



durst

Rho 1012/1030

Operating Instructions

Issued 07/2013

Keep for future reference!



Original instructions

Contents

A	About these operating instructions	8
B	Safety	10
C	Description	23
D	Transport, installation and commissioning	32
E	Operation	33
F	Software	95
G	Service	118
H	Decommissioning and disassembly	142
	Appendix	143

Table of Contents

A	About these operating instructions	8
1	Using these operating instructions.....	8
2	Symbols and markings.....	8
2.1	Structure of warnings.....	9
B	Safety	10
1	Intended use	10
1.1	Impermissible use	10
2	Duties of the owner.....	10
2.1	Safety measures	10
3	Safety and monitoring equipment.....	11
3.1	Housing covers.....	11
3.2	Protective switches on printer	11
3.3	Limit switches at the stacking unit	12
3.4	Signs on printer	12
4	Ambient conditions	14
5	Modifications, attachments and changes in location.....	14
6	Connection of external devices	14
7	Electromagnetic compatibility	15
8	Specific types of danger	15
8.1	UV light	15
8.2	High temperatures	15
8.3	Electrical energy	16
8.4	Moving parts.....	16
8.5	Contact with ink	16
8.6	Sharp edges.....	17
8.7	Ozone buildup.....	17
8.8	Pneumatic system	17
8.9	Danger of falling	18
8.10	Weights	18
9	Protective clothing.....	18
9.1	Safety goggles and protective gloves.....	18
9.2	Safety shoes	18
10	Maintenance and cleaning.....	18
11	Disposal	19
12	Emergencies	19
12.1	Emergency-Stop switch	19
12.2	What to do in case of an emergency	19
12.3	Switching on the printer again after an emergency stop.....	20
13	Faults	20

13.1	Handling faults	20
14	Avoiding damage to property	20
14.1	UV lamps	20
14.2	Print head maintenance	20
14.3	Careful handling of the encoder ruler	21
14.4	Media	21
14.5	Purge	21
14.6	Careful handling of the conveyor belt	22
C	Description	23
1	Printer	23
1.1	Heavy roll tool 30 (optional)	25
1.2	Heavy roll tool 60 (optional)	26
1.3	Stacking unit (optional)	27
1.4	Workstation	28
1.5	Ink supply unit	29
1.6	Cleaning system	30
2	Workflow	31
D	Transport, installation and commissioning	32
E	Operation	33
1	Overview of daily operation	33
1.1	Carrying out the daily work	33
2	Printer	34
2.1	Main operating elements and displays	34
2.2	Workstation	35
3	Automatic feed table	36
3.1	Operating modes	36
3.2	Operating elements	37
3.3	Operating the automatic feed table	38
3.4	Adjusting the front stop	40
4	Automatic removal table	45
4.1	Operating elements	45
4.2	Docking the automatic removal table	46
4.3	Setting the ejection equipment	47
5	Registering table (optional)	48
5.1	Operating elements	48
5.2	Docking the registration table	49
5.3	Adjusting the press rolls	50
5.4	Adjusting the stops	52
6	Heavy roll tool 30 (optional)	54
6.1	Docking Heavy Roll Tool 30	54
6.2	Operating drives of the unwinding and winding units ..	57

7	Heavy roll tool 60 (optional)	57
7.1	Docking Heavy Roll Tool 60	57
7.2	Operating drives of the unwinding and winding units ..	59
8	XY Cutter (optional)	62
8.1	Operating elements.....	62
8.2	Docking the XY Cutter.....	63
8.3	Bypass mode.....	64
8.4	Adjusting the cutting unit (longitudinal cut).....	65
9	Stacking unit	66
9.1	Operating elements.....	66
9.2	Docking and connecting the stacking unit.....	68
9.3	Adjusting the straight impacter	69
9.4	Adjusting the limiting plates.....	69
9.5	Adjusting the light barrier for vertical tracking.....	70
10	Loading medium	70
10.1	Loading a plate medium with an automatic feed table .	70
10.2	Loading the plate medium with the registration table ..	74
10.3	Loading the roll medium (Heavy Roll Tool 30)	75
10.4	Loading the roll medium (Heavy Roll Tool 60)	86
10.5	Laying a medium through the XY Cutter	92
11	Setting the suction power.....	94
F	Software.....	95
1	Basic functions.....	95
1.1	Installation	95
1.2	The menu bar	95
1.3	The status bar.....	96
1.4	Basic operation.....	96
2	Setting up printer	96
2.1	Switching-on time.....	96
2.2	Input queue.....	97
2.3	General basic settings.....	98
2.4	Media families	99
3	Operating printer functions	100
3.1	Basic functions	100
3.2	Cleaning functions	101
3.3	Maintenance.....	101
3.4	Ink batch tracking	102
3.5	UV lamp tracking.....	103
4	Managing media channels.....	104
4.1	Buttons on the right edge of the dialog window	104
4.2	Medium type.....	104

4.3	Media specification	106
4.4	Print options	107
4.5	Image border and alignment.....	108
4.6	Creating, editing and deleting media channels	112
5	Printing.....	113
5.1	Input queue.....	113
5.2	Printing queue.....	116
G	Service	118
1	Inspection and cleaning intervals	118
2	Important information.....	119
3	Initialization after closing the flip doors.....	119
4	Emptying catch tank.....	120
5	Refilling ink	120
6	Clean catch tray of scraping blade.....	122
7	Changing filter of the ink separator	124
8	Checking and replacing air filter	125
9	Cleaning housing	127
10	Checking fuses	127
11	Changing main ink filters.....	127
12	Print head maintenance.....	130
12.1	Required tools/accessories	130
12.2	Daily print head maintenance	130
12.3	Weekly print head maintenance.....	130
12.4	Preparatory work at the cleaning access point	131
12.5	Purge cycle	133
12.6	Wiping print heads.....	134
12.7	Vacuuming out soiled nozzles	136
12.8	Cleaning the printing plate	140
12.9	Documentation of the print head state.....	141
13	Disposal	141
13.1	Disposing of ink, cleaning cloths and cubitainers	141
H	Decommissioning and disassembly	142
	Appendix.....	143
1	Technical data.....	143
1.1	General specifications.....	143
1.2	Print specifications.....	144
1.3	Media specifications	145
1.4	Workstation	145
1.5	Requirements for installation site	145
2	Accessories and spare parts	146

A About these operating instructions





1 Using these operating instructions

These operating instructions are part of the unit.

- ▶ Ensure that these operating instructions are accessible to personnel at all times.
- ▶ Any supplements received from Durst Phototechnik AG are to be included with these operating instructions.
- ▶ Give these operating instructions to any subsequent owners or users of this unit.

2 Symbols and markings

The following symbols are used in these operating instructions:

Symbol	Meaning
✓	Requirement for an action
▶	One-step action
1.	Step within a multi-step action
↳	Result of an action or sequence of actions
i	Information on easier or safer work
(→ Page 23 / Description)	Cross reference
	Imminently hazardous situation that, if not avoided, will result in death or serious injury.
	Potentially hazardous situation that, if not avoided, could result in death or serious injury.
	Potentially hazardous situation that may result in minor injury if the safety precautions are not complied with.
	Potentially hazardous situation that, if not avoided, may result in property damage.

The following typographical markings (e.g. **bold**) are used in these operating instructions for differentiating between types of information:

Example	Meaning
Start Queue	<ul style="list-style-type: none"> ■ Operating element on unit, e.g. buttons, levers etc. ■ Software element, e.g. menu name, menu entry, operating elements etc.
start	File name, path name
[ALT]	Keyboard key

2.1 Structure of warnings

Warnings are structured as follows (in this case, an example for the warning level WARNING):

 WARNING
Type and source of danger! Consequence of the danger ► Measure for avoiding the danger

- Read and observe the warnings.

B Safety

i Read these operating instructions before using the printer and ensure that you have understood everything!

i If it is determined that damage has been caused by a person's non-compliance with these operating instructions, Durst Phototechnik AG is in no way liable. Safe operation of the printer is only ensured when the following safety precautions and warnings are observed exactly.

1 Intended use

The printer is suitable for printing plate and roll media in the industrial field within the specified limits (→ Page 143 / Technical data). The following framework conditions apply in particular:

- The printer may only be operated in closed rooms.
- Only Durst-certified inks and media may be used. Other inks or media may only be used after agreement with Durst Phototechnik AG.
- Intended use includes only the activities described in these operating instructions. Transport, installation, commissioning, decommissioning, disassembly and disposal of the components may only be performed by service technicians authorized by Durst Phototechnik AG.

1.1 Impermissible use

The printer may not be used to print the following media:

- Foodstuffs
- Animals
- Media outside the specified limit values
- Media with an ignition point of less than 150 °C (302 °F)

2 Duties of the owner

To ensure the safety of personnel, the owner must take the following safety measures:

2.1 Safety measures

- ▶ Ensure that the personnel possesses the appropriate qualifications and is sufficiently trained. Brush up on knowledge by taking training courses on a regular basis.
- ▶ Provide the personnel with the stipulated protective equipment.
- ▶ Keep the warnings on the printer in a legible, visible and clean condition.
- ▶ Ensure sufficient lighting.

- ▶ Keep the concentration of ozone and spray mist of the ink below the maximum permissible value. For this purpose, ensure sufficient ventilation in the immediate vicinity the printer.
- ▶ Ensure sufficient fire protection around the printer and issue instructions for fire-extinguishing measures.
- ▶ Observe all regional and national regulations and safety requirements.

3 Safety and monitoring equipment

3.1 Housing covers

The housing covers should prevent the user from being exposed to electrical or mechanical danger and UV light when loading and unloading media and ink.

- ▶ Do not change the way these devices function.

3.2 Protective switches on printer

- 1 Flip doors (here: shown here using a flip door as an example)
- 2 Cleaning access point

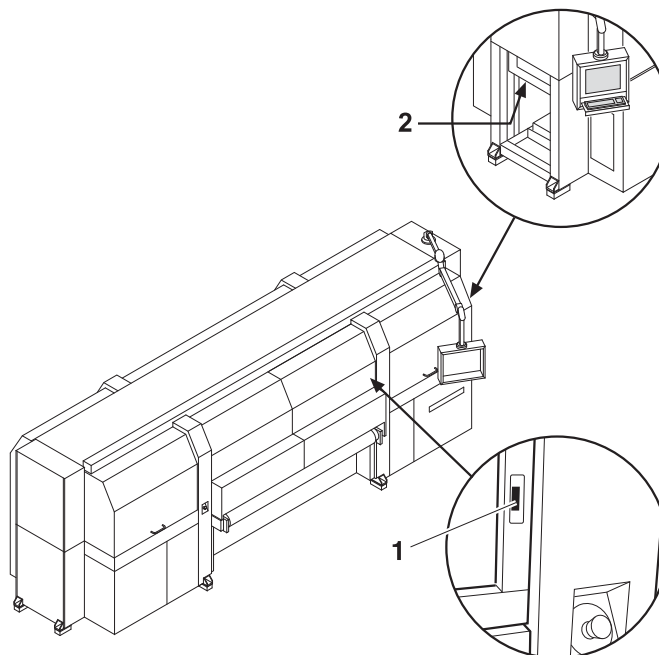


Fig. 1 Position of the protective switches

All flip doors must always be closed, and the light trap carrier at the cleaning access point must be pushed in. The flip doors may only be opened for maintenance and checks, e.g. checking of the material advance. The light trap carrier may only be pulled out for print head maintenance.

This is why protective switches are found on all flip doors and at the cleaning access point. If the flip doors are not closed and the light trap carrier is not pushed in, the printing process cannot start.

- ▶ Do not change the method of functioning of the protective switches.
- ▶ Do not bypass protective switches.

3.3 Limit switches at the stacking unit

If a person's foot is positioned under the table, there is a danger of crushing when the table is lowered. In order to avoid the danger a safety edge (1) is installed that is raised in case of obstacles and stops the downward movement.

- ▶ Keep your feet away from the area underneath the table.
- ▶ Do not change the method of functioning of the limit switch.
- ▶ Do not bypass limit switches.

3.4 Signs on printer



3.4.1 Rating plate











Fig. 2 Rating plate

3.4.2 Safety signs

All safety signs attached to the printer must be observed.

Safety sign	Meaning
	Wear protective gloves
	Wear safety goggles

Safety sign	Meaning
	<p>Extremities can be crushed</p>
	<p>Extremities can be crushed</p>
 <p> ACHTUNG Auch wenn Netzschalter in "Off-Position", steht Teil unter Netzspannung CAUTION Even if Mains switch in "Off-Position" part stay under hazardous live </p>	<p>The component is energized even when the main switch is switched off</p>
 <p> Disconnect main switch before opening Vor dem Öffnen Hauptschalter ausschalten </p>	<ul style="list-style-type: none"> ■ Warning on UV light ■ Switch off main switch before opening
	<p>Warning on UV light</p>
	<p>Warning on hot surfaces</p>

Safety sign	Meaning
	Warning on chemical substances
	Dispose of the device via a separate collection for electric and electronic devices in accordance with the locally applicable regulations
High voltage text sign	Caution: high voltage The mains connection must be disconnected before opening the device and when changing tubes
Ultraviolet radiation text sign	Caution: ultraviolet radiation UV-C, UV-B, UV-A; Protect your eyes and skin

4 Ambient conditions

The printer may only be operated under the specified ambient conditions (→ Page 143 / Technical data).

5 Modifications, attachments and changes in location

The printer is installed and commissioned by authorized Durst service technicians.

- The installation location of the printer may not be changed. Structural stresses and strains are taken into account during installation. Any change to the installation location or structural modifications to the building must be approved by Durst Phototechnik AG.
- Opening the printer housing, electronics case and housing covers, except for routine work, and opening the workstation or unplugging the cable may only be performed by authorized Durst service technicians.
- Print heads may only be replaced by authorized Durst service technicians.
- The UV lamp protection prevents reflected light from drying out the ink in the print head, thus damaging it. The UV lamp protection may therefore not be removed.

6 Connection of external devices

The printer features SELV connections in accordance with IEC60950. The computer features two Fast Ethernet connections (SELV) for connection to LAN/WAN networks. Only SELV-compatible peripheral devices approved by Durst may be connected to the printer.

7 Electromagnetic compatibility

For users in the US The printer has been tested and corresponds with the restrictions for a Class A digital unit in agreement with the regulations of the FCC, Paragraph 15. These restrictions serve to provide appropriate protection against harmful interference with equipment used commercially. This printer generates, uses and radiates energy in the radio frequency range and can, if not installed or used in accordance with the requirements of these operating instructions, cause harmful interference in radio communication. The use of the system in a residential area can lead to such interference. In this case, damage/loss caused by the interference are the fault of the user.

8 Specific types of danger

The printer was built using the best available technology and in compliance with the recognized safety regulations. Areas of danger which cannot be avoided through design are provided with appropriate protective equipment. If the printer is used improperly, however, the user or third parties risk death or injury. The printer itself or another medium could also be damaged.

8.1 UV light

UV light emitted by the UV lamps onto the print carriage can cause lethal burns and damage to the eyes. The viewing windows filter out UV rays.

The UV curtain at the media outlet prevents the direct discharge of UV rays.

The UV lamps are not switched off automatically when the flip doors are opened. Scattered light can thus be discharged.

- ▶ Do not remove the flip doors.
- ▶ Check to make sure the flip doors are closed and locked during printing.
- ▶ Carry out the following measures during print head maintenance:
 - Ensure that the UV lamps are switched off.
 - Wear safety goggles
- ▶ When the flip doors are open, do not look at the UV lamps.
- ▶ Regularly check UV curtain at media outlet for damage.

8.2 High temperatures

The UV lamps on the print carriage are heated up to temperatures exceeding 65 °C (149 °F). Contact with the UV lamps can cause severe burns.

Flammable media can ignite as a result of the UV lamps heating up.

- ▶ Before carrying out work on the UV lamp head wait at least half an hour after the unit has been switched off until the lamps have cooled down.
- ▶ Wear protective gloves when working on the UV lamp head.
- ▶ During print head maintenance, do not touch UV lamps.
- ▶ Do not print media which have an ignition point of less than 150°C (302°F).

- ▶ Observe sufficient fire protection around the printer and issue instructions for fire-extinguishing measures.

8.3 Electrical energy

The printer has a leakage current greater than 3.5 mA. Safe operation of the printer is ensured via a fixed connection to the ground wire.

The entire unit is not de-energized even when the main switch is switched off. Solely the disconnect switch serves as the power isolator.

The capacitors remain charged for several minutes after switching the printer off. There is a risk of electric shock if you touch electrical components.

- ▶ Do not touch any cables or electrical components even when the main switch is switched off.

8.4 Moving parts

The following dangers are present near moving parts:

- Hair, jewelry and clothing being caught and drawn in
- Crushing, impacting and cutting of extremities

Dangerous areas include, in particular:

- Rollers, rolls, belt drives of the table
- Rollers, belt drives and roll mounts of the Heavy Roll Tool
- Straight impacter and table of the stacking unit
- Gear drive of the ejection equipment
- Infeed points of the conveyor belt
- Impacting edges between printer and tables when docking.
- Impacting edges between printer and Heavy Roll Tool when docking

When reaching into the inlet and outlet openings, there is a danger of impacts and crushing from movements of the print carriage and danger of cutting from sharp housing edges.

Lethal injuries could result.

- ▶ Do not remove the flip doors.
- ▶ Do not remove the housing covers.
- ▶ Do not wear long hair, jewelry or loose clothing.
- ▶ During the printing process, do not reach into the inlet or outlet openings or near moving parts.

8.5 Contact with ink

Coming into contact with ink is harmful to your health. Sources of danger include:

- Ink supply unit with Durst Cubitainer
- Waste tank
- Light trap carrier
- Uncured inks on printed media due to insufficient UV exposure
- Spray mist of ink droplets in case of large print head distance
- ▶ Observe the safety data sheets supplied with the ink.
- ▶ Operate the printer with Durst inks only.
- ▶ Use only the cubitainers intended for the printer (→ Page 146 / Accessories and spare parts).
- ▶ Wear protective gloves and safety goggles when cleaning the print heads, adding ink or emptying the waste tank.
- ▶ Avoid allowing ink to contact your face or eyes, e.g. by rubbing your eyes with dirty hands.
- ▶ If contact with the skin occurs, wash affected areas with pH-neutral soap and water.
- ▶ Carry out all specified inspection and cleaning work.

8.6 Sharp edges

Sharp-edged media and housing components can cause cuts.

- ▶ Wear protective gloves when handling media.
- ▶ Do not reach into the inlet and outlet openings during the printing process.

8.7 Ozone buildup

To prevent ozone from building up in the room, Durst recommends setting up the external ventilator with a switch-off time delay. The switch-off time delay should switch off the ventilator at least 10 minutes after the printer is switched off.

The external exhaust equipment must be capable of extracting the required minimum exhaust quantity (→ Page 143 / Technical data).

- ▶ Do not switch off external ventilator for exhaust during printing.

8.8 Pneumatic system

The pneumatic circuits for generating a vacuum at the print head, conveyor belt and ink transport are under pressure. Ink which is ejected suddenly from leaky lines and connections or compressed air released suddenly from leaky lines and connections can cause severe injury.

- ▶ Ensure that the required service work is carried out regularly by Durst customer service.

8.9 Danger of falling

There is a danger of falling when climbing components of the printer. Components can also be damaged.

- ▶ Do not use components of the printer as climbing aids.

8.10 Weights

Falling media present the following dangers:

- Danger of impact and crushing due to heavy weight
- Danger of cuts from sharp edges.
- ▶ Wear safety shoes.
- ▶ Perform the following measures before loading/unloading:
 - Ensure that there are no obstacles near the printer.
 - Ensure that the printer has a secure footing.

9 Protective clothing

9.1 Safety goggles and protective gloves

- ▶ When cleaning the ink supply unit or the print heads, wear the protective gloves provided for this purpose and recommended safety goggles (→ Page 146 / Accessories and spare parts).

9.2 Safety shoes

- ▶ Wear safety shoes when loading and unloading media.

10 Maintenance and cleaning

i If the service work is not carried out sufficiently, all warranty and guarantee claims are null and void.

- Apart from the activities described in the chapter entitled "Service", the customer may not perform maintenance or cleaning work. Regular and additional special service may only be performed by authorized Durst service technicians.
- Only spare parts and consumable media which have been specially developed and optimized by Durst may be used.
- When cleaning the housing or workstation, the printer and workstation must be switched off and de-energized via the power isolator.

11 Disposal

- Tools and accessories that come into contact with ink must be disposed of in an environmentally-friendly manner according to local regulations. This includes, among other things:
 - Ink and ink waste
 - Cleaning cloths
 - Protective gloves
 - Air filters
 - Cubitainers
 - Ink filters
- Information on proper disposal of Durst inks can be found on the data sheet for media safety contained in the ink refilling set or which can be obtained from Durst Phototechnik AG.

12 Emergencies

12.1 Emergency-Stop switch

1 Emergency-Stop switch

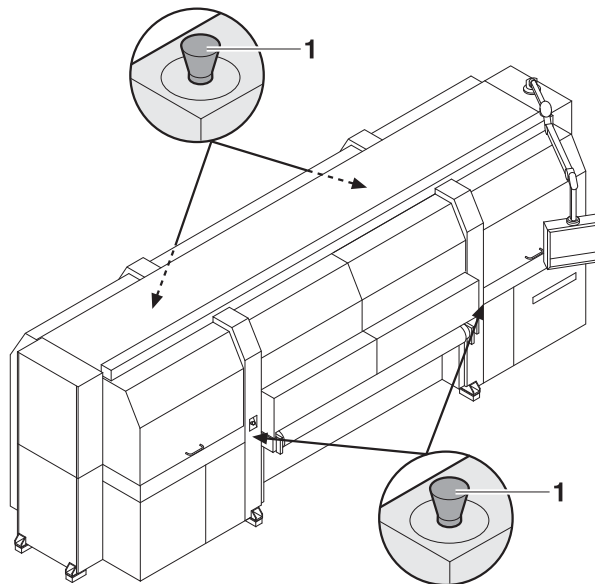


Fig. 3 Emergency-Stop switch

The printer can be switched off with the main switch or one of the Emergency-Stop switches (1).

i The black-and-yellow Emergency-Stop switches at the docked components (tables, Heavy Roll Tool, stacking unit, etc.) only switch off these themselves. The printer is not switched off.

12.2 What to do in case of an emergency

12.2.1 Switching the printer off

- ▶ Switch off the printer with one of the Emergency-Stop switches if a fault occurs which could endanger personal safety.

12.2.2 First aid in case ink contacts skin, mucous membranes or eyes

- ▶ Wash affected areas with pH-neutral soap and water. Under no circumstances should solvents be used, as it remove oils from the skin and increase irritation.
- ▶ Change your clothes immediately if heavy contamination has occurred.
- ▶ If some spray has entered your eyes, wash your eyes immediately with lots water and contact a doctor.

12.3 Switching on the printer again after an emergency stop

12.3.1 Reactivating an Emergency-Stop switch

- ▶ Turn Emergency-Stop switch to the right.
 - ↳ Emergency-Stop switch pops out

13 Faults

13.1 Handling faults

- ▶ If the printer stops unexpectedly:
 - Switch off the printer with the Emergency-Stop switch and/or the main switch.
 - Notify the Durst customer service.
- ▶ If a paper jam occurs, never reach under the housing covers with your hand.

14 Avoiding damage to property

14.1 UV lamps

If the UV lamps are replaced improperly, these are damaged. The UV lamps may only be replaced by Durst service technicians.

14.2 Print head maintenance

The print heads can be damaged if the ink dries out.

- ▶ Carry out all prescribed maintenance work on the print heads.

14.3 Careful handling of the encoder ruler

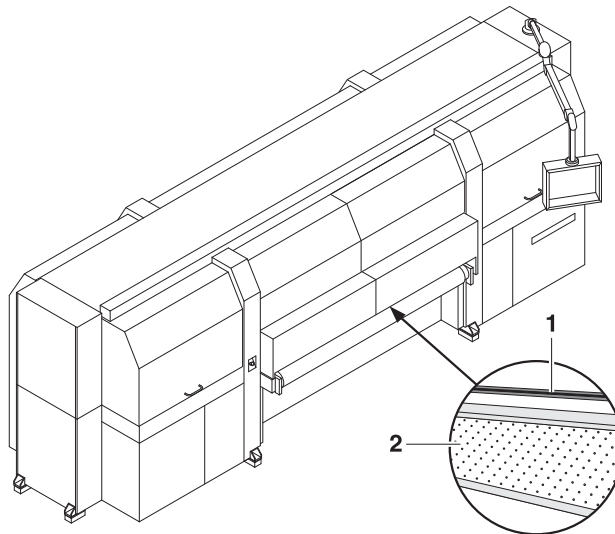


Fig. 4 Encoder ruler

Scratching the encoder ruler (1) reduces the functionality of the printer.

- ▶ Do not touch the encoder ruler with hard objects.

14.4 Media

Unsuitable media can cause a collision with the print carriage.

Examples:

- Bent sheet metal
- Media with uneven surfaces
- Media with insufficient temperature stability
- Media with ribs or ridges

- ▶ Do not load media which could cause a collision.

14.5 Purge

Incorrect cleaning of the slots on the nozzle plate can cause print heads to dry out. This will lead to decreased printing quality or even the failure of individual nozzles.

Due to soiling on the nozzle plate, the ink can be smeared on the printed medium.

Soiled filters and soiling on the conveyor belt can lead to malfunctioning of the exhaust and ventilation. This can cause the following damage:

- Failure of electronic components
- Overheating of the UV lamps
- Damage to the conveyor belt via overheating

Soiling on the rubber rollers and on the encoder ruler reduce print quality.

Unsuitable cleaning tools, corrosive cleaning agents and the penetration of liquids into the printer or workstation can cause damage.

- ▶ Carry out all specified cleaning work.
- ▶ Use only the specified cleaning tools.

14.6 Careful handling of the conveyor belt

- ▶ Do not damage the conveyor belt.
- ▶ Do not soil the conveyor belt.
- ▶ Do not clean the conveyor belt with aggressive cleaning fluids.
- ▶ Remove soiling from the conveyor belt only by means of adhesive tape.

C Description

1 Printer

Task The printer prints coated and uncoated plate or roll media, such as rigid- and flexible-foam panels, aluminum, acrylic glass, polycarbonate, etc. with a width of up to 2.5 m.

Components The printer consists of the following components:

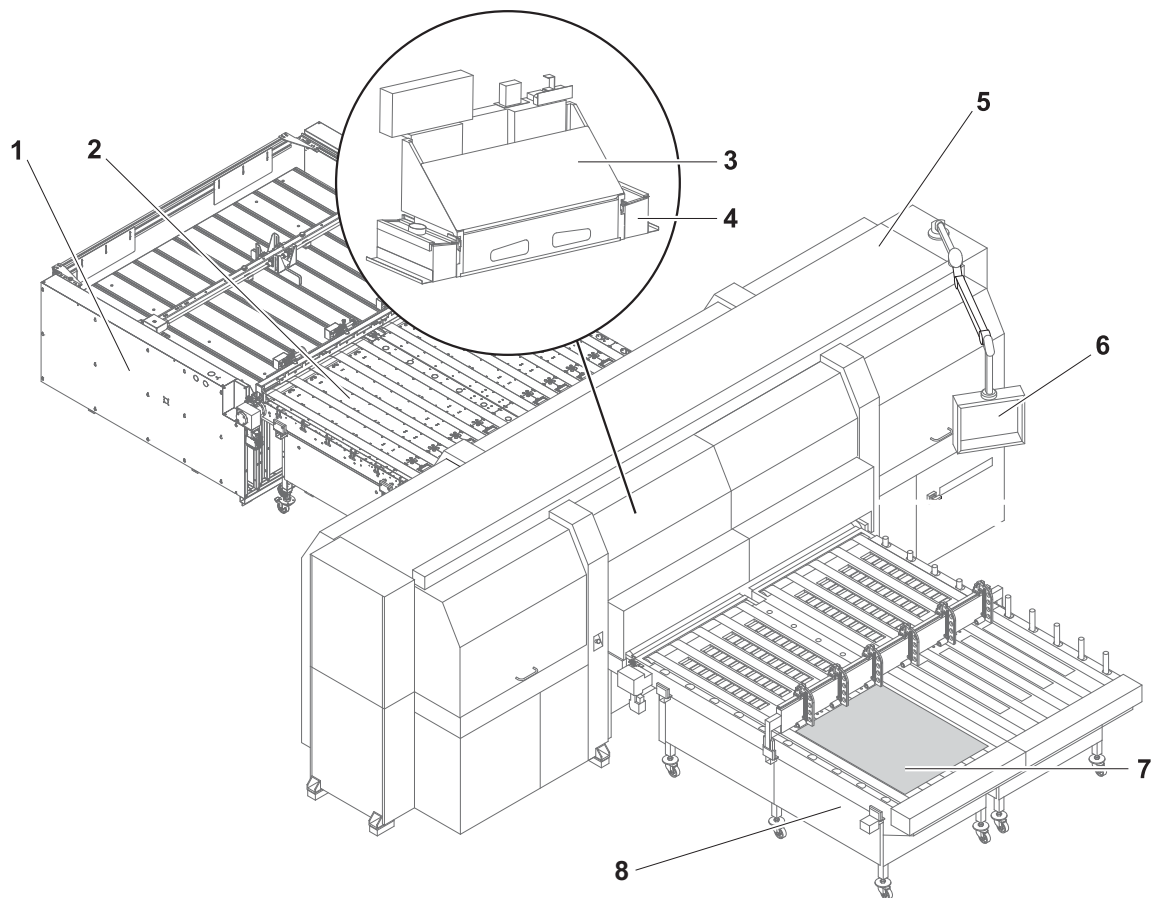


Fig. 5 Components of the printer (here: configuration with automatic feed table, automatic removal table and stacking unit)

- | | | | |
|---|--------------------------|---|----------------------|
| 1 | Stacking unit (optional) | 5 | Printer |
| 2 | Automatic removal table | 6 | Workstation |
| 3 | Print carriage | 7 | Plate medium |
| 4 | UV lamp head | 8 | Automatic feed table |

Function The medium is fed from the loading side. Transport rollers on the inside of the printer (5) transport the medium through the printer during the printing process.

