



Steel Projects

**WinSTEEL
V6.50.7.xx**

Drawing guide

July 2011

The information contained in this document represents the current view of Steel Projects on the issues discussed as of the date of publication. Because Steel Projects must respond to changing market conditions, It should not be interpreted to be a commitment on the part of Steel Projects, and Steel Projects cannot guarantee the accuracy of any information presented after the date of publication.

This document is for informational purposes only. STEEL PROJECTS MAKES NO WARRANTIES, EXPRESS, IMPLIED OR STATUTORY, AS TO THE INFORMATION IN THIS DOCUMENT.

Complying with all applicable copyright laws is the responsibility of the user. Without limiting the rights under copyright, no part of this document may be reproduced, stored in or introduced into a retrieval system, or transmitted in any form or by any means (electronic, mechanical, photocopying, recording or otherwise), or for any purpose, without the express written permission of Steel Projects.

Steel Projects may have patents, patent applications, trademarks, copyrights, or other intellectual property rights covering subject matter in this document. Except as may have been expressly provided in any written licence agreement from Steel Projects, the furnishing of this document does not give you any licence to these patents, trademarks, copyrights or intellectual property. All supplies and licence agreements are subject to Steel Projects standard terms and conditions.

The names of actual companies and products mentioned herein may be the trademarks of their respective owners.

© Copyright 2011 Steel Projects

TABLE OF CONTENTS

1.	General overview	4
2.	Toolbars.....	5
2.1	File.....	5
2.2	Toolings.....	5
2.3	Copy.....	6
2.4	Drawing.....	6
3.	Boxes	8
3.1	Legend box.....	8
3.2	Layers	8
3.3	Information.....	9
3.4	Parameters	9
4.	Getting started with the drawing module	10
4.1	General use	10
4.2	Drilling.....	10
4.3	Cutting	15
4.3.1	Profiles.....	15
4.3.2	Plates	15
4.4	FICEP Macros.....	22
4.5	Stamping	24
4.6	Bending lines	24
4.7	Scribing lines.....	24
5.	Configuration.....	25
5.1	Drawing options	25

The drawing module in WinSTEEL allows the user to create and/or edit the parts that are required to be processed in the workshop.

1. General overview

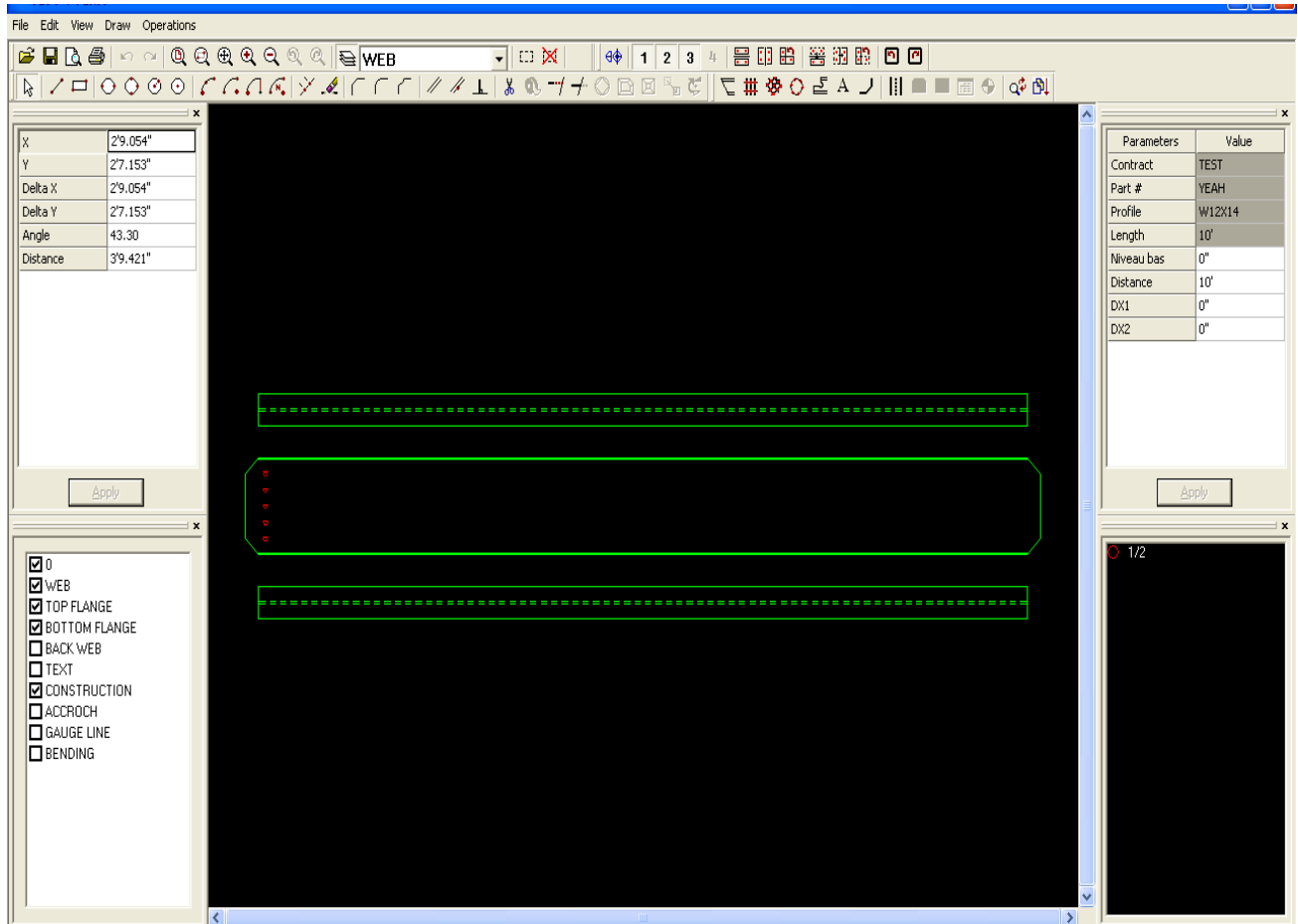


Fig.1 - Main window

The main window is divided into 6 areas; drawing window, toolbars, legend box, layers box, parameters and information.

Note*** these windows can be arranged as the user desires. This is done by dragging and dropping the box to the preferred location.

In order to zoom in and out, just use the mouse wheel. Press and hold the mouse wheel to move the part that is selected.

2. Toolbars

For each function, it is shown if it can be used either for plates or profiles.

