PractiCAM

MetaLab

Screen overview

Browser on/off

Your current location within PractiCAM

Job input   Data preparation   Labels   Reports   Fabrication   Hints on / off   Help   Exit

Active tool

Inactive tool

Toolbar

Sortable table header

Splitter bar

Catalog items bin

Toggle tool

Profiles bin

Wall panels bin

Takeoff options

Hint

Takeoff list

Fittings bin

Quick input field

Note

Takeoff history

Parts bin

Browser space

Workspace

In PractiCAM, within a single takeoff, you can use as few or as many specifications as you wish. This list displays all specifications currently used in this takeoff.

You do not need to change anything in this list. PractiCAM tracks your specifications use, and adds specifications to this list (or removes them, if necessary) as you work.

Welcome to PractiCAM - the best CAM software in the world!

Help & Hints

[Hints] [Help]

To open a Help window, click **Help button** or press **F1 key.**
To see a Help topic for your Browser, make your browser space active (move your mouse cursor over it), and then activate Help.
for your Workspace, make your workspace active (move your mouse cursor over it), and then activate Help.
Context-sensitive Help If you keep your Help window open, as you move around **PractiCAM,** the Help window will display Help relevant to your place within **PractiCAM**.
Expanded Hints To show or hide expanded hints, use **Hints button.**
Online Help Make sure your computer has an Internet connection, then select **Browser : My Connections : MetaLab.**
Software request If your computer is capable of sending e-mails, select **Browser : My Connections : Software Request** and send us a request or a report with all necessary data automatically attached. You can also print this report, and FAX or mail it to us.

Browser

[Browse]

The Browser is a tree-like view of all **PractiCAM** objects – everything that you can create, view, modify and use. The Browser itself can be opened or closed (hidden) by clicking the **Browse button.**
To select an item in the Browser tree, please use a single mouse click (usually, the left button).
To expand or contract a group item **without selection,** use **+/- sign next to Item Name + left click**
with selection,   use   **Item Name + left click**
You can use **drag-and-drop** feature with any item in the Browser.

My Work

[Browse] ► [My Work]

All your jobs, drawings and takeoffs in a single tree-like structure, including information about your lot and scrap inventories, work history, and labor costs for your entire shop.

	Job	All drawings and takeoffs related to the job. Provides information about lots and estimated cost associated with the job.
	Drawing	A group of takeoffs. Stores information about lots and estimated cost associated with this group.
	Takeoff	Everything you make. Here you create and modify all your products, prepare them for manufacturing, create labels and reports for them, and fabricate them by using your equipment.

To create a job: **Browser : My Work ► Toolbar : Create a new job ► edit field ► Enter key**
To create a drawing: **Browser : Job ► Toolbar : Create a new drawing ► edit field ► Enter key**
To create a takeoff: **Browser : Drawing ► Toolbar : Create a new takeoff ► edit field ► Enter key**
To delete an item: **Browser : select a job or a drawing or a takeoff ►**
Toolbar : Delete the selected job or drawing or takeoff ► Dialog Box : Yes
To rename an item: **Browser : select a job or a drawing or a takeoff ► extra left click ► edit field ► Enter key**

My Computer

Browse ▶ 🖥 My Computer

All workstation and user data, including data storage (file folders, hard drives, CDs, floppy drives, and network connections) and backup, visual preferences, user privileges, and software registration.

🖴 📁 💿	Data Storage	Devices for data storage, transfer and exchange (hard and floppy drives, CD ROM drives, network connection, file folders).

Appearance

◉ Appearance   ○ Backup   ○ Users   ○ Registration

To set up visual preferences:	**Workspace** : **color settings** and / or **base font** and / or **emphasis font** and / or **icon settings**
To set up file browser filter:	**Workspace** : **File Browser Filter** : **check file types (left click)**
To set up fitting list columns:	**Workspace** : **Fitting List Columns** : **check column names (left click)**

Backup

○ Appearance   ◉ Backup   ○ Users   ○ Registration

To specify the backup path:	**Workspace** : **Folder Tree** : **select a folder**
To specify the backup schedule:	**Workspace** : **specify the period** ▶ **Workspace** : **specify the number of kept copies**
To schedule a backup:	**Specify the backup path** ▶ **specify the backup schedule**
To backup your database now:	**Specify the backup path** ▶ **Toolbar** : 🖫 **Backup the current database**
To restore from a backup:	**Workspace** : **select a backup** ▶ **Toolbar** : 🖫 **Restore the previous database**

Users

○ Appearance   ○ Backup   ◉ Users   ○ Registration

To create a new user:	**Toolbar** : 👤 **Create a new user** ▶ **Workspace** : **define login, name and privileges** ▶ **Workspace** : **type old password (if any), new password and confirmation**
To delete a user:	**Workspace** : **select a user** ▶ **Toolbar** : ✕ **Delete the selected user**

Registration

○ Appearance   ○ Backup   ○ Users   ◉ Registration

To activate your PractiCAM workstation:	**Workspace** : **edit product registration data (name, company, address, e-mail)** ▶ **Workspace** : **Options and period** : **select desired configuration** ▶ **Workspace** : ⬛Request⬛ **Request or call MetaLab Inc.** ▶ **Workspace** : **Site key (obtained from MetaLab Inc.)** ▶ **Workspace** : ⬛Unlock⬛ **Unlock**

My Equipment

Browse ▶ 🖥 My Equipment

All information about cutters, printers, coil lines, spiral machines, currently installed in your **PractiCAM.**

⬇	Cutter / Pipe cutter	Every item is one of your existing cutters. Set up and control all communication settings, table dimensions and configuration, cutter driver, and other equipment parameters.
💿	Coil line	Every item is one of your existing coil lines. Set up and control hardware settings, mapping of allowances, and other parameters.
🖨 🦓	Printer	Every item is one of your existing printers (Windows-supported or PractiCAM-specific, local or network). Set up and control all printer settings.
🌀	Spiral machine	Every item is one of your existing spiral machines. Set up and control hardware settings, list of diameter values, and other parameters.

To install a new device:	**Workspace** : **Cutters or Coil Lines or Printers or Spiral Machines** ▶ **Workspace** : **Available Cutters** : **drag-and-drop an item to Workspace** : **My Devices**
To set up a cutter:	**Browser** : **My Equipment** : **any cutter** ▶ **Workspace** : **Communication Settings** ▶ **Workspace** : **Table Properties** ▶ **Workspace** : **Cutter Table Orientation, Position and Layout**
To set up a pipe cutter:	**Browser** : **My Equipment** : **any pipe cutter** ▶ **Workspace** : **Communication Settings** ▶ **Workspace** : **Pipe cutter driver editor** : **edit**
To set up a coil line:	**Browser** : **My Equipment** : **any coil line** ▶ **Workspace** : **Communication and Allowances Settings**
To set up a printer:	**Browser** : **My Equipment** : **any printer** ▶ **Workspace** : **Communication Settings**
To set up a spiral machine:	**Browser** : **My Equipment** : **any spiral machine** ▶ **Workspace** : **Communication Settings** ▶ **Workspace** : **Hardware Settings and Diameters**
To connect/disconnect a device:	**Workspace** : **My Devices** : **select a device** ▶ **Toolbar** : 🖉 **Connect** / 🖉 **Disconnect**
To start the download:	**Workspace** : **My Devices** : **select a device** ▶ **Toolbar** : ▷ **Download**
To terminate the download:	**Workspace** : **My Devices** : **select a device** ▶ **Toolbar** : ☐ **Terminate data download**

My Connections

Browse ▶ 🖧 My Connections

All access to external information, network connections and computers, and the connection to our Web site.

🖳	MetaLab Inc.	Direct connection to MetaLab Inc. web site for support, information, software updates and help.
✉	Software request	Send us a request or a report, along with all necessary data.
🖥	Workstation	Link to another PractiCAM computer (your local network). You can access jobs and libraries on any other workstation.

To get work data from another workstation:	**Browser** : **My Connections** : **a workstation** : **My Work** : **select a job or a drawing or a takeoff** ▶ **Toolbar** : 🗐 **Copy** ▶ **Browser** : **My Work** : **select a job or a drawing** ▶ **Toolbar** : 🗐 **Paste**
To use libraries from another network workstation:	**Browser** : **My Libraries** ▶ **Workspace** : **Library Location** : **specify a desired location**
To submit (e-mail, save or print) a software request:	**Browser** : **My Connections** : **Software Request** ▶ **Workspace** : **enter request description, name, company, address, e-mail** ▶ **Workspace** : **My Data** : **select jobs or drawings or takeoffs** ▶ **Workspace** : **My Libraries and My Equipment** : **select libraries and equipment** ▶ **Toolbar** : 🖃 **E-mail** or 🖫 **Save** or 🖨 **Print the software request**

Extensive **PractiCAM** fitting libraries (over 2000 items) can be organized into working bins to optimize your workflow.
A fitting bin is a custom selection of fittings, assembled by you.

Fitting Bins

⦿ Fitting Bins ○ Fitting Locator

You can have as many bins as you want, and every bin can have any configuration. Any bin can be floated, or it can be docked.
When a bin is docked: During data input, it is positioned along a screen side you can slide it along the screen side, and moving your mouse cursor over the bin caption will open and close the bin.
When a bin is floated: During data input, it can be positioned anywhere on the screen by dragging it into a desired position, and can be opened / closed by using ▪ a toggle button on the bin caption. Once a bin is open, you can select any bin element by clicking on it once.
Your custom fittings could be organized in custom library to tree view structure. You can create branches and place custom fittings anywhere you want.

Labels on the right of the preview:
- Fitting libraries
- Fitting bins
- Unlock (to turn off bin docking)
- Dock (to position the bin along a chosen screen side)
- Bin caption
- Preview area
- Change docking alignment
- Custom library

To create a bin:	**Toolbar :** 🖳**Create a fitting bin** ► **Workspace : Fitting Bins :** **type the bin name** or **Workspace : Fitting Libraries :** **drag-and-drop a fitting item** or **a selected group of items into** **any empty space within** **Workspace : Preview area** or **within Workspace : Fitting Bins**
To dock a bin:	**Workspace : Preview area : select a floating bin** ► **Workspace : Preview area :** 🔲**Dock**
To change the alignment of a docked bin:	**Workspace : Preview area : select a bin** ► **Workspace : Preview area :** 🔓**Unlock (if docked)** ► **Workspace : Preview area : drag** ⊞ **Change Alignment** ► **Workspace : Preview area :** 🔲**Dock**
To float a bin:	**Workspace : Preview area : select a bin** ► **Workspace : Preview area :** 🔓**Unlock (if docked)** ► **Workspace : Preview area : drag the bin caption**
To add a fitting to a bin:	**Workspace : Fitting Bins** ► **Workspace : Fitting Libraries : drag-and-drop a fitting item (or a group of items) into Workspace : Fitting Bins or into Workspace : Preview area**
To move a fitting within a bin:	**Workspace : Preview area : select a fitting** ► **Workspace : Preview area : drag-and-drop the fitting**
To delete a fitting from a bin:	**Workspace : Preview area : select a fitting** ► **Workspace : Preview area : drag-and-drop the fitting outside Workspace : Preview area** or **Workspace : Fitting Bins : select a fitting** ► **Toolbar :** ✂**Delete the fitting bin / item**
To delete a bin:	**Workspace : Fitting Bins : select a bin** ► **Toolbar :** ✂**Delete the selected fitting bin / item**
To create a new custom folder:	**Workspace : Custom Library : select any custom library level** ► **Toolbar :** ✎**Create a new custom folder**
To delete a custom folder:	**Workspace : Custom Library : select any custom library level** ► **Toolbar :** ✂**Delete the fitting bin / item**
To change the fitting library icon color:	**Workspace : Fitting Libraries : select a library (left click)** ► **Toolbar :** 🎨**Change the background color for the selected fitting library** ► **Color selection dialog : select a color** ► **OK**
To change the bin caption color:	**Workspace : Fitting Bins : select a bin (left click)** ► **Toolbar :** 🎨**Change the caption color for the selected fitting bin** ► **Color selection dialog : select a color** ► **OK**
To create default bin for library:	**Workspace : Fitting Libraries : select any fitting library** ► **Toolbar :** 🖳**Create default bin for library**
To rename a fitting:	**Workspace : Fitting Libraries** or **Workspace : Fitting Bins : select a fitting** ► **extra left click** ► **type new name** ► **Enter key**

Fitting Locator

○ Fitting Bins ⦿ Fitting Locator

Workspace : Fittings list contains fittings matched to the dimensions indicated in **Workspace : Properties** list. To narrow the located fitting group, adjust undefined property values (for a proper selection, always adjust properties starting at the top of the list).

