



# What's New

## Advance Workshop Steel 2025

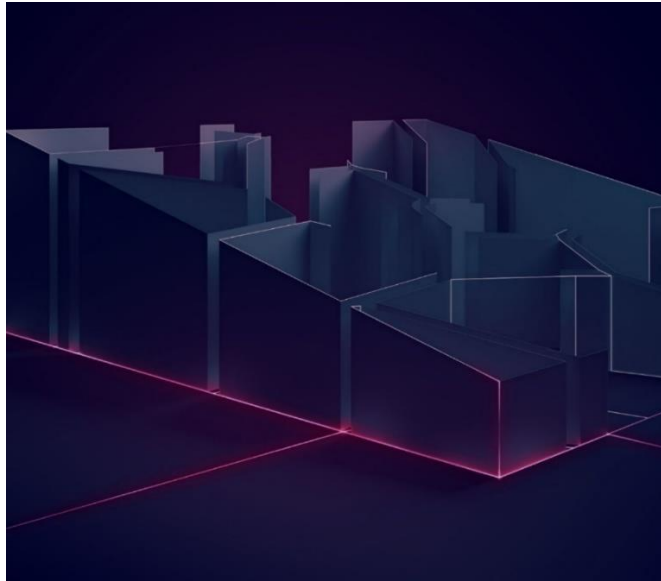


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# 1. Welcome to Advance Workshop Steel 2025

GRAITEC presents the latest version of our manufacturing execution system – **Advance Workshop 2025**, part of the **GRAITEC FABRICATION SUITE**.



GRAITEC has continuously strived to provide first-rate advancements for innovative software solutions to its valued customers, and the recent launch of this new upgraded product range for 2025 reaffirms its position as a leader in offering top-level Construction, AEC, Building Design, and Fabrication software solutions worldwide.

This version of **Advance Workshop 2025** is enhanced with many new functionalities providing substantial value and benefits to users. This latest release incorporates consistent capability expansion to current functionalities as well, altogether designed to increase efficiency and the spectrum of possibilities available to meet industry-specific requirements.

Mentioning some of the most important topics, the following list is meant to provide a consistent overview of areas targeted by these developments:

## Adding Steel Plates manually

- Aside from the existing possibility of adding manually steel profiles within Customer Orders or Quotations, we now introduce the possibility of adding steel plates, considering various types of shapes and dimensions, all configurable as per user needs.

## Subcontracting

- Existing subcontracting functionality has been consistently improved by adding extended capabilities and better management starting with the Import stage and throughout the following stages, like Customer Orders or Quotations, Fabrication Orders, and status traceability, once it gets to and back from the Subcontractor.

## Galvanization and Painting enhanced management

- There are new options for considering finishings like galvanization or any type of paint at Quotation level, weight, and coating area being able to be considered for price estimates regarding finishings.

## Grouping items option for Quotation

- The Quotation tool can now group any items based on customer choice so that the quotation report has a compact and summarized layout, specific for the bidding stage.

## Multiple Fabrication Orders to a Supplier Order

- You can now link multiple Fabrication Orders to the same Supplier Order, streamlining the procurement of requested materials and simplifying stock traceability.

## Direct item-NC link

- NC, smlx, or GTCx files can be attached directly to an item and used together to produce for stock requirements.

## Item definition on multiple levels (item-in-item reference)

- Products with complex definitions in their manufacturing process, such as multiple components on multiple levels (stages) of manufacturing, can now be managed automatically from the final product level.

## Produce for Stock

- Even if we speak about complex products or common standard parts used in structural steel industry, this functionality will allow us to produce and keep in stock these types of products, prior to order submission.

## Managing different units for items

- Items definition allows from now on to set different units (e.g. pcs, weight, linear...) for Supplier Orders, Stock, Invoicing, or even Production, providing bespoke materials' management at different levels.

## Set operation prices according to multiple criteria

- Operation prices are now fully customizable according to criteria that suit better for you. Whether we consider the specific type of order (e.g. public or private), building destination (e.g. commercial, industrial, private...), or even the contractor's name, we can easily set different prices for any operation required along the manufacturing process.

## Workstations (machines) operation times improvements

- Each operation time formula has been revised, providing enhanced results for estimated times along the manufacturing process. New operations and their times have been also included to be considered within production.

## Lot/Phase import

- Phases (or Lots), a property assigned very often even from design/modeling stages and used later on during on-site erection, are now available for all file formats currently available for Import: smlx, Gtcx, NC (formats available from Revit and Advance Steel) or xsr (format available from Tekla).

## External Nesting links

- The nesting module has been extended with a new type of connection with Lantek, a performant and well-known market solution for 2D (plates) nesting. This

enhancement gets next to the existing link with ProNest, confirming the capability of the Nesting Link module to be easily integrated with other similar software solutions.

## Report Templates

- Several new report templates have been included as part of the initiative to extend the current report types available for out-of-the-box solution
- Quotation report
- Material Requisition List
- Job Traveler list
- AWS\_NESTING1D
- AWS\_FO\_BY\_WSTATION

## General enhancements

- The features highlighted in this section relate to overall functionalities available within the software, with multiple targeted enhancements being present within this section
- Import dialog enhancements related to subcontracting
- Nesting stock bar check against profiles managed through Stock
- Transparency and in-depth information about Nesting processing into a newly added log journal
- Mapping any operation type to any workstation type

We are going to go through these features in detail and see individually what their capabilities are, how they work, and what advantages arise by using these functionalities.

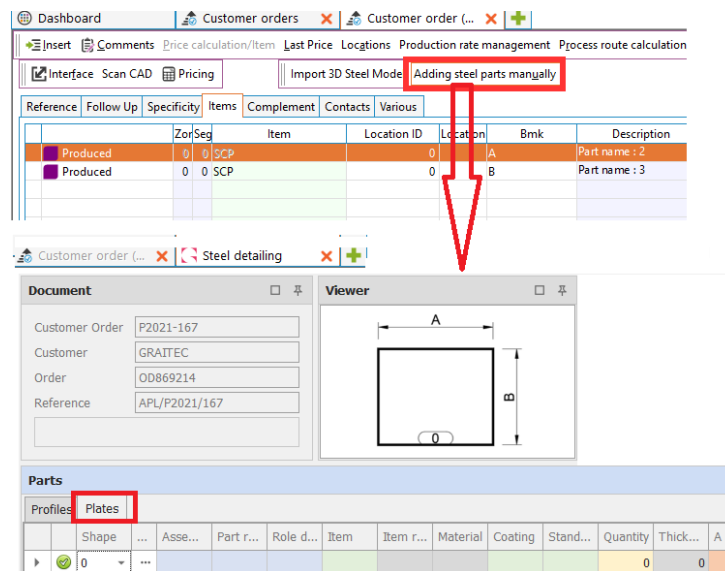
## 2. Adding steel plates manually

The latest update to our manufacturing software introduces a needed feature—the manual addition of steel plates in orders. This enhancement empowers users with more possibilities and control over their business needs, allowing them to seamlessly integrate custom steel plates freely to their exact requirements.

With such an improvement, the requirements source is extended to handle direct orders such as simple drawings, in electronic or physical format, bill of material lists information, or any other method used in an unexpected or last-minute situation.

The feature allows for the manual input of specific details related to the steel plates, such as shape, dimensions, quantity, grade, and more in-depth features, like holes or specific cuts. The manual addition functionality seamlessly integrates with existing modules within the software, including ordering, procurement, nesting, and production planning, streamlining workflows and enhancing overall efficiency.

The workflow starts from inside a customer or Quotation Order (menus 9.3.1 or 9.2.1), where click on the “Adding steel parts manually” option. Similar to what happened until now for steel profiles, a new dialog page opens, and a dedicated tab for Plates is now available.



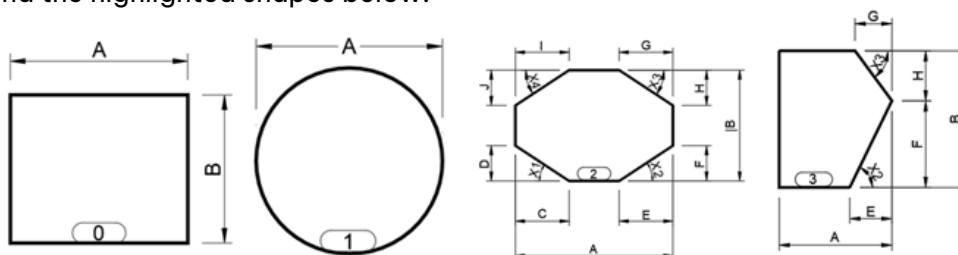
The options available for adding plates are similar to profile sections, tailored to plate requirements, and enhanced with several new useful ones. Let's see what these are in more detail:

Parts																											
Profiles		Plates																									
		Shape	Log	Assembly reference	Part reference	Role description	Item	Item reference	Material	Coating	Standard	Quantity	Thickness	A	B	C	D	E	F	G	H	I	J	X1	X2	X3	X4
		2	...	Assembly 100	Mark 23	Gusset plate	PL1*...	PL1*	ASTMA36	Painting	Default	0	1"														
1	2	3	4	5	6	7	8	9	10	11	12	13	14														

1: Check the status of the line record (validity of all parameters)

2: The “Shape” column allows you to choose between four different standard plate shapes

Together with geometrical parameters, the variety of plate shape outcomes gets easily extended though beyond the highlighted shapes below:



3: This “log” offers access to useful information regarding the assignment and validity check against the machines assigned by the “Process assignment tree” menu.

This represents a newly added check for both steel profiles and plates, similar to what’s happening during models Import. It will run a real-time check against the machine’s capabilities and warning, due to one of the plate’s characteristics, machines have technical limitations in handling it.

4: Assembly reference number – this needs to be typed in

5: Part reference number – this needs to be typed in

6: Role description – this needs to be typed in

7: The item column references records found in the menu “1.10.4 Items” and has “Item nature” set as “Plates”

It’s chosen by the user, and it represents the raw material for the defined plate.

8: This field is automatically retrieved from the item’s definition previously selected at point 7

The referenced field is “Generic item reference” found in the item’s definition from the menu “1.10.4 Items”

9: This field is automatically retrieved from the item’s definition previously selected at point 7

The referenced field is “Material” found in the item’s definition from the menu “1.10.4 Items”

10: The option is selected manually through a combo box that lists the records found in the menu “3.1.8. Rebar Grades & Coatings”

11: The option is selected manually through a combo box that lists the records found in the menu “3.1.6. Standards”

12: The quantity is entered manually

13: The thickness column is filled automatically, based on the item selection from column 7

14: Geometrical parameters that define plate – all the values for these fields are typed in manually  
The fields available and logic are interconnected with column 2 (Shape) and between them, ensuring checks regarding geometrical compatibility.

In addition to all these and in close relation with the validity check run from point 1 (see previous paragraph), a new window dedicated to required operations, is available for both Profiles and Plates.

The information provided inside the “Operations” window is retrieved based on the “Process assignment tree” configuration and items geometrical data (basically, according to the assigned Machine capabilities and element’s features).

### Profiles

Operations			
Operation	Status	Cost	Time
2	To produce	42.21	857
LCUT	To produce	42.15	843
CLEAN	To produce	0.06	14

### Plates

Operations			
Operation	Status	Cost	Time
2	To produce	0.14	2
PCUT	To produce	0.14	2


A window called “Preview”, dedicated to Plates only, can be localized on the bottom right side of the page. This view may be very useful when entering geometrical parameters that define plate shape, since this window updates in real-time the outcome shape. This feature provides more transparency and flexibility in defining various plate shapes that are particular cases for the standard ones. Below you will find a basic example of such a situation, where a gusset plate shape is drawn based only on several parameter values.

Dashboard Customer orders Customer order ( ... Steel detailing

**Document**

Customer Order: F2021-168  
 Customer: GRAITEC  
 Order:  
 Reference:

**Viewer**



**Legend**

Type	Comment
List	F4 or double click open list of items
Free input	
Numeric value	Value without decimal point
Information	Searched value based on input data
Variable	Accessible or not depending on the library

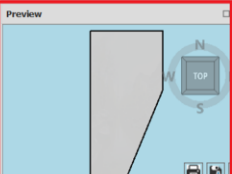
**Parts**

Profiles	Plates	Shape	Asse...	Part r...	Role d...	Item	Item r...	Material	Coating	Stand...	Quantity	Thick...	A	B	C	D	E	F	G	H	I	J	X1	X2	X3	X4
0	1	2	3	PL1*-S...	PL1*	ASTM...	Miscell...	Default	1	1"	10	20														
3	2	3	4	PL1*-3...	PL1*	ASTM...	Miscell...	Default	2	1"	10	20					5	12						67°		

**Operations**

Operation	Status	Cost	Time

**Preview**





## 3. Subcontracting

This version introduces an enhanced management of subcontracted operations and finishings. The mechanisms are slightly different between them, so they are going to be detailed separately.

### 3.1. Subcontracting operations

Either if it's set manually during import or it's automatically assigned due to automatic configurations in the "Process assignment tree", the status of the operation can be set as *"Subcontracted"*. This means that the designated operation(s) as Subcontracted is not going to happen in the workshop, being "sent" to a third-party executant (subcontractor) and "received" later.

Level	Operation production	Mark	Part Source name	Type
Operation - Feasible	To produce	Weld (WELDING#2)		
Main part - Valid		1-547-5		
Part - Valid		1-547-p2	PL 0.3125x1'2.55x6	Plate
Part - Valid		1-547-5	W12x26	Profile
Operation - Feasible	To produce	Length cutting (KALTENBACH PROFILE + ...		
Operation - Feasible	Subcontracted	Drilling (KALTENBACH PROFILE + DRILLI...		
Operation - Feasible	To produce	Shot Blasting/Deburring (SHOT-BLASTING)		
Operation - Feasible	To produce	Cut (MANUAL MACHINE BEAM)		
Operation - Feasible	To produce	Tack Welding (WELDING#2)		
Operation - Feasible	To produce	Weld (WELDING#2)		
Main part - Valid		1-547-14		
Part - Valid		1-547-p2	PL 0.3125x1'2.55x6	Plate
Part - Valid		1-547-14	W12x26	Profile
Operation - Feasible	To produce	Length cutting (KALTENBACH PROFILE + ...		
Operation - Feasible	Subcontracted	Drilling (KALTENBACH PROFILE + DRILLI...		
Operation - Feasible	To produce	Shot Blasting/Deburring (SHOT-BLASTING)		
Operation - Feasible	To produce	Cut (MANUAL MACHINE BEAM)		
Operation - Feasible	To produce	Tack Welding (WELDING#2)		
Operation - Feasible	To produce	Weld (WELDING#2)		

Please note that the status of each operation, including Subcontracted ones, can be tracked for each Customer Order in two ways:

- From "9.3.1. Customer Orders" menu, by accessing the "Follow-up" option

Order status	Customer reference	Printed	Customer order file	Customer order	Creation date	Fabrication order	PT amount
Produced	Sample CO		P2021	159	4/3/2024		968.4
Produced	APL/P2021/158		P2021	158	1/12/2024		766.4
On fabrication order	APL/P2021/157		P2021	157	1/4/2024	BTR21/185	3,009.4
On fabrication order	QTY_for_Requisition_List		P2021	155	1/1/2024	BTR21/179	191.8

Menu Research Legend

Dashboard Customer orders Machines Supplier orders Order status

Status

- Not produced
- In process
- Produced
- Blocked
- Subcontracted

(\*) = Checking done through the DN Finish an event

Customer order

Order P2021 159 Creation date 4/3/2024

Cust. reference Sample CO

Description	Item code	Rep.	Ord. Qty	Del. Qty	Produced Qty	Start checking date	Start checking hour
Assembly name : 1-547-5 : P2021 - 159 / 1 / SCA	SCA	1-547-5	2	0	0.000		
PLS/16"-4x8 ASTM A36	PLS/16"-4x8	1-547-p2	4.000	0.000	0.000		
PCUT - Cut			0.000	0.000	0.000		
AISC-W W12x26 40"ASTM A992	AISC-W-00032	1-547-5	2.000	0.000	0.000		
DRILL - Drilling			0.000	0.000	0.000		
LCUT - Length cutting			0.000	0.000	0.000		
CLEAN - Shot Blasting/Deburring			0.000	0.000	0.000		
PCUT - Cut			0.000	0.000	0.000		
TWELD - Tack Welding			0.000	0.000	0.000		
WELD - Weld			0.000	0.000	0.000		
Assembly name : 1-547-14 : P2021 - 159 / 2 / SCA	SCA	1-547-14	1	0	0.000		
PLS/16"-4x8 ASTM A36	PLS/16"-4x8	1-547-p2	2.000	0.000	0.000		
PCUT - Cut			0.000	0.000	0.000		
AISC-W W12x26 40"ASTM A992	AISC-W-00032	1-547-14	1.000	0.000	0.000		
DRILL - Drilling			0.000	0.000	0.000		
LCUT - Length cutting			0.000	0.000	0.000		
CLEAN - Shot Blasting/Deburring			0.000	0.000	0.000		
PCUT - Cut			0.000	0.000	0.000		
TWELD - Tack Welding			0.000	0.000	0.000		
WELD - Weld			0.000	0.000	0.000		

- By accessing the Customer Order (from "9.3.1. Customer Orders" menu) and choosing "Process route requirement analysis" for the selected Customer Order line

Dashboard Customer orders Machines Customer order (...)