2.1 File



Fig.2 - File toolbar

Icon	Prf.	Pl.	Description
	✓	✓	Open a part from the part list
	✓	✓	Save the current part
	✓	✓	Print preview
	✓	✓	Print the workshop document
	✓	✓	Undo / Redo You can undo / redo as many times as you want
	✓	✓	Zoom all Best zoom to display the entire part
	✓	✓	Zoom Window
	✓	✓	Move You can also move the part by clicking the mouse wheel.
	✓	✓	Zoom In / Out Can be done with the mouse wheel.
	✓	✓	Display / Hide layers box
WEB	✓	✓	Select active layer

2.2 Toolings

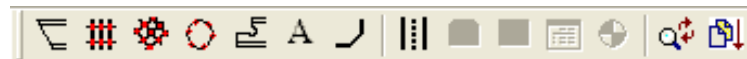


Fig.3 – Toolings toolbar

Icon	Prf.	Pl.	Description
	✓		Mitre cut
	✓	✓	Drilling input
	✓	✓	Inclined drilling input
	✓	✓	Circular drilling input
	✓		Coping input
	✓	✓	Stamping/Marking input
		✓	Bending lines input
	✓	✓	Lead-Cut direction changing
	✓	✓	Lead-Cut sequence changing

2.3 Copy



Fig.4 – Copy toolbar














Icon	Prf.	Pl.	Description
	✓	✓	Switching from American to European view
	✓		Select the sides affected by a symmetry
	✓	✓	Copy holes using a symmetry
	✓	✓	Move holes using a symmetry
	✓		Converts a beam/column with a mitre cut in the flanges into a RHS profile.

2.4 Drawing



Fig.5 – Drawing toolbar

Icon	Prf.	Pl.	Description
	✓	✓	Selection
		✓	Line
		✓	Rectangle
		✓	Circle with 2 points
		✓	Circle with 3 points
		✓	Circle with center and radius
		✓	Circle with center and pre-defined diameter
		✓	Arc 3 points
		✓	Arc center and 2 points
		✓	Arc with 2 points (begin, end) and radius
		✓	Arc with center, start and radius
	✓	✓	Measure
	✓	✓	Eraser
		✓	Straight notch
		✓	Round notch (Convex)
		✓	Round notch (Concave)
	✓	✓	Offset (draw a line to a pre-defined distance)
	✓	✓	Parallel (draw a parallel line to the selected line)
		✓	Cut (a segment)
		✓	Closes the non closed contours
		✓	Extend lines

			Trim lines
			Polygonize circles
			Resize a contour
			Homothetic
			Translation
			Rotation

3. Boxes

3.1 Legend box



Fig.6 – Legend box

Indicates the legend for the holes (diameter and properties)

3.2 Layers

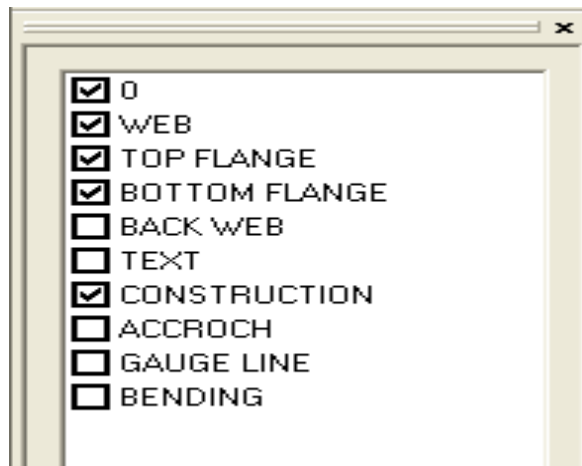


Fig.7 – Layers box

It is possible to display or hide any layer by checking the corresponding checkbox.

3.3 Information

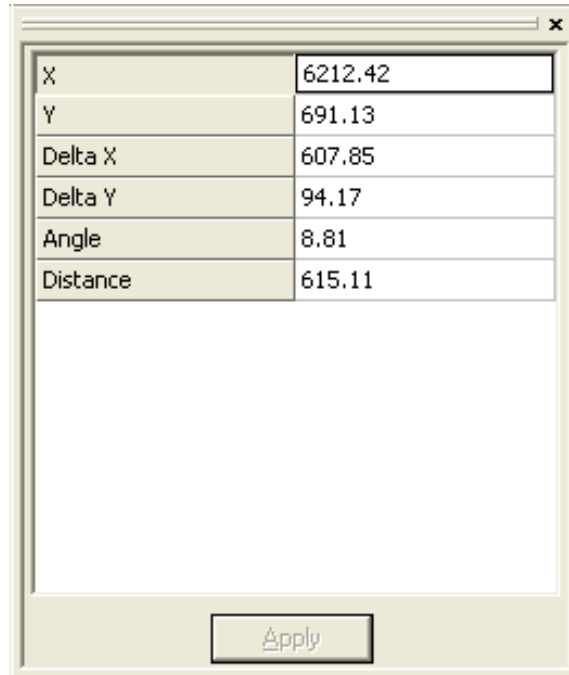


Fig.8 – Info box

This box shows the various data such as coordinates, distance, etc.

3.4 Parameters

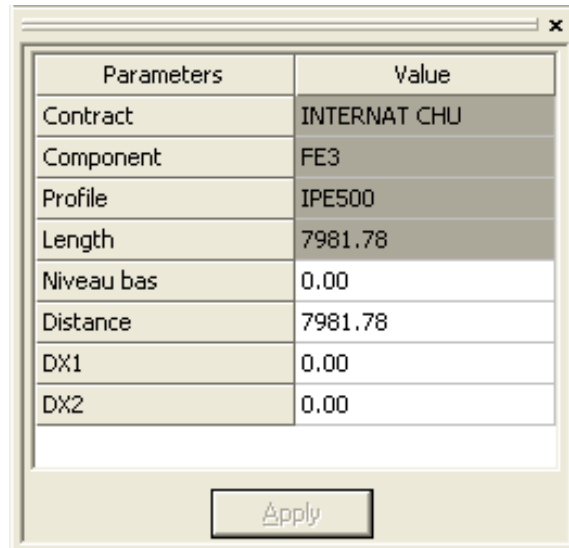


Fig.9 – Parameters box


Displays the options needed for some tools

4. Getting started with the drawing module

4.1 General use

Except in some cases as shown below, when a tool is selected all the parameters that require an input will appear in the *Properties* window. Then, in order to confirm the input, press the *Enter Key* twice or click on the *Apply* button.

4.2 Drilling

By selecting the drilling tool  (or pressing [F6]), this window will appear:

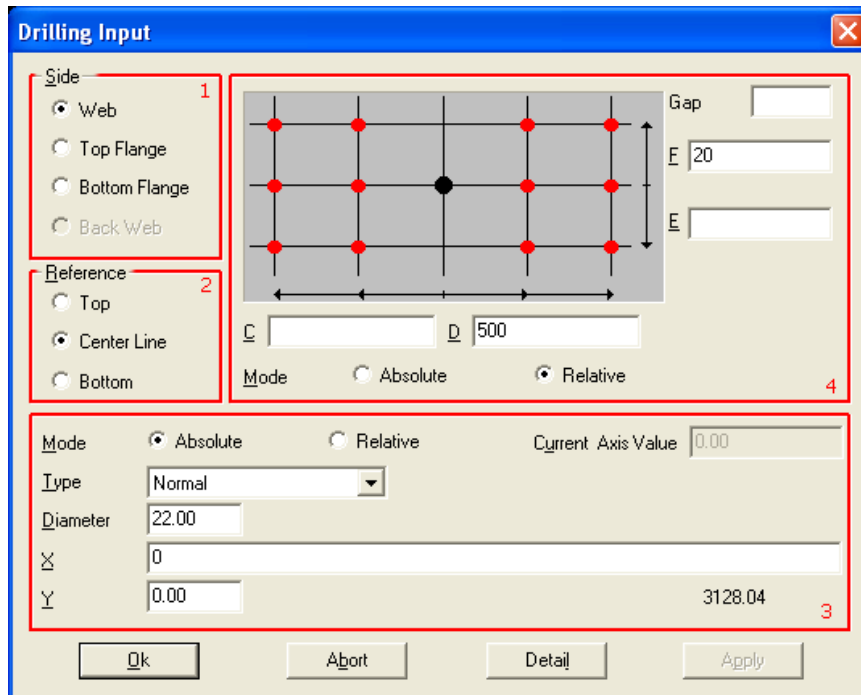


Fig.10 – Drilling Box

In WinSTEEL, the perforations are inserted as a matrix of holes: a complete pattern of holes can be inserted at once.

