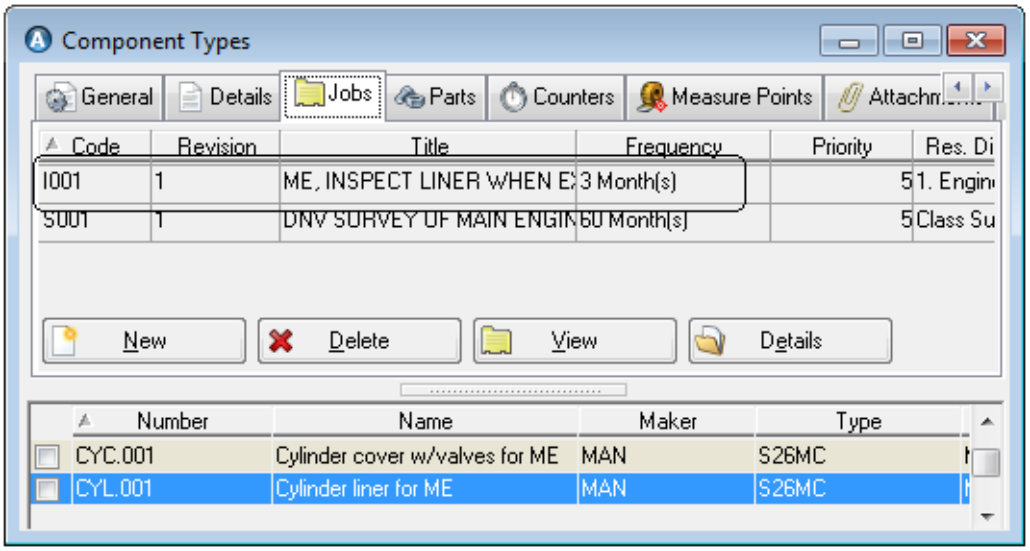
If you:

Click **Yes**, the new job or the changes to the job will appear in the Components window Jobs tab for every component in the system which has been created from the selected component type:



Click **No**, the new job or changes will not be inherited on any linked components and the job will simply be listed in the Component Type's Jobs tab for now.

8. Close the Jobs window to return to the Component Types window where the job is now added to the tab:



Once you've created 'Type Jobs' you will probably want to modify them at Component level to apply to components actually in use at an installation - for example, by adding the **Last Done** date to an individual component job so AMOS can calculate the **Next Due** date.

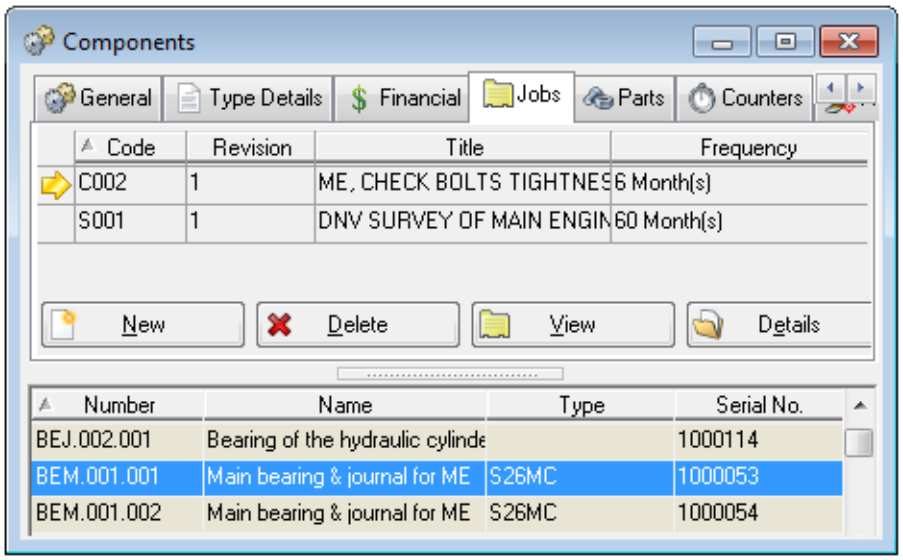
Component Jobs

Components based on component types can inherit defined 'Type Jobs'.

- You can edit these inherited jobs to tailor them for individual components,
- You can also create a new component job for an individual component.

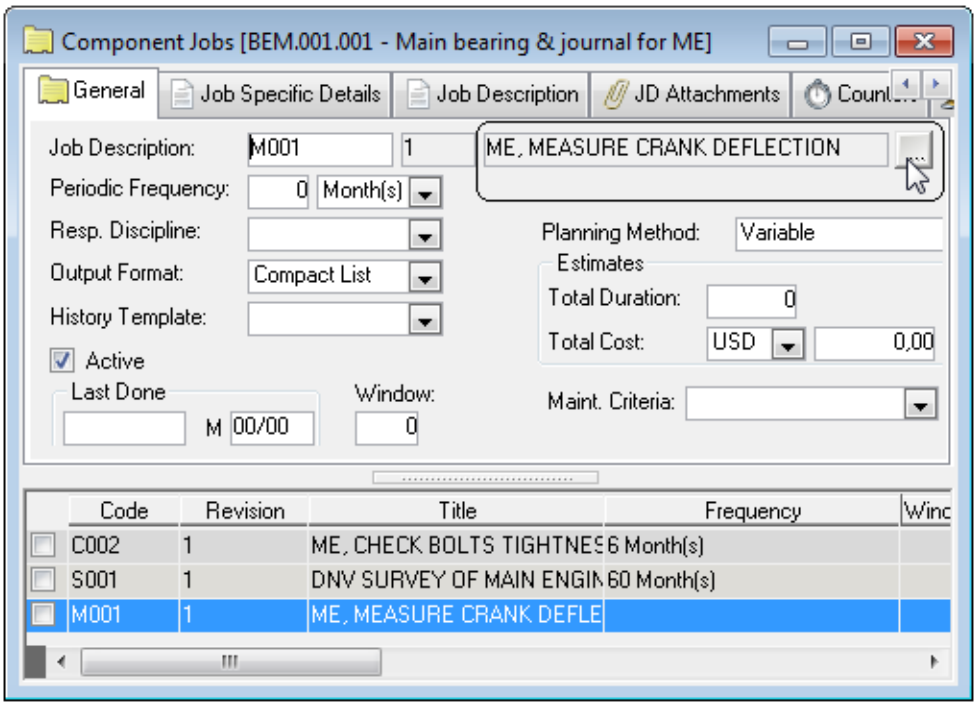
Defining a Job for One Component

1. Go to **Maintenance > Components** and select a component. Click on the Jobs tab:

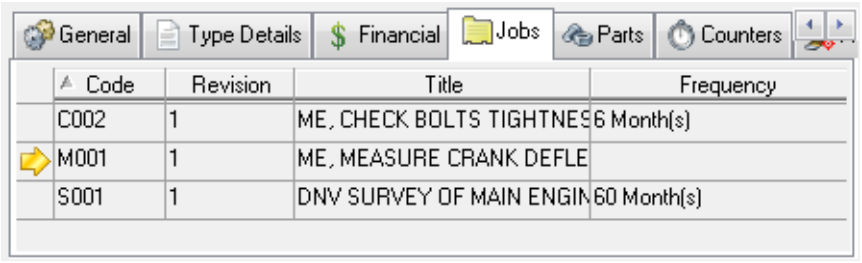


   Any jobs already linked to the selected component are listed here.

   - Click **Details** to see the job description for the selected job.
   - Click **Delete** to remove the selected job if necessary.
   - Click **View** to see the selected job's complete details.
2. Click the **New** button in the Jobs tab to open the Component Jobs window.
3. Lookup a **Job Description** :



4. Fill in the details for the job.
5. Check[1] the **Active** box to make the job active and available for inclusion on work orders.
6. **Save** the job. This job will apply only to the selected component.
7. Close the Jobs window to return to the Components window where the job is now added to the tab:



Working with Component Jobs

Here are some other things you can do in the Component Jobs window:

- Define Exceptions on Component Jobs. Define which fields in the Component Jobs window should be linked to the component type job they are inherited from, and which fields should be protected from type updates. See "Defining Exceptions on Component Jobs: Linking Fields" on the next page.
- Relate Similar Component Jobs. If at least two similar jobs are already listed in the Component Jobs window, 'relate' them to create a hierarchy of jobs that can be reported together. See "Related Component Jobs" on page 32.
- Create Job Dependencies. Link jobs together to form a 'chain of dependency': a relationship where each job depends on the job(s) 'above' it in the chain. See "Complex Activities Management: Job Dependencies" on page 34.
- Component Jobs and Risk Management. Activate risk management for a component job and link a scenario/type. See "Activating Risk Management on Component/Type Jobs" on page 40. Also refer to the *AMOS Q&S User Guide* for more information about risk management.

[1] Uncheck the Active box if you do not want an individual work order created for a job which will be part of a round work order.

Defining Exceptions on Component Jobs: Linking Fields

Any field on the Component Jobs window can be linked to or unlinked from the same field on the Component Type Jobs window. This means that when changes are made to the type job and saved to reflect on component jobs, only the linked fields will be updated on the individual components.

> **EXAMPLE**
>
> A 'Type job' is inherited on fifteen components and all the information is the same. But, on five instances of the component you want the job carried out at a different frequency and by a different discipline, so you change these values on the five components. You do not want any future changes made to the component type job to overwrite these fields, so you protect the Periodic Frequency and the Responsible Discipline fields by unlinking them on the Component Job window for the five components. Later on, someone changes the Periodic Frequency on the component type job and saves the changes to reflect on component jobs, but the unlinked Periodic Frequency field on the five component jobs is not affected.

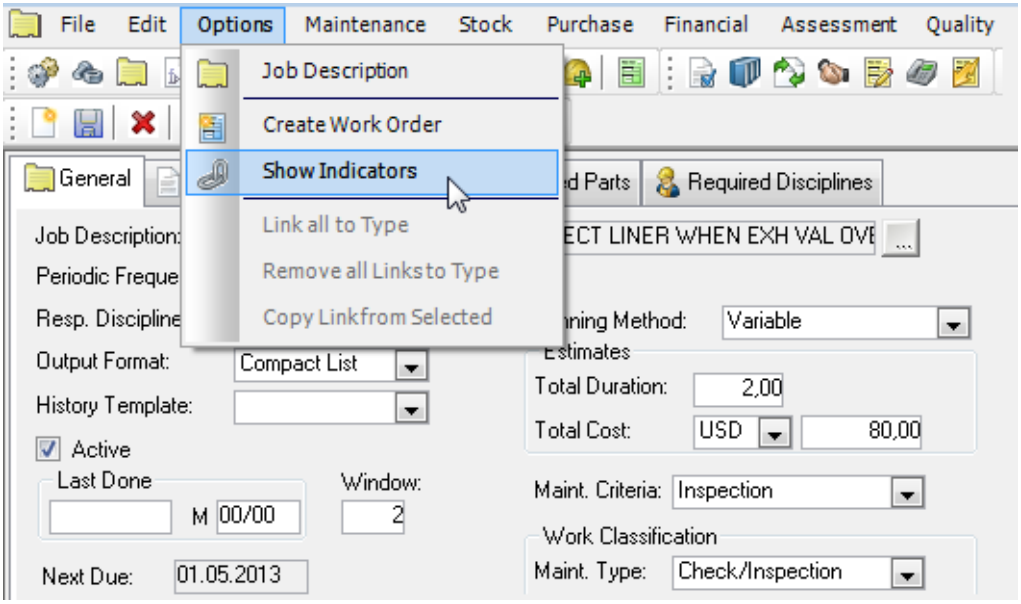
Keep in mind:

- **Deactivating** a component type job deactivates the same job at component level, wherever the **Active** checkbox is linked.
- **Deleting** a component type job also deletes inherited component jobs but it does not delete the component job that have been unlinked and modified,

Linking And Unlinking Fields

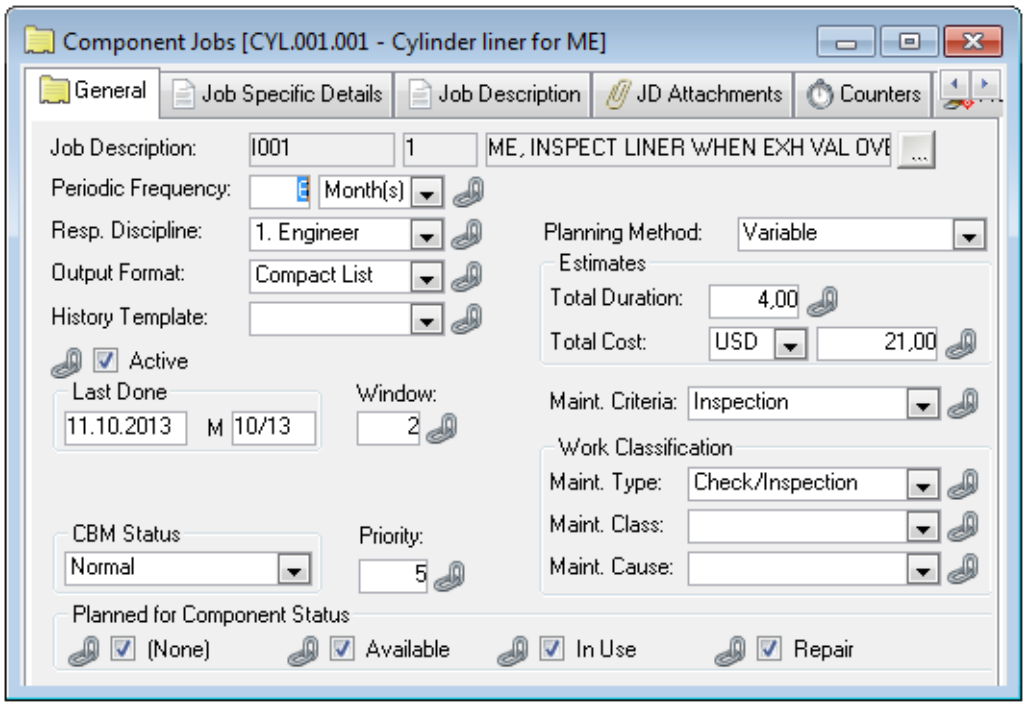
Provided you have the required access, the Component Jobs window Options menu will contain the item **Show Indicators**. To link and unlink fields:

1. Go to **Maintenance > Components**, select a component and open the Jobs tab. Click **View** to open the Component Jobs window[1].
2. Go to **Options > Show Indicators**:

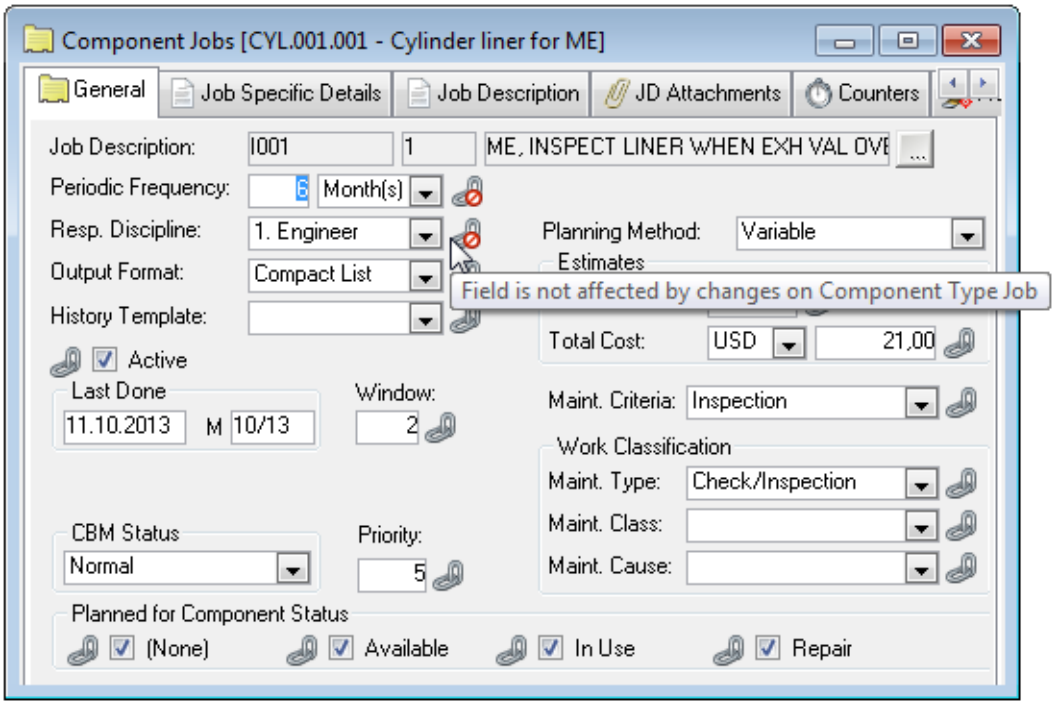


A link icon will appear next to every field on the General tab:

[1] The same functionality applies in the Component Hierarchy and Function Hierarchy window Jobs tabs.

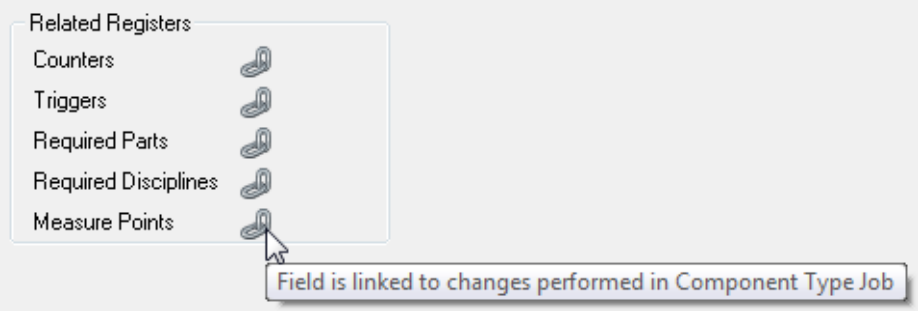


3. Click on the icon for any field to toggle it between linked and unlinked:



In the illustration above, **Periodic Frequency** and **Resp. Discipline** have been unlinked from same fields on the Component Type Jobs window.

4. When the link indicators are visible a set of **Related Registers** appears on the window with a link icon beside each one:



This lets you link or unlink the content in the corresponding tabs.

5. **Save** your changes. Go to **Options > Show Indicators** again if you want to hide the link icons. Any fields you unlinked will remain unlinked whether the icons show or not.

When the linking functionality is enabled, three more options are added onto the Options menu.

Link All to Type	All fields for every job listed in the Component Job window will be linked to the component type job. To link all fields on some jobs but not others, tag the jobs in the list first and then select this option.
Remove All Links to Type	All fields for every job in the window are unlinked from Type. To unlink all fields on some jobs but not on others, tag the jobs in the list first and then select this option.
Copy Link from Selected	You can copy a configuration of linked/unlinked fields from one job to one or more other job(s). Select a job with fields already linked/unlinked. Tag the other job(s) in the list you want this configuration applied to. Then choose this option. The same fields will be linked/unlinked on the tagged jobs, as on the job you are viewing.

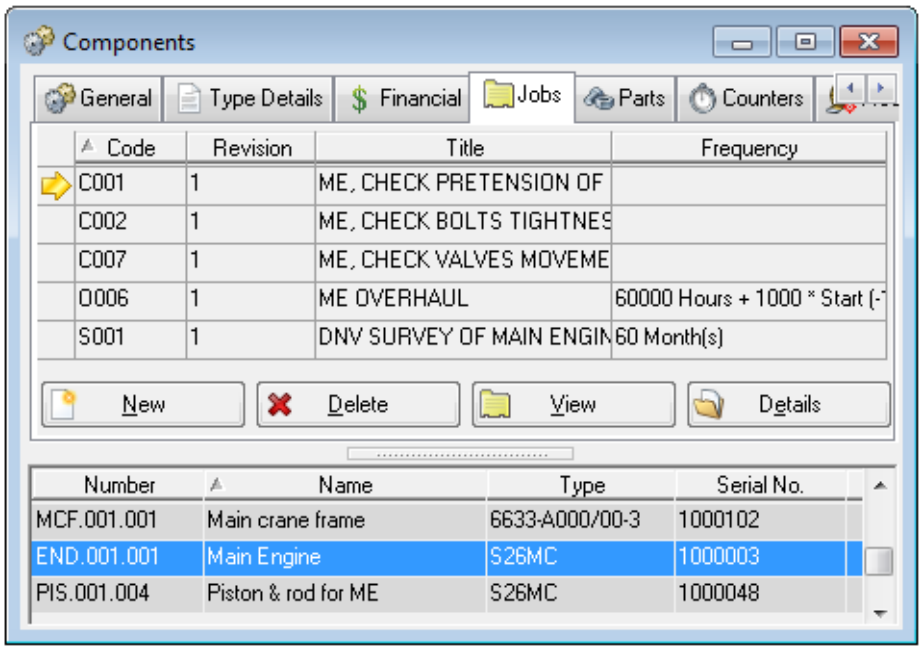
Related Component Jobs

If at least two jobs are listed in the Component Jobs window, you can 'relate' them to create a hierarchy of jobs that can be reported together.

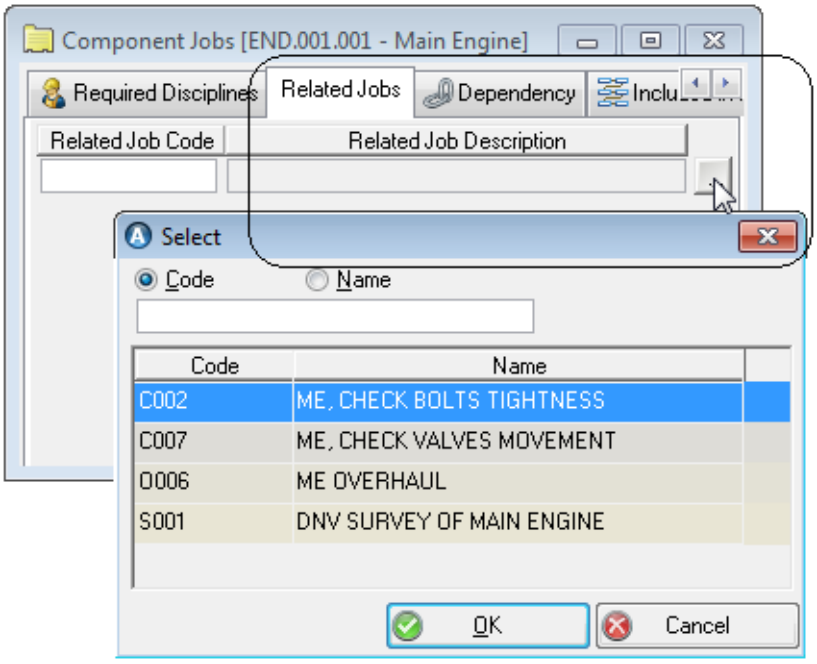
> **EXAMPLE**
>
> You need to remove a cylinder cover and then tighten the bolts again when you replace it. It would not make much sense to have a job which required the removal and replacement of the cover on one day and then to perform the tightening job on the following day. These jobs can be related and taken care of together.

To relate jobs:

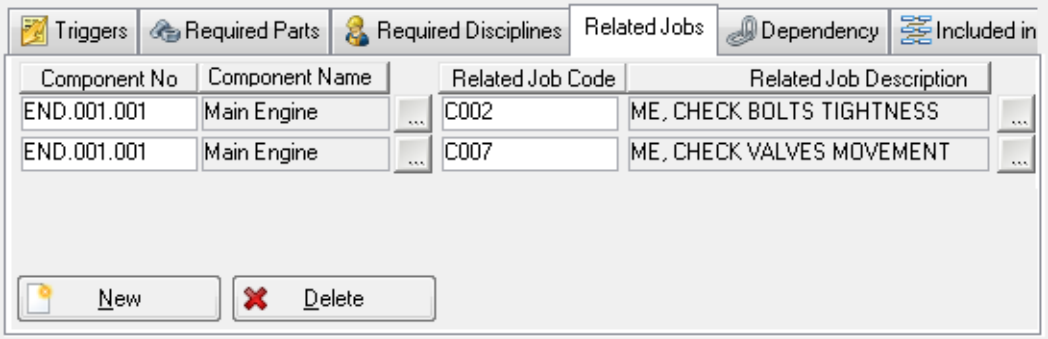
1. Go to **Maintenance > Components**. Select a component which has two or more similar jobs in the Jobs tab:



2. Click **View** to open the Components Jobs window and select a job there. Open the Related Jobs tab.
3. Click the **New** button in the tab. Click the **Related Job** lookup to get a list of the rest of the jobs available on this component:



Choose a job and click **OK**. You can add as many of the similar jobs as apply:



4. **Save** the window.

You can create several levels of related jobs, but you cannot create a loop back to any of the previously related jobs.

Complex Activities Management: Job Dependencies

If the system parameter 'Use Job Dependencies' is set to TRUE, you can configure links between two or more component jobs inside the Component Jobs window[1]. Linked jobs form a 'chain of dependency': a relationship where each job depends on the job(s) 'above' it in the chain.

- A job with one or more other jobs linked to it is called the **Dependant Job**.
- Jobs linked to a Dependant Job are called **Depending Jobs**.

Jobs can be linked in almost any configuration and any job can be both dependant and depending at the same time according to where it is in the chain.

> **EXAMPLE**
>
> In a chain comprised of Jobs A-B-C, B is Depending on A and is also Dependant for C.

Keep in mind:

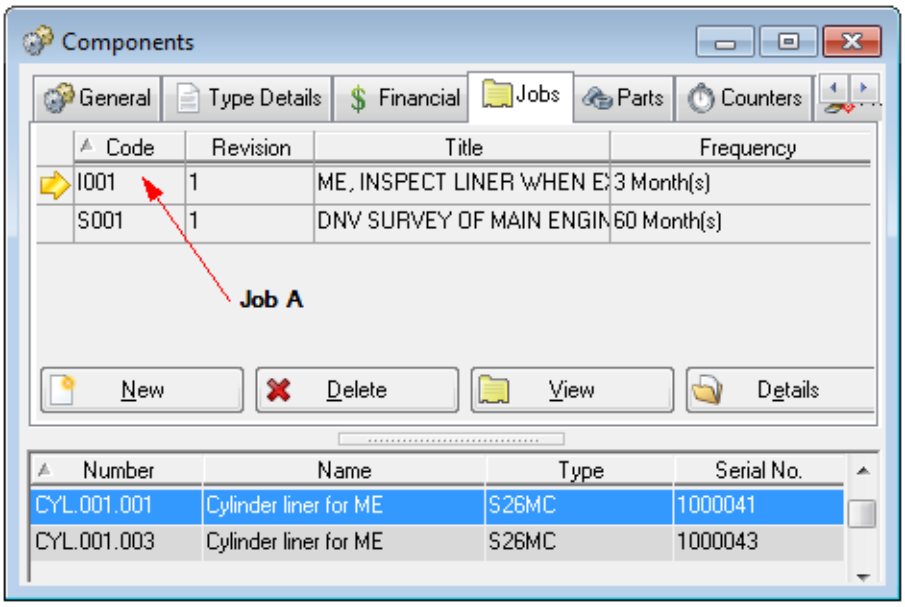
- Dependant Jobs must be marked as 'Active'.
- The component a dependant Job belongs to must have any of the statuses marked for the job in the Jobs window 'Planned for Component Status'.
- Counter based jobs cannot be added to a dependency chain, and,
- The jobs in one chain must all have the same frequency and planning method set in the Jobs window.

Creating a Dependency Chain

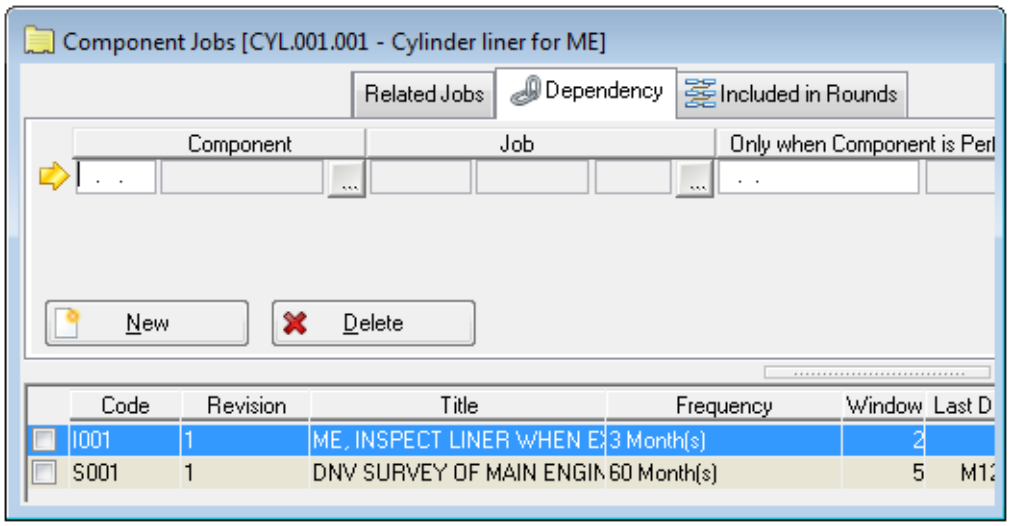
To configure a dependency chain you need to think about your components and jobs in advance and how they might be related. A job may belong to several different components. When you create a dependency chain, you can link any jobs which need to be performed in a set sequence, regardless of which component(s) they belong to.

1. Go to **Maintenance > Components**. Select a component and open the Jobs tab.
2. Select the job you want to start with. This is your first dependant job - Job A.

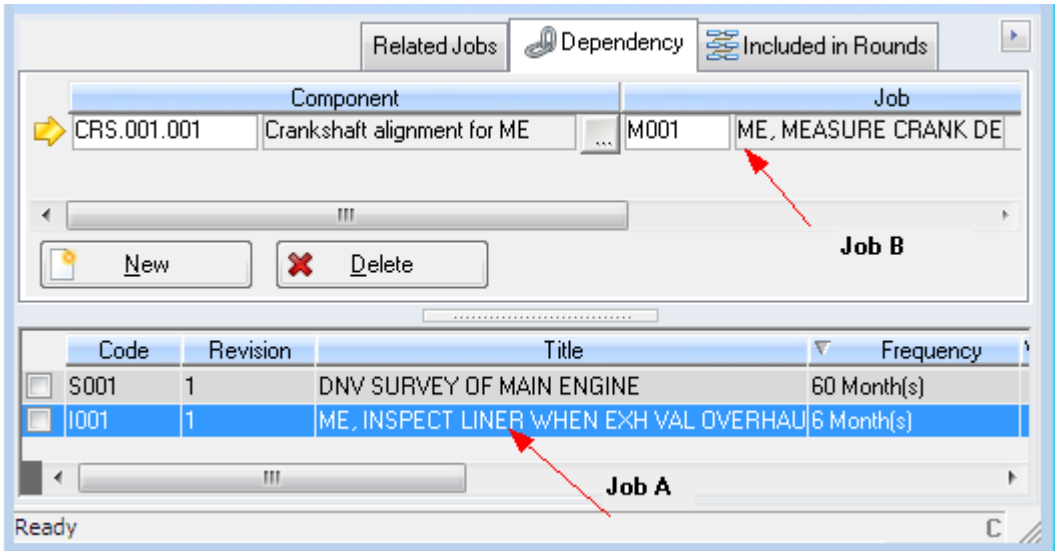
[1] You can also configure these links in the Jobs Planning window at Maintenance > Job Planning, where you can use the graphic timeline to easily visualise your chain.



3. Click **View**. The Component Jobs window opens to show the details for Job A.
4. Open the Dependency tab. Any job(s) you add here will be depending on Job A and work order (s) will not be generated until Job A is complete. Click **New** to get a blank line:



5. Different components might require work inside of this job dependency chain. Select the **Component** the depending job belongs to. Then, lookup the depending **Job** - Job B:



This creates straightforward A - B link. Once saved and work orders are generated, Job B cannot be started until Job A is completed.

If you add two (or more) jobs to the Dependency tab for Job A, it creates a pyramid. When Job A is completed, work orders will be generated for both/all of the depending jobs and be ready to start at the same time.

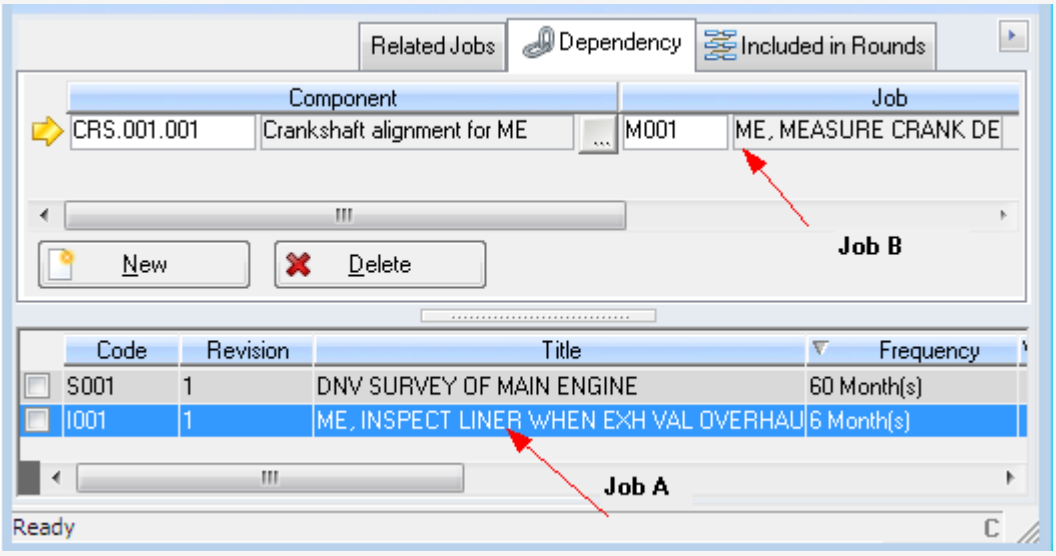
6. **Save** the dependency chain.

Adding Another Link to the Chain

You can add as many jobs to a dependency chain as necessary.

EXAMPLE

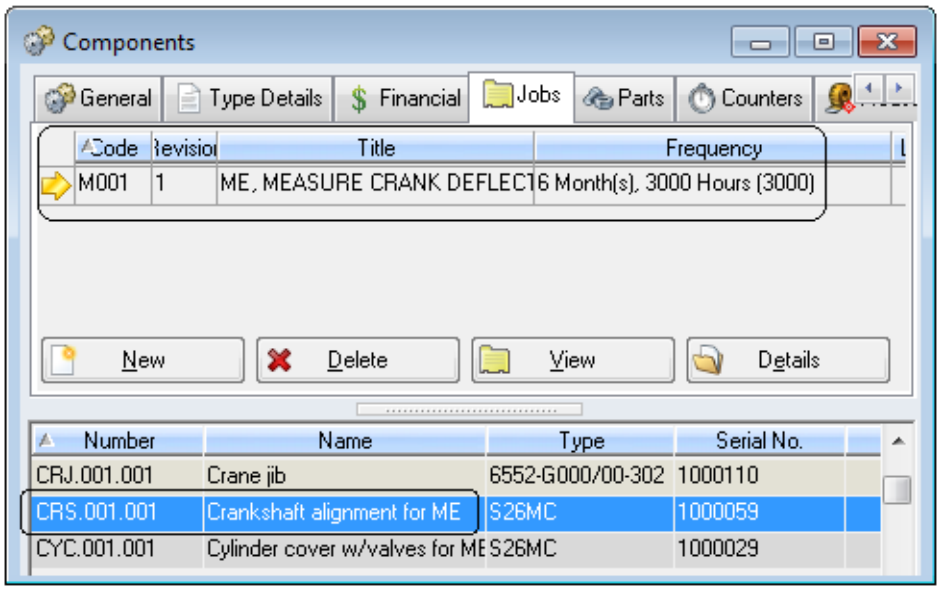
Job B depends on the completion of Job A:



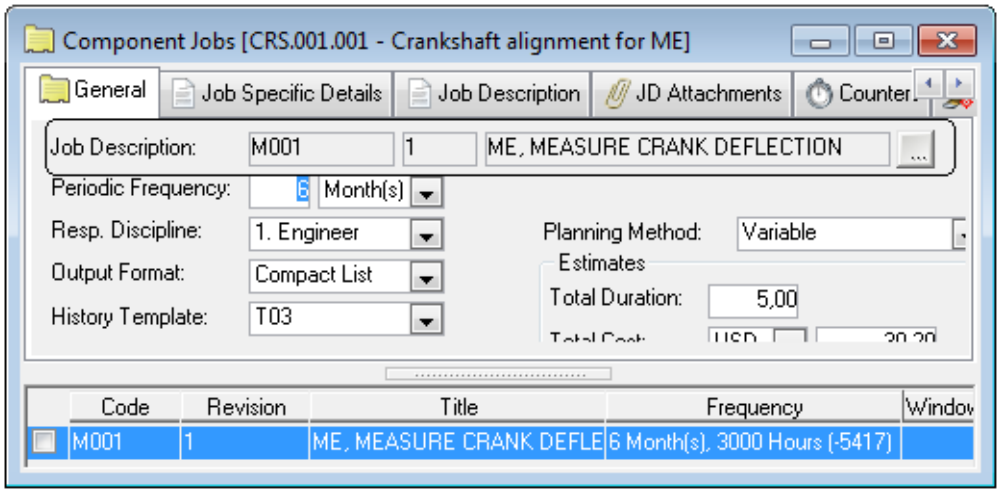
Now, you want to add a depending Job (Job C) to Job B.

To add the next job:

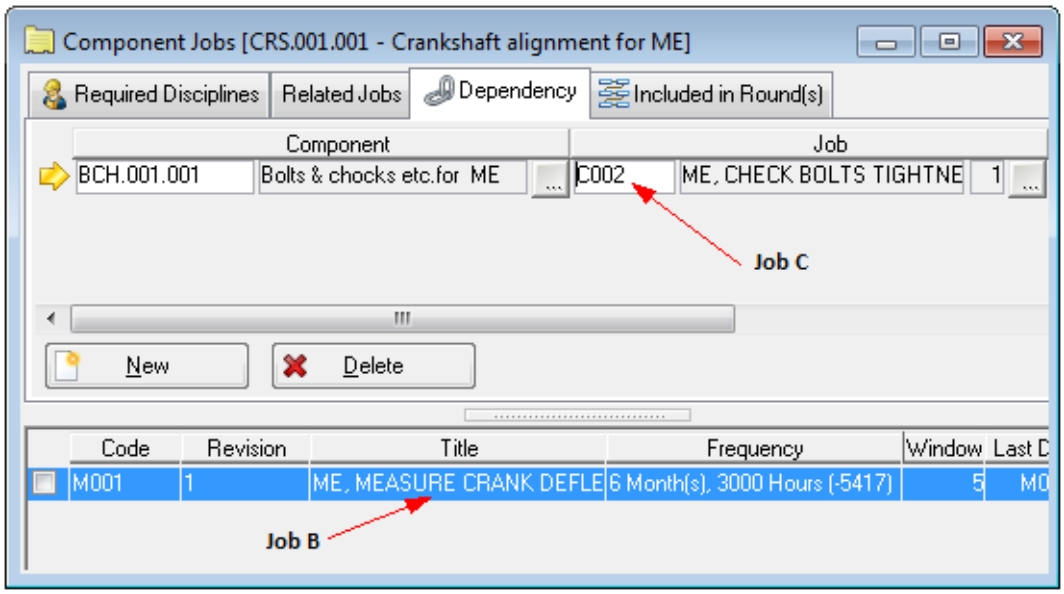
1. Open the Components window.
2. Select the component Job B belongs to - CRS.001.001 - and open the Jobs tab.
3. Select Job B in the Jobs tab:



4. Click **View** to open the Jobs window for Job B:



5. Open the Dependency tab.
6. Add Job C - click **New** and lookup a component and job:



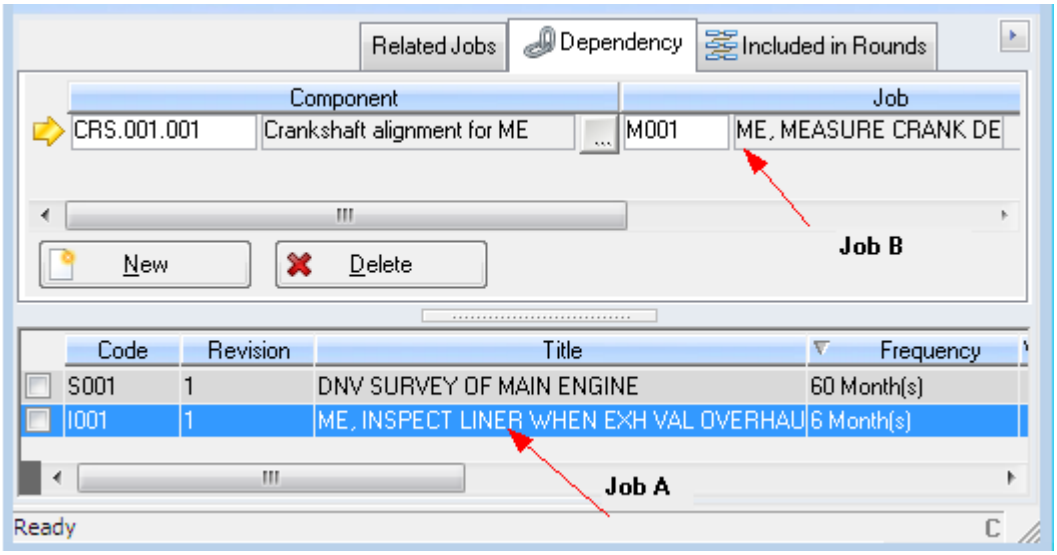
Job C is now Depending on Job B.

7. **Save** your work.

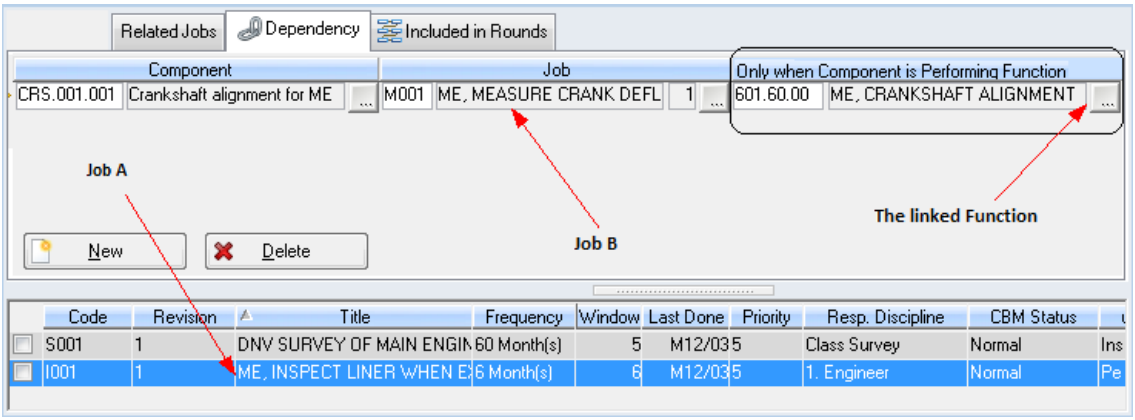
Linking a Function to a Dependency

Components rotate from one function to another and then require different jobs, affecting job dependency configurations. That's why you can define that a dependency is only valid when the component the depending job belongs to is performing a certain function.

Job B depends on Job A:



Lookup a function in the **Only when Component is Performing Function**field:



Now the dependency between Job A and Job B is only valid when Job B's component - CRS.001.001 - is installed on the function 601.60.00. If the component is removed from the function, then Job B can be performed at any time, regardless of whether Job A is completed or not.

Work Orders and Job Dependencies

Work orders generated for dependant and depending jobs are linked together according to the dependency chain: you cannot report on a depending work order until the one above it in the chain is finished and set to completed.

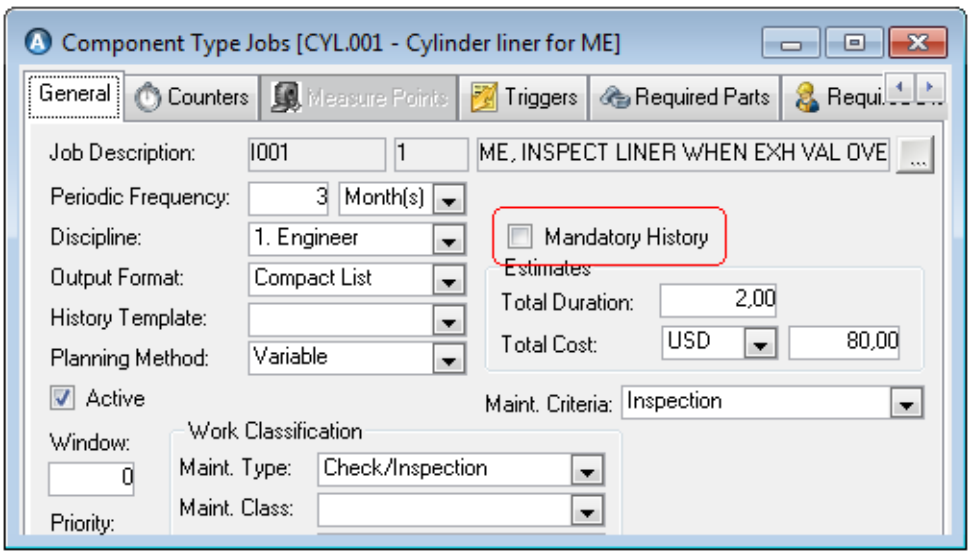
When a component status changes and active work orders exist for that component's jobs but have not yet been started, the work orders will be cancelled even if dependencies exist between them. AMOS will notify you about these cancelled work orders, and will not remove the dependencies. Then you can replace the original component an insert the new component's jobs into the dependency chain, and so replace the cancelled work order.

You can alter work order dependencies in the Work Orders window Dependencies tab or in the Work Planning window.

Mandatory History and Reporting Options

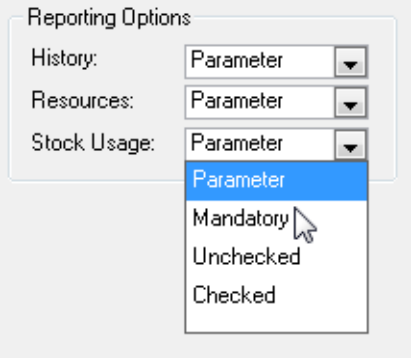
Eventually, employees will carry out the jobs and report on them in the Report Work window, creating history records. Setting some reporting and history options on the Component/Type Job itself, determines which information the user must supply during the Report Work stage.

Open the Component/Type Jobs window. If the 'Compatible to Version' system parameter is set to < 9.2.00, the **Mandatory History** checkbox is displayed:



Checking it means that recording history while reporting work on this job will be mandatory. If there is a template available for reporting job history on, you can select it from the **History Template** drop-down.

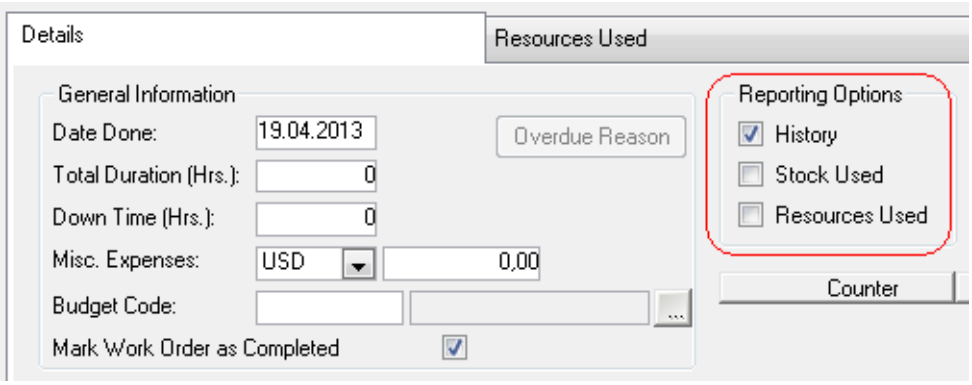
If the same parameter is set to >= 9.2.00, the **Reporting Options** group is displayed containing the three options History, Resources and Stock Usage:



These correspond to the **History**, **Stock Used** and **Resources Used** checkboxes in the Report Work window. Choose a default setting for each reporting option:

- **Checked/Unchecked**. The corresponding checkbox on Report Work will be checked/unchecked. The user can change it while reporting.
- **Mandatory**. The corresponding checkbox will be checked and protected. Reporting this option will be required during report work.
- **Parameter**. AMOS will refer to the 'Report by Default' parameters to determine the setting of the corresponding checkbox. These parameters control whether the option on Report Work is switched on or off by default.

The checkboxes in the Report Work window follow the settings as selected on the job:



Activating Risk Management on Component/Type Jobs

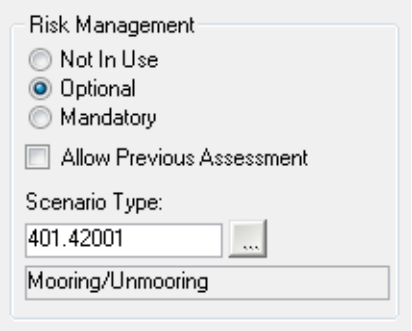
Note: This section applies only if your system license includes Risk Management and the risk management functionality is set up and in use. Refer to the *AMOS Q&S User Guide* for more information about Risk Management.

It's possible to link Risk Scenarios to maintenance work and then carry assessments out in relation to work orders. To link defined scenario/types to your maintenance program, activate risk management on component type jobs and link a scenario type. The settings will be inherited onto component jobs. You can also link component jobs to existing scenarios/types.

To activate risk management on a component job:

1. Open the Component Types window and select a component type. Open the Jobs tab.
2. Click **View** to open the Component Type Jobs window.
3. Select a job.

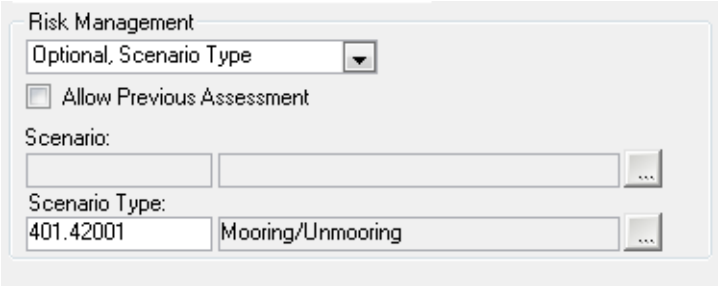
4. By default **Risk Management** is 'Not in Use'. Set it to 'Optional' or 'Mandatory'.
5. Lookup a **Scenario Type** if a suitable one exists:



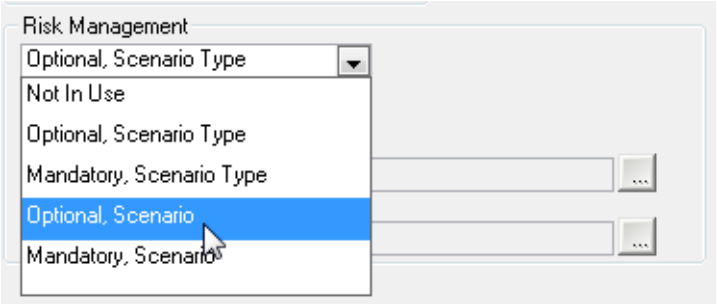
If you do not look up a scenario type a user can do so on the component job itself, or create a local scenario.

6. **Save** the job. AMOS will ask if you want to reflect the changes on components of the type.

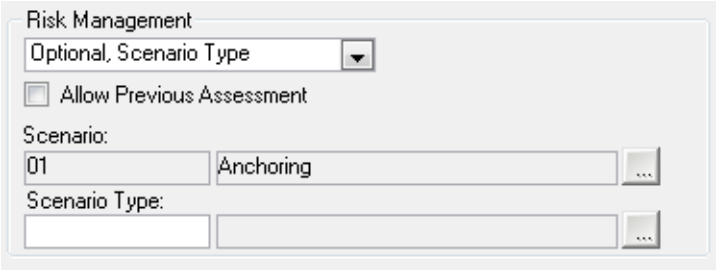
If you chose to update the relevant components with the risk management information, when you open the Component Job window for the same job, you will see the settings there:



You can change the setting on component job level:



You can also add a scenario type or change the specified one, or, lookup an existing scenario:



- When risk management is mandatory on a component job and a scenario/type is applied to it, a new scenario assessment will be linked automatically to the work order for this job.
- If risk management is optional on the component job, no scenario assessment will be linked automatically to the work order - the end user will need to create one.

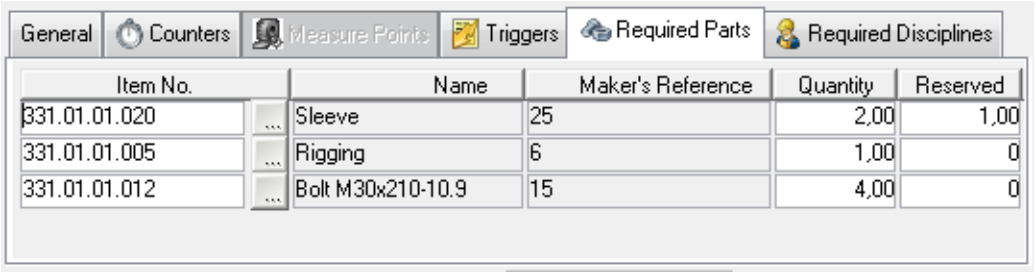
Note: The link established between a Component/Type Job and a Scenario/Type is actually a link to a scenario/type revision. When a revision is eventually filed, the link is no longer valid and this could cause a non-conformity.

Upon issuing a new revision of either a risk scenario or a scenario type, AMOS will check for items linked to the previous revision and if any are found:

- the existing link will be replaced with a link to the new revision's ID, and
- the linked records will be updated automatically, with no notification to the user.

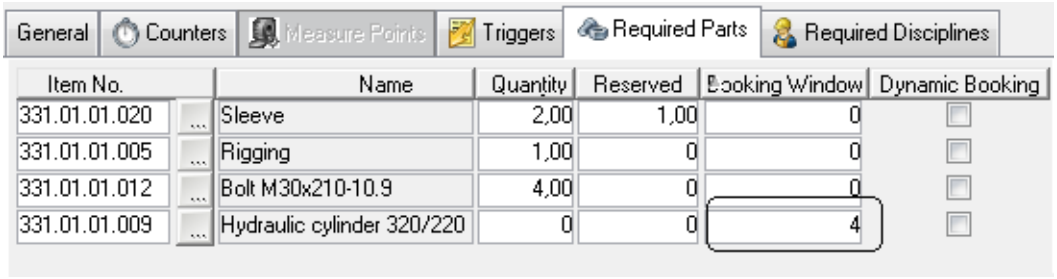
Spare Booking: Reserving Parts on Jobs

Using the Required Parts tab in both the Component and Component Type Job windows, you can add a list of parts that are needed to carry out the selected job. You can also enter the **Quantity** of each part needed, and **Reserve** a number of parts depending on how many you already have on hand.

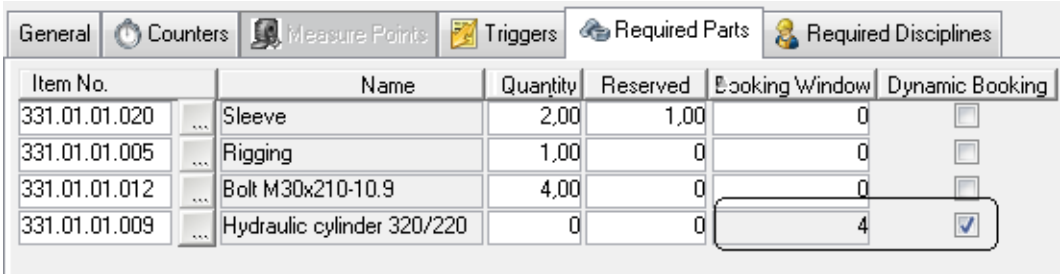


If your system is set up to require advance booking of parts, you will see a field called **Booking Window**, and a checkbox labelled **Dynamic Booking**. Booking parts in advance tells AMOS how much time is needed to get all stock items required for the selected job, onsite and ready to go.

1. Go to **Maintenance > Components/Component Types**. Then select a Component/Type. Open the Jobs tab and click **New** or **View** to open the Component/Types Jobs window.
2. Select a job and open the Required Parts tab.
3. Click the **New** button and enter a part in the Required Parts tab.
4. Enter the number of days required to get the stock item from requisition approval to supply on board, in the **Booking Window** field. This is a fixed value:



5. To make a flexible booking check the **Dynamic Booking** checkbox:



This means AMOS will ignore any fixed value set in the Booking Window field and instead use the value entered in the **Median Supply Time** field in the Stock Item window for the booked item.

AMOS determines the **Supply Time** for an item as the amount of days between when an item is requested, and when it arrives at the installation. When an order is received AMOS calculates the supply time and enters the result in the Stock Transaction Log. The median supply time for an item is derived from all instances of delivery of that item, and appears in the Stock Item window in the **Median Supply Time** field.

6. **Save** the window.

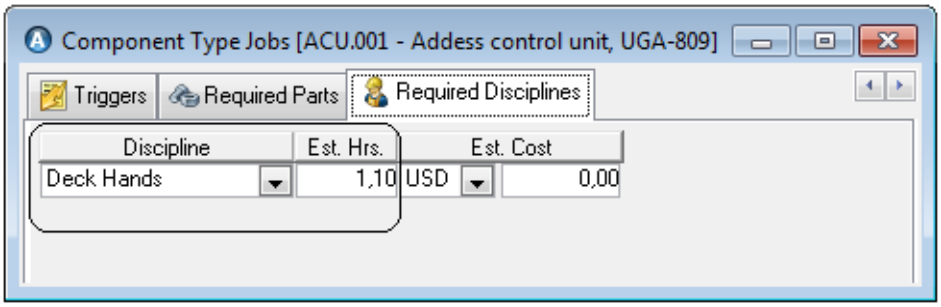
When a work order is generated for a job with booked parts, AMOS will reserve the needed parts for the duration of time between the work order's **Start** and **End** dates. The Booking Window value will appear in the Work Order's Required Parts tab, to indicate how far ahead the parts should be ordered to fulfil the work order's due date. The window will be included in the duration of the booking.

When parts booking is enforced it is not possible to:

- Use the In/Out of Stock window to remove any quantity larger than what is in stock and not already booked.
- Report a quantity of stock used on a work order that is larger than the quantity in stock and not already booked.
- Send out a quantity on a Transfer Document larger than what is in stock and not already booked.

Required Disciplines on Jobs

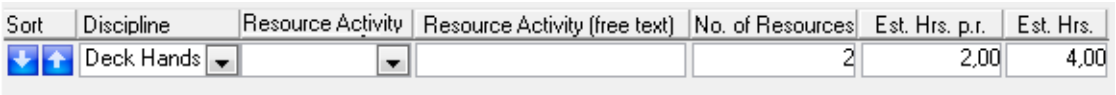
When you create a component/type job, you list up the resources who are going to carry the work out, in the Required Disciplines tab. For each resource you list, you can also estimate the hours needed:



The disciplines you list appear on the resulting work orders and are used with work reporting.

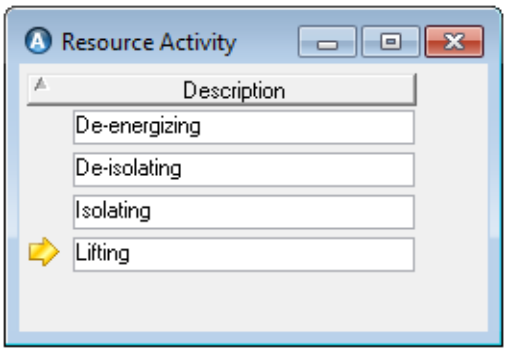
Extended Resources

You might want users to provide more detail in the Required Disciplines tab like the number of people in each discipline, the specific activity they'll carry out and an estimate of the hours needed per person. In that case, set the system parameter 'Extended Resource Registration'[1] to TRUE to add these extra fields to the Required Disciplines tab wherever it appears in the system:

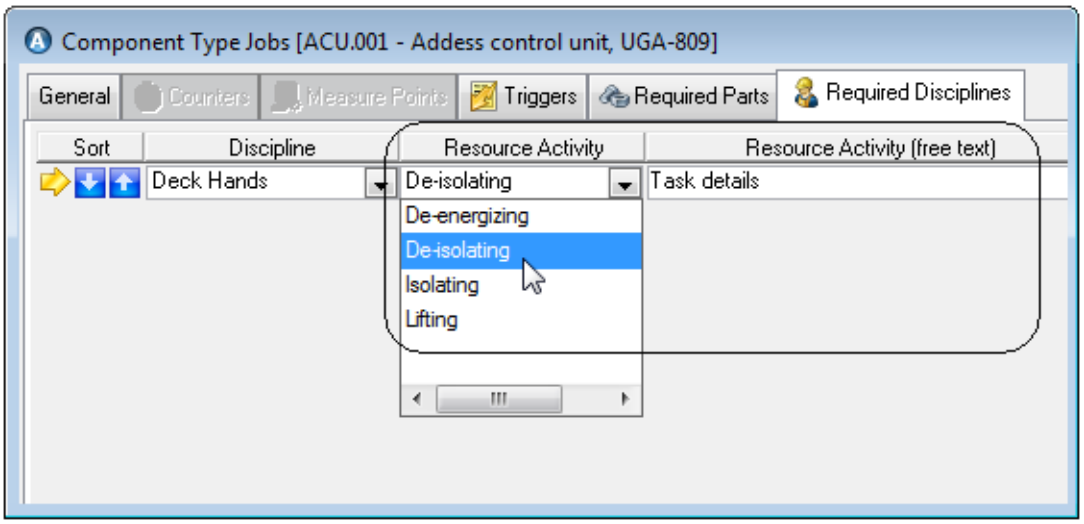


Define a list of available activities in the register at **File > Open Register > Maintenance > Resource Activity**:

[1] Tools > Configuration > Parameters > Options > Maintenance >



The system parameter 'Extended Resource Registration, Activity'[1] is set by default to REGISTER, meaning users will be restricted to selecting an activity from the Resource Activity register. If you change the parameter setting to REGISTER AND TEXT, users can also add free text to the Required Disciplines tab.



At this point users can add required disciplines and **Sort** them as needed; specify the **Number of Resources** needed from each discipline; select a **Resource Activity** from the drop-down list; add free-text assuming the parameter 'Extended Resource Registration, Activity' is set to allow it; and specify the estimated hours per resource (**Est. Hrs. p.r.**).

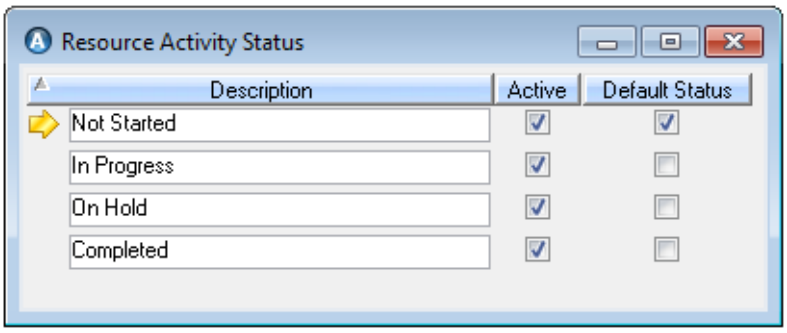
How AMOS handles updates to the total **Est. Hours** field on each discipline depends on the parameter 'Extended Resource Registration, Auto Calc. Est. Hours'. Set to TRUE, AMOS automatically calculates the total estimated hours with any change to the **No. of Resources** or **Est. Hrs. p.r** fields:

```
No. of Resources * Est. Hrs. P. R
```

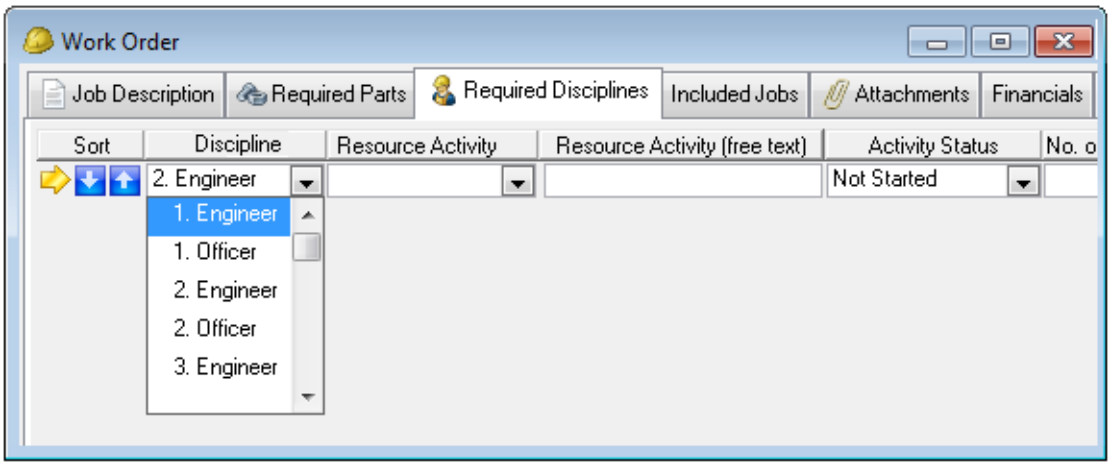
Set to FALSE AMOS still calculates the total estimated hours but will prompt for confirmation before overwriting any existing value.

Required disciplines are inherited on work orders and projects and can be added or adjusted there too. They are also available on the Report Work and Maintenance Log > Resources Used tabs. Activating the extra fields with the 'Extended Resource Registration' parameter also adds a **Status** field to these tabs. Define the available statuses in the register at **File > Open Register > Maintenance >** Resource Activity Status:

[1] Tools > Configuration > Parameters > Options > Maintenance >



If any one of them is flagged 'Default' it will appear automatically with any new discipline added to a work order or the Report Work or Maintenance Log > Resources Used tab:



Updating Parts and Disciplines on Jobs

The parts and disciplines reported as used on a work order might vary from the required parts and required disciplines listed on the component job itself. AMOS can update the Required Parts and Required Disciplines tabs on the Component Job window according to the data a user enters in the Report Work window Stock Used and Resources Used tabs.

It's also possible to update parts on component jobs when you move items in and out of stock for use on work orders.

Updating Required Parts

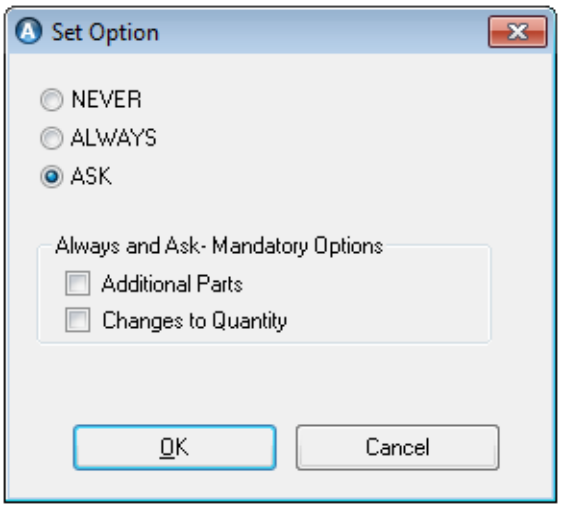
Set the parameter 'Report Work, Stock Used to Update Component Job Required Parts'[1] to either ASK or ALWAYS[2] (default NEVER) depending if you want AMOS to prompt the user or to simply carry out the updates.

Also on the parameter setting, flag the types of updates you want to make to the component job's required parts list, depending on the user's actions in the Report Work window Stock Used tab[3] :

[1] Tools > Configuration > Parameters > Options > Maintenance >

[2] To activate this parameter, 'Use Component Types' must be set to FALSE.

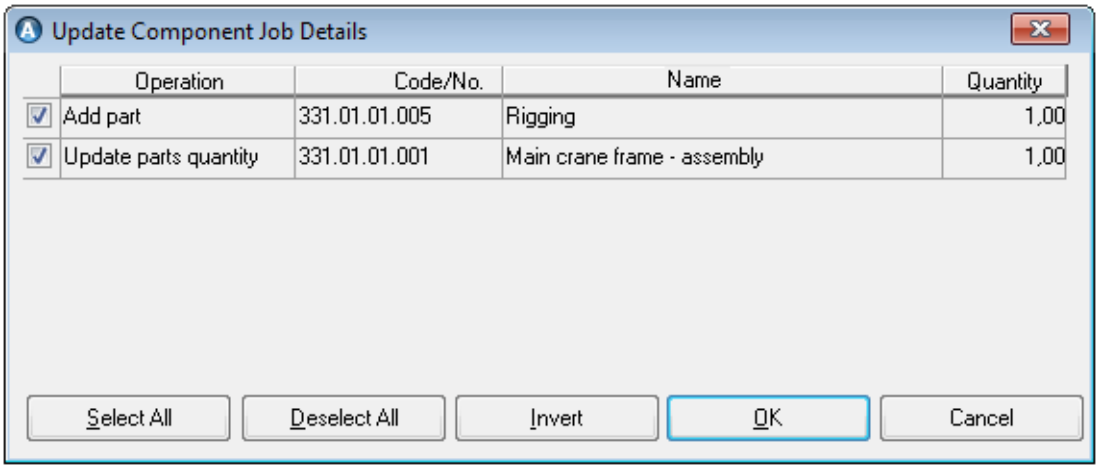
[3] AMOS makes the updates when the work order report has been completed.



Additional Parts. If the user adds another part and quantity to the Stock Used tab, AMOS will add the same part and quantity to the job's Required Parts tab.

Changes to Quantity. If the user changes the used quantity for a part already listed on the Stock Used tab, AMOS will change the quantity for this part on the job's Required Parts tab.

When the parameter is set to ALWAYS, any changes the user makes while reporting the work will automatically be reflected on the Component Job window Required Parts tab, according to the options you flagged. Set to ASK, AMOS will prompt the user in the Report Work window about newly added parts or changes to quantity:



The user can then flag or unflag parts to update the Component Job window Required Parts tab with.

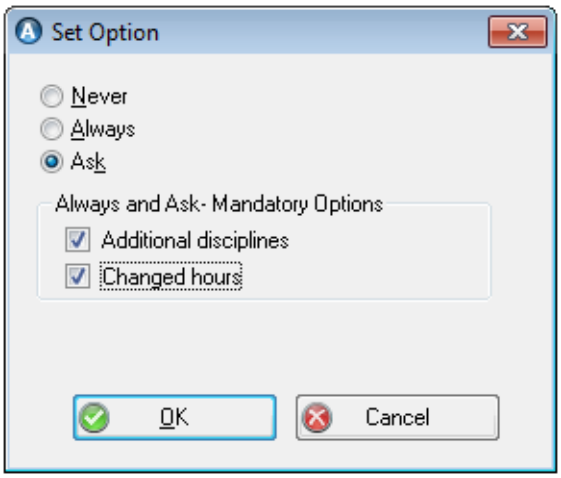
Note: If you set both 'Report Work, Resource Used to Update Component Jobs Required Disciplines' and 'Report Work, Stock Used to Update Component Jobs Required Parts', the applicable changes will appear in one dialog with one prompt only for the user when reporting work.

The same parameter also controls updates from the In/Out of Stock window, in the same way. When a part is registered 'Used' in the In/Out of Stock window in conjunction with a completed work order for a component job, AMOS will add it to Required Parts tab if it wasn't already there, or update the quantity used on an existing part if it's changed, according to the parameter setting and flagged option(s). Likewise, if a user returns a part by registering a 'Returned Unused' transaction in the In/Out of Stock window in conjunction with a completed work order, AMOS will adjust that item's quantity on the component job's Required Parts tab.

Updating Required Disciplines

Set the parameter 'Report Work, Resource Used to Update Component Job Required Disciplines'[1] to either ASK or ALWAYS[2] (default NEVER) depending if you want AMOS to prompt the user or simply carry out the updates.

Flag the types of updates you want to make to the component job's required disciplines list, depending on the user's actions in the Report Work window Resources Used tab when reporting the job[3]:



Additional Disciplines. If the user adds another discipline to the Resources Used tab, AMOS will add the same discipline to the job's Required Disciplines tab. Only the discipline itself will be added - not the hours specified.

Changed Hours. If the user changes the hours on a discipline listed on the Resources Used tab, AMOS will change the estimated hours for this discipline on the job's Required Disciplines tab.

When the parameter is set to ALWAYS, any changes the user makes while reporting the work will automatically be reflected on the Component Job window Required Disciplines tab, according to the options you flagged. Set to ASK, AMOS will prompt the user in the Report Work window about newly added disciplines or changes to hours. The user can then flag or unflag disciplines or hours to update the Component Job window Required Disciplines tab with.

Note: If you set both 'Report Work, Resource Used to Update Component Jobs Required Disciplines' and 'Report Work, Stock Used to Update Component Jobs Required Parts', the applicable changes will appear in one dialog with one prompt only for the user when reporting work.

Scheduling Jobs

Each job has information about when it should be performed. There are different ways to schedule jobs:

- Periodic Frequencies and Planning Methods. A job can be performed regularly at a set frequency. See "Scheduling Jobs: Periodic Frequencies and Planning Methods" on the next page.
- Counters. A job can be performed regularly whenever a counter reaches a predefined level. See "Scheduling Jobs: Counters" on page 50.
- Measure Points/CBM. If your installation uses automatic Condition-Based Maintenance (CBM) and/or components are linked to measure points, then a job may be scheduled whenever certain circumstances occur. See "Scheduling Jobs: Measure Points" on page 52

[1] Tools > Configuration > Parameters > Options > Maintenance >

[2] To activate this parameter, 'Use Component Types' must be set to FALSE.

[3] AMOS makes the updates when the work order report has been completed.

» Triggers. Link manual triggers for pre-defined events like 'Arrival' or 'Departure' to a job. When the trigger is eventually activated, AMOS can generate the necessary work orders. See "Scheduling Jobs: Triggers" on page 55.

Scheduling Jobs: Periodic Frequencies and Planning Methods

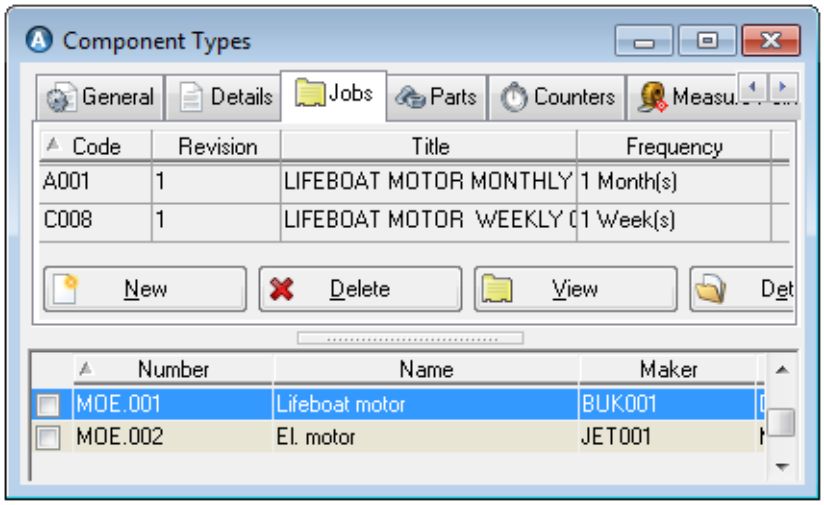
You can schedule jobs to be carried out regularly at a defined periodic frequency. Work orders for jobs with a periodic frequency can be handled automatically[1] after the system has been `kick-started' by creating the first work order: once the status of the current work order has been set to Completed, AMOS creates the next one.

Remember, component type jobs - and their schedules - can be applied to all instances of the component type. Jobs and schedules defined on component job level apply only to the selected component.

EXAMPLE

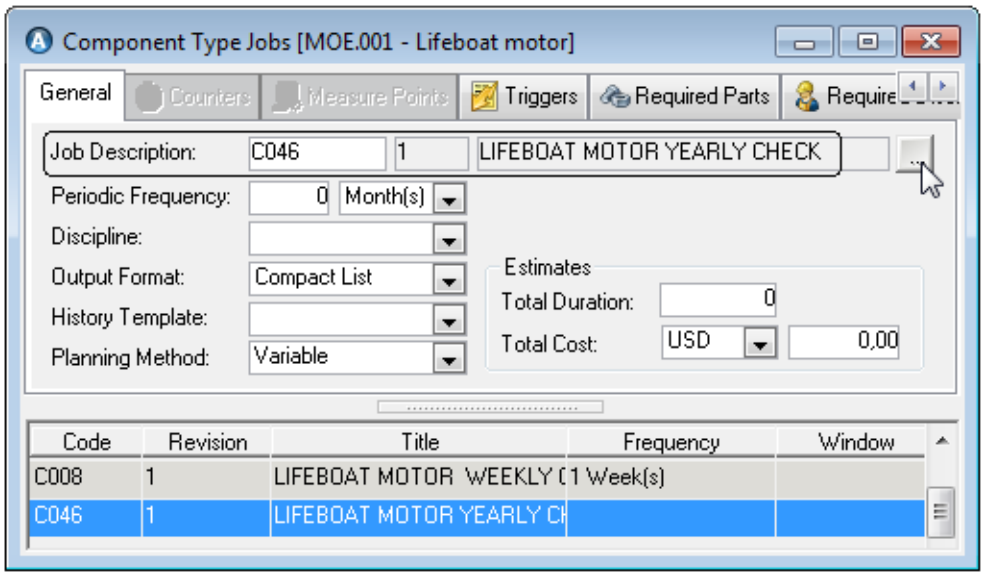
You want to schedule yearly maintenance work on the component type Lifeboat Motor. You add the job 'Lifeboat Motor Yearly Check' to the Component Type Jobs window and then need to define when the job should be carried out.

1. Open the Component Types window, select the type and open the Jobs tab:

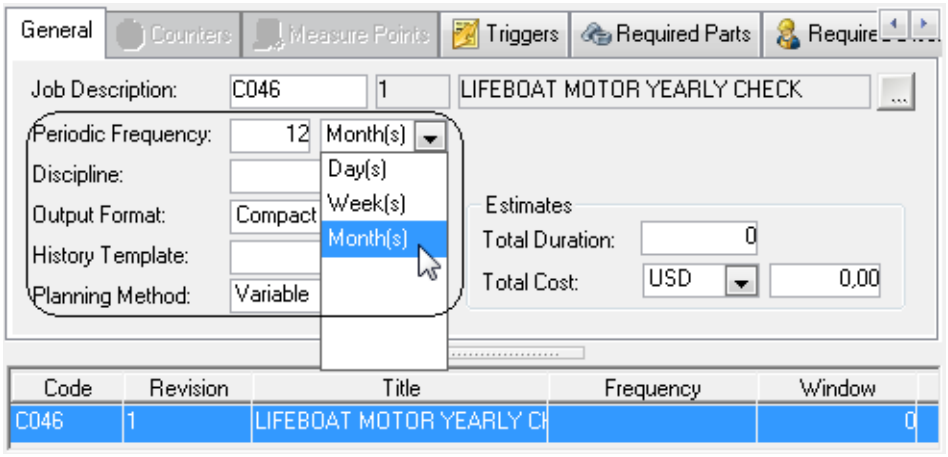


2. Click the **New** or **View** button to open the Component Type Jobs window. Add the new job using the lookup to find the **Job Description** for 'Lifeboat Motor Yearly Check':

[1] Set the system parameter 'Automatically Reschedule Work Orders' to TRUE to allow AMOS to reschedule work orders if you change details like 'Last Done' on the job, or update a counter.

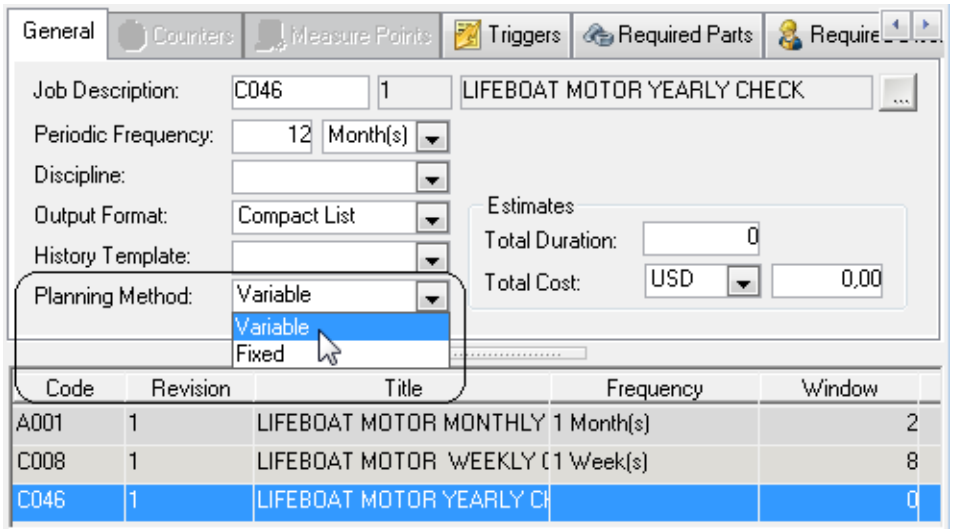


3. Set the interval at which this job should be carried out - for example, 12 months - using the **Periodic Frequency** field:



Using the periodic frequency and the **Last Done** date AMOS will provide the **Next Due** date.

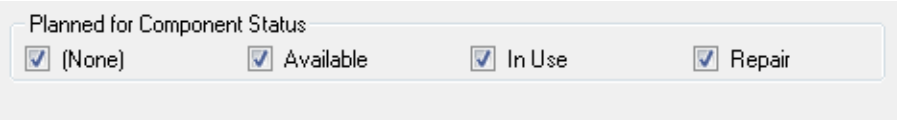
4. Set a **Planning Method**. After the first work order for this job has been completed, AMOS will generate the next one, and so on, due according to the planning method:



- **Variable Planning** enables a flexible reporting date. The next due date is always calculated according to the date of the last report. So, if the frequency on a job is set to 30 days, reported on 5 May causes the next due date to be set to 5 June.
- **Fixed Planning** means a report is always due on the same day of each month. This means that no matter when the job is reported, the next due date remains fixed even if the report was late and fewer than the set number of days remain until the next due date.

5. **Save** your work.

Another way to fine-tune work order generation is to flag one or more of the **Planned for Component Status** checkboxes. The component the job is for then needs to have one of the flagged statuses[1], in order for a work order to be generated:



If the component status is changed to a status which is not flagged, the job will be excluded. If the status is changed again or reverted, a work order will be created automatically or on next selection of Maintenance > Generate Work Orders[2], if that status is flagged in the Jobs window.

Save the job schedule. If you are working in the Component Type Jobs window, AMOS will ask if you want to apply the job/changes to all components of that type.

See "Initial Work Orders for Scheduled Jobs" on page 56 about creating the first work orders for periodic jobs.

Scheduling Jobs: Counters

AMOS can use counters as a way of determining when jobs are due: jobs can be performed when a counter reaches a predefined value. Work orders for jobs with a counter can be handled automatically[3] after the system has been `kick-started' by creating the first work order: once the status of the current work order has been set to Completed, AMOS creates the next one.

> **EXAMPLE**
>
> An engine is to be checked every 1200 running hours. AMOS will start counting the running hours as soon as it is reported that the engine has been installed. When 1200 hours approaches, the job 'Check the engine' will appear when the job lists for the coming period are printed or the Work Planning window is opened. Once the job is reported as completed, AMOS will restart counting.

AMOS counts time automatically but the counters must be updated either manually, or automatically through CBM.

> **EXAMPLE**
>
> There is a maintenance job that must be performed when the ship has docked a certain number of times. There is a counter for the number times the ship has docked which must be updated manually each time the vessel enters a harbour.

Remember, component type jobs - and their counters - can be applied to all instances of the component type. Jobs and counters defined on component job level apply only to the selected component.

---

[1] Work orders are not generated for scrapped or transferred components.

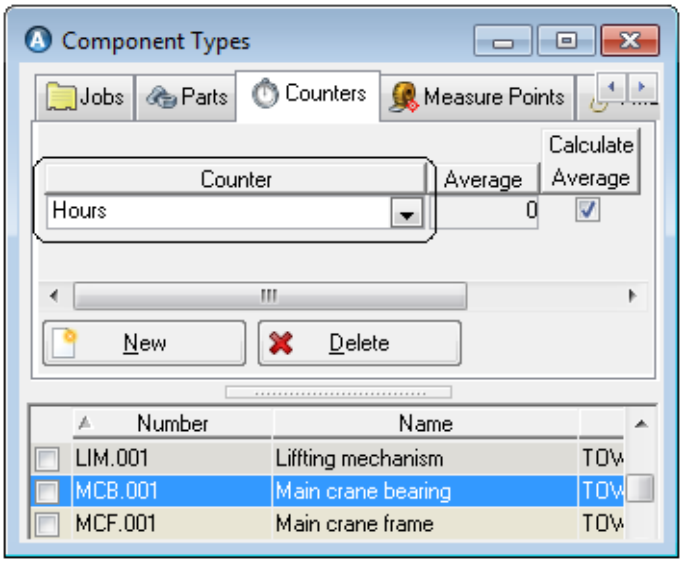
[2] If the parameter 'Automatically Reschedule Work Orders' is set to TRUE, changing a component to a flagged status creates a work order automatically. If the parameter is set to FALSE, changing a component to a flagged status will include the job in the next selection of Maintenance > Generate Work Orders.

[3] Set the system parameter 'Automatically Reschedule Work Orders' to TRUE to allow AMOS to reschedule work orders if you change details like 'Last Done' on the job, or update a counter.

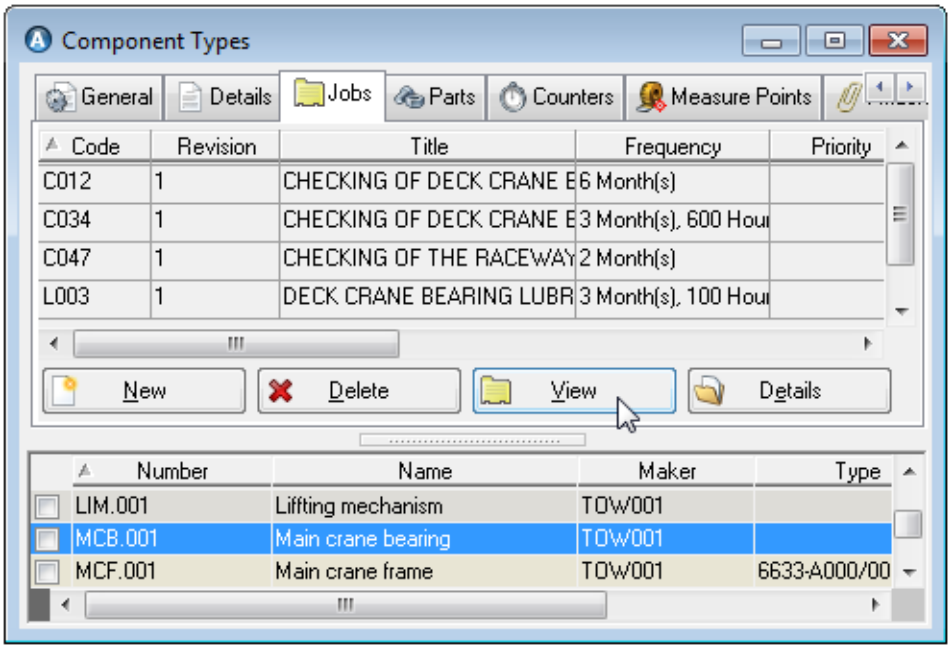
Counters are only available for selection on component/type jobs if they have been listed on the component/type itself, first.

Linking a Counter to a Job

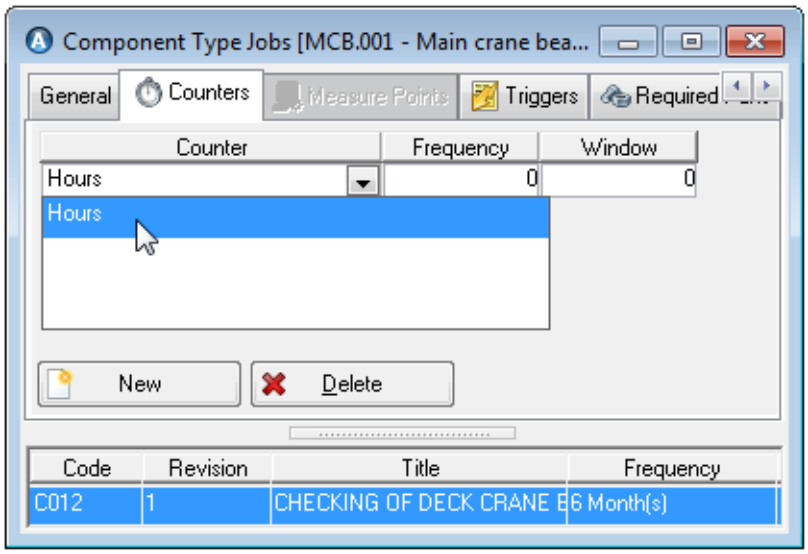
1. Open the Component/Types window and select the component/type. Check that the counter you want is listed in the Counters tab:



2. Open the Jobs tab:

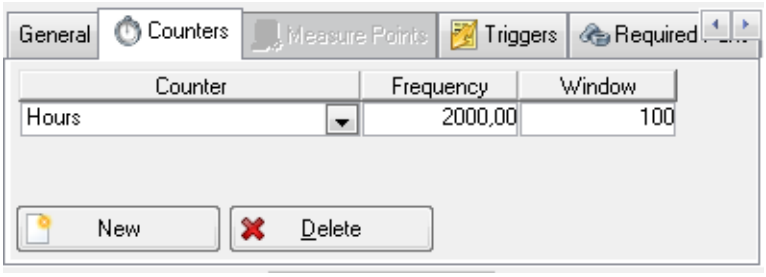


3. Click **New** or **View** to access the Component Types Jobs window for this component type. Open the Counters tab in the Component Type Jobs window and click the **New** button there. The 'Hours' counter is available to add to the job(s):



Notice that the Measure Points tab is unavailable. This is because no measure points have been added to the component type first.

- Set the **Frequency** - how many hours before the job comes due, and
- **Window** - any period of hours on either side of the set frequency, in which the job can be performed.



4. **Save** the changes. If you are working in the Component Type Jobs window, AMOS will ask if you want to apply the job/changes to all components of that type.

When a **Counter** (or **Measure Point**) is **deactivated**:

- If the related Job is also connected to a calendar based frequency, the job shows this plan only and the related Work Order is rescheduled according to this criterion
- If the related Job is triggered only by the deactivated Counter, this is removed and related Work Order is set to Cancelled.

The button **Show All** lists also Job connected to Deactivated Counters.

See "Initial Work Orders for Scheduled Jobs" on page 56 for information about creating work orders for counter jobs.
See "Updating Counters and Measure Points" on page 174

Scheduling Jobs: Measure Points

AMOS uses measure points as a way of determining when jobs are due: when a measure point linked to a component is updated with a value that falls outside of its preset minimum or maximum values, work orders will be generated.

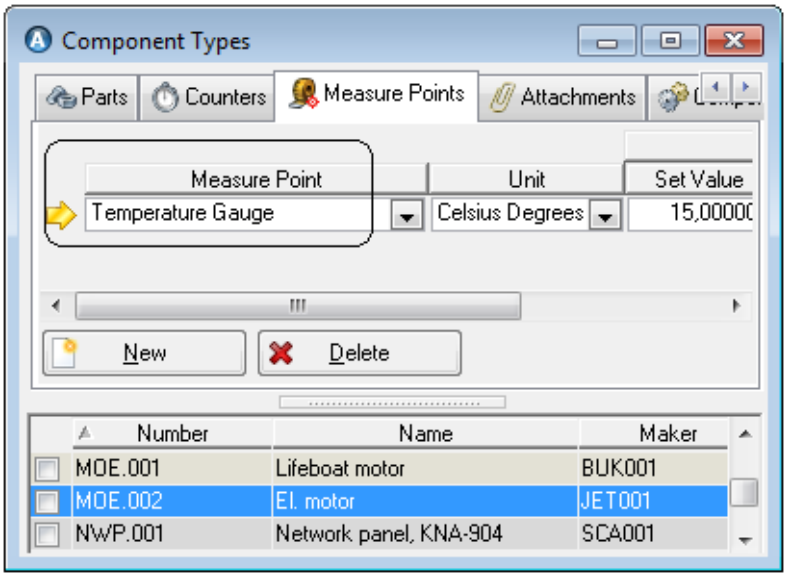
Measure point values are not incremental, and can have an up/down trend over time - for example, a Pressure Gauge or a Temperature Gauge. It is difficult to predict when measure point jobs might be required and so AMOS does not generate work orders in advance but rather as needed.

Remember, component type jobs - and their measure points - can be applied to all instances of the component type. Jobs and measure points defined on component job level apply only to the selected component.

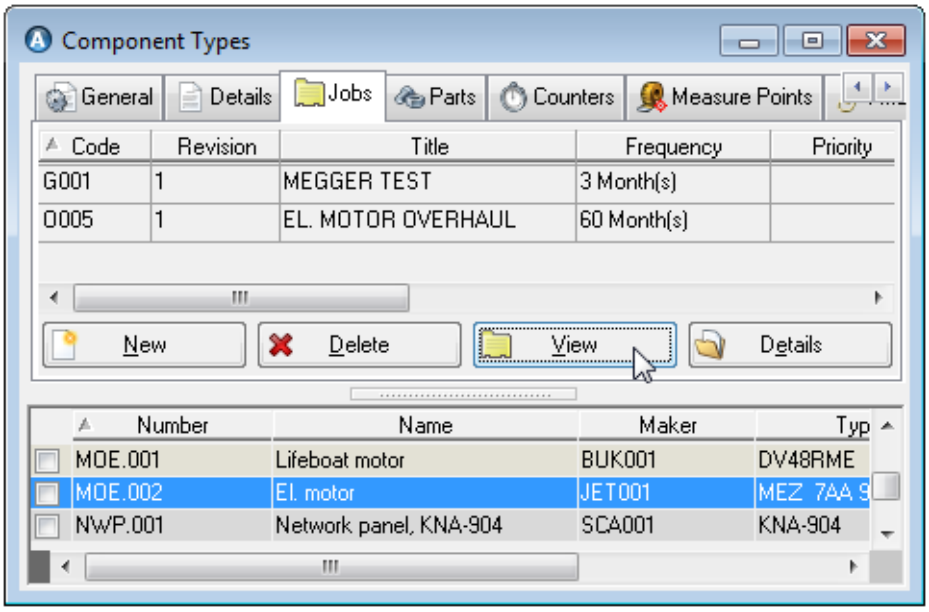
Measure points are only available for selection on component/type jobs if they have been listed on the component/type itself, first.

Linking a Measure Point to a Job

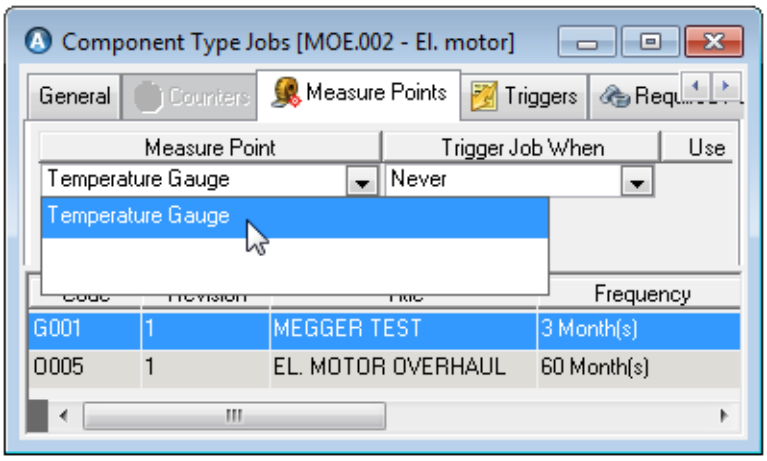
1. Open the Component/Types window and select the component/type. Check that the measure point you want is listed in the Measure Points tab:



2. Open the Jobs tab:



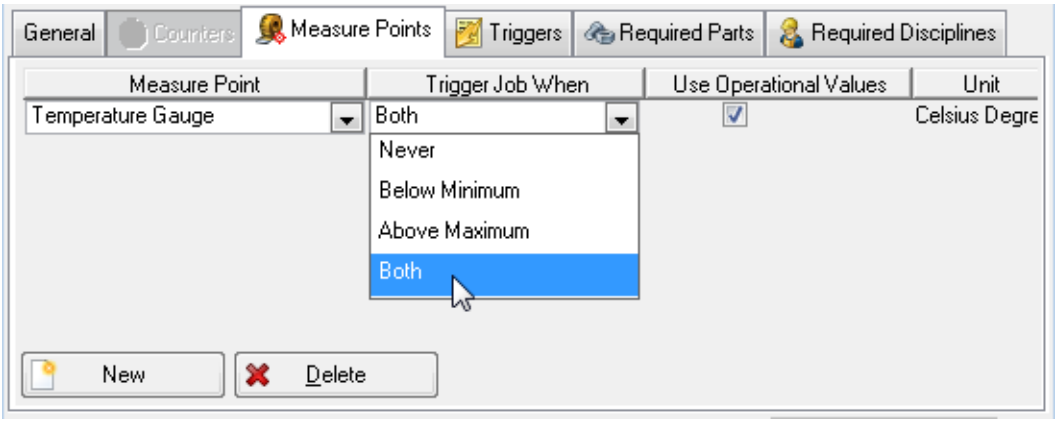
3. Click **New** or **View** to open the Component Types Jobs. Open the Measure Points tab and click the **New** button there. The 'Temperature Gauge' measure point is available to add to the job(s):



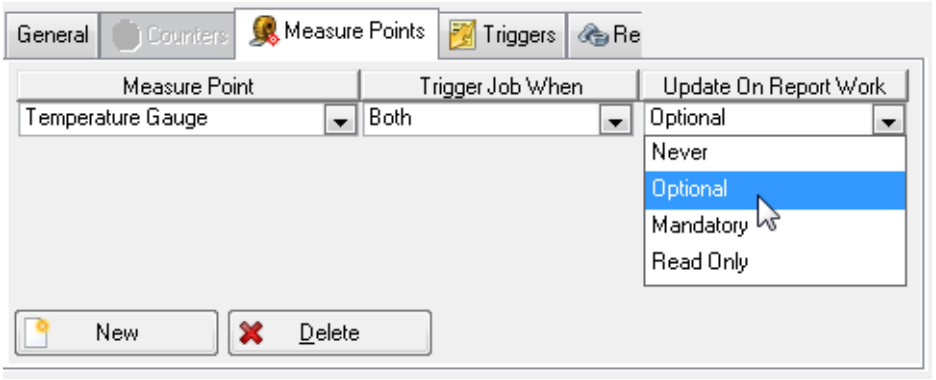
Notice that the Counters tab is unavailable. This is because no counters have been added to the component type first.

4. If you leave **Use Operational Values** flagged, **Min/MaxValues** set on the Component Type window Measure Points tab will apply here for this job. Unflag the checkbox to set different values for the measure point in relation to the selected job:

5. You can define if/how the measure point values trigger the job using the **Trigger Job When** field to select 'Never', 'Both', 'Above Maximum' or 'Below Minimum':



6. Measure Points will not be listed and available for updating in the Report Work window for the selected job unless you set the **Update on Report Work** field to Optional or Mandatory:



7. **Save** the changes. If you are working in the Component Type Jobs window, AMOS will ask if you want to apply the job/changes to all components of that type.

See "Generating Work Orders" on page 73 about creating work orders for measure point jobs.

See "Updating Counters and Measure Points" on page 174

CBM

If your installation uses automatic Condition-Based Maintenance (CBM) functions, then a job may be scheduled when a monitor or sensor detects a predefined condition in a component and passes this information to AMOS. For example, a sensor might detect when the temperature in a cooled unit rises above 10 deg.C, or when an arm on a rotating unit has made 36000 rotations.

It is difficult to predict when CBM jobs might be required and so AMOS does not generate work orders in advance but rather as needed.

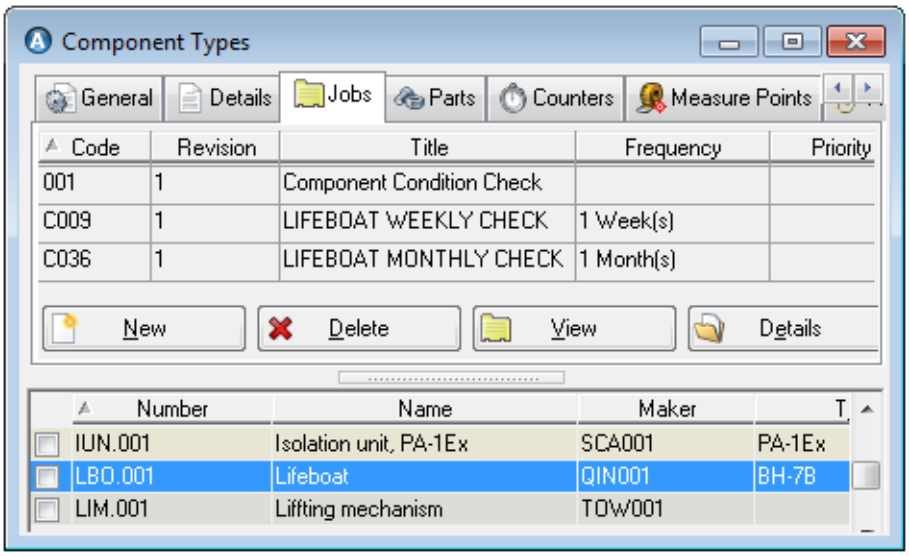
Scheduling Jobs: Triggers

Triggers are another way of determining when jobs should be carried out. When a trigger is linked to a job, AMOS can generate work orders for pre-defined events like 'Arrival' or 'Departure' etc.

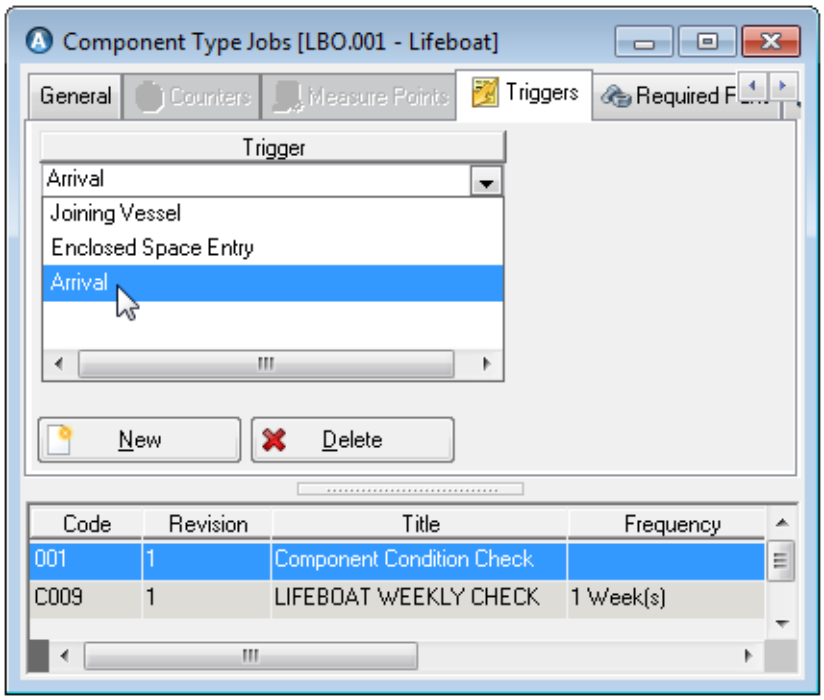
- Link triggers to jobs in the **Component/Type Jobs windows**: remember, triggers added at component type job level are available system-wide to all components of the selected type. Triggers added at component job level apply to the job on the selected component only.
- You can also link triggers to rounds in the **Rounds window**.

To link a trigger to a job:

1. Open the Components or Component Types window. Select a component/type and open the Jobs tab:



2. Click **New** or **View** to open the Jobs window. Select a job in the list and open the Triggers tab there.
3. Click **New** to add a trigger to the selected job:



4. **Save** the changes. If you are working in the Component Type Jobs window, AMOS will ask if you want to apply the job/changes to all components of that type.

To create the relevant work orders, activate the trigger as needed by selecting **Maintenance > Trigger Jobs**. See "Activating Trigger Jobs" on page 73.

The Job Planning Window

You create Jobs in the Jobs windows accessed through the Component Type and Components windows. Those jobs will be listed with their details in the Job Planning window which has a graphic timeline that works in the same way as the Work Planning window. You can use the timeline to visually schedule your jobs before generating work orders to carry them out. Access this window at **Maintenance > Job Planning**. To adjust the timeline in the Planning window, go to **Options > Scale** and/or > **Settings**.

If the system parameter 'Use Job Dependencies' is set to TRUE, you can configure job dependency links between two or more component jobs inside the Component Jobs window. You can also configure these links in the Job Planning window, where you can use the graphic timeline to easily visualise your chain. Use the Dependency tab and/or the Options menu to add and remove dependencies between jobs.

To open the Component Jobs window for a job in the planner, select it and go to **Options > View Jobs**.

Initial Work Orders for Scheduled Jobs

When you define a component job with a periodic schedule or a counter, the next thing you need is the first planned work order for it[1]. Creating the first work order kick-starts the maintenance process: AMOS will automatically create the next work order(s) according to schedule or counter when a user reports the existing one as complete.

AMOS can create a job's initial work order automatically, or, you can manually create it yourself. This depends on the setting of the system parameter 'Automatically Create Initial Work Order'.

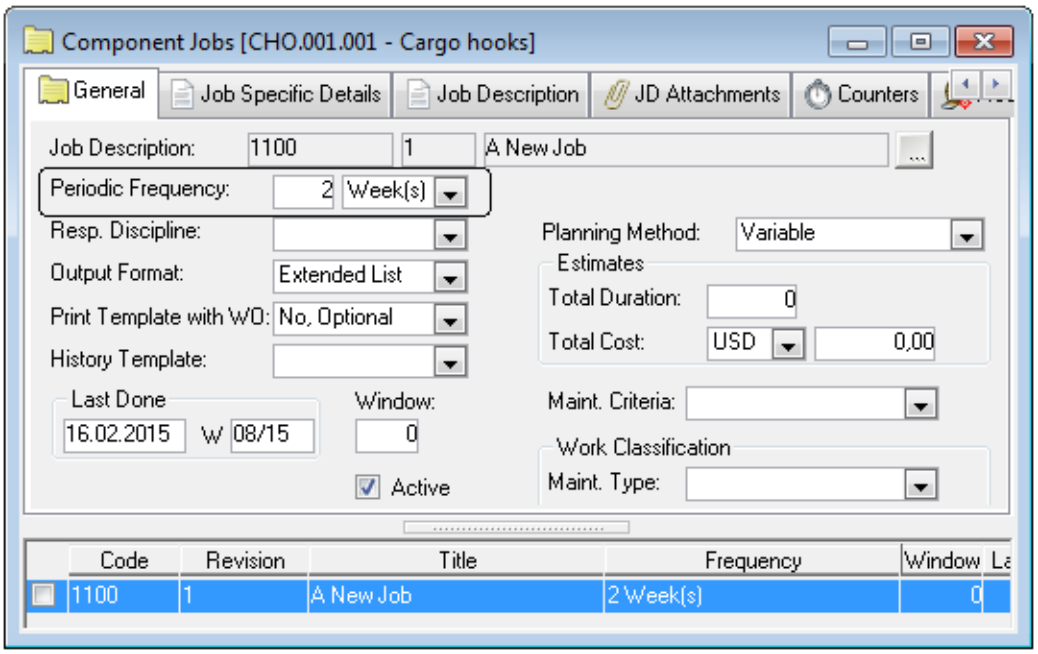
Keep in mind:

[1] This applies to any job without a scheduled work order; for instance, newly reactivated jobs.

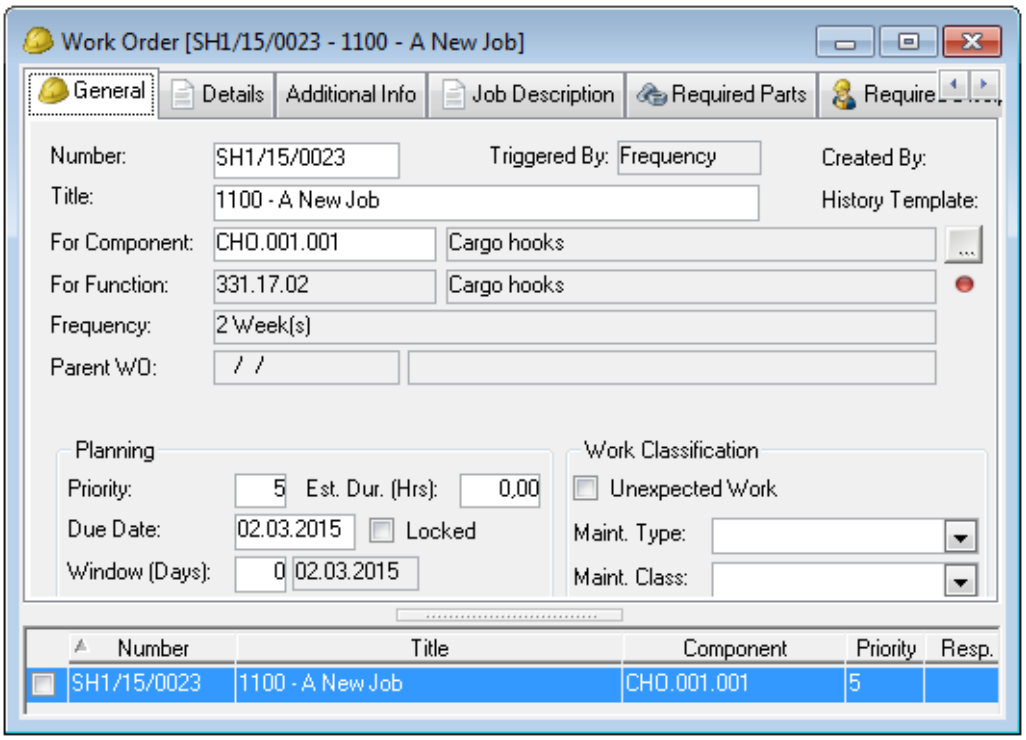
- If you provide a **Last Done** date along with the **Periodic Frequency** on the job, the work order's **Due Date** will be set according to that date and the frequency. Without a last done date AMOS will set the due date on the work order to today and you can reschedule it as needed.
- If the system parameter 'Automatically Reschedule Work Orders' is set to TRUE AMOS will reschedule work orders for you, if you change details like **Last Done** on the job or update a counter.

Creating Initial Work Orders Automatically

When the parameter is set to TRUE and you define a component job, AMOS will create the first work order for this job automatically as soon as you provide at least a **Periodic Frequency** or counter values and **Save**:



You will see it in the Work Order window, with the due date set according to frequency and last done date:



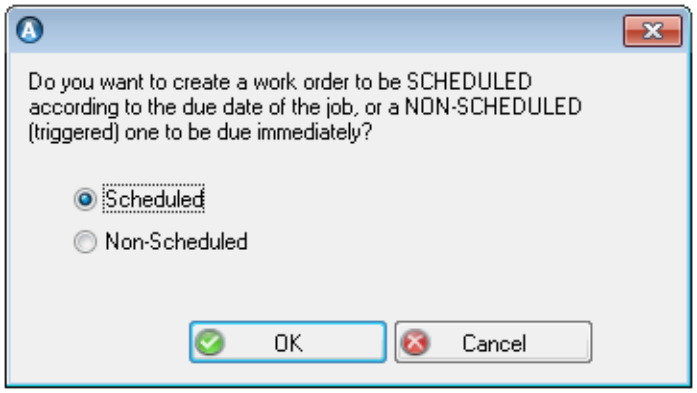
Creating Initial Work Orders Manually

On the other hand, if the 'Automatically Create Initial Work Order' parameter is set to FALSE, AMOS will not create the first planned work order for you when you define a job and **Save** it with a **Periodic Frequency** or the appropriate counter values needed to schedule the work order. In this case, you need to create the initial planned work order yourself. There are two ways to do this: create it from the job, or generate the initial work orders.

Creating Initial Work Orders from the Jobs Window

Create it from the job itself:

1. Define and **Save** a component job with a **Periodic Frequency** or counter and values.
2. Go to **Options > Create Work Order**. In the dialog that opens, choose 'Scheduled'[1]:



   Flag 'Open the created work order' to see the resulting work order after.

3. Click **OK**. AMOS creates the first planned work order for the job setting the due date according to frequency and last done date or counter values.

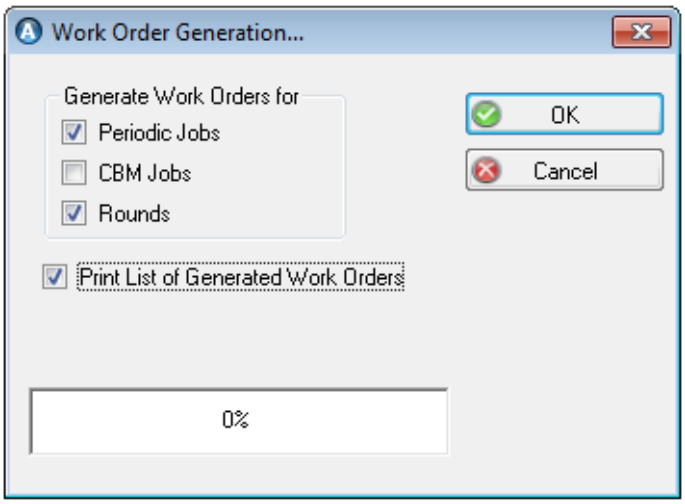
Note: If the first planned work order or a one-off work order with an earlier due date than the schedule will result in already exists for the job, AMOS will not create another one. Instead, you'll see the existing work order open up.

Generating the Initial Work Orders

Or, if you've defined several jobs without creating the first work orders automatically - for instance, when setting up a round - you can generate the initial work orders for them all in one go:

1. Define and **Save** the job(s) with a **Periodic Frequency** or counter and values.
2. Go to **Maintenance > Generate Work Orders**.
3. Flag 'Periodic Jobs' (and/or 'Rounds'):

[1] If you choose 'Non-Scheduled', AMOS will not consider the job's schedule and instead will create a 'one-off' work order with the due date set to today and locked. See "'One-Off' Work Orders" on page 74 about this kind of work order.



4. Click **OK**. AMOS creates the first work order(s), setting the due date(s) according to frequency and last done date or counter values.

Note: If the first planned work order or a one-off work order with an earlier due date than the schedule will result in already exists for any job, AMOS will not create another one for that job. Instead, the existing work order for that job will be listed with the other newly generated ones.

See "Round Work Orders" on page 71 for more about round work orders.

Maintenance Rounds

Your amount of paperwork may become unnecessarily large if a work order is printed for every job. Instead, you can use the Rounds window to group several related jobs so that they are included on a single work order. Typically, a round will comprise similar jobs performed by personnel of the same discipline, but AMOS does allow you to include in a round jobs that would normally be performed by different disciplines.

To set up a round:

1. Define the round and its details. See "Defining a Round" below.
2. Schedule the round. See "Scheduling a Round" on the next page.
3. Allocate jobs to the round. See "Allocating Jobs to a Round" on page 61.
4. You can define certain settings for later reporting on rounds. See "Reporting Methods and Options for Rounds" on page 69

See "Round Work Orders" on page 71 about round work orders.

See "Simple Reporting on Rounds" on page 191 about reporting on rounds.

Defining a Round

1. Go to **Maintenance > Rounds**. Click **New**.
2. Enter a **Title** and assign a **Code** to the round.

> **Tip**
>
> Use the same prefix for all rounds to make it easier to identify work orders generated from the round.

3. There are three available **Output Formats** for a round:

- **List**. Contains a single line for each job.
- **Extended List**. Contains only the most important information.
- **Work Order**. Also includes the description text for each job and all details.

4. Add other information like a **History Template**, **Discipline**, etc., and **Save** the round.

Scheduling a Round

Each round has information about when it should be performed. There are different ways to schedule rounds:

- **Periodic Frequencies and Planning Methods.** A round can be performed regularly at a set frequency.
- **Triggers**. Link manual triggers for pre-defined events like 'Arrival' or 'Departure' to a round. When the trigger is eventually activated, AMOS can generate the necessary work orders.

Periodic Frequencies and Planning Methods

On the Rounds window General tab, set:

- the **Frequency** the round should be performed at[1];
- a **Window** within which the round is to be performed; and
- the **Last Done** date when the round was last completed.

The combination of last done and frequency gives the date by which the round must be completed next time.

Whenever such a round is reported complete, AMOS will generate the next round work order according to the **Planning Method** set for the previous round:

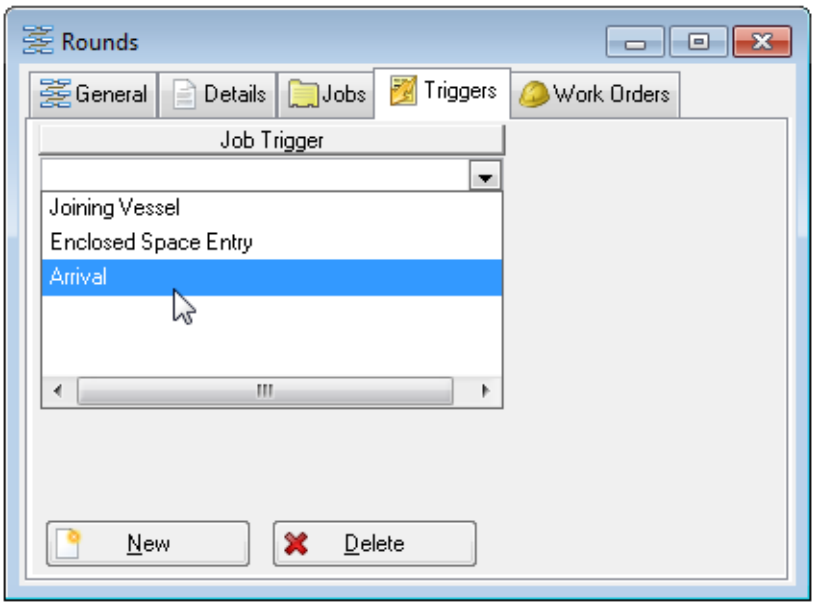
- **Variable Planning**. Enables a flexible reporting date. For example, if a job/round is to be reported every 30 days, the next due date is calculated according to the date of the last report. So, reported on 5 May causes the next due date to be set to 5 June.
- **Fixed Planning**. A report is always due on the same day of each month. This means that no matter when the job/round is reported, the next due date remains fixed even if the report was late and fewer than 30 days remain until the next set date.

Trigger Rounds

Triggers are another way of determining when rounds should be carried out. When a trigger for a pre-defined event like 'Arrival' or 'Departure' is linked to a round and then later activated, AMOS can generate the necessary work orders.

Link triggers to rounds in the Triggers tab:

[1] Flag the 'Include All Jobs when Generating Work Orders' check-box to generate the work order with all maintenance jobs included in the round, regardless of the jobs' own set frequencies.

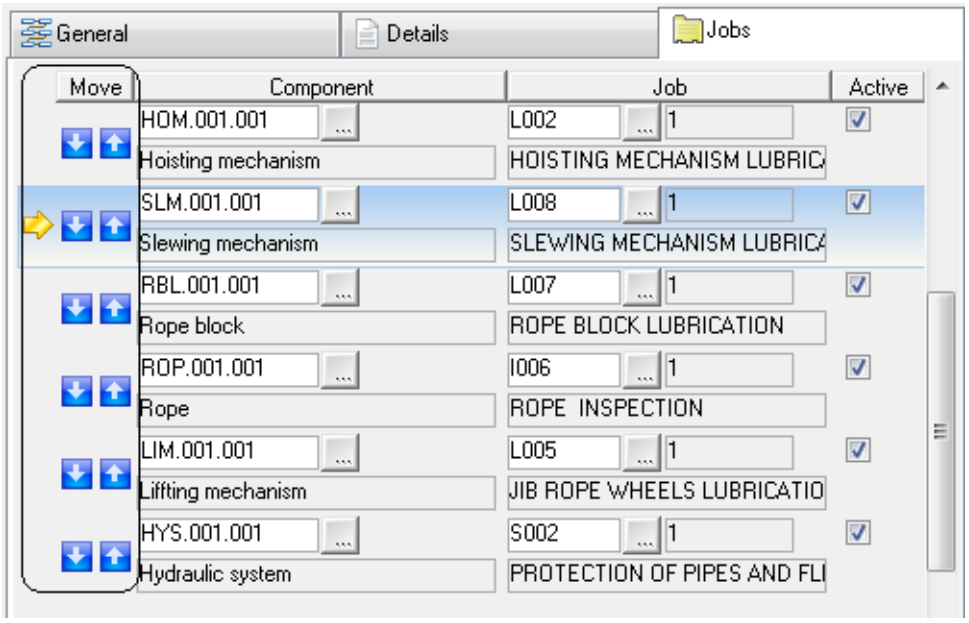


To create the relevant work orders, activate the trigger as needed by selecting **Maintenance > Trigger Jobs**. See "Activating Trigger Jobs" on page 73.

When a trigger is activated, AMOS will check if it is linked to any rounds. If so, AMOS will reschedule any existing round work order(s) to the current date - the date the event was triggered. If no work order already exists for the relevant round AMOS will create one.

Allocating Jobs to a Round

You can define a new round and add jobs to it, and you can add jobs to an existing round. Jobs already included in the round are listed in the Jobs tab. To change the sequence of the jobs, select one and click one of the blue arrows for that job to move it up or down in the sequence:

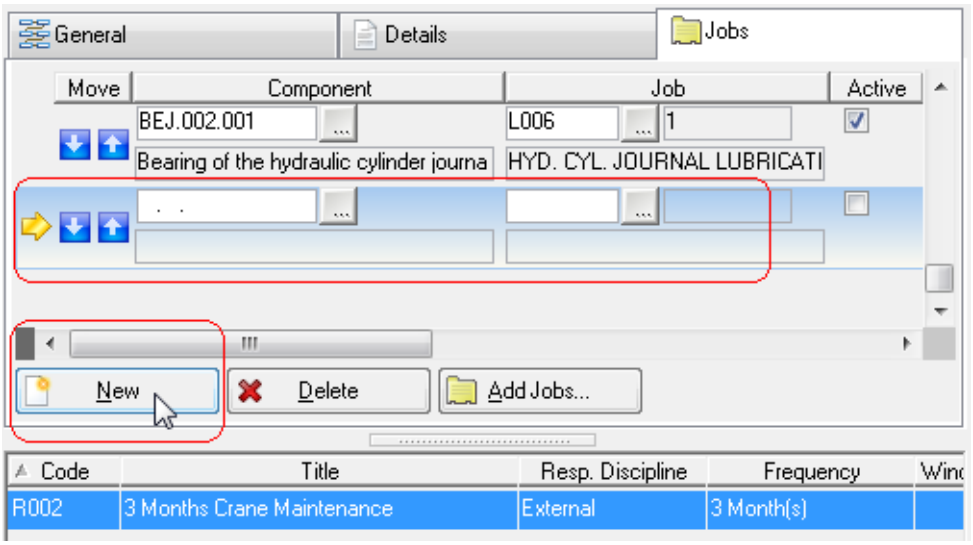


When a job is added to a round, the round's code appears in the Included in Rounds tab in the Component Jobs window and in the Jobs tab on the Component Hierarchy and Function Hierarchy.

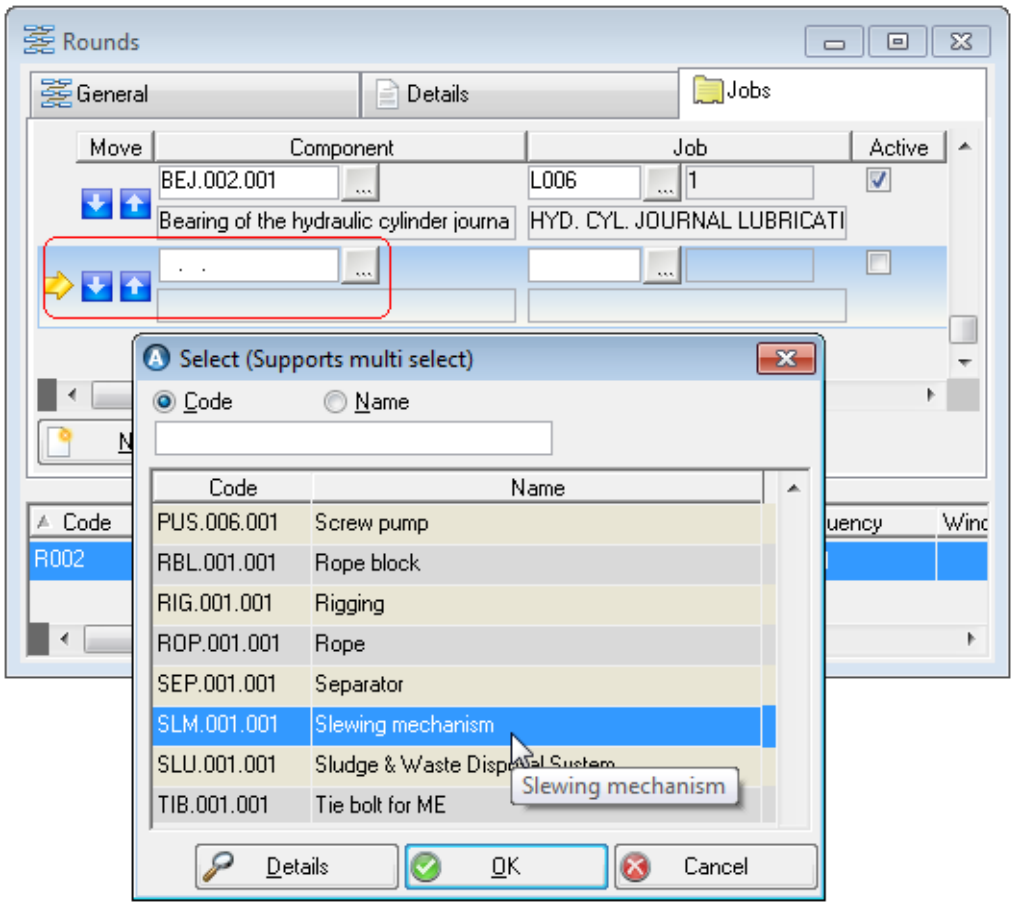
You can add individual jobs to a round using the **New** button or, use the **Add Jobs...** button to add several similar jobs.

Add Jobs with the New Button

1. Select a round and open the Jobs tab.
2. Click the **New** button to get a blank line:

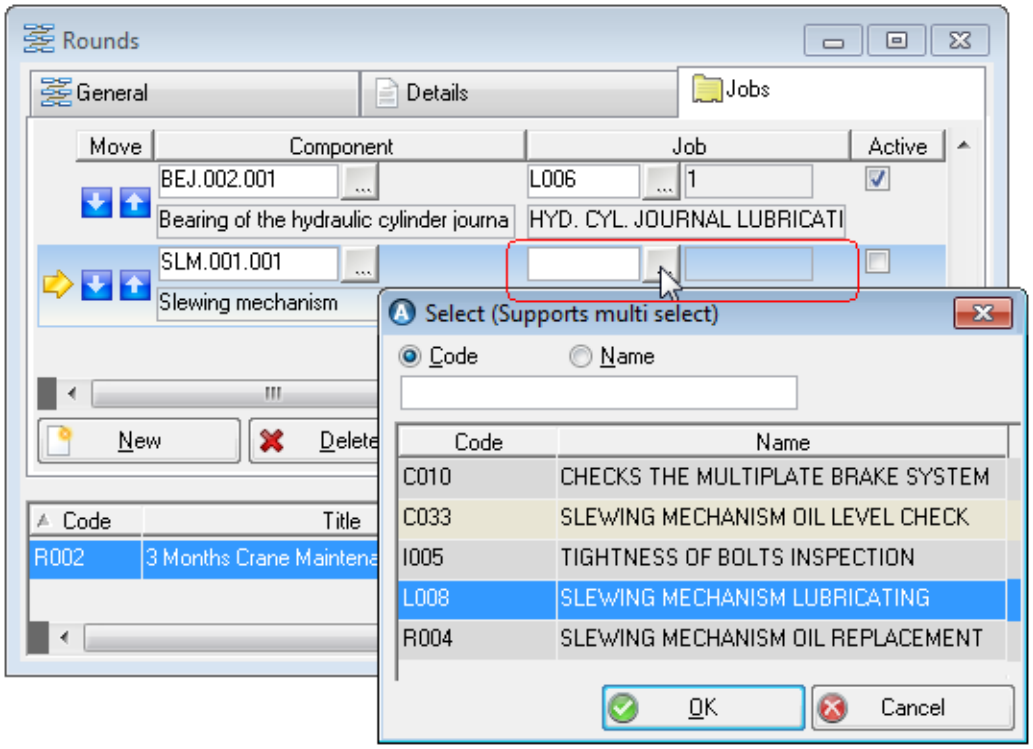


3. Lookup a **Component**:



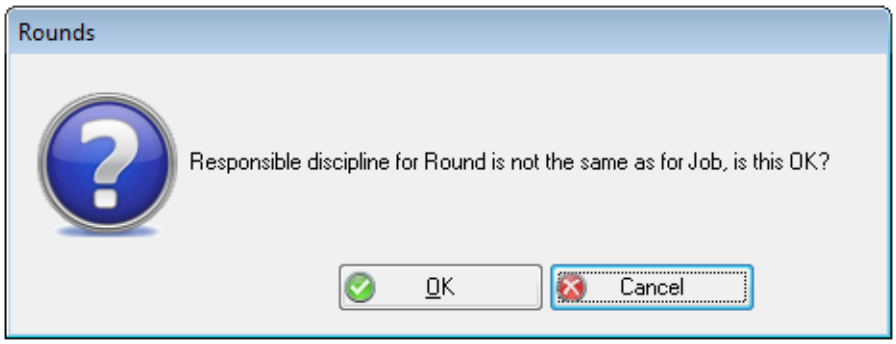
Hold the **Shift** and **Ctrl** keys while clicking on components to add more than one at the same time.

4. Lookup a **Job** from the list of jobs available for this component:



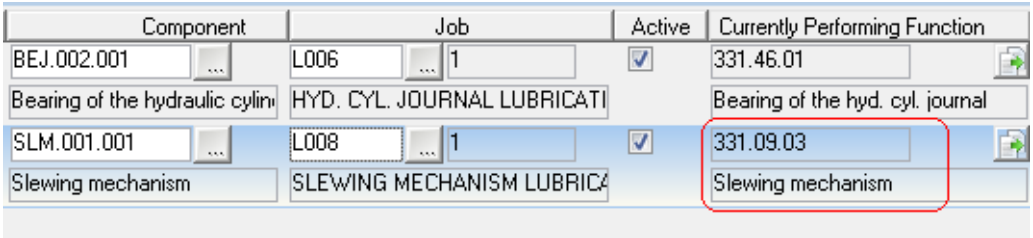
Hold the **Shift** and **Ctrl** keys while clicking on jobs to add more than one job for the same component.

If a job is allocated to a discipline other than the one selected for the round, you get the following question:



Click **OK** if this is what you intended, or click **Cancel** to pick a different job.

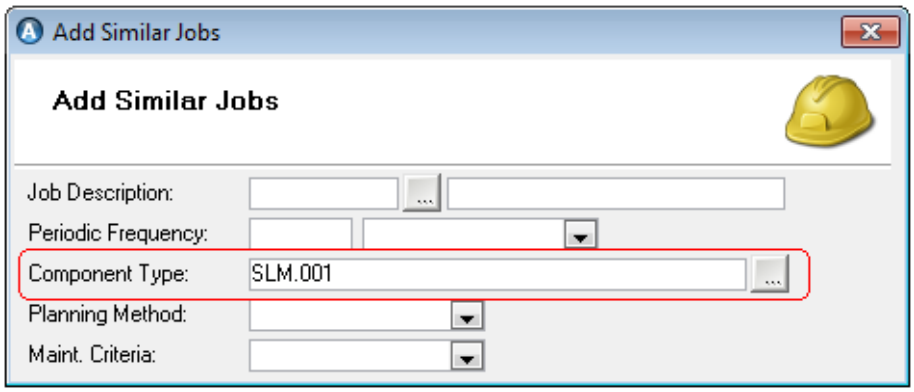
5. AMOS adds the component(s) and job(s) to the list, and fills the **Currently Performing Function** field with the function the selected component is installed on right now:



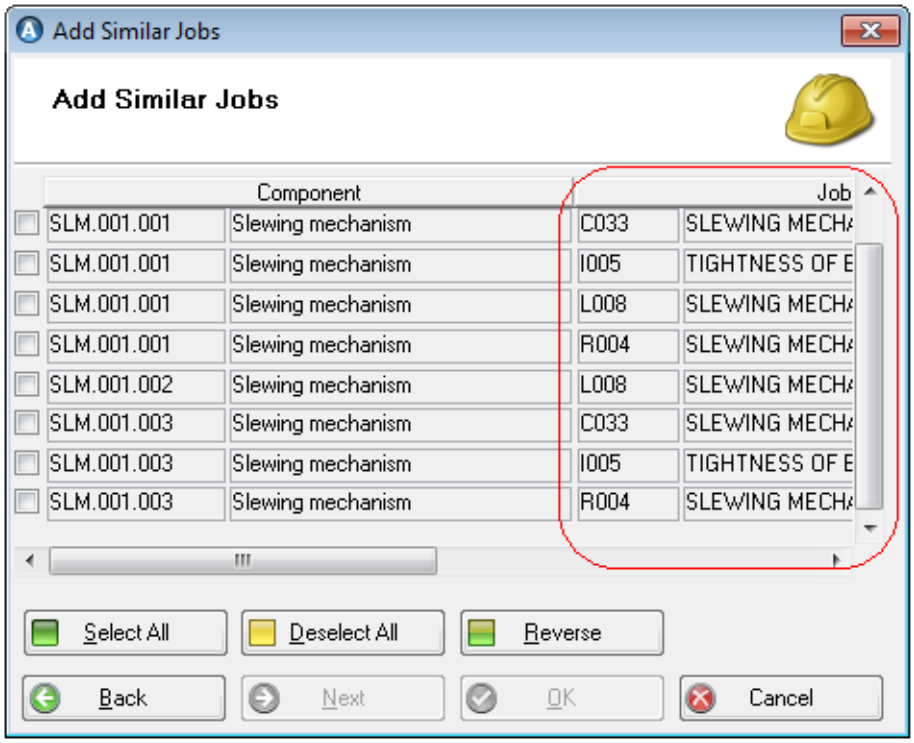
6. **Save** the job(s).

Add Jobs with the Add Jobs... Button

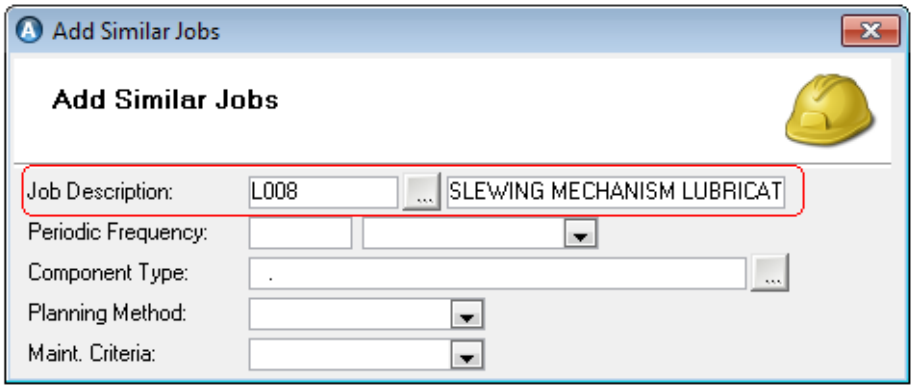
1. Select a round and open the Jobs tab.
2. Click the **Add Jobs...** button. The Add Similar Jobs dialog opens.
3. Lookup a **Job Description** and/or a **Component Type**. You can add any other details to help narrow the list.
4. Click **Next**. The content in the next dialog depends on your selections in the first dialog.
5. If you filtered for a **Component Type**:



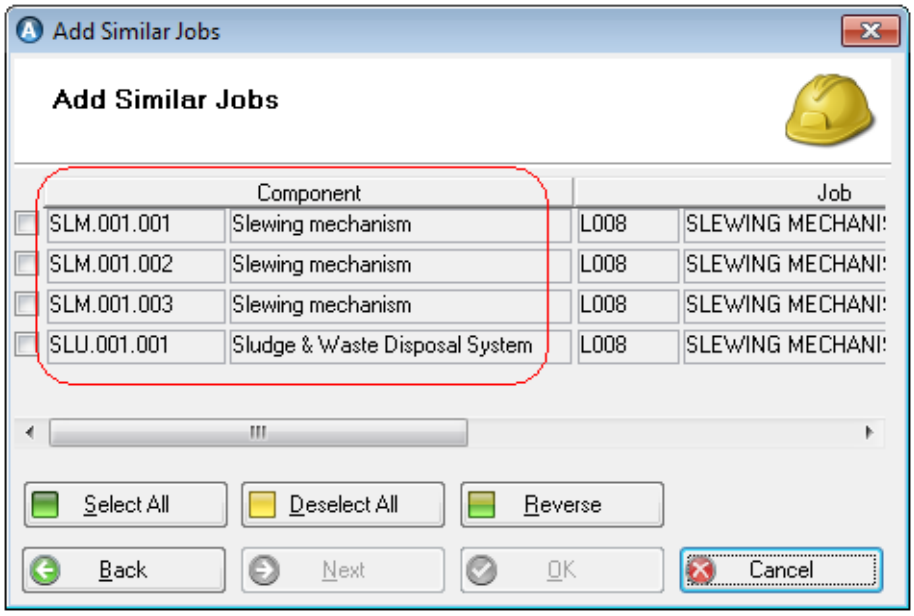
You will see all jobs defined for components of that type:



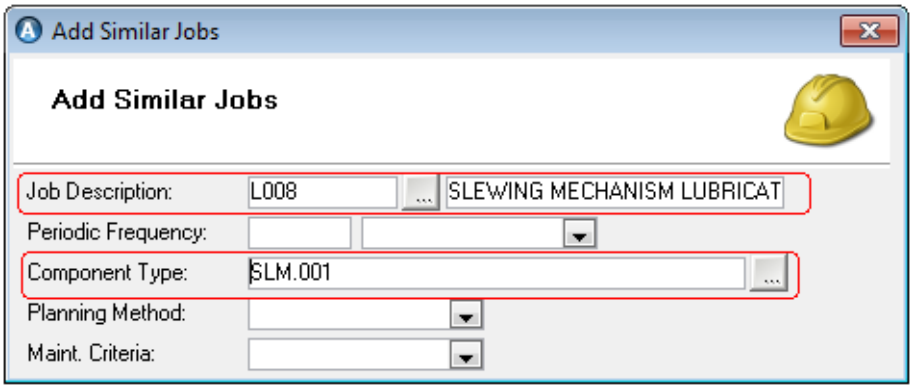
If you filtered for a **Job Description**:



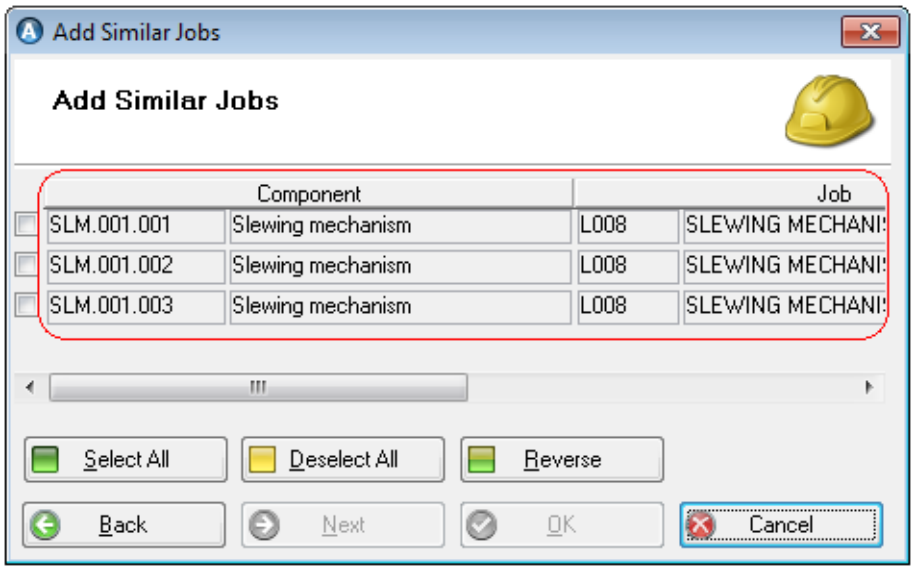
You will see a list of all components having that job assigned:



If you filtered for both a **Job Description** and **Component Type**:



You will see a list of any existing matches of the component and job combination:



6. Check the boxes of the component/job combinations to be included in this round.
7. Click **OK**to return to the main window.
8. AMOS adds the flagged component(s) and job(s) to the list, and fills the **Currently Performing Function** field with the function the selected component is installed on right now.
9. **Save** the job(s).

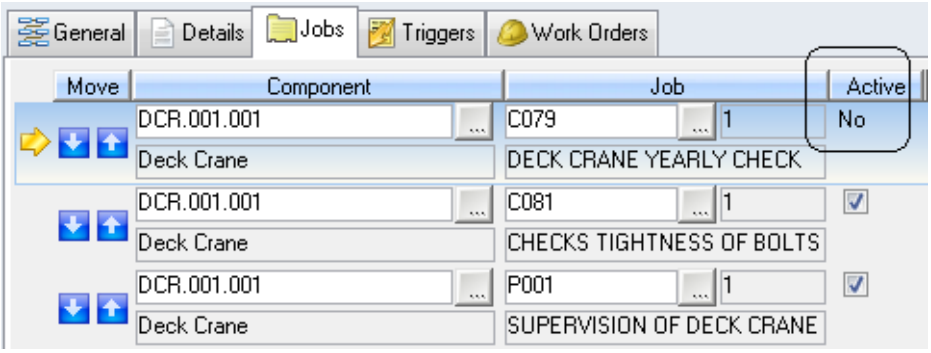
Deactivating and Reactivating Jobs

You can add jobs to rounds whether they are currently active or not. As long as the component job itself is active, it will be flagged **Active** in the round as well. When work orders are generated for the round, only active jobs will be included and so available for reporting.

What happens to jobs and existing round work orders when you deactivate and re/activate jobs?

Deactivating a Component Job

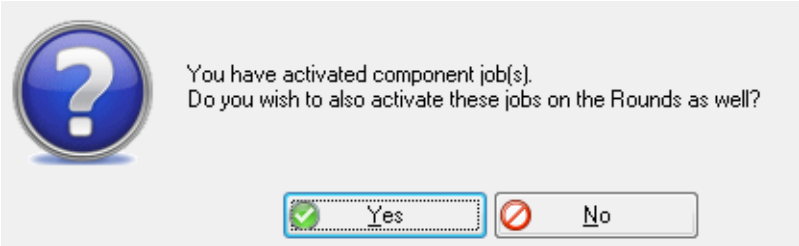
If you deactivate a component job in the Component Jobs window or scrap or transfer the component itself, the job on the round will be deactivated at the same time:



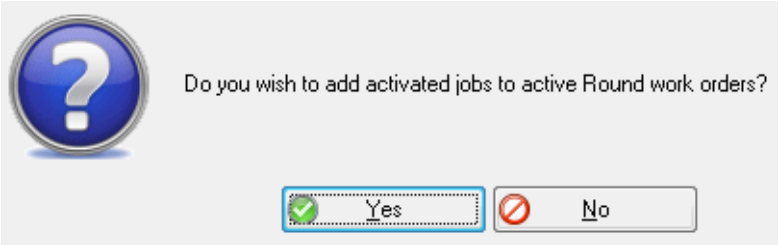
It's not possible to reactivate the round job until you first reactivate the component job itself.

Re/Activating a Component Job

If you re/activate a component job in the Component Jobs window and the job is listed on a round, AMOS will ask if you want to reactivate it on the round as well:

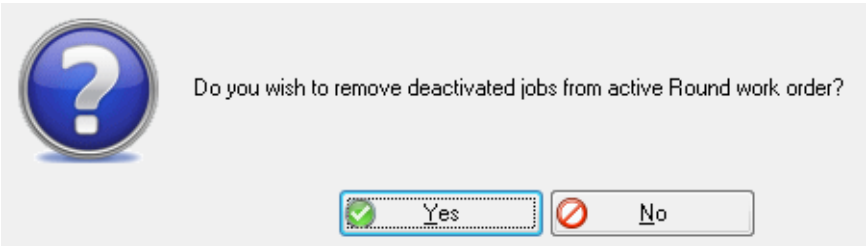


If you click **Yes** to reactivate the round job and an active work order already exists for the round, AMOS can add the newly activated job to it[1] automatically, or by asking first:



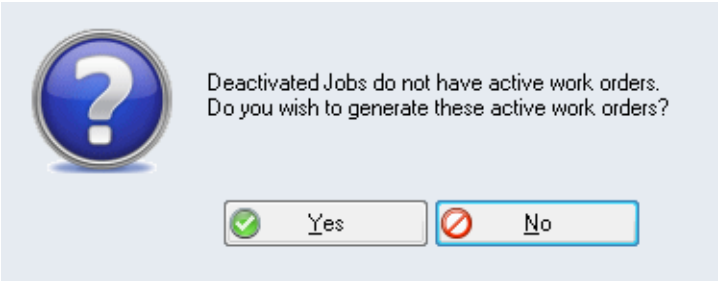
Deactivating a Job on a Round

Unflagging the **Active** box on an active job in the Rounds window deactivates that job inside the round. If an active work order already exists for the round, AMOS can remove the deactivated job(s) from it[2] automatically, or by asking first:



Click **Yes** to remove the deactivated job(s) from the open round work order.

Regardless of the parameter setting, whenever you deactivate a round job AMOS will remind you to create a work order for the job outside of the round:

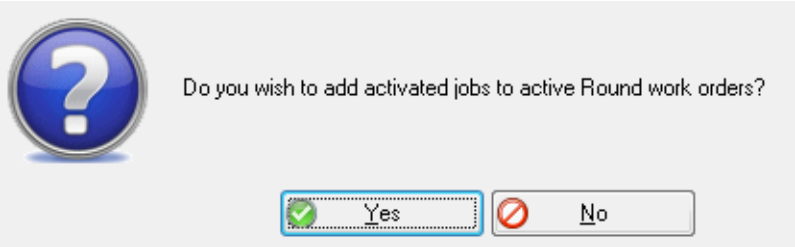


[1] Depends on the setting of the system parameter 'Automatically Update Active Work Orders with Changes on Round Comp Job' (Never-/Always/Ask). Set to NEVER, newly re/activated jobs will not be added to existing round work orders.

[2] Depends on the setting of the system parameter 'Automatically Update Active Work Orders with Changes on Round Comp Job' (Never-/Always/Ask). Set to NEVER, newly deactivated jobs will not be removed from existing round work orders.

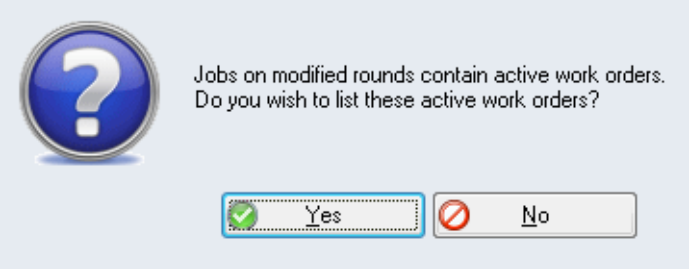
Re/Activating a Job on a Round

Flagging the **Active** box on an inactive job in the Rounds window re/activates that job inside the round[1]. If an active work order already exists for the round, AMOS can add the newly re/activated job(s) to it[2] automatically, or by asking first:



If you click **Yes**, AMOS then checks the 'Include All Jobs when Generating Work Order' checkbox on the General tab. If flagged, AMOS adds the job(s) to the active round work order. If the box is not flagged, AMOS will only add the job(s) to the work order if the due date on the job itself is before or on the work order's due date. Jobs due later than the work order will be excluded.

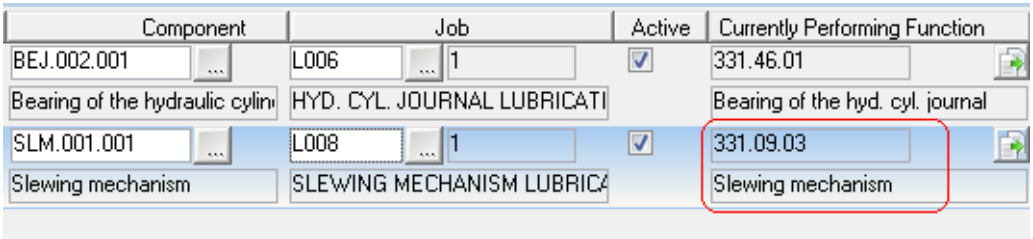
Regardless of the parameter setting, whenever you activate a round job AMOS will notify you if an open work order exists for the job itself outside of the round. Click **Yes** if you want to view and perhaps cancel it:



Function Driven Jobs

Some jobs are 'function driven'. A function driven job is only included in the round IF the component it is linked to is installed on a particular function: in other words, the component job's *current function* and *driving function* must match.

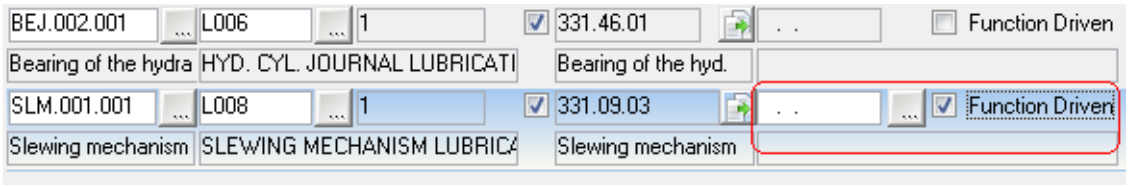
When you list a component job in the Jobs tab and the component is currently installed on a function, that function will appear in the **Currently Performing Function** field:



To tie a component job to a function, flag the **Function Driven** checkbox on the job:

[1] You can only re/activate a job on a round if the component job itself is active.

[2] Depends on the setting of the system parameter 'Automatically Update Active Work Orders with Changes on Round Comp Job' (Never-/Always/Ask). Set to NEVER, newly re/activated jobs will not be added to existing round work orders.



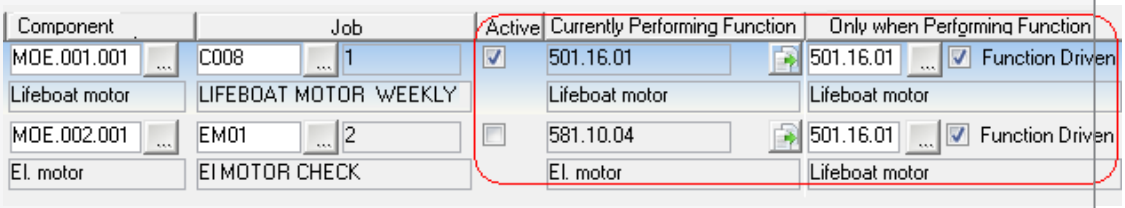
This activates the **Only when Performing Function** lookup field. Select a function:



- The job will only be performed as part of the round if the component is **Currently Performing** the function shown in the **Only When Performing Function** field.
- If the component for this job is installed on a different function or not installed at all, the job will be deactivated and the **Active** box automatically unchecked.
- Only one component can be installed on a function at any time. If two (or more) different component jobs on the same round are driven by the same function, only the one(s) belonging to the component currently installed on the driving function will be activated.
- The other job(s) which are also dependant on the same function will not be activated until the first component is removed and the second installed on that function.

EXAMPLE

In the illustration below, both component jobs are driven by the same function. The component the first job belongs to is installed on the driving function and so the first job is active. The component the second job belongs to is installed on another function, and so is inactive.



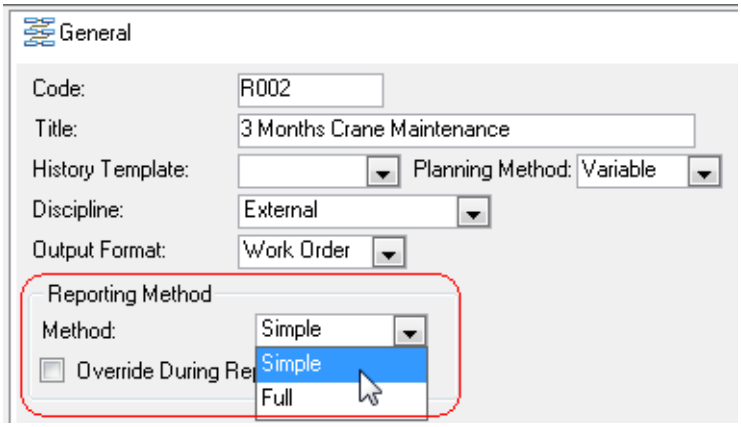
If the component MOE.001.001 is removed from the driving function, the job C008 will be automatically deactivated.

Reporting Methods and Options for Rounds

You can define certain settings on the Rounds window General tab, which come into play later when a user is reporting work on a round.

Reporting Method

There are two options: Simple or Full. Work can be reported against both types of rounds in several stages, so that only the jobs which have actually been completed at any time are checked off.

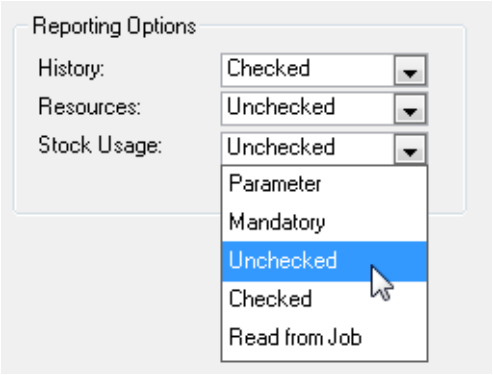


- **When the method is set to 'simple'** a Jobs tab is added to the Report Work window, where the user can check each individual round job off as it is completed. Reporting can continue on the incomplete work order until every job is checked off. Reporting rounds with the simple method creates one maintenance history record for all the jobs/components included in the round, rather than separate entries for each one.
- **When the method is set to 'full'** , during work reporting the user will be presented with a Round Summary dialog before the Report Work window itself opens. Data entered in this dialog will be automatically populated on to each of the jobs attached to the round.

Leaving the **Override on Report** box unchecked means that the reporting method selected on the Rounds window will be enforced in the Report Work window. If you check the override box, when a user reports on this round he/she will have the option to choose either reporting method at that time.

Reporting Options

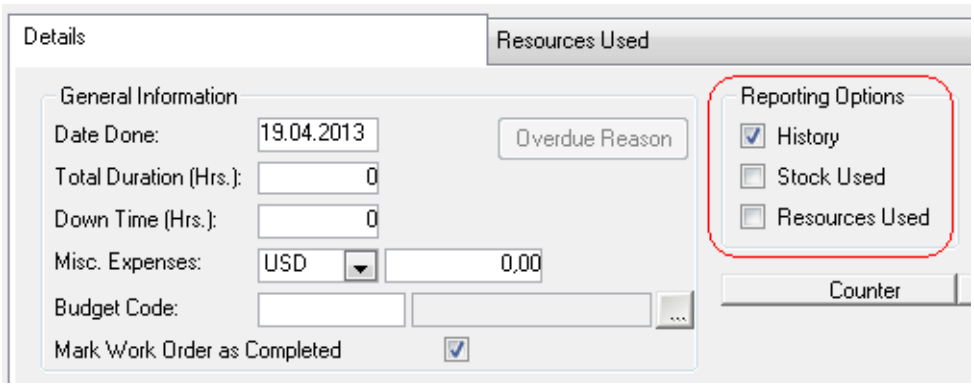
There are three drop-down options fields: **History**, **Resources** and **Stock Usage**:



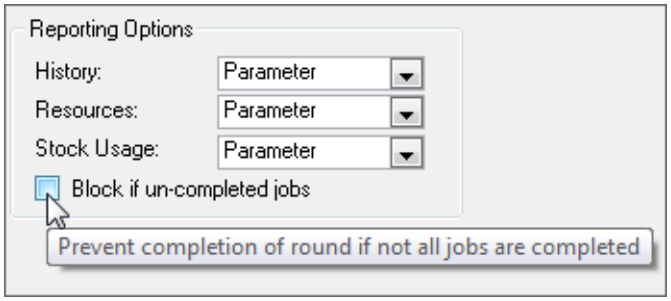
These correspond to checkboxes in the Report Work window that determine which additional information is required from the user.

- **Checked/Unchecked**. The option's corresponding checkbox on Report Work will be checked/unchecked. The user can change it while reporting.
- **Mandatory**. The corresponding checkbox will be checked and protected from change. Reporting this information will be required.
- **Parameter**. AMOS will refer to the 'Report by Default' parameters to determine the setting of the corresponding checkbox. These parameters control whether the option on Report Work is switched on or off by default.
- **Read from Job**. Report options can be set on the Component/Component Type Job. Select Read from Job to take the Reporting Option setting from there for the jobs in this round.

The checkboxes in the Report Work window will then follow the settings selected on the Rounds window General tab:



There is also a checkbox on the round Reporting Options 'Block if un-completed jobs':



It's unflagged by default. Flagging it means that later on when a user is reporting this round, he/she will not be able to mark the work order as complete until all jobs on it are completed.

When this setting is flagged and completion is prevented, granting users access to 'Round; Allow reporting as completed without all Jobs being' allows them to override the checkbox setting and complete the work order anyway.

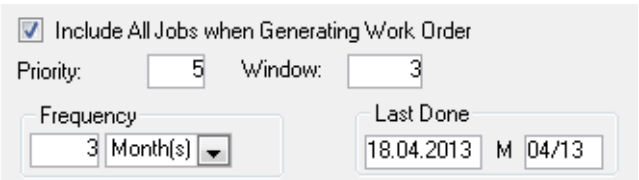
Reporting work on Round work orders is covered with reporting on other types of work orders, in "Simple Reporting on Rounds" on page 191.

Round Work Orders

Once you have defined a round, you will need to create work orders for it:

- Activate the trigger(s) linked to rounds when applicable;
- Select **Options > Create Work Order** in the Rounds window to manually create a one-off work order with its due date set to today;
- Generate the first work order for a new round, and when it is reported complete AMOS will generate the next one according to schedule.

