



How to work with EuroCUT Professional 8?

EUROSYSTEMS
Soft- und Hardware S.à.r.l.

Table of Contents

1 Desktop and Working Sheet.....	1
1.1 I. Desktop.....	1
1.2 II. Working Area.....	1
2 Job Preparation.....	5
2.1 Import.....	6
3 The EuroCUT Layer dialog.....	11
4 Tool Assignment Via Layer.....	13
4.1 Define Layer Assignment.....	13
4.2 How the Tool Sequence Is Determined?.....	16
5 The Output.....	19
5.1 Device Setting - Interface Setup (Local Device).....	19
5.2 Device Setting (Network Device).....	21
5.3 Start Output from the EuroCUT Working Surface.....	22
6 Export.....	31
6.1 PDF Export.....	33
7 Flex-Cut, Half-Cut - Punch Function.....	35
7.1 EuroCUT Driver Options Using a Roll Plotter.....	35
7.2 Step by Step Instruction.....	35
8 The Serial Number Function.....	41
8.1 Step by Step Instruction.....	41
9 Excursion: Contour vs Outline vs Contour Line.....	47
9.1 1. Contour.....	47
9.2 2. Outline.....	48
9.3 3. Contour Line.....	49
10 Excursus: Welding of Vector Objects.....	51
10.1 A Selection of the Most Important Welding Sub Types.....	51
11 Label Production with Cutters with Optical Sensor.....	55
11.1 1. Step: Job Preparation.....	55
11.2 Jog Marks for Optical Recognition Systems.....	56
11.3 2. Step: The Print Process.....	57
11.4 3. Step: The Cutting Process.....	57
12 Cutting - Milling - Creasing - Drawing	61
12.1 The Output Preview.....	61
13 The Layout View Mode.....	69
13.1 Definition:.....	69
13.2 Definition Container.....	69
13.3 Overview Container Types.....	71

Table of Contents

13 The Layout View Mode	
13.4 Working With Containers.....	71
13.5 Series With The Help of The Container Function.....	78
14 Printing.....	89
14.1 Without RIP Software.....	89
14.2 With Pjannto RIP software.....	98
Index.....	99

1 Desktop and Working Sheet

1.1 I. Desktop

The so-called Desktop means the whole visible program window including **Toolbars**, **Working Sheet** and **Desktop** background.

Note: *On the background can be placed any desired number of objects. The size of the background is limited only by the resources of your computer. Thus the layout can be done basically in 1:1 scale.*

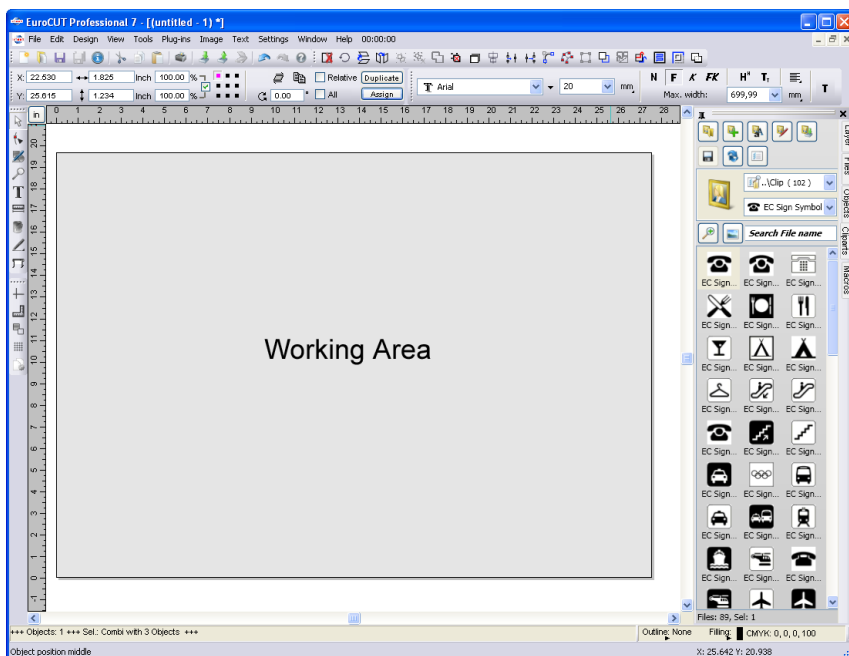


Fig. 1.1-1: Desktop with working sheet (here: gray), Background (here: white), Toolbars, Sidebar, Rulers, Statusbar

1.2 II. Working Area

The workspace is a subset of the EuroCUT desktop. The workspace is usually in the format that will later be output on a machine. In addition to the known DIN formats, any formats can be applied, e.g. for different table sizes.

Note: *The working area is used primarily for guidance. The format of the working area has no influence on the output on a connected device. The output preview*

1.2 II. Working Area

window displays what is given out.

 **please refer to 12: Cutting - Milling - Creasing - Drawing ...**

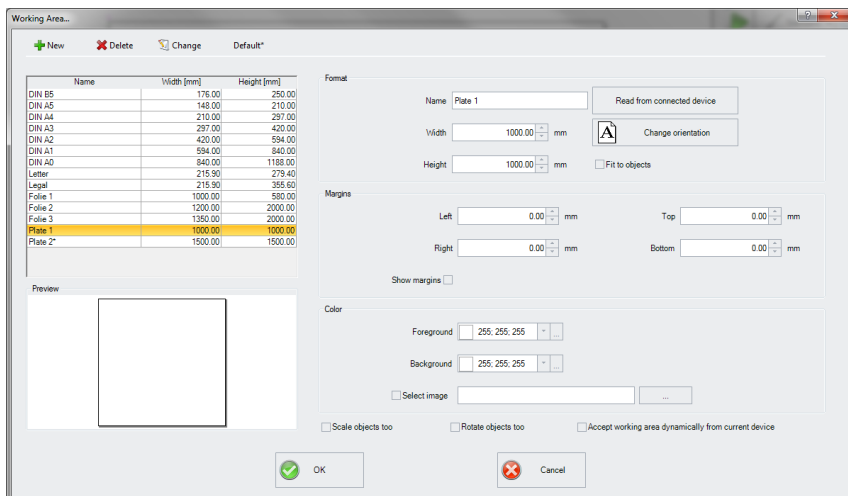


Fig. 1.2-1: The Working Area Dialog

1.2.1 The Buttons

The **New** Button

The **New** button creates a new format. The values for width and height of the selected line are transferred to the new row.

The **Delete** Button

The **Delete** button removes the marked row.

The **Change** Button

This button saves all changed parameters and options.

The **Default*** Button

This button marks the name with a * (star). The star-marked format is used every time EuroCUT is started.

The **Read from connected device** Button

By means of this button - if the read-out command of the driver is processed by the machine controller - the width value can be read from the connected device and inserted

into the width field.

The *Change orientation* Button

This button changes the orientation of the working space from portrait to landscape and vice versa.

The *OK* Button

The OK button accepts the changed values and closes the dialog.

The *Cancel* Button

This button closes the dialog without saving any changes.

1.2.2 The Areas

The *Preview* Area

In this area, the worksheet, the desktop background, their colors, as well as the orientation are displayed proportionally reduced.

The *Format* Area

Name

The name of the format is entered in this field and the name of the selected one is displayed.

Width

In this field, the width of the format is determined.

Height

In this field, the height of the format is set.

The *Margins* Area

Left, Right, Top, Unten

These 4 fields define the distance of the borders from the edge of the working area.

Note: Negative values are also allowed.

The *Color Area*

Foreground

Here, the color of the worksheet can be defined as RGB value.

Background

Here the color of the background desktop can be defined as RGB value.

1.2.3 The Options

The *Fit to objects* Option

This option captures the objects outside the working sheet and extends the sheet by the amount necessary to accommodate all the objects on the working sheet.

The *Show margins* Option

This option displays the defined borders as dashed lines in front of the working sheet.

The *Select image* Option

This option displays the selected bitmap in the preview and later on the working sheet. The ... button opens the file dialog for selecting the desired bitmap.

The *Scale Objects too* Option

If the height or width of the working sheet is changed, all objects on the working sheet are reduced or enlarged by the same amount.

The *Rotate Objects too* Option

This option determines whether the objects on the working sheet and on the desktop background will also be rotated when the orientation is changed.

The *Accept working area dynamically from current device* Option

This option ensures that the width and height values of the working area are read from the connected device and used. For each device, a format is created with the name of the device in the list.

2 Job Preparation

2.1 Import

With this command the graphics that have *not* been saved in the EuroCUT-job-format are transferred to the working surface.

The functionality of this dialog box corresponds to the **open file** command. Differences are only due to the possibility to change the size of the data to be imported by means of the parameter **X-** and **Y-factor**. The desired file is chosen respectively specified via the **name of file**, **type of file** and **directories** (search in).

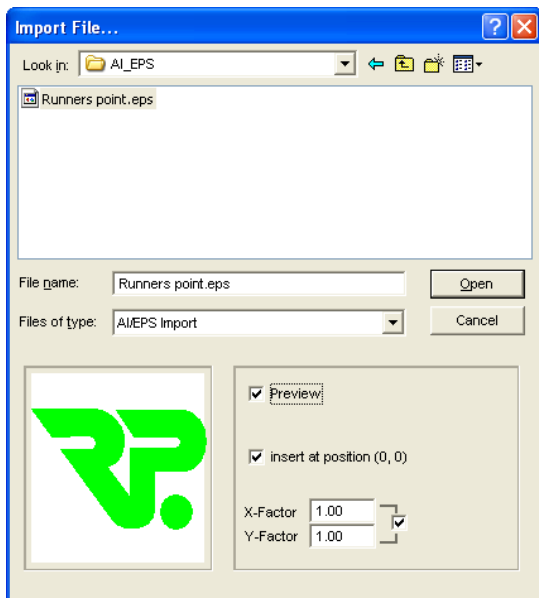


Fig. 2.1-1: Import window with preview

With the preview window in the import dialog all following **formats** can be displayed.

*.ai/eps, *.pcx, *.jtp, *.tif, *.bmp, *.wmf, *.emf, *.dxf, *.gif, *.hpgl, *.gtp, *.ik, *.svg

Indication: With text files (*.txt) the preview window is switched off.

2.1.1 Import Presettings

For many import operations, **constraints** can be defined to be taken into account **before**, **during** or **after** importing the data. Constraints can effect the DXF or HPGL import or all import operations.

Also for export constraints are definable in this window. Thus, a special option on job files can be activated, for example, the PDF export. The **constraints** are extensively recorded

in the following article.

2.1.2 PDF Import

2.1.2.1 Additional Options

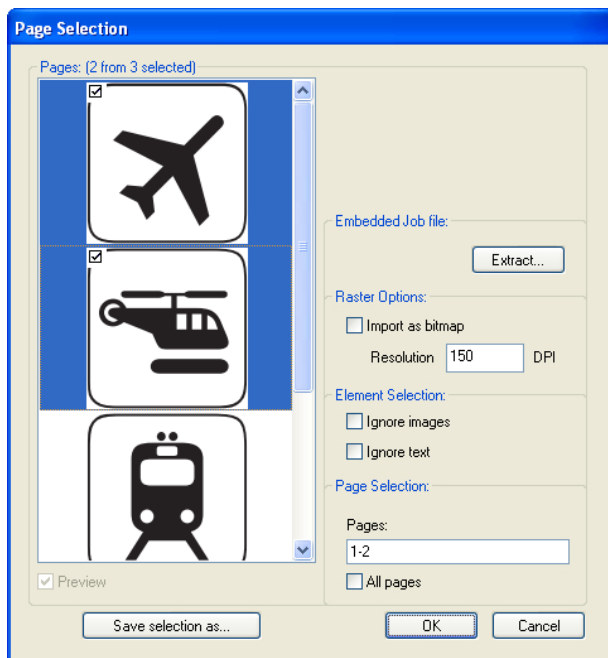


Fig. 2.1-2: Options concerning import of data

Integrated Job File

The **Extract** Button



Enabling the **Extract** ... button ensures, that the import function loads the integrated job file on the desktop, while extracting the PDF file.

Note: *A prerequisite for this is that when you export the appropriate option in the preferences (see above) was made.*

2.1 Import

Raster Options

Import as Bitmap Option

If the **Import as Bitmap** option is enabled, then all vectors will be rastered into a bitmap before the import.

Resolution

The value in dpi

Element Selection

Ignore Images Option

If the **Ignore Images** option is enabled, then no images will be imported.

Ignore Text Option

If the **Ignore Text** option is enabled, then no texts will be imported.

Page Selection

In the **input field** the page number can be entered, which should be imported.

All Pages Option

If the **All Pages** option is enabled, then all pages of the document will be imported.

Search in

In the row **Search in** the path can be set that shall be searched.

File name

If the file name is know it can be entered into this field

Type of file

Here, you have to choose the format of the file to be imported in order to activate the corresponding import filter

Preview

The activation of this option draws a preview of the file content to the left preview window

Insert at Position (0,0)

This option inserts the objects at the 0 (zero) position of the EuroCUT-working surface.

X Factor, Y Factor

With these two factors the data can be scaled (increased or decreased) during the import. The scale can be proportional or unproportional.

2.1 Import

3 The EuroCUT Layer dialog

In the layer-settings dialog the parameters necessary for the output are set and attributed to an object, a color respective a layer. The dialog opens by a right mouse click on the EuroCUT layer-toolbar in the main window.

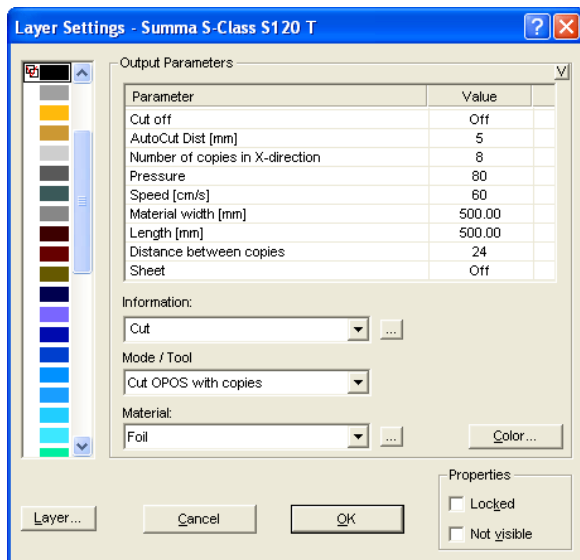


Fig. 3.-1: Layer setup with adjustment of output parameters

In the **Information** field a name for the layer can be entered. This name is shown later in all dialogs in which the colors of the objects are needed.

In the **Mode / Tool** field the output tool can be selected from a list. The tools shown here depend on the used output driver.

In the **Material** field already saved material-configuration can be called up. The material-configuration can be created, saved or deleted with the button right of the selection box.

Indication: By clicking with the left mouse button on another color the settings are saved and the values of another layer can be edited.

3 The EuroCUT Layer dialog

4 Tool Assignment Via Layer

Tools which are provided from an output device are pre-defined in the device driver. The tool selection is done with the output dialog of the **Mode / Tool** list field.

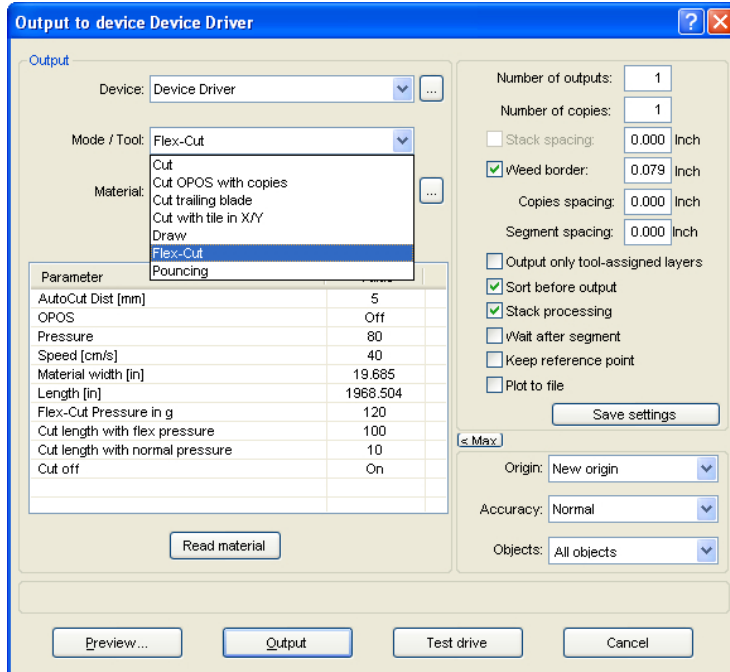


Fig. 4.-1: Tools and tools parameter which were defined in the device driver

4.1 Define Layer Assignment

What tool is located in which layer - that is necessary to define the order of execution - will be assigned in the **layer settings** window. A click with the **right mouse button** on the tool edit layer opens the **layer settings** window. Tool assignment is not possible here.

