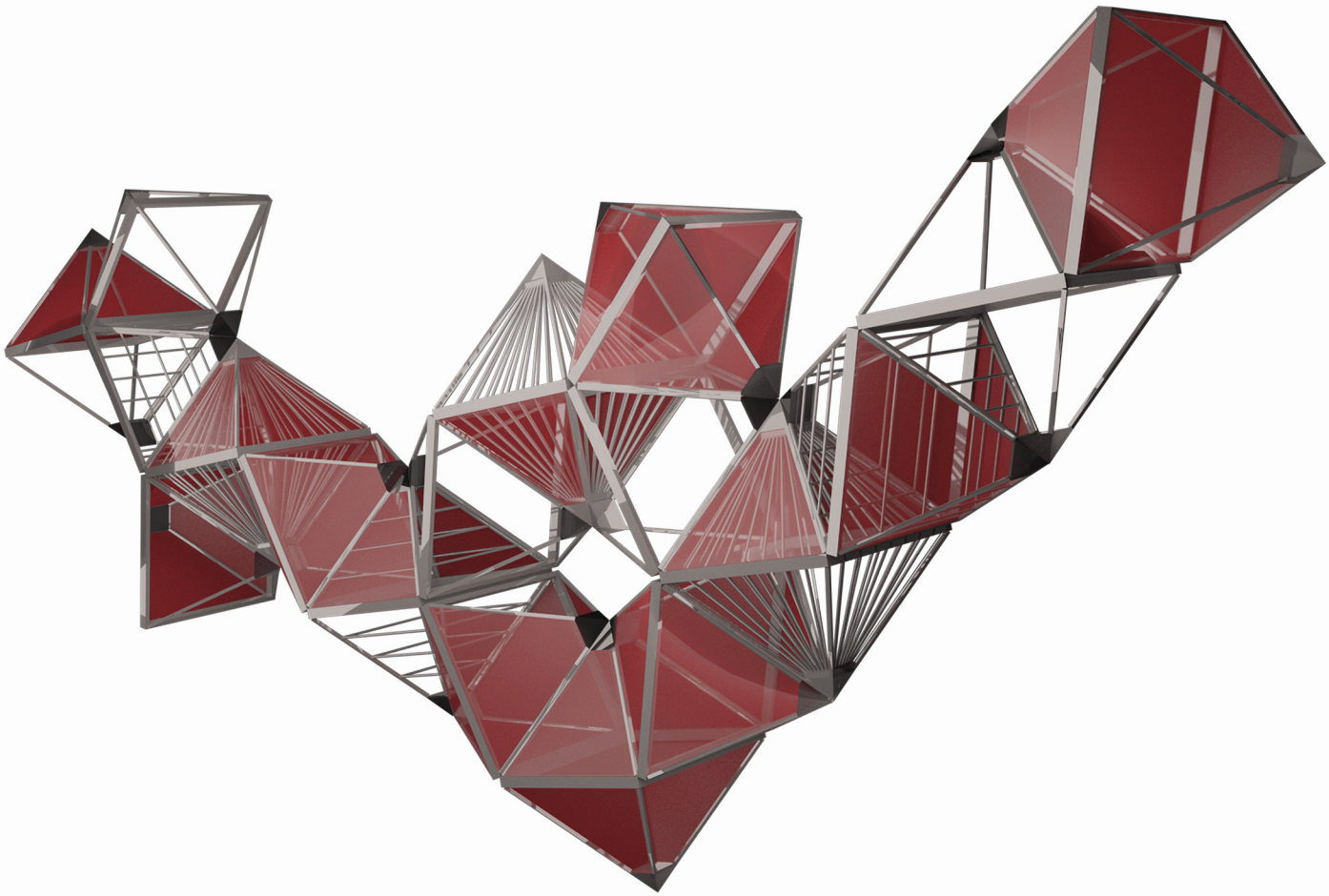
Innovation first

USER GUIDE

ADVANCE WORKSHOP 2018



GRAITEC

Advance Workshop

User Guide

This document has been very carefully prepared in the hope to meet your expectations and to answer all your questions regarding Advance Workshop.

This document only contains a brief description of the software functions and may only be used as a guide for using the software. It can also include information about some modules you did not acquire. For detailed information regarding the program's functions, please refer to the online help provided in Advance Workshop.

In case of any discrepancy between the information given in this guide and the information given in the software, consider the software as your main reference.

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Welcome

Welcome to Advance Workshop, the Management Information Solution (MIS) for steel engineering and manufacturing companies that are trying to implement/introduce a system to effectively manage their fabrication production and associated processes in their business.

The system designed by GRAITEC allows integration between all steps across the production process from quote to production. All in one software solution that is also easily customized to meet specific customer needs.

In this chapter:

- *Introduction*
- *About this manual*

Introduction

Advance Workshop ensures an optimized fabrication management and an end-to-end streamlined workflow.

Advance Workshop's key features are:

- Integration with BIM CAD systems, direct import of standard steel production and NC formats and links with Autodesk Advance Steel detailing system.
- Easy import and manual entry of BOM with automatic geometry definition.
- Automated allocation and routing around the workshop according to the fabrication facilities.
- Time assessment and workload calculation per operation and project.
- Integrated stock management with material traceability and waste management.
- Material optimization for beams and plates* with material certificate registration.
- Central management of all machines including ISO NC code generation and production worksheets.
- Project Planning
- Multi User / Central data base access
- Multi Language.

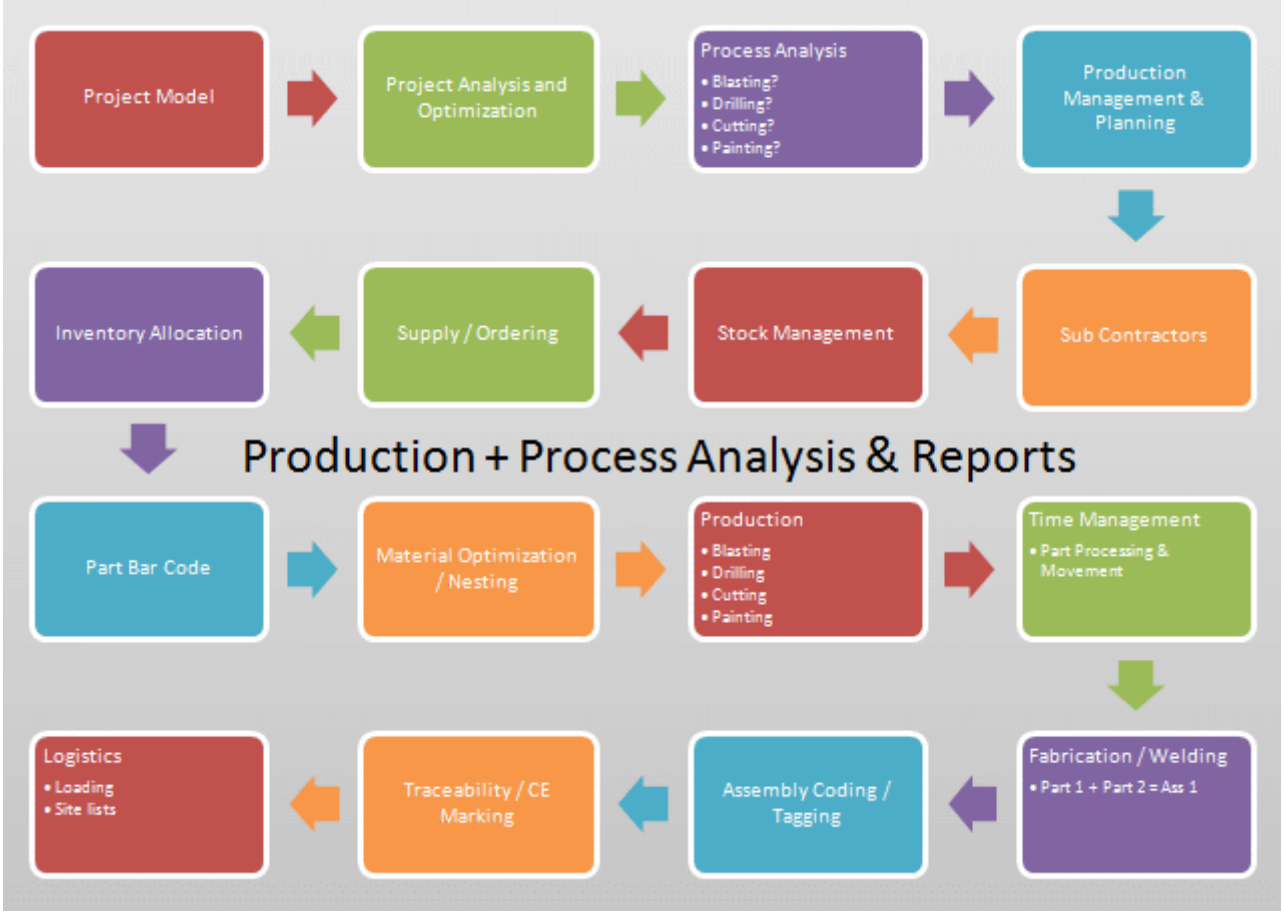


*Plate shapes and processes managed by Advance Workshop which feeds machine supplier plate nesting software.

The beginning of a project and workflow starts from a 3D/2D model obtained from various CAD software. Advance Workshop is able to import the most common part description formats (DSTV, CAM, Excel, etc.) and convert them into manageable data. Thanks to its modularity, it is also possible to arrange data imports into any user-specific format.

Advance Workshop allows users to process and manage information for creating an accurate workflow of the contract, thanks to the powerful interface for creating cycles and managing data. These can be configured according to the internal layout and specific needs of your facility.

This makes the procedure extremely accurate, so as to ensure a knowledge of the production timing, and thus to provide competitive prices. The timing estimation function is critical to business optimization. Data sent to production is represented by Gantt charts that allow you to have a clear idea of the level of resource commitment.

A document control system based on a database allows you to maintain, manage and deliver all necessary documentation, also controlling any existing changes. Document management is crucial if one considers the complexity of quality control procedures to meet legislation whilst having the ability to deliver project related certificates with tight delivery times of today's projects. Companies must manage their projects' data effectively, especially with the changes in the project itself, to increase the added value of engineering.

The report module automatically generates cutting lists, pick lists and barcode production labels. Advance Workshop manages the automated procedures for generating Part Programs for CNC machines. It also provides a panoramic view of the production progress, with the help of a real time visual monitoring system through 2D and 3D graphs.

Advance Workshop manages all the phases and subdivisions of a production order whilst providing a system for monitoring and recording work status, to better manage production progress.

About this manual

This manual's purpose is to familiarize you with your new software. You will learn how to install it, how to start it and use its features. Here you can find:

- Information regarding the application environment;
- A brief description of each of the program's functions;

Chapter 1
Advance Workshop Installation

This chapter provides information regarding the Advance Workshop general requirements and installation steps.

Here you can also find information regarding the application launching methods and the Advance Workshop files management in your computer.

In this chapter:

- *System requirements*
- *Installation*
- *Uninstalling*
- *Starting Advance Workshop*

System requirements

To successfully install Advance Workshop, certain requirements must be met.

For more details, see the Installation guide on GRAITEC Advantage or www.graitec.com/en/advance_installation.asp.

Installation

Before installing Advance Workshop:

- Close all active Windows applications.
- Deactivate the antivirus software.
- Make sure you have local administrator rights for Windows.

***Note**: Please install MySQL server before installing Advance Workshop. See the GRAITEC Advance Installation Guide.*

Installing a version for one user

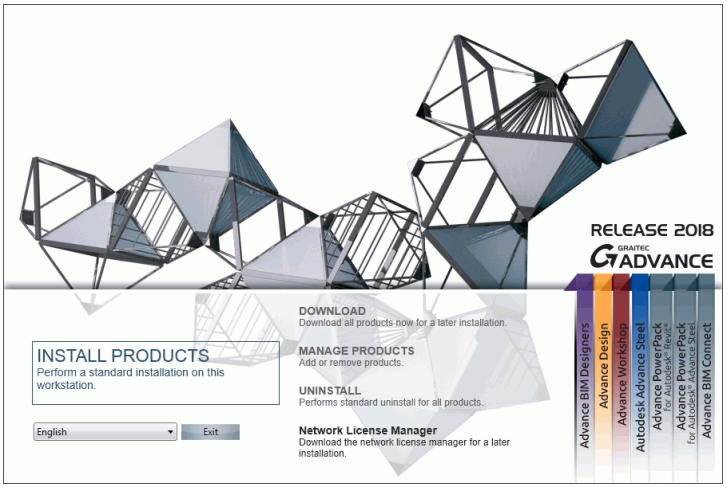
1. Insert the installation DVD into the DVD drive.

The setup program starts automatically and the DVD Browser appears.

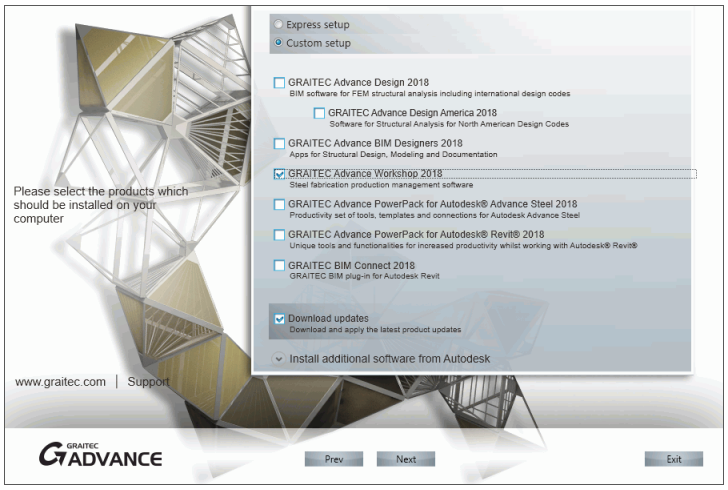
***Note**: If the AutoPlay tool on the computer is switched off and thus the setup does not start automatically, use the following procedure:*

- *On the Windows task bar, click* .
- *In the "Search programs and files" field, enter* SetupAdvance.exe. *Double-click the file to start.*

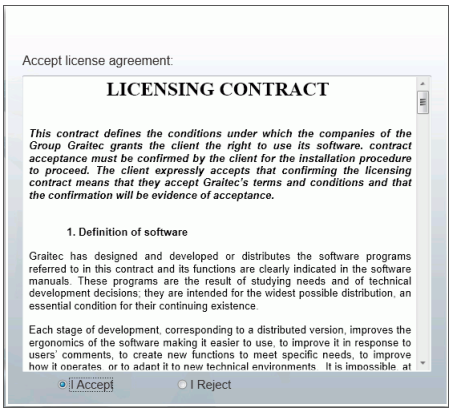
2. Select the installation language and click **Install products**.



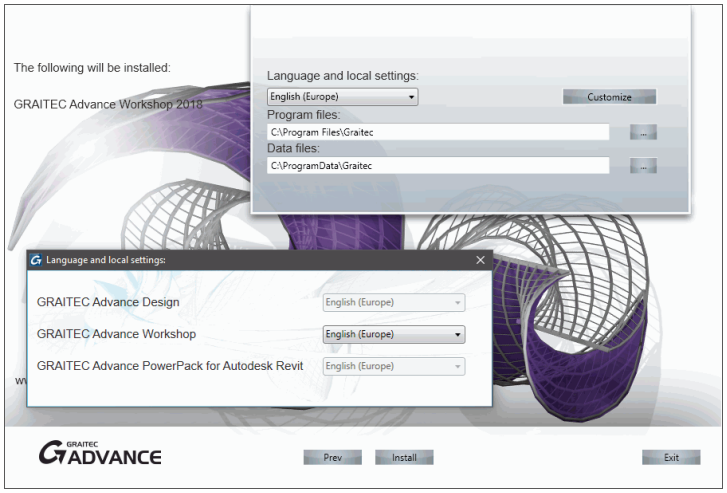
3. On the next screen, select GRAITEC Advance Workshop and click **Next**.



4. Read the license agreement. Click **I accept** to agree to the specified terms and click **Next** to continue.



5. On the next screen, select the interface language and the installation path.
   – To select the interface language, click **Customize**. In the next dialog box, select the interface language and the local settings for each installed application and click <**OK**>.
   – To change the destination path, click . In the next dialog box, enter a path or select a different folder in which to install Advance and click <**OK**>.



6. Click **Install** to start the installation.

The installation starts.

7. Click **Exit** when the installation is completed.

Uninstalling

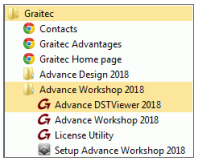
1. In Windows **Start** menu, select **Control Panel**.
2. Click on **Uninstall a program** under **Programs**.
3. Select **Advance Workshop** from the list and click **Uninstall**.

Advance Workshop will be uninstalled.

Starting Advance Workshop

You can launch Advance Workshop using various methods:

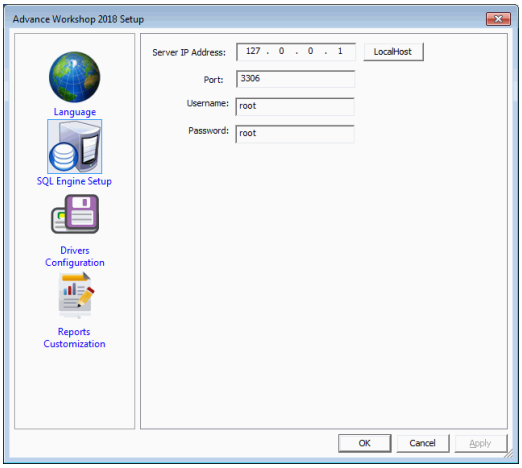
- Windows **Start** menu, select **All Programs**. Select the **Graitec** menu and click the Advance Workshop sub-menu:



  Select **Setup Advance Workshop 2017** to access the Advance Workshop Setup screen. From this screen, you can:

  ✓ Select the desired language.

  ✓ Configure the IP address of the MySQL server to which Advance Workshop refers.



  ✓ Configure drivers.

  ✓ Customize reports (see the Report Designer Guide).

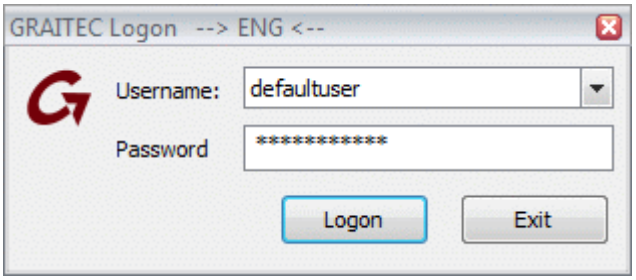
- To access the program, you can also double click the Advance Workshop icon on your desktop.

First start of the software

These instructions are for the first launch of Advance Workshop.

1. Double click on the desktop icon

.
2. Insert the "*defaultuser*" password and click on "**Logon**".



***Note**: A user can not be logged on more than once at the same time.*

3. Advance Workshop asks for the activation code. Follow the license activation steps from chapter **Activating a license** in the Advance Installation Guide.

***Note**: When registering the Advance Workshop 2017 license you received from GRAITEC, please pay attention to the license type. Please remember that usually this software uses a server license, which means you also need to install the Graitec license server software. Please see the Advance Installation Guide for additional information.*

The number of users who can simultaneously access the software is bound to the number of licenses purchased by the company.

As the software is a Client-Server application, it can be installed on any number of computers.

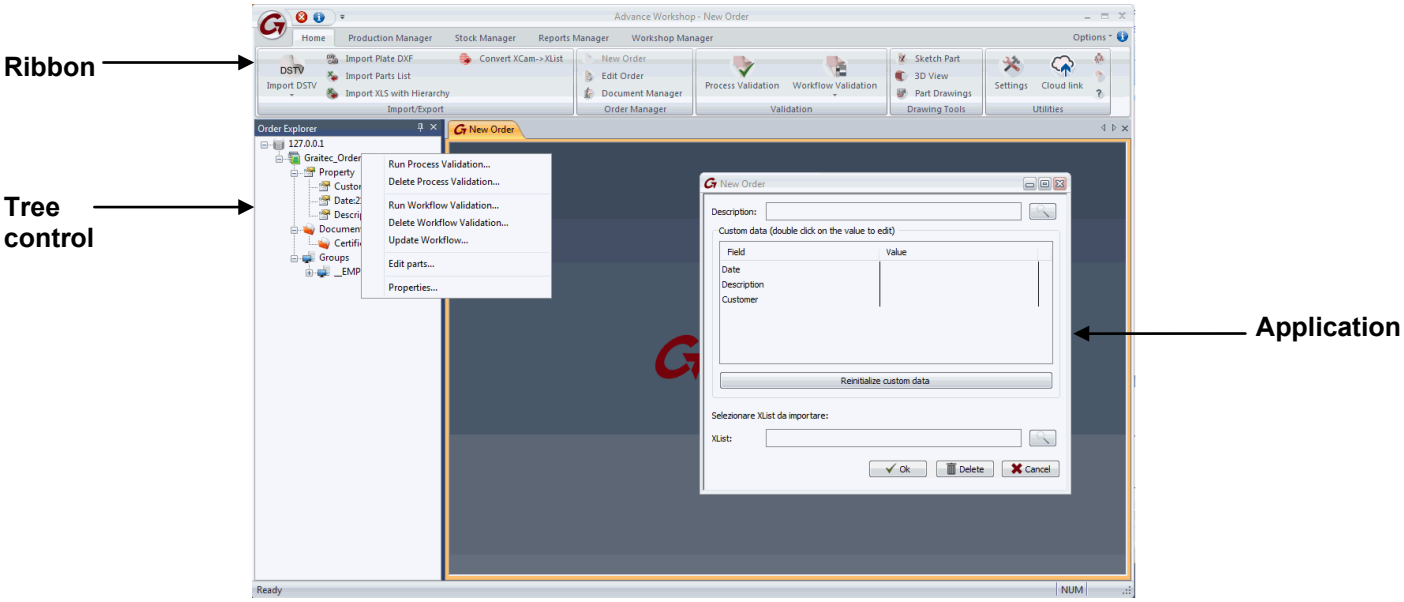
Chapter 2
The Advance Workshop Environment

Advance Workshop is compatible with the Windows environment. Using the Windows shortcuts, it is possible to customize the workspace and control its functions.

In this chapter:

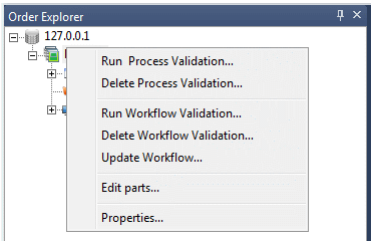
- *Main screen description*
- *The Advance Workshop Ribbon*
- *The Home tab*
- *The Production Manager tab*
- *The Stock Manager tab*
- *The Reports Manager tab*
- *The Workshop Manager tab*

Main screen description



The Advance Workshop environment is divided into 3 areas:

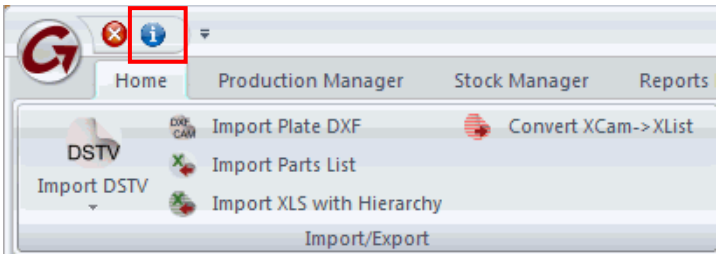
- **Ribbon** = here you can find all the commands for the standard application based on the modules purchased or the rights of the user.
- **Tree control** = from here, all the projects are loaded into Advance Workshop. By selecting the different items, you can expand them to access additional functions.

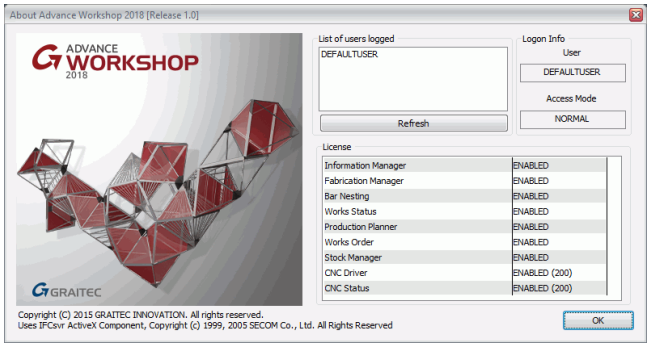


- **Application** = the space where all the dialog windows corresponding to commands enabled in the ribbon bar are opened. To close individual windows, click the red arrow or the "X" in the upper right corner.

***Note**: To exit Advance Workshop, you need to close all open applications.*

The **Info** button on the quick access toolbar opens the following screen where the user can see the enabled modules and the license expiration date.





The Advance Workshop Ribbon

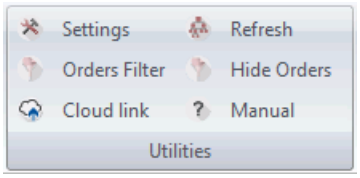
The Advance Workshop Ribbon is composed of five tabs: Home, Production Manager, Stock Manager, Reports Manager, and Workshop Manager.

The Home tab

To start working in Advance Workshop, the user must first start by importing a project model from any BIM solution. In the Home tab you will find all the necessary import commands, as well as order management and process validation commands and drawing tools.

Commands in the Utilities panel

In this section, users can find the commands necessary to configure and update the customization features of Advance Workshop.



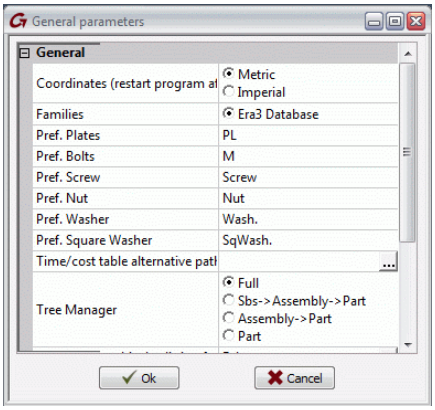
Settings

Command access:

1. General

The General command allows the user to configure all the parameters for the application customization.

All configurations are saved directly in the database and subdivided by the user. This allows the user to access other customized areas.

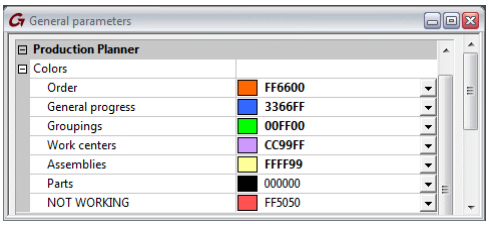


- **Coordinates**: allows the user to select the working units (International = mm / Kg Imperial = inc / lib).
- **Families**: a custom database listing profiles and materials. In this field, the user can choose the database (family) to work with. Only "GRAITEC Database" is available during the initial installation. For the creation of new families, see the chapter regarding the “Database”. Newly created families will only be visible after restarting the program.
- **Pref. Plates**: defines the prefix by which plates are identified within Advance Workshop.
- **Pref. Bolts**: defines the prefix by which bolts are identified within Advance Workshop.
- **Pref. Screw**: defines the prefix by which screws are identified within Advance Workshop.
- **Pref. Nut**: defines the prefix by which nuts and bolts are identified within Advance Workshop.
- **Pref. Washer**: defines the prefix by which washers are identified within Advance Workshop.

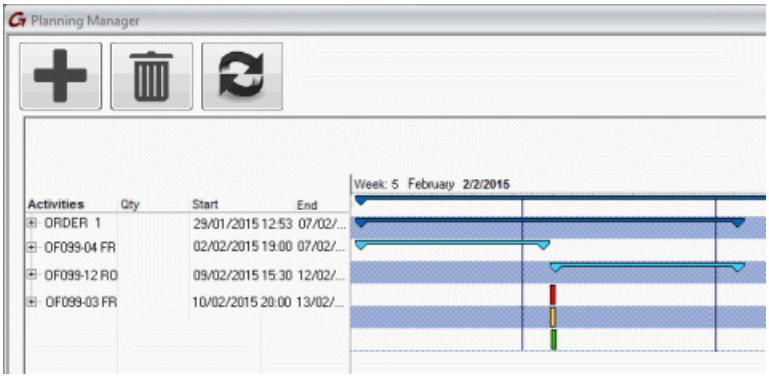
- **Pref. Square Washer**: defines the prefix by which square washers are identified within Advance Workshop.
- **Time/cost table alternative path**: allows the user to select the desired path for the time/cost table.
- **Tree Manager**: defines the level of detail at which the user can view the order tree within Advance Workshop.
  - Select **Part** to just view the part elements.
  - Select **Assembly->Part** to view the assembly and part levels.
  - Select **Sbs->Assembly->Part** to view the subassembly, assembly and part levels.
  - Select **Full** to view all levels of management available in Advance Workshop (allows you to manage up to 7 levels).
- **Enable hierarchical splitting for elements sent to CNC**: select **True** to enable.

Note: *The software can be fully customized, the user can choose which levels to view.*

2. Production Planner



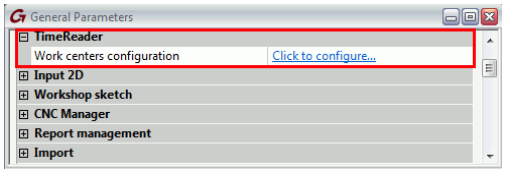
- **Colors**: allows the user to customize the colors in the chart.



  - **Order**: defines the color of the bar relating to "Orders".
  - **General progress**: defines the color of the bar indicating the general progress.
  - **Groupings**: defines the color of the bar relating to "Groupings".
  - **Work centers**: defines the color of the bar relating to "Work Centers".
  - **Assemblies**: defines the color of the bar relating to "Assemblies".
  - **Parts**: defines the color of the bar relating to "Parts".
  - **NOT WORKING**: defines the color of the non-working days .