The list of jobs included on a round work order depends on the setting of the 'Include all Jobs when Generating Work Order' checkbox on the Rounds window General tab:



If you flag this checkbox, the round's work order will include all active jobs in the round. If you unflag this checkbox, AMOS will only include job(s) on the round work order if the due date on the job itself is before or on the work order's due date. Jobs due later than the work order will be excluded.

If active individual work orders already exist for any jobs in a particular round, AMOS will ask if you want to see a list of these active work orders. You can then cancel the work orders outside the round if you want.

See "Deactivating and Reactivating Jobs" on page 66 about what happens to existing round work orders when you deactivate and re/activate jobs on a round.

Handling Maintenance

Once AMOS is up and running with components, jobs, rounds, counters/measure points and so on defined, your tasks to create a jobs list include:

1. Create work orders for jobs as needed. See "Maintenance Work Orders" below
2. Set the correct status and otherwise plan each work order. See "Planning Work Orders" on page 81
3. Issue the work orders to activate them. See "Issuing Work Orders" on page 92.

You might also consider:

- grouping together extraordinary or emergency maintenance work as a Project and sub-divide it into sections. See "Maintenance Projects" on page 100.

When the list of work is created and ready to go:

1. Keep your counters and measure point readings and values up-to-date. See "Updating Counters and Measure Points" on page 174.
2. Carry out the jobs and report on them. Reporting methods differ depending on what kind of work order it is and if the job was planned or not. See "Reporting Work" on page 180.
3. Control the work reports and file them for your records. Filed work orders may be viewed but no further changes can be made. See "Controlling Work Orders" on page 93.

How you manage some types of maintenance depends on whether a job was expected and planned, or not. AMOS contains two related concepts for maintenance that is handled as the need arises:

- **Unplanned** maintenance covers tasks which have not been planned as jobs in your system, but which are carried out when a need occurs. When the job has been completed, enter the relevant information about it in the system.
- **Unexpected** maintenance covers jobs which have been planned in AMOS, but have been actually performed before the scheduled due date when the need arises. Once information about the job has been entered in the system, AMOS will take it into consideration when calculating when the job needs to be handled the next time.

Maintenance Work Orders

Work Orders describe which jobs and other tasks need doing. There are different ways to create work orders, depending on the type of job and how it is scheduled.

- When you define a job with a periodic frequency or a counter, AMOS can create the initial work order for you automatically, or you can create it yourself, manually. After that, AMOS will handle these **Periodic** work orders automatically: when a user reports the current work order as 'Completed', the system generates the next one according to schedule or by estimating the next time the counter will reach the predefined value.

  See "Initial Work Orders for Scheduled Jobs" on page 56

- You might group several jobs together into a **Round**, to handle those jobs on a single work order. Again, after the initial round work order AMOS will handle the next ones automatically.

  See "Round Work Orders" on the previous page.

- You can also create individual work orders for jobs linked to **Triggers** by activating the trigger when necessary.

  See "Activating Trigger Jobs" on the facing page

- You can create **Requisition** work orders for unexpected or unplanned work as needed. See

"Requisition Work" on page 75.

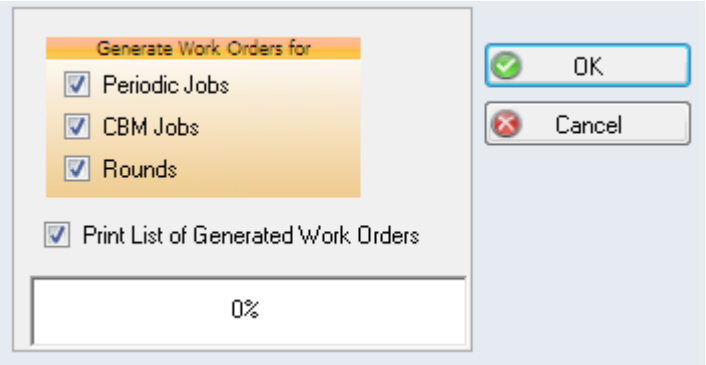
Or, if you need to create an extra work order for a planned job in between its scheduled due dates, you can create a 'one-off' work order for the existing job. See "'One-Off' Work Orders" on the next page

» Jobs can also be scheduled to take place according to measure point or **CBM** values. AMOS does not know when a CBM or measure point signal will appear so it doesn't create work orders for such jobs in advance but rather as needed.

Generating Work Orders

When you define new jobs, it might be necessary to generate the first work orders for them[1]:

1. Go to **Maintenance > Generate Work Orders**:



2. Flag the kinds of jobs you want to generate work orders for.

   If you flag **Print List of Generated Work Orders**, after the operation is complete the Work Orders window will open automatically.

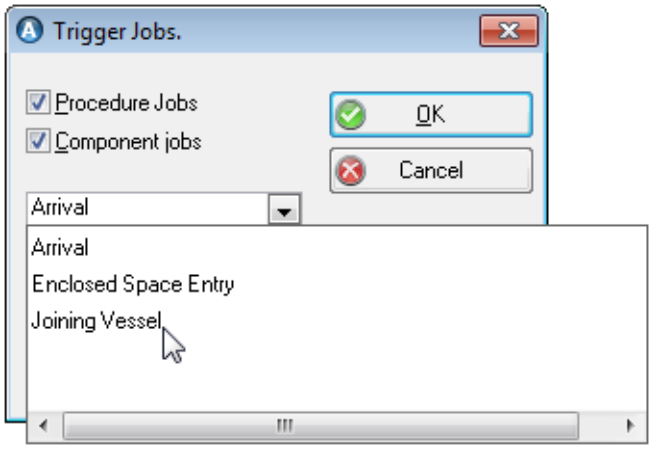
3. Click **OK**. You'll be asked to confirm again.

Activating Trigger Jobs

Some jobs are 'triggered' by events like 'Arrival', 'Departure' or 'Joining Vessel', etc. To create Quality and/or Maintenance work orders for these jobs, activate the relevant trigger(s) as needed:

1. Go to **Maintenance/Quality > Trigger Jobs**.
2. Flag the boxes to trigger **Procedure jobs** (Quality work orders) and/or **Component jobs** (Maintenance work orders).
3. Select the trigger(s) you want to activate from the drop-down list:

[1] Depends on the type of job and the setting of the 'Automatically Create Initial Work Order' parameter. See "Initial Work Orders for Scheduled Jobs" on page 56 for more information about initial work orders.



If you flag **Show created work orders**, after the operation is complete the Work Orders window will open automatically.

4. Click **OK**.

AMOS creates the work orders for any procedure and/or component jobs connected to the selected trigger, or inform you if no jobs are available to trigger.

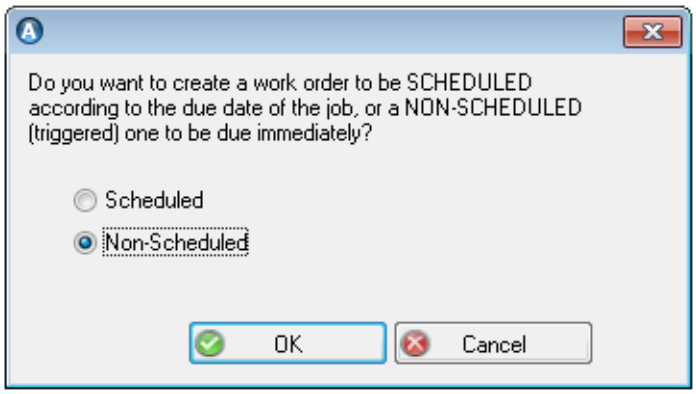
See "Scheduling Jobs: Triggers" on page 55 about linking triggers to maintenance jobs.

'One-Off' Work Orders

You might find it necessary to create a new work order in between the regular due dates of a job's scheduled frequency.

> **EXAMPLE**
>
> A job is defined to be carried out twice a year, and major maintenance is being planned between the previous and the next due date. You need to schedule an additional work order for that job in between the regularly planned work orders.

1. Open the Component Jobs window and select a job.
2. Go to **Options > Create Work Order**.
4. This functionality is affected by a system parameter setting[1]. AMOS will either create the new work order immediately, or present the following dialog:



[1] If the parameter 'Automatically Create Initial Work Order' is set to TRUE, the dialog won't appear. Set to FALSE, you have the option to manually create the first work order for this job according to its schedule, if one does not exist already. See "Initial Work Orders for Scheduled Jobs" on page 56 about creating initial work orders for scheduled jobs.

If you see this dialog, choose 'Non-Scheduled' and click **OK** and AMOS will create the work order after that.

5. (If you flagged 'Open the Created Work Order) The Work Order window opens to the newly created work order with **Due Date** set to today and **Locked**.
6. Plan and issue the work order as usual.

You can also create these 'one-off' work orders for an already scheduled job from the Function Hierarchy and Component Hierarchy Jobs tabs > **New WO** button.

Requisition Work

Sometimes you need to perform unplanned maintenance work that is not defined as a job because it happens so rarely or unpredictably; you install an additional refrigeration unit or take the ship into dry-dock. Or an equipment failure might occur, making it necessary to generate a work order for the necessary repairs.

To handle one-off tasks, create a Requisition Work Order for the component/function on which work is to be done describing the work, the parts needed, and the time to be used. Later, report the work back to AMOS by entering completion data for the work order just like any other work order.

It is up to you to manually create requisition work orders as needed. You can create requisition work orders in the Requisition Work dialog window, or, directly in the Work Orders window[1]. It's also possible to create them from existing work orders or for jobs on round work orders.

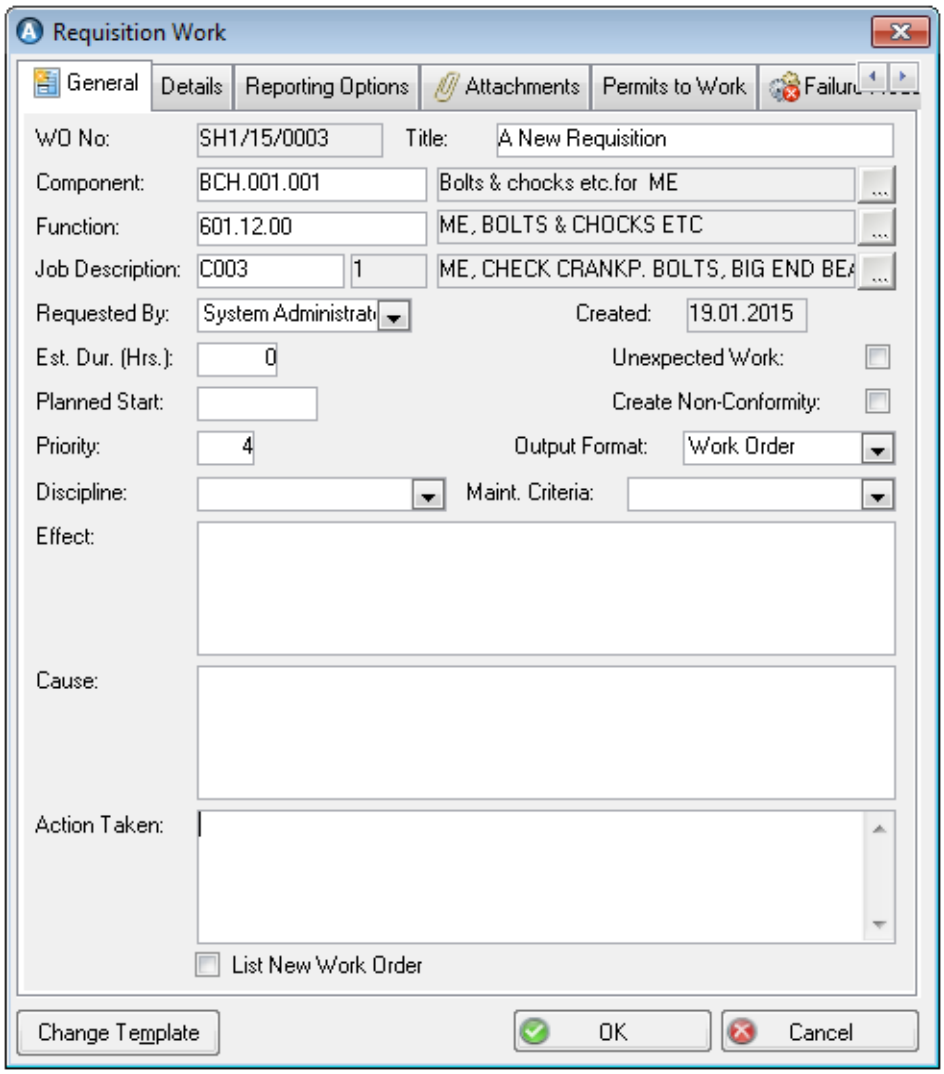
Creating a Requisition in the Requisition Work Dialog

To create a requisition go to **Maintenance > Requisition Work...**, or, select Requisition Work from the Options menu in the:

- Components window
- Component Hierarchy
- Functions window
- Function Hierarchy

Any of these selections will open the Requisition Work dialog window:

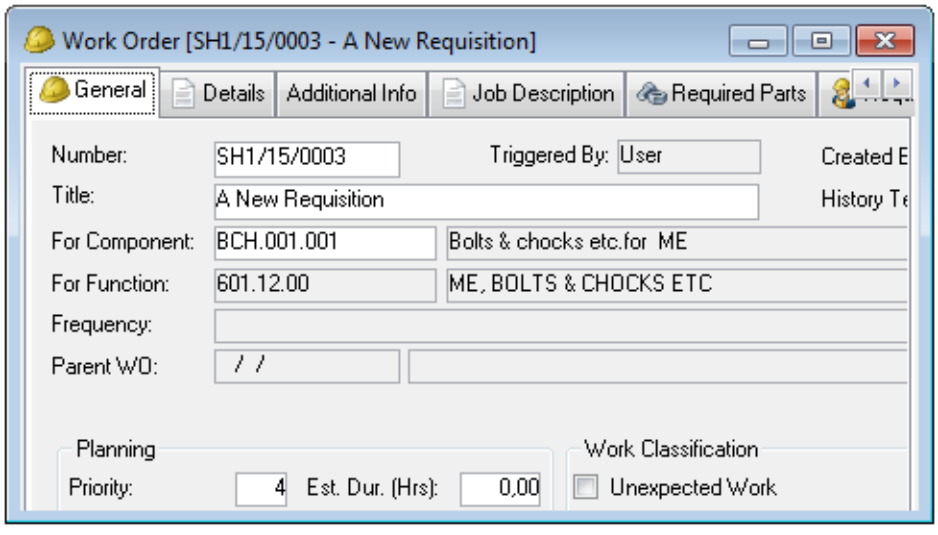
[1] Depending on your system license, you can also create requisition work orders for corrective actions from the Non Conformity window.
See "Work Orders and AMOS Q&S" on page 88.



Lookup the **Component/Function** the work is for and fill out the requisition.

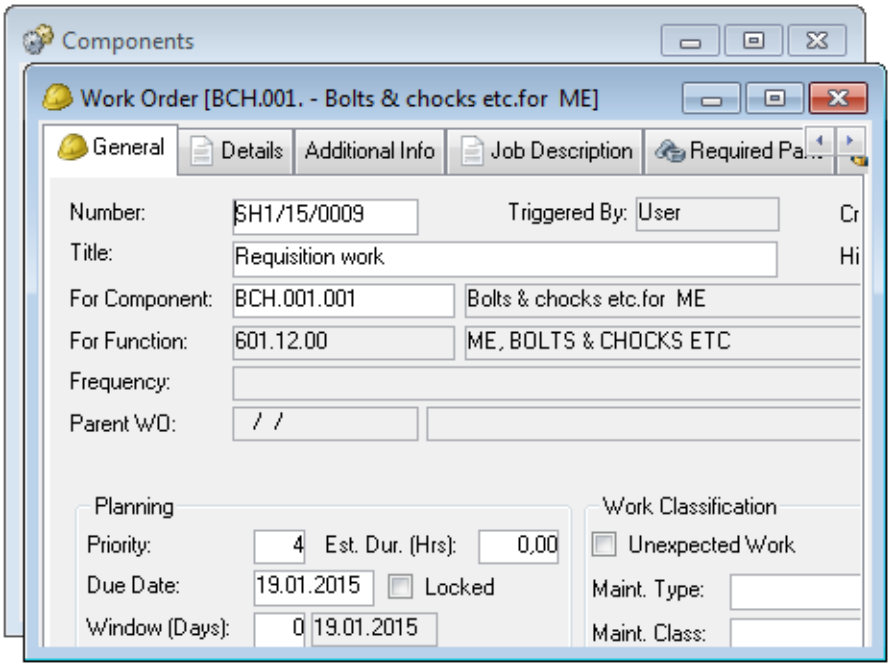
Note: If your system license includes AMOS Quality and Safety, you can flag the 'Create Non-Conformity' checkbox to open the Non Conformity window and create a non conformity after saving the requisition. Refer to the *AMOS Q&S User Guide* for further details.

Click **OK** to **Save** and exit the dialog. You can see your new requisition in the Work Orders window, where you can plan, issue and eventually carry it out.



Creating a Requisition in the Work Orders Window

To skip the Requisition Work dialog set the system parameter 'Requisition work, open Work Order window'[1] to TRUE. Then, selecting **Maintenance > Requisition Work...** or Requisition Work from the Options menu in the Components/Hierarchy or Functions/Hierarchy windows will open the Work Order window directly, with a new Requisition entry already created for you:



To select a job description in this case, go to **Options > Apply Job Description**[2]. Filter for and select a description and AMOS will store the job description text in the Details tab. If there is any text there already you'll have to option to overwrite it, add to it, or cancel.

Then you can complete and **Save** the work order details as usual.

Creating Requisitions from Existing Work Orders and Round Jobs

It's also possible to requisition work from any existing work order[3]: select a work order and go to **Options > Requisition Work on Work Order**. To create a requisition work order from any job on a round work order, select the round work order and open the Included Jobs tab. Choose a job and click the **Requisition** button there.

In either case, AMOS creates a new work order with **Type** set to Requisition. The new work order will list the original 'parent' work order in **the Requisitioned** field on the General tab, and the original parent work order will list the requisition work orders created from it on the Related Work tab.

When you are planning such a work order, or you add it to a maintenance project, the parent work order will appear with it in a **Requisitioned** field on the Work Planning window or the Projects window.

---

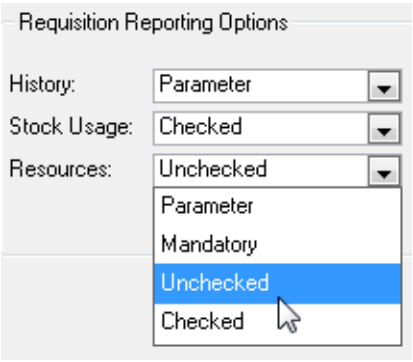
[1] Tools > Configuration > Parameters > Options > Maintenance >

[2] This option is only available for requisition work orders.

[3] Creating new requisition work orders from existing work orders or round work order jobs is access controlled.

Reporting Options on Requisition Work Orders

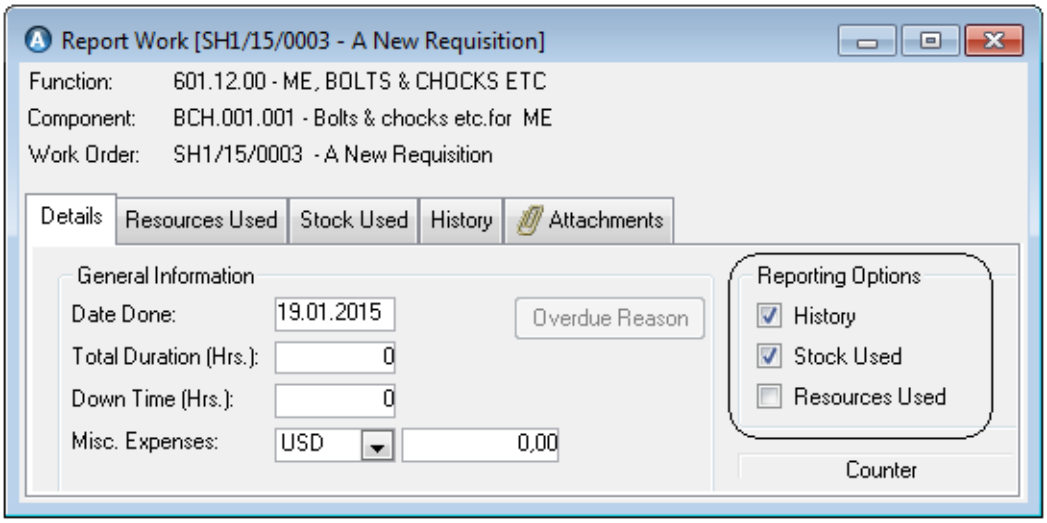
There are three **Reporting Options** you can set for Requisition Work Orders. They are available on the Requisition Work dialog and on the Work Orders window Additional Info tab when the selected work order is a requisition[1]:



These settings correspond to checkboxes in the Report Work window that determine which additional information is required from the reporting user.

- **Checked/Unchecked**. The option's corresponding checkbox on Report Work will be checked/unchecked. The user can change it while reporting.
- **Mandatory**. The corresponding checkbox will be checked and protected. Reporting this option will be required during report work.
- **Parameter**. AMOS will refer to the 'Requisition work, Report by Default' parameters to determine the setting of the corresponding checkbox. These parameters control whether the option on Report Work is switched on or off by default.

The checkboxes in the Report Work window will then follow the settings selected on the requisition work order:



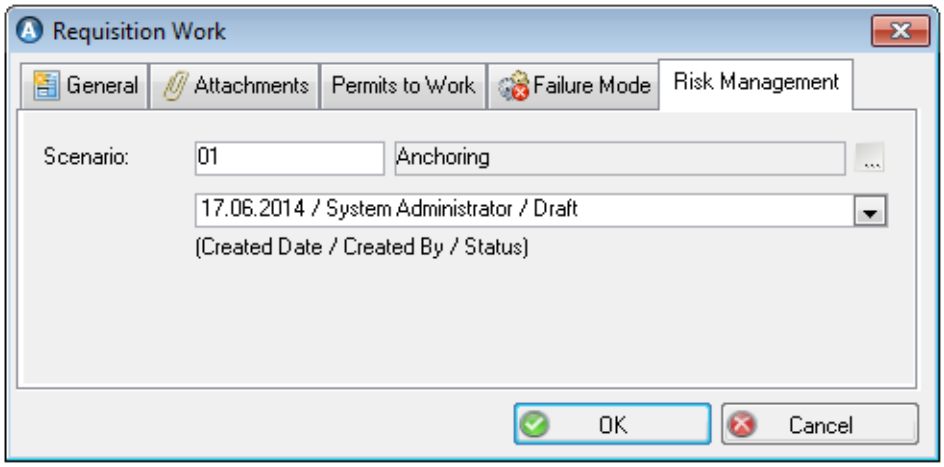
Linking Risk Scenarios to Requisition Work Orders

Note: This section applies only if your system license includes Risk Management and the risk management functionality is set up and in use. Refer to the *AMOS Q&S User Guide* for more information about Risk Management.

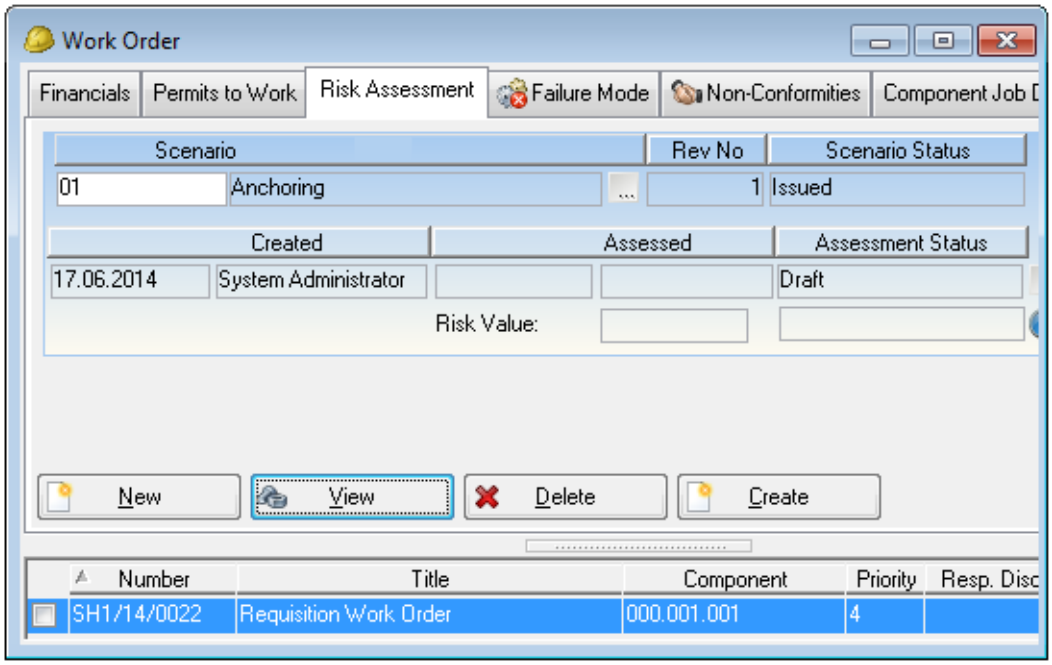
[1] The same three options will appear on the Additional Info tab in the Projects window for any requisition work orders included in a maintenance project.

Risk scenarios can be linked to maintenance work and carried out in relation to work orders. To link an existing scenario to a requisition work order:

Open the Risk Management tab on the Requisition Work window and lookup a **Scenario**:



When a work order is generated, a risk scenario assessment will be created with it for evaluation.



Click **View** to open, activate and evaluate the assessment.

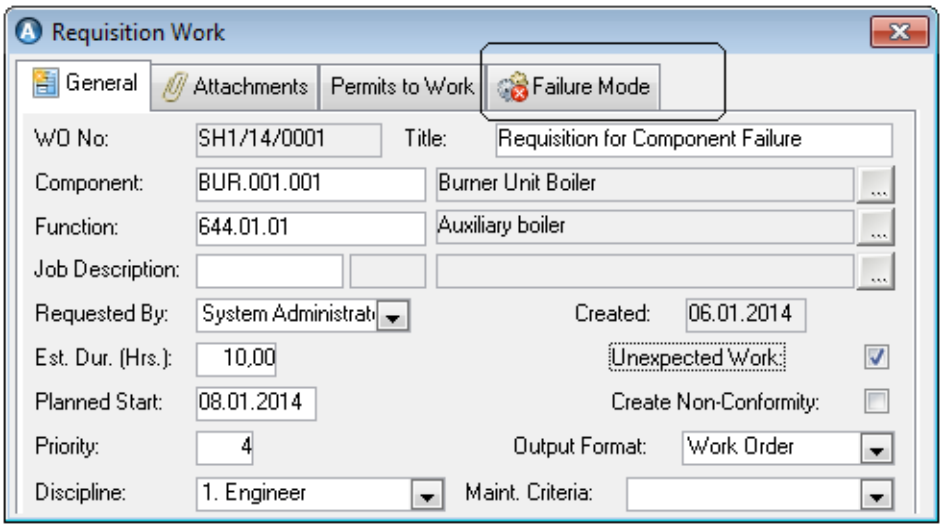
Equipment Failures

When a piece of equipment fails AMOS can help you to classify the failure, define its exact cause and provide data for statistical reports.

You can record failure modes and failure-related information in different ways:

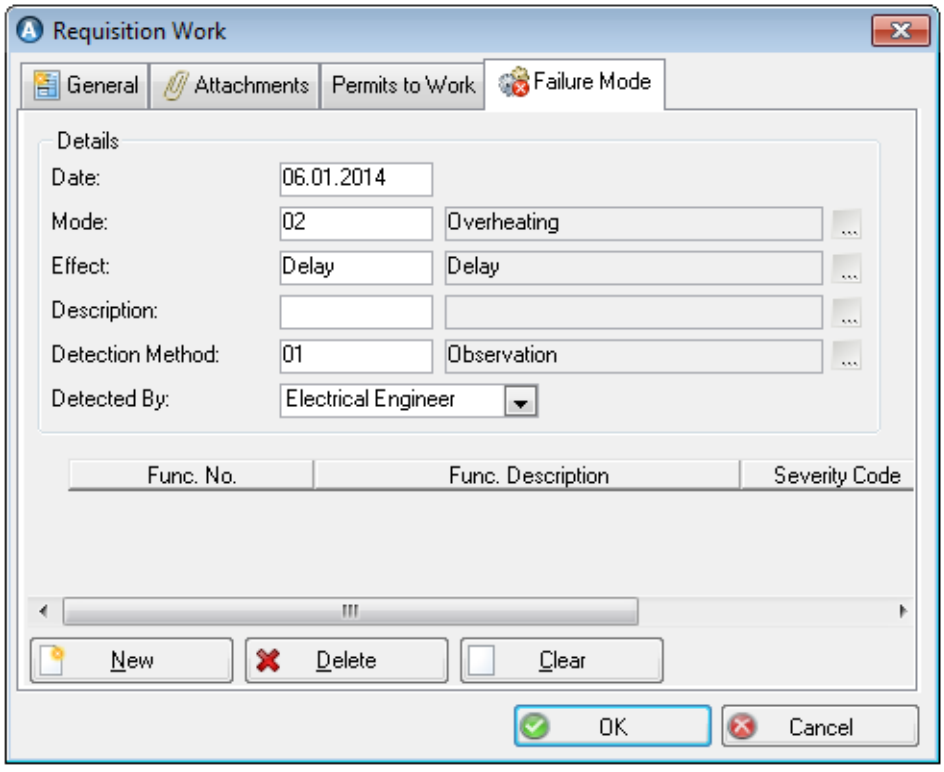
- a piece of equipment fails, so you requisition a work order to handle the repairs and enter the failure-related information on the requisition. It is transferred with all the other information to the resulting work order. Or,
- you add the details regarding an equipment failure directly onto an existing work order in the Work Orders window Failure Mode tab.

To track information related to equipment failures, set up the Failure registers at **File > Open Register > Maintenance >**. This adds a tab called Failure Mode to both the Requisition Work window and the Work Orders window. Below it is shown in the Requisition Work window:

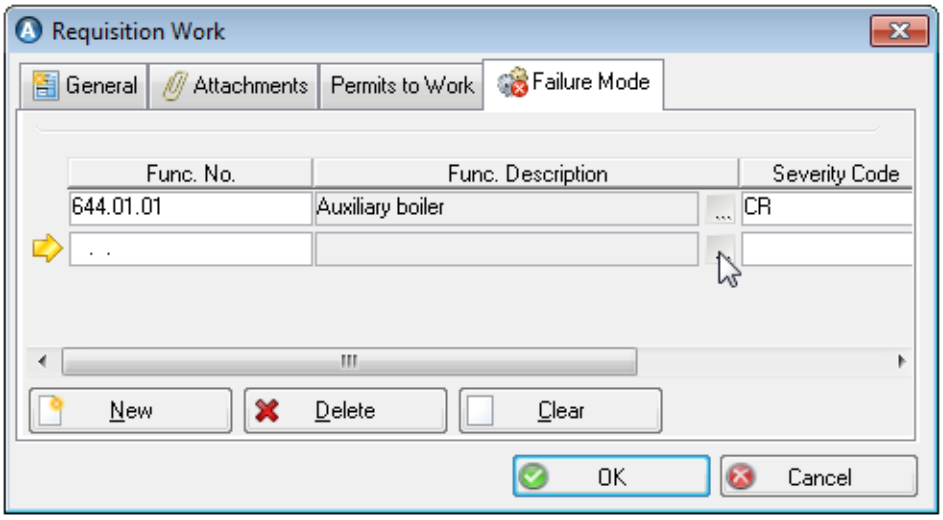


Open the tab and add information about the equipment failure:

Mode	What caused the equipment to fail. Failure modes are linked to component classes: failure on a type of pump will not apply also to a motor. The available modes depend on the component the requisition/work order is for. If you select a failure mode first and later add or change the component on the requisition/work order AMOS will check if the mode applies to the new component. If not, AMOS will remove the mode.
Effect	The effect of the failure such as an interruption to the voyage, a delay in operations, etc.
Description	The observed and definite cause of the failure mode. You may not know this in advance, or it could change later if a different cause is discovered during repair work. You can add or change the description if necessary.
Detection Method	How the failure was noticed - monitoring, testing, observation, etc.



Click **New** to list affected functions and provide **Severity Codes** indicating the extent of the effect:



Save the work order/click **OK** to exit the Requisition window and create the work order.

Planning Work Orders

Once you have generated your first work orders the next step is to plan them. Some planning elements you may carry out in the Work Orders window or the Work Planning window include:

- setting the correct status on newly generated work orders[1] and manually requested work orders.
- adjusting other details like parts and disciplines, which have been inherited from the job.

See "Work Orders Window" below and "Work Planning Window" on page 93.

You might also consider:

- using the Maintenance Tasks window to handle recurring instances of the same job. See "Maintenance Tasks Window" on page 97.

Once you have created and planned your first work orders, 'issue' the actual work orders to activate and print them out.

Work Orders Window

Work Orders describe which jobs and other tasks need to be carried out. The **Maintenance > Work Orders** window shows a complete list of all the work orders in your system.

As you edit, plan or generally work on a work order, change its **Status** on the General tab to reflect the stage it is at. Here is a list of the various pre-defined statuses a work order may have:

Status	Occurrence
Requested	The status of work orders generated for periodic jobs (unless a set system parameter gives such jobs the status Planned). This is also the status assigned to work orders requested manually in the Requisition Work window.
Planned	Set work orders with a status of Requested, Pending or Postponed to Planned if the work will start when the Due Date is approved. If certain system parameters are set, periodic jobs are automatically set to Planned.
Issued	You can Issue and then print work orders currently set to Planned.

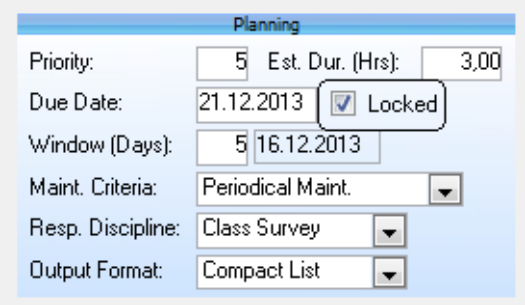
[1] You can skip this if your system is configured to automatically set the status of generated work orders to Planned rather than Requested.

Status	Occurrence
Postponed	To postpone a job change the status from Requested, Pending or Planned, to Postponed.
Pending	Set jobs depending on a specified condition such as Shutdown Required, to Pending. Jobs with the current status Requested, Postponed, or Planned can be changed to Pending.
Cancelled	Set this status if it is necessary to cancel a work order.
Completed	Change the status to Completed when the work is done and the report is finished.
Controlled	Change status to Controlled to file work orders, unless the system parameters specify that Completed work orders are filed automatically.
Filed	Only Completed jobs can be set as Filed. Once changed to Filed, the work order is closed and stored. It can be viewed but not changed.

The following sections address tasks to perform and topics to consider when planning and getting ready to issue work orders.

Locking and Unlocking the Due Date

The **Locked** checkbox on the Work Orders window General tab is always unchecked on new work orders generated automatically by AMOS:



This lets the system make adjustments like altering the estimated due date on a counter-based work order.

Manually generated work orders are automatically locked. Uncheck the box to move the due date.

The table below shows the rules AMOS follows for creating or moving work orders, in regards to the setting of the **Locked** checkbox. 'New' is the next due date of a work order and 'Exist' is the current due date of an existing and valid work order:

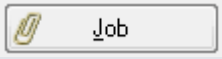
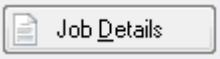
Work Order Due Date	Un/Locked	Action
Exist = Null	Locked	Create new work order
New < Exist	Locked	Create new work order
New > Exist	Locked	Keep existing work order
New < Exist	Unlocked	Move existing work order
New > Exist	Unlocked	Move existing work order

Work Order Due Date	Un/Locked	Action
New < Exist	Locked	IF EXISTS.WOTriggered = NEW.WOTriggeredBy AND WOTriggeredBY in (CBM,Frequency) THEN Keep existing ELSE Create new WO

Round Work Orders

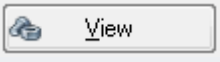
Several related jobs can be grouped together into a round and then included on a single work order. When you select a round work order in the Work Orders window the Job Descriptions tab changes to Round Details and contains the information entered in the Rounds window Details tab.

The Included Jobs tab displays a list of all the active jobs included in the round, and their current 'state' - Not Done, Partly Done or Completed. The tab also contains buttons to open attachments for the selected job:

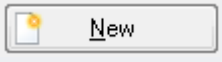
	Opens any attachments linked to the component a job is for.
	Opens any attachments linked to the component job itself.
	Opens the Job Description.

Required Parts and Disciplines

The Required Parts tab for the Work Orders window is for registering the parts in use in the selected work order and information related to the parts such as price, etc. The currency and price as displayed in this tab are used when updating the Stock Transaction register with details of Stock Used entered when reporting work for the Work Order. The **Max. Used** field contains the maximum number of the selected stock item ever used in reporting this job. The **Reported** field contains the total quantity of this item which has been reported throughout the system against the selected work order. There are four buttons:

	Add parts to the work order.
	Remove parts from the work order.
	Display the stock items window for a selected part.
	Display all the spare parts ever used in previous instances of this job.

The Required Disciplines tab for the Work Orders window is for registering which disciplines are involved in the selected work order. There are three buttons:

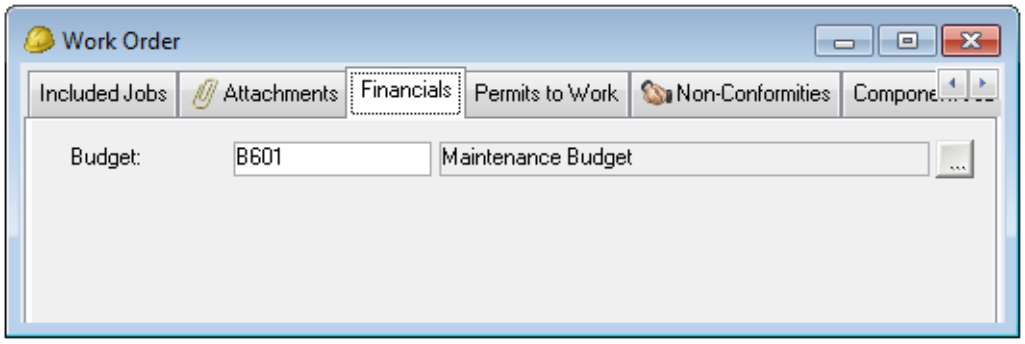
	Add disciplines to the work order.

Delete	Remove disciplines from the work order.
Show All	Display all disciplines ever used in previous instances of this job.

Work Order Financials

To assign a work order to a budget:

1. Select a work order in the window's list.
2. Open the Financials tab.
3. Select a **Budget** code:



If your license includes the accounting module, you can also select a **Cost Centre** and **Account**.

To apply a cost estimate to a work order:

1. Select a work order in the list.
2. Enter a value in the **Estimated Misc. Cost** field on the General tab. It will appear on the Report Work window Details tab when reporting on this work order.

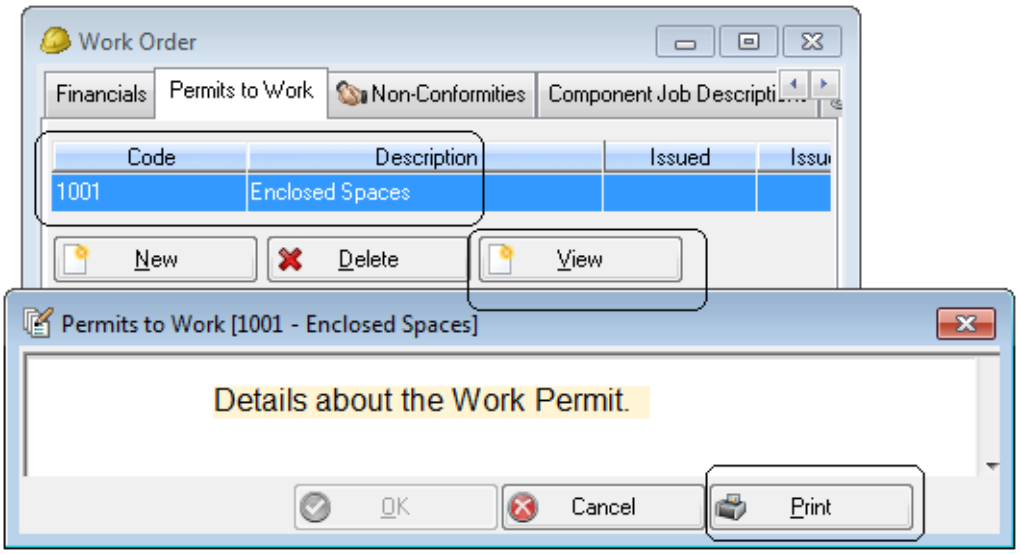
Work Permits on Work Orders

Work Permits[1] contain any special information or forms required to be read or completed prior to carrying out work. When a permit is linked to a job description it is then attached to any new work order for that job. When a work order contains any permits:

- The work permits must be issued to a user. That user will then be the only one who can acknowledge them or report work on the work order.
- All work permits must be acknowledged before the work can be reported.

Click **New** to lookup and add another permit. To view the details on any permit in the list double-click it or select it and click the **View** button:

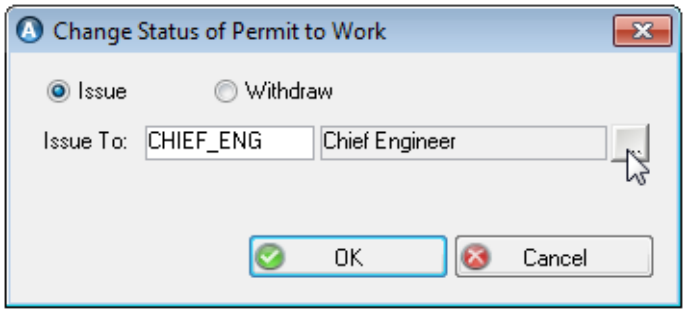
[1] A list of available work permits is maintained in the register at File > Open Register > Permits to Work.



To **Print** a permit open it in the Details window.

Issuing a Permit

1. Select the permit.
2. Go to **Options > Change Status of Permit to Work**.
3. A dialog opens. Click **Issue** and lookup an employee:



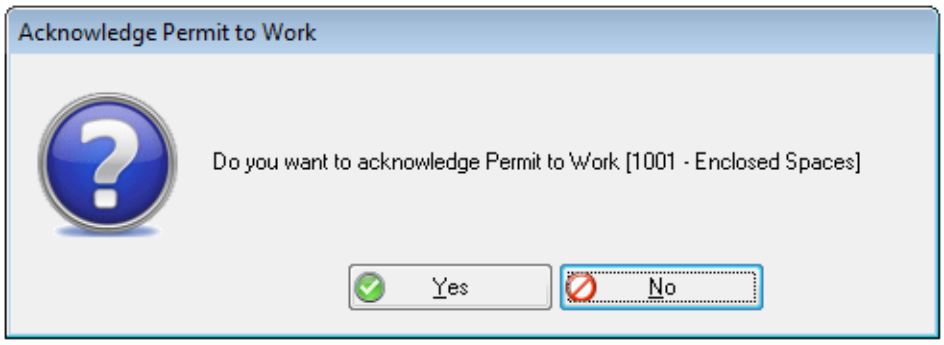
4. Click **OK** to issue the permit and return to the main window.

To withdraw the permit, go to **Options > Change Status of Permit to Work** again and this time click **Withdraw**. Issued permits cannot be deleted.

Acknowledging a Permit

The employee who the permit has been issued to must log in and acknowledge it:

1. Select the issued permit.
2. Double-click on it or click **View**. This opens the permit for reading.
3. When you close the Details window, AMOS will ask you if you want to acknowledge it:



4. Click **Yes**. An acknowledged permit is still viewable but no further issuing, withdrawing or acknowledging is possible, nor can you delete an acknowledged permit.

To allow another user to perform the work instead, do not acknowledge the permit. It must withdrawn and re-issued to another employee.

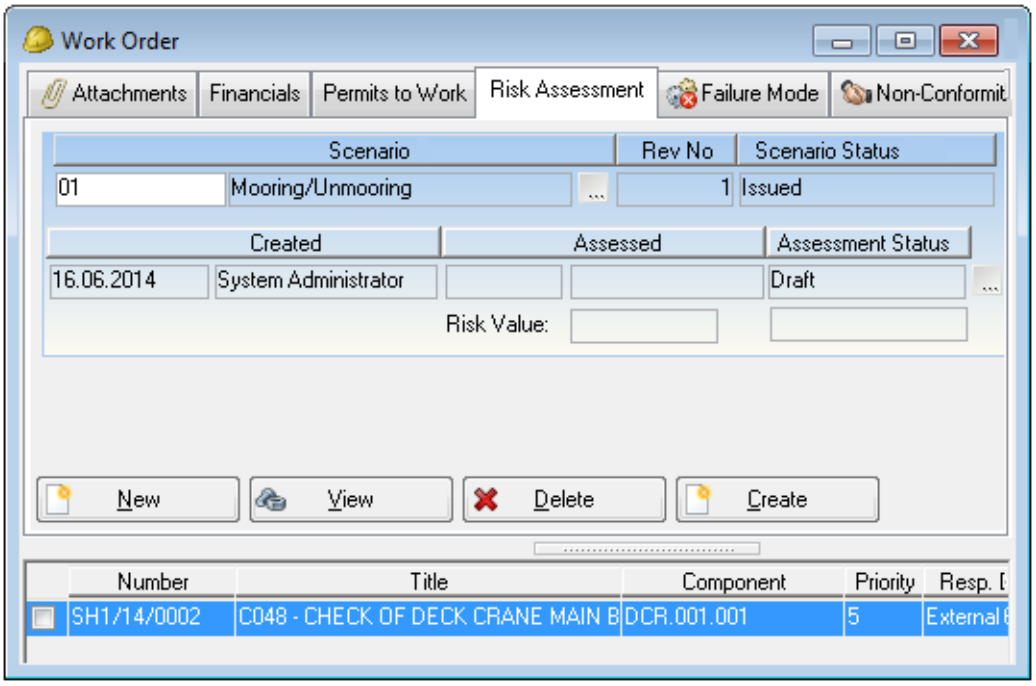
Linking Risk Assessments to Work Orders

Note: This applies only if your system license includes Risk Management and the risk management functionality is set up and in use. Refer to the *AMOS Q&S User Guide* for more information about Risk Management.

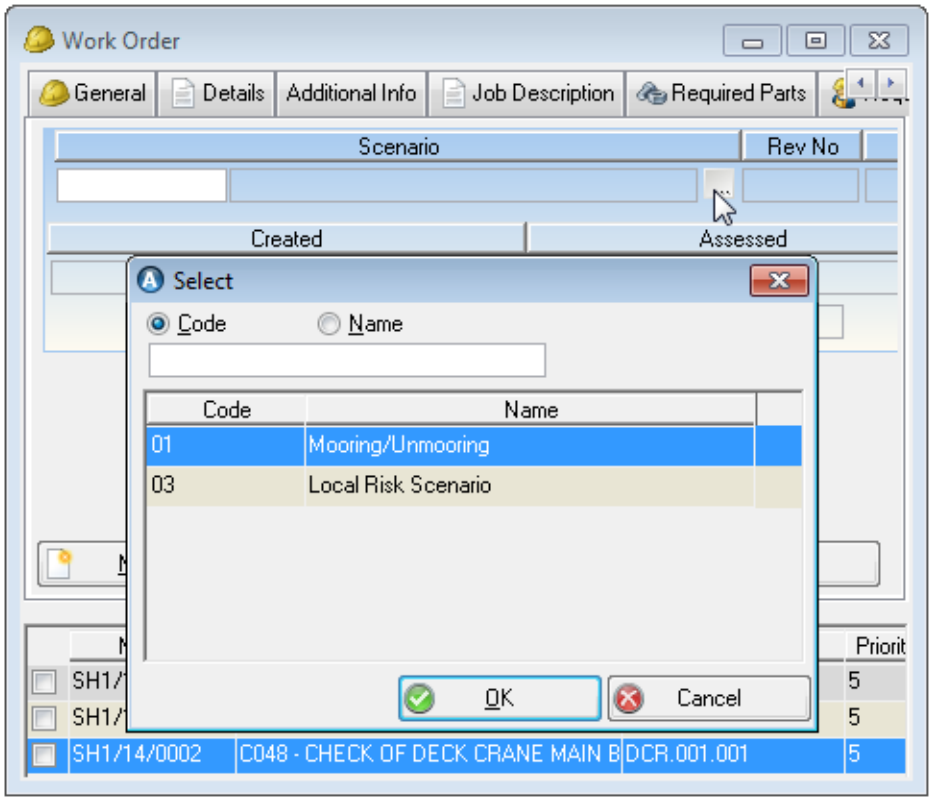
Risk scenarios can be linked to maintenance work and carried out in relation to work orders, before reporting on the work. Depending on the risk management settings on a component job, new work orders for the job might be generated with a risk scenario assessment already listed in the Risk Assessment tab:

- When risk management is mandatory on a component job and a scenario/type is applied to it, a new scenario assessment will be linked automatically to the work order for this job.
- If risk management is optional on the component job, no scenario assessment will be linked automatically to the work order - the end user will be need to create one.

  See "Activating Risk Management on Component/Type Jobs" on page 40 about activating risk management on component/type jobs.



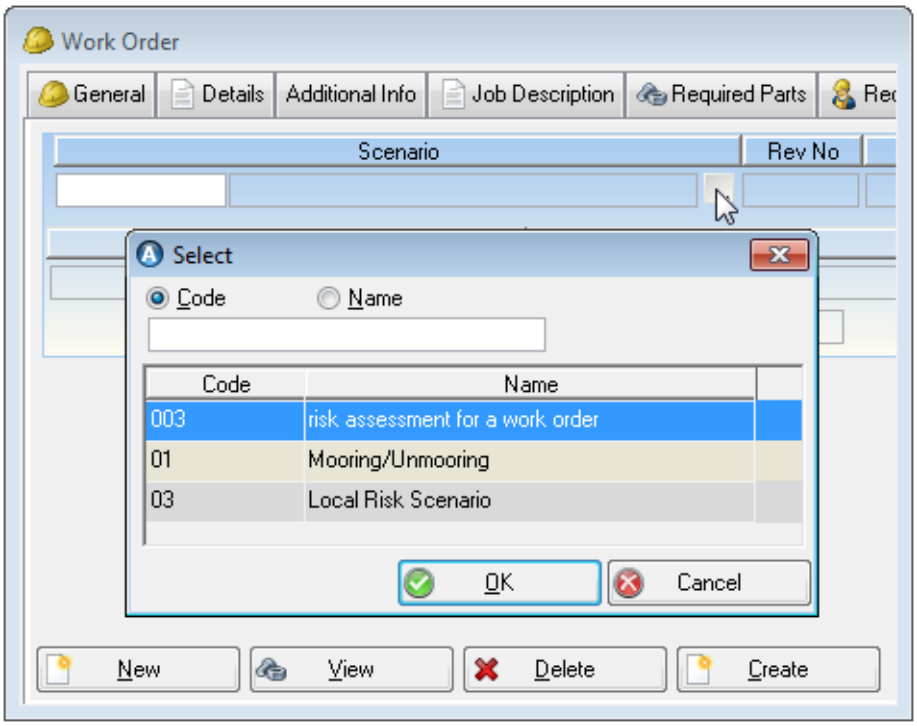
You can also link scenario/types and assessments directly to existing work orders. To register another *existing* risk scenario assessment against the same work order, click the **New** button and look one up:



This refers the work order to the existing scenario assessment - it does not actually create a new one.

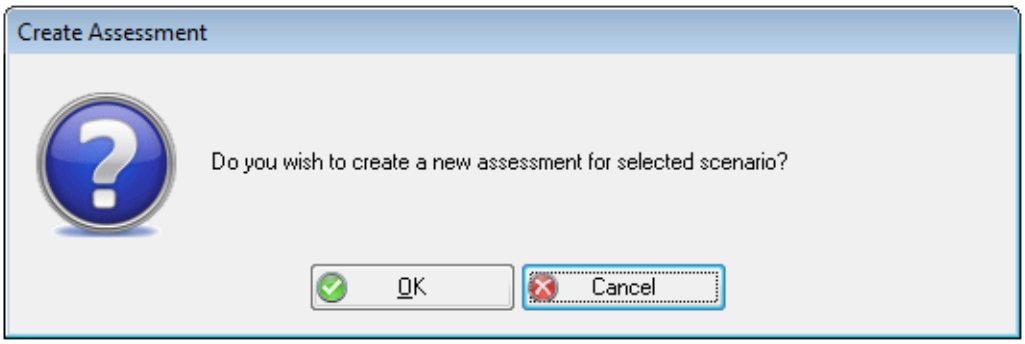
To *create* a new assessment for a scenario on a work order:

1. Click **New**.
2. Lookup a scenario for which no assessments currently exist:



3. Click **OK** to add it to the tab.

4. Click the **Create** button:

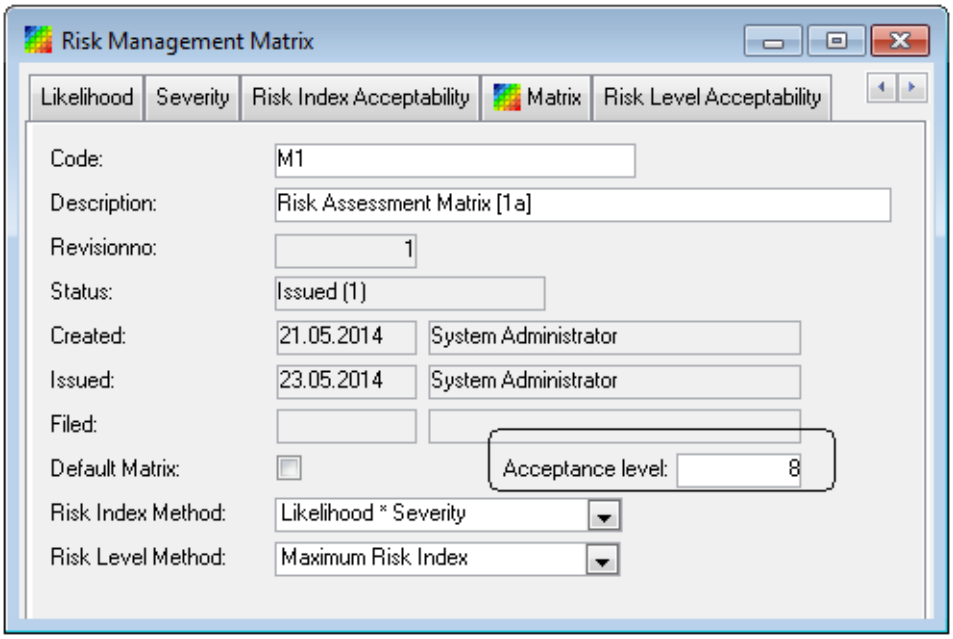


5. Click **OK** to create the new assessment.
6. The Risk Management Assessment window opens. Create and save a local scenario and assessment for evaluation.

Work orders linked to a scenario will appear in the Assessed tab on the risk assessment evaluation.

Mandatory Assessment Evaluations

To prevent a user from reporting a work order as complete until the linked assessment has been satisfactorily evaluated, the QA Manager can apply an **Acceptance Level** on the Risk Matrix configuration:



If the assessed risk value is above the limit set on the matrix the scenario assessment is based on, users will be prevented from reporting on the work order.

Work Orders and AMOS Q&S

If your licence allows it, you can link non conformities to a work order if the work is in response to an unusual occurrence or event.

To create a non conformity from the Work Orders window:

1. Go to **Maintenance > Work Orders**.
2. Select a work order and open the Non Conformity tab.
3. Click **New**. The Non Conformity window opens displaying the Work Order number.
4. Create a Non Conformity as usual. See the *AMOS Q&S User Guide* for more information.
5. **Save** the window and close it to return to the Work Orders window.

The new Non Conformity is listed in the tab: clicking the **View** button opens the Non Conformity window for whichever record is selected in the list.

To create a requisition work order directly from the Non Conformity window Corrective Actions tab for any existing Non Conformity:

1. Go to **Quality > Non Conformity > Non Conformity**, and click **Filter** or choose **Create Entry** in the filter.
2. Select or create a non conformity and open the Corrective Actions tab.
3. Click the **New** button inside the tab. The Corrective Action dialog opens. Select Maintenance and **OK**.
4. The Requisition Work Order window opens. Create a new work order as usual and click **OK**.
5. **Save** and close the window and return to the Work Orders window.

Select the new work order: note on the General tab that it is **Type** corrective action.

The content in the Additional Info tab is editable for any work order in the window, but note that in this case any **Effects**, **Cause** or **Action Taken** you entered on the Requisition Work Order window will appear in the corresponding fields.

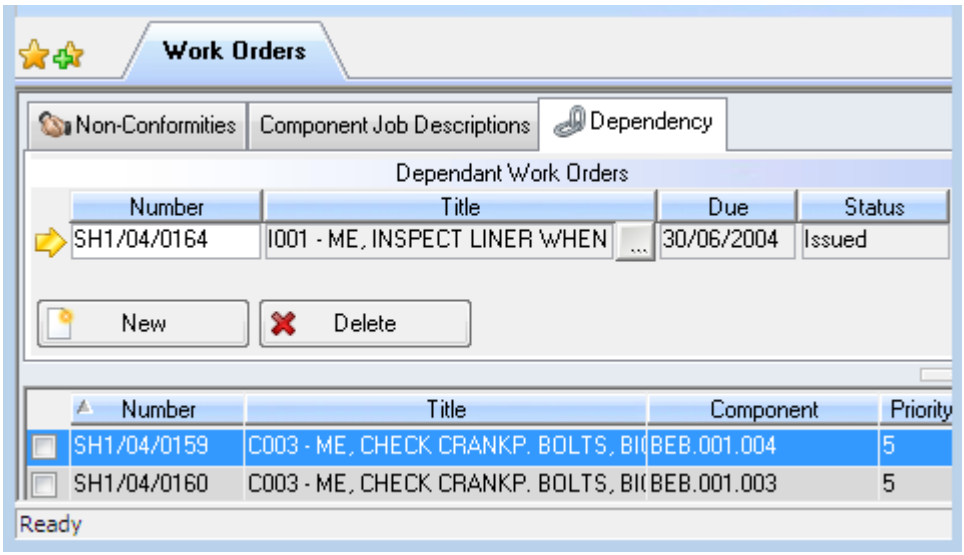
Requisition Work Orders can be created in the same way from the **Quality > Incident** window as corrective actions in response to a recorded incident. The work order's Type will again appear as Corrective Action and the Effect, Cause and Action Taken fields on the Additional Info tab will contain the information added on the Requisition Work Order window. In this case, the relevant **Incident Number** will also appear in the Additional Info tab.

Altering Job Dependencies on Work Orders

When two or more jobs have been linked together in a dependency chain, the work orders created for them will be linked in the same way. See "Complex Activities Management: Job Dependencies" on page 34 for more information on job dependencies.

To view any dependency chains a work order is part of:

1. Select a work order.
2. Open the Dependency tab.
3. The selected work order depends on any Dependant Work Orders listed on the left. That means the selected work order cannot be started until the work order on the left has been completed:



Any work order listed on the right side of the window in the Depending Work Orders list depends on the currently selected work order.

Depending work orders cannot be started until the selected work order is completed.

4. You can alter dependencies here using the **New** and **Delete** buttons to add or remove existing work orders.

Placing Work Orders on Purchase Forms

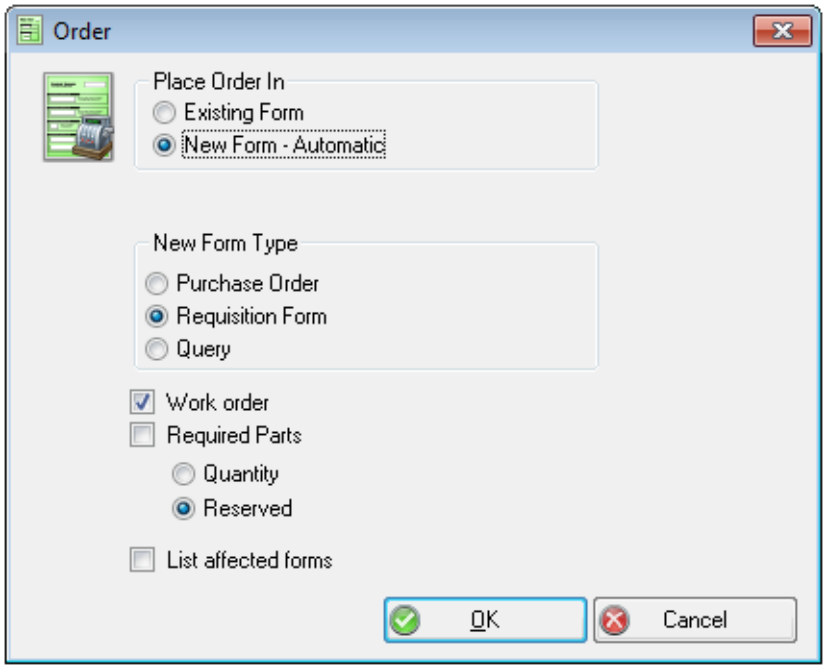
Work Orders can be sub-contracted out to an external supplier by placing them onto purchase forms and ordering each one as a service line item.

To place a work order onto a form:

1. Select a work order in the Work Orders window.

   Or, flag the checkboxes beside several work orders to add them all to the same form at once.

2. Go to **Options > Order...**:



3. Each work order will be added as one service line item. Decide whether to add it to an **Existing** form or to create a **New** form.

   If you opt to create a new form, specify its **Type**.

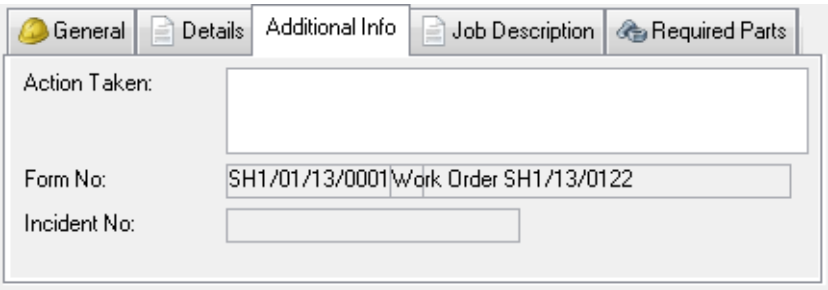
4. To order the parts in the work order's Required Parts tab at the same time, flag the **Required Parts**checkbox and select either **Quantity** or **Reserved**.

   AMOS will try to place work orders and their parts on the same form where possible. You will be informed if some or all parts have already been ordered - these parts will not be ordered twice.

5. Click **OK** to create the form and return to the Work Orders window.

> **T i p**
>
> If you flag the **List affected forms** box the Forms window will open automatically after you finish adding the lines.

Open the Work Orders window Additional Info tab for the same work order to see the number of the form you either created or added to:



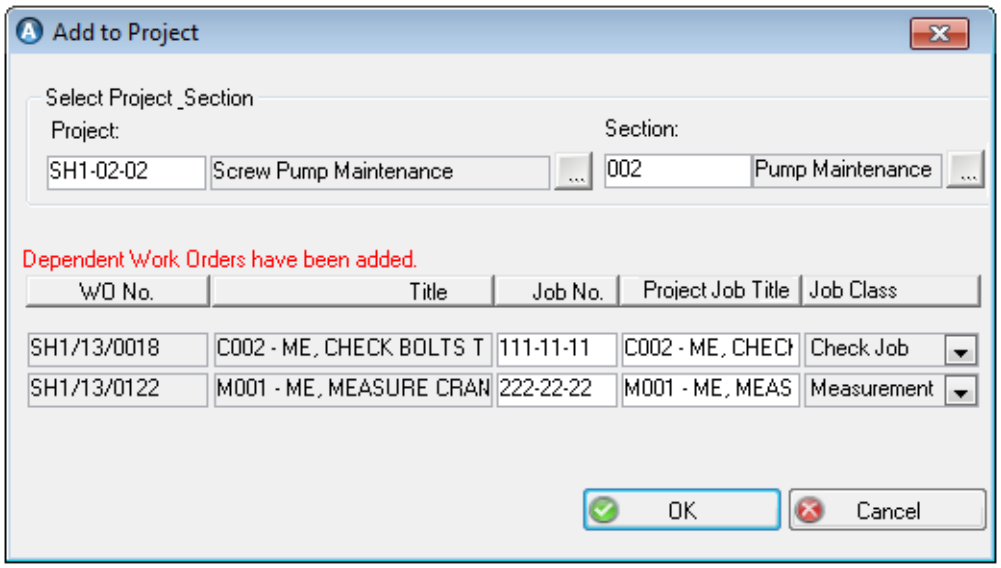
Hold the **Ctrl** key and double-click on the form number to open the Forms window. Selecting **Options > Line Items** shows the work order and any parts added with it.

Adding Work Orders to Projects

Maintenance work can be organised into Projects by adding work orders to a project you have already set up in the **Maintenance > Projects** window.

To add work orders to a project from the Work Orders window:

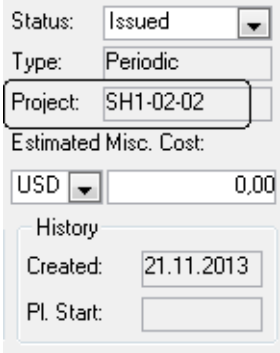
1. Go to **Maintenance > Work Orders**.
2. Select a work order. Or flag the checkboxes next to several work orders to add them to the same project all at once.
3. Go to **Options > Add to Project**:



   If the work order(s) you selected had any dependant work orders - other work orders that block the selected one(s) and have to be completed first - it/they will be added as well.

4. Choose the **Project** and **Section** to add the work orders to.
5. Enter a project **Job Number** for each work order.
6. Click **OK** to exit the dialog and return to the Work Orders window. The project number will now

appear on the work order's General tab:



Copying Work Orders

Instead of manually entering all the details onto a new work order when a similar one has already been generated, copy an existing work order.

To copy an existing work order:

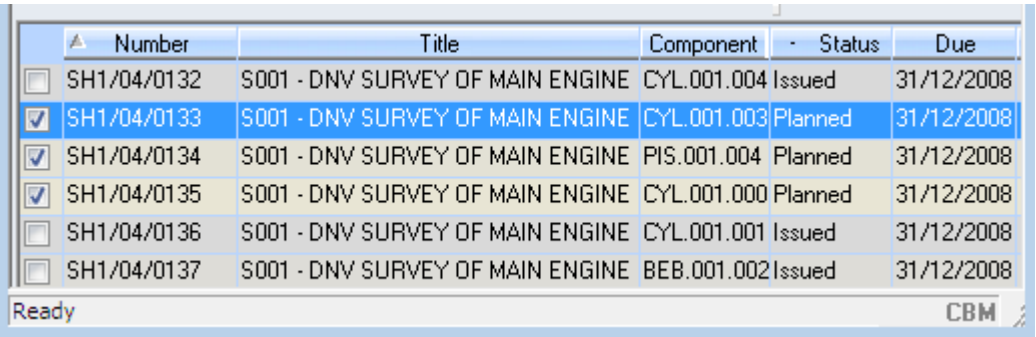
1. Go to **Maintenance > Work Orders**.
2. Select one or more Work Orders to copy.
3. Go to **Options > Copy**.
4. Choose whether to copy the Details, Required Parts and Required Disciplines.
5. Click **OK**. The system generates the new Work Order(s) and it/they will appear at the bottom of the Work Order window.

You can also manually create sub-work orders from parent work orders: select a work order and go to **Options > Create Sub-Work Order**. The new sub-work order receives the same number as the parent plus an additional letter, and the parent number is displayed in the main window. You choose whether or not to copy the required details, parts and/or disciplines when you create the sub-work order. You cannot report a parent work order until all sub-work orders are completed or cancelled.

Issuing Work Orders

Once you have generated your first work orders and then planned them, 'issue' the actual work orders to activate and print them out:

1. Go to **Maintenance > Work Orders**.
2. Flag every **Planned** work order you want to **Issue**:



3.  Go to **Options > Issue** or click the toolbar button.
4. In the Issue Work Orders dialog select the **Output Format** you want to use.
5. Click **Print Preview** to view the list on your screen first and make certain that it is the list you want.
6. Click the **Print** button in the toolbar or select **File > Print** to print the list.

All the information belonging to each work order is printed together on one page (or more as required) including rich text and plain text. When enhanced text is in use, you will have the option to print any enhanced text on separate pages following the rest of the printed content[1]. Any templates are printed on separate pages. The summary for each work order follows it immediately, and then the information for the next work order follows that.

Controlling Work Orders

Unless a system parameter has been set so that completed work orders are filed automatically, use the Work Order window to control the work orders you are finished with and file them:

1. Go to **Maintenance > Work Orders** to open the Work Orders window.
2. Tag the work orders to mark as Controlled.
3. Select **Options > Control** or click the toolbar button.
4. **Save** the window.

You can also control work orders the same way from the Work Planning window Options menu.

Work Planning Window

The Work Planning window at **Maintenance > Work Planning** is for planning, rescheduling and otherwise following up on work orders.

Filtered work orders are listed on the left side and represented by a colour coded bar on the timeline to the right. When you open the Work Planning window the Gantt chart scrolls to Today. When you click on a work order title, the Gantt chart automatically scrolls to the associated work order and selects it.

To save your planning information to an external location go to **Options > Export**.

Note: Different kinds of functionality are available according to your system license.

Filtering the Work Planner

The appearance of the Work Planner filter may change depending on the functionality available with your system license.

If Your License Includes the Projects Module

You can use the filter to search for project jobs by individual project (either on their own or with all other work orders) or by individual project section (only section jobs are shown).

If Your License Includes the Maintenance Task Module

The filter will include an additional tab called Maintenance Tasks. Enter a **From Date** and **To Date** in this tab for the period in which you want to work. The Planning window will then show the Work Orders and Tasks generated for this timeframe and a list of all component jobs in the system, including those which do not have work order(s) due/task(s) generated inside of the set time frame. Check the **Only include WOs that are due within this date range** box to restrict the list of component jobs displayed in the Planning window to those with work orders due/maintenance tasks generated within the set time frame only.

Or, set **Due Between** dates in the filter's Basic tab. All component jobs will be listed but they will contain only the work orders due between those dates.

[1] When the system parameter 'Editor - Type Maintenance' is set to ENHANCED, a checkbox labelled 'Print Enhanced text on separate page, where applicable' is added to the Print dialog.

Note: If you check the **Global Search** checkbox in the Work Planning filter, Generate Maintenance Tasks in the Options menu will be disabled in the resulting window. If you do not check the Global Search checkbox, the Generate Maintenance Tasks option will be available (depending on access rights). In this case, when you select to Generate Maintenance Tasks, the Global Search checkbox in the resulting filter will be disabled.

Working with Multiple Work Orders

You can perform the same task on several or all work orders at once using the Selected List tab:

1. Use the **Shift** and **Ctrl** keys to select several work orders. Or go to **Edit > Select All**.
2. This activates the Selected List tab at the bottom of the Work Planning window.

To change values on the selected work orders:

1. Go to **Options > Change Values**or click the button.

   The button is only active when multiple work orders are selected.

2. The Change Values dialog lets you set changes which are common to all the selected work orders.

Round Work Orders

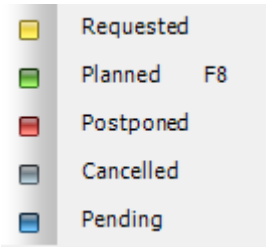
A single line on the chart may represent several jobs when the work order represents a round. If a round is attached to a work order, go to **Options > Included Jobs** it to access the list of jobs that are included in the round.

Changing Work Order Status

The second toolbar contains icons representing the various statuses a work order may have. Each status is represented by a specific colour.

To change the selected work order's status:

- click the appropriate **Status** button in the toolbar. Or,
- go to **Options > Change Status To** to change the selected work order's status to one of the listed alternatives. Or,
- press the **F8** key.



The Change Status To Sub-menu and the Toolbar Shortcut

If you have selected several work orders and the Selected List tab at the bottom of the screen is automatically activated, clicking one of the **Status** buttons in the toolbar sets the status for them all.

Rescheduling a Work Order

There are two kinds of planning methods in AMOS:

- **Fixed Planning.** If you reschedule a fixed job within its reschedule limit, the dates of the jobs to follow will not change.

- **Variable Planning.** If you reschedule a variable job, you must reschedule the jobs that follow by the same amount of time.

Planning methods are set on jobs in the Component/Type Jobs window.

Changing the Duration of a Work Order

1. Click a work order and hold the mouse button down.

   A note appears on the screen showing the planned duration of the selected work order.

2. Change the value in the **Est. Duration (Hrs)**field.
3. The timeline represents whole days, and the estimated number of hours is rounded up to the next full day. A one-hour job is represented on the timeline as a one-day job, while a job estimated at 36 hours is represented as a two-day job.
4. If a planned work order has a window of 4 days and a duration of 1 day, the horizontal bar in the timeline will show the window just to the left of the work order in a slightly less intense version of the same status colour as the work order.

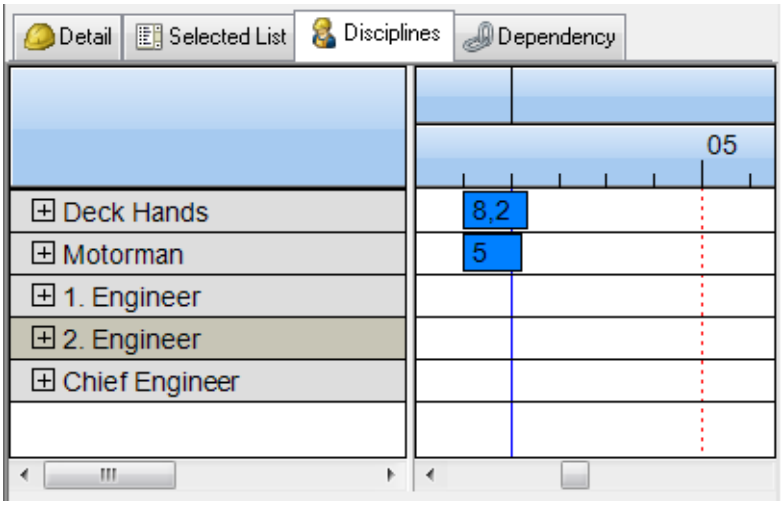
Changing a Work Order's Start/End Dates

1. Click on and drag a work order sideways in the timeline.
2. As you drag, the information in the note changes to reflect the current position of the work order.
3. Drop the bar on a new date.

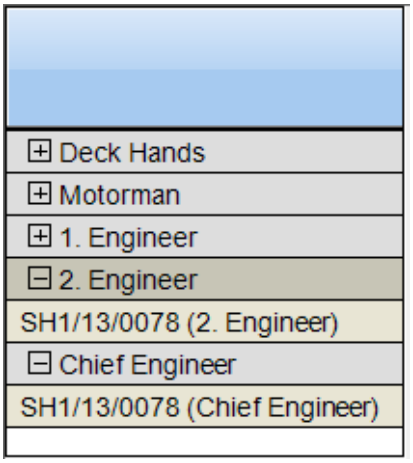
Note: To record rescheduled work orders in the Reschedule Log, set the parameter 'Log Job Rescheduling' to True. To record the reason for rescheduling the job set the parameter 'Require Reason For Job Rescheduling' to True.

Specifying Disciplines on a Work Order

The Disciplines tab provides an overview of the work planned for each discipline. Select a work order in the list and open the Disciplines tab. The disciplines are listed on the left of the tab; a coloured bar on the right side indicates which discipline(s) are required and how many hours for each:



Click the + sign to expand any discipline and see a complete list of work orders which require it and a further breakdown of hours:



To add an additional discipline to a work order:

1. Select a work order.
2. Go to **Options > Required Disciplines**.
3. Select a discipline from the drop-down list.
4. Specify the number of hours and **Estimated Cost**.
5. **Save** and close the window to return to the Work Planner.

Go to **Options > Refresh Disciplines** or press **F5** to refresh the tab without closing and reopening the window.

To find and flag all the disciplines listed for a selected work order(s), go to **Options > Mark Required Discipline**.

Planning Work Order Dependencies

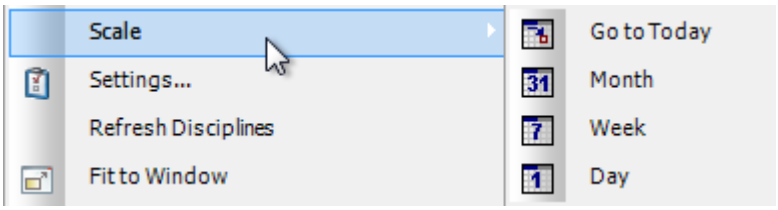
If job dependency chains have been configured in the Component Jobs window or in the Job Planning window, when the work orders for these jobs are generated they are also linked together.

Use the Dependency tab and the Options menu item **Add Dependencies** to alter existing dependencies and create new work order dependencies.

See "Complex Activities Management: Job Dependencies" on page 34

Changing the Scale

1. Go to **Options > Scale**, or click the toolbar buttons.
2. Select **Month**, **Week** or **Day** to change the amount of time shown:

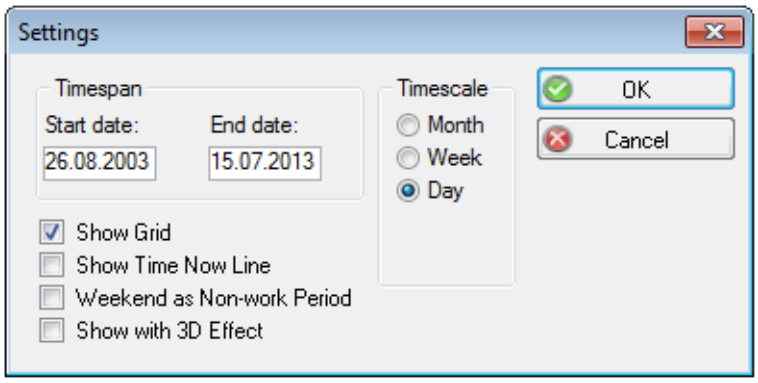


3. Select **Go to Today** to jump to today's date, regardless of the time scale in use.

To scale the entire planning period you are working in down to fit into your current screen, go to **Options > Fit to Window**.

Changing the Timeline Settings

1. Go to **Options > Settings**.
2. Change settings in the dialog:



You can set the 'Work Order Tracking Accuracy' parameter to display and track work orders to the nearest 15 minutes if required.

Maintenance Tasks Window

Recurring instances of the same job are called Maintenance Tasks. If the Maintenance Task module is part of your license[1], and the Maintenance Task functionality is enabled by setting the parameter 'Use Maintenance Tasks' to TRUE, the Work Planning window can display Maintenance Tasks next to the existing Work Orders.

These tasks appear in the Work Planning Window as frequently as they are scheduled in the selected period. In any planning period, you can handle multiple maintenance tasks.

> **EXAMPLE**
>
> If a job is to be performed at a monthly frequency and you choose to review the planning for one year, then for this job the existing work order and eleven subsequent tasks will be displayed in the Planner. Jobs are listed on the left side of the window and clicking the + button beside one will expand it to show the complete list of work orders/tasks. The details, (required parts and required disciplines) for the Maintenance Tasks are retrieved from the Component Job. When the work order is reported to the system, a new work order is generated based on the data from the next task in line for that job.

Opening the Work Planning - Maintenance Task Window

When Maintenance Tasks is activated, selecting **Maintenance > Work Planning** which includes an additional tab called Maintenance Tasks. You must enter a **From Date** and **To Date** in this tab for the period in which you want to work before you can proceed to the window. The Planning window will then show the work orders and tasks generated for this period of time, and a list of all component jobs in the system including those which do not have work order(s) due/task(s) generated inside of the time frame you have set.

To restrict results to your set time period, check the **Only include WOs that are due within this date range** box on the filter. Another way of restricting the number of work orders displayed is to set **Due Between** dates in the filter's Basic tab. All component jobs will be listed, but they will contain only the work orders due between those dates.

You can also set the **Periodic Frequency** of the tasks you want to view, and **Job Descriptions**, **Counters** and **Component Types** associated with the Maintenance Tasks.

[1] Maintenance Task functionality is in addition to standard work planning functionality, provided you have the correct license.

Note: If you check the **Global Search** checkbox in the Work Planning filter, **Generate Maintenance Tasks** in the Options menu will be disabled in the resulting window. If you do not check the Global Search checkbox, the Generate Maintenance Tasks option will be available (depending on access rights). In this case, when you select to Generate Maintenance Tasks, the Global Search checkbox in the resulting filter will be disabled.

The Maintenance Tasks (Read Only) Window

There is a simplified read-only Work Planning - Maintenance Tasks window intended for users who just need to view the planning. It is not possible to make any changes in the read-only window.

Users with 'Maintenance Planning (Read Only)' flagged in the Access Control window Functions tab will see this version of the window.

Resizing the Window

To resize the timeline, drag with the cursor in the header row on the left side of the window. This moves the entire gantt chart, resizing or zooming the timeline. If you drag the header row to the left, each month takes less space. If you drag it to the right it increases the space each month will use.

To resize the columns in the left pane, place the cursor in the list part of the columns under the header row and drag left or right. This expands or contracts the visible space for the columns versus the visible space for the gantt chart.

Note: If you drag the **Discipline** column in the Disciplines tab out to its full width all the columns in the top part of the window will also resize automatically to their own full width. Dragging the Discipline column to the left to less than its full width will then sync the top and bottom timelines again.

The Maintenance Tasks Tab

The Work Planning - Maintenance Task window contains a tab called Maintenance Tasks. This tab lists the Maintenance Tasks associated with the selected Component Job or Work Order.

There are three buttons:

Delete	Deletes the selected maintenance task.
Not Ordered	Checks if all the parts are available for the selected task. If none of the parts have been ordered for the selected task or some have been ordered but not all (indicated by a blue or yellow ball on the Gantt chart and in the **Onorder** column), clicking this button displays a dialog box with the first twenty required parts that are missing.
Forms	Opens the forms belonging to the selected maintenance task. Clicking the **Forms** button at the bottom from the Selected List tab opens the forms for all selected tasks and work orders.

Reschedule Limits

A Reschedule Limit is a set amount of days before and after the calculated due date and registered against component jobs, within which a task can be carried out[1].

[1] Limits are defined in the register at File > Open Register > Maintenance > Reschedule Limits.

You can move and reschedule maintenance tasks but it is not possible to reschedule them into the future outside of the pre-defined task reschedule limit.

If you reschedule a variable task within its limits, the planned and calculated due dates for that task only are moved and the reschedule limit is set for that task according to the new calculated due date. For any subsequent tasks up to the next planned task, the calculated due date and reschedule limit are updated with the same amount of time.

If you reschedule a variable task outside of its limits to an earlier date, the tasks generated behind the first one will be rescheduled using the originally planned interval according to the component job definition for the first task. Any additionally created tasks behind the current task will not be rescheduled.

Tasks generated by moving planning out of the reschedule limits do not have reschedule limits themselves.

Note: If you try to reschedule a task and one or more instances of it are outside the filtered timeline AMOS will inform you that tasks which are not displayed in the Planning window will not be rescheduled. To include these tasks in the rescheduling action re-filter the timeline for the due date of the last task. Tasks not visible in the timeline will remain unchanged.

Moving Tasks and Updating Disciplines

If the selected task has many required disciplines, these disciplines have to be updated whenever you move a task. Selecting **Options > Do not refresh collapsed req. disciplines** prevents this update. Switch this option off by selecting it again - this enables collapsed disciplines to be updated. A checkmark in the menu next to this option indicates that it is ON.

Note: If you try to reschedule a task and one or more instances of it are outside the filtered timeline AMOS will inform you that tasks which are not displayed in the Planning window will not be rescheduled. To include these tasks in the rescheduling action re-filter the timeline for the due date of the last task. Tasks not visible in the timeline will remain unchanged.

Generating Maintenance Tasks

Selecting **Options > Generate Maintenance Tasks** allows you to extend the planning into the future. If you have changed the frequencies for the selected tasks they will be overwritten. If the frequency is the same it will generate new instances of tasks.

Note: If you check the **Global Search** checkbox in the Work Planning filter, **Generate Maintenance Tasks** in the Options menu will be disabled in the resulting window. If you do not check the Global Search checkbox the Generate Maintenance Tasks option will be available (depending on access rights). In this case, when you select to Generate Maintenance Tasks, the Global Search checkbox in the resulting filter will be disabled.

When a plan is generated all tasks will appear in green. They will stay green as long as there is no planned due date. When you alter a task so that a planned due date is set the task will appear as yellow. All additional created tasks will always be yellow since the planned due date is always set for these tasks.

A red exclamation point next to the selected Maintenance Task in the Gantt chart indicates that the task has been generated with a different frequency from the frequency that currently exists in the component job.

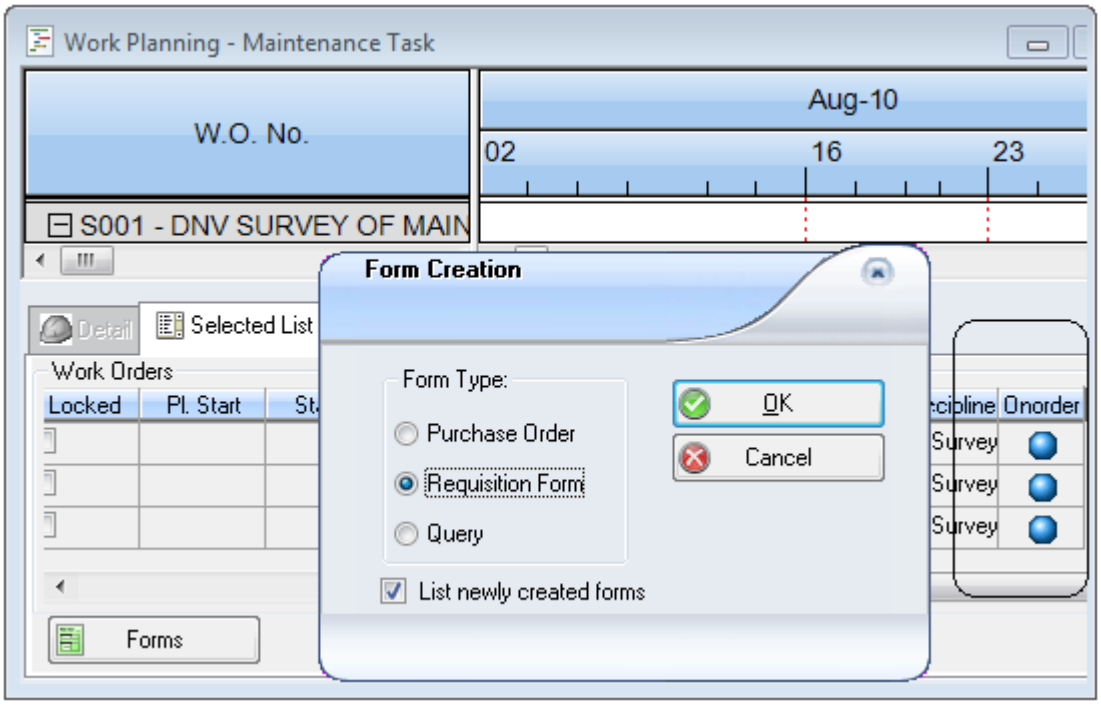
Selecting **Options > Delete Maintenance Tasks** removes the selected planning. This allows you to re-generate it.

Ordering Required Parts

The status of the required parts on order for a Maintenance Task or a Work Order is visually indicated on the Gantt chart:

- If all the parts have been ordered there is a green ball on the Gantt chart next to the selected task or work order.
- If some parts have not been ordered yet you will see a yellow ball next to the selected task or work order.
- If no parts have been ordered you will see a blue ball.

The same icon appears in the **Onorder** column on the Selected List tab:



If the selected work order or maintenance task requires parts, go to **Options > Order Parts** to generate order forms and put these parts on order. This will place all required parts for the selected work order or maintenance task onto a form without taking current stock levels into consideration. Parts which have already been ordered will not be ordered twice, and if all required parts for the selected work order-/maintenance task have been ordered no new forms will be created and AMOS will inform you that all required parts for the selected work order/maintenance task are already on order. If some but not all parts have been ordered already, AMOS will ask if you want to generate purchase orders for the outstanding parts.

Maintenance Projects

Use the Projects window to group both planned and unplanned maintenance work together with all instructions, details, costs and requirements under a project name and sub-divide it into sections. Grouping work together in advance like this enables you to closely monitor related maintenance within a project situation such as a ship survey or dry docking.

When the project is started AMOS will generate the necessary work orders and as the work is carried out and then reported, maintenance history will be kept as usual and new work orders generated as the existing ones are completed.

Always create your new projects well in advance of the planned start date. Here is an overview of the steps a maintenance project would typically progress through from start to finish:

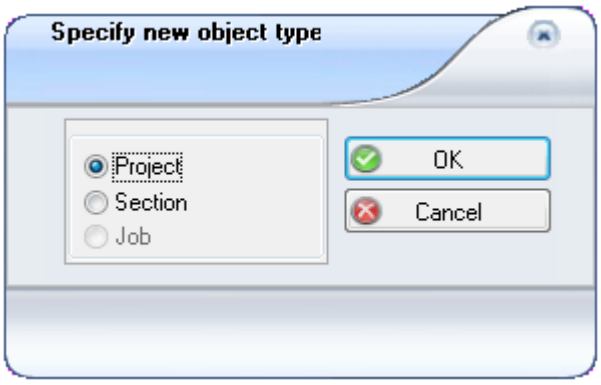
1. Create a new Project. See "Setting up a Project" below.
2. Add Sections to it.See "Project Sections" on the next page.
3. Create new Project Jobs as required by adding a list of work orders to the jobs tab. See "Project Jobs" on page 104.
4. Add or amend details inherited with the work orders such as Team, Parts, Costs, etc. See "Project Work Orders" on page 114.
5. Generate and send a specification to potential shipyards. See "Project Specifications" on page 124.
6. Begin the project according to its planned start date: carry out and report on the work orders. See "Working on a Project" on page 130.

Setting up a Project

The Project window is accessed at **Maintenance > Projects**. Projects and their sections are contained in a hierarchy on the left side.

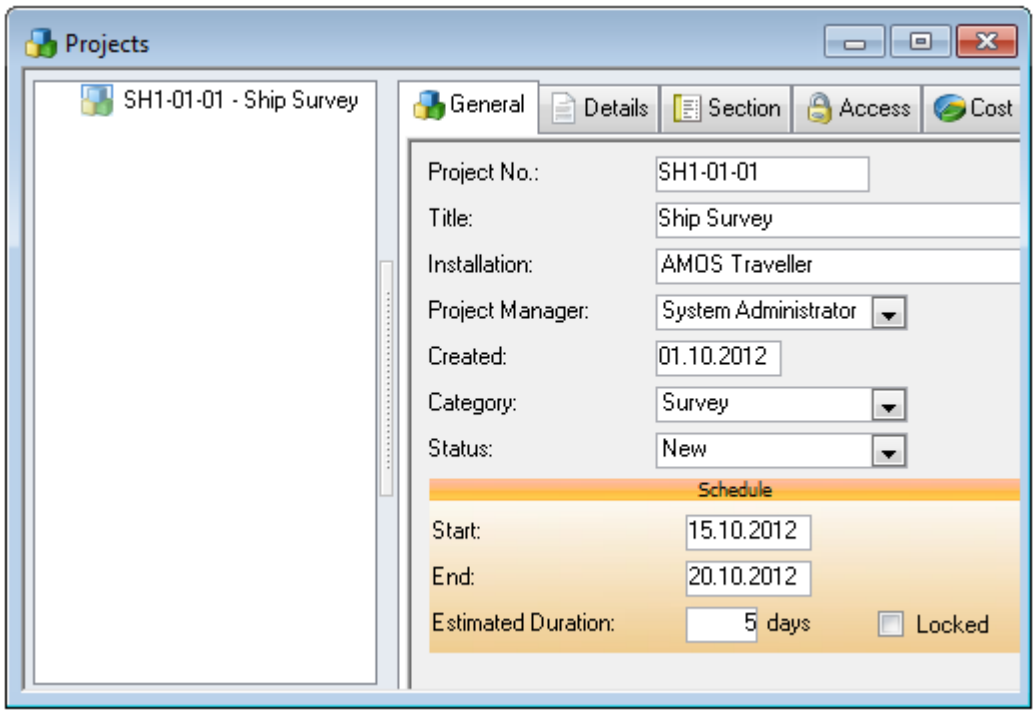
To add a new project:

1. Go to **Maintenance > Projects** and click **OK** in the filter. Click the **New** button on the toolbar to open the Specify new object type dialog:



2. Select **Project** and click **OK**. A new Project icon is added to the hierarchy pane. Enter the basic information on the General tab[1]:

[1]There are two user-defined fields which can be activated for the Projects window General tab. To activate these fields and define labels for them go to Tools > Configuration > Parameters > User Defined Fields > Project > 'useraddressid' and 'userdefext01'.

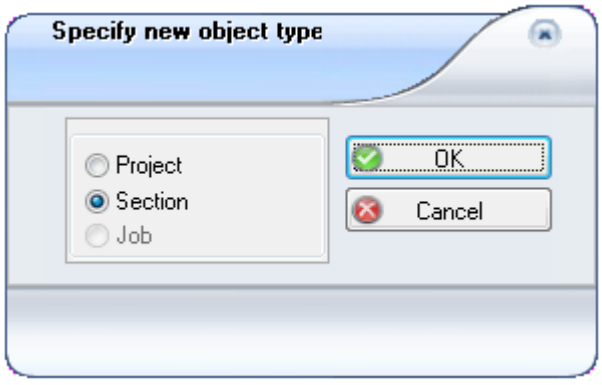


3. Flag the **Locked** checkbox to make the **Estimated Duration** field read only. This lets you compare the estimated duration against the actual duration upon completion of the project.
4. You can also select a **Category**[1] to group the project into- like Survey, or Dry-Docking.
5. The **Status** field can be set manually and updated as the project progresses.
6. **Save** the project.

Project Sections

Projects are comprised of Sections which allow you to group the different maintenance aspects of a project together, for example, Main Engine survey and Boiler Survey are two sections within the project 'Ship Survey'.To add a section to a project:

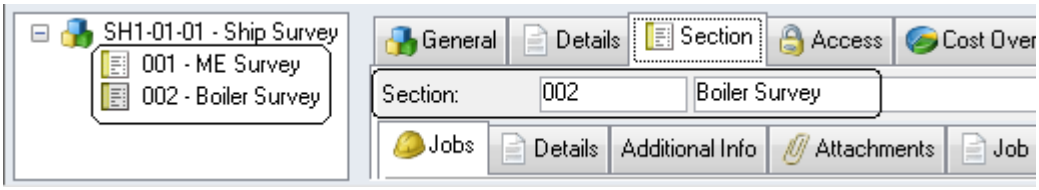
1. Select a Project icon in the hierarchy and click the **New** button on the toolbar.
2. Click **Section** and **OK** in the Specify New Object Type dialog box:



The Section tab in the Projects window will open up automatically.

3. Add a number and title to the line at the top of the tab.

[1] Categories for projects are defined in the register at File > Open Register > Maintenance > Project Categories.

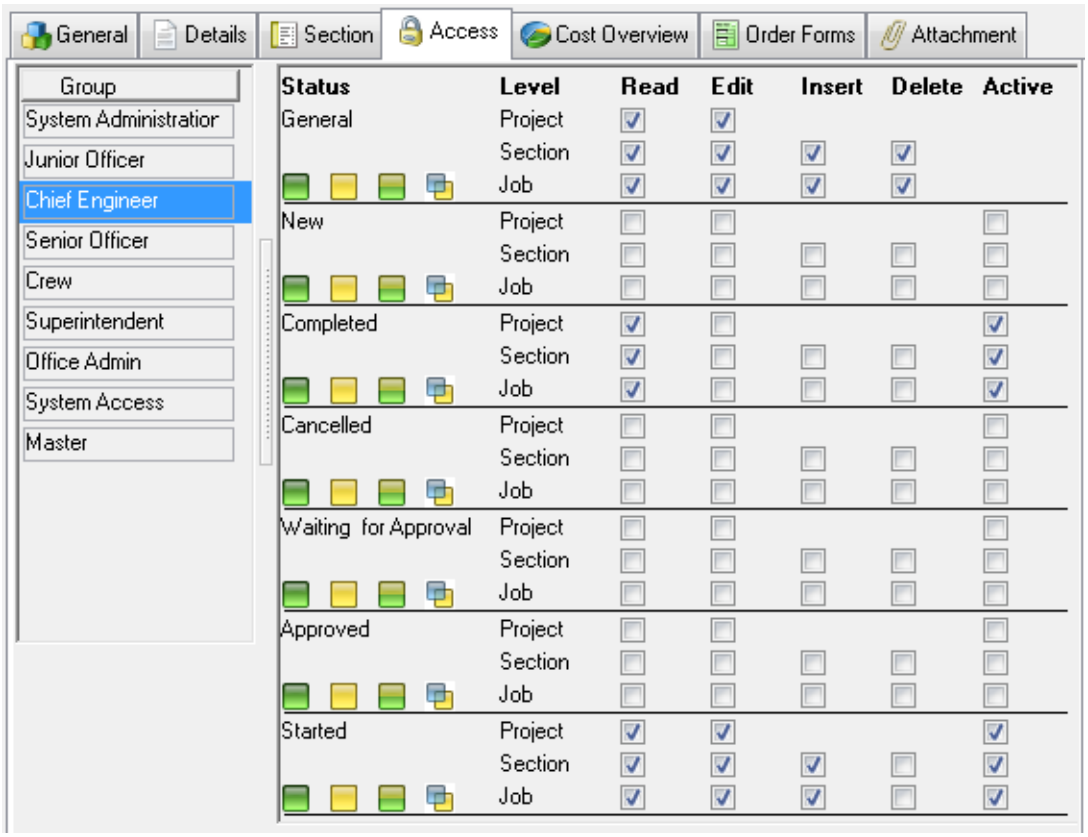


4. **Save** the new section.

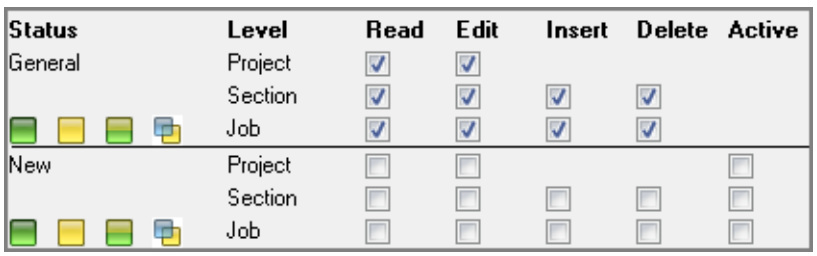
Add as many sections as necessary for every project. Now you can add jobs to your project.

Project Access Control

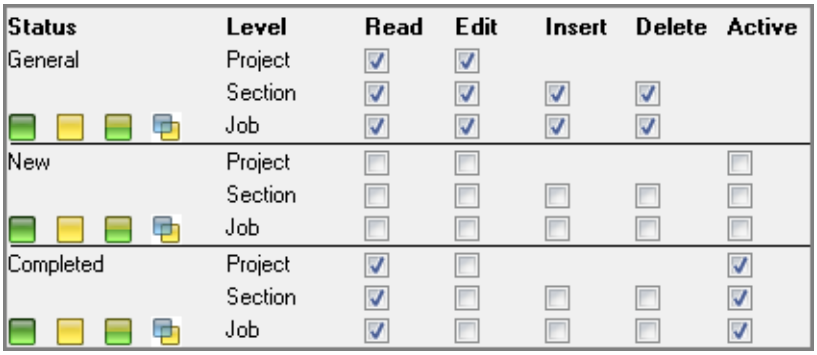
Each project has its own dedicated access control feature to allow or deny different levels of access to any defined user group, according to the project's current status. Open the Access tab in the Projects window to set user group access:



If no access settings are defined on a particular status, the settings defined at the top under 'General' will then apply:



Wherever you do set access rights for a status, flag the **Active** checkbox to override the General-level settings:



If you leave the **Active** box unflagged, the settings will not apply at that status.

To set access rights quickly, use the buttons:

- **Select All**, **Deselect All**, **Invert Selection**

- **Copy to All Statuses**. Copies the access settings for one status, to all other statuses for the selected user group.

There are also separate access controls for the **Project No.** field and the **Estimated Duration Lock** checkbox on the General tab. These access controls are at: **Tools > Configuration > Access Control > Groups > Options > Access Control >**

Fields tab - Maintenance - 'Projects: Number' and 'Project: Estimated Duration Locked'

In the same window, access controls to define access to project compendiums and copying projects are available:

Functions tab - Maintenance - 'Copy Project' and 'Project; Compendium'.

Project Jobs

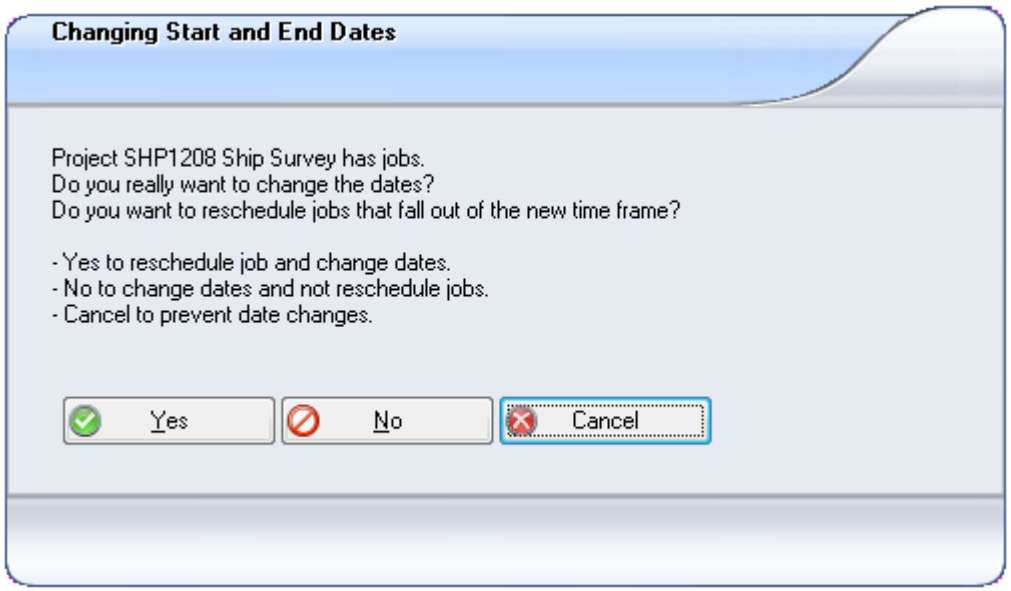
Project sections contain Project Jobs. Every job contains:

- a work order for the maintenance job
- the relevant job description
- required parts and disciplines, inherited from the work order

There are several ways to create a list of jobs:

- Add new or existing work orders:
  - Use the New Jobs dialog to choose an existing periodic work order or create a new one manually; or
  - Select existing work orders from the Work Orders window and choose a project to add them to.
- Add job descriptions and create work orders for them at the same time:
  - Use the Options menu to lookup a job description and create a requisition work order for it on the spot.

The **Due Date** for project job work orders is set to the same as the project's **Start** date. If you reschedule a project at any time and work orders fall outside of the project's new timeframe, AMOS will ask if you want to reschedule the affected jobs too:

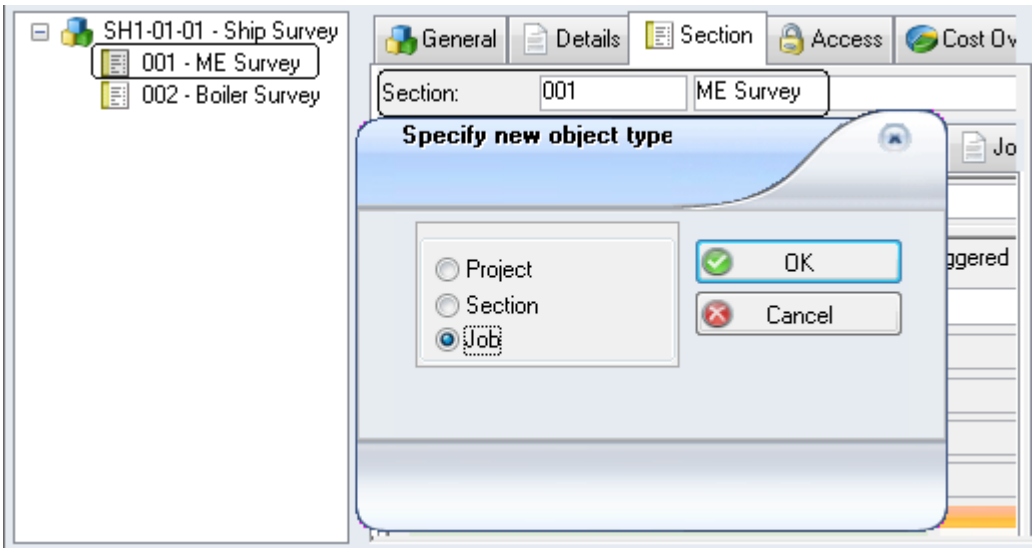


A list of rescheduled work orders with reasons for the adjustment, is available to view by selecting **Options > Reschedule Log**.

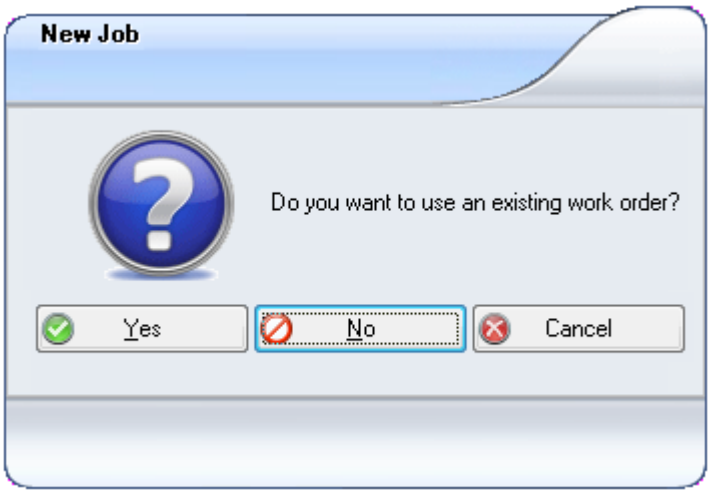
Adding Project Jobs from the New Job Dialog

Use the New Job dialog choose to an existing work order or to create a new one manually:

1. Select a project and a section.
2. Click **New** on the toolbar.
3. Click **Job** and **OK** in the Specify New Object dialog:

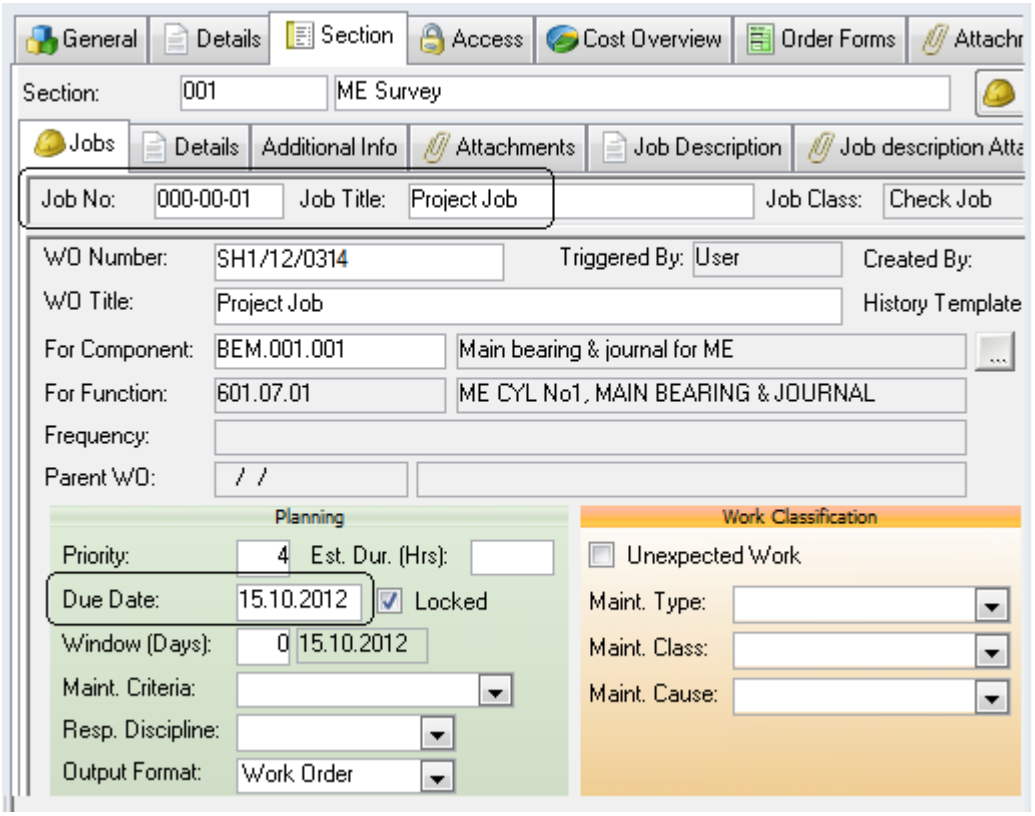


4. The New Job dialog opens asking if you want to use an existing work order:



5. To create a new work order for this project click **No**.

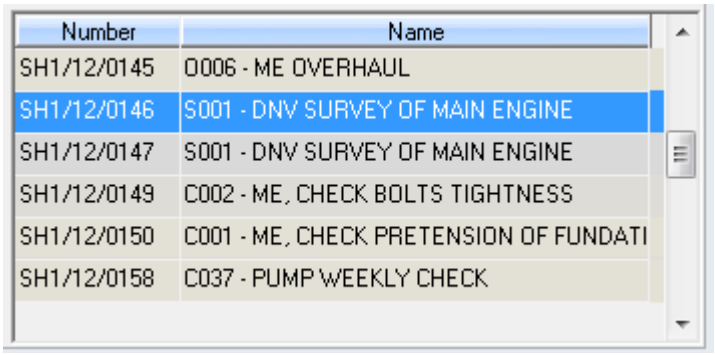
   Create a manual work order in the Section tab Jobs sub-tab[1]. The **Due Date** is automatically set to the project's start date:



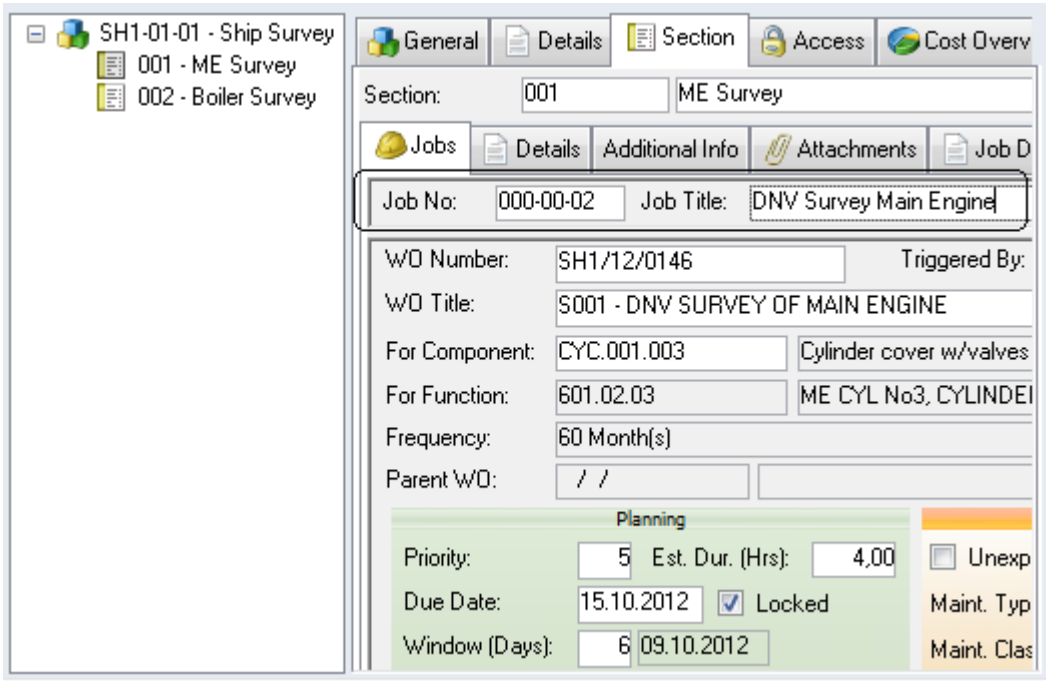
6. Or, to select an existing work order and link it to this project, click **Yes**.

   Lookup and select any existing work order and click **OK** to add it to the project:

[1]The initial status of a work order created manually for a project job is set according to the system parameter Tools > Configuration > Parameters > Options > General > Default Settings > 'Initial Project Work Order Status'. Initial status for project work orders is also available to set in the Work Flow Configuration window, if Maintenance Work Flow is in use.

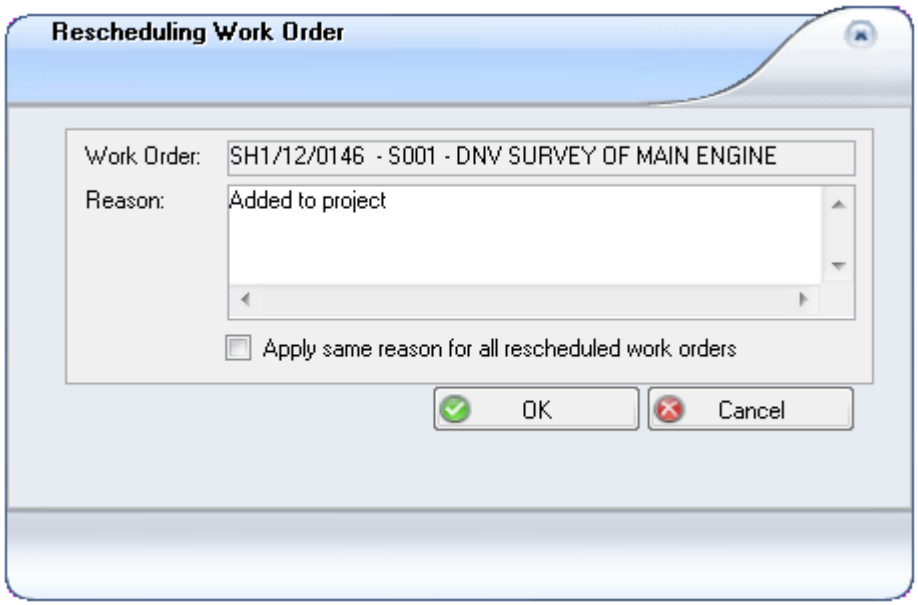


Add a **Job No.** and **Job Title**:



When you add an existing work order as a new job, the due date is automatically set for you to the project's start date. This may mean rescheduling the work order and providing a reason for doing so[1]:

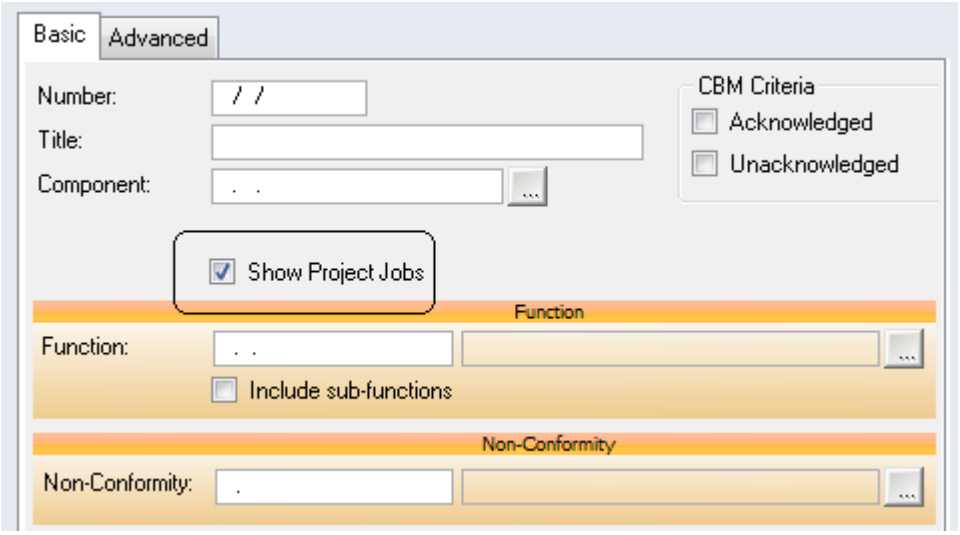
[1] A list of rescheduled work orders with reasons for the adjustment, is available to view by selecting Options > Reschedule Log.



If you select a periodic work order its due date is locked to avoid it falling outside of the project timeframe.

7. Add as many jobs as required to every section.

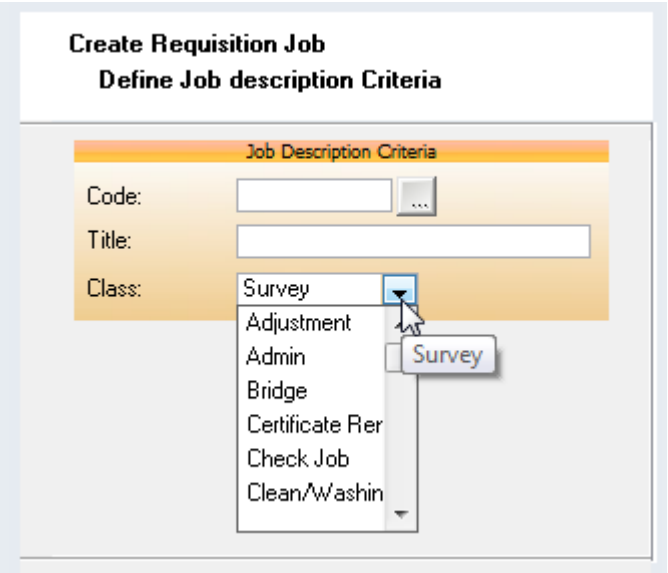
When a work order is created manually for a project or an existing work order is added to a project, that work order will only appear in the Work Order window list when **Show Project Jobs** is checked in the Work Order filter:



Adding Project Jobs from Job Descriptions

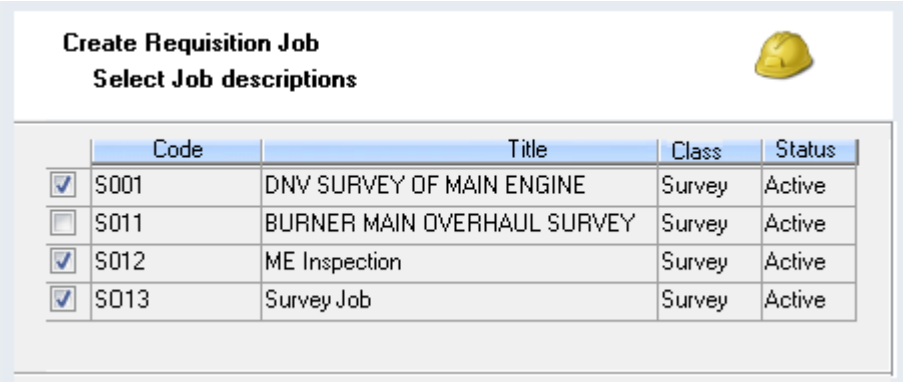
Jobs can be added to a project by selecting job descriptions already available in the system. A wizard opened from the Options menu helps you add one or more job descriptions in one operation:

1. Select a project section.
2. Go to **Options > Create Job(s) from Job Description(s)**. Click **Next** in the Auto Requisition Jobs dialog.
3. The following dialog presents a job description filter. If you are looking for a specific job description, enter its **Code** or **Title**. Or, to narrow the list of descriptions, select a **Class**:



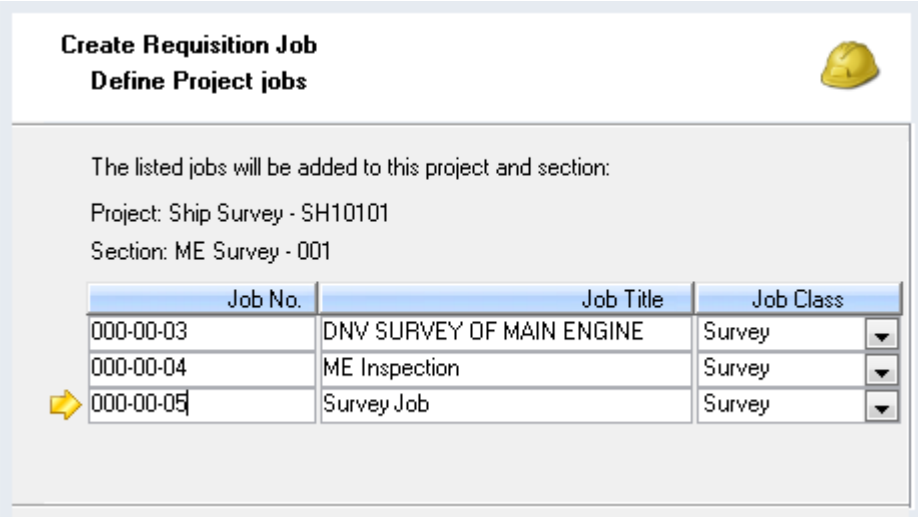
Or leave the filter completely blank. This will return a list of all available job descriptions in the system.

4. Click **Next**.
5. Check the jobs you want to add to the project:



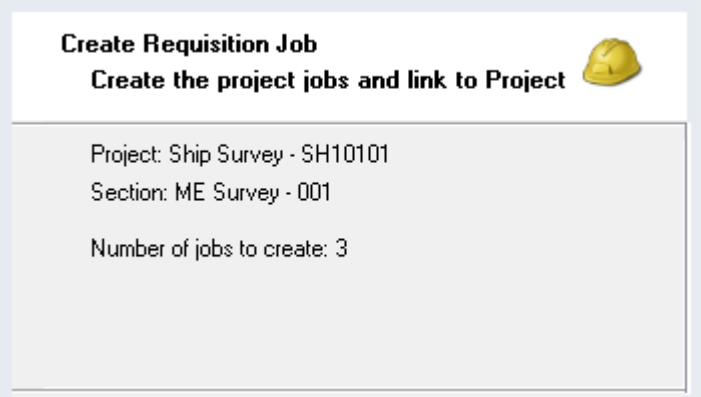
Click **Next**.

6. Enter a project **Job No.** for each job description:

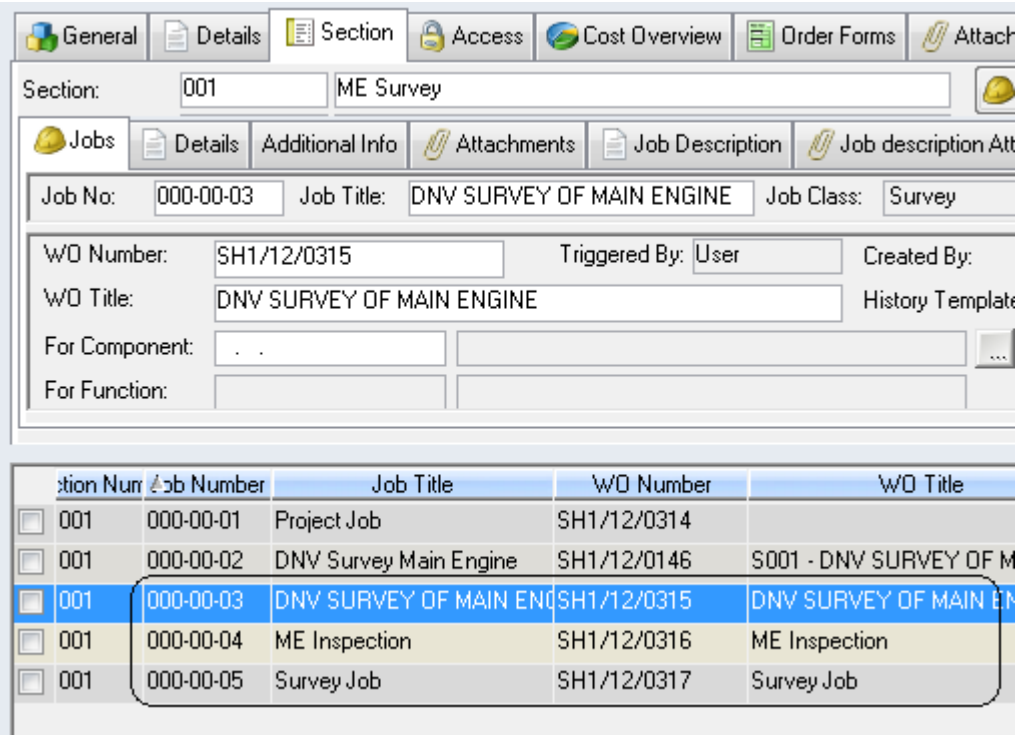


Click **Next**.

7. Click **OK** in the final dialog:



8. You return to the main window with the job(s) added to the project:



The **Due Date** on each job is automatically set to the project's start date. The job description text (if any) will appear in the Section > Details sub-tab. You can adjust this text to reflect any changes required when the task is performed as part of this project.

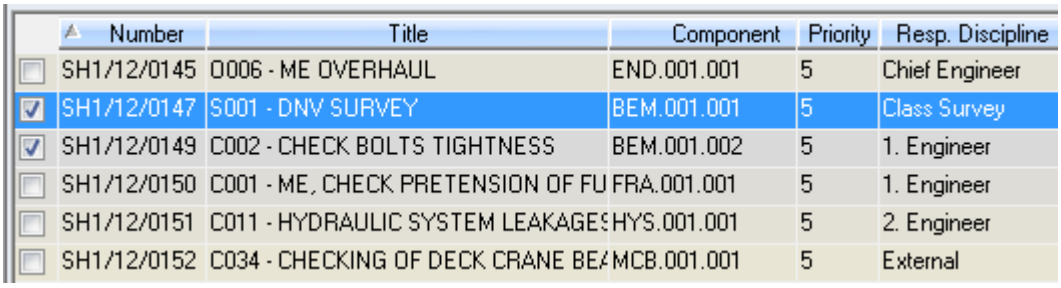
Work orders are created for each job at the same time. Filtering the Work Order window to **Show Project Jobs** will list the new work orders.

Adding Project Jobs from the Work Orders Window

Add existing work orders to a project directly from the Work Orders window:

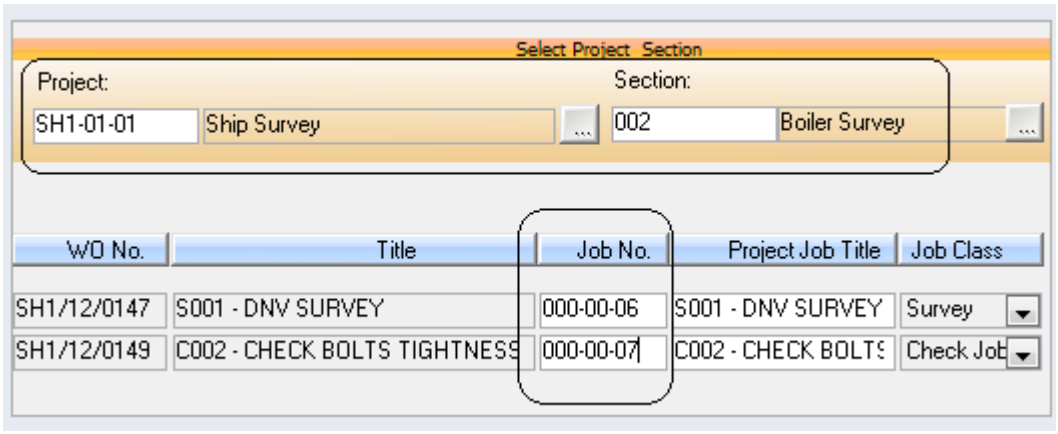
1. Go to **Maintenance > Work Orders**.
2. Select a work order to add to an existing project.

   Or, to add multiple work orders at once to the same project use the filter to filter out a group of applicable work orders and then check the boxes beside each relevant one in the list:



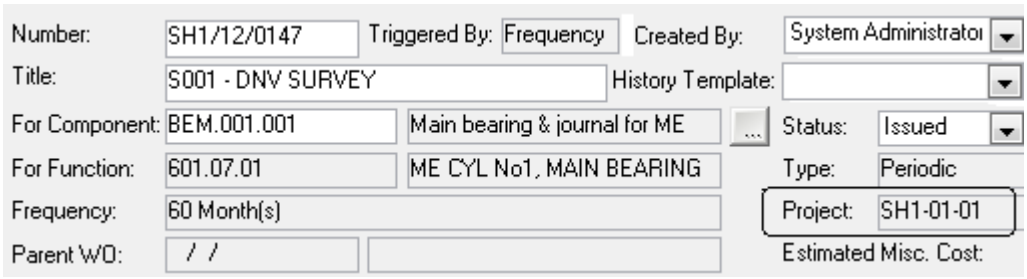
	Number	Title	Component	Priority	Resp. Discipline
☐	SH1/12/0145	0006 - ME OVERHAUL	END.001.001	5	Chief Engineer
☑	SH1/12/0147	S001 - DNV SURVEY	BEM.001.001	5	Class Survey
☑	SH1/12/0149	C002 - CHECK BOLTS TIGHTNESS	BEM.001.002	5	1. Engineer
☐	SH1/12/0150	C001 - ME, CHECK PRETENSION OF FU	FRA.001.001	5	1. Engineer
☐	SH1/12/0151	C011 - HYDRAULIC SYSTEM LEAKAGES	HYS.001.001	5	2. Engineer
☐	SH1/12/0152	C034 - CHECKING OF DECK CRANE BE/	MCB.001.001	5	External

3. Go to **Options > Add to Project**.
4. Use the lookups to choose the **Project** and **Section** to add to:



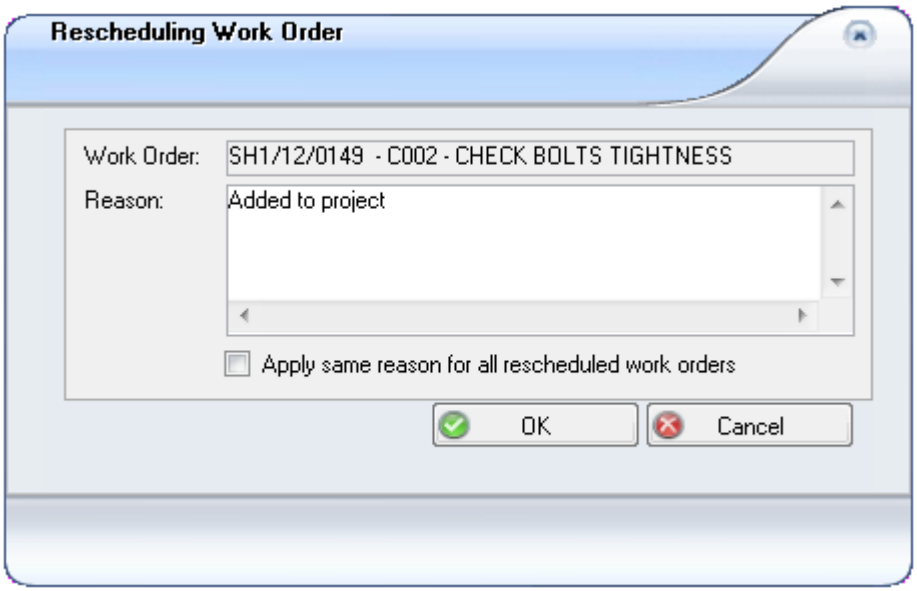
Enter a **Job Number** for each work order.

5. Click **OK** to return to the Work Orders window and **Save** the window. The **Project Number** appears on the General tab for each of the selected work orders:

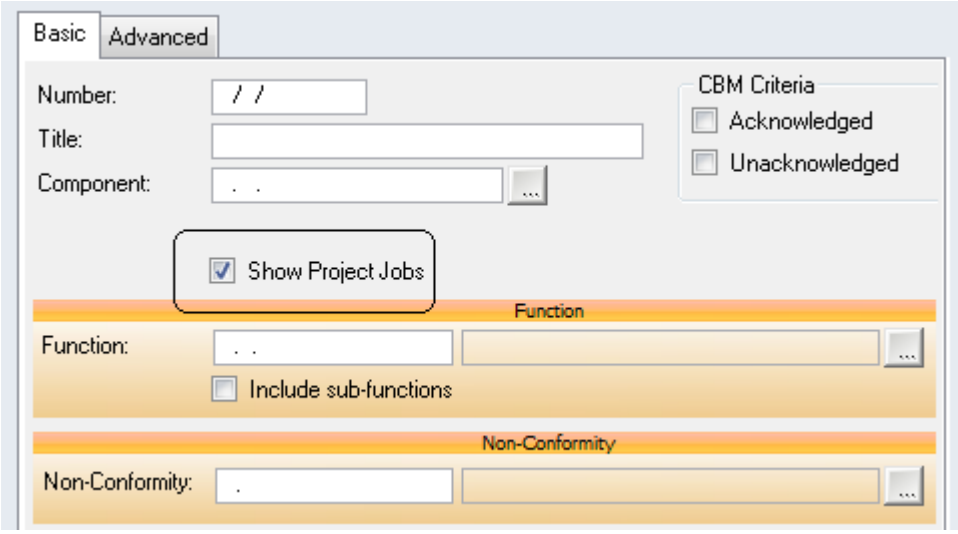


6. The work orders will now be listed in the Project window under the selected project and section. The work order due date(s) will change to align with the project's start date. This may mean re-scheduling the work order and providing a reason for doing so[1]:

[1] A list of rescheduled work orders with reasons for the adjustment, is available to view by selecting Options > Reschedule Log.



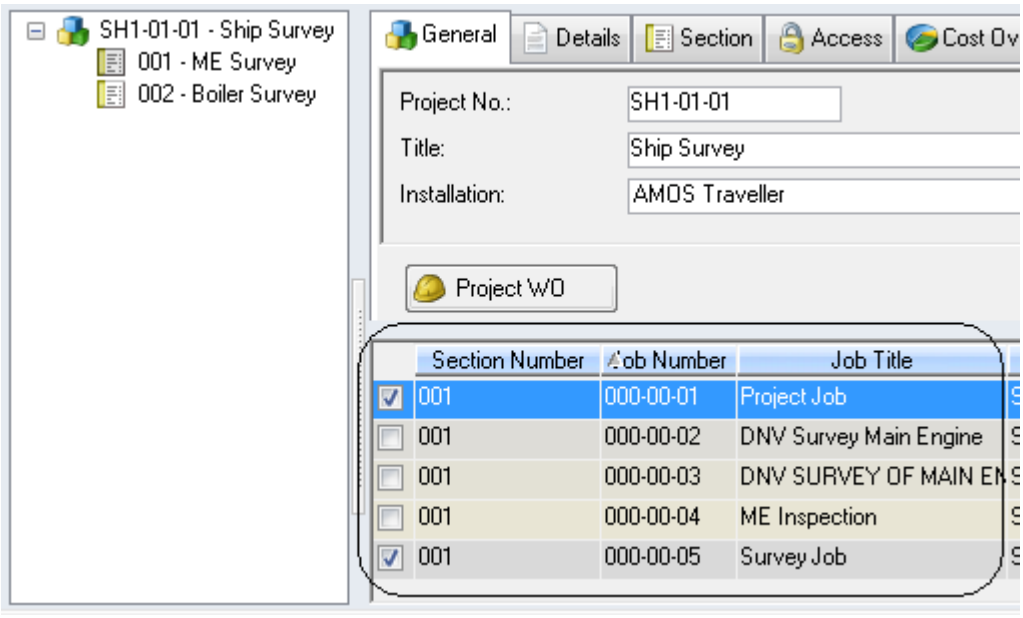
When a work order is created manually for a project or an existing work order is added to a project, that work order will only appear in the Work Order window list when 'Show Project Jobs' is checked in the Work Order filter:



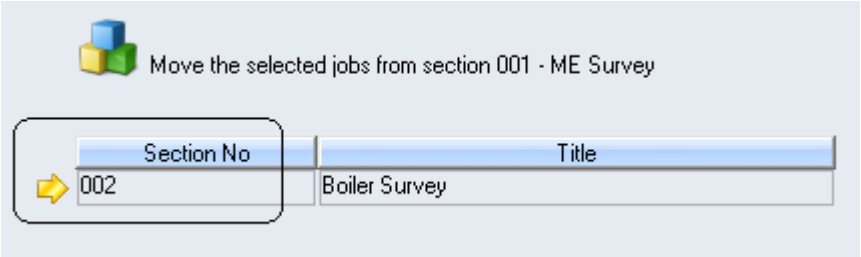
Moving Project Jobs

Jobs can be moved from one section to another one within a project:

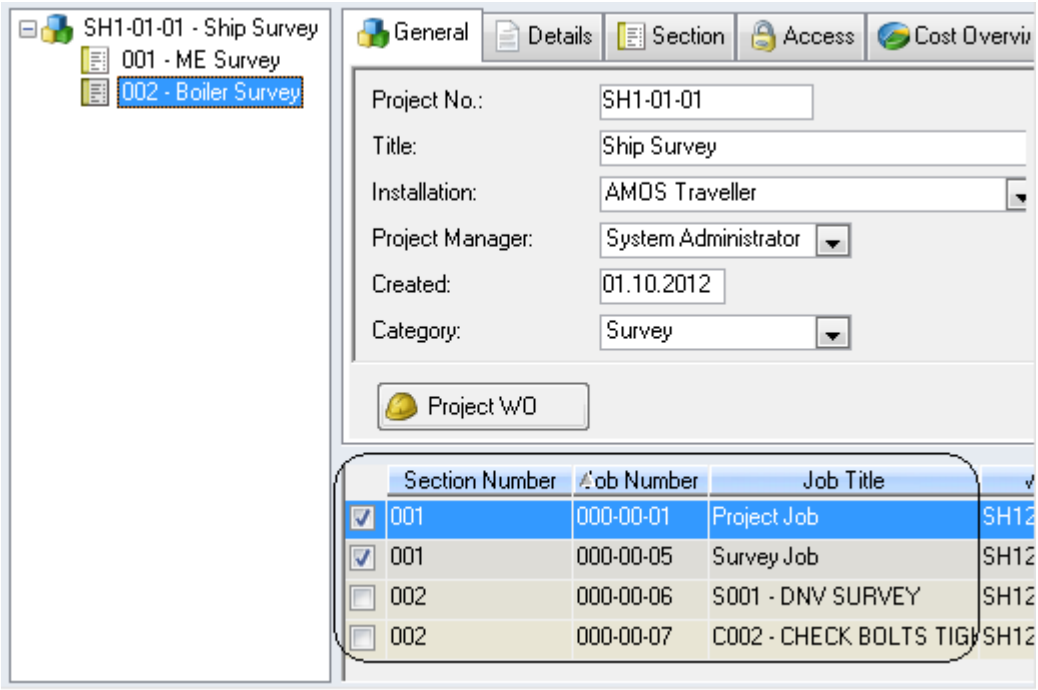
1. Open the Projects window and select the relevant project in the hierarchy.
2. Open the section containing the job(s) you want to move. Check one or more jobs in the list on the right side:



3. Go to **Options > Move Project Job...**The dialog contains a list of available sections. Select the section you want to move the jobs to:

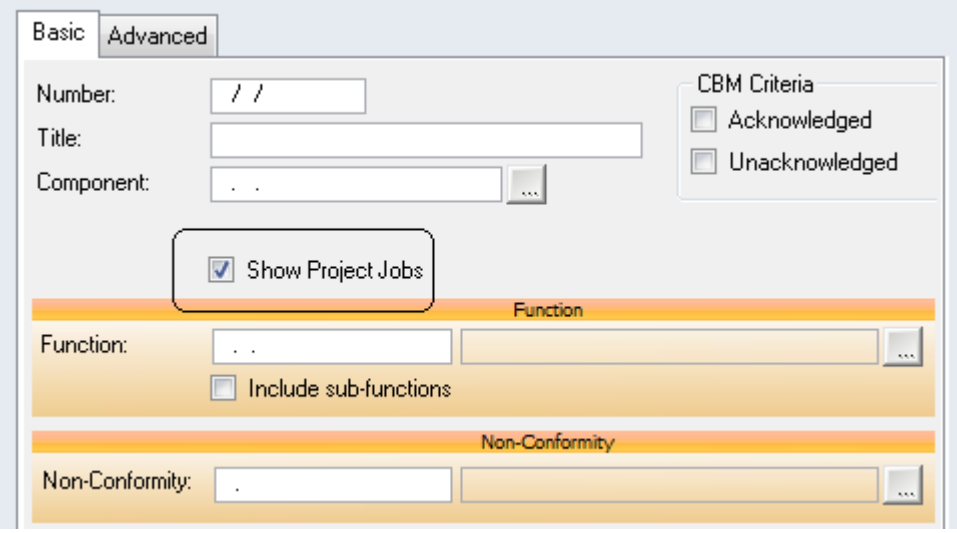


4. Click **OK** to return to the main window. The jobs have been moved:

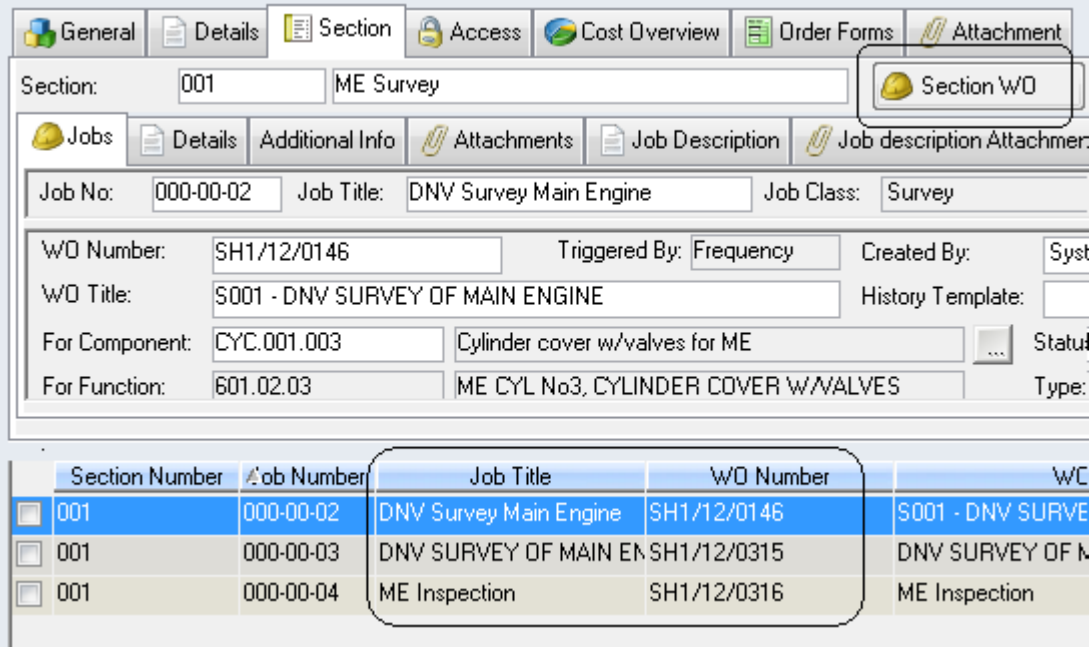


Project Work Orders

When a work order is created manually for a project or an existing work order is added to a project and you open the window at **Maintenance > Work Order**, that work order will only appear in the window list when 'Show Project Jobs' is checked in the filter:

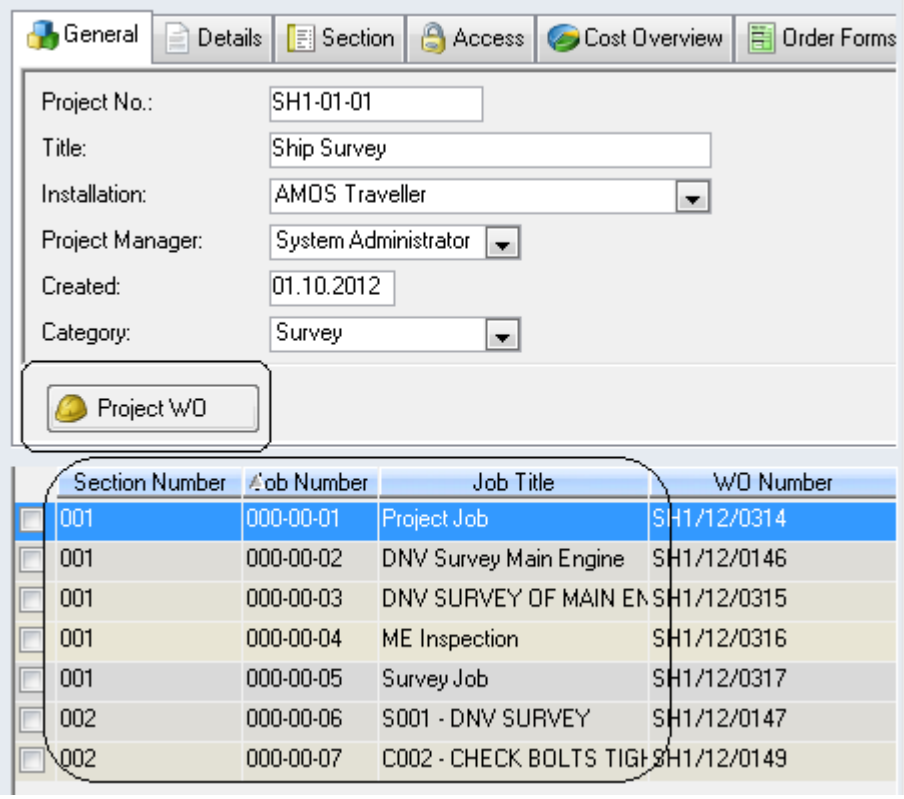


When a project contains a list of jobs, selecting a section in the hierarchy displays only the jobs belonging to that section:



Click the **Section WO** button in the Section tab to open the Work Orders window listing only the work orders in that section.

Selecting the project in the hierarchy displays the complete list of work orders. Click the **Project WO** button on the General tab to open the Work Orders window listing all work orders belonging to the entire project:



Selecting a project and going to **Options > Work Planning** opens the Work Planning window for that project. Only the project job work orders will be available for planning on the timeline when the window is accessed from the Projects Options menu.

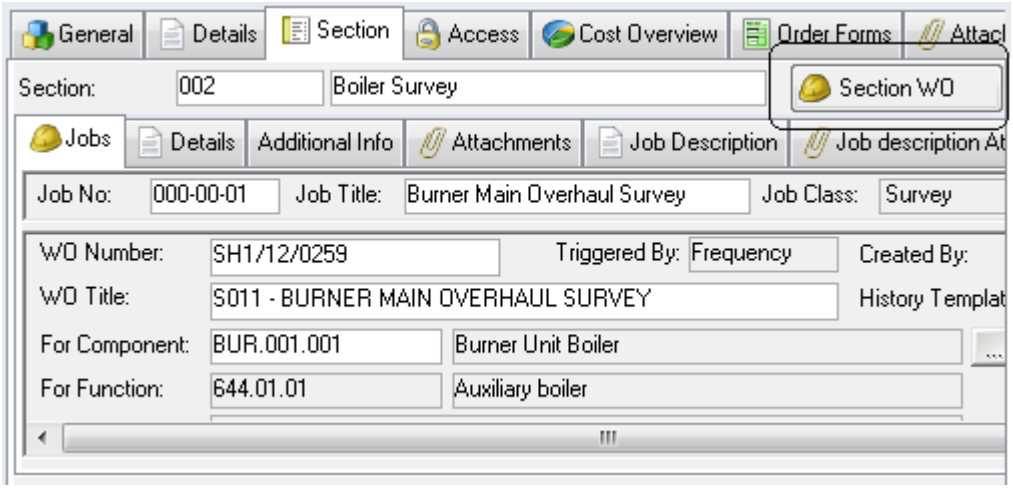
If a round work order is added to the project, the command **Included Jobs** will be available on the Options menu. Select it to open a list of the jobs which are included in the round. If you remove a round work order from a project, AMOS does not reschedule the round but instead reassigns its original due date from before it was added to the project.

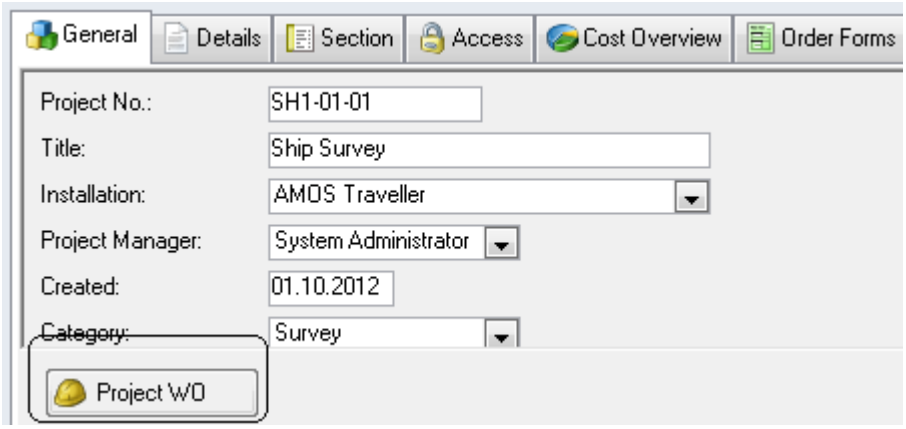
Project Parts and Disciplines

Existing work orders added to projects will come with required parts and disciplines already specified. Editing this information, or adding parts and disciplines to newly created project work orders, is all done in the Work Order window. The information is then transferred to the Projects window.

To edit a project work order:

1. Select a job in the Project window list and double-click it while pressing the **Ctrl** key to open that work order.
2. Or, click the **Section WO** or **Project WO** button to see the work orders for a section or for the entire project job list:





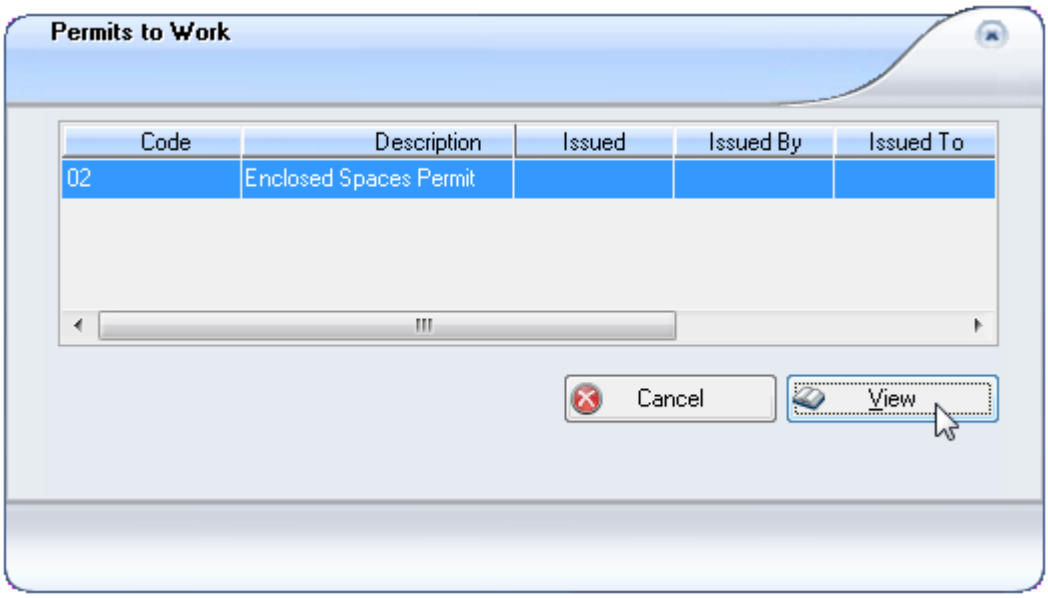
To filter the Work Order window for a project work order, remember to check **Show Project Jobs** on the filter. Otherwise the work order will not appear in the list.

2. Open the Required Parts and Required Discipline tabs and use the buttons to add or remove entries.
3. **Save** and exit the window. The Required Parts and Required Disciplines sub-tabs on the Projects window will be updated accordingly.

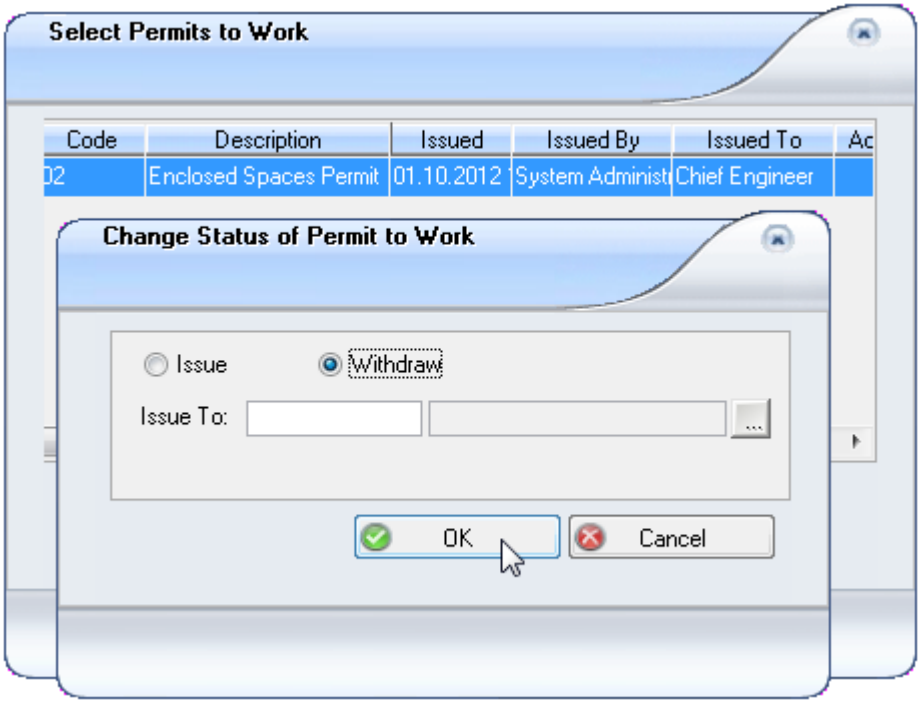
Project Work Permits

Permits to work are added to project work orders (like any other work orders) in the Maintenance Work Order window - access the window from the main menu or from the Project window itself.

Selecting a project work order and going to **Options > Permits to Work** opens a dialog listing the permits attached for that job. You can also view the listed permit(s) in detail:



Choosing **Options > Change Status of Permit to Work** opens a similar dialog where you can select the permit to change and click **OK**. The next dialog to open is for issuing or withdrawing the permit:



Sub-Contracting Project Jobs

Project jobs can be sub-contracted out to an external supplier by placing the work orders onto purchase forms and ordering each one as a service line item.

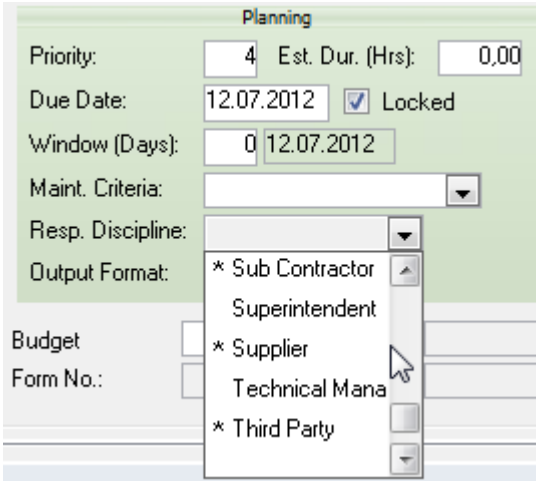
Jobs are placed on order forms by choosing one or more disciplines first and then tagging the jobs defined with the selected discipline(s) to add to the form. As long as the system parameter 'Only Allow to Add Project WO for External Disciplines to Order Forms' is set to TRUE, a job can only be sub-contracted if the **Responsible Discipline** assigned to it is an 'external'[1] one. If the parameter setting is changed to FALSE, jobs with any discipline assigned can be selected.

[1] If no external disciplines are available, define one or more as such in the register at File > Open Register > General > Disciplines.

Assigning a Responsible Discipline to a Job

Every job you are going to sub-contract needs a responsible discipline assigned to it.

1. Open the Projects window and select a project or a section in the hierarchy.
2. Select a job in the list.
3. Use the **Resp. Discipline** drop-down list in the Section tab Jobs sub-tab to choose a discipline. External disciplines are marked with a star:



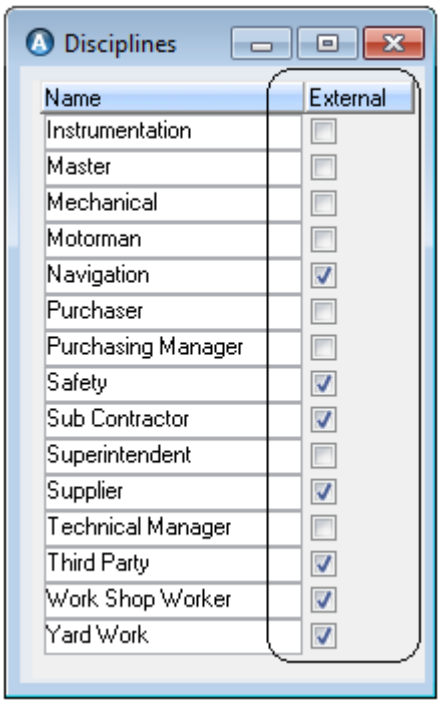
4. Make sure every job to be sub-contracted has a discipline assigned[1].
5. **Save** the window.

What if No External Disciplines are Available?

If no external disciplines are available, define some:

1. Go to **File > Open Register > General > Disciplines**.
2. Choose a discipline in the list or add a new one.
3. Check the **External** box beside the applicable discipline:

[1] If the parameter 'Only Allow to add Project WO for External Disciplines to Order Forms' is set to TRUE, the jobs to be sub-contracted require an external discipline.



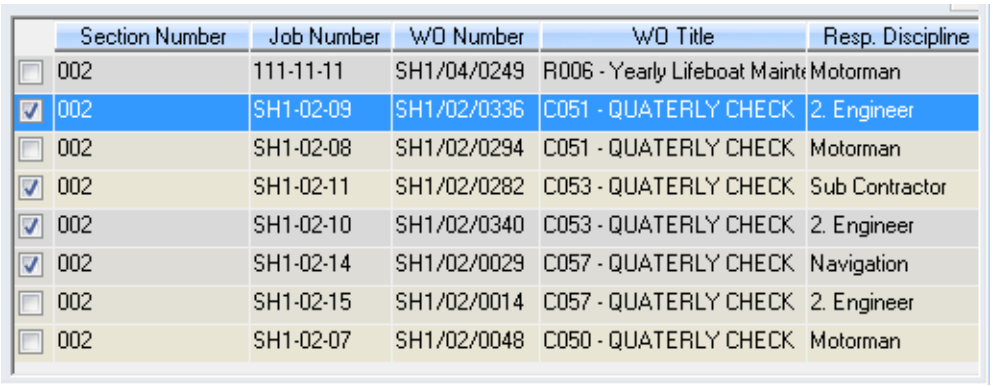
4. **Save** the register.