To find a fitting or a fitting group:	**Workspace : Properties : specify properties**
To add found fitting(s) to a bin:	**Workspace : Fittings : drag-and-drop a fitting (or a group of fittings) into Workspace : Preview area**

Work with Fittings

Browse ► My Work : 📁 : 🖥 : 🗔 ► 🔲🔲🔲🔲🔲

To add a fitting to a takeoff:	**Move your mouse over the docked bin caption** ► **Workspace : Fitting Bin : select a fitting** ► **Fitting Editor : edit fitting parameters** ► **Fitting Editor : Toolbar :** 🔲**Cut & Label** or 🔲**Label only** or 🔲**Order** or **Toolbar :** ⌨**Toggle quick input** ► **Workspace : Quick input field : type fitting name** or **its abriviation** ► **Workspace : Fitting Quantity : set quantity**
To edit fitting parameters:	**Fitting Editor : Fitting parameters : type values (you can use arrow keys for moving around the list)** or **Fitting Editor : Fitting preview : select a dimension and type a value** ► **Enter key**
To edit fitting parameters with quick input:	**Toolbar :** 📝**Toggle show Editor**

When you edit diameter, major and minor dimensions of a round or oval fitting, you can use sizing tables (please refer to Duct Sizing).

| To see all the fitting costs:	**Fitting Editor : Toolbar :** $**Toggle cost estimating data**
To see all parameters checks:	**Fitting Editor : Toolbar :** 👓**Toggle to view checking list**
To see all comments on fitting:	**Fitting Editor : Toolbar :** ☑**Toggle fitting comments**
To create a custom fitting:	**Fitting Editor : type the custom fitting name** ► **Fitting Editor :** [Save to Custom as]**Save to custom as**
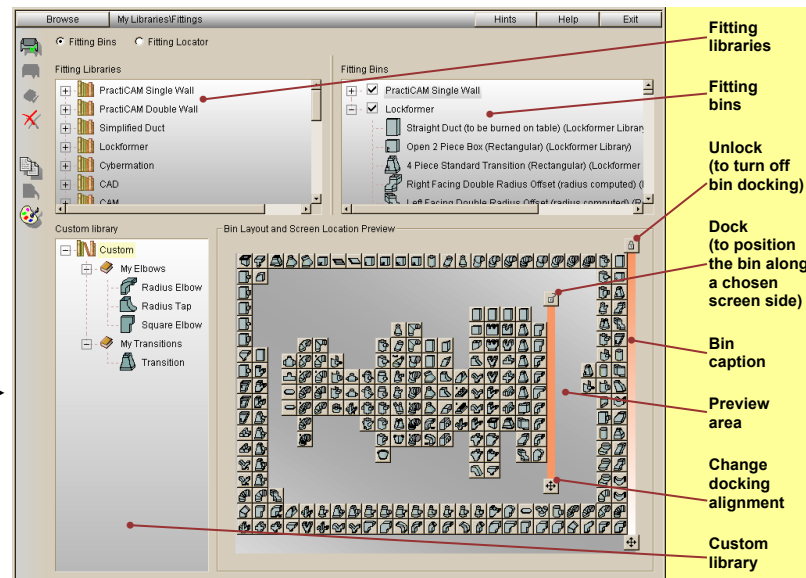
Work with Fittings

Browse ► My Work : [folder] : [icon] : [icon] ► [icons]

|	
To override specifications for a given (modified) parameter:	**Fitting Editor : Toolbar : Parameter override button should be depressed**
To override specifications for all parameters:	**Fitting Editor : Toolbar : Total override button should be depressed**
To select a specification:	**Fitting Editor : Specifications : left click to display all available specification sets ►** **Fitting Editor : Specifications : select a specification set from the drop-down list**
To set fitting defaults:	**Fitting Editor : Fitting parameters : type default values ► Fitting Editor : Toolbar : Save as default**
To edit a fitting face:	**Fitting Editor : Fitting layout : select a fitting face (left click) ► Part Editor : edit face**
To print a label for a fitting face:	**Fitting Editor : Fitting layout : place a check mark into the print box**
To discard a fitting face:	**Fitting Editor : Fitting layout : place a check mark into the discard box**
To shear a fitting face:	**Fitting Editor : Fitting layout : place a check mark into the shear box**

When you mark a fitting face as discarded, it will not be nested and will not be fabricated.
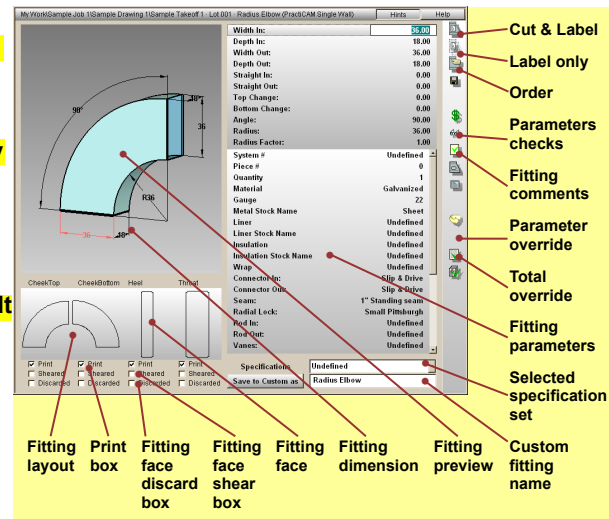
Labels on screenshot: Cut & Label, Label only, Order, Parameters checks, Fitting comments, Parameter override, Total override, Fitting parameters, Selected specification set, Custom fitting name, Fitting layout, Print box, Fitting face discard box, Fitting face shear box, Fitting face, Fitting dimension, Fitting preview

Duct Sizing

Browse ► My Libraries ► Duct Sizing

All duct sizing tables for your round and oval duct fabrication.

To create a new sizing table:	**Workspace : select a shape (round or oval) ► Toolbar : Create a new sizing table ► Workspace : Sizing tables : rename the table**
To create a new adjustment table:	**Workspace : select a shape (round or oval) ► Toolbar : Create a new adjustment table ► Workspace : Adjustment tables : rename the table**
To rename any table:	**Workspace : Sizing tables or Adjustment tables : select a table ► extra left click ► edit field : type the table name ► Enter key**
To delete any table:	**Workspace : Sizing tables or Adjustment tables : select a table ► Toolbar : Delete the selected table**
To make a table active:	**Workspace : Sizing tables and / or Adjustment tables : check or uncheck the box by the table name**

For every adjustment table you can specify a desired priority in record lookup:

|	
To set lookup order:	**Workspace : Lookup order : drag any item to any place in Workspace : Lookup order list**
To add a record to a sizing table:	**Workspace : Sizing Table Editor : left click on any place ► Toolbar : Add a new record**
To add a record to an adjustment table:	**Workspace : Adjustment Table Editor : left click on any place ► Toolbar : Add a new record**
To delete a record:	**Workspace : Sizing Table Editor or Adjustment Table Editor : select a record (left click) ► Toolbar : Delete the current record**
To edit a record:	**Workspace : Sizing Table Editor or Adjustment Table Editor : select a record cell (left click) ► edit field : type value ► Enter key or drop down button : left click ► appeared selection list : select value(s) (left click) ► extra left lick outside the selection list or Enter key**
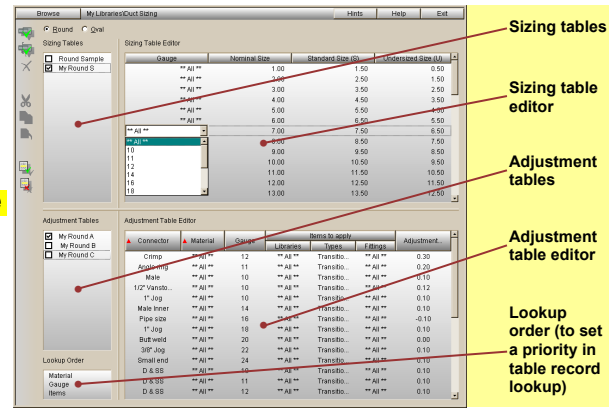
Labels on screenshot: Sizing tables, Sizing table editor, Adjustment tables, Adjustment table editor, Lookup order (to set a priority in table record lookup)

Work with Duct Sizing

Browse ► My Work : [folder] : [icon] : [icon] ► [icons]

To make a round or an oval fitting sized, undersized or adjustable:	**Browser : My Libraries : Duct sizing : make one of existing sizing or adjustment tables active ► Fitting Editor : type diameter, major and minor property values with an "S" modifier for standard fittings, a "U" modifier – for undersized fittings, and an "A" modifier – for adjustable fittings**

Labels on screenshot: Nominal size, Size modifier, Standard size, Adjustment value, Undersized size, Fitting editor, Real size, Libraries duct sizing

When you type the fitting size value with a "U" modifier (i. e. 20U), Real size = Undersized size matching the fitting Nominal size.
When you type the size value with an "S" modifier (i. e. 20S), Real size = Standard size matching the fitting Nominal size.
When you type the size value with an "A" modifier (i. e. 20A), Real size = Nominal size + Adjustment value matching the fitting material, gauge, connector, and the fitting category.

Integral parts of the fitting and duct layout used to connect fitting parts (locks, joints, and seams) or to connect fittings (connectors). You can use default allowances or create your own. You can also create and customize various notches used on fitting faces for marking alignment and bending points.

Edges

Browse ► My Libraries ► Notches & Edges ► ⦿ Edges

An edge is an allowance with parametric (changeable) geometry, used in creating your locks, joints, seams, connectors and modifications of part / face edges.

|	
To create a new edge:	**Toolbar : Create a new edge ► Workspace : Edges list : rename the edge ► Workspace : Parameters list : create edge parameters ► Workspace : Edge Editor : edit the edge ► Toolbar : Save the selected edge**
To rename an edge:	**Workspace : Edges list : select an edge ► extra left click ► edit field : type name ► Enter key**
To delete an edge:	**Workspace : Edges list : select an edge ► Toolbar : Delete the selected edge**
To create a new edge parameter:	**Toolbar : Create a new edge parameter ► Edge parameter dialog : type the parameter name and value ► Edge parameter dialog : OK**
To edit the selected edge:	**Workspace : Edge Editor : edit the edge**

For the description of drawing tools, please refer to the Part Editor.

Labels on figure: Edges list, Parameters list, Edge editor, Drawing tools, Base line of a fitting face

Edges Bins
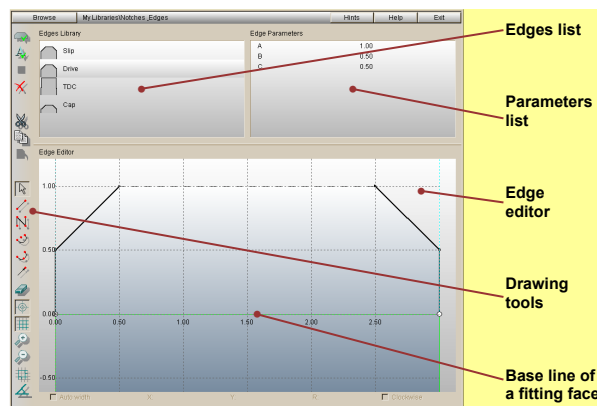
Browse ► My Libraries ► Notches & Edges ► ⦿ Bins

All edges can be organized into working bins. An edge bin is a custom selection of edges assembled by you. You can work with edge bins the same way as you work with fitting or part bins (please refer to Fittings or Parts).

Connectors, Locks, Joints and Seams

Browse ► My Libraries ► Connectors / Locks / Joints / Seams

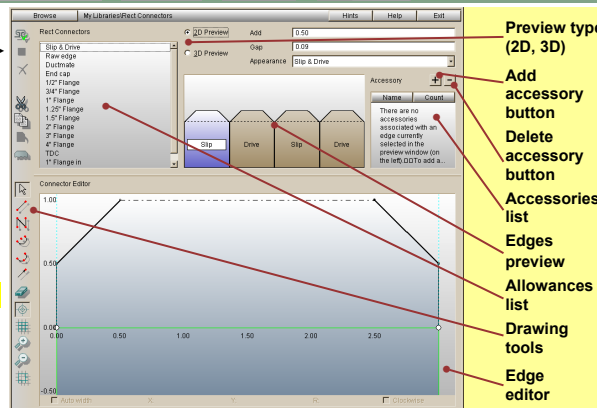|	
To create a new allowance:	**Workspace : Allowances list : select a prototype allowance ► Toolbar : Create a new allowance ► Workspace : Allowances list : edit field : type name ► Enter key ► Workspace : type Add and Gap parameters and select the connector Appearance (for connectors) ► edit the edges ► Toolbar : Save the selected allowance**
To edit an allowance edge:	**Workspace : Preview type : 2D ► Workspace : Edges preview : select an edge ► Connector (Lock, Joint, Seam) Editor : edit the selected edge**
To delete an allowance:	**Workspace : Allowances list : select an item ► Toolbar : Delete the selected allowance**
To add an accessory to the selected connector:	**Workspace : Edges preview : select an edge ► Workspace : click + Add accessory button ► Workspace : Accessories list : Name column : click drop down button on the right and select an accessory from the drop down list ► Workspace : Accessories list : Count column : select or type a required quantity the selected accessory**
To delete an accessory from the selected edge:	**Workspace : Edges preview : select an edge ► Workspace : Accessories list : select an accessory ► Workspace : click - Delete accessory button**
To sort allowance lists:	**Workspace : Allowances list header : series of mouse clicks**

Labels on figure: Preview type (2D, 3D), Add accessory button, Delete accessory button, Accessories list, Edges preview, Allowances list, Drawing tools, Edge editor

Work with Allowances

Browse ► My Work : : : ►

Once allowances are created, you can use them in Fitting Editor and Part Editors.