Insert Comments Price calculation/Item Last Price Locations Production rate management Process route calculation/Item In stock Pricing requirement analysis Process route requirement analysis

Interface Scan CAD Pricing Import 3D Steel Model Adding steel parts manually

Reference Follow Up Specificity Items Complement Contacts Various

	ZorSeg	Item	Location ID	Location	Bmk	Description	Qty (COU)	COU	SU qty	SU	IU qty	IU	Price	Price	Pri
Produced	0	0 SCA	0	1-547-5		Assembly name : 1-547-5	2	Unit	2 UN	Unit	2 UN	Unit	306.1...	306.19 USD	306.1
Produced	0	0 SCA	0	1-547-14		Assembly name : 1-547-14	1	Unit	1 UN	Unit	1 UN	Unit	356.0...	356.03 USD	356.0

Dashboard Customer order (...) Layout process

File Order N° Cust. ref. Qty Cost price Costing amount Type Customer

P2021 159 Sample CO 2.000000 159.19 318.3 Whse RA

Variables Sections Accessories Surfaces Operations Treeview Debit

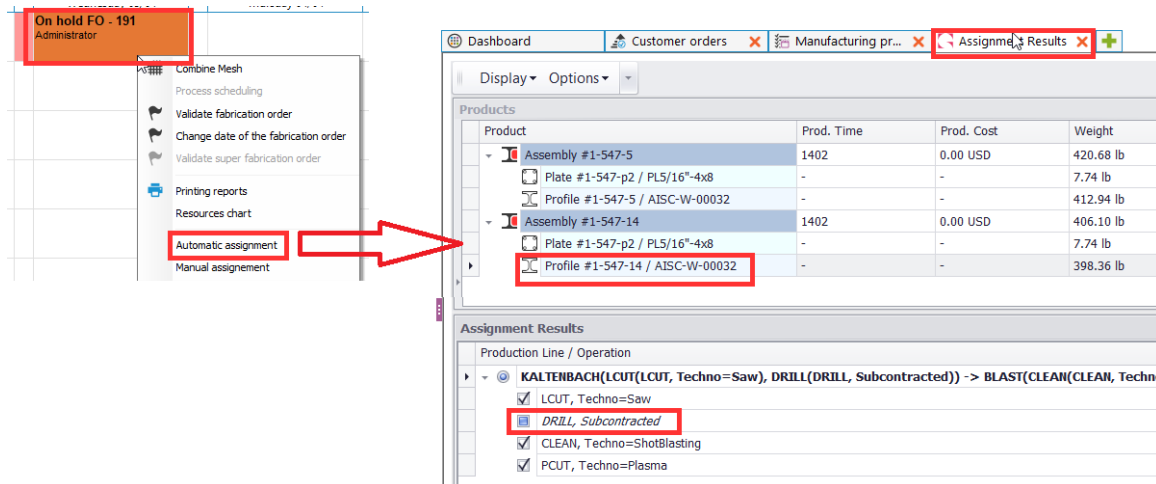
Details	Descript	Barmark	Quantity 1	Length (in)	Width (in)	TI
P2021 - 159 / 1 / SCA	Assembly name : 1-547-5		2.000000			
PLS/16"-4x8	PLS/16"-4x8 ASTM A36	1-547-p2	4.000000	14.5525	6.0000	
PCUT	Cut		0.155556			
AISC-W W12x26 40"ASTM A992	AISC-W W12x26 40"ASTM A992	1-547-5	2.000000	190.4674		
DRILL	Drilling					
LCUT	Length cutting		0.258333			
CLEAN	Shot Blasting/Deburring		0.123889			
PCUT	Cut		0.003333			
TWELD	Tack Welding		0.058889			
WELD	Weld		0.242778			

Gamut Length Accessory Surface Operation

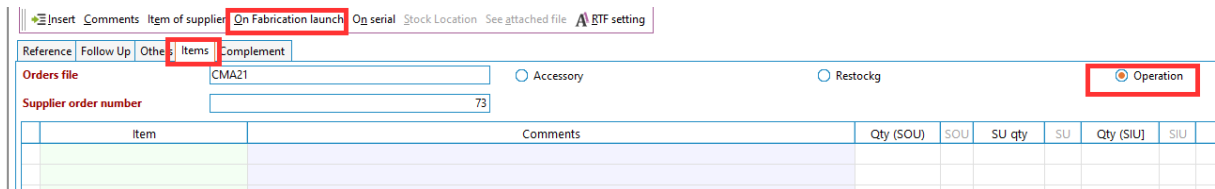
Layout Added Created Produced Subcontracted

Please note that the status of the Subcontracted operations from these dialogs is going to be updated according to the production stages' evolution.

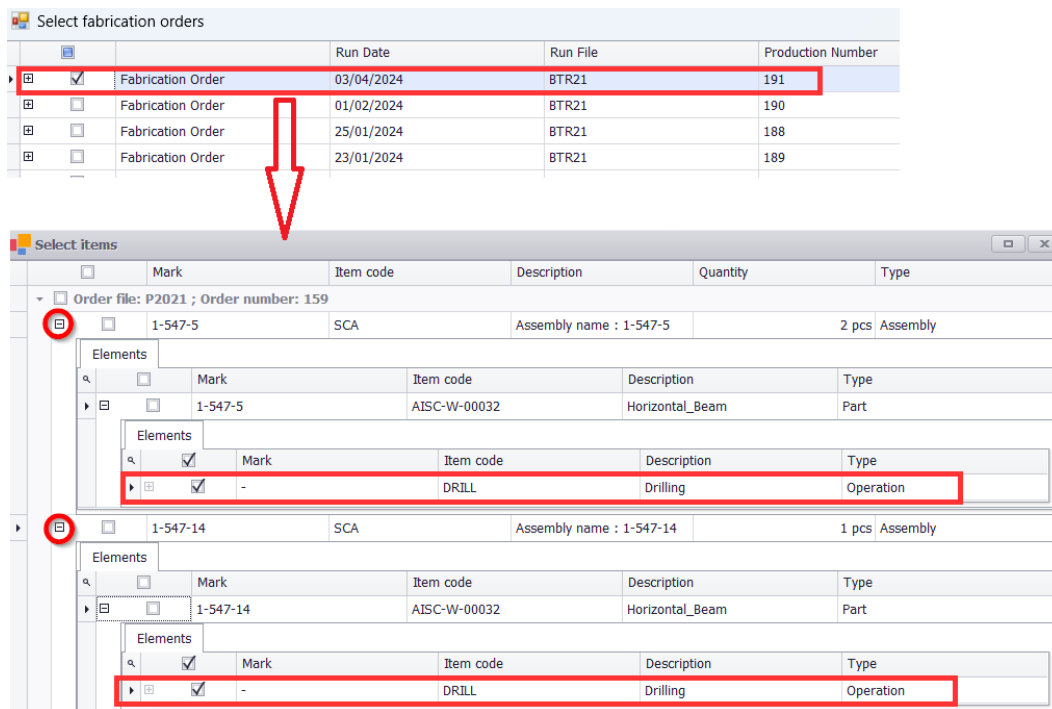
Once a "Fabrication Order" is created, the status of the Subcontracted operations is also kept along the process. This can be checked by going to the menu "7.10 Manufacturing production planning", selecting the Fabrication Order, and choosing "Automatic assignment".



To externalize the execution of the subcontracted operations, a Supplier Order is required to be created. This is done by accessing the menu “2.1.6 Supplier Orders” and creating a new Supplier Order with the following settings (make sure the “Operation” radio button is selected):



Select the “On Fabrication launch” option and choose the Fabrication Order previously created. Select the required operations (only operations previously set as Subcontracted are going to be available in this dialog).



After the operations are selected and the dialog is closed, the Supplier Order contains information about the parts and subcontracted operations.

Insert Comment: Item of supplier On Fabrication On serial Stock Location See attached file RTF setting

Reference Follow Up Others Items Complement

Orders file CMA21 ☐ Accessory ☐ Restock ☒ Operation

Supplier order number 77

Item	Comments	Qty (SOU)	SOU	SU qty	SU	Qty (SIU)	SIU	Weight (lb)	Gross whse	Whs
AISC-W-00032	Order: P2021 - 159; Mark 1-547-5; Operation: DRILL. Drilling:	2.000	BAR	2.000	BAR	2.000	BAR	707.60		RA

Going further, once the operations are executed by the subcontractor and the steel elements are received back, we need to mark this into the system. In order to do that, it's needed to "Reception" (or Balance) the previous Supplier Order. The reception can be done completely (balance) or partially (only for several operations), as can noticed in the bellow picture.

Dashboard Customer order (...) Machines Customer orders Supplier orders

Balance Reception Traceability

Order status	Reference	Purchase order	Order origin	File	Order num	Supplier	Jobsite file	Customer order	Jobsite
Not balanced			Advance Workshop	CMA21	77	Graitec		P2021/159	
Not balanced			Advance Workshop	CMA21	76	Graitec		P2021/169	
Not balanced			Advance Workshop	CMA21	75	Graitec	P2021	P2021/161,P2021/162	

select all Deselect all

File	Numbe	Date	Item	Designation	Color	Balance in SOU	Unit	SOU quantity	Real wgt in (lb)	Balance
CMA21	77	4/29/2024	AISC-W-00032	Order: P2021 - 159; Mark 1-547-5; Operation: DRILL. Drilling:		2.000	BAR	2.000	707.60	Yes

Balance Reception Traceability

Order status	Reference	Purchase order	Order origin	File	Order num	Supplier	Jobsite file	Customer order
Balanced			Advance Workshop	CMA21	77	Graitec		P2021/159
Not balanced			Advance Workshop	CMA21	76	Graitec		P2021/169
Not balanced			Advance Workshop	CMA21	75	Graitec	P2021	P2021/161,P2021/162

Once this step is ended, the Supplier Order is marked as "Balanced" and we can go back to the production stages and continue the manufacturing process. Each of the menus 7.10 or 7.2 will highlight the production status.

Fabrication orders production planning

Monday 29/04 Administrator

- Combine Mesh
- Process scheduling
- Validate fabrication order
- Change date of the fabrication order
- Validate super fabrication order
- Printing reports
- Resources chart
- Automatic assignment
- Manual assignment
- Nesting
- External nesting
- Send to production
- Manual checking
- Information complement

Production checking

Add > < Delete All >> All << Check all Prod. detail On on prod. details Checking process

Order file	Order N°	Reference	Item	Spec. run	Real run	Checked	Barmark	COU qty	PU qty	Qty prodd in COU alres
P2021	159	Sample CO	SCA	4/3/2024	4/29/2024		1-547-	2.000000	2.000000	

Checking date 04/29/2024 File BTR21 Number 191

Item with no serial n° Sous-traitance non

Item with serial n° Sous-traitance validée

In the menu "7.10 Manufacturing production planning", select the Fabrication Order, right-click, choose "Manual checking" and note the status of the subcontracted element as being valid (subcontracting is considered also validated).

Run date	Run file	Production N°	Creation date	Production date
4/15/2024	BTR21	191	4/11/2024	
4/16/2024	BTR21	205	4/11/2024	4/11/2024
4/15/2024	BTR21	204	4/10/2024	
4/15/2024	STO11	202	4/10/2024	

Order file	Order N°	Reference	Item	Real run	Barmark	COU qty	PU qty	Qty prodd in COU
P2021		159 Sample CO	SCA	4/29/2024	1-547-	2.000000	2.000000	0.000000

Order file	Order N°	Reference	Item	Spec. run	Real run	Checked	Barmark	COU qty	PU qty	Qty prodd in COU already checked	Qty pr
P2021		159 Sample CO	SCA	4/3/2024	4/29/2024		1-547-	2.000000	2.000000	0.000000	

In the menu 7.2 Launching on Order, click on “Checking” and notice the status of the subcontracted elements as being valid (subcontracting is considered also validated).

Regardless of the menu, by choosing “OK on prod details”, the elements will be declared as being fabricated.

### 3.2. Subcontracting finishings (coatings)

The finishings (e.g. galvanization, different types of paintings...) designated to protect steel elements can be subcontracted as well. By comparison with operations subcontracting that needs to be declared as Subcontracted even from Import dialog or Fabrication Order, the subcontracting of finishings starts directly from the Supplier Order.

First, a Supplier Order needs to be created and open from the menu “2.1.6 Supplier Orders”.

From the Item tab, select the “Coating” radio button and press “On Fabrication Launch”. Choose the right Fabrication Launch from the next dialog.

Reference	Follow Up	Other	Items	Complement
Orders file			CMA21	
Supplier order number				73

Item	Comments	Qty (SOU)	SOU	SU qty	SU	Qty (SIU)	SIU	Weight (lb)	Gross	Whse	Price(USD)	Price(USD)	Prio

Select fabrication orders	Run Date	Run File	Production Number
<input checked="" type="checkbox"/> Fabrication Order	03/04/2024	BTR21	191
<input type="checkbox"/> Fabrication Order	01/02/2024	BTR21	190

Once the Fabrication Order content is open, you can switch between two selection modes, as mentioned in the “Coating level” (see the bottom left side of the page):

Assemblies – will allow to set a coating for the entire assembly

Parts – will allow to set a coating individually, at each Part of the assembly

In this example, we’ve chosen the “Assemblies” option and we’ve chosen “Galvanizing” as coating.

Order file	Order number	Mark	Item code	Description	Quantity	Weight	Coating
<input checked="" type="checkbox"/> Order file: P2021 ; Order number: 159							
<input checked="" type="checkbox"/>	1-547-5	SCA	Assembly name : 1-547-5	2 pcs	420.68 lb	Galvanizing	
Parts							
<input checked="" type="checkbox"/>	1-547-p2	PL5/16"-4x8	LugPlate#1	4 pcs	7.74 lb		
<input checked="" type="checkbox"/>	1-547-5	AISC-W-00032	Horizontal_Beam	2 pcs	412.94 lb		
<input checked="" type="checkbox"/>	1-547-14	SCA	Assembly name : 1-547-14	1 pcs	406.10 lb	Galvanizing	
Parts							
<input checked="" type="checkbox"/>	1-547-p2	PL5/16"-4x8	LugPlate#1	2 pcs	7.74 lb		
<input checked="" type="checkbox"/>	1-547-14	AISC-W-00032	Horizontal_Beam	1 pcs	398.36 lb		

Coating level: Assemblies

After the elements designated to be subcontracted for galvanization are selected and the dialog is closed, the Supplier Order should list information about the subcontracted items and the goal (e.g. Coating: Galvanization).

Reference	Follow Up	Others	Items	Complement								
<b>Orders file</b> <input type="text" value="CMA21"/> <input type="radio"/> Accessory <input type="radio"/> Restockg <input type="radio"/> Operation <input checked="" type="radio"/> Coating												
<b>Supplier order number</b> <input type="text" value="73"/>												
Item	Comments	Qty (SOU)	SOU	SU qty	SU	Qty (SIU)	SIU	Weight (lb)	Gross	Whse	Price(USD)	Price(USD)
SCA	Order: P2021 - 159; Assembly name : 1-547-5; Mark: 1-547-5; Coating:	2.000	UN	2.000	UN	2.000	UN	0.00		RA	0.00	0.00
SCA	Order: P2021 - 159; Assembly name : 1-547-14; Mark: 1-547-14; Coating:	1.000	UN	1.000	UN	1.000	UN	0.00		RA	0.00	0.00

Once the elements get back from the Subcontractor, this step is registered by creating a Reception or just Balance the Supplier Order.

This can be achieved either directly, from the menu “2.1.6 Supplier Order”, or from the menu “2.2.2 Receptions”. Please note that reception can be done partially (only some of the subcontracted elements are received) or completely.

## 4. Galvanization and Painting enhanced management\*

The finishings (coatings) have gained more versatility in the way they can be configured. If most of the steel projects require a type of coating, there are consistent differences between certain types of coatings, like galvanization and any type of paint. We consider here not only the way of how these types of coatings are estimated but also the way they can be managed and the financial requirements for each solution.

It all starts with defining newly **dedicated items for the coating type** in the menu “1.10.4 Items”. It’s important to note that the “item codes” of the coatings should not be identical with any “Code” operation listed in menu “1.12.2 Operations”. These coating item definitions should have certain settings, according to the way they are going to be evaluated (e.g. we want to have coating based on main element’s weight or lateral surface).

