

**True shape nesting software**

# **Astra S-Nesting**

**User's manual**

# Contents

Contents .....	2
How to begin? .....	3
Importing parts for nesting.....	4
Entering plates for nesting .....	5
Automatic nesting .....	5
Manual modification of layouts .....	5
Printing documentation.....	8
Exporting the nesting results to DXF.....	9
Order Form.....	9
Material Library .....	10
CNG properties .....	12
Developer and technical support.....	12

# How to begin?

Generally, you need to perform the following sequence of actions:

## 1. Import parts for nesting

Parts are imported from the **DXF** format (Drawing Exchange File). To import parts, use the **Import** command in the **File** menu. The "Import parts..." dialog allows you to add files to import and enter the parts' properties.

Please see the detailed description of this task in the "Importing materials for nesting" section.

## 2. Enter plates for nesting

You can add plates using the **Add plates** command in the **Nesting** menu.

Please see the detailed description of this task in the "Entering plates for nesting" section.

## 3. Run automatic nesting

To start order nesting, run the **Start nesting** command in the **Nesting** menu.

The detailed description of the task can be found in the "Automatic nesting" section.

## 4. Manual modification of layouts

If you need to modify a layout manually, go to the **Layouts** tab in the Order Form, select it from the list and run the **Open** command from the context menu.

The layout editing mode allows you to move and rotate parts using your mouse or special exact positioning commands.

The detailed description of this task can be found in the "Manual editing of layouts" section.

## 5. Printing reports

The software allows you to print the following reports: draft of the current layout, drafts of the layouts selected in the list, order parts specification, order layouts specification.

Please see the "Printing documents" section for details.

## 6. Exporting nesting results to DXF

In order to export the list of layouts to **DXF**, select them on the **Layouts** tab and run the **Export** command from the context menu.

Please see "Exporting nesting results to DXF" for the detailed description of this task.