To modify an allowance for the selected fitting:	**Fitting Editor : Parameters list : any allowance value : left click on the drop down button and select an item from the drop down list**

Special Notches

Browse ► My Libraries ► Special Notches

To create a new notch:	**Workspace : select a notch list ► Toolbar : Create a new notch ► Workspace : rename the new notch ► Edge Editor : edit the edge ► Toolbar : Save the edge**
To rename a notch:	**Workspace : select a notch ► extra left click ► edit field : type name ► Enter key**
To delete any notch:	**Workspace : select a notch ► Toolbar : Delete the selected notch**
To edit the selected notch:	**Workspace : Edge Editor : edit edge**

For the description of drawing tools, please refer to the Part Editor.
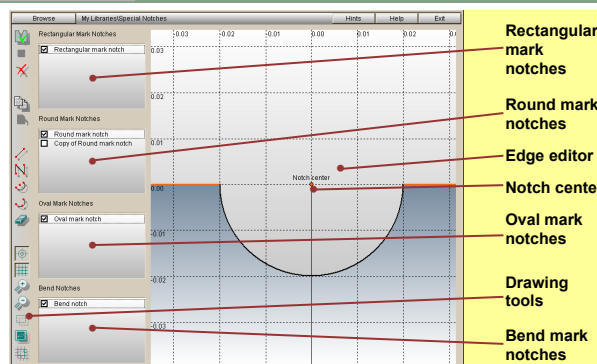
To select a notch list:	**Workspace : Rectangular or Round or Oval or Bend notches list : select a list (left click) anywhere within the list**
To make a notch active:	**Workspace : Rectangular or Round or Oval or Bend notches list : check the box by the notch name**
To select a notch:	**Workspace : Rectangular or Round or Oval or Bend notches list : select a notch (left click)**

Labels on figure: Rectangular mark notches, Round mark notches, Edge editor, Notch center, Oval mark notches, Drawing tools, Bend mark notches

Accessories

Various duct-related items (stiffeners, vanes, rods, dampers) and connector accessories (gaskets, bolts, angles, clips, drives and slips).

To create a new accessory: **Toolbar** : **Create a new accessory** ▶ **Workspace** : **edit the accessory**
To delete a accessory: **Workspace** : **Accessories** : **select an item** ▶ **Toolbar** : **Delete the selected accessory**
To rename an accessory: **Workspace** : **Accessories** : **select an item** ▶ **extra left click** ▶ **edit field** : **type name** ▶ **Enter key**

Stiffeners   ⦿ Stiffeners / ⦿ External Stiffeners

To edit a stiffener: **Workspace** : **Stiffeners** : **select an item** ▶
Workspace : **Stiffener types** : **select a type** ▶
Workspace : **Stiffener parameters** : **type values**

To make a stiffener framed: **Workspace** : **check Frame stiffener box**
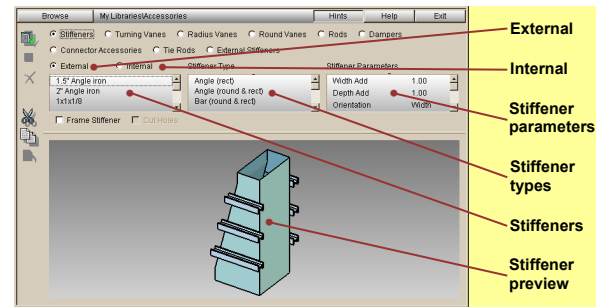**To cut stiffener holes:** **Workspace** : **check Cut holes box**
To select internal stiffeners: **Workspace** : **select Internal**
To select external stiffeners: **Workspace** : **select External**

External
Internal
Stiffener parameters
Stiffener types
Stiffeners
Stiffener preview

Vanes (Turning, Radius and Round)   ⦿ Turning Vanes   ⦿ Radius Vanes   ⦿ Round Vanes

To edit a vane: **Workspace** : **Vanes list** : **select an item** ▶
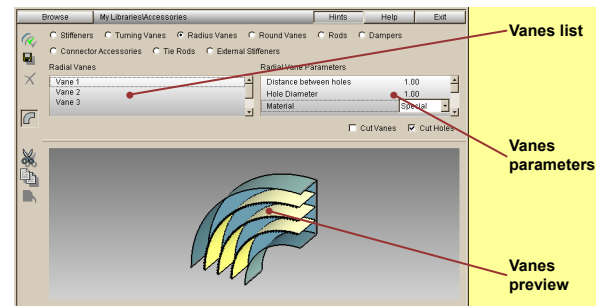**Workspace** : **Vanes parameters** :
type or **select values**

To cut round vanes: **Workspace** : **check Cut Vanes box**

To cut installation holes for radius vanes: **Workspace** : **check Cut Holes box**

Vanes list
Vanes parameters
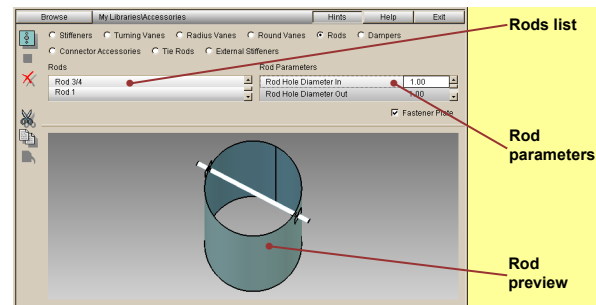*Vanes preview*

Rods   ⦿ Rods

To edit a rod: **Workspace** : **Rods list** : **select an item** ▶
Workspace : **Rod parameters** : **type values** ▶
Workspace : **Fastener plate box** :
check or **uncheck**

Rods list
Rod parameters
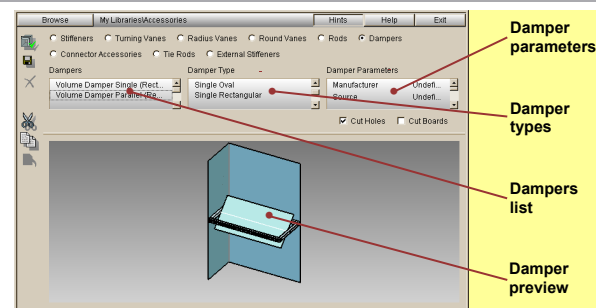*Rod preview*

Dampers   ⦿ Dampers

To edit a damper: **Workspace** : **Dampers list** : **select an item** ▶
Workspace : **Damper types** : **select a type** ▶
Workspace : **Damper parameters** : **type values**

Damper parameters
Damper types
Dampers list
Damper preview

Connector Accessories   ⦿ Connector Accessories

To edit an accessory: **Workspace** : **Connector accessory type** :
select a type ▶ **Workspace** :
**Connector accessories list** : **select an item** ▶
Workspace :
Nomimal length ranges : **edit ranges** ▶
Workspace : **Connector accessory parameters** :
type values

To add an accessory to a connector: (please refer to Allowances / Connectors, Locks, Joints and Seams chapter)

Connector accessory type
Connector accessory parameters
Connector accessories list
Nominal length ranges
Connector accessory preview
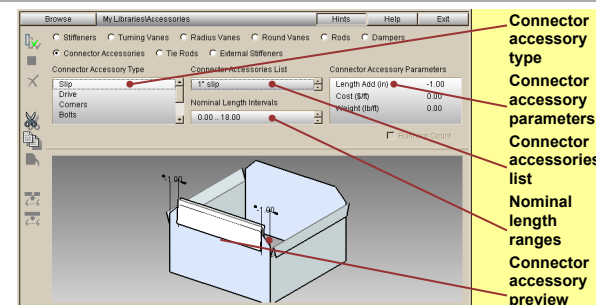
Work with Accessories   Browse ▶ My Work : : : ▶

Once accessories items are created you can add them to the selected fitting in Fitting Editor.

To add accessories to the selected fitting: **Fitting Editor** : **Parameters list** : **any accessory property value** : **left click on the** **drop down button** **and select an item from the appeared drop down list**

Accessories

Specifications

Specify your manufacturing standards in accordance with your requirements (you can use SMACNA-based specifications, as well as any other conceivable specification sets).

To create a specification set: Toolbar : Insert a new specification set ► rename the created specification set

The newly creating specification set will be a copy of a currently selected one (if any).

To rename a specification set: Workspace : Specification sets : select a specification set ► extra left click ► edit field : type name ► Enter key

To delete a specification set: Workspace : Specification sets : select a specification set ► Toolbar : Delete the selected specification set

Work with specifications in **PractiCAM** is based on rule – exception principle.

All fittings are hierarchically organized in categories. Rules specified for more general categories work for all its subsets if only no exception rules are defined for those subsets.

To edit a specification set: Workspace : Specification sets : select a specification set ► Workspace : Pressure class : select a desired pressure class ► edit specification table(s)

If you create a specification table for some fitting set it will be automatically duplicated for all its subsets up to individual fitting.

To create a specification table: Workspace : Target fitting sets : select a fitting category (up to individual fitting) ► Workspace : select a condition set (Non, Largest side or Custom) ► create one or more size breaks sets Conditions : set condition value(s) ranges

You can create a specification table if only no condition value ranges are defined for the selected fitting category and specified condition set.

To select a specification table: Workspace : Target fitting sets : select a fitting category (up to individual fitting) ► Workspace : Condition set : select the condition set (Non, Largest side or Custom)

If there are not condition value ranges in **Workspace : Conditions**, you should create a specification table.

To edit a specification table: Workspace : select a specification table ► edit one or more size breaks sets

To modify condition value ranges, you can add or split a condition value range in two equal ranges, edit upper boundary of a selected condition value range, and delete any selected condition value range.

To create a size breaks set: Toolbar : Create a new size breaks set ► Parameters selection dialog : type size breaks set name ► Parameters selection dialog : check or uncheck parameters by name ► Parameters selection dialog : OK or Cancel

To delete a size breaks set: Workspace : Size break sets list : select a size breaks set ► Toolbar : Delete the selected size breaks set

To edit a size breaks set: Workspace : Size break sets list : select a size breaks set ► Parameters selection dialog : type size breaks set name ► Parameters selection dialog : check or uncheck parameters by name ► Parameters selection dialog : OK or Cancel

To add a condition value range: Workspace : Conditions : select a condition value range to split it in two equal ranges ► Toolbar : Add a condition ► Workspace : Conditions : edit newly created ranges or Workspace : Conditions : edit the last condition value range

You can add more than one condition value range for a custom condition, if you select a not last priority condition value range.

To edit a condition value range: Workspace : Conditions : select a condition value range (left click) ► edit field : type the desired upper range bound ► Enter key

If you select the last condition value range (upper boundary = ANY), the new last condition value range will be automatically created.

To delete a condition value range: Conditions : select a condition value range ► Toolbar : Delete the selected condition

Once you delete all condition value ranges from a specification table, the specification table will be deleted. To add other specification value ranges, you should create the specification table again. When your specification tables are created and condition value ranges are specified, you can edit your specification table rules.
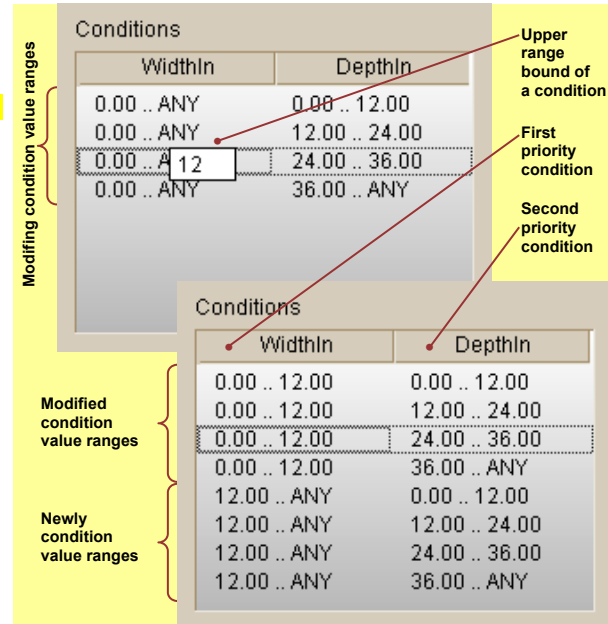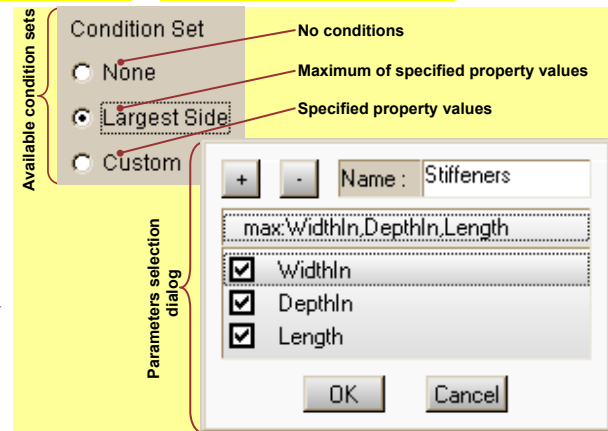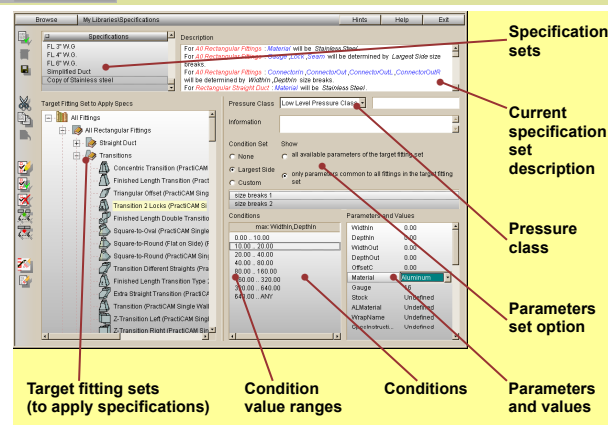
To edit a rule: select a specification table ► Workspace : Conditions : select a condition value range (if any) ► Workspace : Parameters and Values : type or select value(s)

To set a property undefined: Workspace : Parameters and Values : select a property ► Toolbar : Delete the selected value

Work with Specifications

Browse ► My Work : : : ►

To select a current specification set: Fitting Editor : Specifications : left click to display all available specification sets ► Fitting Editor : Specifications : select a specification set (left click)

Once you select a current specification set in Fitting Editor, it will be applied to all following fittings until you deselect it or select another specification set. You can also manually override fitting parameters (please refer to Fittings / Work with fittings chapter).