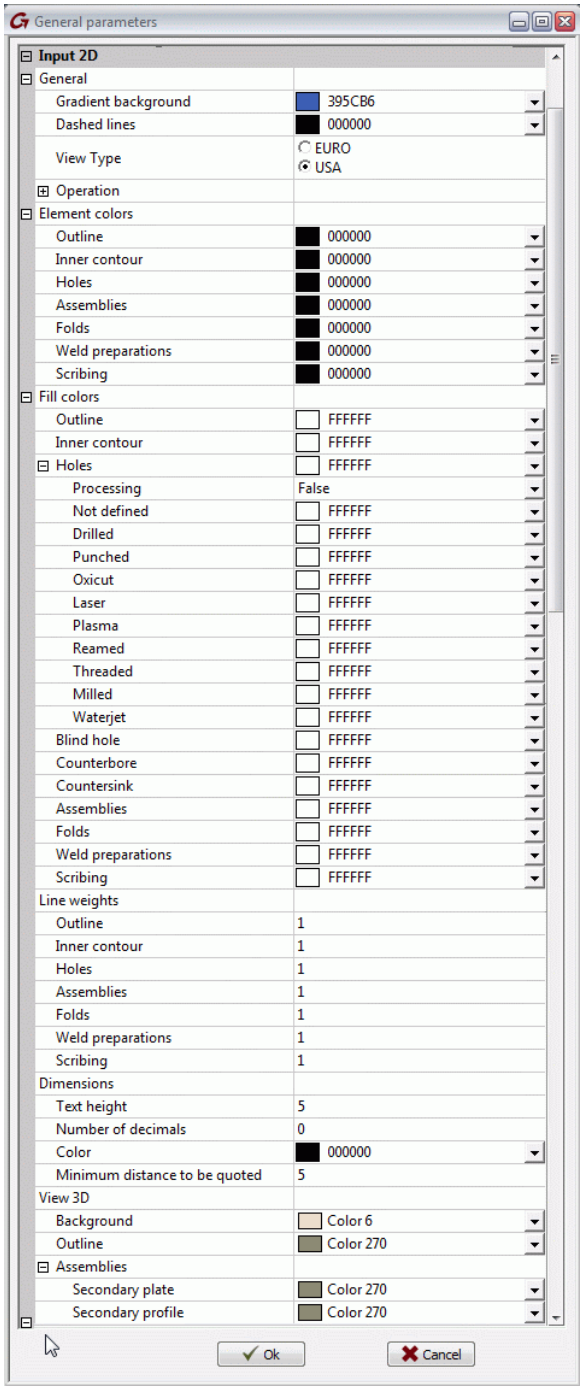
3. TimeReader

Allows the association of the work centers read by TimeReader to the equivalent Advance Workshop centers. Clicking on **Click to configure...** opens the CNC Centers Association window, where you can also specify whether the associated centers can manage bars.



4. Input 2D

Defines line weight colors for all the elements of the Input application.



General: Defines the color of the application background, of the dashed lines of the shapes, and the type of display (European or American drawing view).

Element colors: Allows you to select the color of the lines that define the part, such as side dish, drilling, etc.

Fill colors: Allows you to select the color of the fills that define the part, such as side dish, drilling, etc.

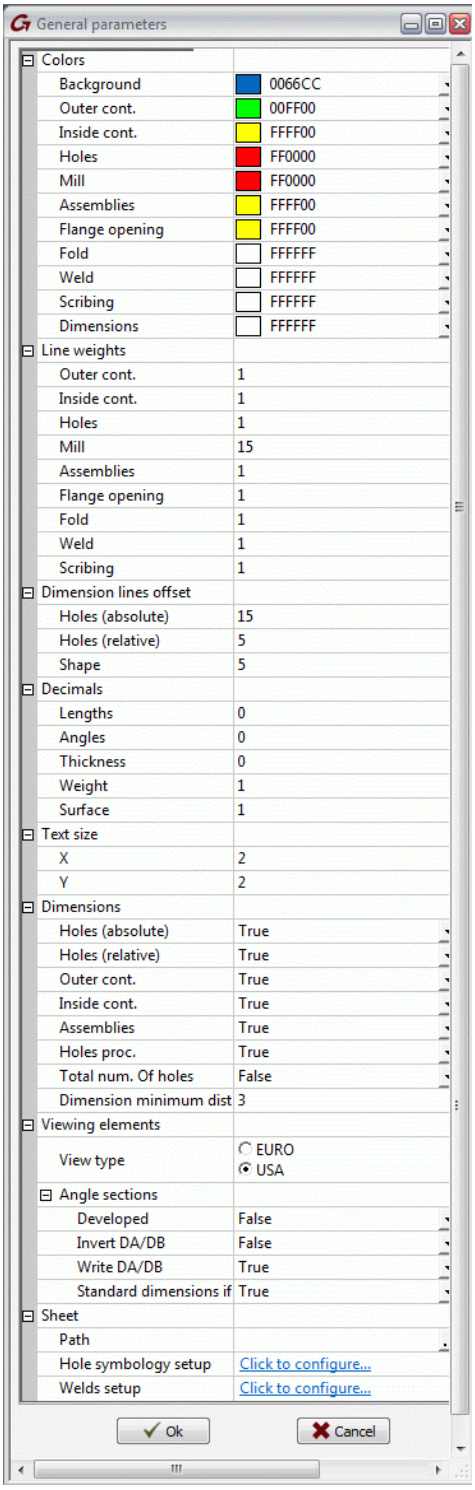
Line weights: Allows you to select the thickness of the lines in the drawing.

Dimensions: Allows you to edit the dimensions which can be activated within the Sketch Part - define the text height, the number of decimal places after the decimal point, the dimension colors, and the minimum distance below which no dimensioning should occur.

View 3D: Allows you to define the colors for parts and assemblies in the 3D viewer.

5. Workshop Sketch

Defines the colors and line weights of all the workshop sketch elements.



Colors: Allows you to select the color of the lines that define the part, such as side dish, drilling, etc.

Line weights: Allows you to select the thickness of the lines in the drawing.

Dimension lines offset: Allows you to define the distance of the dimension lines from the lines of the part's outline.

Decimals: Allows you to define the number of decimal places to be included in the related part dimensions.

Text size: Allows you to define the height and spacing in the dimension texts.

Dimensions: In this field, you can define which dimensions to view in the sketch.

- If the selection is set to "True", the dimension is active and visible. If 'False' is selected, the dimension is not visible.
- With "Dimension minimum distance", you can define the minimum size below which the dimension will not be inserted.

Viewing elements: Allows you to select the type of view (European or American).

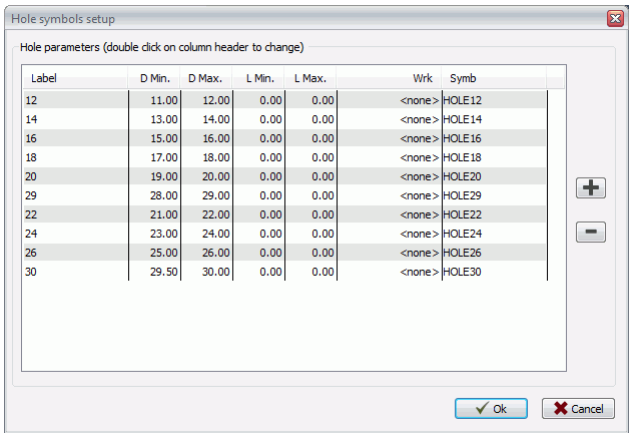
Angle Sections

- "Developed": view the sketches of angular profiles with open flanges.
- "Invert DA / DB": change the indication of the type of flange, if the "Write DA / DB" field is enabled.
- "Standard dimensions if developed": enable the specific dimensions for developed angle sections.

Sheet

- The **Path** field defines the folder where the DXF template of the sketch is saved. If no path is specified, Advance Workshop selects the default template, which is located in the installation folder (*%\Program Files (x86)\Advance Workshop\Applications\appsketch\Resources\SheetTemplates*) under the name *SheetBase.DXF*.
- **Hole symbology setup** defines the symbols for hole representation on the sketch. You can access the configuration window, where you can add or remove configuration lines.
- **Welds setup** defines the symbols for weld representation on the sketch. You can access the configuration window, where you can add or remove configuration lines

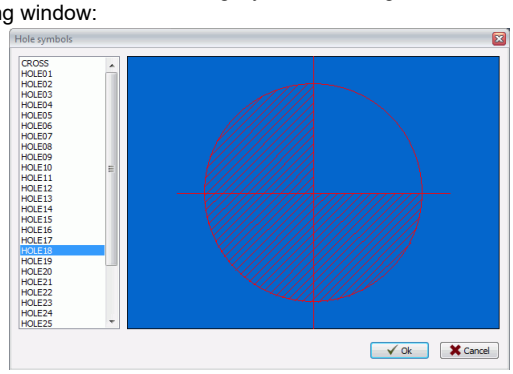
The **Hole symbols setup** dialog:



Click "**+**" to add a new line and "**-**" to delete a line.

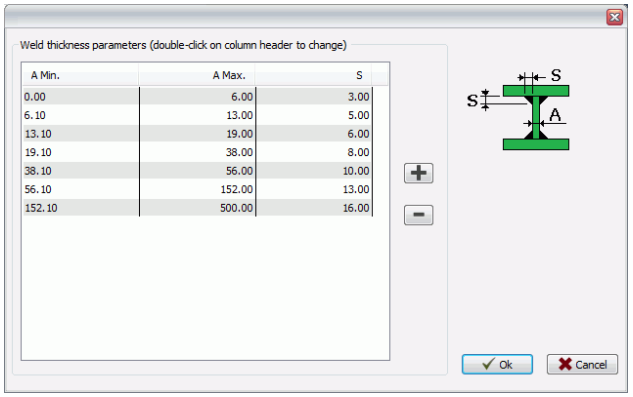
After inserting a line, double click in an individual cell to enter the following values:

- **Label**, a value reported on the sketch.
- **Dmin**, minimum range value for selecting the hole.
- **Dmax**, maximum range value for selecting the hole.
- **Lmin**, minimum range value for selecting the slotted holes.
- **Lmax**, maximum range value for selecting the slotted holes.
- **Wrk**, value for the hole processing type.
- **Symb**, selection of the drilling symbol; clicking in this field opens the following window:



The user can enter and modify the current symbols. The drilling symbols are located in the installation path: *"%\Program Files (x86)\Advance Workshop\Applications\appsketch\Resources\Holes\".*

The **Welds setup** dialog:



Click "**+**" to add a new line and "**-**" to delete a line.

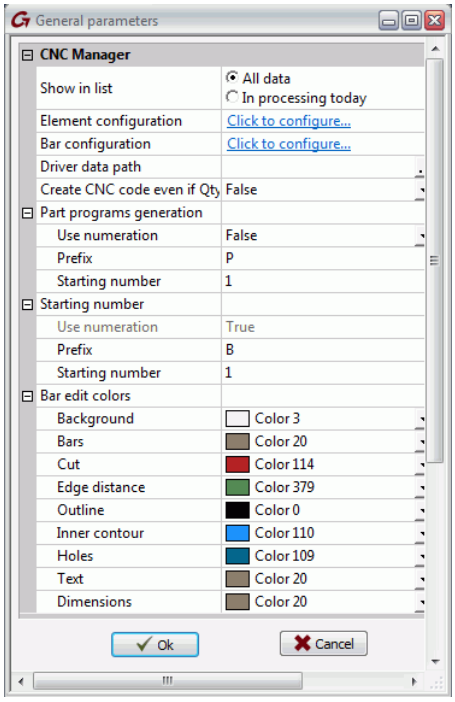
After inserting a line, double click in an individual cell to enter the following values:

- **A Min.**, minimum range value for selecting the weld;
- **Amax**, maximum range value for selecting the weld;
- **S**, weld bead thickness.

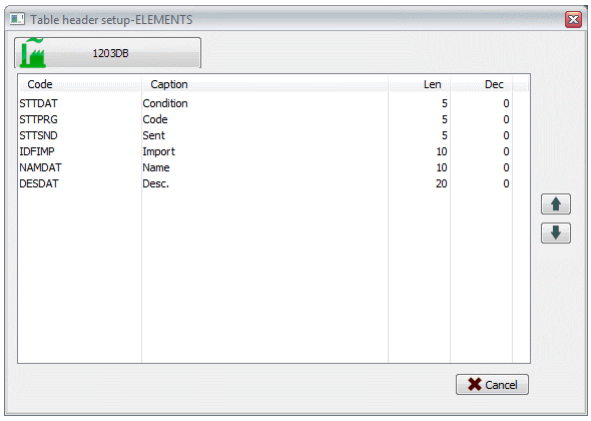
6. CNC Manager

Parameters: **CNC Manager**

Defines the parameters and configuration of the application that manages the parts in their respective work centers, and how they are sent to the CNC machines.



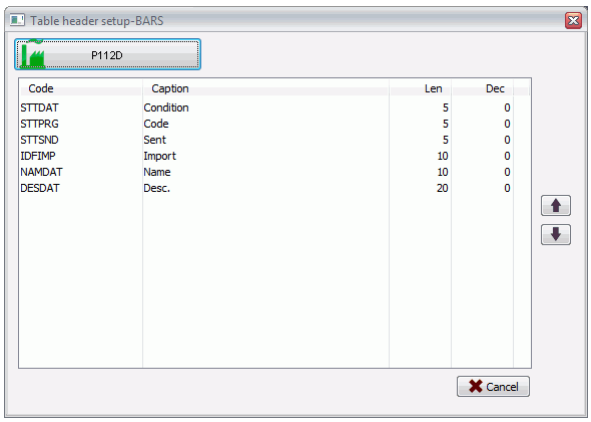
- **Show in list**: allows the user to select the default data type which will be seen on the application screen.
- **Element configuration**: allows you to customize the columns of the **CNC manager** screen, **parts** section. Select **Click to configure...** to access the following screen, where you can edit descriptions and the column order, by work center.



  – Select the work center to customize. By double clicking on items in the **Caption** column, you can change the current description. With **Len**, you can change the column width and with **Dec** you can change the decimal places.

  – Use the arrows on the right of the screen to change the order.

- **Bar configuration**: allows you to customize the columns of the **CNC manager** screen, **bar** section. Select **Click to configure...** to access the following screen, where you can edit descriptions and the column order, by work center.



  – Select the work center to customize. By double-clicking on items in the **Caption** column, you can change the current description. With **Len**, you can change the column width and with **Dec**, you can change the decimal places.

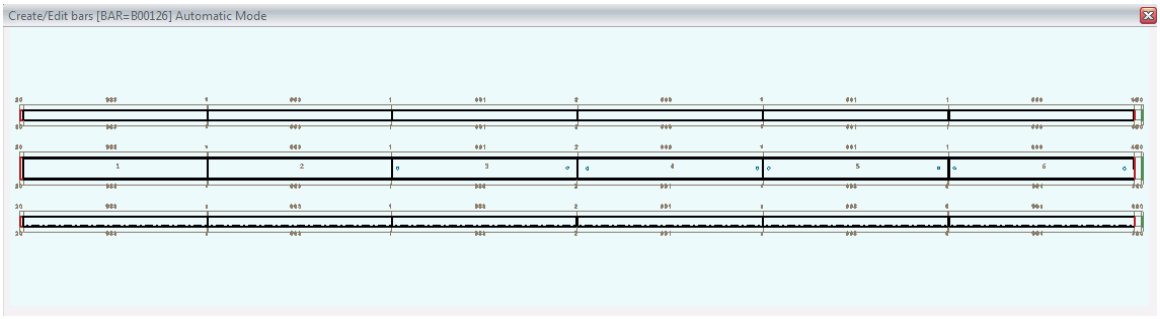
  – Use the arrows on the right of the screen to change the order.

- **Driver data path:** define the folder path containing the machine driver configurations for Advance Workshop. If no path is specified, Advance Workshop will select the default folder located in the installation folder (*%\Program Files (x86)\Advance Workshop\Applications\%*).

- **Part programs generation:** here, you can provide a name, a prefix and a serial number for the CNC programs. Alternatively, the machine program will have the name of the part.

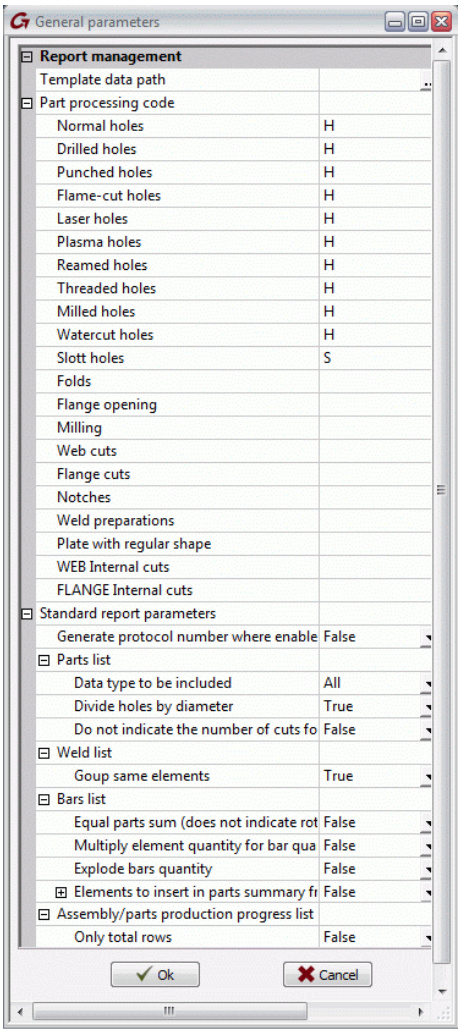
- **Bar programs generation:** here, you can provide a name, a prefix and a starting number for the task bar when running the “add parts to task bar” command.

- **Bar edit colors:** allows you to configure the color of the 2D representation of the task bar.



7. Report Management

Defines the parameters and the configuration of the application that manages Advance Workshop reports.



Template data path: define the folder path for print report templates. If no path is specified, Advance Workshop selects the default template found in the installation folder *(%\Program Files (x86)\Advance Workshop\Applications\appreport\Template\)*

Part processing code: allows you to assign a part processing code.

Standard report parameters

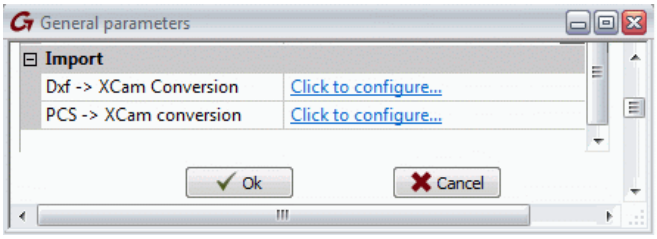
- **Generate protocol number where enabled**: select ***True*** or ***False*** to enable or disable protocol number generation.
- **Parts list**:
  - **Data type to be included**: in this section, you define the elements type to be included in the parts list: ***All*** - all types; ***Plate*** - only plate elements; ***Shape*** - only shape elements.
  - **Divide holes by diameter** gives the option to divide the holes by diameter.
  - **Do not indicate the number of cuts for the plates** is used to eliminate the plate information from the cut column and to keep only the profile information.
- **Weld list**:
  - **Group same elements**: select ***True*** or ***False*** to enable or disable same elements grouping.
- **Bars list** - select ***True*** or ***False*** to enable or disable the corresponding options:
  - **Equal parts sum (does not indicate rotations):** sum of the quantities of equal parts present on a bar.
  - **Multiply element quantity for bar quantity:** multiplies the amount of pieces for the number of bars in the total parts.
  - **Explode bars quantity:** divides the bars with a quantity greater that one into more individual bars with a quantity equal to one.
  - **Elements to insert in parts summary from bar list:** you can select the items (in the list below) to be included in the “summary pieces” list inside the bars module.

Assembly/parts production progress list

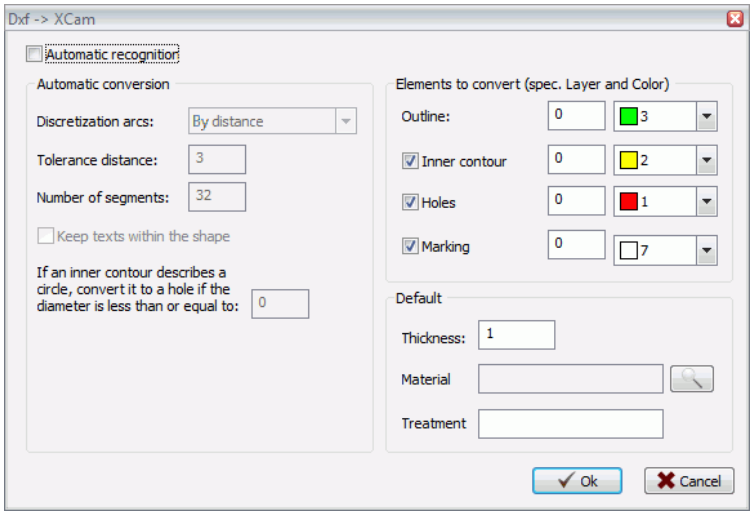
- **Only total rows:** allows you to have only the totals in the “State production progress” list.

8. Import

- **Dxf -> XCam Conversion**: Defines the parameters and the configuration of the application that manages the import of Advance Workshop DXF files for plates.

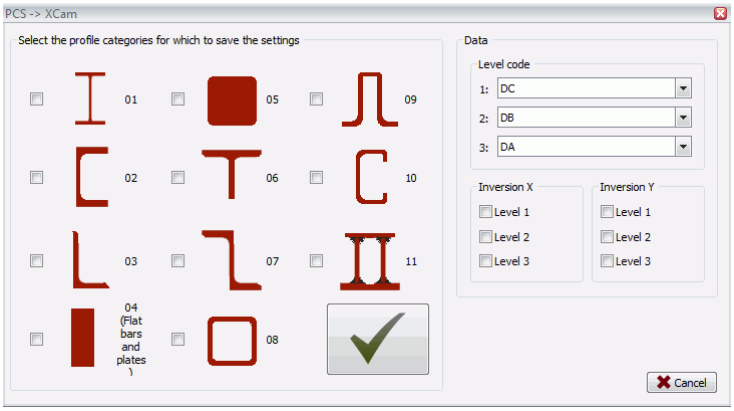


Select **Click to configure...** to access the configuration screen.



This screen enables configuration of how to read and import data, define layers and colors for importing DXF files, as well as the thickness, material and treatment of the plates.

- **PCS -> XCam Conversion**: Defines the parameters and the configuration of the application that manages the import of Advance Workshop PCS files for profiles.



This screen allows you to select the profile categories for which to save the settings and set level codes for importing PCS files.

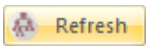
Cloud link

Command access:

This command allows you to upload your project documents to a selected cloud drive.

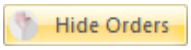
To use the Cloud link tool, the user must have a Google Drive account and the project files which will be uploaded to the cloud drive must be saved on your hard disk.

Refresh

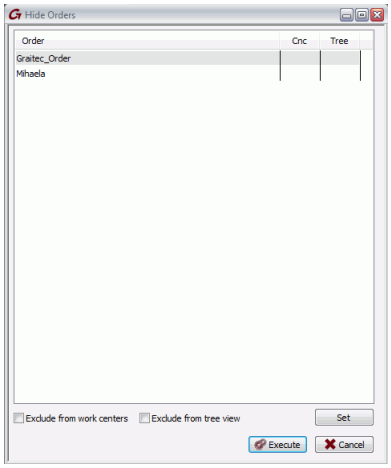
Command access: 

This command allows you to update and synchronize the order management tree.

Hide Orders

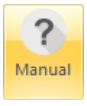
Command access: 

This command opens the **Hide Orders** dialog, where you can select the orders you want to exclude from work centers or from the tree view.



To exclude an order, select the desired order from the list and check **Exclude from work centers** or **Exclude from tree view**, or both and click **Set**. A check mark will appear in the corresponding column, indicating that the work center is excluded.

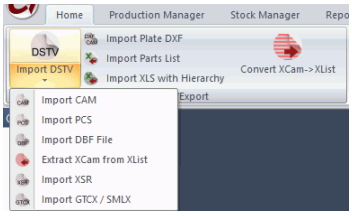
Manual

Command access: 

This command opens the Advance Workshop user guide.

Commands in the Import/Export panel

The Import/Export panel contains import and conversion commands.



Premise:

To import an order (import) in Advance Workshop, you need two fundamental elements: **XCam** and **XList**.

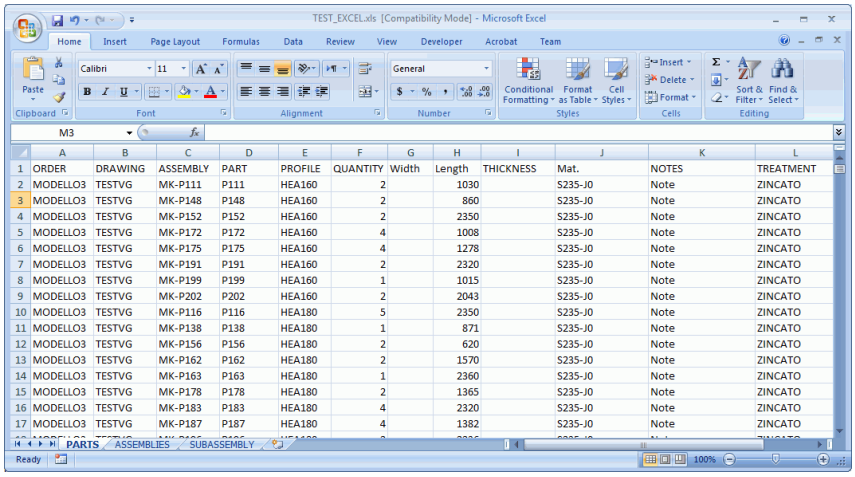
- **XCam** is the file that describes the geometric characteristics of the part from the point of view of the type (profile or plate), dimensions (length, width, thickness), material and any processing such as cuts or holes.
- **XList** is the file that defines the hierarchy of the order. The hierarchy can be made up of only simple assemblies or assemblies with a structure and parts, including the seven layers which can be managed by Advance Workshop.

The hierarchy structure and the part quantities are defined in the XList file.

To create an XCam file:

Advance Workshop has five standard methods for creating a XCam file:

1. Through NC or NC1 files of the DSTV standard. The **DSTV-> XCam** command reads the geometry of the file exported from the major CAD applications for carpentry with Tekla or Advance Steel.
2. Through the CAM file of the TecnoMetal standard. The entire geometry is imported when using the **Cam-> XCam** command.
3. The import of plates. This is achieved through Dxf files using the command **Dxf -> XCam**. Certain data, such as the thickness and any data not derived from the shape of the Dxf, requires manual entry.
4. By using the **Extract XCam from XList** command. Basic information contained in the XList is collected and files are created from the XCam empty file.
5. Through an Excel document, using **Import Parts List** and with **XCam** or **Both** selected under **Generate**. The Excel document should be formatted in the following way:



	A	B	C	D	E	F	G	H	I	J	K	L
1	ORDER	DRAWING	ASSEMBLY	PART	PROFILE	QUANTITY	Width	Length	THICKNESS	Mat.	NOTES	TREATMENT
2	MODELLO3	TESTVG	MK-P111	P111	HEA160	2		1030		S235-J0	Note	ZINCATO
3	MODELLO3	TESTVG	MK-P148	P148	HEA160	2		860		S235-J0	Note	ZINCATO
4	MODELLO3	TESTVG	MK-P152	P152	HEA160	2		2350		S235-J0	Note	ZINCATO
5	MODELLO3	TESTVG	MK-P172	P172	HEA160	4		1008		S235-J0	Note	ZINCATO
6	MODELLO3	TESTVG	MK-P175	P175	HEA160	4		1278		S235-J0	Note	ZINCATO
7	MODELLO3	TESTVG	MK-P191	P191	HEA160	2		2320		S235-J0	Note	ZINCATO
8	MODELLO3	TESTVG	MK-P199	P199	HEA160	1		1015		S235-J0	Note	ZINCATO
9	MODELLO3	TESTVG	MK-P202	P202	HEA160	2		2043		S235-J0	Note	ZINCATO
10	MODELLO3	TESTVG	MK-P116	P116	HEA180	5		2350		S235-J0	Note	ZINCATO
11	MODELLO3	TESTVG	MK-P138	P138	HEA180	1		871		S235-J0	Note	ZINCATO
12	MODELLO3	TESTVG	MK-P156	P156	HEA180	2		620		S235-J0	Note	ZINCATO
13	MODELLO3	TESTVG	MK-P162	P162	HEA180	2		1570		S235-J0	Note	ZINCATO
14	MODELLO3	TESTVG	MK-P163	P163	HEA180	1		2360		S235-J0	Note	ZINCATO
15	MODELLO3	TESTVG	MK-P178	P178	HEA180	2		1365		S235-J0	Note	ZINCATO
16	MODELLO3	TESTVG	MK-P183	P183	HEA180	4		2320		S235-J0	Note	ZINCATO
17	MODELLO3	TESTVG	MK-P187	P187	HEA180	4		1382		S235-J0	Note	ZINCATO

The sample file is located in the program installation path: *%:\Program Files (x86)\Advance Workshop\Test_Import \ XLS\TEST_EXCEL.xls*.

XCam files generated by this type of import are empty (profile without processing, rectangular plate).

If the XList is also generated in this import, this will use the information hierarchy as declared in the file, namely only simple assemblies.

To create an XList:

Advance Workshop has four standard methods for creating a XList file.

1. From the DBF file. These are standards derived from the TecnoMetal program. The Dbf file can only come from this software, ***it cannot be a file created or opened with Access or Excel. The import will not work for Excel documents.*** The Dbf file contains the hierarchy and related quantities.

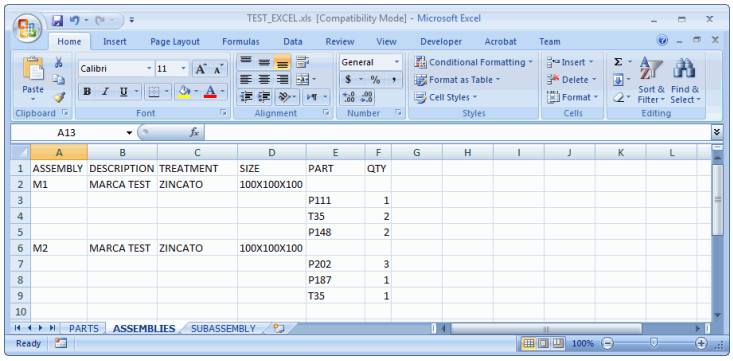
   ***Note**: For parts, the XCam file must have been created from a CAM file.*

2. By generating the list directly from the XCam file. A hierarchy will be generated from individual assemblies and the quantities found in the XCam files.

3. Through an Excel document, using the **Import Parts List** command, and with **XCam** or **Both** selected under **Generate**. The XList generated has a hierarchy of simple assemblies and the quantities of the Excel document.

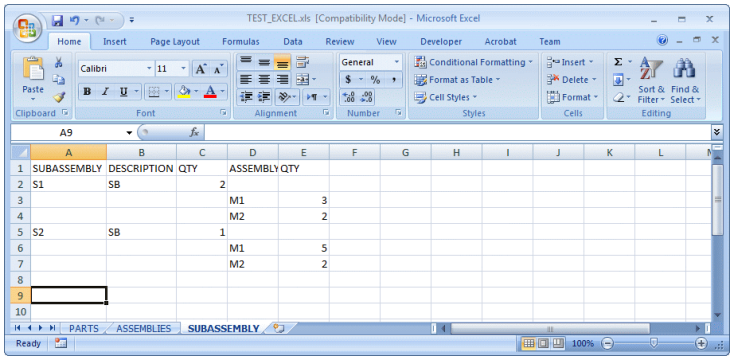
4. Additionally, with an Excel document using the **Import XLS with hierarchy** command. This requires an Excel document with two worksheets, one containing the structure of the assemblies and one containing the structure of the upper levels.

