i-cut Production Console

User Manual

ESKO

Contents

1. Preface

User Manual
for
i-cut Production Console
iPC, version 1.2

Note: We remind you that only the Esko staff, or persons having received appropriate training, are allowed to handle, manipulate or do repairs on the system.

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2. Change Record

Date dd-mm-yy	By	Description
18-06-2014	jhbe	First edition of this document
15-10-2014	jhbe	About Licenses chapter has been modified.
20-02-2015	jhbe	Camera operation chapter has been updated with i-Camera information.
31-03-2015	jhbe	Document is updated according to iPC ver 1.2
11-06-205	jhbe	Reverse Operations in combination with Step and Repeat, update. Description of compensation type **Move Job** is improved. Types of **Registration Marks** - chapter has been updated.
25-06-2015	jhbe	**Tool Up Angle**, description has been updated. Registration using **Laser Pointer**, chapter has been updated.

3. Welcome

Welcome to the Kongsberg i-cut Production Console User Manual.

Throughout this manual, the abbreviation iPC is used for i-cut Production Console.

This manual will provide a complete and detailed description of all iPC functions.

It is aimed for operators of Kongsberg Cutting Tables and people preparing files for such equipment.

Note: Some of the functions and equipments described in this manual are optional.

4. Using this manual

4.1 Main Sections

The manual is divided into the following main sections:

System Description

- A short-form description of the **User Interface**.

- All menues and tool bars are described one by one.

Before We Start

In this chapter, important **Basic Topics** are discussed:

- *File Preparation*

- *Import Presets*

- *Cutting Keys*

- *Registration*

- *Configure Tools*

Workflow Description

A typical workflow is described, with detailed information about each step:

1. *Get Started*
2. *File Import*
3. *Opened Job*
4. *Prepare for Production, Manually*
5. *Prepare for Production using Cutting Key*
6. *Edit Production Setup*
7. *Save a Job*
8. *Run a Job*

Advanced Section

Optional functions for the **Advanced User** are available in the chapters:

- *Edit Job* - Possible modifications to the **Opened Job**.

- *Job Alternatives* - Additional processing alternatives available.

Backup and Restore

- How to configure a proper **Backup** regime.

- How to initiate a **Backup**.

- How to restore from **Backup**.

iPC Configuration

- Option settings, specifying the general behaviour of the system.

Appendices

- **Install Software**

- **Keyboard Shortcuts** - a complete list of **Keyboard Shortcuts** available.

- **iPC Commands** - iPC command language.

4.2 Name Styles and Symbols

Name or style	Description
Pop-up dialog	This is the dialog that appears when you click the **Right Mouse Button**.
Start button	The italic style indicates this is a button on the **Operator Panel**.
OK	The bold style indicates this is a button or function in the **Graphical User Interface** (GUI).
Machine Configuration	Link to topic.
Menu Bar->**Edit**-> **Options**	Menu selection: From **Menu Bar**, select **Edit** and then **Options**.
HW	This symbol indicates that the function depends upon actual hardware. If hardware is not available, this functions is hidden.
	This symbol indicates that the function is license dependant.

4.3 Pictures and Illustrations

Orientation

In this document, pictures and illustrations related to the **Cutting Table** are viewed as shown here:

In the User Interface, several **_Viewing Options_** are available.

5. System Description

This chapter will explore the iPC User Interface in detail.

5.1 Font size in **User Interface**

Ensure your font size setting is 100%.

iPC will not work with bigger fonts.

5.2 Naming Conventions

The iPC User Interface appears in two different views, depending upon the mode you work in:

5.2.1 My Jobs List

1 - *Menu Bar*

2 - *Options Bar*

3 - *Opened Job Preview*

4 - *Windows Toolbar* with *Machine Connection icon*

5 - *Machine Panel*

6 - *My Jobs Actions*

7 - **My Jobs List**

8 - Select **Compact** / **Extended View**

9 - **Job Tabs**

5.2.2 Opened Job

1 - *Menu Bar*

2 - *Toolbar*

3 - *Layers View / Production View*, *see below*

4 - *Properties Bar*

5 - *Job Setup*. Comprises **Layers Setup** and **Production Setup**.

6 - **Job Tabs**.

5.2.3 Tool Configuration

Be aware the difference between **Tool Configuration** and **Configure Tools**:

Configure Tools

Edit **Tool Settings** to be used in a **Layer**

Tool Configuration

Maintain the **Tool Configuration** on the connected **Cutting Table**.

5.3 Menu Bar

The following **Menu Bar** entries are available:

- *File*
- *Edit*
- *View*
- *Selection*
- *Job*

- *Layer*
- *Curves*
- *Machine*
- *Advanced*
- *Help*

5.3.1 File

> ➡ **Menu Bar**->**File**

The following menu items are available:

New Job (Ctrl+N) Create an empty **Job**. You can add/edit geometry using the *Toolbar* functions.	**Close Job (Ctrl+W)** Close the **Opened Job**.
Open File... (Ctrl+O) *Open* an **Input File**, add it to **My Jobs List**.	**Save Job (Ctrl+S)** Save **Opened Job**Job. The **Job** is saved using the iPC .cut format.
Open via Barcode... See *Jobs with Bar Codes*	**Save Job As (Ctrl+Shift+S)** Save **Opened Job**. You are prompted for destination folder and file name.
Add Nested Layout... Open the *Add Nested Layout* dialog. Create a **Nested Layout** for import to **My Jobs List**	**Export** Export **Opened Job** to pdf.
Edit Nested Layout...	**Reload** Reload **Opened Job**. All changes you have made to the job will be lost.
	Exit Terminate **iPC**.

5.3.2 Edit

> ➡ **Menu Bar**->**Edit**

The following menu items are available:

Undo (Ctrl+Z)

Undo previous operation(s).

Options

- Options settings.
- Basic Configuration.
- Default value settings.

For more information, go *here*.

5.3.3 View

➡️   **Menu Bar**->**View**

All **View** functions relates to **Opened Job** displayed in **Layers View / Production View** window.

The following menu items are available:

Zoom Tool By the mouse, define a zoom area.	***Table View Orientation*** Select viewpoint for **Layers View / Production View**
Zoom In **(Ctrl+Add)** Click to zoom in.	***Reference Point*** The selected **Reference Point** is shown in the **Layers View / Production View** window.
Zoom Out **(Ctrl+Subtract)** Click to zoom out.	***Table Rulers*** **Cutting Table Rulers** are shown in the **Layers View / Production View** window (machine dependant).
Fit to Job **(Ctrl+Shift+J))** **Opened Job** will fill the **Layers View / Production View** window.	***Vacuum Zones*** Selected **Vacuum Zones** are indicated in the **Layers View / Production View** window.
Fit to Table **(Ctrl+Shift+T)** A picture of the **Cutting Table** including the **Opened Job** will fill the **Layers View / Production View** window.	***Parking Position*** Show current **Park Position** as a symbol in the **Layers View / Production View** window.
Curve Direction An arrow on each curve indicates curve direction.	***Bounding Box*** Show a **Bounding Box** surrounding **Opened Job**.

Curve Points	*Bounding Box*
Curve Points are visible, available for edit.	Show a **Bounding Box** surrounding **Opened Job**.
Tool Path	**Rulers**
The **Tool Path** is shown.	Add **Rulers** to **Layers View / Production View**.

5.3.4 Selection

> **Menu Bar**->**Selection**

All **Selection** functions relates to **Opened Job**.

The following menu items are available:

Select All Curves (Ctrl+A)	**Deselect All Curves (Ctrl+D)**
In **Opened Job**, select all **Curves**.	In **Opened Job**, deselect all **Curves**.

5.3.5 Job

> **Menu Bar**->**Job**

All **Job** functions relates to **Opened Job**.

The following menu items are available:

Rotate 90^0 CW	*Remove Double Lines and Sequence*
Rotate the entire **Job**.	Use this function to remove double lines and optimize cutting sequence in a **Job**.
Rotate 90^0 CCW	*Remove Double Lines, Join Across Gaps*
Rotate the entire **Job**.	Double lines will be removed.
	Gaps between consecutive lines that are below a certain limit will be joined.

Mirror Horisontally

Mirror **Opened Job**.

Optimize for Production...

Opens the **Optimize for Production** dialog.

Mirror Vertically

Mirror **Opened Job**.

Move Job to Reference Point

The lower left corner of **Opened Job** will be placed in currently selected **Reference Point**.

The corner is the lower left corner of the surrounding rectangle.

Move Open Curves to Separate Layer

Use this function to separate **Open Curves** from **Closed Curves**.

5.3.6 Layer

➡ Menu Bar->**Layer**

All **Layer** functions relates to **Opened Job**.

The following menu items are available:

Add Layer... (Ctrl+L)

Opens the *Add Layer* dialog.

Copy Layer with Curves (Ctrl+Shift+C)

The currently selected **Layer** is copied, geometry included.

Add Regmark Layer...

Opens the *Add Regmark Layer* dialog.

Remove Layer... (Shift+Del)

The currently selected **Layer(s)** are removed.

Edit Layer...

Opens the *Edit Layer...* dialog.

Remove Empty Layers... (Ctrl+U)

Layer(s) with no geometry are removed.

Copy Layer without Curves (Ctrl+C)

The currently selected **Layer** is copied, no geometry included.

Remove Hidden Layers...

Hidden **Layer(s)** are removed.

5.3.7 Curves

➡ Menu Bar->**Curves**

All **Curves** functions relates to *Selected Curve(s)*.

The following menu items are available:

Move... (Ctrl+M) *Move Selected Curves*	**Merge Curves** *Merge Selected Curves*
Jog Curves *Jog Selected Curves*	**Invert Curve Direction (Ctrl+Shift+I)** *Invert Curve Direction for Selected Curves*
Scale... (Ctrl+T) *Scale Selected Curves*	**Lead-in/Lead-out** *Add Lead-in/Lead-out to Selected Curves*
Mirror... (Ctrl+Shift+M) *Mirror Selected Curves*	**Tool Offset...** *Apply Tool Offset to Selected Curves*
Rotate... (Ctrl+Shift+R) *Rotate Selected Curves*	**Optimize Shape** Optimize **Selected Curves** For more information, go *here*.
Edit Points Enter *Edit Point Mode*	**Remove Curves...** *Remove Selected Curves*

5.3.8 Machine

➡	**Menu Bar**->**Machine**

Functions for the connected **Cutting Table**.

The following menu items are available:

Connect Connect to **Cutting Table**	*Set Table Top Reference* On the **Cutting Table**, execute the **Table Top Reference** wizard.
Start Spindle Warm Up On the **Cutting Table**, a **Spindle Warm Up** sequence is executed.	*Adjust Tool Height...* On the **Cutting Table**, execute the Adjust **Tool Height** wizard.

Start Vacuum Cleaner	*Material Measurement*
Vacuum Cleaner on/off control.	On the **Cutting Table**, a **Measure Material Thickness** sequence is executed.
Identify Tools	*Vacuum Zones...*
On the **Cutting Table**, execute a **Tool Identification** sequence.	Select Vacuum Zones suitable for **Opened Job**.
	Direct Commands
	Select functions for immediate execution on the **Cutting Table**

Note: For daily use, some of these functions are easy available also from **Machine Panel**.

5.3.9 Advanced

➡	**Menu Bar**->**Advanced**

The following menu items are available:

Materials and Boards...	**Backup Configuration...**
Functions to maintain a list of available *Materials and Boards*.	Initiate a *System Backup*.
Cutting Keys	**Restore Configuration...**
Functions to maintain *Cutting Keys*.	Initiate a *System Restore*.
Manage Presets	**Log Options... (Ctrl+Alt+Shift+L)**
Functions to maintain *Import Presets*.	Configure the **Log Options** available.
Configure Tools...	
Functions to *Configure Tools* to be used in **Layers**.	

5.3.10 Help

➡	**Menu Bar**->**Help**

The following menu items are available:

User Manuals... F1	**Knowledge Base...**
i-cut Production Console User Manual online...	**Buy accessories online**
Kongsberg Table User Manual online...	**About i-cut Production Console...**
Online Support...	**License Manager...**

5.4 My Jobs List

My Jobs List is a file list showing jobs you have imported into iPC. It can be seen as a "to do" list.

A preview of the selected file is displayed in the **Selected Job Preview** window.

My Jobs List is available in two different views; **Compact View** and **Extended View**, selected from (1):

Switch to Compact View	Select **Compact View**
Switch to Extended View	Select **Extended View**

5.4.1 Compact View

Each file is identified by an icon showing the geometry and its filename.

In addition, **Job Size** and **Last Modified** is available.

5.4.2 Extended View

Each file is identified by it's file name.

In addition, the following columns are available:

- File name and file path
- Due Date
- Customer
- Job Size
- Material
- Material Thickness

- Design Date
- Designer Name
- Flute Direction
- Matrix - if this job require a matirx function
- Modification Date

This information (metadata) is fetched from the **Input File**.

If the information is available or not, depends upon if the **CAD system / Job Preparation software** used supports such data.

If a job is saved using the iPC .cut format, the metadata are stored as part of the .cut file.

Sort by Column

Double-click a Column header will sort the file list by the column content.

Another double-click will sort the content in opposite order.

Modify Columns displayed

> While pointing at **My Jobs List**, click the **Right Mouse Button**.

Select columns to be displayed.

5.4.3 Select a File

Select a **Job** in **My Jobs List**

Single Click

The file is selected, available for:

- **My Jobs Actions** functions (1).

- **Options Bar** (2)

A preview of the selected file is shown in the **Selected Job Preview** window (3).

Double Click

From the selected file, a new **Job** is created, shown as a separate **Job Tab**.
The same function is achieved using the **Create Job** button in **My Jobs Actions**.

5.4.4 My Jobs Actions

The following entries are available:

Add	Add a job to **My Jobs List**.
Remove	Remove the **Selected Job** from **My Jobs List**.
Open	**Open** the **Selected Job** in **My Jobs List**. The new **Job** is shown as a separate **Job Tab**. The same function is achieved by doubleclicking the **Job** in **My Jobs List**.
⚙	The following **Actions** are available: **Add...** Add a job to **My Jobs List**. *Add Nested Layout* **Add Nested Layout** to **My Jobs List**. **Nested Layout** is prepared in a separate dialog. The result can be saved to **My Jobs List**. *Edit Nested Layout...* Edit the selected **Nested Layout** **Open** **Open** the **Selected Job** in **My Jobs List**. **Remove Job (Del)** Remove the selected **Job** from **My Jobs List**. **Remove Unreferenced Jobs** Jobs in **My Jobs List** where the corresponding file is missing, will be removed from **My Jobs List**. **Sort Jobs** This function is available in **Compact View** only Sort **My Jobs List** by:

- Added Date
- Name
- Modified Date
- Size
- Due Date
- Ascending
- Descending

5.4.5 Options Bar

The following toolbar entries are available:

Switch to Table View	Preview of **Selected File** is shown inside a **Cutting Table** view.
Switch to File View	Preview of **Selected File** fills the window.
Import Preset: Import Preset: Esk	From the drop-down menu, select the *Import Preset* to use.
View Preset	Open the *View Import Preset* dialog showing selected **Import Preset**.

5.5 Opened Job

A **Job** is identified as a separate tab including the actual file name on **Job Tabs** (1).

You can have several **Jobs** opened, all identified with its own tab.

A preview of the selected **Opened Job** is shown in the **Layers View / Production View** window (3).

You can edit a **Job** using the available **Toolbar** functions (2).

You can edit a **Job** while another job is executed on the **Cutting Table**. In this way, you can prepare next **Job** for execution.

During execution, a **Job** is locked for editing.

A **Job** contains two main groups of information; **Layers Setup** and **Production Setup**.

5.5.1 Open a Job

You create a **Job** from **My Jobs List**:

➡	In **My Jobs List**, double-click a file.
Open	**My Jobs Actions**->**Open**. A **Job** is opened based upon currently selected file in **My Jobs List**.

Creating an empty **Job** is available as:

➡	**Menu Bar**->**File**->**New Job**. A new, empty **Job** is created.

5.5.2 Select a Job

Jobs are selected using the **Job Tabs**.

The selected **Job Tab** is highlighted.

5.5.3 Close a Job

Closing a **Job** is available from:

➡	**Menu Bar**->**File**->**Close Job**. **Opened Job** is closed.
✖	**Job Tab**->**Close**.

If the **Job** to be closed has been modified, a **Save As** dialog appears.

The **Job** will be saved in the .cut - format regardless the format of the **Input File**.

In **My Jobs List**, the new .cut file will replace previous version.

5.5.4 Ready for Execution

To prepare a **Job** for execution, complete **Layers Setup** (1) and **Production Setup** (2).

To simplify this task, use **Cutting Keys** (3) as described in next chapter.

In the **Properties Bar** (4), you find the status indicator for **Job** ready:

✔	**Layers Setup** and **Production Setup** are properly set. The **Job** is ready for execution.
🚫	This **Job** is not properly prepared for execution. Click on the text to get more information.
⚠ Job is ready for production with warning(s).	This **Job** is ready, but you should check the warnings. Click on the text to get more information. The **Job** is checked for the following, potential error conditions: • A big curve, typically a rectangle, is included in the **Camera / Regmark Layer**. • The **Regmark Layer** is not the first **Layer** in the **Layer List**. • The **Job** contains two **Regmark Layers**. • A **Cut Layer** is placed before a **Crease Layer**. • **Non Reverse operation Layers** are placed before **Reverse operation Layers**.

5.6 **Opened Job**, select **Cutting Key**

After a new **Job** is created, no ***Cutting Key*** is selected, unless it is specified in the selected ***Import Preset***.

Cutting Key:	Leave **Cutting Key** = None to run *without using **Cutting Key***. Press <u>none</u> to open the ***Cutting Key** selection dialog*

5.7 Opened Job, Layers Setup

iPC organizes all geometry and registration data into **Layers** and assigns a unique set of options to each **Layer**.

When importing a file, iPC separates the contents into **Layers**.

The separations are defined by the *Import Mapping*.

Layers defines tools, tool parameters and registration types.

When you run a job, iPC will produce that job based on the order, selection and configuration of your **Layers**.

All **Layers** for an **Open Job** are located in **Layer Setup**:

5.7.1 Layers Tab

1 - **Cutting Key**	**6** - **Layer Name**
2 - **Layer Actions**	**7** - **Expand / Collapse**
3 - **Selected Layer**	**8** - **Show / Hide Layer**
4 - **Edit Layer Button**	**9** - **Layer Display Color**
5 - **Tool Icon**	**10** - **Layer Order**

Expand / Collapse

1 - Selected Layer is highlighted and expanded

A sub-set of **Tool Parameters** are displayed in the **Layer**.

The number of parameters will change, depending upon the actual tool selected.

For more information, see below.

2 - Not selected Layer is compressed

A sub-set of **Tool Parameters** are displayed in the **Layer**.

3 - Layer is collapsed

Layer is collapsed, showing just the **Layer Name**

Layer Window

	Layer Display Color **Color** used when the **Layer** geometry is displayed in **Layers View**. Click to open the **Color Selection** dialog.
	Show / Hide Layer Indicates if this **Layer** is visible, and thereby included or not, see *Include a Layer*. **Single Layer View** Press **Alt** + this icon to display only this **Layer** in **Layers View**.
	Expand Layer.
	Collapse Layer.
	Edit Layer Button Invoke the *Edit Layer* dialog. All **Layer** parameters are available for edit.
	Tool Icon showing the tool currently assigned to this **Layer**. The **Tool** is mounted on the **Cutting Table**.
	Tool Icon showing the tool currently assigned to this **Layer**. The **Tool** is currently not mounted.
	Select Tool From the drop-down list, select **Tool** to be used for this **Layer**.
	Specify **Tool Depth**. Increase the value to go deeper into the material.
	Specify **Tool Depth along Flute**.
	Specify **Tool Depth across Flute**.
	Edit Layer Button

	Invoke the *Edit Layer* dialog. All **Layer** parameters are available for edit.
Speed X/Y	Specify execution speed for this **Layer**.
?	No **Tool** is currently assigned for this **Layer**. Use the **Select Tool** function to specify tool to use.

5.7.2 Select Layer

A **Layer** is selected by a **Mouse Click** inside the surrounding frame:

A selected **Layer** is identified by a highlighted frame.

5.7.3 Include a Layer

1 - Include/exclude all **Layers**

2 - Include/exclude this **Layer**

Click the button to change state:

👁	**Enable Layer** **Layer** is included in **Opened Job**. The geometry belonging to this **Layer** is visible in **Layers View**. The geometry belonging to this **Layer** will be included in the output processing.
▣	**Layer** is excluded. The geometry belonging to this **Layer** is not visible in **Layers View**. The geometry belonging to this **Layer** will not be included in the output processing.
Alt + 👁	Press **Alt** + **Enable Layer** This **Layer** is included, all other **Layers** are excluded. Press a second time to include the **Layers** again.