# Importing parts for nesting

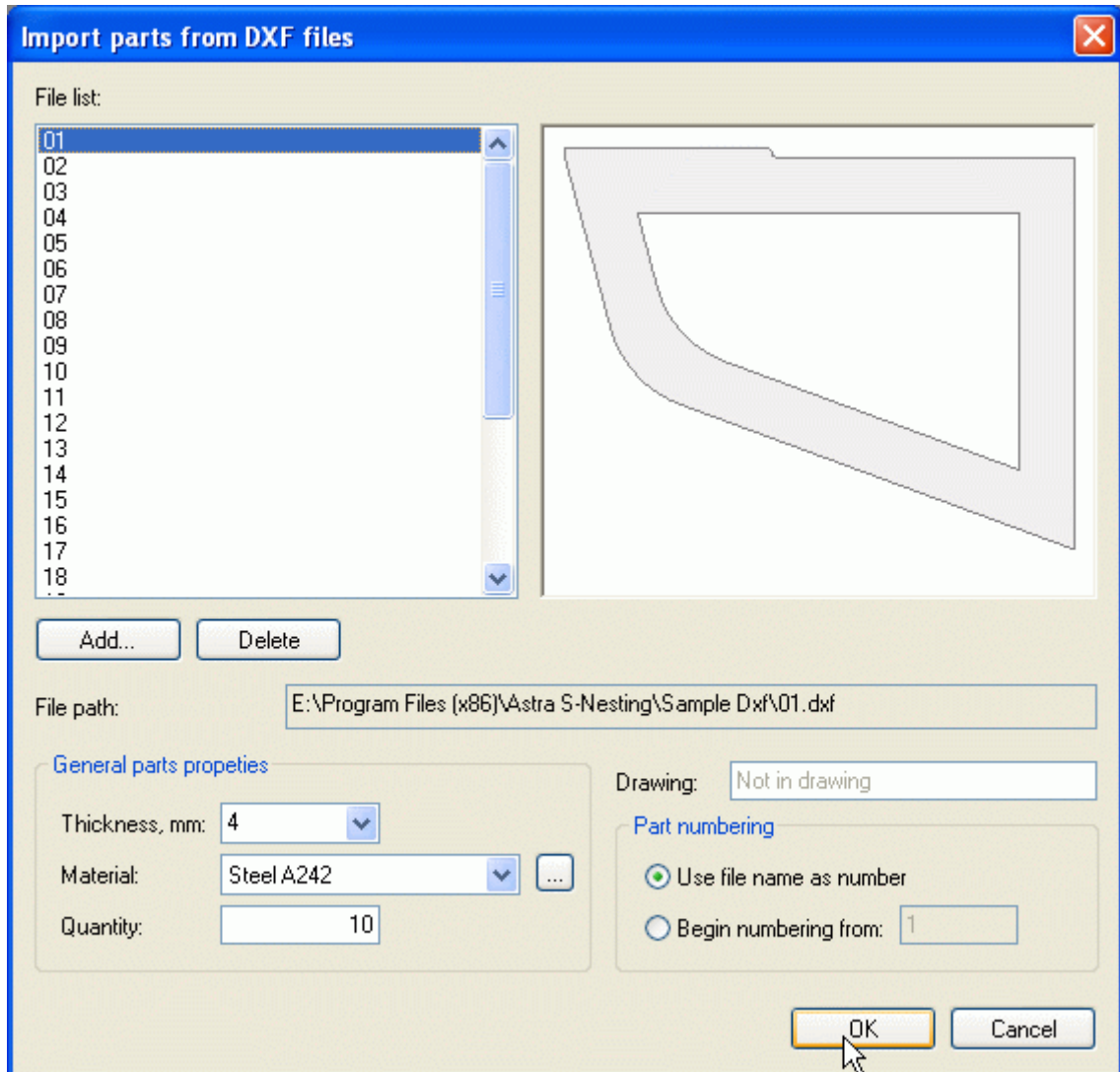


Ctrl+I

Button on the **Standard** toolbar

Hotkeys

Parts are imported from the **DXF** (Drawing Exchange File) format. To import parts, use the **Import** command from the **File** menu. File selection and configuration of part properties can be performed in the "Import parts from DXF files" dialog window (see the screenshot).



To select the necessary files, press the **Add** button. You can simply drag dxf files from Windows Explorer (or any other file manager) onto the **File list** window.

Once the files are selected, set the mandatory properties of the parts being imported: **Thickness**, **Material** and **Quantity**. If necessary, enter the name of the **Drawing** and set **Part numbering** options.

If the necessary material is missing in the list, press the "... " button to the right of the **Material** field for editing the **Material library** (see the **Material library** section).

The list of imported parts is added to the **Parts** tab of the Order Form (see **Order Form**).

## Entering plates for nesting



Button on the Order Form toolbar  
Ctrl+L Hotkeys

To add plates, use the **Add plates** command from the **Nesting** menu. Plate sizes can be entered in the “Add plates for nesting” dialog window (see the screenshot).

Use the dialog window to enter the plate size, its thickness and quantity. If the quantity of plates is unlimited, you don't need to enter this value.

Select the plate material from the dropdown list. If the necessary material is missing in the list, press the “...” button to the right of the Material field for editing the Material library (see **Material library**).

## Automatic nesting



Button on the **Standard** toolbar  
Ctrl+R Hotkeys

For automatic order nesting, use the **Run nesting** command from the **Nesting** menu. Technological nesting parameters are determined by the properties of the Concurrent Nesting Group (CNG).



**IMPORTANT:** Matching thickness and material type of the order plates and parts are mandatory conditions for successful nesting. Parts made of the same material and having the same thickness form a CNG. A single order may contain several CNG's. Each CNG should contain plates for nesting. If no plates are entered for a CNG, the software will notify the user.

Once the automatic nesting process is over, go to the **Layouts** tab of the Order Form to see the calculation results.

## Manual modification of layouts

If you need to manually adjust a layout, open the **Layouts** tab in the Order Form, select the layout in the list and run the **Open** command from the context menu. To open several layouts, select them in the list while holding down **Ctrl** or **Shift**. To change the relative position of the opened layout windows, use the commands in the **Window** menu.

