Produmex PDC Functional Guide

Produmex Manufacturing is a legacy product and Boyum IT Solutions no longer sells new installations for it.

Produmex PDC is a work reporting extension for Produmex Manufacturing add-on. It is a light weight solution meant for mobile platforms or PCs that don’t need SAP client on the hardware where it is running. Users can report their work real-time during the working day using barcode scanners or RFID tools.

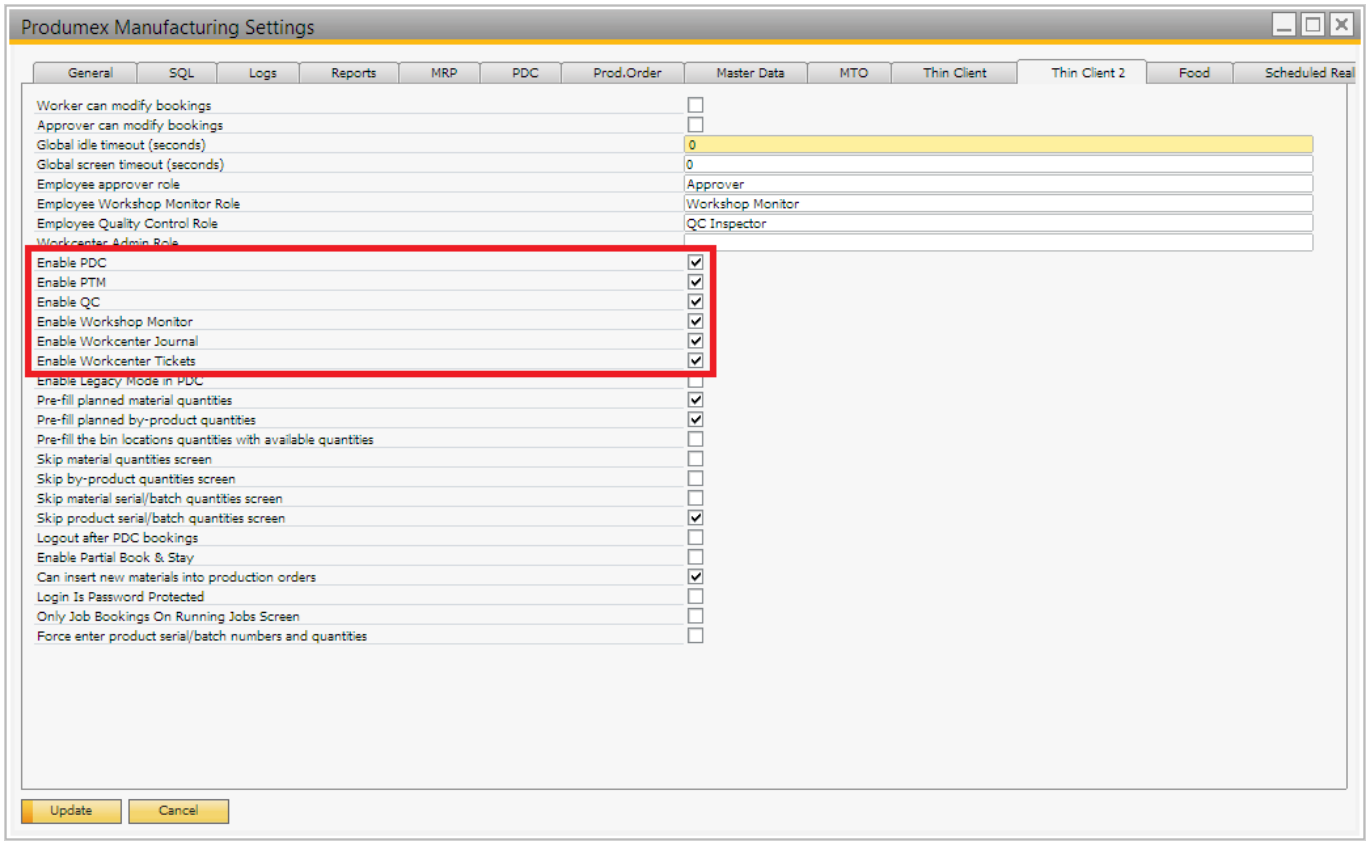
1. Configurations

For more information about the configuration option for PDC please see:

- settings for the office PDC:
  - Produmex Manufacturing Settings > PDC tab
- settings for the mobile device:
  - Produmex Manufacturing Settings > Thin client tab
  - Produmex Manufacturing Settings > Thin client 2 tab
  - Configuration of Produmex PDC

1.1. Enable modules

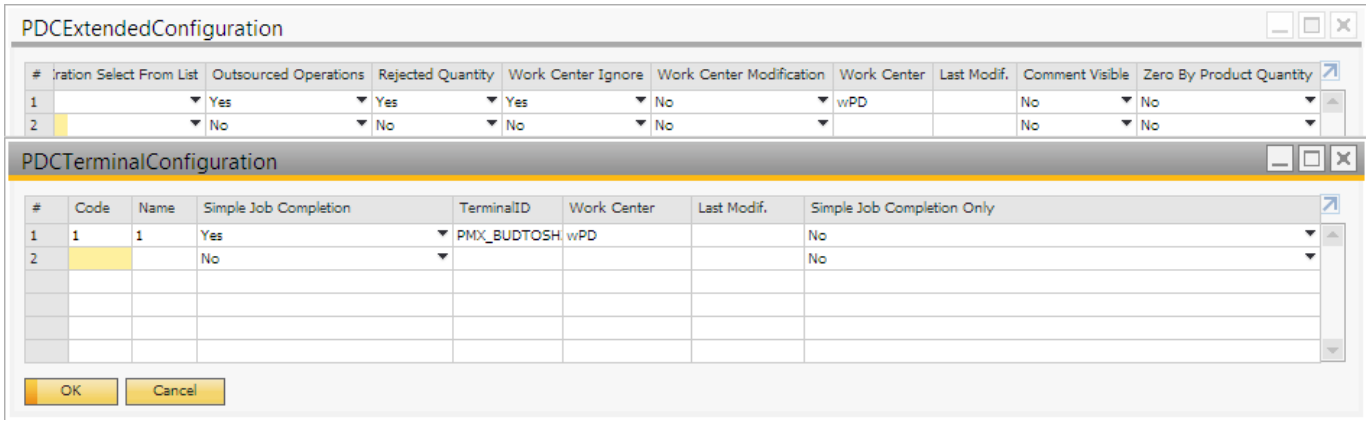
In order to use a module on terminals, enable it on the Thin client 2 tab of Produmex Manufacturing Settings. Every enabled module is displayed on the Main Menu.



The only exception is the ‘Simple Job’ module because it is terminal dependent and assigned for one work center only per terminal. To enable it, open the PDC Terminal Configuration UDT via: Tools > User Defined Windows.

On this form terminal configurations can be specified. Add the terminal ID and define the work center. Only work centers with extended configurations (defined with the *PDC Extended Configuration* UDT) can be added. Set the ‘Simple Job Completion’ option to ‘Yes’.

It is possible to set the terminal only for Simple Job mode by enabling the *‘Simple Job Completion Only’* option too. In this case the system automatically proceeds to the login screen of the module and skips the main menu screen.



1.2. Setup employee roles

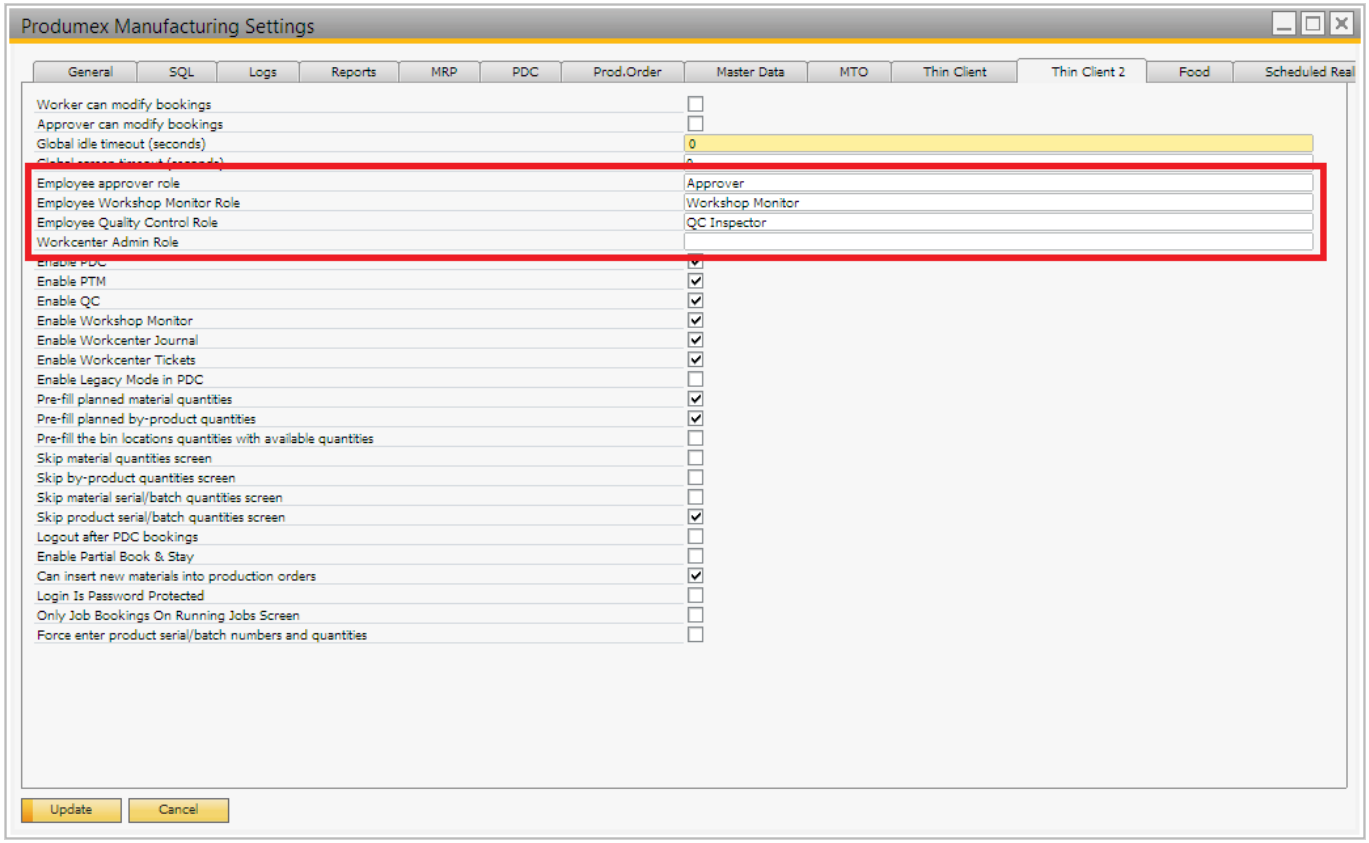
The following employee roles can be defined for PDC:

- *Approver role*: Employees appointed as an approver can approve PDC bookings of sticky/ delicate materials or products.
- *Quality Control Role*: Employees appointed as quality control inspector are authorized to conduct quality inspection.
- *Workshop Monitor Role*: Employees appointed to the workshop monitor role are authorized to use the workshop monitor.
- *Workcenter Admin role*: Employees appointed as work center admins can modify and close work center journals and work center tickets.

First create a role in SAP Business One. Open the Employee Master Data and on the 'Membership' tab select the 'Define new' option on the Role grid.

Add the new role to the employee you would like to appoint. An employee can have more than one roles.

On the Thin Client 2 tab of Produmex Manufacturing Settings add the role name to the corresponding employee role.



1.3. Set a product/ material for PDC approval

Enable the approval for the product or a material in the Item Master Data. Set the *'NeedsPDC Approval'* UDF field to 'Yes'. If it is enabled for a product/material, operations producing/consuming that item must be approved by an employee appointed as 'Approver'. For more information about the

approval process please see: 2.2.10. Approval of PDC Bookings

1.4. Date and Time

The Produmex PDC module uses the date and time settings of the company database.

It is possible that the company time differs from the server time. If the ‘Manage Company Time’ checkbox is enabled on the *Display* tab of General settings, the time zone of the company can be set on the *Time Zone* tab of General Settings.

The Produmex PDC module only considers the daylight saving time if the ‘Daylight Saving Time’ checkbox is enabled for the company.

2. Mobile Device

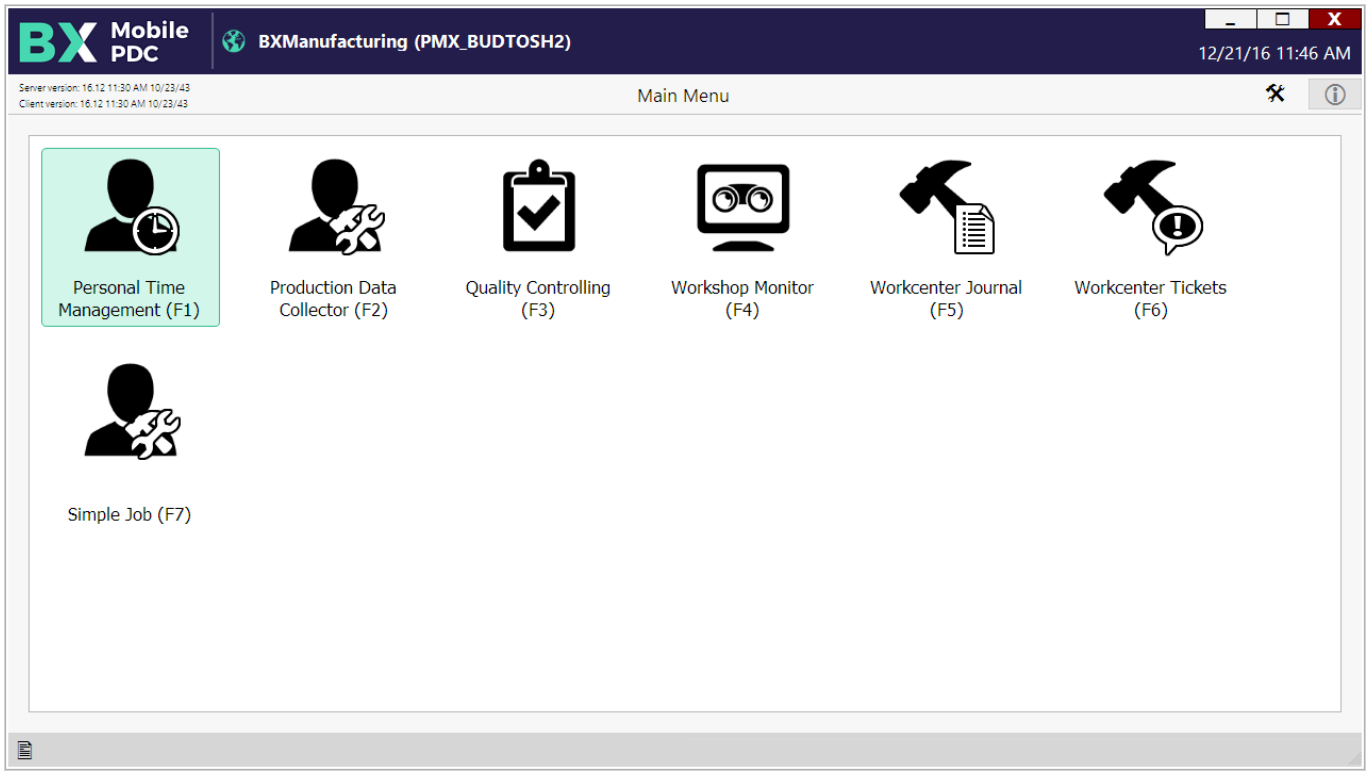
With Produmex PDC you can start the mobile PDC application itself. You have to start it on the client machine.

The user interface was primarily designed for industrial PCs and mobile devices. It means that the windows are not 'normal' windows as in any other applications. You can only move the windows with the blue frame around the window and it will not store the form settings so it always starts maximized.

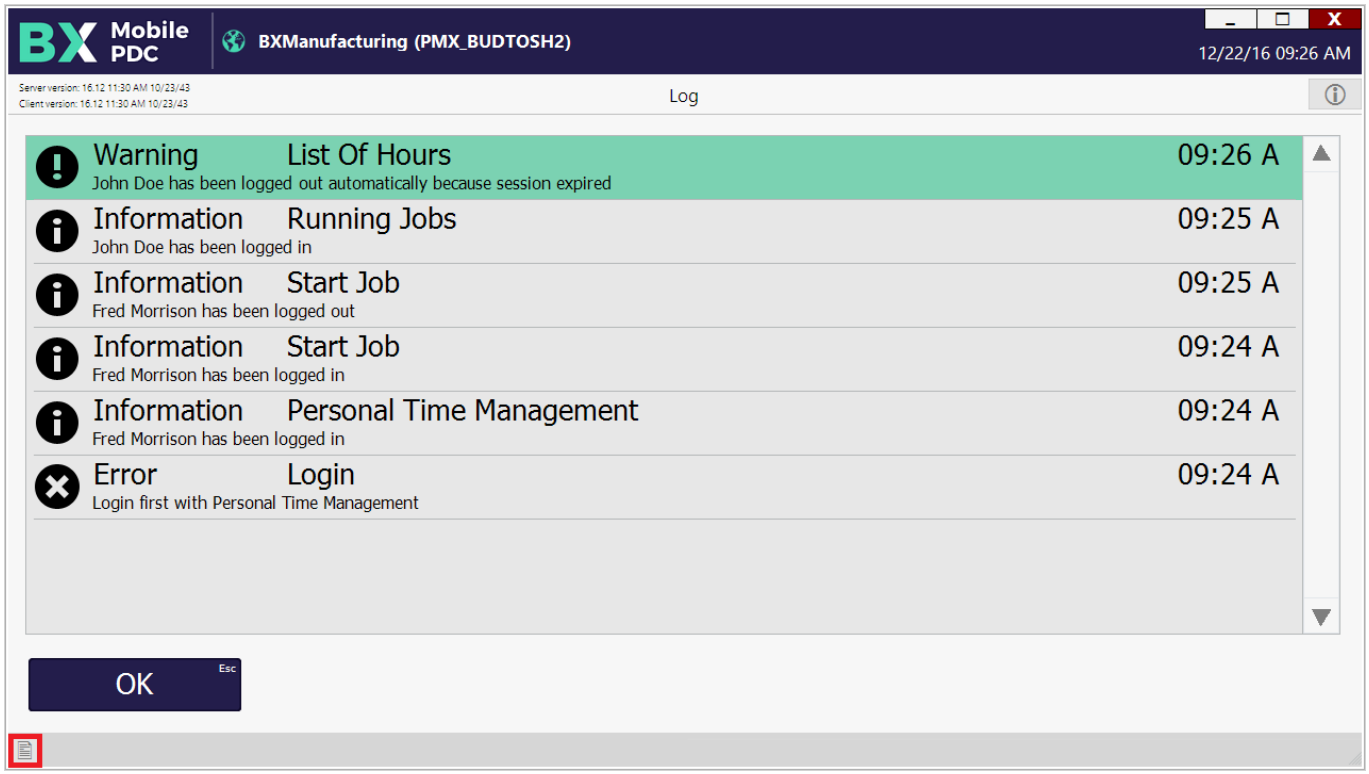
All buttons have a keyboard shortcut, so if you press the keyboard shortcut it is the same as you clicked on the button. In text fields you have a keyboard icon, if you click on that or press F12, the on screen keyboard opens with which you can enter text as well.

If you press tab after adding the code of an employee or operation, the system automatically populates the respective fields. If you have a scanner attached, any data can be added by scanning the barcode.

Main menu
Running the Mobile PDC Client Application the user will find the Main Menu.



On the main menu every enabled module is displayed. If only one module is enabled, the system automatically proceeds with that module and skips the main menu. Click on the icon to see the system messages.



2.1. Personal Time Management

At each new session or work day the user has to log in with Personal Time Management once. This will track the user as an employee, who is mobile across different workstations.