Placing the Job(s) Onto Order Forms

To place the jobs onto order forms:

1. In the Projects window select a project or section.

   Remember, you are going to order jobs by discipline: all project work orders with the selected discipline(s) will be ordered, unless you tag a selection of jobs in the list first:

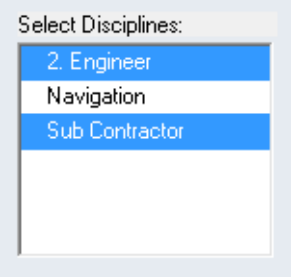


Section Number	Job Number	WO Number	WO Title	Resp. Discipline
002	111-11-11	SH1/04/0249	R006 - Yearly Lifeboat Maint	Motorman
002	SH1-02-09	SH1/02/0336	C051 - QUATERLY CHECK	2. Engineer
002	SH1-02-08	SH1/02/0294	C051 - QUATERLY CHECK	Motorman
002	SH1-02-11	SH1/02/0282	C053 - QUATERLY CHECK	Sub Contractor
002	SH1-02-10	SH1/02/0340	C053 - QUATERLY CHECK	2. Engineer
002	SH1-02-14	SH1/02/0029	C057 - QUATERLY CHECK	Navigation
002	SH1-02-15	SH1/02/0014	C057 - QUATERLY CHECK	2. Engineer
002	SH1-02-07	SH1/02/0048	C050 - QUATERLY CHECK	Motorman

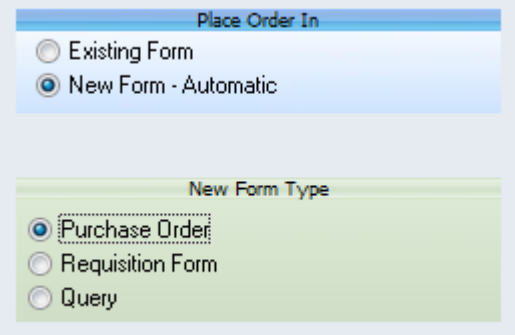
2. Go to **Options > Order**.
3. AMOS lists all disciplines[1] that have been assigned to the jobs in the selected project - or those assigned to the jobs you have flagged.

   Select a required discipline for which to order jobs. Or select multiple disciplines by holding the **Ctrl** key as you click:

[1] If the parameter 'Only Allow to add Project WO for External Disciplines to Order Forms' is set to TRUE, only external disciplines linked to project jobs are shown. Set to FALSE, all disciplines associated with project jobs will be shown.

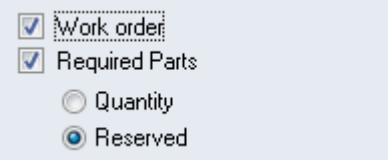


4. Decide whether to add the jobs to an **Existing** form or to create a **New** form:

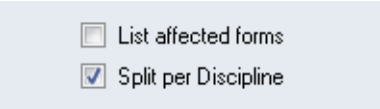


If you opt to create a new form specify its **Type**.

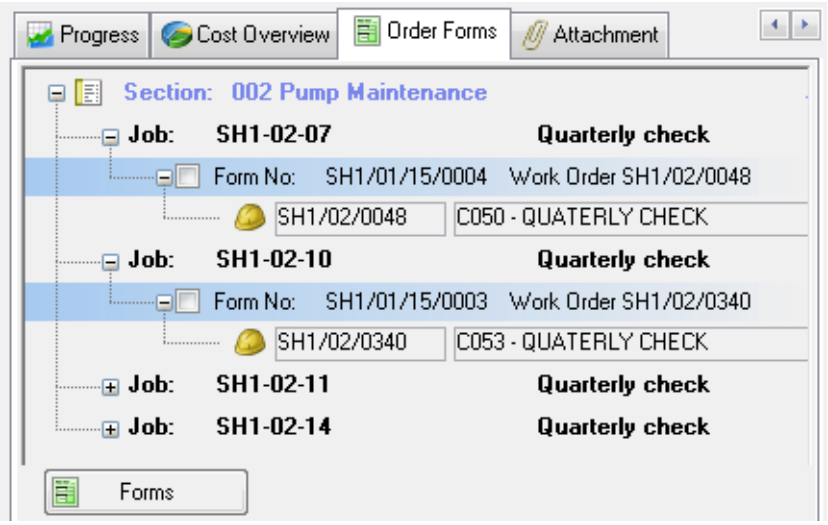
Work Order is checked by default - each work order will be added to the form as one service line item. Each work order probably has a list of parts in the Required Parts tab. To order these parts at the same time check the **Required Parts** checkbox. Flag either **Quantity** or **Reserved**:



5. AMOS will place the parts onto order forms. Parts which have already been placed on a form will not be ordered twice. You will be informed if some or all parts have already been ordered.
6. Flag **Split per Discipline** if you want to make a separate form to contain the jobs tied to each discipline you selected:

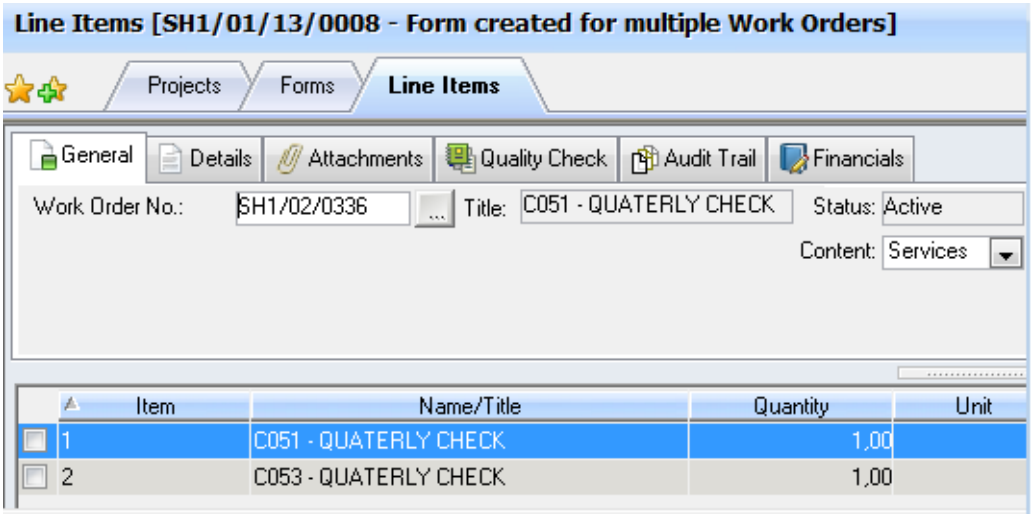


7. Click **OK** to create the forms and return to the Projects window.
8. The jobs with the disciplines selected in step 3 will now be listed in the Projects window Order Forms tab for the selected project or section along with the form details:



If you chose to list affected forms the Forms window will open. Otherwise, selecting a line and clicking the **Forms** button opens the Forms window.

9. You can edit the form header in the Forms window General tab - for example, change the automatically generated **Title**. Select **Options > Line Items** in the Forms window to open the Line Items window for the form showing the work order(s) now belonging to it:



10. Handle the form in accordance with usual purchasing processes.

Copying a Project

Copy an existing project and make appropriate changes to save time when creating a new project that is similar to another one you already have.

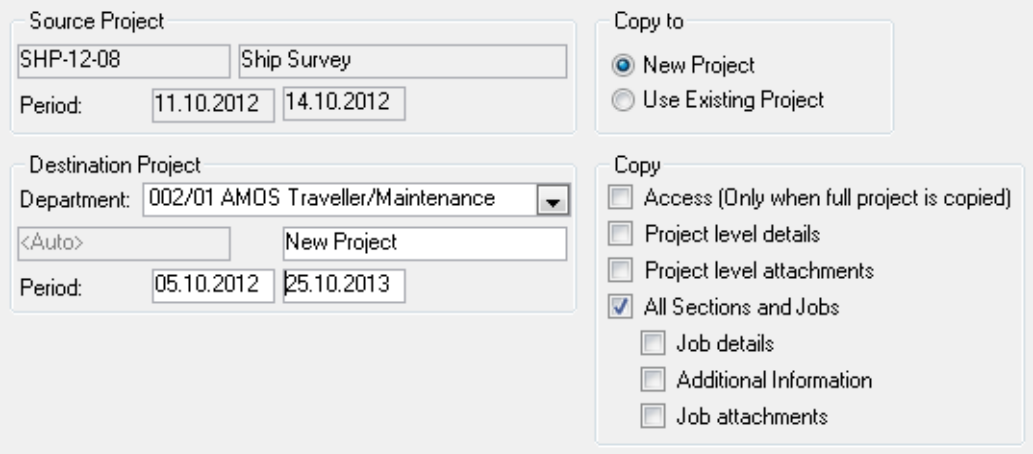
- You can copy information from one existing project or section to another one.
- You can copy entire projects, sections, or job details and requisition work orders within one department or across departments.

Note: Due to sharing restrictions, it is not possible to copy project jobs linked to existing, periodic work orders. Only requisition work orders created manually in the Projects window can be copied from one project to another.

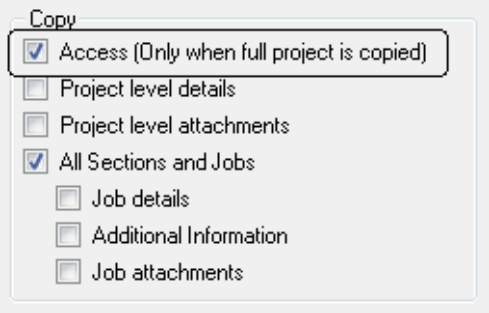
Copying Part or All of a Project

1. Open the Projects window and select a project or section in the hierarchy to copy *from*.

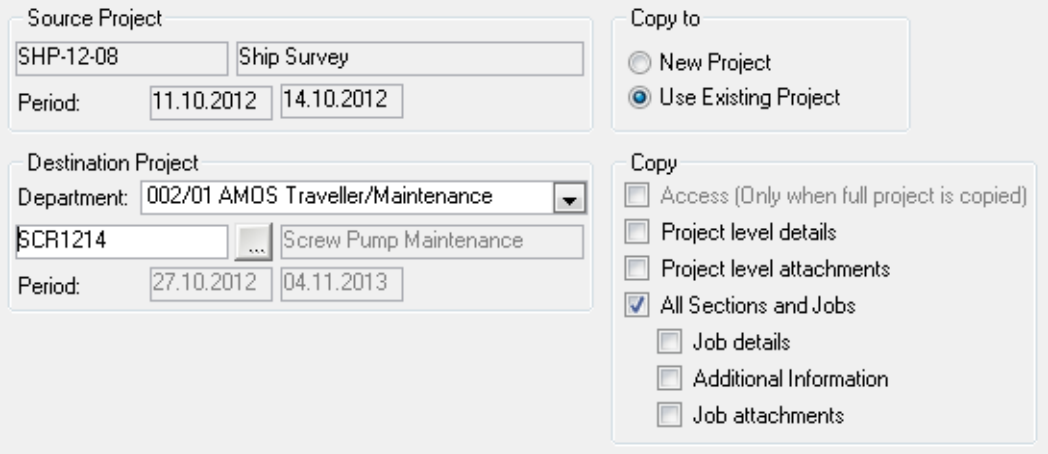
2. Go to **Options > Copy Project.**
3. The selected project appears under **Source Project**. Choose to copy to a **New Project** or to **Use Existing Project**.
4. If you chose **New Project**, use the fields under **Destination Project** to select a **Department**[1] and enter a name for the new project. You can also change the default **Period** dates:



5. When creating an entirely new project you can specify to copy the source project's **Access** settings:

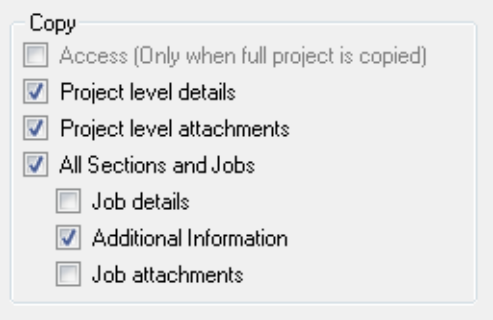


6. If you chose **Existing Project**, use the fields under **Destination Project** to select a **Department** and lookup an existing project. The project **Period** dates come with it:

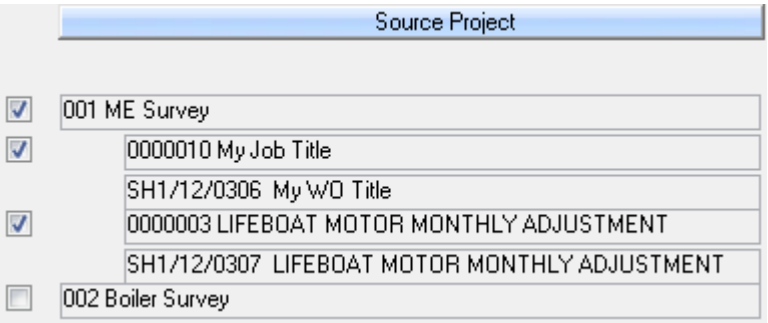


7. Select the items to copy from the source project:

[1] When the Destination department differs from the Source department, work order information like component, function, discipline, maintenance type and cause, etc., will only be copied if the relevant sharing parameters are the same at both installations. If any non-shared fields are mandatory, or if differing work flows are defined at the two installations, it will not be possible to copy the work order(s).

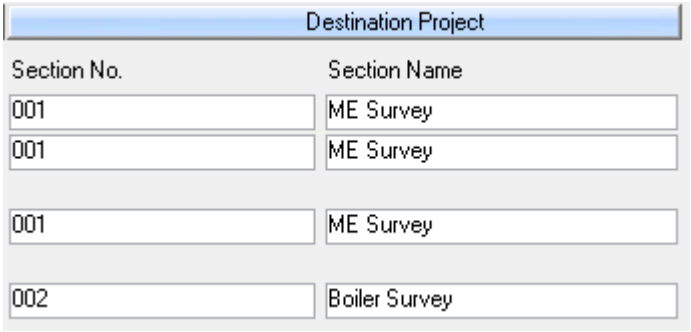


Check **All Sections and Jobs** or, copy individual sections/jobs by checking those applicable in the **Source Project** list:

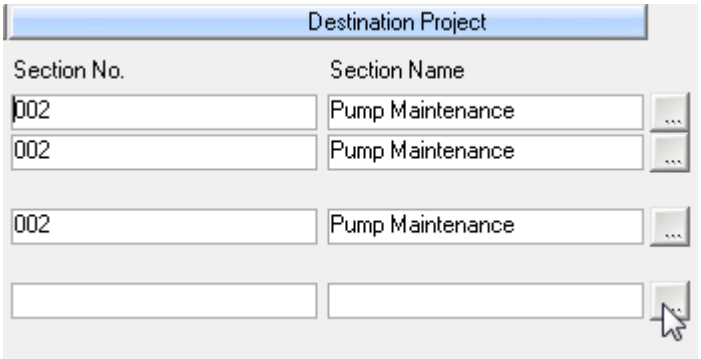


Some will be checked by default, depending on whether you selected a project or section to copy from in the hierarchy in step 1.

If you are copying to a new project the **Section No.** and **Section Name** will be supplied by default in the **Destination Project**. These can be edited:



If you are copying to an existing project, lookup the **Section No.** and **Section Name** in the destination project to copy the checked sections/jobs to:



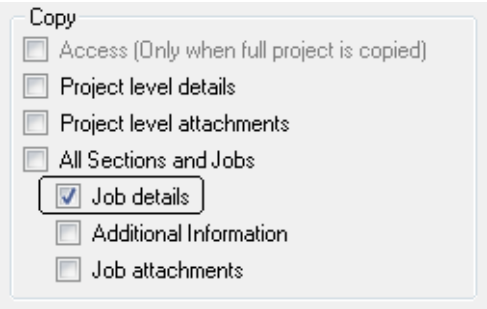
8. Click **OK** to copy the project information and return to the main window.

Copying Job Descriptions

Job description text for project jobs is contained in the Section > Details sub-tab. You may have added

or changed these job descriptions to suit a particular project.

To include job descriptions (and any modifications made to each one) in a project copy operation flag 'Job details':



AMOS will copy the contents of the Section > Details sub-tab for each included job from the original project job. If a later job description revision exists in the system for any of these jobs, it *will not* replace the text on the project job details.

If a newer job description revision exists for any project job(s) and you want to use the latest revision instead, do not include the job(s) in the copy operation. Instead, go to **Options > Create Job(s) from Job Description(s)** to re-create the job(s) for the new project, thereby applying the latest revision(s). Any project-level changes to the Details sub-tab text will in this case be lost.

Project Specifications

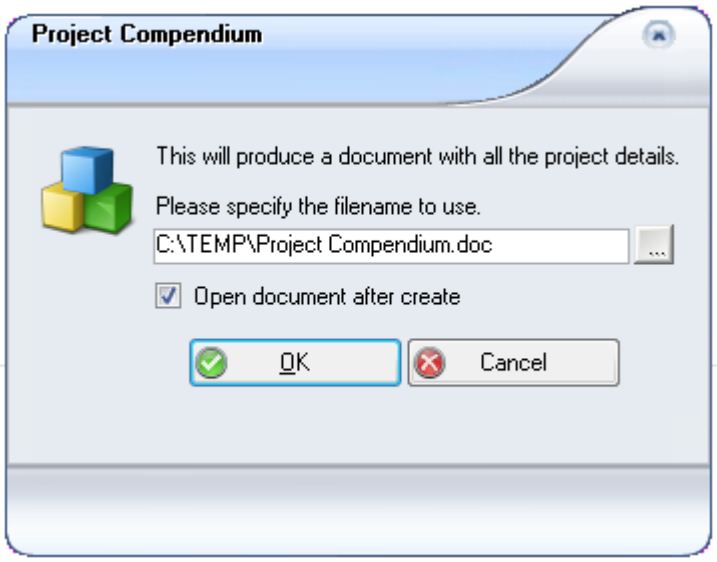
When a project is planned and detailed in the Projects window, the end result is a Project Specification document in MS Word, which makes it easy to communicate back and forth with the involved parties.

Specifications contain the following information in this sequence:

- Front page (defined in the template file)
- Table of contents
- Site specification (the data window d_project_word_vessel_detail within the WOPRO.PBL file)
- Project data details (details page of the project)
- Project Specification Preamble
- Project Sections
- Section (each section starts on a new page)
- Job (each job starts on a new page)
- Work Order
- Project attachments
- Project Specification PostScript

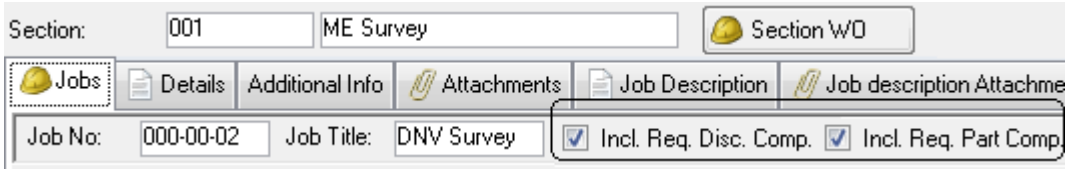
To create a project specification:

1. Open the Projects window.
2. Select a project in the hierarchy. Go to **Options > Create Project Specification**:
3. Use the lookup to browse to a location to store the file, and enter a name to save the file with:



4. Click **OK** to export the details. If you checked **Open document after create option** the project opens up in Word. Otherwise browse to the location you stored it and open it from there.

The contents of the Required Parts and Required Discipline tabs will be included on the printed specification: two checkboxes in the Jobs sub-tab, **Incl. Req. Parts. Comp.** and **Incl. Req. Discs Comp.** are checked by default. Uncheck them to leave them off the specification:



Images attached to project work orders will also be added to the specification, as long as they are supported by MS Word. Supported image file types are:

'emf', 'wmf', 'jpg', 'jpeg', 'jfif', 'jpe', 'png', 'bmp', 'dib', 'rle', 'bmz', 'gif', 'gfa', 'emz', 'wmz', 'pcz', 'pcd', 'pcx' , 'cdr' , 'cgm', 'eps', 'fpx', 'mix', 'pct', 'pict', 'tif', 'tiff', 'wpg'

Any other image file type will not be added.

You can also include PDF files in project specifications. This requires installing Ghostscript.

Note: About PDFs and Ghostscript

Generating a project specification that includes any PDFs may sometimes return a message that attaching PDFs to a specification is only possible if GhostScript is installed - even when GhostScript is correctly installed. This happens if your system is missing the gsdll32.dll file - a 32 bit GhostScript dll file required to attach PDFs to specifications.

If you get that message, first determine if the dll is available to AMOS: go to **Help > About > System Info** and click the **Version** button. If the **Status** column contains a valid version number, the file is accessible.

If not, to make the dll file accessible to AMOS either: add the folder where the file is located to the Windows path environment string (recommended), or copy it into the AMOS installation folder.

Specifications: Preambles and Postscripts

General information such as standard terms for dry-docking and other projects can be included as project specifications in a printed specification. The preamble prints before the list of project jobs on the project specification report, while the postscript prints after the list of project jobs. To add information to a preamble or postscript:

1. Open the Projects window.
2. Go to **Options > Specification > Specification Preamble** or **Specification Postscript**.
3. Type the details into the description window that opens. Close the window when you are finished.

The preamble and/or postscript content will be included automatically when the specification is generated.

Specification preambles and postscripts accept pre-defined templates. Default templates are defined at **Tools > Configuration > Parameters > Default Templates >** 'Project Postscript' and 'Project Preamble'.

You can change the template on either at **Options > Specification > Change Template Preamble/Postscript**. This opens the Select Template dialog where another pre-defined template can be selected and applied.

Specifications: Other Data

It is possible to define the data inserted into the following sections of the specification:

- Required Disciplines
- Required Parts
- Work Permit
- Work Order
- Vessel Specification

The data windows are found in the WOPRO.PBL and can be adjusted according to your requirements. Only the label and corresponding data will be used (not the layout):

1. Open any of the listed data windows with Powerbuilder.
2. Adjust the SQL as desired. There are some columns that are required so expanding the SQL is recommended rather than reducing it.
3. Insert or remove any column in the design view of the data window.
4. Insert static text controls next to your columns.
5. The name of the static text needs to match the column name, <column name> + "_t".
6. Set the tab order of the columns; this will be the order of the data shown in the specification.
7. To exclude data from the specification, but still have it present in the data window simply set the tab order to 0.
8. **Save** the adjusted data window.

Customising a Project Specification

Users have a certain amount of control over the specification document's content, appearance and layout.

Adding a Custom Logo to a Specification

You can display your company logo on a project specification's front page:

Select a logo or image and save it with the name 'ProjectSpecificationFirstPageLogo.png'. Insert this png file into your report directory (as defined at **Tools > Configuration > Parameters > Directories > Report Directory**). Whenever a user generates a specification AMOS will search the report directory for this file, and if one is available, insert the logo on the front page.

Creating a Custom Template

You can create and insert a user-defined template file containing heading and paragraph styles and formatting. This lets you choose font size and styles, and define header and footer content, changing the style(s) used in the output but not the content itself, nor the order it is presented in.

1. Define a custom template containing the style elements you want to display specification details in. AMOS will read and use the following Styles and Formatting from the file:

   Heading 1, Heading 2, Heading 3, Heading 4, Heading 5, Normal

2. You can also define styles for a header and footer (containing a single level table) in the template. If you do not include a header/footer AMOS will use its default header/footer styles.
3. Any text inserted into the details part of a template will be ignored, so the document part of the template should be left empty.
4. **Save** the template with the name 'ProjectSpecification.dot'.
5. Insert the template file into your report directory (as defined at **Tools > Configuration > Parameters > Directories > Report Directory**).

When a user generates a specification AMOS will search the report directory for this file, and use the template styles if one is available. If no user-defined template is available, AMOS simply reverts to specification defaults.

Retrieving Additional Information from the Database

You can insert SQL commands in the header and footer, to retrieve additional details from the database and display them in the specification. This requires a single level table in the header and/or footer to contain the SQL statement.

1. Insert a single row table into the header/footer on the template file.
2. Write the SQL[1] in plain text in the first row/cell of the table. Create a bookmark using the SQL text.

   Start the bookmark name with the label “customsql”. If you are creating multiple bookmarks make sure that the names are not duplicated: for example use "customsql01", "customsql02", etc.

3. **Save** the template to the report directory using the name 'ProjectSpecification.dot'.

When a user generates a specification document, AMOS will scan the template for any bookmarks, execute the SQL and then replace the SQL command in the header/footer with the resulting text.

Here is a sample SQL command to get the user name of the person who created the project:

```
SELECT amosuser.name
FROM amosuser, project
WHERE project.createdby = amosuser.userid
AND project.projectid = :AMOS_ProjectID
```

SQL statements may contain constant variables. The supported variables are:

```
:AMOS_ProjectID
:AMOS_CurrentDeptID
:AMOS_UserID
```

Project Costs

The Cost Overview tab provides a summary of costs throughout the stages of a project:

- When a project is selected, all related project costs are listed in the tab.
- When a section is selected, that section's costs will appear in the tab.
- When a job is selected only the costs related to that individual job will appear in the tab.

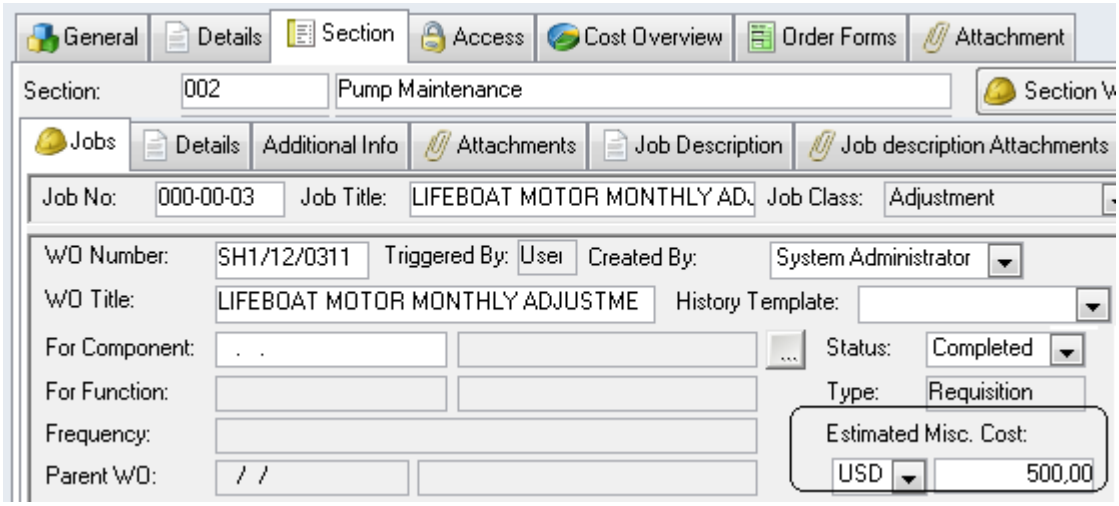
The radio buttons at the top lets you view either **Estimated** or **Actual** costs. Furthermore, costs can be displayed in either **Base** or **Actual** currency. Base currency is the default; selecting actual will display the currency any costs were registered in.

[1] The SQL should produce one record and one column of string data type. If the result counts more than one record, only the first record will be used.

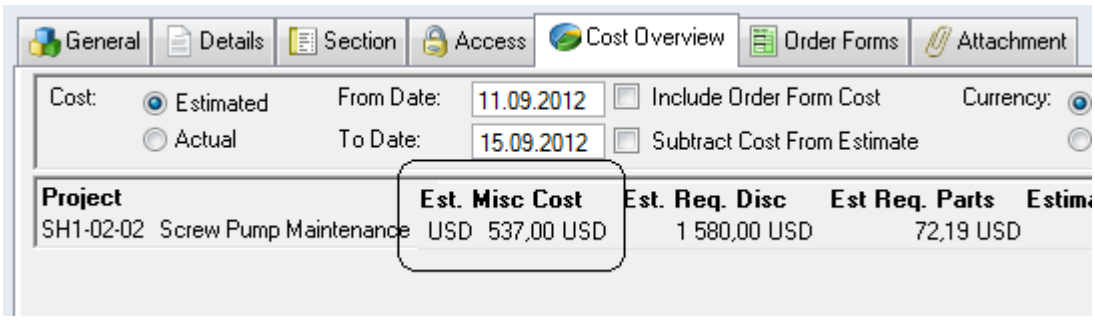
Cost Estimates

To display an overview of estimated costs, click the **Estimated** radio button at the top of the tab. The content in the tab changes according to your selection of a project, section or an individual job.

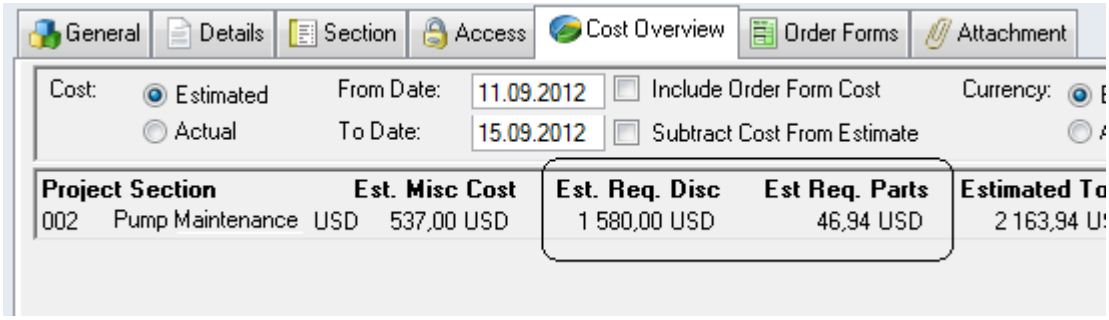
Estimated miscellaneous costs are drawn from the work orders' General tab:



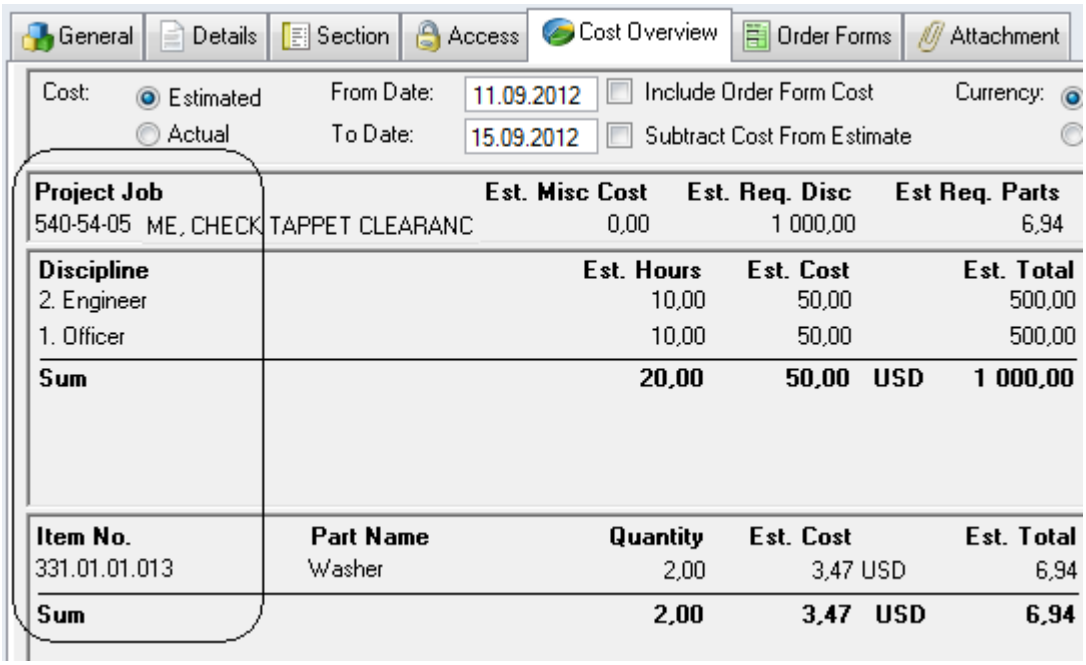
Selecting a project or section in the hierarchy shows the total estimated miscellaneous cost from all work orders in the project/section:



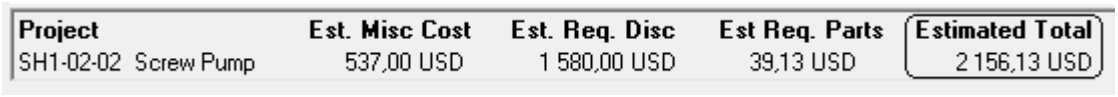
The parts and disciplines needed to carry out a job are added to work orders in the Required Parts and Required Disciplines tabs. Select a project or section to see the total estimated costs for these items, drawn from all work orders in the entire project/section:



Select a job in the list to see a breakdown of the total estimated cost for required parts and disciplines on that work order only. A **Discipline** and **Item No.** section are added to the tab:



The **Estimated Total** reflects the sum of all of the above work order costs (miscellaneous, parts and disciplines) on the selected job, section or entire project.



Check **Include Order Form Cost** at the top of the Cost Overview tab to see any costs related to jobs placed on purchasing forms. The costs are drawn from the purchase form line items. This adds another section to the bottom of the tab when a job is selected in the list:



To prevent the line items costs for work orders which have been placed on order forms from being included in the estimated totals for the project, check **Subtract Cost From Estimate**. Leave the box unchecked to include the order form amounts in the total cost.

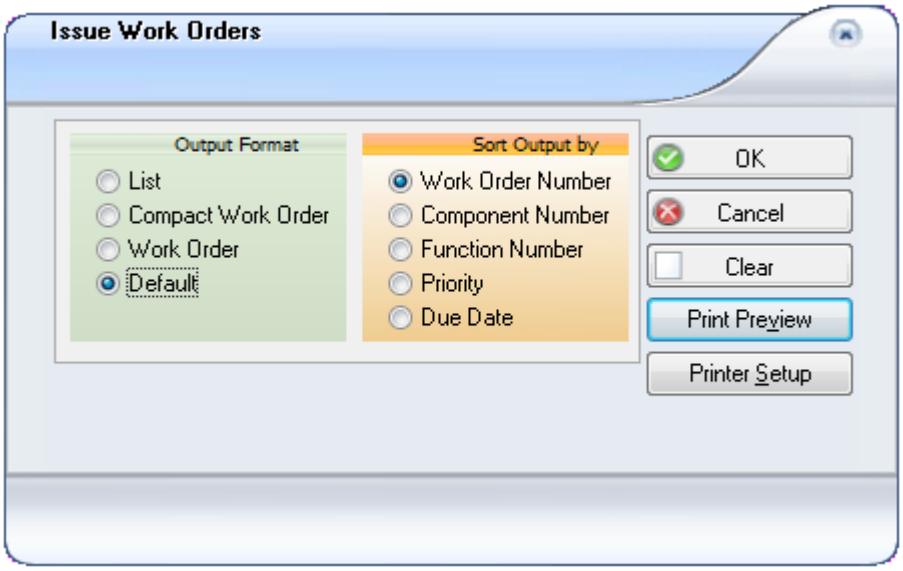
Actual Costs

To display an overview of actual costs, click the **Actual** radio button at the top of the tab. The content in the tab changes according to your selection of a project, section or an individual job. Final costs as specified during report work on the individual, project or section work order(s) are reflected here.

Setting **From Date/To Date** in the top of the tab defines the transaction dates for actual costs: only costs registered within this timeframe will be considered in the total.

Working on a Project

Depending on the initial status[1] of project work orders, you may have to issue work orders to get started. Go to **Options > Issue**:



Click **OK** to issue and print the work orders.

When the project start date arrives, begin carrying out and reporting the work. Select a job in the project list and go to **Options > Report Work** to report the work order, like any other work order. Eventually when the work on any job is done, remember to flag the **Mark Work Order as Completed** checkbox in the Report Work window. This changes the **Status** on the selected project work order to Completed.

As work is carried out, keep track of it by selecting **Options > Maintenance Log**. There is also a Progress tab on the Projects window, where the selected project's sections and jobs are visualised in a bar graph showing the status of each job so far.

When any periodic work order is reported and set to completed, AMOS will generate the next one automatically and it will be listed in the Work Orders window, unattached to any project.

Completed work orders will be filed automatically or not according to a parameter setting[2]. If the parameter is set to false, file and control completed work orders by flagging them in the list and then selecting **Options > Control**.

When a project is finished, set the **Status** on the General tab to Completed.

---

[1]The initial status of a work order created manually for a project job is set according to the system parameter Tools > Configuration > Parameters > Options > General > Default Settings > 'Initial Project Work Order Status'. Initial status for project work orders is also available to set in the Work Flow Configuration window, if Maintenance Work Flow is in use.

[2]Tools > Configuration > Parameters > Options > Maintenance > Auto-Filing of Work Orders >

Advanced Projects

Use the Projects window to group both planned and unplanned maintenance work together with all instructions, details, costs and requirements under a project name and sub-divide it into sections. Grouping work together in advance like this enables you to closely monitor related maintenance within a project situation such as a ship survey or dry docking.

The Maintenance Projects module also allows to include Project Activities like Services to be quoted for a Dry Dock.

The Project Items within the sections are revision controlled allowing for a basic (hardcoded) work flow (amongst which approve and issue) and thus introducing the possibility to allow to communicate only newer revisions to obtain prices from yards and/or other contractors.

A wizard allows to transfer all issued Project Items with possible Project Activities and Additional Costs to Order Forms within the AMOS Business Suite Purchase module to allow to get quotes for the tasks and goods. A dedicated Quotation Comparison window allows to review prices from the different contractors

When the project is started AMOS will generate the necessary work orders and as the work is carried out and then reported, maintenance history will be kept as usual and new work orders generated as the existing ones are completed.

Note: In order to make full use of all this functionality the parameter **'Open Advanced Project'** in the Maintenance section of the parameter window needs to be set. When utilizing the basic Maintenance Projects module please refer to the 3rd revision of this document instead.

Note: With the Advance Project module in use, the option '**Open Project History**' allows to review and follow up on Projects that were initiated in that version of the Maintenance Projects module.

Always create your new projects well in advance of the planned start date. Here is an overview of the steps a maintenance project would typically progress through from start to finish:

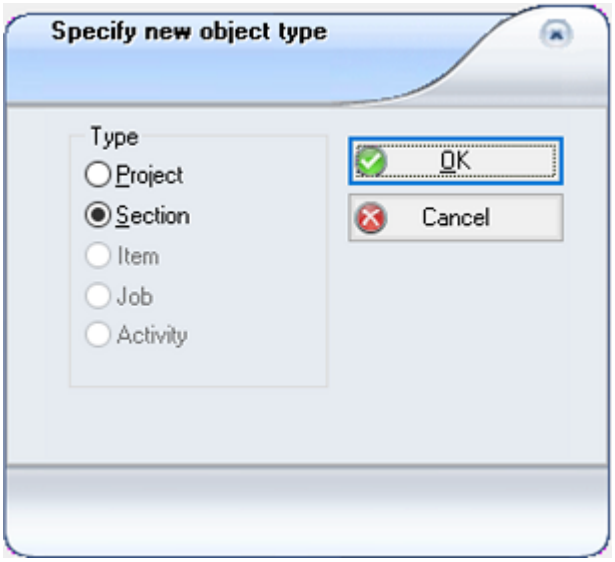
1. Create a new Project. See "Setting up a Project" below.
2. Add Sections to it.See "Project Sections" on page 133.
3. Additional Project Attributes.See "Additional Project Attributes" on page 133.
4. Project Access Control.See "Project Access Control" on page 136.
5. Create new Project Items. See "Project Items" on page 139.
6. Add or amend details inherited with the work orders such as Team, Parts, Costs, etc. See "Project Work Orders" on page 151.
7. Getting Quotation and Procurement See "Getting Quotations and Procurement " on page 155.
8. Copying a Project See "Copying a Project" on page 166.
9. Generate and send a specification to potential shipyards. See "Project Specifications" on page 169.
10. Project Costs See "Project Costs" on page 171.
11. Begin the project according to its planned start date: carry out and report on the work orders. See "Working on a Project" on page 173.
12. Advanced Project Configuration See "Configuration" on page 174.

Setting up a Project

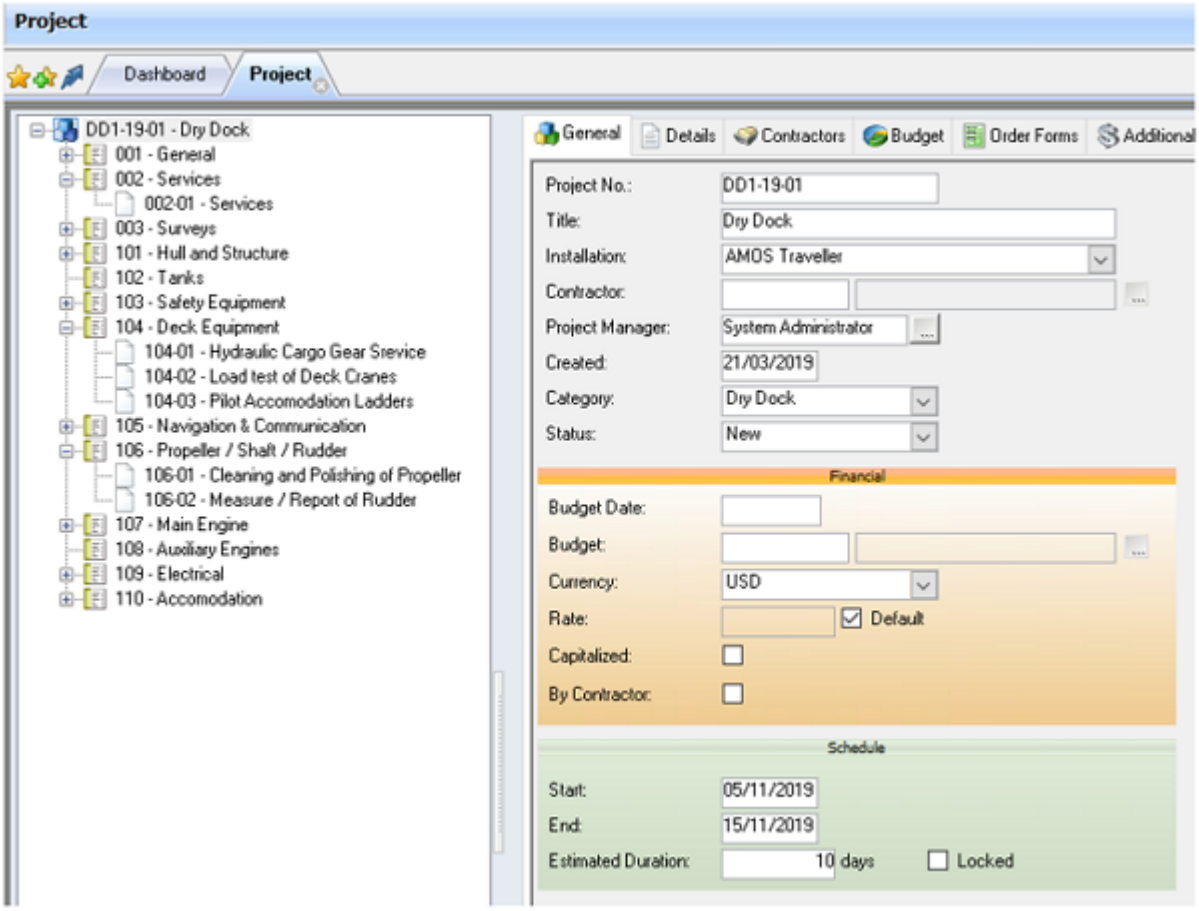
The Project window is accessed at **Maintenance > Projects**. Projects and their sections are contained in a hierarchy on the left side.

To add a new project:

1. Go to **Maintenance > Projects** and click **OK** in the filter. Click the **New** button on the toolbar to open the Specify new object type dialog:



2. Select **Project** and click **OK**. A new Project icon is added to the hierarchy pane. Enter the basic information on the General tab[1]:



3. Flag the **Locked** checkbox to make the **Estimated Duration** field read only. This lets you compare the estimated duration against the actual duration upon completion of the project.

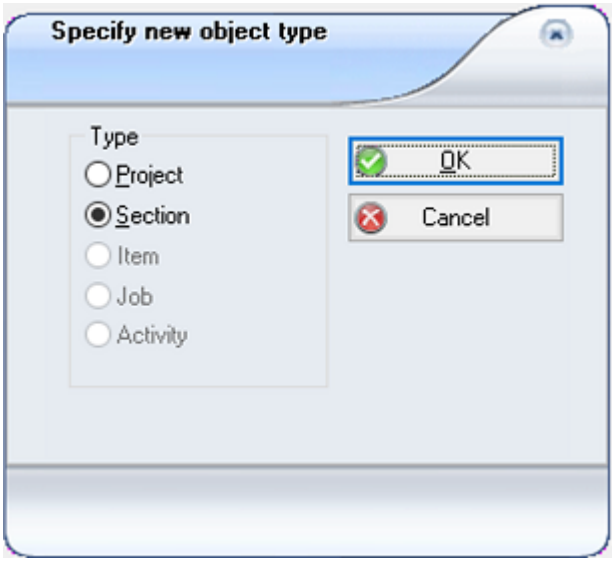
[1] There are two user-defined fields which can be activated for the Projects window General tab. To activate these fields and define labels for them go to Tools > Configuration > Parameters > User Defined Fields > Project > 'useraddressid' and 'userdefext01'.

4. You can also select a **Category**[1] to group the project into- like Survey, or Dry-Docking.
5. The **Status** field can be set manually and updated as the project progresses.
6. **Save** the project.

Project Sections

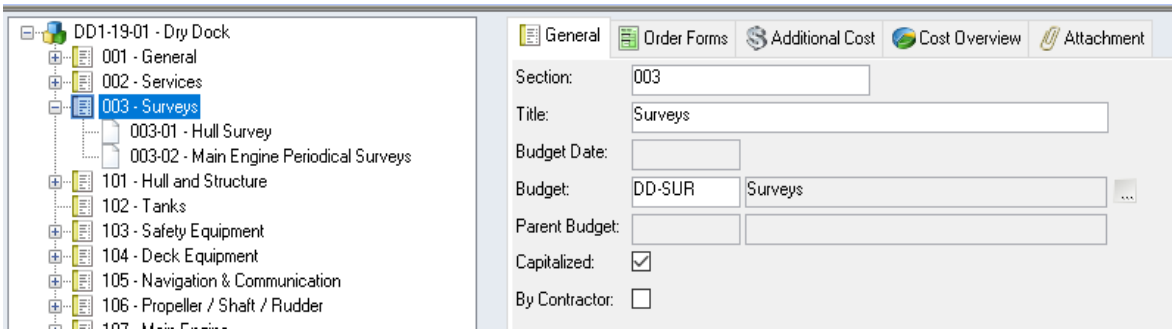
Projects are comprised of Sections which allow you to group the different maintenance aspects of a project together, for example, Main Engine survey and Boiler Survey are two sections within the project 'Ship Survey'.To add a section to a project:

1. Select a Project icon in the hierarchy and click the **New** button on the toolbar.
2. Click **Section** and **OK** in the Specify New Object Type dialog box:



The Section tab in the Projects window will open up automatically.

3. Add a number and title to the line at the top of the tab.



4. **Save** the new section.

Add as many sections as necessary for every project. Now you can add jobs to your project.

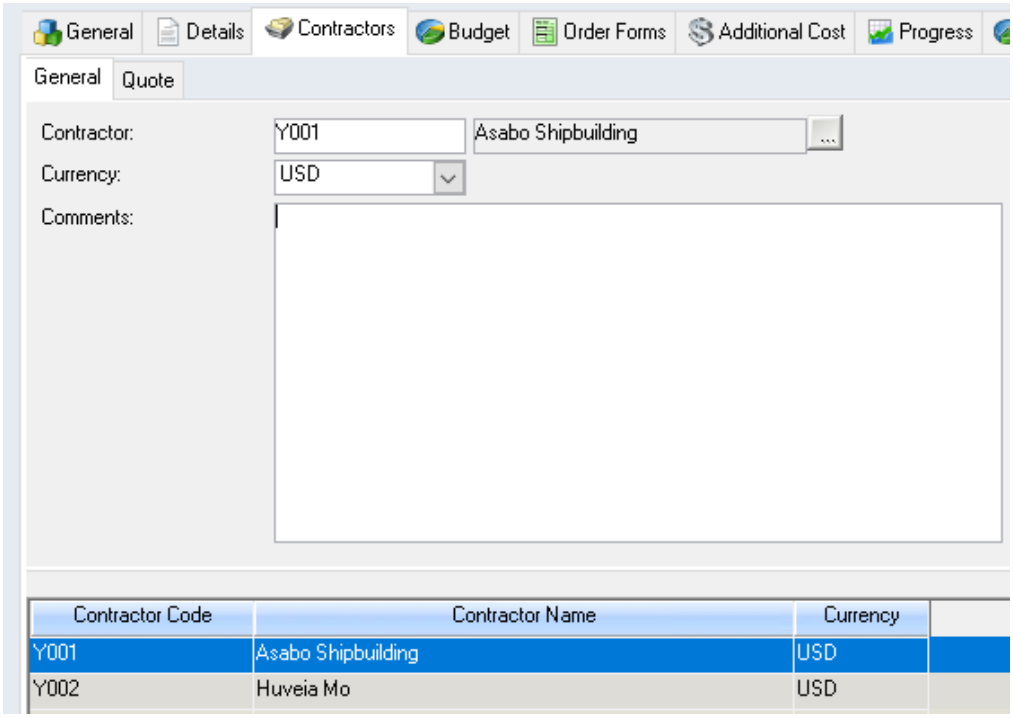
Additional Project Attributes

In Advanced Projects were introduced or expanded several attributes.

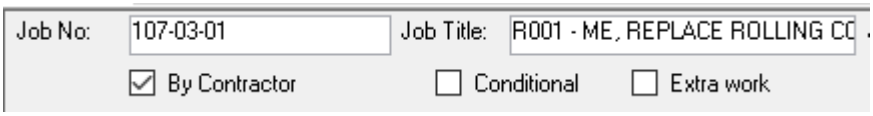
Contractors

[1] Categories for projects are defined in the register at File > Open Register > Maintenance > Project Categories.

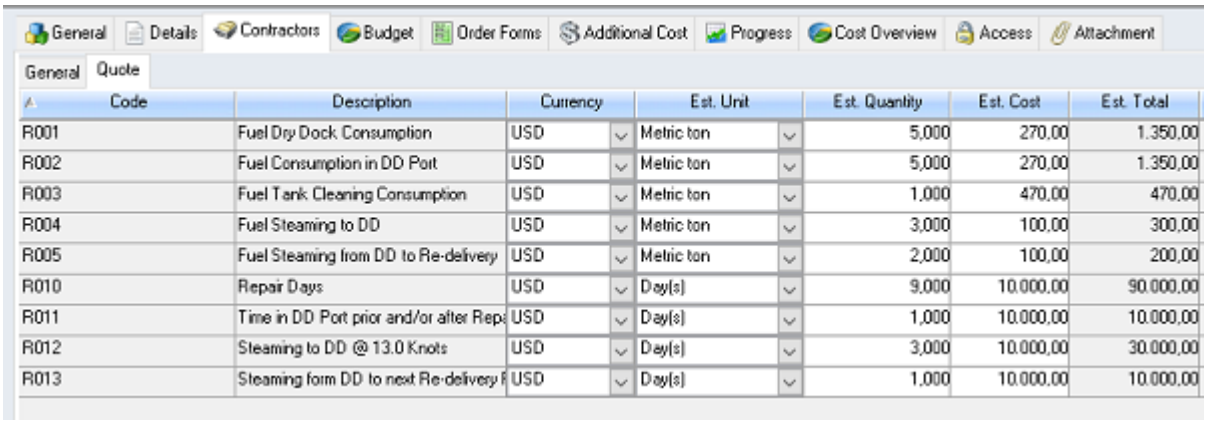
The main Contractors that are considered for the Project can be registered on the **Contractors** tab



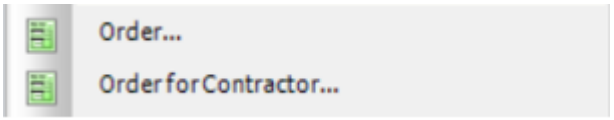
Any Project Item, Job, Required Part or Activity that is marked as '[x] By Contractor' will be considered to be quoted and subsequently – upon selection of contractor – supplied by this main contractor. This contractor in case of a Dry Dock project would be the Yard.



The **Quote** tab on the [Contractors] overview allows to define the non-quotable activity details for that Contractor such as lost revenue and fuel cost.

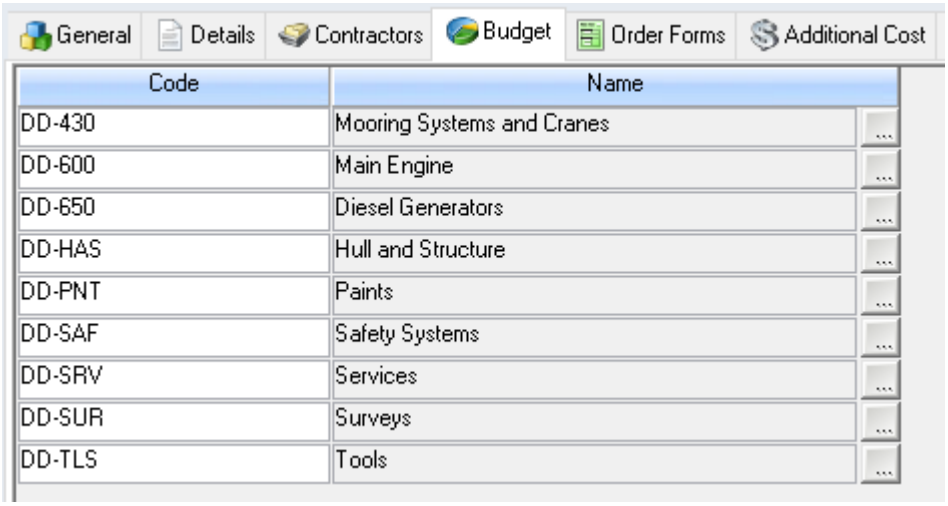


Any other services and/or goods to be supplied by other contractors are not marked with the '[x] By Contractor' indication, but can be followed up through the procurement process separately by selecting the 'Order…' from the Options menu rather than the 'Order for Contractor…' which is intended to transfer items for the Main Contractor only – the one(s) defined in the **Contractors** tab.

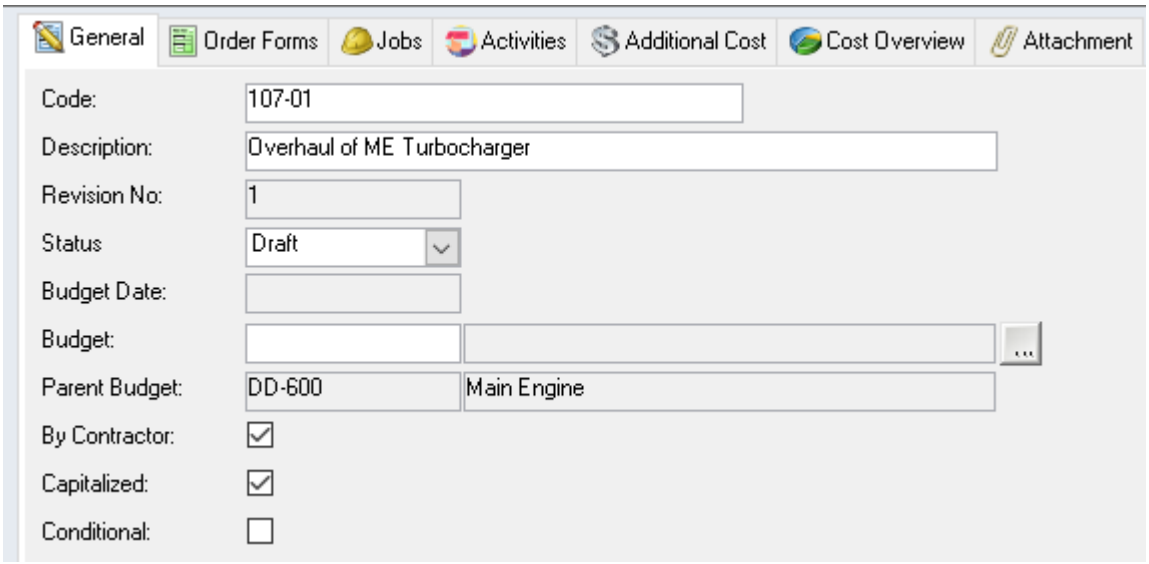


Budget

On the Budgets Tab of the Project it is possible to define which of the Budget Codes are available to be used on the Project.



On Project, Section and Project Item it is possible to define the Budget that is applicable to that part of the project. The system shows (in the example below on Project Item) the Budget defined in the level above (so the Section in this case) and, unless a different Budget is specified on this Project Item, will utilize the Budget defined as the Parent (so for the Section).

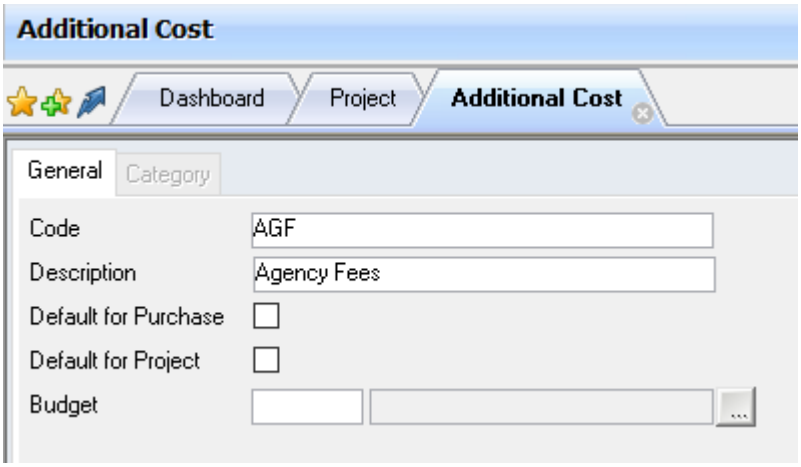


Additional Costs

It is possible to add Additional Cost to a project on all three of the levels: the Project, each of the Sections and any of the Project Items within these sections.

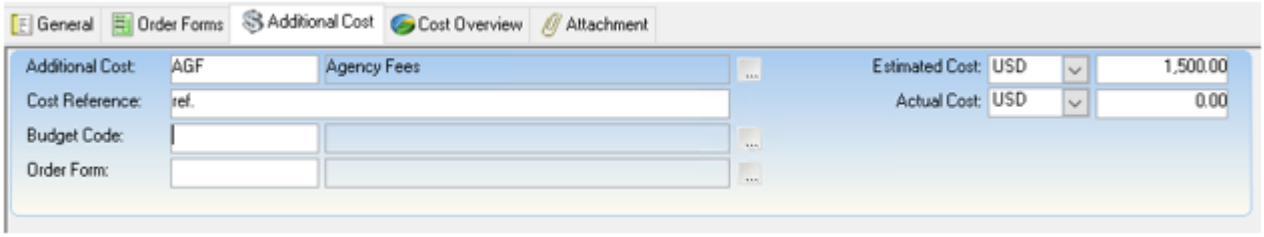
For each of the Additional Costs it is possible to define whether or not they are to be added to a Project by default.

Additional Costs are defined in the File >Open Register >General >Additional Cost window.



On the ‘Category’ tab of the Additional Cost it would be possible to define for which Project Category that cost would be considered default.

After the definition, Additional Costs can be added to any level (Project, Section, Item) of the project with their estimates, actuals and external references.

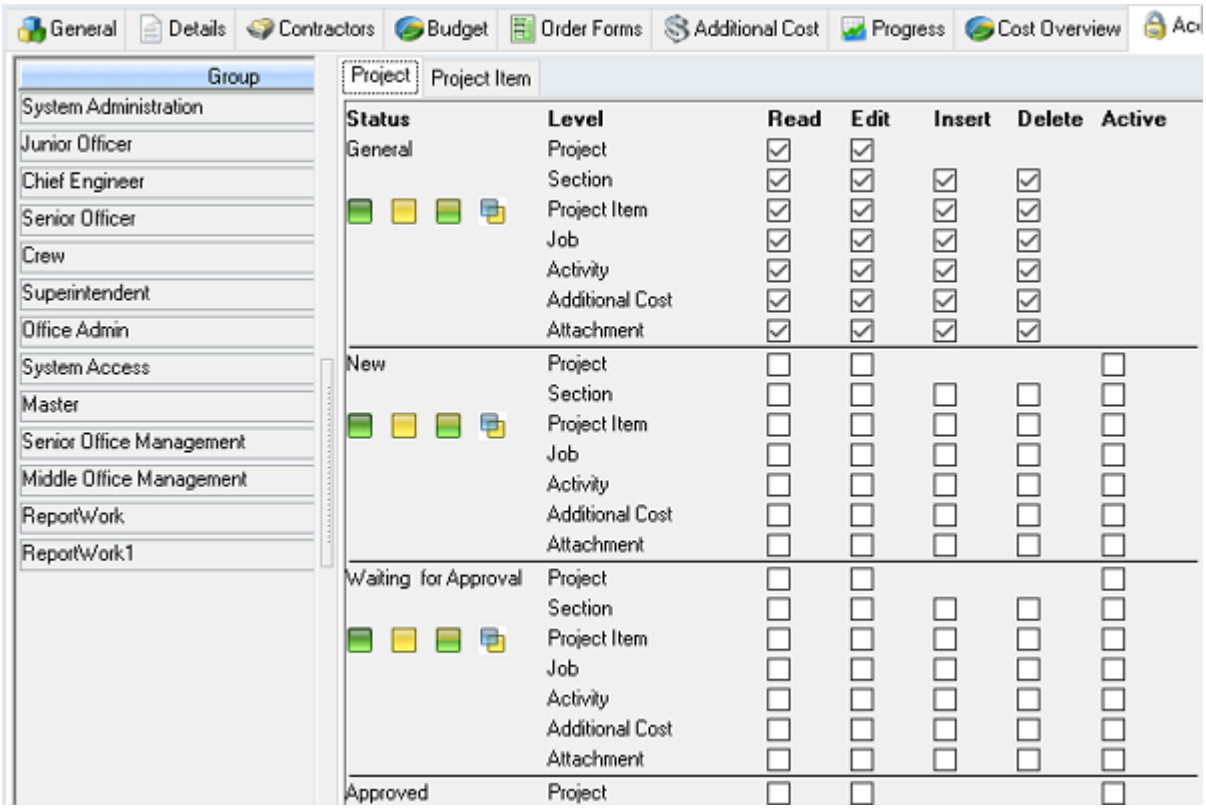


Attachment

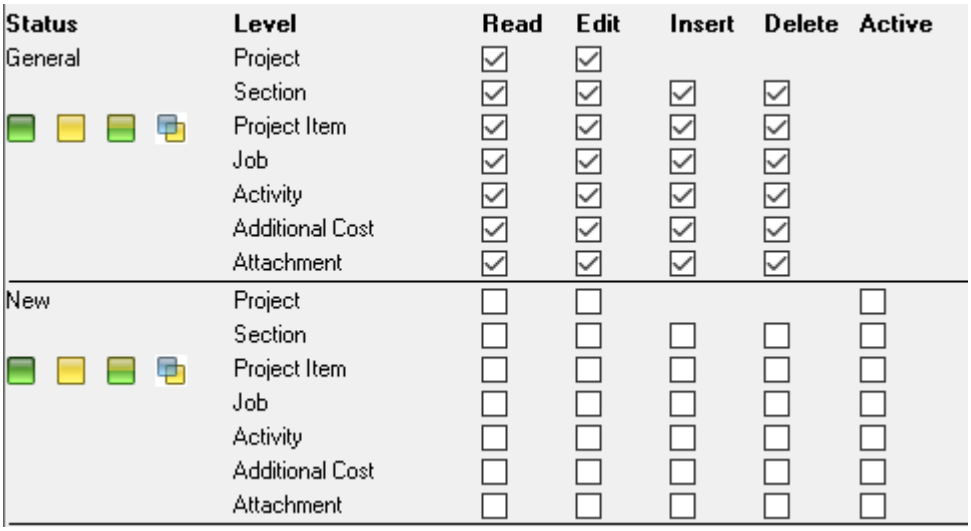
It is possible to add attachments to a project on all three levels: the Project, each of the Sections and any of the Project Items.

Project Access Control

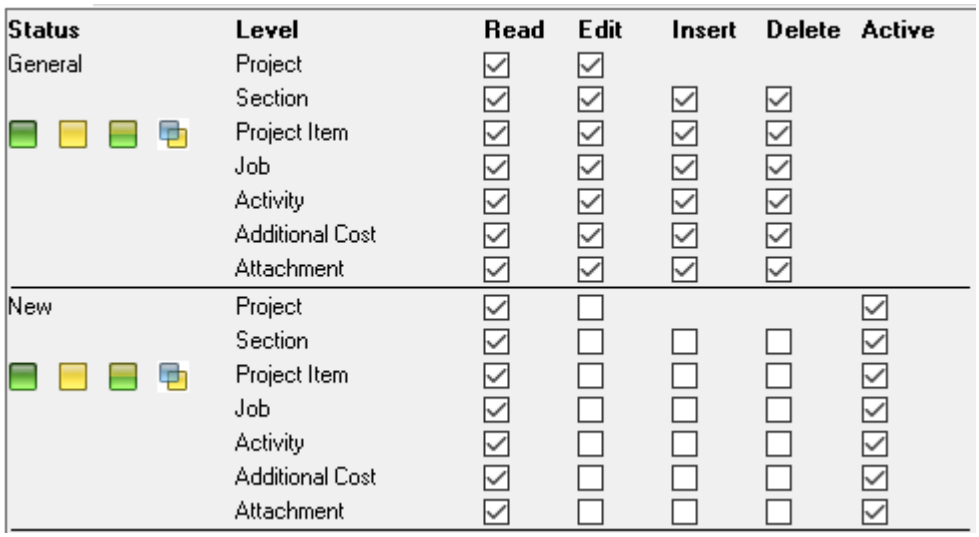
Each project has its own dedicated access control feature to allow or deny different levels of access to any defined user group, according to the project's current status. Open the Access tab in the Projects window to set user group access:



If no access settings are defined on a particular status, the settings defined at the top under 'General' will then apply:



Wherever you do set access rights for a status, flag the **Active** checkbox to override the General-level settings:



Status	Level	Read	Edit	Insert	Delete	Active
General	Project	☑	☑			
	Section	☑	☑	☑	☑	
	Project Item	☑	☑	☑	☑	
	Job	☑	☑	☑	☑	
	Activity	☑	☑	☑	☑	
	Additional Cost	☑	☑	☑	☑	
	Attachment	☑	☑	☑	☑	
New	Project	☑	☐			☑
	Section	☑	☐	☐	☐	☑
	Project Item	☑	☐	☐	☐	☑
	Job	☑	☐	☐	☐	☑
	Activity	☑	☐	☐	☐	☑
	Additional Cost	☑	☐	☐	☐	☑
	Attachment	☑	☐	☐	☐	☑

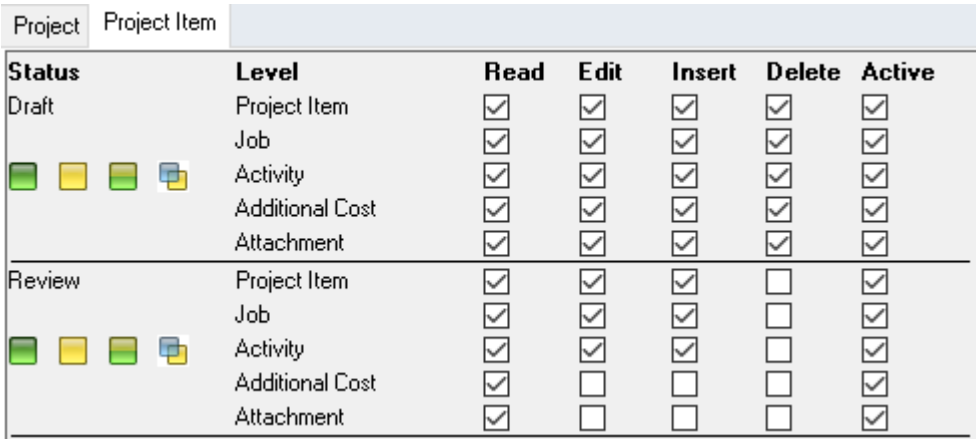
If you leave the **Active** box unflagged, the settings will not apply at that status.

To set access rights quickly, use the buttons:

- **Select All**, **Deselect All**, **Invert Selection**

- **Copy to All Statuses**. Copies the access settings for one status, to all other statuses for the selected user group.

Next to the access definition on Projects in general it is possible to fine tune the access per group for Project Items depending on their status.



Project | Project Item

Status	Level	Read	Edit	Insert	Delete	Active
Draft	Project Item	☑	☑	☑	☑	☑
	Job	☑	☑	☑	☑	☑
	Activity	☑	☑	☑	☑	☑
	Additional Cost	☑	☑	☑	☑	☑
	Attachment	☑	☑	☑	☑	☑
Review	Project Item	☑	☑	☑	☐	☑
	Job	☑	☑	☑	☐	☑
	Activity	☑	☑	☑	☐	☑
	Additional Cost	☑	☐	☐	☐	☑
	Attachment	☑	☐	☐	☐	☑

There are also separate access controls for the **Project No.** field and the **Estimated Duration Lock** checkbox on the General tab. These access controls are at: **Tools > Configuration > Access Control > Groups > Options > Access Control >**

Fields tab - Maintenance - 'Projects: Number' and 'Project: Estimated Duration Locked'

In the same window, access controls to define access to project specification, copying projects, adding and order form to a project, creating an order from a project, selecting a contractor moving a job from an item to another and creating a job from a job description are available:

Functions tab > Maintenance

- Project; Copy Project
- Project; Create Project Specification'
- Project; Add Order Form
- Project; Create Order
- Project; Select Contractor

- Project: Move Project Job
- Project; Create Job(s) from Job Description(s)

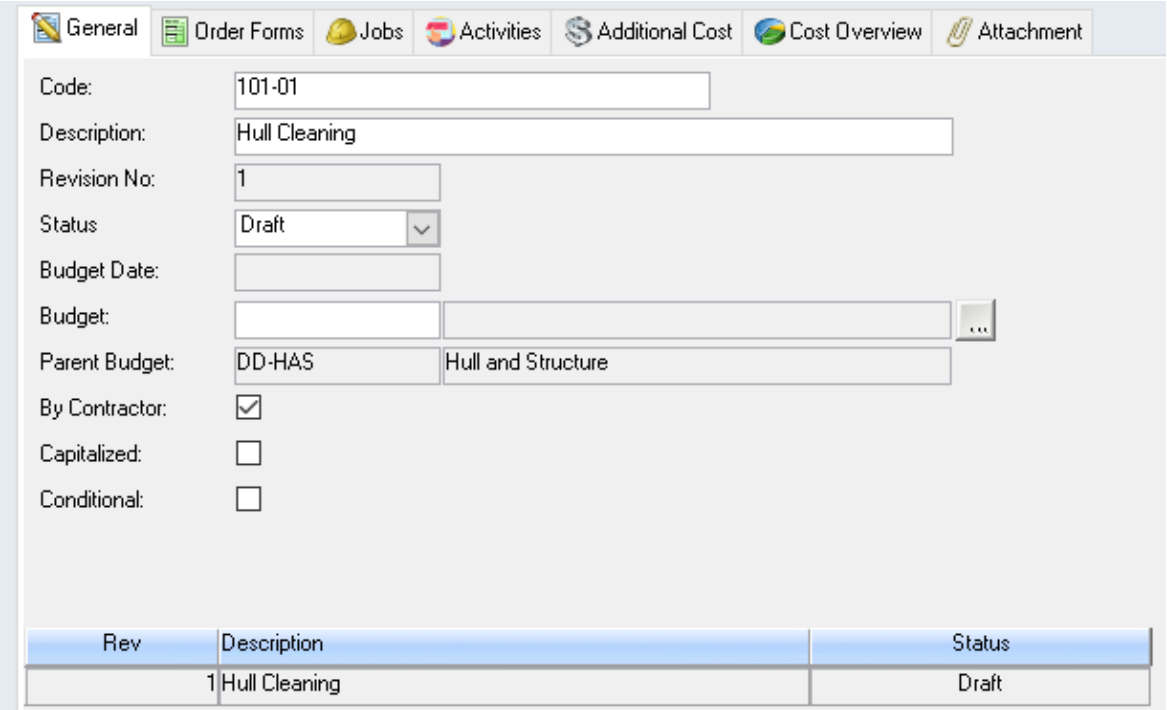
Project Items

Project sections contain Project Items. These items are comprised of:

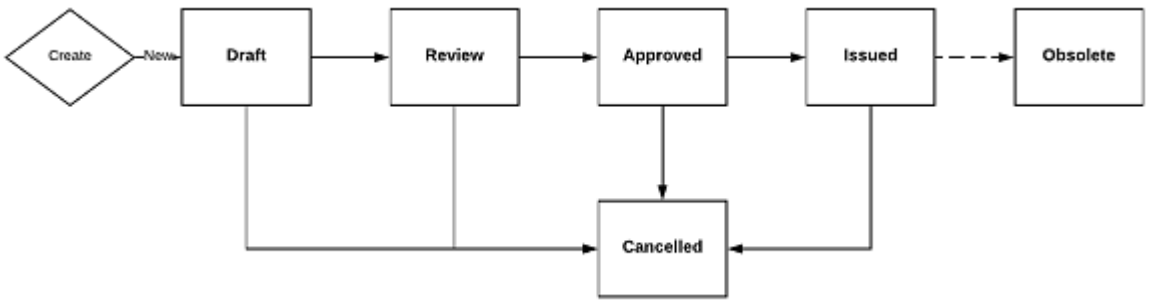
- a work order for the maintenance job
- the relevant job description
- required parts and disciplines, inherited from the work order
- Project Activities

Project Item Revisions

Project Items are Revision Controlled.



Only Issued project jobs can be processed through the procurement process.



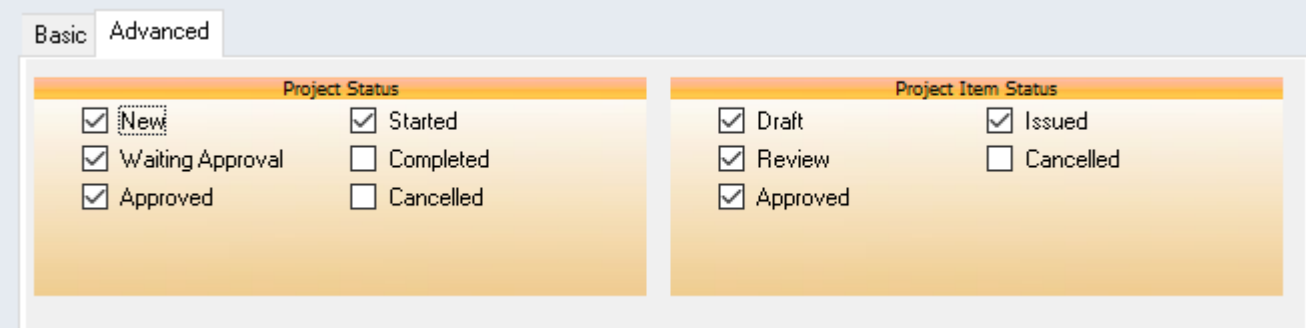
The Work Flow statuses for the Project Items are:

- Draft – the initial state and the state in which all information is gathered and completed with regards to a Project Item.
- Review – the second state with which it is made available to be reviewed.

- Approved – the third state with which someone with the required access has the possibility to allow it to be processed.
- Issued – this is the state where it can be processed through the procurement process.
- Cancelled – this state is available throughout to cancel an item where it will no longer be considered for processing.

Whenever a Project Item has been issued it is locked for changes. Should changes be applied to a Project Item at that stage, a new revision is to be created for that Project Job, where all information from the previous revision is made available in a Draft state to be processed in the same work flow again.

The Projects filter allows to filter out (next to Project statuses) the Project Item statuses for a Project so that for example the person dealing with the approvals could filter out only the items that require their attention and set the status as needed upon review.



For each of the Project Item statuses the access control can be set per user group (see the Project Access Control section for further details).

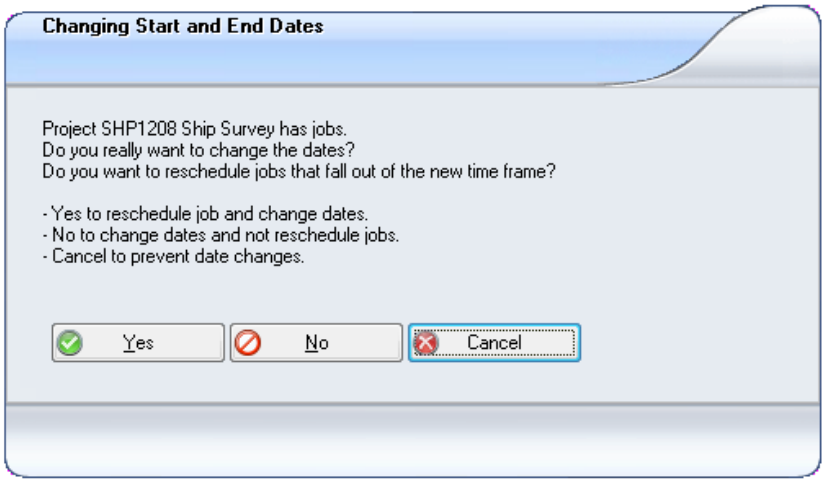
Revisioning allows to only communicate newer revisions with Contractors to obtain only prices for these. In the quotation compare window, the system will only show the prices for the latest revisions.

Project Jobs

There are several ways to create a list of jobs:

- Add new or existing work orders:
  - Use the New Jobs dialog to choose an existing periodic work order or create a new one manually; or
  - Select existing work orders from the Work Orders window and choose a project to add them to.
- Add job descriptions and create work orders for them at the same time:
  - Use the Options menu to lookup a job description and create a requisition work order for it on the spot.

The **Due Date** for project job work orders is set to the same as the project's **Start** date. If you reschedule a project at any time and work orders fall outside of the project's new timeframe, AMOS will ask if you want to reschedule the affected jobs too:

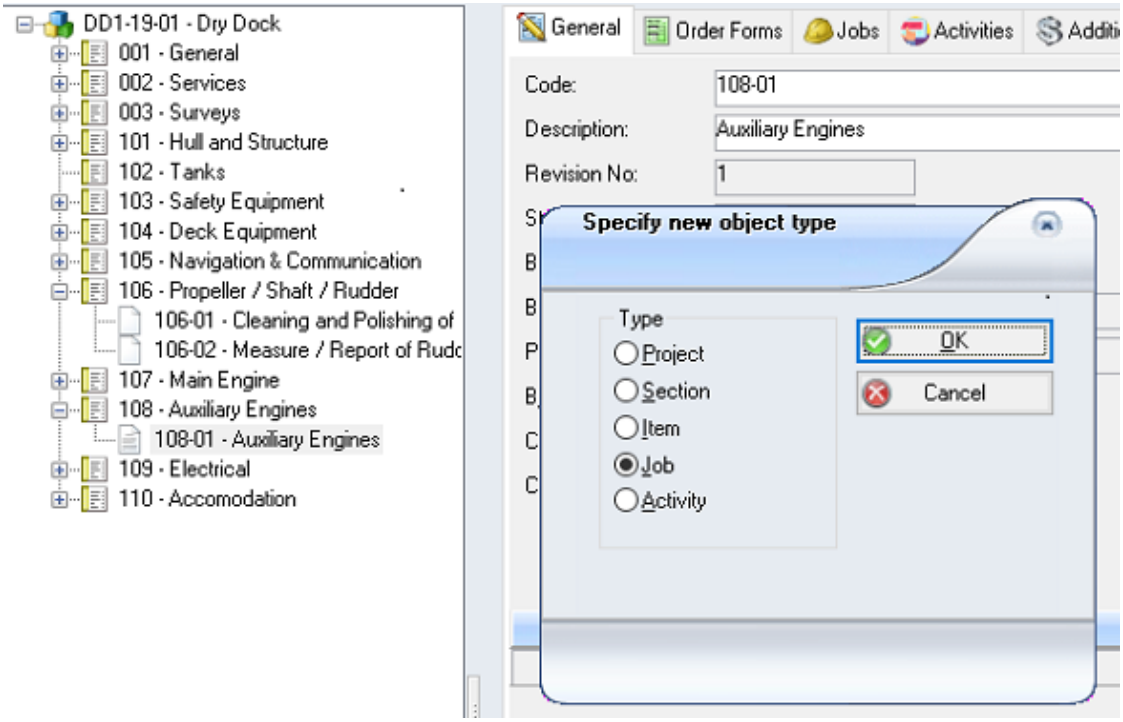


A list of rescheduled work orders with reasons for the adjustment, is available to view by selecting **Options > Reschedule Log**.

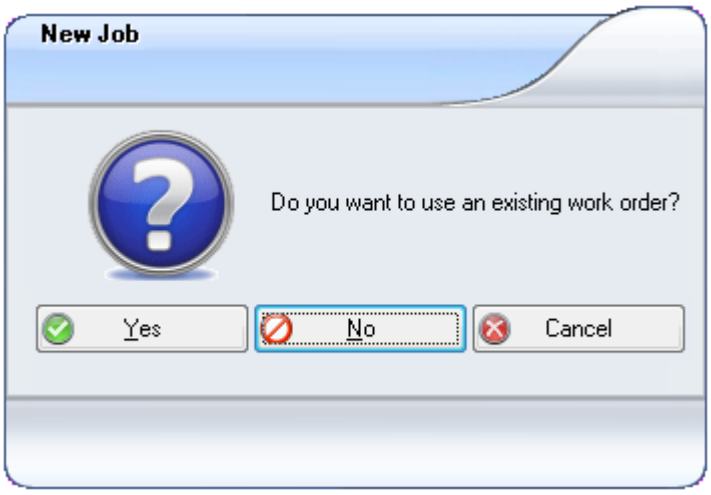
Adding Project Jobs from the New Job Dialog

Use the New Job dialog choose to an existing work order or to create a new one manually:

1. Select a project and a section.
2. Click **New** on the toolbar.
3. Click **Job** and **OK** in the Specify New Object dialog:

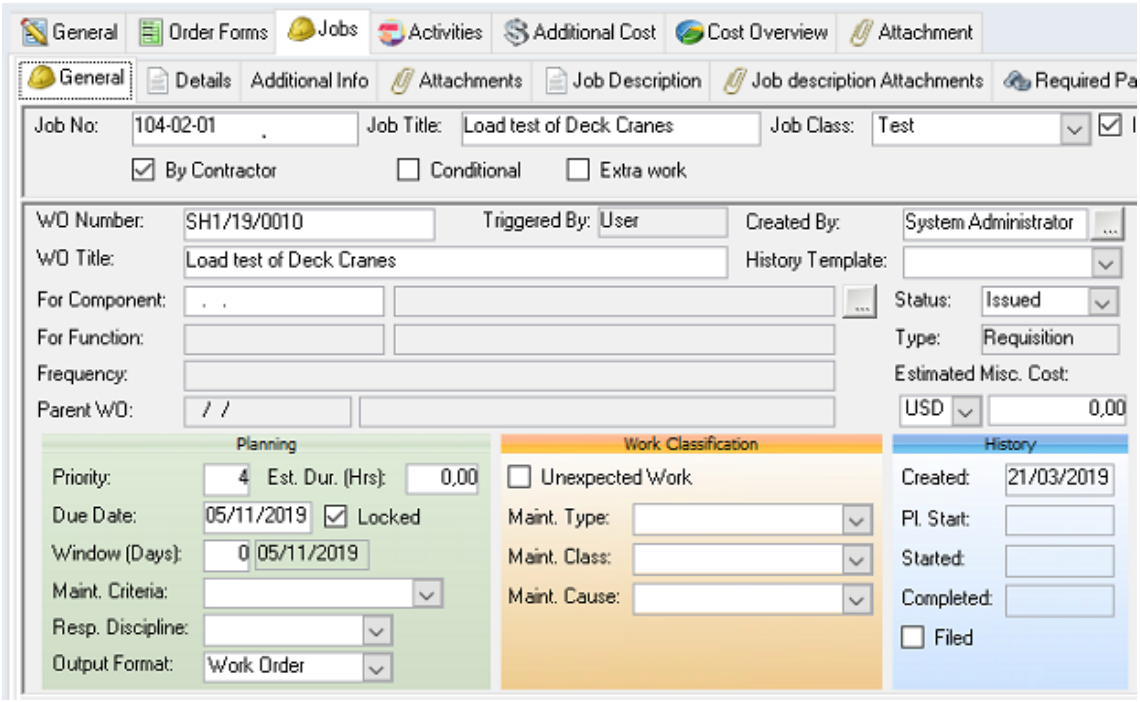


4. The New Job dialog opens asking if you want to use an existing work order:



5. To create a new work order for this project click **No**.

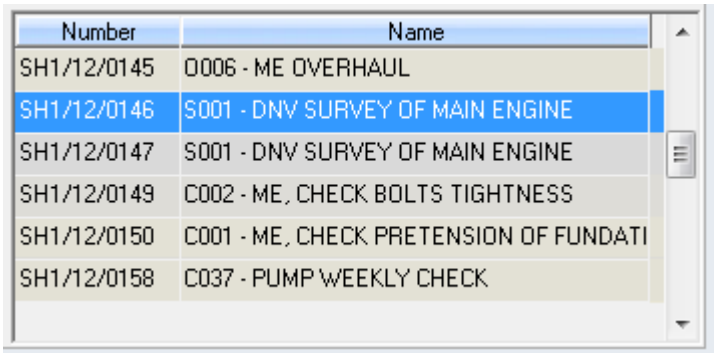
   Create a manual work order in the Item Jobs tab[1]. The **Due Date** is automatically set to the project's start date:



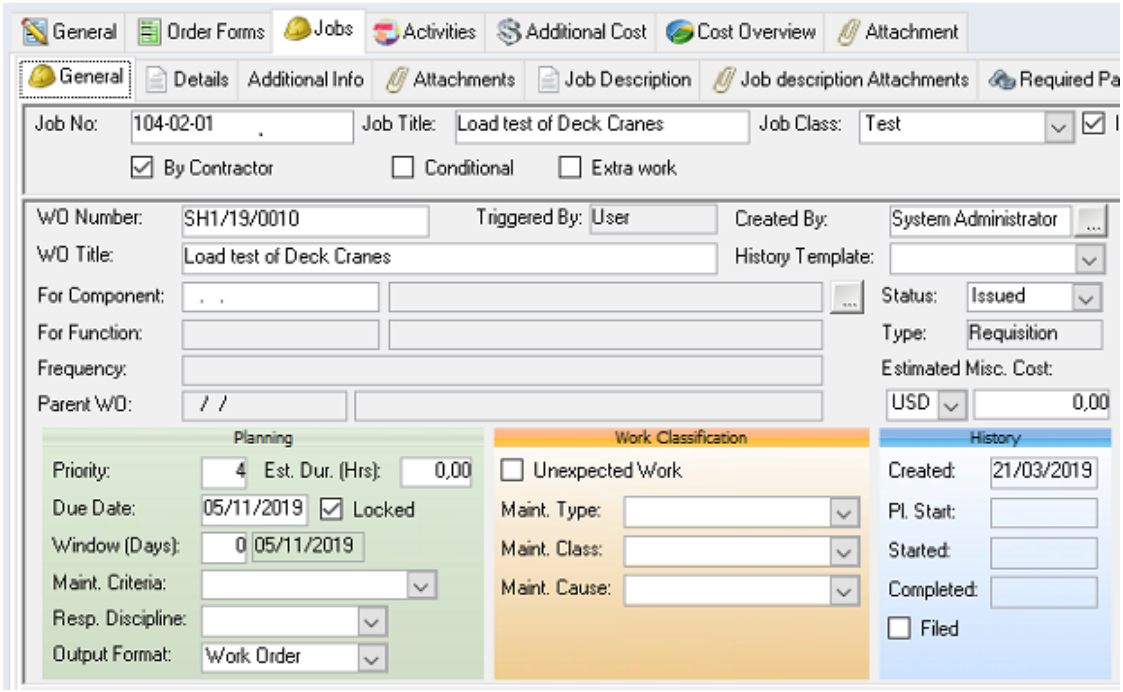
6. Or, to select an existing work order and link it to this project, click **Yes**.

   Lookup and select any existing work order and click **OK** to add it to the project:

[1]The initial status of a work order created manually for a project job is set according to the system parameter Tools > Configuration > Parameters > Options > General > Default Settings > 'Initial Project Work Order Status'. Initial status for project work orders is also available to set in the Work Flow Configuration window, if Maintenance Work Flow is in use.

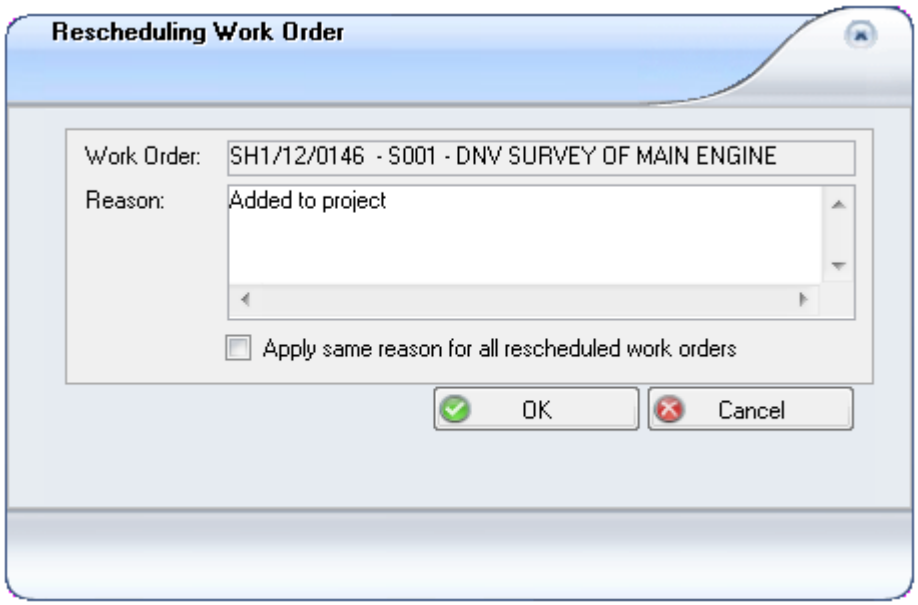


Add a **Job No.** and **Job Title**:



When you add an existing work order as a new job, the due date is automatically set for you to the project's start date. This may mean rescheduling the work order and providing a reason for doing so[1]:

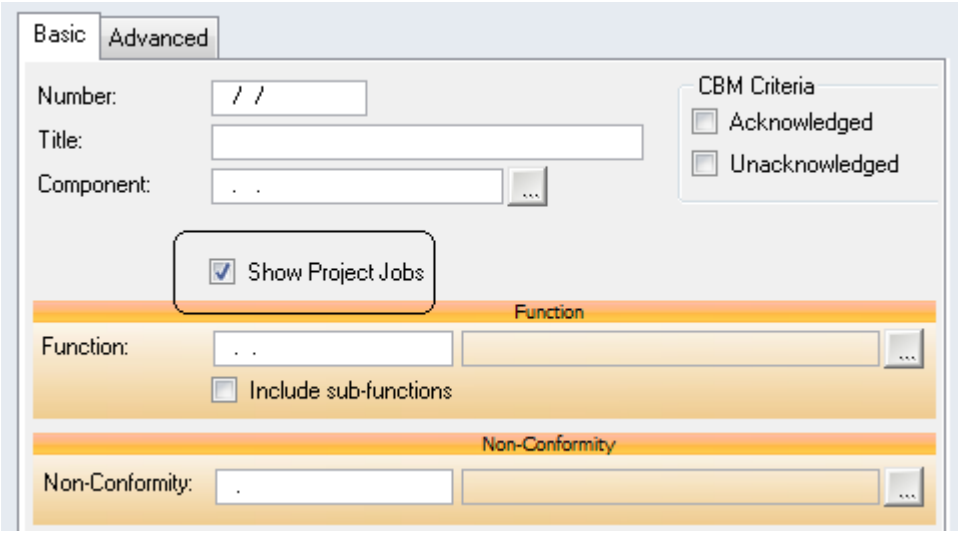
[1] A list of rescheduled work orders with reasons for the adjustment, is available to view by selecting Options > Reschedule Log.



If you select a periodic work order its due date is locked to avoid it falling outside of the project timeframe.

7. Add as many jobs as required to every section.

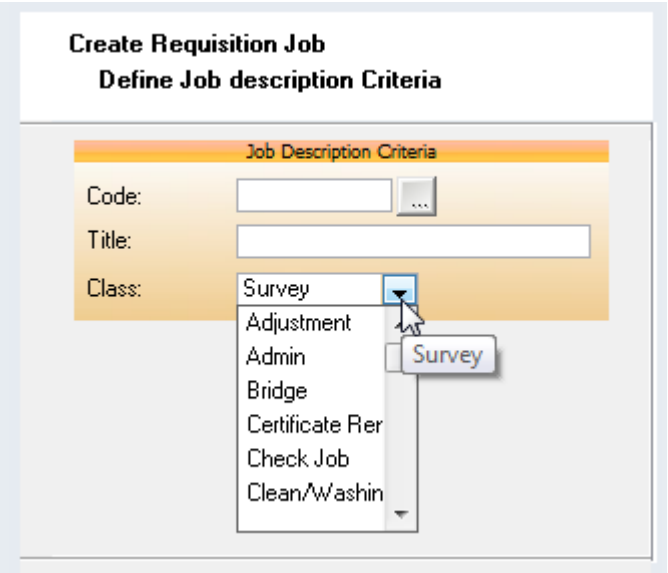
When a work order is created manually for a project or an existing work order is added to a project, that work order will only appear in the Work Order window list when **Show Project Jobs** is checked in the Work Order filter:



Adding Project Jobs from Job Descriptions

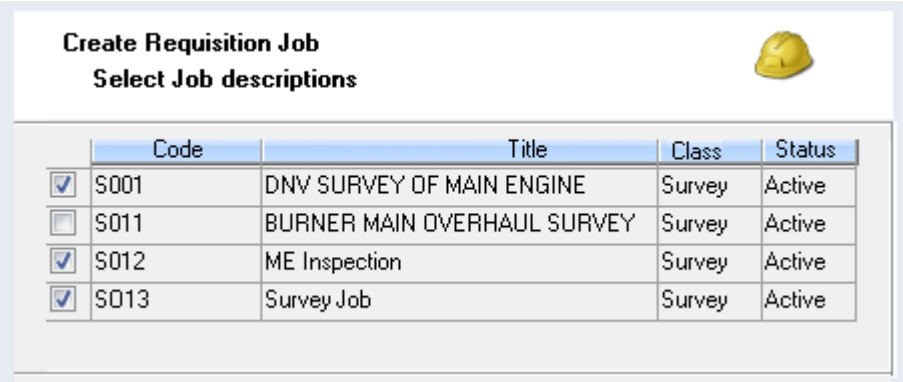
Jobs can be added to a project by selecting job descriptions already available in the system. A wizard opened from the Options menu helps you add one or more job descriptions in one operation:

1. Select a project section and item
2. Go to **Options > Create Job(s) from Job Description(s)**. Click **Next** in the Auto Requisition Jobs dialog.
3. The following dialog presents a job description filter. If you are looking for a specific job description, enter its **Code** or **Title**. Or, to narrow the list of descriptions, select a **Class**:



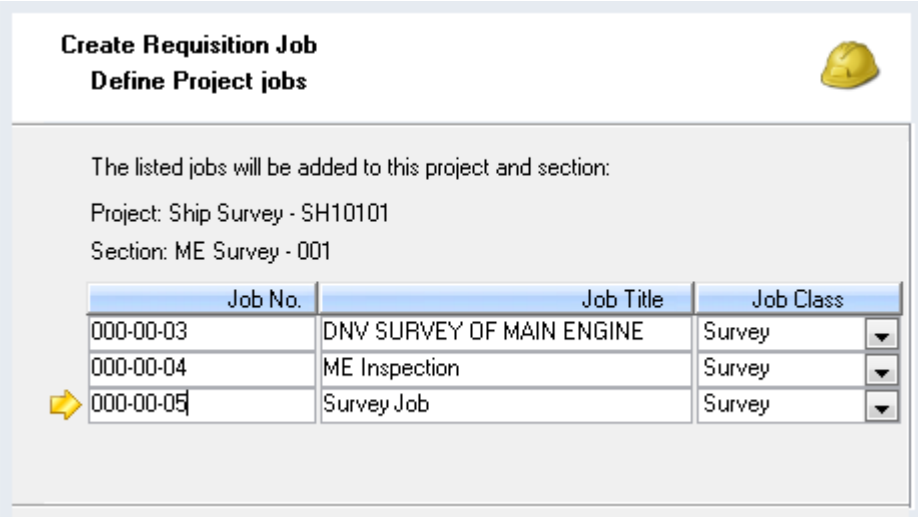
Or leave the filter completely blank. This will return a list of all available job descriptions in the system.

4. Click **Next**.
5. Check the jobs you want to add to the project:



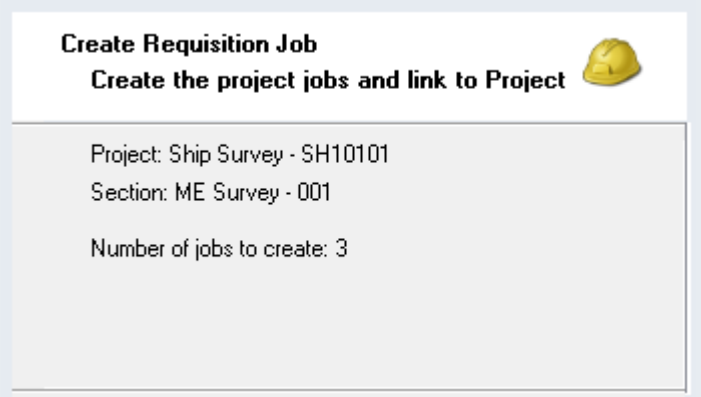
Click **Next**.

6. Enter a project **Job No.** for each job description:

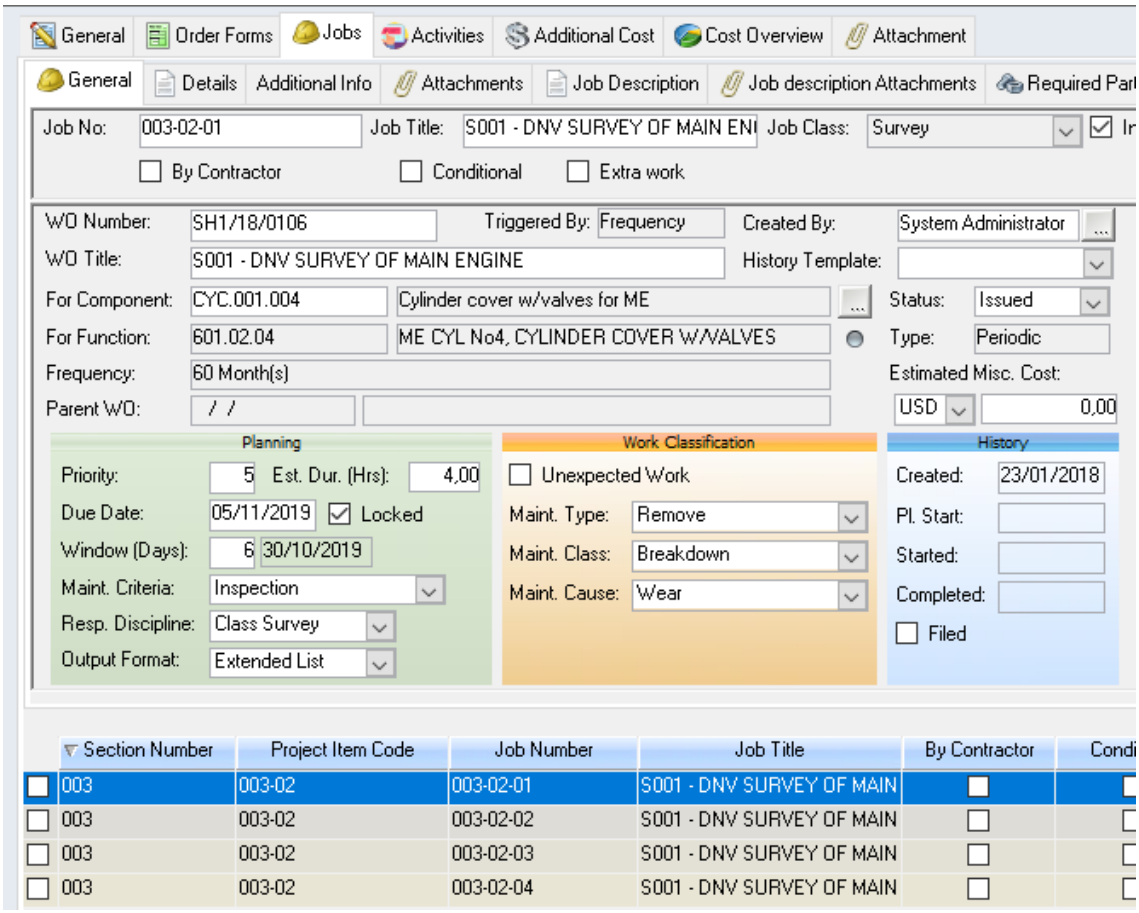


Click **Next**.

7. Click **OK** in the final dialog:



8. You return to the main window with the job(s) added to the project:



The **Due Date** on each job is automatically set to the project's start date. The job description text (if any) will appear in the Section > Details sub-tab. You can adjust this text to reflect any changes required when the task is performed as part of this project.

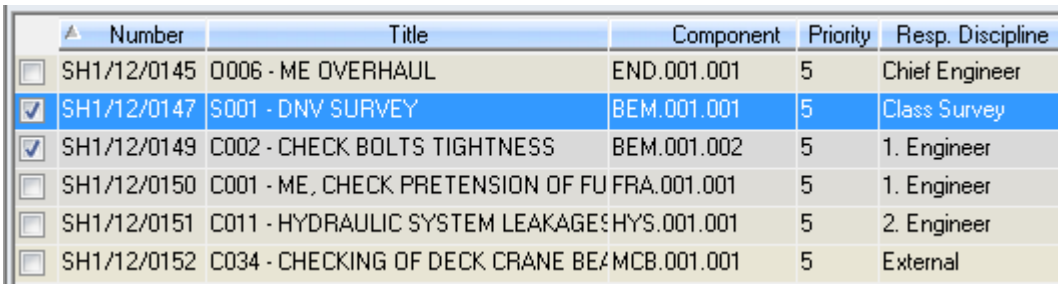
Work orders are created for each job at the same time. Filtering the Work Order window to **Show Project Jobs** will list the new work orders.

Adding Project Jobs from the Work Orders Window

Add existing work orders to a project directly from the Work Orders window:

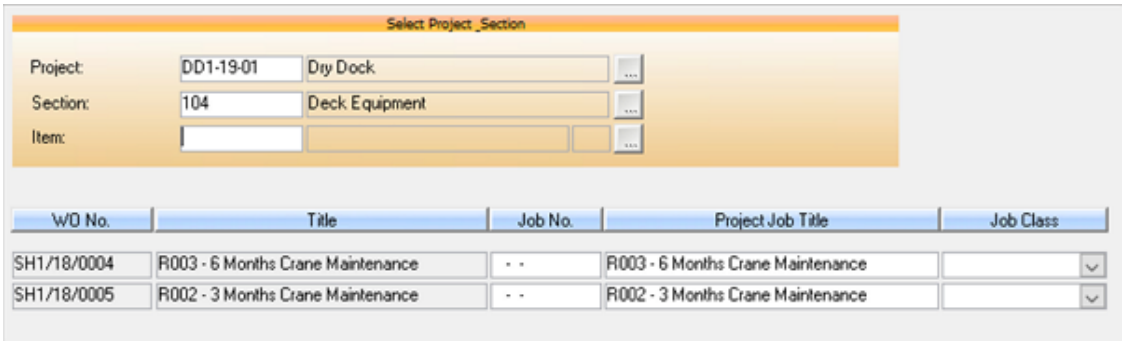
1. Go to **Maintenance > Work Orders**.
2. Select a work order to add to an existing project.

Or, to add multiple work orders at once to the same project use the filter to filter out a group of applicable work orders and then check the boxes beside each relevant one in the list:



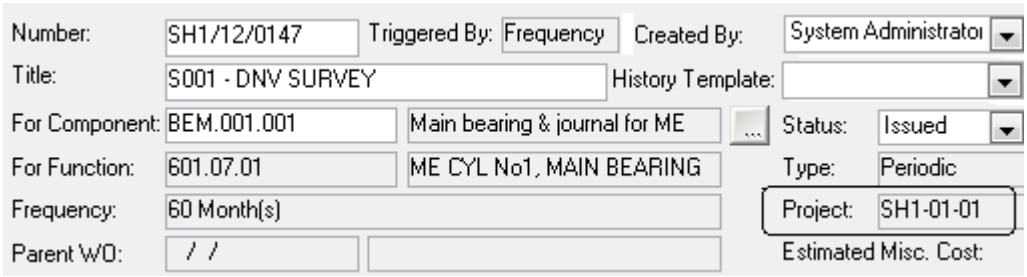
	Number	Title	Component	Priority	Resp. Discipline
☐	SH1/12/0145	0006 - ME OVERHAUL	END.001.001	5	Chief Engineer
☑	SH1/12/0147	S001 - DNV SURVEY	BEM.001.001	5	Class Survey
☑	SH1/12/0149	C002 - CHECK BOLTS TIGHTNESS	BEM.001.002	5	1. Engineer
☐	SH1/12/0150	C001 - ME, CHECK PRETENSION OF FU	FRA.001.001	5	1. Engineer
☐	SH1/12/0151	C011 - HYDRAULIC SYSTEM LEAKAGES	HYS.001.001	5	2. Engineer
☐	SH1/12/0152	C034 - CHECKING OF DECK CRANE BE/	MCB.001.001	5	External

3. Go to **Options > Add to Project**.
4. Use the lookups to choose the **Project**, **Section** and **Item** to add to:



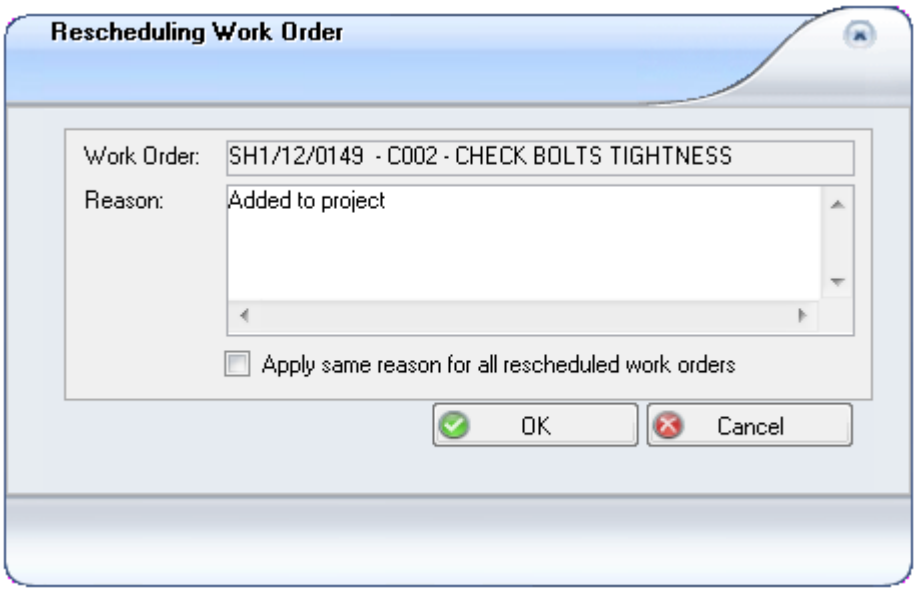
Enter a **Job Number** for each work order.

5. Click **OK** to return to the Work Orders window and **Save** the window. The **Project Number** appears on the General tab for each of the selected work orders:

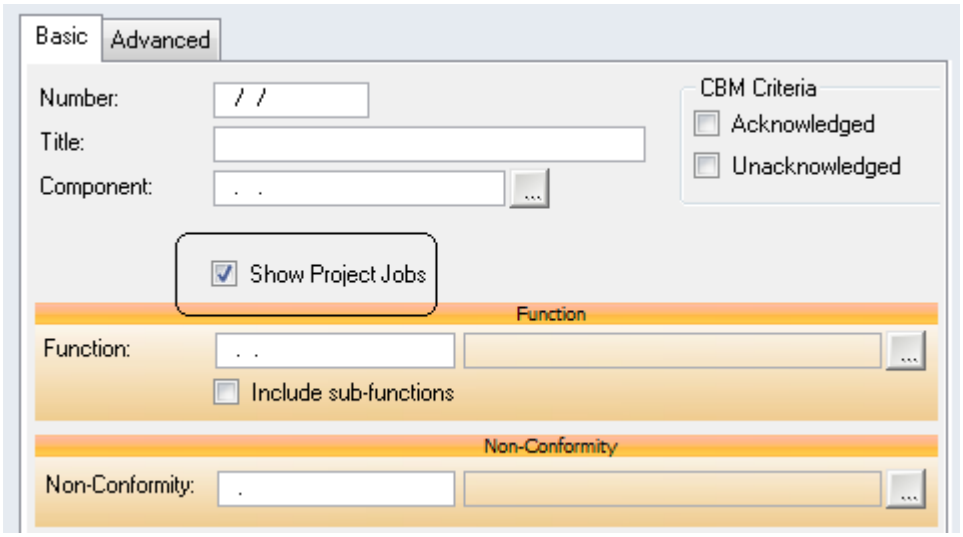


6. The work orders will now be listed in the Project window under the selected project and section. The work order due date(s) will change to align with the project's start date. This may mean re-scheduling the work order and providing a reason for doing so[1]:

[1] A list of rescheduled work orders with reasons for the adjustment, is available to view by selecting Options > Reschedule Log.



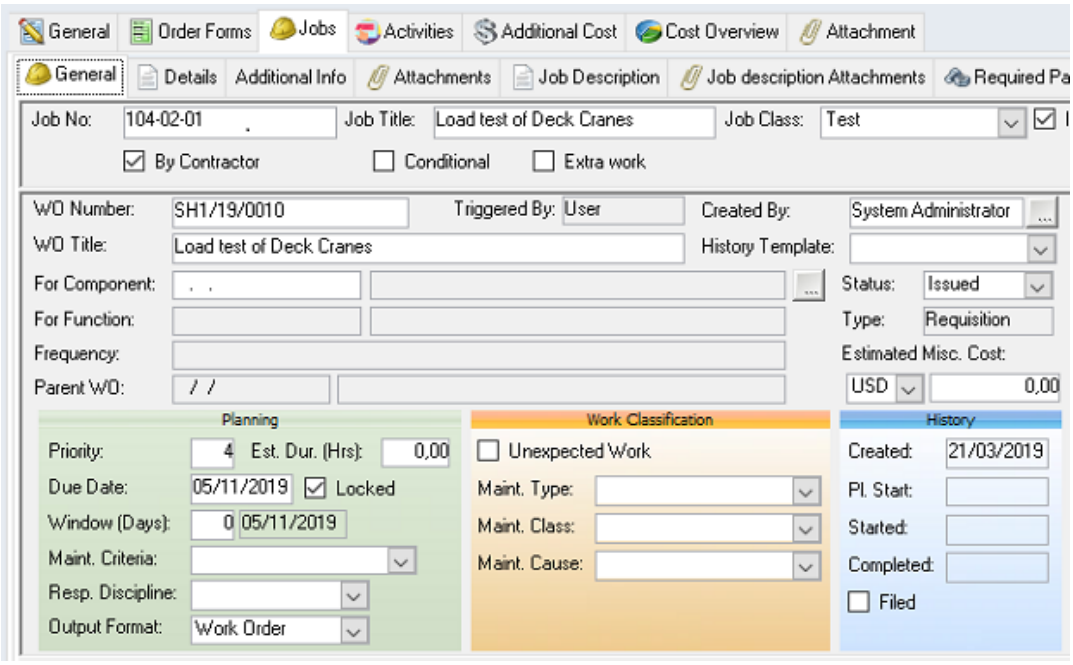
When a work order is created manually for a project or an existing work order is added to a project, that work order will only appear in the Work Order window list when 'Show Project Jobs' is checked in the Work Order filter:



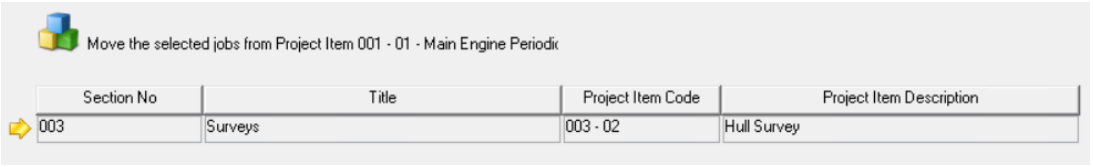
Moving Project Jobs

Jobs can be moved from one item to another one within a project:

1. Open the Projects window and select the relevant project in the hierarchy.
2. Open the section containing the job(s) you want to move. Check one or more jobs in the list on the right side:



3. Go to **Options > Move Project Job...**The dialog contains a list of available items. Select the items you want to move the jobs to:

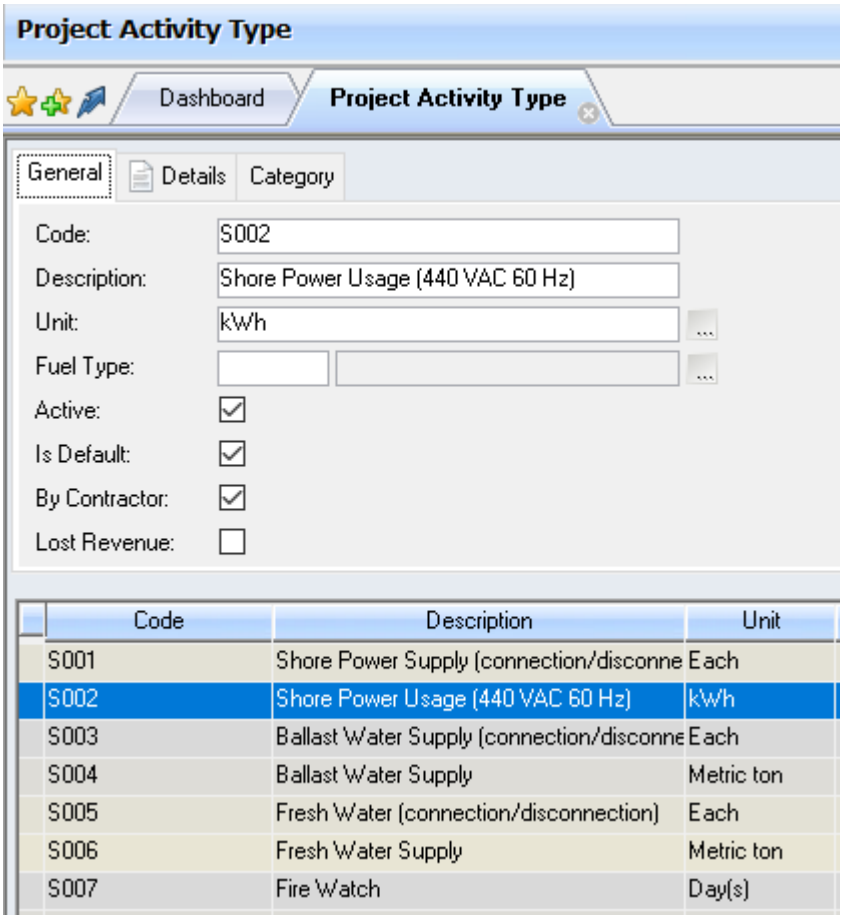


4. Click **OK** to return to the main window. The jobs have been moved:

Adding Project Activities

A Project Item can contain Project Activities. These are either Services to be supplied by the Yard or other Contractors, but could also be for example internal activities that contain specifications with regards to lost revenue when choosing a Yard for the Dry Dock. Cost related to Fuel Consumption as well as cost related to for example extra days to get a vessel to a specific yard which can subsequently be included in the cost comparison between the different Yards.

Activities are defined in the **File >Open Register >Maintenance >Project Activities.**

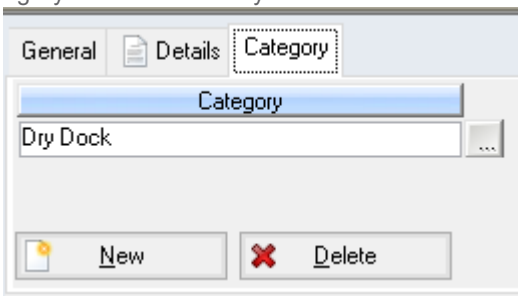


For each of the Project Activities it is possible to define a code and description, but also the Unit of Measurement and the Fuel Type in case it's an Activity that is related to capturing the fuel consumption for that activity.

The Fuel Types can be defined in the **File >Open Register >Maintenance >Fuel Type** window.

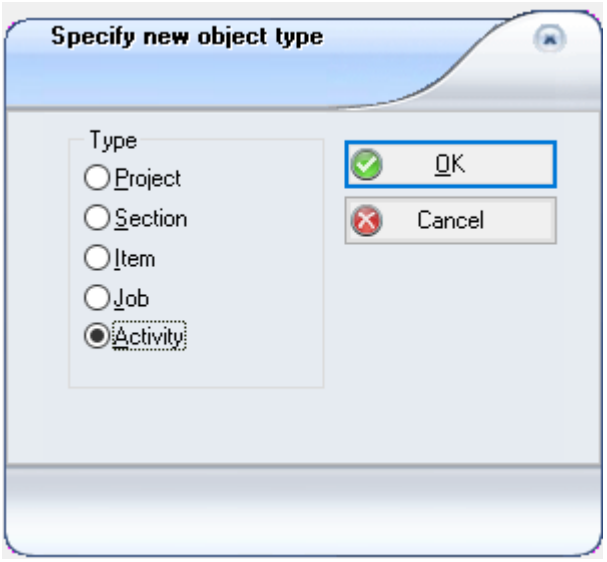
For all Activities the following attributes can be set:

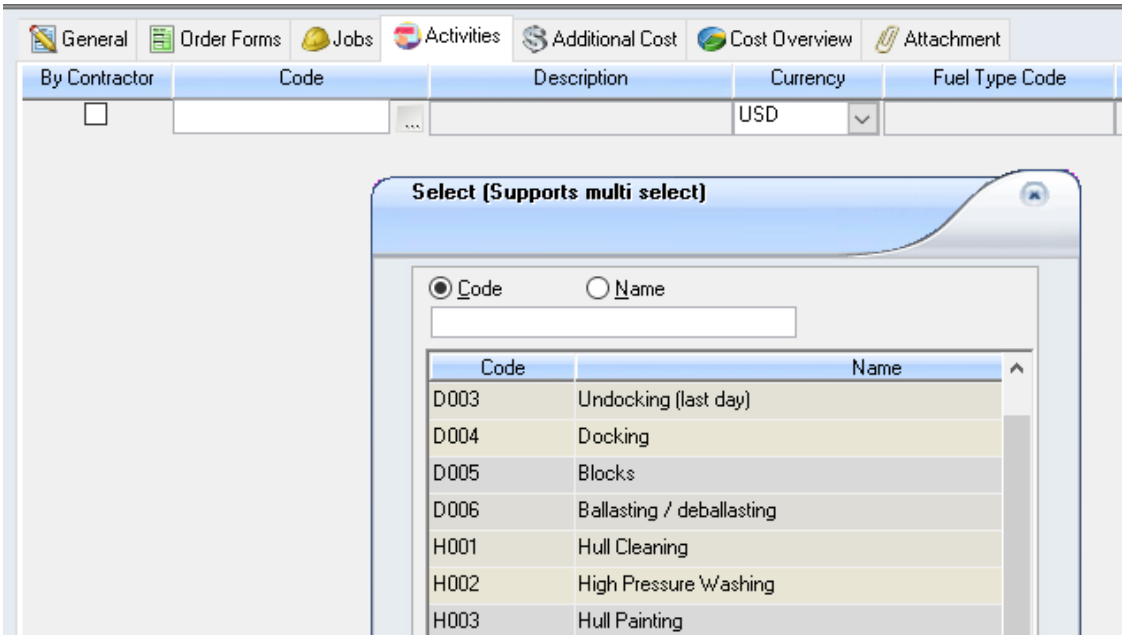
- Active – whether or not it's still in use. When unchecked, this will no longer show up for selection when adding to or creating a new project.
- Is Default – to define whether or not that activity should be added to a Project by default. Note that this can be refined by defining the Project Category the Activity would be a default for in the Category tab for this Activity.



- By Contractor – this is will set the value 'By Contractor' on the Activity when added to the Project, it can be changed on the Project afterwards.
- Lost Revenue – this allows to define whether this Activity is here in order to allow to capture internal cost like lost revenue for extra day(s) spent to travel to the yard or Fuel Cost items to be included in the cost comparison overview, but not to be quoted by the yard or other contractors.

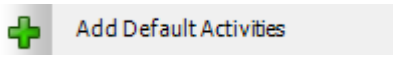
Activities can be added to Project Items manually, by pressing the New button, selecting Activity and utilizing the lookup button to find any (active) activities.





It is possible to select more than one Project Activity to be added in one go by either using the CTRL key to select non sequential Activities, or utilizing the SHIFT key to select a range of Activities.

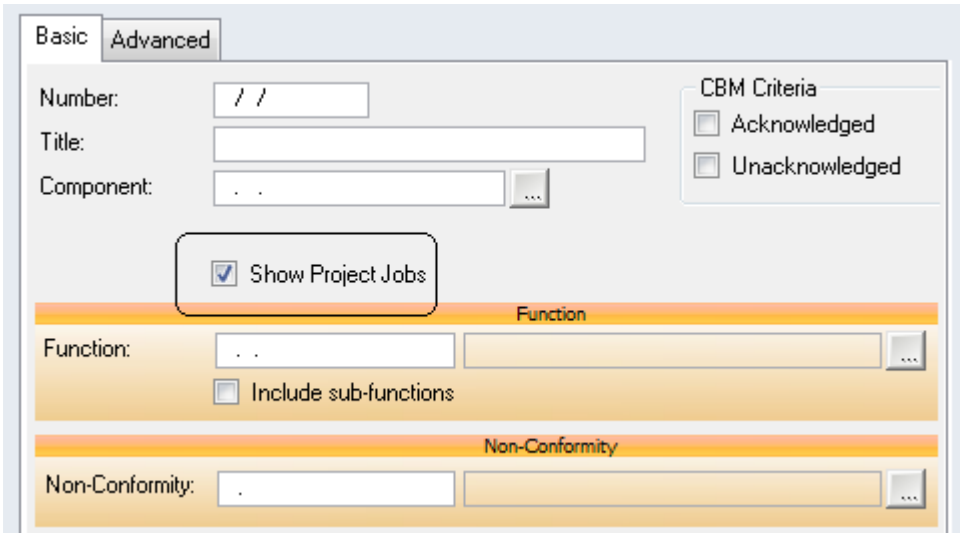
Secondly Activities can be added to a project by selecting the Add Default Activities option from the Options menu, menu bar or context sensitive (right click) menu.



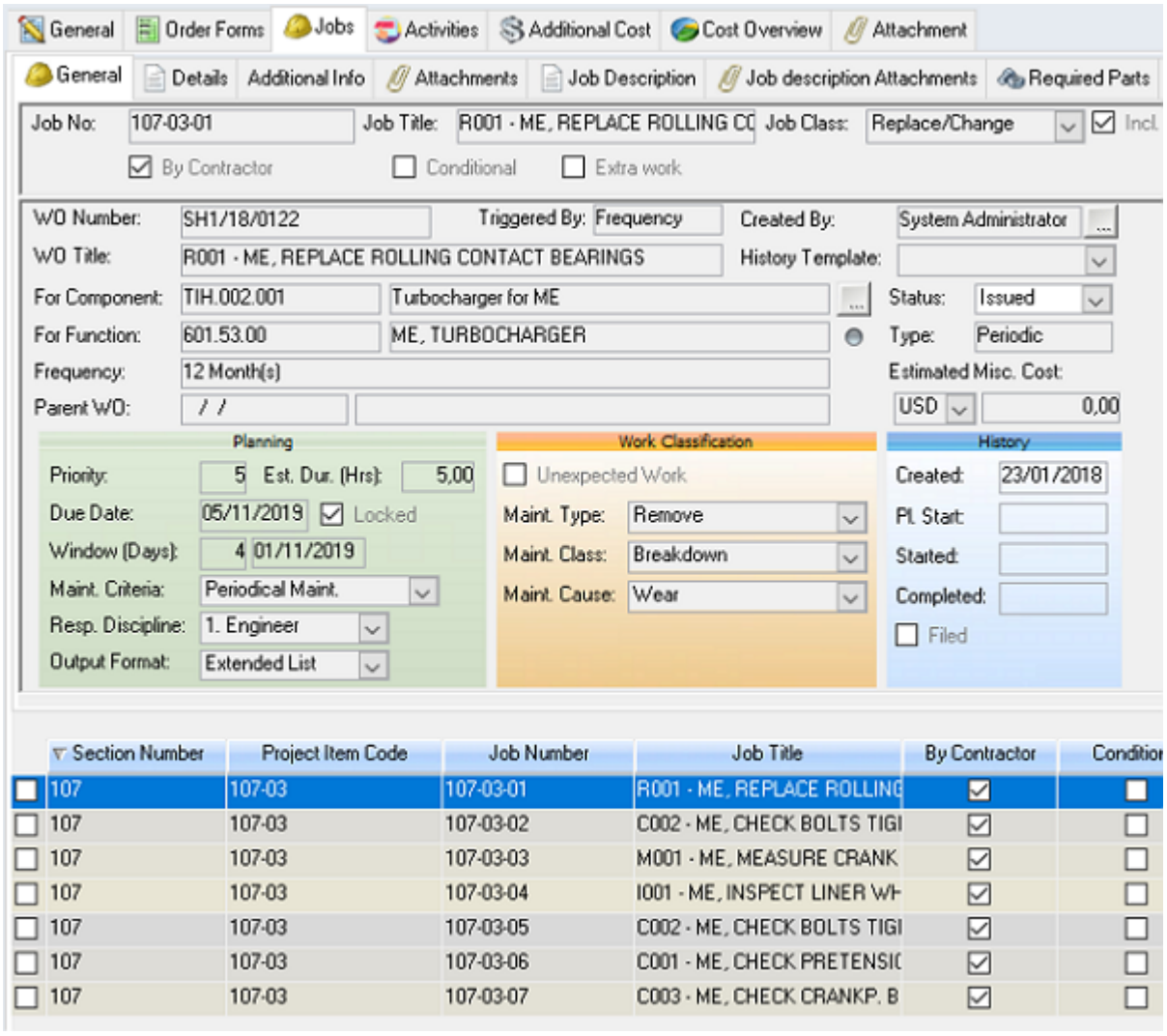
This adds all Activities marked as Default for a Project of the selected Project Category to the Project.

Project Work Orders

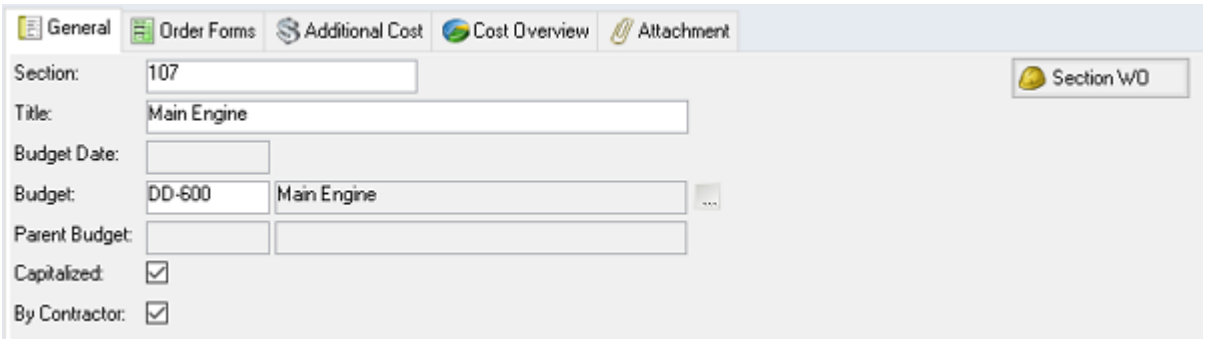
When a work order is created manually for a project or an existing work order is added to a project and you open the window at **Maintenance > Work Order**, that work order will only appear in the window list when 'Show Project Jobs' is checked in the filter:



When a project contains a list of jobs, selecting a item in the hierarchy displays only the jobs belonging to that item



Click the **Section WO** button in the Section tab to open the Work Orders window listing only the work orders in that section.



Click the **Project WO** button on the General tab to open the Work Orders window listing all work orders belonging to the entire project:

Selecting a project and going to **Options > Work Planning** opens the Work Planning window for that project. Only the project job work orders will be available for planning on the timeline when the window is accessed from the Projects Options menu.

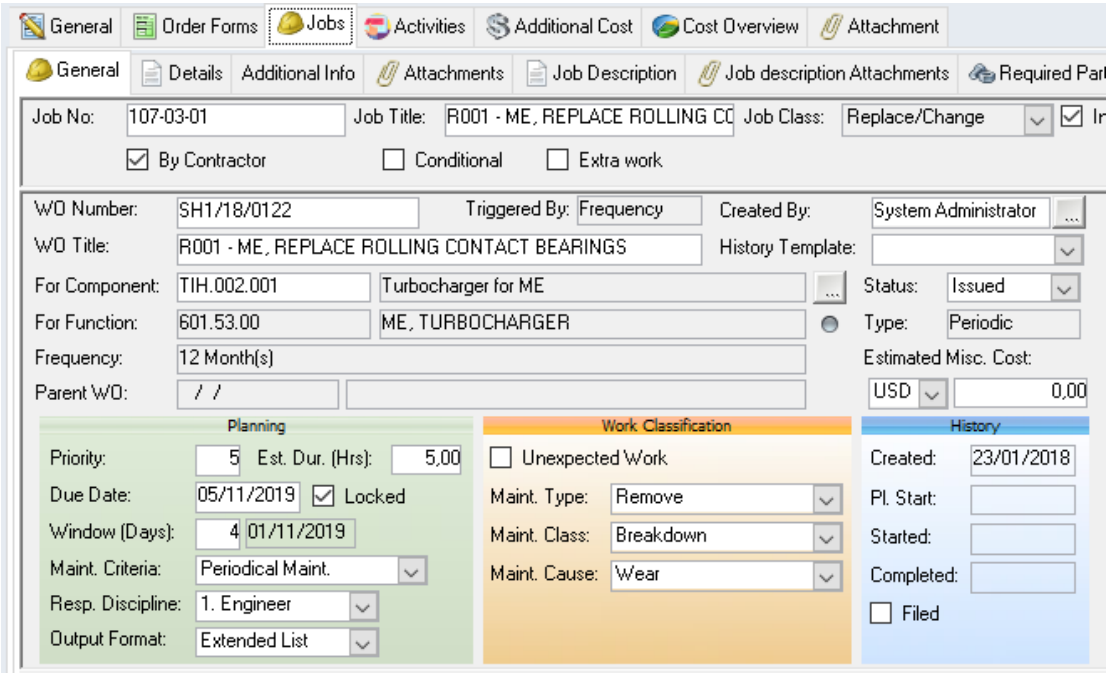
If a round work order is added to the project, the command **Included Jobs** will be available on the Options menu. Select it to open a list of the jobs which are included in the round. If you remove a round work order from a project, AMOS does not reschedule the round but instead reassigns its original due date from before it was added to the project.

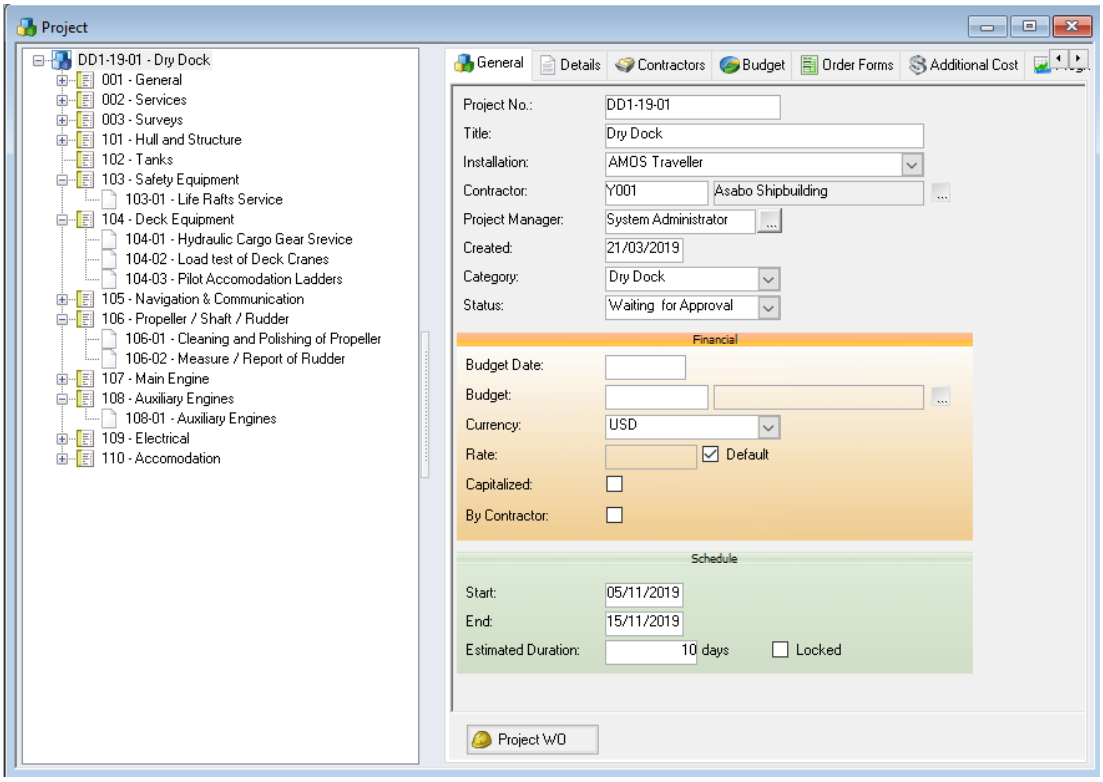
Project Parts and Disciplines

Existing work orders added to projects will come with required parts and disciplines already specified. Editing this information, or adding parts and disciplines to newly created project work orders, is all done in the Work Order window. The information is then transferred to the Projects window.

To edit a project work order:

1. Select a job in the Item window list and double-click it while pressing the **Ctrl** key to open that work order.
2. Or, click the **Item WO**, **Section WO** or **Project WO** button to see the work orders for a section or for the entire project job list:

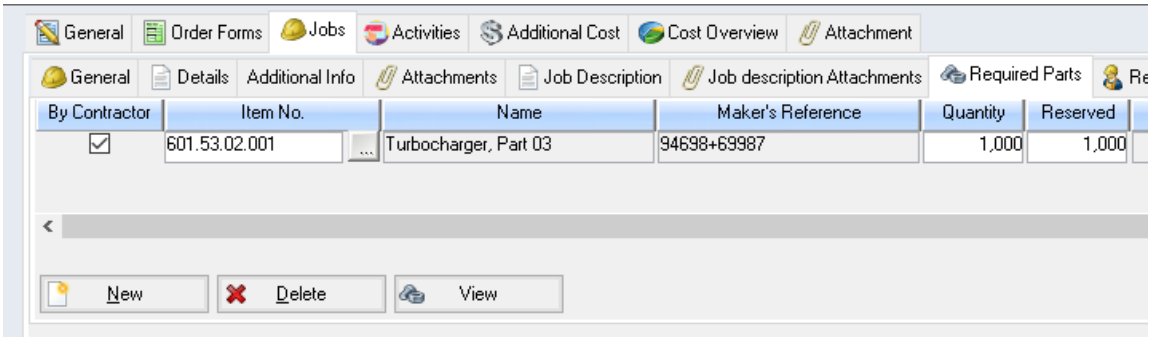




To filter the Work Order window for a project work order, remember to check **Show Project Jobs** on the filter. Otherwise the work order will not appear in the list.

2. Open the Required Parts and Required Discipline tabs and use the buttons to add or remove entries.
3. **Save** and exit the window. The Required Parts and Required Disciplines sub-tabs on the Projects window will be updated accordingly.

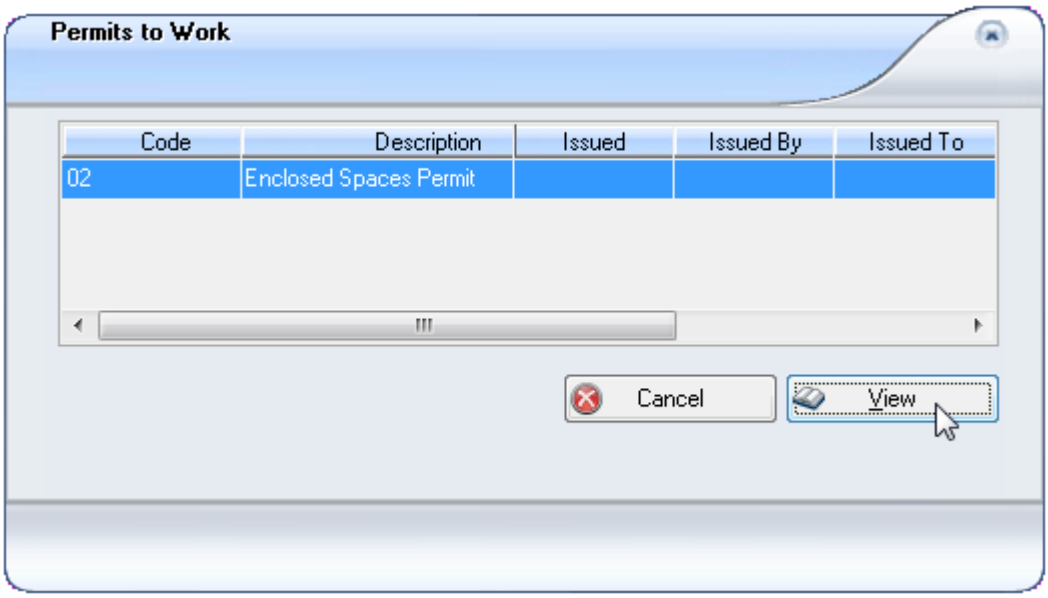
Required Parts can also be directly added from the Jobs tab once a Work Order is linked through a Project using the buttons available within the [Required Parts] tab.



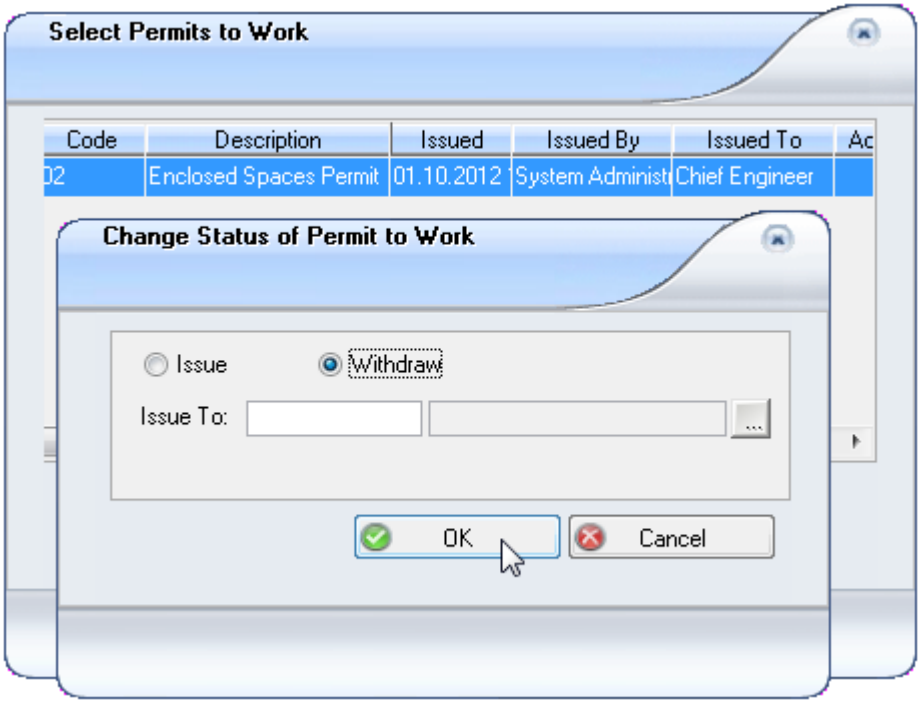
Project Work Permits

Permits to work are added to project work orders (like any other work orders) in the Maintenance Work Order window - access the window from the main menu or from the Project window itself.

Selecting a project work order and going to **Options > Permits to Work** opens a dialog listing the permits attached for that job. You can also view the listed permit(s) in detail:



Choosing **Options > Change Status of Permit to Work** opens a similar dialog where you can select the permit to change and click **OK**. The next dialog to open is for issuing or withdrawing the permit:



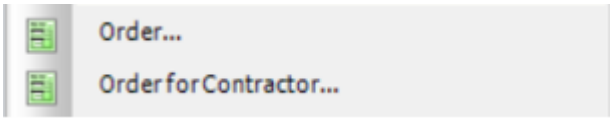
Getting Quotations and Procurement

Once the Project Items that are part of the Project are completed and Issued, they can be moved through the Procurement process to get quotes for the tasks to performed, services to be supplied, and parts to be delivered.

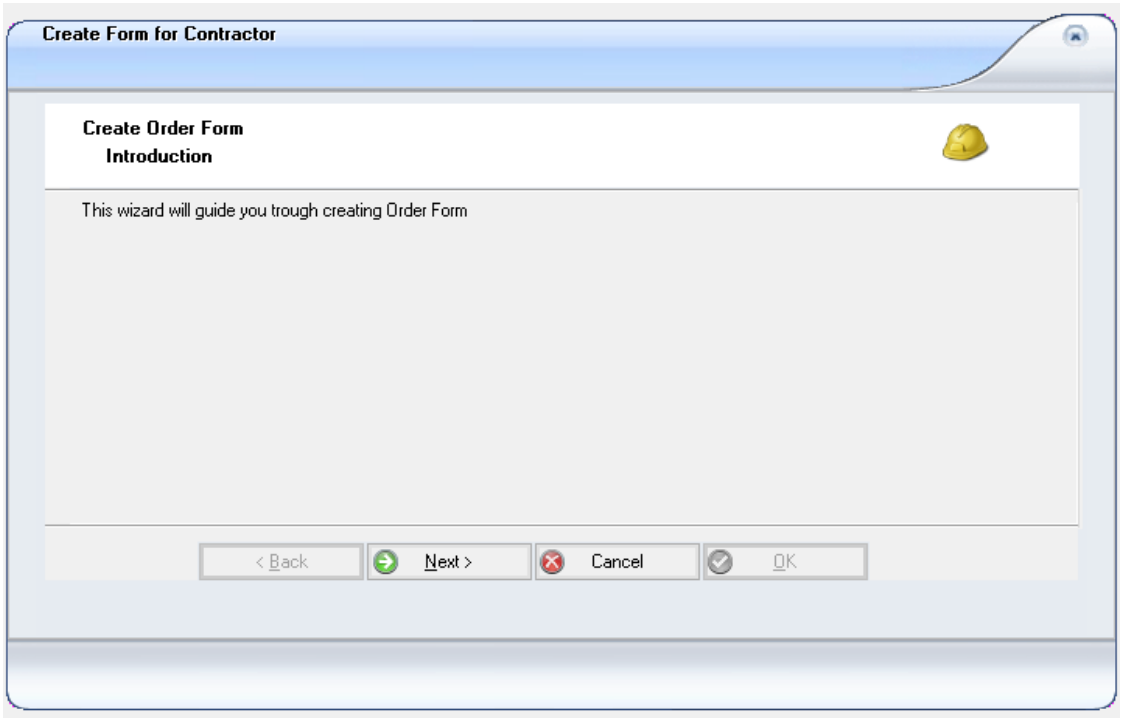
Creating an Order Form for the Contractor (or Yard)

The Project Items that need to be quoted by the Yard (or main Contractor) can be placed on an Order Form utilizing the 'Create Order for Contractor' option. This will add all Items (Jobs, Activities, Parts) that are marked as '[x] By Contractor' on a Purchase Form.

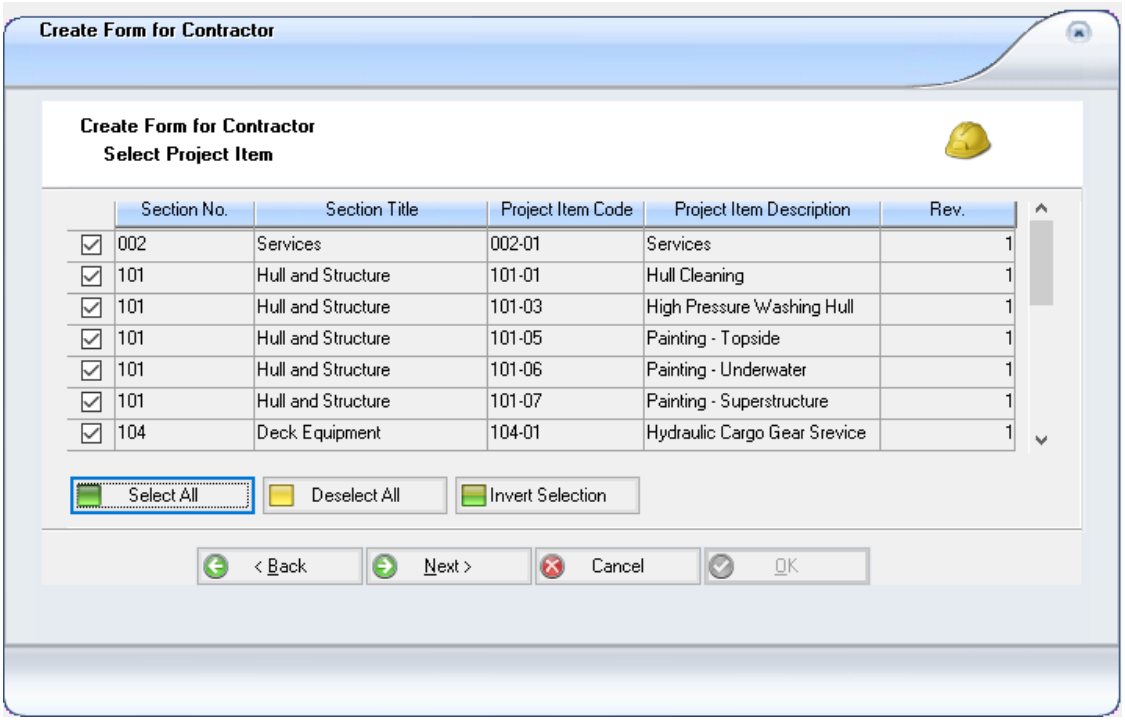
Select 'Order for Contractor' from the Options menu:



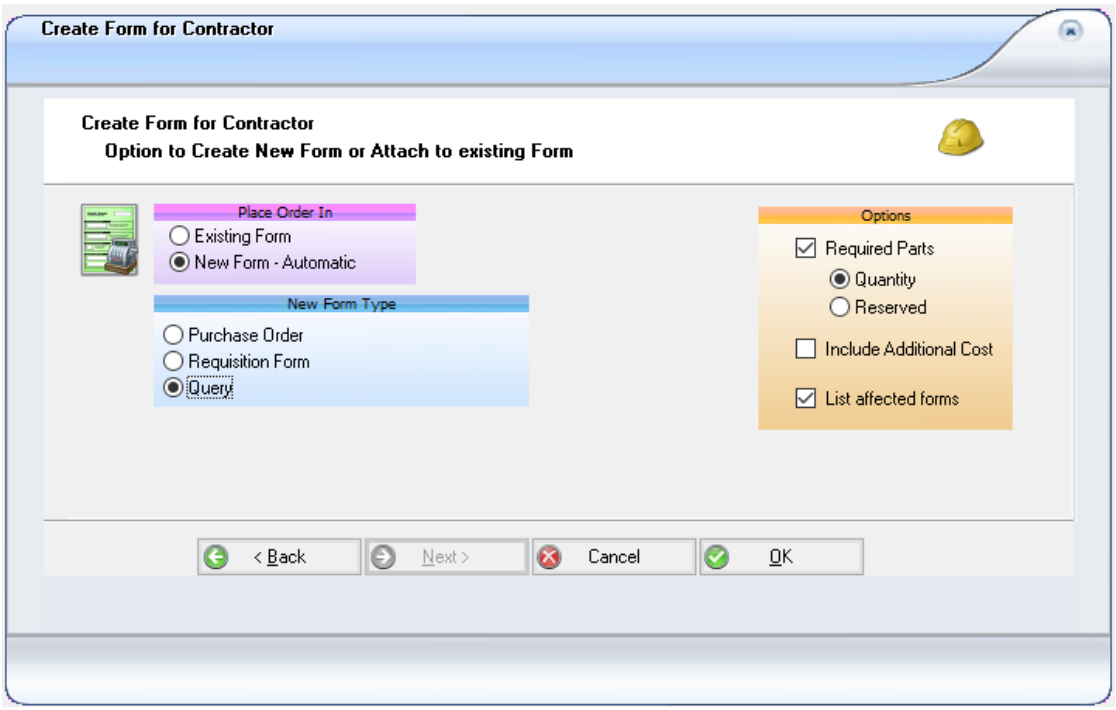
The ‘Order for Contractor’ wizard will open:



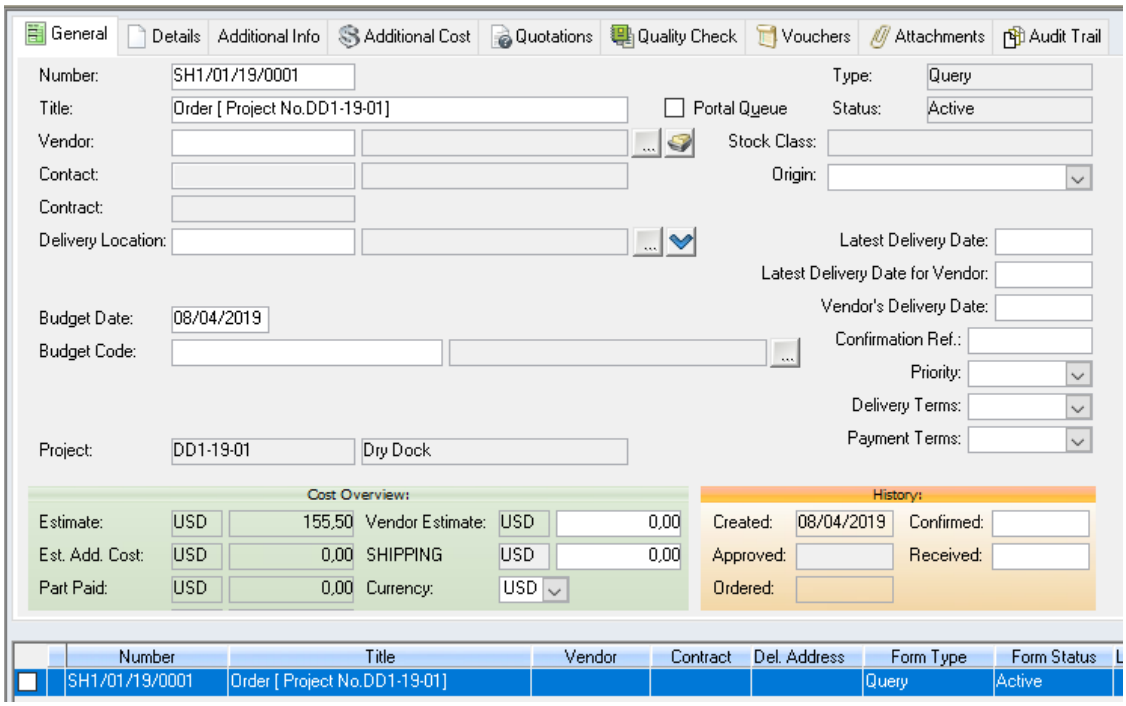
Select which (Issued) Projects Items are to be part of the Order Form to be created:



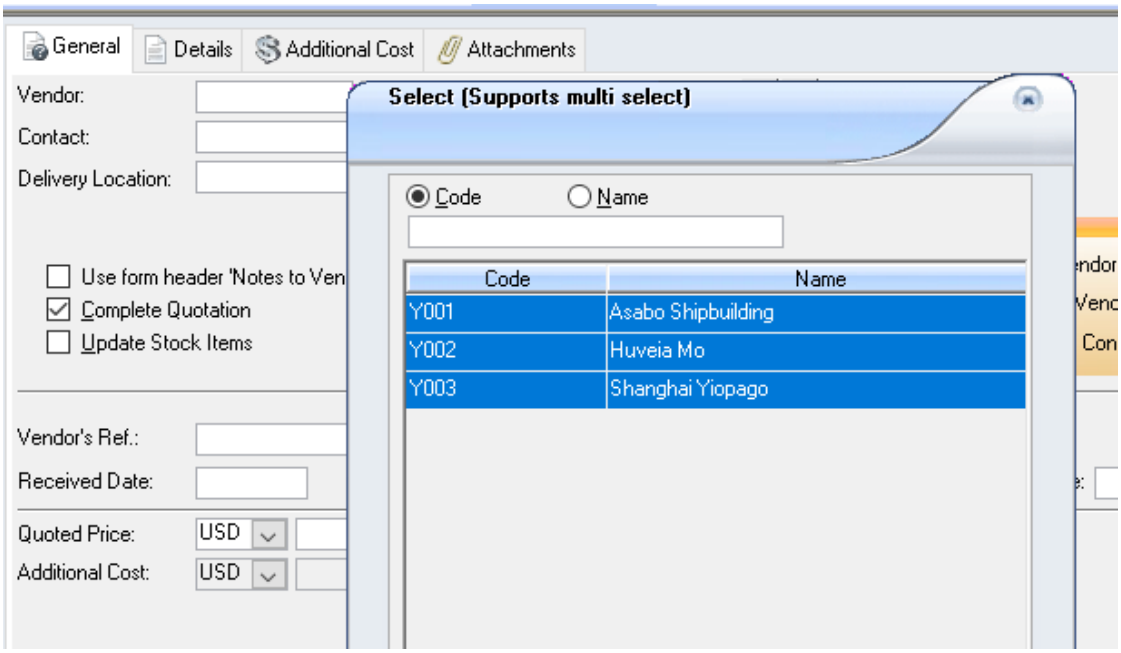
Depending on access defined, select the attributes for the new Order Form and what needs to be included on the Order Form resulting form this action:



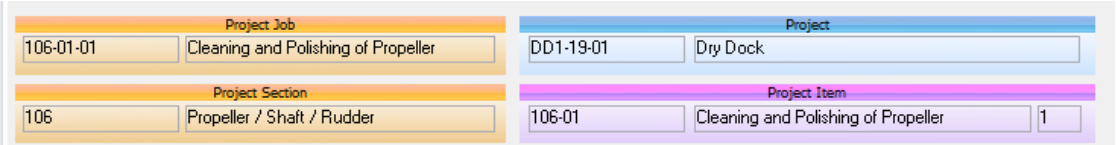
The Order Form is generated linked to the Project:



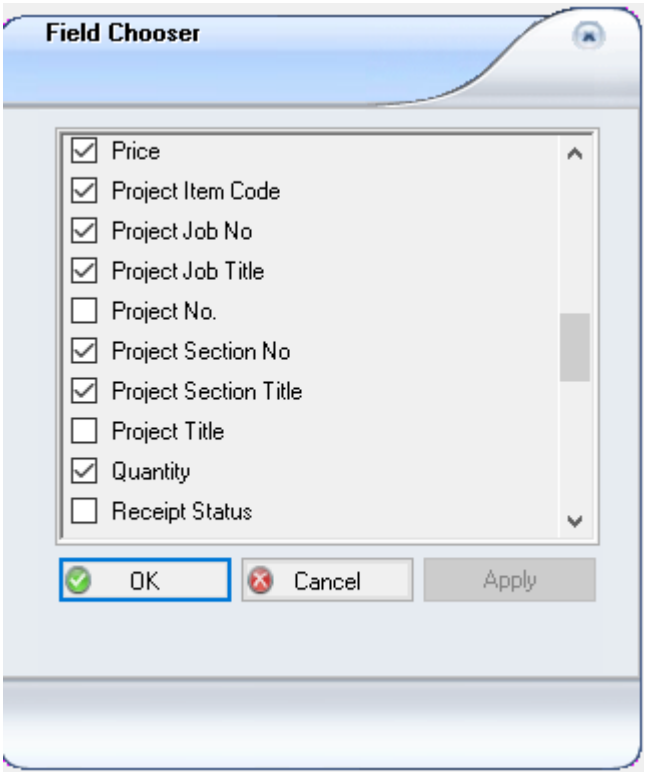
When adding the Vendors for the Quotations on the Order Form, the system will only return the addresses that were defined as the Contractors against the Project.



On the Line Item details of the form, all related information with regards to the Project is listed:

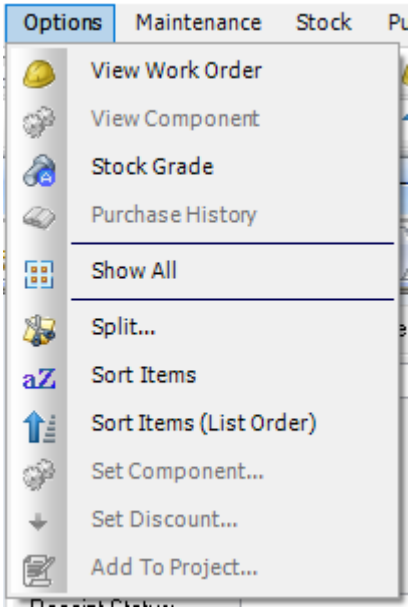


On the Line Items window for the form, utilizing the Field Chooser functionality, it is possible to add the columns related to the Project Information (Project, Section and Project Item) to the list view.



