DELMIAWorks

Assembly Manufacturing

Release: 2022

Contents

ASSY Manufacturing

There are three ASSY Manufacturing Types, ASSY1, ASSY2, and ASSY3. The ASSY manufacturing types are used for assembly operations, where an item may go through several processes before it is considered a finished good. Each of these MFG Types utilize BOMs with processes attached that call out work centers, tools, labor and quality requirements. These processes can be reused over and over simply by attaching them to multiple BOM's. Employees can clock into specific processes and record the number of items that have been processed. For ASSY1 and ASSY2 the components are backflushed at the time of labor reporting. For ASSY3 components are backflushed at final assembly by default, unless the 'Backflush Each Process' option is checked for the MFG Type. The actual labor is collected and the progress of each work order and its processes can be tracked using the Assembly Track and AssemblyData modules. Final Assemblies (dispositions of finished goods) is reported using AssemblyData or the Assembly Track modules (not production reporting).

Below describes the basic differences between the three ASSY MFG Types. The main differences lie in the way they are finite scheduled.

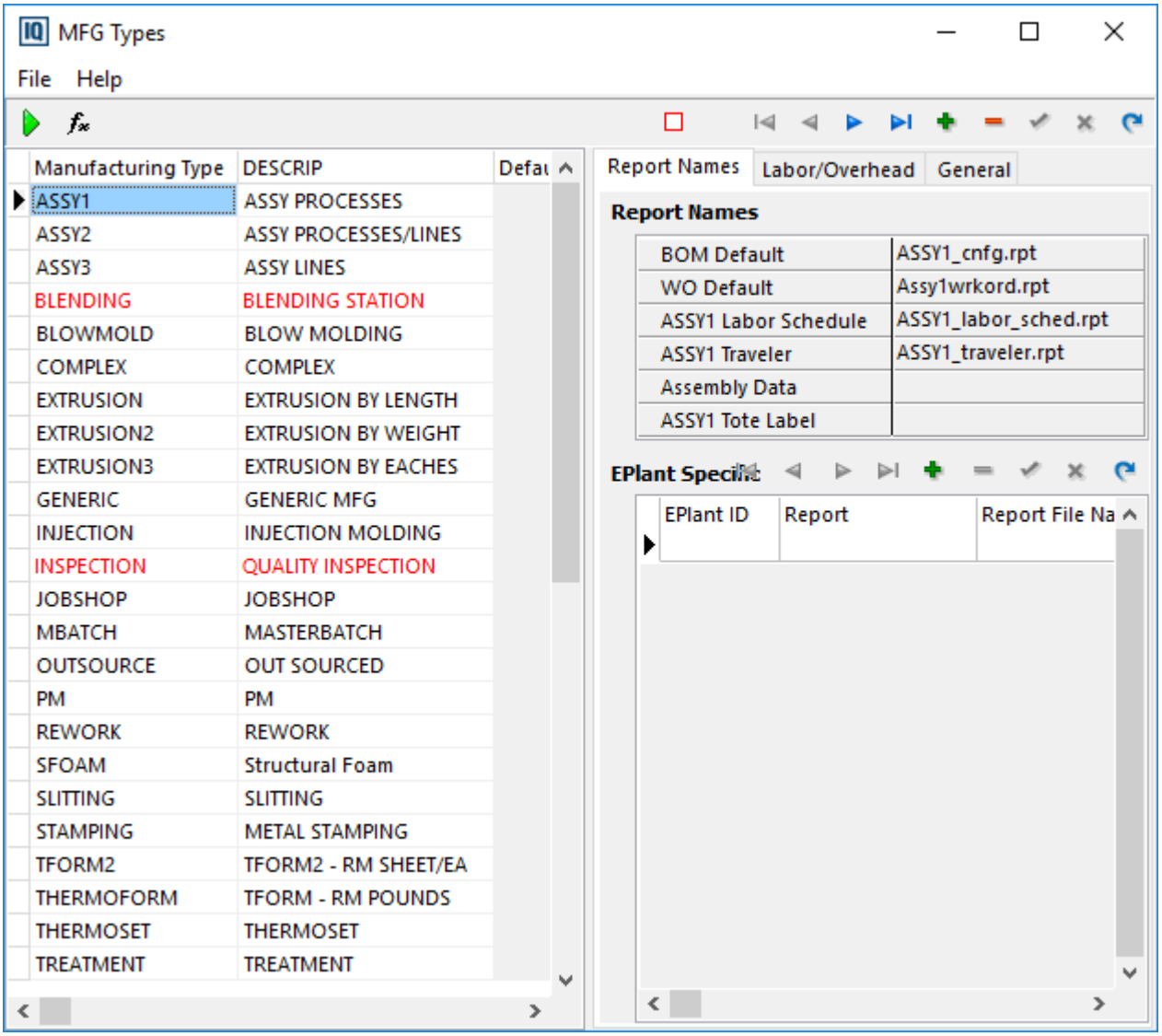
MFG Type	Work Centers	BOMs	Finite Scheduling	Reporting Production
ASSY1	Work Centers are associated to the processes, No Assembly Lines	No work center or Assembly Line is associated to the BOM	Processes are scheduled on work centers in scheduling	Labor reporting is done for each process and components are backflushed during labor reporting
ASSY2	Work Centers are associated to the processes, and to the Assembly Line	No work center or Assembly Line is associated to the BOM	Processes are scheduled on work centers in scheduling similar to ASSY1 except only the work centers that are attached to the assembly line are available for auto loading. The system first determines the Assembly Line based on the first process and then limits the available work centers to those assigned to the assembly line.	Labor reporting is done for each process and components are backflushed during labor reporting
ASSY3	Work Centers are associated to the processes, and to the Assembly Line	An Assembly Line is associated to the BOM	Work orders are scheduled on work centers in scheduling	By default, Final Assembly is used to report production. Items are added into inventory and material attached to each process is backflushed. Users can enter good parts and labor for each process. Optionally, components can be backflushed when reporting labor instead of at final assembly if the 'Backflush Each Process' option is checked for the MFG Type.

Note: There is an 'Assembly' MFG Type available but it is based on the Generic MFG Type. It does not apply to the ASSY MFG Types. It conforms to the Generic MFG Type except the cycle time for the Assembly MFG Type defaults to hours instead of seconds.

Set Up

ASSY Manufacturing Types

The ASSY1, ASSY2 and ASSY3 manufacturing Types, or user defined equivalents must be added as an available type to choose from when creating Bills of Manufacture. The ASSY manufacturing types are added on the MFG Types list. To access Mfg Types go to Sys Setup->System Parameters->Lists. (This list is also available from the BOM form in the Configure menu).



To Add the ASSY Manufacturing Type, follow the steps below:

Click on the ADD [+] function key located on the Navigator bar.

From the 'Select Mfg Type' form choose ASSY1, ASSY2, or ASSY3 from the Predefined tab, or create a user defined MFG Type.

Note: For JobShop for Assembly Manufacturing, the user defined MFG Type cannot be called JOBSHOP because there is already a system defined JOBSHOP MFG Type used for the original JobShop module.

User Defined - This tab is used to create user defined manufacturing types. Enter the name in the Mfg Type field and select the manufacturing type the user defined type should default to from the drop down list of system supported manufacturing types. Once the manufacturing type is selected, the options on the right side of the MFG Types screen will be updated based on the selected default type. When a user defined type is created without having the predefined ASSY type created, the system will still make the Assembly Track and Assembly Process Maintenance modules visible after logging back in.

Report Names	Assign the appropriate reports by clicking on the button to right of these fields and selecting the report from the list. Or use the Assign Default Report Names speed button at the top of the form to assign the default BOM and WO reports. (This does not assign any of the other reports). The reports can be EPlant specific if desired. Select the EPlant ID and then select the report using the search button. When generating reports using speed buttons, the report that prints will be based on the EPlant the user is logged into.
Labor	Set the labor **cost element** associated with the ASSY Mfg Type using the drop down list. Enter the **default Labor Rate**. This value will be used as the default if no rate is specified on the Processes. (Note: The hierarchy for labor is employee level and then MFG type. The system cannot use MFG cell as the operation may not be attached to a BOM when standard labor is calculated). **Labor posted from Time & Attendance** - When checked the labor will not post to translog from floor dispositioning. Labor will be posted from Time & Attendance only. **Use Labor Rate to calculate Actual Labor** - If this option is checked, when calculating actual labor in Actual Costing, instead of using the employee charge rate, the system will use the Mfg Type Labor Rate.
Overhead	Set the overhead cost element associated with the ASSY Mfg Type using the drop down list. Enter the default Rate. (Note: The overhead cost element can only be set to Labor based for ASSY MFG types).

General Tab Fields:

Process Certification	(This only applies to ASSY1) Select the desired process certification from the drop down list. The Certified tab in Assembly Process Maintenance will adjust depending on the selection made here. There are two choices: ▪ Certified Jobs – (Default) - Users can specify job requirements for running the process. This will limit which employees can log into a specific process. Only those employees with an active certification level high enough for the specific job can log into the process. ▪ Certified Employees – With this option selected individual employees will be certified on a process rather than a job.
No Supervisor required for Final Assembly	This option controls whether a supervisor is required to enter the Final Assembly in AssemblyData. **Note**: The 'Process Certification' and 'No Supervisor Required for Final Assembly' settings will be determined by the default predefined ASSY MFG type for any user defined MFG Types based on the ASSY type. The reason for this is the potential to have the same process linked to multiple BOM's.
Dispo IN and OUT Locations	A disposition In and Out location can be entered here. Click on the ellipsis button and select a location from the pick list. The Mfg Type dispo designated locations will fit into the hierarchy after the Mfg Cell dispo designator locations for both IN and OUT locations. This option is also available on user defined MFG Types that are based on the ASSY Type.
Use Percent Complete Reporting	(For ASSY1 and ASSY2 MFG Types) - If this option is checked, when reporting labor for an ASSY1/ASSY2 work order/process, a percentage can be reported against a process instead of entering a quantity. In Assembly Track and JobShop, the Progress bar in the Process Details will display the last percent complete that was reported. Material attached to the process being reported on will not be backflushed until Final Assembly Reporting.
Consume Raw Material by Process	If the 'Use Percent Complete Reporting' option is selected this option is available. If this option is unchecked, in Assembly Track-> Labor Reporting, the Report Consumed Materials tab will be hidden. Material will be backflushed upon Final Assembly. If this option is checked, in Assembly Track-> Labor Reporting, the Report Consumed Materials tab will be visible to enter a value of components to be backflushed. Upon Final Assembly the system will not backflush material.
Use Yield % on BOM	If this box is checked the BOM 's associated to the MFG Type will say 'Yield %' instead of 'Scrap %'.

Backflush Each Process	(For ASSY3 only). If this option is checked, when clocking out of a process in AssemblyData or labor reporting in Assembly Track, the system will backflush the components. When performing Final Assembly, it will not backflush the components. This allows users to be able to finite schedule a work order to an Assembly Line and still allow for backflushing at each process. **Note**: If this option is not checked, the Processing Time on the BOM must be calculated using the Process Throughput Map button. If it is not calculated the system will have no way to know when material(s) are required so it will assume it will end on the last day.
Launch Final Assembly Reporting on designated process	If this is checked users can designate a single process in the Assembly BOM that will launch the "Final Assembly Reporting" form. The Assembly BOM can only have one process designated as "Final Assembly Reporting".
Do not round up dependent demand	With this checked the dependent demand will not be rounded up to the next whole number on dependent work orders. This applies to all MFG Types except MBATCH and JobShop. This also applies to the 'Explode Forecast' tool in the Forecast module. When exploding a Sales Analysis Forecast, the quantity for dependent demand will be rounded up to the nearest whole number unless this option is checked for the relevant Manufacturing Type. If this option is checked, the quantities will be calculated and displayed with full decimal precision to mirror the BOM Tree explosion. Specifically for ASSY MFG Types: ▪ When this option is not checked: Dependent demand will be rounded up to the next whole number on dependent work orders. This may cause parent work orders to start prior to the dependent work order completing. This is due to the Work Order End Date of the dependent work order being calculated based on the Cycles Required where as the projected end time in Assembly Track is calculated based on the rounded up quantity to complete. The parent work order will start based on the dependent demand work order end date. ▪ When this option is checked: Dependent demand will not be rounded up to the next whole number on dependent work orders and therefore does not cause a discrepancy between the work order end date and the projected end time in Assembly Track.
Use SN Labels to Control MTO Dispositions	When this option is set to Yes, MTO releases will be combined on work orders rather than getting a work order for each release (including multiple customers/orders). All other allocation functions of MTO will remain the same, only bucketing is different. When printing labels, the Order # drop down will reflect the customer for that order on the label. This option can be set at the Manufacturing Type level, which will override the default setting in System Parameters->Purchase Order and Sales Order Setup tab. Choices in the drop down are System Default, Yes, and No. 'System Default' will look at the global setting. A selection of 'Yes' will enable the 'Use SN Labels to Control MTO Dispositions' functionality for the specific Manufacturing Type. If 'No' is selected the functionality will not apply to that particular Manufacturing type.

Auto Substitute BOM	When this setting is enabled, when attempting to add a work order to the first position (in EIQ or ShopData), the system will look to see if the BOM on the work order is already scheduled in the first position on a logical work center. If the same BOM is already scheduled/running on a logical work center, and the user is trying to add it to a different logical work center then a substitute BOM will be created before adding the work order. A security enabled warning message will appear: “Attempting to schedule this work order on a different logical work center than the currently running BOM. What do you want to do?" The warning message that surfaces will give the user the option to 'Create a substitute BOM' or 'Do not create substitute BOM'. There is also a “Do not show again” check box. **Note**: This option is visible on all MFG Types but will not affect anything unless the MFG Type also has 'Logical Work Center Support' enabled.
Plug Value	This is used for informational purposes only.

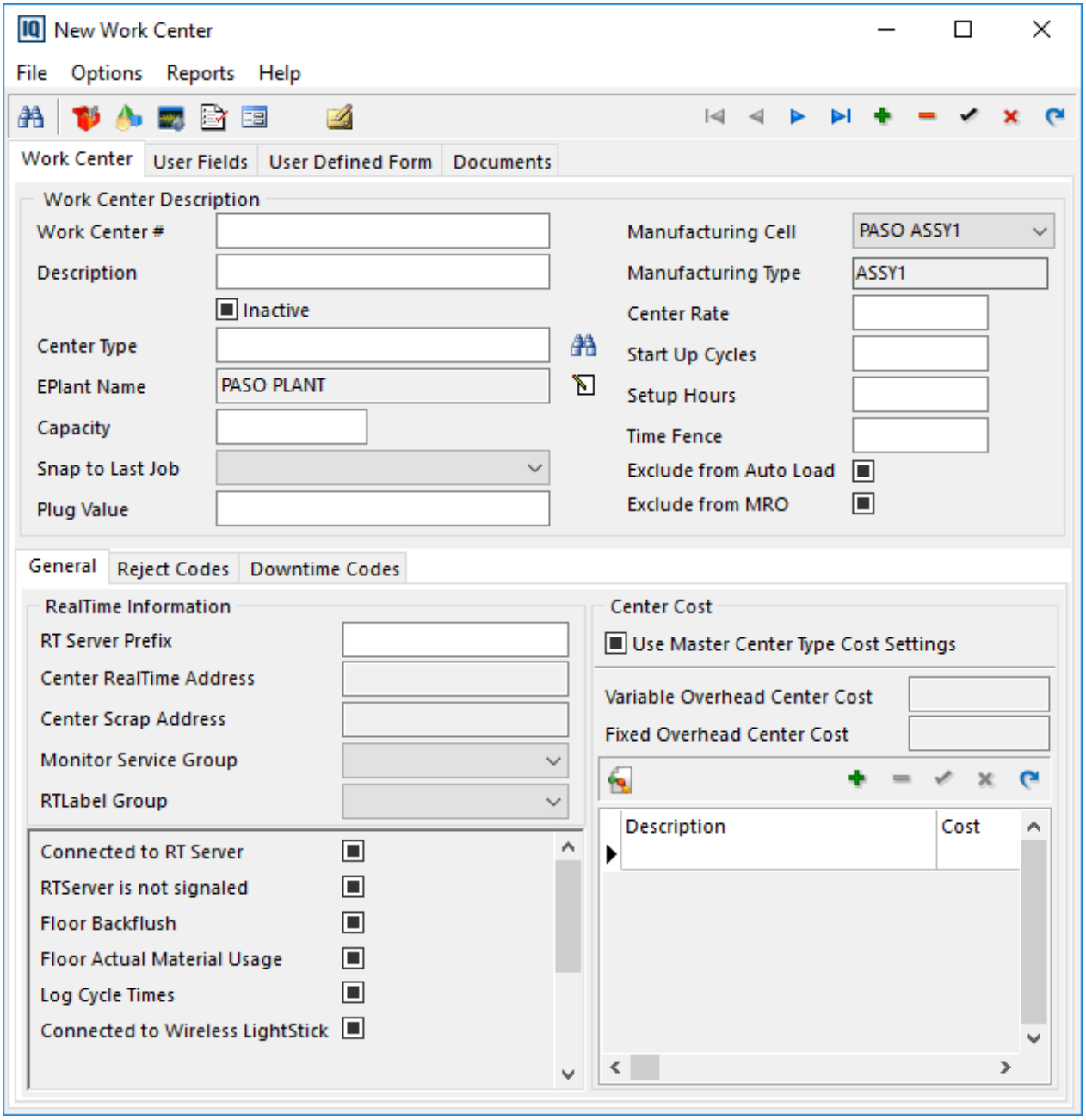
Please refer to the help files for additional information on the MFG Types form.

ASSY1 Work Centers

Work Centers need to be created in the Work Center module and then they can be associated to Assembly Processes as qualified work centers. Processes can be scheduled onto work centers in the Finite Scheduling module and/or assigned within the Dispatch List.

Select New from the Work Center pick list, and then select the Manufacturing Type or Cell from the selection criteria form.

For the ASSY MFG Type the following form will appear:



Work Center Description Information

Work Center #	Enter a unique identification number. This is an alphanumeric field that may hold up to 10 characters. To enter a list in numerical order, the user may need to "pad" the first machines with a 0. For example, enter work center one as "1" and work center eleven as "11", work center 11 will display on the pick list just after work center 1. The user should enter work center one as "01", work center two as "02" and so on for them to show in numerical order.
Description	**Optional**. Used for further description of the work center. This field is displayed on the work center pick list. It should be used to fully describe the work center. This field can also be used to designate the machine number should the user ever choose to renumber work centers. If work centers are renumbered the actual work center number should not be changed due to the effect on the historical data. However, the user can use the description field to include the work center number which can be changed if necessary without affecting the historical data.
Inactive	If this box is checked the work center will be hidden from pick lists.
Center Type	The **Type** is used to "group" similar work centers, usually by size or other similar measurement of throughput. This mechanism allows the system to understand that you have one or many machines that share common characteristics. Select the center type from the pick list. If the desired center type is not in the list, select the New button to create a new center type. Enter the center type name in the field on the pop up box. The EPlant will automatically populate with the EPlant the user is logged into, or select the Assign EPlant button to select the EPlant. **EnterpriseIQ** needs this information so that a capacity can be derived. By assigning a "Type" to the work center, **EnterpriseIQ** can determine where it needs to be scheduled, and if capacity is available. The Type is assigned to the work order which assists scheduling by telling the system where the job can be run.
EPlant Name	Used with the Enterprise module to define the EPlant associated to the work center.
Manufacturing Cell	Use this field to attach a work center to a designated cell. Click on the arrow down near this field, and choose the appropriate cell from the pick list.
Manufacturing Type	Manufacturing type describes the work center as belonging to a particular "type" of manufacturing such as ASSY1.
Center Rate, Start Up Cycles, Setup Hours	These fields are informational only (they are not currently used as all costs for quoting are calculated from the processes).
Time Fence	A work center may store a Time Fence, used with the Auto Loading feature of the scheduling module (the system also maintains a Global Time Fence value). This value, stored in days, will hold the position of any job(s) scheduled on this work center for the number of days listed here. During Auto Loading, EnterpriseIQ will not move or reschedule jobs within this time fence.

Exclude from Auto Load	Check this box so this work center will be excluded from being auto loaded in the finite schedule.

Reject Codes

From the Reject Codes tab users can assign a list of reject codes to a Work Center to limit the reject codes that can be selected in RT and ShopData for the work center. When entering rejects, the reject entry forms will restrict the reject code picklist to the reject codes linked to the work center. If no reject codes are linked to the work center then all the reject codes will be available.

Note: This does not apply to ASSY1 work centers. The system uses the Reject Codes associated to the Process for filtering purposes and not the reject codes associated to the work center or BOM.

Documents

Internal and external documents can be associated to the work center on the Documents tab. These documents will also be visible from AssemblyData.

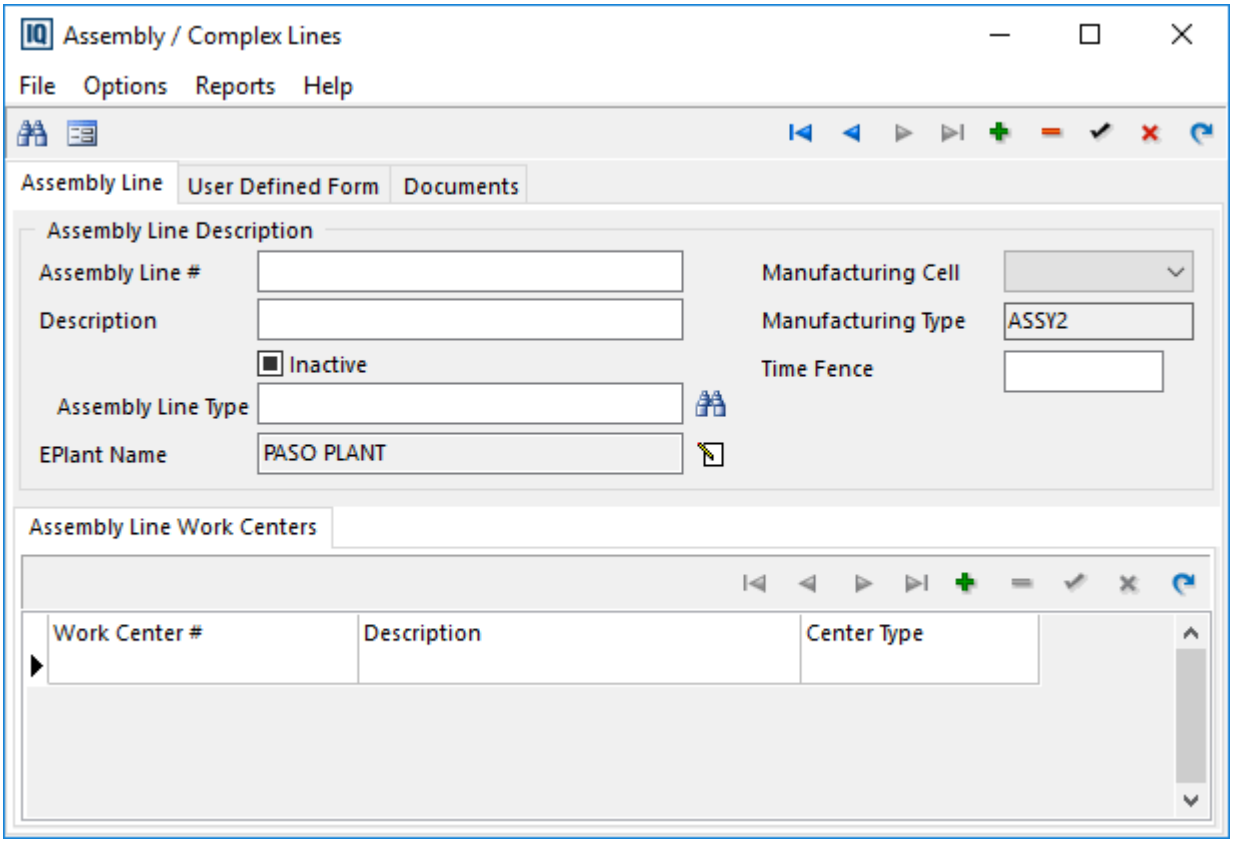
Note: See the Work Center section in the help files for additional information on all of the features in the Work Center module.

Assembly Lines for ASSY2 and ASSY3

The Assembly Lines are used for the ASSY2 and ASSY3 MFG Types. Select the Assembly Lines icon on the Manufacturing tab of the launcher bar.

Select New from the pick list, and then select the Manufacturing Type or Cell from the selection criteria form. Only ASSY2 MFG Types will be available from this form.

For the ASSY2 MFG Type the following form will appear:



(Note: The Assembly Line icon will become available on the launcher bar after the ASSY2 or ASSY3 MFG Types are created and the user logs out and back into the system).

Assembly Line Description Information

Assembly Line #	Enter a unique identification number. This is an alphanumeric field that may hold up to 10 characters.
Description	The description of the Assembly Line.

Assembly Line Type	The **Type** is used to "group" similar assembly lines. This mechanism allows the system to understand that you have one or many assembly lines that share common characteristics. The Type field can be manually typed in or entered from the user defined list by selecting the drop down arrow. To create the list right click on the field and select 'Edit User Defined List'. Select the Add (**+**) button to enter additional records.
EPlant Name	Used with the Enterprise module to define the EPlant associated to the assembly line.
Manufacturing Cell	Use this field to attach an assembly line to a designated cell. Click on the arrow down near this field, and choose the appropriate cell from the pick list.
Manufacturing Type	Manufacturing type describes the assembly line as belonging to a particular "type" of manufacturing such as ASSY2.
Time Fence	An assembly line may store a Time Fence, used with the Auto Loading feature of the scheduling module (the system also maintains a Global Time Fence value). This value, stored in days, will hold the position of any job(s) scheduled on this assembly line for the number of days listed here. During Auto Loading, EnterpriseIQ will not move or reschedule jobs within this time fence.
Inactive	Check this box to mark the assembly line as inactive, which hides it from pick lists.

Assembly Line Work Centers

The bottom section is where the specific work centers that are part of the assembly line are associated to the line.

Select the insert record (+) button and select the work centers from the pick list. Only ASSY1 work centers that are not already associated to an assembly line will be available to choose from.

Disposition Designators

Disposition designators (in and Out) can be associated to an Assembly Line. To associate disposition designators to an Assembly Line, select 'Disposition...' from the Options menu and select the desired location to be associated with In and/or Out transactions.

If the ASSY3 work order is scheduled on an Assembly Line the system will use the line's disposition designators before the ones associated to the MFG Cell and Type.

The hierarchy would be as follows:

1. Hard Allocated to the work order
2. Mfg # default designator
3. Default Designator
4. Designated Assembly line IN/OUT location (if the work order is scheduled in Finite Scheduling)
5. MFG Cell Dispo locations
6. MFG Type Dispo. Designators
7. FIFO
8. Temporary

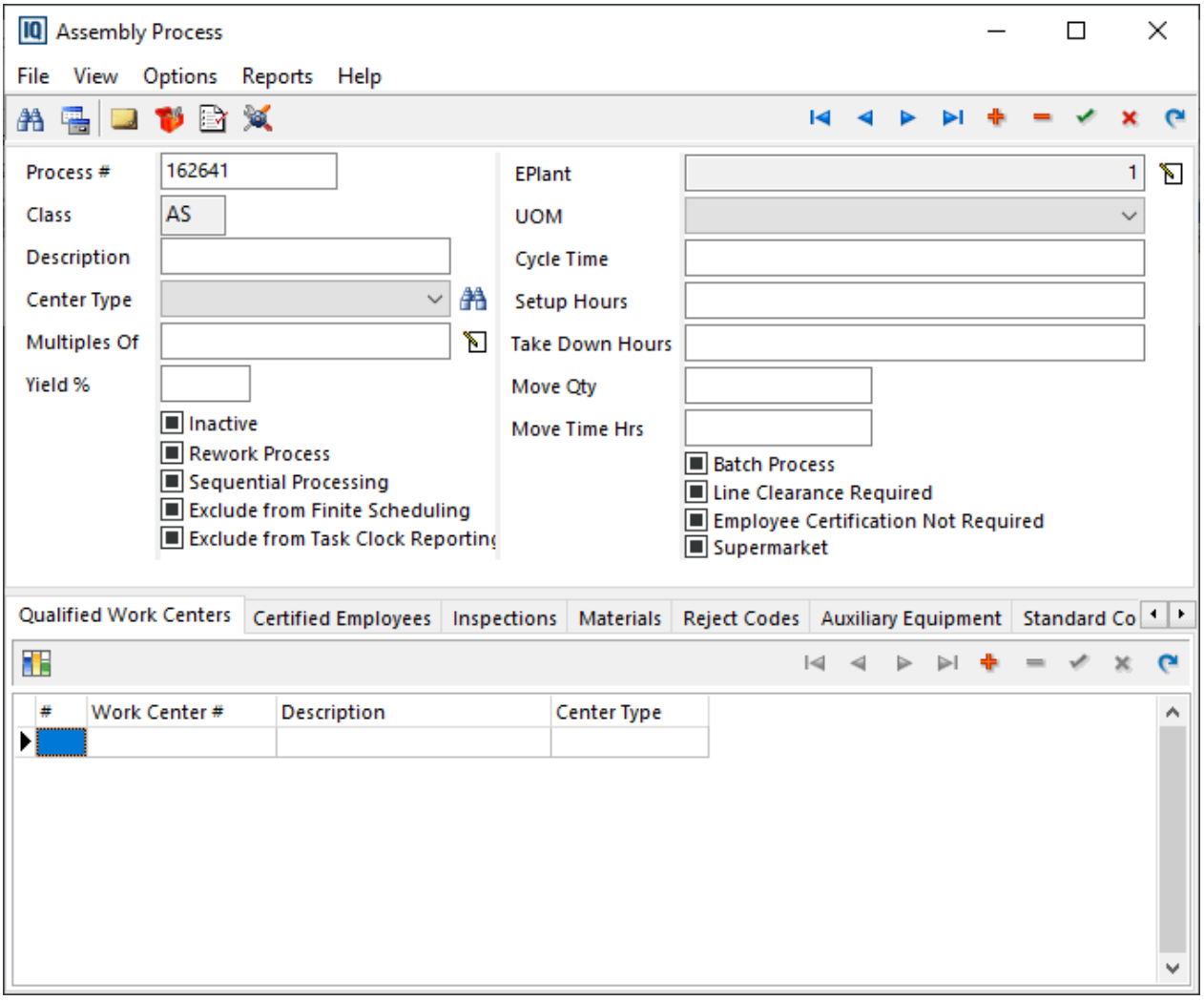
Documents

Internal and external documents can be associated to the work center on the Documents tab. These documents will also be visible from AssemblyData

Assembly Processes Maintenance

From the Assembly Process module users can create an unlimited number of processes that can be associated to BOM's. The processes are tracked using the Assembly Track and AssemblyData modules. These processes can be used over and over in multiple BOM's to provide information as to what processes are required to manufacture the item(s) associated to a specific ASSY type BOM.

From the main launcher bar on the Mfg tab select the Assembly Processes Maintenance speed button. Select New from the pick list and the following form will appear:



From this form users will add all the information related to a specific process within their facility. The information below will describe the fields and tabs in detail.

Main Section Field Listing (Alphabetical Order)

Batch Process	Check this option to indicate the process is done in a batch. This tells the system it takes the cycle time to do the amount of items listed in the multiples of field. Examples: Multiples Of = 1000, Yield = 100%, Cycle Time = 2hrs. 1 takes 2 hrs 500 takes 2 hrs 1001 takes 4 hrs 2001 takes 6 hrs Multiples Of = 1000, Yield = 95%, Cycle time = 2 hrs. 100 takes 2.11 hrs
Center Type	Select the center type from the drop down list or pick list. The list will contain all center types that have been created in the work center module specific to the EPlant. This is used in Rough Cut Capacity. Note: Processes attached to a BOM must have center types with the same MFG Cell as the BOM in order for the system to calculate the rough cut capacity correctly.
Class	The class defaults to AS and cannot be changed.
Cycle Time	The time required to perform the process. Used with Multiples Of/Multiplier field and UOM to determine the rate of production. Enter the cycle time based on the UOM selected. The cycle time must be greater than zero.
Description	This is a description of the process. It is a 25 character alpha numeric field.
Employee Certification Not Required	This will only be visible if the Process Certification is set to Certified Employees for the MFG Type. If this option is checked on the process, the employee certification check will be skipped when clocking into a task in AssemblyData.
EPlant	This is the EPlant associated with the process. This will populate automatically based on the EPlant the user is logged into when creating the process. The 'Assign Plant' button is available to edit the EPlant.
Exclude from Finite Scheduling	If checked the process cannot be finite scheduled either manually or by auto load.
Exclude from Task Clock Reporting	If this is checked, when clocking out of the assembly process the good parts/rejects form will not appear. The system will just clock the user out of the task. Note: If this is checked material cannot be added to the process. (The Materials tab will be read only).
Inactive	When this option is checked the process is considered inactive and will be hidden from pick lists.

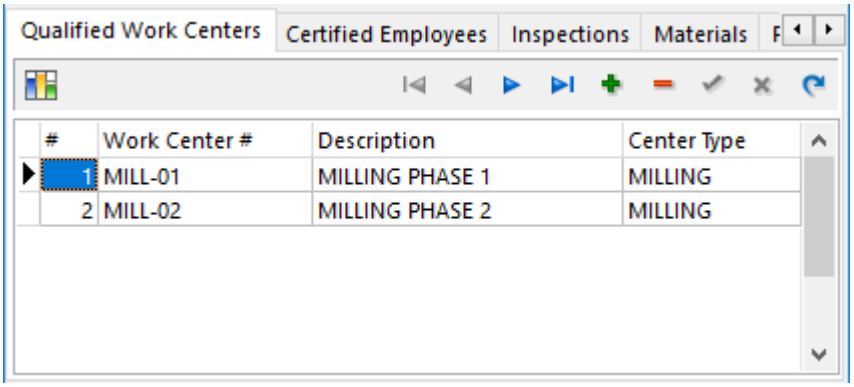
Line Clearance Required	With this checked a supervisor must clear the assembly line prior to an employee clocking into a process. This only applies to users who are utilizing AssemblyData. It does not apply to Assembly Track.
Move Qty	Move Quantity is the total number of parts that can be completed before moving to the next process. This is used in calculating throughput of an ASSY routing. This only applies to the process the move quantity is assigned to (it does not propagate to subsequent processes). **Note**: Move Quantities creates work order like entities by dividing the move quantity into the work order quantity. Each entity is calculated separately which can drastically increase the time it takes to process Update Schedule, add a work order to the schedule or recalculate Assy work center start and end times. This time increase is more prominent with a low move quantity and a high work order quantity because the number of calculations the system has to complete are increased. **Note**: Move Qty plus the Move Time Hrs will be added to following process even if the full Move Qty was reported in Labor Reporting. For example: ASSY1 BOM with 2 processes: Process 1 has a Cycle Time of 1 Hour, Move Qty of 4, and Move Time of 1, and Process 2 has a Cycle Time of 1 Hour and does not have Move Qty or Move Time. Prior to reporting any labor/good parts, the projected start of Process 2 will start 5 hours after Process 1 starts (4 * 1 + 1). After reporting 4 good parts and running update schedule, the Move Qty + Move Hrs are still added to the following process.
Move Time Hrs	Move Time is the time it takes to move from one process to the next process. **Note**: 'Move Time Hrs' does not look at the shop calendar. 'Move Time Hrs' continues even after the shifts end. For example: Shop Calendar has one shift, 8 hrs/day, 5 days/wk, starting at 7:00:00AM (ending at 3:00:00PM). The ASSY1 BOM has two processes. Process 1 has a one hour cycle time, 1 move qty, and 'Move Time Hrs'. Process 2 has a one hour cycle time. There is not a labor/material/machine constraint. When adding a work order with a quantity = 1 on 3/30/2021 3/26/2021 2:00:00PM – 3:00:00PM to finish process 1 3/26/2021 3:00:00PM – 10:00:00PM for the move time (move time still continues even though shift ends at 3:00:00PM) 3/29/2021 7:00:00AM – 8:00:00AM to finish process 2

Multiples of **Multiplier**	This field can be set to 'Multiples Of' or 'Multiplier'. Select the button next to the field to choose the option. This defaults to 'Multiples Of'. The caption will change based on the selection. ▪ Multiples Of - When this is checked the system will divide the value entered in this field into the cycle. If the Multiple Of field is blank or 0, the system will assume it is 1 when using this field for calculations. ▪ Multiplier - When this is checked the system will multiply the value entered in this field by the cycle. For example: If the value in this field is 10, and the Cycle Time is one hour, and Batch Process is not checked: If set to 'Multiples Of' it will take one hour to do ten items, or .1 hour per item (1 / 10 = 0.1) If set to 'Multiplier' it will take 10 hours to do one item (10 * 1 = 10) If Batch Process is checked then the results will be the same for both because it can be done in a batch: If set to 'Multiples Of' it will take one hour to do ten items, or 1 hour per item ((1 / 10) *10) = 1 If set to 'Multiplier' it will take 1 hour to do one item ((10 * 1) / 10) = 1
Process #	This field will automatically populate with a process number but can be changed to a user defined value that more defines the process created. This is a 15 character alpha numeric field.
Rework Process	When this option is enabled, users will be allowed to login to the process at any time regardless of whether Sequential Processing is checked on any of the other processes associated to the BOM. Processes that are marked as a Rework Process will be excluded from the % Completed calculation in Assembly Track. Note: 'Rework' processes should be created with a cycle time = 0. Otherwise, this cycle time will be included in standard cost and overall production hours.
Sequential Processing	With this option checked the next process will not start until the process marked sequential processing is finished. ▪ If it is not complete an employee will not be allowed to clock into the next process. ▪ Also, in the AssemblyData Dispatch List->Report Quantity option, if the prior process is marked sequential processing, and is not completed, a pop up error stating, 'Cannot Report Quantity. Process # xxx was not completed' will appear, and the employee will not be able to report a quantity. Note: This check box does not apply to process dependencies. By default Process 1 is sequential to Process 2 and 2 is sequential to the 3rd. To make these processes independent of each other users must rearrange the dependencies using the 'Process Dependencies Chart' in the BOM.
Setup Hrs	Enter the time it takes to set up for this process. (Process setup time will only show up in the finite schedule and not assembly track). This value is also used to calculate the process throughput of an ASSY routing. It is assumed the setup time is only done once per process.

Supermarket	Check this box if the process is relevant to the Supermarket application. The Supermarket application allows the ability to Task In to a group and pick the required component parts needed for the group of work orders selected. Users can gather the required parts, organize them, report time spent to perform the picking function, and backflush the components.
Take Down Hrs	Enter the time it takes to take down the equipment for this process. This is not used in calculations.
UOM	The unit of measure of the cycle time value. Select a UOM from the drop down list. The choices are: seconds, minutes, hours, or days.
Yield %	Enter the yield percent associated to this process. For example, what is the percentage of usable time.

Qualified Work Centers

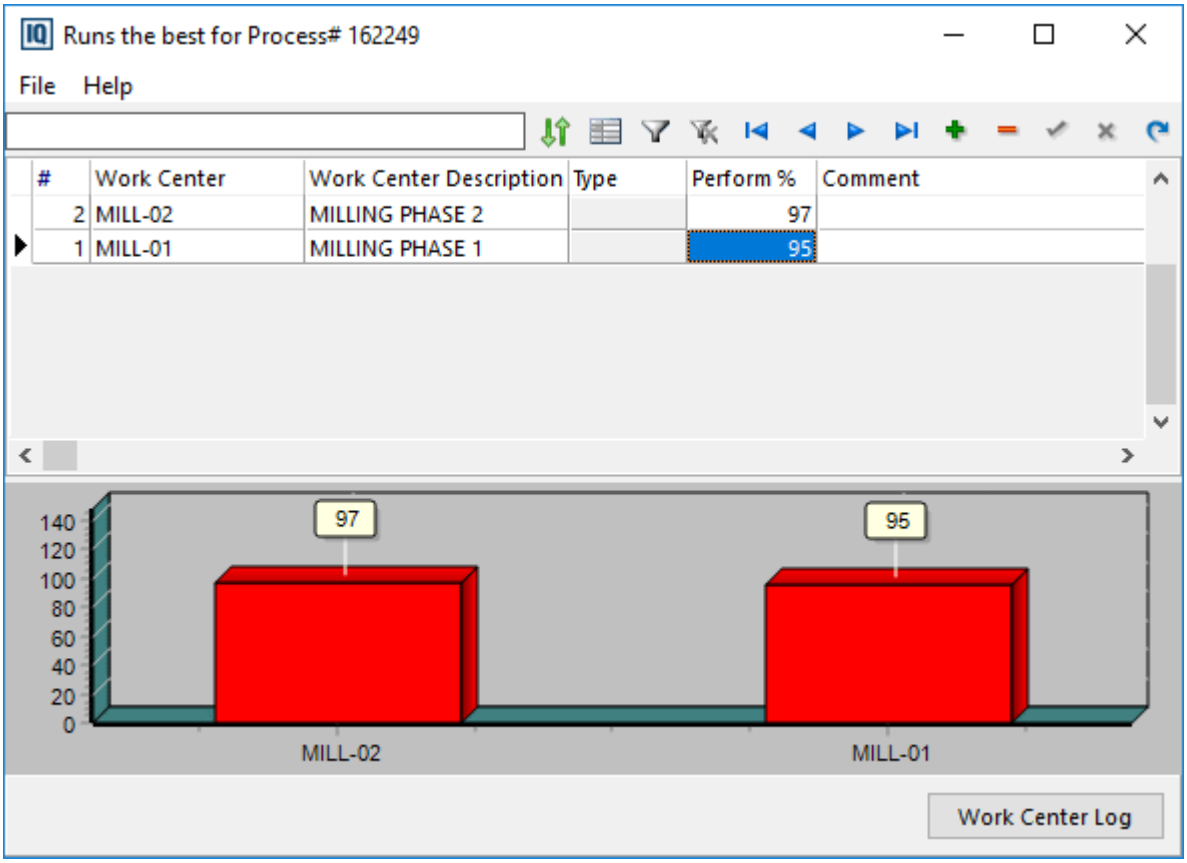
Multiple work centers (created in the Work Centers module) can be associated with a process. The process will be listed on the Dispatch List in AssemblyData for all work centers listed in this section.



To add qualified work centers select the insert record (+) button. Click on the Work Center # or Description field then click on the ellipsis button to bring up the pick list of work centers. (This list will only show 'ASSY1' work center types and will be filtered based on EPlant). Select the work center from the pick list. Once selected, all three fields will contain information. Continue this process until all qualified work centers have been added.

The user can jump to a work center from the right click option.

Runs the Best – Which work centers where the process runs the best can be established by selecting the 'Runs the best' button  . This opens a form to enter the work centers where the process runs the best. To enter this information select the insert button and enter the sequence number. Then select the work center from the drop down list in that field. A performance % and comment may also be entered. If a Perform % value is entered the lower section will display a bar chart reflecting this information. This information can be used to filter the scheduling pool when inserting processes into the finite schedule.

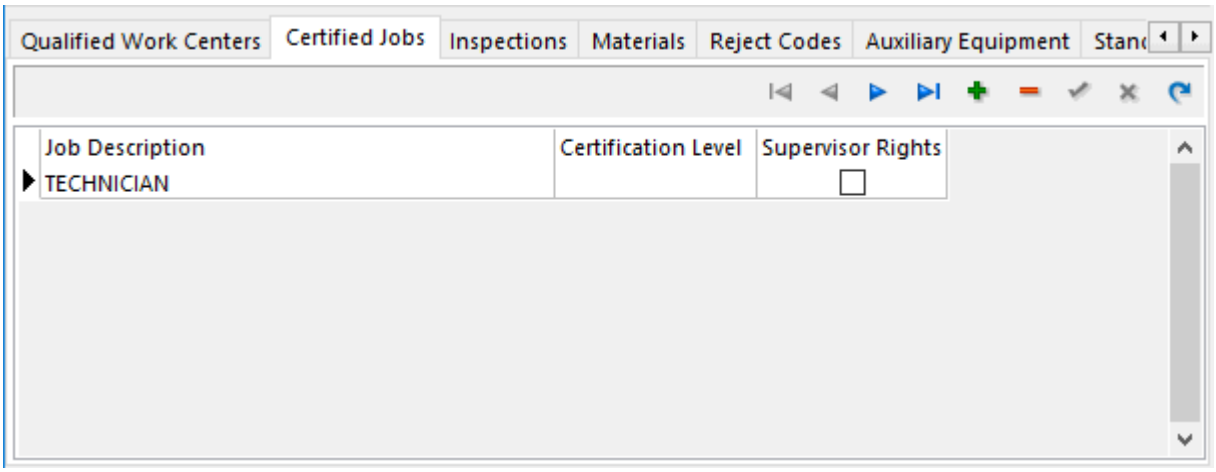


Process Certification Selection

Users can choose to set the Process Certification to either **Certified Jobs** or **Certified Employees**. This setting is found on the Manufacturing Types form (please see ASSY Manufacturing Types above for details). The default is Certified Jobs.

Certified Jobs

If the Process Certification is set to Certified Jobs for the manufacturing type the tab In Assembly Processes Maintenance will say Certified Jobs.



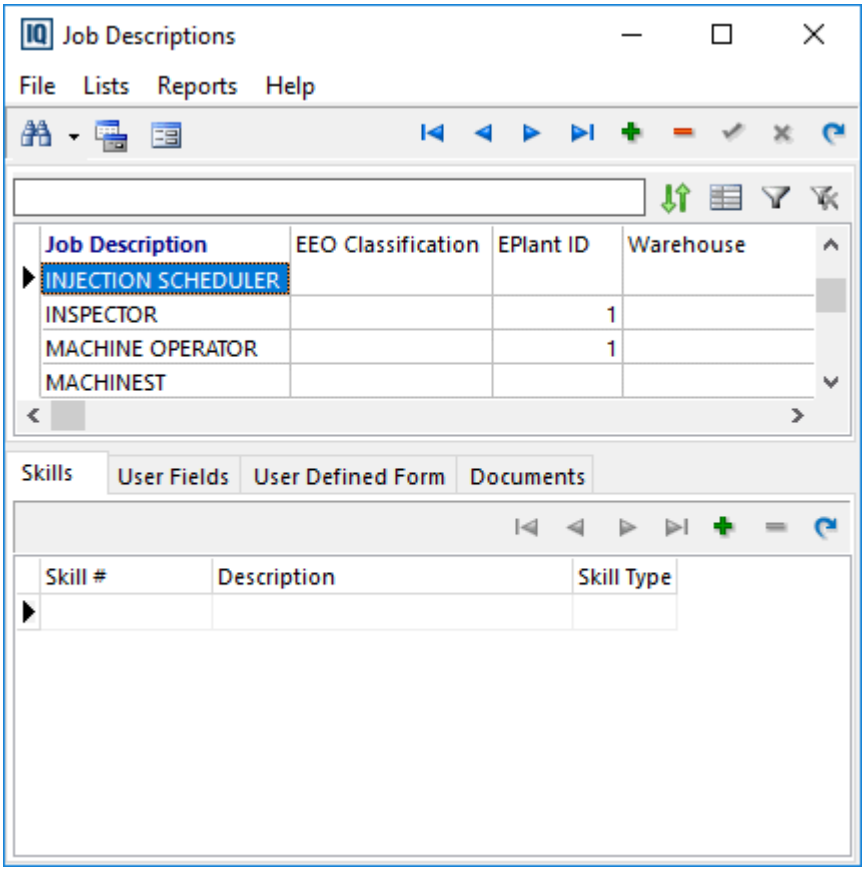
Users can specify job requirements for running the process. This will limit which employees can log into a specific process. Only those employees with an active certification level high enough for the specific job can log into the process.

Employee jobs are linked to employees through the Employee Maintenance module. In order to specify certified jobs users must:

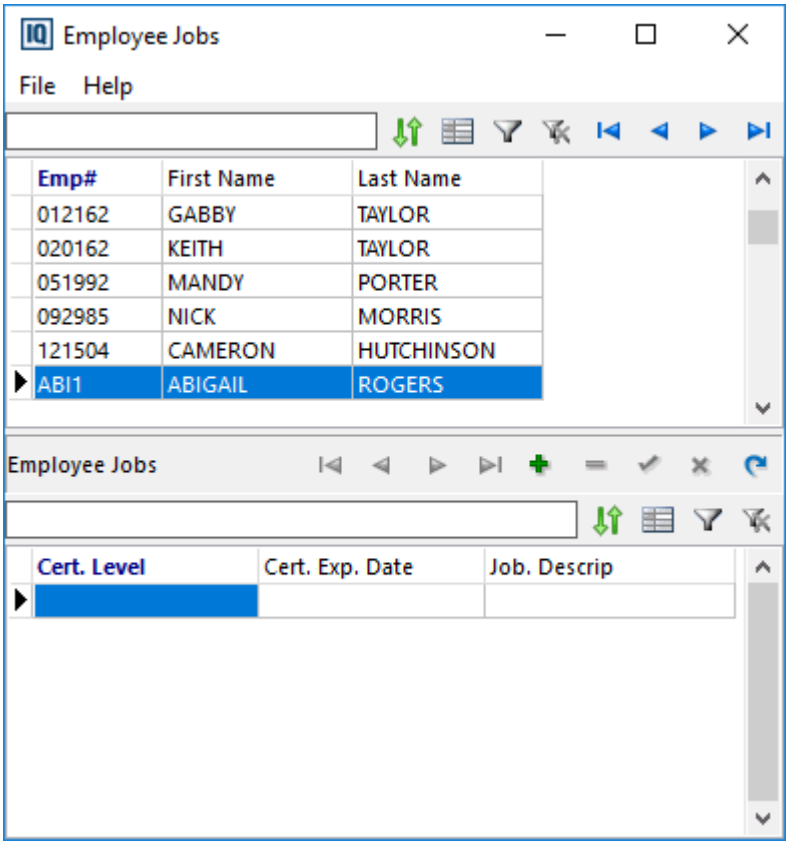
- Create the list of job descriptions.
- Associate the specific job description to employees with certification information in the employee jobs list.
- Associate the Job Descriptions to the processes.

Job Descriptions

Access the Job Descriptions form the Employee Maintenance module (on the Sys Setup tab or Payroll). Select Employee Jobs from the File menu, and then select Job Descriptions from the Employee Jobs File menu. Select the Add (**+**) button in the top section and enter in a Job Description. Continue this process until all job descriptions have been entered.



Employee Jobs – Close the Job Description window to access the Employee Jobs form to begin associating the Job Descriptions to the employees.



From the Employee Jobs form, highlight the desired employee and select the Add (**+**) button. Click in the **Job Descrip** field then select the ellipsis button to bring up the Job Description pick list. Select a job from the pick list. Enter in a certification level and certification expiration date if applicable. Each employee can have multiple job descriptions associated to them.

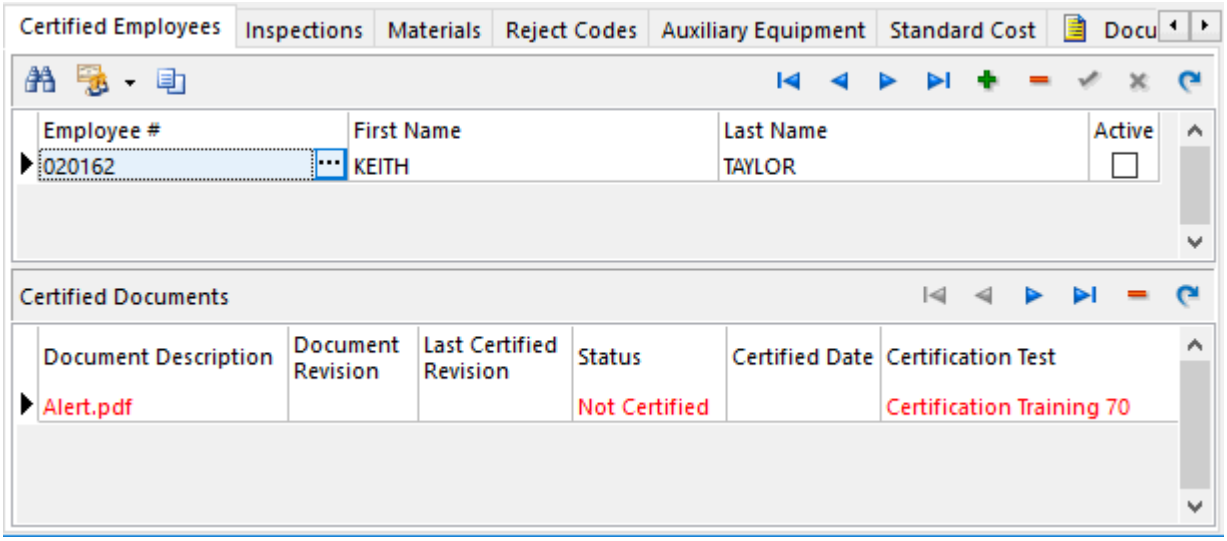
Note: The Job Description field on the Employment Info tab in Employee Maintenance does not link the employee to the 'Employee Job' for the purpose of the Certified Jobs in Processes. The linking must be done in the Employee Jobs form.

Associating Job Descriptions to Assembly Processes

Once Job Descriptions have been created and associated to employees the job descriptions can then be assigned to processes. From the Certified Jobs tab in Assembly Process, select the ellipsis button in the Job Description field. Select the Job Description from the pick list. Enter the Certification Level required for the job description for this process. Continue this process until all required job descriptions have been added.

Certified Employees

If the Process Certification is set to Certified Employees for the manufacturing type this tab will say Certified Employees.



This is a list of employees that are certified to run the specific process. Use the Search button to view a pick list of the employees associated to the process. Inactive employees can be hidden using the 'Hide Inactive Employees' toggle button. Logging into a process in Assembly Data will be restricted to only certified employees. This does not apply to labor reporting in Assembly Track.

To add employees select the insert record (+) button to bring up the pick list of employees. Use the toggle buttons on the pick list or the Shift and Ctrl buttons on the keyboard to multi-select the employees to be added.

The **Certified documents section** displays any External documents that have been associated to the process. Upon adding a document the employee is marked as 'Not Certified' and the line item is red. To certify an employee for **all** of the associated documents highlight the employee and select the 'Certify Selected Employee' speed button. A confirmation button will appear – select Yes to continue. The document text will turn black; the status will say 'Certified', and the system date and time the employee was certified will populate in the Certified Date field.

An employee can be certified on all processes containing the same document by selecting the drop down arrow from the certify employee speed button and selecting that option.

To certify an employee on a single document, right click on the document and select 'Certify This Document'. The specific document will marked as Certified. Employees must be certified on all documents before being allowed to log in to the process.

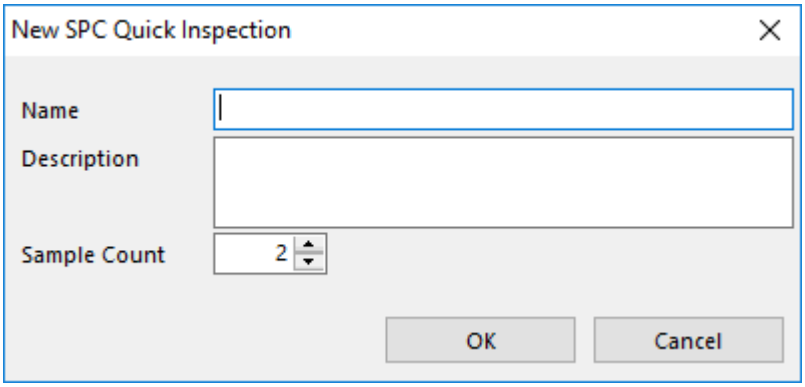
If the external document is updated to a new revision the employee will not be certified any more for that document and the status will display 'Certification Revision Mismatch'. Select the 'Certify Selected Employee' button to certify the employee to the latest document revision.

Note: If there are no certified employees listed, and there are external documents associated to the process, any employee will be able to clock into the process.

Certification Tests can be associated to documents. When an employee that is not certified on the document attempts to clock into a work order they will receive an error, 'There are pending certification training tests required for this Work Order. Would you like to take the test now?' If Yes is selected the system will present the employee with the test questions and multiple choice answers. As the user progresses through the test, the percentage of correct answers will be compared to the Pass Percent on the Certification Training to determine whether the employee passes or fails. If a Certification Test is associated to the document it will be listed in the Certification Test field in the Certified Documents section. If the employee passes the test the document will be marked certified for all instances where the user/document exists in BOMs, Processes and Employee Training records. (Please see the Document Control section of the Quality manual for more information on setting up Certification Tests).

Inspections

This option will be available to customers with the DELMIAworks Quality module. The Inspections tab allows users to associate SPC Quick Inspections to the process. To add inspections select the Add (**+**) button, click on the ellipsis button in the Inspection field and select an Inspection from the pick list, or select New to create a new quick inspection. Enter a Name, Description, and Sample Count. The sample count will default to 2 but can be adjusted to a greater value. This ensures that the group will be valid for analysis in SPC.



From the Inspection tab place a check in the Pre-Inspection and/or Post-Inspection box as it applies to the added Inspection. To complete the quick inspection set up, right click and select Jump to Inspection. Select the newly created inspection from the pick list. The Inspection Setup form will appear for the user to enter the inspection details, parameters, gages, etc.

Pre-Inspection & Post-Inspection

If Pre-Inspection is checked and 'Inspection Required' is active on the SPC inspection group, operators are prompted to complete pre-inspections at the beginning of the assembly process when they task in to the process. If Post-Inspection is checked and 'Inspection Required' is active on the SPC inspection group, operators are prompted to complete post-inspections at the end of the assembly process when they report production. The Pre-Inspection and Post-Inspection settings affect the DELMIAworks Assembly module, Task Clock, as well as Assembly Data.

When operators are prompted to complete inspections and click the 'Continue' button, the Quick Inspection module will appear where they can complete the required inspections. Once Pre and Post-Inspections are completed, operators can proceed to the assembly process or continue reporting production respectively.

Materials

To associate material(s) with a process select the insert (+) button to bring up the master inventory pick list. Select the item and enter the number of parts per information for the process. When attaching material to a process, parts per can be a positive or negative number but it cannot be null or zero. A warning will appear if parts per is not entered. A 'User Defined Worksheet' can be created to calculate the Parts Per field based on values entered by the user in the worksheet. To utilize the worksheet select the ellipsis button in the Parts Per field. Please see the User Defined Worksheet section in this manual for information on creating worksheets. An unlimited number of inventory items may be associated with a process.

Notes:

Components and packaging for an ASSY BOM must be attached to a process associated to the BOM. The Add component to item and Add packaging to item buttons are not available from the ASSY BOM Item Details tab).

Blends are attached as components and therefore the blend will be backflushed during labor reporting; not the components of the blend.

If an attached component is manufactured using an Outsource BOM, and the item changes, users should always clone the BOM and not just change it to a new item. This will prevent out of balance costing issues.

Attaching Packaging and Components

To attach a packaging item or a component, complete the following steps:

- Select the insert (+) button to bring up the master inventory pick list.
- Select the item from the pick list. **Note**: The user must enter the items into inventory before using this feature. However, items may be created on-the-fly by selecting the "New" button from the pick list.

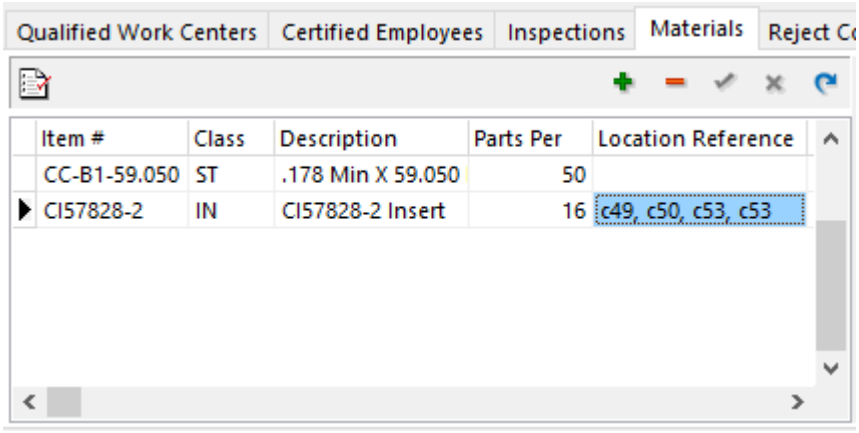
- **For Components**: Enter the number of components per part.
- **For Packaging**: Enter the Parts Per Package. The parts per package calculation needs to know how many parts will be put into the packaging item selected. In the case of a box, for example, you will enter how many parts will be placed in the box. The system then removes the number of boxes based on the number of parts produced. For example, if putting a total of 5,000 parts in a box, with 1000 parts each in 5 bags with a single twist tie per bag, the number of parts per package would be 5,000 for the box, 1000 for the bag and the tie. The quantity price break information comes from the price breaks in the Buying section for the inventory item. The buying price information can be changed from this screen and price breaks may be deleted or added. If the buying information is changed here it will also change in the buying section in master inventory for the inventory item.

- **Startup Qty** - A start up quantity can be entered in this field for the attached material. During the update schedule process the system will check if a start up quantity is required and if so the required material quantity will be added to the first day of production for that specific process (taking into consideration offset days). The requirements will be visible in the Material Exceptions and Staging reports. The quantity entered here will not effect the standard cost of the item unless the 'Include in Std Cost option is checked. The system will use the inventory item's standard calc quantity to determine the costs. **Note**: The system will only apply the startup qty to the consumed components as long as no labor reporting (process wip) took place for the parent item. For instance: Item A consumes Item B. The demand for Item A is 100, Item A needs 10 startup parts of Item B. As long as there is no labor (process wip) reported against Item A, the system will add 10 to Item B (during update schedule).

- **User Fields** - There are three alphanumeric and three numeric user defined fields that are associated with the attached process/item in relation to the BOM. The user may change the label text of these fields from the BOM only, (not from Process maintenance) by right clicking on them and then typing the new label. They can be edited from either place.

- **Material Info** - Material Information can be entered in the memo form accessed by clicking the ellipsis button in this field.

Circuit Board Processing



- **Location Reference** - For users with the 'Circuit Board Processing' license the Material Info field will be called Location Reference instead. This field is used to enter the locations on the circuit board for the material. Select the ellipsis button in the field and enter the locations. The locations must be entered with a comma as a separator.

- **Parts Per** - This field is used to enter the number of locations references.

Location Reference Validation - Select the button in the upper left corner of the Material tab  to validate the location references for all attached materials. The Validation will loop through all materials and check for duplicate strings (separated by commas) and raise an exception if duplicates are found. The exception message will show the duplicate strings. For example: 'Location Reference with duplicated strings: [c1]'. The Validation process will also count the number of location references and raise an exception if the count does not equal the Parts Per. The exception message will show both the count and the current Parts Per. For example: 'Location Reference has 16 locations instead of 15'. If the Location references are valid no message will surface.

Additional Materials Information:

The user can right click and select 'Jump To Inventory' to access the master inventory details for the highlighted item.

Attached materials can be rejected throughout the assembly process from AssemblyData and/or Assembly track.

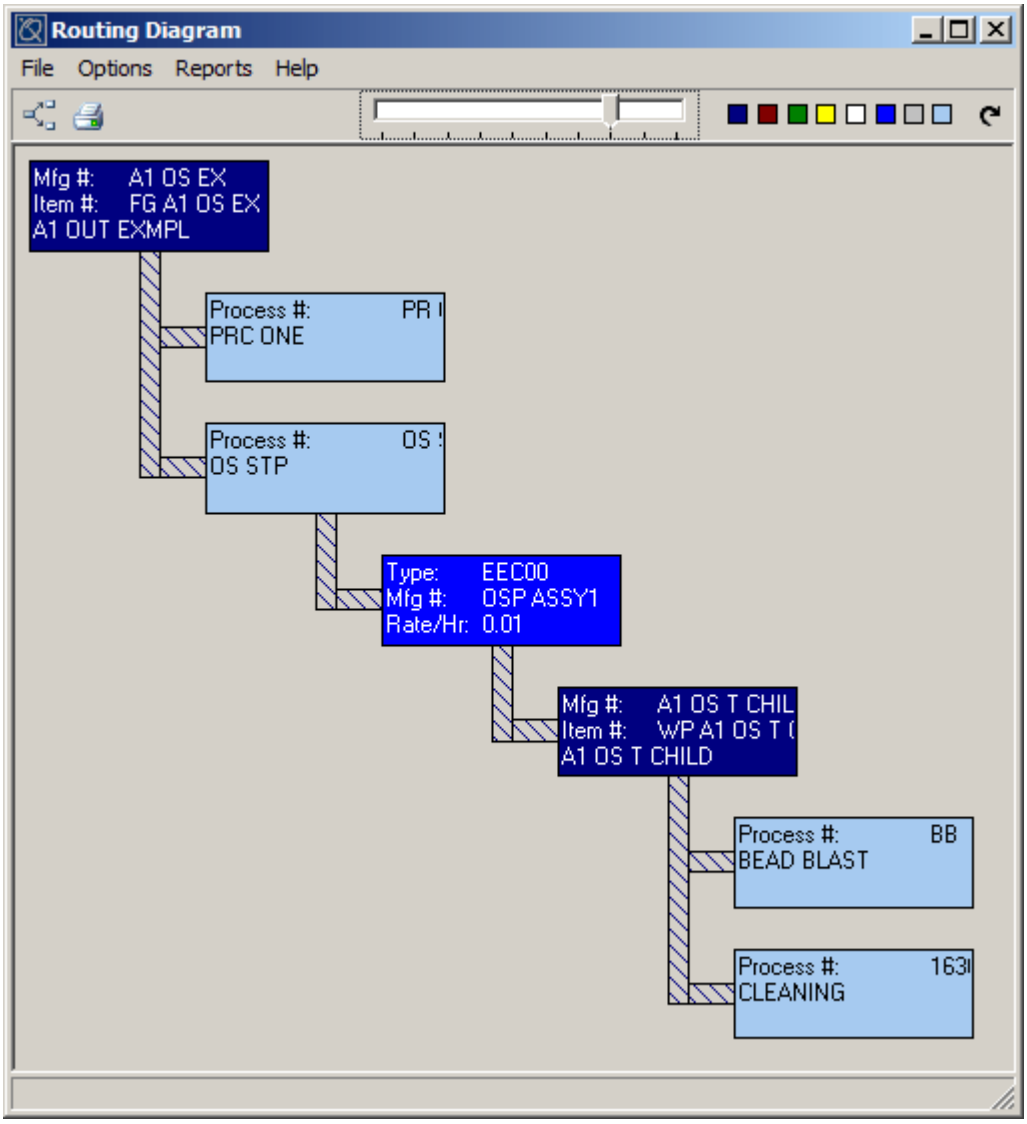
Note: A null or zero quantity is allowed. An Authorization Required form will appear with the Process and Item # information stating, "Field 'Parts Per' is 0". Select OK to continue or Cancel to return to the form to enter a value. Security can be placed on this message.

Note: In order to process transactions, such as rejecting components, users must have a recipe card for all levels of manufactured items, or check the 'Disable Cost Calculation' checkbox (Inventory on the Standard Costing tab) if costing should not affect the item. (See the "Costing" manual for details on recipe Cards and settings).

Outsourced Items and ASSY Manufacturing

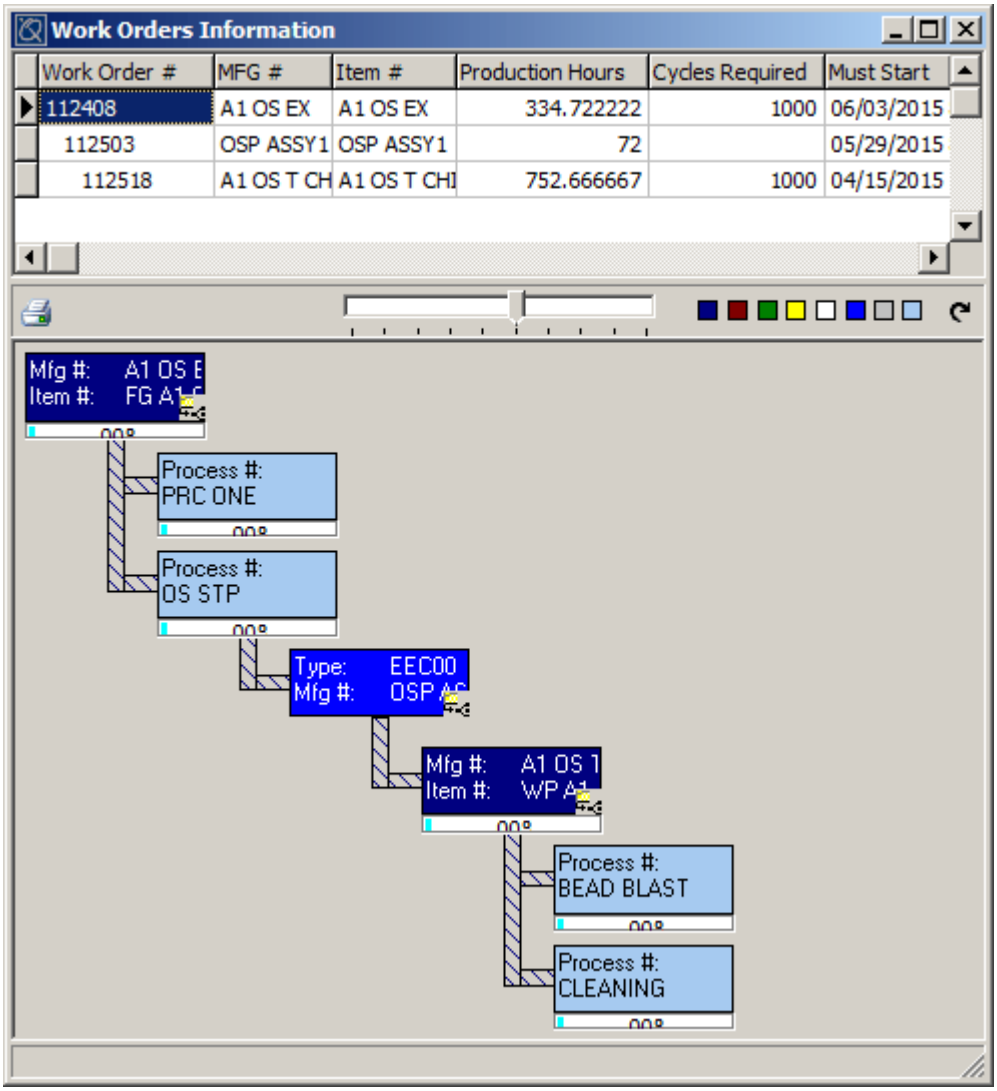
When part of the process requires an outsource vendor to perform an operation an Outsource BOM should be created for that item. It is necessary to have a separate Outsource BOM in order to track the Outsource inventory (In-Transit) locations. The outsource item must change item # when it is received back from the outsource vendor. (The child item that is sent to the vendor becomes the parent item when received back from the vendor). At that point the outsource parent item can be consumed by an Assembly Process. If the outsource item does not have a BOM setup and is just attached to a process there would be no item # change which means there would be no outsource child inventory tracking.

For example: 'A1 OS EX' is an ASSY1 finished goods item that consumes 'OSP ASSY1' which is an Outsource parent item (Outsource BOM) which consumes 'A1 OS T CHILD' which is an Outsource child item manufactured using an ASSY1 BOM.

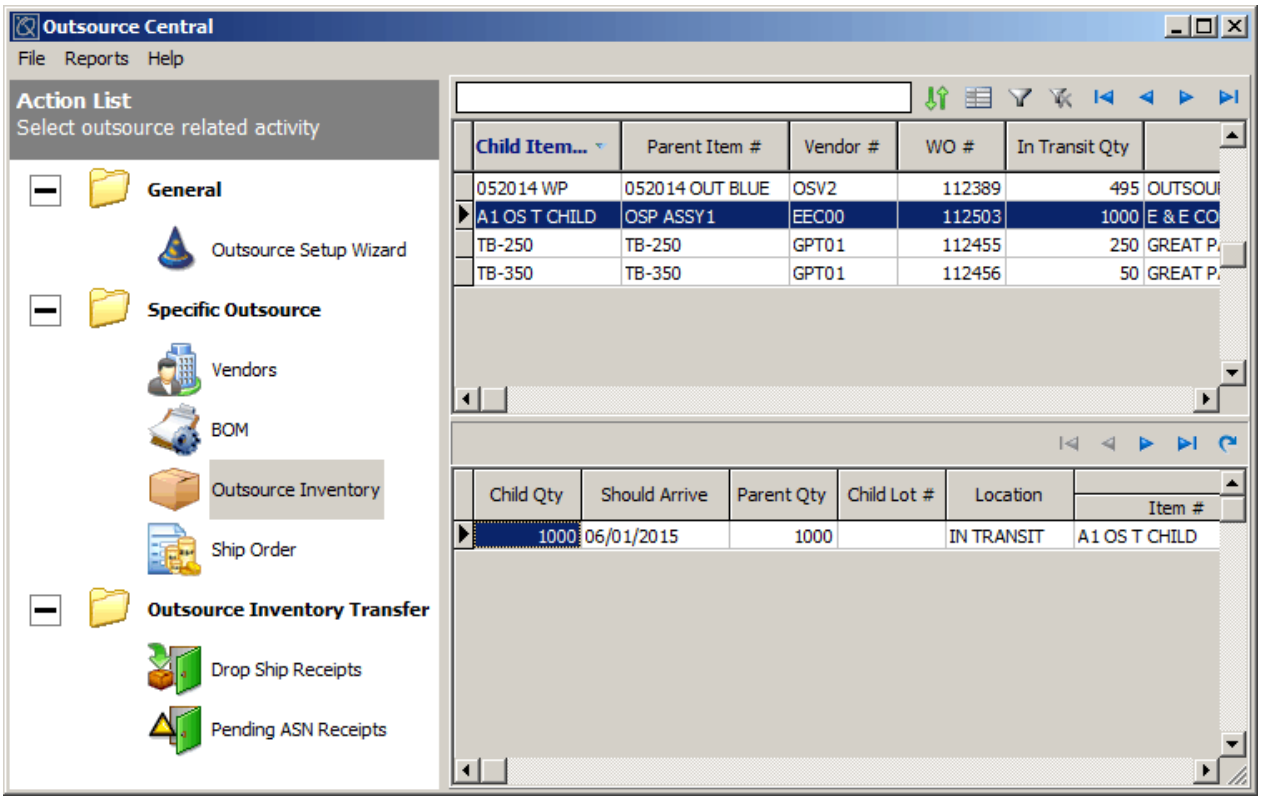


The 'A1 OS T CHILD' item is added to the Outsource BOM as a component. The 'OSP ASSY1' item is added to the Materials tab of the 'OS STP' Process which is attached to the 'A1 OS EX' ASSY1 BOM.

Work Orders will be created for each ASSY1 BOM and the Outsource BOM.



When the Outsource item is setup with a BOM the Outsource Central module can be used to create Ship Orders, receive items, and track the status of the inventory.



A Ship Order is created which is used to ship the child item to the vendor to manufacture the parent item. The item will be in inventory in an In transit location. A PO is created for the vendor. The parent item is then received using the standard receiving process. The child item is 'backflushed' from inventory out of the In Transit location and the parent is added to inventory during receiving, and is ready to be consumed while manufacturing the finished good item.

Please refer to the Outsource Central documentation available from Help->Contents in the module or on MyDELMIAworks for more details.

Note: Outsource Central is not required but provides tools to manage outsource inventory more efficiently. Users can create Outsource BOMs and use POs and Receiving, or Scheduling and Production Reporting to make the inventory transactions.

Outsource Items without Outsource BOMs

For users that do not want to 'break' an ASSY BOM to handle an outsource operation the outsource item is not associated to an Outsource BOM but is just added to the materials tab of an assembly process. The following outlines the steps to handle outsourcing in this manner. Keep in mind users will not be able to track inventory for the parent and child as with the above method.

- Create an inventory item describing the outsource process.
- Assign the outsource cost element. (The cost of the item/process would automatically roll up to the finished goods item).
- Attach the inventory item to the outsource process of the materials tab of the Assembly Process.
- Place a PO for the outsource inventory item, selecting the appropriate Outsource vendor.
- Receive the outsource inventory item into inventory.
- The outsourced item will be backflushed once they the finished goods item is dispositioned.

Reject Codes

Rejects codes can be associated to a process. These reject codes will then be the only ones available when entering rejects for attached materials in AssemblyData and Assembly Track. If no specific reject codes are assigned to a process then the user will be able to select from all reject codes associated to the EPlant they are logged into.

Select the insert (+) button and select the reject code(s) from the list. Multiple codes can be added at one time by using the Shift and Ctrl buttons on the keyboard or the toggle buttons on the form.

Auxiliary Equipment

Auxiliary equipment can be added to a process and then supervisors can select the specific equipment used in Assembly Data while performing the Line Clearance function. This information can be used in custom reports.

Note: If a process does not require a Line Clearance the tools cannot be selected in Assembly Data. The information entered here would be informational only.

To associate auxiliary equipment select the insert record (+) button. Use the toggle buttons on the pick list or the Shift and Ctrl buttons on the keyboard to multi-select the equipment to be added.

New auxiliary equipment can be added to the list by selecting the Auxiliary Equipment Maintenance button  . The list of existing auxiliary equipment will appear. Select the Insert (+) button and to add a new equipment.

To link the auxiliary equipment to a piece of equipment in the Maintenance, Repair and Overhaul (MRO) module select the **Tooling Info** speed button. Select the insert record button and multi-select the MRO equipment to link to the auxiliary equipment. The MRO equipment will display in the Associated Tools section in AssemblyData during a line clearance.

The system will store which MRO equipment ID's were actually used in the line clearance process. The table is for history reporting and is called SNDOP_CLEAR_LINE_PMEQMT.

Standard Cost

The standard cost for labor and overhead for the process is input on this tab.

Labor:

- Select the Labor cost element using the drop down list.
- Next, click on the ellipsis button in the operator field to bring up the Process Labor form (Note: Security can be placed on this form including the Labor rate field).
- Enter the number of operators and the employee level required. Multiple operators and types may be associated to the process. Users can access the Employee Level list by clicking the icon in the top left corner of the form  . (Security is available on this button).

  If the user would like to see what the standard cost for the Labor would be immediately, calculate the standard labor cost by clicking on the calculator button. This button calculates the standard cost for labor using the cycle time, number of operators, multiple of, and labor rate. (The labor rate is based on the rate associated to the employee levels. If the Default employee level is used, and does not have a labor rate populated (it is null), the system will use the labor rate associated to the ASSY MFG Type).

Note: If the Cost field is not calculated after a change has been made to the cycle time, number of operators, multiples of, and/or labor rate, then this number may be different than the Costed BOM. This happens because when recalculating the standard costs on the parent item, it takes the information associated to the process and uses those numbers to calculate the standard cost for Labor so the standard cost is accurate.

Break out Labor Costs including Setup is unchecked (System Parameters->Inventory tab)

- ((Cycle time in hrs / multiple of) / (Yield/100)) * Labor rate * # of operators

Break out Labor Costs including Setup is checked

When this parameter is checked there will be two fields for labor costs, Cost and Setup Cost:

- Cost (Production Labor) = (Cycle time in hrs / multiple of / (Yield/100)) * labor rate * # of non-setup operators
- Setup Cost = Setup Hours * Set up operators * labor rate

Production Cost example: If the multiples of is one, yield is 100, the cycle time is 10 hours, and one non setup operator is attached with a labor rate of 45.00 and a half a non setup operator is attached at 55.00, the standard cost for labor would calculate to 725.00.

(((10 * 1) * 45) + ((10 * .5) * 55)) / 1 = 725.00

Another example: Multiple of = 5, Labor rate = 10, operator = 1, and the cycle time = 15 minutes

((15 minutes /60 minutes) * 10) / 5 = (.25 * 10) / 5 = 2.5 / 5 = .50 per item

Setup Cost Example: If there is one Setup Operator with a labor rate of 20.00, the break out parameter is checked, and the process has one hour of setup, Setup Cost = 20:

1 * 1 * 20 = 20.00

Note: The setup cost for the item will carry over to Standard Costing (in Inventory) and uses the item's 'Standard Calc Qty' to determine the cost per item. In this example, if the 'Standard Calc Qty' for the item is 1000, the setup cost per item would be 0.020 (20 / 1000 = 0.020).

The Cost Element hierarchy for labor when reporting Process WIP as follows:

1. Employee Maintenance > Misc. tab
2. Assembly Process Maintenance > Standard Cost tab
3. MFG Type > Labor/Overhead tab
4. "Labor" (text)

Variable and Fixed Overhead:

- Select the Overhead cost element to associate to the Variable and Fixed costs using the drop down list.
- A Center Cost can be entered if the cost is different than the default Variable and Fixed Overhead rates entered for the MFG Type.
- If the user would like to see what the standard cost for the Variable and Fixed Overhead would be immediately, calculate the standard overhead cost by clicking on the calculator button. This button calculates the standard cost for overhead as follows:

  ((Cycle time in hrs / multiple of) / (Yield/100)) * Rate * # of Non Setup Operators

  Note: If a Center Cost is entered here this will be the rate used for the calculation, otherwise the system will use the Overhead Rate assigned to the default ASSY1 Mfg Type.

  *same calculation is used on Process and in Inventory

Note: If the Cost field is not calculated after a change has been made to the cycle time, rate, multiples of, or yield, then this number may be different than the Costed BOM. This occurs because when standard costs on the parent item are recalculated, the information associated to the process(es) are used to calculate the standard cost for Overhead so the standard cost is accurate.

Note: The standard cost for labor and overhead can be recalculated for all processes at once by selecting '**Calculate Overhead for ALL processes**' and/or '**Calculate Labor for ALL processes**' from the **Options** menu.

Note: The Translog cost element for OVERHEAD is populated according to the following hierarchy: 1) The element for OH on the Process (on BOM), 2) If that is not populated, the system will use the overhead cost element on the ASSY MFG Type.

Upon moving to a different process or exiting the form, if any of the following fields have been modified: Cost Elements for Labor, Overhead and Fixed Overhead, Operators, and Variable and Fixed Center Costs, a Confirmation asking '**Calculate the standard labor and overhead costs for this process?**' with Yes and No buttons will display. If Yes is selected, the system will calculate the standard labor, variable overhead, and fixed overhead costs. If No is selected, the costs are not recalculated. Security is available on this confirmation. There is also a 'Do not show next time' check box.

Documents

Internal or External documents can be added to the process. The documents can be set to print with the BOM, Work Order, All, or None. These documents will also be visible from the AssemblyData module.

The External documents added here will be listed on the Certified Employees tab. These are documents that describe the certification requirements for processes.

The functionality of this tab is the same as is found throughout EnterpriseIQ, such as printing, adding, and editing.

User Fields

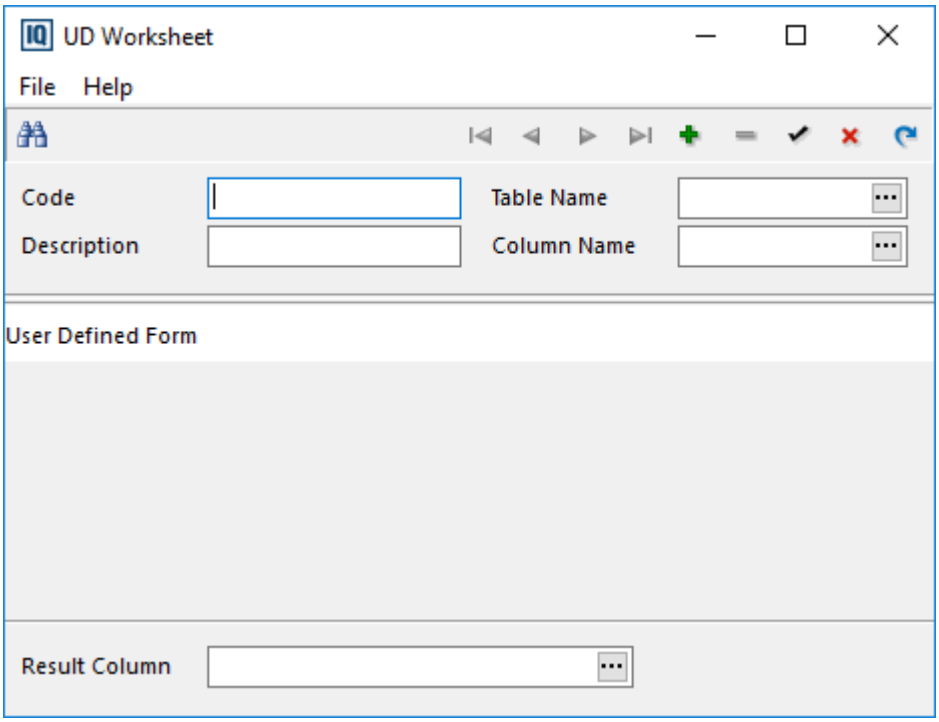
These fields are informational only and are provided so that you may enter other information about the Assembly Process. EnterpriseIQ provides ten text based fields, each 60 characters in length, and ten numeric fields, each supporting up to 15 digits and up to 6 decimal places (nine digits before the decimal and 6 after). EnterpriseIQ does not use these fields in any reports or forms, but they may be used in any user defined reports.

Defining Label Text - Users can define the name of the user field. Place the cursor over the text and right click, then select “Define Label Text” from the drop down menu. Enter a new label and press [OK]. All records will now reflect this change.

User Defined Worksheet

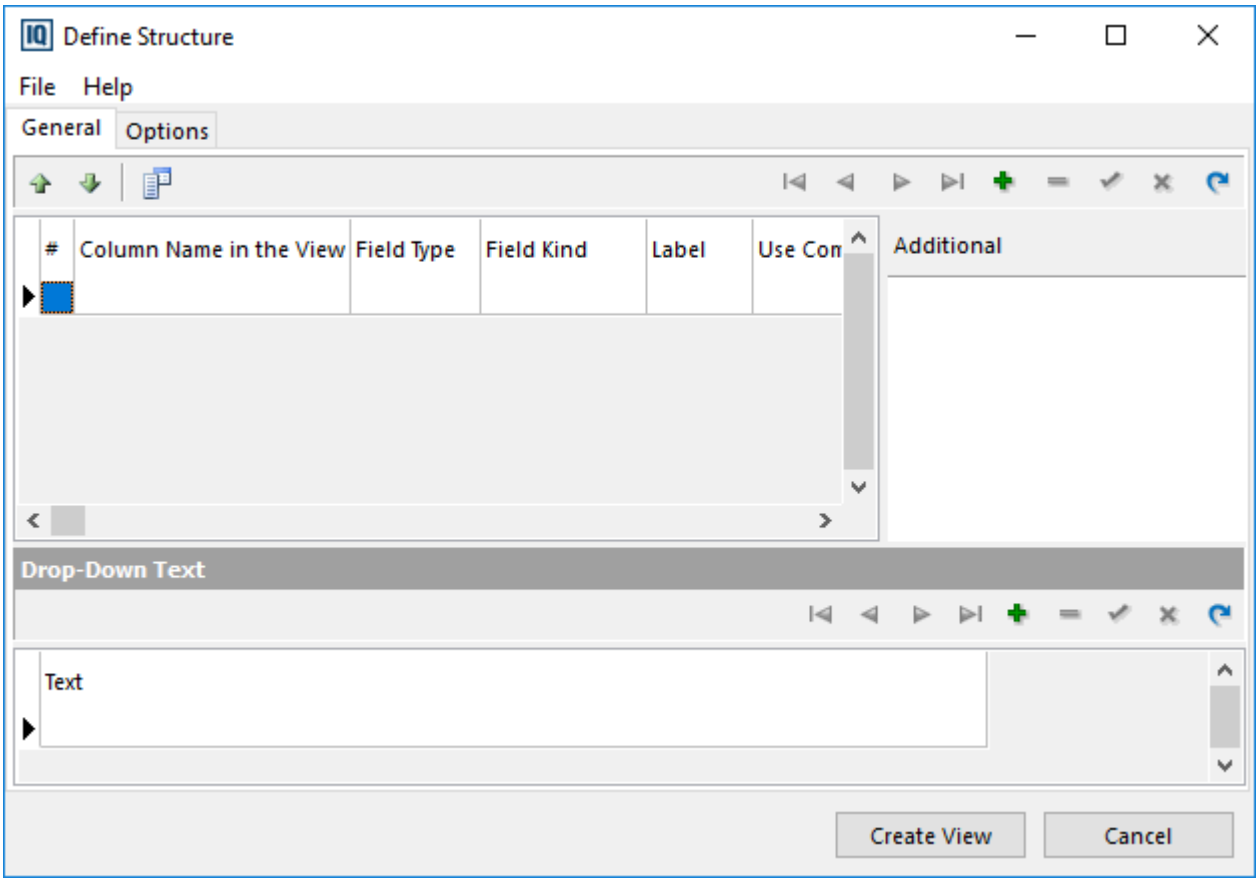
A user defined worksheet can be created to allow other parameters to be entered and calculated to return a value to the Parts Per field (OPMAT.PTSPER_DISP column) on the Materials tab in the Assembly Process Maintenance form. Select the 'User Defined Worksheet Maintenance' option from the Options menu in Assembly Process Maintenance to access the worksheet pick list. Select a worksheet from the pick list or select New to create a new one.

Note: Only a DBA is allowed to create user defined worksheets.



Code	Enter a Code for the worksheet.
Description	Enter a description of the worksheet.
Table Name	Select the table name from the pick list accessed by clicking the ellipsis button. Currently the only supported table is OPMAT.
Column Name	Select the column name from the pick list accessed by clicking the ellipsis button. Currently the only supported column is PTSPER_DISP.

Once the above information has been entered save the record and then select the Define Structure button from the middle section. From the Define Structure form create the columns for the view.



This is the same form used to create User Defined Forms through out EIQ.

Click the + button on the navigator to create each field.

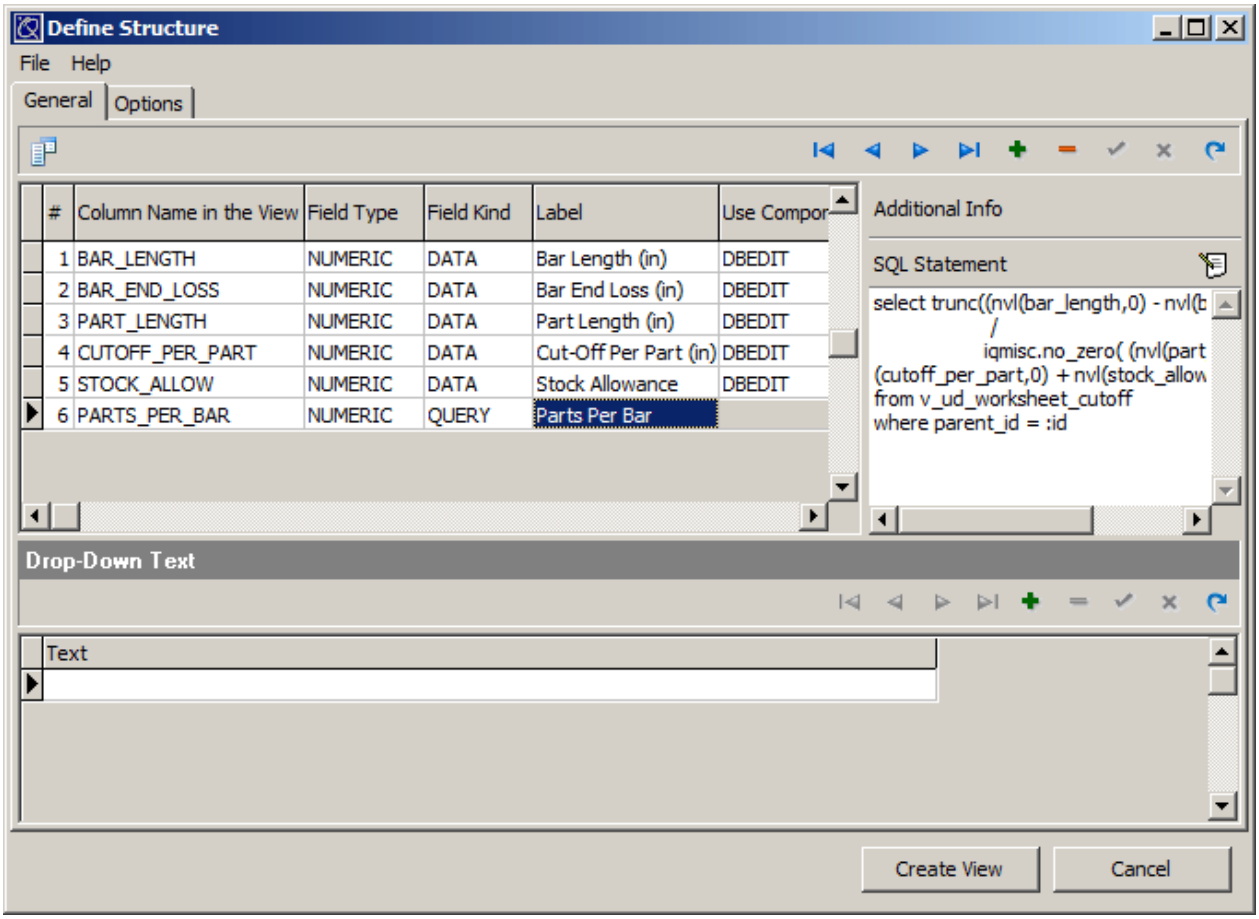
Column Name in the View	This is the Column name used by the system for the user defined reports. It is the name shown in the views. The system identifiers of User# **should not be changed**. If they are changed, users cannot enter a name something that is Oracle related such as: Date, Numeric, Char, Data, Query, or Select. Users can enter values such as: InventoryDate or Inventory_Date, BoxNumber or Box_Number.

Field Type	The structure of the field. Choose from the drop down options: ▪ C - Character field ▪ N - Numeric field ▪ D - Date field
Field Kind	Select Data, Query, or Linked from the drop down list. This field will default to Data if left null. ▪ Data - This is the default and will display the entered data. ▪ Query - If Query is selected a SQL Statement must be entered in the pop up form accessed by clicking on the ellipsis button in the SQL Statement field. ▪ Linked - If this is selected a database (parent) field is linked to the user defined field from the pick list. The system will populate the value from the user defined field over to the field in the parent table. It does not work the other way, if you change the parent field it does not change the field on the user defined form. See the User Defined Forms section of the Using EnterpriseIQ manual for more information.
Label	Enter the name of the field that will be displayed on the form.
Use Component	For Character field types only, the user can select a Use Component feature: ▪ DBEDIT - Select this to have the field be entered manually by the user. ▪ DROP-DOWN - This option will allow the user to select the data from a drop down list, or type it in the field manually. If DROP-DOWN is selected enter the Drop Down Text in the bottom section. ▪ CHECKBOX - This will make the field a check box. ▪ DROP-DOWN-LIST - This option will require the user to select the data from the drop down list only. The Drop Down Text is entered in the bottom section. ▪ MEMO - This component type will allow users to select an ellipsis button in the user defined field and enter up to 250 characters in a pop up form.
Parent Column Name	This feature is used to define relational user fields. Users can specify a Parent Column for a field on the form that uses the DROP-DOWN or DROP-DOWN-LIST components (both the parent and the child must be a one of these). Only columns from the current form can be selected. Then in the Drop Down Text section users define the relationships that will dictate which child options can be selected if a specific parent option is chosen. See the User Defined Forms section of the Using EnterpriseIQ manual for more information. If a user selects values for USER1, and USER2, then changes USER1, USER2 should be cleared prior to posting of the form (this should cascade down to multiple children of children...)

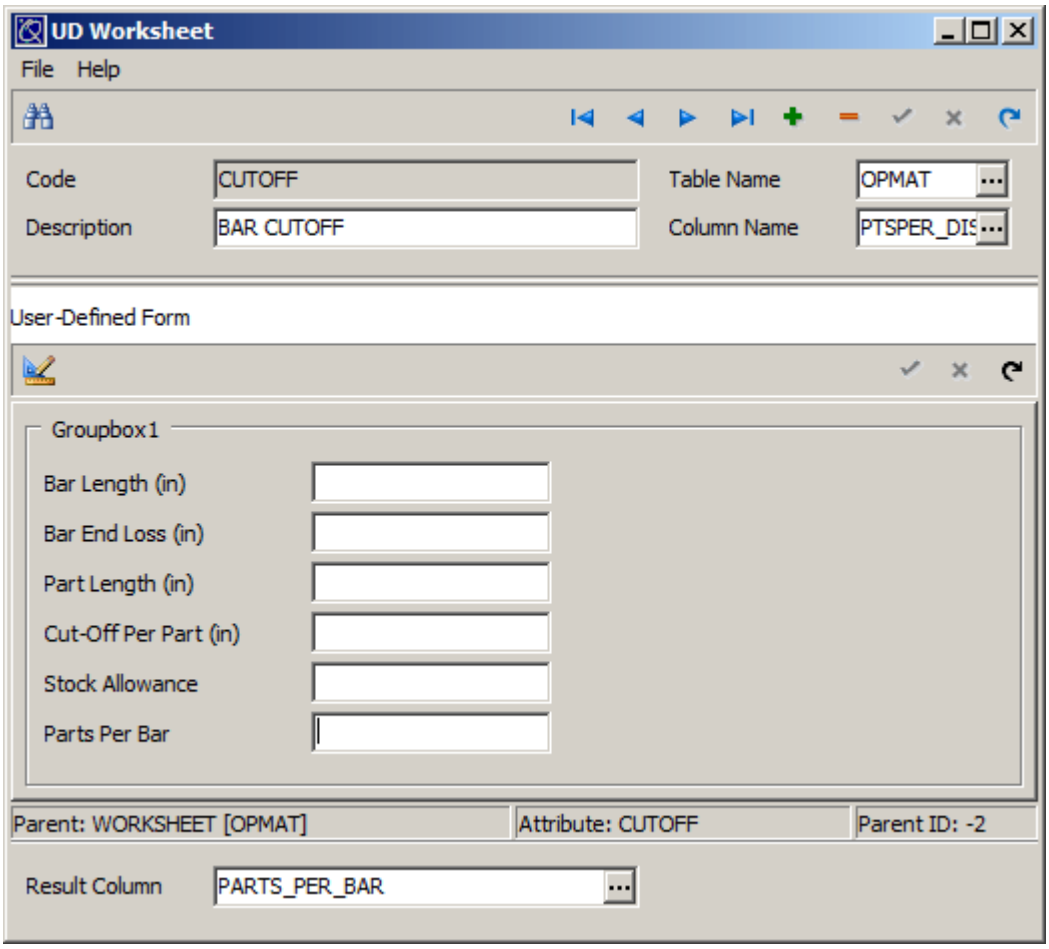
SQL Statement	This is used to enter a SQL Statement for a query kind user field. Select the ellipsis button to enter the SQL Statement in the pop up box. Users can create queries that will use user fields to calculate the value for another user field. Example Query: select trunc((nvl(bar_length,0) - nvl(bar_end_loss, 0)) / iqmisc.no_zero((nvl(part_length,0) + nvl (cutoff_per_part,0) + nvl(stock_allow,0)))) from v_ud_worksheet_cutoff where parent_id = :id

Example Worksheet

This example is to determine the parts per bar that can be made based on factors such as bar length and bar end loss.

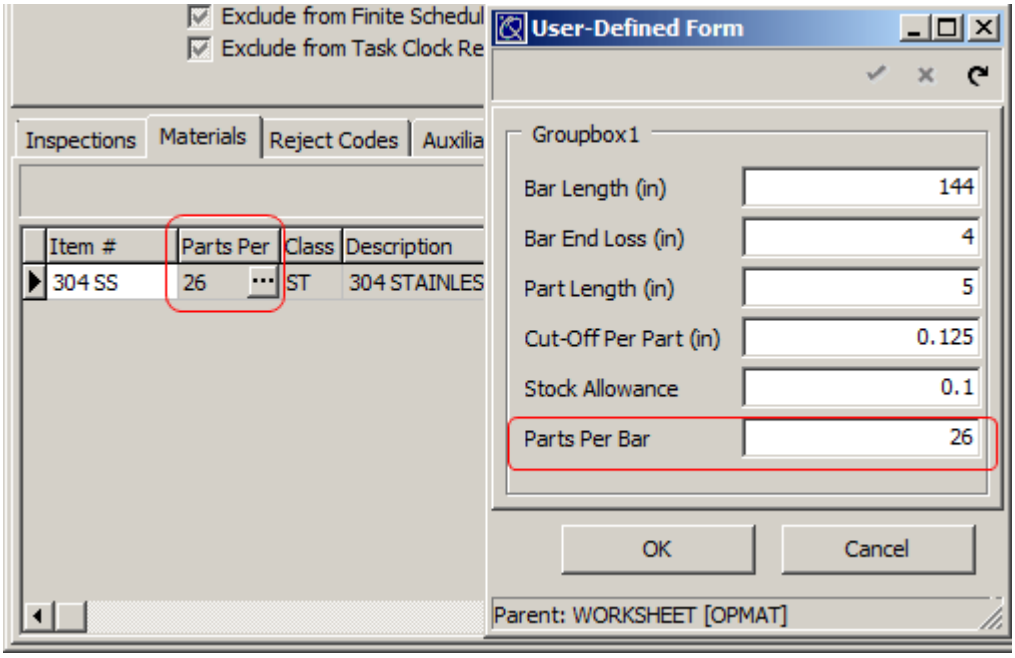


Once the columns have been created, select the 'Create View' button to view the user defined worksheet.



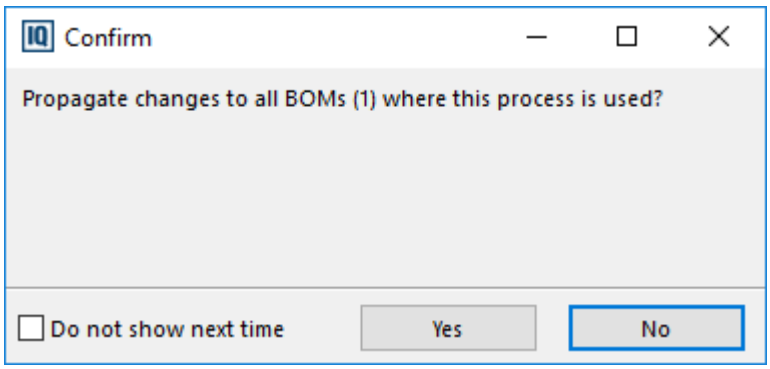
The Result Column is the field to be used in the Parts Per for materials attached to the process. The new form will be visible when adding materials to the process by clicking on the ellipsis button in the Parts Per field.

As values are entered in the user defined fields, the system will calculate the Query field(s) based on those values using the associated SQL(s). The Result Column field will populate the Parts Per field.



Editing a Process

The information on a process can be edited. When a change is made to the Multiples Of/Multiplier, Yield %, UOM, and/or the Cycle Time fields, a Confirm box will appear asking if the user wants to propagate the changes to all BOMs where this process is used.



The number of BOMS that will be affected is listed in the message. No is the default. If the user answers Yes then the changes will be made on all of the BOMs where this process is used, and each BOM will be recalculated. If the user answers No, then just this Process record will be updated. Security can be put on the Yes and No buttons. There is also a 'Do not show next time' check box that can be checked so this message will not appear again unless it is turned back on (in System Parameters->Lists->Dialog Check Boxes).

Additional Features in Assembly Process Maintenance

Routing Notes

Select the Routing Notes speed button to add up to 2000 characters of routing information related to the assembly process. These notes can be added to reports, such as the Assy Traveler.

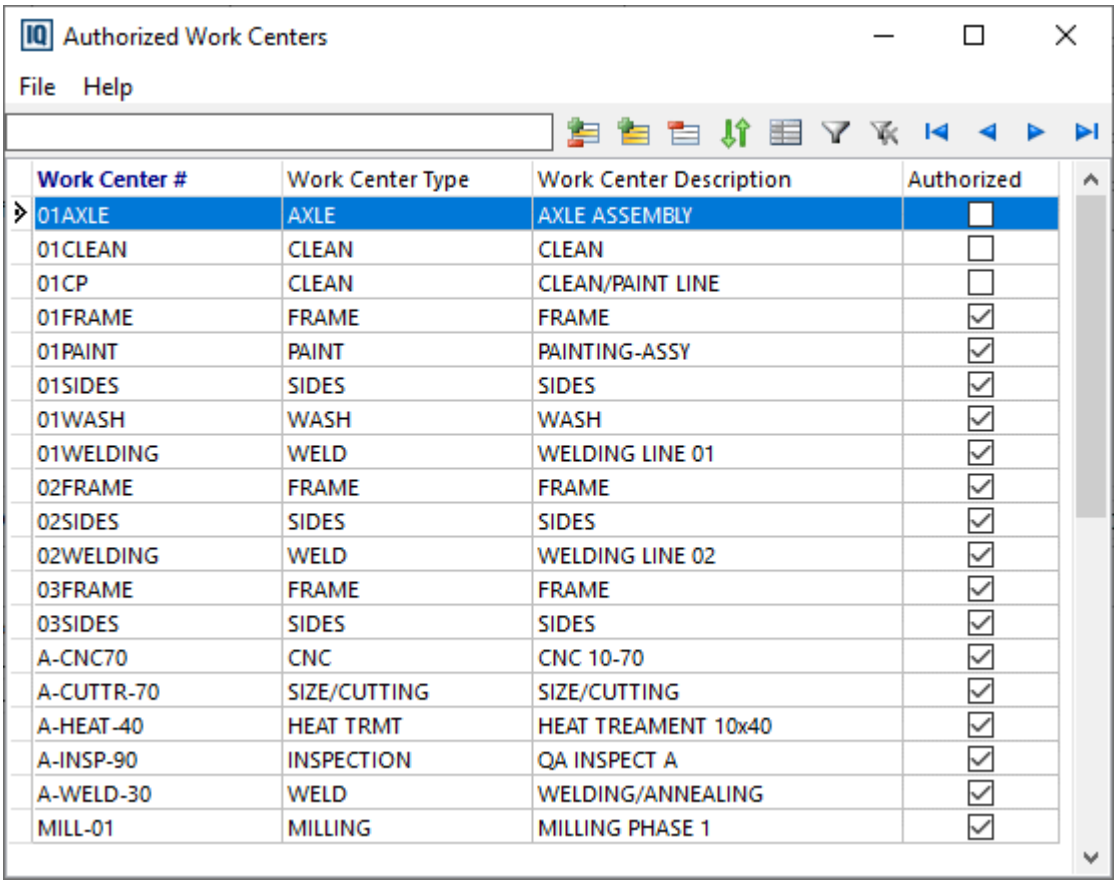
Clone Process

Select Clone Process from the File menu to clone the process. Enter the New Process # and Description in the fields on the pop up form. All the details from the original process will be carried over to the cloned process, including documents, inspections, employees, runs the best, etc.

Authorized Work Centers

Authorized Work Centers can be established for ASSY1 and ASSY2 Processes to control where a work order associated to the process can be scheduled. If a user attempts to add or move a work order in the schedule, or perform a setup from scheduling (not RealTime™), they will receive an Authorization Required Status Exception message. The system does not evaluate whether the work center is authorized or not during Auto Load, in the Dispatch list, or Assembly Track.

To access Authorized Work Orders select the speed button in the upper section of the Assembly Process form  , or select Authorized Work Centers from the Options menu. A form will display that lists all work centers that are associated to the EPlant and Manufacturing Type that is associated to the Process.



Work Center #	Work Center Type	Work Center Description	Authorized
01AXLE	AXLE	AXLE ASSEMBLY	☐
01CLEAN	CLEAN	CLEAN	☐
01CP	CLEAN	CLEAN/PAINT LINE	☐
01FRAME	FRAME	FRAME	☑
01PAINT	PAINT	PAINTING-ASSY	☑
01SIDES	SIDES	SIDES	☑
01WASH	WASH	WASH	☑
01WELDING	WELD	WELDING LINE 01	☑
02FRAME	FRAME	FRAME	☑
02SIDES	SIDES	SIDES	☑
02WELDING	WELD	WELDING LINE 02	☑
03FRAME	FRAME	FRAME	☑
03SIDES	SIDES	SIDES	☑
A-CNC70	CNC	CNC 10-70	☑
A-CUTTR-70	SIZE/CUTTING	SIZE/CUTTING	☑
A-HEAT-40	HEAT TRMT	HEAT TREAMENT 10x40	☑
A-INSP-90	INSPECTION	QA INSPECT A	☑
A-WELD-30	WELD	WELDING/ANNEALING	☑
MILL-01	MILLING	MILLING PHASE 1	☑

By default all work centers in the form are marked as Authorized. Also, when a new work center is created, that is associated to the same EPlant and MFG Type, it will automatically be added to this list and marked Authorized. The Authorized check box can be unchecked to mark a work center as not authorized to run work orders associated to the Process. In order to check or uncheck the Authorized check box for multiple work centers at once use the toggle buttons or the Shift/Ctrl keyboard buttons to select the work centers to change. Then from the right click menu select 'Check Selected' or 'Unselect Selected' to update the Authorized check box for the highlighted work centers.

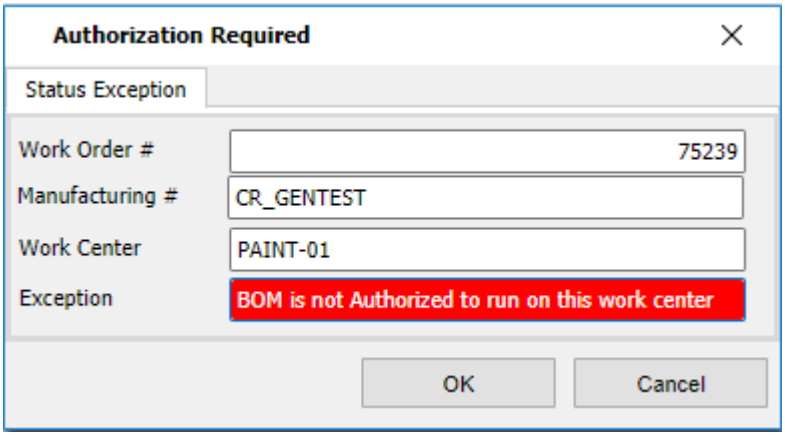
Users can sort based on any column in the table. This form also includes a 'Filter Dataset' button to filter the list.

The Authorized check box is also visible in the Runs the Best list. It is a read only field so changes cannot be made from Runs the Best list. Users can right click and jump from Runs the Best to the Authorized Work Centers form.

Note: When a Process is cloned the authorized work center information populates based on the EPlant/MFG Type query. In other words, if work centers were unchecked in the Authorized Work Centers form for the 'cloned from' process, they will be checked on the new process. The system does not assume that the authorized work centers will be the same for the cloned process.

Status Exception

For unauthorized work centers the Status Exception message will state, "BOM is not Authorized to run on this work center". The pop up message includes an OK and Cancel button, and a 'Do not show next time' option. Security is available on this pop message.



If the user has security for the OK button it can be selected to continue to add or move the work order in the schedule and add it to the production report for the unauthorized work center. If Cancel is selected the work order will not be added/moved.

Note: There is not a parameter (setting) associated to this feature, the system will always evaluate for authorized work centers.

Note: This is separate functionality from the Runs the Best feature which has it's own warning when the scheduling parameter ('Verify Work Center from Runs The Best list') is checked.

