How to connect a scale to Produmex PDC

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

This customization example shows how to use a scale in Produmex PDC with the help of the Produmex WMS ScaleComm Service.
We will add a new Weigh button to the screens where the products can be received and materials can be issued. When this button is pressed, a user query fills the product/material Quantity field with the measured weight. The used scale will be identified based on the work center.

Prerequisites:

- Installed Produmex Manufacturing and Produmex PDC
- Installed Produmex WMS up to version 7.0
- Installed Produmex ScaleCommService

For more information about Produmex PDC customization please see: Customization Technology.

1. Add Weigh button to PDC screens

Open the Customization Fields table via: Tools > User Defined Windows > BXPCUSTFD - Customization Fields. For more information about the Customization Fields user table please see: Create custom field

Add the Weigh button to the following screens:

- Stop Job/Partial Job
- Product (for by-products)
- Product batch
- Material
- Material batch

Field Name	Field Type	Label	Screen	Visible	Protected
PWeigh	Button	Weigh	StopJobScreen	Yes	No
BPWeigh	Button	Weigh	ProductsAdvScreen	Yes	No
MWeigh	Button	Weigh	MaterialsAdvScreen	Yes	No
PBWeigh	Button	Weigh	ProductBatchNumbersAdvScreen	Yes	No
MBWeigh	Button	Weigh	MaterialBatchNumberPickerAdvScreen	Yes	No

In order to use the UoM conversion for batch managed items, add the following user fields on the Customization Fields table as well.

Field Name	Field Type	Screen	Visible	Protected	ReadOnly
ItemM	String	MaterialsAdvScreen	No	Yes	Yes
ItemP	String	ProductsAdvScreen	No	Yes	Yes

2. Add user fields

The used scale will be identified based on the work center. In order to assign a work center to a scale, add a new user field to the Scale Weigh result user table.

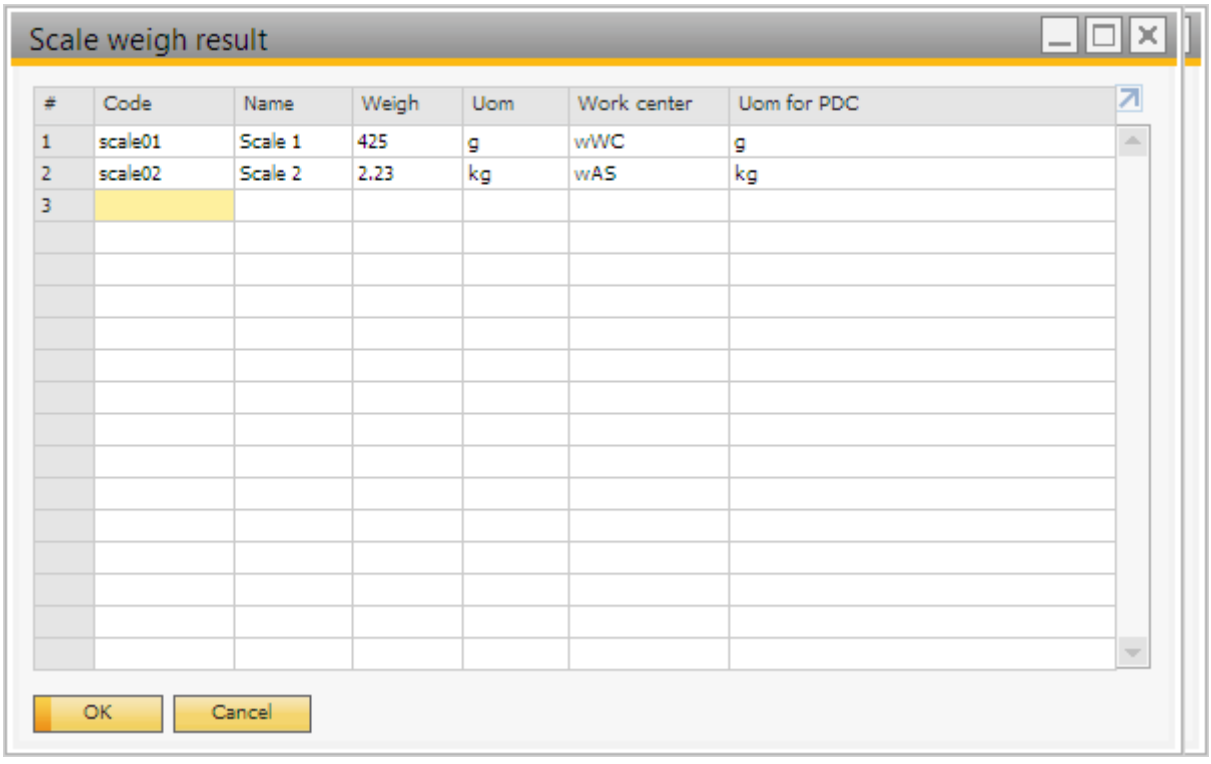
In order to add UoM conversion, define a UoM for PDC user field as well.