Project Section No	Project Section Title	Project Job No	Project Job Title	Rev.
104	Deck Equipment	104-02-01	Load test of Deck Cranes	1
104	Deck Equipment	104-03-01	Pilot Accomodation Ladders	1
106	Propeller / Shaft / Rudder	106-01-01	Cleaning and Polishing of Propeller	1
106	Propeller / Shaft / Rudder	106-02-01	Measure / Report of Rudder	1
107	Main Engine	107-03-01	R001 - ME, REPLACE ROLLING CONTACT BEARINGS	1

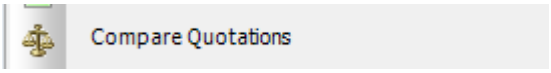
The sort order of the Line Items can be adjusted to reflect the sort order with regards to the Project items utilizing the Options menu:



Comparing Quotes

Once the quotations have been received (note that for this all standard functionality within the Procurement module including the e-Business solutions can be utilized) the cost reported through the quotations by the different Contractors can be reviewed on the Quotation Compare window.

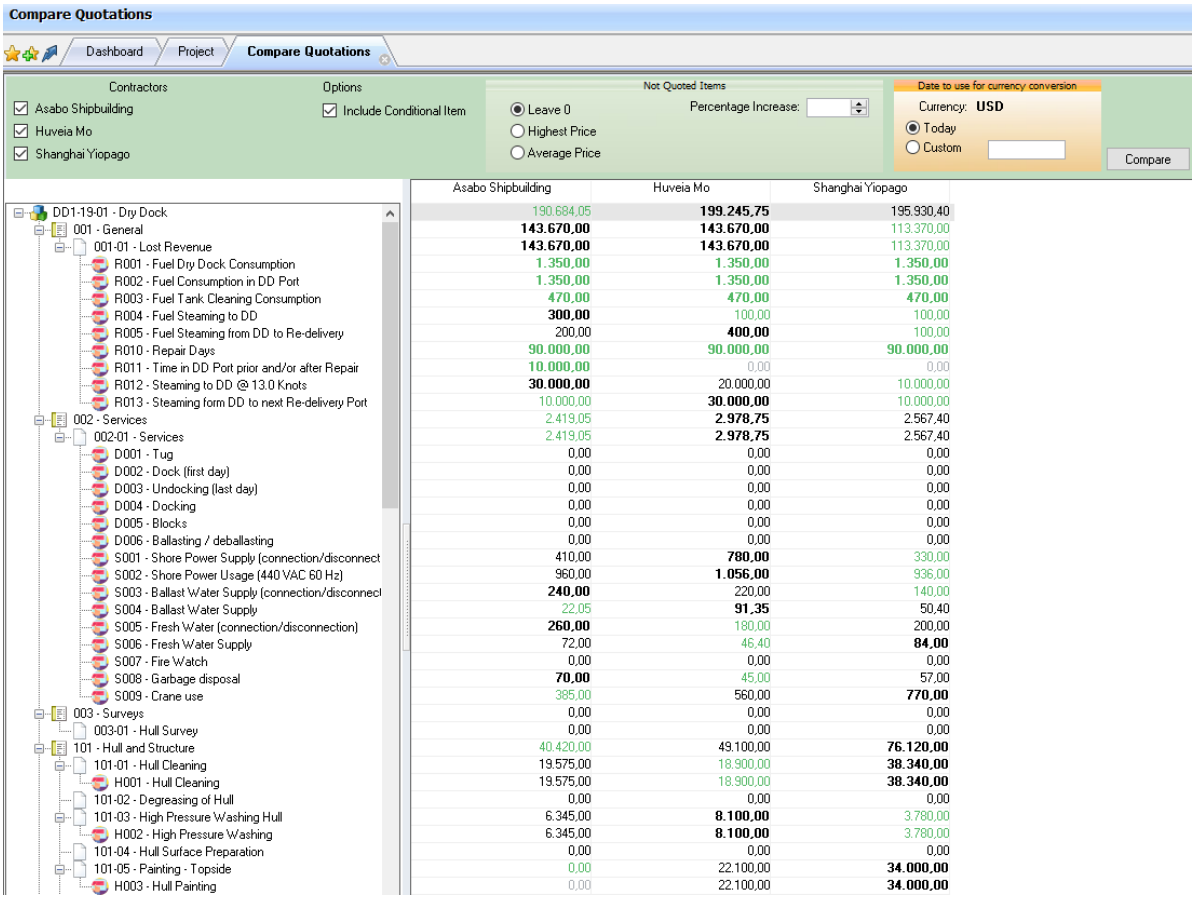
Open this window from the Options menu in the Projects window:



Upon defining the attributes in the top section of this window, press the [compare] button to have the system generate the quotation compare overview.

The settings are:

- Contractors – selection which of the contractors the comparison should be done between.
- Conditional Items – select whether or not Project Items defined as conditional should be part of the comparison.
- Non-Quoted Items – define what should be shown in case of items not quoted by one or more of the Contractors. Options are to Leave it 0 (default option), list the Highest Price or the Average Price of all other Quotations for that Item. There is also the possibility to add a percentage to increase that price with.
- Date to use for Currency Conversion – by default – if difference Currencies are quoted, the system well convert these into the project currency according to today's exchange rate (assuming populated within the system in the list of exchange rates) but it is possible to register an alternative date for the exchange rate to do the conversion with.



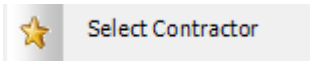
On the right hand side the complete overview of all Project Sections and Items is listed which can be collapsed and unfolded as needed. This does include the 'non-quotable' activities as defined against each of the contractors.

In the cost overview, the highest price is marked in **bold**, the lowest price in green.

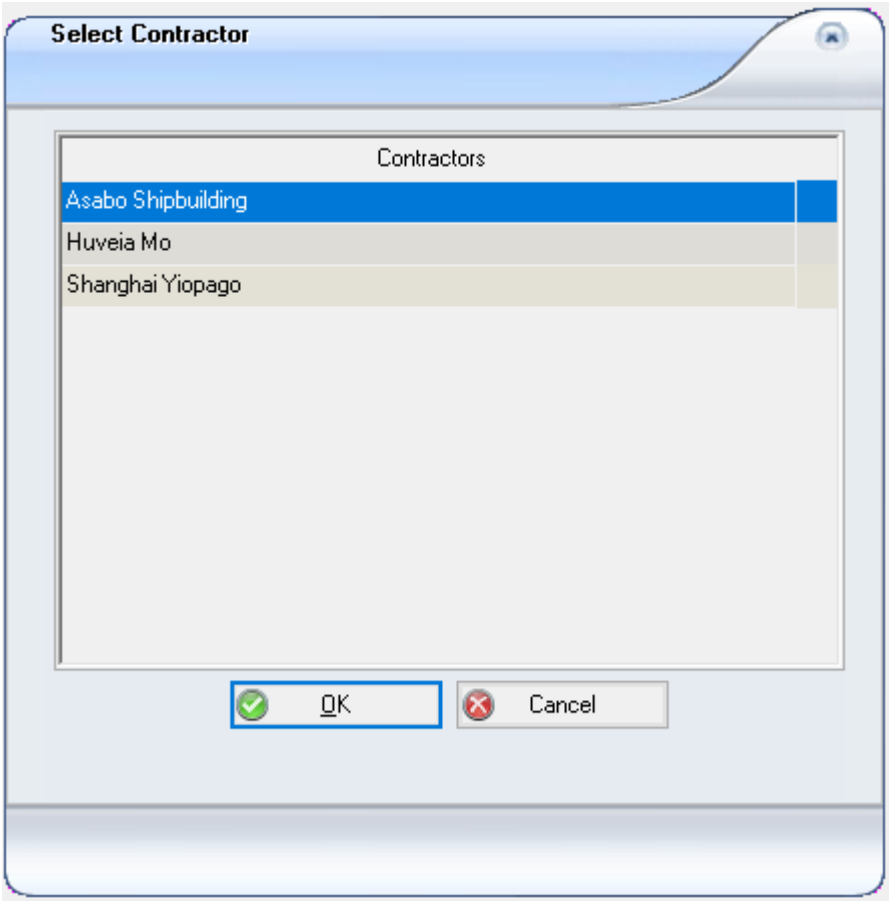
The Quotation Compare window will always compare prices of the same revisions of Project Items and the latest revision of each. Regardless of whether they originate from different Order Forms or not.

Selecting the Contractor

With quotations compared and a decision made from the options menu select



to select the Contractor the project will be granted to:



This sets the Contractor on the Projects General tab.

On the Order From, this contract is selected as the vendor and the price information from the Quotation(s) is set on the Line Items of the Order Form.

Should Project Items be linked to more than one Order Form (which can happen if quotations were needed for newer revisions of some Project Items), the Select Contractor will offer to merge these all into one form.

Sub-Contracting Project Jobs - Placing a Job on an Order Form

Project jobs can be sub-contracted out to an external supplier by placing the work orders onto purchase forms and ordering each one as a service line item.

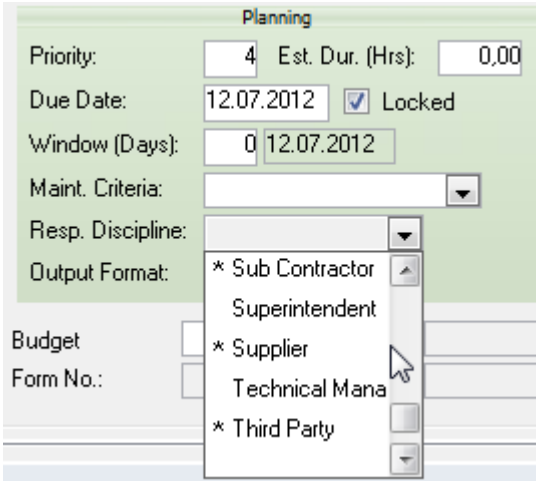
Jobs are placed on order forms by choosing one or more disciplines first and then tagging the jobs defined with the selected discipline(s) to add to the form. As long as the system parameter 'Only Allow to Add Project WO for External Disciplines to Order Forms' is set to TRUE, a job can only be sub-contracted if the **Responsible Discipline** assigned to it is an 'external'[1] one. If the parameter setting is changed to FALSE, jobs with any discipline assigned can be selected.

[1] If no external disciplines are available, define one or more as such in the register at File > Open Register > General > Disciplines.

Assigning a Responsible Discipline to a Job

Every job you are going to sub-contract needs a responsible discipline assigned to it.

1. Open the Projects window and select an item in the hierarchy.
2. Select a job in the list.
3. Use the **Resp. Discipline** drop-down list in the Item tab Jobs sub-tab to choose a discipline. External disciplines are marked with a star:



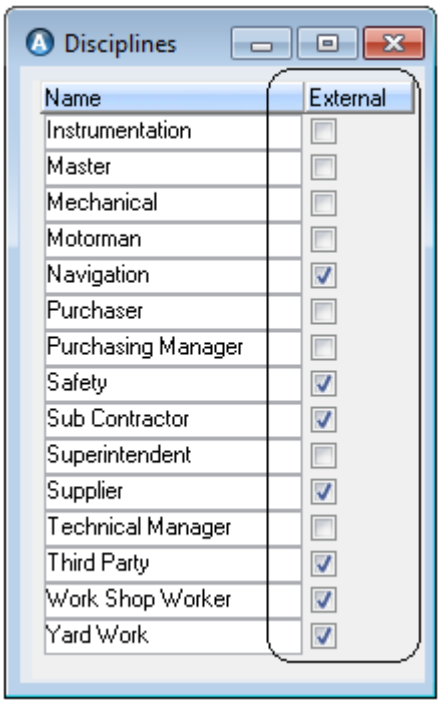
4. Make sure every job to be sub-contracted has a discipline assigned[1].
5. **Save** the window.

What if No External Disciplines are Available?

If no external disciplines are available, define some:

1. Go to **File > Open Register > General > Disciplines**.
2. Choose a discipline in the list or add a new one.
3. Check the **External** box beside the applicable discipline:

[1] If the parameter 'Only Allow to add Project WO for External Disciplines to Order Forms' is set to TRUE, the jobs to be sub-contracted require an external discipline.



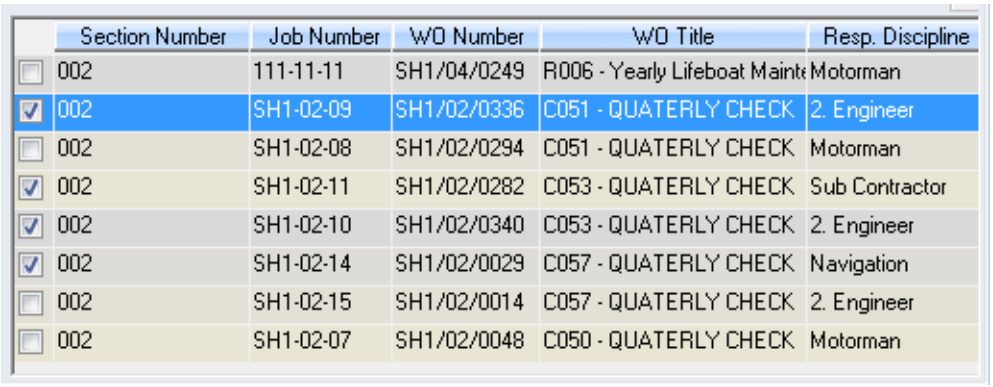
4. **Save** the register.

Placing the Job(s) Onto Order Forms

To place the jobs onto order forms:

1. In the Projects window select a project or section.

   Remember, you are going to order jobs by discipline: all project work orders with the selected discipline(s) will be ordered, unless you tag a selection of jobs in the list first:

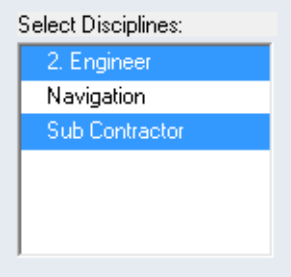


Section Number	Job Number	WO Number	WO Title	Resp. Discipline
002	111-11-11	SH1/04/0249	R006 - Yearly Lifeboat Maint	Motorman
002	SH1-02-09	SH1/02/0336	C051 - QUATERLY CHECK	2. Engineer
002	SH1-02-08	SH1/02/0294	C051 - QUATERLY CHECK	Motorman
002	SH1-02-11	SH1/02/0282	C053 - QUATERLY CHECK	Sub Contractor
002	SH1-02-10	SH1/02/0340	C053 - QUATERLY CHECK	2. Engineer
002	SH1-02-14	SH1/02/0029	C057 - QUATERLY CHECK	Navigation
002	SH1-02-15	SH1/02/0014	C057 - QUATERLY CHECK	2. Engineer
002	SH1-02-07	SH1/02/0048	C050 - QUATERLY CHECK	Motorman

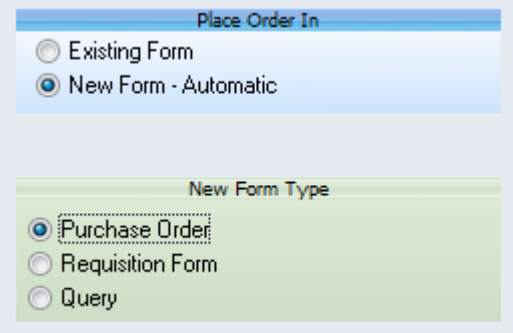
2. Go to **Options > Order**.
3. AMOS lists all disciplines[1] that have been assigned to the jobs in the selected project - or those assigned to the jobs you have flagged.

   Select a required discipline for which to order jobs. Or select multiple disciplines by holding the **Ctrl** key as you click:

[1] If the parameter 'Only Allow to add Project WO for External Disciplines to Order Forms' is set to TRUE, only external disciplines linked to project jobs are shown. Set to FALSE, all disciplines associated with project jobs will be shown.

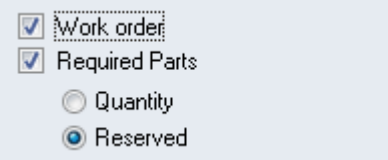


4. Decide whether to add the jobs to an **Existing** form or to create a **New** form:

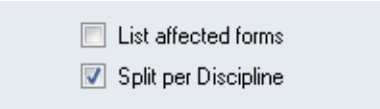


If you opt to create a new form specify its **Type**.

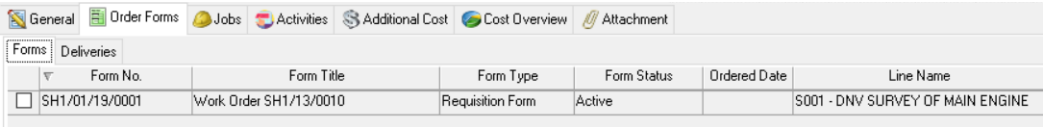
Work Order is checked by default - each work order will be added to the form as one service line item. Each work order probably has a list of parts in the Required Parts tab. To order these parts at the same time check the **Required Parts** checkbox. Flag either **Quantity** or **Reserved**:



5. AMOS will place the parts onto order forms. Parts which have already been placed on a form will not be ordered twice. You will be informed if some or all parts have already been ordered.
6. Flag **Split per Discipline** if you want to make a separate form to contain the jobs tied to each discipline you selected:

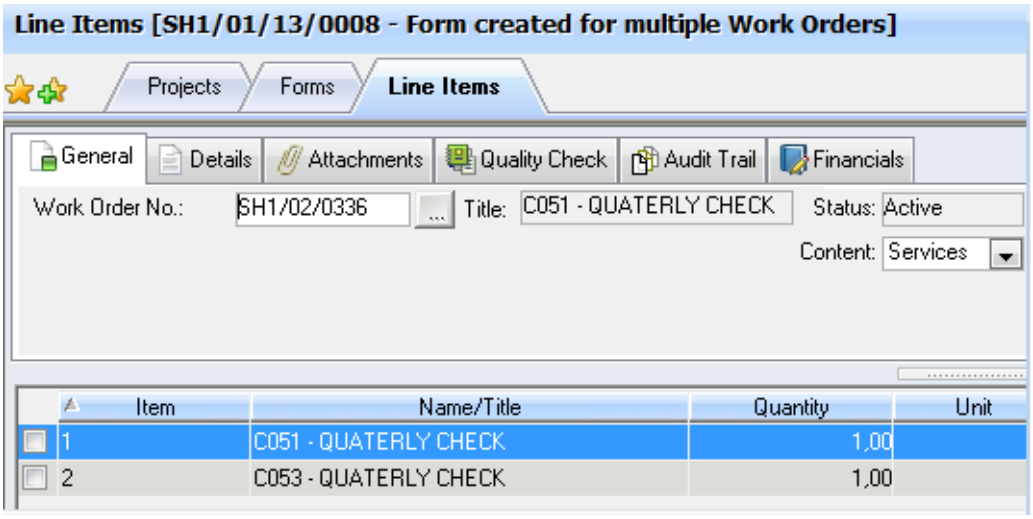


7. Click **OK** to create the forms and return to the Projects window.
8. The jobs with the disciplines selected in step 3 will now be listed in the Item Order Forms tab for the selected project along with the form details:



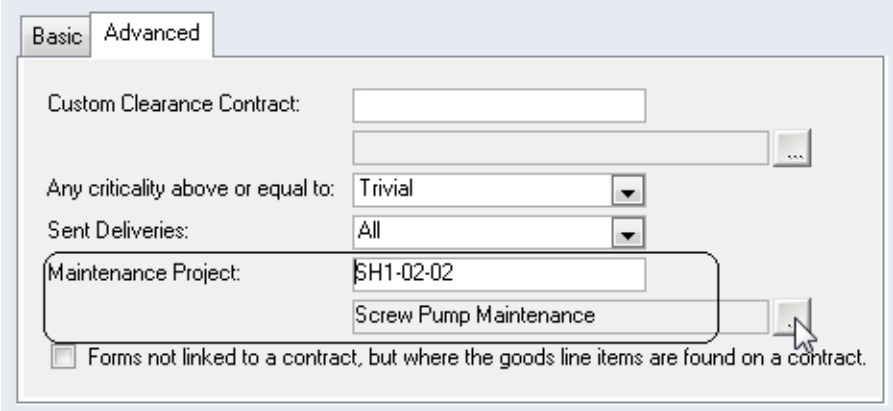
If you chose to list affected forms the Forms window will open. Otherwise, selecting a line and clicking the **Forms** button opens the Forms window.

9. You can edit the form header in the Forms window General tab - for example, change the automatically generated **Title**. Select **Options > Line Items** in the Forms window to open the Line Items window for the form showing the work order(s) now belonging to it:



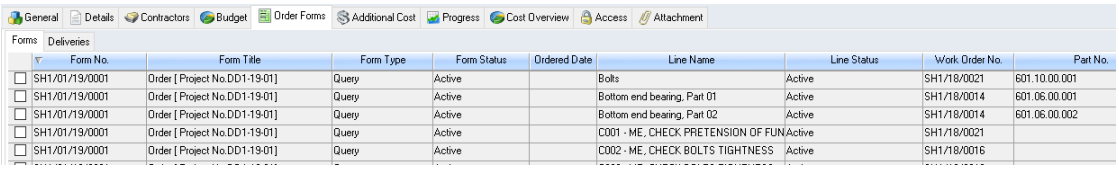
10. Handle the form in accordance with usual purchasing processes.

The Forms window filter Advanced tab includes an option to retrieve any order forms related to a particular project, or containing project-related required parts as line items:



Project Order Forms

Form the Order Forms project on the Projects window, a complete overview is provided of all Purchase Order Forms linked to the project to allow for a quick glance at the status:



This **Order Forms** tab also allows access to any Deliveries related to these purchases to allow to review where they are within the logistics process.

As available elsewhere in AMOS Business Suite, the remote window functionality is available here as well, so to open an Order Form for further processing, simply double click the Order Form number in this overview to accomplish that.

Should more than one form be opened for processing in the Order Form window, utilize the buttons at the bottom of this window:

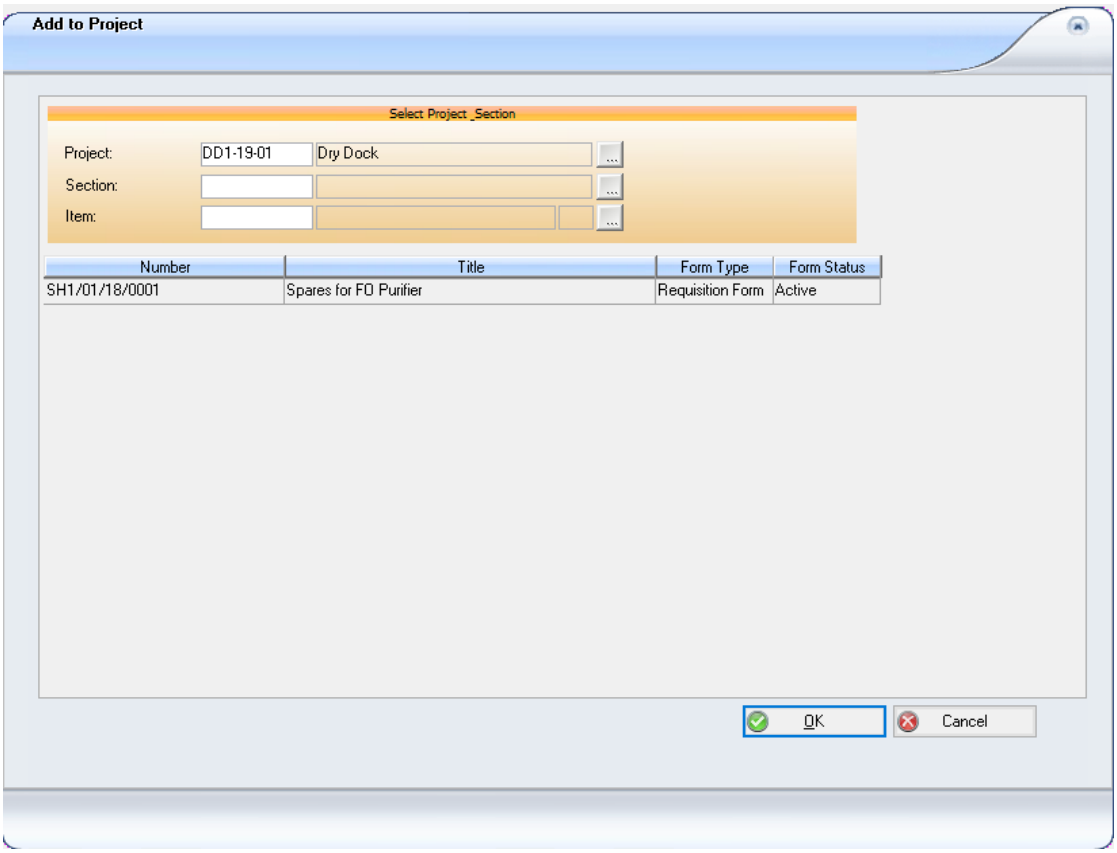


The **Forms** button opens any selected Order Forms (use the checkbox in the first column of this window to identify the Order Forms that should be shown) or click [All Forms] to open the Order Form window with all the forms listed included.

As outlined earlier in this chapter, it is possible to generate Order Forms for the main Contractor as well as other sub-Contractors from this window through the specific options introduced for that.

It is however possible to also link an Order Form not created through the Projects window to a Project afterwards. This could be for example Parts on order which are needed for this Project but not linked to the Project as such.

This can either be accomplished from the Project window by selecting the Option ‘Add Order Form’ from the Options menu, or doing so from the Order Forms window utilizing the ‘Add to Project’ option there when selecting the Order Form to be included.



Define the Project, Section and Item the form is to be linked to and upon confirming with [Ok] the form will be linked to the Project, showing up there and having the links to the Project listed on the Order Form.

It is possible to link more than one Order Form to a Project by selecting the Forms first before the ‘Add to Project’ option is selected.

Copying a Project

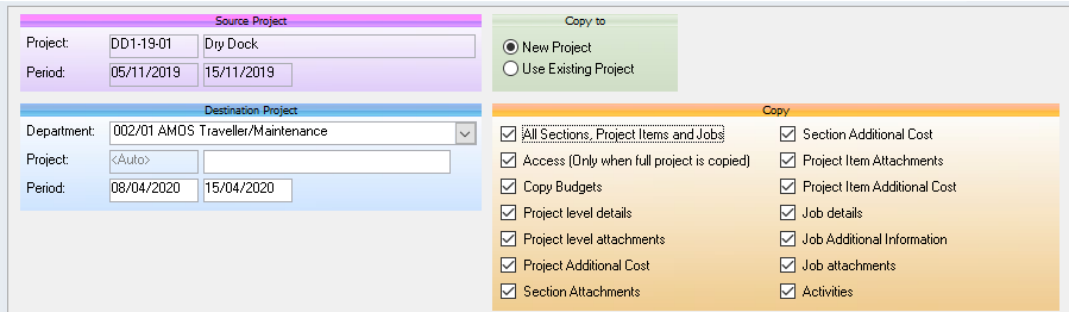
Copy an existing project and make appropriate changes to save time when creating a new project that is similar to another one you already have.

- You can copy information from one existing project or section to another one.
- You can copy entire projects, sections, or job details and requisition work orders within one department or across departments.

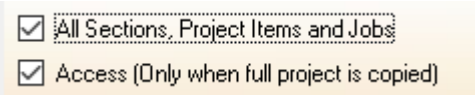
Note: Due to sharing restrictions, it is not possible to copy project jobs linked to existing, periodic work orders. Only requisition work orders created manually in the Projects window can be copied from one project to another.

Copying Part or All of a Project

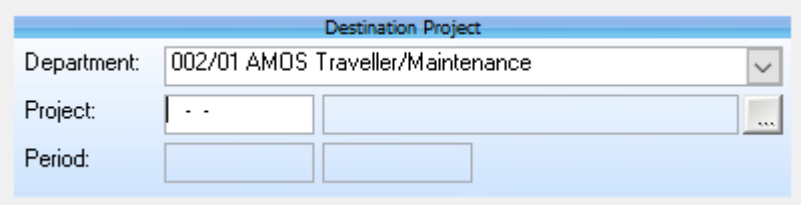
1. Open the Projects window and select a project or section in the hierarchy to copy *from*.
2. Go to **Options > Copy Project.**
3. The selected project appears under **Source Project**. Choose to copy to a **New Project** or to **Use Existing Project**.
4. If you chose **New Project**, use the fields under **Destination Project** to select a **Department**[1] and enter a name for the new project. You can also change the default **Period** dates:



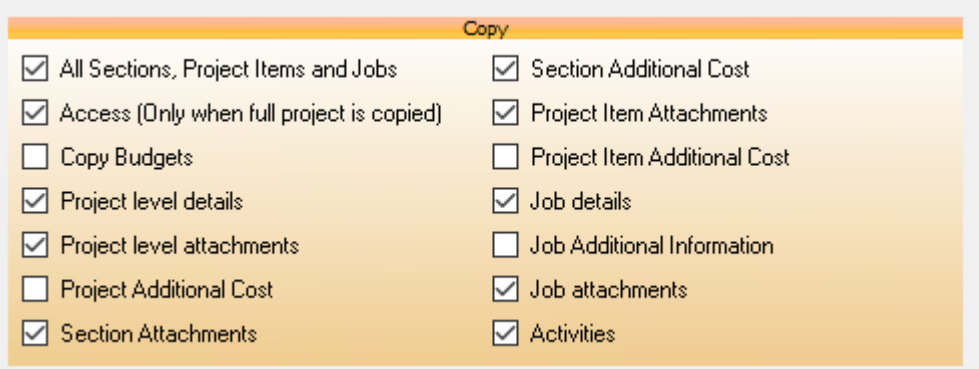
5. When creating an entirely new project you can specify to copy the source project's **Access** settings:



6. If you chose **Existing Project**, use the fields under **Destination Project** to select a **Department** and lookup an existing project. The project **Period** dates come with it:

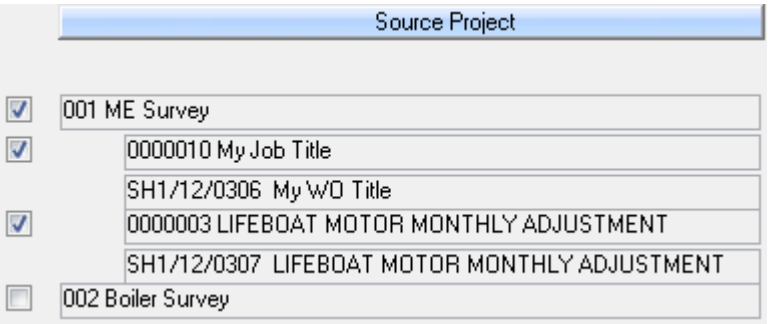


7. Select the items to copy from the source project:



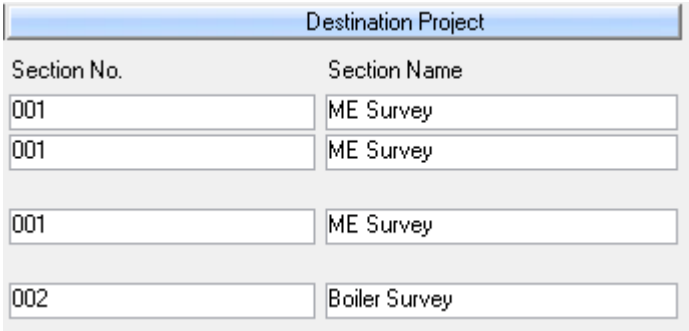
8. Check **All Sections and Jobs** or, copy individual sections/jobs by checking those applicable in the **Source Project** list:

[1] When the Destination department differs from the Source department, work order information like component, function, discipline, maintenance type and cause, etc., will only be copied if the relevant sharing parameters are the same at both installations. If any non-shared fields are mandatory, or if differing work flows are defined at the two installations, it will not be possible to copy the work order(s).

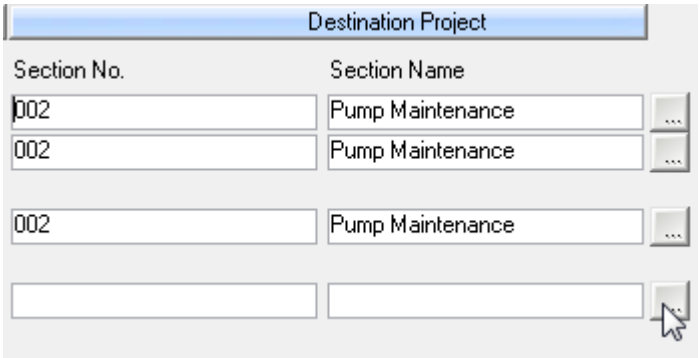


Some will be checked by default, depending on whether you selected a project or section to copy from in the hierarchy in step 1.

9. If you are copying to a new project the **Section No.** and **Section Name** will be supplied by default in the **Destination Project**. These can be edited:



If you are copying to an existing project, lookup the **Section No.** and **Section Name** in the destination project to copy the checked sections/jobs to:

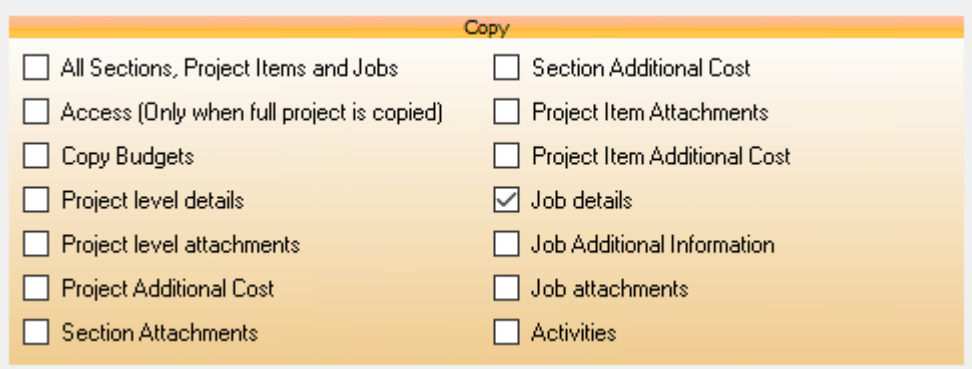


10. Click **OK** to copy the project information and return to the main window.

Copying Job Descriptions

Job description text for project jobs is contained in the **Item > Jobs > Details** tab. You may have added or changed these job descriptions to suit a particular project.

To include job descriptions (and any modifications made to each one) in a project copy operation flag 'Job details':



AMOS will copy the contents of the Item > Jobs > Details tab for each included job from the original project job. If a later job description revision exists in the system for any of these jobs, it *will not* replace the text on the project job details.

If a newer job description revision exists for any project job(s) and you want to use the latest revision instead, do not include the job(s) in the copy operation. Instead, go to **Options > Create Job(s) from Job Description(s)** to re-create the job(s) for the new project, thereby applying the latest revision(s). Any item-level changes to the Details sub-tab text will in this case be lost.

Project Specifications

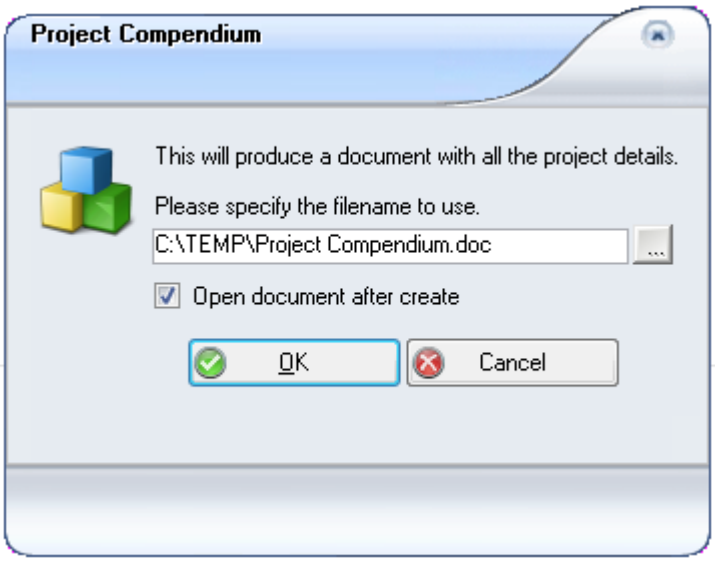
When a project is planned and detailed in the Projects window, the end result is a Project Specification document in MS Word, which makes it easy to communicate back and forth with the involved parties.

Specifications contain the following information in this sequence:

- Front page (defined in the template file)
- Table of contents
- Site specification (the data window d_project_word_vessel_detail within the WOPRO.PBL file)
- Project data details (details page of the project)
- Project Specification Preamble
- Project Sections
- Section (each section starts on a new page)
- Job (each job starts on a new page)
- Work Order
- Project attachments
- Project Specification PostScript

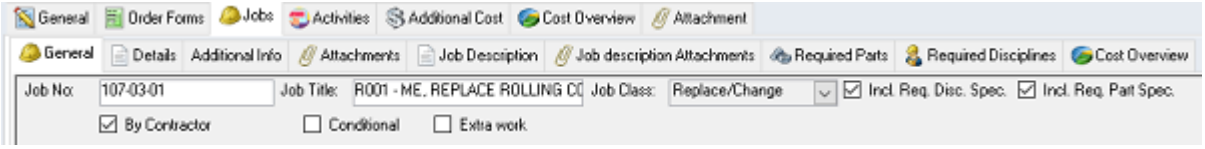
To create a project specification:

1. Open the Projects window.
2. Select a project in the hierarchy. Go to **Options > Create Project Specification**:
3. Use the lookup to browse to a location to store the file, and enter a name to save the file with:



4. Click **OK** to export the details. If you checked **Open document after create option** the project opens up in Word. Otherwise browse to the location you stored it and open it from there.

The contents of the Required Parts and Required Discipline tabs will be included on the printed specification: two checkboxes in the Jobs sub-tab, **Incl. Req. Parts. Comp.** and **Incl. Req. Discs Comp.** are checked by default. Uncheck them to leave them off the specification:



Images attached to project work orders will also be added to the specification, as long as they are supported by MS Word. Supported image file types are:

> 'emf', 'wmf', 'jpg', 'jpeg', 'jfif', 'jpe', 'png', 'bmp', 'dib', 'rle', 'bmz', 'gif', 'gfa', 'emz', 'wmz', 'pcz', 'pcd', 'pcx' , 'cdr' , 'cgm', 'eps', 'fpx', 'mix', 'pct', 'pict', 'tif', 'tiff', 'wpg'

Any other image file type will not be added.

You can also include PDF files in project specifications. Installing Ghostscript is required, to include PDF attachments.

Customising a Project Specification

Users have a certain amount of control over the specification document's content, appearance and layout.

Adding a Custom Logo to a Specification

You can display your company logo on a project specification's front page:

Select a logo or image and save it with the name 'ProjectSpecificationFirstPageLogo.png'. Insert this png file into your report directory (as defined at **Tools > Configuration > Parameters > Directories > Report Directory**). Whenever a user generates a specification AMOS will search the report directory for this file, and if one is available, insert the logo on the front page.

Creating a Custom Template

You can create and insert a user-defined template file containing heading and paragraph styles and formatting. This lets you choose font size and styles, and define header and footer content, changing the style(s) used in the output but not the content itself, nor the order it is presented in.

1. Define a custom template containing the style elements you want to display specification details in. AMOS will read and use the following Styles and Formatting from the file:

   Heading 1, Heading 2, Heading 3, Heading 4, Heading 5, Normal

2. You can also define styles for a header and footer (containing a single level table) in the template. If you do not include a header/footer AMOS will use its default header/footer styles.
3. Any text inserted into the details part of a template will be ignored, so the document part of the template should be left empty.
4. **Save** the template with the name 'ProjectSpecification.dot'.
5. Insert the template file into your report directory (as defined at **Tools > Configuration > Parameters > Directories > Report Directory**).

When a user generates a specification AMOS will search the report directory for this file, and use the template styles if one is available. If no user-defined template is available, AMOS simply reverts to specification defaults.

Retrieving Additional Information from the Database

You can insert SQL commands in the header and footer, to retrieve additional details from the database and display them in the specification. This requires a single level table in the header and/or footer to contain the SQL statement.

1. Insert a single row table into the header/footer on the template file.
2. Write the SQL[1] in plain text in the first row/cell of the table. Create a bookmark using the SQL text.

   Start the bookmark name with the label “customsql”. If you are creating multiple bookmarks make sure that the names are not duplicated: for example use "customsql01", "customsql02", etc.

3. **Save** the template to the report directory using the name 'ProjectSpecification.dot'.

When a user generates a specification document, AMOS will scan the template for any bookmarks, execute the SQL and then replace the SQL command in the header/footer with the resulting text.

Here is a sample SQL command to get the user name of the person who created the project:

```
SELECT amosuser.name
FROM amosuser, project
WHERE project.createdby = amosuser.userid
AND project.projectid = :AMOS_ProjectID
```

SQL statements may contain constant variables. The supported variables are:

```
:AMOS_ProjectID
:AMOS_CurrentDeptID
:AMOS_UserID
```

Project Costs

The Cost Overview tab provides a summary of costs throughout the stages of a project:

- When a project is selected, all related project costs are listed in the tab.
- When a section is selected, that section's costs will appear in the tab.
- When a job is selected only the costs related to that individual job will appear in the tab.

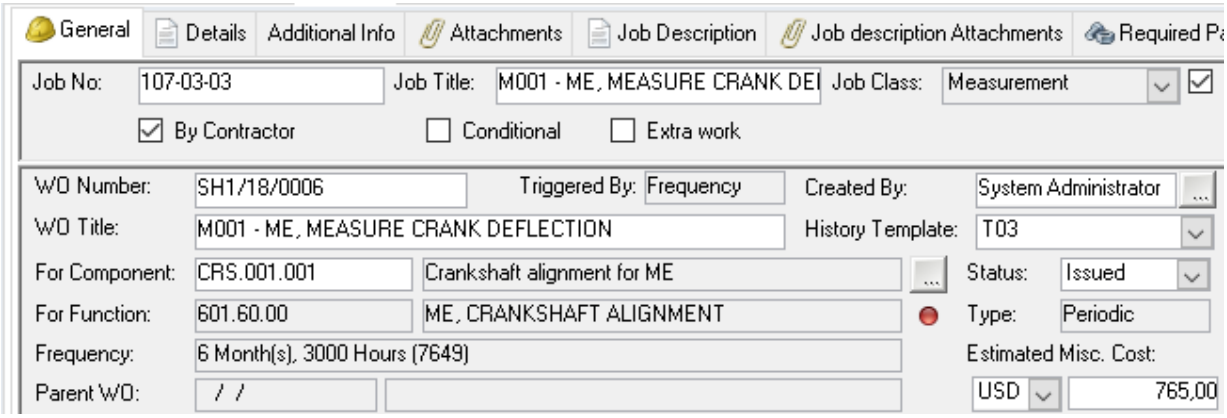
The radio buttons at the top lets you view either **Estimated** or **Actual** costs. Furthermore, costs can be displayed in either **Base** or **Actual** currency. Base currency is the default; selecting actual will display the currency any costs were registered in.

[1] The SQL should produce one record and one column of string data type. If the result counts more than one record, only the first record will be used.

Cost Estimates

To display an overview of estimated costs, click the **Estimated** radio button at the top of the tab. The content in the tab changes according to your selection of a project, section or an individual job.

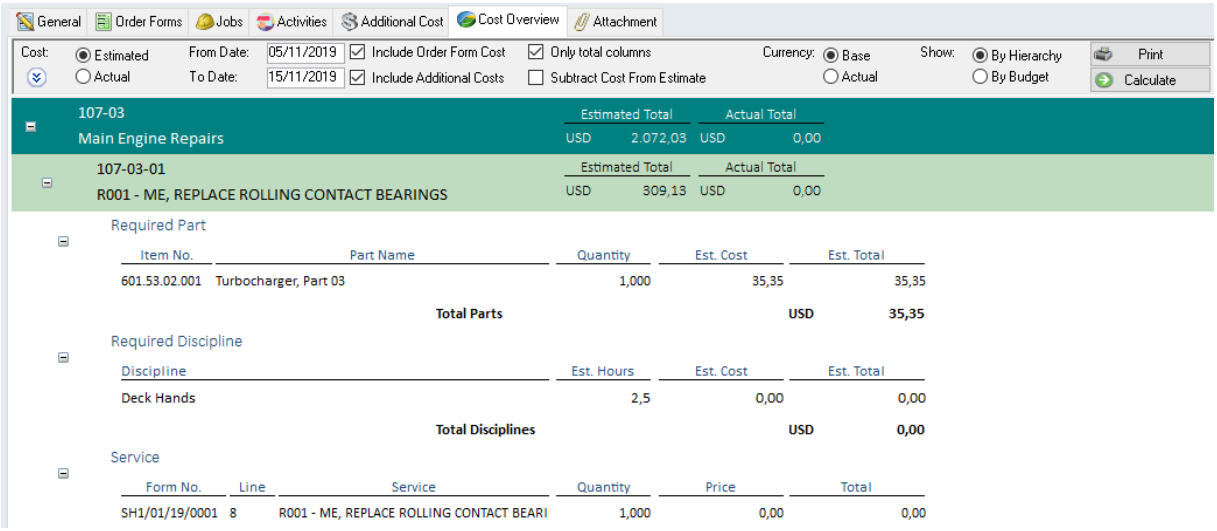
Estimated miscellaneous costs are drawn from the work orders' General tab:



Selecting a project or section in the hierarchy shows the total estimated miscellaneous cost from all work orders in the project/section:

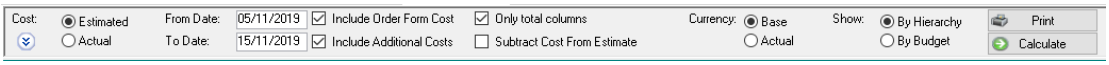
The parts and disciplines needed to carry out a job are added to work orders in the Required Parts and Required Disciplines tabs. Select a project or section to see the total estimated costs for these items, drawn from all work orders in the entire project/section:

Select a job in the list to see a breakdown of the total estimated cost for required parts and disciplines on that work order only. A **Discipline** and **Item No.** section are added to the tab:



The **Estimated Total** reflects the sum of all of the above work order costs (miscellaneous, parts and disciplines) on the selected job, section or entire project.

Check **Include Order Form Cost** at the top of the Cost Overview tab to see any costs related to jobs placed on purchasing forms. The costs are drawn from the purchase form line items.



To prevent the line items costs for work orders which have been placed on order forms from being included in the estimated totals for the project, check **Subtract Cost From Estimate**. Leave the box unchecked to include the order form amounts in the total cost.

Unchecking the '**[x] Only total columns**' adds the columns capturing the **Est. Misc. Cost**, **Est. Req. Disc** and **Est. Req. Parts** columns allowing for an overview where the cost originates from.

Est. Misc Cost		Est. Req. Disc		Est. Req. Parts		Estimated Total		Actual Total	
USD	0,00	USD	0,00	USD	198,97	USD	198,97	USD	0,00

The Cost Overview is presented through the overview of the project hierarchy, if a view is required to see the cost based on the different budgets used within the project, the 'Show [x] by Budget' offers that option.

The Print button offers to option to print the details of the cost overview.

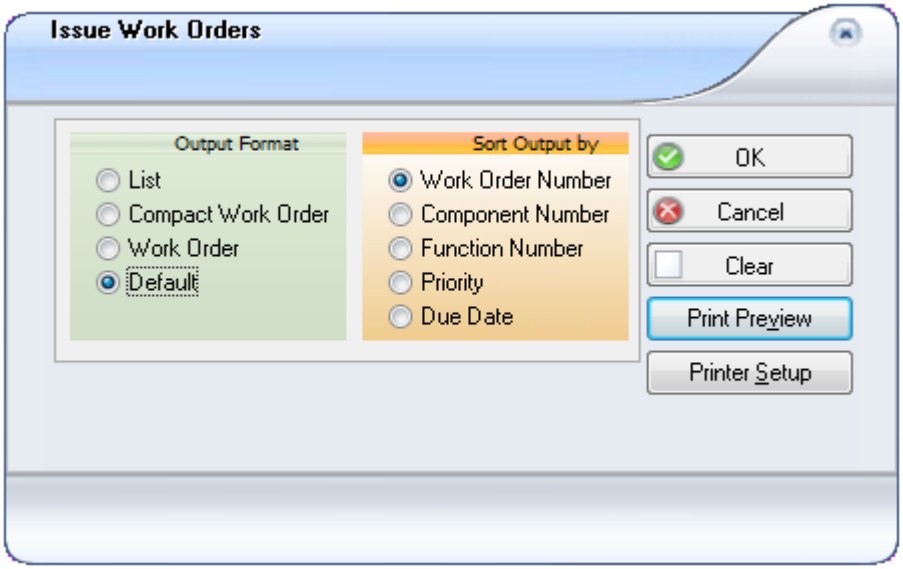
Actual Costs

To display an overview of actual costs, click the **Actual** radio button at the top of the tab. The content in the tab changes according to your selection of a project, section or an individual job. Final costs as specified during report work on the individual, project or section work order(s) are reflected here.

Setting **From Date/To Date** in the top of the tab defines the transaction dates for actual costs: only costs registered within this timeframe will be considered in the total.

Working on a Project

Depending on the initial status[1] of project work orders, you may have to issue work orders to get started. Go to **Options > Issue**:



Click **OK** to issue and print the work orders.

When the project start date arrives, begin carrying out and reporting the work. Select a job in the project list and go to **Options > Report Work** to report the work order, like any other work order. Eventually when the work on any job is done, remember to flag the **Mark Work Order as Completed** checkbox in the Report Work window. This changes the **Status** on the selected project work order to Completed.

As work is carried out, keep track of it by selecting **Options > Maintenance Log**. There is also a Progress tab on the Projects window, where the selected project's sections and jobs are visualised in a bar graph showing the status of each job so far.

When any periodic work order is reported and set to completed, AMOS will generate the next one automatically and it will be listed in the Work Orders window, unattached to any project.

[1] The initial status of a work order created manually for a project job is set according to the system parameter Tools > Configuration > Parameters > Options > General > Default Settings > 'Initial Project Work Order Status'. Initial status for project work orders is also available to set in the Work Flow Configuration window, if Maintenance Work Flow is in use.

Completed work orders will be filed automatically or not according to a parameter setting[1]. If the parameter is set to false, file and control completed work orders by flagging them in the list and then selecting **Options > Control**.

When a project is finished, set the **Status** on the General tab to Completed.

Work Planning

The Work Planning option from the Projects window allows to access the same functionality as in the general AMOS Maintenance Work Planning window, but it limits the scope of the included tasks to those that are part of the selected Project.

Within this window it is possible to plan and make other changes related to the planning of the different jobs and their dependence. See the dedicated section on Work Planning in the AMOS Maintenance & Purchase guide.

Progress

The Progress tab shows the jobs per section within the project and their status, providing a quick overview of all Project Jobs – planned, overdue and completed.

Configuration

Customizable Work Flow

User defined Project Statuses with the access definitions of whom can apply these status transformations can be defined through the customizable Work Flow definition of Projects.

When not in use, each Project can be set to a status from a standard set of statuses (New, Waiting for Approval, Started, Completed and Cancelled) and the related access. When the customizable Work Flow is in use, these are entirely configurable.

See the Work Flow Configuration section in the AMOS Business Suite documentation for a full description on how to set this up.

Dedicated Projects window for Alert Definitions

In order to push information to be followed up by (groups of) users with regards to Projects – for example the approval of Project Items – the Alerts definition supports the Projects window allowing to access the information by double clicking on the alert.

See the Alert Definition section in the AMOS Business Suite documentation for a full description on how to set this up.

Updating Counters and Measure Points

AMOS can use counters and measure points to determine when maintenance jobs are due and work orders need to be generated. This means counters and measure points must be updated at regular intervals, so AMOS can calculate the next maintenance due date for components that depend on them.

- You can manage updates in the dedicated Counters/Measure Points Update windows. See "Counter and Measure Point Update Windows" on the facing page. Or,
- You can manage updates in the Components window Counters and Measure Points tabs. See "Update Counters in the Components Window" on the facing page and "Update Measure Points in the Components Window" on page 177.
- You may also update measure points from the Report Work window while reporting on a work order. See "Reporting Measure Points" on page 189

[1] Tools > Configuration > Parameters > Options > Maintenance > Auto-Filing of Work Orders >

Counter and Measure Point Update Windows

To perform an update in the dedicated Update windows:

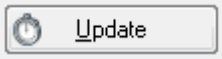
1. Go to **Maintenance > Counters/Measure Points > Update**.
2. Search in the list or click **Filter** to update all counters/measure points at the same time.
3. Press **CTRL+P** to print out the list.
4. Take the list around to the read-out locations and update the list, then return to AMOS.
5. Click in the **Current Value** field and enter the new value. The current **Date Read** will be added to automatically. You can also change values by selecting **Options > Set Current Value** and **> Add to Current Value.**

   If the 'Allow Negative Value of Counters' parameter is set to FALSE, the Update window will not allow a counter value which results in the Current value being lower than the previous value.

   Updates to measure points replace the previous reading with a new one and no average is maintained by the system.
6. Click **Save**. AMOS now updates the total running time for the components controlled by the counters you have updated, and compares current values to the set values for components controlled by measure points, and recalculates the date-due for all jobs accordingly.

Update Counters in the Components Window

You can adjust counter values from the Components window Counters tab[1] using these buttons:

	When you read a counter on your vessel, select it in the tab and click the Update button to open the Update dialog. Enter a new **Current Date** and **Current Value** for the counter.
	Whenever you insert a new counter or want to restart a counter, set the starting values. Select a counter and click this button to open the Set Start dialog.

AMOS will validate the entries you input and allow or prevent saving the changes according to the max per day check values defined on the counter's type. These buttons are access controlled:

Access Control window > Functions tab > Maintenance > 'Counters; Update' and 'Counters; Set Start'.

With the correct access rights, it's possible to manually update the fields directly in the tab:

Access Control window > Fields tab > Maintenance > 'Component, Counter: <Field Name>'.

This ability is usually restricted to someone like the system administrator, because changing the fields manually should only be done to correct a typo or similar error: manual updates do not affect any counter dependencies. Changes in the fields are not validated like updates made with the buttons - if the value you input does not pass, AMOS will warn you but still allow you to save.

Updating Depending Counters

Component counters can depend for their values on other component's counters. You need the correct combination of access rights[2] to Update, Set Start or Replace values on counters which depend on other counters, from inside the Components window Counters tab.

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[1] When the system parameter 'Allow Negative Value of Counters' is set to FALSE, the Update dialog will not allow a value which results in the Current value being lower than the previous value. In this case you may need the access rights to manually update the counters directly in the fields on this tab.

[2] Access Control window, Functions tab > Counters; Update/Set Start/Replace - Counters with Dependency

EXAMPLE: DEPENDING COUNTERS

Counter A on component 2 (A2) depends on Counter A on component 1 (A1).

Counter A on component 3 (A3) depends on Counter A on component 2 (A2).

You can update or set start on A1 and the depending counters will be adjusted accordingly. But you cannot change A2 (and its depending counter) directly, without the correct access. When you have the correct access to change the depending counter A2, if you check the Update Depending Counters box, A3 will also be changed. A1 will not change.

See "Scheduling Jobs: Counters" on page 50 for more information about using counters to schedule jobs.

Replacing a Counter

You can also replace counters in the Components window Counters tab.



When a counter breaks down and you replace it, select the component and then the counter that has been replaced. Click the **Replace** button and enter the starting value on the new counter so AMOS can accurately maintain the **Total Running** value on the component counter.

The **Replace** button is access controlled: **Access Control window > Functions tab >** Maintenance > 'Counters; Replace'

EXAMPLE: REPLACING A COUNTER

A counter is inserted on 20.01.08. It already has a value of 10. This value is entered as the **Latest Start Value**. The counter is updated regularly.

On 21.01.09 the counter breaks down with a **Current Value** of 2021. It is replaced with another used counter which has a value of 500. This **Starting Value** is entered in the Replace dialog along with the date. Upon returning to the Counter tab, 500 has become the Current Value and the **Latest Start Value** for the counter. The former total and date of replacement become the **Latest Zeroed Date** and **Total**.

On 22.01.09 a user reads the counter and updates the **Current Value** to 511. This means that the component has a **Total Running value** of 2522:

2021 - 10 + 511 = 2522

See "Scheduling Jobs: Counters" on page 50 for more information about using counters to schedule jobs.

Counters on Replaced Parts

When a part that takes its counter value from the component it is installed in is replaced, the new part's counter will have a lower value than that of the other original parts in the component. Each part's counter therefore does not take its value directly from the component into which it is installed. Instead, when the component's counter is updated, the difference between the old and the new counter value for the component is added to each of the parts' counters.

See "Scheduling Jobs: Counters" on page 50 for more information about using counters to schedule jobs.

Function Counters

Linking counters to functions allows you to record cumulative counter readings for a function regardless of the component(s) performing it: whenever a component installed in the function has its counter reading updated, the function counter is also incremented by the same amount as the component.

You can alter a function counter at any time without affecting the counters on component installed in the function.

See "Scheduling Jobs: Counters" on page 50 for more information about using counters to schedule jobs.

Update Measure Points in the Components Window

Click the **Update** button in the Components window Measure Points tab to open the Update Component Measure Points window. When you update a measure point with a **Current Value** that falls outside the set values AMOS can generate work orders for the necessary job.

Selecting a measure point in the tab list and clicking the **Trend** button opens a read-only window displaying the measure point's trend graphically. Refer to "Measure Point Trends" below for more about Measure Point Trend graphs.

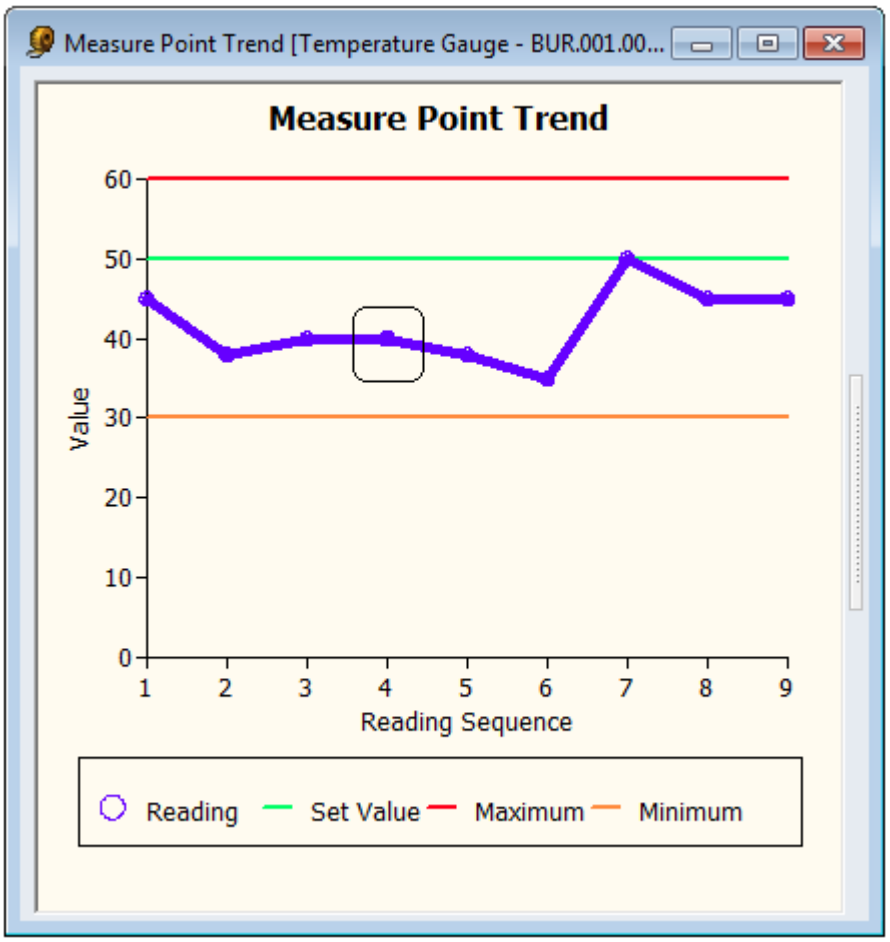
See "Scheduling Jobs: Measure Points" on page 52 for more information about using measure points to schedule jobs.

Measure Point Trends

You can view measure point trend graphs in a separate read-only window. To access the Measure Point Trends window:

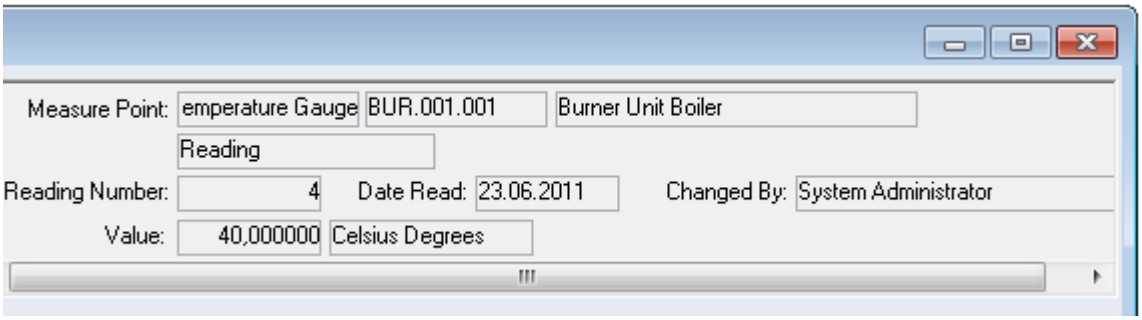
- Select a measure point in the Components window Measure Points tab. Click the **Trend** button. Or,
- Select a measure point in Measure Point Update/Overview window and go to **Options > Measure Point Trend**.

A line graph displays the value of every reading recorded for the selected measure point against the **Set, Minimum** and **Maximum** values. Readings which have taken place so far are plotted on the line graph as a series of small circles representing the **Current** value; clicking on any reading fills the circle in a solid colour to indicate it is selected:



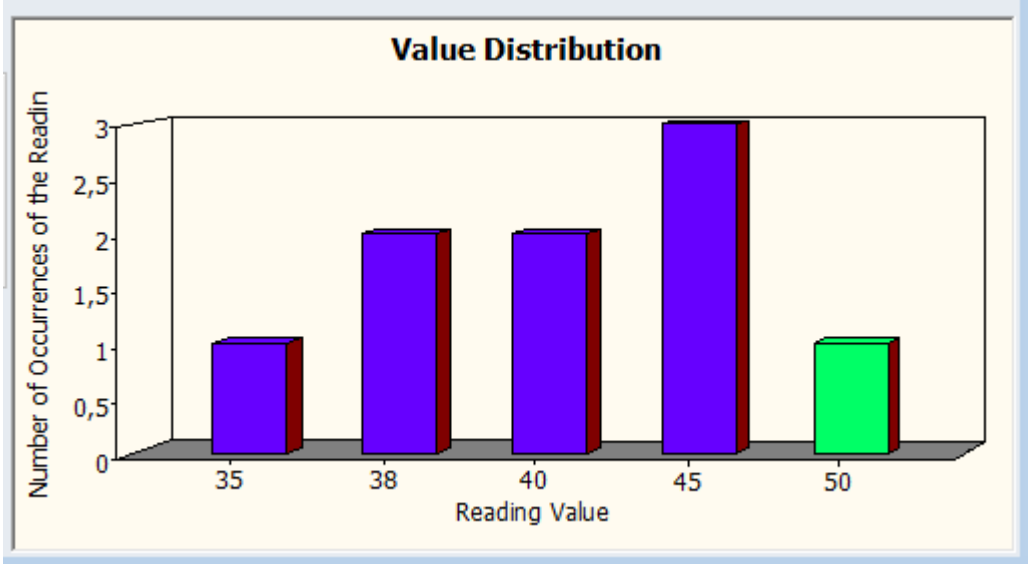
Reading number 4 is selected in the line graph

That reading's details are then displayed in the top right pane of the window:



To move through the readings click in one of the reading detail fields on the top right. Then press the up and down arrow keys on the keyboard to select the next reading and see its details displayed.

A bar graph on the bottom right pane of the window shows all recorded reading values in numerical order, and the number of times each of those reading values occurred. Reading values are rounded up to the next whole number. The bars are colour coded to reflect the same colours used in the line graph to indicate **Set**, **Minimum** and **Maximum** values.



Use the **Edit** menu to copy and paste trends to and from Excel or Notepad and make graphs outside of AMOS. You can also copy a graph and paste it into another instance of the Trend window.

Or, drag and drop readings series from one trend graph to another: open two Trend windows and click on a series, keeping the other trend window visible. When the cursor changes to display a chart icon, drag it to the Trend window in the background and release it. AMOS will ask if you want to align it with the graphs using the reading dates, or insert the new series at the first reading point.

See "Scheduling Jobs: Measure Points" on page 52 for more information about using measure points to schedule jobs.

Counter/Measure Point Overview, Logs

To see an overview of the registered counters/measure points and the components they are linked to, the current values, etc., go to **Maintenance > Counters/Measure Points > Overview**.

The window at **Maintenance > Counters/Measure Points > Counter Log/Measure Point Log** stores all updates, enabling you to view them at will.

In both the Measure Points Update window and the Measure Points Overview window, selecting a measure point and going to **Options > Measure Point Trend** opens a read-only window displaying the measure point's trend graphically. Refer to"Measure Point Trends" on page 177 for more about Measure Point Trend graphs.

Reporting Work

Once a job has been performed you report the work back to AMOS by entering information about who did the work, when, and what materials were used. AMOS uses work reports to update your maintenance schedule and if you do not report work as it is done, AMOS will keep reminding you to do it.

Reporting time and materials used lets AMOS help you keep track of stock and expenses and predict future needs. AMOS can also use these reports to provide the maintenance records you need to document compliance with warranty terms or safety regulations.

Remember:

- A work order is registered as 'Started' the first time you report work on it. The status must be either 'Issued' or 'Started' in order to report work on it.
- For one-time tasks with no job defined that you know about in advance, make a Requisition work order. Report on the Requisition work order as soon as the work is started.
- In some cases maintenance is handled on the spot and reported after it has been completed. Read more about this in the next section.
- When reporting jobs done out-of-turn, remember to flag the **Unexpected Work** checkbox on the Report Work window so AMOS can help you evaluate your maintenance program fairly.
- Reported work cannot be saved if the work is dependent on a counter/measure point that has not been updated.
- If a job has been started or work has been carried out but not completed, uncheck the **Mark Work Order as Completed** checkbox on the Report Work window to enable further reporting.

Reporting work allows you to track the progress of work based on work orders.

- When you report parts used, your stock records and cost records are updated.
- When you report disciplines/time used, your cost records are updated.
- If a history template is defined for your installation, reporting the work enables you to record the data needed for your maintenance log.
- Because the work order is linked to a component, reporting work based on the work order ensures that your maintenance log is complete and correct.

There are different kinds of work and work orders and so there are several factors which influence the content and use of the Report Work window. Tasks to perform as well as general information to provide when reporting various kinds of maintenance work are discussed in "Reporting Resources Used" on page 182 to "Simple Reporting on Rounds" on page 191

When a job is done and there no is more work to report on it, flag the **Mark Work Order as Completed** checkbox on the Report Work window Details tab. AMOS will update the work order's status and completed date accordingly in the Work Orders window. Depending on what kind of work order it is, when the status is set to Completed, AMOS can automatically generate the next work order for those jobs which need to be done at set intervals.

Remember to **Save** your report when you are finished. A log entry is created for each job at **Maintenance > Log**[1].

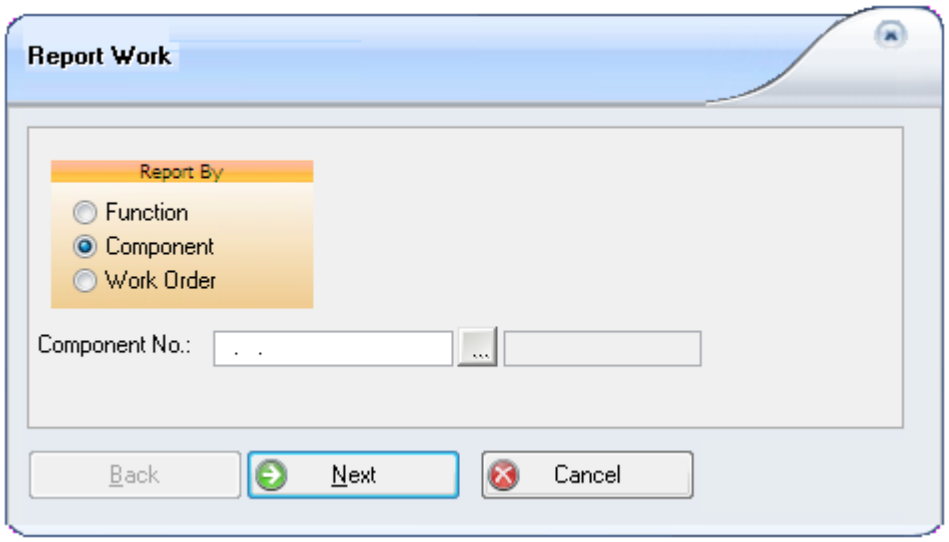
[1]Work orders marked as 'Completed' during work reporting will create Maintenance Log entries with the Job State set to 'Completed'. Work orders not marked complete during reporting will create Maintenance Log entries with the Job State set to 'Partly Done'.

Opening the Report Work Window

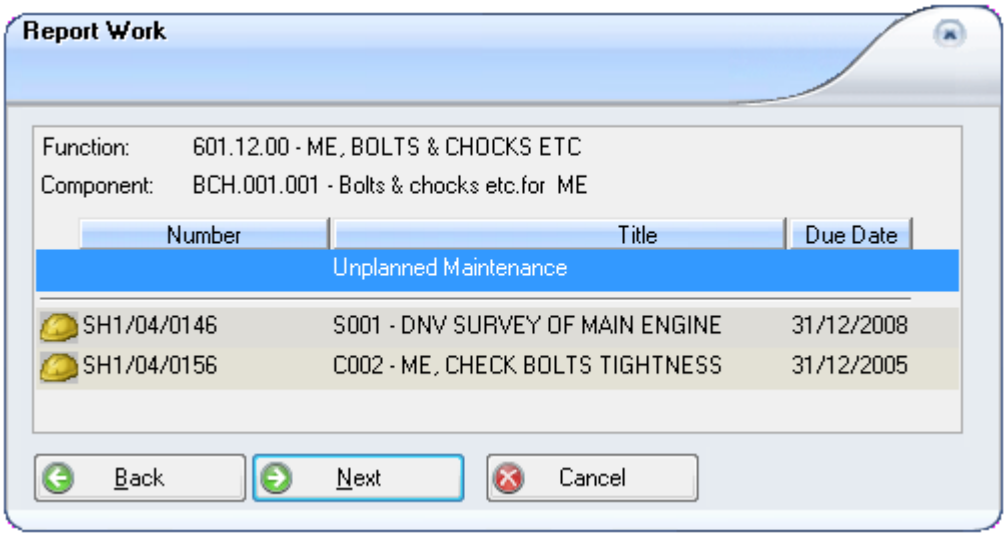
There are different ways to access the Report Work window.

From the Maintenance Menu

1. Select **Maintenance > Report Work** without any open windows. A series of dialog boxes will open allowing you to locate the Work Order by Component, Function or the Work Order itself.



2. Click the lookup button to select the relevant Component, Function, or Work Order from the lists. If you choose to report by Work Order and select the relevant work order with the lookup button, when you click **Next** you go directly to the Report Work window.
3. If you choose to report by Component or Function and select the relevant component/function, when you click **Next** you get a list containing the item Unplanned Maintenance plus the issued work orders for the jobs connected to the selected component/function:



> **Note:** if you select to report on a Round Work Order with Report Method set to Full, a Round Summary dialog will appear next.

4. When you have selected the work order you want, click **Next** to enter the Report Work window. Or, if you are reporting Unplanned Maintenance, just click **Next** to enter the Report Work window.

From the Components Window

The second approach to reporting work is to select **Options > Report Work** in the Components window.

1. Go to **Maintenance > Components** to open the Components window and select a Component.
2. Go to **Options > Report Work**. A dialog opens.
3. Select the work order to report on.
4. Click **Next** to enter the Report Work window.

The Report Work option is also available from the Function Hierarchy Options menu when you select a function with a component installed on it.

From the Work Orders Window

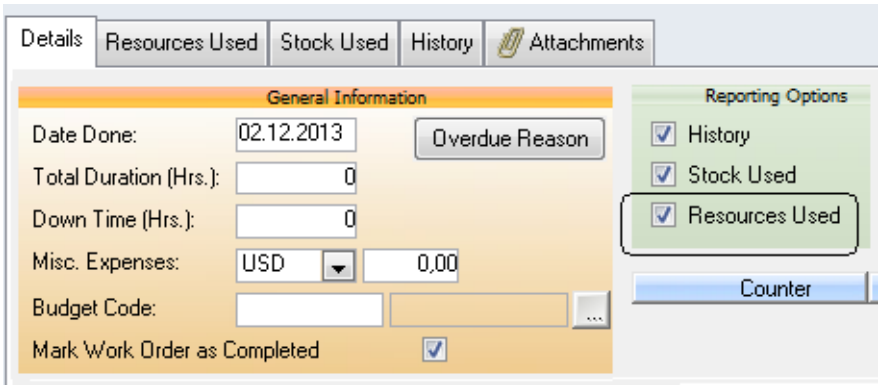
In the third approach, you can report work from the Work Orders window by selecting **Options > Report Work**.

1. Go to **Maintenance > Work Orders** to open the Work Orders window and select a work order.
2. Go to **Options > Report Work**.
3. The Report Work window opens directly with the selected work order's details displayed.

Reporting Resources Used

There are two ways to record Resources Used when reporting work. You may report work by **Discipline** or by **Employee**[1]. Reporting work by discipline is the default set-up. To set up and report work by individual employee, see "Reporting Work by Employee" on the facing page.

If the **Resources Used** checkbox on the Details tab is flagged, filling in the tab is required:



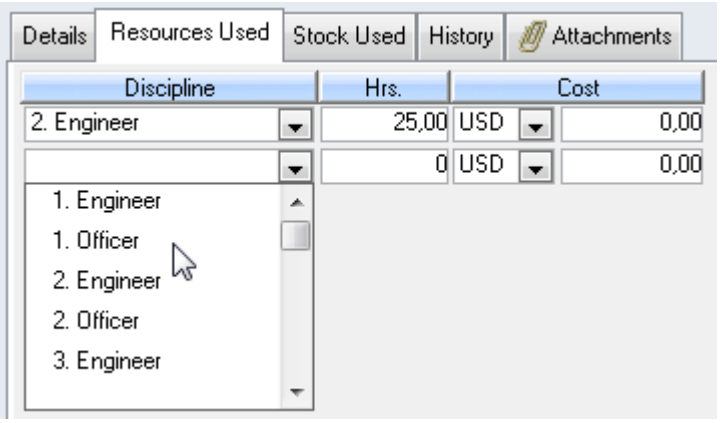
To leave the tab empty, uncheck the box. However - if reporting on resources has been made mandatory[2], you will be prevented from unchecking the box and will not be able to complete the report until you enter the resources used.

To report a resource used:

1. Click in the main part of the screen and click the **New** button on the toolbar.
2. Select a discipline from the drop-down list.
3. Enter the number of **Hours** spent and the **Cost**:

[1] Depends on the setting of the system parameter > Options > Maintenance > 'Log Work With Employee'. Set to FALSE, you will see a list of disciplines. Set to TRUE, the tab will list employees.

[2] Setting the Resources Used reporting option to mandatory is done in the Jobs window for periodic maintenance work orders linked to jobs, and on the work order itself in the case of requisitioned work.



4. AMOS will update your budget information.

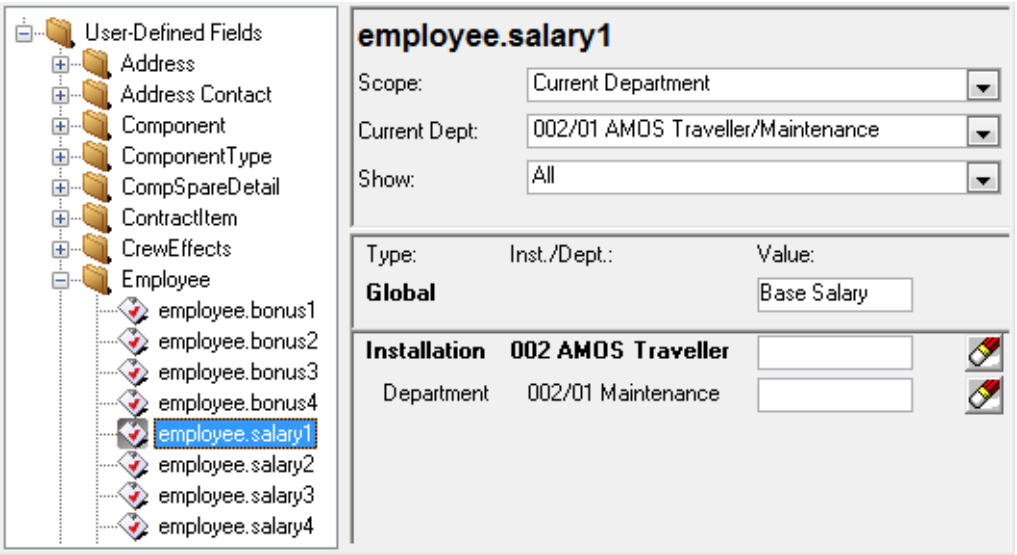
To delete a discipline select it and click the **Delete** button in the toolbar.

Note: AMOS can update the Component Job window Required Disciplines tab for the job with any disciplines you added, or hours you changed on the Resources Used tab according to the setting of a system parameter[1]. If the parameter is in effect these changes may be presented in a dialog when you save the report, and you can flag the ones to update the Required Disciplines tab with.

Reporting Work by Employee

Rather than reporting work by discipline - i.e. mechanic, electrician, chief engineer, etc., you can configure AMOS to report instead by individual employee:

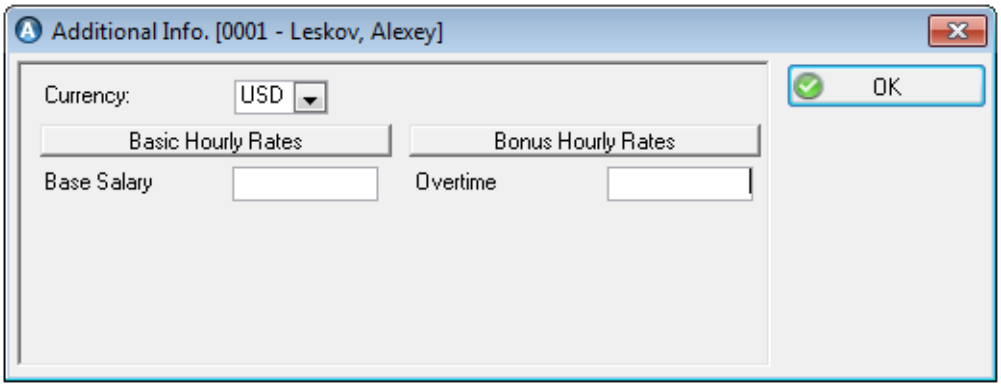
1. Go to **Tools > Configuration > Parameters > Options > Maintenance >** .
2. Select the parameter 'Log Work With Employee'. Set it to TRUE.
3. **Save** the setting.
4. Expand the **User-Defined Fields > Employee** folders.
5. Activate at least one each of the UDFs 'bonus1' to 'bonus4' and 'salary1' to 'salary4' by setting appropriate labels:



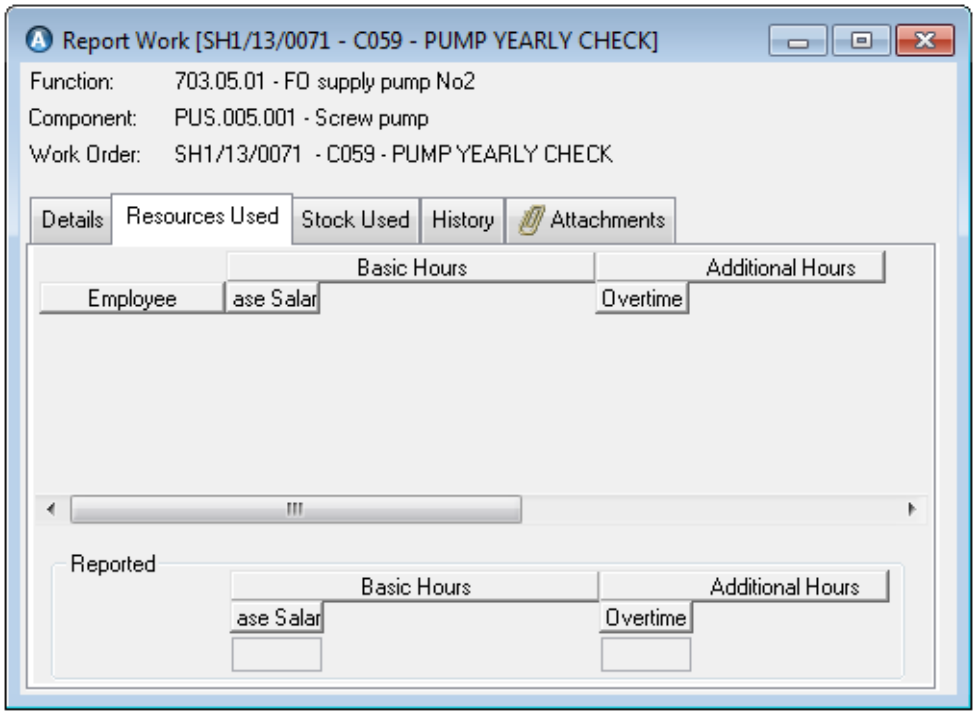
6. **Save** and exit the Parameters window.
7. Go to **File > Open Register > Employees**.

[1]Tools > Configuration > Parameters > Options > Maintenance > 'Report Work, Resource Used to Update Component Job Required Disciplines'

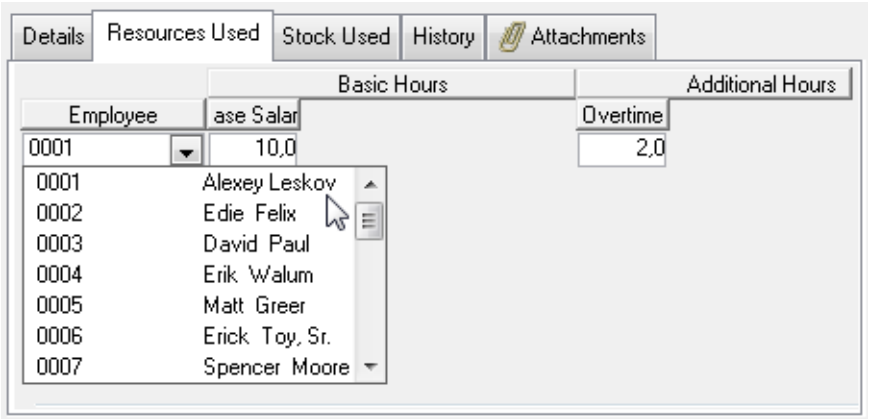
8. Select an employee and go to **Options > Additional Info**. This opens a dialog with the user defined fields you activated by labelling:



9. Choose a **Currency** and define the **Basic** and **Bonus Hourly Rates**.
10. Click **OK** to exit the dialog. Select each employee and provide the same information.
11. **Save** and exit the register.
12. Now, when you report work the Resources Used tab appears as below:



13. Click **New** to add a line and lookup an **Employee**:



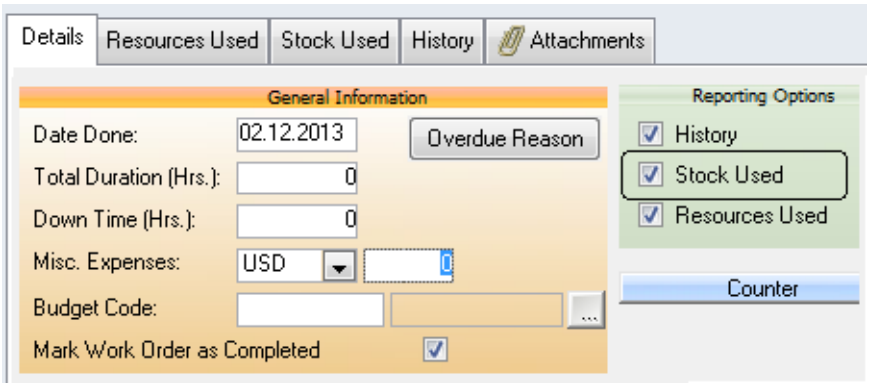
14. Enter the **Basic** and **Additional Hours** spent, at any of the applicable rates.

To delete an employee name select it and click the **Delete** button in the toolbar.

Reporting Stock Used

Enter parts used to complete the job in the Stock Used tab. This automatically creates a record in the Stock Transaction window for the used parts.

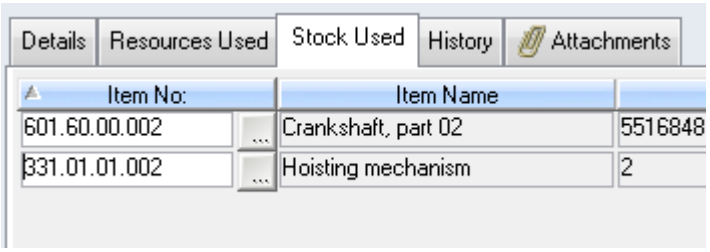
If the **Stock Used** checkbox on the Details tab is flagged, filling in the tab is required:



To leave the tab empty, uncheck the box. However - if reporting on stock has been made mandatory[1], you will be prevented from unchecking the box and will not be able to complete the report until you enter the stock used.

To report stock:

1. Set a **Quantity** on any item(s) already in the list.
2. Click inside the tab and click **New** on the toolbar.
3. Use the lookups to find the **Item** number and **Name**. Enter the quantity used:



3. If you used perishable stock, select the correct expiry date from the **Expiry Date** lookup list.

[1] Setting the Stock Used reporting option to mandatory is done in the Jobs window for periodic maintenance work orders linked to jobs, and on the work order itself in the case of requisitioned work.

If AMOS is set up to take **Depreciation** into account you can differentiate between the use of new and used stock items by selecting the appropriate level of depreciation.

Note: Depending on the settings of certain system parameters[1], AMOS can update the Parts tab on the Components window with any items you add to the Stock Used tab, and so may present a list of newly added items when you save the report. Flag any which should be added to the Components window Parts tab. No quantities will be added with the item(s), just the item name and number.

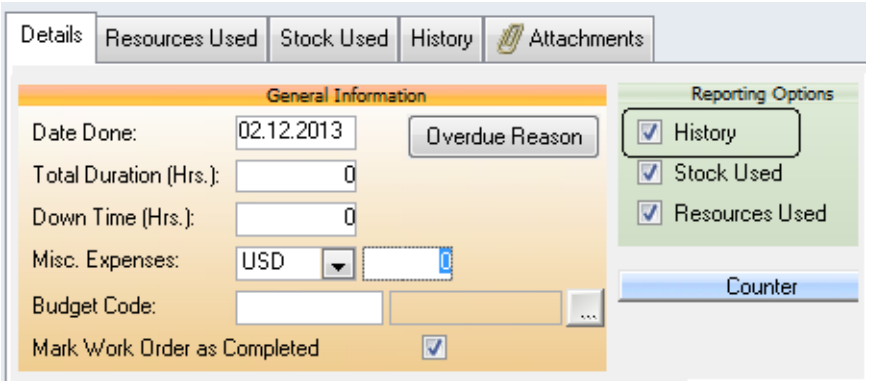
AMOS can also update the Component Job window Required Parts tab for the job with any items you added or changed quantity on in the Stock Used tab, according to the setting of another parameter[2]. If the parameter is in effect these changes may also be presented in the same dialog for you to flag the ones to update the Required Parts tab with.

Reporting History

Any history previously recorded on a work report entry will appear in the History tab. The appearance of the history tab can vary from installation to installation, and from job to job depending on which editor is in use and also if templates have been applied.

History entered here is recorded in the log for each job at **Maintenance > Log** and in the window at **Maintenance > History**.

If the **History** checkbox on the Details tab is flagged, filling in the tab is required:



To leave the tab empty, uncheck the box. However - if reporting history has been made mandatory[3], you will be prevented from unchecking the box and will not be able to complete the report until you enter history.

Reporting Counters

If the Job you're reporting is counter-based [4] , in the General tab of the report you get a table with the last 'Data Read' and the last 'Current value' and you can report the new value:

Counter	Value	Current	Date Read
Hours	0	541.00	6/10/2013

the same in case of composite counter:

[1]Tools > Configuration > Parameters > Options > Maintenance > 'Report Work, Stock Used to Update Component Spare'. This parameter and related functionality is only available if 'Component Types' are not in use.

[2]Tools > Configuration > Parameters > Options > Maintenance > 'Report Work, Stock Used to Update Component Job Required Parts'. This parameter and related functionality is only available if 'Component Types' are not in use.

[3]Setting the History reporting option to mandatory is done in the Jobs window for periodic maintenance work orders linked to jobs, and on the work order itself in the case of requisitioned work.

[4]If the job you're reporting is Non-Counter Based, but a counter is attached to the Component on which you performed that Job, and 'Log Counters For Non-Counter Based Jobs'= Optional/Mandatory

Counter	Value	Current	Date Read
Hours + 1000 * Start	0	20200.00	11/6/2018
Hours	0	200.00	11/6/2018
Number of Startup	0	20.00	11/6/2018

Reporting the value/s is mandatory[1]

With composite counter, if you enter only one element and saves the report -> System prompts 'Value mast be entered for all related composite counters elements'

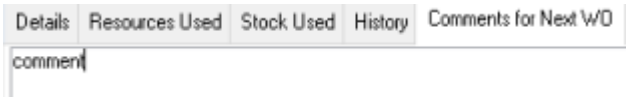


Reporting' a counter doesn't update automatically the counter attached to the Component.

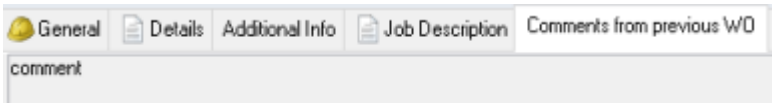
[1] If the job you're reporting is Non-Counter Based, but a counter is attached to the Component on which you performed that Job, and 'Log Counters For Non-Counter Based Jobs'=Mandatory, System prompts you to enter the value/s

Reporting Comment for Next Work Order

When reporting a Work Order, AMOS Business Suite gives you the opportunity to enter a comment in the ‘Comments for Next Work Order’ tab.



That comment will be shown on the next work order in the ‘Comments from previous WO’ tab in read only mode.

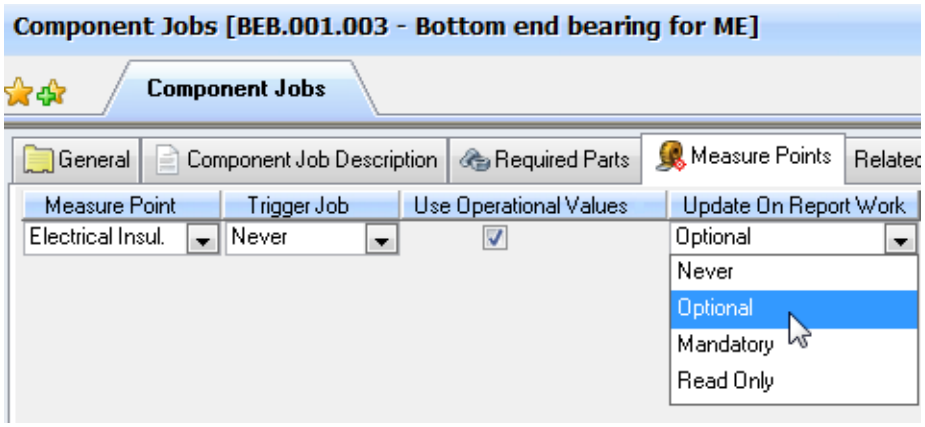


When you’ll report the new generated work order you’ll get the comment with the opportunity to keep, to change or to delete it.

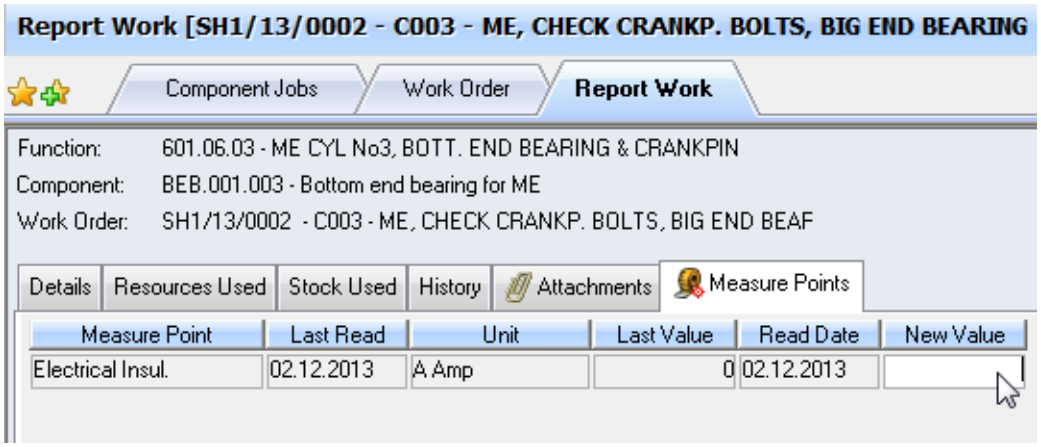
Round Work Orders, also in case of full’ ‘reporting method’, have only one cumulative ‘Comments for Next Work Order’ tab.

Reporting Measure Points

If any measure points are attached to the job you are reporting and the **Update on Report Work** value for those measure points is set to Optional or Mandatory:



...a Measure Points tab will be added to the Report Work window for this job and you can report the new value:



The measure point **Read Date** will be set to match the **Date Done**on the work report. Measure point values will be updated only if the work report date is the same as or later than the current date read on the measure point. The Measure Point Log will be updated regardless of the date.

Reporting Work with a Work Permit

Some work orders may have one or more work permits attached to them. When using permits to work keep in mind:

- All permits to work need to be acknowledged before the work can be reported.
- All permits to work need to be issued to a user, and that user will be the only one who can acknowledge them.

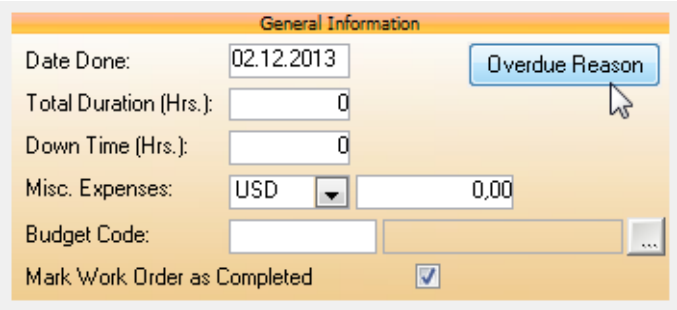
Work orders with permits to work attached should be carried out and reported in the same way as any other work order. However, before you start the work:

1. Open the work order in the Work Orders window and check the Permits to Work tab. If it contains a permit, check if the permit is issued to you.
2. If not, select **Options > Change Permit to Work Status** to issue it to yourself.
3. Double-click each permit in the list to open the details. Read and close the details.
4. A dialog appears asking if you want to acknowledge the permit.
5. Click **OK**.

6. Carry out the work contained in the work order.
7. Report the work as usual.

Reporting Overdue Work

If you are reporting work which is overdue and so the report date is later than the due date on the Work Order, the **Overdue Reason** button next to the **Date Done** field on the Report Work window will activate:



Click this button to open the Overdue dialog. It is mandatory to enter a reason here; AMOS will not allow you to **Save** until you do.

Reporting Unplanned Maintenance

If you accessed the Report Work window by selecting to report work as Unplanned Maintenance for a component, the Failure Mode tab is added.

> **EXAMPLE**
>
> You need to report on some maintenance work that has been performed in response to an equipment failure, but which was not already planned. In this case you can specify the details related to the failure in the Failure Mode tab. AMOS uses these details when creating maintenance reports.

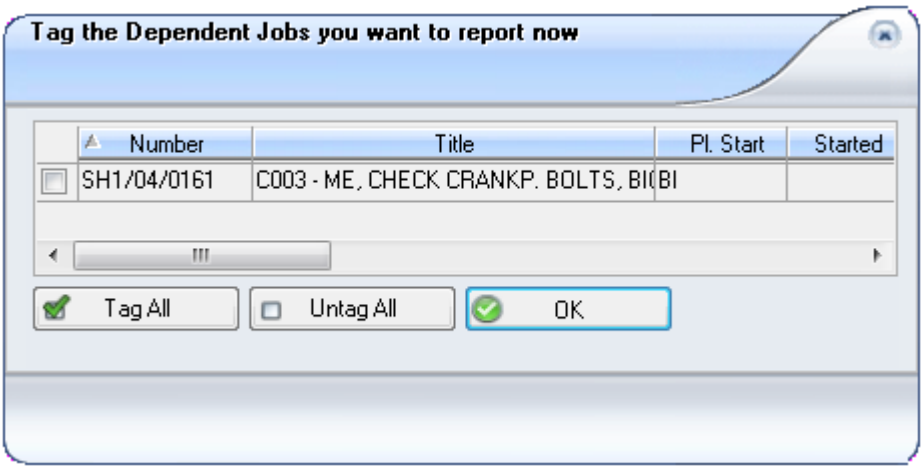
'Unplanned Maintenance' is the default title for this kind of report but you can change it on the Details tab.

See "Equipment Failures" on page 79

Reporting Related Jobs

Jobs can be 'related' and then reported together. When reporting on related jobs, if the main job is completed but one or more of the related jobs is incomplete, a warning appears suggesting that you mark the main job incomplete. To report the main job as completed anyway, all the open related jobs must be reported separately.

If you are reporting work and see the Tag Dependent Jobs dialog, it is best to tag all of the jobs and report them together:



When you click **OK** a report work window will open for each tagged job. You can report the main work order without tagging any of the related jobs, but they need to be reported at some point in time.

See "Related Component Jobs" on page 32 for an explanation of how to 'relate' jobs.

Reporting on Dependent and Depending Jobs

When work orders are linked in a dependency chain, it is not possible to report on one out of sequence. The 'dependant' work order must be completed before the next 'depending' one can be started.

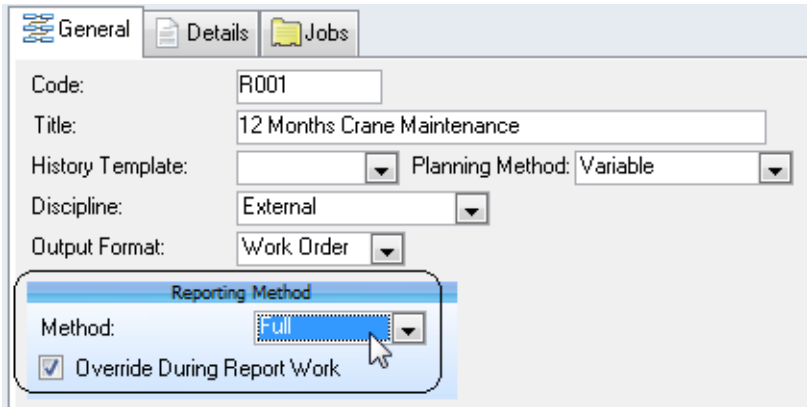
If you select a work order to report on and receive the message 'Report work not possible due to dependency to other work orders', this means that the work order you've selected depends on another one which has not been completed yet.

To see which work order(s) is blocking the selected one, open the Work Orders > Dependency tab. Any work orders listed in the Dependant Work Orders section must be completed before you can report the selected one.

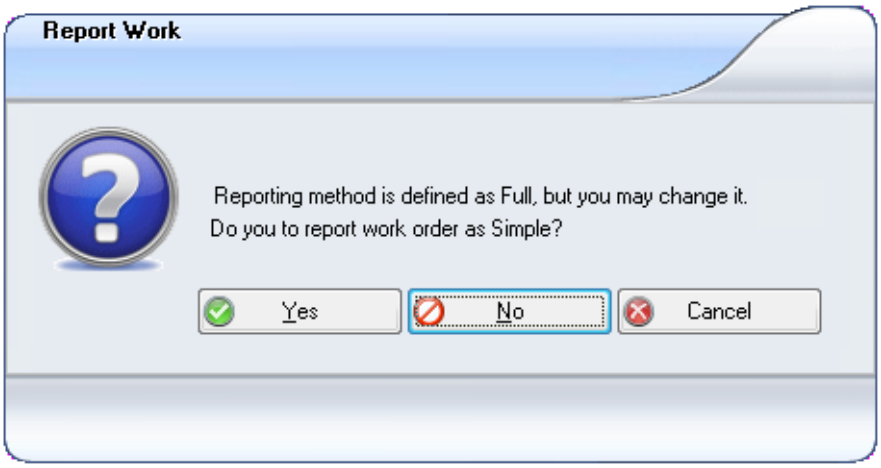
For more about Job Dependencies and how to create and alter them, see "Complex Activities Management: Job Dependencies" on page 34.

Simple Reporting on Rounds

A Round consists of several jobs grouped together. There are two **Reporting Methods** for rounds, **Full** or **Simple** and the one to use is defined on the round itself:

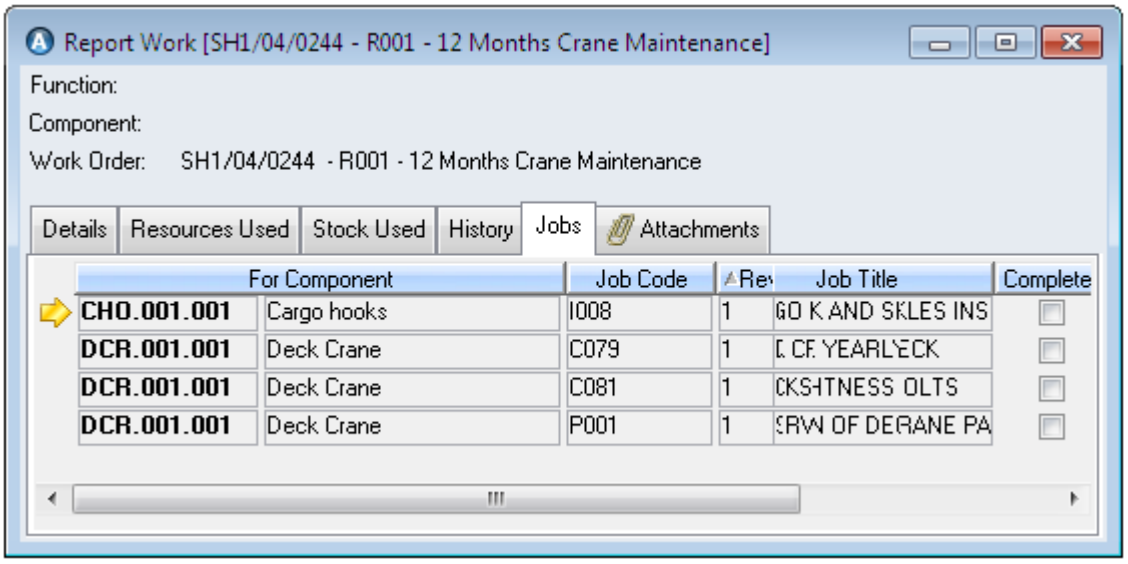


If the **Override on Report** checkbox is flagged on the round, when you opt to report on the round for the first time a dialog appears:



Choose to report using the default method defined on the round, or select the other method instead.

When the reporting method on a round is set to **Simple**, a Jobs tab is added to the Report Work window. Check off each individual round job as you complete it:



The toolbar contains three buttons to mark or unmark all the jobs as completed, and select/deselect all:



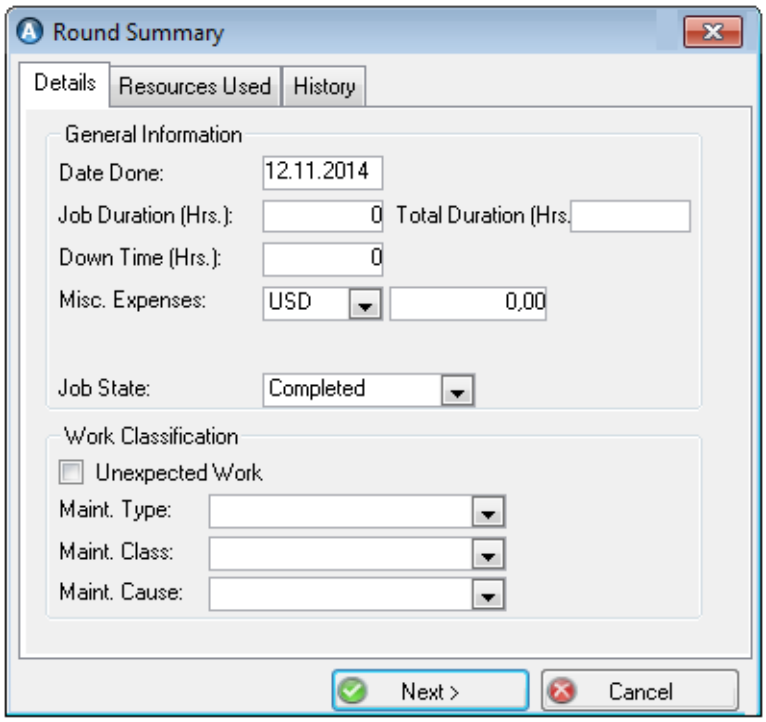
You cannot flag the **Mark Work Order as Completed** checkbox and save the work report until you complete each job in the list[1]. You can continue reporting on the incomplete work order until every job is checked off. When you complete a job in a round, its**Date Last Done** and the **Next Due Date** will be updated automatically.

Reporting rounds with the simple method creates one maintenance history record for all the component jobs included in the round, rather than separate entries for each one.

[1]Whether or not you can mark a work order as completed without completing all jobs on it first, depends on a setting on the round itself (Reporting Options, 'Block if Uncompleted Jobs').

Full Reporting on Rounds

When the reporting method on a round is set to **Full** a Round Summary dialog appears before the Report Work window:



This dialog lets you enter some information in summary, to apply to all jobs included in the round at once.

Job Duration and Total Duration

Report the number of hours spent on the round. Enter either:

- the number of hours spent per job in the **Job Duration** field, or
- the total number of hours spent on the entire round, in the **Total Duration** field.

AMOS will calculate the value for the other field automatically and insert the job duration value onto every job listed in the round.

> **EXAMPLE**
>
> You enter 2 in the **Job Duration** field on a round with 4 jobs. AMOS calculates a **Total Duration** of 8 hours on the Round Summary, and enters 2 hours per job in the Report Work window.
>
> Or, you enter a **Total Duration** of 12 hours on the same round. AMOS enters 3 hours per job in the **Job Duration** field on the Round Summary and on the Report Work window.

Down Time

The amount you enter in the **Down Time (Hrs)** field is assigned unchanged to each incomplete job.

Misc. Expenses

Any amount you enter in the **Misc. Expenses** field will be divided evenly amongst the incomplete jobs.

EXAMPLE

You enter 100 USD in miscellaneous expenses. With 4 incomplete jobs on the round this results in each incomplete job showing a miscellaneous expense of 25 USD in the Report Work window.

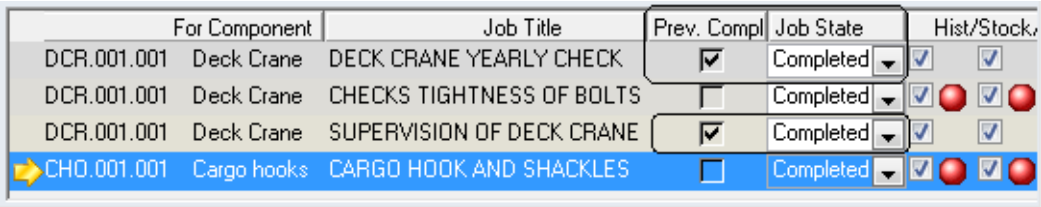
Resources Used

Open the Resources Used tab to list who performed the work. Individual hours entered by discipline on this tab will be split for each discipline amongst incompleted jobs only. Any costs entered by discipline on this tab will be copied to all incompleted jobs - not divided amongst them.

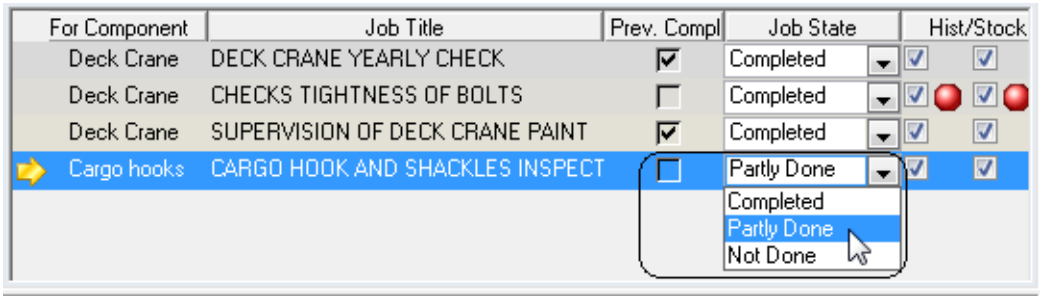
Reporting the Work

When you have finished summarising the round, click **Next** to move on to the Report Work window.

1. Click **Next** in the Round Summary dialog to open the Report Work window. The round jobs are listed in the bottom of the window.
2. Any jobs which have already been finished and reported will be set to 'Completed' *and* the **Prev. Compl** checkbox will be flagged:



3. Select a job and report on it as usual.
4. As you finish each job, select 'Completed' from the **Job State** drop-down. Leave the job state set to 'Partly Done' or 'Not Done' on unfinished jobs, to allow for reporting later:



Tip

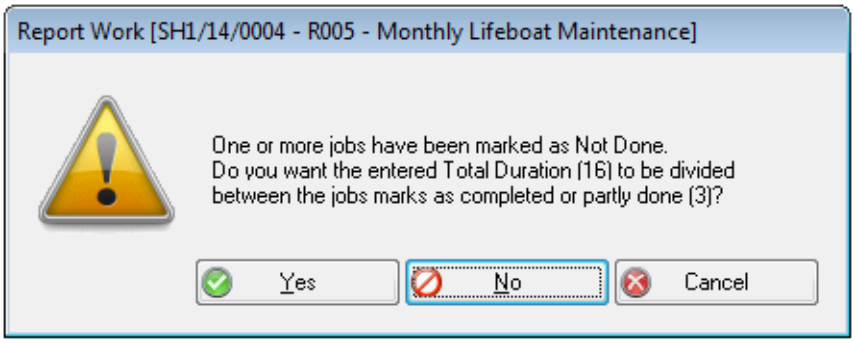
To set the state for all jobs at once select **Mark All...**from the Options or right-click menu. This opens a dialog where you can select a state to apply to all jobs at once. This changes the state on jobs where the **Prev. Complete** box is *not* already flagged. As you complete jobs, AMOS updates the **Date Last Done** and the **Next Due Date** for each one automatically.

5. Return to the Report Work window as many times as needed until each individual job is complete. Then, mark the entire work order as completed[1].
6. **Save** your work.

[1] Whether or not you can mark a work order as completed without completing all jobs on it first, depends on a setting on the round itself (Reporting Options, 'Block if Uncompleted Jobs').

Changing the Job State

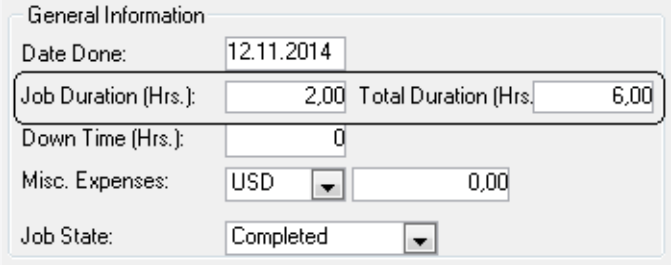
If you change a job's state to 'Not Done', when you **Save** AMOS will ask if you want to recalculate the total duration to divide it amongst the 'Completed' and/or 'Partly Done' jobs:



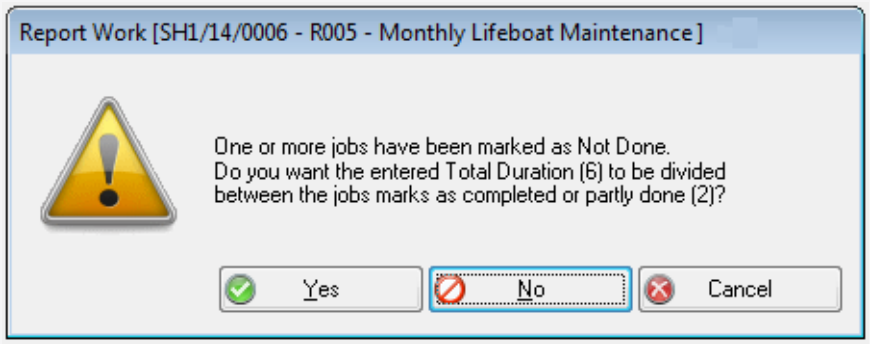
Click **Yes** to divide the total duration, **No** to leave it as is or **Cancel** to return to the window without actually making or saving any changes.

EXAMPLE

You report on a round with 3 jobs, entering 2 in the **Job Duration** field on the Round Summary dialog which sets the **Total Duration** to 6 hours:



2 hours is set in the **Job Duration** field on each job in the resulting Report Work window. You set one of jobs to 'Not Done' and then select **Yes** in the dialog to divide the total duration (6 hours) between the remaining 2 jobs marked as complete:



The **Job Duration** field on the other two jobs is reset to 3 hours each.

Reporting Details on 'Not Done' Jobs

When you report details like history and stock/resources used on jobs set to 'Completed' or 'Partly Done', AMOS creates entries in the maintenance log.

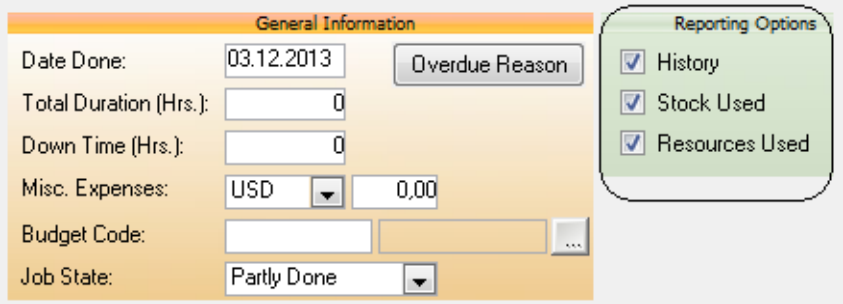
Whether or not you can save these details and create maintenance log entries for jobs set to 'Not Done' depends on the system parameter[1] 'Log Details of Not Done Jobs, on Round WO'.

If set to FALSE, any such details you add to a 'Not Done' job will not be logged. If set to TRUE, a maintenance log entry will be created for any 'Not Done' job which you've added details to.

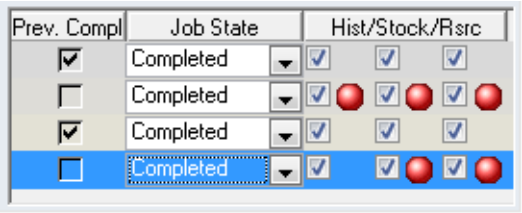
Each job's state is indicated on the corresponding maintenance log entries.

Mandatory Reporting Options

If the **Resources Used/Stock Used/ History** checkbox on the Details tab is flagged, filling in the corresponding tab is required:



You also see a red ball in the list next to any job where the required resources/stock/history information is still missing:



To leave any one of the corresponding tabs empty, uncheck the box. However - if reporting on resources/stock/history has been made mandatory[2], you will be prevented from unchecking the box and will not be able to complete the report until you enter the information.

Marking the Work Order Complete

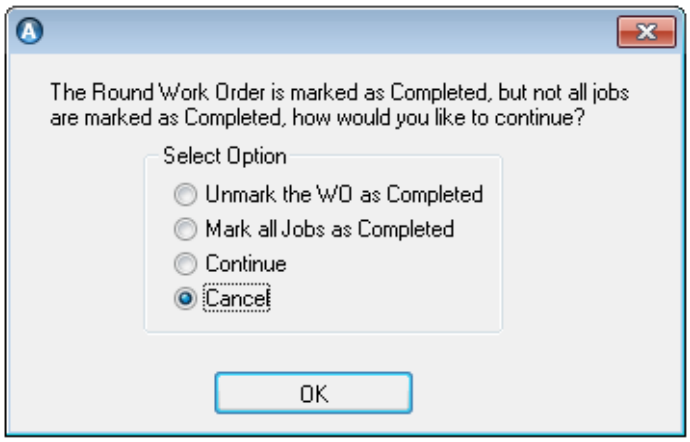
When the state for all jobs included in a round is set to completed, flag the **Mark Work Order as Completed** box at the top of the Details tab to finish with the report.

If you flag the entire work order as completed, but none of the jobs are set to completed AMOS will not allow you to save the report.

If you check the box and try to save the report while one or more jobs is still incomplete, you will receive this message:

[1] Tools > Configuration > Parameters > Options > Maintenance >

[2] Setting any/all of the Reporting Options to mandatory is done in the Rounds window.



- **Unmark** the work order as completed, save and carry on. Or,
- **Mark** all jobs as completed on the current date, and save the finished report. Or,
- **Continue** to report the work order anyway. Maintenance log entries will not be created for the incomplete jobs and they will not be registered as done. Or,
- **Cancel** and return to the main window. Uncheck the Mark Work Order Completed box or set all jobs to complete and save.

Maintenance History

The **Maintenance > History** window stores historical maintenance related information: any information registered in the Report Work window > History tab appears in the History window.

Date Written	The date history is reported.
Written by	The person logged on when history was written in the report work window's history tab.
Component	The component the history (work order) was written against - if no component was registered against the work order for one reason or the other, this will be empty.
Current Function	The function the component registered in the field above is currently performing.
Job	The job registered against the work order the history was reported for.
Work Order	The work order no the history was reported against.
Description	This field displays the job code and description by default but in the history tab of the report work window this can be overwritten.
Include on Next PM Order	This can be checked in the history tab of the report work order window. Checking it means that next time this job needs to be done and is printed, the history reported here will be printed with it.

The Maintenance Log

During work reporting, a log entry is created for each job at **Maintenance > Log** using the data supplied in the Report Work window. Work orders marked as 'Completed' during work reporting will create Main-

tenance Log entries with the **Job State** set to 'Completed'. Work orders not marked complete during reporting will create Maintenance Log entries with the Job State set to 'Partly Done'[1].

According to your access rights, you can add and delete maintenance history entries in the History tab here.

You can also access the maintenance log from other windows (Work Orders, Work Planning, etc.) via the Options menu.

[1] 'Not Done' is only applicable for round jobs, and if the parameter 'Log Details of Not Done Jobs, on Round WO' is set to TRUE.

CHAPTER 2

Stock Management

To simplify your stock management, AMOS takes advantage of information that must be recorded in maintenance and purchasing records: adding items to stock when they are purchased and received; and removing items from stock when maintenance work reports show that parts have been used.

This chapter includes the following topics:

Stock Types 200
Stock Items 212
Parts Handling: Alternative, Replacement and Obsolete Parts 216
Setting Status on Stock 219
Stock Purchase History 225
Stock Wanted 229
In/Out of Stock 232
Taking Inventory: Stock Control 233
Tracing Stock In and Out: Stock Transactions 235
Transfer Documents 236
Forecasting Stock Requirements 247

SpecTec

Stock Types

When you have a new stock type to create, enter the general properties for that type in the Stock Types window at the main office installation. This information will apply to all stock items of that type and includes things like number, name, maker, preferred vendor and so on.

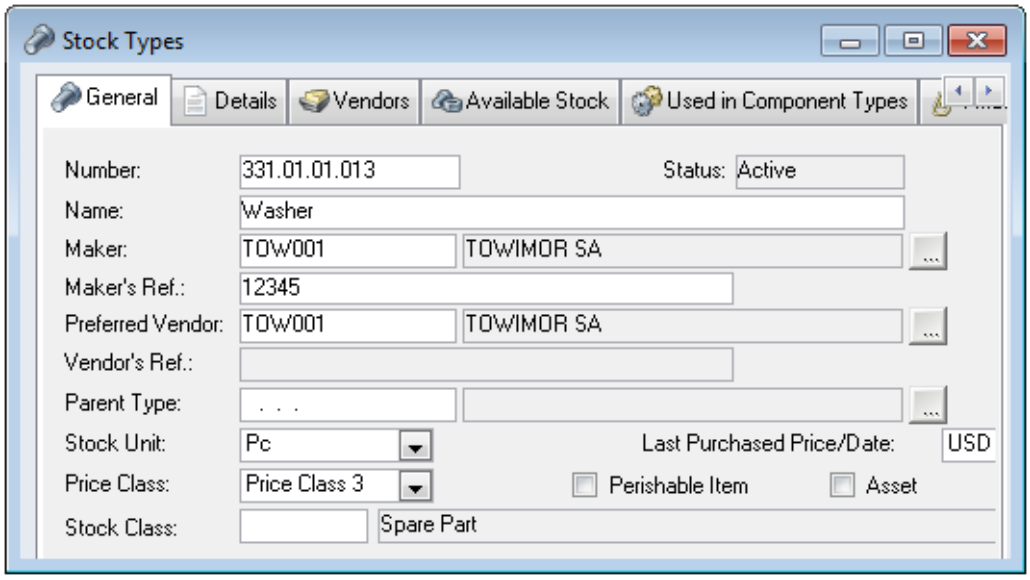
New stock items of any defined type are registered at sites and inherit information from the Stock Type register. Unique information such as the item's physical location is entered in the Stock Items window.

Remember that you can also visualise and work with stock types in the **Stock > Stock Types Hierarchy** window.

Defining a Stock Type

To define a new stock type:

1. Go to **Stock > Stock Types**.
2. Click the **New** button in the toolbar.
3. Enter a unique **Name** and **Number** for the stock type. These will be used to lookup the Stock Type information in the Stock Items window.
4. The type you are registering could belong to another Stock Type. If so, you can select a **Parent Type**. This allows you to organise your stock types in a hierarchy.
5. Select the **Stock Unit** which items of this type are stored as: Piece, Each, Barrel etc.
6. Check the **Perishable Item** checkbox if applicable. The setting of this checkbox is copied onto stock items of this type, and cannot be changed on items.
7. Use the **Stock Class** lookup to group the stock type as a Tool, Consumable, Spare Part etc.
8. If you know the **Last Purchased Price/Date** for an item of this type, enter it here.



9. Click **Save**.

Stock Type Makers

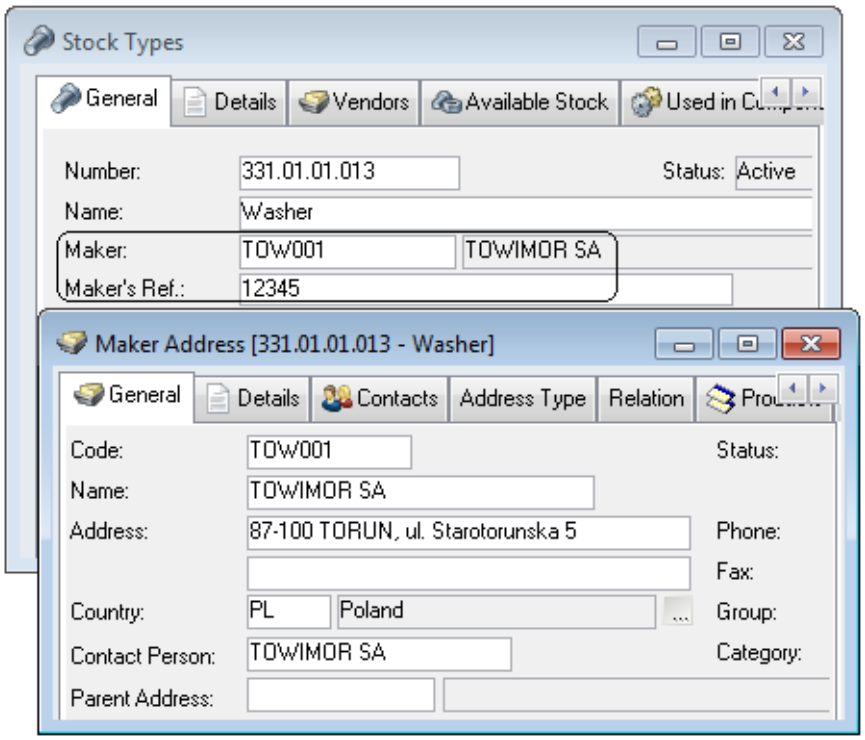
To specify the maker of a stock type:

1. Open the Stock Types window and select a type.
2. Use the **Maker** lookup on the General tab to locate the manufacturer.
3. If the manufacturer has a reference like a catalog number for the stock type enter that in the **Maker's Ref** field.

Users can filter by both your organisation's name for the stock type as well as the maker's reference.

4. **Save** the changes.

> **Tip**
>
> To edit or check the general details about the selected maker go to **Options > Maker**. This opens the Address register with the maker's address and details displayed.

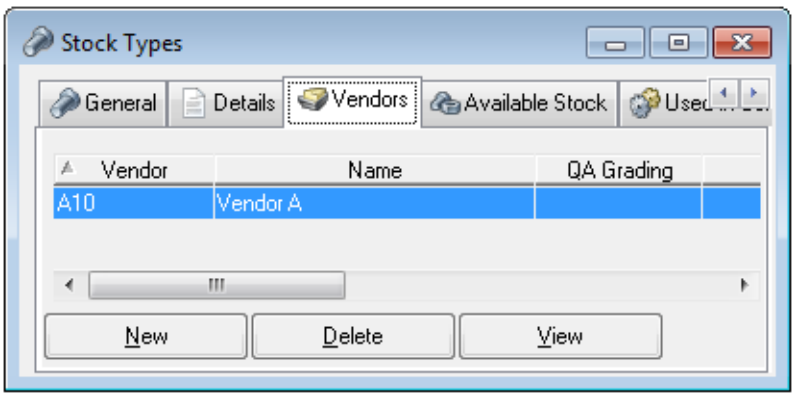


See the *AMOS Business Suite Reference Manual* for more about working in the Address register.

Stock Type Vendors

You may have one or several vendors who supply a particular stock type. To manage a list of available vendors:

1. Open the Stock Types window and select a type in the list.
2. Open the vendors tab:



3. Click the **New** button. This opens the Vendors window.
4. Lookup a **Vendor**.

5. If the vendor has a reference like a catalog number for the stock type enter that in the **Vendor's Ref** field.
6. Use the **Part Description** field to register an alternative description for the selected stock type, or, a description in the vendor's local language.

   Whenever this stock type is placed on a purchase form the part description will appear in the Line Items window.
7. Provide the **Price** and **Delivery** details. The **Price Updated** field is automatically updated whenever a price is entered or changed.

   The **Currency** you select becomes the default for this stock type when ordered from the selected vendor. If there is a default currency set on the vendor's address record for general use, the currency selected here will override it for this stock type.
8. Use the **Min. Order Level** field to indicate the minimum amount of the stock type which must be ordered from this vendor at one time[1].
9. **Save** the record. You can add as many as needed.
10. Close the Vendors window to return to the Stock Types window.

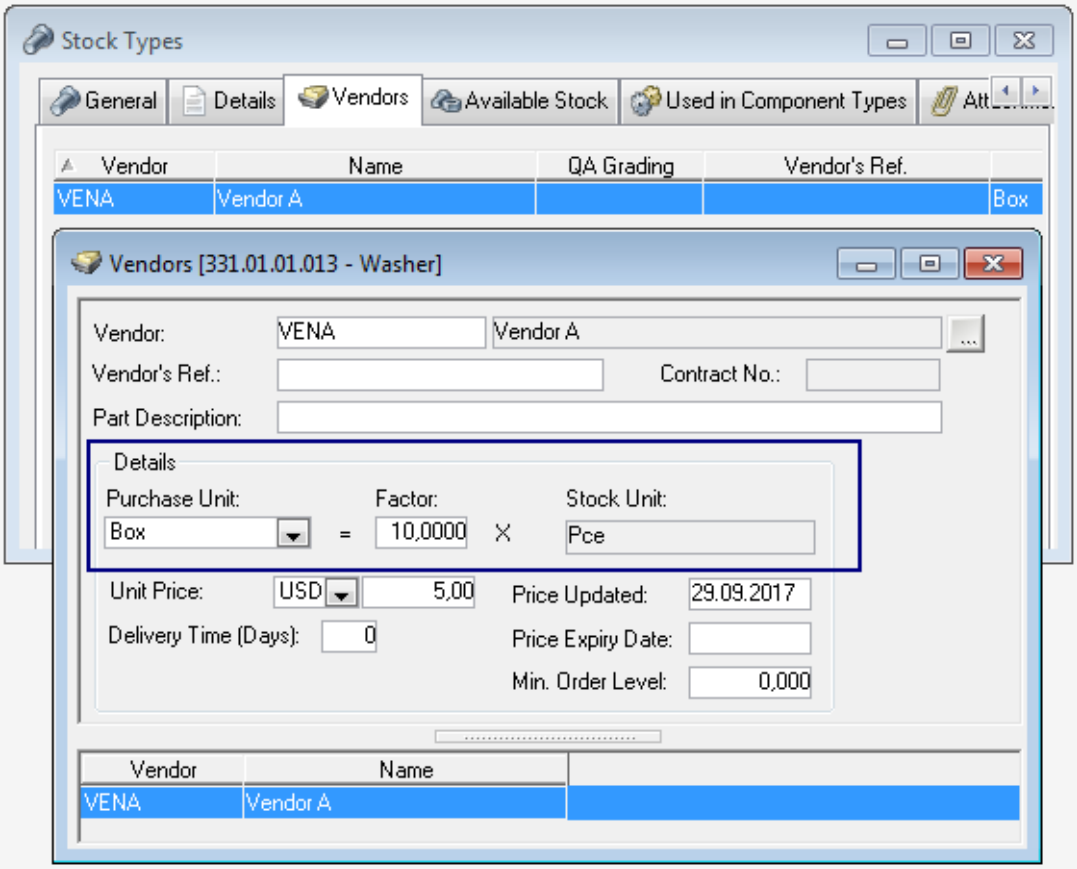
Converting Stock Units to Purchase Units

You might store the stock type in one kind of unit while the vendor sells the same stock type in another unit. To eventually order this item you need to convert the stock unit to purchase units. This is a vendor-specific conversion, so you enter the formula in the Vendor window.

[1] It is also possible to specify a Minimum Order Value on a vendor's address record in the Address register. In that case when issuing a purchase order, AMOS will check that the estimated total cost for all items (not just items of one type) on the form is greater than or equal to the vendor's set minimum value.

EXAMPLE

Your **Stock Unit** 'Piece' is entered on the Stock Types window General tab and appears in the Vendors window. The vendor sells the same item only by the unit 'Box' with 10 pieces per box. To convert the unit you enter Box in the **Purchase Unit** drop-down field, and 10 in the **Factor** field:



Minimum Order Level

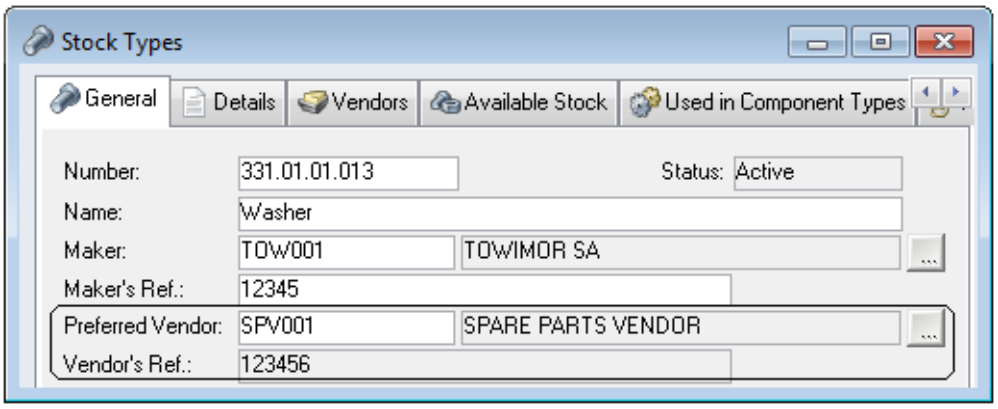
When a **Min. Order Level** is set on a stock type/vendor and a quantity of the stock type is placed on an order form for that vendor, AMOS will verify that the ordered quantity is greater than or equal to the minimum order level set here. AMOS will run the same check when a user attempts to issue a purchase form for this vendor containing a quantity of the stock type with a minimum order level defined.

It is up to the user to decide to continue or not with orders containing line items which do not meet minimum order levels.

Preferred Vendors

To specify a preferred vendor:

1. Open the Stock Types window and select a stock type.
2. Use the **Preferred Vendor** lookup on the General tab to select a vendor. If a reference was specified in the Vendors window, it will appear automatically:



3. **Save** the change.

> **T i p**
>
> To edit or check the general details about a preferred vendor, go to **Options > Preferred Vendor**. This opens the Address register with the relevant vendor's address and details displayed.

See the *AMOS Business Suite Reference Manual* for more about working in the Address register.

Stock Grades

Stock Grades are used to add extra information to stock types, and can indicate items on purchasing forms which require special provisions, such as dangerous goods.

Stock grades are defined in the Stock Grades register at **File > Open Register > General > Stock Grades** and then applied to stock types. They are then inherited on stock items. When stock with a grade defined against it is placed on a purchase form as a line item, the stock grade is copied to the form.

Stock grades may contain the following information:

- An **Indicator** which shows up on relevant stock items in the purchasing process - on order forms, deliveries and transport documents. Forms, deliveries, transport documents and transfer documents can also be filtered by stock indicator level.
- A free-text comment which can be included on the order form printouts to communicate extra information to a third party.

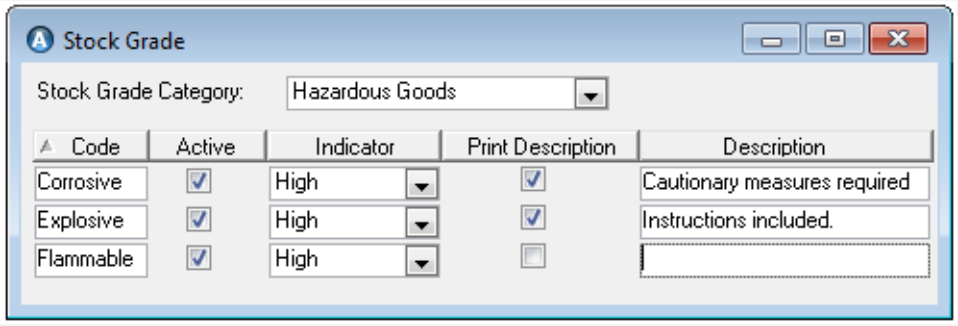
Read about defining stock grades and supplying related information in the register, in the *AMOS Business Suite Reference Manual*, Registers Chapter.

Applying Stock Grades

When stock grades are available in the register, you can apply them to stock types. Stock type grades are inherited read-only on stock items. They are also inherited with stock when it is placed on a purchase form as a line item.

EXAMPLE

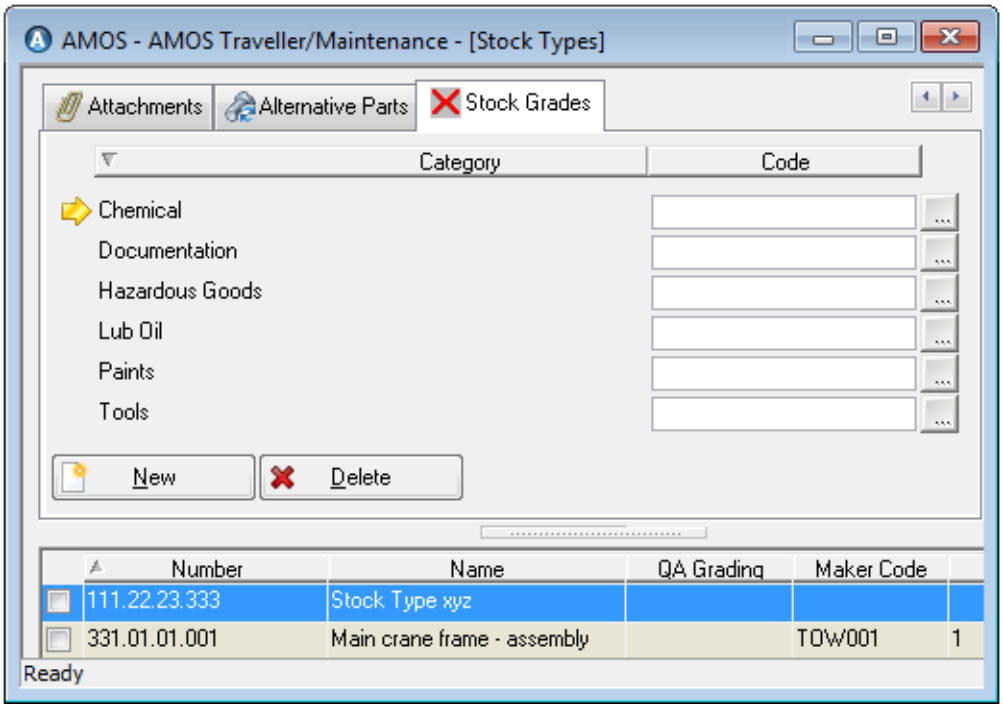
You have the stock grades 'Corrosive' and 'Flammable' defined in the register under the category 'Hazardous Goods'. Both have an indicator level set:



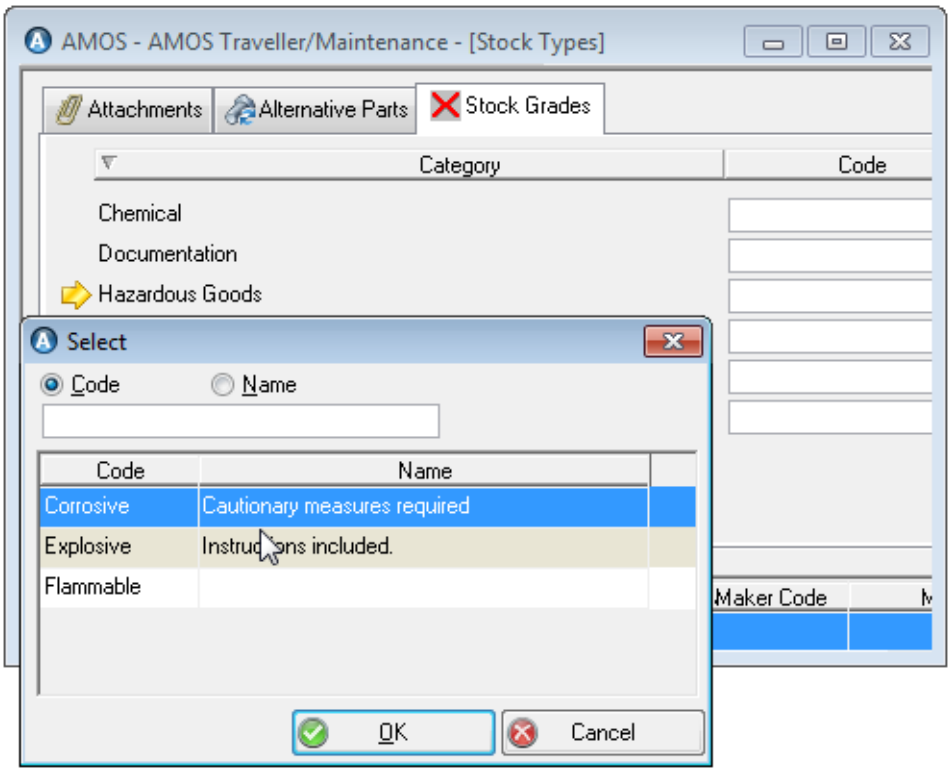
You want to apply these to some stock for future reference during purchasing.

To apply the grades to the stock type:

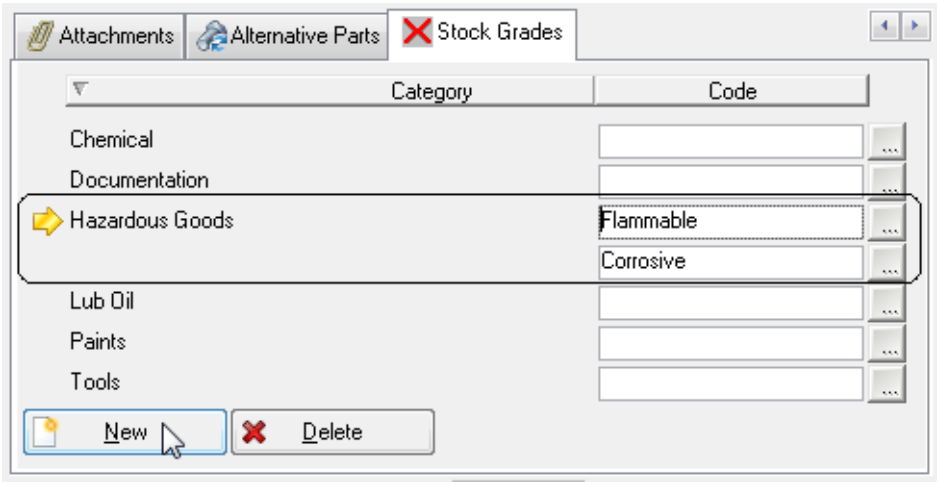
1. Go to **Stock > Stock Types**. Filter for the particular stock type or open the window and select it.
2. Open the Stock Grades tab:



3. You see a list of stock grade categories[1]. Select a category and then lookup and select a grade:



4. Click the **New** button to add another grade in the same category[2]:



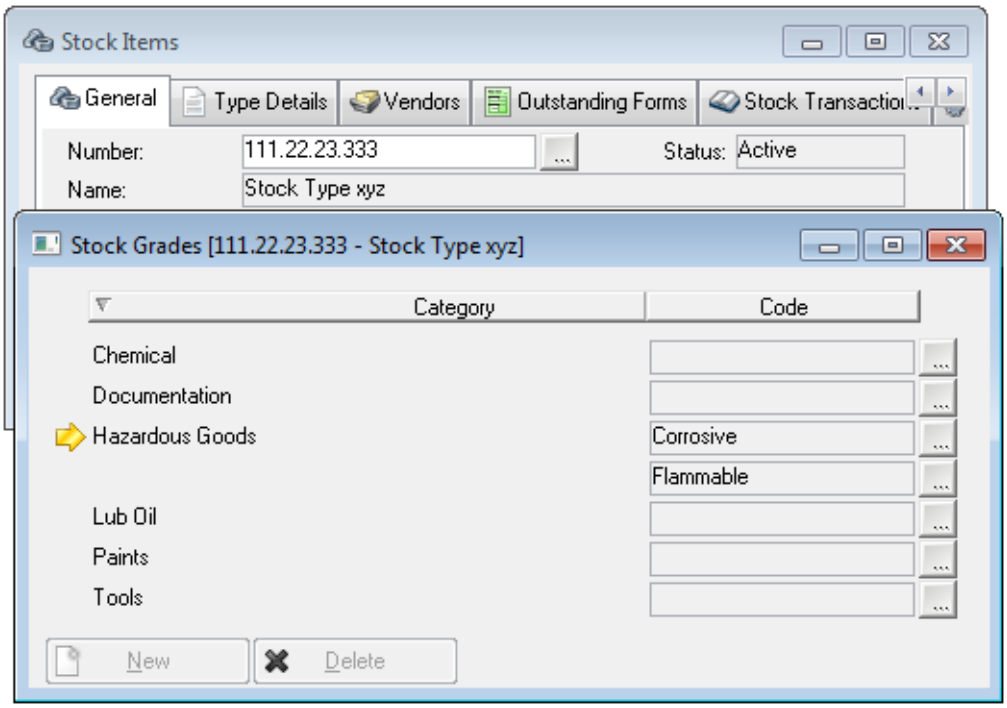
5. **Save** the window.

Stock grades applied at type level will be inherited on stock items. You can view this information from the Stock Items window[3] by selecting **Options > Stock Grades**:

[1]The listed categories are defined in the register at Tools > Configuration > Stock > Stock Grade Categories.

[2]You can only add more than one grade from the same category to the same stock type/item, if the 'Allow Multiple Stock Grades' checkbox on the Tools > Configuration > Stock > Stock Grade Categories register is flagged.

[3]The same item is available on the Options menu in the Stock Wanted and Stock Control windows.



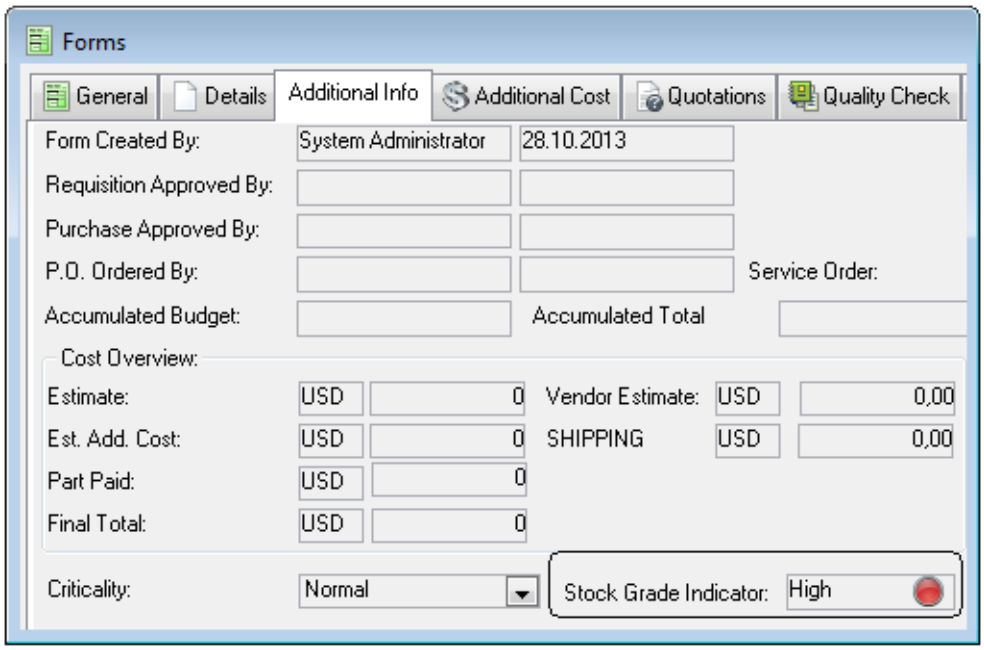
When stock is placed on a purchase form as a line item, any grades defined against the type will go with it. You can change, add or remove stock grades in the **Line Items > Options > Stock Grades** window. Changes there apply to the specific instance of the item only. Note that changes made to stock grades at Stock Type level do not apply to instances of the stock already on existing purchase forms.

Stock Grades on Order Forms

When a stock item is listed on a purchase form, any grade attached to it will show up on the form header and on the line items window:

1. Go to **Purchase > Forms**. Select a form.
2. You can see on the Additional Info tab[1] that the form contains stock with a stock grade indicator defined against it:

[1]The Stock Grade Indicator field is available from the Field Chooser, for the list part of the window.



In cases where more than one item on the form has an indicator defined, the 'highest' level indicator present is shown on the Additional Info tab.

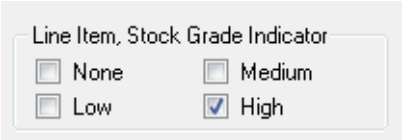
3. Go to **Options > Line Items** to identify which item(s) on the order have an indicator.
4. Select an item and go to **Options > Stock Grades** to see which grade(s) is defined against that item[1].

As line items progress through the purchasing process, any attached stock grade indicators will also appear on deliveries and transport documents. In cases where more than one item on a form has an indicator defined, the 'highest' level indicator present is shown on the Delivery or Transport Document window.

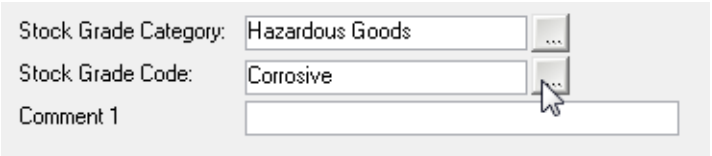
Filtering by Stock Grade Indicators

You can filter by stock grade indicators in several windows throughout the system.

In the Forms filter, search for order forms which have one or more line items with an indicator attached:



You can also filter the Forms window for order forms containing items with a specific **Stock Grade Category** or **Code** within that category:



The same options are available on the filters for the Transport Documents, Transfer Document and Deliveries windows.

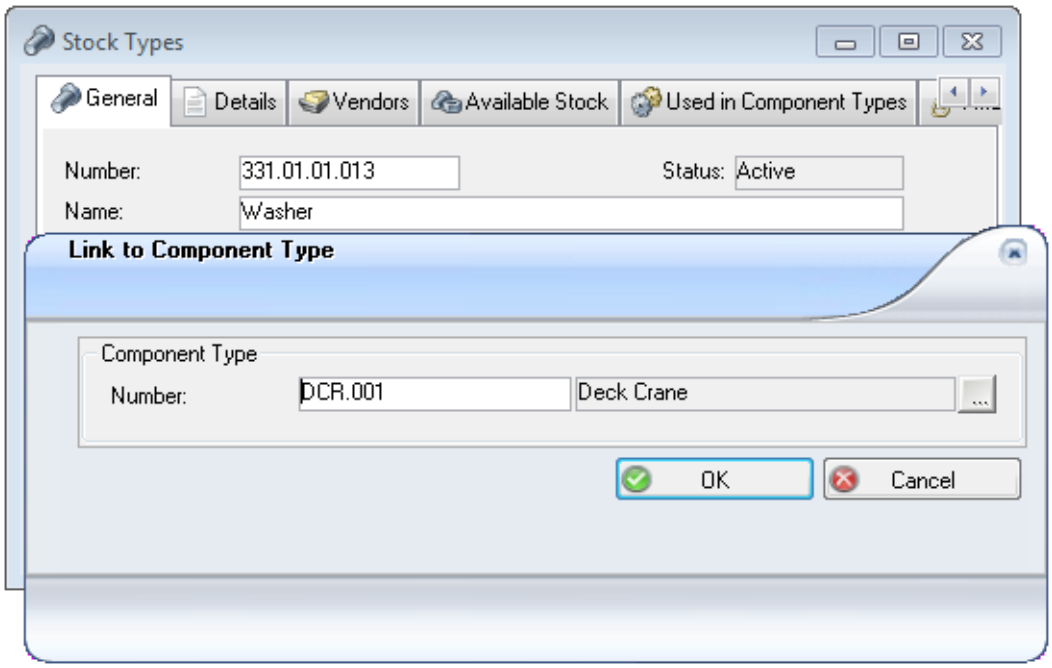
[1] You can change, add or remove stock grades in the Line Items > Options > Stock Grades window. Changes apply to the specific instance of the item only. To apply changes to all items, make them on Stock Type level. Note that changes made to grades at Stock Type level will not apply to instances of the stock already on existing purchase forms.

Stock Types in Component Types

Component types are made up of stock types. List any component types which contain the selected stock type in the Used in Components Types tab: there are two ways to do this.

From the Options Menu

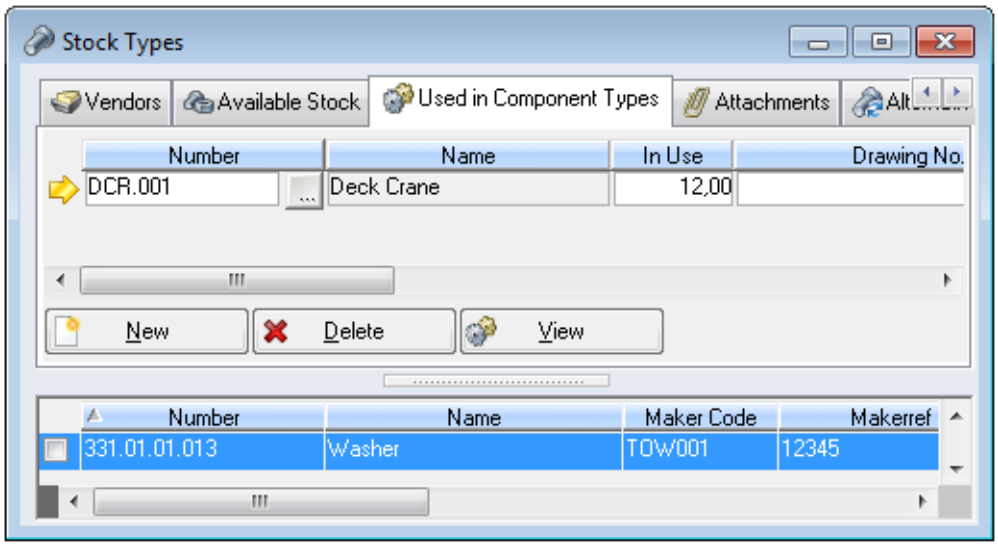
1. Go to **Stock > Stock Types**.
2. Select a stock type and choose **Options > Link to Component Type**.
3. Use the lookup button to select a **Component Type** which the stock type is a part of:



4. Click **OK** to exit the dialog.
5. The Component Type will appear in the Used in Component Types tab on the Stock Types window.
6. Click **Save**.

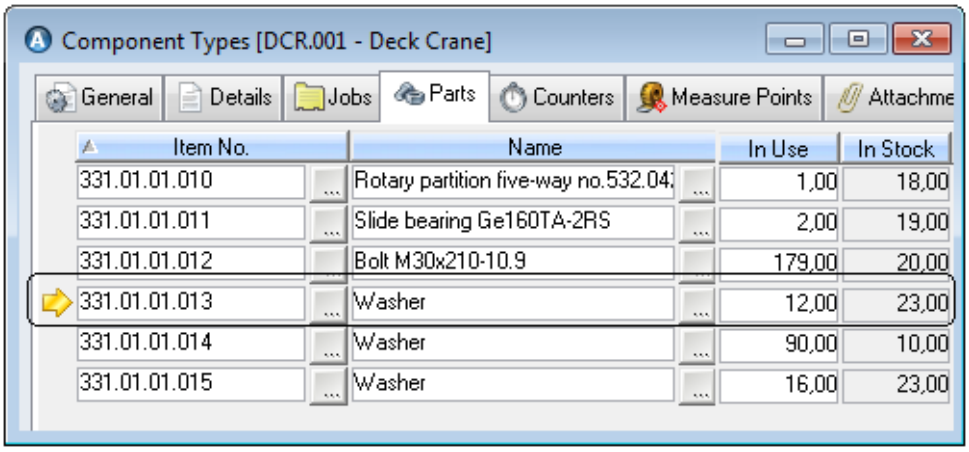
From the Used in Components Type tab

1. Go to **Stock > Stock Types**.
2. Select a stock type and open the Used in Component Types tab.
3. Click the **New** button in the tab and then use the lookups to select a component type:



4. Click **Save**.

The stock type itself will appear in the Component Types window Parts tab, for any component type containing it. Double-clicking a component type in the Used in Component Types tab or selecting one and clicking the **View** button opens the Component Types window:



Or, you can open the Component Types window from the Maintenance menu and filter for the component type you just entered in the Stock Type window.

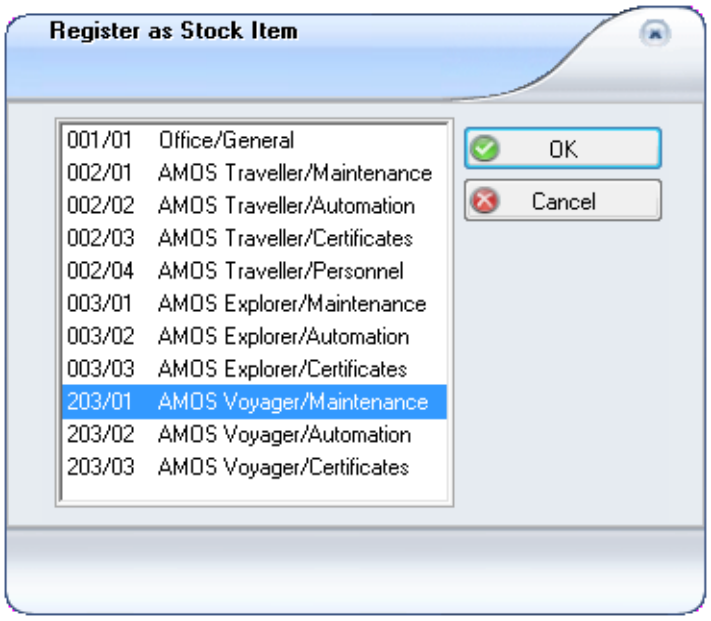
Click **Copy List** to copy the listed component types [1] to the clipboard, from where you can paste them to another program like Word or Notepad, etc.

Registering a Stock Type as a Stock Item

You can register individual Stock Items of any Type at the installations where they are in use:

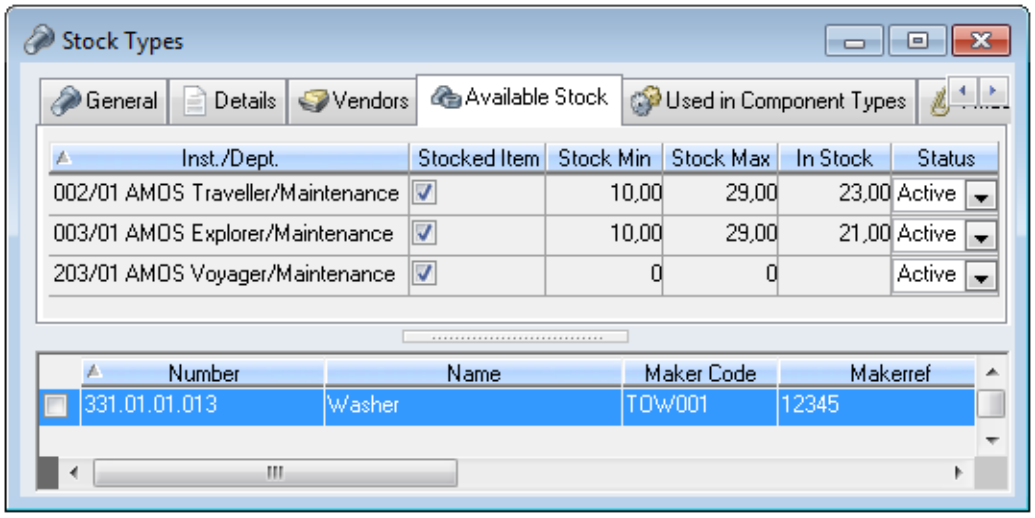
1. Go to **Stock > Stock Types**.
2. Select the Stock Type to register as a Stock Item at an installation.
3. Go to **Options > Register as Stock Item**. A new dialog appears.
4. The dialog contains a list of your defined installations and departments. Select one from the list. Press the **CTRL** button and click to make multiple selections.