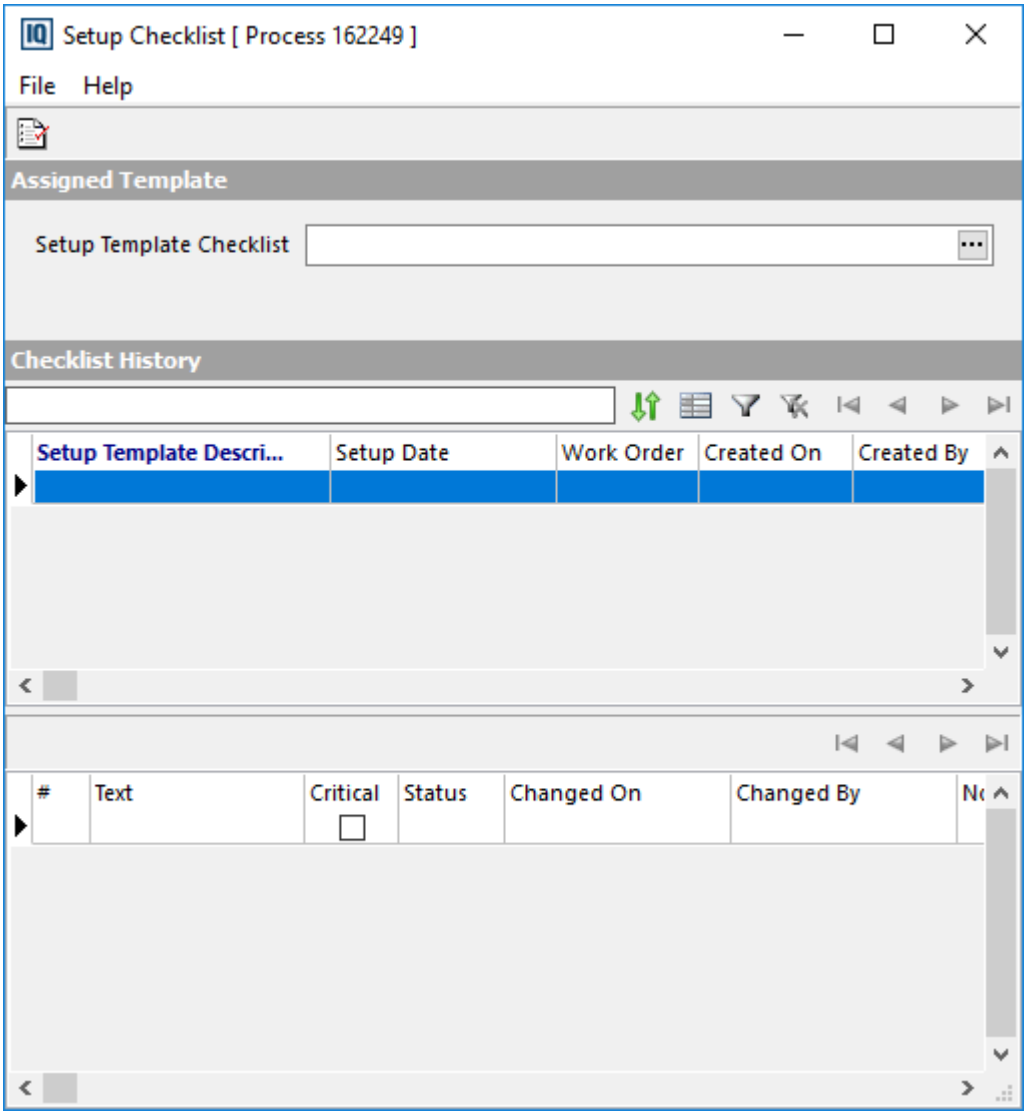
Checklists

Checklists can be associated to Assembly Processes. The checklist will display when a setup is initiated for a process with a setup checklist, from EIQ RealTime™, ShopData, and RTStation. Checklists can also be associated to work centers and BOMs. During a setup the web based Setup Checklist form will appear for the user to enter responses to the checklist items. If a BOM/Process and Work Center both have checklists the checklist will be combined on the same form with the Work Center's checklist listed first. A checklist history is stored for the work center or BOM/Process and can be reviewed at anytime, or used for reports.

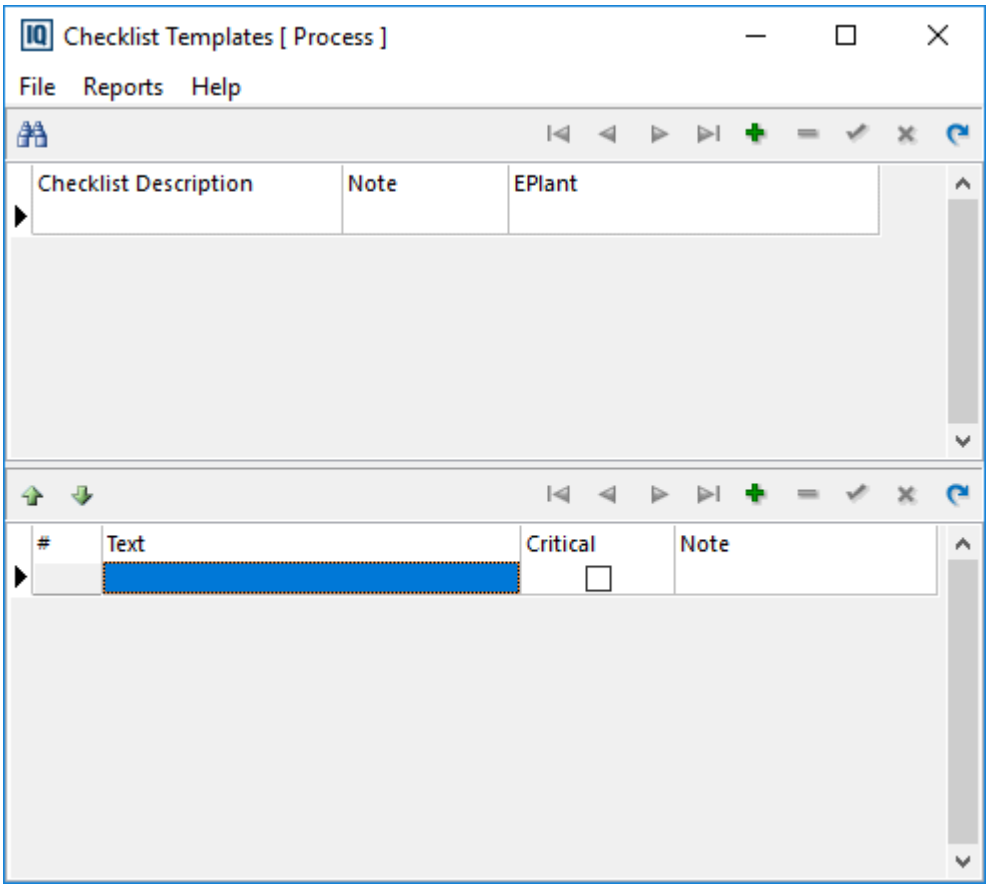
Note: This requires the IIS Server to be setup in order to view the web based checklist. See the ***IIS Installation TechNote https://my.iqms.com/cfs-file.ashx/__key/Technote/IIS-Installation.pdf*** for more information.

Setup

To begin to use the checklist functionality checklist templates will need to be created. Select the 'Setup Checklist Templates' button at the top of the Assembly Process module  to access the checklist for the process. The Process # will appear in the title bar.


Setup Checklist [Process 162249]
File
Help
Assigned Template
Setup Template Checklist
Checklist History
Setup Template Descri...
Setup Date
Work Order
Created On
Created By
#
Text
Critical
Status
Changed On
Changed By

From this form select the template button to access the pick list of checklist templates. Select the 'New' button on the pick list to create a new template. The Checklist Template form will display with a new row created for the user to enter the checklist information.



Enter the data in the form. The top section is a description of the checklist.

Checklist Description	Enter the description of the checklist (up to 150 characters).
Note	Enter additional information about the Checklist (255 character limit).
EPlant	This will populate automatically based on the EPlant the user is logged into when the checklist is created. Users will only be able to see checklists for the EPlant they are logged into.

Enter the actual checklist items associated to the highlighted checklist record.

Sequence #	The sequence of the checklist item. The sequence can be changed using the up and down arrow buttons.
Text	The description of the checklist item. This is a list of steps involved in completing the corresponding Checklist.
Critical	Check this box if the checklist item is critical. Critical items must have the status column on the checklist populated with Y, N, or N/A in order to complete the setup checklist.

Note	A list of responses can be created which will apply to all checklist items. When the employee performs the checklist item they will be able to select from the drop down list, or manually enter a note (if allowed) in the Note field to further describe the outcome of performing the step. To create the list, right click and select 'Edit User Defined List'. Enter the list details in the text field. The Drop Down Style can be selected from the list: ▪ Drop Down - Free form data entry. ▪ Drop Down List - Predefined Text only. ▪ System Default - Will be based on the setting in System Parameters

Once the checklist template has been created it can be assigned to Assembly Processes.

Assigning a Template

From the Process where the template is to be applied, select the 'Setup Checklist Templates' button at the top of the Assembly Process module. Select the ellipsis button in the 'Setup Template Checklist' field. Select a template from the pick list.

As setups are performed for processes with templates, the system will pop up the web based checklist for employees to respond to the checklist items. This will populate the Checklist History portion of the Setup Checklist form.

Checklist History

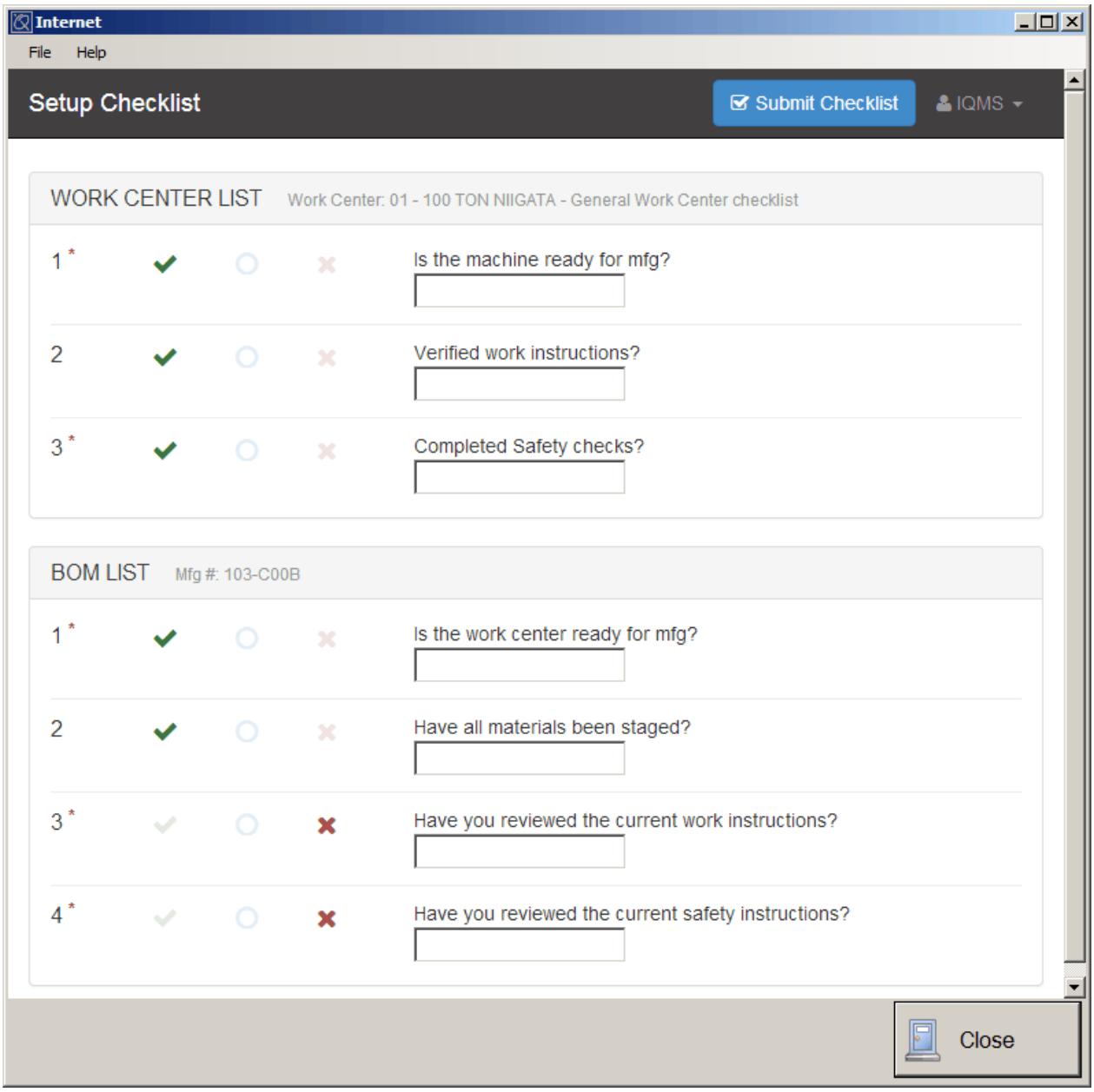
Setup Template Description	This is the template description associated to the historical record.
Setup Date	The date/time the work order was setup.
Work Order	The work order number.
Created On	Date and time checklist record was created.
Created By	The user name that created the record.

The checklist results

Sequence #	The sequence of the checklist item.
Text	The description of the checklist item.
Critical	This box is checked for a critical checklist item.
Status	The status entered during the checklist process for the item. This will be populated with Y, N, or N/A.
Note	The checklist note entered by the employee.

Checklist

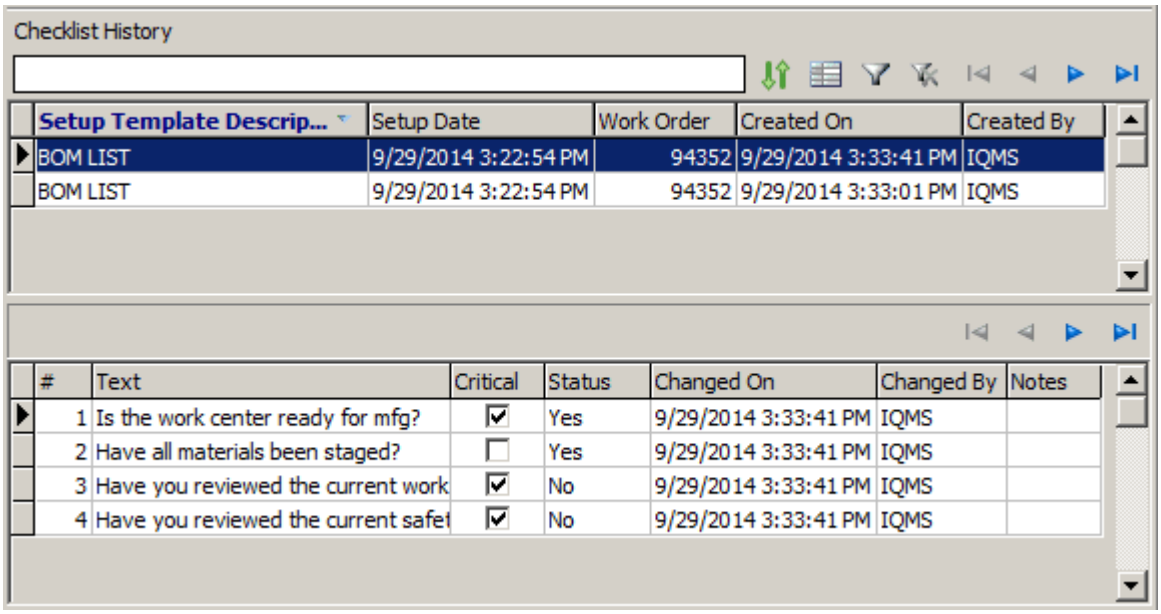
During a setup the web based Setup Checklist form will appear for the user to enter responses to the checklist items. If a BOM/Process and Work Center both have checklists the checklist will be combined on the same form with the Work Center's checklist listed first.



Users can select Yes, N/A, or No for each question. There is also a comment field to enter notes for each checklist item. Once all of the checklist items have been addressed select the Submit Checklist button at the top. If a response is not entered for a critical checklist item (critical checklist items will have a red asterisk next to the number) upon submitting a popup with a Yes and No button will appear stating, 'There are critical items on the checklist that are not marked with a decision. Continue?'. If No is select the user is returned to the checklist to enter a response. If Yes is selected, or if there are no un-answered critical items, a message indicating the checklist has been submitted will display. Select Close to exit the checklist. The work order setup will then be completed.

Checklist History

The information entered from this form is visible from the Setup Checklist form in the Checklist History section.

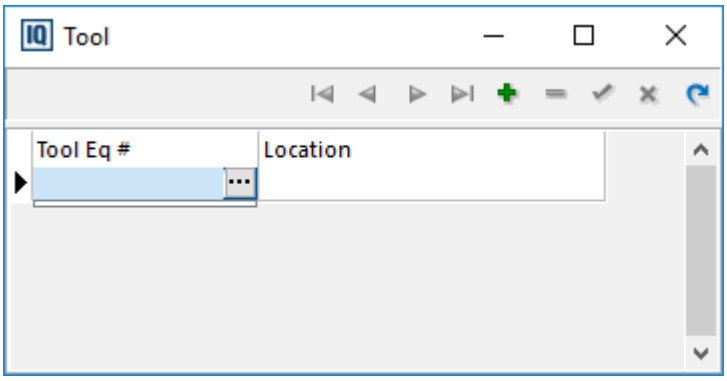


Setup Template Descrip...	Setup Date	Work Order	Created On	Created By
BOM LIST	9/29/2014 3:22:54 PM	94352	9/29/2014 3:33:41 PM	IQMS
BOM LIST	9/29/2014 3:22:54 PM	94352	9/29/2014 3:33:01 PM	IQMS

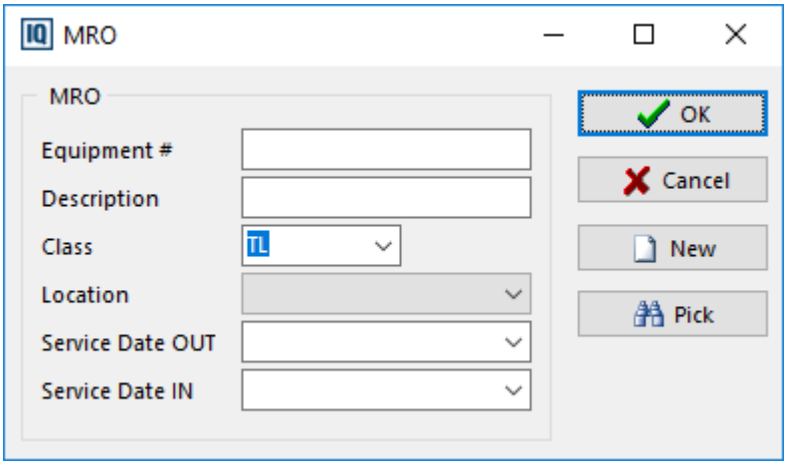
#	Text	Critical	Status	Changed On	Changed By	Notes
1	Is the work center ready for mfg?	☑	Yes	9/29/2014 3:33:41 PM	IQMS	
2	Have all materials been staged?	☐	Yes	9/29/2014 3:33:41 PM	IQMS	
3	Have you reviewed the current work	☑	No	9/29/2014 3:33:41 PM	IQMS	
4	Have you reviewed the current safet	☑	No	9/29/2014 3:33:41 PM	IQMS	

Tool Info

To associate the process with a specific tool select the Tool Info button. The Tool Info form will appear:



Click on the ellipsis button to bring up the Preventative Maintenance Info form to link a tool to the process.

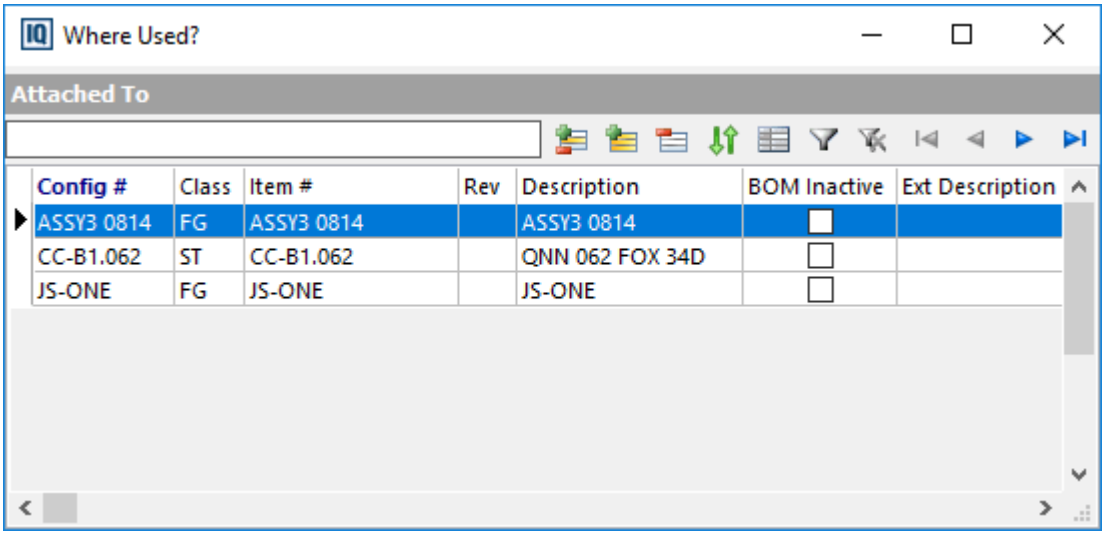


Select the Pick button to choose from existing PM equipment or select New to create a new tooling equipment number.

Good parts reported in Assembly Track for a process updates all tools (with UOM of 'cycle') attached to that process. All tools attached to the process display in AssemblyData (with line clearance selected on the process), and only those tools that have been selected for 'use' have the cycles updated in MRO for good parts reported on the process.

Where Used

From the Options menu select Where Used to bring up a list of the configurations (active and inactive) that use the process.



Right click and select 'Jump to BOM' to access the Bill of Manufacture.

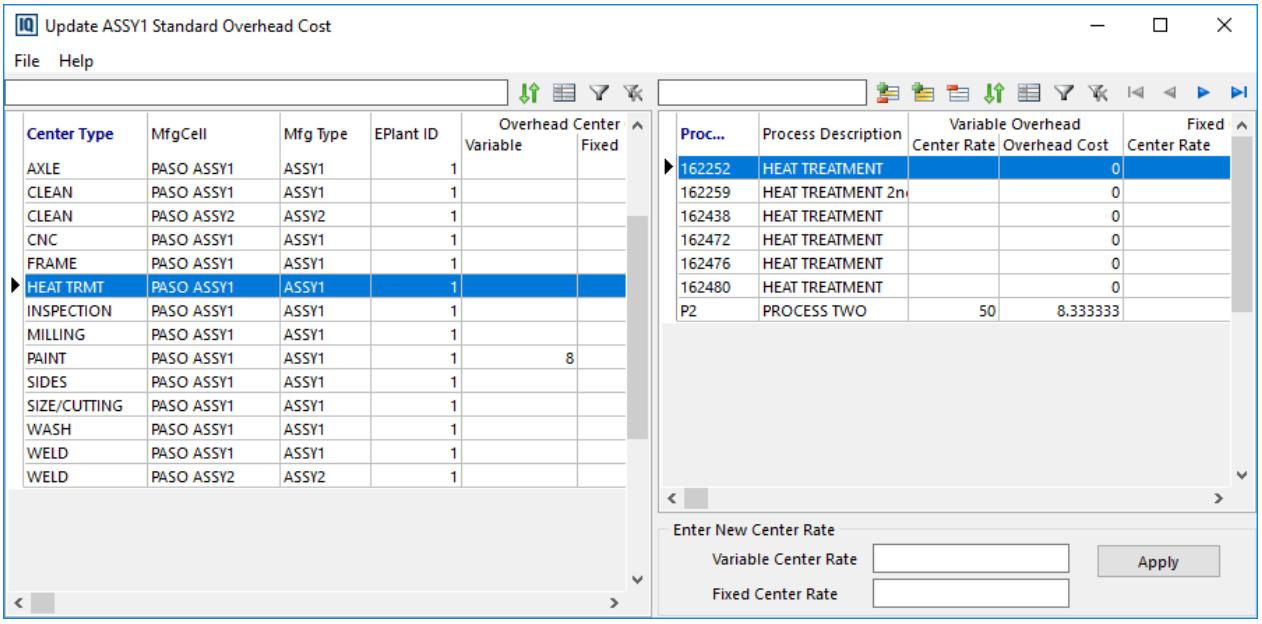
Substitute Process

A process can be substituted with another process for configurations. Highlight the desired configurations using the toggle buttons or the Ctrl/Shift buttons on the keyboard. Right click and select Substitute Process. Select the substitute process from the pick list and a confirm box will appear stating, 'About to substitute marked process(s) with selected process # - are you sure you want to continue?'. Select Yes to continue or No to cancel and return to the Where Used form. Once Yes is selected the BOM is updated.

Note: Once an ASSY work order is scheduled in Assembly Track, no changes should be made to the BOM. If substituting a process on a BOM that has already been scheduled in Assembly Track, an error will appear stating that the WO is already scheduled in Assembly Track.

Work Center Type Overhead Cost Update

Select this function from the Options menu to update the Center Rate on multiple work centers at one time. The left side displays the center types and their corresponding Overhead Center Costs. The right side of this form displays the process(es) that have the highlighted center type assigned. If the center type has a variable and/or fixed overhead rate assigned they will display in the bottom right section.



To update the center rates select the process(es) that need to be updated using the toggle buttons. If the default rates are to be used select the Apply button. A different variable and fixed rate can be entered in these fields and applied to processes without updating the Master Center Type. Select OK on the confirm pop up window and the system will apply and recalculate the selected process(es) standard overhead costs.

Note: The system allows either entering a positive number or the field can be left null effectively wiping out existing process overhead rate and forcing the use of the default system overhead rate.

Note: This does not use the Master Center Type Cost element, it is just applying the center rates.

Jump to Master Center Type is available from the right click menu in the left section.

Jump To Process is available from the right click menu in the right section.

Calculate Overhead or Labor for All Processes

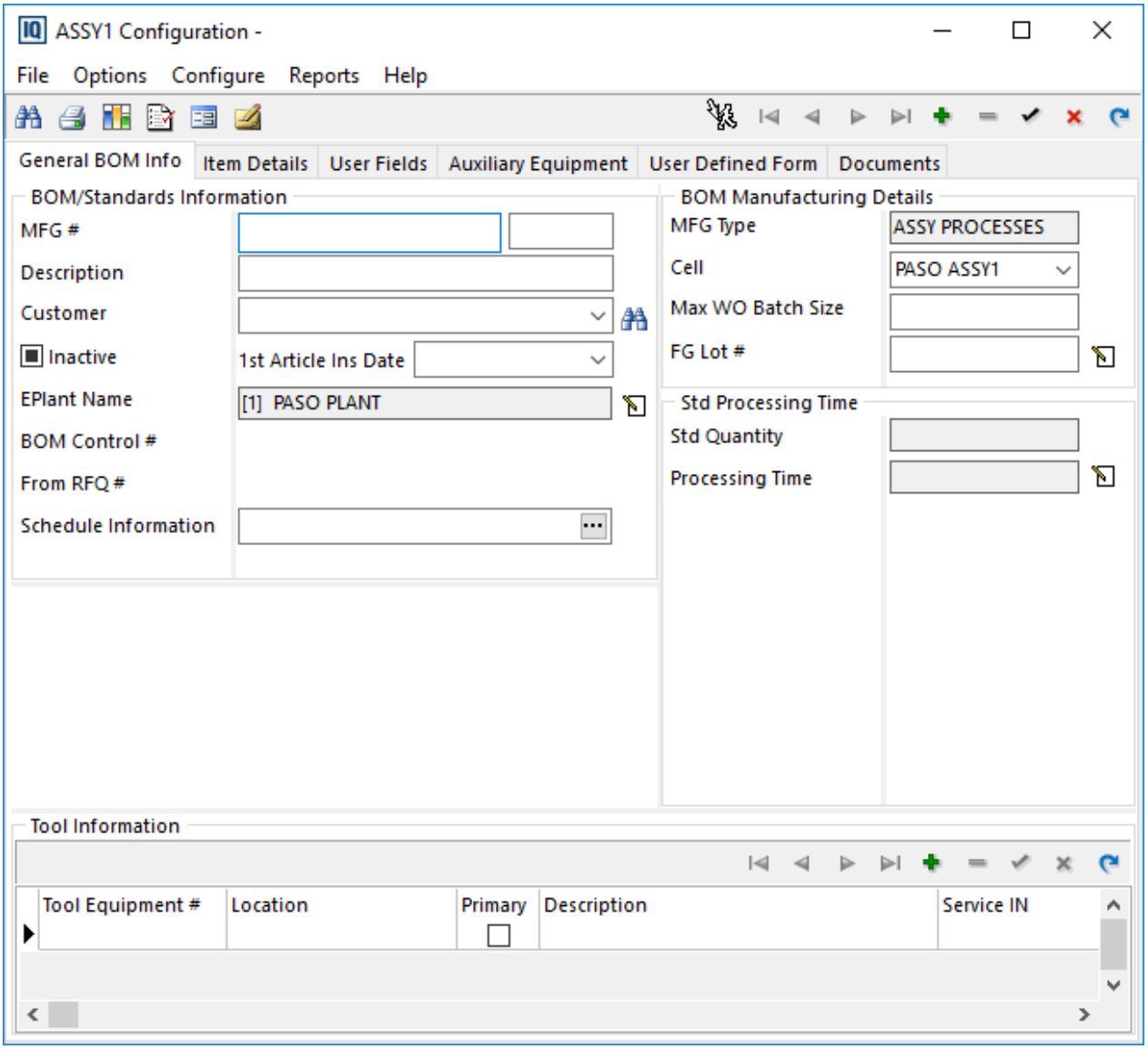
These options (Options menu) allow the user to calculate the labor and/or overhead for all processes at one time.

Note: When 'Calculate Overhead for All Processes' is selected, the system will only recalculate the Variable Overhead cost. To calculate the Fixed Overhead, users must manually calculate by pressing the calculator button next to the Fixed overhead cost field.

ASSY1 and ASSY2 Bills of Manufacture

The ASSY1 and ASSY2 manufacturing types are used for assembly manufacturing that requires multiple processes. Utilizing these manufacturing types will allow the user to associate multiple processes to a single BOM rather than creating multiple Generic BOM's. This type of BOM is tracked using the Assembly Track and Assembly Data modules. Additionally, processes can be scheduled on the finite schedule.

To create a new ASSY1 or ASSY2 bill of manufacture select the BOM button on the Mfg tab of the launcher bar. Select the ASSY1 or ASSY2 manufacturing type from the selection criteria form and the following screen will appear:



Below is a detail listing of all fields per tab on the ASSY1 BOM form:

General BOM Info

Mfg #	Up to 50 characters can be entered in this field. The number entered here is the number of the actual standard. Each configuration number and routing number combination must be unique. If the user enters a Mfg #/Routing # combination that already exists, a prompt will be issued informing that a duplicate number was entered. The user will need to reenter a new Mfg or routing number. Note: To view the STANDARD ID for the BOM select the Alt F1 keys and a pop up will display the ID (for example, Table = IQMS.STANDARD, ID = 46825).
Routing Seq #	This field can be used for informational purposes to define the routing step sequence of the BOM when there are several steps. This field displays in the BOM pick list.
Description	Description of the ASSY BOM. Typically describes the part and process.
Customer	Type in the first couple of letters of the customer's name and the system will hyperbrowse to that customer. Another method is to select the customer from the pick list. This is not a required field, but is often used to associate a job with a particular customer. If you are a proprietary producer, you may leave this blank or list your company as the owner.
Inactive	A BOM can be marked inactive. This will `hide' the BOM from pick lists. To view an inactive BOM the pick lists have a new button in the lower left corner to `view inactive' items.
1st Article Ins Date	Enter in the First Article Date using the drop down calendar (Optional). This is the date that the BOM was first approved for use in a production run. This field is for information purposes only. This field description can also be changed by right clicking on the field and selecting the Define Label Text option. Enter in a user defined caption in the New Value field. The customized caption is based on Manufacturing Type. If the caption is changed for an Injection BOM, all of the Injection BOM's will have that same caption but not other types of BOM's such as Generic.
EPlant Name	This field is used to designate the configuration to a specific EPlant. It is not a required field if EPlant is not being used.
BOM Control #	The BOM Control number will change automatically when someone makes a change to the configuration. This field cannot be edited. This field will not update immediately. In order to see the change, the user would have to exit the BOM module and come back in. The field consists of today's date, time and EnterpriseIQ user ID of the person who made the change.
From RFQ#	Request for Quote Number. This information originates from the Quote module and only displays if the standard was imported from a Quote. This field cannot be edited.

Schedule Information	The user can enter up to 250 characters of information that will display when a work order is scheduled in the finite schedule to a work center that uses this BOM. Since ASSY1 type work orders are not scheduled in the finite schedule this field is informational only. It will not display in Assembly Track or Assembly Data. The information can be printed using the Print button from the BOM or added to a report.
Mfg Type	This field shows the TYPE of manufacturing this BOM will be used for. In this case it will display ASSY1 or ASSY2.
Cell	Manufacturing Cells are use to designate separate areas in your facility. Separate scheduling is done for each cell. Please refer the Manufacturing Cells section in the help files for more information.
Max WO Batch Size	Enter the maximum work order batch size if desired. This will break up the sales order releases into multiple buckets if necessary on the work order(s). For example: The sales order release is 2000 pieces, and the Max WO Batch is 500. Assuming zero on hand the system will create four work orders for 500 pieces each. The Must Start dates on multiple work orders created from a BOM with a setting for Max WO Batch Size are incremented based on the estimated production time. The system starts with the original must ship date and backs up in groups based on the batch size. The difference is put into the last record. The must start is the must ship of the preceding record. This guarantees it will finish exactly on the requested must ship date.
FG Lot #	A finished good lot number can be assigned at the BOM level. When reporting Final Assembly this lot number will automatically populate the Lot # field. If you do not want this field to automatically populate check the 'Do not default FG Lot # during Final Assembly' box on the General tab, then the Lot # field will be blank and users can enter the lot number manually.
Std Quantity	The standard run quantity used to calculate the standard processing time. This value is entered on the Process Throughput Map form accessed by selecting the Throughput Map button.
Processing Time	This is the calculated processing time. Select the Throughput Map button to calculate the standard processing time of the BOM. When the user clicks on the Throughput Map button and calculates the Standard Processing Time, the cycle time in the STANDARD table will be populated which will be visible in the BOM Tree report. Enter the Std Quantity then select the 'Apply Selection Criteria' button. A graphical representation of each process will be displayed in the right hand window. (See example below in Process Throughput Map and Process Dependencies).
Tool Information	Multiple Tools may be linked to a configuration. This is informational only for ASSY type BOM's. To link a tool to the configuration, click on ADD (**+**) button then click on the ellipsis button in the Tool Eq # field to bring up the MRO Info form.

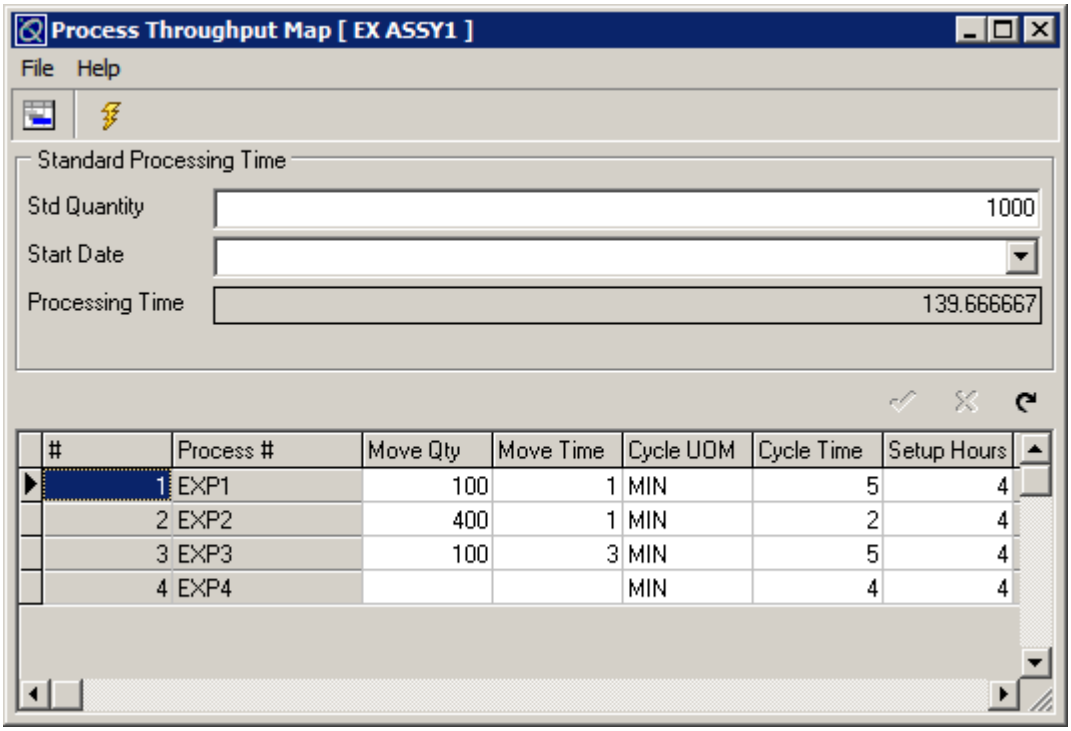
Note: When an ASSY BOM is created, the efficiency factor will default to 100% regardless of the default efficiency factor under Miscellaneous Parameters. Yield is setup on the processes, so efficiency factor on the BOM is unnecessary.

Right Click Options:

From the General BOM tab users can right click and select:

- Trace BOM - This opens the Trace form to view changes made to fields setup in Trace for the Standard table.
- Jump to Process Monitoring Mfg # Setup - For users with a license for RT Process Monitoring, this option will jump to the Process Monitoring Mfg # Set up module with the current BOM highlighted. For more information see the ***RT Process Monitoring TechNote https://my.iqms.com/cfs-file.ashx/__key/Technote/RealTime_2221_-Process-Monitoring.pdf***.
- Jump to Sales Configuration Template - When this option is selected, if the BOM is only associated to one sales config template, that sales configuration template will open. If the BOM is associated to multiple sales configuration templates, a pick list of templates will display to choose from.

Process Throughput Map and Process Dependencies Chart



Example:

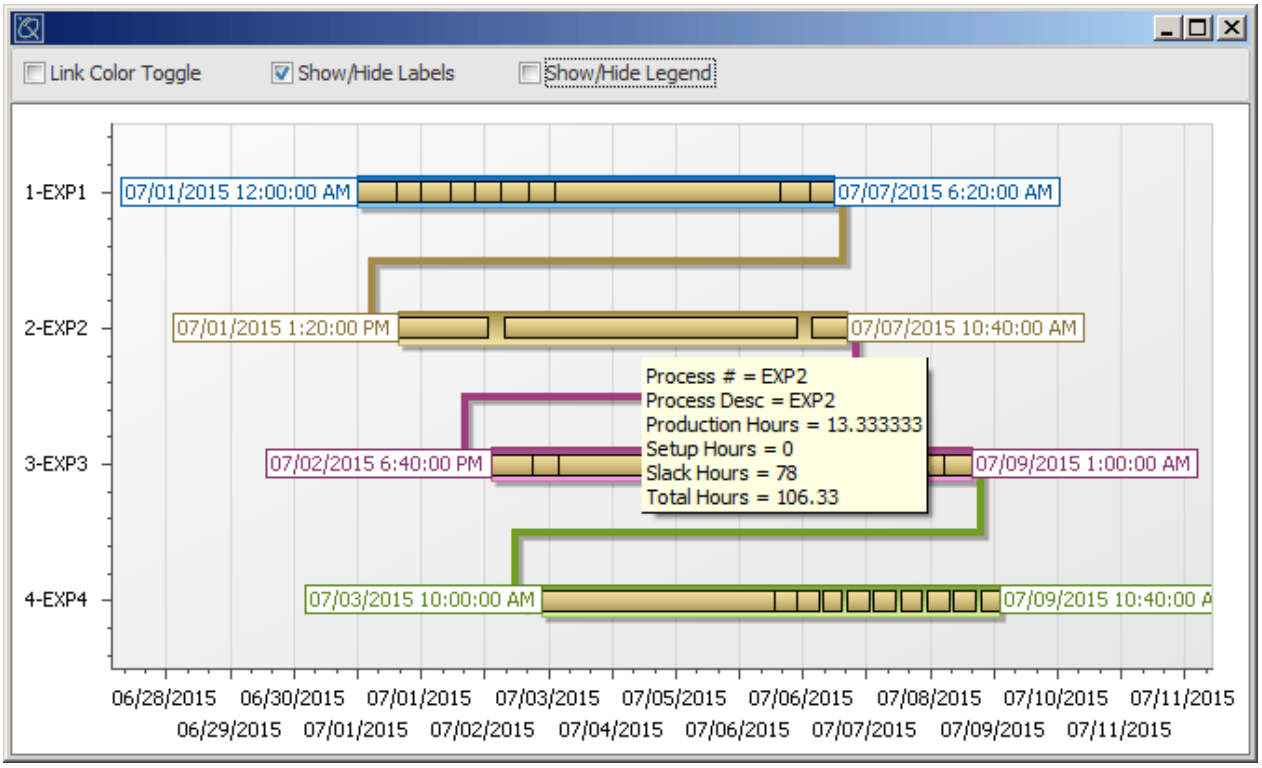
ASSY Type BOM with four processes:

Seq	Setup Hrs	Cycle Mins	Move Qty	Move Time Hrs
1	4	5	100	1
2	4	2	400	1
3	4	5	100	3
4	4	4		

Std Quantity = 1000

Processing Time = 139.666667

To access the Process Chart select the 'Apply Selection Criteria' speed button  and a chart of the processes will appear.



Putting the cursor on a bar will display the Production Hours, Setup Hours, Slack Hours, and Total Hours.

Users can enter a **Start Date** and modify the Move Qty, Move Time, Cycle UOM, Cycle Time, and Setup Hours of any of the processes attached to the BOM. This allows the user to see how long a job will take for the entered Std Quantity and when the job will be completed based on the entered Start Date. If the Start Date is left blank, the system will default to the current date and time. (Note: Changing the move qty and move time in the throughput map will change the move qty and move time on the process on the BOM).

Slack time is informational only, and will be displayed graphically as gaps between process bars and indicates the idle time needed before the process can continue. Any time there is a process with a faster cycle time than the one before it, there will be slack time gaps in that process. This is because the process has to wait for parts from the previous process to be produced before it can continue.

Slack time (Mouse over) Slack time can also be any non-production time on the shop calendar that falls within the production run. This includes off hours, weekends and holidays. This slack time value will be shown in the mouse over of a process bar segment that includes slack time. This time will be included in the Total Hours calculation but will not affect the actual Production Hours. This type of slack time will not be represented as a graphic gap, but is included in the length of the bar. Note that when calculating the throughput map, adding a start time (as opposed to just a date) corresponding to the start of the first shift of the day will prevent including Slack Time hours in the first process representing the time between midnight and the start of the first shift.

Chart Options:

- Link Color Toggle - If Link Color Toggle is unchecked, the link color is the same color as the child process. If Link Color Toggle is checked, then the link color is the same color as the parent process.
- Show/Hide Labels - Toggles the time labels for the lines on or off.
- Show/Hide Legend - Toggles th color legend on or off.

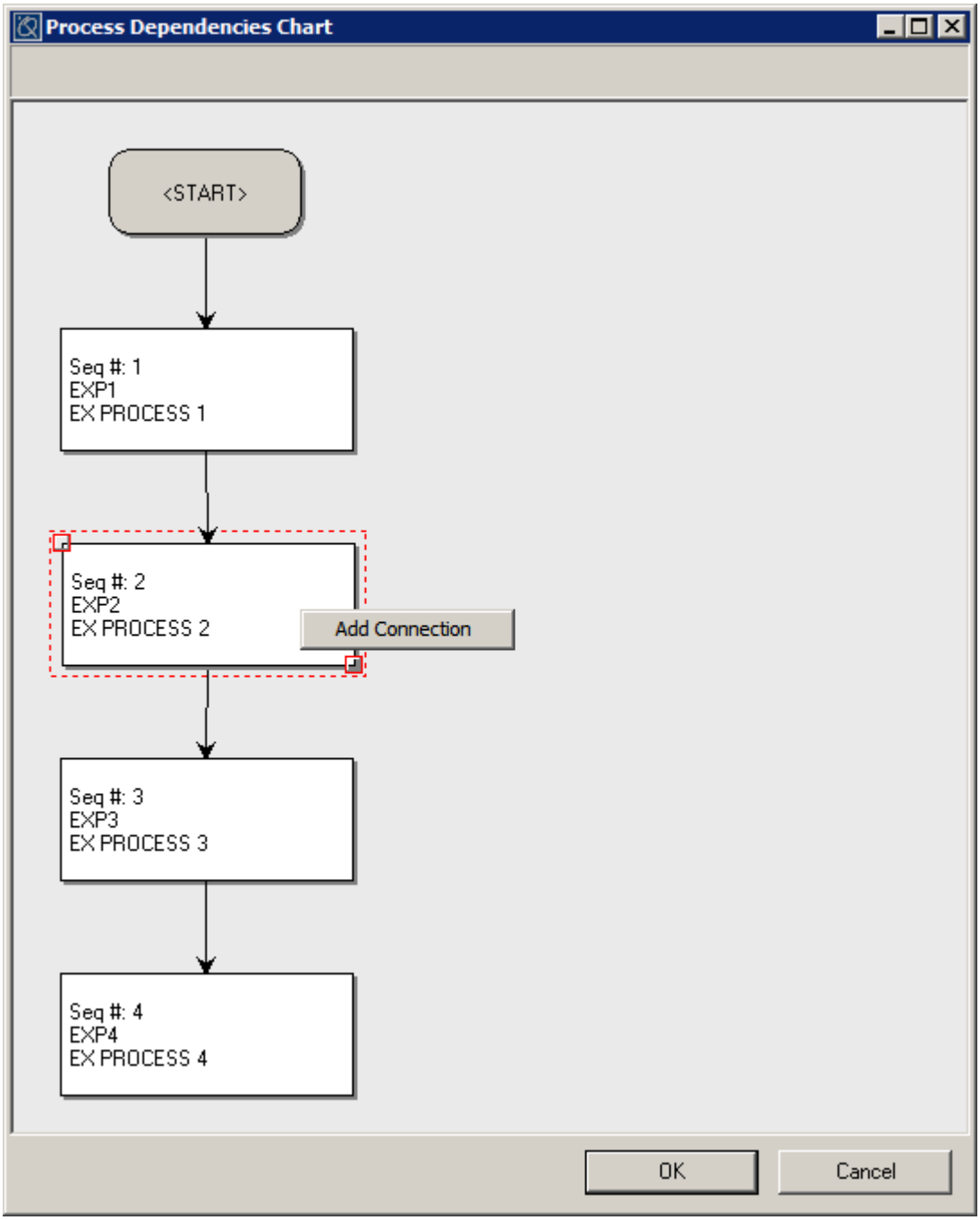
The show/Hide toggle options are only available if a Start Date was entered.

NOTE: If a user happens to have more than one item on an ASSY BOM, the user will only be able to see the processing time of one item at a time. In order to see the time of the other items, highlight the item on the Item Details tab first and then enter the selection criteria in the Throughput Map.

Process Dependencies Chart

The Processing Dependencies Chart screen allows users to specify processes that run concurrently. The system will use the longest cycle time of concurrent processes when calculating the total processing time.

This can be accessed by selecting the Process Dependencies speed button  from the Process Throughput Map, from the Items Details tab, or the Attached Material Details tab on the BOM.


Process Dependencies Chart
<START>
Seq #: 1
EXP1
EX PROCESS 1
Seq #: 2
EXP2
EX PROCESS 2
Add Connection
Seq #: 3
EXP3
EX PROCESS 3
Seq #: 4
EXP4
EX PROCESS 4
OK
Cancel

Each rectangle represents a process. The connecting lines can be added, deleted, or moved (change the parent):

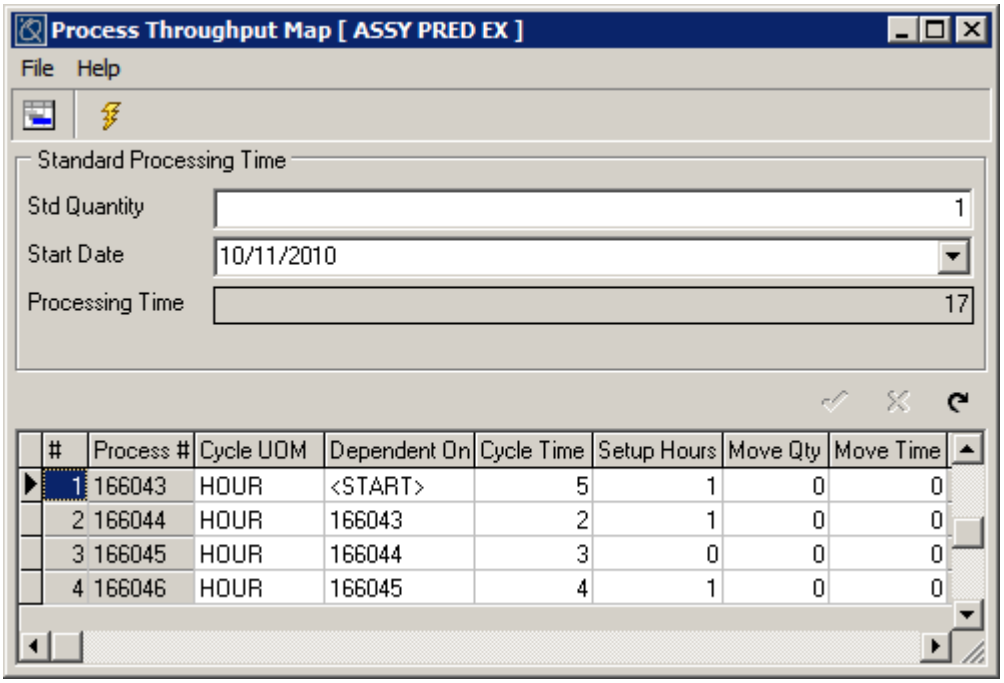
- To add a connecting line, right-click on a process and select Add Connection. Drag the end of the line to the child or parent process. Once the other end of the line rests on the desired process, double click the end of the connecting line. The system will put the arrow on the correct end (parents always pointing to children).
- To delete a line, click to select a connecting line and hit the delete key.
- To change the parent of a connector, right click and select 'Disconnect Parent', then move the arrow to the correct parent and double click it.

To move a process, click on the process first, then click on it again and move. A process cannot be deleted off the chart.

Note: When a user changes the positions of the process boxes this does not carry over to determine the actual sequence of these processes. Dependencies are created using the connecting lines.

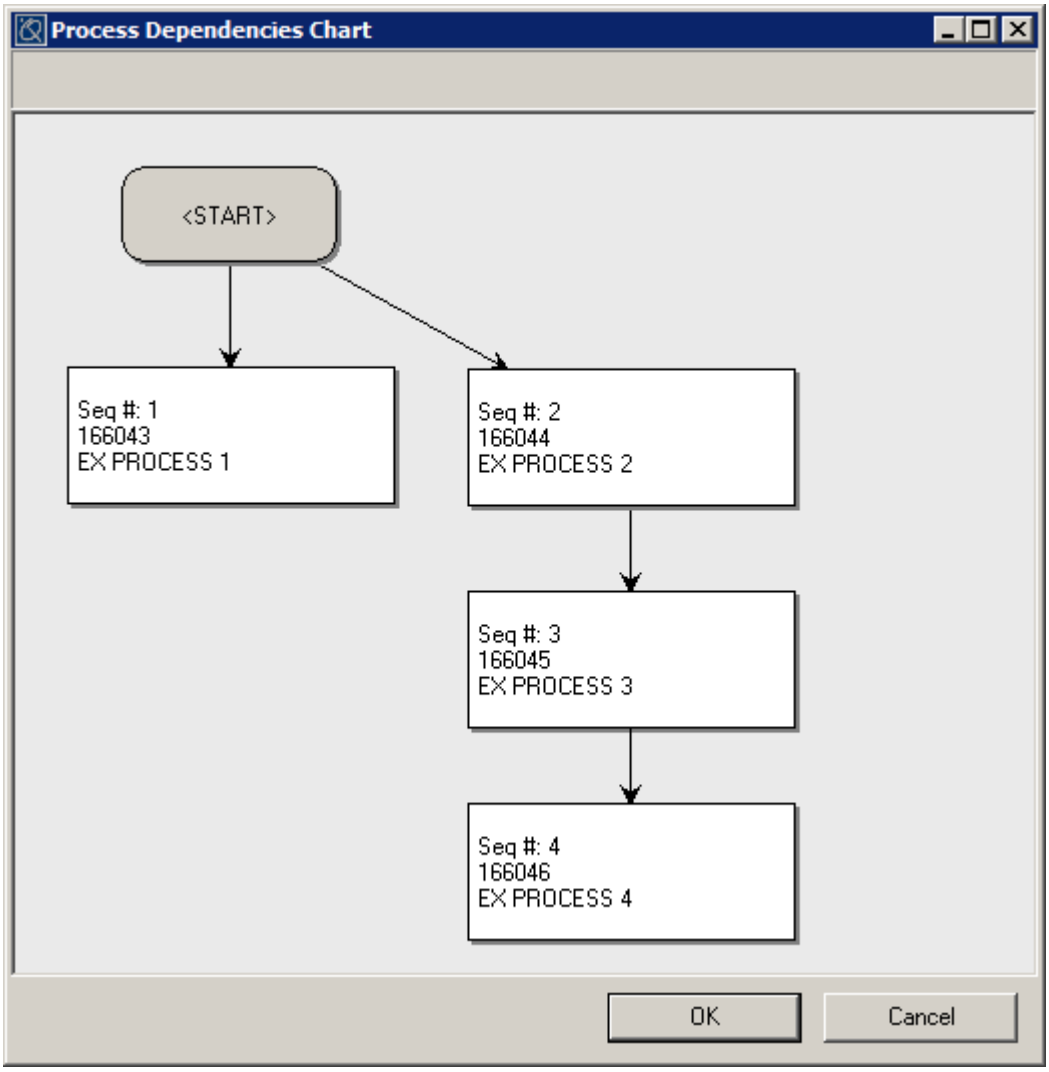
Dependencies Example

For example, there are four processes that are all dependent on the prior process (none can be done concurrently) as shown above.

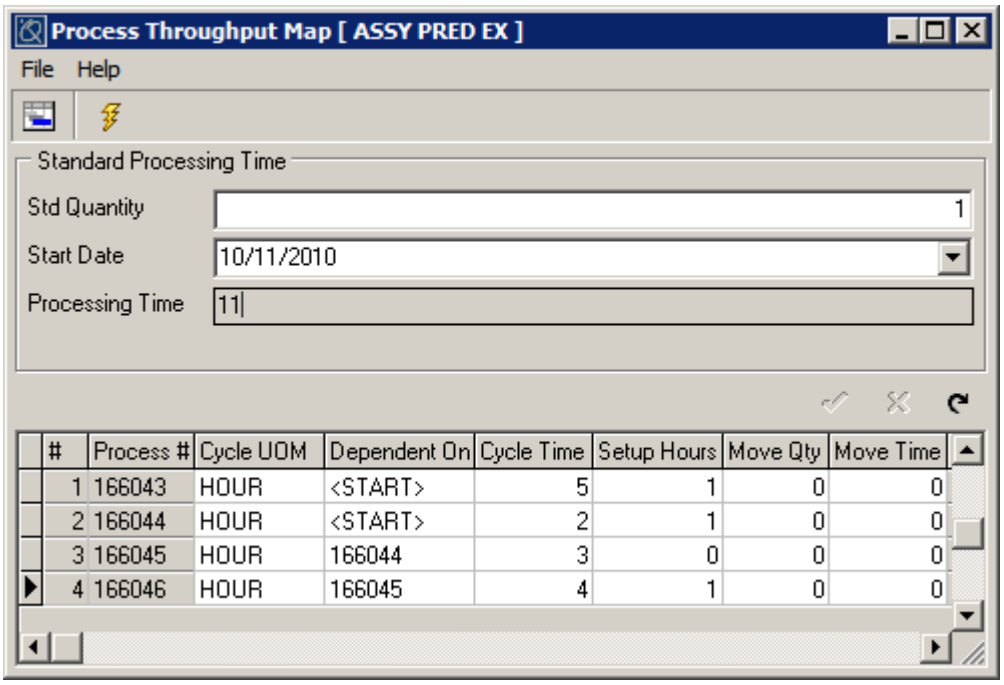


The Processing Time is calculated as the Cycle time plus the set up hours for all four processes (5+2+3+4+1+1+1 = 17).

If the dependencies are changed this will affect the processing time. In the example below the first two processes can be done at the same time, and the third process is dependent on the second one.



The Processing Time is 11 hours (5+1+4+1 = 11).



If this is changed slightly to where the third process is dependent on the first one instead, the processing time would be 14 (5+1+3+4+1 = 14).

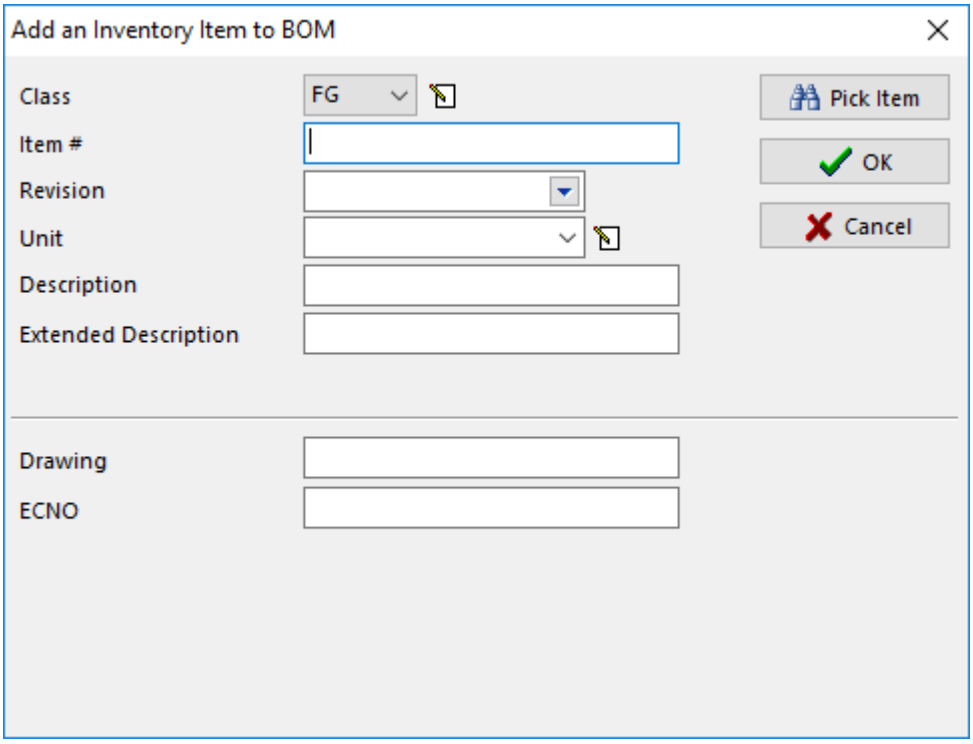
Item Details

From the Item Details tab the user will enter the manufactured item as well as the processes required to produce the item.

Note: ASSY1, 2 or 3 BOMs are not intended to be used for family tools, therefore only one manufactured item can be added. Once a single item is added to the Item Details tab, the Add item + button and right click options will not be available.

First enter the information for the manufactured item. The information entered here will create an inventory record for the item automatically.

Select the 'Add a New Part Number' (+) button in the middle of the form. A pop up screen will appear to enter the item details.



Class	Shows the class of the item that you are adding to the BOM. When you first enter this screen, the class field will default to `FG' for Finished Goods item.
Item #	Enter in the inventory item part number. This number must be unique.
Rev	This field is optional though very important for tracking revisions to parts. It is used to distinguish between similar part numbers. (EnterpriseIQ sorts and stores unique part numbers based on Class, Item Number, Rev and EPlant). You can use it to track any revisions made to the part and can also be retrieved in reports.
Unit	This is the Unit of Measurement for the item. Select the unit from the drop down list.
Description	Enter a short description or common name of the item. The description entered here will be used throughout the system to identify this item.
Extended Description	Second part description field-use up to 100 characters for the description.
Drawing	Optional. The number entered here is used to track the drawing number for the part. Use up to 30 characters.
ECNO	Optional. This user defined field normally carries an engineering change number, but it can also be used to hold additional information about the part, such as a UL number.

User Numeric field

On this screen there is an additional field called User Numeric. This field is only used for EDI or Crystal reports. (The field is in the table Partno and is called Nuser1). The label of this field can be changed by right clicking and typing a new label text.

Inherited Component

This only applies to ASSY1 BOMs. Users can select the ellipsis button in the field to access a picklist of components associated to the process that are marked Serialized Inventory Control (SIC). Select the desired item from the list. The field can be cleared with the delete key.

At the time of final assembly, for a top level part that has an inherited serial associated to it, when the part is being dispositioned, the system will clone the component serial and then the MASTER_LABEL.SERIAL field of the component serials will be copied to the new produced MASTER_LABEL.SERIAL record at the same time that the component MASTER_LABEL record serial fields are updated to the master_label.id of the component serial that was just consumed prepended with a "~".

For example: ID Serial

1001 1000 –This serial is now consumed and copied onto the parent, the next line will be what it looks like after that action.

1000 ~1000

The serial # that was copied to the parent item will also be visible in the MASTER_LABEL.INHERITED_SERIAL field so that the user will have the parent/child relationship available for reporting purposes.

Note: Both the manufactured item and inherited components must be marked Serialized Inventory Control (SIC). The system does not police users against selecting an item as an inherited component and then converting that item to non-SIC at a later time.

Note: The quantity on the label for the inherited serial will always be one because of the 1:1 ratio that has to be maintained to ensure that the serials get merged up to the top level manufactured item. Users can have quantities greater than one on their work orders but will have to enter in the inherited serials one by one for all of the parts on that work order. The system will check the quantity of good parts being reported to ensure that it is equal to the number of labels/serials selected during Final Assembly.

To utilize this feature the ASSY1 Mfg Type must have the following settings:

- Use Percent Complete Reporting = ON
- Consume Raw Material by Process = OFF

Documents Attached to the Item

EnterpriseIQ supports attaching unlimited notes and documents to any item number. Use the Documents button to access the internal and external documents linked with the finished goods item number. This same list of documents can be accessed from within the AssyData and the Inventory module.

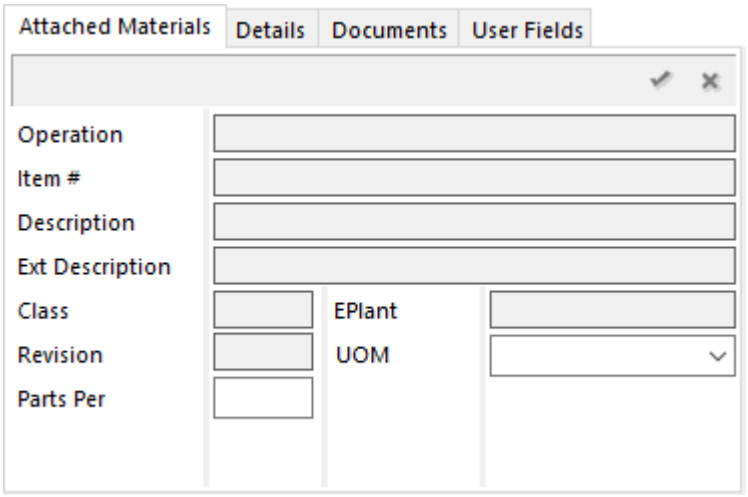
Note that the Documents button provides direct access to the Item Number documents, as opposed to the Documents tab which provides access to documents concerning the configuration.

The user can add, edit, and delete documents from the maintenance form that is displayed. Any changes made to the documents from this area will be reflected when viewing the documents for this item from within the Inventory module and AssyData.

Routing Notes

In the Item Info section of the Items Details tab is a speed button to access a routing note field. This is a 2000 character note field used for work instructions for routings. This information will print on the Routing Packet report available in work orders.

Attached Materials


Attached Materials
Details
Documents
User Fields
Operation
Item #
Description
Ext Description
Class
EPlant
Revision
UOM
Parts Per

In the lower section of the Items Details tab the specific information associated to the highlighted Attached Materials will be displayed. this will include the Operation, Item information such as number, description, class, and revision. This will also show the Parts Per and UOM fields which can be edited from here. If the parts per or unit of measure is changed from the BOM it will update the information in the process as well.

Note: In order to process transactions, such as rejecting components, users must have a recipe card for all levels of manufactured items, or check the 'Disable Cost Calculation' checkbox (Inventory on the Standard Costing tab) if costing should not affect the item. (See the "Costing" manual for details on recipe Cards and settings).

Right Click Options from the Items Details tab

The right click options will depend on the record the user right clicks on.

When right clicking on a manufactured item the options are as follows:

- **Add Item** - When highlighted on the manufactured item, this will open the Add Inventory Item to BOM form, which can also be performed by selecting the plus button.
- **Change Item** - When highlighted on the manufactured item, this will open the Edit this BOM Inventory Item form to make changes. It is the same function accessed from the Edit Item button.
- **Delete Item** - This will delete the attached item after selecting Yes on the confirm box.
- **Jump to Inventory** - This feature will take you to the inventory module for the highlighted item.
- **Jump to Transactions/Locations** - This will access the Transactions module for the highlighted item.
- **Jump to BOL Data** - This will access the BOL Data form for the item.
- **Jump to Inspection Setup** - This option will only be available for users who own the quality modules. It allows the user to jump to the Inspection Setup for the inventory item.
- **Add Process** - This will open the pick list of processes to select from.
- **Add Process Like** - This will add a process like another process by cloning it. (See the Add Process section).
- **BOM Tree** - This screen allows the user to see all required inventory for the manufactured item along with the requirements per item. This information can be exploded for a specific quantity. Click on the BOM Qty Explosion button and enter in a quantity. The information displayed will show the requirements per item, the required amount of material to manufacture the quantity entered, On Hand inventory, as well as non-committed material on hand. This function will show the user how much of the material in inventory that is not allocated towards existing orders. Select the Material Exception List button to open the BOM Tree Material Exceptions list. This list displays only the materials associated to the BOM. For more information please see BOM Tree in the Inventory section.
- **Routing Tree** - This screen displays the work center routing tree for the highlighted item.

- **Routing Diagram** - This feature brings up a color coded, visual routing diagram of the processes involved to make the highlighted item. The boxes can be expanded (right click - expand) to view additional information. The additional information available is: On Hand, Non Committed, Std Cost, and Ext Cost. To set a quantity click on the BOM Qty Explosion speed button. Then right click on a box to see the additional information you selected in parameters for the quantity. For example, if the BOM explosion qty is set to 1000 and the purple material box is expanded, the amount of material required for that quantity will display along with any other options selected under parameters, such as on hand quantity. From this form the user can also jump to Inventory, BOM, or the Material Exception list.
- **Trace Item** - Allows the capability to trace changes to fields set up in the trace tables (System Parameters->Options->IQTrace Tables).

When right clicking on an Process the options are:

- **Add Process** - This will open the Processes pick list to choose or create a new process.
- **Add Process Like** - This will add a process like another process by cloning it.
- **Edit Process** - This will open the Process form for the highlighted operation.
- **Delete Process** - This will remove the process from the BOM, but not from the system.
- **Edit Process Routing Note** - This option will pop up the Routing Notes form to add/edit the notes.
- **Final Assy Reporting** - If the MFG Type has the 'Launch Final Assembly Reporting on designated process' option checked, from this right click option users can designate a single process in the Assembly BOM that will launch the 'Final Assembly Reporting' form when labor is reported.
- **Routing/Seq#** - This allows the user to edit the sequence # (the order is appears in the tree) for the process.
- **BOM Tree**, **Routing Tree**, and **Routing Diagram** as described above.

Add Process

An unlimited number of processes may be added to an item. The processes added are essentially the steps the part goes through to become the item specified in the item details section. Each process can be tracked through the Assembly Track module.

To add a process select the Add Process button or right click in the white area and select Add Process. A pick list of existing processes will appear. Select the first process from the pick list or select the New button to create a new process. Continue this step until all required processes have been added in the order they are performed.

Note: The same process can be added multiple times to the same BOM.

Processes with Attached Materials:

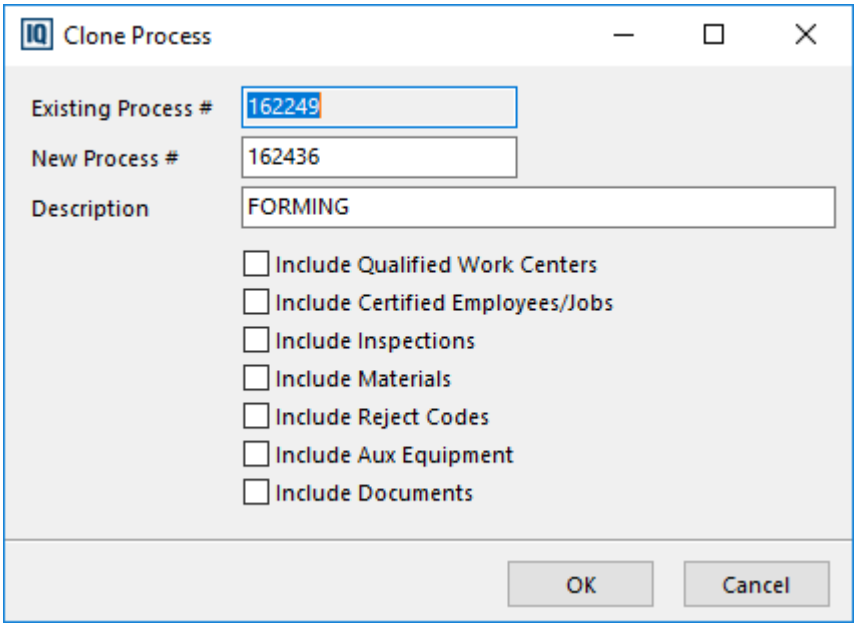
The information for attached materials is in the lower right section on the items details tab. This section lists the Item#, Description, and the parts per requirements as well as the unit of measure for materials associated with a process.

Note: Components and packaging for an ASSY BOM must be attached to a process associated to the BOM. The Add component to item and Add packaging to item buttons are not available from the ASSY BOM Item Details tab.

Editing Attached Materials - If the material attached to a process is changed, all BOMs that have that process attached will be updated with the new material. To only affect a single BOM it is best to create a new Process (or 'clone' a process using the Add Like feature) or create a substitute BOM with the changed material, then only that BOMs material will be changed.

Add Like Process

A process can be 'cloned' on the fly when building the BOM. To add a process like another process select the 'Add Process Like to Item' button  or select 'Add Process Like' from the right click menu. A pick list of existing process will appear to choose from. Select the process to be cloned. A form will appear with the next process number and the same description from the like process populated in the fields. Changes can be made to the process # and description.



Select what should be included in the cloning process by checking the box(es):

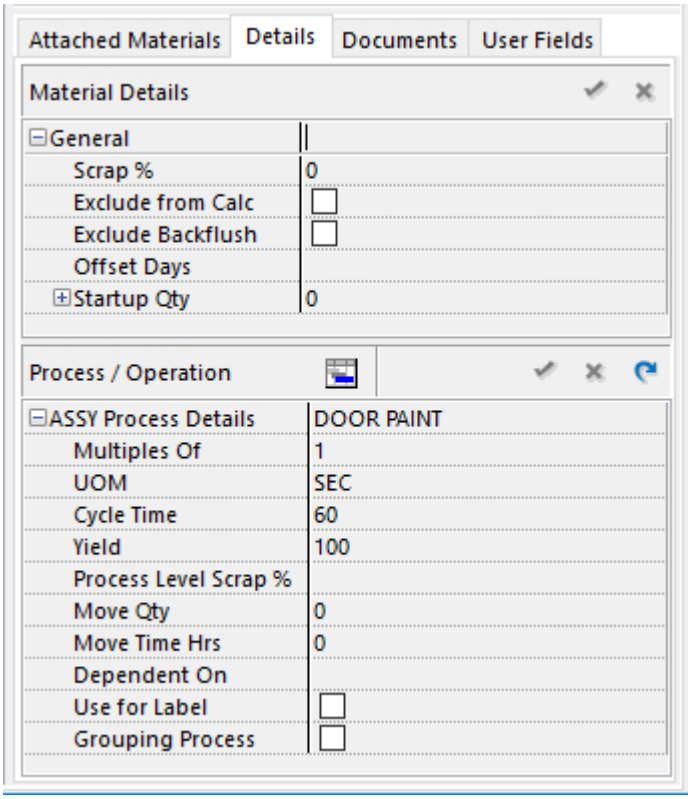
- Include Qualified Work Centers
- Include Certified Employees/Jobs
- Include Inspections
- Include Materials
- Include Reject Codes
- Include Auxiliary Equipment
- Include Documents

The system will copy over the corresponding information. The new process will be added to the BOM. To make changes to the Process, right click and select Edit Process and make the desired changes, such as materials, cycle times, etc. on the Process Maintenance form.

Note: Changes can be made to a BOM associated to a work order in Assembly Track. Assembly processes can be edited or added and the changes will be reflected in Assembly Track. Additionally, a process may be deleted or the process sequence changed as long as the process is not scheduled in the Finite Schedule. When removing a process from a BOM, the sequence number for the remaining processes will automatically be updated.

Details tab - Attached Process and Material Details

The Details tab contains additional options for the attached materials and processes.



If a process has attached materials users can establish parameters for the backflushing of those materials.

Material Details

Scrap %	This field would be used to assign a unique scrap % to the attached item which takes into account fall out from using the item during the process.
Exclude from Calc	With this checked the scrap percentage will not be included in the dispositioning or backflush calculations. Disposition and backflushing will only look at usage and not include scrap.
Exclude From Backflush	When selected this option will keep the attached component from being dispositioned (either through labor reporting or manual transactions with backflush) and will not be included in standard costing. The attached component will not show up in the material exception reports.

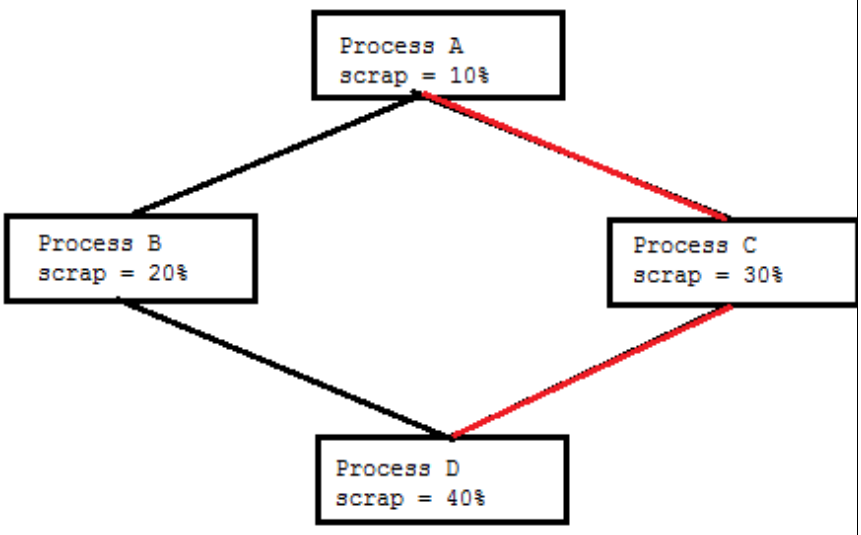
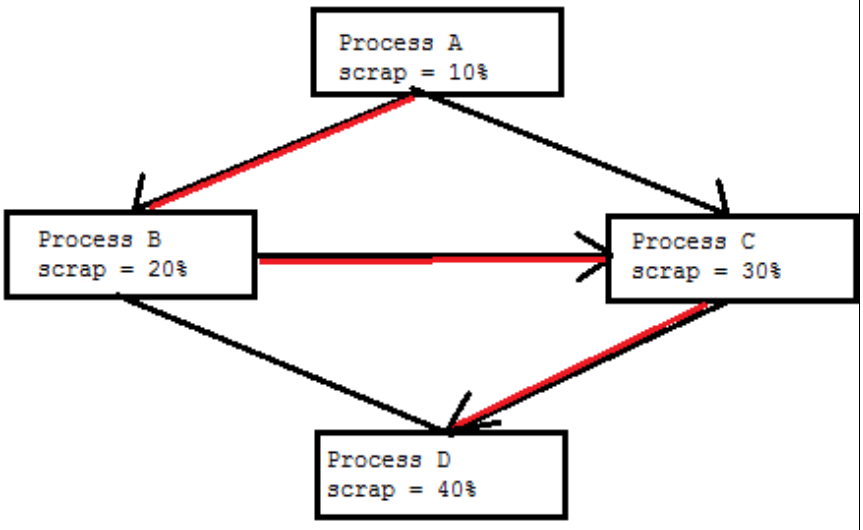
Offset Days	This allows you to specify where in the run the materials will be needed. The offset days affects when the system tells you to bring in the material in the material exceptions List (Scheduling). Users determine the time that the BOM is going to run. The time each process is going to run is not broken out separately. The system looks at the BOM as a whole and by default tells the user to bring in all of the materials at the same time. But this may not be logical so this field allows users to establish when the materials will be needed. For example, if a job is going to run for two weeks the components for the last process may not be needed until the last day of the run so users can control when they are brought in instead of bringing them in at the beginning of the job.

Process / Operation Details

The user can edit the rate of production for a process within a BOM by editing the fields listed below. The information entered in this section will be specific to that BOM. This does not affect the original process.

Note: To change the cycle time associated to the process, right click on the process from the BOM, select Edit Process, and make the changes on the Assembly Process form. A Confirm box will appear asking if the user wants to propagate the changes to all BOMs where this process is used. The number of BOMS that will be affected is listed in the message. No is the default. If the user answers Yes then the changes will be made on all of the BOMs where this process is used, and each BOM will be recalculated. If the user answers No, nothing will be updated. Security can be put on the Yes and No buttons. There is also a 'Do not show next time' check box that can be checked so this message will not appear again unless it is turned back on (in System Parameters->Lists->Dialog Check Boxes).

Multiples	Quantity of parts produced in one cycle.
UOM	Cycle time UOM. Select a UOM from the drop down list. The choices are: seconds, minutes, hours, or days.
Cycle Time	Enter the cycle time based on the UOM selected.
Yield	Enter the yield percent associated to this process. For example, what is the percentage of usable time.

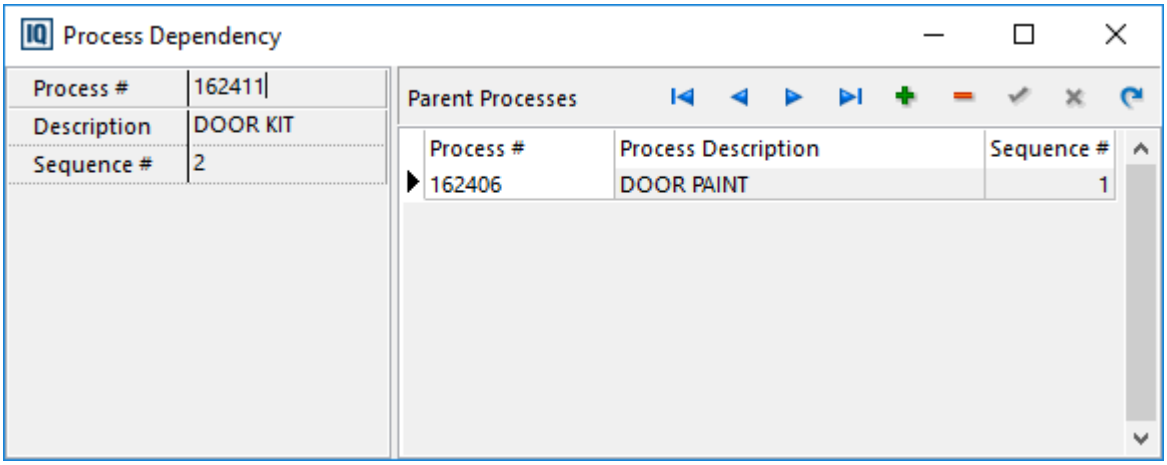
Process Level Scrap %	This is a progressive scrap percentage that will affect any materials attached to previous processes in the ASSY1/ASSY2/ASSY3 BOM. Once a Process Level Scrap % is entered, the Yield will change to 100%. Users can either enter a Yield or Process Level Scrap %. Process Level Scrap % will be included in calculating the processing time in the throughput map and work order production hours. This scrap % will affect material requirements and the standard cost of any materials attached to previous processes. If any processes are running in parallel, the system will calculate the worst case process scrap path. Example 1:  The worst case path is highlighted in red. The combined process scrap factor for A is 0.9 * 0.7 * 0.6 = 0.378 Example 2:  The worst case path is highlighted in red. The combined process scrap factor for A is 0.9 * 0.8 * 0.7 * 0.6 = 0.3024

Move Qty	Move Quantity is the total # of parts that can be completed before moving to the next process. **Note**: Move Qty plus the Move Time Hrs will be added to following process even if the full Move Qty was reported in Labor Reporting. For example: ASSY1 BOM with 2 processes: Process 1 has a Cycle Time of 1 Hour, Move Qty of 4, and Move Time of 1, and Process 2 has a Cycle Time of 1 Hour and does not have Move Qty or Move Time. Prior to reporting any labor/good parts, the projected start of Process 2 will start 5 hours after Process 1 starts (4 * 1 + 1). After reporting 4 good parts and running update schedule, the Move Qty + Move Hrs are still added to the following process.
Move Time Hrs	Move Time is the time it takes to move from one process to the next process. **Note**: 'Move Time Hrs' does not look at the shop calendar. 'Move Time Hrs' continues even after the shifts end. For example: Shop Calendar has one shift, 8 hrs/day, 5 days/wk, starting at 7:00:00AM (ending at 3:00:00PM). The ASSY1 BOM has two processes. Process 1 has a one hour cycle time, 1 move qty, and 'Move Time Hrs'. Process 2 has a one hour cycle time. There is not a labor/material/machine constraint. When adding a work order with a quantity = 1 on 3/30/2021 3/26/2021 2:00:00PM – 3:00:00PM to finish process 1 3/26/2021 3:00:00PM – 10:00:00PM for the move time (move time still continues even though shift ends at 3:00:00PM) 3/29/2021 7:00:00AM – 8:00:00AM to finish process 2
Dependent On	This will list the process that this process is dependent on based on the Process Dependencies chart. This chart can be accessed from this screen by selecting the Process Dependencies speed button.
Final Assy Reporting	If the MFG Type has the **'Launch Final Assembly Reporting on designated process'** option checked, users can designate a single process in the Assembly BOM that will launch the "Final Assembly Reporting" form when labor is reported. The Assembly BOM can only have one process designated as "Final Assy Reporting". If the user checks this box on a process and then also checks it on another process associated to the BOM, the box on the first process will be un-checked by the system. This setting can also be entered by right clicking on a process and selecting 'Final Assy Reporting'. The process that has this option checked will display an asterisk (*) in front of the process description in the tree. If the BOM is cloned, this setting will copy over to the cloned BOM.

Use for Label	For ASSY BOMs with multiple processes that each have attached packaging items the user can specify which process to use for the label. Only one process/operation can be marked 'Use for label.' When printing the label for the manufactured item, the package is the #1 sequence packaging item marked ‘use for label,’ the box quantity is the parts per for the packaging item, the Volume is volume of packing item, and the weight is the weight of the package. When printing batch labels in pick tickets for an ASSY BOM, the system will look at this setting on the BOM to determine which package to use to get the Labels quantity, Parts/Pkg, Weight and Volume. If the BOM does not have a process with Use for Label checked, then the system will default to the first package item found starting with process Sequence 1.
Grouping Process	Check this box if the process will be grouped using the licensed Assembly Track By Group module.

Process Dependency

Select the ellipsis button in the 'Dependent On' field to open the Process Dependency form.



This form shows the current process on the left and any Parent Processes it is dependent on on the right. The parent processes can be edited from this screen by adding/deleting processes. To change a parent process, select the delete button to remove the current process. Then select the insert button and select the ellipsis button in the Process # field. Select the desired parent process from the pick list. Only the processes with a lower sequence number will be listed. Once a change is made here, the Process Dependencies Chart will also change based on the dependencies.

Packaging Details

The fields listed below will be available for packaging items associated to a process:

Seq #	Shows the order of each item attached. The sequence number will default to the order the item is added in. The sequence of the items can be changed by dragging and dropping them in a different order. **Note for Packaging**: The largest packaging item or the one that will be associated to the Bill of Lading should be Seq #1. The default method for calculating BOL' s uses Seq #1 packaging items to calculate the BOL data such as class.
Gross Weight (Pkg Only)	This field is used to enter the ENTIRE (final) weight of the packaging item (box). Includes all parts, bags, ties, etc. The Bill of Lading is based on pounds per cubic feet. Pounds per cubic feet are calculated based on box weight and the volume of the package.
Tare Weight	This is the weight of the empty packaging item. This information is used when BOL's are being calculated based on individual component weights. The program will add up all of the tare weights for the packaging and the net weight for the Finished Good based on the parts per in the BOM.
Ret Contnr (Pkg Only)	This is for returnable containers and will only be used by the EDI module.
Verify ASN Quantity (Pkg Only)	This is used for EDI only. In the BOM, all returnable packaging items that need to appear on the EDI 856/DesAdv outbound transactions should be specified as packaging components and have the Ret. Container box checked. In addition, any returnable packaging items in which the quantity can vary per shipment (usually tops & bottoms), should have the Verify ASN Qty box checked on the BOM. For the inner returnable packaging item, the Seq # MUST be set to 1.

Documents and User Fields associated to a Process or Material:

The **Document** tab contains Internal or External documents associated with the attached process/item in relation to this BOM. These documents can be selected to print with the BOM, Work Order, both, or none.

The **User Fields** tab contains three alphanumeric and three numeric user defined fields that are associated with the attached process/item in relation to the BOM. The user may change the label text of these fields by right clicking on them and then typing the new label. These fields are also visible from the Materials tab in Process Maintenance. They can be edited from either place.

Documents Tab

Each manufacturing configuration may have its own set of process instructions (or notes) such as machine setup notes and process notes. Instructions are stored in memo fields which can hold an unlimited amount of information. The documents can be set to print with: BOM, Work Order, Routing Packet, All, or None.

Internal

The screen acts exactly like a word processor. The user can add, edit, delete, or print documents from here. Graphic images may also be imported into the document or text area. EnterpriseIQ supports .BMP or.WMF graphic files only.

External

This section enables the user to be able to insert or open documents created in different applications such as Microsoft Excel Chart/Worksheets, Microsoft Word Documents, Acrobat Reader, Word pad, Bitmap images, etc. and map the path to these documents so that anyone can access them.

User Fields and User Defined Form Tabs

User Fields in BOMs

User fields can be accessed on the User Field tab or select Options|User Fields to access the six alphanumeric and five numeric user fields. These user definable fields are used for informational or reporting purposes only.

Note: The user defined captions entered in the New Value fields will display for all MFG types.

User Defined Form in BOMs

User defined forms allow the user to create a unique form to store information beyond the scope of the original BOM. Once established, this form is available to all BOMs. The User Defined form can be accessed from the User Defined Form tab, from the speed button, or from the Options menu.

See the 'User Defined Forms' section in the EIQ help file or the Using EnterpriseIQ manual for more information.

Auxiliary Equipment Associated to BOM

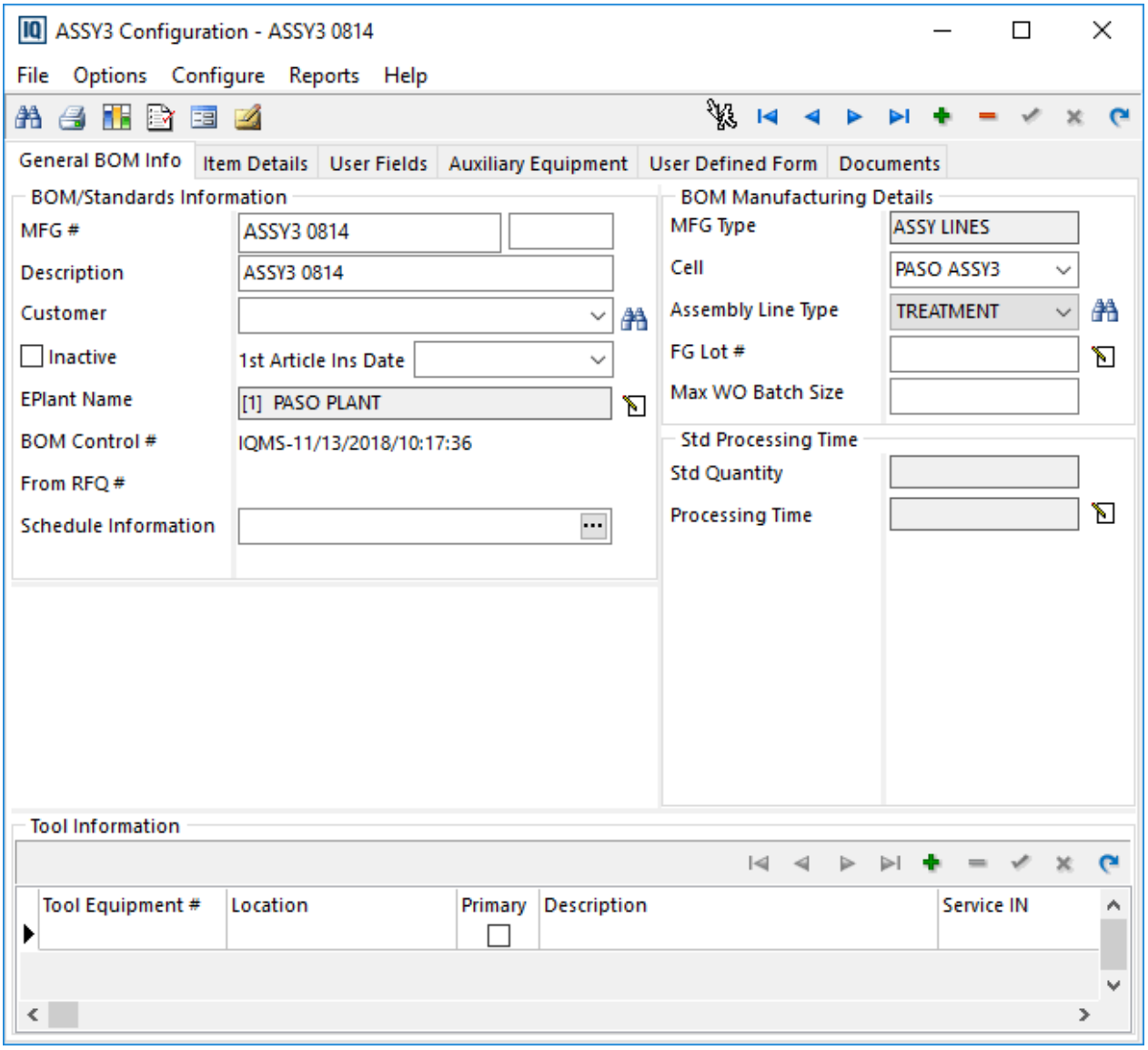
You can associate auxiliary equipment with a configuration. By doing so, EnterpriseIQ can check for availability of the equipment when the job gets scheduled and notify the scheduler of any conflicts. EnterpriseIQ does not use the rate field for finished goods costing purposes, only for quoting. Costing is completely based on the press cost field found in the Work Center information screen or if overridden on the inventory item's standard cost tab (Center Cost field). Center rate is used for quoting; center cost is used for job costing.

Visual BOM Routing

The EnterpriseIQ Visual BOM Routing module is a tool which enables the user to create bills of material in a more visual way or view existing BOM's visually. This option is very similar to the Routing Diagram option available from the items details tab of a BOM except the Visual BOM Routing module has add and edit capabilities. (Please refer to the help files for more information).

ASSY3 Bills of Manufacture

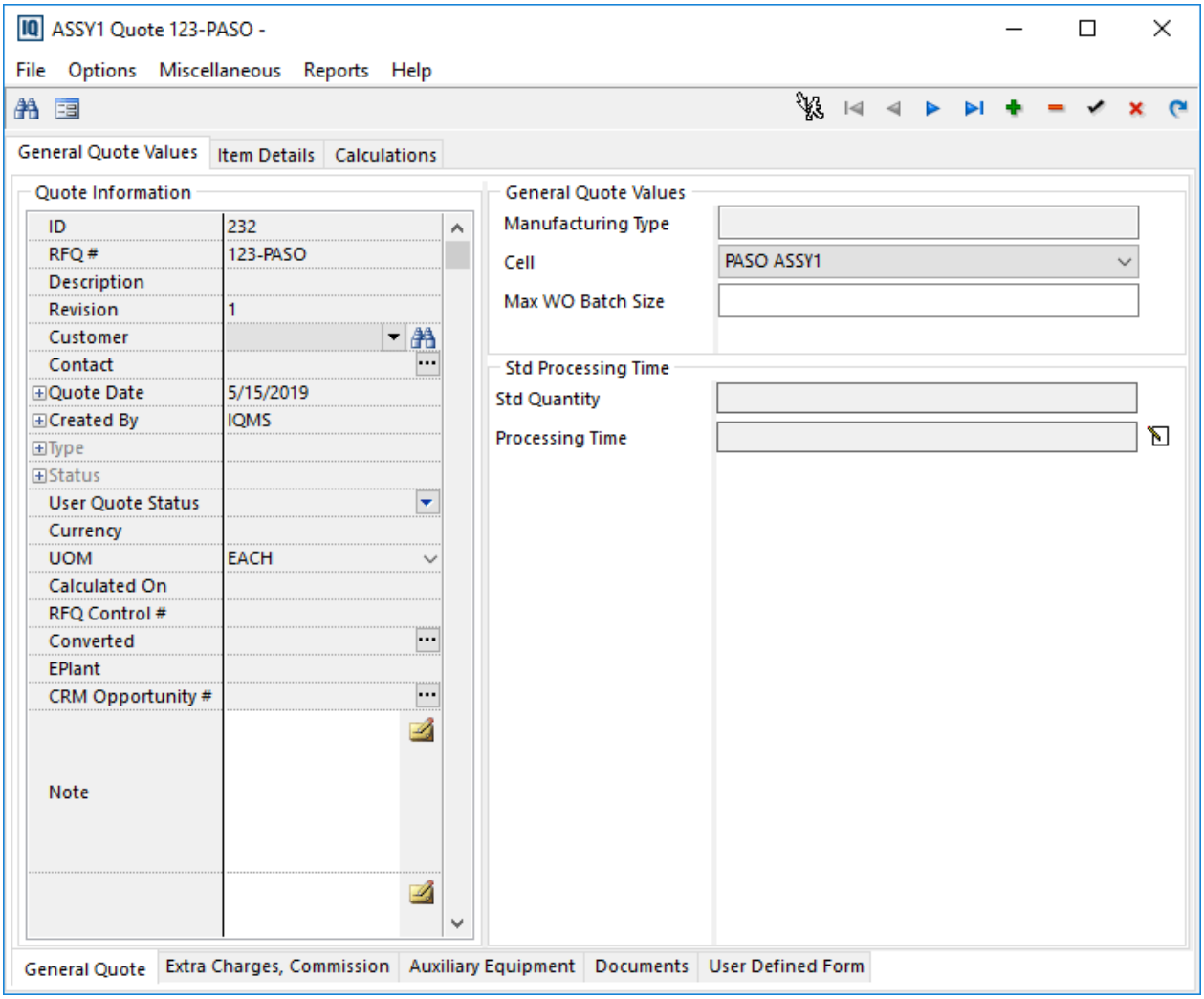
The BOM for ASSY3 MFG Type BOMs is mostly identical to a ASSY1 and ASSY2 BOM except for the areas noted below:



An ASSY3 BOM is associated to an Assembly Line Type. Select the type from the drop down arrow or the pick list. This list is based on the types associated to the assembly lines created in the Assembly Lines module. (See Assembly Lines for ASSY2 for more information).

ASSY1 and ASSY2 Quote

Quotations can be created for the ASSY1 and ASSY2 manufacturing types. The basic functionality in creating an ASSY quote is the same as for any manufacturing type. The main difference is an ASSY quote can have multiple processes like an ASSY BOM. This document will reference the fields in a quotation that only pertain to the ASSY manufacturing type. For a complete discussion on all fields in a quote please refer to the Quote documentation.



General Tab:

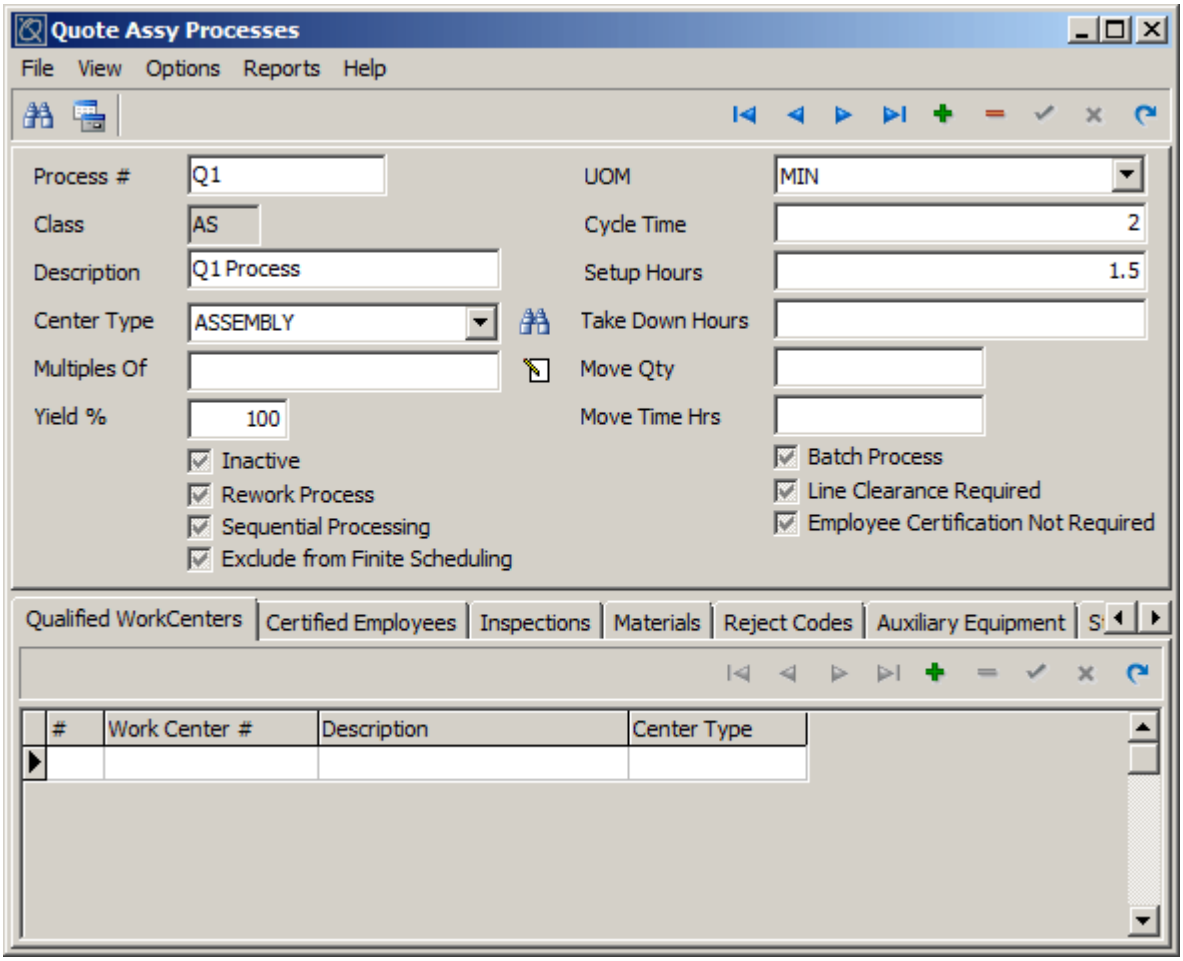
Max WO Batch Size	Enter the maximum work order batch size if desired. This will break up the sales order releases into multiple buckets if necessary on the work order(s). For example: The sales order release is 2000 pieces, and the Max WO Batch is 500. Assuming zero on hand the system will create four work orders for 500 pieces each.
Std Quantity	The standard run quantity used to calculate the standard processing time. This value is entered on the Process Throughput Map form accessed be selecting the Throughput Map button.
Processing Time	This is the calculated processing time. Select the Throughput Map button to calculate the standard processing time of the BOM. Enter the Std Quantity then select the 'Apply Selection Criteria' button. A graphical representation of each process will be displayed in the right hand window. (See example in the ASSY1 Bills of Material).

Item Details

Users can add processes from the Quote Process pick list or from the Assembly Processes.

 Select the 'Add Assy Process' speed button and choose a process from the pick list. New Assembly Processes cannot be added from the quote module.

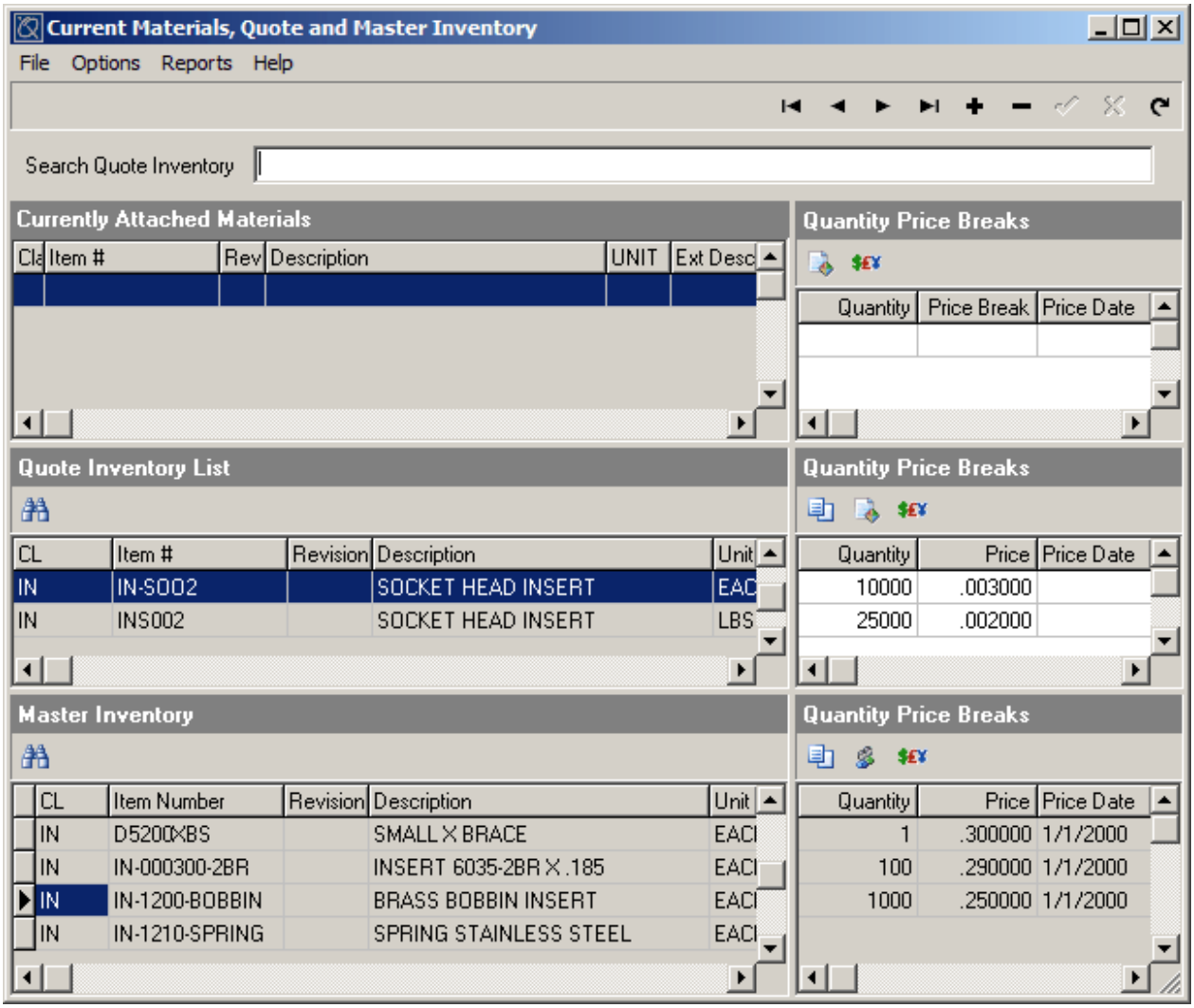
 Select the 'Add Quote Process' speed button to select an existing quote process or select New to create a new quote process.


Quote Assy Processes
File
View
Options
Reports
Help
Process #
Q1
Class
AS
Description
Q1 Process
Center Type
ASSEMBLY
Multiples Of
Yield %
100
Inactive
Rework Process
Sequential Processing
Exclude from Finite Scheduling
UOM
MIN
Cycle Time
2
Setup Hours
1.5
Take Down Hours
Move Qty
Move Time Hrs
Batch Process
Line Clearance Required
Employee Certification Not Required
Qualified WorkCenters
Certified Employees
Inspections
Materials
Reject Codes
Auxiliary Equipment
#
Work Center #
Description
Center Type

The information entered for a Quote Assy Process is basically identical to the information in Assembly Process maintenance. Please refer to that section for field details (see Assembly Processes Maintenance). There are a few differences discussed below.

One difference is when attaching materials, users can attach master inventory items or quote items. Attaching material(s) is accomplished as follows:

- From the Materials tab on the Quote Assy Process select the ellipsis button in the Item # field. A three part form will appear:



- Select the item from either the Master Inventory list or the Quote Inventory list. Drag the item from the one of the lists up to the Currently Attached Materials list.

- Next, enter the Quantity per Item. The Quantity per Item is how many pieces will be consumed for each of the selected items manufactured. Continue this process for all materials required for the process. If the material is a manufactured item that will need to be quoted the user can select the RFQ Required box. The item will be marked in red indicating an RFQ is required. Once the RFQ for the item is created the item will be marked in black. This feature is used in the top down quoting method. This option will be grayed out when adding a new quote inventory item from the 'Modify Quote Inventory Item' form. Once you drag the newly created item to the Currently Attached Materials section the box will be enabled on the 'Edit Attached Material' form. This will indicate that the item needs to be quoted, in other words it is something you manufacture that does not have a quote created for it yet.

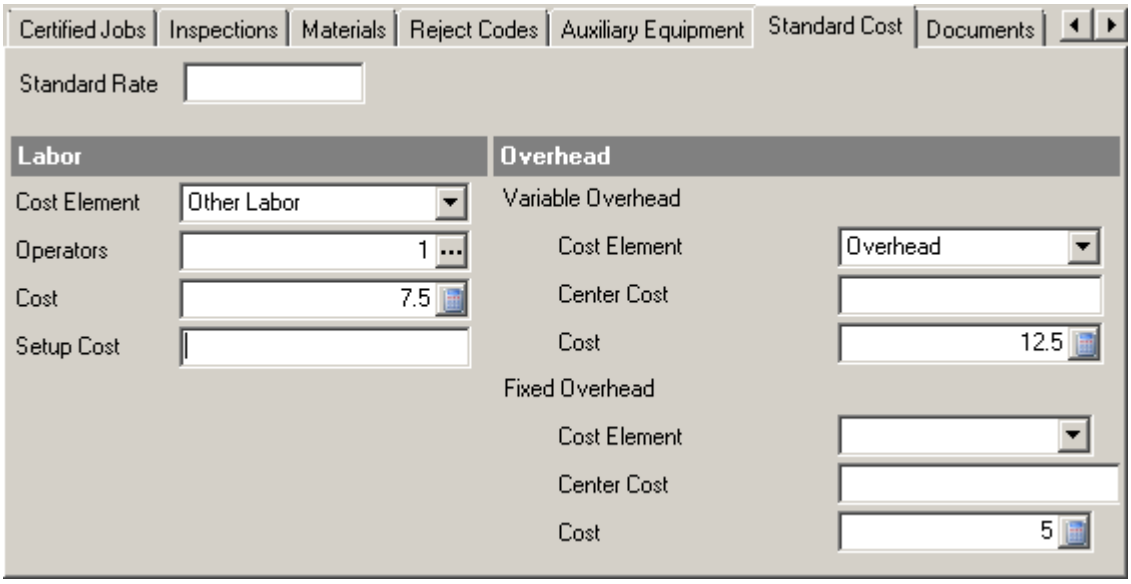
- Modify the Quantity and Price Break information for the material, if necessary.

- To exit, click on File|Exit or click on the [X] in the upper right hand corner of the screen. The selected materials will now be displayed in the visual view to the left under the process they are attached to and the details for the selected material will be displayed in the lower right hand portion of the screen.

Another difference is on the Standard Costing tab. There is a field to enter the **Standard Rate**. This value is used in quoting only to establish the process cost. A value entered here will flow to the 'Process Cost' field on the calculations screen. The system will multiply the Standard Rate times the cycle time in hours times the multiple of value to calculate the process cost per item. (The Labor and Overhead standard costs flow to the 'Prod Cost' field on the calculations screen).

Note: The Standard Rate field is not available on a non quote process, so when an ASSY Quote with a process that only utilizes the Standard Rate field is converted to a BOM it converts without costs.

See quote calculations in the next section for details.



Process Labor Cost	Break out Setup Costs is unchecked ((Cycle time in hrs / multiple of) / (Yield/100)) * Labor rate * # of Operators Break out Setup Costs is checked There are two fields for labor when break out setup costs is checked: Cost (Production Labor): (Cycle time in hrs / multiple of / (Yield/100)) * labor rate * # of Non Setup Operators Setup Cost: Setup Hours * Setup Operators * labor rate
Process Overhead Cost	((Cycle time in hrs / multiple of) / (Yield/100)) * OH Rate * # of Non Setup Operators Note: If a Center Cost is entered here this will be the rate used for the calculation, otherwise the system will use the Overhead Rate assigned to the Mfg Type.
Process Fixed Overhead Cost	((Cycle time in hrs / multiple of) / (Yield/100)) * Fixed OH Rate * # of Non Setup Operators Note: If a Center Cost is entered here this will be the rate used for the calculation, otherwise the system will use the Fixed Overhead Rate assigned to the Mfg Type.

The calculations tab will use the sum of the labor associated to each process plus the sum of the overhead costs to determine the Prod Cost value. The sum of the costs of the operations will be used to determine the Process Cost.

The Labor hierarchy for an ASSY quote is:

1. Employee Level

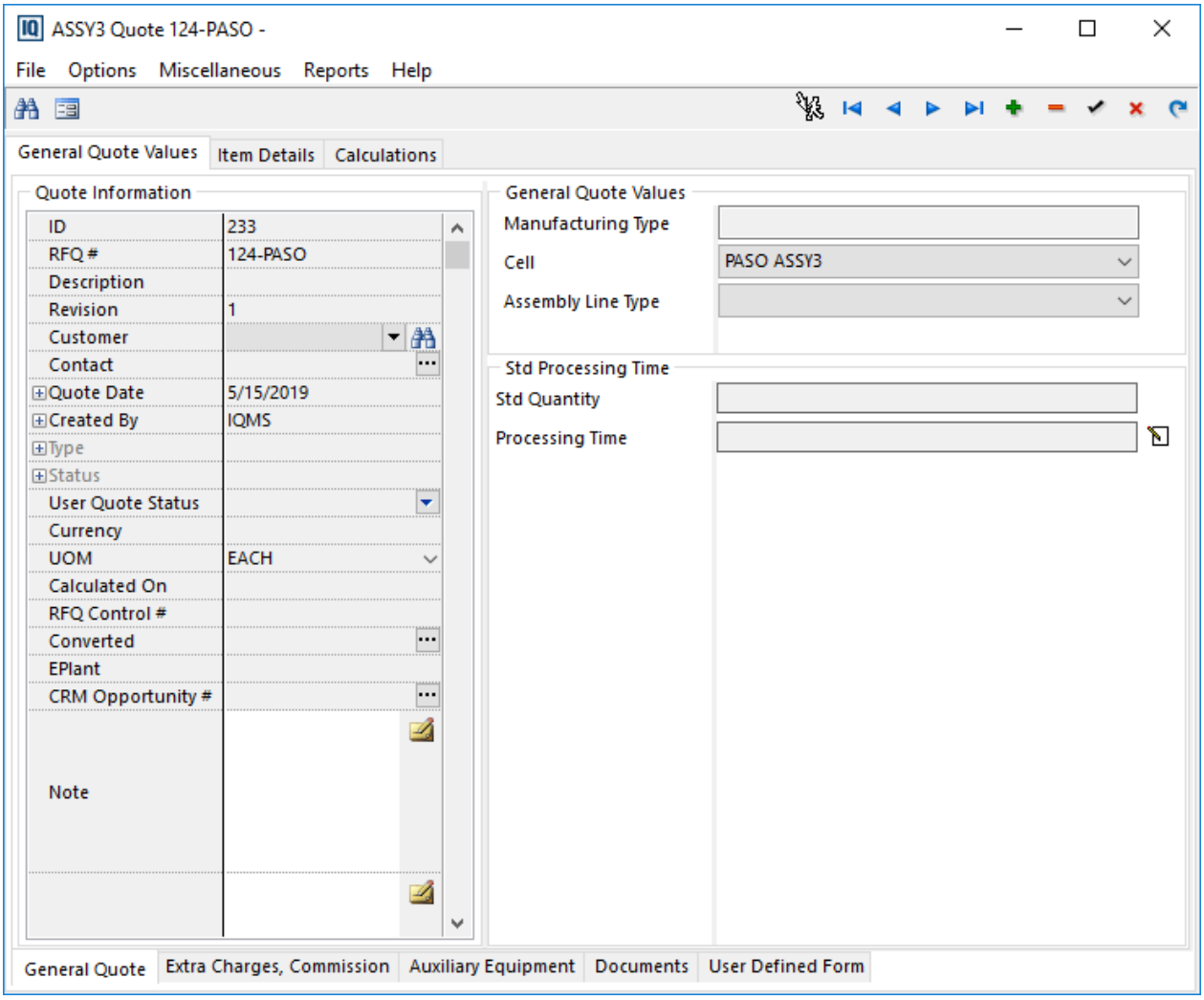
2. Default Operator Labor Rate from Rates and Parameters in Quoting.

3. Labor rate from Mfg Type

Note: Only the ASSY MFG Types includes Mfg Type within the Quoting module labor hierarchy.