Personal Time Management is optional for a company. If the setting is not set, the employees can use the rest of the system without logging in to PTM. The user can tap the Personal Time Management button to advance to the Personal Time Management login screen.

2.1.1. Logging in PTM

Here the user can log in to Personal Time Management. To log in simply enter the employee ID, and click on Login button. When the password protection is enabled, the user has to enter the password instead of the employee ID.

The 'History' textbox will list the latest account event of the user, in this example the last login event.

In the Reason box the user can choose from a list of reasons pre-defined on the Absence Reasons UDT in SAP B1. Open the form via: Tools > User Defined Windows > Absence Reasons.

When the *'PTM Reason for Log out mandatory'* option is enabled on the Thin Client tab of Produmex Manufacturing Settings, a reason is must be given when creating a log out booking.

Press 'Login' to log in or 'Logout' to log out. To go back to the main menu press the 'Main Menu' button.

To overview the employee actions, press the 'Log' button. The displayed data is supplied by the ***'bxtc_pdc_ptm_log_query'*** user query. Before using this function, create a custom query. Please see the custom query example here: PTM Log

2.2. Production Data Collector

When Personal Time Management is enabled, you have to log in with PTM before starting the work with the Production Data Collector. Press the PDC icon. Enter the employee ID and click on the 'Login' button to log in.

If the employee has any open jobs, the system will proceed to the 'Running Jobs' screen otherwise the user will be redirected to the 'Start Job' screen.

2.2.1. Running Job screen

The running jobs window shows all operations that were already started by the employee that has logged in. The jobs for which there is already a started booking (setup or job) or a partial booking will

appear.

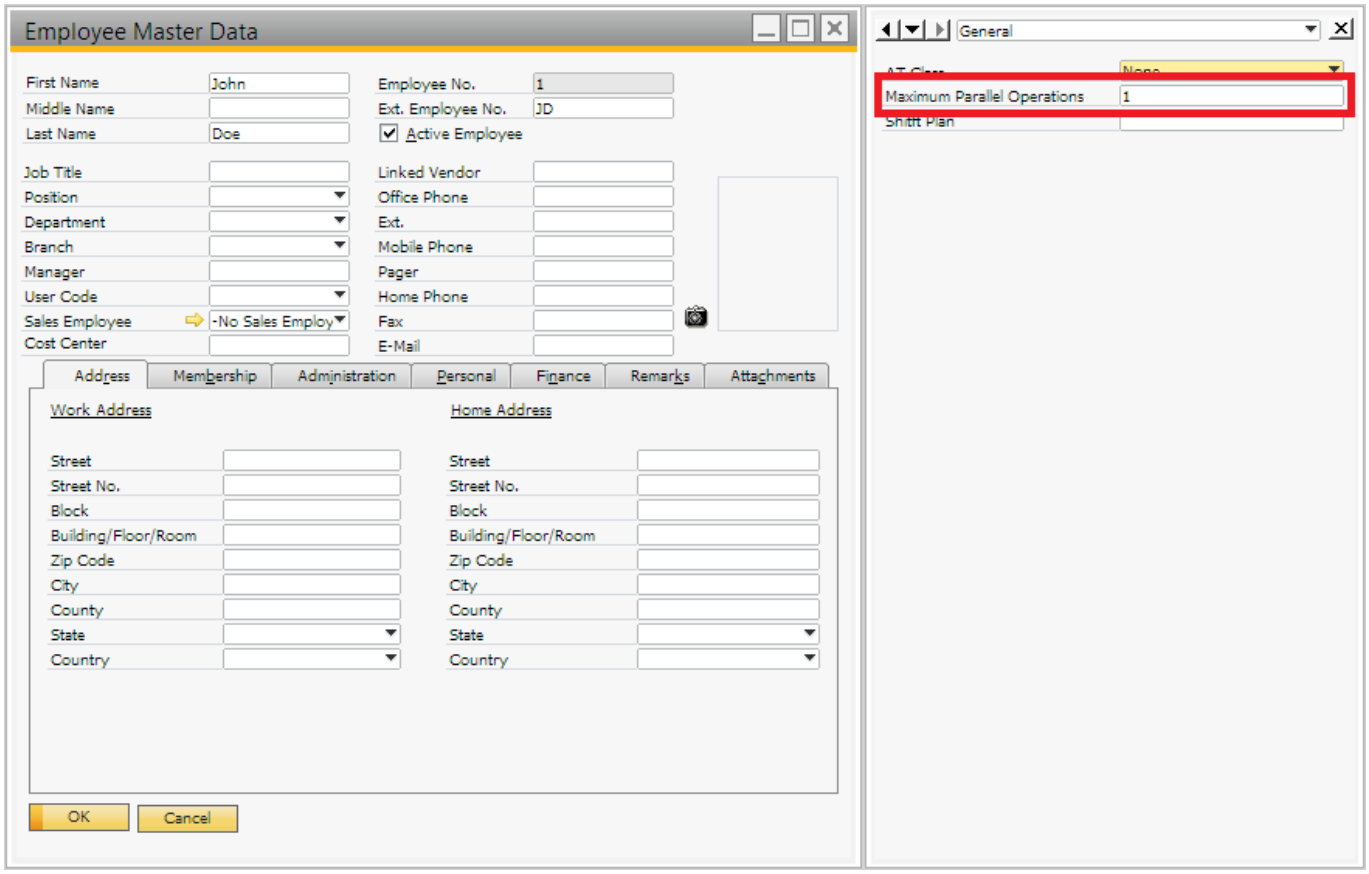
Displayed information:

1. Operation phase
2. Doc Entry – Line Number (Operation code – name)
3. Production order number, Main product code (name)
4. Open quantity, Planned Quantity, Assigned work center
5. Time of the last PDC booking for the operation
6. Date of the last PDC booking for the operation
7. Type of the last PDC booking for the operation

Select an operation from the list. Tick the white box or scan the DocEntry-LineNum identified to the search bar then press TAB.
The DocEnry- LineNum identifier can be found on the Job Requirements report.

To start a new operation that is not listed, scan or enter the *DocEntry-LineNum* identifier from the related production order then press the *'Start'* button. The system will proceed to the 'Start Job' screen. See: 2.2.2. Start Job

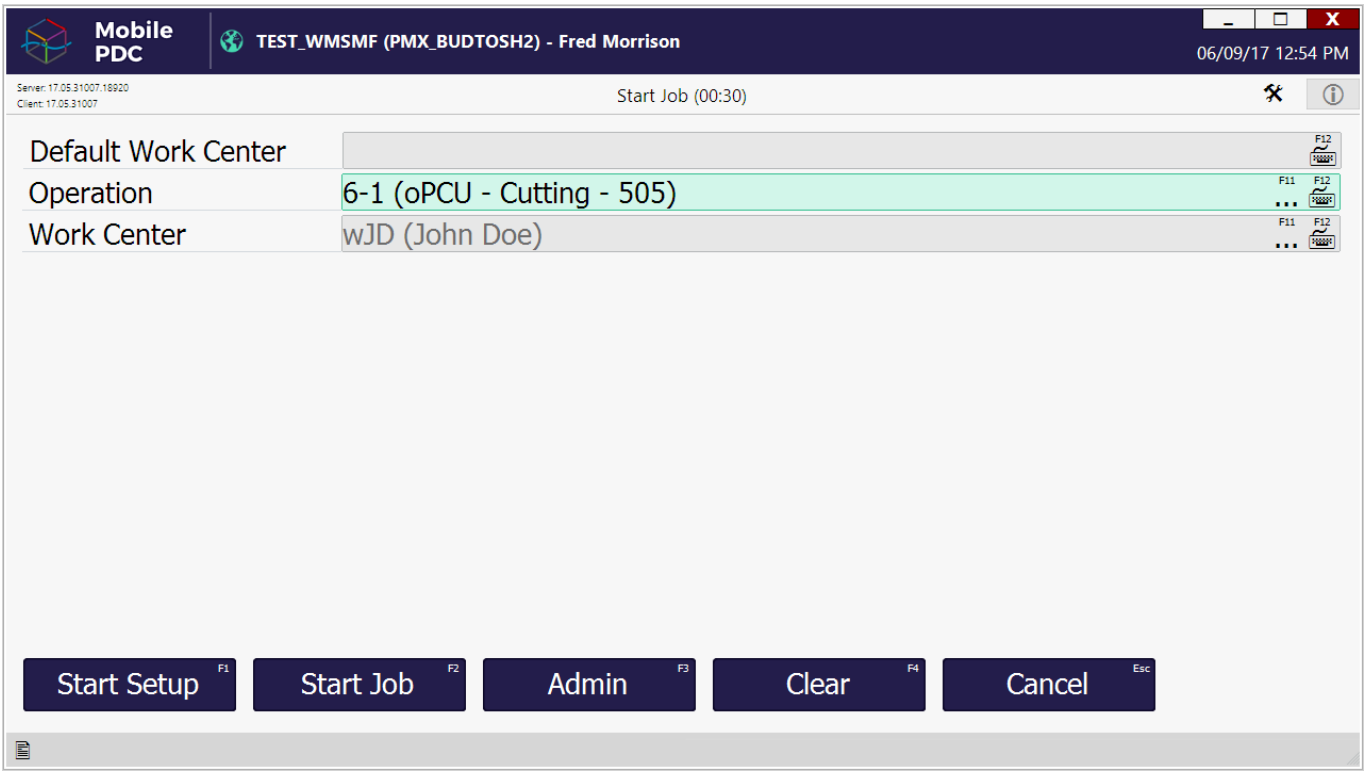
> If the 'Start' button is not active, it means that the employee has reached the maximum number of active operations that can be started at once. The maximum number of parallel operations for an employee can be set on the Maximum Parallel Operations UDF of the Employee Master Data. The employee must close a running operation first before starting another one.



To stop a running operation, press the ‘Stop’ button. See: 2.2.7. Complete Setup or 2.2.8. Complete Job
To make partial booking for a running operation, press the ‘Partial’ button. See: 2.2.3. Partial Completion
To review bookings, press the ‘Admin’ button. See: 2.2.9. Admin
To logout as the current employee, press the ‘Logout’ button.

2.2.2. Start Job

If the employee has no running jobs, he is redirected to the Start Job page.



The default work center is the work center defined for the terminal on the 'PDC Terminal Configuration' user table. To disable the default work center, set the 'Work Center Ignore' option to 'Yes' for the employee on the PDC Extended Configuration user table. When there is a default work center, bookings can be created only for operations with the feature assigned to the default work center.

Scan or enter the *DocEntry-LineNum* identifier of the operation to the 'Operation' field.

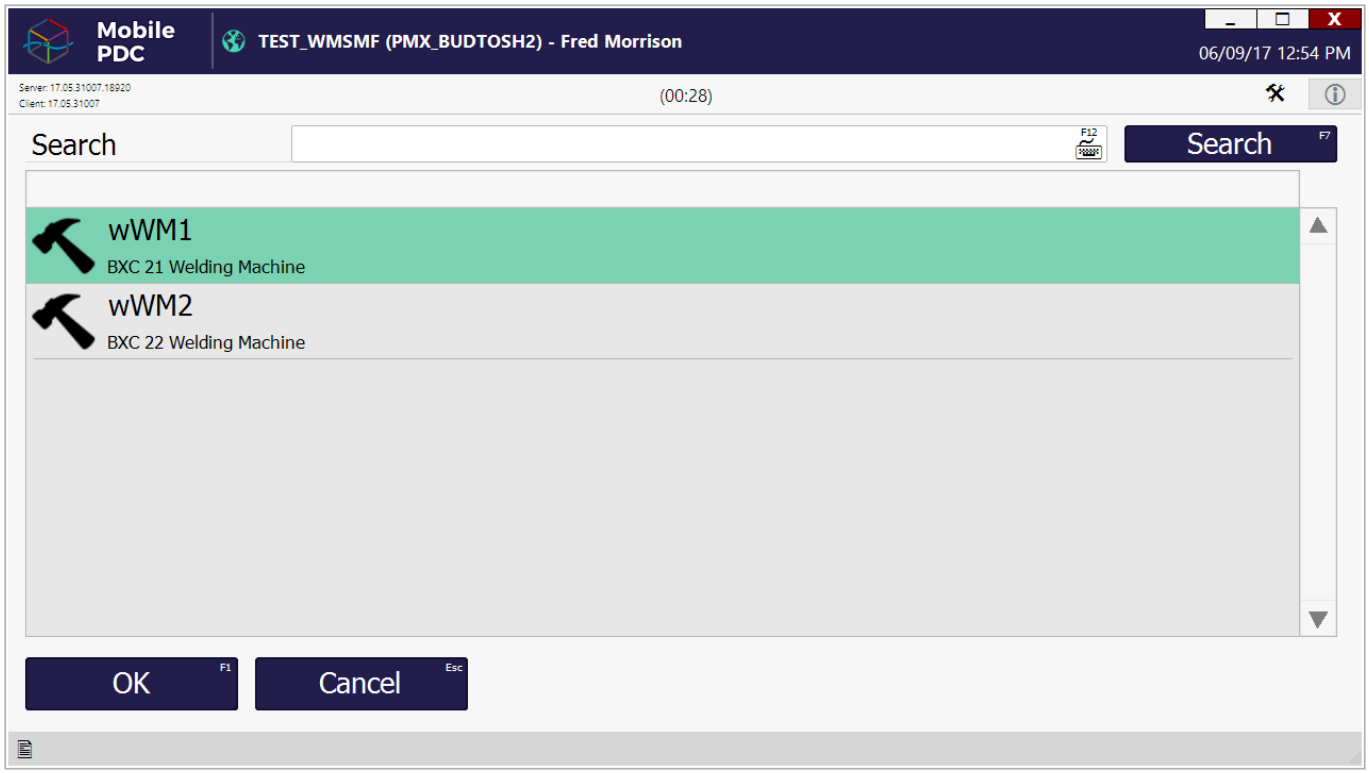
If there is a default work center, the work center field will be populated automatically. The user cannot modify the work center if the default work center is mandatory. The default work center is mandatory in the following cases:

- The employee and/or the work center has no configurations set on the PDC Extended Configuration user table and the 'PDC Modifiable WC for Start' option is disabled on the Thin Client tab of Produmex Manufacturing settings.
- The 'Work Center Modification' option is disabled on the PDC Extended Configuration user table for the employee and/or work center.

Otherwise the work center is not mandatory and the user can select an alternative work center.

If there is no default work center, the user has to enter the work center or select it from a list of available work centers by pressing F11. If there is only one work center for the feature that belongs to the operation, the work center field will be automatically populated with it.

If the operation has a mandatory work center, the operation can only be started on the mandatory work center.

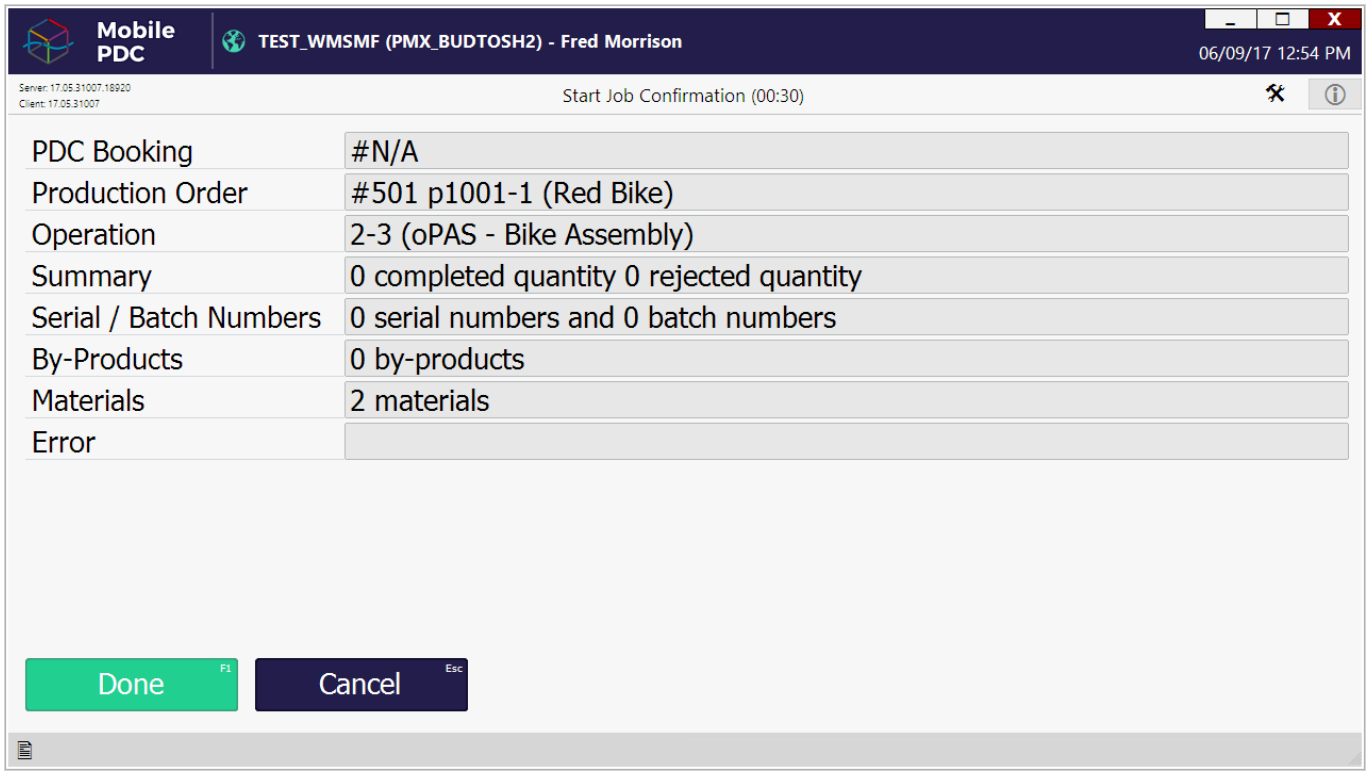


Then he can click on 'Start Setup' or 'Start Job' to start the operation. Based on the settings on the Thin Client tab, setup bookings might be allowed for operations without setup or might be forbidden for every operation. Only operations that meet the following conditions can be started:

- Production order is released
- The operation status is Created or Started

The ‘Clear’ button erases the contents of all fields, so the entered data will be lost. If the user clicks on the ‘Logout’ button, he will be logged out and redirected to the Login screen.

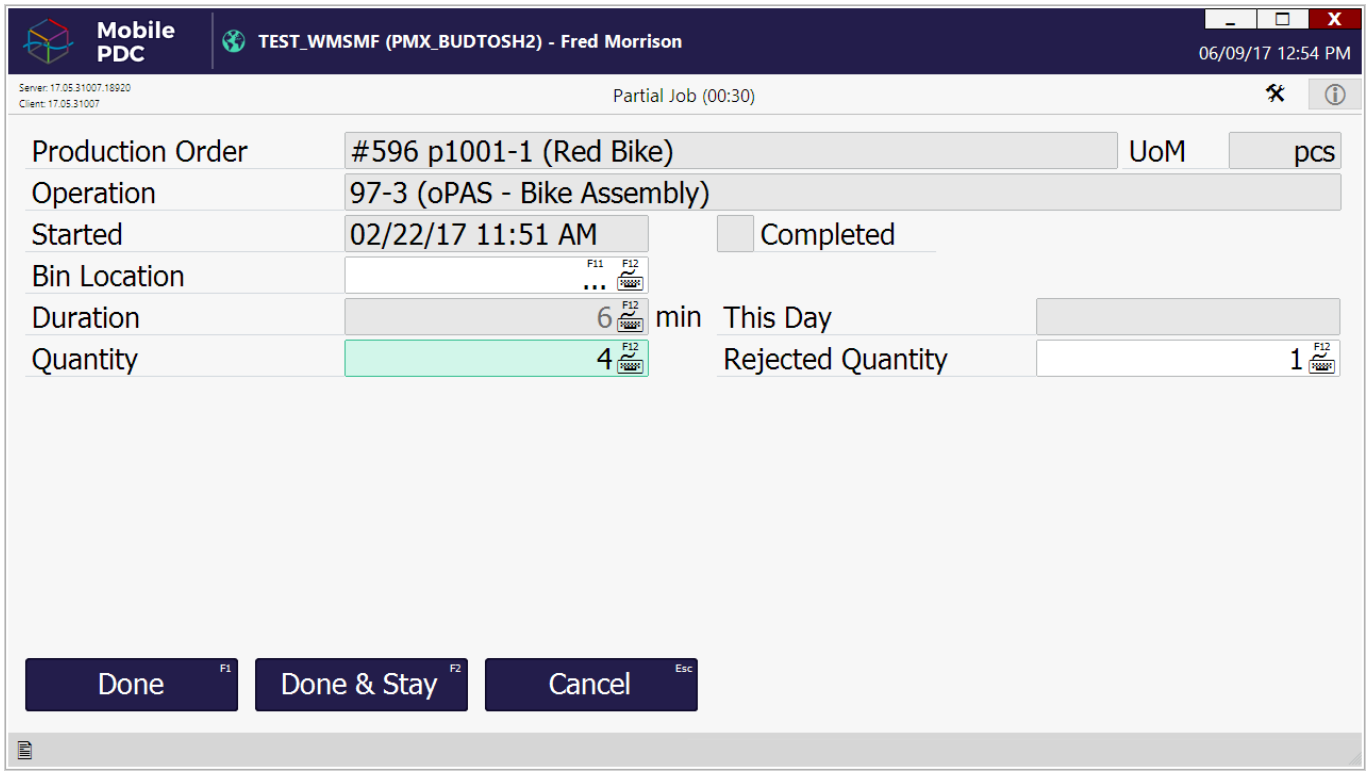
On the next screen the user can overview the details of the operation. Press ‘Done’ to start the setup/job or press ‘Cancel’ to go back to the previous screen.