You can perform the following actions in the layout editing mode:

## Selecting groups of parts

All commands and operations on a layout are applied to a single part or a group of selected parts. Groups can be selected using the mouse with the **Shift** key down or using the standard selection box. You will see a **highlighting box** with **rotation markers** in its corners around the group of selected parts.

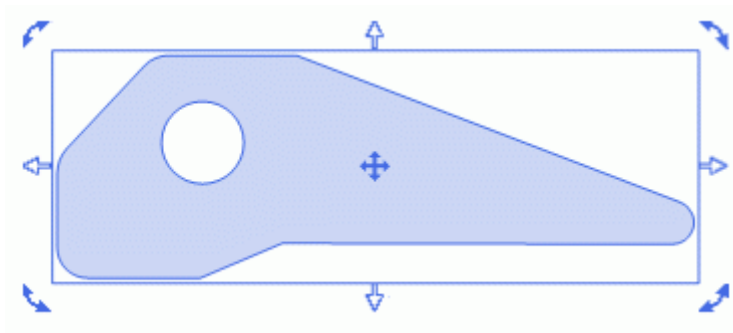
The **Select all** command in the **Edit** menu selects all the parts on the current layout.

## Moving parts

You can move the selected parts in one of the following ways:

1) Use the mouse to move parts.

The part selection box looks like this:

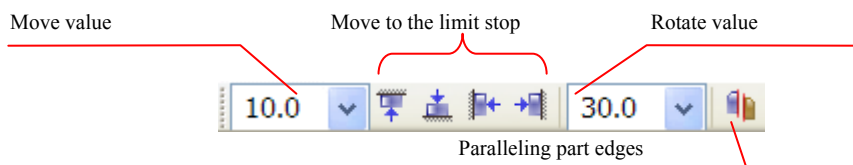


The box can be moved to the nearest limit stop or the edge of the plate if dragged by the center. When a part is dragged in any other way, it is moved without limit stop checks. Clicking any of the four edge markers will move the part to the nearest corresponding limit stop.

If the **Ctrl** key is pressed, parts are moved to limit stops or the edge of the plate.

2) Parts can be moved using the arrow keys (up, down, left, right) to the nearest limit stops or the edge of the plate. You can select the necessary step value or enter it in the **Move by** dropdown list on the **Editing** toolbar.

3) Parts can be moved to limit stops (left, right, top, bottom) – other parts or the edge of the plate – with the help of the **Move - ... to the limit stop** command in the **Edit** menu. This command can be run quickly by pressing one of the buttons on the **Editing** toolbar.



## Part rotation

Rotation of selected parts is performed in one of the following ways:

1) Free mouse rotation is done using the **rotation markers** on the **selection box**. Press the left mouse button on any marker and rotate the part.

2) Rotation by a specific angle can be performed using the **Rotate** command ... in the **Edit** menu. The rotation value is selected or entered in the dropdown list on the **Editing** toolbar.



**IMPORTANT:** The software automatically controls the intersection of parts with each other and the cutting path. Overlapping parts are marked with a special color. The default color is “semitransparent red”. You can change the color of overlapping parts in the **Layout – Color** section of the program’s **Options**.

## Paralleling part edges



Button on the **Editing** toolbar

**Paralleling part edges** is a command mode that allows you to run the **Parallel** command several times until the mode is disabled. To enable/disable this mode, use the **Rotate – Parallel** command in the **Edit** menu.

The edge paralleling sequence is as follows:

- 1) Run the **Parallel** commands to enable the paralleling mode.
- 2) Click the part edge you want to place parallel to another one. For convenience, the edge below the mouse cursor is highlighted with a special color.
- 3) Click the other edge to be paralleled with the first one.

Once you are finished, you can disable the **paralleling** mode.

## Deleting parts

Parts can be deleted from the layout with the help of the **Delete** command in the **Edit** menu. Quick deletion is carried out by pressing the **Delete** key.