- Item’s nature should be always set as “Accessory”

Items

International | Identical unit | GEN code | In order | Supplier | Reversion | See attached file | Select all | Unselect all

Main | List | Financial | Others | Drawing | Tax | Currency | HMS | Technical notes | Multibranch | Complement | Grade substitution

Item: GALVANIZATION

GEN code:

Interfacing item code:

Short description: Galvanization

Long description: Galvanization

Range code: AWS

Type code: AWO

Sales code: OS

Purchase code: NP

Accounting section:

VAT: 0.000000

Gross item code:

Stock item code: GALVANIZATION

European code:

Item nature: Accessory

- Item’s grade should be set as “Galvanized” or “Paint”; new Grades can be defined in menu “3.1.8 Grades”

Items

International | Identical unit | GEN code | In order | Supplier | Reversion | See attached file | Select all | Unselect all

Main | List | Financial | Others | Drawing | Tax | Currency | HMS | Technical notes | Multibranch | Complement | Grade substitution

Item: GALVANIZATION

Std Norm code: 0

Width (mm): 0.00

Height (mm): 0.00

Length (mm): 0.00

Thickness (mm): 0.00

Surface (m2): 0.0000

Length overlap (mm): 0.000

Width overlap (mm): 0.000

Average diameter (mm): 0.000

Grade: Galvanized

Material: No material

- “Units” for coating items need to be set according to the unit measurements relevant to the corresponding steel elements.
- E.g.:
  - For Galvanizing items is common to set weight units (POUNDS or KILO)

Items x Item capture x +

International Identical unit GEN code In order Supplier Reversion See attached file Select all Unselect all

Main List Financial Others Drawing Tax Currency HMS Technical notes Multibranch Complement Grade substitution

Item GALVANIZATION

Supplier Order Unit (SOU)	POUND	POUND
Supplier invoice unit (SIU)	POUND	POUND
Customer Order Unit (COU)	POUND	POUND
Cust. invoicing unit (IU)	POUND	POUND
Stock unit (SU)	POUND	POUND
Production unit (PU)	POUND	POUND
Invoiced COU weight in (kg)		
COU theoretical weight (kg)		

- For Painting items is common to set lateral surface units (SQUARE FOOT or SQUARE METER)

Main List Financial Others Drawing Tax Currency HMS Technical notes Multibranch Complement Grade substitution

Item Pnt

Supplier Order Unit (SOU)	SQUARE FOOT	SQUARE FOOT
Supplier invoice unit (SIU)	SQUARE FOOT	SQUARE FOOT
Customer Order Unit (COU)	SQUARE FOOT	SQUARE FOOT
Cust. invoicing unit (IU)	SQUARE FOOT	SQUARE FOOT
Stock unit (SU)	SQUARE FOOT	SQUARE FOOT
Production unit (PU)	SQUARE FOOT	SQUARE FOOT

- Each of this coating items needs to also have set costs and prices, according to their units

International Identical unit GEN code In order Supplier Reversion See attached file Select all Unselect all

Main List Financial Others Drawing Tax Currency HMS Technical notes Multibranch Complement Grade substitution

Item Pnt

Purchase price	250.00	SQUARE FOOT
Sales price	500.00 \$	SQUARE FOOT
Lowest sales price	0.00 \$	
Average price all warehouses	0.00 \$	SQUARE FOOT
Cost price	250.00 \$	SQUARE FOOT
Catalog price	0.00 \$	Updating the
Supplier code	102	LODGE LUMBER COMPANY, INC.

Next step is to **associate these coating items with the items dedicated to steel assemblies and parts (SCA and SCP).**

This is done through menu "1.13.3 Manufacturing sequence", where GAMSCA and GAMSCP (the manufacturing sequences designated for SCA and SCP items) are defined. For each GAMSCA and GAMSCP the following settings need to be done:

- Go to "Components" tab and add the recently two new added items for Coatings (in this example, they are called "Galvanization" and "Painting")

Dashboard Manufacturing se... x +

Note-pad Detail Insert Comments Browse International

Range Components Operations Variables Reports Copy

Rge info.	Item	Description	Process	Color	Unit qty	Item type	State	With pr/Without/without	Tag printings	Length (mm)	Height (mm)	Thick. (m)	Delay	Check on sd
000	GALVANIZATION	Galvanization			res is numeric	Accessory	On document	1	No/packing					
000	PAINTING	Paint					On document		No/packing					

1 2 3 4 5 6



1: “item code” of the Coating’s items

2: this column sets the “quantity” for Galvanization and Painting items

Since we want that both Coating items to relate with an Assembly or Part property, some scripts are required to compute the required information from each Assembly or Part.

This can be done by clicking in the 'Unit qty' column and paste script content.

Example:

- Galvanization item’s quantity is Assembly or Part weight
- Painting item’s quantity is Assembly or Part lateral surface

Due to the limited space of this document and in order to keep it relatively simple, here is just a partial information of how such a script looks like.

```
res is numeric(*)
coatingComp is string = "-"
Query is rSQL
Query:cCommande = "SELECT GRADE_CODE FROM " + SQL_c:ReqBase("ITEM") + " WHERE
ITEM_CODE = " + SQL_c:ReqQuote(gpGPC:Item_Code)
IF Query:Exec() THEN
    IF NOT Query:OutSide() THEN
        coatingComp = Query:ColC(1)
    END
Query:Close()
END
IF coatingComp = "@A03" THEN
    res = @A04
ELSE
    res = 0
END
RESULT res
```

3: “item type” always needs to be set as “Accessory” (even if the original item’s nature is set otherwise)

4: “State” option:

- If it’s set as “On document” -> it will display the component as its own individual line
- If it’s set as “Consumed” -> it will consume the component as part of the main item (SCA or SCP)

5: “With price” option

- If it’s set as “0” -> the price for the coating item is considered inside the SCA or SCP items
- If it’s set as “1” -> the price for the coating item will be shown as individual line

6: “Printing tags” option allows you to associate or not tags (barcodes) to the components

- These “Components” are going to be linked through scripts (see point 2 from the next paragraph) with “Variables”, that are slightly different for GAMSCA and GAMSCP

Barmark	Description	Value	Cooperation
A01	XML	res is string	<input type="checkbox"/>
A02	A_US	unitSystem is numeric	<input type="checkbox"/>
A03	A_COATING	coatingFinal is string =	<input type="checkbox"/>
A04	A_WEIGHT	res is numeric(*) = 0	<input type="checkbox"/>
A05	A_SURFACE	res is numeric(*) = 0	<input type="checkbox"/>
A06	A_DESC	res is string = ""	<input type="checkbox"/>
A07			<input type="checkbox"/>
A08			<input type="checkbox"/>

Once all these have been done, everything is set, and we can go to import the project data.

From the menu “9.2.1 Quotes”, create a New Quote, go to the “Items” tabs and “Import 3D Steel Model”:

Workshop data import

File

Selection

Summary

Mode

Fabrication

Viewer Off

Show Plates, Profiles, Plates folded, Special parts

Level		ected	Properties of the imported part					Mapped item					Standards	
			Width (in)	Length (in)	Thickness	Material	Coating	Exception	Code	Length (in)	Material	Item coating	Final coating	
	✓ Operation - Feasible													
	✓ Operation - Feasible													
✖ ...	✓ Main part - Valid	1											Galvanized	Standard
✖ ...	✓ Part - Valid		6.0000000	14.1795794	0.3125...	ASTMA36	Galvanised		PLS/16"-4x8	96.0000000	ASTMA36	Raw Material	Galvanized	Standard
✖ ...	✓ Part - Valid		6.0000000	14.5525153	0.3125...	ASTMA36	Galvanised		PLS/16"-4x8	96.0000000	ASTMA36	Raw Material	Galvanized	Standard
✖ ...	✓ Part - Valid		6.4960630	190.4849213		ASTMA992	Galvanised		AISC-W-00032	480.0000000	ASTMA992	Raw Material	Galvanized	Standard
✖ ...	✓ Operation - Feasible	1												
✖ ...	✓ Operation - Feasible	1												
✖ ...	✓ Operation - Feasible	1												
✖ ...	✓ Operation - Feasible	1												
✖ ...	✓ Main part - Valid	1											Powder Coated	Standard
✖ ...	✓ Part - Valid		6.0000000	20.7691174	0.3125...	ASTMA36	Galvanised		PLS/16"-4x8	96.0000000	ASTMA36	Raw Material	Powder Coated	Standard
✖ ...	✓ Part - Valid		12.0866142	176.9999213		ASTMA992	Galvanised		AISC-W-00046	480.0000000	ASTMA992	Raw Material	Powder Coated	Standard
✖ ...	✓ Operation - Feasible	1												
✖ ...	✓ Operation - Feasible	1												

At this point, it's important to select the correct type of coating in “Final coating” field (e.g. Galvanizing or Paint), in order to benefit of the set environment for Finishings.

This is the import result in Quotation, if Painting item is set as “On document”, inside SCA's Manufacturing Sequence:

Insert Comments Last Price Price calculation/Item Pricing requirement analysis See attached file Details Bars Mesh

Import 3D Steel Model Adding steel parts manually Group

Reference Follow Up Specificity Items Complement Contacts Various

Zone	Segment	Item	Location ID	Location	Bmk	Description	Qty (COU)	Technical note N°1	UCC	SU qty	SU	IU qty	IU	Price	Price	Price	Net amt	Disc. (%)
Priced	0	SCA	0	A		Assembly name : 1815	240.570		EACH	1 EACH		1 EACH		103.60 \$	103.60 \$	103.60 \$	103.60 \$	0.00%
Priced	0	SCA	0	B		Paint			SQUARE FOOT	240.570 SQUARE FOOT		240.570 SQUARE FOOT		500.00 \$	500.00 \$	500.00 \$	120,285.00 \$	0.00%
Priced	0	SCA	0			Assembly name : 186	315.650		EACH	1 EACH		1 EACH		68.97 \$	68.97 \$	68.97 \$	68.97 \$	0.00%
Priced	0	SCA	0	C		Paint			SQUARE FOOT	315.650 SQUARE FOOT		315.650 SQUARE FOOT		500.00 \$	500.00 \$	500.00 \$	157,825.00 \$	0.00%
Priced	0	SCA	0			Assembly name : 1811	158.220		EACH	1 EACH		1 EACH		217.35 \$	217.35 \$	217.35 \$	217.35 \$	0.00%
Priced	0	SCA	0	D		Paint			SQUARE FOOT	158.220 SQUARE FOOT		158.220 SQUARE FOOT		500.00 \$	500.00 \$	500.00 \$	79,110.00 \$	0.00%
Priced	0	SCA	0			Assembly name : 184	566.200		EACH	2 EACH		2 EACH		69.17 \$	69.17 \$	69.17 \$	138.34 \$	0.00%
Priced	0	SCA	0			Paint			SQUARE FOOT	566.200 SQUARE FOOT		566.200 SQUARE FOOT		500.00 \$	500.00 \$	500.00 \$	283,100.00 \$	0.00%

- 1: item codes (note that Pnt item has been created for each SCA item )
  - 2: item descriptions
  - 3: quantity (a Painting item should have the lateral area of the corresponding Assembly; a Galvanization item would have the weight of the corresponding Assembly)
  - 4: price, in case of Painting or Galvanization items should be “item cost X Qty” (from point 3)
- Here is the import result in Quotation, if Galvanizing item is set as “Created”, inside SCA's Manufacturing Sequence:

Insert Comments Last Price Price calculation/Item Pricing requirement analysis See attached file Details Bars Mesh

Import 3D Steel Model Adding steel parts manually Group

Reference Follow Up Specificity Items Complement Contacts Various

Zone	Segment	Item	Location ID	Location	Bmk	Description	Qty (COU)	Technical note N°1
Priced	0	SCA	0	A		WS - Assembly	1	(+ 5% plates)
Priced	0	SCA	0	B		Assembly name : 1-547-9	1	(+ 5% plates)

Layout process

File Order N° Cust. ref. Qty Cost price Costing amount Type Customer

ORD22 6 1.000000 912.66 912.66 Whse 226

Variables Sections Accessories Surfaces Operations Treeview Debit

Barmark	Item	Qty	Length (in)	Height (in)	Thickness (in)	State	Cost price / Qty	Costir
1-547-22	Galv	345.00000000	0	0	0	Created	0.00	



ATTN :

Quote No.	Date	Customer	Sales Rep	Lead Time	F.O.B.
QUO22-7	24/11/2023			25/11/2023	In progress

Line	Quantity	UM	Part	Description	Price \$	Extension \$
1	1,000	EACH	EQUIPMENT PLATFORMS	<p>Manufacture pre-fabricated components for (1) freestanding structural equipment platforms (nut &amp; bolt) construction according to the following specifications:  Dimensions: (2) 20'-0" x 8'-0" Modules connected by Upper Bridge  Overall Dimension: 46'-6" x 8'-0"  Usage: Equipment Support and/or Access  Live Load: 125 psf  Top of Deck 11'-2.75"  Under Clearance: 10'-0"  Decking: 1" x 3/16" Painted Bar Grating  (1) Stairway with Upper Bridge Landing 6'-6" x 8'-0"  56 LF of 42" Tall Pipe Guard Rail with 4" Min. Kick Plate  Powder Coat Paint Finish Color(s) of Customer's Choice</p>	459.09	528.29
2	1,000	SOFT	Item Grouping Painting		2,000.00	2,500.00
3	1,000	EACH	INSTALLATION SERVICES		14,675.00	14,675.00
4	2,000	EACH	DEDICATED TRUCKS		2,250.00	4,500.00

This quote includes P.E. stamped drawings

Total for Quote \$

22,203.26



Please call if Quote is more than 30 days from Quote date

## 6. Multiple fabrication orders to a supplier order

This version extends Supplier Orders capabilities to include multiple Fabrication Orders demands within same Supplier Order. This feature brings with him also an overhaul of the dialog that manages this process.

It worth mentioning that, since same Supplier Order functionality is being used for the management of Subcontracting processes (like manufacturing Operations or Coatings – see paragraph 2), this functionality is available for these as well, offering more versatility with the work management done by external parties.

By getting inside the menu “2.1.6 Suppler Orders” and creating a new order, we need to go at the “Items” tab and select “Restock” (the other two options, “Operations” and “Coating” being used for Subcontracting workflows).

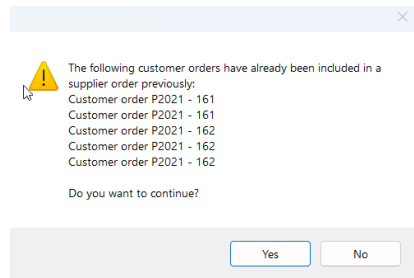
Next step is to hit “On Fabrication launch button” and new dialog is open:

1: check what Fabrication Orders are considered for the current Supplier Order

2: filtering options for the Fabrication Orders list

Once Fabrications Orders are selected, the required raw materials will be listed, and grouped according to the Customer Orders from which are part of.

An additional check is run in the back-end if the elements have been previously selected in another Supplier Order:



The Supplier Order raw materials are listed together with their quantities, weight and prices.

Reference

Follow Up

Others

Items

Complement

Orders file

CMA21

Accessory

Restockg

Supplier order number

75

	Item	Comments	Qty (SOU)	SOU	SU qty	SU	Qty (SIU)	SIU	Weight (lb)	Gross	Whse
	PL5/16"-4x8	PL5/16"-4x8 ASTMA36	4.000	UN	4.000	UN	4.000	UN	739.79		RA
	AISC-W-00046	AISC-W W12x87 40"ASTMA992	1.000	BAR	1.000	BAR	1.000	BAR	1,183.88		RA
	AISC-W-00032	AISC-W W12x26 40"ASTMA992	1.000	BAR	1.000	BAR	1.000	BAR	353.80		RA
	PL1/4"-4x8	PL1/4"-4x8 ASTMA36	2.000	UN	2.000	UN	2.000	UN	296.38		RA
	PL5/16"-4x8	PL5/16"-4x8 ASTMA36	4.000	UN	4.000	UN	4.000	UN	739.79		RA
	PL2"-5x10	PL2"-5x10 ASTMA36	3.000	UN	3.000	UN	3.000	UN	5,557.18		RA
	AISC-HSS-SQ-013	AISC-HSS-SQ HSS 14X14X1/2 40"ASTMA500GRB	3.000	BAR	3.000	BAR	3.000	BAR	8,071.19		RA
	PL3/4"-4x8	PL3/4"-4x8 ASTMA36	1.000	UN	1.000	UN	1.000	UN	444.57		RA

## 7. Direct item-NC link

Starting with the 2025 version you can attach an NC file directly to an item definition. Going to menu “1.10.4 Items” – tab “Technical notes”, you can notice a new option called “Workshop file” at the bottom side of the page. This asks for a path to the NC file.