[1] Selecting 'Copy List' from the Edit menu copies all columns and values from the list part of the window. Clicking the Copy List button only copies the contents of the Used in Components Type tab.

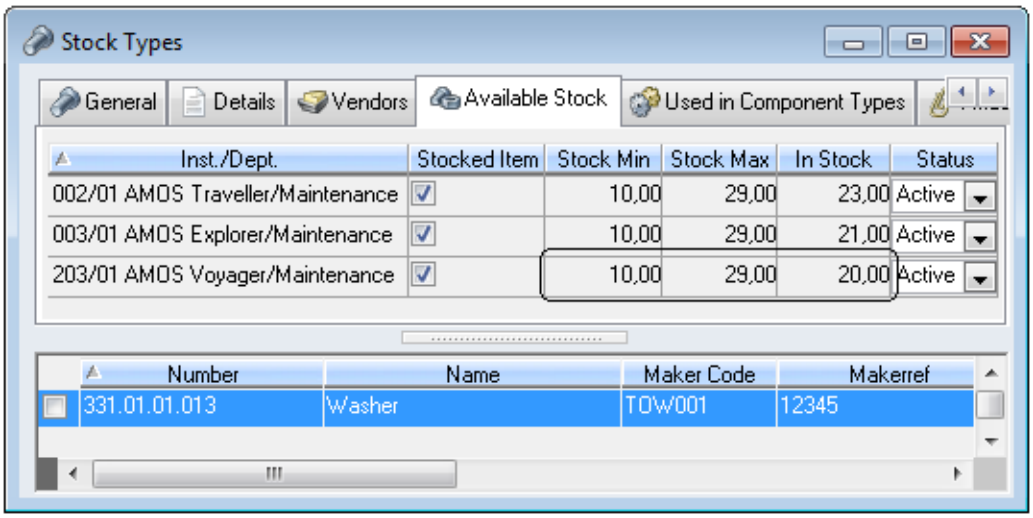


Click **OK**.

5. The selected Stock Type is registered as an Item which is used at the installation(s). It will appear in the Stock Items window at each of the installations you selected.
   The installation(s) is/are also added to the Available Stock tab for this Stock Type:



6. Click **Save**.
7. Go to the Stock Items window for the listed installation(s) to enter details applying to the stock item there, such as **Stock Min.**, **Max.** and current locations and levels, etc. This information will update the Stock Types window Available Stock tab:



Stock Items

Stock items are defined - get their names and ID numbers - in the Stock Items window. Open the window by selecting **Stock > Stock Items** or by clicking the button on the toolbar.

There are two ways to create a new stock item:

- From the Stock Types window, by registering a stock type as an item at an installation. See "Registering a Stock Type as a Stock Item" on page 210. Or,
- Directly in the Stock Items window. See "Creating Stock Items in the Stock Items Window" below.

The Stock Items window contains an overview of a lot of read-only information about each item, inherited from other parts of the system.

Creating Stock Items in the Stock Items Window

To add a new stock item directly to the Stock Items window:

1. Go to **Stock > Stock Items** at the installation where you want to register the item.
2. Click **New** on the toolbar.
3. Click the **Number** lookup and select a stock type. The general details for that type will appear in the General tab.
4. Supply other information specific to the item: use the Stock Details section to enter information specific to this item: how many units are wanted, maximums, minimums and reorder levels.

   Note: AMOS determines the supply time for an item as the amount of days between when an item is requested and when it arrives at the installation. The **Median Supply Time** for an item is derived from all instances of delivery of that item. Adjust it if necessary by selecting **Options > Recalculate Supply Time**.

5. Enter the **Stock Average** price in the Prices area.
6. **Save** the new stock item.

Stock Item Makers and Vendors

Maker and preferred vendor details including any prices and units supplied on the stock type will be inherited onto new stock items.

Go to **Options > Preferred Vendor** to open the Address window for the defined vendor. Go to **Options > Maker** to open the Address window for the stock item's manufacturer.

Stock Items in Components/Types

Lists of component types and components which currently use or contain the selected stock item are inherited in the Components and Component Types tabs. Note that some components/component types might reference an **Alternative No.** This is another stock item which according to the manufacturer or vendor can be used interchangeably with the selected item, in the listed component/component type.

To connect more component types to the selected stock item, go to **Options > Link to Component**. Lookup a component type number and it will appear in the Component Types tab.

> **T i p**
>
> To copy the contents of the Components or Component Types tab, click the **Copy List** button in either one. This copies all listed component/types [1] to the clipboard, from where you can paste them to another program like Word or Notepad, etc.

Stock Depreciation

Some stock items will depreciate in usefulness (and therefore value) with time, as they get older and reach the end of their shelf life. AMOS gives you the opportunity to configure stock items such that the financial side of the program reflects this ageing of your inventory. To configure stock depreciation first activate it and then set levels of depreciation.

> **Note:** This option must only be activated whilst all stock levels are still set to 0 and before any stock transactions have been carried out.

Activating Stock Depreciation

1. Select **Tools > Configuration > Parameters > Options > Stock > Use Stock Item Depreciation**.
2. Click the lookup button to the right of the **Value** field in Global and click the TRUE radio button.
3. Click **OK**.

Setting Depreciation Levels

1. Go to **Tools > Configuration > Stock > Depreciation Levels**.
2. Define names and percentage values for each of the depreciation levels. The `Useful' state determines whether stock at that level is taken into consideration when calculating stock levels. This reflects the fact that certain items may be retained (perhaps for emergencies or cannibalisation), even though they have outlived their shelf life. You can set depreciation levels such as: 'Absent - 0%', 'Small - 30%', 'Average - 50%', Full - 100%', etc.
3. **Save** and close the register.

Once the option is activated, the Stock Items window contains a new element for Depreciation on the Overview tab:

Location	In Stock	Absent	Small	Average	Full
Store 01	78.00	0.00	0.00	0.00	0.00
Store 02	3.00	0.00	0.00	0.00	0.00
Total Stock:.	**81.00**				

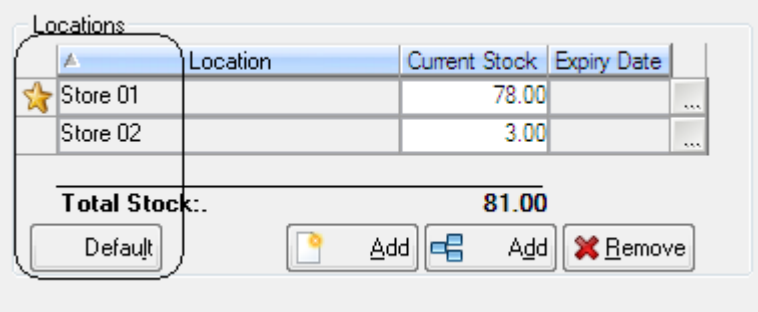
[1] Selecting 'Copy List' from the Edit menu copies all columns and values from the list part of the window. Clicking the Copy List button only copies the contents of the Components or Component Types tab.

Additionally, the Stock Transaction window shows a new **Depreciation** drop-down field where you can select stock according to depreciation level.

Stock Item Locations

To register a stock item's location at an installation:

1. Go to **Stock > Stock Items**. Select an item.
2. Click one of the two **Add** buttons: to add a location from a list or from the locations hierarchy. All locations not already in use for the selected item are available to choose from.
3. Select a location and click **OK** to return to the main window:



4. If you list more than one location, you must define a default: select a location and click the **Default** button to flag it with a star.

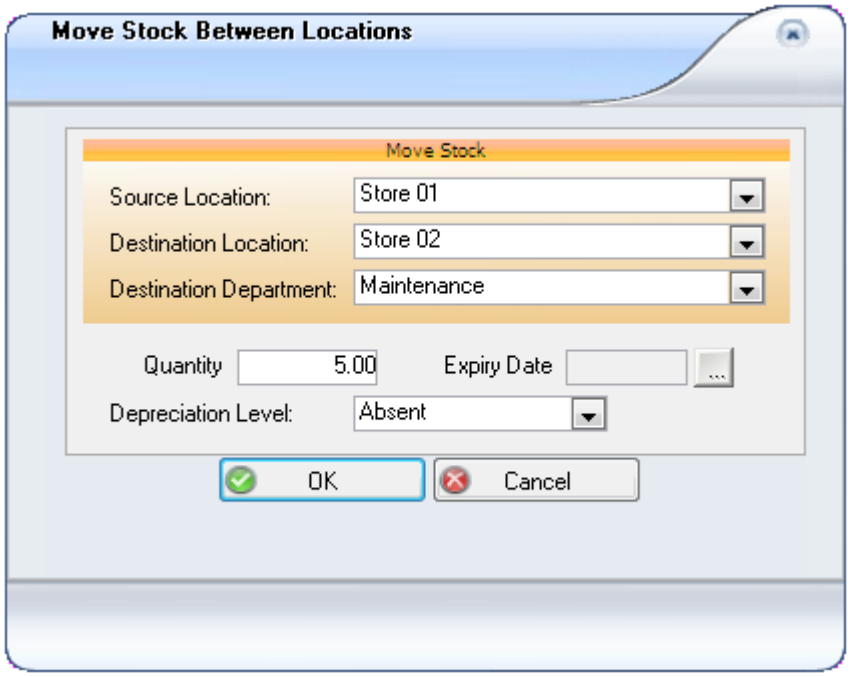
To remove a location from the list select it and click **Delete**.

Moving Stock Items

Moving Partial Quantities of One Item

To move a partial quantity of one stock item from one location to another:

1. Go to **Stock > Stock Items**and select the item to move.
2. Go to **Options > Move** to open the Move Stock dialog.
3. Select the **Source Location** and **Destination Location** and enter the **Quantity** to transfer:



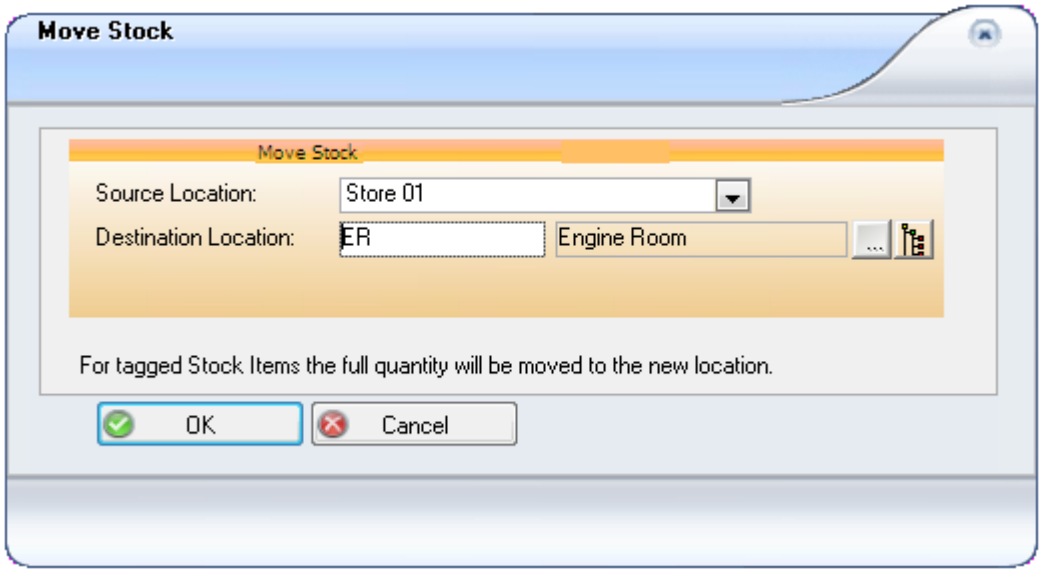
You can choose a different Destination Department, but only if the stock item is already registered there.

For perishable items, the select an **Expiry Date**

4. Click **OK**.

Moving the Full Quantity of One or Several Items

1. Flag one or several items in the Stock Items window.
2. Go to **Options > Move**. The **Move Stock** dialog box changes to the following:

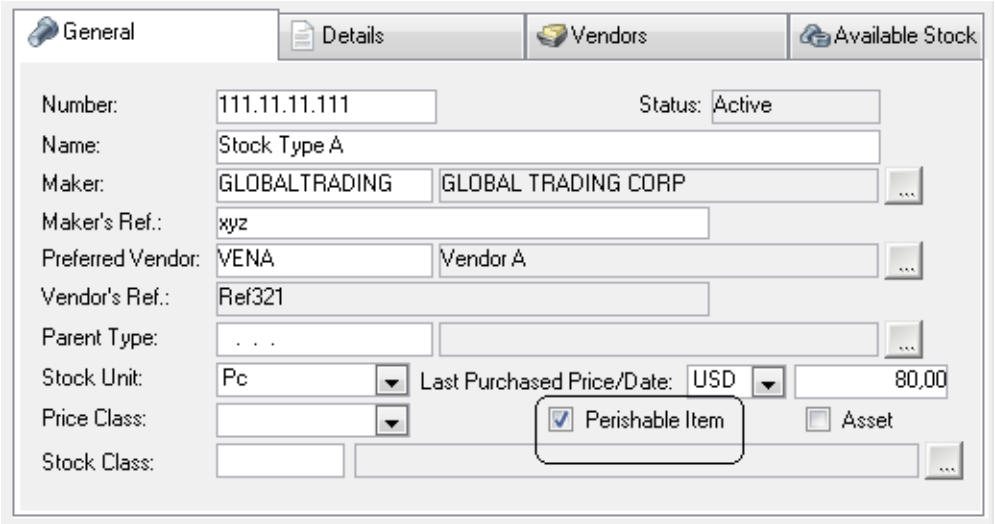


3. Select a **Source Location** and **Destination Location**.
4. Click **OK**.

Remember, when you tag one or more items before selecting the **Move Stock** option, the entire quantity of any selected item will be moved from the source location to the destination. Any expiry date details automatically follow the stock to the new location, and AMOS creates stock transactions of type 'Transferred In' and 'Transferred Out' for the moved stock items.

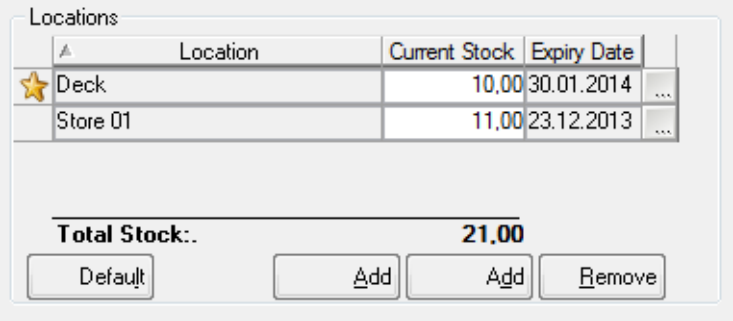
Perishable Stock

Stock is marked as perishable by flagging the **Perishable Item** checkbox on the stock type window:

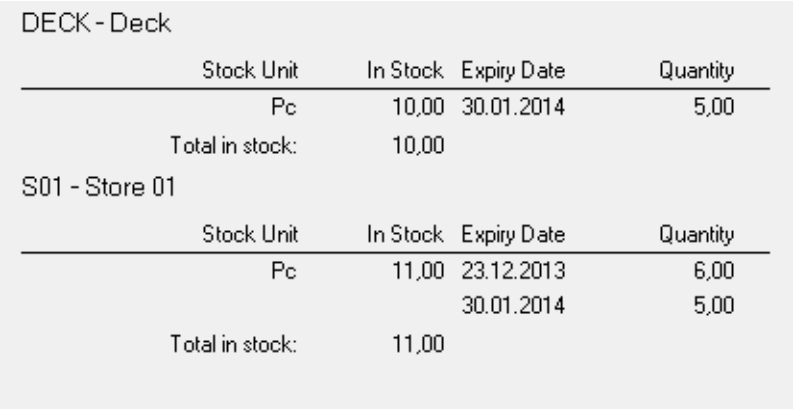


The same checkbox is available read-only, on the Stock Items window and its state (flagged or unflagged) is inherited on items from type level. When locations are added for a perishable item, the Locations tab will be activated and contain a read-only overview of stock locations and totals.

Whenever you move a quantity of a perishable item or generate a type of stock transaction for it, you will need to select or provide an expiration date:



This means that different 'batches' of items in the same location might have different expiry dates. A break-down of such dates is shown in the Locations tab:



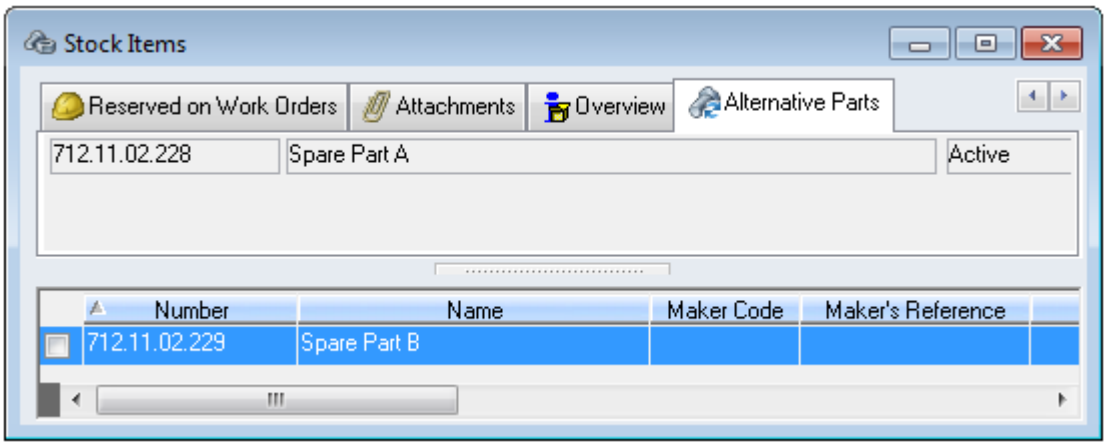
Parts Handling: Alternative, Replacement and Obsolete Parts

Using AMOS to handle spare parts - stock - you can differentiate between:

- Alternative parts,
- Replacement parts, and
- Obsolete parts.

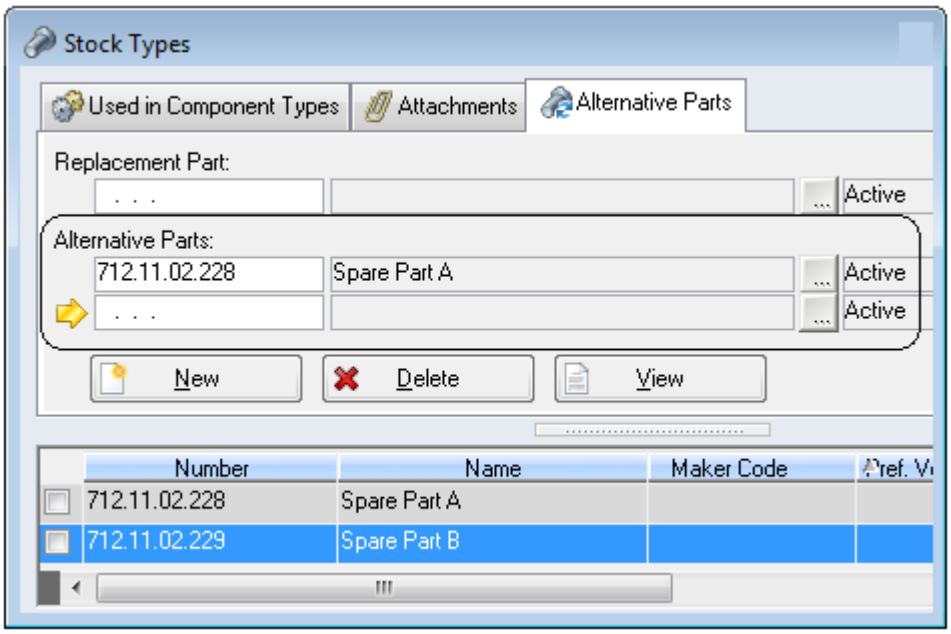
Alternative Parts

Certain stock types can be used as parts interchangeably with other types - Spare A can be used instead of Spare B, and vice versa. Alternate Parts are defined on stock type level and are generally in addition to the primary defined parts. Wherever a stock type appears throughout the system, its defined alternatives will be listed with it - for example: Required Parts tabs, Stock Used tabs, tabs where parts are linked from Stock Type such as the Stock Items window and the Component Type window Parts tab:



To define an alternative part:

1. Go to **Stock > Stock Types**.
2. Select a **Type** in the list and open the Alternative Parts tab.
3. Click the **New** button in the tab to get a blank line under the **Alternative Parts** header.
4. Use the lookup to locate the second stock type, which can be used interchangeably with the one selected in the list. Only active parts can be listed:



5. **Save** the registration. Repeat if there are more alternatives. Clicking the **View** button in the tab opens the Stock Types window to the second, alternative stock type.

Replacement and Obsolete Parts

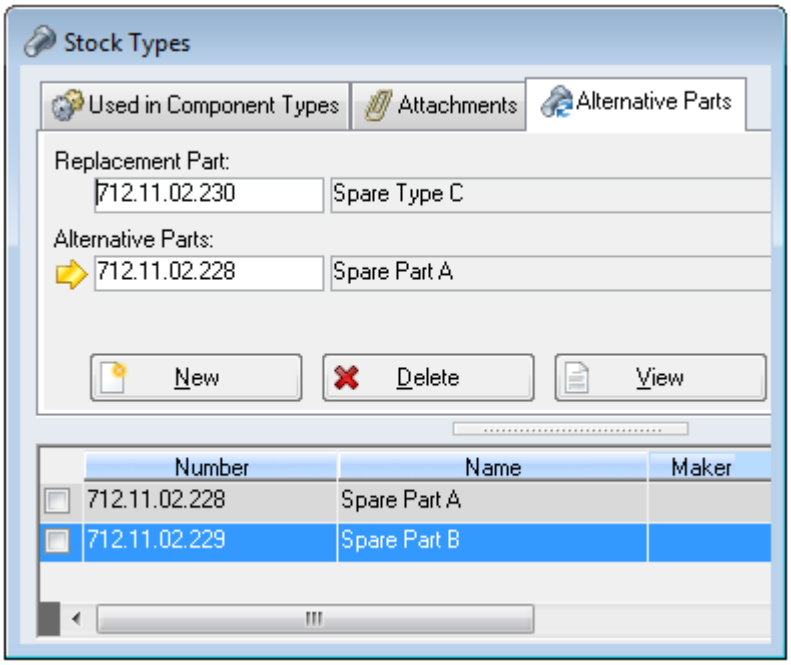
Although Parts can have many alternatives, each part can have only one replacement.

Defining a replacement part provides a way to indicate when an Obsolete and/or Scrapped part has been replaced by another part. When a replacement part is listed on a stock type, upon saving the original part no longer appears throughout the system but its replacement does instead. The original part does not need to be scrapped first. The 'primary' or original part is no longer available in the system; the part it has been replaced with is displayed and used instead.

You can define replacement parts on Stock Type and/or Stock Item and/or Component level.

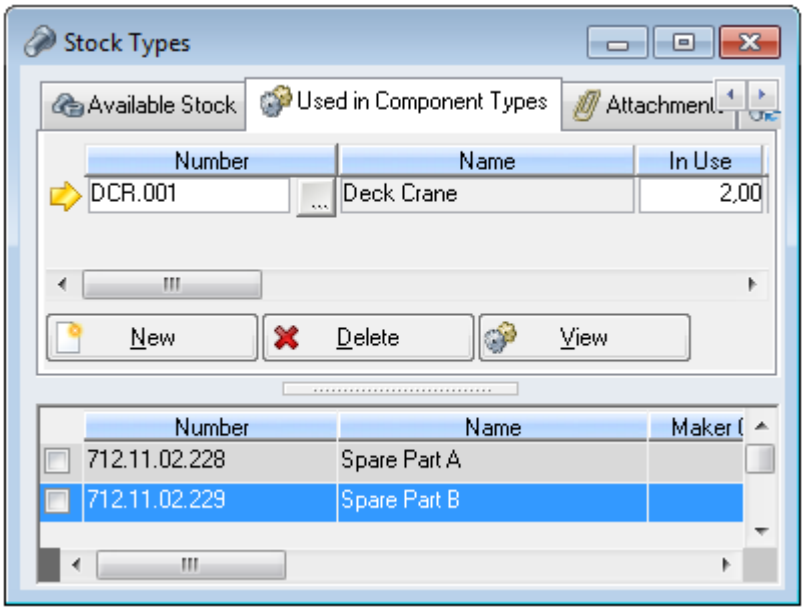
To define a replacement part:

1. Go to **Stock > Stock Types**.
2. Select a **Type** in the list and open the Alternative Parts tab.
3. Use the lookup button under **Replacement Part** to select another stock type to replace the selected one with. Only active parts can be listed:

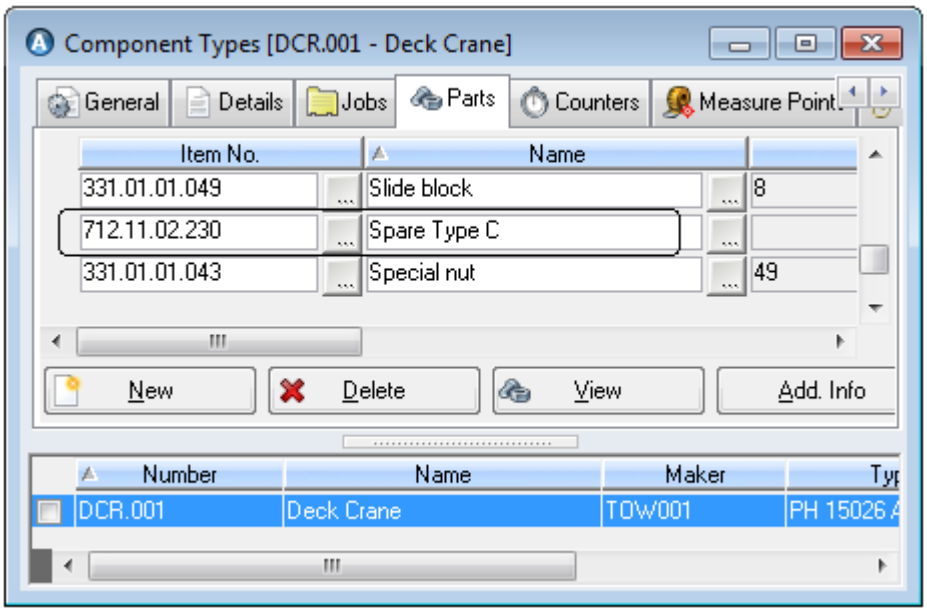


4. **Save** the window.

Open the Used in Component Types tab and double-click on a component type listed there as using the stock type:



The Component Types window opens for that component type and the Parts tab will now contain the Replacement part instead of the original stock type:



The same replacement part will show up throughout the system; for example, on the Components window for Components of that Type, or in Required Parts lists, etc.

Setting Status on Stock

The following statuses can be defined on parts:

- **Active**. A viable part which can be used at any time.
- **Obsolete**. A part which can no longer be purchased, but the remaining stock level can be used. If the stock level of an obsolete part is 0, the part will not appear in parts lists throughout the system.
- **Scrapped**. A part which can no longer be purchased and any remaining stock can no longer be used (recall). Scrapped parts will not be visible throughout the system other than in History records and reports.

Part status can be defined on three different levels. At:

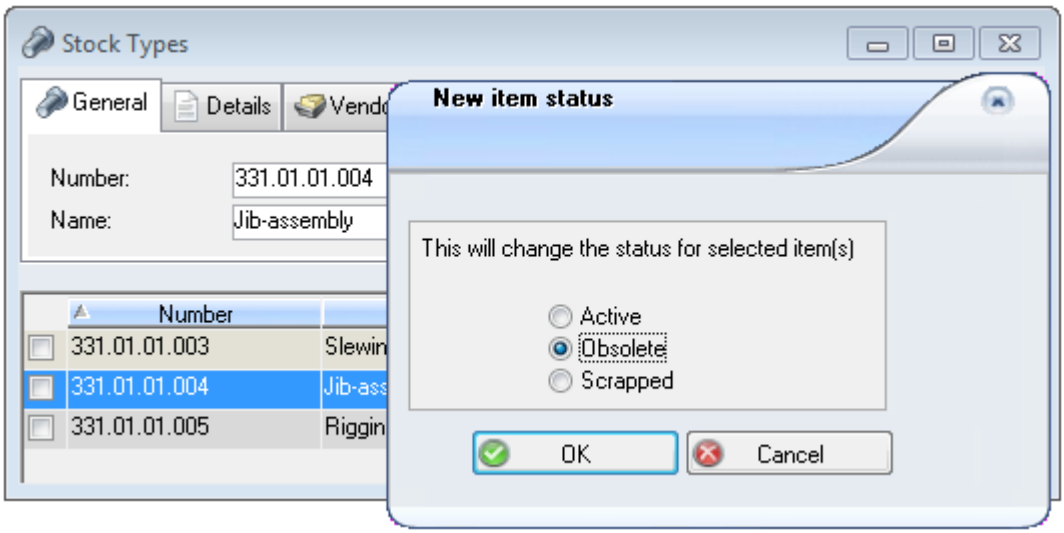
- **Stock Type**. A change in status can be applied system-wide – and can also be reflected on Stock Items and CompSpares.
- **Stock Item**. It can be that the Stock Type itself is Active and Stock Items of that Type are also active and in use at some installations. However, other stock items of that type on two sites might be Obsolete, and on one site that item may have been Scrapped.
- **Component/Type (CompSpare)**. A part's status can be related to the Component it is registered to - for example the same part might be Obsolete for Component A and Scrapped for Component B but still Active for Component C.

Note: CompSpares are the stock types which make up a component/type. They are listed in the Component/Types window Parts tabs.

Setting Status on Stock Types

Changing the Status on a Stock Type

1. Open the Stock Types window. Select a type.
2. Go to**Options > Set Status**.
3. You have three options: Active, Obsolete and Scrapped:



4. Select a new status and click **OK**.

Scrapped stock types cannot be registered as stock items or added to components as parts. When status is set to obsolete or scrapped at stock type level that type can no longer be purchased manually or on the Stock Wanted list either. The Stock Type Hierarchy window will display stock types with status scrapped or obsolete unless all the sub-stock of a type is also set to obsolete.

Propagating a Status Change

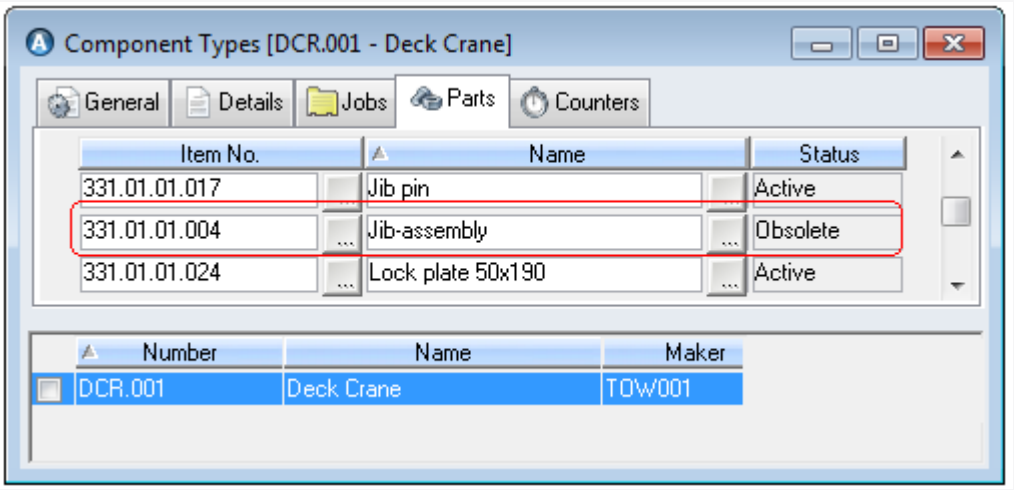
You can propagate a new stock type status onto stock across your system[1]. Upon saving, AMOS will present the following message:

'Status of some Stock Types has been updated, do you want the same status change to be reflected on the Stock Items and CompSpare?'

- Click **No** to save the change to the stock type status only.
- Click **Yes** to reflect the status change on all stock items of that type, and all instances of the stock type which are linked as parts to component types (CompSpares).

EXAMPLE

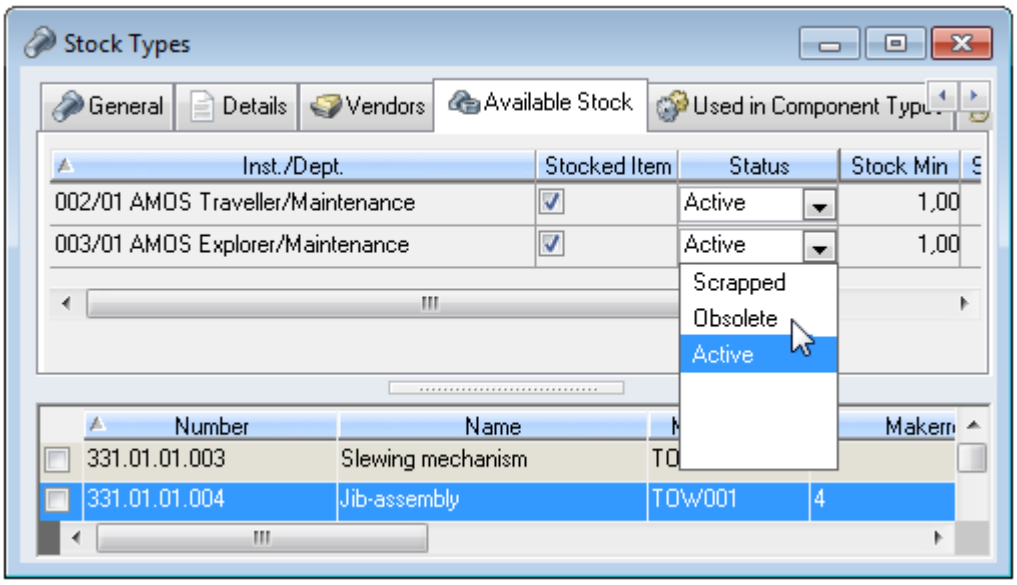
You change the status on stock type 331.01.01.004 from Active to Obsolete. The stock type is linked as a part to the Component Type DCR.001. You click 'Yes' to reflect the change in status and so the stock type's status is updated in the Component Types window:



Activating/Deactivating Stock at Selected Installations/Departments

To activate or deactivate a stock item at one or more installations/departments - but not system-wide - select a new **Status** from the drop-down list in the Stock Types > Available Stock tab for any **Inst./Dept** listed there with the item in stock:

[1] This action is generally performed in the office, not aboard vessels.

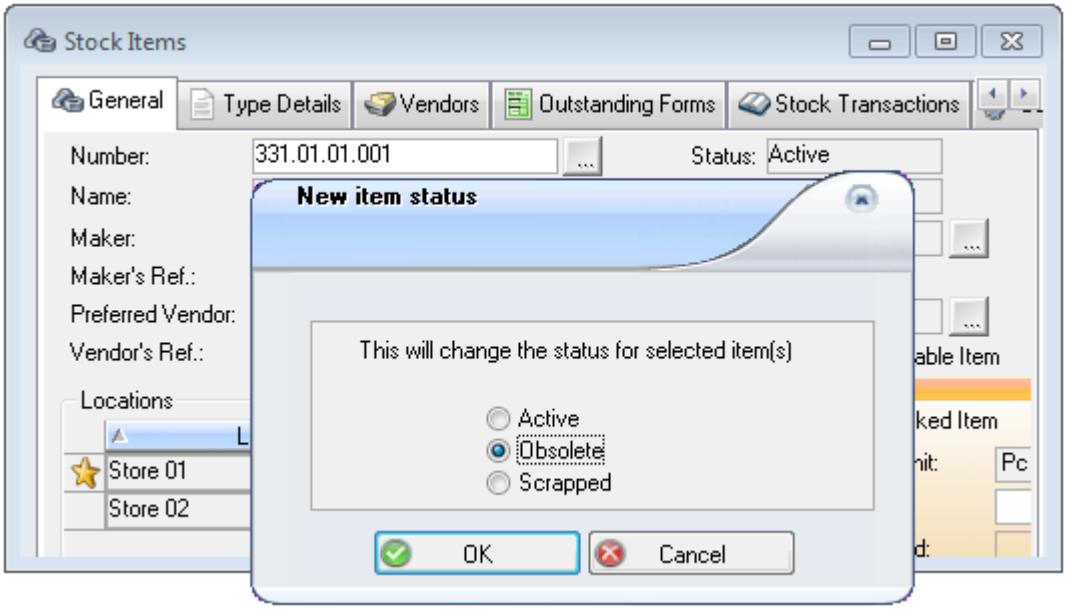


Inactive records in the Stock Types window can only be edited by users with Edit access to the window, and access to the function 'Edit Inactive Stock Details' assigned in the Access Control window. Otherwise, inactive stock types will be read-only.

Setting Status on Stock Items

To change status on a part in the Stock Items window:

1. Go to **Stock > Stock Items**. Select an item.
2. Go to **Options > Set Status**.
3. You have three options: Active, Obsolete and Scrapped:



4. Select a new status and click **OK**.

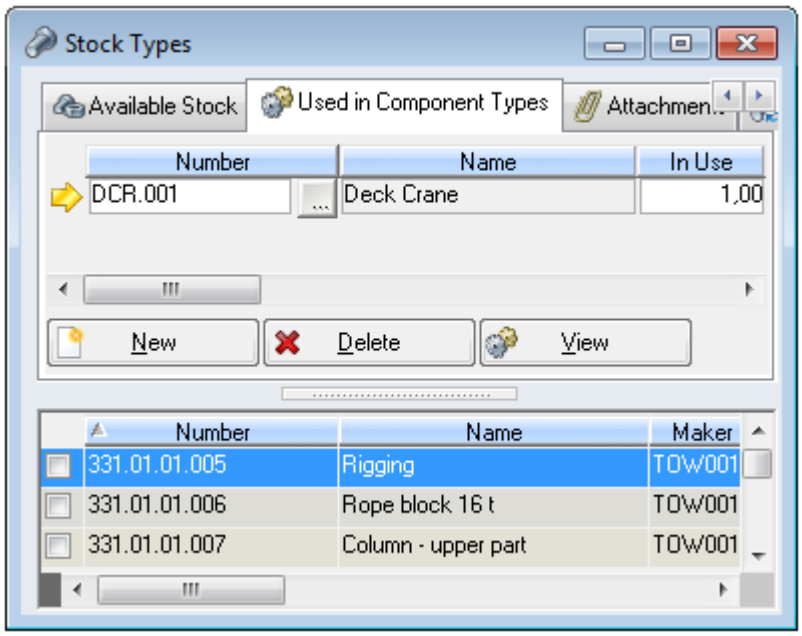
> **Tip**
>
> Set the status for several items at once by tagging the items in the list first, and then selecting **Options > Set Status**. The status you choose will then apply to all tagged items.

Status changes on stock items only apply to the selected item and are not copied to types or across installations.

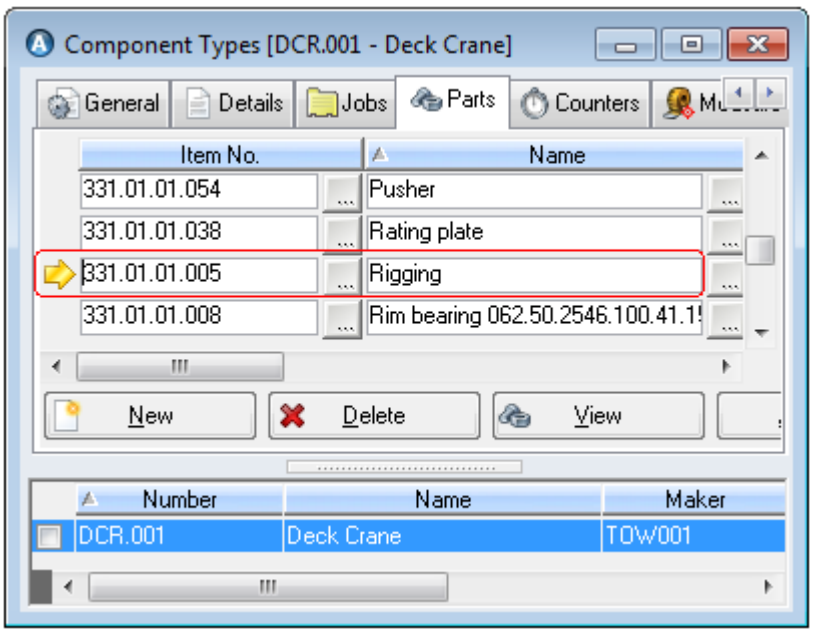
Inactive records in the Stock Items window can only be edited by users with Edit access to the window, and access to the function 'Edit Inactive Stock Details' assigned in the Access Control window. Otherwise, inactive stock items will be read-only. It is not possible to add components to the Components tab for inactive stock items. Items set to scrapped cannot be moved in and out of stock and will not be included in the Stock Wanted window calculations.

Setting Status on CompSpares

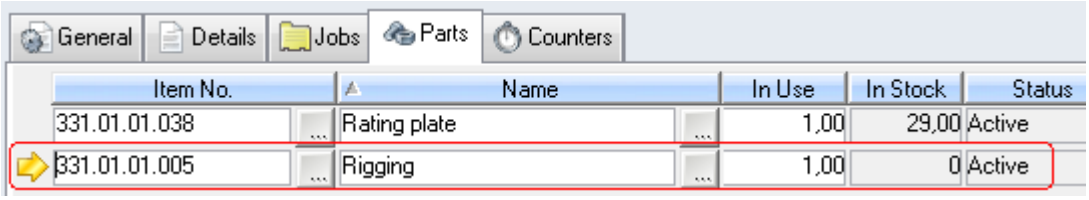
Parts used in a component/type are called compspares. To see the component type(s) a stock type is a part of, open the Stock Types window Used in Component Types tab. Any component types listed there contain the stock type selected in the list. In the illustration below, the stock type 331.01.01.005 is a part of the Component Type DCR.001:



Double-click on the component type to open the Component Type window for DCR.001. Stock type 331.01.01.005 is listed in the Parts tab along with any other stock types which make up the same component type:



The **Status** field at the end of each line defines the state of the selected part in reference to the component type: although a part may be actively in use in one piece of equipment, it could be currently obsolete in another piece of equipment:

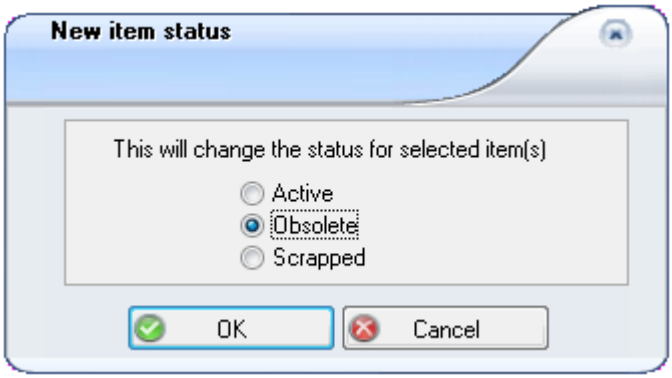


Inactive parts cannot be added to the Parts tabs or the Component/Type Jobs Required Parts tabs. However, it is still possible to include a part in the Stock Wanted list or as a line item on an Order Form even if it has been marked as inactive in a particular component: the component in which the part is inactive simply cannot be selected as the component the part is to be purchased for.

Changing CompSpare Status

You can change a part's status in reference to the selected component type in the Component Type window. The new status can be applied onto the stock type itself, provided the stock is not registered as an active part of any other equipment[1].

1. Open the Component Types window.
2. Select a component type and open the Parts tab.
3. Select a part in the tab and click the **Set Status** button.
4. There are three options: Active, Obsolete and Scrapped:



5. Select a new status and click **OK**.

Note: You can alter the status of stock types listed as parts in the Component Types window or Components windows Parts tabs depending on the setting of the parameter 'Use Component Types'. Set to TRUE, the **Status** field next to every part in the Components window Parts tab is read-only and the **Set Status** button is not available. In this case part status can be set in the Component Types window only, and propagated to individual components. Set to FALSE, changes to part status can be made in the Component window and apply to the selected component and part only.

Propagating a Status Change to Stock Types

When you change the status on a component/type part to Obsolete or Scrapped, AMOS will check if items of that type are linked to any other component(s) and if so, check the status of the part in reference to the other component(s). What happens next depends on the setting of the parameter 'Update Stock Status with Change to CompSpare Status':

[1] This action is generally performed in the office, not aboard vessels.

- Set to FALSE, the status will not change on the stock type.
- Set to TRUE, the stock type's status will be updated to the status set on the part used in the component type, as long as the stock type is not currently an active part of any other component type.
- Set to ASK, AMOS will present the message:

  'This is the only active reference of this stock to Components remaining, do you want to update the Stock Type?' You can choose **Yes** or **No**.

Stock Purchase History

AMOS keeps a record of the ongoing purchase history[1] against stock (types and items) showing you things like when you bought it, from whom, how much it cost and so on. This information is all stored in the read-only Purchase History window, which you can access from the Stock Types or Stock Items window.

Although you can always find the last purchase price of any stock you have bought from a particular vendor on the Stock Type/Item window, to get a better overview of pricing AMOS will also help you to identify the lowest price inside of a given time period you define. This best price is also flagged in the Purchase History window. See "Setting the 'Best Purchase Price' Period" below.

You can also view the purchase history information for individual line items from the **Purchase > Forms > Line Items** window.

Setting the 'Best Purchase Price' Period

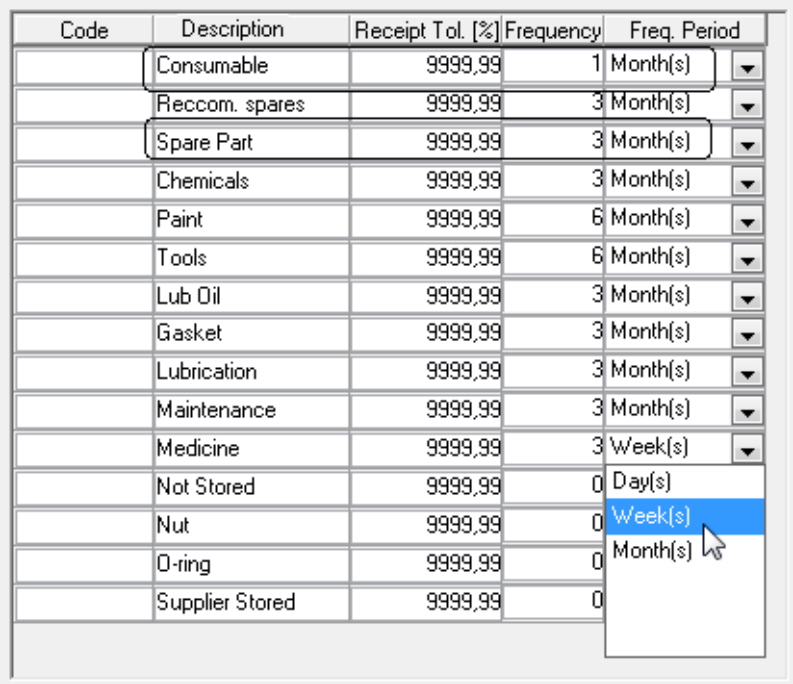
To help you establish the best possible purchase price and limit the records presented in the Purchase History window, you can apply a default time period to individual stock classes.

> **EXAMPLE**
>
> The time frame you want to review would be longer on spare parts than on consumables like fuel oil. AMOS will then show you the historical purchasing information and flag the best price for relevant stock inside of the set time frame only.

Setting a Best Purchase Price Period by Stock Class

1. Go to **File > Open Register > Stock > Stock Classes**.
2. You see a list of stock classes and two columns: **Frequency** and **Frequency Period**.
3. Set the period for each class. So you might set something like 1 Month on consumables, and 3 Months on spare parts:

[1] Purchase history functionality is available to users with the Purchase Module included in their system license.



4. **Save** the register.

Setting a Best Purchase Price Period by Parameter

If you are not using stock classes, or you have stock without a class defined on it, you can set this same time period using a system parameter:

Tools > Configuration > Parameters > Options > Purchase > 'Best Purchase Price Evaluation Period'.

Keep in mind that in this case, the set period applies to:

- any stock which is without a stock class, and
- any stock which does have a stock class defined, but there is no best purchase period set on that class.

You can set the parameter to apply globally or at individual installations.

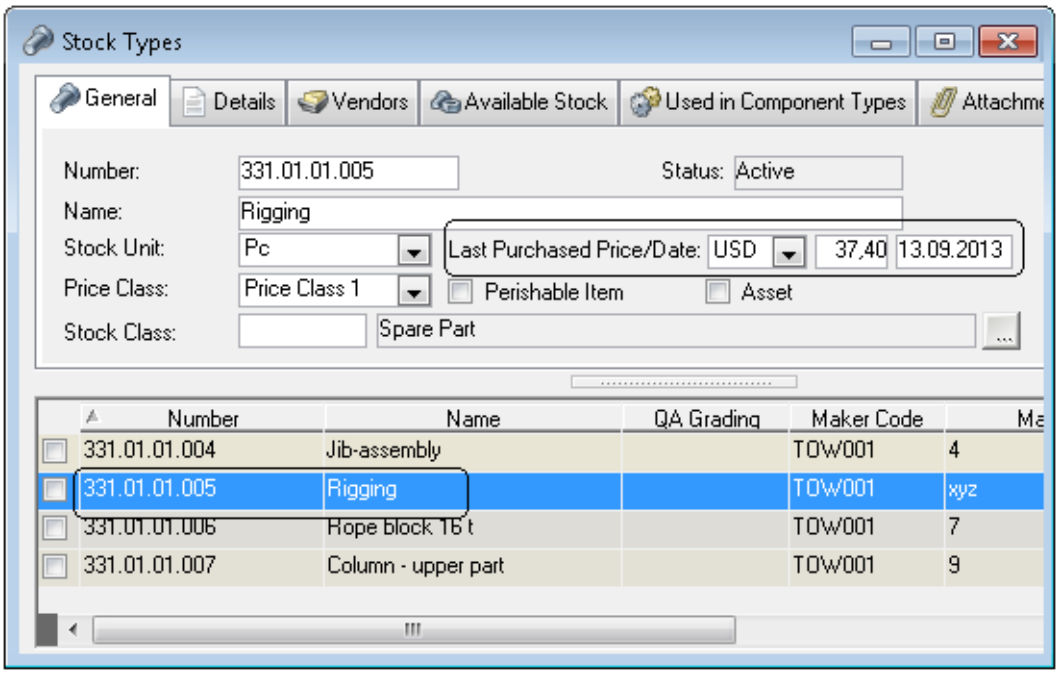
Keeping Track of Purchase History

As you use AMOS to manage purchase forms, receive quotations and order goods, the history for any stock type/item - the forms, prices, dates, currency and vendor - will accumulate on the Purchase History window at both stock type and stock item level. While at stock type level you can see all transactions for all instances of a particular stock type from all installations (according to the set sharing parameters) at stock item level you see the same transactions for that item at the current installation only.

The sharing of the financial information can be handled separately from the sharing of the actual stock types themselves: for example the stock types are shared globally but the financial information is restricted to be shared amongst certain groupings of sites.

To access the historical information from the Stock Types/Items window:

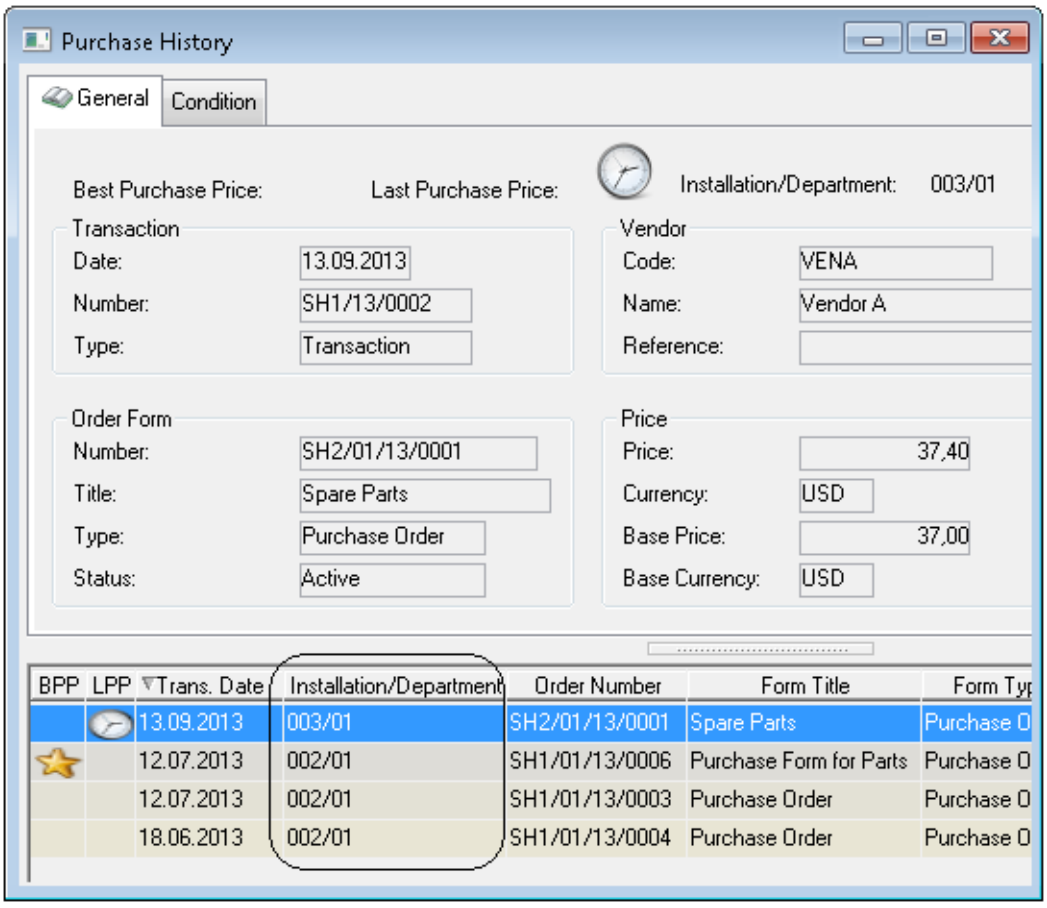
1. Go to **Stock > Stock Types/Items**. Search for a type/item or click **Filter**.
2. Select a type/item in the list:



You can see the **Last Purchased Price** on the General tab.

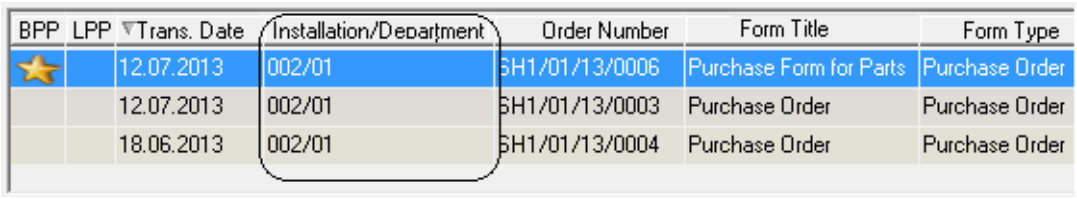
3. Go to **Options > Purchase History**.
4. The Purchase History window for the type/item you selected opens up.

Remember, at Type level you can see transaction history for all items of this type purchased across all shared installations:



The yellow star indicates the transaction with the best price, while the clockface indicates the latest transaction and so, the last purchase price.

At Item level you see the results for the selected item at the current installation only:

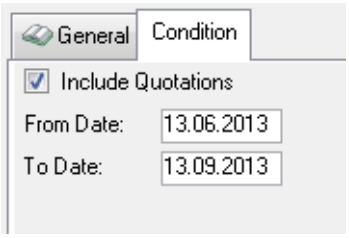


BPP	LPP	Trans. Date	Installation/Department	Order Number	Form Title	Form Type
★		12.07.2013	002/01	SH1/01/13/0006	Purchase Form for Parts	Purchase Order
		12.07.2013	002/01	SH1/01/13/0003	Purchase Order	Purchase Order
		18.06.2013	002/01	SH1/01/13/0004	Purchase Order	Purchase Order

By default, AMOS will also include currently existing quotations for the selected type/item in the transaction list. To appear in the list quotations must:

- have a price registered,
- have a **Sent** date set, and
- have not expired as of the current date.

You can remove quotations from the transaction list and readjust the best and last purchase prices accordingly, by unflagging the **Include Quotations** checkbox on the Condition tab and clicking the **Apply** button:



Changing the Best Purchase Price Period

To help you establish the best possible price, AMOS displays the historical purchasing information inside of the user-defined 'Best Purchase Price Period' time frame only[1], and flags the lowest-priced transaction inside that period.

> **EXAMPLE**
>
> The frequency and period defined on the stock class 'Spare Parts' is 3 months. The stock type '331.01.01.005 - Rigging' belongs to this class. This means that opening the Purchase History window on September 5 will show forms containing this item with dates from June 5 - September 5 only, and the transaction with the best price in that timeframe will be marked with a gold star.

If no best price period is defined on the stock class, or no stock class is defined on the line item's stock type, AMOS will refer to the setting of the parameter 'Best Purchase Price Evaluation Period'.

You can change the default pricing interval when evaluating for best purchase price:

1. Open the Condition tab.
2. Enter a new **From Date** and/or **To Date**.
3. Click **Apply**. The content of the General tab will updated according to your new timeframe.

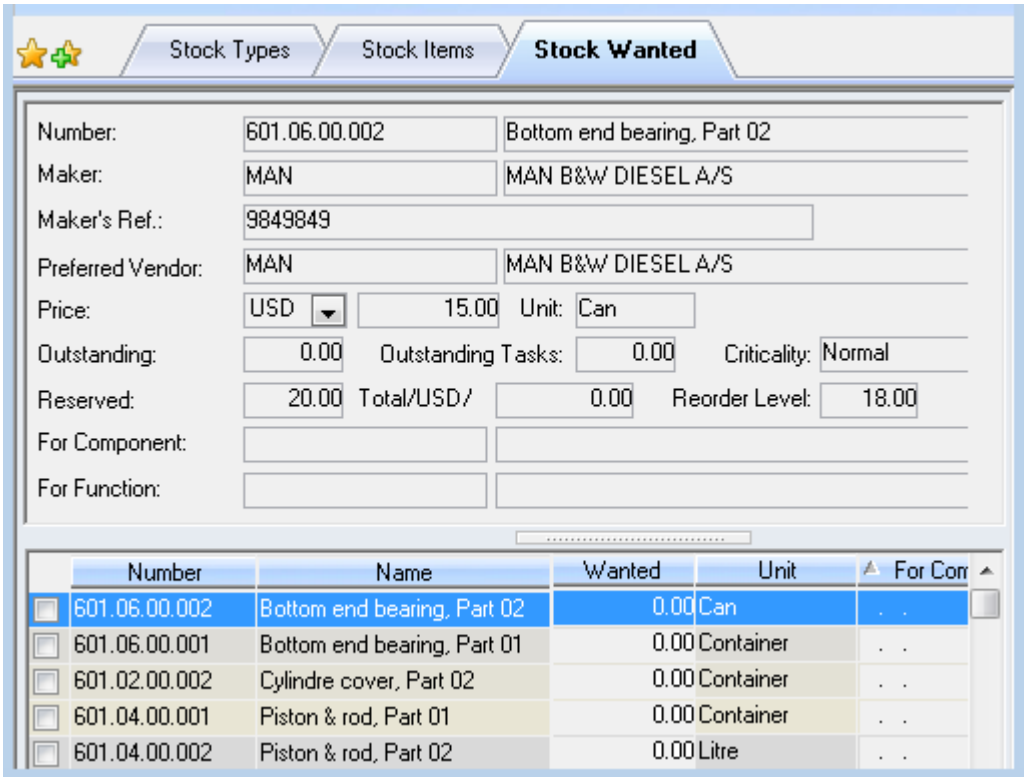
[1] If you have not set the parameter or applied a frequency period to stock classes as outlined in "Setting the 'Best Purchase Price' Period" on page 225, then opening the Purchase History window will show all transactions available for the selected type/item and all records will be considered in the best price evaluation - meaning the 'best' price flagged could in fact be outdated.

Stock Wanted

The Stock Wanted window offers a complete overview of your current stock. AMOS takes the quantities that you enter in the **Wanted** column and inserts them into automatic requisition forms. The user making the requisition can change the items or quantities if necessary.

To set up a list of required stock:

1. Go to **Stock > Wanted**.



2. Review the information in the window and decide which items and quantities you want.
   - **In Stock**. How many of each item you have. If the number is red the quantity in stock is less than the reorder level defined in the Stock Items window.
   - **Outstanding**. The quantity requisitioned but not yet received. To see where these items are in the purchasing pipeline, select the item and go to **Options > Show Outstanding Forms**.
   - **For Component**. The component the item is wanted for. If the stock item is already associated with a single component number, that number appears automatically during the quantity wanted update.
   - To view or edit a list of all component types using the selected stock item, go to **Options > Used in Component Types**.
   - If the reorder level is incorrect or you need to adjust a stock item itself, select the item and choose **Options > View Stock Item**.
3. For each required item enter a **Wanted** quantity. You can change quantities automatically: to ask for either the reorder quantity or have AMOS calculate the quantity needed to fill stock to either minimum or maximum level, go to **Options > Calculate Wanted Quantities**.

   See "Calculate Wanted Quantities" on the next page for more about this option.
4. **Save** the window.

Note: If your license includes the Maintenance Tasks module, the Stock Wanted window contains an additional column called Outstanding Tasks. This column displays the quantity of outstanding items on forms for maintenance tasks. Required parts for maintenance tasks are purchased through the Work Planning window and the values in the Outstanding Tasks column do not influence the Stock Wanted calculation.

Calculate Wanted Quantities

You can enter required quantities in the Stock Wanted window manually or you can update quantities there automatically.

To ask for the reorder quantity or to have AMOS calculate the quantity needed to fill stock to either minimum or maximum level:

1. Go to **Stock > Stock Wanted**.
2. Go to **Options > Calculate Wanted Quantities**. The Calculate Wanted Quantities dialog opens.
3. Select a stock item by **Number**, **Maker**, **Preferred Vendor** or **Stock Class**. Alter the target quantity using the radio buttons.
    - **Reorder Quantity (based on Reorder level)**. Display the reorder quantity if the total quantity of stock on hand plus outstanding order quantities are below the Reorder stock level.
    - **Minimum (based on Minimum level)**. Calculate the quantity required to bring the stock level up to the Minimum amount if the total quantity of stock on hand plus outstanding order quantities are below the Minimum stock level.
    - **Maximum (based on Maximum level)**. Calculate the quantity required to bring the stock level up to the Maximum amount if the total quantity of stock on hand plus outstanding order quantities are below the Maximum stock level.
    - **Maximum (based on Reorder level)**. Calculate the quantity required to bring the stock level up to the Maximum amount if the total quantity of stock on hand plus outstanding order quantities are below the Reorder stock level.
4. Flag **Display Wanted Quantities >0 Only** to exclude from the display any items where the Wanted Quantity is 0. Uncheck the checkbox to display all the stock items in the specified range whether they require ordering or not.
5. Flag **Simulate Future Work** to cause AMOS to consider future work orders that have not been generated yet, and predict wanted quantities that will be required for those as well.
6. Click **OK** to process the calculation and exit the dialog.
7. AMOS calculates whether a stock item requires ordering by adding outstanding orders to current stock and then subtracting those stock items reserved against work orders. The resulting figure (quantity on hand) is then compared to the reorder level figure.
8. You return to the Stock Wanted window. If the quantity on hand is less than or equal to the reorder level, a requirement is indicated in the **Wanted** column for that item.

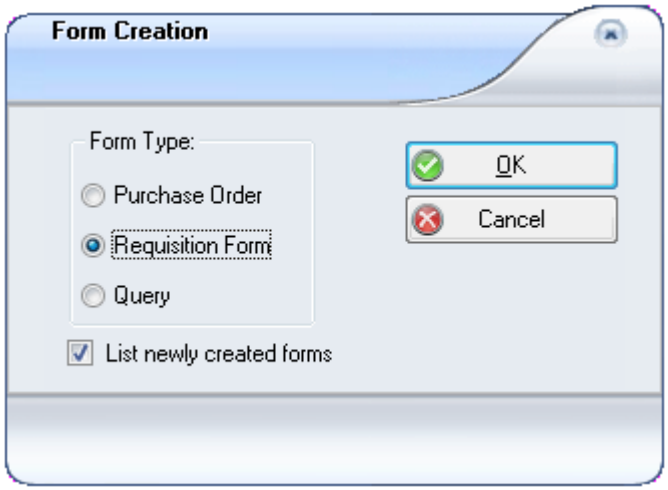
Purchasing from the Stock Wanted Window

After updating quantities of required stock, you can generate forms for the wanted items from the Stock Wanted window. Go to **Stock > Stock Wanted** to open the window and update your requirements.

Note: If the parts you select to add to a form are tied to a valid purchase contract, you may be required[1] to select a relevant contract and a delivery location to apply to the new form automatically.

Placing a Selection of Items onto Forms

1. Tag several lines in the Stock Wanted window.
2. Go to **Options > Generate Forms**. Choose the type of form(s) to generate:

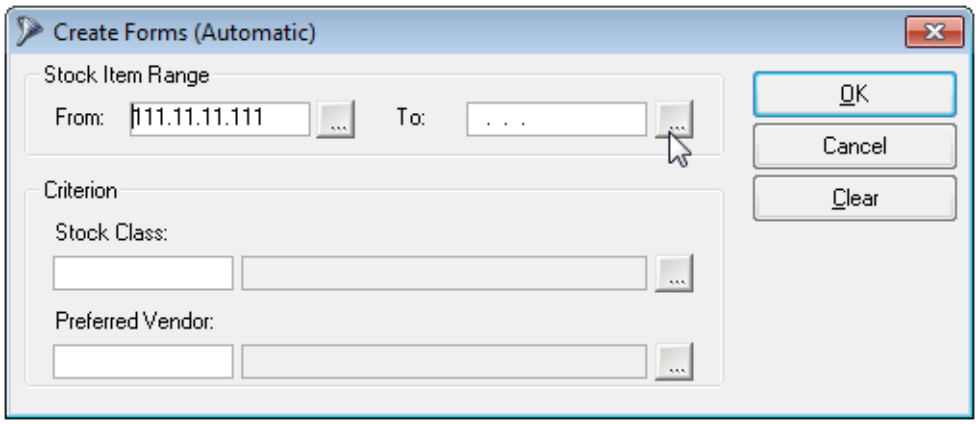


3. Check the **List newly created forms** checkbox to display the newly created form(s) in the Forms window.
4. Click **OK**. The forms are generated automatically and all tagged items with a defined wanted quantity are processed.

Placing a Range of Items onto Forms

1. Open the Stock Wanted window but do not tag any lines.
2. Go to **Options > Generate Forms**. Choose the type of form and click **OK**.
3. In the next dialog, select a **Range** of items to include in the form(s):

[1] Depends on the setting of the system parameter Tools > Configuration > Parameters > Options > Purchase > 'Ordering from Stock Wanted, Contract is Mandatory'.



4. To further restrict form creation use the **Preferred Vendor** and **Stock Class** lookups to only create forms for items with a particular class or vendor.
5. Click **OK** to generate the form(s).

How are Items Split onto Forms?

Stock classes can be linked to order form Content descriptions (such as Goods, Projects, etc.). When forms are generated automatically the required items are then separated by content: that is, all items in stock classes belonging to the content description 'Goods' will be grouped onto one form, and the Content field will be set automatically for that form.

Items are also grouped by preferred vendor, one form per vendor. Items with no vendor assigned are grouped onto another separate form. If the preferred vendor address for any item has been assigned a QA Grade which makes it unavailable, in that case when generating order forms that item will be added onto a separate form with no vendor registered on it. The form will be titled 'Automatically Created Form' and contain an indication that the preferred vendor was not selectable.

In/Out of Stock

Most stock transactions are related to either a maintenance action or a purchase form, and AMOS captures these transactions automatically in the Stock Transactions window. However, in some circumstances you may need to register stock going in or out of stores manually in the In/Out of Stock window.

When stock is moved in and out of stores in the In/Out of Stock window and a work order is registered with the transaction, the quantity reported used will be included in the stock usage statistics along with stock transactions reported against the same work order elsewhere in the system, such as the Report Work window. These statistics, 'Avg. Used' and 'Max. Used' appear on the Required Parts tabs of the Work Order and Component Job windows for each stock item listed. Stock Items registered here as 'Returned Unused' also affect the statistics.

To register stock movement:

1. Go to **Stock > In/Out of Stock**. You can also access this window from the Stock Items window by selecting **Options > In/Out of Stock**.
2. Lookup the **Stock Item** number and name. Read-only information for the selected item will appear:
   - The default **Location**.
   - **Total Current Stock** available in the default location.
   - **Total Stock** shows the total number of parts available in all locations.
   - The **On Order** field shows how many parts are currently on order.
3. Select a reason for moving the stock from the **Transaction Type** drop-down list.

The transaction type determines which other information is required such as Work Order number, Component number, etc. If you select 'Return Unused' and select a work order, the quantity returned cannot exceed the quantity reported as used against that work order.

> **Note:** Reporting stock movements against completed or filed work orders depends on the setting of the parameter 'In/Out of Stock on WO of Status'.

4. Select the **Location**you are moving the stock to or from and enter the **Quantity**.
5. If the stock item is marked as perishable, you will have to enter an **Expiry Date** if you are increasing stock. If you are decreasing stock you will have to select the correct expiry date.
6. If **Transaction Codes** are in use at your installation, you can select one. Transaction codes may be used to designate a responsible person or a project number.
7. You can add another transaction by clicking the **New Entry** button. All transactions on one form have to be the same type.
8. Click **OK** to close the window.

> **Note:** When spare booking is enforced by the system parameter 'Stock Reservation, Required Booking', it is not possible to use the In/Out of Stock window to remove any quantity larger than what is in stock and not already booked.

> **Note:** Depending on the setting of a system parameter[1], when a part is registered 'Used' in the In/Out of Stock window for a completed component job work order, AMOS can add the part to the Component Job window Required Parts tab if it's not already there, or update the required quantity if a different quantity is taken out of stock.
>
> Likewise, if you return a part by registering a 'Returned Unused' transaction in the In/Out of Stock window in conjunction with a completed work order, AMOS can adjust that item's quantity on the component job's Required Parts tab.
>
> If the parameter is in effect these changes may be presented in a dialog when you save the window, and you can flag the ones to update the Required Parts tab with.

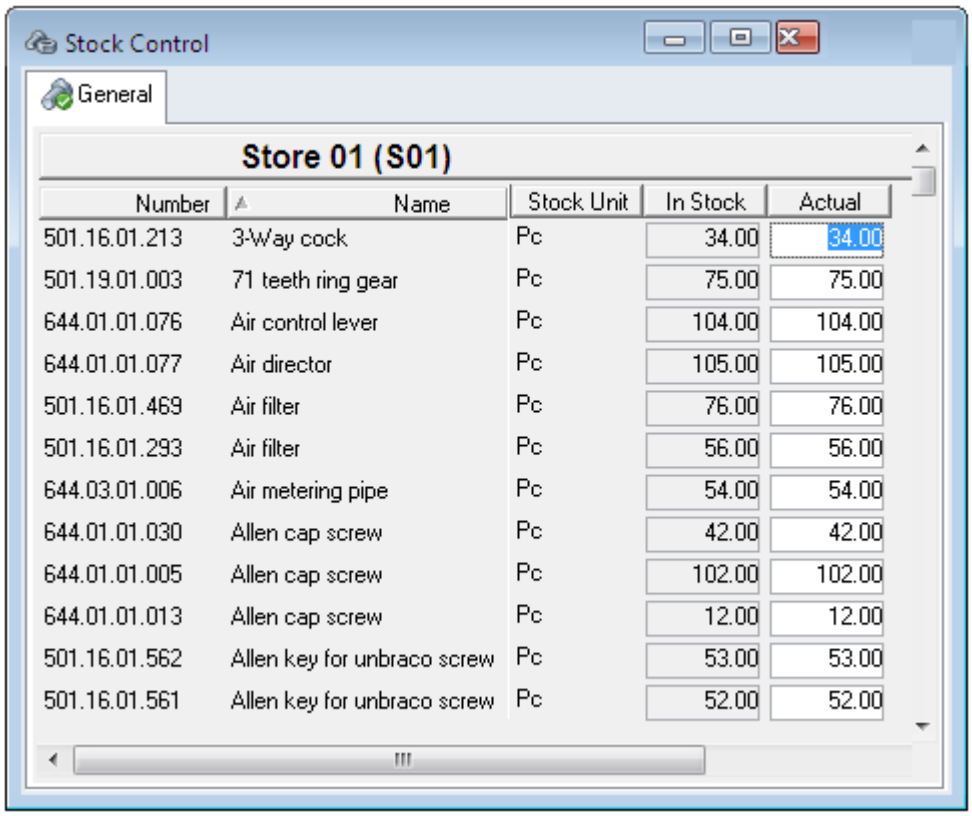
Taking Inventory: Stock Control

Stock items occasionally get removed from stock without being recorded, so at regular intervals you will need to take inventory to ensure that the actual stock in store matches your stock records.

To print and update a stock list:

1. Go to **Stock > Control**.
2. Click **OK** to list all stock. Or, select a storage location. Or, type the beginning of a stock item number first to restrict the list to those items you are interested in.

[1] Tools > Configuration > Parameters > Options > Maintenance > 'Report Work, Stock Used to Update Component Job Required Parts'



3. Go to **File > Print** or click **Print** on the toolbar to print the list shown in the window, according to the settings you filtered by.
4. Go to the store and perform a physical count of what is actually on the shelves in the storage area. Then return to AMOS.
5. Click in the appropriate field under **Actual** and enter the correct amount. Note that the value which appears in the Actual column when you open the window is determined by the setting of the parameter 'Stock Control: Populate Actual Column'.

   The column can be populated already to match the In Stock column, or; contain no values at all, or; contain a 0 for every line in the window.

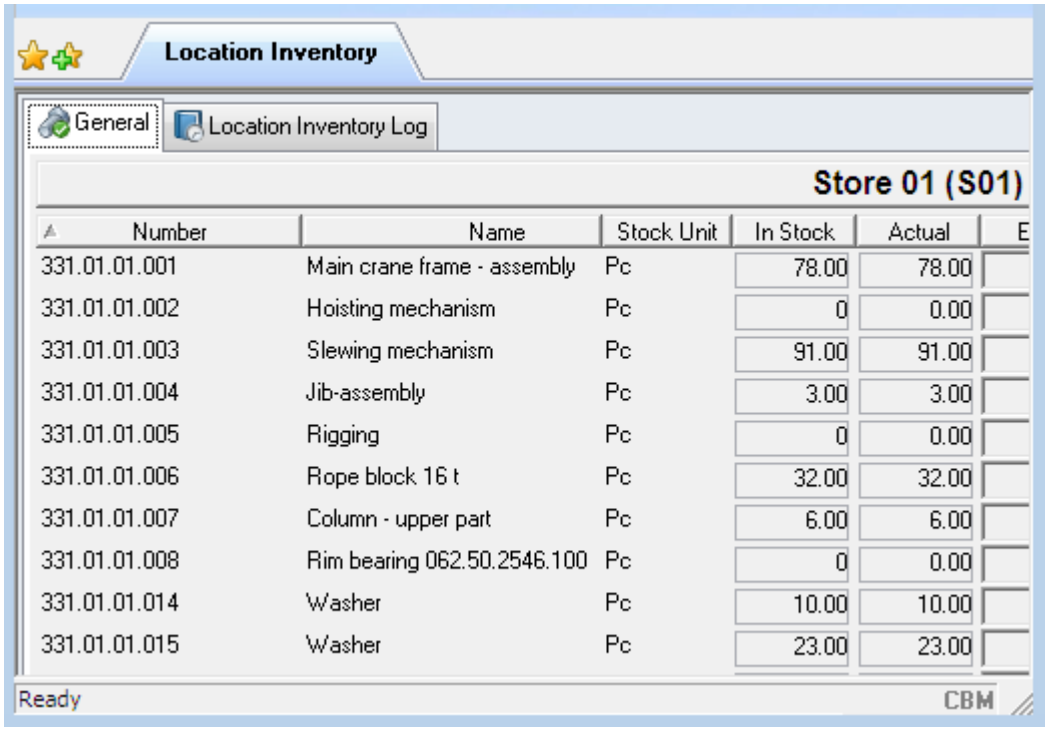
   If you prefer, you can define new stock transactions for any missing items or extra items so you have a more complete record of the actions.
6. Click **Save**.

Note: If the stock item is marked as perishable, you will have to enter an expiry date if you are increasing stock. If you are decreasing stock you will have to select the correct expiry date.

Checking Stock by Location: Location Inventory

When you perform an inventory, even if you make no alterations to the stock levels it is still important to keep an audit trail indicating who performed the check, the location the inventory was performed at, and the date.

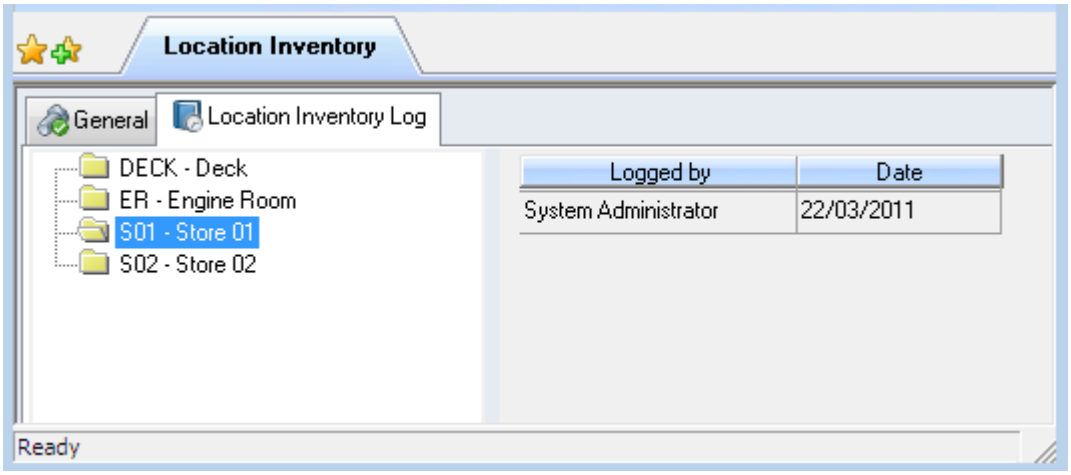
To record that regular stock checks are being carried out, use the Location Inventory window to check stock check at every location. Go to **Stock > Location Inventory**:



If you notice an item is missing, select the location it belongs at and click **New** on the toolbar. Then you can lookup and add the missing item.

The differences between this window and the regular Stock Control window are:

- it's only possible to filter by location when opening this window. Every item appears in the lists for the filtered locations; you cannot filter out by component or function.
- there is a checkbox **Stock Control Completed** in the heading for every location. Stock Level changes made to any location will not be saved unless you flag this box.
- the Location Inventory Log tab shows the locations and the date of last inventory for each location, and the user who performed the check. Once you flag the **Stock Control Completed** box, the checked location will be added to this list - regardless of whether or not you changed any actual levels. Selecting a location and clicking the **Show All** button will display all inventory log entries for each location.



Tracing Stock In and Out: Stock Transactions

In the Stock Transactions window you can see what is automatically recorded as moving in and out of stock through the Maintenance and Purchasing functions. Because AMOS can automatically update your

stock records based on work reported in maintenance and on received goods, there will not normally be much work to do in the Stock Transactions window. You can view automatically recorded transactions and correct them or add additional information if necessary.

Altering Stock Transactions

To alter a stock transaction:

1. Go to **Stock > Transactions**.
2. Select a transaction and make your changes.

   Enter an **Expiry Date** when increasing stock quantities for perishable items. If you are decreasing stock for perishable items you will have to select the correct **Expiry Date**.

   The two fields **Current Function** and **Performed Function** indicate which function the selected component is currently performing (if any) and which function it was performing at the time this stock transaction took place - for example if the transaction is the result of a work report on a job, the **Performed Function** field will contain the function recorded in the Maintenance log when the work was reported.

   You can also assign the **Type** of transaction and lookup a related job or work order.
3. **Save** the window.

AMOS determines the supply time for a stock item as the amount of days between when the item is requested and when it arrives at the installation. The median supply time for an item is derived from all instances of purchase of that item. To adjust the supply time on an item go to **Options > Recalculate Supply Time**.

Reversing a Stock Transaction

To reverse a stock transaction in the Stock Transaction window, if one is made in error or to return incorrectly delivered goods:

1. Select the transaction.
2. Go to **Options > Reverse Transaction**.

   If you attempt to remove more items than are currently in stock, you will be warned that reversing the transaction will remove more than the current number of stocked items. You must then verify whether this operation is **OK** or not. If any accounting transactions are linked to the reversed stock transaction, new accounting transactions are created to reverse the existing ones.
3. **Save** the window.

Transfer Documents

Stock required at a site can be requisitioned and purchased from external suppliers using the AMOS purchasing functionality, but it is also possible that another site within your organisation may already have a surplus of that item available. In this case the stock can be sourced and transferred internally. The required items are then transferred from the 'Donating site' to the 'Recipient site', using Transfer Documents to register and follow up on the transfer of stock moving to and from different sites within your organisation.

> **EXAMPLE**
>
> Your installation requires some stock items. This makes your installation the 'recipient site'. You want to get these items from another installation, so you create a transfer document listing the required items in the Request tab. You then send the transfer document to the office for approval and it is issued to the donating site. The donating site transfers and ships the stock and you receive the shipment at your site.

A transfer document progresses through the following steps:

Step	Recipient Status	Donating Status
Transfer Document Created	Unsubmitted	Not shown
Transfer Document Submitted	Submitted	Not shown
Transfer Document Approved	Submitted	Pending
Goods Partly Transferred	Partly Transferred	Partly Transferred
Goods Transferred	Transferred	In Transit
Goods Received	Received	Received

The visible status of a transfer document depends upon the installation from which you are viewing it - the recipient installation or the donating installation. As the transfer document is processed, the status is shown in the History area of the Transfer Documents window.

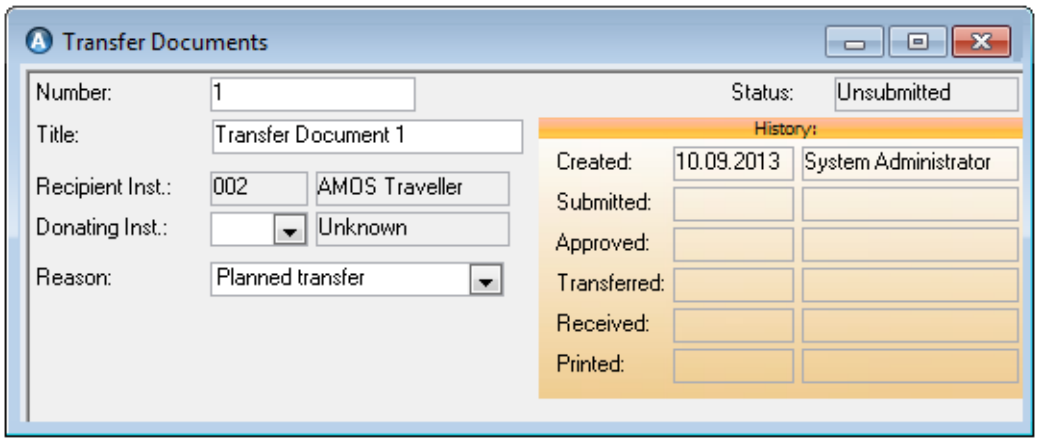
Note: To use transfer documents successfully and transfer items from one installation to another make sure that the stock items you are going to request and transfer actually exist with default locations registered at both the donating and the recipient installations. Items which are not registered with a location supplied, will not be included with transfers.

Creating a Transfer Document

Create a transfer document at a recipient installation to request some stock you require there:

1. Go to **Stock > Transfer Documents**.
2. Click **New** on the toolbar.
3. Enter an identifying **Number** and **Title** for the transfer.

   The **Recipient Inst.** field contains the name of the installation that created the document - in this case, your current installation.
4. Select the installation that will provide the required stock items from the **Donating Inst.** drop-down list. If you are unsure of the donating installation, leave it blank and the office can select it later.
5. Select a **Reason** for the transfer from the drop-down list.

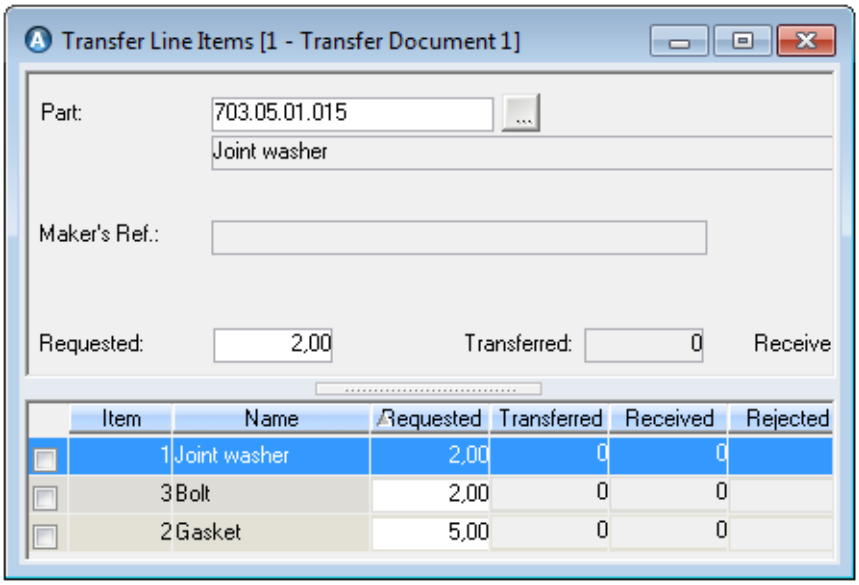


6. **Save** the document.

Adding Line Items to a Transfer Document

Add the items you require to your transfer document:

1. Open the Transfer Documents window and select a document.
2. Go to **Options > Line Items** or double-click on the transfer document in the list part of the window.
3. Click **New**. Use the **Part** lookup to add a stock item.
4. Enter the **Requested** quantity.
5. List all the required items:



6. **Save** and close this window to return to the Transfer Documents window.
7. **Save** the Transfer Document.

To see any items which have been deleted from an existing transfer document, go to **Options > Show All**.

If necessary, you can generate purchase order forms from the Transfer Line Items window: select one or more line items and go to **Options > Create Order Form**. A separate order form is created for each preferred vendor.

At the Recipient Site - Stock Item Registrations and Locations

The Transfer Line Items window also shows you if the items you are requesting:

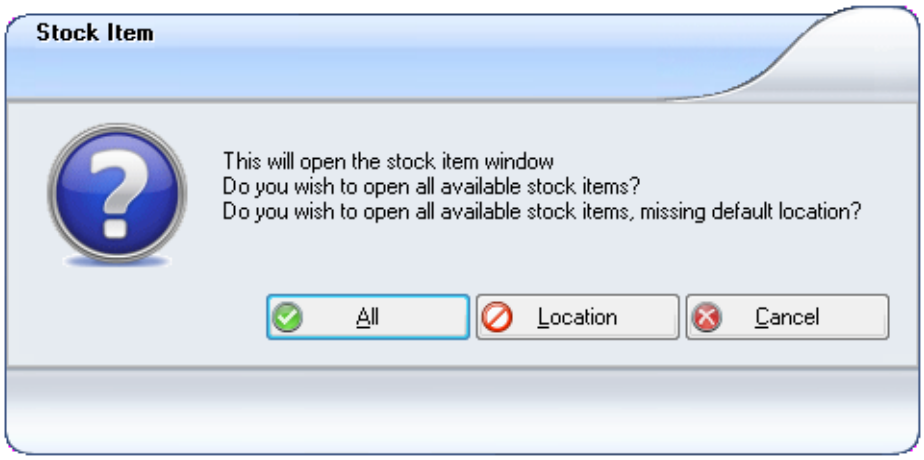
- are already registered as stock items at both the recipient and donor installation, and,
- if the items have a default location specified at both the recipient and donor installation.

Stock Item Exists (Recipient)	Default Location Exists (Recipient)	Stock Item Exists (Donor)	Default Location Exists (Donor)
Yes	Yes	Yes	Yes
Yes	No	Yes	Yes
Yes	Yes	Yes	Yes

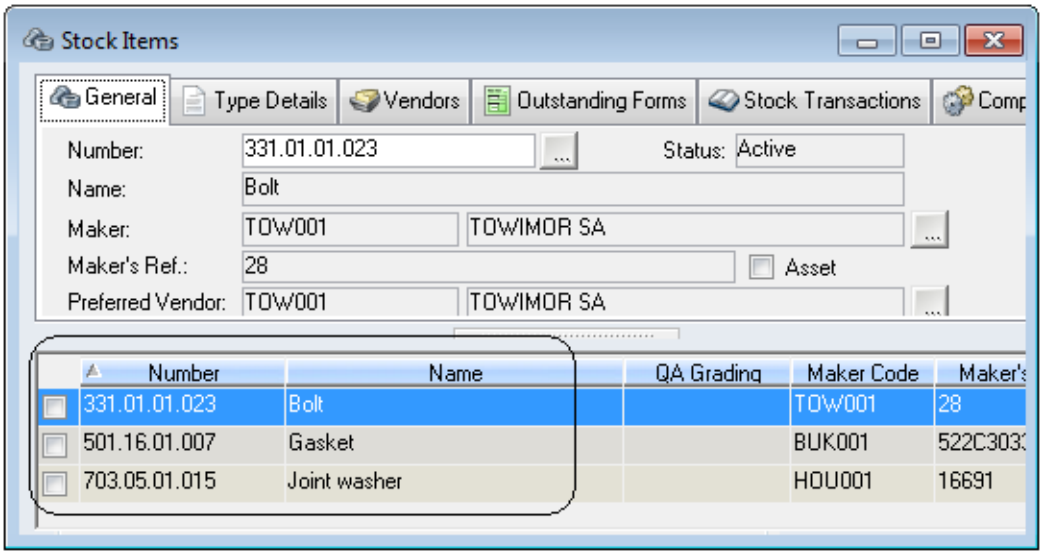
Double-clicking on a **Name** in the line opens the Stock Items window for that part, provided it exists at the current installation.

> **Note:** Items which are not registered in the *recipient* installation's Stock Items window, and/or do not have a default location defined here, will not be included with the transfer from the donor installation.

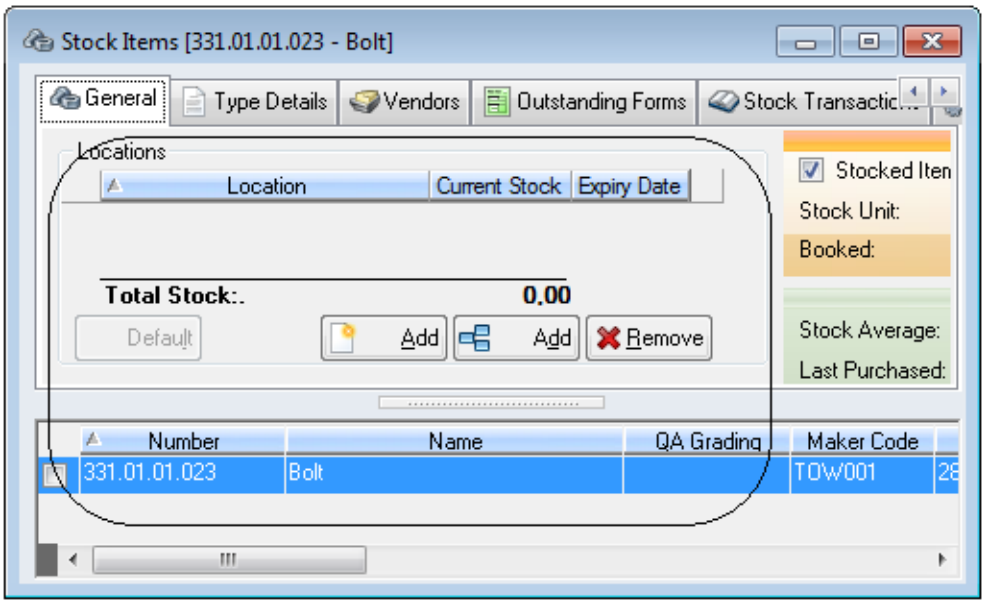
Selecting **Options > Open Stock Items** opens a dialog with two choices:



All. AMOS will open the Stock Items window showing all the items on the transfer document which are registered as stock items at the current installation:

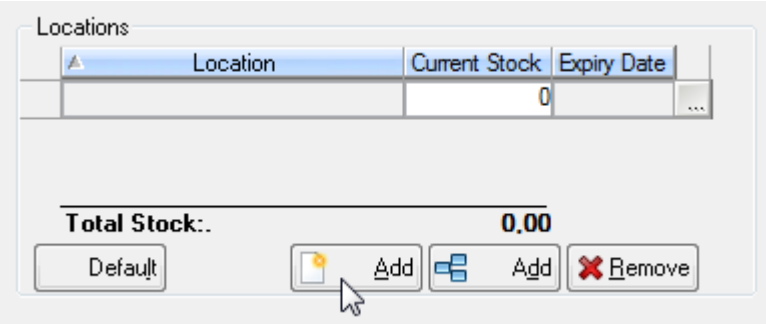


Location. AMOS will open the Stock Items window showing all the items on the transfer document which are registered as stock items at the current installation, *and*, do not have a default location already defined there:



Note: If there are stock items without default location, AMOS directly opens the filter instead f giving the message "no matching data found".

You can add one or more locations for the stock item here, and set one as the **Default**:



Note: Items which are not registered in the *recipient* installation's Stock Items window, and/or do not have a default location defined here, will not be included with the transfer from the donor installation.

Submitting a Transfer Document

When you have prepared a transfer document with stock items added and you are ready to submit it:

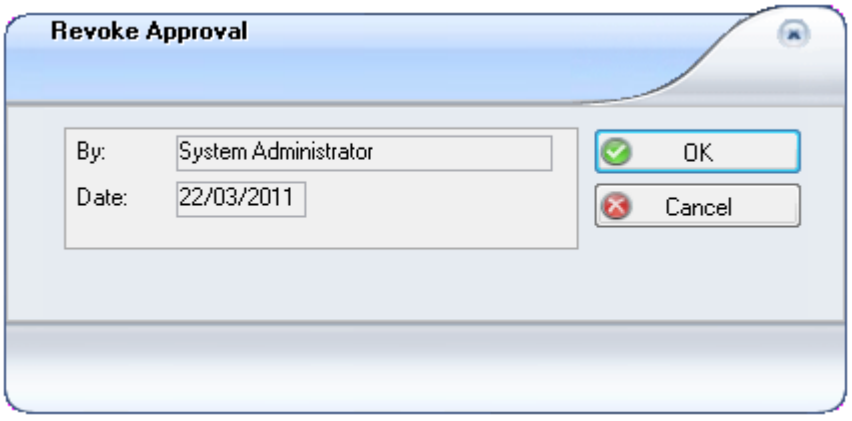
1. Open the Transfer Documents window and select a document.
2. Go to **Options > Submit**.
3. The Submit dialog opens. Click **OK** to submit or **Cancel** to reject submission.

Approving a Transfer Document

After submitting a transfer document, someone with the required authority can grant approval:

1. Open the Transfer Document window and select a document.
2. Go to **Options > Change Approval....**
3. The Grant Approval dialog opens. This dialog is for accepting or rejecting approval of the Transfer Document.
4. Click **OK** to approve or **Cancel** to reject.

If you mistakenly approve the wrong document or need to reverse an approval, select **Options > Change Approval...** once more. The Revoke Approval dialog opens.



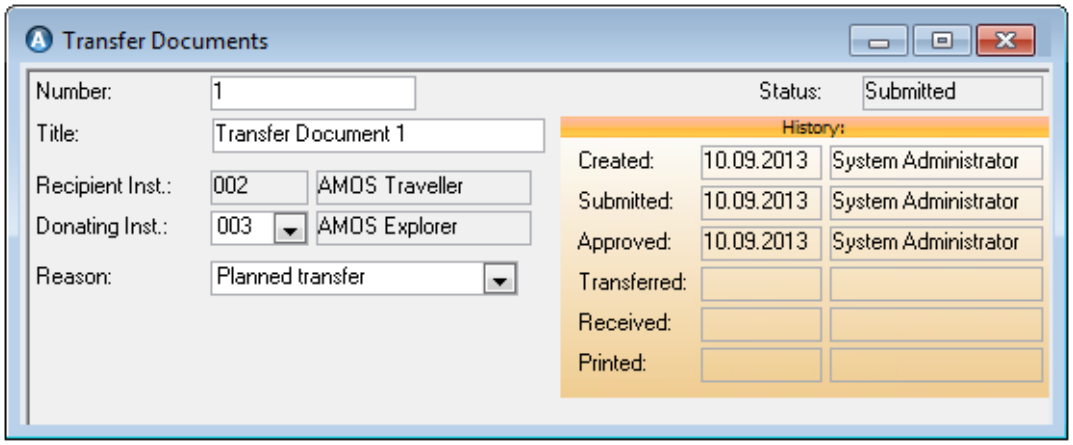
Revoking the approval of a Transfer Document does not record the identity of the person who carried out the instruction or the date on which the approval was revoked. It simply re-sets the approval status to the un-approved condition.

Now you can go on to transfer the items.

What Happens Next?

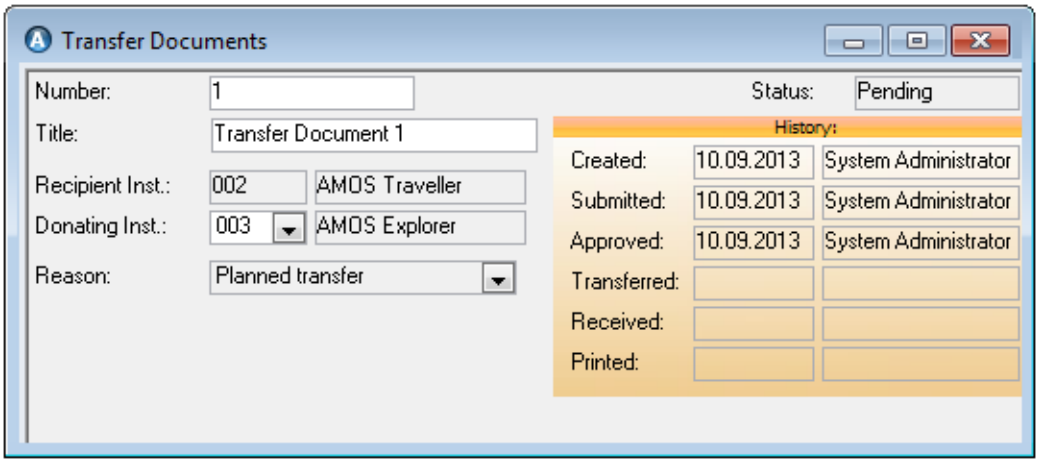
After the recipient installation has created, submitted and approved a transfer document - and the **Donating Installation** is selected on the document - the donating installation receives a copy of the same transfer document. When the donating installation opens their own Transfer window, the request for transfer will be shown, with the status Pending.

Here you can see a transfer document at the recipient installation AMOS Traveller:



It has been submitted and approved and the **Donating Installation** is set to AMOS Explorer. Note that the **Status** at the top right corner, is set to 'Submitted'.

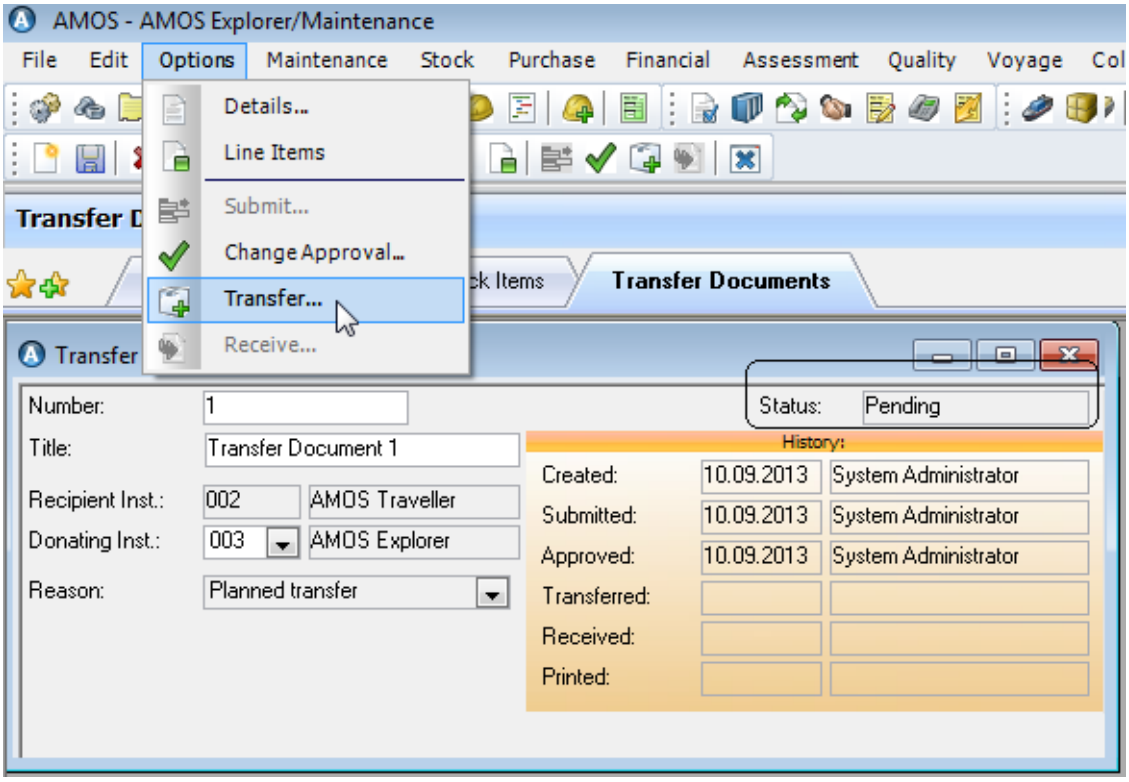
Switching installations and opening the Transfer Document window at the AMOS Explorer, you can see the same document:



However, at the donating installation AMOS Explorer, you can see that the **Status** on the document is 'Pending'. The donating installation can proceed to transfer the items.

Transferring the Items

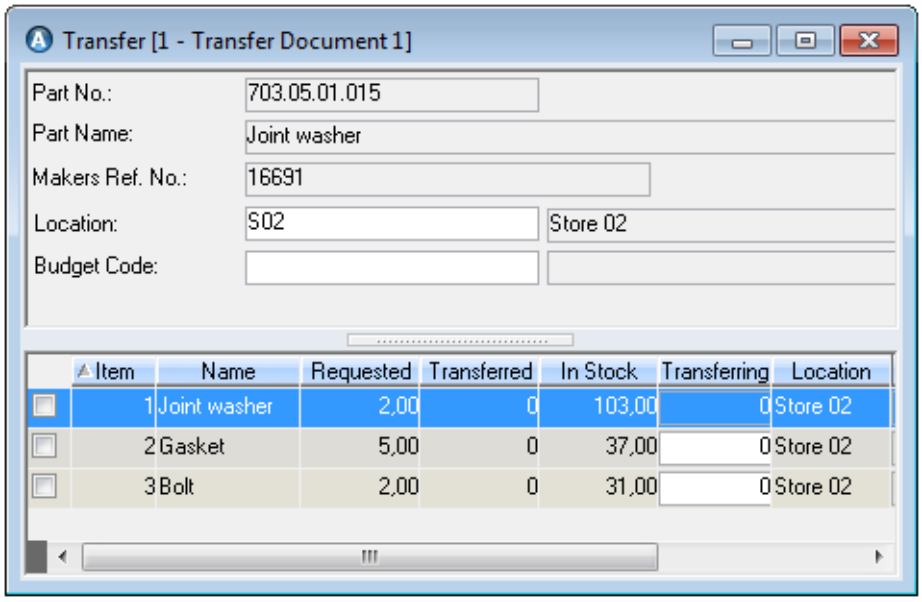
When you open the Transfer Documents window at the donating installation and select a transfer document with status Pending, **Options > Transfer** becomes available:



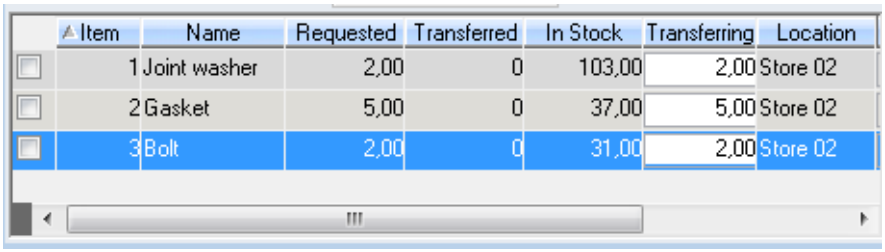
Transferring from a Donor Installation

To transfer the stock items on a transfer document:

1. Open the Transfer Documents window at the donating installation and select the pending document.
2. Go to **Options > Transfer...**. The Transfer window opens showing the requested items and their current **In Stock** levels at this installation:



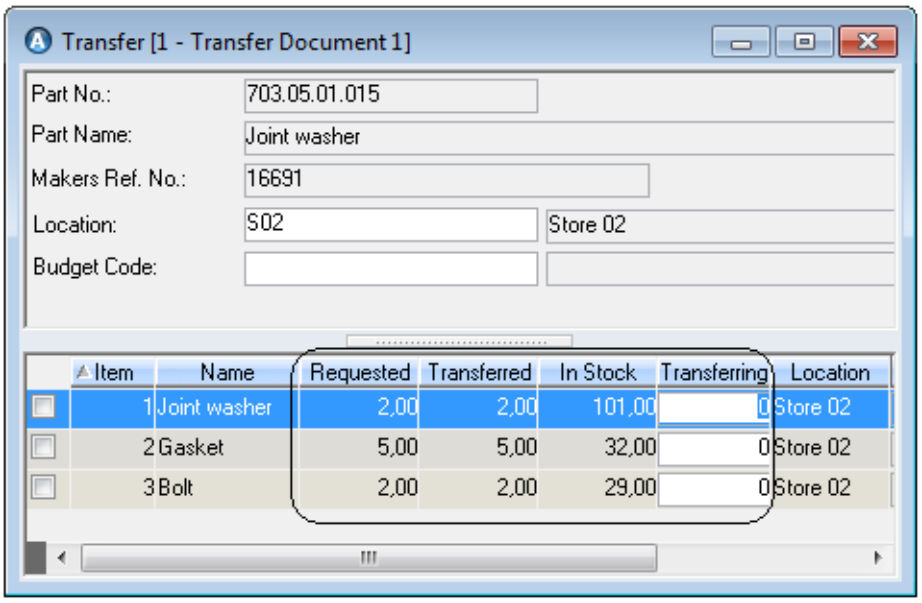
3. To transfer the full amount of every item requested on the transfer document, select **Options > Fill**.
4. Or, to send a partial amount, enter each quantity to transfer in the **Transferring** column individually:



Item	Name	Requested	Transferred	In Stock	Transferring	Location
1	Joint washer	2,00	0	103,00	2,00	Store 02
2	Gasket	5,00	0	37,00	5,00	Store 02
3	Bolt	2,00	0	31,00	2,00	Store 02

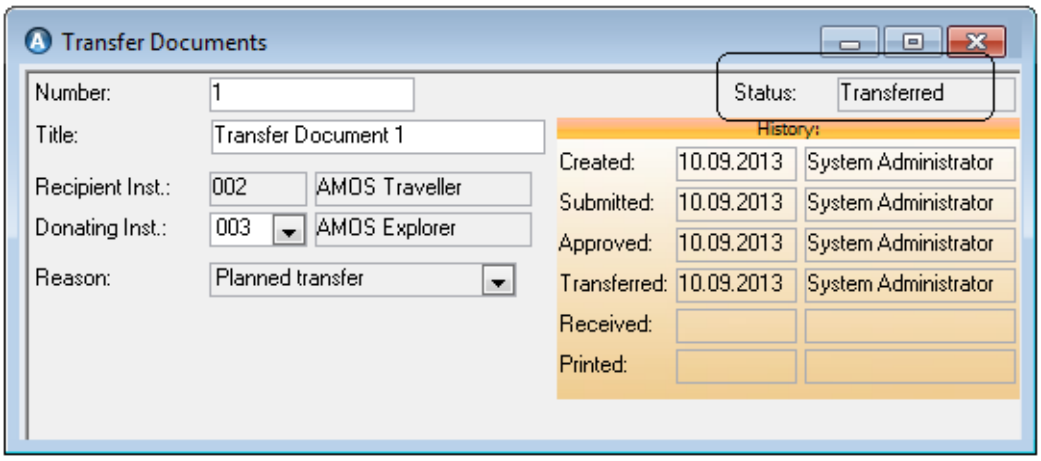
Note: If any of the requested stock items do not exist at your installation, you will not be able to register a quantity to transfer for that item and it will not be included with the transfer operation - AMOS will notify you of this during transfer of the other items.

5. Click **Save**.
6. This automatically updates the **Transferred** column to the same as the **Requested** column. This also updates the **In Stock** column to reflect the amount of each item now left at the donating installation:

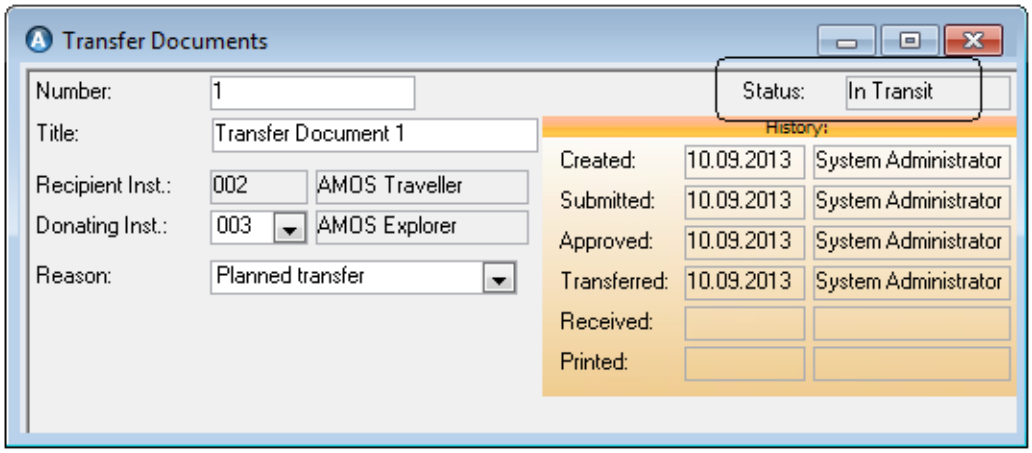


When you save, AMOS will ask if you wish to mark the document as transferred.

7. To make a partial transfer now (with the intention of completing the transfer quantity at a later stage) click **No**. Re-enter the transfer document later to complete it.
8. If the document is complete, **click Yes**. Close the transfer document to return to the main window where you can see the **Status**is updated to 'Transferred':



Once a transfer document has been marked as transferred at the donating installation, the recipient installation can see the same document in the Transfer Documents window there, marked **In Transit**:



There is an interim status of **Partly Transferred** to indicate if not all of the requested items have been sent.

Note: AMOS will inform you if there are related jobs or job dependencies found for an item on the Transfer Document. In this case you will have the option to transfer all related or depending components and leave the dependencies in place, or, remove the dependencies prior to transferring only the specified items.

At the Donating Site - Stock Item Registrations and Locations

Selecting **Options > Line Items** opens the Transfer Line Items window at the donating installation. The window shows the list of stock items the recipient installation is requesting, and how many of each. The window also shows you if the items you are donating:

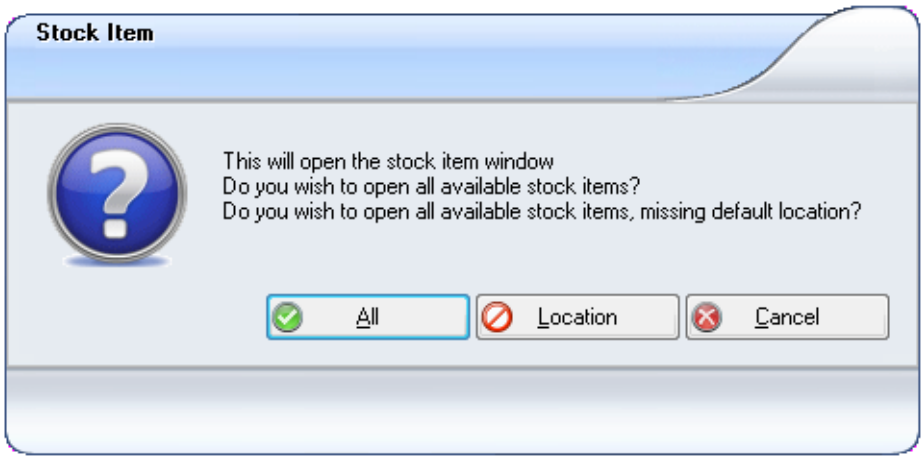
- are already registered as stock items at both the recipient and donor installation, and,
- if the items have a default location specified at both the recipient and donor installation.

Stock Item Exists (Recipient)	Default Location Exists (Recipient)	Stock Item Exists (Donor)	Default Location Exists (Donor)
Yes	Yes	Yes	Yes
Yes	No	Yes	Yes
Yes	Yes	Yes	Yes

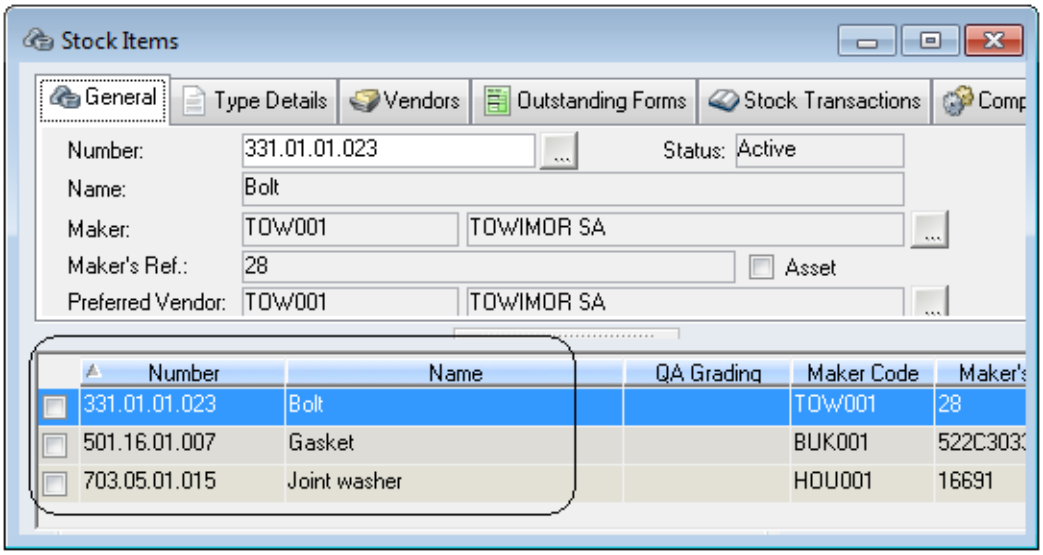
Note: Items which are not registered in the Stock Items window at the *recipient* installation, and/or without a default location defined there, will not be included with the transfer from the donor installation.

Double-clicking on a **Name** in the line opens the Stock Items window for that part, provided it exists at the current installation.

Selecting **Options > Open Stock Items** opens a dialog with two choices:



All. AMOS will open the Stock Items window showing all the items on the transfer document which are registered as stock items at the current installation:



Location. AMOS will open the Stock Items window showing all the items on the transfer document which are registered as stock items at the current installation, *and*, do not have a default location already defined there.

Note: If any of the requested stock items do not exist at the *donating* installation, you will not be able to register a quantity to transfer for that item and it will not be included with the transfer operation - AMOS will notify you of this during transfer of the other items.

Quality Checks on Transfer Documents

Transfer documents linked to quality checks appear in the Transfer Document tab on the Line Items or Receive window and on the same tab in the Quality Check window. Double-clicking on one will open up the Transfer Document window to that record.

Setting a transfer document to 'Transferred' updates the stock level(s) for the item(s) it contains. However, stock levels might not *actually* be updated in every case:

- you may have a quality check against an item which has not actually been received yet and so, the stock level was not updated in the first place. Or,
- you may have a quality check for a line item which has been received, but for which the stock transaction was reversed and the stock levels already reverted.

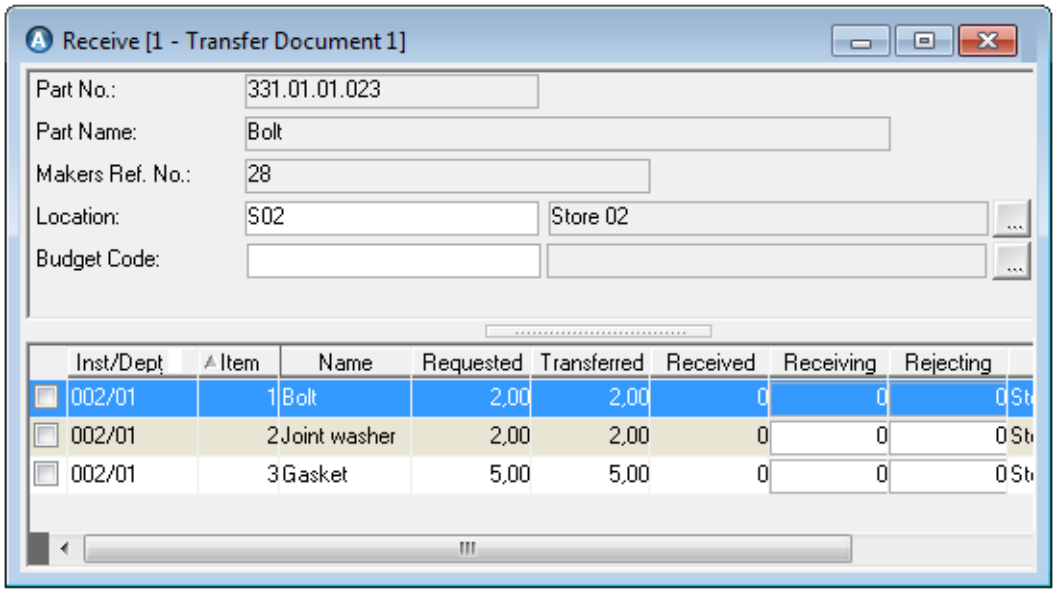
In these scenarios you probably do not want to update the stock levels when you transfer the items on a transfer document. When the donating installation opens the Transfer window (**Stock > Transfer Documents > Options > Transfer**) a checkbox labelled **Transfer Updates Stock Levels**appears next to any transfer lines added from quality checks. Unflag the box next to any quality check line item to exclude it from the stock level consideration - no stock transaction will be generated and the levels remain the same. Leave the box flagged to update stock levels for that item accordingly.

Receiving a Transfer Document

After the donating installation has marked a transfer document as transferred, the recipient installation can see that the document is 'In Transit'.

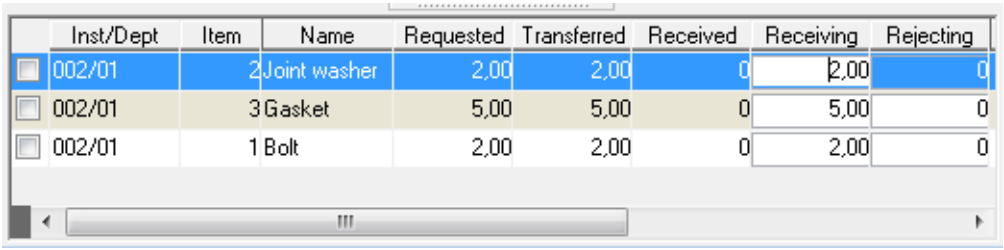
When the transferred items arrive at the recipient installation:

1. Go to **Stock > Transfer Documents**and select the transiting document.
2. Go to **Options > Receive**. A Receive window opens listing all the items which have been transferred on the document:



> **Note:** Items which were not registered in the *recipient* installation's Stock Items window, and/or do not have a default location defined here, will not be included with the transfer from the donor installation. Additionally, if any of the items did not exist at the *donating* installation, they will not have been included with the transfer either.

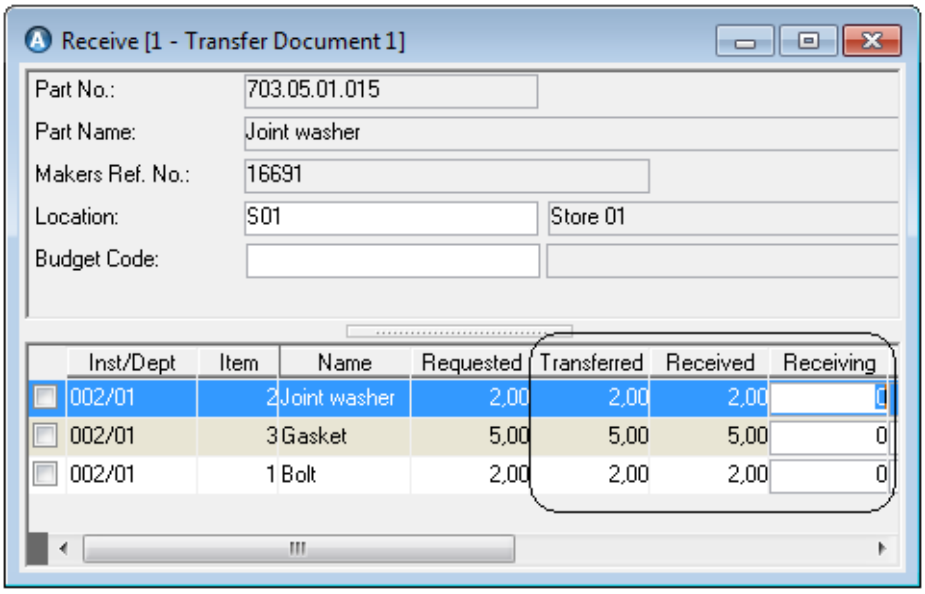
3. To receive the full amount of every item transferred on the document, select **Options > Fill**.
4. Or, to receive a partial amount, enter each quantity to receive in the **Receiving** column individually:



   You can also attach a budget code to each transferred item and reject items if necessary by entering a value in the **Rejecting** column on any line.

5. Click **Save**.

6. This automatically updates the **Received** column to the same as the**Transferred** column:



This also updates the stock levels at your installation.

7. When the received quantity matches the transferred quantity you will be prompted to mark the transfer document as received.

Once you mark a transfer document as received, no further action can be taken against it other than printing it.

Forecasting Stock Requirements

Selecting **Stock > Forecast** opens the Stock Forecast Analysis filter where you can produce a forecast for material resources required for a set future period of time in a range of installations and departments. The forecast is based on existing work orders and planned maintenance - AMOS simulates the future occurence of the same job(s) to provide the forecast output.

CHAPTER 3

Purchasing

AMOS makes it easy to see when it is time to reorder. Then you can create forms to requisition or to order the parts or consumables that you need, and to track each order until the goods arrive at your installation and are placed in your stock.

This chapter includes the following topics:

Purchasing with AMOS 250
Working with Purchasing Forms 252
Requisition Forms 263
Query Forms 265
Quotations 266
Updating Quotations 273
Comparing Quotations 284
Selecting a Quotation 305
Purchase Orders 307
Deliveries 314
Transport Documents 326
Receiving a Delivery 333
Quality Checks and Claims 335
Purchase Contracts 344
Custom Clearance 380

SpecTec

Purchasing with AMOS

Stock Items Become Form Lines

Any item in your stock register can be ordered. Each item is one line item in a form.

A purchasing form can contain as many line items as you find convenient. Usually you will want to group items you expect to purchase from the same vendor in one form, but this is your choice.

On your command, AMOS will automatically create requisition forms for stock items that have wanted quantities on the Stock Wanted window. (See Stock Wanted in Chapter 5.)

For each item, AMOS selects your preferred vendor and calculates how many of the supplied units are needed to meet your stock requirements.

When you automatically requisition many items at the same time, AMOS groups the items by preferred vendor, creating one requisition for each vendor and one catch-all requisition for items where there is no vendor registered.

Forms Have Two Parts: Headers and Lines

Each purchasing form has two parts: the form headers and the line items.

The information that is the same for the whole form (like the address of your installation, the form number and the like) is called the form header. You can see the list of all your forms and view their headers in the Forms window.

The line items for a selected form can be viewed in the Line Items window. You can also see what forms individual items are located in by starting with the Stock Wanted window, selecting a stock item that you need to know about, and going to the Forms window.

Type In Once, Print Out Different Purchasing Forms

Besides a number that doesn't change, each form also has a form type and a status. You can change these whenever you need to. By changing the type and the status, you can re-use the information in the windows to print out whatever paper documentation you need: requisition forms, queries and purchase orders.

Naturally, it is up to your organisation to decide what these values will mean.

If you are the requester at an installation working with a centralised purchaser, it might look like this, though:

Form Type	What is Happening
Requisition	This is a form that you created, at the installation. It is your request to the purchaser to obtain some goods.
Query	This is a form that the purchaser is checking prices and vendors for; you are waiting for quotations.
Purchase Order	This is a form where quotations have been received, and the decision to purchase has been made. The requester and/or the purchaser are tracking the delivery, transport and receipt of the ordered goods.

Any type of form, a requisition, query or purchase order, can have any of these states:

Form Status	What is Happening
Active	Either the requester or the purchaser is working on getting this form filled. Active forms can also be sorted and grouped according to the dates you record for the following milestones: Approved for purchase, Ordered by purchaser, Confirmed by vendor, Received at installation.
Split	This form still exists, but all of its original line items have been split off onto other forms. The form is not cancelled, because it is useful for information purposes, even though you do not expect to receive deliveries in relation to this form. The split line items and their previous and new locations are shown by selecting **Options > Show All**.
Cancelled	This is a form number that is no longer in use.
Parked	This is a form that either the requester or the purchaser does not feel is complete. It is parked on the desk (and in the AMOS database) of one or the other and the other person does not see this form until its status changes. AMOS normally helps the requester and the purchaser to copy their data to each other regularly, so that each can track progress without continual phone calls. Parked forms are not copied, so this status helps to save on communication costs.
Filed	A filed form is one for which all goods have been received at the installation.

Forms Are Forever, But Line Items Split Up

As everyone who works with purchasing knows, items that were originally requested on the same form are not always purchased from the same vendor, supplied at the same time, or received together at the installation.

AMOS allows you to split line items away from their original form so that you can create forms that correctly show what purchasing actions you are taking. A line that has been split is visible in two places in AMOS:

- In the original form, when you select **Options > Show All**, it will appear as an inactive line showing the form number where the active line is located, and
- In the form where it is active, shown as received (or cancelled) for a form to be filed.

On forms that have been Received and Filed, AMOS will prevent you from splitting line items. To split line items on a Filed form, first convert the form to Active, and set the **Received** quantity on the selected line item, to 0. Otherwise, you will receive the message that AMOS 'Cannot split line items that have been received'.

Orders Arrive in More than One Delivery

AMOS lets you assign the line items in a form to one or more deliveries so that you can track the actual delivery situation.

In AMOS, delivery refers to getting the goods from the vendor to your organisation, often to a central location.

Goods Are Transported From Central Locations To The Installation

With Transport Documents, AMOS lets you view the deliveries you have been advised to expect, and group deliveries from different vendors into appropriate transportation lots to be conveyed to the installation.

Goods Marked As Received Become Stock Items

The final step in the purchasing process is to confirm the receipt of goods at the installation.

As you confirm receipt in the purchasing forms and save your changes, AMOS will update your stock records automatically. Consumables are not recorded into stock.

Working with Purchasing Forms

The Forms window contains a list of all the purchase forms - Requisition, Query, and Purchase Order - available in the system.

Throughout the purchasing process you will add information like line items and quotations to your forms. As you add this information and the form goes through conversions to different types in the process, the header information on the Forms window is standard no matter the type of form, and applies to the whole form.

You can change form type and status at any time to print out the forms you need or to reflect the progress of your work. The user names of people who have created, approved or ordered the selected form are all registered in the Additional Info. tab. Form numbers always stay the same.

Here are some things to consider when you're working with purchasing forms at various stages:

- Filtering the Forms window
- Order Form Origins
- Order Form Content Descriptions
- Delivery Destinations
- Additional Costs
- Cost Overview
- Line Items on Forms
- Stock Grades on Order Forms

Filtering the Forms Window

Here are some tips for filtering the Forms window to narrow the returned list of forms.

Basic Tab

Refine the displayed results to a very precise level:

- **Only Forms**. Select the Approval status of the forms you want returned, lookup a Contract, or select Priority, Payment Terms or Receipt Condition. The Form State list allows you to search for forms that are for example, Confirmed, Awaiting Quotation Receive or have received only some of the expected quotations, etc.
- Filter for forms created in any given number of days up until today. For example enter 5 in the **Created within the last days field**, and return forms created starting from five days ago, until today.
- Search for only forms related to a specific budget code in any year by typing the budget code directly into the **Code** field in the Budget section. Don't use the lookup and don't enter a year. Or, to narrow these results down to a certain year, type in the **Code** and then enter a **Financial Year**. To search for forms related to a particular budget, type in your **Code** and then click the lookup and select a budget code and year from the list.

Advanced Tab

Restrict the displayed results to a more general level of form types, statuses and content.

When you click the **Select All** button, a pop-up menu with two options appears: Form Types and Statuses Only, or Expanded. Selecting the first option checks all the Types and Statuses listed on the Advanced tab. Selecting the second option checks all Types and Statuses including all Stock Classes, Priorities and Departments (if running in multi-department mode).

Set the **Content** drop-down field in the Advanced tab to one of three options:

- **All**. The default value that returns all forms. Or,
- **Goods Only**. Returns forms that do not contain any service lines. Or,
- **Services**. Returns forms that have at least one service line.

Set the **Quality Check** drop-down field in the Advanced tab to one of three options also:

- **All**. Uses the existing filter criteria.
- **Claims only**. Returns forms containing order lines with Quality Check records.
- **Without Claims**. Returns forms which do not contain order lines with Quality Check records.

Flag **Only show forms attached to Maintenance Tasks** to restrict your search to return forms for Maintenance Tasks. This checkbox is only available if Maintenance Tasks is part of your licence.

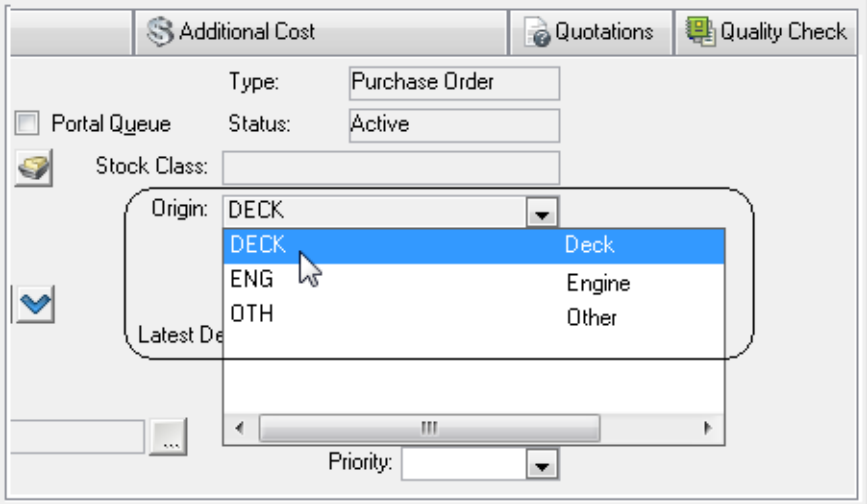
Order Lines Tab, Delivery Tab

Use the Order Lines tab to filter by individual line items on a form. You can search for order forms which have one or more line items with a **Stock Grade Indicator** attached, or for order forms containing line items with a specific **Stock Grade Category** or **Code** within that category.

The Delivery tab contains fields to search by delivery status, destination and dates.

Where Did This Form Come From? Form Origin Identification

When a list of possible values exists in the Order Form Origin register, the **Origin** field on the Forms window General tab indicates the departmental division each form was created from - for example, 'Deck' or 'Engine' inside the Maintenance department:

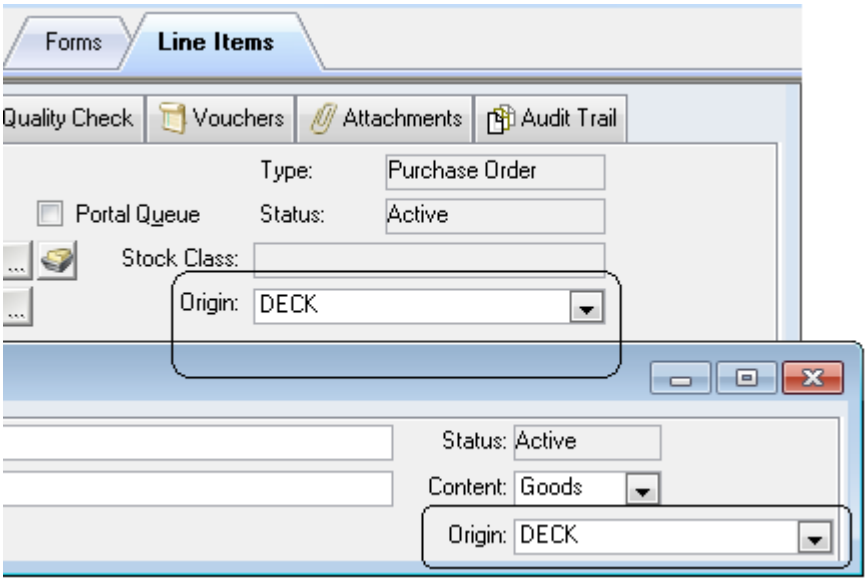


Form origin values can be assigned to user groups, as a means of restricting access to forms. If one or more origins are linked to your userID/group, you can edit any forms coming from those origins as well any forms without an origin assigned. To edit any form regardless of origin, you require access on the Access Control Functions tab to 'Allow editing forms of all origin'.

If your user ID is linked to a default order form origin, when you creates a new form your default origin will appear on the form automatically.

There is a system parameter[1] which can be set to display the **Origin** field on the Line Items window too. Line items will inherit the origin value from the form header:

[1] Tools > Configuration > Parameters > Options > Purchase > Origin on Line Item Level



If a line item has been split to another form, the origin shows you where that individual item is required even if the form itself originated from another departmental division.

You can change the **Origin** field value on either window. If the 'Origin on Line Item Level' parameter is set to ASK, when you change the form header's origin AMOS will ask whether the value should be changed on the form's line items, too.

See the *AMOS Business Suite Reference Manual* for instructions on defining order form origins, assigning access to origins and default origins.

Order Form Contents

If AMOS is configured to accept order form content descriptions, you can select a pre-defined description on the Forms window Additional Info. tab to indicate the kind of content a purchase form contains - like Service Order, Goods, Projects, and so on.

To activate[1] and use this functionality:

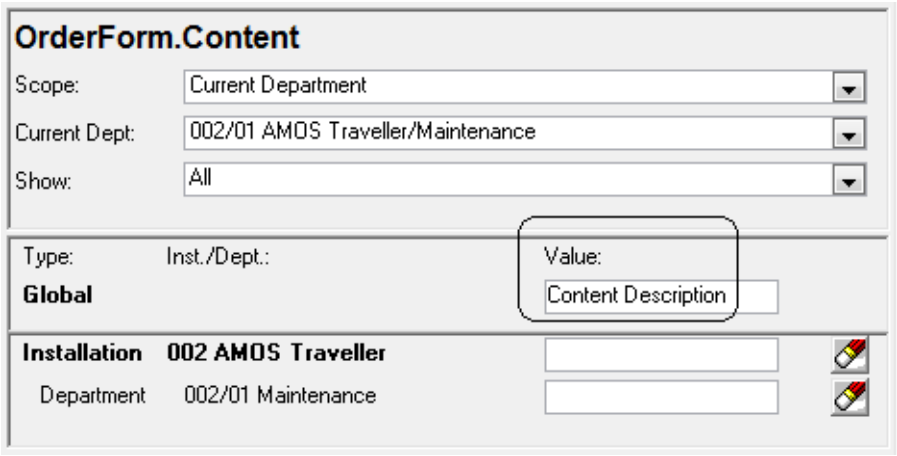
1. Activate the user defined field orderform.content.
2. Populate the Order Form Content register.
3. Assign a description to any form.

   (Optional) Link stock classes and content descriptions together.

Activating the User Defined Field

1. Go to **Tools > Parameters > User-Defined Fields > OrderForm >** .
2. Select the field 'OrderForm.Content'.
3. Enter a label for the field at installation or global level:

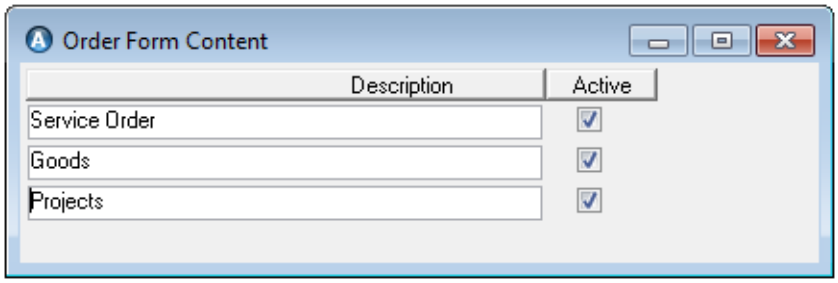
[1] You require the correct access rights to activate user defined fields and populate registers. If this has already been done you can simply select from the descriptions available in the Additional Info. tab.



4. **Save** and exit the Parameters window.

Populating the Register

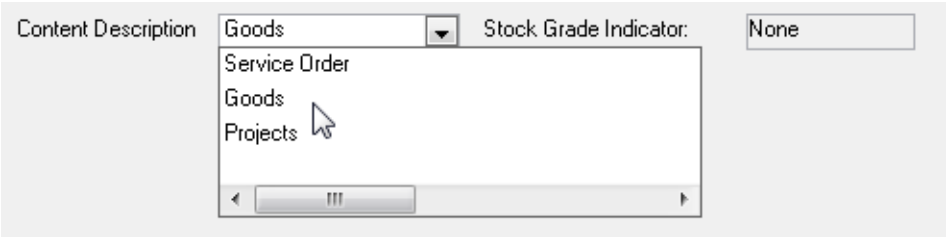
1. Go to **File > Open Register > Purchase > Order Form Content**.
2. Click **New**. Add as many descriptions as needed.
3. To make each one available for selection in the Forms window, flag the **Active** checkbox:



4. **Save** and exit the register.

Assigning Descriptions to Order Forms

1. Go to **Purchase > Forms**.
2. Select a form.
3. Open the Additional Info. tab. You can now see the activated user defined field with the label you gave it and the descriptions from the register:



4. Select a description for the form and **Save** the window.

Optional: Linking Stock Classes and Content Descriptions

To further restrict order form content and group items onto forms as logically as possible, you can link stock classes to content descriptions. When a content description with stock classes linked to it is entered on a form, only the items belonging to the linked stock classes can be added as line items to that form.

When forms are generated automatically the required items will be separated onto forms by content.

EXAMPLE

You have linked three different stock classes to the content description 'Goods' and two more stock classes to the content description 'Projects'. You generate requisition forms and all wanted items in the three stock classes linked to 'Goods' will be grouped onto one form. All wanted items in the two stock classes linked to 'Projects' will be grouped onto another form.

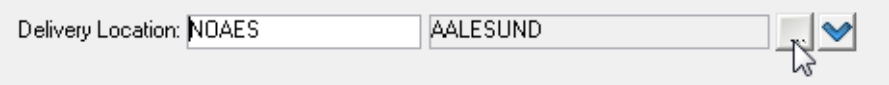
This functionality is controlled by a system parameter: **Tools > Configuration > Parameters > Options > Purchase >** 'Link Stock Class to Order Form Content'. Set the parameter to TRUE[1]. **Save** the setting.

You can now link one content description to each stock class listed in the register at **File > Open Register > Stock > Stock Classes**.

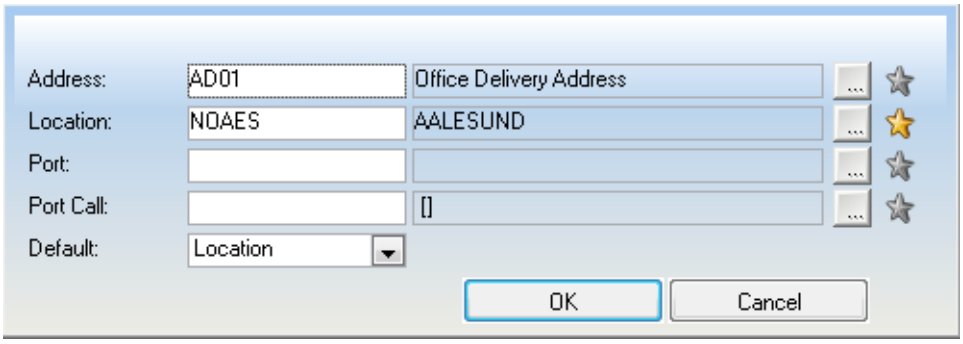
Delivery Destinations on Forms

There are four options for specifying delivery destinations on purchase forms: by Address, Location, Port and Port Call. Although values can be entered for all four options on any form, the one which appears by default on new forms is defined by the setting of the parameter 'Initial Form Delivery Option'[2].

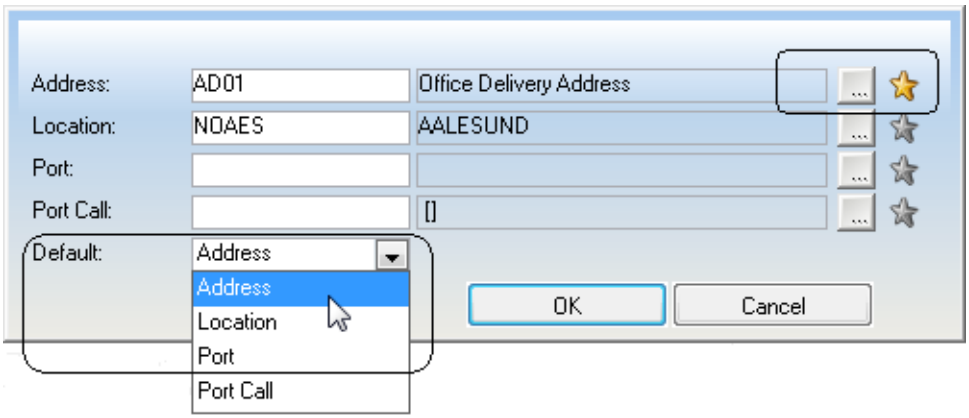
Set the default **Delivery** destination using the lookup on the Forms window General tab:



Clicking the  button next to the **Delivery** field lookup button opens a dialog where the other three delivery fields can be filled in as well:



You can select a different **Default** field to display on the General tab:

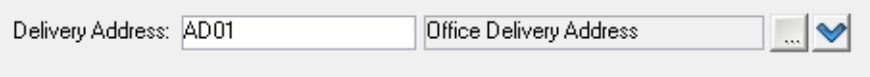


The destination set in the default **Delivery** field is the one which will be applied to the eventual order:

---

[1] Correct access rights are required to set system parameters.

[2] Go to Tools > Configuration > Parameters > Options > General > Initial Form Delivery Option to change the delivery destination field displayed upon form creation.



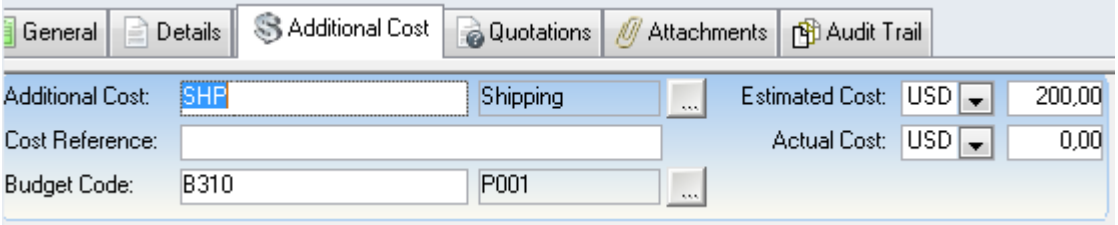
The same delivery destination details will be applied automatically to any new quotations created for a form. If the destination is changed at quotation level and the quotation is then selected, the form header will be overwritten with the default destination from the quotation.

There is an exception: if the form belongs to a purchase contract the delivery destination field is always set to **Delivery Location** as on the contract, and this cannot be changed.

Values you enter in the delivery destination fields are also displayed on the Additional Info tab.

Additional Costs on Forms

Use the Forms window > Additional Cost tab to add estimates and actual totals for extras like shipping and insurance:



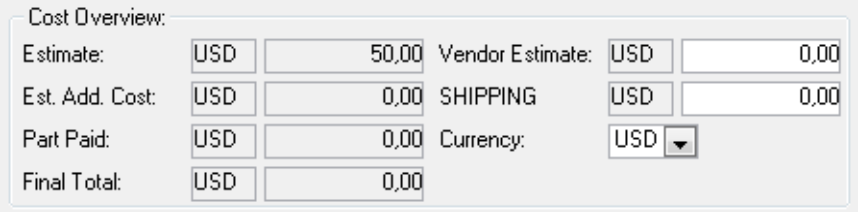
These additional costs can also be assigned to a budget other than the one specified on the form header.

AMOS will total up costs as you enter them and display the value on the General tab in the **Est. Add. Cost** field.

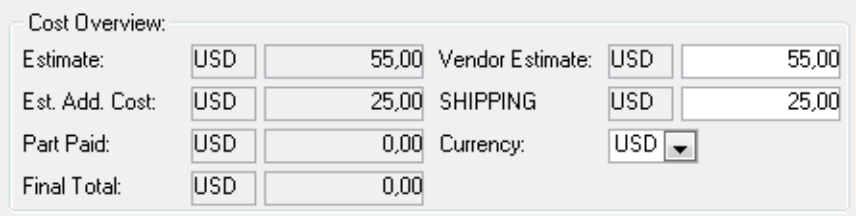
The costs available for selection are defined in the Additional Costs register. Any cost codes flagged as default in the register will always appear in the Forms window Additional Costs tab when a new form is created; they can however be removed. Additional costs can be added in the same way to quotations and transferred to the form header if the quotation is selected.

Costs Overview on Forms

Keep track of costs by entering amounts in the **Cost Overview** section on the Forms window General tab. Once you have entered line items and prices, selecting **Options > Estimate Cost** will update the **Estimate** field for you:



As a form progresses from a requisition to an eventual order and you add vendor estimates, quoted prices and costs and eventually select a quotation the fields will update/be updated accordingly:



You can use these numbers for budgeting purposes. The information is automatically copied read-only to the Additional Info tab in a read-only section. If you select a currency other than the base currency on the General tab, AMOS will automatically calculate the values copied to the Additional Info tab to base currency.

Line Items on Forms

There are two kinds of line items: 'goods', or actual stock items; and 'services', or jobs on work orders. The Line Items window is for adding and maintaining a list of all the individual stock items and services for order on each form.

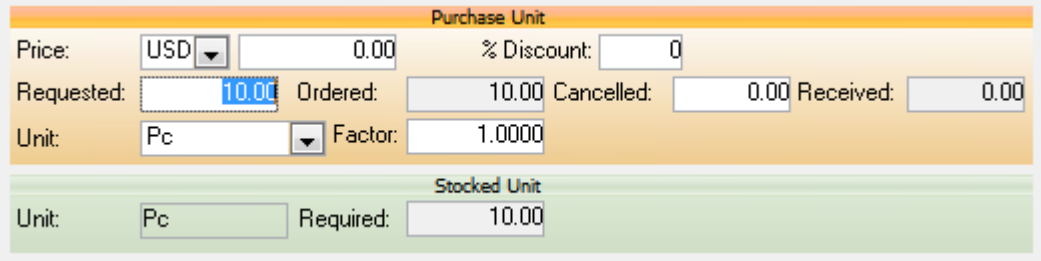
To add a new line item:

1. Go to **Purchase > Forms**. Select a form.
2. Go to **Options > Line Items** to open the Line Items window.
3. Click **New** on the toolbar.
4. The **Content** field is set by default to 'Goods'. The fields to the left are for choosing stock items.

   See "Service Line Items" on the facing page about adding work orders to forms.
5. Lookup a **Part Number**[1]. There are two lookup buttons - one opens a list of all available parts, and the other opens a list of only those parts which are not already tied to a purchase contract.
6. To add an item without a number enter it free-text in the **Part Name** field.
7. If the eventual purchase of this item is part of the budget flag the **Budgeted Purchase** box. Lookup a **Budget Code** to assign it to.
8. To include the line item on printouts, faxes or e-Business documents, flag **Include on Forms**.
9. Certain fields and tasks in the Line Items window differ depending on the type of form the line items are for.

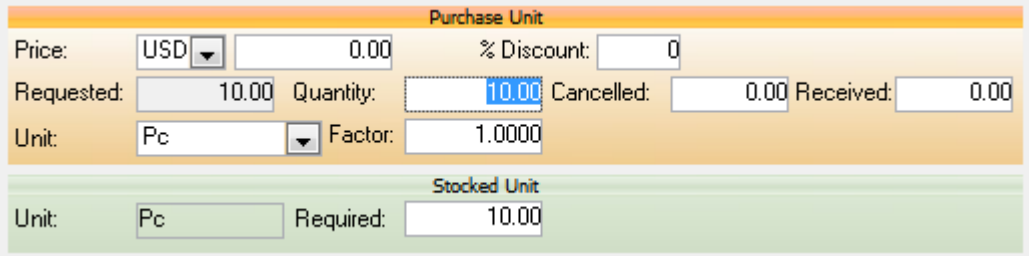
   Requisitions

   When the form is a *Requisition*: indicate how many of each item you want in the **Requested** field in the Purchase Unit section.



   Queries

   When the form is a *Query*: indicate how many of each item you want in the **Quantity** field in the Purchase Unit section.

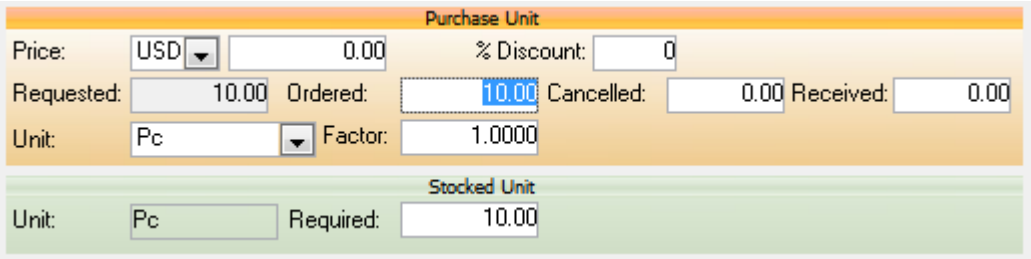


   Purchase Orders

[1] You cannot select a stock type for which no stock item registration exists in the current department.

When the form is a *Purchase Order*: indicate how many of each item you want in the **Ordered** field in the Purchase Unit section.

Update the value for any existing items already on a purchase order before sending it out, if fewer are to be ordered than requested. If part of an order cannot be confirmed enter the number of items that have been cancelled in the **Cancelled** field. This keeps the line from remaining permanently unfilled, which would prevent you from filing the purchase order.



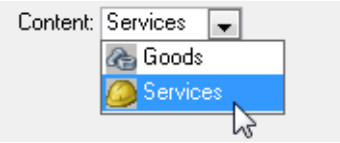
10. **Save** the line items.

To see the stock item record for a selected line item or the component the item is a part of, go to **Options > View Stock Item/View Component**.

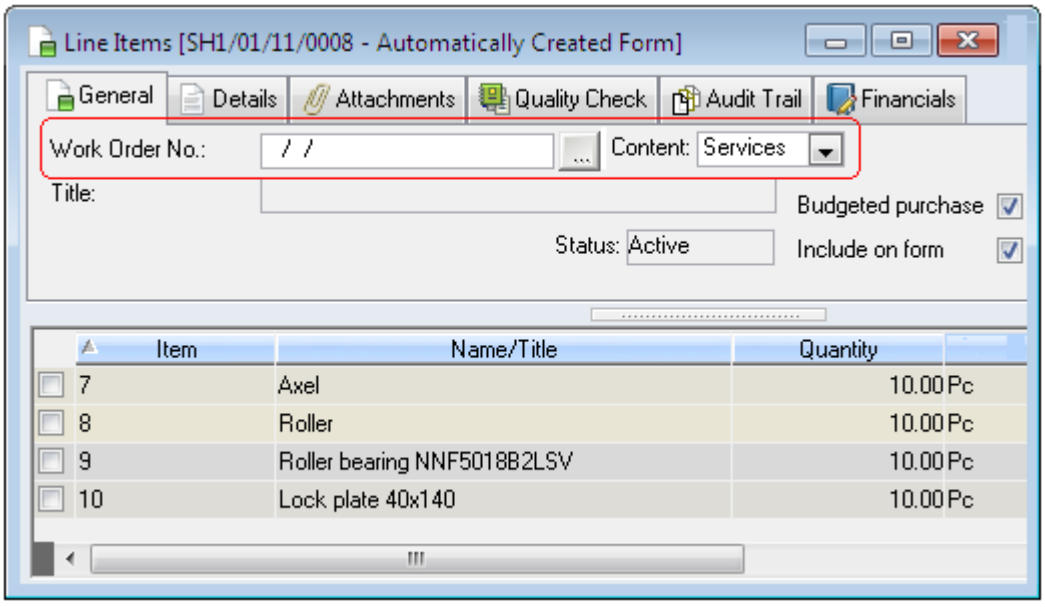
Service Line Items

You can order services by adding work orders as 'service' line items on purchase forms:

1. Go to **Purchase > Forms**. Select a form.
2. Go to **Options > Line Items** to open the Line Items window.
3. Click **New** on the toolbar.
4. The **Content** field is set by default to 'Goods'. Change it to 'Services':



5. Lookup a **Work Order No.**:



When you add service line items, the **Service Order** checkbox in the Forms window Additional Info. tab is automatically checked.

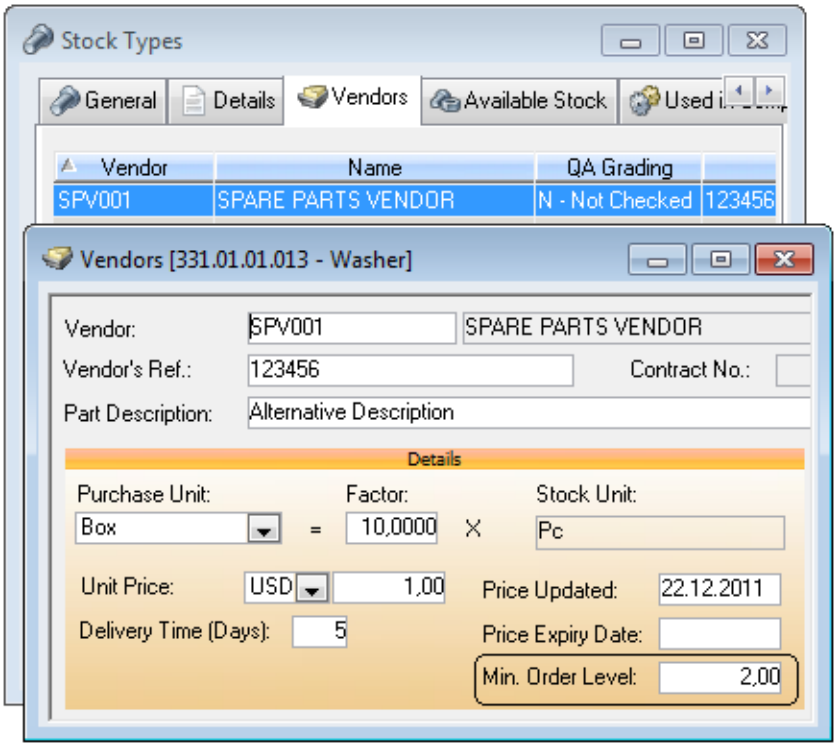
6. Add the rest of the line item details as you would for an order of goods. See "Line Items on Forms" on page 258 for more information.

You can also create purchase forms for work orders and their required parts directly from the Work Orders and Projects windows.

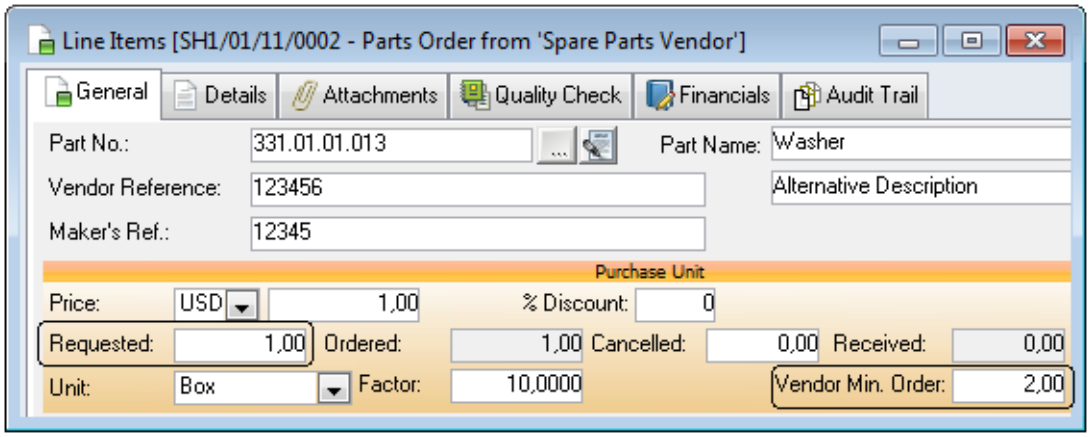
To see the work order itself for a selected service line item go to **Options > View Work Order**.