## Working with the clipboard

The following commands are available in the **Edit** menu when editing layouts and using the clipboard:

**Cut** – deletes the selected parts from the layout and places them into the clipboard.



Button on the **Standard** toolbar  
Ctrl+X Hotkeys

**Copy** – copies the selected parts into the clipboard. Running this command is only possible if the multiplicity of the selected parts is more than 1 and there are unnested parts with this number in the order. You can check the quantity of parts in the **Part properties** window, which is opened by the **Properties** command on the layout.



Button on the **Standard** toolbar  
Ctrl+C Hotkeys

**Paste** – pastes parts from the clipboard into the current layout.



Button on the **Standard** toolbar  
Ctrl+V Hotkeys

## Undoing and redoing commands and operations

The **Undo** и **Redo** commands in the **Edit** window enable you to undo and redo commands and actions.

## Scaling

The following commands are available in the **View** menu:

**Fit to window** – fits the layout to the window size.



Button on the **View** toolbar

Num\* Hotkeys

**Zoom in** – increases the zoom level by 2%.



Button on the **View** toolbar

Num+ Hotkeys

**Zoom out** – decreases the zoom level by 2%.



Button on the **View** toolbar

Num- Hotkeys

**Window scaling** – enables the mode that allows you to use your mouse to set the window size for zoomed viewing.



Button on the **View** toolbar

**Previous view** – sets the previous layout zoom level.



Button on the **View** toolbar

F3 Hotkeys

**Panoramic** – enables the layout sliding mode.



Button on the **View** toolbar

**Mouse wheel rotation** – performs the standard zooming functions.

## Printing reports



Button on the **Standard** toolbar

Ctrl+P Hotkeys

To print the active layout, run the **Print** command in the **File** menu. To print several layouts, select them in the list on the Layouts tab of the Order Form prior to running this command. This command can also be run from the context menu of the list of layouts.

To print the list of order layouts, run the **Documents – Layouts** command ... in the **Nesting** menu. To print the list of layouts, run the **Documents – Parts** command ... in the **Nesting** menu.

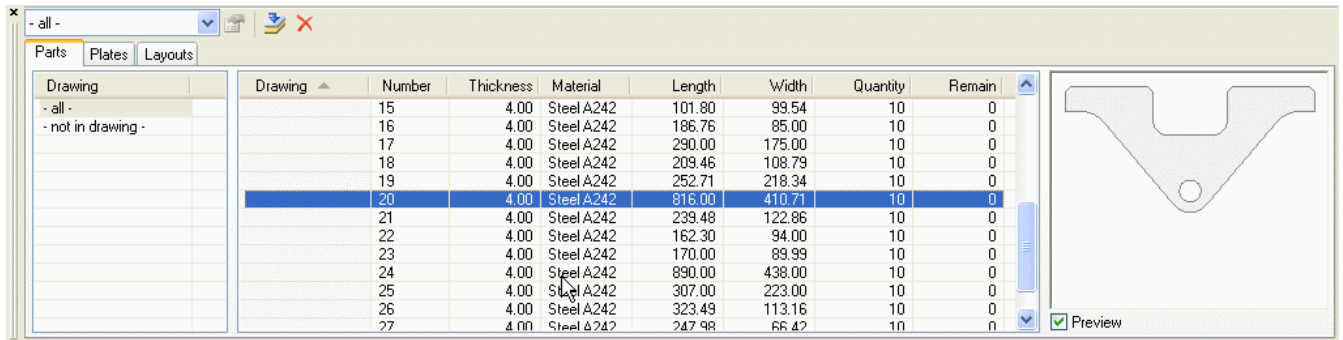
# Exporting nesting results to DXF

Ctrl+E      Hotkeys

To export the active layout to DXF, run the **Export** command from the **File** menu. To export specific layouts to DXF, select them in the list on the **Layouts** tab of the Order Form and run the **Export** command from the context menu.

## Order Form

This window contains all order data that are displayed on corresponding tabs: **Parts**, **Plates** and **Layouts** (see the screenshot below).