5.7.4 Layer Sequence

The execution sequence on the **Cutting Table** is determined by the **Layer Order**, starting from the top of the list.

You can re-arrange the execution sequence by moving **Layers** up or down:

1. Select the actual **Layer**.
2. While you keep the **Left Mouse Button** down, move the **Layer** up or down.
3. When at wanted position, release the **Left Mouse Button**.

5.7.5 Edit Selected Layer

⚙	**Opened Job**->**Layers Tab**->**Edit Layer**
➡	**Menu Bar**->**Layer**->**Edit Layer**...

The content of the **Edit Layer** dialog will change, depending upon selected **Tool**.

For **Milling tool** parameters, go *here*

Layer Name	**Depth, Flute Dependant**
Enter the name you want for the **Layer**.	

The original name is derived from the **Input File** and the **Import Mapping**.	If enabled, you can specify **Depth Across** and **Depth Along** flute independently.
Layer Type Select *Layer Type*.	**Depth**: Specify **Tool Depth**. Increase the value to go deeper into the material.
Tool From the drop down list, select the tool to use when this **Layer** is processed. Note: Tools above the horisontal line are currently available on the machine.	**Depth Along** Specify **Tool Depth along Flute**. The value can be entered as: • xx mm • xx in • xx % *Depth limitations*
Registration Type From the drop down list, select the wanted **Registration Type**. For details, see *Registration*.	**Depth Across** Specify **Tool Depth across Flute**. The value can be entered as: • xx mm • xx in • xx % *Depth limitations*
Speed X/Y Specify the execution speed for this **Layer**.	**Reverse Operation** Specify if this **Layer** should be executed on the reverse side of the sheet.
Acceleration Specify the acceleration to be used as a % - value of maximum acceleration available.	**Layer Color** Select the color to use when this **Layer** is displayed in **Layers View**. Press the **Layer Color** bar to open the **Color** dialog.

5.7.6 Layer Types

Layer Types are used by **Cutting Keys** and some **Advanced Job** menu features.

Layer Type is a property of a **Layer**, typically defining which operations (cut, crease, etc) to perform on a layer.

Layer Type is assigned to a **Layer** during **Import Mapping**, based upon certain properties in the **Input File**, like **Layer Name**, **Color** or **Line Type**.

Some design applications can also define the **Layer Type** directly.

Alternatively, the **Layer Type** can be selected in the **Edit Layer** dialog.

Layer Types

The following **Layer Types** are available:

- **Unknown**
- **Cut**
- **Crease**
- **Partial Cut**
- **Perf Cut**
- **Bevel Cut**
- **V-notch**
- **Plot**
- **Kiss Cut**

- **Drill**
- **Regmark**
- **Braille**
- **Crease Across Grain**
- **Reverse Crease**
- **Reverse Crease Across Grain**
- **Wash Out**
- **Engraving**
- Free use 1, 2,3

5.7.7 Add new Layer

	Menu Bar->**Layer**->**Add Layer**...
	Opened Job->**Layers Tab**->**Add Layer**

Note: Do not use this entry to create a **Regmark Layer**.

Layer Name

Enter the name you want for the **Layer**.

Layer Type

Select *Layer Type*.

Tool

From the drop down list, select the tool to use when this **Layer** is processed.

Note: Tools above the horisontal line are currently available on the machine.

Layer Color

Select the color to use when this **Layer** is displayed in **Layers View**.

Press the **Layer Color** bar to open the **Color** dialog.

The **Add Layer** dialog box will change depending upon the **Tool** selected.

To fill in the other parameters for the **Layer**, see *Edit Layer*.

5.7.8 Add Regmark Layer

> **Menu Bar**->**Layer**->**Add Regmark Layer**...

Normally, the position of the **Registration Marks** is included in the **Input File**.

If, for any reason, you have **Input Files** without **Registration Mark** information, you can use the **Regmark Layer** to specify the size and position of **Registration Marks** relative to the corners of the job.

Note: **Registration Marks** created this way are always circular.

Name

Enter the **Name** you want for the **Layer**.

Coordinates are Absolute

The coordinates for the **Registration Marks** are specified in the same coordinate system as the geometry.

Coordinates are Distance from Corner of Work Area

The coordinates for the **Registration Marks** are relative to corner of the **Work Area**.

Coordinates are Distance from Corner of Enclosing Rectangle

The coordinates for the **Registration Marks** are relative to the corner of the enclosing rectangle.

Top Left Select if a top left **Registration Mark** should be used. Enter coordinates for the **Registration Mark**.	**Top Right** Select if a top right **Registration Mark** should be used. Enter coordinates for the **Registration Mark**.
Bottom Left Select if a bottom left **Registration Mark** should be used. Enter coordinates for the **Registration Mark**.	**Bottom Right** Select if a bottom right **Registration Mark** should be used. Enter coordinates for the **Registration Mark**.
Regmark Size Enter the size of the **Registration Mark**.	

5.7.9 Copy Layer and Curves

1. Select the **Layer** you want to copy.

2. The copy function is available as:

➡	**Menu Bar**->**Layer**->**Copy Layer With Curves**
⬛	**Opened Job**->**Layers Tab**->**Copy Layer Including Curves**

5.7.10 Copy Layer, no Curves

1. Select the **Layer** you want to copy.
2. The copy function is available as:

➡	**Menu Bar**->**Layer**-> **Copy Layer Without Curves**
⬛	**Opened Job**->**Layers Tab**->**Copy Layer Without Curves**

5.7.11 Remove Layer

1. Select the **Layer** you want to delete.
2. The delete function is available as:

➡	**Menu Bar**->**Layer**->**Remove Layer**
⬛	**Opened Job**->**Layers Tab**->**Remove Active Layer**

5.7.12 Remove Empty Layers

➡	**Menu Bar**->**Layer**->Remove Empty **Layers**...

All **Layers** without curves will be removed.

5.8 Opened Job, Production Setup

5.8.1 Number of Copies

Opened Job->**Production Setup**->**Copies**

Copies

Specify **Number of Copies** to produce.

Table

Displays the **Job Layout** on *Table 1* (X x Y)

X - **Number of Copies** along X.

Y - **Number of Copies** along Y.

5.8.2 Quality

Accuracy

The performance is optimized to achieve maximum accuracy.

Speed

The performance is optimized to achieve maximum speed. Less accuracy is a possible consequence.

5.8.3 Material Handling

➡ **Opened Job**->**Production Setup**->**Material Handling**

Function groups:

Table Preset

Material Feed

Skip Table

Material Measurement

Table Preset

Table Preset defines some basic behaviour of the system.

From the drop-down list, select one of the **Table Presets** available.

For more information about **Table Preset**, go *here*.

Material Feed Functions

Note: These features are available only when **Sheet Feed Table Preset** is selected.

Feed to front of table

Automatically feed sheets to the front of the table.

The feeding length is calculated using the **Table to Feeder** distance and the **Width** parameters in the **Options** dialog.

Notes: This function is for **Sheet Feeder** operations only.

Sheet Feeding Length

Sets the distance your device will feed the sheet(s) when using **Sheet Feeder**.

Setting the value properly ensures minimum feed time. The **Feed Length** is usually approximately equivalent to the sheet length or slightly larger.

If multiple sheets are on the table at one time, the length may be set slightly smaller.

Multiple sheets on the table maximizes vacuum hold-down.

Note: This function is for **Sheet Feeder** operations only.

Pre-load Sheets

HW

Specify the number of sheets to be loaded at the start of your production.

Use this function when you have **Multiple Sheets** on the table, and you need to load more than one sheet before production start.

Skip Table Functions

Note: These features are available only when **Sheet Feed** or **Roll Feed Table Preset** is selected.

HW

Skip Table if Registration Mark is not found

If the **Registration Mark** is not found, iPC will automatically skip the **Table** during **Sheet Feed** or **Roll Feed** productions.

The **Skip Table** feature allows iPC to run with less human intervention by automatically avoiding production breaks due to mis-loaded sheets or damaged **Registration Marks**.
Note: If **Registration Mark** is not found on two successive sheets, the execution will stop.

Skip Table After

Entering a number of seconds in the **Skip Table After** field delays the skipping of the table.
Use this function to provide some time for manual correction.

Material Measurement

Decide how to carry out the **Material Thickness** measurement.

From the drop-down list, select:

Optimized Measurement

• If **No Registration** - material is measured in two opposite corners of the material.

• If **Registration** - material is measured in the position of the first **Registration Mark**.

Measure at Laser Position

The material is measured in current **Laser position**.

Successive sheets are measured in the same postition.

Note: This function is available when **No Registration** is selected only.

5.8.4 Registration

Registration Types

> **Opened Job**->**Production Setup**->**Registration**->**Registration Type**

From the drop down list, select wanted **Registration Type**: *None*, *Registration Marks*, *Edge Recognition*.

Note: If the **Opened Job** includes a **Regmark Layer**, the **None** alternative is not available.

For more information, see *Registration Types*.

No **Registration Marks**

No **Registration**, the **Job** is executed at the position of the selected **Reference Point** + **Offset**, if any.

Use Registration Marks

Read **Registration Marks**.

Compensation Types

Select from the following **Compensation Types**:

- Move Job
- Placement
- Register Curve
- Register Layer
- Linear Compensation
- Full Compensation

For more information, see *Compensation Types*.

Search Area

`HW`

Different ways of **Registration Mark** search is available:

Manual

The center of every **Registration Mark** is defined manually using the arrow keys on your keyboard and a live camera image or **Laser Pointer**.

Center Only

iPC attempts to locate each **Registration Mark** automatically. If it is unable to locate a mark, you are prompted to manually position the camera using the arrow keys on your keyboard. iPC will only recognize the intended **Registration Mark** if it is near the center of the camera image.

Normal

This option is nearly identical to **Center Only**, except that the **Registration Mark** doesn't need to be near the center of the camera image for iPC to recognize it.

As long as the mark is completely within the camera image, iPC will automatically reposition the camera directly over the center of the mark before reading its position.

Extended

If the **Registration Mark** is not completely within the camera image, iPC expands the field of view by moving the camera to up to four additional overlapping positions around the original image.

Ask Confirmation for First Mark

`HW`

For the first **Register Mark** in each **Job**, you will be asked for confirmation.

Adaptive Registration

Select this option to optimize **Register Mark** read, focusing on:

Accuracy

Read all **Registration Marks** available in order to achieve maximum accuracy.

Speed

Minimize the number of **Registration Marks** used in order to achieve maximum speed. Less accuracy is a possible consequence.

Will take effect from the second **Table** of a job.

Use Edge Recognition

Use **Edge Recognition** to find correct job position.

Sheet Position

Specify the distance from **Selected Reference Point** where the camera should search for the sheet corner.

Check Edge Distance

Specify the measuring distance to be used.

Check Direction

Select which direction to measure:

Corner and X

Sheet Corner and a position **Check Edge Distance** from corner in X-direction is detected.

Corner and Y

Sheet Corner and a position **Check Edge Distance** from corner in Y-direction is detected.

Corner, X and Y

Sheet Corner and a position **Check Edge Distance** from corner in both X and Y-direction is detected.

Use Corner only

Sheet Corner only is detected.

5.8.5 Position

> ➡ **Opened Job**->**Production Setup**->**Position**

Position

| | Main Reference Point ▾ | [icon] |

| Offset: | ↤ | 0 mm | Reset |
| | ⊺ | 0 mm | ☐ Update automatically |

Reference Point

Select the *Reference Point* to use.

Move Job to Reference Point

[icon]

The lower left corner of the surrounding rectangle of current **Job** will be placed in selected **Reference Point**.

Offset

If you want to place the job with an offset to selected **Reference Point**, add proper:

[icon] - X offset values

[icon] - Y offset values

Reset

Offset values are set to zero.

Update Automatically

This is a function for **Jobs** containing **Registration Marks**.

The **Job Position** is updated after each **Job**:

A modified start position for one **Job** will be used as start position for the next **Job**.

5.8.6 Step and Repeat

➡	**Opened Job**->**Production Setup**->**Step and Repeat**

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▭▭▭ **Number of Copies** along X.		目 **Number of Copies** along Y.	
⊟⊟ **Gap** between copies along X.		⊟ Gap between copies along Y.	
⊟⊟ **Step size** between copies along X		⊟ Step size between copies along Y.	
Update Copies **Copies** field (1) is updated by **Number of Copies** along X mulitplied with **Number of Copies** along Y.			

Notes:

- You enter either **Gap** or **Step size**.

5.8.7 Tool Head Parking

➡	**Opened Job**->**Production Setup**->**Tool Head Parking**

Specify **Park Position** after **Job** finished.

If current **Production Setup** contains a **Park** command, the machine will move to the specified **Park Position**.

P	Drag to set **Park Position** In **Table View**, place the **Mouse Pointer** on the **Park** icon, press **Left Mouse Button** and drag the icon into wanted **Park Position**.
↦	**Set Park Position** Enter X-coordinates for **Park Position**
↥	Enter Y-coordinates for **Park Position**
▣	Coordinates are relative to **Main Reference Point**.
▣	Coordinates are relative to lower right of the **Job**.
▣	Coordinates are relative to upper right of the **Job**.

5.9 **Toolbar**

Toolbar content will change depending upon if you work in **Layers Setup** or **Production Setup**:

Function	Layers Setup	Production Setup
Zoom Tool	x	x
Zoom In	x	x
Zoom Out	x	x
Fit to Job	x	x
Fit to Table	x	x
Edit Points	x	
Show Curve Directions	x	
Show Curve Points	x	
Show Tool Path	x	x
Vacuum Zones		x
Park Position		x
Show Table Rulers		x
Show Reference Point		x
Bounding Box	x	x
Show Rulers	x	

5.9.1 Zoom Tool

	Menu Bar->View->Zoom Tool
	Toolbar->Zoom Window

By the mouse, define a **Zoom** area.

5.9.2 Zoom In

➡	**Menu Bar**->**View**->**Zoom In**
⊕	**Toolbar**->**Zoom In**
➡	**Ctrl+Add**

Click to **Zoom** in.

5.9.3 Zoom Out

➡	**Menu Bar**->**View**->**Zoom Out**
⊖	**Toolbar**->**Zoom Out**
➡	**Ctrl+Minus**

Click to **Zoom** out.

5.9.4 Fit to Job

➡	**Menu Bar**->**View**->**Fit to Job**
▣	**Toolbar**->**Fit to Job**
➡	**Ctrl+0**

Opened Job will fill **Layers View / Production View**.

5.9.5 Fit to Board

	Toolbar->**Fit to Board**
	Ctrl+Shift+J

Opened Job will fill the board displayed in **Layers View / Production View**.

5.9.6 Fit to Table

	Menu Bar->**View**->**Fit to Table**
	Toolbar->**Fit to Table**
	Ctrl+Alt+0

Cutting Table including the **Opened Job** will fill **Layers View / Production View**.

5.9.7 Edit Points

	Menu Bar->**View**->**Curve Points**
	Toolbar->**Curve Points**

Enter **Edit Point Mode**.

On selected curve, the **Curve Points** are highlighted, available for edit.

5.9.8 Show Curve Directions

	Menu Bar->**View**->**Curve Directions**
	Toolbar->**Curve Directions**

Show **Curve Direction**.

An arrow at the start of each curve indicates **Curve Direction**.

5.9.9 Show Curve Points

➡	**Menu Bar**->**View**->**Curve Points**
	Toolbar->**Show Curve Points**

All **Curve Points** are highlighted.

5.9.10 Show Tool Path

➡	**Menu Bar**->**View**->**Tool Path**
	Toolbar->**Tool Path**

Use this function to visualize the **Tool Path** of a **Milling Tool**.

5.9.11 Vacuum Zones

➡	**Menu Bar**->**View**->**Vacuum Zones**
	Toolbar->**Vacuum Zones**

Current **Vacuum Zone** configuration is shown in **Layers View / Production View**.

5.9.12 Park Position

➡	**Menu Bar**->**View**->**Park Position**

	Toolbar->**Show Parking Point**

	Current **Park Position** is shown in **Layers View / Production View**.

5.9.13 Show Table Rulers

	Menu Bar->**View**->**Table Rulers**
	Toolbar->**Show Table Rulers**

Cutting Table Rulers are shown in **Layers View / Production View**.

5.9.14 Reference Point

	Menu Bar->**View**->**Show Reference Point**
	Toolbar->**Reference Point**

	The selected **Reference Point** is shown.

5.9.15 Bounding Box

	Menu Bar->**View**->**Bounding Box**
	Toolbar->**Show Bounding Box**

The **Bounding Box** for the **Opened Job** is displayed.

5.9.16 Show Rulers

➡	**Menu Bar**->**View**->**Rulers**
🔲	**Toolbar**->**Show Rulers**

Rulers are shown in **Layers View / Production View**.

5.10 **Properties Bar**

From the **Properties Bar**, the following information is available, either in **Layers View** or **Production View**:

Curves:

Number of curves in **Opened Job**

Points:

Number of curve points in **Opened Job**

Size:

The size of **Opened Job** (X x Y).

This is the size of one copy of the **Job**; not influenced by **Step and Repeat** values.

Total Size:

The size of **Opened Job** (X x Y).

This is the size of of the complete **Job**; including **Step and Repeat**.

Current **Mouse Pointer** position (X) relative to the selected **Reference Point**.

Y:

Current **Mouse Pointer** position (Y) relative to the selected **Reference Point**.

5.10.1 Flute/Grain Direction

	This symbol indicates the **Flute Direction** for the displayed job.
	This symbol indicates the **Flute Direction** for the displayed job.
	No **Flute** / **Grain** direction specified

Normally, the **Flute Direction** is specified in the **Input File**.

Manually, the **Flute Direction** is altered from: **Properties Bar**->**Flute Direction** drop-down menu.

5.11 Machine Panel

Machine Panel provides information about the **Job** currently executed on the **Cutting Table**.

The overall status of **Job Execution** is displayed as:

Edit Job / Idle Mode - job preparation

In this mode, you can:

- Edit new jobs
- Start a new job

Execution Mode - execution is on-going

Error Mode - error, execution has stopped.

iPC **Message Box** will provide more information.

5.11.1 Machine Panel Views

It is possible to configure how the **Machine Panel** is displayed on the screen:

> **Machine Panel**->**Select View**
>
> You can select the following views:
>
> - **Position at Bottom**
>
> - **Position at Right**
>
> - **Maximize**

Position at Bottom

Position at Right

Maximize

5.11.2 Machine Panel Functions

The **Machine panel** functions available will change depending upon the status of the system.

The following states are defined:

Execution Mode

- *Executing*

Idle Mode

- *Material Replacement*

- *Stop*

- *Job finished*

Error Mode

- *Error*

- *Error/Pause*

- *Safety stop*

- *Regmark not found*

Executing

1 - Name of file being run.

2 - Status of Current Job

- Inner circle - **Current Table**

- Outer circle - **Current Job**

3 - Stop Production dialog

Stops production after **Current Table**.

Modify Job is then available.

5 - Number of Copies

Number of copies produced/Total number of copies requested.

6 - Producing copy

Copy number currently prodused

9 - Finish all copies

Estimated time until all requested copies are completed.

10 - Current table

Estimated time until **Current Table** is completed.

Note: Not for first **Table**, visible for successive **Tables** only.

11 - Performance information

- Time elapsed since start of **Current Job**

- Spindle Power

- Measured rotation speed (RPM)
- Measured material thickness

Material Replacement

1 - Name of file executed.

2 - Status of Current Job

- Replace material.
- Press *Start* to continue.

4 - Start Production dialog

- Produce remaining copies.
- Restart from current Table
- Restart all.

5 - Number of Copies

Number of copies produced/Total number of copies requested.

6 - Producing copy

Copy number currently prodused

8 - *Machine Panel Toolbar*

11 - Performance information

- Time elapsed since start of **Current Job**

- Spindle Power
- Measured rotation speed (RPM)
- Measured material thickness

Note: This state is entered when:

- If **Park after Table** is enabled and the **Table** is completed.

- **Execution stop after this Table** is enabled.

Stop

1 - Name of file executed.

2 - Status of Current Job

- Production stopped by operator.
- Machine moved to **Park Position**.

4 - Start Production dialog

- Produce remaining copies.
- Restart from current Table
- Restart all.

5 - Number of Copies

Number of copies produced/Total number of copies requested.