4.1 Define Layer Assignment

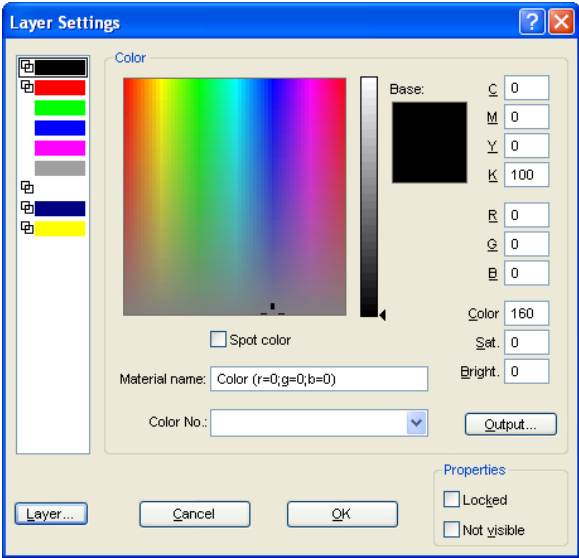
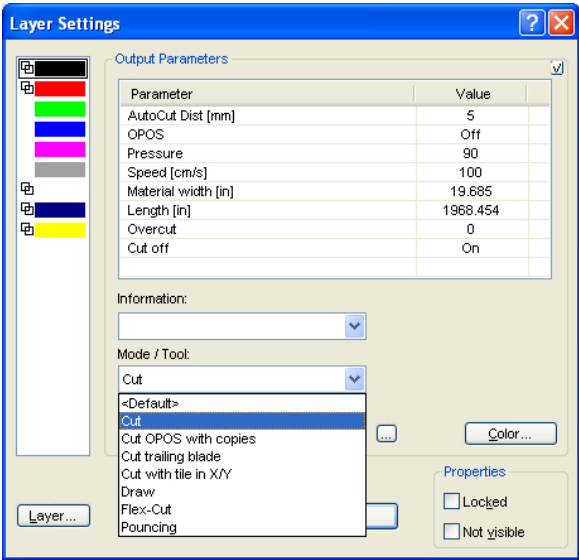


Fig. 4.1-1: Window before switching into the output view

4.1.1 The *Output* Button

If the *Output* button is enabled, the *layer settings* window switches in the following view:



Now, all from the respective driver provided tool modes are listed. When you select a tool, then the editable parameters and values appear in the list in the upper area of the **output parameter** window. Values can now be edited. A **doubleclick** in the desired field allows editing of its value. Repeat this operation for each layer and mode which is scheduled for output.

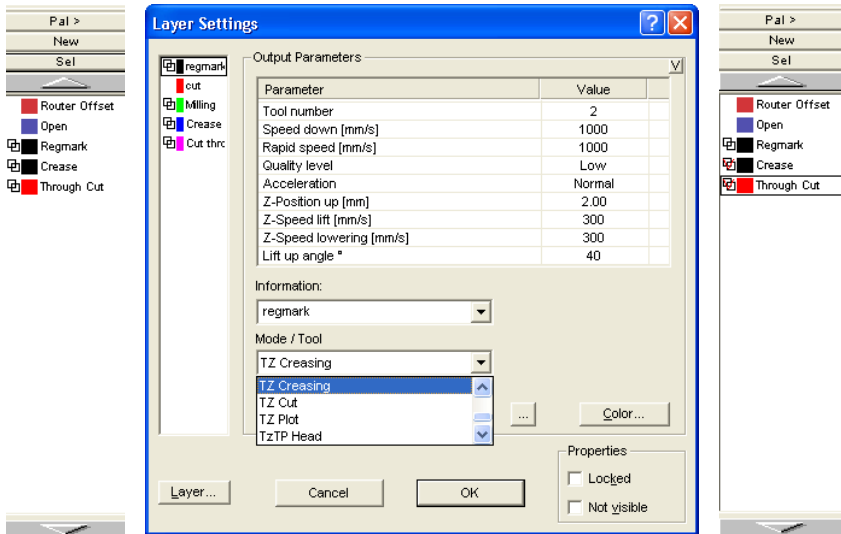


Fig. 4.1-2: Layer with tool nomination (left-hand) - tool assignment (Middle) - Layer with assigned tool (right-hand)

Note: When the red hook is visible, a tool assignment had been done. An additional control is possible via a tool tip in the layer box by placing the mouse cursor on the layer under investigation and is waiting for some time.

Depending on the output device, different tools and output modes are available. In the example below, for example, tools of a flatbed cutter are been used. Here it is important to determine the correct order in which the tools should work.

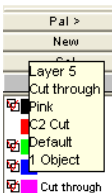


Fig. 4.1-3: Tool tip control for the "Cut Through Layer"

4.2 How the Tool Sequence Is Determined?

In principle, it should be noted that the processing of the **layer is done top down** and the logical sequence of different tools, is applied, so that for example, drawing is active ahead the cut tool. This sequence can be reordered individually.

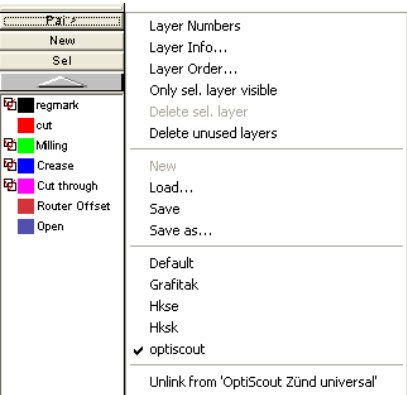


Fig. 4.2-1: Layer sequence which should be reordered

The change order function is enabled via the **layer order** menu item. In the **move layer** area you'll find the buttons to change the layer order.

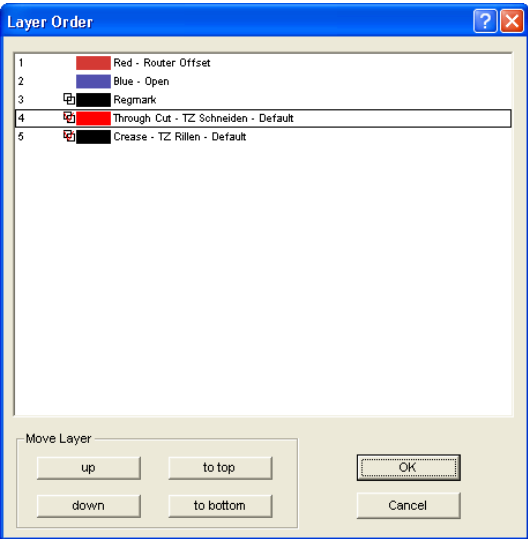


Fig. 4.2-2: Tool sequence reordered - Through Cut above Crease

Conclusion: The tool assignment allows first, the definition of tools, second, the parameters for each tool, third, the selection of the color (layer) in which the to be processed objects lie and in the fourth place, the sequence in which the operation should be processed. EuroCUT Professional 8 gives you the flexibility you need in dealing with different output scenarios and workflows.

4.2 How the Tool Sequence Is Determined?

5 The Output

5.1 Device Setting - Interface Setup (Local Device)

The EuroCUT output

With this command you activate the module for *cutting, milling, creasing* and *drawing* of your data.

You activate this function via the  button in the **tools** toolbar or via the **file** menu, menu entry **output...**



Fig. 5.1-1: The output button

When *first* opening another dialog will be opened before in which the *driver of the device* as well as the *connection* has to be defined.

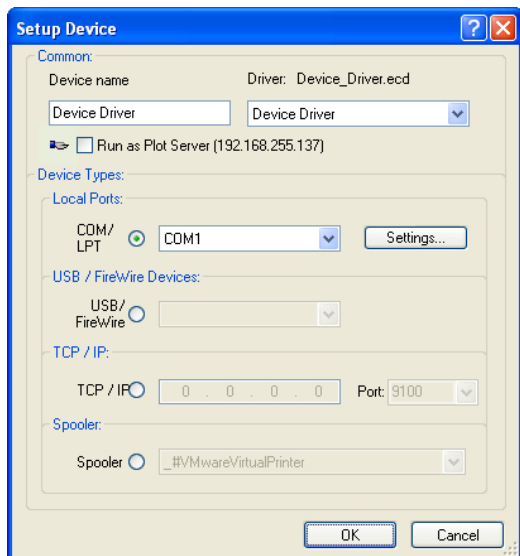


Fig. 5.1-2: Driver and selection of the connection

General

Under the part of the dialog named **General** you select the **driver of the device**.

In the right list all device **drivers** are listed that are available in EuroCUT. In the left list an individual name for the driver can be distributed. This name will be used in the output dialogs of EuroCUT.

5.1 Device Setting - Interface Setup (Local Device)

Enable as server

Requirements are at least 2 licenses of EuroCUT.

If the option **enable as server** is activated the output device will be marked as **plot server** and can be used by another **Plot Manager** for the output.

The characteristic features of an output device are that a driver for the processing of the data has to be distributed to this output device. On the computer on which the Plot Manager is running the job data for the output are transformed into device data by means of a driver. The output of the device data can be done in several ways:

Types of connection

Local interfaces

Local interfaces are the interfaces (COM1, COM2, ..., LPT1, LPT2, ...) that are directly on your computer.

The activation of the **settings** button opens a dialog for the configuration of the interface. These settings that are done here apply for the whole system.

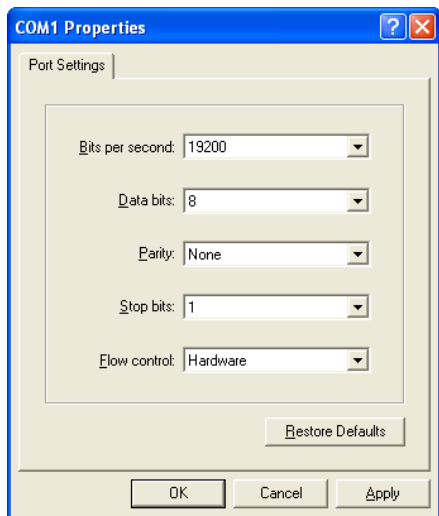


Fig. 5.1-3: Dialog for the setting of the interface parameters

Indication: When steering serially you have to pay attention that all settings on the side of the computer as well as on the side of the output device correspond. Otherwise there is no or faulty communication between them.

USB / Firewire Devices

Here, all momentarily connected **USB / Firewire devices** are listed.

TCP / IP

Here, you have to enter the TCP / IP address and the port number to which shall be output.

Spooler

Here, you can select a Windows printer driver.

When opening the **output** dialog again it will be opened *directly* with the previously set device driver.

5.2 Device Setting (Network Device)

When selecting the menu item **create network device ...** following dialog will be opened:

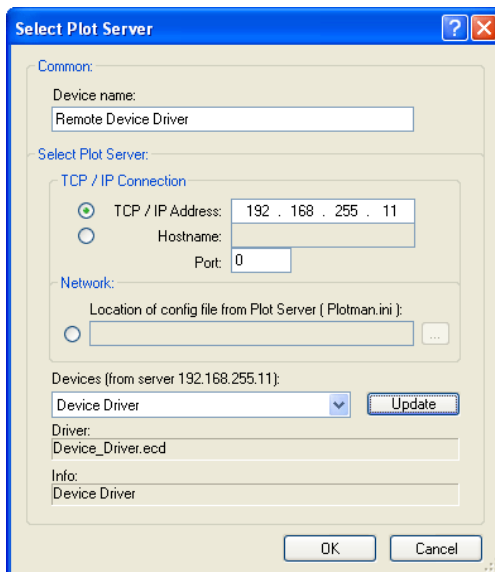


Fig. 5.2-1: Dialog for the configuration of a plot server

A **network device** enables the output of EuroCUT jobs on a Plot Manager that runs on *another* computer. Contrary to a "normal device" the data are not locally transformed into device data but transferred unchanged to the plot server for the further processing.

5.3 Start Output from the EuroCUT Working Surface

Device name

In the entry line enter the name of the device.

Server selection

In the area named **server selection** enter the **TCP/IP address** if you use a TCP / IP connection or the **name of the computer** that is used.

Network

If a connection shall be done via a **network** the configuration file of the plot server, the **plotman.ini**, must be selected.

Devices (of server)

If the **actualize** button is pressed the **devices** of the server are read.

Indication: The device of the server can only be read if the server was selected as only then, the devices of the server are available.

Driver

In the field **driver** the device driver is entered that the server uses for *this* device.

Indication: This driver must also be created locally, which means as local device.

5.3 Start Output from the EuroCUT Working Surface

The output is started using the plotter icon .

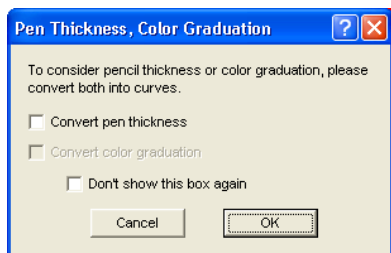


Fig. 5.3-1: Pre-processing line weight and color gradient

If a EuroCUT job contains objects with the attributes **pen thickness** and/or **color graduation** a preceding dialog appears. The object attributes can be transformed into vectors so that they are taken into consideration at the output. After clicking on the **OK** button the object attributes are transformed into curves.

5.3.1 Output to Device

Output to device Device Driver

Output

Device: **Device Driver**

Mode: **Cut**

Output Profile: **Foil**

Number of jobs: 1

Copies per job: 1

☐ Copy spacing y-direction: 0.00 mm

Copy spacing x-direction: 0.00 mm

☒ Weed border distance: 2.00 mm

Segment spacing: 0.00 mm

☐ Only Output tool-assigned layers

☐ Send design relative to origin

☐ Plot to file

☒ Enable tooltips

☐ Disable sending of technology data

☐ Pause after feeding a segment

Save settings

Parameter	Value
OPOS	Off
Pressure	90
Speed [cm/s]	100
Material width [mm]	500.00
Length [mm]	49998.73
Overcut	0
Step count	1

Sort Options

☒ Sort before output

Actual Setting:

☒ Always prefer job order

Sort Options

Accuracy: Normal

Origin: New origin

Objects: All objects

Test drive

Preview... **Output** **Read material size** **Cancel**

Fig. 5.3-2: Output dialog

Output

In the area named **output** of the **output to device** dialog you can control most of the parameters that are directly or indirectly in contact with the output device.

Device

In the **device** field the previously defined output device is shown.

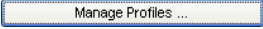
Mode

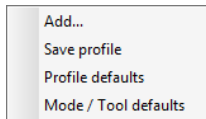
In the **mode** field the required output mode is preset.

Output Profile

In the field **output profile** the required profile with individual settings and values is selected.

Manage Profiles Button

Clicking on the  button opens the following popup menu:



Add

Activating the **Add** menu item writes a new data record into the profile database.

Save Profile

Selecting the menu item **Save profile** the prior to this edited and changed values are written into the profile database.

Profile Defaults

Activating the menu item **Profile defaults** resets all **Values** to the default value. The profile values are reread.

Mode / Tool Defaults

Activating the menu item **Mode / Tool defaults** resets all **Parameters** to the **internal driver values**.

Number of Jobs

The value in the field **number of jobs** repeats the last output *without* the reading of the video marks with identical output parameters such as scaling, etc. Only layers with tools are given out. This variant protects against the fact that layers are output with no tool assignment. This means that there is no error output due to the use of the last active tool.

Copies per Job

In the field **copies per job** you define how often the *selected* objects shall be cut. After the cutting this value is automatically reset to 1.

Copy Spacing Y-Direction

The value in the field **Copy spacing y-direction** defines if the copies shall be stacked vertically and which space has to be kept between the copies. Pre-condition for the activation of this option is that the selected object can be cut more than one time on top of each other!

Indication: *In the preview the first object is shown „normally“. Each further object of the stack is shown dashed in blue.*

Copy Spacing X-Direction

The value in the field **Copy spacing x-direction** defines the space between the copies that were entered in the field **Copies per job**.

Weed Border Distance

With the option **Weed border distance** it is defined if and with which space a rectangle is cut around the plot that facilitates the weeding of the foil. In the **output preview** the frame - if activated - is shown *dashed in blue*.

Segment Spacing

The **segment spacing** defines the horizontal space between the single segments. Segments always occur if the job has to be sectioned which means divided.

Only Output Tool-Assigned Layers

By activating this option, only objects from a layer with an assigned tool are transferred to the **Plot-Manager**.

Send Design Relative to Origin

Via this option the zero point (0/0) of the cutter can be moved. If this option is **not** active EuroCUT selects automatically the physical zero point as starting point for the cutting.

If the **Send design relative to origin** option is active the physical zero point is moved relatively to the offset coordinate of the reference point. The coordinates of the

5.3 Start Output from the EuroCUT Working Surface

reference point corresponds to the position of the down left corner of the object to be cut on the EuroCUT working surface.

Plot to File

If the option **plot to file** is active all output data are directed to a file you have named and written onto the hard drive.

Enable Tool Tips

If this option is enabled, explanatory texts regarding parameters, values or options are displayed, if the mouse cursor is located directly above.

Pause after Feeding a Segment

Sectioning / Segmentation: If a job is too big for the output EuroCUT separates the job automatically in so many parts (**segments**) that are necessary for the complete output of the job.

If the option **Pause after feeding a segment** is active the output is interrupted after each segment and the material can be re-adjusted if necessary.

Save Settings Button

By activating the **Save settings** button all values that have previously been entered in the **output** dialog are stored and assigned to the currently active output device.

5.3.2 Sort Options

Sort before Output

If the option **Sort before output** is activated all objects in the working surface are sorted
1. in *head direction* and 2. in *transport direction*.

Actual Setting



Fig. 5.3-3: Main direction icon

The icon shows which **main direction** is selected in the **output to device** dialog.

Always Prefer Job Order

This option ensures, that the sorting that was made before, is not changed through an alternative sortation.

The Button

The **sort options** button opens the **output settings** dialog.

Accuracy

The **Accuracy** field offers the following settings: **very low**, **low**, **normal**, **high** and **very high**. As default, the value **normal** is set.