Drawing	Number	Thickness	Material	Length	Width	Quantity	Remain
- all -	15	4.00	Steel A242	101.80	99.54	10	0
- not in drawing -	16	4.00	Steel A242	186.76	85.00	10	0
	17	4.00	Steel A242	290.00	175.00	10	0
	18	4.00	Steel A242	209.46	108.79	10	0
	19	4.00	Steel A242	252.71	218.34	10	0
	20	4.00	Steel A242	816.00	410.71	10	0
	21	4.00	Steel A242	239.48	122.86	10	0
	22	4.00	Steel A242	162.30	94.00	10	0
	23	4.00	Steel A242	170.00	89.99	10	0
	24	4.00	Steel A242	890.00	438.00	10	0
	25	4.00	Steel A242	307.00	223.00	10	0
	26	4.00	Steel A242	323.49	113.16	10	0
	27	4.00	Steel A242	247.98	66.42	10	0

### The Parts tab

The **Parts** tab contains the list of Drawings, parts and the part preview window. The list of parts is displayed according to the currently selected element in the **Drawing** list. If "**- all -**" is selected, the full list of order parts is displayed.

Parts can be added to the list by importing them from DXF (see the "Importing parts for nesting" section). You can delete the selected parts using the **Delete** command from the **Edit** menu.

Part properties can be viewed and edited in the **Part properties** dialog window, which is opened by the **Properties** command from the context menu of the parts list. This window also allows you to change the **quantity** of parts and their **names**.

### The Plates tab

Plates can be added using the **Add plates** command in the **Nesting** menu (see the "Entering plates for nesting" section). The command can be run by pressing the **Ctrl+L** combination in the context menu or by clicking Button on the Order Form toolbar. Selected plates can be deleted by the **Delete** command in the **Edit** menu.

Plate properties can be viewed and edited in the dialog window that is opened by the **Properties** command in the plate list context menu. This window allows you to change the size and quantity of plates if they are still unnested.

Nesting is performed automatically with the help of the **Start nesting** command in the **Nesting** menu (see the "Automatic nesting" section). To manual nesting for selected plates only, use the **Plate nesting** command from the plate list context menu.

## The Layouts tab

The layouts tab contains the list of order layouts. Layouts are added to the list during automatic nesting (see the "Automatic nesting" section) or manual plate nesting. Selected layouts can be deleted by running the **Delete** command in the context menu of the list of layouts.

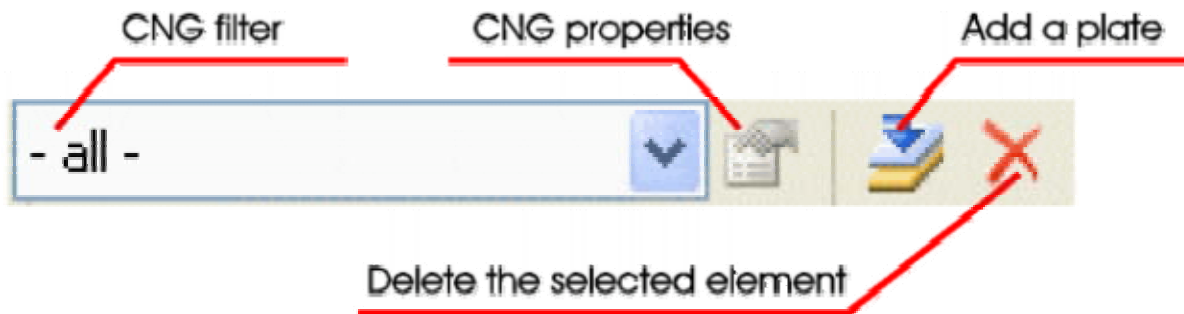
You can open a layout for editing by double clicking on it in the list or by running the **Open** command in the context menu of the list of layouts (see the "Manual editing of layouts" section).

To export layouts to **DXF**, select them in the list using the **Ctrl** or **Shift** keys and run the **Export** command in the context menu.