During the Start Job/Setup phase, materials might be issued depending on their milestone type. For more information about issuing materials please see:2.2.5. Materials.

2.2.3. Partial Completion

To create bookings for a partially completed job/setup, press the *'Partial'* button. After a partial booking the job/setup remains open therefore it will be listed among the running jobs.



Enter the completed and rejected quantity (if any) for the operation.

Define a Bin Location for material issues/product receipts on the 'Bin Location' field. The default Bin Location is the bin location specified on the PDCExtendedConfiguration UDT. If no bin location has been defined on that form, by default the bin location specified for the work center is shown. If there is no bin location specified on either form, the bin location is empty by default.

The bin location selected on this screen can be overridden for materials and products.

Press the 'Done' button to proceed.

If there are by-products for the operation or the operation is the last operation on the production order and the product is linked to it with a milestone, 'Products' screen will open up. Please see: 2.2.4. Product and By-Products

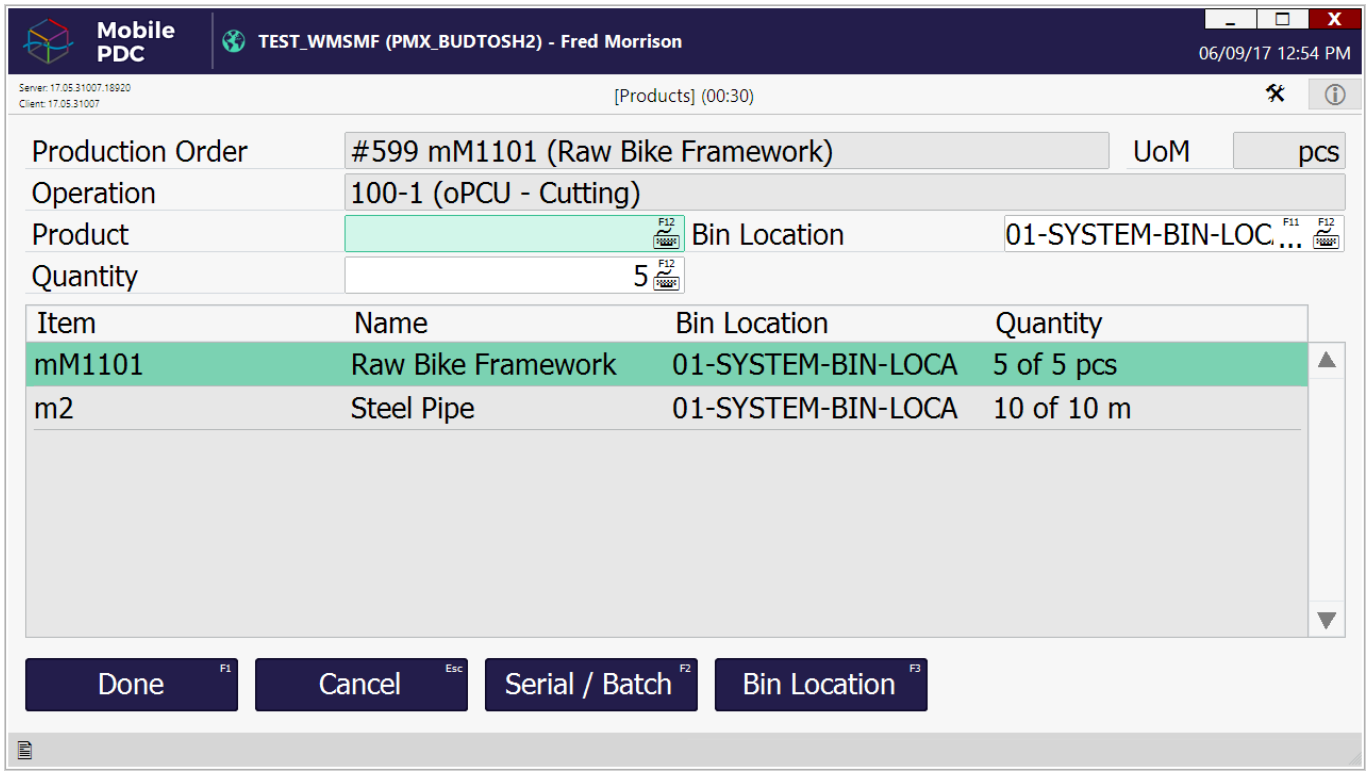
If an operation has materials linked to it with a milestone, the 'Materials' screen will open up. Please see: 2.2.5. Materials

After the booking was created, the system will return to the Running Jobs screen or the Start Job screen if the employee has no running jobs. When the *'Logout after PDC bookings'* option is enabled on the Thin client 2 tab, the employee will be automatically logged out and redirected to the Main Menu.

When the *'Enable Partial Book & Stay'* option is set to true, an additional 'Done & Stay' button is displayed on the Partial Job screen. To stay on the 'Partial Job' screen after the booking was created, perform the partial completion after pressing this button.

2.2.4. Product and By-Products

Receive the products or by-products on the 'Products' screen. On the grid the main product and the by-products (if any) are listed. The main product is always listed first.



Select the product on the grid then enter the quantity. Add the quantity by pressing the ‘Add’ button or overwrite the quantity by pressing the ‘Update’ button.

The default quantity of the main product is the quantity added on the partial or complete job/setup screen.

The default quantity of a by-product is calculated from the received quantity of the main product and the base quantity of the by-product. It is possible to receive more or less of a by-product than the calculated quantity.

The default bin location is the bin location specified for the operation but it can be adjusted. Scan or enter the destination bin location to the ‘Bin Location’ field or select it from a list after pressing F11. To add a product to different bin locations, select the bin location then press the Bin Location button (F3). The ‘Product Bin Location Picker’ screen will open. (Please see: 2.2.4.3. Product Bin Location Picker). Please note: The bin location for items managed by batches or serial numbers can be added on the Product Batch/Serial Numbers screen therefore the bin location picker function is not available for such items.
When using the Legacy mode, the Bin Location button is not displayed and the Product Bin Location Picker screen cannot be reached.

After the PDC processor processes the booking, the system automatically creates the Receipt from Production document for the main product and receives it to the inventory. By-products will be taken into stock with a Goods Receipt document which will be converted to a Receipt from production document after the main product has been booked.

If the main product is managed by batches or serial numbers, add the serial/batch numbers before receiving the product. Press the ‘Serial/Batch’ button. If the product is managed by batches, the Product Batch Numbers screen will open. (Please see: 2.2.4.1. Product Batch Numbers).

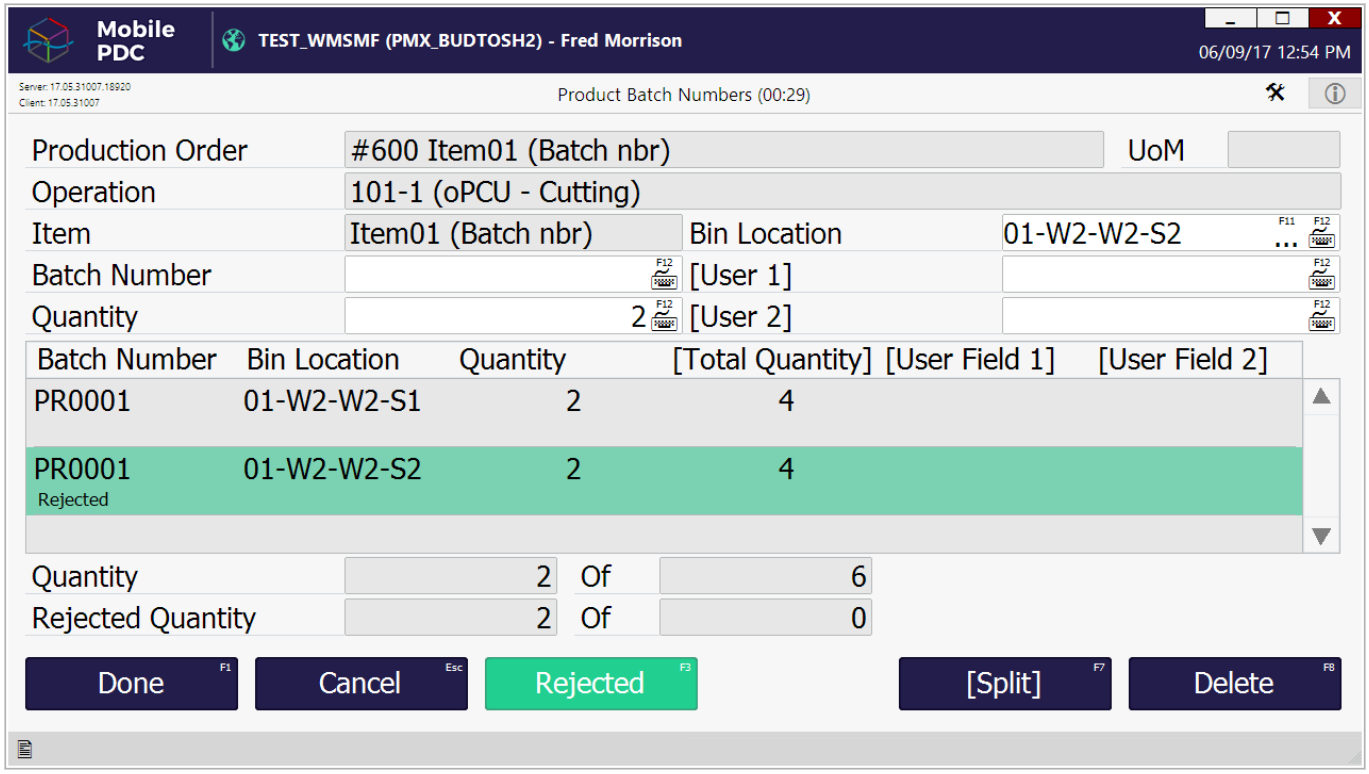
If the product has serial numbers, the Product Serial Numbers screen will open. (Please see: 2.2.4.2. Product Serial Numbers). If the ‘Skip product serial/batch quantities screen’ option is enabled on the

Thin client 2 tab, this button will not be active and the serial/batch numbers will be determined by a custom query. For more information please see: Product serial/batch number

By-products cannot be managed by serials/batches.

2.2.4.1. Product Batch Numbers

If it is a batch numbered product, the *'Product Batch Numbers'* form appears.



Enter the created batch number into the 'Batch Number' field then press TAB to add the batch number to the grid. Multiple batch numbers might be added.

Select the batch on the grid. Enter the quantity of the batch into the 'Quantity' field and scan the bin location or select it on the 'Bin Location' field then press TAB. All bin locations must have the same warehouse. Please note: When using Legacy mode, the Bin Location cannot be specified on this screen.

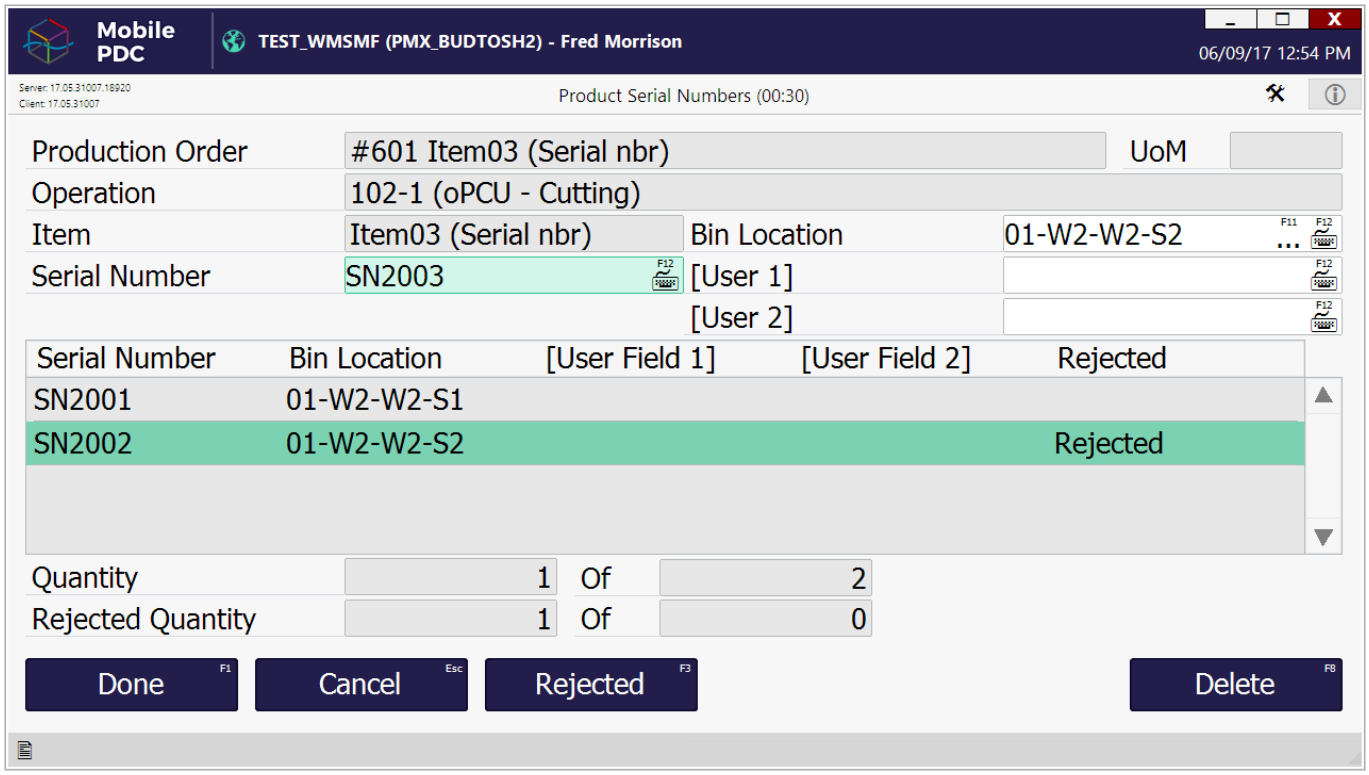
To register the batch for rejected quantities, select the line of the batch number then press the 'Rejected' button. It is possible to set completed and rejected quantities for the same batch number.

To receive the same batch into multiple bin locations, select the batch then press the 'Split' button. The line of the batch will be duplicated but the bin location and the quantity value on the new line will be empty.

To remove a wrongly entered batch number, select it on the grid and click on 'Delete'.

2.2.4.2. Product Serial Numbers

If the product is serial numbered, the ‘Product Serial Numbers’ window will open.



Add the serial numbers into the ‘Serial Number’ field then press TAB to add it to the grid. If the serial number already exist, an error message will be shown.

To define the bin location, select a serial number and add the bin location to the ‘Bin Location’ field then press TAB. all bin locations must have the same warehouse. Please note: When using Legacy mode, the Bin Location cannot be specified on this screen.

To add serial numbers belonging to rejected quantities, first enter the serial number, then select it on the grid and press the ‘Rejected’ button. The serial number will be marked as ‘Rejected’.

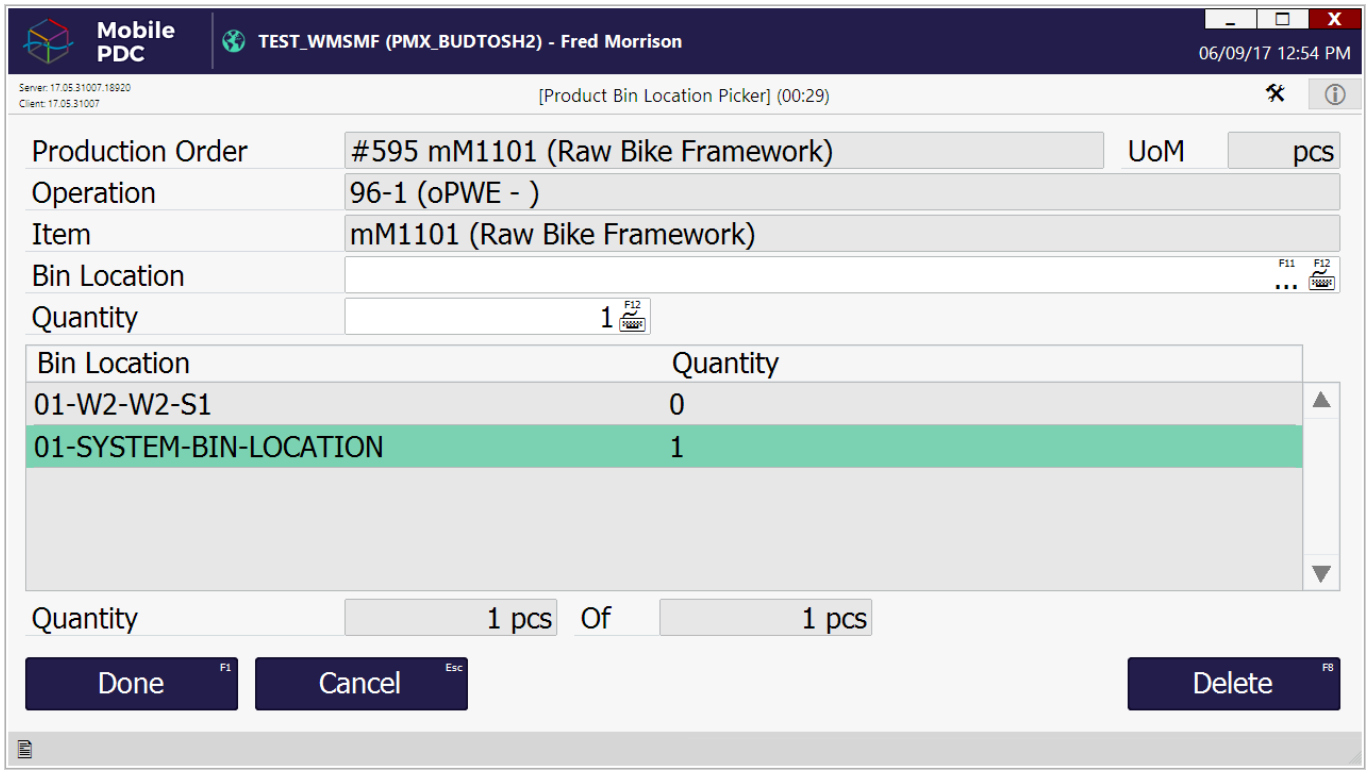
To remove a wrongly entered serial number, select it and press the ‘Delete’ button’.

After every serial number has been entered, press the ‘Done’ button to proceed.