Line Item Minimum Order Levels

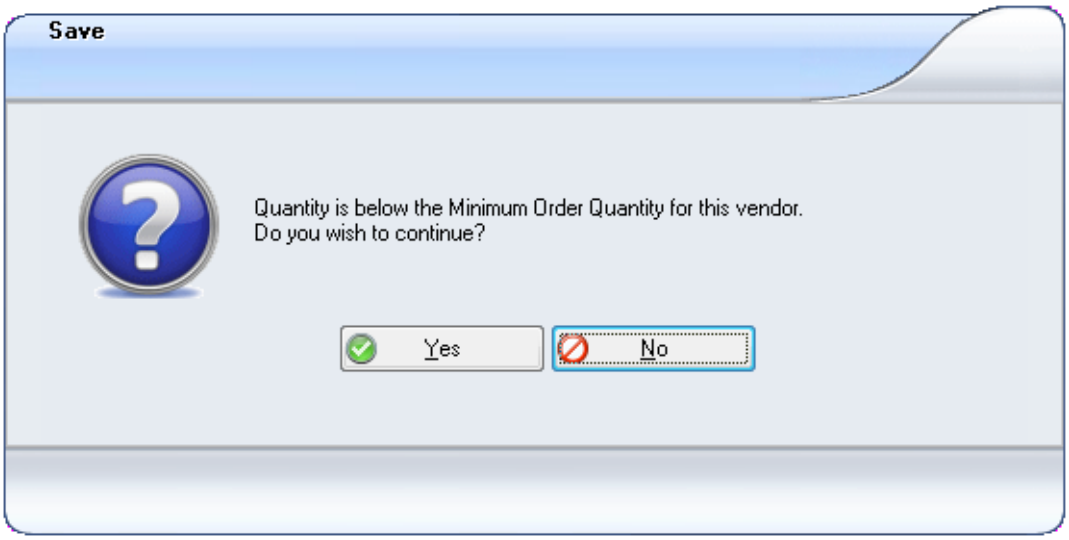
Some vendors may have a set Minimum Order Level specified for certain items. Minimum order levels are defined on stock types in the Vendors window. For example, the illustration below shows that the vendor 'Spare Parts Vendor' has specified a minimum order level of 2 for the stock type 331.01.01.013 - Washer:



When the washer is placed as a line item on a form for 'Spare Parts Vendor', when you enter or change the quantity to eventually purchase on the Line Items window AMOS will check if the total is >= to the defined minimum order level quantity:



Specifying a quantity which is less than the **Vendor Min. Order** and attempting to save results in this dialog appearing:



Choose to continue with the save or not.

Line Item Purchase History

As you use AMOS to manage purchase forms, receive quotations and order goods, the history for any stock type/item you order - the forms, prices, dates, currency and vendor - will accumulate in the Line Items > Purchase History window.

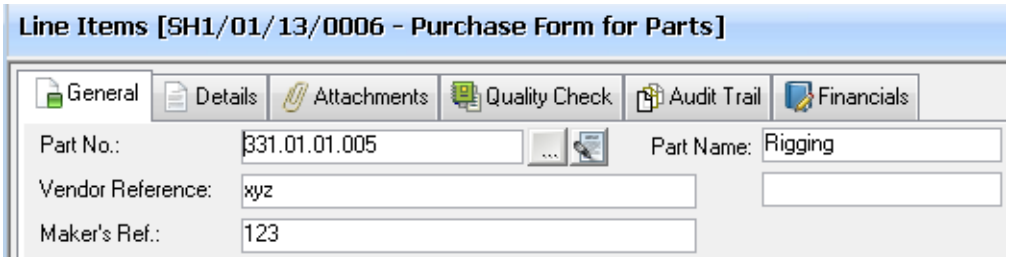
To help you establish the best possible purchase price, AMOS can identify the lowest price inside of a given time period you define. This best price is also flagged in the Purchase History window.

You can also view purchase history on stock from the Stock Types and Stock Items windows.

See "Stock Purchase History" on page 225

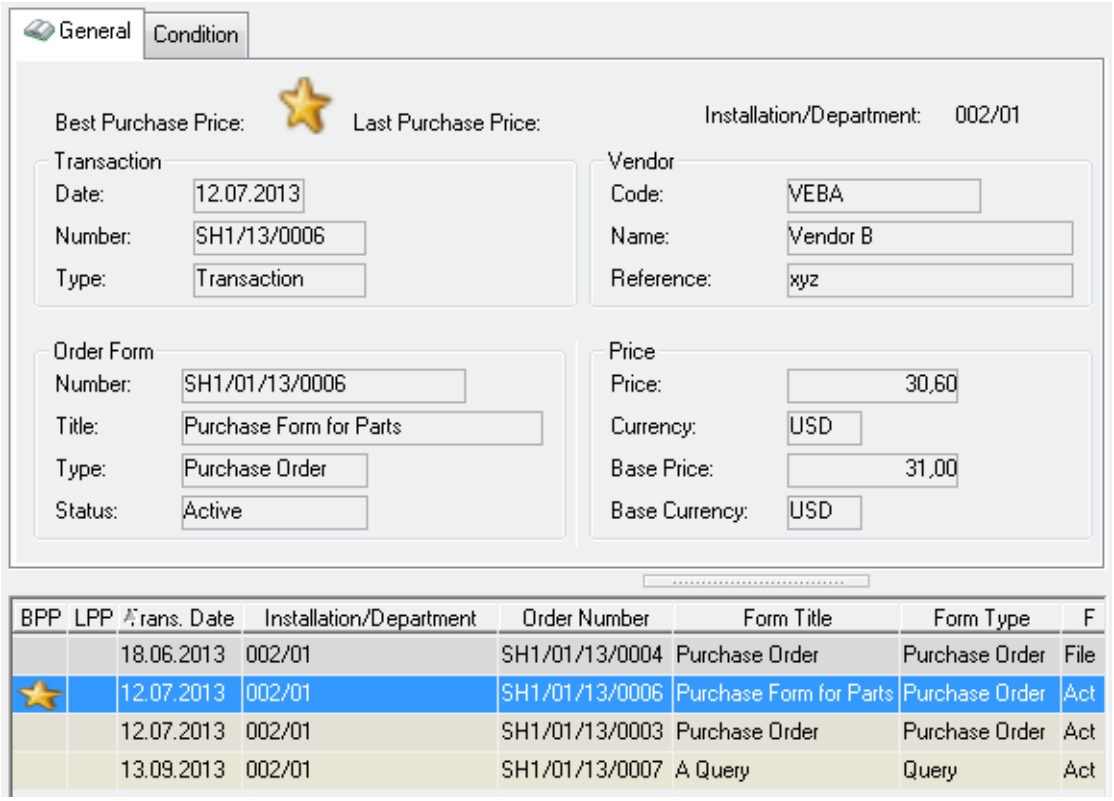
To access the historical information from the Line Items window:

1. Go to **Purchase > Forms**. Search for a form or click **Filter** to go straight to the window with all records.
2. Select a form in the list and go to **Options > Line Items**. When the Line Items window opens, select one of the form's items:



3. Go to **Options > Purchase History**.
4. The Purchase History window for the item you selected opens up, listing previous orders at the current installation[1], containing the item:

[1] To see transaction history for this item at other installations, open the Forms window in global search mode.

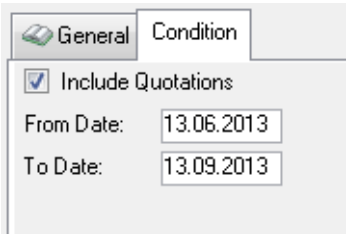


A yellow star indicates the transaction with the best price, while a clockface indicates the latest transaction and so, the last purchase price.

By default, AMOS will also include currently existing quotations for the selected item in the transaction list. To appear in the list quotations must:

- have a price registered,
- have a **Sent** date set, and
- have not expired as of the current date.

You can remove quotations from the transaction list and readjust the best and last purchase prices accordingly, by unflagging the **Include Quotations** checkbox on the Condition tab and clicking the **Apply** button:



Best Purchase Price Period on Line Items

To help you establish the best possible price, AMOS displays the historical purchasing information for the selected line item inside of the user-defined 'Best Purchase Price Period' time frame only[1], and flags the lowest-priced transaction inside that period.

[1] If you have not set the parameter or applied a frequency period to stock classes as outlined in "Setting the 'Best Purchase Price' Period" on page 225, then opening the Purchase History window will show all transactions available for the selected item and all records will be considered in the best price evaluation - meaning the 'best' price flagged could in fact be outdated.

EXAMPLE

The frequency and period defined on the stock class 'Spare Parts' is 3 months. The stock type '331.01.01.005 - Rigging' belongs to this class. This means that opening the Purchase History window on September 5 will show forms containing this item with dates from June 5 - September 5 only, and the transaction with the best price in that timeframe will be marked with a gold star.

If no best price period is defined on the stock class, or no stock class is defined on the line item's stock type, AMOS will refer to the setting of the parameter 'Best Purchase Price Evaluation Period'.

You can change the default pricing interval when evaluating for best purchase price:

1. Open the Condition tab.
2. Enter a new **From Date** and/or **To Date**.
3. Click **Apply**. The content of the General tab will updated according to your new timeframe.

Requisition Forms

A requisition form is a purchasing form that is usually created at an installation and sent to a central purchasing function. The requisition tells exactly what goods are wanted, and in what quantities. Normally the purchaser will then check the requisition form and convert it into a purchase order.

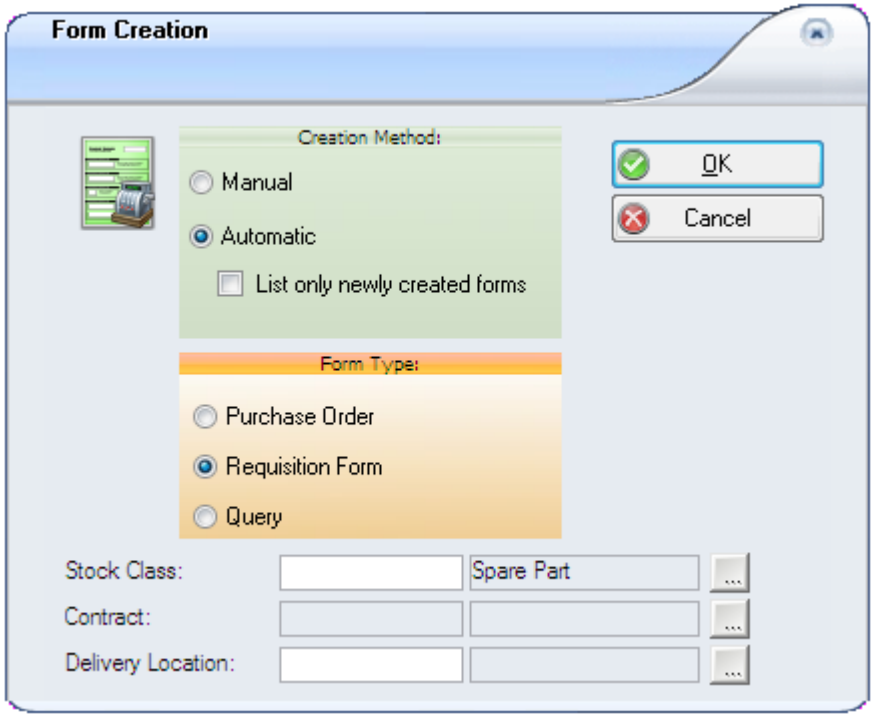
You can create requisitions automatically or manually:

- If the goods you want are registered as stock items AMOS can create requisitions for you automatically.
- To requisition consumables - goods that are not registered as stock items - create your own requisition manually.

Creating an Automatic Requisition

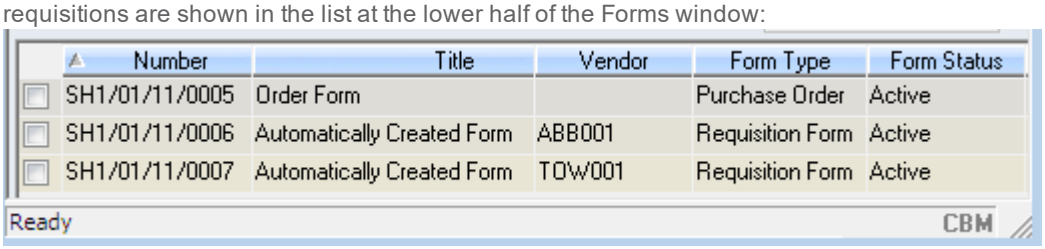
1. Select **Purchase > Forms** or click the  button in the toolbar.
2. Click **Filter**in the filter to retrieve all the existing requisitions, queries and purchase orders, or filter for a particular form.

3. Click the **New** button on the Forms window toolbar. The Form Creation dialog opens:



Select Automatic and Requisition Form. You can lookup a **Stock Class**, **Contract** or **Delivery Location** to reference - the related items will be added to the form. If no valid contracts are available you will not be able to select a contract or location.

4. Click **OK**.
5. Specify the stock item number range to create requisitions for. Or, leave the fields blank to create requisitions for all stock items with wanted quantities shown in the Stock Wanted window. You can remove lines or edit quantities after creating the form(s).
6. Click **OK**.
7. AMOS checks the preferred vendor for each item.
8. If the vendor supplied units are different from the stock item units - for example you buy in cases, but you use up a bottle at a time and thus count your stock in bottles - AMOS calculates the quantities of the vendor-supplied units needed to fill your stock requirements.
9. AMOS groups the items by preferred vendor, making one requisition for each vendor. The new requisitions are shown in the list at the lower half of the Forms window:



Number	Title	Vendor	Form Type	Form Status
SH1/01/11/0005	Order Form		Purchase Order	Active
SH1/01/11/0006	Automatically Created Form	ABB001	Requisition Form	Active
SH1/01/11/0007	Automatically Created Form	TOW001	Requisition Form	Active

Newly created forms, with the title Automatically Created Form

Creating a Manual Requisition

1. Go to **Purchase > Forms** or click the  in the toolbar to open the Forms window.
2. Click **New** to create a new form header. The Form Creation dialog opens.
3. Select Manual and Requisition Form, and click **OK**.
4. Fill out the values in the form header.

5. **Save** the new form header.
6. Select **Options > Line Items**to add items to your form in the Line Items window.
7. Insert as many line items as you require, entering the **Requested** amount for each one.
8. **Save** the form.

Query Forms

For routine purchases you probably already know which vendor offers you the best combination of price, quality and delivery times. This vendor will usually be registered in AMOS as the preferred vendor for those items, along with price and vendor unit data.

Where you do not have a clear preference, or for items that have not been purchased before, you may want to create a query form which you can print and send to the vendors.

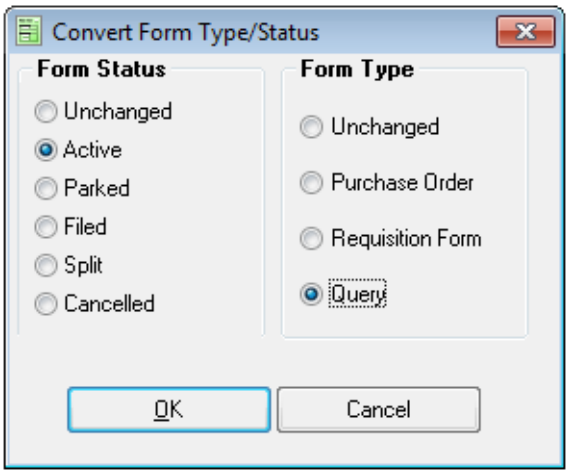
There are two ways to create a query form:

- You can convert an existing requisition or purchase order, with line items already listed into a query form.
- If there is no form already in the system, create a new form with the type query and then add the line items to it.

Once you have a query form containing line items, use the Quotations window to add a quotation for each vendor you want to query, and send it out.

Converting a Requisition to a Query

1. Filter and open the Forms window. Select the form you want to convert.
2. Or tag multiple forms to be converted all at once.
2. Select **Options > Convert/Tagged**.
3. The Convert Form Type/Status dialog opens. Choose a status and select Query:

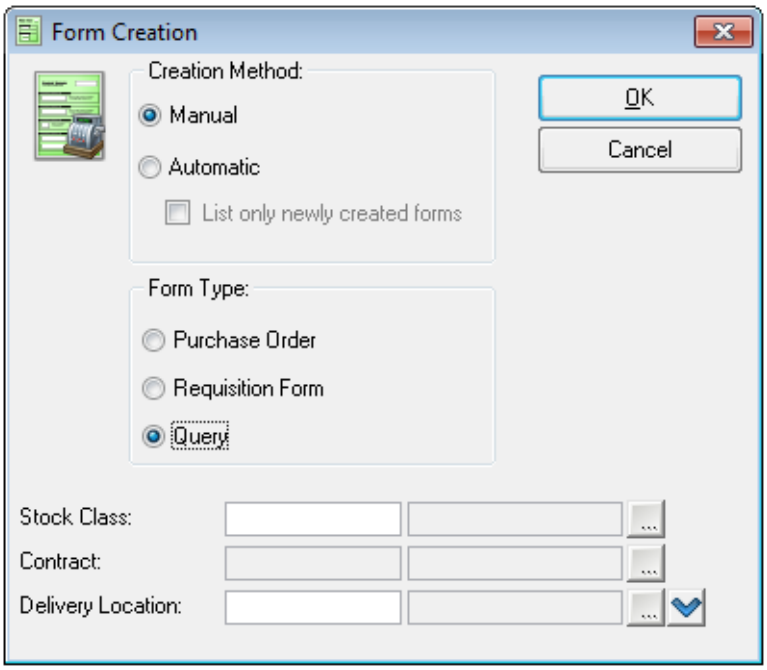


4. Click **OK** to return to the Forms window.
5. **Save** the converted form. You can add more line items if necessary by selecting **Options > Line Items**.

Creating a Query Form from Scratch

1. Open the Forms window and click the **New** button on the toolbar.
2. In the Form Creation dialog, choose **Query**.
3. Choose **Manual** for a query about consumables, or if you want to add line items yourself. Choose

Automatic if you want the line items created based on the wanted values in the Stock wanted window:



4. Click **OK**.
5. Fill in the form header details on the Forms window: **Title**, **Delivery Location** and **Latest Delivery Date**.
6. Go to **Options > Line Items** to open the Line Items window and add the items you are planning to buy. See "Line Items on Forms" on page 258 about adding line items to forms.
7. **Save** the form.

Quotations

All quotations belonging to a purchase form are listed in the Quotations tab on the Forms window. The details for these quotations are registered and maintained in the Quotations window.

You access the Quotations window from the Forms window:

1. Go to **Purchase > Forms** to open the Forms window.
2. Select any form in the list. Opening the Quotations tab here shows you any quotations which already exist.
3. Either:
   - Go to **Options > Quotations**, or
   - Click the **View** button in the Quotations tab.
4. The Quotations window opens for the selected purchase form.

Now you can add quotations to the form: one for each vendor you want to send the query to. See "Adding Quotations to a Query Form" below.

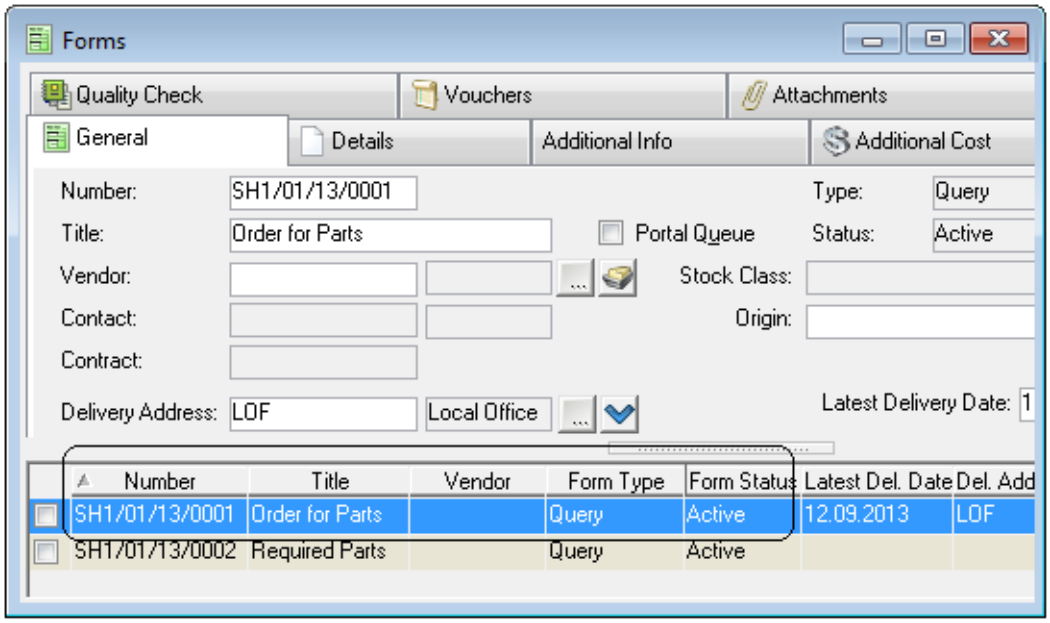
Adding Quotations to a Query Form

You can send the same query form to multiple vendors, asking for item prices and delivery times from each one: add a quotation to the query form for each vendor you are going to send to.

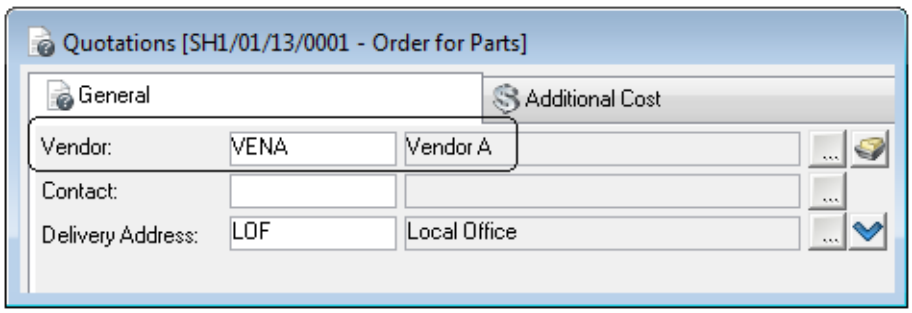
You can also send several quotations to the same vendor specifying a different delivery location on each one, in case the price varies depending on delivery location.

To add a quotation:

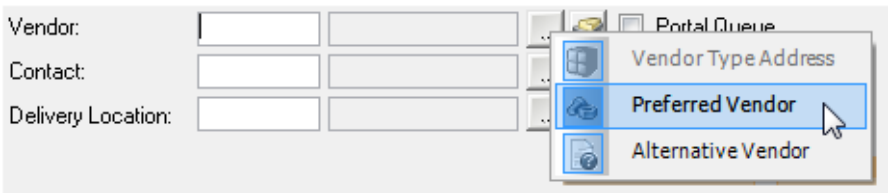
1. Open the Forms window and select a query form:



2. Access the Quotation window. Either:
   - Open the Quotations tab and click the **View** button inside the tab. Or,
   - Go to **Options > Quotations**.
3. When the Quotations window opens, click **New** on the toolbar.
4. Select a **Vendor**:

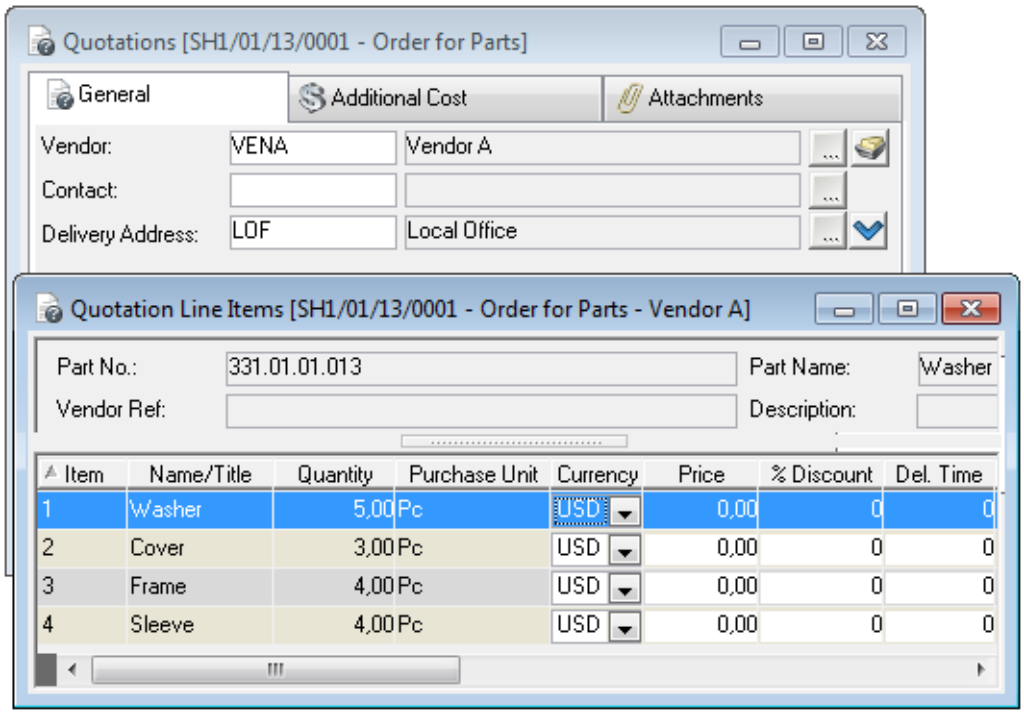


   Right-click on the **Vendor** lookup to narrow the selection to Preferred and/or Alternative vendors:

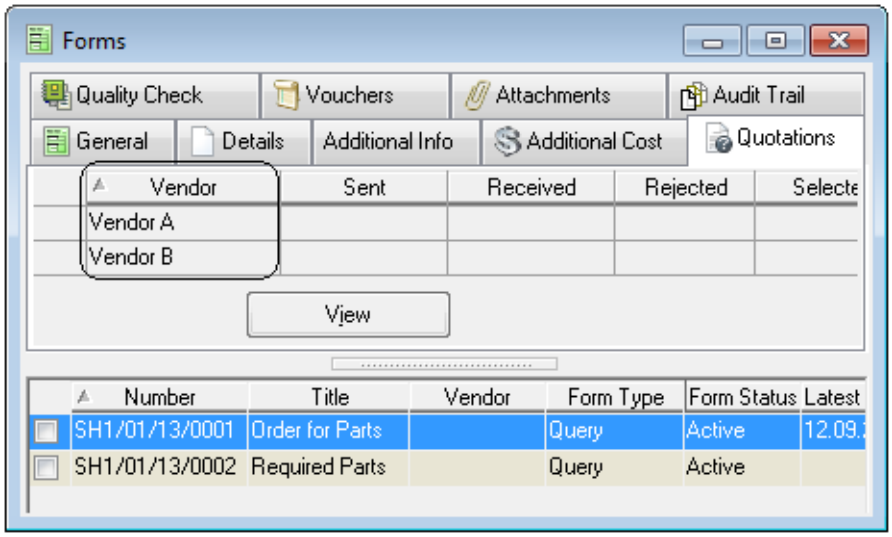


   Then, left-click the lookup and AMOS will return the list of vendors according to the options you selected. AMOS will remember which option(s) you set until it is closed and restarted.

5. Add a **Delivery**destination, or change the existing location if necessary.
6. **Save** the quotation.
7. All the line items belonging to the purchase form are listed in the quotation's Line Items window automatically. You can view them by selecting **Options > Line Items**:



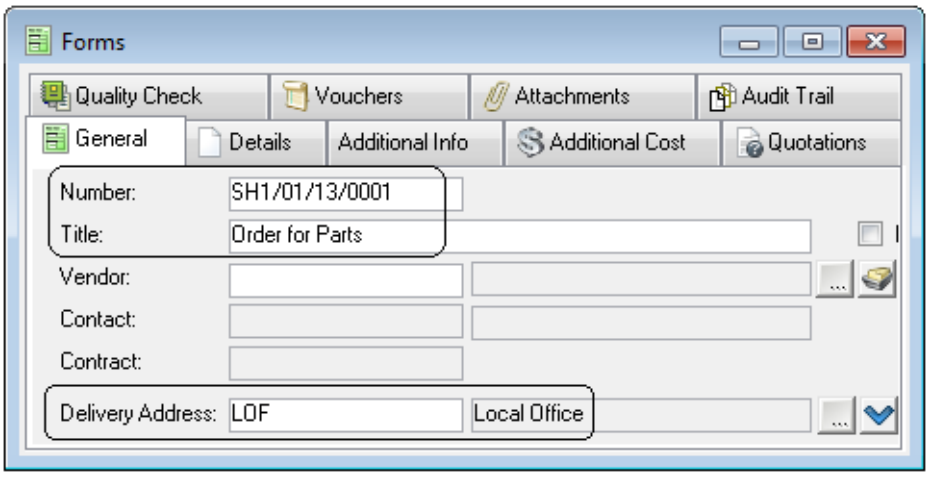
8. To make another quotation for the same form, click the **New** button on the toolbar again. Add a different **Vendor** name. Or, add the same vendor and change the **Delivery** destination.
9. **Save** and close the Quotation window to return to the main Forms window.The new quotation(s) will be listed in the Quotations tab on the Forms window for the query form(s):



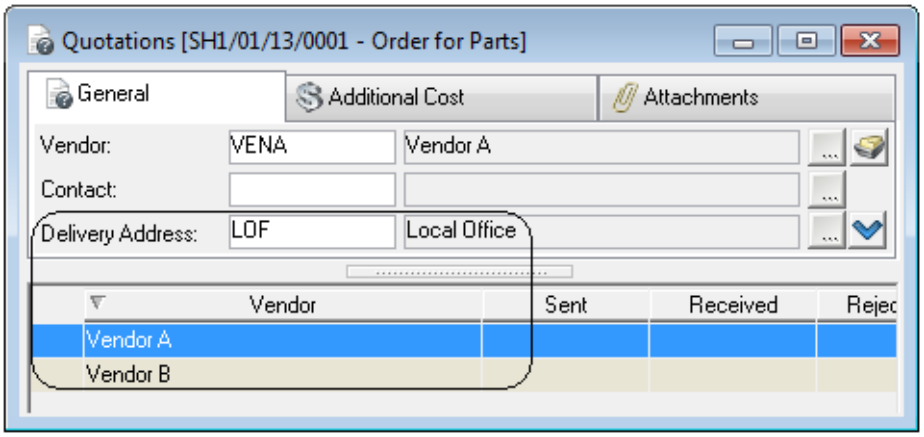
Changing Delivery Destinations on Quotations

You may want to query prices and delivery times for sending the same order to different locations.

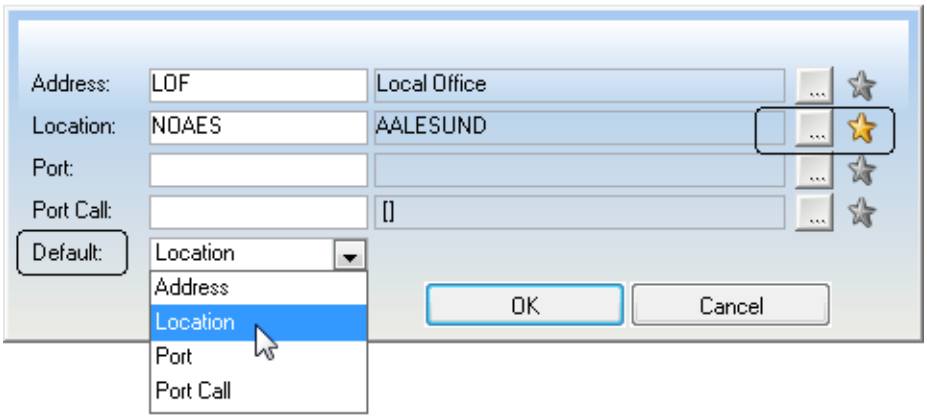
There are four options for specifying delivery destinations: by Address, Location, Port and Port Call. The **Delivery** destination field - and any value set for it - on the purchase form header:



...appears on each quotation too:

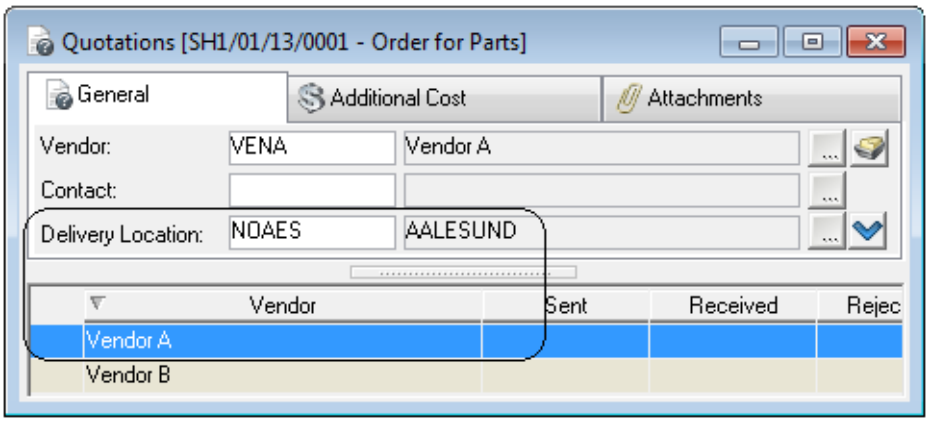


Clicking the  button next to the **Delivery** field lookup[1] opens a dialog where any of the other three delivery fields can be filled in as well, and a different **Default** destination selected:



The default destination will appear on the quotation:

[1] Changing the delivery destination on the form header only affects quotations added afterwards. The delivery destination will not change on existing quotations for that form.



If this quotation is eventually selected, the form header will be updated with the destination field and value as set on the quotation.

Printing and Sending a Quotation

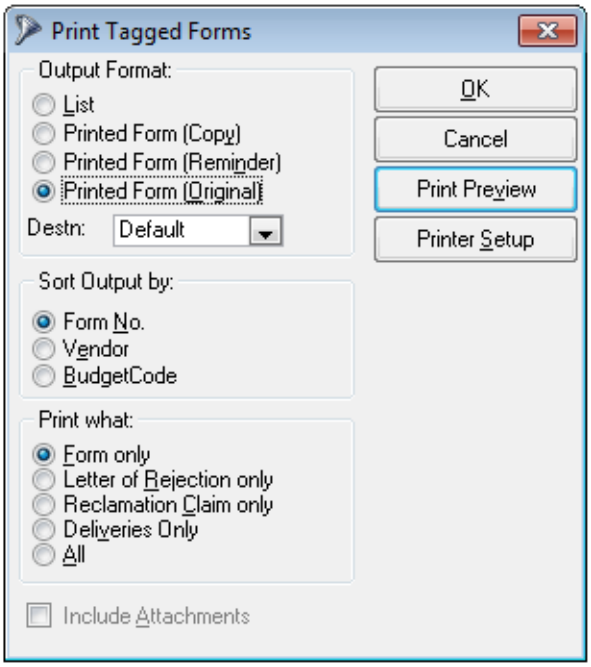
When a query form is ready to send out for quotes, print and send it from the Forms window, either

> Tag one or more query forms in the Forms window and click the **Print** button on the toolbar, or go to **File > Print**. Change the default settings in the Print dialog if you need to.

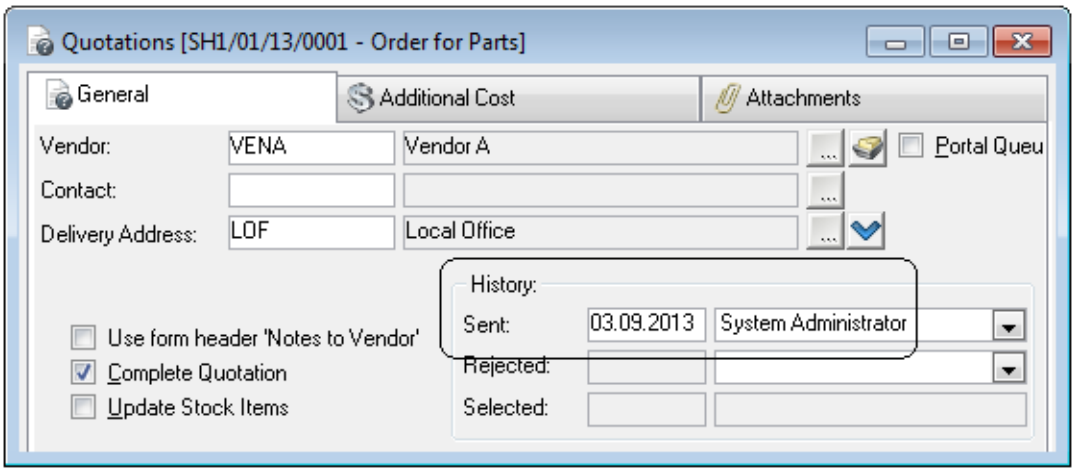
or

> Without tagging any query forms first, click the **Print** button on the toolbar or go to **File > Print**. Specify a **Range** of forms to print and flag **Query** in the 'Include Forms of Type' list. Change the default settings in the Print dialog if you need to.

The output format is set to **Printed Form (Original)**:



This means the system will add the current date to the **Sent**field on the Quotations window for the printed quotation(s):



The query is then sent/ready for sending, and you cannot take out another original[1].

Click **OK** when you are ready to print.

Options in the Print Dialog

You can change the output format if you do not actually intend to send the quotation(s) yet:

- **Printed Form (Copy)**. Can be selected either before or after you print the original[2].
- **Reminder**. Works the same way as a copy, and is for sending a reminder to the vendor.

The destination is set to default. Leave it, or select another destination from the list:

- **Printer**. The form(s) are sent to your default printer. You might need to click **Printer Setup** first to indicate which printer this is.
- **Email**. Only available if AMOS Mail is installed on the PC. The form(s) are sent by email to the selected vendor(s). The forms' vendor(s) must already have an email address specified in the Address register and the output format for the address set to email.
- **Portal**. The form(s) are sent out via a pre-configured portal. The forms' vendor(s) must be connected to a portal in the Address register with an email address specified and the output format on the address set to portal. When sending to portal you can send attachments as well: check the **Include Attachments** box. Read about defining portals and configuring them for use in the *AMOS Business Suite Reference Manual*.
- **Fax**. Only available if the AMOS Mail Fax Driver is installed on the PC. AMOS will automatically find the registered fax number of the recipient and the fax is sent without any further prompting for address information.

When enhanced text is in use[3], you will have the option to print any enhanced text on separate pages following the rest of the printed content: a checkbox labelled 'Print enhanced text on separate page, where applicable' is added to the bottom of the dialog.

Note: Checking the **Portal Queue** checkbox on the Forms window General tab will bypass portal validation. It is recommended to **Print to Portal** using the Print dialog instead. This sets the flag on the quotation and queues it for portal export. If you bypass the portal validation, portal export may eventually fail if anything on the quotation is missing or incorrect.

Note: If you have added a floating image to the Details tab, to include that image in any printout(s) ensure that it is placed inside the page margins shown in the tab.

[1] You must choose Printed Form (Original) to print to Destination Portal.

[2] If you select Printed Form (Copy) you cannot print to portal.

[3] If the system parameter 'Editor - Type Purchase' is set to ENHANCED.

Order Form and Quotation Lines Synchronisation

AMOS will automatically synchronise order lines and quotation lines up to the point of sending/printing the quotation, respecting the setting of the system parameter 'Prevent Quotation Synchronisation'.

- AMOS does not perform any synchronisation if you select the print output 'List' format.
- Once you have printed an original copy of a form or quotation it will be excluded from any further printing; meaning AMOS will not auto-synch any newly added lines and you cannot print again to manually synchronise.

Quotation Notes and Attachments

You can add attachments and different types of notes to forms and quotations, and include these with the form or quotation when you send it to a vendor.

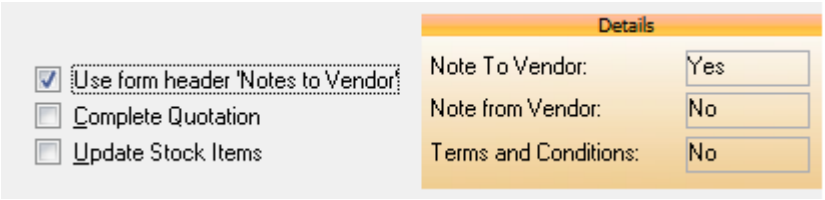
Notes to Vendor

You may want to send a comment or remark to the vendor along with your query form or purchase order. Similarly, vendors might return comments to you with their quotations. Notes can be attached from the Forms window or the Quotations window:

1. Open the Forms window or the Quotations window and select the form or the quotation you will attach a note to.
2. Go to **Options > Note to Vendor**, or click the corresponding toolbar button.

   In the Quotations window:  or,  in the Forms window.
3. A details window opens where you can enter your notes and click **OK** to return to the main window.

When a note to vendor exists at Quotation level, it will be used instead of any note entered on the form header. To use a note entered at form header level, check the **Use form header 'Notes to Vendor'** checkbox on the Quotation window.



A note to vendor exists on the quotation; but the note at header level will be sent.

Left unchecked, the note added at Quotation level will be sent.

In the same way you can attach notes returned from the vendor. The notes can be sent and received using e-Business portals.

Attachments

If your system is configured to export order forms and quotations through a ShipServ portal driver and the appropriate settings are defined[1], you can send attachments from the Forms window Attachments tab though the portal with the selected form by flagging the **Mail Attachment** checkbox.

The same option exists in the Quotations window: if the vendor on a quotation is linked to a ShipServ portal driver and the appropriate portal settings are defined, you can send attachments for the quotation

[1] AMOS will export attachments via a ShipServ portal if the attachment file is linked to the attachment service type 'Internal' or 'Default Association'. Attachments with service type 'External' will not be exported to portal. Sources and related service types are defined on attachment files in the Attachment References register.

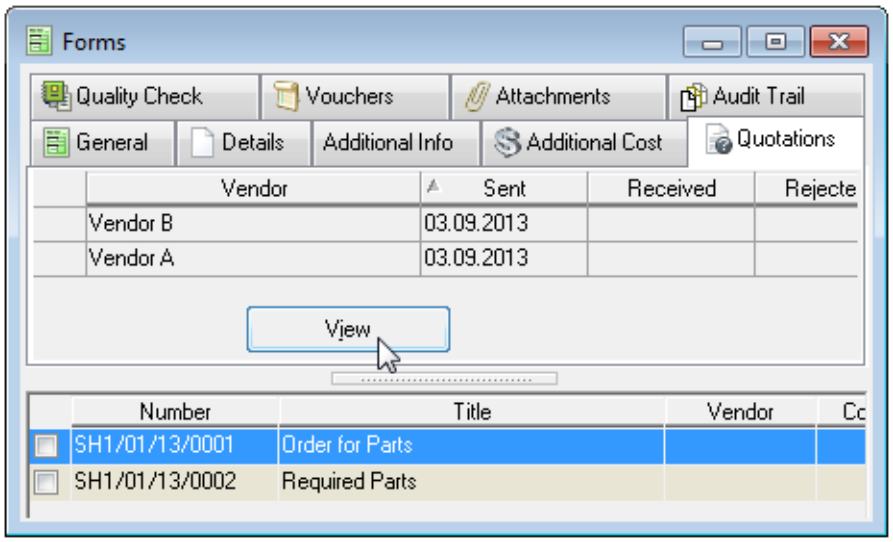
through the portal as well by flagging the **Mail Attachment** checkbox in the Quotations window Attachments tab.

If you check the box **Use form header Attachments** on the Quotation General tab any attachments added to the form header will be sent together with this quotation. Otherwise, attachments linked at Quotation level are used. These checkboxes are only available if the vendor is linked to a ShipServ portal.

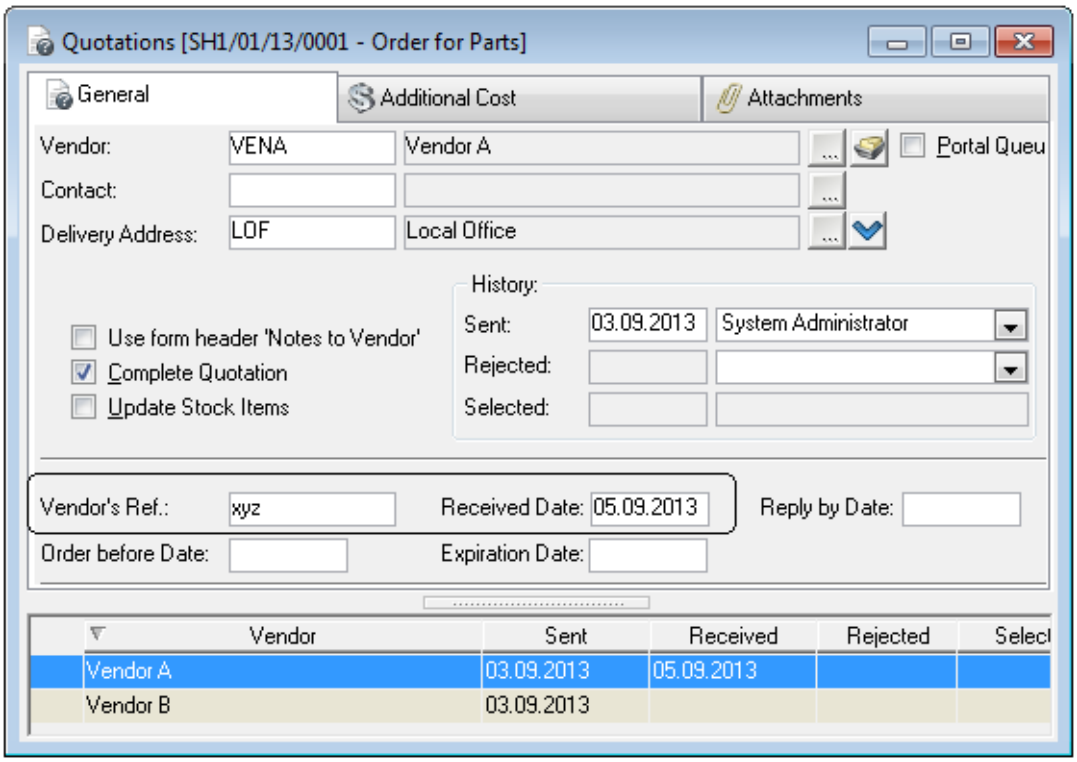
Updating Quotations

When a vendor returns a quotation including prices and delivery information, discounts, etc., update the quotation in AMOS:

1. Open the Forms window and select the form you are working with:



2. Click **View** in the Quotations tab, or go to **Options > Quotations** to open the Quotations window.
3. Select a quote in the window and enter the General details like the **Vendor's Reference** number and the **Received Date**:



4. **Save** the quotation. Update any other quotations for the same form.

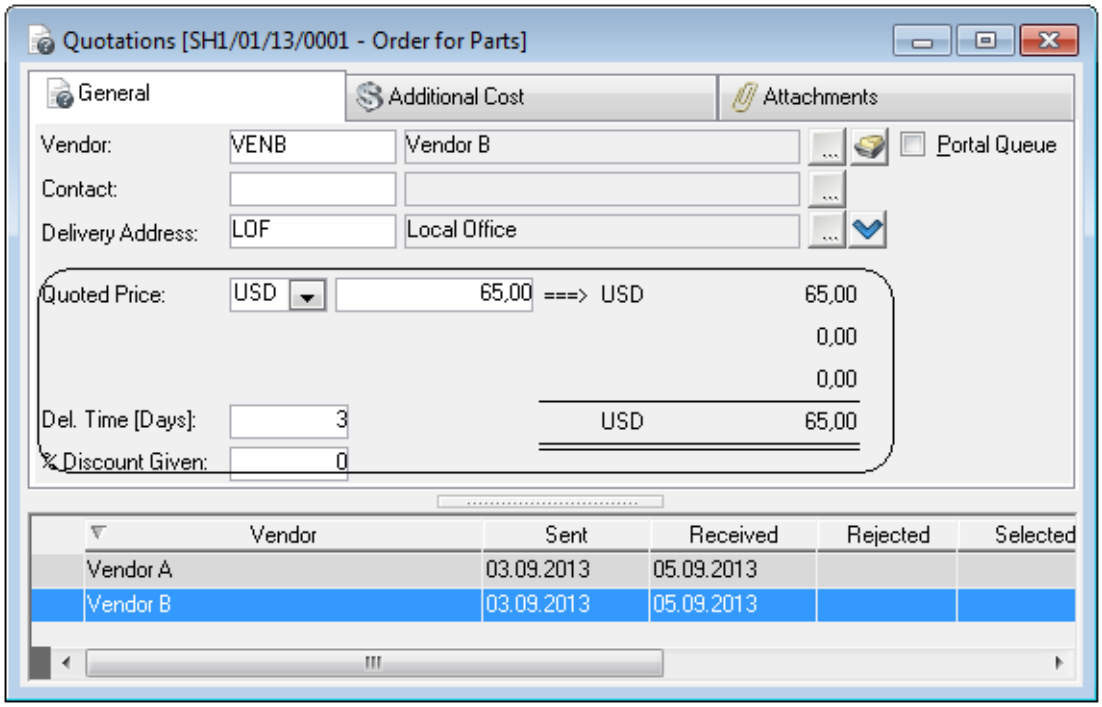
Continue on to add pricing, discount, delivery and other additional information to each quotation.

Updating Quotation Prices and Discounts

For each quotation enter the prices, delivery time and discount information the vendor has supplied in the Quotations window.

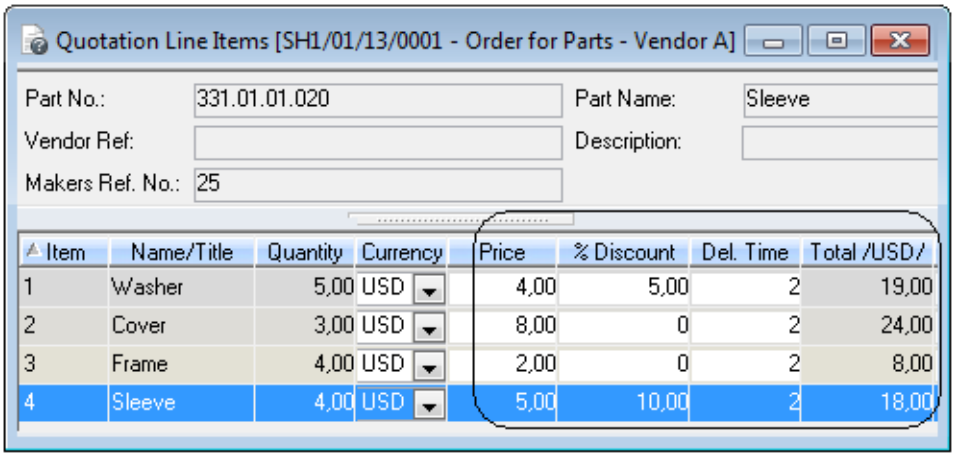
Entering a Total Quoted Price

You can enter a total cost for the whole quotation on the General tab in the **Quoted Price** field, and specify a **Delivery Time**:



Entering Prices and Discounts by Item

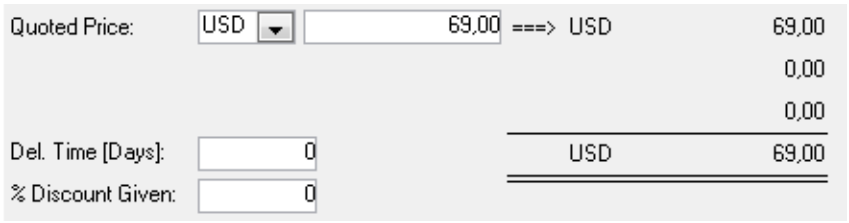
Or, record the quoted prices and discounts line-by-line. Go to **Options > Line Items** to open the Quotation Line Items window and add the quoted **Price**, **Delivery Time** and any individual **Discount** to each one. AMOS updates the **Total** on each item for you:



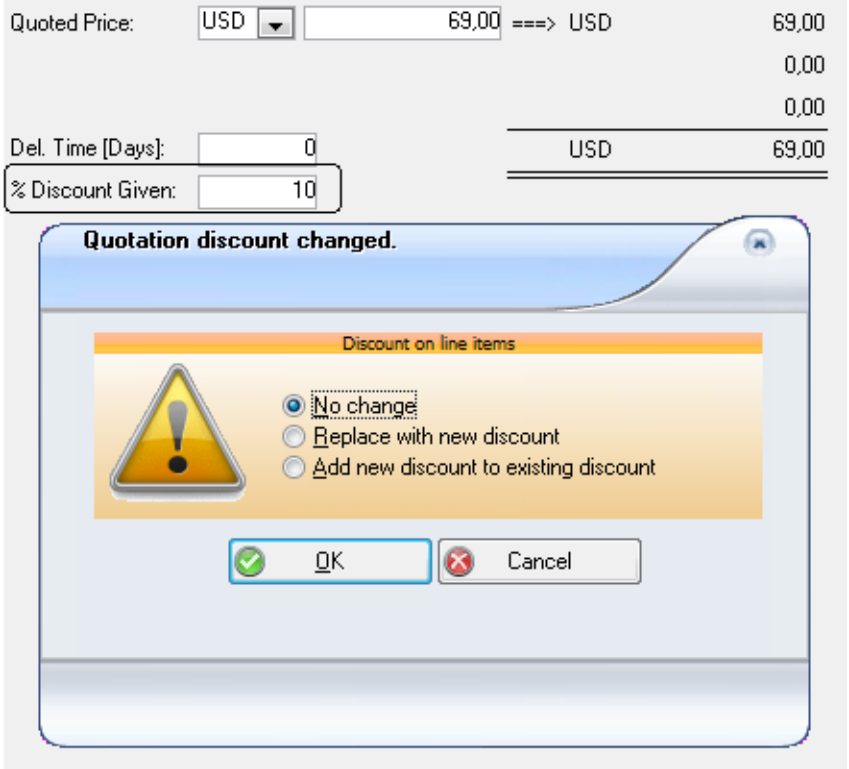
When you are finished, **Save** and close the Quotation Line Items window to return to the Quotation itself. Select **Options > Calculate** to update the quotation's total:



The correct operation of the calculate function depends upon quotation prices and discounts from the vendor being entered at line item level[1]. The **Quoted Price** displayed in the Calculate dialog is the total price of the quotation, that is, line item quantity multiplied by price minus discount:



To change the line item discount(s) or apply the same discount to each line item all at once, enter a percentage value in the **% Discount Given** field on the Quotations window General tab. When you click **Save**, a discount dialog opens:



Make a selection and then **Save** the Quotations window again. The changes appear in the Quotation Line Items window:

If you chose to **Replace** any existing discount on each line item with this new value, the percentage is placed on each quotation line item overwriting any previous discount value. Any line items with no discount already specified at all, will also receive the new value:

Item	Name/Title	Quantity	Currency	Price	% Discount	Del. Time	Total /USD/
1	Washer	5,00	USD	4,00	10,00	2	18,00
2	Cover	3,00	USD	8,00	10,00	2	21,60
3	Frame	4,00	USD	2,00	10,00	2	7,20
4	Sleeve	4,00	USD	5,00	10,00	2	18,00

Selecting **Options > Calculate** in the Quotation window updates the quotation's total:

[1] If the quoted value is in a currency other than your base currency, AMOS will convert it on the General tab as well.

Quoted Price:	USD	64,80	===> USD	64,80
				0,00
				0,00
Del. Time [Days]:	0		USD	64,80
% Discount Given:	10,00			

OR

If you chose to **Add** this new value to any existing discount on each line item, the percentage is added on top of any discount value on each line item, and any line items with no discount already specified at all, will also receive the new value:

Item	Name/Title	Quantity	Currency	Price	% Discount	Del. Time	Total /USD/
1	Washer	5,00	USD	4,00	15,00	2	17,00
2	Cover	3,00	USD	8,00	10,00	2	21,60
3	Frame	4,00	USD	2,00	10,00	2	7,20
4	Sleeve	4,00	USD	5,00	20,00	2	16,00

Selecting **Options > Calculate** in the Quotation window updates the quotation's total:

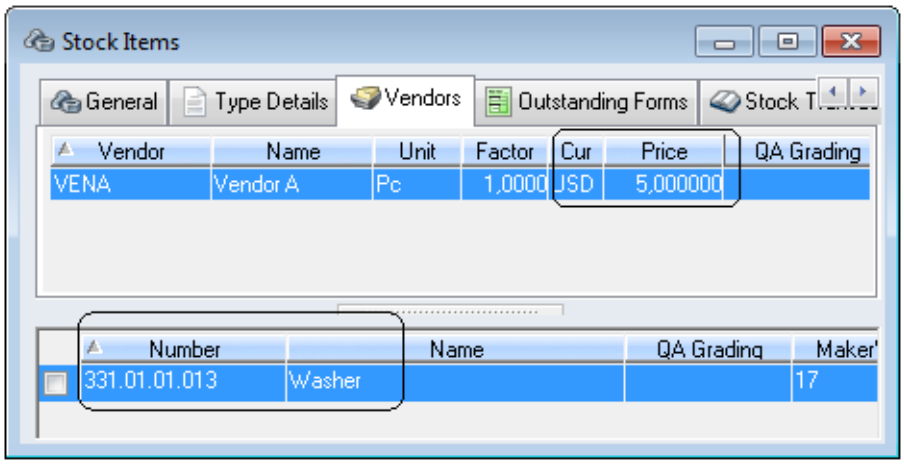
Quoted Price:	USD	61,80	===> USD	61,80
				0,00
				0,00
Del. Time [Days]:	0		USD	61,80
% Discount Given:	10,00			

Updating Stock Vendor Prices and Units

You may already have information about stock prices and units as supplied by different vendors, registered in the Vendors window. To open the Vendors window, first open the Stock Types/Items window and select a record. Open the Vendors tab for that stock, and click **New** or **View**.

Vendor Prices

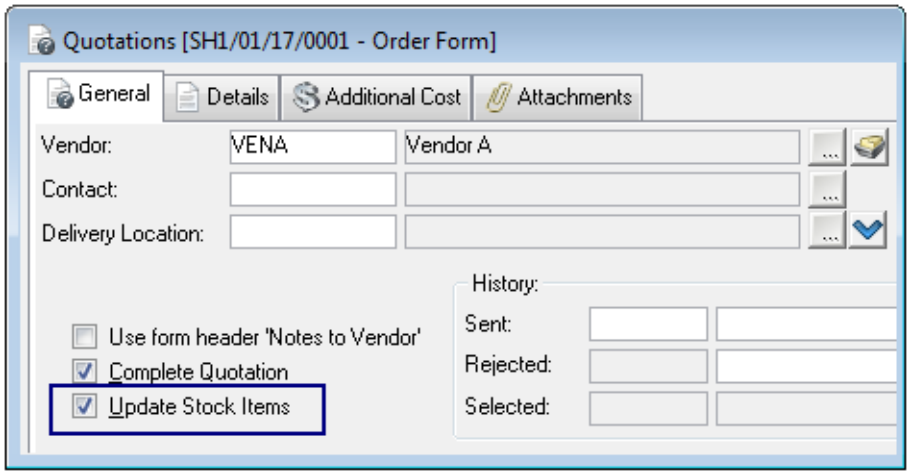
Vendors and their prices might be entered against any of quotation line items already in the Stock Types/Items window Vendors tab. For example, Vendor A is registered in the Stock Types/Items window against the item 331.01.01.013 Washer, selling it for 5 USD:



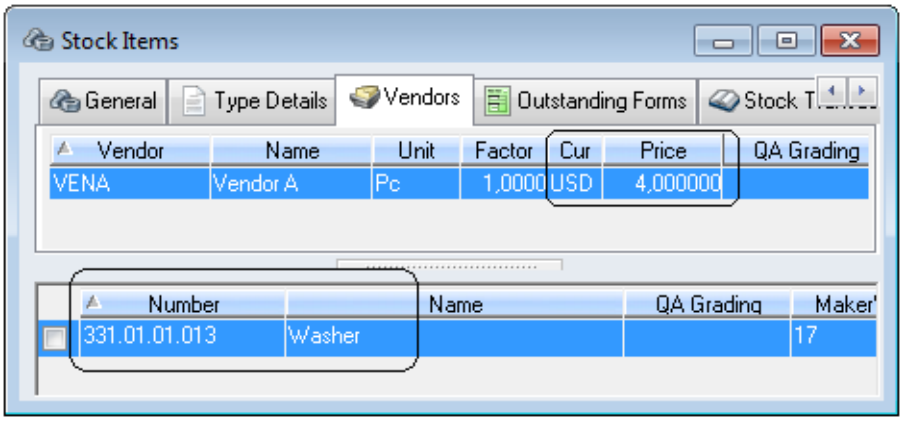
You have a quotation from Vendor A including this item but at a price of 4 USD each:

Item	Name/Title	Quantity	Currency	Price
1	Washer	5,00	USD	4,00
2	Cover	3,00	USD	8,00
3	Frame	4,00	USD	2,00
4	Sleeve	4,00	USD	5,00

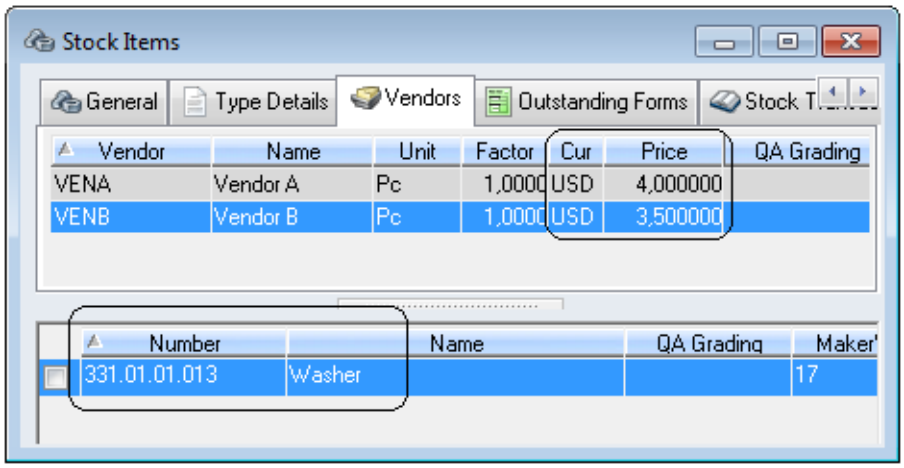
You flag **Update Stock Items** on the Quotations window General tab:



When you **Save** the quotation, AMOS will update the price in the Stock Types/Items window to the quoted price:



Likewise, if you have a quotation from another vendor who is not already listed on the Vendors tab for this item, checking **Update Stock Items** will add the vendor and their quoted price to the stock type/item:

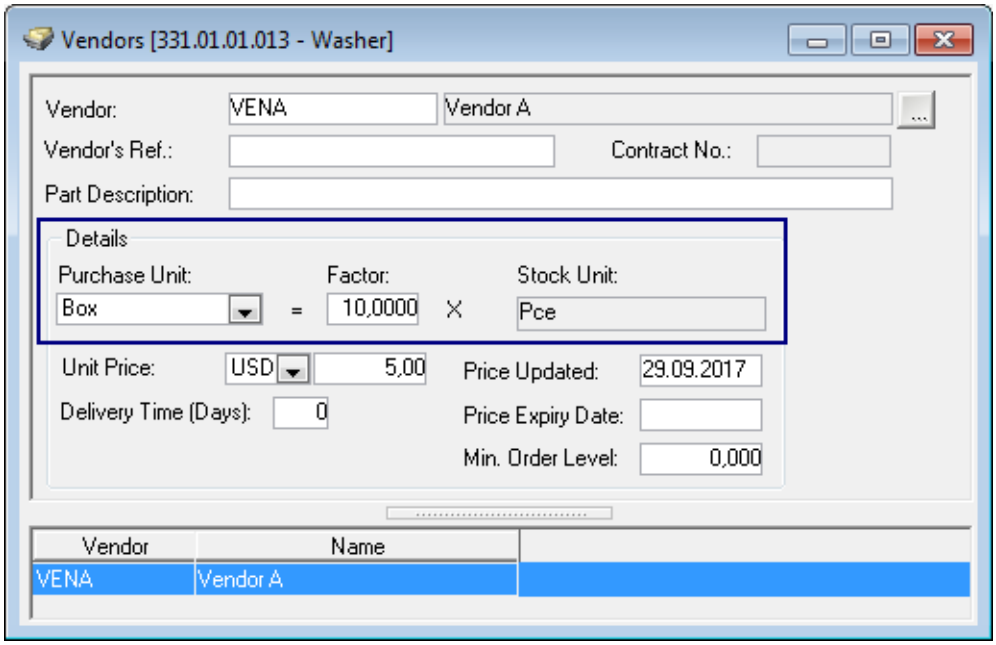


Vendor Units

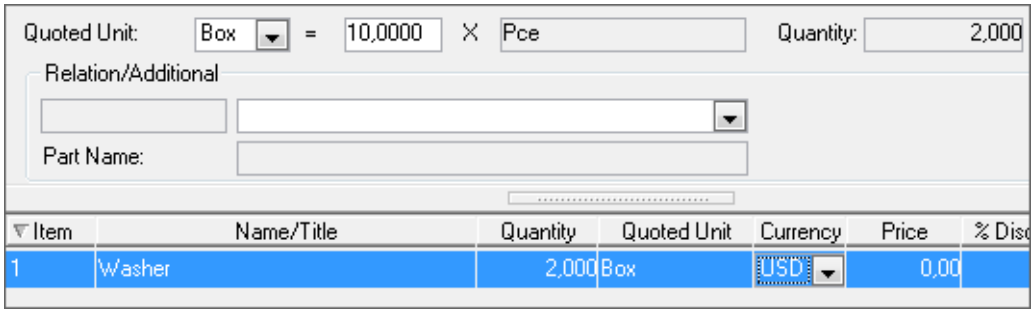
You might store a stock type/item in one kind of unit while a vendor sells it in another unit. To eventually order this item you need to convert the stock unit to purchase units. This is a vendor-specific conversion, so you'll enter the formula in the Vendor window for that stock. You can do this in the Stock Types/Items > Vendors window in advance, or on the quotation line.

Note: it's important to make sure that the unit the vendor is quoting you in, already exists in AMOS. If it doesn't, then add it to the Units register (**File > Open Register > General > Units**).

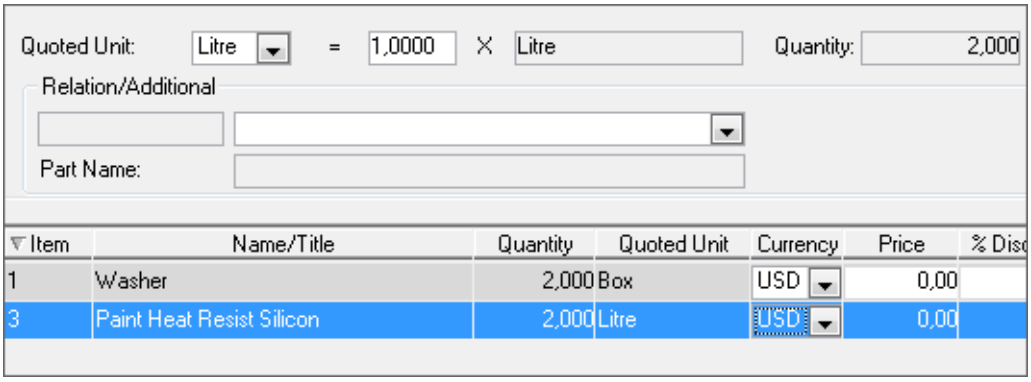
For example, you stock a washer using the **Stock Unit** 'Piece'. Vendor A is listed in the Stock Types/Items > Vendor window for this washer, and sells it only by the unit 'Box' with 10 pieces per box. To convert the unit you enter Box in the **Purchase Unit** drop-down field, and 10 in the **Factor** field:



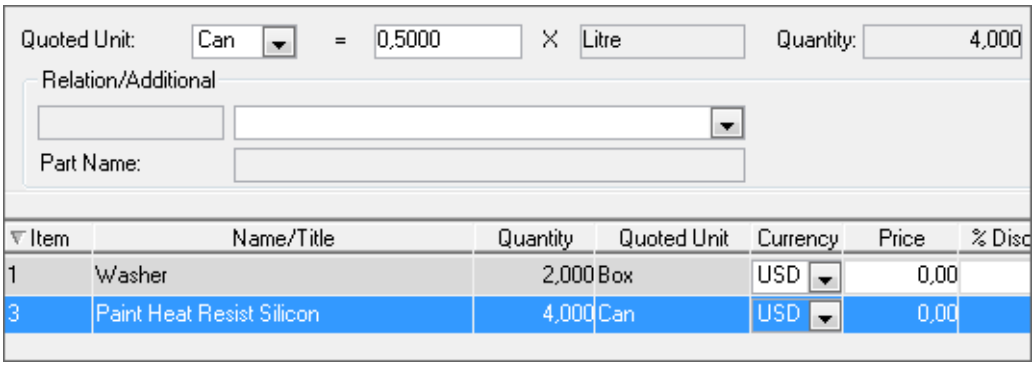
Later on, you want a quote for 20 pieces of this item. When you create a quotation for Vendor A, AMOS will apply the pre-defined formula to the quotation line item for you, meaning Vendor A will quote you for a quantity of 2 *boxes*:



Let's say you've also asked Vendor A to quote on some paint that they supply. Vendor A is already listed on the Stock Types/Items > Vendor tab for this paint, but no conversion formula is registered in the Vendor window. You want 2 litres of the paint:

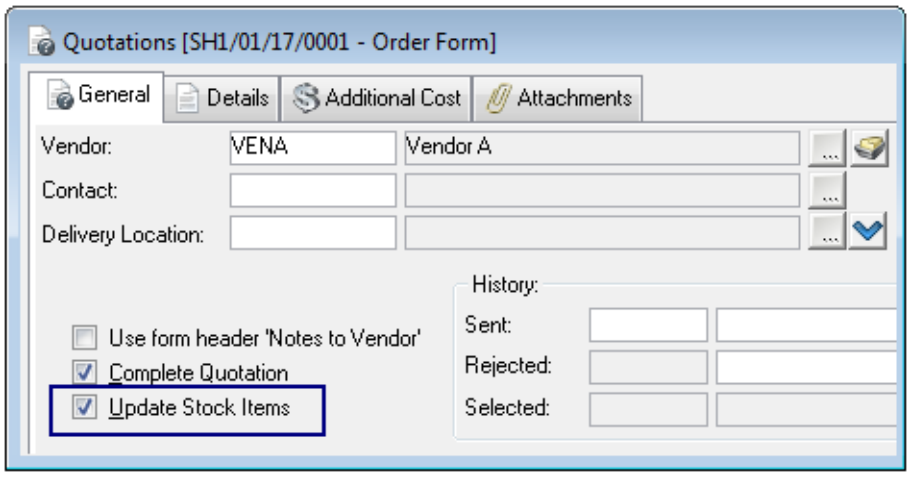


When you get the quote back from Vendor A, it turns out they only sell this item in 'Cans' of half a litre. So you enter their conversion formula on the quotation line like this:

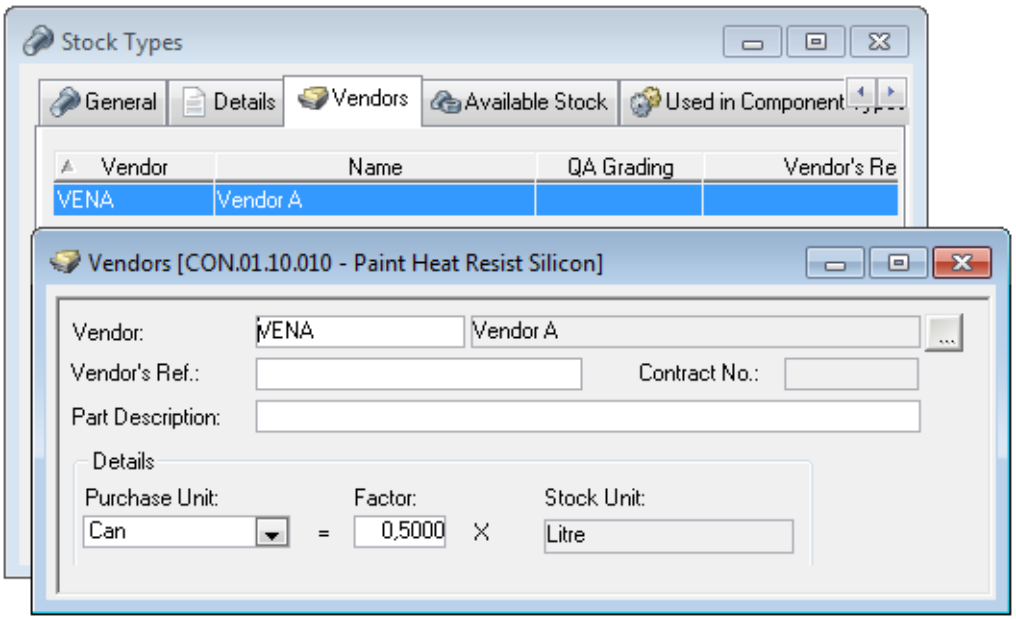


And so that means you'll need to order 4 cans from Vendor A.

If you change units or define a conversion formula on a quotation line item, as long as **Update Stock Items** is flagged on the Quotation window General tab:



The vendor's unit and formula will be saved to the Stock Types/Items > Vendors record, for use next time:



Quotation Additional Costs

Use the Additional Cost tab[1] to add estimates for extras like shipping and insurance:

1. Open the tab. Any default costs will already appear here.
2. Fill in the cost values, or click the **Delete** button to remove the line.
3. Add more costs by clicking **New** and using the lookup.

If the quotation is eventually selected, additional costs added here can be transferred to the relevant purchase form header, and updated with 'actual' costs there.

Alternative, Additional and Related Quotation Line Items

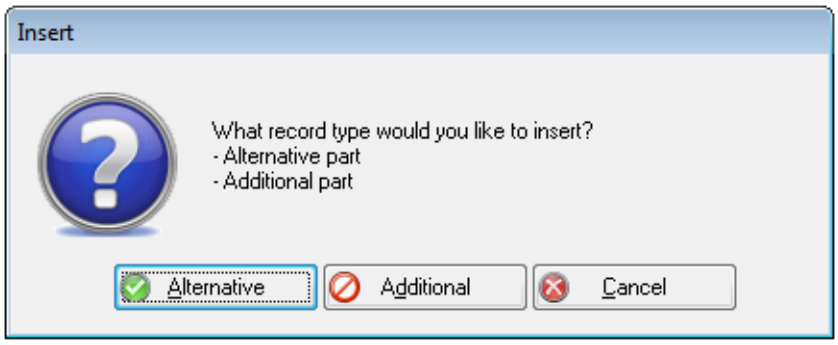
It is possible to add different kinds of extra lines to quotations: 'Alternative' lines, 'Additional' lines and 'Related' lines.

Alternative and Additional Quotation Line Items

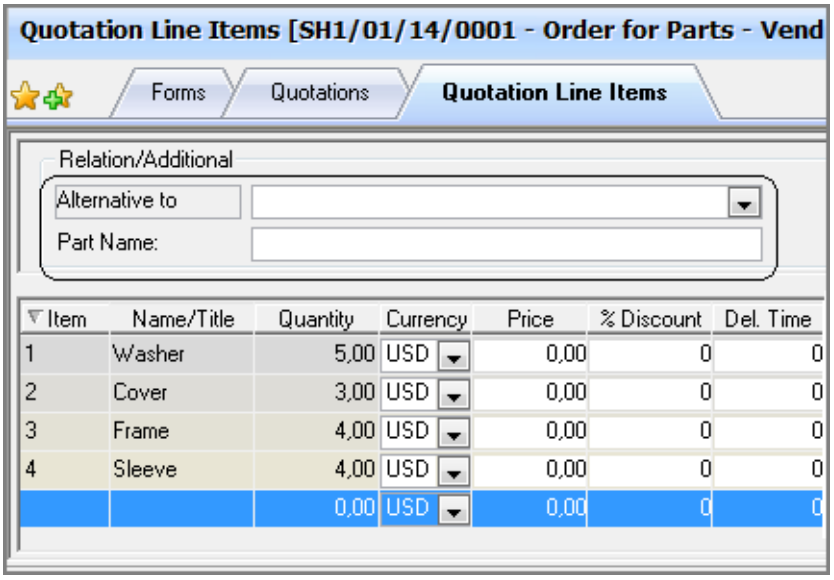
Alternative and additional lines are suggested replacements for an original line on the query you sent out, or extra items added by the vendor. For example, a queried vendor does not carry one of the items you requested, and has responded with an alternative part for the original item instead:

1. Open the Quotation Line Items window and click **New** on the toolbar. AMOS asks which type of line you want to add:

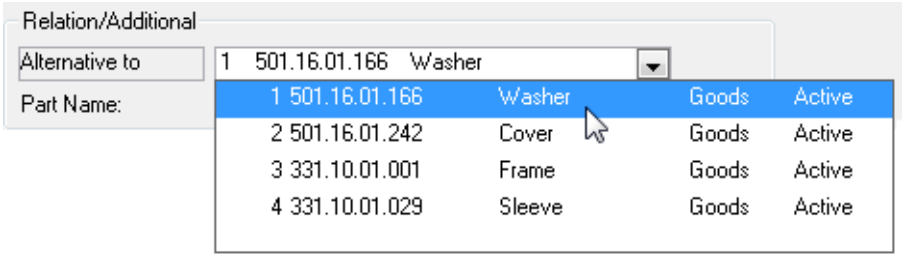
[1] The cost values available for selection are defined in the Additional Costs register and can be marked there as default. Any cost codes marked default in the register will always appear in the Quotations window Additional Costs tab when a new quotation is created; they can however be removed.



2. Click **Alternative**. This adds a new line and activates the **Alternative To** fields:



3. Use the drop-down list to select the part on the quotation that the alternative part is for:

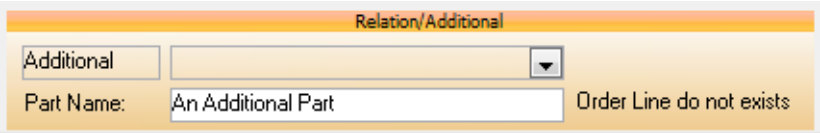


4. Enter a free-text **Part Name** and **Save**. The alternative part is listed with the same **Quantity** and **Item** number as the part it can replace:

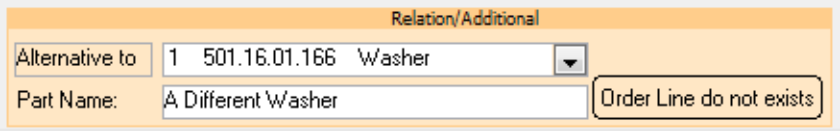


5. Add prices to the items as quoted by the vendor, and **Save**.

Add additional parts in the same way: click **New** and then click **Additional** in the dialog. In this case, simply enter a free-text part name and any other details like quantity:



Any alternative/additional line items added in the Quotation Line Items window apply only to the specific quotation they are added to, and are not as yet on the purchase order form:



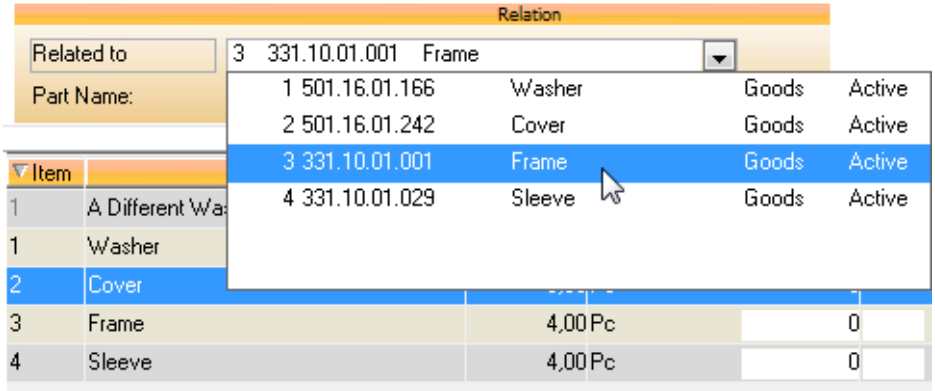
Alternative/additional lines will transfer to the purchase order form's line items tab only if that quotation is eventually selected. They will be added to the purchase order as consumables, with no part number. If you later remove this vendor from the form or select another quotation, the alternative quotation line items will be removed again from the purchase order form's line items.

Alternative/additional line items added to order forms upon quotation selection will not be deleted if they have been split to another form *before* you remove the vendor from the form or select another quotation.

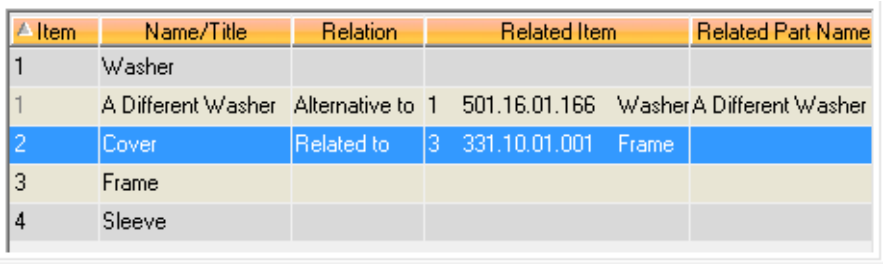
Related Quotation Line Items

You can also 'relate' line items, to indicate that two of the items should always be ordered together:

1. Open the Quotation Line Items window and select a line.
2. Use the **Relation** drop-down list to select one of the other items on the quotation:



3. As shown below, Item 2 is now 'related to'[1] Item 3:



Item	Name/Title	Relation	Related Item	Related Part Name
1	Washer			
1	A Different Washer	Alternative to	1 501.16.01.166 Washer	A Different Washer
2	Cover	Related to	3 331.10.01.001 Frame	
3	Frame			
4	Sleeve			

4. Add prices to the items as quoted by the vendor, and **Save**.

[1] The Relation, Related Item and Related Part Name fields are available from the Field Chooser and you may need to select them to display them in the list.

Related lines only apply to the individual quotation the relation is specified on. Relationships will transfer to purchase form line items only if the quotation they are defined on is selected.

Comparing Quotations

AMOS can help you to set up a matrix to compare prices and delivery times from different vendors, and find the best offer. The matrix shows you if there is anything to gain by splitting an order between several vendors to obtain the best price on each item.

You may configure and save any number of different purchasing scenarios for the same order form.

> **EXAMPLE**
>
> One scenario comparing quotations for the best price and another scenario for the same order form comparing the quoted delivery times. Or, you've sent more than one quotation for the same order form to the same vendor - with a different delivery location specified on each one - so you want to compare the vendor's various quoted prices and delivery times against each other as well as against other vendors' offers.

The correct operation of the compare function depends upon quotation prices and discounts being entered at line item level.

The general process for comparing quotations is this:

1. Create a comparison scenario.
2. Configure the matrix.
3. Compare the quotations and view the results.
4. Choose the best deal by price or delivery time.
5. Propose, approve and select comparison scenarios.
6. (Optional) Split items to other forms for purchasing.

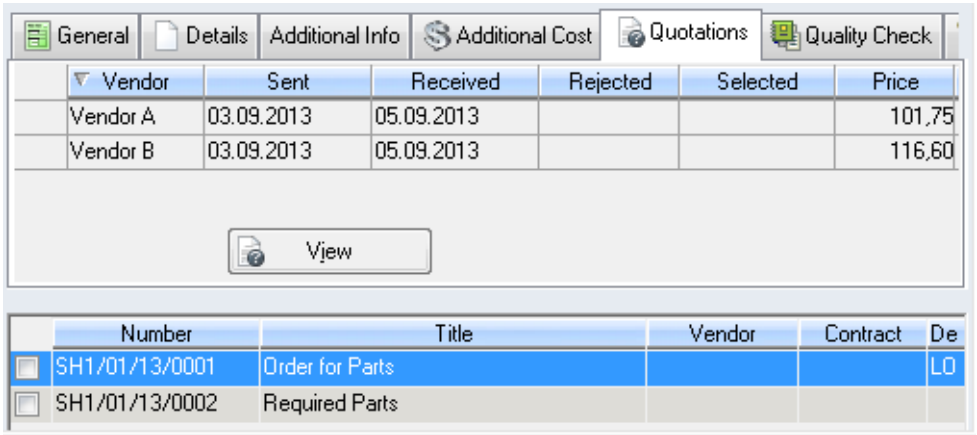
When you are finished close the Quotation Compare Scenarios window to return to the Quotations window, where you can select the quotation to use according to your best scenario and carry on with purchasing.

See "Selecting a Quotation" on page 305 for more about selecting a quotation.

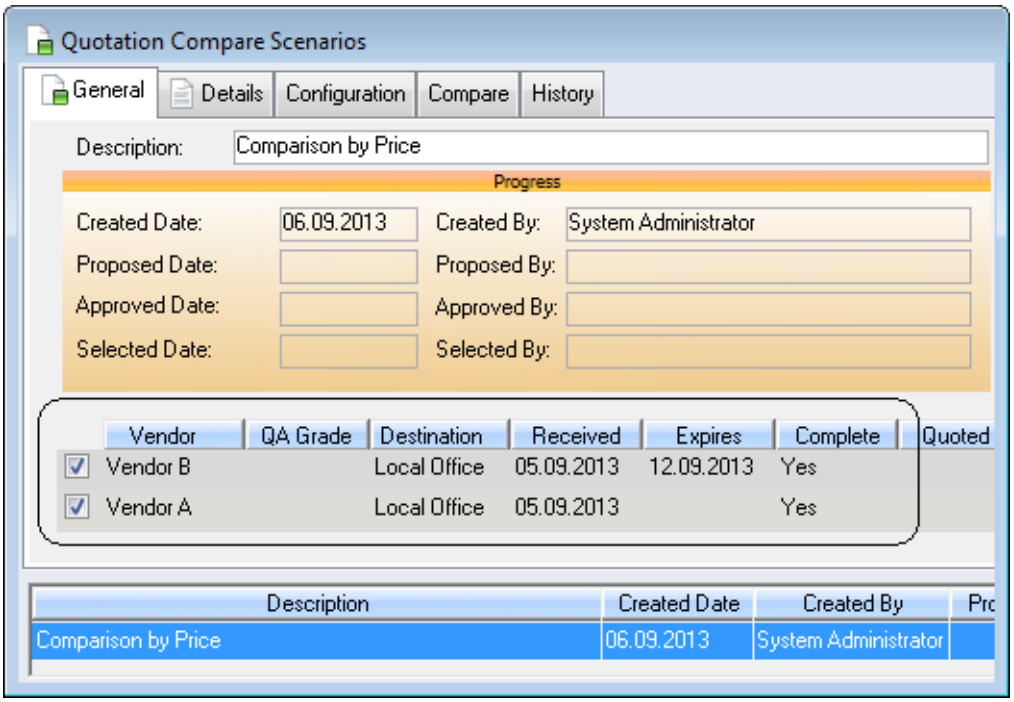
Quotation Comparison Scenarios

To create a quotation comparison scenario:

1. Open the Forms window. Select the form you are working with.
2. Existing quotations for this form are listed in the Quotations tab:

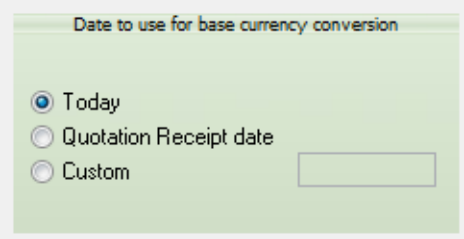


3. Open the Quotations window: either click **View** or go to **Options > Quotations**.
4. In the Quotations window, select **Options > Compare**to open the Quotation Compare Scenarios window. Click **New** to start:



5. All of the quotations you have registered for this query are listed with general details. The quotations are checked for inclusion in the scenario by default if:
   - the vendor's **QA Grade** has not been defined as unacceptable
   - a **Received** date is registered
   - the quotation's **Expiration** date is later than today's date

   You can check or uncheck any listed quotations to include or remove them from the scenario.
6. Enter a name for the scenario in the **Description** field and select the date to use if conversion to base currency is necessary:



7. **Save** the scenario so far.

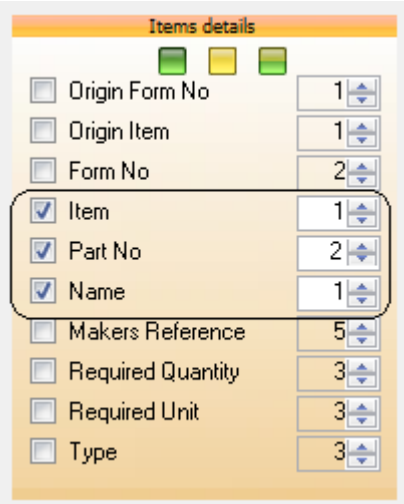
Configuring the Matrix

The information AMOS displays in the matrix and uses to compare quotations is user-definable. To configure a comparison scenario, open the Quotation Compare Scenario window > Configuration tab and choose the items and factors you want to compare by. When you are finished, opening the Compare tab shows you the results of your selections.

Items Details

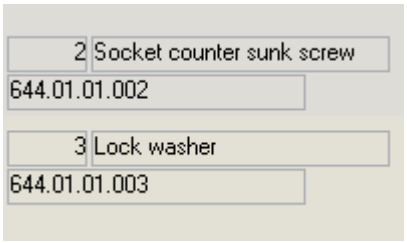
This section lists the information for each line item on the form, such as line item **Type**, **Name**, **Required Quantity**, etc. Every detail you flag here will appear in the Line Item column on the matrix.

Next to each item detail you can enter a number to determines how many rows the Line Items column on the matrix will be split into per line item, and in which order these rows will appear.



For example, check **Item**, **Part No** and **Name**. Set them to 1, 2 and 1 respectively.

In the resulting matrix, for every item on the left side you'll see the line **Item** number and **Name** displayed on the first row, and the **Part Number** displayed on the second row of the matrix.

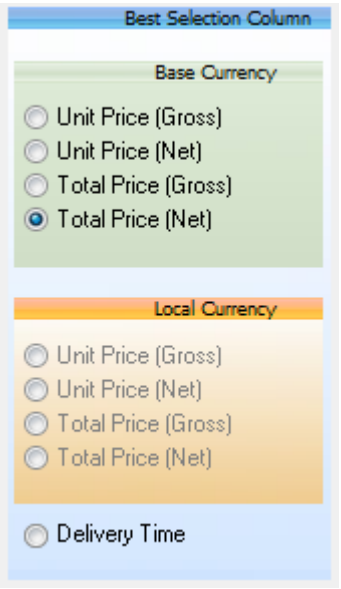


Grouped By

Choose how you want AMOS to group the line items on the matrix. In addition to displaying the items grouped by your selection, AMOS will show sub-totals for each group.

Best Selection Column

Tell AMOS which factors to consider when finding the best deal in this scenario. You can choose only one option:



Unit Price. AMOS finds the best offer for each item based on the item's *per unit* price. The lowest unit price for each item amongst the included quotations will be highlighted in blue and displayed in the **Best Price** column. Choose **Gross** or **Net** to compare the prices before or after the deduction of any applicable discounts. Or,

Total Price. AMOS finds the best offer for each item based on the *total cost* per item. The lowest total price for each item amongst the included quotations will be highlighted in blue and displayed in the **Best Price** column. Choose **Gross** or **Net** to compare the prices before or after the deduction of any applicable discounts. Or,

Delivery Time. AMOS will show the **Best Time** for each item listed on the matrix, and highlight the shortest delivery time for each item in blue text.

Comparisons will generally be performed and displayed in your base currency. However in some cases it is possible to compare using the quotations' own currencies. If your base currency is USD and you have three quotations which are all in GBP, the **Local Currency** fields will become available and you can select to compare by Unit/Total Price in the quotations' specified currency.

Matrix

Choose the options [1] you want displayed in the comparison matrix. See "Comparing Quotations in the Matrix" on page 288 for more information about how your selections here affect the appearance and usability of the matrix.

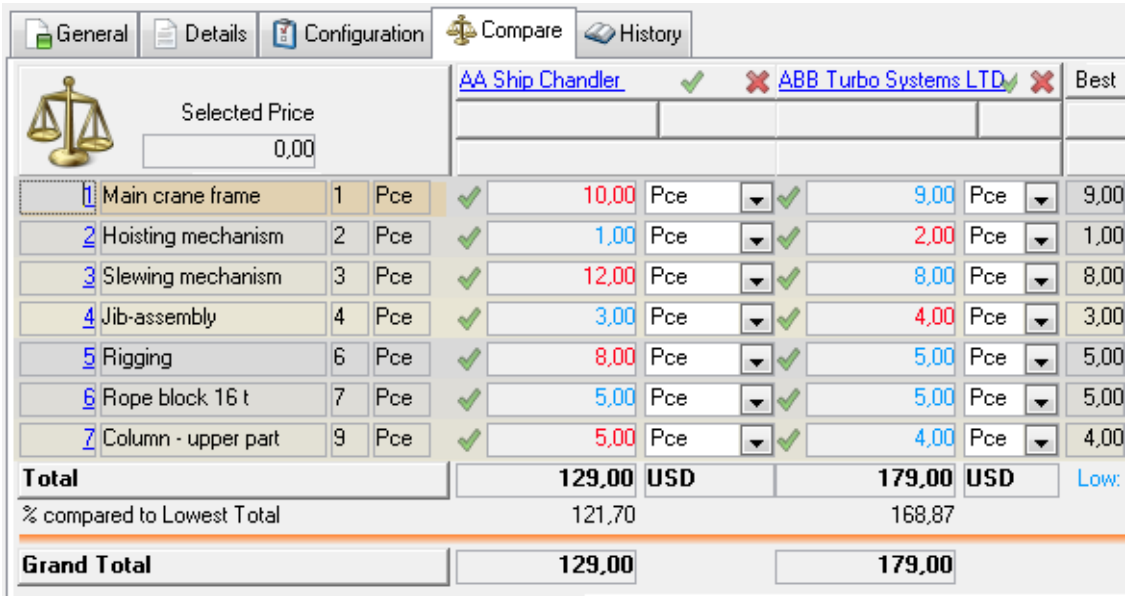
[1] Items under Local Currency will only be selectable if all the quotations included in the comparison are in the same currency, and it is not your base currency.

Saving Your Configuration for Next Time

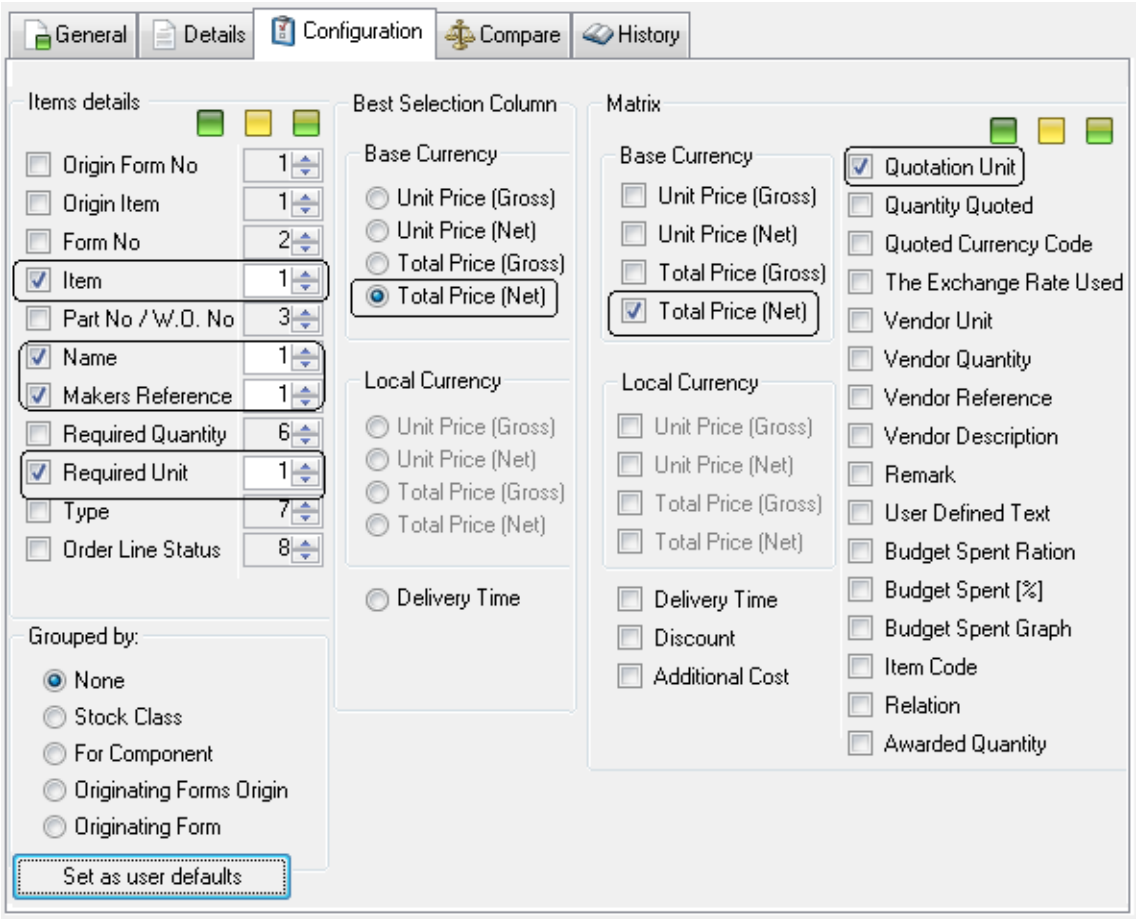
When you have finished your configuration, if you want to save it for automatic use next time, click **Set as User Defaults**. The next time you create a scenario, these settings will appear by default in the Configuration tab and you can alter them if necessary.

Optional Configuration: Simple Comparison Matrix

The 'Simple Comparison' matrix available in AMOS version 9.2.00 showed a limited amount of information in one row for each line item, providing a basic but quick comparison:



To recreate this simple comparison matrix as shown above, select these options as shown in the Quotation Compare Scenarios window > Configuration tab:



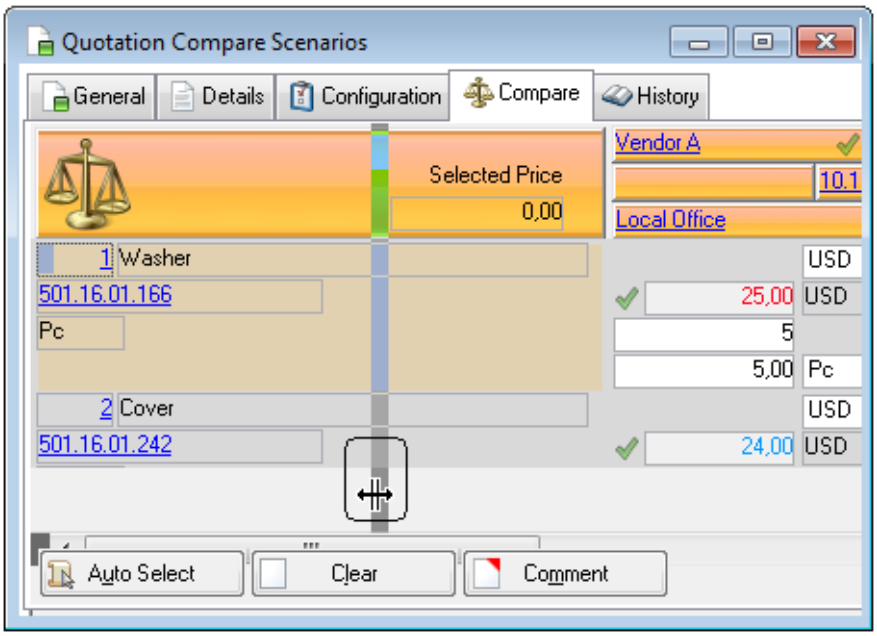
- Under 'Items Details' flag **Item**, **Name**, **Maker's Reference** and **Required Unit**. Set them all to 1.
- Under 'Best Selection Column' select **Total Price (Net)**.
- Under 'Matrix' flag **Total Price (Net)** and **Quotation Unit**.

Save the configuration and open the Compare tab to see the results.

Comparing Quotations in the Matrix

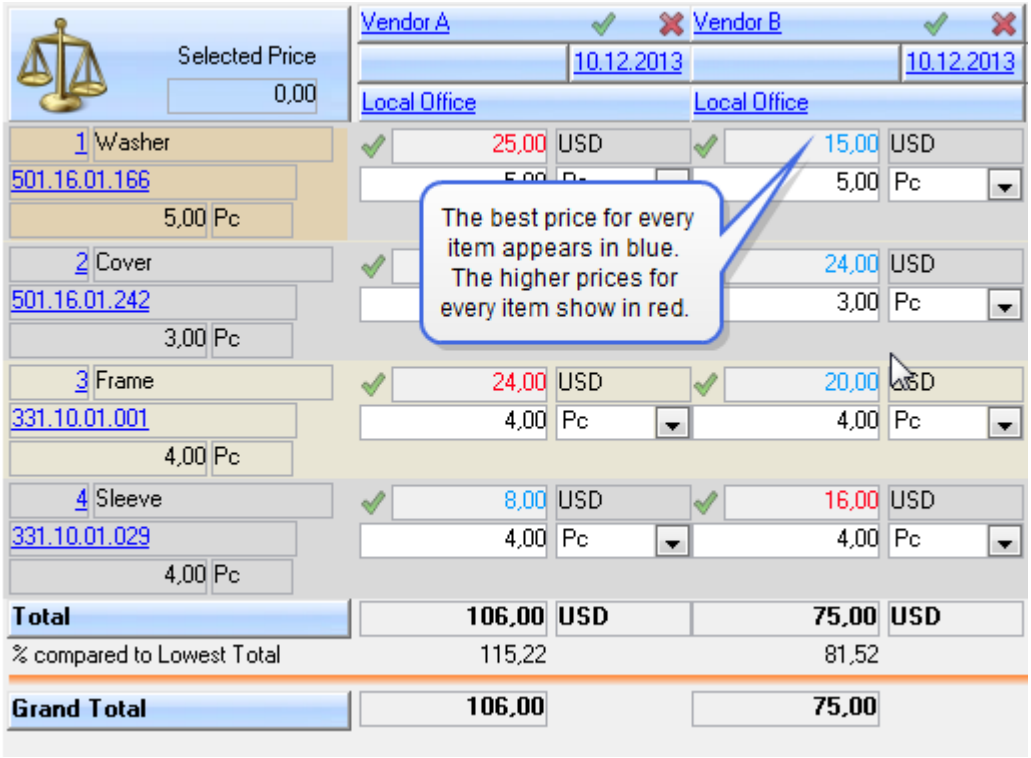
When you have configured the matrix and selected the information you want to compare by, open the Compare tab to see the results. Choose the best deal, or, return to the General tab and create a new comparison scenario for the same purchase form.

Use the split bar to divide the screen into smaller sections, each with its own horizontal scroll bar. Click on the dark grey split bar in the bottom left corner of the scrollbar and drag the dividing line to split your screen:

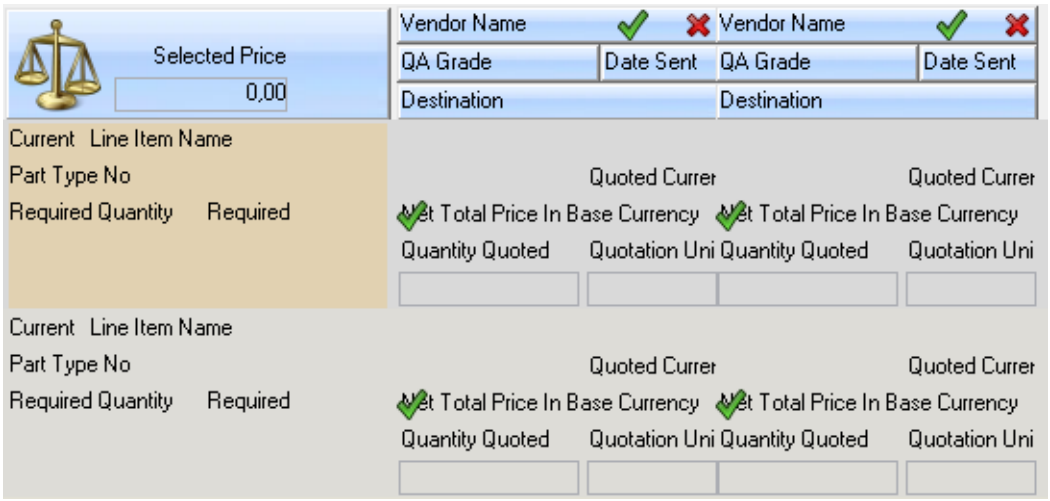


What's What in the Comparison Matrix

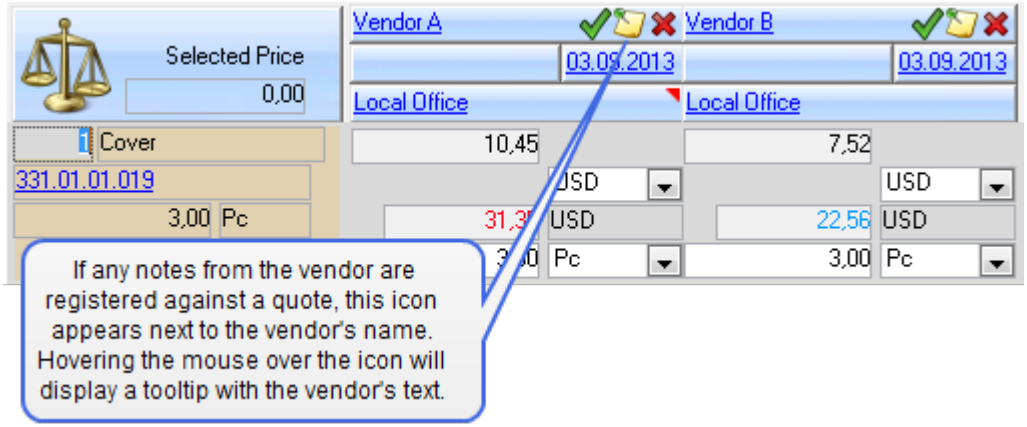
A comparison scenario appears in the matrix with the line items listed on the side and columns for each included vendor's quote across the top. The matrix contains the information you selected in the Configuration tab:



Click the button in the top left corner of the tab to show an explanation of the content for every field:



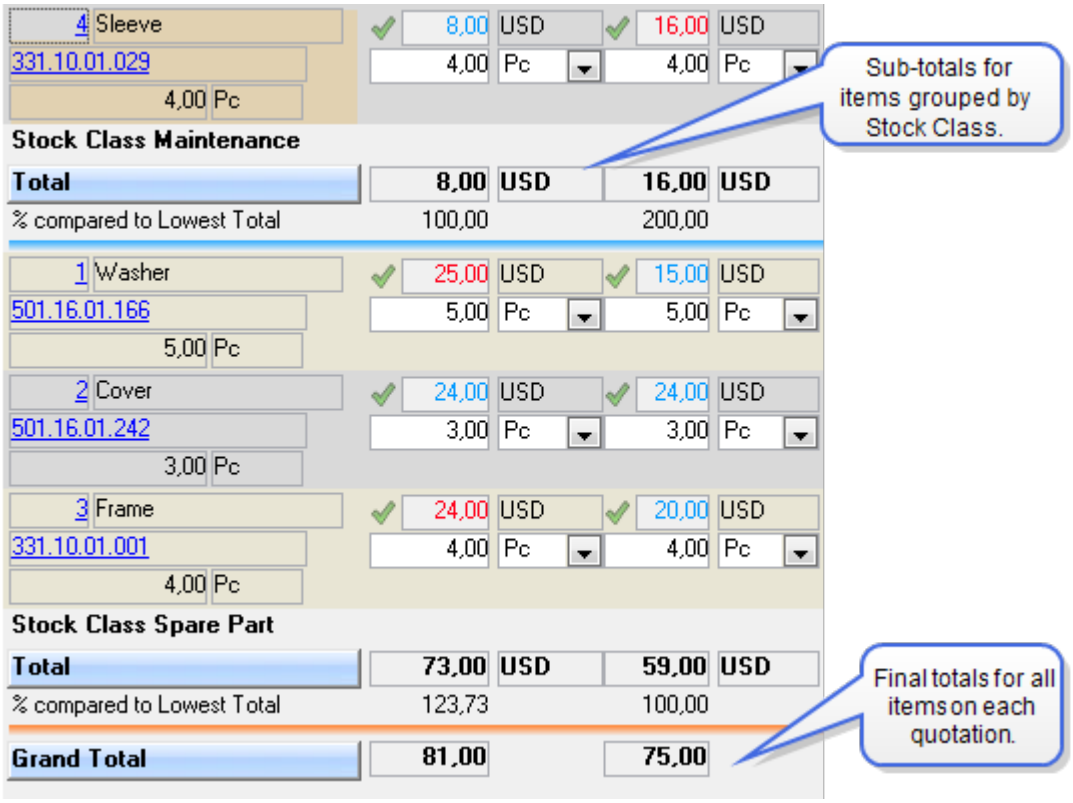
- Double-clicking on a vendor name opens the Address register.
- Double-clicking on a line item opens the Quotation Line Items window.



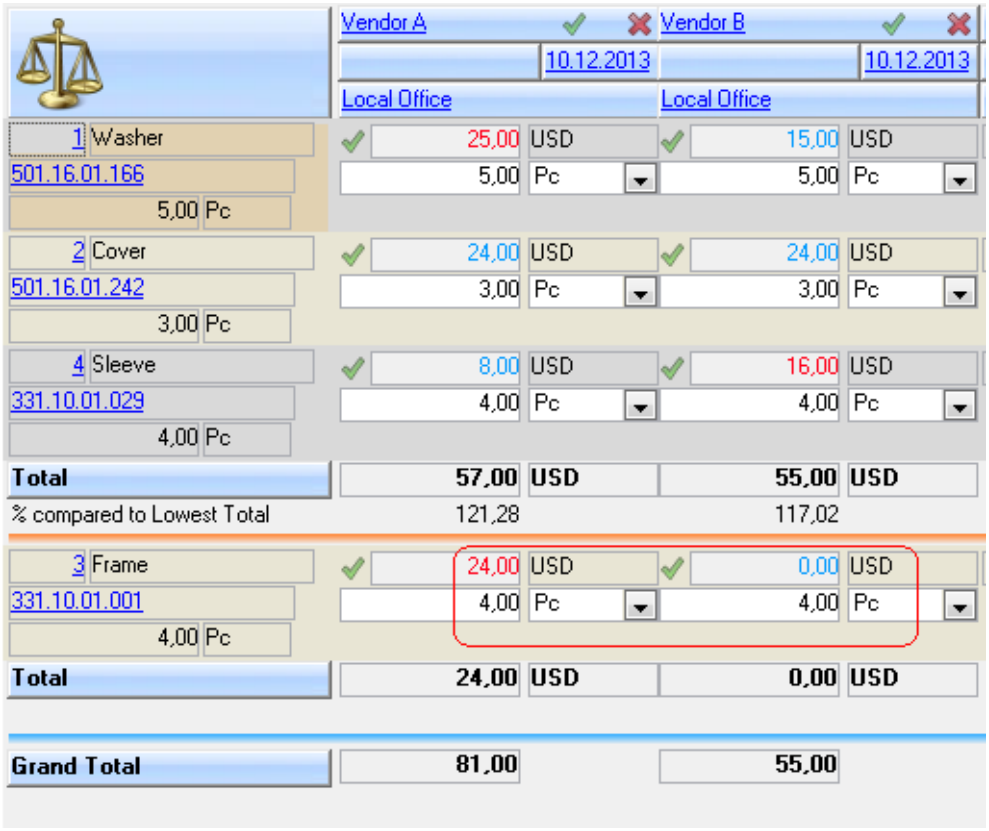
To add notes or comments yourself, click the **Comment** button at the bottom of the Compare tab.

Prices and Totals

The **Total** price for each quotation is shown at the bottom of the matrix. If you choose to group the line items (Configuration tab > Grouped by), sub-totals are shown after every grouping. In the illustration below, the items have been grouped by stock class:

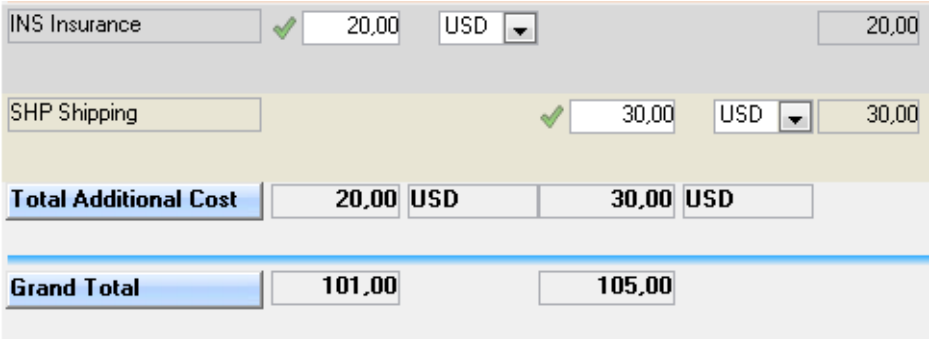


If no price was quoted for a particular item, that item will be listed separately. This prevents a quotation with missing prices from appearing to be a lower-cost deal. In the illustration below, Vendor B did not quote a price for 'Item 3 Frame' so it is displayed at the bottom of the matrix:



You can still select this item manually by itself or with the entire quotation; however it will not be considered in an auto-select[1]. On the other hand, if you want 'Item 3 Frame' (or any other items missing a price) to be listed with the rest of the items anyway, flag **Combine All Items** in the Matrix section on the Configuration tab.

If a quotation includes any additional costs, you can compare them in the matrix also by selecting **Additional Cost** on the Configuration tab. In this case, the Compare tab will contain a section for the additional costs and consider the values in the Grand Total(s):



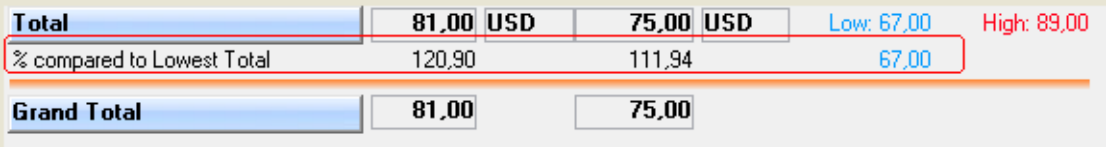
If you flagged **Best Price and Time** in the Price Information section on the Configuration tab, you'll see columns for the best price and delivery time for each item on the right side of the matrix. Flagging **Last and Best Purchase Prices** in the same section will add two more columns next to that: BPP and LPP. These columns show the **Best Purchase Price** and **Last Purchase Price** per item, drawn from your purchase history records.

AMOS also shows the best total price you can get by combining the lowest quote for each item regardless of the vendor offering it. The highest total price is also shown:



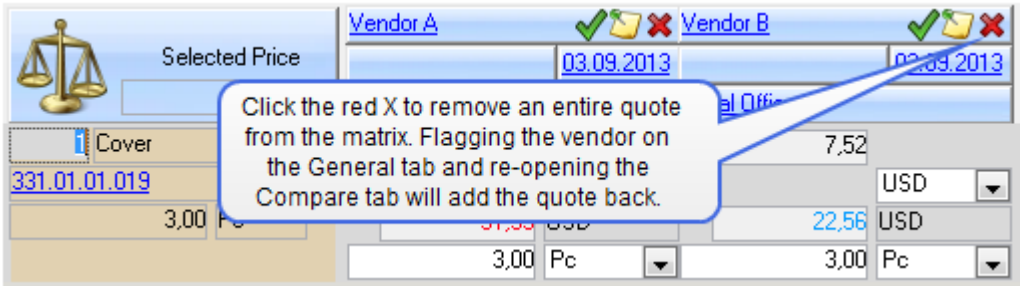
The **% Compared to Lowest Total** line indicates the percentage by which each complete quotation is higher than the best priced combination of items:

[1] You can include items like this in an auto-select by applying a quoted item code. See 'Configuration Options - Item Codes' for more information.



Removing Quotes or Items from the Matrix

Click the red **X** next to a vendor name to remove that vendor's quote from the matrix:



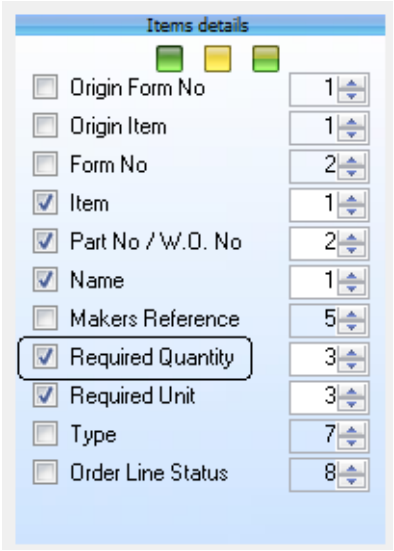
This does not affect the quotation itself, and it can be added back to the comparison. If you reject a quotation in the Quotation window, that quotation will be removed automatically from any existing comparison scenarios.

To completely remove a line item from the scenario, quotation(s) and from the purchase form itself, click the **Delete Item** button:

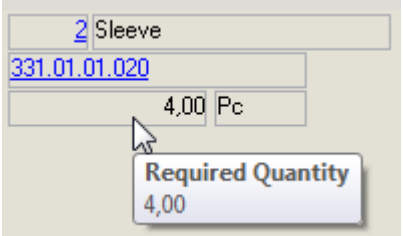


Configuration Options - Change the Required Quantity

To show the required quantity of each item on the matrix, flag **Required Quantity** on the Configuration tab:



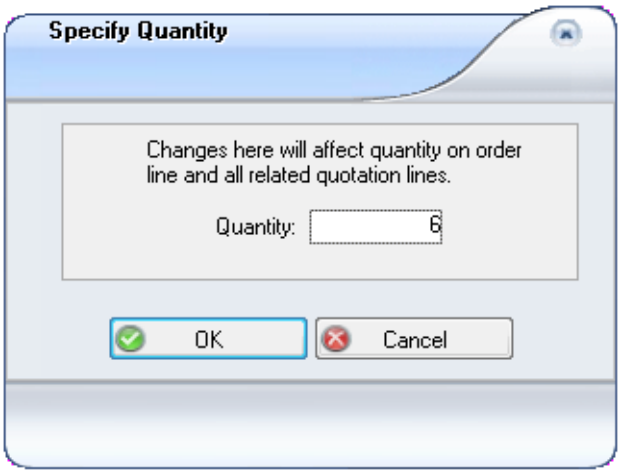
The required quantity field will show up on the matrix for every line item:



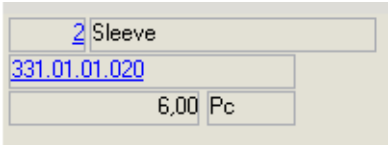
The value in this field comes from the purchase order the item belongs to.

You can change the required quantity here[1], keeping in mind that it will change on the purchase order and quotation(s) too.

Double-click in the field to open the Specify Quantity dialog:



Enter a new **Quantity** and click **OK**to update the value:



Configuration Options - Alternative, Additional and Related Items

Alternative/Additional lines are suggested replacements for an original line on the query you sent out, or extra items suggested by the vendor. If any of the quotations in a comparison scenario contains an alternative/additional item, it will appear at the bottom of the matrix, in grey:

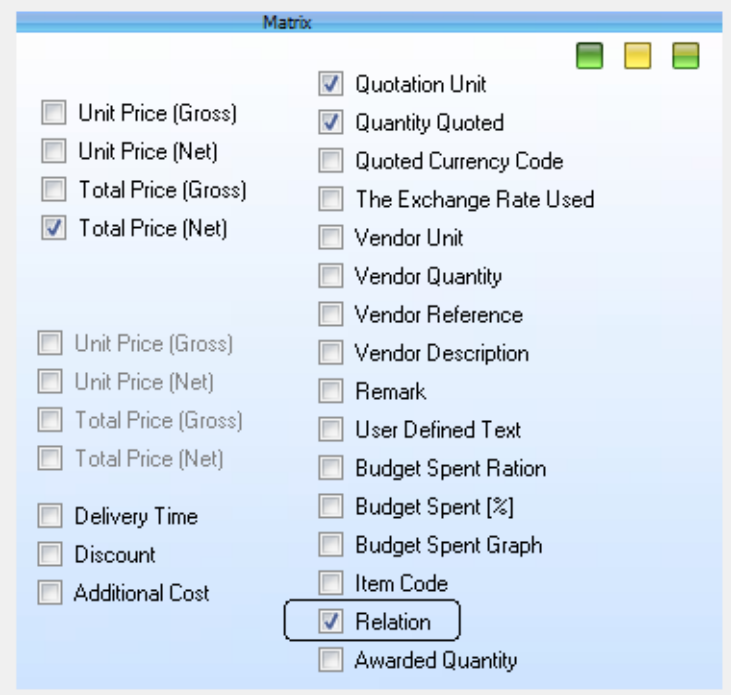


[1]To change the required quantity on a line item you need access to 'Quotation Compare, Line Quantity' on the Access Control window > Functions tab.

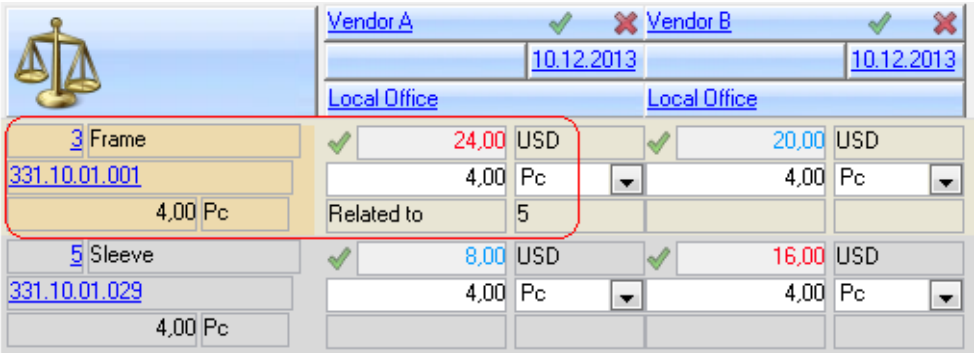
Alternative/additional items only apply to the quotation they were added to. If you select the entire quotation here or use auto-select, AMOS considers the original item(s), not the extra items.

The price of the alternative/additional item is included in the grand total for Vendor A's quotation. See '*Configuration Options - Item Codes*', below, about how to leave the price for either the alternative/additional item or the item it replaces, out of consideration.

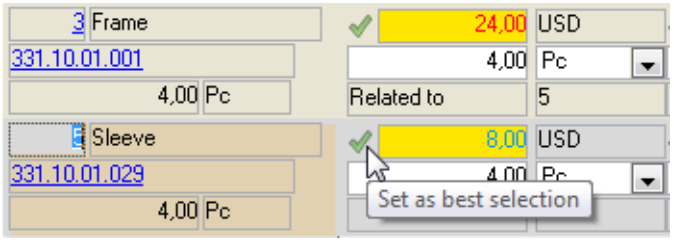
Two line items on the same quotation which should be ordered together, can be 'related' to each other (related items are linked in the Quotation Line Items window). To see related items on the matrix select **Relation**[1] on the Configuration tab:



In the illustration below, Vendor A's quote relates 'Item 3 Frame' to 'Item 5 Sleeve':



The relationship only applies to the quotation it has been specified on. If you manually select[2] 'Item 5 Sleeve' from Vendor A, 'Item 3 Frame' will be selected automatically for you (and vice versa):



[1] This also adds the text 'Alternative to' and 'Additional', to any such extra items in the matrix.

[2] Using Auto Select disregards relationships and chooses each item from the vendor offering the best price/time.

See "Best Price or Delivery Time" on page 299 for more information about selecting and auto-selecting quotation lines in the matrix.

Configuration Options - Item Codes

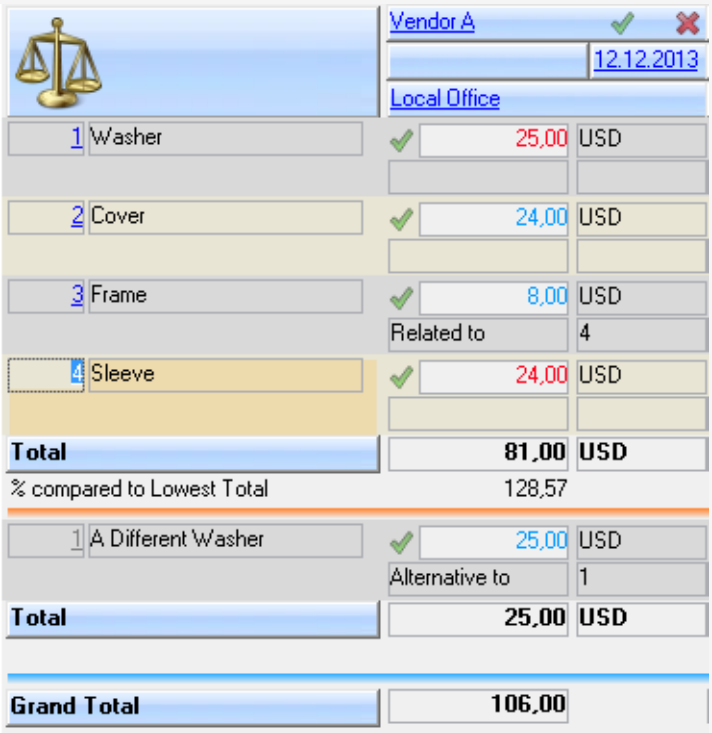
If quotation compare item codes are in use[1], you can add extra information to item/vendor combinations in the matrix. Applying an item code lets you do things like cancel an item in a certain scenario only, or prevent its price from consideration in the total, without actually affecting the quotation itself.

Depending how an item code has been configured, it can do two things in the current scenario:

- Prevent or allow selection of the item it is assigned to; and
- Include or remove the price of the item it is assigned to, in the quotation total.

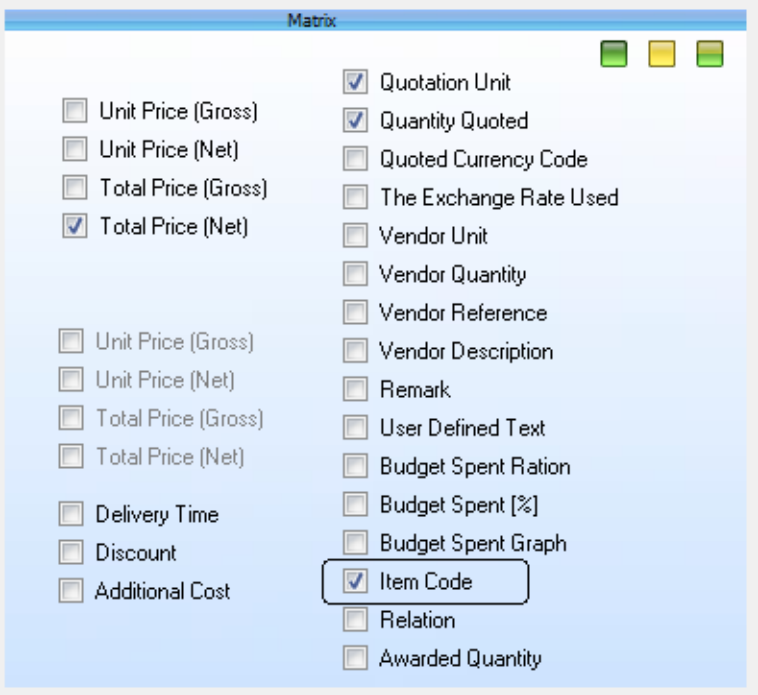
EXAMPLE

You have an alternative item in Vendor A's quote. You want to cancel the original item it replaces in this scenario so that the same price is not considered twice in the final total. In the same scenario and quotation, 'Item 3 Frame' is related to 'Item 4 Sleeve'. Since item 3 comes for free with purchase of item 4, you want to remove its cost from the comparison as well. The scenario currently includes the price values for the original item and the related item, and so has a Grand Total of 106.00 USD.

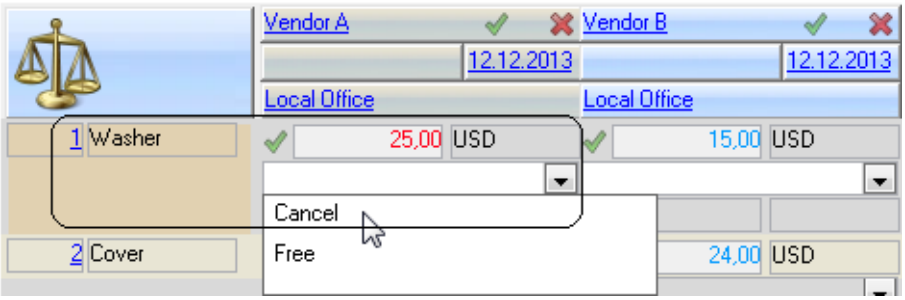


Select **Item Code** on the Configuration tab:

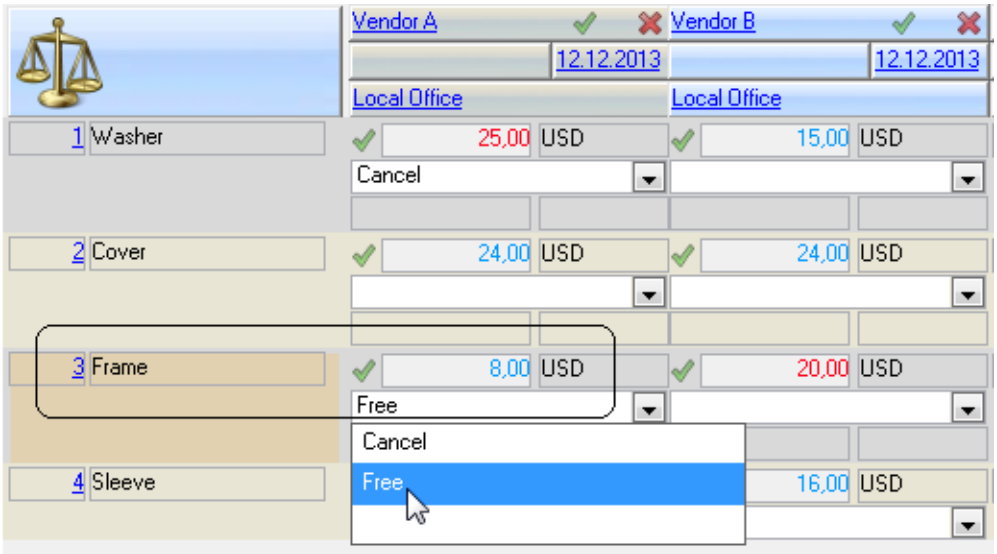
[1] Item codes are defined in the register at File > Open Register > Purchase > Quotation Compare Item Code.



This adds a drop-down field containing predefined item codes on each item/vendor intersection. Find the original item the alternative item replaces. Deactivate it in this scenario by selecting the item code 'Cancel'[1]:



Find the item related to item 4, and select the item code 'Free':



[1] Item codes and their availability and usage - to cancel or exclude items, etc. - are user-defined in the register at File > Open Register > Purchase > Quotation Compare Item Code.

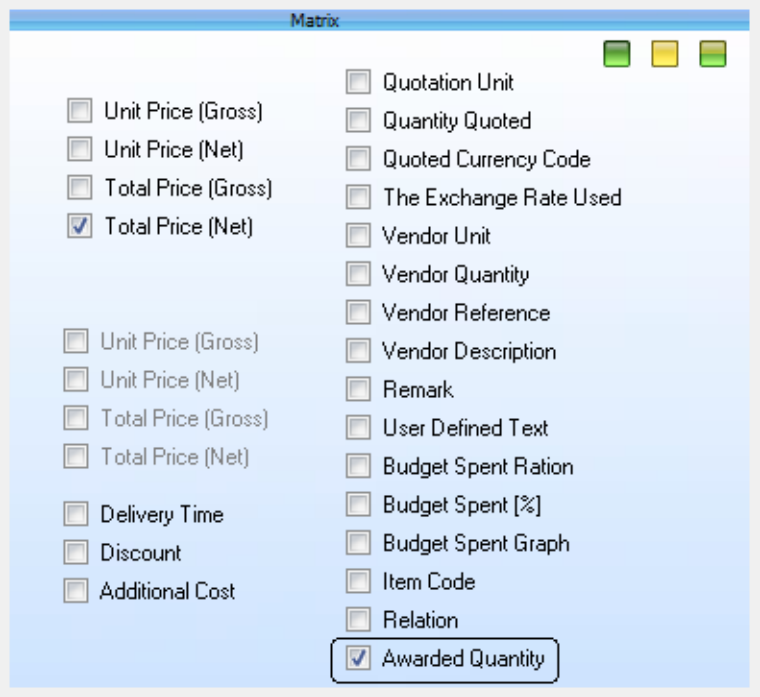
Save the matrix and refresh the window. The quotation total was formerly 106 USD, which included the prices for the extra item and the related free item. Those prices will now be excluded and the new total is 73 USD.

If an item code is used to remove a price from consideration in the total, you can still manually select that individual item. However it will not be included if you select an entire quote, nor will it be considered in an auto-select.

Configuration Options - Awarded Quantities

If you want to purchase some but not the entire quantity of an item from one of the vendors, you can 'award' that partial amount to a vendor on the matrix.

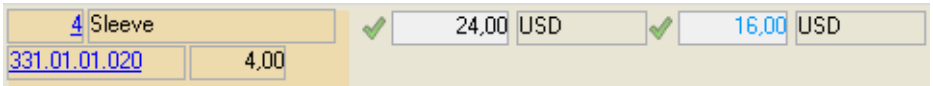
Select **Awarded Quantity** on the Configuration tab:



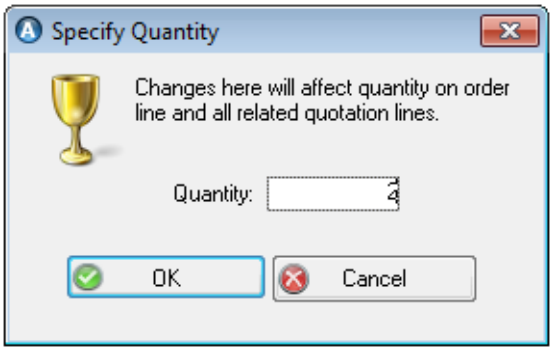


This adds the **Award** button to the Compare tab.

4 pieces of 'Item 4 Sleeve' are required and Vendor A and Vendor B have quoted prices for it:



To designate a set quantity for Vendor B, click in the vendor/item intersection in the matrix and then click the **Award** button. Enter the **Quantity** to award:



Click **OK**:



Now a quantity of 2 is designated for purchase from Vendor B.

Keep in mind that if you select this item from Vendor B, the change in quantity will be applied to the relevant quotation line and the purchase order form itself.

Comparison Scenario History

The History tab in the Quotation Compare Scenarios window stores a copy of the matrix at the moment you choose to record it. This lets you configure a scenario any way you want, save a 'snapshot' of it, change the original, and still refer to the previous results in the History tab.

History is read-only and you cannot use it to 'revert' to a previous configuration once you have made changes to the current scenario.

To manually create a history record at any time save your latest work in the Compare tab. Open the History tab and click the **New** button. A copy of the matrix in its current state is created:



Do the same thing whenever you want to record changes in the matrix. If your list of history records gets too long use the **Delete** button to remove some of the entries.

History can also be created automatically and the changes (splitting, cancelling line items etc.) which trigger its creation are controlled by a parameter setting: **Tools > Configuration > Parameters > Options > Purchase >** 'Quotation Compare, Auto Add History'.

Best Price or Delivery Time

To choose the best deal by price or delivery time select the most suitable vendor for each line item in the list, or for the order as a whole:

- AMOS can automatically select the best offer for each item for you, and you can make manual adjustments as needed. Or,
- You can manually make the selection yourself.

Open the Compare tab and select a scenario.

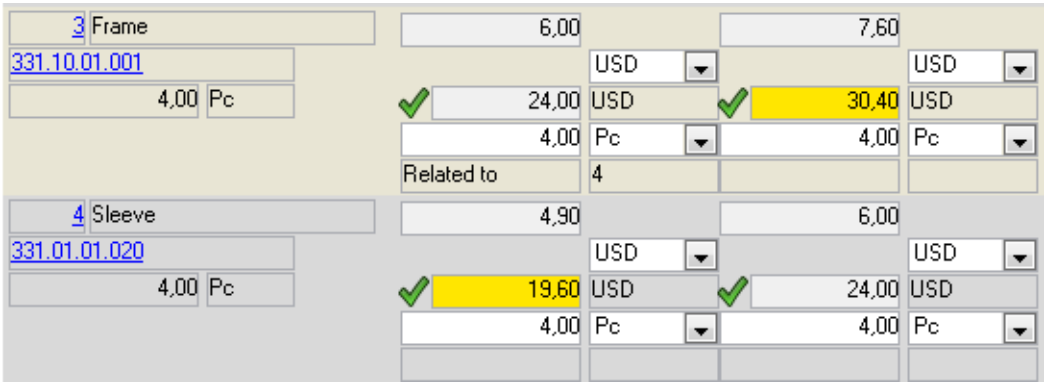
To select each item *manually* click the green checkmark next to the best price/time for each item you plan to order. The cell will be highlighted in yellow.

Tip

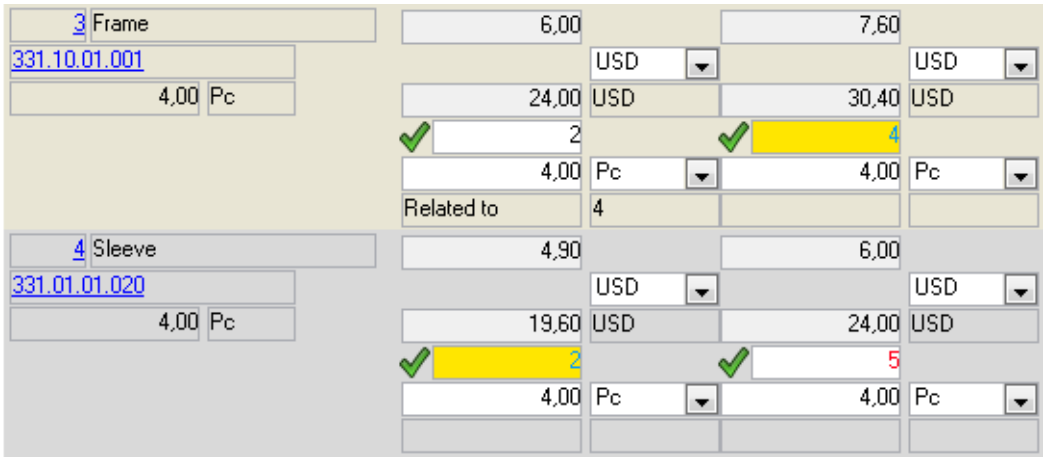
To select multiple items from the same quotation, click on the green checkmark icon next to a line item. Then hold the **Shift** key and click the checkmark next to any item further down, from the same vendor. All items in between will be selected too.

To have AMOS make the selection for you, click the **Auto Select** button to see the best buy for every item based on what you set in the **Best Selection Column** in the Configuration tab.

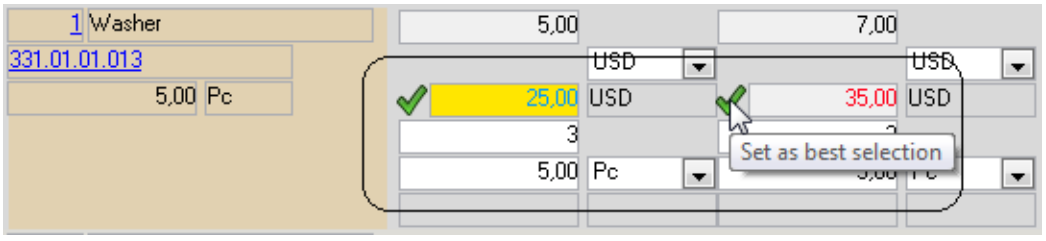
So, if you set **Unit Price** or **Total Price** there, when you click Auto Select AMOS will find the vendor offering the best price on each item and highlight those cells in yellow:



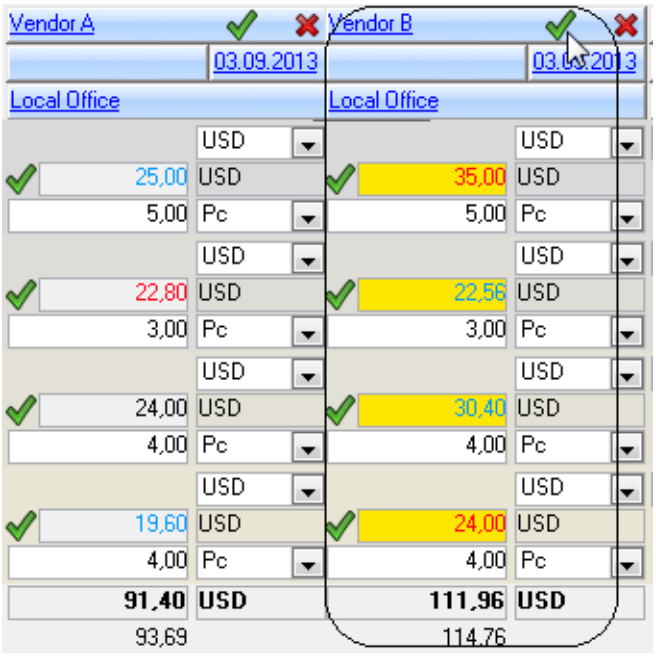
If you set **Delivery Time** in the Configuration tab, AMOS will find the vendor offering the shortest delivery time on each item and highlight those cells:



You can change the auto selection manually by clicking on the green checkmark icon in front of another vendor/item combination instead if you prefer to buy that item from the other vendor anyway:



Or, you can select an entire quotation from a specific vendor by clicking the green checkmark behind the **Vendor Name** in the column header – all items will be selected for that vendor:



To remove the yellow highlighting and deselect every item at once, click the **Clear** button.

When you have chosen a vendor for every item automatically, manually or in combination, **Save** your selection(s). You may want to propose the saved comparison scenario for quotation selection and purchasing.

If required, you can split some of the items to other purchase forms - for example, to purchase each item from the vendor offering the lowest price according to the comparison.

Propose, Approve and Select Comparison Scenarios

At different stages throughout the quotation comparison process, you may want to set statuses on comparison scenarios to track their progress.

> **EXAMPLE**
>
> Having compared quotations and selected the best offer for all of the included items, you Propose the most suitable comparison scenario. The responsible person can then Approve the Proposed comparison scenario. The approved comparison scenario can progress to Selected. The listed items can then be split if necessary according to the scenario, the quotation selected and an order placed.

To change the status on a comparison scenario:

1. Select a Comparison Scenario in the bottom of the Quotation Compare Scenario window.
2. Depending on the current status of the record, choose **Propose**, **Approve** or **Select** from the Options menu[1].
3. A confirmation dialog will appear. Finalise the status change and return to the main window.
4. Statuses can be revoked: for example, select an Approved scenario in the list and choose **Options > Approve**again. This time the confirmation dialog asks if you want to revoke the scenario.
5. **Save** the status changes.

[1]Each of the three options has a separate access control in the Access Control window - Functions tab > Purchase > Approve Quotation Scenario/Propose Quotation Scenario/Select Quotation Scenario.

Comparison Scenarios Work Flow

User-defined Work Flow functionality is available in the Quotation Compare Scenarios window if it is activated by a parameter setting: **Tools > Configuration > Parameters > Options > General > Work Flow >** 'Use in Purchase Quotation Compare'. If a Work Flow configuration is in place then the Options menu in the Compare Scenarios window changes to show the selection 'Work Flow...' instead of Propose, Approve and Select.

When your own work flow configuration in place, the available statuses and selections will vary from these examples. Using the Work Flow to assign a comparison scenario to selected users means that you can choose who to make each scenario available to while preventing other users from seeing it.

Splitting Line Items to Other Forms

Having compared quotations and selected the best offer for all of the compared items you may want to split some items away from the original purchase form onto another form (or more than one), to achieve the best prices.

> **EXAMPLE**
>
> You have compared two quotations and selected the vendor offering the best price for each item. The best deal involves ordering from a combination of the two vendors. So, you decide to order items 1,3 and 4 from Vendor A, but to split item 2 onto another purchase form to send to Vendor B for a better price.

To split items:

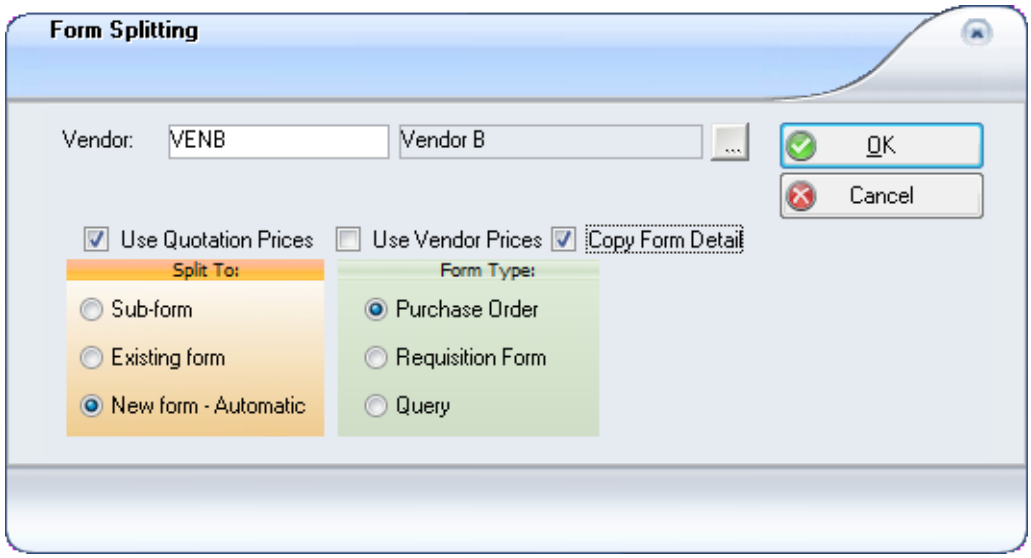
1. Open the Compare tab on the Compare Scenarios window.
2. Select each item and vendor combination using the **Auto Select** button or by clicking the green checkmarks:

Selected Price 107,58	Vendor A		Vendor B	
	03.09.2013		03.09.2013	
	Local Office		Local Office	
1 Washer	5,00		7,00	
331.01.01.013		USD		USD
5,00 Pc	25,00	USD	35,00	USD
	5,00	Pc	5,00	Pc
2 Cover	10,45		7,52	
331.01.01.019		USD		USD
3,00 Pc	31,35	USD	22,56	USD
	3,00	Pc	3,00	Pc
3 Frame	6,00		7,60	
331.10.01.001		USD		USD
4,00 Pc	24,00	USD	30,40	USD
	4,00	Pc	4,00	Pc
4 Sleeve	4,90		6,00	
331.01.01.020		USD		USD
4,00 Pc	19,60	USD	24,00	USD
	4,00	Pc	4,00	Pc
Total	**99,95**	**USD**	**111,96**	**USD**
% compared to Lowest Total	102,45		114,76	

   To remove the yellow highlighting and deselect every item at once, click the **Clear** button.

3. Click the **Split** button at the bottom of the window. The Form Splitting dialog opens.

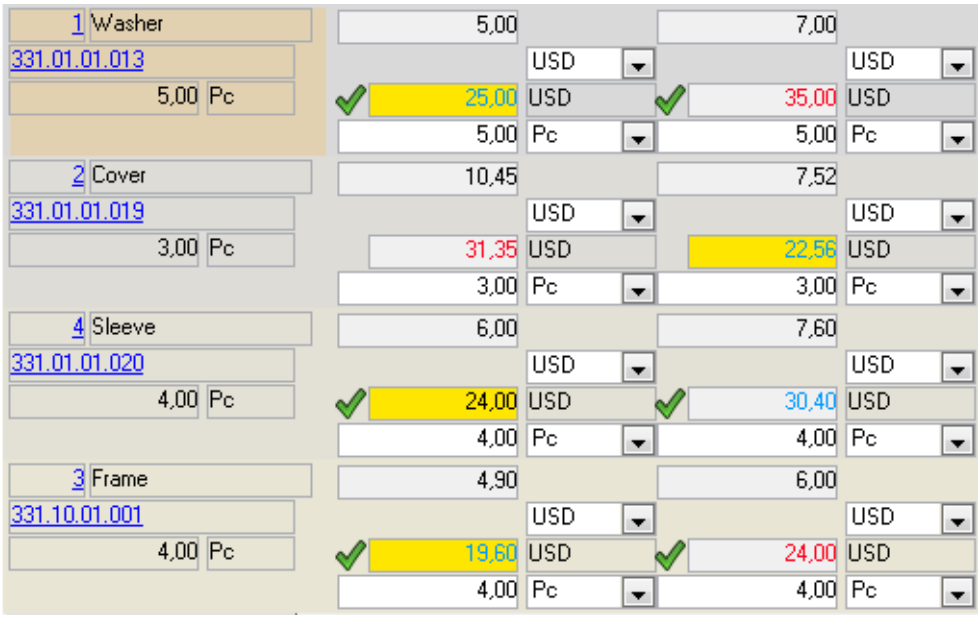
4. You are going to create a purchase form to split item 2 onto, leaving the other three items on the original form, for Vendor A.
5. Lookup the **Vendor** for the new form[1], in this case Vendor B:



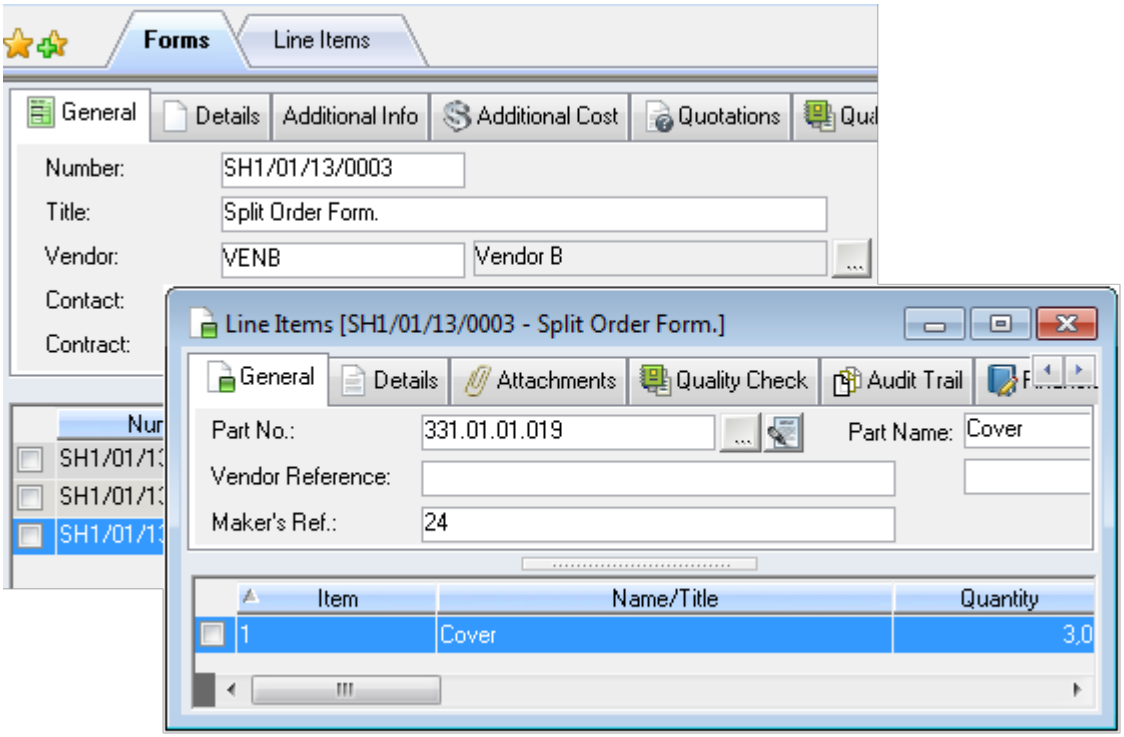
6. Define how you want to split the item(s):
   - **Sub-form**. Create a new purchase form. This new form will be given the same number as the original, followed by a letter: for example 1997/1023A.
   - **Existing**. Select from the forms you already have for Vendor B.
   - **New form - Automatic**. Create a new form with a new number.
7. Define the prices to use:
   - Flag **Use Quotation Prices** to transfer the price Vendor B quoted for this item, onto the new form.
   - Flag **Use Vendor Prices** to transfer the price from the multi-vendor record for this item, onto the new form.

   If you check both options the quoted price will take priority. If no quotation price exists then AMOS will use the vendor price.
8. To copy details from the original form with the split items to the new form, check **Copy Form Detail**.
9. Click **OK** to split the item selected for Vendor B to a new form. **Save** the Compare window. The split item no longer has a green checkmark next to it:

[1] Only the vendor(s) included in the comparison are available to select. If you have only made selection(s) from one vendor, only that vendor is available. When you split items from a comparison, it's not possible to select another vendor instead.



Open the Forms window. The newly created (or updated existing) form for Vendor B is listed here and contains the split item:

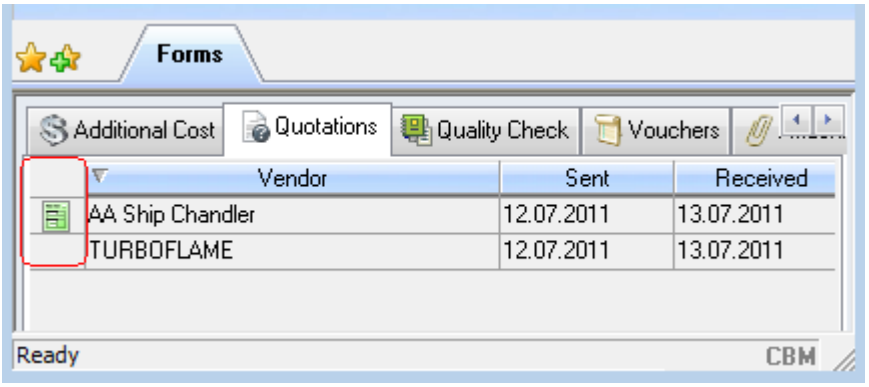


The other 3 line items will remain on the original purchase form[1].

[1] You can also split line items on purchase order forms. For more information see "Splitting Lines" on page 308.

Selecting a Quotation

When you have more than one quotation for the same form - from several different vendors or multiple quotations from one vendor - you need to select which quotation to accept before making a purchase order. If one of the quotations listed in the Forms window Quotations tab is from the same vendor as listed on the General tab for the form, a green icon will appear to the left of that record to notify you of this:



However, it will not be automatically selected. You can select quotations from:

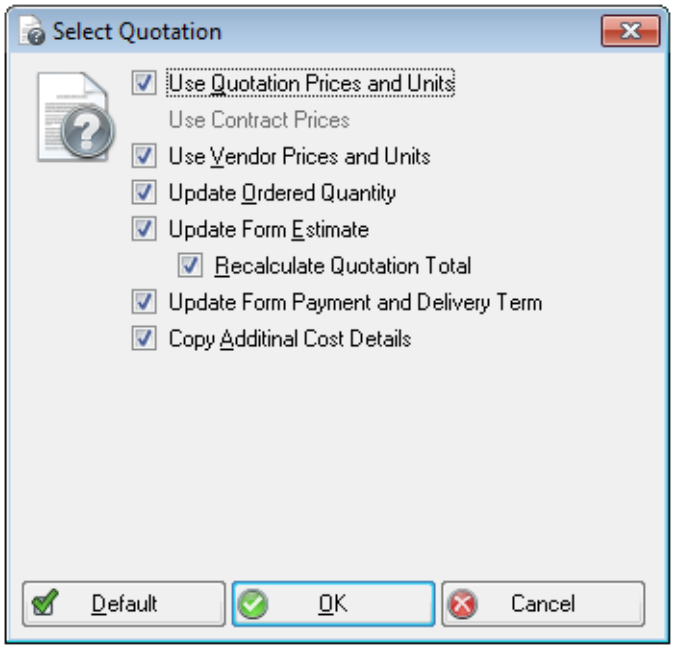
- the Quotations window, or
- the Forms window General tab.

A quotation past its expiry date cannot be accepted.

Selecting a Quotation from the Quotations Window

To select your quotation in the Quotations window:

1. Select the form in the Forms window and go to **Options > Quotations**. The Quotations window for that form opens.
2. Choose the quotation you want to select. Go to **Options > Select**.
3. The Select Quotation dialog opens where AMOS asks which information to consider in the selection.



Check the boxes as appropriate.

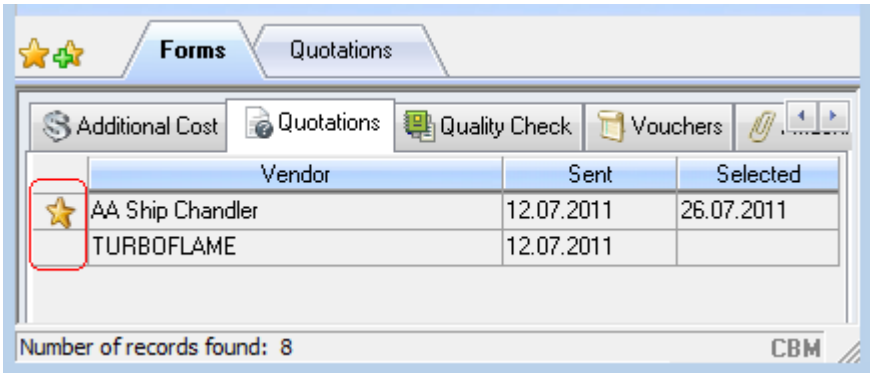
- **Use Quotation Prices and Units**. Updates order line item details (price, unit, currency code, quantity and factor) with values from the quotation lines.
- **Use Vendor Prices and Units**. Updates order line item details with values from 'Multi Vendor Financial'. Vendor prices are those registered in the stock items register in the vendor details for each item.

> **Note:** If you check to use both Quotation and Vendor prices, the system will use a quotation price if available, otherwise it will make use of the vendor price recorded in the stock register.

- **Update Ordered Quantity**. Recalculate order line quantity based on value 'Original Quantity' divided by 'Factor'.
- **Update Form Estimate**. Calculates the order form estimate based on quoted price. The price will be copied to the Estimate field on the form header.
- **Update Form Payment and Delivery Term**. When flagged, payment and delivery terms on the Forms window General tab will be updated to match any terms specified on the address for the selected vendor. If the selected vendor does not have any terms defined, any terms currently on the purchase form will be cleared. If you unflag this option, the terms fields on the purchase form will remain as they are (blank, or showing the terms from a previously selected vendor).
- **Copy Additional Cost Details**. Check to indicate that additional cost values added to the quotation should be transferred to the Form header Additional Costs tab and replace any values already existing there.

When you're finished, you can click **Default** to save the checkbox settings for the next time you open this dialog.

4. Click **OK** to return to the Quotations window. The selected Quotation now shows a gold star icon at the top of the window. When you re-open the Forms window the same icon will appear in the Quotations tab beside the selected quotation for this form.