Open the User-Defined Fields- Management screen from Tools > Customization Tools and add the work center field and PDC UoM field.

In the example we added the following user fields:

Title	Description	Type	Length
WORKCENTER	Work center	Alphanumeric	50
UOMPDC	UoM for PDC	Alphanumeric	2

Register the fields with the Objects Registration Wizard. Make sure to mark the new fields as 'Visible' during the registration. *Please note: A work center can only have one assigned scale.*



3. Configure scales and the ScaleComm service

3.1. Define the scales

Define the scales in the Organizational Structure of Produmex WMS. For more information about the scale configurations in the Organization Structure please see: Scale

3.2. Configure ScaleComm Service

Open the configuration file of the ScaleComm Service from its installation folder.
Define the scales with the ScalesCodes. Add the code of the scales from the Organizational Structure. To define multiple scales, separate them by comma.
Make sure that the 'Skip Polling' option is set to false and adjust the Polling Interval if needed.
For more information about the ScaleComm Service configurations please see: Application configurations.

3.3. Assign work centers to the scales

Open the Scale weigh result user table via the following path: Tools > Default forms > PMX_SCWR – Scale weigh result.

- Add the scale code to the Code field.
- Add the work center code to the user field you created for work centers.
- Add the UoM of the scale to the user field you created for UoM for PDC.

When the ScaleComm Service runs, it will add the weight to the 'Weigh' field of the matching scale.

In order to convert between units of measurements correctly, make sure that both the UoM of the item and the UoM of the scale is defined properly on the following standard SBO tables:

- Weight - Setup (OWGT)
- Units of Measure - Setup (OUOM)

Please note: When using SAP HANA, value names are case sensitive.

3.4. PDC Settings

Make sure that the *'PDC Custom Validation UQ setting enabled'* option is enabled on the Thin Client tab of Produmex Manufacturing Settings.

4. Add the custom queries

Add the custom queries with the Query Manager. For more information about PDC custom queries please see: Create a SAP user query.

4.1. Product

Query name: *BXPPSMobilePDC_StopJobScreen_PWeigh_click*

```
SELECT
'TextQuantity' as Click$,
(
SELECT [@PMX_SCWR].U_PMX_WEIGH * OWGT.WightInMG / OWGT2.WightInMG
FROM [@PMX_SCWR]
JOIN OWGT ON OWGT."UnitDisply" = [@PMX_SCWR].U_UOMPDC
JOIN OITM ON OITM."ItemCode" = $[CurrentPDCBooking.ProductCode]
JOIN OWGT AS OWGT2 ON OWGT2."UnitDisply" = OITM."InvntryUom"
WHERE U_WORKCENTER= $[CurrentPDCBooking.WorkCenterCode]
)
AS TextQuantity,
'TextRejectedQuantity' as Click$
```

Query name: *BXPPSMobilePDC_StopJobScreen_PWeigh_click_after*

```
SELECT 'TextRejectedQuantity ' as Click$
```

4.2. By-product

Query name: *BXPPSMobilePDC_ProductsAdvScreen_BPWeigh_click*

```
SELECT
'TextQuantity' as Click$,
(
SELECT [@PMX_SCWR].U_PMX_WEIGH * OWGT.WightInMG / OWGT2.WightInMG
FROM [@PMX_SCWR]
JOIN OWGT ON OWGT."UnitDisply" = [@PMX_SCWR].U_UOMPDC
JOIN OITM ON OITM."ItemCode" = $[SelectedProduct.ProductCode]
JOIN OWGT AS OWGT2 ON OWGT2."UnitDisply" = OITM."InvntryUom"
WHERE U_WORKCENTER= $[CurrentPDCBooking.WorkCenterCode]
)
AS TextQuantity
```

This query runs when the user clicks on the ‘Weigh’ button.
First it clicks in the Quantity field.
Then it selects the weigh from the PMX_SCWR table based on the current work center and it converts the measured weigh from the UoM of the scale defined on the UoM for PDC field to the UoM of the item specified on the Produmex Inventory tab of the Item Master Data.