In the first area (Side), select the side that requires holes to be drilled (if the profile is a plate, the side is automatically set as *Web*). Then, in the second area (Reference), select the desired reference for the drilling matrix. The reference is the vertical reference (Y axis) of the origin in the drilling matrix. If *Top* is selected, then the origin is placed at the top and the Y coordinates of the holes will be placed in a downward direction. If *Centre Line* is selected, holes can be placed above or below the origin. Finally if *Bottom* is selected, Y coordinates of the holes will be placed above the origin.

After selecting the Y reference, the hole parameters and placing the origin of the matrix is now defined. In the *Type* list, the type of hole to be created is specified here (drill, punch, slot, countersink, etc.). If *Normal* selected, WinCN / WinNEST will select the appropriate way to make the hole, regarding their parameters. If *Drill* is selected, WinCN / WinNEST will automatically drill the hole even if this hole should have been punched (ex. TIPOB).

When creating drilled or tapped holes it is possible to input a depth to create blind holes. The legend will display them as filled circles.

In the X and Y fields, the coordinates of the origin is inputted here. This is represented by the black point in the area above (4).

Now the coordinates of the holes are placed in the fields C, D, E and F; C and D represent the X axis and E and F stand for the Y axis.

In this example, here is the resulting hole;

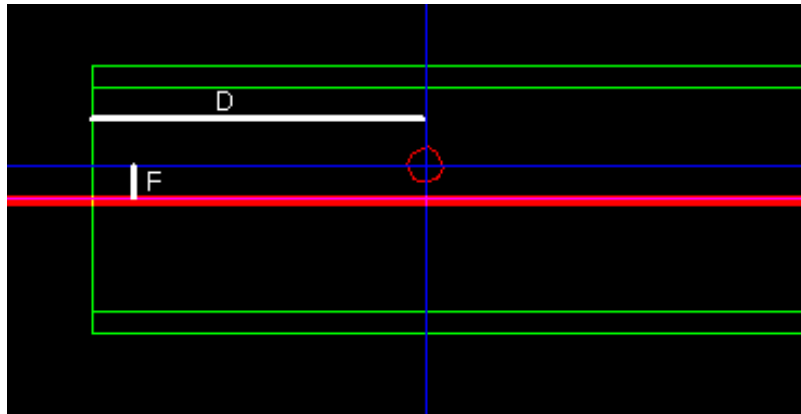


Fig.11 – Drill Example

The red line indicates the horizontal axis of the origin.

If the reference is changed to *Top* and the parameters are as below, the same result is obtained.

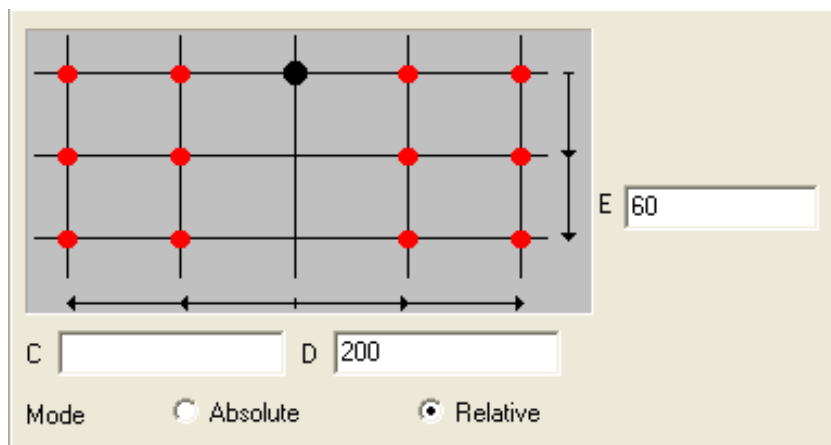


Fig.12 – Drill Box 2, reference Top

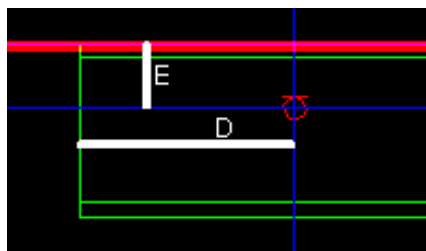


Fig.13 – Drill Example 2, reference Top

When absolute mode is selected, all coordinates are in reference to the origin. If relative mode is selected, coordinates are from the last inputted coordinate. This allows the user to input a series of holes at once.

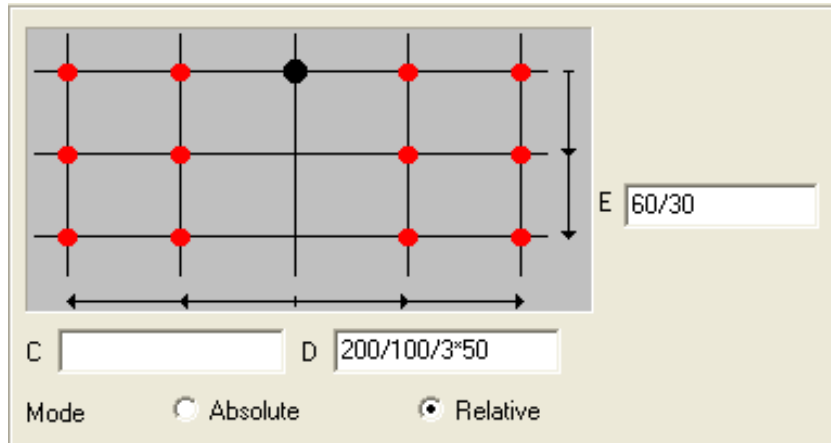


Fig.14 – Drill Box with many holes

In this case, the resulting 10 holes will look like this;

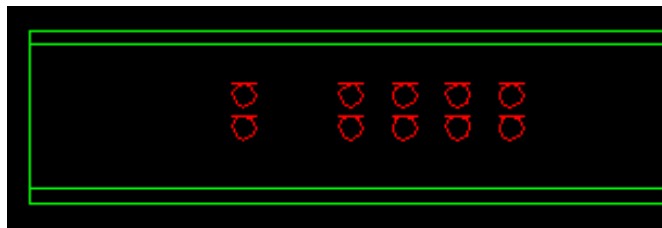


Fig.15 – Drill example, 10 holes

After creating a hole, the properties can be changed by right clicking on it and selecting properties, or by double clicking on it.