Please note: The added batch/serial quantity must equal to the quantity entered on the partial or complete job/setup form.

2.2.4.3. Product Bin Location Picker

On the ‘Product Bin Location Picker’ screen scan the Bin Location or select it by pressing F11 or pressing the ‘…’ button then press TAB to add it to the grid. Select the Bin Location line then add the quantity to receive to the ‘Quantity’ field.



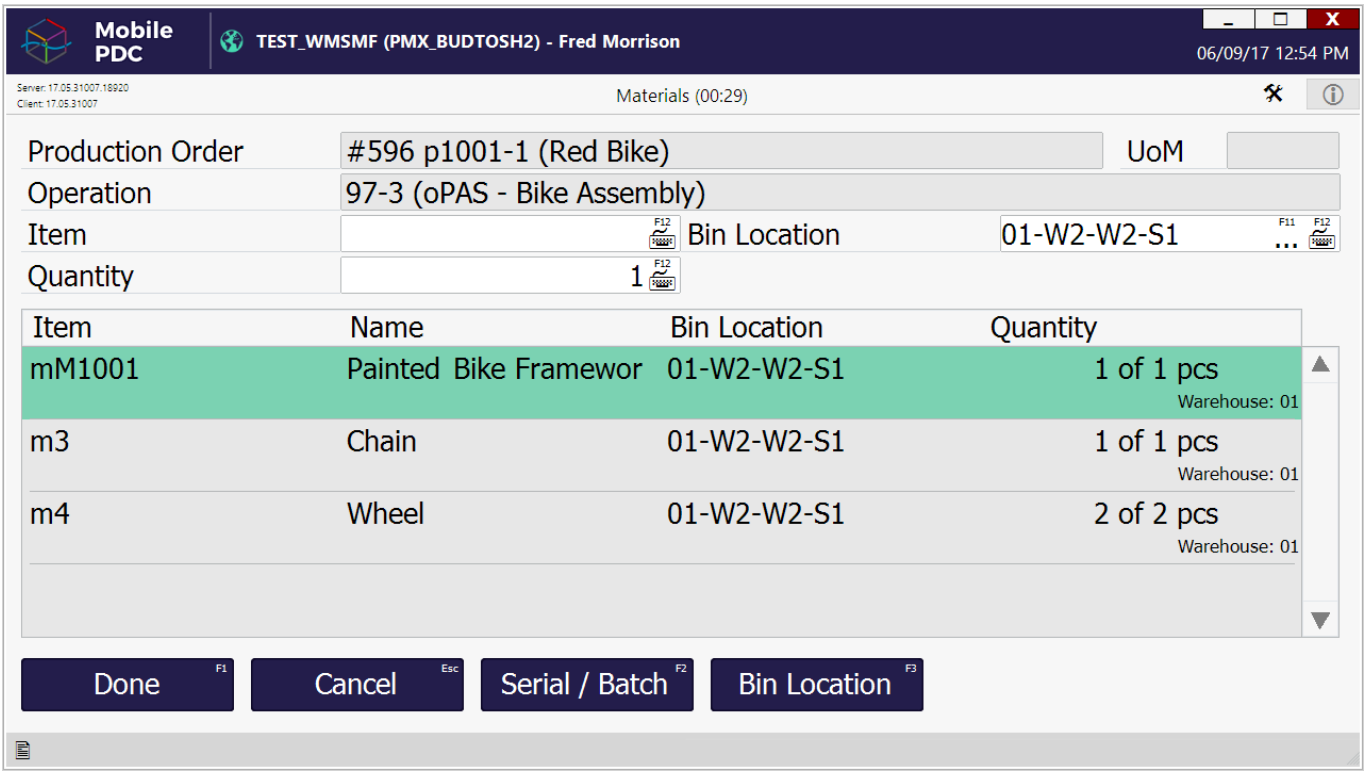
It is of high importance to keep in mind that when working with MultiBranch company databases the user must select a target warehouse from the same branch as defined for the production order, otherwise SAP B1 will reject the inventory transaction. In case of an error the user can fix the issue in the PDC administration screen on the terminal.

2.2.5. Materials

Consumed materials might be reported in different operation phases, depending on their Milestone type.

- Materials with the milestone type ‘Depends On Begin’ have to be issued when starting a job.
- Materials with the milestone type ‘Depends on Every’ can be issued in partial and completed PDC bookings.
- Materials with the milestone type ‘Depends on End’ can only be issued when completing a job.

If the operation has no linked materials, the system will automatically skip this screen.



Scan the item code or enter it to the ‘Item’ field. When the ‘Can insert new materials into production orders‘ option is enabled on the Thin client settings, the user might be able to add items not linked to the operation.

Select the line of the material. If you scan the item code of the material or enter it to the ‘Item’ field, the material line will be automatically selected.

After that the cursor will be automatically positioned into the Quantity field. Here you can enter the used quantity and click on ‘Add’ or ‘Update’. To add the entered quantity to the already booked quantity, press ‘Add’. To overwrite the already booked quantity with the entered quantity, press ‘Update’. When the *‘Can insert new materials into production orders’* option is enabled on the Client 2 tab, new materials can be added during the booking. Scan the item code or enter it to the ‘Item’ field then press TAB. The item will be listed on the grid. Add the consumed quantity and the bin location as described above. After the booking is processed, a new material line is automatically inserted before the operation on the production order.

If the materials are serial or batch managed, you have to select the batches/serials that were used. Select the line of the material then press the ‘Serial/Batch’ button. If the material is managed by batches, the Material Batch Number Picker screen will open. (Please see: 2.2.5.1. Material Batch Number Picker) If the material has serial numbers, the Material Serial Number Picker screen will open. (Please see: 2.2.5.2. Material Serial Number Picker)

Please note: If you don’t enter any quantity on the Materials screen, and click on Serial/Batch button, then the needed quantity will be zero. It means the user can add as many serial/batch numbers as he wants, but he cannot add more than the remaining quantity for the operation.

If the ‘Skip material serial/batch quantities screen’ option is enabled on the Thin client 2 tab, this button will not be active and the serial/batch numbers will be determined by a custom query. For more information about the custom query please see: Material serial/batch number

The default bin location is the bin location specified for the operation but it can be adjusted. Scan the

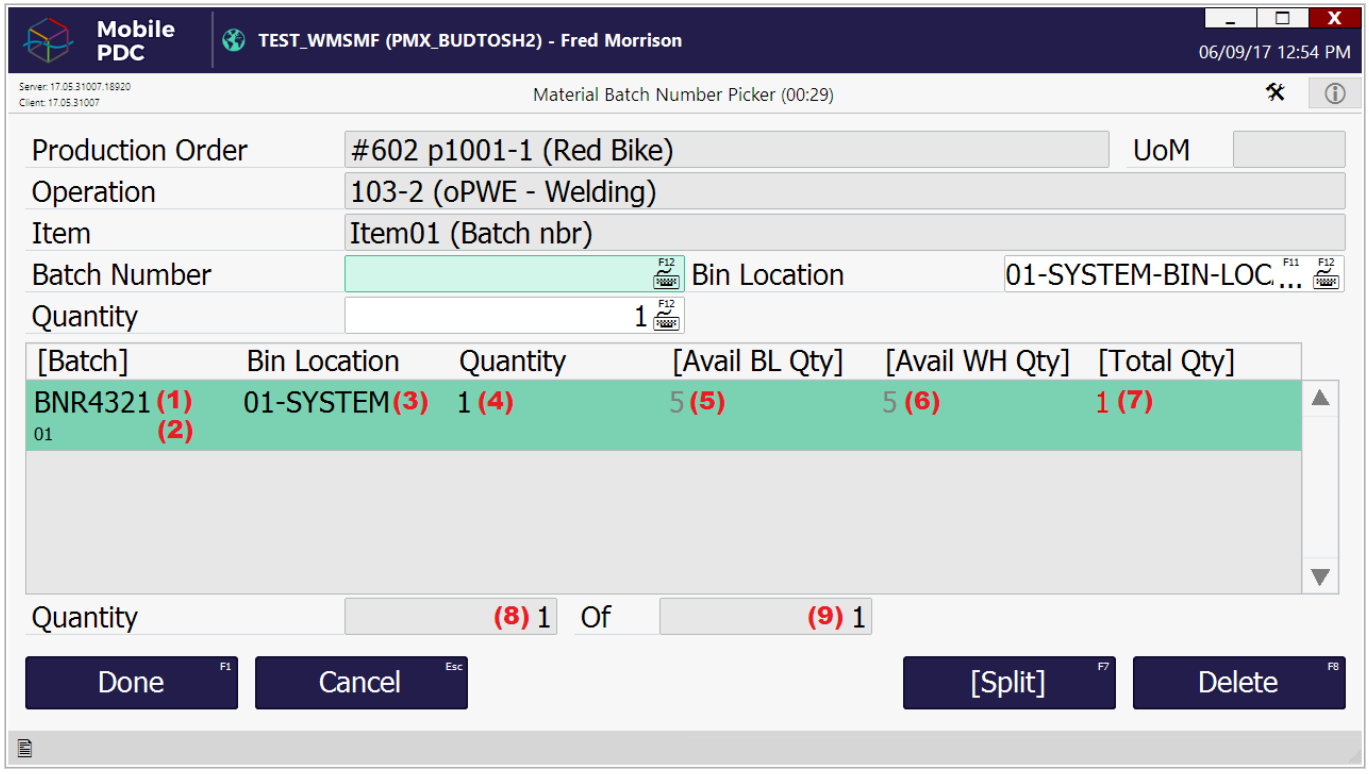
source bin location or add its code to the Bin Location field or select it from a list after pressing F11. To add materials from multiple bin locations select the material then press the 'Bin Location' button. The Material Bin Location Picker screen will open. (Please see: 2.2.5.3. Material Bin Location Picker) When using the Legacy mode, the Bin Location button is not displayed and the Material Bin Location Picker screen cannot be reached.

After the transaction is processed by the PDC processor, the booked materials will be issued with an Issue from Production document.

2.2.5.1. Material Batch Number Picker

Add a batch to the grid by scanning the batch number or entering it to the 'Batch Number' field then press TAB. Only existing batches can be added. Select the batch on the grid then add the quantity to the 'Quantity' field and scan the Bin Location or enter its code to the Bin Location field then press TAB. If the bin location is specified, the batch must exist in the bin location with the specified quantity.

All batch numbers must have the same warehouse.



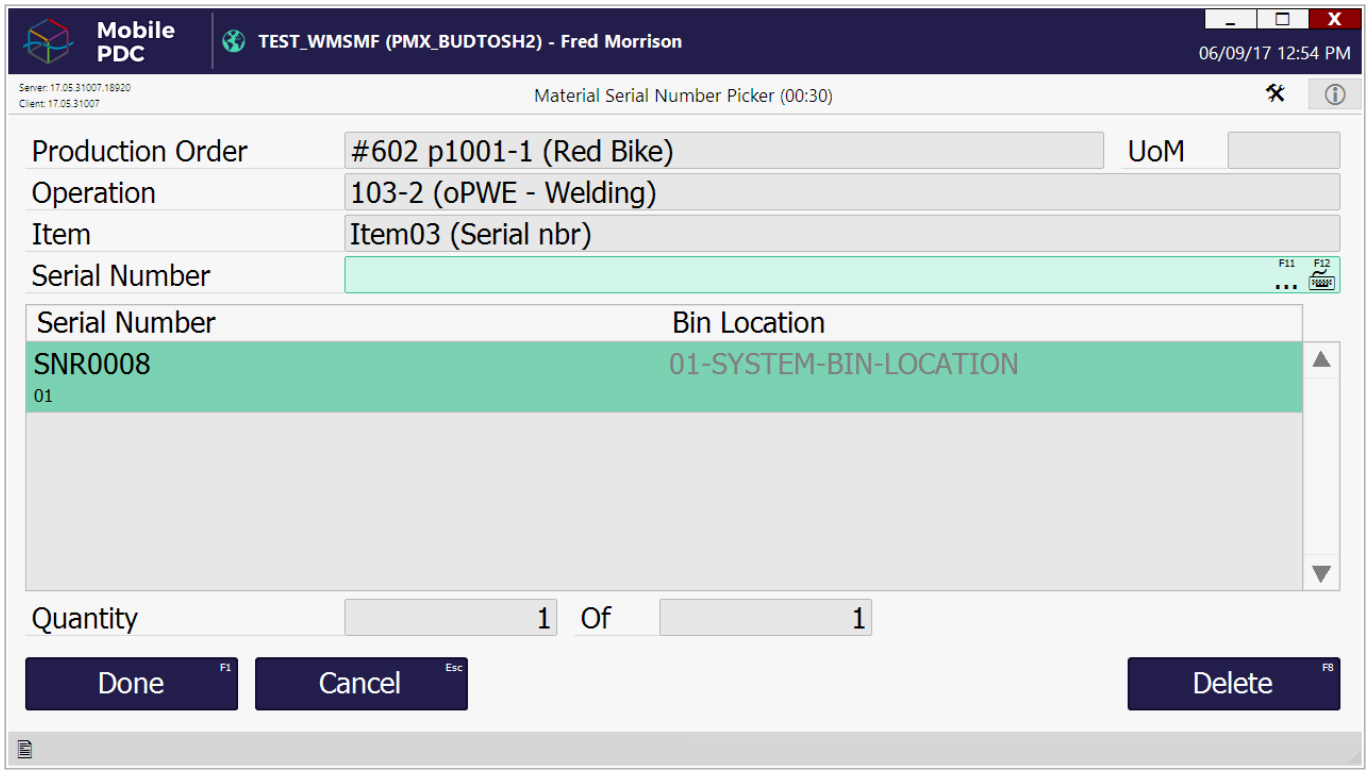
1. Existing batch number
2. Warehouse
3. Bin location
4. Allocated quantity
5. Available quantity in the bin location
6. Available quantity in the warehouse
7. Total allocated quantity
8. Total allocated quantity

9. Needed quantity

To issue the same batch from multiple bin locations, select the batch then press the ‘Split’ button. The line of the batch will be duplicated but the bin location and the quantity value on the new line will be empty.
Please note: When using Legacy mode, the Bin Location cannot be specified on this screen.

To delete a line, select a line then press the ‘Delete’ button.
Press ‘Cancel’ to go back.
Press ‘Done’ to proceed.

2.2.5.2. Material Serial Number Picker



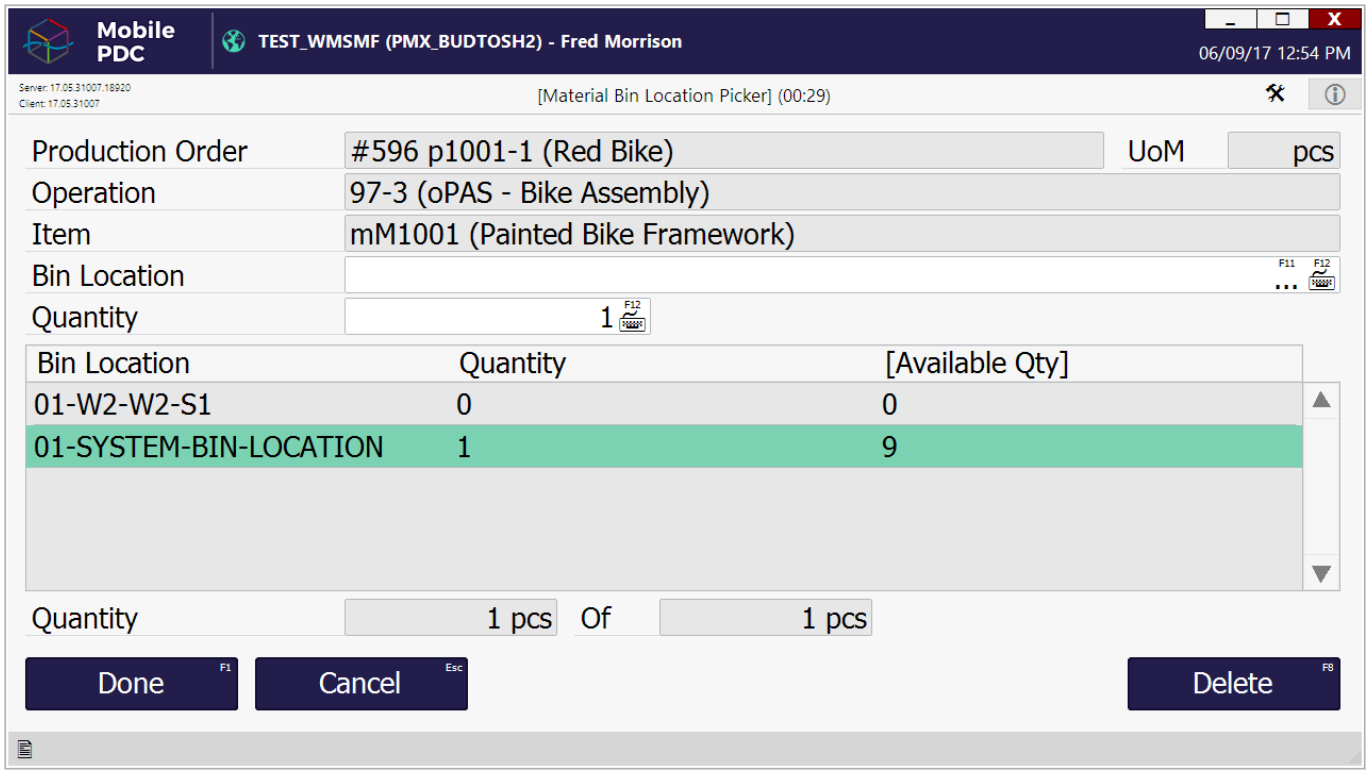
Add the serial number to the serial number field. Already added serial numbers will be listed on the form. Only existing serial numbers can be added. It is not possible to scan serial numbers from different warehouses.

To delete the serial number, select its line and press the ‘Delete’ button.

You have to add all needed serial/batch numbers. Partial definition is not possible. After all serial/batch numbers have been defined, you can click on ‘Done’.

2.2.5.3. Material Bin Location Picker

On the ‘Material Bin Location Picker’ screen scan the Bin Location or select it by pressing F11 or pressing the ‘…’ button then press TAB to add it to the grid. Select the Bin Location line then add the quantity to consume to the ‘Quantity’ field.



It is of paramount importance that when working with MultiBranch company databases the user must select a source warehouse from the same branch as defined for the production order, otherwise SAP B1 will reject the inventory transaction. In case of an error the user can fix the issue in the PDC administration screen on the terminal, nevertheless.

2.2.6. Confirmation

You will get a confirmation dialogue with all the data you entered.

Click on ‘Done’ to finish the process. If the booking does not need approval or quality controlling, it will be processed by the PDC Processor. Click on ‘Cancel’ to go back to the Materials screen where the entered data can be changed.

2.2.7. Complete Setup (Stop Booking)

To finish a setup, press the ‘Stop’ button. The steps of a setup completion are identical to the steps of a partial completion. After the setup is completed, the system will ask whether to start the job part of the operation. Press ‘Yes’ to start the job. A start job booking will be created for the operation. Press ‘No’ to start the job later. Only a ‘Complete setup’ booking will be created and the user must manually start the job for the operation.

When a setup was finished, the phase is closed and it will not be listed on the Running jobs screen.

2.2.8. Complete Job (Stop Booking)

To finish a job, press the ‘Stop’ button.

Enter the completed and rejected quantity (if any) for the operation.

Define a Bin Location for material issues/product receipts on the ‘Bin Location’ field. The default Bin Location is the bin location specified on the PDC Extended Configurations UDT. If no bin location has been defined on that form, the bin location specified for the work center is shown by default. If there is no bin location specified on either form, the bin location is empty by default.

The bin location selected on this screen can be overridden for materials and products.

If the employee has permission to mark operations as completed, the ‘Completed’ checkbox is active. You can set this permission on the PDC Extended Configurations user table. If the employee checks the ’Completed’ checkbox, the operation is marked as ‘Completed’ and the status of the operation is changed to ’Finished’ when the booking is processed. Finished operations cannot be started again.

Press the ‘Done’ button to proceed.