During printing, the print carriage (3) passes over the medium. The print heads on the print carriage print the medium with ink. The UV lamps in the UV lamp head (4) dry the ink on the medium.

The printer is operated at the workstation (6).

Plate media Usage of the automatic feed table (8) allows plate media (7) to be fed continuously on a larger scale.

If a registering table is used, thin plate media can be fed manually. Compressed-air-controlled stops ensure optimal alignment of the plate medium.

On the unloading side the printed plate medium is output on the automatic removal table (2). If the stacking unit (1) is used, the plate medium can be stacked.

Roll media The automatic feed table (8), on which a roller attachment is mounted, can be used to print smaller roll media.

A Heavy Roll Tool can be docked onto the printer on the loading and unloading sides to print larger roll media.

If an XY cutter is used, the roll medium can be cut in the longitudinal and transverse direction on the unloading side.

1.1 Heavy roll tool 30 (optional)

Task Light roll media up to a diameter of 0.3 m can be loaded with the Heavy Roll Tool 30.

Components The Heavy Roll Tool 30 is comprised of an unwinding unit on the loading side and a winding unit on the unloading side. The winding and unwinding units have essentially the same design

- 1 Roll mount
- 2 Roll medium
- 3 Roll-end sensor
- 4 Optical sensor

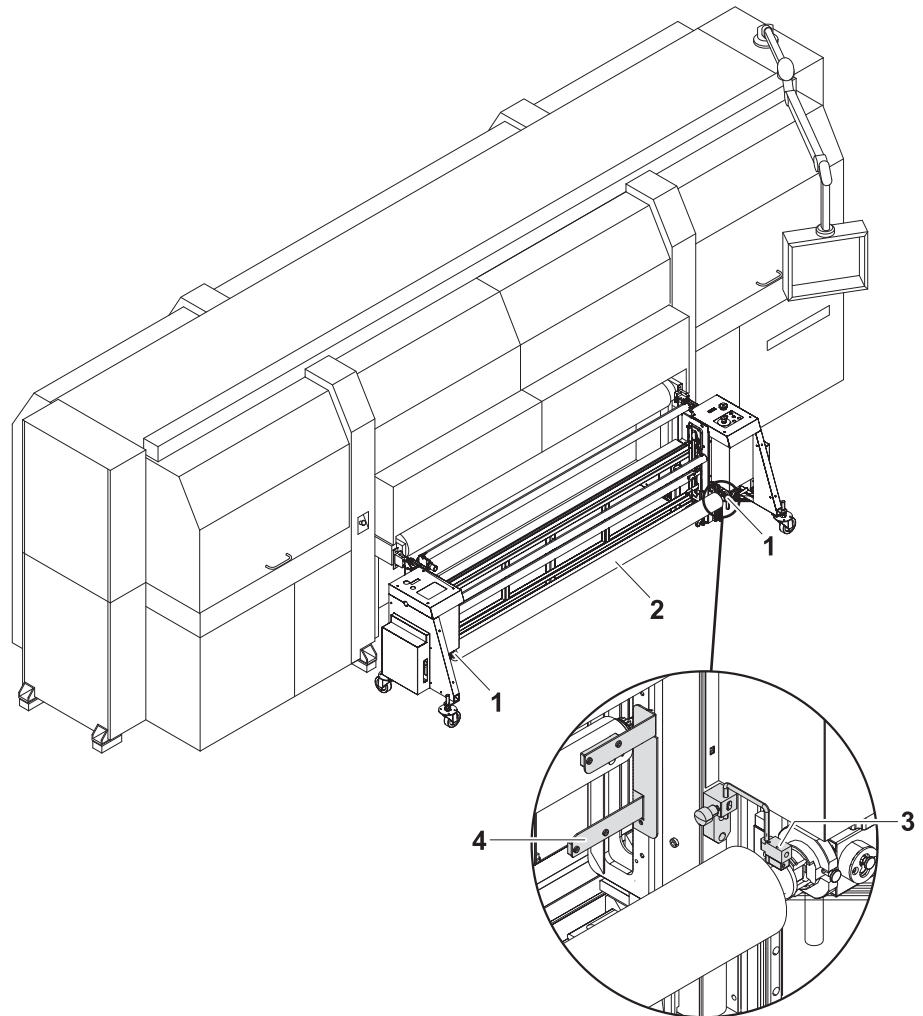


Fig. 6 Components of the heavy roll tool 30 (here: unwinding unit on the loading side)

Function The core of the roll medium (2) rests on an axis that is borne in the roll mounts (1) of the unwinding unit or winding unit. Locking jaws on the axis are pressed against the core using compressed air. This secures the core on the axis.

The roll medium is lead through the printer over the redirection and tensioning rollers and wound on the winding unit on the unloading side.

Drives controlled via optical sensors (4) wind and unwind the medium.

The roll-end sensor (3) on the unwinding unit detects when the roll medium is fully unwound. The printing process is then automatically interrupted, and a message appears in the software.

1.2 Heavy roll tool 60 (optional)

Task Heavy roll media with a diameter between 0.3 m and 0.6 m can be loaded with the Heavy Roll Tool 60.

Components The Heavy Roll Tool 60 is comprised of an unwinding unit on the loading side and a winding unit on the unloading side. The winding and unwinding units have essentially the same design

- 1 Roll mount
- 2 Roll medium

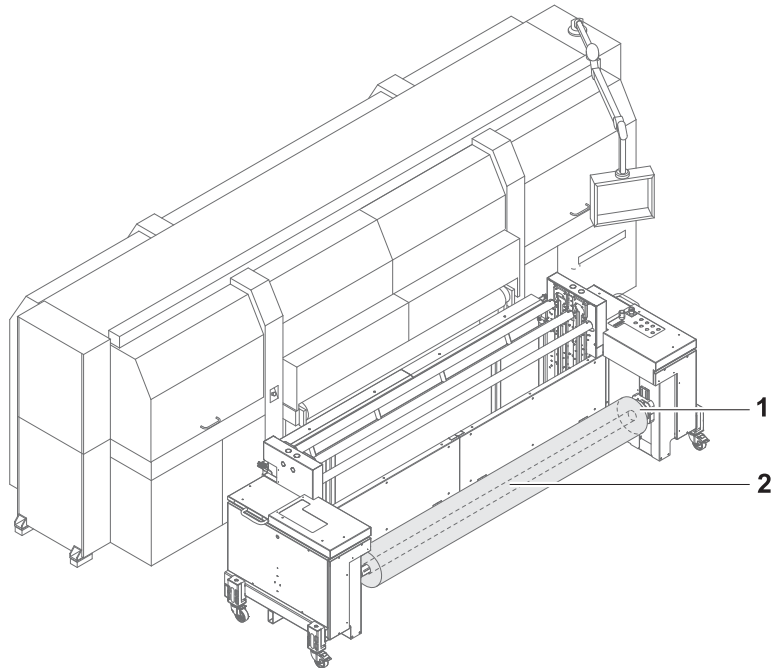


Fig. 7 Components of the heavy roll tool 60 (here: unwinding unit on the loading side)

Function The core of the roll medium (2) rests on an axis that is borne in the roll mounts (1) of the unwinding unit or winding unit. Locking jaws on the axis are pressed against the core using compressed air. This secures the core on the axis.

The roll medium is lead through the printer over the redirection and dancing rollers and wound on the winding unit on the unloading side.

1.3 Stacking unit (optional)

Task The stacking unit stacks printed plate media automatically.

Components

- 1 Limiting plates
- 2 Straight impacter
- 3 Compressed-air nozzles

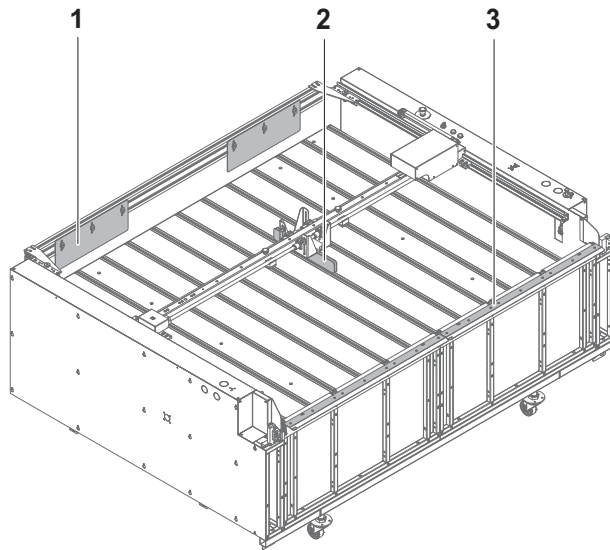


Fig. 8 Stacking unit

Function Compressed-air nozzles (3) generate an air cushion on which the printed plate media slide into the stacking unit. The straight impacter (2) moves to and fro on the axis and automatically pushes the stack flush to the side wall of the stacking unit. The limiting plates (1) are set to the length of the plate media and limit the stack to the rear.

A light barrier detects the height of the plate stack and automatically adjusts the vertical position of the table.

1.4 Workstation

Task The printing process is controlled and monitored at the workstation.

Components

- 1 Monitor with touch screen
- 2 Keyboard
- 3 Computer

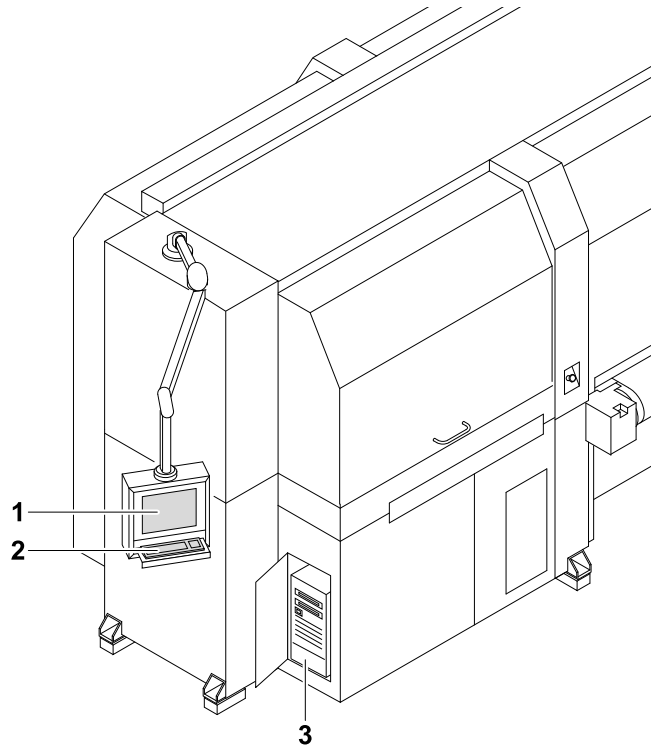


Fig. 9 Workstation

The workstation consists of the computer (3), monitor with touch screen (1) and keyboard (2).

Function The workstation makes available the software for controlling the printer.

The images to be printed can be loaded via a network cable to the workstation from the external CALDERA RIP station.

The operator performs the following activities at the touch screen:

- Preparation of the printer for loading the medium and for maintenance work
- Basic printing settings
- Modification of print parameters
- Sorting of images in the printing queue
- Initiation of the printing process

1.5 Ink supply unit

Task The ink supply unit provides the print heads with ink of different colors.

Components

1 Ink supply unit

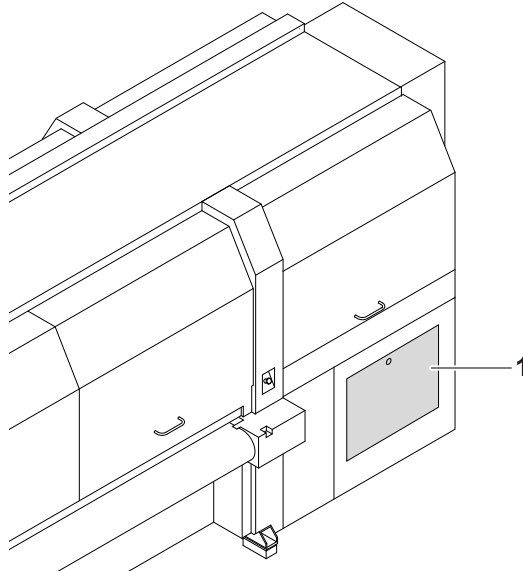


Fig. 10 Ink supply unit

Depending on the version, the ink supply unit (1) contains 4 to 8 ink tanks for ink of different colors and loading compartments for cubitainers.

Function The ink is stored in the ink tanks. New cubitainers are connected in the loading compartments to refill the ink tanks.

1.6 Cleaning system

Task The purging system is used for automatic and manual purging of the print heads.

Components The cleaning system consists of a catch tank and a cleaning access point.

- 1 Suction strips
- 2 Catch tank
- 3 Cleaning access point

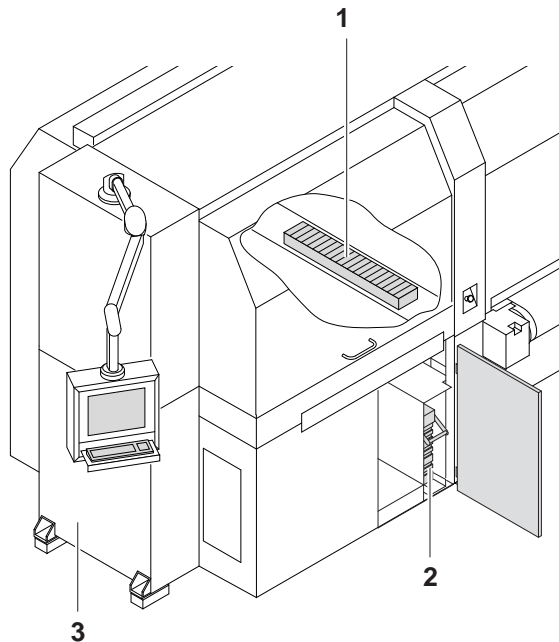


Fig. 11 Cleaning system

Function When the purge cycle is initiated, ink is forced through the print heads and collected in the catch tank (2).

The suction strips (1) suck ink residue from the printheads.

The cleaning access point (3) allows manual cleaning of the print heads from below.

2 Workflow

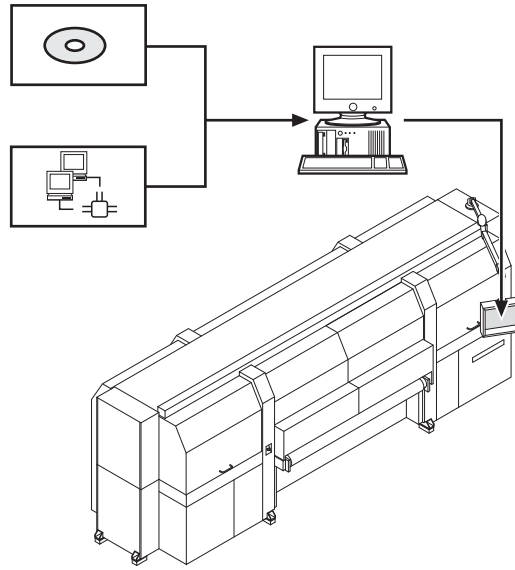


Fig. 12 Workflow

The image files to be printed are loaded onto an external RIP server via CD or network. A DTP professional or an automated workflow then fully prepares the image files for printing. The prepared image files are then transferred to a prepared printer hotfolder via the network.

The file is displayed in the input queue and is available for editing additional printing options, such as image cropping, media channel assignment or printing mode (2–5 Pass/HighSpeed/Draft glossy or matt).

D Transport, installation and commissioning

Transport, installation and commissioning are performed by service technicians authorized by Durst Phototechnik AG.

E Operation

1 Overview of daily operation

1.1 Carrying out the daily work

- Preparing printer**
- ✓ The workstation is booted up
 - ✓ Printer is switched on with the main switch
 - 1. Close flip doors.
 - 2. Start the software.
 - 3. Press **Printer > Printer** in the software.
 - 4. Under **Printer Startup**, press the **Initialize** button.
 - ↳ The print carriage, table fan and all motors move to the reference position.
 - ↳ The interface between the internal electronics and workstation is initialized.
 - ↳ The UV lamp system is initialized.
 - 5. Carry out the work of daily print head maintenance (→ Page 130 / Print head maintenance).
 - 6. Check fill level of ink and refill ink if necessary.
- Printing**
- 7. Load medium.
 - 8. If printing extends past the medium edge, tape the conveyor belt at the edges of the medium to prevent soiling.
 - 9. Prepare images on external RIP server and send them to printer.
 - 10. Select or check print options at the workstation.
 - 11. Move images to the queue.
 - 12. Print media.
- Carrying out daily shutdown**
- 13. Print a test image and archive it.
 - 14. Press **Printer > Printer** in the software.
 - 15. Press the **Daily** button under **Printer Shutdown**.
 - ↳ The ink heating is switched off.
 - ↳ The UV lamp system is switched off.
 - 16. Do **not** initialize the print carriage so that the print carriage remains in the vertical position of the last print.
 - 17. Close all doors to prevent ambient light from shining in.
- i** For economical work, we recommend not shutting down the workstation when switching off the printer.
- This allows you to prepare files and transfer data from the RIP server to the workstation even if the printer is switched off.
- 18. Exiting the software. Do **not** switch off workstation or printer when doing so.

2 Printer

2.1 Main operating elements and displays

- 1 Key switch
- 2 Lamp
- 3 Acoustic signaller
- 4 Main switch

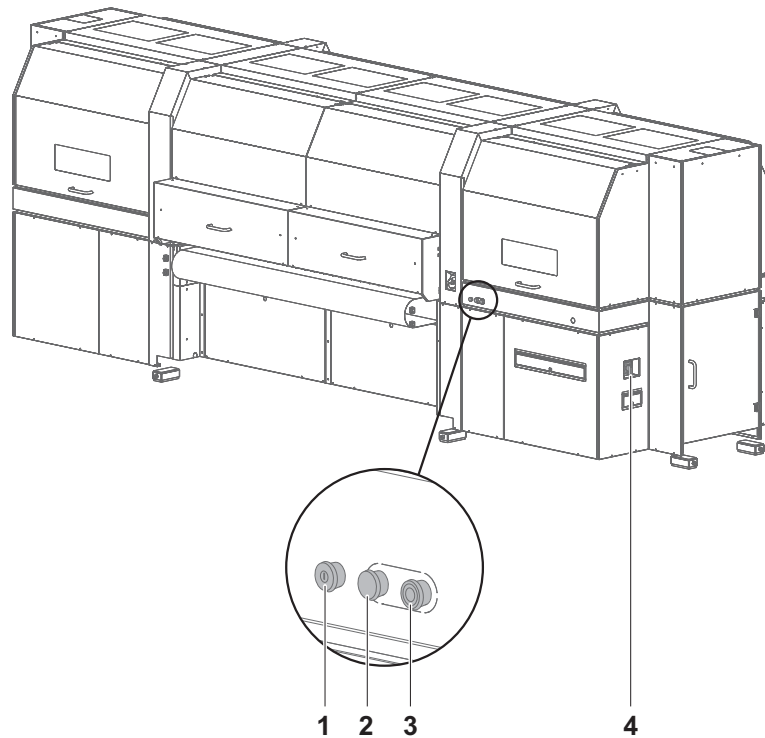


Fig. 13 Main operating elements

Button The main operating elements and displays have the following function:

Position	Operating element	Function
1	Key switch	<p>Select operating mode:</p> <ul style="list-style-type: none"> ■ 0: Safety setting: <ul style="list-style-type: none"> – All drives blocked – UV lamps switched off – Electrical components still energized – Emergency-Stop switch active ■ 1: Normal mode (all safety circuits must be closed; otherwise, the corresponding component is blocked) <ul style="list-style-type: none"> – All connected peripheral devices are operated ■ 2: Device-change position (only active for 10 min) <ul style="list-style-type: none"> – Enables changing of peripheral devices (tables, stacking unit, Heavy Roll Tool, etc.) without the main switch dropping to 0. – All drives blocked – UV lamps switched off – Electrical components still energized – Emergency-Stop switch bridged
2	Lamp	For manual loading of plate media: Lamp lights up when the next plate medium can be inserted.
3	Acoustic signaller	For manual loading of plate media: An acoustic signal is emitted when the next plate medium can be inserted.
4	Main switch	<ul style="list-style-type: none"> ■ Switching the printer on and off (electrical components still energized) ■ The printer is only switched off at the main switch for maintenance or a longer standstill. ■ The workstation is still supplied with power when the printer is switched off at the main switch.

Operating mode **2** can only be maintained for max. 10 minutes. The printer is then switched off at the main switch and must be switched on again and reinitialized.

The printer can only be switched to the **0** or **1** operating mode if all the control connections for peripheral devices are bridged. This is ensured by the following measures:

- Connection of a peripheral device
- Insertion of a jumper

2.2 Workstation

2.2.1 Booting up workstation

- ▶ Switch on main switch of computer.
 - ↳ The LED illuminates.
 - ↳ The computer boots up.
 - ↳ The Linux screen interface appears on the monitor after booting up.

2.2.2 Shutting down workstation

i Only the software should be exited daily, without shutting down the workstation. The monitor switches off automatically.

We recommend only shutting down the workstation if the unit will not be used for more than two days.

- ✓ The software has been exited
- ▶ Shut down Linux operating system.
- ↳ Once the Linux operating system has shut down, the workstation switches off automatically.

2.2.3 Connecting a USB stick/an external USB hard disk

i Data transfer from an external USB hard disk, for example, only makes sense via the connected RIP server since the image data to be printed must be in the 1-bit format.

NOTICE

Connection of an incompatible device to the workstation!

Damage to the workstation

- ▶ Connect only SELV-compatible devices to the workstation.

- ▶ Connect a USB stick/USB hard disk to the USB port of the computer.

3 Automatic feed table

3.1 Operating modes

The automatic feed table can be operated in 3 operating modes:

- Automatic mode for serial printing
- Semi-automatic mode for printing individual plate media
- Manual mode for individual plate media with excess length

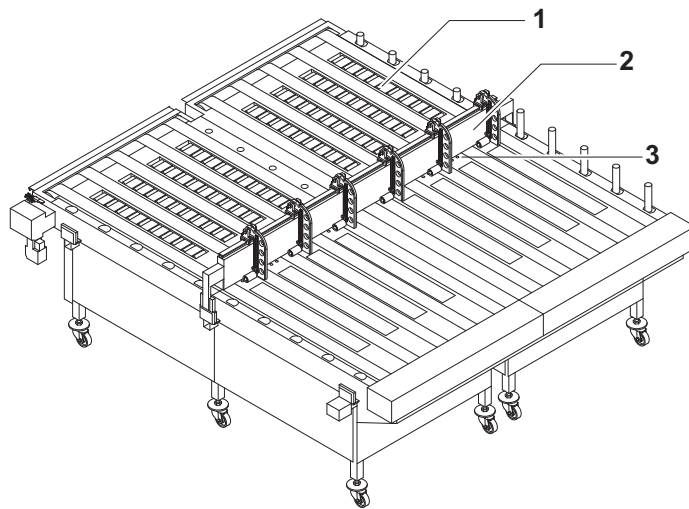


Fig. 14 Automatic feed table overview

Automatic mode In automatic mode the plate media are stacked on each other. The front stop (2) keeps the plate media back. Only the lowest plate medium respectively is transported through the gap between the front stop and the conveyor belt to the printer.

Semi-automatic mode The front stop (2) is not used in semi-automatic mode. Pins (3) that travel automatically upwards serve as a front stop. If drawing-in is triggered manually, the pins travel downwards and enable transporting of the plate medium.

Manual mode The front stop (2) is not used in manual mode. In this operating mode the rolls (1) move upwards. The plate medium is laid on the rolls of the feed table and pushed manually on the rolls until the front stop of the printer.

3.2 Operating elements

- 1 Rolls
- 2 Roll Up – Down button
- 3 Operator panel for semi-automatic mode

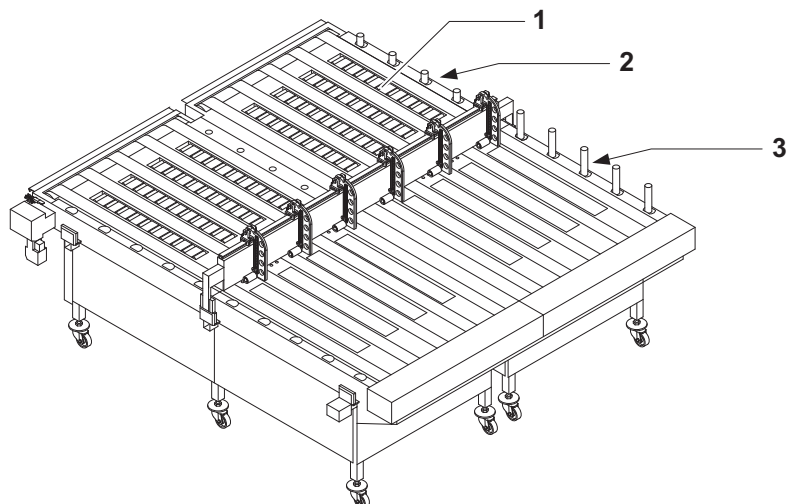


Fig. 15 Operator panels

Semi-automatic mode One operator panel (3) each is located on the right- and left-hand side of the feed table for semi-automatic mode.


The buttons have the following function:

Button designation	Function
Right side: Ready – Right Left side: Ready – Left	Starting drawing-in of the plate medium
Right side: Stop – Right Left side: Stop – Left	Stopping drawing-in of the plate medium
Selector switch Auto – Man/Ext	Switch between semi-automatic and automatic mode

Manual mode The rolls (1) can be travelled up and down with the **Roll Up – Down** buttons (2).

3.3 Operating the automatic feed table

3.3.1 Docking the automatic feed table

 CAUTION
<p>High weight of the feed table!</p> <p>Danger of crushing during docking</p> <ul style="list-style-type: none"> ▶ Only dock the feed table with two persons. ▶ Do not reach into the area of the printer guide while pushing.