The accuracy defines of how many vector parts an object should consist. This is only relevant with objects whose size range in ten thousands of a millimeter. Other object sizes are calculated *automatically* by EuroCUT.

Feed / Origin

Depending on the selected driver the field name is either **feed** or **origin**.

Friction Feed Cutter

With **origin** the options are **new origin** or **don't set**. If the option **new origin** is selected the device goes into X-direction at a fix set value behind the last cut object and this position is then the new origin. If **don't set** is activated the physical zero point is the new origin after the output.

Flatbed Cutter

With **feed** the options are **feed** or **no feed**. If the option **feed** is activated the material feed is carried out with the sectioning and with the output from the roll if the flatbed cutter has an automatic material feed.

Objects

The field **Objects** allows the selection of the objects to be output. Besides the modes **all objects** and **selected objects** EuroCUT also allows the cutting of **color sequences** or of **single color layers**. The two last named are explained more in detail in the chapter „**color separation when cutting**“.

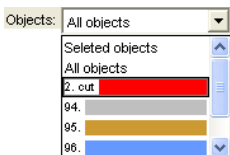


Fig. 5.3-4: List field objects with selection modes.

5.3.3 Parameter / Value Table

The table **Parameter / Value** allows the access to the parameters of device and driver. The area is divided in **parameter** and **value**. The width of the display can be changed by moving the vertical line between the areas with the mouse. Whenever **Edit...**

5.3 Start Output from the EuroCUT Working Surface

is displayed in the **value** column a double-click opens the corresponding window for the setup of a **group of parameters**.

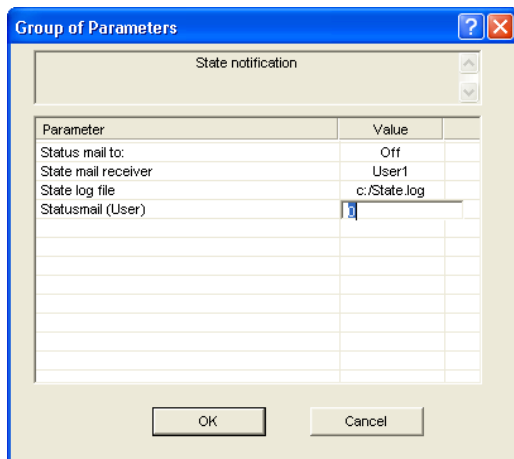


Fig. 5.3-5: Example for an opened parameter group

Info Line

In the **Info Line** information relating to the output process is displayed additionally, e. g. "Job will be sectioned".

Test Drive

If the **test drive** button is activated the connected device drives along the **weeding frame** with the tool head lifted. This also happens if the option **weeding frame** is not active.

Preview or Direct Output

The **Preview** button opens the **output** preview. **Direct output** suppresses the **preview** window. After pressing the output button, the plotter commands are transferred to the plotter together with the data.

Output

The **Output** button transfers the data directly to the **Plot Manager** and to the connected device.

Read Material Size

The **Read material size** button delivers back to all connected devices the height of the area to be plotted if an accordant command is intended in the firmware for the device. Devices that do not offer this option no value respective zero is delivered back.

5.3.4 Color Separation when Cutting

Each layer color used in the draft appears again in the **objects** list with the number that clearly defines each layer color. In addition, in this list field *two horizontal color bars* appear. After having transferred the data of a color layer, in the info area of the Windows status bar the **Plot Manager** icon () appears.

Double clicking on this icon activates the Plot Manager **job control**. If the mouse cursor is positioned on the icon and the right mouse button is pressed, a pop up menu appears in which the **Plot Manager** can be closed or the program **version** can be shown. In the **layer selection** the color layers that have not been processed yet occur in the order in which they had been selected. The order in the stack can be changed at any time.

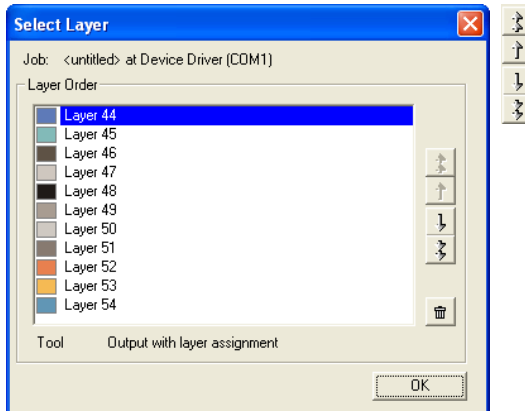


Fig. 5.3-6: Definition of the order in which the single layers shall be processed by up / down buttons

The order is defined via the **up** / **down** buttons. Layer colors that are not necessary are deleted from the list with the  button.

Tip: For the color separated cutting use the register marks from the draw tool. Register marks are cut at the same place on the foil independently from the used color.

5.3 Start Output from the EuroCUT Working Surface

6 Export

If you want to use a job-file also in other programs the data must be made available in another format than the EuroCUT-job-format. This process is called „**export**”

Indication: Exporting is done with the highest quality and lowest compression.

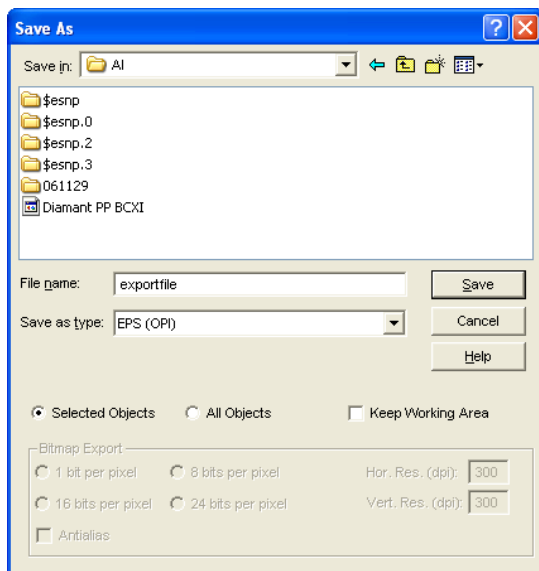


Fig. 6.-1: EuroCUT Export window with file selection

Save

With the icons next to the **Save-field** you choose the path in which the export-file shall be saved.

File name

In this field you enter the name of the export-file.

Type of file

Here, you select in which other format the data on the desktop is to be written.

Following export-filters are available in EuroCUT: *.eps (opi), *.cmx (Corel6-X6), *.plt (HPGL), *.jpg, .pcx, *.tif, *.bmp.

Indication: If objects are selected only those are exported, otherwise all of them.

6 Export

Selected objects

If this option is activated only the marked objects are written in the export-file.

All objects

If this option is activated all objects are written in the export-file.

Maintain worksheet

With this option the contour of the worksheet is written as object in the export-file.

Bitmap-Export

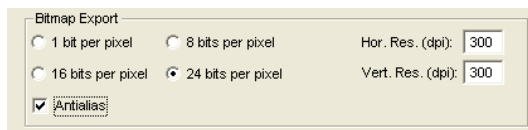


Fig. 6.-2: Shade and resolution at Bitmap-export

Shade

The number in front of „Bit per pixel” indicates the exponent of the shade.

Example: 8 bits per pixel = $2^8 = 256$ colors

Resolution

This value defines the amount of pixels per inch. The higher the value the finer becomes the resolution. The value dpi 300 for example is sufficient for the offset printing.

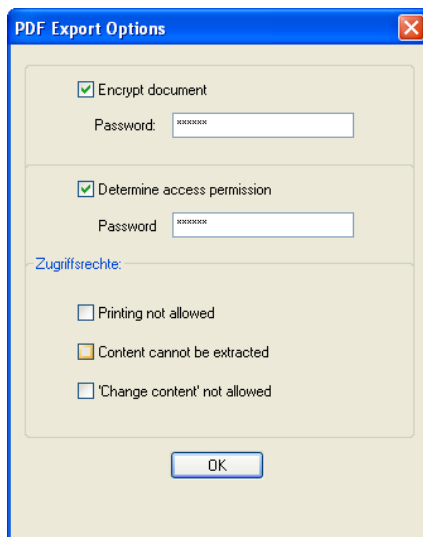
Indication: Higher values are often not suggestive as the size of the file increases with higher dpi.

Antialias

The export of a bitmap can also be done with antialiasing short: Antialias, which is a **jaggies smoothing** or **edge smoothing**.

6.1 PDF Export

6.1.1 Additional Options



6.1.2 *Encrypt Document* Option

Enabling the **Encrypt Document** option allows input of an individual password.

Password

In the **input field** any password for the document can be filed.

Note: Please make sure that a secure password is used. It should be at least 8 characters long and made of numbers, letters, capital letters and special characters.

6.1.3 *Set Access Rights* Option

Enabling **Set Access Rights** option allows you to enter an individual password.

Password

In the **input field** any password for the following access rights of the document can be filed.

Note: Please make sure that a secure password is used. It should be at least 8 characters long and made of numbers, letters, capital letters and special characters.

PS: The EuroCUT PDF export includes a double-stage password protection. The first stage refers to the entire document and the second stage to a specific access rights of the document.

6.1.4 Access Rights

Printing not allowed Option

When this option is enabled, printing of the document - **without knowing the password** - is not possible.

Content cannot be extracted Option

When this option is enabled, extracting of contents - **without knowing the password** - is not possible.

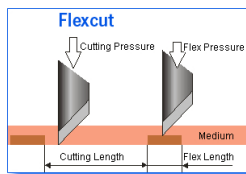
Do not allow "Change Contents" Option

When this option is enabled, editing of contents - **without knowing the password** - is not possible.

7 Flex-Cut, Half-Cut - Punch Function

7.1 EuroCUT Driver Options Using a Roll Plotter

Definition



Flex-Cut - short for: Flex(ible)-Cut; Term which is used from Summa (Plotter manufacturer). Mimaki speaks of "Half-Cut".

Flex-Cut: Flexible cutting: Flexible, because with 2 cutting pressures and variable cutting lengths are parameterized. There is a cutting pressure value for the cutting (cut-through) of the material plus medium, and a second cutting pressure value for the so-called kiss-cut, in which only the material itself is cut and not the medium below.

Application Field

Application field is the production of decals of foil or cardboard (only limited possible) like labels. This application field is normally a domain of flat bed cutters. But even with the latest-generation of roll cutter such a production can be built. This function can be realized both with an optical sensor, as well - even faster and more accurate - with a camera.

Suitability of Roll Cutters

Basically, the cutter must offer this option. Summa and Mimaki are supporting this function in their professional cutter series. If a cutter is suitable for a special workflow, depends in first place on the material, and secondarily on the size of the copies and into third place on the possibilities of cutting software. EuroCUT has all functions, which are required for **sensor-based systems** (OPOS, OPAAL, ...) As a professional software solution for driving camera-based systems should be mentioned here **OptiScout Roll Cutter Edition** from EUROSYSTEMS.

Limits

Limits are mainly those where the material e.g. heavy cardboard can not adequately be transported from a roll plotter or materials, in which a cutting pressure of 600g is not enough to cut through them. This field of applications remains reserved to flatbed cutters.

7.2 Step by Step Instruction

1. Step: Assignment of The Cut Mode in The Layer Toolbar

Preparation:

The job is prepared with EuroCUT Professional 8 (▶ [please refer to 11: Label Production with Cutters with Optical Sensor](#)).

7.2 Step by Step Instruction

Here is the **abstract**:

The is prepared for printing with the use of the following functions: 1. Contour function, 2. Cloning, 3. Multi copies, and 4. Set Jog Marks. Printing can be started directly from EuroCUT Professional 8, if PjanntoRIP, EuroVPM or PosterPrint as print programs were installed. If another then the mentioned RIPs is used, the EPS (OPI) export may be used, in order to preprocess the job data.



Fig. 7.2-1: Job ready for output - Layer toolbar wit tool selection

2. Step: Setup Kiss-Cut Parameter

In the layer settings an appropriate cutting mode must be selected (see blue marking). The basic setting of the tool has to be preset in the list of output parameter. The black layer was selected for objects, which should be processed in the so-called kiss-cut mode. The red hook shows that a tool assignment was done.

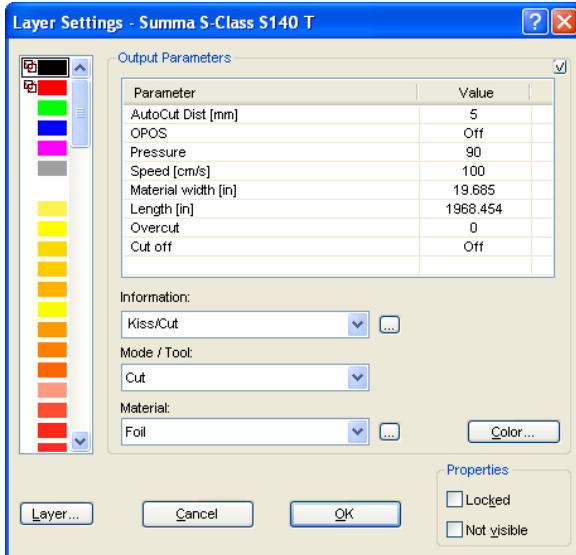


Fig. 7.2-2: Setup of the tool mode: Kiss-Cut

3. Step: Set Flex-Cut Parameter

In the layer settings the Flex-Cut cutting mode must be selected (see blue marking). The basic setting of the tool must be preset in the list of the oupt parameter. The magenta layer was selected fpr objects, which should be processed in the Flex-Cut mode - here: magenta external contour.

Note: Here the basic setting of cutting length with flex pressure and normal pressure may be done. The cutting length determines the length of the bridges that need to remain standing so that the decals do not fall out of the carrier material.

7.2 Step by Step Instruction

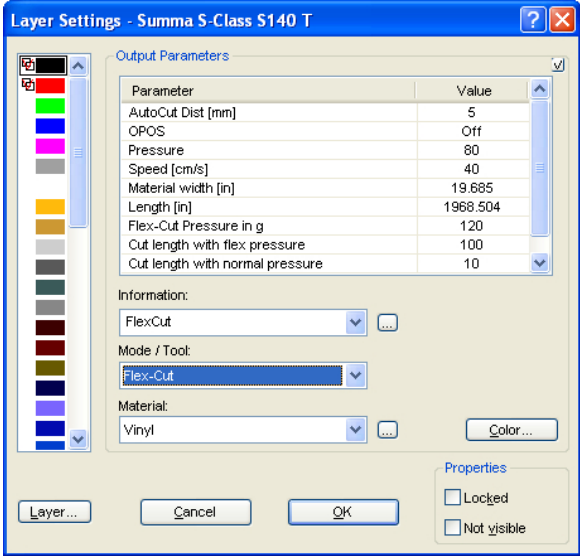


Fig. 7.2-3: Setup of the tool mode: Flex-Cut with pressure and cutting length

4. Step: Set Driver Parameter in The Cutting Dialog

In the cutting dialog the mode Flex-Cut must be selected. It is particularly pay attention to the blue shaded parameters in Fig. 7.2-4 . These parameters are only visible, if the appropriate cutting mode was selected (here: Flex-Cut).

Note: The in the cutting dialog visible Flex-Cut graphic is not! included. It should only make it clear what the parameters mean.

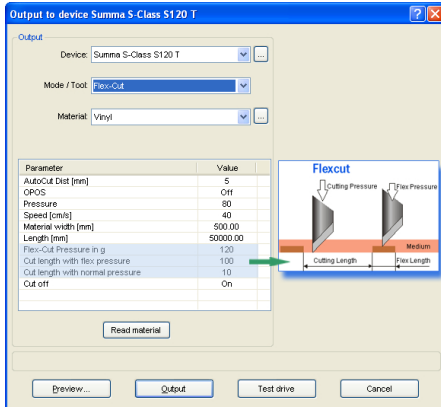


Fig. 7.2-4: Setup of the Flex-Cut parameters (Common settings)

5. Step: Output on The Cutter

After pressing the output button the job is cut, with these values. The result of this output are perforated, removable decals.

7.2 Step by Step Instruction

8 The Serial Number Function

8.1 Step by Step Instruction

Step 1:

- Place background. Here the background consists of color areas, name of event, and sponsor logos
- Set text blocks 1 (name) and 2 (number) with the **Text** tool

Step 2:

The key F8 activates the so-called layout mode for the serial number function. In this mode text is defined length and alignment and customized as well the behavior of the text block in length and height exceeding the specified dimensions, ie, for example, "no line break" or "adjust cap height".

Important: If caps height is enabled, the longest line is reference measurement.

Step 3:

In the next step the text blocks must be given an identifier: **Name** and **Number**.



The image shows two identical form boxes side-by-side. Each box has a title bar labeled 'Identifier'. Inside each box, there is a label 'Name' followed by a text input field. In the left box, the input field contains the text 'Name'. In the right box, the input field contains the text 'Number'.