Query name: *BXPPSMobilePDC_ProductsAdvScreen_BPWeigh_click_after*

```
SELECT 'TextProduct' as Click$
```

This query runs after the click on the ‘Weigh’ button. It clicks in the Product field in order to validate the quantity added with the previous query.

4.3. Product and by-product batch

Query name: *BXPPSMobilePDC_ProductsAdvScreen_ButtonSerialBatch_click*

```
SELECT $[SelectedProduct.ProductCode] AS 'ItemP'
```

This query fills the ItemP user field with the item code of the selected product when the Serial/Batch button is pressed. As the ItemP user field is a 'Protected' field, the field value can be used in custom queries for events of the next screen.

Query name: *BXPPSMobilePDC_ProductBatchNumbersAdvScreen_PBWeigh_click*

```
SELECT
'TextBatchQuantity' as Click$,
(
SELECT [@PMX_SCWR].U_PMX_WEIGH * OWGT.WightInMG / OWGT2.WightInMG
FROM [@PMX_SCWR]
JOIN OWGT ON OWGT."UnitDisply" = [@PMX_SCWR].U_UOMPDC
JOIN OITM ON OITM."ItemCode" = $[ItemP]
JOIN OWGT AS OWGT2 ON OWGT2."UnitDisply" = OITM."InvntryUom"
WHERE U_WORKCENTER= $[CurrentPDCBooking.WorkCenterCode]
)
AS TextBatchQuantity,
'TextBatch' as Click$
```

Query name: *BXPPSMobilePDC_ProductBatchNumbersAdvScreen_PBWeigh_click_after*

```
SELECT 'TextBatch' as Click$
```

4.4. Material

Query name: *BXPPSMobilePDC_MaterialsAdvScreen_MWeigh_click*

```
SELECT
'TextQuantity' as Click$,
(
SELECT [@PMX_SCWR].U_PMX_WEIGH * OWGT.WightInMG / OWGT2.WightInMG
FROM [@PMX_SCWR]
JOIN OWGT ON OWGT."UnitDisply" = [@PMX_SCWR].U_UOMPDC
JOIN OITM ON OITM."ItemCode" = $[SelectedMaterial.ItemCode]
JOIN OWGT AS OWGT2 ON OWGT2."UnitDisply" = OITM."InvntryUom"
WHERE U_WORKCENTER= $[CurrentPDCBooking.WorkCenterCode]
)
AS TextQuantity,
'TextItem' as Click$
```

Query name: *BXPPSMobilePDC_MaterialsAdvScreen_MWeigh_click_after*

```
SELECT 'TextItem' as Click$
```

4.5. Material batch

Query name: *BXPPSMobilePDC_MaterialsAdvScreen_ButtonSerialBatch_click*

```
SELECT $[SelectedMaterial.ItemCode] AS 'ItemM'
```

Query name: *BXPPSMobilePDC_MaterialBatchNumberPickerAdvScreen_MBWeigh_click*

```
SELECT
'TextBatchQuantity' as Click$,
(
SELECT [@PMX_SCWR].U_PMX_WEIGH * OWGT.WightInMG / OWGT2.WightInMG
FROM [@PMX_SCWR]
JOIN OWGT ON OWGT."UnitDisply" = [@PMX_SCWR].U_UOMPDC
JOIN OITM ON OITM."ItemCode" = $[ItemM]
JOIN OWGT AS OWGT2 ON OWGT2."UnitDisply" = OITM."InvntryUom"
WHERE U_WORKCENTER= $[CurrentPDCBooking.WorkCenterCode]
)
AS TextBatchQuantity
```

Query name: *BXPPSMobilePDC_MaterialBatchNumberPickerAdvScreen_MBWeigh_click_after*

```
SELECT 'TextBatch' as Click$
```