1. Set the key switch at the printer to **2** (device-change position).

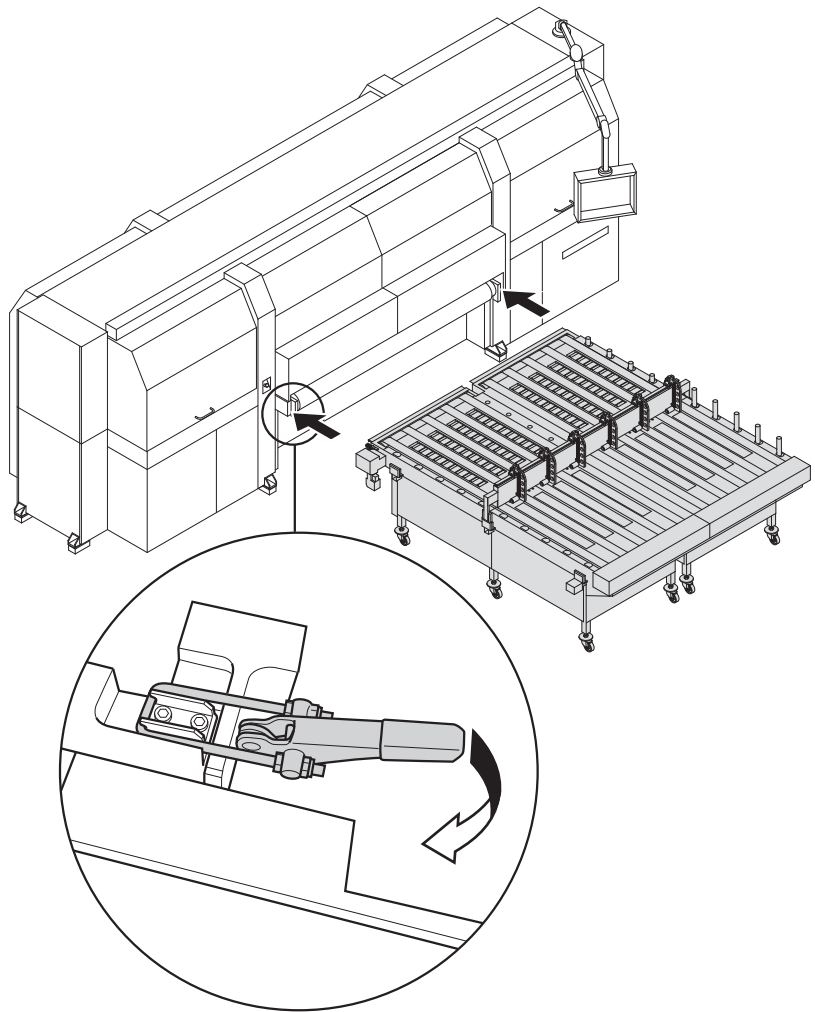


Fig. 16 Docking the automatic feed table

2. Slide the feed table into the guide of the printer.
3. Close clamping lock.
4. Connect the power cable and compressed-air hose to the external supply.

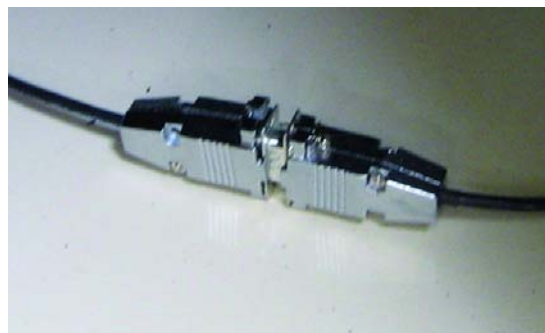


Fig. 17 Connecting the control cables

5. Connect the control cable of the feed table with the control cable of the printer.
6. Set the key switch at the printer to **1** (normal mode).

3.4 Adjusting the front stop

The front stop has to be set to the width and thickness of the plate media. The plate media lying on it are held back. The front stop can be removed completely, if required, for loading in semi-automatic mode.

3.4.1 Removing the front stop

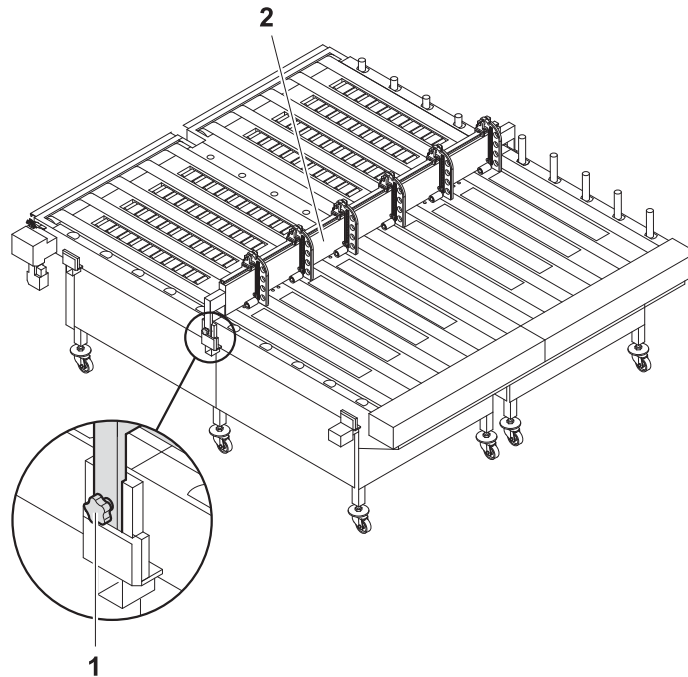


Fig. 18 Removing the front stop

1. Open the fastening screw (1) on the right- and left-hand side of the feed table.
2. Remove the front stop (2).

3.4.2 Adjusting the passing height

The passing height (gap between the front stop and the conveyor belt) has to be adjusted depending on the thickness of the plate medium.

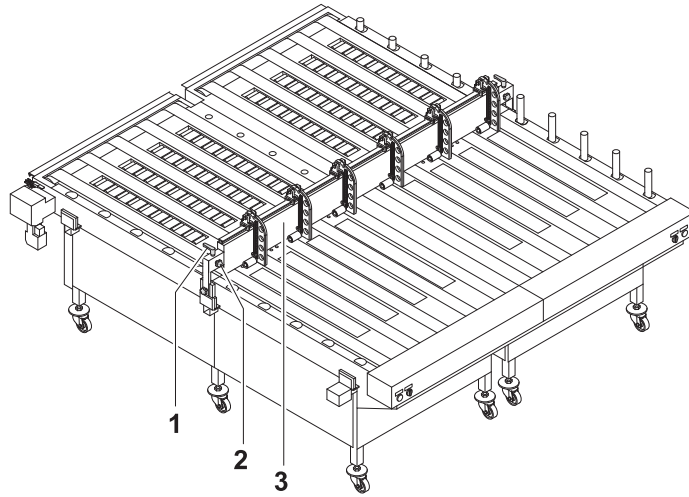


Fig. 19 Adjusting the passing height

1. Loosen the fixing screw (2).
2. Use the lever (1) to adjust the height of the front stop (3).
3. Tighten the fixing screw.

3.4.3 Adjusting the swivel stops

The swivel stops guide the plate media laterally and keep the tracks at a defined distance.

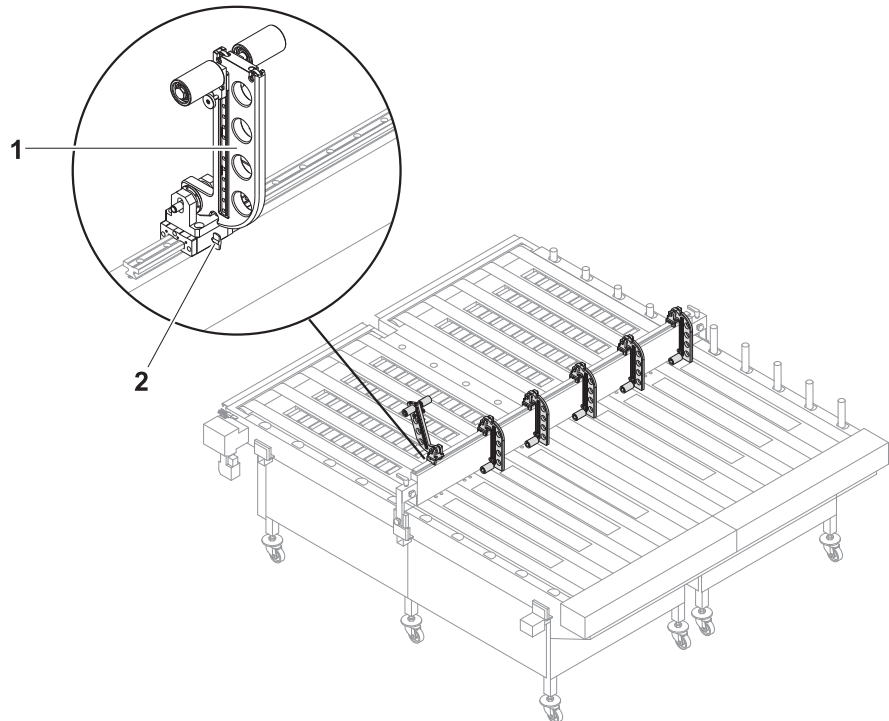
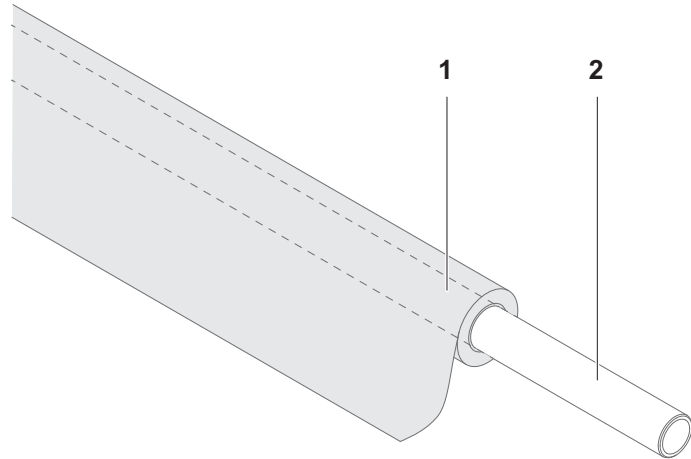


Fig. 20 Adjusting the swivel stops

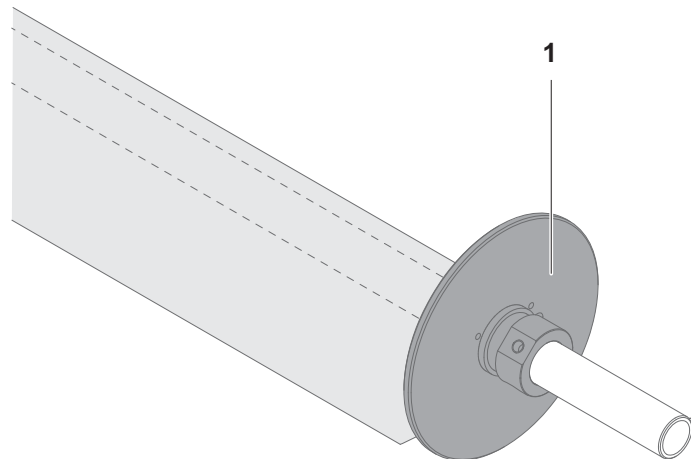
1. Carry out the following steps to adjust the swivel stops (1) to the width of the plate media:
 - Loosen the fixing screw (2).
 - Move the swivel stop on the guide rail in accordance with the desired width.
 - Tighten the fixing screw.
2. Depending on the number of planned tracks swivel down the corresponding swivel stops.

3.4.4 Mounting the roller attachment (option)

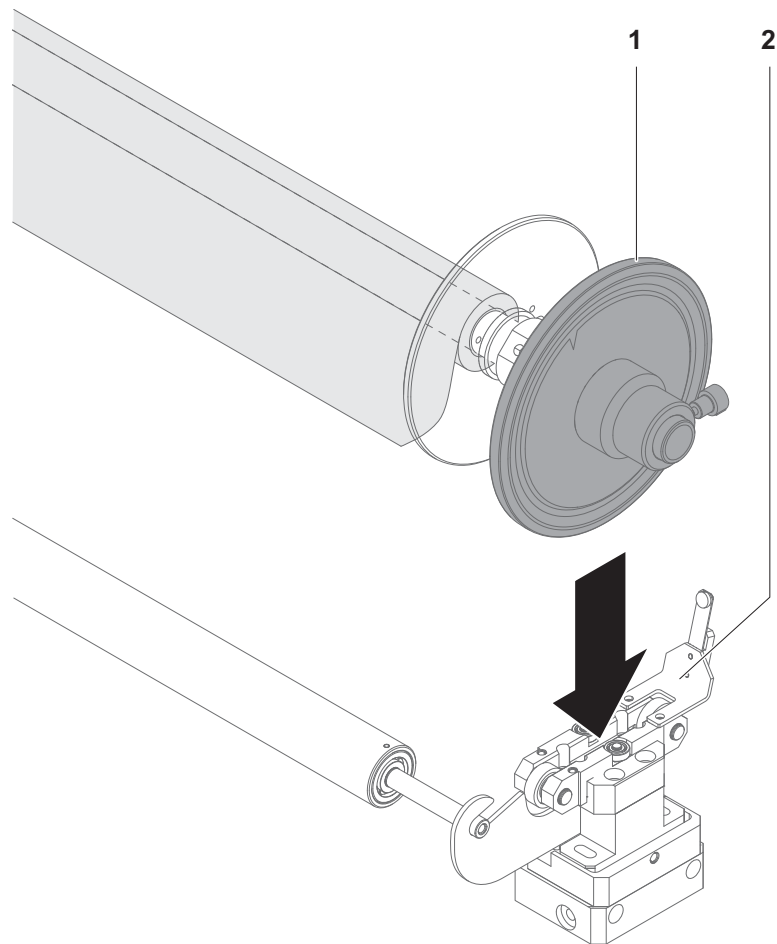
The roller attachment can be mounted to print small roll media.



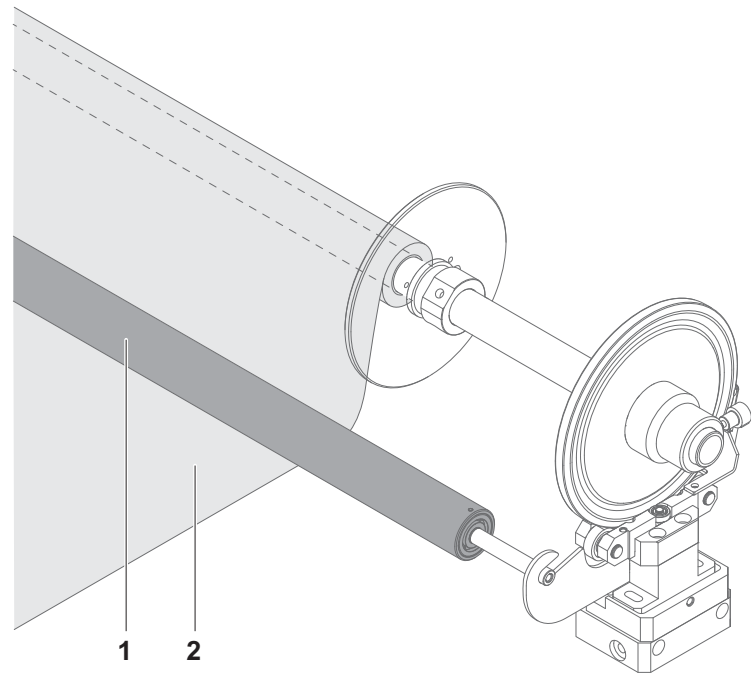
1. Slide the roll medium (1) onto the axle (2).



2. Slide on a roll holder (1) each at both end and fixate the roll medium at the desired position.



3. Slide one running wheel (1) each on at both ends. Position the running wheels so that they can be placed into the bearings (2) on both sides.
4. Place the axle with the running wheels on the bearings.



5. Lay the roll medium (2) under the redirection roller (1) to the printer.

4 Automatic removal table

4.1 Operating elements

- 1 Controller
2 Main switch

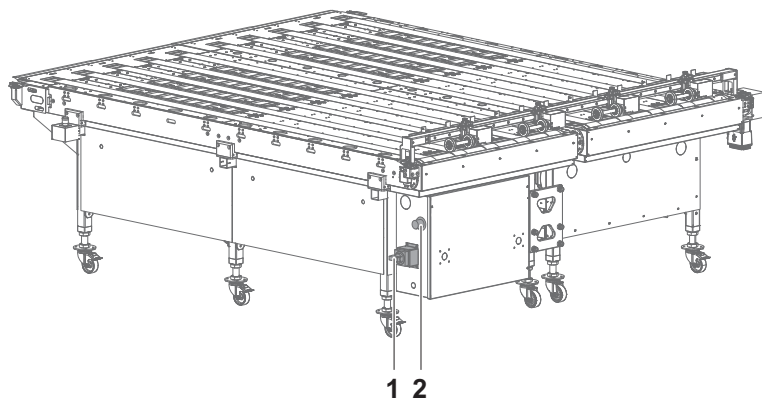


Fig. 21 Operating elements

The suction power of the suction can be set with the controller (1).

The removal table is switched on and off with the main switch (2).

4.2 Docking the automatic removal table

⚠ CAUTION

High weight of the feed table!

Danger of crushing during docking

- ▶ Only dock the feed table with two persons.
- ▶ Do not reach into the area of the printer guide while pushing.

1. Set the key switch at the printer to **2** (device-change position).

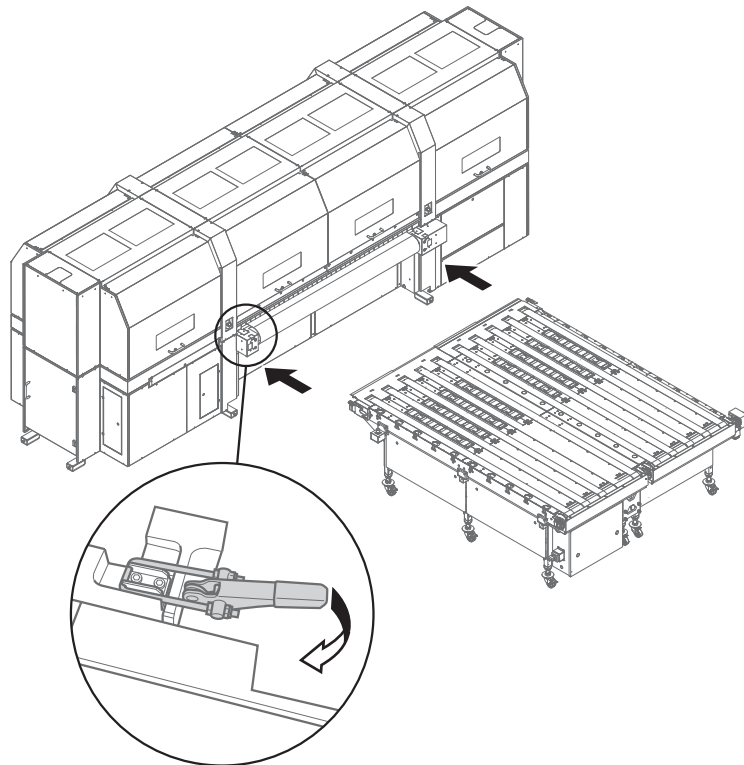


Fig. 22 Docking the automatic removal table

2. Slide the feed table into the guide of the printer.
3. Close clamping lock.
4. Connect the power and control cables.
5. Connect the compressed-air hose.
6. Set the key switch at the printer to **1** (normal mode).

4.3 Setting the ejection equipment

The ejection equipment can be moved horizontally and vertically.

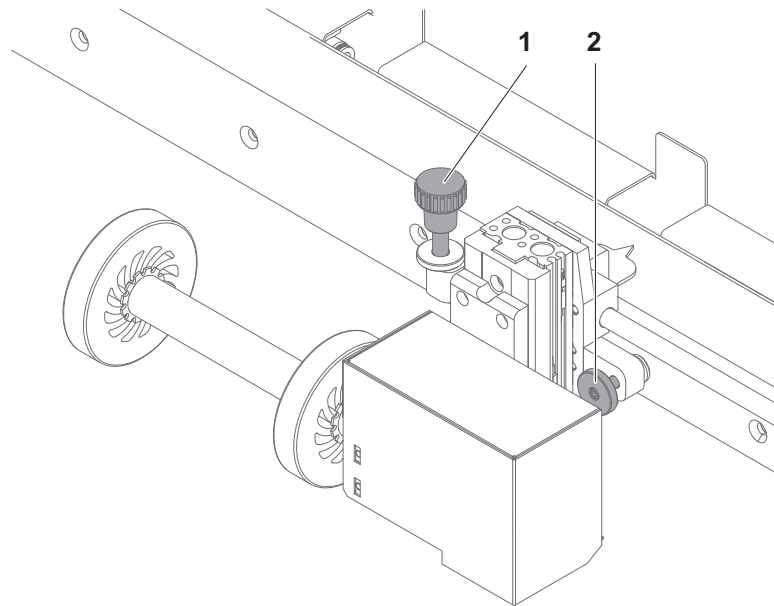


Fig. 23 Setting the ejection equipment

The horizontal position is fixed with fixing screw (2), the vertical position with fixing screw (1).

- ▶ Carry out the following steps to set the ejection equipment:
 - Loosen the corresponding fixing screw.
 - Move the ejector equipment to the desired position.
 - Tighten the fixing screw.

5 Registering table (optional)

5.1 Operating elements

- 1 Main switch
- 2 Emergency-Stop switch
- 3 **START** buttons
- 4 **STOP** button
- 5 Footswitch

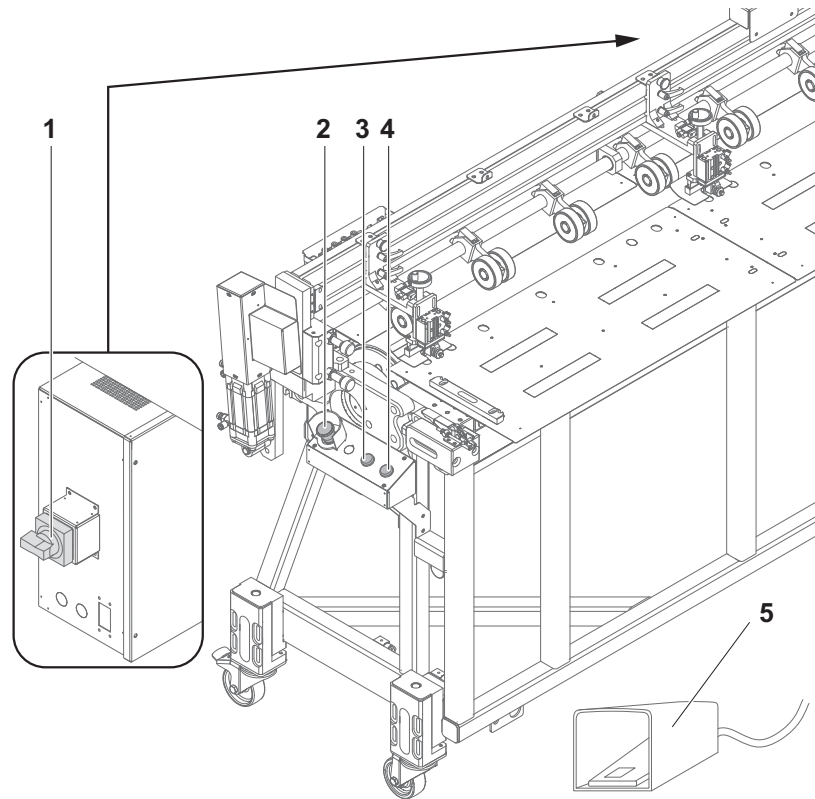


Fig. 24 Operating elements

The operating elements have the following function:

Position	Operating element	Function
1	Main switch	Switching the registering table on/off
2	Emergency-Stop switch	Triggering an emergency stop
3	START button	Switching on the registration table
4	STOP button	Switching off the registration table
5	Footswitch	Starting/stopping drawing-in of the plate medium

The footswitch can be used as an alternative to the **START/STOP** button.

5.2 Docking the registration table

⚠ CAUTION

High weight of the registration table!

Danger of crushing during docking

- ▶ Only dock the registration table with two persons.
- ▶ Do not reach into the area of the printer guide while pushing.

1. Set the key switch at the printer to **2** (device-change position).

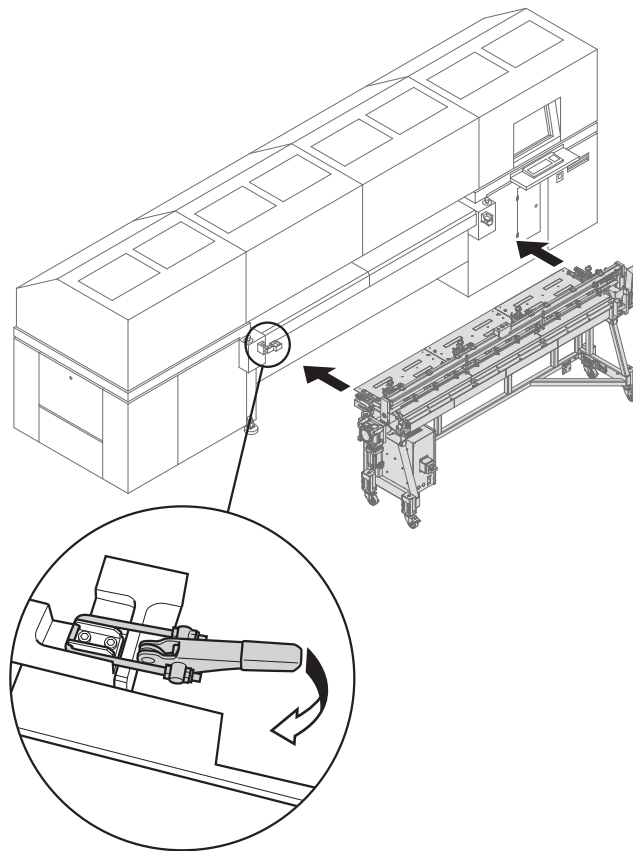


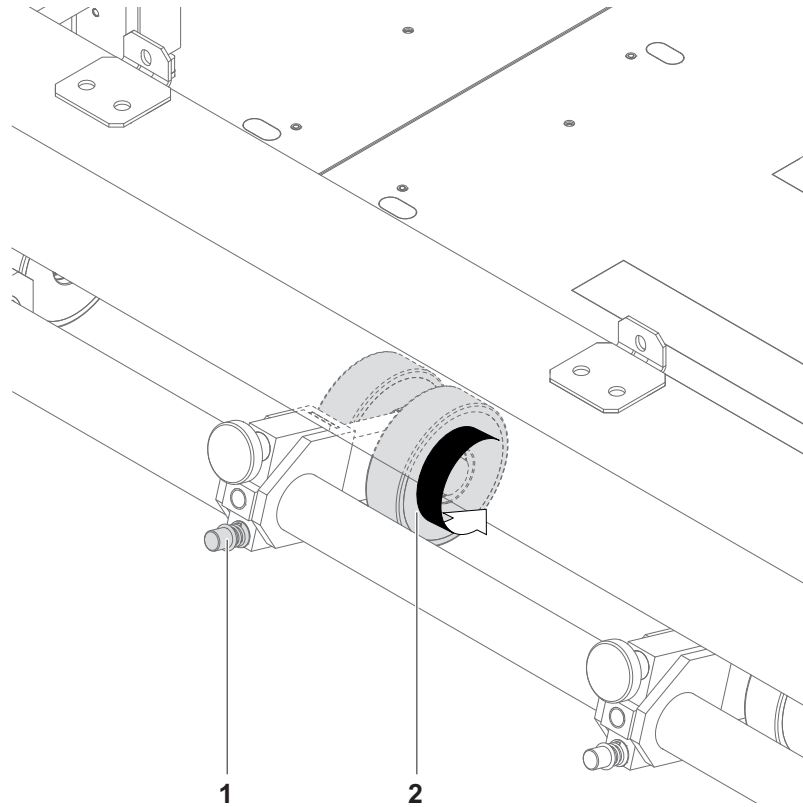
Fig. 25 Docking the registration table

2. Slide the registration table into the guide of the printer.
3. Close clamping lock.
4. Connect the power and control cables.
5. Connect the compressed-air hose.
6. Set the key switch at the printer to **1** (normal mode).