While editing the matrix for the holes, it is possible to select certain holes in the matrix to be removed. This is done by clicking on the *Detail* button. The following is an example.

Fill the Drill parameters as shown

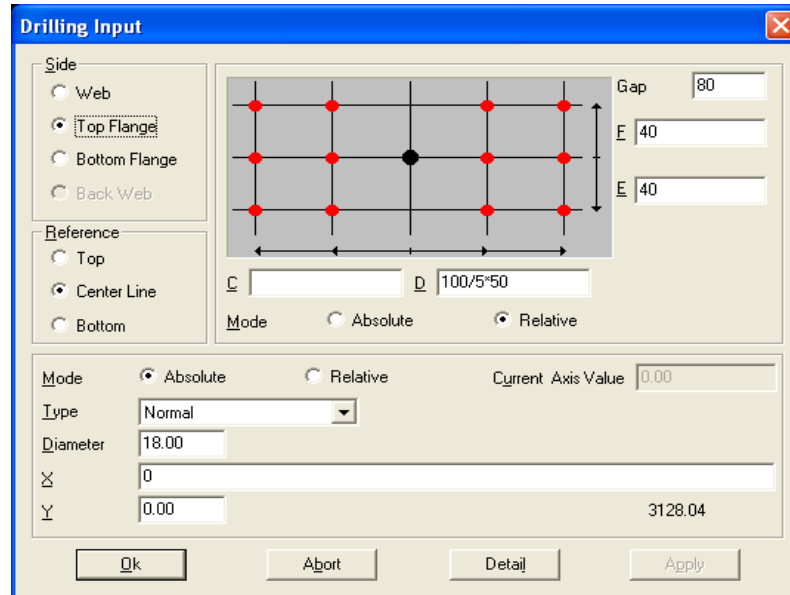


Fig.15-1 – Example of advanced drill pattern

By clicking OK, the following pattern is obtained:

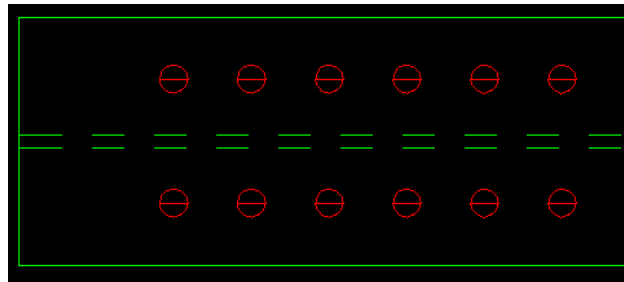


Fig.15-2 – Regular drill pattern

Double click on a hole to edit the properties of the group. Then click on the *Detail* button and uncheck the boxes representing the holes to be deleted.

Fig.15-3 – Modifying the drilling pattern

After clicking OK, the following figure is the result;

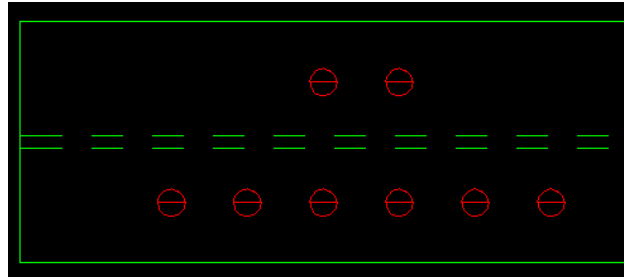



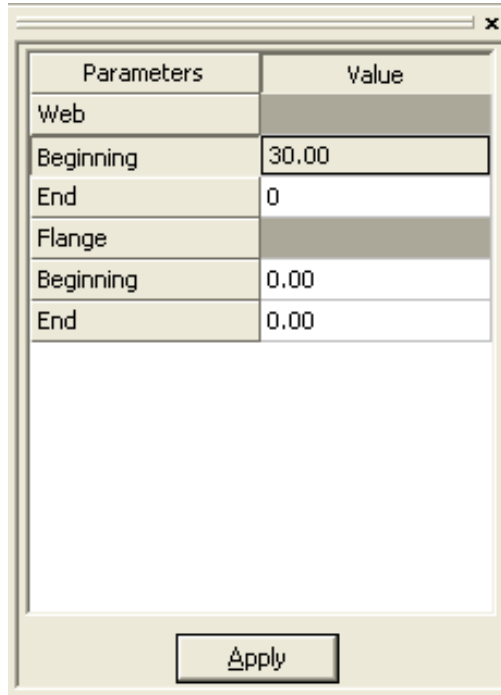
Fig.15-4 – Advanced drilling pattern

Remark: Note that the pattern can be modified as many times as desired simply by opening the *Drilling Group Detail* window and changing the pattern.

4.3 Cutting

4.3.1 Profiles

Making a cut in WinSTEEL is very easy: select the cutting tool  (or press [F5]). Then, in the *parameters box*, fill the fields as required:



Parameters	Value
Web	
Beginning	30.00
End	0
Flange	
Beginning	0.00
End	0.00

Apply

Fig.16 – Cut Box


In this case, there will be a cut in the Web, on the left hand side (*beginning*), with the angle of 30°. It is possible to do the same on the flanges.

To remove a cut in a profile, simply enter the value 0 in the corresponding field.

4.3.2 Plates

Cutting a plate is slightly different compared to a bar profile. The contours of the plates are modified instead of adding a cut/mitre. The tools required to do this are in the drawing toolbar.

4.3.2.1 Notches

After having selected a notch tool,  fill the parameters in the parameter area (cut length, radius, etc.) and approach the mouse pointer to the angle to be modified. In the case of straight notches, the value *Cut1* corresponds to the closest line to the pointer.