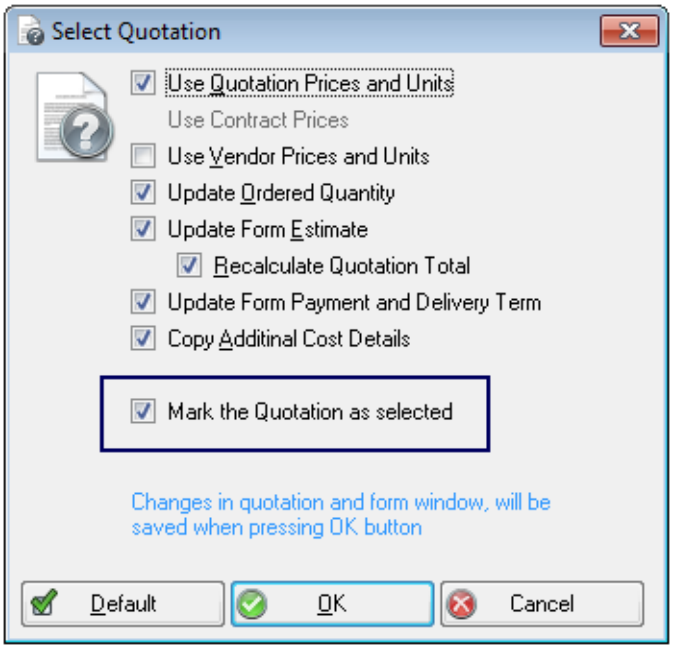
Selecting a Quotation from the Forms Window

To select your quotation from the Forms window General tab:

1. Open the Forms window and select the form you plan to order.
2. Check that a quotation from the vendor listed on the General tab already exists for this form (in the Quotations tab).

   If more than one quotation from the same vendor exists for this form (for example different prices for different delivery destinations), you will not be allowed to select the quotation here on the form header. Instead, make the selection in the Quotations window where you select not only the vendor but the specific quotation as well.
3. Click the **Vendor** lookup button.
4. The Select Quotation dialog appears containing the same checkboxes along with an additional

option: **Mark the Quotation as selected**.



5. Check this box and click **OK** to exit the dialog and return to the Forms window. If you click **Cancel** instead, the Vendor field will clear.

Purchase Orders

When you have made a decision to purchase requisitioned goods, either convert an existing form to a purchase order or create a new form of type purchase order. Before you can place the order, there may be other tasks to perform such as approving the form and splitting line items to other orders. When the form content is finalised, print/issue it and send it to the vendor.

When you want a purchase order, you can either:

Converting a Requisition/Query to a Purchase Order

1. Go to **Purchase > Forms** or click the button on the toolbar.
2. Select the form that you want to make into a query. To convert more than one form flag the boxes at the left-hand side.
3. Go to **Options > Convert** or, if you tagged several forms select **Options > Convert Tagged**.
4. The Convert Form Type/Status dialog opens. Choose a status and select 'Purchase Order'.
5. Click **OK** to return to the Forms window with the form(s) type converted.
6. **Save** your work.

Creating a New Purchase Order

To create a query form when there is no requisition or purchase order to change:

1. Open the Forms window and click the **New** button on the toolbar.
2. Choose Purchase Order in the Form Creation dialog box.
3. Choose 'Manual' for a Purchase Order about consumables, or if you want to add line items your-self. Choose 'Automatic' if you want the line items created based on the wanted values in the Stock wanted window.
4. Fill in the form header details on the Forms window and go to **Options > Line Items** to add line items. Indicate how many of each item you want in the **Ordered** field. You might also update this

value later for any existing items on a purchase order before sending it out, if fewer are to be ordered than requested, or if some have been **Cancelled**.

Approving an Order

Someone other than the purchaser may need to approve purchase orders before they are final[1]. Whether or not you can approve a form is controlled by access rights and influenced by Approval Limits defined in the Approval Limits register and then assigned to user groups. Any member of a group with an approval limit assigned can approve purchases of a value less than or equal to their own approval limit.

1. Go to **Purchase > Forms**.
2. To filter for a specific form or a list of forms, choose a setting from the **Approval** drop-down list:
   - **Awaiting Approval**. Returns all forms waiting to be approved,
   - **Awaiting my Approval**. Returns all forms you specifically are in charge of approving,
   - **I can Approve**. Returns all forms you are allowed to approve, considering your approval limits.
3. The window opens listing the forms according to filter settings. Select a form to approve.
4. Go to **Options > Change Approval**.

   Note: If the system parameter 'Require Estimated Cost for Approval' is set to TRUE then AMOS will require you to enter an amount in the **Estimate** field on the Forms window before allowing you to approve the form.
5. Click **Grant Approval**. You return to the main window and AMOS updates the **Approved** field in the History area to show the date of approval.
6. **Save** the form.

You can revoke approval the same way: go to **Options > Change Approval** and click **Revoke Approval**.

Later you can see who approved the purchase order, and when approval was given: a record of each form's history is kept in the Additional Info. tab.

Splitting Lines

All the line items on any form must eventually be purchased from the same vendor: one vendor per form. This means you may need to sometimes 'split' lines from one form to another.

EXAMPLE

A requisition contains items that you would prefer to purchase from three different vendors. You will need to create new forms for some of the items, or move the items over onto existing forms to those vendors. Or, upon receiving quotations from two different vendors for the same items you decide to purchase some items from one vendor and some from the other.

Splitting Lines to Other Forms

Note: AMOS will prevent you from splitting line items on forms that have been received and filed. To split line items on a filed form, first convert the form to active and set the received quantity on the selected line item to 0.

To split a line item:

[1] Whether approval on forms is required or not is controlled by the setting of the system parameter 'Level of Approval'.

1. Go to **Purchase > Forms**. Select a form containing lines to split.

   This is the original form. (It might be a requisition, query or purchase order).
2. Select **Options > Line Items**.
3. Flag the checkbox in the Line Items window beside each line you want to move to a new form.
4. Select **Options > Split**.
5. Set the vendor for the new form you want to split to.
6. Define where to split the line to:
   - **Sub-form**. Create a new purchase form. The new form will have the same number as the original, followed by a letter: for example 1997/1023A.
   - **Existing**. Select from the forms you already have and consolidate similar items into one order.
   - **New form - Automatic**. Automatically create a new form with a completely new number.
7. To transfer the line item details information at the same time, check the **Copy Form Detail** check-box.

   > **Note:** When copying, converting and/or splitting forms, the number series used to generate the new form number is the series used by the department that created the original form - not the series used by the department the user is currently logged on to.
8. Click **OK** to create the new form.
9. Remember to **Save** your changes before you close the window.

Keeping Track of Line Items: Viewing Split Lines

You can keep track of ordered items even though they may no longer be on the original form. A split line is visible in two places:

Split line items still appear in the Line Items window for the original form: depending on the setting of a system parameter[1] you may have to select **Options > Show All** or click the **Show All** button to make them visible. You can not change split lines in any way. The split line will contain a reference to the new form number, so you will always be able to find the active line item. In the illustration below, selecting **Options > Show All** shows that the last item in the list has been split away from this form and is now **On Order** SH1/01/11/0012:

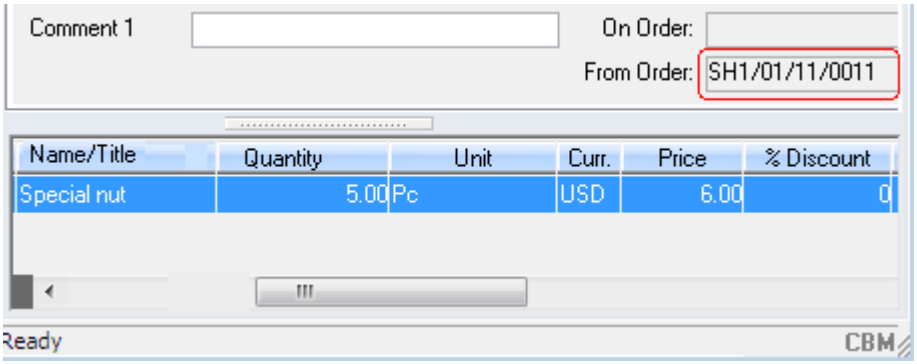


Selecting Options > Show All in the Line Items window

You may need to select **Options > Show All** or click the **Show All** button again to hide the split item(s).

[1] The setting of the parameter > Options > Purchase > 'Line Items Displayed by Default' determines which line items - active, cancelled and split - are shown by default on purchase forms, and it also affects the behaviour of the 'Show All' window option.

The Line item is of course visible and active in the new form. Here, the reference to the old form is shown, in case you need to refer to the original form. The illustration below shows the Line Items window for the new form which the item has been split to. The **From Order** field references the original form, SH1/01/11/0011:



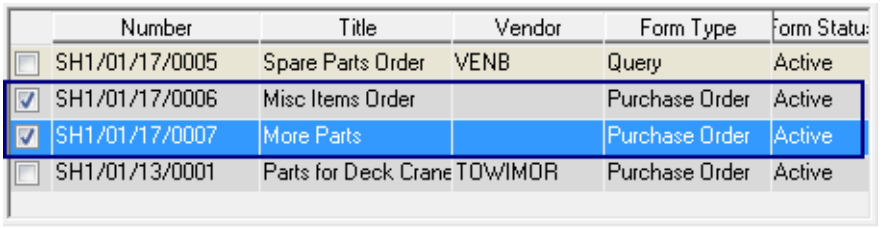
Merging Forms

You can split individual line items as needed; but if you want to move all the *active* line items from two or more forms onto yet another form, you can do this all at once by merging the forms in question. This requires access rights to *'Functions > Purchase > 'Forms Merge'*.

Merging to an Existing Form

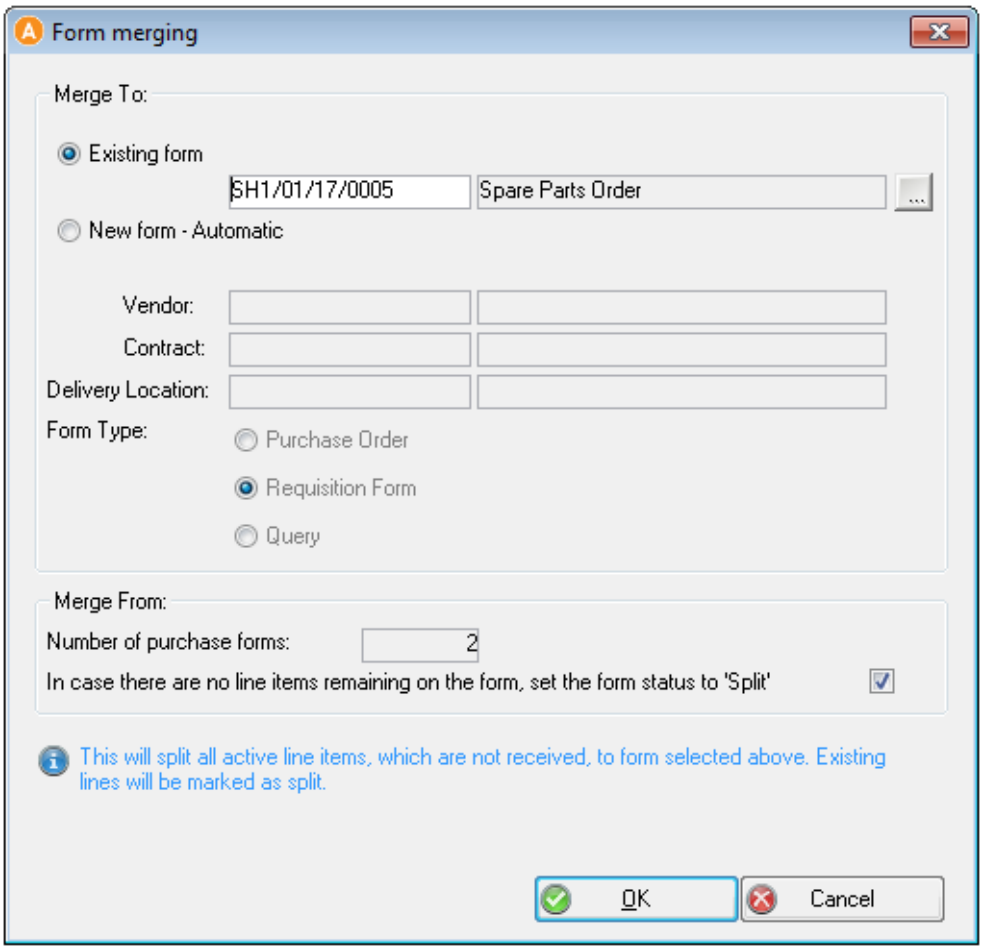
You can merge two or more forms onto a form that already exists. For example, you want to move all active lines from forms 0006 and 0007 onto the existing form 0005:

1. Open the Forms window.
2. Select the forms whose line items you want to merge together: it doesn't matter if they are different types of forms or have different suppliers, or no suppliers at all:



   Don't select the existing form you plan to merge the others onto.

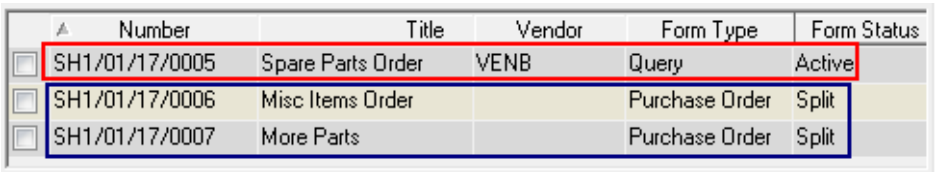
3. Go to **Options > Merge Forms**.
4. Select **Existing Form**, and lookup the one you want to merge to:



The checkbox at the bottom right is flagged by default. Leaving it flagged means that as long as no line items (inactive or already received ones) are left behind on the original forms, the forms you split from will be marked as 'Split'. If you unflag it, the original forms will keep their status, but with no line items listed after the split.

5. Click **OK**. The line items from the two selected forms will now be merged onto the existing, active form (form 0005), together with the items it already contained.

   To see the other two original forms (forms 0006 and 0007) in the list, filter for forms with status 'Split':



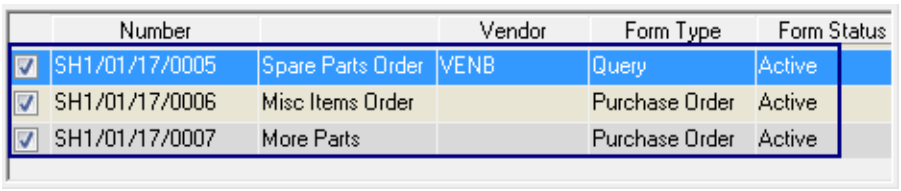
Number	Title	Vendor	Form Type	Form Status
SH1/01/17/0005	Spare Parts Order	VENB	Query	Active
SH1/01/17/0006	Misc Items Order		Purchase Order	Split
SH1/01/17/0007	More Parts		Purchase Order	Split

   To see the line items you split away, select **Options > Show All** in the Line Items window.

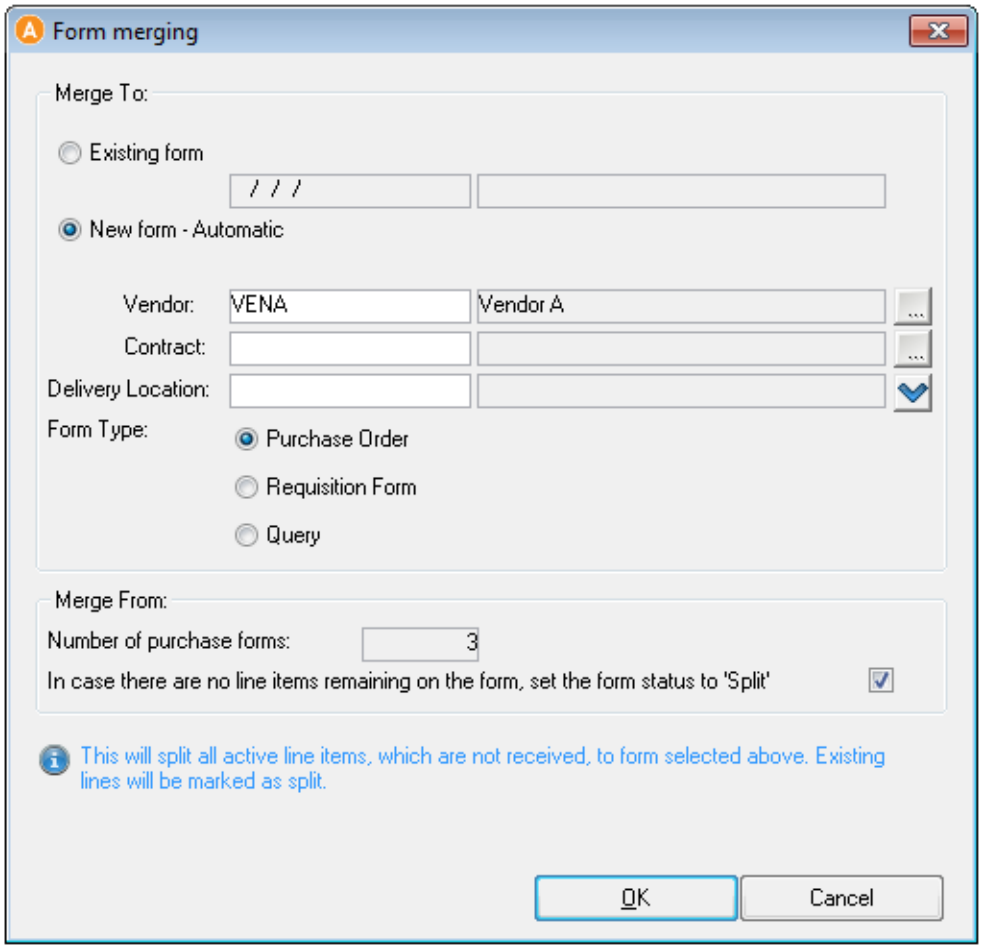
Merging to a New Form

You can merge two or more forms onto a new form. For example, you want to move all active lines from forms 0005, 0006 and 0007 onto a new form:

1. Open the Forms window.
2. Select the forms whose line items you want to merge together: it doesn't matter if they are different types of forms or have different suppliers, or no suppliers at all:



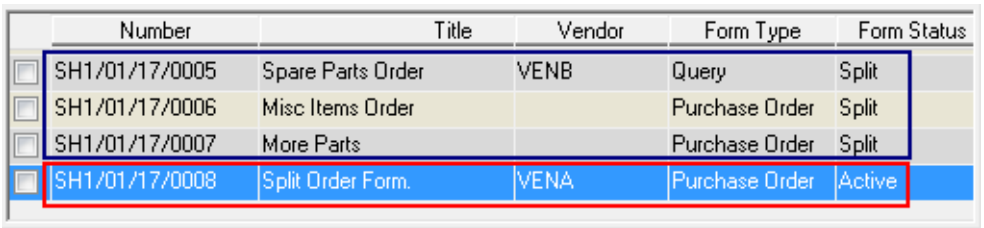
3. Go to **Options > Merge Forms**.
4. Select **New Form**, and the **Form Type**. Optionally, lookup a **Vendor**, **Contract** if there is one, and **Delivery Location** if you know it.



The checkbox at the bottom right is flagged by default. Leaving it flagged means that as long as no line items (inactive or already received ones) are left behind on the original forms, the forms you split from will be marked as 'Split'. If you unflag it, the original forms will keep their status, but with no line items listed after the split.

5. Click **OK**. The line items from the selected forms (0005, 0006 and 0007) will now be merged onto a new, active form titled 'Split Order Form'.

   To see the other original forms in the list, filter for forms with status 'Split'.



To see the line items you split away, select **Options > Show All** in the Line Items window.

Printing and Sending Purchase Orders

When a purchase order is ready to send out, print and send it from the Forms window:

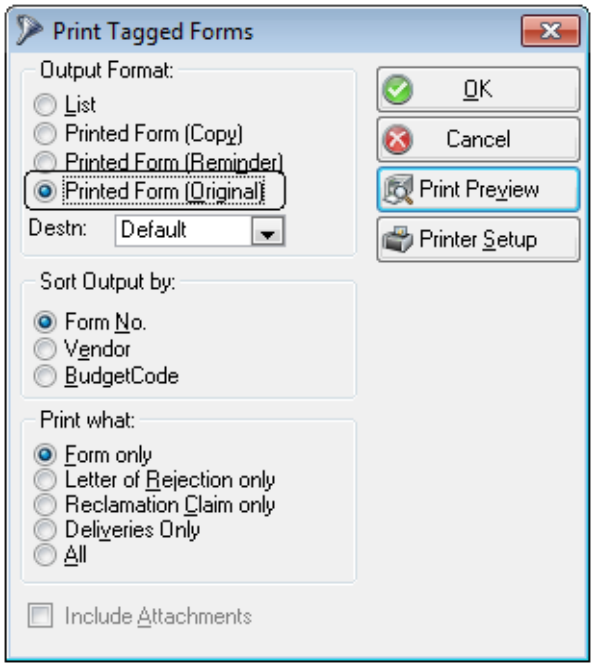
1. Either:

   Tag one or more purchase order forms in the Forms window and click the **Print** button on the toolbar, or go to **File > Print**. Change the default settings in the Print dialog if you need to.

   Or

   Without tagging any purchase order forms first, click the **Print** button on the toolbar or go to **File > Print**. Specify a **Range** of forms to print and flag **Purchase Order** in the 'Include Forms of Type' list. Change the default settings in the Print dialog if you need to.

2. The output format is set to **Printed Form (Original)**:



3. When you print an original purchase order AMOS will add the current date to the **Ordered** field on the Forms window for the printed order(s).

   The form is ordered/ready for ordering and you cannot take out another original[1].

4. Click **OK** when you are ready to print.

Options in the Print Dialog

You can change the output format if you do not actually intend to send the order(s) yet:

- **Printed Form (Copy)**. Can be selected either before or after you print the original[2].
- **Reminder**. Works in the same way as a copy, and is for sending a reminder to the vendor.

The destination is set to 'Default'. Leave it, or select another destination from the list:

- **Printer**. The form(s) are sent to your default printer. You might need to click **Printer Setup** first to indicate which printer this is.
- **Email**. Only available if AMOS Mail is installed on the PC. The form(s) are sent by email to the selected vendor(s). The forms' vendor(s) must already have an email address specified in the Address register and the output format for the address set to email.

---

[1] You must choose Printed Form (Original) to print to Destination Portal.

[2] If you select Printed Form (Copy) you cannot print to portal.

- **Portal**. The form(s) are sent out via a pre-configured portal. The forms' vendor(s) must be connected to a portal in the Address register with an email address specified and the output format on the address set to portal. When sending to portal you can send attachments as well: check the 'Include Attachments' box. Read about defining portals and configuring them for use in the *AMOS Business Suite Reference Manual*.
- **Fax**. Only available if the AMOS Mail Fax Driver is installed on the PC. AMOS will automatically find the registered fax number of the recipient and the fax is sent without any further prompting for address information.

When enhanced text is in use[1], you will have the option to print any enhanced text on separate pages following the rest of the printed content: a checkbox labelled 'Print enhanced text on separate page, where applicable' is added to the bottom of the dialog.

Note: Checking the **Portal Queue** checkbox on the Forms window General tab will bypass portal validation. It is recommended to **Print to Portal** using the Print dialog, instead.

Note: If you have added a floating image to the Details tab, to include that image in any printout(s) ensure that it is placed inside the page margins shown in the tab.

Minimum Order Values and Levels

If a **Minimum Order Value**has been specified on the Address register for the selected vendor and the parameter 'Auto-Calculate Form Estimate' is set to TRUE, upon sending an original purchase order form AMOS will check that the estimated cost on the form is greater than the vendor's set minimum value. If the estimated cost is less than this value AMOS will prompt you to choose to continue with the operation or not. If you have tagged multiple forms to send and one or more falls below the set minimum value, you will be notified that the forms in question were not processed.

AMOS behaves in the same way if a **Minimum Order Level**has been set on any items in the Stock Types > Vendors window: if an item with a minimum order level set for the selected vendor is included on a form, AMOS checks that the ordered quantity of that item is the same or greater than the minimum order level. If not, AMOS prompts you with a list of the forms containing items which are under the minimum level. You can choose to process all forms anyway, or only those where all items meet or exceed the minimum level.

Deliveries

Deliveries are forms used to distribute goods in transit from a vendor, to a location like one of your warehouses or another site. They are a kind of temporary goods received form that follows the stock items until they are officially received at the ordering installation.

When you receive an order confirmation from a vendor, you have the following tasks to do in AMOS:

1. Register one or more deliveries, as required. See "Registering Deliveries on a Form" below.
2. Assign the form's line items onto the deliveries. See "Line Items on Deliveries" on page 318.
3. Keep track of each delivery's location. See "Deliveries - Intermediate Locations" on page 322.
4. Arrange transport for deliveries from central locations to various installations. See "Transport Documents" on page 326.
5. Receive the delivery when it arrives. See "Receiving a Delivery" on page 333.

Registering Deliveries on a Form

If the vendor informs you that the goods will be delivered in more than one lot or if you are sending them to various destinations, AMOS will allow you to register as many deliveries as necessary against a single

[1] If the system parameter 'Editor - Type Purchase' is set to ENHANCED.

order form.

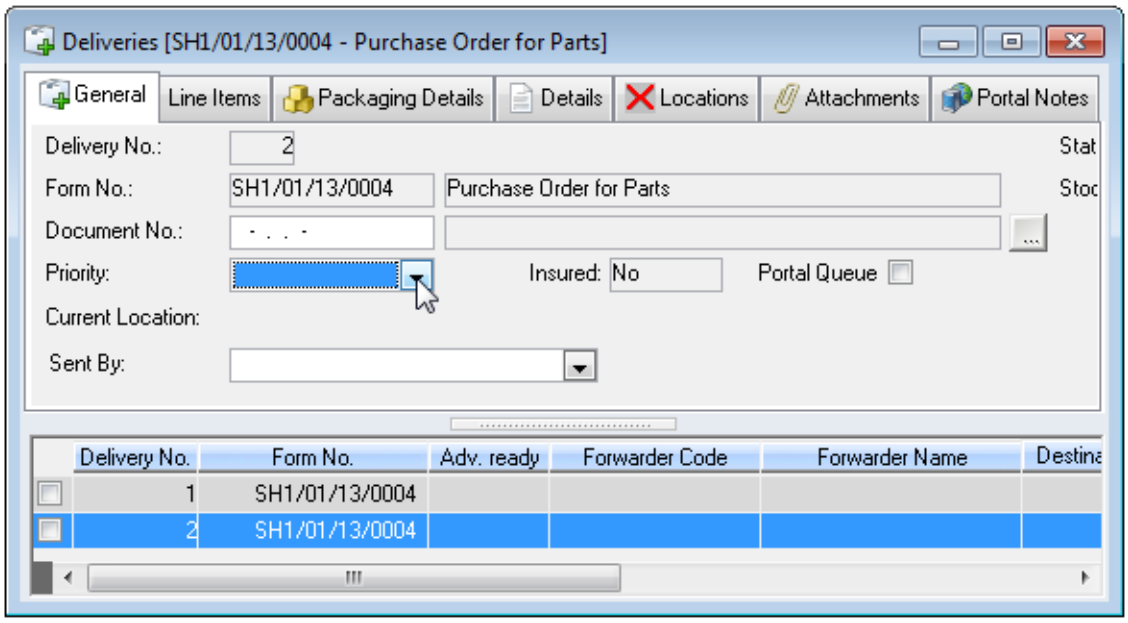
There are two ways to access the Deliveries window:

- Go to **Purchase > Deliveries**. You will see a list of all existing deliveries in the system.

Or

- Go to **Purchase > Forms**. Select a form. Go to **Options > Deliveries**. The Deliveries window opens showing any existing deliveries for this form. Click the New button to create the first or add another one for the selected form.

Add any further details you have, like an **ETA on Site** date or **Priority**:



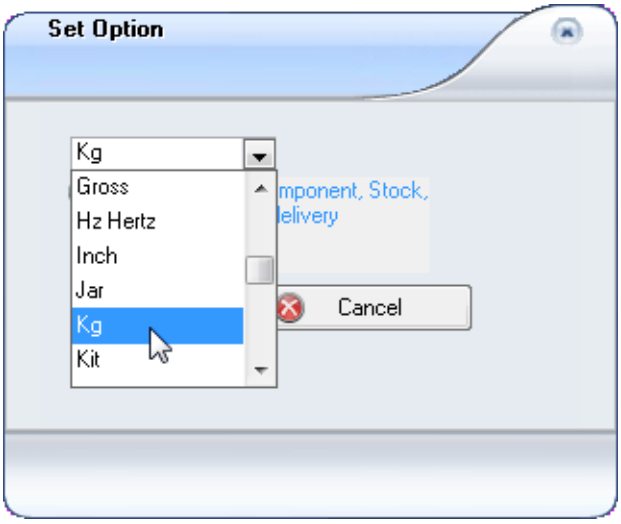
All line items on a purchase form must be assigned to a delivery. Although you may have ordered a group of items from one vendor on the same purchase order, this does not necessarily mean you want all the items on one form to be delivered to the same place. That's why any one purchase form can be linked to multiple deliveries if needed in order to cover delivery of all the line items. See "Line Items on Deliveries" on page 318.

Weight Calculations

To allow for splitting transport and delivery costs based on the weight of each item on an incoming order, you need to define the weight on individual parts and components throughout the system. Then AMOS can automatically calculate and re-calculate the weight on transport, transfer and delivery documents, as items are added and removed or weight values are updated elsewhere.

First, you'll need to set two parameters:

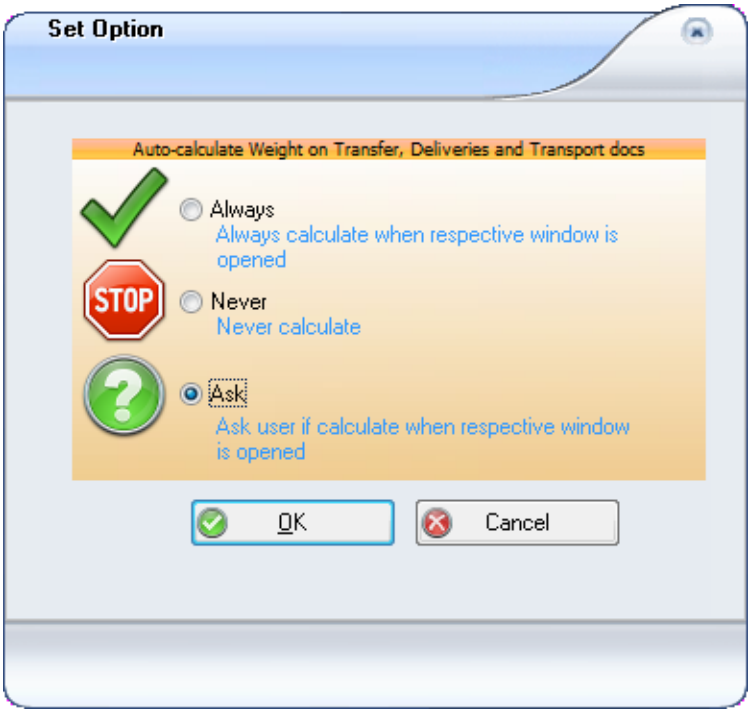
1. Go to **Tools > Configuration > Parameters > Options > General > Default Settings >** 'Weight Identifier'.
2. Define the default ‘Weight Identifier’ (a unit from the Unit register) that you want applied to newly added component/types and stock/type from now on:



Save your setting. The same unit will also apply by default on transfer documents, transport documents and deliveries.

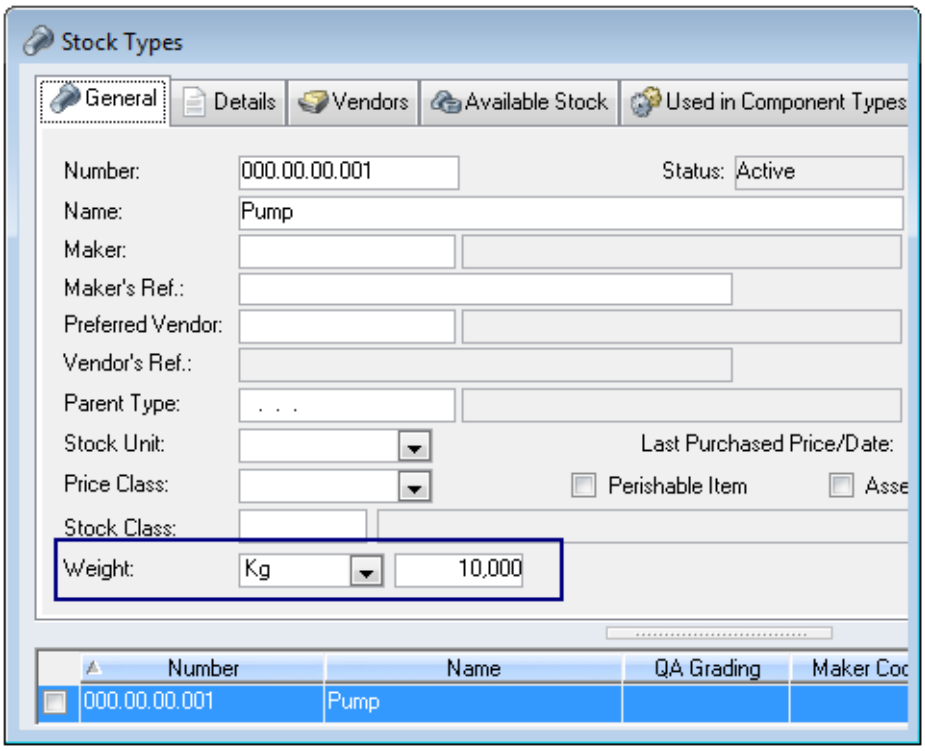
IMPORTANT: To avoid issues with your system, it is necessary to set a value on this parameter after upgrade.

3. Go to **Options > Purchase >** 'Auto-calculate Weight on Transfer; Deliveries and Transport docs'.
4. Set this parameter to:
   - ALWAYS, if you want AMOS to automatically calculate the weight of items on records when a user opens the Transfer Document, Transport Document and Deliveries window.
   - ASK, if you want the system to prompt the user before making the calculation.
   - NEVER, if you don't want AMOS to make any automatic calculations.



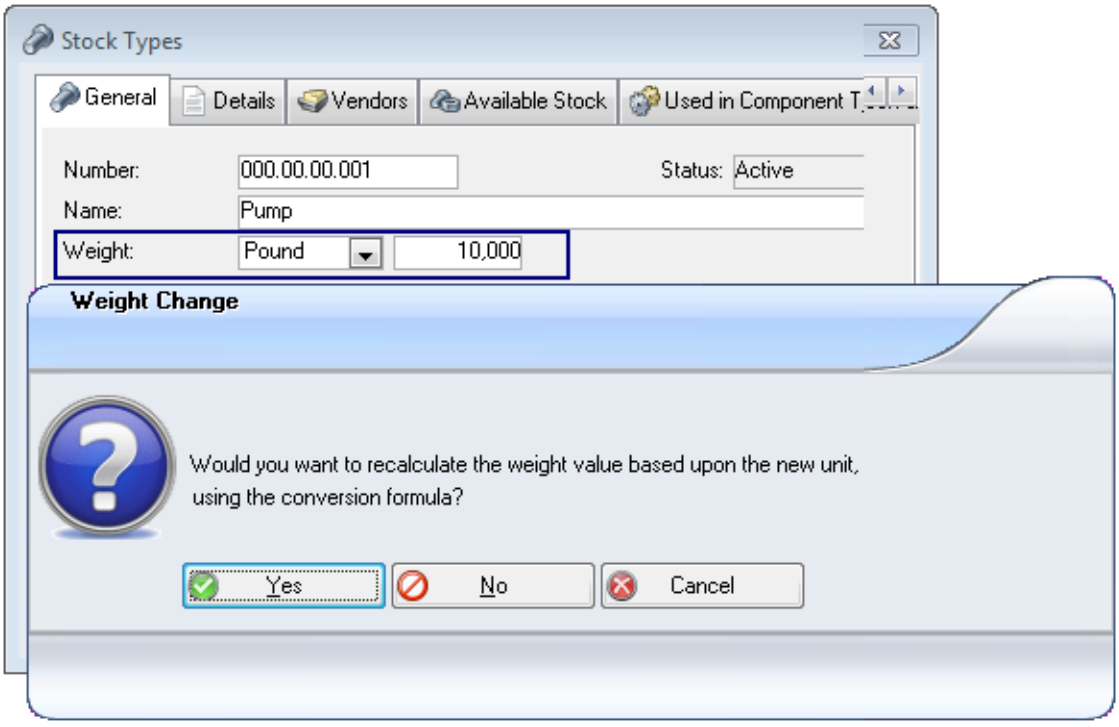
5. **Save** and close the Parameters window.

From now on, new component/types and stock/types will appear with this new **Weight** identifier automatically - just add a value:

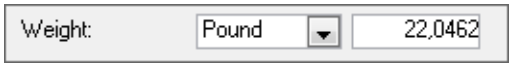


On existing records the **Weight** fields will be blank - it's a good idea to set the unit and add a value on these ones too.

Now, if you change the unit on a component/stock/type, for example from kilograms to pounds, AMOS will prompt you using the conversion formula (if there is one) as defined in the Unit register:



If you click **Yes**, AMOS recalculates:



If there is no conversion formula, AMOS will ask whether to leave the contents of the **Weight** field as is, or reset the weight to 0.

When you list items with weight defined on purchase order forms (or transfer documents), place the forms on deliveries and link them to transport documents, upon opening one of those windows AMOS will handle the weight value according to the setting on the second parameter: it will automatically re/-calculate weight, or ask if you want to recalculate, or do nothing at all. You'll see the totalled line item weight on the Deliveries window > Packaging Details tab, on the Transport Documents > General tab and on Transfer Documents.

If a valid conversion formula isn't available for any of the units in use on line items, the weight of those items won't be recalculated.

Line Items on Deliveries

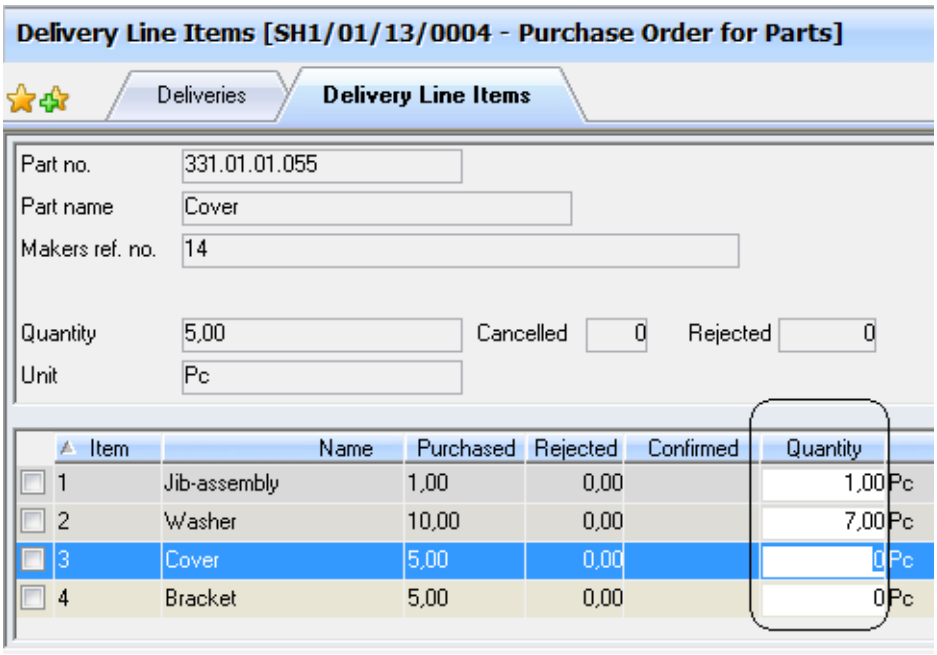
Having created one or more delivery records for a form, go on to assign the form's line items to the different deliveries.

1. Go to **Purchase > Forms**. Select the form to work with and go to **Options > Deliveries**. When the Deliveries window opens, select a delivery.

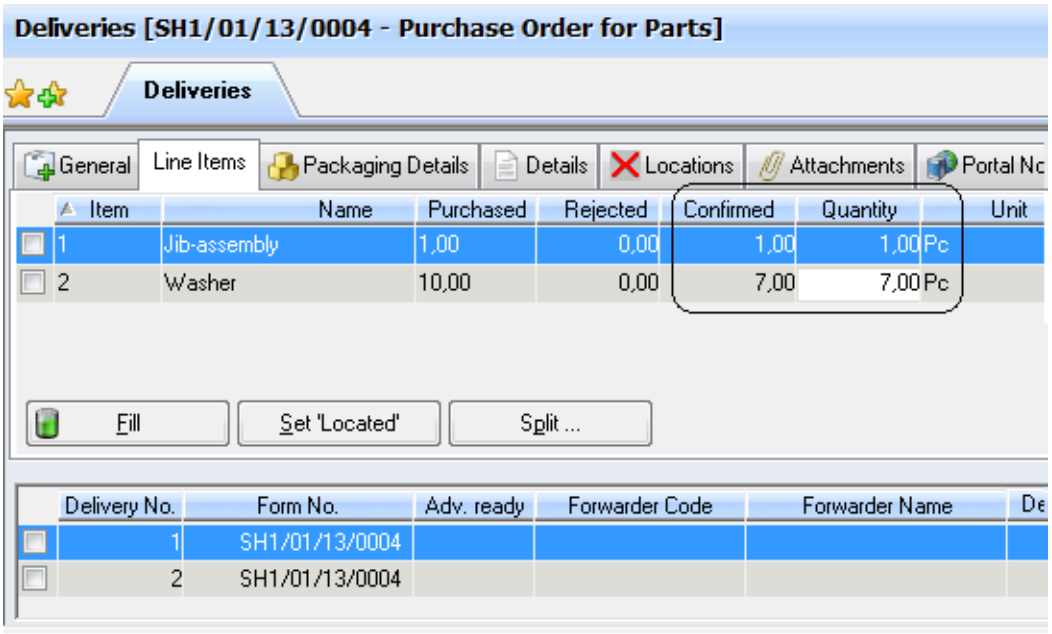
   Or

   Go to **Purchase > Deliveries**. Filter for the delivery you are looking for.

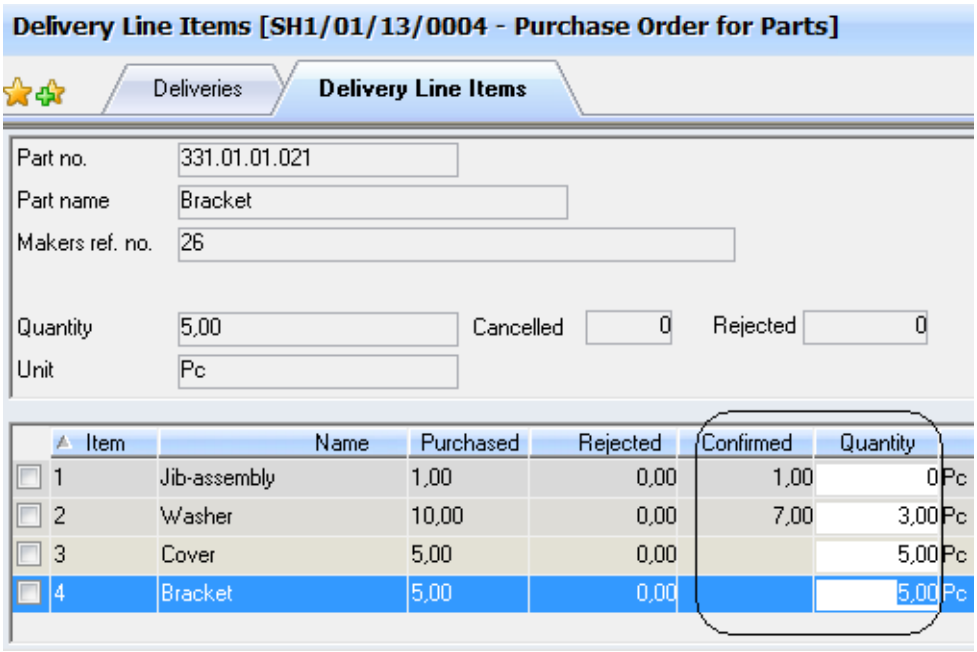
2. Go to **Options > Line Items**. The Delivery Line Items window opens showing a list of all line items on the purchase form. Enter the **Quantity** of each item that will be included in this delivery:



3. **Save** and close the window. The line items and quantities you just entered will appear in the Line Items tab on the main Delivery window:

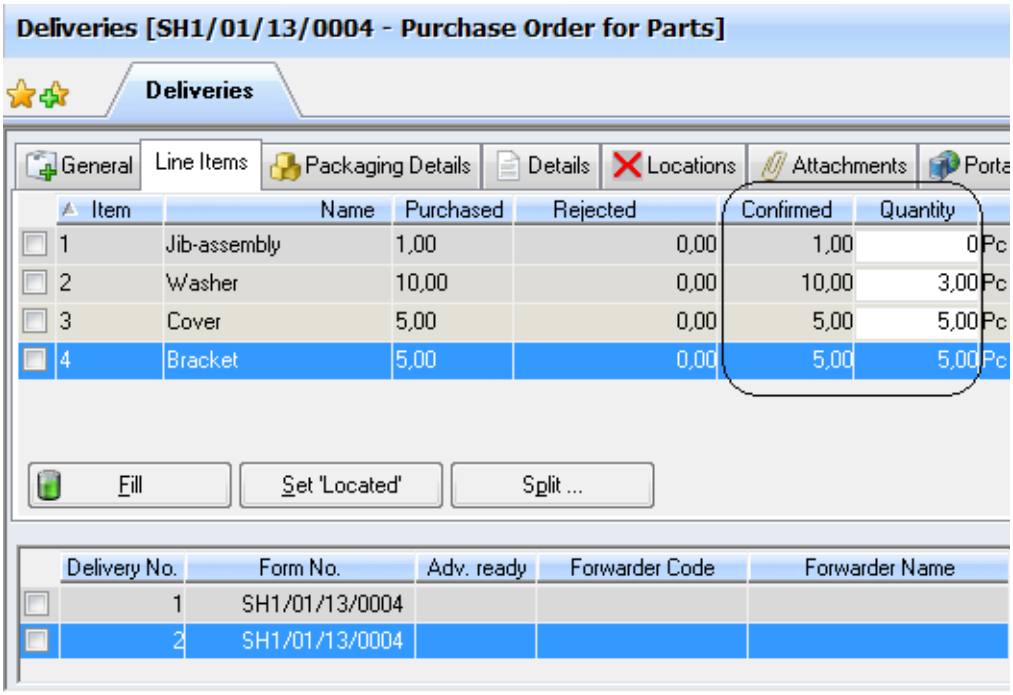


4. To assign some of the line items to another delivery for a different destination, create or select another delivery for the same form and open the Delivery Line Items window. The Delivery Line Items window now shows the quantities of items already assigned to Delivery 1, in the **Confirmed** column.
5. Add the quantities belonging to this delivery. You can fill in the values manually:



Or, if you have partial quantities of one or more items already registered on another delivery, you can select **Options > Fill Delivery** to automatically calculate and fill up the outstanding quantities.

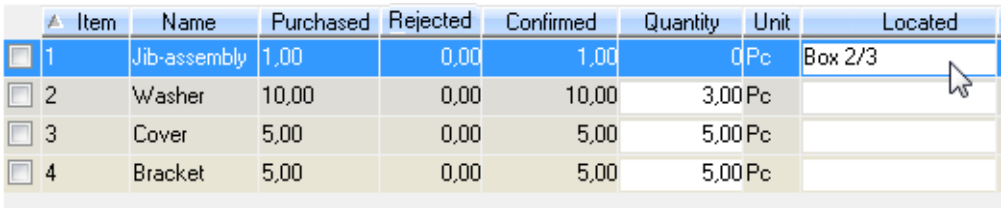
6. **Save** and close the Line Items window to return to the Deliveries window. Again, you can see your changes in the Line Items tab:



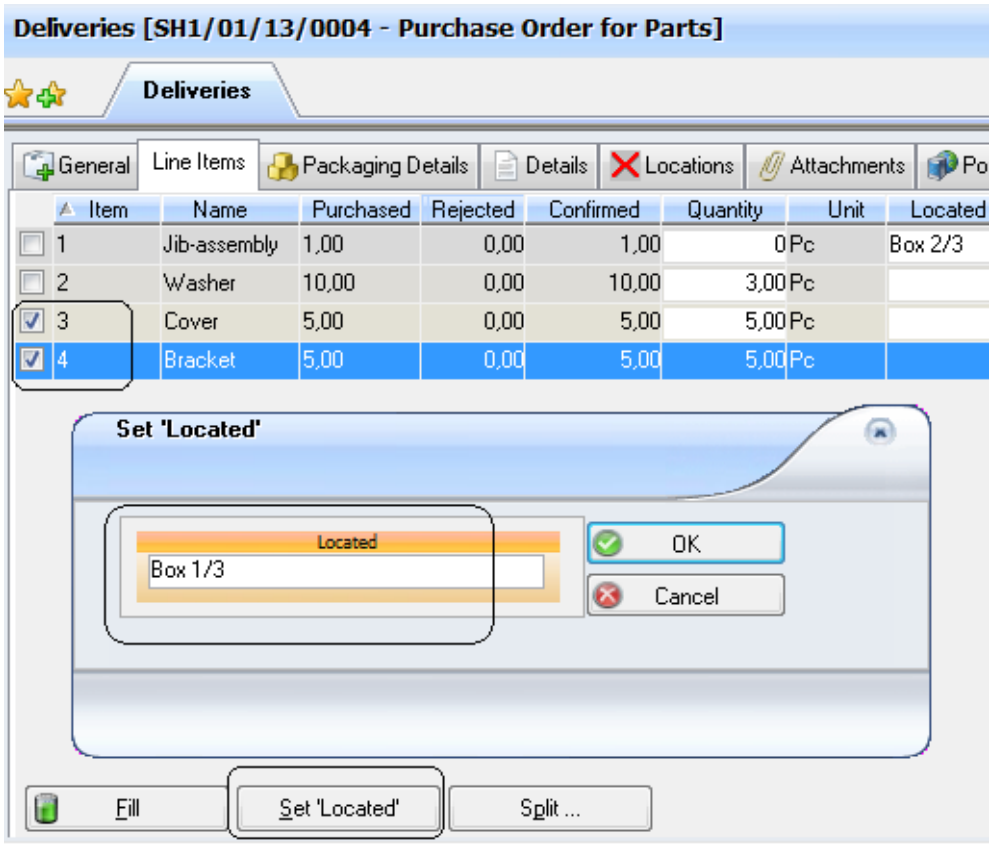
There is a **Fill** button on the Deliveries window Line Items tab. Clicking it here will have the same effect as selecting **Fill Delivery** from the Line Items window Options menu - any outstanding partial quantities will be calculated and filled up on this delivery.

Item Locations in a Delivery

To keep track of items inside a delivery made up of many boxes or part, specify the exact location - like 'box 2/3' - by manually entering it in the **Located** field on a line item in the Line Items tab or window:



Tag multiple items and click the **Set Located** button on the Line Items tab or go to **Options > Set Located** in the Line Items window, to open a dialog where you can enter a location to be applied to all tagged items at once:

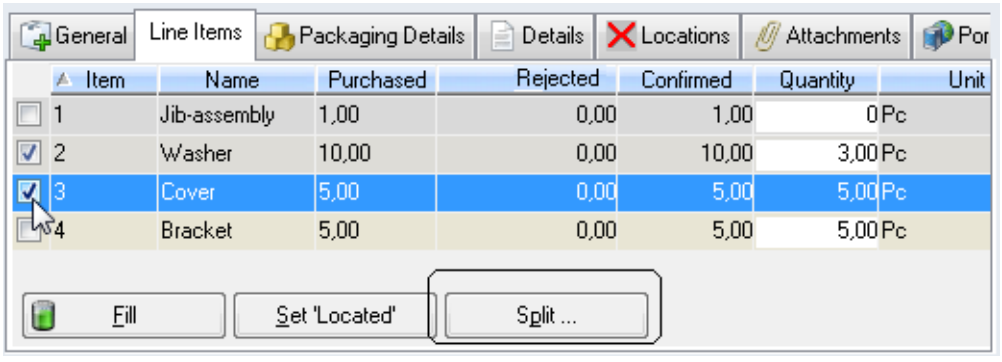


Splitting Delivery Lines

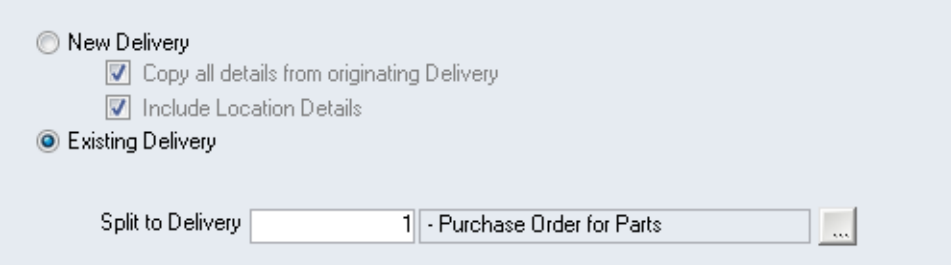
To make sure everything ends up where it is supposed to you may find that you need to move some items which have already been assigned to one delivery onto another one instead. To do this without losing track of items or amounts you can split a partial or full quantity of an item to a new delivery, or to another existing delivery.

Split delivery lines from the Line Items tab or the Line Items window Options menu: changes in one location update the other.

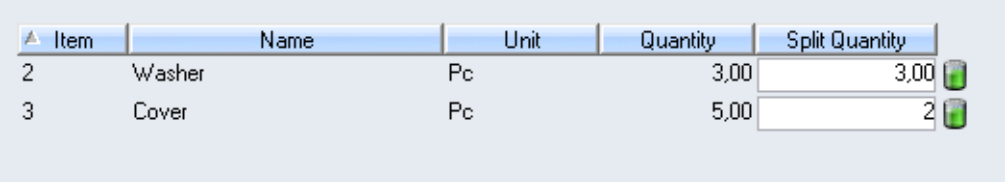
1. Open the tab or the window and select one line item or tag several:



2. In the tab, click the **Split...** button. In the Line Items window, go to **Options > Split Deliveries**. The Split Delivery dialog opens.
3. You can split to:
   - a **New Delivery**. Create an entirely new delivery for the selected line item(s). Or,
   - an **Existing Delivery**. Lookup an existing delivery for the *same purchase form*, to move the item(s) to.

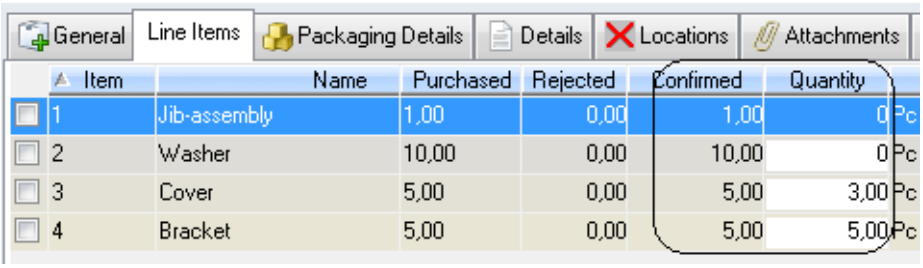


4. Insert the **Split Quantity** for each item:



Item	Name	Unit	Quantity	Split Quantity
2	Washer	Pc	3,00	3,00
3	Cover	Pc	5,00	2

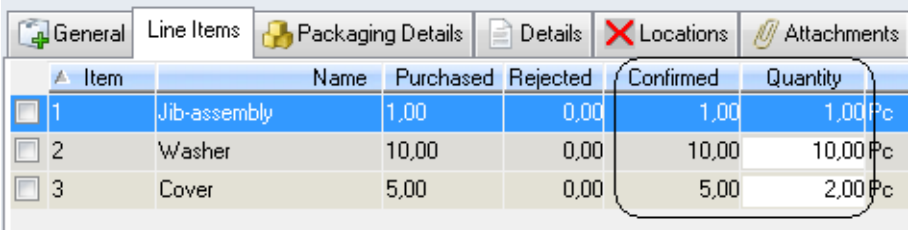
5. Click the **Fill** button to automatically insert the entire quantity of one item or the **Fill All** button to fill up the entire list.
6. Click **OK** to leave the dialog and split the items. The illustrations below show that 3 washers and 2 covers belonging to 'Purchase Order for Parts', have been moved from Delivery 2:



General | Line Items | Packaging Details | Details | Locations | Attachments

Item	Name	Purchased	Rejected	Confirmed	Quantity
1	Jib-assembly	1,00	0,00	1,00	0 Pc
2	Washer	10,00	0,00	10,00	0 Pc
3	Cover	5,00	0,00	5,00	3,00 Pc
4	Bracket	5,00	0,00	5,00	5,00 Pc

...and are now on Delivery 1:



General | Line Items | Packaging Details | Details | Locations | Attachments

Item	Name	Purchased	Rejected	Confirmed	Quantity
1	Jib-assembly	1,00	0,00	1,00	1,00 Pc
2	Washer	10,00	0,00	10,00	10,00 Pc
3	Cover	5,00	0,00	5,00	2,00 Pc

7. **Save** the window.
8. If you opted to split to a new delivery, you will see a newly created record showing the split item(s) and the information you selected to include with the split.
9. Selecting **Options > Show All** in the Deliveries window displays all the line items originally included on the delivery.

Deliveries - Intermediate Locations

Any single shipment might go from the vendor to an agent, then to a warehouse, and so on, before it arrives at the final destination.

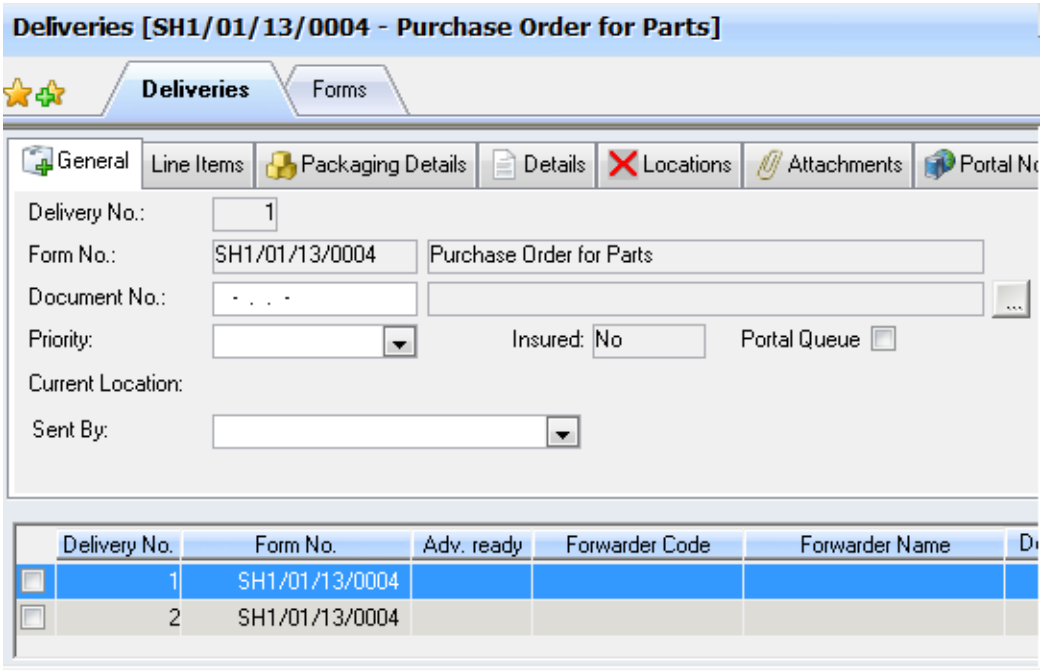
EXAMPLE

You have created a delivery for an order of some parts from Vendor A, who will send the order to your warehouse in Rotterdam. You create a location showing that the forwarder, Shipping Company XYZ, will ship the delivery to its first stop, an Agent.

Later, you register a second location, flagging it as the current one. The forwarder in this case is A1 Transport, who will ship the delivery to the destination, your warehouse in Rotterdam.

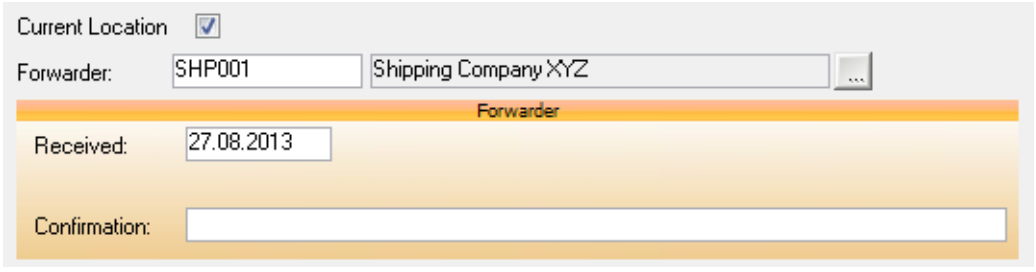
To keep track of where your deliveries are register each forwarder and stop along the way in the Locations tab as a separate entry:

1. Open the Deliveries window and select a delivery:

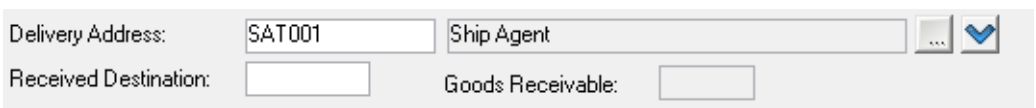


   Vendor A is registered as the selected vendor on the order form this delivery is for.

2. Open the Locations tab. Click the **New** button in the tab. This creates an entry for the first delivery location, flagged by default as the **Current Location**.
3. Fill in the details for the **Forwarder** who will send the order from Vendor A to the next stop:

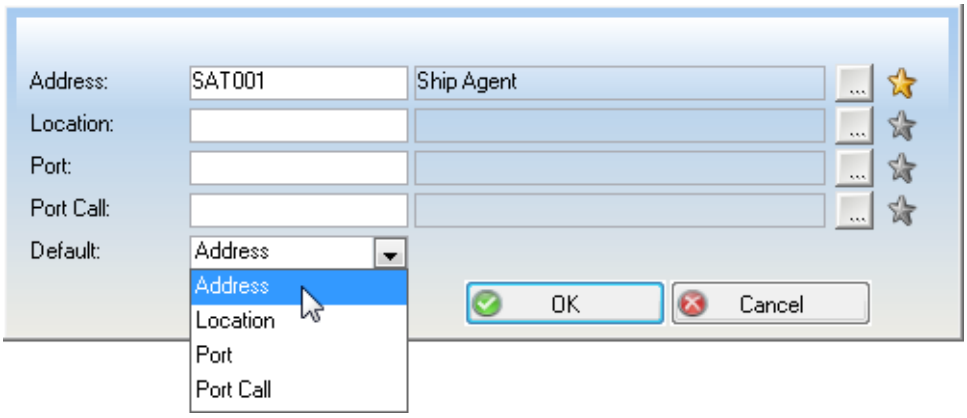


4. Lookup the **Delivery** destination the forwarder will ship the order to:



5. There are four options[1] for specifying delivery destinations: by Address, Location, Port and Port Call.

   Clicking the button next to the **Delivery** field lookup button opens a dialog where any of the other three delivery fields can be filled in as well, and a different **Default** destination selected:



   The default destination will appear in the tab.

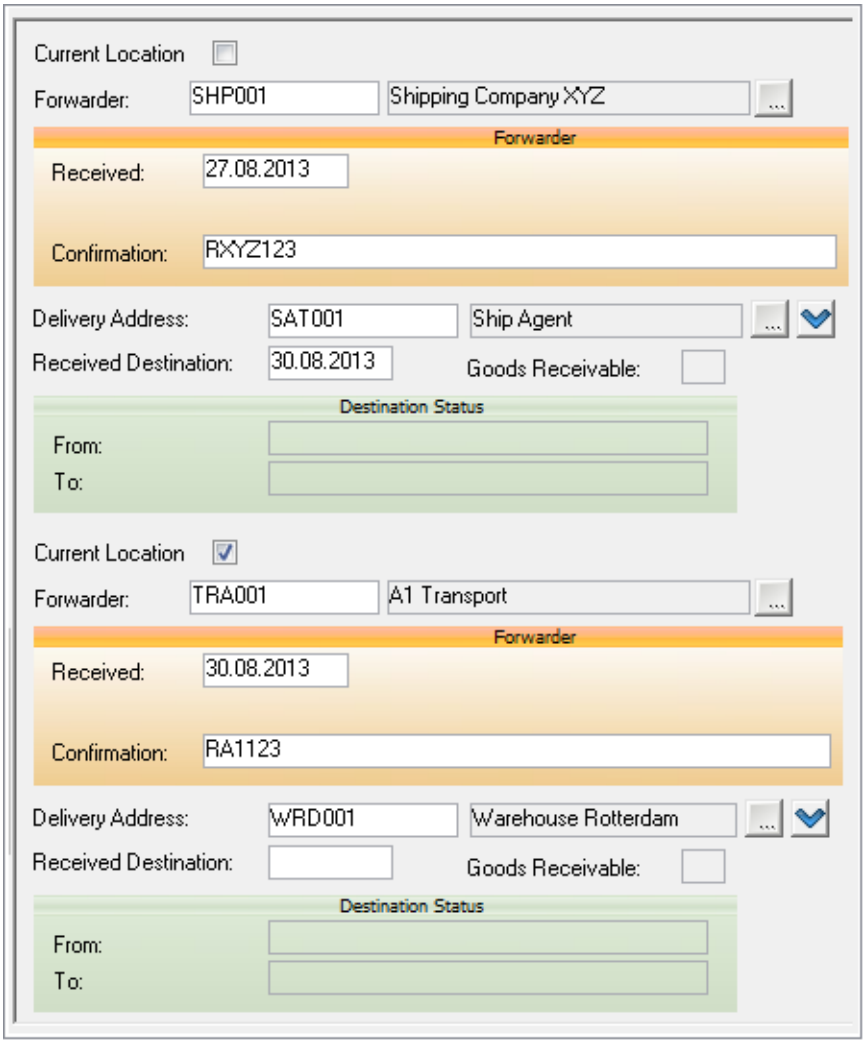
6. **Save** the location.

As the delivery progresses from location to location, keep track of it here:

1. When the delivery reaches the first destination, fill in the **Received Destination**[2] date.
2. Click **New** to add the next location. Newly added locations are automatically flagged as the **Current Location**. You know the order is coming from the agent address on the previous location, and you add the **Forwarder** and the next **Delivery** destination:

[1]The Delivery destination field which appears automatically is determined by the system parameter 'Initial Form Delivery Option', but it can be changed.

[2]The setting of the 'Goods Receivable' field depends on whether the 'Goods Receivable' checkbox is flagged on the relevant address record.



3. **Save** the location. Remember to update the **Received Destination** date when the order arrives.

Note that you can supply all packing-related information for each delivery in the Packaging Details tab. Use the Details tab for any other comments or notes.

Filtering by Current Location

Every time you add a new location to the Deliveries > Locations tab, it is flagged as the current location by default. You can change this if necessary.

Keeping track of the current location of each delivery helps you get an overview of where everything is right now:

Open the Deliveries window filter. Lookup a destination in the **Delivery Destination** section:



Do not flag the **Include Previous Destinations** checkbox. Click **Filter**. AMOS will return a list of any deliveries currently at the selected location.

Transport Documents

Deliveries will arrive at the central purchasing depot continuously, but transport to ships or installations is usually arranged periodically.

Transport documents are for grouping goods from multiple orders that have come into a central location on different deliveries, and need to be forwarded on to the installation where they are needed. While one delivery can only contain line items from the same purchase order, transport documents can contain the items from many deliveries, as long as they are all going to same final destination.

To arrange transport for a delivery:

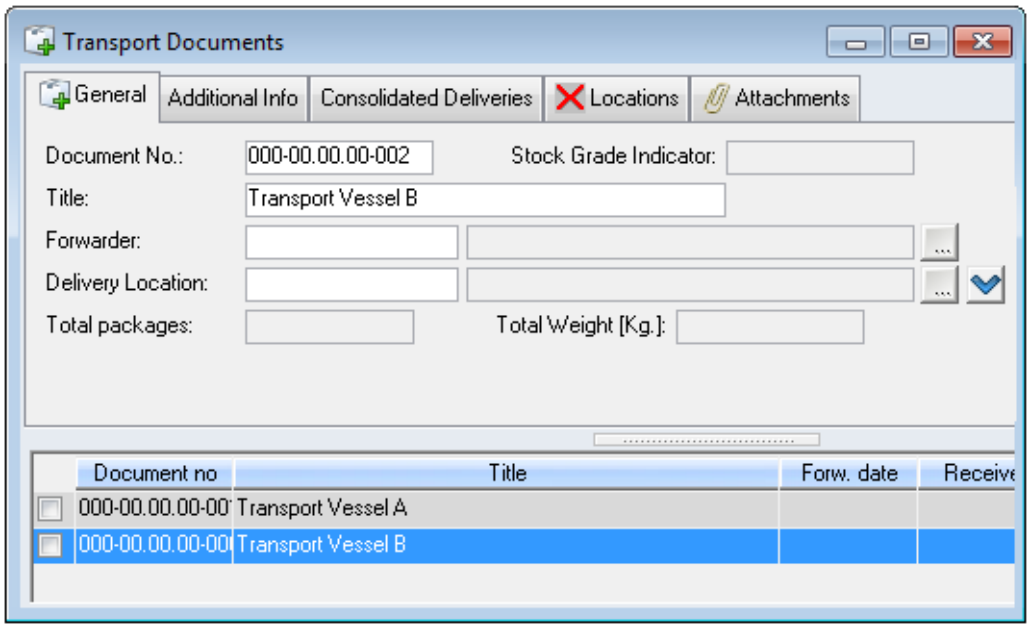
1. Create a transport document. See "Creating a Transport Document" below.
2. Add one or more deliveries to it. See "Adding Deliveries to a Transport Document" on the facing page.
3. Keep track of the transport's location and progress. See "Transport Documents - Intermediate Locations" on page 330.

Creating a Transport Document

EXAMPLE

Several deliveries have arrived at your warehouse in Rotterdam. Some of the deliveries are bound for Vessel A, and some are bound for Vessel B. You create two transport documents to manage this distribution - one for Vessel A and one for Vessel B.

1. Go to **Purchase > Transport Documents**.
2. Click **New** on the toolbar and add a **Title** to the document:



3. Click **Save** and add the next document the same way.
4. Carry on to add all the deliveries which are going to the same site.

Adding Deliveries to a Transport Document

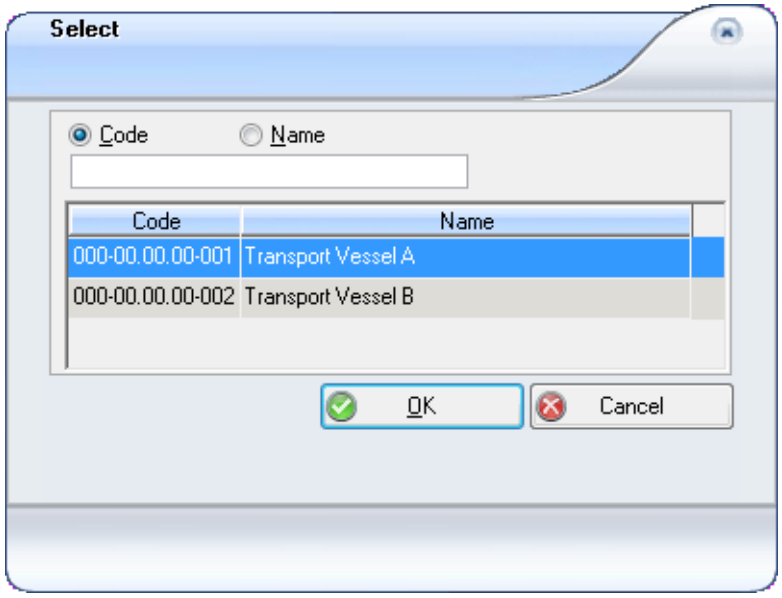
Transport documents are for grouping - or consolidating - goods from multiple orders that have come into a central location on different deliveries, and need to be forwarded on to the installation where they are required. While one delivery can only contain line items from the same purchase order, a single transport document can contain many different deliveries, as long as all the items are going to same final destination.

- A *consolidated* delivery is a delivery which has been added to a transport document.
- An *unconsolidated* delivery is a delivery which has not yet been added to a transport document.

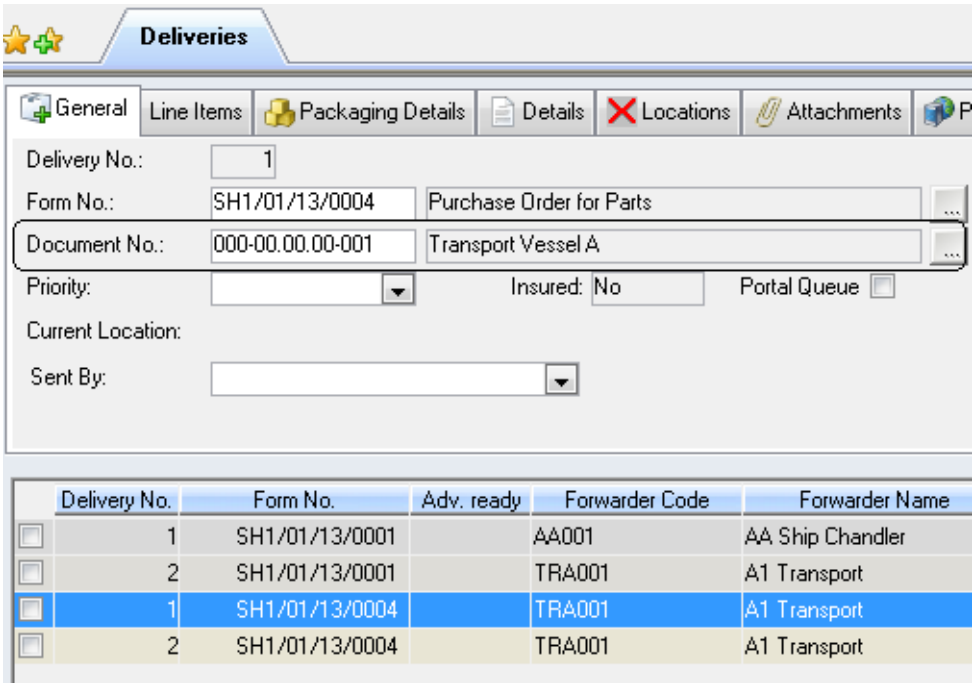
You can add deliveries to transport documents from the Deliveries window or from the Transport Documents > Unconsolidated Deliveries window.

Adding a Delivery from the Deliveries Window

1. Open the Deliveries window. Select a delivery.
2. Either go to **Options > Add to Transport Document**, or click the **Document No.** lookup button to open a select dialog:



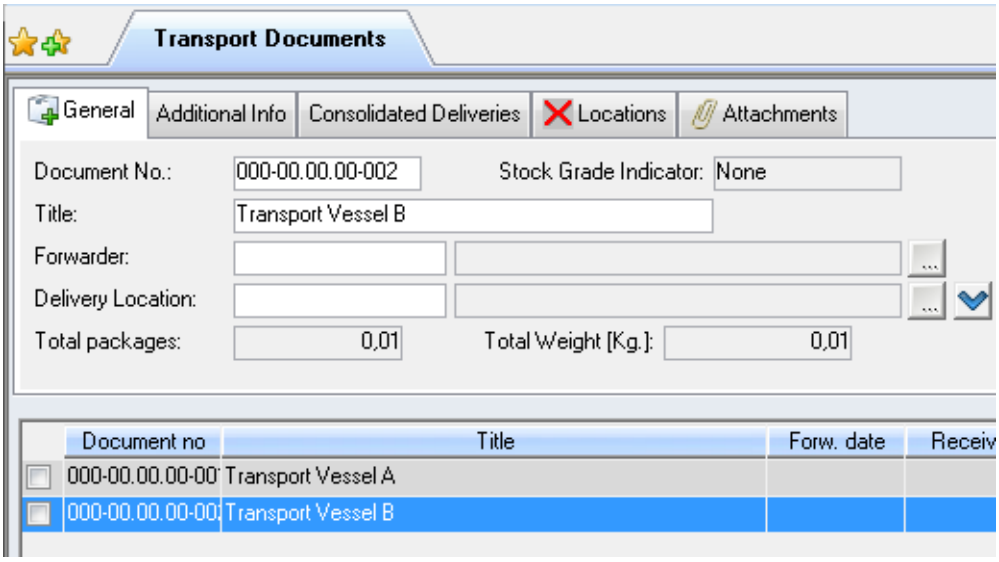
3. Select a transport document and click **OK**. The delivery is added to the transport document:



4. **Save** the window. You can open the Transport Document window directly by selecting **Options > View Transport Document**. This delivery will appear in the transport document's Consolidated Deliveries tab.

Adding a Delivery from the Transport Documents Window

1. Go to **Purchase > Transport Documents**. Select a transport document:

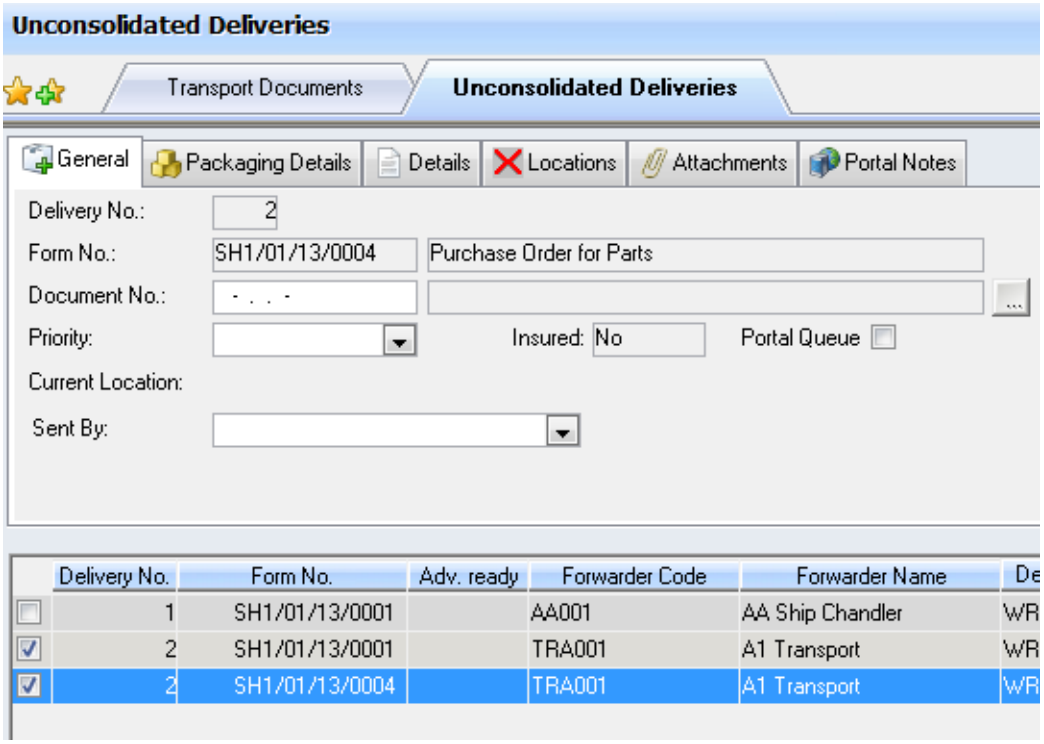


2. Go to **Options > Unconsolidated** deliveries.

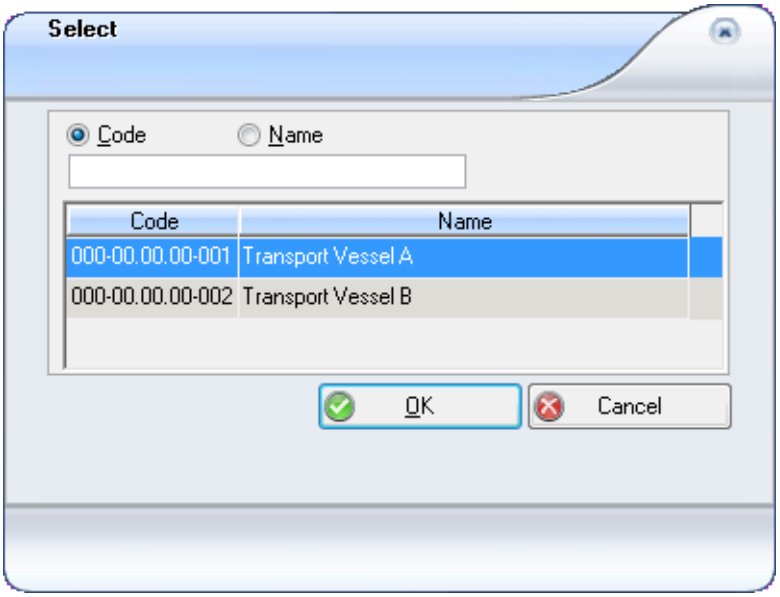
   This opens the Unconsolidated Deliveries window, which lists only those deliveries that have not been assigned to a transport document yet.

   If AMOS says **No deliveries found** then either you have not yet defined any deliveries, or all deliveries have already been consolidated on transport documents.

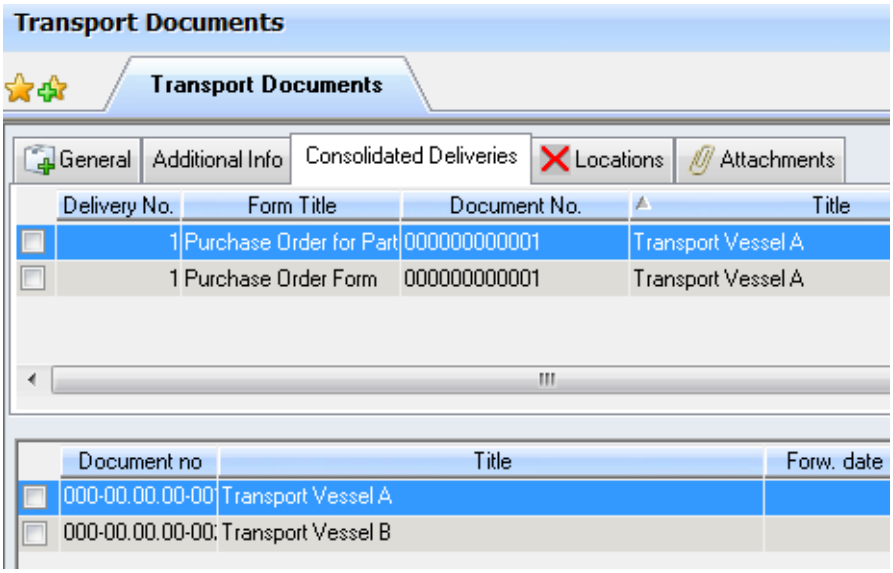
3. Select a delivery in the list, or tag several:



4. To add the delivery onto the transport document you selected in step 1, go to **Options > Attach/Attach Tagged**. The delivery will disappear from the Unconsolidated Deliveries window.
5. Or, to add a delivery to another transport document instead, select it and go to **Options > Add to Transport Document** or use the **Document No.** lookup to open a list and choose a document:



6. Click **OK**.
7. **Save** and close the Unconsolidated Deliveries window.
8. The deliveries will appear in the Consolidated Deliveries tab on the Transport Documents window:



Removing Deliveries from a Transport Document

To remove a delivery from a transport document:

1. Select a document from the list in the Transport Documents window.
2. Go to **Options > Consolidated Deliveries**. Select a delivery.
3. Go to **Options > Remove**. The delivery disappears from the window and from the Consolidated Deliveries tab on the Transport Document window.

Remember to reassign the delivery to another transport document. You can move a delivery from one transport document to another directly in the Consolidated Deliveries window:

1. Go to **Options > Add to Transport Document**.
2. Select another document.
3. **Save** the change.

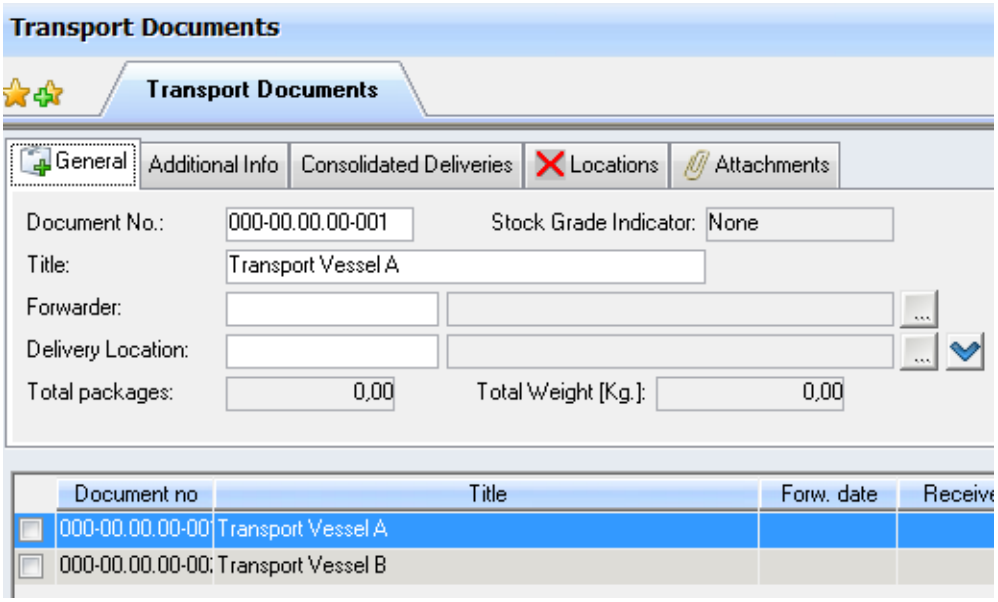
Transport Documents - Intermediate Locations

Transport documents are the last step in getting your newly purchased stock to the sites where it is required. However, there may be more than one stop along the way, from your central location like a warehouse, to the actual installation.

> **EXAMPLE**
>
> You have a transport document containing a group of delivery items assembled at your warehouse in Rotterdam and all bound for Vessel A. You want to use the transport document to track the progress of the items from the warehouse in Rotterdam, to a local agent and then on to the port where Vessel A is expected.

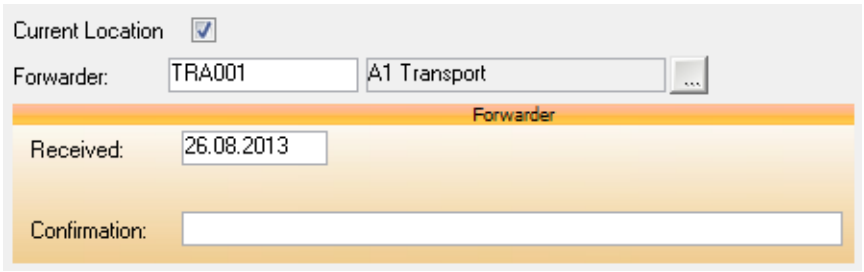
To keep track of locations on a transport document:

1. Open the Transport Documents window and select a document:

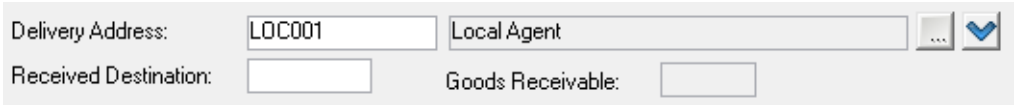


You know that the deliveries consolidated on this document, are at your warehouse in Rotterdam.

2. Open the Locations tab. Click the **New** button in the tab. This creates an entry for the first location on the document, flagged by default as the **Current Location**.
3. Fill in the details for the **Forwarder** who will send the order from the Rotterdam warehouse to the next stop:



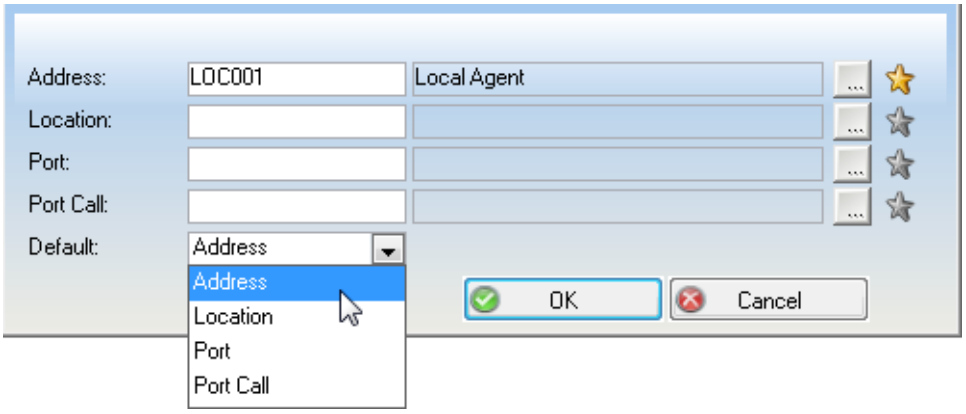
4. Lookup the **Delivery** destination the forwarder will ship the transport to:



5. There are four options[1] for specifying delivery destinations: by Address, Location, Port and Port Call.

   Clicking the button next to the **Delivery** field lookup button opens a dialog where any of the other three delivery fields can be filled in as well, and a different **Default** destination selected:

[1] The Delivery destination field which appears automatically is determined by the system parameter 'Initial Form Delivery Option', but it can be changed.

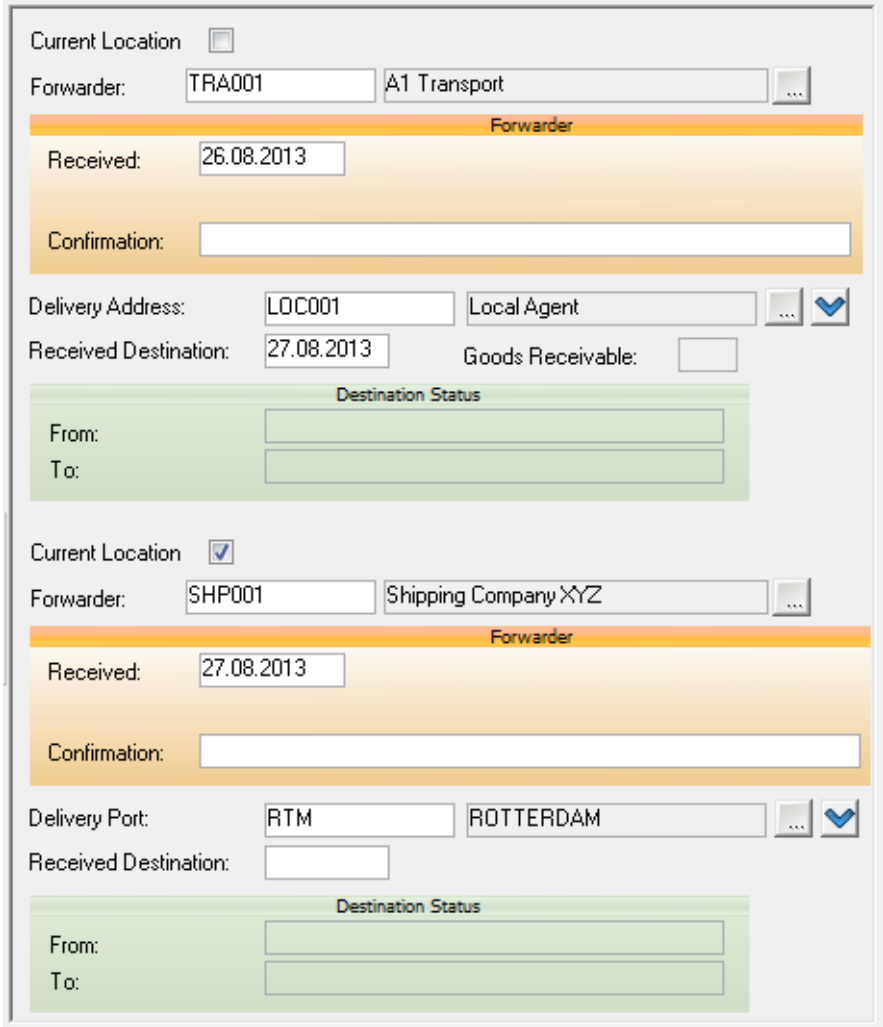


The default destination will appear in the tab.

6. **Save** the location.

As the transport progresses from location to location, keep track of it here:

1. When the transport reaches the first destination, fill in the **Received Destination**[1] date.
2. Click **New** to add the next location. Newly added locations are automatically flagged as the **Current Location**. You know the order is coming from the agent address on the previous location, and you add the **Forwarder** and the next **Delivery** destination:



3. **Save** the location. Remember to update the **Received Destination** date when the order arrives.

[1]The setting of the 'Goods Receivable' field depends on whether the 'Goods Receivable' checkbox is flagged on the relevant address record.

Note that you can supply information about flights and other methods of transport from location to location, in the Additional Info tab. Dates, costs, customs fees and delivery size and weight are all tracked on the General tab. As you alter a transport document, go to **Options > Recalculate Totals** to adjust the total transportation costs.

Filtering by Current Location

Every time you add a new location to the Transport Documents > Locations tab, it is flagged as the current location by default. You can change this if necessary.

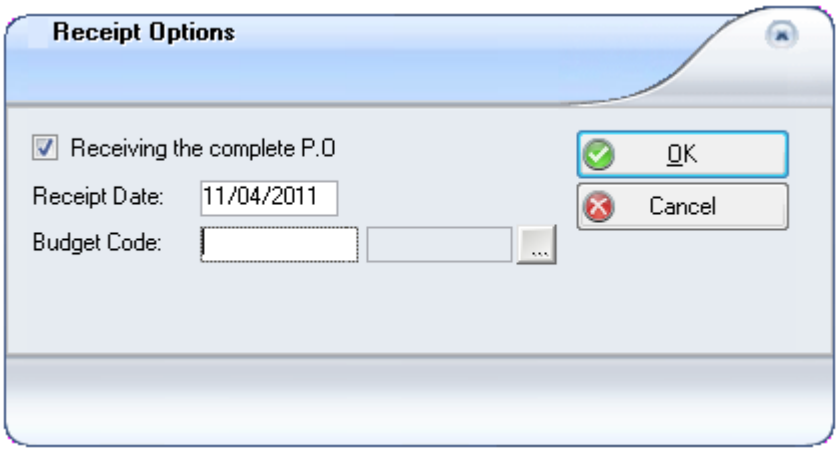
Keeping track of the current location of each transport helps you get an overview of where everything is right now:

1. Open the Transport Documents window filter. Lookup a destination in the **Delivery Destination** section on the Locations tab.
2. Click **OK**. AMOS will return a list of any transports currently at the selected location.

Receiving a Delivery

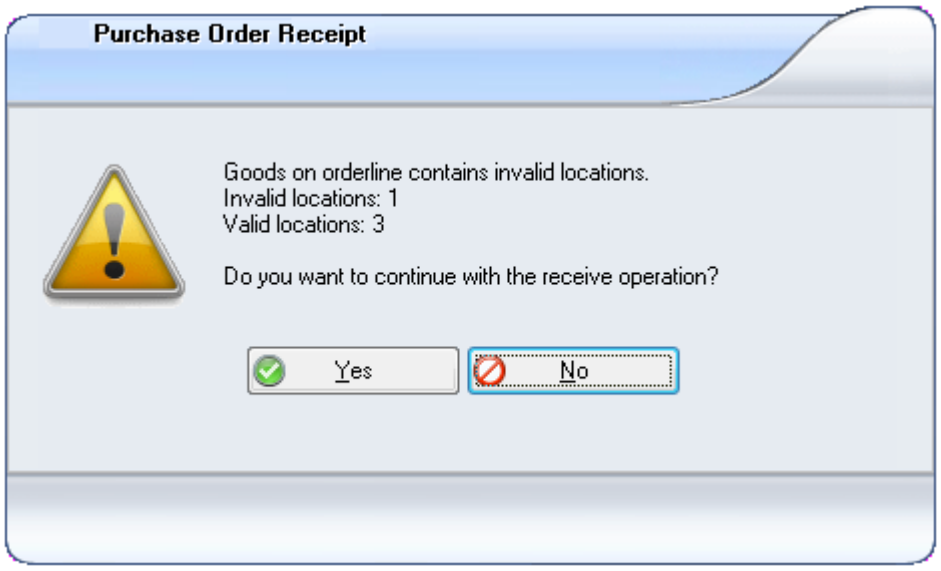
When goods arrive at an installation, register their receipt in AMOS:

1. Open the Forms window and select the purchase order you want to receive, or flag several forms.
2. Go to **Options > Receive** or **> Receive Tagged**. The Receipt Options dialog opens:



   It's easiest to flag **Receiving the complete P.O** and then change the quantities of the items you have not received. For example, if there are many items and most of the order has arrived, check the box to open the Receive window with the totals already entered.

3. Click **OK**. If you see the dialog shown below, it means one or more line items on the order do not have a default location registered in the Stock Items window:

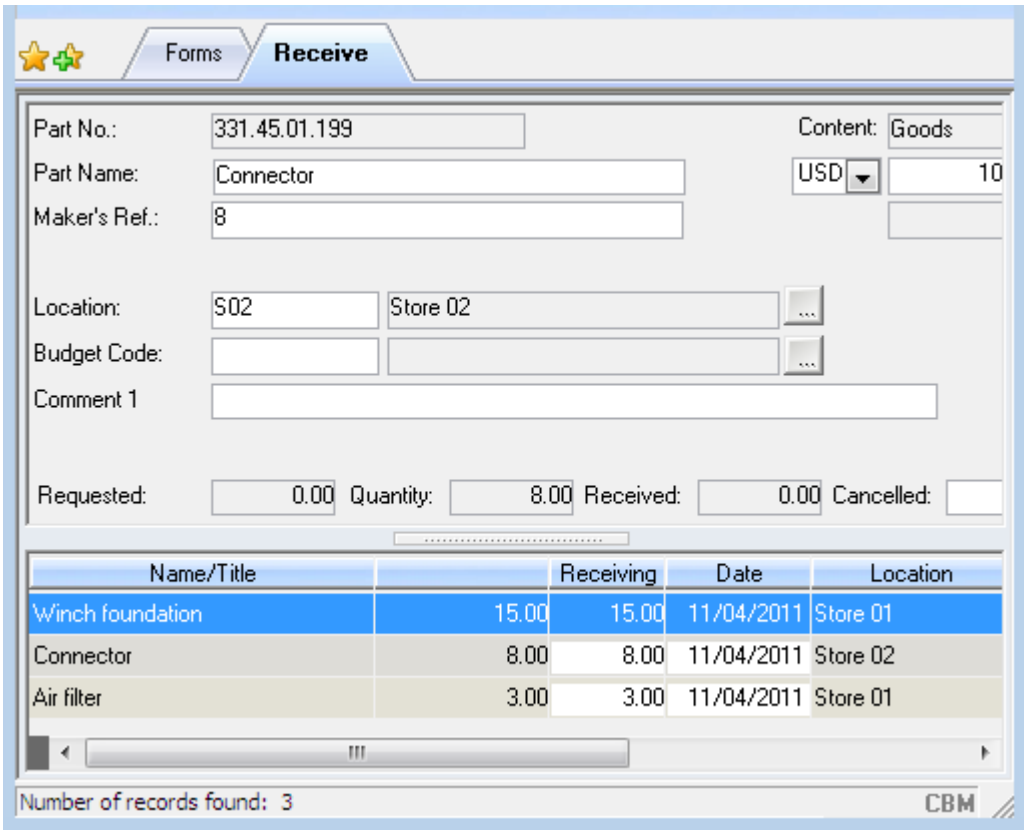


Items without a default location will not be filled in the Receive window, and it will not be possible to enter a received amount for them until you specify a default location.

If you click **No** to hold the receiving operation, go to the Stock Items window to lookup the item(s) and define a default location. See "Stock Item Locations" on page 214

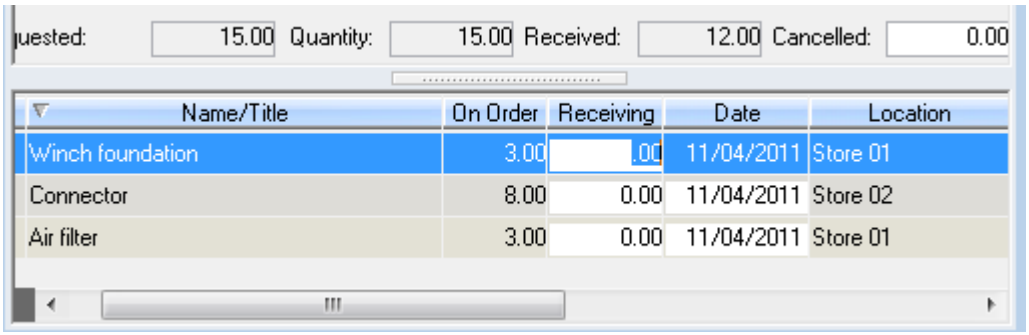
Or, click **Yes** to carry on and receive the other items now.

4. When the Receive window opens, if you indicated that you were receiving the complete order the **Receiving** column will already be filled for you with quantities matching the **On Order** amount.



5. If you need to change any amounts enter the number recevied on any item in the **Receiving** column.

As shown below if you mark 12 received on the first item and save the change, AMOS will subtract 12 from the **On Order** amount and leave 3 to be received later.



You may be prompted to enter expiry dates for perishable items if you have not selected an expiry date already.

6. Lookup a **Location** to which the items are being received.
7. When you have set all the quantities click **Save**.
8. If all items on the order have now been received, AMOS will ask if you want to file the order. If you've received an entire purchase order, change its status from 'Active' to 'Filed'.

Quality Checks and Claims

You can add comments to the relevant purchase form regarding the quality of received goods on that form. These quality checks and claims can be registered from several different locations in AMOS:

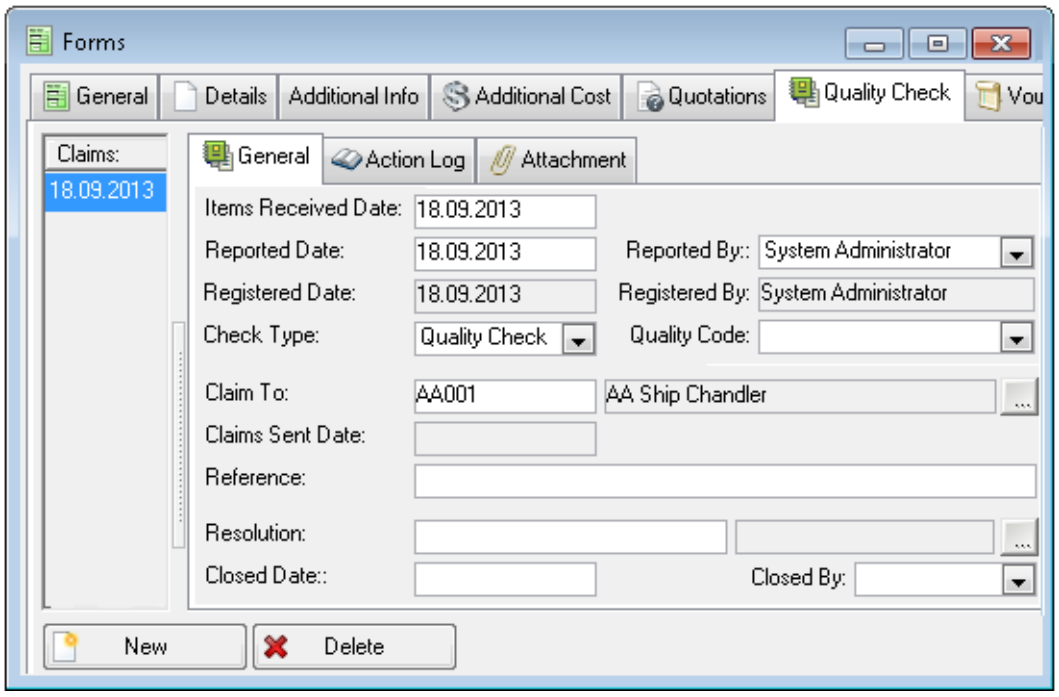
- in the Forms window against the relevant purchase form. See "Quality Checks for an Entire Form" below.
- in the Line Items window or in the Receive window, for an individual item or several items. See "Quality Checks for Items on a Form" on the next page.
- from the dedicated Quality Check window, specifying the form or item(s) the check applies to. See "The Quality Check Window" on page 338.

Each comment record starts out as a quality check, and from there you can upgrade it to a quality claim if necessary.

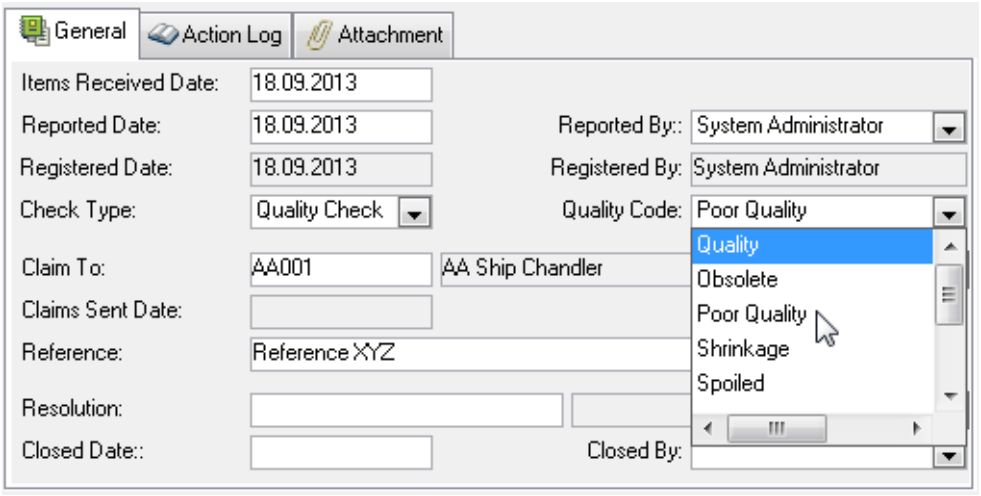
Quality Checks for an Entire Form

Quality checks entered in the Forms window apply 'in general' to the selected order form:

1. Go to **Purchase > Forms** . Filter for a form or open the Forms window and select one.
2. Open the Quality Check tab and click the **New** button inside the tab. The **Check Type** on new records is automatically set to Quality Check:



3. Enter a **Reference** and select a **Quality Code** - did the order include items which were spoiled, damaged, obsolete, incomplete?



4. Use the Action Log tab to record any corrective actions or progress carried out.
5. **Save** the check.

You can enter multiple checks or claims against the same form depending on the problem. Click the **New** and **Delete** buttons in the Quality Check tab to add and remove checks as needed.

All checks and claims in the system are listed in the Purchase > Quality Check window.

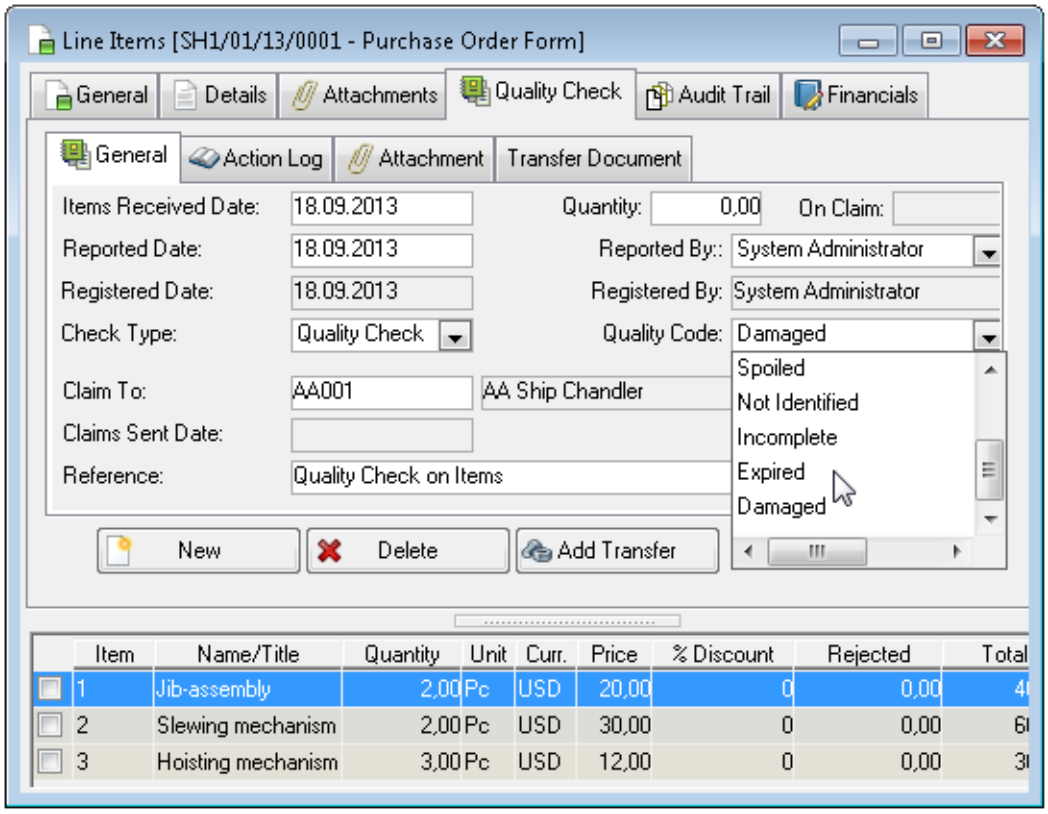
Quality Checks for Items on a Form

You can register a quality check on a certain item or a specific quantity of items:

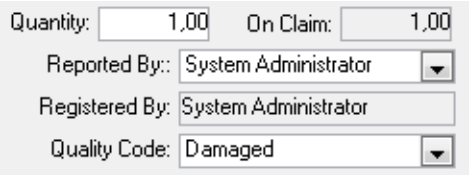
- before or after receipt, in the Line Items window; or
- as you receive the delivery in the Receive window.

1. Go to **Purchase > Forms**. Filter for a particular form or open the window and select one.
2. Go to **Options > Line Items**or **Options > Receive**.

3. In the Line Items or the Receive window, select the individual item to register a check against. Open the Quality Check tab.
4. Click the **New** button inside the tab. The **Check Type** on new records is automatically set to Quality Check.
5. Enter a **Reference** and select a **Quality Code** - did the order include items which were spoiled, damaged, obsolete, incomplete?



6. Register a **Quantity** - the number of this item which the check concerns. It may not be the total amount of the item in question - for example, 2 pieces of the item 'Jib-Assembly' were ordered on the form - you are recording a check on just 1 of them:



   This quantity will show up as the **Rejected** amount in the Delivery and Voucher windows.

   Notice the read-only **On Claim** field - it indicates how many instances of this item are registered in quality checks against the same form. The total includes quantities on the current check and on any others entered against the same item (on the same form) on the Line Items window, Receive window or Quality Check window.

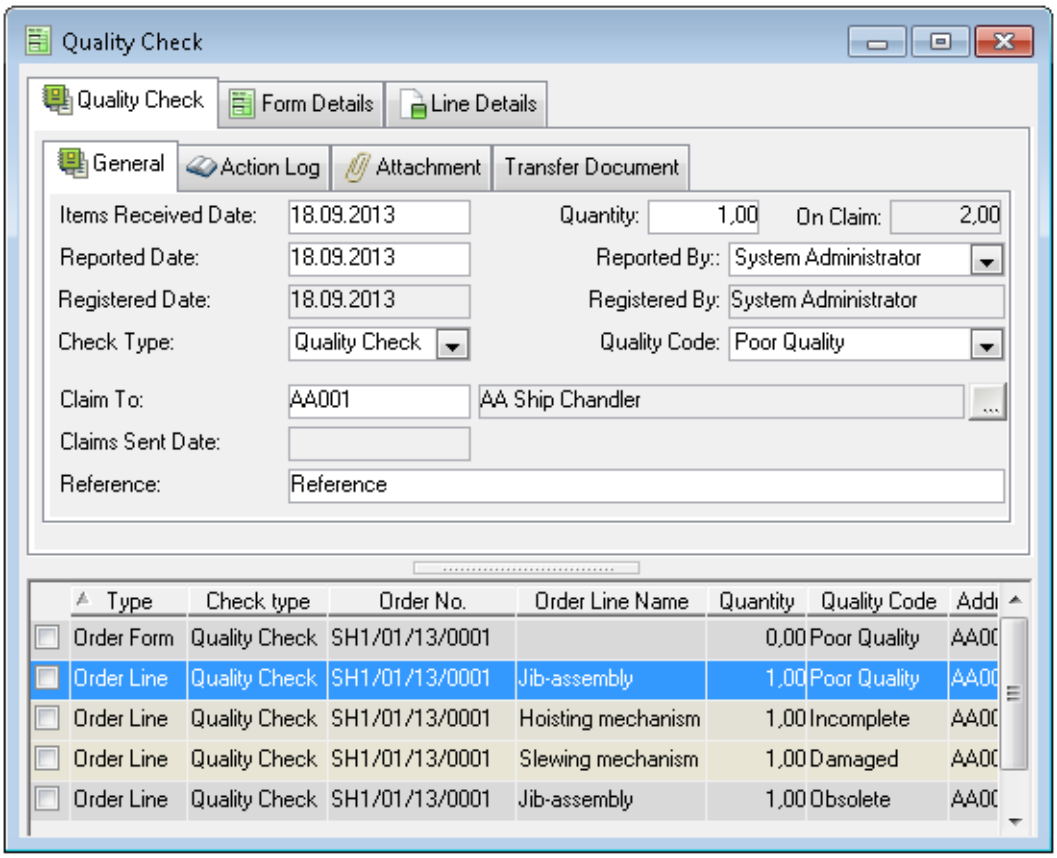
7. Use the Action Log tab to record any corrective actions or progress carried out.
8. **Save** the window.

Individual checks registered in the Line Items or Receive window are copied to the Quality Check tab in the Receive window, and vice versa.

All checks and claims in the system are listed in the Purchase > Quality Check window.

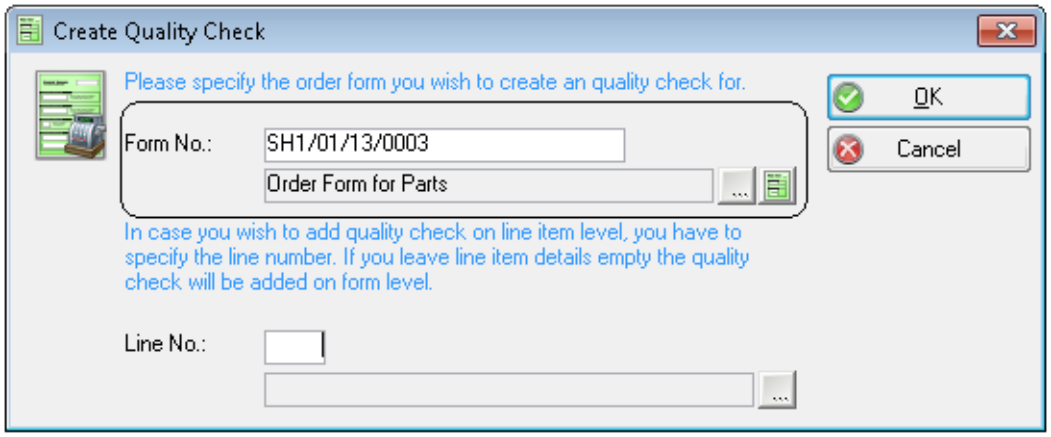
The Quality Check Window

All checks and claims in the system are listed in the **Purchase > Quality Check** window. The Line Details tab activates and deactivates depending on whether you select a record registered against an Order Form or an Order Line:

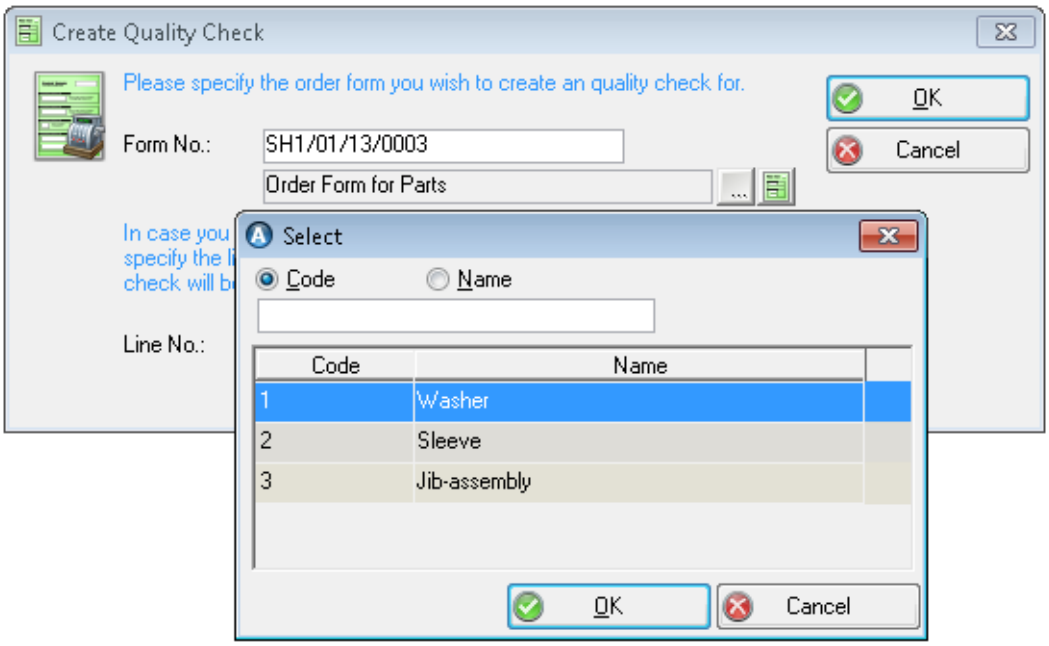


To add a new check in this window:

1. Click the **New** button on the toolbar. A Create dialog opens.
2. Select a **Form**. Click **OK** to apply the quality check at form level:



3. Or, lookup a **Form** and then a **Line Item** on the selected form, and then click **OK** to apply the quality check to an individual item:



The quality check record is added to the main window. Fill in the rest of the details.

4. **Save** the window.

Escalating a Check to a Claim

Not all quality checks do lead to claims to external parties, like suppliers or agents: sometimes quality checks are registered as the result of internal miscommunications, such as incorrectly ordering the wrong part.

However, as the result of a quality check you may need to raise a claim:

1. Open the quality check record you are going to escalate:
2. Go to **Purchase > Forms**, select a form and then open the Quality Check tab.

   Or,

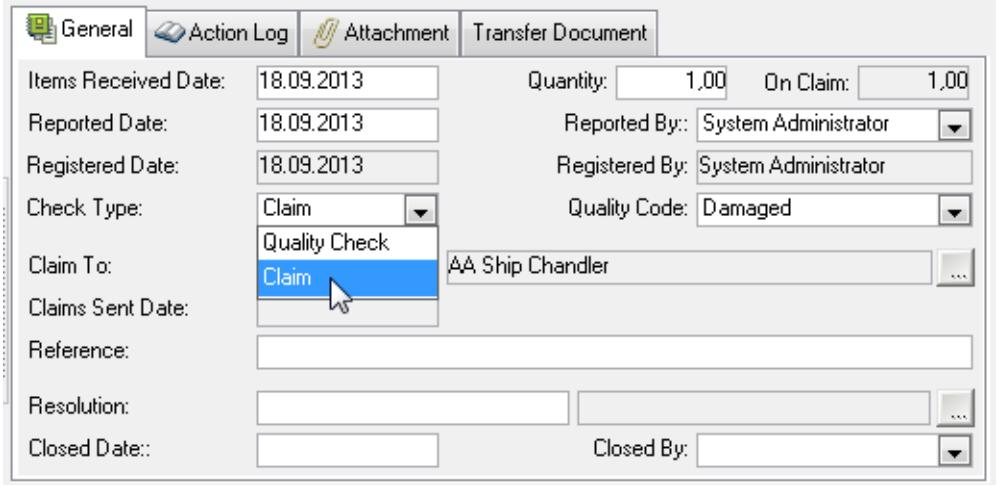
   Go to **Purchase > Forms**, select a form and then go to **Options > Line Items**. Select a line item and open the Quality Check tab.

   Or,

   Go to **Purchase > Forms**, select a form and then go to **Options > Receive**. Select a line item and open the Quality Check tab.

   Or,

   Go to **Purchase > Quality Check**.
3. Select a quality check record.
4. Change the **Check Type** field to Claim:



5. The **Claim To** field defaults to the form's vendor. You can change it if the claim will be sent to another address like a forwarder or an agent.
6. You can track changes to a check or claim in the Action Log tab as it progresses.
7. **Save** the change, and send the claim.

Individual claims registered in the Line Items or Receive window are copied to the Quality Check tab in the Receive window, and vice versa.

Sending a Claim

To send a claim:

1. Open the Forms window and flag the form containing the claim.
2. Click the **Print** button on the toolbar and select **Reclamation Claim only**.
3. Click **OK**. The output takes its address from the setting of the **Claim To** field.

Resolving a Claim

Once a claim has been processed and resolved, select the record and enter a **Resolution** against it. Resolutions are predefined and may have been linked to Quality Codes[1]. In that case, the resolutions you can choose from are those which have been linked to the quality code applied to the claim.

> **EXAMPLE**
>
> The quality code 'Damaged' is linked to the resolutions 'New Order Placed' and 'Scrapped and Refunded'. You want to assign a resolution to a claim where the quality code is set to 'Damaged'. This means you can choose either of the two resolutions: 'New Order Placed' or 'Scrapped and Refunded'. If no particular resolutions have been linked to the quality code on the claim, then all existing resolutions will be available for selection.

To resolve a claim:

1. Open the quality claim record you are going to resolve:

   Go to **Purchase > Forms**, select a form and then open the Quality Check tab. Or,

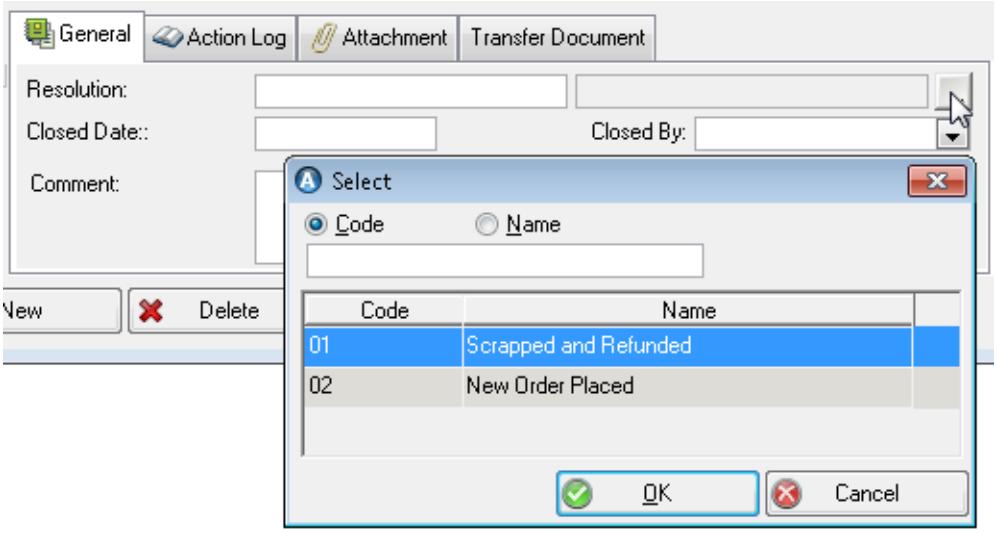
   Go to **Purchase > Forms**, select a form and then go to **Options > Line Items**. Select a line item and open the Quality Check tab. Or,

[1] Resolutions are defined in the Quality Resolution Codes register, and linked to quality codes in the Quality Codes register.

Go to **Purchase > Forms**, select a form and then go to **Options > Receive**. Select a line item and open the Quality Check tab. Or,

Go to **Purchase > Quality Check**.

2. Select a quality claim record.
3. Lookup a **Resolution**:



4. Enter a **Closed Date**, **Closed By** id and any **Comments**.
5. **Save** the window.

Individual claims registered in the Line Items or Receive window are copied to the Quality Check tab in the Receive window, and vice versa.

Returning Rejected Items

When you have rejected items at a site and you need to 'land' these items, you can create a transfer document to manage the return. You can arrange this from the Line Items window, the Receive window or the Quality Check window. You also have the possibility to add these items to an existing transfer document to send them back.

You can create transfer documents for quality checks registered against individual line items, but not for any checks which are registered against entire forms.

> **EXAMPLE**
>
> You have a claim containing 3 rejected items. These are already on site and need to go back. You create a transfer document for 2 items and add the third item to an existing transfer document.

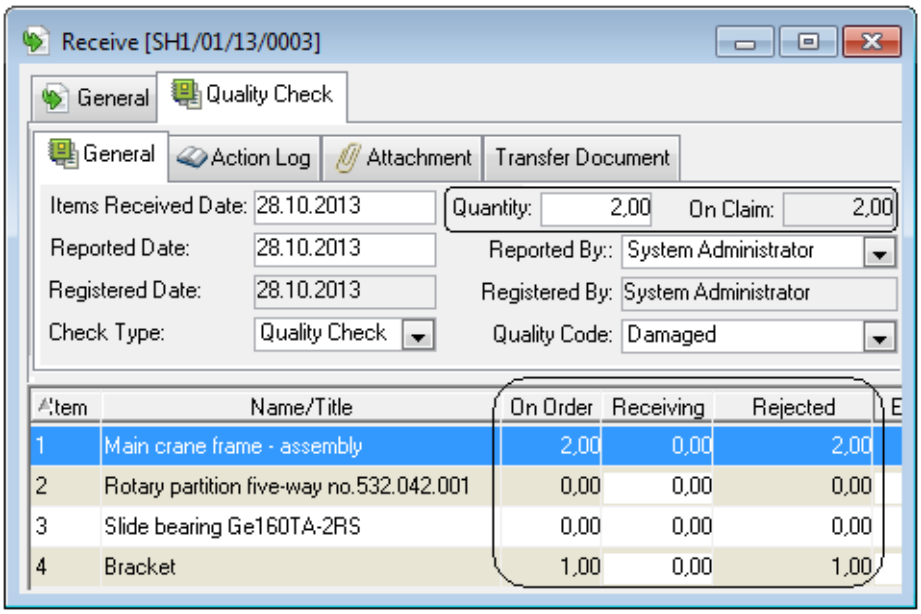
1. Open the quality claim record containing the items to go back:

   Go to **Purchase > Forms**, select a form and then go to **Options > Line Items**. Select a line item and open the Quality Check tab. Or,

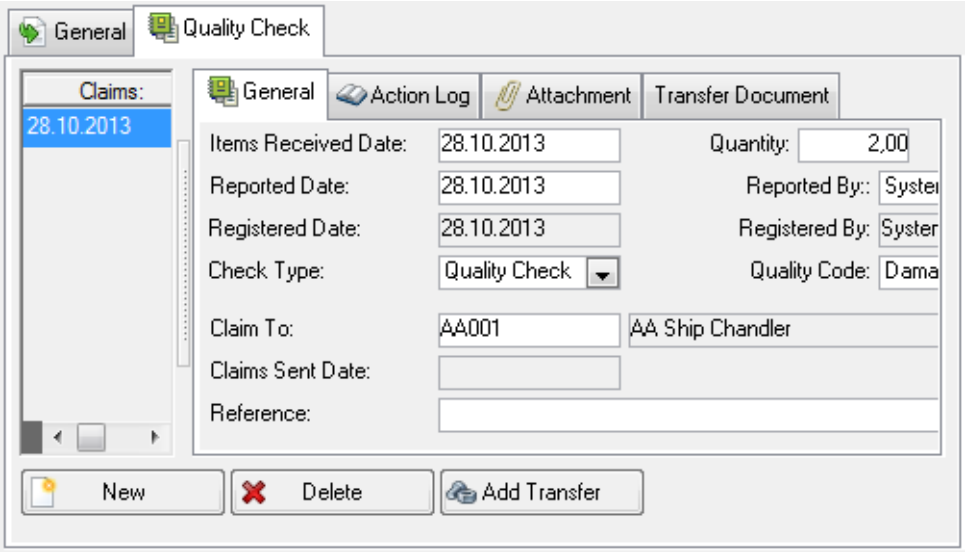
   Go to **Purchase > Forms**, select a form and then go to **Options > Receive**. Select a line item and open the Quality Check tab.

   Go to **Purchase > Quality Check**.

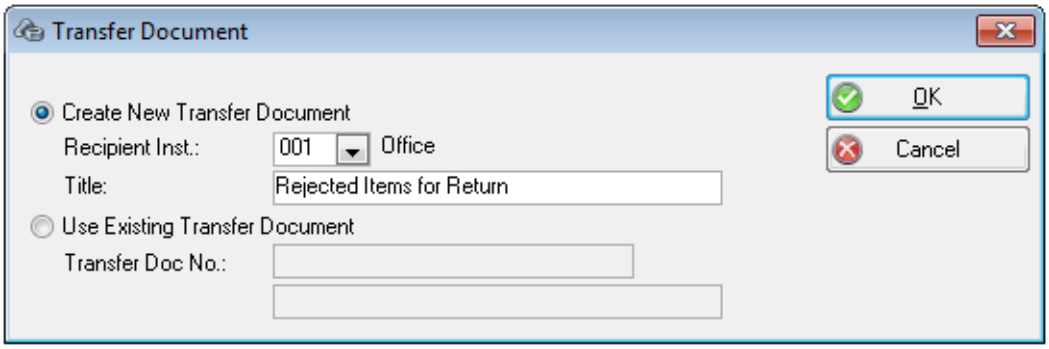
2. Select a quality check record. In the illustration below, a total of 3 items have been rejected during receipt of a delivery, and the quality check for the first 2 items is selected:



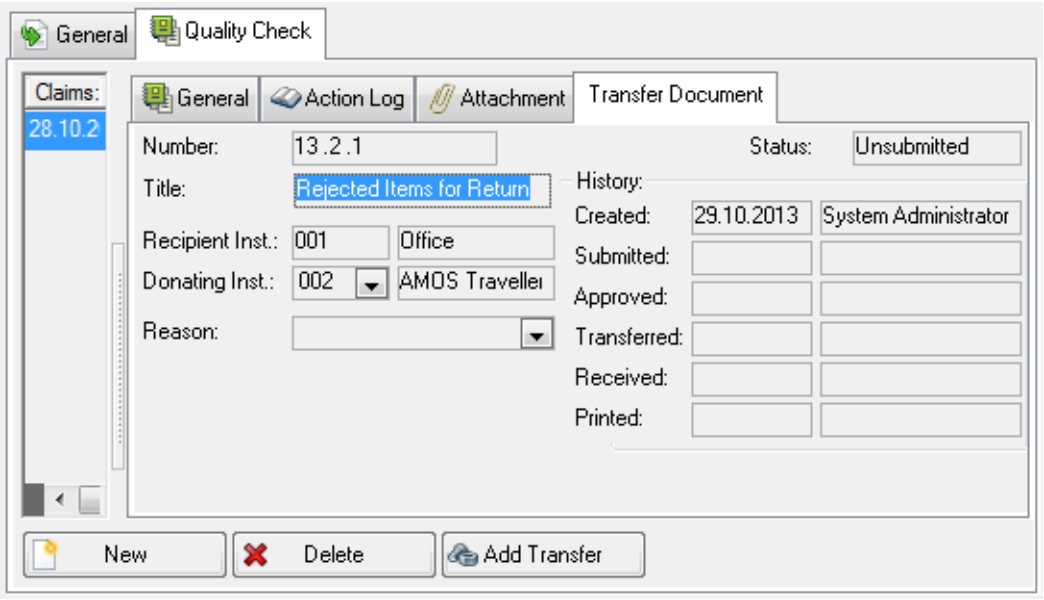
3. To create a transfer document from the Quality Check window, you go to **Options > Add Transfer Document**. In the other two windows, you click the **Add Transfer** button:



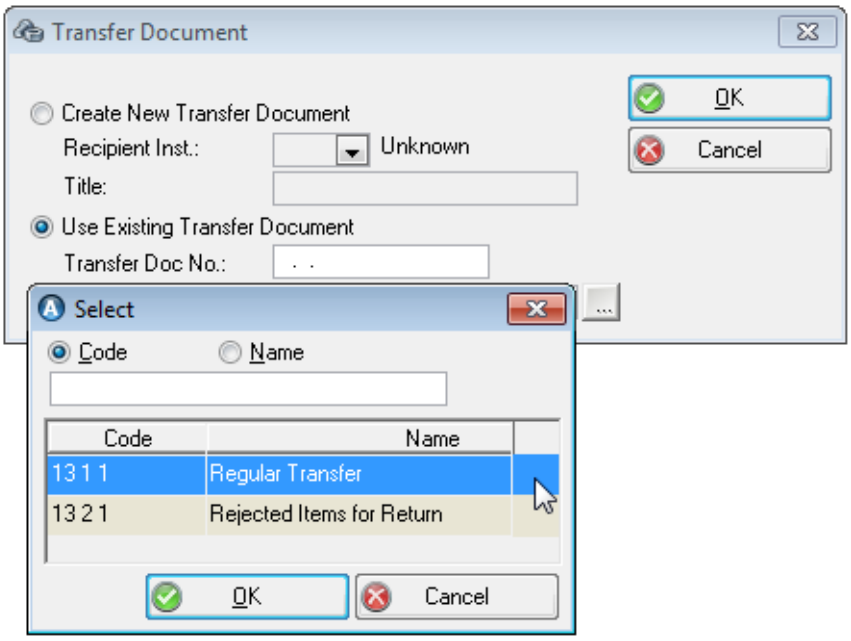
4. To create a new transfer document for these two rejected items, select to **Create a New** document, choose the **Recipient** installation and enter a **Title**:



5. Click **OK**. Open the Transfer Document tab to see the new transfer document listing the current installation as the donating one:



6. To add the other rejected item to an existing transfer document, select it in the list and click **Add Transfer** again. This time, select **Use Existing Document**and use the lookup to select a transfer document:



   To appear in the lookup list an active transfer document's donor installation must be either undefined, or, set to the same installation as the order form with the rejected line items belongs to.

7. Click **OK** to add this transfer document to the tab.
8. **Save** and exit the Quality Check window.

No matter where you create the transfer documents - from the Line Items, Receive, or Quality Check window - they will appear in the same tab in all three locations. Process these transfer documents as usual in the window at **Stock > Transfer Documents**.

Quality Checks on Transfer Documents

Transfer documents linked to quality checks appear in the Transfer Document tab on the Line Items or Receive window and on the same tab in the Quality Check window. Double-clicking on one will open up the Transfer Document window to that record.

Setting a transfer document to 'Transferred' updates the stock level(s) for the item(s) it contains. However, stock levels might not *actually* be updated in every case:

- you may have a quality check against an item which has not actually been received yet and so, the stock level was not updated in the first place. Or,
- you may have a quality check for a line item which has been received, but for which the stock transaction was reversed and the stock levels already reverted.

In these scenarios you probably do not want to update the stock levels when you transfer the items on a transfer document. When the donating installation opens the Transfer window (**Stock > Transfer Documents > Options > Transfer**) a checkbox labelled **Transfer Updates Stock Levels**appears next to any transfer lines added from quality checks. Unflag the box next to any quality check line item to exclude it from the stock level consideration - no stock transaction will be generated and the levels remain the same. Leave the box flagged to update stock levels for that item accordingly.

Purchase Contracts

Creating a Purchase Contract allows you to register a price and delivery agreement with a vendor on stock to be purchased in the future. The prices and terms set out in the contract can be applied to any purchases of the selected items when ordered from that vendor. You can have more than one contract per vendor, as long as at least one of the following is true:

- they are for different validity periods: that is, the From/To dates do not overlap.
- they contain different parts.
- they are for different sites/vessels.

Contracts are based on Product Groups and Delivery Zones, with different terms for each:

- **Product Groups** contain all the stock available for purchase on any given contract.
- **Delivery Zones** contain a breakdown of all possible delivery locations for the contract vendor.

Multiple discounts can be defined at various levels on the same Purchase Contract. They can also be applied depending on the quantity of items ordered. Read about contract discounts in "Levels and Types of Discounts" on the facing page.

Whenever you arrange a new contract, register it in the Contracts window and remember to update the status as changes are eventually made. To set up a purchase contract:

1. Register the basic details for the contract on the Contracts window General tab and assign the contract to the installations where it will be used. See "Creating a Purchase Contract" on page 350.
2. Set up Delivery Zones and group locations together. See "Defining Delivery Zones" on page 354.
3. Set up Product Groups and assign Stock to each group. See "Setting Up Product Groups" on page 356.
4. Use the Product Groups and Delivery Zones to create a Price Matrix in the Contract Items tab. Register the contract items' base prices. See "Creating the Price Matrix and Entering Base Prices" on page 359.

   Specify contract discounts and surcharges, as well as alternate fixed prices and other exceptions.
5. Save the finished Contract and then approve and issue it, making it available to apply to Purchase Orders. See "Approving and Issuing a Contract" on page 369.

To read about applying and removing contracts on purchasing forms, see "Contracts and Purchasing Forms" on page 1.

Note: When you open the Purchase Contracts window for the first time after upgrading a database where Purchase Contracts already existed, if any of these existing contract contains references to Stock Classes AMOS will present two options: delete the Stock Class references and replace them with Stock items of the same class, or, delete the Stock Class references and do not replace them automatically.

Levels and Types of Discounts

Multiple discounts can be applied at different levels on the same purchase contract: define your discounts starting with those which apply to the entire contract or a whole zone or product group. After that, you can specify item-by-item exceptions on the price matrix. Any discount can depend on the volume ordered. See the referenced sections for examples of how to register these discounts.

Discount Levels

Discounts can be applied to items at several levels:

- **Purchase Contract**. Register a discount on the contract itself, which can then apply to all items available for purchase on the contract. See "Discounts on Contract Level" on page 353.
- **Product Group**. Register a discount on a Product Group which can then apply to all items inside that group. See "Discounts on Product Groups" on page 359.
- **Item**. Register a discount directly on a selected item. See "Discounts on Items" on page 361.

Discounts on Location

Discounts can also be applied to locations:

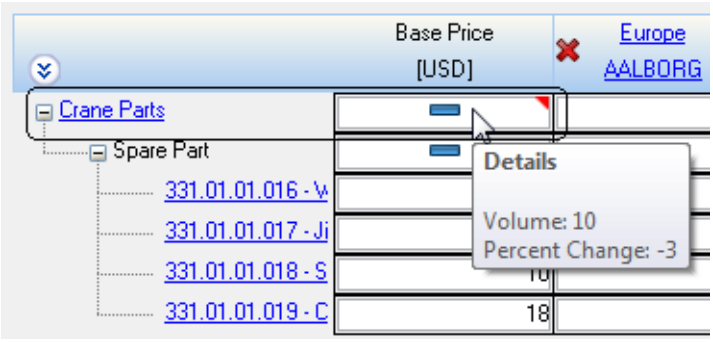
- **Delivery Zone**. Register a discount against a delivery zone, which can then apply to any contracted item delivered to any location inside of that zone. See "Discounts on Delivery Zones" on page 356.
- **Delivery Location**. Register a discount on a specific delivery location. Any item from any group sent to that location can receive the discount. See "Discounts on Locations" on page 362.
- **Item/Location**. Apply a discount on a particular item only when that item is sent to a specific delivery location. See "Item/Location Discounts" on page 363.
- **Group/Location**. Apply a discount on a product group in combination with a selected delivery location, which will apply when any item from that group is sent to the location. See "Item/Location Discounts" on page 363.

Types of Discounts

There are three 'types' of discounts you can apply:

- **Percent Change**. A discount on an item's base price by percentage.
- **Price Change**. A discount on an item's base price by a fixed amount (currency and value).
- **Fixed Price**. An alternative base price per item. Any other discounts on an item with an alternate fixed price will be calculated using the fixed price instead of the original base price.

Different types and levels of discounts and surcharges can all apply in combination on the same contract. For example, you have a contract set up for purchasing a Product Group of crane parts with delivery to several locations inside of two Zone, Europe and North America. A Product Group discount of 3% on any group item ordered in a volume of 10 or more pieces has been applied:



In addition to this, the discounts shown below have been registered on the matrix:



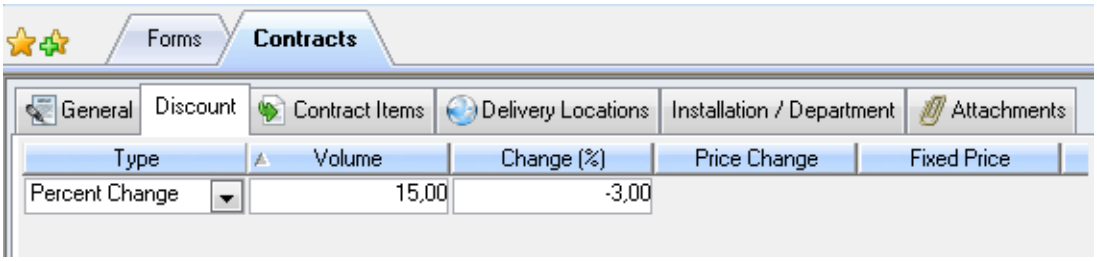
- Item 331.01.01.016 has an alternate fixed price of 2,20 USD when delivered to Aalborg, regardless of quantity.
- Any items in the group Crane Parts will receive a 5% discount when delivered to Aalesund.
- Item 331.01.01.019 cannot be delivered to Toronto.
- When item 331.01.01.017 is ordered in a quantity of 25 or more for delivery to Toronto, each item is reduced in price by 1 USD. If the same item is ordered in a quantity of 50 or more for delivery to Toronto, each item is reduced by 2 USD.

In addition to these discounts entered on the price matrix, contract-level discounts could be present on the Discount tab and/or Zone-level discounts could be present on the Delivery Locations tab.

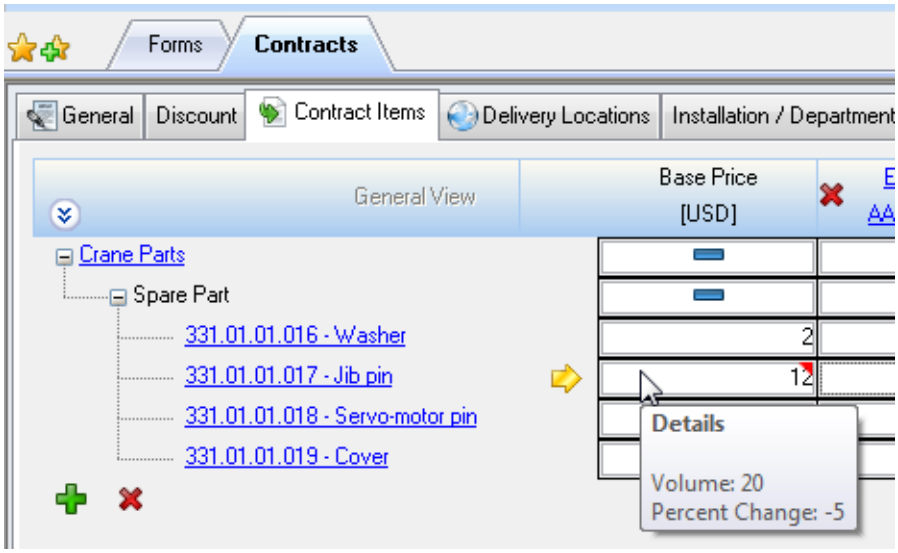
How Does AMOS Calculate and Apply Discounts?

AMOS applies discounts and alternate prices taking the most 'precise' value available - starting with an item-level discount. If no discount is available at item-level, AMOS continues on to look for discounts applied to product groups and delivery locations and eventually at contract or zone level. For example:

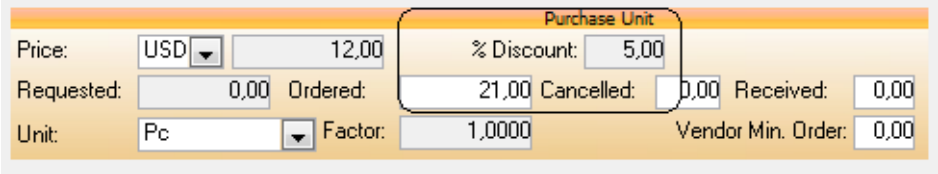
A contract-level discount of 3% applies to all items on a contract, when 15 pieces or more of any one item are ordered:



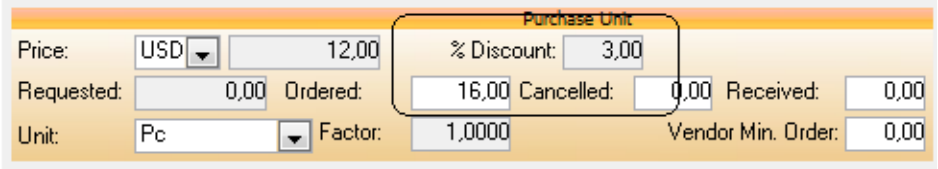
This means any item on the contract ordered in a quantity of 15 or more pieces can receive the discount. On the same contract, an item-level discount of 5% is applied to Item 331.01.01.017 when 20 or more pieces are ordered:



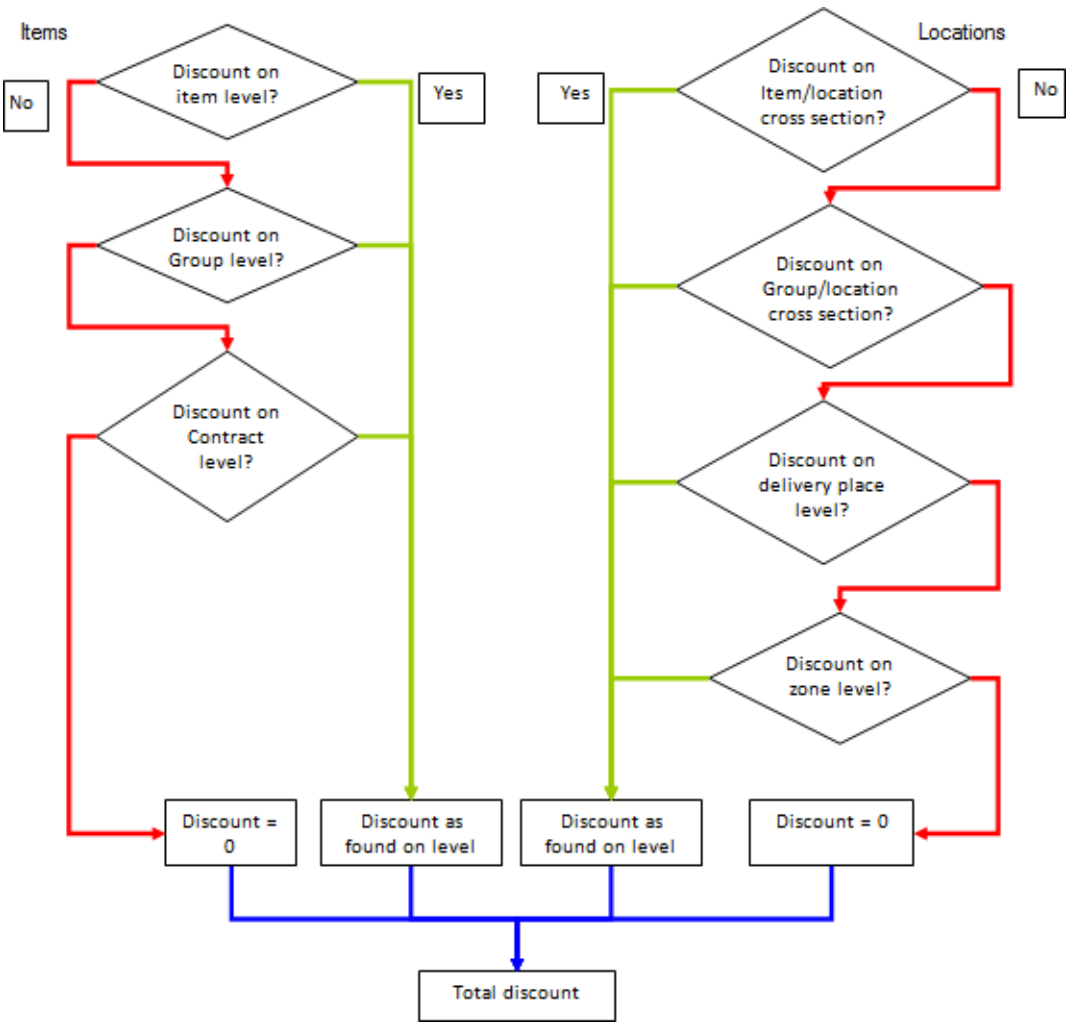
When you order 20 or more pieces of this item the 5% item discount will apply on the order form instead of the contract-level discount:



However, if you only order 16 pieces of that item the contract-level discount applies:



As shown in the following flow chart, when calculating the total cost of an item AMOS considers both the discounts applied to items and the discounts applied to locations, together:

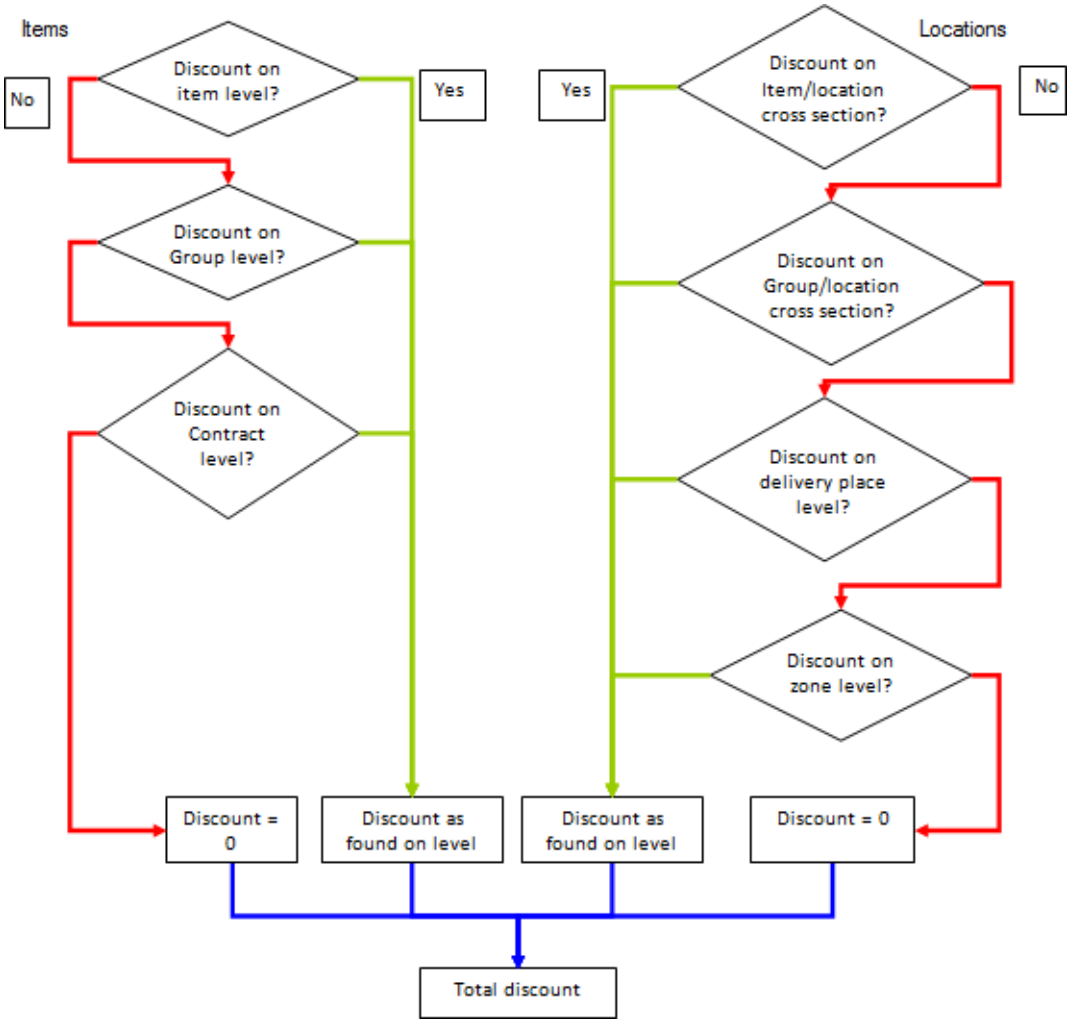


The calculation process differs slightly for each of the three discount types - Percent Change, Price Change and Fixed Price.

Percent Change Discount

When calculating a percent change discount, AMOS considers the item discounts first, and then location discounts.

As shown on the left side of the flow chart, AMOS checks for a discount on item-level. If an applicable one is present - i.e. the ordered quantity of the item matches or exceeds the volume specified for the discount - that discount will be applied. If no discount is found at item-level, AMOS looks for a product group discount next, and a contract-level discount after that:



Any discount found on item, group or contract level is applied to the ordered item first.

Then, the location discounts are evaluated in the same way. AMOS looks for a discount on the item/-location matrix cells first, and then moves to group/location and so on, as shown on the right side of the flow chart.

The first applicable discount is then deducted from the amount resulting from the first calculation.

> **EXAMPLE**
>
> A 5% discount is applied on the product group Crane Parts and so applies to all items inside the group. On the same contract, a 2% discount has been applied to the delivery location Aalborg and any contracted items sent there can receive the discount. You order 1 piece of an item which costs 12 USD, for delivery to Aalborg. AMOS deducts the 5% product group discount from this item price first. From the resulting sum of 11,40 USD, AMOS then deducts the 2% location discount. The final cost of the item is then 11,17 USD.

Price Change Discount

When calculating a price change discount, AMOS checks for discounts on items as well as discounts on locations in the same way as when calculating a percentage discount. Refer to the flow chart in "Percent Change Discount" on the previous page to review. AMOS then adds the first applicable item discount found together with the first applicable location discount.

EXAMPLE

An item discount of 0,20 USD per piece is placed on a 12 USD item when that item is ordered in a volume of 8 or more pieces to any location. Additionally, there is a discount applied to Zone 1 such that any contracted item sent to any location in Zone 1 in a quantity of 10 or more pieces will receive a 0,25 USD discount per piece. You order 10 pieces of this item for delivery to a location in Zone 1. The two discounts are added together and deducted from the item's base price. The item's price therefore becomes 11,55 USD.

Fixed Price Discount

Setting a fixed price discount simply provides an alternate base price per item. Any other discounts on such an item will be calculated against the fixed price instead of the original base price.

EXAMPLE

An item with a base price of 12 USD, has an alternate fixed price of 10 USD when ordered in a volume of 5 or more pieces. There is also a 2% location discount registered for deliveries to Aalborg. You order 5 pieces of this item for delivery to Aalborg. AMOS takes the alternate fixed price of 10 USD per item and deducts the 2% location discount from that. The item's price therefore becomes 9,80 USD.

What Happens When You Mix Different Types of Discounts?

It's very likely that both percent and price change discounts will be present on the same contract.

As described above in the other scenarios, AMOS looks for the first applicable discount on item/-group/contract level and then on location/zone level and takes both into consideration when calculating the final price. When a percentage and a price change discount are both present, AMOS calculates the percent change first and then deducts the price change discount from the resulting value.

EXAMPLE

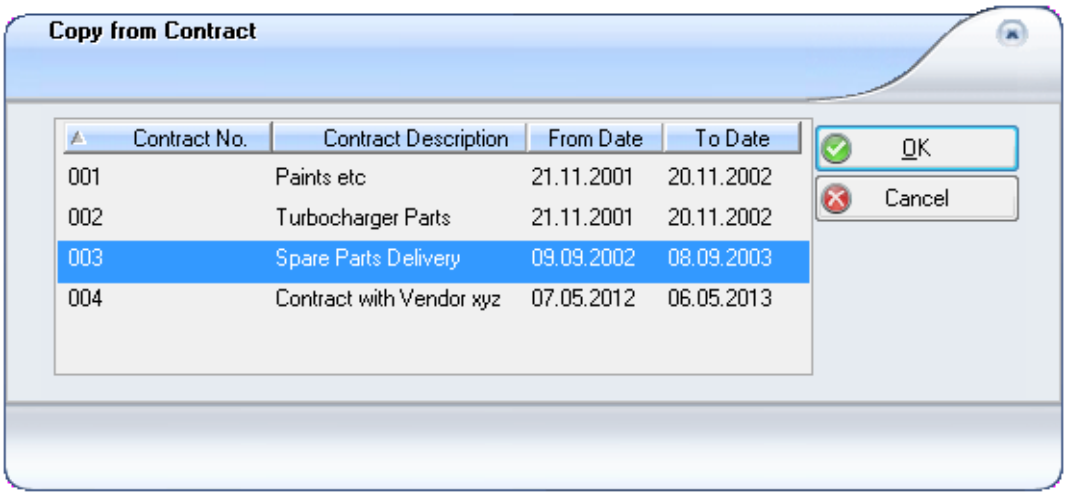
An item discount of 2 USD per piece is placed on a 12 USD item, when that item is ordered in a volume of 8 or more pieces. At the same time, there is a 5% discount registered on Zone 1. You order 10 pieces of that item for delivery to a location inside of Zone 1. AMOS deducts the 5% zone discount from the item's original price first. From the resulting price per item of 11,40 USD, it then deducts the 2 USD item discount. The item's price becomes 9,40 USD.

Creating a Purchase Contract

Create a new contract in one of two ways: copy the details of an existing contract to a new record, or start from scratch.

Copying Details from an Existing Contract

1. Go to **Purchase > Contracts**.
2. Click the **New** button.
3. Enter a **Number** and lookup a **Vendor** for the new contract.
4. **Save** the record.
5. Select **Options > Copy from Contract**. A list of all the pre-existing contracts opens:

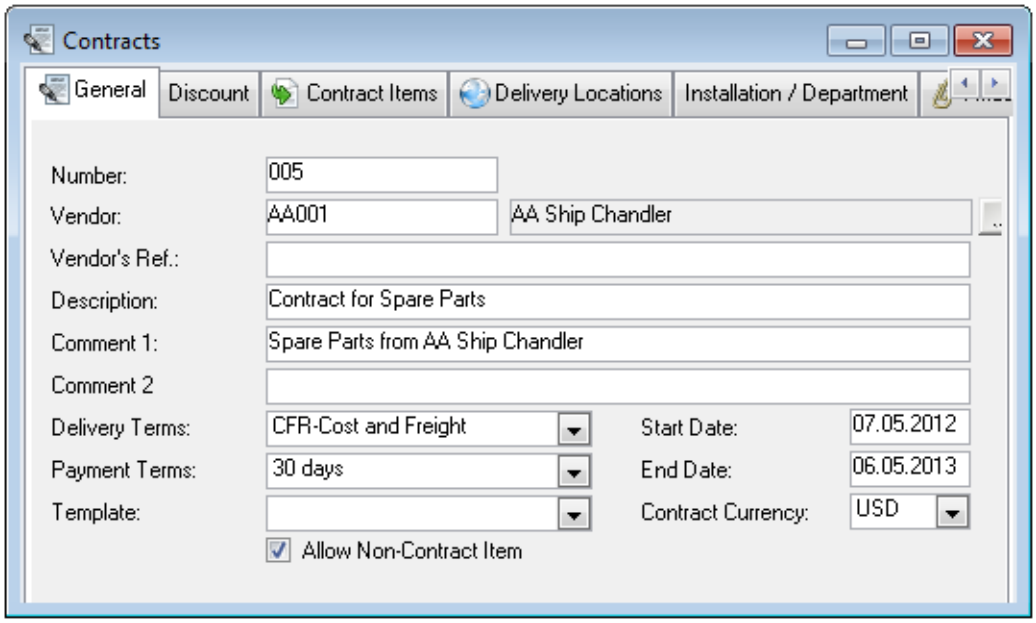


6. Choose a contract here and click **OK**.

The details are copied from the selected contract into the new one.