ASSY3 Quote

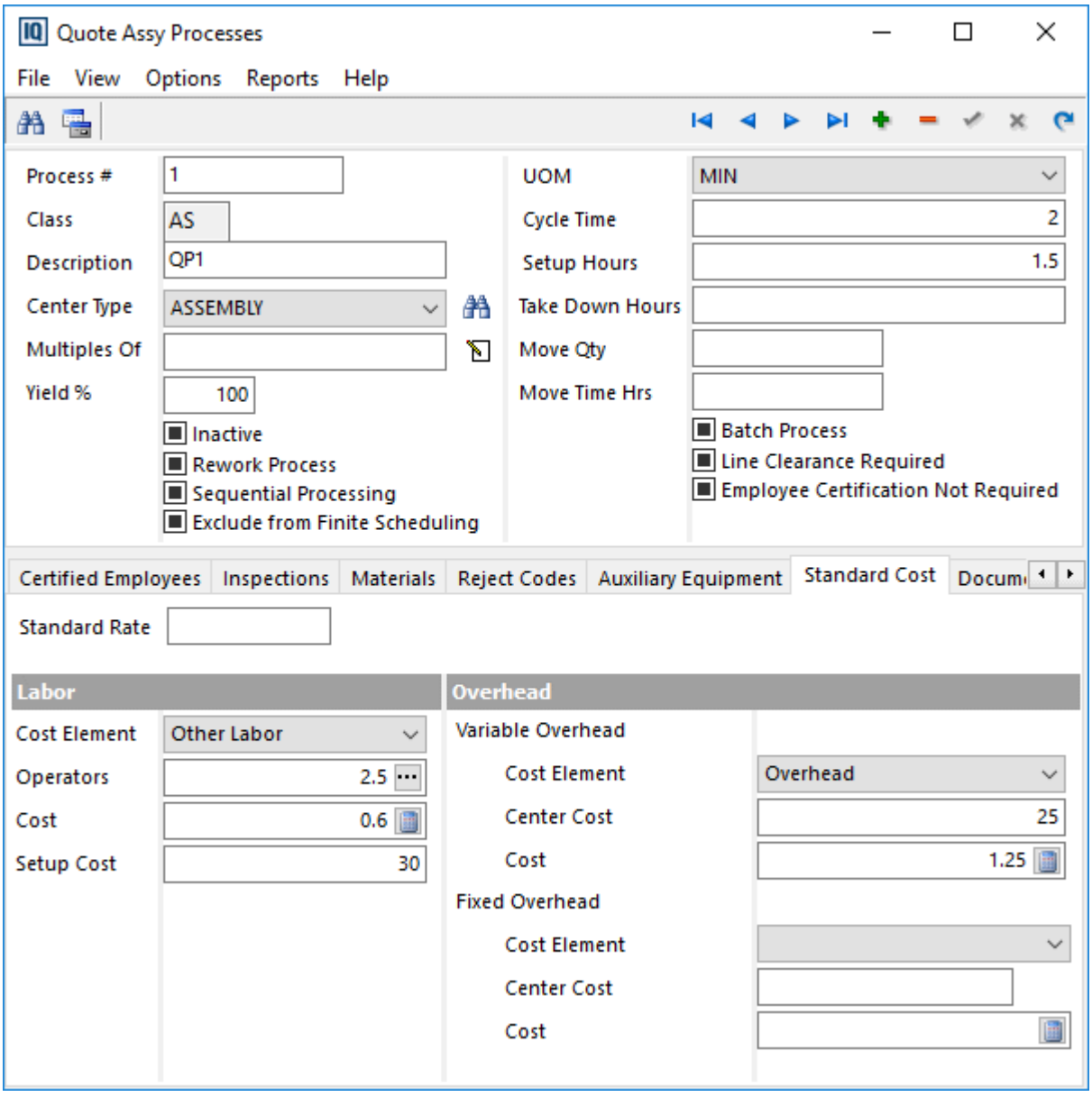
The ASSY3 Quote form and functionality is basically identical to the ASSY1 and ASSY2 types except an Assembly Line Type is associated to the quote and the Max WO Batch field is not applicable.

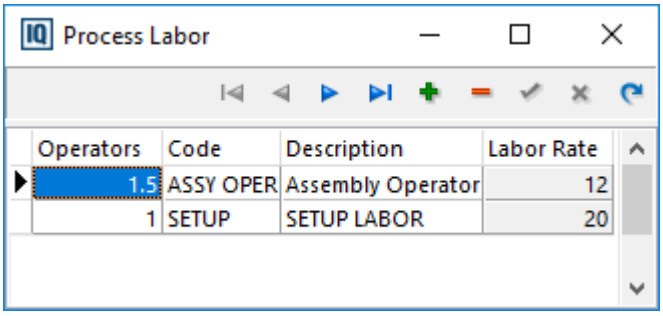


ASSY Quote Calculations

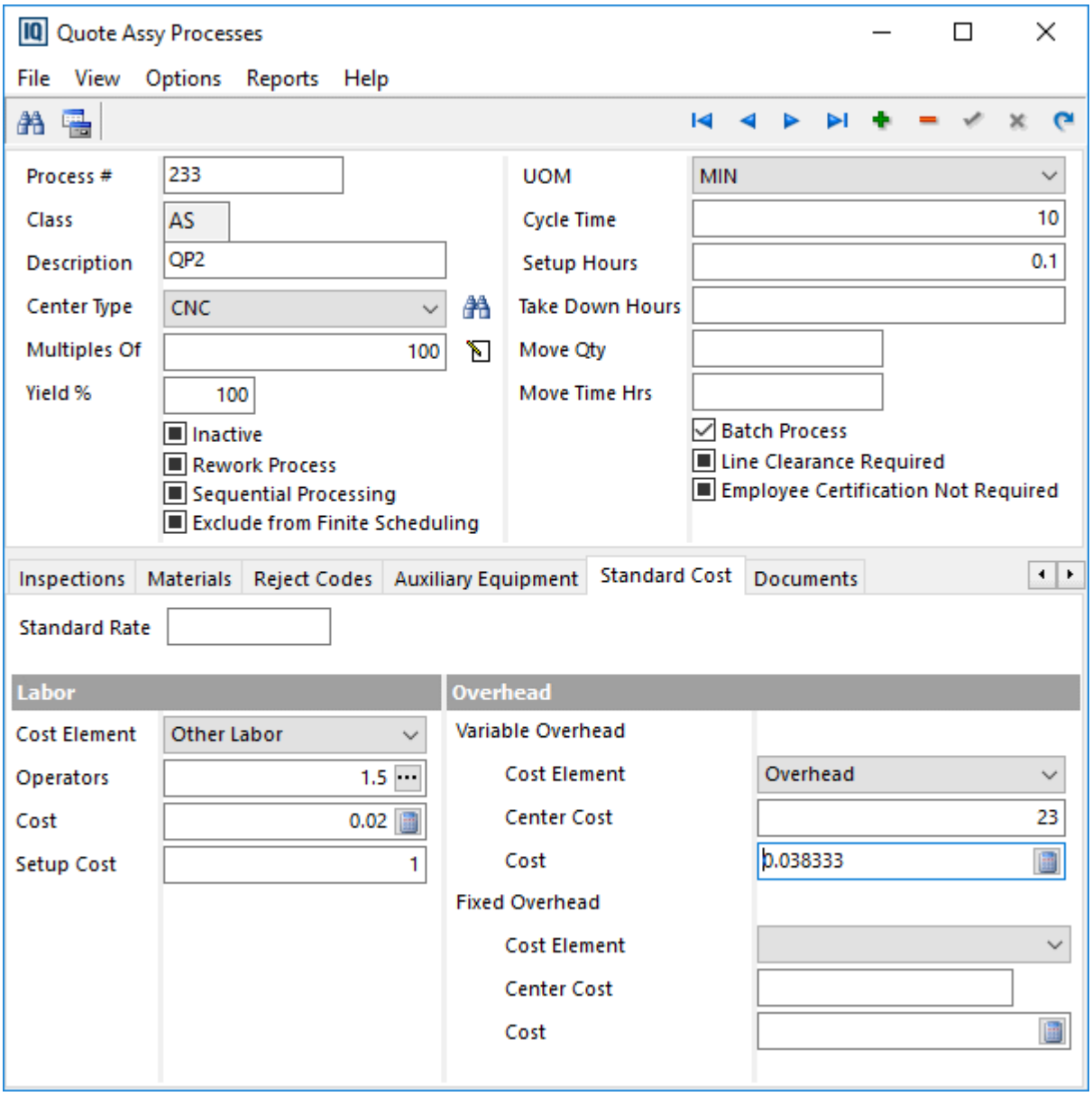
Calculation Samples

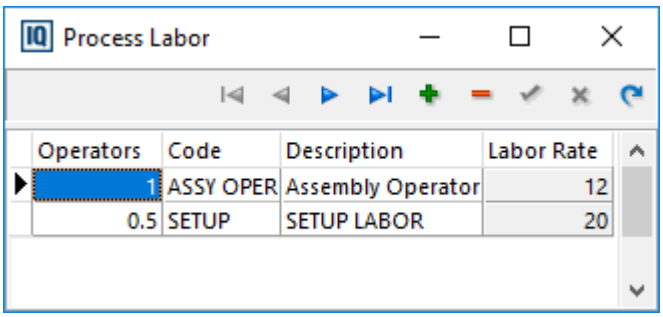
The calculation samples provided below are based on information from the following Quote ASSY Processes screen shots and a Quote Quantity of 100. All percentages or amounts shown in the calculated fields have been rounded off. The Markup By is set to Percentage and the fixed overhead costs are zero.



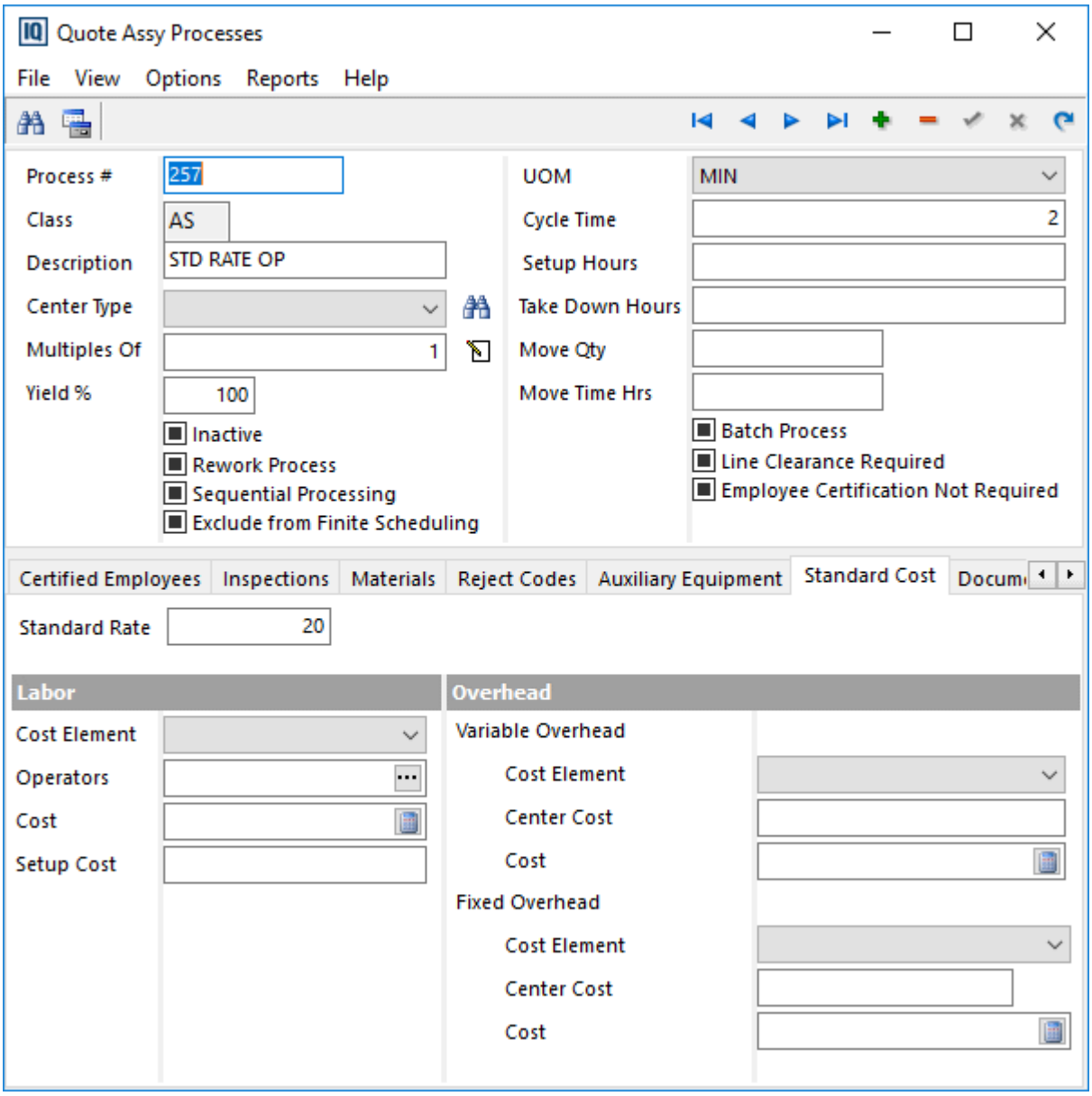

Process Labor
Operators
Code
Description
Labor Rate
1.5
ASSY OPER
Assembly Operator
12
1
SETUP
SETUP LABOR
20

This process is a Batch Process. See ASSY1 Bills of Manufacture for how the Cycle Time is calculated for a Batch Process.





This process uses a Standard Rate rather than calculated labor and overhead which will populate the Process Cost row on the Calculations tab.



$£¥	100	500	1000
Optm % Markup			
Unit Cost	7.3000	7.0520	7.0210
Unit Price	9.2891	8.3065	8.0298
Price/1000	9,289.1310	8,306.4540	8,029.8400
Gross Profit Margin %	17.48	10.86	8.19
Cost %	82.52	89.14	91.81
Prod %	25.08	24.91	25.36
Material %	49.88	55.78	57.70
Net Value/Hr	41.52	39.34	36.91
Yield/Hr	52.58	48.91	46.26
Prod Hrs	8.43	35.77	69.93
Oper Hrs	33.72	143.08	279.72
Prod Labor	62.00	310.01	620.01
Setup Labor	31.00	31.00	31.00
Overhead	128.83	644.16	1,288.32
Prod Cost	221.83	985.17	1,939.33
Process Cost	66.67	333.33	666.67
Prod Markup	44.37	98.52	96.97
Total Prod Cost	332.87	1,417.02	2,702.97
Fix % MarkUp	20.00	10.00	5.00
Lbs Req			
Cost/Lb			
Comp. Cost	438.75	2,193.75	4,387.50
Pkg Cost	2.50	12.50	25.00
Outsource Cost			
Material Cost	441.25	2,206.25	4,412.50
Material Markup	110.31	330.94	529.50
Total Matrl Cost	551.56	2,537.19	4,942.00
Fix % MarkUp	25.00	15.00	12.00
Extra Charges	0.25	1.25	2.50
Commissions	0.4423	0.3955	0.3824
Total Revenue	884.68	3,955.45	7,647.47
Total Cost	730.00	3,526.00	7,021.00
Total Profit	154.68	429.45	626.47
VAP %	34.88	24.55	19.37
VGM %			

The field listing below outlines and shows the calculations for each field.

Optm % MarkUp	If a quote is Optimized, the resulting percent change is displayed here. The optimized percentage is the percent of change between the original calculated unit price and the new optimized unit price. The column will be blank if the quote has not been optimized. **Example**: The price is optimized from $1.00 to $1.25. The Opt % Markup field displays 25 indicating that the quoted price is 25% higher than the calculated price. All percentages are based on the calculated price.
Unit Cost	The cost to make the product per unit. **Calculation**: a. Total Cost / Quote Quantity b. 730.00 / 100 **Unit Cost** = 7.30
Unit Price	Suggested sales price per unit. **Calculation**: a. (Total Revenue / Quote Quantity) + Commission b. (884.68 / 100) + 0.4423 **Unit Price** = 9.2891
Price/1000	The price for 1000 units of product. **Calculation**: a. Unit Price * 1000 b. 9.2891 * 1000 **Price/1000** = 9,289.1310
Profit/Total Margin	This will display either the Markup % or the Gross Profit Margin % depending on which option is selected in the Margin Display section on the Calculations Parameters screen. The default is set in Rates and Parameters. **Calculation if Markup % is selected**: a. ((Total Revenue – Total Cost) / Total Cost) * 100 b. (884.68 - 730.00) / 730.00) * 100 c. (154.68 / 730.00) * 100 **Markup %** = 21.19 **Calculation if Gross Profit Margin is selected**: a. ((Total Revenue – Total Cost) / Total Revenue) * 100 b. (884.68 - 730.00) / 884.68) * 100 c. (154.68 / 884.68) * 100 **Gross Profit Margin** = 17.48

Cost %	Total cost as a percent of the Unit Price. **Calculation**: a. (Total Cost / Total Amount) * 100 b. (730.00 / 884.68) * 100 **Cost %** = 82.52
Prod %	The production costs as a percentage of the total price. **Calculation**: a. Prod Cost / Total Revenue * 100 b. (221.83 / 884.68) * 100 **Prod %** = 25.08
Material %	The material costs as shown as a percentage of the total price. **Calculation**: a. Material Cost / Total Revenue * 100 b. (441.25 / 884.68) * 100 **Total Material %** = 49.88
Net Value/Hr	This is the effective hourly press rate, after removing extra charges, materials and labor. It is calculated by taking the Total Revenue less Extra Charges, Material Cost, Production labor and Setup labor then dividing by the quote quantity, and multiplying by Prod Hours. **Calculation**: a. ((Total Revenue - (Material Cost + Extra Charges + Labor Cost)) / Prod Hours b. ((884.68 - (441.25 + 0.25 + 93)) / 8.434 c. (884.68 - 534.50 / 8.434 d. 350.18 / 8.434 **NetValue/Hr** = 41.52
Yield/Hr	The total yield per hour for the Quote Quantity. Essentially the amount made per hour after material costs (plastic, components, and packaging) and commissions, but before labor costs. **Calculation**: a. (Total Revenue - Material Cost) / Prod Hours b. (884.68 - 441.25 / 8.434 **Yield/Hr** = 52.58

Prod Hrs	Production Hours required for the Quote Quantity. **Calculation:** Non Batch Process = (Cycle Time per Hour/multiples of/(yield/100) * Quote Quantity) + setup hours Batch Process = Takes the cycle time to do the amount of items listed in the multiples of field. ((Cycle Time per Hour/multiples of/(yield/100) * (Quote Quantity/Multiples Of - if less than quote quantity) + setup hours) a. (((0.033333/1/1) * 100) + 1.5) + ((0.166666 * 1 * 1) + 0.1 * 2) + ((0.033333/1/1) * 100) b. 4.8333 + 0.26666 + 3.3333 **Prod Hrs** = 8.43 If a Process Scrap % is entered on the process the Production Hours will use that value instead of the yield. When a process scrap % is entered the yield will change to 100%. Users can either enter a Yield or Process Level Scrap %. (See Attached Process and Material Details for details on Process Level Scrap).
Oper Hrs	Total number of operator hours required for production. **Calculation**: a. Production Hours * total number of Operators associated to processes (including set up operators). b. 8.43 * 4 **Oper Hrs** = 33.72
Prod Labor	Total Production Labor *'Break Out Setup Costs' is checked* Sum of the (Prod Hours * Non Setup operators * Labor Rate) for each process * Quote Qty a. ((0.033333 * 1.5 * 12) * 100) + (0.166666 * 1 * 12) b. 59.994 + 1.99992 **Prod Labor** = 62.00 *Break Out Setup Costs' is not checked* Sum of the (Prod Hours * operators * Labor Rate) for each process * Quote Qty a. ((0.033333 * 1.5 * 12) * 100) + (0.166666 * 1 * 12) b. 59.994 + 1.99992 **Prod Labor** = 62.00
Setup Labor	Total cost for setup labor. Sum of the (Setup Hours * setup operators * Labor Rate) for each process a. (1.5 * 1 * 20) + (0.1 * 0.5 * 20) b. 30 + 1 = 31.00

Overhead	The sum variable and fixed overhead costs for all processes without a Standard Rate * Quote Qty a. (1.25 + 0.038333) * 100 b. 125 + 3.8333 **Overhead** = 128.83
Prod Cost	The total production cost for the Quote Quantity. Based on the sum of the labor and overhead standard costs for all attached processes multiplied by the quote quantity. **Calculations:** *'Break Out Setup Costs' is not checked* a. Sum of all processes ((Cycle time in hrs / multiple of) / (Yield/100)) * OH Rate * # of Operators * Quote Qty + ((Cycle time in hrs / multiple of) / (Yield/100)) * Labor rate * # of operators * Quote Qty +((Cycle time in hrs / multiple of) / (Yield/100)) * Fixed OH Rate * # of Operators * Quote Qty b. ((0.033333/1/1) * 25 * 1.5 * 100) + ((0.033333/1/1) * 12 x 1.5 * 100) + ((0.033333/1/1) * 20 * 1 * 100) + (0.166667 * 23 x 1) + (0.166667 * 12 * 1) + (0.166667 * 20 * 0.5) **Prod Cost** = 259.17 *'Break Out Setup Costs' is checked* a. Sum of all processes (((Cycle time in hrs / multiple of) / (Yield/100)) * OH Rate * # of Operators * Quote Qty) + (((Cycle time in hrs / multiple of) / (Yield/100)) * Labor rate * # of operators * Quote Qty) + (Setup Hours * # of Setup operators * Labor rate) + (((Cycle time in hrs / multiple of) / (Yield/100)) * Fixed OH Rate * # of Operators * Quote Qty) b. ((0.033333/1/1) * 25 * 1.5 * 100) + ((0.033333/1/1) * 12 * 1.5 * 100) + (1.5 * 1 * 20) + (0.166667 * 23 * 1) + (0.166667 * 12 * 1) + (0.1 * 0.5 * 20) **Prod Cost** = 221.83 **Note**: This can also be simply calculated by summing up the Prod Labor, Setup Labor, and Overhead values Example: 62.00 + 31.00 + 128.83 = 221.83
Process Cost	Cost for processes with a Rate instead of standard costs. **Calculation:** a. Sum of all processes with standard rate (Cycle time in hrs * Rate * Multiple Of) * Quote Qty b. 0.033333 * 20 * 1 * 100 **Process Cost** = 66.67
Prod MarkUp	The amount the production is being marked up. **Percentage Calculation:** a. Prod Cost * (Prod % Markup/100) b. (221.83) * (0.20) **Prod MarkUp** = 44.37

Total Prod Cost	The total production amount, including markup. **Calculation**: a. Prod Cost + Prod MarkUp + Process Cost b. 221.83 + 44.37 + 66.67 **Tot Prod Cost** = 332.87
Tbl % MarkUp or Fixed MarkUp	The production markup percentage as specified in the Calculation Parameters section.
Comp Cost	Total cost of components needed for this quoted quantity. Pricing is based on default price breaks and number of units required. The units required takes into consideration the scrap percentage associated to the component if any. **Calculation**: a. (Quote Qty * parts per) * 1 + Scrap %) * component cost b. (((100 * 1) * 1 + .05) * 2.75) + (((100 * 1) * 1) * 1.5) **Comp. Cost** = 438.75 If the Attached Components Scrap Calculation in Rates and Parameters is set to 'Based on (1/1-Scrap)', the calculation would be: (100 * (1/1-0.05)) * 2.75 + (((100 * 1) * 1) * 1.5) = 439.47 Process Level Scrap % will be included in calculating the Comp Cost, and Pkg Cost of any materials attached to previous processes. For example, if there is Process Level Scrap of 10% on a process the comp cost would be increased to 487.50 ((((100 * 1) * 1 + .05) * 2.75) + (((100 * 1) * 1) * 1.5) * (1/1-.10)
Pkg Cost	Total Packaging cost for the quoted quantity. Pricing is based on quantity price breaks and number of units. The items required takes into consideration the scrap percentage associated to the packaging item if any. The system will round up to the nearest whole packaging item required and multiply times the cost to determine total Pkg Cost. Example: Parts per packaging item = 10, Scrap % = 0, quote qty = 100, cost = 0.25 Calculation: a. ((Quote Qty/parts per) * 1+ Scrap %) * pkg cost b. ((100/10) * 1) * 0.25 **Pkg Cost** = 2.50 With a 10% process level scrap the Pkg Cost would be 3.00 as it rounds up to a whole package. 2.50 * (1/1-.10) = 2.7775 rounded up is 3

Material Cost	Total cost of material associated to all processes for the quote quantity. Calculation: a. Comp. Cost + Pkg Cost b. 438.75 + 2.50 **Material Cost** = 441.25
Material MarkUp	The amount the materials are being marked up. **Calculation**: a. Tot Material Cost * (Mat % Markup / 100) b. 441.25 * (0.25) **Matr MarkUp** = 110.31
Total Matrl Cost	The total material amount, including markup. **Calculation**: a. Tot Matl Cost + Matr MarkUp b. 441.25 + 110.31 **Total Matr Cost** = 551.56
Fix or Tbl % MarkUp	The material markup percentage as specified in the Calculation Parameters section.
Extra Charges	Additional charges not accounted for in the normal quote input screen such as extra shipping charges, mold maintenance, color changes, etc. This information comes from the information entered on the 'Extras Charges, Commission' tab. **Extra Charges** = 0.25
Commissions	Sales commissions will be added into the item price based on Total Price or Gross Margin and one of two calculations. **Calculation example**: a. Total Price: Total Revenue / Qty * Commission%/100 b. (884.68 / 100) * 0.05 c. 0.4423
Total Revenue	Total revenue for the Quote Quantity including the Optm % MarkUp. **Calculation**: a. (Total Prod Cost + Total Matr Cost + Extra Charges) * (1 + (Optm % MarkUp / 100)) b. (332.87 + 551.56 + 0.25) * (1 + (0/ 100)) c. 884.68 * 1 **Total Revenue**= 884.68
Total Cost	The Total Cost to produce the Quote Quantity (break even). **Calculation**: a. Prod Cost + Process Cost + Material Cost + Extra Charges b. 221.83 + 66.67 + 441.25 + 0.25 **Total Cost** = 730.00

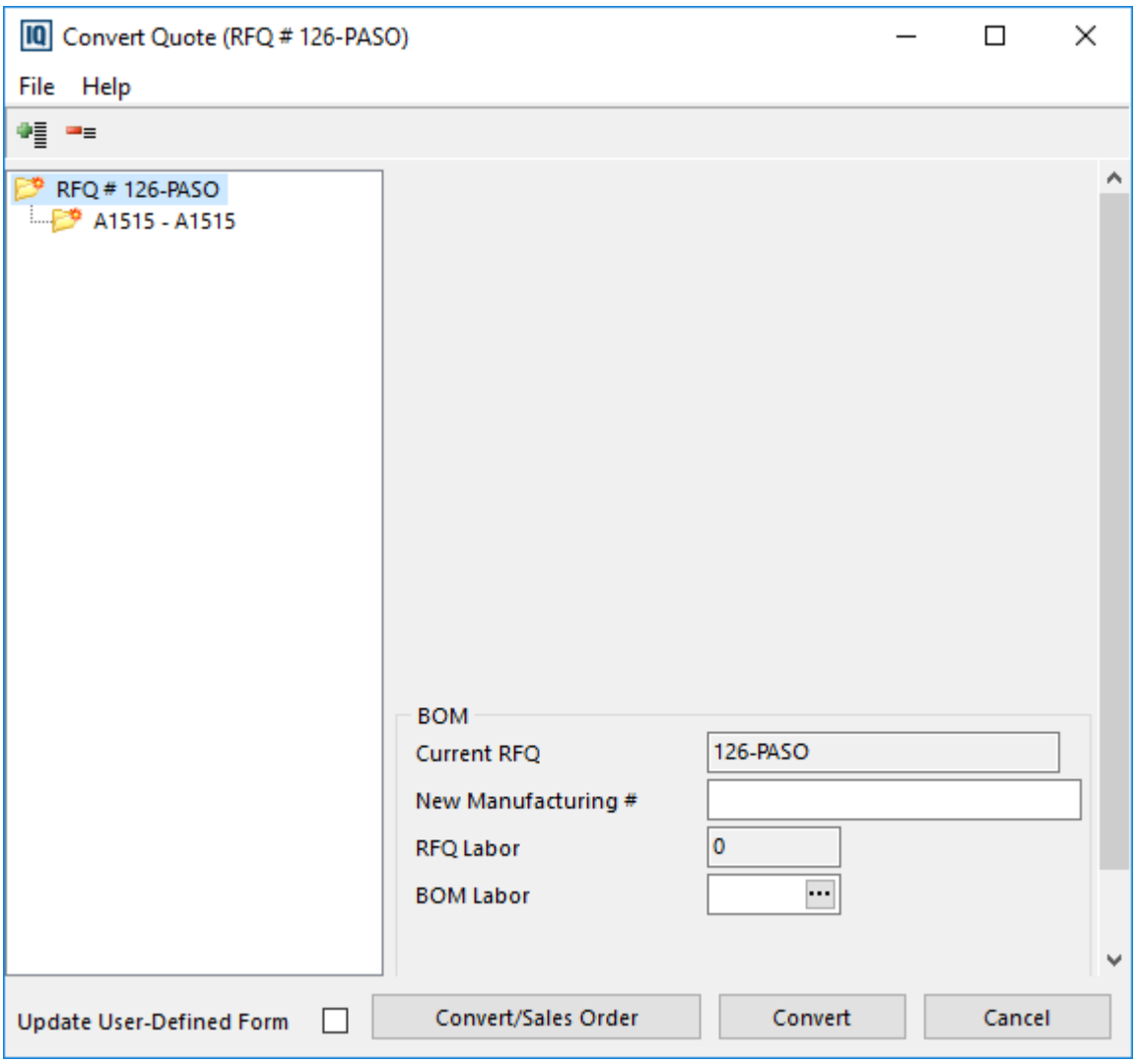
Total Profit	Total Profit that will be made on the Quote Quantity. **Calculation**: a. Total Amount - Total Cost b. 884.68 - 730.00 **Total Profit** = 154.68
VAP%	Value Added percentage. **Calculation:** a. (Total profit / (((Unit Price - Commissions) * Qty) - Material Cost)) * 100 b. 154.68 / (((9.3124 - 0.4656) *100) - 441.25) * 100 c. 154.68 / 443.43 **VAP% =** 34.88 %

Note: VGM % is not applicable to ASSY MFG type quotes.

Convert ASSY Quote to BOM

To convert a quote to a BOM, follow the steps below.

- Select the quote to convert from the quote pick list.
- Click on the Calculation tab and then click on the Convert... button at the top of the screen, or select File/Convert to BOM... from the main menu. The following screen will appear.



- To review the information on all items and attached packaging/components, click on the Full Expand button. This allows the user to identify all items that are not currently in Master Inventory prior to converting the quote and to make any changes to the item number or description of new items prior to conversion.

- Click on each item attached, make any changes as necessary and click on the Apply button to save the changes. A red check mark will appear in each folder that is reviewed. Note: A description must be entered for each item or the quote cannot be converted to a BOM, because the description field is mandatory in BOMs.

- Enter the new Manufacturing Number.

- *DO NOT* enter the BOM Labor information. This does not apply to the ASSY MFG Types as the labor comes from the attached processes. If BOM labor is added the standard cost of the item will be incorrect.

- Click on [Convert] to proceed with the conversion process. The system will create the new configuration and automatically add any new item(s) to the Master Inventory along with the quantity and price break information. The packaging items' sequence numbers in the BOM will be based on the order they are attached to the quote.

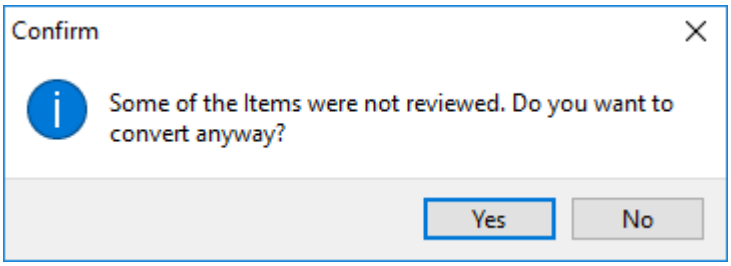
The quote can also be converted to an existing BOM. Instead of creating a new BOM number type in an existing BOM number. All of the settings that are not available in the Quote will be preserved as it was on the BOM before the conversion. For example the Dispo by Cycles check box on attached components will stay as it was on the original BOM before the conversion from the quote.

NOTES:

More than one manufacturing number may be required if the quote has manufactured sub-components attached that exist only as quoted items.

When converting a quote to a BOM, any attached components that are created during the convert will have the prices breaks written to the "Buy" pricing in inventory. However, if the item is associated to a Vendor RFQ the AKA Buying tab will be automatically populated with the vendor(s) and price break(s) from its Vendor RFQ.

The following message may appear if some of the items were not reviewed:



When the quote has been converted the user will receive a prompt that the conversion was completed successfully. Click on [OK] to return to the main screen.

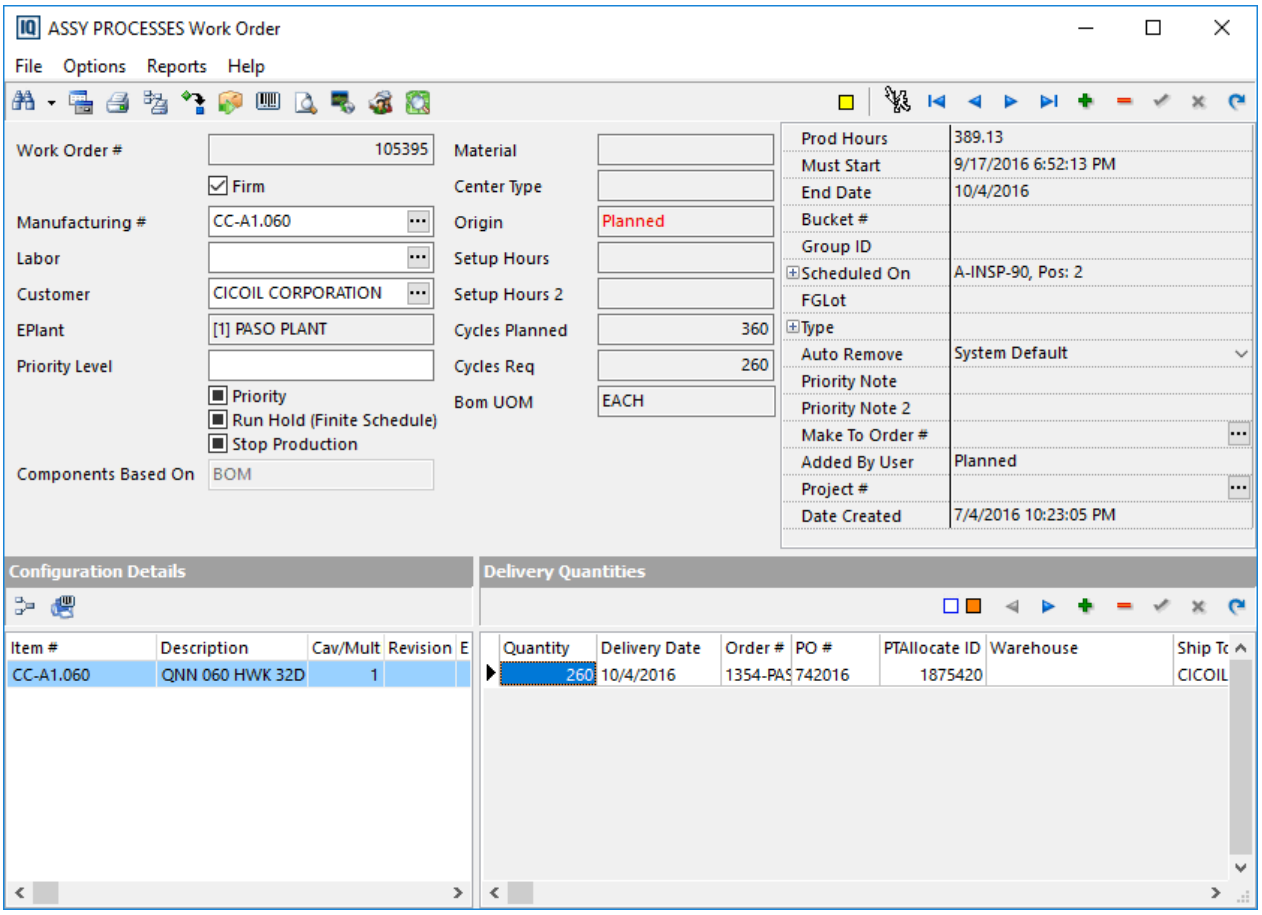
Convert to BOM and Create a Sales Order

To convert a quote to a BOM and create a Sales Order at the same time, follow the steps above until all items have been reviewed and you are ready to convert to the BOM. Instead of clicking on the [Convert] button, click on the [Convert/Order] button to proceed with the conversion process and create the BOM and the Sales Order. If a customer is not associated to the quote the user will receive a warning and will not be able to continue creating the sales order, however the quote will still be converted to a BOM.

When the quote has been converted the user will receive a prompt that the conversion was completed successfully and the Sales Order form for the quoted item will be shown on the screen. If a Sales Order Note is associated with the customer (Customer Maintenance->Misc tab) it will appear on the screen with the sales order.

Work Orders for ASSY

Work Order's for ASSY Mfg Type BOM's are generated during the Update Schedule process as with all work orders. The fields and functionality is basically the same as for all work orders. Two exceptions for ASSY Work orders are the ability to right click and Jump to Assembly Track and the Stop Production feature.



Stop Production - If the work order is marked Firm, the Stop Production check box will appear. This allows the scheduling department to put a stop to all work related to a work order regardless of where in the factory the order is being processed. This prevents employees from being able to log into the work order in AssemblyData. If an employee attempts to log in to a stopped work order, they will get a message: "Work order xxxxx is stopped for production. Unable to login." To restart the production just un-check the Stop Production box. **Note**: This does not prevent a user from Labor Reporting in Assembly Track.

Substitute BOM's - When creating a substitute BOM for an ASSY work order, new processes will be created and attached to the substitute BOM. This will allow the user to add/modify material without affecting the original BOM. If the work order is scheduled in Assembly Track the system will not allow the user to create a substitute BOM for that MFG number. The user must un-schedule the work order then they can create sub-bom and re-schedule.

Hard Allocation - When adding a substitute item during Hard Allocation for ASSY WO's, the cost for the substitute item is picked up in Final Assembly. During Process WIP the cost of the original components attached to the BOM will Credit and Debit FG Inventory, Credit Variance and Debit WIP. During Finish Process WIP the cost of the substitute item will credit the inventory account and the difference between the substitute item and original component will go to variance.

Changing the Quantity - When releases for an ASSY1, 2, or 3 work order are first created, the system records the quantity and original quantity of the release. The original quantity should not be changed because it is used in the calculations for the running quantity, progress %, and hours to go, and also updates the process quantity appropriately when taking into account rejects for any process. However, if a user does manually changes the Delivery quantity, a dialog surfaces warning that this would change the original work order quantity. The user can select Yes or No with security available on the Yes button. A 'Do not show next time' checkbox is also on the form. Changing the quantity will then refresh the 'Qty' and the process 'Qty To Complete' in Assembly Track.

If a user would like to change the WO quantity without changing the original work order quantity, do not modify the quantity of the existing WO release. To increase the work order quantity, a new work order release must be added. To decrease the work order quantity, delete the existing release and add a new one with the correct release quantity.

Deleting a work order - If a user attempts to delete an ASSY work order and it is in Assembly Track an Authorization required status exception will appear stating that the work order is in Assembly Track. Select OK to continue deleting the work order which will also remove it from Assembly Track; or select Cancel to not delete the work order. Security can be put on the OK button to prevent users from deleting ASSY work orders that are in Assembly Track.

When the *user* tries to delete an ASSY1 or ASSY2 work order (through Assembly Track or the work order module) the system will check the translog to verify if PIT is posted. (Note: the option 'Use Standard Cost during Post Transactions' must be checked in System Parameters, Inventory Setup tab). If some records have not been posted, an exception error will be raised. The user can override the exception to go ahead and delete the work order. Security can be setup on this exception error.

When the *system* tries to auto-remove firm work orders, the system will run the same check. Even if some records have not been posted, the system will remove and delete the work order. NOTE: This is also true for substitute BOMs. If unposted transactions still exist, the system will delete the work order, however, the substitute BOM will not be deleted. After posting the PIT transactions, it is recommended to then delete the substitute BOM.

Note: If a work order is deleted or archived (from the work order, Assembly Track, or Assembly Data) prior to the total work order quantity being reported, the WIP Inventory will be cleared out so that perpetual to GL stays in balance. A GJ Prepost record is generated for the quantities of remaining WIP inventory (in the ARINVT_WIP table) at the time of deleting or archiving the work order. Labor and overhead are included when using standard costing, but they are not included when using actual costing. This GJ prepost entry cannot be edited. The table is cleared once the GJ entry is posted.

For more information on work orders please see the Work Order help files.

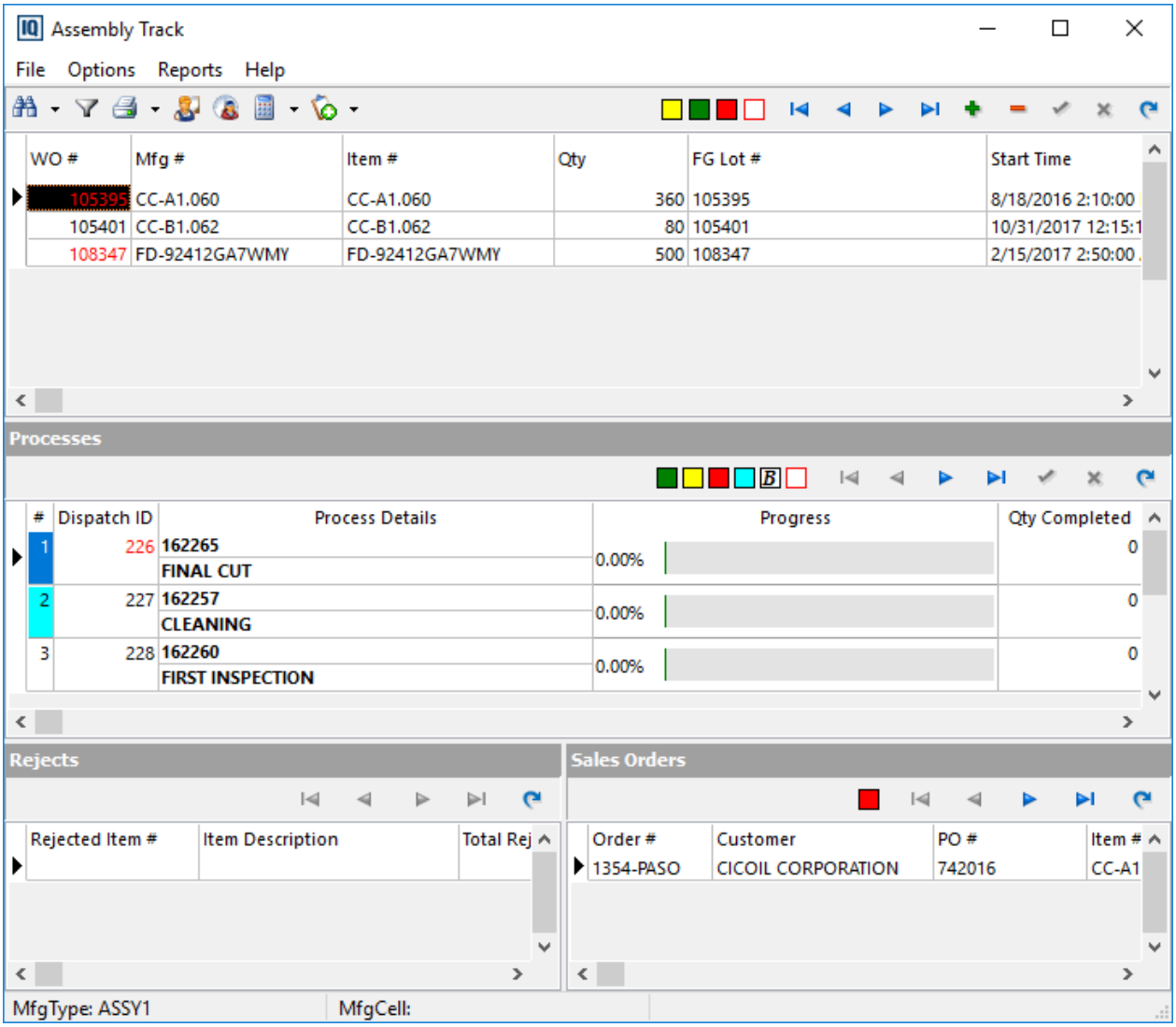
Assembly Track

The Assembly Track module is used to track ASSY type manufacturing operations, enter labor, and produced part information. From the Assembly Track module users can also update the schedule, view material exceptions, rough cut capacity, labor capacity, and more.

If the customer does not have Time & Attendance, Assembly Track can be used to report final assembly, and enter labor reporting as well. If you have Time and Attendance, then this information can be captured in AssemblyData (see below).

To access the Assembly Track module, select the Assembly Track speed button from the Mfg tab on the launcher bar. Select the MFG Type or MFG Cell from the selection criteria form. (Only MFG types that are based on an ASSY MFG Type will be displayed). This filter can be selected from Filter button or from the File menu in Assembly Track to switch to a different MFG Type/Cell.

A Confirm pop-up will appear asking if the user would like to recalculate all work orders processes production start and end time. Select Yes to recalculate, or No to not recalculate. If it is not desired that this pop-up not appear each time check the 'Do not show next time' box. This function is also available on the Assembly Track form. The user can recalculate the processes production start and end time for all work orders or for the highlighted work order by selecting one of these options from the drop down arrow next to the calculator speed button.



The top section shows work orders that are for the ASSY manufacturing type that have been added to Assembly Track from the ASSY scheduling pool. Once added to Assembly Track the work orders are marked Firm. The top section is sorted by work order and cannot be changed. Use the Search button to access the pick list to find specific records.

The middle section displays the associated process number(s), process description(s), and a progress bar, the quantity that has been reported as completed the process, and the time in hours remaining for the process.

The lower section displays reject information and sales orders.

Filter button - Select this button  to access the Selection Criteria form to choose a different assembly MFG Type or Cell to view.

Assembly Track Top Section

The top section displays all of the work orders that have been added to the Assembly Track.

Alphabetical field listing for the top section:

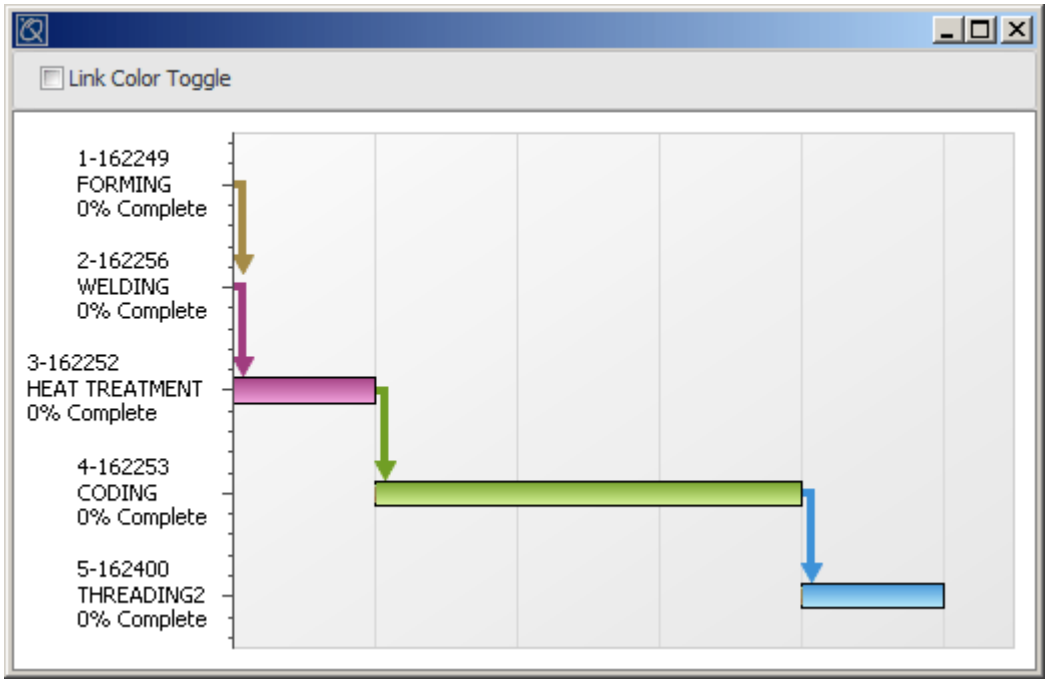
% Completed	The Calculation for this column is (OrigQty – Qty / OrigQty) * 100.
% Reject	Total Reject % = [Sum (Reject Cost from all processes) / (standard cost of the item * WO Qty)] * 100
Class	Item's class.
Completed	During Final Assembly, if the user checks the completed option and chooses 'No' to delete the work order, the work order will not be deleted and the work order will be flagged as 'Completed' and will be highlighted in yellow. **Note**: When marking a work order 'completed' or deleting a work order, if the processes 'Qty to Complete' is not zero, a warning will appear stating: 'Open processes, cannot complete. Costing will be out of balance.' Security can be set on this warning. If the user continues to delete the work order, this information will be written to the Event Log. (This message will not appear for ASSY3 work orders because the material is backflushed during Final Assembly and the transactions all appear in Finish Process WIP).
Description / Ext Description	Description and Extended Description of the item.
EPlant ID	This is the EPlant ID associated to the work order.
FG Lot #	This is the FG Lot # associated to the item. If both the 'Increment/Change Lot # at Setup' and 'Use WO # as Lot #' Scheduling Parameters are checked the FG Lot # field will populate with the WO #. Users can right click and select 'Change FG Lot #' to set the lot number to the next sequential lot number. When performing a Final Assembly or when printing barcoded labels, the system will default to this Lot #.
Firm	This will be checked if the work order is marked Firm.
Force Start Time	When this is checked the system will not change the ASSY_START_TIME when recalculating Assy Start & End Time.
Item#	This is the item number associated with the work order.
Labor % Used	[Sum (time to produce good parts) / WO Prod Hrs] * 100 ** Time to produce good parts (per process) = [Cycle time / multiple of / (yield/100)] * Sum (process quantity from table: TA_LABOR.process_qty) for that WO/Process Note: Processes that are marked as a Rework Process will be excluded from the % Completed calculation.

Mfg #	This is the Mfg # (BOM) associated to the work order.
Must Start	This is the calculated must start date for the work order.
OrigQty	The original quantity the work order was created for.
Priority Note 1 & 2	The Priority Notes from the work order. These can also be modified from here, by typing in the field, which will update the work order.
Production Hours	The total number of production hours required from the work order.
Projected End Time	The projected end date/time for the work order. It is calculated from the final process Projected End Date. This is based on the Start Time. To calculate this field select the 'Calculate this work order processes production start and end time' (Calculator) speed button to update this field. Note: Select the drop down arrow next to this button to calculate this for all work orders. This field will be color coded Green if the Projected End Date is before the WO End Date and Red if the Projected End Date is after the WO End Date. The WO End Date is based on the Sales Order Release Date – the Ship Time.
Qty	The required work order quantity. This will be updated based on the number of parts reported through Final Assembly. **Note**: The quantity will be increased when a Reverse Disposition is done (in IQRF or WMS) on the ASSY item.
Quality Issues	This will be checked if any records exist for the item on the work order in CAR/CAPA, ECO, Deviation, PPAP/Product PQ, or MRB. A Show Quality Issues right click option is available to bring up a screen showing the quality issues, and allows jumping to those issues.
Reject Cost	Total Reject Cost = Sum(Reject Cost from all processes)
Release Date	The first release date from the sales order that does not have a zero quantity.
Rev	Item's revision.

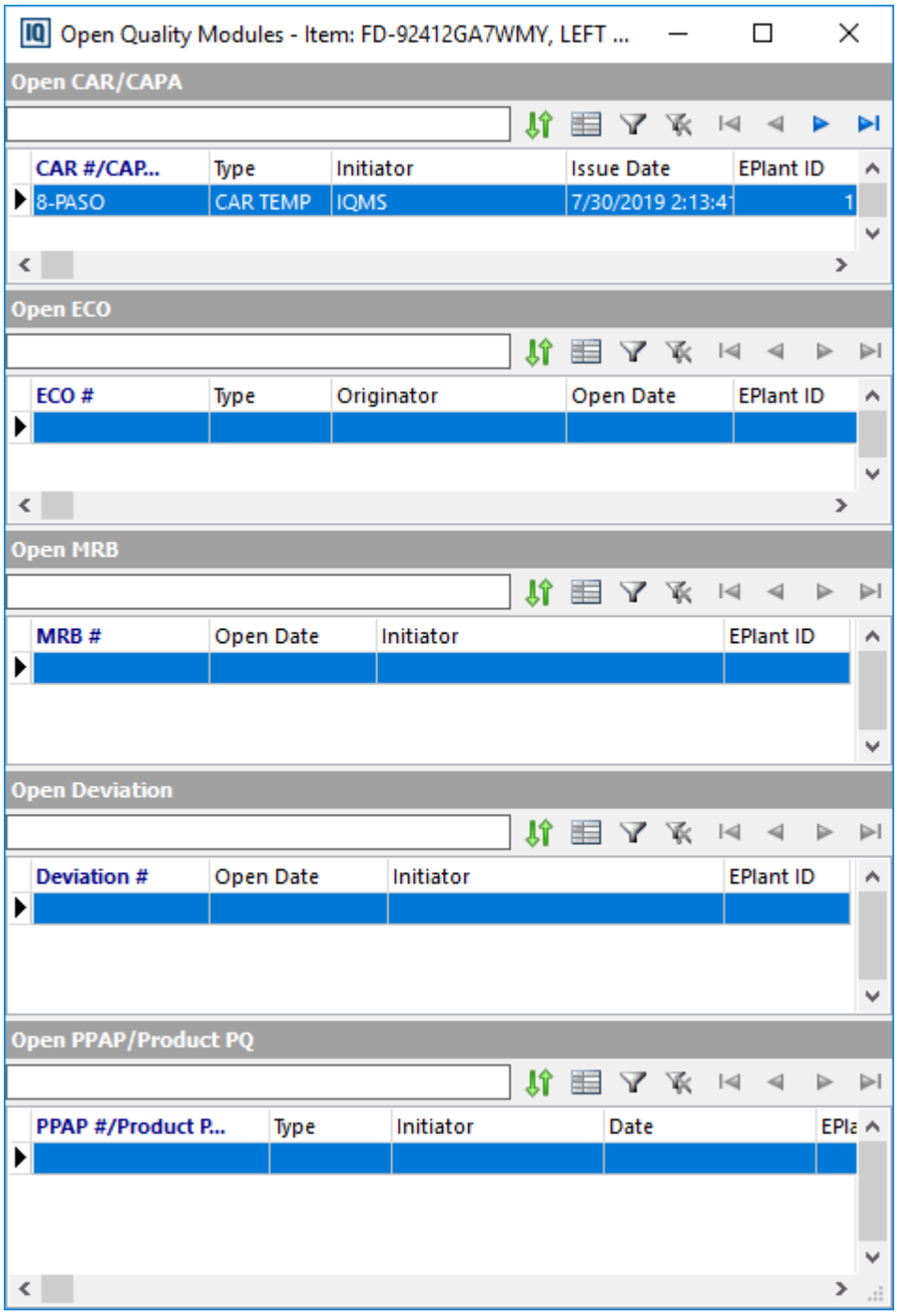
Start Time	This is populated with the Must Start date when the work order is added to Assembly Track. This field can be edited by the user by selecting a different date from the drop down calendar. If the Start Time is changed select the Calculator speed button to re-calculate the Projected End Time. Material requirements are calculated from the start time if the work order is in Assembly Track. **Note**: An item with two releases for the same date will have the same Must Start Time and therefore the same Start Time. **Note**: If the Scheduling Parameter 'Evaluate Negative Consumption' is enabled, the Start Time for dependent work orders will be overwritten and be based on the Must Start Date. **Note**: If the start time is left blank and the record is posted, the Start Date will return to the last posted date.
WO#	This is the work order number generated by the system to produce the items required to meet demand. This field will be in red text if the work order is on the Material Exception list.
Work Order Print Date	The date/time the work order was printed.
Work Order Printed By	The user name who printed the work order.

Right Click Options – Top Section:

- **Report Final Assembly –** This option is used to report the number of items that are complete (have gone through all processes). This function will add the manufactured items to inventory. Please see Report Final Assembly for more information.
- **Insert WO –** This option will open the Add to Assembly track form. It performs the same function as selecting the insert (+) button.
- **Change FG Lot #** - Select this option to bring up the Set FG Lot # form to allow the user to change the lot #. When performing Final Assembly in Assembly Track or AssyData, or when printing bar-coded labels, the system will default to the entered FG Lot #. Ensure unique lot # per item - When this option is checked the system will assign a unique lot number for each item in a family tool. Exp. Date - If the item has the 'Expiration Date is Mandatory' option checked (Inventory->Additional tab) this field will be visible. For a new lot number a date must be entered or the user will get an error. Select the date from the drop down calendar. 'Retain Assigned Lot # for this Work Order' - When this option is checked the system will populate the FG Lot # in the Work Order table (WORKORDER.FG_LOTNO), and the lot number that is assigned will not be changed by the system later with the work order number if the global Scheduling Parameter 'Use WO # as Lot #' is checked. General - This tab shows the last number used when Next Lot # was selected for any item.
- **Rework Reporting** - When this option is selected the Production Reporting by Work Order (PRW) module will open with the work order pick list filtered on the REWORK Mfg Type. See Rework Reporting for details.
- **Throughput Map** - This displays the Projected Process Throughput Map for the highlighted work order. This is a graphical view of the required processes. The left axis displays the Process # and Description, and the percent complete. (The start and end times consider the MFG Cell calendar). For more information see Process Throughput Map and Process Dependencies.



- **Show Quality Issues** - If records exist for the item on the work order in CAR/CAPA, ECO, Deviation, PPAP/Product PQ, or MRB this option will be available. Select this option to bring up a screen showing the quality issues. Users can right click to jump to those issues from the pop up form.



- **Jump To's**: Work order, BOM, Inventory.
- **Costing Info -** This option displays the actual and standard cost details and totals, as well as variances for the final product.

Note: The user can also see costing information in the Process Cost module, however, only if final assembly has been reported on that work order. If the work order has been deleted, the user can only see the costing information from Process Cost, again, only if final assembly has been reported on that work order. For reporting, the 'Assembly Process Cost Detail' (PC_dtl_assy.rpt) report should be used for ASSY work orders as it uses different composite tables to gather the data, and not the 'Process Cost Detail' report (pc_dtl.rpt).

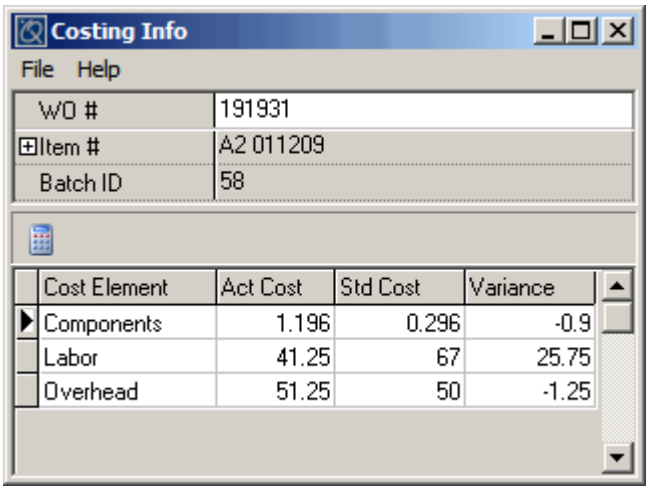
Actual Cost Calculations

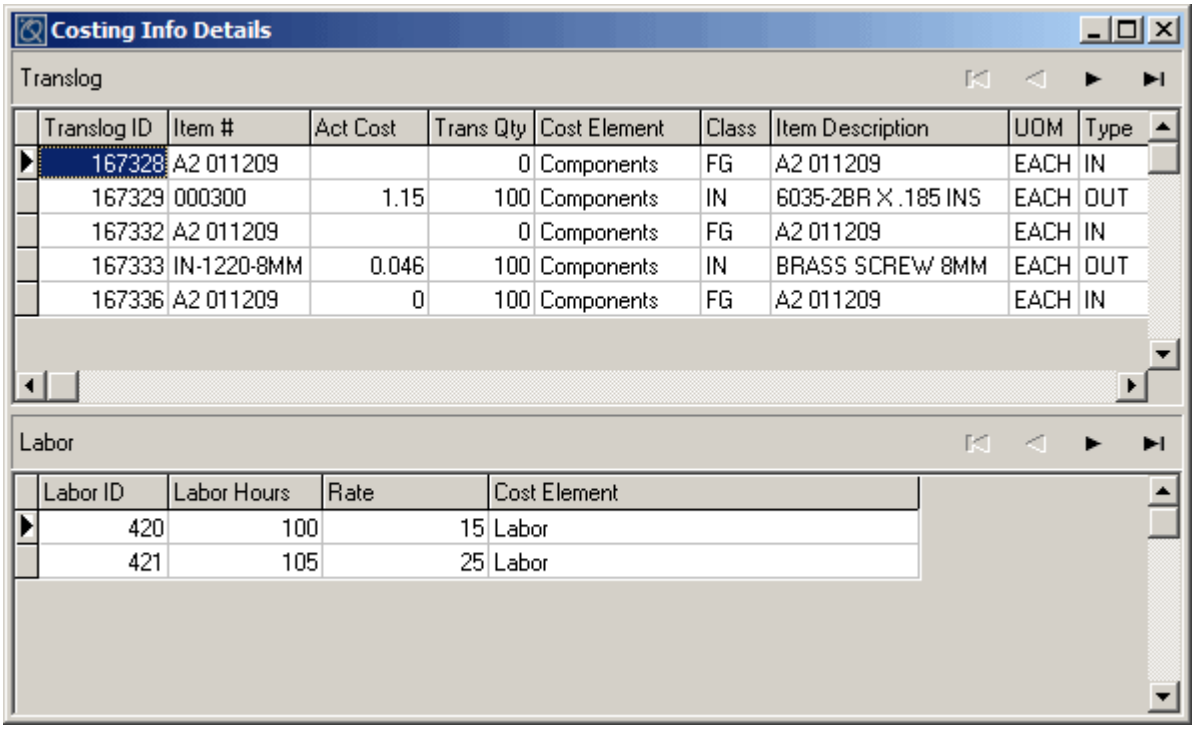
Actual **Overhead** is the total hours entered into Assembly Track or Assembly Data for all of the processes multiplied by the Mfg Type's labor based overhead rate, and divided by the total transaction quantity to arrive at a per-piece cost.

Actual **Labor** is calculated using the employees charge rates from Employee Maintenance multiplied by the total hours for each rate. The total labor dollars is then divided by the total transaction quantity.

Actual **Materials** is the sum of the actual costs multiplied by the transaction quantity for all attached materials.

Example:





Trans Qty = 100; Total Hours = 205; Overhead Rate = 25; Employee Charge Rates =15 (100 hours) and 25 (105 hours)

Actual Overhead = Total Hours * OH Rate / Trans Qty = (205 * 25) / 100 = 51.25

Actual Labor = Sum of the (Labor Hours * Actual Employee Charge Rate) / Trans Qty

= [(100 * 15) + (105 * 25)] / 100 = 41.25

Actual Materials = Sum of the (Actual Cost * Trans Qty) / Trans Qty

= [(100 * 1.15) + (100 * .046)] / 100 = 1.196

Assembly Track Processes Section

The middle section displays the specific Process information associated with the work order highlighted above.

Process #	Process sequence number.
Dispatch ID	This is the ID for the process from the SNDOP_DISPATCH table.
Process Details	The process operation number and description. This text will be bold if the process is scheduled in finite scheduling.

Progress	**Progress %** = (Qty / WO qty) * 100 **Note**: The progress percentage takes into account any rejected mfg parts and updates the progress percent for each process where more components will be needed. Example of progress percentage: (A BOM with 3 processes. The processes have attached components with parts per = 1. WO qty = 200) After reporting 200 good parts and 3 rejected mfg parts on process 1, the progress % of process 1 = 100. 200 good parts, 3 rejects = 100% (200/200) After reporting 100 good parts and 5 rejected mfg parts on process 2, the progress % for process 1 will now be 97.5% (because now process 1 needs 5 more components) and the progress % for process 2 will be 50%. 200 good parts, 3 rejects = 97.5% (200-5)/200 100 good parts, 5 rejects = 50% (100/200) After reporting 50 good parts and 10 rejected mfg parts on process 3, the progress % for process 1 will now be 92.5%, progress % for process 2 will be 45%, and the progress % for process 3 will be 25% 200 good parts, 3 rejects = 92.5% (200 – 5 – 10)/200 100 good parts, 5 rejects = 45% (100 - 10)/200 50 good parts, 10 rejects = 25% (50/200) **Progress bar colors** - compares the actual parts per hour versus the standard parts per hour. ▪ Actual parts per hour = qty / sum(time out – time in) for that process / # of Processes the employee was logged into simultaneously ▪ Standard parts per hour = 1 / [Cycle time / multiple of / (yield/100)] If Actual is 100% or greater than standard, then the bar is green If actual is 95 – 99% of standard, then the bar is yellow If actual is less than 95% of standard, then the bar is red
Qty Completed	Sum of the process quantity (from table: TA_LABOR.process_qty) for the specific WO/Process.
Rejects	This column represents only Mfg Parts rejects.
Hours To Go	[Cycle time / multiple of / (yield/100)] * (WO Qty – Qty).
Continue to Next Process	If the process has the Sequential Processing option checked this option will be available (otherwise it will be grayed out). The user can check the 'Continue to Next Process' box for processes that are complete. Once it is checked an employee will be allowed to log into the next process through Assembly Data. If this is not checked it will prevent an employee from clocking into the next process in Assembly Data. (This information resides in the Ptorder_sndop_complete table. If an operation number shows in there, then users can log into the next process).

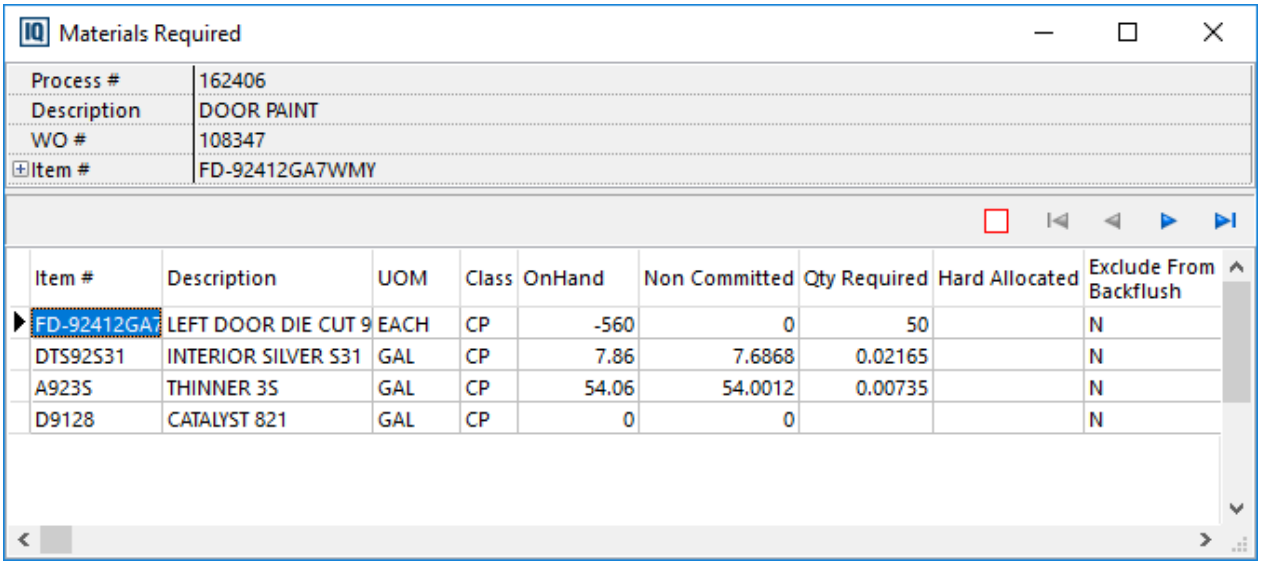
Qty To Complete	The number of items to be completed.
Projected Start Time	Projected start time for the process. **Note**: For ASSY1 work orders scheduled in the first position of a RealTime™ work center the parts to go and hours to go are updated based on RealTime™. If the work order is not placed on a RealTime™ work center in the first position, the parts to go and hours to go will reduce based upon reporting Good Parts on the process in Assembly Track. However, the hours to go will not always match the projected start and end times of the process. The hours to go represents the actual time to produce the parts. The projected start and end times take into consideration slack time. Slack time is the idle time needed before the process can continue. Any time there is a process with a faster cycle time than the one before it, there will be slack time gaps in that process. This is because the process has to wait for parts from the previous process to be produced before it can continue. If not scheduled in Finite Scheduling, the Projected Start Time and Projected End Time is calculated using the Process Throughput algorithm.
Projected End Time	Projected end time for the process calculated using the process throughput algorithm. **Note**: ▪ When the MFG Type option 'Do Not Round Dependent Demand' is not checked: Dependent demand will be rounded up to the next whole number on dependent work orders. This may cause parent work orders to start prior to the dependent work order completing. This is due to the Work Order End Date of the dependent work order being calculated based on the Cycles Required where as the projected end time in Assembly Track is calculated based on the rounded up quantity to complete. The parent work order will start based on the dependent demand work order end date. ▪ When the MFG Type option 'Do Not Round Dependent Demand' is checked: Dependent demand will not be rounded up to the next whole number on dependent work orders and therefore does not cause a discrepancy between the work order end date and the projected end time in Assembly Track.
Must Start	This is the Must Start for the process. It is calculated as follows: **First Process** must start date = WO Start Time from Assembly Track Top Section. Subsequent processes must start is based on the process throughput algorithm. **Note:** The 'Evaluate Negative Consumption' option in Scheduling must be utilized in order for the system to calculate the Must Start times correctly for dependent processes. If dependent work orders are found to be out-of-sync for Must Start dates in Scheduling and the middle grid of Assembly Track, users should either remove these work orders from both Scheduling and Assembly Track and then re-load them, or alternatively users can manually change the Start Time of dependent orders in the top grid of Assembly Track to get the Must Start times back in sync for the dependent processes.
Work Center #	If the process is scheduled, this field will be populated with the work center # that the process is scheduled on. It cannot be edited from this field.

Color Coding

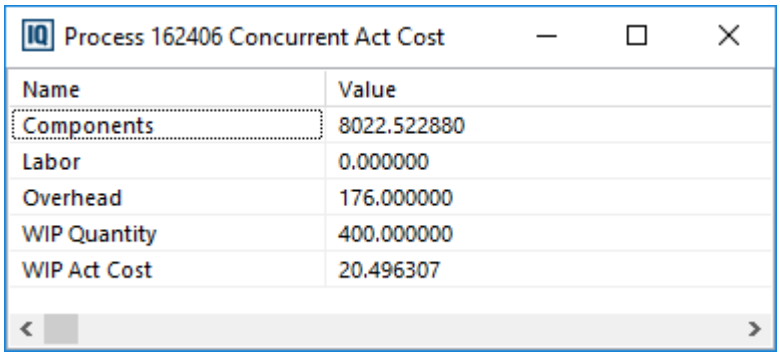
- **Green** - If Actual progress is 100% or greater than standard, then the bar is green
- **Yellow** - If actual progress is 95 – 99% of standard, then the bar is yellow
- **Red** - If actual progress is less than 95% of standard, then the bar is red
- **Light Blue** - Constraining Process – The process that is the constraint will be flagged in light blue. This indicates where the bottle neck is, basically the process that will take the longest.
- **Bold** - The Process Details field will be bold if the process is scheduled in the finite schedule.
- **Red Outline** - When a material on a process is on the Materials Exception list, the 'Dispatch ID' field will be in red text. When right clicking on the process and selecting Materials Required, the 'Item #' field of the material that has the exception will be in red text also. Any materials marked 'Exclude from Backflush' on the BOM will not be affected. This allows for better visibility.

Right Click Options – Middle Section

- **Materials Required –** This will display the material(s) required for the process. It includes the items details such as UOM and Rev, Qty Required, On Hand, Non Committed, Exclude from Backflush check box, and Hard Allocated. Right click to Jump To Inventory. If the item is on the material exception list it will be highlighted in red. Reporting against the process reduces the 'Qty Required', (reporting Final Assembly against the WO does not reduce the 'Qty Required' for the process).



- **Show Details –** Displays the labor and equipment usage details. This is described in greater detail in the Show Details section below.
- **Costing Info –** This option displays the concurrent actual cost details for the process. The system keeps track of the actual costs based on a 'bucket' for the total good parts that have passed through the process and three 'buckets' (Labor, Overhead and Components) for the total costs incurred. The total costs incurred buckets will store the total expenditure of labor, overhead and component usage at actual cost. Rejected components will also be included in the component cost bucket. During Final Assembly, the process cost buckets will be used to calculate the actual cost by dividing the process total good parts by each cost bucket. By summing all processes an actual cost per item will be calculated. When the final assembly is posted the system will update each process bucket by subtracting the final assembly quantity from the process good parts bucket and subtracting the final assembly quantity * the per unit cost for each cost bucket.



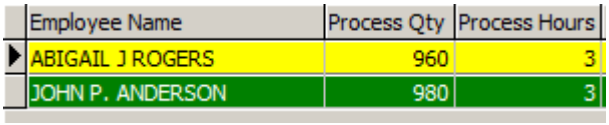
Actual Cost Calculations

Actual **Overhead** is the labor hours entered into Assembly Track or Assembly Data multiplied by the Mfg Type's labor based overhead rate, and divided by the total process quantity to arrive at a per-piece cost.

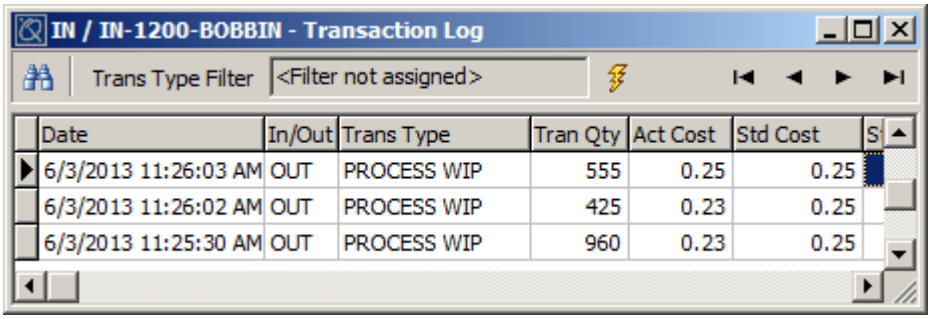
Actual **Labor** is calculated using the employees charge rates from Employee Maintenance multiplied by the process hours for each. The total labor dollars is then divided by the total process quantity.

Actual **Materials** is the sum of the actual costs multiplied by the transaction quantity for all attached materials.

Example:



Employee Name	Process Qty	Process Hours
ABIGAIL J ROGERS	960	3
JOHN P. ANDERSON	980	3



Date	In/Out	Trans Type	Tran Qty	Act Cost	Std Cost
6/3/2013 11:26:03 AM	OUT	PROCESS WIP	555	0.25	0.25
6/3/2013 11:26:02 AM	OUT	PROCESS WIP	425	0.23	0.25
6/3/2013 11:25:30 AM	OUT	PROCESS WIP	960	0.23	0.25

Process Qty = 1940; Process Hours = 6; Overhead Rate = 25

Actual Overhead = Process Hours * OH Rate = 6 * 25 = 150.00

Actual Labor = Sum of the (Process Hours * Employee Charge Rate)

= [(3 * 25) + (3 * 15)] = 120.00

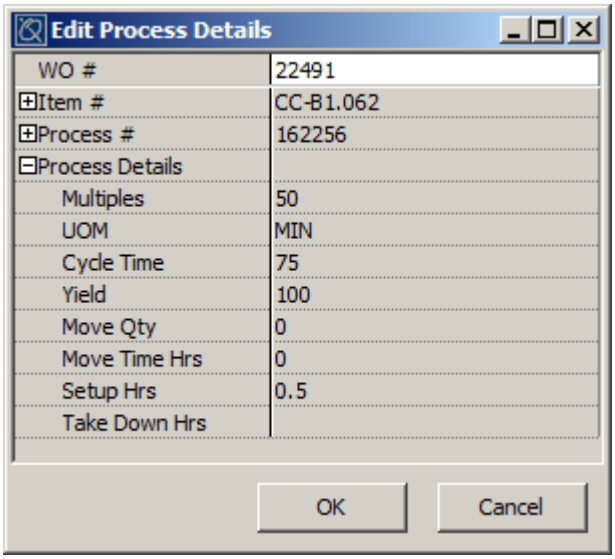
Actual Materials = Sum of the (Actual Cost * Trans Qty)

= [(555 * 0.25) + (425 * 0.23) + (960 * 0.23)] = 457.30

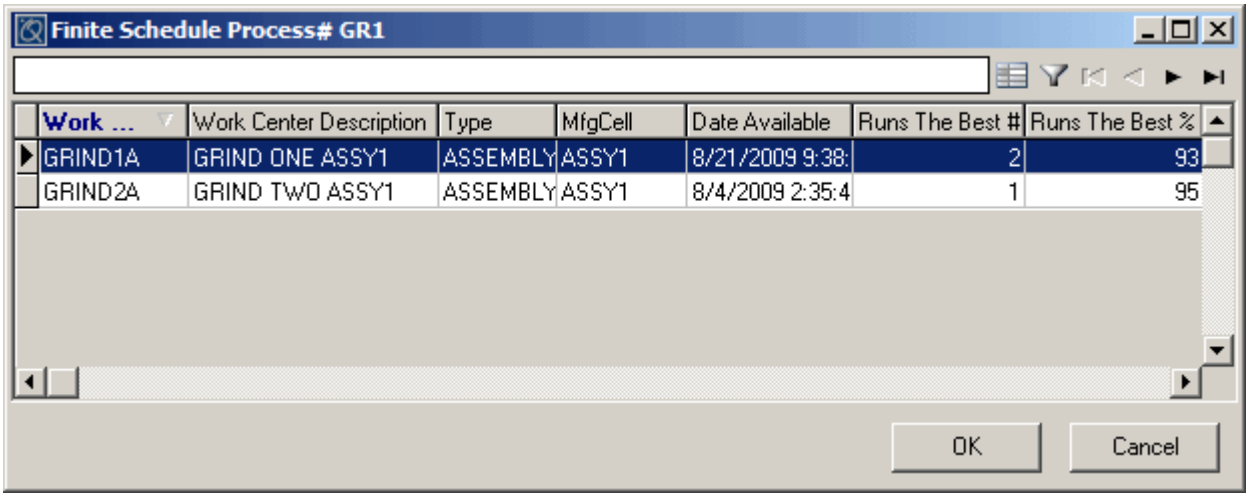
WIP Act Cost = Sum of Components, Labor and Overhead / WIP Quantity = (150 + 120 + 457.30) / 1940 = 727.30 / 1940 = 0.374897

Note: The Process Cost/Actual Cost may be higher if components are rejected on the process because the cost of the rejected component will be part of the actual cost on the FG item. If the reject should not be part of the actual cost than the component can be rejected through Transactions and Locations or PO Receiving.

- **Dispatch List Priority –** This opens the Process Dispatch List. Please see Process Dispatch List)
- **Labor Reporting –** Users can report actual labor and quantities from Assembly Track using this option which is described in more detail below (see Labor Reporting).
- **Edit Labor -** This option allows users to edit the hours and quantity for a specific labor record. (See Edit Labor below for more details).
- **Edit Process Details –** This option allows the user to edit the process details such as UOM and cycle time for the specific BOM/Process combination. Editing any field except the Setup Hrs and Take Down Hrs will not change the information for the process in Process Maintenance. If the Setup Hrs and Take Down Hrs fields are modified it will change the information for the process in Process Maintenance.



- **Jump To Process Maintenance -** This will jump the user to the highlighted process.
- **Jump to Schedule –** This will jump the user to the Finite Schedule.
- **Jump to Work Center** - Will jump the user the process is scheduled on. (This option is for ASSY1 and ASSY2 only).
- **Quick Inspection** - Users can jump to Quick Inspection for either the Inventory Item or the Process.
- **Finite Schedule This Process –** (For ASSY1 and ASSY2 only). This option allows the user to easily schedule the process in the finite schedule. (It will not be available if the process has already been scheduled). A form will appear listing the work center(s) based on the processes' qualified work center list.



The list displays Date Available (the next available start time based on the work center's current schedule) and Runs the Best information. If a process does not have qualified work centers setup, a list of all work centers with an ASSY MFG Type or default to the ASSY MFG Type will be available to choose from. Select the work center and click OK to add the process to the schedule for the selected work center. The process will be added to the bottom.

- **Finite Schedule this WO** - (For ASSY3 only). This option allows users to schedule the ASSY3 work order onto the correct assembly line. The pick list will display the available assembly lines. Once the WO is scheduled, all of the processes in Assembly Track will be in bold.

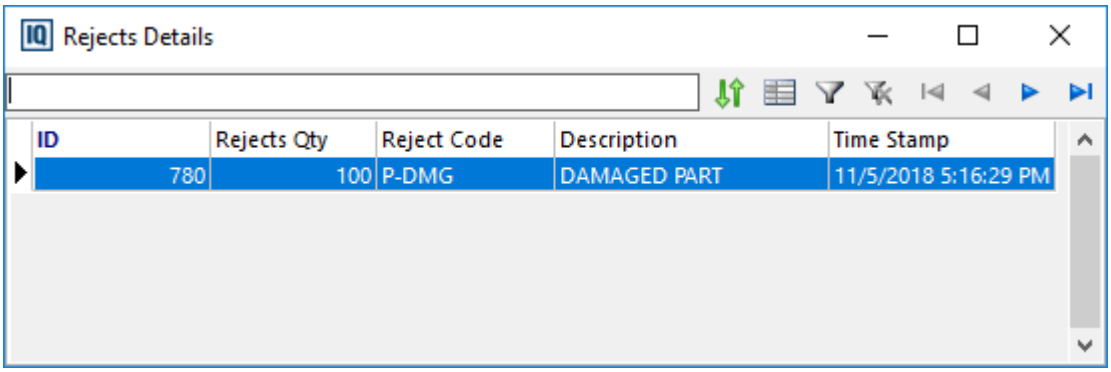
Assembly Track Rejects Section

The Rejects section displays the component reject information that is entered during labor reporting.

Rejected Item # / Description /Class / Rev	The rejected item number, description, class and revision level.
Total Rejects	The sum of rejects of the item for the specific WO/Process.
% Rejected	[Total rejects / (WO qty * parts per of component)] * 100
Reject Cost	Total rejects * standard cost of the component

Right Click Options – Rejects Section

- **Jump To Inventory**
- **Show Details** – This displays the Reject Details. The user can right click from this form and select 'Void Reject Entry' to void the reject entry and add the components back into inventory. See Labor Reporting for more information.



Sales Orders

This section displays the sales order(s) associated to the WO. The fields include Order #, Customer, PO#, Item information, Promise and Request dates, WO Release Quantity, and Job Sequence. If the line item on the sales order has been put on hold the Order # field will display in red. The user can right click and select **Jump to Sales Orders** to access the order.

Adding work orders to Assembly Track

To begin tracking an ASSY type work order from the Assembly Track module, select the insert (+) button at the top of the form, or right click from the top section and select 'Insert WO'. A list of ASSY type work orders will appear. This list includes all work orders that have not been added to Assembly Track. It includes the WO#, Mfg#, Item information (item #, description, rev, class, and EPlant), the quantity to be produced, the first release date from the sales order, the number of production hours required, priority and firm designations, and the must start date. The work orders listed may be displayed in a different color.

- **Red** text in the WO# field indicates the work order is on the material exception list.
- **Blue** text indicates the work order is generated from the Forecast module.
- **Light Blue** - If the work order has been marked a priority the priority field will have a Y in it with a light blue background.

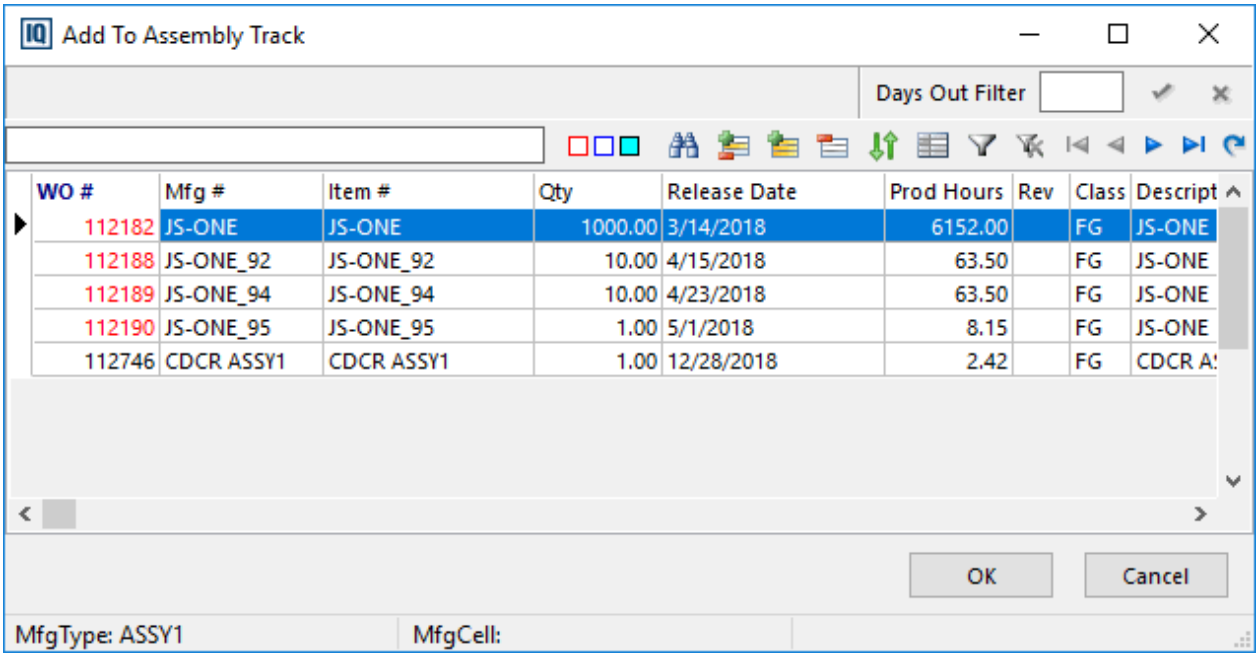
Days Out Filter - Enter the number of days to filter the records displayed based on the must start date. The scheduling pool can be limited to only view jobs where the must start date is so many days from today. To filter the list to include only work orders for a certain time frame enter in the number of days out in the Days Out Filter field. The list will then display only those work orders that have a must start date within that period or are past due.

Jump To's – From this screen the user can right click and select: Jump to Work Order, BOM, or Inventory.

Once the work order is added to Assembly Track it is automatically marked Firm and the ASSY_RUN field in the work order table is set to 'Y'.

The Scheduling Parameters 'Increment/Change Lot # at Setup' and 'Use WO# as Lot #' are applicable when adding work orders to Assembly Track. If they are both checked, the FG Lot # will be populated with the work order number.

Note: The 'Exclude back to back same Mfg #' parameter does not apply when adding work orders to Assembly Track. It is only considered when scheduling ASSY work orders to the Finite Schedule.



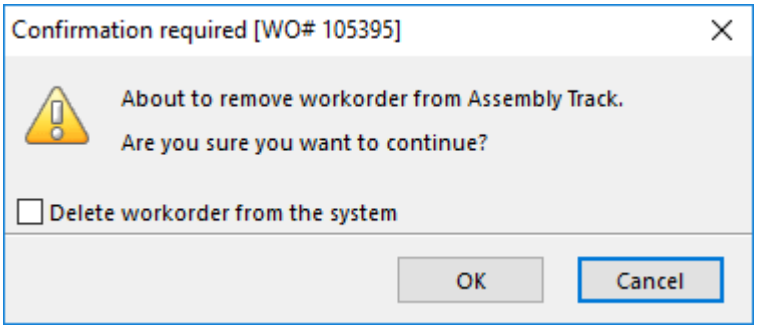
Note: Changes can be made to a BOM associated to a work order in Assembly Track. Assembly processes can be edited or added and the changes will be reflected in Assembly Track. Additionally, a process may be deleted or the process sequence changed as long as the process is not scheduled in the Finite Schedule.

Potential Error Messages:

- If a user tries to add a WO that has been deleted, the following error will appear:
  - Encountered the following error: "At end of table. It is possible the selected work order(s) got deleted causing the above error – please try again". After clicking OK, the Add To Assembly Track form will automatically close.
- If a user tries to add a WO that is already in Assembly Track, the following error will appear:
  - "Encountered the following error: Key violation. ORA-00001: unique constraint (IQMS.UNQ_SNDOP_DISPATCH) violated ORA-06512 : at « IQMS.ASSY1_MISC », line 191 ORA-06512: at line 1. Please try again". After clicking OK, the Add To Assembly Track form will automatically close.
- If a user attempts to add a WO to Assembly Track while Update Schedule is running they will see several warnings:
  - The first warning states, "Timeout - Unable to proceed". After selecting OK on that warning a confirm message will display, "Update Schedule is currently running. Duplicate work orders may be created. Are you sure you want to add this work order?" This message has a Yes and No button, as well as a 'Do not show next time' check box. Security can be placed on the Yes button and check box. If Yes is selected the work order is added to Assembly Track but may be duplicated. If No is selected another message will display stating, "Failed to acquire shared lock. 'Update Schedule' process is currently in progress. Please try again later".

Removing a Work Order

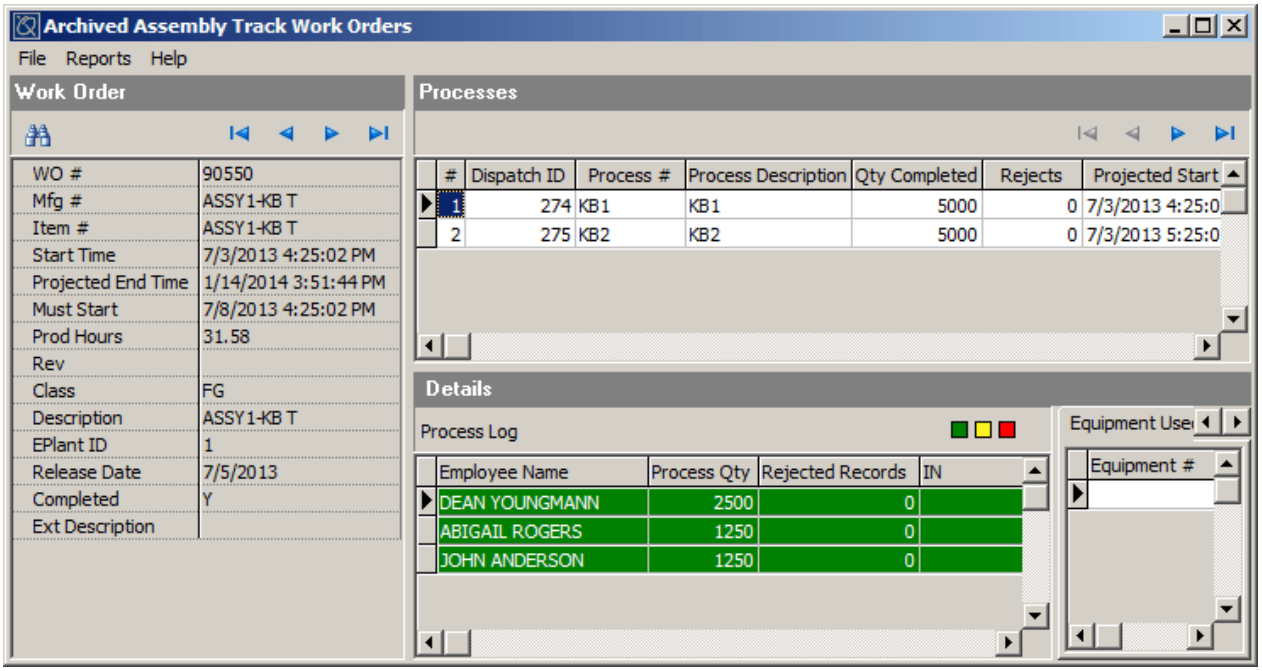
To remove a work order simply highlight the work order in Assembly Track and select the minus (**-**) button. A pop up confirmation box will appear, to continue select OK. This will just remove the work order from Assembly Track but not from the system (the ASSY_RUN field will revert to 'N'. There is also an option on the confirmation box '**Delete workorder from the system**'. If this is checked the system will pop up a screen asking the user if it should be deleted or archived.



- Selecting **Delete** will remove the work order from the system.
- If **Archive and Delete** is selected the work order information is written to the Hist_Workorder table. Archived work orders are read only when viewing them.

Viewing Archived Assembly Track Work Orders

Archived work orders can be viewed from Assembly Track>File>View Archived Assembly Track Work Orders, or via the drop down menu item 'Search Assembly Track Archived Work Orders' on the binoculars icon on the Assembly Track form.



Right Click Options

Work Order Section:

- Jump to BOM
- Jump to Inventory
- Jump to Work Order- This access the archived work order. Archived work orders are read only when viewing them.

Processes Section:

- Show Rejects - Shows rejects for the highlighted process.
- Jump to Process Maintenance

Note: In order to do Actual Cost Work Order reconciliation for removed ASSY Work Orders the system will update the required columns in the HIST_ILLUM_RT and HIST_ILLUM_PART tables.

Note: If a work order is deleted or archived (from the work order, Assembly Track, or Assembly Data) prior to the total work order quantity being reported, the WIP Inventory will be cleared out so that perpetual to GL stays in balance. A GJ Prepost record is generated for the quantities of remaining WIP inventory (in the ARINVT_WIP table) at the time of deleting or archiving the work order. Labor and overhead are included when using standard costing, but they are not included when using actual costing. This GJ prepost entry cannot be edited. The table is cleared once the GJ entry is posted.

Speed Buttons in Assembly Track

Search - This opens a pick list of work orders in Assembly Track.

Assign Filter - This accesses the Selection Criteria filter to choose a Mfg Type or Mfg Cell.

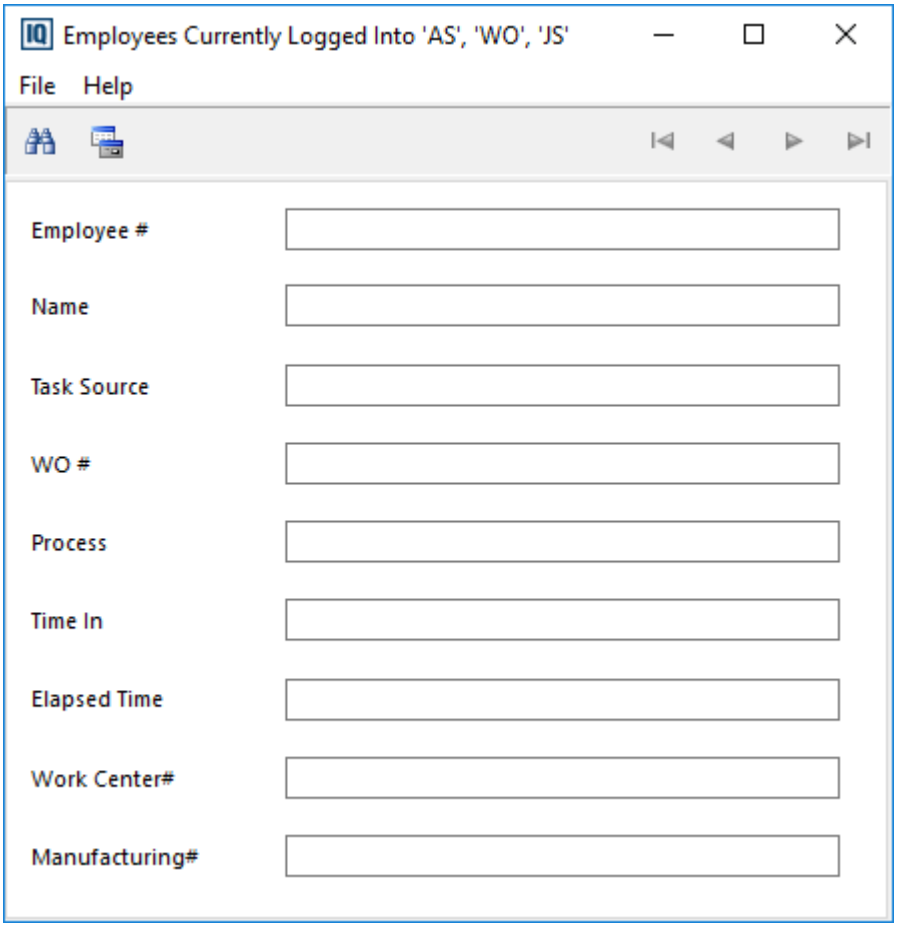
Print Traveler – Select the speed button  at the top of the Assembly Track form to print a traveler report.

Print Work Order - Select the arrow down button next to the printer button and select 'Print Work Order'.

Note: When printing either one of these reports, the hierarchy is to use the reports associated to the MFG Type first and if no reports are listed there, then the reports will be printed based on the ones specified in System Parameters.

Dispatch List - Select the speed button  to access the Assembly Dispatch List. See Assembly Dispatch List for details.

Who is Logged In - Select this button  to show all employees logged into all Work Orders in Assembly Track. It will display the employee information, Task Source (AS, WO, or JS), WO#, Process, In Time and Elapsed Time. Use the Search button to find a specific employee. This form also includes the Form/Table toggle button.



Calculate - This button  calculates this work orders production start and end time.

Auto Load - This speed button  has three functions:

- Auto load non scheduled processes - This option auto loads all non scheduled processes for the selected work order.
- Remove from schedule and auto load - This option removes scheduled processes from the schedule for the selected work order and auto loads them. This is useful in situation where process parameters have been modified.
- Remove from Schedule - This will remove the processes from the schedule for the selected work order. Note: Processes/Work Orders scheduled in the 1st position in Finite Scheduling will not be removed from the schedule.

Labor Reporting in Assembly Track

Labor can be reported directly from the Assembly Track module for ASSY1, ASSY2, and ASSY3 processes. This allows users to enter the production date, labor hours, and the number of items that were processed by a specific employee. When labor reporting records are entered, a zero quantity translog record is created for the manufactured item with a transaction type of Process WIP. For ASSY1 and ASSY2 MFG Types a dependent transaction is created for labor and overhead, and the components are backflushed. An entry will be visible from Post Inventory Transactions as a Disposition transaction type and Report Process WIP as the Tr. Reason.

Note: For ASSY3, the labor reporting option is available, however, by default the system will backflush material and disposition parts during Final Assembly.

Note: If the ASSY3 MFG Type has the '**Backflush Each Process**' option checked the system will backflush components at the time of labor reporting and not during Final Assembly reporting. If 'Backflush Each Process' is not checked for ASSY3, the Report Consumed Materials tab will not display.

Note: For ASSY1, on a process where the BOM has an inherited serial component specified, the system will check to see if 'Use Percent Complete Reporting' is checked and 'Consume Raw Material by Process' is not checked. If these are correct the user can proceed as normal. If not, an exception will display stating: "Specified BOM is configured to inherit serial component, "Use Percent Complete Reporting" must be enabled and "Consume Raw Material by Process" must be disabled on the General Tab of the Manufacturing Type Configuration before proceeding".

Disposition Hierarchy During Labor Reporting

When reporting labor for ASSY1 and ASSY2, the following hierarchy is for backflushing the material out of inventory.

1. Hard allocated to the work order
2. Mfg # default designator
3. Default designator
4. Designated work center location (if the process is scheduled in Finite Scheduling)
5. Designated work center location (if the process IS NOT scheduled in Finite Scheduling, but IS scheduled on the Dispatch List)
6. MFG Cell Dispo locations
7. MFG Type Dispo OUT location
8. FIFO
9. Temporary

When reporting labor for ASSY3 (Backflush Each Process is checked), the following hierarchy is for backflushing the material out of inventory.

1. Hard allocated to the work order

2 Mfg # default designator

3 Default designator

4 Designated assembly line OUT location (if the work order is scheduled in Finite Scheduling)

5 MFG Cell Dispo locations

6 MFG Type Dispo OUT location

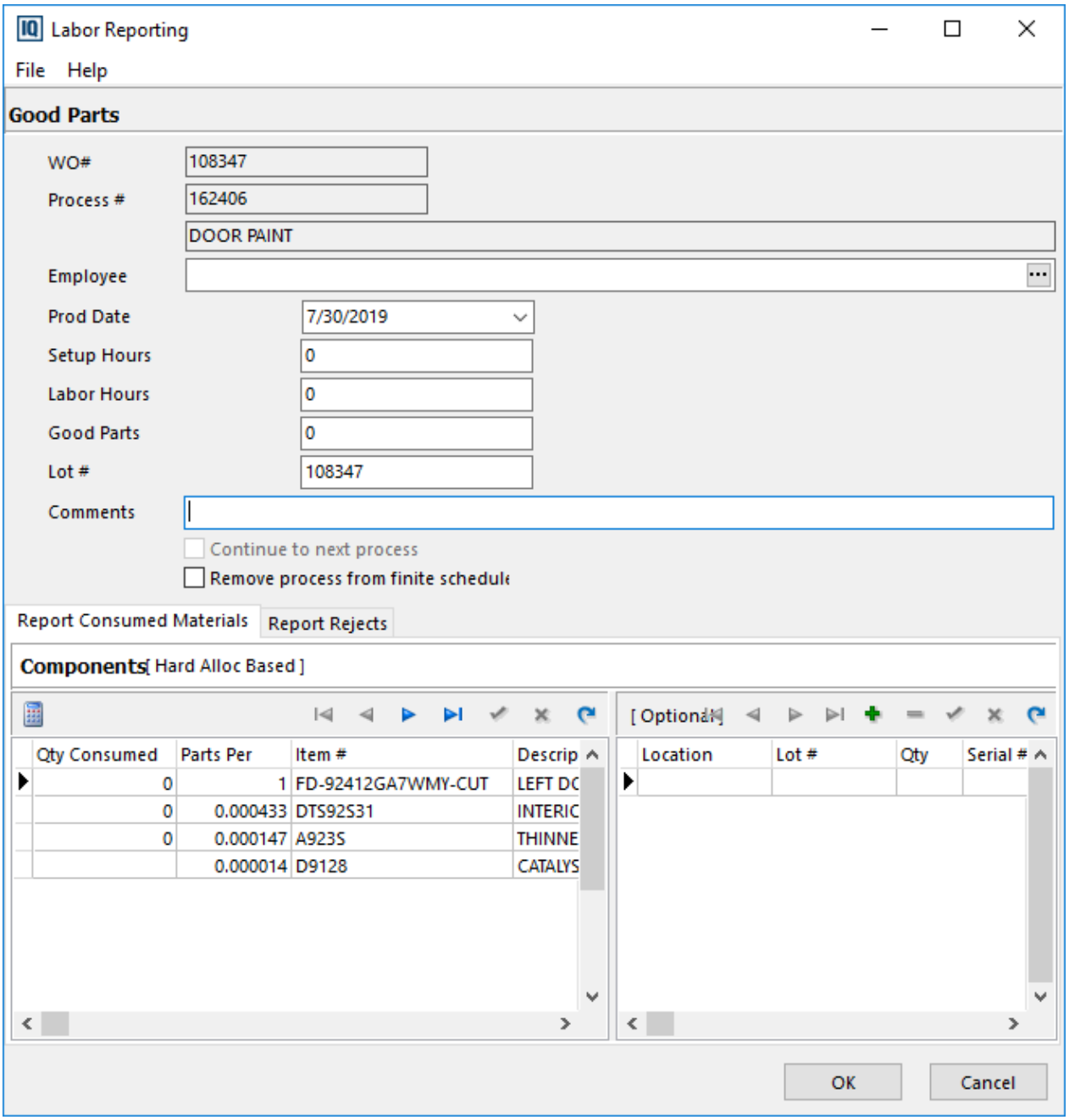
7 FIFO

8 Temporary

Note: When reporting labor for ASSY3 (Backflush Each Process is NOT checked), there is no hierarchy because nothing is backflushed during labor reporting.

Note: The system will use the disposition hierarchy by default, however users can optionally select the location(s) that inventory will be removed from.

To access the Labor Reporting form, right click on the process completed and select '**Labor Reporting**'



The Labor Reporting form displays and asks for the following information:

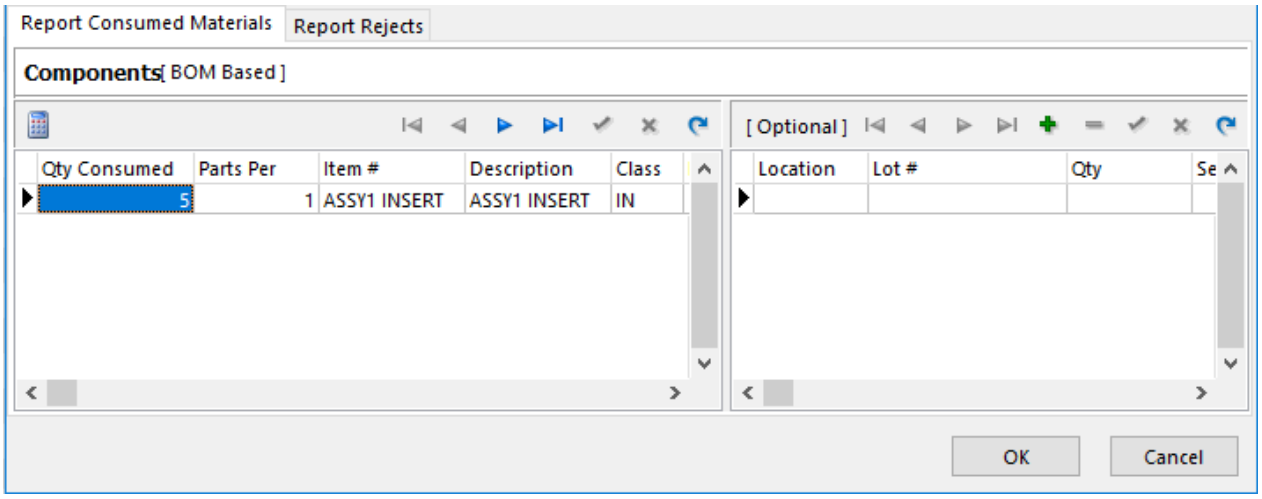
WO#	This is the work order the process is associated to.
Process #	The process number and description that the user right clicked on.
Employee	Select the ellipsis button to access the active employee pick list. Select the employee that performed the process from the list. Employee certification is not required when entering labor from Assembly Track. Note: If the selected employee does not have a charge rate assigned in Employee Maintenance a warning message will display stating: "Charge Rate missing. Emp # [xxxx]. Continue with charge rate of 0 (zero)?" The pop up message includes a Yes and No button as well as the 'Do not show next time' option. If the user selects Yes, the charge rate will be 0. If No is selected or the user clicks the 'X' to exit they are returned to the Labor Reporting Form.
Prod Date	The production date populates automatically with the system date but can be changed to the actual date the production occurred if different using the drop down calendar. The date carries through to the transaction date in translog on the FG item and any attached process components.
RT Production Hours	If the process is or has run in RT Monitoring this form will include a field for RT Production Hours. The system will calculate the number of production hours and good parts that have taken place since the last time this process was reported on. On posting the Labor Reporting record ILLUM_RT.PRW_TOTAL_UP_PROCESSED and ILLUM_PART.PRW_TOTAL_QTY_PROCESSED will be updated.
Setup Hours	Employees can enter the number of setup hours for the process. Through reporting this information can be used to track setup hours for each process. (If this field is populated, another row will be created in TA_LABOR where IS_SETUP = Y).
Labor Hours	Enter the number of labor hours that the employee performed the process.

Good Parts	Enter the number of good parts the employee processed. Users can report zero or negative good parts and the labor and overhead will carry over to actual costing and process costing. Note: In the scenario where a phantom item is hard allocated and its components are marked 'Consume All'; if a user is reporting zero good parts they will need to set the good parts to 1 and calculate first, then change it back to zero so that the phantom components are backflushed in/out on the fly. Note: If the Good Parts entered is more or less than the work order quantity an Authorization required status exception will appear to notify the user. Select OK to proceed or Cancel to return to the Labor reporting form. Security can be placed on the OK button to not allow employees to enter more or less than the work order quantity.
Lot #	This field will automatically populate with the FG Lot # from the work order, and will match the FG Lot # when reporting good parts in Final Assembly. Note: If lot numbers are entered manually, the Labor Reporting lot number must match Final Assembly lot number in order to obtain Lot traceability of the backflushed components, which can be viewed in Lot # Tracking after reporting Final Assembly. If the labor reporting lot # is different than the FG lot #, a confirmation message stating: 'The Labor Reporting lot number must match the FG lot number in order to obtain Lot traceability of the backflushed components. Are you sure you want to change the Labor Reporting lot number?', with Yes/No buttons. Security is available on this form and the buttons. If the Lot # is mandatory for the inventory item the employee must enter a lot number in this field to proceed. If one is not entered an error will appear stating: Unable to continue - missing mandatory field 'Lot #'. If the lot number is not mandatory the employee can enter a lot number if desired or leave this field blank.
Comments	Enter a comment associated to the labor record. This can be used for reporting purposes.
Continue to next process	If the process has the Sequential Processing option checked this option will be available (otherwise it will be grayed out). The user can check the 'Continue to Next Process' box for processes that are complete. Once it is checked an employee will be allowed to log into the next process through Assembly Data. If this is not checked it will prevent an employee from clocking into the next process in Assembly Data.
Remove process from finite schedule	This option will be grayed out unless the process is currently scheduled in finite scheduling. If the option is checked, upon selecting OK in Labor Reporting, the process will be removed from finite scheduling.

Note: If the process on the BOM is designated as 'Final Assembly Reporting, when the user selects OK on the Labor Reporting form the Final Assembly Reporting form will appear to enter Good Parts. See Report Final Assembly for details.

Maintenance, Repair and Overhaul Equipment Cycles Update – When good parts and rejects are entered for a process, the total cycles of all tools associated to the process will be updated in MRO. This only applies to attached equipment with a unit of measure of Cycles. Note: When good parts are voided or when the rejected mfg parts are voided, the cycles of the MRO equipment will be reduced.

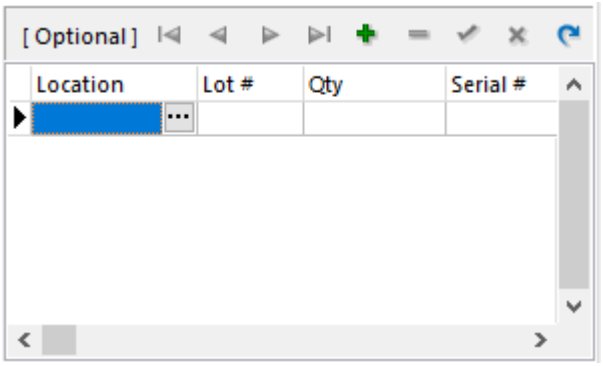
Report Consumed Materials



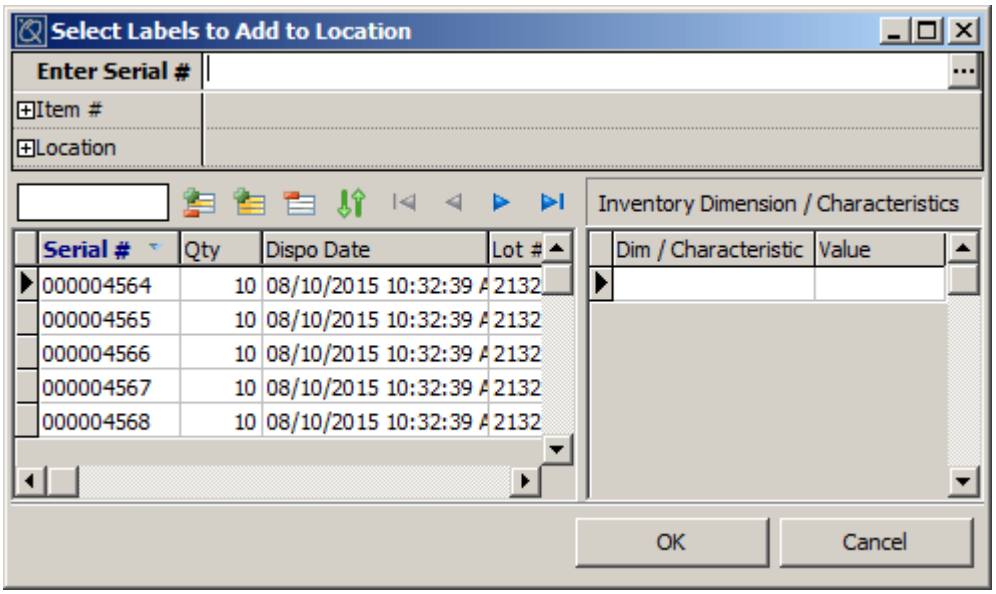
From this tab users can backflush consumed materials with or without reporting good parts. This section displays the components associated to the process and includes fields for: Qty Consumed, Parts Per, Item #, Description, Class, Rev, and Ext Description. It also indicates whether the components are BOM Based or Hard Allocated Based. If the user enters in Good Parts, click the calculate button to calculate the components to consume. If the process has attached materials and the calculate button is not clicked on, upon hitting OK a message 'Good Parts' field has been modified, consumed materials must be recalculated, Would you like to do it now?' surfaces with Yes and No buttons. If the user clicks 'No' the Qty Consumed will not be calculated and no components will be backflushed. If 'Yes' is selected the Qty Consumed will be calculated and components will be backflushed. The Qty Consumed field can be edited. If 0 good parts are entered the Qty to Consume value must be manually entered. If negative good parts are entered the system calculates a negative quantity for the components (including a phantom's components) and returns them to inventory.