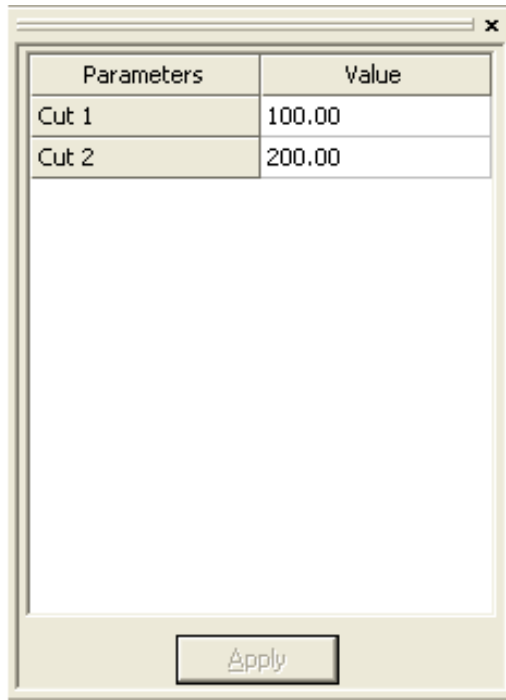


Fig.17 – Notch Box

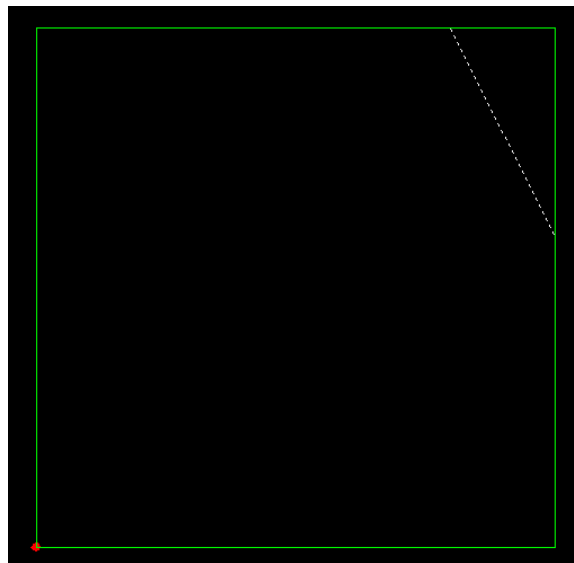


Fig.18 – Notch before clicking

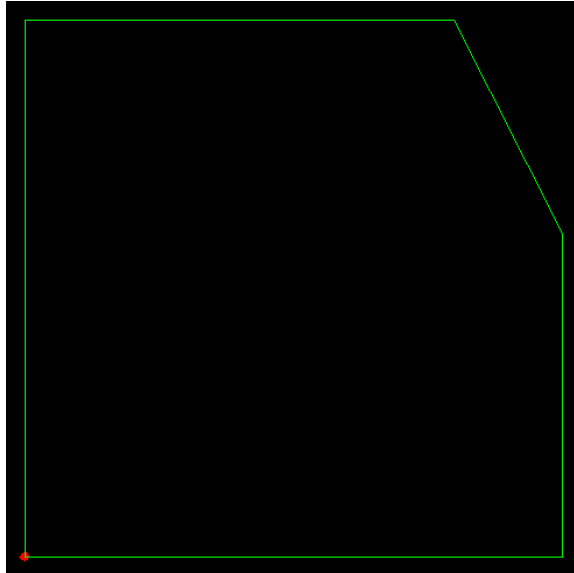




Fig.19 – Notch after clicking

Round and tangent notch tools work like the straight notch tool. The parameter to put is not a distance but a radius.

4.3.2.2 Construction lines

Construction lines are useful when figures are needed to be drawn in a plate. They allow for reference points to aid when drawing lines, circles, rectangles, etc.

Select the *parallel tool*,  check the *construction* box and click on the line to have a parallel line drawn. Then click to place the insertion point. This tool is useful if the user requires draw lines going through the middle or ends of existing lines.

To draw a construction line with an offset value from a reference line, select the *offset tool*,  insert the offset value and click on the reference line;

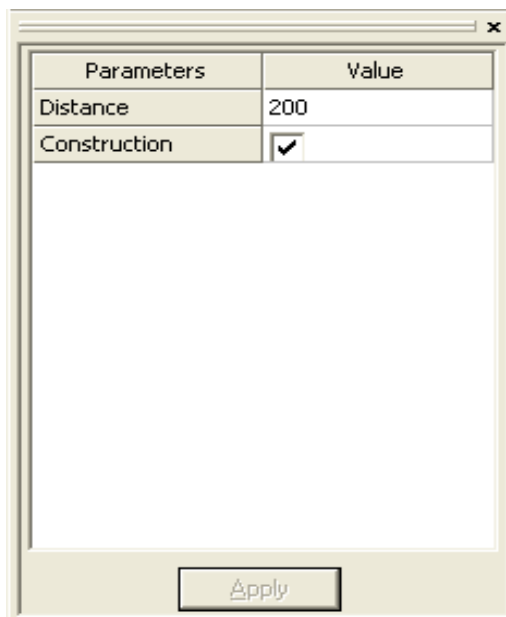


Fig.20 – Offset Parameters

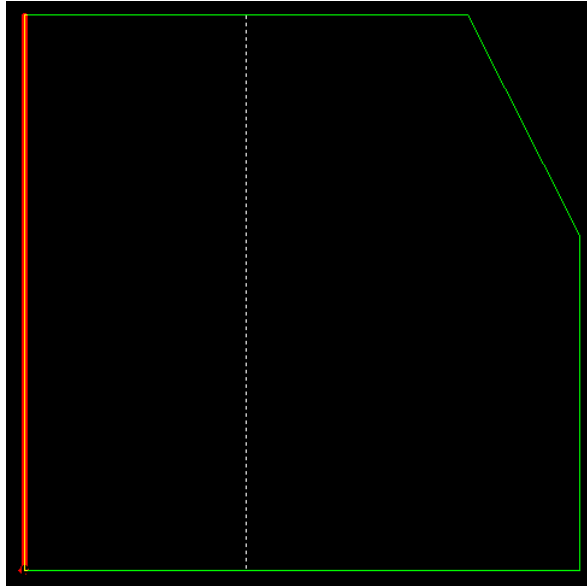


Fig.21 – Offset tool before clicking

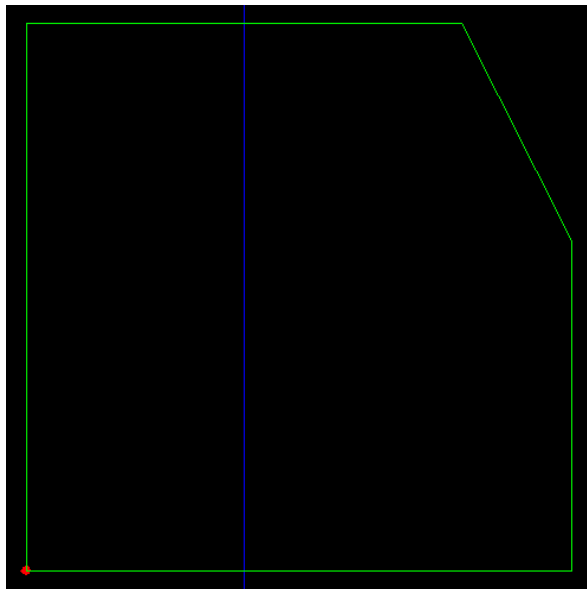


Fig.22 – Offset tool after clicking

Note that construction lines will not appear on the workshop document. However it is possible to hide them either by deleting them or by inactivating the construction layer.

4.3.2.3 Modifying the contour

After having drawn some construction lines, the shape of the plate can be modified using one of the drawing tools (line, rectangle, etc.).

For this example, the line tool will be used.