5.3 Adjusting the press rolls

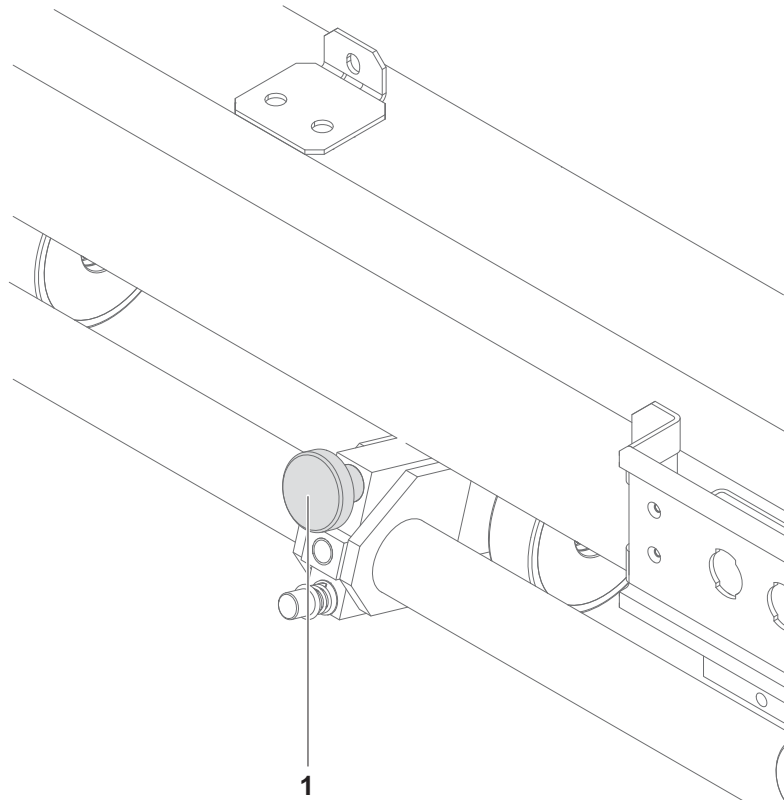
5.3.1 Swivelling the press rolls

The press rolls can be swiveled upward if necessary.



1. Loosen the fixing screw (1).
2. Swivel the press roll (2).
3. Tighten the fixing screw.

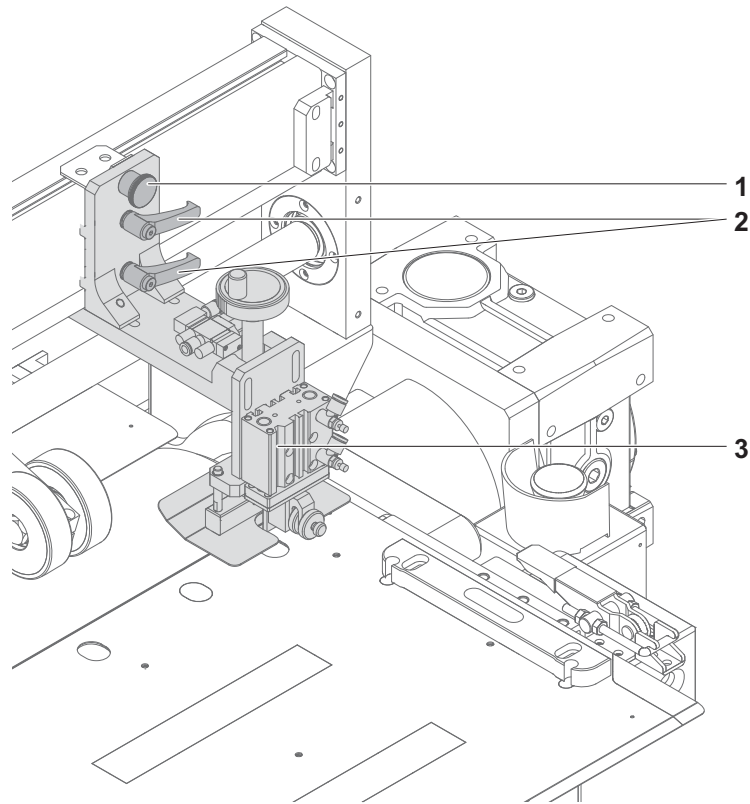
5.3.2 Adjusting the contact pressure



- ▶ Adjust the contact pressure using the adjusting screw (1).

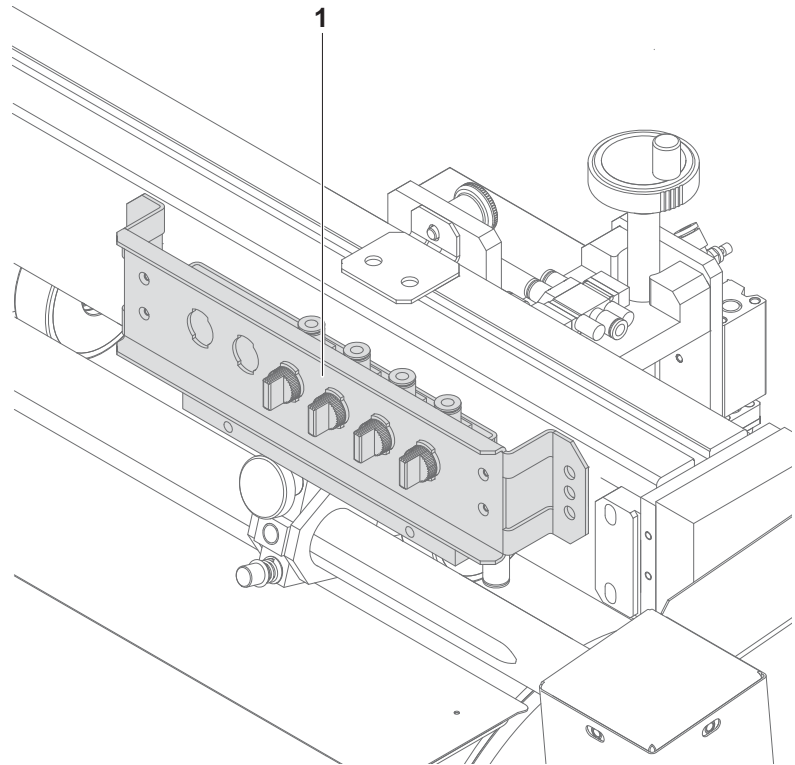
5.4 Adjusting the stops

5.4.1 Moving the stop horizontally



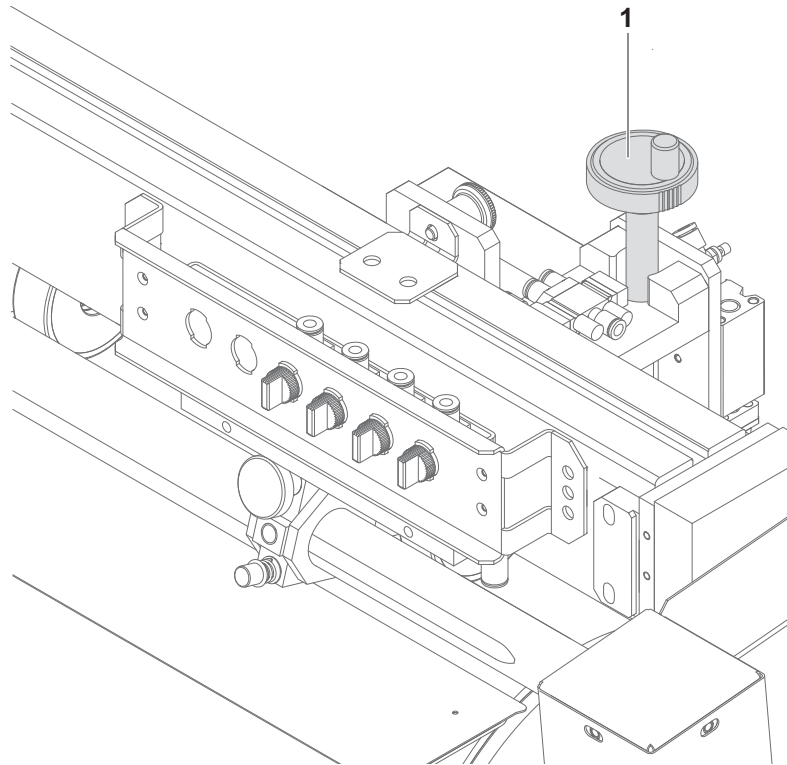
1. Loosen the fixing lever (2).
2. Pull the stop unit (3) upward and keep it there.
3. Pull out the fixing pin (1).
4. Slide the stop unit to the desired position.
5. At the desired position, let the fixing pin latch in and move the stop unit downward.
6. Tighten the fixing lever.

5.4.2 Adjusting the compressed-air supply



- ▶ Use the control knobs (1) to switch the corresponding stops on/off.

5.4.3 Adjusting the height of the inlet plates



- ▶ Adjust the height of the inlet plates using the crank (1).

6 Heavy roll tool 30 (optional)

6.1 Docking Heavy Roll Tool 30

The unwinding unit is docked on the loading side, and the winding unit is docked on the unloading side in the same manner.

1. Set the key switch at the printer to **2** (device-change position).

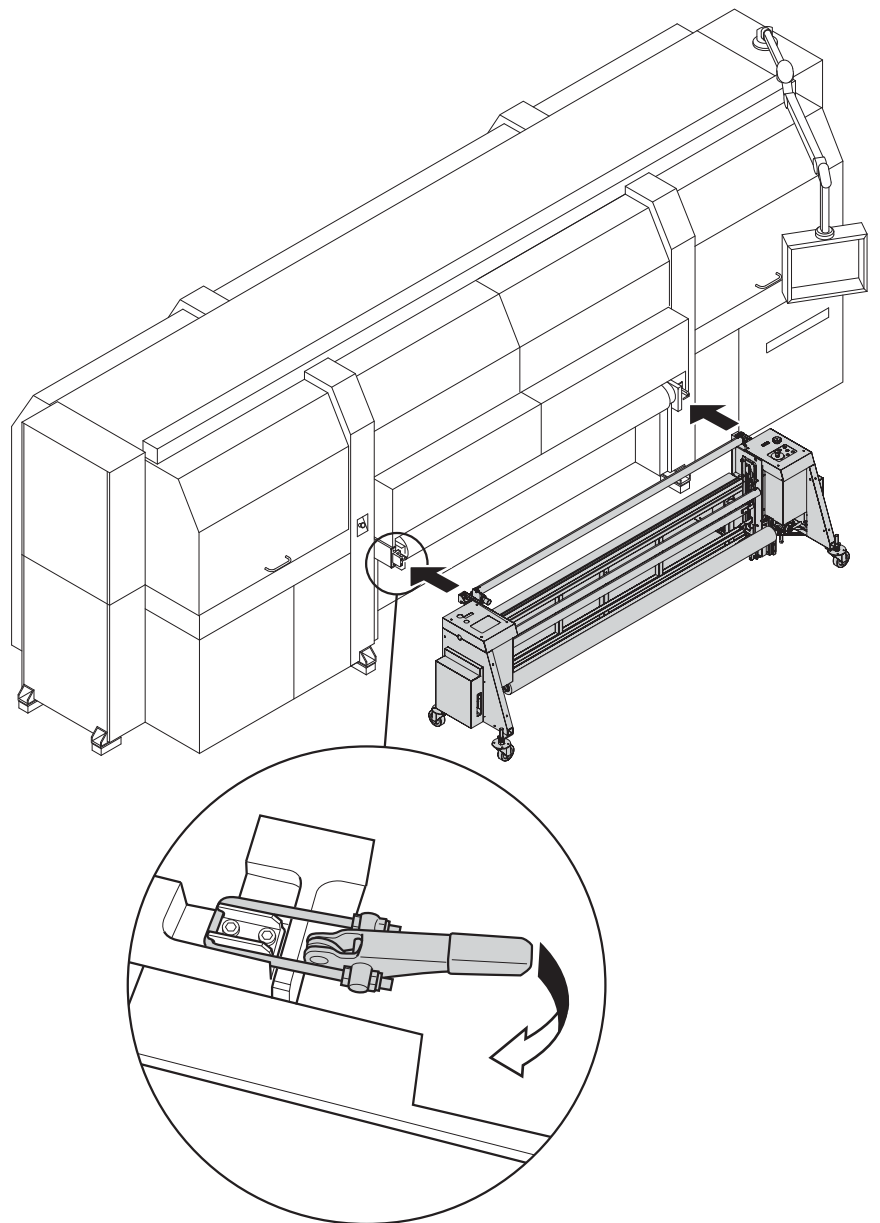


Fig. 26 Sliding the Heavy Roll Tool 30 into the guide and closing the clamping lock

2. Slide the Heavy Roll Tool 30 into the guide of the printer.
3. Close clamping lock.

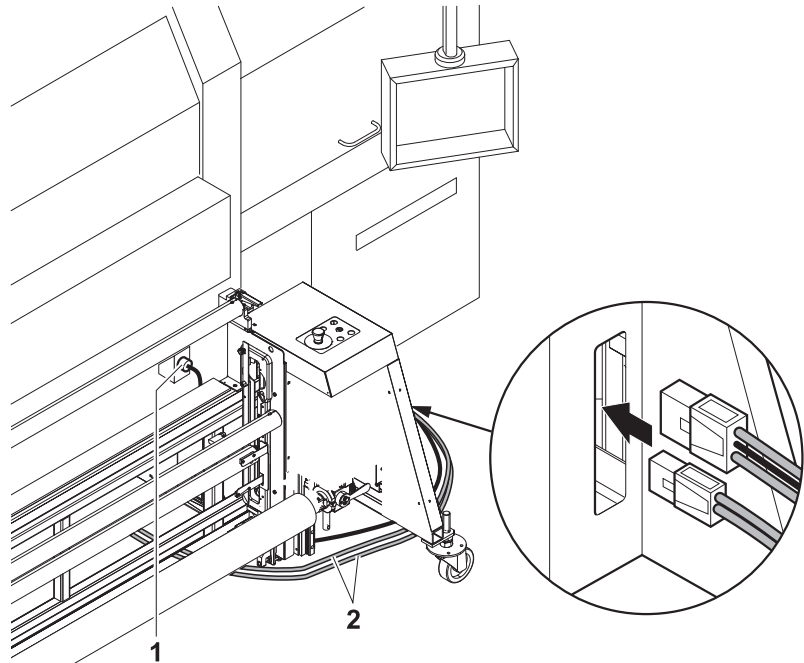


Fig. 27 Connect the power and control cables.

4. Connect power cable to the connector on the unwinding unit and to the connector on the printer (1).
5. Connect the control cable (2) to the connection on the unwinding and winding units.
6. Set the key switch at the printer to **1** (normal mode).

6.2 Operating drives of the unwinding and winding units

The drives of the unwinding and winding units are operated at the operator panels, one of which is located on each of the right and left sides.

- 1 **UP** button
- 2 **DOWN** button
- 3 Selector switch
- 4 **REVERSE** button
- 5 **FORWARD** button

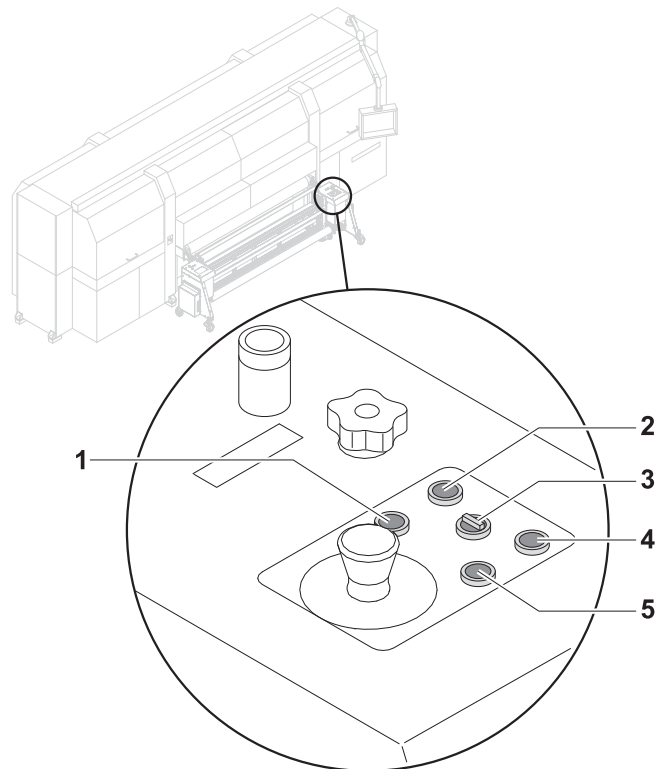


Fig. 28 Operator panel

6.2.1 Setting axis drives to automatic operation

- ▶ Depending on the desired rotation direction, set the selector switch (3) to **Autom. Forward** or **Autom. Reverse**.

6.2.2 Rotating axis drives forward and in reverse manually

1. Set selector switch (3) to **Manual**.
2. Press and hold the **FORWARD** or **REVERSE** button as long as desired.

6.2.3 Moving unwinding or winding unit up or down

- ▶ Press and hold the **UP** or **DOWN** button as long as desired.

7 Heavy roll tool 60 (optional)

7.1 Docking Heavy Roll Tool 60

The unwinding unit is docked on the loading side, and the winding unit is docked on the unloading side in the same manner.

1. Set the key switch at the printer to **2** (device-change position).

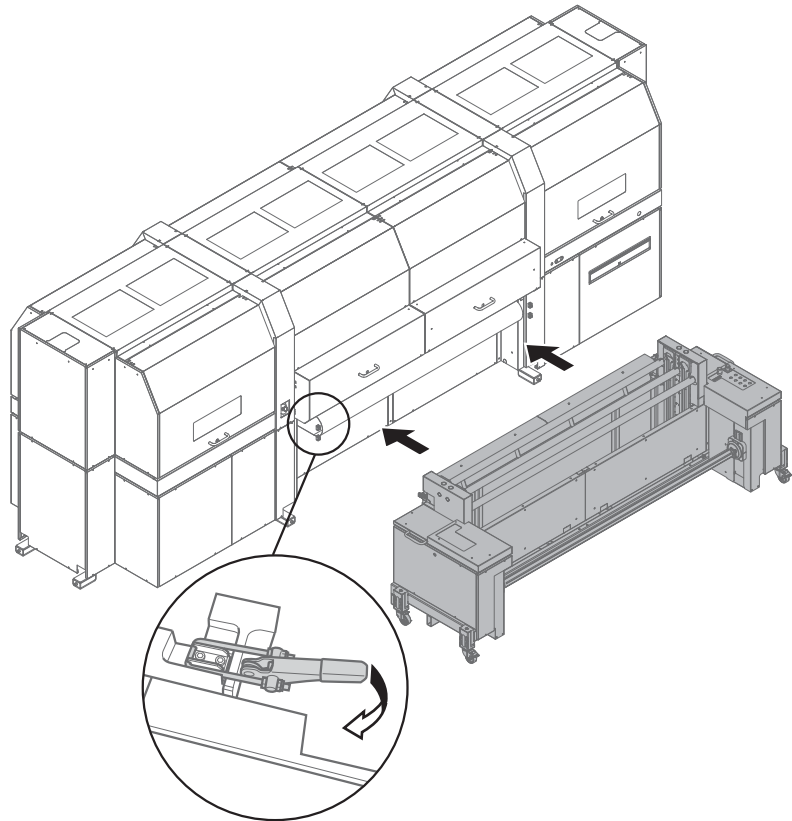


Fig. 29 Sliding the Heavy Roll Tool 60 into the guide and closing the clamping lock

2. Slide the Heavy Roll Tool 60 into the guide of the printer.
3. Close clamping lock.
4. Connect power cable to the connector on the unwinding unit and to the connector on the printer.
5. Connect the control cable to the connection on the unwinding and winding units.
6. Set the key switch at the printer to **1** (normal mode).

7.2 Operating drives of the unwinding and winding units

7.2.1 Operating elements

- 1 **START** button
- 2 Lamp
- 3 **FORWARD** button
- 4 **UP** button
- 5 Scale
- 6 Controller
- 7 Emergency-Stop switch
- 8 **DOWN** button
- 9 **REVERSE** button
- 10 Selector switch
- 11 **LOAD** button

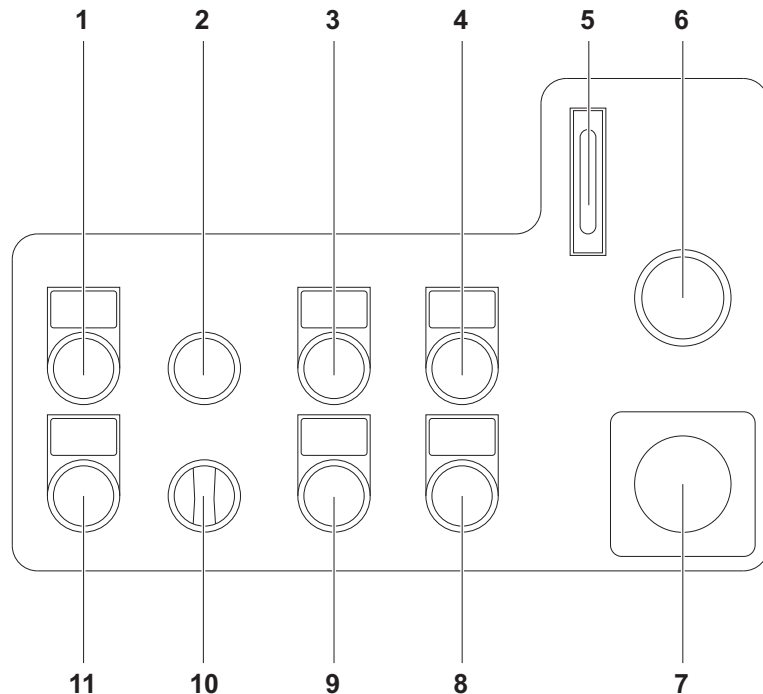


Fig. 30 Operating elements

The drives of the unwinding and winding units are operated at the operator panels, one of which is located on each of the right and left sides.

Position	Button designation	Function
1	START button	Activating the Heavy Roll Tool 60
2	Lamp	<ul style="list-style-type: none"> ■ Lights up: Heavy Roll Tool 60 operating ■ Flashing: Fault (e.g. error message or no medium present)
3	FORWARD button	Transporting the roll medium forward by hand
4	UP button	Moving the roll mounts upward
5	Scale	Reading the horizontal position
6	Controller	Fine positioning the roll medium horizontally
7	Emergency-Stop switch	Triggering an emergency stop
8	DOWN button	Moving the roll mounts downward

Position	Button designation	Function
9	REVERSE button	Transporting the roll medium backward by hand
10	Selector switch	Switching between the following operating modes: <ul style="list-style-type: none"> ■ Manual: Manual mode ■ Auto Forward: Forward direction of movement in automatic mode ■ Auto Reverse: Reverse direction of movement in automatic mode
11	LOAD button	Moving the dancing rollers upward

7.2.2 Commissioning winding and unwinding units

Carry out the following steps respectively at the winding and unwinding units:

✓ The winding and unwinding units are connected to the printer

1. Set selector switch to **Manual**.

2. Press the **START** button.

↳ The lamp lights up

Power is supplied to the Heavy Roll Tool 60 and it can be operated.

7.2.3 Setting axis drives to automatic operation

✓ Winding and unwinding units are operating

► Depending on the desired rotation direction, set the selector switch to **Auto Forward** or **Auto Reverse**.

7.2.4 Rotating axis drives forward and in reverse manually

✓ Winding and unwinding units are operating

1. Set selector switch to **Manual**.

2. Press and hold the **FORWARD** or **REVERSE** button as long as desired.

7.2.5 Moving the roll mounts upward or downward

✓ Winding and unwinding units are operating

NOTICE

Danger of collision while moving up and down with opened roll mounts!

Damage to the Heavy Roll Tool

► Close the roll mounts before moving up or down.

0. Press and hold the **UP** or **DOWN** button as long as desired.

7.2.6 Moving the dancing rollers upward

- ✓ Winding and unwinding units are operating
- ▶ Press the **LOAD** button.

8 XY Cutter (optional)

The XY Cutter can be used in 2 modes:

- Cutting mode (cutting function is being used)
- Bypass mode (cutting function is not being used)

8.1 Operating elements

- 1 On/Off switch conveyor belt
- 2 Selector switch
- 3 **UP** button
- 4 **DOWN** button
- 5 Operator panel
- 6 Footswitch
- 7 Main switch

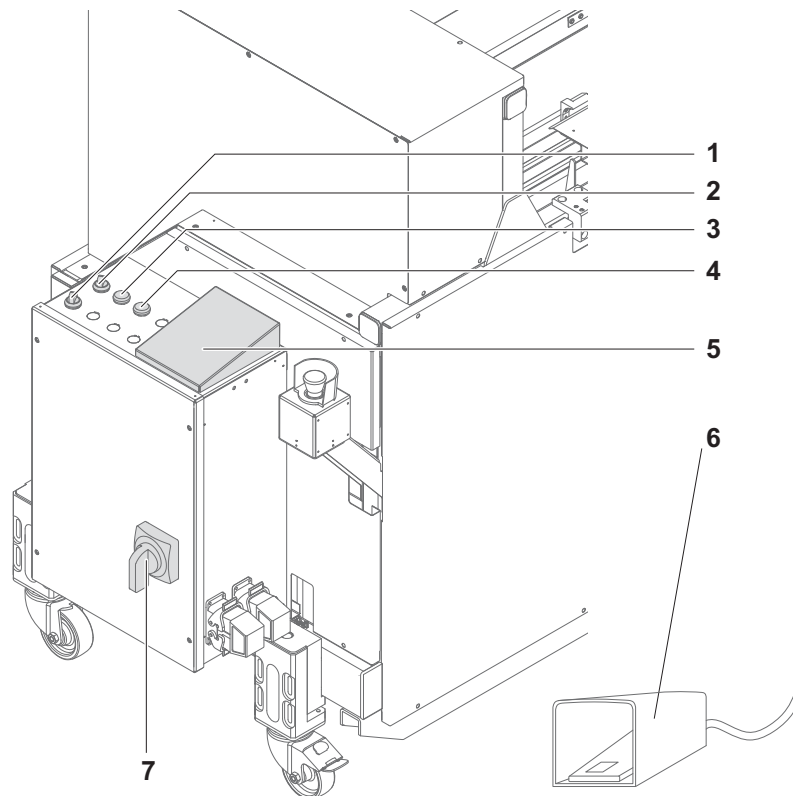


Fig. 31 Operating elements

The operating elements have the following function:

Position	Operating element	Function
1	On/Off switch conveyor belt	Switching the conveyor belt for waste on/off
2	Selector switch	Switching between automatic and manual mode
3	UP button	Moving the cutting unit upward
4	DOWN button	Moving the cutting unit downward
5	Operator panel	(do not use in line with printer)
6	Footswitch	Opening/closing the cutting unit
7	Main switch	Switching on/off the cutting unit

8.2 Docking the XY Cutter

⚠ CAUTION

High weight of the XY Cutter!

Danger of crushing during docking

- ▶ Only dock the XY Cutter with two persons.
- ▶ Do not reach into the area of the printer guide while pushing.