Sidebar labels (screenshots):

- Specification sets
- Current specification set description
- Pressure class
- Parameters set option
- Parameters and values
- Target fitting sets (to apply specifications)
- Condition value ranges
- Conditions

- Available condition sets
- No conditions
- Maximum of specified property values
- Specified property values
- Condition Set: None / Largest Side / Custom
- Parameters selection dialog
- Name : Stiffeners
- max:WidthIn,DepthIn,Length
- WidthIn / DepthIn / Length
- OK / Cancel

- Modifying condition value ranges
- Conditions: WidthIn / DepthIn
- 0.00 .. ANY | 0.00 .. 12.00
- 0.00 .. ANY | 12.00 .. 24.00
- 0.00 .. A[12] | 24.00 .. 36.00
- 0.00 .. ANY | 36.00 .. ANY
- Upper range bound of a condition
- First priority condition
- Second priority condition

- Conditions: WidthIn / DepthIn
- Modified condition value ranges:
  - 0.00 .. 12.00 | 0.00 .. 12.00
  - 0.00 .. 12.00 | 12.00 .. 24.00
  - 0.00 .. 12.00 | 24.00 .. 36.00
  - 0.00 .. 12.00 | 36.00 .. ANY
- Newly condition value ranges:
  - 12.00 .. ANY | 0.00 .. 12.00
  - 12.00 .. ANY | 12.00 .. 24.00
  - 12.00 .. ANY | 24.00 .. 36.00
  - 12.00 .. ANY | 36.00 .. ANY

Specifications (vertical side tab)

Cost Estimation

Browse ▶ 🖿 My Work : 🗀 : 🔳 : 🔲 ▶ 🔲🔲🔲🔲 or 🔲🔲🔲🔲

Data for estimating cost. There are several ways to get estimation information associated with your work.

To get estimating data   **Browser** : **My Work** : **select a takeoff** ▶ 🔲🔲🔲🔲 ▶ **activate the Fitting Editor for desired fitting** ▶
associated with a fitting: **Fitting Editor** : **Toolbar** : **depress 💲Toggle cost estimating data**

To print a cost report: **Browser** : **My Work** : **select a takeoff** ▶ 🔲🔲🔲🔲 ▶ **Workspace** : **Reports list** : **select a cost report** ▶
   Toolbar : 🖨**Print current**

Summary estimating data associated with your work

Estimating data associated with a fitting

Local data based estimation data

SMACNA based estimation data

		SMACNA			Local		
	Material	Shop	Field	Total	Shop	Field	Total
⊟ 🖿 Sample Drawing 1	22.23 $	20.61 $	33.02 $	75.86 $	0.00 $	0.00 $	22.23 $
📖 Sample Takeoff 1	22.23 $	20.61 $	33.02 $	75.86 $	0.00 $	0.00 $	22.23 $
⊞ 🖿 Sample Drawing 2	66.69 $	93.33 $	106.63 $	266.64 $	93.33 $	106.63 $	266.64 $

To get summary estimating data: **Browser** : **My Work (or a job or a drawing)**
To display material as cost: **Browser** : **My Work (or a job or a drawing)** ▶ **Workspace** : **Show the material as** : **select Cost**
To display material as weight: **Browser** : **My Work (or a job or a drawing)** ▶ **Workspace** : **Show the material as** : **select Weight**
To display labor as cost: **Browser** : **My Work (or a job or a drawing)** ▶ **Workspace** : **Show the labor as** : **select Cost**
To display labor as time: **Browser** : **My Work (or a job or a drawing)** ▶ **Workspace** : **Show the labor as** : **select Time**
To calculate material by faces: **Browser** : **My Work (or a job or a drawing)** : **Estimate the material cost as** : **Faces only**
To calculate material by sheets: **Browser** : **My Work (or a job or a drawing)** : **Estimate the material cost as** : **Total Full Sheets**

To calculate material by sheets   **Browser** : **My Work (or a job or a drawing)** :
(without scrap):   **Estimate the material cost as** : **Total Sheets (less re-usable scrap)**

Estimation

Browse ▶ 📗 My Libraries ▶ 💲 Cost Estimation

You can have as many approaches for estimation as you want. Only one of them is the main. It is used in reports.
Besides, there are a lot of secondary approaches for comparition and selecting the best one.

To create new estimating approach: **Workspace** : **Estimating approaches** : **select a prototype approach** ▶ **Toolbar** : 💲**Create a new approach**
To delete an estimating approach: **Workspace** : **Estimating approaches** : **select an approach** ▶ **Toolbar** : ✕**Delete the selected approach**
To select the main approach: **Workspace** : **Estimating approaches** : **left click on check box at the left of the approach until** ■
To select secondary approaches: **Workspace** : **Estimating approaches** : **left click on check box at the left of the approach until** ☑
To make an approach inactive: **Workspace** : **Estimating approaches** : **left click on check box at the left of the approach until** ☐

Every approach consists of estimation methods. An estimation method sets values
of shop and field productivities for different materials, gauges, pressure classes, and
selected size parameter values breaks. You can either select a size parameter
the productivity depends on (stretch out, diameter, perimeter, and so on) or measure
units for productivity (lbs per hour, hour per item, feet per hour and so on). Also you can
see graphic of functional dependence for the productivity. Every estimation method can
be applied for custom defined item groups up to individual item.

Estimating approaches
Estimating methods filter
Item type selector
Destination items groups
Productivity measure units
Productivity argument
Productivity function graphic
Productivity function

Materials list   Size breaks list   Estimating methods   Productivity table   Productivity function

To select the method types   **Workspace** : **Estimating methods filter** :
to be shown: **checkmark item categories to show methods for**

To create new estimating method: **Workspace** : **Estimating methods** :
select a prototype method ▶
Toolbar : 📋**Create a new method**

To delete an estimating method: **Workspace** : **Estimating methods** :
select a method ▶ **Toolbar** : 📋**Delete**

To select a destination item type: **Workspace** : **Items type selector** : **select a type**

To set destination item groups   **Workspace** : **Estimating methods** : **select a method** ▶
for the method: **Workspace** : **Destination items groups** : **checkmark destination item groups up to individual item**
   (use + and − signs at the left of a group name to expand / collapse the group)

To create a new size break: **Workspace** : **Estimating methods** : **select a method** ▶ **Toolbar** : 📋 **Change the order of conditions** ▶
   Workspace : **Size breaks list** : **new record** : **type size break value**

To create new material category: **Workspace** : **Estimating methods** : **select a method** ▶ **Toolbar** : 📋**Create a new material record** ▶
   Workspace : **Materials list** : **new record** : **select material, gauge, pressure class**

To edit the selected   **Workspace** : **Estimating methods** : **select a method** ▶ **Workspace** : **Size breaks list** : **select a size break** ▶
estimation method: **Workspace** : **Materials list** : **select a material record** ▶ **Workspace** : **Productivity argument** : **select** ▶
   Workspace : **Productivity measure units** : **select** ▶ **for every productivity argument**
   Workspace : **Productivity table** : **enter productivity argument and productivity value**

To select the parameter   **Workspace** : **Productivity argument** : **left click to show the list of properties** ▶ **select a property**
the productivity depends on:

To select the productivity   **Workspace** : **Productivity measure units** : **left click to show the list of units** ▶
measure unit: **select a measure unit**

To show function   **Workspace** : **Function** : **Shop / Field** : **checkmark**
for shop / field productivity:

Segmentation

(side label: Segmentation)

Collection of all automatic segmentation rules for your products.

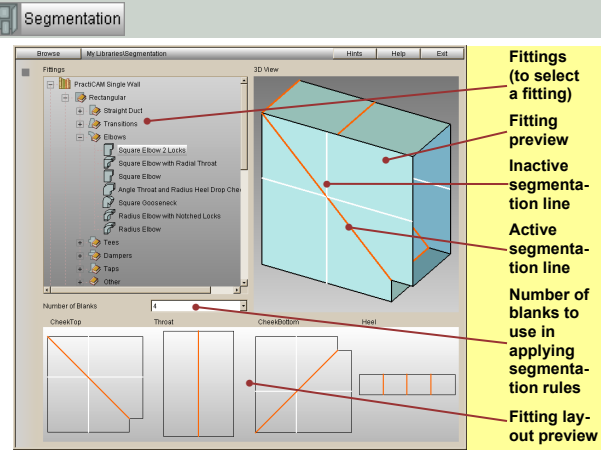|	
To edit fitting segmentation rules:	**Workspace : Fittings : select a fitting ► Workspace : Number of Blanks : select the fitting layout ► toggle fitting segmentation lines**
To toggle a fitting segmentation line on or off:	**Workspace : Fitting preview or Fitting layout preview : move your mouse cursor near the segmentation line ► click on that line**
To rotate a fitting:	**Workspace : Fitting preview : drag the fitting (left mouse button pressed)**
To use zoom in fitting preview:	**Workspace : Fitting preview : drag the fitting (right mouse button pressed)**

Right-side labels: Fittings (to select a fitting); Fitting preview; Inactive segmentation line; Active segmentation line; Number of blanks to use in applying segmentation rules; Fitting layout preview

Leads & Loops

(side label: Leads & Loops)

Your cutting allowances used to provide precise cutting contour.

|	
To edit leads:	**Workspace : Leads**
To create a new lead:	**Toolbar : ▭Create a new lead ► Workspace : Leads list : rename the lead ► Workspace : Lead sketch editor : create the lead sketch ► Workspace : Lead parameters : type values (you can use arrow keys for moving around the list) ► Toolbar : ▤Save this lead**
To rename a lead:	**Workspace : Leads list : select a lead (left click) ► extra left click ► type name**
To delete a lead:	**Workspace : Leads list : select a lead (left click) ► Toolbar : ✕Delete the selected profile**

You can work with loops exactly the same way as you work with leads.

Right-side labels: Lead parameters; Lead types list; Leads list; Lead sketch editor
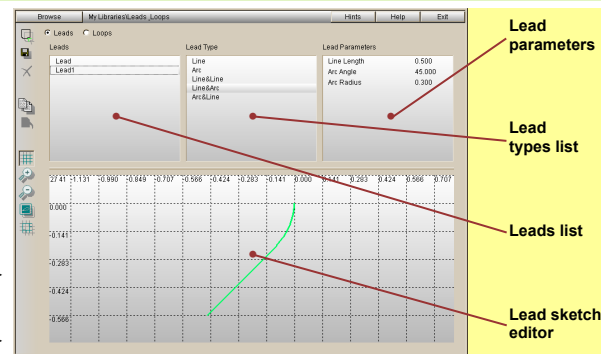
Work with Leads & Loops

To create a new cutting mode:	**Toolbar : Create a new cutting mode**
To apply a lead in/out or loop:	**Workspace : Cutting Modes : a cutting mode row : select the lead in / out or loop column (left click) ► left click on the ▾ drop down button ► extra left click to select**

Catalog Items

(side label: Catalog Items)

All items used in duct manufacturing and installation (spin collars, flexes, etc.).