Manually Selecting Backflush Location

By default the system will use the disposition hierarchy when backflushing components, however users can optionally select the location(s) that inventory will be removed from. To select the location click on the ellipsis button in the Location field and select the location from the pick list. Enter the quantity in the Qty field.



For Serialized Inventory Control (SIC) items select the insert record button on the navigator bar to access the Select Labels form to choose the labels to disposition. Select the ellipsis button in the Enter Serial # field to bring up the list of labels to choose from. Highlight the labels to disposition using the toggles buttons and press OK. If the user selects the ellipsis button in the location field rather than selecting the insert record button a message will appear stating, 'This is a serialized component - use navigator to add new labels(s) or delete selected record.Continue to next process'.



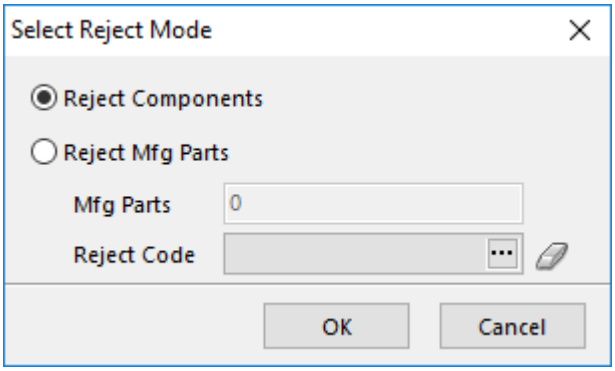
Reporting by Percent Complete: On the General tab in MFG Types, if the 'Consume Raw Material by Process' box is unchecked, the Report Consumed Materials tab in Labor Reporting will be hidden and the user cannot backflush components at the process. They will be backflushed at Final Assembly. If the 'Consume Raw Material by Process' box is checked, then the this tab will be displayed and the user can backflush components at the process. They will not be backflushed at Final Assembly. The 'Consume Raw Material by Process' box is defaulted to be unchecked.

If the user enters in a percentage for % Complete, select the calculate button on the tab to calculate the components to consume. If the calculate button is not clicked on, upon hitting OK a message '% Complete field has been modified, consumed materials must be recalculated, Would you like to do it now?' surfaces with Yes and No buttons. If the user clicks 'No' the Qty Consumed will not be calculated and no components will be backflushed. If 'Yes' is selected the Qty Consumed will be calculated and components will be backflushed. If the user enters 0 good parts, the message will not surface because there is no parts to calculate the quantity to consume. Users can manually enter in a Qty to Consume which will backflush the components.

Report Rejects

Rejects can be entered as part of a labor record or an employee can report just rejects. Select the Report Rejects box to enter rejects for attached components or for the manufactured item.

The mode defaults to Reject Components but can be changed by clicking the ellipsis button in the Mode field. A pop up form will appear to select Reject Components or Reject Mfg Parts.



Reject Mfg Parts:

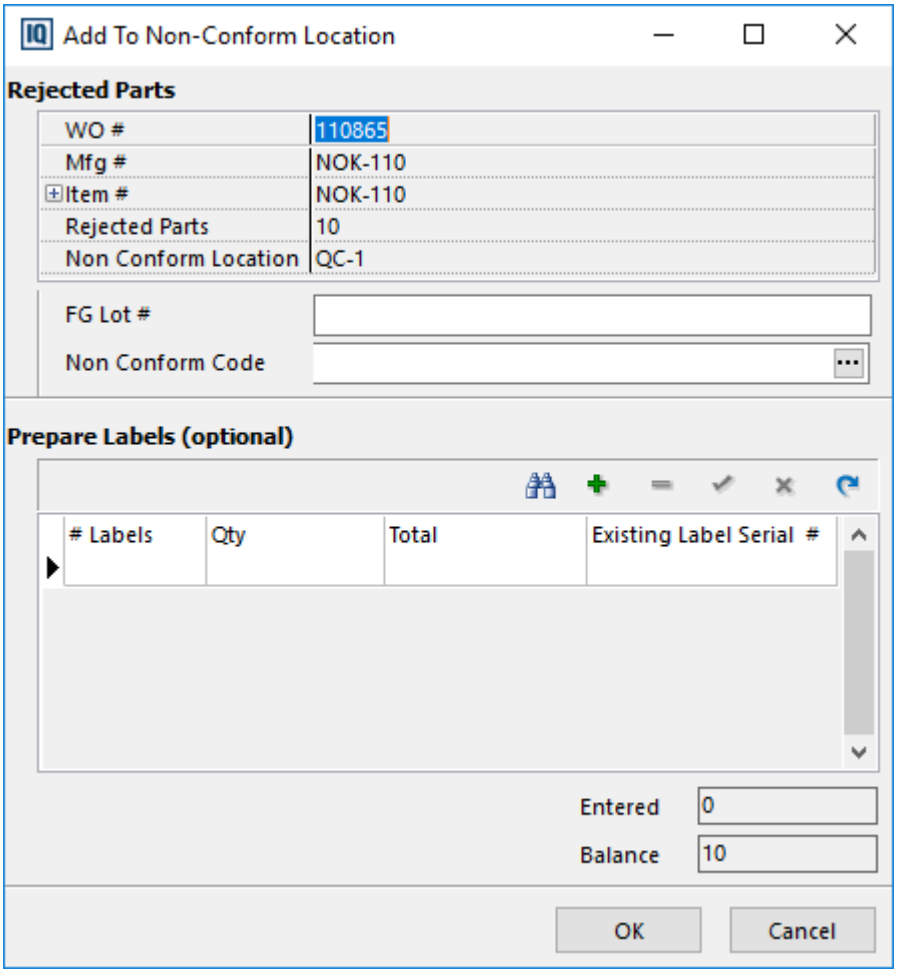
When the reject mode is set to Reject Mfg Parts, an employee can enter rejects for the manufactured item from the pop up form. Enter the quantity in the Mfg Parts field and select the reject code from the pick list accessed by clicking on the ellipsis button in the Reject Code field. If specific reject Codes are assigned to the process, only those codes will be available to choose from. If no specific reject codes are assigned to the process then the user will see all based on the EPlant logged into. A FG Lot # can be viewed/edited in the **Lot #** field under the Good Parts field on the main Labor Reporting form. This information will populate in the translog.

When rejecting MFG parts the system will calculate the number of **components** to be rejected based on the quantity of MFG parts rejected. The system will also automatically populate the same reject code selected for the Mfg parts for the components. The user can override the quantity of components in the Reject Qty field. The reject code can be changed by selecting a different one from the reject code pick lists accessed by selecting the ellipsis button in the components reject code field in the bottom right portion of the form.

Note: If the reject code is changed on the component level, upon doing a Void Reject MFG Part for this transaction, the Reject Code that was entered first on the Reject Mode form is the code that will be used for the Void transaction.

Non Conform Location Reject Code

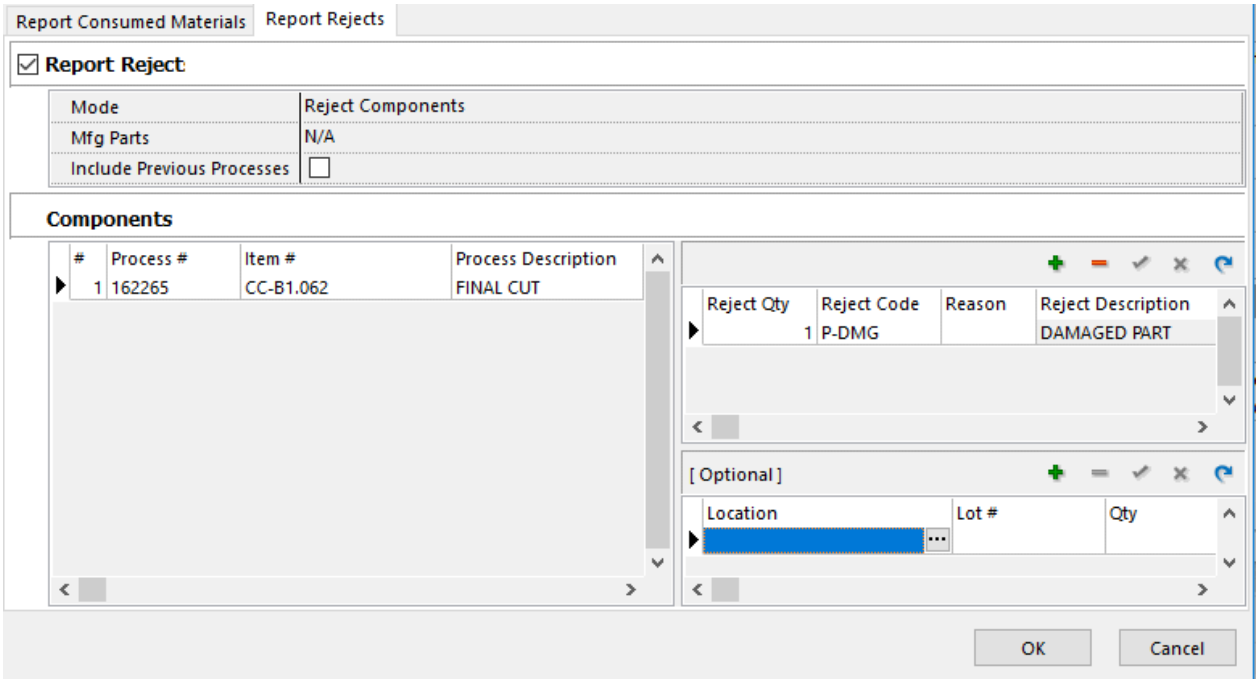
- If the selected reject code has a non conform location associated to it (Reject Codes list) the system will do an IN disposition transaction with a reason of 'Non Conform Mfg Rejects' for the quantity rejected into the location associated to the reject code. (This does not update the Floor Dispo column in the production report). Once the reject is posted a form will display to enter the FG Lot #, Non Conform Code and prepare labels.


Add To Non-Conform Location
Rejected Parts
WO #
110865
Mfg #
NOK-110
Item #
NOK-110
Rejected Parts
10
Non Conform Location
QC-1
FG Lot #
Non Conform Code
Prepare Labels (optional)
Labels
Qty
Total
Existing Label Serial #
Entered
0
Balance
10
OK
Cancel

- Enter the FG Lot # in the field if desired. If the item has the 'Lot # is mandatory' option checked in inventory it is required. Select the Non Conform Code from the pick list accessed by clicking on the ellipsis button in the field. This will be the non conform code associated to the non conform location in inventory. Labels can be prepared by manually entering in the number of labels and quantity per label, or existing label serial numbers can be selected from the pick list.

Note: If no labor is associated to the transaction then the reject is not included in the cost of the part. This option to report rejects should be used when reporting labor and good parts. If only Rejects need to be reported they should be entered through the Void->Report Existing As Rejects (Adjustments) option – see Void Options.

Reject Components:



Any components that are associated to the process (Materials tab in Assembly Process Maintenance module), and items that are substituted or added to an assembly work order through hard allocation, will be displayed in the lower components section. Select the '**Include Previous Process**' check box to include components from all of the processes up to the logged in process. Only processes with components will display. If a Non-Material item is attached to a process, the item is not displayed in the Reject Components and/or Reject MFG part screen, and cannot be rejected through Assembly Track. If any components were rejected during the process the user can enter the reject quantity and reject code on the right.

To enter rejects highlight the correct component and enter the reject Qty in the field. A positive number can be entered and reported for previous processes. Select the ellipsis button in the Reject Code field to access the pick list of reject codes to select from. If specific reject Codes are assigned to the process, only those codes will be available to choose from. If no specific reject codes are assigned to the process then the user will see all based on the EPlant logged into. Multiple reject codes can be added for the same component.

From this form users can select the specific location/lot to remove the rejected components from. This is optional unless the 'Component Reject Location is mandatory' option is checked for the Manufacturing Cell (System Parameters->Lists->Manufacturing Cells). If the option is not checked the bottom section will display 'Optional'. If it is checked it will display 'Mandatory'. If required and a location/lot is not selected an error will appear stating: 'Missing mandatory location - operation aborted'. If the Qty entered for the location(s) does not equal the Reject Qty an error will display: 'Location total qty is out of sync with the rejects qty - operation aborted'.

- For Non-Serialized Inventory Control (SIC) components, select the ellipsis button in the Location field and a pick list of locations associated to the component will display. Select a location/lot from the list. The quantities of the rejects will be removed from the location(s) chosen (negating the hierarchy).
- If the component is SIC, select the ellipsis button in the Location field and a pick list of locations associated to the component will display. Once a location is selected, then the labels linked to that location will display for the user to choose from.

Note: Rejected components cannot be over reported or under reported on the location level in relation to the totally reject quantity

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Once posted the total rejects will be listed in the lower section of the Assembly Track form. The user can right click from a specific item in that section and select “Show Details’ to see the individual reject quantities, reject codes and time stamp for that item.

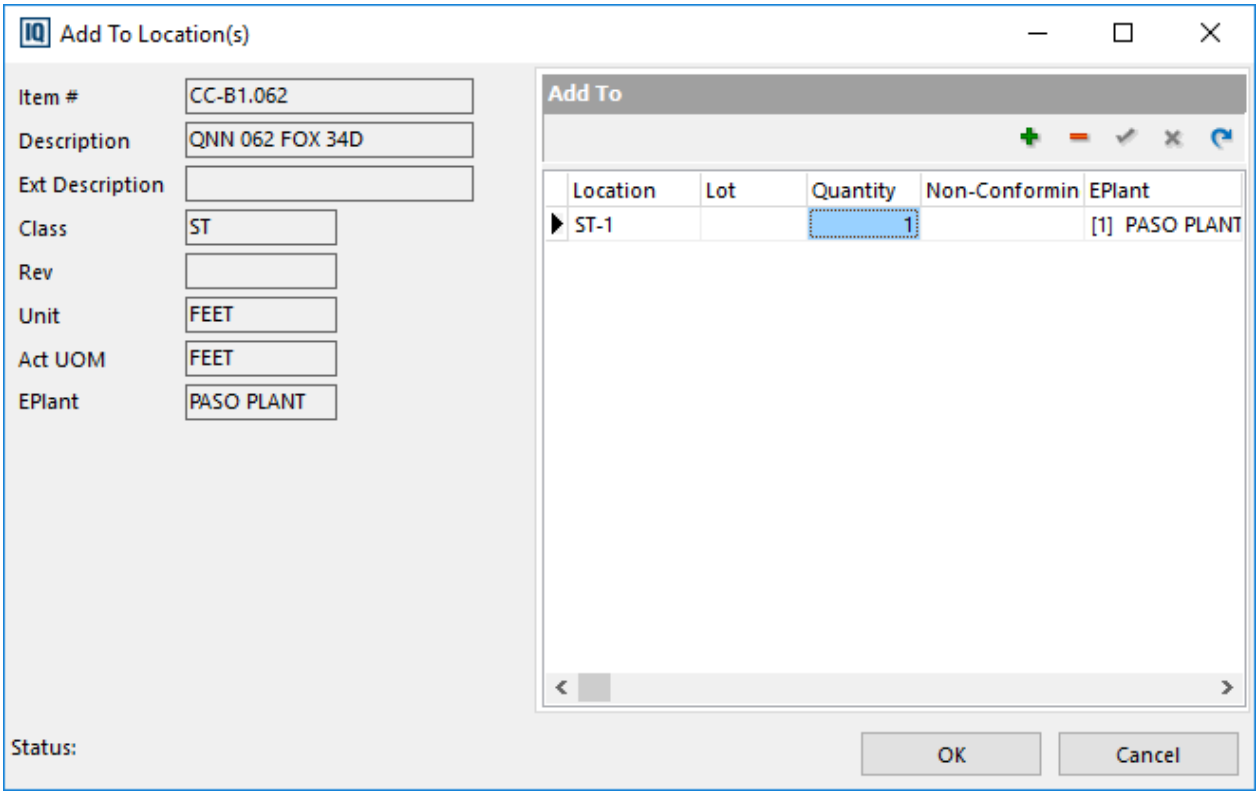
Note: In order to process transactions, such as rejecting components, users must have a recipe card for all levels of manufactured items, or check the 'Disable Cost Calculation' checkbox (Inventory on the Standard Costing tab) if costing should not affect the item. (See the "Costing" manual for details on recipe Cards and settings).

Void Rejects

If rejects are entered in error the user can void the rejects. Right click in the lower section and select Show Details. Highlight the record to be voided, right click and select '**Void Reject Entry**'. Select Yes from the confirm box to continue, or No to cancel the void.

Voiding Rejected Components

When Yes is selected an 'Add To Location' form will appear. If the FGMULTI record still exists the location and quantity will automatically fill in. The location can be changed but the quantity cannot. If the FGMULTI record does not exist select the ellipsis button in the location field and a pick list of locations will appear. Select the location to put the components into and enter the quantity. The quantity must be the same as the quantity originally rejected otherwise the user will receive an error: "Total Transaction Qty (1.00) must equal 2.00."

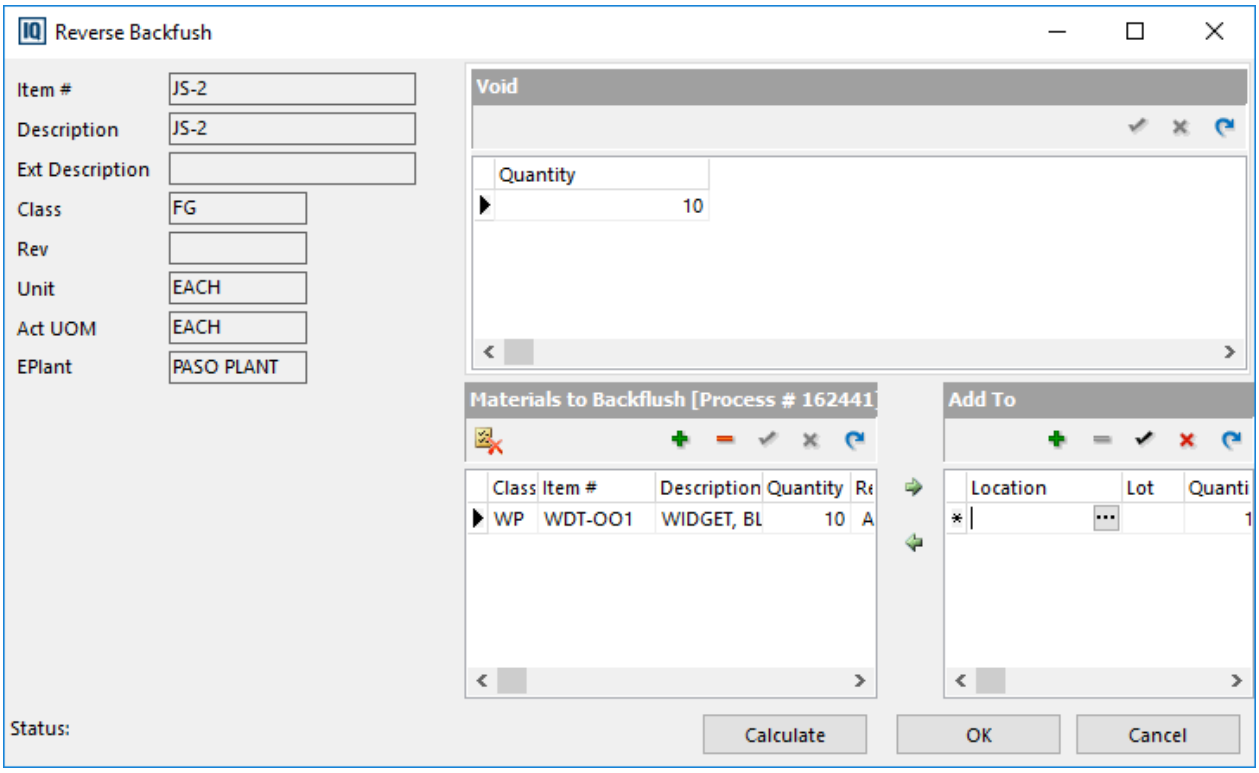


For Serialized Items: When voiding a rejected serialized component the system will attempt to add the voided quantity to an existing FIFO label. In the rare case of no labels found the system will display the following message: 'This is a serialized inventory. No associated labels found in location 'x' to be credited with requested qty. Please have associated label(s) in the specified location and try again later'.

If component rejects are reported during the Labor Reporting process a manual out transaction will be created in translog for the rejected component.

Voiding Rejected Manufactured Parts

When Yes is selected a 'Reverse Backflush' form will appear with the quantity populated. Select the Calculate button to calculate the materials to add back to inventory. Arrow over the materials to add to inventory and select the locations to put them back into. For serialized items, select the ellipsis button next to Enter Serial # on the Select Labels to Add form and choose the label. The location will populate with location associated to the serial number.



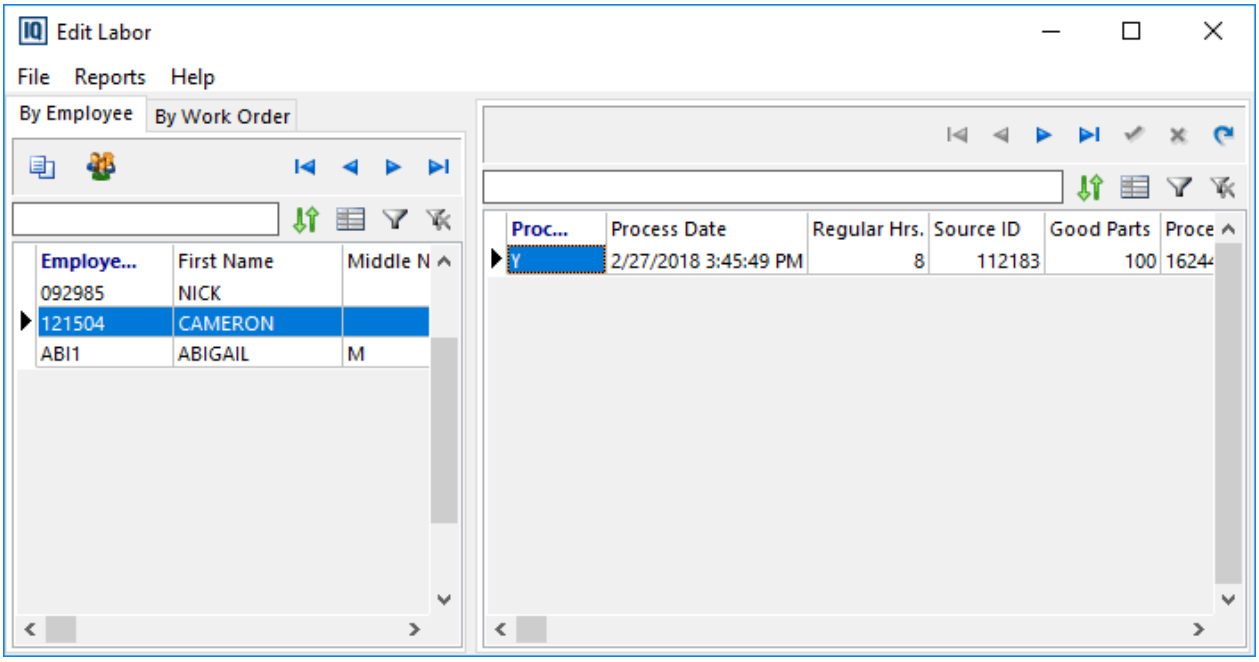
Note: If voiding a MFG Part Reject and the reject code was overridden on the components the Reject code for the void will be the one entered first when selected the reject mode.

Note: If reported rejects were assigned a Non-Conform Code associated with a non-conforming location, if the reject entry is voided against those same items, the non-conforming location will be cleared.

Edit Labor

The quantity and hours associated to labor records can be edited. Right click on the process where the labor needs to edited and select ‘Edit Labor.

A form will appear displaying the labor records associated to the specific MFG # and Process #.

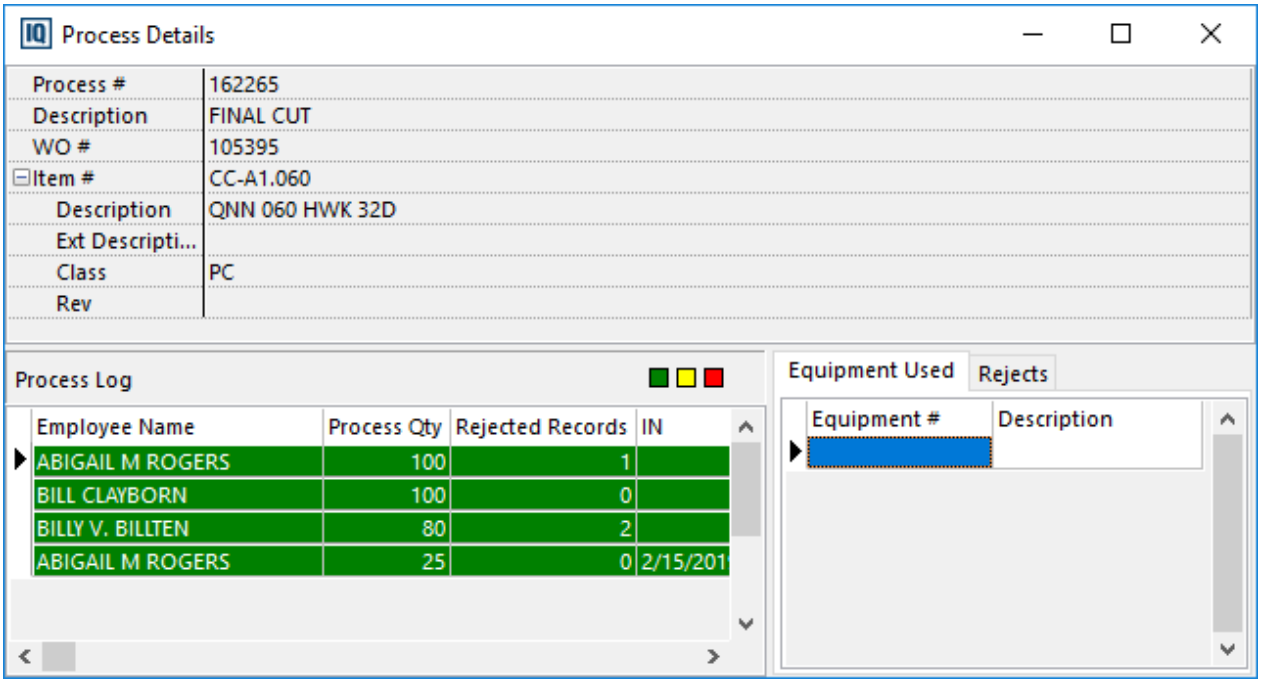


Highlight the employee on the left whose labor record needs to be edited and the corresponding labor entries will appear on the right. Only the **Regular Hrs.** fields may be edited. Once a record is changed the **Manually Changed By** field will populate with the user ID who made the change.

Note: The Labor records created from Labor reporting are automatically marked as processed. If you cannot find a specific labor record be sure the Hide Processed Records toggle button is not depressed.

Show Details

Right click in the middle section and Select 'Show Details' to display the labor details for the highlighted work order and process.



The top section displays the Process information, work order, and item details.

The lower section is a process log detailing the employees that have performed the process. This includes:

- **Employee Name**
- **Process Quantity** – The number of items the employee processed.
- **Process Hours** – The total hours entered in Labor Reporting or calculated based on the clock in and out (Time Out – Time In).
- **Rejected Records** - Quantity of rejected records.
- **Time In** – The actual date and time the employee clocked into the process
- **Time Out** - The actual date and time the employee clocked out of the process
- **Std Parts / Hr** – This is the calculated standard parts per hour for the process. Calculated as:

  1 / [Cycle time / multiple of / (yield/100)]
- **Act Parts / Hr** - This is the actual parts per hour for the labor record. Calculated as:

  Qty / sum (time out – time in) for that process / # of Processes the employee was logged into simultaneously.

- **Comments** – This field displays the comments added from the Clock Out screen in Assembly Data or from the Labor Reporting form in Assembly Track.
- **Line Clearance ID** – This field displays the SNDOP_CLEAR_LINE.ID from the database.
- **Note** - This is the note the employee entered from the Task Clock. Double click the field to view the entire note.
- **Process Date** - The process date (TA_LABOR.PROCESS_DATE).
- **Prod Date** - The production date (TA_LABOR.PROD_DATE).

Color Codes:

The line item color codes are based on the individual record's progress which is calculated by comparing the actual parts per hour versus the standard parts per hour.

Actual parts per hr = qty / sum (time out – time in) for that process / # of Processes the employee was logged into simultaneously.

Standard parts per hr = 1 / [Cycle time / multiple of / (yield/100)]

If actual is 100% or greater than standard, then bar is green

If actual is 95 – 99% of standard, then bar is yellow

If actual is less than 95% of standard, then bar is red

A white line item will appear when an employee is clocked into the process but has not yet clocked out.

Equipment Used

The right pane displays the tool (the PM Equipment # and description) used for this labor record. This information can only be added when the record is created using Assembly Data. The information is entered during the Line Clearance process.

Equipment information can be added or deleted. Highlight a labor record and right click on the equipment used tab. Select Add or Delete. If Add is selected, the user can add a tool associated to the auxiliary equipment attached to the process. If Delete is selected, the equipment will be removed. Note: Equipment used is attached based on the Line Clearance. If Line Clearance was not performed in Assembly Data the options to add or delete equipment will not be available.

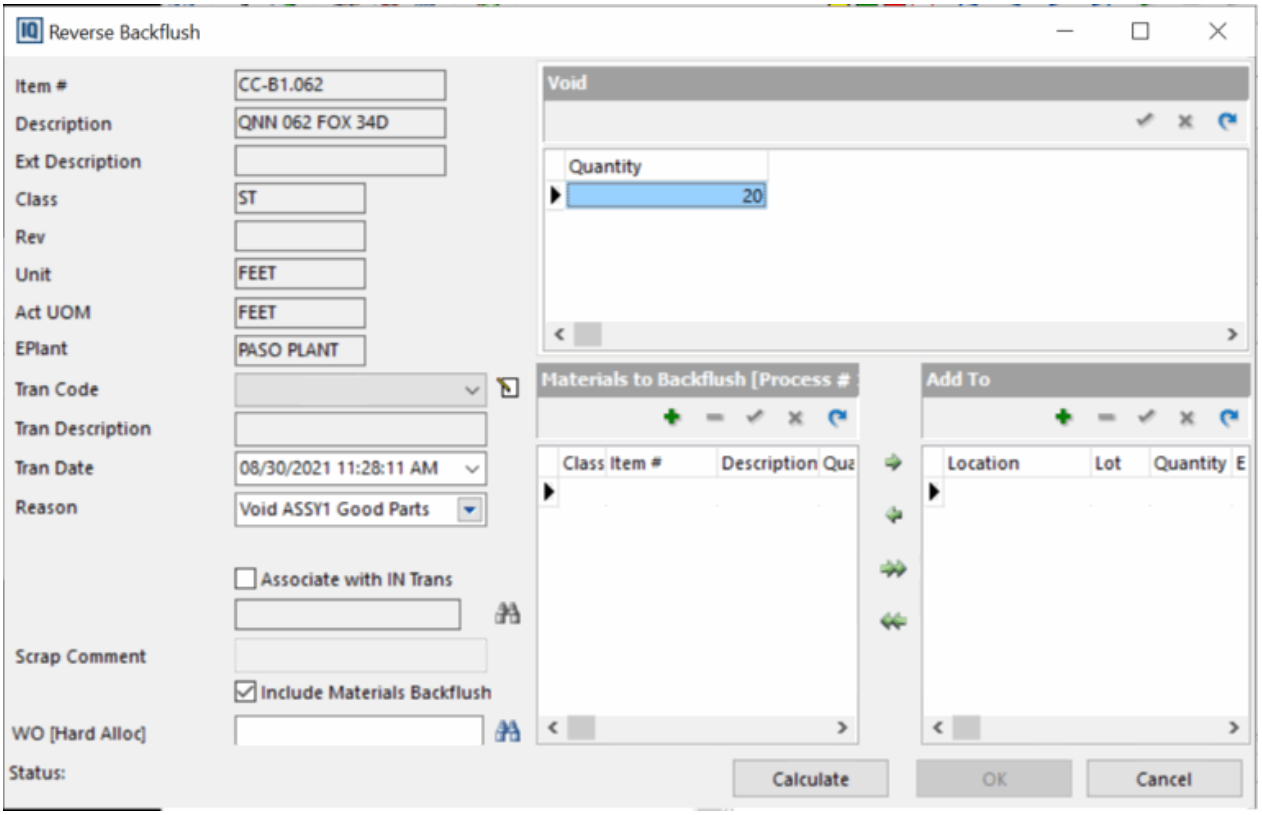
Rejects – The Reject details associated to the labor record. The fields on this tab include: the Date, Item #, Qty, Reject Code and Description, Reason, Item Description, Class, and Rev.

Void Options

Right click from a labor record and select Void. From the Void menu there are two options:

Void Good Parts (Reverse Backflush)

This option allows the user to void the good parts entered on a process record. A reverse Backflush form will appear:



The Quantity will default to the quantity of good parts reported on the labor record but can be changed. Once the quantity is entered select the calculate button for the system to determine the quantity of components to put back into inventory. The system will only display the material associated to the process step that is being voided. Arrow over the materials to the 'Add To' section using the single arrow for the selected item(s) or the double arrow for all items and select the location to put the components back into. Select OK to complete the transaction.

When doing a Void (Reverse Backflush) in Assembly Track for items with Serialized Inventory Control (SIC) components, after the user selects the serial number(s) to return, then OK, the locations list pops up to select a current location or to create new one on the fly. If no location is chosen or created, then the user cannot move forward and a message will appear 'Unable to determine master location ID based on translog or locations picklist.'

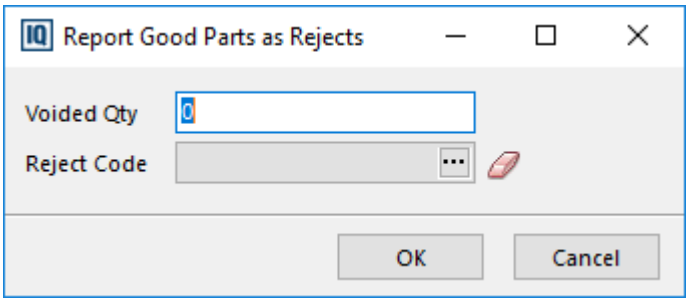
Note: The Scrap check box is not available on this form because if checked the Post Inventory Transaction would be incorrect.

Note: The button to exclude/include Labor and Overhead is not available on this form. The inclusion/exclusion of labor and overhead is dependent on the type of costing being utilized. By design, for Standard Costing labor and overhead will automatically be part of the transaction, but not for Actual Costing.

Return Material Only - This same option can be used to just return material back to inventory without voiding any good parts. The system will allow a user to enter a void quantity of zero. A pop up warning will appear stating, "Transaction Quantity is Zero. Are you sure you would like to continue?". To continue select Yes, the material will be added back to inventory (pulled out of WIP and back into inventory). If No is selected the user will be returned to the Reverse backflush screen. Security can be placed on this warning box.

Report Existing As Rejects (Adjustments)

This option allows the user to report good parts as rejects. A pop up form will appear to enter the Voided Qty and Reject Code.



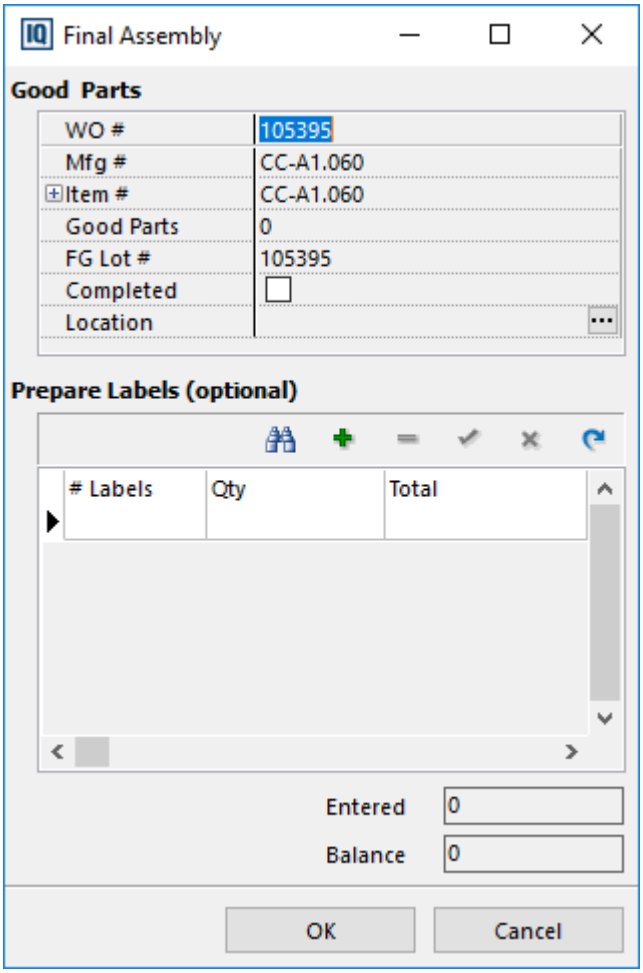
A record will be visible on the Rejects tab on the Process Details form for the Voided Qty. The Progress details in the middle section of Assembly track will be adjusted accordingly.

Report Final Assembly in Assembly Track

The Final Assembly function is used to report good parts. The employee can enter the number of finished goods that have been completed (gone through all of the required processes). This will add the items to inventory and create a record in the transaction log with a reason of 'Final Assembly'. (Backflushing of components for ASSY1/ASSY2 happens during Labor Reporting – not Final Assembly). With matching Lot #s for good parts during Labor Reporting and Final Assembly, Lot traceability includes backflushed components in Lot # Tracking after reporting Final Assembly.

- Highlight the desired item in the top section of Assembly Track, right click and select Report Final Assembly.
- A pop up form will appear to enter the Good Parts, optionally the location, and prepare labels.

Note: If the process on the BOM is designated as 'Final Assembly Reporting, when the user selects OK on the Labor Reporting form the Final Assembly Reporting form will appear to enter Good Parts.



Enter the quantity of **Good Parts.** (Note: Zero or a negative number is allowed). If zero is entered in the good parts field a warning will appear stating, 'Zero good parts have been entered. Continue?'. If the user selects Cancel they cannot proceed to the next form. If OK is selected, the system will continue. If the quantity of good parts entered is greater than the work order quantity a warning will appear with an OK and Cancel button stating, 'Total Good Parts is greater than WO Qty'. Security can be placed on these warnings.

Note: If there are unposted labor records against the work order, a Status Exception showing the work order # will appear stating, "There are unposted labor records. Continue?". Security can be place on the OK button to prevent users from posting the record.

Upon finishing Final Assembly if 'Work Order is Complete' was unchecked, nothing is posted to translog, so in PIT the cost of the consumed components remain in WIP. If 'Work Order is Complete' is checked during Final Assembly, the system will write a 0 quantity entry in Translog. Regardless of the quantity entered, the system will clear the SNDOP_DISPATCH buckets so that in PIT, the cost of the consumed components, labor, and OH of those parts not reported in final assembly would be credited from WIP and debited into Variance.

Note: When a negative value is entered the Post Inventory Transaction (PIT) will display a negative debit value instead of a positive credit value. This is because the system does not have IN and OUT in this form. It only looks for an IN therefore a negative entry calculates the same as a positive number resulting in a negative debit rather than a positive debit. The journal entry will be correct, the negative debit value is converted to a positive credit value.

- Enter a FG Lot # if required or desired. If the item has the 'Expiration Date is Mandatory' option checked (Inventory->Additional tab) the Exp. Date field will be populated with the lot's expiration date. If the date is required but null an error will display when attempting to post stating 'Expiration Date must be entered'.

- Check the 'Completed' box if the work order is finished. After selecting 'OK' the user will be asked if the work order should be deleted or not. If it is not deleted it will still be visible in Assembly Track but it will be highlighted in yellow to indicate it is complete. Note: When marking a work order 'completed' or deleting a work order, if the processes 'Qty to Complete' is not zero, a warning will appear stating: "Open processes. Cannot complete. Costing will be out of balance." Security is available on this warning. If the user continues to delete the work order this information will be written to the Event Log.

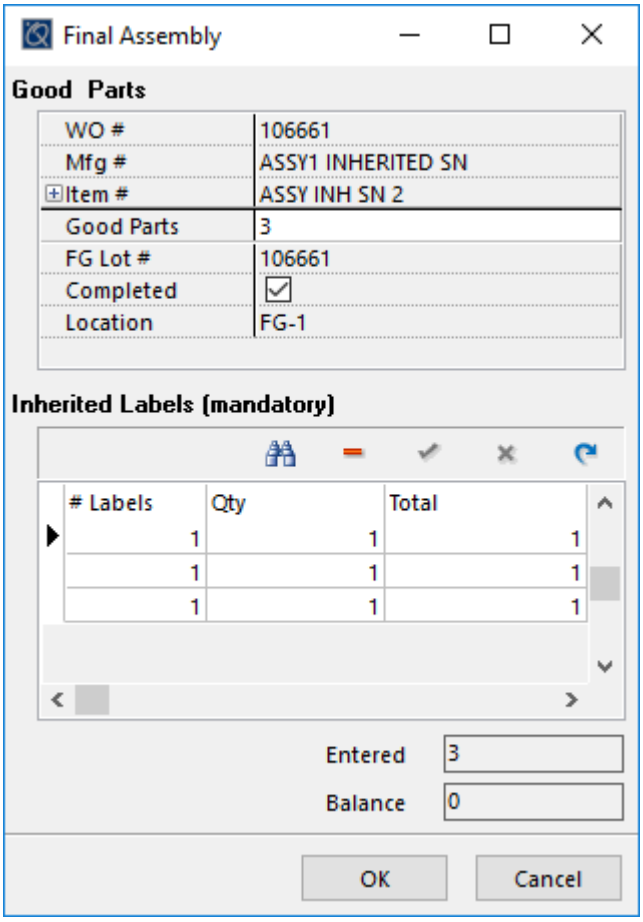
When the user tries to delete an ASSY1 or ASSY2 work order through Assembly Track, the system will check the translog to verify if PIT is posted. (Note: the option 'Use Standard Cost during Post Transactions' must be checked in System Parameters, Inventory Setup tab). If some records have not been posted, an exception error will be raised stating: "Unposted disposition transactions." The user can override the exception to go ahead and delete the work order. Security can be setup on this exception error.

A location can be entered by selecting the ellipsis button in the location field. A pick list of existing locations associated to the item will appear. The user can choose from one of these or select the New button to add a new location. If this field is populated, the parts will be dispositioned into that location. This overrides the disposition hierarchy. If the parameter 'Location is mandatory during Final Assembly' is checked (Options menu in Assembly Track), if the Location field is not populated, an error message will pop up: 'Mandatory field 'Location' must be entered - operation aborted', with an OK button. When OK is selected, the Final Assembly form remains open for the user to enter the location. If unchecked, entering a location is optional.

- **Prepare Labels** by entering the number of labels and the quantity of good parts associated with each label. The system will keep track of the balance of items that still need a label in the Balance field. If the 'Print Labels On Final Assembly' parameter is checked, or if the item is serialized, the user must enter labels for the good parts and the balance must equal zero or they will receive an error: "Total labels qty does not match good parts - unable to continue". The **search** pick list will display any existing MASTER_LABEL records for the selected work order that have not been dispositioned or shipped. An existing serial number can be selected and upon finishing Final Assembly, the system will reprint the label and disposition into inventory. If the parameter is not checked creating labels is optional.

Note: In IQRF or WMS, a Reverse Disposition can be done for items associated to ASSY MFG Type BOMs to allow users to correct the quantity reported during final assembly. Reverse dispositions are done based on serial numbers, so in order to use the Reverse Disposition feature labels must be prepared during reporting final assembly or existing labels selected in the Prepare Labels section of the Final Assembly screen in Assembly Track and AssyData.

- **Inherited Labels** - If an Inherited Component was associated to the manufactured item on the Item Details tab of the ASSY1 BOM (see the BOM Item Details section for details) users are required to select the Inherited Serial numbers to associate with the final manufactured item by selecting the Search button in the Inherited Labels section. This will open a pick list of serial numbers associated to the Inherited Serial item.

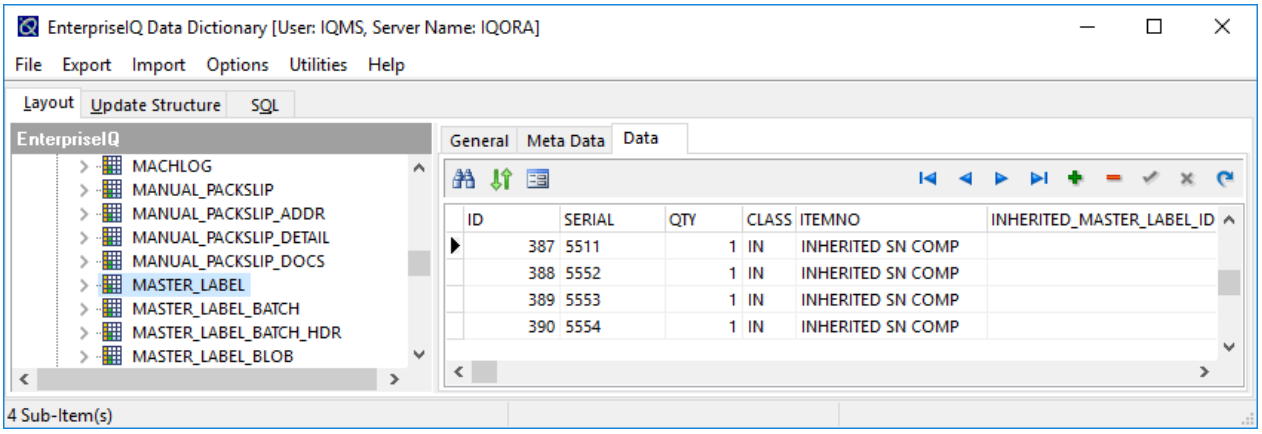

Final Assembly
Good Parts
WO # 106661
Mfg # ASSY1 INHERITED SN
Item # ASSY INH SN 2
Good Parts 3
FG Lot # 106661
Completed
Location FG-1
Inherited Labels (mandatory)
Labels Qty Total
1 1 1
1 1 1
1 1 1
Entered 3
Balance 0
OK
Cancel

The quantity of labels must equal the good parts being reported. If they do not match an error will appear stating: "Good parts entered must match the number of inherited consumed labels."

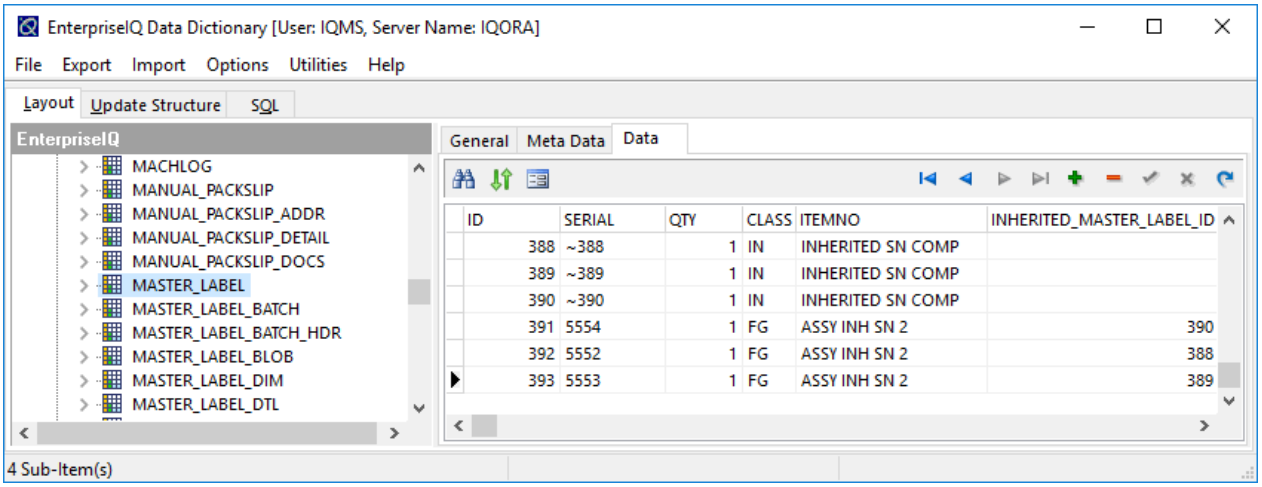
When the finished part is being dispositioned, the system will clone the component serial and then the MASTER_LABEL.SERIAL field of the component serials will be copied to the new produced MASTER_LABEL.SERIAL record at the same time that the component MASTER_LABEL record serial fields are updated to the master_label.id of the component serial that was just consumed prepended with a "~".

For Example:

These are the serials for the Inherited Component shown in the Master Label table after being received:



This is the Master Label table after Final Assembly. The Foreign Serial #s 5552, 5553, 5554 are consumed and copied onto the parent, and the serial #s for the components updated to the master_label.id of the component serial that was just consumed prepended with a "~". In this example below they are now ~388, ~389, and ~390.



The serial # that was copied to the parent item is visible in the MASTER_LABEL.INHERITED_SERIAL field so that the user will have the parent/child relationship available for reporting purposes.

Completing the Transaction

- Select OK to complete the transaction. If a location was not manually selected, for ASSY1 and ASSY2, items will be put into a location based on the Disposition Hierarchy below:

If the process IS scheduled in Finite Scheduling:

1. Hard Allocated to the work order
2. Mfg # default designator
3. Default Designator
4. Dispo IN of the work center associated to the last process
5. Dispo IN of the dispatch list work center associated to the last process
6. MFG Cell Dispo locations
7. MFG Type Dispo. Designators
8. FIFO
9. Temporary

If the process IS NOT scheduled in Finite Scheduling:

1. Hard Allocated to the work order
2. Mfg # default designator
3. Default Designator
4. Dispo IN of the dispatch list work center associated to the last process
5. MFG Cell Dispo locations
6. MFG Type Dispo. Designators
7. FIFO
8. Temporary

Note: The Hard Allocated location applies in situations where a manufactured item is used in a higher level process and is hard allocated to the higher level work order.

When reporting Final Assembly for ASSY3 (Backflush Each Process is NOT checked), the following hierarchy is for dispositioning the FG item into inventory and backflushing the material out of inventory, if a location was not selected manually.

1. Hard Allocated to the work order
2. Mfg # default designator
3. Default Designator
4. Designated Assembly line IN/OUT location (if the work order is scheduled in Finite Scheduling)

5 MFG Cell Dispo locations

6 MFG Type Dispo. Designators

7 FIFO

8 Temporary

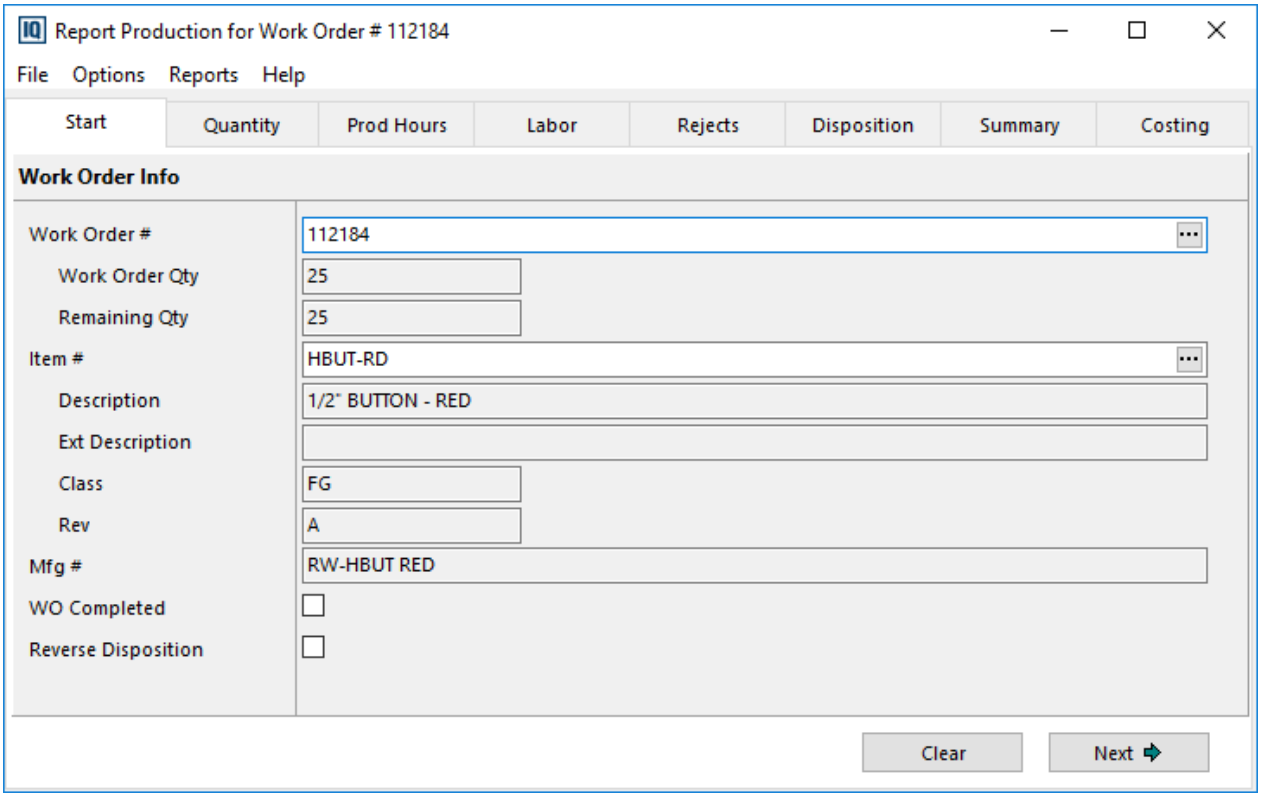
Note for **VIN Generator** users: If the work order is associated to MASTER_LABEL records with a VIN number, the user will not be able to enter a FG Lot #. After entering a quantity and clicking Next, preparing labels is mandatory (even if the item is a non-serialized control item). The user can either search for an existing serial # or add a label. Upon posting Final Assembly, the item is dispositioned into inventory with the VIN # as the lot #. The Smart Code, Cost, and Price from the CRM Quote will be populated under lot control. The weight of the item will also be populated under lot control. (For more information on VIN Generator please see the ***Vehicle Identification Number Generator https://my.iqms.com/cfs-file.ashx/__key/Technote/VIN-Generator.pdf*** TechNote).

Rework Reporting in Assembly Track

From the top section in Assembly Track select 'Rework Reporting' from the right click menu to report Rework Mfg Type items using the Production Reporting by Work Order (PRW) module. When this option is selected the work order pick list filtered on the REWORK Mfg Type will appear. Select the item to be reported from the pick list and the PRW form will open at the Start tab.

This feature is also available in Assembly Data.

Start



This tab will display the Work Order #, Work Order Qty, and Remaining Qty, and the Item information based on the selection made from the pick list. To change the work order or item select the ellipsis button in the fields and select from the corresponding pick list. The **Clear** button will remove all of the data that was entered to start the production report over.

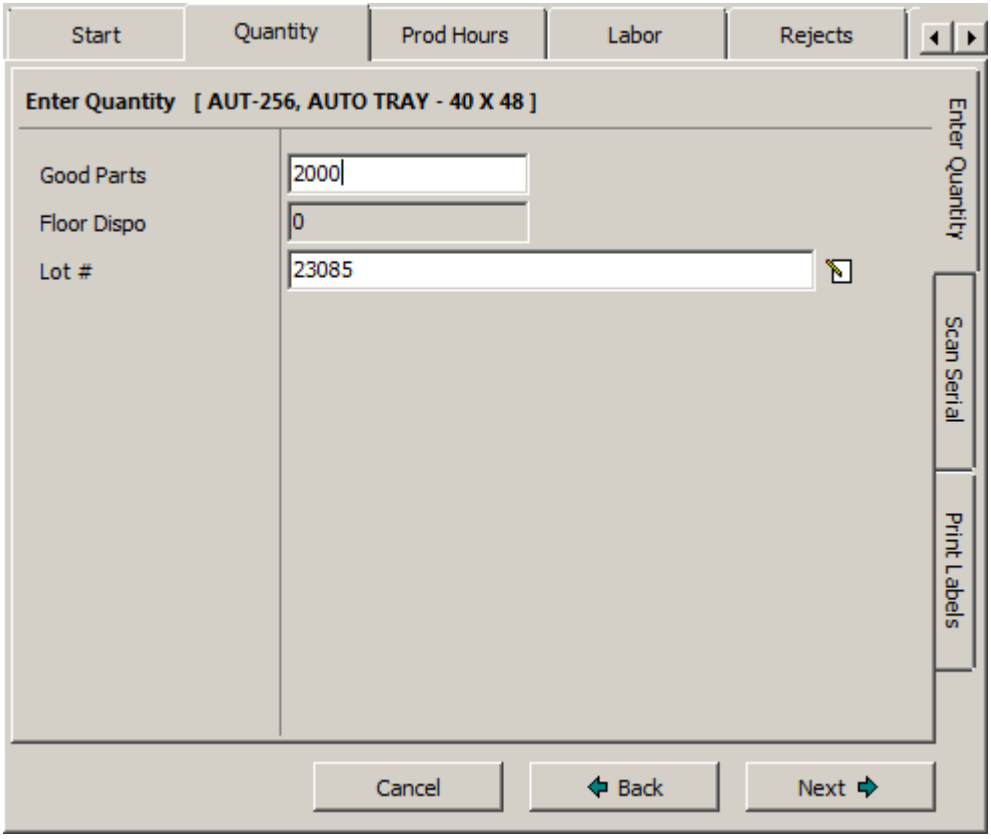
Select the **WO Completed** box if the work order is complete. After clicking on the 'Finished' button on the Summary or Costing tab if this box was checked and the work order is marked Firm, the system will ask if the user wants to delete the WO, “WO# xxxxx has been marked completed. Delete this WO?” If the work order is not marked firm, it will remain on the schedule for the system to take care of automatically when update schedule is run again.

Right Click 'Jump To' Options available on the Start tab:

- Jump To Work Order
- Jump To Inventory
- Jump To BOM
- Jump To Work Center

Once the information is complete, select the Next button.

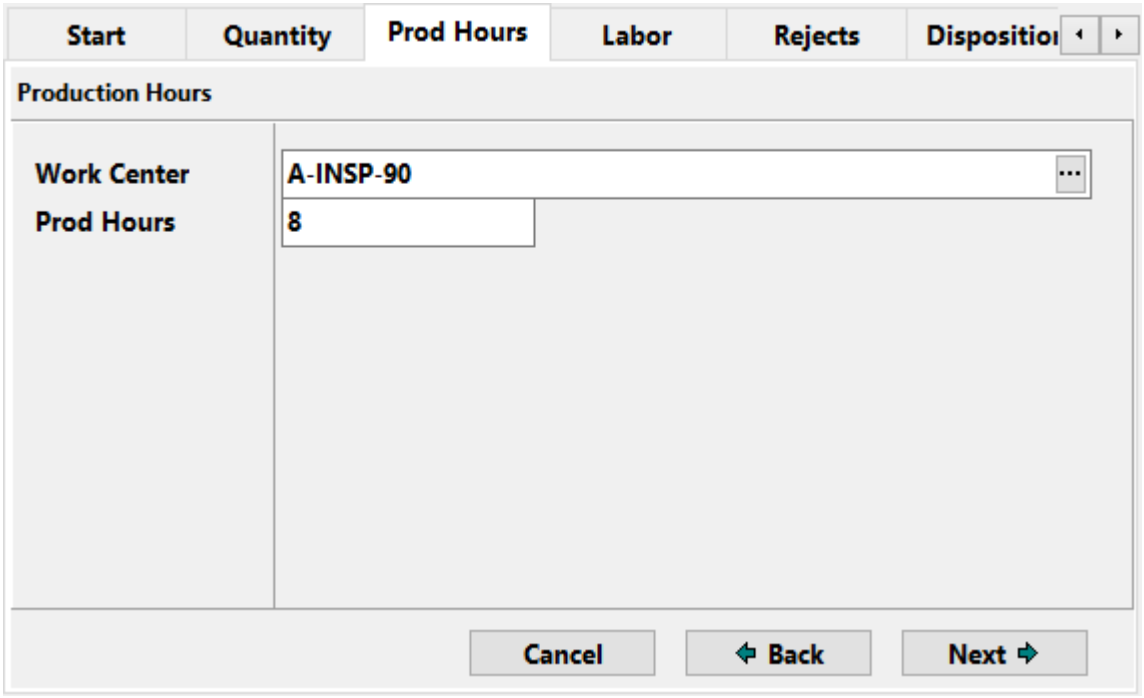
Quantity



From this tab users will enter the quantity reworked. The Lot # will automatically populate with the current lot of the MFG#. A Lot # can be manually entered or the user can select the 'Set Next FG lot #' button to have the system apply the next lot number. If the WO Completed box is checked, if the quantity being reported is less than the WO quantity when clicking ‘Next’, a warning will appear: ‘Quantity reported is less than the work order quantity.’ This warning has a ‘Do not show again’ option. Security can be placed on this warning.

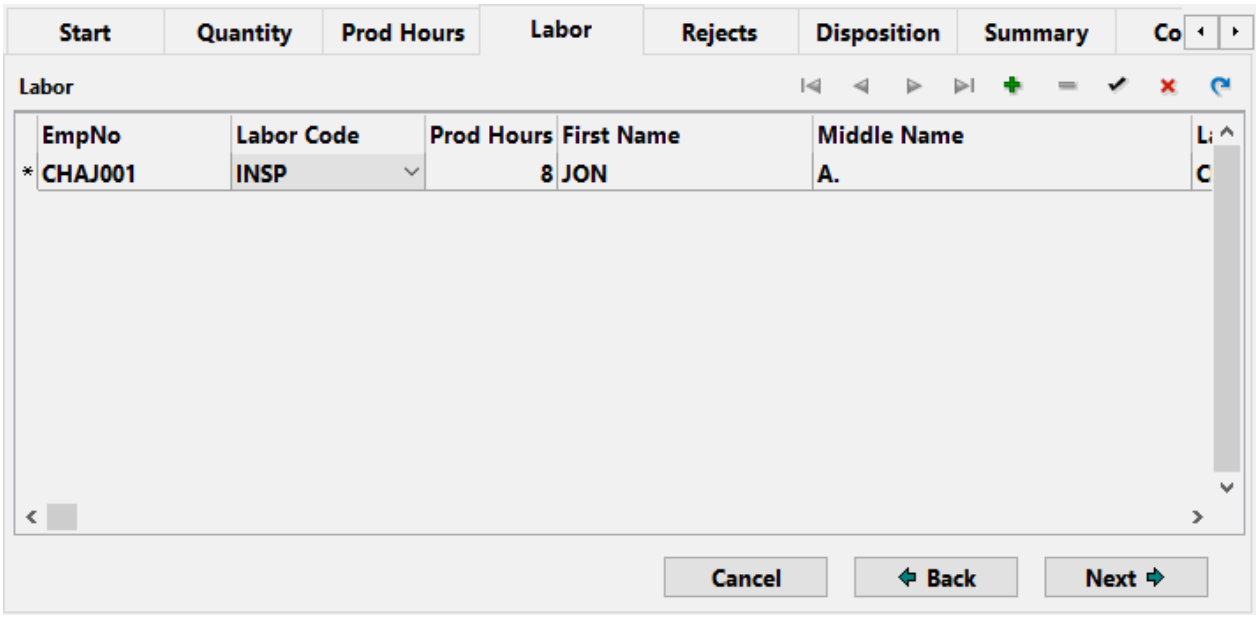
Prod Hours

Select the Work Center from the pick list accessed by clicking on the ellipsis button in the field. Then enter the production hours.



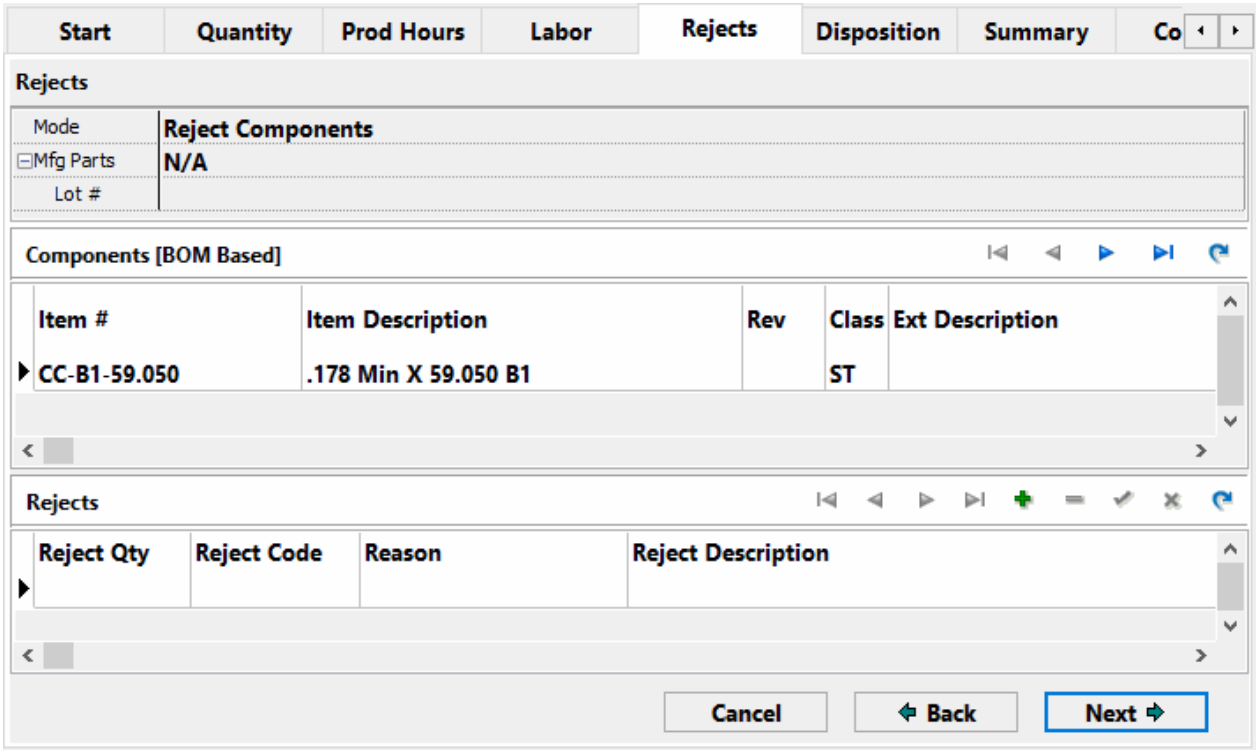
Labor

Specific employees can be associated to the production report record. Select the + button to add a labor record. Then select the ellipsis button in the 'EmpNo' field and select an employee from the pick list. The Prod Hours field will populate with the Prod Hours entered on the previous tab. This value can be edited to record the actual labor hours associated to the specific employee. Multiple labor records can be created by selecting the + button again.

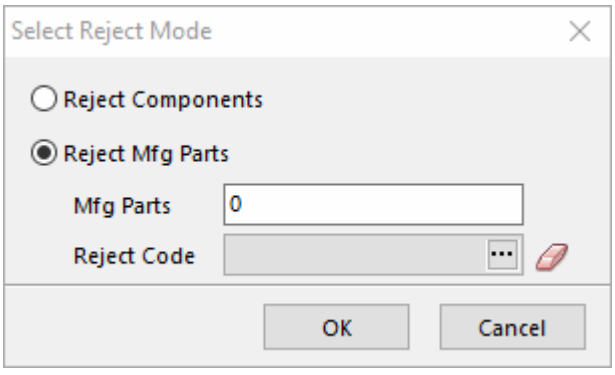


Rejects

Rejects for attached components or for the manufactured product can be entered from the Rejects tab.



From the Mode field select the ellipsis button and choose: Reject Components or Reject Mfg Parts from the pop up form.



Reject Mfg Parts

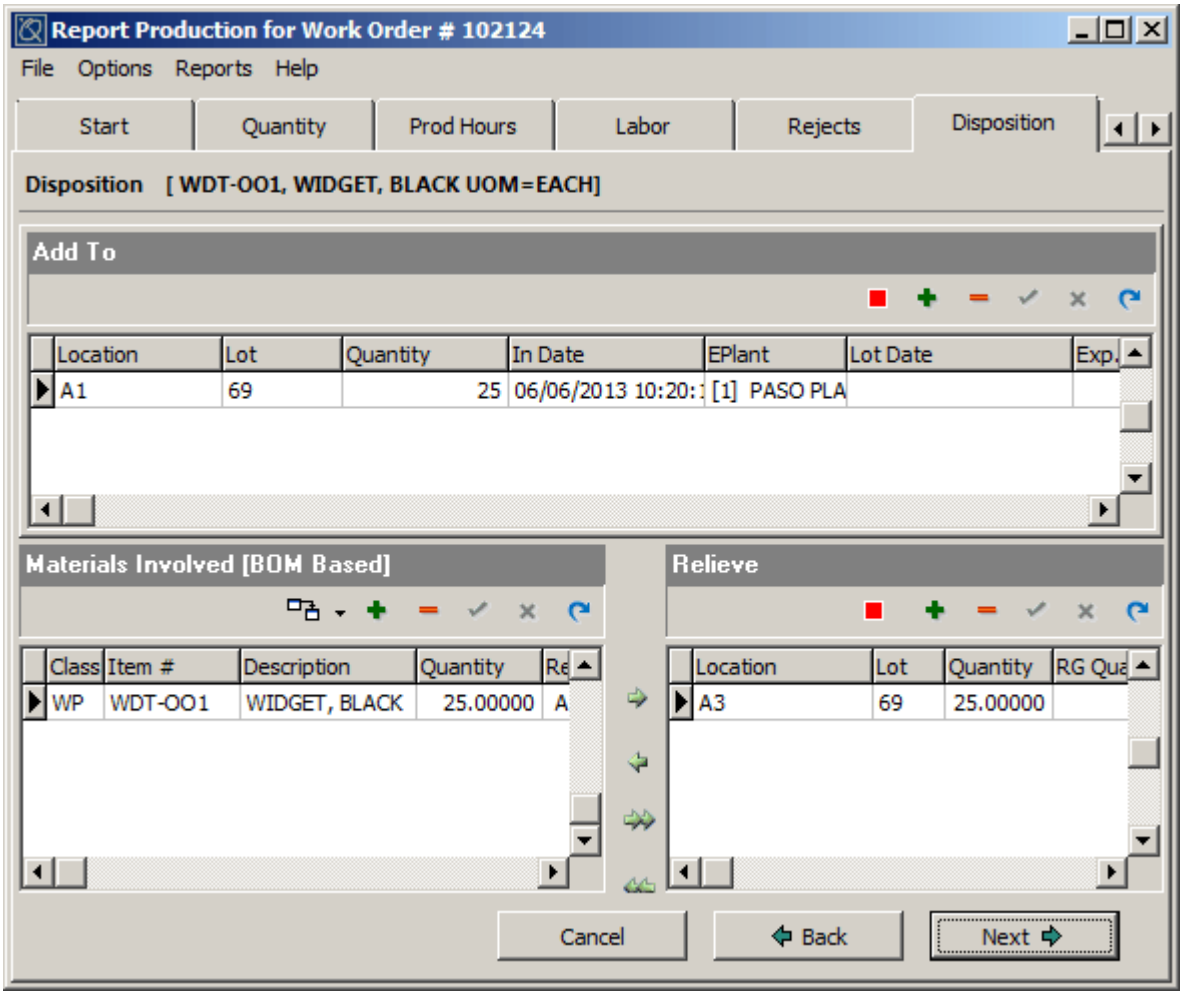
When the Reject Mfg Parts option is selected enter the quantity of rejects in the Mfg Parts field, and select the Reject Code from the pick list accessed from the ellipsis button. The eraser button next to this field can be used to clear the selected reject code. The system will automatically calculate the reject quantity for the components based on the Mfg Parts reject quantity, but it can be overridden by entering a different value in the Reject Qty field for the specific component. The Reject Code will default to the same code that was selected for the manufactured item but can be changed by selecting a different code from the pick list. Additional information can be entered by typing in the Reason field.

Reject Components

Select this option to reject the components without rejecting the manufactured item. The components associated to the BOM for the manufactured item will display in the middle section. Highlight the item to be rejected and enter the quantity in the Reject Qty field in the bottom section of the form. Select the reject code from the pick list and enter a reason if desired.

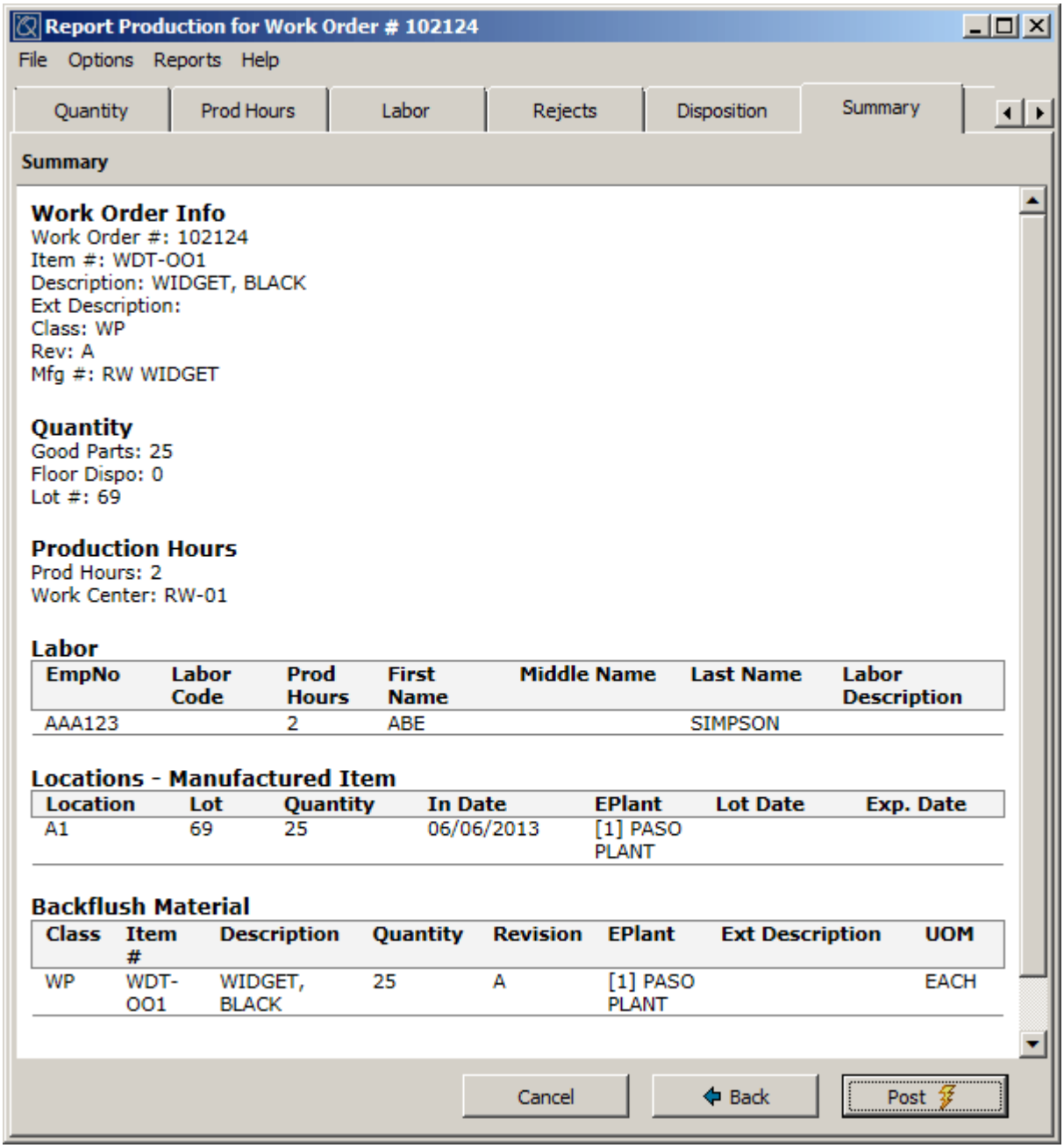
Disposition

The Disposition tab the system will do an OUT transaction from the non-conform location and an IN to a location based on the disposition hierarchy. (Note: If the disposition IN location is marked as non-conform then the item will remain in non-conform status, if this is not desired be sure that the IN location based on the hierarchy is not marked as non-conform). The transaction will show up in Post Inventory Transactions (PIT) as a transaction type of disposition. The system uses the costs associated to the Recipe Card. If it is desired that the costs come from the Rework BOM you must recalculate it and roll those costs.displays the reworked item. It will populate the 'Add To' and 'Materials Involved' sections based on the reported good parts and the BOM information.


Report Production for Work Order # 102124
File
Options
Reports
Help
Start
Quantity
Prod Hours
Labor
Rejects
Disposition
Disposition [WDT-OO1, WIDGET, BLACK UOM=EACH]
Add To
Location
Lot
Quantity
In Date
EPlant
Lot Date
Exp.
A1
69
25
06/06/2013 10:20:1
[1] PASO PLA
Materials Involved [BOM Based]
Class
Item #
Description
Quantity
Re
WP
WDT-OO1
WIDGET, BLACK
25.00000
A
Relieve
Location
Lot
Quantity
RG Qua
A3
69
25.00000
Cancel
Back
Next

Summary

The Summary tab displays the information that was entered in the production report, such as serial #'s, labor, locations, rejects, and backflush information.

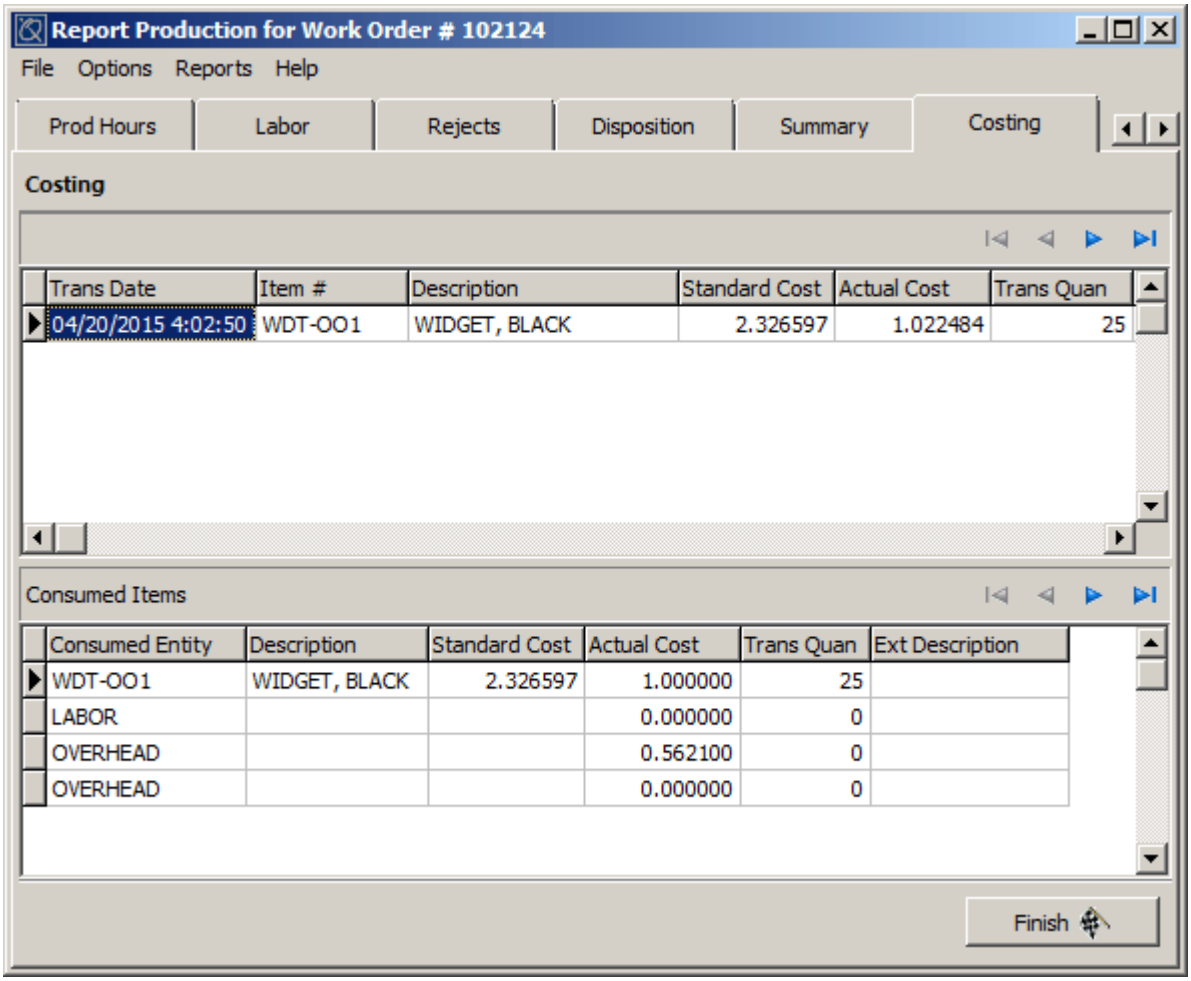


Once the information is reviewed, the transaction can be posted by selecting the Post button. A confirm message will display stating, "Are you sure you want to post this production report?" If Yes is selected, a 'Disposition' type transaction will be made. Selecting No will return the user to the summary tab without posting the transaction. If the relieved quantity differs from the Materials Involved quantity by 10% or more, a warning will appear when posting the Production Report. If information needs to be edited prior to posting select the Back button to return to the previous tab(s).

From the Summary tab users can right click and choose to copy and paste the summary, or print it (print or print preview).

Costing

This tab displays the Costing information for the item. This functions just like the Process Cost module. For a complete discussion on the process costing module please refer to the Introduction to Process Costing topic in the Standard and Actual Costing section of the help files.



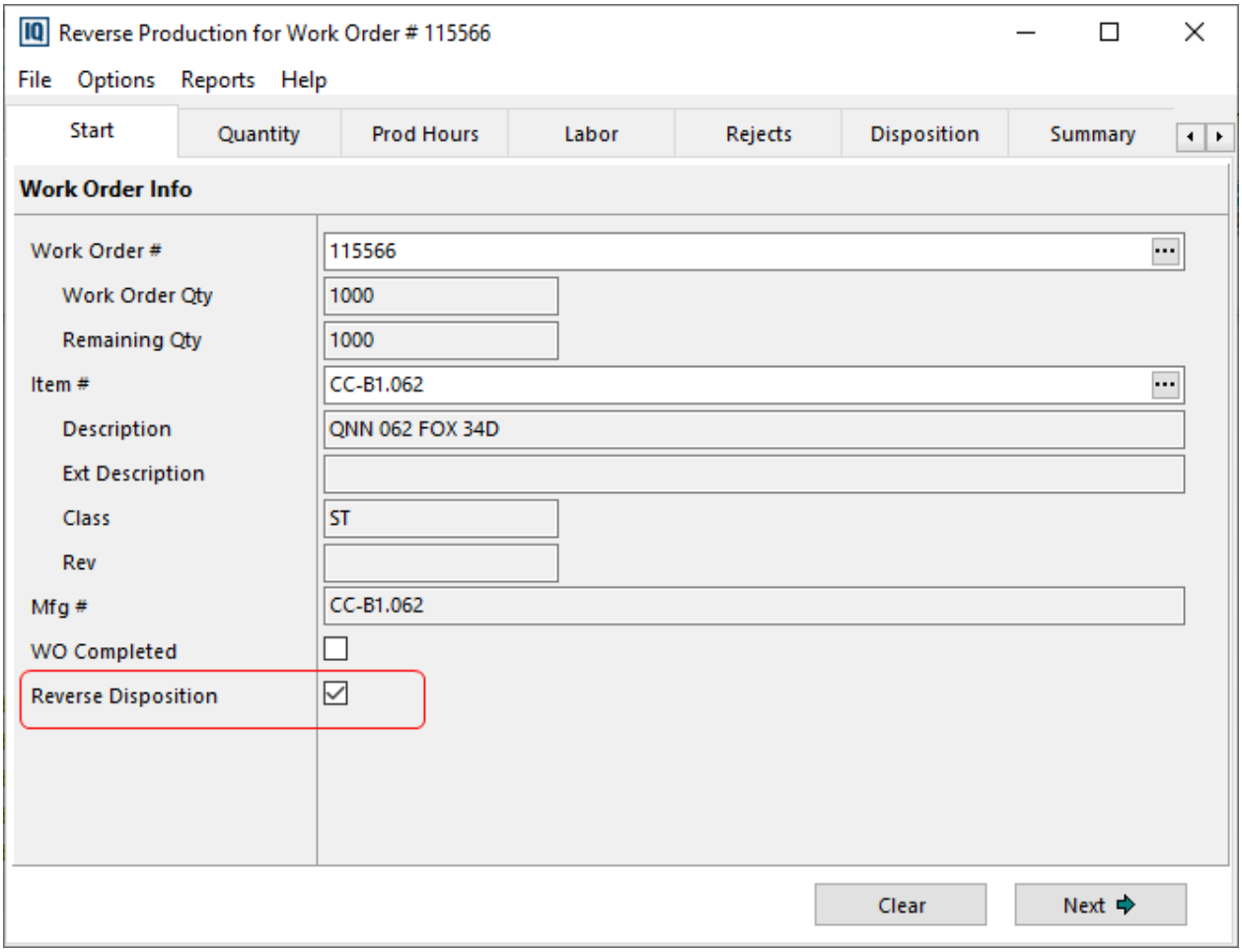
Finish

Once the the production report is complete, select the Finish button and select Yes to the confirm message. The user will be returned to the Start tab.

Reverse Disposition

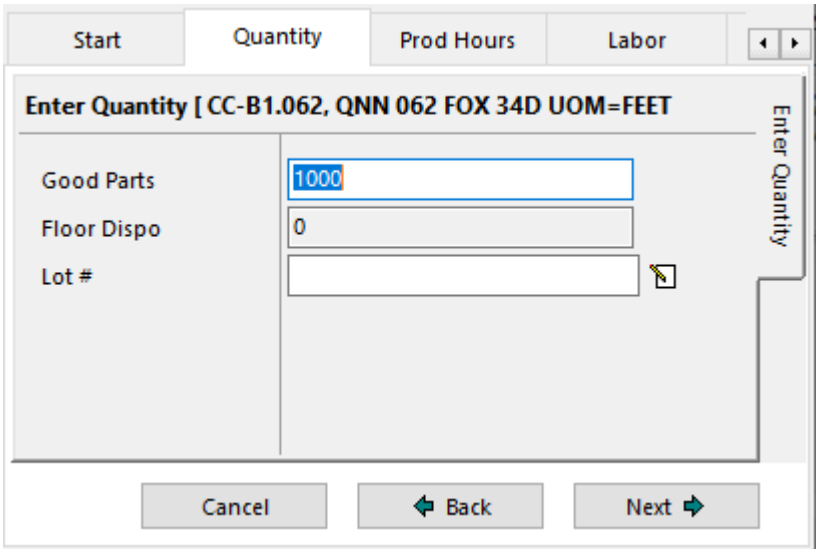
There is a Reverse Disposition check box on the Start tab to perform a reverse disposition. If this is checked, the Quantity tab for non-SIC items will display the 'Enter Quantity' tab only. For SIC items the Scan Serial tab will only display. The Disposition tab will relieve the manufactured product and add the materials involved based on the work order.

Select the work order and check the Reverse Disposition box. The PRW form will display Reverse Production for Work Order # xxx in the top blue bar.

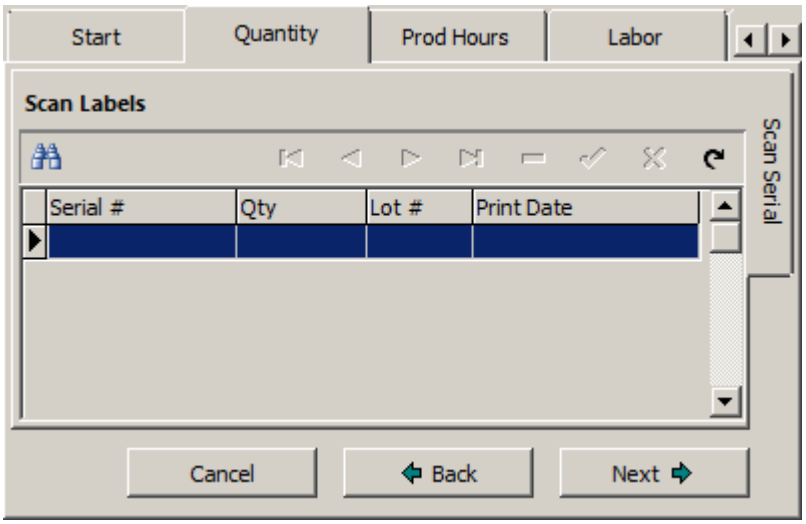


Select Next to access the Quantity tab. If there is more than one production report for the work order another pick list will surface to select the specific Production Report ID to reverse.

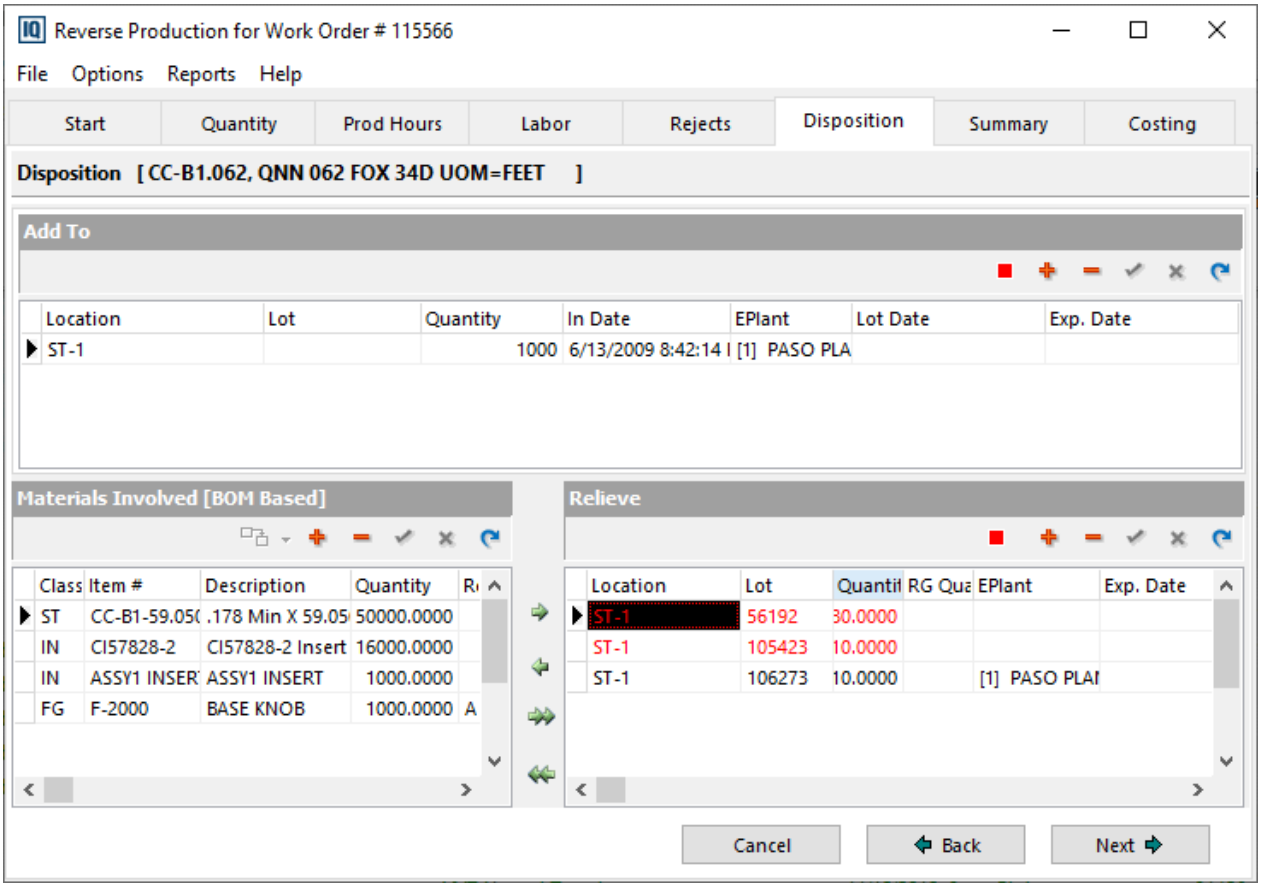
Once the Quantity screen appears, for non-SIC items the user will enter the quantity of production to reverse in the 'Good Parts' field, and enter a lot # if applicable.



For SIC items the Scan Serial tab will only display. Select the search button to access the list of serial numbers associated to the work order. Select the serial number(s) and press OK.



The Disposition form will show the manufactured product coming out of inventory and the materials involved will be added to inventory. During the reverse disposition users should not enter any reverse consumed materials. All this information will automatically come in based on the original disposition, including if they were hard allocated.

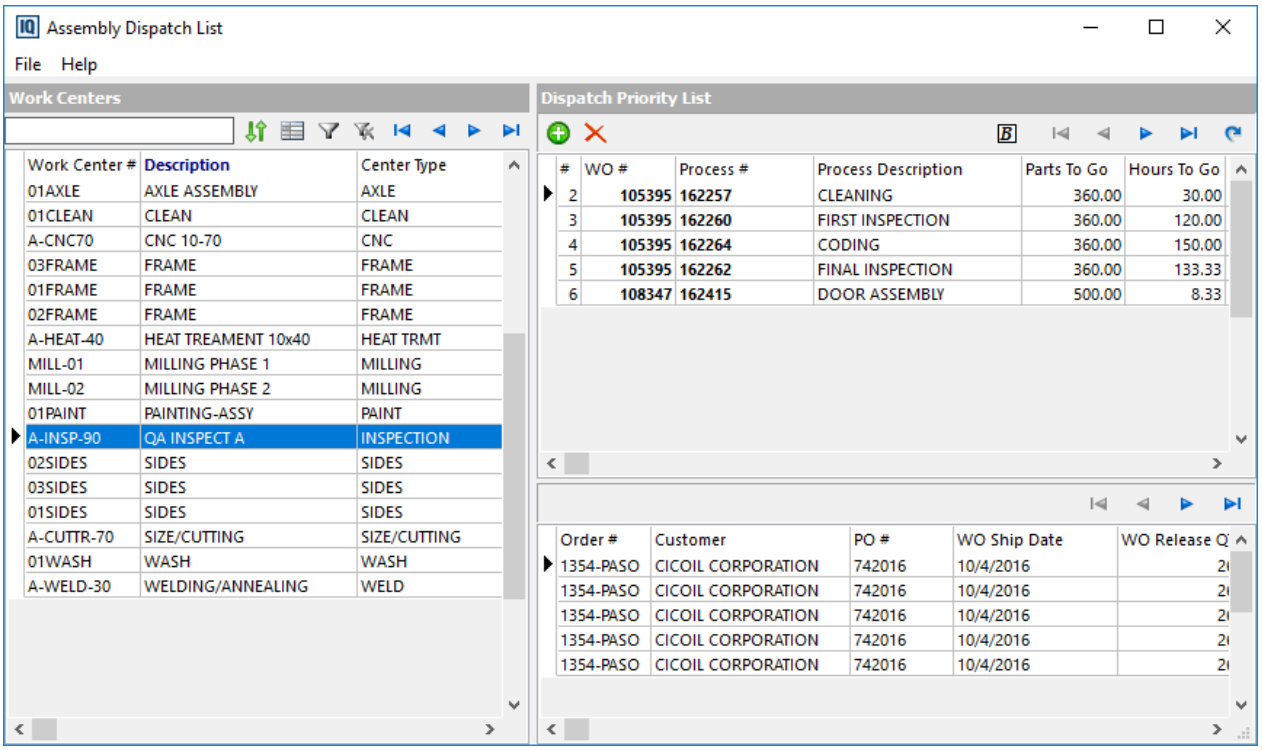


Dispatch Lists

Assembly Dispatch List

The Assembly Dispatch List allows the user to schedule a process to a work center dispatch list (not the actual work center schedule) in order to prioritize the processes to be run on a work center.

To access the Dispatch List select the speed button at the top of the Assembly Track form  .



The Left side of the form displays all of the ASSY1 work centers and includes the Work Center #, Description, Center Type, Mfg Cell, and EPlant ID.

The right side is the Dispatch Priority List where the user can select specific processes to prioritize on a work center. The top section displays the WO #, Priority Notes and process details such as parts to go and hours to go. If the process is finite scheduled the Process # column will be in Bold. If the Process is finite scheduled, the system will not allow a change in Seq #, Additions or Deletions. If the user attempts do any of these functions a message will display stating: "Work Center 'xxx' has processes scheduled in Finite Schedule. Jump to Schedule to make changes to the Finite Schedule." When a Process is added to the finite schedule it will also be added to the Assembly Dispatch List reflecting the finite schedule Seq #. If the finite schedule Seq # is reordered the Assembly Dispatch List will reflect the change in sequence. If the Process is deleted from the finite schedule it will also be deleted from the Assembly Dispatch List.

Upper Section Right Click Options:

- Jump to Work Order
- Jump to Schedule
- Jump to Process Maintenance
- Jump to BOM

The bottom section displays the sales order and customer details.

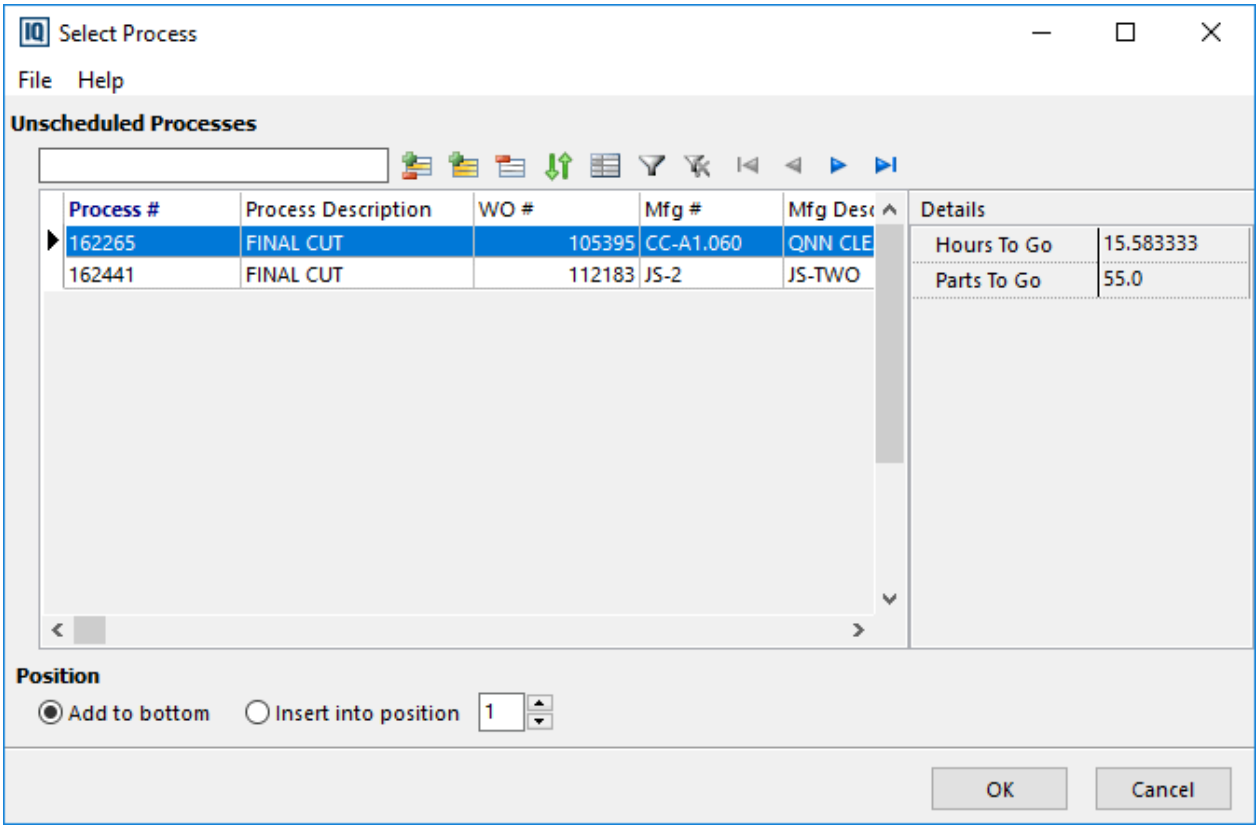
Bottom Section Right Click Options:

- Jump to Sales Order
- Jump to Inventory

Schedule a Process from the Dispatch List

If there are no processes finite scheduled a process can be added to the Dispatch List. If process have been finite scheduled all additions, deletions and changes must be done from Finite Scheduling.

To schedule a process highlight the work center on the left and then select the **Insert Process** button  . A list of unscheduled processes will appear. This list includes the item, process, and work order information. It also includes the Job Sequence number from the Sales Order release. This field can be used to inform the operators what parts they need to build and in what order they are needed. The Hours To Go and Parts To Go display on the right side of the form and populate based on the highlighted unscheduled process.



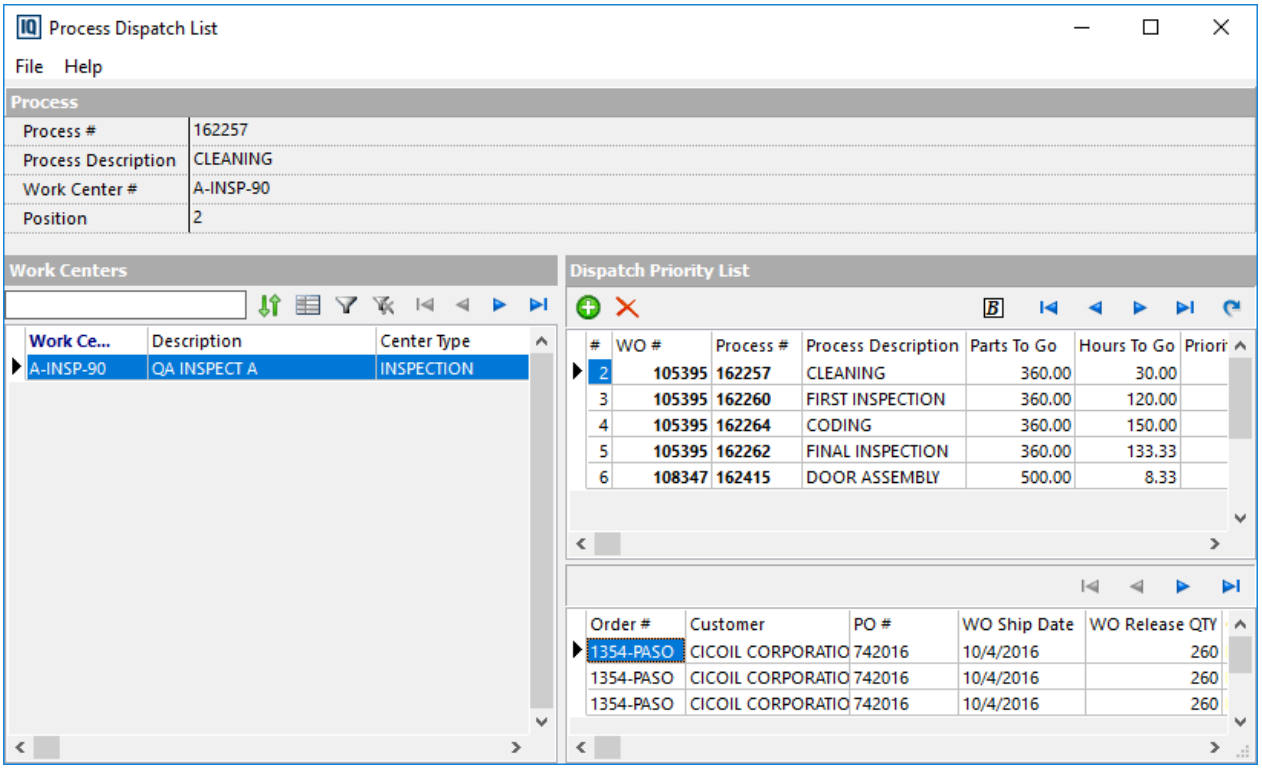
Highlight the process to be scheduled, or use the toggle buttons to multi-select several processes. Select the position using one of the options: Add to bottom or Insert into a position number. Select OK to add the them to the work center's dispatch priority list.

Each process is now scheduled on a specific work center in a specific position. The Dispatch List in AssemblyData will be updated to reflect the changes made here.

Once processes are scheduled on the dispatch list users can move them up or down to change their position in the list by dragging and dropping them with the mouse.

Process Dispatch List

From the middle section of the Assembly Track form the user can right click and select **Dispatch List Priority** to access the Process Dispatch List. This differs slightly from the Assembly Dispatch List. The emphasis is on the specific process selected.



The **Process** section contains the Process #, description, Work Center # and Position where it is currently scheduled if applicable.

The **Work Centers** section lists the process's qualified work centers.

The **Dispatch Priority List** section displays the work order information including priority notes and sales order information for processes that are scheduled on the highlighted work center. If the process is finite scheduled the Process # column will be in Bold. If the Process is finite scheduled, the system will not allow a change in Seq #, Additions or Deletions. If the user attempts do any of these functions a message will display stating: "Work Center 'xxx' has processes scheduled in Finite Schedule. Jump to Schedule to make changes to the Finite Schedule." When a Process is added to the finite schedule it will also be added to the Assembly Dispatch List reflecting the finite schedule Seq #. If the finite schedule Seq # is reordered the Assembly Dispatch List will reflect the change in sequence. If the Process is deleted from the finite schedule it will also be deleted from the Assembly Dispatch List.

Upper Section Right Click Options:

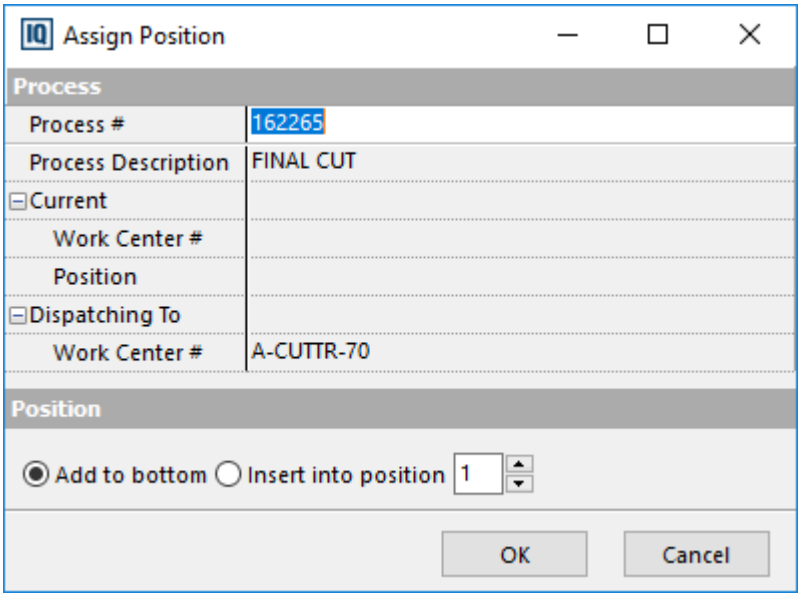
- Jump to Work Order
- Jump to Schedule
- Jump to Process Maintenance
- Jump to BOM

The bottom section displays the sales order and customer details.

Bottom Section Right Click Options:

- Jump to Sales Order
- Jump to Inventory

If there are no processes finite scheduled a process can be added to the Dispatch List. (If process have been finite scheduled all additions, deletions and changes must be done from Finite Scheduling). Processes can be scheduled similar to the method used in the Assembly Dispatch List. Highlight the work center you would like to schedule the process on and then select the Insert Process button. The **Assign Position** form will display to update the process's scheduled position.



This form displays the current work center and position if the process has already been scheduled. It also shows the work center the process is to be dispatched to. Select the new position by choosing 'Add to bottom' or 'Insert into position', and then select OK to dispatch the process to the selected work center and position.

This will update the Dispatch List in AssemblyData as well.

Assembly Track Options Menu

Various options are available from this menu. These options allow quick access to other related modules in the software.

Parameters

- **Auto Remove FIRM work orders** – With this checked the system will automatically remove completed firm work orders from the system. This is a global setting that can be turned on to look at firm work orders. If the firm work orders are completed and no longer scheduled on the finite schedule they will be removed during the update schedule process. This global setting can be overridden at the work order level.
  - **Auto Archive Removed Firm Work Orders** - This is only available if the 'Auto Remove Firm work orders' is checked. During Update Schedule,the system will Archive and Delete the work order if this is checked.
  - **Include JobShop Based Work Orders** - Check this box to also auto remove firm work orders for JobShop work orders. If the check box is *not* checked update schedule will not delete any firm, completed work orders that are attached to a JobShop project. If a user attempts to delete a JobShop work order from the Work Orders module or from Assembly Track, an exception message, 'WO is attached to a Jobshop Project' with security on the OK button is raised.

- **Print Labels on Final Assembly –** If this option is checked it will be mandatory to print labels during Final Assembly. If it is not checked it will be optional to print labels. Note: This is a work station specific parameter.
- **Location is mandatory during Final Assembly** - If checked, when reporting final assembly through Assembly Track and AssemblyData, the system will ensure the Location field is populated. If the Location field is populated, the system will continue with Final Assembly. If the Location field is not populated, an error message will pop up: 'Mandatory field 'Location' must be entered - operation aborted', with an OK button. When OK is selected, the Final Assembly form remains open for the user to enter the location. If unchecked, entering a location is optional.
- **Do not set BOM & Inventory inactive** - For JobShop 2 - If this is checked the BOM and inventory will not be set to inactive when the JobShop project is archived.
- **Finite Scheduling tab - Fast Finite Schedule (do not adjust sibling processes)**
  - With this checked, during auto load scheduling of ASSY processes the system will not attempt to move out or recalculate sibling(s) scheduled on another work station. This speeds up the Auto load process. If this is not checked Auto Load may be very slow.
  - Also, without this checked Update Schedule may be very slow. When this is not checked the system will recalculate all the associated dependent processes which can increase the time it takes to update the schedule.
  - Note: For ASSY work orders the 'Backward Pass Late Work Orders' (Finite Schedule Parameter) will not run if this option is not checked.

Shop Setup

This takes the user to the Shop Calendar. See the Shop Setup section in the Introduction to the Basics.pdf or the EIQ.chm.

Rough Cut Capacity

This opens the Rough Capacity module in the standard format or the Whiteboard view. Rough cut capacity is defined at the total "time" consumed by your work orders. It does not assume all work orders have been scheduled. The system displays as much data as available, based on the work orders present in the system. The system uses the Shop Calendar to determine hours available. ASSY work orders are assigned to the work center type based on the Center Type field in the Process. If the job is not scheduled, the MFG cell is based on the BOM. If the job is scheduled, the MFG cell is based on the work center the job is scheduled on.

Note: Processes attached to a BOM must have center types with the same MFG Cell as the BOM in order for the system to calculate the rough cut capacity correctly. However, ASSY1 processes running as part of an assembly line (ASSY2) will be evaluated based on the processes center type and will ignore the MFG cell of the work center or parent BOM.

Additional Information:

Details of the Day is calculated:

(Process cycle time * Process Qty to complete) + setup hrs

Then the system breaks this into how many hours are left in each shift and sums the total

For example:

Process cycle time = 3 hrs, setup hrs = 1

Shop calendar has 3 shifts, 24 hrs/day, 5 days/week, each shift is 8 hrs

Process qty to complete = 37

(3*37) + 1 = 112 hrs

Then this value is broken out by each day. Right click on the WO/Process,to see this broken out by shift.

(For more information please see the Manufacturing manual or the online help).

Requirements

Four modules are available from this option: Material Exception List, Daily Projected Requirements, Daily Material Staging, and Daily Parts Projection. These are the same exception reporting tools available from the scheduling module. (For more information please see the Manufacturing manual or the online help).