The screenshot shows the 'Technical notes' tab in the software interface. The 'Workshop file' field is highlighted with a red box, showing a path: '..... with NC file\L3X3X0.5\DSTV\NC'.

Once you chose a path, an Import dialog opens, requiring mapping the imported file to a database item. This process is identical with what is happening during Import in a Customer or Quotation Order.

It worth mentioning that this association (item and geometrical data) is not limited at NC files only, being able do it also with SMLX or GTCX file formats. Once all the information is added, the dialog should show that everything is valid, and the import can be done:

The screenshot shows the 'Workshop data import' dialog. The 'File' field is highlighted with a red box, showing a path: '..... with NC file\L3X3X0.5\DSTV\NC'. The 'Selection' tab is active, showing a table with columns: Level, Operation production, Mark, Source name, Type, Role, Quantity, Width (in), Length (in), Thickness. The table contains data for 'Model - Valid', 'Phase - Valid', and 'Part - Valid'.

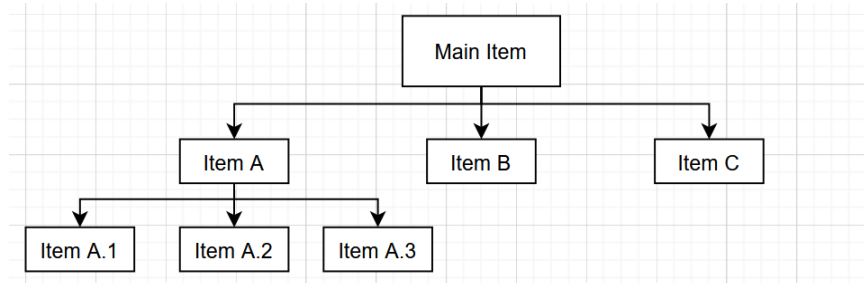
This direct association leads the way to new use cases such as:

- To produce standard steel parts to be kept in stock (e.g. clip angles, base plates...)
- Defining complex products within specific Customer (Fabrication) Orders, items build out from a combination of other complex products and in-house manufactured steel elements (without using “Import” overall workflow)

## 8. Item definition on multiple levels (item-in-item reference)

This feature streamlines production management of elements defined and made on multi-levels of production.

In order to have a better understanding, here is a basic schematic representation of what and how such an item can be defined.



Once such product is defined (“Main item” in this example), it can be added to a production workflow and the algorithm is going to process automatically all the sub-items, operations and eventually raw materials from which these are made of.

How such a structure can be defined in Advance Workshop:

The first step is to create in the menu “1.10.4 Items” an Item for each component.

Dashboard

Items

Gamut cost price computing

Modification of prices

Last Price

Create steel items

Item code	Stock item code	SIU	Description	Item with nomenclature
Item A	Item A	UN	Item A	Yes
Item A.1	Item A.1	UN	Item A.1	No
Item A.2	Item A.2	UN	Item A.2	No
Item A.3	Item A.3	UN	Item A.3	No
Item B	Item B	UN	Item B	Yes
Item C	Item C	UN	Item C	Yes
Main Item	Main Item	UN	Main Item	Yes

Then, if the item has sub-components within its definition, we need to assign a Manufacturing Sequence (or Nomenclature). This is done by opening each item’s property pages, going to “Other” tab, activate and select a Manufacturing Sequence from bottom-right side of the page.



Dashboard | Items | Item capture

International | Identical unit | GEN code | In order | Supplier | Reversion | See attached file | Select all | Unselect all

Main | List | Financial | Others | Drawing | Tax | Currency | HMS | Technical notes | Multibranch | Complement | Grade substitution

Item: Item A

Std Norm code:

Width (in): 0.0000 Min. resto: 0.0000 Range type:

Height (in): 0.0000 Coating: No grade

Length (in): 0.0000 Min. resto: 0.0000 Quality certificate rate:

Thickness (in): 0.0000 Resist index:

Surface (ft2): 0.000 Profile ID: 0 Product type: Miscellaneous

Length overlap (in): 0.0000 Serial number:

Width overlap (in): 0.0000 Serial N° def.: root YYYYYMM NNNNNN

Average diameter (in): 0.0000 Root:

BD system: 0 Coating: No grade BD:

1: No grade

2: No grade

Packaging: Not available

Real length: 0.0000 Item with nomenclature: Yes

Bar %: 0.00 Pricing sequence code:

Bars quantity: 0 Manufacturing sequence code: Item A Def

Rawmaterial tolerance weight (%): 0.00% Quality model:

Reception balance tolerance (%): 0

Weighbridge

Since each Manufacturing Sequence is most likely to need to have unique structure, it's very possible creating in menu "1.13.3" individual Manufacturing Sequences for each product. As example, for "Main item", the Manufacturing Sequence can look something like this:

Dashboard | Items | Manufacturing se...

Note-pad | Detail | Insert | Comments | Browse | International

Ranges | Components | Operations | Variables | Reports | Copy

Nomenclature code	Description	Range type	No barman	Processing on customer order
Complex Def.	Complex Definition	CAO	<input type="checkbox"/>	Always made
Item A Def	Item A Definition	CAO	<input type="checkbox"/>	Always made
Item B Def	Item B Definition	CAO	<input type="checkbox"/>	Always made
Item C Defin	Item C Definition	CAO	<input type="checkbox"/>	Always made

And for sub-component "Item A", the Manufacturing Sequence can be something like this:

Note-pad | Detail | Insert | Comments | Browse | International

Ranges | Components | Operations | Variables | Reports | Copy

Rge info.	Item	Description	Process Route	Color	Unit qty	Item type	State	With price	Without document	without stock	Tag printings
000	Item A	Item A			2	Accessory	Consumed	1			No/packing
000	Item B	Item B			1	Accessory	Consumed	0			No/packing
000	Item C	Item C			6	Accessory	Consumed	1			No

Ranges | Component | Operations | Variables | Reports | Copy

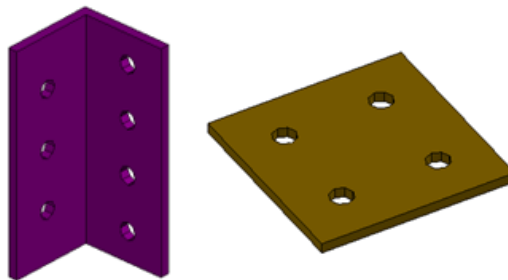
N°	Previous	Operation	Delay	Description	Compan	Worksho	Bay	Workstat	Setup machine alloc	Machine a	Operator	Tag print	Bar code
1		ASSEMB		Assembling	01	AW	03	301				No	

## 9. Produce for Stock

Either if we speak about standard steel elements, or more complex non-structural items, the same need is available, to have the product in stock and use it once an order is placed into fabrication.

Although most of the steel industry products are bespoke, sub-parts of the final products can be used more often, thus being produced, and kept in storage for later usage.

Here are common examples of such parts, like clip angles and base plates, but another type of elements can be in such category if we consider miscellaneous steel products like railings and stairs as products that pertain to such standardization.



The process steps required to produce for stock are similar to Customer Orders, but in this case, the order is going to be from another type, a Stock Order, and we have slight differences along the settings.

While for production orders originating from a direct customer request the workflow kicks off with the menu “9.3.1. Customer Orders”, for internal production we are going to use the menu “7.1 Ordering for Stock”.

As a first observation, it’s important to set the right value on the left side filtering panel (Research menu) for the highlighted parameters, so that Stock Orders are listed on the main page, from the right side.

Menu

Research

Legend

Search in grid...

Default view

Stock order file

STK21

...

Stock order N°

0

Other stock order file

Jobsite file

STK21

...

Estimate N°

0

Jobsite N°

0

Branch code

GR

...

Customer Reference

Status

All

▼

Start date

End date

Dashboard

Items

Balance

FO

Purchase order (direct sales)

Order status	Stock order
Balanced	STK21
Balanced	STK21
Balanced	STK21
Balanced	STK21
Produced	STK21
Balanced	STK21
Created	STK21
Tariffed	STK21
On fabrication order	STK21
Balanced	STK21
Balanced	STK21
Balanced	STK21
Balanced	STK21
Balanced	STK21
Balanced	STK21
Balanced	STK21
Balanced	STK21
Cleared	STK21
Balanced	STK21
Balanced	STK21

Before creating a Stock Order and proceeding to fabricate, let’s spend some time to highlight the type of items and settings required in the system.

- Need to define the products kept in stock

- Define a “generic item” used in production
- Create and attach to this “generic item” dedicated Manufacturing Sequence

## 9.1. Defining products done for stocks

This is done from the menu “1.10.4 Items”.

Here is a definition example for a steel part Clip angle L3X3X1/2 with 10” length. All fields in red need to be filled accordingly.

International | Identical unit | GEN code | In order | Supplier | Reversion | See attached file | Select all | Unselect all

Main | List | Financial | Others | Drawing | Tax | Currency | HMS | Technical notes | Multibranch | Complement

Item: Stock-L3X3X1/2

GEN code:  Purchase / Sale: Purchase/sale

Interfacing item code: Clip angle L 3x3x1/2 L=10 Gen. item ref.: L3X3X1/2

Short description: Clip angle L 3x3x1/2 L=10

Long description: Clip angle L 3x3x1/2 Length = 10"

Range code: WKS WorkShop

Type code: PAR Parts

Sales code: VN Vente normale

Purchase code: DIV Divers

Accounting section:  e-business

VAT: 9.980000 001

Gross item code:  Kept in stock: Yes

Stock item code: Stock-L3X3X1/2 Supplying type: Production/Supplier

Item nature: Section

International | Identical unit | GEN code | In order | Supplier | Reversion | See attached file | Select all | Unselect all

Main | List | Financial | Others | Drawing | Tax | Currency | HMS | Technical notes | Multibranch | Complement | Grade substitution

Item: Stock-L3X3X1/2

Width (in): 3.0000 Min. resto: 0.0000 Range type:

Height (in): 3.0000 Coating: No grade Material: ASTM36

Length (in): 10.0000 Min. resto: 0.0000 Quality certificate rate:

Thickness (in): 0.0000 Resist index: 0.00000

Surface (Rz): 0.000 Profile ID:

Length overlap (in): 0.0000 Product type: Steel range item

Width overlap (in): 0.0000 Serial number:

Average diameter (in): 0.0000 Serial N° def.: root: YYYYMM NNNNNN

Root:

Please note that no Manufacturing Sequences need to be attached to these items.

Main	List	Financial	Others	Drawing	Tax	Currency	HMS	Technical notes	Multibranch	Complement	Grade substitution				
Item											Std Norm code				
Width (in)											3.0000	Min. resto	0.0000	Range type	
Height (in)											3.0000			Coating	No grade
Length (in)											10.0000	Min. resto	0.0000	Quality certificate rate	
Thickness (in)											0.0000			Resist index	
Surface (ft2)											0.000	Profile ID		Product type	Steel range item
Length overlap (in)													0.0000	Serial number	
Width overlap (in)													0.0000	Serial N° def.: root	YYYYMM NNNNNN
Average diameter (in)													0.0000	Root	
BD system												Coating			
0											No grade				
1											No grade				
2											No grade				
Packaging											Not available				
Real length													0.0000	Item with nomenclature	No
Bar %													0.00	Pricing sequence code	
Bars quantity													0	Manufacturing sequence code	
Rawmaterial tolerance weight (%)													0.00%	Quality model	
Reception balance tolerance (%)													0		

For a Special Product (non-structural steel item) is recommended to use a similar definition, with the difference that “Item nature” should be set as “Accessory” and “Product Type” is no more important (thus it can remain as “Miscellaneous”).

Main	List	Financial	Others	Drawing	Tax	Currency	HMS	Technical notes	Multibranch	Complement	Grade substitution			
Item											Purchase / Sale	Purchase/ sale		
GEN code												Gen. item ref.		
Interfacing item code														
Short description											CB16000 item			
Long description											CB16000 item			
Range code											WKS	WorkShop		
Type code											PAR	Parts		
Sales code											VN	Vente normale		
Purchase code											DIV	Divers		
Accounting section													<input type="checkbox"/> e-business	
VAT											9.980000	001	Kept in stock	Yes
Gross item code													Supplying type	Supplier
Stock item code											Stock -CB16000		Item nature	Accessory

Since these types of products are usually build from multiple sub-components, you may want to attach a Manufacturing Sequence to this product, for the only purpose to catch the products components and retrieve this information automatically during manufacturing.

International Identical unit GEN code In order Supplier Reversion See attached file Select all Unselect all

Main List Financial Others Drawing Tax Currency HMS Technical notes Multibranch Complement Grade substitution

Item Stock-GB5000 Std Norm code 0

Width (in) 0.0000 Min. resto 0.0000 Range type

Height (in) 0.0000 Coating No grade Material No material

Length (in) 0.0000 Min. resto 0.0000 Quality certificate rate

Thickness (in) 0.0000 Resist index

Surface (ft2) 0.000 Profile ID 0 Product type Miscellaneous

Length overlap (in) 0.0000 Serial number

Width overlap (in) 0.0000 Serial N° def.: root YYYMM NNNNNN

Average diameter (in) 0.0000 Root

BD system Coating BD

0 No grade

1 No grade

2 No grade

Packaging Not available

Real length 0.0000

Bar % 0.00

Bars quantity 0

Rawmaterial tolerance weight (%) 0.00%

Item with nomenclature Yes

Pricing sequence code

Manufacturing sequence code WKS-TRAINING

## 9.2. Defining the “generic item”

This item has the role to lead the production for stock, to offer flexibility and to aggregate various settings within its definition. Its definition is also initiated from menu “1.10.4 Items”.

Main List Financial Others Drawing Tax Currency HMS Technical notes Multibranch Complement Grade substitution

Item Stock-Items Purchase / Sale Purchase / sale

GEN code Gen. item ref.

Interfacing item code

Short description Generic Stock-Items

Long description Generic Stock-Items for Ordering

Range code WKS Workshop

Type code PAR Parts

Sales code VN Vente normale

Purchase code DIV Divers

Accounting section

VAT 9.980000 001

Gross item code

Stock item code Stock-Items

Kept in stock No

Supplying type Production/Supplier

Item nature Accessory

Specific Manufacturing Sequence needs to be assigned to this item; its definition being detailed in next paragraph.

International Identical unit GEN code In order Supplier Reversion See attached file Select all Unselect all

Main List Financial Others Drawing Tax Currency HMS Technical notes Multibranch Complement Grade substitution

Item Stock-Items Std Norm code

Width (in) 0.0000 Min. resto 0.0000 Range type

Height (in) 0.0000 Coating No grade

Length (in) 0.0000 Min. resto 0.0000 Quality certificate rate

Thickness (in) 0.0000 Resist index

Surface (ft2) 0.000 Profile ID 0 Product type Miscellaneous

Length overlap (in) 0.0000 Serial number

Width overlap (in) 0.0000 Serial N° def.: root YYYMM NNNNNN

Average diameter (in) 0.0000 Root

BD system Coating BD

0 No grade

1 No grade

2 No grade

Packaging Not available

Real length 0.0000

Bar % 0.00

Bars quantity 0

Rawmaterial tolerance weight (%) 0.00%

Reception balance tolerance (%) 0

Item with nomenclature Yes

Pricing sequence code

Manufacturing sequence code StockForOrder

Quality model

### 9.3. Defining Manufacturing Sequence for the “generic item”

We aim to have flexibility each time when we want to produce for Stock, thus the Manufacturing Sequence will allow to choose what items want to produce for each Stock Order.

The following settings are recommended for this Manufacturing Sequence:

- no records for “Components” or “Operations” tabs
- a script was added to the “Variables” tab, to open the Manufacturing Sequence dialog during Stock Order process and allow choosing what items to produce.

Here you can find the script content:

```
res est une chaîne
gpGPC:gManualKeyIn=True
RENNoyer res
```

The screenshot shows the Manufacturing Sequence dialog with the Variables tab selected. The script content is as follows:

```
res est une chaîne
gpGPC:gManualKeyIn=True
RENNoyer res
```

Having no Components records allows us to set later (during Production) what items we want to produce.

The script will open this Manufacturing Sequence dialog during the Stock Order, allowing us to select what specific items we want to produce.

Going back to menu “7.1 Ordering for stock”, an Order can now be created. Then open the order and add a new item by following the steps from the picture below:

The screenshot shows the software interface with the 'Ordering for stock' dialog open. The 'List' button is highlighted with a red box and a red circle, indicating the next step in the process.

Once step 3 is done, the Item list is open, and need to choose the previously defined “generic item”.

Item code	Stock item code	SIU	Description	Item with nomenclature
Stock -CB16000	Stock -CB16000	UN	CB16000 item	No
Stock-BP-8X8	Stock-BP-8X8	UN	Base Plate 8x8	No
Stock-Items	Stock-Items	UN	Generic Stock-Items for Ordering	Yes
Stock-L3X3X1/2	Stock-L3X3X1/2	UN	Clip angle L 3x3x1/2 Length = 10"	No
StockRML3X3X1/2	StockRML3X3X1/2	BAR	Stock Raw Material AISC-AI L3X3X1/2 40'ASTMA36	No

Set a Quantity (usually this should be 1, since the qty of produced item it's declared at the next step), a Cost and run "Process route calculation/item".