Select the first intersection (note that the pointer locks automatically on intersections):

Fig.23 – Intersection locked

Click and select the second point you want the line to go through :

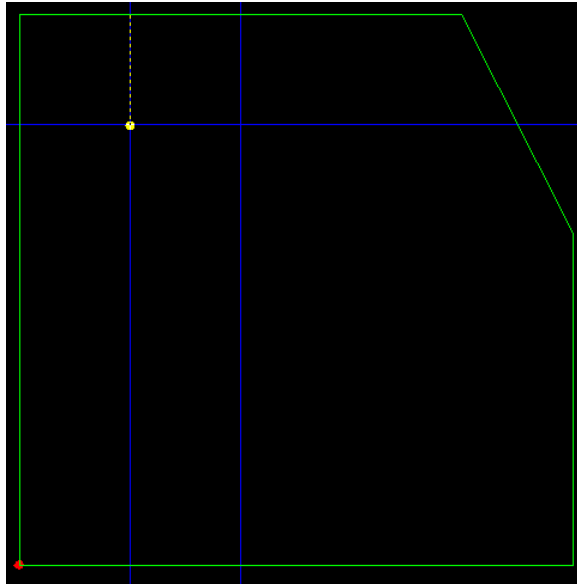


Fig.24 – First point ok, second point locked

Click on the second point.

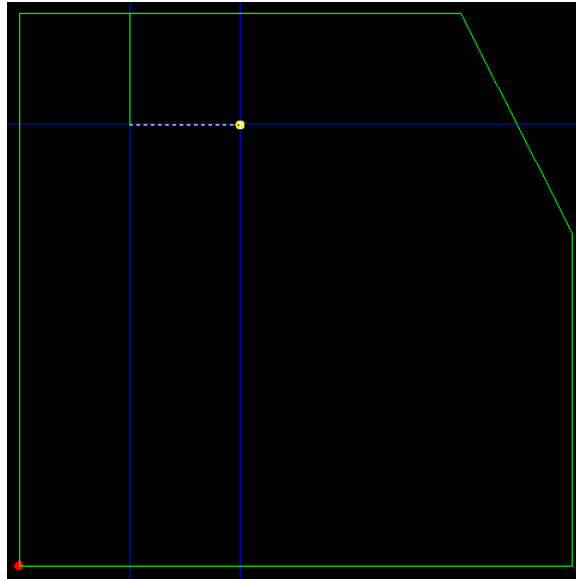


Fig.25 – Second point locked

Do the same for the last point. When the last point is clicked, right click to finish.

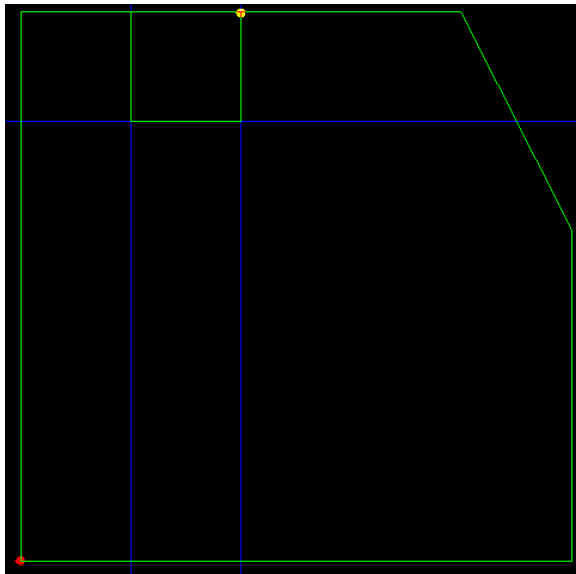



Fig.26 – Polyline complete

To cut the segment between the first and the last point of the polyline, select the scissor tool  and click on the segment to delete it. When the pointer approaches the line, the segment will be highlighted to indicate which part of the line that will be removed:

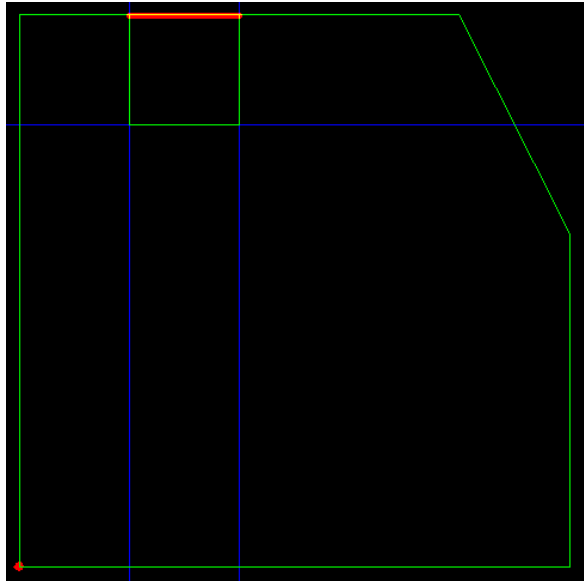


Fig.27 – Cut Highlight

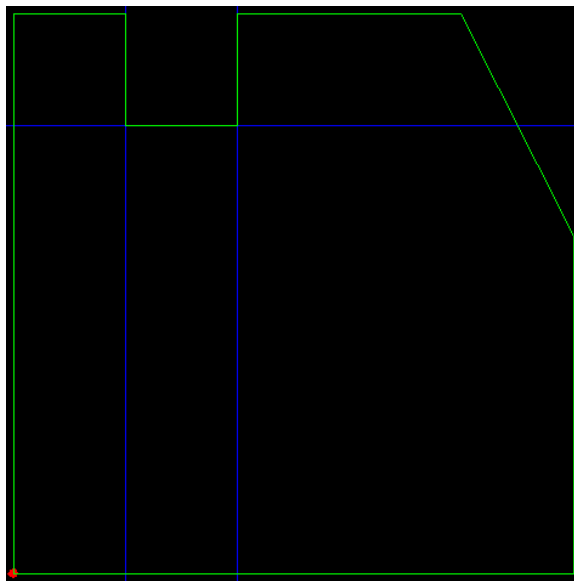



Fig.28 – Cut complete

4.4 FICEP Macros

In order to program FICEP coping machines, WinSTEEL has a *macro* library. These macros can be used only for profiles (beams, channels, flats, etc.).

To add a coping to a profile, select the *macro tool*  (or press [F8]).

In the following window, select the macro that is desired.

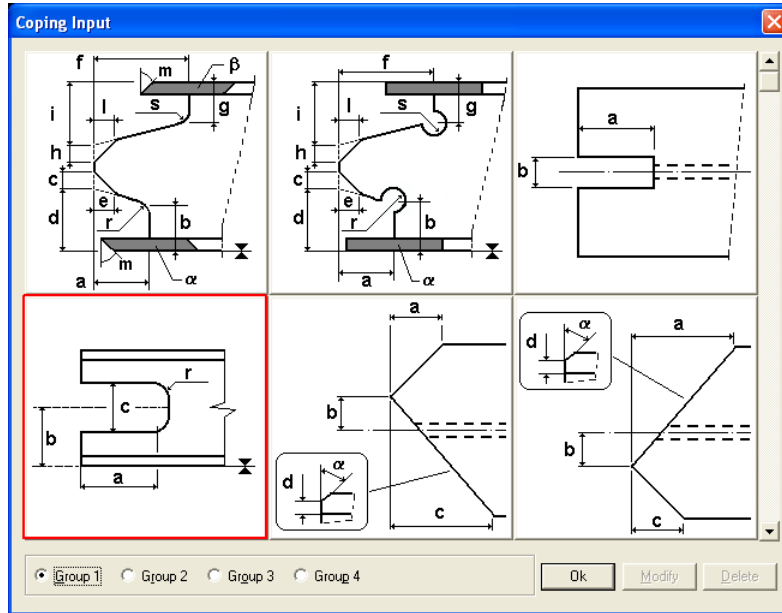


Fig.29 – Macros Box

When a macro is selected, the following window appears. The data must be entered to represent the correct cope. Each dimension on the figure is represented by a letter and each letter is reported in fields on the right hand side. If a field is left blank, it is considered to equal 0.