Labor Capacity

This brings up the Labor Capacity module in the standard format or the Whiteboard view. This will display Labor Capacity for all MFG Types, but the user can select the filter button to only display labor capacity for the ASSY MFG Type. You can measure standard labor hours against the required hours to meet your schedule. This system can indicate, by week, day and shift, how many hours you normally have available and how many hours are currently planned. The planned hours are based on the work orders currently in the system.

For an ASSY MFG Type the user can utilize the shift information from Time and Attendance to populate the standard labor hours automatically. From Assembly Track select Options->Labor->Labor Capacity. Then select Standard Labor Capacity from the Options menu in Labor Capacity. Select the Filter button to show only the ASSY MFG Type. Highlight the MFG Type/Cell/Shift #/Employee Level combination to populate hours for and then select the Assign Hours Based on Time & Attendance Calendar button  . This will populate the standard hours from the Time and Attendance calendar for that record.

NOTE: In order for this to function the employees must be assigned a Department with a MFG Type and an employee level in Employee Maintenance, and be assigned to a Time and Attendance shift.

The following SQL can be executed in **IQAlert** on a weekly basis to populate the ASSY1 standard labor. (Substitute the correct ASSY MFG Type in the SQL for ASSY2 and ASSY3).

```
begin
   for v in ( select distinct rtrim(mfgtype) as mfgtype,
                                        mfgcell_id,
                                        emp_level_id,
                                        shift
                                  from std_labor
                                 where mfgtype in
                                        (select mfgtype
                                           from mfgtype
                                          where standard_mfgtype = 'ASSY1')
                                 or mfgtype = 'ASSY1')
   loop
      assy1_misc.assign_snd_labor_week_from_ta( v.mfgtype,
                                                v.mfgcell_id,
                                                v.emp_level_id,
```

```
                                                    v.shift );

   end loop;

end;

/
```

(For more information on Labor Capacity please see the Manufacturing online help. For more information on the set up please see the online help for Employee Maintenance and Time and Attendance).

Update Schedule

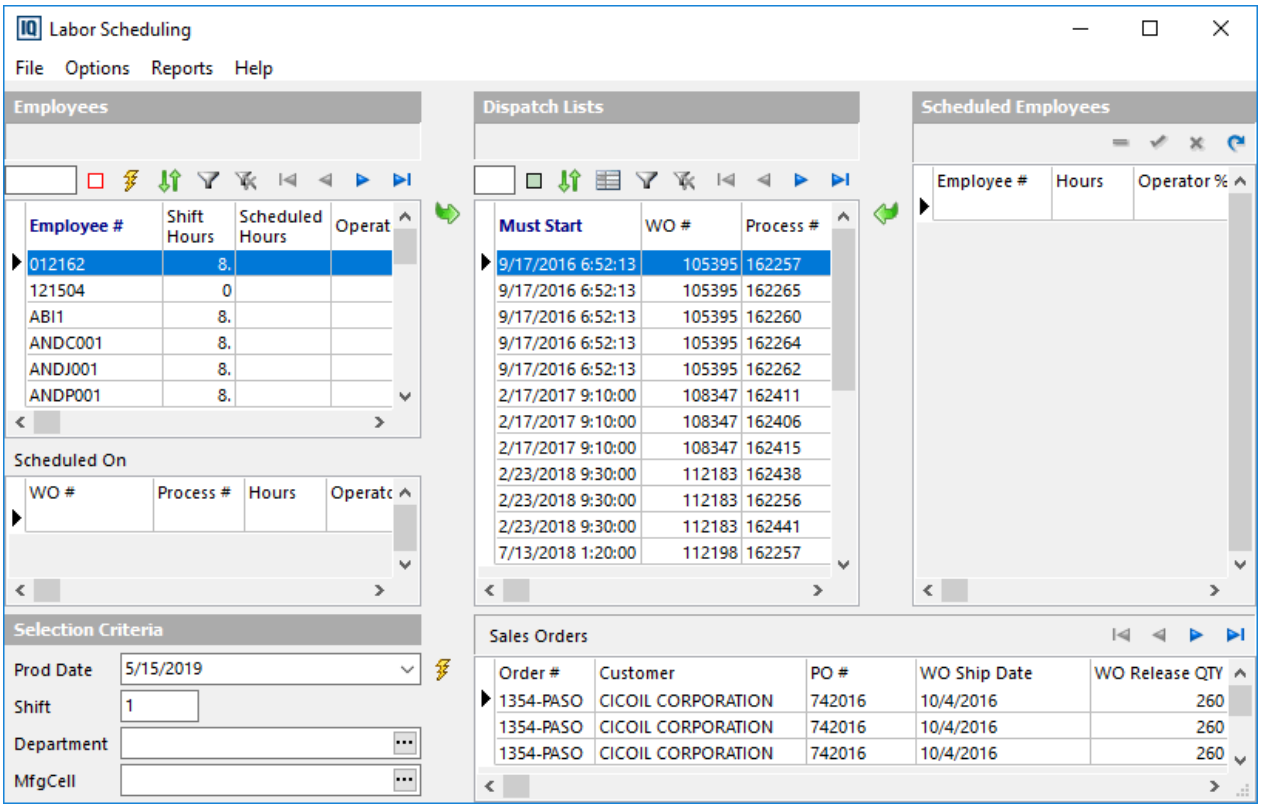
This option opens the MRP Engine where update schedule is run.

Note: If if work orders are deleted from Assembly Track while Update Schedule is running capacity planning will skip deleted work order and record the event in the Event Log.

Labor Scheduling

This option allows users to schedule employees on specific processes. It provides a view of which employee is scheduled on each process.

Note: This option functions in conjunction with Time and Attendance. Shifts must be created, and employees must be assigned to the shifts.



Selection Criteria

The bottom left section is where the selection criteria is entered. This criteria is used to populate the Employees section. The Prod Date and Shift default to the current date and shift. Once the information is entered select the 'Apply Criteria' button  .

Prod Date	The production date populates automatically with the system date but can be changed to a different date using the drop down calendar.
Shift	The current shift will display. To change the shift, type the information in this field.
Department	Select the Department from the pick list accessed by clicking on the ellipsis button.
Mfg Cell	Select the Mfg Cell from the pick list to further filter the employees.

Employees

This section will list the employees that match the entered criteria. The 'Scheduled On' section will display the WO/Process # the highlighted employee is scheduled on.

Check the '**Match process certification**' option to only show employees with a valid certification for the selected process. This option requires that the MFG Type's Process Certification be set to Certified Jobs. The system will check to see if the employee is certified for the job description associated to the process for the correct certification level.

Employee # / First Name / Last Name	These fields display the employee #, first name and last name.
Shift Hours	The number of hours on the shift.
Scheduled Hours	The number of hours the employee is currently scheduled on the shift. This is calculated based on the Hours and Operator % in the Scheduled Employees section. It is the sum of (Hours x Operator %) for all processes the employee is scheduled on. For example: If the employee is scheduled for 5 hrs at 30% on a process and 3 hrs at 75% on another, the Scheduled Hours = (5 x .3) + (3 x .70) = 3.6 hours
Operator %	The percentage the employee is scheduled. If this is greater than 100% the line will display with red text indicating they are **over capacity**.
Scheduled On	This section shows the WO #, Process #, Hours and Operator % the highlighted employee is scheduled on. There are two right click options: ▪ Jump To Process Maintenance ▪ Jump To Work Order

Dispatch Lists

This portion of the form shows the current dispatch list (processes) sorted by the must start date of the WO that they belong to.

Check the '**Match employee certification**' option to only show processes the selected employee is certified to be scheduled on.

Scheduling Labor – To schedule an employee on a process, highlight the employee in the Employees section of the form and the process in the Dispatch List that they are to be scheduled on. Then select the 'Schedule Employee' button  . The information will populate in the 'Scheduled Employees' and the 'Scheduled On' sections of the form.

Green line item - The line will turn green if the labor requirements have been fulfilled for the process. (If the scheduled hours = the required hours).

Must Start	Must Start Date of the work order the process is associated to.
WO #	Work Order #
Process # and Description	Process # and description.
Hours To Go	The number of hours to go. [Cycle time / multiple of / (yield/100)] * (WO Qty – Qty)
Parts To Go	The number of parts left to go. This is the same as the Qty to Complete in the middle section of Assembly Track.
Operator Hours	**Required** - The number of operator hours required for the process. (Hours to Go x # of operators required). **Scheduled** – The number of operator hours scheduled.
Operators	**Required** – The number of operators required for the process. **Scheduled** – The number of operators scheduled on the process.
Work Center #	The work center where the process is scheduled in Finite Scheduling. If null, the work center where the process is scheduled in the dispatch list displays.
Sales Orders	Below the Dispatch List section this form displays the sales order details for the highlighted process. This includes: Order #, Customer, PO#, WO Ship Date, WO Release QTY, Promise and Request Dates, and Item information. The user can right click form this section to jump to the sales order or inventory.
Process Projected Start and End Times	The projected start and end time of the process.

There are three right click options:

- Jump To Process Maintenance
- Jump To Work Order
- Jump To Work Center

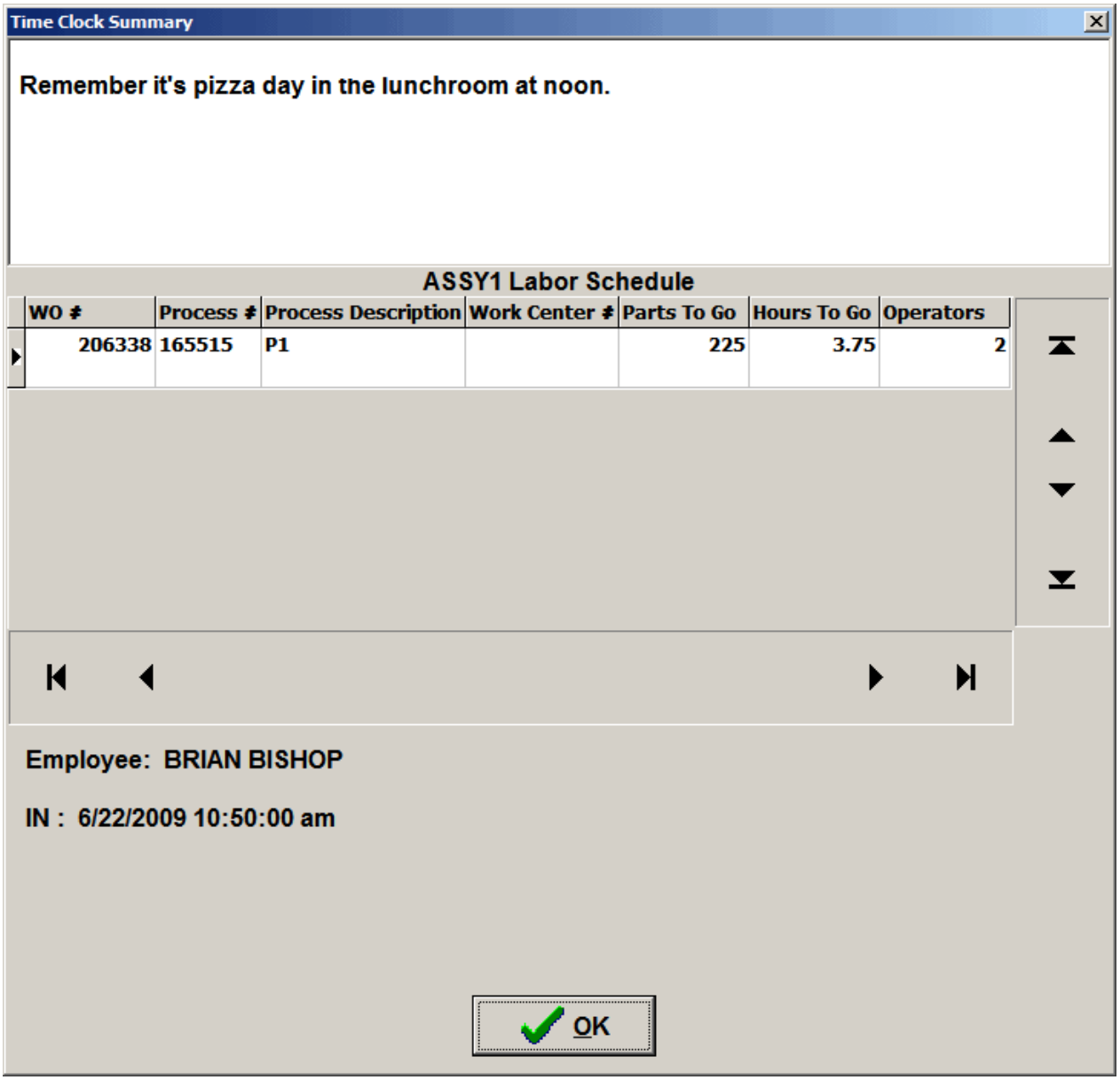
Scheduled Employees

This section lists the employees scheduled on the highlighted process.

Employee # / First Name / Last Name	These fields display the employee #, first name and last name.
Hours	The number of hours the employee is scheduled on the process. This will default to the number of required hours if it is less than the shift hours, otherwise it will default to the hours in the shift. This field can be manually overridden to enter the actual number of hours the employee is to work on the process.
Operator %	The percentage of involvement the employee is scheduled. This will default to 100%. This value can be overridden to a different percentage. This will update the Scheduled Hours in the Employees section.

Employee Messages:

As employees are scheduled, a Time & Attendance employee message will be created so when the employee clocks in, the dispatch information will be displayed, along with any other messages that apply to the employee.



Task Message Parameters – From the Options menu in Labor Scheduling there are two settings:

- **Message Display Time** – This option allows the user to determine the number of seconds the dispatch information will be displayed upon clocking in. This defaults to 30 seconds.
- **Print Scheduled Task Message** – This allows the employee to print the task message upon clocking in. The report that prints is the ASSY1 Labor Schedule report from System Parameters.

Finite Schedule for ASSY1

ASSY1 processes can be scheduled on the Finite Schedule if they are in Assembly Track. Select the Finite Manufacturing Scheduling button from the launcher bar. Select the ASSY1 MFG Type or pick a specific MFG Cell. The associated work centers will be available to select from. **Note**: Processes can also be scheduled by right clicking from Assembly Track and selecting 'Finite Schedule This Process'. (See the right click options in the Middle Section for details).

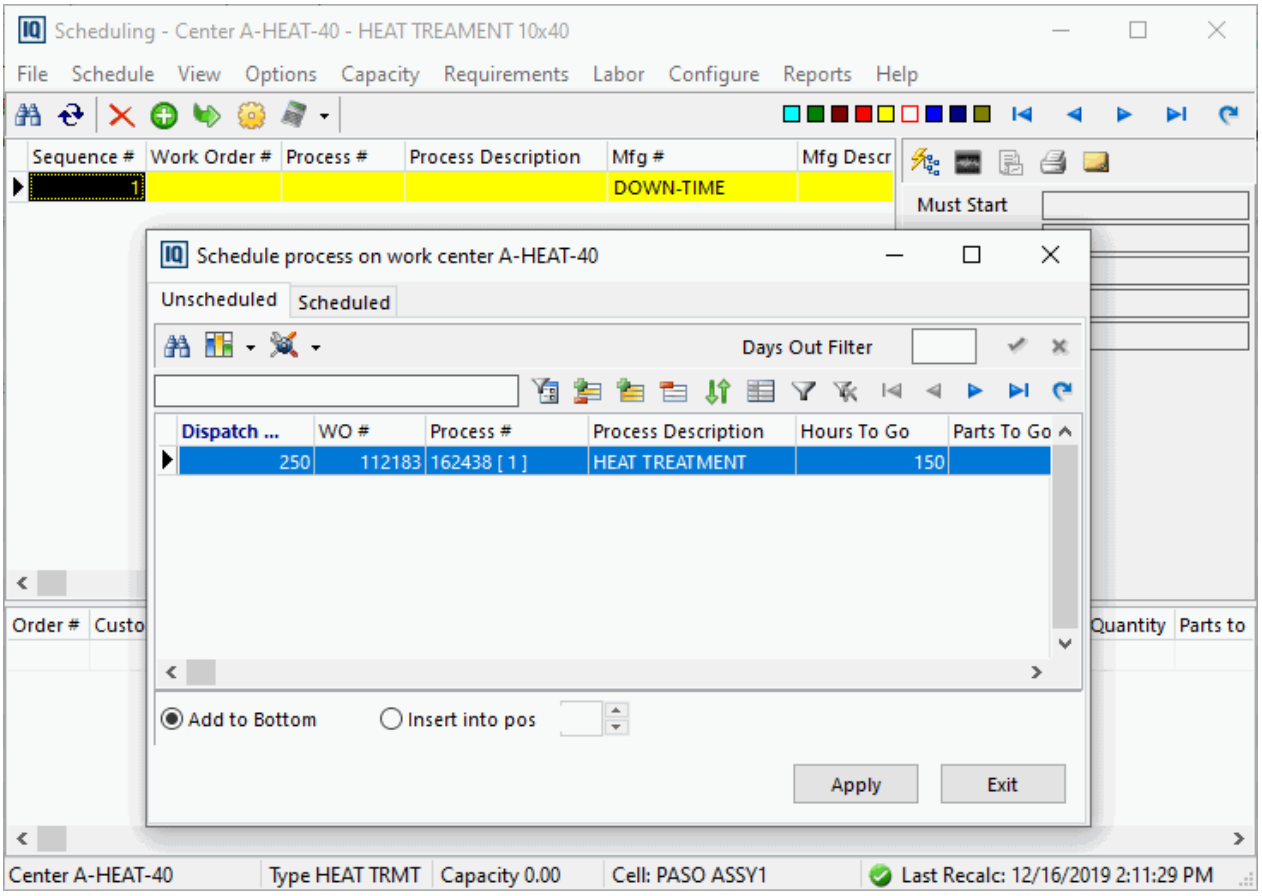
Right click and select '**Insert Job**'. A form listing the WO # / Process # will appear. The available fields in this form are: Dispatch ID, WO#, Process #, Process Description, Projected Start Time, Projected End Time, Mfg #, WO Must Start Date, Item #, Setup Hrs, Must Start, Ship Date, Group Code, Group ID, CSUSER1, CSUSER2, Customer Name, Description, Origin, Priority, Ship To Company, and WO Type.

The scheduling pool window contains all processes both currently scheduled and unschedule. Each group is displayed on a separate tab. Use the Unscheduled tab to see those processes needing to be scheduled.

By default this will only display processes where the work center is listed as a qualified work center for the process. Select the '**Override work center**' button to view all processes attached to a BOM based on the selected MFG Type/MFG Cell in Finite scheduling.

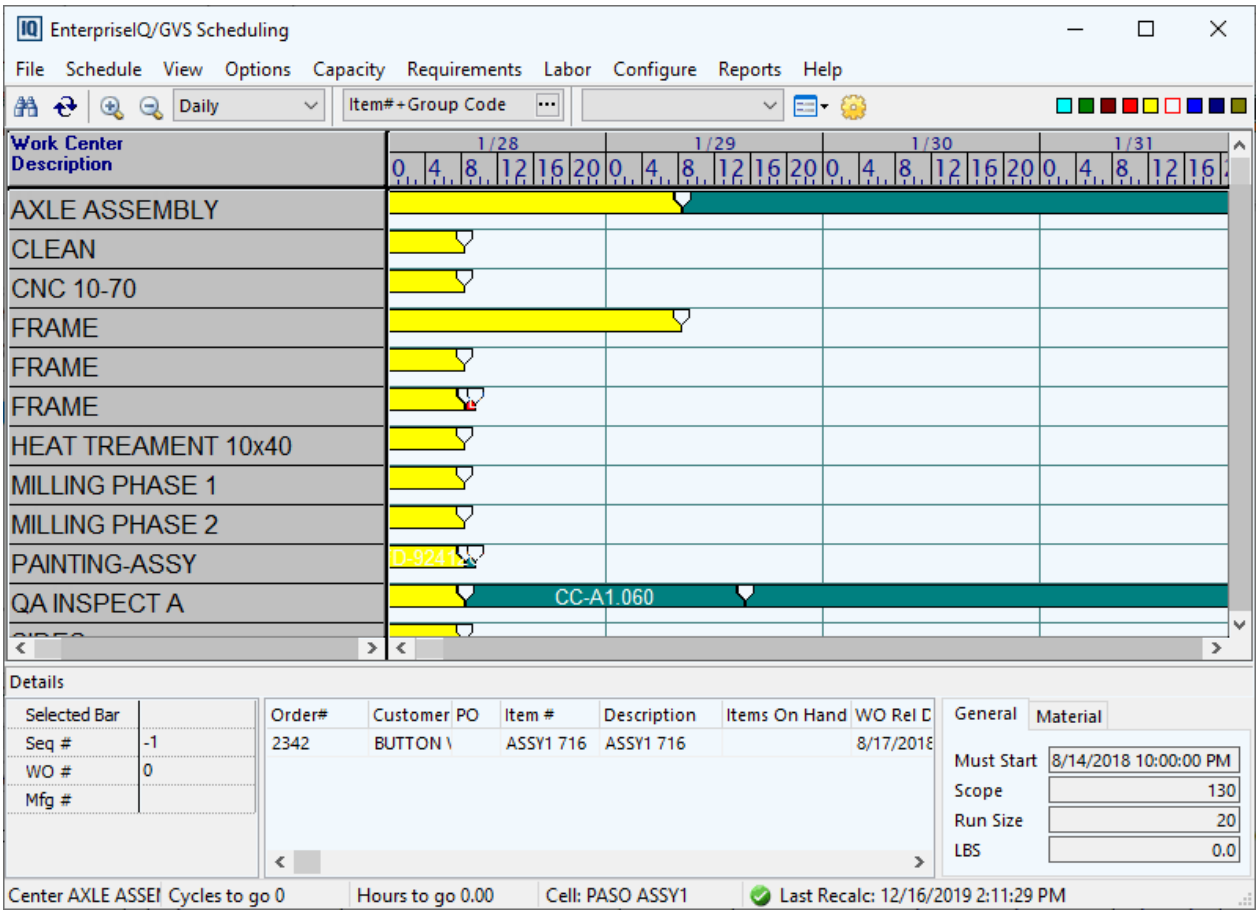
Highlight the process(es) to be scheduled. Multiple processes can be selected and scheduled using the toggle buttons. Select the 'Add to Bottom' or 'Insert into pos #' option to add the process to the schedule. Once a process has been scheduled in the finite schedule module it will display in bold in Assembly Track.

Finite scheduling is color coded based on process production start date vs. process must start date. In the Scheduling window, the must start date will reflect the process must start date. In the top right order of Scheduling is the work order must start date.


Scheduling - Center A-HEAT-40 - HEAT TREAMENT 10x40
File Schedule View Options Capacity Requirements Labor Configure Reports Help
Sequence # Work Order # Process # Process Description Mfg # Mfg Descr
1 DOWN-TIME
Must Start
Schedule process on work center A-HEAT-40
Unscheduled Scheduled
Days Out Filter
Dispatch ... WO # Process # Process Description Hours To Go Parts To Go
250 112183 162438 [1] HEAT TREATMENT 150
Add to Bottom Insert into pos
Apply Exit
Order # Custo
Quantity Parts to
Center A-HEAT-40 Type HEAT TRMT Capacity 0.00 Cell: PASO ASSY1 Last Recalc: 12/16/2019 2:11:29 PM

When an ASSY1 process is scheduled on a work center in finite scheduling, the projected start and end times in the middle grid of Assembly Track will be updated based on the start and end times in scheduling. The projected end time in the upper grid is calculated by taking into account all of the production start and end times of the processes.

The Graphic view is also available for ASSY1 Processes. Users can change the GVS WO Caption to include the Process # and Process Description. Materials associated to processes are shown on the Material tab in the lower right where a Jump to Inventory is available.



Additional Scheduling Pool Options

Days Out Filter - The scheduling pool can be limited to only view jobs where the must start date is so many days from today. This filter will help speed up the insert pick list. To filter the list to include only work orders for a certain time frame enter in the number of days out in the Days Out Filter field. The list will then display only those processes that have a must start date within that period or are past due. For example if you set the Days Out Filter to 7, the list will only display processes with a must start date that is prior to today through seven days from today's date.

Runs the Best - The user can obtain "Runs the Best" information by clicking on the button located in the upper left portion of the screen  . Doing so will bring up the Runs the Best list for the process. Select the drop down arrow next to the runs the best speed button to filter the scheduling pool to only show those processes that have the target work center in their runs the best list.

Authorized Work Centers

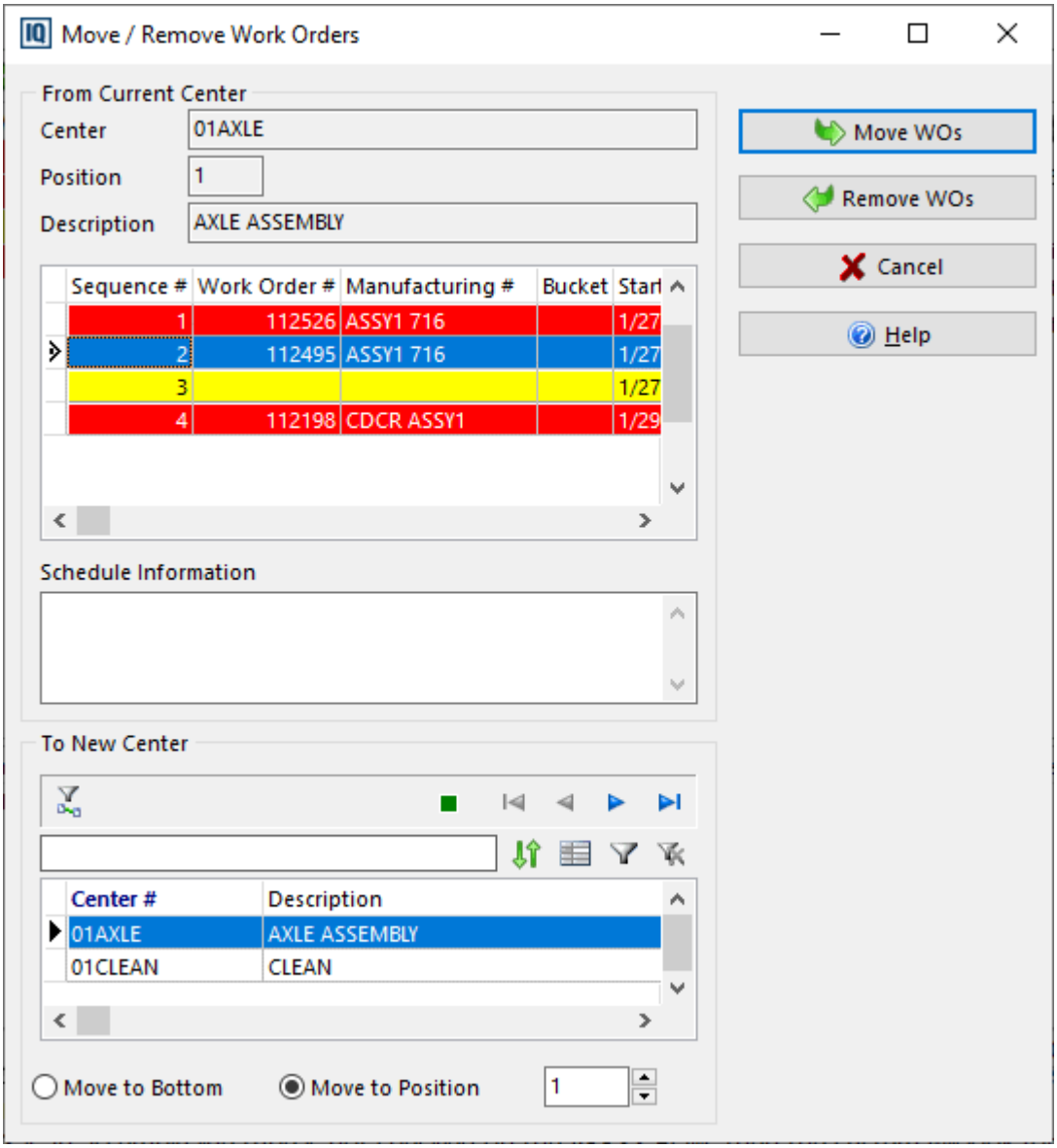
- Display Authorized Work Center - Click on the Authorized Work Centers button to display the Authorized Work Center list for the highlighted process. This displays all work centers that are associated to the EPlant and Manufacturing Type that are associated to the Process on the work order. Work centers that are authorized for the BOM will have a check in the Authorized box. When this form is accessed from the Scheduling Pool changes cannot be made. The toggle buttons are visible but the right click options to check and uncheck are grayed out. To make changes users must access it from the Process Maintenance module.
- Filter Authorized Work Center - The user can select the drop down arrow next to the Authorized Work Center speed button to filter the scheduling pool to only show those processes that have the target work center in their Authorized Work Center list.

Note: Users can filter on both Runs the Best and Authorized Work Centers at the same time. The 'Override Center Type' option takes precedence and will override the work centers that are displayed.

Search – Select the Search button to bring up a pick list of processes. You can also search for any process by typing information in white box in the upper portion of the scheduling pool screen. The cursor will go to the first record that matches the typed information based on the sort field. You can sort this list based on any of the columns. Note that the sort criteria currently set displays as a blue header in the grid immediately below. Right click anywhere within the form and select the desired field to sort on.

Move a process - When moving a process on the schedule the move form will default to show only work centers that are qualified to run this process. Runs the Best work centers will be highlighted in green. The user can select the override button to show all work centers.

Note: The move option will not be available for processes associated to ASSY2 BOMs.


Move / Remove Work Orders
From Current Center
Center
01AXLE
Position
1
Description
AXLE ASSEMBLY
Sequence #
Work Order #
Manufacturing #
Bucket
Start
1
112526
ASSY1 716
1/27
2
112495
ASSY1 716
1/27
3
1/27
4
112198
CDCR ASSY1
1/29
Schedule Information
To New Center
Center #
Description
01AXLE
AXLE ASSEMBLY
01CLEAN
CLEAN
Move to Bottom
Move to Position
1
Move WOs
Remove WOs
Cancel
Help

Auto Load - Processes can be automatically loaded onto the schedule by using Auto Load function. Auto Load for ASSY1 items is based on the process must start date. Work centers do not need to be setup on the process in order for Auto Load to work. When running auto load, if Runs the Best or Qualified Work Centers are not setup on the process, the system will look at the center type associated to the process and schedule the job on a work center with the same center type as the process. If a center type is not associated to the process, the system will look for a work center that is an ASSY1 MFG type or like an ASSY1 (a user defined ASSY1 MFG type). (This also applies to the ASSY2 MFG Type. For ASSY3 if an assembly line type is not specified on the ASSY3 BOM, then the system will look for a work center that is ASSY3 MFG type or like ASSY3).

The auto load routine will look for the best fitting gap where the process will not be late. If a gap is not found, the process will be scheduled at the bottom of the work center.

Auto Load can be run from the scheduling module or from Assembly Track.

To run Auto Load from Assembly Track select on of the options from the Auto Load speed button  .

- Auto load non scheduled processes - This option auto loads all non scheduled processes for the selected work order.
- Remove from schedule and autoloader - This option removes scheduled processes from the schedule for the selected work order and auto loads them. This is useful in situation where process parameters have been modified.
- Remove from Schedule - This will remove the processes from the schedule for the selected work order. Note: Processes/Work Orders scheduled in the 1st position in Finite Scheduling will not be removed from the schedule.

Scheduling Notes:

When 'Snap To Last Job' is checked, the system will schedule the processes you are moving, adding, or editing to start directly after the process in front of it. Basically, it “snaps” to the back of the previous process. This setting is global but can be overridden at the work center level from the Work Centers module or from the 'Snap To Last Job' form accessed from the Configure menu in Scheduling. In addition, if 'Snap to Last Job' is enabled for ASSY MFG Types, it is possible for the processes to run "out of sequence".

Safety Lead Time is not considered when auto loading an ASSY MFG Type work orders.

The ‘Evaluate Negative Consumption’ option in Scheduling must be utilized in order for the system to calculate the Must Start times correctly for dependent processes. If dependent work orders are found to be out-of-sync for Must Start dates in Scheduling and the middle grid of Assembly Track, users should either remove these work orders from both Scheduling and Assembly Track and then re-load them, or alternatively users can manually change the Start Time of dependent orders in the top grid of Assembly Track to get the Must Start times back in sync for the dependent processes.

Processes for ASSY1 work orders that have been added to the Finite Schedule only show the work order # in red to show a material exception if the material is on that process and not a different process on the work order.

When a Process is added to the finite schedule it will also be added to the Assembly Dispatch List reflecting the finite schedule Seq #. If the finite schedule Seq # is reordered the Assembly Dispatch List will reflect the change in sequence. If the Process is deleted from the finite schedule it will also be deleted from the Assembly Dispatch List. If the Process is finite scheduled the system will not allow a change in Seq # or Deletions from the Dispatch List.

Update Schedule and Auto Load may take a long time when there are many processes associated to work orders. There is a parameter in Assembly Track->Options menu called 'Fast Finite Schedule (do not adjust sibling processes)'. With this checked, during auto load scheduling of ASSY processes the system will not attempt to move out or recalculate sibling(s) scheduled on another work stations, and it will not recalculate all the associated dependent processes which can increase the time it takes to update the schedule.

Move Qty plus the Move Time Hrs will be added to following process even if the full Move Qty was reported in Labor Reporting. For example: ASSY1 BOM with 2 processes: Process 1 has a Cycle Time of 1 Hour, Move Qty of 4, and Move Time of 1, and Process 2 has a Cycle Time of 1 Hour and does not have Move Qty or Move Time. Prior to reporting any labor/good parts, the projected start of Process 2 will start 5 hours after Process 1 starts (4 * 1 + 1). After reporting 4 good parts and running update schedule, the Move Qty + Move Hrs are still added to the following process.

For ASSY1 work orders scheduled in the first position of a RealTime™ work center the parts to go and hours to go are updated based on RealTime™. If the work order is not placed on a RealTime™ work center in the first position, the parts to go and hours to go will reduce based upon reporting Good Parts on the process in Assembly Track. However, the hours to go will not always match the projected start and end times of the process. The hours to go represents the actual time to produce the parts. The projected start and end times take into consideration slack time. Slack time is the idle time needed before the process can continue. Any time there is a process with a faster cycle time than the one before it, there will be slack time gaps in that process. This is because the process has to wait for parts from the previous process to be produced before it can continue. See the examples below:

Example 1

- Shop Calendar - 24 hrs/day
- All processes have the same cycle time of 1 hour
- Hours to go match projected start/end

Process Details	Hours To Go	Projected Start Time	Projected End Time	Work Center #
162678	10.00	4/8/2021 12:28:55 PM	4/8/2021 10:28:55 PM	322524.1
322524.1				
162679	10.00	4/8/2021 10:28:55 PM	4/9/2021 8:28:55 AM	322524.2
322524.2				
162680	10.00	4/9/2021 8:28:55 AM	4/9/2021 6:28:55 PM	322524.3
322524.3				
162681	10.00	4/9/2021 6:28:55 PM	4/10/2021 4:28:55 AM	322524.4
322524.4				

Example 2

- Shop Calendar - 24 hrs/day
- Processes 1, 3, and 4 have a 1 hour cycle time. Process 2 has a 30 min cycle time

Process Details	Hours To Go	Projected Start Time	Projected End Time	Work Center #
162678	10.00	4/8/2021 12:28:55 PM	4/8/2021 10:28:55 PM	
322524.1				
162679	5.00	4/8/2021 10:28:55 PM	4/9/2021 8:28:55 AM	
322524.2				
162680	10.00	4/9/2021 8:28:55 AM	4/9/2021 6:28:55 PM	
322524.3				
162681	10.00	4/9/2021 6:28:55 PM	4/10/2021 4:28:55 AM	
322524.4				

Hours to go cannot match projected start/end because the process has to wait for parts from the previous process to be produced before it can continue

Example 3

- Shop Calendar - 2 shifts; 20 hrs/day
  - Shift 1 start: 00:00:00
  - Shift 2 start: 10:00:00
- All processes have the same cycle time of 1 hour

Process Details	Hours To Go	Projected Start Time	Projected End Time	Work Center #
162678	10.00	4/8/2021 12:58:03 PM	4/9/2021 2:58:03 AM	322524.1
322524.1				
162679	10.00	4/9/2021 2:58:03 AM	4/9/2021 12:58:03 PM	322524.2
322524.2				
162680	10.00	4/9/2021 12:58:03 PM	4/12/2021 2:58:03 AM	322524.3
322524.3				
162681	10.00	4/12/2021 2:58:03 AM	4/12/2021 12:58:03 PM	322524.4
322524.4				

Hours to go cannot match projected start/end because the shop calendar is not 24hrs/day. In this example, the jobs stop at 8:00:00pm and then continue the following day when shift 1 starts

Example 4

- Shop Calendar has 1 shifts, 8 hr/day, 5 days a week
  - Shift 1 – 00:00:00 – 8:00:00AM

Create an ASSY1 BOM with two processes:

- Process 1 - 1 hr cycle time; Move Qty = 1; Move Time = 6
- Process 2 - 1 hr cycle time

Create a work order: Quantity = 10; Delivery date = 3/29/2021

Add the work order to Assembly Track

Process Details	Hours To Go	Projected Start Time	Projected End Time
162678	10.00	3/24/2021 7:00:00 AM	3/26/2021 1:00:00 AM
322524.1			
162679	10.00	3/25/2021	3/26/2021 8:00:00 AM
322524.2			

Move time hours does not look at the shop calendar. Move time hours continues even after the shifts end. Therefore the next process start will be the next available working shift time.

For more information on finite scheduling please refer to the Scheduling section of the help files.

Finite Schedule for ASSY2 and ASSY3

ASSY2

ASSY2 work centers have each process finite scheduled like ASSY1 processes except only the work centers that are attached to the assembly line are available for auto loading. The system first determines the Assembly Line based on the first process and then limits the available work centers to those assigned to the assembly line.

For example:

Setup: ASSY2 BOM has 3 processes.

Process	Welding	Painting	Finishing
Work Centers:	Weld A	Paint A	Finish A
	Weld B	Paint B	Finish B
	Weld C	Paint C	Finish C

3 assembly lines exist:

Assembly Line:	Line A	Line B	Line C
Work Centers:	Weld A	Weld B	Weld C
	Paint A	Paint B	Paint C
	Finish A	Finish B	Finish C

The first process is finite scheduled to work center 'Weld B'. When the user schedules the second process, only the work centers associated to the Assembly Line B will be available for scheduling. In this example the user would just see 'Paint B'.

ASSY2 processes cannot be moved. The user must un-schedule the processes and reschedule them to the desired work center.

ASSY3

For ASSY3, the work orders (not processes) are scheduled on the Assembly Line. ASSY3 process cannot be scheduled.

RealTime for Assembly Manufacturing

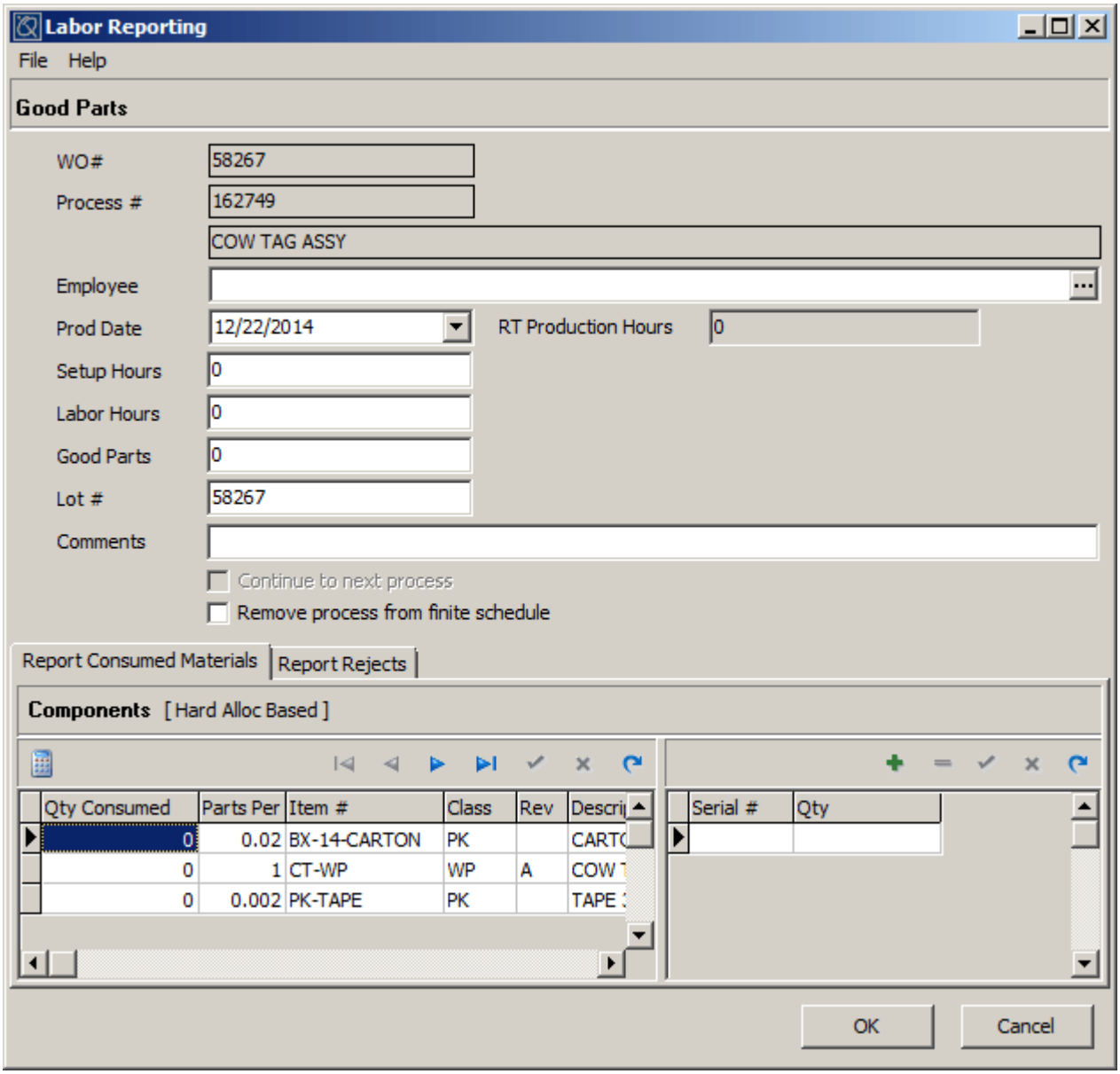
If the ASSY MFG Type work centers are connected to the RT Server, users can view the information from the RealTime Production Monitoring module as with all other MFG Types.

The various views, such as Part Numbers, Work Orders, etc will include the Process # and Process Description.

Note: For ASSY1 work orders, the Parts to Go, Cycles Left and Hours to Go fields on the RealTime Production Monitoring screen will count down based on cycles.

There are two right click options that are only visible for the ASSY type manufacturing:

- Jump to Process Maintenance - This jumps to the Assembly Process Maintenance form for the process currently running.
- Process Labor Reporting - This will access the Labor Reporting form to enter labor hours, good parts, etc. This form includes a field for RT Production Hours. It will only surface when the Process is or has run in RT Monitoring. The system will calculate the number of production hours and good parts that have taken place since the last time this process was reported on. On posting the Labor Reporting record ILLUM_RT.PRW_TOTAL_UP_PROCESSED and ILLUM_PART.PRW_TOTAL_QTY_PROCESSED will be updated. See Labor Reporting for more information.



For more information on RealTime refer to the RealTime section of the help files, or access the RealTime pdf from MyDELMIAworks.

Assembly Track By Group and Associated Modules

This module displays information similar to Assembly Track but by center type and group. Once released from the Scheduling Sandbox, groups will be populated in the Assembly Track By Group. This screen will allow for the ability to see by group and center type what the status is for any Group, Work Order and Process.

Note: A license is required for this module.

The basic flow:

- Update schedule is run and work orders are generated.
- In the Unassigned tab of the Grouping ID Assignment module ASSY work orders will be listed. Note: Only work orders associated to a BOM with a Grouping Process (Grouping Process box checked on the Item Details->Details tab) will display. From this module users can group work orders based on their needs. For example, different items all required on the same date and use the same center type.
- Once work orders are selected to be in a group the scheduler can adjust the center type if needed.
- Once the information has been entered/verified users select the Apply button to add the group to the Assigned tab.
- The assigned groups are then available to add to the Assembly Track Sandbox module.
- From the sandbox schedulers can Publish the group to the Assembly Track By Group module.

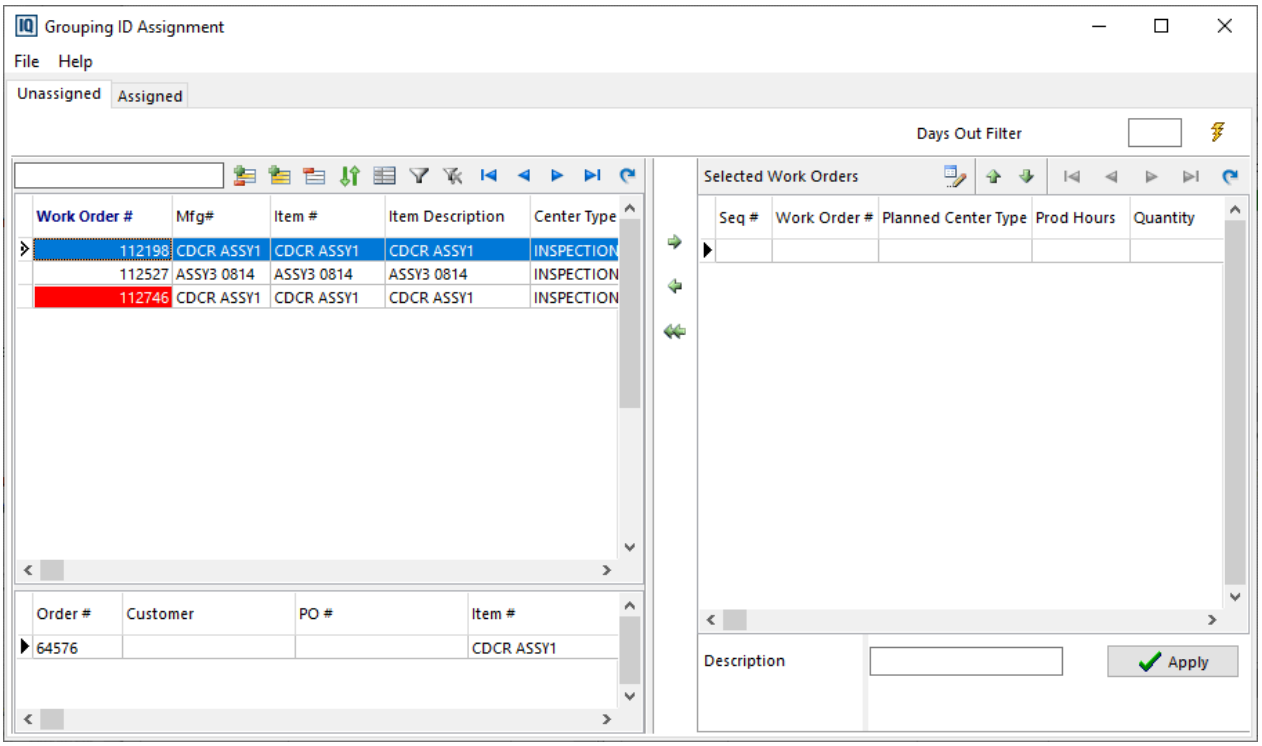
Schedulers will have three main areas to work from:

- Grouping ID Assignment - From this module schedulers will take work orders and group them together based on their business rule criteria.
- Scheduling Screen Sandbox -This is a scheduling tool similar to finite schedule and the insert job pool, but instead of the work orders being added to work centers, Groups from the assigned tab populated during Grouping will be added to a Center Type. The center type will show groups that have already been added to the center type. Existing groups that have had an employee clock into the first process ('Initiated Group') are displayed but cannot be moved. All other groups can be adjusted accordingly.
- Capacity Screen - This module shows bucketed hours based on the final assembly process hours: Initiated Group Hours are the hours left on currently started Groups, Planned Group Hours are the hours that are existing in the Center Type Schedule but have not been initiated yet, Unscheduled Group Hours are the groups in the insert group pool that have not been placed in the schedule yet, and Standard Hours are the hours available per center type based on standard labor capacity. There is the ability to filter and select certain Center Types to be listed on the Capacity Whiteboard. Each center type will display with the bucketed hours. A grand total of the selected center types will be displayed at the bottom.

Grouping ID Assignment

This module is used to create groups of work orders to be added to the Assembly Track By Group screen. This is accessed by clicking on the Group ID Assignments button at the top of the Assembly Track By Group module  . The screen includes two tabs:

- Unassigned -This will display ASSY work orders that have not been assigned to a group. Only work orders associated to BOMs with a process that has the Grouping Process box checked will display.
- Assigned - This will display work orders that have been assigned to a group.



Unassigned Tab

Alphabetical Field Listing for Top Left Section:

Bucket	Work Order bucket number, if applicable.
Center Type	Default Work Center Type associated to the process marked 'Group Process'.
Customer Name	Customer associated to the work order.
EPlant ID	EPlant ID associated to work order.
Group Code	Group Code ID associated to the inventory item. A Group Code can be assigned to inventory items on the Additional tab in the Inventory module.
Item #	Item number
Item Description	Item Description
Item Ext Description	Item's extended description
Mfg Cell	Manufacturing cell associated to the work order.
Mfg Type	Manufacturing Type associated to the work order.
Mfg#	Manufacturing number associated to the work order.
Multiple Of Exception	This box will be checked if the quantity is less than the selling multiples of. This is so that orders not equating to a selling multiples of can easily be seen and grouped together.
Must Start	The must start date of the work order.
Origin	Indicates where the Work Order was created from. Either from a Sales Order (Planned), the Forecast module (Forecast), or Manual.
Quantity	The quantity of the work order. This field will be blue if the quantity is less than the selling multiples of.
Revised Center Type	This will display the revised work center type if it has been changed from the default. This field can be changed by selecting a different center type from the pick list accessed by clicking the ellipsis button in the field.
Revision	Item's revision
Ship To ID	Ship To ID associated to the work order.
User Fields	User 1 and User 2 fields from the BOM.
WO Type	WO Type, i.e. Firm

Work Order #	Work Order number. This field will be red if there is a material exception on the work order.

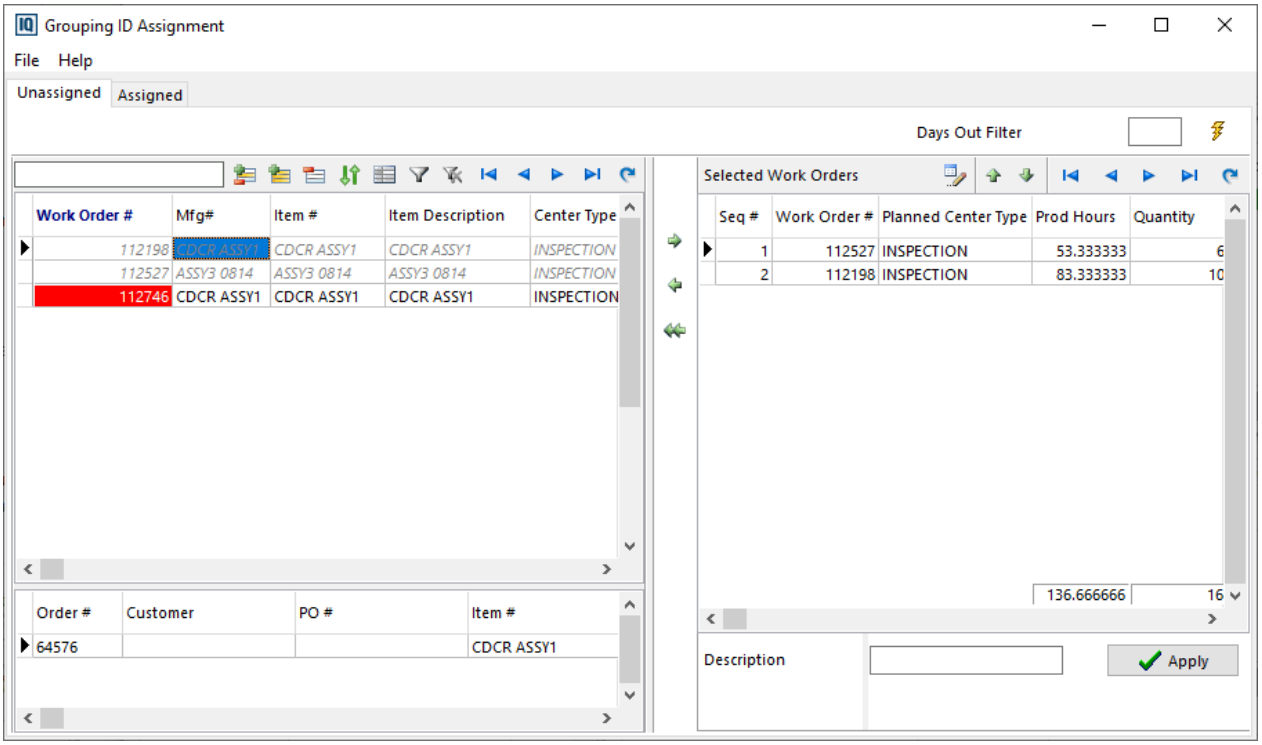
Jump To Work Order - Right click and select Jump To Work Order to access the highlighted work order.

Lower Left Section

This section will display the sales order information for the highlighted work order. This includes field such as: order #, customer, ship to, and release information such as quantity and promise date.

Grouping Work Orders

Users can sort the top left grid using any of the fields to help with logical grouping. Use the Shift/Ctrl keyboard button or the toggle buttons to select work orders to be grouped together. The 'Days Out Filter' can be used to filter the top left grid to only include work orders where the must start date is so many days from today. Once the desired work orders are selected use the 'Add to selected work orders' green arrow button to add the work orders to the 'Selected Work Orders' side. The work orders that have been added to the right side will display in light italicized text in the left grid.



Note: Users are prevented from opening the Group ID Assignments form if Update Schedule is running, a shared lock warning will appear.

Note: When the Grouping ID Assignment Form is already open and update schedule is run a pop up will appear on the Group ID Assignment form stating, 'Please be advised Update Schedule is currently running, this form must be closed'. Upon hitting OK the form will close. Update schedule will run correctly even if the OK button is not hit.

Right Grid Field Listing:

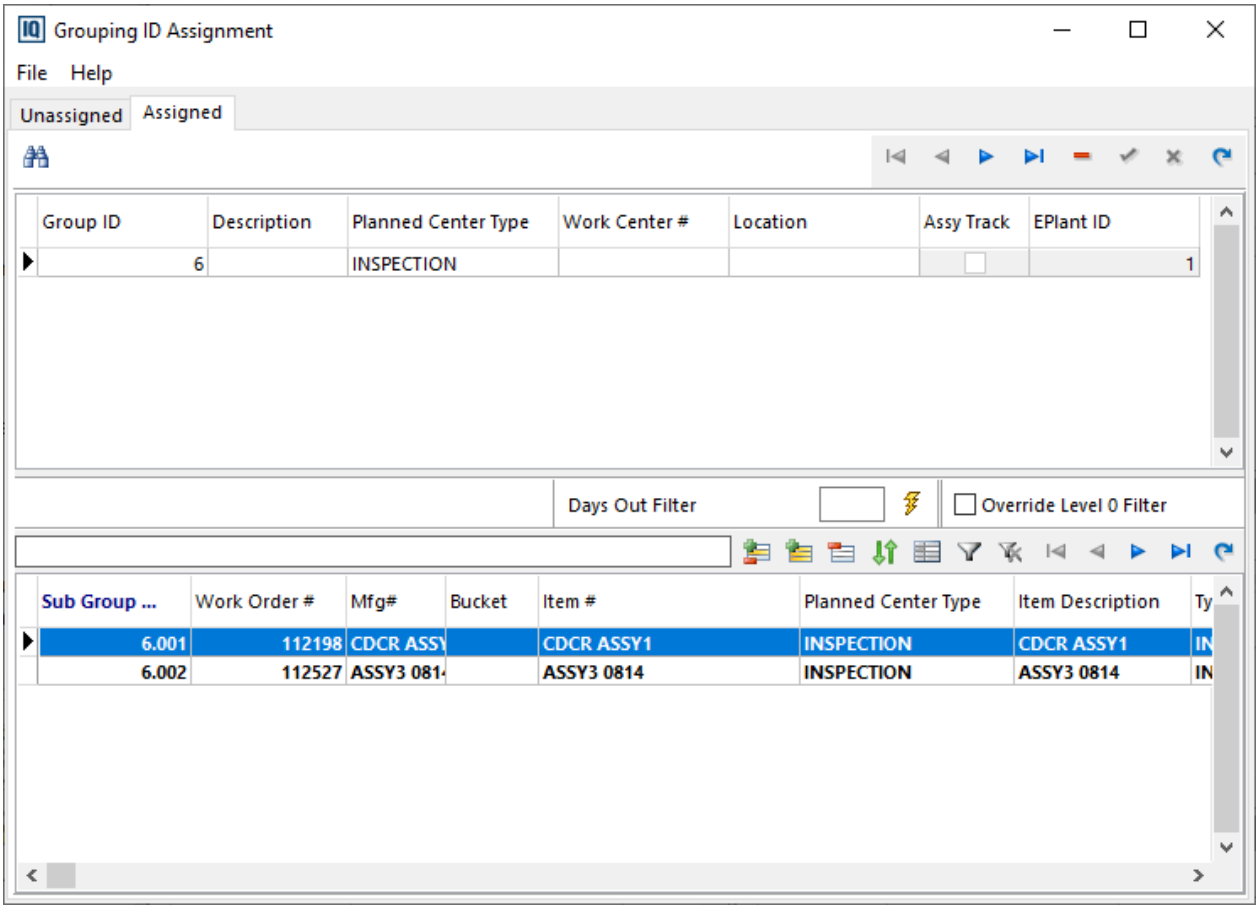
Bucket	Work Order bucket number, if applicable.
Customer Name	Customer associated to the work order.
Group Code	Group Code ID associated to the inventory item. A Group Code can be assigned to inventory items on the Additional tab in the Inventory module.
Planned Center Type	Planned Work Center Type associated to the process. This will carry over from the Center Type field or the Revised Center Type if populated. This can be changed for all work orders at once by clicking the 'Assign plan center type' button  . After selecting this button choose a center type from the pick list. The Planned Center Type for all of the listed work orders will change to the selected one.
Prod Hours	The work order production hours. This is summed at the bottom of the grid and can be used for information to determine capacities.
Quantity	The work order quantity. This is also summed at the bottom of the grid.
Seq #	The sequence number of the work orders. The sequence can be changed using the up/down arrows or by dragging and dropping.
Ship To ID	Ship To ID associated to the work order.
User Fields	User 1 and User 2 fields from the BOM
Work Order #	Work Order number. This field will be red if there is a material exception on the work order.

Description Field - This is an optional field that can be used for any notes to describe the group or for messages to the floor such as priority.

Apply

Once the information has been entered and verified select the Apply button to assign the work orders to the group. A confirm message will appear stating the Group ID to be assigned to the work orders. Select Yes to continue, or No to return to the module with no changes. When Yes is selected the system will assign a group ID to the group, move the group of work orders to the Assigned tab, mark the work orders Firm, set the workorder number as the lot number for each workorder assigned to the group, and check the 'Retain Assigned Lot # for this Work Order' box for the FG Lot # on the work orders.

Assigned Tab



The Assigned tab displays the Group information in the upper grid and the associated work orders in the lower grid.

Upper Grid

Assy Track	This box will be checked if the group has been added to Assembly Track By Group.
Description	The description of the group if one was entered.
EPlant ID	EPlant ID of the group.
Group ID	Group ID.
Location	If using the SuperMarket module the Location is selected during the SuperMarket picking and will populate in the Group Section Grid. The Location will show in Red until the Supermarket process for the entire group is reported in full (100%) and users have tasked out of this group process. Once complete and logged out, the location will display in green. It is an indicator that the group is available for dispatch. If there is no location it means the group is not ready yet. Note: The SuperMarket is a separate module that allows users to pick components in the 'Supermarket' (the Warehouse). This module allows the ability to Task In to a group and pick the required component parts needed for the group of work orders selected. Users can gather the required parts, organize them, report time spent to perform the picking function, and backflush the components. If not using the SuperMarket, this field can be manually selected on an initiated group by clicking on the ellipsis button in the field. It is mostly informational only and is not used for backflushing. However, a group will not be visible in the 'Assembly Data Dispatch List By Group' unless a location is associated to the record.
Planned Center Type	Planned Work Center Type associated to the process. This will carry over from the Center Type field or the Revised Center Type if populated. This can be changed for all work orders at once by clicking the 'Assign plan center type' button  . After selecting this button choose a center type from the pick list. The Planned Center Type for all of the listed work orders will change to the selected one.
Work Center #	Users can dispatch an initiated group ID to a specific work center. Select the ellipsis button in the field and choose a work center from the pick list. The list will be filtered if a specific center type was entered in the Center Type filter field. Once selected the Work center ID is stored in the Assembly Group table. Users can clear this field which will remove the Work center ID from the Assembly Group table.

This section includes a **Search** button to access the pick list of groups to enable users to find a specific group.

Lower Grid Field Listing:

Bucket	Work Order bucket number, if applicable.
Customer Name	The customer associated to the work order.
Cycles Required	Cycles required for the work order.
Item Information	This includes the item #, Item Description, Item Ext Description, and Revision.
Mfg #, Mfg Type and Mfg Cell	The Mfg #, Mfg Cell, and Mfg Type associated to the work order.
Must Start	The must start date of the work order.
Origin	Indicates where the Work Order was created from. Either from a Sales Order (Planned), the Forecast module (Forecast), or Manual.
Planned Center Type	Planned Center Type
Prod Hrs	The number of production hours required for the work order.
Promise Date and Request Date	The promise and request date from the sales order associated to the work order.
Setup Hrs	Setup hours required for the work order.
Ship Date	The sales order ship date.
Type	Default Center Type
WO Type	WO Type, i.e. Firm
Work Order #	Work Order number. This field will be red if there is a material exception on the work order.

The '**Days Out Filter**' can be used to filter the grid to only include work orders where the must start date is so many days from today.

Override Level 0 Filter - By default only level zero (top level) work orders are listed in the grid. They will display in bold text. Select the 'Override Level 0 Filter' to display all levels. Lower level work orders will not be in bold text.

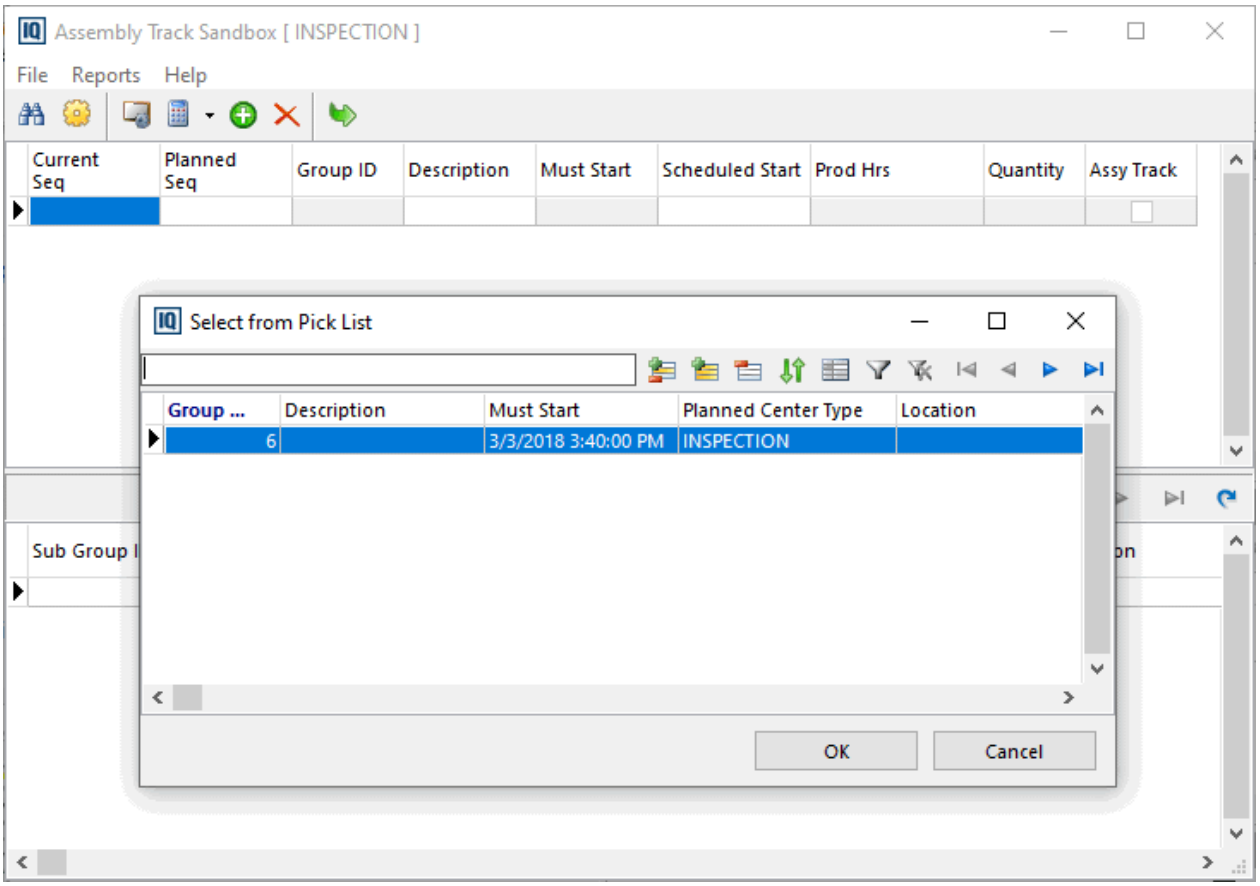
Jump To Work Order - Right click and select Jump To Work Order to access the highlighted work order.

Remove from Group - Select this option to remove the highlighted work order(s) from the group. Work Orders scheduled in Assembly Track cannot be removed. Work Orders can be highlighted using the Shift/Ctrl keyboard buttons or the toggle buttons in the grid. A Confirm message with a Yes and No button will appear stating, 'About to remove selected work orders from Group ID x. Work Orders scheduled in Assembly Track will not be removed. Are you sure you want to continue?'. The removed work orders will be visible on the Unassigned tab. Note: When removing work order from a Group the 'Firm' check box will remain checked.

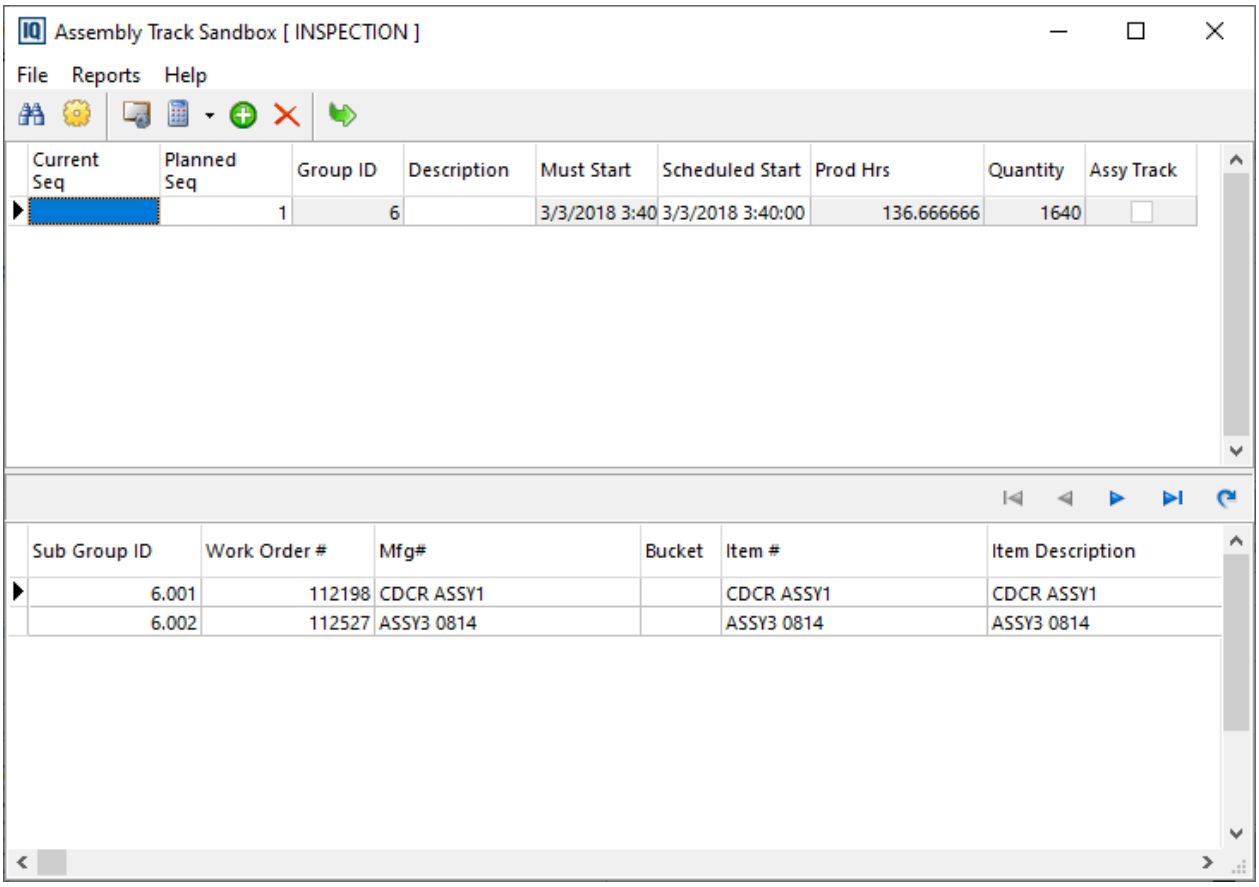
Assembly Track Sandbox

The Assembly Sandbox is used by schedulers to insert groups into a schedule based on the center type.

Select the Assembly Sandbox button  on the Assembly Track By Group module to access the form. A pick list of center types will appear to choose from. Once selected the Assembly Track Sandbox will open displaying the center type chosen in the top blue bar. The form will be empty the first time it is opened.



To add groups to the sandbox select the green plus button. A pick list of planned groups that have not been released to production yet, with a planned center type that matches the sandbox center type will appear. Select group(s) to add using the Shift/Ctrl keyboard buttons or the toggle buttons in the list.



Top Section:

This includes the Group ID and Description, total production hours and quantity for the group, Must Start and Scheduled Start dates, and Planned and Current Sequence.

Assy Track	This box will be checked if the group has been published to the Assembly track By group module.
Current Sequence	The Current Sequence is the sequence the group currently resides in that has been published to the floor. This will be blank until published.
Group ID and Description	The Group ID and Description.
Must Start	The Start date of the assembly process that has been checked final assembly.
Planned Sequence	The planned sequence will be populated based on the order in which the group is added/inserted in the sandbox.
Prod Hrs	The total amount of hours based on the constraining processes by group.
Quantity	The total production quantity to build by group.
Scheduled Start	This is the same as the must start date unless the scheduler has set a force start date on the group. To force a start date select a date from the drop down calendar in the field.

Note: Groups that have been initiated (a process has been tasked into for any work order belonging to that group) will display in bold and italics. This indicates that a process within that group has been started and no changes can be made.

Lower Section:

Displays the work orders that are associated to the Group that the user is selected on in the top grid. This shows information specific to the work order such as: Group ID, Work order #, Must start date of the work order, Manufacturing #, Center Type assigned during grouping, Item#, Prod Hours, and Quantity.

Options:

Group ID Assignment - Select this button  to access the Group ID Assignment module.

Remove Group from Assembly Sandbox - Select this button  to remove the group from the sandbox. If it was published to Assembly Track By Group, it will remain there but the Seq # will be removed.

Calculation Options - From the calculator button drop down arrow there are three options:

- Recalc All Groups
- Recalc Selected Group

- Refresh Planned Sequence

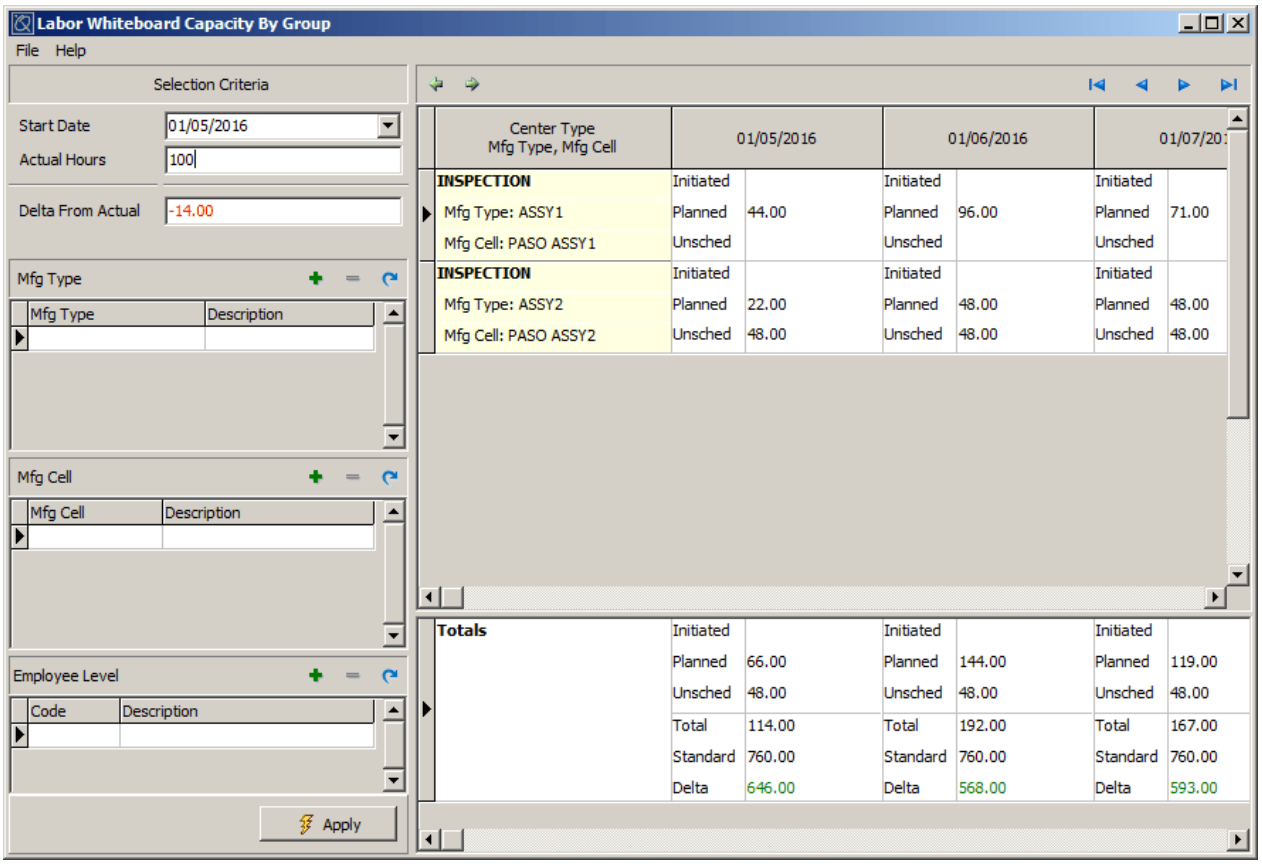
Publish - Select the Publish button  at the top of the scheduling sandbox to release all groups that have been added to the scheduling sandbox to Assembly Track By Group in the planned sequence assigned.

Labor Whiteboard Capacity By Group

This module can be accessed from the Assembly Track Sandbox or Assembly Track By group modules. The Labor Whiteboard Capacity By Group module is used to show labor requirements based on specific filters that can be set. This can be used to help level load the labor.

Select the  button to access the module.

To populate the form users must at the minimum select a Start Date and then click the Apply button.



Selection Criteria

Start Date - Select a Start Date from the drop down calendar. This will be used as the first date in the whiteboard capacity section.

Actual Hours - Users can enter actual labor hours to calculate the Delta From Actual.

Delta From Actual - If an actual value is entered the system will calculate the Delta = [Actual Hours - Start Date Total Hrs (which is Planned + Unsched)]. For example using the screen shot above: Actual Hours entered is 100, Total = 66 + 48 = 114, 114 - 100 = -14. The color of the Delta From Actual value will be green if it is a positive number and red if negative.

Mfg Type - The Labor Whiteboard can be filtered for specific Mfg Types by selecting the plus button in the section and then selecting the Mfg Type(s) from the multi-select pick list. If blank all will show.

Mfg Cell - The Labor Whiteboard can be filtered for specific Mfg Cells by selecting the plus button in the section and then selecting the Mfg Cell(s) from the multi-select pick list. If blank all will show.

Employee Level - The Labor Whiteboard can be filtered for specific Employee Levels by selecting the plus button in the section and then selecting the Employee Level(s) from the multi-select pick list. If blank all will show.

Whiteboard Section

The first column displays the Center Type, Mfg Types, and Mfg Cells based on the criteria selected. There is a column for each date starting with the selected Start Date. In each column there is data for the following:

- Initiated – Groups that have had a process tasked into for any work order belonging to that group. The Initiated value is the total for all initiated groups in this center type. As groups are started this total will increase and as groups are removed this total will decrease.
- Planned – The labor hours required for groups that are in Assembly Track or the Sandbox (published or unpublished). As unscheduled groups are moved up from the insert group pool to the center type schedule this value will increase. If they are moved out of the center type schedule this total is decreased.
- Unscheduled – This is the total amount of hours currently sitting in the insert group pool (Assigned tab of the Group ID Assignments module) that have not been scheduled into the center type yet. Typically Schedulers will attempt to bring this number to zero multiple times during the day as orders are grouped.

Totals

The Total section summarizes totals for a view period. This includes summaries of the information above; Initiated, Planned and Unscheduled. It also includes the total hours, standard hours and delta for the date.

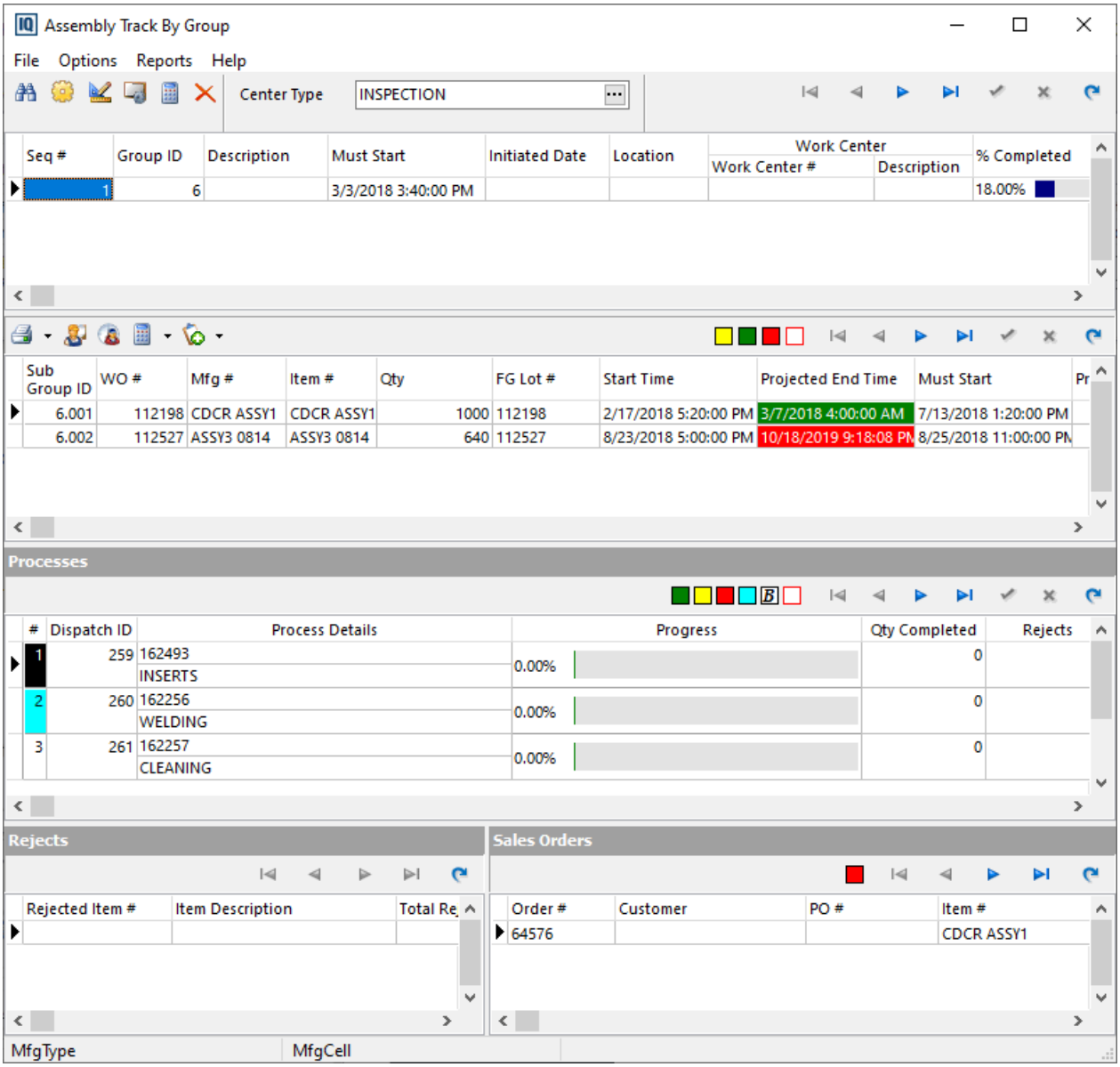
- Total = Initiated + Planned + Unscheduled

- Standard = The total of labor hours available for the view period based on the selected criteria. This is based on the standard labor capacity form (in Scheduling->Labor menu->Labor Capacity->File menu).
- Delta = Standard – Total. If the delta is greater than standard it is shown in red, if the delta is less than the standard it will be green.

Assembly Track By Group

Once schedulers have published group(s) they will appear in the Assembly Track By Group module. This is typically used by floor personnel to view released work orders and their progress. This screen is very similar to Assembly Track but has the ability to view by Group and Center Type what the status is for any Group, Work Order and Process. It displays the published groups in the top section instead of individual work orders, which are displayed in the second section.

After accessing the module a pick list of groups will display. Pick a group from the list. Once in the module users can select a specific center type to filter the information by clicking the ellipsis button in the Center Type field. To clear the filter delete the selection from the field.


Assembly Track By Group
File
Options
Reports
Help
Center Type
INSPECTION
Seq #
Group ID
Description
Must Start
Initiated Date
Location
Work Center
Work Center #
Description
% Completed
1
6
3/3/2018 3:40:00 PM
18.00%
Sub Group ID
WO #
Mfg #
Item #
Qty
FG Lot #
Start Time
Projected End Time
Must Start
6.001
112198
CDCR ASSY1
CDCR ASSY1
1000
112198
2/17/2018 5:20:00 PM
3/7/2018 4:00:00 AM
7/13/2018 1:20:00 PM
6.002
112527
ASSY3 0814
ASSY3 0814
640
112527
8/23/2018 5:00:00 PM
10/18/2019 9:18:08 PM
8/25/2018 11:00:00 PM
Processes
#
Dispatch ID
Process Details
Progress
Qty Completed
Rejects
1
259
162493
INSERTS
0.00%
0
2
260
162256
WELDING
0.00%
0
3
261
162257
CLEANING
0.00%
0
Rejects
Rejected Item #
Item Description
Total Re
Sales Orders
Order #
Customer
PO #
Item #
64576
CDCR ASSY1
MfgType
MfgCell

Top Section Field Listing:

Group ID and Description	The Group ID and description of the group. When all work orders for a group are complete, the Group ID will no longer display.
Seq #	The sequence number of the group from the Assembly Track Sandbox.
Must Start	Must start date of the earliest work order.
Initiated Date	Shows the date and time stamp of when the first work order of the group was tasked into.
Location	If using the SuperMarket module the Location is selected during the SuperMarket picking and will populate in the Group Section Grid. The Location will show in Red until the Supermarket process for the entire group is reported in full (100%) and users have tasked out of this group process. Once complete and logged out of the location will display in green. It is an indicator that the group is available for dispatch. If there is no location means the group is not ready yet. Note: The SuperMarket is a separate module that allows users to pick components in the Supermarket (the Warehouse). This module allows the ability to Task In to a group and pick the required component parts needed for the group of work orders selected. Users can gather the required parts, organize them, report time spent to perform the picking function, and backflush the components. If not using the SuperMarket, this field can be manually selected on an initiated group by clicking on the ellipsis button in the field. It is mostly informational only and is not used for backflushing. However, a group will not be visible in the Assembly Data Dispatch List By Group unless a location is associated to the record.
Work Center	User can dispatch an initiated group ID to a specific work center. Select the ellipsis button in the field and choose a work center from the pick list. The list will be filtered if a specific center type was entered in the Center Type filter field. Once selected the Work center ID is stored in Assembly Group table. Users can clear this field which will remove the Work center ID from Assembly Group table.
% Completed	This is calculated by adding together all of the Work orders completed divided by the number of work orders in the group.
User Text 1	User text field for additional information. Right click and select Define User Text to change the name of the column.

Individual Work Order Section - This section will display the same information that is in Assembly Track, except there is an additional column for Sub Group ID (work order Sub Group ID assigned in the Group ID Assignment module). Please refer to the Assembly Track Top Section portion of the Assembly Manufacturing documentation.

Processes, Rejects, and Sales Orders Sections - These are identical to the Assembly Track module. Please refer to the following sections: Assembly Track Processes Section, Assembly Track Rejects Section, Sales Orders.

Remove Group from Assembly Track - Select the red X button to remove a group from Assembly Track. A confirmation message will appear with Yes and No buttons and a 'Do not show next time' check box. Security can be placed on this message. When Yes is selected the group is removed from Assembly Track and it is also removed from Assembly Data Dispatch List by Group.

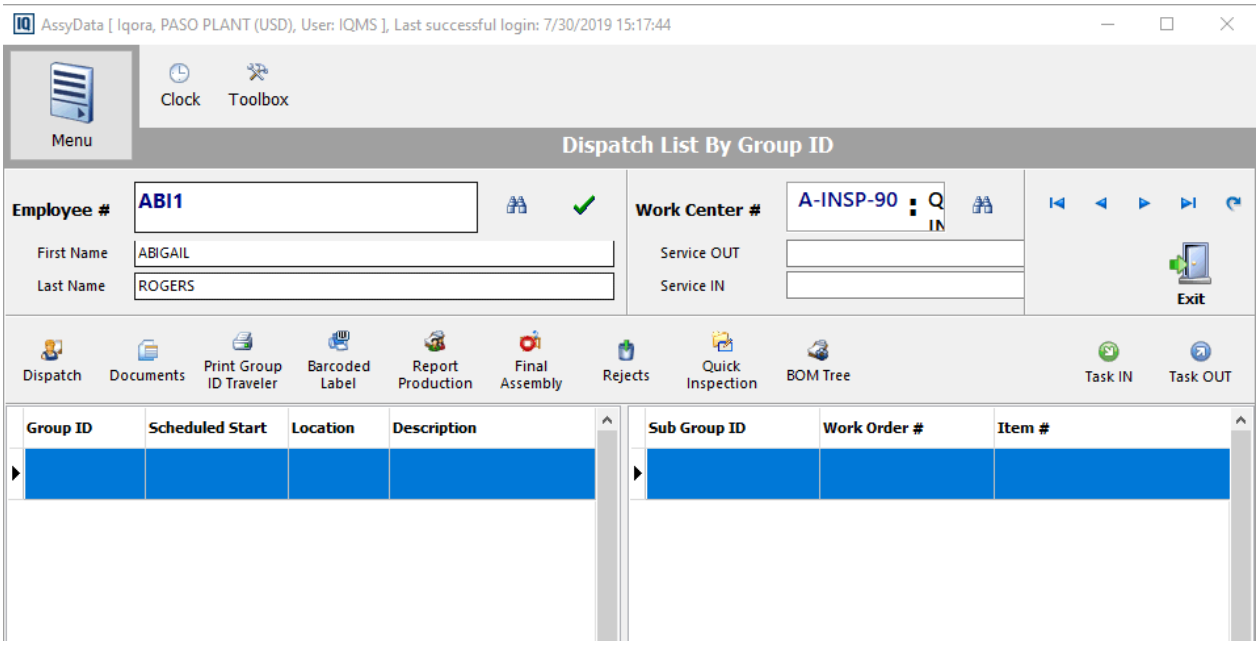
Calculate - Select the calculator button to calculate all groups work orders start and end time.

Assembly Data - Dispatch List By Group

This module is similar to the Assembly Data Dispatch List but allows users to view the data for the groups. Groups that have been initiated with the location field populated will be visible in the dispatch list.

When accessing this module, by default, a pick list of employees will appear. The Employee pick list does not appear when opening the module if the option 'Disable Clock In Employee Pick List' is checked in System Parameters>Time and Attendance, and the Search button to access the employee pick list will also not be visible.

If the pick list displays, after selecting an employee from the list the form will display with the Employee # and name fields populated. If the pick list does not display the employee can enter their Employee # in the field.



Top Section

Employee Information - This displays the employee selected when accessing the module. This includes the Employee # and First and Last Name. The employee can be changed by selecting a different one from the pick list accessed from the search button.

Work Center Information - Select a work center from the pick list of active work centers accessed from the search button.

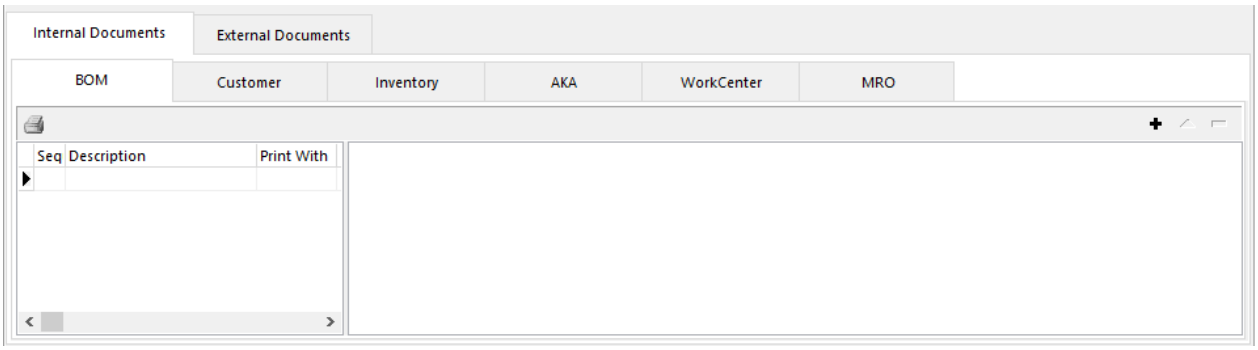
Dispatch List Section:

Group - This will list the Group(s) associated to the the work center.

Sub Groups - This will list the sub groups associated to the highlighted group.

Buttons:

- Dispatch - Select this button to toggle to/from the Dispatch List By Group and the Dispatch List.
- Documents - Select this toggle button to display the Internal and External documents associated to the BOM, Customer, Inventory, AKA, Work Center, and MRO.

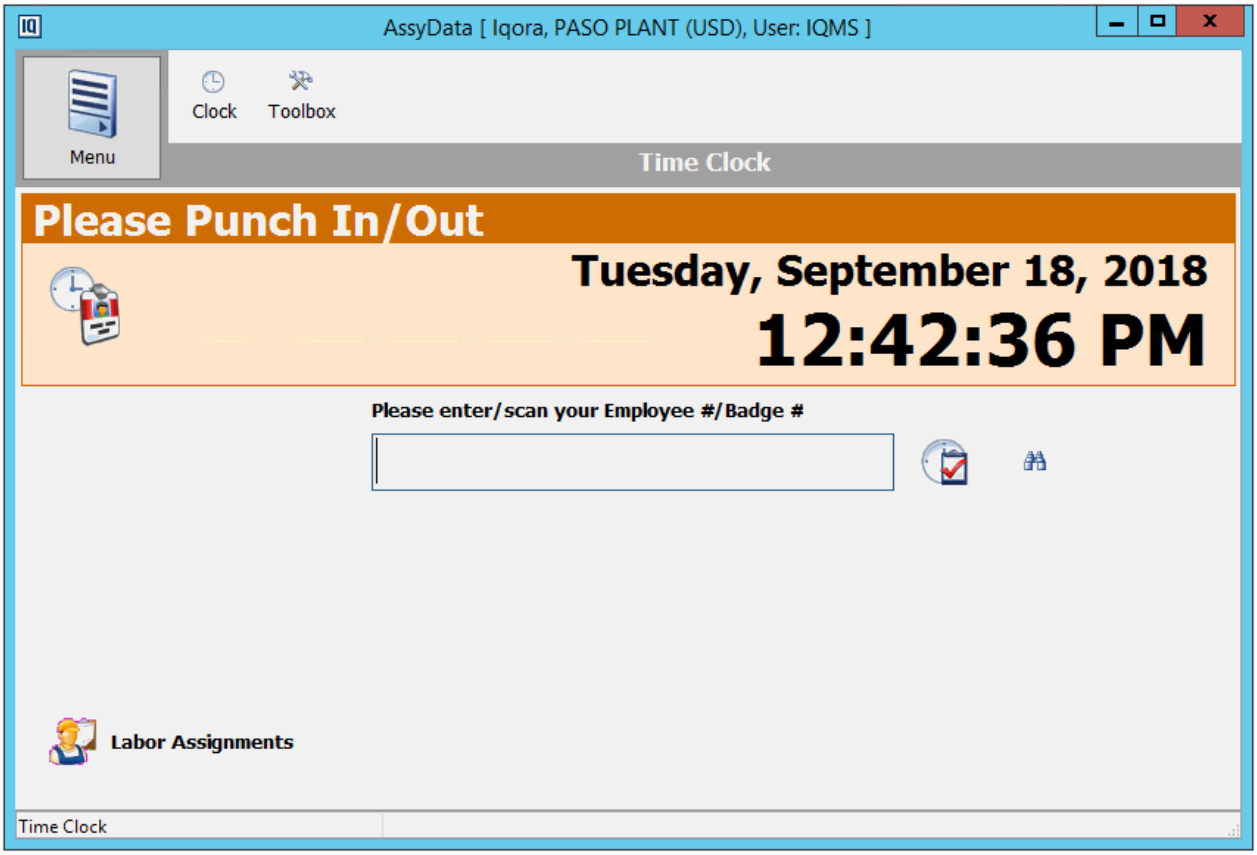


- Print Group Traveler - Select this button to print the Group Traveler report.
- Barcoded Label - Prints a barcode label.
- Report Production - Accesses the Report Production feature.
- Final Assembly - Opens the Final Assembly module for the highlighted work order.
- Rejects - Accesses the Rejects module for user input.
- Quick Inspection - Access to the Quick Inspection module
- BOM Tree - Opens the BOM Tree. The process description will display in line with the material at the beginning of each material. The BOM Tree will not automatically be exploded for the manufacturing quantity.
- Task IN -Tasks the employee listed at the top in to the work order.
- Task OUT - Tasks the employee listed at the top out of the work order.
- Exit - This will exit the module and return the user to the Assembly Data Time Clock screen.

AssemblyData

AssemblyData is a touch screen interface module that utilizes the Time & Attendance login process to collect labor against ASSY work orders for individual Processes. This is specifically designed to collect the labor records for users with the Time & Attendance module. This section will describe the functions available within AssemblyData.

Note: AssemblyData was designed for use with ASSY manufacturing types, however users are able to clock into other manufacturing types as well. Some of the features in AssemblyData will not apply to non-ASSY work orders, such as Line Clearance, Final Reporting and process information.

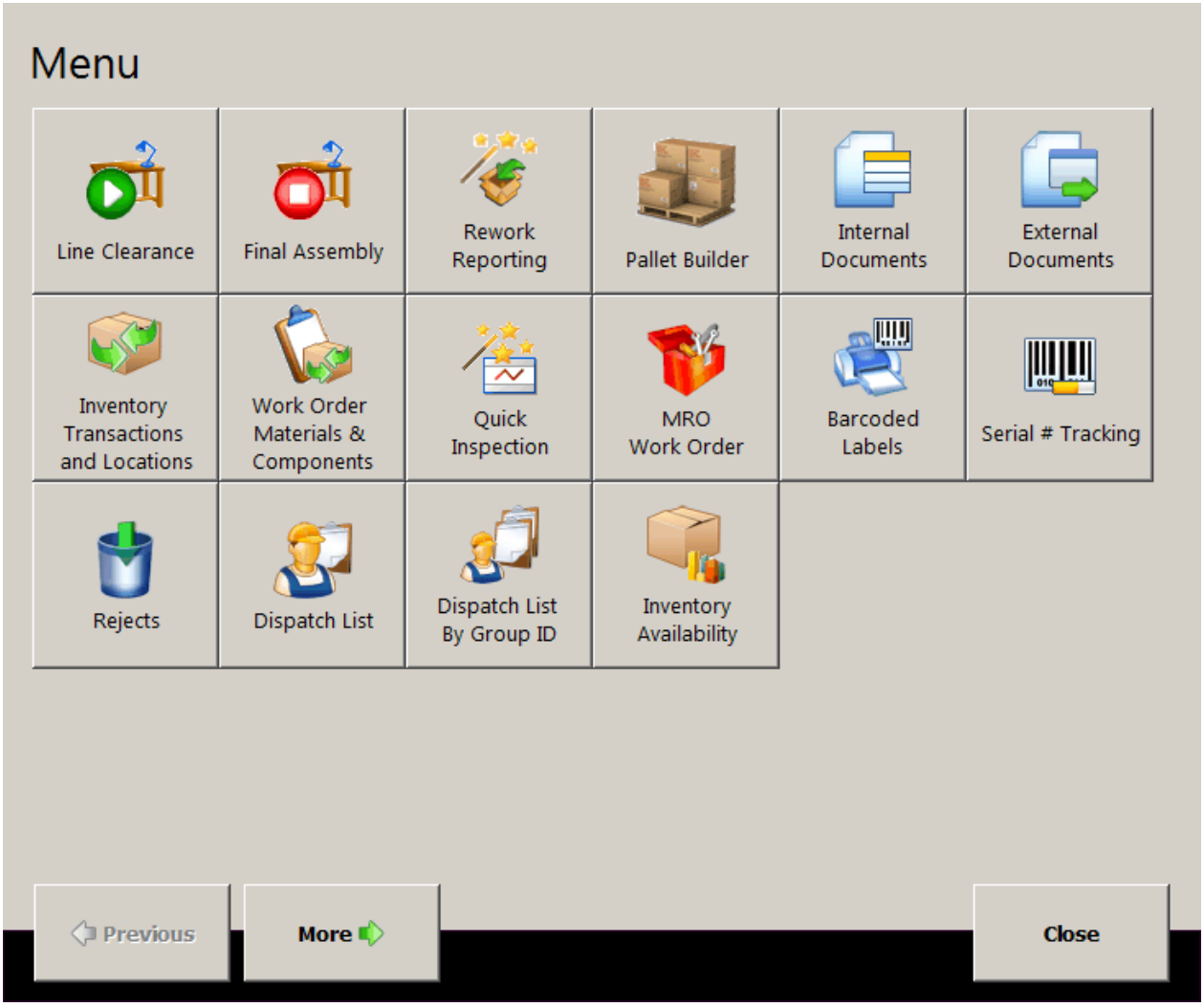


Resizing the Screen - The AssemblyData screen can be resized. When using dual monitors users can set the target to indicate multi (for example, "C:\Program Files\IQMS\IQWin32\AssyData.exe" _multi_). With this set two windows can be opened to different work centers on the same workstation.

(Note: 600x800 resolution is not supported).

Menu

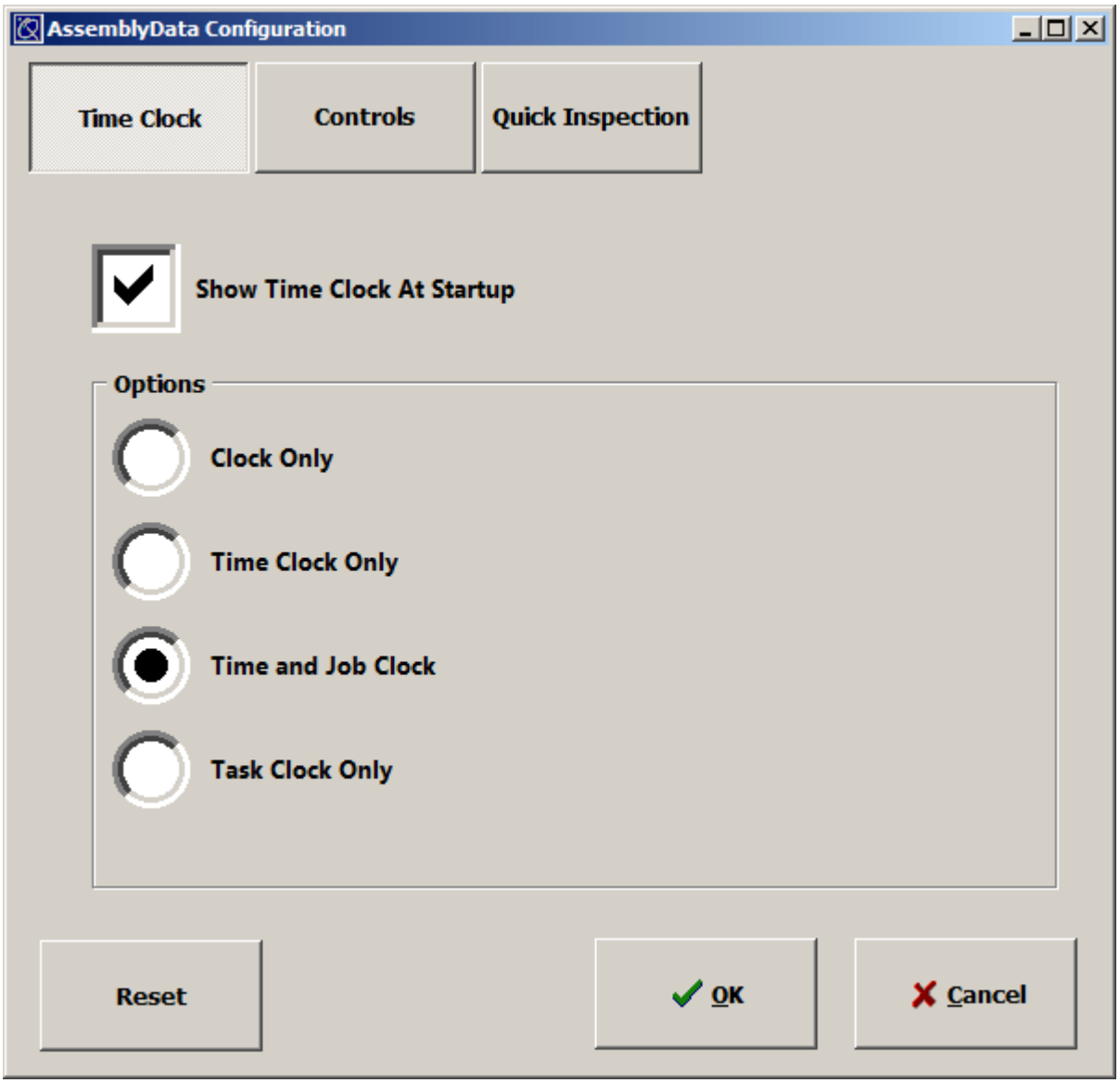
The **Menu** button shows the available functions within AssemblyData and provides access to these modules. Pushing/Clicking a button will display the appropriate module.



More - Press the More button to access additional features.

- Reports - This opens the Reports form to print reports associated to AssemblyData.
- Who is Logged In - This will show all employees logged into all Work Orders that have been released via Assembly Track. It will display the employee information, Task Source, WO#, Process, the Time In, Elapsed Time, Work Center #, and Manufacturing #. Use the Search button to find a specific employee. This form also includes the Form/Table toggle button.
- Login - Opens the Login screen
- Security Inspector - Access to Security Inspector
- Configure AssemblyData - This opens the Configure AssemblyData screen.

Configure



Following are the available configuration options:

Time Clock

Show Time Clock at Startup - With this checked the Time Clock will be visible when ShopData is started. What will display is dependent on the option selected (see below). If this is not checked the date and time will not appear on the ShopData screen.

Options

- **Clock Only –** This displays the date and time only. Users cannot clock in when this option is selected.
- **Time Clock Only -** With this checked the Time Clock screen will display the current date and time and allow users to punch in/out for the day. However, if the Task Clock is enabled in System Parameters (see below) the Task Clock will automatically appear after the user punches in.
- **Time and Job Clock -** With this option checked the date and time will appear and the user will be able to clock in/out for the day as well as clock in/out to specific tasks.
- **Task Clock Only –** This option will display the date and time and defaults to the Task Clock screen to allow the user to clock in/out of tasks. The Punch In/Out clock is also available by selecting the 'Punch-In Clock' button.

Task Clock – The Task Clock can also be made visible on this screen. This parameter is set up in **Sys Setup->System Parameters->Time & Attendance** tab. The user can select the Enable Task Clock In/Out for all work stations (Global) or override the global setting for the local workstation. If this option is checked the user will have access to the Task Clock and be able to clock In/Out of specific tasks.

Controls

Print Labels on Final Assembly - If this option is checked it will be mandatory to print labels during Final Assembly. If it is not checked it will be optional to print labels.

Dispatch List shows all processes on certified work centers - When checked the Dispatch List will display all processes from the Assembly Dispatch Priority List and any processes that have the work center certified in the Process Maintenance. If it is set to No, only work orders in the dispatch list will display.

Startup

Quick Inspection Charts - Users can choose to have the system display the Trend, Control, X-Bar charts, the X-Bar and Range chart, and/or the P and NP chart when accessing the Quick Inspection module from ShopData. To have a chart display on startup check the box next to the option.

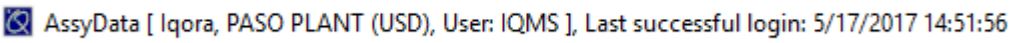
Additional Options

Selecting the **More** button again will access the Help menu which includes: Help Contents, Knowledge Center, and About.

Clock – This buttons takes the user to the Time Clock screen.

Toolbox – This brings up a box to select the on screen keyboard, keypad, or calendar for touch screens. The tool box can be set to 'AutoHide' when changing screens, by depressing the top button. If it is not selected the tool box will remain on the screen as the user moves from module to module. When the user clicks on a field that requires an entry to be made using one of the tools they will become available to select on the Tool Box. Note: When using the keypad to enter numeric values there is a +/- button available to enter negative values when allowed (such as in Quick Inspection). The value must be entered first then the user can select the +/- button to change the sign.

If the '**Display User ID on Launcher**' option is checked in Security Inspector on the Password Policy tab, un logging into AssemblyData the username will display in the title bar.



If the '**Display Last Login**' setting is checked in Security Inspector -> Password Policy, the last successful login will display on the title bar. Also, the following information will display on the About form accessed form the Help menu:

- Last Login - Displays the last date and time the user logged in.
- Last Failed Login and Failed Login Tries - Displays the last date and time there was a user failed login and the number of failed login tries. The Failed Login Tries will reset after a user logs into the system successfully two consecutive times.

Time Clock

The main portion of the screen is the Time & Attendance Time Clock. Users can clock in for the day as well as clock into specific tasks (work orders). The time clock functionality within Assembly Data allows employees to clock into specific processes associated to ASSY work orders. The actual labor is collected. Employees can clock into multiple processes at the same time and the labor hours will be calculated as the total time logged into a specific process divided by the number of processes logged into simultaneously.

This document will describe the functionality specific to Assembly Data only. For detailed information about Time and Task Clock please refer to the Time & Attendance help files.

Note: If using the RTBOX user to log into the clock, no roles are required on the RTBox user.

Configure Assembly Data Clock Options

This option allows the user to change the configuration of the time clock screen.

Click on the Menu button then click More, and select Configure Assembly Data.

Show Time Clock at Startup - With this checked the Time Clock will be visible when Assembly Data is started. What will display is dependent on one of the following options selected. If this is not checked the date and time will not appear on the assembly data screen.

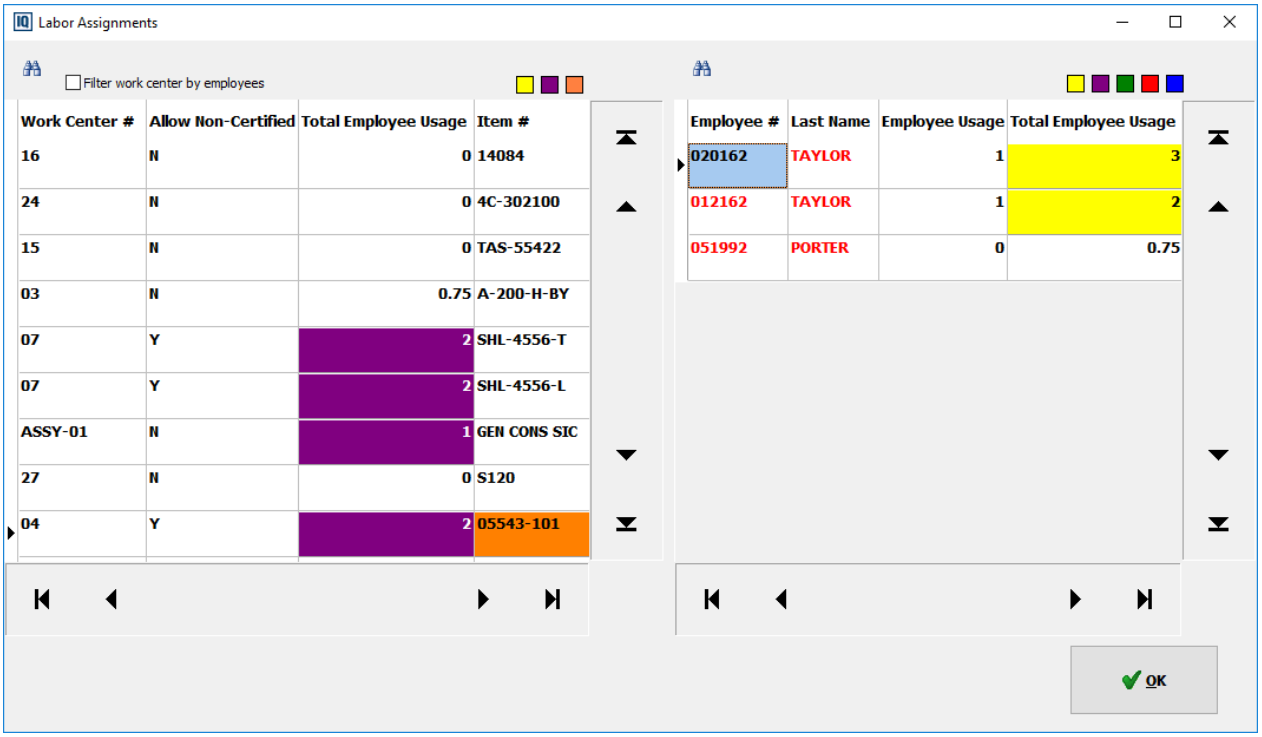
Options:

- **Clock Only** - This displays the date and time only. Users cannot clock in when this option is selected.
- **Time Clock Only** - With this checked the Time Clock screen will display the current date and time and allow users to punch in/out for the day. However, if the Task Clock is enabled in System Parameters, the Task Clock will automatically appear after the user punches in.
- **Time and Job Clock** - With this option checked the date and time will appear and the user will be able to clock in/out for the day as well as clock in/out to specific tasks.
- **Task Clock Only** - This option will display the date and time and defaults to the Task Clock screen to allow the user to clock in/out of tasks. The Punch In/Out clock is also available by selecting the `Punch-In Clock' button.
- **Task Clock by Class** - This option allows a user to select a task class and a specific task, and then multiple users can clock into that task in row without having to select the class/task again. This is to help speed up multiple users tasking into the same class.

The Task Clock can also be made visible on this screen. This parameter is set up in Sys Setup->System Parameters->Time & Attendance tab. The user can select the Enable Task Clock In/Out for all work stations (Global) or override the global setting for the local workstation. If this option is checked the user will have access to the Task Clock and be able to clock In/Out of specific tasks.

Labor Assignments

The Labor Assignments feature appears on both the Time Clock and Task Clock screens for users who are assigned the **sbtnLaborAssignments** security role within EnterpriseIQ Security Inspector. The Labor Assignments screen allows shop floor users to view which work center they are assigned to, allowing users to search work centers, employees, and filter work centers by employee.



The left side will display work centers that have work orders scheduled on them. The work center will be listed multiple times based on the items and Employee Levels associated to the MFG #.

Filter Work Centers by Employee - Check this option to only display work centers where the highlighted employee is scheduled.