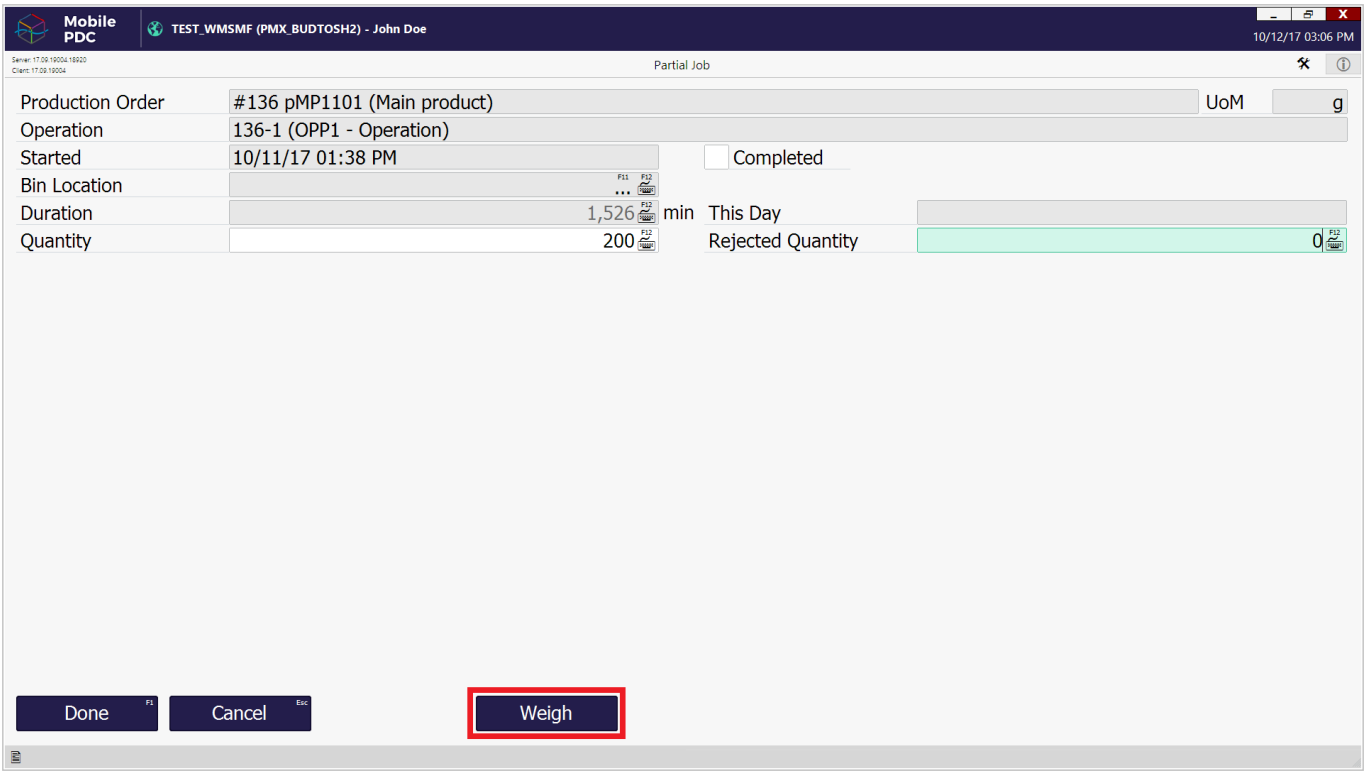
5. Customized production data collection process

Process the PDC booking as described in Production Data Collection.

5.1. Stop Job/Partial Job screen

After pressing the Stop or the Partial button, the user is prompted to the Stop Job/Partial Job screen. An additional Weigh button is displayed on the screen. Press this button to weigh the produced quantity instead of adding it manually for the main product.

If the main product is managed by batches and multiple batches were produced in this job, weigh every batch on this screen.