7 - Start on copy

Copy number that will be produced if you continue execution.

8 - *Machine Panel Toolbar*

11 - Performance information

- Time elapsed since start of **Current Job**

- Spindle Power

- Measured rotation speed (RPM)
- Measured material thickness

Note: This state is entered when:

- If *Stop* is pressed twice

- Execution is stopped from **Machine Panel**.

Job finished

1 - Name of file executed.

2 - Status of Current Job

Job is completed.

8 - *Machine Panel Toolbar*

11 - Performance information

- Time elapsed since start of **Current Job**

- Spindle Power

- Measured rotation speed (RPM)
- Measured material thickness

Error

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1 - Name of file executed.

2 - Status of Current Job
Information about the error condition.

3 - Stop Production dialog
Stops production.

8 - *Machine Panel Toolbar*

11 - Performance information

• Time elapsed since start of **Current Job**

• Spindle Power

• Measured rotation speed (RPM)
• Measured material thickness

Pause

1 - Name of file executed.

2 - Status of Current Job

- Production paused by operator
- Press *Start* to continue.

3 - Stop Production dialog

Stops production after **Current Table**.

Modify Job is then available.

5 - Number of Copies

Number of copies produced/Total number of copies requested.

6 - Producing copy

Copy number currently prodused

8 - *Machine Panel Toolbar*

11 - Performance information

- Time elapsed since start of **Current Job**

- Spindle Power
- Measured rotation speed (RPM)
- Measured material thickness

Safety stop

1 - Name of file executed.

2 - Status of Current Job

Machine stop due to safety error.

Information about the error condition.

3 - Stop Production dialog

Stops production.

8 - *Machine Panel Toolbar*

11 - Performance information

• Time elapsed since start of **Current Job**

• Spindle Power

• Measured rotation speed (RPM)
• Measured material thickness

Regmark not found

HW

1 - Name of file executed.

2 - Status of Current Job

Machine stop due to **Registration Mark** not found.

Information about the error condition.

3 - Stop Production dialog

Stops production.

8 - *Machine Panel Toolbar*

11 - Performance information

- Time elapsed since start of **Current Job**

- Spindle Power

- Measured rotation speed (RPM)
- Measured material thickness

iPC Pause functions

To pause job execution, press *Pause* on **Operators Panel**.

Stop in Execution Mode

Stop production after this **Table**:

- System enters **Idle Mode**

- Modify job is available.

Stop when in Pause

When we press **Stop** while in **Pause**:

- System enters **Idle Mode**

- Modify job is available.

5.11.3 Machine Panel Toolbar

Vacuum Zones

➡	**Menu Bar**->**Machine**->**Vacuum Zones**
	Machine Panel->**Vacuum Zones**

Select **Vacuum Zones** suitable for **Opened Job**.

Proper selection is important to achieve the best possible material hold down.

Intelligent Vacuum Control

Vacuum Zones, suitable for the **Opened Job**, are automatically selected, based upon the size of the job (**Bounding Box**).

Table Top Reference

⮕	**Menu Bar**->**Machine**->**Set Table Top Reference**
↓	**Machine Panel**->**Table Top Reference**

On the **Cutting Table**, execute the **Table Top Reference** wizard.

The table top level measurement in current **Laser Pointer** position is updated.

Measure on top of **Cutting Underlay**; no material.

Adjust Tool Height

⮕	**Menu Bar**->**Machine**->**Adjust Tool Height**...
↕	**Machine Panel**->**Tool Height**

On the **Cutting Table**, execute the **Adjust Tool Height** wizard.

Camera View

➡	**Menu Bar**->**Machine**->**Show Camera**
📷	**Machine Panel**->**Camera**

`HW`

Enter the **Camera View** dialog for manual camera picture inspection.

For more information, go *here*.

Spindle Warm Up

➡	**Menu Bar**->**Machine**->**Start Spindle Warm Up**
⏱	**Machine Panel**->**Spindle**

`HW`

On the **Cutting Table**, a **Spindle Warm Up** sequence is executed.

Start Vacuum Cleaner

➡	**Menu Bar**->**Machine**->**Start Vacuum Cleaner**
🧹	**Machine Panel**->**Vacuum Cleaner**

`HW`

Vacuum Cleaner on/off control.

For machines with **Milling Tool** installed.

May be used for manual dust removal after job execution.

Material Thickness Measurement

➡	**Menu Bar**->**Machine**->**Material Measurement**
÷	**Machine Panel**->**Material Thickness**

On the **Cutting Table**, a **Measure Material Thickness** sequence is executed.

Material thickness measurement is done as part of **Job Execution**.

This function is typically used when you need to know the thickness of the material before you start the job.

Measured thickness is displayed in the **Status** part of the **Machine Panel**.

Identify Tools

➡	**Menu Bar**->**Machine**->**Identify Tools**
🗡?	**Machine Panel**->**Identify Tools**

On the **Cutting Table**, a **Tool Identification** sequence is executed.

Use this after the insertion of a new tool.

5.11.4 Machine Panel Statusbar

Since start
Elapsed time since **Job** start, in secs.

Spindle power

Current **Milling Spindle** power usage, as a %-value of maximum.

Measured rotations

Current **Milling Spindle** rotation (RPM).

Material thickness

Measured **Material Thickness** (mm / in.)

5.12 Machine Connection

From **Windows Toolbar**, invoke **Machine Connection**.

For more information, go to *Machine Connection and Configuration*.

6. Before We Start

6.1 Introduction

In this chapter, we will describe some important concepts and parameters used in iPC that are essential in order to achieve optimal performance on your machine:

- *Table*
- *Table Preset*
- *Registration*
- *File Preparation*
- *Import Presets*
- *Cutting Keys*
- *Configure Tools*

6.2 About Table

It is important to understand the term **Table** used in this manual:

Cutting Table

Do not get confused by the term **Cutting Table**, which is the machine we use when processing our materials, as cutting, creasing, milling.

Table

The term **Table** describes the part of a job that fits into the **Work Area** of the **Cutting Table**.

Example 1

Ten copies of a printed or non-printed sheet is requested, only one sheet can be placed on the **Cutting Table** at a time.

Such a request will be executed as ten **Tables**.

Manual or automatic feeding will be initiated between each **Table**, depending on **Table Preset** selected.

A job is divided into two parts as it is longer than the table.

During execution, you complete the first **Table**. Then the material is fed forward to move the second part of the job into the work area. Then, the second **Table** is executed.

Example 2

A roll with printed decals should be cut.

The roll includes two columns of decals.

Three rows of decals fits within the **Work Area** of the **Cutting Table**.

In order to cut the roll, a **Step and Repeat** of 3 x 2 should be requested.

Each **Table** consist of 6 copies

When total **Number of Copies** is set to e.g. 100, a conveyor feed will be executed between each **Table**, given that a **Roll Feed Table Preset** is selected.

6.3 Table Presets

Table Preset defines some basic behaviour of the system.

A set of frequently used **Table Presets** are installed by default.

In addition, you can add and delete specialized factory made presets to suit your need.

Select Table Preset

> **Opened Job**->**Production Setup**->**Material Handling**->*Table Preset*

Maintain Table Preset

> **Menu Bar**->**Edit**->**Options**...->**Production**->*Table Presets*

Table Presets

The following **Table Presets** are installed by default:

6.3.1 Installed by default

Park after Table

Before starting, place the first sheet on the table top.

1 - When *Start* is pressed, this will happen:

• Copy 1 will be produced, or
• The number of copies specified by **Step and Repeat** is produced.

2 - Tool head will move to **Park Position**.

3 - **Material Replacement** is displayed in **Machine Panel** .

4 - Operator should replace material in same position, then press *Start*.

5 - Remaining copies will be produced in the same way until specified **Number of Copies** are produced.

Vacuum and **Blow Back** are switched on / off automatically as an integrated part of this process.

Park after Table, Manual Vacuum

Before start, place the first sheet on the table top.

1 - When *Start* is pressed, copy 1, alternatively the number of copies given by **Step and Repeat**, is produced.

2 - Tool head will move to **Park Position**.

3 - **Material Replacement** is displayed in **Machine Panel** .

4 - Operator should replace material in same position, then press *Start*.

5 - Remaining copies will be produced in the same way until specified **Number of Copies** are produced.

Vacuum and **Blow Back** is manual, to be controlled by the operator from **Operators Panel**.

Roll Feed

HW

Conveyor solution is required.

First copy on the roll must be placed on the table top before starting.

1 - When *Start* is pressed, copy 1, alternatively the number of copies given by **Step and Repeat**, is produced.

2 - Traverse will move to the back of the **Cutting Table** to transport the conveyor and the roll forward. Feeding distance is defined by **Sheet Feeding Length**, alternatively fed to front of table if **Feed to front of table** is selected.

3 - Second copy is produced. (First regmarks will have to be identified manually unless step distance is specified correctly.)

4 - Traverse will feed next copy (Regmarks will now be identified automatically.)

5 - Sequence continues until specified **Number of Copies** are produced.

Vacuum and **Blow Back** are switched on / off automatically as an integrated part of this process.

Sheet Feed, Feed Before

HW

Requires **Sheet Feeder** and conveyor.

Start without any sheet on the table top.

1 - When *Start* is pressed

• The number of sheets defined by **Pre-load Sheets** (default 1) is loaded on to the table top by the **Sheet Feeder** and the conveyor + traverse.

• Feeding distance is defined by **Sheet Feeding Length**, alternatively fed to front of table if **Feed to front of table** is selected.

2 - First sheet, alternatively the number of copies given by **Step and Repeat** in Y direction, is produced while **Sheet Feeder** is picking up the next sheet. First regmarks has to be identified manually.

3 - Traverse will move to the back of the table to transport the conveyor and the sheet forward.

4 - Second copy is produced. Normally the regmarks are now found automatically.

5 - **Sheet Feeder** will simultaneously pick next sheet, but is, during first copies, learning when operation should start to present the sheet in due time.

6 - Traverse will feed next sheet.

7 - Sequence continues until specified **Number of Copies** are produced.

Vacuum and **Blow Back** are switched on / off automatically as an integrated part of this process.

MultiZone Production

See separate *chapter*.

6.3.2 Optional

Roll Feed, Double Blow-back

HW

Conveyor solution is required.

First copy on the roll must be placed on the table top before starting.

1 - When *Start* is pressed, copy 1, alternatively the number of copies given by **Step and Repeat**, is produced.

2 - Traverse will move to the back of the **Cutting Table** to transport the conveyor and the roll forward. Feeding distance is defined by **Sheet Feeding Length**, alternatively fed to front of table if **Feed to front of table** is selected.

3 - One extra **Blow Back** sequence is completed in order to get rid of wrinkles in the material.

4 - Second copy is produced. (First regmarks will have to be identified manually unless step distance is specified correctly.)

5 - Traverse will feed next copy (Regmarks will now be identified automatically.)

6 - Sequence continues until specified **Number of Copies** are produced.

Vacuum and **Blow Back** are switched on / off automatically as an integrated part of this process.

Sheet Feed, No Feed Before

HW

Requires **Sheet Feeder** and conveyor.

Start with a sheet on the table top.

1 - When *Start* is pressed

2 - First sheet, alternatively the number of copies given by **Step and Repeat** in Y direction, is produced while **Sheet Feeder** is picking up the next sheet. First regmarks has to be identified manually.

3 - Traverse will move to the back of the table to transport the conveyor and the sheet forward. Feeding distance is defined by **Sheet Feeding Length**, alternatively fed to front of table if **Feed to front of table** is selected.

4 - Second copy is produced. Normally the regmarks are now found automatically.

5 - **Sheet Feeder** will simultaneously pick next sheet, but is, during first copies, learning when operation should start to present the sheet in due time.

6 - Traverse will feed next sheet.

7 - Sequence continues until specified **Number of Copies** are produced.

Vacuum and **Blow Back** are switched on / off automatically as an integrated part of this process.

Sheet Feed, No Feed Before, Double Blow Back

HW

Requires **Sheet Feeder** and conveyor.

Start with a sheet on the table top.

1 - When *Start* is pressed

2 - First sheet, alternatively the number of copies given by **Step and Repeat** in Y direction, is produced while **Sheet Feeder** is picking up the next sheet. First regmarks has to be identified manually.

3 - Traverse will move to the back of the table to transport the conveyor and the sheet forward. Feeding distance is defined by **Sheet Feeding Length**, alternatively fed to front of table if **Feed to front of table** is selected.

4 - One extra **Blow Back** sequence is completed in order to get rid of wrinkles in the material.

5 - Second copy is produced. Normally the regmarks are now found automatically.

6 - **Sheet Feeder** will simultaneously pick next sheet, but is, during first copies, learning when operation should start to present the sheet in due time.

7 - Traverse will feed next sheet.

8 - Sequence continues until specified **Number of Copies** are produced.

Vacuum and **Blow Back** are switched on / off automatically as an integrated part of this process.

Barcode Sheet Feed

HW

Requires **Sheet Feeder** and conveyor.

As for **Sheet Feed**, but loading commands are different to cover for **Barcode** reading.

To be used when each sheet in the stack includes a (potentially unique) **Barcode**.

Please note! Automatic production by **Barcode** is currently not supported

Manual Sheet Feed, Feed Before

HW

Conveyor required, but no **Sheet Feeder**.

Start without a sheet on the table top.

1 - When *Start* is pressed:

• The number of sheets defined by **Pre-load Sheets** (default 1) is loaded on to the table top by the conveyor and the traverse.

• The operator must be ready to present sheets for pickup at the rear of the machine.

• Feeding distance is defined by **Sheet Feeding Length**, alternatively fed to front of table if **Feed to front of table** is selected.

2 - First sheet, alternatively the number of copies given by **Step and Repeat** in Y direction, is produced.

3 - First regmark has to be identified manually.

4 - Traverse will move to the back of the table to transport the conveyor and the sheet forward. Feeding distance is defined by **Sheet Feeding Length**, alternatively fed to front of table if **Feed to front of table** is selected.

5 - Second copy is produced. Normally the regmarks are now found automatically.

6 - Conveyor + traverse simultaneously picks up next sheet presented by the operator, but is, during first copies, learning when operation should start to present the sheet in due time.

7 - Conveyor + traverse will feed next sheet.

8 - Sequence continues until specified **Number of Copies** are produced.

Vacuum and **Blow Back** are switched on / off automatically as an integrated part of this process.

Manual Sheet Feed, No Feed Before

HW

Conveyor required, but no **Sheet Feeder**.

Start with a sheet on the table top.

1 - When *Start* is pressed

2 - First sheet, alternatively the number of copies given by **Step and Repeat** in Y direction, is produced. First regmarks has to be identified manually.

3 - Traverse will move to the back of the table to transport the conveyor and the sheet forward. Feeding distance is defined by **Sheet Feeding Length**, alternatively fed to front of table if **Feed to front of table** is selected.

4 - Second copy is produced. Normally the regmarks are now found automatically.

5 - Conveyor + traverse simultaneously picks up next sheet presented by the operator, but is, during first copies, learning when operation should start to present the sheet in due time.

6 - Conveyor + traverse will feed next sheet.

7 - Sequence continues until specified **Number of Copies** are produced.

Vacuum and **Blow Back** are switched on / off automatically as an integrated part of this process.

6.4 About **Registration**

6.4.1 Adding Registration Marks

In order to achieve perfect print to cut alignment, all printed jobs destined for finishing with your iPC device should contain **Registration Marks**.

By adding **Registration Marks** to both the print and cut files, you are providing iPC with the necessary information to register the **Cut Path** to the **Printed Graphic**.

The placement and total number of **Registration Marks** depends upon the required cutting tolerance and the predicted amount of distortion.

i-cut Layout is a software package from Esko that has functions to automate the process of adding **Registration Marks**.

The same algorithm is used in ai-cut; is a special plug-in for Illustrator® and CorelDraw®, available from Esko.

Using those tools greatly simplifies the process of adding **Registration Marks**, but you should still understand the basic concepts explained in this section.

For more information about ai-cut, go *here*.

Poor triangulation of distorted graphics with only four **Registration Marks**.

Improved triangulation of distorted graphics with eight **Registration Marks**.

Understanding the **Registration** capabilities of iPC will help you decide how many marks to add to your job, and where to place those marks. Review the **Registration Types** section of this manual for more information on **Registration**.

For the best possible compensation, **Registration Marks** should be placed around, and inside (if possible) the cut path in a triangular relationship to one another. Jobs with tighter cutting tolerances require more **Registration Marks**.

The more marks, the smaller each triangulated area becomes, and the more accurately iPC will be able to compensate for distortion in that area.

If there are specific areas within the job that are more critical than others, more **Registration Marks** should be added to those areas. It's difficult to accurately predict the amount of distortion that will occur in any printed job; therefore we suggest you always include more **Registration Marks** than you think you will need.

You can always remove unnecessary **Registration Marks** later in iPC, but once the job is printed it is impossible to add more **Registration Marks**.

Jobs longer than your cutting table will be divided and produced by iPC in sections. Adding **Registration Marks** along these divisions will improve registration and alignment of cut paths between sections.

6.4.2 Types of Registration Marks

10115c

Circle:	3 mm < D < 12 mm	1/8 in. < D < 1/2 in.
Mask:	D >= d + 4 mm	D >= d + 5/32 in.
Donut:	4 mm < D < 12 mm	5/32 in. < D < 1/2 in.
	1 mm < T < D/4	3/64 in. < T < D/4
Cross:	4 mm < D < 15 mm	5/32 in. < D < 19/32 in.
	1 mm < T < D/4	3/64 in. < T < D/4

iPC supports four types of **Registration Marks**; circle, mask, donut and cross.

The machine will search for **Registration Marks** and detect any of these automatically.

Thus, there is no function to specify type of **Registration Marks**.

A circle is the best choice for nearly all scenarios. If there is a high amount of reflection or insufficient contrast between the color of the printed **Registration Marks** and the background, a donut shape may provide iPC with a better regmark reading result.

Important to know about Registration Marks

These are the rules for interpreting a **Regmark Layer**:

- A closed contour is one **Registration Marks** with position in the geometric center.

- A curve with 3 points is a corner detection.
- A curve with 2 points is an edge detection.

10115d

If you have a simple cross made of two crossing lines in the input file, you will get an output that is unpredictable. It might be interpreted as two corners (A) or three edges (B).

Use a closed contour as specified above.

6.4.3 Compensation Types

The **Compensation Type** dictate how iPC will register and modify **Cut Paths** based on the information it collects from reading **Registration Marks**.

The following **Compensation Types** are available:

-
- **Placement**
- **Register Curve**
- **Move Job**
- **Register Layer**
- **Linear Compensation**
- **Full Compensation**

In order to complete the picture, we have included here also the description of two registration methods not using **Registration Marks**:

- No **Registration Marks**, use **Ruler**
- **Edge Recognition**

No Registration Marks, use Ruler

Sheet positioning against the **Ruler** ensures correct cut-out.

It is a pre-requisite that the graphics is correctly positioned relative to sheet corner.

Notes:

- It is a pre-requisite that the **Cutting Table** is equipped with **Rulers**.
- The offset from **Reference Point** to geometry must be known.
- This method is not recommended if the job contains graphics that the cut-out must align to.

Edge Recognition

Sheet Position is unknown, cut-out is wrong

Sheet Position is obtained by **Edge Recognition**

Cut-out is perfect

It is a pre-requisite that the graphics is correctly positioned relative to sheet corner.

Notes:

- The offset from sheet edge to geometry must be known (the bounding box of the job).
- A straight sheet corner is presumed.
- This method is not recommended, as there is no compensation involved.

Placement

This simplest form of **Registration** rotates and positions all curves in all layers as one.

Size, shape and relative positioning of the curves all remain intact.

The position and rotation of the graphics is unknown

Using **Registration Marks** to obtain correct positioning.

Register Curve

Each curve is produced at the exact size and shape defined by the file, but registered individually from all other curves in the file; compensating for positional and rotational changes in the printed job.

The position and the rotation of the graphics is not known.

Using **Registration Marks** to modify the position and rotation of each curve individually.

Move Job

Specifically targeted for textile signage to fit inside a frame, which during finishing is nested together in a layout with other objects.

• Each curve keep the original size and shape.
• Each curve is moved individually based upon it's center of gravity and local distortion close to that specific curve.
• Each curve is rotated based upon overall measured rotation.

The position and rotation of the graphics is unknown

We are using **Registration Marks** to:

• Modify the position of each curve individually.
• Modify the rotation of each curve according to the overall calculated rotation for all curves.

Important to know about **Move Job**:

• You need bleed.
• **Move Job** is made to avoid a bad rotation of the first curve. If you use **Register Curve**, the rotation of the first curve is based upon the local **Registration Marks**. In case of bad spacing, the first curve might be rotated out of scope.