Reference	Follow Up	Specificity	Items	Various
		Zone Segm	Item	Bmk Description Qty (COU) COU SU qty SU IU qty IU Cost price
Priced	0	0	Stock-Items	Generic Stock-Items for Ordering 1 unite 1 Unite 1 Unite 10.00 USD

In the opened dialog, add the items that you want to produce for stock and raw material from which they are made from (if it's the case):

Manual nomenclature

Insert Note-pad

Barcode	Item	Description	Color	Specif	Type	Qty	COU	Cuttin	Length	Height	Thi	State	With price	Tag printings
1	Stock <CBi6000	CBi6000 Item			Accessory	2 UN	N		0,0	0,0		Created	1	Yes
3	StockRML3X3X1/2	Stock: Raw Material AISI-AI L3X3X1/2 40°ASTMA36			Accessory	1,00 BAR	AR		0,0	0,0		Consumed	0	Yes
2	Stock-L3X3X1/2	Chp angle L 3x3x1/2 L=10			Accessory	18 UN	N		0,0	0,0		Created	1	Yes

In this example, we've chose:

1: a Special Part item *Stock-CBI6000*

2: a standard steel Profile, as clip angle *Stock-L3X3X1/2*

3: the raw material that is consumed to create the Clip Angles from point 2, as *StockRML3X3X1/2*

Please note that the raw material consumed for manufacturing the steel Profiles needs to be estimated and declared separately, as there is not going to be any Nesting procedure available along this process.

The item settings are:

- "Type" needs to be Accessory for any item (including steel profiles or plates); this is mandatory, so that the process can run
- "Qty" represents the quantity that we want to produce or that is consumed (in case of raw material)
- "State" should be Created for produced items and Consumed for consumed items (like raw materials)
- "with Price" represents if the item price is considered (value "1") or not (value "0")
- "Tag printings" sets if we want to have tags are associated or not to the items

The breakdown content of the order can be further check by using Requirement analysis option from inside the Order.

The screenshot displays the 'Requirement analysis' window in the software. The 'Treeview' tab is selected, showing a hierarchical list of items. The 'STK21 - 25 / 1 / Stock-Items' is expanded, revealing sub-items: 'Stock -CB16000', 'StockRML3X3X1/2', and 'Stock-L3X3X1/2'. The 'Details' tab is also visible, showing the 'Generic Stock-Items for Ordering' description. The 'Barkmark' column shows 'CBI6000 item' for the first sub-item and 'Stock Raw Material AISC-AI L3X3X1/2 40°ASTMA36' for the second. The 'Quantity 1' column shows '1.000000' for the first sub-item and '18.000000' for the second. The 'Length (in)', 'Width (in)', 'Thickness (in)', and 'Weight (lb)' columns are also present.

Once the Order for Stock has been created, the next step is to create a **Fabrication Order**. This can be done either from menu *7.1 Ordering for Stock*, either from menu *7.10 Manufacturing Production Planning* (same as for a Customer Order).

The next step is to "Validate" the Fabrication Order, using the same menu *7.10 Manufacturing Production planning*.

The screenshot shows the 'Items stock' menu with a table of production orders. The 'Produced' status is highlighted. Below it, the 'Manufacturing production planning' menu is shown, displaying a calendar view of production orders. A context menu is open over the 'On hold FO - 200' entry, showing options like 'Validate fabrication order' and 'Change date of the fabrication order'.

Order status	Stock order file	Stock order N°	Fabrication order
Produced	STK21	25	
Balanced	STK21	18	BTR21/193
Balanced	STK21	17	BTR21/192
Balanced	STK21	24	BTR21/199
Balanced	STK21	23	BTR21/198
Produced	STK21	22	
Balanced	STK21	21	BTR21/194
Created	STK21	20	
Tariffed	STK21	19	

Monday 08/04	Tuesday 09/04	Wednesday 10/04	Thursday 11/04	Friday 12/04	Saturday
Jobsite: ARMA+ STK21 - 19 / 1	Jobsite: ARMA+ STK21 - 24 / 1		Jobsite: ARMA+ STK21 - 25 / 1		

Monday 08/04	Tuesday 09/04	Wednesday 10/04	Thursday 11/04	Friday 12/04	Saturday
On hold FO - 1 Administrator	BTR21 - 199 Administrator 20240406		On hold FO - 200 Administrator		
On hold FO - 15 Administrator					
On hold FO - 28 Administrator					
On hold FO - 39 Administrator					

From this point on, the stock starts to register data, about expected, theoretical stock and so on. As the Fabrication Order progresses, the quantities will move (updated) according to their status. The status can be traced from menu *11.1/Items stock*:

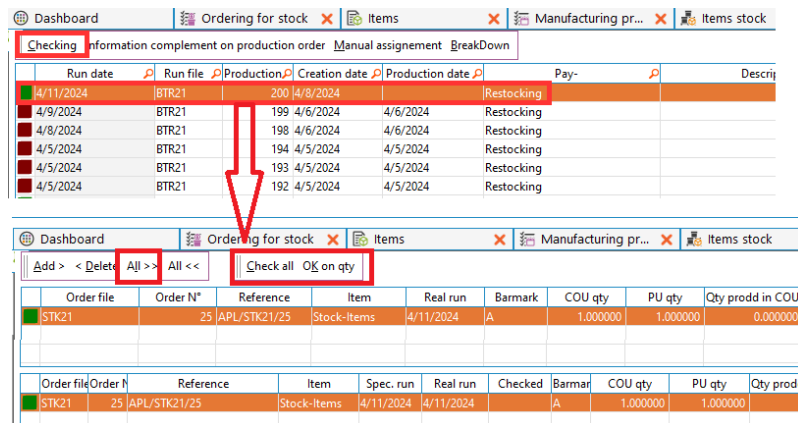
Item code	Description	Whse	Description	Range	Type code	Stock in hand	Cust. reserved stock	Expecting stock from supp	Available stock	Theoretical stock	Minimum stock
Stock -CB16000	CB16000 Item	RA	Warehouse	WKS	PAR	0	0	2	0	2	0
Stock-BP-8X8	Base Plate 8x8	RA	Warehouse	WKS	PAR	0	0	0	0	0	0
Stock-L3X3X1/2	Clip angle L 3x3x1/2 Length = 10"	RA	Warehouse	WKS	PAR	0	0	18	0	18	0
StockRML3X3X1/2	Stock Raw Material AISI-C-AI L3X3X1/2 40'ASTMA36	RA	Warehouse	WKS	PAR	100.00	1.00	0.00	99.00	99.00	0.00

Once the Fabrication Order is validated, this will be available also on menu "7.2 Launching on Customer Order". Here is a snapshot of this menu list, each line representing such a Fabrication Order.

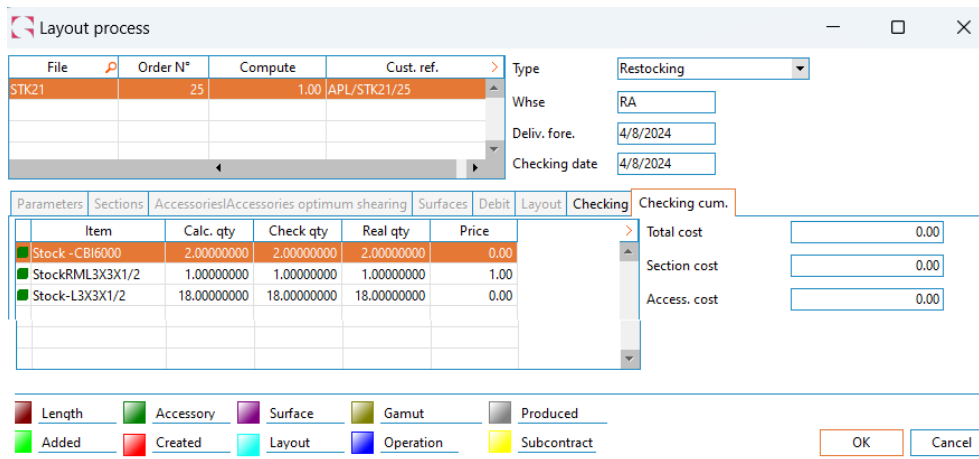
Run date	Run file	Production	Creation date	Production date	Pay-
4/11/2024	BTR21	200	4/8/2024		Restocking
4/9/2024	BTR21	199	4/6/2024	4/6/2024	Restocking
4/8/2024	BTR21	198	4/6/2024	4/6/2024	Restocking
4/5/2024	BTR21	194	4/5/2024	4/5/2024	Restocking
4/5/2024	BTR21	193	4/5/2024	4/5/2024	Restocking
4/5/2024	BTR21	192	4/5/2024	4/5/2024	Restocking
2/1/2024	BTR21	190	1/22/2024		Restocking
1/25/2024	BTR21	188	1/22/2024	1/22/2024	Restocking



Select the Fabrication Order, press "Checking" and continue with the steps as they are in the next picture:



Press "OK" on next dialog.



At this point, the Production for Stock has finished, the Stock Order gets the status *Balanced* and the Stock Items page is updated with the quantities. Produced quantities are now under "Stock in hand" and all other stock columns have been updated accordingly.

Refreshing every minute Traced stock detail Expect.Reserv. Details Stock to stock Graph											
Item code	Description	Whse	Description	Range	Type code	Stock in hand	Cust. reserved stock	Expecting stock from sup	Available stock	Theoretical stock	Minimu
3 Stock -CB16000	CB16000 item	RA	Warehouse	WKS	PAR	2	0	0	0	2	2
Stock-BP-8X8	Base Plate 8x8	RA	Warehouse	WKS	PAR	0	0	0	0	0	0
1 Stock-L3X3X1/2	Clip angle L 3x3x1/2 Length = 10"	RA	Warehouse	WKS	PAR	18	0	0	0	18	18
2 StockRML3X3X1/2	Stock Raw Material AISC-AI L3X3X1/2 40"ASTMA36	RA	Warehouse	WKS	PAR	99.00	0.00	0.00	99.00	99.00	99.00

1: the steel Profile produced for stock (clip angle L3X3X1/2 with 10" Length)

2: the raw material consumed to create the Clip Angles from point 1

3: the Special Part item produced for Stock

To summarize the Stock Order outcomes:

- 2pcs of Special Part items "Stock -CB16000" are now "Stock in hand"
- 18pcs of standard steel profiles Clip angle "Stock-L3X3X1/2" are now "Stock in hand"
- 99pcs as raw material "StockRML3X3X1/2" are now as "Stock in hand", 1 pcs being consumed to produce the 18pcs clip angles

Please note that for Special Part products (like "Stock-CB16000") that are built from multiple components, which are also made from multiple components (this multilevel could continuing

further), the stocks quantities for each component should be updated accordingly for all sub-items part of this definition chain.

## 10. Managing different units for items

Some items are managed differently along their production path. Sometimes they are acquired as individual quantities, internally managed as bulk (e.g. weight units), and sold down the line as a different stock unit.

The management of such items has been consistently improved, providing more flexibility and correct conversion between units and actions (e.g. storage transfers).

Let's consider a product set with different units and see its behavior.

An item with different units is defined as in the picture below:

International Identical unit GEN code In order Supplier Reversion Sge attached file Select all Unselect all

Main List Financial Others Drawing Tax Currency HMS Technical notes Multibranch Complement Grade substitution

Item Sample Item

Supplier Order Unit (SOU)	KILO	KILO
Supplier invoicing unit (SIU)	KILO	KILO
Customer Order Unit (COU)	EACH	EACH
Cust. invoicing unit (IU)	KILO	KILO
Stock unit (SU)	TONNE	TONNE
Production unit (PU)	TONNE	TONNE
Invoiced COU weight in (kg)	250.00000	SOU weight (kg) 1.00000
COU theoretical weight (kg)	250.00000	PU weight (kg) 1,000.00000
		PU --> COU 4.0000000000

1 COU =	250.0000000000	x IU	1 IU =	0.0040000000	x COU
1 COU =	0.2500000000	x SU	1 SU =	4.0000000000	x COU
1 SOU =	1.0000000000	x SIU	1 SIU =	1.0000000000	x SOU
1 SOU =	0.0010000000	x SU	1 SU =	1000.0000000000	x SOU
1 SU =	1.0000000000	x PU	1 PU =	1.0000000000	x SU

### Note:

- Customer order unit (COU) needs to be always set as EACH.
- It's required to fill the unit conversion factors (if that's the case) for all non-mandatory fields (non-red color fields)

Once such an element is added to a Customer Order, using the "Adding steel part manually" functionality or any other Import 3D Steel method, the units set to the item definition will be used accordingly, along the production steps.

Customer order ( ORD1 - 1 / JOB21 - 29 - 29 )

Insert Comments Price calculation/Item Last Price Locations Production rate management Process route calculation/Item Process route requirement analysis

Interface Scan CAD Pricing Import 3D Steel Model Adding steel parts manually

Reference Follow Up Specificity Items Complement Contacts Various

	Item	Location ID	Location	Bmk	Description	Qty (COU)	COU	SU qty	SU	IU qty	IU	Unit weight (kg)	Total weight (kg)	Price	Price
Produced	SCP	0	A		Part name : P50	2	EACH	2	EACH	2	EACH	31	62	6,250.00 CAD	6,250.00 CAD

Here is how “Stock” and “Supplier Order” records are tracked according to item unit settings:

Menu Research

Search in grid...

Default view

Stock location code

Item type

Displaying unit

Interfacing item code

Bars length (mm)

Items stock

11.1.1

Refreshing every minute

Traced stock detail

Expect.Reserv. Details

Stock to stock

Graph

Item code	Interfacing item	Description	Whse	Descripti	Ra	Ty	Stock locati	SU (Stock unit)	Stock in han	Cust. reserve	Expecting st	Avai
Example W13		CISC_W W130x24	PRE	Precast Fa	AWS	RM		TON	-0.500	0.500	0.250	

Search in grid...

Default view

Stock location code

Item type

Displaying unit

Interfacing item code

Bars length (mm)

Items stock

11.1.1

Refreshing every minute

Traced stock detail

Expect.Reserv. Details

Stock to stock

Graph

Item code	Interfacing item	Description	Whse	Descripti	Ra	Ty	Stock locati	SIU (Supplier in	Stock in han	Cust. reserve	Expecting st	Available st	Theoretical
Example W13		CISC_W W130x24	PRE	Precast Fa	AWS	RM		KG	-500	500	250	-1000	-750

## Supplier Orders Management ( SUP22 1 (Air Liquid) )

Insert

Comments

Item of supplier

On Fabrication launch

On serial

Stock Location

See attached file

Reference

Follow Up

Others

Items

Complement

Orders file

SUP22

Accessory

Length

Plates

Supplier order number

1

Item	Comments	Qty (SOU)	SOU	SU qty	SU	Qty (SIU)	SIU	Weight (kg)	Gross
Example W130x24	CISC_W W130x24 40'350W	250.000	KG	0.250	TON	250.000	KG	250	

## 11. Set operation prices according to multiple criteria

This implementation extends the current capabilities regarding internal operation costs, one of the most important parameters involved in the overall production costs. With this version, we bring a new and user-friendly way to define operations cost according to customer name or type, operation properties (e.g. straight or slanted cut, diameters), workstation, and many others.

It also worths mentioning that the current implementation paves the road to include any other type of parameters as parameters to define operation costs.

The file format that allows the price configuration is excel, a very common format, easy to manipulate and very suitable to organize such information.

If we go to the menu “1.12.2 Operations”, we are going to notice a new button called “Import prices”. This will open a dialog and prompt about selecting an Excel file template from where prices should be imported. As the following picture highlights, these new prices are going to be considered instead of the “Workstation cost/hour” dialog cell, only when the Excel records are found as valid. In all other cases, the value shown in UI is still the one used.