1. Set the key switch at the printer to **2** (device-change position).

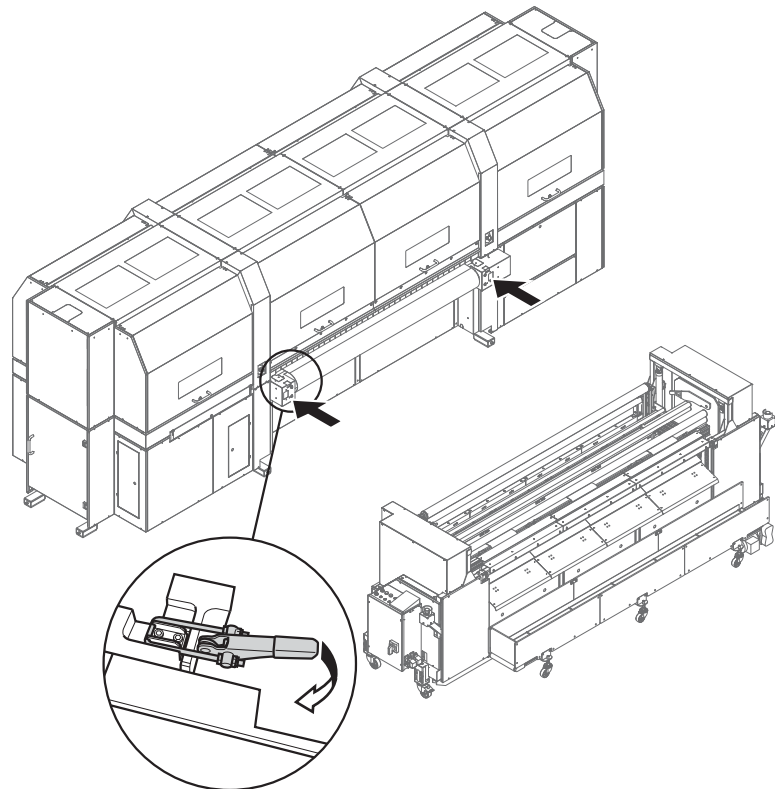


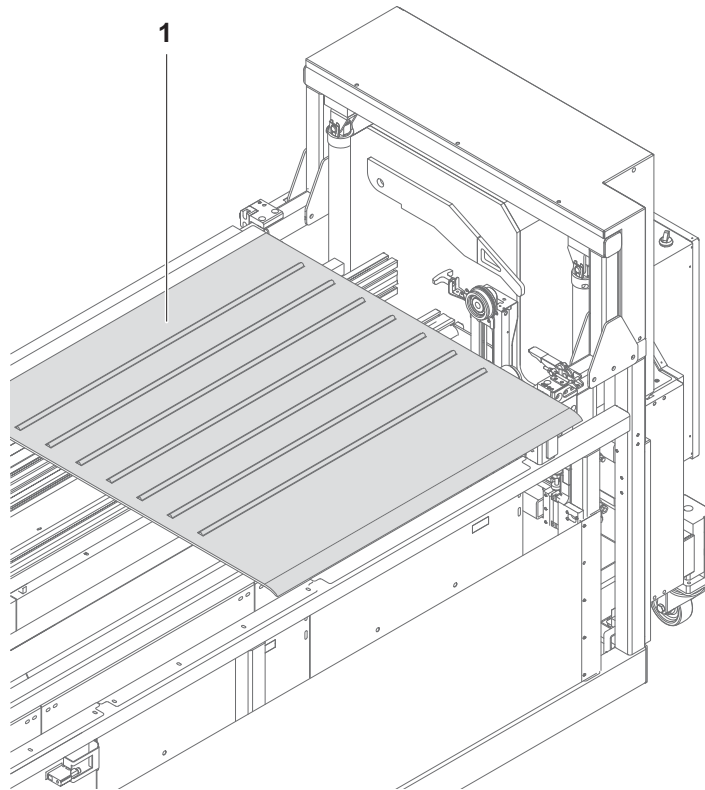
Fig. 32 Docking the XY Cutter

2. Slide the XY Cutter into the guide of the printer.
3. Close clamping lock.
4. Connect the power and control cables.
5. Connect the compressed-air hose.
6. Set the key switch at the printer to **1** (normal mode).

8.3 Bypass mode

In bypass mode the medium is solely moved on roller tracks over the XY Cutter.

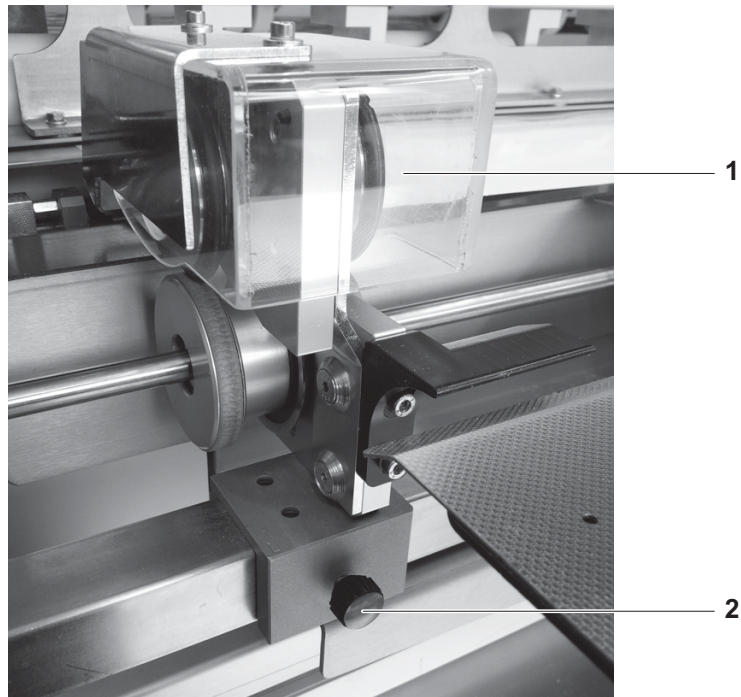
8.3.1 Preparing the XY Cutter for the bypass mode



- ▶ Lay on the roller tracks (1).
- ↳ The XY Cutter is prepared for the bypass mode.

8.4 Adjusting the cutting unit (longitudinal cut)

8.4.1 Moving the cutting unit horizontally



1. Loosen the fixing screw (2).
2. Slide the cutting unit (1) to the desired position.
3. Tighten the fixing screw.

9 Stacking unit

9.1 Operating elements

1 Operator panel

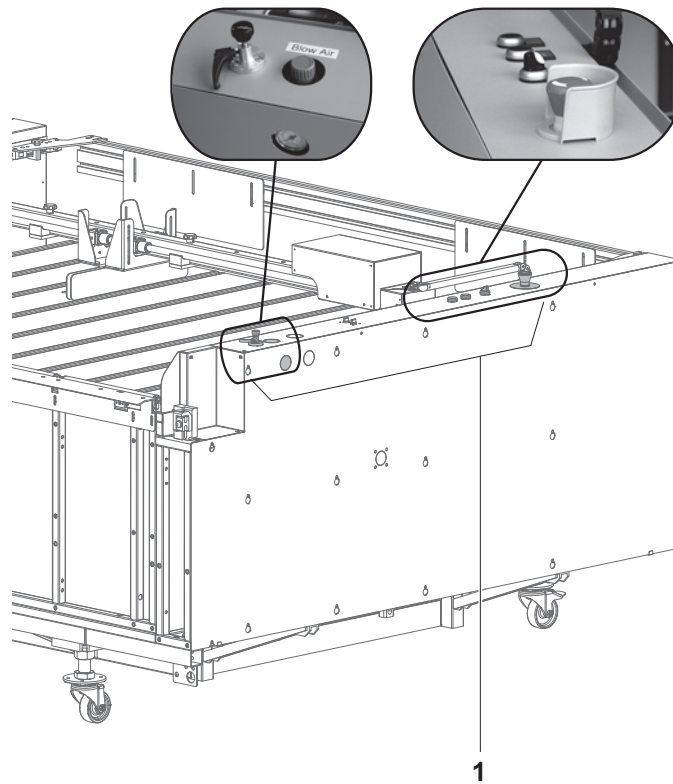


Fig. 33 Operator panel

Operation is carried out at the operator panel (1). Two operating modes can be selected:

- Automatic mode for serial printing
- Manual mode for printing individual plate media

In automatic mode the plate media are stacked on each other. The light barrier detects the height of the stack and automatically adjusts the vertical position of the table.

The table of the stacking unit can be moved manually in vertical direction during manual mode.

- 1 Pressure indicator
- 2 Adjusting screw
- 3 Control knob
- 4 **UP/DOWN** buttons
- 5 Selector switch
- 6 **Blow Air Left/Blow Air Right**
- 7 Emergency-Stop switch

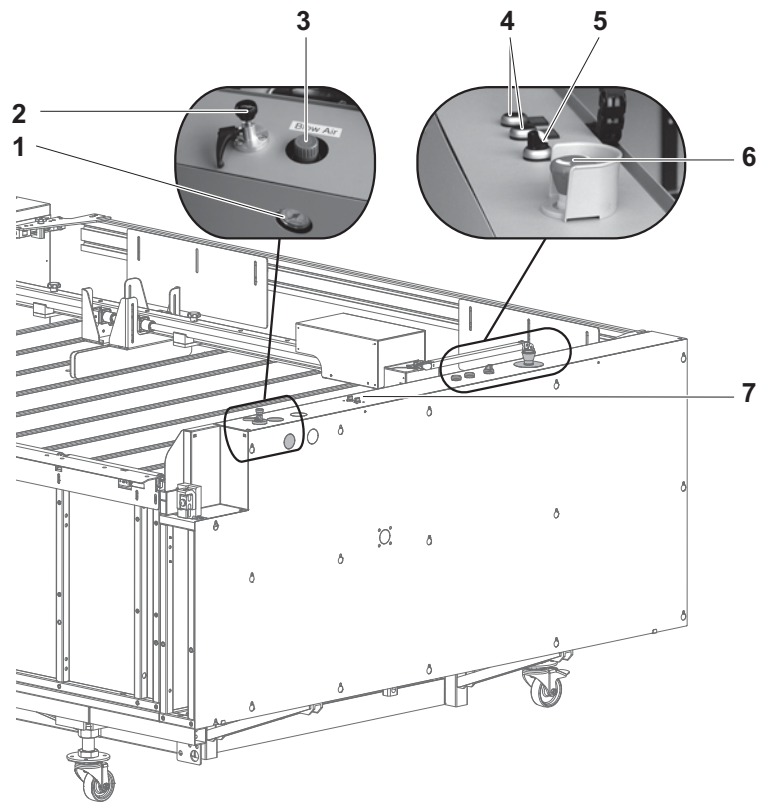


Fig. 34 Operating elements

The operating elements at the operator panel have the following function:

Position	Operating element	Function
1	Pressure indicator	Indicates the air pressure at the compressed-air nozzles
2	Adjusting screw	Adjusting the light barrier
3	Control knob	Adjusting the air pressure at the compressed-air nozzles
4	UP/DOWN buttons	Moving the table manually up or down (only possible in manual mode)
5	Selector switch	Switching between automatic and manual mode
6	Blow Air Left/Blow Air Right	Adjusting the compressed-air distribution to the left- and right-hand side
7	Emergency-Stop switch	Triggering an emergency stop

9.2 Docking and connecting the stacking unit

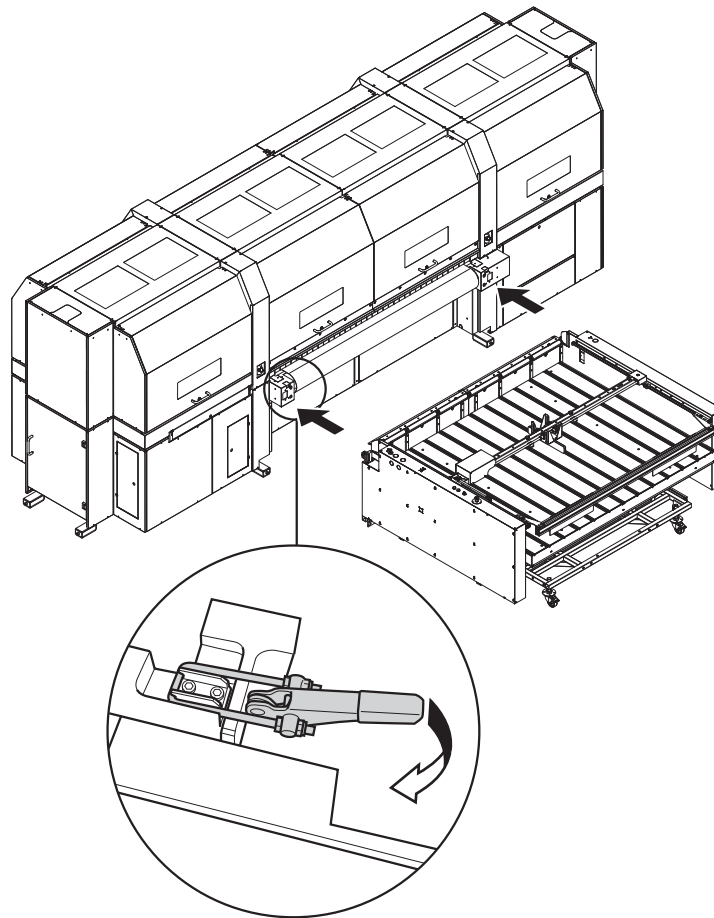
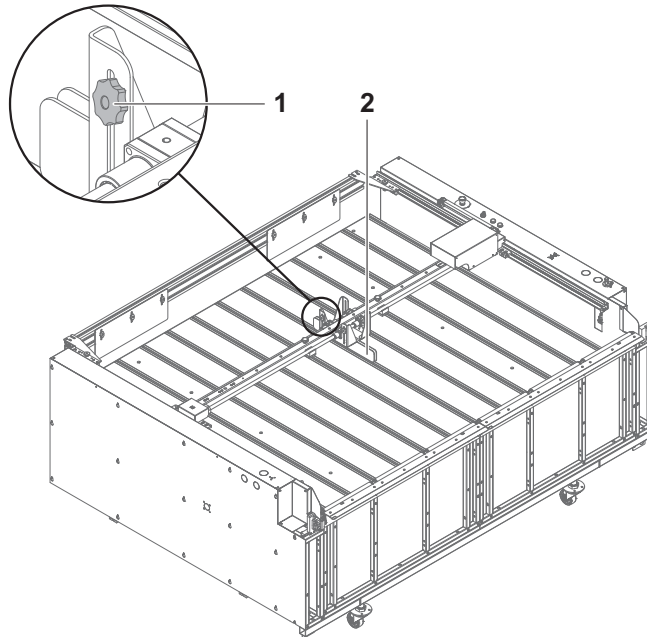


Fig. 35 Docking the stacking unit

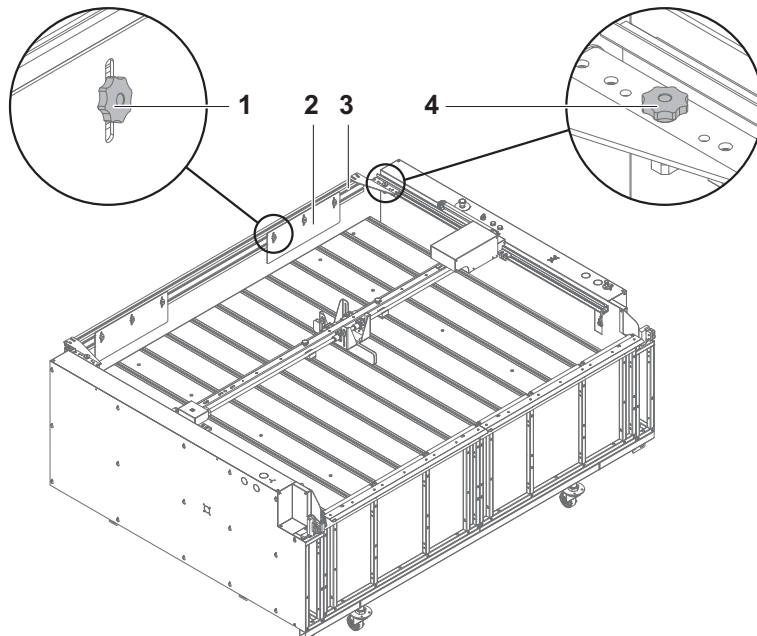
1. Set the key switch at the printer to **2** (device-change position).
2. Slide the stacking unit respectively into the guide of the printer.
3. First close the left-hand clamping lock, then the right-hand one.
4. Connect the power and control cables.
5. Connect the compressed-air hose.
6. Set the key switch at the printer to **1** (normal mode).

9.3 Adjusting the straight impacter



1. Loosen the fixing screw (1).
2. Adjust the desired position of the straight impacter (2) on the axis.
3. Tighten the fixing screw.

9.4 Adjusting the limiting plates



- ▶ Adjust the horizontal position as follows:
 - Loosen the fixing screw (4).
 - Adjust the position of the bar (3) to the length of the plate media.
 - Tighten the fixing screw.

NOTICE

Collision of the table with the limiting plates!

Damage to the stacking unit

- ▶ Test the height of the limiting plates before operation. Tighten the fixing screws only lightly for the test.

- ▶ Adjust the height as follows:
 - Loosen the fixing screws (1).
 - Adjust the limiting plate (2) to the desired height.
 - Tighten the fixing screws only lightly.
 - Test the setting in operation.
 - Tighten the fixing screws.

9.5 Adjusting the light barrier for vertical tracking

The vertical position of the light barrier can be adjusted.

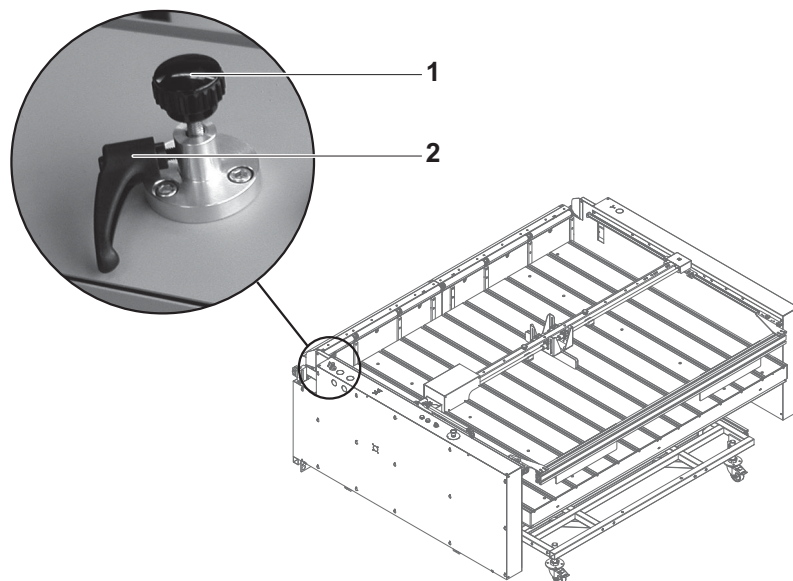


Fig. 36 Adjusting the light barrier

1. Loosen the fixing lever (2).
2. Adjust the vertical position with the adjusting screw (1) to the desired position.
3. Tighten the fixing lever.

10 Loading medium

10.1 Loading a plate medium with an automatic feed table

Plate media can be loaded in the following operating modes:

- Automatic: Loading of thin flexible plate media for serial printing
- Semi-automatic:
 - Thin, flexible plate media
 - Mirror-inverted printing of the rear
- Manual mode: Plate media with excess length

10.1.1 Loading plate media in automatic mode

✓ In the software **Continuous Feeding** is activated in the media channel

1. Adjusting the front stop (→ Page 40 / Adjusting the front stop)
2. Set the feed table at the operator panel to automatic mode.

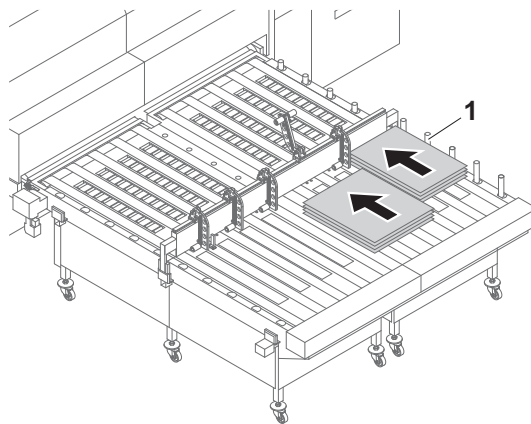


Fig. 37 Laying media on the load position

3. Lay the desired number of plate media stacked on the feed table. Proceed as follows:
 - Lay the first track against the right-hand guides (1).
 - Lay all further tracks to the left. Lay the plate media between the swivel stops in the process.
4. Load the desired media channel in the software.
5. Start printing process in the software.
6. Lay further media on the feed table while the media are being drawn in.
 - ↳ The media are transported automatically to the printer.

10.1.2 Loading a plate medium in semi-automatic mode

For mirror-inverted printing of the rear the front is first used with the right stop, then the rear with the left stop.

- ✓ In the software **Continuous Feeding** is activated in the media channel
- 1. Remove the front stop, if necessary, or adjust it so that drawing-in of the plate medium is not impaired (→ Page 40 / Adjusting the front stop).
- 2. Set the feed table at the operator panel to semi-automatic mode.
 - ↳ The pins at the front stop move upward.
- 3. Load the desired media channel in the software. Take the following into consideration: If a plate medium is to be printed with left stop (e.g. for back printing), this option has to be activated in the media channel.

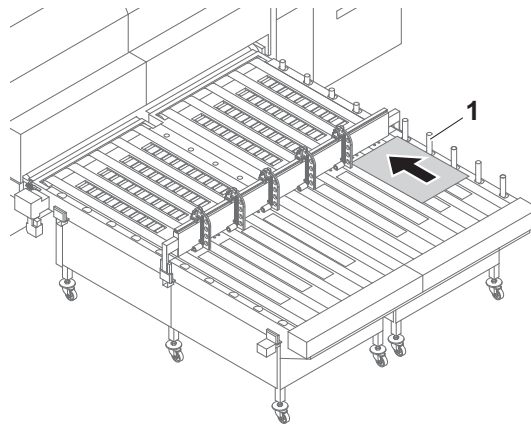


Fig. 38 Laying the medium against the guides and pins (here: right stop)

- 4. Lay the plate medium as follows on the feed system:
 - Lay the plate medium against the guides (1). By default the guides (1) on the right-hand side are used, in case of left stop (for example for back printing) the guides on the left-hand side.
 - Lay the plate medium with the front end against the pin.
- 5. Start drawing-in at the corresponding operator panel.
 - ↳ The medium is transported automatically to the printer.

10.1.3 Loading a plate medium in manual mode

- ✓ In the software **Continuous Feeding** is deactivated in the media channel
- 1. Remove the front stop, if necessary, or adjust it so that drawing-in of the plate medium is not impaired (→ Page 40 / Adjusting the front stop).
- 2. Move the rolls upward at the operator panel for manual mode.
- 3. Load the desired media channel in the software. Take the following into consideration: If a plate medium is to be printed with left stop (e.g. for back printing), this option has to be activated in the media channel.

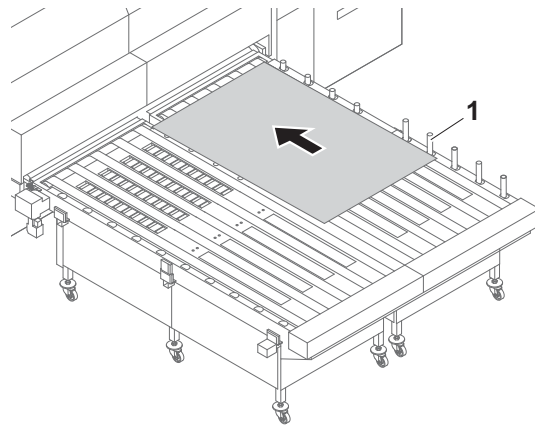


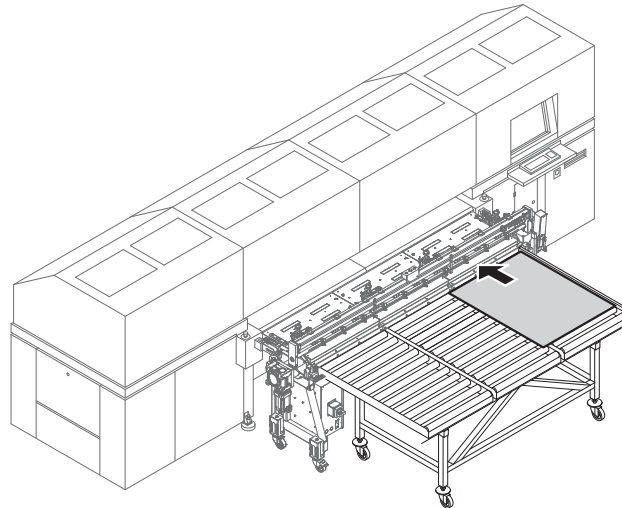
Fig. 39 Laying the medium against the guides and pins (here: right stop)

- 4. Lay the plate medium against the guides (1). By default the guides on the right-hand side are used, in case of left stop (for example for back printing) the guides on the left-hand side.
- 5. Push the plate medium manually to the printer.

10.2 Loading the plate medium with the registration table

10.2.1 Procedure

- ✓ In the software **Manual Continuous Feeding** is activated in the media channel
 - ✓ The registration table is set
1. Load the desired media channel in the software.



2. Push the plate medium until the stops of the registration table.
 3. Start the plate drawing-in with the footswitch.
– or –
Start the plate drawing-in with the **START** button.
- ↳ The plate medium is drawn in automatically.

10.3 Loading the roll medium (Heavy Roll Tool 30)

A roll medium is loaded consecutively in the following steps:

- Initiating loading procedure in the software
- Inserting roll medium on the loading side
- Inserting empty core on the unloading side
- Guiding roll medium through the printer
- Aligning the roll medium
- Setting the roll-end sensor
- Commissioning unwinding and winding units

10.3.1 Initiating loading procedure in the software

- ▶ Load the desired media channel in the software. Ensure that **Roll Media** and **Heavy Roll Tool** are activated in the media channel (→ Page 104 / Managing media channels).

10.3.2 Inserting roll medium on the loading side

1. Move unwinding unit to the bottom position.

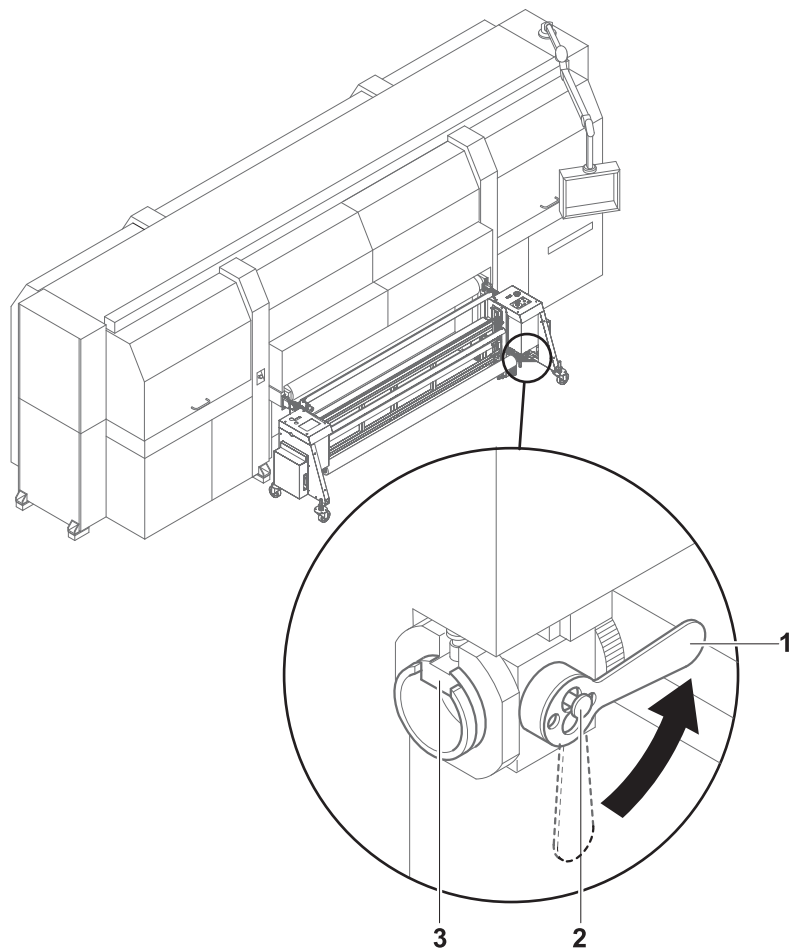


Fig. 40 Decouple roll mount from drive and rotate roll mount

2. Disengage locking button (2) for coupling.
3. Rotate lever (1) to the horizontal position to decouple the roll mount from the drive.
4. Turn roll mount manually until the groove (3) faces upward.