To create a new folder:	**Workspace : Folder Tree : select any folder tree level ► Toolbar : 🗀Create a new catalog item library ► rename it**
To rename any folder:	**Workspace : Folder Tree : select a folder ► extra left click ► edit field : type name ► Enter key**
To delete a folder:	**Workspace : Folder Tree : select any folder tree level ► Toolbar : ✕Delete**
To create new catalog item:	**Workspace : Folder Tree : select any folder tree level ► Toolbar : 🗀Add a new catalog item ► rename the newly created catalog item ► change preview picture ► change icon ► add one or more dimensions ► Workspace : Item parameters : type dimensions values**
To rename any catalog item:	**Workspace : Items : select an item ► extra left click ► edit field : type new name ► Enter key**
To select an icon for representing catalog:	**Workspace : Icon : left click ► select an icon or Workspace : Icon : left click ► File open dialog : select a preview file ► OK**
To change preview picture:	**Workspace : Preview : left click ► File open dialog : select a preview file ► OK**
To add parameter(s) to the selected item:	**Toolbar : 🗐Add a new parameter ► Workspace : Item parameters : type the parameter name, type and default value**
To delete a parameter:	**Workspace : Item parameters : select a parameter ► Toolbar : 🗒 Delete the selected parameter**
To delete a catalog item:	**Workspace : Items : select an item (left click) ► Toolbar : 🗒Delete a catalog item**

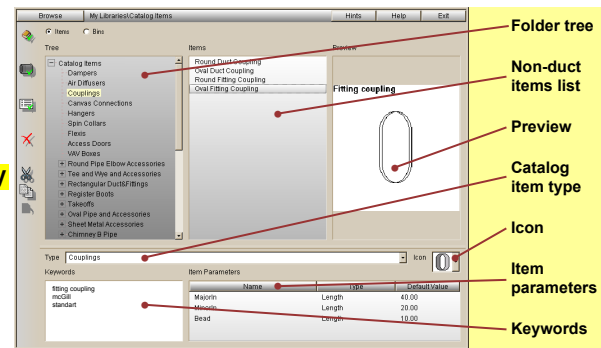You can work with catalog bins exactly the same way as you work with fitting bins (please refer to Fittings).

Right-side labels: Folder tree; Non-duct items list; Preview; Catalog item type; Icon; Item parameters; Keywords

### *Work with Catalog Items*

To add a catalog item to takeoff:	**Workspace : Catalog Bin : select a catalog ► Catalog Editor : edit catalog item**
To edit any catalog item with Catalog Item Editor:	**Workspace : Takeoff list : select a catalog item (left double click) ► Parameters list : type values ► Description : type description ► Barcode Sequence : type sequence ► Toolbar : ✓Apply changes or ⟲Cancel**

Right-side labels: Parameters list; Preview; Description (to type verbal description); Barcode sequence
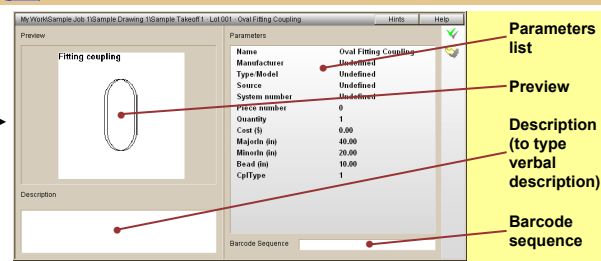
Profiles

The Profile Editor is used to create the architectural items from their profile sketches. Every profile sketch uses chain-link line and arc elements and slopes from the wall up to the ceiling or down to the floor.
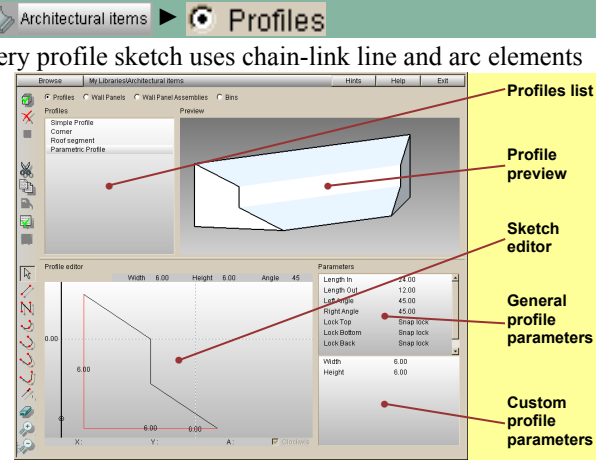
To create a new profile:
Toolbar : Create a new profile ▶
Workspace : Profiles list : rename the profile ▶
Workspace : Sketch Editor : create the profile sketch ▶ Workspace : Sketch parameters : type values (you can use arrow keys for moving around the list) ▶
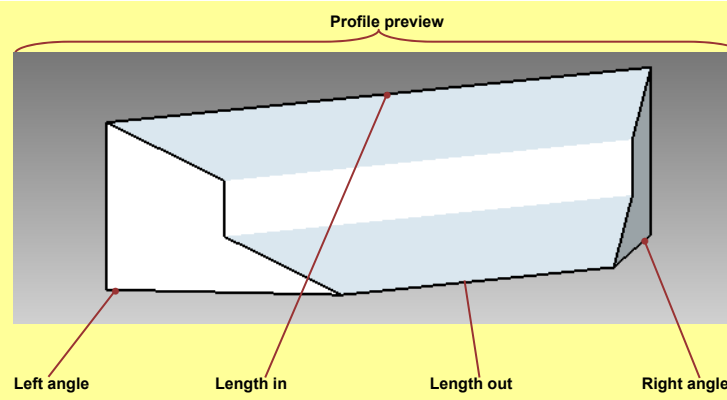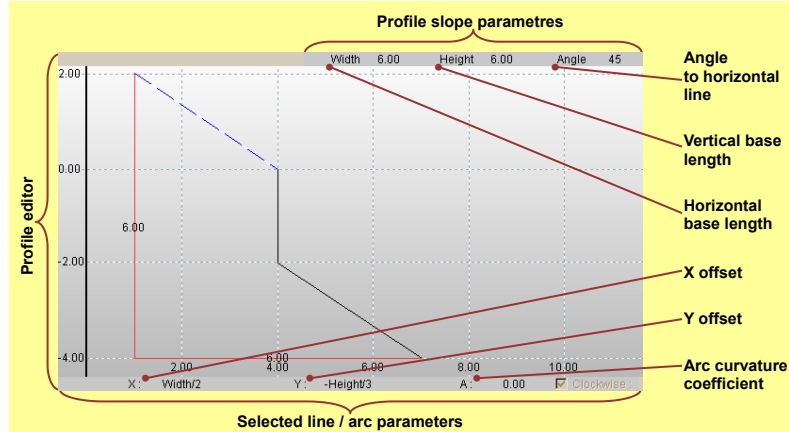Toolbar : Save profile modifications

To rename a profile:
Workspace : Profiles list : select a profile (left click) ▶ extra left click ▶ type name

To delete a profile:
Workspace : Profiles list : select a profile (left click) ▶
Toolbar : Delete the selected profile

- Profiles list
- Profile preview
- Sketch editor
- General profile parameters
- Custom profile parameters

Profile slope parametres

- Angle to horizontal line
- Vertical base length
- Horizontal base length
- X offset
- Y offset
- Arc curvature coefficient

Selected line / arc parameters

Profile preview

- Left angle
- Length in
- Length out
- Right angle

To create a custom parameter:
Toolbar : Add a new parameter ▶ Input parameters dialog : type the parameter name and default value ▶ Input parameters dialog : OK or Cancel

To parametrize a profile geometry:
Toolbar : Select ▶ Workspace : Profile Editor : select a line / arc (left click) ▶
Workspace : Selected line / arc parameters : select a parameter (drag mouse with left mouse button depressed over the parameter value) ▶ type a custom parameter name

Tools for adding items to the sketch:

Icon	Name	Description
	Line	Adds a line.
	Line-by-line	Adds chain-link lines.
	3-point arc	Adds an arc using 3 points on it.
	Ellipse	Adds an elliptical arc using 3 points on it.
	Parabola	Adds a parabolic arc using 3 points on it.
	Hyperbola	Adds a hyperbolic arc using 3 points on it.

Tools for navigating the drawing space and the viewing area:

Icon	Name	Description
	Zoom In	Magnifies the content of the viewing area.
	Zoom Out	Reduces the content of the viewing area.
	Grid settings	Sets the grid size.

Tools for changing or removing items from the sketch:

Icon	Name	Description
	Select	Selects a sketch element.
	Delete	Deletes an element.
	Point move	Moves a point.

Profiles bins

Architectural item (Profiles) libraries can be organized into working bins to optimize your workflow. A profile bin is a custom selection of profiles assembled by you. You can work with profile bins exactly the same way as you work with fitting bins (please refer to Fittings).

Work with Profiles

To add a profile to a takeoff:
Move your mouse over a docked bin caption ▶
Workspace : Profile Bin : select a profile ▶
Profile Editor : edit the profile parameters ▶
Toolbar : Cut & Label or Label only or Order

To edit profile parameters:
Profile Editor : Profile parameters : type values or Profile Editor : Profile preview : select a dimension and type a value ▶ Enter key

To create a custom profile:
Profile Editor : type the custom profile name ▶
Profile Editor : Save to Custom as Save to custom as

To set profile defaults:
Profile Editor : Profile parameters : type values ▶
Profile Editor : Toolbar : Save as default

To edit a profile face:
Profile Editor : Profile layout : select a profile face (left click) ▶ Part Editor : edit face

To discard a profile face from manufacturing:
Profile Editor : Profile layout : place a check mark into the discard box

To print a profile face label:
Profile Editor : Profile layout : place a check mark into the label print box
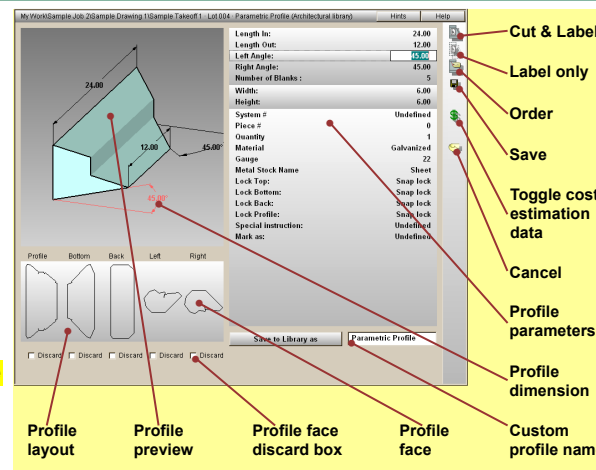
- Cut & Label
- Label only
- Order
- Save
- Toggle cost estimation data
- Cancel
- Profile parameters
- Profile dimension
- Custom profile name
- Profile face
- Profile face discard box
- Profile preview
- Profile layout

Wall Panels (sidebar)

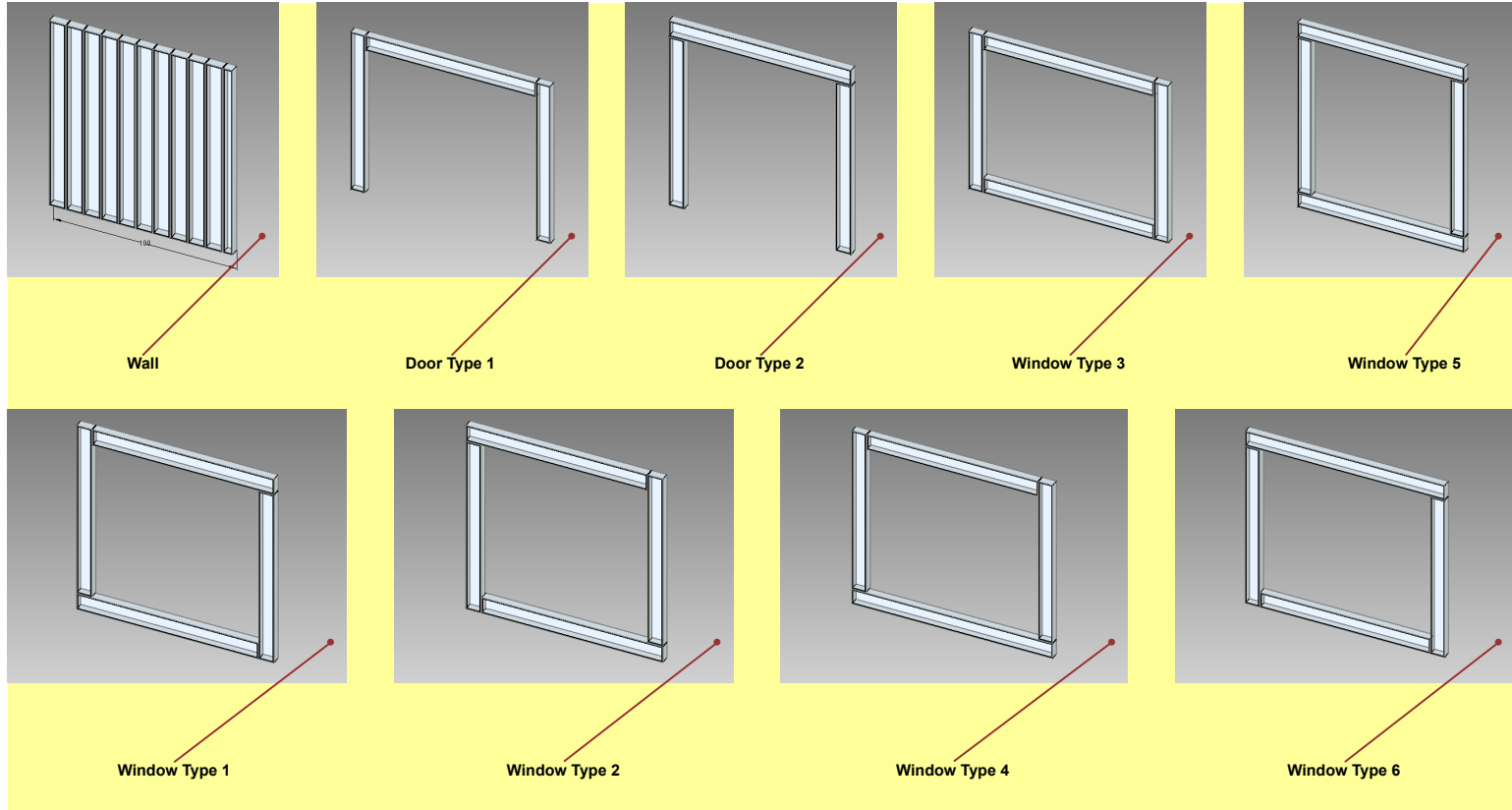|	
To create a new wall panel:	**Toolbar** : ☑**Create a new wall panel** ▶ **Workspace** : **edit the wall panel**
To delete a wall panel:	**Workspace** : **Wall Panels list** : **select an item** ▶ **Toolbar** : ✂**Delete the selected wall panel**
To rename a wall panel:	**Workspace** : **Wall Panels list** : **select an item** ▶ **extra left click** ▶ **edit field** : **type name** ▶ **Enter key**
To edit a wall panel:	**Workspace** : **Wall Panels list** : **select an item** ▶ **Workspace** : **Wall Panel types** : **select a type** ▶ **Workspace** : **Wall Panel parameters** : **type values**
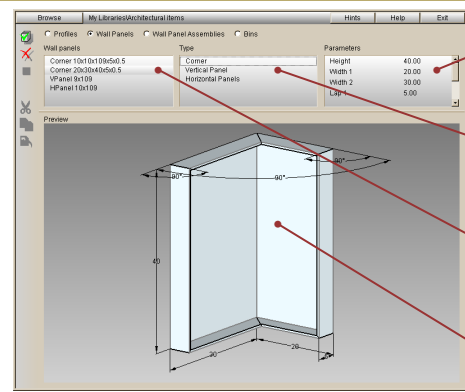
Wall panel parameters
Wall panel type
Wall panels list
Wall panel preview