Sheet 1



	A	B	C	D	E	F
1	ASSEMBLY	DESCRIPTION	TREATMENT	SIZE	PART	QTY
2	M1	MARCA TEST	ZINCATO	100X100X100		
3					P111	1
4					T35	2
5					P148	2
6	M2	MARCA TEST	ZINCATO	100X100X100		
7					P202	3
8					P187	1
9					T35	1
10						

Sheet 2



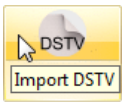
	A	B	C	D	E
1	SUBASSEMBLY	DESCRIPTION	QTY	ASSEMBLY	QTY
2	S1	SB	2		
3				M1	3
4				M2	2
5	S2	SB	1		
6				M1	5
7				M2	2
8					
9					
10					

***Note**: Both worksheets must be available during import. If you do not have the Subassembly, insert only one Subassembly named "_empty_".*

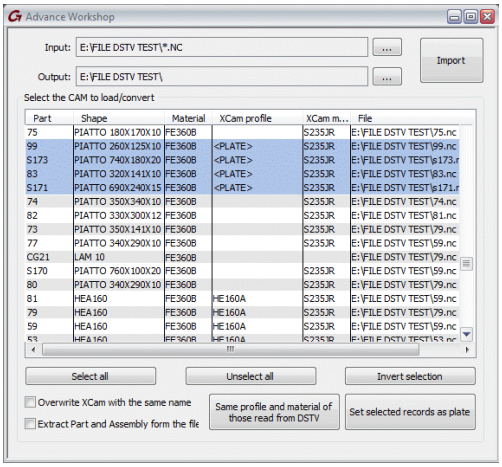
It is not necessary to import the parts Excel file first, generating an XCam or XList, but it is possible to generate the XCam in other ways.

***Important!** When imported, the hierarchy with the quantity and the treatment will be taken from the XList, while the geometric information such as the size, material and processing, will be taken from the XCam.*

DSTV -> XCam

Command access: 

This command allows you to convert DSTV files (NC - NC1) to the XCam format of Advance Workshop. This operation is necessary to load the construction parts of a task within the GRAITEC system.



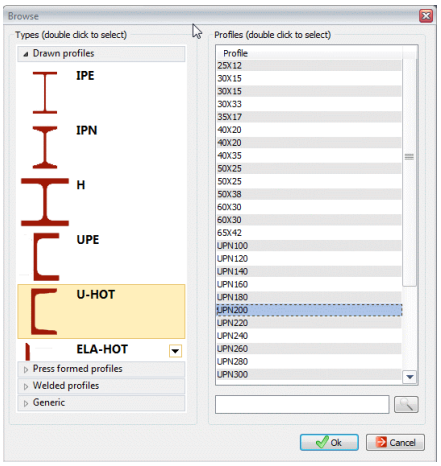
To import DSTV files, use the "**…**" search button and select the folder where the NC files are located. Select the path where to place the XCam (***Output***) file. This is set by default to the same as the Input path.

All the files in the folder will be automatically loaded in the middle window.

If the **XCam Profile** and **XCam Material** columns are filled, you can select everything with **Select All** and run the import with **Import**. All XCam files for parts are created in the destination folder.

If the "**XCam Profile**" and "**XCam Material**" columns are not filled (see the image above), select the mapping, otherwise, the DSTV file will not be imported.

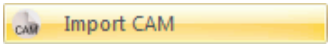
To select the mapping, double click the empty box, and the profiles or materials database will be loaded.



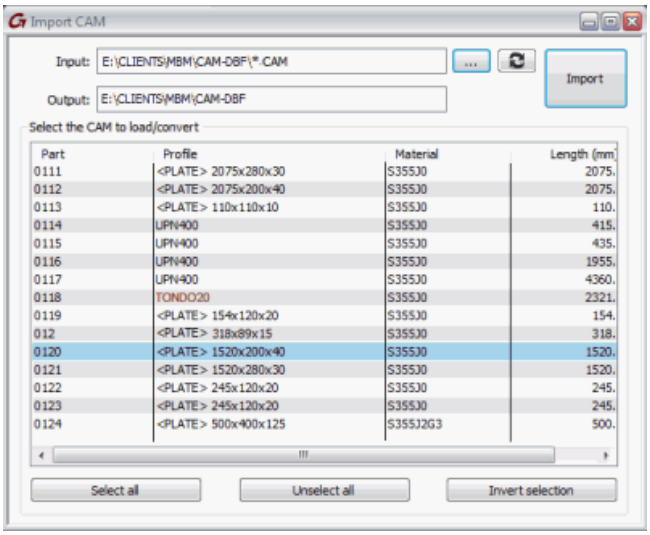
Double click the desired profile. In automatic mode, all the boxes will be filled in the same profile. They will also be inserted in the **conversion table**.

- Select **Overwrite XCam with the same name** to replace the old file, for future imports. If not selected, the old file will be kept.
- Select **Extract Part and Assembly form the file** to extract the assembly and part name from the files and rename the XCam file with the name of the part detected in the file.
- **Set as plate selected records** is used to define an item as a plate.

CAM -> XCam

Command access: 

This command allows you to convert CAM files (*.cam) to the XCam format of Advance Workshop. This operation is necessary to load the construction parts of a task within the GRAITEC system.



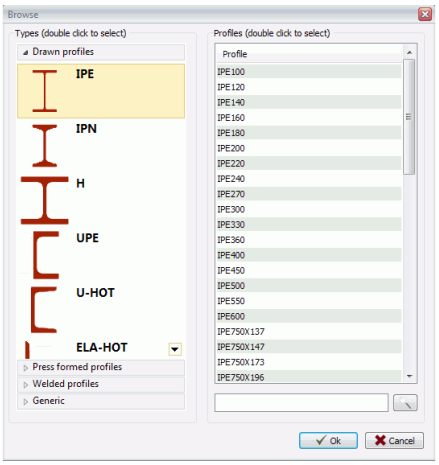
To import CAM files, use the Input "**...**" search button and select the folder where the *.cam files are located. Select the path to place the XCam (***Output***) file. This is set by default to the same as the Input path.

All the files in the folder will be automatically loaded in the middle window.

If the **Profile** and **Material** columns are filled and black, you can select everything with **Select All** and run the import with **Import**. All the XCam files for parts will be created in the destination folder.

If there are any red elements in the **Profile** and **Material** column (see previous image), select the mapping, otherwise, the CAM file will not be imported.

To select the mapping, double click the cell containing red text and the profiles or materials database will be loaded.

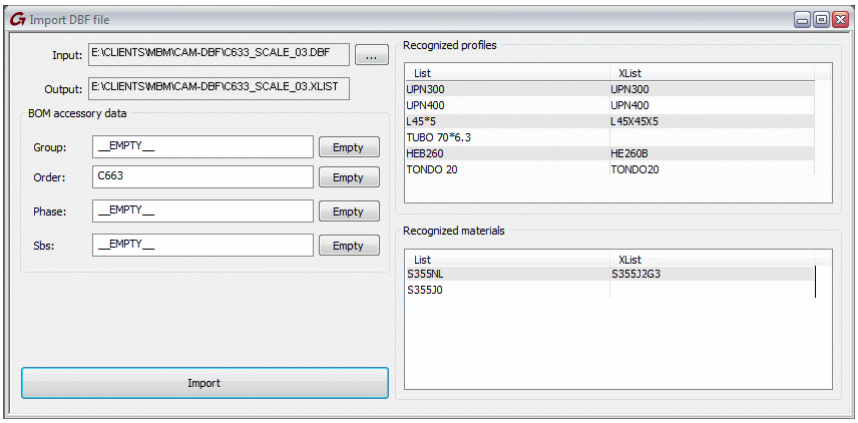


Double click on the desired profile. In automatic mode, all the boxes will be filled in the same profile. They will also be inserted in the ***conversion table***.

DBF -> XList

Command access:

This command allows you to convert DBF files (BOM specific format generated with the TecnoMetal software) in the XList format of Advance Workshop. This operation is necessary to load the construction hierarchy of a task within the GRAITEC system.



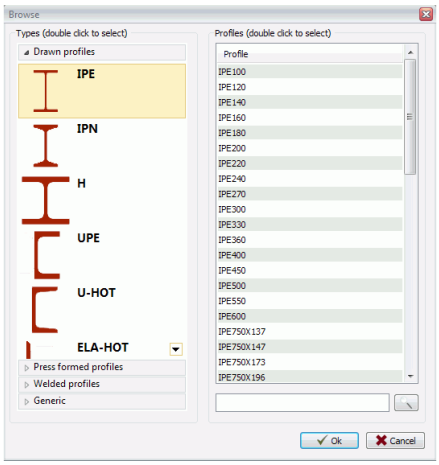
To import DBF files, use the "**...**" search button and select the folder where the *.dbf files are located. Select the path to place the XList (***Output***) file. This is set by default to the same as the Input path.

All the records in the folder will be automatically loaded in the right window.

If the **XList** column is fully populated, select **Import**. The XList file of the parts will be created inside the destination folder.

If some elements are missing from the **XList** columns (see the above image), select the mapping, otherwise the XList file will not be created.

To select the mapping, double click the empty box and the profiles or materials database will be loaded.

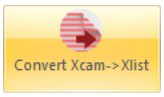


Double click the desired profile. In automatic mode, all the boxes will be filled in the same profile. They will also be inserted in the **conversion table**.

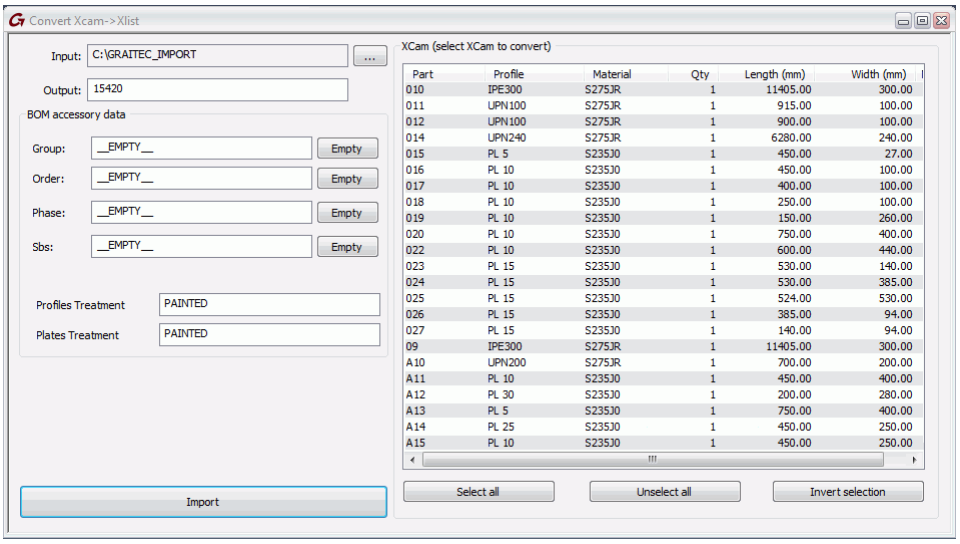
Related BOM data is automatically compiled when loading the DBF file, but the user can add new information by entering the value directly into the corresponding box.

If the word **EMPTY** is written in the field, the data will be empty.

XCam -> XList

Command access: 

The command lets you create an XList BOM by selecting a folder with Advance Workshop XCam files.



To import XCam files use the Input "**...**" search button and select the folder where the *.XCam files are located. In (***Output***), enter the name of the file to be created as XList BOM.

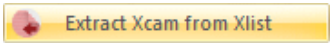
To create the BOM, the profile and plate treatments must be defined in the boxes on the left of the screen.

To create the file, select the desired items or **Select All** to import the entire folder and run the import with **Import**.

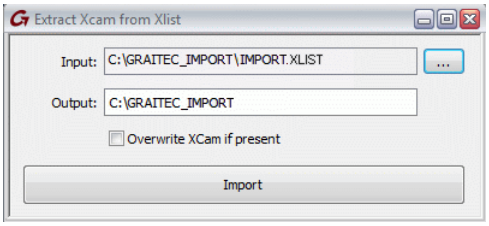
Before import, it is also possible to define the associated order data such as ***Group / Order / Phase / Subassembly***. If the fields carry the value **EMPTY**, the values will be null.

The created file will be placed in the same folder from which the XCam files were loaded.

XList -> XCam

Command access: 

This command allows you to create XCam files without working by a distinct XList selected.



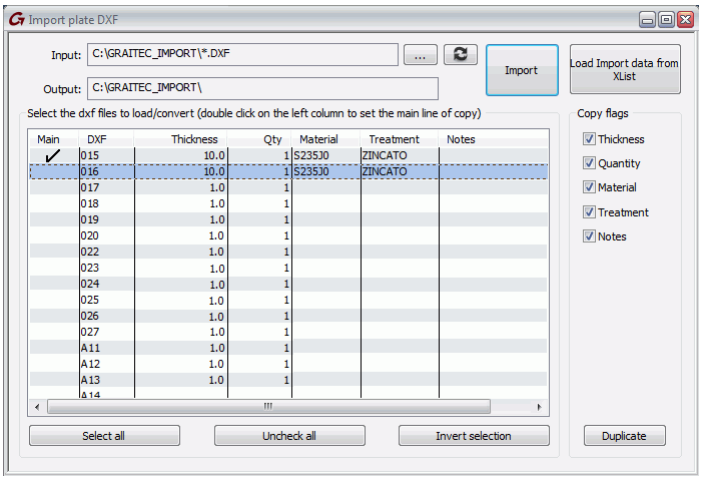
To import XList files, you need to select the folder where to placed the *.XList file in the **Input** path, using the "**...**" search button. The path where the XCam files will be created is inserted by default in (***Output***).

The option **Overwrite XCam if present** is used to overwrite the old files in case of future imports. If it is not checked, the old file will be kept.

DXF -> XCam

Command access: Import Plate DXF

The command allows you to import DXF files and to convert them into plate XCam files.



Before importing the DXF file with this command, you must configure the import setup found in the Advance Workshop Setup.

To import a DXF file, you need to select the folder where the *.dxf files are located in the **Input** path, using the "**...**" search button. The default path for placing the XCam files (***Output***) is the same as the Input path.

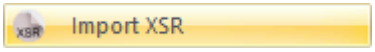
When selecting the folder, the existing files will be loaded. The user must fill in the missing information, such as material, thickness, quantity, treatment.

To enter data, double click on the cells and click **Enter** from the keyboard to confirm. You can also make copies of the data for fast and easy input.

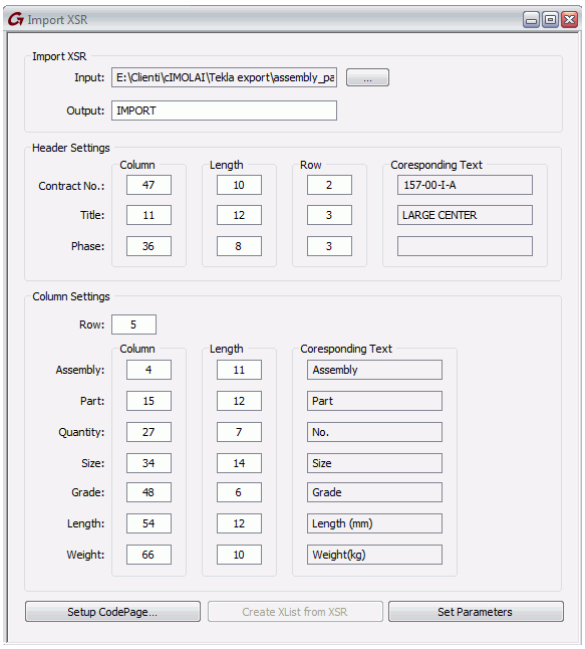
To copy the data, you need to complete at least one of the rows with the desired data, and then to click in the **Main** box and to define it as a master object. Then, define in the Copy flag" section which of the elements you want to copy by inserting the flag in the boxes as shown. Select the rows in which you want to copy the data and use the **Duplicate** command at the bottom right corner.

After you finish filling in all the fields, select everything and import it using **Import**.

Import XSR

Command access: 

This command allows you to import lists generated by Tekla software (XSR format), including part/assembly hierarchies.



After you select the file, the file data is automatically loaded. You can make changes, then confirm using the “Set Parameters” button.

Use the “Create Xlist from XSR” command to create an Xlist in the same folder from where you have loaded the XSR file.

Import GTC / SMLX

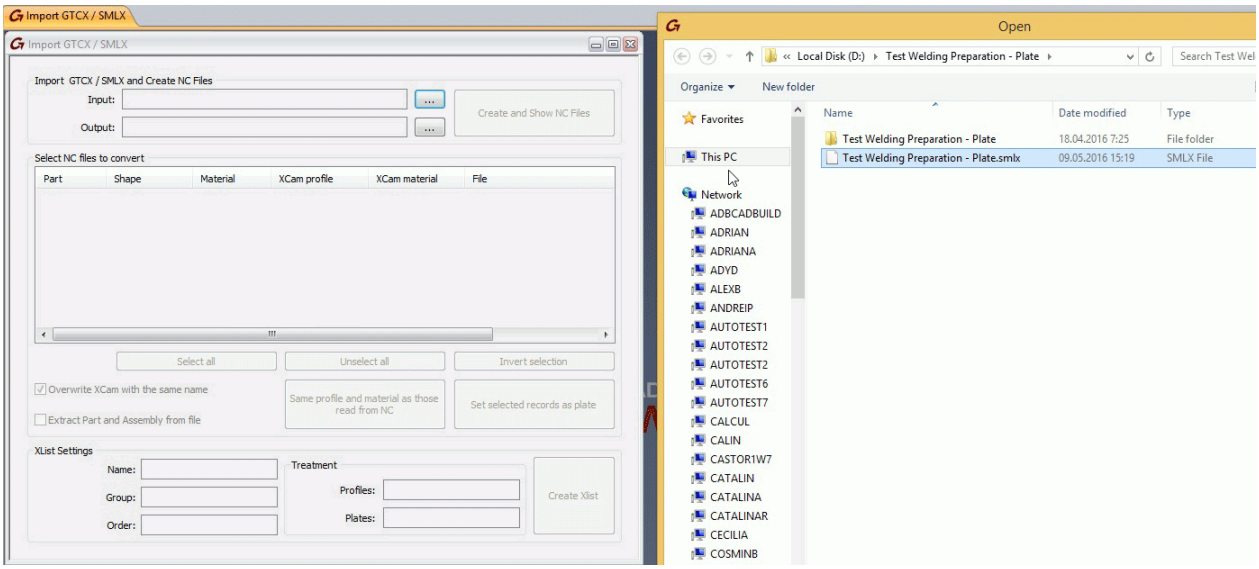
Command access:

This command allows you to import GTC or SMLX files exported from Advance Steel.

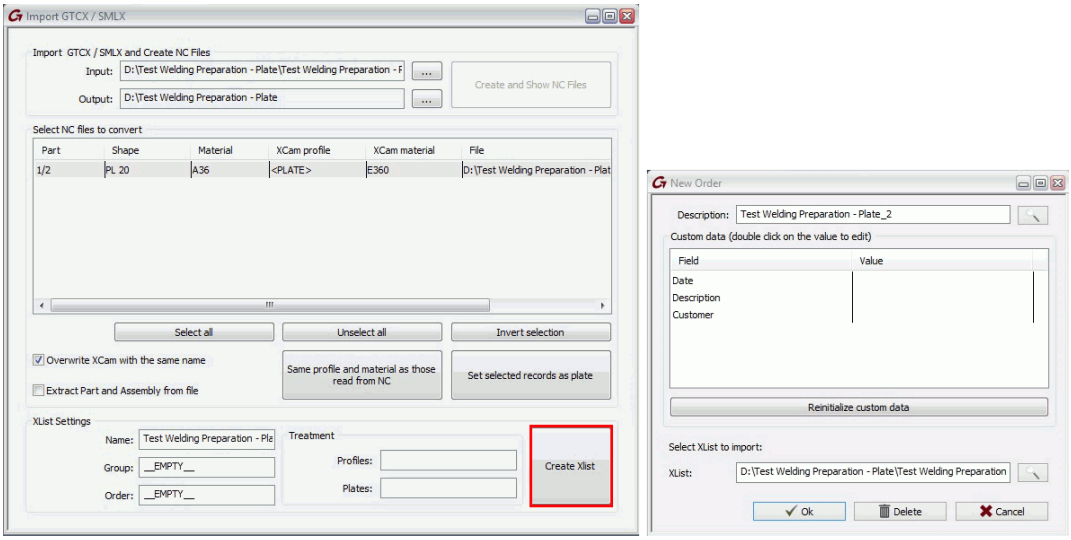
Note: *GTC data sharing with Advance Workshop is possible only for **complete projects** exported from Autodesk Advance Steel.*

The workflow is as follows:

1. In Autodesk® Advance Steel, “Export & Import”, use the “Advance export” command to export your complete model.
2. In Advance Workshop, “Home” tab, access the “Import GTCX / SMLX” command.
3. Browse for the model exported from Advance Steel and use it to create an Xlist and a new order.



4. Select a specific output folder or just use the default path provided, and create NC files to get the individual parts in the model. Once you set the details for the Xlist file and create it, a new dialog opens so that the import process can be finalized by creating a new order for the model.



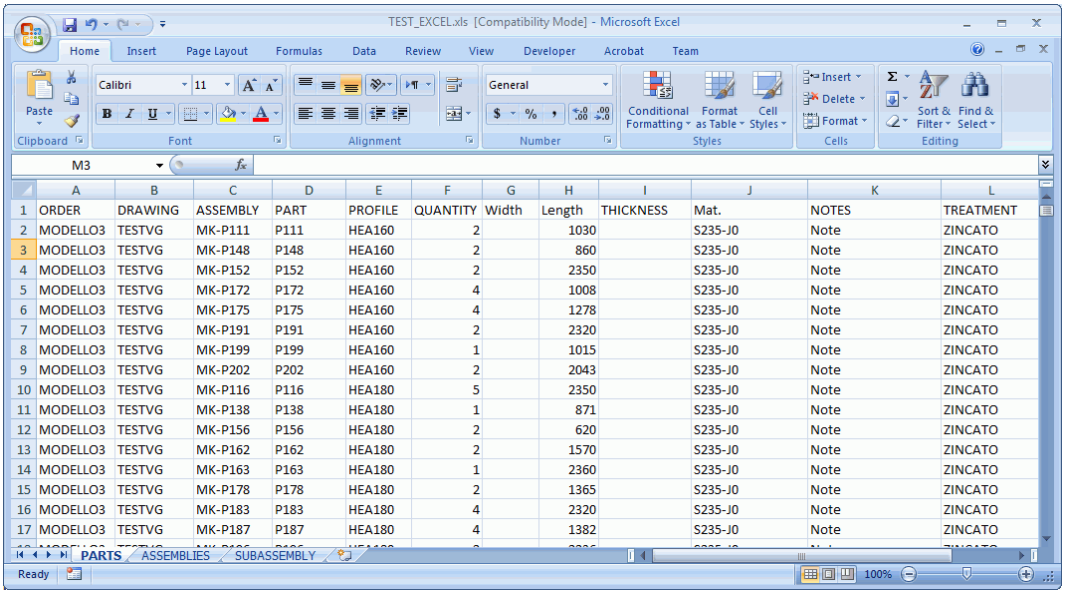
Excel Import

The command allows the user to create XList lists and/or XCam files without processing, by loading the data directly from edited Excel files.

The file must be in XLS format.

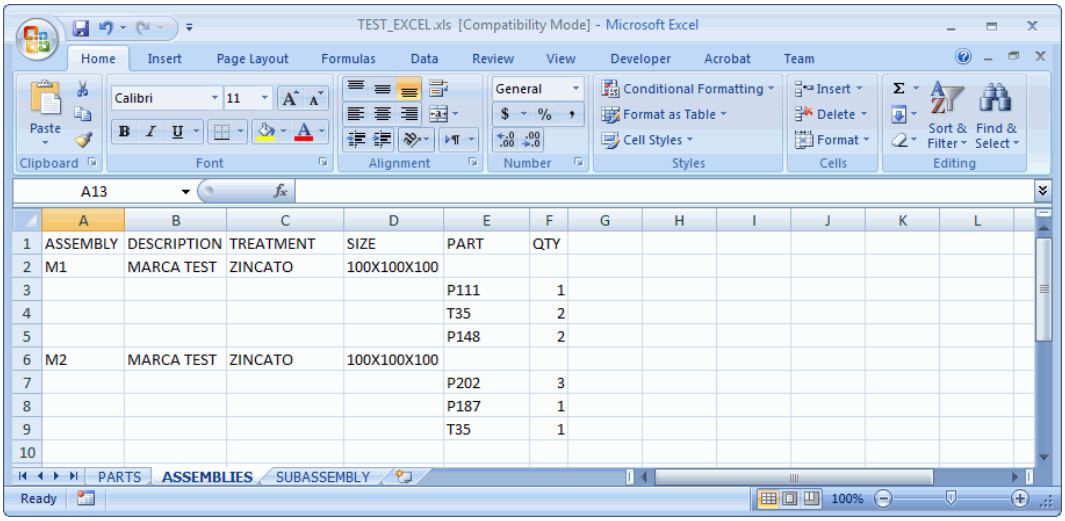
The formatting of the Excel sheets must be as follows:

Parts formatting



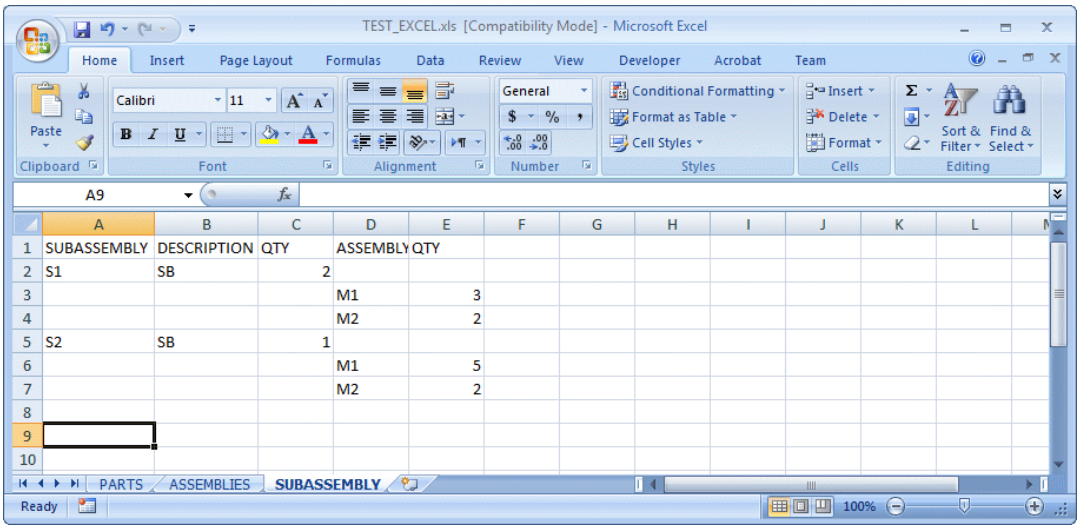
	A	B	C	D	E	F	G	H	I	J	K	L
1	ORDER	DRAWING	ASSEMBLY	PART	PROFILE	QUANTITY	Width	Length	THICKNESS	Mat.	NOTES	TREATMENT
2	MODELLO3	TESTVG	MK-P111	P111	HEA160	2		1030		S235-J0	Note	ZINCATO
3	MODELLO3	TESTVG	MK-P148	P148	HEA160	2		860		S235-J0	Note	ZINCATO
4	MODELLO3	TESTVG	MK-P152	P152	HEA160	2		2350		S235-J0	Note	ZINCATO
5	MODELLO3	TESTVG	MK-P172	P172	HEA160	4		1008		S235-J0	Note	ZINCATO
6	MODELLO3	TESTVG	MK-P175	P175	HEA160	4		1278		S235-J0	Note	ZINCATO
7	MODELLO3	TESTVG	MK-P191	P191	HEA160	2		2320		S235-J0	Note	ZINCATO
8	MODELLO3	TESTVG	MK-P199	P199	HEA160	1		1015		S235-J0	Note	ZINCATO
9	MODELLO3	TESTVG	MK-P202	P202	HEA160	2		2043		S235-J0	Note	ZINCATO
10	MODELLO3	TESTVG	MK-P116	P116	HEA180	5		2350		S235-J0	Note	ZINCATO
11	MODELLO3	TESTVG	MK-P138	P138	HEA180	1		871		S235-J0	Note	ZINCATO
12	MODELLO3	TESTVG	MK-P156	P156	HEA180	2		620		S235-J0	Note	ZINCATO
13	MODELLO3	TESTVG	MK-P162	P162	HEA180	2		1570		S235-J0	Note	ZINCATO
14	MODELLO3	TESTVG	MK-P163	P163	HEA180	1		2360		S235-J0	Note	ZINCATO
15	MODELLO3	TESTVG	MK-P178	P178	HEA180	2		1365		S235-J0	Note	ZINCATO
16	MODELLO3	TESTVG	MK-P183	P183	HEA180	4		2320		S235-J0	Note	ZINCATO
17	MODELLO3	TESTVG	MK-P187	P187	HEA180	4		1382		S235-J0	Note	ZINCATO

Assemblies formatting



	A	B	C	D	E	F	G	H	I	J	K	L
1	ASSEMBLY	DESCRIPTION	TREATMENT	SIZE	PART	QTY						
2	M1	MARCA TEST	ZINCATO	100X100X100								
3					P111	1						
4					T35	2						
5					P148	2						
6	M2	MARCA TEST	ZINCATO	100X100X100								
7					P202	3						
8					P187	1						
9					T35	1						
10												

Higher levels formatting

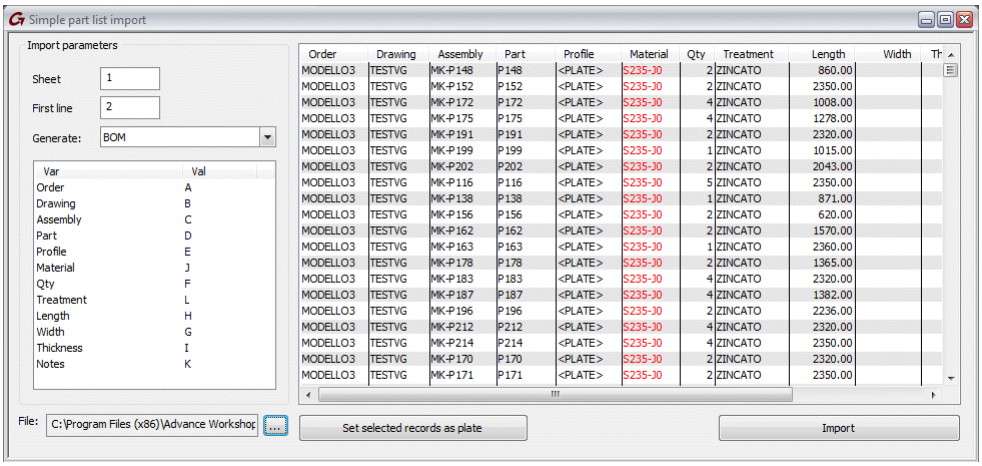


***Note**: You can evaluate customized imports with the users.*

- **Import Parts list**

  Command access: Import Parts List

  Import the parts list.