On EuroCUT's working sheet this is displayed as follows:

8.1 Step by Step Instruction

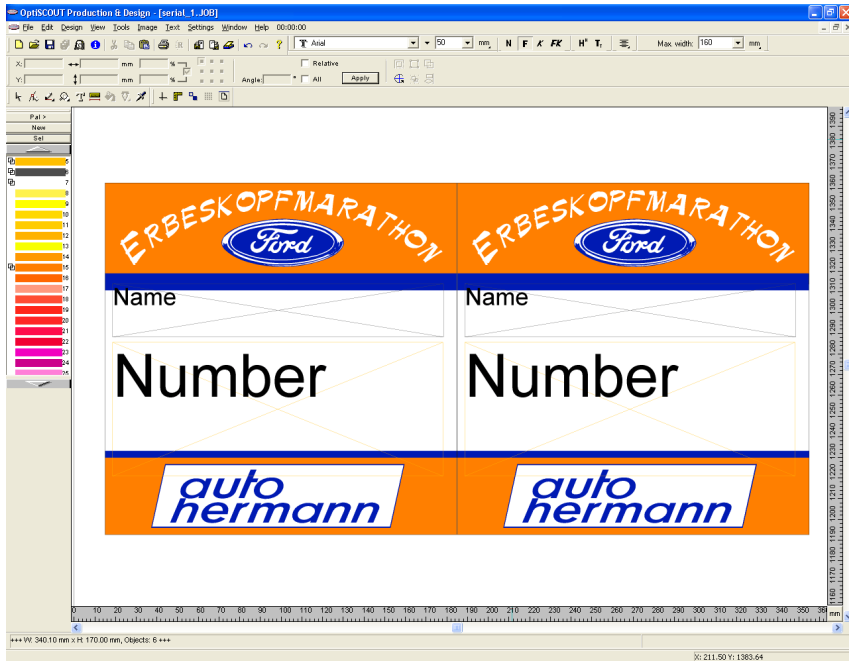


Fig. 8.1-1: Background. Logos and text blocks with identifier names

Step 4:

With the **duplicate** function of the **object parameter** toolbar the desired number of copies is generated.

Question: Why here the clone function cannot be used?

Answer: Because the copies are different. Clones must always be identical copies of the so-called control object.

Step 5:

Control number of copies, text lengths and identifier in the **layout mode**.

Step 6:

Date Import

In our example an Excel table file is used. Other supported import formats are: DBase, Access and Paradox. In Excel the start number table is generated and stored.

Tip: The columns header should have the same names as the textblock's identifier, so you can easily make the assignment.

	A	B	C	D	E	F	G	H	I
1	Number	Name							
2		400 E. Hille							
3		401 L. Hoffmann							
4		402 H. Krauß							
5		403 M. Michels							
6		404 R. Schwandrau							
7		405 J. Staudt							
8		406 S. Kiemel							
9		407 B. Kneer							
10		408 B. Martini							
11		409 S. Marzlin							
12		410 J. Räscher							
13		411 M. Schiefeneder							
14		412 B. Schmitz							
15		413 C. Schmitz							
16		414 P. Weigand							
17		415 A. Weinandy							
18		416 J. Adriaans							
19		417 M. Adriaans							
20		418 J. Faimann							
21		419 T. Heßling							
22		420 F. Leinen							
23		421 J. Martini							
24		422 R. Martini							
25		423 D. Rausch							
26		424 M. Reiz							
27		425 M. Rohland							
28		426 T. Van Swam							
29		427 P. Vermeer							

Fig. 8.1-2: Excel table with number and name column

Note: If the Excel data change is active during the serial number function, then the file and field assignment must be carried out again.

Step 7:

The serial number function is enabled with the **tools** menu of EuroCUT.

Step 8:

Now, the values for both text blocks must be read out from the excel file and the appropriate table must be selected.

8.1 Step by Step Instruction

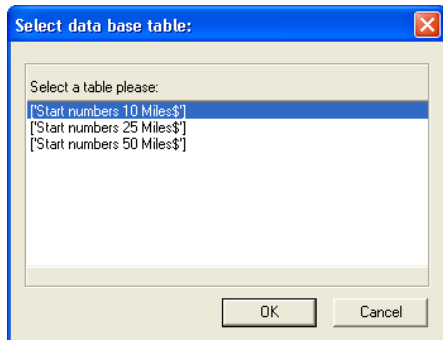


Fig. 8.1-3: Here: Selection of table with name "Start Number"

Important: A double click on the column head must be done, in order to be able to assign field names with table names.

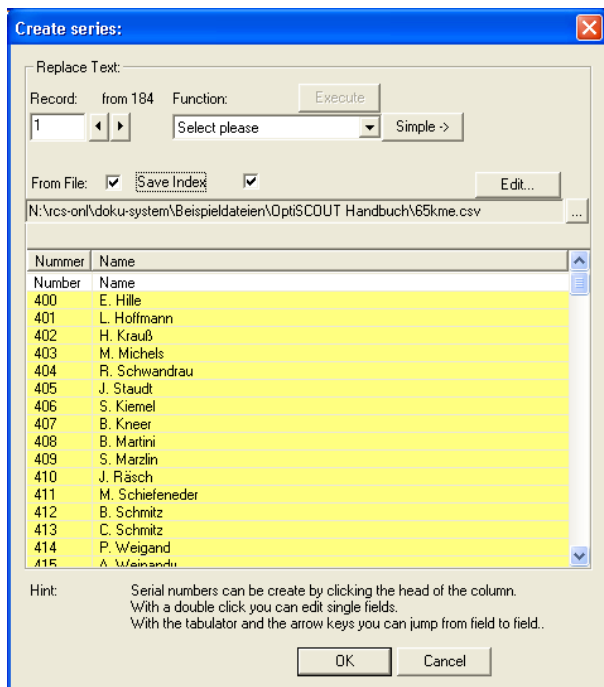


Fig. 8.1-4: Read in and assigned data of the start number table

Step 9:

Select the output function und activate, if necessary, the "simple" floating toolbar.

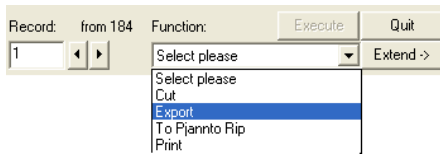


Fig. 8.1-5: „Floating” toolbar

The **save index** option save the spot where the index stood last in the data set (mouse marker end). Hence it follows, that the next calling will be done from this spot

Step 10:

Result of the step 1 to 9 is the following full surface view of the data sets with start numbers and names from a Excel table with two columns.

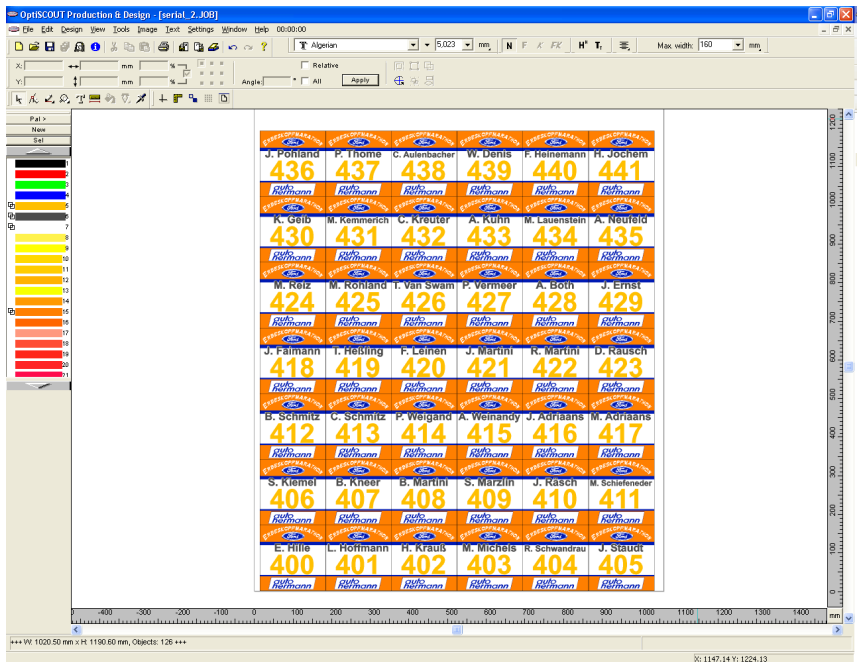


Fig. 8.1-6: Example of a serial number assignment with data of an Excel table

The output can be achieved in various ways e.g. Printing on a local or a network printer, via RIP on a large format printer, via data export in a file, or via connected device - cutter

8.1 Step by Step Instruction

or milling machine.

9 Excursion: Contour vs Outline vs Contour Line

Often, there is confusion among EuroCUT Professional 8 users, because the differences between these terms are not clear and there can be seen no difference on the EuroCUT working sheet, if the so-called full surface mode is enabled. Not until then the so-called contour mode - switch on or off using F9 key - differences can be seen. Obviously completely different functions are meant.

In the following the terms are examined for their similarities and differences.

9.1 1. Contour

Definition:

Contour is a property, an attribute of a vector object or a type face, comparable with a color fill. Color and width can be defined individually. This contour is given out on a laser or ink jet printer. The tool for the definition of a contour is the pen .

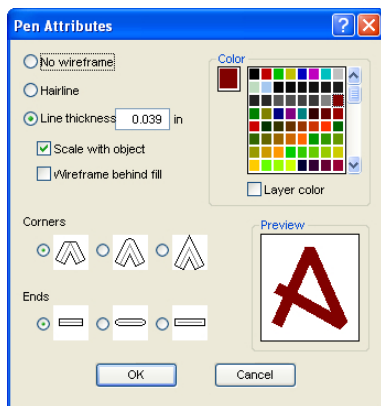


Fig. 9.1-1: Pen attributes dialog

Contour Contour

Fig. 9.1-2: Full surface mode

Contour Contour

Fig. 9.1-3: Contour mode

Attention: A contour is not! given out on a cutter, unless the "Convert contours" function was executed before data transfer to the output module.

9.1 1. Contour

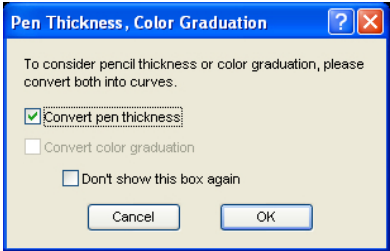


Fig. 9.1-4: Dialog for conversion of contours into cuttable objects

If the option *Convert contours* is enabled, a vector combination in the thickness of the contour is generated. This combination is put in a layer with the same color.

Additionally the following dialog appears with a pre-selection of the correct welding method (here: *Weld by Color*).

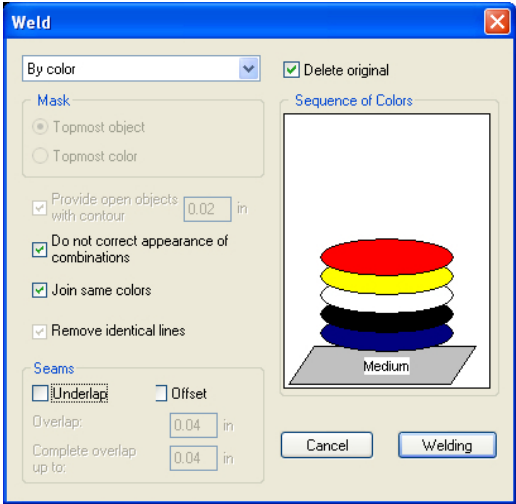


Fig. 9.1-5: Welding dialog with presetting "by color"

Tip: For testing can be switched into the contour mode in order to control which objects will be given out.

9.2 2. Outline

Definition

Outline is a vector contour around another vector object oder a type face. In differenc to the term *contour* the generated contour is a real vector which can be outputted. Another difference is, that interior parts are contoured as well with a so-called *Inline*. Example:

Letters like a, e where the interior parts are also contoured (see fig. below)

Note: The Outline function is linked with the welding function, so that if contours are overlapping each other, an error-free output to vinyl gets possible.

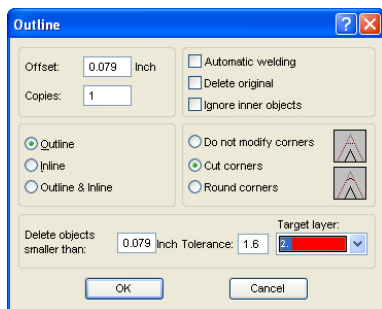


Fig. 9.2-1: Outline dialog



Fig. 9.2-2: Full surface mode

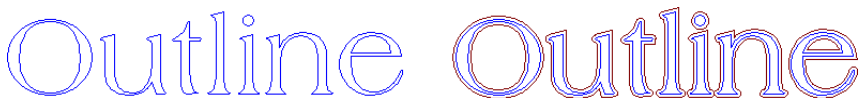


Fig. 9.2-3: Contour mode

9.3 3. Contour Line

Definition

By a contour line is often referred in connection with the term: "print & cut". In "Print & Cut" bitmaps mostly logos - graphics without vectors - are contoured with a vector line, in order to produce decals, label, sticker on a cutter with OPOS sensor. The contour line is the line that is cut around each sticker. It is like the pen contour an outline around the entire object.

Note: In this case the thickness of an object cannot be defined; as default a so-called hairline (0.01 mm) is generated.

9.3 3. Contour Line

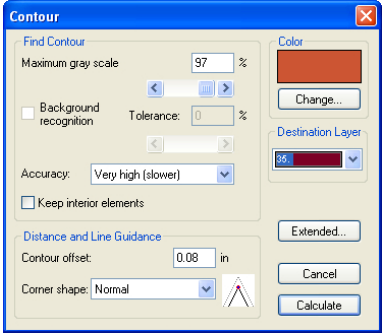


Fig. 9.3-1: Contour line dialog



Fig. 9.3-2: Full surface mode



Fig. 9.3-3: Contour mode

Conclusion: The above examples should made clear that it is important to keep apart the notions. Although, there cannot be seen any difference on the scree when in the full surface mode, different tools and functions are involved. This example also shows how flexible the tools of EuroCUT Professional 8 are.

10 Excursus: Welding of Vector Objects

10.1 A Selection of the Most Important Welding Sub Types

The **welding** function merges two or more vector objects together to a combination. Depending on number and shape of the selected objects, you can select between the following options: **Manually**, **Automatically**, **Trim** (which cuts objects with lines or curves), **Open trimming**, **Fill**, **By color**, **Full surface** or **Screen printing**.

10.1.1 Automatically



Automatically calculates the common areas of the objects. All overlapping pieces are merged with each other; transparent interiors are taken into account.

The option **Automatically** is especially appropriate for the welding of serifs of scripts. The serif of the preceding letter often overlaps with the following letter itself or its serif. Without welding the material would be cut at this intersections. The automatic welding eliminates this overlap and serves to a cuttable transient of the serifs.

Note: Please note that by this option objects with different color are welded to one! combination object. Should the object colors taken into account, then choose either one of the options: **By color**, **full surface**, or **screen printing**.

Tip: If after the automatic welding some parts are missing, then you should reduce the character spacing in your text editor by 100% to 99%. As a result, identically on top of each other lying node points get moved in a way, that they can recognized as separate nodes and then the welding function runs correctly.

10.1.2 By Color



By color removes all areas, which are masked from overlying colors. It does not matter, how much objects or colors you select. If open objects are also selected, they can be closed or be provided with a line width.

10.1.3 Full Surface



The option **Full Surface** underfills objects in one color, whose areas cover the areas of another. The partially covered objects are handled in a way, that the overlying ones cover the underlapped totally.

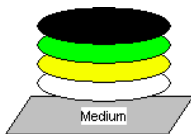
Tip: The most common application is the window lettering. Here, the option 'by Color' is often too difficult to handle. At 2 or 3 foil colors, you should take the full surface option, in which the individual foil colors are glued one above the other.

10.1.4 Screen Printing



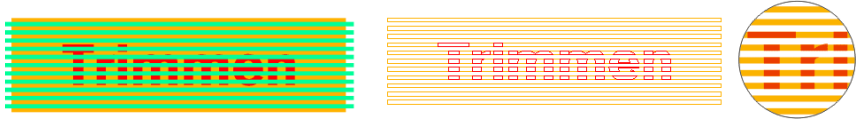
The welding option **screen printing** is particularly powerful tool for screen printers. First of all it eliminates overlaps of the color layers. Afterwards the colors are stacked in the color sequence. Finally, a bridge (an outflow wedge) gets inserted as an overlap.

10.1.5 The Color Stack of Screen Printing



Changing the color stack: In screen printing the sequence of printing colors is from light to dark. Lighter colors are printed before darker colors. With a mouse click a color layer can be picked up and moved to the desired position. The color stack shows the location of the individual layers above the medium. The output sequence takes, the changings of the color stack, into account.

10.1.6 Trim



Trim means, that you can cut closed objects with lines or curve objects and the resulting subobjects are then closed again automatically. Depending on the request, you can put one or more objects - like a "knife" - on the objects which should be dissipated. If you use more "knives", this objects must lie in the same layer or must be combined. With the help of the **trim** function the underlying objects are dissected along the "knives". Also, a dissection in multiple tiles is easily achievable, because the knives may overlap. The resulting subpieces are then sorted according to their location and condensed to particular groups.

10.1 A Selection of the Most Important Welding Sub Types

11 Label Production with Cutters with Optical Sensor

EuroCUT Professional 8 is predestined for the so-called "Print & Cut" production of labels or stickers on self-adhesive material. The term "print & Cut" means, that on the medium gets printed first and then the labels are cut outlined with a cutting plotter. The cutter therefor should be equipped with an optical sensor, which recognizes so-called register marks or jog marks, so that print inaccuracies can be compensated. For the "Print & Cut" process it doesn't matter with which method the material was printed - screen print or digital inkjet print.

Definition: OPOS - Acronym for **O**ptical **P**ositioning **S**ystem

11.1 1. Step: Job Preparation

The job is prepared with EuroCUT Professional 8. All tools which are needed for the production of labels are included. With the CoRUN export function out of host programs like CorelDRAW, Freehand, AutoCAD or Illustrator external data can be imported and processed in EuroCUT.