To print layouts, select them in the list using the **Ctrl** or **Shift** keys and run the **Print** command in the context menu.

## The Order Form toolbar

The Order Form toolbar contains the following elements:



**CNG filter** – allows you to select the CNG filter; the list of parts is displayed according to the currently selected filter options.

**CNG properties** – opens a window for previewing and editing the selected nesting group.

**Add a plate** – opens a dialog window for adding a plate for nesting.

**Delete the selected element** – deletes the selected element from the list depending on the currently active tab: **Parts**, **Plates** or **Layouts**.

## Material Library

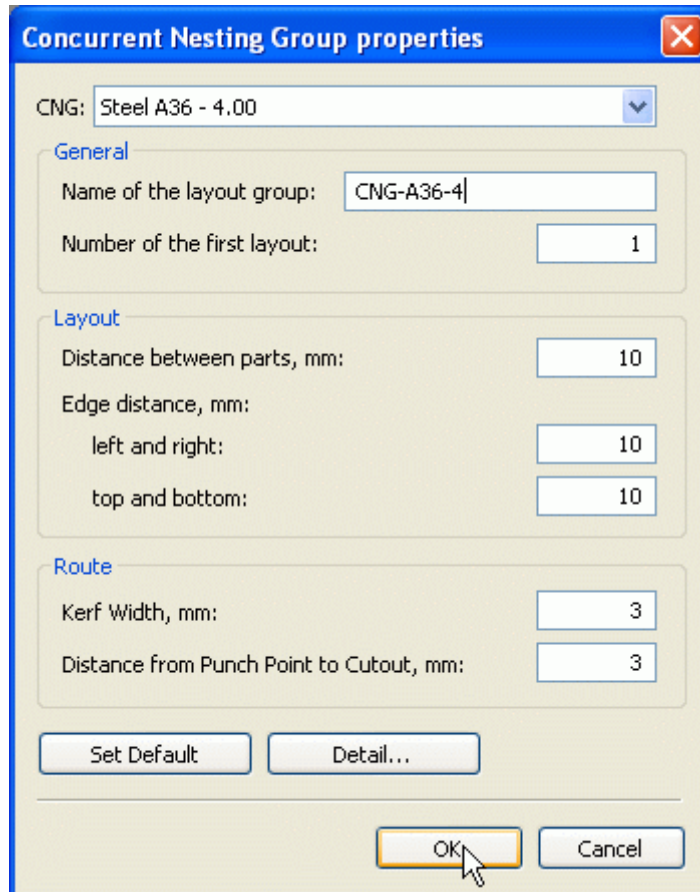
The list of used materials and their properties can be found in the **Material Library** (see the screenshot), which can be opened by the corresponding command from the **File** menu. The library can be also opened by pressing the "... " button in the "Import parts" and "Add plates" dialog windows.



## CNG properties

A set of parts of the same material and thickness is called a concurrent nesting group (CNG). Definition of CNG properties is only possible after the parts have been imported, i.e. after the CNG has been created. To define these properties, use the **CNG properties** command in the **Nesting** menu.

Choose the necessary CNG (if the order contains more than one CNG) in the **CNG properties** dialog window (see the screenshot below), set its properties and press **OK**.



The following properties can be set here:

**Name of the layout group** – it's a prefix to be used for naming layouts in reports.

**Number of the first layout** – the number of the first layout in the current CNG.

**Distance between parts** – distance between parts on the layout.

**Edge distance** – allowed distance from parts on the layout and its edge.

You can define the default properties of a CNG – they will be used for all new concurrent nesting groups. To do that, use the **Default CNG** in the **File** menu.

## Developer and technical support

Technos LLC

Tel/fax (0512) 58-50-59

**Email:** [info@techno-sys.com](mailto:info@techno-sys.com), [support@techno-sys.com](mailto:support@techno-sys.com)

**Site:** <http://nesting.astrapro.ru>

**Address:** 2A Rabochaya Str., Nikolaev, Office 601

**Postal address:** Technos, P.O.B 312, 54001 Nikolaev, Ukraine