• Using **Move Job** ensures that the rotation of the first curve is aligned with the rotation of the other curves in the job.

Register Layer

Similar to **Register Curve**, this registration type compensates each **Layer** individually. All curves in each **Layer** will maintain exact size, shape and relative positioning.

Linear Compensation

This **Registration Type** offers the second highest level of compensation.

When **Linear Compensation** is selected, iPC applies an average compensation for each curve. The size, shape, offset and rotation of all curves are altered to compensate for linear distortion in the printed graphic. **Linear Compensation** is rarely used because **Full Compensation** provides superior registration and compensation, but is still included as an option.

The position, rotation and size of the graphics is unknown.

Using **Registration Marks** to modify position, rotation and scale of the cut-out.

Full Compensation

When selected, iPC adjusts the position of each point on every curve individually according the positions of the three **Registration Marks** closest to those points.

This feature compensates for all types of distortion, including: offset, scale, rotation, skew and compound distortion. **Full Compensation** offers the highest level of compensation available and provides the closest possible match of cut path to printed graphic.

Position and shape of graphics is unknown

Using **Registration Marks** to re-calculate the shape of the graphics.

6.4.4 About Compensation Types

One **Registration Type** is selected for each **Job** (**Opened Job**->**Production Setup**->**Registration**).

Jobs printed with large amounts of bleed or jobs that must maintain an exact overall size, or contain cuts that must maintain an exact relative size may require using **Placement**, **Register Curve**, **Register Layer**.

Just a few marks around the outer edge of each path or group of paths provide sufficient information for these **Registration Types**.

Jobs that require precise **Cut to Print Registration**, or precise outer border width should be produced with **Full Compensation**.

Unstable materials such as flexible or applied graphics also most often require **Full Compensation** for proper **Registration**.

Jobs produced with traditional printing methods, like screen printing, contains the greatest amount of distortion.

Digitally printed jobs generally contain less distortion, but accuracy varies greatly from printer to printer. Producing digitally printed jobs with tight tolerances still requires compensation, especially if the job is printed on a flexible substrate.

6.5 File Preparation for iPC

6.5.1 File Types

iPC Input Files

The following file types are available for iPC import:

- **iPC files:** .cut, .script, .nest.

- **Curve files:** .acm, .ard, .mfg, .dxf, .ai, .pdf, .cf2, .ds2.

.script
Output from the *i-script* work flow.
Contains cut data separated from a graphics file.
For more information, go *here*.

.nest
This file type contains a saved **Nested Layout**.

Adobe Illustrator® is widely used for file preparation, but any vector-based design or drafting software capable of outputting one or more of the compatible file types may be used.

iPC Output Files

.cut

A **Job** saved as a .cut file contains all settings made to the file.

Thus, no **Import Presets** are active when importing such files.

Note: Often, **i-script** files use the extension .cut instead of .script.

6.5.2 Defining Cut Paths

Every job imported into iPC requires cut paths, which are vector curves made of line segments, arcs, Bezier points, etc. These paths are normally created or defined in your **Design Software**.

The cut quality of your finished jobs is the direct result of the quality of the cut paths you create. iPC has some basic tools for optimizing cut path quality and improving processing speed, but poorly drawn paths will produce poor cutting results.

The best cut paths are smooth curves that wrap perfectly around the simplest and most intricate details.

Poor cut paths consist of curves that wander in and out of registration, or rough curves made from an excessive number of points. Vectorization of raster graphics often generates poor curves that must be refined manually before cutting. To ensure proper registration between printed graphic and cut, each cut path and registration mark must be perfectly aligned to the associated graphic and registration mark in the print file.

Jobs generated from Structural Design Systems like ArtiosCAD will be optimized for best cutting quality and no additional optimization is necessary.

Normally the cut and print data are created at the same time and separated into two files before the job is produced. This file separation can be done manually before printing or, if the job is going to be digitally printed, the *i-script workflow* enables compatible RIP softwares to automatically separate the files before outputting to the printing device.

6.6 Import Presets

6.6.1 Using Import Presets

Basic function

We use **Import Presets** to automate the process of converting the geometry in the **Input File** into ready to cut curves in iPC **Layers**.

Import Preset Options

In addition to the basic mapping function, **Import Presets** can include also **Cutting Key**, **Optimization** and a **Description**.

Using this combination will automate the whole job of converting an **Input File** to a **Job** ready for execution.

6.6.2 Import Preset and Cutting Key

Import Preset Function

This figure shows the basic operation of **Import Preset**.

The **iPC Layers** created by this process must be modified with tool settings.

Using Cutting Key, sample 1

In this case, the **Input File** content is organized into **Layers**.

Layer Names in the **Input File** are compared to **Layer Names** in the **Import Preset**.

The corresponding **Layer Type** is used to select the proper **Cutting Key**.

If properly prepared, the **iPC Layers** created by this process are complete, with tool selection and tool settings in place.

Using Cutting Key, sample 2

In this case, the **Input File** content is organized using **Tool numbers**, used for ACM file format.

Tool numbers in the **Input File** are compared to **Tool numbers** in the mapping part of the **Import Preset**.

The corresponding **Layer Type** is used to select the proper **Cutting Key**.

If properly prepared, the **iPC Layers** created by this process are complete, with tool selection and tool settings in place.

6.6.3 View Import Presets

➡	**Menu Bar**->**File**->**Add Job**->**View Preset**
➡	**Menu Bar**->**Advanced**->**Manage Presets**->**Import Presets**->**View**
➡	**Options Bar**->**View Preset**

Use this function to explore the content of selected **Import Preset**.

For information about the different parameters, see *Create...*

6.6.4 Select Import Preset

➡️ Menu Bar->File->Open->Import Preset

➡️ Options Bar->Import Preset

The selected **Import Preset** is used when reading the selected **Input File**.

6.6.5 Manage Import Presets

➡️ Menu Bar->Advanced->Manage Presets->Import Presets...

New...

Create a new **Import Preset**.

For more information, go *here*.

View/Edit

View/Edit selected **Import Preset**.

View button is available for all **Esko Import Presets**.

Edit button is available for all **Self-defined Import Presets**.

Esko Import Presets are not available for editing.

Copy...

Create a new **Import Preset** based upon an existing one.

Delete

Delete selected **Import Preset**.

Note: You are not allowed to delete any **Esko Import Presets**.

Create new Import Preset

➡️ Menu Bar->Advanced->Manage Presets->Import Presets->New...

Go through each **Category** to enter relevant information:

General

Preset Name

Enter the name of the new **Import Preset**.

Description

Enter a description.

The description is used to recognize the **Import Preset** for later use.

Mapping

File Type

This is a list of supported **File Types**.

Select the **File Type** to use and select **Mapping Preset**:

Mapping Preset

Open the drop down list to see all alternatives available.

Initially, the factory default mapping is used for each file format.

If you have created your own **Import Preset Mapping**, it will be available from this menu.

For more information, go *here*.

View

View the selected **Import Preset Mapping**.

Cutting Key

Use Cutting Key

Enable and select a **Cutting Key** to combine **Import Preset Mappings** and **Cutting Keys**.

Using this combination correct will automate the entire process of reading an **Input File** and convert it to a proper **Layer** setting.

The link between **Import Mappings** and **Cutting Keys** is *Layer Types*.

The **Import Mapping** will result in a number of **Layers** with certain **Layer Types**.
Selected **Cutting Key** also includes **Layers** with defined **Layer Types**.
These two sets of **Layers** will be matched based on **Layer Types**.

Keep Original Layer Colors

If relevant, the **Layer Colors** from the **Input File** are kept.

Create Unmatched Layers

When this function is selected:

If the **Cutting Key** include **Layers** that is not populated from the **Input File**, selected mapping, these **Layers** are created as empty layers. Can be useful if geometry has to be moved between **Layers** after import.

When this function is disabled:

Such data is ignored.

Optimize Curves

Add **Optimize Curves** functions. For details, go *here*.

Please note that for **Import Presets** there are one more **Optimizing Type** available, called "No Optimization".

This option should be selected when the geometry is already optimized for cutting in the source application, typically CAD systems like ArtiosCAD.

Mapping Import Presets

Menu Bar->**Advanced**->**Manage Presets**->**Mapping Presets**...

+

From the list of supported **File Formats**, select actual format and press the **+** sign in front of the requested **File Format**.

The view is expanded to show all defined **Mapping Presets** for the selected format.

New...

Create a new **Mapping Preset**.

From the list of supported file formats, select actual format and press **New**...

For more information, go *here*.

View/Edit...

The **Default Mapping Preset** is available for viewing only.

To modify a default **Mapping Preset**, make a copy of it, edit and save it using a new name.

User Defined Mapping Presets are available for editing.

For more information, go *here*.

Copy...

Create a copy of an existing **Mapping Preset**.

From the list of supported **File Formats**, select actual format and press **Copy...**.

For more information, go *here*.

Delete

Delete the selected **Mapping Preset**.

Create a new Mapping Preset

➡ **Menu Bar**->**Advanced**->**Manage Presets**->**Mapping Presets**->**New**...

Create a new Mapping Preset

From the list of supported **File Formats**, select actual format and press **New**...

The new **Mapping Preset** will be added to the already existing **Mapping Presets** for the actual format.

Edit Mapping Preset

Mapping Preset is basically a table of rules for how to convert the **Input File** into **iPC Layers**.

There are different rules for different formats.

Preset Name
Enter a name for the new **Mapping Preset**.

New
Add a new line to the table.

Duplicate
Create a duplicate of selected line in the table in order to make a similar entry in the mapping table.

Move Up
Move selected line one step up.

Move Down
Move selected line one step down.

Remove
Remove selected line.

Mapping Preset for different formats

ACM format Mapping Preset	PDF format Mapping Preset (color based)
Using wildcards When searching text fields, it is possible to use wildcards, as "Cut*".	**Ignore text** Text in the **Input File** is omitted **Import trim box** Specify if a trim box should be included. Trim box = bounding rectangle. **i-cut Layer name** i-cut Layer name for trim box. **Trim box Layer type** *Layer Type* for trim box.

General
Input File parameters will differ, depending upon the different file formats.

i-cut Layer Name
Layer Name to use in iPC.

i-cut Layer Type
Layer Type to use in iPC.

6.7 Cutting Keys

> **Menu Bar**->**Advanced**->**Cutting Keys**

A specific setup of **Layers** can be saved for later re-use.

Such a data set is called a **Cutting Key**.

Each **Cutting Key** is identified by

- **Material**

- **Material Thickness**

- **Details** description

- **Tool** description

Please note that it is up to the user to decide which of these parameters to use and how. In particular, the **Details** parameters are designed for "free purpose".

Thus a list of **Cutting Keys** will look like this:

As seen from the illustration, a **Cutting Key** contains more fields than the selection fields.

The **Layers** parameters contained in a **Cutting Key** are not visible until the **Cutting Key** is applied to a **Job**

Use **Cutting Keys** to ensure uniform processing and repeatable quality of the products produced.

Using the features provided, you maintain a library of **Cutting Keys** for the substrates you most often produce.

iPC includes a standard library of **Cutting Keys** for common materials that may be edited and customized.

In addition, you can download new libraries from your iPC dealer.

6.7.1 Select Cutting Keys

Opened Job->**Layers**->**Cutting Key**

Click <u>none</u> to invoke **Cutting Key** selection dialog.

The **Cutting Keys** listed above the horisontal line are the **Favorite Cutting Keys**.

See *below* for more details.

Select Cutting Key by Attributes

If the actual **Cutting Key** is not available among the **Favorites**, you can select by **Attributes**.

Select Cutting Key by Attributes

Specify the different selection criterias in order to decide correct **Cutting Key**:

Material

From the drop down list, select the material you are about to process.

Note: If this list is empty, you have to import a set of **Cutting Keys** in order to continue (*Import Cutting Keys*).

Thickness

From the drop down list, select material thickness.

Details

From the drop down list, select the description that fits your job.

Tool

From the drop down list, select tooling.

Keep Original Layer Colors

When this function is selected:

Layer colors used in the **Input File** are kept.

Create Unmatched Layers

When this function is selected:

If the **Cutting Key** include **Layers** that is not populated from the **Input File**, selected mapping, these **Layers** are created as empty layers. Can be useful if geometry has to be moved between **Layers** after import.

When this function is disabled:

Such data is ignored.

✓	**Layer Setup** is accepted.
✗	**Layer Setup** is cancelled.

If the **Layer** and **Production Setup** is as wanted, you are now ready to execute the job.

If your preferred configuration is not available as a **Cutting Key**:

• Manually edit current **Layer** settings to suit your need.

• You can as well change the **Layer Type**. Available **Layer Types** will be those included in selected **Cutting Key**.

- See *Edit Selected Layer*.

- Save it as a new **Cutting Key**:

> **Opened Job**->**Layers**->**Cutting Key**->**Save Cutting Key**
>
> **Menu Bar**->**Advanced**->**Cutting Keys**->**Save as Cutting Key**....

6.7.2 Favorite Cutting Keys

Select Favorite Cutting Key

The **Cutting Keys** listed above the horisontal line are the **Favorite Cutting Keys**.

From the list, select the preferred **Favorite Cutting Key**.

Select this Cutting Key

Press button to accept this **Cutting Key**.

Cancel this selection

Press button to cancel this selection.

Add to Favorite Cutting Keys

Select the **Cutting Key** as described above.

Press the **Cutting Key** again to invoke the dialog:

From this dialog, you can:

Add to Favorites

The selected **Cutting Key** will be added to list of **Favorites**.

Save Cutting Key

The selected **Cutting Key** will be saved.

Get Cutting Key Info

Use this function to check the selected **Cutting Key**.

Remove from Favorite Cutting Keys

Menu Bar->**Advanced**->**Cutting Key**->**Manage**

1. Select the **Cutting Key** you want to remove from list.
2. Select **Edit** to enter the **Edit Cutting Key** dialog.

In the dialog, disable **Show as favorite**.

6.7.3 Create new Cutting Key

A new **Cutting Key** is created based upon **Opened Job**.

Thus, to create a new **Cutting Key**, follow these steps:

1. Open the actual **Job**.
2. Complete **Edit Layers** settings to suit your need.
3. Save the setting as a new **Cutting Key**:

➡   **Opened Job**->**Layers**->**Cutting Key**->**Save Cutting Key**

➡   **Menu Bar**->**Advanced**->**Cutting Keys**->**Save as Cutting Key**....

Material	**Show Tool Image**
From the drop down list, select material to use.	Select this option if you want to illustrate this **Cutting Key** alternative using an image.
If actual material is not available:	Browse for the image file.
1. Click **New Material**.	
2. Enter the name of the new material.	
3. Click **OK**.	
Thickness	**Show Cutting Key Text**
From the drop down list, select material to use.	Select this option if you want to describe in more detail the content or how to use this **Cutting Key**.
If actual thickness is not available, click **New Thickness** and enter wanted thickness.	Enter wanted text in the edit box.
Note: To avoid creating **Cutting Keys** for each material thickness, use a more general name.	
Details	**Save**
From the drop down list, select the details description that suits your job.	Click **Save** to create the new **Cutting Key**.
If not found, click **New Details** and enter wanted details description.	All **Layer** parameters are saved as part of this **Cutting Key**.
Tool	
Enter a description of the actual tool configuration	

6.7.4 Update Cutting Key

To modifiy an existing **Cutting Key**, follow these steps:

1. Open a **Job**.
2. Select the **Cutting Key** to use.
3. Modify **Layers** to suit your need.
4. Apply the modifications (**Opened Job**->**Layers**->**Apply**)
5. Select the **Cutting Key** again.
6. Update the **Cutting Key** with the modified parameters:

➡	**Opened Job**->**Layers**->**Cutting Key**->**Save Cutting Key**...
➡	**Menu Bar**->**Advanced**->**Cutting Keys**->**Save Cutting Key**...

6.7.5 Cutting Key Manager

➡	**Menu Bar**->**Advanced**->**Cutting Keys**->**Manage**...

A list of all **Cutting Keys** available is displayed:

Edit

1. Select one **Cutting Key** by highlighting the actual line in the table.
2. Click the **Edit** button.
3. In the **Edit Cutting Key** dialog, update relevant information:

Material

Update material information.

Thickness

Update thickness information.

Detail

Update details description.

Tool

Update tool information.

Show Tool Image

Update if you want to illustrate this **Cutting Key** using an image.

Browse for the image file.

Show Cutting Key Text

Update if you want to describe this **Cutting Key** using text.

Enter wanted text in the edit box.

Note: To edit the **Layer Parameters**, go to *Update Cutting Key*.

Delete

1. Select one **Cutting Key** by highlighting the actual line in the table.
2. Click the **Delete** button.

Export

Using a common set of **Cutting Keys** inside a company or between co-operating companies will standardize the production process and secure the quality of the products produced.

Use the **Export** function to distribute **Cutting Keys** used.

1. Select one or more **Cutting Keys** by highlighting the actual line(s) in the table.

2. Click the **Export** button.

3. You are asked for a destination folder and file name.

Import

For more information, see *Import Cutting Keys*.

6.7.6 Import Cutting Keys

> ➡ **Menu Bar**->**Advanced**->**Cutting Keys**->**Manage**...

Use this function to:

• Include **Cutting Keys** received from co-operating sites.

• Import/include **Cutting Keys** provided by the supplier.

By default, **Cutting Keys** are stored in this folder:

C:\Users\UserName\My Documents\i-cut Production Console\CuttingKeys

Backup **Cutting Keys** files are stored in this folder:

C:\Users\UserName\My Documents\i-cut Production Console\CuttingKeyBackup

 Select **Import**

Replace Library

Current set of **Cutting Keys** is completely replaced by the imported keys.

Update Library

Existing **Cutting Keys** are updated.

New **Cutting Keys** are added.

Expand Library

Add only new **Cutting Keys**.

Existing **Cutting Keys** are kept unchanged.

Merge Library

All imported **Cutting Keys** are added to current set of keys.

In case of conflicts, the imported **Cutting Key** name is modified.

Enter Yes if ok

The list of available **Cutting Keys** is updated.

6.7.7 Global Cutting Keys

➡ **Menu Bar**->**Advanced**->**Cutting Keys**->**Global Cutting Keys**...

Cutting Keys are key elements in iPC.

Use **Global Cutting Keys** to standardize the workflow towards the **Cutting Table**.

Using the same **Cutting Keys** within a work group for instance, will ensure a common solution to common tasks.

Use Global Cutting Keys
Enable use of **Global Cutting Keys**.

Path
Browse for the global destination folder.

Copy Global Cutting Keys to Local
Global Cutting Keys will be copied to your local destination.
Before copy, your current local **Cutting Keys** will be backed up.

Copy Local Cutting Keys to Global
Local Cutting Keys will be copied to your global destination.
Before copy, the current **Global Cutting Keys** will be backed up.

6.7.8 i-script Link

Menu Bar->**Advanced**->**Cutting Keys**->**i-script Link**...

Some RIP and layout applications allow you to include material names in the **i-script** files they generate for iPC.

When you open a file containing a material name in iPC, you are prompted to associate (link) that name to a specific **Cutting Key**.

Once the material name is associated, each time a file containing that material name is opened, the associated **Cutting Key** will be loaded automatically.

The **i-script** Link feature allows you to edit or remove these associations using the **i-script** Link dialog.

Current associations appear in the **Cutting Key** name list.

To edit or remove an association, select it, then click the **Edit** or **Remove** button.

Selecting **Edit** allows you to choose a **Cutting Key** using the standard Material/Thickness/Details/ Tool menus.

6.8 Configure Tools

➡ **Menu Bar**->**Advanced**->**Configure Tools**

Use this function to maintain your **Tool Settings**.

The **Tool Settings** provided in this dialog will be used for the initial setting when tools are selected for the different **Layers**.

Initial settings are twofold:

1. Is the setting relevant for the tool
2. If yes, what should the default value be

Please note that these settings are carefully defined by the supplier for each tool, and should be changed by qualified personell only.

When used in a **Layer**, the **Tool Settings** can be modified to suit that particular job.

A modification of **Tool Settings** within a **Layer** will not modify the general **Tool Settings** maintained from this dialog.

The type and number of parameters in this dialog will change depending upon the selected tool.

We do not show the dialogs for each tools, but a list of parameters covering all tools is provided:

Name
From the drop-down list, select the **Tool** you want to edit.
Note: In the drop-down list, all possible tools are shown.
Normally, at a customer site, just a sub-set is available.