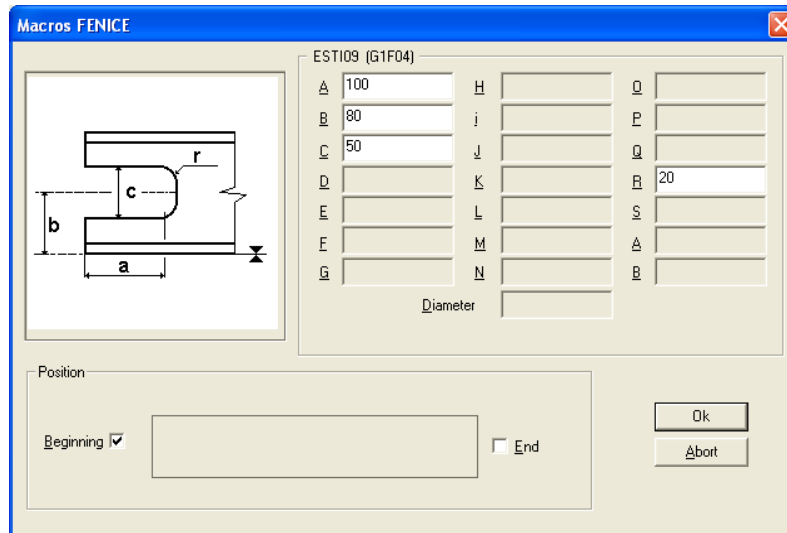


Fig.30 – Macro configuration

In this example, the cope is added on the left hand side of the beam (beginning).

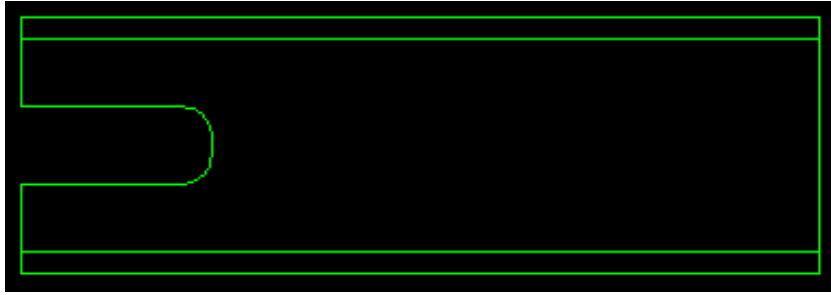


Fig.31 – Coping generated on the beam

In order to modify the macros settings or delete it, select the macro tool to find the macro used and click on modify or delete.

It is possible to have the macros used most frequently separated in a user-defined library. This will make it easier to find the same macro in the future. To do so, select the "Macro User" item in the "File" menu. Then, double click on the macro to be added in the user-defined library and click on OK when done.

Fig.32 – User-Defined Macros definition

Then when the macro tool is selected, there will be a group *User* that will display only the most frequently used macros as defined by the user.

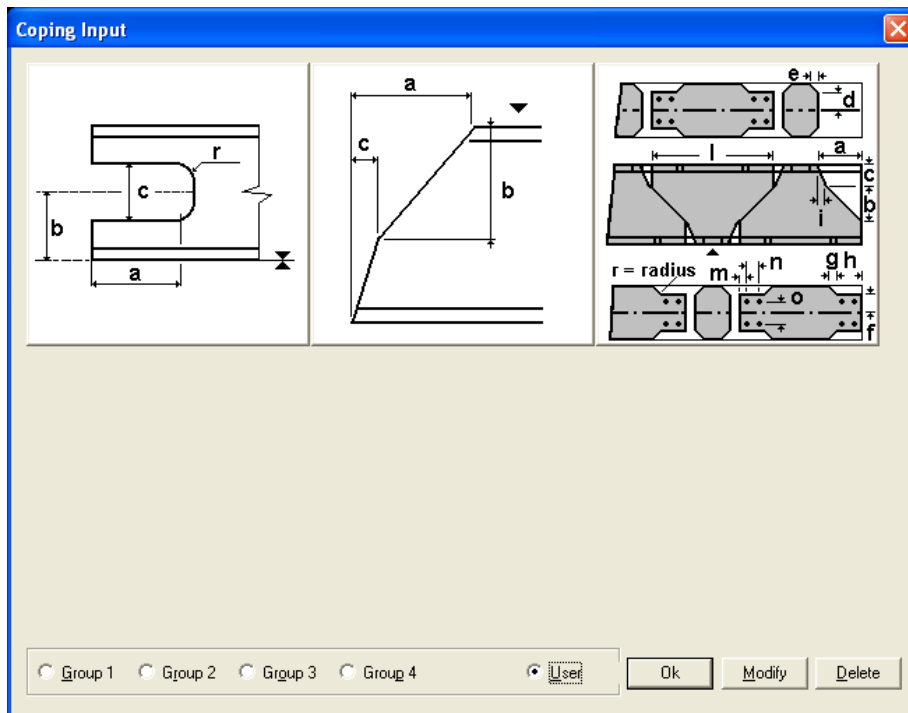


Fig.33 – User-Defined macros selection

4.5 Stamping

The mark number (or any text as desired) can be manually placed on a part. Simply select the stamp tool **A** (or press [F7]).

In the parameters box, the part name is automatically set by default. This can be changed or left as required.

Then, click on the location on the part where the stamp should be placed.

4.6 Bending lines

WinSTEEL allows the user to draw bending lines on the plates. They will appear on the workshop document. Bending lines are inserted as regular lines plus the value of the bending angle that is entered in the properties box.

4.7 Scribing lines

WinSTEEL also allows the user to draw lines to be scribed on plates or profiles using bending lines. The difference is that the angle parameter must be set to 0.