This section includes the following fields:

Work Center **Work Center Description**	There is a column for work center number and work center description.
Item # **Description** **Ext. Description** **Rev**	The inventory item information for the item(s) scheduled in the first position on the work center. There are four columns: Item Number, Description, Extended Description and Revision. If there is more than one item manufactured using the scheduled MFG #, the work center will be listed for each item.
MFG #	The Manufacturing number scheduled in the first position on the work center.
Work Order	The work order number scheduled in the first position on the work center.
Allow Non-Certified	If this is 'N', it indicates that only certified employees associated to the MFG # can be scheduled. If this is set to 'Y' non-certified employees can be scheduled.

Required	The total number of operators required for all employee levels, including setup. The work center will be listed for each employee level associated to the MFG #.
Operators Scheduled	The sum of employee hours for the specific work center. (Employee hours are entered per employee in the Labor Scheduling module, right side of the form).

Color Coding in Work Center Section

- Orange - If the item is associated to an open CAR/CAPA, ECO, MRB, Deviation, or PPAP/Product PQ the item number field will be colored orange.
- Yellow - If the total employee usage is greater than the amount of operators required to run the job the 'Total Employee Usage' field will be highlighted yellow.
- Purple - If the total employee usage is equal to the amount of operators required to run the job the 'Total Employee Usage' field will be highlighted purple.

The right side of the form will display scheduled employee information:

Employee Name	There are columns for: Employee #, First Name, Middle Name, and Last Name.
Employee Usage	The employees usage for the work center.
Total Employee Usage	This is the sum of the employee usage for all work centers the employee is scheduled on. This is updated automatically whenever an employee is scheduled on a work center and allows users to clearly see when an employee's total usage is equal to or greater than 1. ▪ This field will be highlighted purple when an employee's total employee usage is equal to 1. ▪ This field will be highlighted yellow when an employee's total employee usage is greater than 1. ▪ If the total employee usage falls below 1 this field will update automatically and show no color.

Color Coding in Employee Section

The font in the Employee Name fields will be color coded as follows to indicate whether employees are certified:

- Green - Certified
- Red - Not certified
- Blue - Re-Certification Required

Total Employee Usage field color coding:

- Purple - The Total Employee Usage field will be highlighted purple when an employee's total employee usage is equal to 1.
- Yellow - The Total Employee Usage field will be highlighted yellow when an employee's total employee usage is greater than 1.

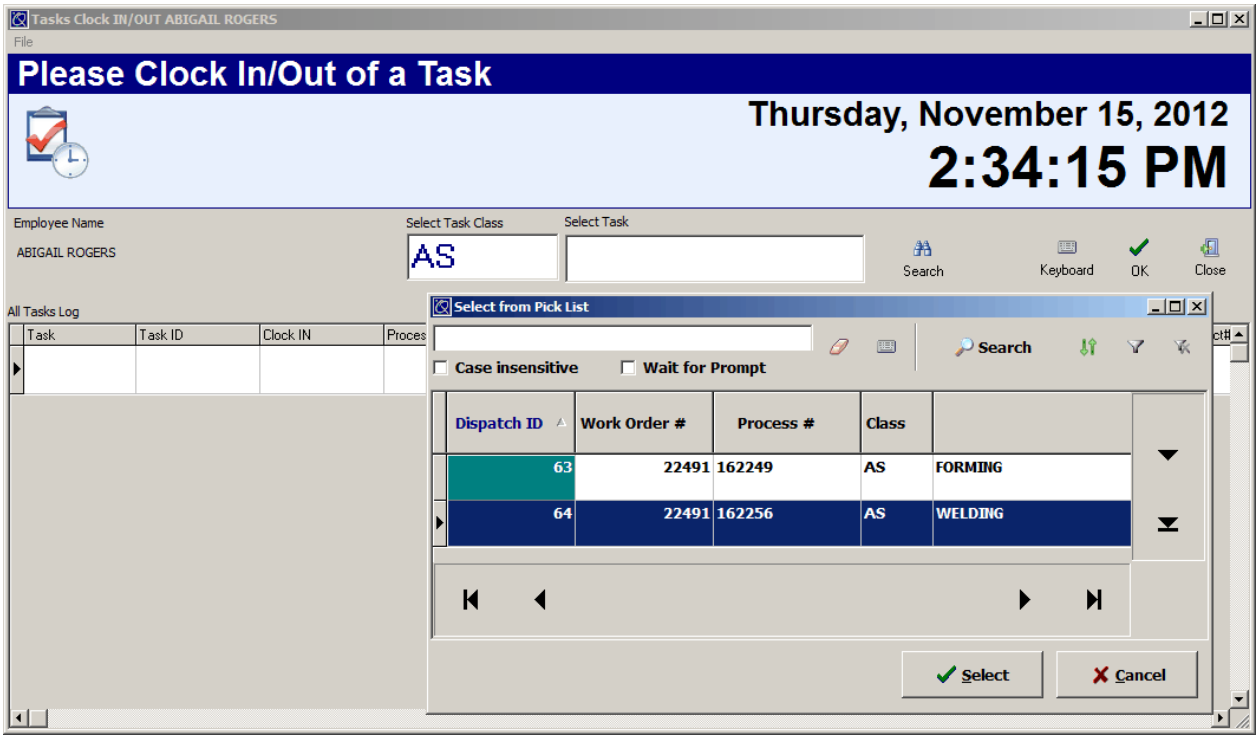
Note: The Labor Assignment feature is not available when Assembly Data is in Task Clock Only mode.

Clocking into a Process

Once an employee is clocked in they can select the Task Clock to clock into an ASSY work order.

Select the AS Task Class and then select a work order or dispatch ID from the touchscreen pick list and press Select. The pick list includes process and item information to help employees select the correct task. Only work orders that have been added to Assembly Track will be available to log into.

Note: If the System Parameter options for 'Default to Select Task on Task clock In' and 'Task Class is included as a prefix to the task barcode' are selected, entering or scanning a barcode with “AS” plus the dispatch ID will log the user into the task.



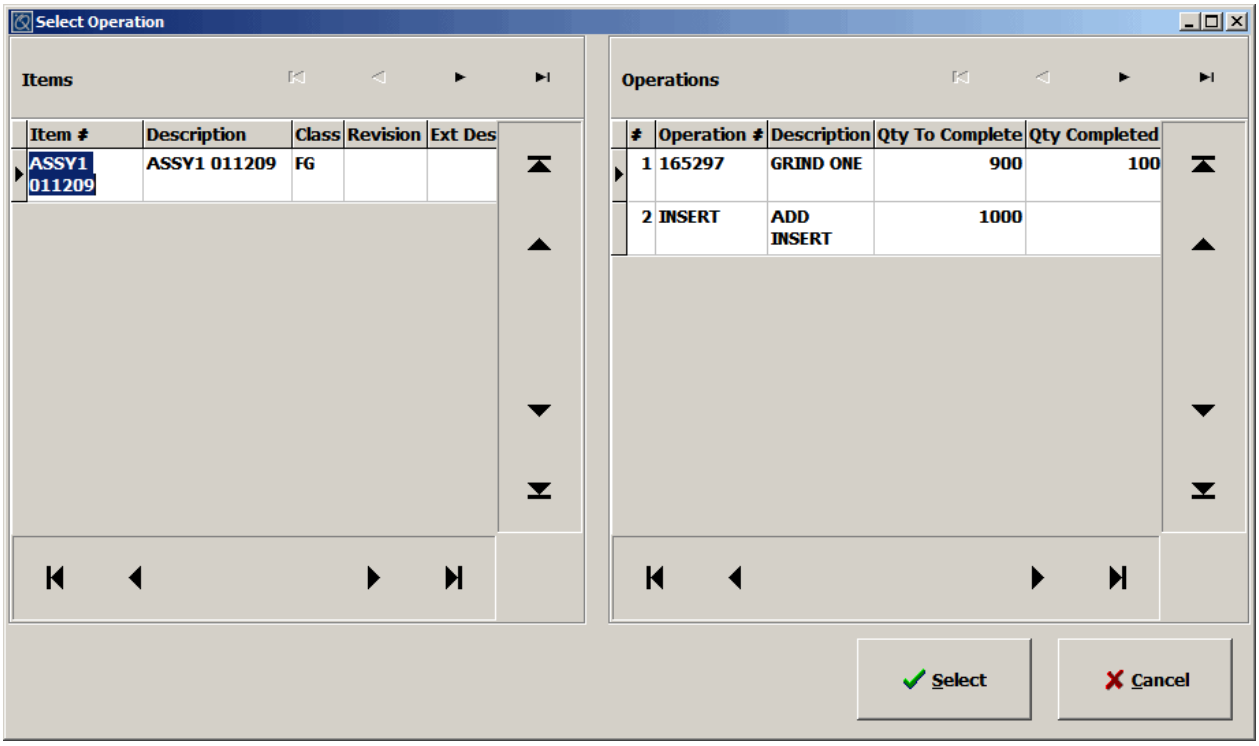
Below is the information on fields that apply to Assembly Data:

Task	Will display the type of Work Order
Task ID	This is the Work Order number
Clock IN	Time employee clocked into the task
Clock OUT	Time employee clocked out of the task
Description	For type WO displays item being produced.
Process #	This will display the process the user clocked into if applicable to the work order.
Total MFG Rejects	This applies to ASSY MFG Types. It is the total manufactured parts rejected for each process.

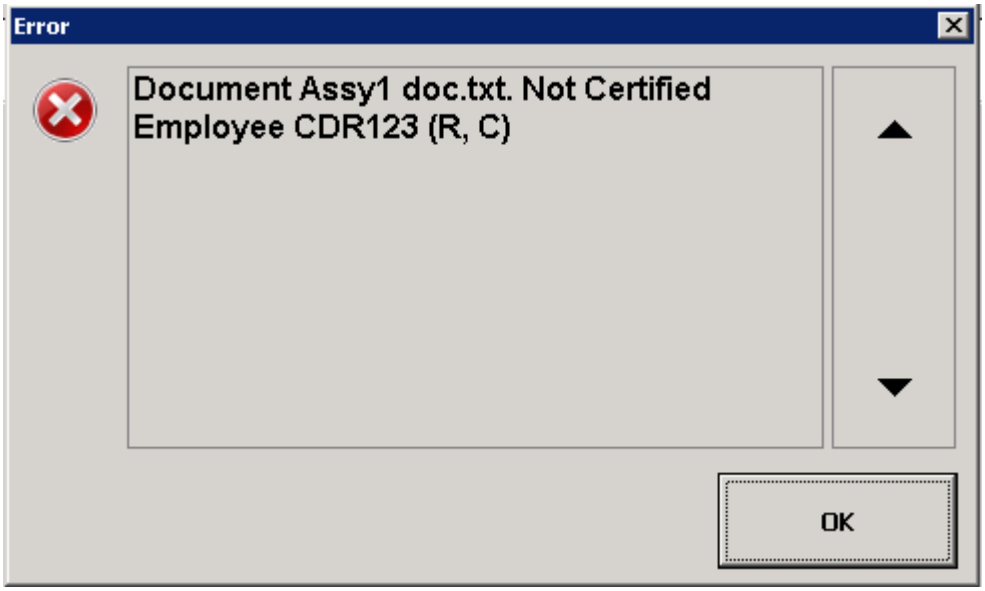
Note	Employees can enter a Note related to the task in the Note field. Select the keyboard button to bring up the keyboard form to enter a note. Depending on the task reported, the note will be displayed on the labor record for that task. ▪ AS – Displayed in Assembly Track > right click on process > Show Details > in the Process Log grid ▪ WO – For ASSY1/ASSY2/ASSY3 WO's, the note is displayed in Assembly Track > right click on process > Show Details > in the Process Log grid
Work Center #	If the process is scheduled on a work center, this field will display the work center #.
Current Progress	The current progress of the process.

After clocking into the work order the employee will select the specific process they will work on from the Select Operations screen. If the employee is clocking into a process to perform the set up, they can check the Setup box in the Operations section. This box defaults to not checked.

NOTE: In order for the Select Operation screen to appear the **Separate Pick lists for Projects/Tasks** option in System Parameters->Time and Attendance tab must be checked.



If the process has certification requirements only those employees that are certified will be able to clock into the process. If they are not certified an error will appear and the employee will not be clocked into the task. The error will state, "'Document <document name> Not Certified. Employee <employee #> (Last name, First name)'."



If the Process requires a **Line Clearance** and the line has not been cleared an error will appear: “Line is not cleared for this WO#, Process# and Shift”, and the employee will not be able to clock into the process.

Note: The system will allow an employee assigned to any shift to be able to login to any WO/process within the approved date/time range as long as the process has been cleared

If the process is marked as a **Sequential Process** and the prior process is not complete the employee will not be allowed to login. They will receive an error stating: “Cannot login. Operation # ___ was not completed”.

Note: If the work order is associated to a JobShop project a warning will appear stating, "Work order is associated to a JobShop project. You will be clocked into a ‘JS’ task class. Are you sure you would like to continue?". If the user selects Yes, the system will change the task class on the fly to ‘JS’ and clock the user into the selected process. If the user selects No, the user will not be clocked into the WO/process and they will be returned to the task clock screen.

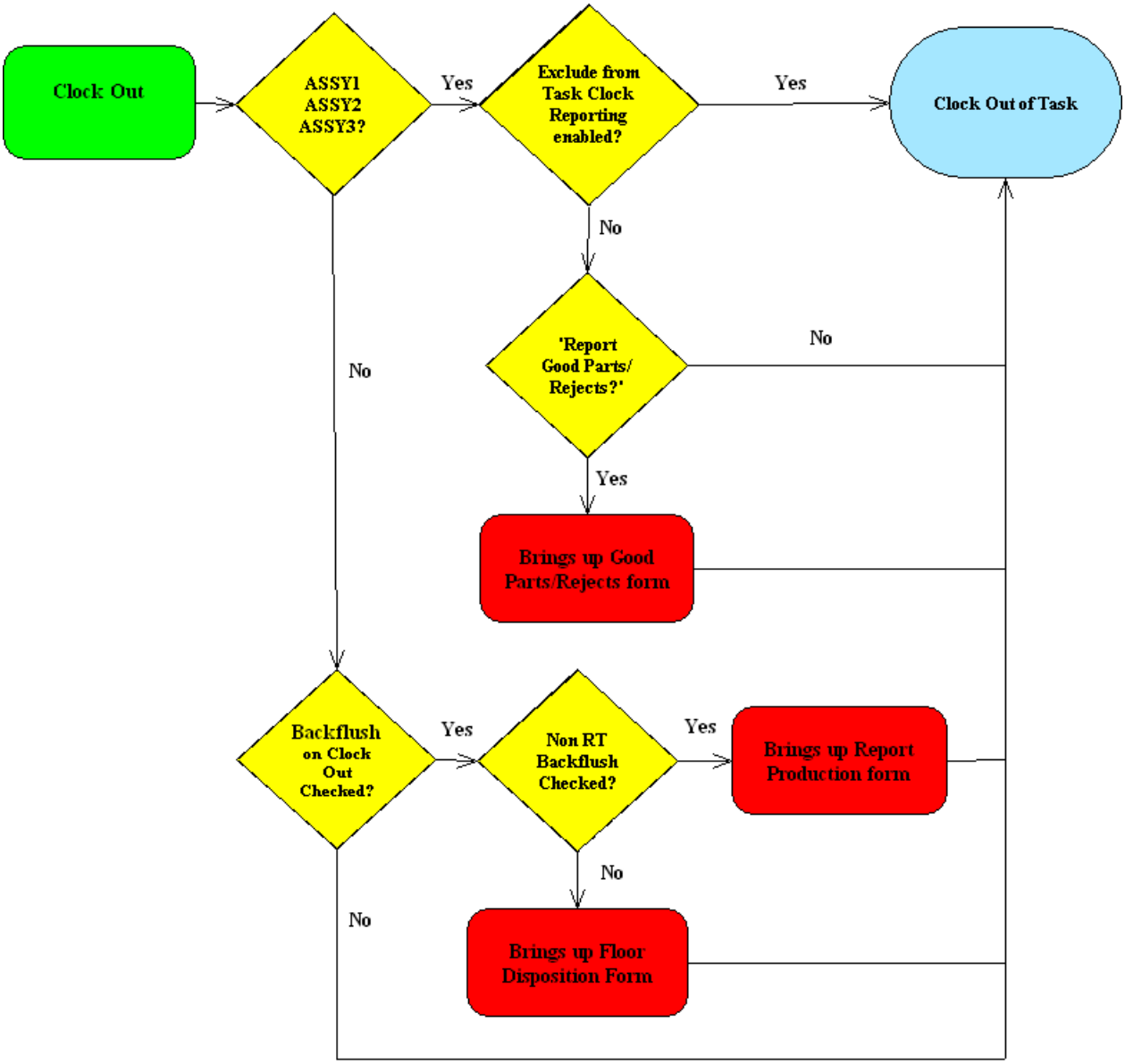
Clocking into Multiple Tasks

While the Task Clock application gives users the ability to clock into multiple tasks simultaneously by default, restrictions on this behavior can be implemented from the Time & Attendance section of System Setup --> System Parameters. The following settings are available:

- **Do Not Allow Employees to Task Clock In to Multiple Tasks** - If this option is checked and an employee is task clocked into a task, upon clocking into another task, the system will automatically clock the employee out of the previous record and will populate the time out in TA_LABOR.TIME_OUT with the current time. Checking this option will also expose the 'Allow supervisor override' option.
- **Allow supervisor override** - If 'Do Not Allow Employees to Task Clock in to Multiple Tasks' is enabled, this option will appear. When checked, a supervisor may allow an employee to clock into multiple tasks. This is done by requiring the user via prompt to enter a supervisor badge number prior to clocking them into an additional task.

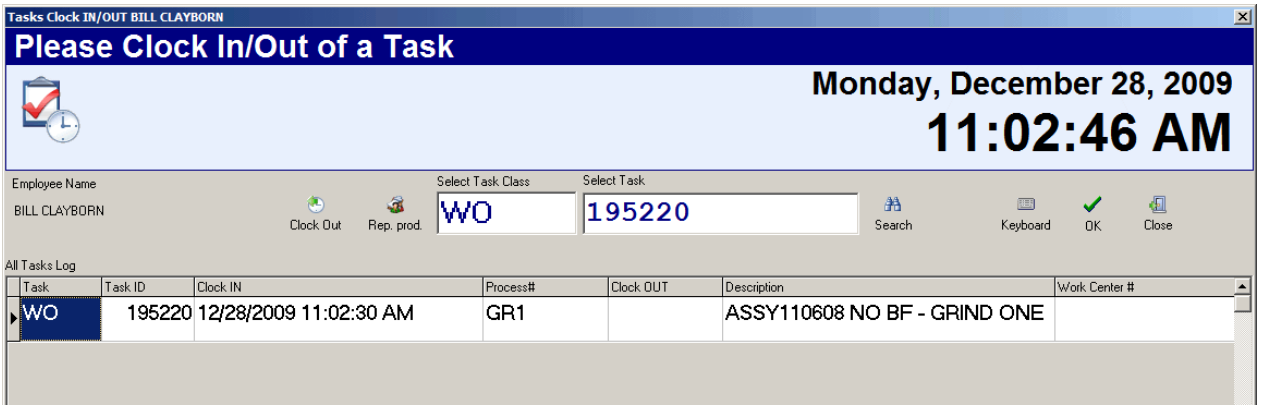
Clocking Out of a Process

When clocking out of a process, the screen that will appear to the employee depends on the settings established for the MFG Type and Process. Below is a flowchart that shows what screen the system will bring up:



From the Clock Out screen the user will have two options:

- **Clock Out** - Allows the user to report production and clocks the user out of the process. For this option select the Clock Out button at the top or click in the Task ID field and click on the clock button to clock out of the task. Employees can also clock out of a task by entering the 'AS' task # in the Select Task field and selecting OK. A confirm pop up will display asking, 'Do you want to clock out of this task?' After selecting OK, when clocking out of an Assembly WO (WO, AS, or JS task classes) another confirm message will appear asking, 'Report Good Parts/Rejects?' with Yes/No buttons. If Yes is selected, the Enter Good Parts/Rejects form will appear. If No is selected, the user will be clocked out of the task without going into the Enter Good Parts/ Rejects form and the system will display a notification 'Operator clocked out at xx:xx:xx'. Note: The prompt asking to 'Report Good Parts/Rejects' will not appear if the process the employee is clocking out of has the 'Exclude from Task Clock Reporting' checked.
- **Report Production** - If the MFG Type has the 'Backflush on Clock Out' option checked this option will be available. It allows the user to report production but stay logged into the process. For this option select the 'Rep Prod' button at the top. The Enter Good Parts/Rejects form will appear.



Note: If the process has the ‘Exclude from Task Clock Reporting’ option checked the 'Report Good Parts/Rejects?' confirm message will not appear.

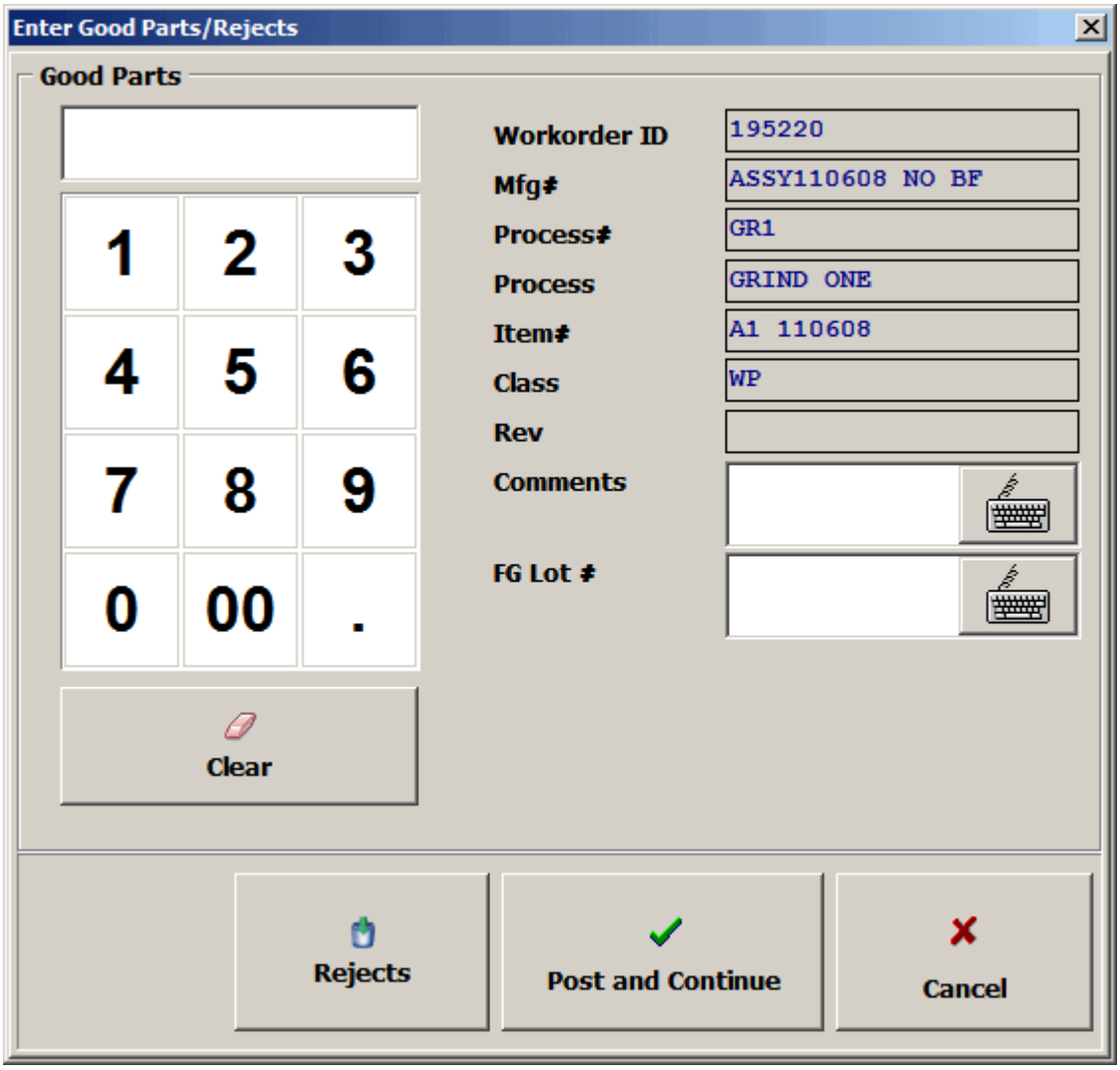
Note: If the user attempts to clock out for the day from the Time Clock while still clocked into a task, by default the task clock in/out screen will appear to allow the user to clock out of the tasks and enter good parts/rejects. If the employee selects Close without closing the tasks, a warning will appear, 'Not all good parts have been reported against the process. You have not clocked out.' and the employee will not be clocked out. If the Time and Attendance System Parameter 'Clock out of all tasks without reporting production when punching out of the Time Clock' is checked when punching out of the Time Clock, the employee will be automatically clocked out of all tasks and the task clock.

Good Parts/Rejects

From the pop up screen the employee can enter the number of good parts/rejects they processed. Enter a value in the white box for the number of good parts produced or use the keypad to enter the value. The Clear button will clear any entered value. Cancel will take the employee back to the task clock without clocking them out. Users can report zero good parts. When there are zero good parts reported upon task clocking out using AS or WO task class from Assembly Data or Task Clock for Assy1/2/3 MFG types, no hard allocated items will be consumed, even if they are marked as Consume All, but the labor records are used in the calculation of the Actual Cost for Labor and Overhead.

Note: In the scenario where a phantom item is hard allocated and its components are marked ‘Consume All’; if a user is reporting zero good parts they will need to set the good parts to 1 and calculate first, then change it back to zero so that the phantom components are backflushed in/out on the fly.

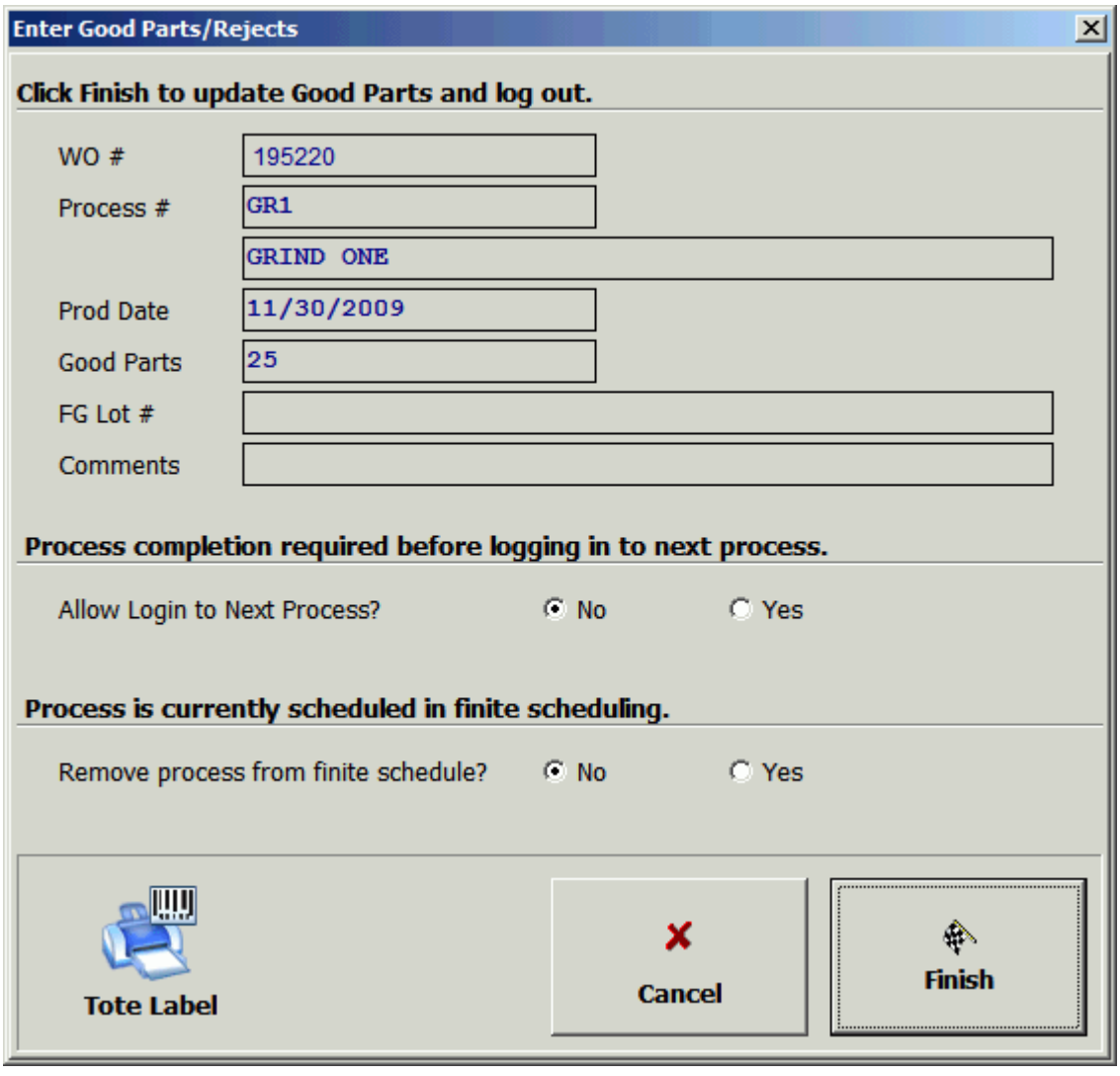
Note: If the Good Parts entered is more or less than the work order quantity an Confirm status exception will appear to notify the user. Select OK to proceed or Cancel to return to the Labor reporting form. Security can be placed on the OK button to not allow employees to enter more or less than the work order quantity.


Enter Good Parts/Rejects
Good Parts
1
2
3
4
5
6
7
8
9
0
00
.
Clear
Workorder ID
195220
Mfg#
ASSY110608 NO BF
Process#
GR1
Process
GRIND ONE
Item#
A1 110608
Class
WP
Rev
Comments
FG Lot #
Rejects
Post and Continue
Cancel

FG Lot # - Enter a Finished Good Lot #. If the 'Lot # is mandatory' option is checked for the item then the employee must enter a lot # otherwise it is optional. This field will automatically populate with the FG Lot # from the work order. The FG Lot # will carry through each process for the same work order. If the labor reporting lot # is different than the FG lot #, a confirmation message stating: 'The Labor Reporting lot number must match the FG lot number in order to obtain Lot traceability of the backflushed components. Are you sure you want to change the Labor Reporting lot number?', with Yes/No buttons. Security is available on this form and the buttons.

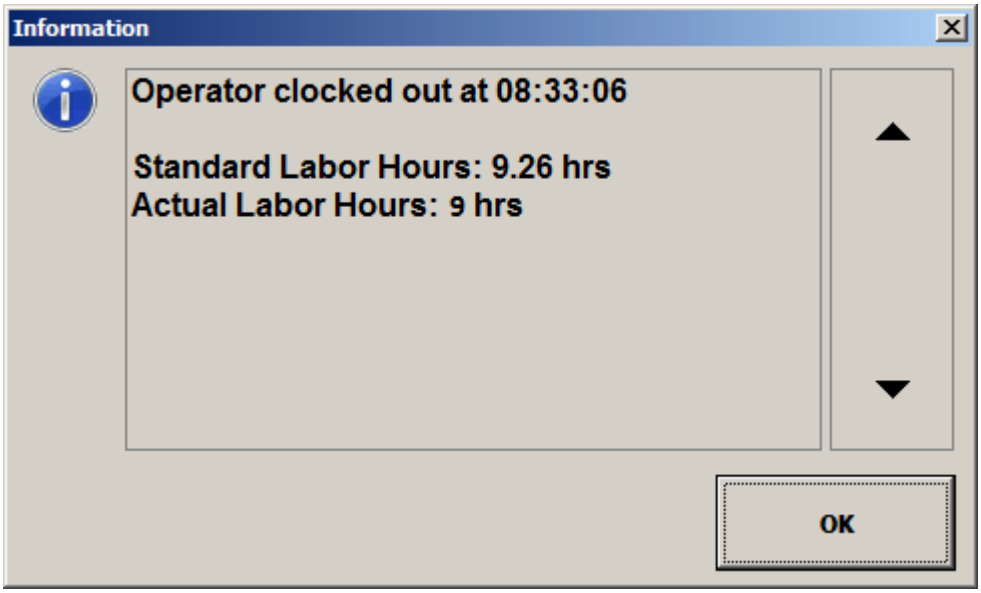
Comments can be entered which will appear in the Comments field in the Process Details screen in Assembly Track (accessed by right clicking in the middle section of Assembly Track and selecting 'Show Details').

Once the good parts quantity is entered and there are no rejects to report select Post and Continue to continue clocking out. If the total good parts and rejects is less than the work order quantity a warning will appear to notify the user. Select OK to continue or cancel to return to the Good Parts screen.



Select Cancel to return to the Task Clock or select the Finish button to complete the transaction.

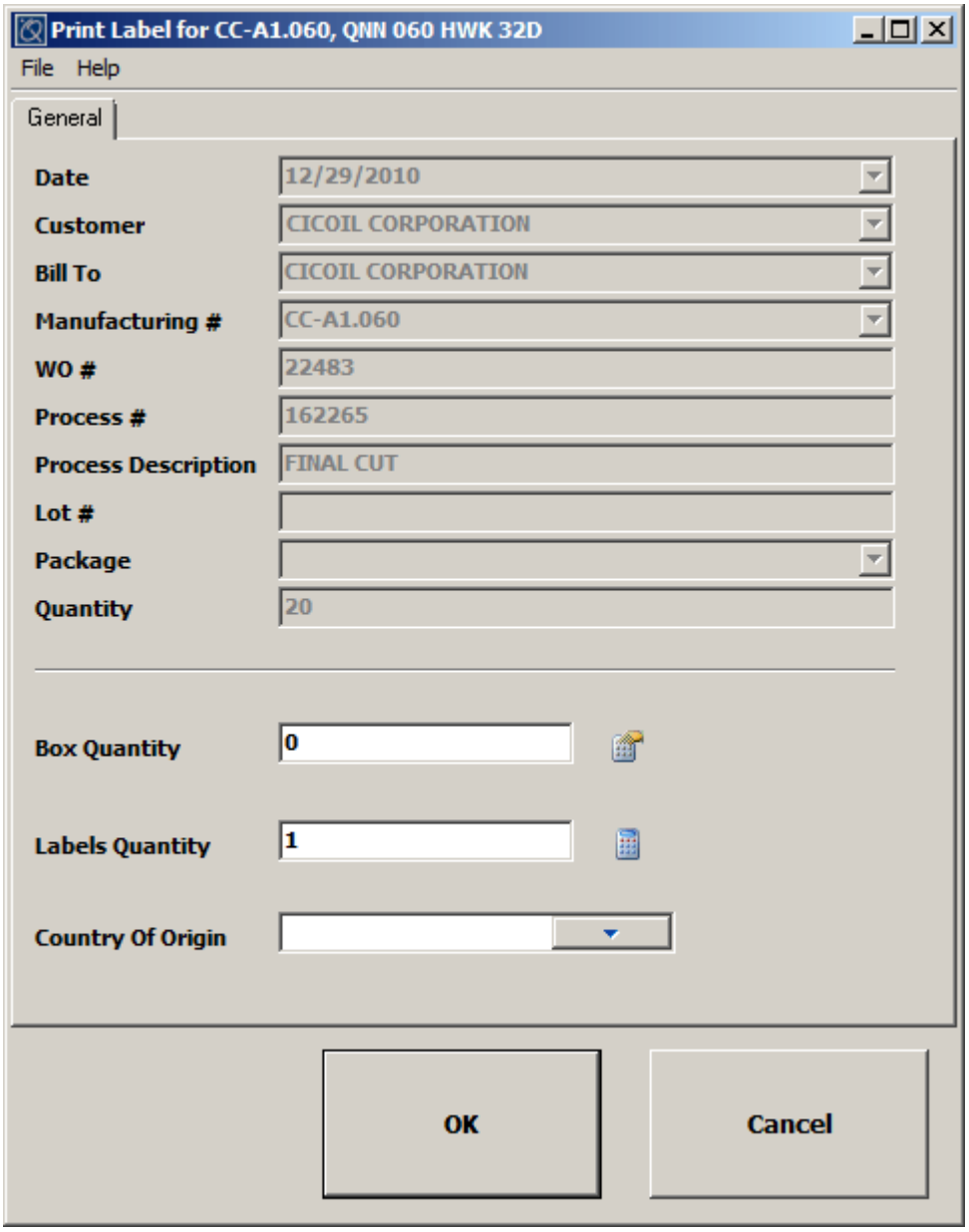
An Information message will appear displaying the standard labor hours and actual labor hours. Standard Labor Hours = qty of good parts reported * standard labor hours of the process; and Actual Labor Hours = time out – time in.



Note: If the process on the BOM is designated as 'Final Assembly Reporting, when the user selects OK on the Labor Reporting form the Final Assembly Reporting form will appear to enter Good Parts. (See Final Assembly for details).

Additional Options:

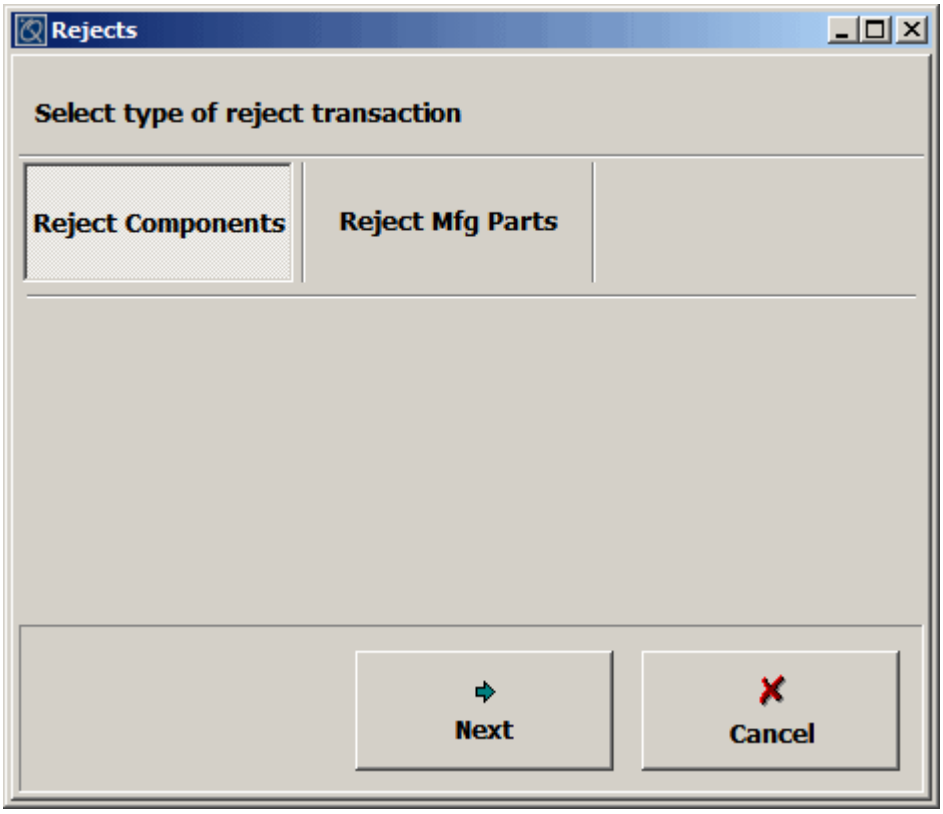
- **Process Completion Required before logging in to next process**: If the process has the Sequential Processing option checked the employee will be able to designate whether or not to allow users to log into the next process. The system will state: “Process completion required before logging in to next process. Allow Login to Next Process?” The employee can select the No if the process is not complete or Yes if it is. This defaults to No.
- **Process is currently scheduled in finite scheduling**: Remove process from finite schedule? This only displays if the process is finite scheduled. If the user checks the Yes box the process will be removed from finite scheduling and returned to the scheduling pool. Security can be placed on the Yes option.
- **Tote Label**: Select the 'Tote Label' button to print a Tote label. The report used is based on the default assigned to the EPlant in MFG Types, or if none the one assigned to the MFG Type, or if none the one assigned in System Parameters->Reports and Forms. This report must be a Crystal label. Enter the Box Quantity and Label Quantity, or use the calculate label quantity button. When the label is printed the system will populate the data in the Master label table including the following additional fields: LAST_SNDOP_ID, NEXT_SNDOP_ID, PROCESS_LOGIN, and PROCESS_SHIFT. (Note: Currently the Tote label must be a Crystal label). Note: The Tote label button can be hidden through security.



Maintenance, Repair and Overhaul Equipment Cycles Update – When good parts and rejects are entered for a process, the total cycles of tools associated to the process will be updated in MRO. If a Line Clearance is required, only the tool(s) selected during the Line Clearance will have their cycles updated. This only applies to attached equipment with a unit of measure of Cycles. Note: When good parts are voided or when the rejected mfg parts are voided, the cycles of the MRO equipment will be reduced.

Rejects – Entering During Log Out

The first screen that appears upon selecting the Rejects button enables the user to choose the type of reject transaction, either Reject Components or Reject Mfg Parts.

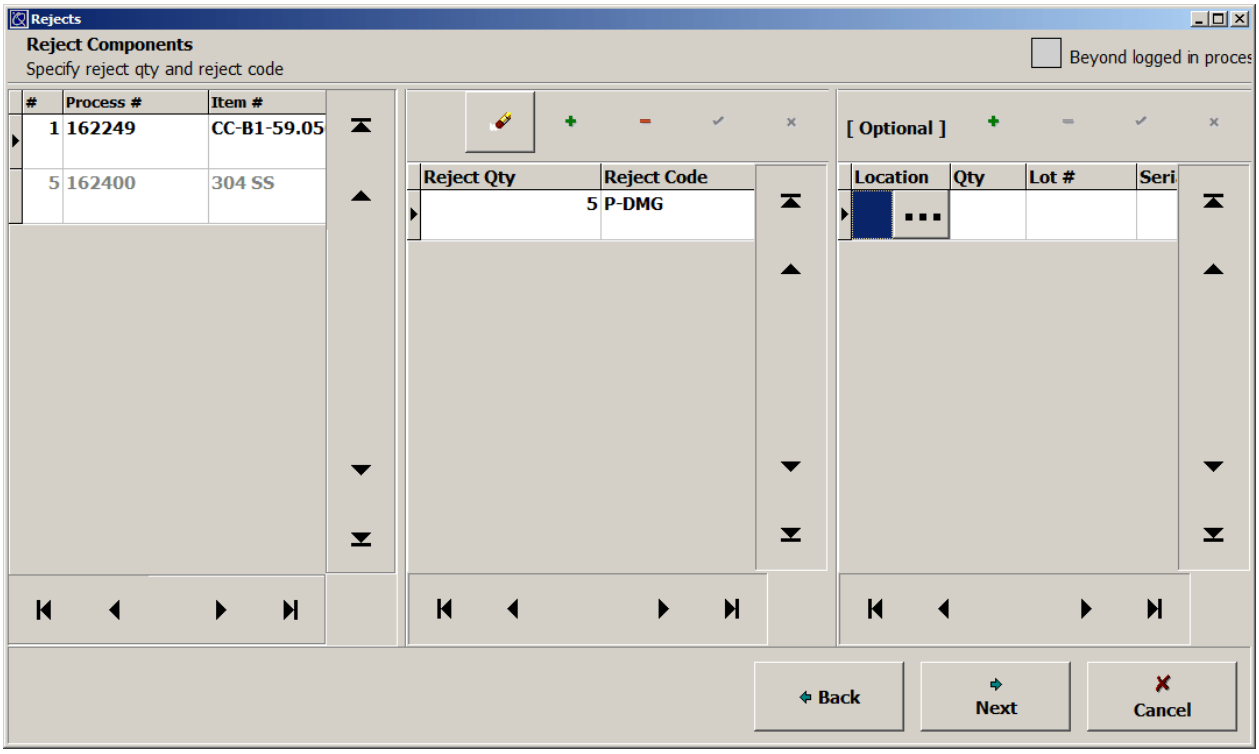

Rejects
Select type of reject transaction
Reject Components
Reject Mfg Parts
Next
Cancel

Rejecting Components

To reject components, select the Reject Components option and then select the Next button. From the Rejects screen the user will see all the components associated to the work order they are clocking out of. Only processes with components will display. If a Non-Material item is attached to a process, the item is not displayed in the Reject Components and/or Reject MFG part screen, and cannot be rejected through Assembly Data. Components will be grayed out if they are for processes that are beyond the process the employee is clocking out of. If the employee is clocking out of the final process all the components will be available to enter rejects for in case it was missed during an earlier process.

Enter the reject quantity and reject code. When entering a reject for components used on an earlier process the system will allow a positive quantity. Both 'Reject Qty' and 'Reject Code' must be assigned.

To access the Reject Code pick list select the  button in the Reject Code field. If specific reject codes have been associated to the process only those will be visible otherwise all reject codes will be listed. In addition to the qty and code a Reason can be entered. To access the keyboard to type a reason select the  button in the reason field.



Multiple rejects records can be created for each component if required to provide different reject reasons. To create another reject record select the + button. To delete a record use the – button. Once the reject information is entered select the Next button to continue with the clock out.

From the Location section users can select the specific location/lot to remove the rejected components from. This is optional unless the 'Component Reject Location is mandatory' option is checked for the Manufacturing Cell (System Parameters->Lists->Manufacturing Cells). If the option is not checked the location section will display 'Locations - Optional'. If it is checked it will display 'Locations - Mandatory'. If checked and a location/lot is not selected an error will appear stating: 'A component reject location is mandatory. Please select a location'.

- For Non-Serialized Inventory Control (SIC) components, select the ellipsis button in the Location field and a pick list of locations associated to the component will display. Select a location/lot from the list. The quantities of the rejects will be removed from the location(s) chosen (negating the hierarchy).
- If the component is SIC, select the ellipsis button in the Location field and a pick list of locations associated to the component will display. Once a location is selected, then the labels linked to that location will display for the user to choose from.

Note: Rejected components cannot be over reported or under reported on the location level in relation to the totally reject quantity.

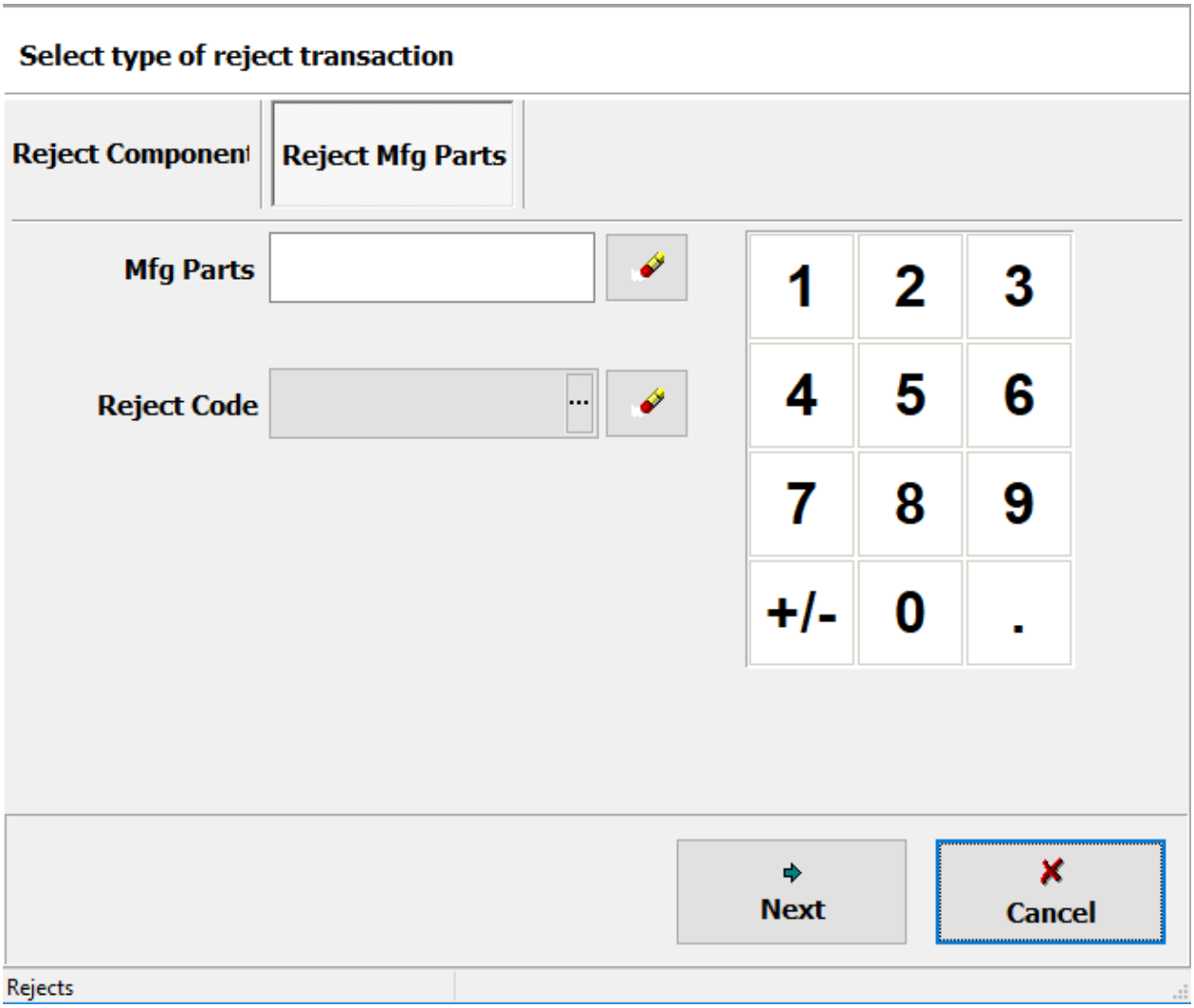
The employee can select the **Cancel** button to discontinue with the clock out and be returned to the main Assembly Data screen.

The next screen will indicate the system is ready to execute the transaction. Three buttons are available on this screen:

- **Back** – This will return the user to the Rejects screen
- **Finish** – This will complete the clock out and create the labor record. Rejects will be posted to the transaction log for the components and labor and overhead is also recorded.
- **Cancel** – This will cancel the reject transaction and take the employee back to the Task Clock.

Reject Mfg Parts

To enter reject information for the manufactured part select the ‘Reject Mfg Parts’ option and enter the number of rejects and select the reject code on this screen:



Select the **Next** button to continue. The **Reject Component** screen will appear to enter rejects for the components as described above. When a value is entered in the Reject Mfg Parts field the system will automatically calculate the quantity of components associated to the process based on the parts per, and that value will be displayed in the Reject Qty field for the attached components. The same reject code selected for the Mfg Parts will also be carried over. Both values can be overridden.

Once the components reject information is entered, select the **Next** button to continue. The **FG Lot #** will be displayed for the user to view/edit.

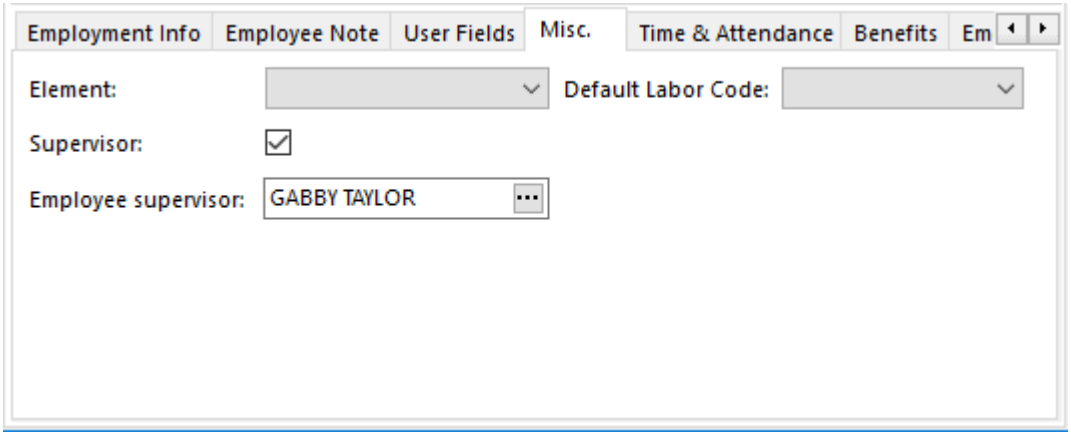
This information will be populated in the translog, and the 'ADJUST WIP' transaction type will be available for posting in PIT for both the current and previous processes' components.

Rejects reported in Assembly Data for both AS and WO tasks will display in Assembly Track in the Rejects section. If rejects are entered in error, they may be voided by right clicking in that section and selecting 'Show Details'. Then right click and select 'Void Reject Entry'. See Void Rejects for details.

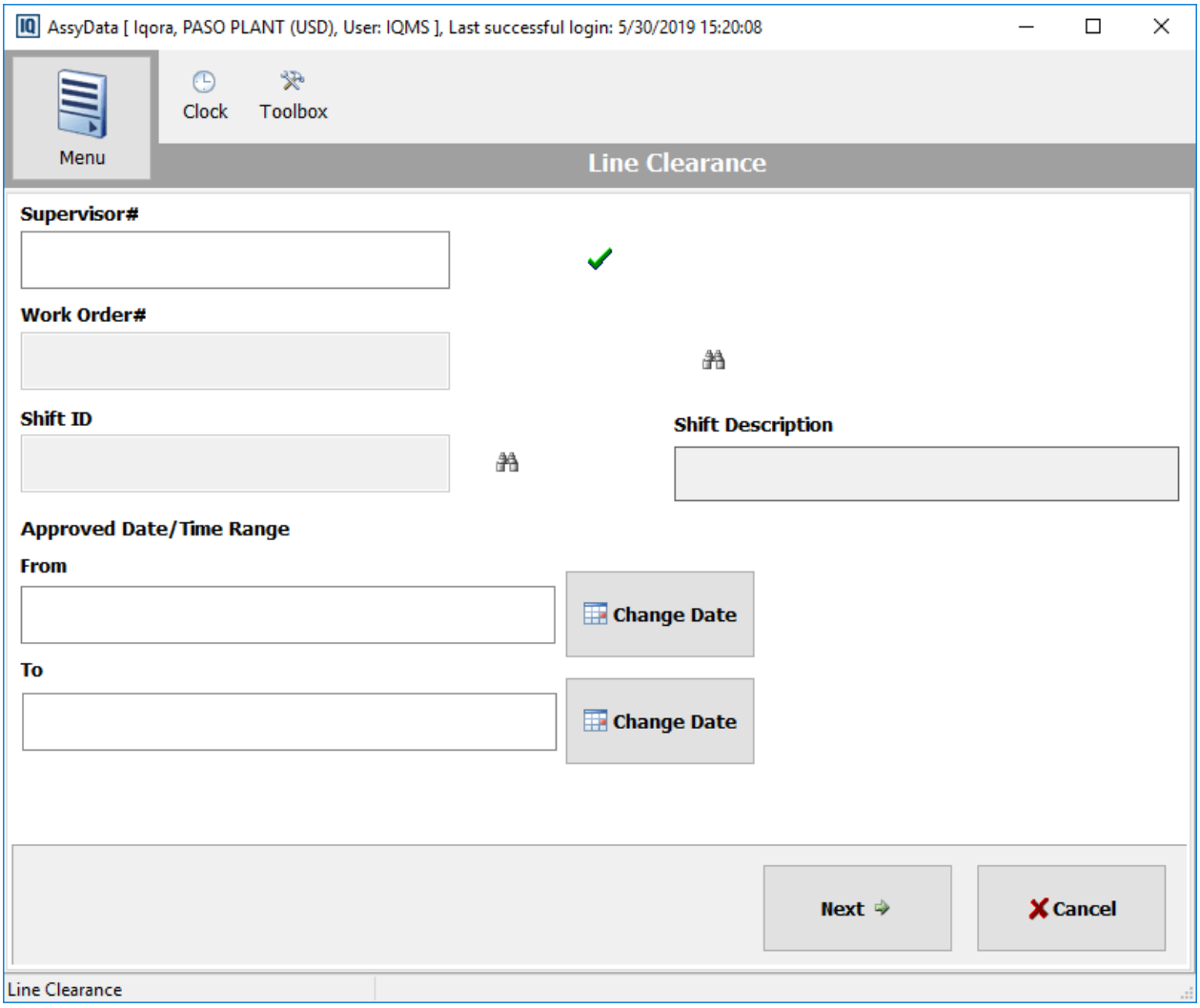
Line Clearance

The Line Clearance module is used to clear the assembly line for processes. This must be done for processes that have the Line Clearance Required option checked prior to an employee clocking into a process.

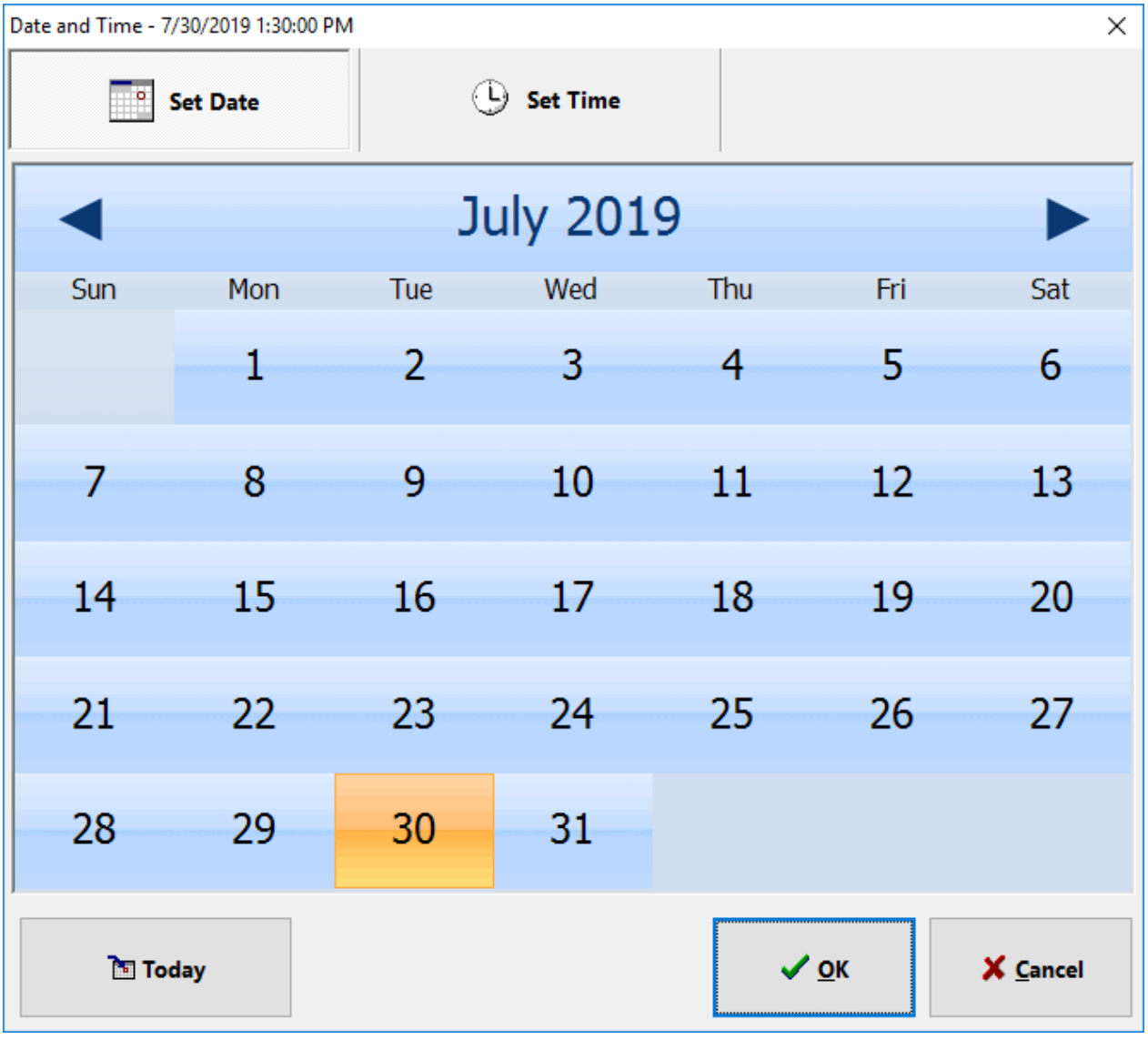
Only Supervisors can perform the line clearance procedure. Supervisor status is established in Employee Maintenance by checking the Supervisor option on the Misc. tab. Line clearance information will be stored in a history table (SNDOP_CLEAR_LINE) which stores each time a process was cleared, including the date/time, shift ID, supervisor, and process.



- To clear an assembly line, select the Line Clearance button in Assembly Data. The following screen will appear:

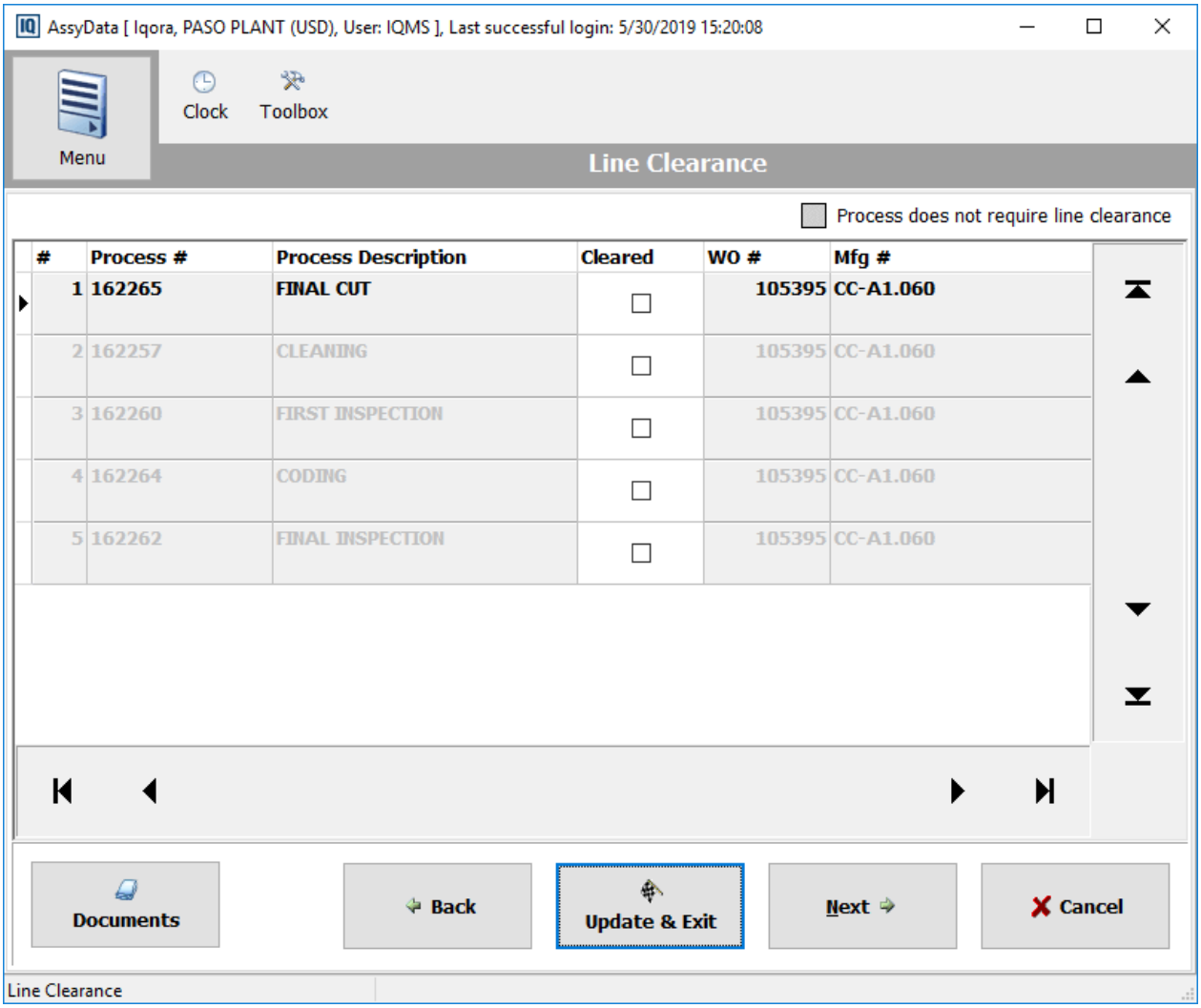


- Then scan the supervisor (Employee) ID. Or select Enter to select the employee from the supervisor pick list.
- Scan the work order number or use the pick list to find the work order and press Select.
- Scan the Shift ID or use the pick list to find the desired shift. Once selected the shift start and end date/times in the Approved Date/Time Range fields will fill in automatically. The dates and/or times can be changed by selecting the Change Date button and entering the correct information in the pop up form.



The line will be cleared between these dates for the shift selected.

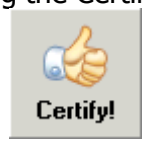
- Select Next to continue.



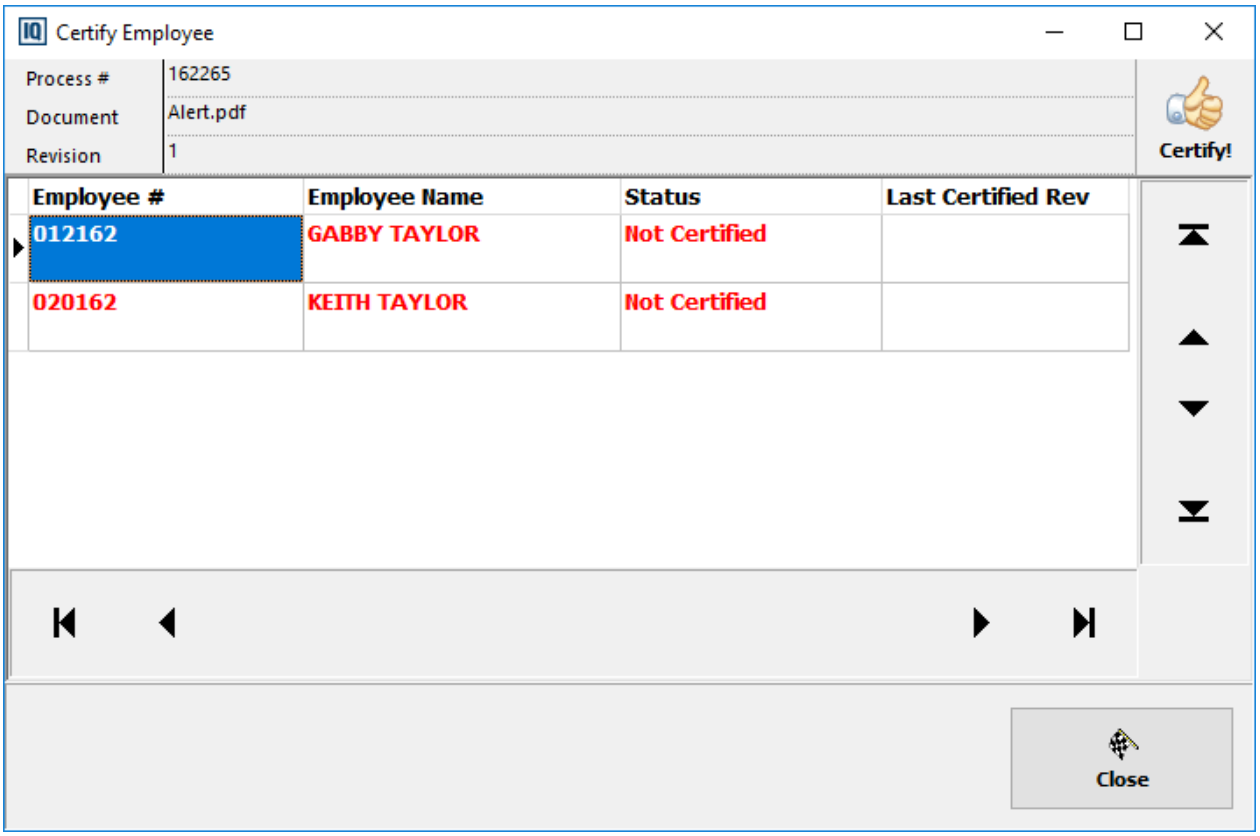
- Check the '**Cleared**' check box to clear the line for each process. Processes that require a line clearance will display in bold. Those that do not will be grayed out and cannot be cleared. Processes that have already been cleared will have the box already checked. Multiple processes can be cleared at the same time.

- From this screen users can access internal and external documents associated to the Process, BOM, or Inventory item by selecting the **Documents** toggle button in the lower left portion of the screen.

- **Certify** - Employees can be certified for a process from the External document screen by selecting the Certify button 

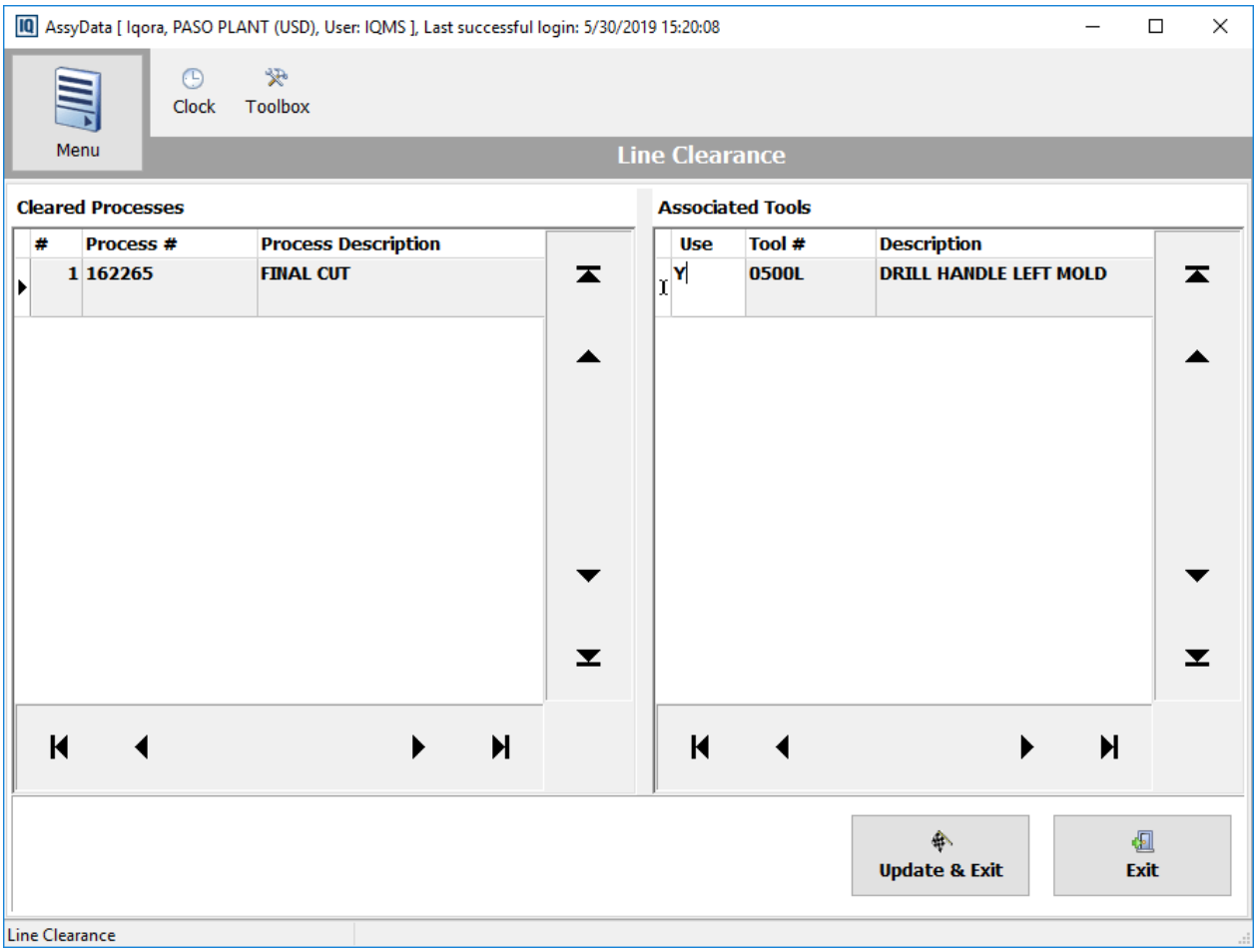
. Highlight the employee to be certified and select the Certify! 

button.



To return to the Line Clearance screen select the Documents button again.

- Once the line has been cleared the user can select the Update and Exit button to complete the line clearance and return to the Time Clock screen, or select the Next button to proceed to the **Associated Tools** screen.



From the Associated Tools screen the supervisor can select the specific tool(s) that should be used to perform the process. The list will display the MRO equipment that has been associated to the Auxiliary Equipment listed on the Assembly Process. (See Auxiliary Equipment for more information). The system will store which MRO equipment ID's were actually used in the line clearance process and can be used for history reporting. If a tool is not chosen, the system will still allow an employee to sign into the work order.

- Once all the information has been added select the Update & Exit button to return to the main screen.

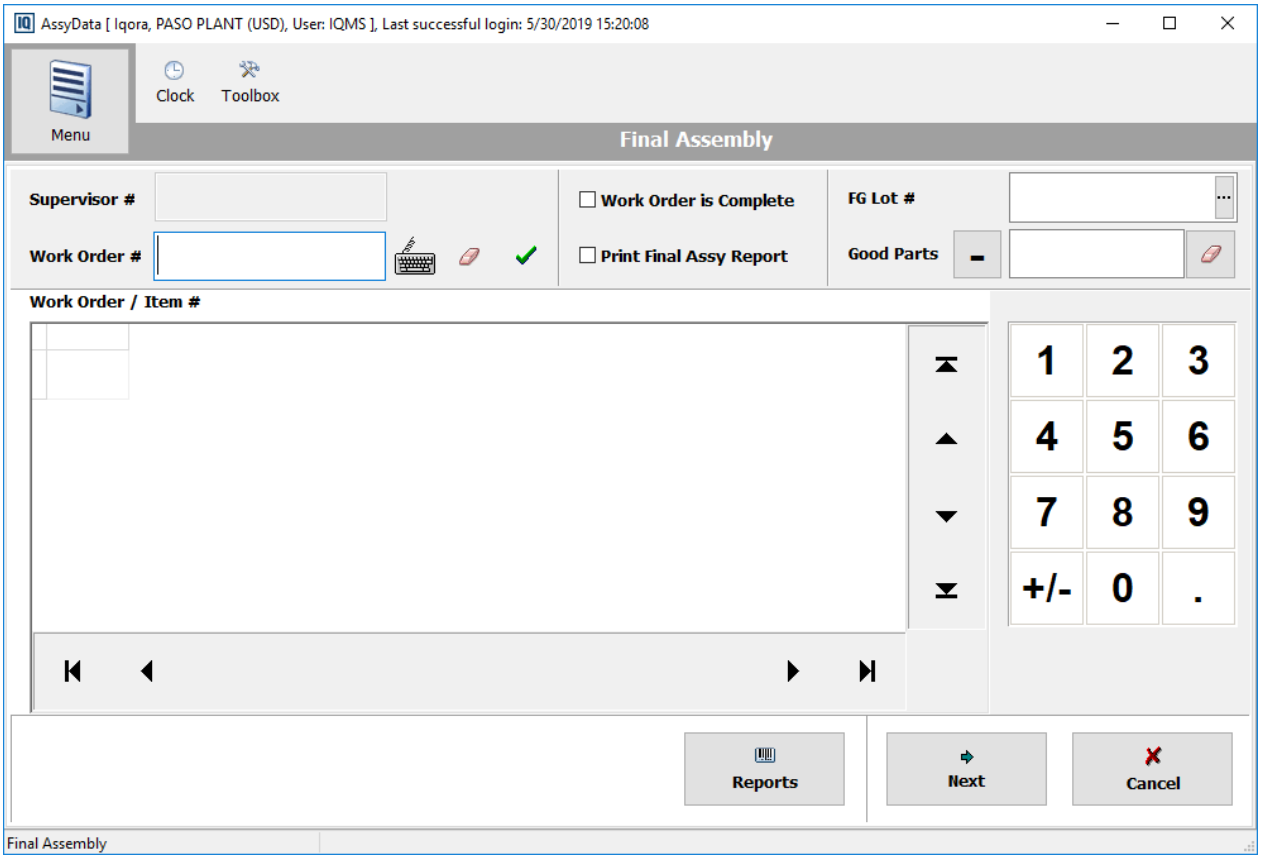
Final Assembly in AssemblyData

The Final Assembly function is used to report good parts. This is the same function that is available in Assembly Track. This will add the items to inventory and create a record in the transaction log with a Trans Type of 'Finish Process WIP' and a reason of 'Final Assembly'. With matching Lot #s for good parts during Labor Reporting and Final Assembly, Lot traceability includes backflushed components in Lot # Tracking after reporting Final Assembly.

Note: If the process on the BOM is designated as 'Final Assembly Reporting, when the user selects OK on the Labor Reporting form the Final Assembly Reporting form will appear with the work order and item # populated to enter Good Parts. However, from AssemblyData only a supervisor (Employee Maintenance->Supervisor option is checked) can enter the number of finished goods that have been completed; unless the 'No supervisor required for Final Assembly' option is checked for the MFG Type.

Note: When a supervisor is required, the system will capture the supervisor's badge number in the TRANSLOG table.

Select the Final Assembly button from the module bar in AssemblyData and the following screen will appear:



- Enter the supervisor number if required.

- Enter the work order number, or select the check button to bring up a list of all ASSY work orders. (Note: It is not necessary that the work order be added to Assembly Track to be visible in Final Assembly as it is when logging in).

- Highlight the desired work order and enter the 'Good Parts'. (Note: Zero or a negative number is allowed). If zero good parts is entered a warning will appear stating, 'Zero good parts have been entered. Continue?'. If the user selects Cancel they cannot proceed to the next form. If OK is selected, the system will continue. If the quantity of good parts entered is greater than the work order quantity a warning will appear stating, 'Total Good Parts is greater than WO Qty'. Security can be placed on these warnings.

- Upon finishing Final Assembly if 'Work Order is Complete' was unchecked, nothing is posted to translog, so in PIT the cost of the consumed components remain in WIP. If 'Work Order is Complete' is checked during Final Assembly, the system will write a 0 quantity entry in Translog. Regardless of the quantity entered, the system will clear the SNDOP_DISPATCH buckets so that in PIT, the cost of the consumed components, labor, and OH of those parts not reported in final assembly would be credited from WIP and debited into Variance.

Note: When a negative value is entered the Post Inventory Transaction (PIT) will display a negative debit value instead of a positive credit value. This is because the system does not have IN and OUT in this form. It only looks for an IN therefore a negative entry calculates the same as a positive number resulting in a negative debit rather than a positive debit. The journal entry will be correct, the negative debit value is converted to a positive credit value.

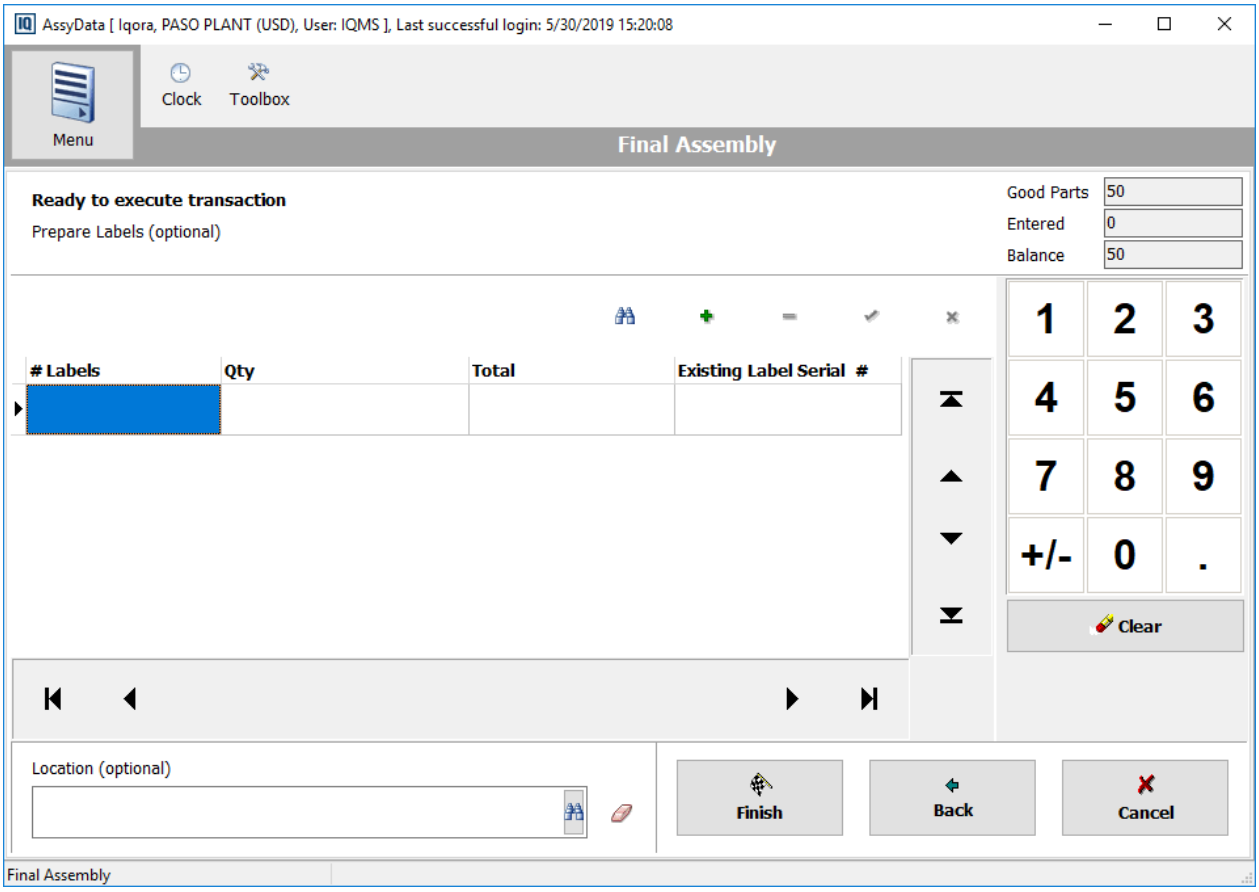
- Enter a FG Lot # if desired. (If the 'Lot # is Mandatory' option is checked for the item the supervisor must enter a lot number).

- A Final Assembly Report can be printed by selecting the 'Print Final Assembly Report' box. The report that prints is the one that has been assigned in System Parameters->Reports and Forms->AssemblyData report.

- There is also a Reports button that can be used to print reports added to this menu.

- Check the 'Work Order is Complete' box if the work order is finished. After selecting the Finish from the Prepare Labels screen the user will be asked if the work order should be deleted or not. If it is not deleted it will still be visible in Assembly Track but it will be highlighted in yellow to indicate it is complete.

- Select the Next button. The Prepare Labels screen will appear.


AssyData [Iqora, PASO PLANT (USD), User: IQMS], Last successful login: 5/30/2019 15:20:08
Menu
Clock
Toolbox
Final Assembly
Ready to execute transaction
Prepare Labels (optional)
Good Parts 50
Entered 0
Balance 50
Labels
Qty
Total
Existing Label Serial #
1 2 3
4 5 6
7 8 9
+/- 0 .
Clear
Location (optional)
Finish
Back
Cancel
Final Assembly

- Prepare Labels by entering the number of labels and the quantity of good parts associated with each label. The system will keep track of the balance of items that still need a label in the Balance field. If the 'Print Labels On Final Assembly' Parameter is checked (in Configure AssemblyData,Controls tab), or if the item is serialized, the user must enter labels for the good parts and the balance must equal zero or they will receive an error: "Total labels qty does not match good parts - unable to continue". If the parameter is not checked creating labels is optional. The Search pick list will display any existing MASTER_LABEL records for the selected work order that have not been dispositioned or shipped. An existing serial number can be selected from the pick list and upon finishing Final Assembly, the system will reprint the label and disposition into inventory. (Note: Serial numbers with prefixes can be scanned).

- **Location** - Users can optionally select a location for the items to be dispositioned to. Select the pick list button and select a location from the list. A new location can be associated to the item by selecting the New button on the pick list. This will bring up the 'Assign New Location' (location list) form. This will override the Disposition Hierarchy mentioned below. If the parameter '**Location is mandatory during Final Assembly**' is checked (Options menu in Assembly Track), if the Location field is not populated, an error message will pop up: 'Mandatory field 'Location' must be entered - operation aborted', with an OK button. When OK is selected, the Final Assembly form remains open for the user to enter the location. If unchecked, entering a location is optional.

- Select the 'Finish' button and a confirmation box will appear. Select OK to continue and post the transaction. Or select Cancel to return to the Final Assembly screen.

Note: If the quantity of good parts entered is greater than the work order quantity a warning will appear with an OK and Cancel button stating, 'Total Good Parts is greater than WO Qty'. Security can be placed on these warnings.

- The items will be put into a location based on the **Disposition Hierarchy** below unless a location was selected manually.

When reporting Final Assembly for ASSY1 and ASSY2, the following hierarchy is for dispositioning the FG item into inventory:

If the process IS scheduled in Finite Scheduling:

1 Hard Allocated to the work order

2 Mfg # default designator

3 Default Designator

4 Dispo IN of the work center associated to the last process

5 Dispo IN of the dispatch list work center associated to the last process

6 MFG Cell Dispo locations

7 MFG Type Dispo. Designators

8 FIFO

9 Temporary

If the process IS NOT scheduled in Finite Scheduling:

1 Hard Allocated to the work order

2 Mfg # default designator

3 Default Designator

4 Dispo IN of the dispatch list work center associated to the last process

5 MFG Cell Dispo locations

6 MFG Type Dispo. Designators

7 FIFO

8 Temporary

Note: The Hard Allocated location applies in situations where a manufactured item is used in a higher level process and is hard allocated to the higher level work order.

If a location was not selected manually, when reporting Final Assembly for ASSY3 (Backflush Each Process is NOT checked), the following hierarchy is for dispositioning the FG item into inventory and backflushing the material out of inventory.

1 Hard allocated to the work order

2 Mfg # default designator

3 Default designator

4 Designated assembly line IN/OUT location (if the work order is scheduled in Finite Scheduling)

5 MFG Cell Dispo locations

6 MFG Type Dispo OUT location

7 FIFO

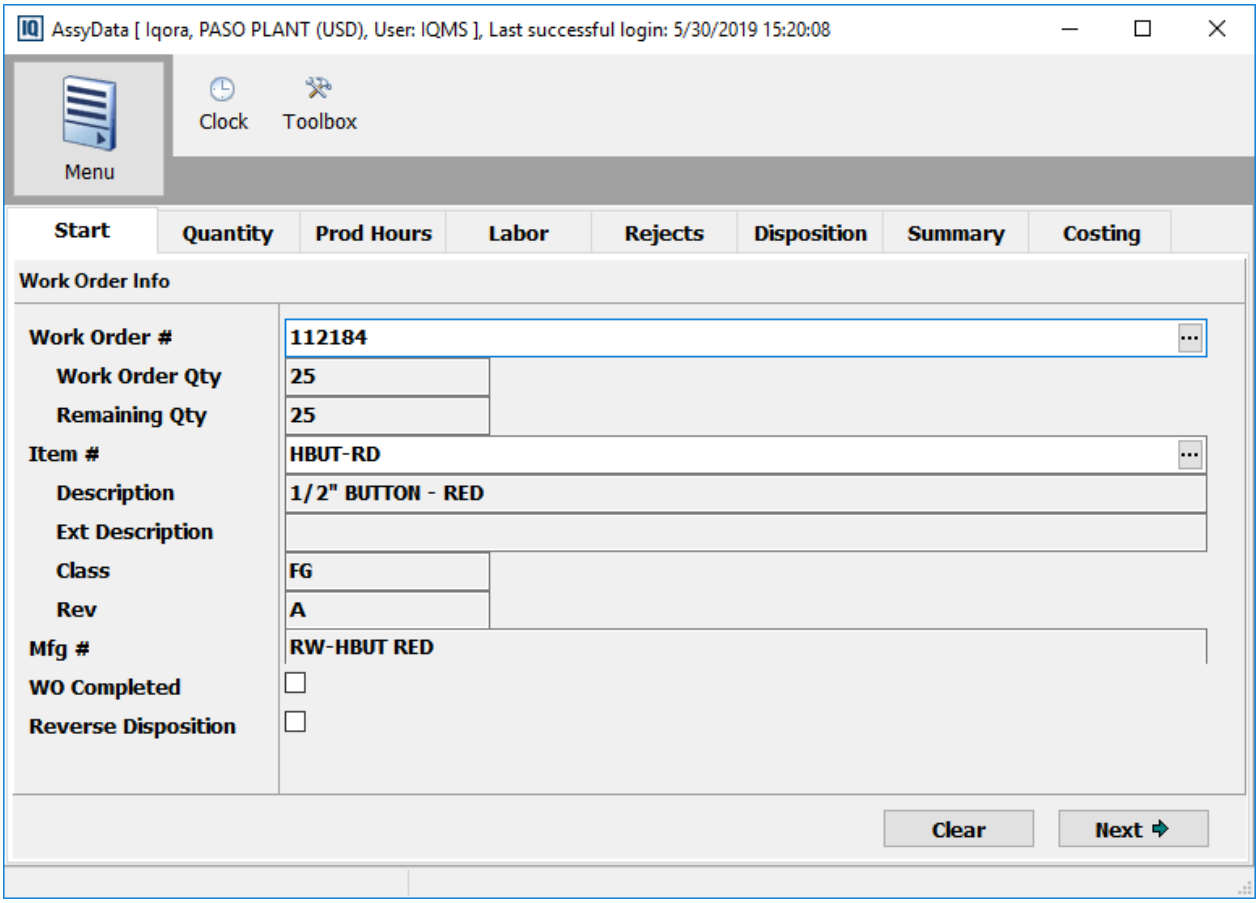
8 Temporary

Note for VIN Generator users: If the work order is associated to MASTER_LABEL records with a VIN number, the user will not be able to enter a FG Lot #. After entering a quantity and clicking Next, preparing labels is mandatory (even if the item is a non-serialized control item). The user can either search for an existing serial # or add a label. Upon posting Final Assembly, the item is dispositioned into inventory with the VIN # as the lot #. The Smart Code, Cost, and Price from the CRM Quote will be populated under lot control. The weight of the item will also be populated under lot control. (For more information on VIN Generator please see the ***Vehicle Identification Number Generator https://my.iqms.com/cfs-file.ashx/__key/Technote/VIN-Generator.pdf*** TechNote).

Rework Reporting in Assembly Data

In Assembly Data select Rework Reporting module to report Rework Mfg Type items using the Production Reporting by Work Order (PRW) module. When this option is selected the work order pick list filtered on the REWORK Mfg Type will appear. Select the item to be reported from the pick list and the PRW form will open at the Start tab. This option is also available in Assembly Track (right click option in the top section. (The screen shots below are from Assembly Track but are the same in Assembly Data except for touchscreen).

Start



This tab will display the Work Order #, Work Order Qty, and Remaining Qty, and the Item information based on the selection made from the pick list. To change the work order or item select the ellipsis button in the fields and select from the corresponding pick list. The **Clear** button will remove all of the data that was entered to start the production report over.

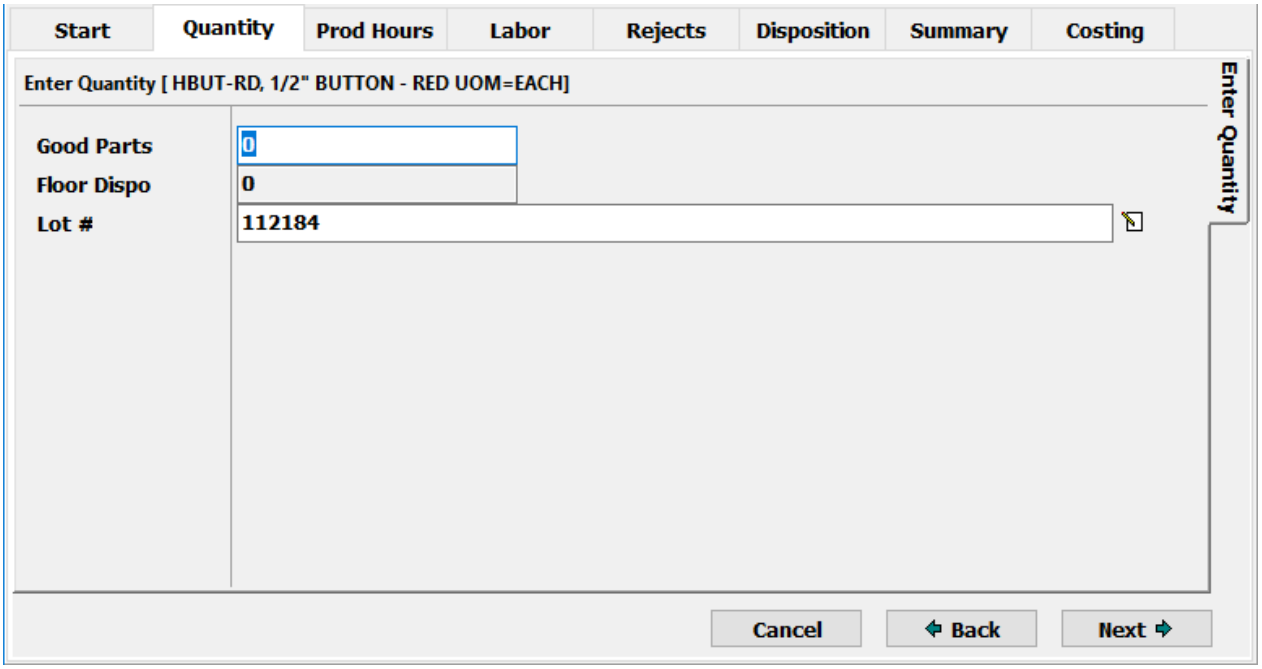
Select the **WO Completed** box if the work order is complete. After clicking on the 'Finished' button on the Summary or Costing tab if this box was checked and the work order is marked Firm, the system will ask if the user wants to delete the WO, "WO# xxxxx has been marked completed. Delete this WO?" If the work order is not marked firm, it will remain on the schedule for the system to take care of automatically when update schedule is run again.

Right Click 'Jump To' Options available on the Start tab:

- Jump To Work Order
- Jump To Inventory
- Jump To BOM
- Jump To Work Center

Once the information is complete, select the Next button.

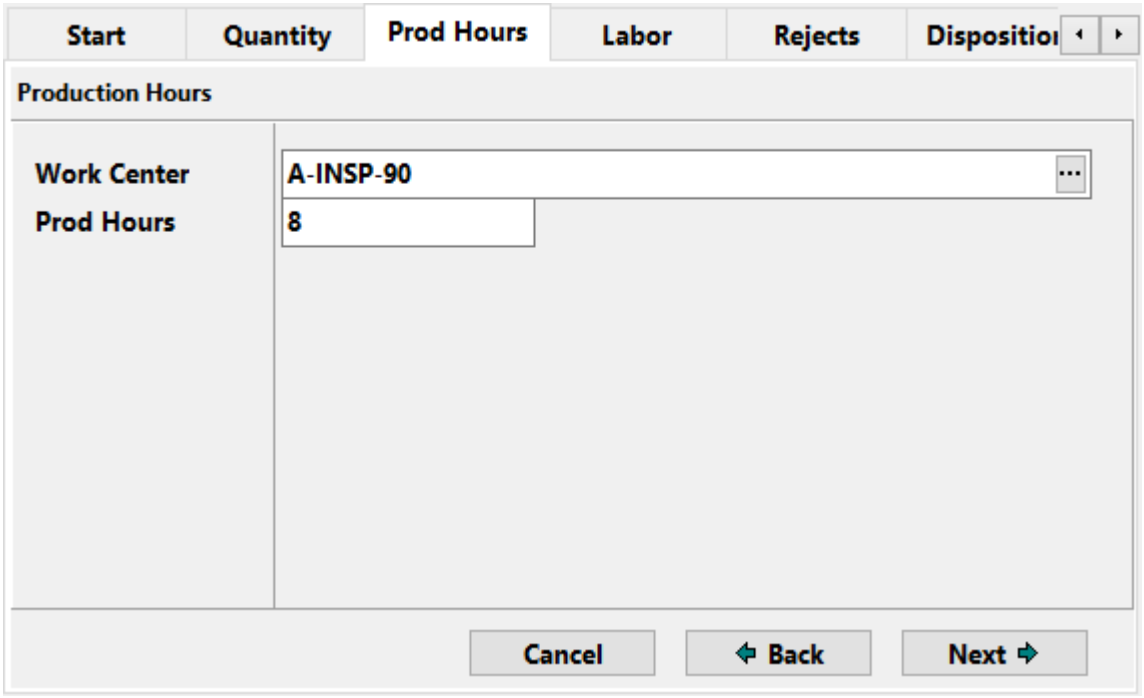
Quantity



From this tab users will enter the quantity reworked. The Lot # will automatically populate with the current lot of the MFG#. A Lot # can be manually entered or the user can select the 'Set Next FG lot #' button to have the system apply the next lot number. If the WO Completed box is checked, if the quantity being reported is less than the WO quantity when clicking ‘Next’, a warning will appear: ‘Quantity reported is less than the work order quantity.’ This warning has a ‘Do not show again’ option. Security can be placed on this warning.

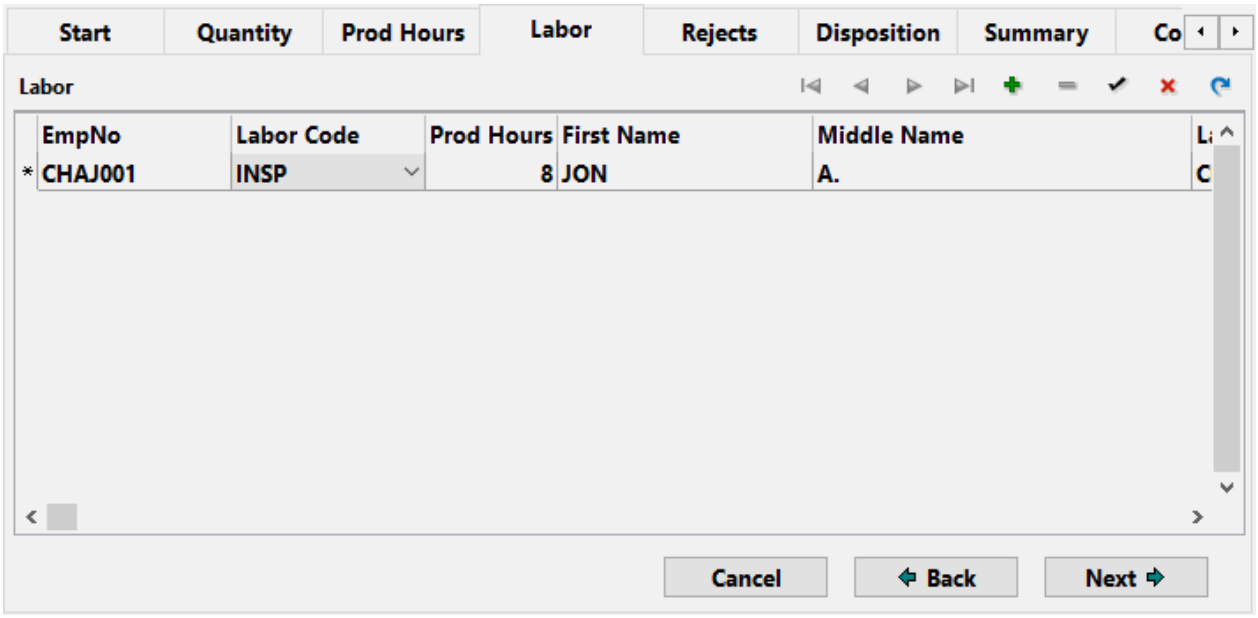
Prod Hours

Select the Work Center from the pick list accessed by clicking on the ellipsis button in the field. Then enter the production hours.



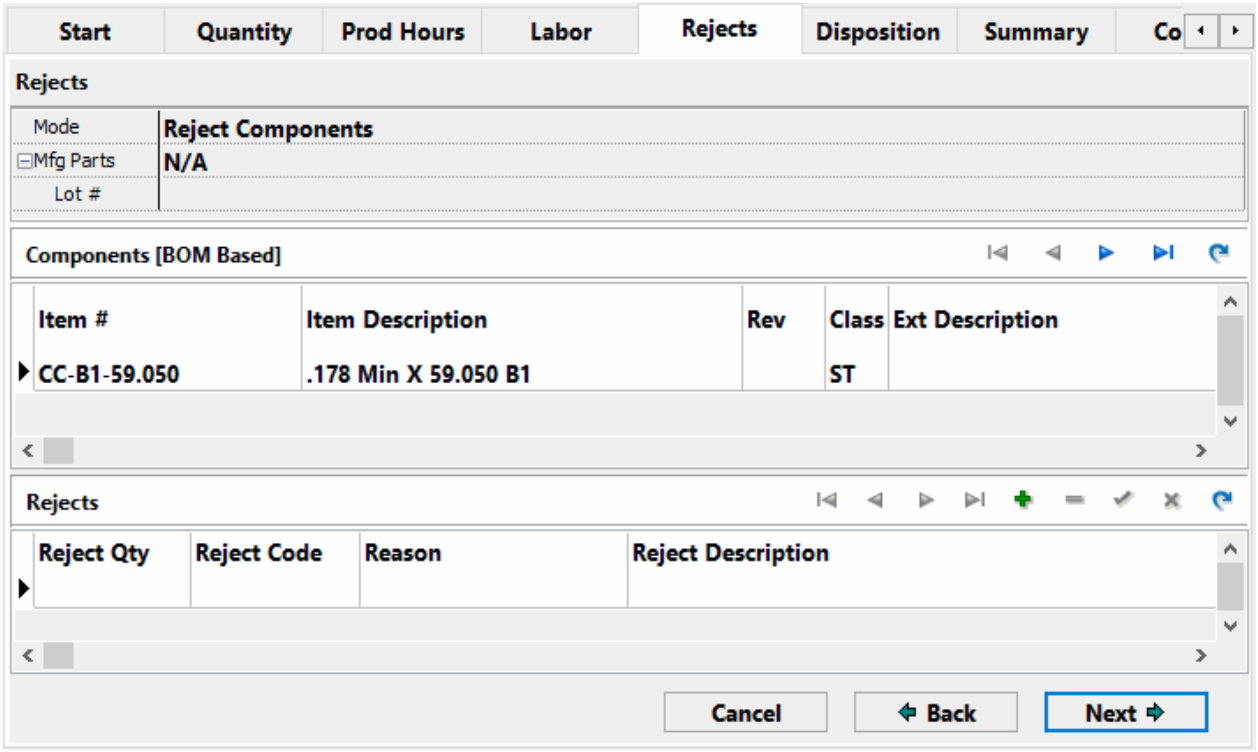
Labor

Specific employees can be associated to the production report record. Select the + button to add a labor record. Then select the ellipsis button in the 'EmpNo' field and select an employee from the pick list. The Prod Hours field will populate with the Prod Hours entered on the previous tab. This value can be edited to record the actual labor hours associated to the specific employee. Multiple labor records can be created by selecting the + button again.

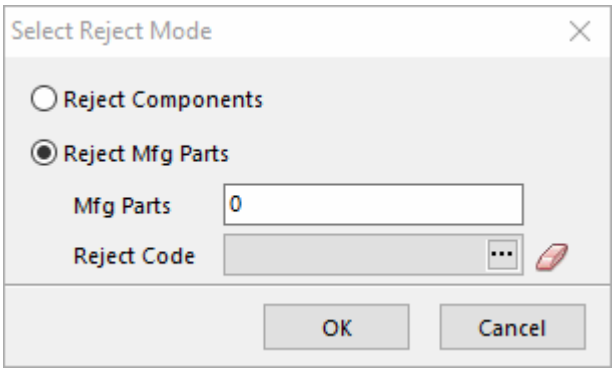


Rejects

Rejects for attached components or for the manufactured product can be entered from the Rejects tab.



From the Mode field select the ellipsis button and choose: Reject Components or Reject Mfg Parts from the pop up form.



Reject Mfg Parts

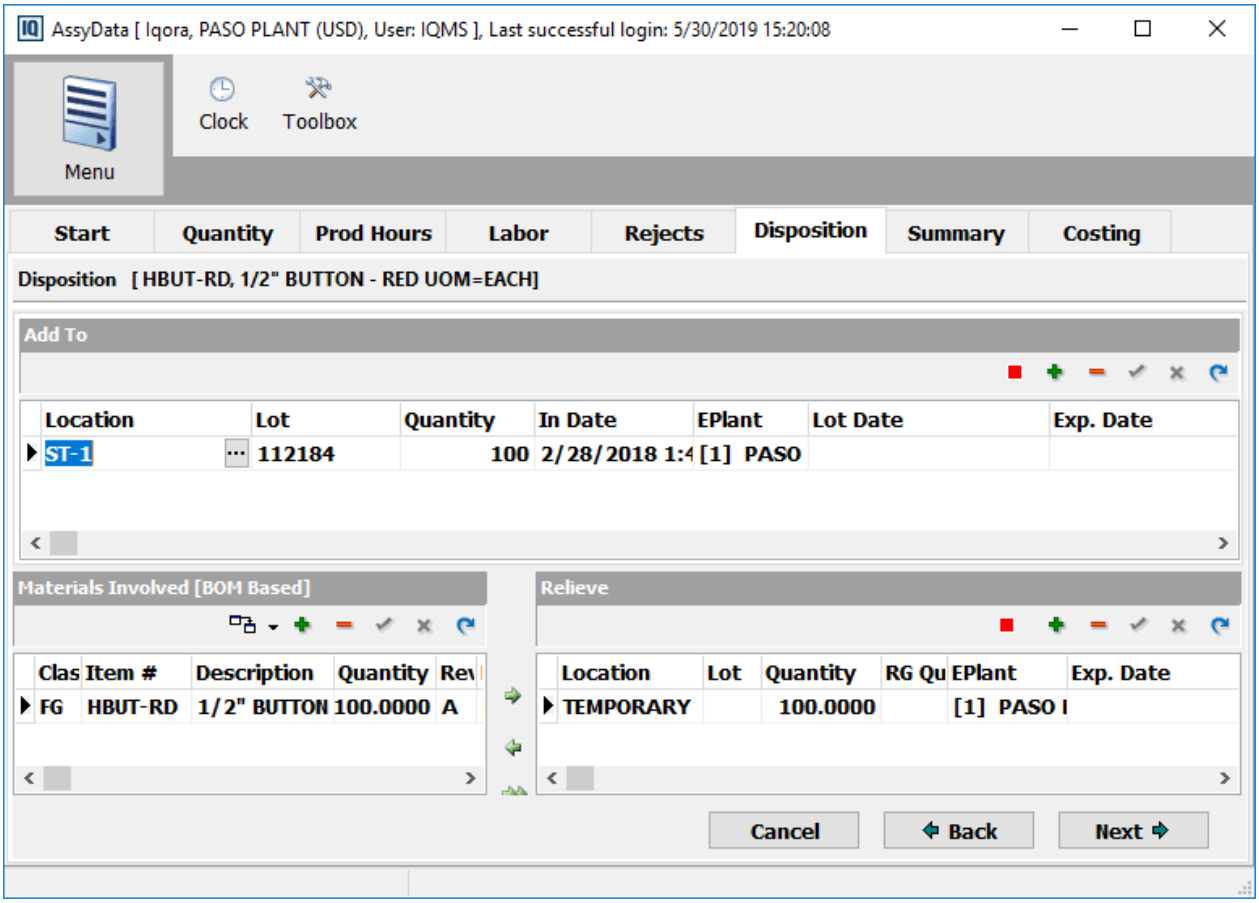
When the Reject Mfg Parts option is selected enter the quantity of rejects in the Mfg Parts field, and select the Reject Code from the pick list accessed from the ellipsis button. The eraser button next to this field can be used to clear the selected reject code. The system will automatically calculate the reject quantity for the components based on the Mfg Parts reject quantity, but it can be overridden by entering a different value in the Reject Qty field for the specific component. The Reject Code will default to the same code that was selected for the manufactured item but can be changed by selecting a different code from the pick list. Additional information can be entered by typing in the Reason field.

Reject Components

Select this option to reject the components without rejecting the manufactured item. The components associated to the BOM for the manufactured item will display in the middle section. Highlight the item to be rejected and enter the quantity in the Reject Qty field in the bottom section of the form. Select the reject code from the pick list and enter a reason if desired.

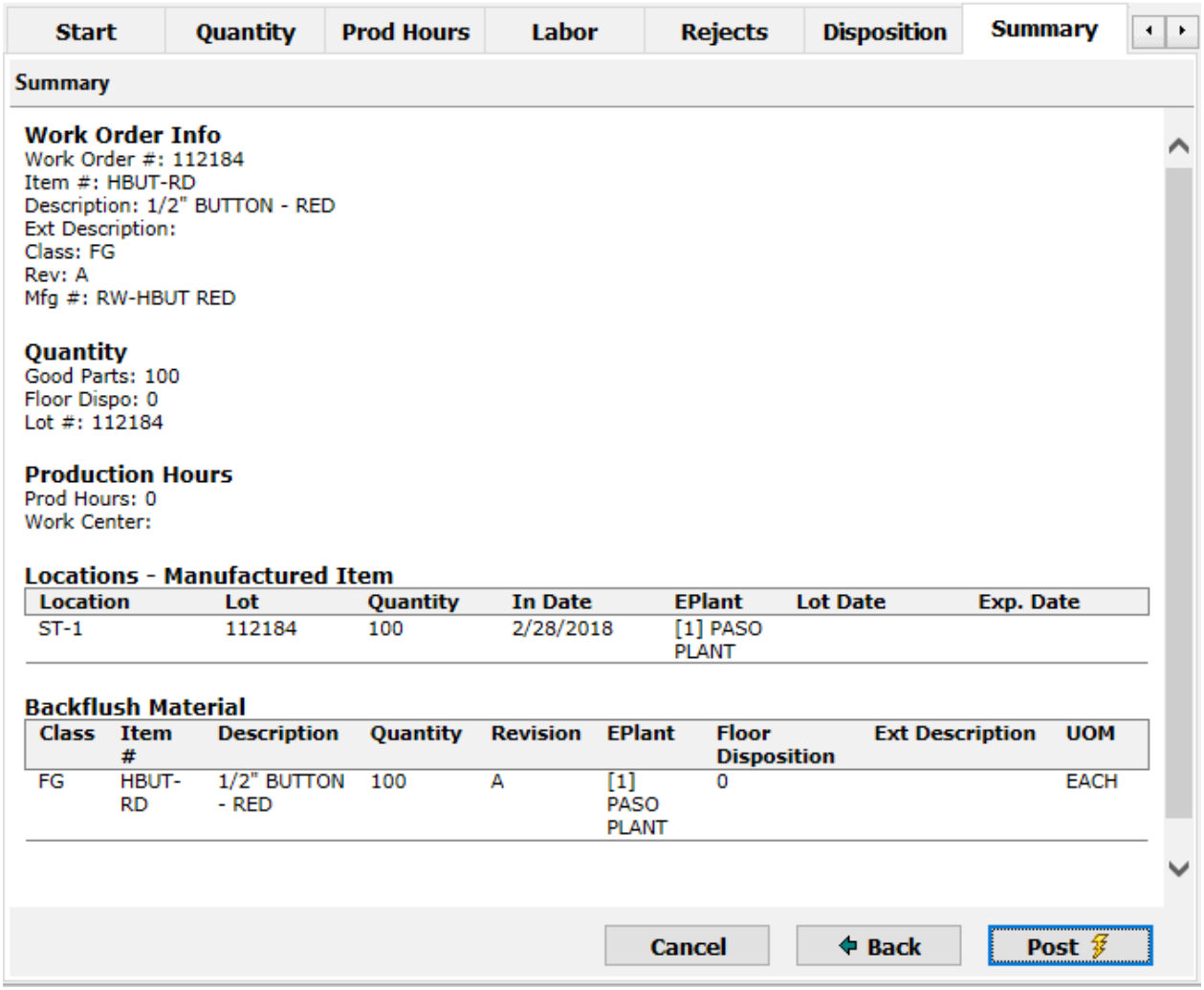
Disposition

The Disposition tab the system will do an OUT transaction from the non-conform location and an IN to a location based on the disposition hierarchy. (Note: If the disposition IN location is marked as non-conform then the item will remain in non-conform status, if this is not desired be sure that the IN location based on the hierarchy is not marked as non-conform). The transaction will show up in Post Inventory Transactions (PIT) as a transaction type of disposition. The system uses the costs associated to the costed BOM. If it is desired that the costs come from the Rework BOM you must recalculate it and roll those costs.