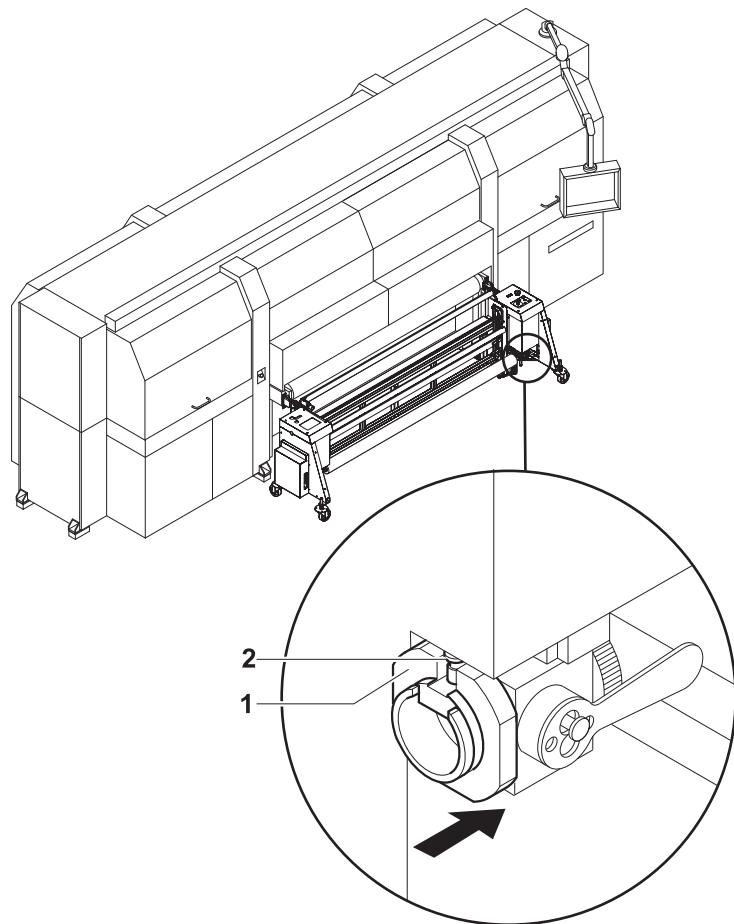


Fig. 41 Opening the groove

5. Open grooves of the right and left roll mounts in the following manner:
 - Disengage locking button (2).
 - Slide sliding ring in such a way (1) that the groove is exposed.

⚠ WARNING

High weight of the medium!

Danger of crushing when inserting the ends of the axes into the roll mount

- ▶ Wear protective gloves.
- ▶ When loading the roll, do not grip the ends of the axes.

6. Using a hand lift, position the roll with the axis in such a way that the axis ends are located above the grooves in the roll mounts.
7. Move unwinding unit to the top position. Allow the axis ends to slide into the grooves and take the roll upward.

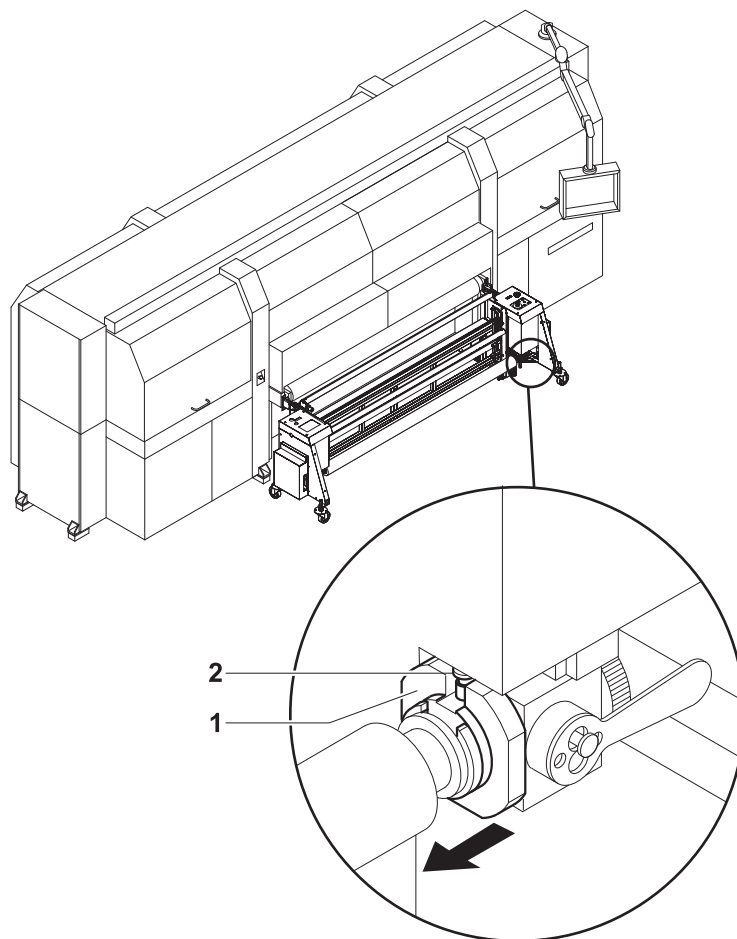


Fig. 42 Securing the axis with a sliding ring

8. Secure both axis ends as follows:
 - Disengage locking button (2).
 - Slide sliding ring (1) over the axis end.
 - Lock locking button.

10.3.3 Inserting empty core on the unloading side

- ▶ Insert empty core to wind up the roll medium in the same manner as the roll medium on the loading side.

10.3.4 Guiding roll medium through the printer

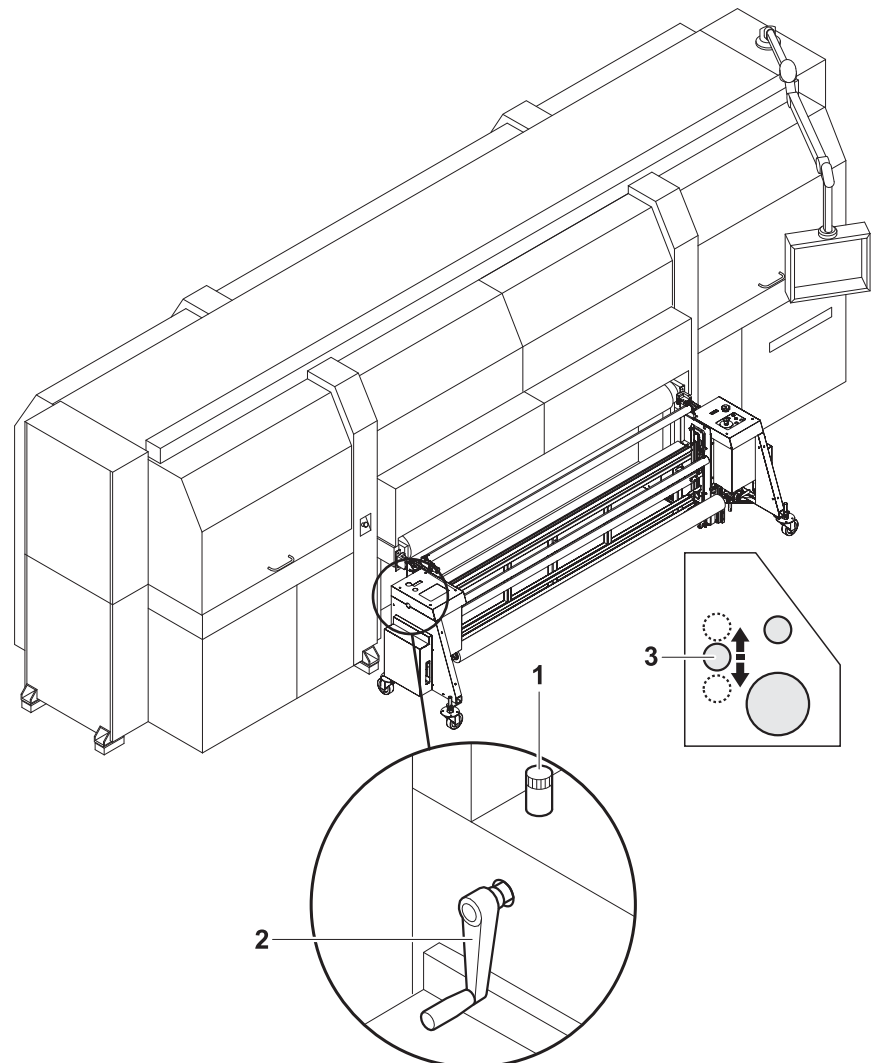


Fig. 43 Moving the tensioning roller upward (movement of the tensioning roller (3) shown schematically)

1. To make threading of the roll medium around the tensioning roller easier, carry out the following measures on the unloading and loading sides:
 - Loosen the set screw (1).
 - Move tensioning roller (3) upward with crank (2).
 - Secure tensioning roller with set screw.

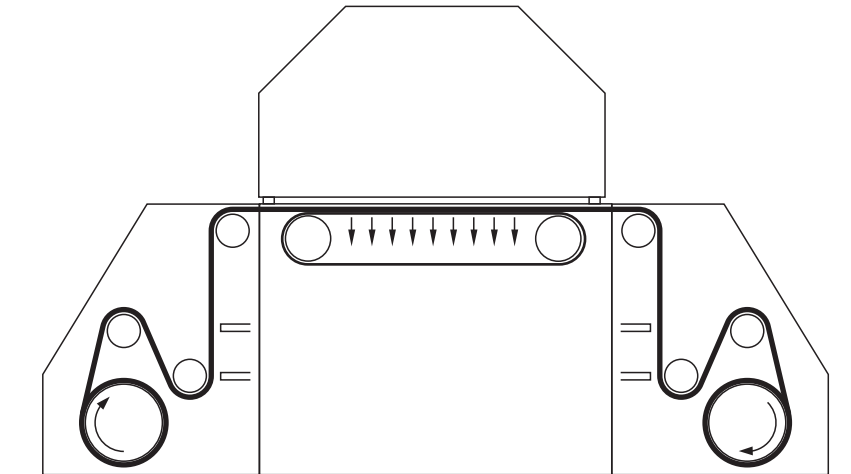


Fig. 44 Guide the roll medium around the tensioning roller and redirection rolls (here: schematically for front printing)

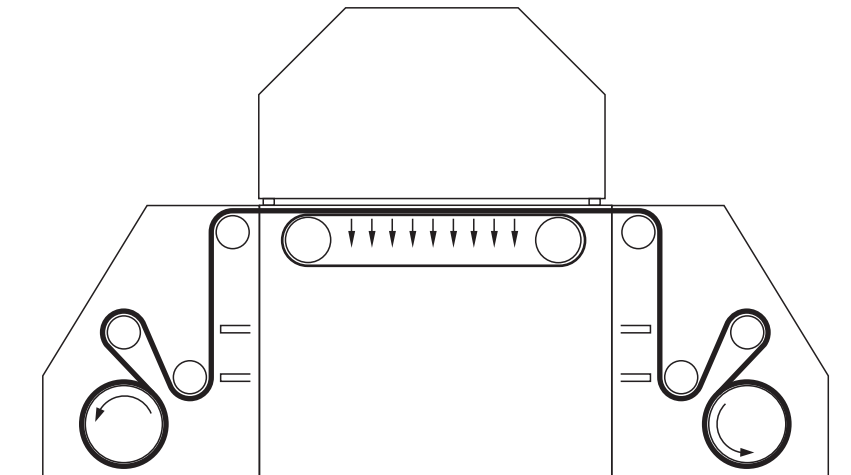


Fig. 45 Guide the roll medium around the tensioning roller and redirection rolls (here: schematically for back printing)

2. Guide roll medium around tensioning roller and redirection rolls.
3. Guide roll medium through the printer.
4. Guide the roll medium around the redirection rolls and tensioning roller in the same way at the winding unit and attach it to the empty core.
5. Return tensioning rollers to bottom position on unloading and loading sides.

10.3.5 Aligning the roll medium

Carry out the following measures on both the loading and unloading sides.

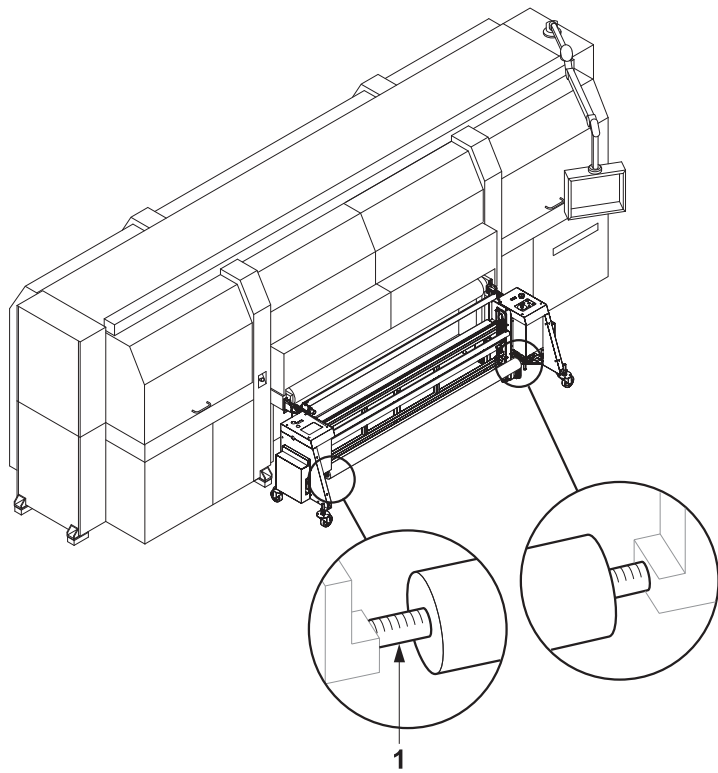


Fig. 46 Aligning the roll medium

1. Pre-position roll on the axis manually using the markings (1).

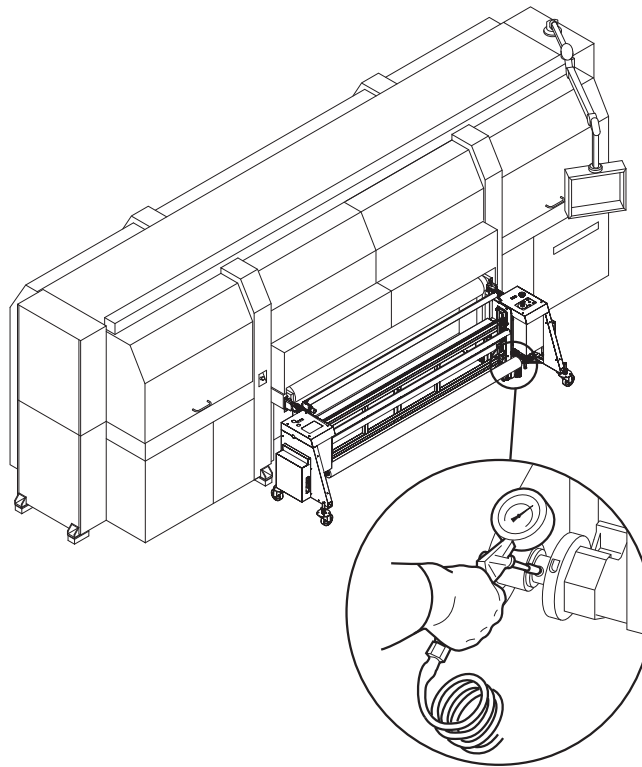


Fig. 47 Blowing compressed air into the valve

2. To secure the roll on the axis, place air blow gun on valve and fill compressed air into valve. Observe the permissible air pressure specified by the manufacture in the process.
 - ↳ The roll is secured to the axis via the locking jaws.

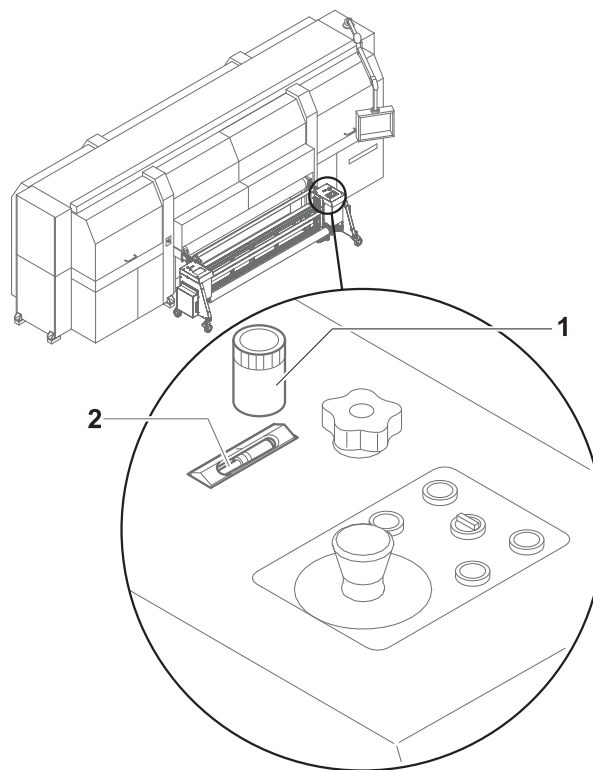


Fig. 48 Carrying out horizontal fine positioning

3. Using the controller (1), position the medium horizontally in such a way that it contacts the stop.
↳ The horizontal position is shown on the scale (2).

10.3.6 Setting the roll-end sensor

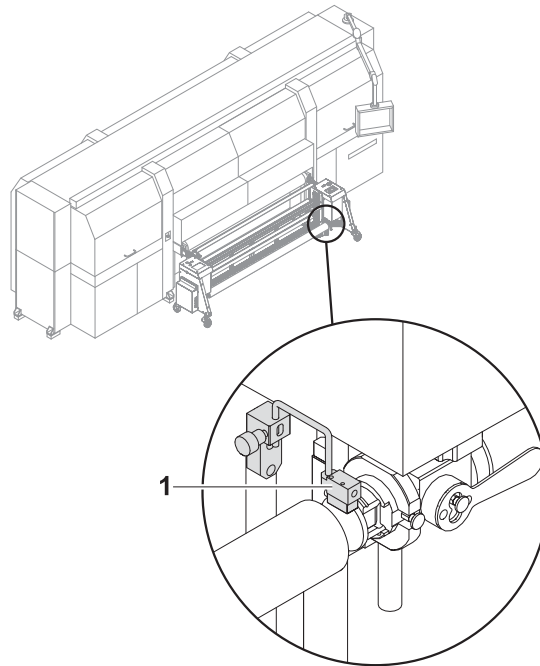
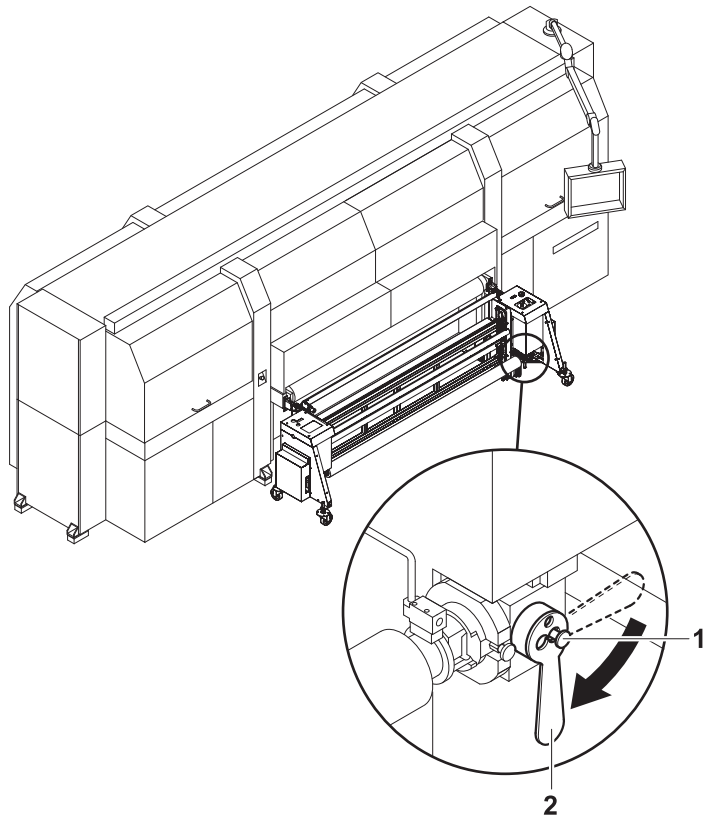


Fig. 49 Setting the roll-end sensor

- ▶ Set the roll-end sensor (1) on the unwinding unit to the desired height.

10.3.7 Commissioning unwinding and winding units

Carry out the following measures on both the loading and unloading sides.



1. Turn lever (2) down to the vertical position to couple the roll mount to the drive.
2. Engage locking button (1).
3. Set drive to automatic operation at the operator panel.

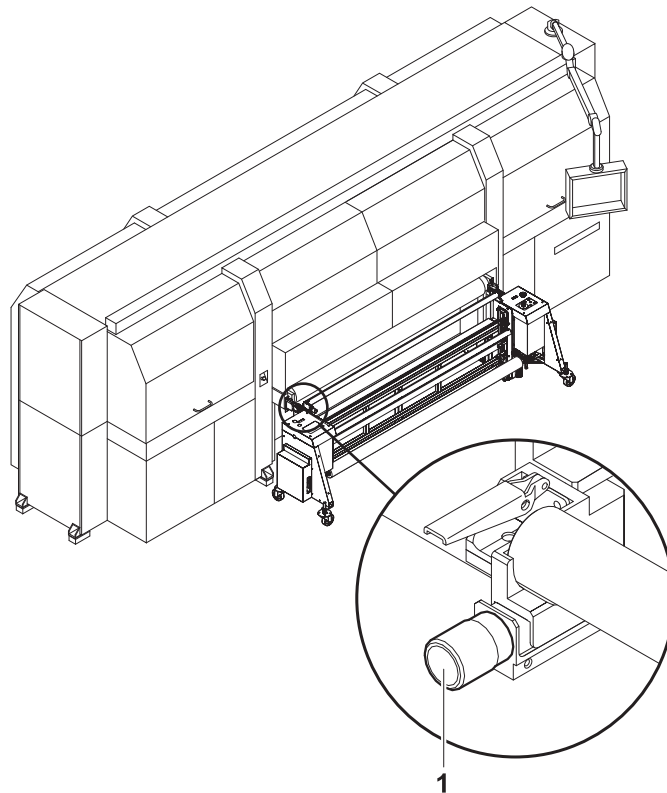


Fig. 50 Adjusting for straight running

4. If necessary, adjust the roll medium for straight running, e.g. if it is throwing folds, with the straight-running controller (1).

10.4 Loading the roll medium (Heavy Roll Tool 60)

A roll medium is loaded consecutively in the following steps:

- Initiating loading procedure in the software
- Inserting roll medium on the loading side
- Inserting empty core on the unloading side
- Guiding roll medium through the printer
- Commissioning unwinding and winding units

10.4.1 Initiating loading procedure in the software

- ▶ Load the desired media channel in the software. Ensure that **Roll Media** and **Heavy Roll Tool** are activated in the media channel (→ Page 104 / Managing media channels).

10.4.2 Inserting roll medium on the loading side

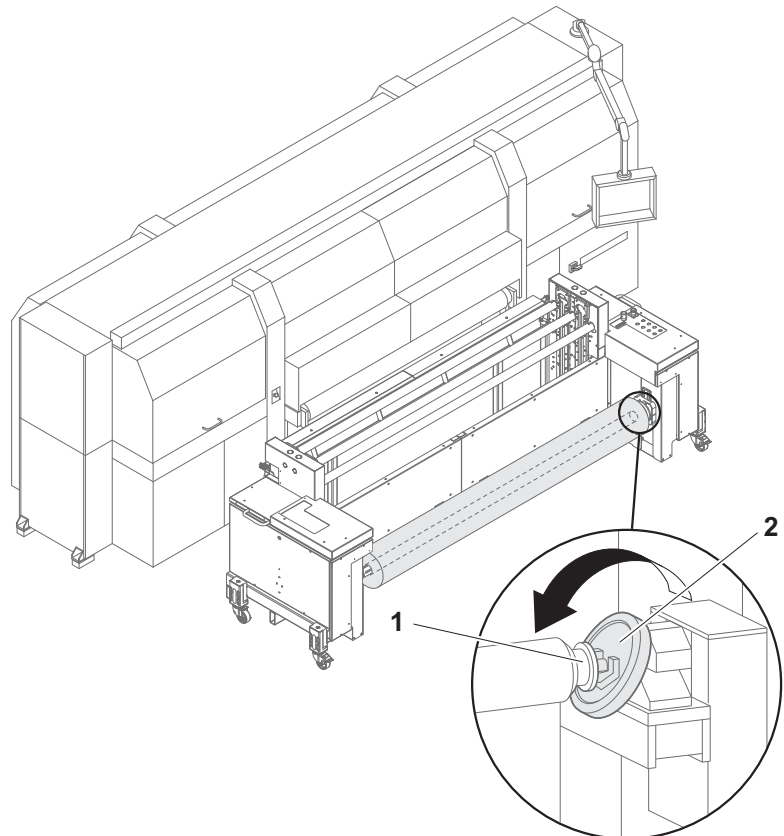
- ✓ Unwinding and winding units are operating
1. Move the roll mounts of the unwinding unit to the lower position with the **DOWN** button.

⚠ WARNING

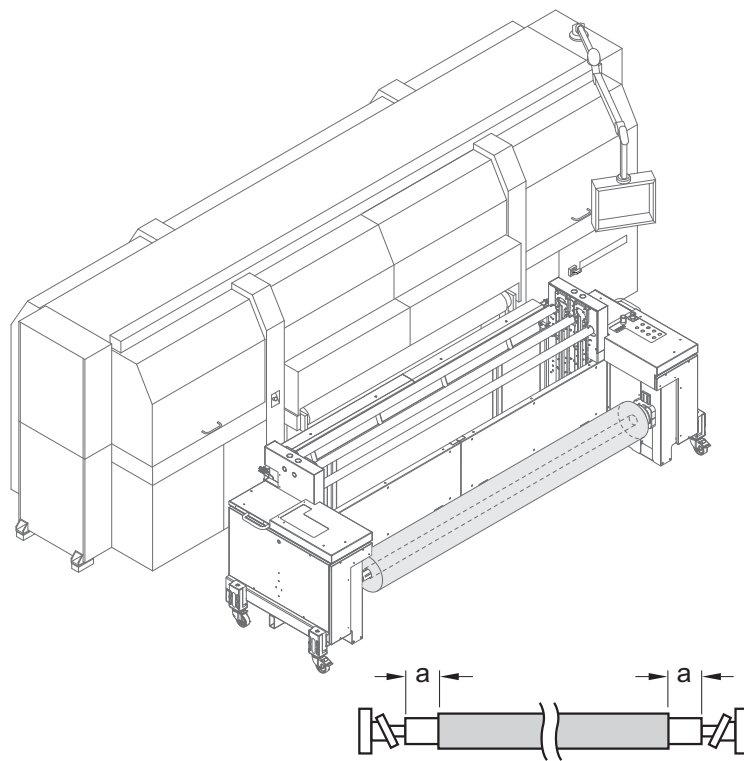
High weight of the medium!

Danger of crushing when inserting the ends of the axes into the roll mount

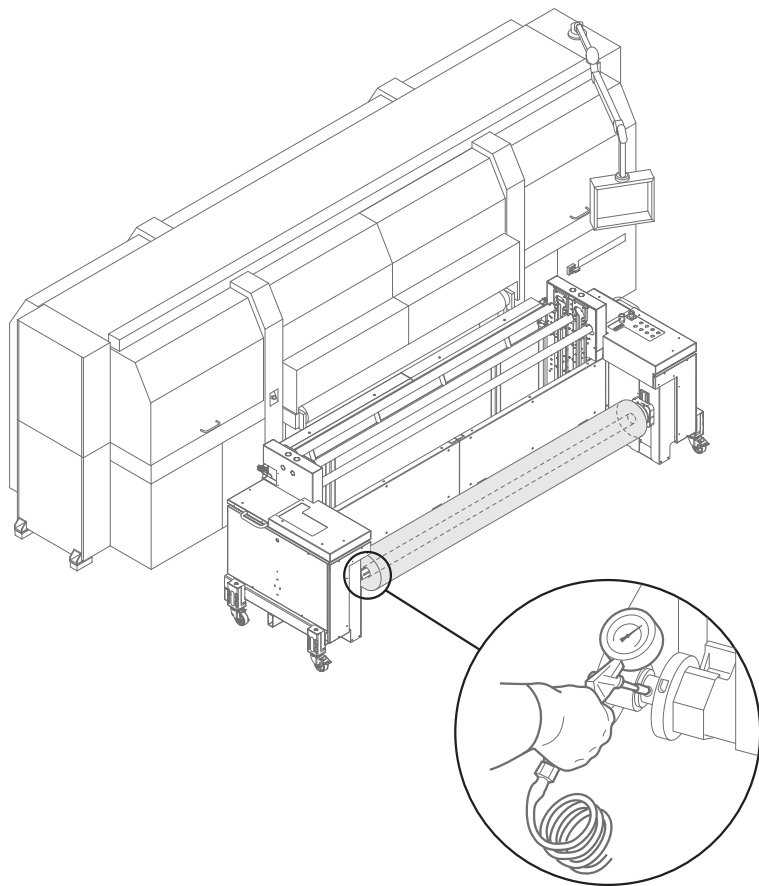
- ▶ Wear protective gloves.
- ▶ When loading the roll, do not grip the ends of the axes.