Wall Panel Assemblies

Browse ▶ My Libraries ▶ Architectural items ▶ ◉ Wall Panel Assemblies

There are following types of wall panels: vertical and horizontal panels, and corners. You can create your own wall panels and assemble them into predefined panel groups. You can work with panel assemblies the same way as you work with wall panels.

Wall   Door Type 1   Door Type 2   Window Type 3   Window Type 5

Window Type 1   Window Type 2   Window Type 4   Window Type 6

Work with Wall Panels

Browse ▶ My Work : 🗀 : 🗔 : ▦ ▶ 🖩🖩🖩🖩🖩

|	
To add a wall panel to a takeoff:	**Move your mouse over a docked bin caption** ▶ **Workspace** : **Wall Panel Bin** : **select a wall panel** ▶ **Wall Panel Editor** : **edit the wall panel parameters** ▶ **Wall Panel Editor** : **Toolbar** : 📄**Cut & Label** or 📄**Label only** or 📄**Order**
To edit wall panel parameters:	**Wall Panel Editor** : **Wall Panel parameters** : **type values** or **Wall Panel Editor** : **Wall Panel preview** : **select a dimension and type a value** ▶ **Enter key**
To create a custom wall panel:	**Wall Panel Editor** : **type the custom wall panel name** ▶ **Wall Panel Editor** : ▭ Save to Custom as **Save to custom as**
To set wall panel defaults:	**Wall Panel Editor** : **Wall Panel parameters** : **type values** ▶ **Wall Panel Editor** : **Toolbar** : 💾**Save as default**
To discard a wall panel face from manufacturing:	**Wall Panel Editor** : **Wall Panel layout** : **place a check mark into the discard box**
To edit a wall panel face:	**Wall Panel Editor** : **Wall Panel layout** : **select a wall panel face (left click)** ▶ **Wall Panel Editor** : **edit face**
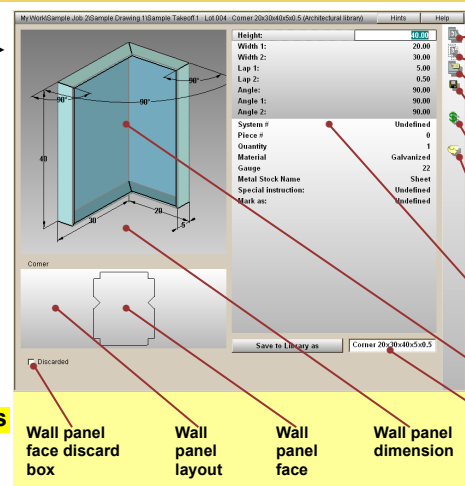
Cut & Label
Label only
Order
Save
Toggle cost estimation data
Cancel
Wall panel parameters
Wall panel preview
Custom wall panel name

Wall panel face discard box
Wall panel layout
Wall panel face
Wall panel dimension

Parts

Extensive **PractiCAM** part libraries (over 1500 items) can be organized into working bins to optimize your workflow. A part bin is a custom selection of parts assembled by you. You can work with part bins exactly the same way as you work with fitting bins (please refer to Fittings).
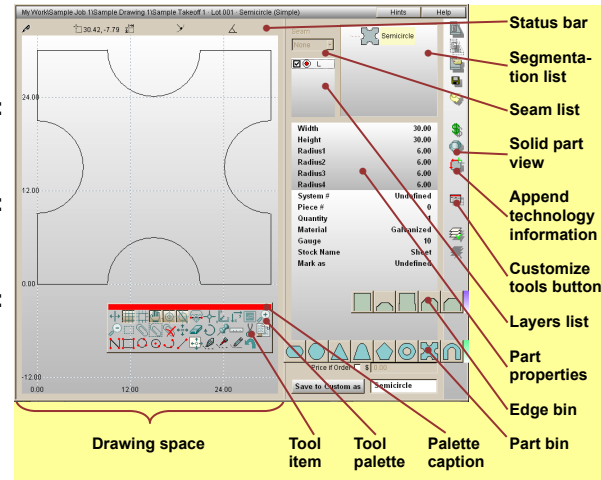
Work with Parts

Browse ▶ My Work : 📁 : 🔲 : ▥ ▶ ▣▣▣▣▣

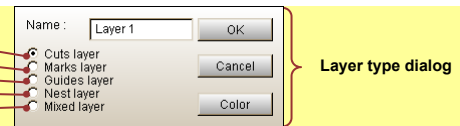|	
To add a part to a takeoff:	**Workspace : Part Bin : select a part (left click) ▶ Part Editor : edit part**
To add a custom part to a takeoff:	**Toolbar : ⚙Create a new custom part ▶ Part Editor : edit part**
To add alpha part(s) to a takeoff:	**Toolbar : T̲Create a new alpha part ▶ Alpha Part Editor : type a new part name ▶ Enter key ▶**
	Alpha Part Editor : select font and font style, part face and material ▶
	Alpha Part Editor : type alpha part text ▶ Alpha Part Editor : 🖺Cut & Label or ✍Cancel
To create a vector part from a bitmap (to cut a part from any picture):	**Toolbar : 🗺Create vector parts from bitmaps ▶ Bitmap Tracer : select a bitmap image file ▶**
	Bitmap Tracer : Cutting path ▶ Bitmap Tracer : Dimensions : type values ▶ Bitmap Tracer :
	Separating Color and Allowance : select ▶ Bitmap Tracer : Border : check desired border ▶
	Bitmap Tracer : Optimization : check desired optimization ▶ Bitmap Tracer : OK or Cancel
To edit a part:	**Workspace : Takeoff list : select any part (left double click) ▶**
	Part Editor : Graphic Editor : edit part ▶ Part Editor : Part parameters : type values ▶
	Part Editor : Toolbar : 🖺Cut & Label or ⬚Label only or 🗒Order
To delete any part:	**Workspace : Takeoff list : select any part (left click) ▶ Toolbar : ✂Delete**

Part Editor

The Part Editor is used to create a new part from a part library, to edit an existing part or a fitting face, and to create a custom part. Every part sketch uses line and arc elements. The part sketch can be organized by layers. Every new element is placed on a currently selected layer. All elements from the same layer are displayed with the same layer color. You can show or hide any layer.

To add a new layer:	**Toolbar : 📝Create a new layer**
To select a layer:	**Layers list : select a layer (left click)**
To change layer type:	**Layers list : select a layer (left click) ▶**
	Layers list : left double click ▶ Layer type dialog :
	select a layer type ▶ Layer type dialog : OK
To rename a layer:	**Layers list : select a layer (left click) ▶**
	Layers list : left double click ▶ Layer type dialog :
	type new name ▶ Layer type dialog : OK
To edit layer color:	**Layers list : select a layer (left click) ▶**
	Layers list : left double click ▶ Layer type dialog :
	Color button ▶ Color selection dialog :
	select a color ▶ Color selection dialog : OK ▶
	Layer type dialog : OK
To show / hide a layer:	**Layers list : check or uncheck by the layer name**
To delete a layer:	**Layers list : select a layer (left click) ▶**
	Toolbar : 📝Delete the selected layer / segment

Status bar
Segmentation list
Seam list
Solid part view
Append technology information
Customize tools button
Layers list
Part properties
Edge bin
Part bin

Drawing space — Tool item — Tool palette — Palette caption — Part bin

Cut lines layer
Marks lines layer, contains lines for marking parts and faces
Guide lines layer, contains auxiliary construction lines. The lines will not be cut
Nest lines layer, contains auxiliary lines bounding a part to be nested. The lines will not be cut
Mixed line types layer

Name : Layer 1   OK
◉ Cuts layer
○ Marks layer   Cancel
○ Guides layer
○ Nest layer
○ Mixed layer   Color
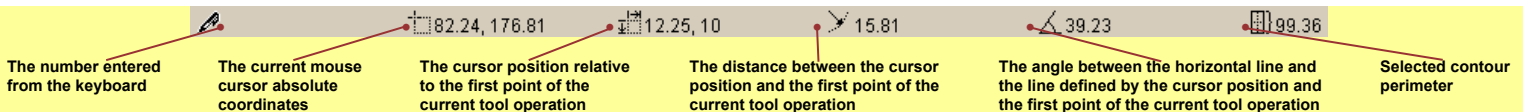
Layer type dialog

You can segment (cut in two) any part. Any segment can be cut again and you can work with any resulting segment as with an individual part. The ✂ segmentation tool uses Seam list. The selected seam allowances will be added to both sides of the cut.

To segment a part:	**Segmentation list : select a segment ▶ Drawing space : a palette : ✂Segment this part ▶**
	Seam list : select a seam ▶ Drawing space : click starting point of the segmentation line ▶
	Drawing space : click ending point of the segmentation line
To delete a segment:	**Segmentation list : select a segment ▶ Toolbar : 📝Delete the selected layer / segment**

You can also add predefined allowances (edges from your edge bin) to any edge of the part.

To add an allowance to the part:	**Edge bin : select an allowance ▶ Drawing space :**
	move your mouse cursor to the desired graphic element and click on it to place an allowance

The status bar shows the current position, direction-distance and keyboard editing information.

✏	⊡82.24, 176.81	⊤12.25, 10	⟩15.81	∠39.23	🏠99.36
The number entered from the keyboard	The current mouse cursor absolute coordinates	The cursor position relative to the first point of the current tool operation	The distance between the cursor position and the first point of the current tool operation	The angle between the horizontal line and the line defined by the cursor position and the first point of the current tool operation	Selected contour perimeter

You can organize the drawing tools in your palette(s), and you can have as many palettes as you want.

To customize your palette:	**Toolbar : 🔲Customize tools button should be pressed**
To add a drawing tool:	**Drawing tool list : drag-and-drop an item into Drawing space : a palette**
To create a new palette:	**Drawing tool list : drag-and-drop an item into an empty place of the Drawing space**
To move a palette:	**Editor area : a palette : drag the palette caption**
To delete a drawing tool from a palette:	**Editor area : a palette : drag-and-drop the tool item outside the Drawing space**
	(the palette will be automatically deleted when all its tools are deleted)
To save the part to library:	**Custom part name : type a name ▶ [Save to Custom as] Save to custom as**
To use the saved part:	**Browser : My Libraries : Edges ▶ add the saved part (located in custom library) to a part bin**
To enter part price:	**Price if order : check box : set check ▶ Price if order : type the part price**

Parts

Part Editor

Tools for navigating the drawing space and the viewing area:

⊞	Toggle grid	Turns on and off the grid.		⊹	Set an origin point	Sets the position of the origin point.
⊞	Grid settings	Sets the grid size.		⌐	Move the drawing to the origin point	Sets the viewing area at the origin point position (0,0).
⊹	Toggle snap	Turns on and off cursor snapping to segment ends and grid crossings.		▣	Fit to view	Adjusts the size of the viewing area to the size of part.
✕	Toggle snap to line intersection	Turns on and off cursor snapping to line intersections.		🔍	Zoom In	Magnifies the content of the viewing area.
⚲	Toggle snap to line	Turns on and off cursor snapping to line.		🔍	Zoom Out	Reduces the content of the viewing area.
⚲	Toggle snap to line center	Turns on and off cursor snapping to element center.		⬚	Frame zoom	Magnifies the selection to fill all of the viewing area.
⇥	Change the blank orientation	Changes axes orientation relatively to the viewing area.		✋	Scroll	Scrolls the content of the viewing area.
⬚	Contour / element allowance	Turns on and off adding allowance to element by single click.		↔	Autoscroll	Pans the viewing area across the drawing when your cursor comes close to the edge of the viewing area.