If there are by-products for the operation or the operation is the last operation on the production order and the product is linked to it with a milestone, ‘Products’ screen will open up. Please see: 2.2.4. Product and By-Products

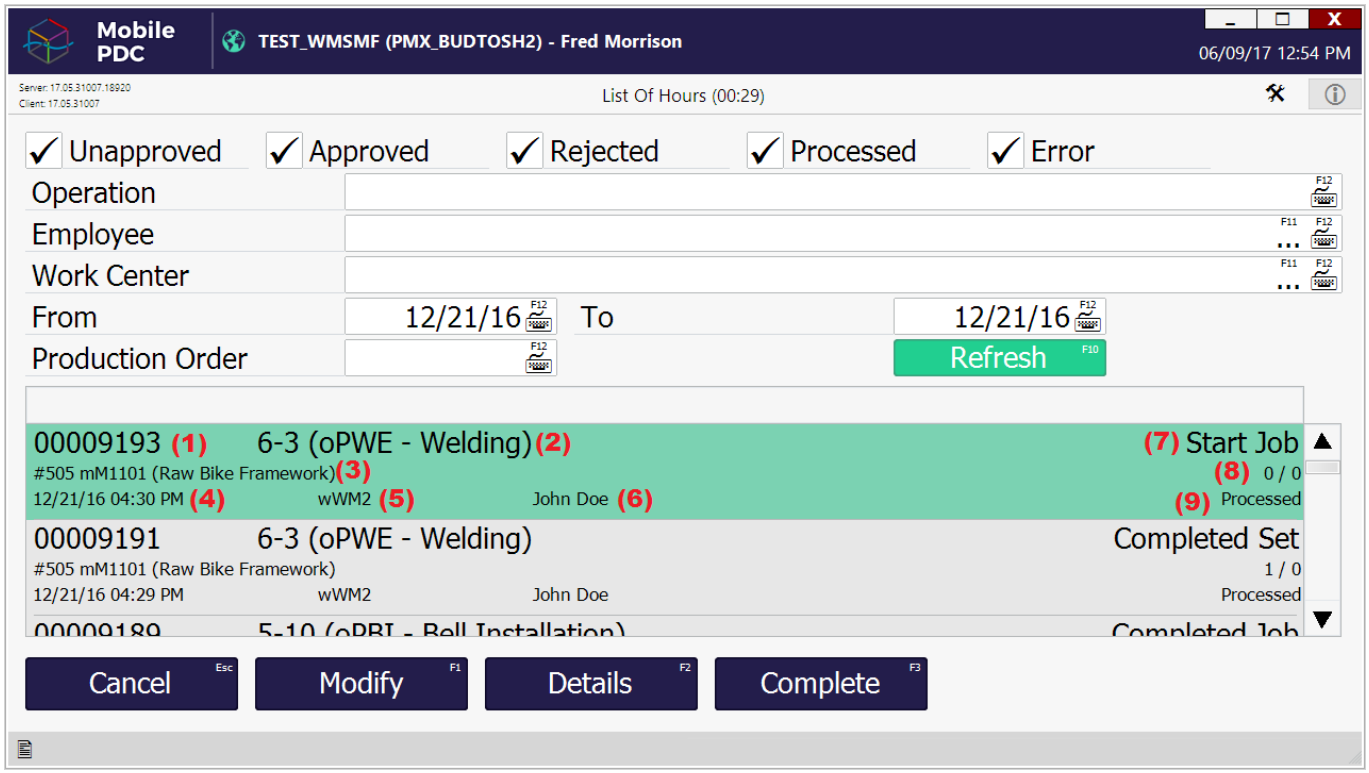
If an operation has materials linked to it with a milestone, the ‘Materials’ screen will open up. Please see: 2.2.5. Materials

After the booking was created, the system will return to the Running Jobs screen or the Start Job screen if the employee has no running jobs. When the ‘Logout after PDC bookings’ option is enabled on the Thin client 2 tab, the employee will be automatically logged out and redirected to the Main Menu.

After a job is completed, it is not shown on the running jobs screen.

2.2.9. Admin

On the Admin screen the employee can overview the bookings he created. Press the ‘Admin’ button to open the ‘Admin’ screen.



1. Allocation Code
2. DocEntry- LineNumber (operation code –name)
3. Production order number. Main product code (name)
4. Booking date and time
5. Work center
6. Employee (who made the booking)
7. State/ Phase
8. Completed/ Rejected quantity
9. Process status

The upper part of the window is a filter. The user can select what type of bookings he wants to see (unapproved, approved, rejected, processed or error) for which operation and work center in which date range. When the user filled the filter fields he has to click on the ‘Refresh’ button to get the list of the operations in the grid below.

Please note: Only employees with approver role can change the Employee code and see the bookings of other employees. Employees without approver role can only see their own bookings.

Details
To overview the details of a booking, select the operation and press the ‘Details’ button. First the summary page will be shown. To see the details of the selected materials or products (if any) click on the ‘Done’ button. To go back to the Admin page, press ‘Cancel’.

When the materials/ products are managed by serials or batches, an additional ‘Serial/Batch’ button is displayed. Press this button to review the added serials/batches. Click on the ‘Done’ button to proceed.

Modify
If the *Worker can modify bookings* setting is enabled, employees can change their bookings. If the *Approver can modify bookings* setting is enabled, employees with approver role can change any

bookings.

To modify the booking, press the ‘Modify’ button. The following can be modified:

- The booked time.
- Completed status. (Please note: Only employees/approvers who have the permission to mark an operation as ‘Finished’ can modify the completed status. The permission can be set on the PDC Extended Configurations user table.)

It is not advised to use this function for correcting material/product bookings. Use these SAP BO functions instead:

- right-click menu on the Production order: Report completion >Return components
- Goods Issue/ Goods receipt
- Disassembly order

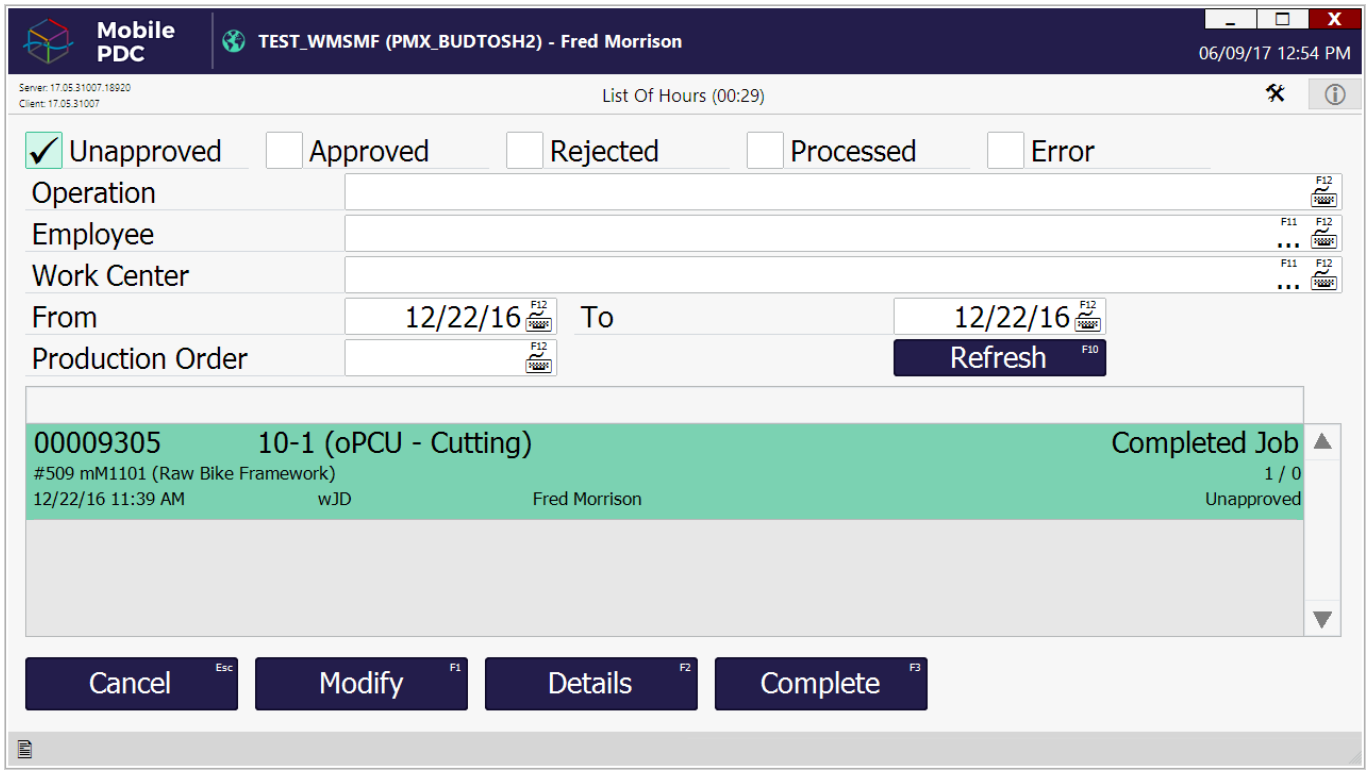
Complete
To finish a job booking, press the ‘Complete’ button. Only jobs with ‘Started’ status can be completed.

2.2.10. Approval of PDC Bookings

PDC supports approving of the PDC bookings by the appointed approver person only.

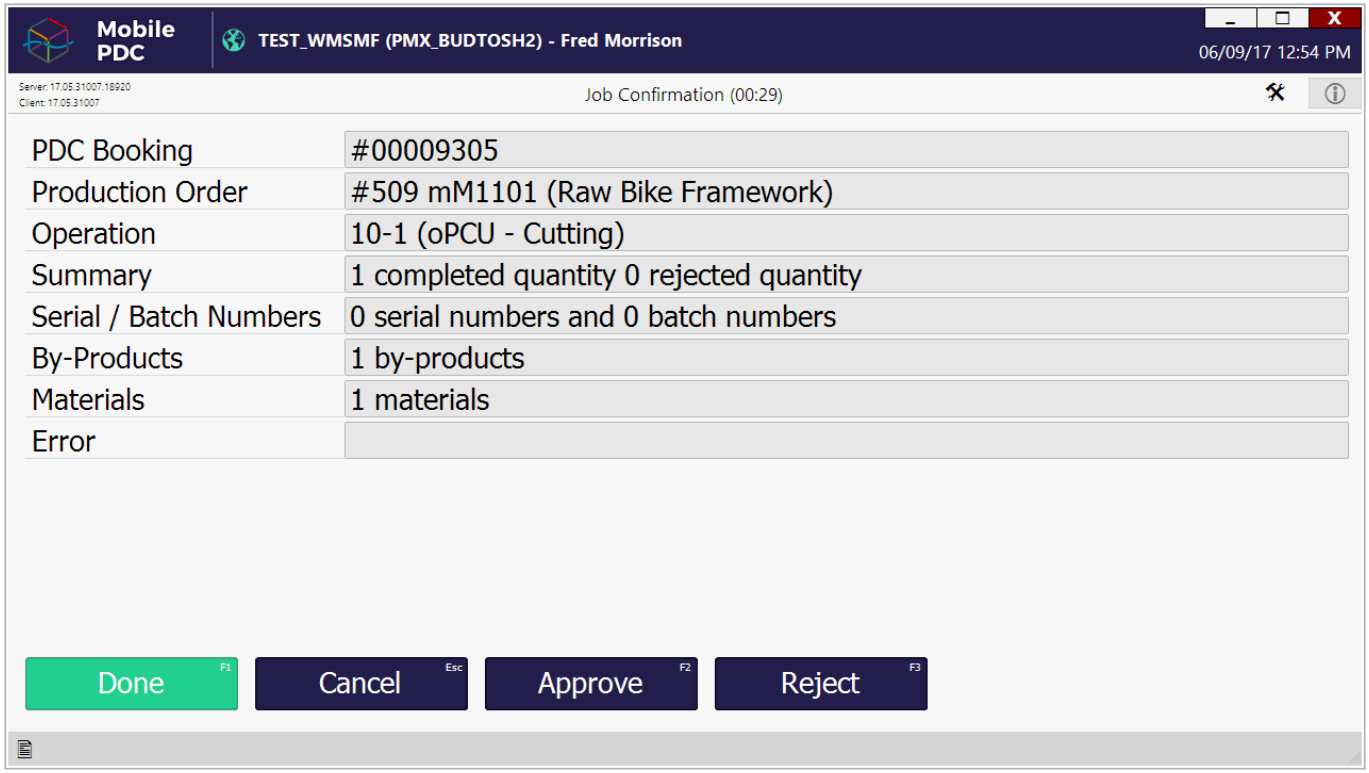
If there is at least one material/product where the *‘NeedsPDC Approval’* option is set to ‘Yes’, approval is needed for the PDC booking. To approve the PDC booking the approver employee has to log in to the mobile PDC, and click on the ‘Admin’ button on the Start Job page.

The filter form will open preloaded with all the operations that are unapproved:



The filter fields works as described in the ***2.2.9. Admin section***. Approver employees can see the bookings of other employees too. Press the 'Details' button to review or press the 'Modify' button to revise the details of the selected booking.

On the summary page additional 'Approve' and 'Reject' buttons are displayed if the status of the selected operation is 'Unapproved'.



If the PDC booking is rejected, the material bookings will not happen and the booking will be marked as 'Rejected'.

If the PDC booking is approved, it will be processed by PDC Processor.

Employees without approver role cannot perform an operation that has materials or products that needs to be approved. If a non-approver employee starts a job for such operation, it will be disposed automatically to an approver employee. When this setting is enabled, sticky jobs completed by approver employees will be automatically approved.

2.3. Quality Controlling

Quality Controlling is a manufacturing shop-floor quality control/assurance data collection function of Produmex Manufacturing. It supports two major processes:

- QC for production order operations
- QA for outsourcing deliveries

When a worker reports the (partial) completion of an operation with the PDC system (either via the mobile client or shop floor PDC wizard), a QC officer can report QA data for that operation. The QC

officer can qualify an operation as rejected (repairable or un-repairable) or approved. The QA data are stored in a database (in the @BXPQAPARAMSJRNL table), and custom reports can be created by the customers or the partner. Saving QA data to that table is the only result of the quality controlling terminal; any additional steps that should be taken after the quality control process (workflow, repairing job, etc.) should be implemented separately as an addition to the quality controlling terminal.

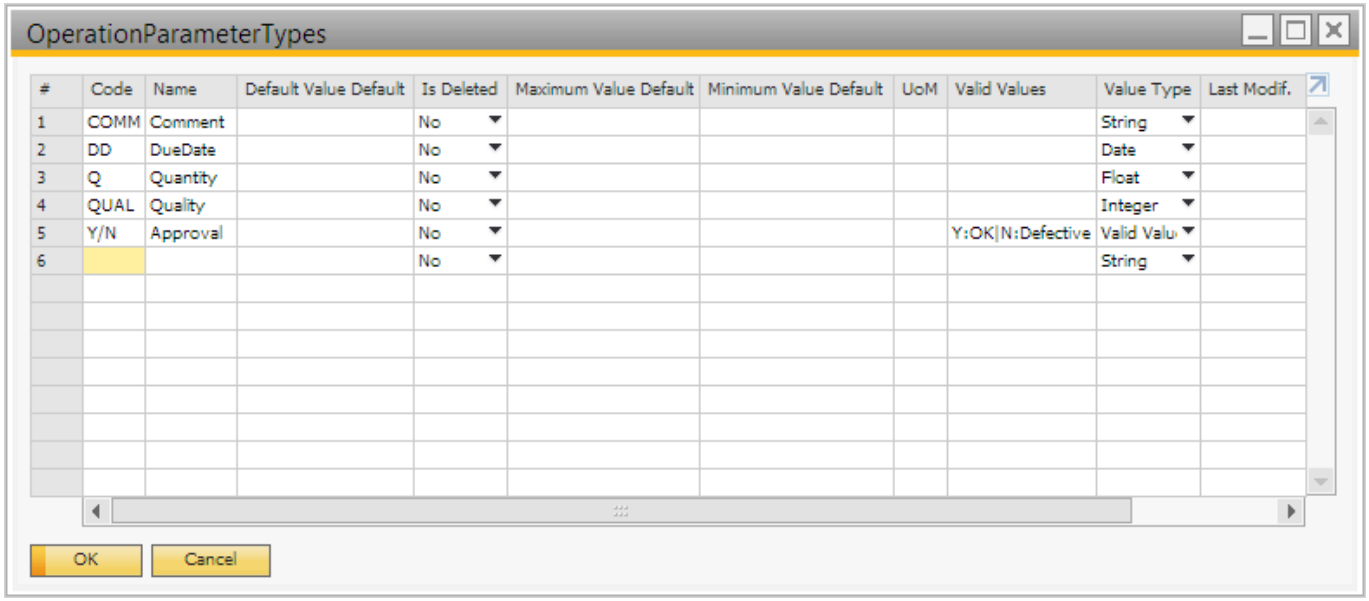
When a delivery (Goods Receipt PO) document is created for an outsourced operation, a QC officer can enter QA data for that delivery. Based on the quality qualifications, the outsourced operation may be rejected.

2.3.1. Set up quality controlling

In order to set up quality control parameters for an operation, enable the *'Production Operation Parameters'* option on the PDC tab of Produmex Manufacturing Settings. Next open the Operation Parameter Types form from: Tools > User-Defined Windows.

Here company specific reporting parameter types (dimensions) can be specified. Each operation can have multiple parameter types associated with it.

Typically in QA these parameters are some metric of the component worked on or the result of some QC tests. In the following example four parameter types were added, that will cover all the relevant features.



Based on the value type

- String: Text can be specified freely. Here it is used for a comment parameter type.
- Float, Integer, Boolean: Numeric fields can be used for measurement.
- Valid Values: This type can be used to create a 'choose from list' parameter. With a taglanguage, the entries in the list can be specified. The syntax is the following: 'Value in database':'Description'|'Value in database':'Description'|... For example in this case Y: OK|N: Defective was specified.
- Date, Time: Date and time is best stored in these types.

Please note: It is not necessary to add timestamp to every operation, as this is automatically collected.

Next open the Production > Manufacturing Operations form. Here, under the Parameters tab, the used parameters can be specified for each kind of operation.

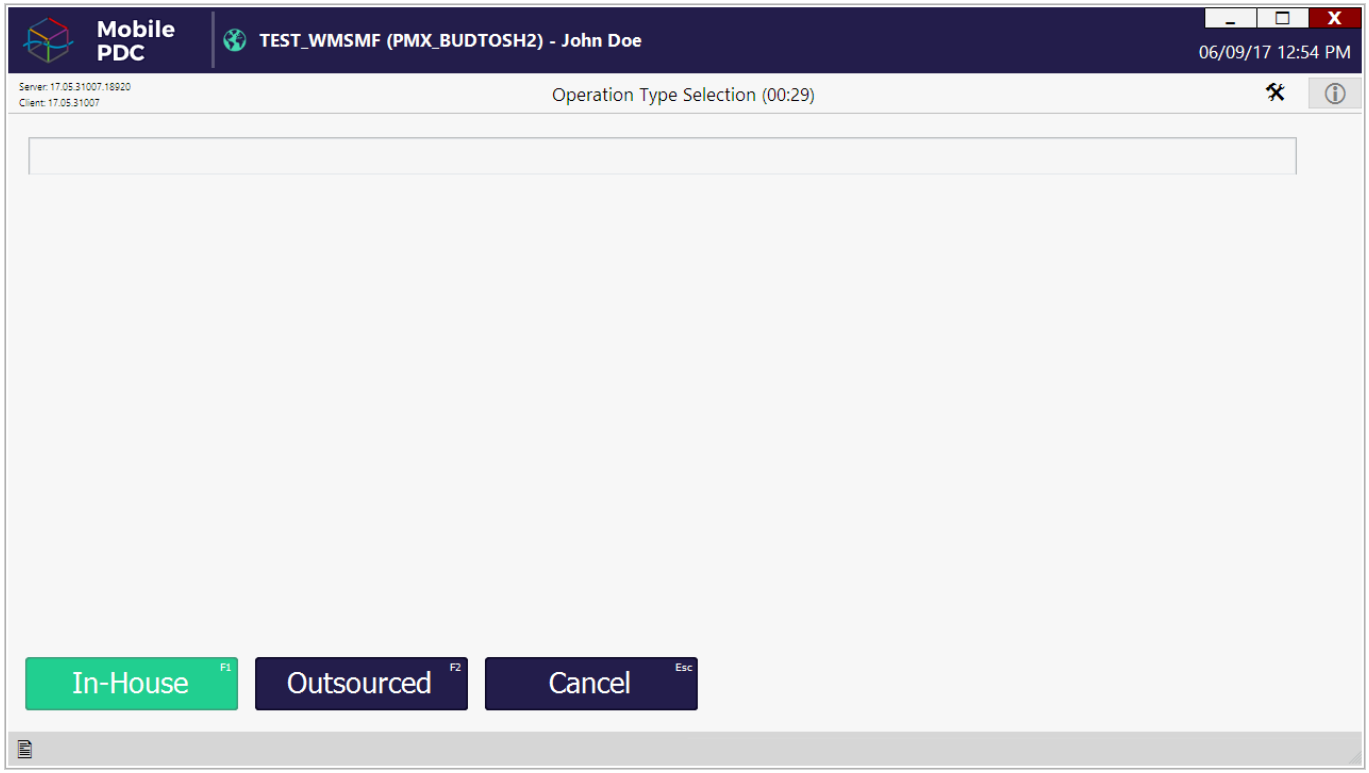
In the Type column, the previously defined parameter types can be chosen.
To use the parameters for the mobile QC terminal the value at the Quality Assurance column has to be set to true. In this example four parameters were specified.