2. Position the roll with axis (1) in the roll mounts depending on the side to be printed.
3. Close the roll mounts (2).



4. Slide roll onto the axis so that it is positioned centrally on the axis.



5. To secure the core on the axis, place air blow gun onto the valve and fill compressed air into the valve.

↳ The core is secured to the axis via the locking jaws.

NOTICE

Danger of collision while moving up and down with opened roll mounts!

Damage to the Heavy Roll Tool

- ▶ Ensure that the roll mounts are closed.

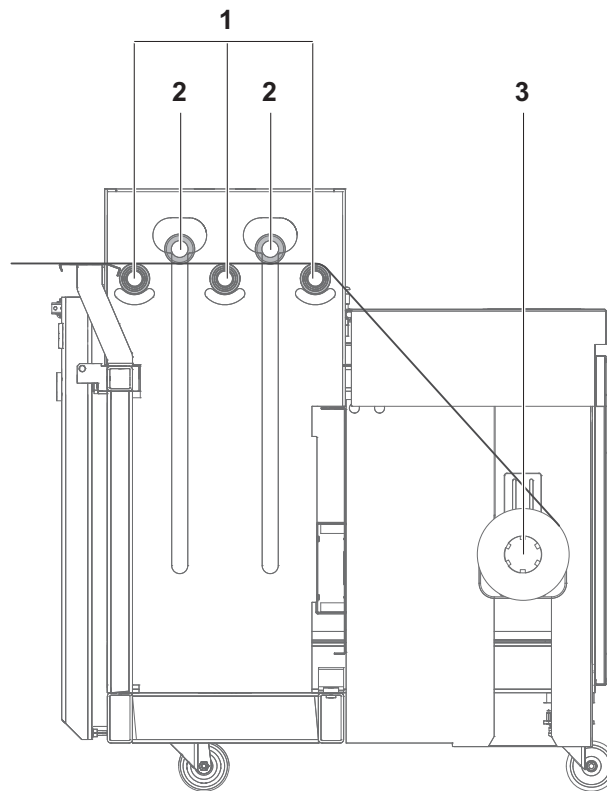
6. Move the roll mounts to the highest position with the **UP** button.
7. Move the dancing rollers upward with the **LOAD** button.

10.4.3 Inserting empty core on the unloading side

- ▶ Insert empty core to wind up the roll medium in the same manner as the roll medium on the loading side.

10.4.4 Guiding roll medium through the printer

1. Set the Heavy Roll Tool 60 to **Manual** with the selector switch.

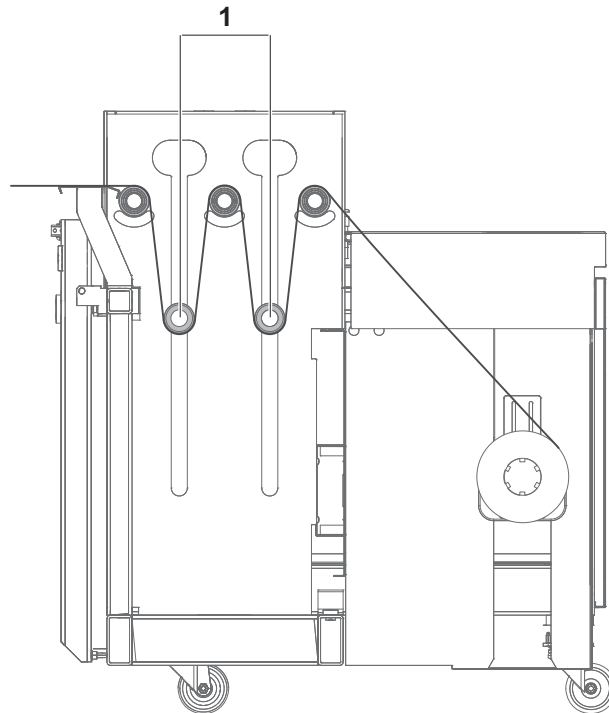


2. Lay the roll medium (3) over the redirection rollers (1) and under the dancing rollers (2) to the printer. Use the **FORWARD** or **REVERSE** buttons for manual transporting.
3. Fine positioning the roll medium at the unwinding unit horizontally.
4. Guide the roll medium around the redirection rolls and tensioning roller in the same way at the winding unit and attach it to the empty core.

10.4.5 Setting the direction of rotation

Carry out the following measures on both the loading and unloading sides.

- ▶ Depending on the desired rotation direction, set the selector switch to **Auto Forward** or **Auto Reverse**.
- ↳ The dancing rollers (1) move downward.



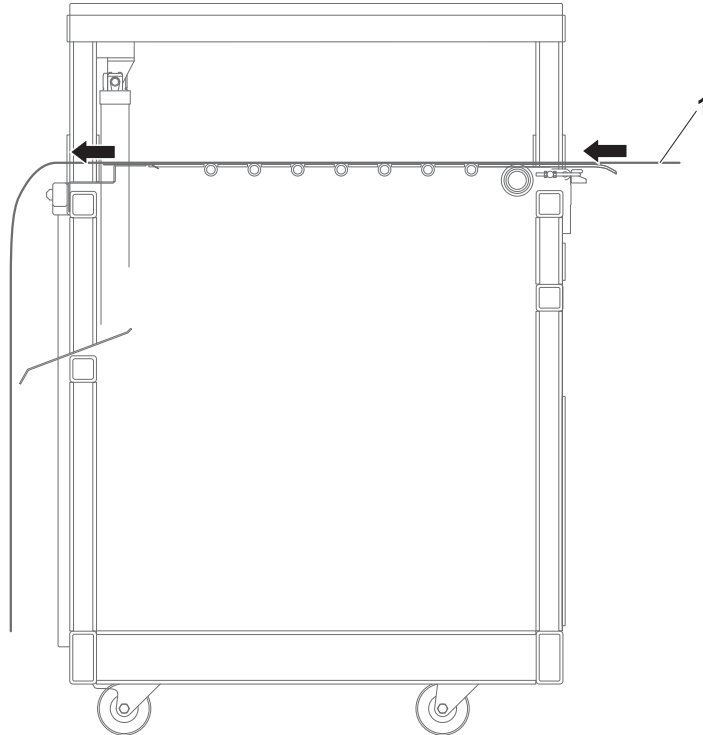
The unwinding and winding units are ready for automatic mode.

10.5 Laying a medium through the XY Cutter

10.5.1 Bypass mode

Laying a medium over roller tracks

- ✓ The roller tracks are laid on

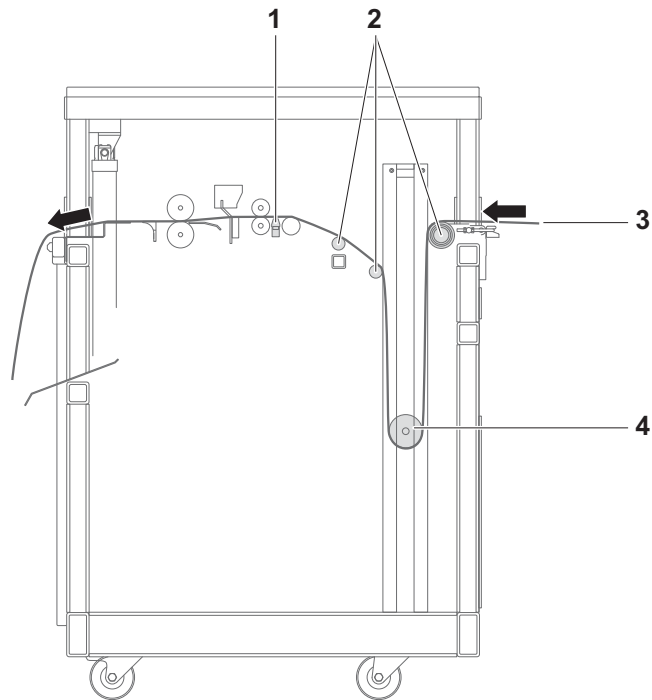


- ▶ Lay the medium (1) over the roller tracks.

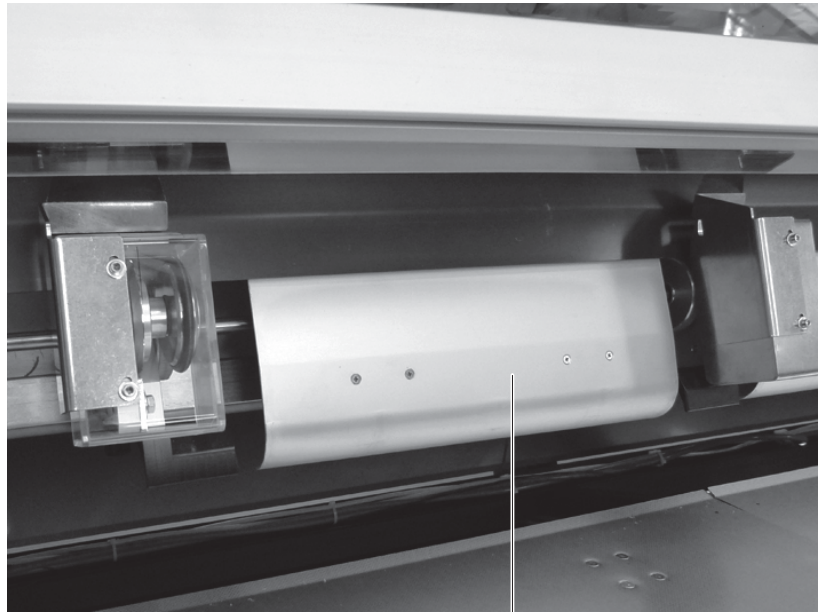
10.5.2 Cutting mode

Lay the medium through the cutting unit

1. Set selector switch to **MAN**.
2. Press the **UP** button.
 - ↳ The cutting unit moves upward.
3. Open the cutting unit with the footswitch.



4. Lay the medium (3) over the redirection rollers (2) under the yellow belt (1) through the cutting unit.
5. Align a medium.
6. Close the cutting unit with the footswitch.
7. Lay on the tensioning roller (4) and lower with the line onto the medium.
8. Set the knife to the desired position (→ Page 65 / Adjusting the cutting unit (longitudinal cut)).



1

9. Set the guide plates (1) to the desired position.
10. Switch on the conveyor belt for waste.
11. Press the **DOWN** button.
 - ↳ The cutting unit moves downward.
12. Set the selector switch to **AUTO**.

11 Setting the suction power

The suction power can be set with the controller (1).

1 Controller

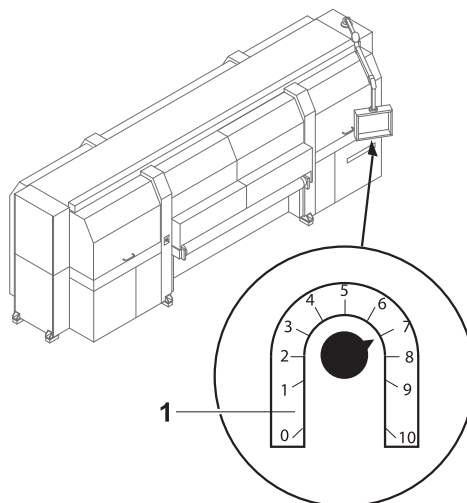


Fig. 51 Controller for setting the suction power

F Software

1 Basic functions

1.1 Installation

You can install the software either via the Durst FTP server or from a CD.

You must enter the license number after the software is started to be able to use all the functions.

1.1.1 Installing software via the Durst FTP server

You can download software updates as an ISO file from the Durst FTP server.

- ▶ Contact Durst customer service for information on download and installation.

1.1.2 Installing software from CD

- ▶ Insert printer software CD and follow the instructions on the screen.

1.1.3 Entering software license

- ✓ The software has been started
- 1. Press **Setup** > **General**.
- 2. Press **Edit**.
- 3. Enter license number in the **Validation Code** input field.
- 4. Press **Save**.


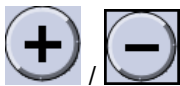

1.2 The menu bar

The menu bar is the starting point for all activities of the software. You can see the current program function at all times.



Fig. 52 Menu bar

The menu bar contains the following dialog elements, among other things:

Item	Function
	Open operating instructions
	Maximize/minimize program window
	Exiting the software

1.3 The status bar

The status bar informs you of the important current data of the printer, e.g. loaded medium, medium width, remaining length and ink fill level.




Fig. 53 Status bar

1.4 Basic operation

You can operate all dialog elements, e.g. buttons, scroll bars and arrow symbols, just by pressing the touch screen.

You can also use the keyboard, trackball and mouse.

1.4.1 Starting the software

- ✓ Monitor and computer are switched on
- ✓ The Linux operating system has been started
- ▶ Double-press  .

1.4.2 Exiting the software

1. Press  .
 - ↳ The **Durst Rho** dialog window appears.
2. Confirm with **Yes**.

1.4.3 Modifying parameters

To change the parameters on the tabs, the general procedure is as follows:

1. Press **Edit**.
2. Modify desired parameters.
3. Press **Save**.

2 Setting up printer

2.1 Switching-on time

Define the following settings on the **Auto Timer** tab:

■ Time intervals for weekly switch-on of ink heating

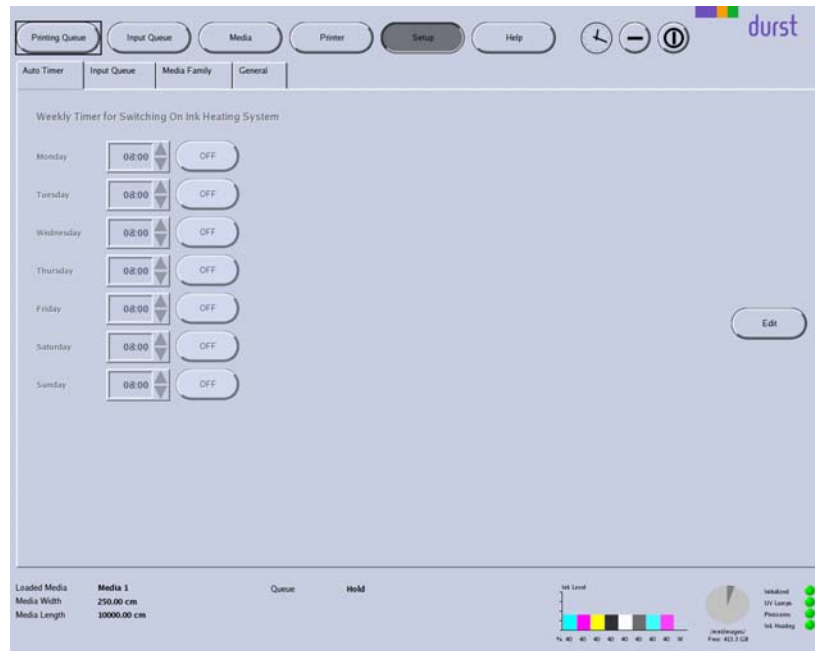


Fig. 54 Auto Timer tab

2.2 Input queue

You can create, rename and delete input queues individually on the **Input Queue** tab.

1 Navigation window

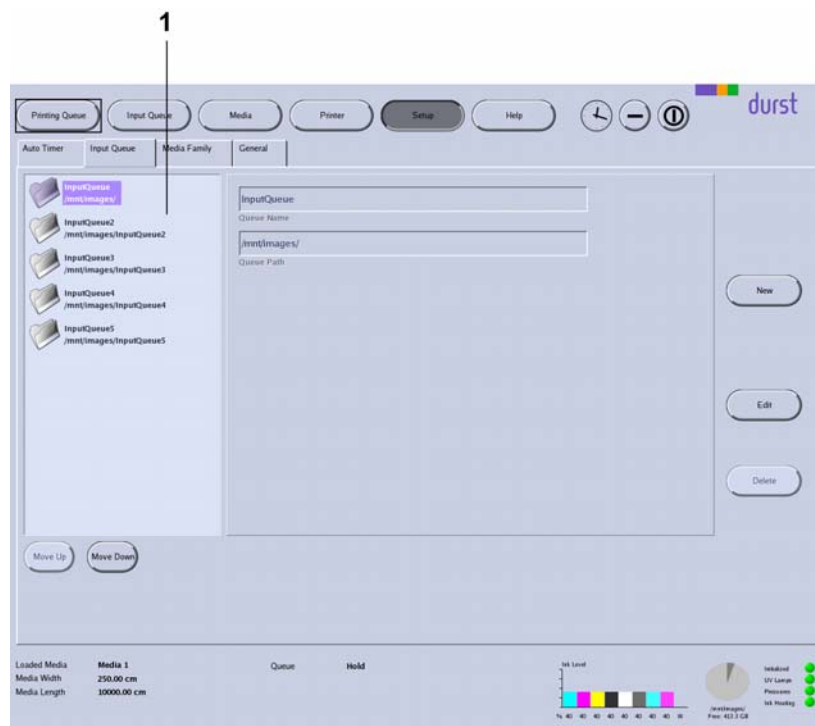


Fig. 55 Input Queue tab

The **Input Queue** is already created by default and cannot be deleted.

New New hotfolders are created with the **New** button.

Edit Parameters of the selected hotfolder are modified with the **Edit** button.

Delete The selected hotfolder is deleted with the **Delete** button.

2.3 General basic settings

Define the following settings on the **General** tab:

- Language
- Units
- Validation
- Media transport options



Fig. 56 **General** tab

Media Transport Options With **Media Transport Options**, you can enter the global value for **Encoder Offset**. The global value applies for all printing.

You can enter an additional encoder offset value for a special medium in the corresponding medium channel. The encoder offset value in the medium channel is then added to or subtracted from the global encoder offset value of the **General** tab.

2.4 Media families

As you must create separate media channels for the different medium thicknesses and blanks for each material, the number of media channels can become unclear very quickly. For this reason, you have the option of combining multiple media channels into a media family, e.g. KAPA or corrugated cardboard. Each media family is clearly identified by an ID number (**Family ID**). If a job is transferred from the RIP server to the corresponding input queue of the printer, it provides its ID number right away, thus indicating the media family to which it belongs. If you select the media channel for a job in the input queue, the software only offers you those media channels that are part of the media family of the job for pre-selection.

On the **Media Family** tab, you can create new media families and edit and delete existing media families.

1 Navigation window

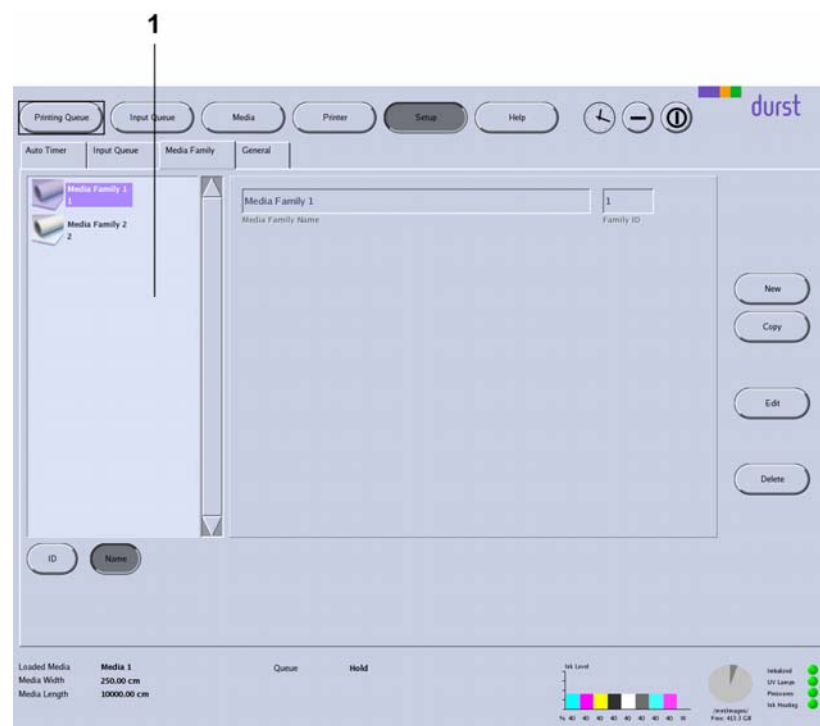


Fig. 57 Media Family tab

Navigation window All created media channels are listed in the navigation window (1). You specify the sorting order with the **ID** and **Name** buttons.

2.4.1 Buttons on the right edge of the dialog window

New A new media family is created with the **New** button.

Copy You copy the selected media family and save it with a new name with the **Copy** button.

Edit Parameters of the selected media family are modified with the **Edit** button.

Delete The selected media family is deleted with the **Delete** button.

3 Operating printer functions

3.1 Basic functions

On the **Printer** tab, you can operate the following functions, among others:

- Initialization
- Test image
- Movement of the printing table
- Encoder test image
- UV lamp
- Displaying the software version
- Ink heating

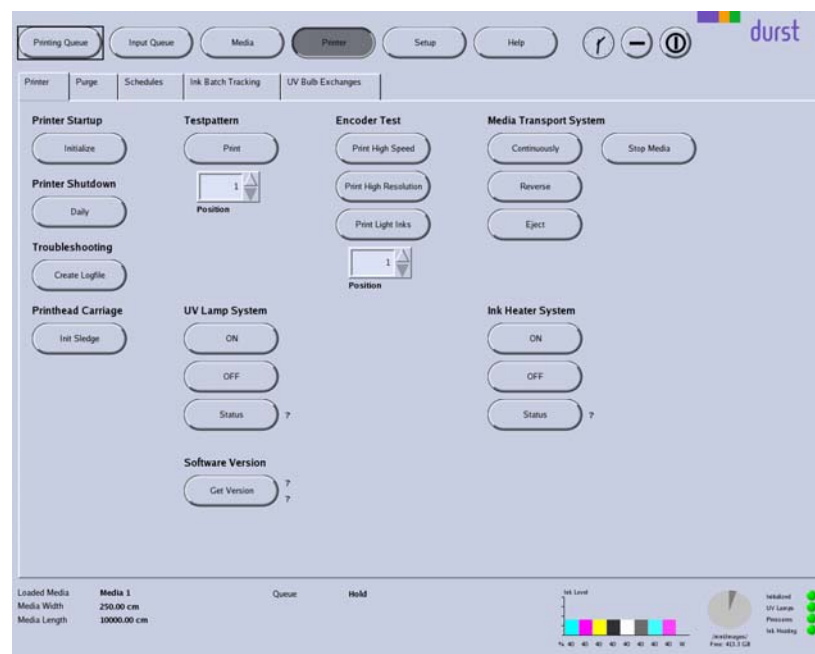


Fig. 58 **Printer** tab

Printer Startup All units of the printer move to the reference position. Durst recommends this option if the printer was switched on manually.

Printer Shutdown You can turn off the printer for its daily shutdown with the **Daily** button.

Testpattern **Print:** The **Print** button initiates printing of a test pattern. The test pattern is not placed in the **Printing Queue**, rather it is printed immediately.

Position: Media can be printed with test patterns multiple times. Using the **Position** selection list, you specify the image line on which the respective test pattern is to be printed by repeatedly loading the medium. The software calculates the required advance automatically.

Encoder Test Using the buttons under **Encoder Test**, you can print an encoder test image in the desired quality, optimized either with a higher print speed (**Print High Speed**) or high resolution (**Print High Resolution**). When pressing the corresponding button, the encoder test image is transferred directly to the **Printing Queue**.

Position: Media can be printed with encoder test images multiple times. Using the **Position** selection list, you specify the image line on which the respective encoder test image is to be printed by repeatedly loading the medium. The software calculates the required advance automatically.

Media Transport System You control the manual advance of the medium with this option.

Continuously: The medium is transported further until you press **Stop Media**.

Reverse: The medium is transported backward until you press **Stop Media**.

Eject: The medium is transported out of the printer.

Stop Media: The advance is stopped.

3.2 Cleaning functions

You set the purge parameters and initiate the purge cycle on the **Purge** tab.

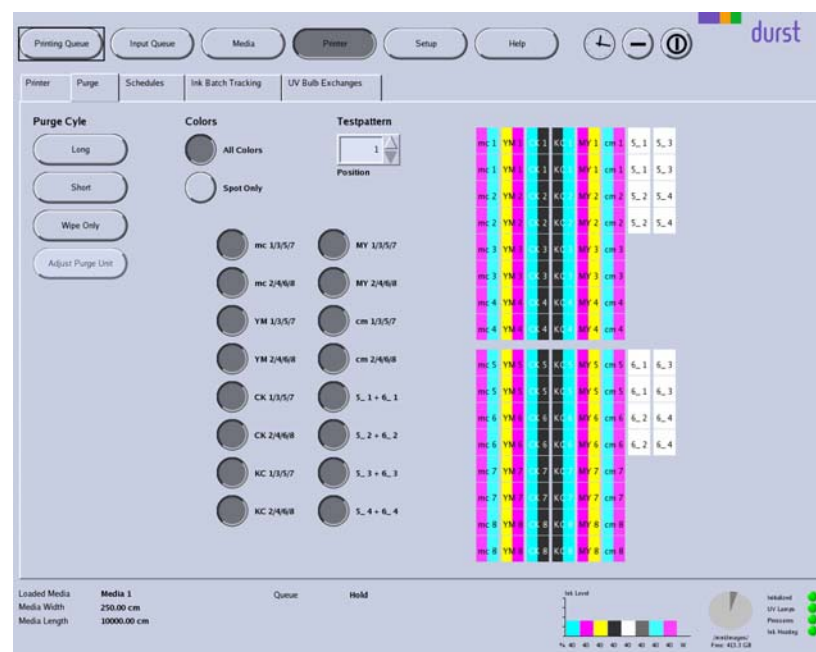


Fig. 59 **Purge** tab

Purge Cycle Long: Start purge cycle with a duration of approx. 6 minutes.

Short: Start purge cycle with a duration of approx. 3 minutes.

Wipe Only: Start automatic suction of the print heads.

Colors Under **Colors**, you select the colors for which the print heads are to be rinsed.

3.3 Maintenance

The **Schedules** tab provides an overview of all service activities described in the "Service" chapter (→ Page 118 / Service).



Fig. 60 Schedules tab

Maintenance Reminders Under **Maintenance Reminders**, you can set the time intervals for reminder messages for the following activities:

- Purge cycle
- Cleaning the printing plate
- Archiving the test pattern

3.4 Ink batch tracking

You can document the refill date, color and batch number of the ink on the **Ink Batch Tracking** tab.

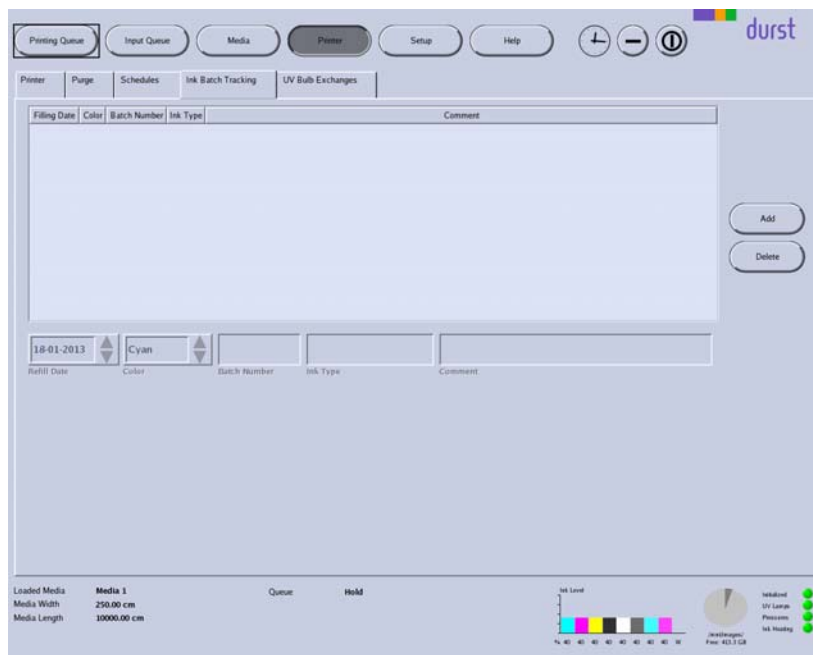


Fig. 61 Ink Batch Tracking tab

3.5 UV lamp tracking

You can document the changing of the UV lamp on the **UV Bulb Exchanges** tab.