Important to note:

- the value present in the UI dialog is not going to be replaced by the import, since it still may make sense for some situations (excel conditions are not exhaustive).
- Excel values are imported in the back-end of the system; any change done in the Excel file afterwards, requires to import again the Excel file

**Import prices**

Code	Description	Work type
BEND	Bending	Bending (4)
BEVEL	Bevel	Miscellaneous (1)
CAMB	Cambering	Arc bending (10)
DESIGN	Design office	Miscellaneous (1)
FOLD	Folding	Bending (4)
FORM	Forming	Bending (4)
GALV	Galvanizing	Surface treatment (16)
HAND	Handling	Handling (8)
MARK	MarkPoint	Miscellaneous (1)
NUMB	Numbering	Miscellaneous (1)
SCRIBB	Scribbling/Mark Layout	Miscellaneous (1)
SORT	Sorting	Miscellaneous (1)
STORE	Storage	Warehouses/Stock (7)
THREADTAP	Thread taping	Miscellaneous (1)

**Operation**

Operation: LCUT Stock item code: LCUT

Description: Length cutting

Range: OPE Operation: OPE

Type: OPE

Maxl (H) by tag: 0.00 Stock display: No

Workstation cost / hour: 80.00 USD Labour cost /hour: 100.00 USD

Workstation catalog price: 200.00 Labour catalog price /hou: 150.00 USD

Operation cost / kg: 0.00 WM Operation cost / kg: 0.00

Unit: Heure Heure

Stock display unit (SDU): Heure Heure

Prod. Unit (PU): Seconde Seconde

The excel file template requires a specific layout, with specific column names, so that the system to identify the parameter's meaning. Here are the column's names, together with instructions about what data and how they should be filled-in:

Operation_Code	Operation_Price_per_hour	Range_Code	Range_Type_Code	Market_Segment_Code	Parameter_Category	Parameter_Name	Parameter_Value	Parameter_Min_Value	Parameter_Max_Value

- Operation\_Code* – code operation from menu “1.12.2. Operations” (mandatory input)
- Operation\_Price\_per\_Hour* – custom operation price, per hour (mandatory input)
- Range\_Code* – from the menu “1.6.2. Ranges/types of items” (optional input)
- Range\_Type\_Code* – from the menu “1.6.2. Ranges/types of items” (optional input)
- (“Range\_Code” and “Range\_Type\_Code” need being simultaneously set)
- Market\_Segment\_Code* – as defined in menu “1.11.4 Market segments” (optional input)
- Parameter\_Category* – value from a “predefined parameter category” list (optional input)
- Parameter\_Name* – value from a “predefined parameters” list (optional input)
- Parameter\_Value* – the fixed value of the parameter, when criteria to consider for the price requires like that (optional input)
- (example: Parameter Category = “Customer”, Parameter Name = “LSGroup” => Parameter Value = “Group3”)
- Parameter\_Min\_Value* – minimum value to be used for parameters that require an interval, working together parameter max (optional input)

- *Parameter\_Max\_Value* – maximum value to be used for parameters that require an interval, working together parameter min (optional input)
- (example: Parameter Category = “Operation”, Parameter Name = “CutAngle” => Parameter Min Value = “0” and Parameter Max Value = “30” degrees)
- (“*Parameter\_Category*”, “*Parameter\_Name*”, “*Parameter\_Value*” or “*Parameter\_Min\_Value*” and “*Parameter\_Max\_Value*” need being simultaneously set)

## 11.1. Predefined parameter categories

The following Categories are currently available to be set in the Excel file:

- “*Customer*”
- “*Operation*”
- “*Element*”
- “*Workstation*”

## 11.2. Predefined parameters

For the “*Customer*” category, the following parameters are available:

- “*Code*” – requires a code from menu “1.10.5 Customers” in “*Parameter\_Value*” column
- “*LSGroup*” – requires a code from menu “1.11.8 Pricing group” in “*Parameter\_Value*” column

For “*Operation*” category, the following parameters are available:

- “*CutAngle*” – used with “LCUT” operation; it can be fixed value or interval (min-max values)
- “*Diameter*” – used with “DRILL” or “PCUT”; it can be fixed value or interval (min-max values)

For “*Element*” category, the following parameters are available:

- “*NoOfHoles*” – number of holes on the part; it can be fixed value or interval (min-max values)
- “*NoOfCuts*” – number of cuts on the part; it can be a fixed value or interval (min-max values)
- “*Weight*” – weight of the part; it can be a fixed value or interval (min-max values)

For “*Workstation*” category, the following parameters are available:

- “*Code*” – requires a code from menu “1.12.6 Physical working position” in “*Parameter\_Value*” column
- “*Time*” – time needed to produce an operation on the workstation; it can be a fixed value or interval (min-max values)

## Examples of usage for pricing criteria using the excel template

Setting a price for a certain Range of items will need to include all the types contained in that range

	A	B	C	D	E	F	G	H	I	J
1	Operation_Code	OperationPrice per hour	Range_Code	Range_Type_Code	Market_Segment_Code	Parameter_Category	Parameter_Name	Parameter_Value	Parameter_Min_Value	Parameter_Max_Value
2	LCUT		2 CO	CO						
3	LCUT		2 CO	IPN						
4	LCUT		2 CO	UPE						
5	LCUT		2 CO	UPN						
6										

Setting a price for a certain Range type

	A	B	C	D	E	F	G	H	I	J
1	Operation_Code	Operation_Price_per_hour	Range_Code	Range_Type_Code	Market_Segment_Code	Parameter_Category	Parameter_Name	Parameter_Value	Parameter_Min_Value	Parameter_Max_Value
2	LCUT		2 CO	CO						
3										

Setting a price for a certain customer

	A	B	C	D	E	F	G	H	I	J
1	Operation_Code	Operation_Price_per_hour	Range_Code	Range_Type_Code	Market_Segment_Code	Parameter_Category	Parameter_Name	Parameter_Value	Parameter_Min_Value	Parameter_Max_Value
2	LCUT		2			Customer	Code	2F PRODUCTI		
3										

### Setting a price for a certain machine/workstation

	A	B	C	D	E	F	G	H	I	J
1	Operation_Code	Operation_Price_per_hour	Range_Code	Range_Type_Code	Market_Segment_Code	Parameter_Category	Parameter_Name	Parameter_Value	Parameter_Min_Value	Parameter_Max_Value
2	LCUT		2			Workstation	Code	001		

### Setting a price for LCUT depending on whether the cut is straight or not

	A	B	C	D	E	F	G	H	I	J	K
1	Operation_Code	Operation_Price_per_hour	Range_Code	Range_Type_Code	Market_Segment_Code	Parameter_Category	Parameter_Name	Parameter_Value	Parameter_Min_Value	Parameter_Max_Value	
2	LCUT	2				Operation	CutAngle	0			straight cut
3	LCUT	4				Operation	CutAngle		1		89 angled cut
4											

### Setting the same price for the same Range type, but for multiple customers

	A	B	C	D	E	F	G	H	I	J
1	Operation_Code	Operation_Price_per_hour	Range_Code	Range_Type_Code	Market_Segment_Code	Parameter_Category	Parameter_Name	Parameter_Value	Parameter_Min_Value	Parameter_Max_Value
2	LCUT		2 C0	C0		Customer	Code	2F PRODUCTI		
3	LCUT		2 C0	C0		Customer	Code	A C M E		
4	LCUT		2 C0	C0		Customer	Code	ARTISANS PL		
5	LCUT		2 C0	C0		Customer	Code	AZEVEDO		
6										

### Setting a price based on Market segment, range type, hole diameter and part weight

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Operation_Code	Operation_Price_per_hour	Range_Code	Range_Type_Code	Market_Segment_Code	Parameter_Category	Parameter_Name	Parameter_Value	Parameter_Min_Value	Parameter_Max_Value			
2	DRILL		2 C0	C0		0 Operation	Diameter		10	30	DRILL price is 2 for holes between 10 and 30 in diameter and the part weight between 10 and 500		
3						Element	Weight			10			
4	DRILL		4 C0	C0		0 Operation	Diameter		30	50	DRILL price is 4 for holes between 30 and 60 in diameter and the part weight between 500 and 1000		
5						Element	Weight			500			
6													

## 11.3. Final Remarks:

- “Range\_Code”, “Range\_Type\_Code” and “Market\_Segment\_Code” may be set only on the first line an operation, if there are multiple parameters that the user wants to consider as criteria for price
- (they can be added to each line of the operation, but they need to be the same)
- definition of a price criteria ends when the next line contains an “Operation\_Code” and a “Operation\_Price\_per\_hour”
- we can have as many lines as we want for the parameters between two consecutive “Operation\_Code” and a “Operation\_Price\_per\_hour”, but every criterion defined for each line must be met in order to use that price (all the conditions need to be accomplished simultaneously)

## 12. Workstations (machines) operation times improvements

The estimated times spend during Machine or Workstation operations provide more accurate results, due to an overhaul process of all the formulas that are in back-end of these operations.

The influence of these enhancements can be noticed for Quotations and Customer Orders estimate times.

The easiest way to notice this is to access “Pricing requirement analysis” option and go to “Operations” tab, but these operation times changes are obviously noticeable inside reports or any other place.

File	Order N°	Cust. ref.	Qty	Cost price	Costing amount	Type	Customer
P2021	159	Sample CO	2.000000	159.19	318.3	Whse	RA
Variables	Sections	Accessories	Surfaces	Operations	Treeview	Debit	
Item code	Company	Workshop	Bay	Workstation	Setup machine (h)	Machine (h)	Cost machine price / h
TWELD	01	AW	01	101	0.01944400	0.05888900	50.00
WELD	01	AW	01	101	0.00277800	0.24277800	35.00
PCUT	01	AW	01	030	0.00000000	0.15555600	150.00
DRILL	01	AW	01	021	0.00000000	0.00000000	100.00
LCUT	01	AW	01	021	0.00000000	0.25833300	80.00
CLEAN	01	AW	03	035	0.00000000	0.12388900	15.00
PCUT	01	AW	03	301	0.00000000	0.00333300	150.00

HALL_CODE	Workstatio...	Workstation	Machine	Time	Cost	Weight	Quantity
01							
01	002	FLAME	FLAME	15:45 min.	65.63 USD	1,500.24 lb	5 pcs
01	021	PROFILE	KALTENBACH	1:53:25 hrs.	340.75 USD	6,677.04 lb	5 pcs
01	100	WELDING#1		-	0.00 USD	0.00 lb	0 pcs
01	101	WELDING#2		1:40:50 hrs.	0.00 USD	0.00 lb	5 pcs
01	200	PRESS	LVD PRESS	-	0.00 USD	0.00 lb	0 pcs
01	030	LVD	LVD LASER	46:05 min.	192.01 USD	143.19 lb	22 pcs
01	400	PAINT		-	0.00 USD	0.00 lb	0 pcs
01	999	Galv		-	0.00 USD	0.00 lb	0 pcs
03							
03	035	CLEAN	BLAST	17:25 min.	4.35 USD	6,677.04 lb	5 pcs
03	301	VM-03-301	VM-03-301	-	0.00 USD	0.00 lb	0 pcs

The manufacturing machines, that are set-up from menu “1.12.12 Machines”, are also directly impacted by these changes, firstly by better coverage of the supported operations and secondly, by



the estimated operation times used along the manufacturing process. Together with quantities, the times are the cornerstones of the overall estimated costs and prices summarized in the final project reporting.

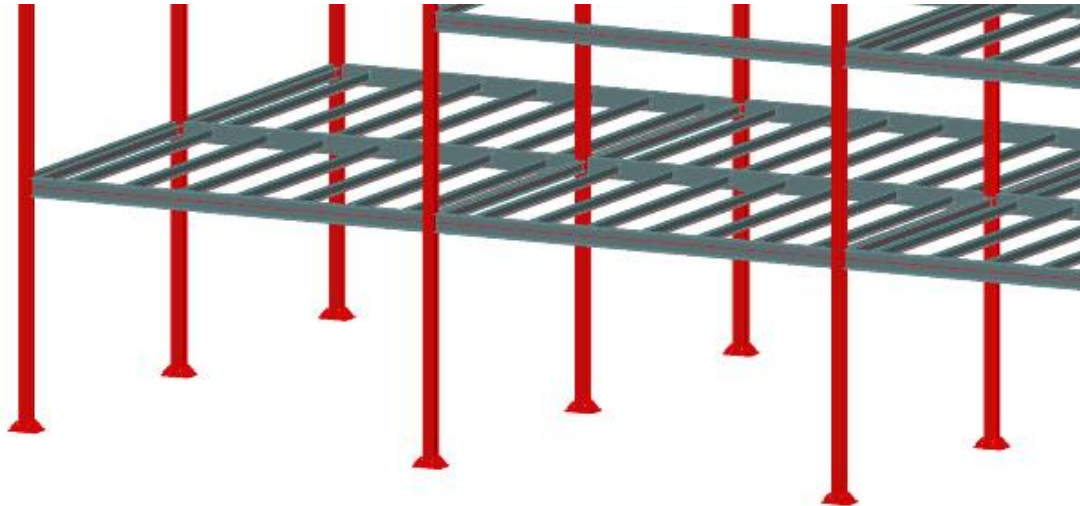
Machine parameters

LVD PRESS/LVD PRESS BRAKE : 01/AW/01/200	Parameter Name	Parameter Value	Economic Value	Parameter Key Pair
SPALECK1/DEBURRING BARREL SPALECK 1 :	▼ Saw			
LVD LASER/LVD LASER : 01/AW/01/030	▼ Time			
KALTENBACH/KALTENBACH PROFILE + DRILLING	▼ Speed			
FLAME/FLAME : 01/AW/01/002	Speed[1]	23.34	23.34	(760/<DEFAULT>/)
VM-03-302/MANUAL MACHINE ANGLE :	Speed[2]	25.00	25.00	(1640/<DEFAULT>/)
VM-03-301/MANUAL MACHINE BEAM : 01/AW/01/030	Speed[3]	25.00	25.00	(5380/<DEFAULT>/)
VM-03-300/MANUAL MACHINE PLATE :	Speed[4]	25.84	25.84	(11250/<DEFAULT>/)
BLAST/SHOT-BLASTING : 01/AW/03/035	Speed[5]	25.94	25.94	(15600/<DEFAULT>/)
VM-03-301/MANUAL MACHINE BEAM : 01/AW/01/030	Speed[6]	26.67	26.67	(22650/<DEFAULT>/)
KALTENBACH/KALTENBACH PROFILE + DRILLING	Speed[7]	26.67	26.67	(27000/<DEFAULT>/)
KALTENBACH/KALTENBACH PROFILE + DRILLING	Speed[8]	27.50	27.50	(36370/<DEFAULT>/)
KALTENBACH/KALTENBACH PROFILE + DRILLING	Speed[9]	28.34	28.34	(40000/<DEFAULT>/)
	Speed[10]	28.34	28.34	(44460/<DEFAULT>/)
	▼ DrillBit			
	▼ Holes			
	▼ Round			
	▼ Time			
	▼ Speed			
	Speed[1]	1.64	1.64	(10/<DEFAULT>/)
	Speed[2]	1.76	1.76	(12/<DEFAULT>/)
	Speed[3]	1.67	1.67	(14/<DEFAULT>/)
	Speed[4]	1.61	1.61	(16/<DEFAULT>/)
	Speed[5]	1.63	1.63	(18/<DEFAULT>/)
	Speed[6]	1.64	1.64	(20/<DEFAULT>/)
	Speed[7]	1.54	1.54	(22/<DEFAULT>/)
	Speed[8]	1.46	1.46	(24/<DEFAULT>/)

## 13. Construction Phasing Import

Either is known as “Phase”, “Lot” or any other similar name, this property means the same thing: a process that divides a construction project into distinct stages that are executed sequentially. It represents a common approach for complex projects since it provides a better management, resource coordination, and scheduling.

The current version of Advance Workshop 2025 comes with a comprehensive solution for this problem, ensuring that all the current file formats (smlx, NC, gtcx) and the project's structure (assemblies, parts) are compatible in transferring this important information down the line to the production and job site.



(3D model example – highlights phases)

Workshop data import

File: D:\

Selection: Summary

Mode: Fabrication ☐ Viewer Off

Show Plates, Profiles, Plates folded, Special parts

File format dropdown: GTCX, SMLX, NC (nc, nc1, Wiscor), GTCX, IFC

Level	Operation production	Mark	Source name	Material	Coating
Model	...	Advance Steel to Fabrication ...			
Phase - Valid	...	Phase 0			
Main part - Valid	...	1BP2			Galvanised
Part - Valid	...	1BP2	PL 0.5x6x12	ASTMA36	Galvanised
Operation - Feasible	To produce	Truck loading (WELDING#2)			
Main part - Valid	...	1BP1			Galvanised
Part - Valid	...	1BP1	PL 0.125x1'11x1'11	ASTMA36	Galvanised
Operation - Feasible	To produce	Truck loading (WELDING#2)			
Phase - Valid	...	Phase 1			
Main part - Valid	...	1C4			Galvanised
Main part - Valid	...	1C5			Galvanised
Main part - Valid	...	1C2			Galvanised
Main part - Valid	...	1C6			Galvanised
Main part - Valid	...	1C1			Galvanised
Main part - Valid	...	1C3			Galvanised
Main part - Valid	...	1C8			Galvanised
Main part - Valid	...	1C7			Galvanised
Phase - Valid	...	Phase 2			

## 14. External nesting links (Lantek)\*

This version extends the number of nesting external software that Advance Workshop is capable of communicating with, by adding also Lantek to this list. This represents a 2D nesting solution used by manufacturers worldwide due to its capabilities.