  You need to define in the upper part the sheet to be extracted from the XLS sheet and the starting row for reading data. For example, if the file has a header on the first row, you must insert row number two. Then, select what you want to extract: only XList or only XCam, or both.

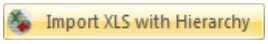
  In the diagram below, it is important which columns contain information. By default, the columns are set as defined in the sample sheet.

  Having defined the parameters, to import the **XLS** file you need to select the folder where you placed the *.xls file in the **File** path, using the "**...**" search button.

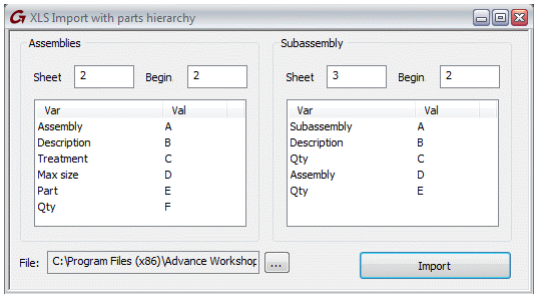
  By selecting the file, the information will be uploaded. The items highlighted in red are items that are not recognized in the Advance Workshop Database and need to be confirmed. To change an item, double-click the box and select a new item, or access the Database (Ex: materials) without exiting the import and enter the new item; when saving the import, it is automatically updated.

  Use **Import** to create the import.

- **Import XLS with Hierarchy**

  Command access: 

  After importing the parts, it is possible to enrich the order by importing the hierarchy.



  In this screen, you can configure the import of the marks hierarchy, as well as that of the subassembly's.

  In the left side, you can define the configuration of the assemblies import (by default it looks like in the example shown).

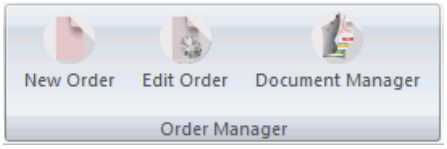
  You must report the Excel sheet and the row from which data starts in order to exclude the headings.

  The same procedure applies if there is a Subassembly hierarchy.

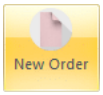
  At this point, select the file with the "**...**" button and start the import using the **Import** button.

Commands in the Order Manager panel

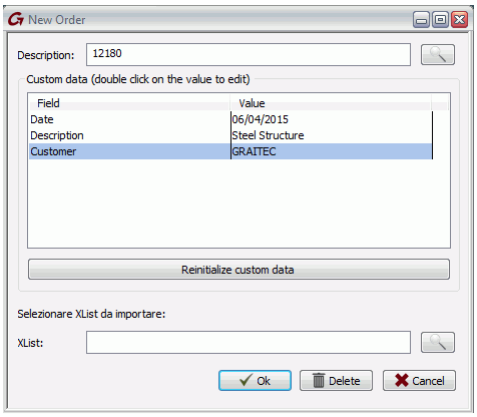
In this section, users can find all the functions needed to enter work orders into production, as well as the related documentation.



New Order

Command access: 

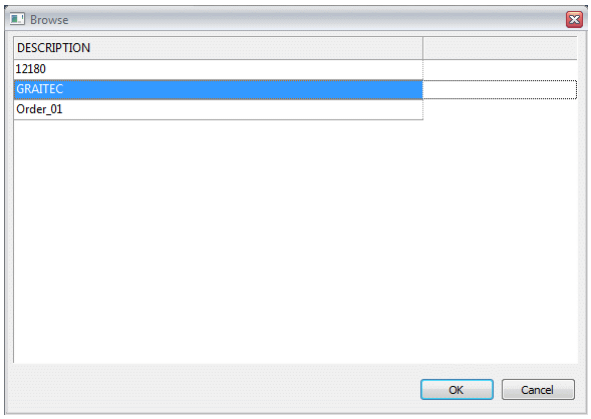
This command lets you create a new work order, or to eliminate it completely from production.



To create a new order, you must write its name in the **Description** field; then, you can enter custom data for the additional information, and use **Save** to save it.

Note: *Custom data can be personalized, by contacting the GRAITEC support team to add or eliminate fields.*

To delete a work order, select the order list using the ***magnifying glass*** and double-click to load it.



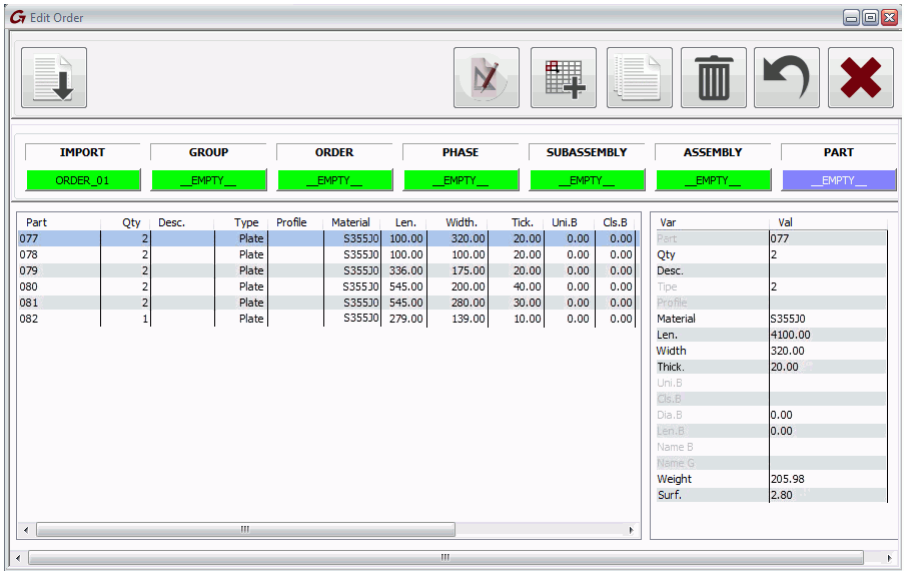
Click on **Delete** to delete the list.

The **Reset custom data** button should be used in cases when the data is modified or new fields are added, to update them in the orders.

Edit Order

Command access:

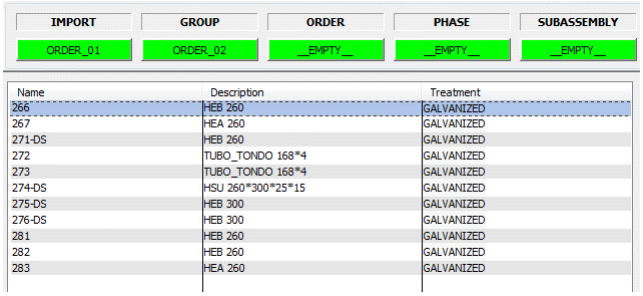
This command lets you open and modify an order created in Advance Workshop, or to create a new order from an XList file created externally, and then to send it in production.



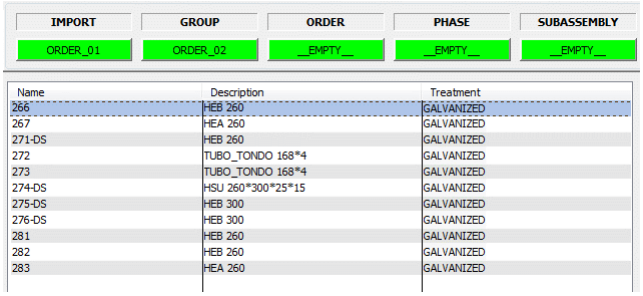
The screen is divided into three areas. The upper area is the bar containing all the commands of the application. Below is the indicator of the order level.

The second area, on the left, is the import structure area, and the third area, on the right, is where all loaded parts information is displayed and modified.

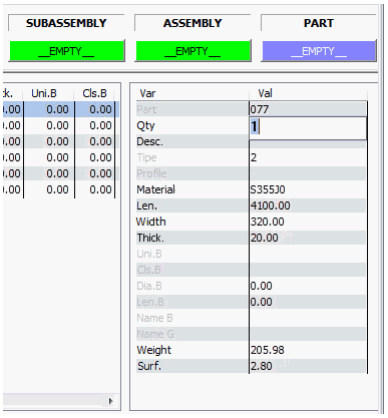
Double-click the desired item to access the next level.



Select the button for the desired level to go up one level.

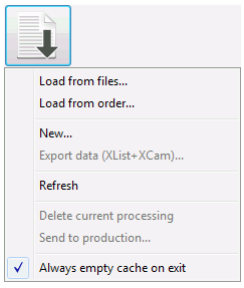


To edit a part information field, double-click in the right screen, change the value and then press **Enter** to confirm.



Below you will find descriptions for all order management controls.

The **Load** button opens a drop-down menu with 7 options:

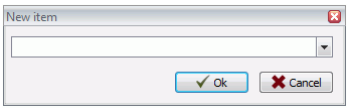


- **Load from files** allows you to select a folder where an XList file is found, and to load this file in the application.
- **Load from order** allows you to select an order loaded in Advance Workshop and to load all the data to manage additions or edits.

  Selecting the command displays a screen asking you to select the Imported data present in the database of Advance Workshop.

- **New** allows you to create a new job, which can then be sent into production.

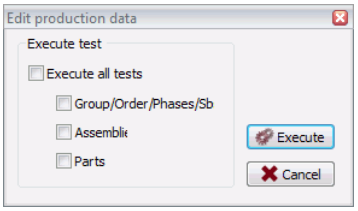
  Selecting the command displays a screen where you have to enter the name of the job to create.



  – To exit and save the operations, use the **OK** button;

  – If you press **Cancel** or the "**X**" button to exit the window, the operation will be cancelled.

- **Export data (XList+XCam)** allows you to export the XList/XCam file of a processing. When selecting the command, you will be asked where you want to save the file.
- **Refresh** allows you to refresh the loaded list of parts.
- **Delete current processing** allows you to download the editor of an active process.
- **Send to production** allows you to load a new process for production, and also to load a modified process. In the case of updating an Advance Workshop order which was modified in the return to production phase, the following screen opens.



  Here, you can perform some order update operations.

  The options under **Execute all tests** indicate the levels where changes were detected and which, when sent into production, will be checked for consistency changes.

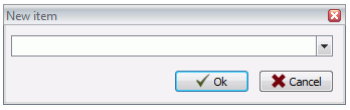
  To save the performed operations, use the **Execute** button.

  – If you press **Cancel** or the "**X**" button, the operation will be cancelled.

- If the **Always empty cache on exit** option is checked, the cache will be emptied when you exit the **Edit Order** window.

The **Edit parts** button loads the application for the physical modification of the part.

The **Add** button displays a screen that allows the user to add new items to the list in the level in which it is located.

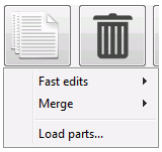


In addition, at every level the command opening the drop-down proposes the elements present at that level, in case you want to duplicate the information (ex., equal parts of different assemblies).

  – To exit and save the performed operations, use the **OK** button.

  – If you press **Cancel** or the "**X**" button, the performed operations will be cancelled.

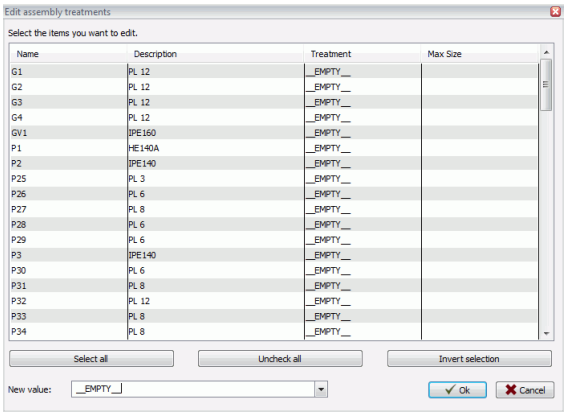
The **Edits** button opens a drop down menu with 3 options.



Two options are available in **Fast edits**:

- **Edit assembly treatments** allows you to edit the treatment of one or more assemblies.

  Selecting the command loads a window where all the assemblies of the loaded order are present.



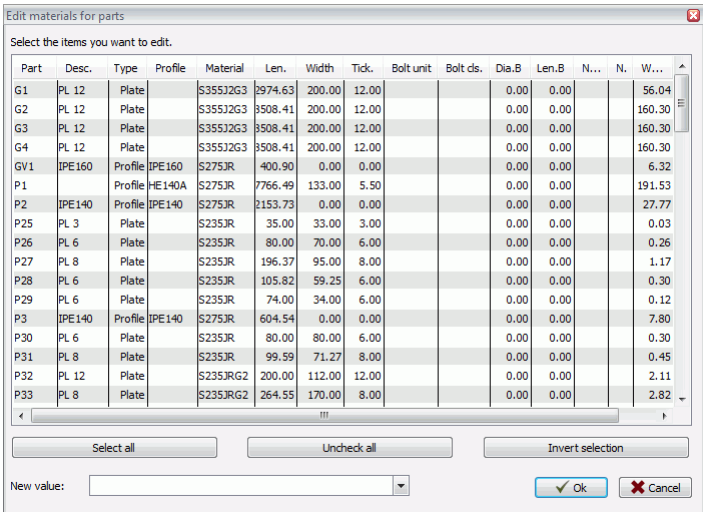
  Input the new value in the **New value** field, then select the assemblies for which you want to apply the edit.

  ✓ To exit and save the performed operations, use the **OK** button.

  ✓ If you press **Cancel** or the "**X**" button, the operation will be cancelled.

- **Edit part materials** allows you to edit the material of one or more parts.

  Selecting the command loads a window where all the parts from the loaded import are present.



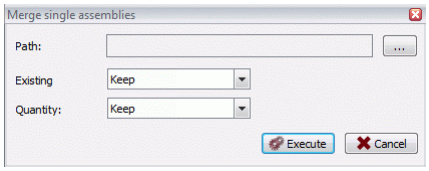
  Input the new value in the **New Value**, then select the marks for which you want to apply the edit.

  ✓ To exit and save the performed operations, use the **OK** button.

  ✓ If you press **Cancel** or the "**X**" button, the operation will be cancelled.

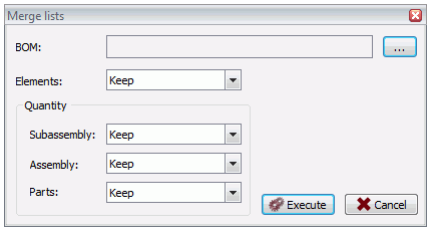
Merge can join the XCam files in a hierarchy, by creating individual assemblies or by fusing together two XLists in a common list. Two options are available in **Merge**:

- **Merge single assemblies** allows you to add new assemblies to an existing list, by means of XCam files.



  In **Path**, select the folder where the XCam files are found. In the options, you can select the type of operation for any equal assembly and the number of equal assemblies.

- **Merge lists** allows you to add a second list to the opened list.



  In the path, select the XList file to add.

  Then, from the options, you can choose the type of operation to perform on elements at various equal levels.

  If the related XCam data is present in the XList folder, it will be loaded. If the XCam file is missing, the data fields will be empty when the import is sent back to production.

Load parts allows the loading of related XCam files to the order.

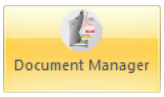
If you select the command, you will be prompted to select the folder where the files are, and whether you want to overwrite any previous files.

The **Delete** button deletes a line by removing one of the levels of the data structure. In case you remove a level by mistake, you can undo the deletion using the **Undo** command.

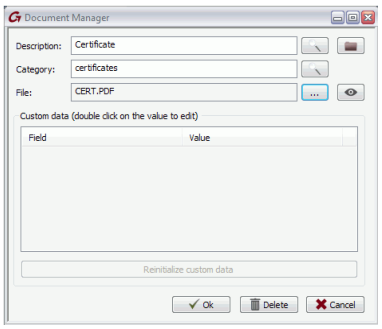
Click this button (**Undo**) to undo the last operation(s).

Use the **Cancel** button to exit the active command.

Document Manager

Command access: 

This command allows the user to upload electronic documents (pdf, dwg, doc, xls, etc.) in the archive of Advance Workshop, so that they can be associated at various levels in the work orders.

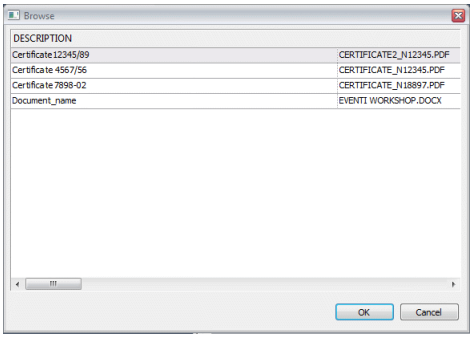


To save a new document, enter the name of the document in the **Description** field, then select the **Category**, if it was previously created, or insert a new category by typing its name in the field, and then, in the **File** field, select the file to be uploaded and stored.

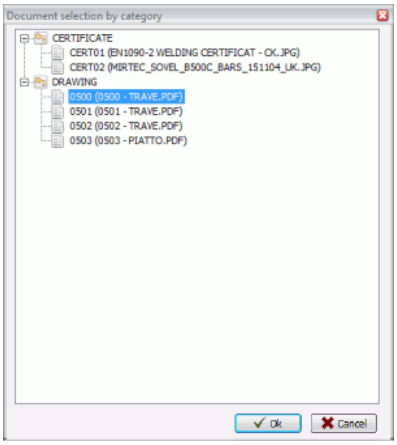
It is also possible to define and store "custom data" for the document.

Use **OK** to upload the document definitively.

If you want to consult a document, select the ***magnifying glass*** next to the **Description** field and select from the list the document you want to consult.



Alternatively, you can use the extended browse / find button to search documents divided into categories.



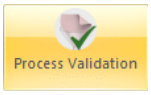
To view the document, select the ***eye*** next to the **File** field, and the document will open in the program in which it was created (e.g., DWG files will be opened with the AutoCAD application).

To delete a document, select it from the list and use **Delete**.

To associate the document to one of the levels, see the **New Order** chapter.

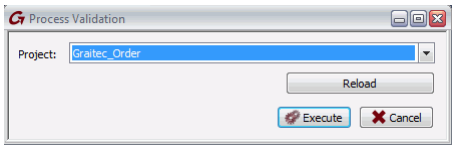
Commands in the Validation panel

Process Validation

Command access: 

The command is used to initiate the production procedure. The process validation defines the cycles of production to which the order elements are associated.

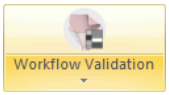
The processes are defined in the **Processing** configuration section.



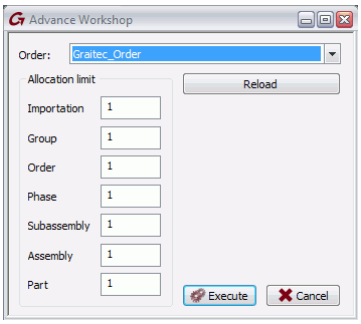
To launch the procedure, select the project from the drop-down menu, and select **Start**.

The **Reload** button allows the user to update the order situation from the server in the event that orders are added to the server.

Workflow Validation

Command access: 

After the validation of the processes, the next step is the validation of the workflow. This command allows you to filter the required centers and those which are not necessary for the processing defined in the workflow.



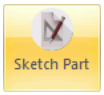
Allocation limit indicates the minimum amount below which the parts are distributed in the work center equivalent to the maximum load. To be used when the workflow contains work centers having the same function and the allocation of loads is necessary.

To launch the procedure, select the order from the drop-down menu, and select **Execute**.

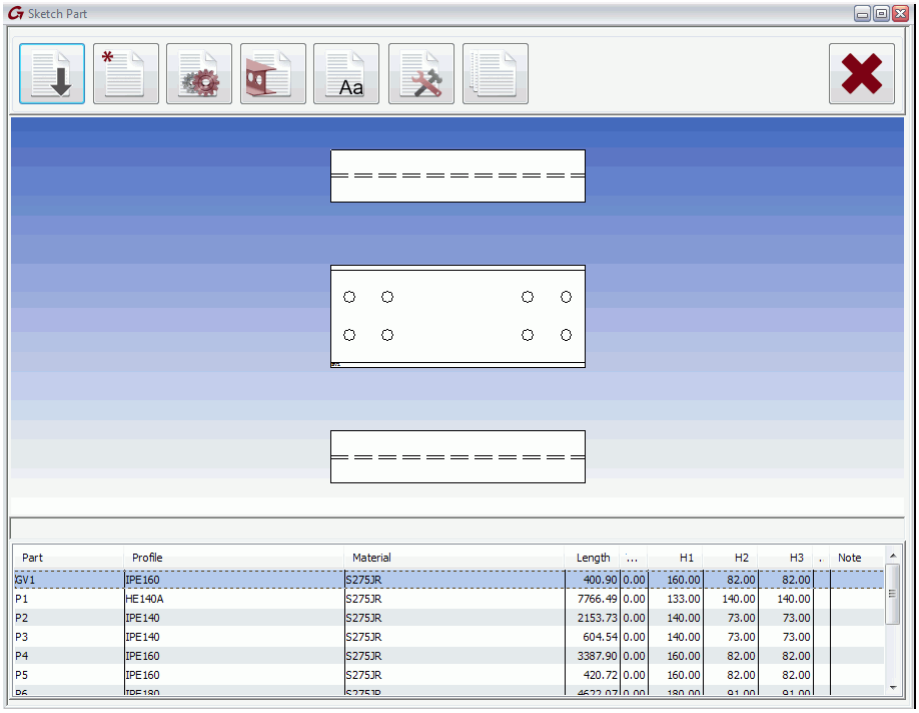
The **Reload** button allows the user to update the order situation from the server in the event that orders are added to the server.

Commands in the Drawing Tools panel

Sketch Part

Command access: 

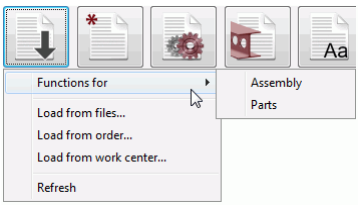
The Sketch Part button allows the user to open, edit or create a new XCam file.



The screen is divided into three areas. The upper area is the bar showing all the application commands, in the center is the drawing area where the currently loaded part is represented and at the bottom you can find the area showing the list of all the files which are open at the time.

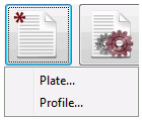
Below you will find descriptions for all commands in the **Sketch Part** window.

The **Load** button opens a drop-down menu with 5 options:

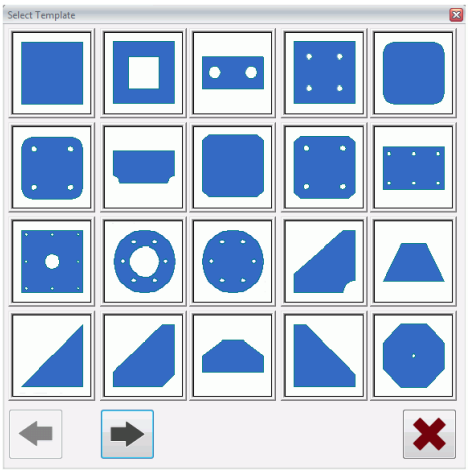


1. **Functions for > Assembly/Parts** allows you to choose the CAD functionality for parts or assemblies. (currently, it only runs for parts).
2. **Load from files** allows you to select a folder containing XCam files and to load them into the application.
3. **Load from order** allows you to select an order loaded in Advance Workshop and to load all the part/assembly elements of that order.
4. **Load from work center** opens a screen showing the work centers that are processing parts/assemblies. Double click on one of them to upload all the elements of that center.
5. **Refresh** allows to refresh the list of parts/assemblies loaded.

The **New** button opens a drop-down menu with 2 options:

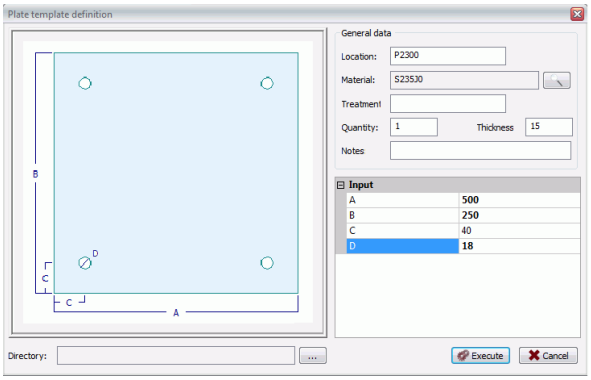


1. **Plate** opens a screen for selecting a new plate to create.



This screen lists the Templates of plate types available. The templates can be customized directly by the user or via GRAITEC support, using scripts.

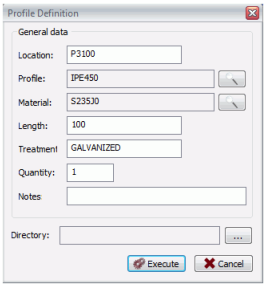
Selecting one of these plates opens the following input dialog:



– Here, the user has to fill in the **general data**, the dimensions of the plate, and the **Directory** (folder) where to save the generated XCam file.

– Clicking **Execute** generates the inserted plate in the active order. It is automatically loaded in the list in the bottom, where you can display it with a click.

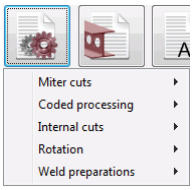
2. **Profile** opens a screen for the creation of a new profile.



– Here, the user has to fill in the **general data**, by selecting the profile from the database, the material and the **Directory** (folder) where to save the generated XCam file.

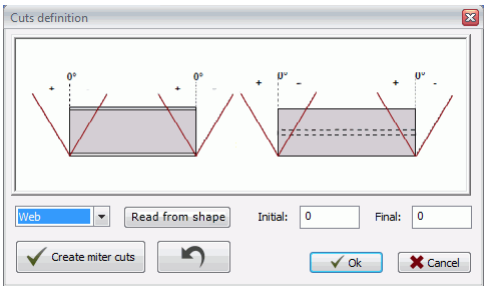
– Clicking **Execute** generates the inserted profile in the active order. It is automatically loaded in the list in the bottom, where you can display it with a click.

The **Processing** button opens a drop-down menu with 5 options.

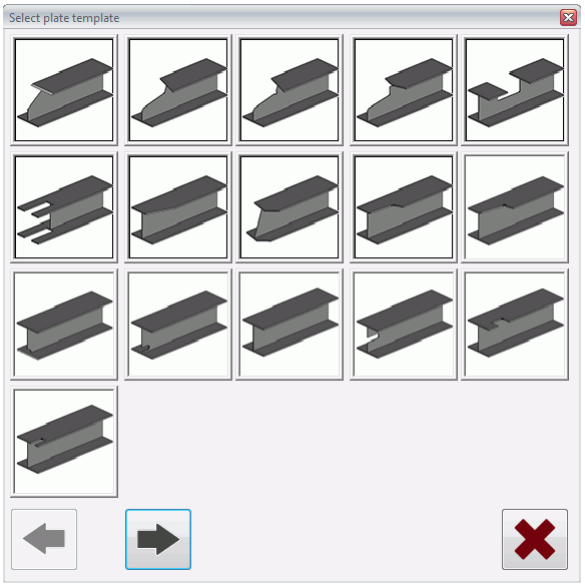


Every item on the menu has other options inside.

1. The **Miter Cuts** menu has two options.
   - Click **Insert** to open the **Cuts definition** dialog, where you can set the desired cut parameters for the selected profile (only works with profiles).

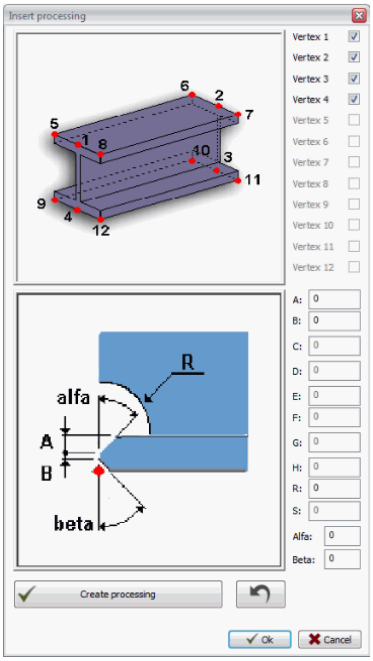


   - Click **Delete** to delete the inserted cuts. A check mark will appear in the **Mod.** column of the corresponding part.
2. The **Coded Processing** menu has four options:
   - The **Add** button allows the operator to insert cuts on the loaded profile (only works with profiles). The list of templates is loaded under the selected profile type.



***Note**: The program already comes with a large number of processing types, but it is possible to insert new ones on request.*

Selecting the desired type of processing by clicking on the corresponding image opens the data entry screen.



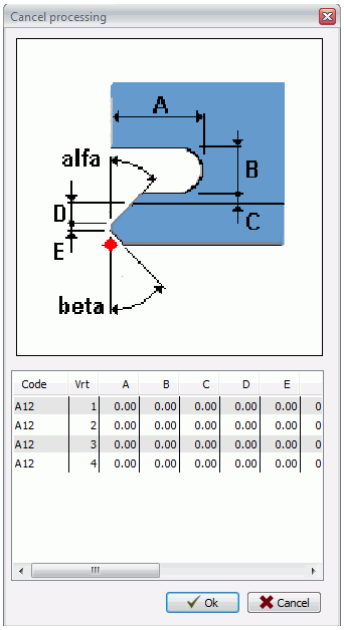
On this screen, the operator can select the vertex on which to apply the processing and the cut size indicated by the dimensions (it is possible to leave some unwanted values at 0).

Use **Create processing** to save and apply the processing on the vertex. The left arrow button is used to go back to the previous operation.

To exit and save the operations, use the **OK** button.

If you press **Cancel** or the "**X**" button, the operation will be cancelled.

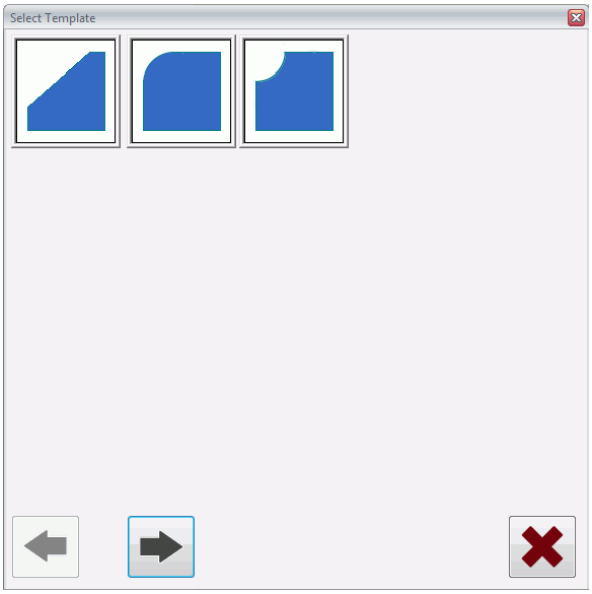
– **Delete** allows the operator to eliminate the cuts inserted with the previous command.