Type
From the drop down list, select the **Tool Type** used for this **Tool**.
For some **Tools**, correct **Tool Type** is required when using **Cutting Keys**.

Velocity
Specify the **Execution Speed** for this **Tool**.

Acceleration
Specify the **Acceleration** to be used as a % - value of maximum acceleration available.

Depth, Flute Dependant
If enabled, you can specify **Depth Across Flute** and **Depth Along Flute** independently.

Depth Referenced from Top

If enabled, depth is referenced from **Top of Material**.

If disabled, depth is referenced from **Top of Cutting Underlay**.

Depth Along

Specify cutting/creasing depth **Along Flute** direction.

Can be specified as % of **Material Thickness** or mm / inch.

Depth Across

Specify cutting/creasing depth **Across Flute** direction.

Can be specified as % of **Material Thickness** or mm / inch.

Tool Up Angle

If a direction change is above this angle, the tool will be lifted in the corner.

The following rules applies:

- **Tool Up Angle** is valid for knife tools only.

- **Tool Up Angle** is default 30 deg.

NOTE!

Tool Up Angle is 14 deg if:

- Tool is **RotaCut** knife.

- Tool has a **Lag** value.

- Tool has **Circle Adjustment** value.

- Tool has **Width** value.

Stop at Tool Select

Execution will stop when this tool is selected; waiting for operator intervention.

In the **Edit Field**, add the text to be displayed when execution stops.

If the **Edit Field** is emptly, a default text is displayed.

Knife Overcut

Add an offset to the **Start** and **End** point of a line.

Use this function to achieve correct cut in corners.

Both positive and negative values are allowed.

Circle Adjustment

Use this parameter to adjust the quality of a circle when cutting with knife.

Increase/reduce the value to increase/reduce the radius of the circle.

Use a test sample to verify optimal setting.

Reverse Operation

Specify if this layer should be executed on the *reverse* side of the sheet.

Multi-pass

See *Multi-pass Depth* for more information.

6.8.1 Depth Control, Tools

For some tools, the maximum allowed depth is superviced:

Tool	Maximum allowed depth (mm/in.)
HD Crease	5 mm/0.2 in.
Crease Tool	5 mm/0.2 in.
MicroCut Tool	2 mm/0.08 in.
Drill Tool	2 mm/0.08 in.
Milling Tool	1 mm/0.04 in.

6.9 Materials and Boards

Menu Bar->**Advanced**->**Materials and Boards**...

In **Layers View / Production View**, it is a prerequisite for correct display of job relative to the actual board, that the material and board information is correctly specified.

Use the shown dialog to select and maintain materials and boards available.

Notes:

1. For some functions, as **Nested Layout**, correct material information is mandatory.
2. This function is not fully implemented yet.

Materials	List of defined materials. • Materials do not have size.
Material Name	Name of selected material.
Boards	List of defined boards. • Boards have size. • One material can have several boards.
Board Name	Name of selected board.
Length	Length of selected board.
Roll Feed	Specify if this is a roll of material.
Width	Width of selected board.
Thickness	Thickness of selected board
Structural direction	Select between: • None • Along Length • Along Width
+	Add new material or board.
-	Remove selected material or board
Duplicate	Duplicate selected material.

7. Get Started

Instructions about software installation is available in a separate chapter - *Install software*.

Once installation is completed, iPC may be opened for the first time.

Launch the program using the **Desktop Icon** or **Windows Start menu**.

7.1 Start Up Sequence

If the PC is connected to a **Cutting Table**, follow this start-up sequence:

1. Ensure the **Cutting Table** is free from obstructions and ready to run.
2. Power up the **Cutting Table** according to the **User Manual** for the table.
3. From Desktop, double-click the **iPC Icon**.
4. On the **Cutting Table**, complete the start-up sequence as described in the **User Manual**.
5. The iPC User Interface will now appear on the PC screen and you are ready to start.

7.2 Shut Down Sequence

Follow these steps to properly shut down your system:

1. Shut down the **Cutting Table** according to description in the **User Manual**.
2. Close iPC using **Menu Bar**->**File**->**Exit**.

8. Work Flow

There are three different ways to get ready for production:

1. Open an already prepared and saved cut file-> produce
2. Create a job using **Esko default Import Preset**.

   - Apply a **Cutting Key** or manually apply **Layer** information.

   - Optimize if necessary and produce.
3. Create a job with a customized **Import Preset**-> produce

The basic workflow is illustrated in this figure:

In the following chapters, each step is described.

8.1 File Import

8.1.1 My Jobs List

Import Files to **My Jobs List**

➡	**My Jobs Actions**->**Add**...
➡	**My Jobs Actions**->**Actions**->**Add**...

Import Preset

Select **Import Preset** to use when importing selected **Input File**.

The different **Import Preset** selections available in the **File Open** dialog specifies different rules for how to transfer information from the **Input File** to the **iPC Job**.

The following **Import Presets** are included from factory:

Esko Default
Default mapping for all file formats.
Layer based; layers in the **Input File** are converted to **Layer Types**.
No **Cutting Key**.
Standard **Optimizing**.

Esko - No Optimization
Default mapping for all file formats.
Layer based; layers in the **Input File** are converted to **Layer Types**.
No **Cutting Key**.
No **Optimizing**.

Specify default Import Preset

You can specify which **Import Preset** should be the default selection.

For more information, go *here*.

Create your own Import Preset

You can create your own **Import Preset** as well as copy and modify the default setup.

For more information, see ***Manage Import Presets***.

View Import Preset

This is a link to the ***Edit Import Preset*** dialog.

My Jobs List Options

Several options are available to the files in **My Jobs List**:

- Different **List Views**
- Add or remove files from the list
- Sort by different parameters
- Different **Preview** alternatives
- Select **Import Preset**
- Create **Job**

For more information, see *My Jobs List*.

8.1.2 Create Job

➡	In **My Jobs List**, double-click a file.
[Open]	**My Jobs Actions**->**Open**. A **Job** is opened based upon currently selected file in **My Jobs List**.

For more information, go *here*

8.2 Opened Job

➡	**Job Bar**->**Select Job**

The **Job Tab** for the **Opened Job** is highlighted:

8.2.1 Layers View / Production View

A range of view possibilities are available to **Opened Job**:

- *Define a **Zoom Area***
- ***Zoom In***
- ***Zoom Out***
- *Make **Job** fill the window*
- *Make the **Cutting Table** fill the window*
- ***Show Rulers***
- ***Show Curve Direction***

- ***Show Curve Points***
- ***Show Tool Path***
- ***Show Flute Direction***
- ***Show Reference Point***
- ***Show Cutting Table Rulers***
- ***Show Vacuum Zones***
- ***Show Park Position***

8.2.2 Opened Job Edit

A range of edit possibilities are available to **Opened Job**:

- ***Job Modifications*** - edit the entire **Job**.
- ***Curve Modifications*** - edit single curves.
- ***Curve Point Modifications*** - edit single points.

8.3 **Prepare for Production**

Prepare for Production consist of two main tasks:

- Ensure the **Layers Setup** is proper.

- Ensure the **Production Setup** is proper.

8.3.1 Layer Setup, manual

Not using **Cutting Keys**

Cutting Key:	Invoke the **Apply Cutting Key** dialog.
	Disable **Use Cutting Keys**.

Edit Layers

For each **Layer**, specify the **Tool** and **Tool Parameters** to use.

Note: **Layer Type** is not required when running without using **Cutting Keys**

For more information, see *Opened Job, Layers*.

8.3.2 Layer Setup using Cutting Key

Select Cutting Keys

Click <u>none</u> to invoke **Cutting Key** selection dialog.

The **Cutting Keys** listed above the horisontal line are the **Favorite Cutting Keys**.

Select Cutting Key by Attributes

If the actual **Cutting Key** is not available among the **Favorites**, you can select by **Attributes**.

Modify Layers

You can modify **Layer Setup**.

For more information, see ***Opened Job, Layers***.

8.3.3 Production Setup

Number of Copies

➡ **Opened Job**->**Production Setup**->**Copies and Quality**

🔑

From this dialog, set:

- **Copies** - specify number of copies to produce. *More information*.
- **Quality** - select wanted performance. *More information*.

Material Handling

➡ **Opened Job**->**Production Setup**->**Material Handling**

HW

From this dialog, specify functions for **Conveyor Feed** operations:

- **Table Preset** - Select the **Table Preset** function to use.
- **Feed to front of table** - the sheet is moved to the front of the **Cutting Table**. (**Table Preset** dependant)
- **Sheet Feeding Length** - specify the lenght to feed the material. (**Table Preset** dependant)
- **Pre-load Sheets** - specify how many sheets to pre-load before execution start. (**Table Preset** dependant)
- Skip table if **Registration Mark** is not found - specify to avoid unwanted stops. (**Table Preset** dependant)
- **Skip Table After** - adding a delay allows the operator to fix the problem. (**Table Preset** dependant)
- **Material Measurement** - decide how to carry out the measuring sequence.

For more information, go *here*.

Registration

➡ **Opened Job**->**Production Setup**->**Registration**

HW

🔑

From this dialog, specify:

- **Registration Type** - select to use **Registration Marks** or **Edge Detection**.

Use **Registration Marks**

- **Compensation Type** - select **Compensation Type**.
- **Search Area** - select the size of the area where the camera will search for **Registration Marks**.
- **Ask Confirmation for First Mark** - on the first **Registration Marks** in a job, always wait for confirmation.
- **Adaptive Registration** - Select if registration optimization is wanted; high **Speed** or high **Accuracy**.

Use **Edge Recognition**

- **Sheet Position** - specify the distance from **Main Reference Point** to the surrounding rectangle for the job.
- **Check Edge Distance** - specify the measuring distance to be used.
- **Check Direction** - select which direction to measure.

For more information, go *here*.

Position

➡	**Opened Job**->**Production Setup**->**Position**

From this dialog, set:

- **Reference Point** - select what **Reference Point** to use.
- **Move Job to Reference Point** - regardless the reference point used in the actual job, place the job in selected **Reference Point**.
- **Offset** - If there is an offset from selected **Reference Point** to the job, add values for X and Y.
- **Update Automatically** - The **Job Position** is updated after each copy.

For more information, go *here*.

Step and Repeat

➡	**Opened Job**->**Production Setup**->**Step and Repeat**

From this dialog, specify the number of copies along X and Y to be laid out on one **Table**.

Specify **Step** or **Gap** values.

For more information, go *here*.

Tool Head Parking

> ➡ **Opened Job**->**Production Setup**->**Tool Head Parking**

Specify a park position after **Job** is finished.

For more information, go *here*.

8.4 **Save Job**

At any stage in the **Prepare for Production** process, you can save the **Opened Job** for later use:

> ➡ **Menu Bar**->**File**->**Save Job**

> ➡ **Menu Bar**->**File**->**Save Job As**...

Opened Job will be saved using iPC .cut file format.

It is recommended to save the job when any modifications to **Layers**, **Production Setup** or geometry is changed within iPC.

All relevant information is kept in the .cut format, which is not the case for any external format.

To open a saved **Job File**, use the standard **File Open** functions.

8.5 Running a Job

8.5.1 Execute a Job

> To start a **Opened Job**, press *Start* on **Operators Panel**.

Execution will start if:

- The Cutting Table is up and running, ready for execution
See **Cutting Table User Manual**.

- The Job is properly prepared
See **_Ready for Execution_**.

8.5.2 No Registration

These are the specific steps to follow to execute a **Job** not using **Registration Marks**:

1. The **Job** contains no **Regmark Layer**.
2. Place the **Sheet of Material** onto the **Cutting Table**.
3. If you use a **Fixed Reference Point**, position the **Sheet of Material** correct relative to the reference point. If available, we recommend using **Table Rulers** for this purpose.
4. If **User Defined Reference Point** is used, ensure the reference point is correctly positioned on the sheet.

For more information, see **Cutting Table User Manual**.

8.5.3 Reading Registration Marks

These are the specific steps to follow to execute a **Job** using **Registration Marks**:

1. The **Job** contains a **Regmark Layer** with **Tool Type** = **Camera**.
2. **Registration** using **Registration Marks** is enabled.
3. A proper **Compensation Type** is selected.

Confirm Registration Mark

Select between:

- Automatic camera detection
- Manual registration

It is important that the **Registration Mark** found on the material is the same as the one highlighted in **Job View**

Jog to the correct mark, by keyboard arrows, or by **Operator panel**.

Confirm when correct mark is found.

✓	Confirm that this is correct **Registration Mark** The same confirmation is available as: • **Enter** from PC keyboard. • *Start* on **Operator Panel**.
◀	Move between **Registration Marks**
▶│	Move to the last **Registration Mark**
│◀	Move to the first **Registration Mark**

8.5.4 Registration using Laser Pointer

If no camera is available, the **Laser Pointer** will be used for registration.

These are the specific steps to follow

1. The **Job** contains a **Regmark Layer** with **Tool** = **Camera**.
2. **Registration** using **Registration Marks** is enabled.
3. A proper **Compensation Type** is selected.

Laser Pointer will be used as pointing device.

8.5.5 Edge Recognition

> **Opened Job**->**Production Setup**->**Registration**->**Registration Type**->**Edge Recognition**

These are the specific steps to follow to execute a **Job** using **Edge Recognition**:

1. The **Job** has a defined offset from **Sheet Edge** to geomety (surrounding rectangle).

    The distance is entered as **Production Setup**->**Position**->**Offset**.
2. **Registration** using **Edge Recognition** is enabled.
3. For more information, go *here*.

9. Optimal Production Workflow

Input File

1

My Jobs List

2

Opened Job

3

Job Setup

4 ✓

Material in Place

5

Start

10124b

Standardize each step to achieve the **Optimal Production Workflow**:

1 Import Input File

Combine **Import Preset** and **Cutting Key**

2 Create Job

Use **Cutting Key** to establish correct **Layer** configuration.

3 Modify Job Setup.

The **Job** is ready for execution.

4 Ensure material is in place

Sheets of Material - Vacuum hold down

Roll Feed - Enter material

Sheet Feeder - Load material

5 Press *Start* to execute

10. Edit Job, Advanced

All drawing and editing of curves is normally completed in the CAD system / Job Preparation software used before the file is imported to iPC.

Although iPC is not intended to be a design program, it does provide some basic tools for making minor corrections to imported files.

The tools are grouped into three different levels:

- *Job Modifications*
- *Curve Modifications*
- *Curve Point Modifications*

10.1 Job Modifications

The **Job Modification** functions will modify the **Opened Job** as one entity.

10.1.1 Rotate 90 deg. CW

> **Menu Bar**->**Job**->**Rotate 90 deg. CW**

Opened Job is rotated.

10.1.2 Rotate 90 deg. CCW

> **Menu Bar**->**Job**->**Rotate 90 deg. CCW**

Opened Job is rotated.

10.1.3 Mirror Horizontal

> **Menu Bar**->**Job**->**Mirror Horizontal**

Opened Job is mirrored.

10.1.4 Mirror Vertical

➡️ **Menu Bar**->**Job**->**Mirror Vertical**

Opened Job is mirrored.

10.1.5 Remove Double Lines and Sequence

➡️ **Menu Bar**->**Job**->**Remove Double Lines and Sequence**

To explain this function, we use an example:

We have a **Job** that consist of a set of squares, programmed to be completed one by one.

Use the **Remove Double Lines and Sequence** function to:

- Improve cutting quality by removing double lines.
- Improve cutting quality by reducing number of corner passings.
- Increase overall performance by reducing tool operations and corner passings.
- Increase overall performance by reducing tool up movements.

Line segments along a straight line will be executed one by one.

All X-axis lines will be executed first.

Subsequently, the Y-axis lines will be executed.

10.1.6 Remove Double Lines and Join Across Gaps

To explain this function, we use an example:

We have a **Job** that consist of a set of squares, designed to be completed one by one.

Between each square, there is a gap.

Lines can be extended across gaps as this area is waste.

Use the **Remove Double Lines and Join Across Gaps** function to:

• Improve cutting quality by removing double lines.
• Improve cutting quality by reducing number of corner passings.
• Increase overall performance by reducing tool operations and corner passings.
• Increase overall performance by reducing tool up movements.

Line segments along a straight line will be combined into one, continous line.

All X-axis lines will be executed first.

Subsequently, the Y-axis lines will be executed.

Note: The maximum gap size for this function to work is 1 mm / 0.04 in.

10.1.7 Optimize for Production

> ➡️   **Menu Bar**->**Job**->**Optimize for Production**

In the **Optimize for Production** dialog, select **Optimizing Type**:

• *Standard*

• *Sample Making*

Note: **Optimizing Type = No Optimization** selection is available only as part of **Import Preset**.

No Optimization

Use "No Optimizing" when curve sequences have been optimized before importing to iPC.

Any manual operations on the curves after import will therefore issue a warning. If you ignore this warning, the optimized curve sequencing might be lost.

 Move Job to Reference Point

The lower left corner of the job will be placed in currently selected **Reference Point**.

Any offset from (0,0) used in the **Input File** is ignored.

Use this function to place the **Job** correctly on your material.

Optimize, Standard

Standard Optimization is mainly used to optimize files used in a graphical workflow.

Connect Open Curves

Curve segments that are close to each other are connected.

Select **Connect Open Curves** to:

• Increase performance.

- Improve cutting quality.

Specify d = **Maximum Distance** where curve connection is allowed.

Reject Small Curves

Small, freestanding curve elements are omitted.

Select **Reject Small Curves** to:

- Remove unwanted curves and stray points.
- Increase performance.
- Improve cutting quality.

Specify d = **Maximum Size** of a curve segment that can be omitted.

Avoid Overcuts

Lines will be cut and direction will be modified if the angle is above a specified limit.

This to avoid visible knife overcuts.

Set Curve Direction

Specify an overall rule for curve execution direction.

Typical use:

Often, when milling, the left side of the path has a smoother surface compared to the right side.

Use this function to optimize the quality of your product.

Invert Curve Direction for Inside Curves

Specify an overall rule for curve execution direction.

This is an extension to the **Set Curve Direction** function, see above.

If the blue part is your product and you want a smooth surface outside and inside, you have to invert the curver direction for the inner curve.

Move Job to Reference Point

The lower left corner of the job will be placed in currently selected **Reference Point**.

Any offset from 0,0 used in the **Input File** is ignored.

Use this function to place the **Job** correctly on your material.

Optimize, Sample Making

Optimize for **Sample Making** is normally used to achieve maximum cutting and creasing quality for **Corrugated** and **Folding Carton** designs.

Please note that:

• Most **Sample Making** operations will be applied on **Layer Type** Cut and Crease only.

• The relevance of this feature is dependant upon whether any optimization is performed during output from the CAD / Job Preparation software.

Features available in **Optimize for Sample Making** are similar to optimizing features in ArtiosCAD from Esko.

Select parameters in the following **Categories**:

- *General* - general optimizing functions.

- *Round Slots* - functions to avoid tear in narrow slots.

- *Overcut & Corners* - functions to avoid tear and overcut in corners.

- *Over-Crease* - functions to improve performance during crease.

General

Crease Cut Back

Increased crease quality; avoid crease line outside wanted position.

d - distance to use when shortening the crease lines.

Add layer for second cross grain tool

A new **Layer** for **Cross Grain Crease** is created.

Adding a separate **Layer** allows for more flexible setup for crease along / across grain, as different tooling.

Cut Across Gaps

Increased performance.

Connect Open Curves

Curve segments that are close to each other are connected.

Select **Connect Open Curves** to:

- Increase performance.
- Improve cutting quality.

Specify d = **Maximum Distance** where curve connection is allowed.

Reject Small Curves

Small, freestanding curve elements are omitted.

Select **Reject Small Curves** to:

- Remove unwanted curves and stray points.
- Increase performance.
- Improve cutting quality.

Specify d = **Maximum Size** of a curve segment that can be omitted.

Move Job to Reference Point

The lower left corner of the job will be placed in currently selected **Reference Point**.

Any offset from 0,0 used in the **Input File** is ignored.

Use this function to place the **Job** correctly on your material.

Round Slots

Round Slot Method, Continous Cut

Risk for material tear.

d - **Tear Distance**. The maximum distance where the Round Slot Method will work.

a - **Tear Angle**. The maximum angle where the Round Slot Method will work.

Round Slot Method, Reverse Last Line

Risk for material tear is reduced.

Round Slot Method, Cut "Short" Line Last

Risk for material tear is reduced.

Overcut & Corners

Reverse at T-junctions

Risk for material tear is reduced.

Split Lines connection Corners

Improve cutting quality in corners.

Automatically Round Corners

Improve cutting quality in corners.

r - **Radius**. Corner radius.

L - **Length** of adjacent line segments. This function will work on corners where L is above specified value.