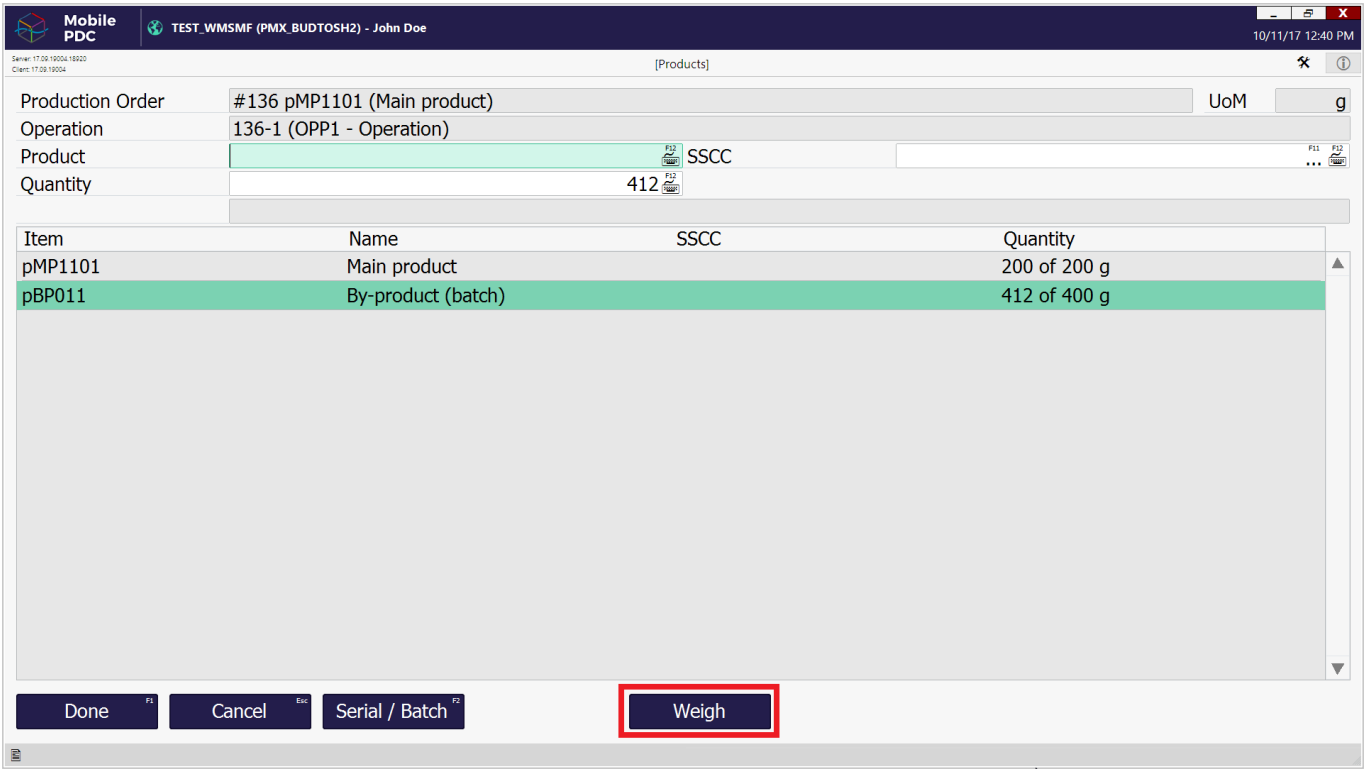


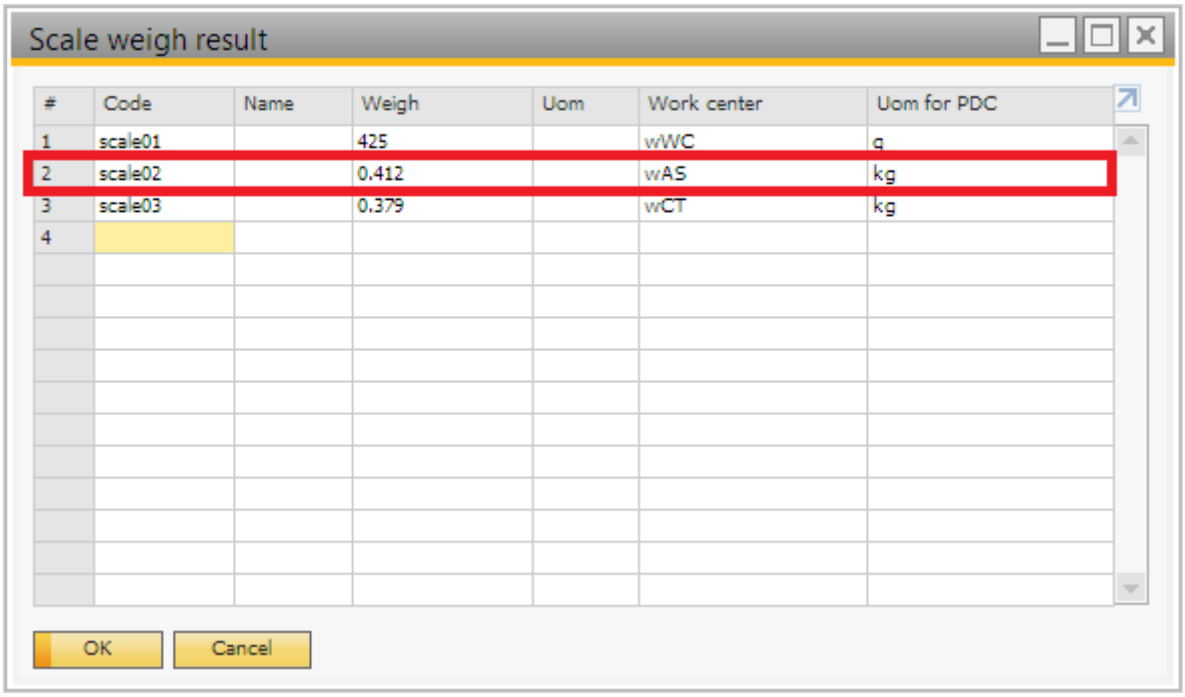
5.2. Products screen

On the Products screen the main product and by-products can be received.

To add the produced quantity for the by-product by weighing, select the by-product and press the Weigh button. If the by- product is managed by batches and multiple batches were produced in this job, weigh every batch on this screen.

Please note: It is not possible to modify the produced quantity for the main product on this screen.