The transfer is very simple and intuitive:

Advance Workshop place required information about the elements to be nested (plates) into a shared folder

Lantek retrieves this information from the shared folder, it runs the nesting, and places the result in the same folder.

Advance Workshop gets back and centralize the entire nesting information, together with its remnants.

Here are the configurations required:

For **Advance Workshop machine**:

- set the AW2NestigToolFolder path to the shared folder where NC data will be exchanged
- set the DBConnectionString to the location of the database.
- configure the "Tool" parameter with the value "2" (specific to Lantek)
- enable the driver and specify a full name for it

Name	GM-PLATE		
Description	GENERIC MACHINE PLATE		
Manufacturer	XXX	Model	XXX
Serial	00		
Parameter Name	Parameter Value	Economic Valu	
ExternalNesting			
Aw2NestigToolFolder	\\LS-AP-TEST\Users\DS\Documents\Lantek_Shared\Files		
DBConnectionString	data source = LS-AP-TEST\Lantek; initial catalog = Lantek-groetsch-Full...		
Tool	2		
Driver			
DownloadingPath			
Enabled	<input checked="" type="checkbox"/>		
FullName	Aw.Driver.Dstv.DstvDriver		

For **Advance Workshop items**:

- items used as raw material (plate sheets) from Advance Workshop, need to have same "External nesting item code" as their Lantek correspondent sheets

International Identical unit GEN code In order Supplier Reversion Select all Unselect all

Main List Financial Others Drawing Tax Currency HMS **Technical notes** Multibranch

Item PL10-1x4-S355JR

Technical note N°1

Technical note N°2

Production item type

**External nesting item code**

Jobs Home Manage Utilities View Add-Ins

Machines Parts **Sheets** Materials Consumables Tools Turrets Multitools Dies Assign punches-Standard stations

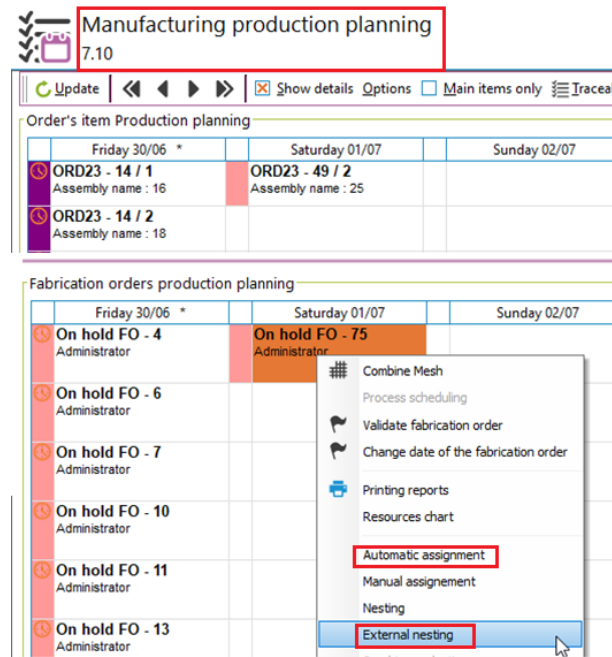
Components Punches

Sheets

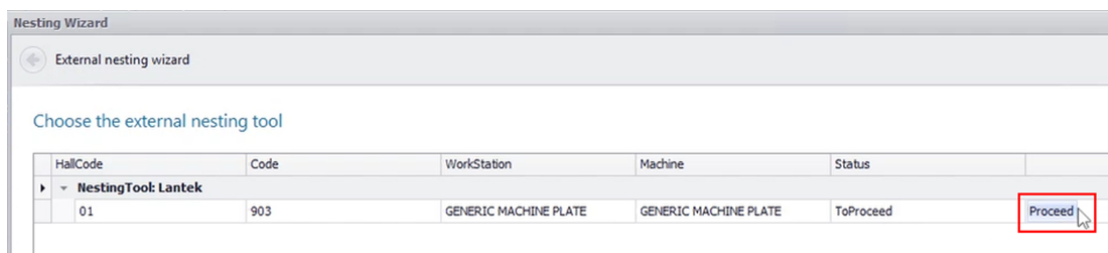
Reference	Material	Thickness (mm)	Dimensions (mm)	Quantity
1.4301x2000x1000x10	1.4301	10.0000	2000.000x1000.000	1
1.4301x2000x1000x12	1.4301	12.0000	2000.000x1000.000	1
1.4301x2000x1000x2	1.4301	2.0000	2000.000x1000.000	0
1.4301x2000x1000x3	1.4301	3.0000	2000.000x1000.000	1
1.4301x2000x1000x4	1.4301	4.0000	2000.000x1000.000	0
1.4301x2000x1000x5	1.4301	5.0000	2000.000x1000.000	0
1.4301x2000x1000x6	1.4301	6.0000	2000.000x1000.000	1
1.4301x2000x1000x8	1.4301	8.0000	2000.000x1000.000	10
1.4301x220x200x0.8	1.4301	0.8000	220.000x200.000	1
1.4301x2500x1250x1	1.4301	1.0000	2500.000x1250.000	0
1.4301x2500x1250x1.5	1.4301	0.0000	2500.000x1250.000	3
1.4301x2500x1250x1.5	1.4301	1.5000	2500.000x1250.000	8
1.4301x2500x1250x10	1.4301	10.0000	2500.000x1250.000	0
1.4301x2500x1250x15	1.4301	15.0000	2500.000x1250.000	1
1.4301x2500x1250x2	1.4301	2.0000	2500.000x1250.000	10

As **workflow steps**:

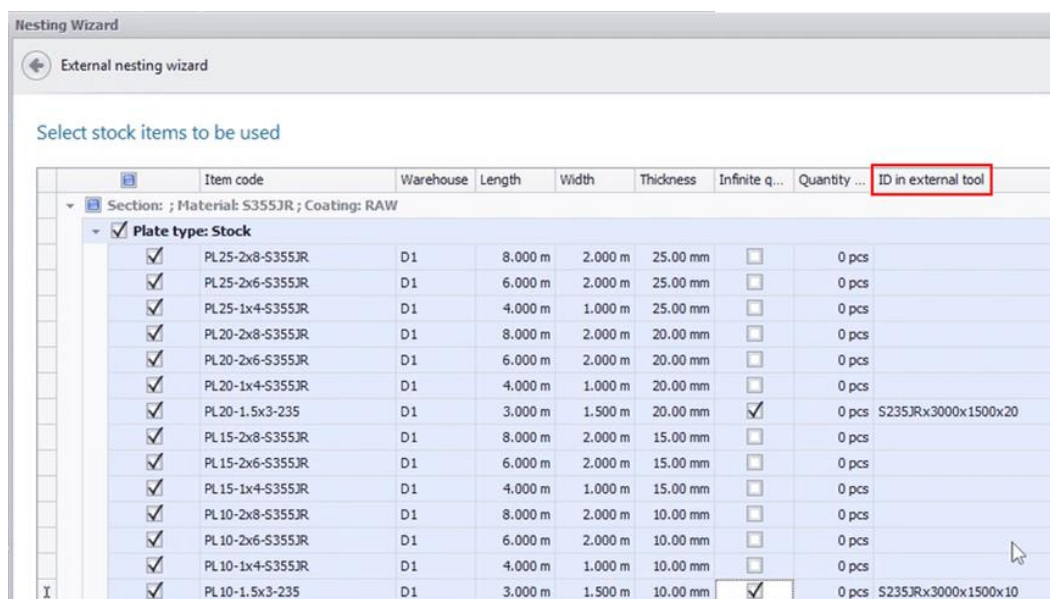
- go to menu “7.10 Manufacturing production planning”, run first “Automatic assignment” and then “External nesting”



- the following dialog appears, and it requires to hit “Proceed” to move forward:

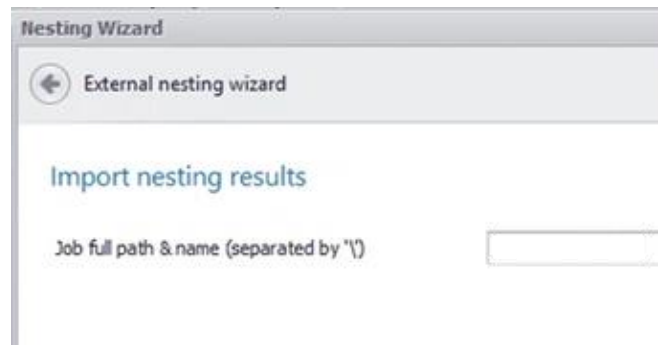


If the Advance Workshop items are set up correctly, the information will be displayed “ID in external tool”.



The information is pushed at this point to the shared folder and the nesting continues in Lantek software.

After the nesting process is finished, the project's needs is required to be saved, in order to send data back.



The nesting results should be displayed as follows:

Nesting Wizard											
External nesting wizard											
External nesting results											
Nesting											
FO file: FO023 ; FO number: 76											
FO023-76-N0001											
Layout Data											
Machine: GENERIC MACHINE PLATE											
PL10-1.5x3-235											
Parts											
Remnants											
Mark											
Width											
Length											
Quantity											
1058					404.02 mm				602.48 mm		2 pcs
1046					139.30 mm				190.00 mm		12 pcs
1051					133.15 mm				147.29 mm		4 pcs

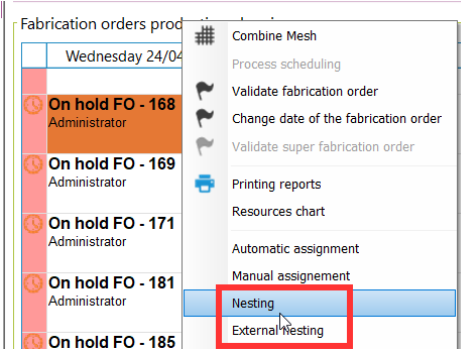
## 15. Report Templates

New report templates have been added as part of out-of-the-box version.

Although reporting will be constant subject to customization and adjustments, these reports provide useful content required to track production data. Let's get through each of these new reports and check what information is being brought by each of them.

### 15.1. Material Requisition list

This report is available at Fabrication Order level (menu "7.10 Manufacturing production planning"). The information provided is about the required raw materials within the Fabrication Order. Although the report provides meaningful results with or without a Nesting process run upfront, it's highly recommended to do so, in order to have listed quantities related to real production info.



**Material Requisition List**  
 Shop copy  
 Graitec France  
 Job Number : **BTR21-156**

Sold GRAITEC  
 To 17,Burospace  
 BIEVRES, 91572

Ship GRAITEC  
 To 17,Burospace  
 BIEVRES, 91572

Date : 4/22/2024  
 Time : 11:09:16 AM

Order No : P2021-144	Dated : 10/6/2023	Quote No : 0
Customer : GRAITEC		PO Num : APL/P2021/144
Ship Via :		Priority : 0
Part Number :		Product Code : Steel connection
Description :		
Drawing Number :		Revision :
Start Date : 10/9/2023	Finished Date : 4/22/2024	Master Job No P2021-149
Contact :		Phone :
		Fax :
Total Qty Open : 57	Qty Posted : 0	Qty To Make : 57

Item	Quantity	Unit	Amount
<b>Profiles</b>			
PL3/8"-4x8      PL3/8"-4x8 A STMA36	6.000	UN	6.00
PL5/16"-4x8      PL5/16"-4x8 ASTMA36	71.000	UN	71.00
PL1/4"-4x8      PL1/4"-4x8 A STMA36	7.000	UN	7.00
PL2"-5x10      PL2"-5x10 ASTMA36	9.000	UN	9.00
PL1/8"-5x10      PL1/8"-5x10 ASTMA36	8.000	UN	8.00
PL1/2"-4x8      PL1/2"-4x8 A STMA36	2.000	UN	2.00
PL3/4"-4x8      PL3/4"-4x8 A STMA36	1.000	UN	1.00
<b>Plates</b>			
AISC-WT-00240      AISC-WT WT8X13 40"ASTMA992	16.000	BAR	16.00
AISC-W-00140      AISC-W W24x117 40"ASTMA992	1.000	BAR	1.00
AISC-HSS-SQ-013      AISC-HSS-SQ HSS 14X14X1/2 40"ASTMA500GRB	9.000	BAR	9.00
AISC-W-00032      AISC-W W12x26 40"ASTMA992	13.000	BAR	13.00
AISC-W-00046      AISC-W W12x87 40"ASTMA992	7.000	BAR	7.00

### 15.2. Job Traveler list

This type of report defines the general requirements for the job traveler needed to list all actions demanded for a fabrication order while defining the critical path and estimated times by workstation.

It's available at the Fabrication Order level (menu "7.10 Manufacturing production planning").

### Job Traveler

Shop copy

Graitec France

Job Number : P2021-162

Date : 4/22/2024

Time : 11:04:45 AM

Sold GRAITEC  
To 17 Burospace  
BIÈVRES, 91572

Ship GRAITEC  
To 17 Burospace  
BIÈVRES, 91572

Order No : P2021-162

Dated : 4/12/2024

Quote No : 0

Customer: GRAITEC

PO Num : APL/P2021/162

**Ship Via :**

Priority : 0

Part Number :

Product Code : Steel connection

Drawing Number :

**Revision :**

**Dated :**

Start Date : 4/10/2024

Finished Date : 4/22/2024

Master Job No P2021-158

**Contact :**

**Phone :**

Total Qty Open :

Qty Posted :

Qty To Make :

## Routing

**Routed by :**

Quantity

Step No	Work Cntr / Vendor		Setup	Cycle	Total
Dept	Operation	Description	Time	Time	Time
035	CLEAN	SHOTBLASTING	0	612	0
PROCESS	CLEAN			612	
021	PROFILE	KALTENBACH22	0	4747	0
PROCESS	LCUT			4029	
PROCESS	DRILL			718	
002	FLAME	FLAME MACHINE	0	567	0
PROCESS	PCUT			567	
030	LVD	LASER MACHINE	0	980	0
PROCESS	PCUT			980	
101	WELDING#2	WELDING#2	0	9615	0

The information contained by this report is also available at interface, by selecting the Fabrication Order, right click and run “Automatic Assignment”. The information about times is aggregated similar as in the report, at the bottom of the dialog.

The screenshot shows the 'Automatic assignment' menu in the production planning software. The menu is open, displaying various options. The 'Automatic assignment' option is highlighted with a red box. The menu options are:

- Combine Mesh
- Process scheduling
- Validate fabrication order
- Change date of the fabrication order
- Validate super fabrication order
- Printing reports
- Resources chart
- Automatic assignment** (highlighted)
- Manual assignment
- Nesting
- External nesting
- Send to production
- Manual checking
- Information complement
- RM Traceability
- Delete fabrication order

Workstations							
HALL_CODE	Workstation Code	Workstation	Machine	Time	Cost	Weight	
01							
01	002	FLAME	FLAME	-	0.00 USD	0.00 lb	
01	021	PROFILE	KALTENBACH	34:59 min.	108.95 USD	811.29 lb	
01	100	WELDING#1		-	0.00 USD	0.00 lb	
01	101	WELDING#2		25:33 min.	0.00 USD	1,247.45 lb	
01	200	PRESS	LVD PRESS	-	0.00 USD	0.00 lb	
01	030	LVD	LVD LASER	14:00 min.	58.33 USD	30.95 lb	
01	400	PAINT		-	0.00 USD	0.00 lb	
01	999	Galv		-	0.00 USD	0.00 lb	
03							
03	035	CLEAN	BLAST	11:02 min.	2.76 USD	811.29 lb	
03	301	VM-03-301	VM-03-301	06 sec.	0.42 USD	811.29 lb	

### 15.3. AWS\_NESTING1D

This type of report is designed to provide information relating to the result of the steel profiles nesting. It can be used by getting in menu “7.10 Manufacturing production planning”, selecting a Fabrication Order, and go to print category “19. Debit sheet”.



It lists a breakdown report about the profile elements together with the raw materials from which are assigned to be cut off, the end of the report offers also a summary of the total raw material amount involved in that specific Fabrication Order.