Over-Crease

Maximum Length of Cut to Over-crease

A crease line will continue on top of a cut line.

Increased performance.

L - Maximum length of line element where this function will work.

Maximum Gap to Over-crease

A crease line will continue across a gap.

Increased performance.

L - Maximum length of gap where this function will work.

10.1.8 Move Job to Reference Point

➡	**Menu Bar**->**Job**->Move Job to **Reference Point**

Move Job to Reference Point

The lower left corner of the **Job** will be placed in currently selected **Reference Point** + **Offset**, both defined in **Production Setup**.

Any offset from 0,0 used in the **Input File** is ignored.

Use this function to place the **Job** correctly on your material.

10.1.9 Move Open Curves to Separate Layer

➡	**Menu Bar**->**Job**->**Move Open Curves to Separate Layer**

Some functions, as **Wash Out** using the **Milling Tool**, requires **Closed Curves** in order to operate properly.

Use this function to separate **Open Curves** from **Closed Curves**.

10.2 Curve Modifications

Curve Modifications are carried out on **Selected Curve(s)** in a **Opened Job**.

10.2.1 Select a Curve

Select one Curve

Using the **Mouse Pointer**, select the curve you want to modify.

The **Selected Curve** is highlighted.

Select Multiple Curves

1) While **Ctrl** is active, use the **Mouse Pointer** to select the curves you want to modify.

2) Use the **Mouse Pointer** to draw a rectangle around wanted curves.

The **Selected Curves** are highlighted.

10.2.2 Move...

➡	**Menu Bar**->**Curves**->**Move**...
➡	**Ctrl+M**

⊢▸	The indicated direction refers to the selected **Layers View / Production View Orientation**.
	If standard view is selected, this is the +X direction.
⊥	If standard view is selected, this is the +Y direction.

Select between **Distance** or **Position**:

Distance

Specify the distance to move the **Selected Curve(s)**.

Position

Specify the new coordinates (X and Y) for the **Selected Curve(s)**.

Anchor

Select **Anchor Point** for the new coordinates (X and Y).

Center of Curve(s)

The coordinates specified are relative to the center of the **Selected Curve(s)**:

Lower left of Curve(s)

The coordinates specified are relative to the lower left corner of the **Selected Curve(s)**:

Keep Original

The original, **Selected curve(s)** are kept unchanged. A copy of the **Selected curve(s)** is made, ready to be moved:

10.2.3 Jog Curves

➡	**Menu Bar**->**Curves**->**Jog Curves**...
➡	**Alt + Left**, **Alt + Right**, **Alt + Up**, **Alt + Down**

Use **Keyboard Arrows** to move the **Selected Curve(s)**:

10.2.4 Scale Curve

➡	**Menu Bar**->**Curves**->**Scale**...
➡	**Ctrl+T**

Scale by **Factor** or **Size**:

Scale

Specify a scale factor to use when scaling the **Selected Curve(s)**.

Size

Specify the new, overall size for the **Selected Curve(s)**.

Maintain Aspect Ratio

When checked, the X/Y relationship of the original curves is kept.

Extend from Center of Curve(s)

Scale is carried out relative to the center of the **Selected Curve(s)**:

Extend from Lower Left of Curve(s)

Scale is carried out relative to the lower left corner of the **Selected Curve(s)**:

Keep Original

The original, **Selected Curve(s)** are kept unchanged.

A copy of the **Selected Curve(s)** is made, ready to be scaled.

10.2.5 Mirror Curve

➡	**Menu Bar**->**Curves**->**Mirror**...
➡	**Ctrl+Shift+M**

Mirrors/flips the **Selected Curve(s)** according to the selected options.

Curves may be mirrored **Vertically** or **Horizontally**.

Vertical (up/down)

Specify vertical mirroring.

Horizontal (left/right)

Specify horizontal mirroring.

Center of Selected Curve(s)

Selected mirroring is carried out around the center of the **Selected Curve(s)**:

Center of All Curve(s)

Selected mirroring is carried out around the center of the **All Curve(s)**:

Center of Work Area

Selected mirroring is carried out around the center of actual **Work Area**:

Keep Original

The original, **Selected Curve(s)** are kept unchanged.

A copy of the **Selected Curve(s)** is made, ready to be mirrored.

10.2.6 Rotate Curve

➡	**Menu Bar**->**Curves**->**Rotate**...
➡	**Ctrl+Shift+R**

Note: Rotataing curves or the entire job will not change the flute/grain direction of the job.

However, if you want to change the flute/grain direction, this can be done from **Menu Bar**->**Job**->Rotate 90° CW or CCW.

Clockwise/Counter Clockwise

Specify rotation direction.

Center of Selected Curve(s)

Rotation is carried out around center of **Selected Curve(s)**:

Center of All Curve(s)

Rotation is carried out around center of **All Curve(s)**:

Center of Work Area

Rotation is carried out around center of **Work Area**:

Keep Original

The original, **Selected Curve(s)** are kept unchanged. A copy of the **Selected Curve(s)** is made, ready to be rotated.

10.2.7 Merge Curves

Menu Bar->**Curves**->**Merge**...

Multiple overlapping curves can be combined into a single continuous curve using the **Merge Curves** feature.

This can be useful in creating a single shape from multiple objects such as overlapping letter shapes.

Replace Existing Curves

The new curve(s) replaces existing curves:

Generate new Layer

The new curve(s) are placed in a new **Layer**.

Specify the **Name** of the new **Layer**.

10.2.8 Invert Curve Direction

➡	**Menu Bar**->**Curves**->**Invert Curve Direction**
➡	**Ctrl+Shift+I**

The execution direction for the **Selected Curve(s)** is inverted.

This function is useful in combination with other **Edit** features like **Split Curve** to optimize cutting directions.

10.2.9 Lead-in/Lead-out

➡	**Menu Bar**->**Curves**->**Lead-in/Lead-out**

10.2.10 Tool Offset

> **Menu Bar->Curves->Tool Offset...**

Tool Offset

Tool Offset can be used to achieve correct size of the final product when milling.

Please note that normally, the compensation for **Milling Bit** diameter is done with the **Layer** parameters **Tool Offset** and **Tool Diameter**.

The main reason for using this **Edit** function is to keep the **Layer Offset** values for later use.

Can also be used for e.g. adding a **Cut Layer** with a certain offset outside a **Kiss Cut** layer.

Tool Diameter
Specify the diameter of the tool to use. The offset is set to half the diameter.

Where
Specify if the tool should be **Outside** or **Inside** the **Closed Curve**.
Wash Out. See below.

Wash Out Small Curves
Wash Out is a function to mill the entire area of a **Closed Curve** into chips. Useful as small pieces of waste may block the suction system..
Use this function to wash out all **Closed Curves** smaller than the **Treshold** value.
For more information, see below.

Direction
Specify the execution direction for the tool.

Replace Existing Curve(s)
The new curve(s) replaces existing curve(s):

Generate new Layer
The new curve(s) are placed in a new **Layer**.
Specify the **Name** of the new **Layer**.

Wash Out

➡ **Menu Bar**->**Curves**->**Tool Offset**->**Where**->**Wash Out**

Wash Out is a function to mill the entire area of a **Closed Curve**.

Use this function to wash out the **Selected Curve**.

10.2.11 Optimize Shape

Menu Bar->**Curves**->**Optimize Shape**...

Optimizing improves the cutting performance of curves by re-drawing them to a specified tolerance as lines and arcs.

Curves are automatically optimized when producing, but the **Optimize Curves** feature is available for optimization of curves before production occurs, and provides greater control over the optimization of your curves.

Tolerance

Curves are automatically optimized using the specified **Tolerance**.

A low value will maintain the quality of the **Input File**.

A high value will increase performance, but the cutting quality might be reduced, depending upon the material used.

Break Long Lines

This function divides a (long) line into line segments with specified length.

One example:

You are about to cut a big rectangle in a flexible material, with a high demand for **Print to Cut** alignment.

By compensation to the corners of the rectangle only, the result is not optimal, despite a high number of **Registration Marks**.

Shorter lines allows for more accurate **Print to Cut** alignment.

Note: Break Long Lines can be applied for all jobs from **Menu Bar**->**Edit**->**Options**->**Production**.

Make Sharp Corners

Rounded Corners with specified **Radius** are converted to **Sharp Corners**.

Make Rounded Corners

Sharp Corners are converted to **Rounded Corners** with specified **Radius**.

Replace Existing Curves

The new curve(s) replaces existing curves:

Generate new Layer

The new curve(s) are placed in a new **Layer**.

Specify the **Name** of the new **Layer**.

10.2.12 Remove Curves

➡	**Menu Bar**->**Curves**->**Remove Curves**...
➡	**Del**

Remove **Selected Curve**.

Confirm to complete:

10.3 Curve Segment Modifications

10.3.1 Select a Curve Segment

Enter Edit Point Mode

	Toolbar->Edit Points
	Menu Bar->Curves->Edit Point

Select Curve Segment

Select **Curve Segment** using the **Mouse Pointer**:

Edit Curve Segment Menu

While pointing at the **Curve Segment**, press the **Right Mouse Button**.

The **Edit Curve Segment Menu** appears:

- *Add Corner*
- *Add Arc*
- *Add Bezier*
- *Split Curve*
- *Close Curve*
- *Add Regmark*

10.3.2 Add Corner

	Selected Curve Segment->Right Mouse Button Menu->Add Corner

Add a **Corner Point** in **Current Position**.

Current Position - using the **Mouse Pointer**, point to a position on the **Selected Curve**.

10.3.3 Add Arc

> Selected Curve Segment->Right Mouse Button Menu->Add Arc

Add an **Arc Point** in **Current Position**.

Current Position - using the **Mouse Pointer**, point to a position on the **Selected Curve**.

10.3.4 Add Bezier

> Selected Curve Segment->Right Mouse Button Menu->Add Bezier

Add a **Bezier Point** in **Current Position**.

Current Position - using the **Mouse Pointer**, point to a position on the **Selected Curve**.

10.3.5 Split Curve

> Selected Curve Segment->Right Mouse Button Menu->Split Curve

> Selected Curve Point->Right Mouse Button Menu->Split Curve

Split Curve

☐ Remove Curve Segment   OK

☑ Gap   Cancel

Gap Size: 10 mm

Remove Curve Segment

Remove the **Curve Segment** currently pointed at.

Gap

A **Gap** with length **Gap Size** is inserted in **Current Position**.

Current Position - using the **Mouse Pointer**, point to a position on the **Selected Curve.**

10.3.6 Close Curve

➡	**Selected Curve Segment**->**Right Mouse Button Menu**->**Close Curve**
➡	**Selected Curve Point**->**Right Mouse Button Menu**->**Close Curve**

The **Selected Open Curve** is closed.

10.3.7 Add Regmark

	Selected Curve Segment->**Right Mouse Button Menu**->**Add Regmark**
	Selected Curve Point->**Right Mouse Button Menu**->**Add Regmark**
	Layers View / Production View->**Right Mouse Button Menu**->**Add Regmark**

A new **Registration Mark** will be created in the **Mouse Pointer** position:

Position X and Y

Specify the coordinates for the new **Registration Mark**.

Entering values here will override the **Mouse Pointer** position.

Center/Lower Left

Specify if the coordinates are relative to the center or the lower left corner of the **Job**.

Size

Specify the size of the new **Registration Mark**.

Layer

Specify the **Layer** for the new curve.

The **Regmark Layer** is default.

10.4 Curve Point Modifications

10.4.1 Select a Point

Enter Edit Point Mode

	Toolbar->**Edit Points**
	Menu Bar->**Curves**->**Edit Point**

Select Curve Point

Select **Curve Point** using the **Mouse Pointer**:

Edit Curve Point menu

While pointing at the **Curve Point**, press the **Right Mouse Button**.

The **Edit Curve Point** menu appears:

- *Edit Point*

- *Remove Point*

- *Smooth*

- *Add Regmark*

- *Use as Start Point*

- *Add Lead-in/Lead-out*

- *Split Curve*

- *Close Curve*

10.4.2 Edit Point

➡	**Selected Point**->**Right Mouse Button Menu**->**Edit Point**

Move **Selected Point** to a new position.

X/Y

Specify the coordinates for the new position.

Type

Specify the corner type:

- **Corner**

- **Arc** - the new point is a point on an arc

- **Bezier** - the new point is a point on a Bezier curve

- **True Type**

- **Bow**

- **Tangent**

10.4.3 Remove Point

➡	**Selected Point**->**Right Mouse Button Menu**->**Remove Point**

The **Selected Point** is deleted.

10.4.4 Smooth

➡	**Selected Point**->**Right Mouse Button Menu**->**Smooth**

10.4.5 Add Regmark

➡	**Selected Curve Segment**->**Right Mouse Button Menu**->**Add Regmark**
➡	**Selected Curve Point**->**Right Mouse Button Menu**->**Add Regmark**
➡	**Layers View / Production View**->**Right Mouse Button Menu**->**Add Regmark**

A new **Registration Mark** will be created in the **Mouse Pointer** position:

Position X and Y

Specify the coordinates for the new **Registration Mark**.

Entering values here will override the **Mouse Pointer** position.

Center/Lower Left

Specify if the coordinates are relative to the center or the lower left corner of the **Job**.

Size

Specify the size of the new **Registration Mark**.

Layer

Specify the **Layer** for the new curve.

The **Regmark Layer** is default.

10.4.6 Use as Start Point

➡	**Selected Point**->**Right Mouse Button Menu**->**Use as Start Point**

The **Selected Point** is used as **Start Point**:

10.4.7 Add Lead-in/Lead-out

➡	**Selected Point**->**Right Mouse Button Menu**->**Add Lead-in/Lead-out**

10.4.8 Split Curve

➡	**Selected Curve Segment->Right Mouse Button Menu->Split Curve**
➡	**Selected Curve Point->Right Mouse Button Menu->Split Curve**

Remove Curve Segment

Remove the **Curve Segment** currently pointed at.

Gap

A **Gap** with length **Gap Size** is inserted in **Current Position**.

Current Position - using the **Mouse Pointer**, point to a position on the **Selected Curve.**

10.4.9 Close Curve

➡	**Selected Curve Segment**->**Right Mouse Button Menu**->**Close Curve**
➡	**Selected Curve Point**->**Right Mouse Button Menu**->**Close Curve**

The **Selected Open Curve** is closed.

10.5 Add new Geometry

> **Layers View / Production View->Right Mouse Button Menu**

The following menu items are available:

- *Add Regmark*

- *Add Square*

- *Add Circle*

- *Add Ellipse*

- *Add Rectangle*

10.5.1 Add Regmark

> **Selected Curve Segment->Right Mouse Button Menu->Add Regmark**

> **Selected Curve Point->Right Mouse Button Menu->Add Regmark**

> **Layers View / Production View->Right Mouse Button Menu->Add Regmark**

A new **Registration Mark** will be created in the **Mouse Pointer** position:

Position X and Y

Specify the coordinates for the new **Registration Mark**.

Entering values here will override the **Mouse Pointer** position.

Center/Lower Left

Specify if the coordinates are relative to the center or the lower left corner of the **Job**.

Size

Specify the size of the new **Registration Mark**.

Layer

Specify the **Layer** for the new curve.

The **Regmark Layer** is default.

10.5.2 Add Square

➡	**Layers View / Production View**->**Right Mouse Button Menu**->**Add Square**

Add a **Square** in **Mouse Pointer Position**.

Position X and Y

Specify the coordinates for the new **Square**.

Entering values here will override the **Mouse Pointer** position.

Center/Lower Left

Specify if the coordinates are relative to the **Center** or the **Lower Left Corner** of the**Job**.

Size

Specify the size of the **Square**.

Layer

Specify the **Layer** for the new curve.

10.5.3 Add Circle

➡ **Layers View / Production View->Right Mouse Button Menu->Add Circle**

Add a **Circle** in **Mouse Pointer Position**.

Position X and Y

Specify the coordinates for the new **Circle**.
Entering values here will override the **Mouse Pointer** position.

Center/Lower Left

Specify if the coordinates are relative to the center or the lower left corner of the **Job**.

Size

Specify the size (diameter) of the new **Circle**.

Layer

Specify the **Layer** for the new curve.

10.5.4 Add Ellipse

➡ **Layers View / Production View->Right Mouse Button Menu->Add Ellipse**

Add an **Ellipse** in **Mouse Pointer Position**.

Position X and Y

Specify the coordinates for the new **Ellipse**.

Entering values here will override the **Mouse Pointer** position.

Center/Lower Left

Specify if the coordinates are relative to the center or the lower left corner of the **Job**.

Size

Specify the size (X/Y) of the new **Ellipse**.

Layer

Specify the **Layer** for the new curve.

10.5.5 Add Rectangle

> **Layers View / Production View->Right Mouse Button Menu->Add Rectangle**

Add a **Rectangle** in **Mouse Pointer Position**.

Position X and Y

Specify the coordinates for the new **Rectangle**.

Entering values here will override the **Mouse Pointer** position.

Center/Lower Left

Specify if the coordinates are relative to the center or the lower left corner of the **Job**.

Size

Specify the size (X/Y) of the new **Rectangle**.

Layer

Specify the **Layer** for the new curve.

11. Job Alternatives, Advanced

11.1 **Step and Repeat**

> ➡ **Opened Job**->**Production Setup**->**Step and Repeat**

Use **Step and Repeat** when you want more than one copy of **Opened Job**:

For more information, go *here*.

11.2 **Add Nested Layout**

> ➡ **Menu Bar**->**File**->**Add Nested Layout**...
>
> ➡ **Toolbar**->**Add Nested Layout**...

Use **Add Nested Layout** when you want to merge different designs together and treat these as one job.

Normally, this function is relevant for non-printed material only.

Note: This function is not fully implemented yet.

A separate **Nesting Window** appears, where all **Nesting** functions are maintained:

Available Jobs

This is **My Jobs List** as you know it from before, with the possibility to **Add**, **Remove** and **Sort** files in the list.

Used Jobs

This is a list of **Files** selected for **Nesting**, and the number of **Copies** currently specified.

Use the **+** and **-** buttons to modify number of copies.

Layout

Configure Layout.

Auto Nest

Not Implemented Yet.

Add to Nest

Add **Selected File** to **Nested Layout**.

For more information, go *here*.

11.2.1 Configure Layout

> **Nesting Window**->**Layout**

From this dialog, configure the overall rules for this **Nested Layout**.

When creating a new **Nested Layout**, this dialog is the start point.

Board

From the drop down list, select actual **Board**

This function is not implemented yet.

Trim and Gap

Specify the **Trim** and **Gap** values:

Stack in X/Y

Specify if the **Nested Layout** should start placing jobs along X or Y.

Allow Rotation

Specify if **Rotation** is allowed.

180 - the only **Rotation Angle** allowed.

90 - the only **Rotation Angle** allowed.

Free - You can specify **Rotation Angle** to use.

Snap

Specify a **Snap Distance**.

If two jobs are moved closer to each other than the **Snap Distance**, they will be moved together to use one common line.

11.2.2 Create Nested Layout

➡	Double-click a file in the **My Jobs List**.
➡	**Nesting Window->Add to Nest**

Start creating a new **Nested Layout** by adding files to the **Layout** using the above commands.

When files are loaded and placed as wanted, press **OK** to save the **Nested Layout**.

The **Nested Layout** can be re-opened for later edit.

The new **Nested Layout** will be added to **My Jobs List**, ready to be handled in the same way as any other file.

That means you can add **Nested Layouts** into new **Nested Layouts**.

By the above commands, the **Copy** dialog is invoked.

Layout is available in two ways, by **Copies** or **Step and Repeat**:

Copies

Copy REIN.acm	✕
⦿ Copies	
○ Step 'n Repeat	
	OK
	Cancel
Number of Copies:	1
Copies in X:	4
Copies in Y:	3
Max no. of Copies on Board:	12
These options are also available by right-clicking any design.	

Specify **Number of Copies**.

The copies are distributed according to the rules in **Layout Configuration**.

Step and Repeat

Specify how many **Copies** you want along **X** and **Y**.

11.2.3 Edit Nested Layout

Select a Copy for Edit

Use the **Mouse Pointer** to select a copy for edit.

The **Selected Copy** is surrounded by a frame.

Edit a Selected Copy

Move
With the **Mouse Pointer**, point inside the **Selected Copy**.
Keep left **Mouse Button** down and move the **Selected Copy** to wanted position.
Release the button.

Delete
Right-click inside the **Selected Copy**.

From the menu, select **Delete**.

Add Copy
Right-click inside the **Selected Copy**.
From the menu, select **Add Copy**.