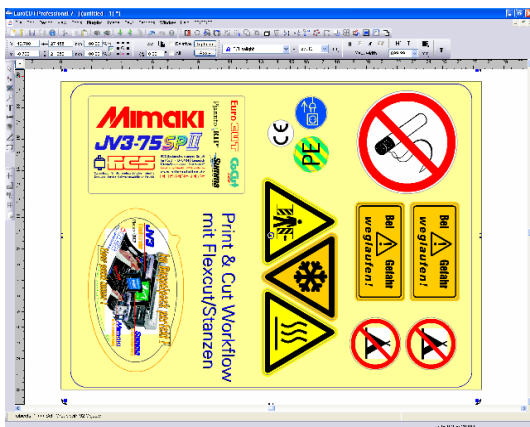


Fig. 11.1-1: Job preparation

Using the special functions 1. Contour Line, 2. Clones, 3. Multi Copies, and 4. Set Jog Marks a job is prepared for printing. Printing can be done directly using EuroCUT Professional 8, if for example PjanntoRIP or EuroVPM as a print program is installed as well. If another RIP than those specified is in use, you must use the EPS (OPI) export in order to prepare the job data for printing.

Tip: For the generation of identical copies, the clone tools should be used. This ensures a small amount of data and a high processing speed.

Thus the cutter can provide the print job with cut outline, manufacturer-specific jog marks can be used and printed additionally! Setting of the jog marks can be done with the

11.1 1. Step: Job Preparation

Settings / Common Settings / Register Marks menu in EuroCUT.

Limits: EuroCUT Professional 8 has no resp. only rudimentary image processing tools. The image processing must be done in a host program such as Photoshop. Afterwards, the image data are imported into EuroCUT and processed.

11.2 Jog Marks for Optical Recognition Systems

11.2.1 Field of Application: Contour Cutting (Print & Cut):

Wherever printed materials must be cut or milled with contours, the usage of jog marks is indispensable, in order to produce with the required accuracy. Beyond that, inaccuracies which occur during the print process, must be compensated. Preset ist done in the Settings / Common Settings / Register Marks menu. The jog marks are set using the tools menu with the Set Jog Marks submenu item.

Note: The jog marks function can be used with all cutters with optical sensors or with flatbed cutters or milling machines equipped with camera systems for mark recognition.

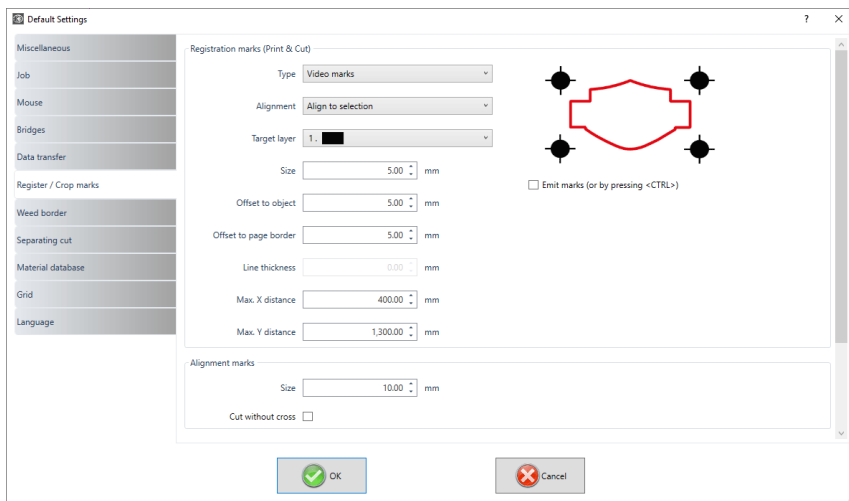


Fig. 11.2-1: Settings menu in EuroCUT with jog mark selection

11.2.2 Definition

Jog marks and video marks are used synonymously for marks related to optical detection of marks. **Register marks** describe a tool, that is used for the assembly of colored signs. **Print and cut marks** describe marks, that are used commonly in printing and desktop

publishing.

Note: *Jog marks are usually associated with an optical sensor; video marks with camera usage.*

11.2.3 Jog Marks

A detailed description of all parameters can be found here:

After preselecting the producer-specific jog marks, this jog marks can be set around the job, so that in the 2nd step they will be part of the printing job. Hotkey for this function in EuroCUT is **SHIFT+J**.

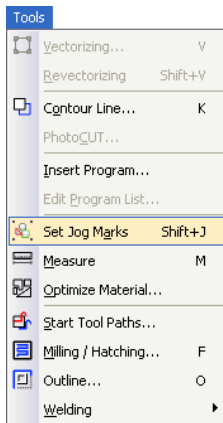


Fig. 11.2-2: Tool menu for setting of jog marks

11.3 2. Step: The Print Process

Print processing is either done in screen print or digital inkjet print with solvent ink. The RIP does the rastering, the linearization and the density correction. Additionally control parameter like heater temperature, resolution, etc. are managed. Modern solvent printer print on un-coated materials which often do not have to be laminated. All users which do not have an own printer, can delegate the print process to an external provider.

11.4 3. Step: The Cutting Process

Currently, all premium cutter have an optical sensor, so that with this devices a serial production of label, stickers, or decals is possible. The cutter processes in doing so the contour line - not to be confused with Outline - which was generated in the job preparation around all copies. Fig. 11.4-4 shows the magenta contour lines which will be cut.

11.4 3. Step: The Cutting Process



Fig. 11.4-1: Cutting head with sensor and tangential knife

The cutter described above are able to process sheets or rolls. EuroCUT's plotter driver support both functions. Fig. 11.4-2 and Fig. 11.4-3 show the driver parameter for the cutting with sensor for the processing of identical job copies using rolls or sheets (Fig. 11.4-3).

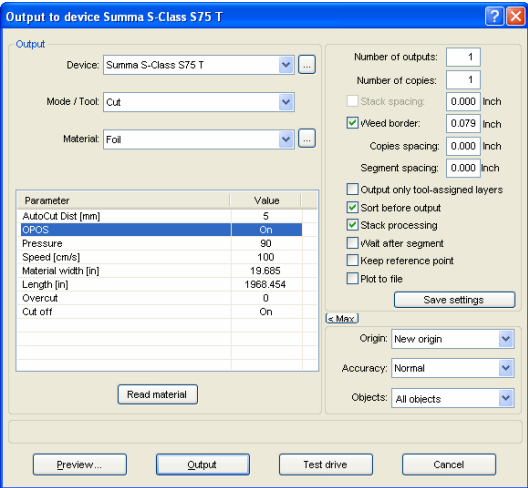


Fig. 11.4-2: Parameter setting OPOS=ON using the example of Summa S-Class

Note: The parameter "OPOS" is set automatically on "ON" if the appropriate marks are used. When processing identical copies of jobs on a roll using jog marks, the mode "OPOS cutting with copies" must be used (Fig. 11.4-3). Then additionally the number of copies in X direction can be set and as well as the mark distance between the copies in mm.

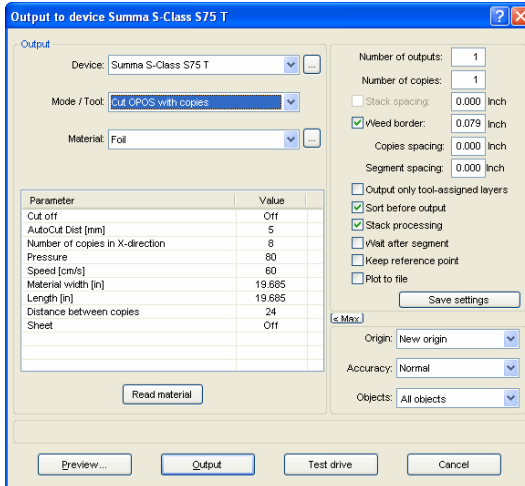


Fig. 11.4-3: Parameter setting with identical Job copies from roll (also possible with sheets, if the parameter "Sheet=On" was set)

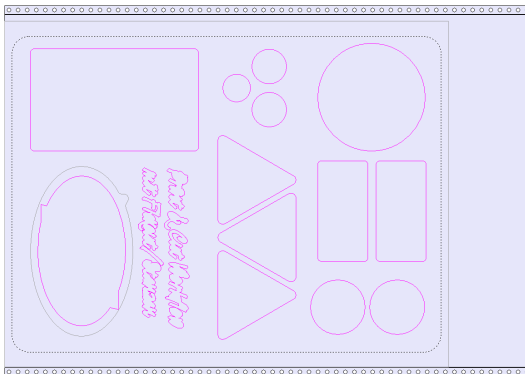


Fig. 11.4-4: Cut contours in the cut preview (the gray contour below left, is required for "Flex-Cut")

The **result** of this process are readymade labels in individual number and size. To get the labels carwashresistant, they must be treated with a liquid lacquer.

11.4 3. Step: The Cutting Process

12 Cutting - Milling - Creasing - Drawing ...

12.1 The Output Preview

The **output preview** is automatically started if you press the **preview** button in the **output** dialog.

Closing the **output preview** and returning to the working surface of EuroCUT

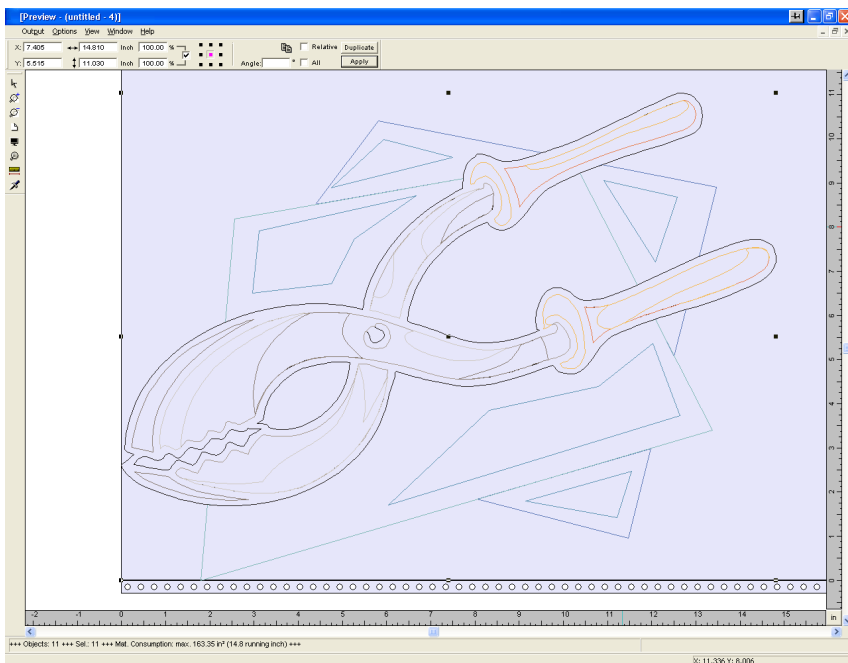


Fig. 12.1-1: Output preview with toolbars, status line and output objects

In the status line of the cutting preview the following information is shown: **contour**, **filling**, **width** and **height**, **group** or **combination**, the **max. foil consumption** in square meters and running meter (rmm) as well as selected **object features**. If the **output** menu is activated the data are transferred to the output device.

Indication: If the job to be cut is left, underneath or above the material- or table preview and the output -menu is activated you will automatically be reminded that the objects to be cut are out of range of the output.

Detailed description:

12.1.1 Material optimization

The material consumption can be reduced by using the module **Box nesting**. The **Box nesting** ensures that all objects are arranged in such a way that they take up as little space as possible during output. Rotating or not rotating objects ensures that material consumption can be reduced.

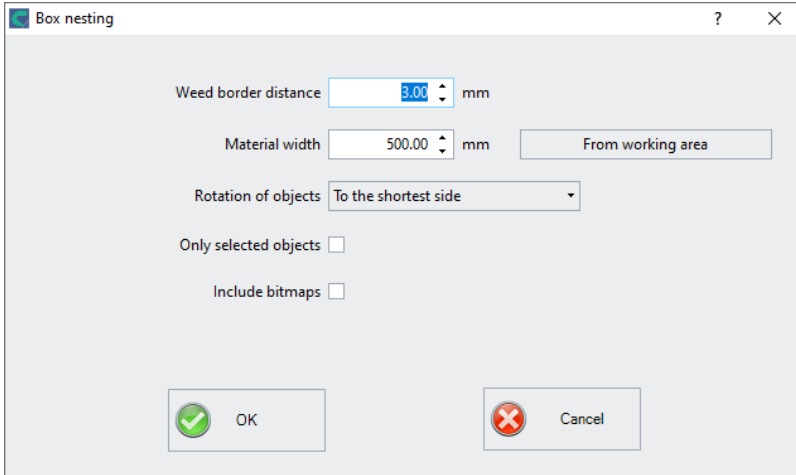


Fig. 12.1-2: Parameter dialog for the material optimization

Indication: *Groups and combinations are each regarded as an optimization object. If this is not desired the grouping must be interrupted and the combination cancelled.*

Following options are available:

Weed border distance

In this field the desired distance between the optimization objects, the so called **weed border distance** can be set.

Material width

This value determines to which maximum material width the optimization should be applied. If the working area is to be used, just click on the **From working area** button to enter the corresponding width value.

Rotation of objects

none

With this option, no objects are rotated; they are only optimized for the **weed boarder distance**.

to the shortest side

All objects are rotated so that the shortest side is downwards.

as required

During the optimization all objects are rotated so that they can be arranged saving the most space.

Only selected objects

Only the selected objects are considered. With this option you can for example optimize according to layers (colors).

Include bitmaps

If this option is activated, bitmaps and groups that contain bitmaps are also optimized.

12.1.2 Weeding lines

Weeding lines serve for the better procession of large jobs. Material length or width of several meters are difficult to handle, therefore, you can insert weeding lines during the foil cutting that divide the job into smaller parts that are more easy to handle.

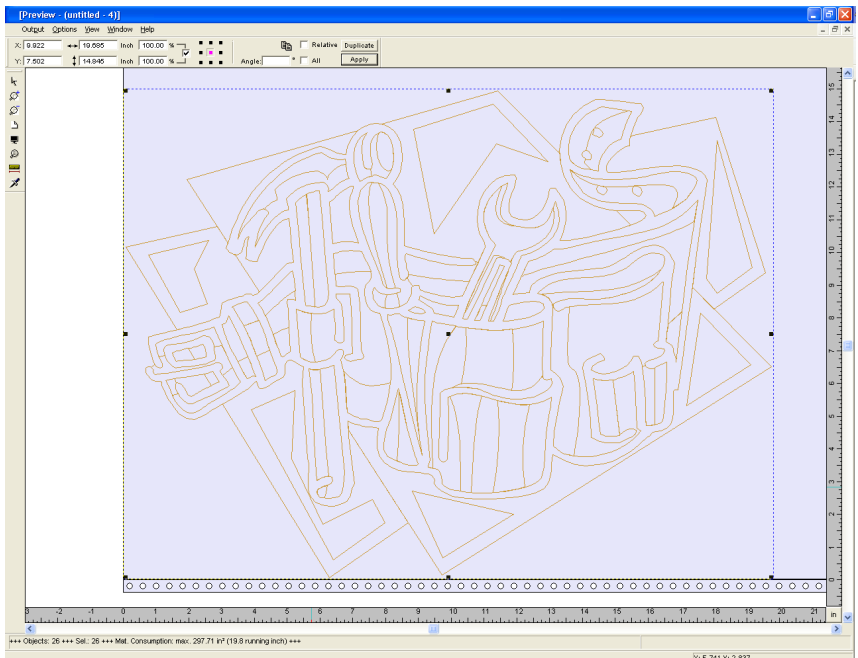


Fig. 12.1-3: Output job with weeding frame (dashed in blue) without weeding lines

12.1 The Output Preview

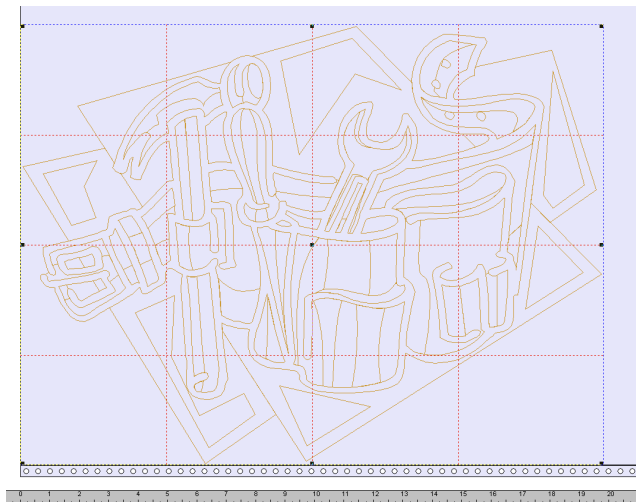


Fig. 12.1-4: Example with 3 horizontal and 3 vertical weeding lines (dashed in red)



Fig. 12.1-5: Result of the output with weeding lines - objects not! cut

In the **output preview** there are 3 possibilities to insert horizontal and vertical weeding lines.

Indication: Weeding lines can only be inserted if the option weeding frame has been activated in the output dialog.

1. Manually

Position the mouse cursor on the weeding frame *dashed in blue* around the objects. The mouse cursor changes into a double-headed arrow. Now draw a horizontal or vertical weeding line to the position where it should be segmented. Repeat the process until all necessary weeding lines are inserted.