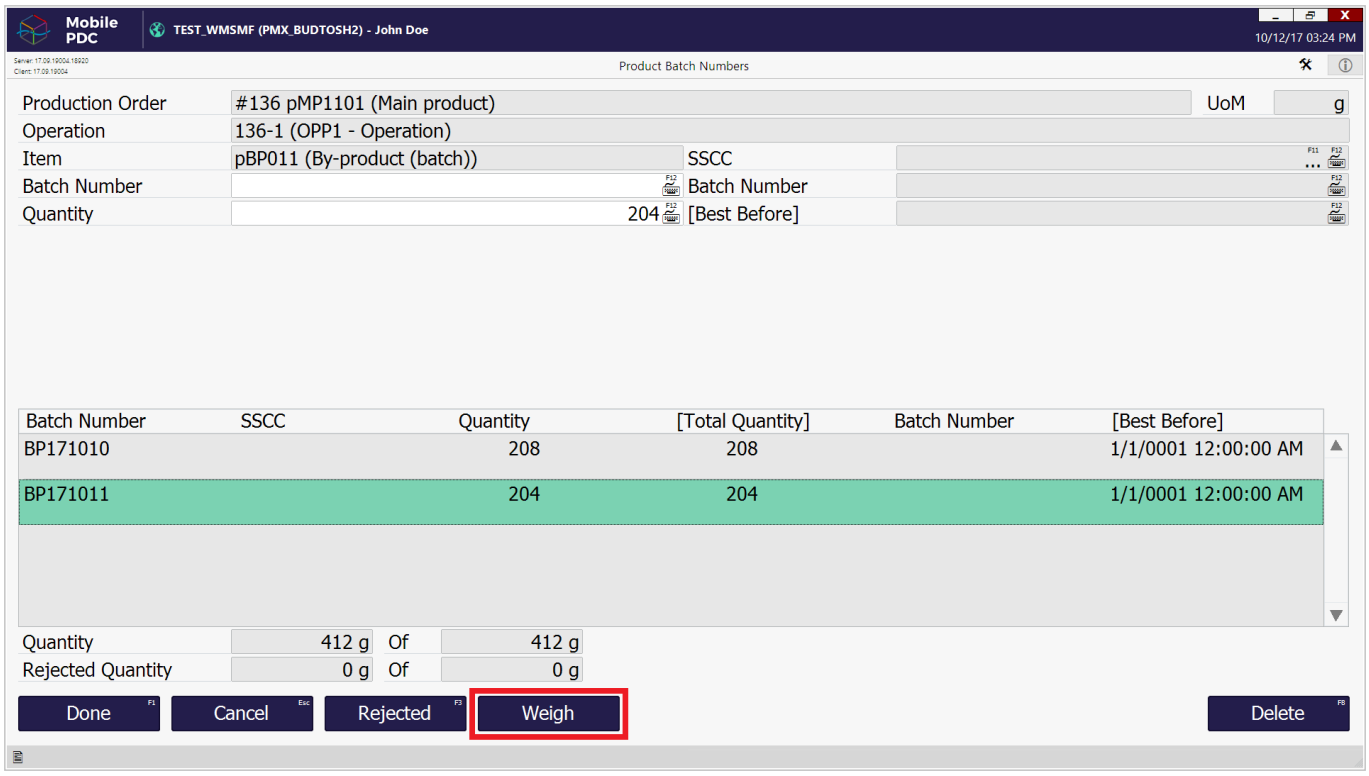




5.3. Product, by-product batch

If the (by)-product is managed by batches, select the (by)-product and press the Serial/Batch button in order to add the batch numbers. On the Product Batch screen scan