5. Configuration

5.1 Drawing options

Menu File / Options

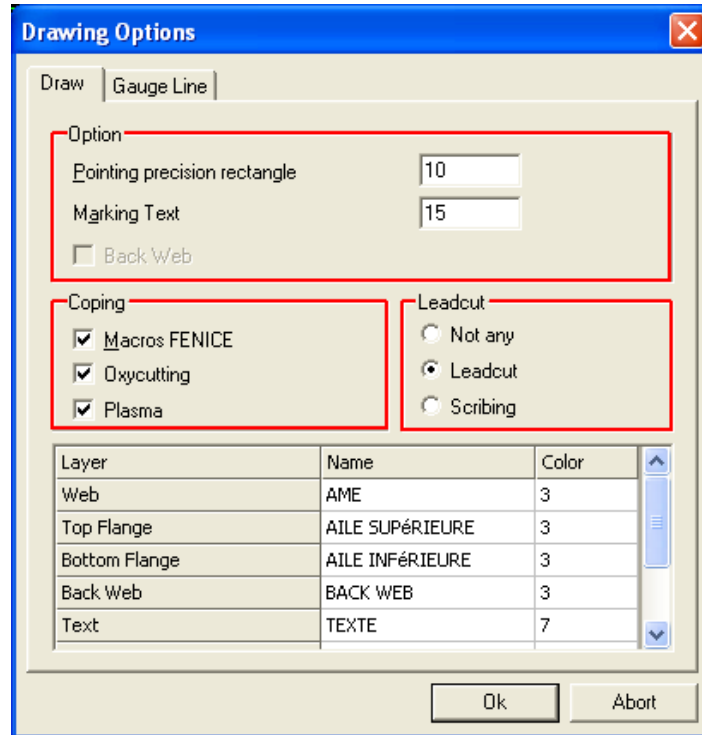


Fig.34 – Drawing options

Item	Description
Pointing precision rectangle	This value allows defining the size of the selection rectangle during the selection of drawing elements. Default Value = 5.
Marking Text	Font size for stamping
Macros FENICE	Must be checked if using a FICEP Robot If the coping machine is a Ceptrol machine, uncheck this box.
Oxycutting / Plasma	Both Oxycutting and Plasma are checked by default. If the Robot doesn't have Plasma, uncheck the plasma checkbox. If it doesn't have an Oxycutting torch, uncheck the Oxycutting checkbox.
Lead Cut	If a macro is not recognized, WinSTEEL can generate Lead Cut commands, scribing lines. If <i>Not Any</i> is checked, nothing is done.

Remark: With a FICEP Coping Machine (Robot), it is possible to copy the file *minosse.ini* / *arianna.ini* (in D:\Minosse or D:\Arianna on the machine) into the *BASE* folder of WinSTEEL in order to set up the macros filter automatically.

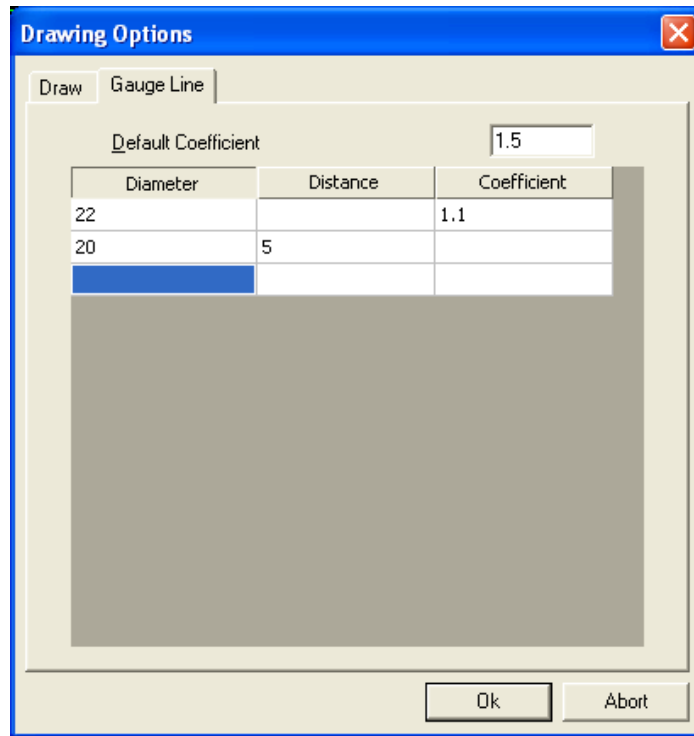


Fig.35 – Gauge line

This data is used for the generation of shape outlines according to the size of each drilling axis.

WinSTEEL proposes either a fixed distance relative to the size selected, or a coefficient to apply to the relevant size. Otherwise, the default coefficient will be applied.

Steel Projects is a leading European Software Development Company. Our market leading Windows based modular CAD CAM Production software (WinSTEEL) has provided tremendous time and cost savings to Structural Steel Fabricators for over 20 years.

- **Scribing** – automatic import and scribing of associated parts and their marks, less human errors enabling fast accurate throughput and assembly
- **Bar Coding** – instant tracking and database update of parts from arrival, through manufacture to dispatch and assembly

Our fully integrated modular software provides the Structural Steel Fabricator with the solution they have been searching for, a scalable system to track and monitor both labour and material from estimation to delivery.

From Estimating, Contract Management, Suppliers, Material Enquiries, Purchasing, Orders, Invoices, Material Delivery, Stock Control, CAD Import, Bar and Plate nesting, Machine Timings, Bar Coding, Employee Time Cards, and Part Audit Trail to CAM file routing to machines

- **Estimating** – quickly create accurate concise estimates using latest supplier price information from manual input, from imported excel sheets or WinSTEEL import
- **Purchasing** – automatic creation of contracts and prelim material lists, generate pricing enquiries, raise orders receive deliveries
- **Stock** – stock control, automatic material addition from orders, material off cuts automatically added, reports materials received and allocated, outstanding orders
- **Time** – instant automatic allocation of employee time against actual contract / part / activity, salary preparation, true contract costing and timings
- **Cost** – up to date, accurate comparison between budget and actual cost, easy comparison and reporting
- **WinSTEEL** - importation of CAD files, contract phase and part management, profiles database, machine and tooling cycles
- **WinSER** – optimized machine routing, machine cycle times for parts and bars, machine load optimization, contract / load status at a glance, automatic feedback of machine times, planning control
- **Nesting** – Bar and Plate nesting, easy to use, fast and accurate, minimizes waste, improves productivity
- **Post processors** – maximize operator efficiency with single GUI, easy to use drag and drop functionality, available for all types of machines

Unlike other MIS software this is a truly flexible, user-friendly plug and play system and does not require a software engineer to spend weeks or months to integrate the software into the Company's production machinery systems.

Steels Projects is the only software system that provides on-going feedback on workshop efficiency and machine utilization direct to the Production or Workshop Manager's PC.

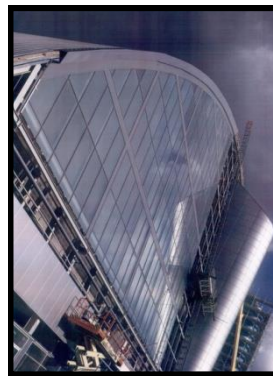
The real-time information provided can then be used to create reports on the efficiency of individual machines or the overall workshop. This data is invaluable to any manager requiring confirmation of or revision to current time scheduling, stock control, purchasing, nesting, cost analysis and capitalization of new machinery.

Our software package really is one of the easiest ever systems to implement and the modular nature of the software enables clients to choose to introduce the module, or modules, that best suit their business or working practices, thereby gaining the maximum financial benefit.

From large to small structural steel fabricators we help maximize their production efficiency, reduce their costs and increase their profitability.



Steel Projects



Steel Projects

Rue des Frères LUMIÈRE

38200 Vienne
FRANCE

Phone: +33 (0) 474 311 730

Fax: +33 (0) 474 780 410

E-mail: support@steel-projects.com

Web: www.steel-projects.com

© Copyright 2008 Steel Projects