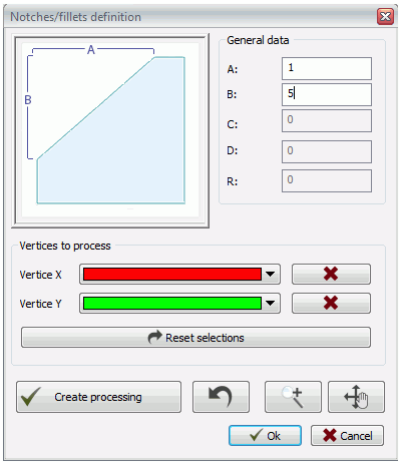
Select a cut you want to remove and press **Save** to close.

If you press **Cancel** or the "**X**" button, the operation will be cancelled.

– **Plate Chamfers/Fillets** allows you to create chamfers and fillets on plates (only works on plates). It is possible to select the template of the bevel, or contact GRAITEC to implement bespoke templates .



Selecting the desired command opens the following dialog.



Here, you can input the chamfer size; then, with the buttons below marked with a *red circle and white cross*, you can select the two vertices, depending on how you want to enter the dimensions.

After clicking the button, select the vertex by drawing a selection box on the desired side. When the vertex is selected, the symbol on the button changes to a green checkmark.

The selected vertex takes the color selected in the drop-down menu of the **Vertices to process** section, for example, red and green like in the above window.

Select the vertices and click the **Create processing** button to create the chamfer on the part; you can cancel the operation by clicking the left arrow.

Use the *lens* button to zoom; use the *arrows* to pan.

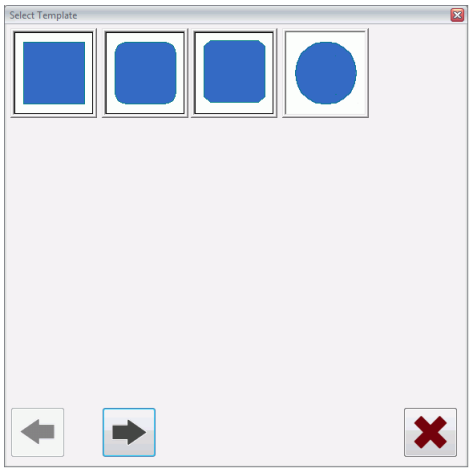
To exit and save the operations, use the **OK** button.

Press **Cancel** to exit the window. If you press the "**X**" button, the operation will be cancelled.

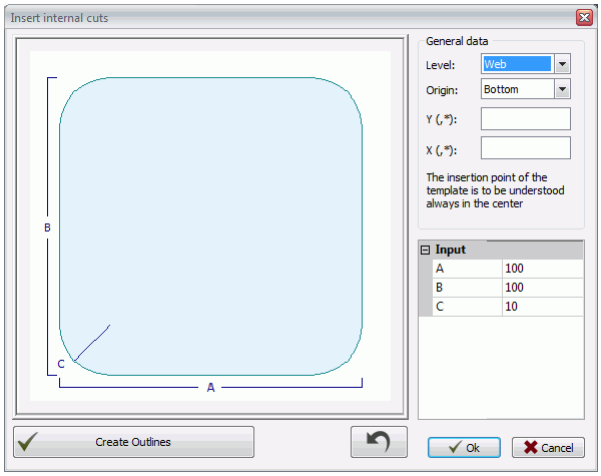
– **Reset shape** allows the operator to remove the chamfers on the plate and to change it back to a rectangular shape.

3. The **Internal Cuts** menu has two options:

   – The **Add** button allows you to insert variously shaped cuts within in the outline of profiles and plates.



   Select the type of cut to displays the following data entry screen.



   In **general data** you can select the level, if the element is a profile, the start point, and you can input the dimensions for the position of the cut.

   The measurements are always relative to the center of the selected figure. In the **Input** area you can insert the dimensions of the cut.

   Use **Create Outlines** to create the cut.

   To exit and save the operations, use the **OK** button.

   Press **Cancel** to exit the window. If you press the "**X**" button, the operation will be cancelled.

   – **Delete** allows you to delete the internal cuts by drawing a selection window around them.

4. The **Rotation** menu has three options:

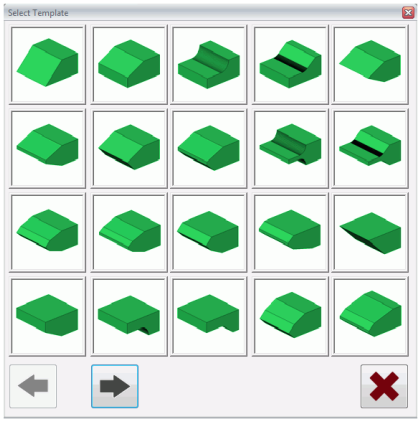
   – **Invert/Rotate X** allows you to mirror a plate on the X axis.

   – **Invert/Rotate Y** allows you to mirror a plate on the Y axis.

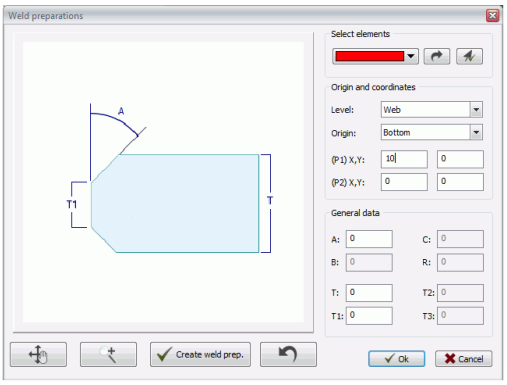
   – **Align plate to a vertex** allows you to rotate a plate with respect to a desired vertex. To rotate, draw a selection window around the vertex with respect to which you want to make the rotation.

5. The **Weld Preparations** menu has three options:

   – **Insert** allows you to enter rectilinear weld preparations on plates.



You can select the type of template you want to insert.



From **Select Items**, you can select the vertex on which to insert the processing through the window.

In the **Origin and coordinates** section, you can select the level (in the case of the profiles, the point of origin) and, eventually it is possible to change the points to create the initial and the final offset of the weld preparation against the side.

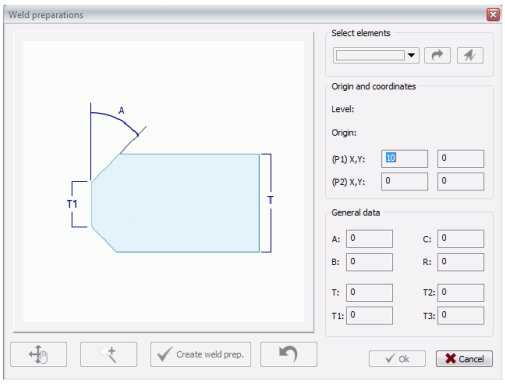
Finally, insert the dimensional data of the weld preparation in the **general data** section. **Create weld prep.** generates the weld preparation on the part.

To exit and save the operations, use the **OK** button.

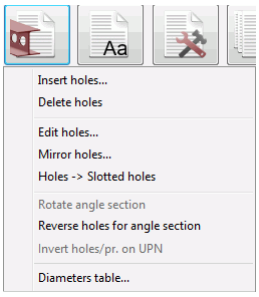
If you press **Cancel** or the "**X**" button, the operation will be cancelled.

– **Delete** allows you to delete the inserted weld preparations by drawing a selection window around them.

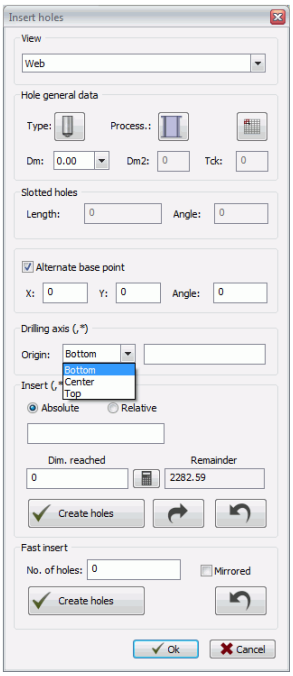
– **Properties** allows the operator to access the details of the inserted weld preparation; drawing a selection window exits the selected weld preparation's information window.



The **Holes** button opens a drop-down menu with 8 options.



1. **Insert Holes** allows the operator to insert holes on loaded profiles and plates:

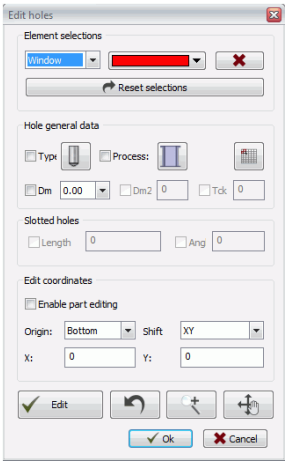


- **View** allows you to select the side on which to place the holes (for the Web plates).
- In **Hole general data** you can select the hole **Type** (Counterbore, Slotted hole, etc.) the type of **Processing** (Drilled, Punched, etc...) and you can insert dimension data, such as the diameter.
- You can also configure the table of drilling parameters (the button on the right), for example, the diameter tolerance, the edge distance and the hole pitch to be used in **Fast insert**.
- The **Slots** section will be active if **Slotted hole** is selected as the hole **Type**. The rotation angle starts from horizontal and rotates counterclockwise.
- The **Alternate base point** section is used to define a starting point for a series of holes, different from the point of origin of the plate or profile.
- **Drilling axis (,*)** is the axis of the inserted hole or series of holes. You can select the reference point (**Bottom, Center, Top)** of the profile or plate and insert the positive or negative displacement for one or more rows of holes.

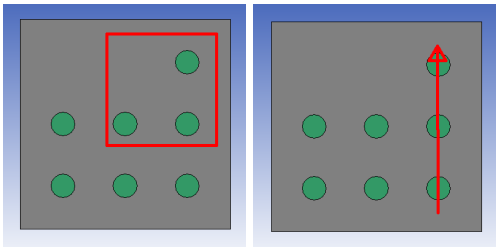
***Note**: The distance between the marking gauges is always relative to the last one inserted.*

- From **Insert (,*)**, you can select if the input dimension is absolute or relative. You can enter multiple distances separated by commas. After the values are inputted, the "Dim reached" and "Remainder" fields remain updated.
- **Create holes** allows you to save the operation, the right arrow allows you to reset the attained height and to start from scratch, and the left arrow allows you to undo the operations.
- **Fast insert** allows the user to quickly insert holes on a profile, selecting only the number of holes, and if mirroring is desired. The distances between holes are given in the "Hole table" configuration table.
  - To exit and save the operations, use the **OK** button.
  - If you press **Cancel** or the "**X**" button, the operation will be cancelled.

2. **Delete holes** allows the operator to delete the holes inserted on the profiles and the plate. The command asks you to draw a selection window around on the hole or holes that you want to delete.
3. **Edit holes** allows the operator to make changes to various kinds of already inserted holes.



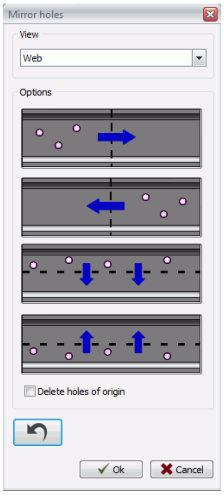
– From **Element selections**, the user selects the hole selection method: selection window or selection line. Through the first method, you select the holes by drawing a selection window around them, while through the second method, you pick a start point and an end point of the selection line (very useful for inclined selections).



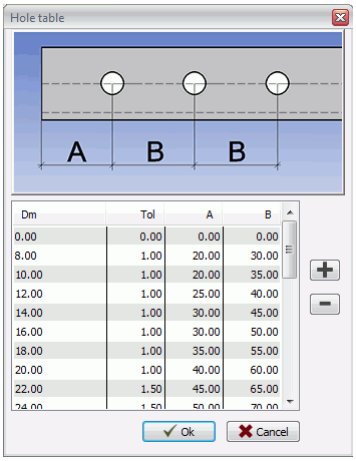
Then, you can change the items by selecting and activating the desired options.

– With **Edit coordinates**, you can change the position of the holes in three ways. The first is by indicating the new coordinates, the second is by indicating the direction and angle, and the third is by indicating the direction, the angle and the alignment of the selection arrow.
– You can apply the changes with **Edit**. You can cancel the operation with the left arrow.
– If you press **Cancel** or the "**X**" button, the operation will be cancelled.

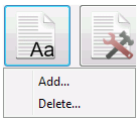
4. **Mirror holes** allows the operator to mirror existing holes.
   – Select the **View** on which to perform the operation, then click on one of the images to apply the change.
   – To exit and save the operations, use the **OK** button.
   – If you press **Cancel** or the "**X**" button, the operation will be cancelled.



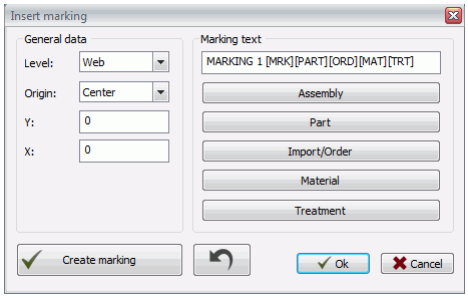
5. **Holes -> Slotted holes** allows the operator to change the selected holes into slotted holes.
6. **Rotate angle section** is used for rotating a profile when the user needs to move holes or notches on a specific side. The command is active only for angle sections that have the same flange dimensions, such as L100x100x10.
7. **Reverse holes for angle section** allows the operator to reverse the holes from one side to another of angle section profiles.
8. **Invert holes/processing on UPN** allows the operator to perform the mirroring of holes, cuts or notches on a UPN section (frequently used for stair stringers).
9. **Diameters table** allows the operator to access the holes configuration table.



The **Marking** button opens a drop-down menu with 2 options.



1. The **Add** button allows the operator to insert a mark on the profile.

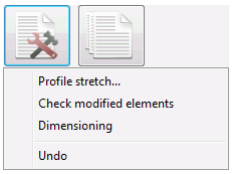


Select the level, the origin and the insertion coordinates.

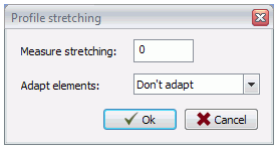
- In the **Marking text** section, you can enter the desired variables by clicking on the respective command, or you can write using the PC keyboard.
- **Create marking** allows you to insert the mark.
- To exit and save the operations, use the **OK** button.
- If you press **Cancel** or the "**X**" button, the operation will be cancelled.

2. **Delete** allows the operator to remove marks from profiles and plates. The command asks you to draw a selection window around the mark you want to delete.

The **Edit** button opens a drop-down menu with 4 options.



1. **Profile stretching** allows the user to elongate or shorten the loaded profile.

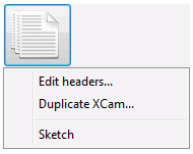


   The operator inserts the "positive" stretching value or the "negative" shortening value. Below, you can select the type of stretch to run.

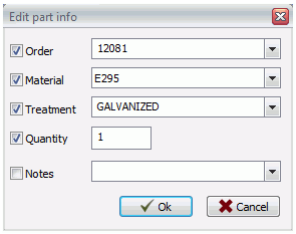
   The first option, **Don't adapt**, elongates or shortens the profile without changing the position of inner holes or cuts, the second option, **Recalculate parts**, distributes the parts proportional to the stretching, and the third option, **Move selected**, allows you to select the items to be moved.

2. **Check modified elements** allows the operator to verify for an order whether the modified parts have already been entered into production. This allows verifying if the changes affect the production phase.
3. **Dimensioning** allows the operator to activate the dimensions of the loaded part.
4. The **Undo** function allows the operator to cancel in a sequence the last operations.

The **Batch Operations** button opens a drop-down menu with 3 options.



1. **Edit headers** allows the operator to change the header of the parts as elements in the material.

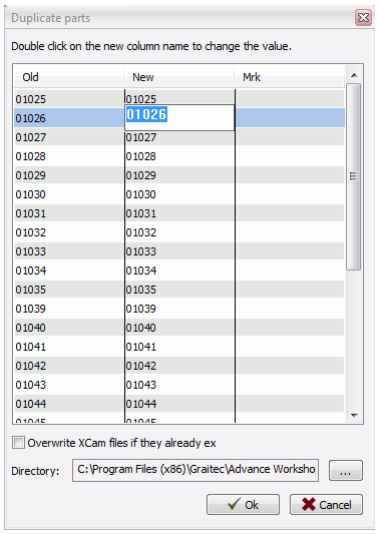


   – To make the change, select one or more parts in the list below the graphic input, select the command and check the parameter or parameters to be changed by editing the new value.
   – To exit and save the operations, use the **OK** button.
   – If you press **Cancel** or the "**X**" button, the operation will be cancelled.

2. **Duplicate XCam** allows the user to create a copy of an element with a different name.

   To make a copy of one or more elements, select them from the list below the graphic input, then select the command.

   The command prompts you to define the folder where the XCam copy will be saved, then, the following screen appears:



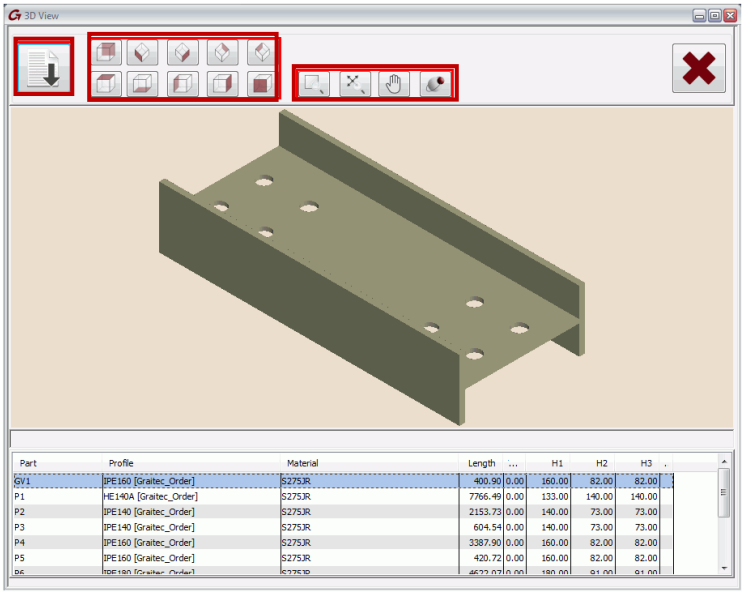
   Now the user can change the name of the part by double-clicking the field in the **New** column.

3. **Sketch** allows the operator to directly access the sketch of the selected part.

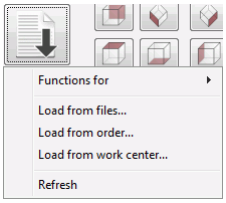
3D View

Command access:

This command allows the user to view the part elements as a solid model.



- Select the **Load** button to open a drop down menu with 4 options.



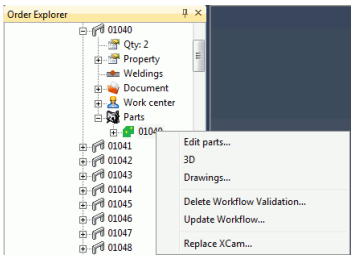
  – **Load from files** allows you to select a folder containing XCam files and to load them into the application.

  – **Load from order** allows you to select an order loaded in Advance Workshop and to load all the part elements in that order.

  – **Load from work center** opens a screen containing the work centers which are processing parts; you can select one of them with a double-click to upload all the parts of that center.

  – **Refresh** allows to refresh the loaded list of parts.

***Note**: You can also launch the 3D View application by going directly to a part present in the Tree control of Advance Workshop and selecting the 3D option with the right button.*

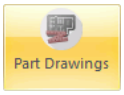


- The **Views** commands allows you to change the point of view of the object with 2D and isometric views. To change the point of view, select one of the views of the 10 views available. By default, all parts are in SW view.

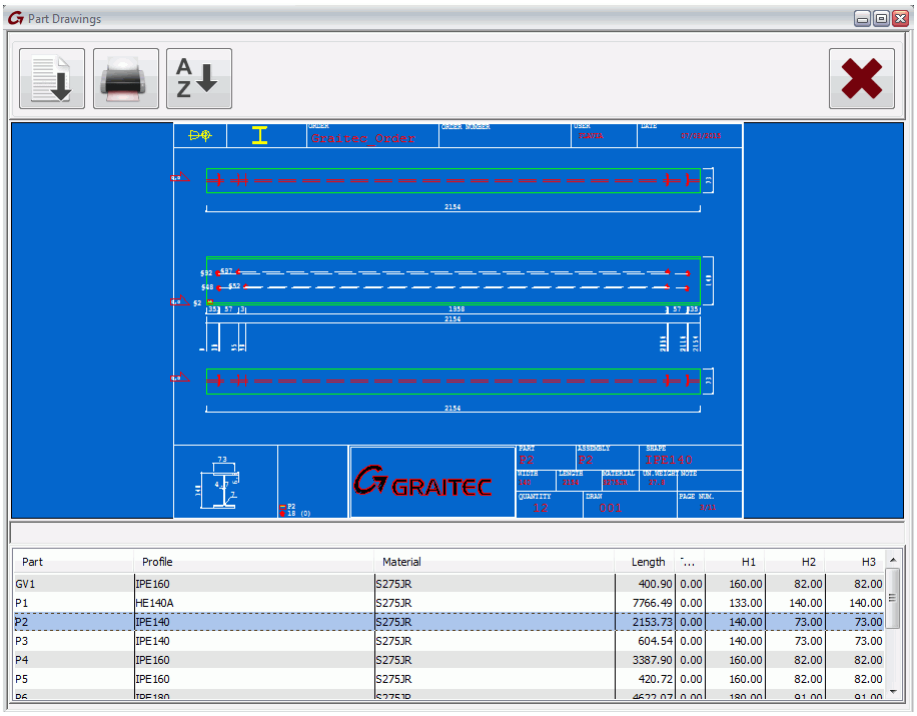
- The **Zoom** commands allow the user to perform zoom operations or to change the view of the object.
  - **Window zoom** allows zooming to specific areas of the object. Select the command, then draw a selection window around the part you want to zoom in on.
  - **Zoom all** allows you to return to viewing the entire object.
  - **Pan** allows you to move in the object view.
  - **Orbit** allows you to rotate the point of view of the object.

***Note**: You can also move by scrolling with the mouse.*

Part Drawings

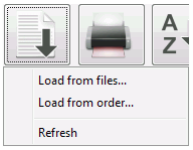
Command access: 

The part drawing allows the operator to see and print one or more selected parts on paper or PDF. Alternatively, it can be exported to DXF.



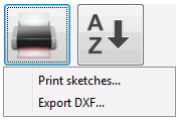
The screen is divided into three areas. The upper area comprises the bar with all the commands of the application, the center area is the drawing area, where the part currently loaded is represented, and the lower area is where the operator can find the list of all the files currently opened.

- Select the **Load** button to open a drop down menu with 3 options.



  - **Load from files** allows you to select a folder containing XCam files and to load them into the application.
  - **Load from order** allows you to select an order loaded in Advance Workshop and to load all the part elements in that order.
  - **Refresh** allows to refresh the loaded list of parts.

- Select the **Print/Export** button to open a drop down menu with 2 options.



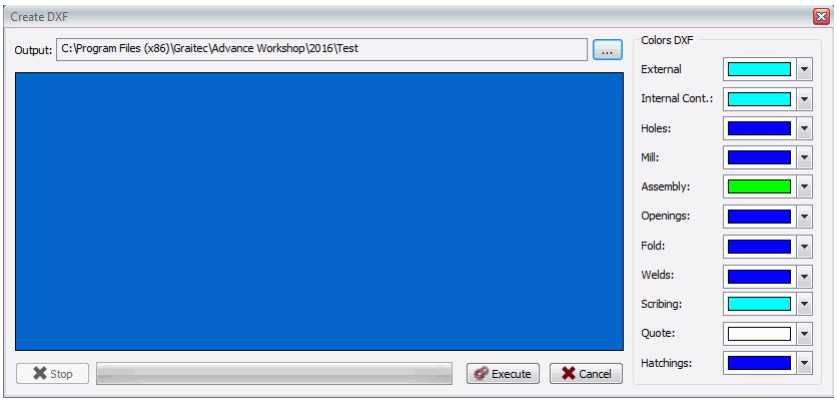
– **Print sketches** allows you to print the sketches previously selected from the list below.

You can change some of the print settings, or change the numbering of the sketches.

✓ To exit and print, use the **Execute** button.

✓ If you press **Cancel** or the "**X**" button, the operation will be cancelled.

– **Export DXF** allows you to export in DXF format the previously selected sketches in the list below.

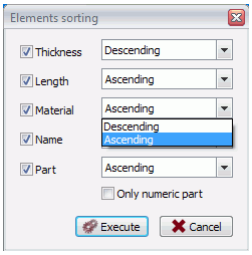


You must select the folder where to save the DXF files created. To the user can also customize the export with colors.

✓ To exit and print, use the **Execute** button.

✓ If you press **Cancel** or the "**X**" button, the operation will be cancelled.

- Select the **Sorting** button to open a window where you can sort the selected elements according to certain criteria.



You can only sort by numerical distribution, by activating the check box.

✓ To exit and run the command, use the **Execute** button.

✓ If you press **Cancel** or the "**X**" button, the operation will be cancelled.

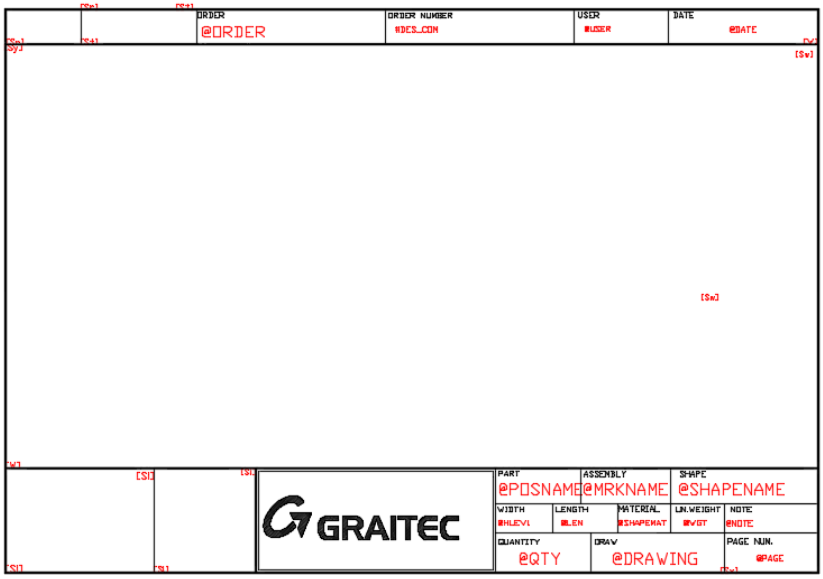
Part Drawing Customization

This chapter explains how you can customize the title block of the sketch for parts printing.

The sketches loaded by default are located in the folder:

%:\Program Files (x86)\Graitec\Advance Workshop\2017\Applications\appsketch\Resources\SheetTemplates

In the installation phase, the file *SheetBase.dxf* is selected.



The working areas in the sketch are defined by delimiters. These are strings enclosed in square brackets, which delimit the various areas of the sketch to represent various elements.

They always have to be entered in pairs of 2, in order to delimit the area of interest: the first one in the lower left corner, and the second one in the upper right corner.

If the delimiters are not entered in the drawing, the objects will be omitted.

- [W] Area in which the part (plate or profile) drawing is inserted.
- [St] Area for the insertion of the section of the represented profile type.
- [Sl] Area for the legend of the holes.
- [Sr] Area for the insertion of the view type representation (American or European).
- [SH] Area for the representation of the profile section with sizes.
- [Sw] Area for the representation of weld preparations.

In the drawing you can also enter a number of variables that will complete the sketch in the printing phase.

- @POSNAME: Part name
- @MRKNAME: Assembly name
- @SHAPENAME: Profile name
- @QTY: Quantity of parts to be produced
- @DRAWING: Drawing name
- @PAGE: Page number
- @SHAPEMAT: Material
- @WGT: Unitary weight
- @LEV1: Width
- @ORDER: Order/Import

- @DES_COM: Order description
- @USER: The user who printed the sketches
- @DATE: Print date
- @LEN: Length
- @NOTE: Notes

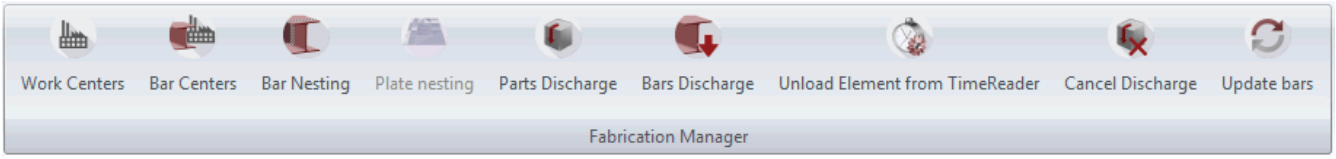
Note: *After you finish customizing the sketch, you need to save it in DXF AutoCAD 12 format and place it in the folder which you have set up during the general configuration.*

The corporate logo must be composed of the AutoCAD entity - only lines and circles and nothing else. It must not be an image file.

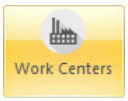
The Production Manager tab

Commands in the Fabrication Manager panel

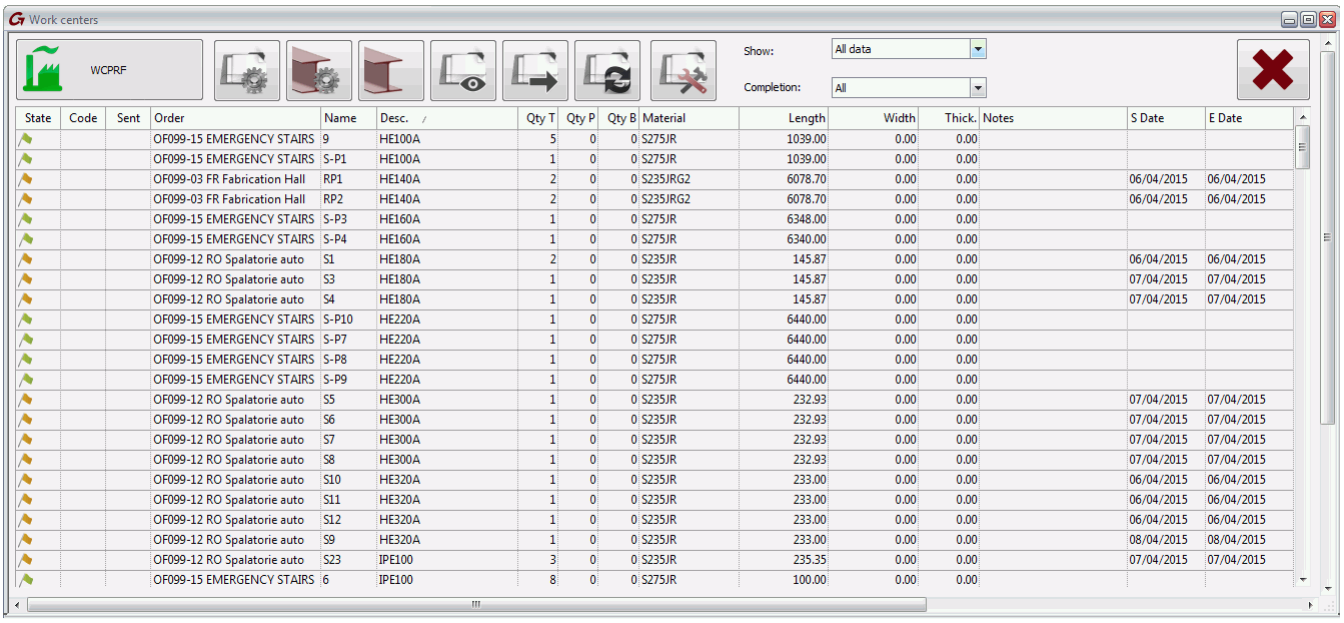
In this section you can input commands for the management of work centers and for sending Advance Workshop parts to production.