2. Via the menu *options*

Open the menu ***options*** and activate the menu item ***horizontal weeding line*** or ***vertical weeding line***.

The first weeding line is inserted in the middle of the objects to be cut. The second call up of the function bisects the two halves in two more halves and so on.

3. Via the shortcuts **h** or **v**

An „**h**“ or „**v**“ directly entered via the keyboard generates the respective weeding lines - as described in 2.

Tip: Single objects can be provided additionally with a separate weeding frame via the right mouse menu.

12.1.3 Job Sectioning

Sectioning is the division of a job in so many parts (sections) that are necessary for the complete output of the job.

If the job to be output is bigger than the set or the available output width (***output*** dialog, field ***width of material***) of the output device in the information area of the ***output*** dialog the indication „***job will be sectioned***“ is shown.

Indication: The terms sectioning and segmentation are used as synonyms.

The activation of the ***output*** menu then opens the following dialog ***before*** the transfer to the device:

12.1 The Output Preview

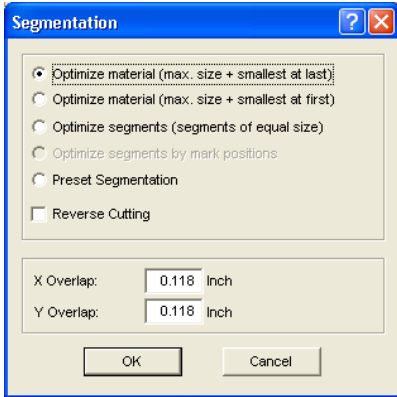


Fig. 12.1-6: Sectioning dialog with overlapping of 3 mm

Optimize material (max. size + smallest at last)

Optimize ... smallest at last causes EuroCUT to create segments in the maximum permitted size. The size of the last segment usually differs from the others

Optimize material (max. size + smallest at first)

Only active with flatbed cutters. If the last segment was also cut as last the plate could not be processed until the end. Therefore, the remainder is cut as first so that the plate lies on the table until the end.

Segment optimization (segments of equal size)

If the option **segment optimization** is activated always segments *of the same size* are created.

Optimize segments by mark positions

This option is activated as default with EuroCUT if **video markers** exist in the Job. The above dialog is skipped and the preview of the dynamic segments is shown. The reason of this optimization is that always at least 3 video markers are necessary. Depending on the location of the video markers EuroCUT "searches" up to 30% next to the segment line if there is a video marker. If yes, the respective segment is adjusted **dynamically**.

Preset segmentation

The last used setting is automatically saved. When loading the job again this sectioning can be accessed.

Reverse cutting

The option **reverse cutting** indicates that the objects are cut as „negative“ for example for the use as template for the screen printing.

X-overlap and Y-overlap

Segmentation with overlapping - In the fields **X- and Y-Overlap** you can define how much the segments shall overlap. The vectors are enlarged accordingly at the cutting points.

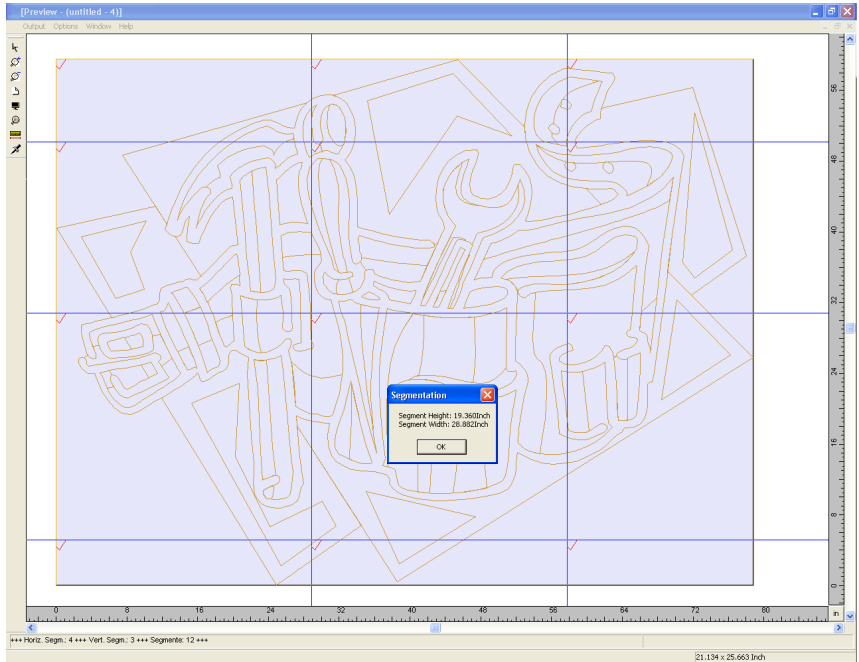


Fig. 12.1-7: Foil optimization in the sectioning preview with 8 segments and information on segment sizes

Selection and deselection of the segments

Selection and deselection of the segments is done by clicking into the segment. The red checkmark  indicates which segment is active and being output.

Changing the suggested sectioning

You can change the sectioning by clicking on the blue section lines and move them to the desired position with the mouse. If necessary EuroCUT inserts automatically new sections.

In the status line of the segmentation preview the size of the job to be cut in X- and Y-direction and the number of segments are shown.

13 The *Layout View Mode*

The *Layout View* Mode is switched on or off using the *View* Menu.



13.1 Definition:

On all 4 corners of the working surface, the word "Layout" will appear. The containers are shown as dashed red line with the name "text container" or "image-container".

NOTE: The *Layout View Mode* is not to be confused with the contour or the full surface mode (F9).

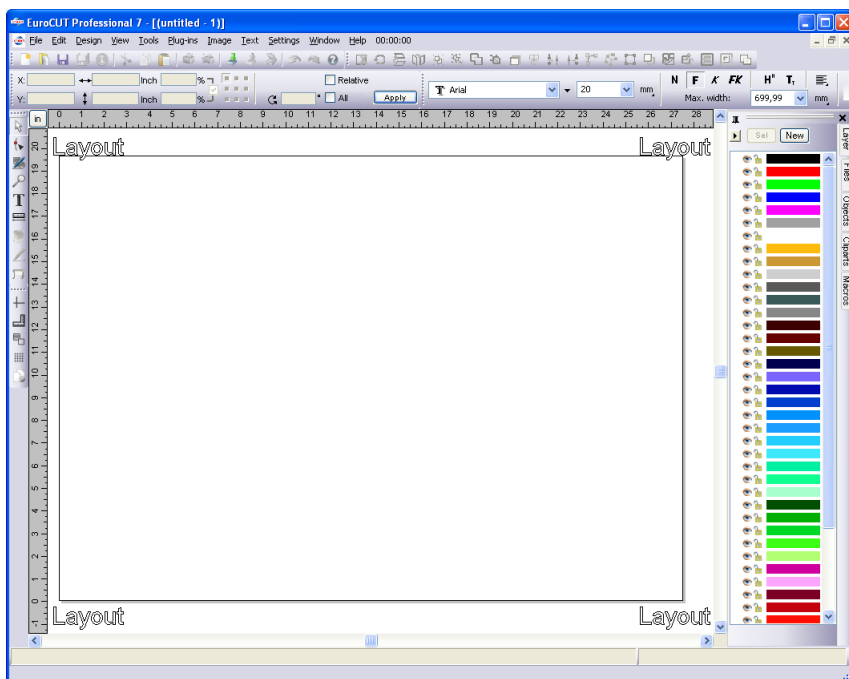


Fig. 13.1-1: Layout anzeigen Modus eingeschaltet

13.2 Definition Container

13.2.1 What Is A Container?

A **Container** can receive *bitmaps* or *texts*. There are 2 types of containers: 1. Image containers (bitmaps) and 2. Text containers. With the **Draw-** or **Text** tool a frame is mounted, to gather the later content. The framework determines properties and dimensions of the content. The container is displayed in the so-called **Show Layout** mode - as a red dotted line. The mode is switched on and off using the F8 key on the the keyboard.

13.2.1.1 Benefits

A container can be filled with different contents using a macro. The replacement contents can be entered and edited in EuroCUT or externally imported from a *.CSV file. The content adapts to predetermined characteristics and dimensions. It can be defined, for example, whether in texts that are longer than the frame, the cap height is adjusted or whether the text block is compressed. The **Replace** macro automatically replaces the contents, line by line.

The benefit thus lies firstly in the fact that the layout and behavior of objects in the container can be predetermined, and secondly that through the automatic replacement a significant increase in productivity can be achieved - Keyword: Serial production.

13.2.1.2 Limits

The limits are that bitmaps and texts, but **not vector objects** can be imported into the container.

13.2.1.3 Compatible Formats

- for **Image** container: *.BMP, *.PCX, *.JPG, *.TIF, *.GIF, *.PNG
- for **Text** container: EuroCUT own file format and using the text import function in the textbox *.ECT, *.RTF, *.TXT
- for **external** data sets / databases: *.CSV

13.2.2 Excursus:

13.2.2.1 The CSV Format (Comma Separated Values)

One character - often the comma - is used for separating records (columns). Rows are separated by newlines. Depending on the software involved semicolon, colon, tab, space or other separating characters are possible.

The CSV file format is often used to transfer simple structured data between different computer programs - here: database tables. The column names are defined in the first record - the so-called head record.

13.3 Overview Container Types

	Image Container	Text Container
Creation	<i>Draw</i> tool of the <i>Tools</i> toolbar (closed object is required), i. e. the container's contour is drawn using one of the <i>Draw</i> tools	<i>Text</i> tool of the <i>Tools</i> toolbar, i. e. write a text or mount a frame with the <i>Text</i> tool
	The <i>Container</i> property will be set <i>automatically</i> when in <i>Show Layout</i> mode (F8)	The <i>Container</i> property will be set <i>automatically</i> when in <i>Show Layout</i> mode (F8)
	In the <i>Contour-</i> or <i>Full Surface</i> mode a container is created using the <i>Change to Container</i> function in the <i>Object</i> or <i>Context</i> menu.	In the <i>Contour-</i> or <i>Full Surface</i> mode a container is created using the <i>Change to Container</i> function in the <i>Object</i> or <i>Context</i> menu.
Deletion	<i>Cancel Container State</i> function in the <i>Design</i> or <i>Context</i> menu or <i>Reset Container</i> attribute in the <i>Objects / Attributes</i> tab of the <i>sidebar</i>	<i>Cancel Container State</i> function in the <i>Design</i> or <i>Context</i> menu or <i>Reset Container Attribute</i> in the <i>Objects / Attributes</i> tab of the <i>sidebar</i>
Representation (in the F8 <i>Show Layout</i> mode)	Red dotted line with text " <i>Image Container</i> "	Red dotted line with text " <i>Text Container</i> "
Set Parameter / Boundary Conditions	Enable <i>Container Settings</i> function in the <i>Context</i> menu or <i>Double click</i> on " <i>Image Container</i> "	Enable <i>Textbox</i> function in the <i>Text editor</i> toolbar or via <i>Context</i> menu or <i>Double click</i> on " <i>Text container</i> "
Change Name	<i>Name</i> field in the <i>Objects</i> tab or <i>Name</i> field in the <i>Setup Image Container</i> dialog	<i>Name</i> field in the <i>Objects</i> tab or <i>Name</i> field in the <i>Settings</i> tab of the <i>Textbox Settings Text Container</i> dialog
View	F8 key or Enable <i>Show Layout</i> in the <i>View Menu</i>	F8 key or Enable <i>Show Layout</i> in the <i>View Menu</i>

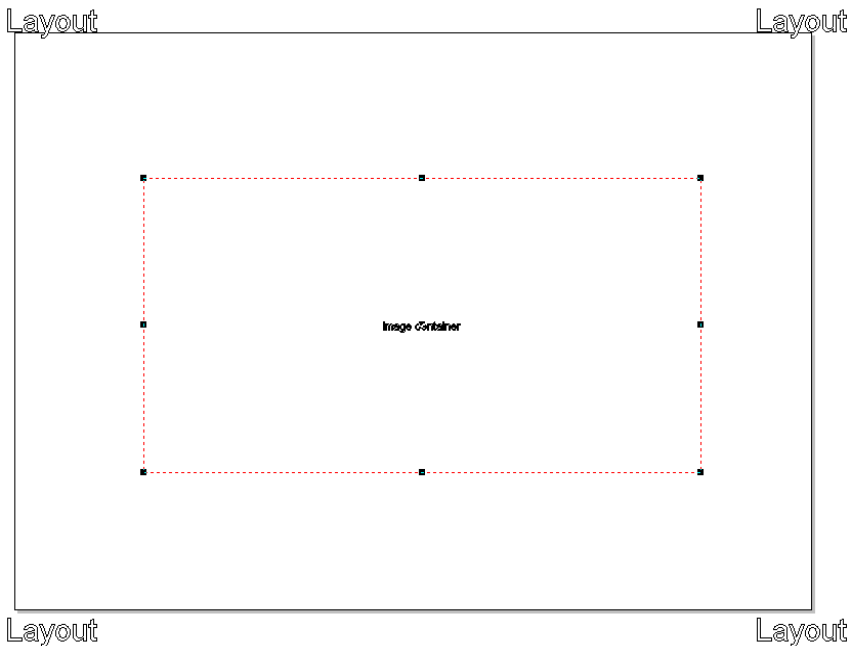
13.4 Working With Containers

13.4.1 How Do I Draw A Container?

You can use the same tools as for the drawing of vectors: the **Draw-Tool**  and the **Text-Tool** . A red-dashed frame is the mark of a container. The default names are "Image Container" or "Text Container", depending on with which tool was drawn. With the

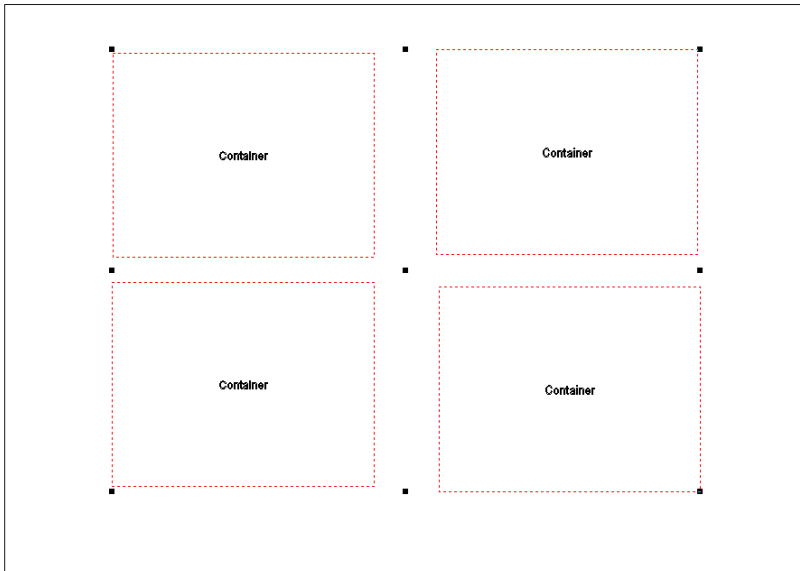
text tool, a frame is drawn or text is entered at the cursor position. Double-clicking on the container opens the respective settings dialog.

13.4.1.1 Display in the *Show Layout* Mode



Layout

Layout



Layout

Layout

Fig. 13.4-1: Display of one Image Container and four Containers in the Show Layout Mode (F8)

13.4.1.2 Display in the *Contour* resp. *Full Surface* Mode

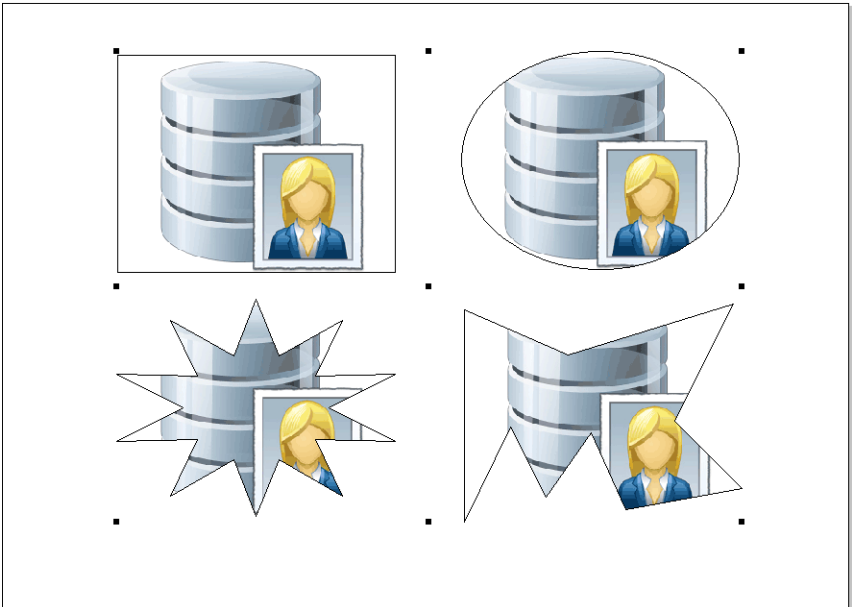
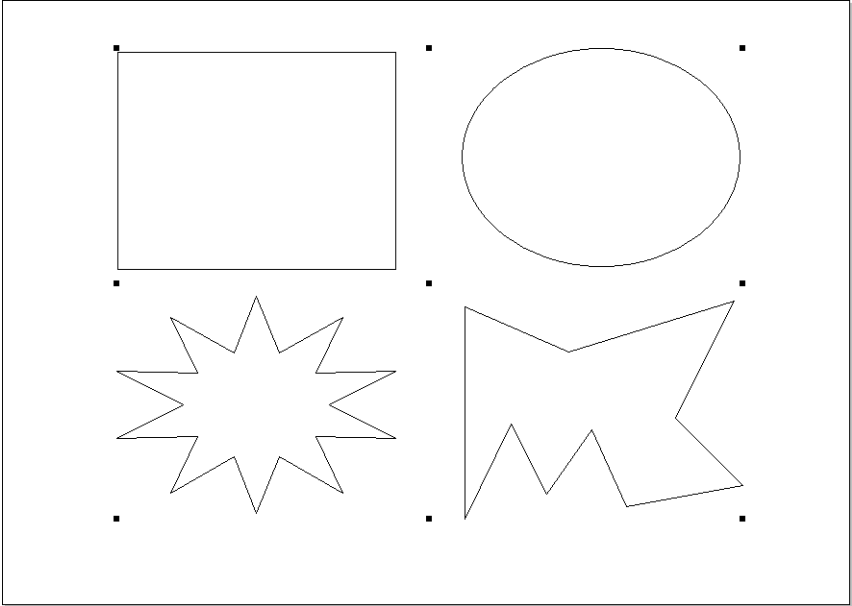
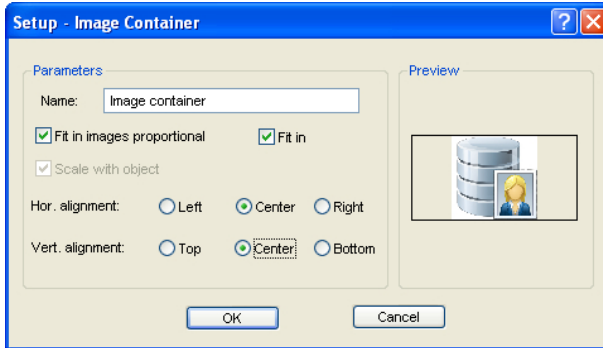


Fig. 13.4-2: Standard view (Contour Mode) and standard view (Full Surface Mode) with default fills

13.4.1.3 Container Settings Image

A doubleclick on an **Image Container** opens the following dialog, in which can be defined how the inserted bitmap should be treated.