Tools for adding, changing or removing items from the sketch:

⊘	Select by element	Groups part elements one-by-one.		▤	Copy	Creates a duplicate of an element / group.
▨	Select a group	Groups part elements within a rectangle.		↻	Rotate	Moves an element or a group of elements around the specified point.
✗	Deselect all	Cancels the current selection.		⊡	Move all elements on a layer	Moves all elements on a layer.
⬭	Delete	Reduces the content of the viewing area.		✂	Segment this part	Segments a part into two pieces.
✛	Move	Moves an element / group.		⌐	Chamfer a corner	Rounds about a corner by line.
⧊	Mirror	Reflects selected elements.		⌐	Make a fillet	Rounds about a corner by arc.
⊡	Scale	Scales selected elements vertically.		⊣	Extend a line	Extends a line to first intersection point.
⟋	Direction/Distance	Turns on / off polar coordinates data input.		⊤	Trim a line	Trims a line to first intersection point.
⟋	Offset an element	Offsets a selected element.		⟋	Split	Splits an element into two elements.

Tools for adding items to the sketch:

⟋	Line	Adds a line.		⬚	Rectangle	Adds a rectangle.
Ⴖ	Line-by-line	Adds chain-link lines.		○	3-point circle	Adds a circle by 3 points on it.
➹	Move selected point	Moves selected point.		⊙	Circle	Adds a circle by its center and radius.
⟋				⬭	Oval	Adds an oval by its bounding rect.
⟋	Bend by line	Adds bending information.		⌣	3-point arc	Adds a arc by 3 points on it.

To make the tools available: ==Toolbar : 🔲Customize tools button is depressed==
To activate a tool: ==Drawing space : the tool icon : left click ► Drawing space : select an element/a group or specify points==
To deactivate a tool: ==Right click anywhere on your screen or activate another tool==
To select an element/group: ==Drawing space : an element : left click==
To define a group: ==Drawing space : a bin : Select a group ► Drawing space : specify two opposite corners of a rectangle==

You can use a mouse or a keyboard to move your cursor. Using the keyboard, you can specify the exact location of the cursor without snapping.

To use snapping: ==⊞Toggle grid or ✕⊹⚲⚲ Toggle snap tools buttons should be pressed==
To specify a point: ==Drawing space : left click==

To specify a point using keyboard: ==Type the X coordinate value ► "X" key and / or Type the Y coordinate value ► "Y" key ► Enter key==
For example, the "10","X","5","Y" keyboard sequence will place the cursor at the (10,5) point.
To append techno information: ==Toolbar : 🔲 Append technological information ► Technological parameters : edit==
To shows 3D part view: ==Toolbar : ⚪Solid part view==

|						
✎	Marking tool	Turns on and off marking mode.		◇	Change order	Change part contours execution order.
✎	Guides tool	Turns on and off construction mode.		◇	Change start point	Change start point of the part outline.
✎	Nesting tool	Turns on and off nesting mode.		◇	Change direction	Change part contour path tracing order.
↶	Undo	Undoes last action.				

To combine parts to cut them together: ==Layers list : select a cut layer (left click) ► Drawing space : draw parts to be cut ► Drawing space : a palette : Switch on / off nesting mode ► Drawing space : draw bounding part to be nest==

You can also use the arrow keys with typed-in distances and directions for greater precision.

To specify a point relatively to the current cursor position: ==Type distance ► press any arrow key to specify direction ► repeat the operation for chain offsets ► Enter key==

➹	Hold	Stores the next selected location point without selecting it for relative positioning.		▭	Measure a distance	Find the distance between any two points.

Every time you specify a point, you can use ➹**Hold** tool for exact relative positioning. The Hold tool can be used in conjunction with any other tool.

To specify a point relatively to the specified position: ==Drawing space : a palette : ➹ Hold ► Drawing space : specify a point (left click or using keyboard) ► type distance ► press any arrow key to specify direction ► repeat for chain offsets ► Enter key==

To find the distance between any two points: ==Drawing space : ▭Measure a distance ► Drawing space : select the first point (left click) ► Drawing space : select the second point (left click)==

Preferences

Browse ► My Libraries ► Preferences ► General

Your library preferences page allows you to set up your **PractiCAM** interface: Data Editor options, system measure units, dictionaries for names by categories and export settings.

To create a special instruction:	**Toolbar : Create a new special instruction ►** **Special instructions list :** **type special instruction**
To delete the selected special instruction:	**Special instructions list :** **select a special instruction ►** **Toolbar : Delete the selected line**
To add a mark group:	**Toolbar : Create a new mark group ►** **Mark groups list : type mark group name**
To delete the selected mark group:	**Mark groups list : select a mark group ►** **Toolbar : Delete the selected line**
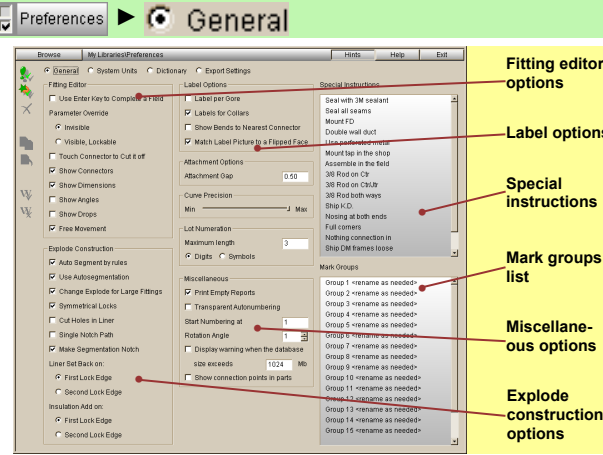
Screenshot labels:
- Fitting editor options
- Label options
- Special instructions
- Mark groups list
- Miscellaneous options
- Explode construction options

System Units

Browse ► My Libraries ► Preferences ► System Units

|	
To select imperial system:	**Workspace : Standard**
To select metric system:	**Workspace : Metric**
To set up measure units:	**Workspace : select units for length, weight, time and currency ►** **Workspace : Exchange Rate :** **type value for you currency**
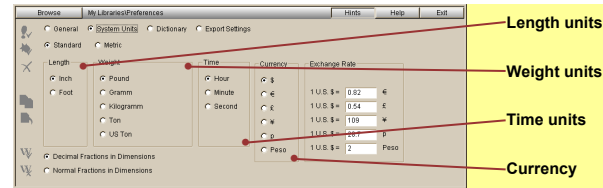
Screenshot labels:
- Length units
- Weight units
- Time units
- Currency

Names Dictionaries

Browse ► My Libraries ► Preferences ► Dictionary

You can select your interface language and specify your own item and property names to make **PractiCAM** interface more convenient for you.

To change the system language:	**Workspace : Languages list : select a language ►** **reload PractiCAM**
To add a dictionary entry:	**Workspace : Categories list : select a category ►** **Toolbar : Create a new dictionary entry**
To delete a dictionary entry:	**Names list : entry : select (left click) ►** **Toolbar : Delete the selected dictionary entry**
To edit a dictionary entry:	**Names list : name : (left click) and type value ►** **Names list : representation name :** **select (left click) and type value**
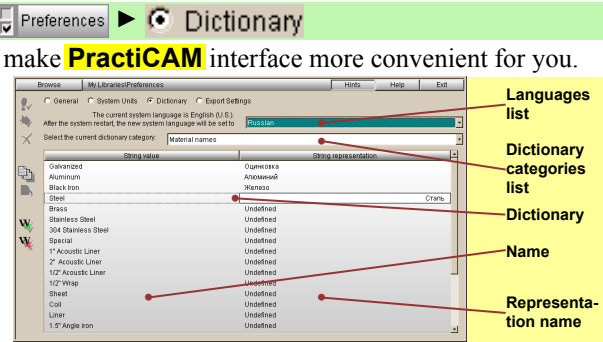
Screenshot labels:
- Languages list
- Dictionary categories list
- Dictionary
- Name
- Representation name

Export Settings

Browse ► My Libraries ► Preferences ► Export Settings

|	
To set up export settings:	**Destination folder : select ► File format : select**

Work stages

Takeoff is a set of things you make.

Takeoff Input

Here you can create and modify all your products (please refer to the Fittings, Parts, and Non-duct Items), and change the takeoff identity and the takeoff options.

To enter the drawing name:	**Workspace : Drawing name : type the name**
To enter the lot number of the takeoff:	**Workspace : Lot number : type the number**
To set the item types to show in Takeoff list:	**Workspace : Takeoff summary and view filter :** **check or uncheck the item types by name**
To turn auto tracking on or off:	**Workspace : Options :** **check or uncheck Tracking box**

If tracking is on, the next fitting inlet will be adjusted to the previous fitting outlet.

To turn auto piece numbering on or off:	**Workspace : Options : check or uncheck** **Automatic piece numbering box**
To show / hide the takeoff history and the takeoff note:	**Workspace : Options : check or uncheck** **Show History box**
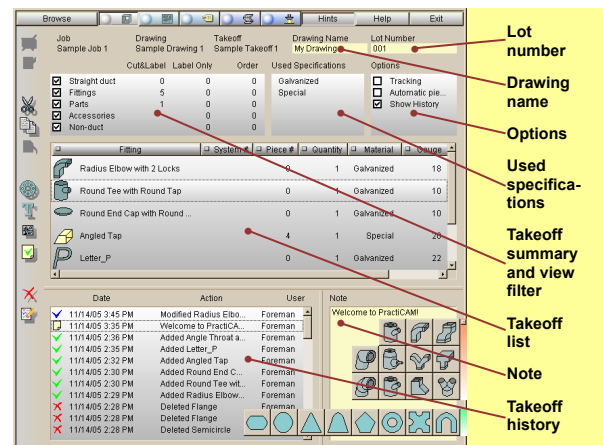
Screenshot labels:
- Lot number
- Drawing name
- Options
- Used specifications
- Takeoff summary and view filter
- Takeoff list
- Note
- Takeoff history

Takeoff list contains items you have created or copied to the current takeoff with its parameters (system number, piece number, etc.).

To edit a takeoff item:	**Workspace : Takeoff list : left double click on that item**
To select a group of items:	**Workspace : Takeoff list : Ctrl key + left click or** **Workspace : Takeoff list : Shift key + left mouse button pressed + mouse move**
To delete takeoff item(s):	**Workspace : Takeoff list : select an item or a group of items ► Toolbar : Delete**

Takeoff history contains every operator's action pertaining to this takeoff (fitting creation, modification etc.) and custom user notes.

To add a custom note:	**Workspace : Note : type the note ► Toolbar : Insert a new custom note**
To edit a custom note:	**Workspace : Takeoff history : select a note ► Workspace : Note : type the note**
To clear the history log:	**Toolbar : Clear history log ► Confirmation dialog : Yes**
To delete item(s) from the history log:	**Workspace : Takeoff history : select an item or a group of items ►** **Toolbar : Delete the selected fitting, part, custom object or a note**

Left margin labels: **Preferences** / **Work stages**

Automatic Nest

Nest

Here you can prepare your products for manufacturing.

To nest your work automatically:	**Set nest options ► Toolbar : ▣Automatic nest**
To display all nest options:	**Toolbar : ▣Toggle waste reduction on**
To display the nest layout:	**Toolbar : ▣Toggle waste reduction off**
To set desired nest quality:	**Workspace : Quality : drag the slider (low quality but faster - high quality but slower)**
To set cut order (by gauge):	**Workspace : Cut order list : drag any gauge item within the list**
To cut faces inside out:	**Workspace : check Cut Inside Out box**
To move blanks from one gauge to another:	**Workspace : Variable gauge table : check Yes / No cells**
To allow flipping:	**Workspace : check or uncheck Allow flipping**
To turn the torch path optimization on or off:	**Workspace : check or uncheck Optimize Torch Path**
To use scrap:	**Workspace : Scrap options : type minimal width of scrap and check sides to get scrap**
To set the final torch position:	**Workspace : Move To : select the desired torch position**

Once your work is automatically prepared for manufacturing, you can edit the nest layout manually using special tools.