Number of Copies...
Right-click inside the **Selected Copy**.
From the menu, select **Number of Copies**...
The **Copy** dialog is opened.

11.3 Jobs Longer than Table

If your cutting device is equipped with an automated conveying system, you may be able produce jobs that are larger than your cutting table.

iPC supports production of jobs longer than the table by dividing the job into multiple sections and producing those sections automatically.

This function is enabled, ready to execute as soon as a job longer than the table is processed.

11.4 Jobs with Bar Codes

Menu Bar->**File**->**Open via Barcode**

The following rules applies:

• Currently, using **Bar Codes** for automatic production is not available.

• QR and Data Matrix codes are supported.

• The function is available for i-Camera.

Workflow

The sheet of material is placed on the table top.

After invoking the **Jobs with Bar Codes** function, you enter a wizard.

You are asked for

- A folder name; where the **Input files** are located.

- The **Import Preset** to use.

- Press *Start*.

- By jog, move camera in a position where the **Bar Code** is visible inside the camera picture.

-

- Press **Accept** to use the **Bar Code** and continue.

- The **Bar Code** is red, and the corresponding **Input File** is opened.

- The **Job** is ready for production.

- Press *Start* to continue.

- The **Job** is completed

-

-

- Press **Skip** to ignore this **Bar Code**.

- The **Input File** folder name is remembered from one job to another.

- The **Bar Code** location is remembered from one job to another.

11.5 Job including Reverse Operation

➡ **Menu Bar**->**Advanced**->**Configure Tools**

➡️	**Menu Bar**->**Layer**->**Edit Layer**...
⚙️	**Opened Job**->**Layers Tab**->**Edit Layer**

HW

Workflow

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Step 1 - the sheet is aligned towards the **Right Ruler**.

Reverse Operations are completed.

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Step 2 - the sheet is aligned towards the **Left Ruler**.

The rest of the job is completed.

A typical use of **Reverse Operation** is when you want to add a **Crease** line on the front side of a material that you normally prepare from the rear side.

This function requires that the table is equipped with **Left and Right Rulers**.

Note: **Reverse Operation** is not available on machines with conveyor belt.

Reverse Operations in combination with Step and Repeat

For each copy defined by **Step and Repeat**, you have to move the sheet; first against the **Right Ruler**, then against the **Left Ruler**:

11.6 **Stop at Tool Select**

> ➡ **Menu Bar**->**Advanced**->**Configure Tools**

Use this function to stop execution before the actual **Layer** is executed.

One example of use is if you want to change a **Milling Bit** in the middle of a job.

For more information, go *here.*

11.7 **Multi-pass Depth**

🔑

Multi-pass Depth is available for the following tools:

- Crease tools
- Knife tools
- Milling tools

General Tool Configuration

> ➡ **Menu Bar**->**Advanced**->**Configure Tools**

Tool Configuration for Opened Job

⚙	**Opened Job**->**Layers Tab**->**Edit Layer**
➡	**Menu Bar**->**Layer**->**Edit Layer**...

Milling and **Multi-pass** is described in a separate *chapter*.

General

Multi-pass Depth
Specify the maximum depth to be processed in each pass.

Measure / Material Thickness

Specify if the **Material Thickness** should be taken from the **Material Thickness** measurement performed at the beginning of the job.

If not, specify the thickness.

Material Thickness is used when calculating the depth of each pass.

Web Thickness

Web Thickness is not relevant for **Crease** and **Knife cutting** operations.

Milling and **Multi-pass** is described in a separate *chapter*.

Finishing Pass Offset

Finishing Pass is not relevant for **Crease** and **Knife cutting** operations.

Milling and **Multi-pass** is described in a separate *chapter*.

11.8 Milling functions

⚙	**Opened Job**->**Layers Tab**->**Edit Layer**
➡	**Menu Bar**->**Layer**->**Edit Layer**...

General

All settings are maintained from **Edit Layer** dialog.

Layer Type

Layer type **Cut** is used for milling.

Tool

Select the **Milling Tool** available.

Stop at Tool Select

Stop at Tool Select will make the machine stop before the execution of the actual **Layer** is started.

The text entered in the **Stop at Tool Select** field will be displayed.

Use this function in jobs with multiple milling operations requiring different milling bits.

Use the text field to describe the new **Milling Bit** to be entered.

Spindle RPM

Specify RPM.

Tool Offset

Specify if the **Milling Bit** should be inside or outside the closed curve, or in the center of the line.
For **Closed Curves**, we also have the **Wash Out** function available.

Direction

Specify the milling direction around a **Closed Curve**.
This setting has huge impact on the finished product quality.
Note: This function will override the original direction of the curve.

Tool diameter

Specify the **Milling Bit** diameter.
All **Closed Curves** will be offset half the value, outside or inside, dependant upon **Tool Offset** selection.

Wash Out Small Curves

Use this function to **Wash Out** all **Closed Curves** smaller than the **Treshold value**.

Multi-pass depth

Specify the maximum depth to be milled in each pass.
Recommendation: This value should be limited to 1 - 1.5 times the **Milling Bit** diameter.

Measure / Material Thickness

Specify if the material thickness should be taken from the material thickness measurement performed at the beginning of the job.
If not, specify the thickness.
Material thickness is used when calculating the depth of each pass.

Web Thickness

When producing a job with multiple passes, specifying a **Web Thickness** offsets the depths of all passes so that only a thin amount of material is left for an additional final pass.

The vacuum hold-down strength of all cutting devices have limitations, and small parts may shift on the cutting surface when they are routed.

The result is an undesired cut on the edge of the part where the **Milling Bit** made contact during the shift.

This effect is eliminated or greatly reduced using **Web Thickness**.

When the **Milling Bit** has less material to cut on the final pass, there is less chance of the part moving when the cut is completed because there is less force applied to the part by the **Milling Bit**.

Finishing Pass Offset

Spesify the offset to be used for the last finishing pass.

Drill holes

Select this option to drill holes.

Multi pass milling

1. pass | 2. pass | 3. pass - mill through and clean the path (**Web Thickness**).

Multi-pass Milling is required if you want to mill through a material where the thickness is bigger than 1 - 1.5 times the **Milling Bit** diameter.

Finishing Pass Milling

A **Finishing Pass** is the last pass of a multi-pass production.

This pass is slightly offset, or contracted, from the other passes.

The result is a final pass that shaves the entire edge of the part; removing any evidence of the multi-pass production and producing a smooth edge.

iPC will automatically increase the **Tool Offset** to compensate for the Finishing Pass and produce the curves at the intended size.

Wash Out

Use **Layer Type**: **Wash Out**

Wash Out is a function to mill the entire area of a **Closed Curve**.

Use this function to wash out the **Closed Curves** in the **Layer**.

Drill holes

Use **Layer Type**: **Drill**

When you specify that a **Layer** should drill holes, holes will be drilled in the center of **Closed Curves**.

A typical example is shown at left.

Geometry (circles) will be converted into holes and drilled.

11.9 MultiZone Production

11.9.1 Introduction

Concept

For **MultiZone Production**, the **Cutting Table Work Area** is separated into two or more **Working Zones**.

Each **Working Zone** correspond to one or more **Vacuum Zones** on the **Cutting Table**.

Thus, the number of **Working Zones** available depends upon the acual machine model.

For more information, see **User Manual** for the actual machine.

To explain the function, we use a machine with two **Working Zones** (1 and 2).

When a **Job** is properly prepared, a simple **MultiZone Production** workflow could be described as:

1. You place one sheet of material in **Working Zone** 1.
2. You start the **Job**.
3. While the **Job** in **Working Zone** 1 is processed, you prepare **Working Zone** 2 with a sheet of material.
4. When processing of **Working Zone** 1 is completed, the machine automatically start processing the **Job** in **Working Zone** 2 if you have marked **Working Zone** 2 as **Ready**. If not, machine will stop in the defined **Parking Position**.
5. You remove the processed material from **Working Zone** 1 and load a new sheet of material.
6. The process repeats.

Vacuum for the different **Working Zones** is switched on and off automatically, as an integrated part of the process.

How to initialize MultiZone Production

➡️ **Opened Job**->**Production Setup**

MultiZone Production is available by:

- Selecting **MultiZone Production Table Preset** (1).

- Select a suitable **Vacuum Zones** configuration (2).

- Specify **Number of Copies** > 1 (3)

11.9.2 User Interface

During **MultiZone Production**, the **Layer View / Production View** window is separated into **Working Zones** that corresponds to the zones on the **Cutting Table**.

In the illustration, you see **Working Zone** 1 and 2.

On top of each zone, there is a **Status Bar** (3).

From the **Status Bar**, you read the processing status and you press the bar to go from one state to another.

Status Bar functions

Producing

The production in this **Working Zone** is on-going.

The icon shows the live progress.

Waiting for Operator (Replacing Material)

This state is set when the production is finished in one **Working Zone** and this **Working Zone** is not ready for production.

Remove processed material from the **Working Zone**.

Enter new material into the **Working Zone**.

Press the **Status Bar** button to enter the **Ready to Produce** state.

Note: The traverse cannot move over this zone, unless the user pressed the **Status Bar** button to enter the **Ready to Produce** state.

Ready to Produce

Processed material is removed from the **Working Zone** and new material is in place.

You have pressed the **Status Bar** button to enter the **Ready to Produce** state.

Note: You can press this button again to go back to the **Waiting for Operator** state.

Produced

This state is set when the production is finished and another **Working Zone** is not ready for production.

When the **Working Zone** is ready, press *Start* to continue.

11.9.3 Workflow

Workflow

1 - Prepare for the Job.

In **iPC**, the prepared **Job** is displayed (1).

On the Cutting Table (2), place a sheet of material in **Working Zone** 1.

Use adhesive tape to mark the position of the sheet (3).

The tape position will be the reference for the next sheet produced on this zone

Vacuum Zones

By default, all **Vacuum Zones** connected to a **Working Zone** are selecteted.

To achieve proper material fixture, configure the **Vacuum Zones** to be optimal for the actual job.

Alternatively, use *Intelligent Vacuum Control*.

2 - Press *Start*.

Working Zone 1 enters **Producing** state.

3 - Load material into Working Zone 2.

Use adhesive tape to mark the position of the sheet (1).

The tape position will be the reference for the next sheet produced on this zone

In **iPC**, press the **Status Bar** button to enter the **Ready to Produce** state in **Working Zone** 2.

4 - Job finished, Working Zone 1.

Job in **Working Zone** 2 starts automatically.

5 - Replace material, Working Zone 1.

When ready, press the **Status Bar** button to enter the **Ready to Produce** state in **Working Zone** 1.

6 - Working Zone 1 Ready to Produce.

Job in **Working Zone** 2 continues until completed.

7 - Working Zone 2 completed.

Job in **Working Zone** 1 starts automatically.

Replace material in **Working Zone** 2.

The process repeats until the specified **Number of Copies** are completed.

11.9.4 Registration

Job has Registration Marks

Use **MultiZone Production** in combination with any of the **Registration Types** available.

Job without Registration Marks

Use **MultiZone Production** in combination with **Edge Recognition**.

This workflow is aimed for unprinted material.

In this workflow, we allow to define the sheet position for the first production on each zone. Once that is done, the production will continue without registering the sheet edges.

Opened Job->**Production Setup**->**Registration**->**Register First Table only**.

11.9.5 More Zones

Depending upon the actual **Cutting Table** model, we can have 2, 3 or 4 **Working Zones**.

- Instead of defining the sheet position on 2 zones, this should be done for all zones.
- Once the sheet positions are known, the user can replace sheets on the **Working Zone** that is busy producing and press the corresponding **Status Bar** to tell that the working zone is ready to continue production.
- If the user replace the sheets in time the production will continue smoothly.
- If the user can not replace the sheets in time the production will stop and the user will be asked to replace the material.

Safety Rules

In the situation above, **Working Zone** 1 and 2 are ready to continue, while **Working Zone** 3 is waiting for material replacement.

When **Working Zone** 4 completes, the normal workflow will be to go to the next **Working Zone** that is ready and continue processing there.

But, in this case, the traverse will pass a **Working Zone** where material replacement is supposed to take place.

Execution will stop.

The operator has to ensure it is safe to continue before *Start* is pressed.

11.9.6 Rotated Table View

In case the Layers View / Production View is rotated 90°, the User Interface looks like this:

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12. Direct Commands

Direct Commands Menu

➡ **Menu Bar**->**Machine**->**Direct Commands**

Use this menu to select functions for immediate execution on the **Cutting Table**.

Each menu item is configurable, using the **Edit Commands**... function:

Edit Commands...

➡ **Menu Bar**->**Machine**->**Direct Commands**->**Edit Commands**...

Menu Text 1

Specify the text that describes **Command 1**.

This text will be displayed in the **Direct Commands Menu**, **Line 1**.

Command 1

Specify the command to be executed when **Line 1 (Ctrl+1)** is selected in the **Direct Commands Menu**.

For a list of available commands, *see Appendix*.

You can edit the command directly or add a command using the + function.

Menu Text 2-4, Commands 2-4

Description similar to **Menu Text 1** and **Command 1**.

For further information, see *Table Preset*.

12.1 **iPC Commands**

Use **iPC Commands** to prepare:

- *Direct Commands*

Conveyer belt Speed and Acceleration (%SSA) Syntax: %SSA <speed> <acceleration>. Command to limit belt speed and acceleration. Values are percentage of maximum.	**Sheet Feed (%SHF)** Syntax: %SHF <distance> <start position> Command to move the conveyer belt the specified distance. Start position is optional. Value specified in 1/1000 mm.
i-cut Delay (I-SD) Syntax: I-SD <time>; Execution is delayed <time> msec.	**Sheet Feeder Communication On (I-FM 1)** Syntax: I-FM 1; Sheet feeder communication enabled.
i-cut Message (I-MS) Syntax: I-MS <message>. Dispaly a <message> to the Operator.	**Sheet Feeder Communication Off (I-FM 0)** Syntax: I-FM 0; Sheet feeder communication disabled.
i-cut Park (I-PK) Syntax: I-PK. Move to **Park Position**.	**Vacuum pump, start and stop of (%PMP)** Syntax: %PMP <on/off>. Command to turn the vacuum pump on and off.
Reference Point selection(%SRE) Syntax: %SRE<1>/<X>. Switches between main fixed reference point (1) and panel defined reference point (X)	**Vacuum suction direction control (%SUC)** Syntax: %SUC<on/off>. Switches between suction (on) and **Quick Release** / **Blow Back** (off)

13. **Backup and Restore**

After your system has been fully configured, you should back it up using the **Backup and Restore** system.

Performing a backup will save all of iPC's essential parameters into a number of files.

If your system stops performing properly or you accidentally alter your configuration, you can easily restore all settings to their exact state as when the backup was performed. Backups may be performed either manually or automatically.

Please note:

- iPC backup stores all iPC configuration settings to a number of files on the file system.
- Backup of the file system is the responsibility of the customer.

For information about how to configure an automatic backup sequence, see ***Backup**, schedule*.

13.1 **Backup System Parameters**

Manual Backup of System Parameters

> **Menu Bar**->**Advanced**->**Backup Configuration**...

Each time **Manual Backup** is invoked, you enter a **File Save** dialog.

Specify a proper file name and click **Save**.

Use this function to backup your system both before and after performing upgrades.

13.2 **Restore System Parameters**

Restore System Parameters

> **Menu Bar**->**Advanced**->**Restore Configuration**...

Each time **Restore** is invoked, you enter a **File Open** dialog.

Select the file you would like to restore and click **Open**.

We strongly recommend you always backup your system manually before performing a restore.

13.3 **Backup Cutting Key**

> **Menu Bar**->**Advanced**->**Cutting Keys**->**Backup**...

Use this function to complete a manual backup of the complete set of **Cutting Keys**.

You are asked for a destination folder and file name.

Scheduled backups will follow the selected sequence, independent from any manual backup.

13.4 **Restore Cutting Key**

> **Menu Bar**->**Advanced**->**Cutting Keys**->**Restore**...

Use this function to restore the complete set of **Cutting Keys**.

For more information, see *Import Cutting Keys*.

14. iPC Configurations

The **iPC Configuration** setting is a set of options specifying the general behaviour of the system.

After first installation, you should go through each option in order to ensure proper setting.

14.1 **Layers View / Production View Orientation**

➡   **Menu Bar**->**View**->**Layers View / Production View Orientation**

Select viewpoint for **Layers View / Production View**.

Alternatives:

- 0°

- 90°

- 180°

- 270°

Viewpoint and **Operator Panel** position should be co-ordinated, in order to get correct **Jog Direction**.

For more information, see *Hardware Configuration*.

14.2 General

➡   **Menu Bar**->**Edit**->**Options**...->**General**

Machine Type

The **Machine Type** connected is displayed.

Work Area Length:

The measured length of the **Work Area**.

Work Area Width:

The measured width of the **Work Area**.

Table to Feeder Distance HW

This value, which is relevant only if a **Sheet Feeder** is connected, affects the **Feed to front of table** option in the **Production Setup**.

The sum of the **Table to Feeder Distance** and Width parameter defines the feed length required to feed a sheet of material to the front of your device's work area.

Units

Select **Units** to be used in the **User Interface** (mm or inch).

Speed Units

Select **Units** to be used for speed in the **User Interface** (m/min or ips).

Import Units

Select **Units** to be used for **File Import**.

Units specified in the **Input File** will override this setting for that particular file.

Default Import Preset

Select Default **Import Preset** to be used for **File Import**.

Ask for confirmation when creating jobs with the Default Import Preset

When enabled, you will be asked for confirmation each time a file is imported using the **Default Import Preset**.

Use this function to avoid unintended use of the **Default Import Preset**.

Show flute/grain direction

Show / hide the flute /grain direction symbol from the **Properties Bar**.

Show apply Cutting Key sort warning

Show / hide warning message after you **Accept** a **Cutting Key**.

Remove finished jobs from My Jobs

From the drop-down list, decide how to handle **Finished Jobs**:

Never = Never remove job from **My Jobs List**.

Always = Automatically remove **Finished Jobs** from **My Jobs List** on close.

Show Dialog = This dialog appear at close of a **Finished Job**:

14.3 Production

➡ **Menu Bar**->**Edit**->**Options**...->**Production**

14.3.1 Table Presets

General

Table Preset is a set of commands that is sent to the **Cutting Table** each time a **Job** is executed.

You select the **Table Preset** to use from the *Production Setup->Material Handling* dialog.

By default, several **Table Presets** that are suitable for most production scenarios are installed.

More factory made **Table Presets** are available in the folder

Esko->**i-cut Production Console**->**Production Options**.

If needed, add these to existing presets using the **Load** function.

Note: Only **Table Presets** configured for current **Machine Configuration** can be installed.

Use these functions to maintain **Table Presets**:

Delete
Delete selected **Table Preset**.

Load...
Load **Table Preset** from file.

14.3.2 Read Furthest Registration Mark First

HW

Define Registration Mark read sequence:

Un-checked

Normal sequence.

Checked

The sequence is:

1. Read the **Registration Mark** in the furthest X-position.
2. Read the rest of the **Registration Marks** using the normal sequence.

This function improves the calculation of placement and rotation of curves on large sheets, but it will increase the execution time.

14.3.3 Step X-axis before Y-axis

Define Step and Repeat priority:

Un-checked

The entire column (Y) will be executed first before moving to next column.

Checked

The entire row (X) will be executed first before moving to next row.

14.3.4 Break Long Lines

This function divides a (long) line into line segments with specified length.

By this, compensation is improved.

One example:

You are about to cut a big rectangle in a flexible material, with a high demand for **Print to Cut** alignment.

By compensation to the corners of the rectangle only, the result is not optimal, despite a high number of **Registration Marks**.

Shorter lines allows for more accurate **Print to Cut** alignment.

14.4 Feeder Connection

Menu Bar->**Edit**->**Options**...->**Feeder Connection**

HW

iPC may communicate with a **Sheet Feeder** through a serial line.

If necessary, provide relevant parameters.

To establish communication between iPC and your feeder, follow these instructions:

1. Connect the feeder to your computer using an available serial COM port, or USB-to-Serial adapter
2. From your **Windows Device Manager**, locate the COM port settings of the port to which the sheet feeder is connected.
3. Change the settings to: COM Port Number: As found in (2), Bits per second: 9600, Data bits: 8, Parity: Odd, StopBits: 1, Flow control: None
4. In the **Feeder Connection** dialog, adjust the parameters to match the corresponding values in your Device Manager.
5. Enable iPC communication on your sheet feeder's touch screen interface.
6. Open your iPC Configuration window and verify that the Feeder option is presently available. If it is not, contact your iPC dealer to request a license upgrade.