**Fabrication order:** BTR21 - 156

**Workstation:** KALTENBACH22

Nesting #	Item code	Item ref	Length (ft/in)	Remnant	Quantity	Unit weight (lb)	Total weight	Material
1,130	AISC-HSS-SQ-013	HSS 14X14X1	30' 0"	2.59"	1	2690.4	2690.4	ASTMA500G
	Customer order	Mark	Quantity	Length (ft/in)	Weight (lb)	Cutting angles		
	P2021 - 144	C1001	1	14' 10.25"	1332.12	0.0		0.0
	P2021 - 144	C1003	1	14' 10.25"	1332.12	0.0		0.0

Nesting #	Item code	Item ref	Length (ft/in)	Remnant	Quantity	Unit weight (lb)	Total weight	Material
1,131	AISC-HSS-SQ-013	HSS 14X14X1	30' 0"	2.59"	1	2690.4	2690.4	ASTMA500G
	Customer order	Mark	Quantity	Length (ft/in)	Weight (lb)	Cutting angles		
	P2021 - 144	C1001	1	14' 10.25"	1332.12	0.0		0.0
	P2021 - 144	C1004	1	14' 10.25"	1332.12	0.0		0.0

Nesting #	Item code	Item ref	Length (ft/in)	Remnant	Quantity	Unit weight (lb)	Total weight	Material
1,132	AISC-HSS-SQ-013	HSS 14X14X1	30' 0"	2.59"	1	2690.4	2690.4	ASTMA500G
	Customer order	Mark	Quantity	Length (ft/in)	Weight (lb)	Cutting angles		
	P2021 - 144	C1001	1	14' 10.25"	1332.12	0.0		0.0
	P2021 - 144	C1001	1	14' 10.25"	1332.12	0.0		0.0

#### List of bars used

Item code	Item ref	Material	Lgth (ft/in)	Qty	Unit wgt (lb)	Total wgt (lb)	Scrap (ft/in)	Scrap (%)	Scrap (lb)
AISC-HSS-SQ-01	HSS 14X1	ASTMA50	9144	1	1220.34491	1220.34491	2.59"	0.7	19.39
AISC-HSS-SQ-01	HSS 14X1	ASTMA50	9144	1	1220.34491	1220.34491	2.59"	0.7	19.39
AISC-HSS-SQ-01	HSS 14X1	ASTMA50	9144	1	1220.34491	1220.34491	2.59"	0.7	19.39
AISC-HSS-SQ-01	HSS 14X1	ASTMA50	9144	1	1220.34491	1220.34491	15.59"	4.3	116.54
AISC-HSS-SQ-30	HSS 14X1	ASTMA50	7620	1	1220.34491	1220.34491	3' 0.93"	12.3	331.19
AISC-W-00032	W12x26	ASTMA99	12192	2	160.4821	320.9642	11.95"	2.5	8.81
AISC-W-00032	W12x26	ASTMA99	12192	1	160.4821	160.4821	8' 2.14"	20.4	72.34
AISC-W-00032	W12x26	ASTMA99	12192	1	160.4821	160.4821	8' 2.16"	20.4	72.35
AISC-W-00032	W12x26	ASTMA99	12192	1	160.4821	160.4821	8' 8.88"	21.9	77.31
AISC-W-00032	W12x26	ASTMA99	12192	1	160.4821	160.4821	24' 7.43"	61.5	217.76
AISC-W-00046	W12x87	ASTMA99	12000	1	536.9978	536.9978	18.54"	3.9	2.4
AISC-W-00046	W12x87	ASTMA99	12000	1	536.9978	536.9978	2' 3.48"	5.8	3.56
AISC-W-00046	W12x87	ASTMA99	12000	1	536.9978	536.9978	12' 9.16"	32.4	19.83
AISC-W-00140	W24x117	ASTMA99	12000	1	722.16945	722.16945	15' 9.59"	40.1	33.01

<b>Total</b>	
Quantity	15
Weight (T US)	10.359
Length (ft/in)	502' 5.76"
Scrap weight (T US)	0.507

## 15.4. AWS\_FO\_BY\_WSTATION

The report is designated to oversee parts production at each workstation level. It's available by entering in menu "7.10 Manufacturing production planning", selecting a Fabrication Order, and going to the print category "19. Debit sheet".

Within the report we can find information regarding the operations that occur on each individual machine, grouped based on the produced part and considering the raw material involved in the process. Additionally, barcodes are available at each level of operation, allowing real-time status of the production by scanning and sending the information into the system.



### ***Fabrication order by workstation***

[illegible]

## 15.5. Quotation report\*

This report can be available based on the request, in the menu “9.2.1 Quotation” and it is used alongside the newly developed “Grouping” option (available in the same menu).

Line	Quantity	UM	Part	Description	Price \$	Extension \$
1	1.000	EACH	EQUIPMENT PLATFORMS	<p>Manufacture pre-fabricated components for (1) freestanding structural equipment platforms (nut &amp; bolt) construction according to the following specifications:  Dimensions: (2) 20'-0" x 8'-0" Modules connected by Upper Bridge  Overall Dimension: 46'-6" x 8'-0"  Usage: Equipment Support and/or Access  Live Load: 125 psf  Top of Deck: 11'-2.75"  Under Clearance: 10'-0"  Decking: 1" x 3/16" Painted Bar Grating  (1) Stairway with Upper Bridge Landing 6'-6" x 8'-0"  56 LF of 42" Tall Pipe Guard Rail with 4" Min. Kick Plate  Powder Coat Paint Finish Color(s) of Customer's Choice</p>	459.09	528.28
2	1.000	SQFT	Item Grouping Painting		2,000.00	2,500.00
3	1.000	EACH	INSTALLATION SERVICES		14,675.00	14,675.00
4	2.000	EACH	DEDICATED TRUCKS		2,250.00	4,500.00

This quote includes P.E. stamped drawings

Total for Quote \$

22,203.26

## 16. General enhancements

### 16.1.Import dialog - subcontracting

The import dialog can track down the status of operations & items and highlight at upper levels of items.

Now you can easily notice if one of the Assemblies (Main part) or Part contains something assigned as “Subcontracted” since their status is updated automatically (into yellow check mark), up until now requiring expanding and checking manually each item’s branch.

Workshop data import

File: D:\

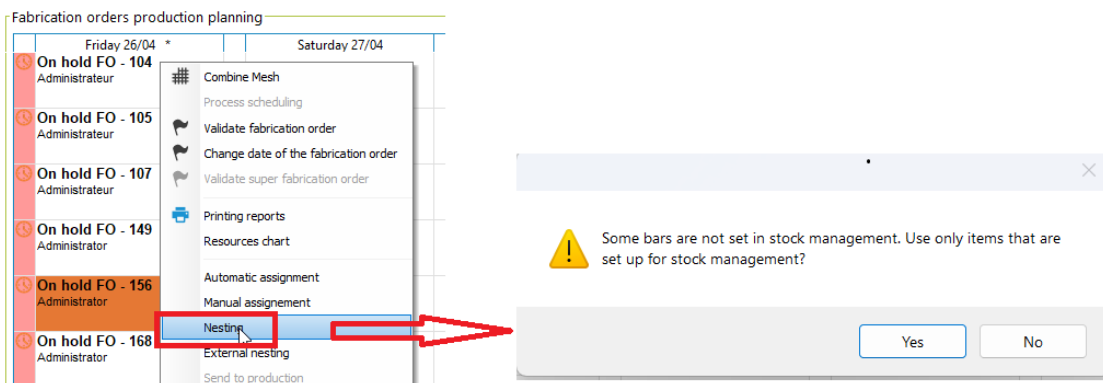
Selection Summary

Mode: Fabrication ☐ Viewer Off

Level	Operation production	Mark
Model - Has errors		P2021-166
Phase - Has errors		_EMPTY_
Part - Valid		2
Main part - Valid		1-547-9
Part - Valid		1-547-p4
Part - Valid		1-547-p1
Operation - Subcontracted	Subcontracted	Cut
Part - Valid		1-547-p3
Part - Valid		1-547-9
Operation - Feasible	To produce	Tack Welding (WELDING#2)
Operation - Feasible	To produce	Weld (WELDING#2)
Main part - Valid		1-547-10
Part - Valid		1-547-p10
Part - Valid		1-547-p9
Part - Valid		1-547-p4
Part - Valid		1-547-p1
Part - Valid		1-547-p3
Part - Valid		1-547-10
Operation - Feasible	To produce	Tack Welding (WELDING#2)
Operation - Feasible	To produce	Weld (WELDING#2)
Main part - Valid		1-547-8
Main part - Valid		1-547-11
Main part - Valid		1-547-7

### 16.2. Nesting on Stock materials only

While you are about to launch the nesting process from Fabrication Order (menu “7.10 Manufacturing Production planning”), you’ll be prompted to choose between all the item stored in Items menu or elements stored in stock exclusively.



Based on this choice, the nesting dialog will list as available raw materials, only the steel profiles that correspond to the choice (all profiles or only the ones that have stock records). This means, that based on the user’s choice, the nesting dialog will list only items found in the menu “11.1.1 Items stock” or all items defined in menu “1.10.4 Items”. Here is an example where the choice at the dialog question was “No” and the nesting dialog shows items that are not being tracked as Item Stock, and grouped under the “Unmanaged” category.

Select stock bars									
<input checked="" type="checkbox"/>	Item code	Warehouse	Length	Stock in hand	Customer reserve...	Available stock	Expected stock fro...	Theoretical stock	
Section: HSS 14X14X1/2 ; Material: ASTMA500GRB ; Coating: DIV									
Section: W12x26 ; Material: ASTMA992 ; Coating: DIV									
Bar Type: Unmanaged									
<input checked="" type="checkbox"/>	AISC-W-00032	RA	360.000 in	0 pcs	0 pcs	0 pcs	0 pcs	0 pcs	
Bar Type: Stock									
<input checked="" type="checkbox"/>	AISC-W-00032	RA	480.000 in	0 pcs	5 pcs	-5 pcs	6 pcs	1 pcs	

### 16.3. Mapping any operation type to any workstation type

The difference between a workstation and a machine is that workstation may or may not have associated a machine. In case of a workstation without a machine associated to it, we consider it as “manual workstation” (e.g. a work bench) and the current enhancement handles this situation, by allowing the association of any operation to such workstation type.

Being a relatively complex multistep configuration, we iterate a basic configuration example for such a situation, considering PCUT (plate or contour shape cut) that is handled manually by a worker (at a manual workstation).

First, the manual workstation is defined and the operation that needs to be executed on it.

This is done by accessing the menu “1.12.6 Physical working position” and making the next settings:

- create a manual workstation

Physical working position									
1.12.6									
Company	Workshop	Bay	Warehouse code	Workcenter	Workstation	Abbrev.	Descript.	Type	Number
01	01	00	BRO	001	016	SPARTAN	SPARTAN IRON WORKER	WASREF_WKS_STEEL	16
01	01	00	BRO	001	017	ACCURL PRE	ACCURL PRESS BRAKE	WASREF_WKS_STEEL	17
01	01	00	BRO	001	018	CINCINNATI	CINCINNATI PRESS BRAKE	WASREF_WKS_STEEL	18
01	01	00	BRO	001	019	WHITNEY	WHITNEY PRESS BRAKE	WASREF_WKS_STEEL	19
01	01	00	BRO	001	020	IRRIG WELD	IRRIGATION WELDING AREA	WASREF_WKS_STEEL	0
01	01	00	BRO	001	021	TRUCK WELD	TRUCK BED WELDING AREA	WASREF_WKS_STEEL	0
01	01	00	BRO	001	022	MIXED WELD	MIXED USE WELDING AREA	WASREF_WKS_STEEL	0
01	01	00	BRO	001	023	STRUC WELD	STRUCTURAL WELDING AREA	WASREF_WKS_STEEL	0
01	01	00	BRO	001	024	MachPCUT	Mach PCUT	WASREF_WKS_STEEL	0

- set operation as being available at workstation level

Possible operations on that workstation									
Mach PCUT									
Workstation						Operation	Operation require		
01	01	00	024	Mach PCUT	<input type="checkbox"/>	BEND	Bending	<input type="checkbox"/>	
01	01	00	024	Mach PCUT	<input type="checkbox"/>	BEVEL	Bevel	<input type="checkbox"/>	
01	01	00	024	Mach PCUT	<input type="checkbox"/>	CAMB	Cambering	<input type="checkbox"/>	
01	01	00	024	Mach PCUT	<input type="checkbox"/>	CLEAN	Shot Blasting/Deburring	<input type="checkbox"/>	
01	01	00	024	Mach PCUT	<input type="checkbox"/>	DRILL	Drilling	<input type="checkbox"/>	
01	01	00	024	Mach PCUT	<input type="checkbox"/>	FOLD	Folding	<input type="checkbox"/>	
01	01	00	024	Mach PCUT	<input type="checkbox"/>	FORM	Forming	<input type="checkbox"/>	
01	01	00	024	Mach PCUT	<input type="checkbox"/>	HAND	Handling	<input type="checkbox"/>	
01	01	00	024	Mach PCUT	<input type="checkbox"/>	LCUT	Length cutting	<input type="checkbox"/>	
01	01	00	024	Mach PCUT	<input type="checkbox"/>	MARK	MarkPoint	<input type="checkbox"/>	
01	01	00	024	Mach PCUT	<input type="checkbox"/>	MILL	Milling	<input type="checkbox"/>	
01	01	00	024	Mach PCUT	<input type="checkbox"/>	NUMB	Numbering	<input type="checkbox"/>	
01	01	00	024	Mach PCUT	<input type="checkbox"/>	PAINT	Painting	<input type="checkbox"/>	
01	01	00	024	Mach PCUT	<input checked="" type="checkbox"/>	PCUT	Cut	<input type="checkbox"/>	
01	01	00	024	Mach PCUT	<input type="checkbox"/>	SCRIBB	Scribbling/Mark Layout	<input type="checkbox"/>	
01	01	00	024	Mach PCUT	<input type="checkbox"/>	SORT	Sorting	<input type="checkbox"/>	
01	01	00	024	Mach PCUT	<input type="checkbox"/>	STORE	Storage	<input type="checkbox"/>	

Next step is to assign the operation (PCUT in this example) from menu “1.12.13 Production assignment tree”. Following the steps and settings from next pictures we achieve this requirement as well.

Production assignment tree 1.12.13

Export Import Save as Delete

Tree: 01-01

Test	Test All Directions	Node Number	Rank
1. ProfileBranch?	False	Node #1 (root)	1
1. Machine V-20 SAW -> LCU?	False	Node #3	1
1. Machine AVERGER -> DRILL, SCRIBB. THREADTAP?	True	Node #4	1
2. Workstation MachPCUT -> PCUT?	-	Node #4	2
2. Machine M-16A SAW -> LCU?	-	Node #3	2
3. Machine VT100HML -> LCU?	-	Node #3	3
2. PlateBranch?	-	Node #1 (root)	2
3. AssemblyBranch?	-	Node #1 (root)	3

New Test(if False)

Test Name: Test Name

WorkstationTest

01-01-00 / MachPCUT (Mach PCUT)

PCUT

OK Cancel

Production assignment tree 1.12.13

Export Import Save as Delete

Tree: 01-01

Test	Test All Directions	Node Number	Rank
1. ProfileBranch?	False	Node #1 (root)	1
1. Machine V-20 SAW -> LCU?	False	Node #3	1
1. Machine AVERGER -> DRILL, SCRIBB. THREADTAP?	True	Node #4	1
2. Workstation MachPCUT -> PCUT?	-	Node #4	2
2. Machine M-16A SAW -> LCU?	-	Node #3	2
3. Machine VT100HML -> LCU?	-	Node #3	3
2. PlateBranch?	-	Node #1 (root)	2
3. AssemblyBranch?	-	Node #1 (root)	3

Full Expand

Full Collapse

Add a test if False

Add a test if True

Edit Test

Delete Test

Test All Directions

Once all these are set, the specified operation is going to be automatically assigned to newly defined manual workstation during the import process into a Customer Order, as it can be noticed in the picture below:

Selection Summary

Mode: Fabrication Viewer Off Show Plates, Pro

	Level	Mark	Part			
			Type	Role	From file	Previously
✓	Model - Valid	Manual PCUT assign.GTCX				
✓	Main part - Valid	B2			1	
✓	Part - Valid	b1001	Profile	-	1	
✓	Operation - Feasible	Length cutting (HYDMECH V-2...		Length cutti...	1	
✓	Operation - Feasible	Cut (Mach PCUT)		Cut	1	
✓	Part - Valid	p1000	Plate	-	1	
✓	Operation - Feasible	Weld (TRUCK BED WELDING A...		Weld	1	
✓	Main part - Valid	B3			1	
✓	Part - Valid	b1002	Profile	-	1	
✓	Operation - Feasible	Length cutting (HYDMECH V-2...		Length cutti...	1	
✓	Operation - Feasible	Cut (Mach PCUT)		Cut	1	
✓	Part - Valid	p1000	Plate	-	1	
✓	Operation - Feasible	Weld (TRUCK BED WELDING A...		Weld	1	
✓	Main part - Valid	B1			1	
✓	Part - Valid	b1000	Profile	-	1	
✓	Operation - Feasible	Length cutting (HYDMECH V-2...		Length cutti...	1	
✓	Operation - Feasible	Cut (Mach PCUT)		Cut	1	
✓	Part - Valid	p1000	Plate	-	1	
✓	Operation - Feasible	Weld (TRUCK BED WELDING A...		Weld	1	

#### Disclaimer:

Topics marked with \* symbol may require specific customization, adjusted to specific environment (database), in order not to interact or to be altered by other set-up functionalities.