Work centers

Command access: 

This command opens the screen for communication with the work centers treating the parts or assemblies.



State	Code	Sent	Order	Name	Desc.	Qty T	Qty P	Qty B	Material	Length	Width	Thick.	Notes	S Date	E Date
			OF099-15 EMERGENCY STAIRS	9	HE100A	5	0	0	S275JR	1039.00	0.00	0.00			
			OF099-15 EMERGENCY STAIRS	S-P1	HE100A	1	0	0	S275JR	1039.00	0.00	0.00			
			OF099-03 FR Fabrication Hall	RP1	HE140A	2	0	0	S235JRG2	6078.70	0.00	0.00		06/04/2015	06/04/2015
			OF099-03 FR Fabrication Hall	RP2	HE140A	2	0	0	S235JRG2	6078.70	0.00	0.00		06/04/2015	06/04/2015
			OF099-15 EMERGENCY STAIRS	S-P3	HE160A	1	0	0	S275JR	6348.00	0.00	0.00			
			OF099-15 EMERGENCY STAIRS	S-P4	HE160A	1	0	0	S275JR	6340.00	0.00	0.00			
			OF099-12 RO Spalatorie auto	S1	HE180A	2	0	0	S235JR	145.87	0.00	0.00		06/04/2015	06/04/2015
			OF099-12 RO Spalatorie auto	S3	HE180A	1	0	0	S235JR	145.87	0.00	0.00		07/04/2015	07/04/2015
			OF099-12 RO Spalatorie auto	S4	HE180A	1	0	0	S235JR	145.87	0.00	0.00		07/04/2015	07/04/2015
			OF099-15 EMERGENCY STAIRS	S-P10	HE220A	1	0	0	S275JR	6440.00	0.00	0.00			
			OF099-15 EMERGENCY STAIRS	S-P7	HE220A	1	0	0	S275JR	6440.00	0.00	0.00			
			OF099-15 EMERGENCY STAIRS	S-P8	HE220A	1	0	0	S275JR	6440.00	0.00	0.00			
			OF099-15 EMERGENCY STAIRS	S-P9	HE220A	1	0	0	S275JR	6440.00	0.00	0.00			
			OF099-12 RO Spalatorie auto	S5	HE300A	1	0	0	S235JR	232.93	0.00	0.00		07/04/2015	07/04/2015
			OF099-12 RO Spalatorie auto	S6	HE300A	1	0	0	S235JR	232.93	0.00	0.00		07/04/2015	07/04/2015
			OF099-12 RO Spalatorie auto	S7	HE300A	1	0	0	S235JR	232.93	0.00	0.00		07/04/2015	07/04/2015
			OF099-12 RO Spalatorie auto	S8	HE300A	1	0	0	S235JR	232.93	0.00	0.00		07/04/2015	07/04/2015
			OF099-12 RO Spalatorie auto	S10	HE320A	1	0	0	S235JR	233.00	0.00	0.00		06/04/2015	06/04/2015
			OF099-12 RO Spalatorie auto	S11	HE320A	1	0	0	S235JR	233.00	0.00	0.00		06/04/2015	06/04/2015
			OF099-12 RO Spalatorie auto	S12	HE320A	1	0	0	S235JR	233.00	0.00	0.00		06/04/2015	06/04/2015
			OF099-12 RO Spalatorie auto	S9	HE320A	1	0	0	S235JR	233.00	0.00	0.00		08/04/2015	08/04/2015
			OF099-12 RO Spalatorie auto	S23	IPE100	3	0	0	S235JR	235.35	0.00	0.00		07/04/2015	07/04/2015
			OF099-15 EMERGENCY STAIRS	6	IPE100	8	0	0	S275JR	100.00	0.00	0.00			

The window consists of a series of commands for the management of work centers and of parts; in the bottom, there is a series of columns reporting the data of the parts.

The first command allows the operator to select the work center on which to operate.

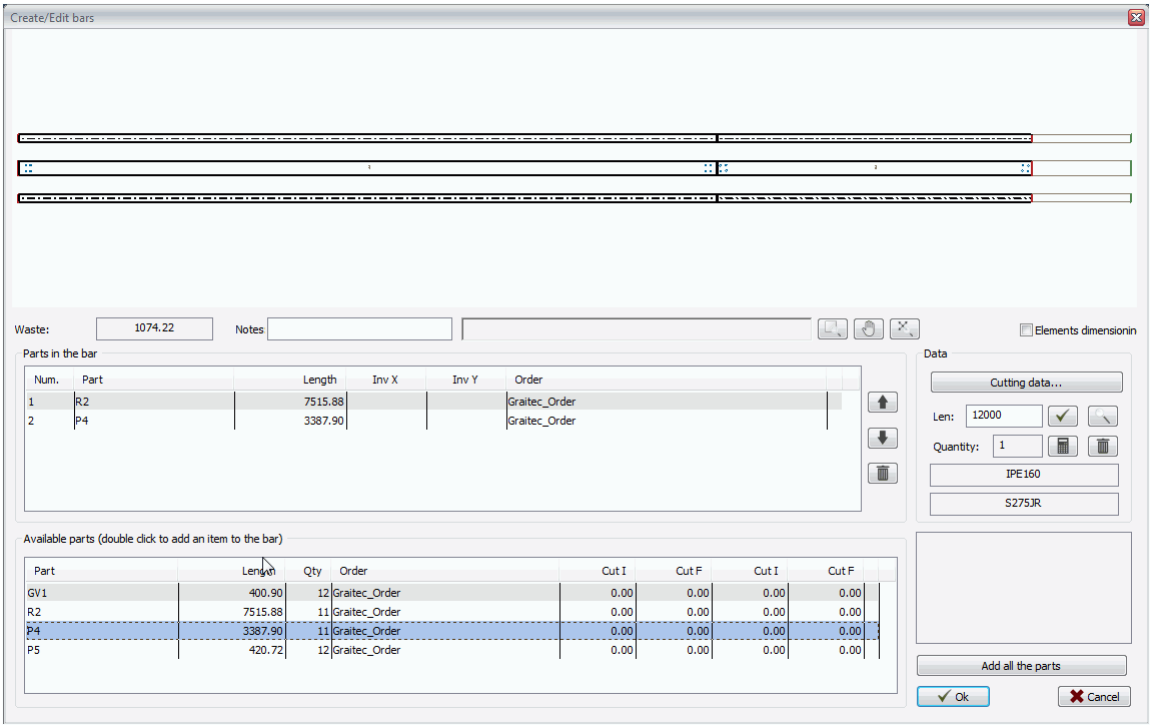
Clicking the button opens a drop down menu, where you can select the work center which you want to access.

The **Create work programs** command allows the operator to generate a corresponding file for every part, to be sent to the work center (e.g., *.fnc for FICEP machine). You can also run the command with multiple selections.

The **Manual Nesting** command allows the operator to access the bar creation part in manual mode.

The command is effective only for work centers that are predisposed to the nesting of the bars, and only for parts that are in **Completion = To be completed** state.

Select the work center parts that you want to add to the bar, and press **Manual Nesting.**



In this screen you can see a preview of the bar that is being produced (at first, only a rectangle with initial and final cut is shown); as you add parts, they are drawn on the bar.

To add parts, simply double-click on an entry in the part list. This is the part list for the category to be produced.

Above the list is a field identifying the length of scrap that you have on the bar, and a notes field.

To the right, in the data field, there is a **Data cut...** button for accessing the machine setup and for defining the length of the bar to use.

With the calculator command, Advance Workshop allows you to automatically calculate how many bars you can create with the desired configuration.

Click the **OK** button to add the newly created bar; click **Cancel** to leave the application without saving your work.

The buttons with the *up* and *down* arrows allow you to swap the order of the parts, and the ***eraser*** button allows you to delete them.

The **Automatic/Nesting bar creation** command allows the operator to select a number of parts and send them to automatic bar nesting.

The command is effective only for work centers that are predisposed to the nesting of the bars, and only for parts that are in **Completion = To be completed** state.

For the functioning of automatic nesting, see the chapter on automatic creation of bars.

The **Edit work program** command is used to access the temporary folder of files generated by the **Create work programs** command, to give the operator an opportunity to verify and edit them if necessary (e.g., with Notepad).

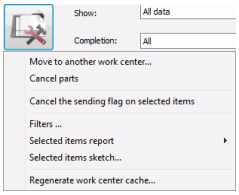
The command opens the folder *%\Program Files (x86)\Advance Workshop\Machine* (Advance Workshop installation folder).

The **Send work programs to center** command allows the operator to send the programs generated by the **Create work programs** command to the corresponding work center (e.g., CNC machine) for the execution of the part.

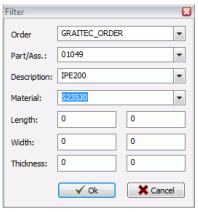
Normally, when configuring the software, the GRAITEC Technical team prepares a folder named _Machine with subfolders corresponding to the work centers on the server dedicated to Advance Workshop.

The **Refresh the list** command allows the operator to update the screen in the case when operations have been made by other operators connected to Advance Workshop.

The **Parts management** utility command is used for parts management.



- With **Move to another work center**, you can move parts to other compatible work centers.
- **Cancel parts** cancels the selected parts.
- **Cancel sending flag on selected items** allows the operator to cancel the flag for sent parts and to resend them to work centers.
- **Filters** allows the operator to run the search filters in the container of the work center.



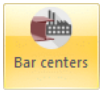
- **Selected items report** creates a report of all the selected items.
- **Selected items sketch** loads the **Sketch** application with all the selected parts.
- **Regenerate work center cache** recreates the cache and updates the selected work center.

The columns present in the **Work centers** dialog for each work center are:

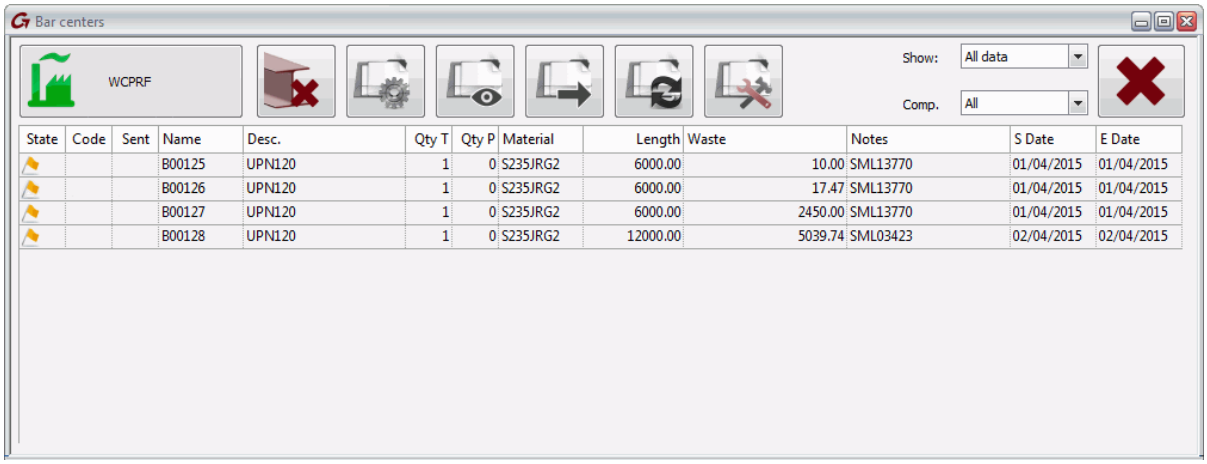
- **State**. In this column you will find three types of flags (green, yellow, red), indicating that the part is to be produced during the current day (green), the part is delayed in relation to the expected date (yellow), or that the part is not yet produced (red).
- **Code**. This column shows if the machine code generated is correct or not. If the code is correct, a *hammer* symbol is displayed, if the code is incorrect or has not been generated, an *interdiction* symbol is displayed.
- **Sent**. In this column, the symbol appears if the part has already been sent to the work center for processing.
- **Order**. This column describes the order to which the part refers.
- **Name**. This is the name of the part/assembly.
- **Desc.** This is the description of the part, indicating if it is a profile or a plate.
- **QtyT**. This is the total amount of parts to be produced.

- **QtyP**. This is the amount of parts produced; this amount is increased when using the quantity unload. The quantity changes color and becomes yellow if the parts have been partially produced and green if all the parts have been produced.
- **QtyB**. This is the amount of parts placed on the bars (if the center allows it). When placing the mouse over the quantity, a " Tooltip " appears, indicating the bars where there are optimized parts.
- **Material**. Indicates the quality of the parts in a list.
- **Length / Width / Thick.** Indicate the overall dimensions of the parts (length, width and thickness).
- **S Date**: is the production start date
- **E Date**: is the scheduled production end date.
- The **Show** display option allows you to see **All data** or only those **In processing today**.
- The **Completion** display option allows you to see the parts **To be completed**, **Completed** or **All**.
- Use to close the application.

Bar centers

Command access: 

This command opens the screen for communication with the work centers that manage bars.



State	Code	Sent	Name	Desc.	Qty T	Qty P	Material	Length	Waste	Notes	S Date	E Date
			B00125	UPN120	1	0	S235JRG2	6000.00	10.00	SML13770	01/04/2015	01/04/2015
			B00126	UPN120	1	0	S235JRG2	6000.00	17.47	SML13770	01/04/2015	01/04/2015
			B00127	UPN120	1	0	S235JRG2	6000.00	2450.00	SML13770	01/04/2015	01/04/2015
			B00128	UPN120	1	0	S235JRG2	12000.00	5039.74	SML03423	02/04/2015	02/04/2015

The window has a ribbon with commands to manage the centers, and in the bottom, the list of the bars with the corresponding information.

The first command allows the operator to select the work center on which to operate.

Clicking the button opens a drop down menu, where you can select the work center which you want to access.

The **Delete bar** button allows the operator to eliminate any created bars from the bar list. You can run the command with multiple selections.

The **Create work programs** command allows the operator to generate the file of the bar to be sent to the work center (eg *.fnc for FICEP machine). You can run the command with multiple selections.

The **Edit work program** command allows access to the temporary folder of files generated by the **Create work programs** command, to give the operator an opportunity to verify and edit them if necessary (e.g., with Notepad).

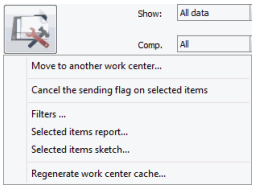
The folder opened by the command is *%\Program Files (x86)\Advance Workshop\Machine* (the Advance Workshop installation folder).

The **Send work programs to center** command allows the operator to send the programs generated by the **Create work programs** command to the work center (e.g., CNC machine) considered for the execution of the bar.

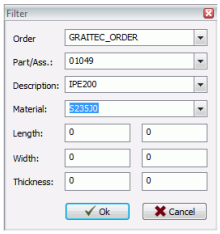
Normally, in the software configuration phase, the GRAITEC Technical team prepares a _Machine folder with subfolders corresponding to the work centers, on the server dedicated to Advance Workshop.

The **Refresh the list** command allows the operator to update the screen to show operations made by other operators connected to Advance Workshop.

The **Parts management** utility command is used for parts management.



- With **Move to another work center** you can move parts to other compatible work centers.
- **Cancel sending flag on selected items** allows the operator to cancel the flag for sent parts and to re-send them to work centers.
- **Filters** allows the operator to run the search filters in the container of the work center.



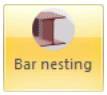
- **Selected items report** creates a report of all the selected items.
- **Selected items sketch** loads the **Sketch** application with all the selected parts.
- **Regenerate work center cache** recreates the cache and updates the selected work center.

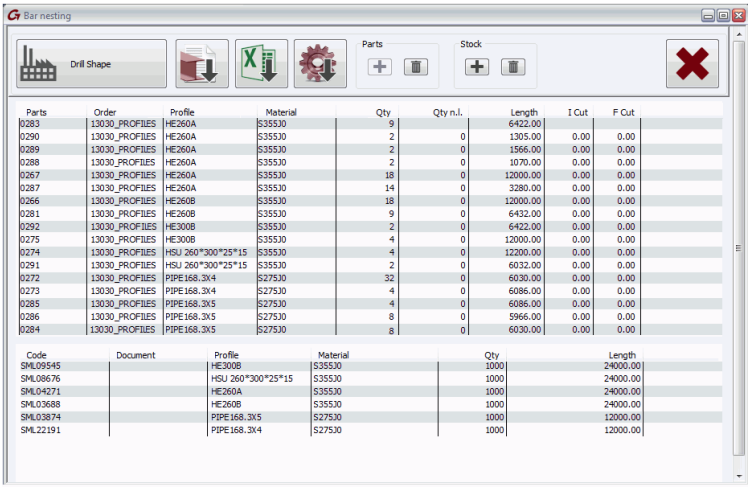
The columns present in the **Work centers** dialog for each work center are:

- **State**. In this column you will find three types of flags (green, yellow, red), indicating that the bar is to be produced during the current day (green), the bar is delayed in relation to the expected date (yellow), or that the bar is not yet produced (red).
- **Code**. This column shows if the machine code generated is correct or not. If the code is correct, a *hammer* symbol is displayed, if the code is incorrect or has not been generated, an *interdiction* symbol is displayed.
- **Sent**. In this column, the symbol appears if the bar has already been sent to the work center for processing.
- **Name**. This is the name of the bar (the name is automatically specified at creation time, you can define the nomenclature from the General Setup).
- **Desc.** This is the description of the bar, indicating if it is a profile or a plate.
- **QtyT**. This is the total amount of bars to be produced.

- **QtyP**. This is the amount of bars produced; this amount is increased when using the quantity unload. The quantity changes color and becomes yellow if the bars have been partially produced and green if all the bars have been produced.
- **Material**. Indicates the quality of the bars in a list.
- **Length**. Indicates the overall bar length.
- **Waste**. Indicates the length of the waste remaining on the bar.
- **S Date**: is the production start date
- **E Date**: is the scheduled production end date.
- The **Show** display option allows you to see **All data** or only those **In processing today**.
- The **Completion** display option allows you to see the parts **To be completed**, **Completed** or **All**.
- Use to close the application.

Bar nesting

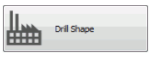
Command access: 



Parts	Order	Profile	Material	Qty	Qty n.l.	Length	I Cut	F Cut
0283	13030_PROFILES	HE260A	S355J0	9		6422.00		
0290	13030_PROFILES	HE260A	S355J0	2	0	1305.00	0.00	0.00
0289	13030_PROFILES	HE260A	S355J0	2	0	1566.00	0.00	0.00
0288	13030_PROFILES	HE260A	S355J0	2	0	1070.00	0.00	0.00
0267	13030_PROFILES	HE260A	S355J0	18	0	12000.00	0.00	0.00
0287	13030_PROFILES	HE260A	S355J0	14	0	3280.00	0.00	0.00
0266	13030_PROFILES	HE260B	S355J0	18	0	12000.00	0.00	0.00
0281	13030_PROFILES	HE260B	S355J0	9	0	6432.00	0.00	0.00
0292	13030_PROFILES	HE300B	S355J0	2	0	6422.00	0.00	0.00
0275	13030_PROFILES	HE300B	S355J0	4	0	12000.00	0.00	0.00
0274	13030_PROFILES	HSU 260*300*25*15	S355J0	4	0	12200.00	0.00	0.00
0291	13030_PROFILES	HSU 260*300*25*15	S355J0	2	0	6032.00	0.00	0.00
0272	13030_PROFILES	PIPE168.3X4	S275J0	32	0	6030.00	0.00	0.00
0273	13030_PROFILES	PIPE168.3X4	S275J0	4	0	6086.00	0.00	0.00
0285	13030_PROFILES	PIPE168.3X5	S275J0	4	0	6086.00	0.00	0.00
0286	13030_PROFILES	PIPE168.3X5	S275J0	8	0	5966.00	0.00	0.00
0284	13030_PROFILES	PIPE168.3X5	S275J0	8	0	6030.00	0.00	0.00

Code	Document	Profile	Material	Qty	Length
SML09545		HE300B	S355J0	1000	24000.00
SML08676		HSU 260*300*25*15	S355J0	1000	24000.00
SML04271		HE260A	S355J0	1000	24000.00
SML03688		HE260B	S355J0	1000	24000.00
SML03874		PIPE168.3X5	S275J0	1000	12000.00
SML22191		PIPE168.3X4	S275J0	1000	12000.00

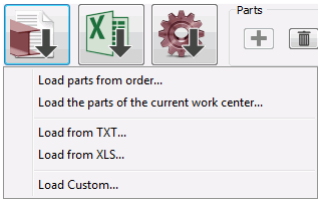
The dialog window is divided into three areas: the first area is that of the operation icons, the second area at the top is the list of parts to be optimized, the third area at the bottom is the available stock of bars.



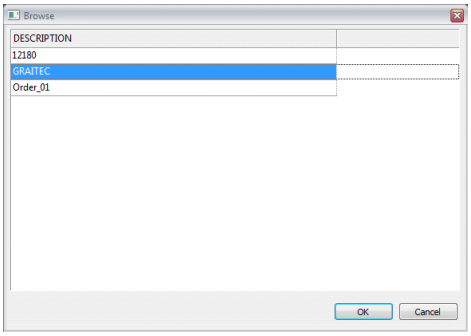
The first command allows the operator to select the work center on which to operate.

Clicking the button opens a drop down menu, where you can select the work center which you want to access.

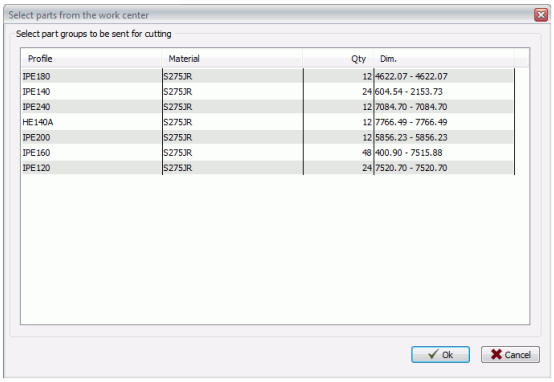
The **Parts** command opens a menu with multiple selection functions for loading parts for nesting.



- **Load parts from order** opens the order selection window, where you can choose the desired order from which to load the parts.

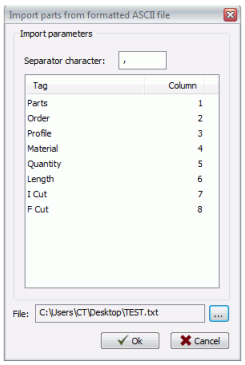


- **Load parts of the current work center** opens a window where you can select the parts of the selected work center with the first command, and then import them to complete the nesting.



The parts are divided into groups and sorted according to their profile, material, quantity and minimum / maximum range of measurement.

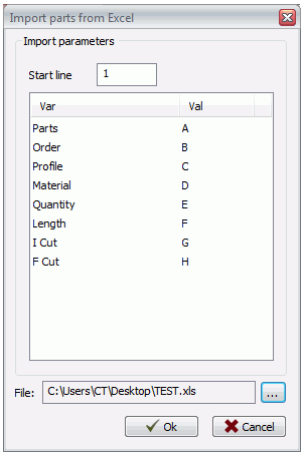
- With **Load from TXT** you can load text files formatted with the required information:
  - Mandatory: Part, Profile, Length, Quantity, Material.
  - Optional: Import, I Cut, F Cut.



Select the file with the "**...**" button to load it.

It is possible to set the position of the record by editing the **Column** field with a double click on the number.

- With **Load from XLS** you can load Excel files in XLS format, formatted with the required information:
  - Mandatory: Part, Profile, Length, Quantity, Material.
  - Optional: Import, I Cut, F Cut.

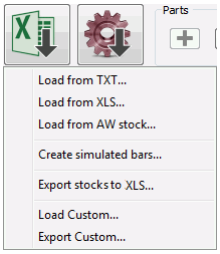


Select the file with the "**...**" button to load it.

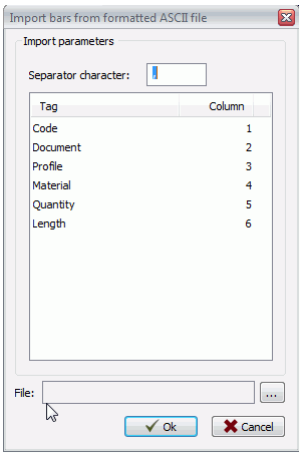
It is possible to set the position of the record by editing the **Val** field with a double click on the number.

- **Load Custom** allows GRAITEC to configure specific imports for customers.

The **Stock** button opens a menu with multiple functions for loading parts from the bar stock.



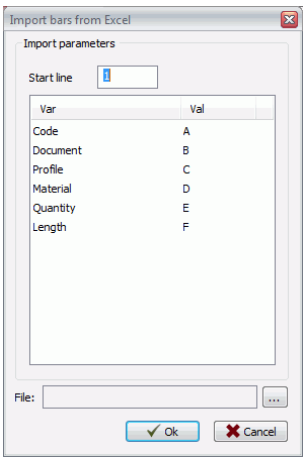
- With **Load from TXT** you can load text files formatted with the required information:
  - Mandatory: Profile, Length, Quantity, Material.
  - Optional: Code, Document



Select the file with the "**...**" button to load it.

It is possible to set the position of the record by editing the **Column** field with a double click on the number.

- With **Load from XLS** you can load EXCEL files in XLS format, formatted with the required information:
  - Mandatory: Profile, Length, Quantity, Material.
  - Optional: Code, Document

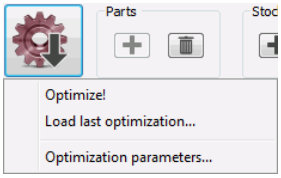


Select the file with the "**...**" button to load it.

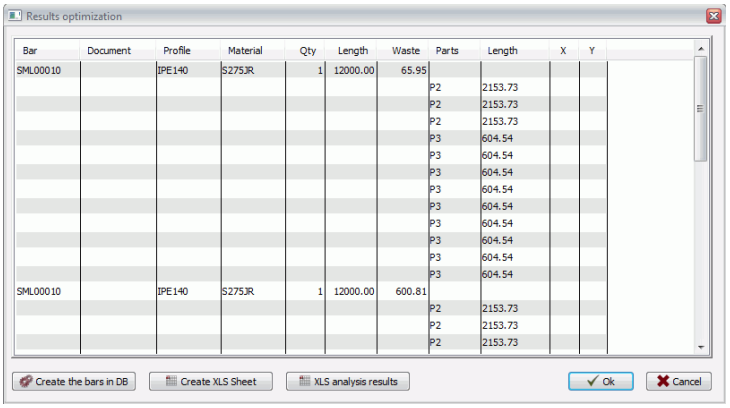
It is possible to set the position of the record by editing the **Val** field with a double click on the number.

- **Load from AW** stock allows the loading of bars from the Advance Workshop Stock (if it is present).
- With **Create simulated bars**, the program automatically creates in stock a series of bars with quantity 1000, with sections and materials related to the parts loaded at the top. The command then asks the operator to provide the length of the reference bar, in case some parts are larger than the chosen bar, the program automatically creates bars that are multiple of that inserted.
- **Export stocks to XLS...** allows you to export the remaining stock of bars from optimization in Excel format.
- **Load Custom** and **Export Custom** allows GRAITEC to configure specific orders for customers.

The **Processing** button opens a drop-down with three options:

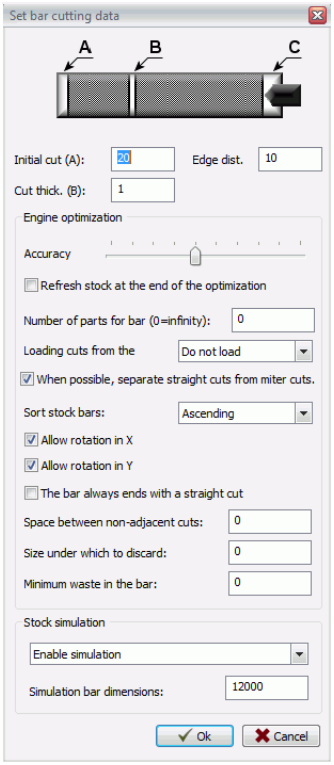


- **Optimize!** calculates the bar nesting.



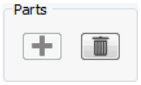
- **Load last optimization** allows you to review the latest optimization done.

- **Optimization parameters** allows you to modify the optimization setup.



  - **Initial cut** defines the length of the bar initial cut.
  - **Cut thick.** defines the blade thickness.
  - **Edge dist.** defines the safety distance for the rear clamp.
  - **Accuracy** allows you to control the number of nesting tries for a better result.
  - **Refresh stock at the end of the optimization** updates stock after optimization.
  - **Number of parts for bar (0=infinity)** allows to define the maximum number of parts to be included on a bar.
  - **Loading cuts from the** allows you to consider the miter cuts (web, flange, both) in optimization.
  - **When possible, separate straight cuts from miter cuts** allows you to split parts with straight cuts from parts with miter cuts.
  - **Sort stock bars** allows you to sort the stock bars, from shortest to longest or from longest to shortest.
  - **Allow rotation in X** allows to rotate the parts in the optimization phase.
  - **Allow rotation in Y** allows to rotate the parts in the optimization phase.
  - **The bar always ends with a straight cut** allows you to end a bar with a straight cut.
  - **Space between non-adjacent cuts** defines the space between two miter cuts with different angles.
  - **Size under which to discard** defines the size of the parts under which they are considered scrap.
  - **Minimum waste in the bar** defines the minimum size to keep on the bars to re-use the waste.
  - **Stock simulation** allows you to execute optimizations with virtual bars.