the batch number then press the Weigh button to add the quantity by weighing.

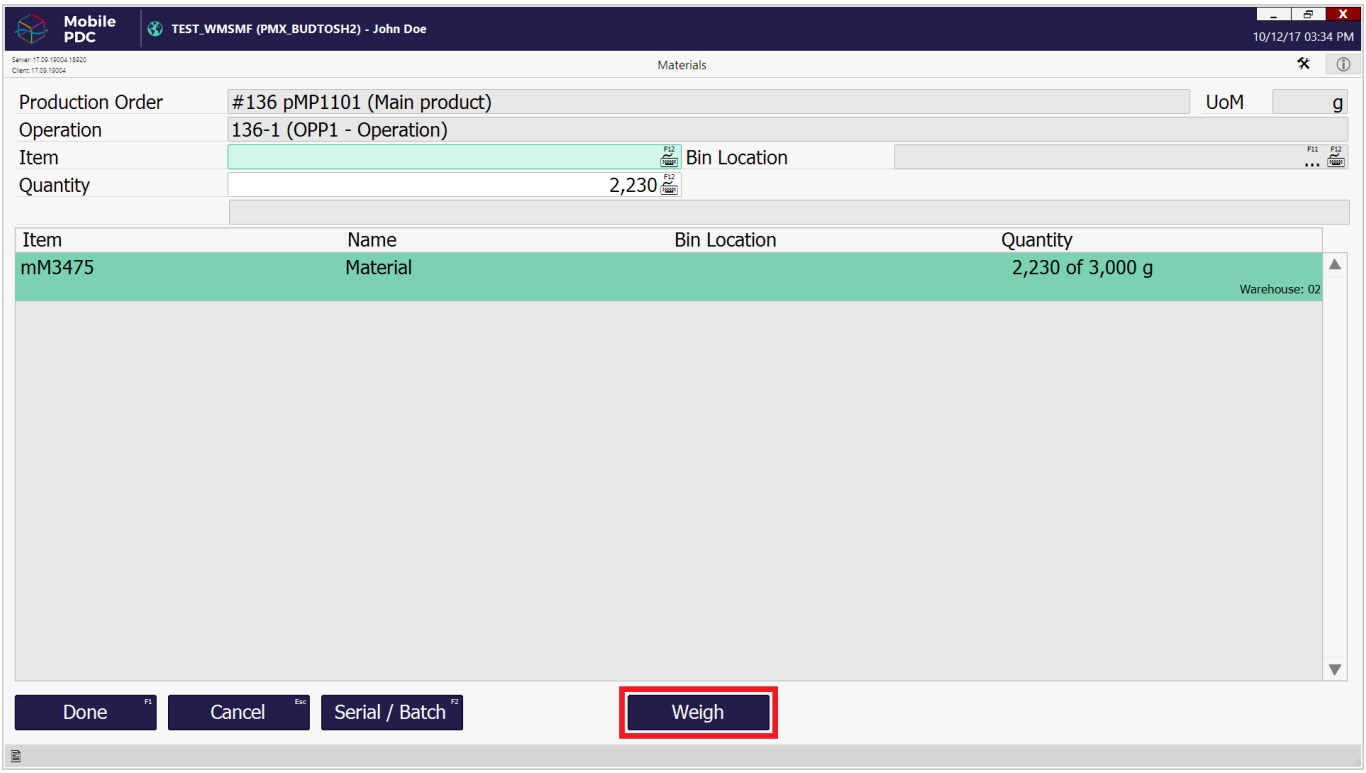
Please note: The combined quantity of the batches must be equal to the (by)-product quantity specified on the previous screen.