13.4.1.4 Parameter

Name

Here an individual name for the image container can be defined. Default name is: **Image Container**.

Insert images proportionally Option

If the **Insert images proportionally option** is enabled, then the bitmap, which is to be imported, will be enlarged or scaled-down into the frame, while maintaining the proportions.

Fit Option

If the **Fit option** is enabled, then the to import bitmap will be adjusted into the frame.

Scale with objects option

If the **Scale with objects option** is enabled, the the content of the container will scaled also, that means if the frame gets enlarged or reduced then the content is scaled too.

Hor.(zontal) Alignment

The **Horizontal Alignment** can be *left, middle or right*.

Vert.(ical) Alignment

The ***Vertical Alignment*** can be top, middle or bottom.

13.4.1.5 Preview

The Preview shows, how the contents behave in relation to the container.

13.4.1.6 Cancel Container Status Option

This menu item ***Cancel Container Status*** cancels the object status "Container". The object attribute in the ***objects*** tab is disabled.

13.4.1.7 Context Menu - Container Relevant Entries

Hide Content

This menu item hides the content of the image container, when in *full surface* mode.

Show Content

This menu item shows the content of the image container, when in *full surface* mode.

Remove Content

This menu item removes the content of the image container.

Note: Same function as: Fill: None.

Container Setup

This menu item opens the ***Setup Image Container*** dialog..

Cancel Container State

This menu item disables the container attribute of the selected object.

Note: This is the same function like disabling the container attribute in the objects and attributes tab.

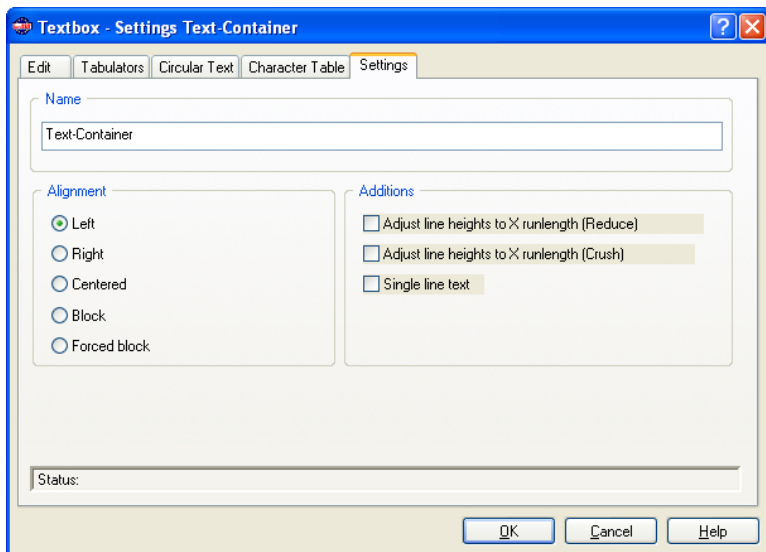
Change To Container

This menu item transforms a text or vector object into a container object. The container object is only visible in the ***show layout*** mode.

Note: This menu item is only visible, when you are not in the show layout mode.

13.4.1.8 Settings Text Container

A doubleclick on a text container opens the following dialog in which is defined, how texts will be handled.



Name

In the text field a name for a text block can be defined. By default, the name "text". The name is shown in the **object's** tab list of the sidebar and in the **object names** tab.

Alignment

Here the **alignment** of text blocks is pre-defined; these options correlate with the items in the **text** toolbar.

Left

If the **left** option is enabled, then the marked text block will be justified left.

Right

If the **right** option is enabled, then the marked text block will be justified right.

13.5 Series With The Help of The Container Function

Centered

If the ***centered*** option is enabled, then the marked text block will be justified centered.

Block

If the ***block*** option is enabled, then the marked text block will be justified as block.

Forced Block

If the ***forced block*** option is enabled, then the marked text block will be justified as forced block, which means that all lines of text - even the last one - are adjusted on the column width or width of the work sheet.

Additions

Adjust line heights to X runlength (Reduce)

If this option is enabled, then when the X runlength is changing, the text block will be scaled-down proportionally.

Adjust line heights to X runlength (Crush)

If this option is enabled, then when the X runlength is changing, the text block will be compressed, which means that the character distance will be reduced.

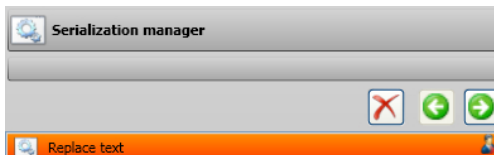
Single line text

If this option is enabled, then is prevented, that a line break is executed at the end of the line.

13.5 Series With The Help of The Container Function

13.5.1 Serialization Manager Macro

13.5.1.1 The *Macro Player*



13.5.2 Macro Player Control Elements



No function; Icon for macros and macro functions

13.5.2.1 The *Cancel Process* Button



Enabling the *Cancel Process* button breaks the execution of the macro.

13.5.2.2 The *Backwards* Button



Pressing the *Backwards* button jumps back to the last executed macro function.

13.5.2.3 The *Execute Function* Button



Pressing the *Execute Function* button starts execution of the macro.

13.5.2.4 The Macro Function „Replace Text”



The *Cancel* Button



Pressing the *Cancel* button closes the *Parameter* view.

The Data Tab

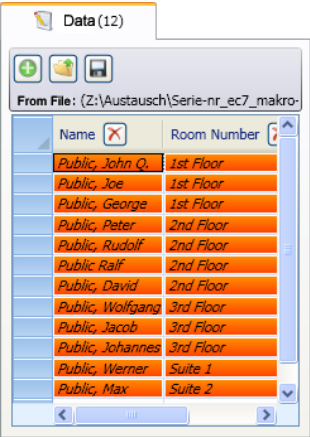
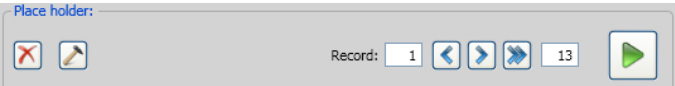


Fig. 13.5-1: Manual data input in the data tab

Place Holder

The Function Buttons



The *Delete* Button



Enabling the **Delete** button deletes all data and formattings.

The *Action* Button



Activating the **Action** button executes the action, which was selected in the **Extended** tab - using the **Execute Action** Option.

Record

The *Navigate Backwards* Button



Navigates backward by a full set of duplicates - data exchange is reversed and brought to the level of the previous set of duplicates.

The *Navigate Forwards* Button

Navigates forward by a full set of duplicates - fills so to speak, the next page of data, including the formatting and displays it on the work sheet.

The *Execute* Button

Pressing this button executes the macro: from current line to end line.

Note: *The first value will be reset to 1.*

The *Run Completely* Button

Enabling the ***Run Completely*** button executes the macro functions one after another - until the end. Macro functions, which are requiring parameter input wait, a dialog for the input is displayed and then the next function is executed.

The *Stop* Button

The ***Stop*** button breaks the data exchange process and switches to the ***Run Completely*** button.

The *New Line* Button

The activation of the ***New Line*** button insert a new line at the cursor position.

The *Import* Button

Pressing the ***Import*** button allows importing data from an external file (*.CSV)

Note: *The data in the data tab will be overwritten.*

The *Export* Button

Pressing the **Export** button exports the data as a *.CSV file.

Note: *The current place holder names will be written as column names.*

13.5.2.5 Data Input - Navigation In The Data Tab

Manual Input:

With manual input, the cursor moves to the next line after pressing the ENTER key. When using the TAB key, the cursor jumps to the next column. Double-clicking in a field allows editing of the field.

Selection of A Single Record

A single record is selected with a mouse click on the blue button . All records are selected when clicking on the blue button with the triangle in the lower right corner .

Insert Data

Besides the manual data entry inserting of data can be done also using Windows' clipboard. Sources can be Excel or HTML tables. By means of hotkey CTRL+V data can be inserted in the data fields.

13.5.2.6 The *Formatting* Tab

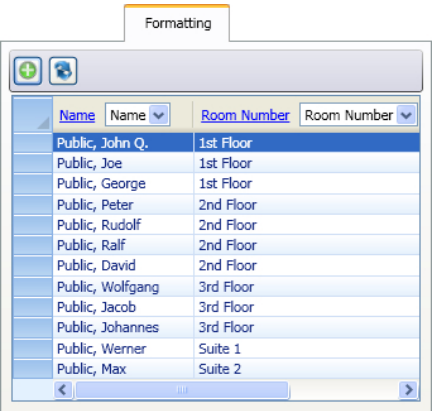


Fig. 13.5-2: Data formatting in the formatting tab

13.5.2.7 The Buttons

The *Update* Button



If this button is enabled, then data will be exchanged from the selected record immediately.

Note: *This function ensures that the data is actually exchanged in the view.*

The *Font Height* Button



When enabling this button a consistent, maximum font height is determined. It is calculated from the longest existing record.

1. Enable the *font height* option in the place holder *formatting* dialog.
2. Enable *Adjust Font Size* option (double-click on the column head opens the dialog)
3. The maximum possible font height appears next to the column name and taken as the basis for calculating the display.



Fig. 13.5-3: Action indicator

13.5.2.8 The *Extended* Tab

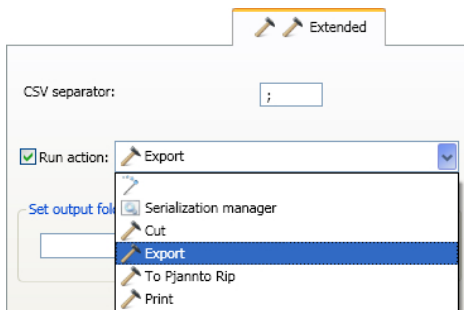


Fig. 13.5-4: List of actions which can be done with the data records

13.5.3 Actions

Important note: *In the actions list all available actions and macros are displayed. Also macros, that should not be usefully defined as an action (e. g. serial numbers with the serialization manager)*

13.5.3.1 CSV Separator

In this field the separator for the separation of data and columns resp. rows of the export *.CSV file can be defined.

13.5.3.2 Personal Actions

Duplicates from Selection

Serial Numbers

 **please refer to 8: The Serial Number Function**

13.5.3.3 Common Actions

Cut

This action enables the cut module of the Plot Manager after executing the macro.

Export

This action enable the export dialog after executing the macro.

To Pjannto RIP

This action enables the RIP "Pjannto RIP - in case it was installed and licensed - and transfers the data for rastering and printing.

Print

This enables the print module after executing the macro and prints the data on the connected printer.

13.5.3.4 Output Folder

Here you can define in which folder the export file should be saved.

13.5.4 Example

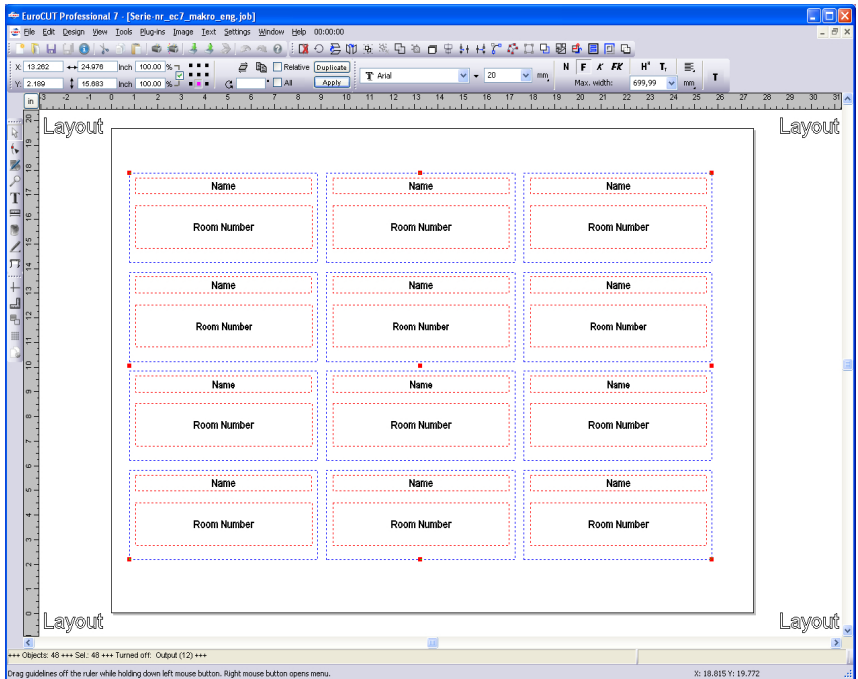


Fig. 13.5-5: View in the layout mode

13.5.4.1 Define Counter

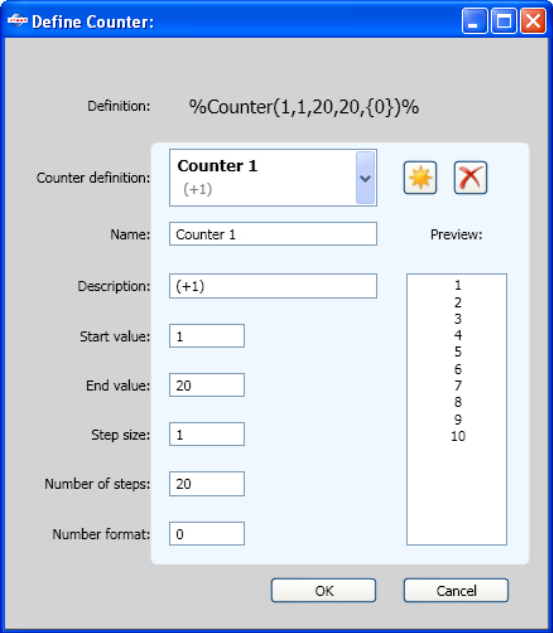


Fig. 13.5-6: Parameter dialog for the formatting of a counter

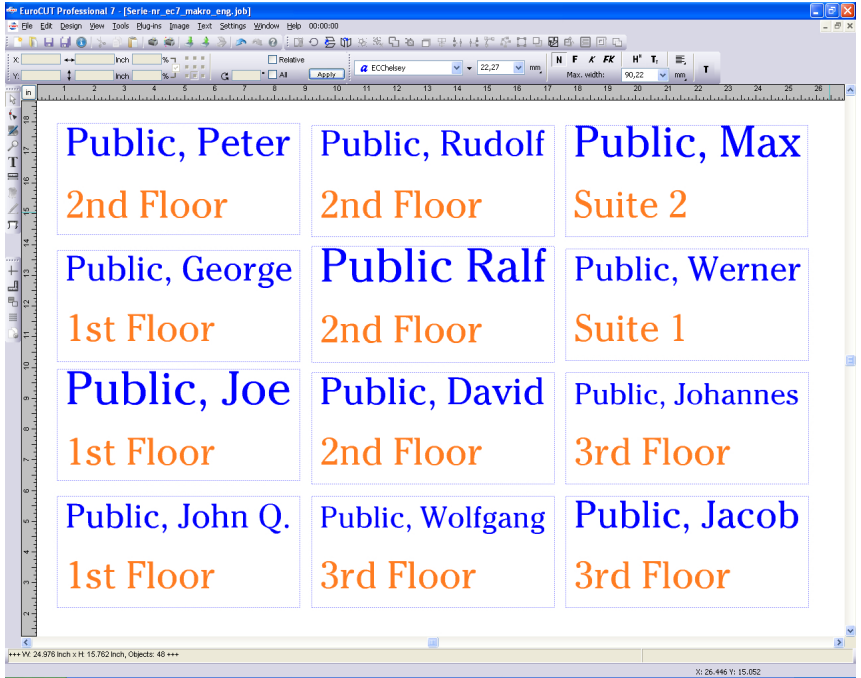
The **New Counter** Button



Enabling the **New Counter** button resets the counter values and then, inserts a counter into the formatting string at the cursor position.