AssyData [Iqora, PASO PLANT (USD), User: IQMS], Last successful login: 5/30/2019 15:20:08
Menu
Clock
Toolbox
Start
Quantity
Prod Hours
Labor
Rejects
Disposition
Summary
Costing
Disposition [HBUT-RD, 1/2" BUTTON - RED UOM=EACH]
Add To
Location
Lot
Quantity
In Date
EPlant
Lot Date
Exp. Date
ST-1
112184
100
2/28/2018 1:4
[1] PASO
Materials Involved [BOM Based]
Clas
Item #
Description
Quantity
Rev
FG
HBUT-RD
1/2" BUTTON
100.0000
A
Relieve
Location
Lot
Quantity
RG Qu
EPlant
Exp. Date
TEMPORARY
100.0000
[1] PASO I
Cancel
Back
Next

Summary

The Summary tab displays the information that was entered in the production report, such as serial #'s, labor, locations, rejects, and backflush information.

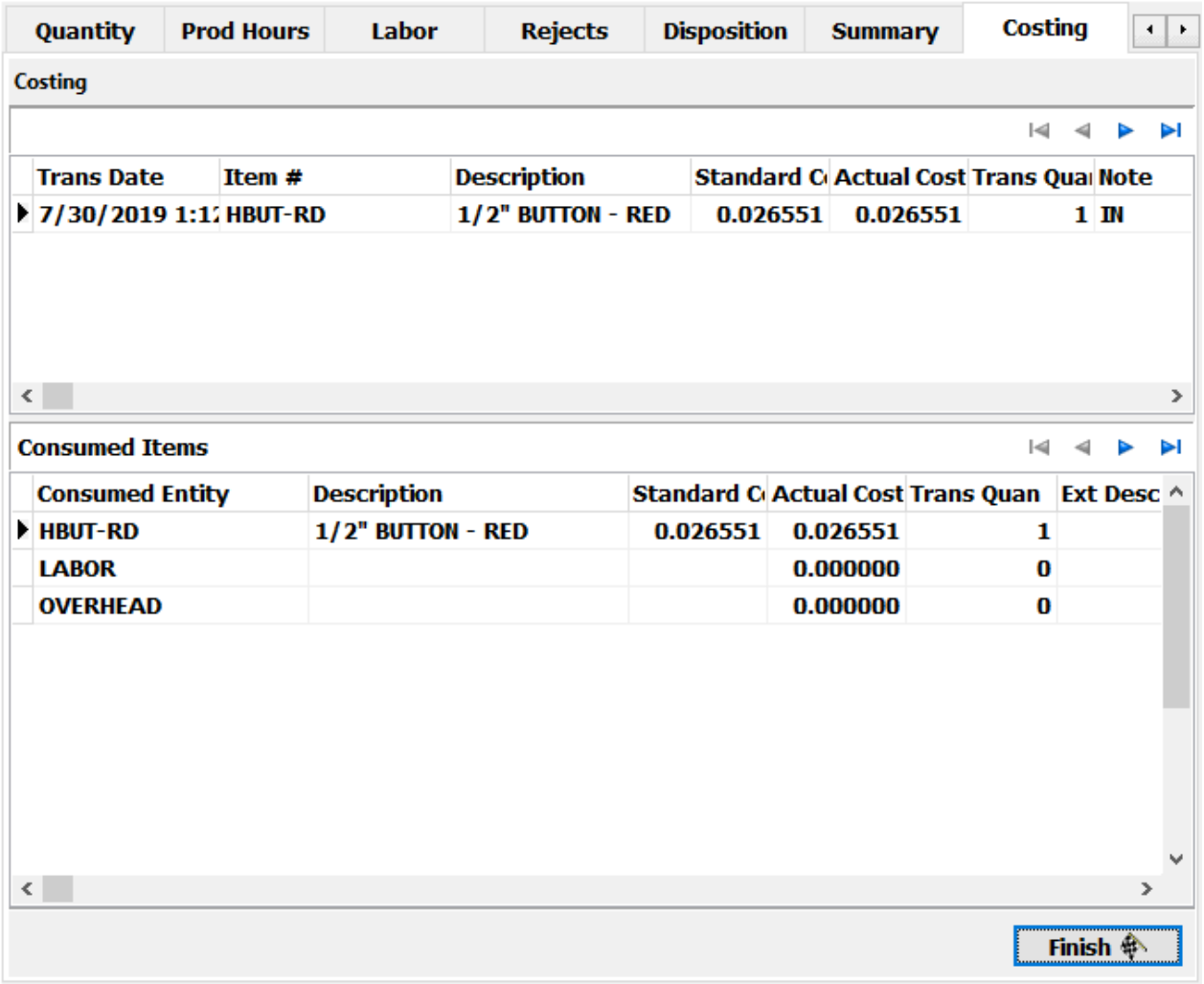


Once the information is reviewed, the transaction can be posted by selecting the Post button. A confirm message will display stating, "Are you sure you want to post this production report?" If Yes is selected, a 'Disposition' type transaction will be made. Selecting No will return the user to the summary tab without posting the transaction. If the relieved quantity differs from the Materials Involved quantity by 10% or more, a warning will appear when posting the Production Report. If information needs to be edited prior to posting select the Back button to return to the previous tab(s).

From the Summary tab users can right click and choose to copy and paste the summary, or print it (print or print preview).

Costing

This tab displays the Costing information for the item. This functions just like the Process Cost module on the Process Cost tab on the EIQ Launcher Bar. For a complete discussion on the process costing module please refer to the Introduction to Process Costing topic in the Standard Cost section of the help files.



Finish

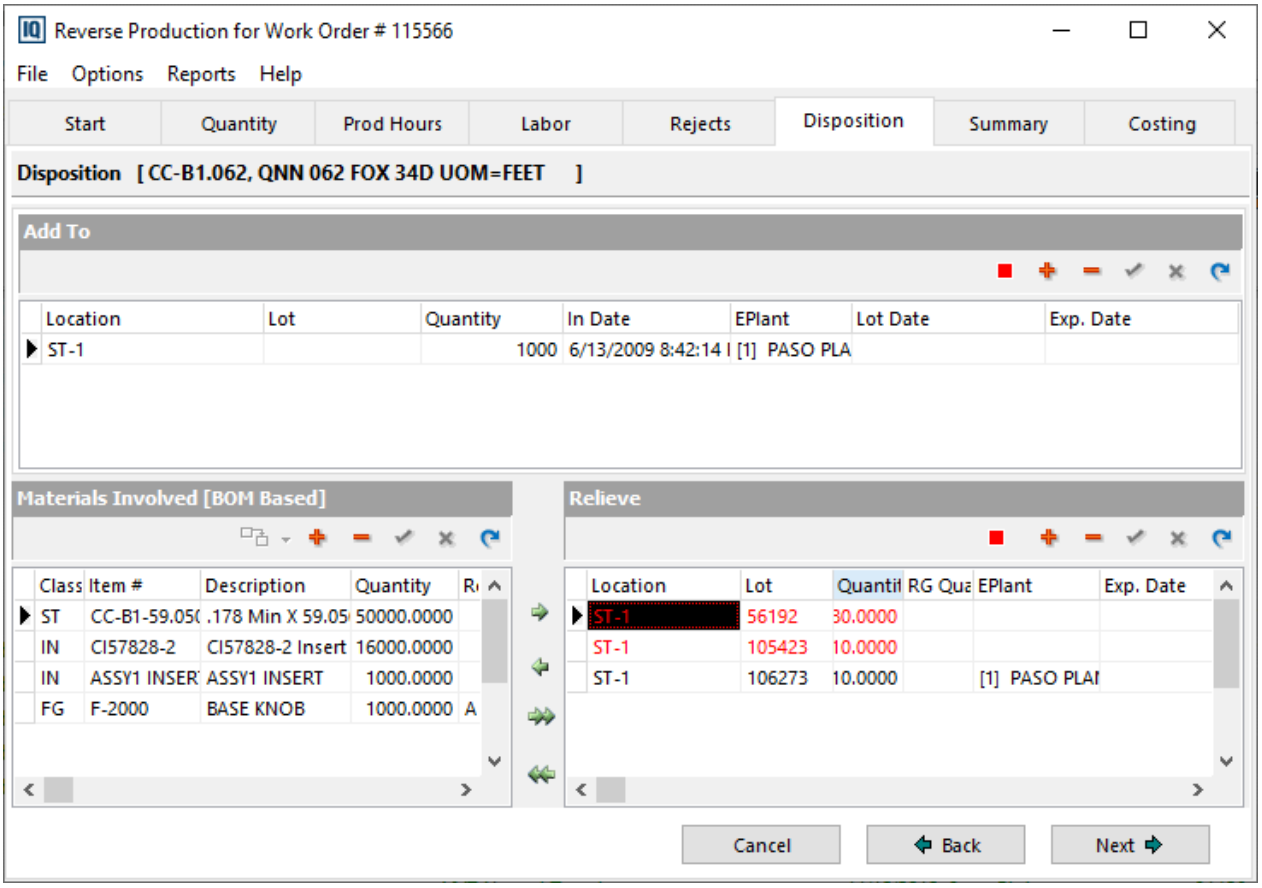
Once the the production report is complete, select the Finish button and select Yes to the confirm message. The user will be returned to the Start tab.

Reverse Disposition

There is a Reverse Disposition check box on the Start tab to perform a reverse disposition. If this is checked, the Quantity tab for non-SIC items will display the 'Enter Quantity' tab only. For SIC items the Scan Serial tab will only display. The Disposition tab will relieve the manufactured product and add the materials involved based on the work order.

1. Select the work order and check the Reverse Disposition box.
2. Select Next to access the Quantity tab. If there is more than one production report for the work order another pick list will surface to select the specific Production Report ID to reverse.
3. Once the Quantity screen appears, for non-SIC items the user will enter the quantity of production to reverse in the 'Good Parts' field, and enter a lot # if applicable.
4. For SIC items the Scan Serial tab will only display. Select the search button to access the list of serial numbers associated to the work order. Select the serial number(s) and press OK.

5 The Disposition form will show the manufactured product coming out of inventory and the materials involved will be added to inventory. During the reverse disposition users should not enter any reverse consumed materials. All this information will automatically come in based on the original disposition, including if they were hard allocated.



Pallet Builder

The Pallet Builder module allows the user to scan a master label serial #; when scanned and validated against the currently running work center's work order, the application will disposition the serial # and add it to the correct pallet. The disposition reason in translog will be 'Floor Disposition'. This module supports multiple pallets in the event that a family tool is running and will match the label to the correct part. Multiple pallets can also be created for a single part.

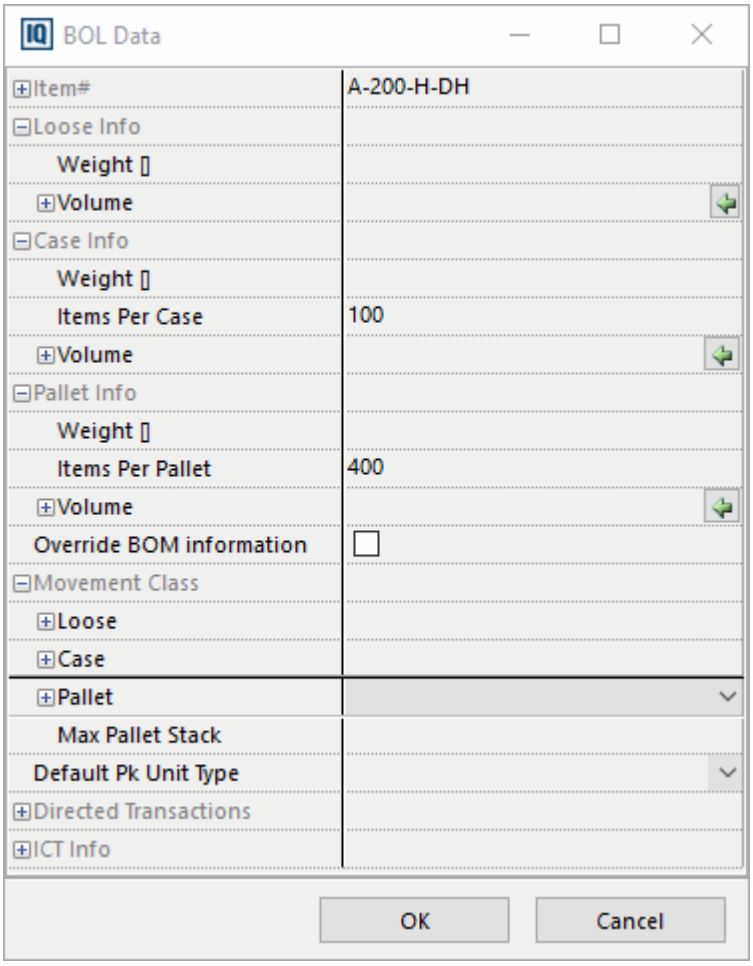
Setup

A pallet label must be set up so a label will print when the pallet is filled to capacity.

By default BOL Data must be setup for items in order for the system to calculate the correct amount of parts per package and package per pallet. However if the '**Do Not Force BOL Data**' (in ShopData Configuration->Pallet Builder->Global setting) is set to Yes, the system will look to the setting of the option Override BOM Information on the inventory item's BOL Data settings. If that setting is checked, the system will use the information in the BOL Data screen for packaging information in Pallet Builder. If it is not checked, Pallet Builder will use the packaging information on the BOM instead. If the' Do Not Force BOL Data' option is set to No, Pallet Builder will always look at the BOL Data packaging information.

BOL Data

From the inventory item screen, go to the Inventory item in EnterpriseIQ, open the Options menu and select 'BOL Data'. From within BOL Data, enter the appropriate number of Items Per Package and Items Per Pallet. Items Per Package refers to the number of items in a box, while the Items Per Pallet refers to the number of total items to a single pallet.


BOL Data
Item#
A-200-H-DH
Loose Info
Weight []
Volume
Case Info
Weight []
Items Per Case
100
Volume
Pallet Info
Weight []
Items Per Pallet
400
Volume
Override BOM information
Movement Class
Loose
Case
Pallet
Max Pallet Stack
Default Pk Unit Type
Directed Transactions
ICT Info
OK
Cancel

Pallet Builder will use the following calculation to determine the number of boxes per pallet: **(Items Per Pallet / Items Per Package) = # of boxes per pallet**

Label

The pallet label used will be the label set in Label Maintenance as a 'Manufactured' label type and 'Pallet' label kind. In the event that the user has multiple 'Pallet' kind labels with specific customers associated to them, the system will use the customer-specific label if the customer on the label matches the customer set as the Default Customer on the inventory item. (The Default Customer is set in the Inventory module Additional tab).

Pallet Builder Settings in ShopData

From the Pallet Builder settings in Configure ShopData there are several options relevant to Pallet Builder.

Local Settings:

- Printer - Prompt on Pallet Complete - If checked, this will notify the user that the pallet is complete. If the Auto Print Pallet button is depressed in the pallet Builder module, the application will automatically prompt the user to print a pallet label as soon as the pallet is completed. The parameter default is not checked.
- Control
  - Warn for Non-Conform Scan - When enabled, this setting will surface an error message popup immediately after scanning a serial # located in a non-conform location. The message will state, 'Serial # XXXXXXXXX is in a Non-Conforming Location. Would you like to continue?'. If OK is selected the system will add the scanned serial as normal. If NO is selected the system will continue building the pallet as normal without losing any previous scans, but it will not include the non-conform located serial # that was just scanned.
  - Dispo on Pallet Complete - This will eliminate individual transactions being made for each scan, reducing the total number of records in translog. With this setting active, one transaction is done when the pallet is completed.
  - Prompt Pallet Quantity - If the 'Dispo on Pallet Complete' parameter is checked this option will be available. When checked, a form will surface when selecting the Pallet Complete button allowing the user to fill in the pallet quantity. It will have the total scanned value, which may be overridden by the user. The application then takes the quantity entered, divided by the number of serials, and updates the quantity of each child label prior to dispositioning them all at once.

Global Settings:

- Do Not Force BOL Data - If this is checked, the system will then look to the setting of the option 'Override BOM Information' on the inventory item's BOL Data settings. If that setting is checked, the system will use the information in the BOL Data screen for packaging information in Pallet Builder. If it is not checked, Pallet Builder will use the packaging information on the BOM instead. If the' Do Not Force BOL Data' option is set to No, Pallet Builder will always look at the BOL Data packaging information.
- Allow Mixed Lots - When the option is checked, child serials of mixed lots are allowed on a single pallet. The system follows the same transaction rules as when building mixed lot pallets from scanners, and ensures child serials added to a pallet have a Lot # when 'Lot # is mandatory' is selected on the item. Note: When the 'Allow Mixed Pallets' in WMS Profiles is set to Y, and the system determines that the pallet is mixed, each child label will be dispositioned one at a time to the correct location/lot. Additionally, when the 'Allow Mixed Lots' Pallet Builder setting is checked and the pallet is a mixed lot, the pallet label's Lot # will be nulled as soon as the label is entered and the pallet becomes mixed.

Building Pallets

The following section will discuss the various controls within the Pallet Builder application as well as instructions for building pallets.

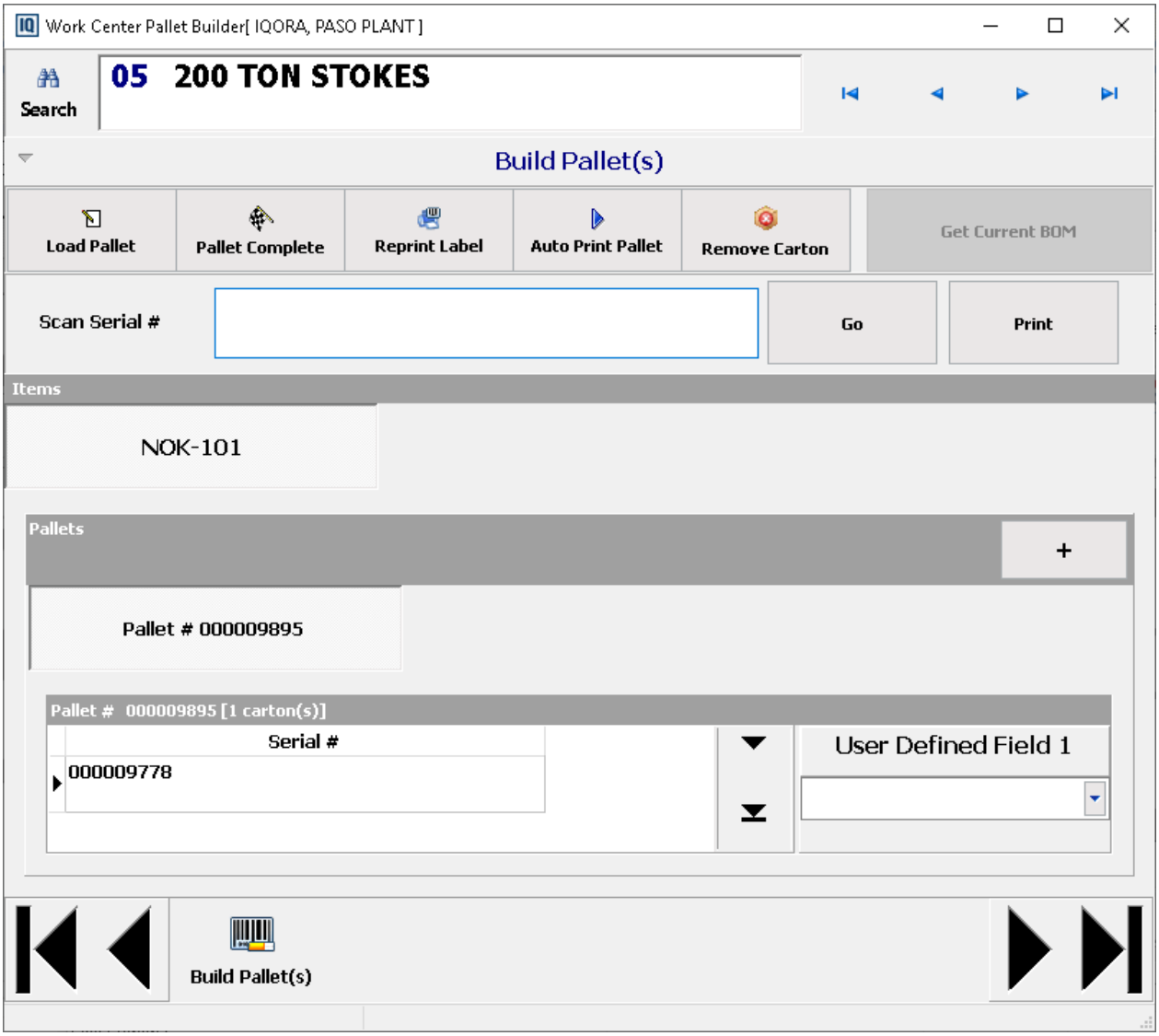
Pallet Builder Controls:

Load Pallet	Allows the user to view a pallet that was already created against the work center. A popup will appear where the user can enter a pallet or case serial #. This can be used to view the pallet in order to reprint a pallet label.
Pallet Complete	If the 'Auto Print Pallet' functionality is not activated, the user can click the 'Pallet Complete' button to print a label for the pallet.
Reprint Label	This allows the user to reprint the selected pallet label. The user must use the 'Load Pallet' button and enter the pallet serial # to view the pallet and reprint the label.
Auto Print Pallet	When this button is depressed, the application will automatically prompt the user to print a pallet label as soon as the pallet is completed.
Remove Carton	Users can select the Remove Carton button to remove the highlighted carton from the pallet. When this option is selected a popup form will display with three options: ▪ Adjust (Out Transaction) - Removes the label from the screen and removes the item(s) from inventory with a transaction code. A pick list of transaction codes will appear to choose from. ▪ Scrap (Out Transaction) - This also removes the label and item from inventory but with a reject code. The Rejects form will appear to choose a reject code. ▪ Disassociate (No Inventory Transaction) - This removes only the label with no transaction. The item remains in inventory.

Get Current BOM	When a new work order is added, the Get Current BOM turns red and signals the user that a new BOM was setup. This button should be toggled when the current BOM showing in the Items/Pallets section does not match the BOM that's currently running in first position in Finite Schedule for the work center. The system will refresh this button every 15 seconds. Note: If there are pallets in progress a warning with Yes and No buttons will display: 'Warning: The current Pallet Builder configuration has pallet(s) in progress. Do you want to force 'Get Current BOM' and apply the next configuration? Current Configuration: [WC#: #, BOM#: xxx, Item#(s):xxx, Next Configuration: [WC#: #, BOM#: yyy , Item#(s): yyy'

From within the Pallet Builder module, set the desired 'Auto Print Pallet' setting (on or off), and enter the first serial number into the 'Scan Serial #' field and click the 'Go' button.

Once the first box serial # is entered, a pallet serial # will be generated as well. The user can continue to add additional boxes to the pallet utilizing the same method used to enter the first box #.



If the '**Warn for Non-Conform Scan**' setting in ShopData Configuration for Pallet Builder is set to Yes, if a serial number in a non-conform location is scanned an error message will display stating, 'Serial # XXXXXXXXX is in a Non-Conforming Location. Would you like to continue?'. If Yes is selected the system will add the scanned serial as normal. If No is selected another message will display, 'Non-Conforming serial #XXXXXXXXX was prevented from being scanned to the pallet', and the system will continue building the pallet as normal without losing any previous scans, but it will not include the non-conform located serial # that was just scanned.

By default if a serial is scanned that does not match the lot number a message will display, 'Serial #XXXXXXXXX, Lot #yyy, does not match Lot #zzz'. If the '**Allow Mixed Lots**' is set to Yes (in ShopData Configuration->Pallet Builder->Global setting), child serials of mixed lots are allowed on a single pallet. The system follows the same transaction rules as when building mixed lot pallets from scanners, and ensures child serials added to a pallet have a Lot # when 'Lot # is mandatory' is selected on the item.

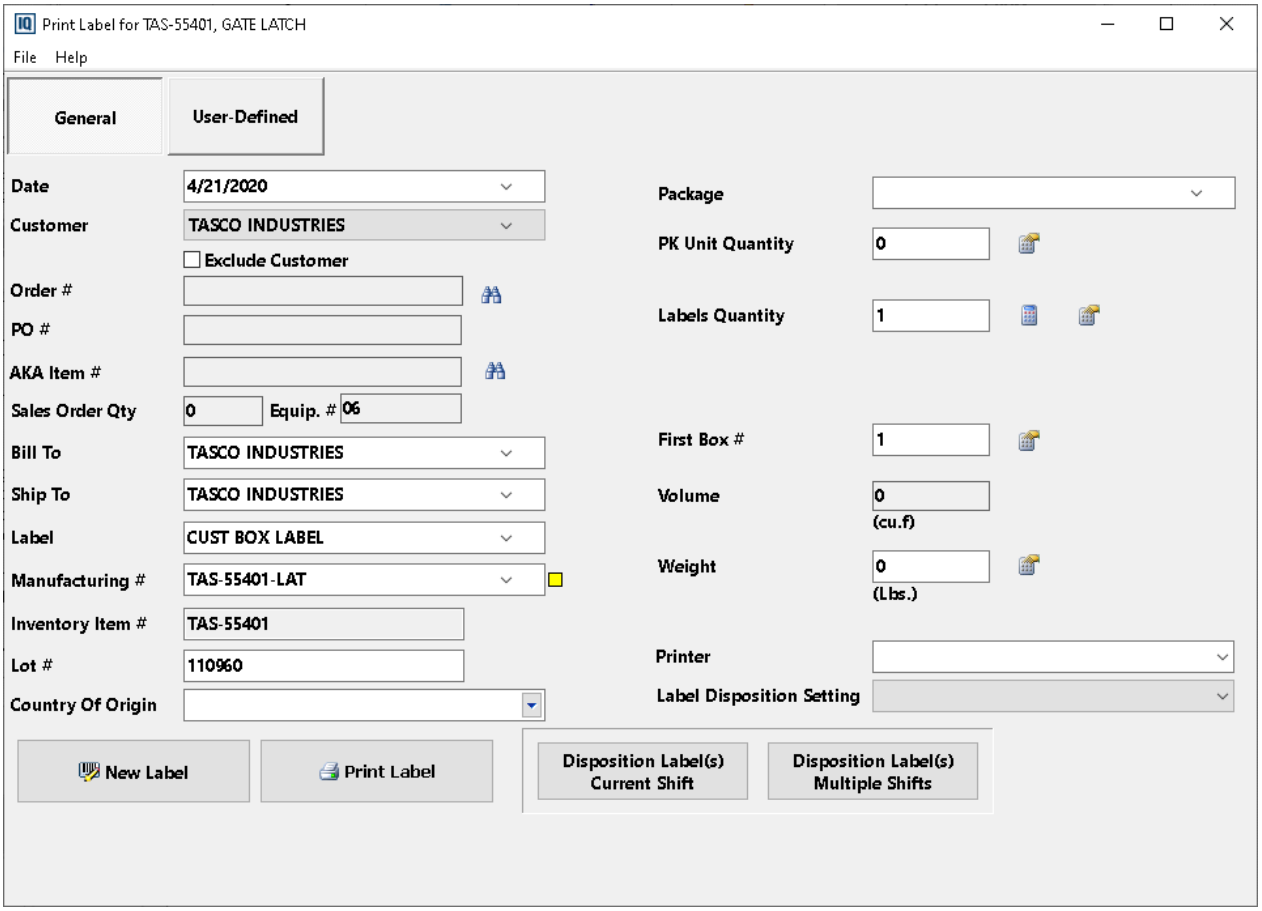
If the 'Use SN Labels to control MTO Dispositions' parameter is checked (System Parameters -> Purchase Order and Sales Order Setup tab, during Pallet Builder floor dispositions by SN if the MASTER_LABEL.ORD_DTL_ID is populated the system will lookup the order line item to see if it is marked MTO. If it is marked MTO the disposition will be processed as an MTO. It will not look at the Work Order for the MTO designation if this parameter is checked.

Note: If an error occurs while adding a serial number to a pallet, the scan transaction is canceled and the serial number will not be added.

Print

Instead of scanning an existing label that has already been printed, select the 'Print' button to create a new label and generate a new pallet label in one step. The system will attach the newly printed box label to the pallet label automatically.

The Print Label form will display to print the new label.

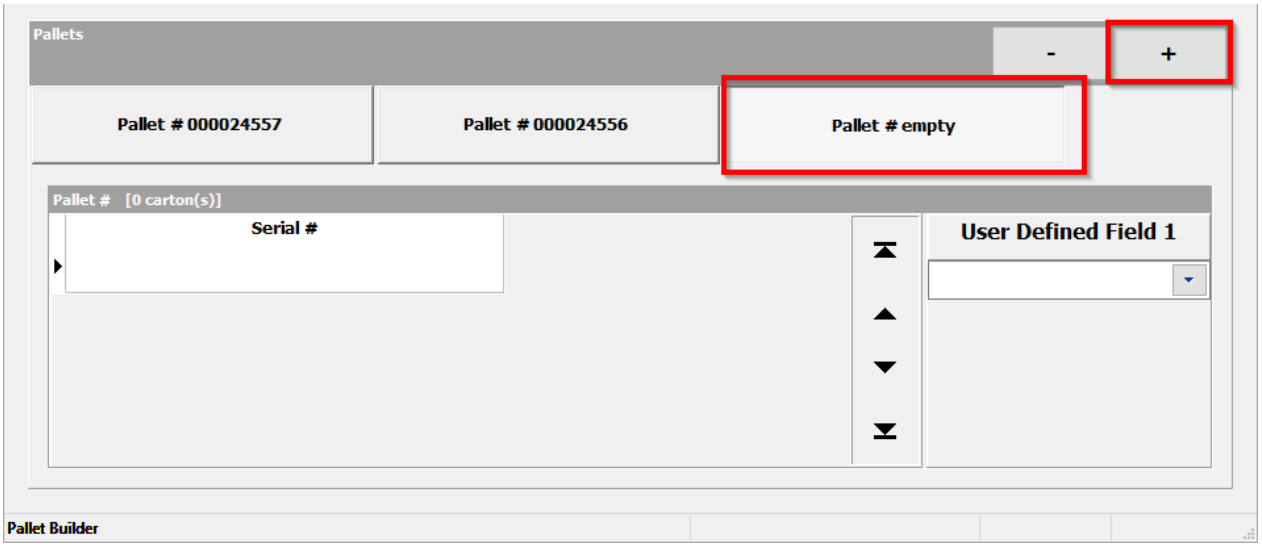

Print Label for TAS-55401, GATE LATCH
File Help
General
User-Defined
Date 4/21/2020
Customer TASCO INDUSTRIES
Exclude Customer
Order #
PO #
AKA Item #
Sales Order Qty 0 Equip. # 06
Bill To TASCO INDUSTRIES
Ship To TASCO INDUSTRIES
Label CUST BOX LABEL
Manufacturing # TAS-55401-LAT
Inventory Item # TAS-55401
Lot # 110960
Country Of Origin
Package
PK Unit Quantity 0
Labels Quantity 1
First Box # 1
Volume 0 (cu.f)
Weight 0 (Lbs.)
Printer
Label Disposition Setting
New Label
Print Label
Disposition Label(s) Current Shift
Disposition Label(s) Multiple Shifts

Note: If the Pallet Builder option 'Dispo on Pallet Complete' is checked, the Shift Disposition options (Disposition Labels Current Shift and Disposition Labels Multiple Shifts) will not be visible as they do not apply.

Note: The 'Labels Quantity' field in the Print Label form cannot be edited. It defaults and remains at 1.

Multiple Pallets

Multiple Pallets can be created for a single item. A new pallet can be created by selecting the + button in the Pallets section. A new tab will display with 'Pallet # Empty'. Serial numbers can then be scanned to the new pallet and a pallet serial # will be generated.



Additional Pallets can also be loaded to the screen using the Load Pallet button.

An empty pallet can be deleted by selecting the - button. The - button is not available for a pallet with attached serial #'s.

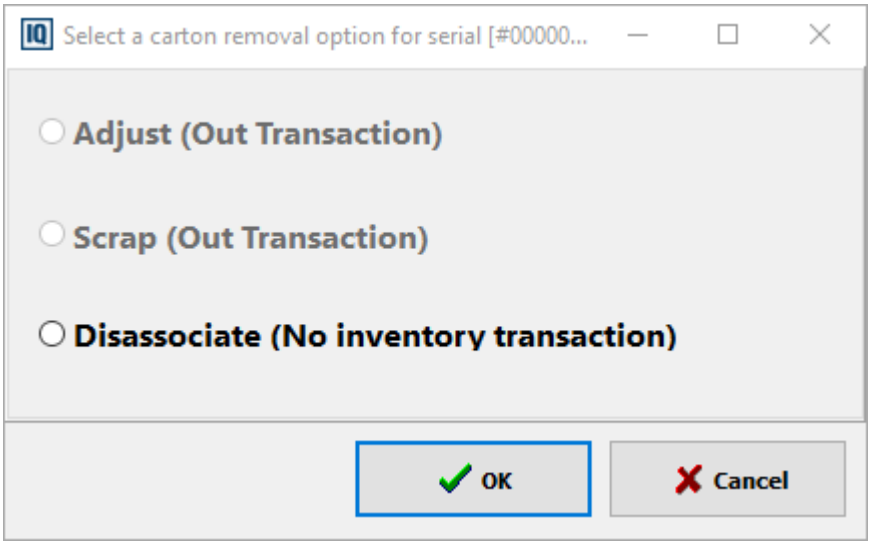
User Defined Field

Each pallet can have a value populated in the User Defined Field. The name of the User Defined Field can be set by selecting the right click option 'Define Label Text' and entering text in the New Value field. The list of selections is created by right clicking on the drop down arrow and selecting 'Edit User Defined List'. The list can be a drop down or pick list based (where an SQL is assigned).

For example, the pick list based option could be used to allow users to visually identify for whom the pallet is being loaded. An SQL could be created that would query the CNTR_SCAN_PALLETS and link back to the work order to display a list of all customers assigned to the releases section of a work order via the link back through sales orders to customers.

Remove Carton

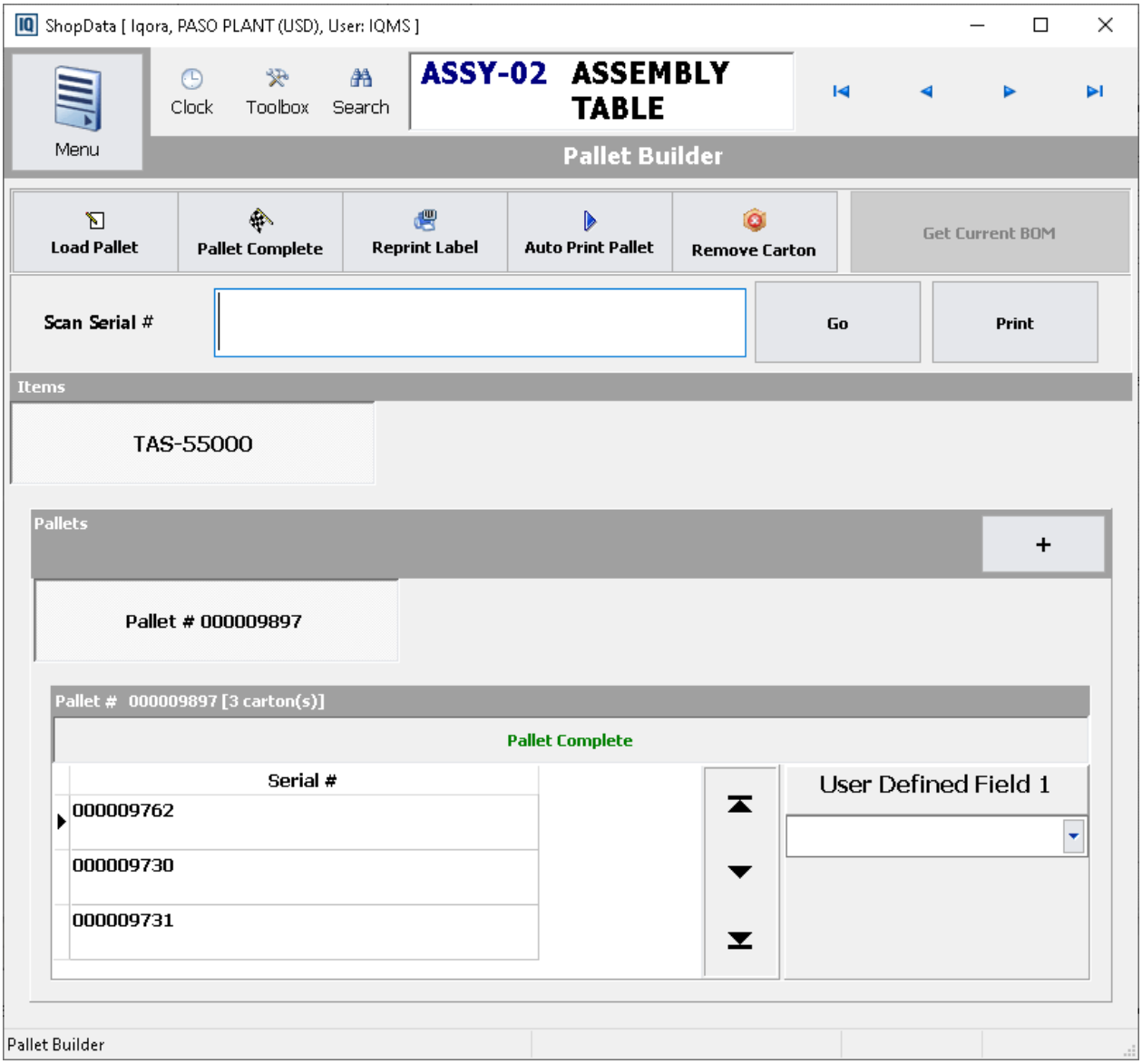
Users can select the Remove Carton button to remove the highlighted carton from the pallet. When this option is selected a popup form will display with three options:



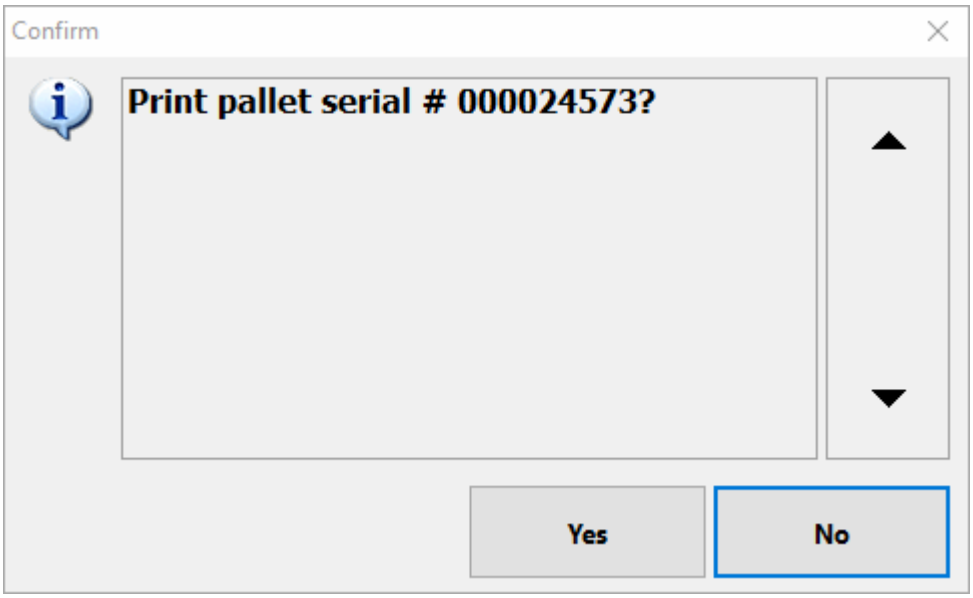
- Adjust (Out Transaction) - Removes the label from the screen and removes the item(s) from inventory with a transaction code. A pick list of transaction codes will appear to choose from.
- Scrap (Out Transaction) - This also removes the label and item from inventory but with a reject code. The Rejects form will appear to choose a reject code.
- Disassociate (No Inventory Transaction) - This removes only the label with no transaction. The item remains in inventory.

Pallet Complete

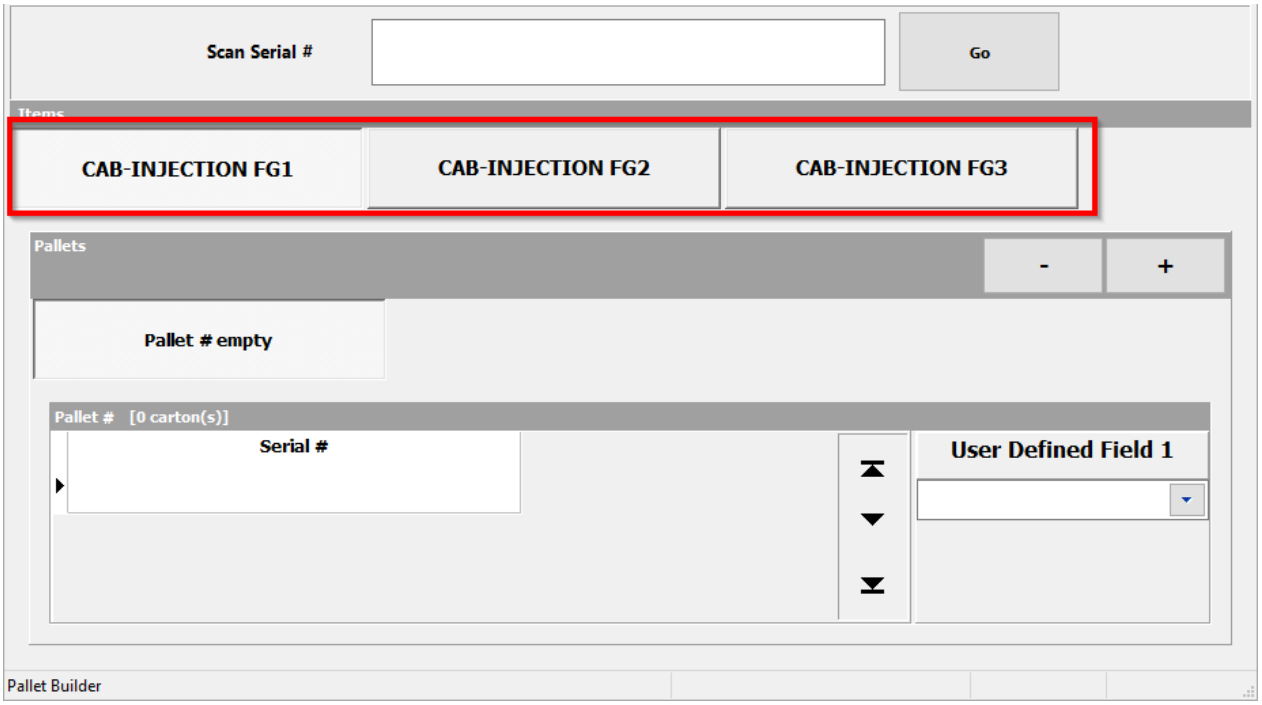
Once the maximum number of boxes has been added to the pallet, an indicator will display on the screen indicating that the pallet is complete. At this point the user can toggle the 'Pallet Complete' button in the upper left portion of the screen to print a pallet label.



If the ‘Auto Print Pallet’ function was activated, a prompt to print a pallet label will automatically appear when the user adds the last box to the pallet. If the user does not have the ‘Auto Print Pallet’ functionality enabled, the same prompt will appear when the user toggles the ‘Pallet Complete’ button.



Note: If a family tool is running, Pallet Builder supports multiple pallets. It will match the label to the correct part when scanned.



Consumed Materials

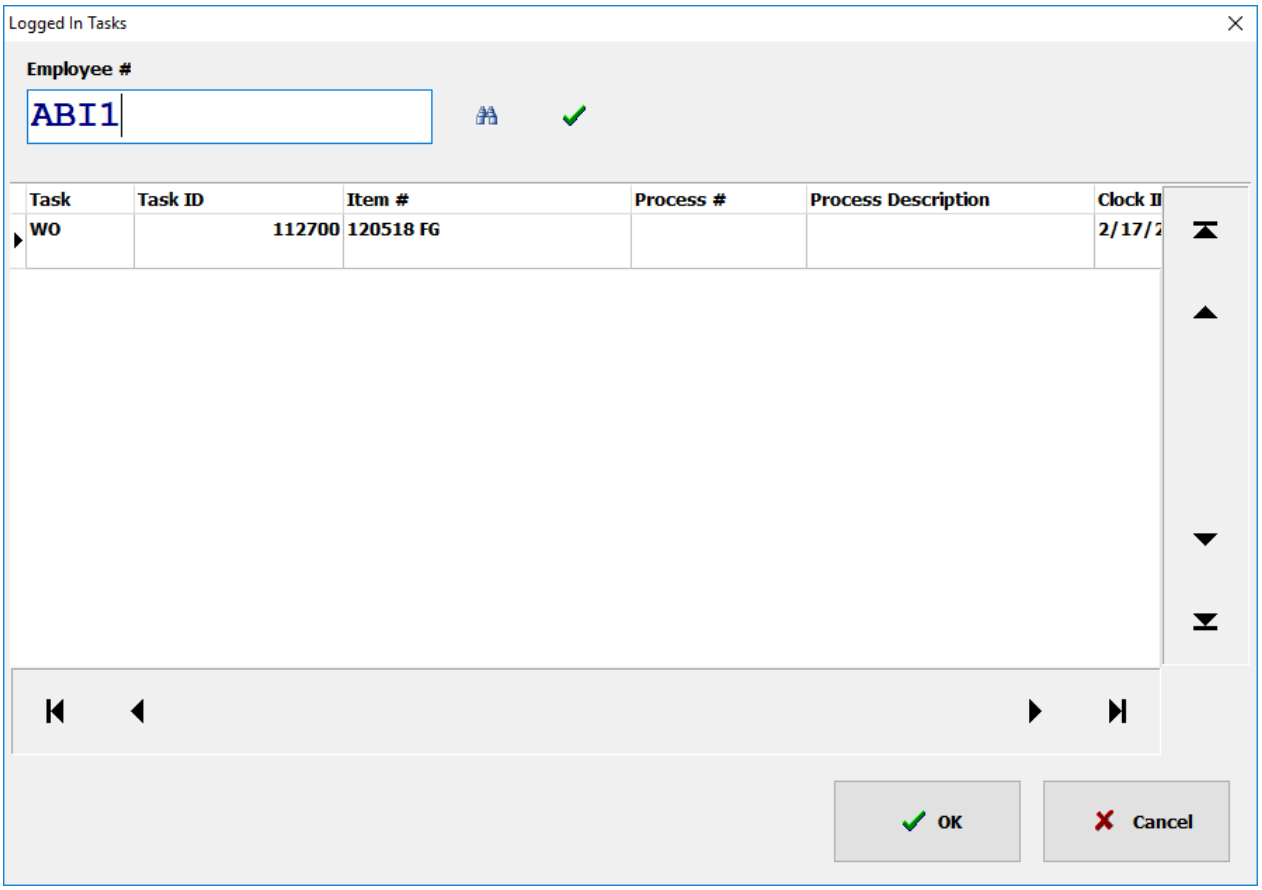
If the 'Auto Backflush on RT Scan to Inventory' is checked in Production Reporting Parameters, materials are automatically backflushed when the serial number is entered or scanned to the pallet. If 'Dispo on Pallet Complete' is turned on within Pallet Builder Settings, materials are not backflushed until the pallet is completed.

Internal/External Docs

From the module toolbar select the Internal or External document button. The document buttons will allow the employee to view the internal and/or external documents for the Processes, BOM, and Inventory item associated to the work order they are logged into. The Routing Notes associated to the process will also be available by selecting the Routing Note button.

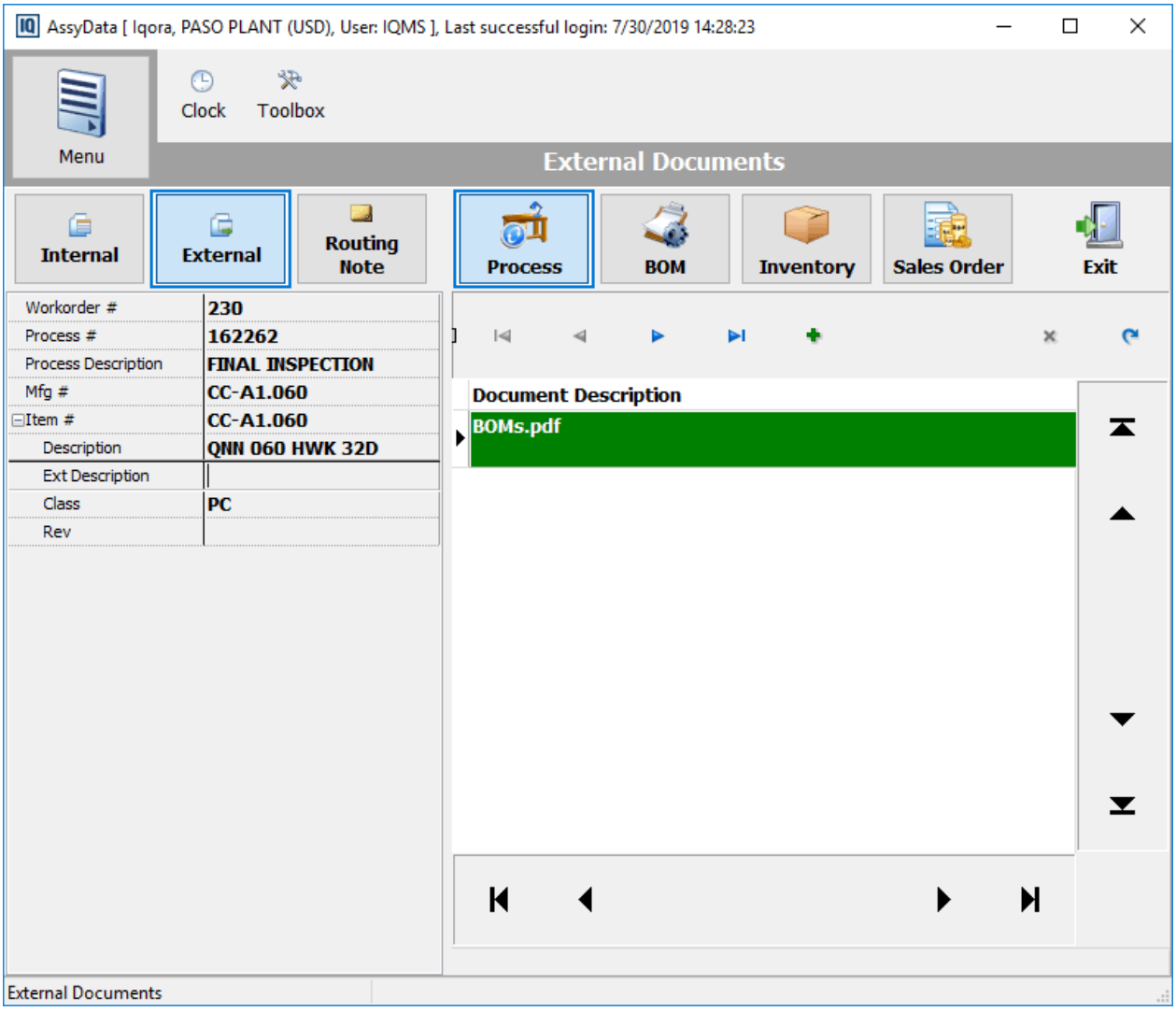
- To access the documents select one of the document buttons on the module tool bar. (Regardless of the one selected the employee will have the ability to view both types from the screen).

- Enter the employee number in the Logged In tasks screen. The work orders the employee is logged into will be listed.



➢ Highlight the work order and select OK. The screen will open to display the documents.

The emphasis will be on the document type selected in the menu. In either case the user can toggle to the other type of documents by selecting the corresponding button.



Documents associated to the Process, BOM, and Inventory item are all available from this screen. To access a document from one of those modules simply select the correct button on the left side of the screen.

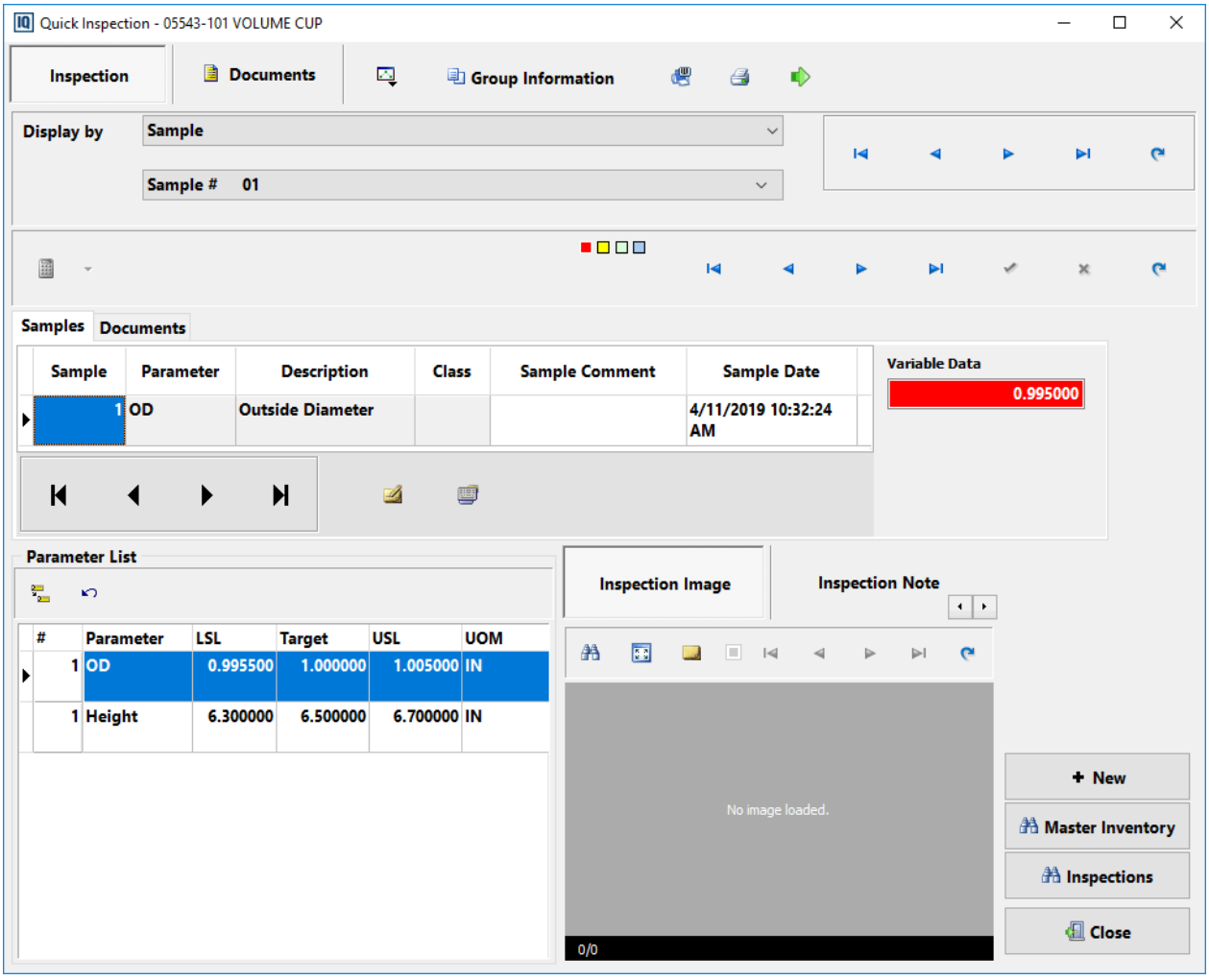
All documents tab functionality that is found throughout EnterpriseIQ is available in AssemblyData, such as printing, adding, and editing.

Quick Inspection

This option will be available to customers with the EnterpriseIQ SPC module. From this option users will be able to perform a SPC Quick Inspection for various types of records such as a Inventory Item, Processes, MRO/Tooling item, or Work Center. The user will first select the Type from the pop up box. Next enter the employee name using the employee or team member list. (Check the 'Do not show next time' box if you would prefer to not see this option). If the 'Enable electronic signature sign off' option is checked in System Parameters->Company File Information->Application tab the employee will be asked to enter their username and password.

The corresponding pick list will display depending on the type of inspection selected. For example, when selecting Process, after entering the employee information a pick list of the work orders scheduled in Assembly Track will appear first, and then a pick list of processes attached to the BOM associated to that work order. Select the SPC Quick Inspection and then the SPC screen will appear. Select the correct item from the list and the list of Quick Inspections associated with the item will be listed. Select the inspection to be performed. The gage/device selection box will appear, select a gage/device or cancel to use the first one. Users can check the 'Do not show next time' box on this screen also to not have this pop up appear each time. Once past this screen the SPC Quick Inspection screen will appear.

Note: If there are open CARs, MRBs, ECOs, Deviations, or PPAPs a status exception will be raised requiring authorization to proceed.


Quick Inspection - 05543-101 VOLUME CUP
Inspection
Documents
Group Information
Display by
Sample
Sample # 01
Samples
Documents
Sample
Parameter
Description
Class
Sample Comment
Sample Date
1
OD
Outside Diameter
4/11/2019 10:32:24 AM
Variable Data
0.995000
Parameter List
#
Parameter
LSL
Target
USL
UOM
1
OD
0.995500
1.000000
1.005000
IN
1
Height
6.300000
6.500000
6.700000
IN
Inspection Image
Inspection Note
No image loaded.
0/0
New
Master Inventory
Inspections
Close

When creating a Quick Inspection record in AssyData, the information for Mfg#, Work Order #, or Work Center # will only be populated on the Quick Inspection group information section if the item is running on the work center selected at the top of the screen. Otherwise, the values will be null and can be edited as needed. If the work order # required option is selected for the Inspection Group, the user will be required to select a work order # from the pick list.

Select the 'Group Information' toggle to switch from viewing the group information and the sample details, to just the sample details.

Speed Button Options:

- Charts - Select the Charts button to select a chart for viewing (X-Bar, X-Bar and Range, and P and NP). Select the 'Enable Multiple Charts' option to be able to view multiple charts at one time.
- Print Labels _Opens the Print Labels form
- Print Reports - Accesses the registered reports menu for reports associated to the Quick Inspection module.
- Carry Over Inspection Detail - Depress the 'Carry Over Inspection Detail' button to carry the details from the current quick inspection to a new record. When a new record is created using the + button the system will carry over the following information: Manufacturing #, Work Order #, Receipt #, PO #, Vendor #, Vendor Company, Note, User Text 1-3, FG Lot#, and Serial#. This will prevent the inspector from having to manually enter the information when performing multiple inspections on the same material and lot.

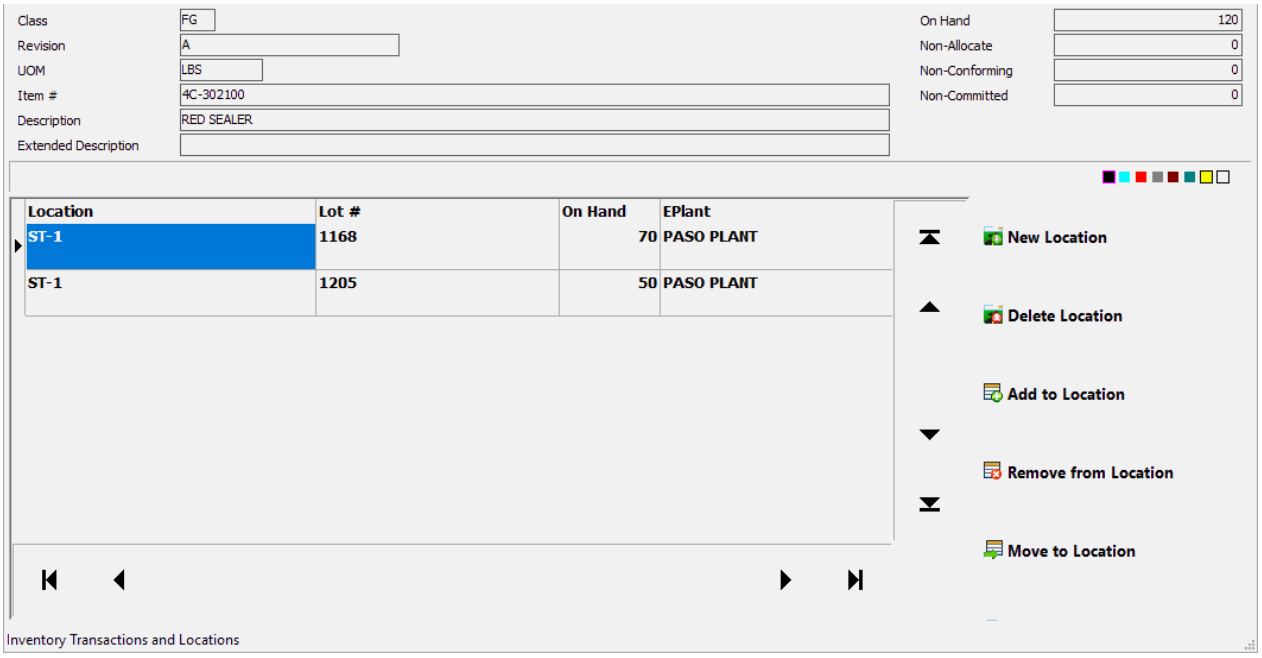
For additional information on the SPC Quick Inspection please see the SPC help file.

Inventory Transactions and Locations

This module allows users to view location information for items and perform in and out inventory transactions similar to the Transaction and Locations module in EnterpriseIQ.

Select the Inventory Transactions and Locations button on the module bar to access this module. The inventory pick list will appear. Choose the desired item from the list.

The screen will display the locations associated to the selected item with color coding just like in EnterpriseIQ.



Functions available in the AssemblyData Inventory Transaction and Location module:

New Location

Select the New Location button to associate a new location to the item. Select the location from the arrow down list by scrolling down to the location or type in the first character of the location and the system will 'hyperbrowse' to the location, or select the search button to access the pick list of locations. Once you have chosen a location, enter in the Lot Number of the material, if applicable. In the case of a manufactured item the user may enter the lot number or touch the arrow icon and the program will bring over the current lot number from the BOM.

The new location can be specified as a Default Disposition location.This is used during auto dispositioning in production reporting. If an item has a default location set up it will be used when adding or removing inventory during auto dispositioning. To set the location to be a default designator click on the check box next to the Associate with Mfg# or select the Set as Default Designated Location box next to this field. Both options can also be selected. These fields are discussed in greater detail in the Disposition Options section in the Production Reporting chapter.

Press [OK] to finish the entry and link the location to the inventory item.

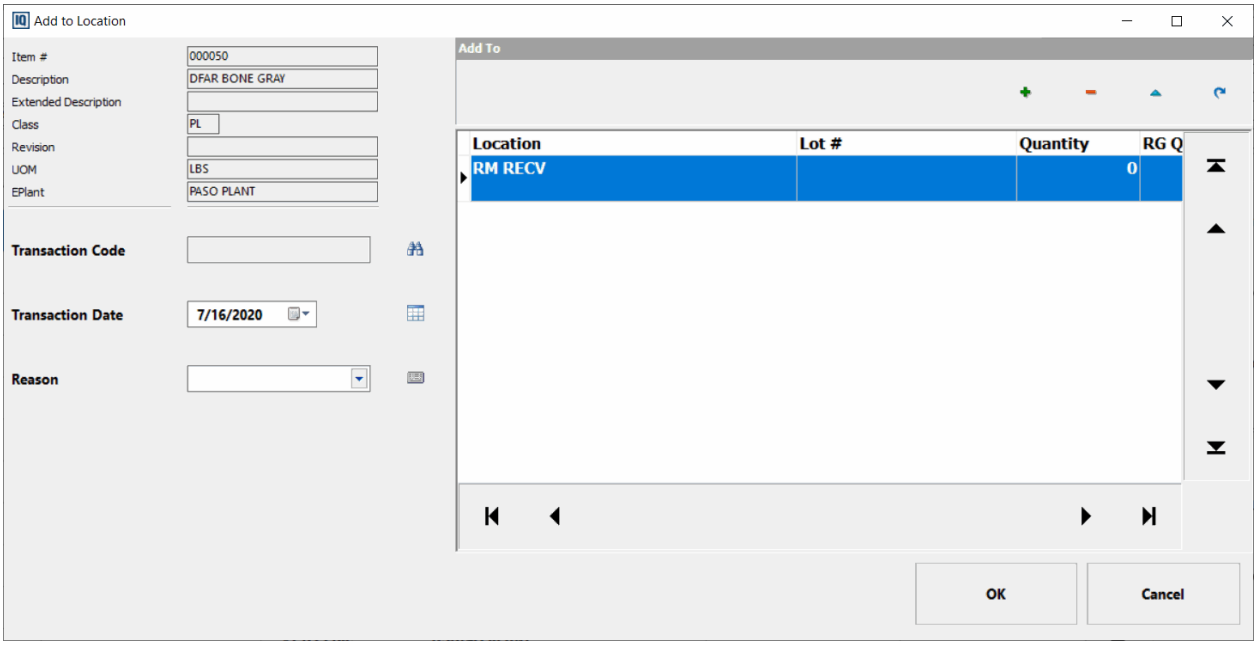
Lot Date - The Lot Date field can be used to enter the date of the lot for locations with a lot number. Select the calendar button in the field to access the pop up calendar to select the Lot Date. Lot Dates can also be entered during PO Receiving through EIQ or RF. If the item has a value in the shelf life field other than zero on the Additional tab in inventory, when the difference between the system date and the lot date exceeds the shelf life the location will automatically be marked in red indicating it is expired. Costs Associated to Locations.

Delete Location

Highlight the location to be deleted then select the Delete Location button. Confirm the deletion by pressing Yes. If the location has a quantity, the Remove from Location screen will appear otherwise the location will deleted. From the Remove from Locations screen, accept or edit the Quantity to be removed. The user can enter a Reason, Transaction Code, or other Options. See Removing Material from Inventory below for more information. Once removed the location will no longer show in the list of locations associated with the inventory item.

Add to Location

Highlight the location that material will be added to then select the Add To Location button. The Add to Location screen will appear.


Add to Location
Item #
000050
Description
DFAR BONE GRAY
Extended Description
Class
PL
Revision
UOM
LBS
EPlant
PASO PLANT
Transaction Code
Transaction Date
7/16/2020
Reason
Add To
Location
Lot #
Quantity
RG Q
RM RECV
0
OK
Cancel

Enter the Quantity to be added to the location. To enter a quantity press the quantity field to open the quantity pop up form. (If adding an item of class PL, the option to enter a Regrind Quantity will also be available). Press the show keypad button and enter the quantity to be added.

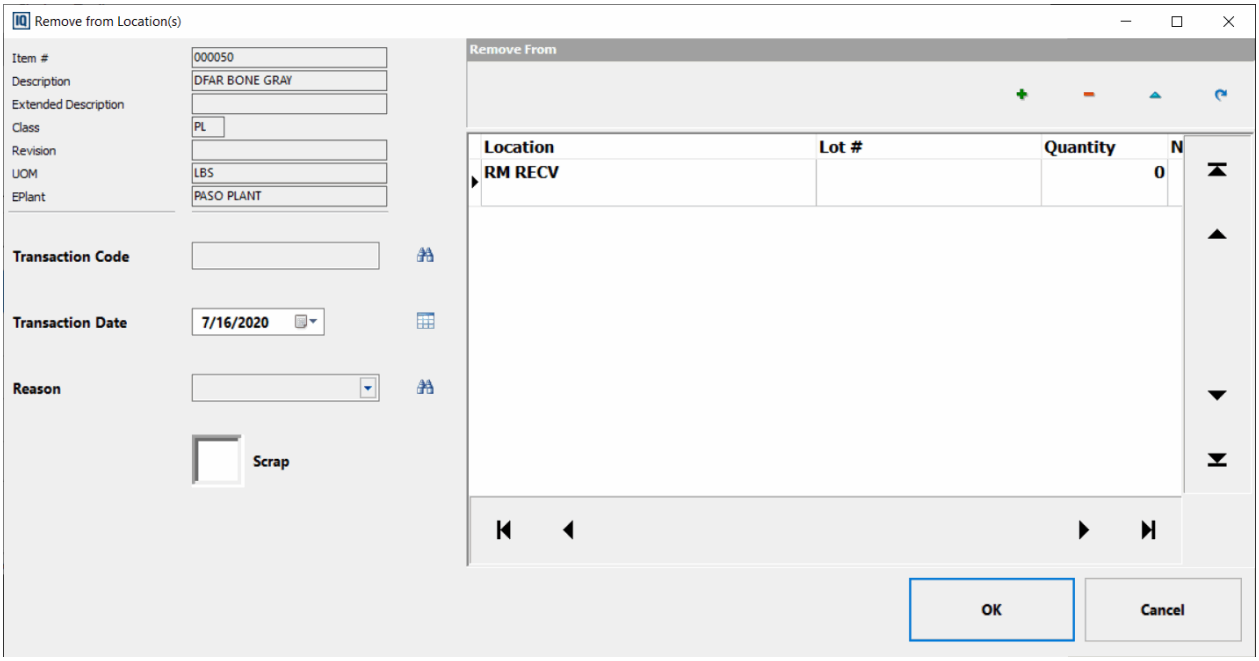
Select a Transaction Code from the pick list, if desired.

Enter the Transaction Date. The date will default to the system date and time but the user has the option to change it by selecting a different date from the drop down calendar or touch screen calendar form accessed by pressing the calendar button next to this field.

Enter a Reason for the transaction (optional) by clicking the drop-down arrow in the field and selecting a Reason from the drop-down list that appears. Please note that the Reasons list is editable by right-clicking the drop-down arrow and selecting 'Edit User Defined List'.

Remove from Location

Highlight the location that material will be removed from then select the Remove from Location button. The Remove from Locations screen will appear.



Enter the **Quantity** to be removed from the location (if removing an item of class PL, the option to enter a Regrind Quantity will also be available). To enter a quantity press the quantity field to open the quantity pop up form. Press the show keypad button and enter the quantity to be removed.

Select a **Transaction Code** from the pick list, if desired.

Enter the **Transaction Date**. The date will default to the system date and time but the user has the option to change it by selecting a different date from the drop down calendar or touch screen calendar form accessed by pressing the calendar button next to this field.

Enter a **Reason** for the transaction (optional) by clicking the drop-down arrow in the field and selecting a Reason from the drop-down list that appears. Please note that the Reasons list is editable by right-clicking the drop-down arrow and selecting 'Edit User Defined List'.

Scrap - If the material to be removed from inventory is going to be scrapped, press the No button to change it to Yes. Then select the Scrap Code from the pick list in the Scrap field. When entering scrap the system will look up the manufacturing cell on the BOM and only surface the reject codes with a cell that matches the BOM. Reject codes with no manufacturing cell will also display. When entering scrap where the BOM does not have a cell, the system will only surface the reject codes with no cell associated to them. Scrap transactions are written to the rejects table.

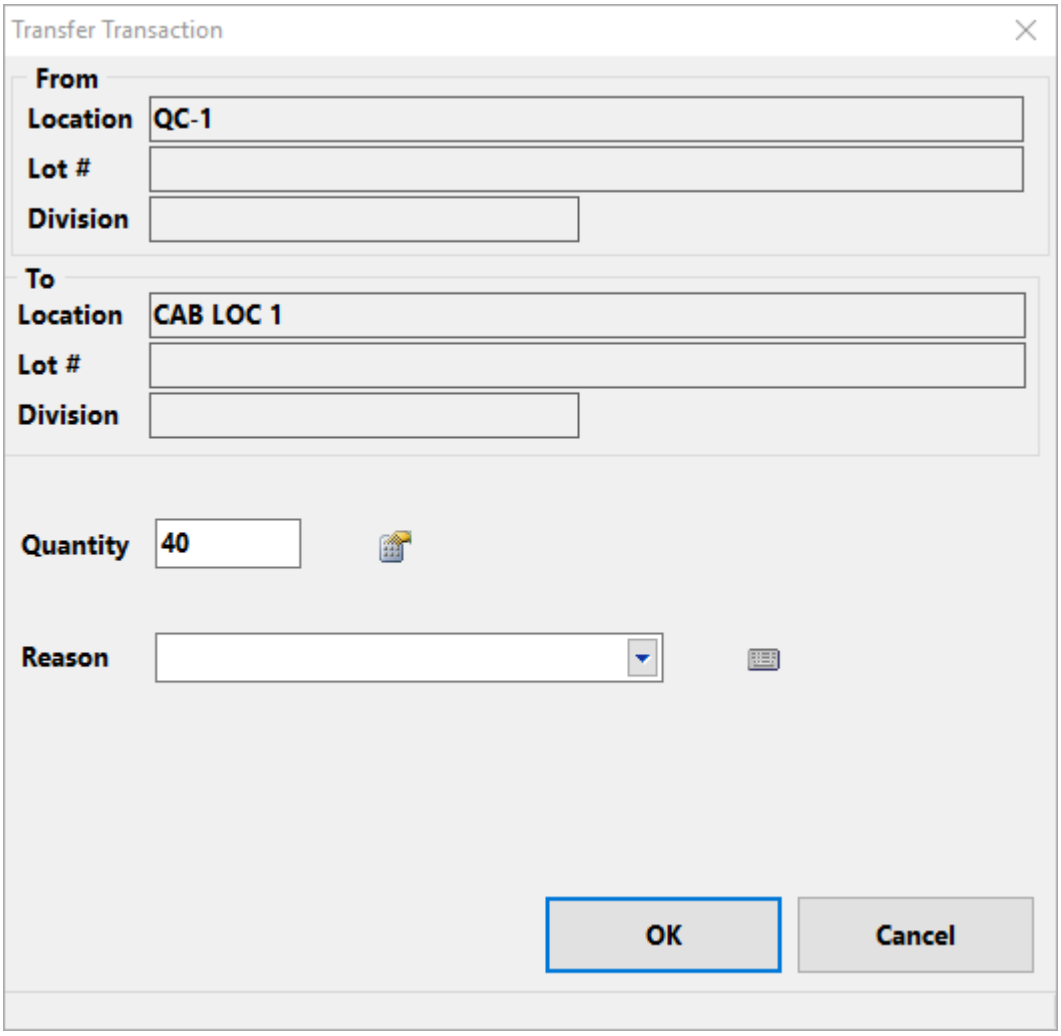
Move To Location

The Move To Location option allows users to move a quantity from the highlighted location to another location.

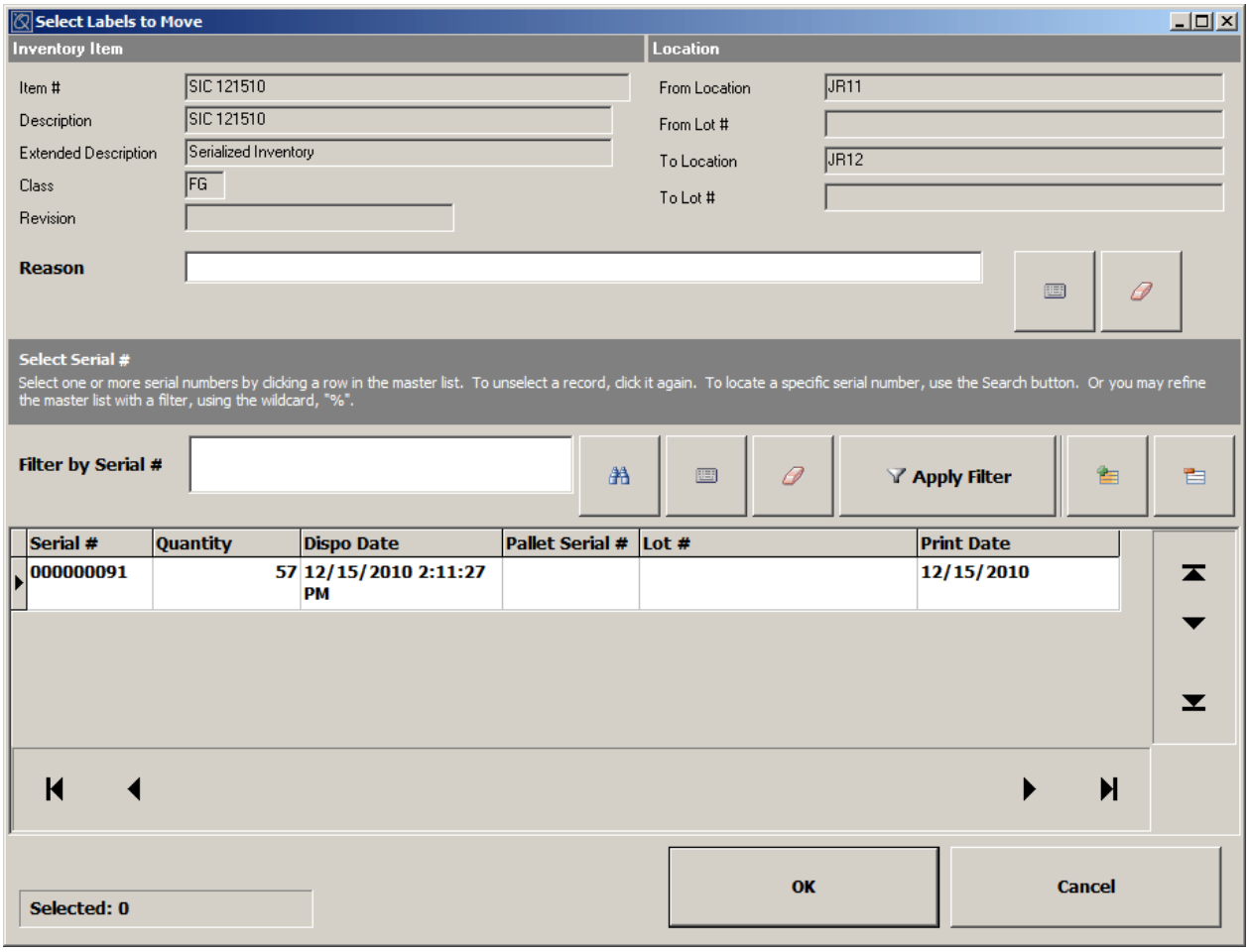
Highlight the Location to be removed from then select the Move to Location button.

Select a Target Location from the pick list of locations associated to the item, or select the New button to associate a new location. When the new button is selected the Master Location pick list will appear to choose from.

For Non-Serialized items, once a target location is selected a pop up form will appear to enter the quantity to be moved and optionally a reason.


Transfer Transaction
From
Location
QC-1
Lot #
Division
To
Location
CAB LOC 1
Lot #
Division
Quantity
40
Reason
OK
Cancel

For Serialized Items, a form will appear for the user to choose the label(s) to move.

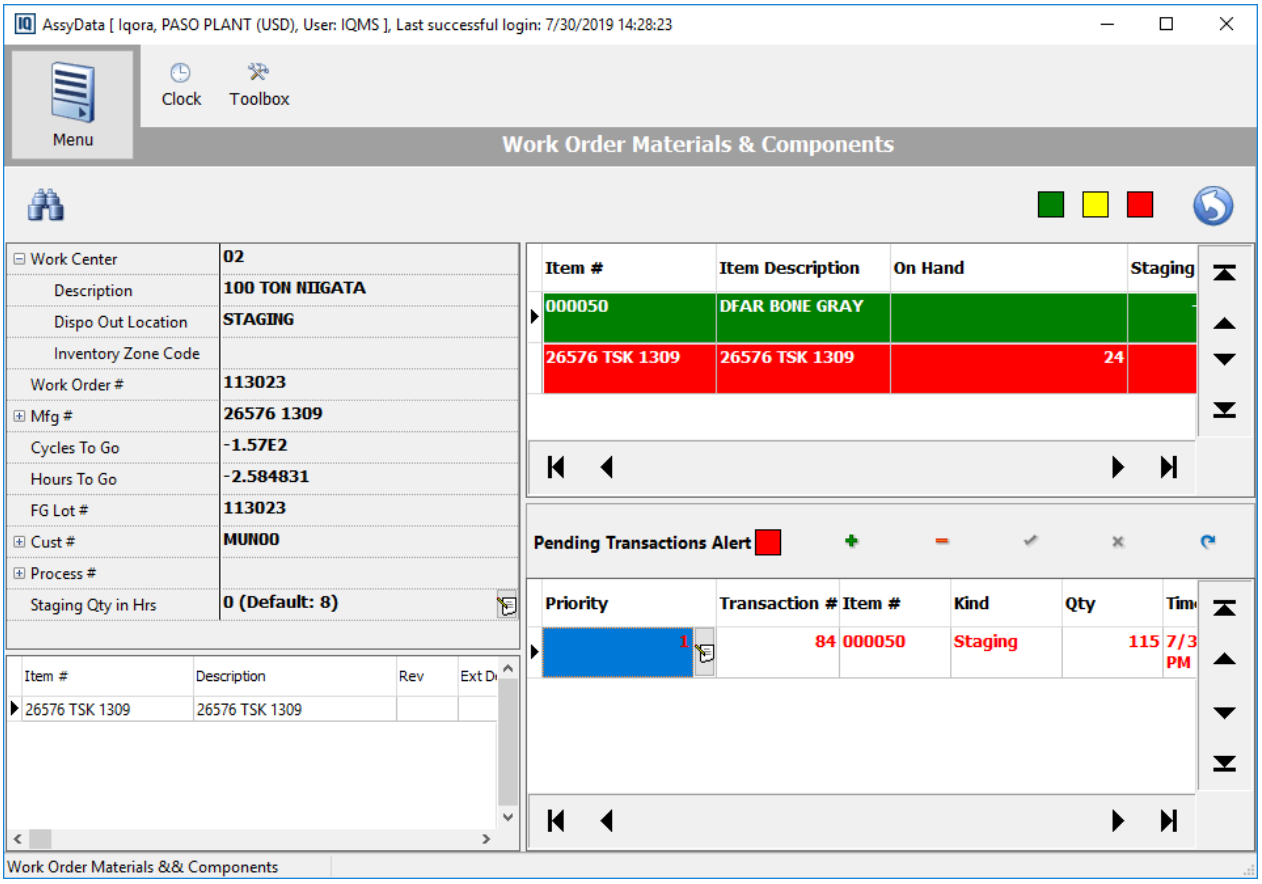


Show Linked Labels - For Serialized Items users can select the Show Linked Labels button to view the labels associated to a specific location. The form displayed will look similar to the one above.

Work Order Materials & Components

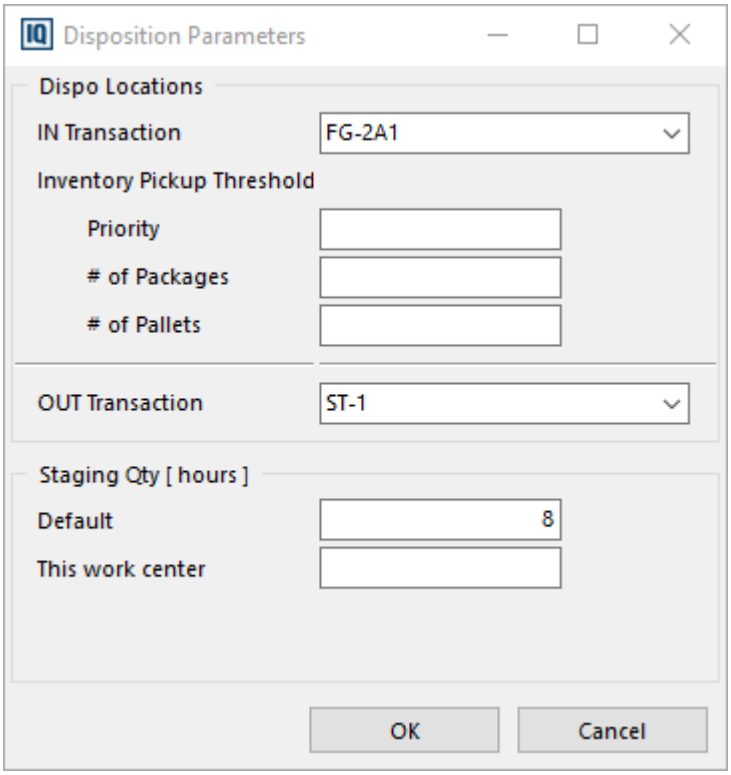
This module is only available if licensed for 'Advanced WMS'.

From this module users can see the Work Center, Mfg #, and Item information as well as the material requirements for the work order in the first position on specific work centers. It also provides the ability for users to request material that is not part of the BOM to be moved to the work center's Dispo Out location.



The left section includes the following fields:

Work Center	This displays the Work Center number and Description. This section also includes the work center's Dispo Out Location (set in the Shop Floor Disposition Parameters in the Work Center module); and the Inventory Zone Code associated to the location.
Work Order #	The work order number running on the work center.
Mfg #	The Mfg # and Description.
Cycles and Hours to Go	The current cycles and hours to go.
FG Lot #	The FG Lot Number.
Cust #	The customer number and name associated to the work order.
Process #	The process number and description associated to the work order if applicable.

Staging Qty in Hrs	This is the number of hours the system will use to determine the staging quantity of materials required. This defaults to 8 hours but can be changed from this field or a specific value can be assigned to a work center that will override the default. To change the value associated to the work center select 'Shop Floor Disposition Parameters' from the Options menu in the Work Center module. Enter a value in hours in the 'This work center' field in the Staging Qty (hours) section.  The Default can also be changed from the parameters form that will affect all work centers. To change the staging hours value from this ShopData module select the button in this field and select a value from the pop up keypad and push OK. This will also change the value in the 'This work center' field in the 'Shop Floor Disposition Parameters'.
Item Information	This section includes the Item #, Description, Rev, and Ext Description for the manufactured item(s).

Materials Section

The materials listed in this section will be those that are in the Dispo Out Location associated to the work center and the materials required to run the specific work order. If an item has the 'Exclude from Work Order Materials and Components' option checked on the Additional tab in Inventory it will not show here. The materials are color coded based on their status.

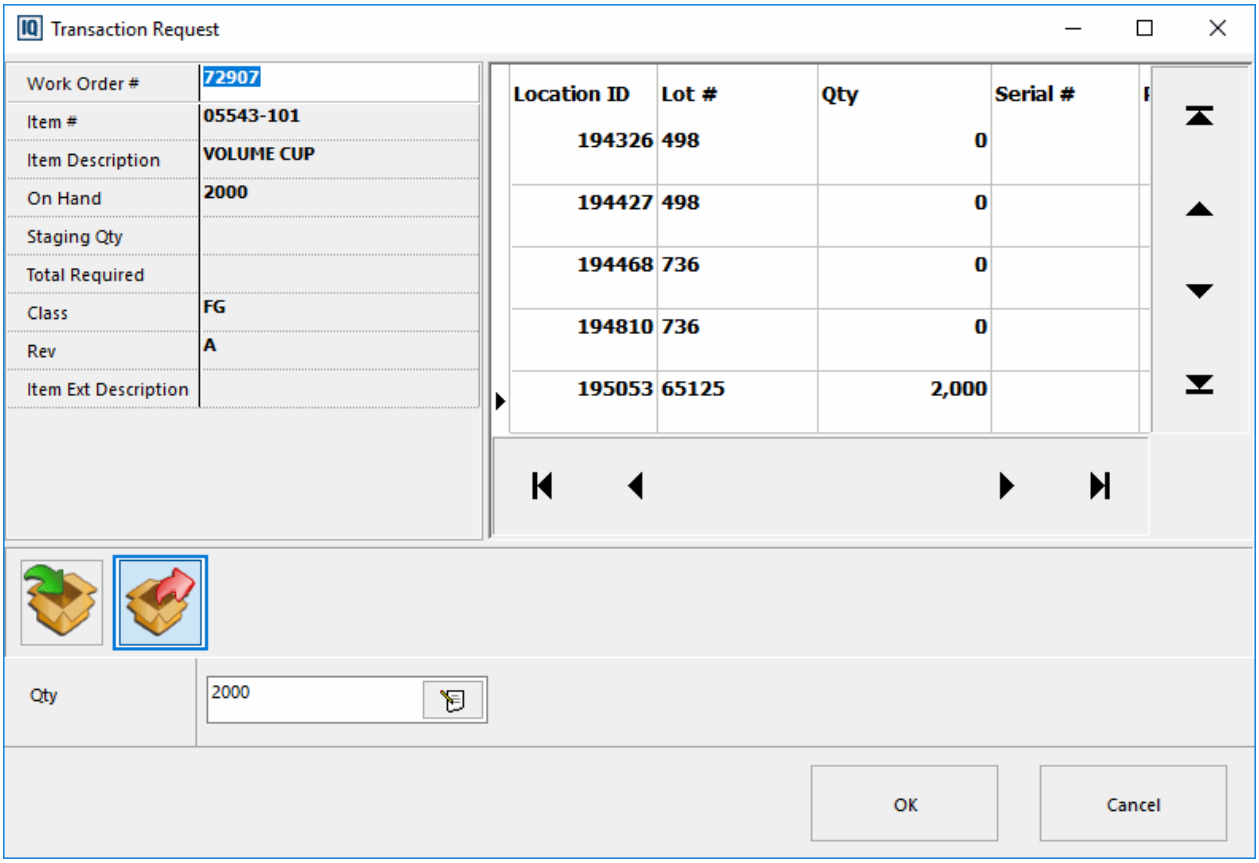
- Green - Material is required for this work order and the On Hand is equal to or greater than the Staging Quantity.
- Yellow - Material is required for this work order but the On Hand is not equal to the Staging Quantity.
- Red - Material is not required for this work order.

The fields in this section include:

Item Information	Item #, Item Description, and Ext Description
On Hand	The on hand quantity of the item in the Dispo Out Location.
Staging Qty	The required quantity for staging based on the staging hours.
Total Required	The total required to complete the work order.

Transaction Request

Users can double click an Item in the Material/Component grid to request a 'Staging Request' or 'Pickup Request'. The default transaction will default to Pickup (Out) if the item does not belong to the work order that is running (Red). It will Default to Staging (In) if the item is yellow or green.



The form will display the Work Order and Item information. It will list all FGMulti records associated to the work center location, as each record may have a specific serial number and/or lot #.

Select the 'Staging Request' button (green arrow) to request the items to be sent to the work center. The quantity defaults to amount required for the work order.

Select the 'Pickup Request' button (red arrow) to request the items to be picked up from the work center. The quantity defaults to the amount in the location that is not needed for the work order.

The quantity can be changed by selecting the button next to the field and entering a different value using the keypad.

Press OK and the transaction request will display in the Pending Transactions Alert section of the module.

Pending Transactions Alert

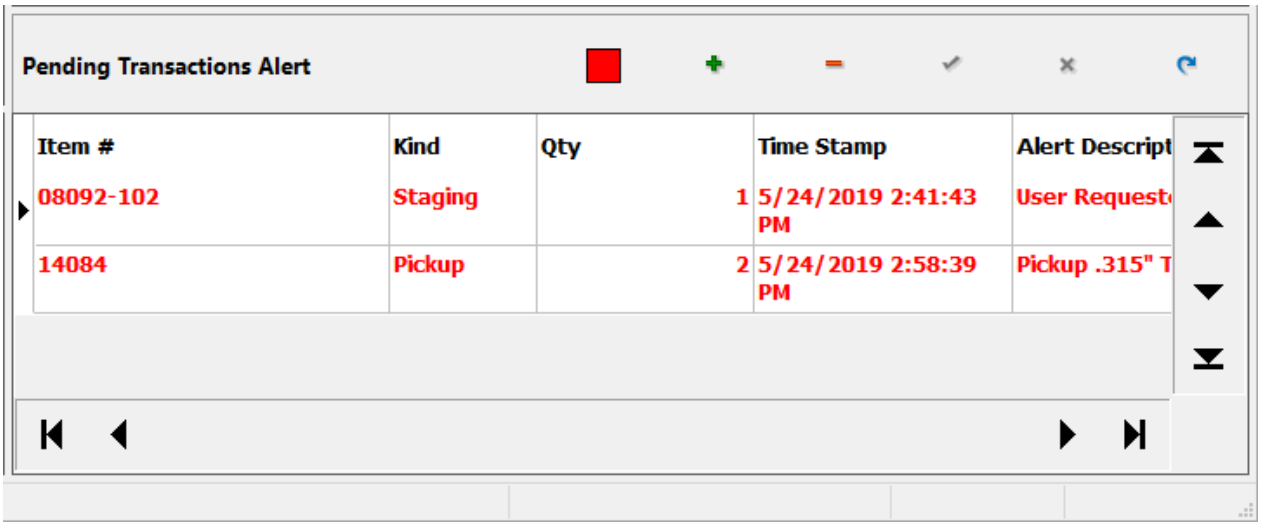
In this section users can view existing requests, or request materials that are not part of the BOM.

To add a request:

Pending Transactions Alert

In this section users can request materials that are not part of the BOM.

- Select the + button and a pick list of inventory will display.
- Find the item in the list and press Select.
- The item will be added to the lower section.



The pending transaction alert record will be in red text if there is a problem with the transaction plan (i.e. could not find a matching rule or insufficient qty or locations). This will enable users to visibly see right away there is a problem. Users can right click on the record and select 'Inventory Transaction Plan' to review the plan.

Pending Transaction Alert section Field Listing:

Priority	When adding a transaction from the Pending Alert section this field will default to High but can be changed by selecting Med or Low from the drop down list. When adding a transaction using the Transaction Request form it defaults to null, but can be changed using the drop down list.
Qty	This is the quantity of items requested. This will default to one but can be changed by selecting the button in the field and entering the desired quantity in the pop up Keypad.
Transaction #	This is the transaction number assigned by the system.
Item Information	Item #, Item Description, Class, Item Ext Description, and Rev
Kind	This will display 'Staging' in green.
Alert Description	The system will populate the Alert Description with “User Requested XXX to LLL” where the XXX is the Inventory description the LLL is the Location.
Time Stamp	The date and time the request was made.

Refresh button - A Refresh is available in the upper part of the screen that when pushed will refresh the screen. The screen will automatically refresh based on the entry in Realtime Monitor>Plant Parameters> Screen Refresh Time.

A table is populated with the information necessary to process the transaction alert along with the date and time the alert was submitted. When a transaction alert is initiated, the work center’s disposition 'out' location’s zone is written to the transaction alert table. When a new transaction alert is added to the table, a notice will display to all WMS users that are assigned to the inventory zone. When a user acknowledges the alert and completes the transaction, that transaction alert row is moved to a history table along with the date and time that the transaction was completed.

MRO Work Order

View or Create MRO Work Order

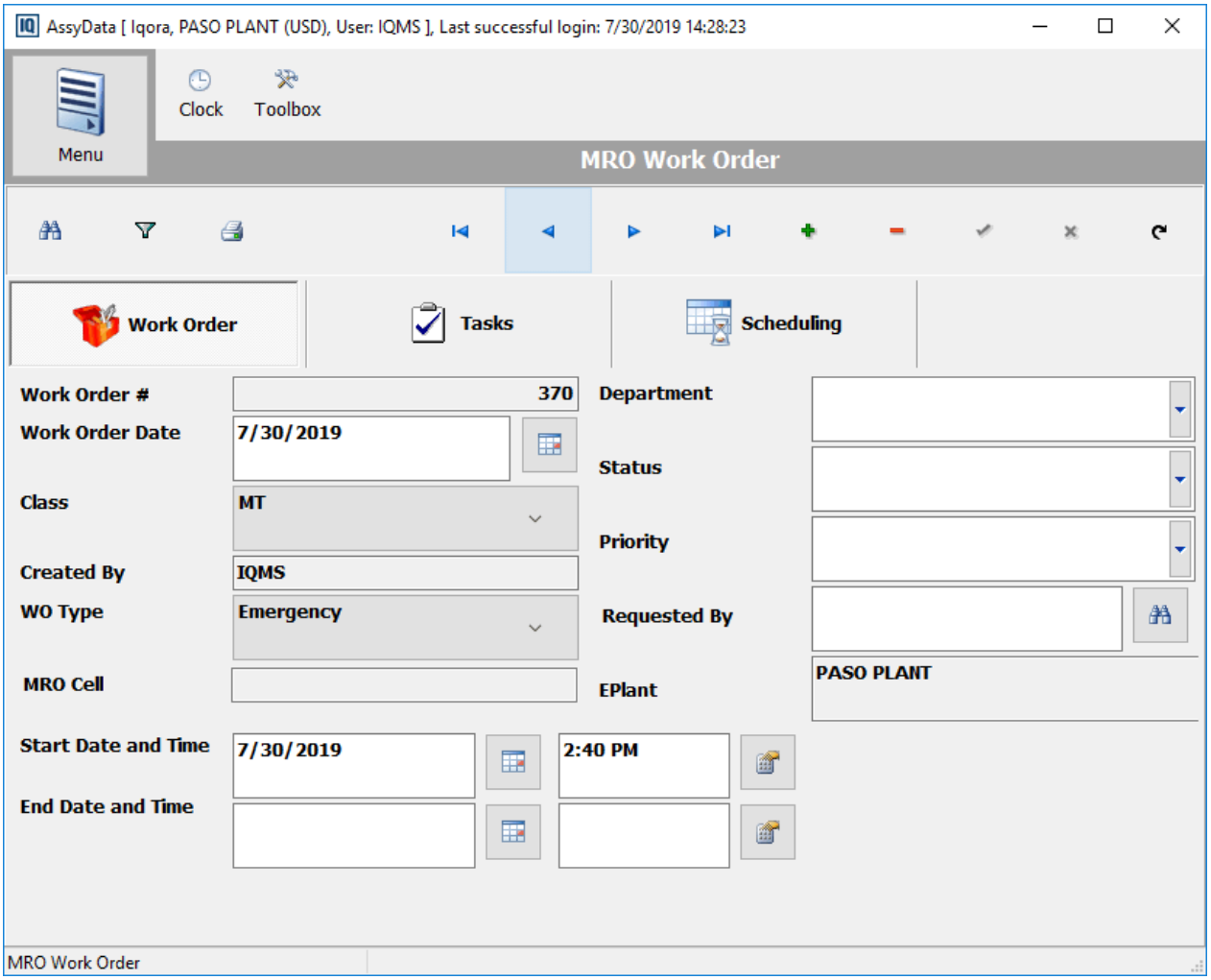
This module allows the employee to view or create a Maintenance, Repair and Overhaul work order for the work centers associated to the processes that they are currently logged into.

- To access an existing MRO work order or create a new one, select the Create MRO Work order button and enter the employee ID. A list of work orders the employee is logged into will appear.

- Highlight a work order and select OK. MRO work orders associated to the work center(s) linked to the process associated to the selected work order will appear, if there are no MRO work orders the pick list will be empty.

View Existing MRO Work Order:

- To view an existing MRO work order highlight it in the pick list and press Select. The MRO work order screen will appear with the details of the work order, tasks, and Scheduling information.


AssyData [Iqora, PASO PLANT (USD), User: IQMS], Last successful login: 7/30/2019 14:28:23
Menu
Clock
Toolbox
MRO Work Order
Work Order
Tasks
Scheduling
Work Order #
370
Work Order Date
7/30/2019
Class
MT
Created By
IQMS
WO Type
Emergency
MRO Cell
Start Date and Time
7/30/2019
2:40 PM
End Date and Time
Department
Status
Priority
Requested By
EPlant
PASO PLANT
MRO Work Order

The Work Order screen will display the basic information about the work order. The fields with data in the above screen shot are automatically filled in by the system. The Work Order Date and Start Date default to the date/time the work order was created. The WO Type defaults to Emergency. The user can make adjustments to the fields or add information in the ones without data.

Other options:

Select the corresponding speed button to access one of the following:

- **Filter** – This will filter the pick list to display only open, only closed, or both types of work orders.
- **Print** – This option will print a single work order or a range of work orders.
- **Search** – This brings up a pick list of existing work orders.

Tasks

To view the Task information, select the '**Tasks**' button. From this screen the user can associate labor and material to the task, create notes, and close task(s) once completed, by using the speed buttons. There is also a Quick Inspection button which will access the Quick Inspection module for the equipment. If the equipment has not been added to the Inspection Setup module a warning will appear stating, 'The selected MRO Equipment has not been configured for SPC'.

Task Details - The Task Details such as General, Checklists, and User Fields can be displayed/hidden by selecting the double blue arrow button. When displayed, information such as Code and Comment can be entered on the General tab. If the task has a checklist associated to it users can select the Checklist button to enter the status of the checklist items. This form functions similar to the MRO work order form within the MRO Module.

Close Work Order - After selecting Close Selected, or Close All the Close Work Order screen will appear.

Task Values:

- **Closed Date** - Use this field to enter the actual date and time the task was completed. The information will default to the current date and time. Click on the drop down calendar to select the date. Use the up/down arrows or type in the time the task was completed. The date and time can also be changed by selecting the 'Date' speed button at the top of the form and entering the information in the pop up box. Changing the date is available regardless of which Task Unit Count/Task Reset Option that is selected.
- **New Total Units** - This is the Current Total Units less the Starting Units. This value can be changed by typing over the calculated value. The value in this field will carry over to the Total Units for the task on the Tasks tab on the main screen. If the task is not associated with an equipment the user will not be able to edit the field.
- **Starting Units** - This is the starting units on the task when the work order was created.
- **Current Total Units** - This field will display the current total units for the task found on the Tasks tab on the main screen.

- **Incomplete** - Click the Incomplete? button to change it to Yes if the task was not completed. The task line will be yellow. Labor and inventory can still be entered. Marking a work order incomplete will reset the New Total Units to zero by default when the reset when closing or zero when closing task unit count parameters are used. Users can manually adjust the New Total Units, if it is not desired that they return to zero. Both the starting units and current total unit information is available.

Select the Disposition Attached Inventory and Attached Labor buttons to enter the labor and disposition inventory from the corresponding forms.

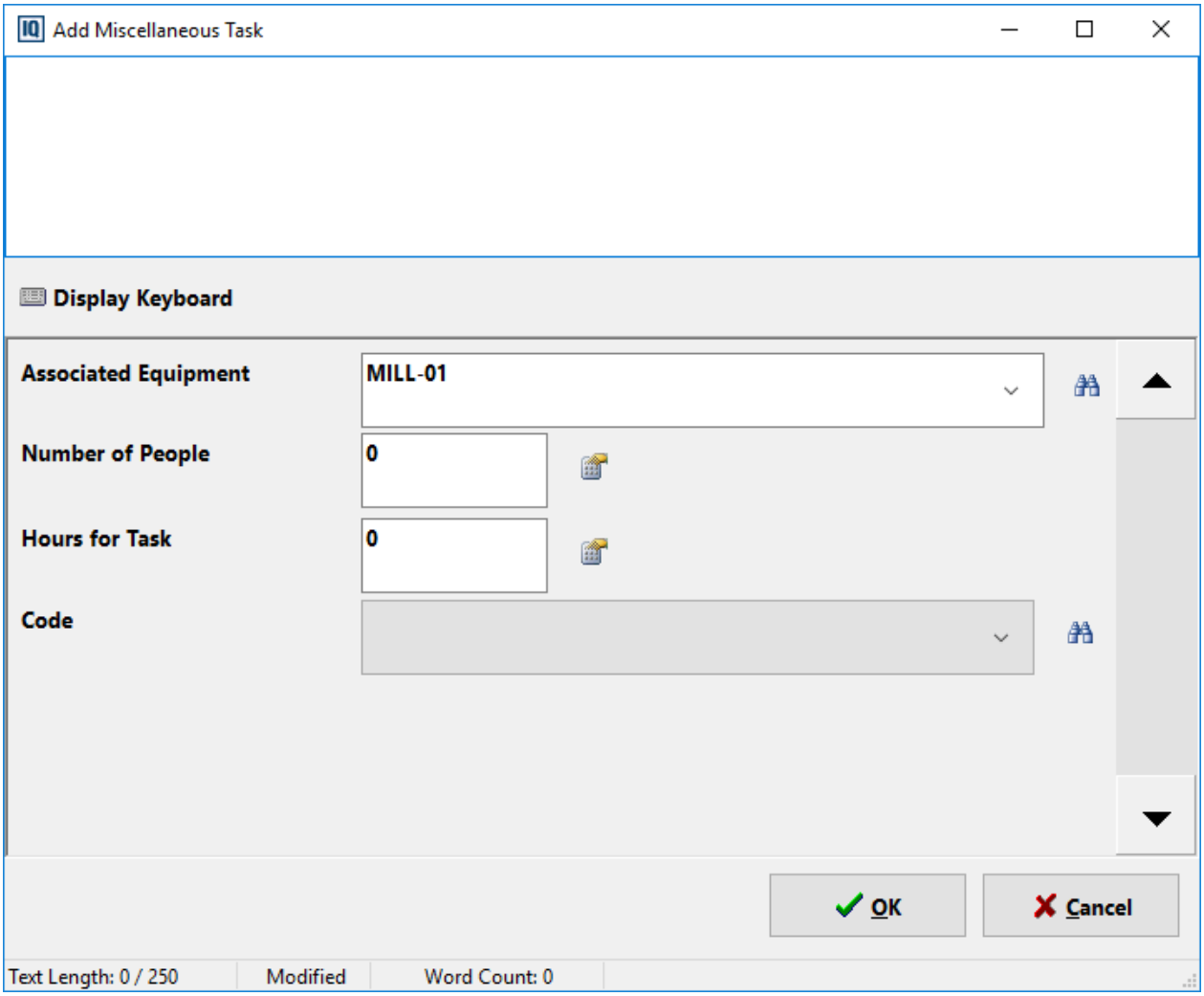
Note: The 'Include Materials Backflush' option is disabled when dispositioning manufactured inventory through a MRO work order, preventing the backflush of the manufactured item components.

(For additional information on entering this data please see the MRO help file available by selecting Help->Contents from within the MRO module).

Create New MRO Work Order:

To create a new MRO work order select New from the Select Work Order pick list. Since the system knows the Process the user is logged into, if there is only one work center setup under Qualified work centers associated to the process, the system will use that work center to create the MRO work order. If more than one work center is setup under Qualified work centers, a pick list of those work centers will appear so the user can select the work center to create the MRO work order for.

Once a work center is selected or if there is only one work center, a pop up box will appear to enter a Free Form task description. The employee can enter the hours and people to perform task the task, if known.



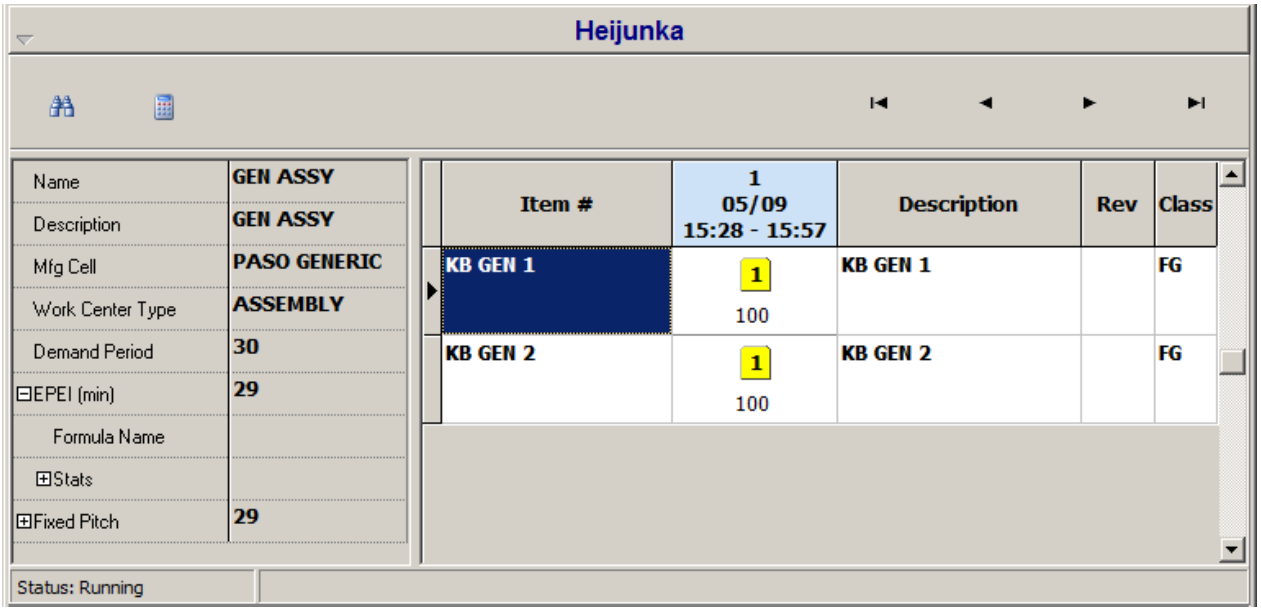
Select OK and the MRO work order will automatically be generated and will appear. If desired the user can select the Printer icon with a destination of email to send it to the individual responsible for performing the maintenance.

Heijunka

Heijunka is a Japanese term that refers to the overall leveling, in the production schedule, of the volume and variety of items produced in given time periods. Heijunka is what most lean companies are working towards as they try to be able to make just what the customer wants in the time or when the customer wants it. In Heijunka, the company is trying to do two things. One is to level production by volume and the other is to level the production by product type or mix of products. Heijunka takes the total volume of orders in a period and levels them out so the same amount and mix are being made each day. In short, what you are trying to do is to build a level schedule everyday by taking the actual customer demand, determine the pattern of volume and mix, and building your level schedule.

A tool used to help level both the mix and volume of production is a Heijunka box. A Heijunka box has a column of kanban slots for each pitch interval, and a row of kanban slots for each product type. Kanban are placed into the leveling box in the desired mix sequence by product type.

To enable Heijunka scheduling, check the 'Heijunka/KanBan Scheduling' option in System Parameters > Application tab. Once this option is checked, the user will need to log out of EnterpriseIQ and log back in to see the Heijunka Box icon on the Manufacturing tab. The Heijunka Box icon will also be available in EIQ and AssemblyData.



Field Information:

Name	Name of the Heijunka Box.
Description	Description of the Heijunka Box
Mfg Cell	The Mfg Cell of the Heijunka Box.
Work Center Type	The work center type of the Heijunka Box.
Demand Period	The Run scope of the Heijunka family. The Mfg # run scope must be equal to the Heijunka run scope. Once a BOM is part of a Heijunka family, the run scope on the BOM cannot be changed.
EPEI	Every Product Every Interval - The smallest possible lot size for a part in a process is a reflection of the "production interval" or "EPEI". This interval defines the maximum frequency that you can produce each part without running out of capacity because of too many setups on all parts. It is an expression of how frequently each item produced in a process can actually be run without incurring a capacity penalty. This value is calculated or a user defined EPEI formula can be created and assigned. Formula Name - The EPEI formula assigned to the Heijunka Box. If left blank, the system uses the default EPEI formula EPEI Stats: ▪ Last Recalc ▪ Daily Avail (min) ▪ Daily Load (min) ▪ Daily Setup (min) ▪ EPEI ▪ # Change Over
Fixed Pitch	The frequency at which finished goods are withdrawn from a pacemaker process as well as the corresponding amount of schedule released to that process. The default formula for Fixed Pitch = (Std Container Capacity * longest cycle time of the items) * 3 Formula Name – The Fixed Pitch formula assigned to the Heijunka Box. If left blank, the system uses the default Fixed Pitch formula.

Report Production

Production can be reported from this screen for manufactured items. If a card is yellow users can double click on the item # to access the Report Production form.