Creating a New Contract from Scratch

1. Go to **Purchase > Contracts** to open the Contracts window.
2. Click **OK** in the filter.
3. Click the **New** button on the toolbar.



4. Enter the General tab information: a **Number**, **Description** and **Vendor** for the contract. If a Rule and Mask have been defined for Contract Numbers the Number field will be populated automatically.
5. If this contract will be known to the vendor by a different name or code, enter it in the **Vendor's Ref.** field.
6. Select **Delivery Terms** and **Payment Terms**. The **Contract Currency** you choose is for all values on the contract.

   When the contract is fully registered, you will be able to base Purchase Forms on it.
7. If you check the **Allow Non-Contract Item** checkbox, it will be possible to add non-contracted line items to any forms based on this contract in addition to the contracted line items.

If you leave the box unchecked, it will not be possible to place other items not specified on the contract onto any purchase forms based on it.

8. Lookup **Start** and **End Dates** for this contract to indicate when the contract will be available for use, and for how long.
9. Use the **Levels** section to specify the minimum/maximum quantity of items an order based on this contract should contain and minimum/maximum price values the vendor will accept orders for:



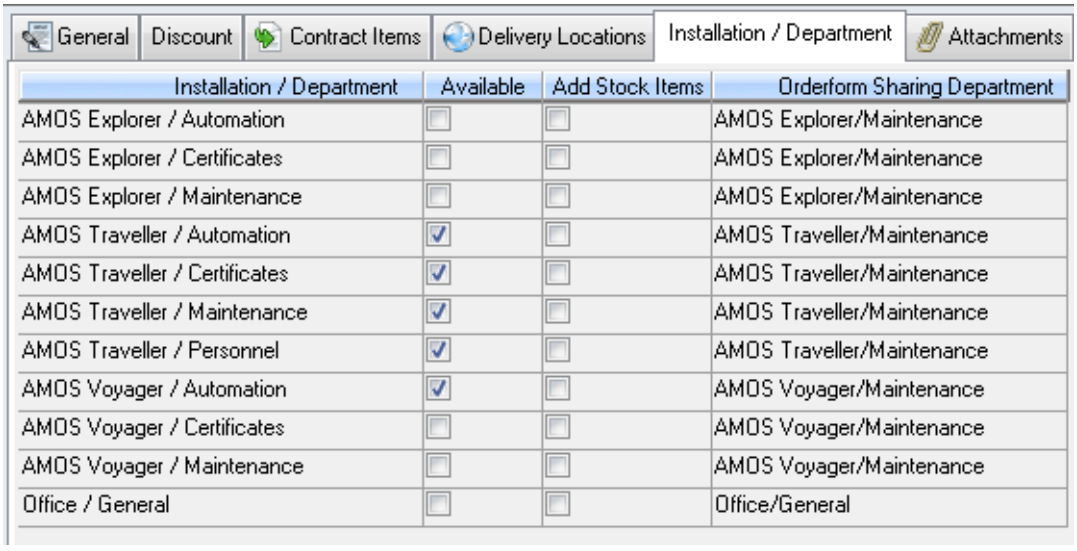
These levels apply for the totals on the entire contract. The same information can be entered at Product Group level as well and will then apply to the items within a group, or added directly onto an individual item.

10. **Save** the contract.

Applying a Contract to Multiple Installations

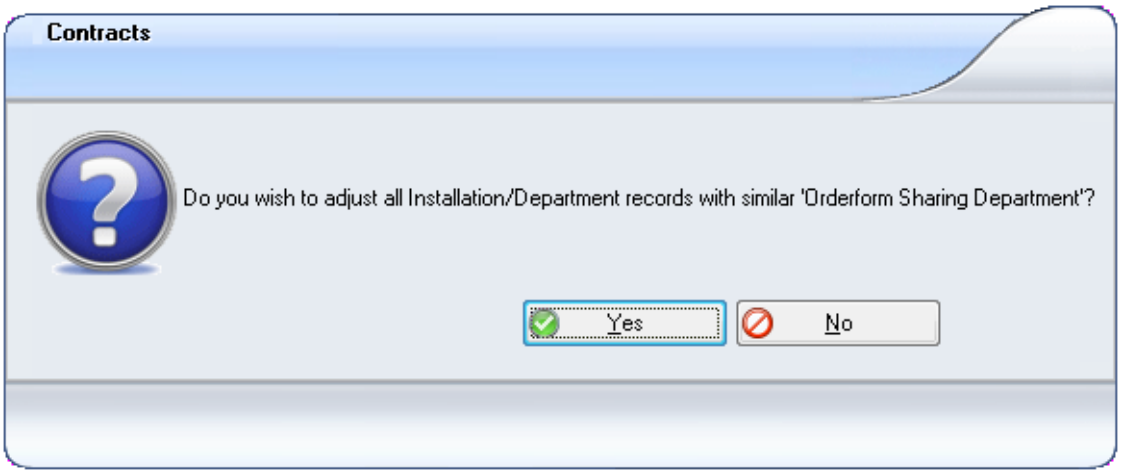
A contract can apply to multiple installations/departments. Only in systems using Stock Types, an extra tab appears on the Contracts window: Installation/Department. The tab contains a list of installations which share the same Stock Types as the installation you are currently logged in at. The contract will not be available for use anywhere until Installations and Departments are selected here.

Check installations and departments in the list where the selected contract can be applied:



Installation / Department	Available	Add Stock Items	Orderform Sharing Department
AMOS Explorer / Automation	☐	☐	AMOS Explorer/Maintenance
AMOS Explorer / Certificates	☐	☐	AMOS Explorer/Maintenance
AMOS Explorer / Maintenance	☐	☐	AMOS Explorer/Maintenance
AMOS Traveller / Automation	☑	☐	AMOS Traveller/Maintenance
AMOS Traveller / Certificates	☑	☐	AMOS Traveller/Maintenance
AMOS Traveller / Maintenance	☑	☐	AMOS Traveller/Maintenance
AMOS Traveller / Personnel	☑	☐	AMOS Traveller/Maintenance
AMOS Voyager / Automation	☑	☐	AMOS Voyager/Maintenance
AMOS Voyager / Certificates	☐	☐	AMOS Voyager/Maintenance
AMOS Voyager / Maintenance	☐	☐	AMOS Voyager/Maintenance
Office / General	☐	☐	Office/General

When you check one department inside an installation, AMOS will present the following message:



Clicking **Yes** adds the rest of the applicable departments for the installation at once. Clicking **No** checks only the department you clicked on.

To check the **Available** box for all Installations/Departments at once, press **Ctrl+A** or right-click inside the tab and choose **Select All** from the pop-up menu.

In some cases although an installation shares a stock type, no items of that type have been registered there yet. Check the **Add Stock Items** box beside an installation to ensure that AMOS will automatically create stock items at the checked installation in this case.

Discounts on Contract Level

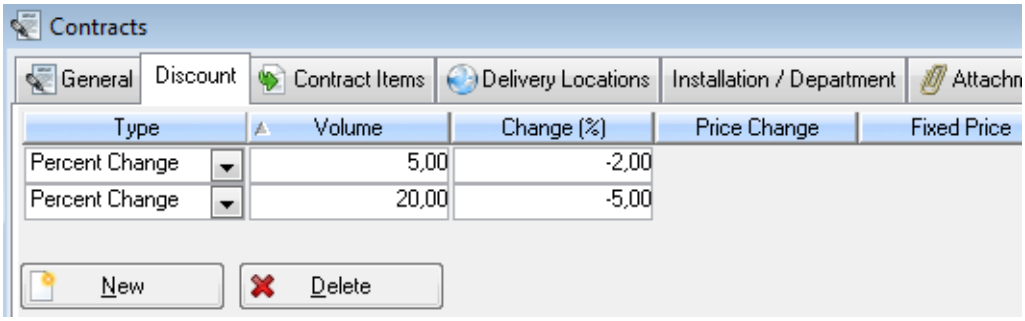
Use the Discount tab to apply pricing and discount information to every item on the contract at once. A contract-level discount will only be applied to an item if AMOS does not find a discount registered directly on the item itself or on the product group. See "Levels and Types of Discounts" on page 345 for more about different levels and types of discounts and how they are calculated and applied.

> **EXAMPLE**
>
> If 5 or more pieces of any one item on the contract are ordered, a 2% discount can apply to that item. If 20 or more pieces an item are ordered, a 5% discount can apply. If an item is ordered in a quantity less than 5, it will not receive the contract discount.

To define a discount on contract-level:

1. Select a contract in the Contracts window.
2. Open the Discount tab.
3. Click the **New** button in the tab.
4. Select the **Type**, specify the **Volume** of any contract item which must be ordered to receive the discount and then enter the percentage, deduction or fixed price accordingly.

   For example:



5. Click **Save** on the toolbar.

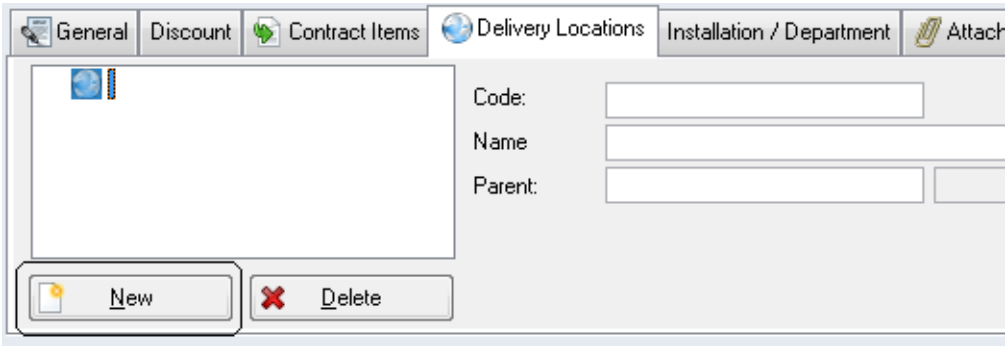
Defining Delivery Zones

Delivery locations differ from vendor to vendor and must be defined on each contract in the Delivery Location tab before you can populate the matrix in the Contract Items tab.

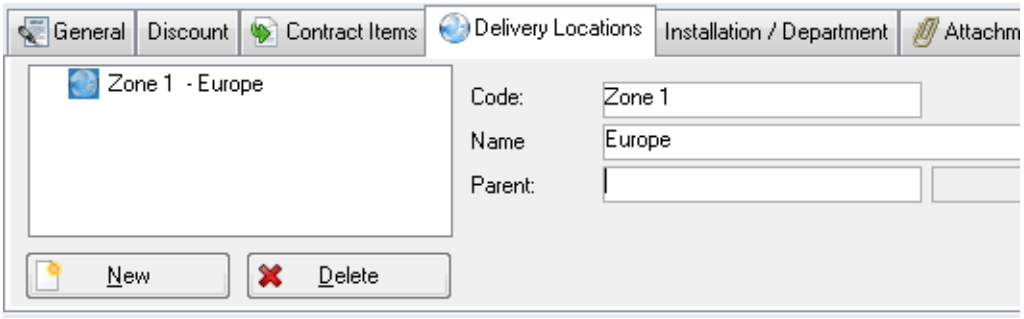
A delivery zone is any set region containing a group of delivery locations - ports, addresses, locations, or port calls - which the supplier will deliver the contract items to. Prices and discounts on product group items are usually affected by different delivery locations.

To define a delivery zone and build a location hierarchy:

1. Select the correct contract in the Contracts window list.
2. Open the Delivery Locations tab.
3. Create a zone by clicking the **New** button at the bottom left corner of the hierarchy panel:

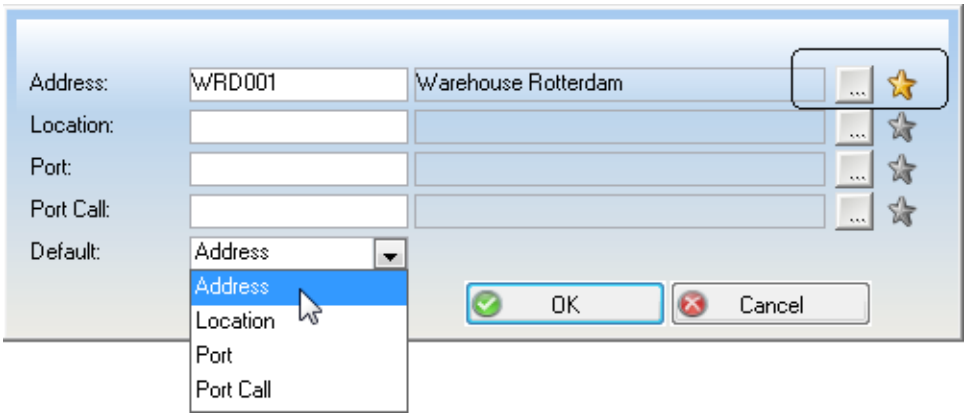


4. Define a **Code** and **Name**, for example Zone 1 Europe:



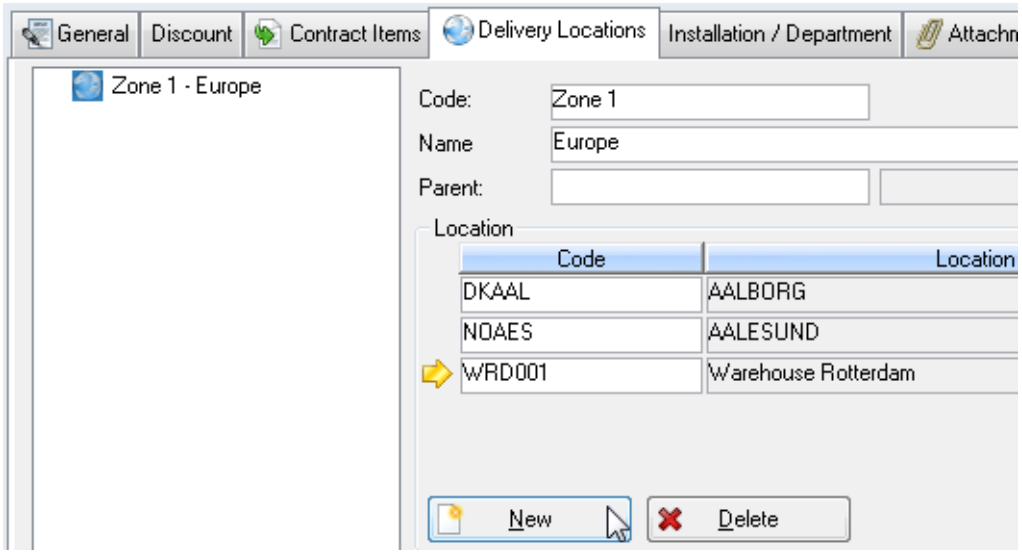
5. Click **Save**. Select the name in the hierarchy.
6. Click the **New** button in the Location area and use the lookup to find a location. Add multiple locations at once by holding the **CTRL** key in the lookup dialog and clicking to multi-select as many as required.
7. There are four options for specifying locations: by Address, Location, Port and Port Call.

   Clicking the  button next to the location lookup button opens a dialog where any of these options can be filled in. Select the one to display on the main window by clicking the star beside the field or selecting it from the drop-down **Default** list:

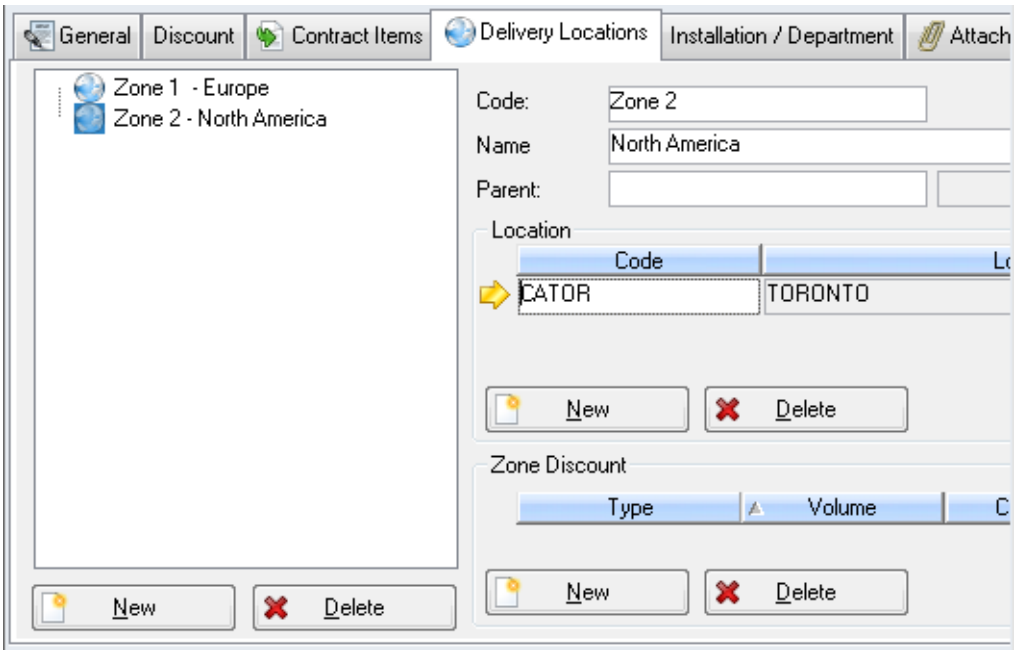


List all locations to which the vendor can deliver.

8. Click **OK** to return to the main window.



9. Add further zones and locations as required:



To remove a location from the group select it in the list and click the **Delete** button.

10. **Save** the list of locations.

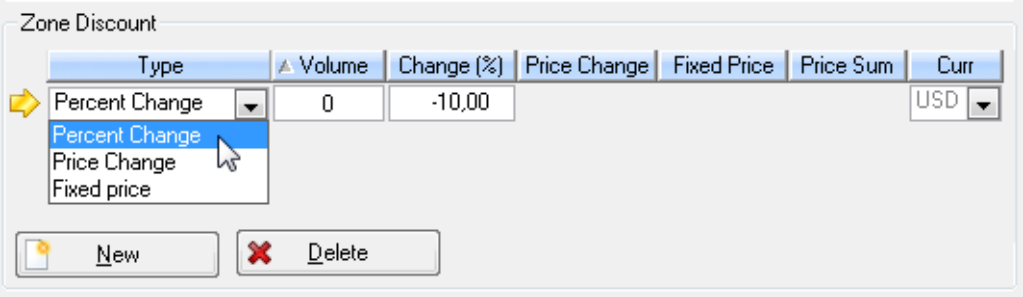
Discounts on Delivery Zones

Discounts and surcharges can be applied to an entire Delivery Zone: perhaps a 10% discount applies on a delivery of any item on the contract to any of the locations inside the selected zone.

There may be exceptions to the discount on certain items or for some of the locations inside a zone. You can apply these exceptions on the price matrix. See "Item/Location Discounts" on page 363 about applying exceptions to items/groups in combination with certain delivery locations.

To register a zone-level discount:

1. Select the correct contract in the Contracts window and open the Delivery Locations tab.
2. Select a Zone in the hierarchy.
3. Click the **New** button inside the **Discount** area.
4. Select the **Type**, specify if a certain **Volume** of an item must be ordered to receive the discount and then enter the percentage, deduction or fixed price accordingly.



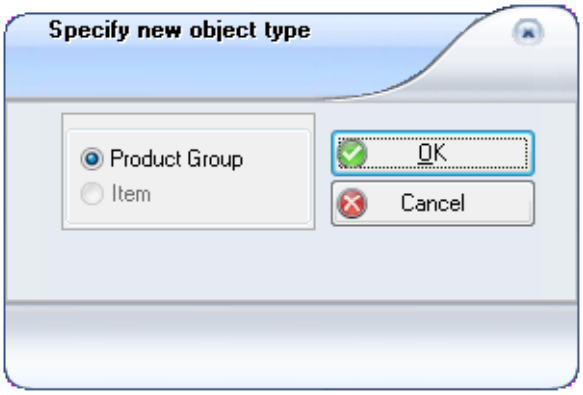
5. Click **Save**. Add more discounts if required.

Setting Up Product Groups

A contract Product Group contains a grouping of stock to be purchased on contract from the selected vendor, with agreed prices and discounts. You define these Groups in the Contract Items tab and assign stock before you can create and populate the price matrix in the same tab.

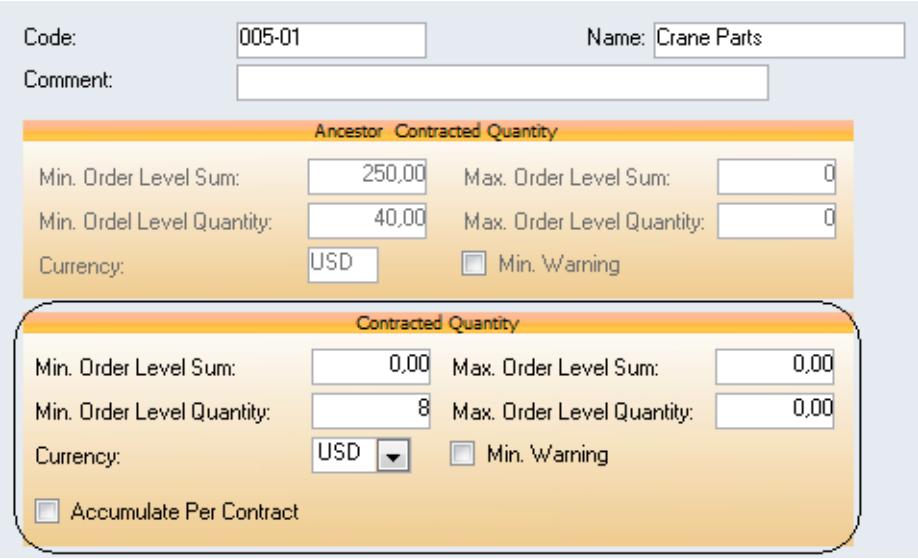
To add a new product group:

1. Open the Contracts window and ensure the correct contract is selected.
2. Open the Contract Items tab. If any Groups are defined already they will be listed here. Clicking the + sign beside a Group expands it to show any items already assigned to it, and you can view or alter its properties by clicking on it.
3. Click the  sign inside the Contract Items tab.
4. The Specify new object type dialog opens:

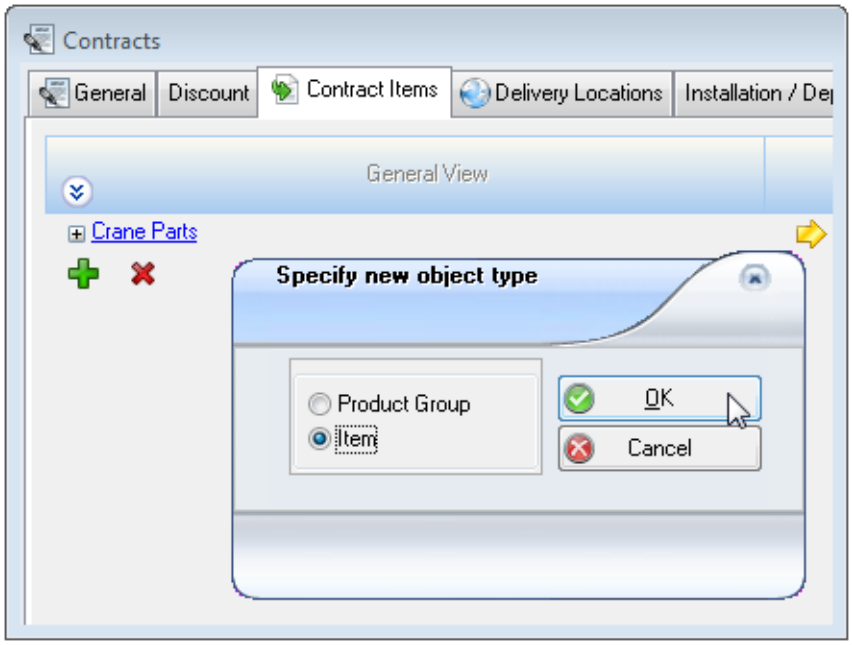


5. Click **Product Group** and then **OK**.

6. The New Contract Group dialog opens. Give the group a name according to the items to go into it: i.e. Crane Parts.
7. Enter the **Contracted Quantity** details as set out in your agreement with the vendor. These details apply to the entire Product Group:

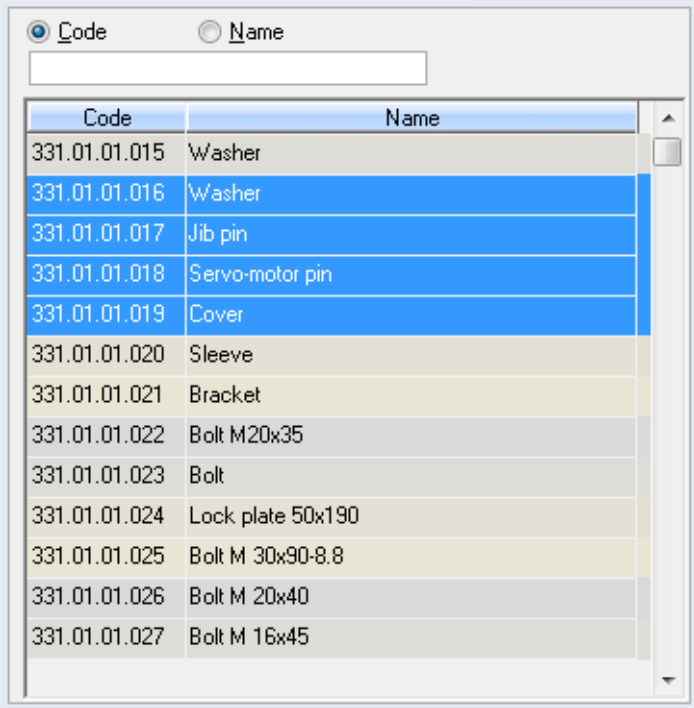


8. The same information can be entered on the Contract General tab and will apply across the entire contract, except where differing details are specified on a Product Group. Information already entered on the contract will appear in the **Ancestor Contracted Quantity** section.
9. Min/Max levels on a product group have to be met by the quantity or price sum of items ordered from that group. However, more than one purchase form containing line items from the same product group, can be tied to one contract. To allow these levels to be met by a combination of product group items accumulated on different purchase forms which are all tied to the same contract, check **Accumulate Per Contract**.
10. Click **OK**. Your new group will be displayed.
11. Add items to the newly defined Group: click  again and in the dialog, select Item:



12. Click **OK**.

13. The Stock Type/Items filter appears containing the Stock Types/Items which have been distributed to the current installation. Set filter criteria to narrow the list. Click **OK**.
14. The Select dialog appears: select an item/type to add to the group. By holding the **CTRL** key and clicking you can multi-select any number of items:



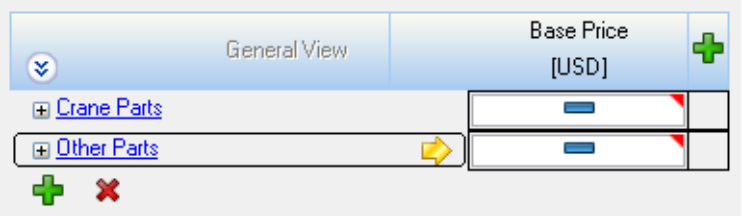
To add the selected item(s) click **OK** and return to the main window.

15. Click the + sign next to the Product Group to see the item(s) you selected to add[1]. Stock is categorised within the Product Group by Class:



If no class has been assigned on a particular stock item, it will appear in a default category labelled <None>. Clicking on a line will open the Stock Types or Stock Items window.

16. **Save** the window so far and then add all remaining product groups and items the same way, as required. Make sure the correct group is selected with the yellow arrow, when adding an item:



[1]Note that once an item has been added to a contract, the Contract No. will be listed on the Stock Type/Items windows Vendors tab for that item.



17. If delivery zones and locations are not already specified for this contract, do that now. When both zones and product groups/items have been registered, create and populate the price matrix.

Discounts on Product Groups

Discounts and surcharges can be registered on a product group and can then apply to all items inside that group, except where an item-level discount has been applied instead. This kind of discount is entered in the Product Group dialog.

> **EXAMPLE**
>
> A vendor offers a 10% discount on all paints. Rather than registering the discount against each individual paint, add all the paints to one Product Group. Then, apply the discount to the group. All items inside the group can receive the discount, according to volume ordered.

If the discount only applies to that product group when the delivery takes place at a certain location, register it on the price matrix. See "Item/Location Discounts" on page 363 about applying product group discounts in combination with certain locations.

To register a product group discount:

1. Select the correct contract in the Contracts window and open the Contract Items tab.
2. Click on an existing product group in the hierarchy.
3. Click the **New** button in the product group dialog to get a new line at the bottom.
4. Select the **Type**, specify if a certain **Volume** of items from this group must be ordered to receive the discount and then enter the percentage, deduction or fixed price accordingly:



5. **Click Save**. Add more discounts if required.

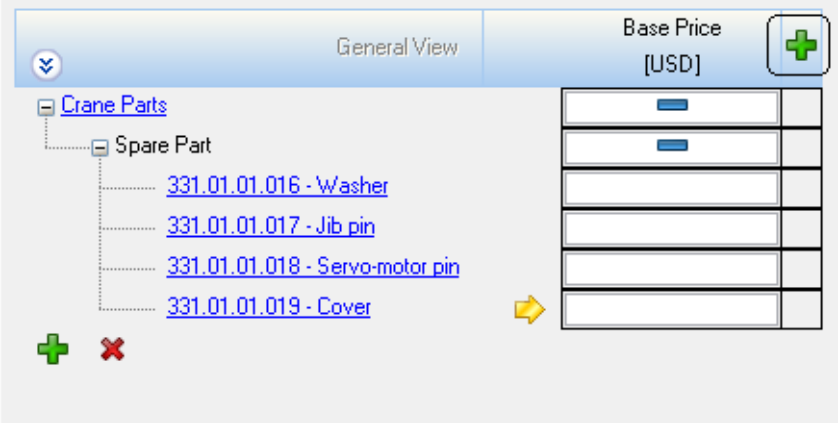
Creating the Price Matrix and Entering Base Prices

Delivery zones and product groups create a price matrix in the Contract Items tab: product groups and their items appear on the left side and delivery zones and their locations appear on the right. After defining these groups and zones the next step is to register the contract items' base prices and discounts by item/group and location combinations in the price matrix. The price matrix can be populated outside or inside of AMOS.

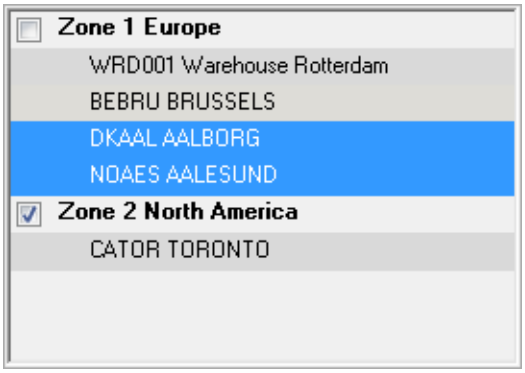
To create a price matrix:

1. Open the Contracts window and ensure the correct contract is selected.
2. Open the Contract Items tab.

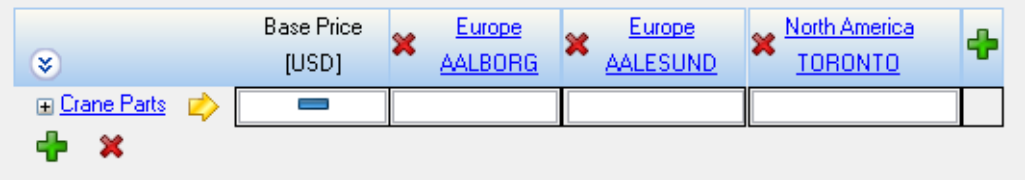
3. Add a delivery zone by clicking the button beside Base Price:



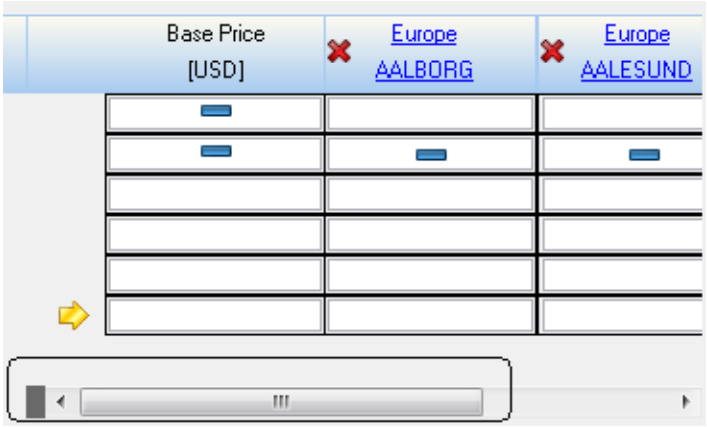
4. The Delivery Locations select dialog appears listing all locations defined against this contract. Select an entire Zone by checking the box, or select multiple locations by holding the **Ctrl** key and clicking on the locations you want to add:



5. Click **OK**. The locations will now appear at the top of the tab, forming the matrix:



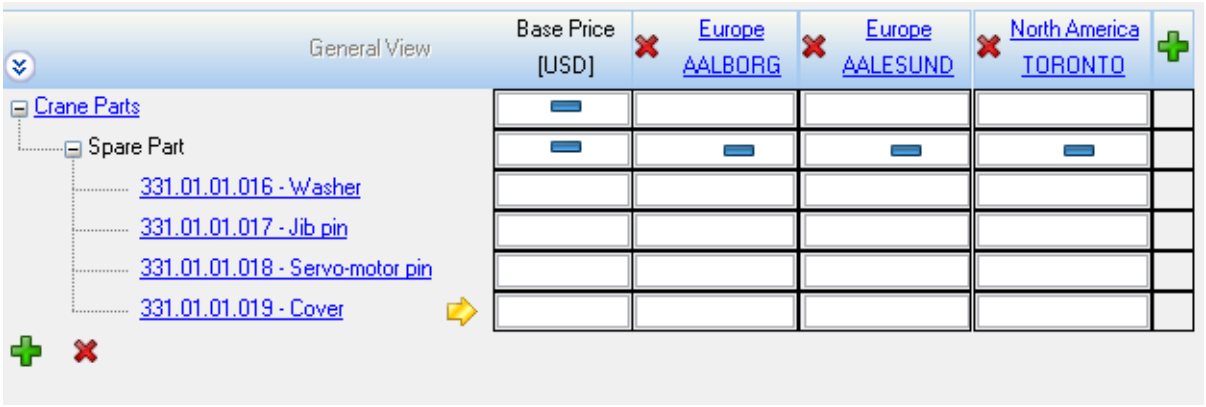
6. Depending on the size of the window or the number of columns you have displayed, all the columns might not be visible at once. In this case you will see a horizontal scrollbar at the bottom of the matrix and you can scroll the matrix back and forth:



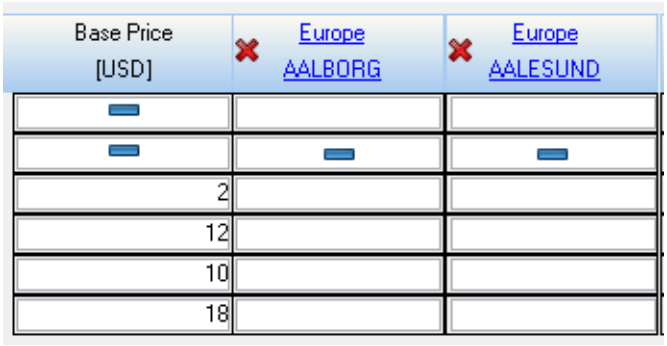
7. At the left side of the scrollbar you see a grey vertical divider line. You can click and drag this to

any place in the matrix thereby splitting the column display into two. All columns are available on each side of the split line and can be scrolled independently, to easily view delivery locations which were not originally displayed side by side.

Expand one or more Product Groups to work with:



8. In the first column, register the set Base Price for each item in the Group using the currency specified on the General tab. This price is standard for the vendor and independent of the delivery location:



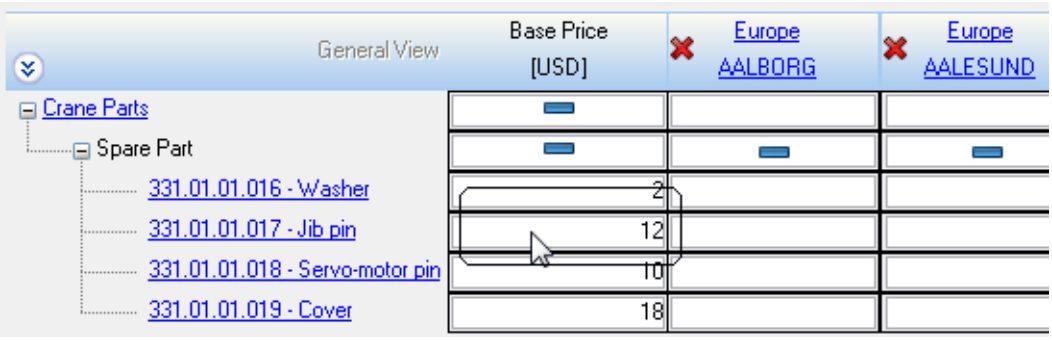
9. **Save** the matrix so far.

You can add any location defined against the contract in the Delivery Locations tab, to the matrix. However - you do not have to add all of them. For example, if there are no additional conditions applying to a particular location, you might leave it off the matrix. You can still create contracted purchase orders for locations which are defined on the Delivery Locations tab but not shown in the matrix. In such a case, AMOS would simply use the base price defined against the contracted item, and any item or zone discounts would also apply.

Discounts on Items

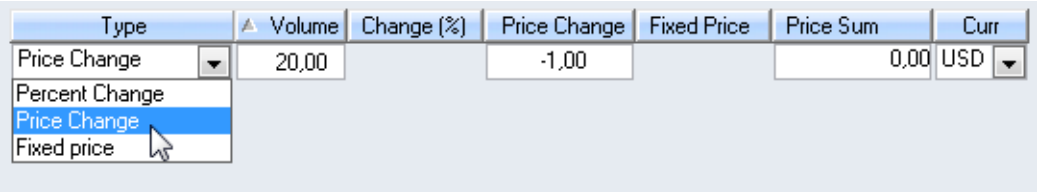
Discounts can be registered on individual items. Such a discount will apply whenever that item is ordered according to any required volume.

1. Ensure the correct contract is selected in the list in the Contracts window. Open the Contract Items tab. Expand the Product Groups.
2. Double-click on the base price cell next to the item:

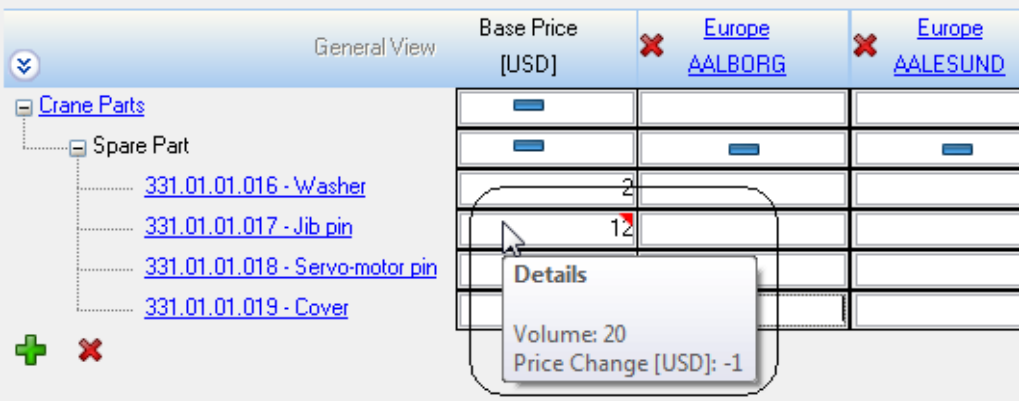


3. A dialog opens. Click **New** if other discounts are already listed. Select the **Type** of discount. If a certain quantity of the item must be ordered to receive the discount, specify the **Volume**. Enter the percentage, amount of deduction or fixed price accordingly.

   For example, a 1 USD discount applies per piece when 20 or more of the selected item are ordered:



4. Click **OK** to leave the dialog and apply the discount. A flag in the matrix cell indicates that details are present. Hovering with the mouse displays them in a tooltip:



Discounts on Locations

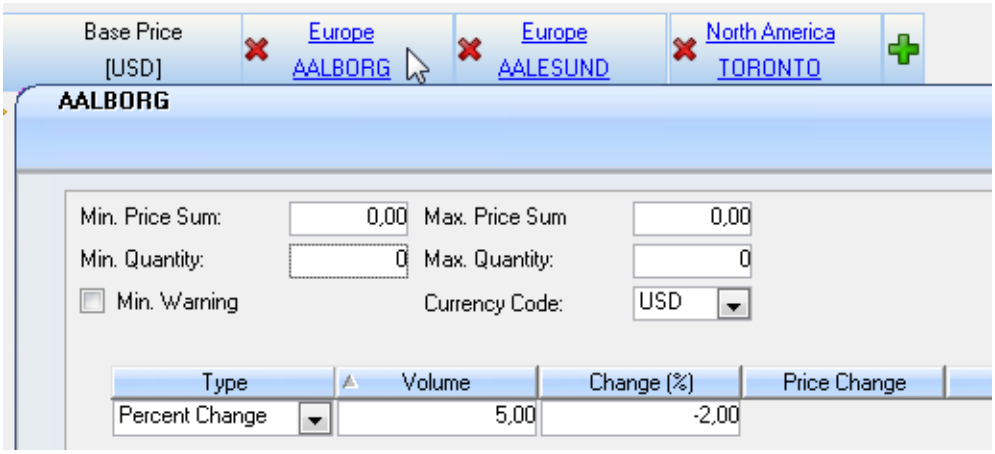
Discounts can be registered on individual delivery locations and can then apply when an item is ordered for delivery to that location, according to any required volume. Discounts registered on the matrix for an item or a group in combination with this location, will override the location-level discount.

See "Item/Location Discounts" on the facing page about registering discounts on items/groups in combination with selected locations.

To apply a discount on a delivery location itself:

1. Ensure the correct contract is selected in the list in the Contracts window. Open the Contract Items tab. Expand the Product Groups.
2. Click on the Location name in the top of the matrix.
3. A dialog opens. Click **New** if other discounts are already listed. Select the **Type** of discount. If a certain quantity of the item must be ordered to receive the discount, specify the **Volume**. Enter the percentage, amount of deduction or fixed price accordingly.

For example, any contracted item ordered in a quantity of 5 or more will receive a 2% discount when sent to Aalborg:



4. Click **OK** to leave the dialog.

Discounts on the Matrix

In addition to discounts registered on product groups and items, delivery zones and locations, and at contract level, discounts can also be entered on the price matrix:

- **Item/Location**. Apply a discount on a particular item only when that item is sent to a specific delivery location.
- **Group/Location**. Apply a discount on a product group in combination with a selected delivery location, which will apply when any item from that group is sent to the location.

Such discounts can apply to an order of a single item; they can also depend on the volume ordered.

Remember, when entering values into the matrix:

- a value entered without a + or - sign is automatically considered a discount and AMOS will add the - sign in front of the value.
- to indicate that a value is in fact a surcharge, enter the + sign before the value itself, i.e. +5%.
- to specify a percentage discount, enter the percent sign after the value, i.e. 5% or +5%.
- to specify a price discount/surcharge in the contract currency, simply enter the amount of the discount, i.e. 5 or +5. No currency code or symbol is needed.
- to specify a price discount/surcharge in a currency other than the contract currency, enter the currency code before the value, i.e. EUR 2,50, or +EUR 2,50.
- to specify an alternate fixed price on an item, enter the cost amount followed by an asterisk, i.e. 1,20 *. If the fixed price is not in the contract currency, enter the currency code before the value, i.e. EUR 6,00*.

To specify the volume of an item which must be ordered to receive a particular discount, double-click in the matrix cell and enter the discount in the dialog which opens. Read about volume discounts in "Discounts Depending on Volume" on page 365.

Item/Location Discounts

Location discounts can be applied directly on a delivery location and can then apply generally to any items sent there. See "Discounts on Locations" on the previous page.

However, discounts can also be registered on the price matrix for an item or a group in combination with a location, and will override the location-level discount.

To apply a discount on an item or a product group in combination with a selected location:

1. Enter the percentage or monetary value of the discount directly into the intersecting cells for the item/location or group/location.

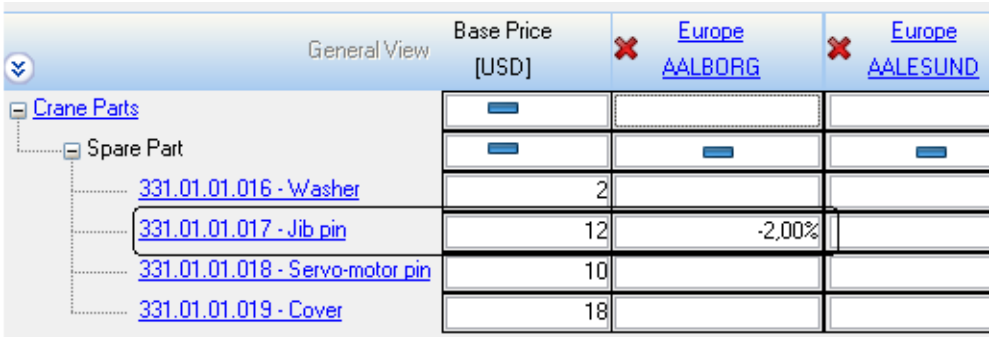
   See the examples below.

2. Or, if the discount also depends on the quantity ordered, double-click in the intersecting cell to specify the type of discount and the volume which must be ordered to receive the discount.

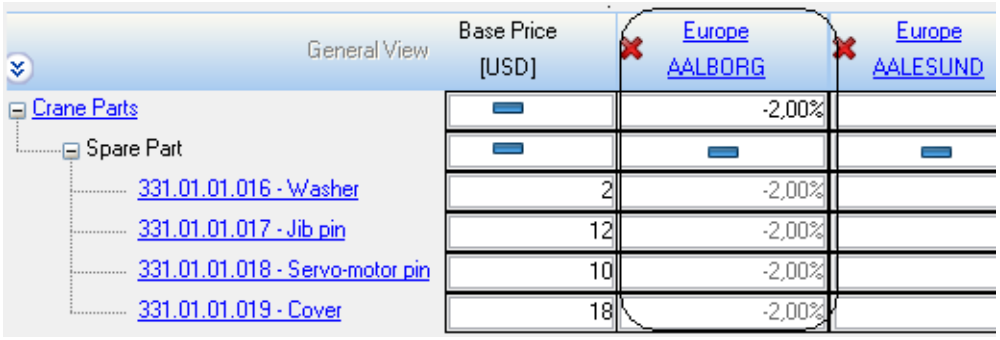
   See "Discounts Depending on Volume" on the facing page about specifying volume on a discount.

3. **Save** the matrix.

Discounts entered in the intersecting cell for an individual item and a location apply to that item/location combination only. As shown below, when item 331.01.01.017 is delivered to Aalborg a 2% discount applies:



Discounts entered in the intersecting cell for a product group and a location apply to any of the group's items delivered to that location. The value is copied into the cells below for every item in the group. So if the same discount as shown above were instead applied to the entire product group Crane Parts in combination with the location Aalborg, the matrix would look like this:



If an ancestor discount - such as a discount entered on the location itself or on the zone - already exists, the discount entered in the matrix cell is the one which will be applied. The two amounts are not added together. In the illustration below a 5% discount has been applied to Zone 1 Europe. However, when item 331.01.01.017 is sent to Aalborg it will receive a 2% discount instead:



Furthermore, there may be price exceptions at certain locations. That is, sending an item to a particular location could lower or increase its cost. To register an alternate fixed price find the appropriate cell on

the matrix and enter the price value followed by an asterisk. You only need to enter the currency code if the price is in a currency other than the contract's currency:

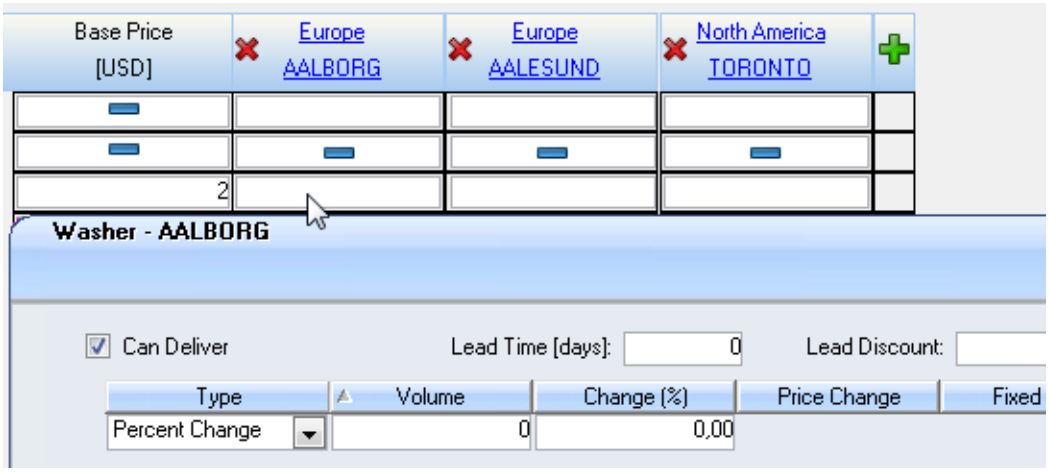


Discounts Depending on Volume

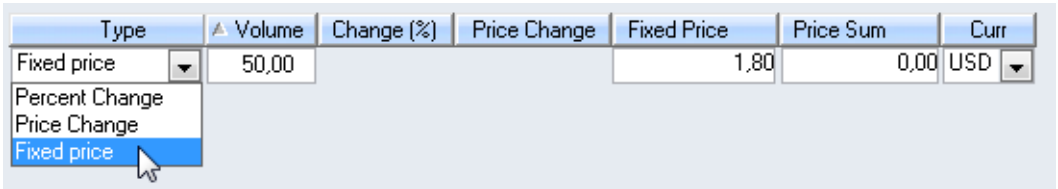
If a discount also depends on the quantity ordered, double-click in the intersecting cell to specify the volume which must be ordered to receive the discount.

> **EXAMPLE**
>
> Item 331.01.01.016 is listed on the contract with a base price of 2 USD per piece for any delivery location. However, if 50 or more pieces of that item are ordered for delivery to Aalborg, each item becomes 1,80 USD.

1. Double-click in the intersecting cell. A dialog opens.

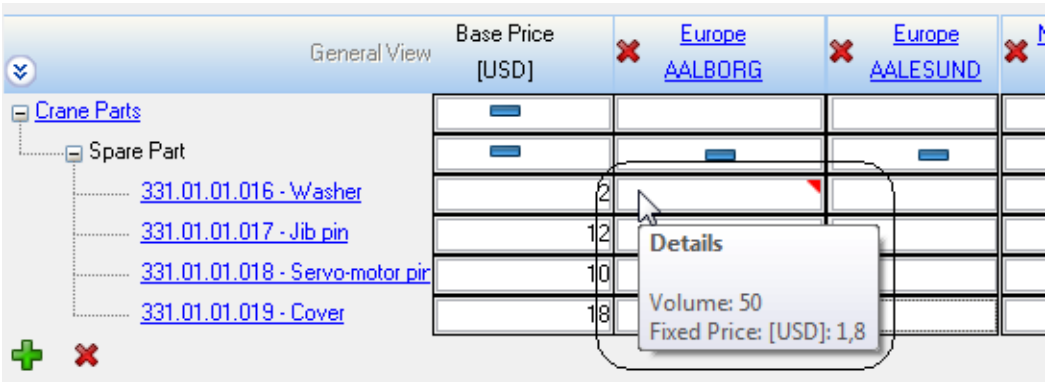


2. If other discounts are already listed, click **New**. Select the **Type** of discount, specify the **Volume** of the item which must be ordered to receive the discount and then enter the percentage, deduction amount or fixed price accordingly:



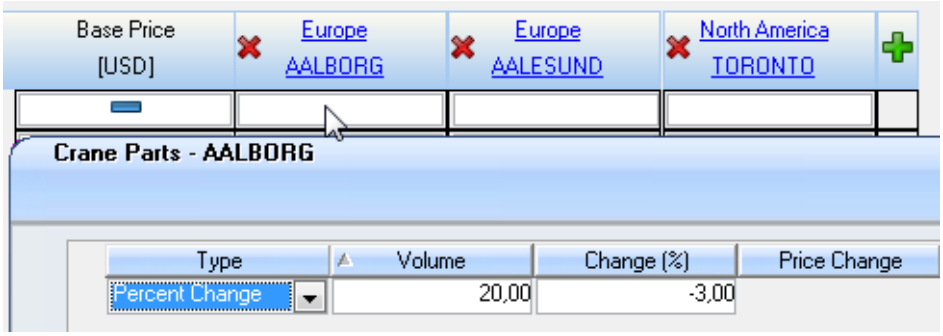
3. Click **OK** to leave the dialog and apply the discount. A flag in the matrix cell indicates that details

are present. Hovering with the mouse displays them in a tooltip:



To apply the same discount on every item within a product group, rather than entering it item by item apply it to the product group in combination with the location:

1. Double-click in the intersecting cell for the group and location:



2. Apply the discount in the dialog.

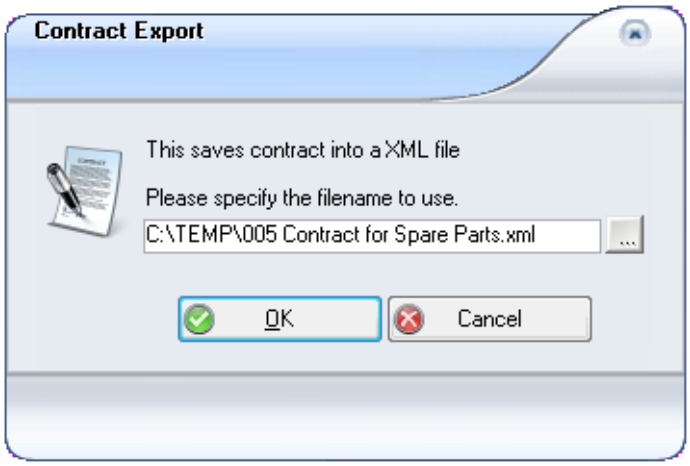
The discount shown above can apply to any single item inside the product group Crane Parts, when ordered in a quantity of 20 or more for delivery to Aalborg. It will not apply in cases where a discount has been registered on a group item in combination with Aalborg.

Populating a Matrix Outside of AMOS

The options to export and import contracts allow you to update contract pricing via an XML file. Export the contract to create the XML file and use your preferred XML editor to customise the display format. Send this file to the supplier for updates to pricing and discounts, which you can then import back into AMOS.

To easily populate the matrix outside of AMOS, export it as an XML file:

1. Select a saved contract with Delivery Zones and Product Groups defined.
2. Create the price matrix by adding delivery zones and locations to the Contract Items tab as described in "Creating the Price Matrix and Entering Base Prices" on page 359.
3. Go to **Options > Export Contract**:



4. Use the lookup button to browse to a location to store the file and enter a name for it.
5. Click **OK**. The contract is exported.
6. You can now open the contract file in an XML editor and add new or update existing prices there.

When finished with your changes, import the contract back into AMOS:

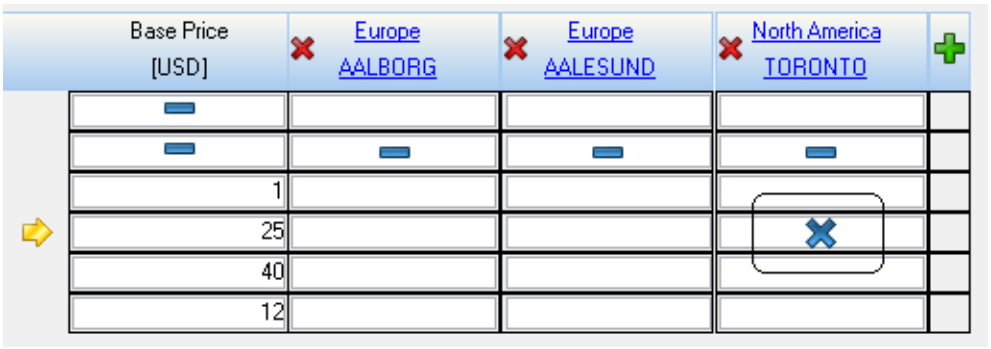
1. Open the Contracts window and select the contract.
2. Go to **Options > Import Contract**.
3. Lookup the contract and click **OK**.
4. The changed content is imported back into your contract.

See *Appendix A* at the end of this guide for more about XML file formats.

Undeliverable Items

Sometimes a vendor cannot deliver a certain item to a particular location:

1. Ensure the correct contract is selected in the list in the Contracts window. Open the Contract Items tab. Expand the Product Groups.
2. Double-click in the intersecting cell for the item and the location it can't be delivered to.
3. The dialog for the item in combination with the location opens. Uncheck the **Can Deliver** check-box. Click **OK** and the cell will be marked on the matrix:

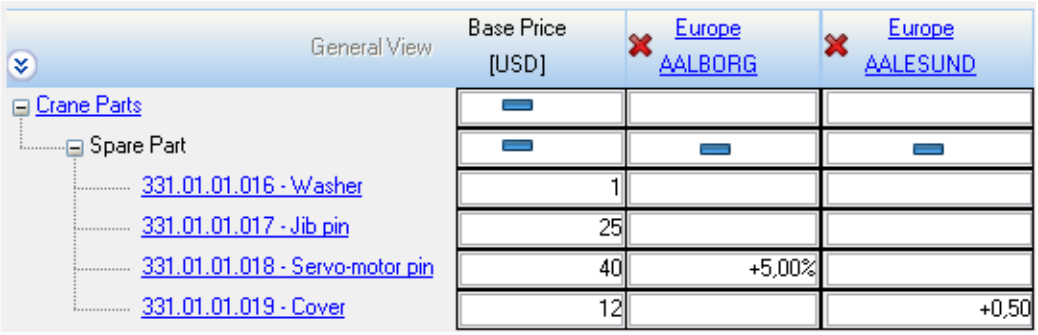


Surcharges

There might be a surcharge on certain items or delivery locations.

> **EXAMPLE**
>
> Item 331.01.01.018 delivered to Aalborg has a surcharge of 5%. Item 331.01.01.019 delivered to Aalesund has a surcharge of 0.50 USD.

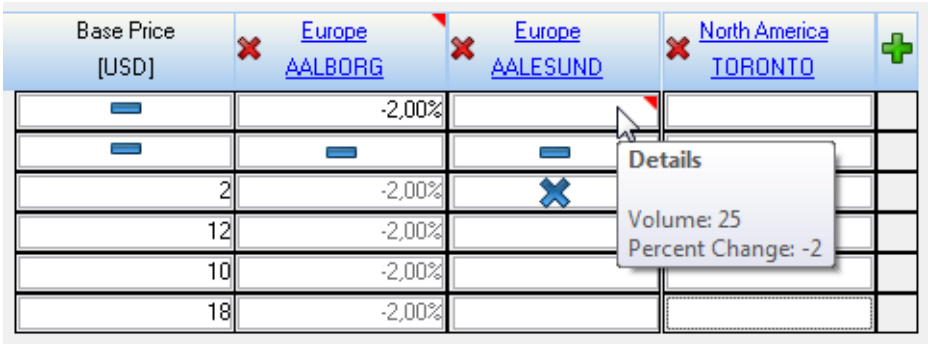
1. Ensure the correct contract is selected in the list in the Contracts window. Open the Contract Items tab. Expand the Product Groups.
2. You can enter a surcharge in the contract's currency or in a percentage, in the same ways as discounts are specified. Make sure to enter a + sign before the value; otherwise the system will assume you are applying a discount.
3. Again, if you are entering a surcharge directly onto the matrix expressed as a percentage, be sure to enter the % sign also:



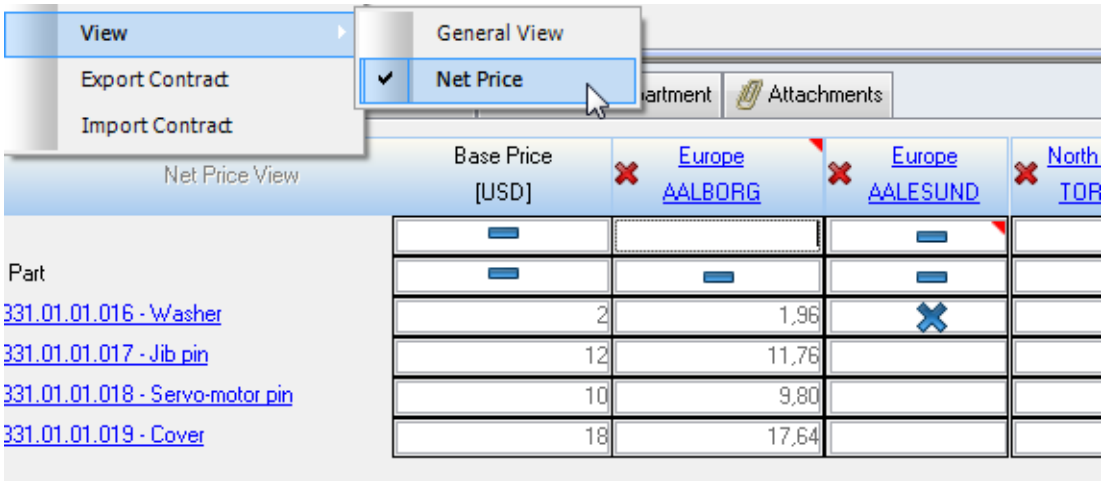
Price View on the Matrix

A matrix can be viewed from two perspectives: General or Net Prices. Both are available by selecting **Options > View >** .

The General View is the default and discount and surcharge values appear in the matrix as you input them:



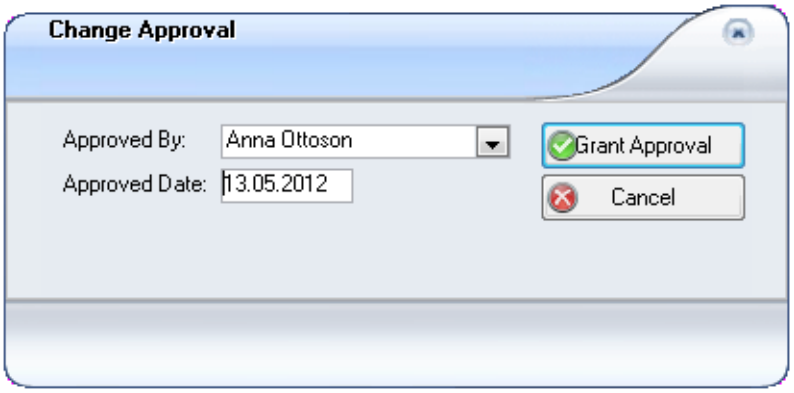
Changing to the Net Prices view shows the final costs on each item after discounts and surcharges:



Approving and Issuing a Contract

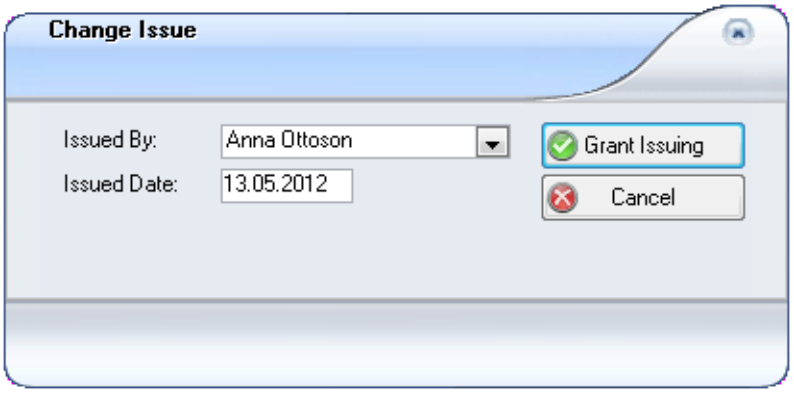
Only contracts which have been approved and issued will be available for use with Purchasing forms. When a contract is complete and all of its details are registered, select it in the list:

1. Open the Contracts window and select a contract.
2. Go to **Options > Approve**. The Approve dialog opens:



3. Click **Grant Approval**, and **OK**.
4. You return to the main window and the contract is now approved. Click **Save**.

   Selecting **Options > Approve** again will present the option to Revoke Approval, if necessary.
5. Once approved, to issue the contract select it again.
6. Go to **Options > Issue**. The Change Issuing dialog opens:



7. Click **Grant Issuing** and **OK**. You return to the main window and the contract is now ready for use.
8. **Save** the issued contract.

   Selecting **Options > Issue** again will present the option to Revoke Issuing, if necessary.

Applying a Contract to a Purchase Form

After registering and issuing an active contract in the Contracts window, it is ready to be applied to Purchasing Forms in the Forms window:

There are three ways to link a valid contract and a purchase form together:

- Select an existing form in the Forms window and apply a contract. See "Applying a Contract to an Existing Purchase Form" below.
- Create a new form in the Forms window and select a contract to apply to it during the creation process. See "Applying a Contract to a New Form" on page 373.
- Generate a new form automatically in the Stock Wanted window and select a contract to apply to it during the creation process. See "Generating Contracted Forms from Stock Wanted" on page 375

Certain conditions must be met in order to apply a contract to a purchase form.

Note: Applying a contract to a purchase form only affects the prices on that form. It does not change any vendor prices registered on the stock types/items.

Applying a Contract to an Existing Purchase Form

The option to tie a contract to an existing order form is only available when at least one valid contract exists and is assigned to the current installation[1], and no purchase contract is already tied to the selected form.

Which Contracts are Available?

A contract will be available for the form(s) you select if the following criteria are met:

- The current date is inside of the contract's start and end dates[2].
- The contract is Approved and Issued.
- If a vendor is specified on the form, it matches the contract vendor.
- The delivery location on the selected form is also defined against the contract.

What if the Form Already Contains Line Items?

Additionally, when line items are present on the form already:

- If the contract allows for non-contracted items[3] then a contract matching the other criteria can be applied even if some/all of the items on the form are not also on the contract.
- If the contract does not allow for non-contracted items[4], all items already present on the form must also be listed on the contract. If a line item on the form is not included on the contract, it will not be possible to link the form and that contract together.

To link a valid contract to an existing order form:

---

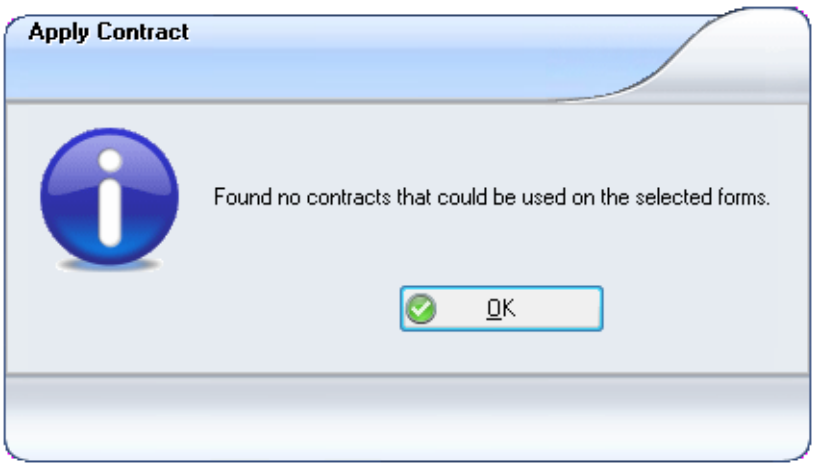
[1] The installation/departments where a contract will be available must be checked off on the Contracts window Installation/Department tab. This only applies when 'Use Stock types' is set to TRUE.

[2] If you apply a currently valid contract to a form but don't approve and issue the form until after the contract's end date, AMOS will notify you that the contract is no longer valid when you eventually issue the form.

[3] The 'Allow Non-Contract Items' box on the Contract's General tab is checked.

[4] The 'Allow Non-Contract Items' box on the Contract's General tab is unchecked. Only contracted items are allowed on purchase forms tied to that contract.

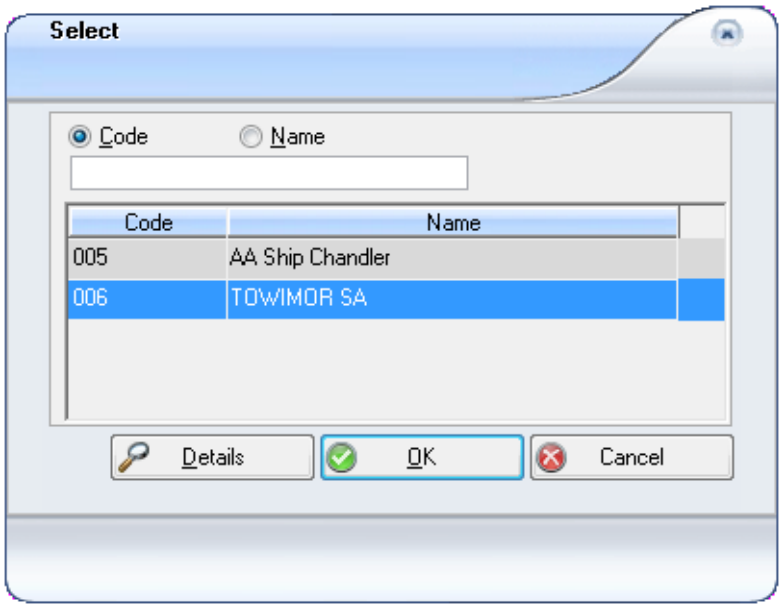
1. Go to **Purchase > Forms**. The Forms window opens.
2. Select one or more forms with a **Delivery Location** already specified.
3. Go to **Options > Apply Contract**.
4. AMOS will inform you if no applicable contract exists at all:



Otherwise, the following dialog appears:

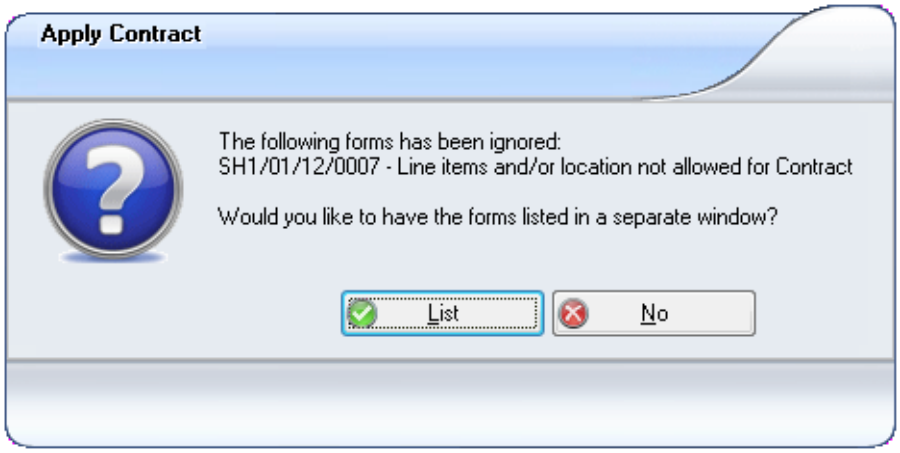


5. Click **Continue** to automatically apply the valid contract.
6. If you selected only one form or multiple forms with the same vendor on each one, you will return to the Forms window immediately with the contract now applied. Go on to Step 7.
7. If you selected any form(s) containing contracted items but with no vendor yet specified, or multiple forms with different vendors and a valid contract exists for each of these vendors, after you click **Continue** AMOS will present the Contracts filter. Select criteria or just click **Filter** to open a list of all contracts which are valid for these forms:



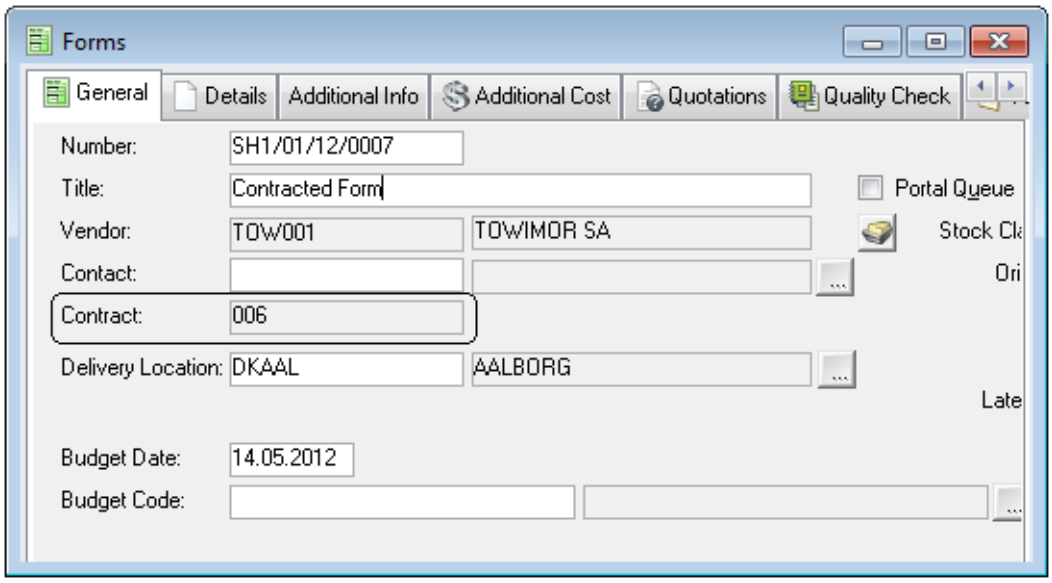
8. Select one and click **OK** to return to the Forms window.
9. The contract will be applied to the selected forms. Form(s) which previously had a different **Vendor** than the selected contract will now be updated to match that contract's vendor.

   However, if the location or line items are not a match on any one of the selected forms you will see this dialog before the Forms window:



   In that case click **No** to return to the Forms window directly or click **List** to see the ignored forms in a separate window. The contract will be applied where possible and the ignored form(s) will remain unchanged.

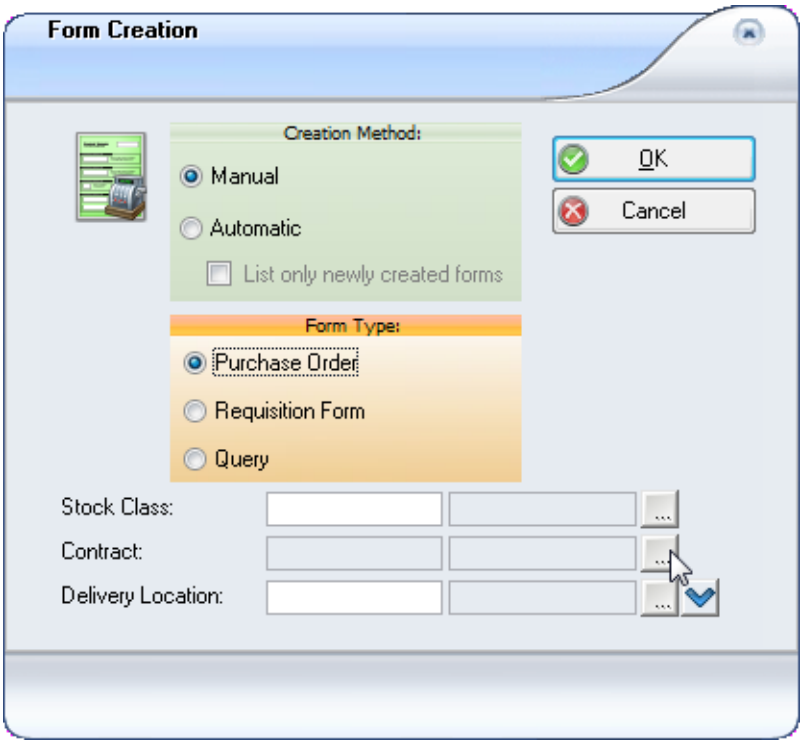
10. Once applied successfully, the **Contract** number appears on the General tab for each form the contract was assigned to:



Applying a Contract to a New Form

You can create a new form and select a contract to apply during the creation process. This option is only available when at least one valid contract exists and is assigned[1] to the current installation:

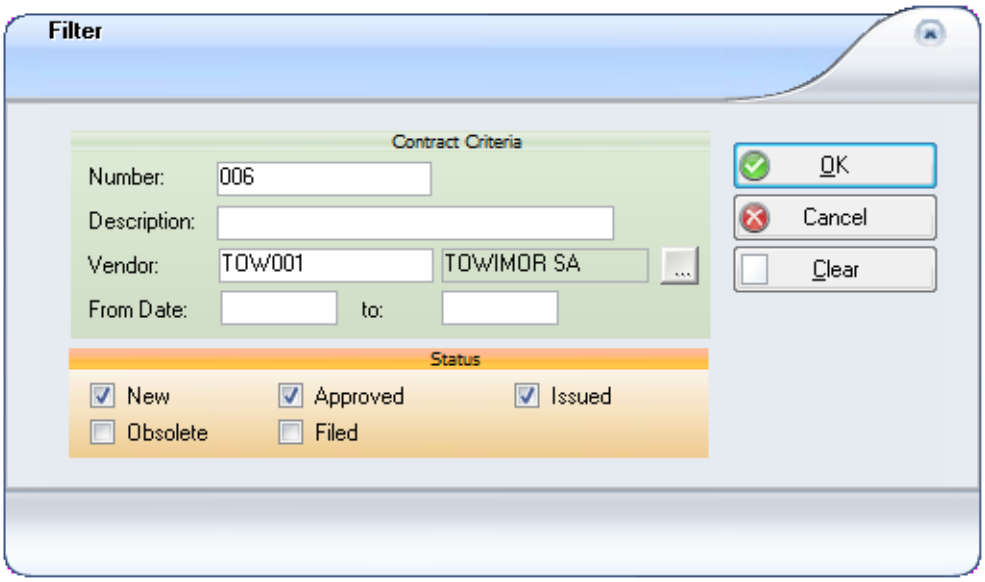
1. Open the Forms window and click **New** on the toolbar.
2. In the Form Creation dialog select **Manual** and **Purchase Order**:



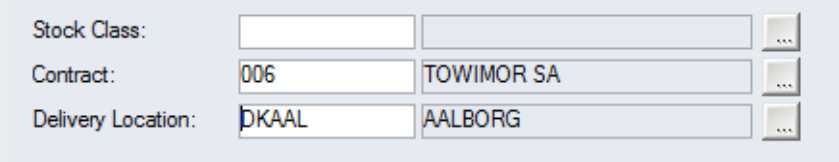
3. Click the **Contract** lookup button.
4. Use the filter to locate the required contract. For a contract to be available for selection:

[1]The installation/departments where a contract will be available must be checked off on the Contracts window Installation/Department tab. This only applies when 'Use Stock types' is set to TRUE.

- The current date must fall within the valid start and end dates of the contract.
- The contract must be Approved and Issued.

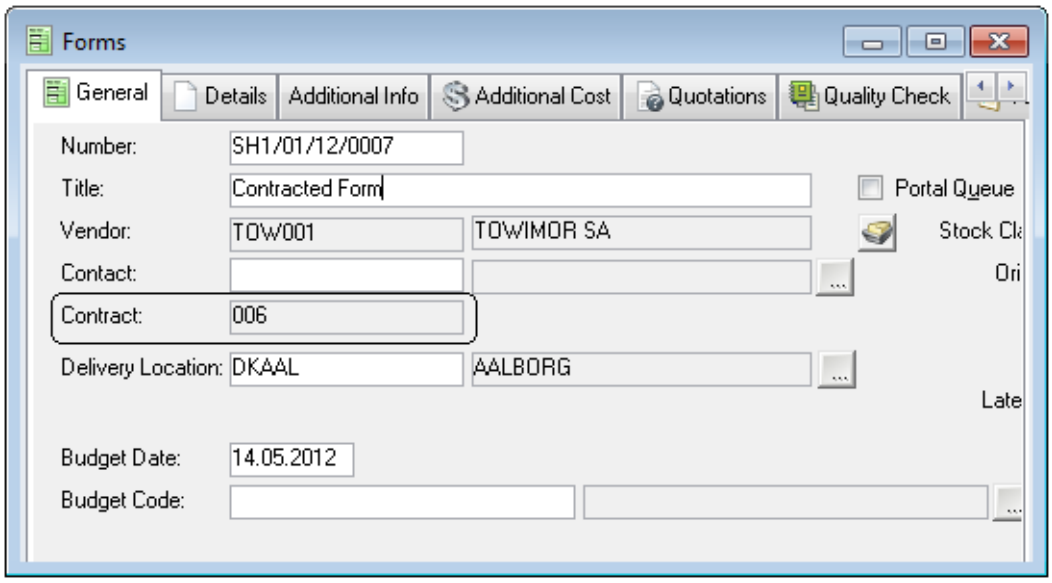


5. Click **OK** to return to the Form Creation dialog with the **Contract** entered.
6. Lookup a valid **Delivery Location** for the purchase order. It must be any one of the locations listed on the contract in the Delivery Locations tab:



7. Clicking the blue down-arrow beside the **Delivery Location** lookup lets you choose from any of the available four delivery destination options: Address, Location, Port and Port Call.
8. Click **OK**.
9. You return to the Forms window and the new form is created and linked automatically to the contract you selected. The **Vendor** as specified on the contract is already entered for you, along with the **Contract** number and **Delivery Location**.

   Now you can add the rest of the form's details such as a **Title**:

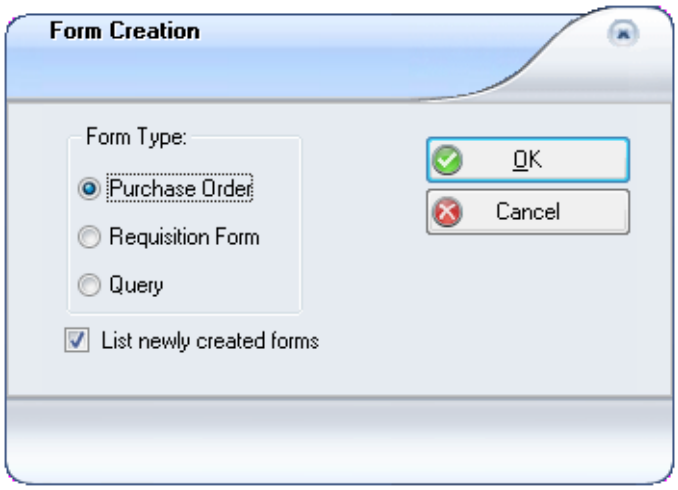


Generating Contracted Forms from Stock Wanted

When you generate purchase forms automatically from the Stock Wanted window, AMOS will detect if any of the required items are listed on contracts. In that case, you can assign contracted items for one vendor and location onto the same form and apply the applicable contract to that form. This option is only available when at least one valid contract exists for some of the wanted items, and the contract is assigned[1] to the current installation.

Note: The setting of the system parameter 'Ordering from Stock Wanted, Contract is Mandatory'[2] controls whether selecting and applying a valid contract and delivery location to a new form created from Stock Wanted for contracted parts is required, or not.

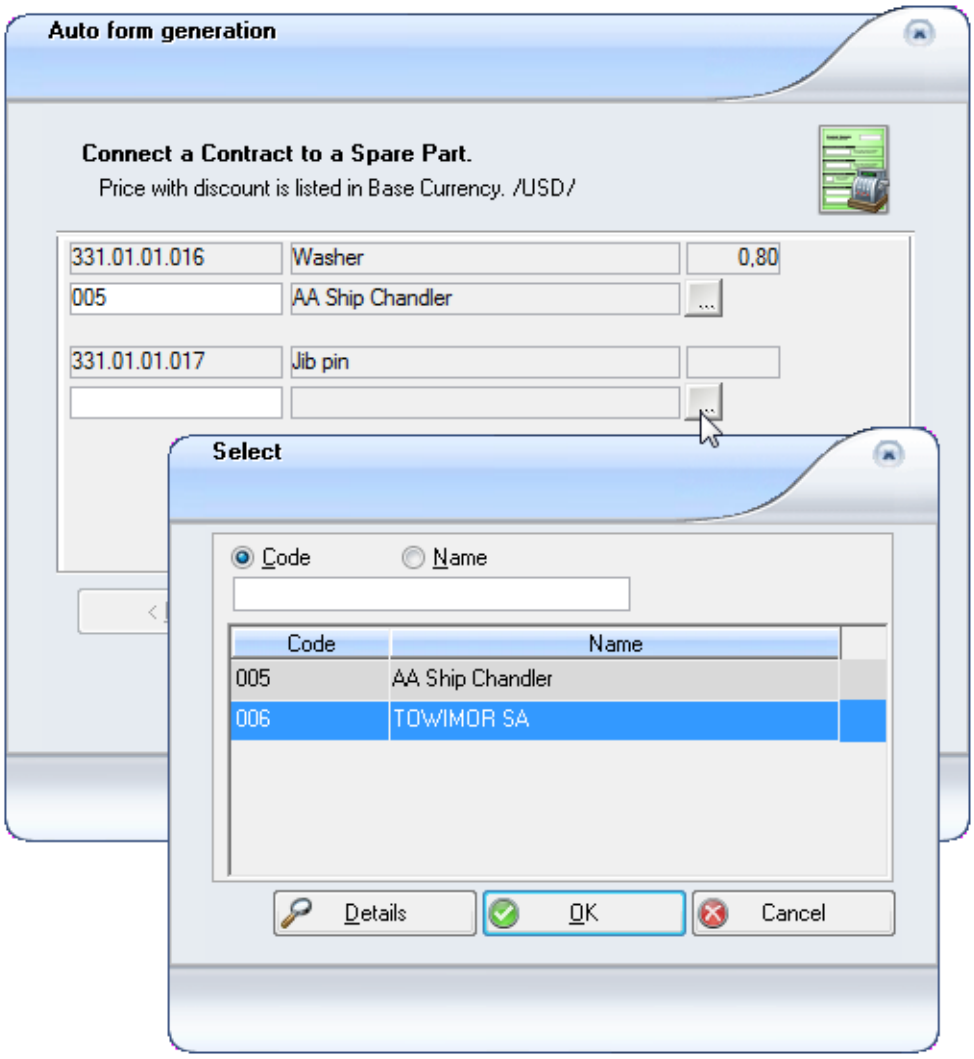
1. Go to **Stock > Stock Wanted**.
2. Update the **Wanted Quantities** column in the Stock Wanted window according to your requirements.
3. Select **Options > Generate Forms**.
4. In the Form Creation dialog, select **Purchase Order** and click **OK**:



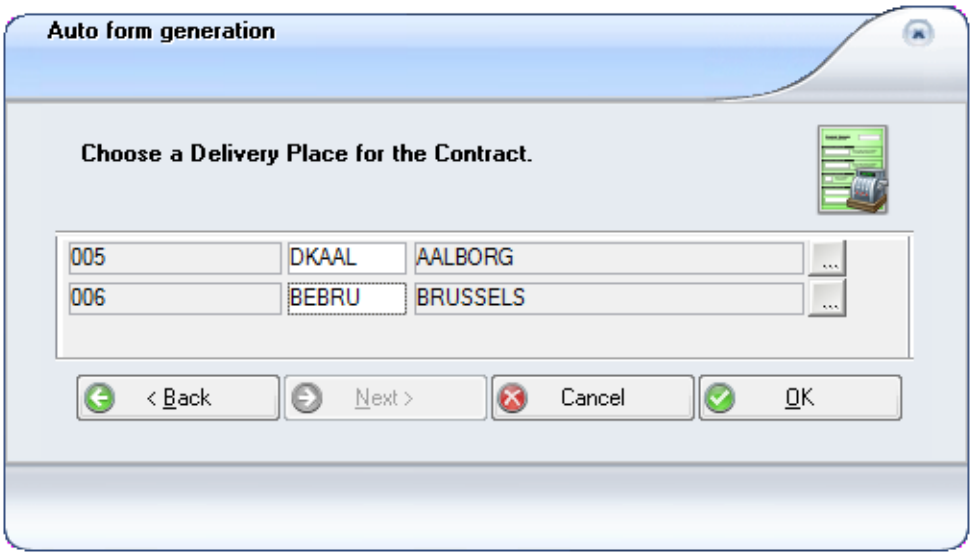
[1] The installation/departments where a contract will be available must be checked off on the Contracts window Installation/Department tab. This only applies when 'Use Stock types' is set to TRUE.

[2] Tools > Configuration > Parameters > Options > Purchase >

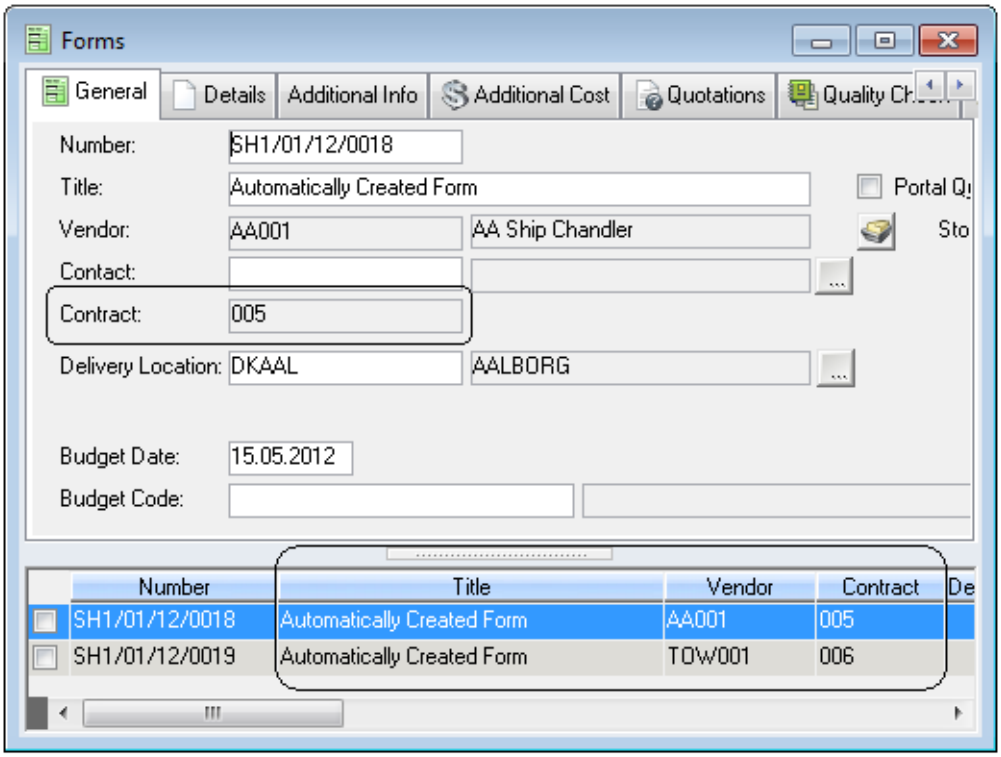
5. A filter opens; set criteria to locate items you want to include on the form(s), and click **OK**.
    - When only one contract is applicable for a required item, AMOS chooses that contract automatically.
    - If more than one contract is suitable for any of the wanted items, the next dialog will contain a list of these items and allow you to choose the contract to apply for each one:



6. For a contract to be available for selection:
    - The current date must fall within the valid start and end dates of the contract.
    - The contract must be Approved and Issued.
7. Select contracts and click **Next**.
8. Click the lookup(s) to select delivery locations for each contract order. Only locations listed on Delivery Locations tab for the respective contract(s) will appear for selection:



9. Click **OK**. AMOS creates the forms, placing contracted items for the same vendor and delivery location onto the same form and linking the contract to it:



Changing a Contracted Purchase Form

When a purchase form is linked to a contract, changing certain details on the form may render the contract no longer applicable to that form. Changing the vendor on a contracted form is not possible.

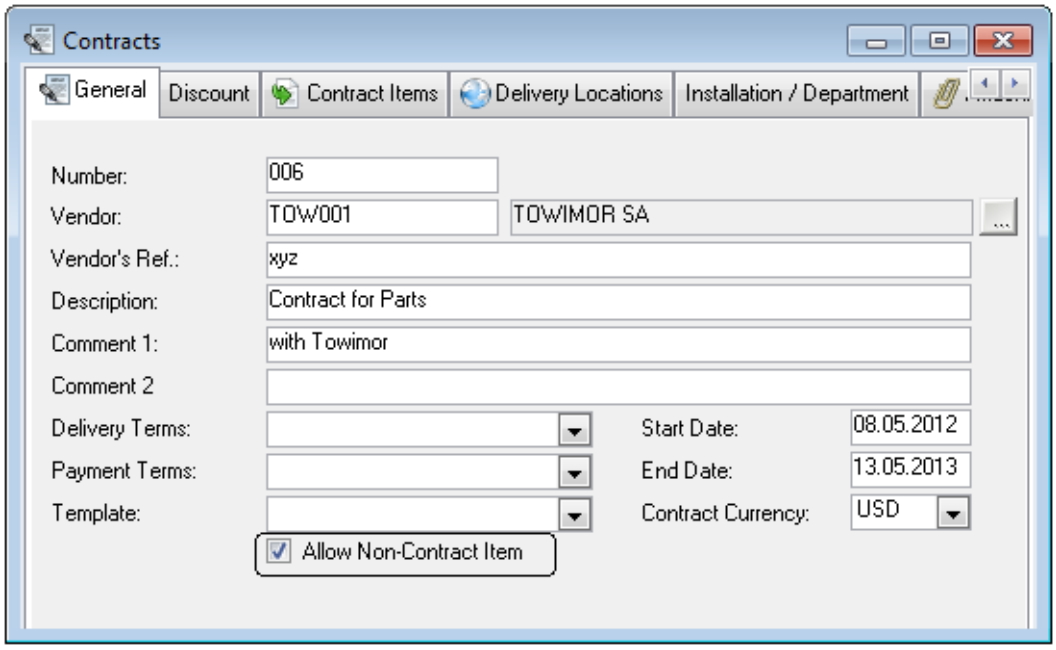
If you change the delivery location on a contract-based purchase order AMOS updates the prices accordingly. Only locations listed on the linked contract may be selected. However, if the vendor does not deliver one or more of the contract line items to the delivery location you try to select[1], AMOS will prevent you from changing the location field.

[1] The 'Can Deliver' checkbox is unchecked for one or more items on the contract in combination with the selected location.

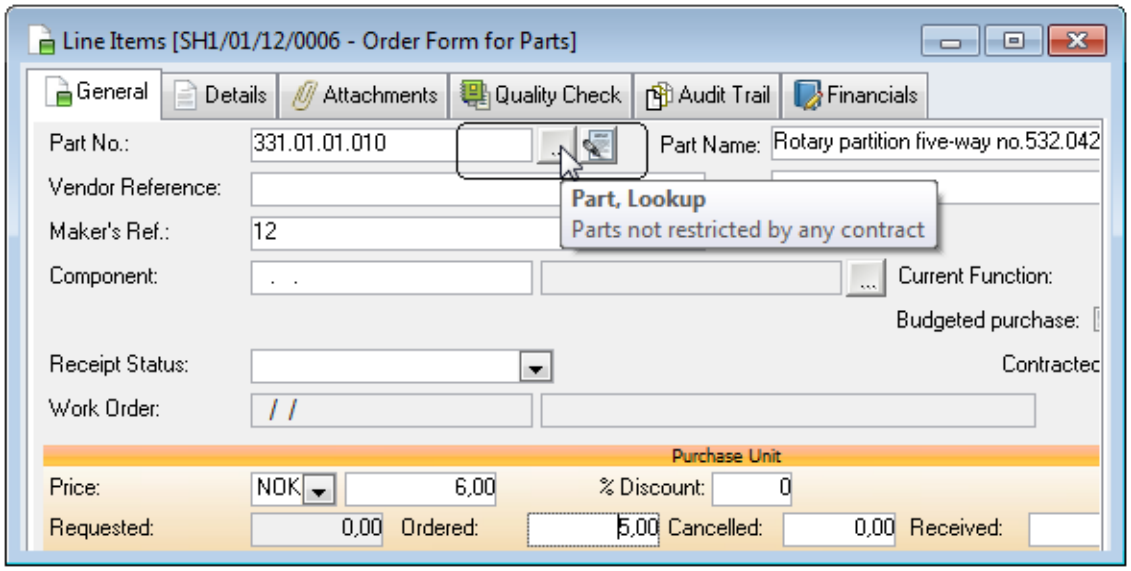
Adding Line Items to Contracted Forms

You may plan to order items from one vendor which are not included on that vendor's contract. Whether or not you can mix contracted and non-contracted items on the same purchase form for one vendor depends on the contract itself.

If the **Allow Non Contract Items** checkbox is flagged on the Contract's General tab:

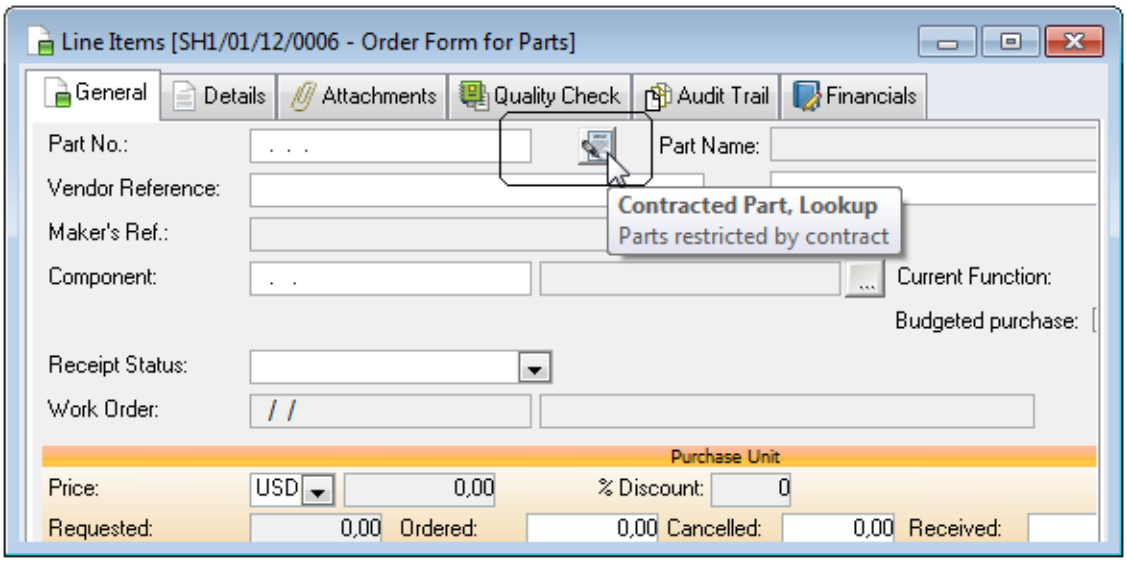


AMOS will let you add any line item to the purchase form whether it is a part of the linked contract or not:



When the contract does allow non-contract items, there is also a field added to the Line Items window: **Contracted Item**. It displays True or False, for every item on the form.

If the **Allow Non-Contract Item** box is not flagged on the contract, and such a contract is linked to a purchase form, the Line Items window for that form will only accept contracted items. The lookup button for **Part No.** will retrieve only the items available on the contract:



Splitting Line Items on Contracted Forms

When the contract allows it, and a form does contain a mix of contract and non-contract items you may decide to split away some of the items. Contract and non-contract items cannot be split in the same operation so if you plan to split multiple items at once make sure you only flag contracted items or non-contracted items, together.

Contracted items can only be split to existing forms already tied to a contract if:

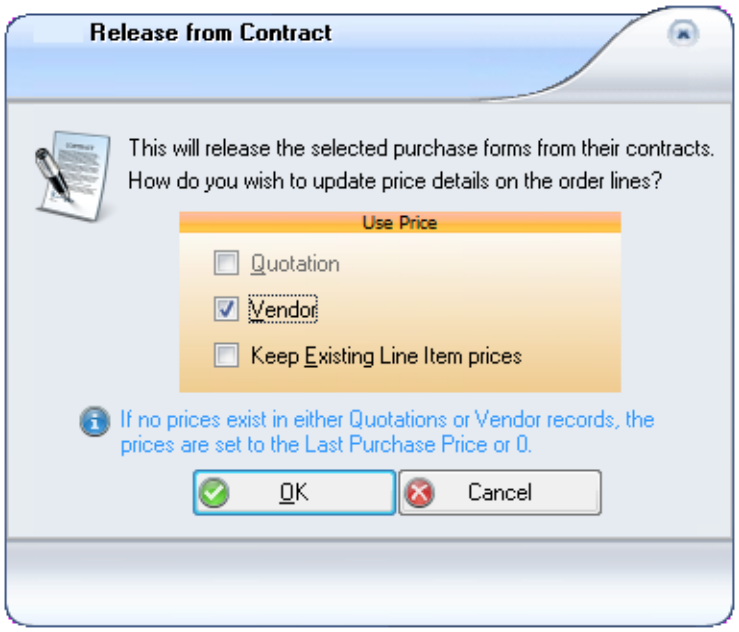
- the contract tied to the destination form allows for non-contract items, or
- the item you are splitting away is also a part of the contract already tied to the existing destination form.

If an existing form with a contract does not meet either of these conditions, it will not appear in the list for selection when splitting the contracted item(s).

Removing a Contract From a Purchase Form

If a contract has already been applied to a form you can remove it:

1. Go to **Purchase > Forms**.
2. Select the contracted form.
3. Go to **Options > Release from Contract**.
4. AMOS presents the Release from Contract dialog:



5. Choose which prices to revert to:
   - If a quotation for this form from the selected vendor exists, **Quotation** is checked by default. The line item prices change to the quoted prices.
   - Checking **Vendor** updates the prices according to the vendor prices set on the stock type/item.
   - **Keep Existing Line Item Prices** leaves the contract prices on the line items.
   - If no prices exist for some/all of the line items the prices will be set to Last Purchase Price or to 0.
6. Click **OK** to leave the dialog and release the form from the contract.

Note: Releasing a form from a contract and keeping contracted prices or reverting to other prices as set in the dialog, only affects the prices on this form. It does not change any vendor prices registered on the stock types/items.

Filtering Forms by Contract

To find all order forms linked to a specific contract, lookup the **Contract** number on the Basic tab of the Forms filter. AMOS will return a list of forms linked to the contract you have specified.

In the Advanced tab of the Forms filter, check the **Forms not linked to a contract, but where the goods line items are found on a contract** checkbox to filter for a list of any forms which are not yet linked to a contract but contain items which are listed on an existing and valid contract.

Custom Clearance

AMOS provides a Custom Clearance module for creating, managing and processing Custom Clearance Contracts and Forms when they are required.

The Custom Clearance (hereafter referred to as CC) process is outlined here:

1. A CC Contract is created between a buyer and a sub-contractor. It is then submitted to the proper authorities. Once approved and registered, the concession is valid for use.

   Record the details in the Custom Clearance Contracts window.

2. Materials can be purchased abroad under the approved concession without paying duties, for

use by the buyer's sub-contractor.

Enter ordering and purchasing dates in the Custom Clearance Forms window.

As the process continues, update all information and dates in the CC Forms window and update status on the documents using the Work Flow.

3. The vendor sends the purchased material to the buyer in one or more deliveries. The materials are transferred to a free zone and held there awaiting clearance and 'actual' delivery.
4. Submit delivery reports referencing the CC Contract between buyer and sub-contractor to the same government office.
5. If approved under the concession the government office issues a Custom Declaration. If denied, the buyer must pay the duties.
6. The buyer submits the Custom Declaration to Custom Authorities.
7. The materials are moved from the free zone and delivered to the destination.
8. At the expiry of the CC Contract Custom Authorities will classify the material as Asset or Consumed to finalise the contract. Material classed as Asset can be re-exported, or transferred to another sub-contractor under another valid contract, or, the duty can be paid on it and it can then be kept. For materials deemed Consumed, no action is taken for those of low value and for those of high value, loss and damages incurred are reported.
9. Create a 'Settlement of Finalisation' document to finalise the Custom Declaration.

Creating a Custom Clearance Contract

A Custom Clearance Contract must be created between a buyer and a sub-contractor and approved by the appropriate governmental authorities before you can begin importing materials for the sub-contractor's use, duty free. When approved and registered, the concession is valid for use. Its details and information can be maintained in this window, until its expiry.

To create a Custom Clearance Contract:

1. Select **Purchase > Custom Clearance Contracts**. Filter and open the window.
2. Click **New** on the toolbar and fill in the General and Details tabs.
3. The Forms tab is read-only. It shows the list of forms that are connected to the selected contract, in the case of contracts that already exist. The connected forms are linked to the contract in the Forms window, Additional Info tab. To view a form, select it and click the **View** button. The Form will open in the Forms window.
4. **Save** your information.

Creating a Custom Clearance Form

Custom Clearance Forms contain all the details about the Customs Declaration, and the Custom Clearance Contract and processes, for the sub-contractor. These forms are very important for maintaining records of all the dates involved in the Custom Clearance process.

Upon receipt of a new Customs Declaration, you create a CC Form here, and then open the existing record and enter the date and information applicable to each step of the process: for example, the date the CC Contract is Submitted to the authorities, the date it is Processed, the order forms linked to the contract, the date the items arrive in the Free Zone, etc.

To create a new Custom Clearance Form:

1. Select **Purchase > Custom Clearance Forms**. Filter and open the window.
2. Click **New** on the toolbar.
3. Fill in the General tab and click the lookup button to choose the CC contract which this Declaration applies to.
4. Enter the **Date** applicable to the CC contract so far - the date it was Created, the date it was Sub-

mitted to the governmental authorities, etc.

5. **Save** the window.

Adding Forms and Expenses to Custom Clearance Forms

Open the Forms tab on the Custom Clearance Forms window and click the **New** button to attach any order form or quotations to the CC Form. The Forms linked here will appear in a read-only list in the Forms tab of the Custom Clearance Contract window. To view a form already there, select it and click the **View** button and the Forms window opens.

Open the Expenses tab on the Custom Clearance Forms window and click the **New** button. Select the **Type** and **Cost** of the Expense(s) related to this Custom Clearance operation - like Duty, Storage Fees, Transportation, etc.

Custom Clearance Form Work Flow

Custom Clearance Forms are driven, and the work flow Activities tab displays any work flow operations performed on the selected Custom Clearance Form. Whenever the form progresses to a new stage, ensure that its work flow status is updated.

For example, you have an existing CC Form with status Submit. This indicates that the CC Contract details have been submitted to the appropriate government authorities. Then you receive approval from the authorities for the contract. At this point, you would enter the date in the **Processed Date** field on the General tab, and then change the work flow status:

1. **Save** the selected record.
2. Go to **Options > Work Flow**.
3. Choose the action that leads to the status 'Issued' (for a contract that has been approved). Click **OK**, and the status is updated.
4. The new status appears in the General tab and the work flow actions are recorded in the Work Flow Activities tab.

Custom Clearance Items and Finalisation

In the Custom Clearance Forms window, select **Options > Items**, to open the corresponding window. The line items for the selected CC Form are listed here.

Select a line item and use the lookup buttons to enter details regarding the item's:

- **Delivered Date** (date it arrived at the warehouse).
- **Transferred Date** (date if was re-exported, or transferred to a free zone).
- The **Quantity** of the item, **Duties Paid** (if any), and **Status**. To change the status of multiple items, tag several items and go to **Options > Set Status**. Proceed to change the status as you would for just one item.
- **High Value** (in the case of loss or damage to an item of high value, reports must be provided to the authorities during Finalisation).

The Finalised Info tab contains the Finalisation records for the selected item. One item can have any number of records. Clicking the **Insert** button allows you to enter a new record, when an item is finalised.

Completing a Finalisation Record

1. Select a **Finalise Type** - for example, is it an Asset (re-usuable, to be exported again)? Or is it Consumed (damage or used)?
2. **Expense Type** - select the type of expense related to the item (if you have to pay for transportation or duty, on the item, for example).
3. Select the **Quantity** of finalised items, Currency Code and Receiver ID. The Unit field is read-only and comes from the line item record.

4. **Save** the information.

CHAPTER 4

Financials

See what has been spent on various maintenance activities or purchases, and what is planned or budgeted to be spent in the future. AMOS can help you monitor costs compared to your yearly budget. Using the AMOS financial module you can:

This chapter includes the following topics:

Creating a Budget 386
Budget Specifications 389
Vouchers 390
Budget Breakdowns and Progress 394
Budget Prognosis 394
Budget Commitment Control 394
Budget Commitment Formula 396
Using Budget Hierarchies 397
Elements Which May Affect the Budget 398

SpecTec

Creating a Budget

The budget is divided into three Budget Classes:

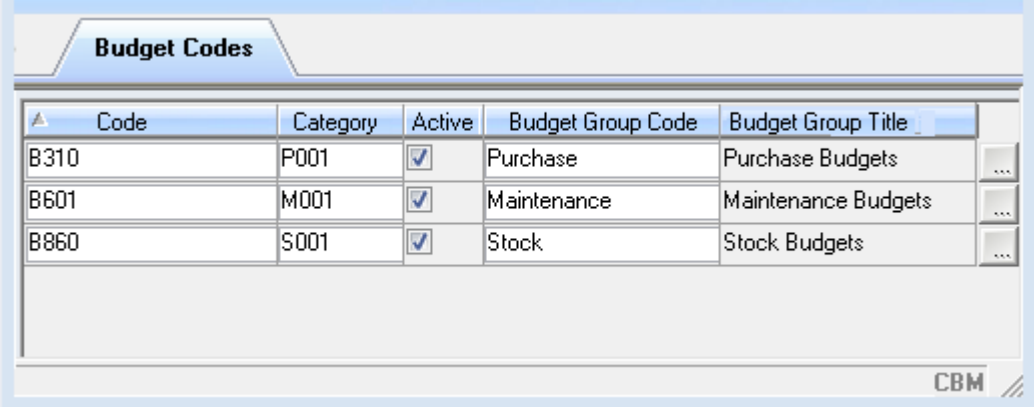
- **Purchase**. Used for purchased items, and the amounts for following up the budget are transferred from Purchase Orders.
- **Stock**. Used to track the cost of stock consumed, and amounts from Stock Transactions are transferred to the budget.
- **Maintenance**. Used to track the resource costs spent on maintenance, and amounts are transferred from the Maintenance Log.

To create a new budget:

1. Define a budget code. See "Defining a Budget Code" below.
2. Add the details to the Budget Overview window. See "Adding Budget Details" below.

Defining a Budget Code

1. Go to **Tools > Configuration > Budget > Budget Codes**.



2. Click **New** in the toolbar.
3. Enter a **Code and Title** and make sure that the **Active** checkbox is flagged.
4. Select a **Budget Group Code** and **Title** to create a budget hierarchy.
5. **Save** the window.

Adding Budget Details

You set up the details for a budget in the Budget Overview window, accessed from the Budget window itself.

Reviewing Budget Details

To see the overview for any budget, select it in the Budget window and go to **Options > Overview**. Eventually, as expenses are registered against the budget the Overview window will show:

- **Monthly totals**. Information about monthly consumption on this budget code.
- **Accumulated** expenses, corresponding budget figures and the variance.
- If Budget Commitment Control functionality is enabled, you'll see forecasted values also. See "Budget Commitment Control" on page 394
- You can also view cumulative budget overview figures in the Budget Hierarchy window.

Editing a Budget

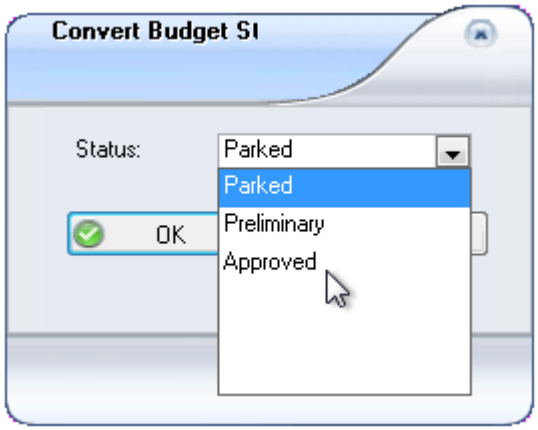
To edit an existing budget:

1. Go to **Financial > Budget**.
2. Double-click on a budget code, or select it and go to **Options > Overview**.
3. Make your changes in the Overview window.
4. **Save** and close the window.

Setting Budget Code Status

A budget code may have one of three statuses: Preliminary, Approved or Parked. If you have the correct access level, you may convert the status of a budget code:

1. Go to **Financial > Budget**.
2. Select a budget code or flag several.
3. Go to **Options > Convert**:

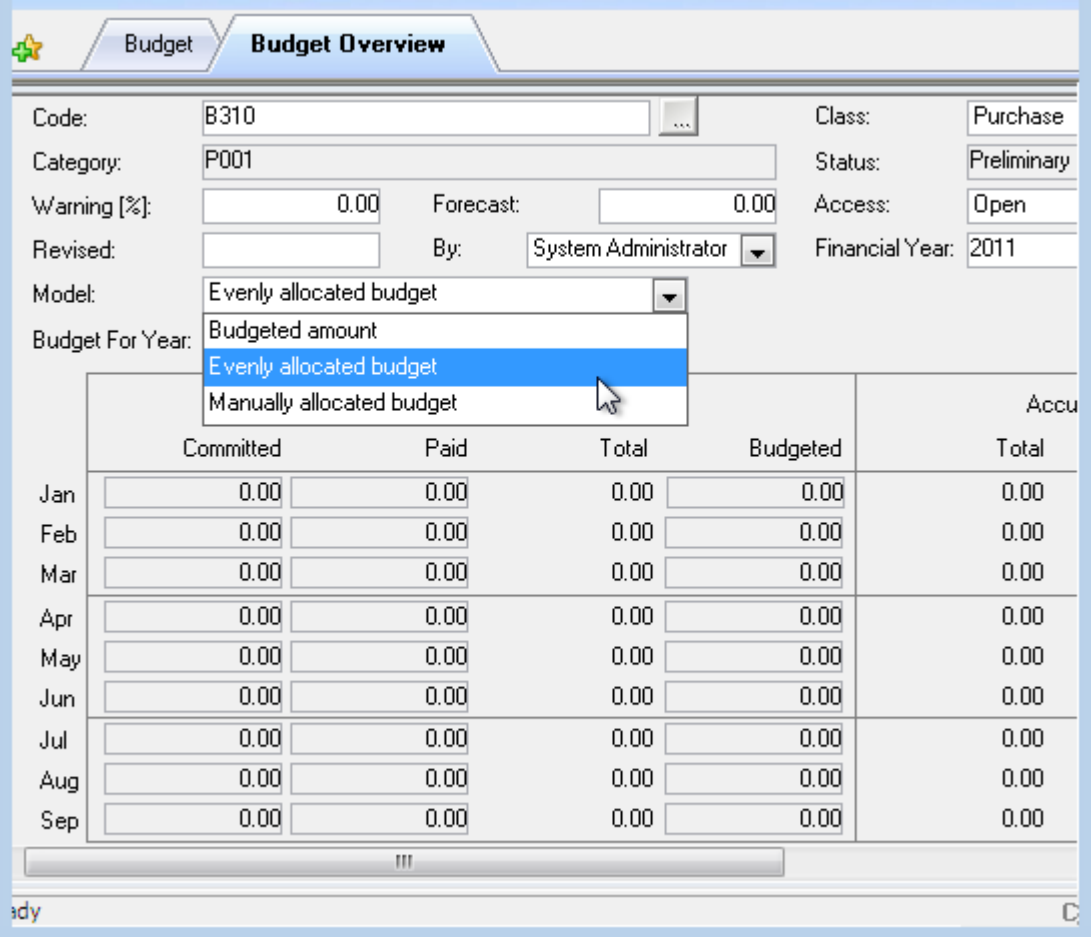


Select a new status.

4. Click **OK** to return to the Budget window with the new status set.
5. **Save** the window.

To open the Budget Overview and add budget details:

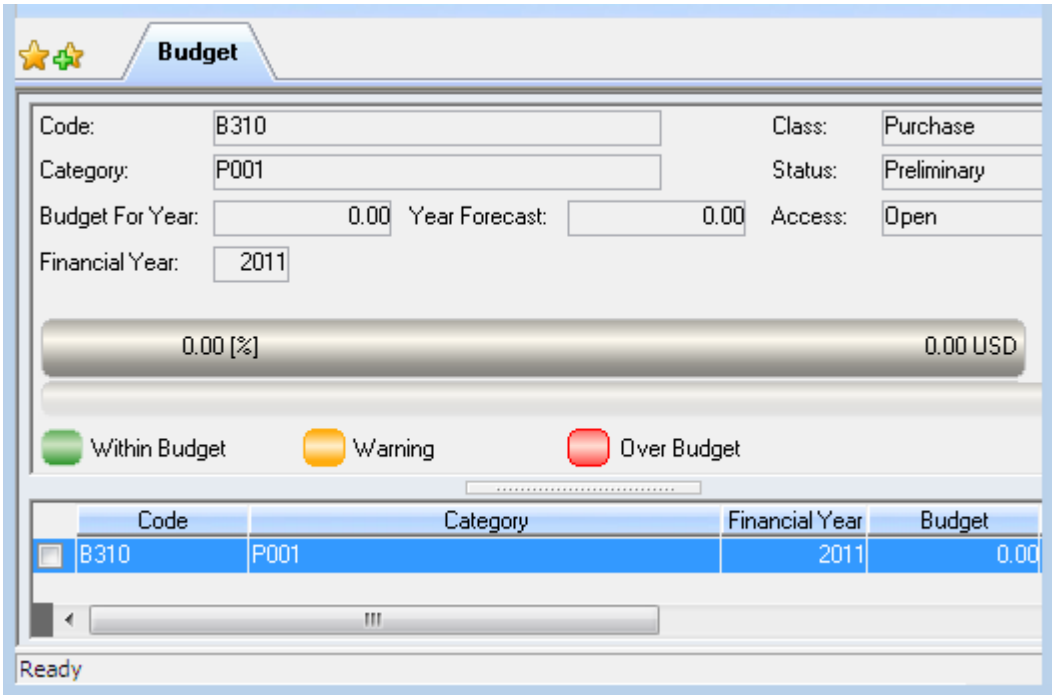
1. Go to **Financial > Budget**. Filter and open the window.
2. Click **New** in the toolbar. This opens the Budget Overview window:



3. Lookup a budget **Code**. The budget **Category** comes with it.
4. Select a **Model**:
   - **Budgeted Amount**. Specify a sum for the entire year.
   - **Evenly Allocated**. Distributes the budget sum evenly over each period.
   - **Manually Allocated**. Allows for entering the budget sum directly in the Budget Overview window with separate amounts for each month of the budget year.
6. Enter a 'threshold amount' in the **Warning** field. If the accumulated spending exceeds this amount an asterisk (*) will appear in the Warning column on the Budget window.

> **EXAMPLE**
>
> A value of 90% will produce a warning when 90% of the specified budget has been spent.
> A value of 110% produce a warning when the budget code has been overspent by 10%.

7. Assign **Access**: Open or Restricted. Selecting restricted ensures that only user groups who have been granted access can update the selected budget code.
8. **Save** and close the Budget Overview window to return to the Budget window:



Copying a Budget

To create realistic budgets, you can copy existing budget information.

1. Go to **Financial > Budget**. Then go to **Options > Copy**.
2. Select the source and destination for the copying operation.
3. Lookup the budget codes to include in the **Range to Copy**.
4. Flagging the **Copy** budget figures box activates the **Adjust budget values by [%]**field. Enter a percentage by which each amount in the target budget should increase compared to the source budget.
5. If the original budget contains any notes and/or a template, these will be copied automatically with the budget itself, unless you unflag the **Copy the budget details text/template**.

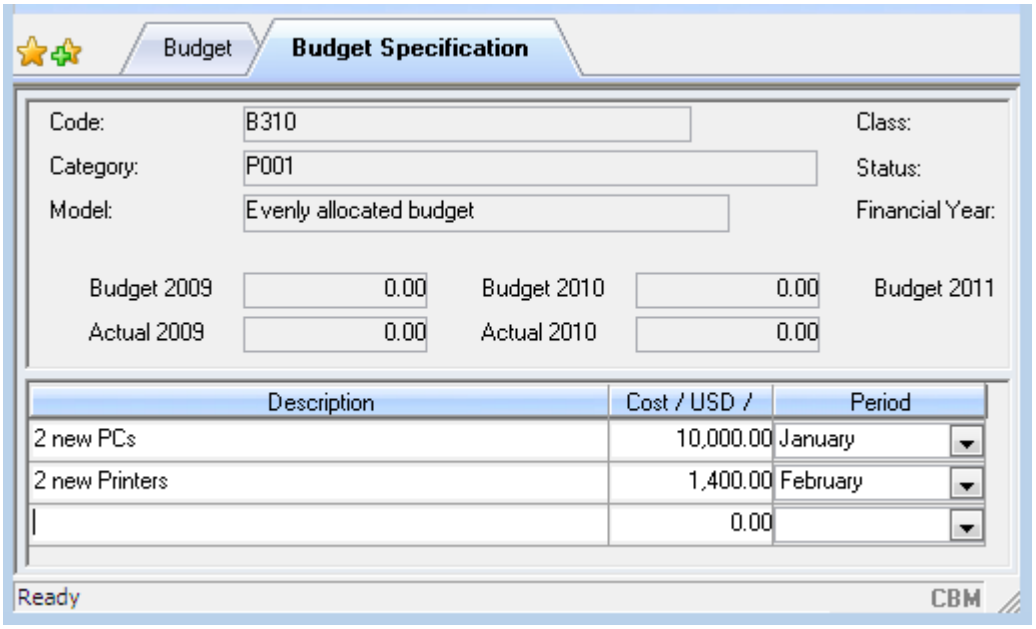
Budget Specifications

It's possible to enter budget specifications for your budget codes in the Budget Specification window. To do so, the system parameter 'Use Specification for Stock/ Purchase/Maintenance Budget' must be set to TRUE. Then, the corresponding budget specifications are used to update budget figures for the respective budget classes.

Using budget specifications also requires that the parameter 'Start of Financial Year' contains the date format.

To define a specification for a budget code:

1. Go to **Financials > Budget** and then select a code in the window.
2. Go to **Options > Specification**.
3. The Budget Specification window opens:



4. Click **New** and enter an item to charge to the budget code.
5. Add as many lines as needed.
6. **Save** and exit the window.

Vouchers

AMOS can help you to manage vouchers - both invoices and credit notes. You can also set up the system to use the voucher function to automatically update the budget.

Each voucher can be based on existing purchase forms or created without any reference to a form. To enter vouchers against a form you need at least read access rights for forms of that type.

Then, with the work flow[1] you can track the progress of each voucher from creation to approval to payment issued or received.

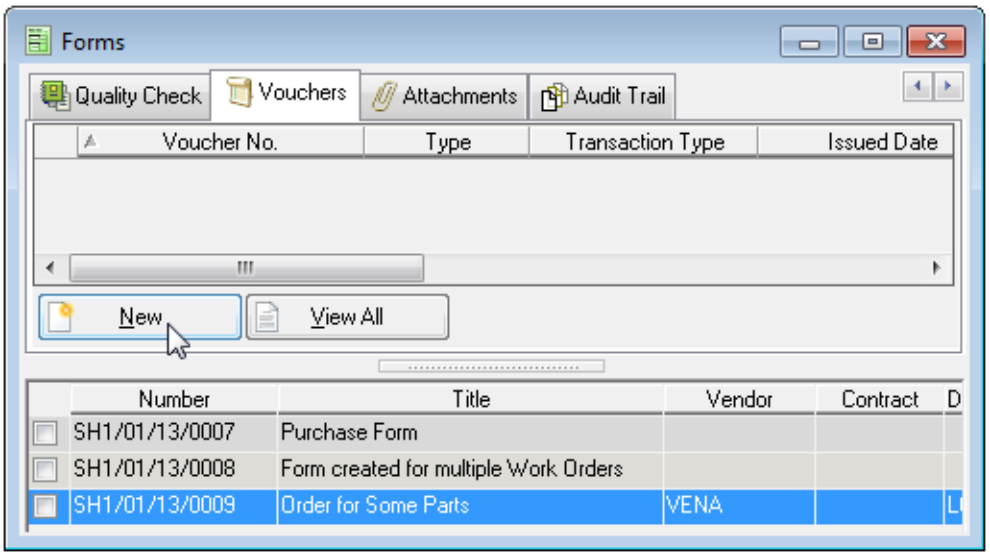
Creating an Invoice for a Purchase Form

When you receive an invoice from a vendor for part or all of the items on an order you have purchased, create an invoice in the Voucher window. You can link multiple forms to one voucher.

> **EXAMPLE**
>
> You purchased items from the same vendor, on both Purchase Order X and Purchase Order Y Rather than registering a separate invoice for each form, you create one voucher and add both forms to it. The same voucher record will appear in the Vouchers tab on the Forms window for each form.

1. Go to **Purchase > Forms**. Select a form.
2. If a voucher is already registered for the form you can go to **Options > Vouchers**. If not, open the Vouchers tab and click **New**:

[1] Requires a Work Flow configuration, and the parameter 'Voucher; Use Work Flow' must be set to TRUE.



The Vouchers window opens. The vendor from the purchase form will appear automatically in the **Address**field.

3. Fill in the fields like **Reference** and **Voucher Category**. Enter any estimated amounts from the form in the **Received** fields.
4. Set the voucher **Type** and **Transaction** to 'Invoice' and 'Payable'. This means you are paying the invoice and subtracting from the budget.
5. The form you selected in the Forms window is shown in the Forms tab. Using the **New** and **Delete** buttons in the tab you can add more or remove forms as needed for the same invoice.
6. If the voucher is for one entire purchase form or all forms for the same vendor have been added to it, check the **Final Invoice** box on the General tab.
7. **Save** the window. Once you have added invoiced quantities and prices in the Line Items window, open the Forms tab on the Voucher window and click **Calculate** to update the final totals in the Forms tab and General tab.

Creating an Invoice Without Reference to a Form

You can create an invoice without reference to any form:

1. Go to **Financial > Voucher**. Search for a voucher or click **Filter**.
2. Click **New** on the window toolbar.
3. Fill in the fields like **Reference**, **Voucher No.** and **Voucher Category**.
4. Select a **Type** and a **Transaction** for the voucher:
   - **Invoice + Payable**. An invoice you need to pay, which will be subtracted from the budget.
   - **Invoice + Receivable**. An invoice you will send out to receive a payment, adds to the budget. See "Receivable Transactions - Inter-Company Invoices" on the next page.
5. Enter a **Budget Code** to register the cost of the voucher against.
6. Enter the **Net Amount** and currency, as well as any **VAT Amount** in the **Voucher** fields. AMOS updates the **Total Amount** for you.
7. Enter any discount in a **Percentage** or **Fixed Price** on the General tab. This discount will be applied over the entire invoice.
8. Enter the external **Address** or internal **Department** where the voucher came from in the Originator area.
9. Add amounts for things like shipping or insurance to the Additional Costs tab.
10. **Save** the window.

You can add forms to this voucher in the Forms tab at any time. Adding forms to an existing voucher means that some details on the General tab will be overwritten with information from the form(s). See for more information.

Voucher Amounts, Discounts and Budget Codes

- You can change the **Amount** and **VAT Amount** on forms if the invoice differs from the order form.
- Clicking the **Calculate** button in the Forms tab will update the **Net**, **VAT** and **Total Amount** fields on the General tab for you, according to information on the associated forms.
- Enter a **Budget Code** for each form on the Forms tab, to register the cost or payment of the voucher against. You can enter different code on every form.
- If you have access to 'Allow to Update Order Form Budget from Voucher' on the Access Control window Functions tab, Budget Codes entered here will be transferred back to the linked Purchase Form(s).
- A discount, in **Percentage** or **Fixed Price** can be entered on the General tab. This discount will be applied over the entire invoice in addition to any discounts already belonging to the related form(s) and line items.
- Vendors usually offer extra discounts when you meet certain agreed payment terms, such as: if you pay an invoice within fifteen days, they'll add an additional 2% discount. If these kinds of discounts are defined on the Payment Terms register, you can then select a payment term on a voucher in the Voucher window and AMOS will calculate the discount according to the formula you provide and the date you pay the invoice.

Voucher Additional Costs

Any **Additional Costs** belonging to the purchase form(s) appear in the Additional Cost tab, grouped by form. You can add more additional costs directly and they will be grouped under the header Voucher Additional Cost. Click the **Fill** button to copy the **Estimated Cost** value into the **Actual Cost** field for every cost in the list.

Voucher Line Items

When a voucher is linked to one or more purchase forms, it contains the same line items as the form(s).

To see the voucher lines:

1. Open the Vouchers window.
2. Select a voucher.
3. Go to **Options > Line Items**.

The line items are grouped on vouchers by order form; the quantity received to date is updated each time a new voucher is created. You can also see any quantities which have been delivered, received and rejected. Double-click in the Rejected field to see open the relevant quality check; double-click on the form number to open the linked purchase order.

To fill a voucher:

1. Go to **Options > Fill Voucher** to automatically fill the **Quantity** column.

   Or, manually enter the quantity on the invoice for each item and the invoicing **Price**.
2. When you've added the quantities and prices, open the Forms tab.
3. Click **Calculate** to update the final totals in the Forms tab and General tab.
4. **Save** the voucher.

Receivable Transactions - Inter-Company Invoices

You may need to send an invoice to another address or installation to receive payment.

To create an inter-company invoice:

1. Go to **Financial > Voucher**. Click **New** on the toolbar.
2. Enter a **Reference** and **Voucher Category**.
3. Lookup your **Department** as the Originator.
4. Enter the **Net** and **VAT Amounts** for the complete invoice in the Voucher fields.
5. Select a **Type** and a **Transaction** for the voucher, in this case:

   Invoice + Receivable. An invoice you will send out to receive a payment, which adds to the budget.

   When the transaction is set to Receivable, the Recipient tab becomes active.
6. Open the Recipient tab. Click the **New** button.
7. Choose **Address** or **Department** and lookup the address or the installation which will receive the invoice.
8. Enter the **Amount** the recipient will be billed for and the **VAT Amount** as appropriate.
9. Enter any discount in a **Percentage** or **Fixed Price** on the General tab. This discount will be applied over the entire invoice.
10. As long as no forms are linked to the invoice, enter a **Budget Code** to apply the voucher against on the General tab.
11. Enter other costs such as shipping or insurance on the Additional Costs tab. AMOS will then include these values on the General tab totals.
12. **Save** the invoice.

You can add forms to this voucher at any time in the Forms tab. Adding forms to an existing voucher means that some detail on the General tab will be overwritten with information from the form(s). See for more information.

Credit Notes

Whenever you issue or receive a credit note, register it as a voucher so it can be applied against an invoice in the future:

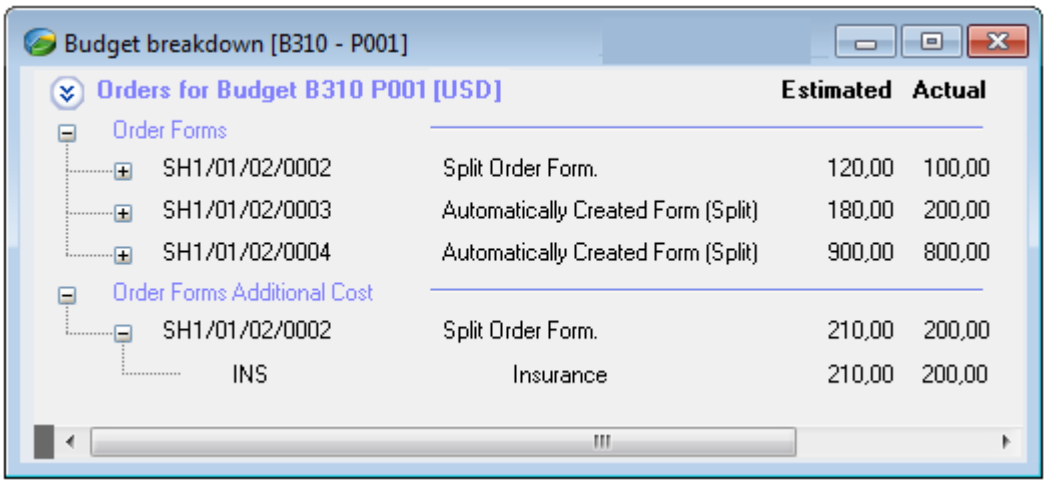
1. Go to **Financial > Voucher**.
2. When the window opens click **New** on the toolbar.
3. Enter a **Reference**and a **Voucher Category**.
4. Select a **Type** and a **Transaction** for the voucher:
   - **Credit Note + Payable**. An amount credited to you which will add to the budget.
   - **Credit Note + Receivable**. An amount you owe in credit which will subtract from the budget.
5. Enter the **Net Amount** and currency and any **VAT Amount**in the Voucher fields. AMOS updates the **Total Amount**of credit for you.
6. If you set the **Transaction** to Payable the Recipient tab activates. Lookup the external **Address** or internal **Department** issuing the credit note to you, and the credited amount(s).

   If you set the Transaction to Receivable, enter the external **Address** or internal **Department** where the credit note came from in the Originator area.
7. Enter the **Budget Code**on the General tab to register the amount of the voucher against.
8. To use the credit note in conjunction with a purchase, lookup an existing **Invoice** on the General tab. Link forms to the credit note using the **New** and **Delete** buttons in the Forms tab.
9. **Save** the window.

Budget Breakdowns and Progress

You can view a detailed list of all costs assigned so far to an active budget, in the Budget Breakdown window. Each cost is shown with amounts, grouped according to where the cost was applied and what it is for:

1. Select a budget in the Budget window.
2. Go to **Options > Budget Breakdown**. The next window opens.
3. All the details for every cost applied so far appear in a collapsible list.
4. The end of the row shows both **Estimated** and **Actual** amounts.



Viewing this window is access-controlled: the option is only available if you have access to 'Budget Breakdown' on the Access Control window Functions tab.

You can also select **Options > Progress** to view a graphical representation of budget spending in the Budget Progress window. The progress is displayed on a meter for each of the three budget classes, at department level, installation level, and system wide.

Budget Prognosis

After establishing the original budget there may be need for some adjustments. The Prognosis function enables you to create new, updated versions of the budget based on actual consumption and turnover. To open the Budget Prognosis window select a budget code and go to **Options > Prognosis**.

- A Prognosis budget is controlled by the same mechanisms as the regular budget. It uses one of the same three budget modes.
- If the Specification parameters are set to TRUE, specifications amounts are used to calculate a budget prognosis. To calculate, select the prognosis to work with and go to **Options > Specification**. Then enter a specification as for the usual budget.
- You can copy the relevant specifications from previous prognoses. For the first prognosis created, copy data from the budget code itself. For subsequent prognoses, copy data from the previous version. To copy data, select **Options > Copy Specification**.
- You cannot change a budget Prognosis after the status has been set to Approved.

Budget Commitment Control

Budget Commitment Control functionality is split in two independent parts: custom budget impact, and budget warnings and limits.

Custom Budget Impact

It is possible to define Purchase Form costs against a budget as a **Forecast**, rather than a Commitment. This means that the form would not yet have an impact on the budget commitment, but it may have one, in the future. This functionality is enabled by its own set of parameters and access rights. When these parameters and access are set accordingly, an additional column appears in the Budget windows, called Forecast. This column appears in addition to the columns **Committed** and **Paid**. The Budget Formula window allows you to define the types and statuses of forms which will impact each of these three columns. The form status can affect the columns in different ways:

- **No impact** (set None). The selected status will have no effect on the budget at all
- **Forecast**. The selected status will effect the Forecast column in the budget windows
- **Committed**. The selected status will effect the Committed column in the budget windows, and in turn, the Paid column, depending on which field the cost is registered against on the form

Enabling Custom Budget Impact

To enable this functionality set the system parameter and access rights below as follows:

1. Go to **Tools > Configuration > Parameters > Options > Budget >** and select the parameter 'Allow User-defined Impact on Purchase Budget'.

   Set the parameter to TRUE.

2. **Save** the setting. This allows users to custom define which form status (Split, Cancelled, Parked, etc.), affects which budget column (Committed, Paid or Forecast). The Forecast field will appear in the Budget windows and on Budget reports.
3. Close the parameters window and go to **Tools > Configuration > Budget > Budget Commitment Formula**.

   This next window contains columns in three groups:

   - **Type**. Alist of form types: Purchase Order, Requisition Form and Query.
   - **Status**. The work flow statuses that apply to forms, such as Split, Cancelled, etc.
   - **Impact**. Three lists with radio buttons: None, Forecast and Committed.

   If Purchase work flow is in use the system will only provide the work flow status column to register the impact against.

   Define whether or not each form/status combination will have an impact on either the **Forecast** or **Committed** column in the Budget windows, or no impact at all.

4. **Save** and close the window.

Budget Warnings and Limits

In the Budget Hierarchy at group level you can define **Approval Warning** percentages and **Approval Limits** for each Budget Group within the hierarchy. The percentages apply on the accumulated budget for the group they are registered against.

When Approval Warnings and Approval Limits are defined and a user attempts to approve a form the system will verify the percentage against the accumulated budget for the year for the budget group the budget code on the form belongs to. If the cost of the form plus the outstanding commitments on that budget group exceed the warning percentage of the accumulated budget for the year the system will provide a warning. If the 'Limit' percentage is reached the system will not allow the approval.

EXAMPLE

Your system contains a Budget Group which is accumulated at a value of 10,000. The Commitments against this budget are at 5,000. The Warning percentage for this group is set at 90% and the Limit is set at 95%.

This means that when a user tries to approve a form with a value that will bring the amount committed against the budget within 90% of the accumulated budget for the year (in this case, a value of 4,300), he will receive a warning.

If he tries to approve a form with a value that will bring the amount committed against the budget within 95% of the accumulated budget for the year (in this case, 4,600 or more), AMOS will not allow the approval.

Enabling Budget Warnings

To enable budget warnings set the parameters and access rights as follows:

1. Go to **Tools > Configuration > Parameters > Options > Budget > Use Budget Control When Approving Forms**. Set the parameter to TRUE to switch on the budget warning functionality.
2. Go to the parameter **Interrupt Approval Warning/Limit Adjustment When Sub-Group Exists**. The setting of this parameter indicates if the system should automatically update warning percentages on sub-group levels that may belong to groups, when the percentages are updated at group level. The possible settings are: Suppress with yes, Suppress with no, and Interrupt.
3. **Save** your settings and close the parameters window.
4. Go to **Tools > Configuration > Access Control > Groups**. Select Access Control from the Options menu.
5. Open the Fields tab on the Access Control window. Scroll down to the Budget section and you will see two settings: **Approval Limit** and **Approval Warning**. Make these fields read-only.
6. Open the Functions tab on the Access Control window. Scroll down to the Purchase section. The first two controls are: **Approve Purchase Order Beyond Budget Control Limit** and **Approve Requisition Form Beyond Budget Control Limit**.

   Allow the users who belong to groups with access to Commitment Control to bypass the functionality. These users will then be able to approve forms regardless of the budget values and warning percentages.
7. **Save** and close the window.

Budget Commitment Formula

It is possible to define purchase form costs against a budget as a 'Forecast', rather than a 'Commitment'. This means that a form does not yet have an impact on the budget commitment, but it may have one in the future.

When the relevant parameters and access are set, a **Forecast** column appears in the Budget windows in addition to the columns **Committed** and **Paid**. The Budget Formula window allows you to define the types and statuses of forms which will impact each of these three columns. The form status can affect the columns in different ways:

- **No impact**. (Set None). The selected status will have no effect on the budget at all
- **Forecast**. The selected status will affect the Forecast column in the budget windows
- **Committed** . The selected status will affect the Committed column in the budget windows, and in turn, the Paid column, depending on which field the cost is registered against on the form.

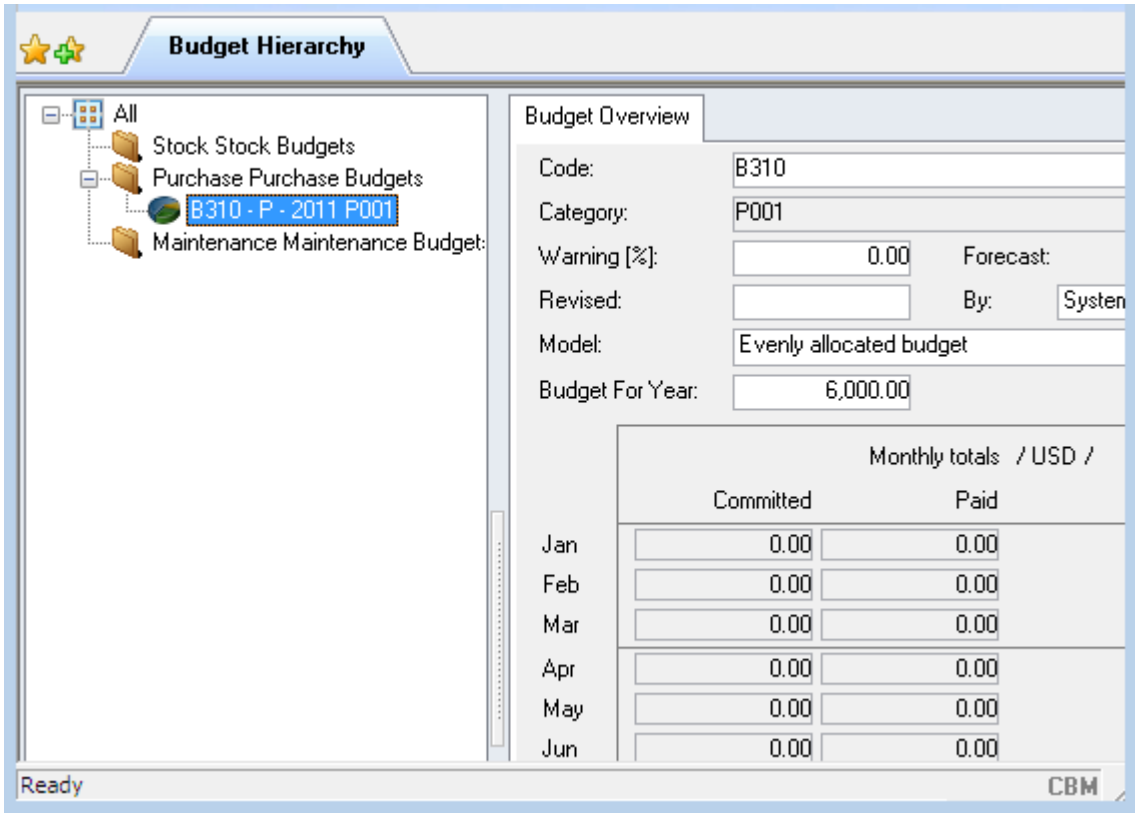
To enable this functionality:

1. Go to **Tools > Configuration > Parameters > Options > Financial >** 'Allow User-defined Impact on Purchase Budget'.
2. The default setting is FALSE. Change it to TRUE.
3. **Save** the setting. Now users can custom define which form status (Split, Cancelled, Parked, etc.), affects which budget column (Committed, Paid or Forecast). The **Forecast** field will appear in the Budget windows and on Budget reports.
4. Close the Parameters window and go to **Tools > Configuration > Budget > Budget Commitment Formula**.
5. This window contains columns in three groups:
   - **Type**. A list of form types: Purchase Order, Requisition Form and Query.
   - **Status**. The work flow statuses that apply to forms, such as Split, Cancelled, etc.
   - **Impact**. Three lists with radio buttons: None, Forecast and Committed.

   Note: If Purchase work flow is in use, the system will only provide the work flow status column to register the impact against.
6. Define whether or not each form/status combination will have an impact on either the forecast or committed column in the Budget windows, or no impact at all.
7. **Save** your settings.

Using Budget Hierarchies

A budget hierarchy should reflect your own financial reporting and so enable closer monitoring of budget usage. Go to **Financial > Budget Hierarchy** to open the Budget Hierarchy window:



Select a folder to view that budget group's summary overview: the cumulative amounts for each of the budgets in the budget group. If you select the topmost icon you see the cumulative totals for all budgets.

To define Budget Group Properties select **Options > Budget Group Properties** or double-click on a group folder in the hierarchy. Set the **Display Model** to the budget model you want the selected group's

values to show in. You can also set **Approval Warning** percentages and **Approval Limits** for each group within the hierarchy which apply on the accumulated budget for the group they are registered against.

> **Note:** To expand the budget hierarchy you require at least read access for budget codes in general. Depending on the applied filter and your access rights to individual budgets, certain lowest level groups may appear empty.

Elements Which May Affect the Budget

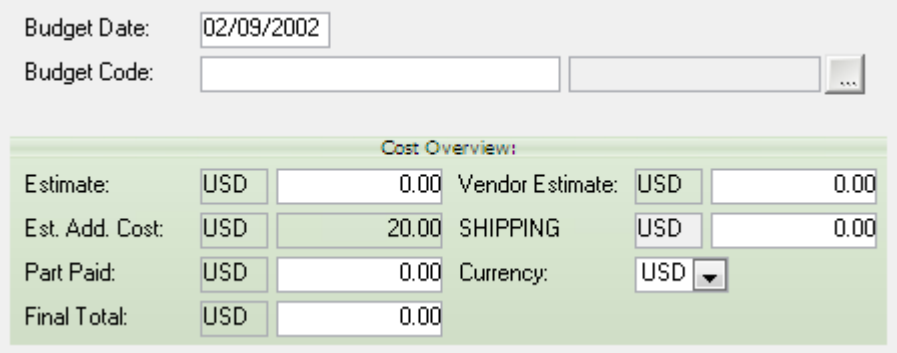
There are three different budget classes in AMOS M&P: Purchase, Stock, and Maintenance. Depending on which class is selected, the budget is affected in ways described in the sub-sections below. Additionally, vouchers may affect the budget.

How Purchase Orders Affect the Budget

Purchase orders contain several options that interact with the budgeting function. If a purchase order has the status Active or Filed, the amounts in certain fields (see below) are automatically transferred in order to monitor expenses compared to the budget. You can read more about working with purchase orders in Chapter 6.

This section describes the Purchase budget class. The two columns **Committed** and **Paid** in the Budget Overview window are only available for the Purchase budget class. The reason is that this budget class is intended for purchases made on a regular basis, where it is possible to estimate the expenses for a period. Thus, you normally select Evenly allocated budget from the Budget Class drop down list for such items.

A purchase order form contains the following fields, which interact with the budget function:



- Use the lookup to select the **Budget Code** and establish the link between the items purchased on the purchase order and the budget code that has been defined.
- Use the **Estimate** field to estimate the total cost for the selected Budget Code in this purchase order, whereas the **Part Paid** field is for recording payments that have been made. In the example above, the column Committed in the Budget Overview window would show an amount of 800 USD: This amount is calculated by subtracting the Part Paid amount from the Estimate amount.
- If the field **Final Total** is filled in, this will appear both in the **Paid** and the **Total** columns in the Budget Overview window, overriding whatever values are entered in the Estimate and Payments fields.

How Stock Transactions Affect the Budget

If the budget class Stock is selected for a budget, data is automatically transferred from stock transactions to the budget function. You can read more about working with stock transactions in Chapter 5. A stock transaction contains fields that are relevant to budget follow-up.

The budget code is used to identify the budget category to which the stock transaction amount should be posted.

How the Maintenance Log Affects the Budget

If the budget class Maintenance is selected for a budget code, data is automatically transferred from the maintenance log to the budget function.

The maintenance log may contain information about resources used in completing a specific maintenance task. AMOS M&P may be set up in two different ways to keep track of such resources:

- The resources may be registered by **Discipline**, like Electrical.
- The resources may be registered by **Employee**, regardless of which task that employee actually performed.

How Vouchers Affect the Budget

The system may be set up in such a way that Vouchers automatically influence budget figures. If the system parameter 'Use Vouchers to Update Budget' is set to TRUE, amounts registered for vouchers automatically affect the budget to which they are assigned. See "Vouchers" on page 390 for more about the optional Voucher function in AMOS.

APPENDIX A

Contracts - XML File Formats

This chapter includes the following topics:

Introduction 402
Header 405
Contract 405

SpecTec

Introduction

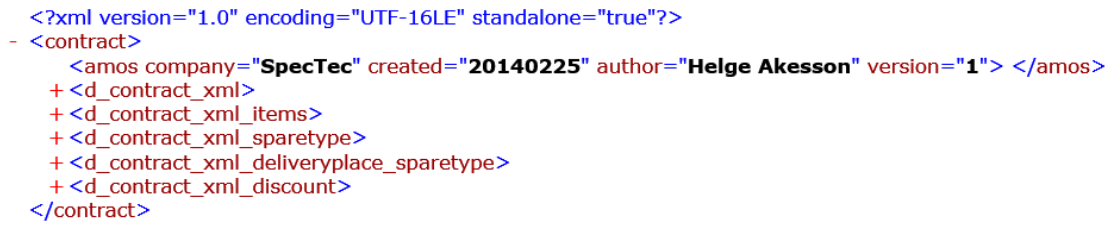
The XML file is divided into the following sections:

- Header; and
- Contract: **contract** root tag.

The Contract section is further subdivided into the following subsections:

- AMOS Details: **amos** tag;
- Contract Details: **d_contract_xml** tag;
- Contract Item Details: **d_contract_xml_items** tag;
- Spare Type Details: **d_contract_xml_sparetype** tag;
- Spare Type Delivery Place Details: **d_contract_xml_deliveryplace_sparetype** tag; and
- Discount Details: **d_contract_xml_discount** tag.

The following image provides an example of this XML file in your browser with the major tags contracted:



Here is an example of an expanded Contract:

```
<?xml version="1.0" encoding="UTF-16LE" standalone="yes" ?> <contract>
<amos version="1" author="Helge Akesson" created="20140306" com-
pany="SpecTec"> </amos>
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            <contractid>1000006 <column editable="false"> </column> </con-
            tractid>
            <contractno>2013-003 <column editable="false"> </column> </con-
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            <descr>Main Engine Spares <column editable="false"> </column>
            </descr>
            <createddate>20140306 <column editable="false"> </column> </cre-
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            ity>
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            rencycode>
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            lownoncontractitem>
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            tractcurrency>
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            tractno>
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<contractitemid>**1000014** <column editable="false"> </column> </contractitemid>

<code>**001** <column editable="false"> </column> </code>

<name>**Main Engine Parts** <column editable="false"> </column> </name>

<minquantity>**0** <column editable="true"> </column> </min-quantity>

<maxquantity>**0** <column editable="true"> </column> </maxquant-ity>

<itemcomment> <column editable="false"> </column> </item-comment>

<itemtype>**1** <column editable="true"> </column> </itemtype>

<accumulatepercontract>**0** <column editable="true"> </column> </accumulatepercontract>

<minpricesum>**0** <column editable="true"> </column> </min-pricesum>

<minwarning>**0** <column editable="true"> </column> </minwarning>

<maxpricesum>**0** <column editable="true"> </column> </max-pricesum>

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</d_contract_xml_items>

<d_contract_xml_sparetype>

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<contractno>**2013-003** <column editable="false"> </column> </con-tractno>

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<minwarning>**0** <column editable="true"> </column> </minwarning>

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<parttypeno>**6010201001** <column editable="false"> </column> </parttypeno>

```
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            pricesum>
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            quantity>
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            pricesum>
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            ref>
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            defmarpol>
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            defimono>
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      <d_contract_xml_discount_row>
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```

Bear the following points in mind when you examine the XML output:

- Date Format: YYYYMMDD;
- Decimal Separator: "."; and
- National Characters: must be converted to the XML format, in this case UTF-16LE.

Note: the content of the **<editable></editable>** tag is either "True" or "False". Edit only fields with a value of "True".

Header

The header contains standard XML meta-information:

```
<?xml version="1.0" encoding="UTF-16LE" standalone="yes"?>
```

Contract

Contract details reside within the **<contract></contract>** tags.

AMOS

The **<amos></amos>** tag contains AMOS-specific attributes:

Attribute	Content
company	SpecTec
created	*YYYYMMDD* (date of file creation)
author	Helge Akesson (name of developer)
version	1

Contract Details

The Contract Details section contains information taken from the Contract's **General** tab:

Attribute	Database Linkage	Editable	Values
contractid	PurchaseContract.ContractID	False	
contractno	PurchaseContract.ContractNo	False	
descr	PurchaseContract.Descr	False	
createddate	PurchaseContract.CreatedDate	False	
minpricesum	PurchaseContract.MinPriceSum	True	
minquantity	PurchaseContract.MinQuantity	True	
minwwarning	PurchaseContract.MinWarning	True	
maxpricesum	PurchaseContract.MaxPriceSum	True	
maxquantity	PurchaseContract.MaxQuantity	True	
currencycode	PurchaseContract.CurrencyCode	True	
allownoncontractitem	PurchaseContract.AllowNonContractItem	True	0|1
contractcurrency	PurchaseContract.ContractCurrency	True	

Contract Item Details

The Contract Item Details section contains information for the Contract Items listed on the **Contract Items** tab:

Attribute	Database Linkage	Editable	Values
contractno	PurchaseContract.ContractNo	False	
contractitemid	ContractItem.ContractItemID	False	
code	ContractItem.Code	False	
name	ContractItem.Name	False	
minquantity	ContractItem.MinQuantity	True	
maxquantity	ContractItem.MaxQuantity	True	
itemcomment	ContractItem.ItemComment	False	
itemtype	ContractItem.ItemType	True	

Attribute	Database Linkage	Editable	Values
accumulatepercontract	ContractItem.AccumulatePerContract	True	
minpricesum	ContractItem.MinPriceSum	True	
minwarning	ContractItem.MinWarning	True	
maxpricesum	ContractItem.MaxPriceSum	True	
currencycode	ContractItem.CurrencyCode	True	

Spare Type Details

The Spare Type Details section contains information from the Spare Types linked to each Contract Item on the **Contract Items** tab, retrieved by double-clicking on the "Base Price" cell of each Item:

Attribute	Database Linkage	Editable	Values
contractitemsparetypeid	ContractItemSpareType.ContractItemSpareTypeID	False	
contractno	PurchaseContract.ContractNo	False	
contractitem_name	ContractItem.Name	False	
parttypeno	SpareType.PartTypeNo	False	
partname	SpareType.PartName	False	
baseprice	ContractItemSpareType.BasePrice	True	
minpricesum	ContractItemSpareType.MinPriceSum	True	
minquantity	ContractItemSpareType.MinQuantity	True	
minwarning	ContractItemSpareType.MinWarning	True	
maxpricesum	ContractItemSpareType.MaxPriceSum	True	
maxquantity	ContractItemSpareType.MaxQuantity	True	
currencycode	ContractItemSpareType.CurrencyCode	True	
unit_name	Unit.Name	False	
makerref	SpareType.MakerRef	False	
userdefmarpol	SpareType.UserDefMarPol	False	
userdefimono	SpareType.UserDefImoNo	False	

Spare Type Delivery Place Details

The Spare Type Delivery Place section contains information from the intersection of each Spare Type/Delivery Place column, taken from the **Contract Items** tab:

Attribute	Database Linkage	Editable	Value
contractno	PurchaseContract.ContractNo	False	
contitemsparetypedeliveryid	ContItemSpareTypeDelivery.ContItemSpareTypeDeliveryID	False	

Attribute	Database Linkage	Edit-able	Valu-e
candeliver	ContItemSpareTypeDelivery.CanDeliver	True	
leadtime	ContItemSpareTypeDelivery.LeadTime	True	
leaddiscount	ContItemSpareTypeDelivery.LeadDiscount	True	
deliveryplace_name	DeliveryPlace.Name	False	
sparetype_partname	SpareType.PartName	False	
makerref	SpareType.MakerRef	False	
userdefmarpol	SpareType.UserDefMarPol	False	
userdefimono	SpareType.UserDefImoNo	False	

Discount Details

The Discount Details section contains information pertaining to all discounts listed on the Contract, i.e., Contract, Delivery Zone, Delivery Location, Group, Group/Location, Item, and Item/Location:

Attribute	Database Linkage	Editable	Value
forcontractid	PurchaseContract.ContractID	False	
contractno	PurchaseContract.ContractNo	False	
discountid	ContractItemDiscount.Discountid	False	
discounttype	ContractItemDiscount.DiscountType	True	
volume	ContractItemDiscount.Volume	True	
discount	ContractItemDiscount.Discount	True	
deductionprice	ContractItemDiscount.DeductionPrice	True	
fixedprice	ContractItemDiscount.FixedPrice	True	
pricesum	ContractItemDiscount.PriceSum	True	
currencycode	ContractItemDiscount.CurrencyCode	True	
discount_for_table	(Refer to the table below.)	False	
discount_for_table_code	(Refer to the table below.)	False	
discount_for_table_description	(Refer to the table below.)	False	
contractitemid	ContractItemDiscount.ContractItemID	False	
contractitemdeliveryplaceid	ContractItemDiscount.ContractItemDeliveryPlaceID	False	
contractid	ContractItemDiscount.ContractID	False	
contractdeliveryplaceid	ContractItemDiscount.ContractDeliveryPlaceID	False	
contractitemsparetypeid	ContractItemDiscount.ContractItemSpareTypeID	False	
contitemsparetypedeliveryid	ContractItemDiscount.ContItemSpareTypeDeliveryID	False	
contractzoneid	ContractItemDiscount.ContractZoneID	False	

Depending on the type of discount, AMOS will popuate each of the fields with different information. The first column, discount_for_table, has the text displayed below; the other two columns retrieve the specified data from the database:

Level	discount_for_table	discount_for_table_code	discount_for_table_description
Contract	PurchaseContract	*Contract Number*	*Contract Description*
Delivery Location	ContractDeliveryPlaceID	*Delivery Location Code*	*Delivery Location Name*
Delivery Zone			
Group	ContractItem	*Group Code*	*Group Name*

Level	discount_for_table	discount_for_table_ code	discount_for_table_ description
Group/Delivery Location	ContractItem/DeliveryPlace	*Group Code/Delivery Location Code*	*Group Name/Delivery Location Name*
Item	ContractItem/SpareType	*Group Code/Spare Type Number*	*Group Name/Spare Type Name*
Item/Delivery Location	ContItem/SpareType/Delivery	*Group Code/Spare Type Number/Delivery Loca- tion Code*	*Group Name/Spare Type Name/Delivery Location Name*

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