14.5 **Lead-in/Lead-out**

> **Menu Bar**->**Edit**->**Options**...->**Lead-in/Lead-out**

The **Lead-in**/**Lead-out** feature is primarily used for routing.

Adding **Lead-in**/**Lead-out** to a curve opens and extends the curve dynamically at production time so that cutting begins and ends inside or outside the path.

This is important for routing because the initial plunge into, and final lift out of the material may produce cutting results which are inconsistent with the rest of the part.

For information about how to apply **Lead-in** and/or **Lead-out**, see:

1. *Curve Modifications*.
2. *Curve Point Modifications*.

In the **Lead-in**/**Lead-out** option dialog described here, specify default values to use when **Lead-in** and/or **Lead-out** is applied.

The following parameters are available:

Outside

Lead-ins and **Lead-outs** are added to the outside of the curve(s) to which they are applied.

Inside

Lead-ins and **Lead-outs** are added to the inside of the curve(s) to which they are applied.

Depend on Tool

Both the inside or outside position and the radius of the **Lead-ins** and **Lead-outs** depends upon the tool parameters in the **Edit Layer** dialog for the **Layer(s)** on which the intended curves reside.

Lead-in/Lead-out

Select whether **Lead-ins** and/or **Lead-outs** will be applied.

Radius

The **Lead-ins** and **Lead-outs** are always generated as absolute arcs, with the Radius defining the size. The Radius should be large enough to account for the diameter of the **Milling Bit** or laser beam.

Show this dialog when applying Lead-in/Lead-out

When enabled, this dialog is displayed when the **Lead-ins** and **Lead-outs** are applied from the **Edit Curve** and **Edit Curve Point** dialogs.

14.6 Backup

> **Menu Bar**->**Edit**->**Options**...->**Schedule Backup**

Use this dialog to configure the automatic **Backup Sequence**.

For **System Backup**, choose automatic backups to occur **Daily**, **Weekly** or **Monthly**.

For more information, see ***Backup and Restore***.

14.7 Language

> **Menu Bar**->**Edit**->**Options**...->**Language**

Windows Default Language

The language displayed in the **User Interface** defaults to the **Windows Operating System** language.

Enforce Language

Select this option if:

1. Your current **Windows** language is not supported by iPC.
2. You prefer to select a different language.

Select the desired language from the corresponding drop-down list and click **OK**.

Restart **iPC** to activate the new language setting.

14.8 Reference Points

        Menu Bar->**Edit**->**Options**...->**Reference Points**

About **Reference Points**

To position a job on the table, **Reference Points** are used.

For the actual job, the selected **Reference Point** has co-ordinates X=0, Y=0.

14.8.1 Main Reference Point

The **Main Reference Point** (R) is a fixed **Reference Point** on the table.

You can select it from the list of **Reference Points** in the dialog, but you can not modify or delete this **Reference Point**.

14.8.2 User Defined Reference Points

Create User Defined Reference Points

1. Click the **New** button to create a new **User Defined Reference Point**.
2. Enter the name of the reference point in the **Name** edit field.
3. Set the reference point position by:

    a. Enter X/Y - co-ordinates into the **Position** fields in the dialog.

       The co-ordinates are relative to the **Main Reference Point**.
    b. Click the **Update** button to set coordinates of the **Reference Point** in current **Laser Position**.

Click OK to activate the new **Reference Point** setting.

Delete a User Defined Reference Point

1. In the list of reference points, highlight the **User Defined Reference Point** you want to delete.
2. Click **Delete**.

Panel Reference Point

The **Panel Reference Point** is a special version of **User Defined Reference Points**.

It is selected from the list of reference points in the dialog.

You can set the **Panel Reference Point** in three different ways:

1. Enter X/Y - co-ordinates into the **Position** fields in the dialog.

    The co-ordinates are relative to the **Main Reference Point**.
2. Click the **Update** button to set **Panel Reference Point** in current **Laser Position**.
3. Press the *Set Reference Point* button on **Operators Panel**.

    Panel Reference Point is set to current **Laser Position**.

	Set Reference Point button on C-series
	Set Reference Point button on XL, XN, XE, XP, V-series

15. Machine Connection and Configuration

From **Windows Toolbar**, invoke **Machine Connection**.

The following menu items are available:

- *Machine Configuration*

- *Tool Configuration*

- *Service Menu*

- *About...*

- *Terminate Machine Connection*

Note: These functions covers basic system settings, normally done once.

To be maintained by **Trained Personnel** only.

15.1 **Machine Configuration**

15.1.1 Hardware Configuration

> **Machine Connection**->**Machine Configuration**->**HW Configuration**

2 Vacuum Pumps	Use Pumps for Blow Back
Specify if this system is configured with **2 Vacuum Pumps**.	This system is configured with **2 Vacuum Pumps** and the pumps provides **Blow Back**.
Vacuum Setup	**Rulers Mounted**
From this dialog, select the hardware vacuum configuration you have on your **Cutting Table**; number of vacuum sections.	Specify if this system has **Cutting Table Rulers** mounted.
Operator Panel	**Camera Setup**
Specify **Operator Panel** position.	Enter the **Camera Setup** dialog.
This information will define **Jog Direction** for the jog buttons on the **Operator Panel**.	For more information, go *here*
Conveyor	**Router Setup**
Specify if this system has **Conveyor Belt**.	Enter the **Router Setup** dialog.

For more information about these settings, see **User Manual for the Cutting Table.**

15.1.2 Setup

➡	**Machine Connection**->**Machine Configuration**->**Setup**

Vacuum/Blow Back

Specify installed **Vacuum/Blow Back** solution.

- Standard blowback using fan

  Blow Back is provided by a separate fan.

- Vacuum based blowback

  Blow Back is provided by the Vacuum pump

Jog Speed

Specify low and high **Jog Speed** as a percent of maximum speed.

Incremental Jog

Specify the **Step Size** for low and high **Incremental Jog**

Split Sheet Feed

Normally, material feed is carried out as one continous movement.

Select this option to divide the material feed into two separate movements.

Useful to avoid unwanted safety breaks for certain material sizes.

Sheet Feed Correction

Add a correction value.

A positive value will increase the movement.

Conveyor Speed

Specify **Conveyor Speed** as a percent of maximum allowed speed.

For optimal feed operation, some materials requires a reduced conveyor speed.

Conveyor Acceleration

Specify **Conveyor Acceleration** as a percent of maximum allowed acceleration.

For optimal feed operation, some materials requires a reduced conveyor acceleration.

Tool height calibration mode

Select calibration mode:

- Manual adjustment - use the manual procedure for tool height calibration.
- Automatic measurement - use **X-pad** for tool height calibration

Note: this choice is relevant on machines with **X-pad** only.

Default

All parameters are set to factory default.

For more information about these settings, see **User Manual for the Cutting Table.**

15.1.3 Installation

> **Machine Connection**->**Machine Configuration**->**Installation**

Set Main Reference Position

Invoke the **Set Reference Point** wizard.

Follow wizard instructions.

Note: Complete this function for all **Tool Holders**.

Register Table Size

Invoke the **Register Table Size** wizard.

Follow wizard instructions.

Adjust X1 to X2 angle

Invoke the Adjust **X1 to X2 angle** wizard.

Follow wizard instructions.

Set Ruler Position

Invoke the Set **Ruler Position** wizard.

Follow wizard instructions.

Map Table Top Surface

Invoke the Map **Table Top Surface** wizard.

Execute on top of the **Vacuum Table**, no **Cutting Underlay** or **Conveyor Belt**.

Follow wizard instructions.

Table Top Reference

Update table top level measurement in current **Laser Pointer** position.

Measure on top of cutting underlay; no material.

Calibrate Measuring Pad

Invoke the Calibrate **Measuring Pad** wizard.

Follow wizard instructions.

For more information about these settings, see **User Manual for the Cutting Table.**

15.2 **Tool Configuration**

➡ **Machine Connection**->**Tool Configuration**

Identified Tools

The tools currently mounted on the **Cutting Table** are displayed.

Select a Tool

By the radio buttons, select the **Tool** to update.

Identify Tools

Complete a **Tool identification** sequence.

15.2.1 Adjust Active Tool

General

Tool adjustment is carried out using wizards.

All tools need to be adjusted in the **Tool holder** position they will be used.

We recommend to use a sheet of quality carton or corrugated to perform these wizards.

About adjustments

Tool Height

The tool tip should touch the surface of the cutting underlay.

Lag setting

The knife lag depends upon the blade adapter.

Rotation adjustment

Adjust tool angle tangential to moving direction.

Center offset adjustment

Adjust tool sideways until centered.

Camera Calibration

Compensate for camera offset and lens distortion.

For more information, go *here*.

Offset Adjustment

Adjust offset relative to **Laser Pointer**.

For more information about tool adjustment, see Cutting Table User Manual.

15.2.2 More

The **More** dialog contains selections to **Ignore**, **Delete** or **Add** to the **Tool List**.

The **Tool List** contains **Tools** that you can select for the available **Tool Positions**.

Ignore Automatic Tool Identification

Ignore Automatic Tool Identification may be used when the **Automatic Tool Detection** fails, and manual tool selection is necessary.

If **Ignore Automatic Tool Identification** is checked, **Tool Setup** remains unchanged after:

- **Table Zero Position** sequence

- **Identify Tools** function

Delete Tool

Use **Delete Tool** when a **Tool** is no longer in use.

The deleted **Tool** will no longer be available in the **Tool List** in the **Edit Layer** dialog.

Add Tool

Use **Add Tool** to

- Add new **Tools**

- Add tools that fails during **Automatic Tool Detection**

The **Tool** is added to the **Tool List**.

15.3 Camera Operations

Show Camera

➡️ **Menu Bar**->**Machine**->**Show Camera**

📷 **Machine Panel**->**Show Camera**

Use this function for an immediate check of camera image.

Test camera detection:

- From the pull-down menu, select type of detection.
- Move a suitable material into the camera picture.
- The detected registration is high-lighted.
- The green bar below the picture indicates the quality of the detection.

Camera Setup

➡️ **Machine Connection**->**Machine Configuration**->**HW Configuration**->**Camera Setup**

Prerequisites:

- The camera has to be visible as an imaging device from device manager.
- Necessary camera driver has to be installed (Epix driver if i-cut camera).

- If using i-cut camera, select add i-cut camera.
- In the list of cameras, select the one currently connected
- Select **Edit**

- Give the camera a proper name
- Select type of camera (**Tool head**, **In-stack**)

- Select OK to save your settings.

The connected **Tool head** is marked by a (*) in front of the name.

i-Camera Configuration

➡ **Machine Connection**->**Machine Configuration**->**HW Configuration**->**Camera Setup**

If your system is equipped with i-Camera, some additional functions are available:

- **Refresh** the view.

- Select actual camera.

- Select **Edit**.

From this dialog, you can:

- Name the camera.
- Select type of tool head.
- Select tool head.
- Select **Enable Advanced Settings** to adjust parameters.

Note:

Before any adjustment, ensure proper camera height:

Press **Manual Tool down** to move camera into correct position.

Press **OK** to complete.

Image Quality

Adjust and test settings in order to obtain stable and accurate **Registration Marks**.

Capture Mode

Select **Minimize Reflections** to use the internal camera light (default).

Select **No Illumination** and the internal camera light will be switched off.

Offset Adjustment

➡ **Machine Connection**->**Tool Configuration**->**Adjust Active Tool**->**Offset Adjustment**

Two initial steps are mandatory:

- Complete **Offset Adjustment** between **Laser Pointer** and all tool positions.

- Select one tool, preferably a knife tool, as the common reference tool between **Laser Pointer** and **Camera**.

Select **Offset Adjustment** and complete the wizard.

Camera Calibration

Machine Connection->**Tool Configuration**->**Adjust Active Tool**->**Camera Calibration**

For this procedure, use the same reference tool as in previous chapter.

Select **Camera** and **Adjust Active Tool**

Follow the instructions given by the wizard, step by step.

Select **Camera Calibration**.

Follow the steps in the wizard:

1. Select the reference tool, preferably the same tool as used during the previous offset adjustment.
2. Place a sheet of thin material on the table.
3. Fixate the sheet using **Vacuum on**.
4. Jog the **Laser Pointer** into a proper position on the sheet.
5. Press **Start** to create the **Reference Mark**.

While the sheet is kept in place by vacuum on, do:

1. Jog the tool head away.
2. Carefully remove the cutout from the **Reference Mark**.
3. Press **Next**.

1. Verify that the mark is correctly detected.
2. Press **Next**.

The **Camera Calibration** wizard will now complete.

Correct completion is indicated as displayed.

Press **Finish**.

Press Close to terminate the procedure.

Note: **Camera View** will be oriented according to *Layers View / Production View*.

15.4 **Service Menu**

Note:

The **Service Menu** functions are available for certified service personnell only.

They are not aimed for table operators.

15.4.1 Message Display

> Machine Connection->**Service Menu**->**Message Display**

Popup on Warnings

Select if you want the **Message Display** window displayed for each warning message.

Error messages are always displayed.

Always on Top

Select if you want the **Message Display** on top of your **Desktop**.

Log Messages

When enabled, all messages are logged for later examination.
Useful for trouble shooting.

Show

Specify at what level messages are shown:

- **All** - all kind of messages are displayed.

- **Important Only**

- **Critical Only**

15.4.2 Memory Dump

> ➡ **Machine Connection**->**Service Menu**->**Memory Dump**

Invoke the **Memory Dump** application.

To be used for **Software Maintenance**.

For more information, see **Hwtest User Manual**

15.4.3 Position Display

> ➡ **Machine Connection**->**Service Menu**->**Position Display**

For more information, see **User Manual for Cutting Table** .

15.4.4 Show Vacuum Dialog

Select **Vacuum Zones** suitable for **Opened Job**.

Note: This dialog is available from: **Machine Panel**->**Vacuum Zones**

15.4.5 Emulate Panel

Machine Connection->**Service Menu**->**Emulate Panel**

A function for **Software Maintenance**.

15.4.6 Tool Holder Select

> ➡ **Machine Connection**->**Service Menu**->**Tool Holder Select**

Select **Tool holder** for test.

This function is available when iPC is dis-connected from **Cutting Table** only.

15.5 About ...

System Version	**Machine Size**
Version number and date of the installed software.	Machine size as obtained by the **Register Table Size** function
Machine Type	**Work Area all Tools**

Type name of connected **Cutting Table**.	Nominal **Work Area** available for all tools in the currently mounted **Tool holder**.

15.5.1 Maintenance Info

Current Status

Date	First Time Started
Todays date.	Date when the system was running for the first time.
Run Time	
Total number of hours the machine has been running (executing).	

Maintenance

Date	By
Date when last maintenance was carried out.	Initials of the person who completed last maintenance.
Run Time	**Since Last Maintenance**
Hour counter when last maintenance was carried out.	Number of execution hours since last maintenance.

15.6 Terminate Machine Connection

Use this function to terminate the connection to the **Cutting Table**.

To re-connect: **Menu Bar**->**Machine**->**Connect**

15.7 Logging

15.7.1 General

Bug report

A **Bug report** should consist of:

- A detailed, step by step description of what happened.
- If found at a customer site also a confirmation that the bug can be reproduced in the lab.
- Sometimes a description of the expected behavior will also be a help.
- A .zip file of the log folder, with at least the files:
- • i-cut Production Console.log
  - iPcDeveloperLog.txt
  - Last KB ACM file.log
  - Last KB Mat file.log
  - MCDeveloperLog.txt.

15.7.2 Log Settings

➡ **Ctrl + Alt + Shift + L**

From this dialog, specify the log level.

For log settings to take effect, restart iPC.

The default setting will always be **Service Log**.

Initiating a log should be carried out only if requested by Esko personnel.

Procedure

To invoke logging:

In the **Log Settings** dialog, check **Use integrated logging system** and **Log to File**.

To reduce the size of the log file, please do as little as possible:

- Start iPC.
- Do the test and nothing else.
- Stop iPC.
- Zip the log folder and copy to your server.

Notes:

- Log type **Debug** or **Trace** will seriously affect performance and must be used for short periods of time.

- Never leave a machine in any other setting than **Service Log**.

16. **Install Software**

For information about software installation, see the **Installation Manual** for the actual machine.

Available on the Documentation DVD.

16.1 **File Save Structure**

➡	**Computer->xxx->My Documents->i-cut Production Console**

Documents library
i-cut Production Console

Name

📁 Backup
📁 Cutting Keys
📁 Exports
📁 MC
📁 Production Options
📁 Sample Files
📁 User Manual
📄 Options.xml

This is the default file save structure.

Backup

Cutting Keys

Exports

MC

Production Options

Sample Files

User Manual

17. **About Licenses**

iPC has four main licenses.

Installed license is available from **Menu Bar**->**Help**->**License Manager**...

i-cut Production Console Basic

Basic license cover only basic functions. No camera functions.

i-cut Production Console Packaging Production

Packaging Production license cover all main topics for production, but less functionality regarding edit, milling and camera distortion compensations.

i-cut Production Console Sign Std

Sign Std license covers all features for V-series.

i-cut Production Console Sign Prod

Sign Prod license is the main license that covers all features in iPC software.

Feature	Basic	Pack Prod	Sign Std	Sign Prod	Details
Base	x	x	x	x	Enable all base functionality including start of application
Line_edit		x	x	x	Enable all manual geometry editing. Basic version will be "read only", like XL-Guide
Avoid_overcut			x	x	Enable **Layer** feature to automatically split lines and change cut directions, mainly for printed materials
Registration_and_placement		x	x	x	Enable edge / regmark reg. and placement (position / rotation) compensation. Registration device is HW dependant
Barcode		x		x	Enable use of camera for reading barcodes, which enables automated workflow. Barcode scanner always supported
Linear		x	x	x	Enable linear and differential scale
Non_linear			x	x	Enable non linear (full) distortion compensation
Intelligent Marks			x	x	Enable **Adaptive Registration**
Non Stop		x		x	Enable more than 1 copy (table) productions
Milling			x	x	Enable advanced milling features, like **Lead-in/Lead-out**, **Multi-pass**, **Wash Out**, **Tool Diameter Compensation**

Feature	Basic	Pack Prod	Sign Std	Sign Prod	Details
Add_Nested_Layout	x	x	x	x	Enable dialog for merging designs onto same board based on bounding boxes or manual positioning
Step_and_repeat	x	x	x	x	Enable **Step and Repeat** the "i-cut way"
MultiZone production		x		x	

18. **Keyboard Shortcuts**

Alt + Click	**Select All Curves**
Alt + Left **Alt + Right** **Alt + Up** **Alt + Down**	**Jog Selected Curve(s)**
CTRL + -	**Zoom Out**
CTRL + +	**Zoom In**
CTRL + 0	**Fit to Data**
CTRL + A	**Select All Curves**
CTRL + Alt + Shift + L	**Log Options**
CTRL + Alt + M	**Maintenance Interval update**
CTRL + C	**Copy Layer(s)**
CTRL + D	**Deselect All Curves**
CTRL + L	**Add Layer**
CTRL + M	**Move Selected Curves**
CTRL + N	**New File**
CTRL + O	**Open File**
CTRL + S	**Save File**
CTRL + Shift + A	**Select All Layers**
CTRL + Shift + C	**Copy Layer(s) with Curves**
CTRL + Shift + D	**Deselect All Layers**
CTRL + Shift + I	**Invert Curve Direction**
CTRL + Shift + J	**Fit to Job**
CTRL + Shift + M	**Mirror Selected Curves**
CTRL + Shift + R	**Rotate Selected Curves**
CTRL + Shift + S	**Save File As**
CTRL + Shift + T	**Fit to Table**
CTRL + T	**Scale Selected Curves**
CTRL + U	**Remove Unused Layers**
CTRL + W	**Close File**
CTRL + Z	**Undo**
Delete	**Remove Selected Curves**
F1	**Help**
Shift + Delete	**Remove Layers**

19. Using **ai-cut/i-cutCDR**

ai-cut is an addon to **Adobe Illustrator**.

i-cutCDR is an addon to **CorelDraw** versions X3, X4 and X5.

These addons provides tools to automatically add iPC **Register Marks** to designs.

For more information, see separate **User Manuals**.

20. **i-script**

In a traditional workflow, image data and cut data are generated as separate files out from the Design station.

i-script is a workflow where image data and cut data are separated in the RIP process.

The big advantage is that modifications made during the RIP process are maintained both for the image data and the cut data.

i-script is adapted by leading RIP and printer producers.

i-script file format is as well used for data transfer from Esko applications like i-cut Layout and ArtiosCAD to iPC.