2.3.2. Logging in to QC

Only employees appointed quality inspectors can log into Quality Control.

In the next screen the employee can choose between the two mentioned functions: the in-house QC and the outsourced QC.

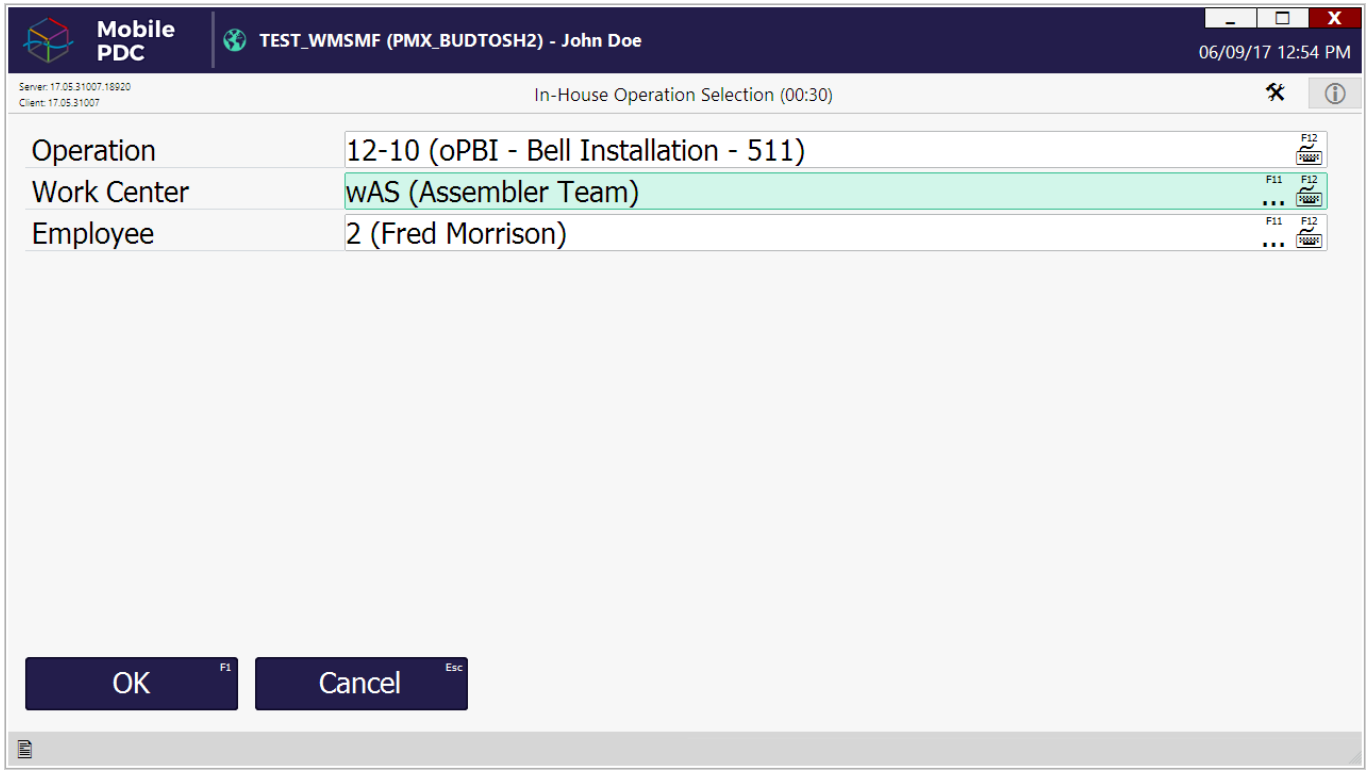
Select the type of the operation on the next screen. Press the ‘In-house’ button to inspect in-house operations, or press the ‘Outsource’ button to inspect the quality of outsourced products. Press the ‘Cancel’ button to go back to the previous screen.



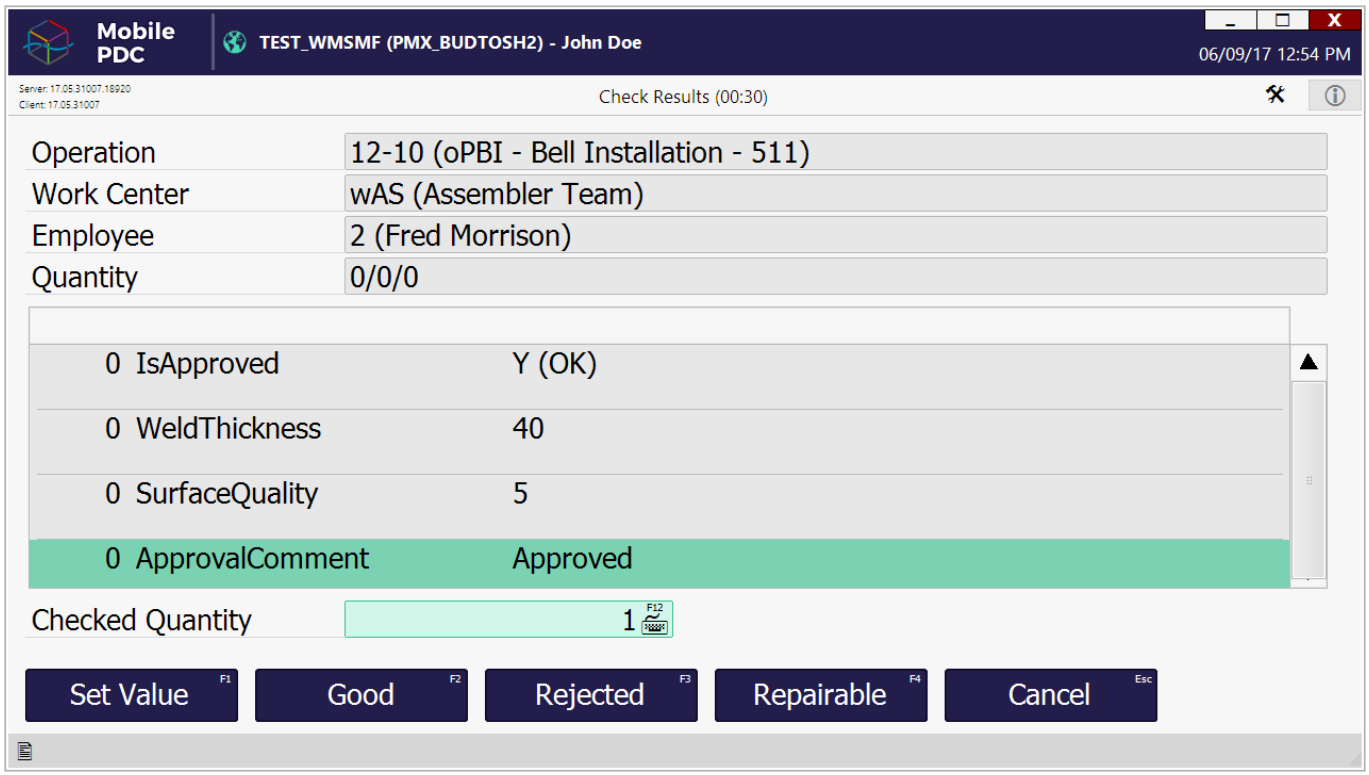
2.3.3. In-House QC

On the ‘In-House Operation Selection’ screen enter an operation ID. Choose a work center and the employee who performed the operation. Only operations with at least one PDC booking can be

selected.



The system will proceed to the ‘Check Results’ screen. On this screen the quality of the operation can be reported with the previously defined parameters. Add the number of the tested instances to the ‘Checked Quantity’ field.



To specify parameters, select the parameter from the list and press the ‘Set Value’ button. This will prompt the ‘Set Value’ form.

The method for entering the value varies according to the value type of the parameter:

- String: Enter the text to the textbox.
- Float, Integer, Boolean, Date -Time: Add the value to the textbox.
- Valid Values: Select a value from the list.

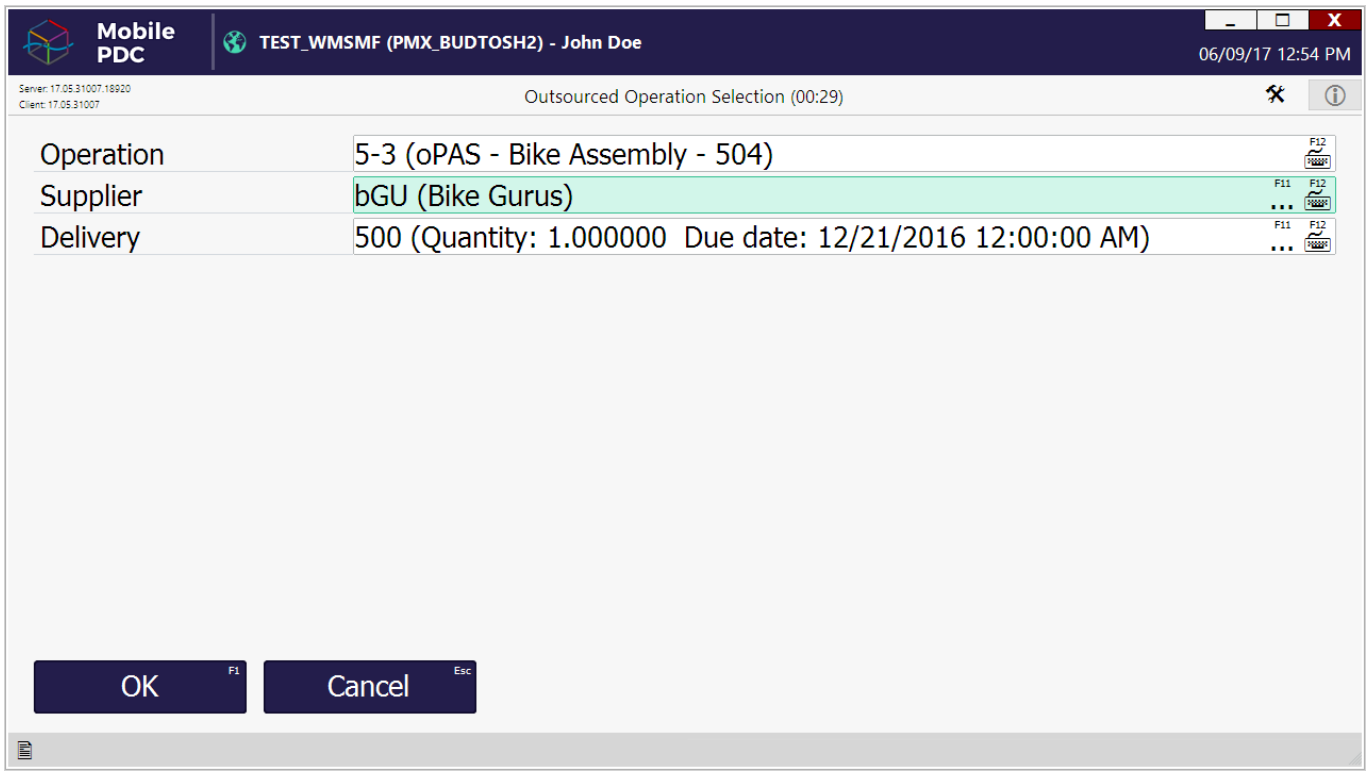
To approve the operation quality, press the 'Good' button.
To reject the operation, press the 'Rejected' button.
To register the operation as repairable, press the 'Repairable' button.

2.3.4. Outsourced QC

For more information about outsourced operations please see: Outsourced Manufacturing.

The Quality Control of an outsourced operation can be handled by selecting 'Outsourced' on the Operation Type Selection form. The procedure is the same as an in house operation with the one exception of the selection form.

In the Outsourced Operation Selection window the operation can be specified and then the supplier and the instance of the delivery can be selected.



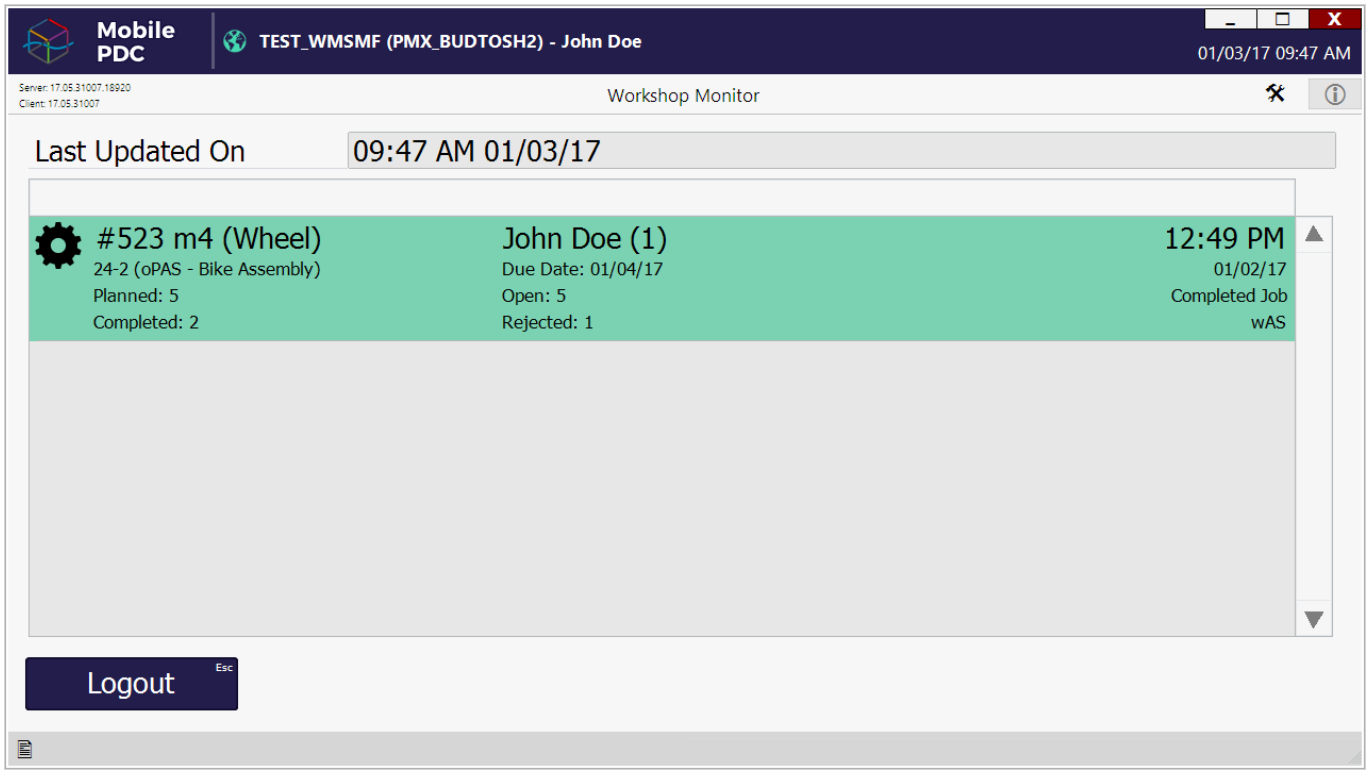
After this the procedure is the same as introduced in the in-house case.

Quality Assurance entries can be seen on: Tools > User Defined Windows > QualityAssuranceJournal

2.4. Workshop Monitor

On the workshop monitor ongoing operations can be overviewed. The workshop monitor will display data supplied by the ***'bxtc_pdc_workshop_monitor_query'*** user query. Before using the workshop monitor, create the custom query. See the example query here: Workshop Monitor

Only employees appointed as Workshop Monitor inspector can log in the Workshop Monitor.

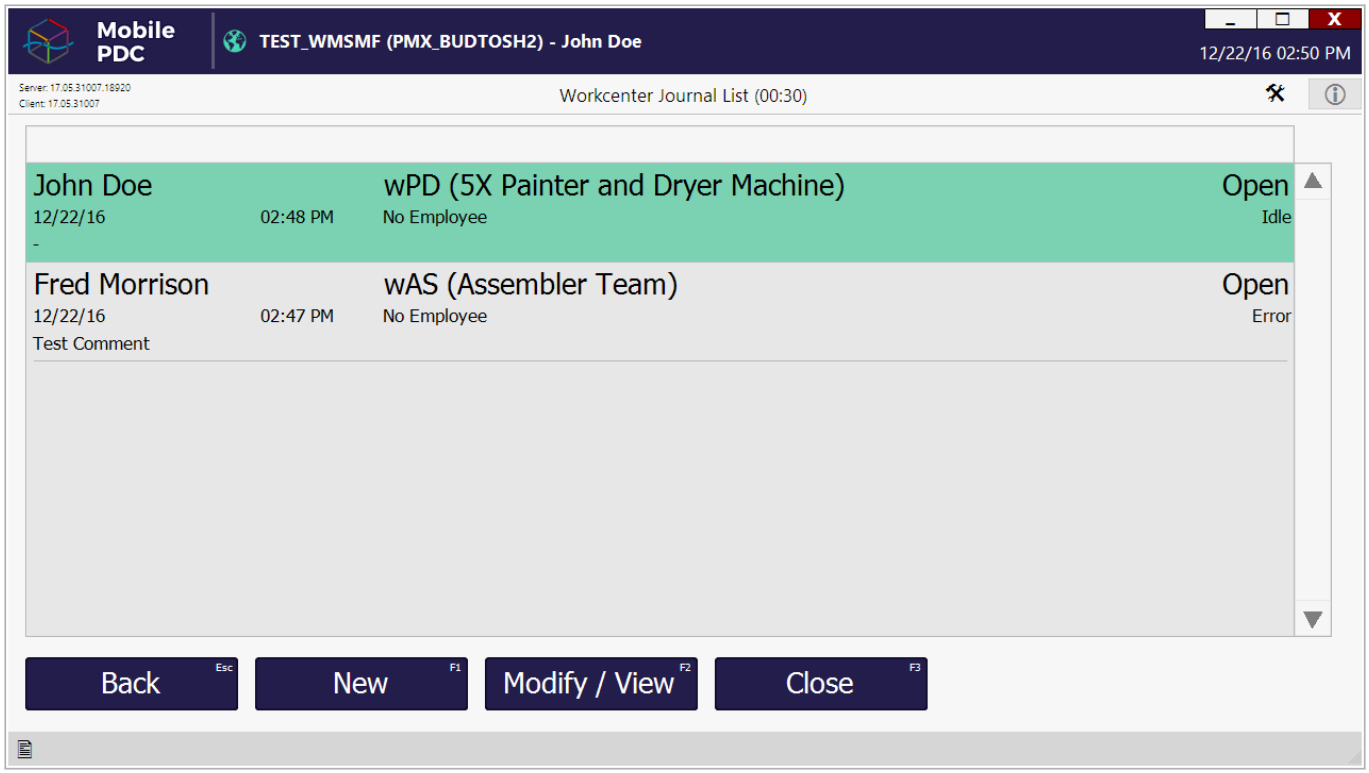


2.5. Work Center Journal

With Work Center Journal tickets work center unavailability reasons can be reported. To create work center journal entries, login the Work Center Journal module. Every employee can create WC journal entries or modify their entries. Only employees appointed as WC admins can close journal entries or modify entries created by other employees.