13.5.4.2 Result

Depending on the number of records filled by the update button each of the next duplicates (container) is refilled, displayed and the action, which was selected in the **Extended** tab is executed. This happens until the last record is reached.



13.5 Series With The Help of The Container Function

14 Printing



Fig. 14.-1: The print button in the standard toolbar

14.1 Without RIP Software

The following chapters explain in detail the single functions of the EuroCUT print dialog.

Open the EuroCUT **print...** dialog by selecting the menu item **print** in the **file** menu, via the keyboard hotkey CTRL+P or by pressing the  button in the toolbox.

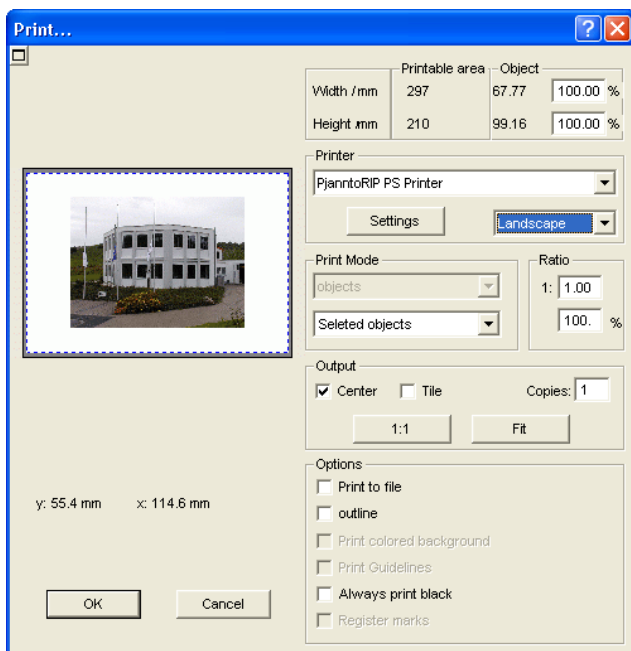


Fig. 14.1-1: The print dialog

In the down right part of the dialog you find the option **tile** and the **adapt** button and the **1:1** button under **output**. Depending on which option you have activated the appearance of the preview of the **print**-dialog changes.

Indication: If the **print** -dialog is opened the **adapt** button is automatically active because we do not assume formats that exceed the maximum output-size of the device to be accessed as standard for the printing of objects or graphics.

The adapt mode

The **adapt**-mode corresponds to the printable area. The values for the printable area are shown in the field **print area** which is in the upper right part of the print dialog.

The preview window in the adapt mode

The preview window offers the possibility to check your job before printing. The edges of the window are *magnetic* which means that if an object is approaching the edge of the sheet the object stays at the edge of the window. Thus, a faster positioning of the objects in the corners or at the edges of the sheets is obtained.

Tip: If the magnetization of the edges shall be switched off, keep the SHIFT button pressed while positioning your objects.

The **x- and y-coordinates** that are shown underneath the preview window express the location of the left upper edge of the object on the working surface.

Mouse-functions in the preview window (adapt-mode)

Clicking once with the *right* mouse button or activating the **preview** button increases the preview window to the maximum size of display.



Fig. 14.1-2: The print preview button



Fig. 14.1-3: Print preview in the complete picture mode

Indication: The size of display depends on the set screen resolution (800*600, 1024*768, ...). Clicking again with the right mouse button resets the original status.

Indication: If the left mouse button is pressed and kept pressed, a dashed black frame appears around the objects to be printed. This frame covers all objects that are on the working surface and corresponds to the printing area.

Printable area and object

The fields **Printable area** and **object** are in the upper right part of the **print** dialog.

	Printable area	Object	
Width /mm	210	67.77	100.00 %
Height /mm	297	99.16	100.00 %

Fig. 14.1-4: Section field printing area and object

Printable area

In this field, the specified printing area with height and width values is shown.

Object

In this field the object/s to be printed with height and width values is/are are shown.

Indication: The fields for the percental enlargement of the objects are not active in the adapt-mode.

One field below on the right side of the **print** dialog is the field **printer**.

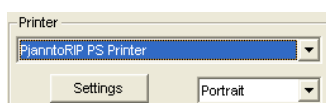


Fig. 14.1-5: Printer selection and Setup

If you open the list you will get a list of all printers that are installed on your system. Select the printer that you want to use. In order to do more settings for the printing activate the **setup** button. The dialog that now opens corresponds to the menu item properties of the respective printer file menu.

Indication: The print dialog that is opened by pressing the **setup** button depends on the loaded printer driver and is therefore not further explained.

Right next to the **setup**-button the orientation of the sheet (portrait / landscape) can be set.

What is printed?

In the area named print mode are two combo-boxes in which you can define what shall be printed. In the first list you can choose between the options **objects**, **objects with worksheet**, **job-info** and **job-calculation**.

Objects

All objects on the worksheet are printed.

Objects with worksheet

All objects and the worksheet (black frame) are printed. Underneath the black frame the company's name, the dimensions of the working surface and the proportion in which it shall be output are also automatically printed.

Job-info

If this option is activated all information that have been entered in the **job-info** are output as well as all objects in the below right area of the sheet are printed downsized.

Job-calculation

If this option is activated the information that have been entered in the **job-calculation** are output.

The following setting- possibilities are available in the second list: **all objects**, **selected objects**, **color separated printing** (printing in the order of the layer), **printing of single layer** (colors).

All objects

All objects that are on the working surface are printed.

Selected objects

Only objects are printed that have been marked on the working surface.

Color separated printing

All objects of one color are printed in the order previously set. The color bar (layer-order) in the second list contains all colors (layers) that have been used on the working surface and corresponds to the later printing order.

Indication: The printing is always started with the darkest color.

Printing of single colors (layer)

All colors listed in the second list correspond to those that have been used for the objects on the working surface. If there is for example only one black and one red object only two color bars (layers) are offered as selection.

Ratio

Here, you have the possibility to enter the printing proportion as numeric or percentage values.

Indication: Both fields are coequal which means that if a numeric value is entered the corresponding percentage value is entered automatically in the dedicated field and vice versa.

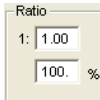


Fig. 14.1-6: Field for the entry of the size proportion

Examples for the indications of proportion with the corresponding percentages:

Proportion 1 : 1 corresponds to 100.00 %

Proportion 1 : 2 corresponds to 50.00 %

Proportion 1 : 3 corresponds to 33.33 %

Proportion 1 : 4 corresponds to 25.00 %

Centered

If this option is activated all objects on the working surface are centered.

Tiling

If this option is chosen the **print**-dialog appears in the **tile** mode.

Number of copies

In this field the number (max. 9999) of the exemplars to be printed can be defined. The buttons **adapt** and **tile** enable switching between the two modi with the same name.

1:1

If this button is activated all objects on the working surface are displayed in their *original size* in the preview window and output.

Adapt

If this button is activated all objects on the working surface are downsized so that they can be shown completely in the preview window.

Options

Output to file - Print to file

If this option activated, print data is redirected to a file.

Contour mode

With this option activated all objects are printed like shown in contour mode - without filling.

Also print colored worksheet

When selecting this option the background color defined for the working surface is also printed.

Print subsidiary lines

If the job to be printed contains subsidiary lines they are also printed.

Always print black

This option becomes automatically active if in the first list **all objects** and in the second list **color separated printing** (after the layer order) or **print single colors** (after single layers) was selected.

Indication: If you want to print the objects on the working surface in color the option always print black must be deactivated.

Register-/ Jog-Marks

This option becomes automatically active if in the first list **all objects** and in the second list **color separated printing** (after layer order) or **print single colors** (after single layers) was selected.

Indication: If you do not want to also print register and jog marks this option must be deactivated.

14.1.1 The Tile Mode

If you switch from the **adapt mode** to the **tile mode** the preview window appears as follows:

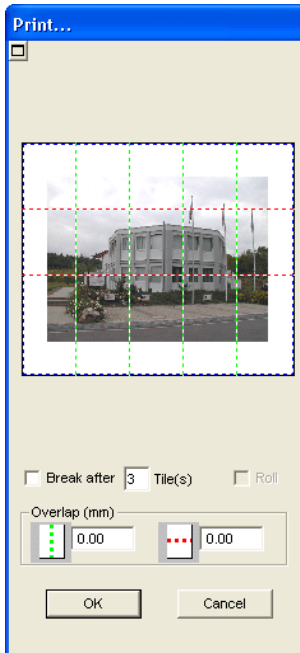


Fig. 14.1-7: The preview window in tile-mode

In the **tile** mode all tiles are shown. A tile is that part of the object that can be output on the device to be accessed.

The option **pause after** indicates after which tile (enter amount of tile) the output shall be interrupted. The fields **overlapping (mm)** serve for the entry of the desired *horizontal* and *vertical overlapping* of the objects to be printed.

When printing to roll (option **Roll**), whole lanes can be printed without having spaces between the single tiles.

Indication: *Only the print of a whole lane can be interrupted and not the printing of a single tile. The entry of an overlapping in feed direction (print direction) has no influence on the roll which can also be seen at the display of the size of the tile.*

After the tiling the dialog is not closed automatically as it is an advantage to directly compare the print and the preview. In addition, thus you can directly repeat the print of a specific tile.

Mouse function in the preview window (**tile mode**)

One click with the right mouse button on the tile preview increases the tile display. This can also be done by clicking on the -button in the upper left area of the window. Clicking once again with the right mouse button resets the original status.

14.1 Without RIP Software

If you *double click* with the left mouse button on a tile this one will be deactivated which means it will not be printed.

Double clicking with the left mouse button while pressing the SHIFT button leads to the inversion of the tiles which means that the tiles that have been deactivated before become now active (printed) and the tiles that have been active become deactivated (not printed).

The objects within the preview window can be shifted by means of the mouse. The window edges are magnetic which means that when the object is approaching the edge of the sheet the object remains clinged. When pressing the SHIFT button the magnetization is released.

Example for the printing in the *tile* mode

The following example explains the single functions, shortcuts,... in the *tile* mode in detail.

The *tile* mode offers the possibility to print in any size which means each graphic, independent of the size can be printed on the connected output device. For the print of your graphic you *do not* need a printer with which DIN A2-, A1-, A0- or even large size can be output.

How?

The graphic to be printed is divided in so many segments (tiles) that are necessary to be able to output the graphic on the connected output device. The amount of necessary tiles depends on the size of the graphic to be output and the pre-defined output format (DIN A3, A2, ...). The setting of the output format is done via the **set** button EuroCUT **print** dialog and depends on the connected output device.

Load any graphic in EuroCUT and open the **print** dialog, either via the **file** menu by selecting the menu item **print...**, via the keyboard with the key combination CTRL+P or via the button in the **standard** toolbar.

The EuroCUT **print** dialog is opened in the **adapt** mode. Activate the *tile* mode by activating the thus named button.

The **print** dialog appears as follows:

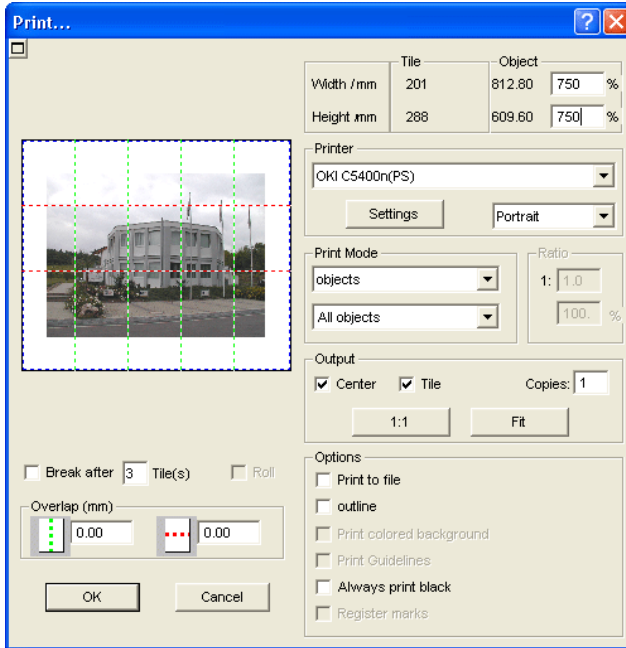


Fig. 14.1-8: The print dialog in the tile mode

In the upper right corner of the dialog you find the two fields **tile** and **object**.

The field **tile** corresponds to the field **print area** in the **adapt** mode. The other fields in the right part of the print dialog are the same as in the **adapt** mode.

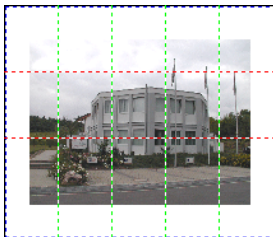


Fig. 14.1-9: Preview with settings in the tile mode

Activated and deactivated tiles

An active tile is a tile that is **not** marked with a red „X“. Deactivated tiles on the other hand are marked with a red „X“.

14.2 With Pjannto RIP software

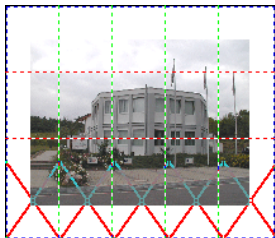


Fig. 14.1-10: Bottom row: Tiles deactivated

The deactivation or activation of a tile is done by **double clicking** with the left mouse button which means when double clicking on an active tile it becomes deactivated. Another double click on the same tile activates it again.

In the previous figure you can see that the lower row of tiles is marked with a red „X”. These tiles were deactivated and will not be printed.

In the **tile** mode you do not only have the possibility to activate / deactivate single tiles.

Tip: Keep the CTRL button pressed while double clicking with the left mouse button on the desired tile and all tiles where the mouse cursor is are deactivated.

14.2 With Pjannto RIP software



Fig. 14.2-1: The Pjannto RIP button in the *standard toolbar*

Indication: Pjannto RIP is a professional PostScript-RIP that is not a part of EuroCUT. If a license was purchased from Pjannto RIP and the software is installed on the same computer the Pjannto RIP button is automatically embedded in the standard toolbar of EuroCUT and the file menu enlarged with the entry Pjannto RIP... .

Index

A

Access rights 33, 34

Always print black 94

Attributes tab 71, 76

AutoCAD 55

Automatic welding 51

B

BMP 6, 31, 70

Bridges 37

C

Cap height 41, 70

Character spacing 51

Clone 42, 55

CMX 31

Color graduation 22

Contour cutting 56

Contour line 47, 49, 50, 55, 57

CorelDRAW 55

CoRUN 55

D

Device driver 13, 21, 22

Driver 2, 11, 13, 15, 19, 20, 21, 22, 24, 27, 35, 38, 58, 91

Duplicate 42

D

DXF 6

E

EMF 6

Encrypt document 33

EPS 31, 36, 55

F

Fills 81

Foil optimization 67

Font size 83

Freehand 55

Full surface 45, 47, 49, 50, 51, 52, 69, 71, 73, 74, 76

G

GIF 6, 70

Grouping 62

GTP 6

H

Hairline 49

HPGL 6, 31

I

IK 6

Illustrator 55

Import 6, 7, 8, 9, 42, 70, 75, 81

Import filter 8

Inline 48

J

Job-calculation 91, 92

JPG 70

L

Laser 47

Local device 19, 22

M

Macro 70, 78, 79, 81, 84

Macros 79, 83

Margins 3, 4

Material consumption 62

Milling 2, 19, 46, 56, 61

N

New origin 27

No line break 41

Number of copies 42, 58, 93

O

Offset 25, 32

Open trimming 51

OPI 31, 36, 55

Optical sensor 35, 55, 57

Optimization 62, 63, 66, 67

Orientation 3, 4, 91

Outline 47, 48, 49, 55, 57

O

Output preview 25, 28, 61, 64

Overlap 51, 52, 53, 67

P

Password Protection 33

Password protection 33

PCX 6, 31, 70

PDF 6, 7, 33

Pen attributes 47

Pen thickness 22

Plot Manager 20, 21, 28, 29, 84

Plot server 20, 21, 22

Plot to file 26

PLT 31

PNG 70

Positioning 90

Print & Cut 49, 55, 56

Print and Cut marks 56

Print area 90, 97

Print to file 93

Producer 57

R

Read out 43

Rectangle 25

Reference Point 25

Reference point 25

Register marks 29, 55, 56

Reverse cutting 66

RGB 4

Roll plotter 35

S

Screen printing 51, 52, 66

Segment 25, 26, 66, 67

Segment optimization 66

Segmentation 26, 65, 66, 67

Separate 51, 65

Serial numbers 83, 84

Special characters 33

Spooler 21

Stack 25, 29, 52

Step by Step 35, 41

Subsidiary lines 94

T

Template 66

Test drive 28

Text editor 51, 71

TIF 6, 31, 70

Tiling 93, 95

Tool assignment 13, 15, 25, 36

Trim 51, 53

V

V

Video marks 25, 56, 57

W

Weed border distance 25, 62

Weeding frame 28, 63, 64, 65

Weeding lines 63, 64, 65

Welding 48, 49, 51, 52

WMF 6