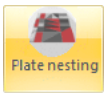
The buttons in the **Parts** section allow you to add or delete elements from the part list.



The buttons in the **Stock** section allow you to add or delete elements from the bar stock area.

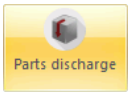
Use this button to close the **Bar nesting** application.

Plate nesting

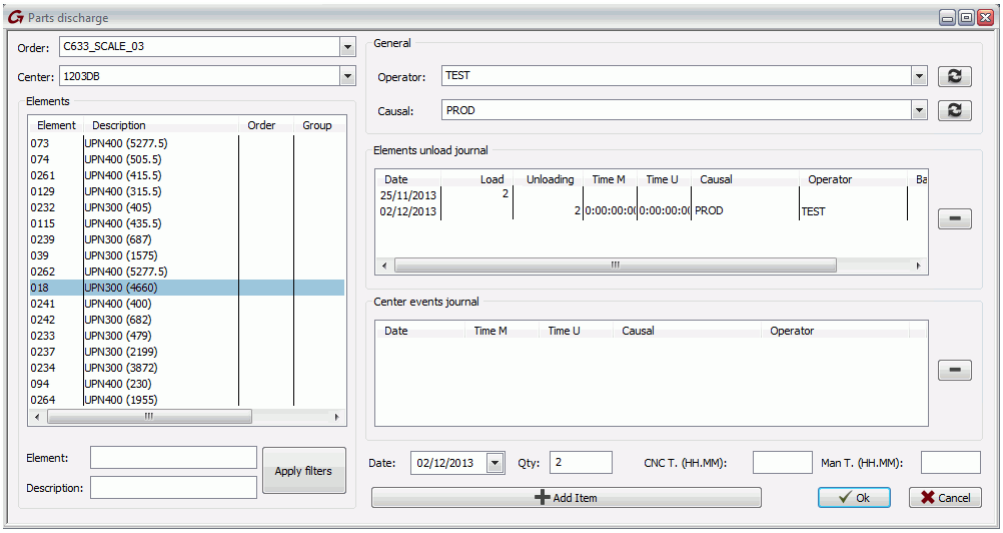
Command access: 

The command is similar to **Bar nesting**, opening an application window with buttons for plate nesting (not yet available).

Parts discharge

Command access: 

The command allows the user to discharge the parts produced in the work centers. It is also possible to record machine / man hours, in order to see the processing progress.



To discharge parts, first you must choose the work center and the order from which the parts will be selected.

Then, select a value for the **Operator** and **Causal** fields; if they are empty or there is no desired item, it is enough to edit them the first time; after that, your options will remain stored.

You can then select the part to be updated by double clicking on it. The data is displayed in the **Elements unload journal**; at this point it is possible to indicate at the bottom the **Date**, the amount to be discharged (never greater than the total amount indicated) and, eventually, the machine and the man hours, which are not mandatory. Use the "Add Item" button to record the operation. Then, you can select other parts to update them.

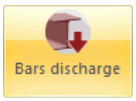
You can also choose not to select parts and only submit man and machine hours (e.g. setup operations), which are then added to the order and recorded in the **Center events journal**.

To exit and save the operations, use the **OK** button.

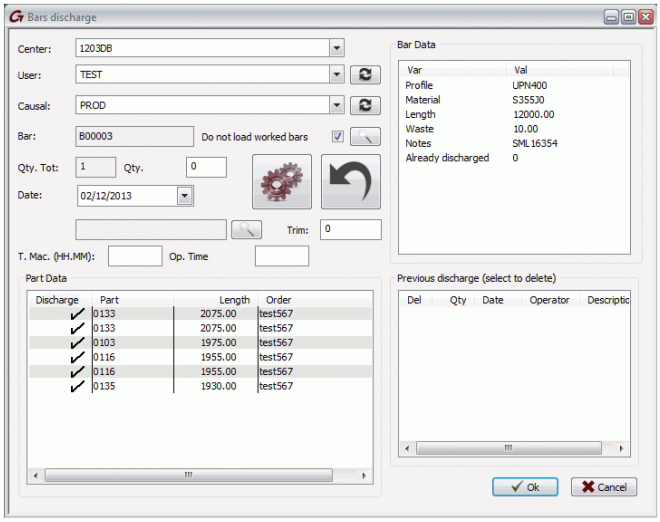
If you press **Cancel** or the "**X**" button to exit the window, the operation will be cancelled.

From the bottom left section, you can run filters on the parts in the selected work center.

Bars discharge

Command access: 

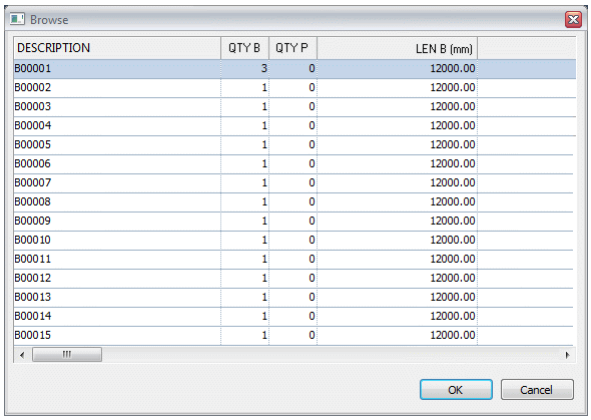
The command allows the user to discharge the quantities produced in the work centers that produce bars. It is also possible to record machine / man hours, to see the processing progress.



To discharge the quantity of parts, first you must choose the work **center**.

Then, you must select the **Operator** and **Causal** fields; if they are empty or there is no desired item, it is enough to edit them the first time; after that, your options will remain stored.

Then, from the bar field, you can select the bar you want to discharge. Selecting the icon with the lens calls up the following screen.



***Note**: In this screen, double-click or select the row and press **OK** to load the desired bar.*

When a bar is loaded in the right side, the data of the bar is loaded and in the box below **Part Data**, the list of parts composing the bar appears on the left marked with a check mark.

You can now update the bar by indicating the **date** and the **quantity** and the man and machine hours relative to the bar, and by and selecting the gear button.

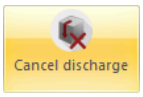
To cancel the operation, select the arrow button on the left.

For a partial unloading of the bar, you must perform the operations described above, but before recording the operation, remove the "**V**" check mark on the left of the part that was not produced, by double clicking on it.

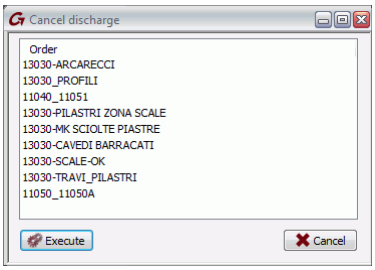
To exit and save the operations, use the **OK** button.

If you press **Cancel** or the "**X**" button to exit the window, the operation will be cancelled.

Cancel discharge

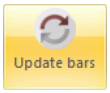
Command access: 

The **Cancel Discharge** command is used when it becomes necessary to cancel the discharge of an entire work order.



To cancel the discharge, select the desired import and press **Execute** to execute the operation.

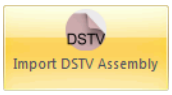
Update bars

Command access: 

Click this button to update the bars.

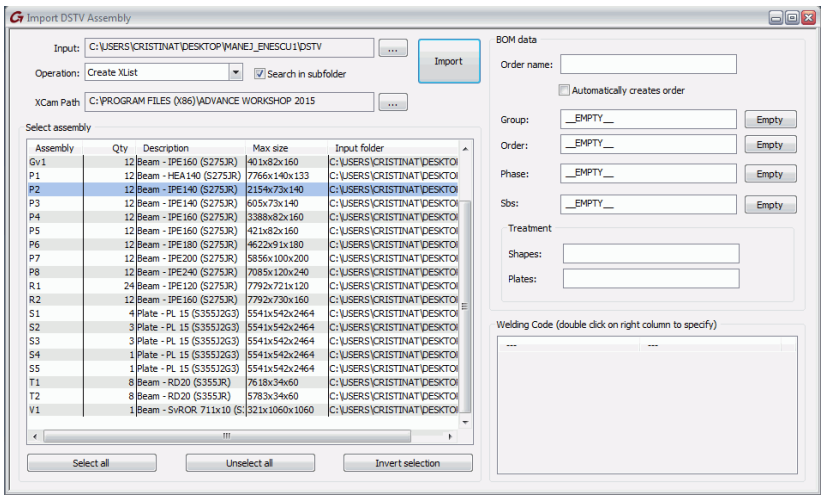
Commands in the Assemblies panel

Import DSTV Assembly

Command access: 

This command allows you to import assemblies from DSTV files. To use the command, you can export the WISCON file from Autodesk Advance Steel. You will find the WISCON folder in the DTSV folder of your project.

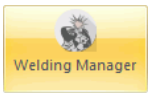
From this command, you can assign the assemblies (3D) to an order already created in Advance Workshop, or you can create and load a new order.



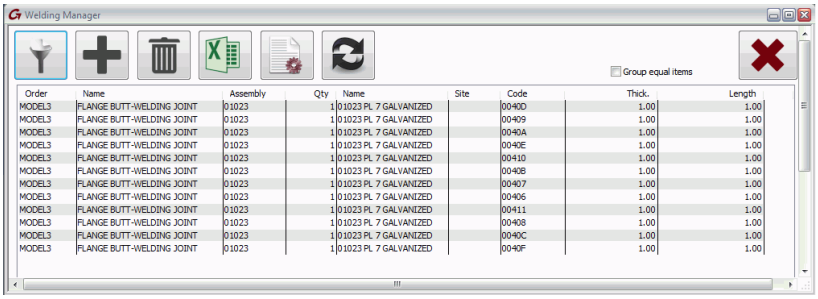
Input allows you to select the WISCON folder. All the files in the folder will be automatically loaded in the lower left window.

- **Operation**:
  - With **Create XList**, you can create a new order by entering the name in **Order name** and check **Automatically creates order**.
  - With **Associate to assemblies** you can associate the WISCON file to an already created order. In this case, the order must be the same and the assemblies have the same name and composition.
- **XCam Path** (for the **Create XList** option): select the folder containing the XCam files (converted from a DSTV file).
- **Order** (for the **Associate to assemblies** option): select the order in which to associate assemblies.
- Click **Select all**, and then **Import**, to load all the information.
- **Order name** allows you to enter a new order name.
- **Group** allows you to enter the name if you want to associate the import to a specific group.
- **Order** allows you to enter the name if you want to associate the import to a specific suborder.
- **Phase** allows you to enter the name if you want to associate the import to a specific phase.
- **Sbs** allows you to enter the name if you want to associate the import to a specific subassembly.
- **Treatment** allows you to enter the treatment that you want to associate for profiles and plates.
- **Weld code** If welds are defined in the assemblies, they appear in the window below. In the left column, you can find the names read in files. In the right column, you can assign a corresponding name from your database.

Welding Manager

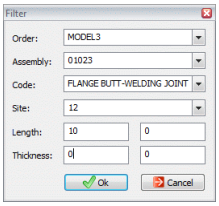
Command access: 

The command allows you to manage welds.



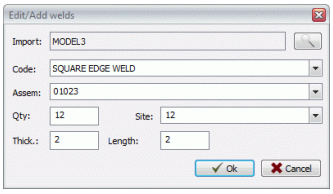
The dialog window is divided into two areas: the operation icons at the top, and the available welds list at the bottom.

The **Filter** button allows you to filter the welds displayed in the bottom of the dialog.



You can select the order, the assembly, the weld code, the corresponding site, and input the length and thickness. Only the selected weld types will be displayed.

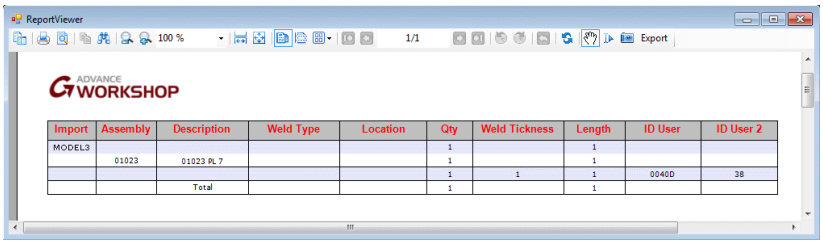
The **Edit/Add welds** button allows you to add welds or to edit the existing ones. Make the desired selections, then click **OK** to add/edit the welds.



The **Delete** button deletes the selected welds from the list.

The **Import weld from XLS** button allows you to import weld data from a XLS file.

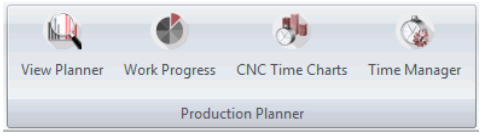
The **Report** button creates a report for the selected weld.



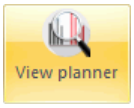
Press the **Refresh** button to refresh the list.

Press the **Cancel** button to exit the application window.

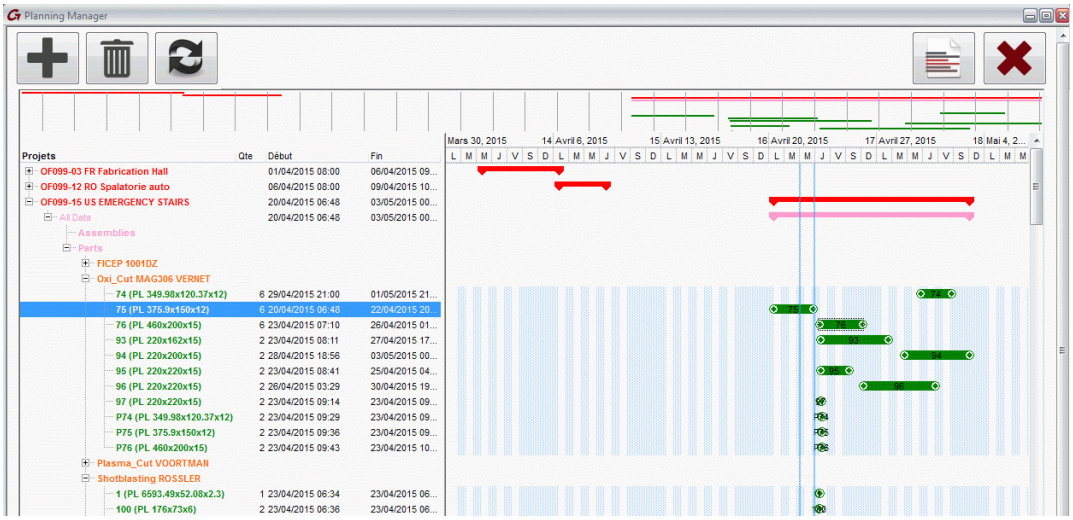
Commands in the Production Planner panel



View Planner

Command access: 

This command opens the planning graph screen, where you can see the order allocation divided according to working days, with the start date and the end of work.



On the left you will find all of the company's work centers, and under each center, the parts to be manufactured with their allocated time and the start and end dates. You can move the chart using the arrows at the level of the months.

By holding down and dragging the mouse over the days, you can change the viewing scale of the graph.

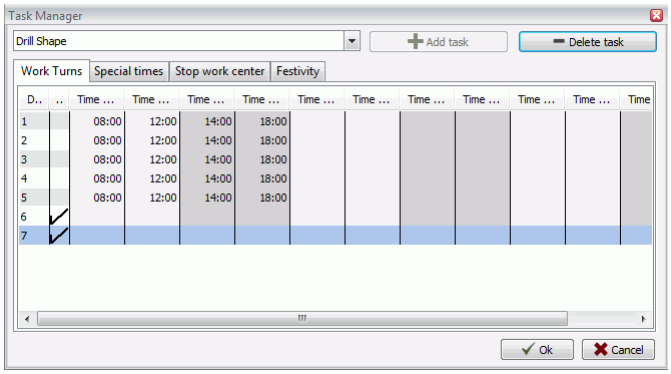
In the upper part you can also find the ***Options*** button, where the user can filter and update the data according to orders and work centers.

This button adds a new order to the planning.

This button deletes an order from the planning.

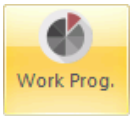
This button refreshes the planning.

This button adds/modifies the working hours.

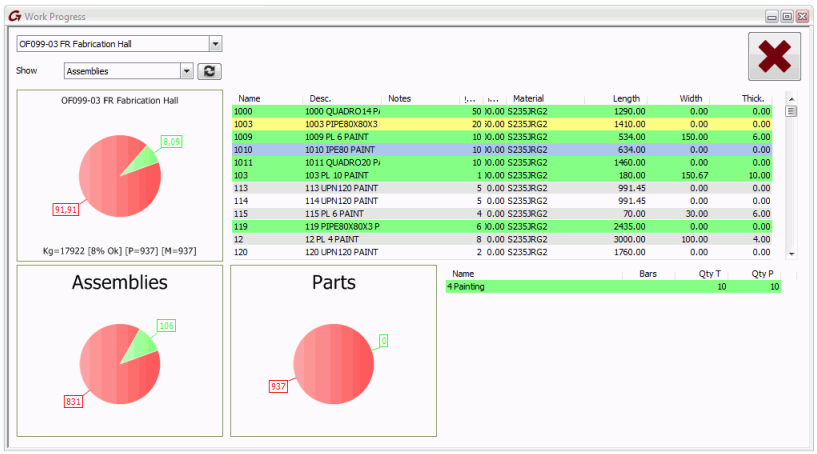


Press **Exit** to close the window and quit the application.

Work Progress

Command access: 

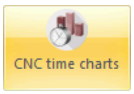
This command allows you to view the status of a production order. Select the order name, and then select parts or assemblies.



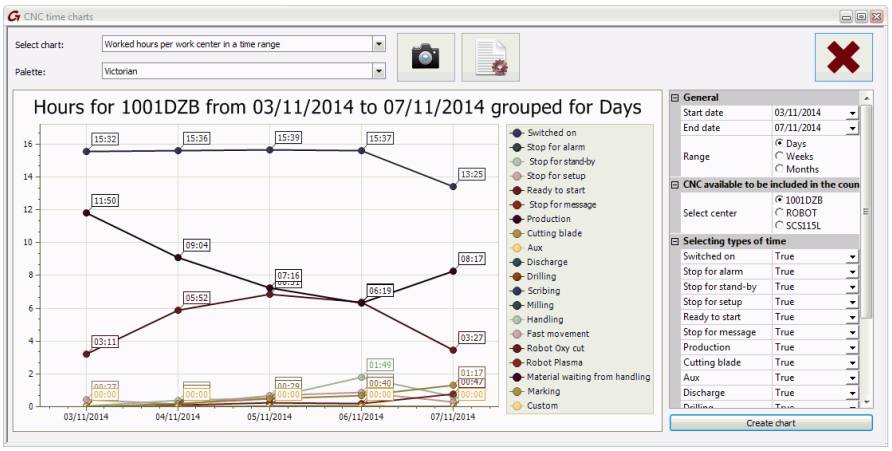
The graphs represent the overall status of the order with the percentage of completion and then the completion status of the parts and assemblies.

On the left you have the parts and assemblies having a total (green) or partial (yellow) completion status. If you select a part or an assembly, the completion status in the individual processing steps will appear below.

CNC Time Charts

Command access: 

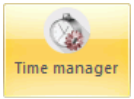
This command allows you to see the status of production of CNC machines connected to Advance Workshop. For this command, you must have the CNC module status activated. Use **Select Chart** to select the chart type. You have three options: day status, time range status, compare time/production.



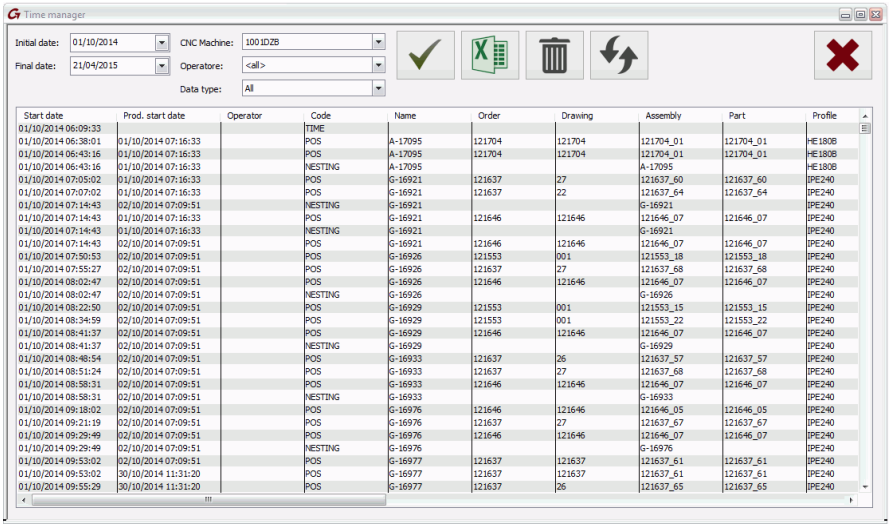
This button allows you to capture a chart image.

This button allows you to create a report.

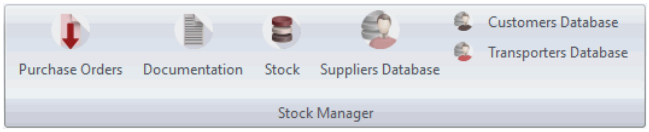
Time Manager

Command access: 

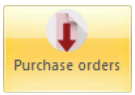
Allows you to open the database of the times CNC to export data to Excel or change data.



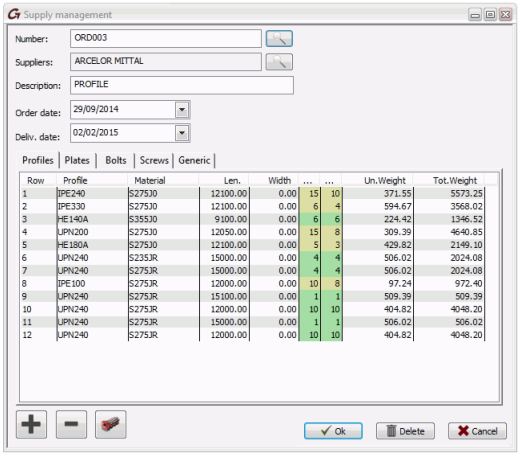
The Stock Manager tab



Purchase Orders

Command access: 

This command allows the user to create and manage purchase orders for the Advance Workshop stock.



To create a new order you must:

- Enter a number that defines the order.
- Select a vendor from the registry of suppliers (see the Database section).
- The description is an optional Notes field.
- Record the date of the order (by default, the PC date is displayed).
- Record the date of the alleged delivery.

Then, select the type of element to be inserted in the bill of materials (Profiles, Plates, Bolts, Screws, Generic).

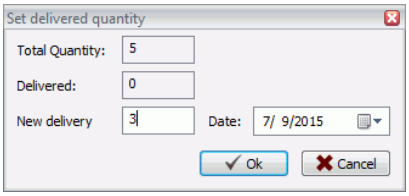
To add items to the order, select the "**+**" button. To delete the row, select the "**-**" button.

Click **OK** to save the order.

In the columns **Ord.** (Ordered) and **Del.** (Delivered), you can see the quantity ordered elements and delivered elements.

To save the delivered items, recall a previously saved order and select the button after having selected the row to edit.

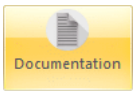
This opens the following window:



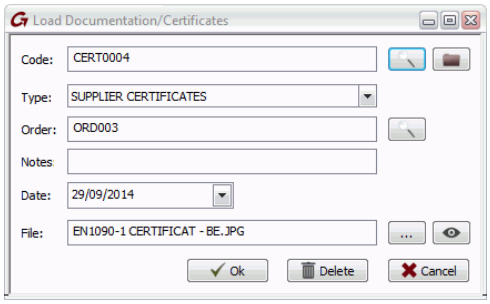
Here, the user can record the quantity delivered and the date of arrival.

Click **OK** to confirm.

Documentation

Command access: 

This command allows the user to store and manage sales orders documents for the Advance Workshop stock.



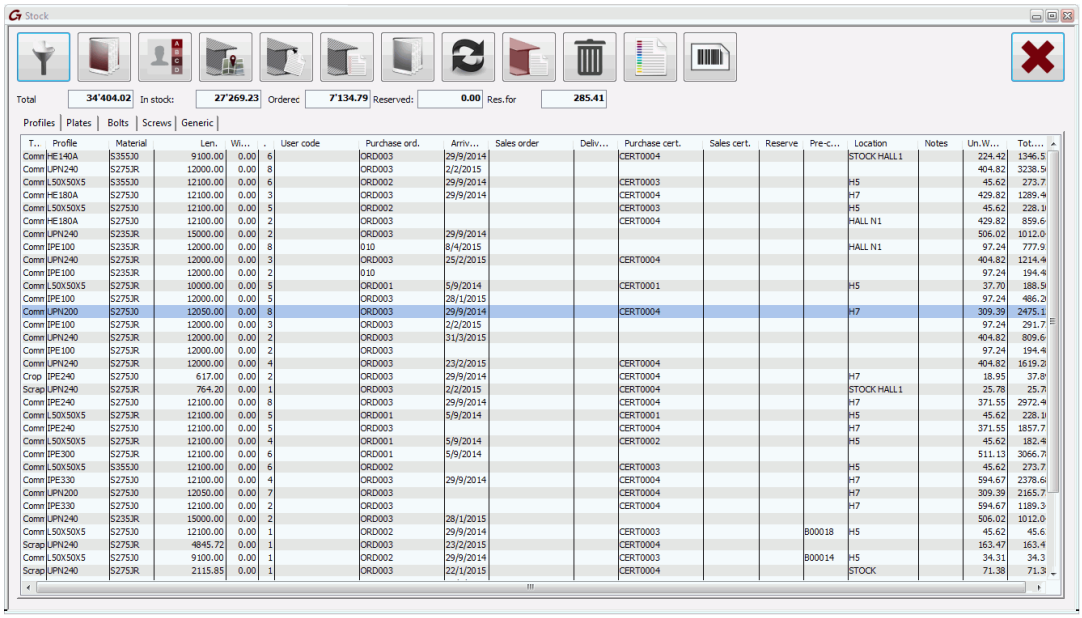
To save a document, you must define a code, select the type of document, and then select the file type (pdf, doc, xls, etc.).

Click **OK** to save.

Stock

Command access:

This command allows the user to manage and monitor the status of the Advance Workshop stock.



In the upper part of the stock window are located are the function commands, followed by the windows that indicate the weights of the selected beams loaded at that time, and in the bottom, the columns with the items present in stock.

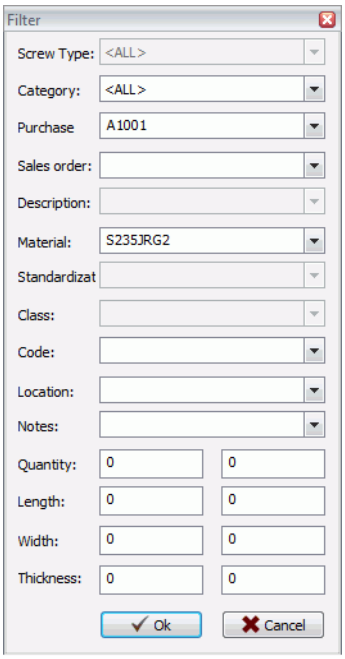
The definition of individual columns:

- **Type**: three item types are available, **Commercial**, **Crop**, and **Scrap**.
  - ✓ "Commercial" is used when it comes from a purchase order and did not undergo any processing.
  - ✓ "Crop" is used when it has been processed, but it is still reusable.
  - ✓ "Scrap" means it has been processed, but is no longer reusable.

  The "Crop" or "Scrap" status is defined in the optimization setup for beams or plates. For bolts and generic elements, the type is always Commercial.

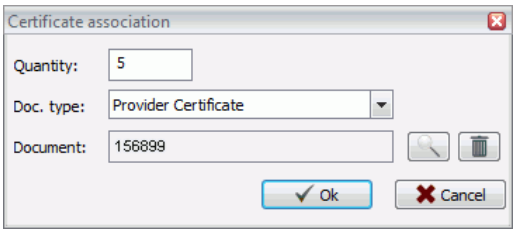
- **Profile**: defines the category of the item.
- **Material**: defines the quality of the item.
- **Len.**: defines the length in the case of beams or plates.
- **Width**: defines the width in the case of plates.
- **Qty**: defines the quantity of the item.
- **User code**: define the user code.
- **Purchase ord.**: defines the number of the purchase order to which the item refers.
- **Arrival date**: defines the date of arrival in stock.
- **Sales order**: defines the elements that have been entered on a sales order directly from stock.
- **Delivery date**: defines sales order delivery date and the successful delivery.
- **Purchase cert.**: defines the number of the certificate to which the selected item is connected.
- **Sales cert.**: defines the document attached to the element in sales phase.
- **Reserve**: defines the order / contract through which the item was reserved.
- **Pre-commitment**: defines the name of the bar for which the element was assigned.
- **Location**: defines the place where the item is stored in the warehouse.
- **Notes**: user notes field.
- **Un.Weight**: unit weight.
- **Tot.Weight**: total weight.

The **Filter** button allows you to filter out all data in the stock. The selections are done using the following window.



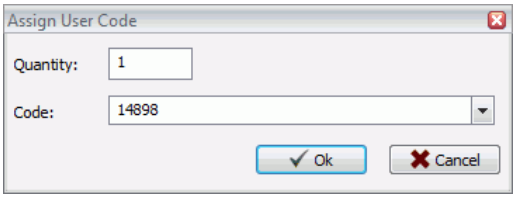
You can make selections by entering the text in the search field, followed by an asterisk.

This command allows you to associate certificates to the rows of the stock (documents previously stored with the **Documentation** command from the **Stock** module).



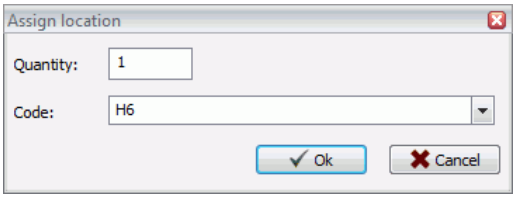
You can select the type of document you want to associate, as well as modify the quantity of parts to be associated with that document.

This command allows you to associate a user code to a row.



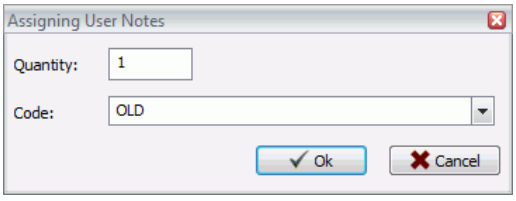
You can select or enter the user code which you want to associate, as well as modify the quantity of parts to be associated with that code.

This command allows you to associate a location code to a row of material.



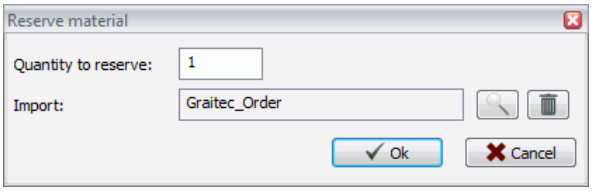
You can select or enter the code which you want to associate, as well as modify the quantity of parts to be associated with that code.