To move a part within a sheet:	**Toolbar : ✛Move ► Workspace : Nest preview : drag a part within Nest preview**
To flip a part:	**Toolbar : ◣Flip ► Workspace : Nest preview : click one or more parts to flip**
To discard a part from the nest layout:	**Toolbar : ✛Move ► Workspace : Nest preview : drag-and-drop a part to Temporary storage**
To rotate a part:	**Toolbar : ↻Rotate ► Workspace : Nest : click the center point of rotation ► Workspace : Nest preview : drag any point of the part or Workspace : Rotation Angle : click and type value ► Enter key**
To move a part to another sheet:	**Toolbar : ✛Move ► Workspace : Nest preview : drag-and-drop the part to Temporary storage ► display another sheet ► Workspace : Temporary storage : drag-and-drop the part to Nest preview**
To add a part to your work without re-nesting with following manual nest:	**My library : My materials : create a temporary gauge (no stocks with that gauge) ► My library : My work : a takeoff : select ► add and edit a new part ► Part editor : Part properties : Gauge property : select temporary gauge**

If there is no material stock for that temporary gauge, your part will not be nested automatically, and you will see it in Temporary storage.

To add a new part to your nest:	**Nest page : Temporary storage : drag-and-drop the part to a sheet with the same material and other gauge ► Manual Nest Editor : nest the part manually**

Manual nest

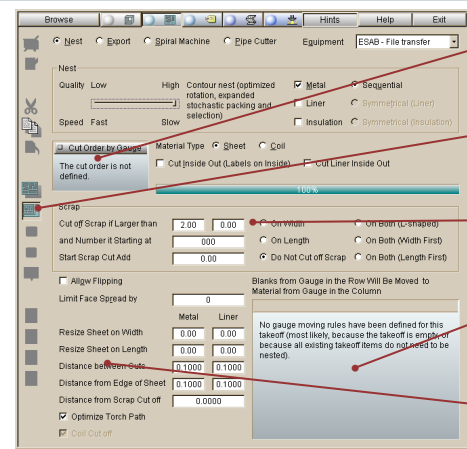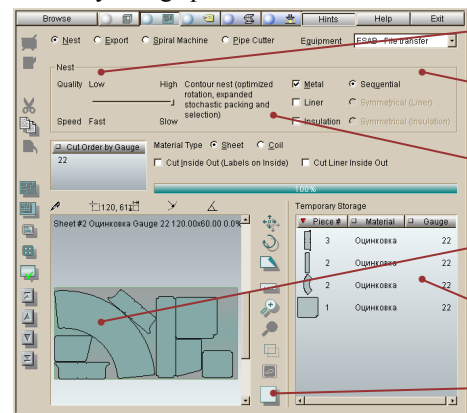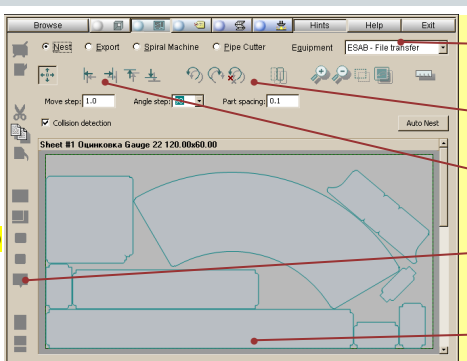|	
To switch from automatic nest preview to Manual nest editor:	**Nest ► Nest preview toolbar : Advanced manual nest**
To switch to automatic nest:	**Manual Nest Editor : ▣Automatic nest**
To set rotation angle step:	**Angle step : type value**
To set movement step:	**Move step : type value**
To set spacing between parts:	**Part spacing : type value**
Switch collision checking on/off:	**Collision detection : check/uncheck**
To move part:	**Manual Nest Editor : Nest diagram : drag-and-drop**
To call off collision checking:	**Keyboard : Space : keep pressed**

⊢	Ctrl + ←	Align part left.	↶	CCW part rotation.
⊣	Ctrl + →	Align part right.	↷	CW part rotation.
⊤	Ctrl + ↑	Align part up.	↶✖	Cancel rotation.
⊥	Ctrl + ↓	Align part down.	✛	Move and rotate.

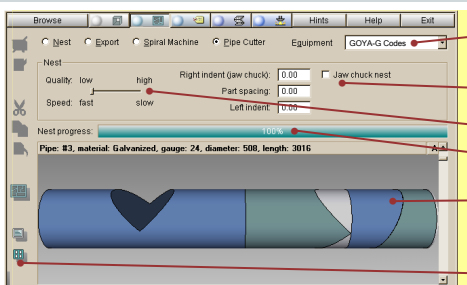|			
🖼	Frame zoom.	📏	Measure tool.
⬚	Zoom rect.	▯	Flip part.

Piping nest

Pipe Cutter

PractiCAM provides two libraries containing fittings made of pipes –
BaltVent Single Wall and BaltVent Double Wall. To optimize material the pipe nest procedure is used.

To nest pipe fittings:	**Pipe nest options : set ► Toolbar : ▣Automatic nest**
To use pipe place in jaw chuck:	**Jaw chuck nest : check mark**

Note: This procedure is applicable for the fittings of BaltVent libraries only.

Callout labels (screenshots):
- Cut order list
- Toggle waste reduction
- Scrap options
- Variable gauge table
- Nest optimization options
- Quality
- Nest options
- Material type
- Nest preview
- Temporary storage
- Manual nest
- Equipment list
- Manual nest options
- Quality
- Nest diagram navigation tools
- Nest diagram
- Equipment list
- Pipe nest options
- Quality
- Progress bar
- Nest diagram
- Nest diagram navigation tools

Labels

Here you can create labels for your products.

|	
To print labels:	**Specify label set ► select a graphic template ► select a printer ► Toolbar : Print selected or Toolbar : Print current or Toolbar : Print all**
To select a printer:	**Workspace : Printer : click drop down button and select an item from appeared drop down list**
To specify label set to print:	**Workspace : Product summary and / or Workspace : Select and Sort options : Product types : check or uncheck product types by name ► Workspace : Select and Sort options : check or uncheck label types and select sheet diapason**
To display labels sorted:	**Workspace : Select and Sort options : select a sort option (Sorted by nest, Sorted by cut or Sorted) ► set sort properties (if you select Sorted)**
To set sort properties:	**Workspace : All properties to sort labels by : drag-and-drop an item to Selected properties to sort labels by ► set sorting property priority ► set sort order**
To set sorting property priority:	**Workspace : Selected properties to sort labels by ► drag an item within Selected properties**
To set sort order:	**Workspace : Selected properties to sort labels by : click on increment or decrement sign**
To select a graphic template:	**Workspace : Graphic template list : click drop button and select an item from appeared drop-down list**
To preview a label:	**Specify label set ► select a graphic template ► Workspace : Labels list : select a label or Toolbar : Go to the first label or Toolbar : Go to previous label or Toolbar : Go to next label or Toolbar : Go to the last label**
To toggle full screen mode:	**Toolbar : Full screen toggle**
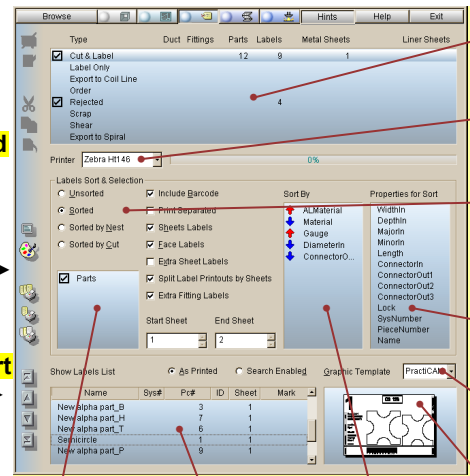
Reports

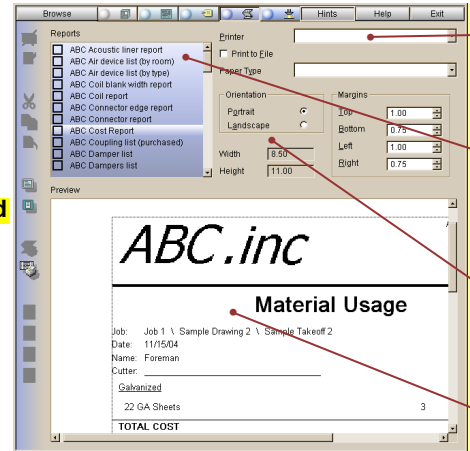|	
To print a selected report:	**Workspace : Reports list : select a report ► select a printer ► set paper options ► Toolbar : Print current**
To print all select reports:	**Workspace : Reports list : check or uncheck repots by name ► select a printer ► set paper options ► Toolbar : Print all**
To select a printer:	**Workspace : Printer : click drop down button and select an item from appeared drop down list**
To set paper option:	**Workspace : Paper settings : set paper orientation, size and margins**
To print report(s) to file:	**Workspace : check Print to file option ► File selection dialog : select a file ► OK**
To toggle full screen mode:	**Toolbar : Full screen toggle**
To preview a report:	**Workspace : Reports list : select a report or Toolbar : Go to the first report or Toolbar : Go to previous report or Toolbar : Go to next report or Toolbar : Go to the last report**

Manufacturing

Here you can fabricate your products by using various NC-controlled equipment.

To send your cut data to an equipment:	**Workspace : Nest or Export or Spiral Machine ► select an equipment ► specify data request ► specify manufacturing options ► Toolbar : Transmit data**
To save cut or export data to a file:	**Workspace : Nest or Export ► select an equipment ► specify data request ► specify manufacturing options ► Toolbar : Save data to file**
To store your cut data in separate files for each sheet:	**Workspace : check Split into sheets box**
To select equipment:	**Workspace : Equipment list : click drop down button and select an item from appeared drop down list**

Equipment list contains all installed cutters, coil lines or spiral machine. To install and set up your equipment, please refer to My Equipment chapter.
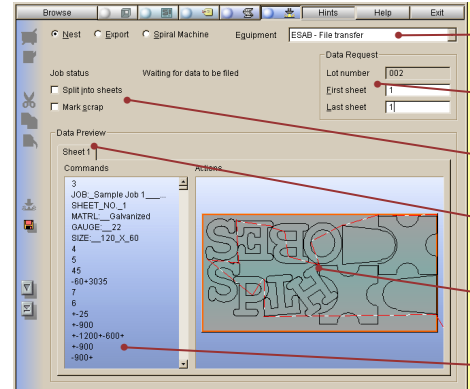
To specify data request:	**Workspace : Data request : type first and / or last sheet to send to cutter or first and / or last entry (fitting) to send to coil line**

Before sending your cut data to equipment you can preview that data for every sheet.

To preview cut data:	**Workspace : Data preview : Tab control : select a sheet ► Toolbar : Trace the selected sheet or Toolbar : Next torch step**

Labels screen callouts: Product summary, Printers list, Select and sort options, All properties to sort labels by, Graphic template list, Label preview, Selected properties to sort labels by, Labels list, Product types

Reports screen callouts: Printers list, Reports list, Paper settings, Report preview

Manufacturing screen callouts: Equipment list, Data request, Manufacturing options, Tab control, Cut commands preview, Data preview

Materials

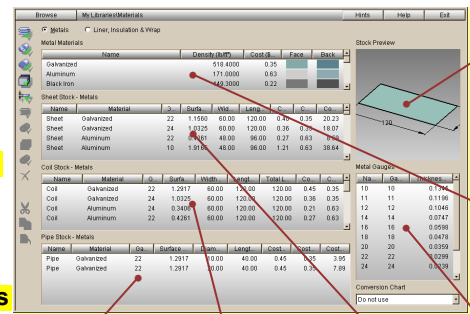|	
To edit your metal materials:	**Workspace** : **Metals**
To edit your liner and wrap materials:	**Workspace** : **Liner, Insulation & Wrap**
To add a metal material:	**Toolbar** : **Create a new metal material** ► **Metal materials table** : **edit the material properties**
To add a metal gauge:	**Toolbar** : **Create a new metal gauge** ► **Metal gauges table** : **edit the gauge properties**
To add a new sheet metal stock:	**Toolbar** : **Create a new sheet metal stock** ► **Metal sheet stocks table** : **edit the stock properties**
To add a new coil metal stock:	**Toolbar** : **Create a new coil metal stock** ► **Metal coil stocks table** : **edit the stock properties**
To add a new pipe metal stock:	**Toolbar** : **Create a new pipe metal stock** ► **Metal sheet stocks table** : **edit the stock properties**
To add a liner / insulation material:	**Toolbar** : **Create a new liner / insulation material** ► **Liner / Insulation materials table** : **edit the material properties**
To add a wrap material:	**Toolbar** : **Create a new wrap material** ► **Wrap materials table** : **edit the material properties**
To add a new sheet liner / insulation stock:	**Toolbar** : **Create a new sheet liner / insulation stock** ► **Liner / insulation sheet stocks table** : **edit the stock properties**
To add a new coil liner / insulation stock:	**Toolbar** : **Create a new coil liner / insulation stock** ► **Liner / insulation coil stocks table** : **edit the stock properties**
To delete the selected material:	**A materials / stocks table** : **select an item** ► **Toolbar** : **Delete the selected line**
To edit stock dimensions:	**A materials / stocks table** : **select an item** ► **Stock preview** : **select a dimension (left click)** ► **type new value** ► **Enter key**
To sort material / gages / stock:	**A materials / gauges / stocks table** : **column headers** : **left click until ▲ or ▼ mark appeared**
To show / hide a table column:	**A table header** : **right click** ► **check / uncheck the column**

Note: When your materials, gauges, stocks are sorted by names, they will list in that order everywhere in **PractiCAM**.