5.4. Material

On the Materials screen materials to be consumed can be reported.

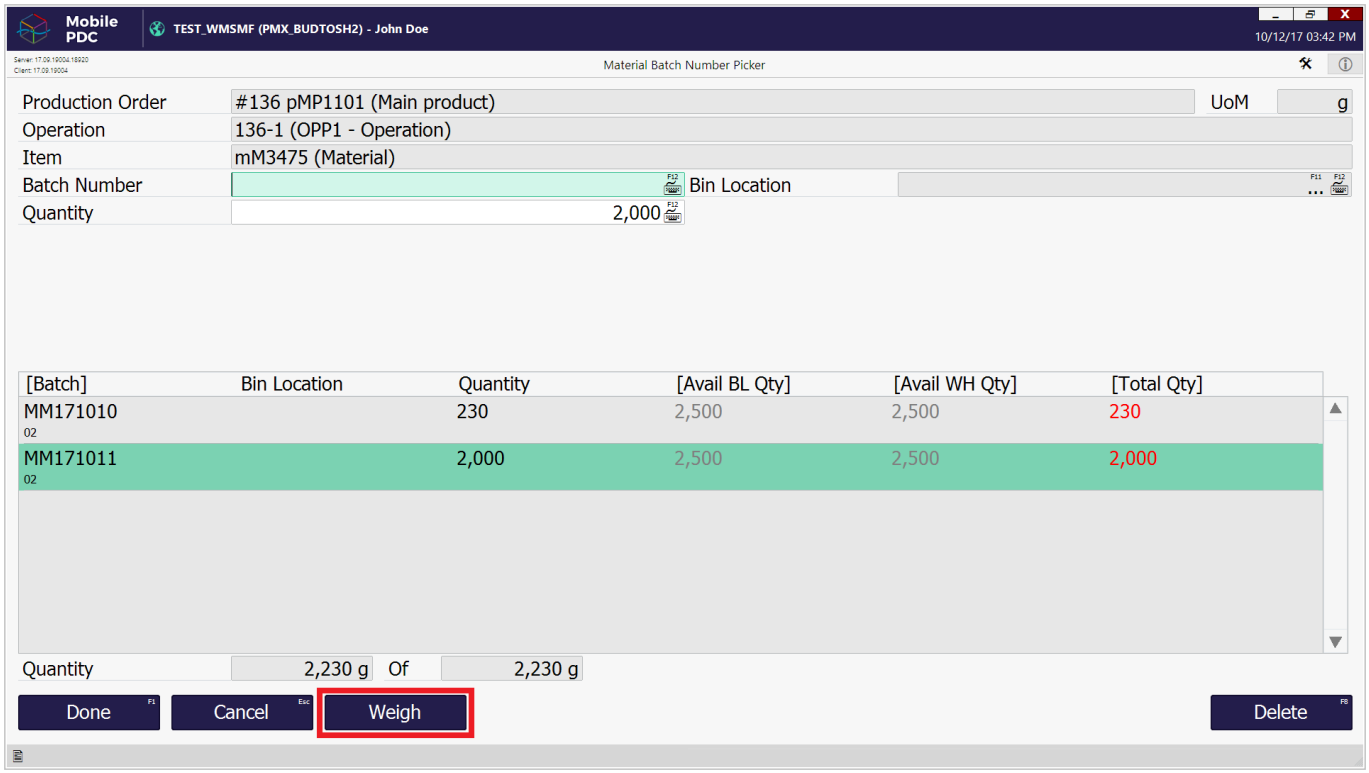
Select the material and press the Weigh button in order to add the quantity by weighing. If the material is managed by batches and multiple batches are going to be consumed in this job, weigh every batch on this screen.



5.5. Material batch

If the material is managed by batches, select the material and press the Serial/Batch button in order to add the batch numbers. On the Material Batch screen scan the batch number then press the Weigh button is order to add the quantity by weighing.

Please note: The combined quantity of the batches must be equal to the material quantity specified on the previous screen.



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