2.5.1. Work Center Journal List

After the login, the list of open entries are displayed.



Press the ‘Back’ button to go back to the login screen.
Press the ‘Modify/View’ button to review or modify the elected entry. The ‘Work Center Journal Entry’ screen of the selected entry will open up.
If the employee is appointed to the Work Center Admin role, an additional ‘Close’ button is displayed on the screen. Press this button to close the entry.
Press the ‘New’ button to create a new entry. The ‘Workcenter Journal Entry’ screen will be prompted.

2.5.2. Work Center Journal Entry

On the ‘Information’ field the employee name and the date of the creation is displayed. Non modifiable field.

Enter the code of the work center to the work center field or select it from a list after pressing F11.

Select a reason for the work center unavailability. The possible values are: ‘No Employee’, ‘No Material’ or ‘None’. Select an entry type. The possible values are: ‘Idle’, ‘Error’ or ‘None’. It is possible to add remarks to the journal with the ‘Comment’ textbox.

Press the ‘Done’ button to create the entry or press the ‘Cancel’ button to go back to the previous screen.

Work Center Journal entries can be reviewed in the office environment as well. Open the Work Center Journal UDT via: Tools > User Defined Windows. On this form closed journal entries are also displayed.

2.6. Work Center Tickets

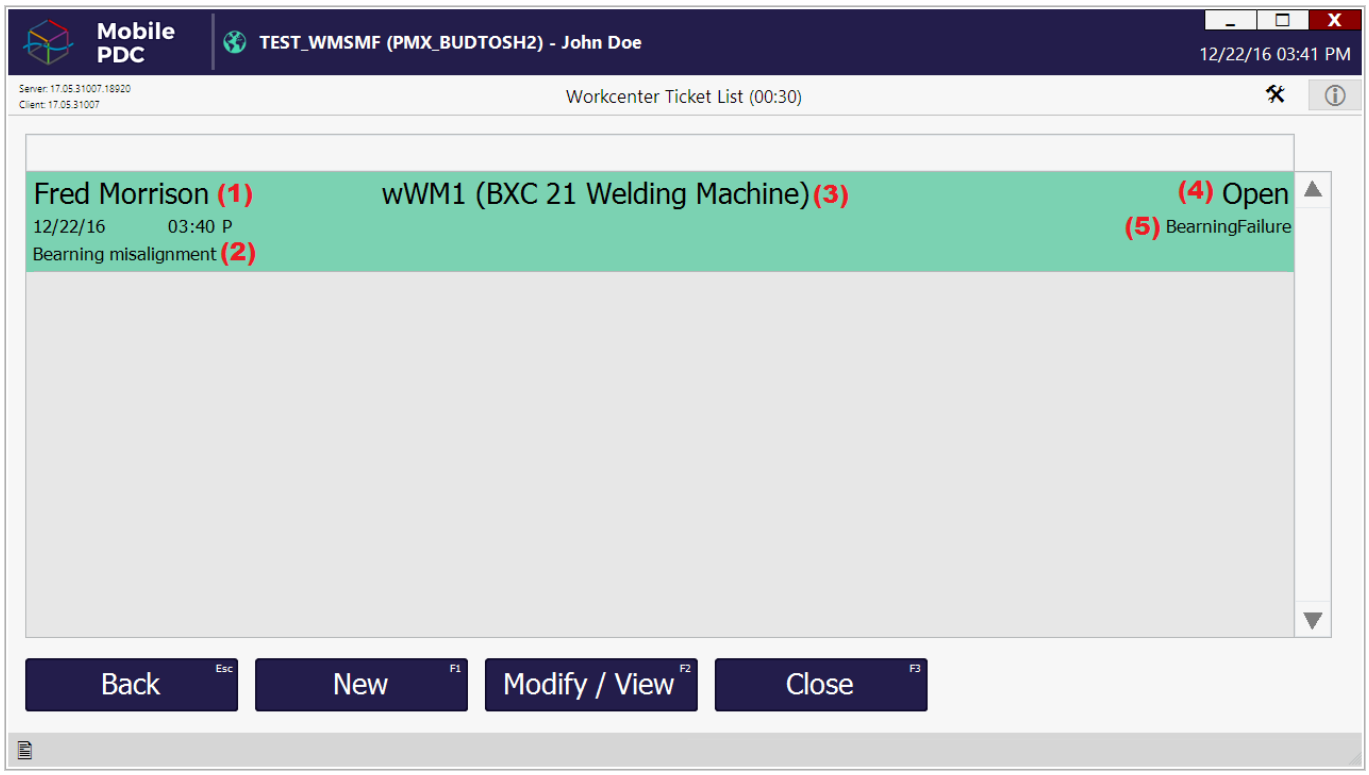
With work center tickets machine failures and malfunctions can be reported.

2.6.1. Setup Work Center Ticket types

If you would like to use the Work Center Ticket module, it is recommended to setup ticket types for the work center. Open the Form via: Tools > User Defined Fields > WorkCenterTicketTypes.
Add the ticket code and name then press 'Update'.

2.6.2. Work Center Ticket List

After the login, the list of open tickets are displayed.



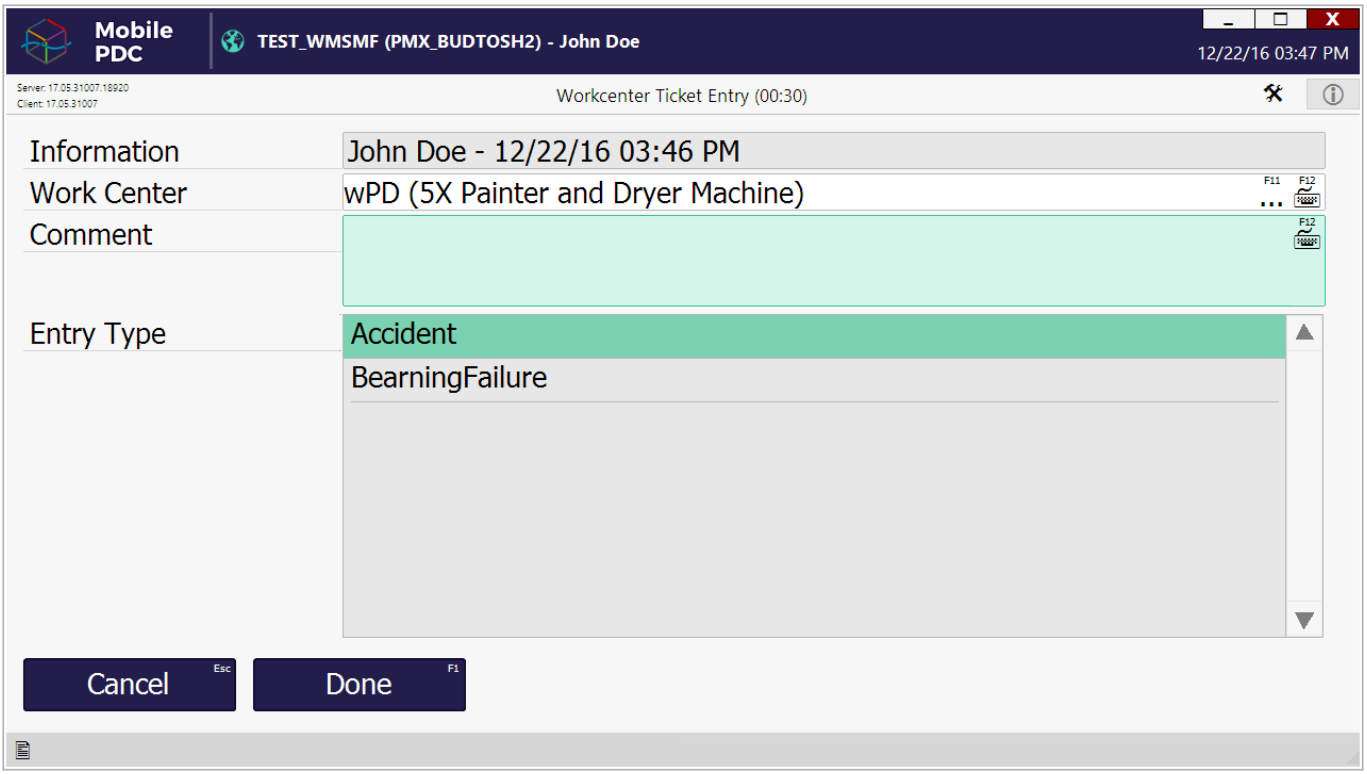
1. Creator name, date and time of the creation
2. Added comment
3. Work center code and description
4. Ticket status
5. Ticket type

Press the 'Back' button to go back to the login screen. Press the 'Modify/View' button to review or modify to selected ticket. The 'Work Center Ticket Entry' screen of the selected entry will open up.

If the employee is appointed to the Work Center Admin role, an additional 'Close' button is displayed on the screen. Press this button to close the ticket.

Press the ‘New’ button to create a new entry. The ‘Workcenter Ticket Entry’ screen will be prompted.

2.6.3. Work Center Ticket Entry



On the ‘Information’ field the employee name and the date of the creation is displayed. Non modifiable field.

Enter the code of the work center to the ‘Work Center’ field or select it from a list after pressing F11. Add a comment to the ‘Comment’ textbox.

Select an entry type. Every ticket type defined on the Work Center Ticket Type UDT can be selected.

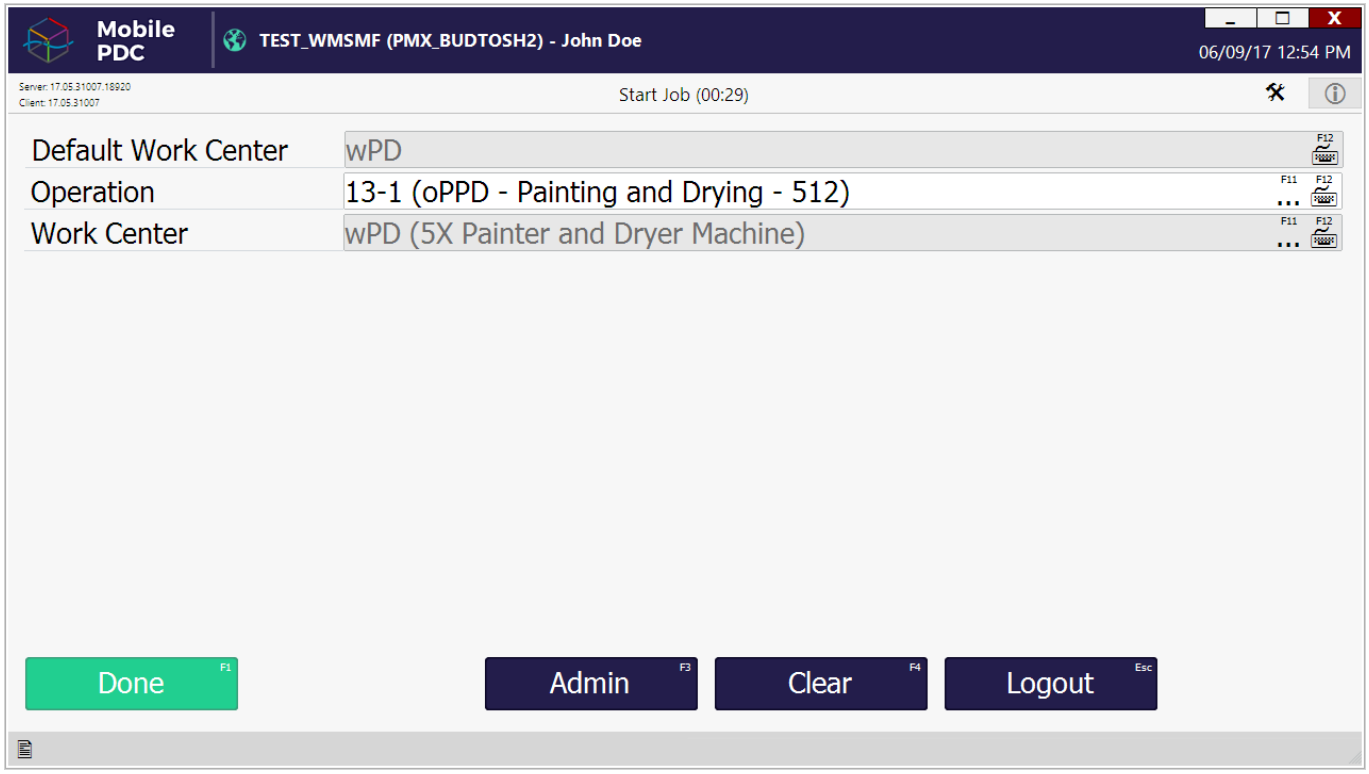
Press the ‘Done’ button to create the entry or press the ‘Cancel’ button to go back to the previous screen.

Work Center Ticket entries can be reviewed in the office environment as well. Open the Work Center Tickets UDT via: Tools > User Defined Windows. On this form closed ticket entries are also displayed.

2.7. Simple Job module

With the Simple Job module, the user can start and complete a job and a setup at one step.

2.7.1. Start Job



The default work center is the work center defined for the terminal on the PDC Terminal Configuration user table. To disable the default work center, set the 'Work Center Ignore' option to 'Yes' for the employee on the PDC Extended Configuration user table]]. When there is a default work center, bookings can be created only for operations with the feature assigned to the default work center.

Add the *DocEntry-LineNumber* identifier to the 'Operation' field.

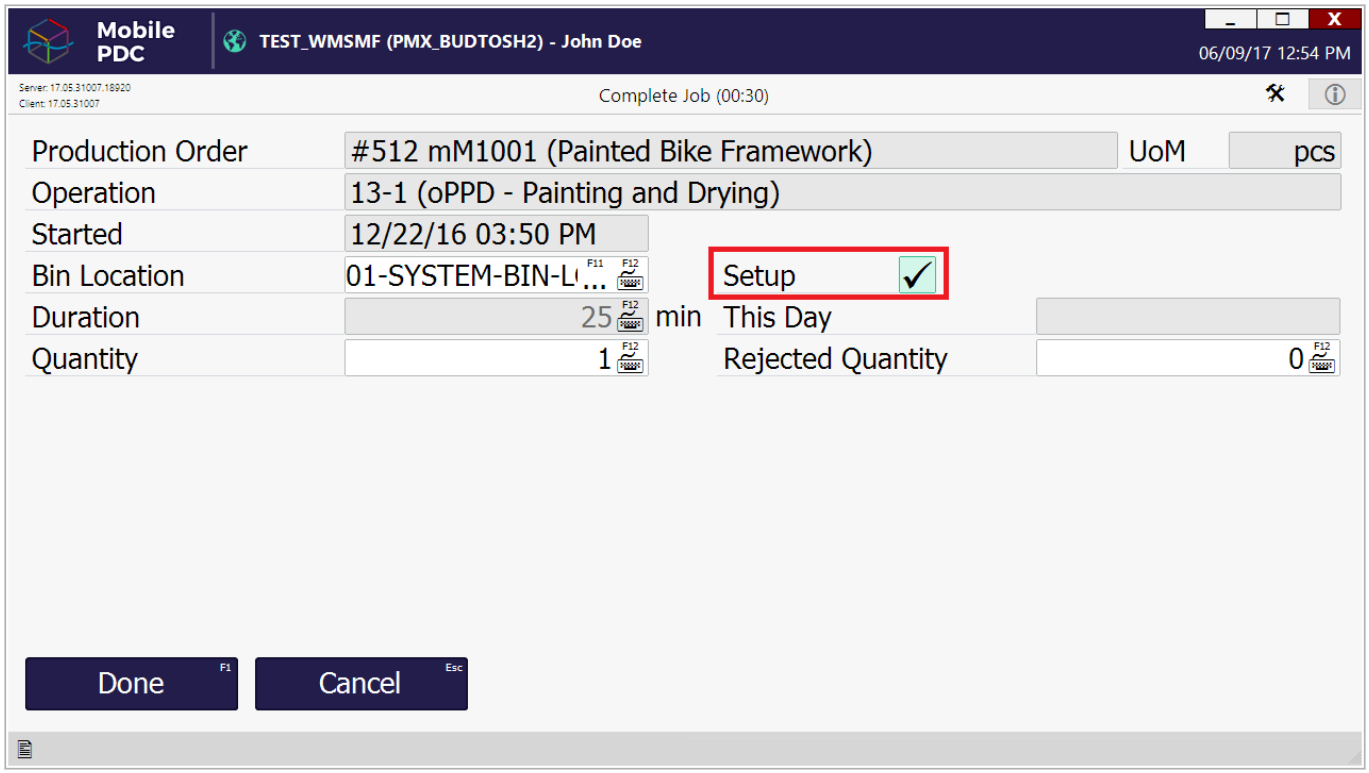
If there is a default work center, the work center field will be populated automatically. The user cannot modify the work center if the default work center is mandatory. The default work center is mandatory in the following cases:

- The employee and/or the work center has no configurations set on the PDC Extended Configuration user table and the 'PDC Modifiable WC for Start' option is disabled on the Thin Client tab of Produmex Manufacturing settings.
- The 'Work Center Modification' option is disabled on the PDC Extended Configuration user table for the employee and/or work center.

Otherwise the work center is not mandatory and the user can select an alternative work center.

To erase the content of the modifiable fields, press the 'Clear' button.
To log out as the current employee, press the 'Logout' button.
To see the Admin screen, press the 'Admin' button. For more information about the Admin function please see: 2.2.9. Admin

Press the 'Done' button to proceed.



2.7.2. Complete Job

Scan the destination Bin Location or enter its code.
The default Bin Location is the Bin Location defined for the employee/work center on the PDC Extended Configuration user table. If there is no default bin location defined for the employee/work center on the PDC Extended Configuration user table, then the default bin location is the bin location defined for the work center.

To create setup bookings too, tick the 'Setup' box. The box is only active if there is setup time defined for the operation. Scan the destination Bin Location or enter its code.

Then enter the completed and rejected quantity. When the user enters the completed/rejected quantity, the duration is automatically calculated.

- If setup time is defined for the operation and the 'Setup' checkbox is checked, the duration is calculated as {(Setup base quantity + Operation base quantity) * (Completed quantity + Rejected quantity)}.
- If there is no setup time defined for the operation and/or the 'Setup' checkbox is not checked, the duration is calculated as {Operation base quantity * (Completed quantity + Rejected quantity)}.

After the Duration field is filled, the system also calculates the Start time as {Current Date/Time – Duration}.

If the *'Manual Job Duration'* option is enabled on the PDC Extended Configuration user table, the user can enter the duration. When the user enters or modifies the duration, the system recalculates the Start time. Please note: The completed quantity will not be recalculated based on the duration.