This command allows you to associate a note to a row of material.



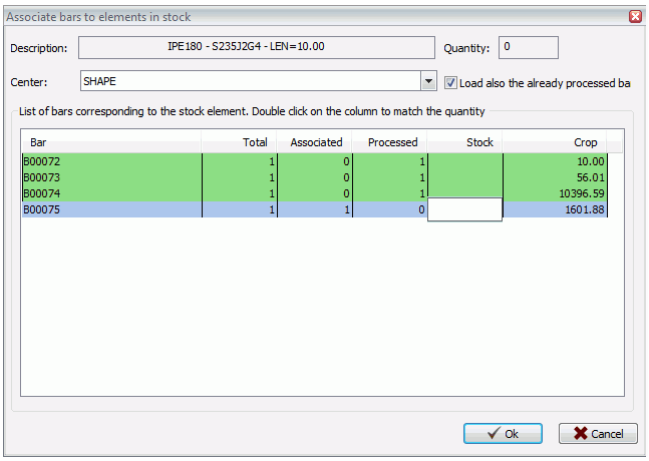
You can select or enter the note which you want to associate, as well as modify the quantity of parts to be associated with that code.

This command allows you to reserve the material for a specific contract/order. This material will be used only for that particular job.



You can select the import which you want to associate, as well as modify the quantity of parts to be associated with that import.

This command allows you to pre-commit to work the bars or to modify pre-commitments derived from the optimization of the bars.



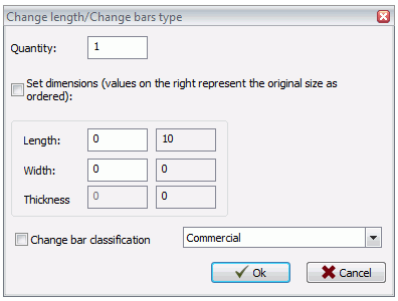
Select the bar stock. The window opens with a list of the bars corresponding to the stock item, divided by work center.

To bind, double click on the **Stock** box and enter the quantity to be associated.

To reduce or eliminate the association, enter values using the "**-**" sign.

This command allows the user to update the stock screen.

The command allows the user to edit an item of stock in the size and state (Commercial/Waste/Scrap).



It's possible to apply the changes for all the items or for some of them. To change you need to tick the check box and enter the desired value. For dimensional data are always shown on the right data derived from the original order for reference.

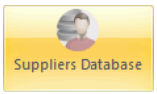
Click OK to confirm.

This command allows you to delete rows of material from the stock.

This command allows you to print a list to selected records.

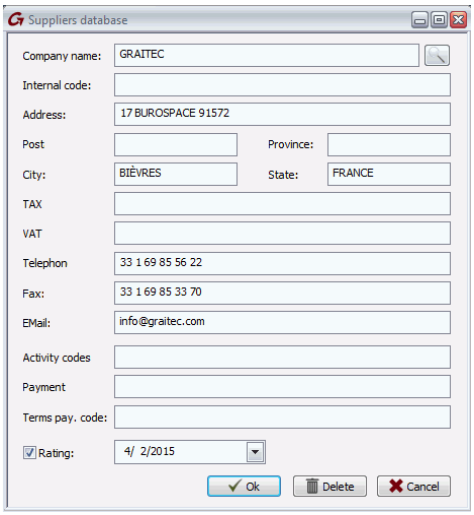
This command allows you to print a labels to selected records.

Suppliers Database

Command access: 

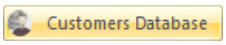
Allows you to create and save a register of suppliers.

To be used in the management of the stock module.



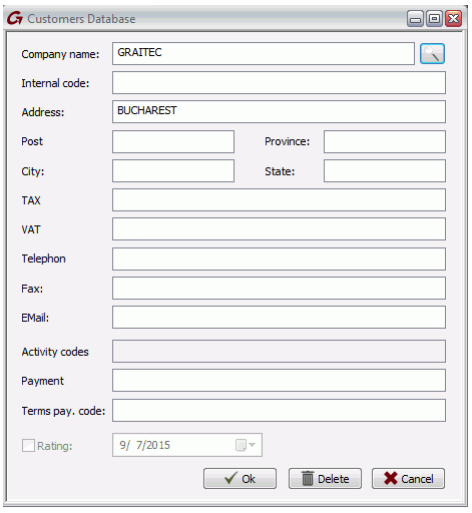
Click **OK** to save.

Customers Database

Command access: 

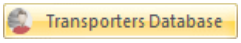
Allows you to create and save a client registry.

It is used in the management of the stock module.



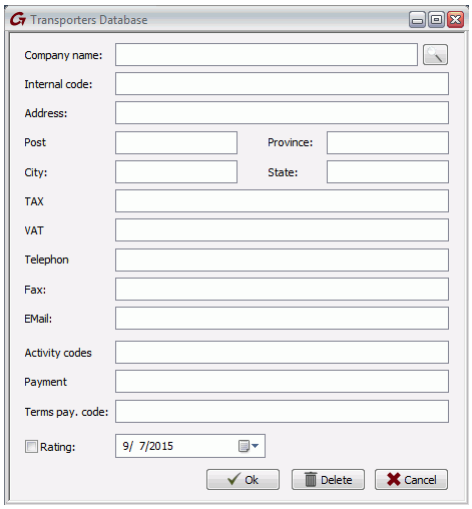
Click **OK** to save.

Transporters Database

Command access: 

Allows you to create and save a transporter registry.

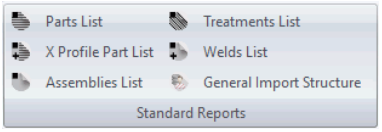
It is used in the management of the stock module.



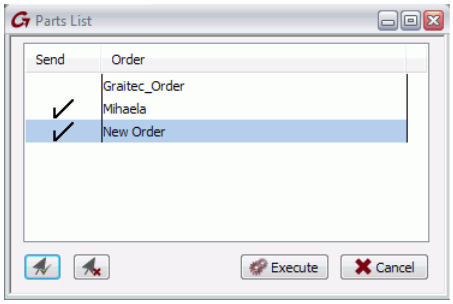
Click **OK** to save.

The Reports Manager tab

Commands in the Standard reports panel

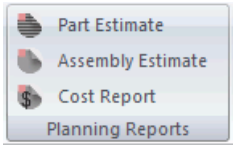


Each button opens a dialog where you can select the desired orders for which you want to execute the corresponding report. The order is selected by double-clicking in the corresponding cell from the **Send** column.



Click **Execute** to create the desired report (**Parts List**, **X Profile Part List**, **Assemblies List**, **Treatments List**, **Welds List, General Import Structure**).

Commands in the Planning Reports tab



Planning reports are only available in the Workshop configuration.

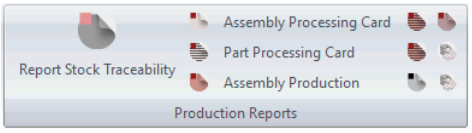
Three types of reports can be selected:

- **Part Estimate**: here, you can get all the information on the production of single parts.
- **Assembly Estimate**: here, you can get all the information about the production of assemblies.
- **Cost Report** show all the production times for an entire order.

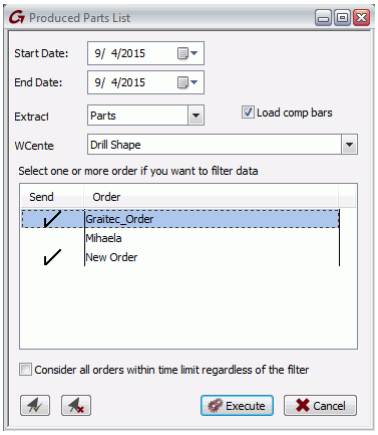
Selecting the desired report opens the order list window, where you can select one or more work orders; you can activate an order by double-clicking on the item.

Click **Execute** to create the desired report.

Commands in the Production reports panel

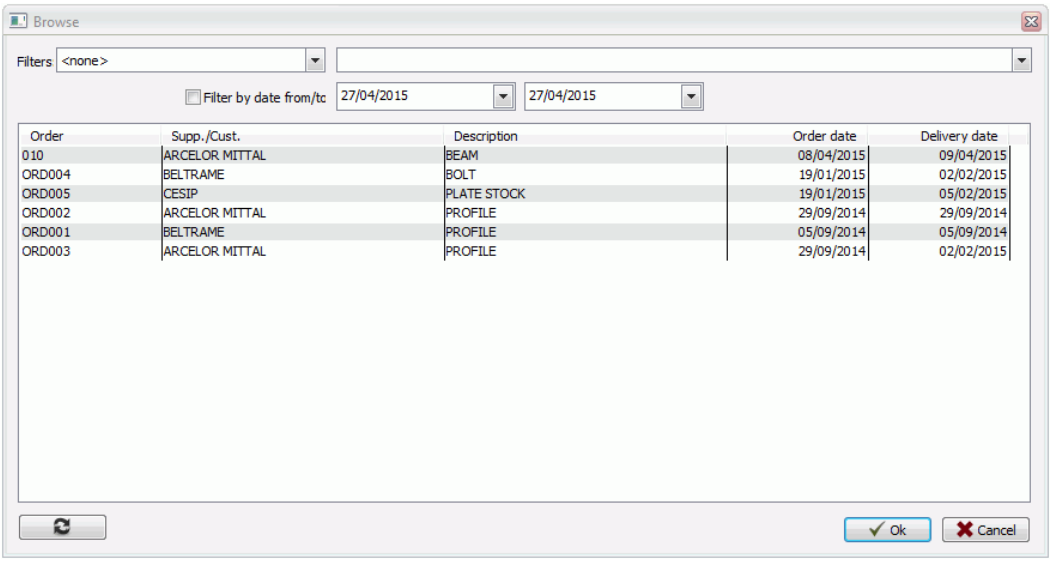


- **Assembly Processing Card** represents the list of manufacturing phases for assemblies.
- **Part Processing Card** represents the list of manufacturing phases for parts.
- **Assembly Production** represents the production state for assemblies.
- **Parts Production** represents the production state for parts.
- **Produced Parts List** represents the state of parts or bars produced and recorded with “part discharge” and “bars discharge”. You can select a time range, work center and orders.

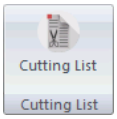


Commands in the Stock reports panel

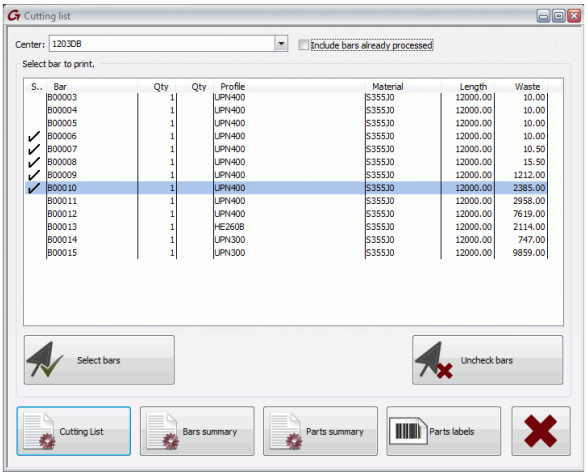
The **Purchase Order Report** and **Sales Order Report** buttons open a window where you can filter purchase and sale orders to be displayed in a list. You can filter orders by order number, company name or description, and you can display only the orders from a certain time range.



Cutting List

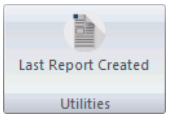
Command access: 

This command allows the user to create cutting lists, a bar summary and a part summary for the optimized bars.



To run the report, you have to select the work center where the bars are present. Then, by highlighting the row or rows, you can select or deselect items to be included on the list with the **Select bars** and **Deselect bars** buttons below (multiple selections are allowed). After making the selection, you can use the three buttons to select the type of list you want to generate. The selection remains highlighted, to allow you to generate all three reports in a sequence.

Last Report Created

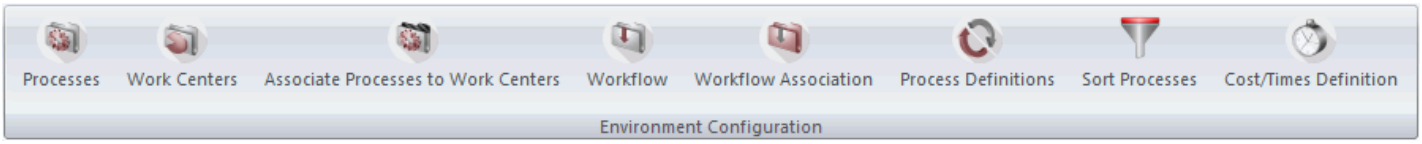
Command access: 

This command allows you to reopen the last report created, without having to recreate it with the above commands.

The Workshop Manager tab

Commands in the Environment Configuration panel

This section presents all the commands for configuring Advance Workshop.

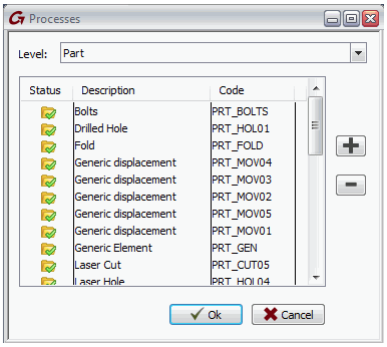


Important: *The configuration of Advance Workshop must always be performed under assistance from GRAITEC and it must not be modified by unauthorized users.*

Processes

Command access:

The following command allows you to define all the types of processing that are performed by the user at various levels.



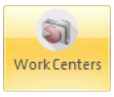
Select the processing level, then use the "**+**" button to add a new processing.

To delete a processing, use the "**-**" button.

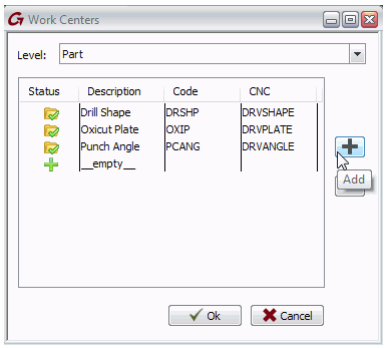
To exit and save the operations, use the **OK** button.

If you press **Cancel** or the "**X**" button to exit the window, the operation will be cancelled.

Work Centers

Command access: 

The following command allows you to define all the user work centers at various levels.



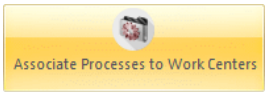
Select the processing level, then use the "**+**" button to add a new processing.

To delete a processing, use the "**-**" button.

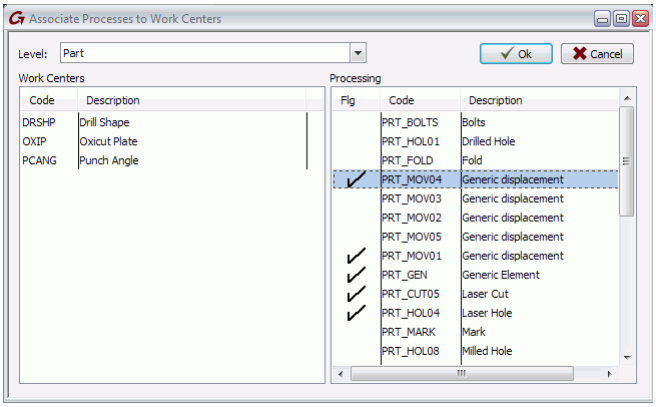
To exit and save the operations, use the **OK** button.

If you press **Cancel** or the "**X**" button to exit the window, the operation will be cancelled.

Associate Processes to Work Centers

Command access: 

The following command allows you to associate the work centers with the operations they can perform.



Select the level on which to operate. Then, select the center to the left and double-click the type of processing on the right. A work center can run multiple processing types.

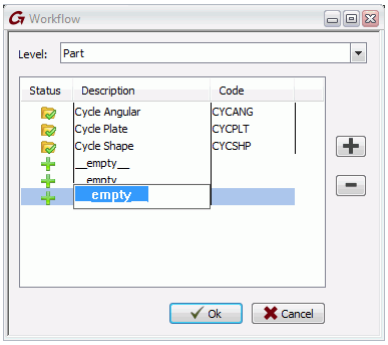
To exit and save the operations, use the **OK** button.

If you press **Cancel** or the "**X**" button to exit the window, the operation will be cancelled.

Workflow

Command access:

The following command defines the registry and the code of the work cycles.



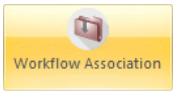
Select the processing level, then use the "**+**" button to add a new processing.

To delete a processing, use the "**-**" button.

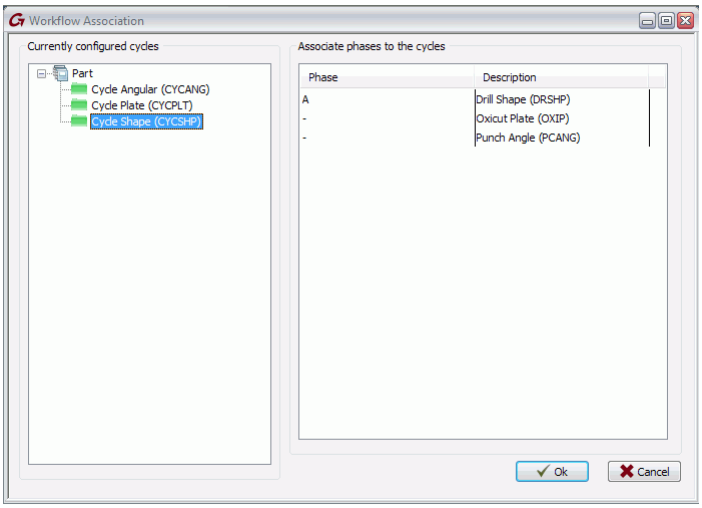
To exit and save the operations, use the **OK** button.

If you press **Cancel** or the "**X**" button to exit the window, the operation will be cancelled.

Workflow association

Command access: 

The following command allows you to associate the work cycles with the processing steps and their priority.

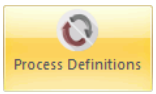


Select the cycle in the left pane, select the desired phase and enter the letter corresponding to the priority. If the phases can be equivalent, they can be given the same priority.

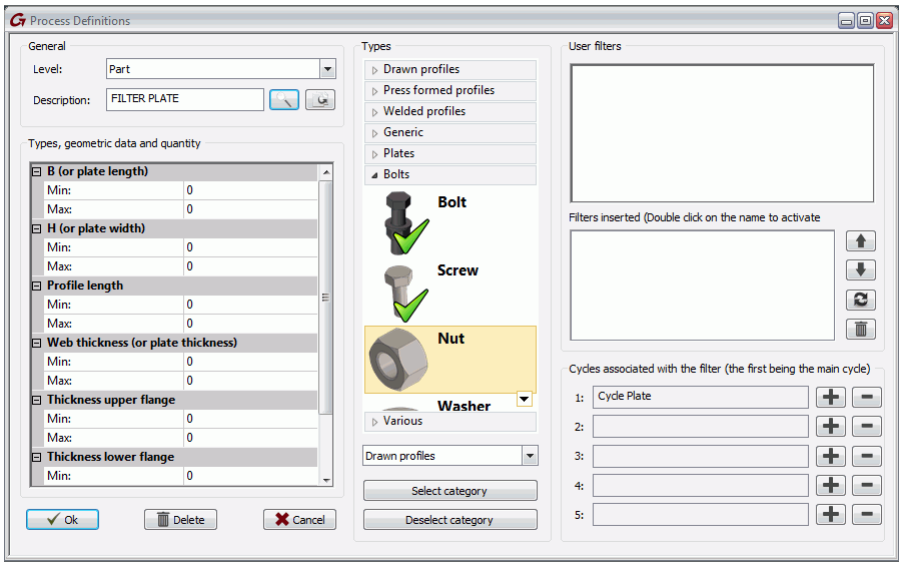
To exit and save the operations, use the **OK** button.

If you press **Cancel** or the "**X**" button to exit the window, the operation will be cancelled.

Process Definitions

Command access: 

The following command allows you to create filters for sorting the parts and associating them to the processing cycles.



By selecting the level to which the filter refers, you can define the name and the physical characteristics of the elements that should be accepted by the filter.

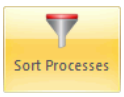
In the center, you can select the category of items that are part of the filter. On the right you can define user filters specific to the customer.

On the bottom right you can select the standard cycle that responds to the filter and any alternative cycles.

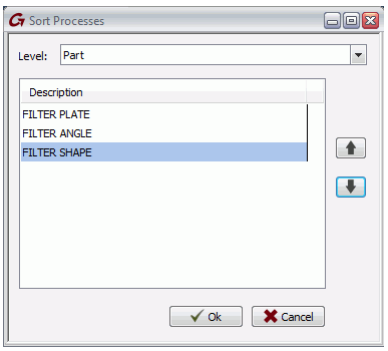
To exit and save the operations, use the **OK** button.

If you press **Cancel** or the "**X**" button to exit the window, the operation will be cancelled.

Sort Processes

Command access: 

The following command allows you to sort the filters you created, in such a way that, if multiple filters accept the same elements, these can be given a priority.

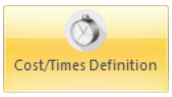


Select the processing level, then sort the list of existing filters using the up and down arrows.

To exit and save the operations, use the **OK** button.

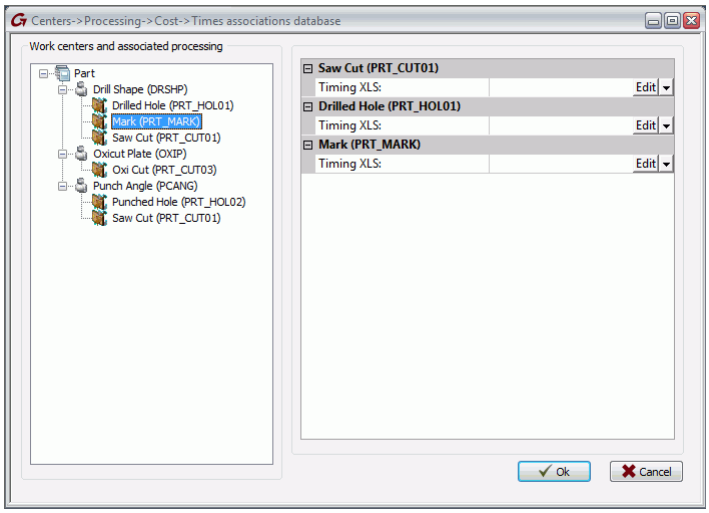
If you press **Cancel** or the "**X**" button to exit the window, the operation will be cancelled.

Cost/Times Definition

Command access: 

The following command allows you to define the time needed for processing execution within the company.

***Note**: This part of the configuration is not editable by the user, but only by the GRAITEC technical team. The user should only change the parameters included in the cycles.*



To exit and save the operations, use the **OK** button.

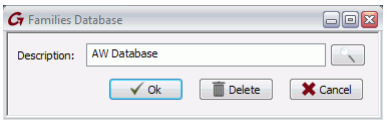
If you press **Cancel** or the "**X**" button to exit the window, the operation will be cancelled.

Commands in the Database panel

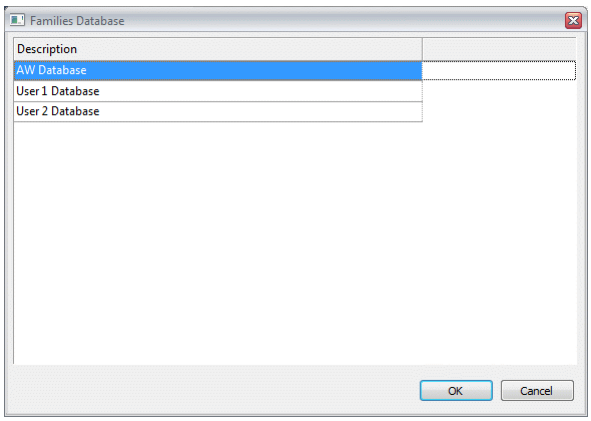
Families

Command access:

Allows the user to create custom databases to be used for the management of activities.



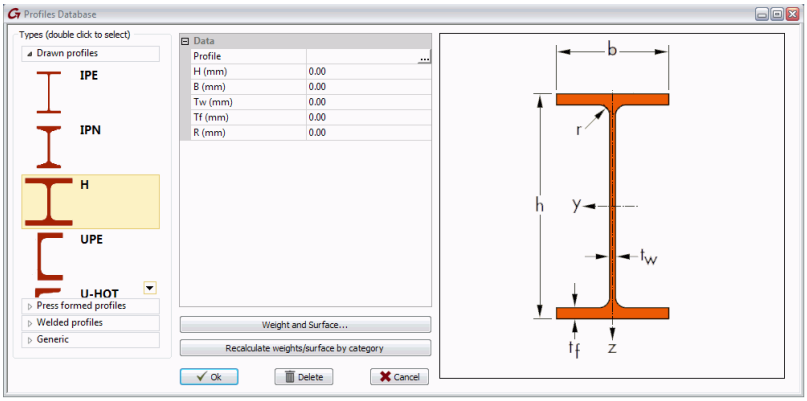
- To insert a new family, write the name in the **Description** field and click **OK**.
- To delete a family, select the name from the search command and click **Delete**.



Profiles

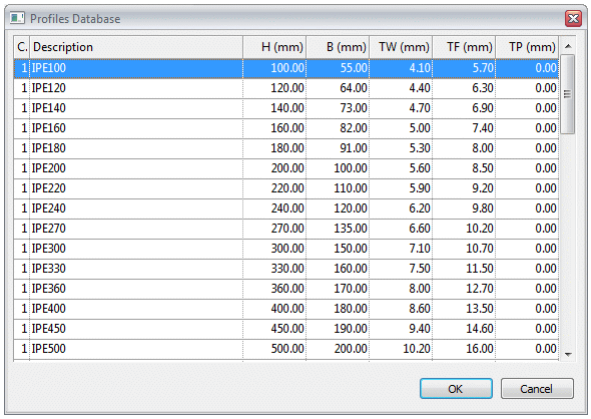
Command access:

The profile database of Advance Workshop is the heart of the program. It is already delivered to the user with specific profile catalogues, but can be customized.

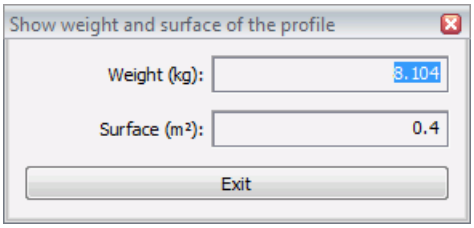


In the left-hand pane (showing red cross-sections of the profiles), you can select the category (type) of profiles to view/edit.

In the center, by clicking on the button with three dots, you can load the list of available profiles for the selected category. Click on one of the lines to load the data of the desired profile.



- Select the **Weight and Surface** button to access the window showing the weight and surface of the profile.

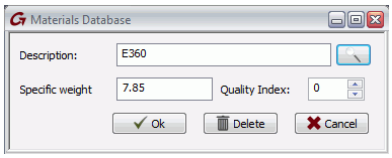


- The **Recalculate weights/surface by category** button allows you to update the database whenever you insert new elements.
- To enter a new profile, select the category to which it belongs, then enter the **name** and **dimensional data** requested on the right of the screen.
- To insert data, double click in a cell and click **Enter** to confirm.
- To save, click the **OK** button.
- To delete an element, select it and click **Delete**.

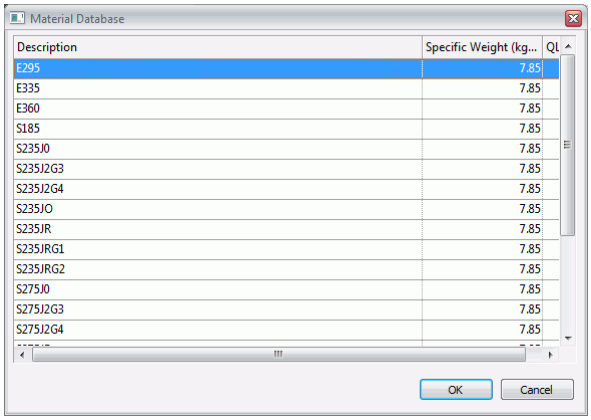
Materials

Command access:

Allows the user to create and manage the materials database, used for the management of activities.



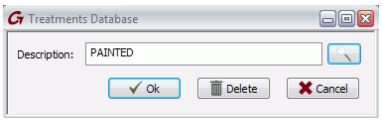
- To insert a new material, write the name in the **Description** field, enter the specific weight expressed in Kg/dm3 in the **Specific weight** field, and click **OK**.
- To delete a material, select the name from the search command and click **Delete**.



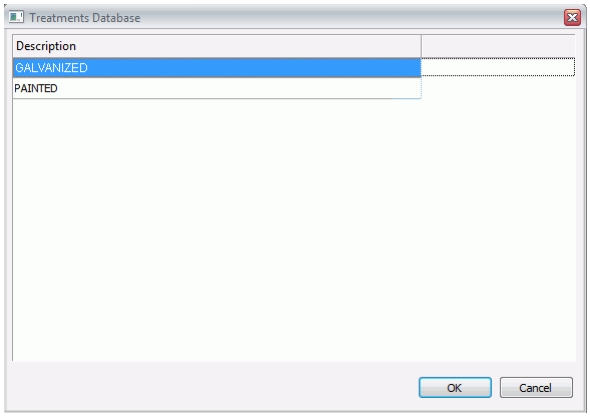
Treatments

Command access:

Allows the user to create and manage the surface treatments database, used for the management of activities.



- To insert a new treatment, write the name in the **Description** field and click **OK**.
- To delete a treatment, select the name from the search command and click **Delete**.



Conversion tables

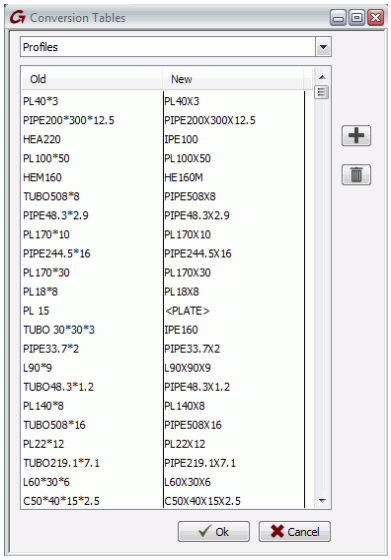
Command access:

The conversion table is designed to assist the user during the parts import phase. Profiles generated by CAD may have different names for the same profiles (e.g. HEA300 - HE300A, etc.).

Once the comparisons are inserted within the table, the parts are imported into Advance Workshop without needing to be converted or manipulated. These are loaded with the name already in use within Advance Workshop.

The table can be created by manually entering the data using the **add** button.

The table is configurable: profiles and materials can be selected from the first drop-down menu.



The table updates automatically by performing new imports and making associations in the order import phase.

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