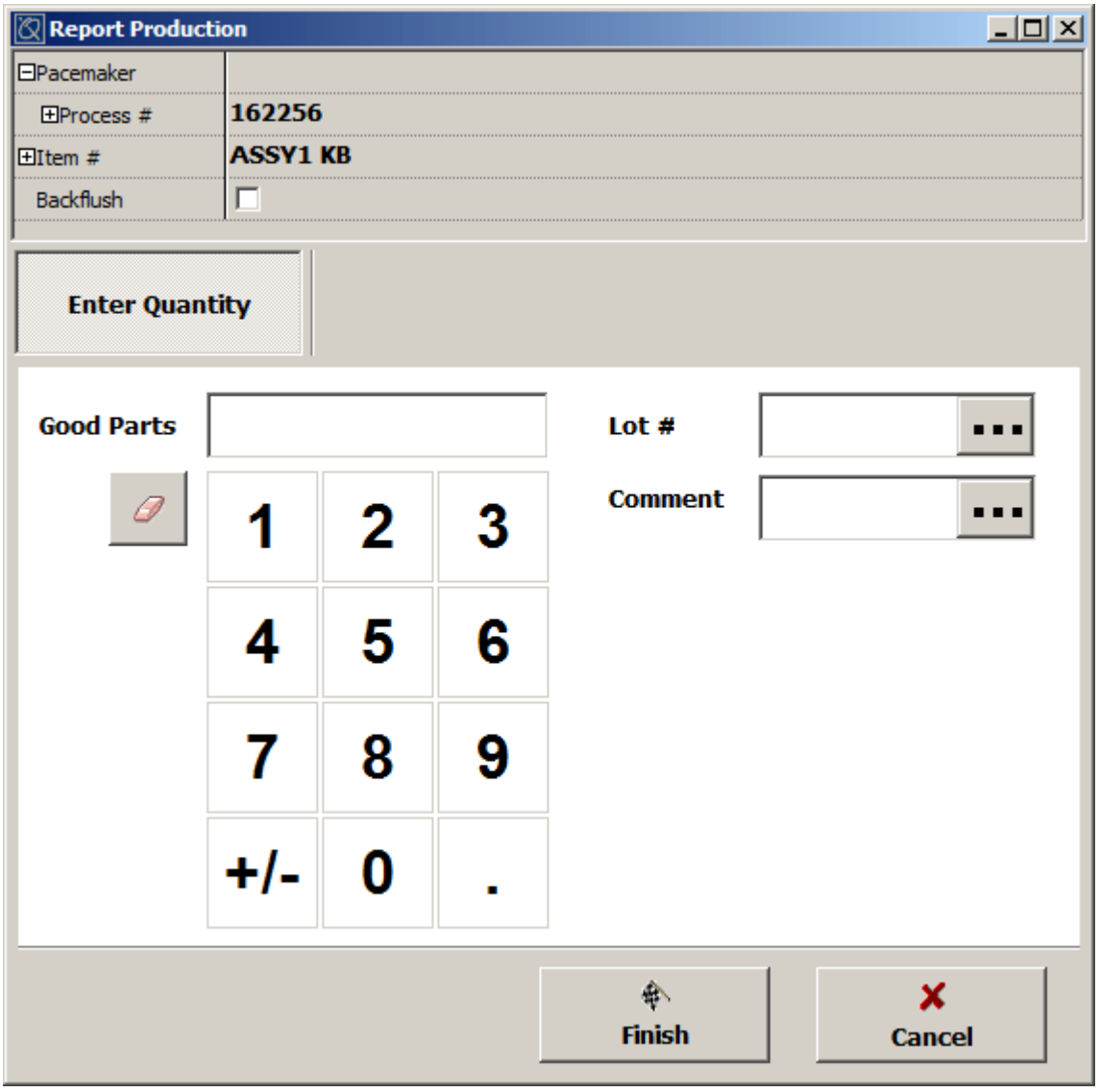
Top Section Fields:

- Pacemaker – only applicable for manufactured items

- Item # - Displays the Item #, Description, Ext. Description, Class, Rev, and UOM of the item.
- Backflush – only applicable for manufactured items

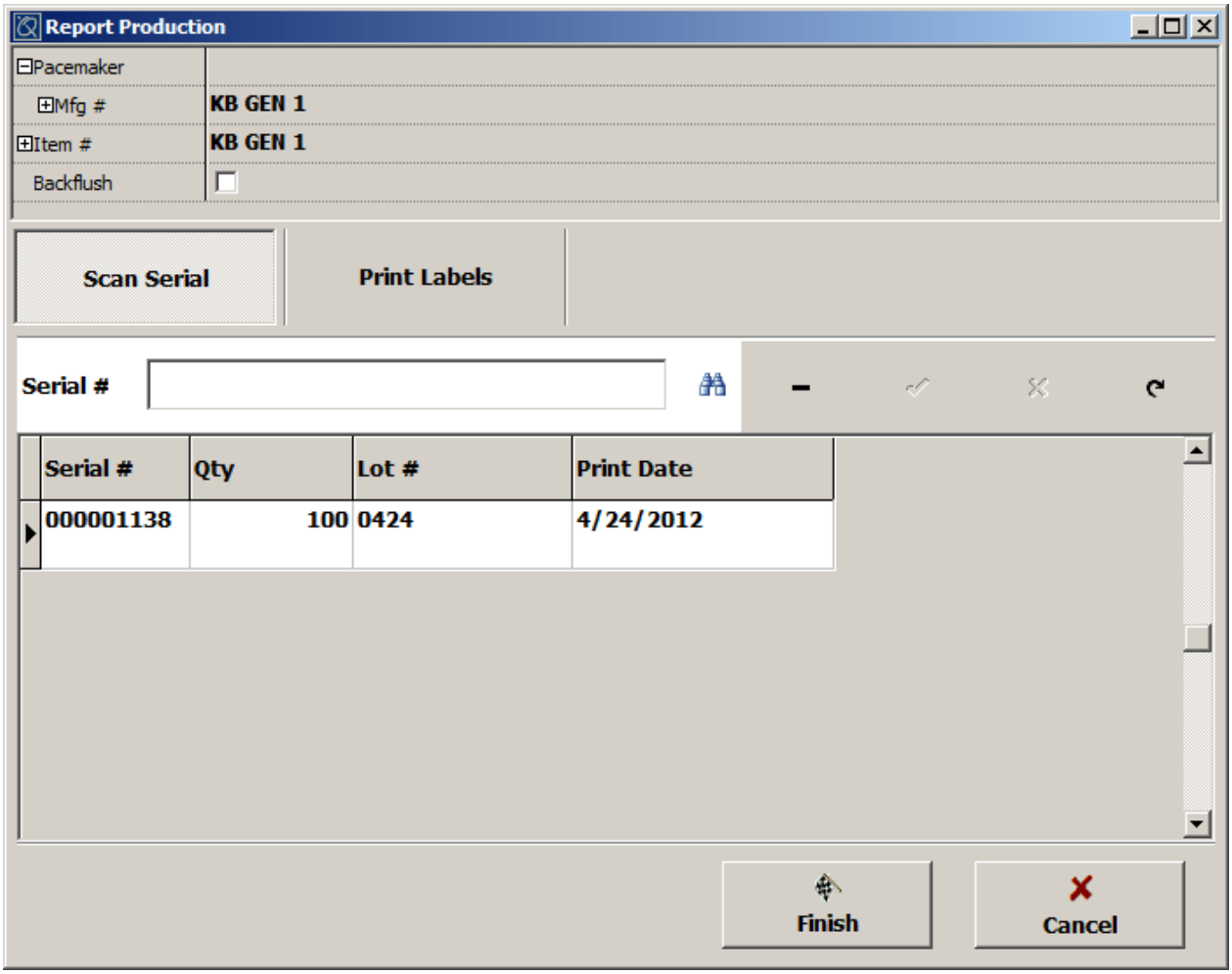
Non Serialized Items:

The *Enter Quantity* tab will only be visible for non-serialized items. To report production enter a quantity in the Good Parts field, and enter a lot number if applicable. A Manual/Backflush In transaction will occur for the quantity of good parts entered. The Backflush check box will be checked if the 'Scanner Print Label/Backflush' check box is checked for the item in Kanban Control in EIQ. It cannot be check or un-checked from this form.



Serialized Items:

Scan Serial is available for SIC items. Select the search button to access the pick list of all SN#s for this item that have not been dispositioned. A Manual/Backflush In transaction will occur for the quantity associated to the serial number.



Print Labels tab

This is only applicable for manufactured items. The default information will populate in the other fields as with all labels. Make any necessary changes on the General tab or User-Defined tab and select the OK button to print the label. A Manual/Backflush In transaction will occur for the quantity associated to the label.

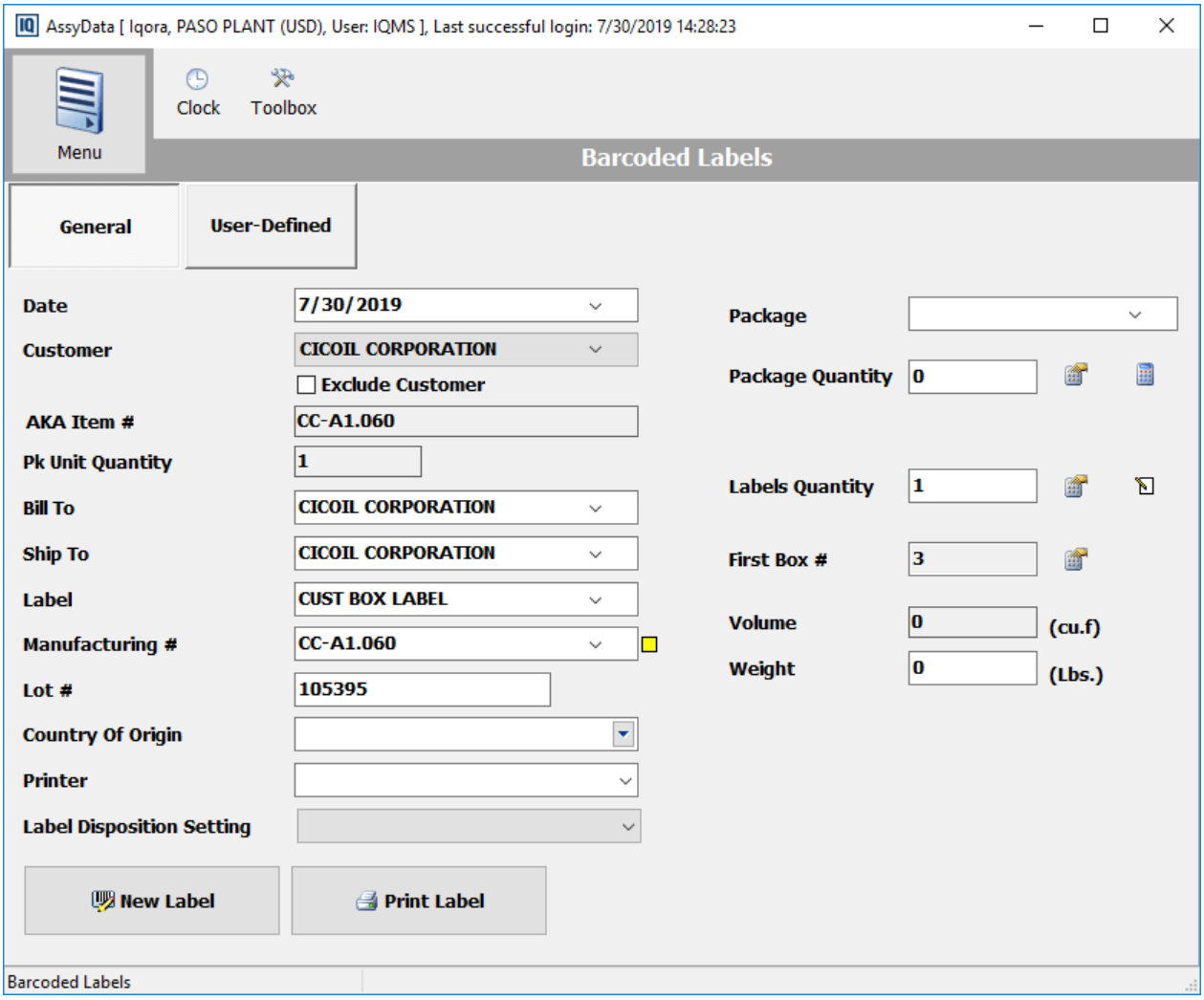
Barcoded Labels

The Barcoded Labels module allows the user to create labels for the inventory item associated to the work order they are currently logged into, or reprint a tote label.

Create Label:

Select the Barcoded Label button on the module toolbar, and then select the Tasks button.

- Enter the employee ID and a list of work orders the employee is logged into will appear.
- Highlight a work order and select OK. The Print Inventory Barcoded Labels screen will appear for the item associated to the selected work order:



- If necessary update the information in the fields on the General and User-Defined tabs, enter the labels quantity, and then select the **Print Label** button to print the labels.

The **New Label** button gives the user access to the **Label Maintenance** form.

Reprint Label:

Select the Reprint Label button to reprint a Tote Label.

Scan the serial number and select OK. The Tote label for the specified serial number will print.

Serial # Tracking

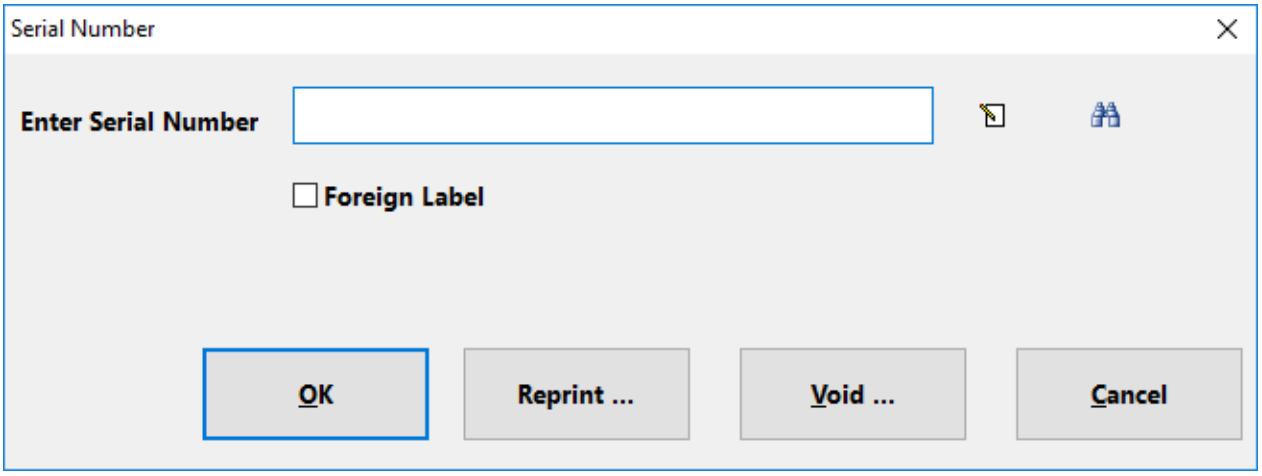
Serial Number Tracking is used to view label information for specific Serial Numbers.

EnterpriseIQ uses a master label table to manage the data from the creation of labels. Every label created through EnterpriseIQ adds a record to this table, and each record/label is assigned a unique serial number.

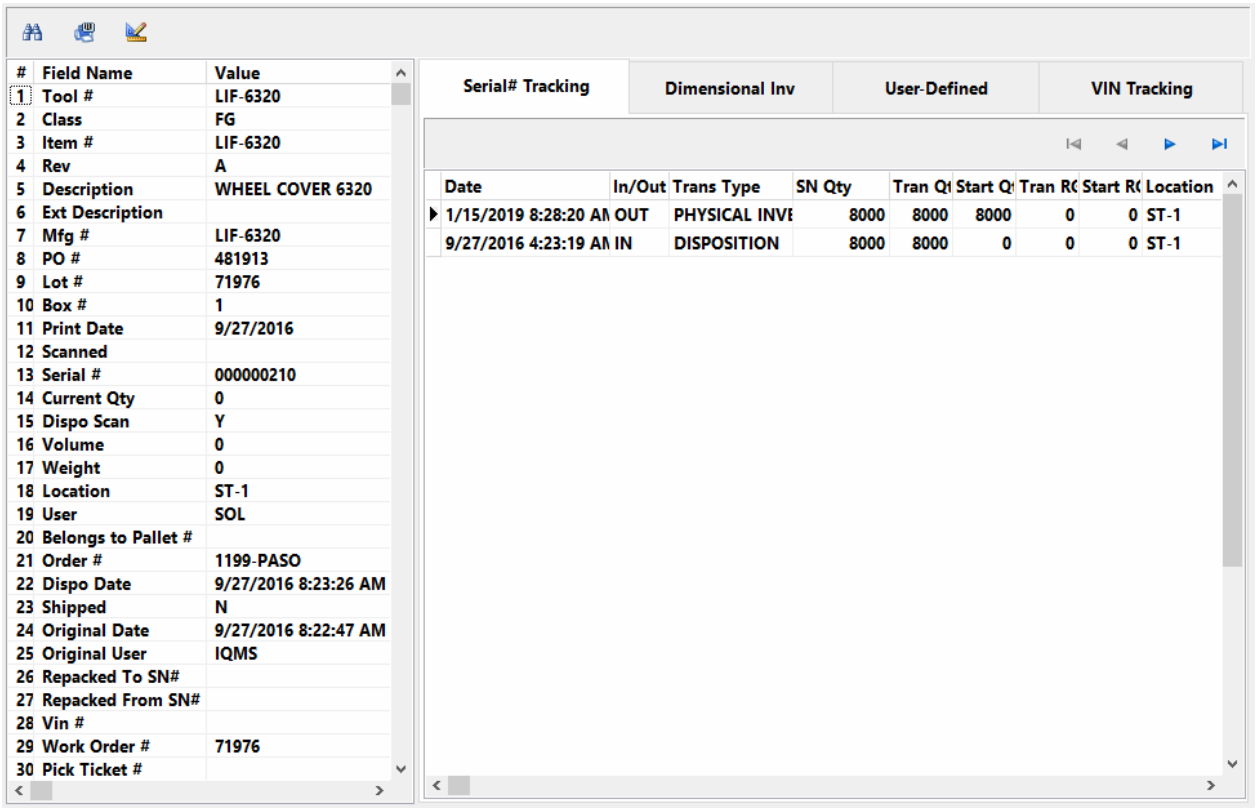
The information stored within this table is based on when the label was created. It is essentially a record of the label itself, though other tables are actually used to create the label. Note that data elements such class, itemno, description, serial number and FG_lotno are part of this table. This provides easy access to the pertinent manufacturing data included in the box or package containing the label.

The serial number is stored as a character string (typically nine digits), preceded by leading zeros. It is based on the unique ID number automatically assigned during the creation of the label.

To view the label data based on the serial number select the Serial # Tracking button from the Menu in AssyData. A pop up form will appear to enter the serial number. To enter a serial number select the  button next to the field to access the keyboard. Or select the search button to access the pick list of serial numbers. The pick list includes fields such as: serial #, item information, print date, quantity, and VIN #.



Once entered select OK.



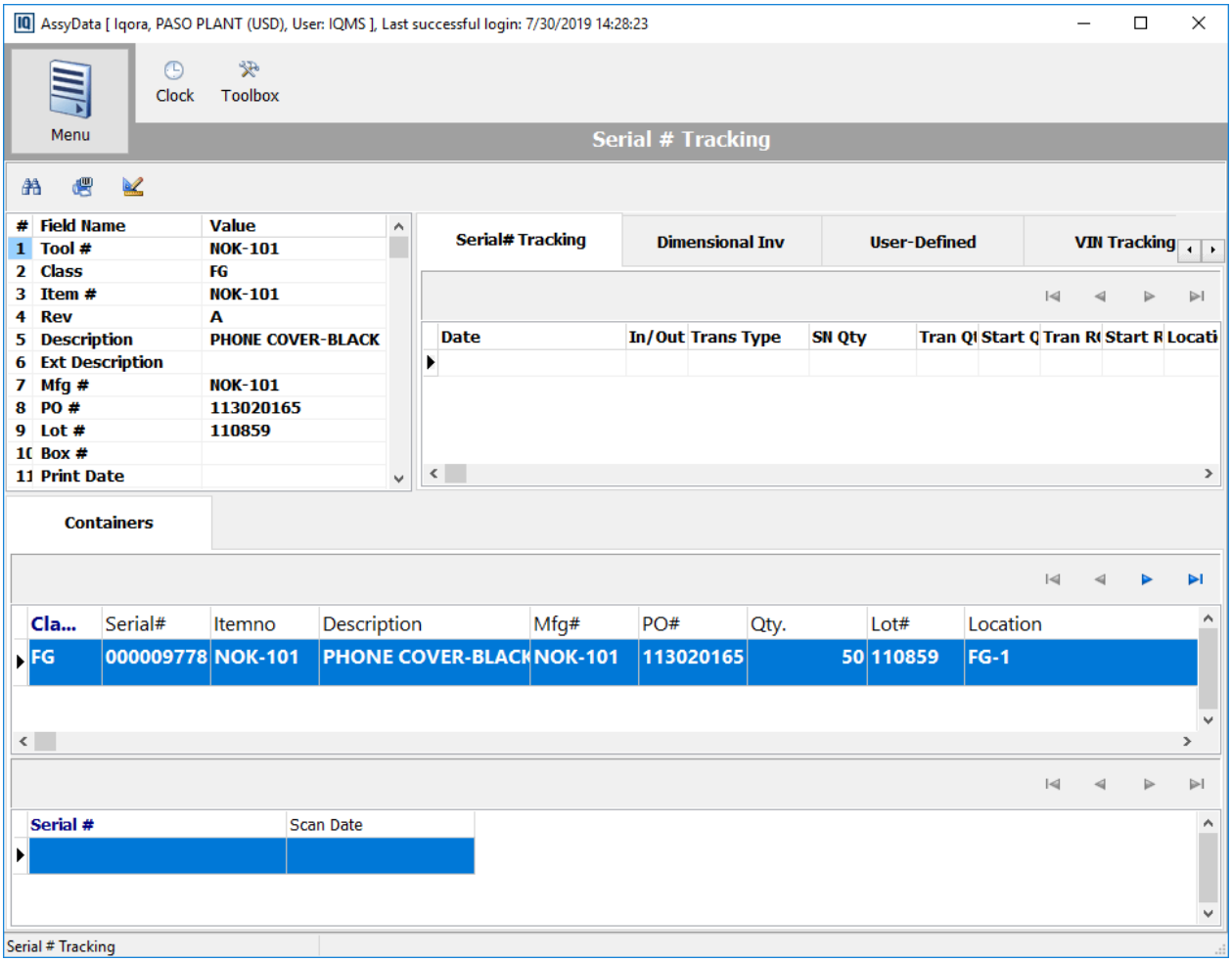
#	Field Name	Value
1	Tool #	LIF-6320
2	Class	FG
3	Item #	LIF-6320
4	Rev	A
5	Description	WHEEL COVER 6320
6	Ext Description	
7	Mfg #	LIF-6320
8	PO #	481913
9	Lot #	71976
10	Box #	1
11	Print Date	9/27/2016
12	Scanned	
13	Serial #	000000210
14	Current Qty	0
15	Dispo Scan	Y
16	Volume	0
17	Weight	0
18	Location	ST-1
19	User	SOL
20	Belongs to Pallet #	
21	Order #	1199-PASO
22	Dispo Date	9/27/2016 8:23:26 AM
23	Shipped	N
24	Original Date	9/27/2016 8:22:47 AM
25	Original User	IQMS
26	Repacked To SN#	
27	Repacked From SN#	
28	Vin #	
29	Work Order #	71976
30	Pick Ticket #	

Serial# Tracking | Dimensional Inv | User-Defined | VIN Tracking

Date	In/Out	Trans Type	SN Qty	Tran Qt	Start Q	Tran RC	Start RC	Location
1/15/2019 8:28:20 AM	OUT	PHYSICAL INVE	8000	8000	8000	0	0	ST-1
9/27/2016 4:23:19 AM	IN	DISPOSITION	8000	8000	0	0	0	ST-1

The Serial Number Tracking form will appear displaying the details about the label. The transaction log details for the serial number will be visible for packages that have been dispositioned with labels.

Container Labels - If the label is a pallet label the form will display information for the pallet, containers on the pallet, and if foreign serial numbers were used to fill the containers those will show also.



Dimensional Inventory - This tab will display the Dimensional Inventory information for the serial # for serialized inventory control (SIC) items. The information on this tab is not editable. (The tab is visible for non-SIC items as well but will not have information). See Printing Labels for more information on Dimensional Inventory.

User-Defined - This tab displays the user fields from the Print Label form. The information on this tab is not editable

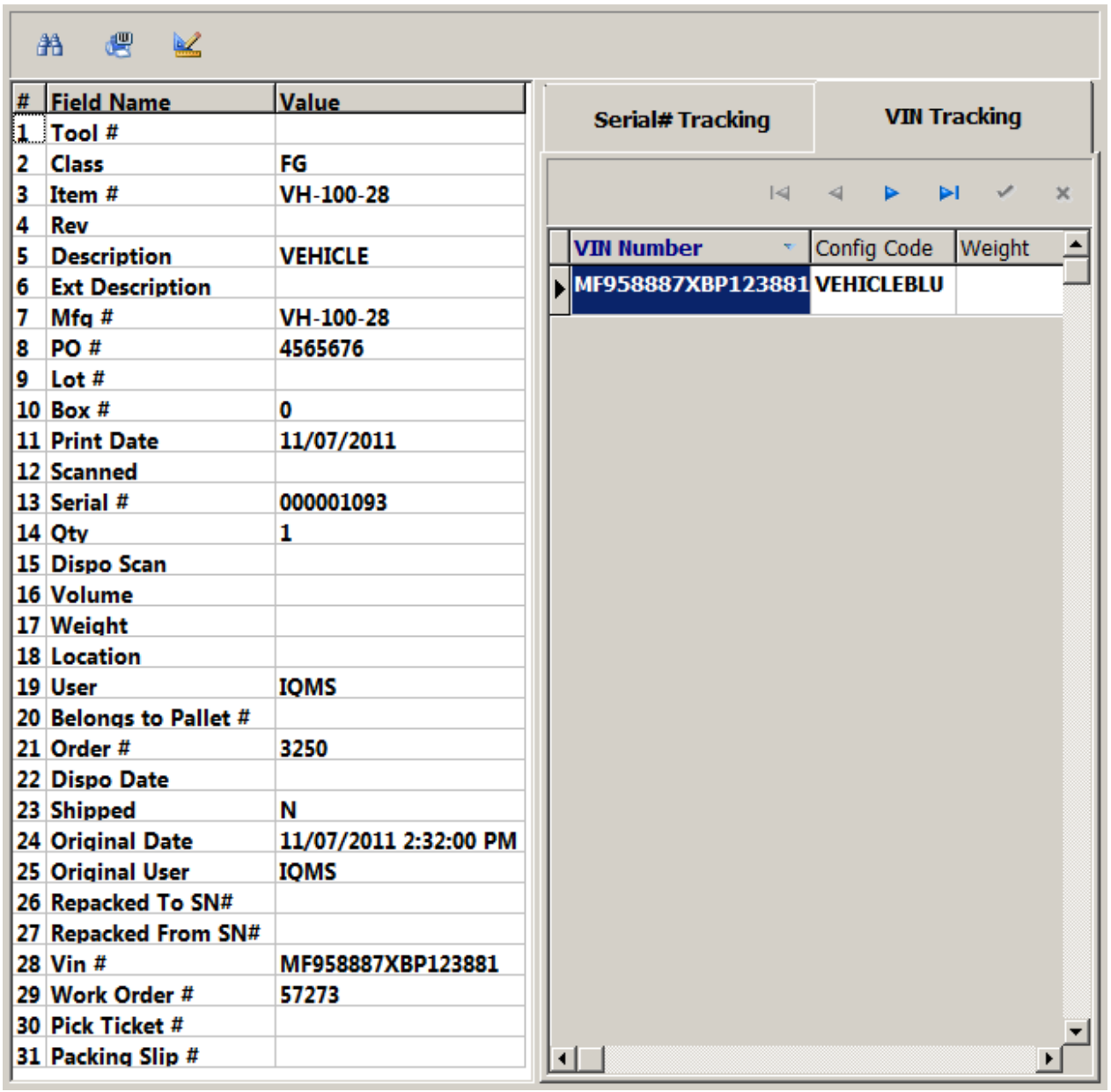
VIN Tracking - This tab will be available for users licensed for VIN Generator.The information comes from the VIN_HISTORY table which is populated based on the table below.

Note: The VIN History table will not populate the VIN # unless the Config Code is populated in inventory on the Manufacturing tab.

Field Name in system (if applicable)	Column Name in data base	When the field is populated
VIN Number	VIN_NO	VIN Generation
Serial #	SERIAL	VIN Generation
Config Code	SMART_CODE	VIN Generation
	ARINVT_ID	VIN Generation
Item #	ITEMNO	VIN Generation
Rev	REV	VIN Generation
Class	CLASS	VIN Generation
Description	DESCRIP	VIN Generation
Ext Description	DESCRIP2	VIN Generation
Mfg #	MFGNO	VIN Generation
	STANDARD_ID	VIN Generation
Weight	CONFIG_WEIGHT	VIN Generation, can be edited
GAWR	GAWR	VIN Generation, can be edited
GVWR	GVWR	VIN Generation, can be edited
Tire Size	TIRE_SIZE	VIN Generation, can be edited
Rim	RIM	VIN Generation, can be edited
PSI	PSI	VIN Generation, can be edited

Single/Dual	SINGLE_DUAL	VIN Generation, can be edited
Vehicle Attributes	VEHICLE_ATTRIB	VIN Generation
Spare Tire	SPARE_TIRE	VIN Generation, can be edited
Number of Axles	NUM_AXLES	VIN Generation
Model Year	MODEL_YR	VIN Generation
	ARCUSTO_ID	VIN Generation
Company	ARCUSTO_COMPANY	VIN Generation
Order #	ORDERNO	VIN Generation Updated with Packing Slip generation
	ORD_DETAIL_ID	VIN Generation
PO #	PONO	VIN Generation
Work order Number	WORK ORDER_ID	VIN Generation
	LM_LABELS_ID	VIN Generation
	CRM_QUOTE_DETAIL_ID	VIN Generation
Sales Value	UNIT_PRICE	VIN Generation
Sales List Price	LIST_UNIT_PRICE	VIN Generation
Dispo Date	DISPO_DATE	Reporting Final Assy or RT Scan to Inventory
Lot #	FG_LOTNO	Reporting Final Assy
Location	LOC_DESC	Reporting Final Assy
	SHIPMENT_DTL_ID	Packing Slip creation
Config Choices	ARINVT_CARGO.DATA1	VIN Generation, can be edited

Note: When a VIN label is generated/printed it contains customer and sales order information, and it also generates a master_label record with the same detail. When a RF/WMS user has the Verify order option=Y and ships the label toward a different order and customer the ARCusto_ID, ARCusto_Company, OrderNo, Ord_Detail_ID, PONo, and CRM_Quote_Detail_ID fields in master label and VIN_History tables are updated.



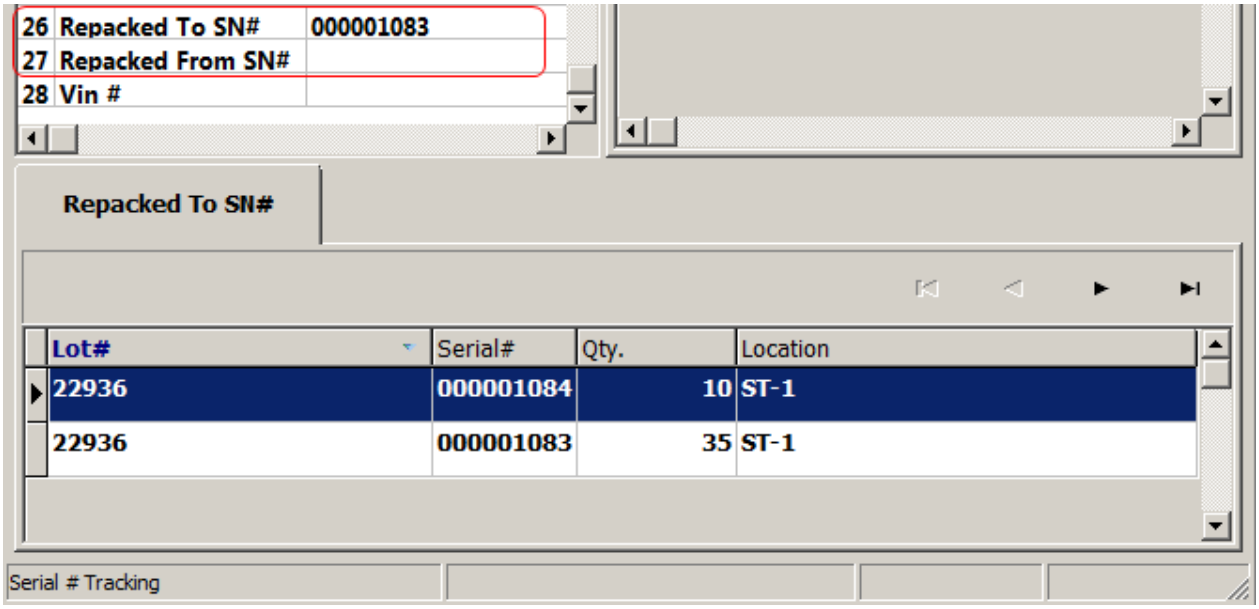
#	Field Name	Value
1	Tool #	
2	Class	FG
3	Item #	VH-100-28
4	Rev	
5	Description	VEHICLE
6	Ext Description	
7	Mfg #	VH-100-28
8	PO #	4565676
9	Lot #	
10	Box #	0
11	Print Date	11/07/2011
12	Scanned	
13	Serial #	000001093
14	Qty	1
15	Dispo Scan	
16	Volume	
17	Weight	
18	Location	
19	User	IQMS
20	Belongs to Pallet #	
21	Order #	3250
22	Dispo Date	
23	Shipped	N
24	Original Date	11/07/2011 2:32:00 PM
25	Original User	IQMS
26	Repacked To SN#	
27	Repacked From SN#	
28	Vin #	MF958887XBP123881
29	Work Order #	57273
30	Pick Ticket #	
31	Packing Slip #	

Serial# Tracking | VIN Tracking

VIN Number	Config Code	Weight
MF958887XBP123881	VEHICLEBLU	

Repack To and Repack From Information

If the label has been repacked to or from another serial number that information will display in the 'Repacked To SN#' and 'Repacked From SN#' fields in the upper section. Only the first serial number will appear in the top section. An additional grid displays at bottom of the form for 'repacked to' serials. This will list multiple serial numbers when applicable. Right click in the lower grid and select 'Jump to SN' to jump to the repacked to serial number. The Serial Number tracking form will open to the highlighted serial number.



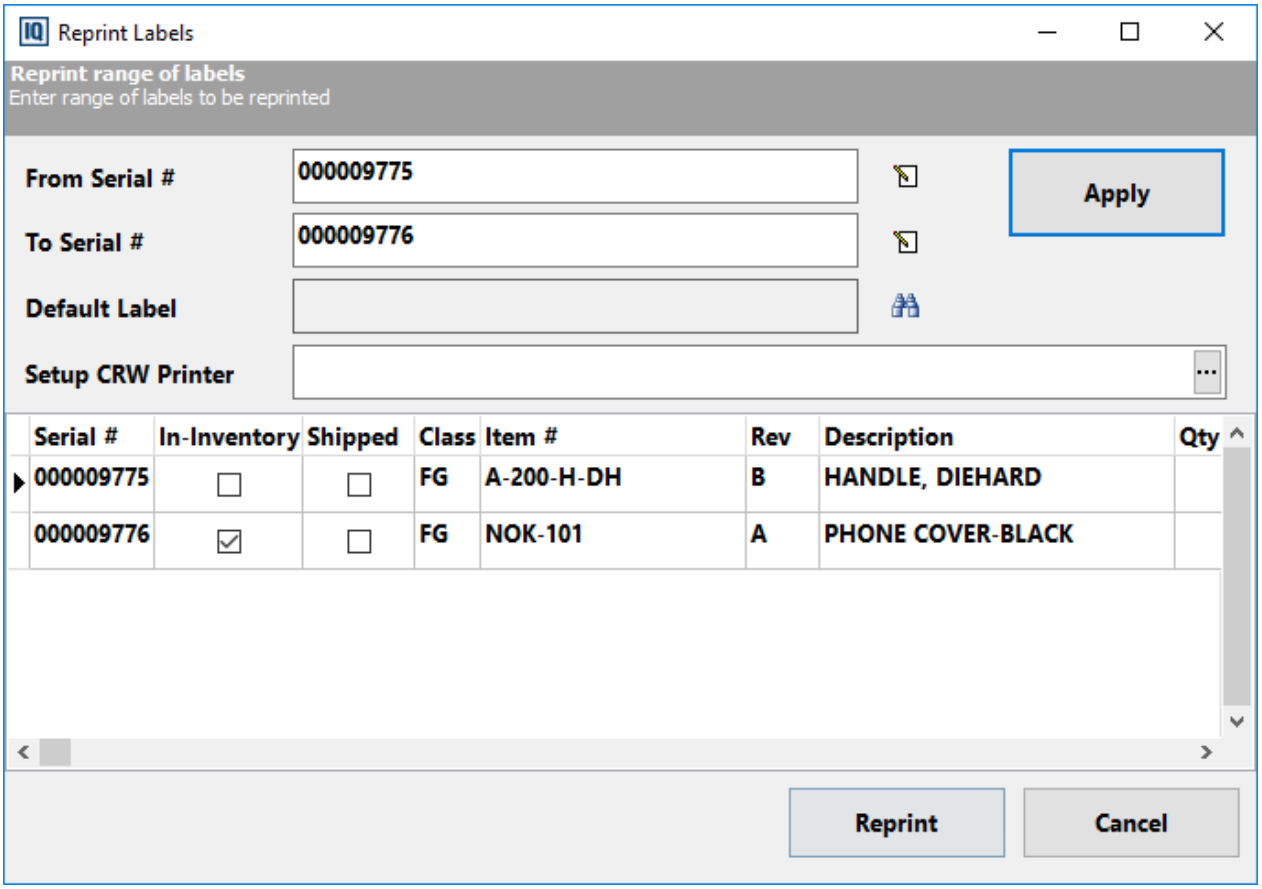
Right Click Options from the Upper Section

- **Drill Down by Lot #** - This option opens the Lot Number Tracking form for the item associated with the label.
- **Jump to Inventory** - Jumps to the inventory module for the item associated to the label.
- **Jump to BOM** - Jumps to the BOM for the item. If the item is not associated to a BOM, the BOM pick list will appear.

Speed Button Options

- **Search Serial #** - This brings up the form to enter the serial number to search for.
- **Reprint Label** - This option will reprint the label.

Reprint a Range of Labels



Enter the From and To serial numbers using the keyboard accessed by clicking the button next to the fields, and select Apply. The labels will be listed in the lower section displaying the label details such as Item #, Description, Qty, Shipped, etc.

Default Label - Toggle the search button and select a label format to use for reprinting all selected labels. Once a default label format is selected, a pop up message will display stating, "Do you wish to update all the labels in the range?". Click Yes to update all of the selected labels with the selected label format. Clicking No will return the user to the reprint form with no changes. A different label can be selected for a specific serial number by clicking on the ellipsis button in the Label field in the lower section. The pick list of labels will appear to choose from.

Setup CRW Printer - This allows users to select the CRW printer for reprinting the labels. This alleviates the user from having to select a printer for each Crystal label. Select the ellipsis button to bring up the Print form to select a printer. If a printer is selected, when clicking on Reprint, the system will use the specified printer for printing all of the CRW labels.

To reprint all of the listed labels select the **Reprint** button.

If a default label is not selected, and the option in System Parameters -> Label Setup->Reprint Original Label is checked the system will reprint the label based on the Master_Label.LM_Labels_ID. If it is not checked the system will reprint the label based on the label hierarchy.

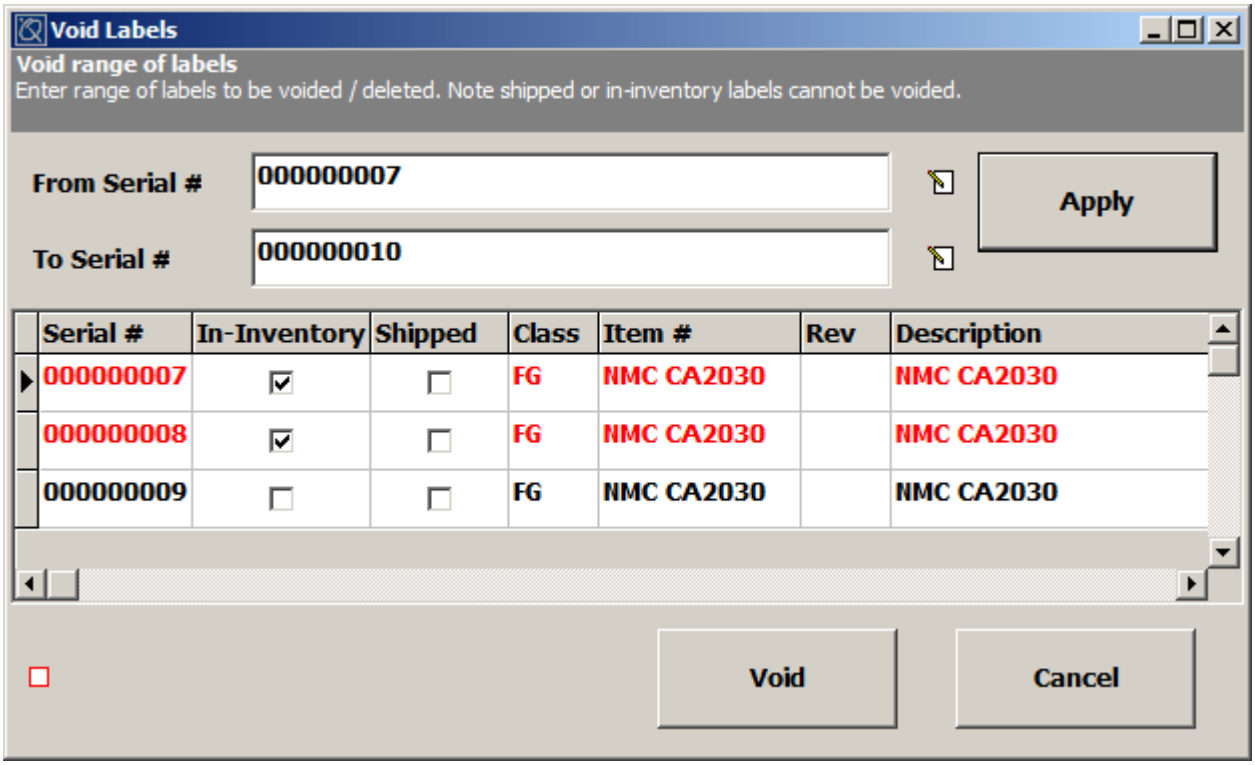
Foreign Serial Numbers

Foreign Serial numbers are serial numbers from labels typically from purchased items. Foreign serial numbers may contain up to 50 alphanumeric characters. Foreign serial numbers can be linked to boxes with labels bearing EnterpriseIQ generated serial numbers. This link is done through the Scan Line module. (Please refer to the Scan Line TechNote for more details). Once in place, the system can be used to trace foreign serial numbers back to the box and pallet used during packing and shipment. To trace a Foreign Serial number, select the 'Foreign' box on the Serial Number form and enter the foreign serial number. The system will display the boxes/pallets that are associated with that foreign serial number.

Void Labels

This option will allow the user to void a range of labels. The label can only be voided if it has not been dispositioned or used in a shipment. This function will remove the label permanently from the master label table.

Select the Void button from the search form. Enter the range of labels in the from and to fields and select Apply. The selected labels will appear in the lower section. If the label cannot be deleted it will appear in red.

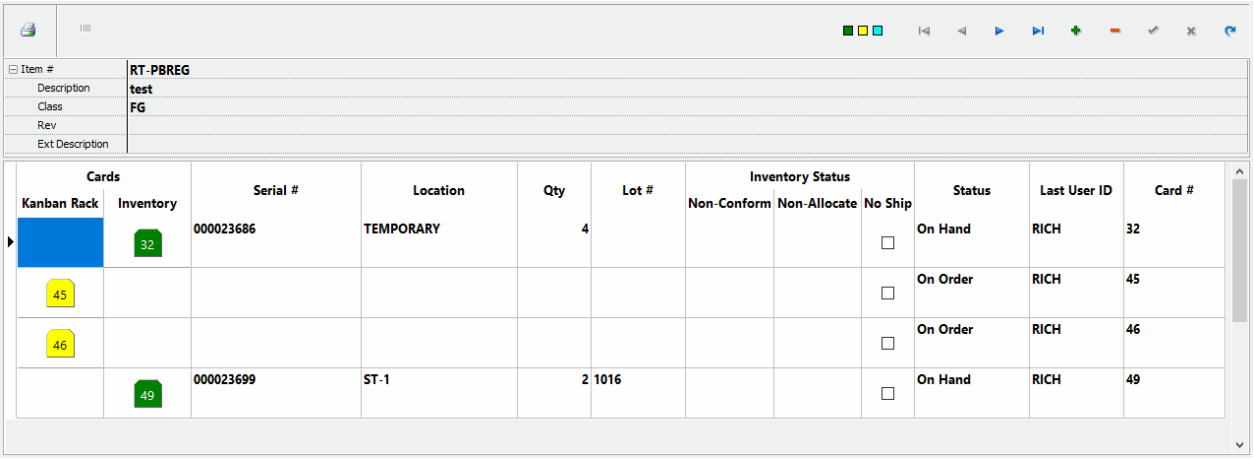


Select the Void button to complete the process. To exit without voiding the labels select Cancel.

Kanban Supermarket

This button provides users direct access to the Kanban Cards.

Select an item from the pick list and the Kanban Supermarket form will appear. The form displays the Kanban cards. The screen shot below shows the fields when the item is marked as a serialized inventory control item. Non-serialized items will not have the Serial #, Location, Qty, Lot #, or Inventory Status fields.



To create Kanban cards select the Insert (+) button. Continue this process to create the recommended card count quantity. Each Kanban card will be assigned a unique card number which is used in RF Scanning. Select the Print button to print each card. (The report used is assigned in System Parameters->Reports and Forms). These cards are attached to the container of material. When first created the status of the cards are inactive. The status of the cards are changed using IQRF. The status can be either On Hand or On Order. As the status is changed the color code is changed on this form. Green indicates on hand status and yellow indicates on order status. The user name of the person who last changed the status will populate in the Last User ID field.

Kanban Cards Grid

- Cards – Displays whether the card is in the Kanban Rack or Inventory.
- Status – When Kanban cards are first created, the status of the cards are inactive. The status of the cards can be changed either manually or through IQRF/WMSIQ. The status can be either On Hand, On Order, or Pending Accumulation. As the status is changed the color code is changed and the card moves back and forth between the Kanban rack and Inventory. Green indicates on hand status, yellow indicates on order status, and blue indicates pending accumulation.

  Note: The status can be changed manually within this form but when done this way it will not update the PO releases, therefore it is not recommended. Only use IQRF.
- Last User ID – the last user ID when the Kanban card's status is changed.
- Card # - The card number.
- Additional fields for Serialized items: Serial #, Location, Qty, Lot #, and Inventory Status.

Kanban Card Speed buttons

- Print Card(s) – Allows the user to print the cards.
- Assign label to the kanban card – Allows the user to assign an existing label to a kanban card.

Kanban Supermarket Options:

The same functionality available from Kanban Control exists in Kanban Supermarket, such as reporting production and assigning serial numbers to cards. For a complete discussion of these options please refer to Kanban for Purchased Items or Kanban for Manufactured Items depending on the type of item.

Rejects

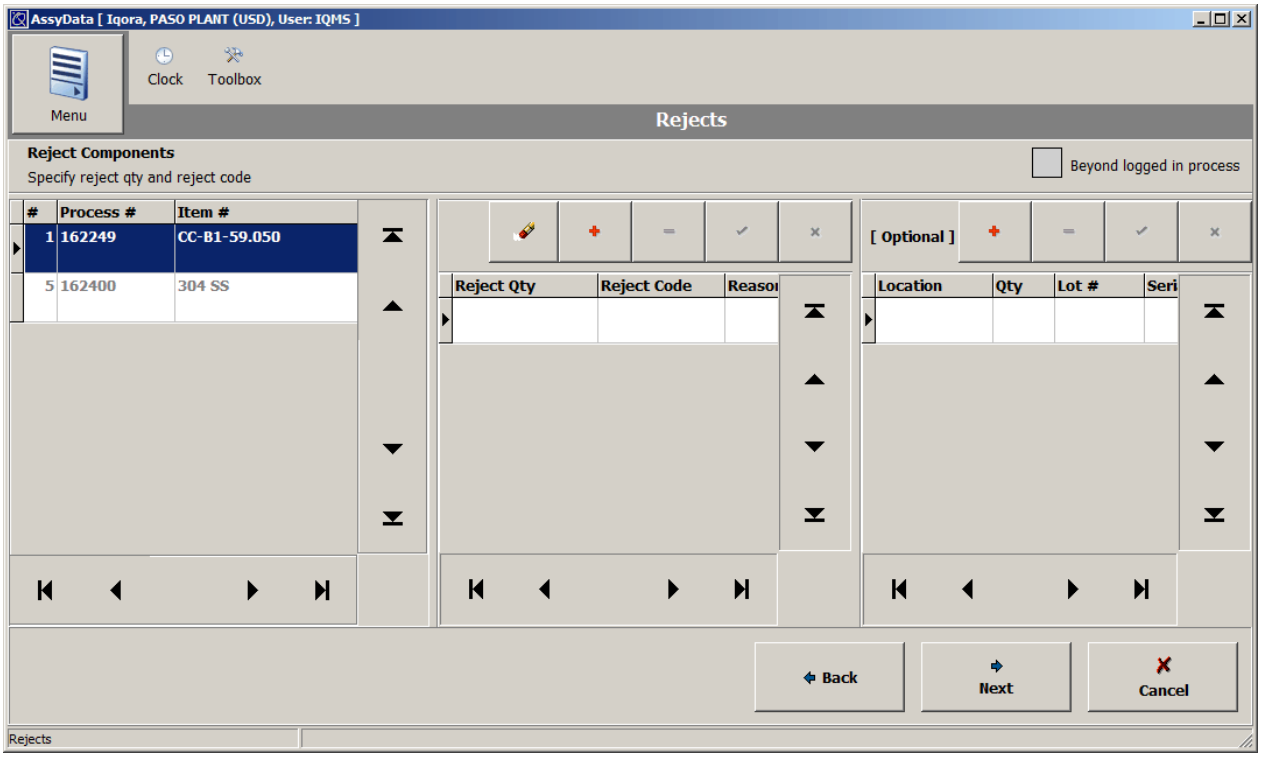
The Rejects module allows the employee to enter rejects for manufactured parts or components associated to the work order they are currently logged into. Supervisors can enter rejects for any process that is logged into.

Select the Rejects button on the module toolbar.

- Enter the employee ID and a list of work orders the employee is logged into will appear, or if a supervisor ID is entered than all logged in processes will appear.
- Highlight a work order and select OK. Select Reject Components or Reject Mfg Parts.

Reject Components in Assembly Data

The Rejects screen will appear displaying the components associated to all of the processes (Materials tab in Assembly Process Maintenance module), and items that are substituted or added to an assembly work order through hard allocation, will be displayed in the lower components section. Employees can reject components for prior processes than the one the employee is logged into. If any of the components are associated to processes beyond the logged in process they will be grayed out and the employee cannot reject those components at this time. Note: If the process does not have attached components the employee will receive an error: “Unable to report rejects - selected process has no attached components”.



- To enter rejects highlight the correct process/component, select the **+** button, and enter the **Reject Qty** in the field. Enter the reject code or select the button in the **Reject Code** field to access the pick list of reject codes to select from. If specific reject Codes are assigned to the process, only those codes will be available to choose from. If no specific reject codes are assigned to the process then the user will see all based on the EPlant logged into. Optionally enter a **Reason**. Select the keyboard button in the field to access the touch screen keyboard.

From this form users can select the specific location/lot to remove the rejected components from. This is optional unless the 'Component Reject Location is mandatory' option is checked for the Manufacturing Cell (System Parameters->Lists->Manufacturing Cells). If the option is not checked the bottom section will display 'Optional'. If it is checked it will display 'Mandatory'. If required and a location/lot is not selected an error will appear stating: 'Missing mandatory location - operation aborted'. If the Qty entered for the location(s) does not equal the Reject Qty an error will display: 'Location total qty is out of sync with the rejects qty - operation aborted'.

- For Non-Serialized Inventory Control (SIC) components, select the ellipsis button in the Location field and a pick list of locations associated to the component will display. Select a location/lot from the list. The quantities of the rejects will be removed from the location(s) chosen (negating the hierarchy).
- If the component is SIC, select the ellipsis button in the Location field and a pick list of locations associated to the component will display. Once a location is selected, then the labels linked to that location will display for the user to choose from.

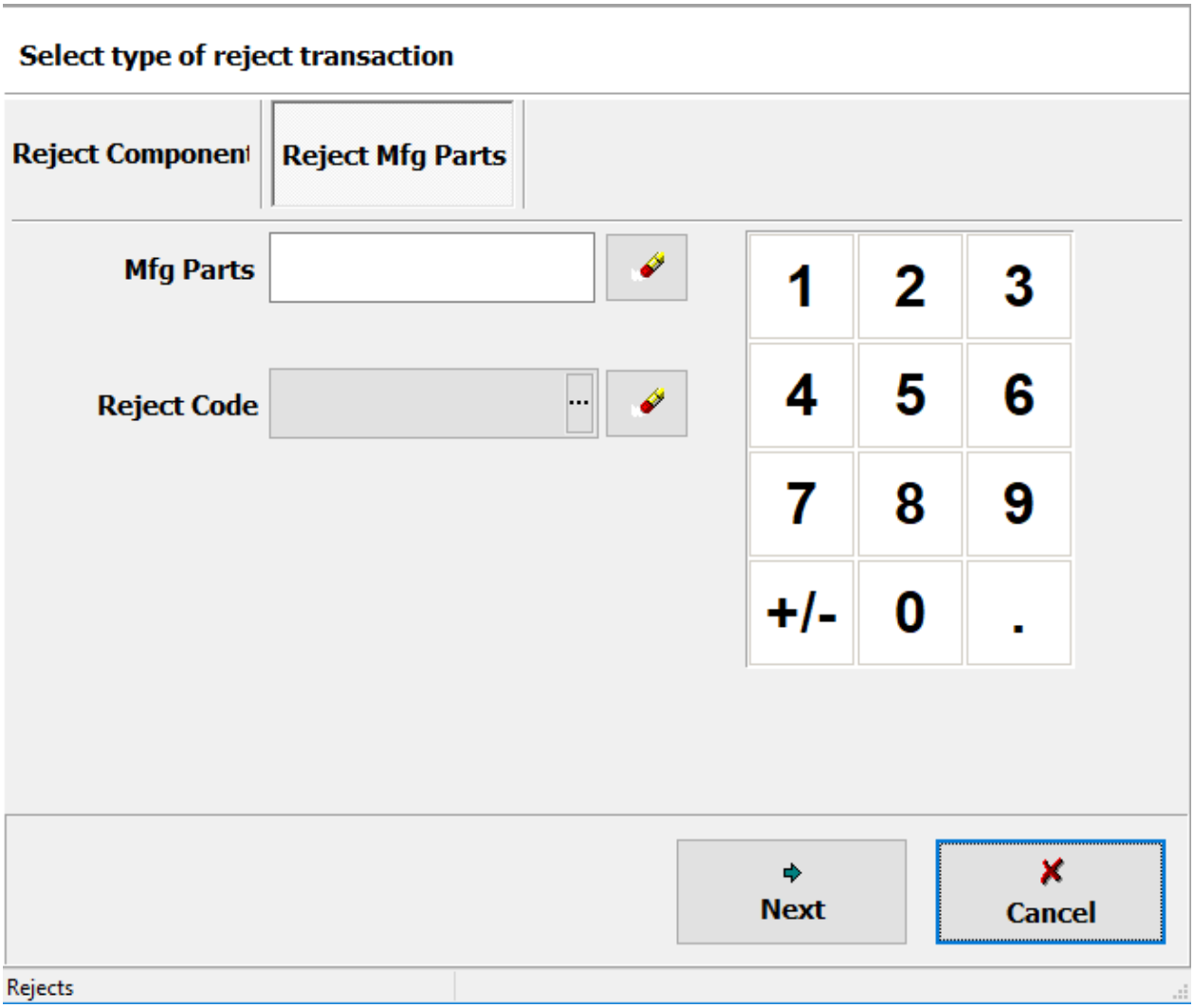
Note: Rejected components cannot be over reported or under reported on the location level in relation to the totally reject quantity.

- Select Next, verify/edit the FG Lot #. If the Lot # is changed a Confirm message will display, 'The labor reporting lot number must match the FG lot number in order to obtain lot traceability of the backflushed components. Are you sure you want to change the labor reporting lot number?'. Select Yes to continue or No to not continue posting. There is also a 'Do not show next time' check box.

- Select Finish to execute the transaction. A Manual out transaction will be recorded in the transaction log for the component.

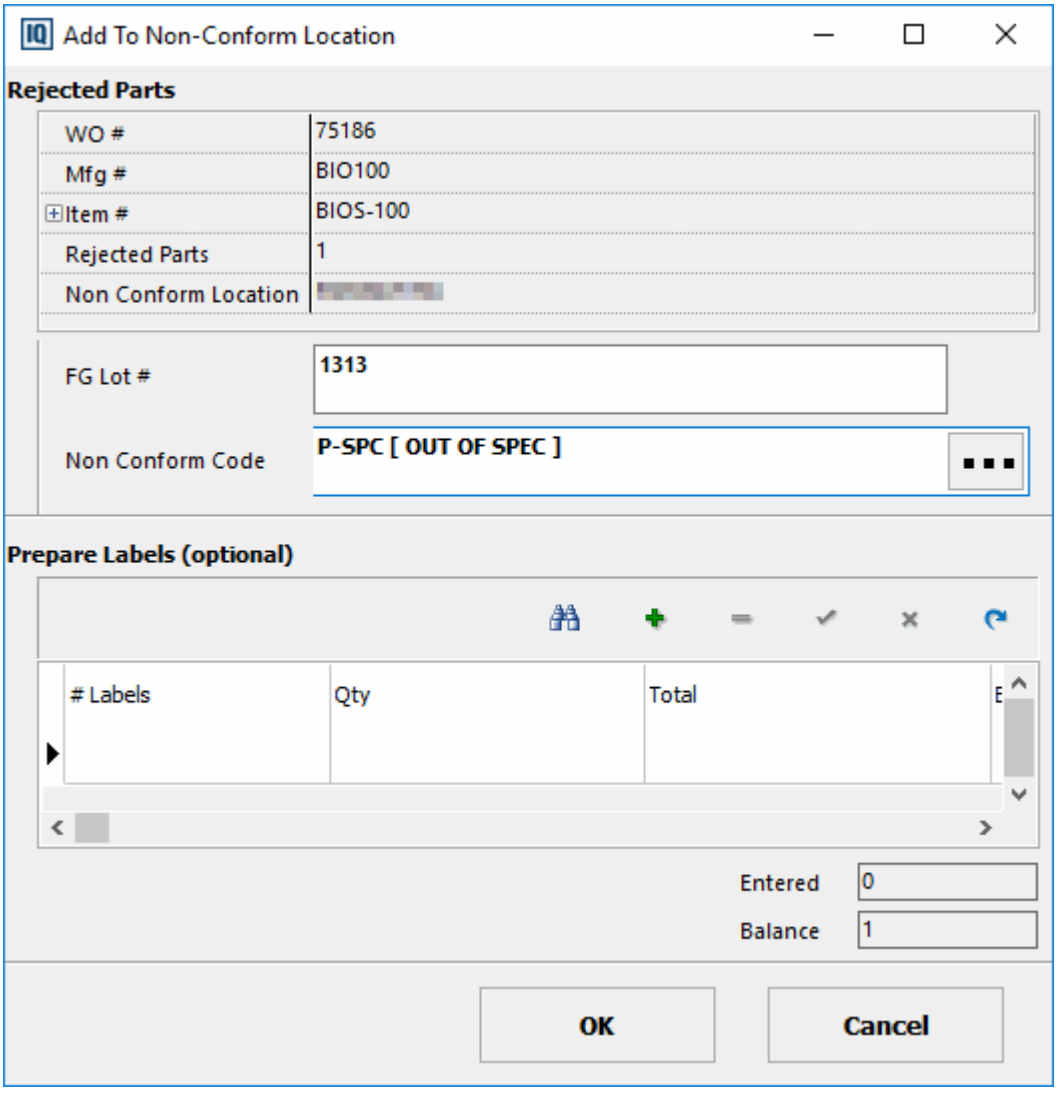
Reject Mfg Parts in AssyData

To enter reject information for the manufactured part for ASSY1, 2, and 3 items select the 'Reject Mfg Parts' option and enter the number of rejects and select the reject code on this screen:



- Select the Next button to continue. The Reject Component screen will appear to enter rejects for the components as described above. When a value is entered in the Reject Mfg Parts field the system will automatically calculate the quantity of components associated to the process based on the parts per, and that value will be displayed in the Reject Qty field for the attached components. This value can be overridden. If the 'Exclude Backflush' option is checked for the component (Attached Materials-> Details tab on the BOM), then the system does not automatically create a reject entry for the components, however, the user can enter component reject information in manually.

- If the selected reject code has a non conform location associated to it (Reject Codes list) the system will do an IN disposition transaction with a reason of 'Non Conform Mfg Rejects' for the quantity rejected into the location associated to the reject code. (This does not update the Floor Dispo column in the production report). Once the reject is posted a form will display to enter the FG Lot #, Non Conform Code and prepare labels. Enter the FG Lot # in the field if desired. If the item has the 'Lot # is mandatory' option checked in inventory it is required. Select the Non Conform Code from the pick list accessed by clicking on the ellipsis button in the field. This will be the non conform code associated to the non conform location in inventory. Labels can be prepared by manually entering in the number of labels and quantity per label, or existing label serial numbers can be selected from the pick list.



- Once the components reject information is entered, select the Next button to continue.
- Select Finish to post the transaction.
- For users licensed for the Quality modules, a pop up message will appear asking, "Would you like to create an MRB?" If Yes is selected a pick list of existing MRBs will appear to add the item to, or select the New button to create a new MRB. If No is selected the material will be toggled to non-conform without being associated to an MRB. Security can be placed on this message.

Note: The logged in user ID will populate in the REJECTS table in order to track who reported rejects. (In shop floor applications like AssyData that are shared among more than one user, the user recorded is the user logged into the application, not who entered the transaction).

Dispatch List in AssemblyData

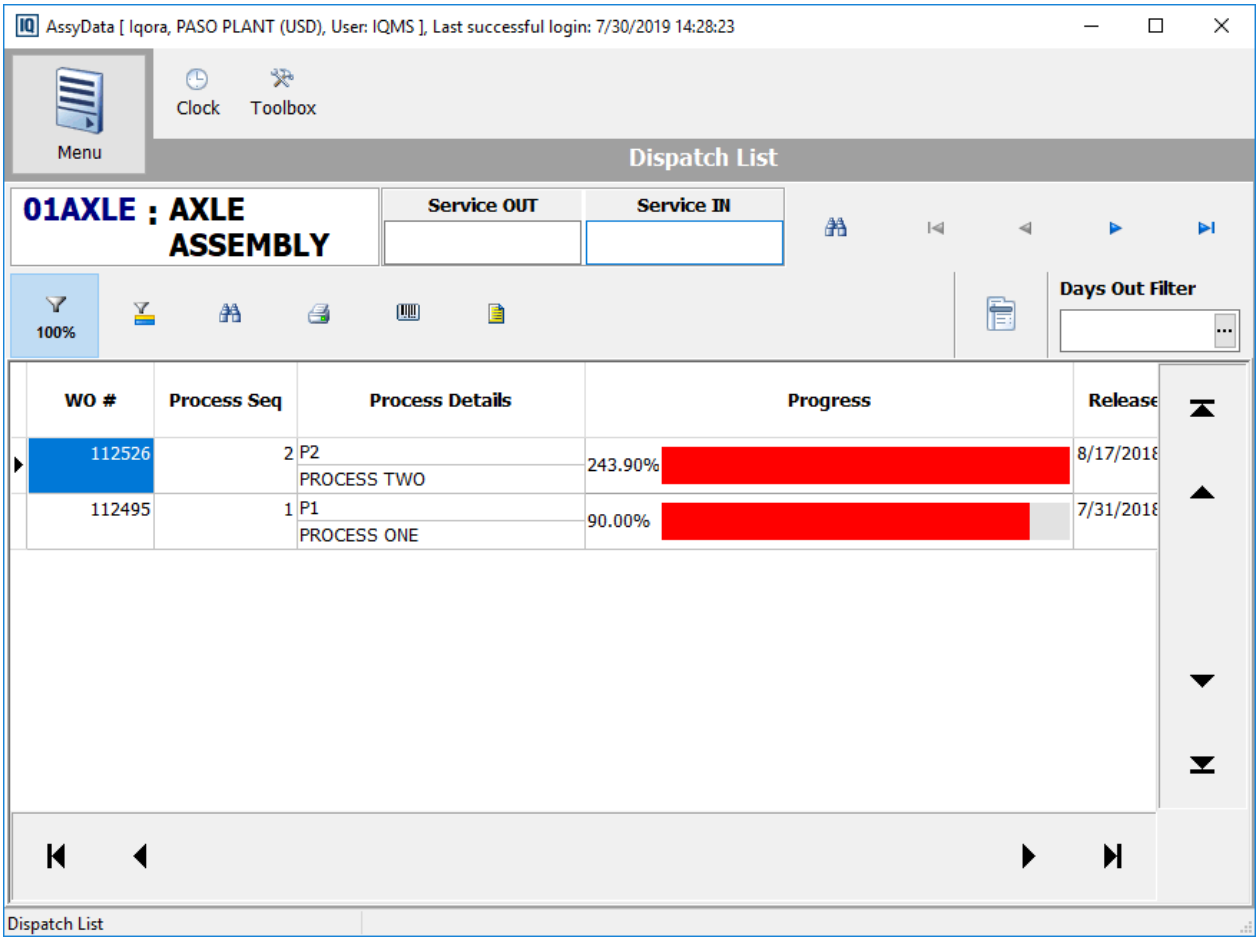
Select the Dispatch List button on the module toolbar to view processes on the selected Work Center.

Note: There is a Control option available in Configure AssemblyData called **Dispatch List shows all processes on certified work centers.** When toggled to Yes the Dispatch List will display all processes from the Assembly Dispatch Priority List and any processes that have the work center certified in the Process Maintenance. If it is set to No, only work orders in the dispatch list will display.

The processes that appear in the Dispatch List depends on how the process is set up and the control option described above.:

- If the option 'Dispatch List shows all processes on certified work centers' is checked, processes that are in Assembly Track will be visible on Work Centers with the corresponding Center Type.
- If a Qualified Work Center is associated to the Process then the process will only be visible to those Work Centers in AssemblyData.
- If the process is added to the Dispatch List within Assembly Track then the process will only be visible to the Work Center the process was dispatched to.

This screen displays similar fields that are found in the Assembly Track module such as Progress %, Hours to Go, and Priority information. The Processes must be part of the work orders that are on the top grid of the Assembly Track module to be visible in the Dispatch List. The order of the work orders is based on the Dispatch Priority List in Assembly Track. If no work orders have been scheduled in the dispatch list they will be in order based on the work order's Must Start Date.


AssyData [Iqora, PASO PLANT (USD), User: IQMS], Last successful login: 7/30/2019 14:28:23
Menu
Clock
Toolbox
Dispatch List
01AXLE : AXLE ASSEMBLY
Service OUT
Service IN
100%
Days Out Filter
WO #
Process Seq
Process Details
Progress
Release
112526
2
P2
PROCESS TWO
243.90%
8/17/2018
112495
1
P1
PROCESS ONE
90.00%
7/31/2018
Dispatch List

To select a Work Center use the pick list button to access the pick list of work centers, or the scroll buttons to scroll through the work centers to find the desired one. The pick list includes work center #, description, type and Mfg Cell. It also has the Advanced filter feature. Note: The chosen work center is remembered in the registry so it will automatically come up the next time the Dispatch List module is selected.

Along side the work center field the Service Out and Service In dates are displayed. If service dates have been entered in the Maintenance, Repair and Overhaul module for the work center, those dates will appear in these fields.

Filters

There are two filter option to filter the records displayed in the lower section:

- Inventory Group - User can select an Inventory Group to filter the records displayed based on the Inventory Group associated to the Item. Select the ellipsis button to access the pick list to choose an inventory group.
- Days Out Filter - This filter allows users to enter the number of days to filter the records displayed based on the must start date. Select the ellipsis button to access the keypad to enter a days out value.

Below is an alphabetical list of the fields that are visible in the Dispatch List. These are some of the same fields that are in the Assembly Track module. Users can sort the columns in AssemblyData.

EPlant ID	This is the EPlant ID associated to the work order.
Hours To Go	[Cycle time / multiple of / (yield/100)] * (WO Qty – Qty)
Item#	This is the item number associated with the work order.
Item Description	The description of the item number associated with the work order.
Logged In	This box will be checked if an employee is clocked into the process. This will allow the employees to see what jobs/processes are being worked on.
Lot #	Lot #
Mfg #	This is the Mfg # (BOM) associated to the work order.
Must Start	This is the calculated must start date for the work order.
On Hand	The On Hand quantity for the item.
Previous Process	This includes the Process #, Description and quantity Completed of the previous process.
Priority Note 1 & 2	The priority Notes from the work order. These cannot be edited from here. To make changes to the Priority Note field(s), right click and jump to the work order.
Process Details	The process operation number and description.
Process Seq	Process sequence number.

Progress	Progress % = (Qty / WO qty) * 100 Note: The progress percentage takes into account any rejected mfg parts and updates the progress percent for each process where more components will be needed. (See the Progress % details in the Middle Section table for Assembly Track for a calculation example). Progress bar colors - compares the actual parts per hour versus the standard parts per hour. Actual parts per hour = qty / sum(time out – time in) for that process / # of Processes the employee was logged into simultaneously Standard parts per hour = 1 / [Cycle time / multiple of / (yield/100)] If actual is 100% or greater than standard, then the bar is green If actual is 95 – 99% of standard, then the bar is yellow If actual is less than 95% of standard, then the bar is red
Qty	Sum of the process quantity (from table: TA_LABOR.process_qty) for the specific WO/Process.
Qty to Complete	The number of items to be completed.

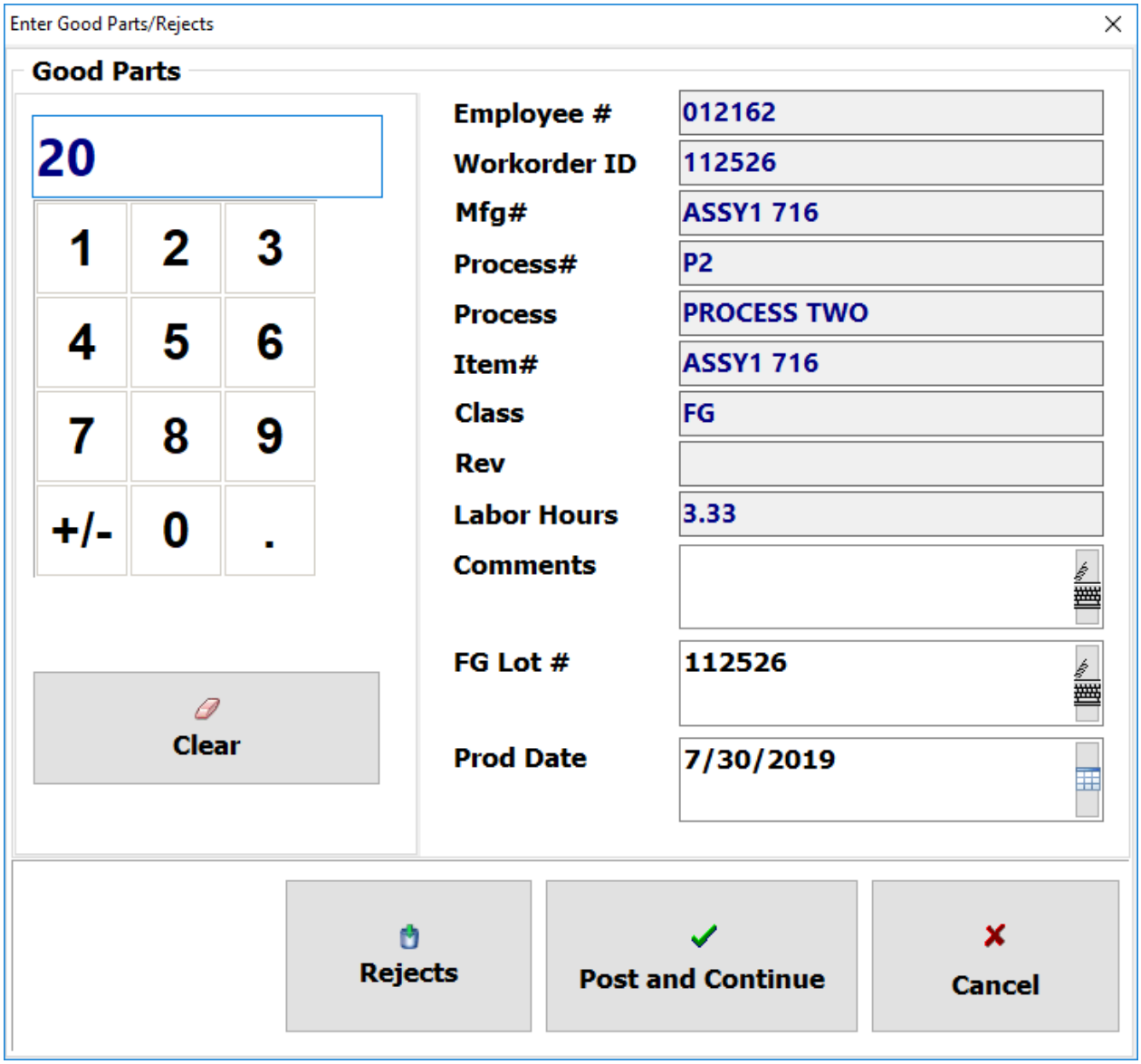
Rejects	The number of Mfg Parts rejected.
Release Date	The first release date from the sales order.
WO #	This is the work order number generated by the system to produce the items required to meet demand.

WO Print Date	The date the work order was last printed. This will be updated when the work order is printed from a speed button no matter where the speed button is.
WO Printed By	The user who last printed the work order.

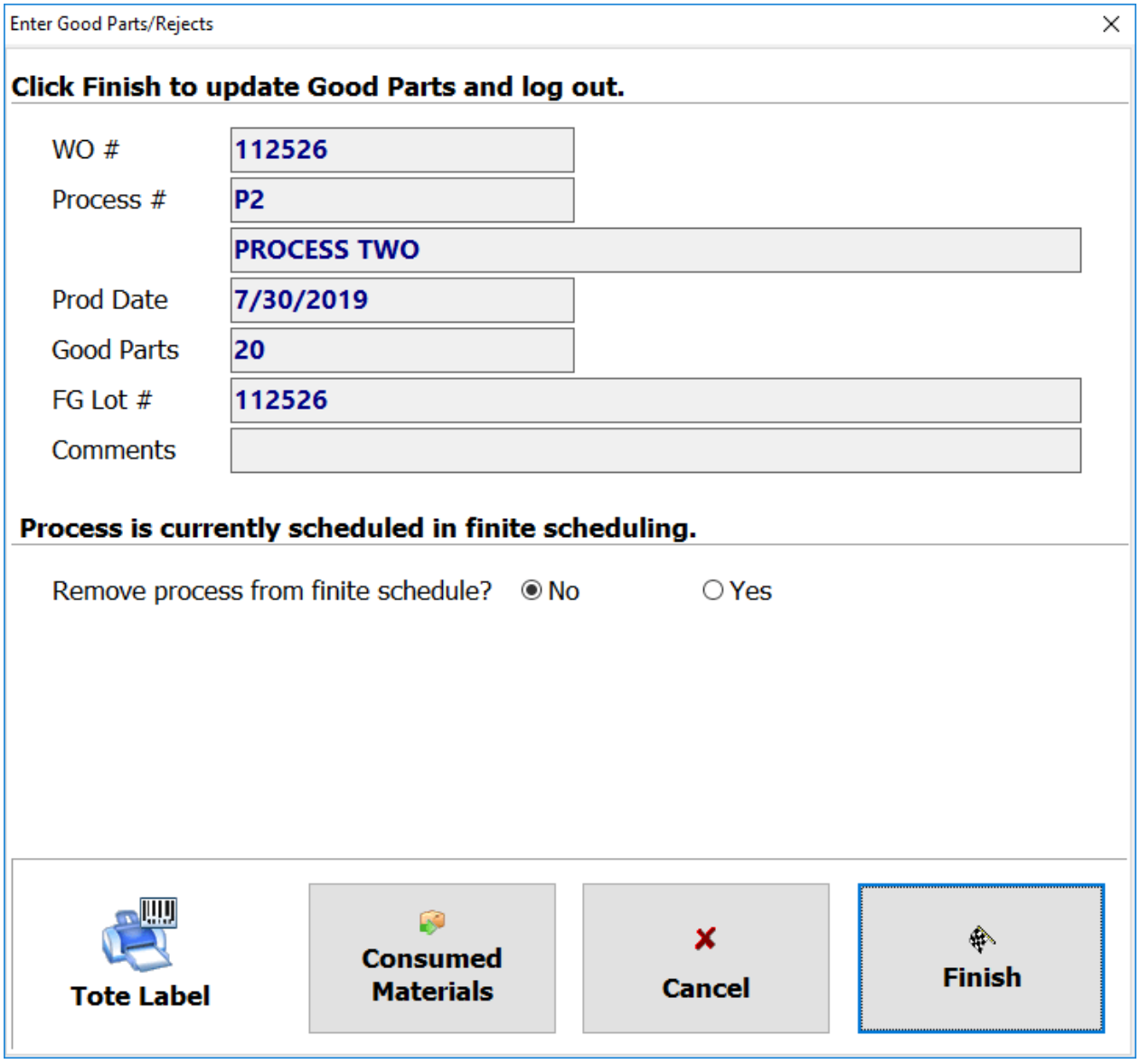
Additional Options:

- **Hide Records** - Select the Filter button to hide records where the Progress is 100% or greater.
- **Hide Sequential Processes** - Click the second filter button to hide processes where the process before it in the routing is set to sequential and is not 100% complete. This applies across work centers. For example, if there is 'process 1' on work center A which is not 100% complete and 'process 2' on work center B, with the filter button on, work center B will not display 'process 2'.
- **Search Work Order #** - Select the Search Work Order button to access the pick list of work orders for the current work center's dispatch list.
- **Print WO Traveler** - Select the printer speed button to print the traveler for the highlighted work order.
- **VIN Generator** - This will access the VIN Generator module. (See ***Vehicle Identification Number (VIN) Generator https://my.iqms.com/cfs-file.ashx/__key/Technote/VIN-Generator.pdf*** TechNote for more information).

  Report Quantity - Select the Options button or right click and select this option to report Good Parts. When this is selected, a pick list of employees will appear. Select the employee and enter good parts. Labor hours will be displayed and calculated as the qty * standard labor hours.


Enter Good Parts/Rejects
Good Parts
20
1
2
3
4
5
6
7
8
9
+/-
0
.
Clear
Employee #
012162
Workorder ID
112526
Mfg#
ASSY1 716
Process#
P2
Process
PROCESS TWO
Item#
ASSY1 716
Class
FG
Rev
Labor Hours
3.33
Comments
FG Lot #
112526
Prod Date
7/30/2019
Rejects
Post and Continue
Cancel

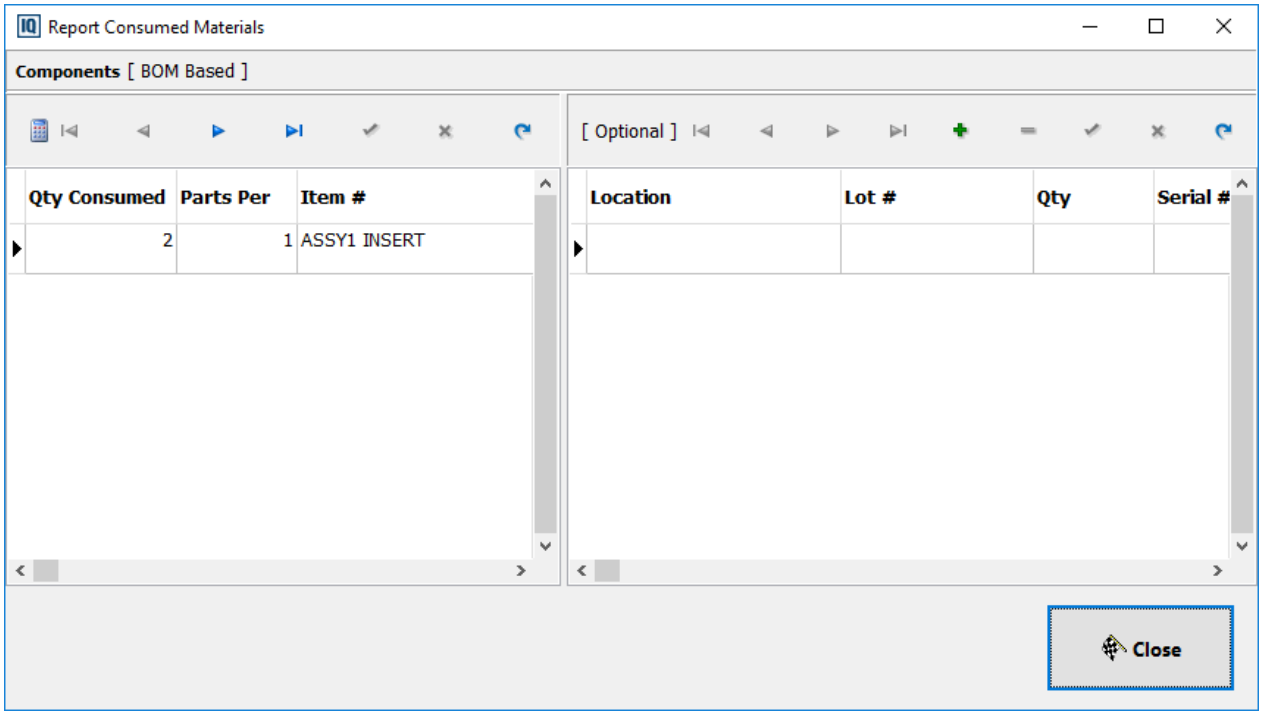
Comments or a FG Lot # may be entered if desired. Select Post and Continue to go to the next screen.



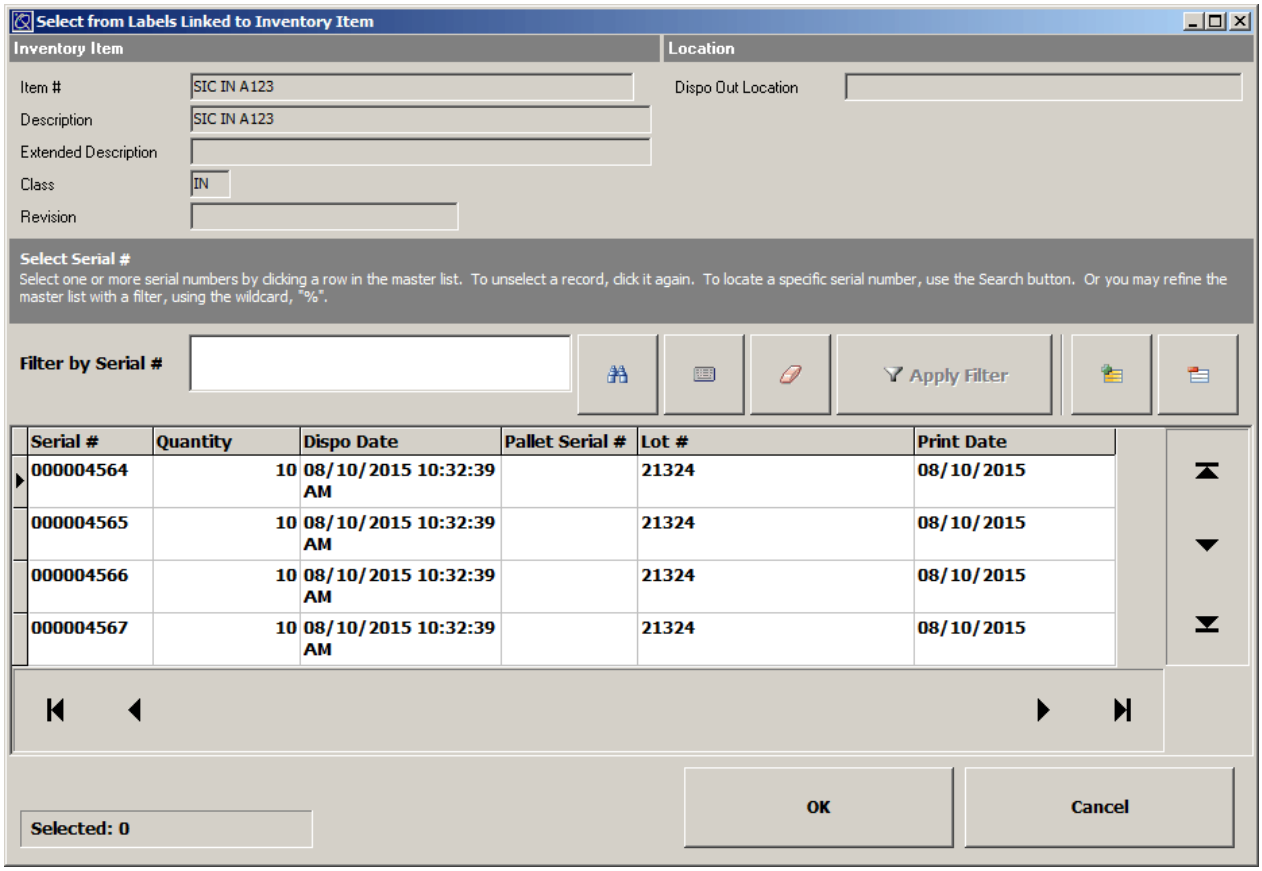
By default the system will use the disposition hierarchy when backflushing components (when the Finish button is selected), however users can optionally select the location(s) that inventory will be removed from. To select the location(s) click on the 'Consumed Materials' button.

Note: The Consumed Materials button is not available when clocking out of a task, it is only available when reporting good parts from the Dispatch List.

From the Report Consumed Materials form select the ellipsis button in the Location field and select the location from the pick list. Enter the quantity in the Qty field.

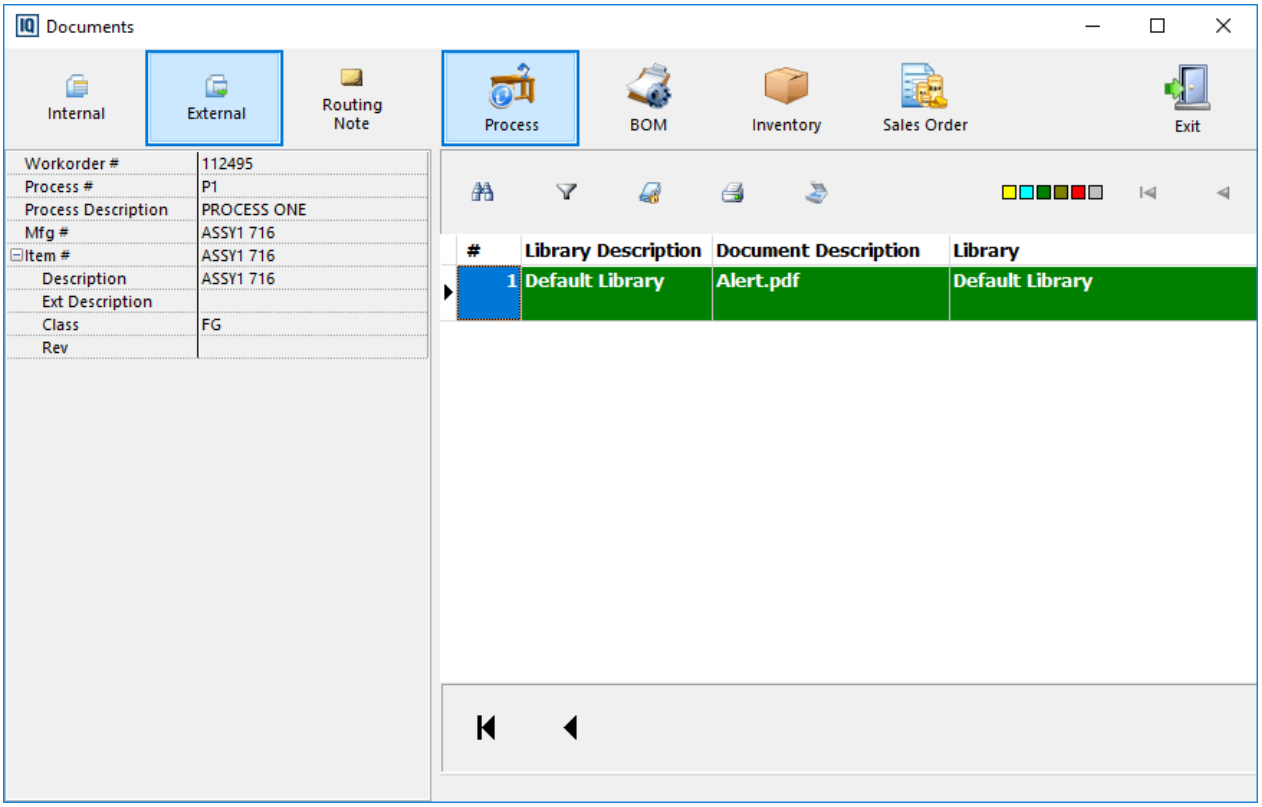


For Serialized Inventory Control (SIC) items select the insert record button on the navigator bar to access the Select Labels form to choose the labels to disposition. Highlight the labels to disposition. If the user selects the ellipsis button in the location field rather than selecting the insert record button a message will appear stating, 'This is a serialized component - use navigator to add new labels(s) or delete selected record.Continue to next process'.



If Final Assy Reporting is designated on the process, the system will bring up the Final Assembly screen after posting the good parts. If the prior process is marked sequential processing, and is not completed, a pop up error stating, 'Cannot Report Quantity. Process # xxx was not completed' will appear, and the employee will not be able to report a quantity.

- **Documents** - Click the Documents button to access the Documents form, which also allows the user to access Internal and External documents and Routing Notes. The system will display a red '*' next to the Documents icon indicating there are documents attached to the BOM, Process, Inventory item associated to the Work Order, or documents associated to the line item on the Sales Order. When selecting the Sales Order button a pick list of sales orders associated to the work order will appear. Select a sales order from the pick list and select Internal or External to view the documents.



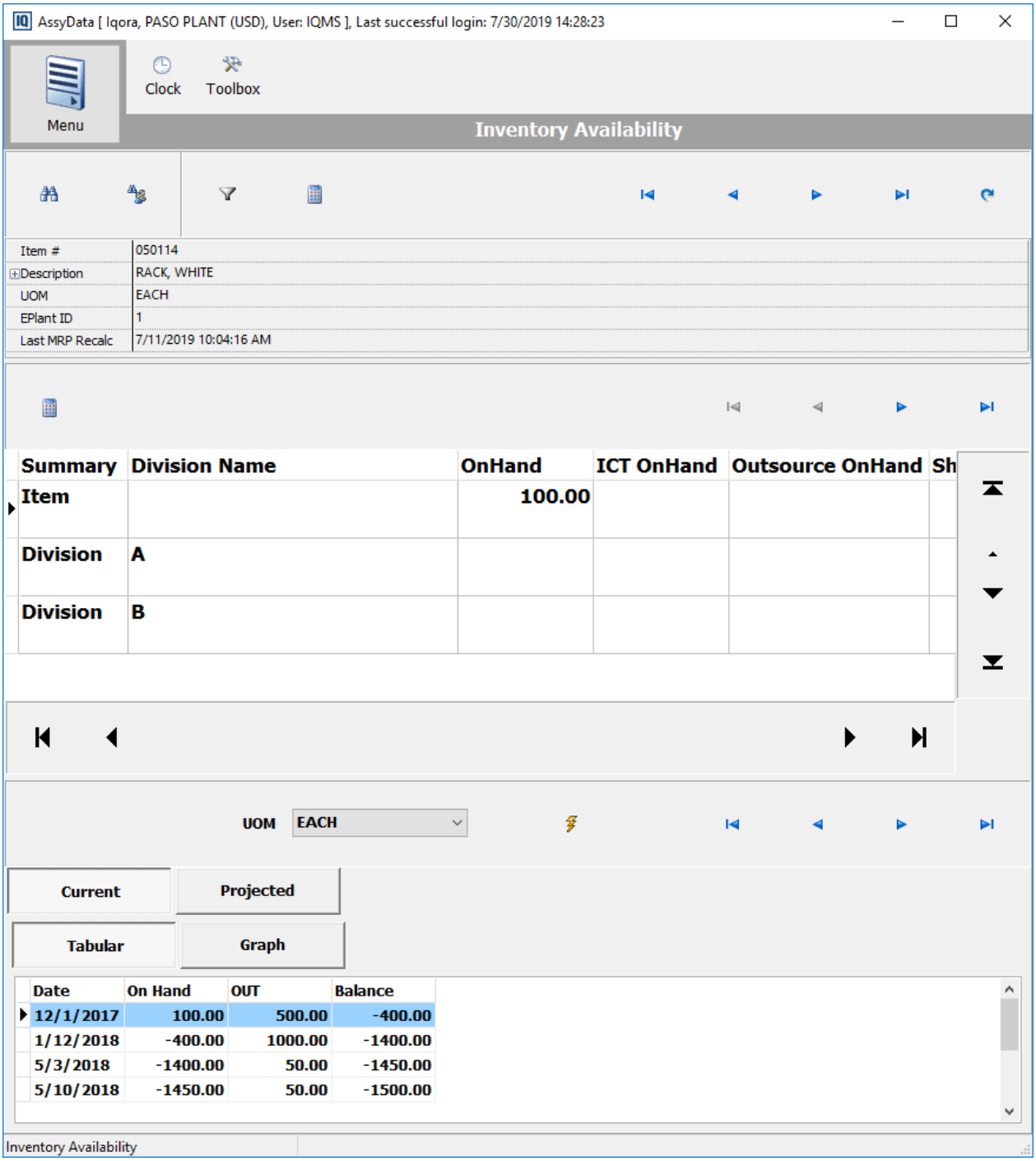
'Jump To' Right Click Options:

- Jump to MPS Time Phase
- Jump To BOM
- Jump to Where Used

Note: The target forms will not be converted to a touchscreen equivalents due to their high complexity.

Inventory Availability

This module functions just like Inventory Availability module accessed from EIQ on the Sales/Distribution tab. From the Menu in Assembly Data select Inventory Availability. A pick list of inventory items will appear. Select the item from the list and then the following form will appear:



 **Search Inventory** - This speed button brings up the inventory pick list.

 **Search AKA Inventory** - This speed button brings up the AKA inventory pick list.

 **EPlant** - This speed button is used to filter for a certain EPlant if applicable.

 **Calculate Material Exceptions, Ideal vs Existing and Daily Material Requirements** - This will recalculate material exceptions just as it does in Material Exceptions.

A query is generated that returns the following grid. The top section includes item details such as Class, Item #, and Description, UOM and EPlant ID.

The middle grid displays the current On Hand, ICT On Hand, Outsource On Hand, Ship Staging On Hand, Non Allocate On Hand, and Non Conform On Hand for the item and broken down based on Division(s).

On Hand	Total of all inventory on hand for the division.
ICT On Hand	Intercompany In Transit (type #1)
Outsource On Hand	Items in transit to Outsource vendor (In Transit type #2)
Ship Staging On Hand	On Hand quantity for items that have been shipped but are awaiting verification (In Transit type #3)
Non Allocate On Hand	Non Allocate on Hand
Non Conform On Hand	Non Conform On Hand

Lower Section Tabs

The information in the lower section will display the Current and Projected information based on the highlighted line in the middle section. It will display the details based on the division associated to the line. For example, for records where there is no division the system will only display records with no division. Select the 'Evaluate Inventory Available' (calculator) button to view the Available to Promise (ATP) details. For the Item Summary Level, the Available to Promise calculation will use the Total On Hand available in the all warehouses less any VMI. It is calculated: (Total on hand for all warehouses + scheduled WO's for specific warehouse) – (Backlog for specific warehouse).

By clicking on the tabs in the lower section, you can view either the Current information or the Projected. Projected takes into account scheduled information, while Current only looks at actual sales releases. You can optionally view either Projected or Current information graphically. The tab the user was on last will be remembered in the registry.

Note: The Projected tab does not display (Intercompany Transfer) ICT sales orders and they are not part of the calculation, however ICT orders will display on the Current tab.

Unit of Measure (UOM) - Users can change the UOM to one of the UOM factors that are defined for the inventory item. Select a UOM from the drop down list and then select the 'Apply UOM' button. This drop down list will show if the factor is designated for Sales Orders or Purchase Orders. The information in the lower section will change based on the selected UOM.

Date	Date an activity is scheduled to occur. In the case of sales orders, it is the date of release. In the case of scheduling, it is the date of production
On Hand	The current balance given that the previous event occurs. The On Hand quantity includes the Non-Allocated quantity. Note: If the item is running and a floor disposition is done, the on-hand will increase by the floor dispositioned amount, and the first Scheduled row will decrease by the floor disposition amount.
IN	If the items will be coming IN to inventory, via *scheduled* production, the daily projected amount will be shown here. This information is also visible in the Daily Parts Projection module (Scheduling-Requirements menu). This amount will be reduced by any floor dispositions that increased the associated On Hand value.
OUT	If the items will be going OUT of inventory via the sales release, this amount is shown here
Balance	At the end of the day, this is the projected inventory balance. Note that this value becomes the starting value for the next On Hand record

Source	For **manufactured** items this field indicates whether the activity is based on the schedule (SCHEDULED), sales releases (BACKLOG), or awaiting inventory verification (STAGING). You can double click on a Backlog source to see the sales order information that includes the Order #, Ship Qty, Request and Promise date, Forecast attribute, and more. Double click on a Scheduled source row to access the work order information. **Dependent Demand** will display with a source of Required. For **purchased** items this field indicates whether the activity is based on the PO or REQUIRED. You can double click to quickly drill down to the purchase order or work order information.
Available to Promise	Available to Promise, also known as ATP, is a value that calculates by the day whether you have excess inventory that can be promised to your end user. This value is different from the daily on hand balance, as it must look into the future and determine if there is demand for the item that will consume the current inventory. For example, you may have several sales releases that demand X number of parts. If you only have enough on the floor and just enough in production to cover the demand, then your available to promise will either show zero or a negative number. However, if you have excess inventory and plan to make more beyond the actual demand, the system will indicate on what day in the future you can promise the inventory. The formula for ATP is: (On Hand - Non-Allocate + Scheduled WO's) - (Out in Staging + Backlog from Sales Orders). When Filtered for a Warehouse the calculation is: (Total on hand for all warehouses + scheduled WO's for that warehouse) – (Backlog for that warehouse). Note: VMI is not included in on hand for the ATP calculation. (It is included in the value in the On Hand column described above). Note: The On Hand quantity can be reduced by the quantity in In-transit and/or Non Allocatable locations by checking the desired options on the Options menu.

Right Click Options

Right click in the top grid and the following functions are available:

- **Jump to Transactions/Locations** - Select this to jump to the Transactions module for the highlighted item.
- **BOM Tree** - This function brings up the BOM Tree information. This information shows all of the required components that make up the item.

Reports

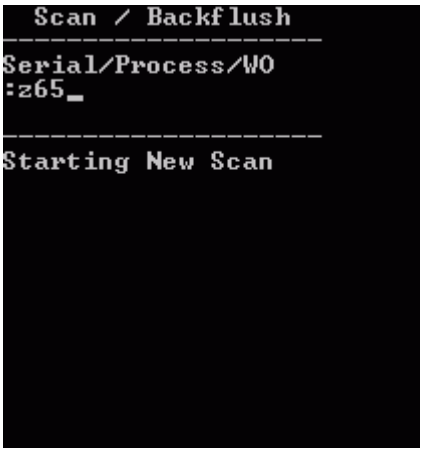
Select the Module Bar to access the list of options. Select Reports and the Registered Reports screen will appear with the reports that were added through Assembly Track. This screen functions the same as all reports menus throughout the system.

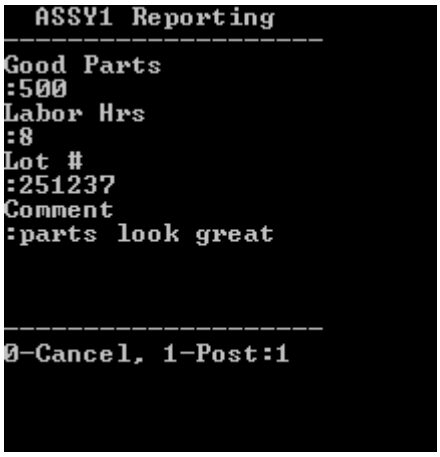
Reporting for All ASSY MFG Types Using IQRF

For the ASSY MFG Type items the scan backflush option in IQRF can be used to report good parts or final assembly. To report good parts, scan a 'Z'+dispatch ID. To report final assembly, scan a 'W'+ work order #, and upon posting a label is printed for the entire quantity.

Reporting Good Parts

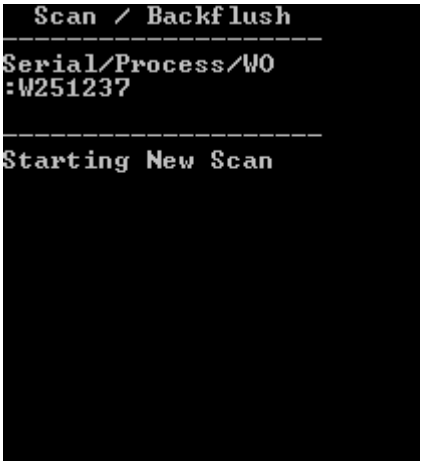
Scan a Z + the dispatch ID associated to the process. Enter the Good Parts, Labor Hrs, Lot #, and a comment if desired. Select 1-Post to complete the transaction. The information reported in RF will be visible from Assembly Track.

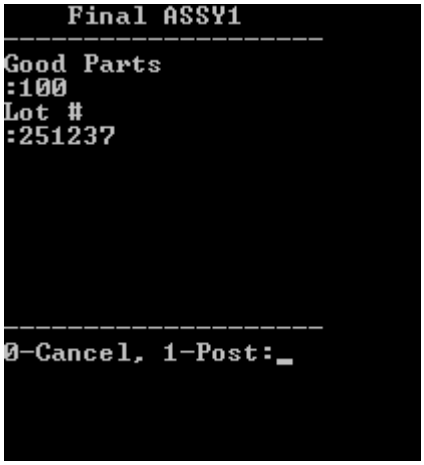




Reporting Final Assembly:

Scan a W+the ASSY work order number. Enter the Good Parts and Lot #. Select 1-Post to complete the transaction. Once the post option is selected a label is printed for the entire quantity.





Note for ASSY3: If the Backflush Each Process is unchecked for the ASSY3 mfg type the system will not backflush the material attached to the process; if it is checked, materials will be backflushed.

Transaction Information

Below is a brief description of the transactions that occur during reporting for ASSY items.

Action			PIT Trans Type	Tr. Type	Tr. Reason	Source	Backflush
Report good parts	D	C					
	WIP	INV	Process WIP	Process WIP	Report Process WIP	SNDOP	Y
Void good parts	D	C					
(Reverse Backflush)	INV	WIP	Process Reverse Backflush	Reverse_Backflush	Void ASSY1 Good Parts	SNDOP	Y - Reversed
Void good parts	D	C					
(Report Existing As Rejects)	Variance	WIP	**Adjust WIP**	Adjust WIP	Process WIP Rejects	SNDOP	N
Void rejected Mfg Part	D	C					
(Report Existing As Rejects)	WIP	Variance	**Adjust WIP**	Adjust WIP	Void ASSY1 Reject Mfg Parts	SNDOP	N
Report rejected component	D	C					
	Variance	INV	Manual	Manual	Process WIP Rejects	REJECTS	Y
Void rejected component	D	C					
	INV	Variance	Manual	Manual	Void ASSY1 Reject Component	REJECTS	Y - Reversed
Report rejected Mfg part	D	C					
	Variance	INV	Manual	Manual	Process WIP Rejects	REJECTS	Y
(Previous Processes)	Variance	WIP	**Adjust WIP**	Adjust WIP	Process WIP Rejects	REJECTS	N
Void rejected Mfg part	D	C					
	INV	Variance	Manual	Manual	Void ASSY1 Reject Mfg Parts	REJECTS	Y - Reversed
(Previous Processes)	WIP	Variance	**Adjust WIP**	Adjust WIP	Void ASSY1 Reject Mfg Parts	REJECTS	N
Report Final Assembly	D	C					
	INV	WIP	Finish Process WIP	Finish Process WIP	Final Assembly	(null)	N
				Overhead	Disposition		
				Labor	Disposition		

Note: The system will use standard costs or actual costs depending on which option is selected on the System Parameters setting on the Inventory Setup tab.

Note: When Actual or Standard Costing is enabled, when the following PIT transaction Types are prepared: Process WIP, Finish Process WIP, Adjust WIP, Process Reverse Backflush, they will affect the quantity in the ARINVT_WIP table. If the prepost or posted GJE are deleted or reversed and PIT is set to Unprocessed = Y, the quantity in the ARINVT_WIP table will be updated. After preparing the GJ Entries through PIT the system will populate/update the ARINVT_WIP table in order to keep track of the WIP transactions for costing purposes. If costs are re-evaluated the WIP Account is debited with the difference between the new and old std cost * quantity in WIP and the system will credit the inventory cost revalue acct with the same amount.

Note: When posting Process WIP, Process Reverse Backflush, and/or Adjust WIP transactions when using Actual Costing, the Labor and Overhead records are not created for the ARINVT_WIP table. Records are still created in Standard Costing.

Labor Reporting Transaction

Time & Attendance posting based on Clock In/Out in AssemblyData or **Labor Reporting in Assembly Track**

This does not affect the manufactured item's inventory; Manufactured inventory is not affected until Final Assembly.

An IN transaction with a type of 'Process WIP' is created in translog for the manufactured item with a transaction quantity of zero. Dependent transactions are created for attached components, labor and overhead. In Post Inventory transaction (PIT) the transaction for the consumed components will fall under the Process WIP transaction type. The transaction will be a debit to the work in process account and a credit to the item's Dispo GL account.

Debit	Credit
WIP	Inventory Dispo GL
	components, pkg, etc)

Note: The default WIP Process account is set up in System Parameters->GL Setup tab. This can be overridden at the inventory level from the Modify GL Accounts feature accessed from the Options menu.

Good parts (Process_Qty) will be captured in TA_LABOR as well as the labor hours and production date.

The source = WO, and the Source ID = the WO #.

The *Cost Element hierarchy* for labor when reporting Process WIP as follows:

1 Employee Maintenance > Misc. tab

2 Assembly Process Maintenance > Standard Cost tab

3 MFG Type > Labor/Overhead tab

4 "Labor" (text)

Reject Components Transaction

During Labor Reporting components can be rejected (see Report Rejects). This will be a Manual Transaction Type in PIT. Components are backflushed.

The system will debit the account associated to the reject code if there is one otherwise it will debit the variance account.

Debit	Credit
Variance or GL Acct associated to Reject Code	Inventory Dispo GL (components, pkg, etc)

Void Rejected Component:

PIT Manual Transaction Type. Components are added back into inventory (Manual/Backflush transaction type). (This is done from the Rejects portion of Assembly track – right click and select show details. Right click again and select Void reject Entry – see Void Rejects).

Debit	Credit
Inventory Dispo GL (components, pkg, etc)	Variance or GL Acct associated to Reject Code

Reject Mfg Parts during Labor Reporting

PIT 'Manual' Transaction Type. Components are backflushed.

The system will debit the account associated to the reject code if there is one otherwise it will debit the variance account.

Debit	Credit
Variance or GL Account associated to Reject Code	Inventory Dispo GL (components, pkg, etc)

For Previous Process:

Debit	Credit
Variance	WIP

Note: For a previous process the credit cannot hit the GL Acct on the Reject Code because the previous process MFG Part never hits the reject table therefore there is no link back to use that Reject Code GL Acct.

Void Rejected Mfg Parts:

When voiding rejects from the Rejects portion of Assembly track. (Right click and select show details. Right click again and select Void reject Entry – see Void Rejects). The transaction depends on the method used when rejecting the Mfg part:

Debit	Credit
Inventory Dispo GL (components, pkg, etc)	Variance or GL Acct associated to Reject Code

For Previous Process:

Debit	Credit
WIP	Variance

Note: For a previous process the credit cannot hit the GL Acct on the Reject Code because the previous process MFG Part never hits the reject table therefore there is no link back to use that Reject Code GL Acct.

For example:

Assume 2 processes A and B;

Process A consumes X

Process B consumes Y

If the user rejected B through labor reporting, voiding will result in:

Item	Trans. Type	In/Out	Inventory is affected
Y	MANUAL	IN	Yes
X	ADJUST WIP	IN	No

Only Rejects get updated.

If the user rejected B as a reject through show details, voiding will result in:

Item	Trans. Type	In/Out	Inventory is affected
Y	ADJUST WIP	IN	No
X	ADJUST WIP	IN	No

Rejects and quantity completed are updated.

Void Good Parts (Reverse Backflush)

This option is available from the middle grid, right click from the Process Details screen. (Right click and select show details. Right click again and select Void->Void Good Parts – see Void Options).

PIT 'Process Reverse Backflush ' Transaction Type.

- Displays Labor and Overhead transactions in translog. The Transaction Type is 'Reverse Backflush' and the Transaction Reason by default is 'Void ASSY1 Good Parts'.
- Puts consumed components back into inventory (IN transaction, Trans Type is Reverse Backflush).
- Creates an OUT transaction with transaction quantity of 0 for the manufactured item, and creates a disposition transaction for the components as a credit to the work in process account and a debit to the item's Dispo GL account.
- Updates ta_labor.process_qty for the manufactured item.

Debit	Credit
Inventory Dispo GL (components, pkg, etc)	WIP

Report Existing As Rejects (Adjustment):

This option is available from the middle grid, right click from the Process Details screen. (Right click and select show details. Right click again and select Void->Report Existing As Rejects – see Void Options).

PIT 'Adjust WIP' Transaction Type.

Debit	Credit
Variance	WIP

- Adds a record to rejects.
- Updates ta_labor.process_qty and reject_qty.

Void Rejected MFG Part (Report Existing As Rejects):

PIT 'Adjust WIP' Transaction Type.

Debit	Credit
WIP	Variance

Final Assembly

An IN transaction is created in translog for the manufactured item with a Trans Type of 'Finish Process WIP' and a reason of 'Final Assembly'.

The Disposition is based on the hierarchy:

1. Hard Allocated to the work order
2. Mfg # default designator
3. Default Designator
4. Designated work center location
5. MFG Cell Dispo locations
6. MFG Type Dispo. Designators

7 FIFO

8 Temporary

Final Assembly Reported in Assembly Track

An entry will be visible from Post Inventory Transactions as a Finish Process WIP transaction type. The work in process account will be credited.

Debit	Credit
FG Inventory	WIP
	Labor Absorbed
	Overhead Absorbed

Final Assembly Reported in AssemblyData

TA_LABOR is not posted automatically after reporting labor/good parts. Labor is posted through Time & Attendance Task Clock In/Out Maintenance.

Before Labor is posted:

Final Assembly – PIT Finish Process WIP Transaction Type

Debit	Credit
FG Inventory	WIP
	Variance (mfg items)

After Labor is posted:

Final Assembly – PIT Finish Process WIP Transaction Type

Debit	Credit
FG Inventory	WIP
	Labor Absorbed
	Overhead Absorbed

Note: When using a substitute ASSY BOM, the system will not calculate the standard cost based on the substitute BOM. It calculates the standard cost based on the default BOM. When a substitute BOM is used for an ASSY1/2/3 BOM, upon reporting Final Assembly, the variance will be forced to the default Finish Process WIP Variance GL account in System Parameters. If this account is not filled in, the default Production Variance Account is used.

Note: The Process Cost/Actual Cost may be higher if components are rejected on the process because the cost of the rejected component will be part of the actual cost on the FG item. If the reject should not be part of the actual cost than the component can be rejected through Transactions and Locations or PO Receiving.

The Translog cost element for OVERHEAD is populated according to the following hierarchy: 1) The element for OH on the Process (on BOM), 2) If that is not populated, the system will use the overhead cost element on the ASSY MFG Type.

Final Assembly Reported in Assembly Track:

An entry will be visible from Post Inventory Transactions as a Finish Process WIP transaction type. The work in process account will be credited.

Debit	Credit
FG Inventory	WIP
	Labor Absorbed
	Overhead Absorbed

Final Assembly Reported in AssemblyData:

TA_LABOR is not posted automatically after reporting labor/good parts. Labor is posted through Time & Attendance Task Clock In/Out Maintenance.

Before Labor is posted:

Final Assembly – PIT Finish Process WIP Transaction Type

Debit	Credit
FG Inventory	WIP
	Variance (mfg items)

NOTES:

The Variance accounts will be hit only if the 'Include Overhead and Labor variance' option is checked in System Parameters.

If the PIT Finish Process WIP transaction is posted before labor is posted from Time and Attendance, then a manual adjustment will need to be done to correct the WIP account as the Labor and Overhead will be posted there.

After Labor is posted:

Final Assembly – PIT Finish Process WIP Transaction Type

Debit	Credit
FG Inventory	WIP
	Labor Absorbed
	Overhead Absorbed

Actual Cost Example

ASSY1 BOM with 4 processes							
	Actual Cost	Parts Per					
Process 1 material	0.6	1					
Process 2 material	10	0.008					
Process 3 material	0.1	1					
Process 4 - no material attached	0	0					
Employee charge rate	15						
ASSY1 Mfg Type OH rate	8						
SNDOP_DISPATCH before	**Dispatch ID**	**Prod Hrs**	**Components**	**Labor**	**Overhead**	**Process Qty**	**WIP Act Cost**
Material = Tran Qty * Act Cost	1	9.5	12	142.5	76	20	11.525
Labor = Prod Hrs * Charge Rate	2	20	1.2	300	160	15	30.74666667
OH = Prod Hrs * mfg type OH rate	3	2	1	30	16	10	4.7
	4	0.9	0	13.5	7.2	10	2.07
WIP Act Cost = (Components + Labor + Overhead) / Process Qty							
Report Final Assy	8						
Calculated Cost (prorated)	1		4.8	57	30.4		11.525
Before/Process Qty * Final Assy Qty	2		0.64	160	85.33333333		30.74666667
	3		0.8	24	12.8		4.7
	4		0	10.8	5.76		2.07
							49.04166667
					Act cost of Final Assy per part (populates FGMULTI)		
SDNOP_DISPATCH after	1		7.2	85.5	45.6	12	
Before - Calculated Cost	2		0.56	140	74.66666667	7	
	3		0.2	6	3.2	2	
	4		0	2.7	1.44	2	

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