If the *'Comment Visible'* option is enabled on the PDC Extended Configuration user table, an

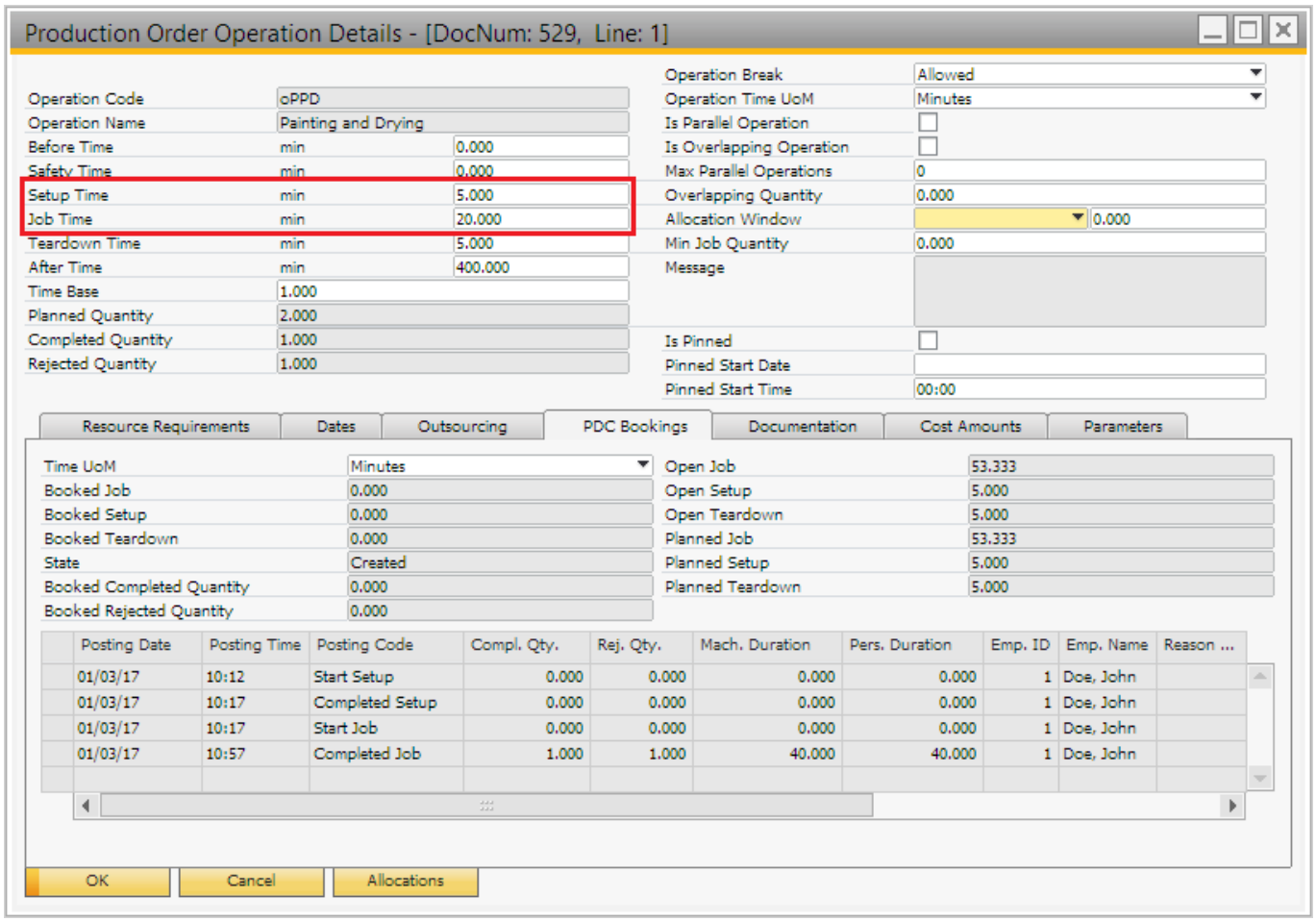
additional Commend field is displayed on the screen.

Press the ‘Done’ button to proceed.

When there are materials linked to the operation with a milestone, receive the materials. Please see: 2.2.7.Materials

When there is a by-product linked to the operation or the operation is the last one on the production order and there is a milestone set for the product, receive the (by-)products too. Please see: 2.2.6.Products

Operation Details
Because the user does not start the job manually, the booked time cannot be measured. The system will automatically create the ‘Start Setup’, ‘Completed Setup’, ‘Start Job’ and ‘Completed Job’ bookings. The Posting Time of the Complete Job booking is the time when the PDC booking was created. The Posting Time of the ‘Start Setup’, ‘Completed Setup’, ‘Start Job’ bookings is calculated backwards.



3. PDC bookings in SAP B1

3.1. Create PDC bookings

3.1.1. Simplified Production Data Collection

Many manufacturing companies do not need the full-fledged data collection terminal. Instead, they could do very well with the much simpler PDC office terminal. In this scenario, the production data is collected (mostly) on paper, and the data is entered at the end of the day by an office assistant.

3.1.1.1. Print the PDC sheet

Open the sheet generator via: Production > PDC > PDC Sheet Generator.

The *'PDC Sheet Generator Parameters'* screen will open up.

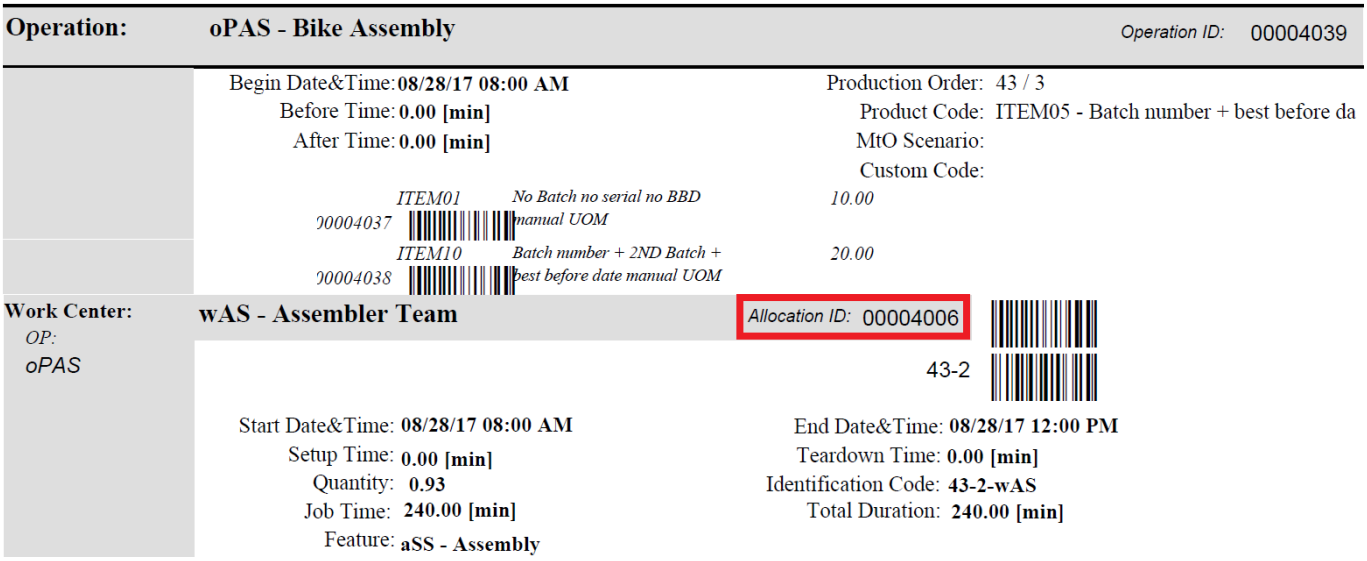
To print a prefilled sheet, tick the 'Prefilled' box then select the data to add to the sheet. The sheet can be prefilled with the following data:

- Employee ID
- Pr. Ord. No
- Operation Code
- Work Center

Enter the number of rows you would like to add for each allocation to the 'Rows per allocation' field.

Click on 'Ok' then set the printing options on the 'Select Report Layout' screen.

The Allocation ID is the identification number of the allocation that can be seen on the Job Requirements Report:



The Posting Code stands for the status of a certain phase in PDC booking. (Eg.: ‘Partial setup’, ‘Completed Job’)

3.1.1.2. PDC Bookings office terminal

Enter the data collected on the PDC screen on the PDC Bookings office terminal form. Open the form via: Production > PDC > PDC Bookings office terminal.

With the office terminal it is not mandatory to record all phases (setup, job, shutdown, break, etc.) of the operation; most typically only the job completion is booked.

When the bookings have been inserted and user presses the ‘Update’ button, the appropriate material issue for production or product receipt from production (according to the milestone settings of the operation and material lines) inventory transactions will be committed as well. After a job completion is booked on the office terminal, the status of the operation is set to ‘Finished’.

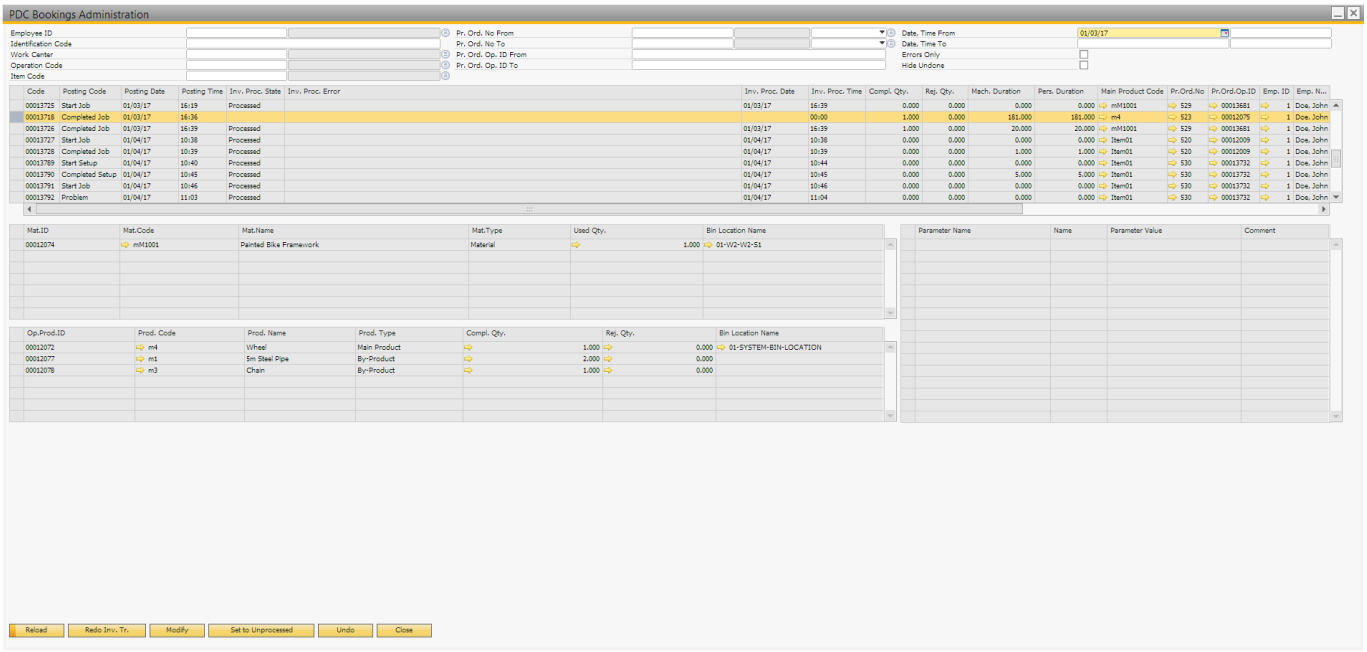
3.1.3. Simple PDC Shop-Floor Wizard

The Simple PDC Shop-Floor Wizard is an obsolete function. It is recommended to use the Mobile PDC instead.

3.2. Manage PDC bookings

3.2.1. PDC Administration

On the PDC Administration form PDC bookings can be reviewed and modified. Open the form via: Production > PDC > PDC Administration.



The upper part of the screen is a filter. Bookings can be filtered with the following:

- Employee
- Work center
- Operation code
- Item code (of the main product)
- Production order number (range)
- Production order operation ID (range)
- Date (range)

Check the ‘Errors only’ box to list only bookings with processing errors. Uncheck the ‘Hide undone bookings’ box to include undone bookings in the list as well.

Click on the ‘Reload’ button to get the list of the bookings with the applied filters. The bookings will be listed on the upper grid.

On the middle of the screen a ‘Material’ grid and a ‘Product’ grid is displayed. When the ’Use Operation Parameters’ option is enabled on the PDC tab of Produmex Manufacturing Settings, an additional ‘Parameter’ grid is shown.

On the ‘Material’ grid the materials issued during the selected booking are listed. On the ‘Product’ grid the products received during the selected booking are listed. On the ‘Parameter’ grid the quality assurance parameters will be displayed.

Click on the ‘Close’ button to close the form.

Modify

To modify a booking, select its row and click on the ‘Modify’ button. The ‘Modify PDC Booking’ form will open up. On this form the following can be modified:

- Posting Date and Time
- Machine and Person Duration
- Completed and Rejected Quantity

If the PDC booking has inventory transactions, the completed and the rejected quantities cannot be modified.

Set to Unprocessed
To reprocess every failed transaction displayed on the screen, click on the 'Set to Unprocessed' button. The status of the transaction will be set to 'Unprocessed'. These transactions will be reprocessed when the PDC Processor runs again.

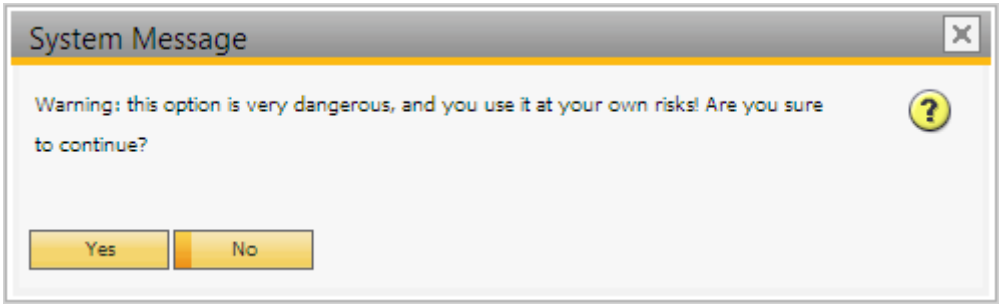
Redo failed transactions
To individually reprocess bookings with inventory transaction errors, select the row of the booking and press the 'Redo Inventory Transactions' button.

The System Message shows the number of the successful and failed reprocesses.

Undo a booking
When the *'PDC Allow Undo'* option is enabled on the PDC tab of the Produmex Manufacturing Settings, PDC transactions can be undone. An additional 'Undo' button is displayed on the screen.

To undo an erroneous booking, select the row of the transaction and click on this button. Undone bookings are marked with a tick in the box on the 'Is Undone' column. Undoing a *Close* or IsCompleted booking changes the status of the operation back from *Finished* to *Started* or *Created*.

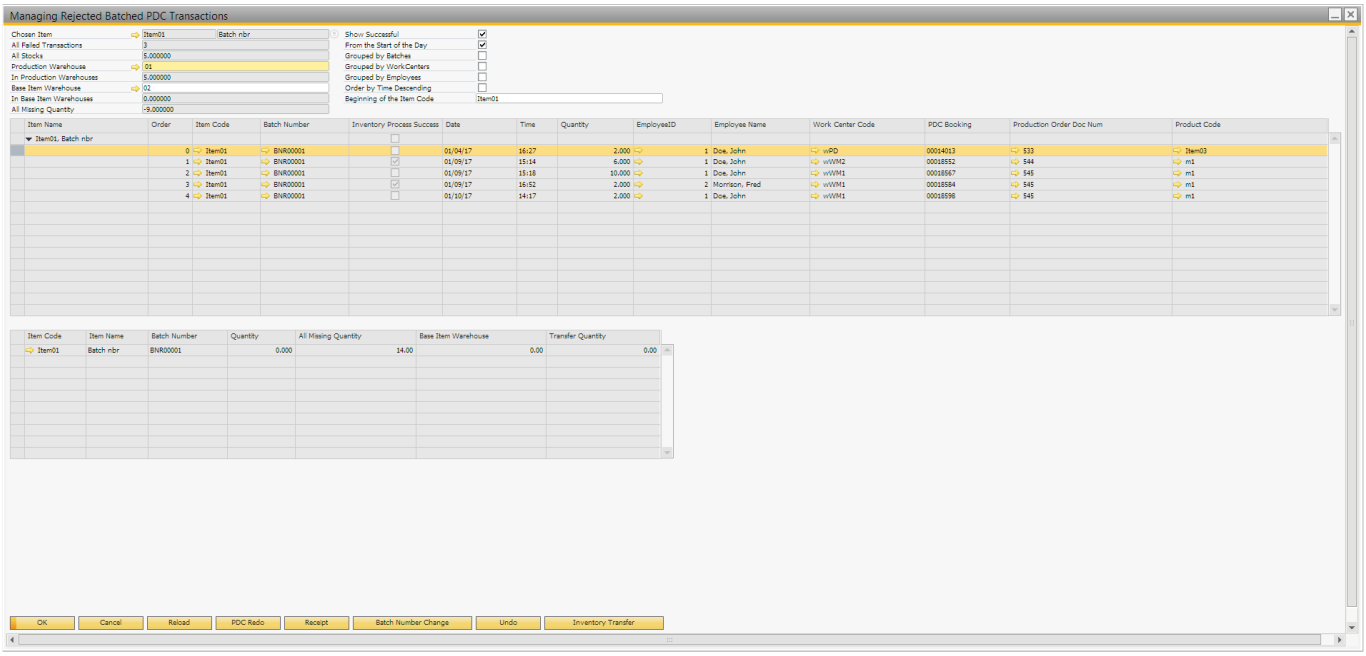
When the *'PDC Undo Only No Transaction'* option is disabled, PDC bookings with inventory transactions can also be undone. Please note that undoing a PDC booking with inventory transaction is strongly discouraged. During the process a system warning will open up. Press the 'Yes' button to proceed with the undoing. The inventory transactions booked for the PDC transaction will be undone too.



PDC bookings containing materials or products managed by serial or batch numbers cannot be undone.

3.2.2. Managing Rejected Batched PDC Transactions

To correct PDC transactions that were unsuccessful due low stock quantity of batch managed materials, enable the *'Managing Rejected Batched PDC Transactions'* option on the PDC tab of Produmex Manufacturing settings. Open the form via: Production > PDC > Managing Rejected Batched PDC Transactions.



On the header transaction details can be overviewed.
The grid can be filtered with the following:

- Show successful: Tick the box to show the successful transactions linked to the rejected batches.
- Beginning of the Item Code: To filter the list based on the item code, start to enter the item code to the textbox.

Displaying options can also be set on the header:

- Grouped by Batches/ Work Centers/ Employees: Enable the grouping options by ticking the box.
- Order by Time Descending: By default the rows are sorted by the batch/ serial numbers. When this option is enabled, the rows are ordered descending by the creation date and time.

Reload

Click on the 'Reload' button to get the list of rejected batched transactions with the applied filters.

The transactions are grouped by the item. Click on the black arrow next to the item code to reveal the rows of the failed transactions belonging to the item.

PDC Redo

To reprocess bookings with rejected batches, select the row(s) of the booking(s) and press the 'PDC Redo' button.

Batch Number Change

When the transaction is failed because there are insufficient stock from the added batch but there are stock available from other batches, the transaction can be corrected by changing the batch number. Select the transaction row to change then click on the 'Batch Number Change' button. The 'Batch Number Change' form will be open.

Batches with available quantities are listed on the grid. Add the quantity to change to the ‘Change Quantity’ cell on the row of the new batch. Remarks can be added on the ‘Comment’ textbox.
The transaction will be reprocessed by the PDC processor.

Receipt
When the transaction is failed because there are insufficient stock in the inventory, the transaction can be corrected by receiving the missing quantity. Select the transaction row(s) then click on the ‘Receipt’ button.

Add the quantity to receive to the ‘Receipt Quantity’ cell on the opening form then press the ‘Ok’ button to create a ‘Goods Receipt’ document and receive the items.

Please note: In order to create the goods receipt document, a *‘GoodsReceipt Series Name’* should be set on the PDC tab.

The selected transaction(s) will be reprocessed by the PDC processor.

Inventory Transfer
When the transaction is failed because there are insufficient stock from the batch in the warehouse, the transaction can be corrected by receiving the missing quantity from another warehouse. Select the transaction row(s) then click on the ‘Inventory Transfer’ button.

The selected transaction(s) will be reprocessed by the PDC processor.

Undo
Rejected batch transactions have no inventory bookings linked therefore can safely undone. To undo rejected batch transactions, press the ‘Undo’ button then add the quantity to undone to the ‘Undone Quantity’ field.

Finter

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