Fig. 62 UV Bulb Exchanges tab

4 Managing media channels

You create new media channels and edit or delete existing media channels on the tab under the **Media** button.

1 Navigation window

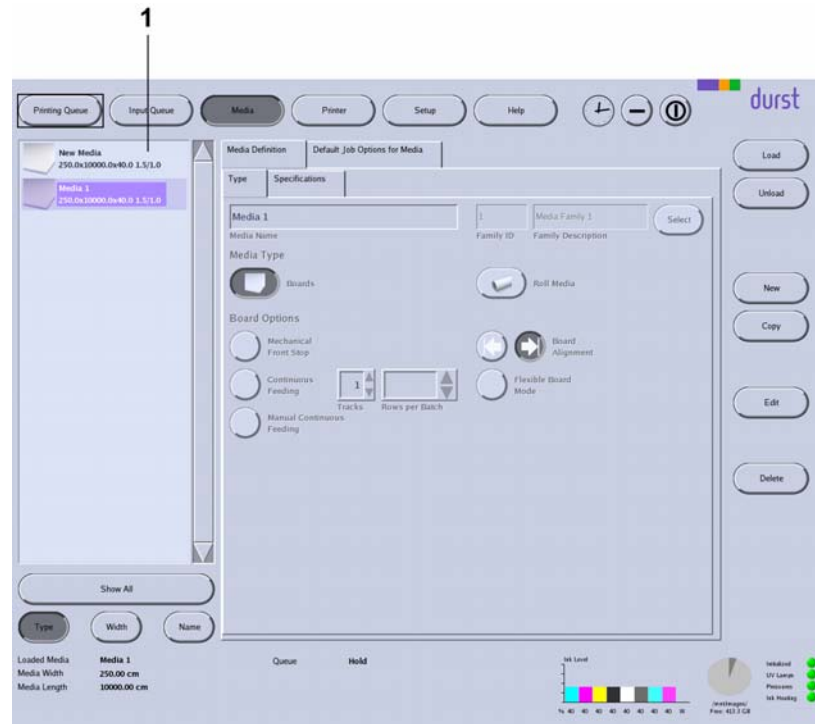


Fig. 63 Tabs under the **Media** button.

All created media channels are listed in the navigation window (1). You specify the sorting order with the **Type**, **Width** and **Name** buttons.

With the **Show All** button, you can cause only those media channels which belong to a certain media family to be listed. This will give you a better overview should you have a large number of media.

4.1 Buttons on the right edge of the dialog window

- Load/Unload** The loading and unloading procedures for changing the media channel are triggered with the **Load** and **Unload** buttons.
- New** A new media channel is created with the **New** button.
- Copy** You copy the selected media channel and save it with a new name with the **Copy** button.
- Edit** Parameters of the selected media channel are modified with the **Edit** button.
- Delete** The selected media channel is deleted with the **Delete** button.

4.2 Medium type

You can define the following parameters on the **Type** sub-tab:

- Name
- Media family
- Type: Plate ("board") or roll medium

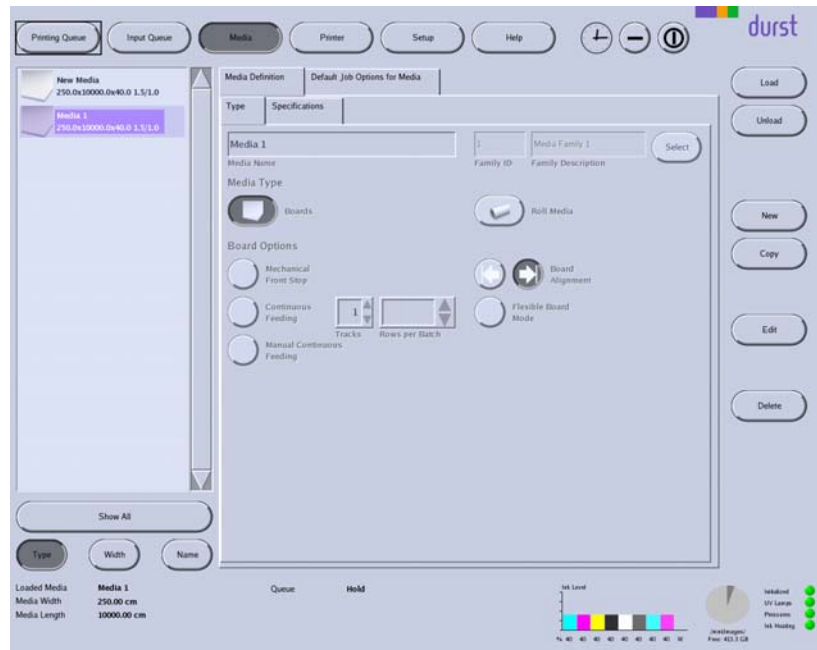


Fig. 64 Type sub-tab

Depending on whether you press the **Boards** or **Roll Media** button under media type, different buttons appear on the sub-tabs.

4.2.1 Plate media

The following functions are available if you press the **Boards** button:

Board Options You press the **Continuous Feeding** button if you use the automatic feed table for serial printing. This enables you to feed in stacks of plate media in automatic or semi-automatic mode.

Press the **Manual Continuous Feeding** button, if you use a registration table and continuously feed a track with plate media manually.

Press the **Mechanical Front Stop** button when you are feeding in individual plate media and push the plate media manually to the front stop of the printer.

With the **Rows per Batch** selection list field you specify the number of rows after which the feed system is to carry out a forced stop. All the plates already fed in are first printed completely and transported out of the printer. Afterwards the measuring system reregisters new the plate edges of the next batch in order to avoid measuring errors in the image positioning.

Using the **Tracks** selection list field, you set the number of webs to be printed next to one another.

With the **Board Alignment** buttons, you can set whether the plate media are positioned at the right- or left-hand stop.

With the **Flexible Board Mode** button you ensure that flexible board media are fed and removed fault-free.

4.2.2 Roll media

The following functions are available if you press the **Roll Media** button:

Roll Media Options You press the **Heavy Roll Tool** button if you use a heavy roll tool.

If the **Media Detection while printing** button is activated, the printer checks whether the roll medium is running straight through the printer. If this option is activated, media width tolerance fluctuations can lead to undesired cancellation of printing, however. If you would like to avoid this, you must deactivate this option.

4.3 Media specification

You can define the following parameters on the **Specifications** sub-tab:

- Dimensions
- Distances
- Parameters for media transport
- UV drying

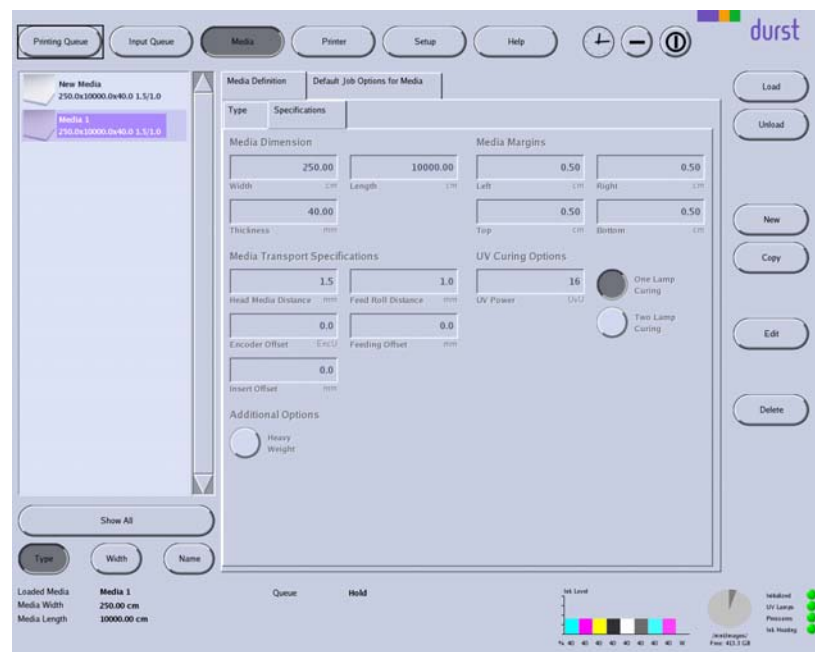


Fig. 65 **Specifications** sub-tab

Media Margins In the input fields under **Media Margins**, you define the printable area of the medium by entering left, right, top or bottom medium borders (**Left, Right, Top, Bottom**).

UV Curing Options Under **UV Curing Options**, you set the power of UV lamps for curing the printed medium. Durst recommends setting the power as low as necessary.

If the power level is too high, sensitive media can yellow or stretch. For this reason, it may be necessary to not carry out full curing so as to protect the medium.

In special cases, you will require more power. In such cases, it makes sense to increase the power level and work with two UV lamps.

Media Transport Specifications **Encoder Offset:** If the advance causes striping during printing, you can enter an encoder offset value. This value is added to or subtracted from the global encoder offset value (**General** tab).

Feeding Offset: In the case of heavy plate media a small offset can arise during transporting into and out of the printer. You can compensate this offset by entering a value for **Feeding Offset**.

Feed Roll Distance: You can change the contact pressure on the medium via the spacing of the transport rollers. With a value of "0", the contact pressure is at its maximum.

Feeding Offset: If you are loading a flexible medium with rounded corners, the optical sensor may detect the edge of the medium too late. This will result in a printing offset. You can compensate for this offset by entering a correction value.

Additional Options When printing heavy media, striping may occur due to slippage between the medium and the conveyor belt. You can minimize slippage with the **Heavy Weight** button.

4.4 Print options

You can define the following parameters, among others, on the **Print Options** sub-tab:

- Quality level
- Print direction
- Surface
- Print refinement and special effects
- Spot colors
- Curing delay

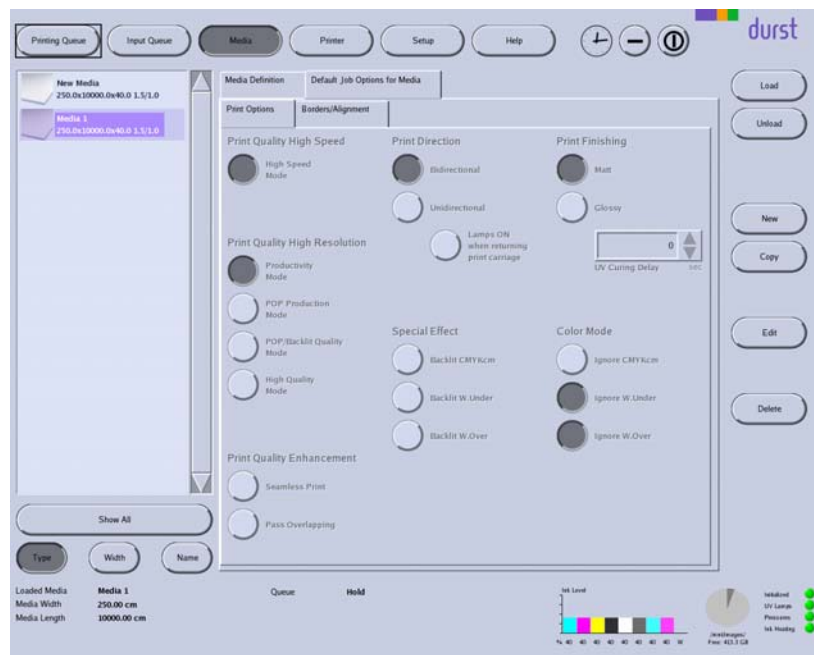


Fig. 66 **Print Options** sub-tab

Print Direction Bidirectional: The ink is applied in both directions when the print carriage moves. This increases print speed.

Unidirectional: The ink is only applied by the print carriage upon its outward traversal.

If the spot color white or an opaque ink for a shiny surface was created as its own channel during image processing, you can control the processing of the spot color individually.

Lamps ON upon carriage return: Durst recommends this option if you have selected **Unidirectional**.

4.5 Image border and alignment

You can define the following parameters, among others, on the **Borders/Alignment** sub-tab:

- Border distances
- Alignment
- Oversize

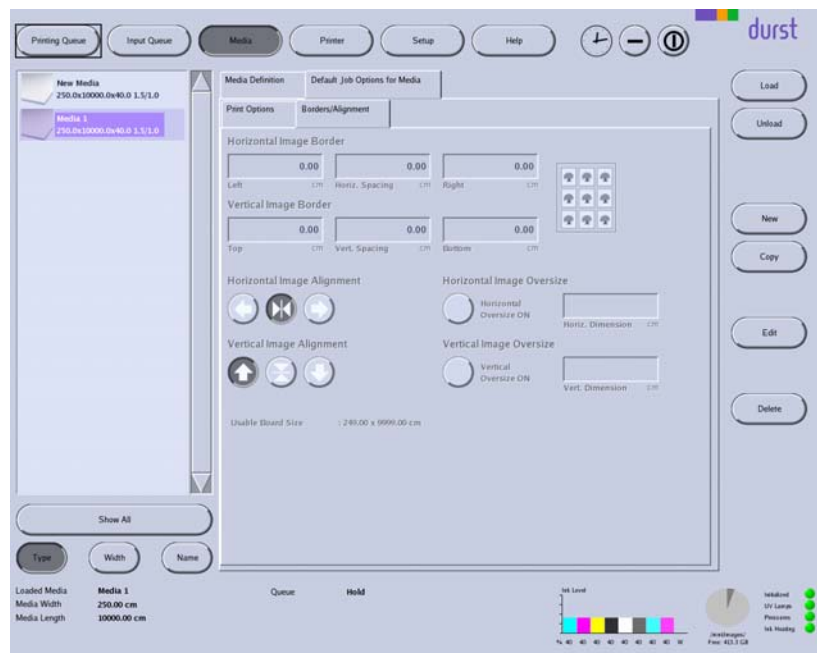


Fig. 67 Borders/Alignment sub-tab

4.5.1 Horizontal Image Border/Vertical Image Border

Under **Horizontal Image Border** and **Vertical Image Border**, you can enter an image spacing between the individual images and to the left or right border of the printable area.

In the input fields **Left**, **Right**, **Top** and **Bottom**, you enter the respective image borders to the left, right, top and bottom borders of the printable area. The printable area is defined by the media margins you entered on the **Specifications** sub-tab under **Media Margins**.

The total spacing of the image, for example to the left media edge, is the sum of the left media margin (**Left from Media Margins**) and the left image border (**Left from Horizontal Image Border**).

- 1 Left image border
- 2 Medium border
- 3 Image

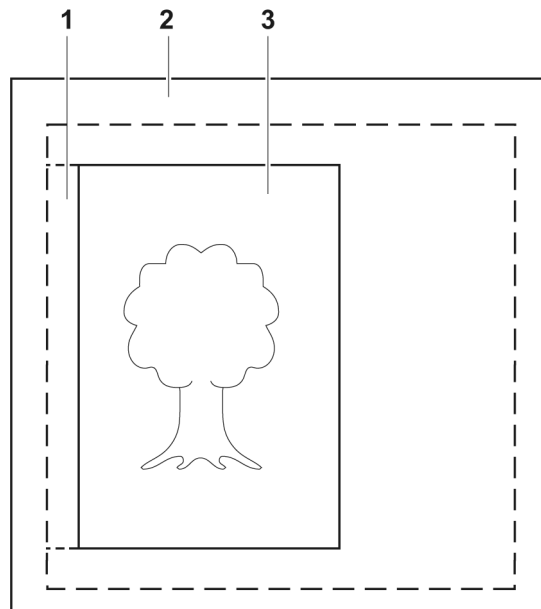


Fig. 68 Borders (schematic example)

In the **Horiz. Dimension**, **Vert. Dimension** input fields, always enter the horizontal or vertical spacing between the images.

4.5.2 Horizontal Image Alignment/Vertical Image Alignment

Using the buttons under **Horizontal Image Alignment** and **Vertical Image Alignment**, you can align the image on the medium vertically (top, bottom, centered) and horizontally (left, right, centered). Here, the image and its defined image border (**Horizontal Image Border** or **Vertical Image Border**) are considered to be a unit and are aligned as one.

- 1 Medium
- 2 Top image border
- 3 Image
- 4 Image and image border unit
- 5 Vertical centering axis

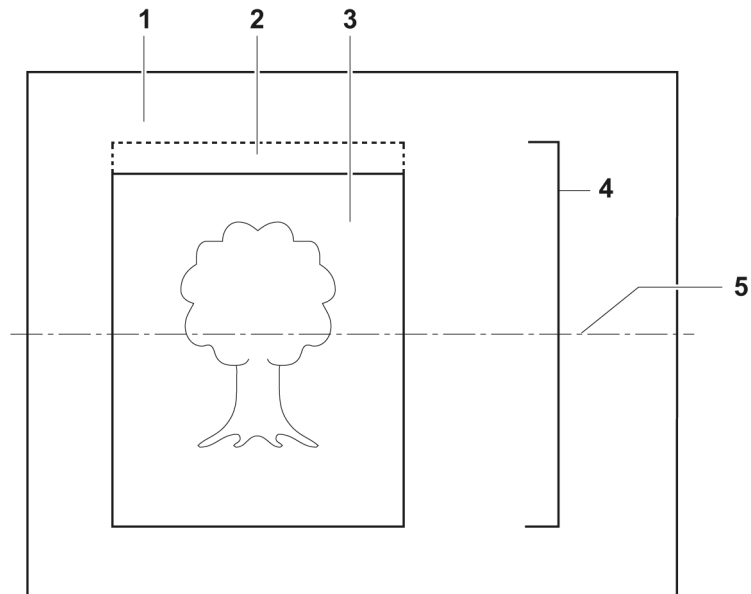


Fig. 69 Alignment of image with image border (schematic example for centered alignment)

4.5.3 Horizontal Image Oversize/Vertical Image Oversize

To ensure that the medium is printed up to the edge, you can enter an oversize for overprinting under **Horizontal Image Oversize** and **Vertical Image Oversize**. The software then clones the pixels at the image border and inserts them at the border according to the oversize. Here, printing occurs in the image border, image spacing or medium border by the oversize value.

- 1 Oversize
- 2 Medium border
- 3 Image
- 4 Image spacing

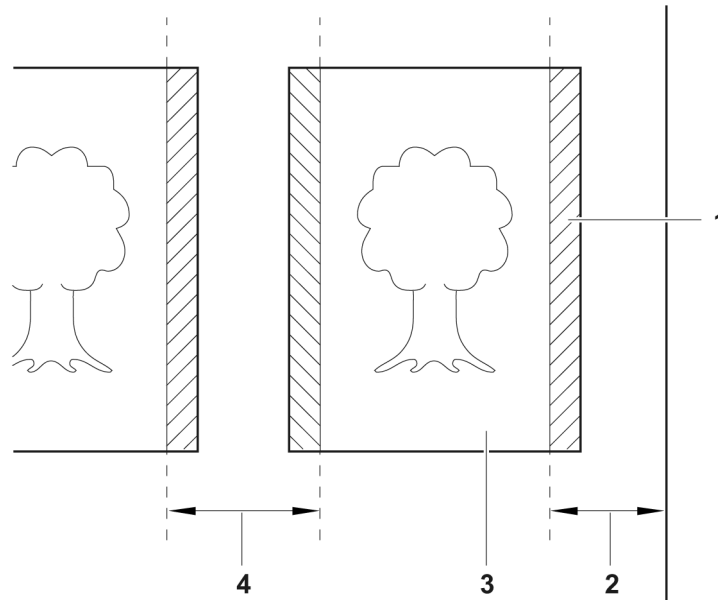


Fig. 70 Overprinting with images with borders (schematic example)

4.6 Creating, editing and deleting media channels

4.6.1 Creating new media channel

1. Press **Media**.
2. To create a media channel with completely new data, carry out the following steps:
 - Press **New**.
 - Select **Media Definition** tab.
 - Select **Type** sub-tab.
 - Enter a name in the **Media Name** input field.
 - Press **Select**.
 - Select media family.
 - Edit other media parameters.
3. To create a new media channel based on an existing media channel, carry out the following steps:
 - Select desired existing media channel in the navigation window.
 - Press **Copy**.
 - Modify desired parameters.
 - Rename media channel if necessary.
 - Edit other media parameters.
4. Press **Save**.

4.6.2 Editing existing media channel

1. Press **Media**.
2. Select desired media channel in the navigation window.
3. Select desired tab or sub-tab.
4. Press **Edit**.
5. Edit desired parameters.
6. Press **Save**.

4.6.3 Deleting media channel

1. Press **Media**.
2. Select desired media channel in the navigation window.
3. Press **Delete**.

4.6.4 Loading/unloading media channel

- ✓ The media channel is created
1. Press **Media**.
 2. Select desired media channel in the navigation window.
 3. Press **Load/Unload**.

5 Printing

Once the job has been prepared on the RIP server and transferred to the workstation of the printer, printing occurs in the following steps:

- Prepare job in the input queue (→ Page 113 / Input queue)
- Transfer job to the printing queue (→ Page 113 / Input queue).
- Initiate printing process in the printing queue (→ Page 116 / Printing queue).

5.1 Input queue

You prepare jobs for printing in the input queue under the **Input Queue** button. As soon as a job is transferred from the RIP server to the workstation, it appears in one of the corresponding input queues.

You define the printing parameters on the **Basics**, **Print Options**, **Borders/Alignment** and **Size** sub-tabs.

1 Navigation window



Fig. 71 Input queue

Navigation window Jobs intended for preparation are displayed in the navigation window (1).

Sub-tabs The **Print Options** and **Borders/Alignment** sub-tabs correspond to the sub-tabs on the **Media** tab (→ Page 104 / Managing media channels). You can modify the preset parameters for a job separately under **Media** on this sub-tab.

5.1.1 Basic settings

Define the following basic settings on the **Basics** sub-tab:

- Job name
- Media channel
- Number of copies
- Maximum number of images in a row and rows per page



Fig. 72 Basics sub-tab

If you want to select a media channel (**Media** list field), the software only offers you those media channels which are part of the media family of the job for pre-selection.

5.1.2 Image section

You can change the image crop of the ripped image on the **Size** sub-tab.

1 Slider



Fig. 73 Size sub-tab

To select an image crop, you can define how much is to be cut away from the respective image border. You have the following options here:

- Enter the desired number of pixels or select it with the arrow keys under **Image Crop** in the respective input fields **Left**, **Right**, **Top** and **Bottom**.
- Select the crop with the sliders (1).

If you want to move a selected image crop while maintaining the height/width,



you can lock the height/width with the button.

Crop to Board With the **Crop to Board** button, you crop an image starting from the top-left corner automatically and precisely to the size of the plate medium. The requirement here is that the image is larger than the plate medium.

Image Scale You scale the image with the buttons under **Image Scale**.

5.1.3 Preparing a job and transferring it to the Printing Queue

Preparing a job

1. Press **Printing Queue**.
2. Select desired job in the navigation window.
3. Select desired sub-tab **Basics**, **Print Options**, **Borders/Alignment** or **Size**.
4. Modify desired parameters.
5. Press **Save**.

Transferring jobs to Printing Queue

- ✓ The job is prepared
- 1. Select job in the navigation window.
- 2. Press **Print**.
- ↳ The job appears in the **Printing Queue**.

5.2 Printing queue

The **Printing Queue** dialog window shows all the jobs which have been transferred from the input queue for printing. You can change the order of jobs in the queue, delete jobs from the queue and initiate the printing process here.

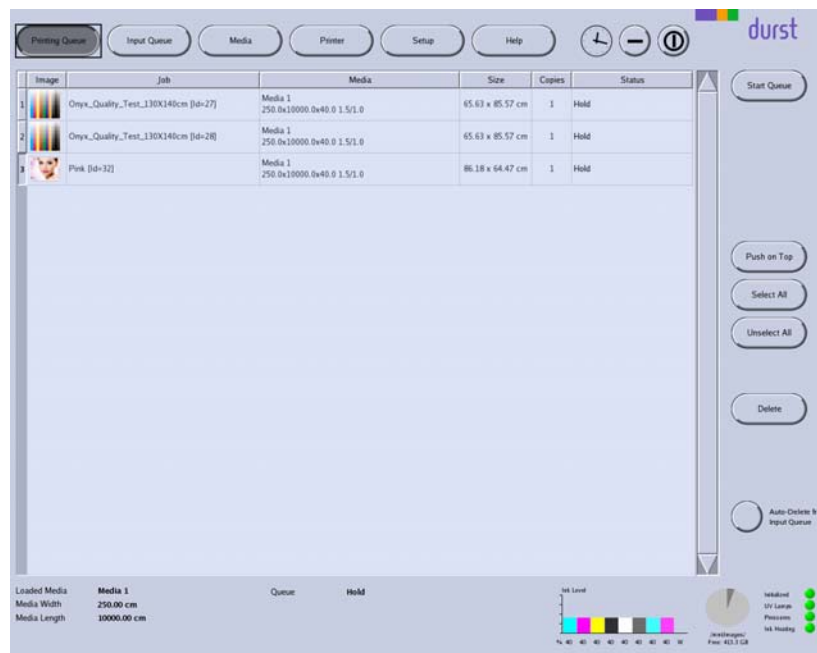


Fig. 74 Printing Queue dialog window

Start Queue Manager The printing process is started for the selected job with the **Start Queue** button.

Push on Top The selected job is moved to the front of the queue with the **Push on Top** button.

5.2.1 Initiate printing process in the printing queue

✓ If printing occurs over the edge of the medium, the conveyor belt is taped at the edges of the medium.

1. Press **Printing Queue**.

↳ The **Printing Queue** dialog window appears.

↳ All jobs in line for printing are displayed in the queue.

2. To print a job, carry out the following steps:

– Select desired job.

– Press **Start Queue**.

↳ The current print status is displayed on the status line.

G Service

1 Inspection and cleaning intervals

i Warranty and guarantee claims can only be made if the test images have been retained.

When?		What?
Daily		<ul style="list-style-type: none"> ▶ Check housing covers visually. ▶ Check condition of the encoder ruler and have it purged by Durst service technicians if heavily soiled. ▶ Carry out the work of daily print head maintenance (→ Page 130 / Print head maintenance). ▶ Check all warning signs for cleanliness and readability and replace if necessary. ▶ Ensure that all protective equipment is attached and in proper working order. This includes the following protective equipment (in particular): <ul style="list-style-type: none"> – Protective switches – Housing covers – Limit switches of the stacking unit – UV lamp protection – UV curtain at media outlet
Weekly	–	▶ Wiping printing plate(→ Page 130 / Print head maintenance)
	On the last workday in connection with the weekly shutdown	▶ Carry out the work of weekly print head maintenance (→ Page 130 / Print head maintenance).
	On the first workday at the beginning of shift	▶ Carry out the work of weekly print head maintenance (→ Page 130 / Print head maintenance).
Monthly		<ul style="list-style-type: none"> ▶ Check air filter of UV lamps and change if necessary (→ Page 125 / Checking and replacing air filter). ▶ Clean exhaust grate. ▶ Change filter of the ink separator (→ Page 124 / Changing filter of the ink separator)

When?	What?
Annually	<ul style="list-style-type: none"> ▶ Have print heads checked and, if necessary, adjusted by Durst service technicians. ▶ Change main ink filters (→ Page 127 / Changing main ink filters) ▶ Allow only Durst service technicians to check pneumatic circuits.
When necessary	<ul style="list-style-type: none"> ▶ Clean housing of the printer (→ Page 127 / Cleaning housing). ▶ Remove leaked ink. ▶ Clean conveyor belt. ▶ Carry out print head maintenance (→ Page 130 / Print head maintenance). ▶ Clean catch tray of scraping blade (→ Page 122 / Clean catch tray of scraping blade).
In case of fault or defect	<ul style="list-style-type: none"> ▶ Check fuses and, if necessary, have replaced by Durst service technicians (→ Page 127 / Checking fuses).

2 Important information

Scattered light from the UV lamps reduces print quality. Scattered light may be present in the following cases:

- Black painted surfaces are scratched and thus take on a reflective surface.
- The light trap carrier is not installed.
- ▶ Do not touch black painted surfaces with hard objects, e.g. knives.
- ▶ Ensure that the light trap carrier is always installed.
- ▶ Repaint discolored black painted surfaces on the transport system or light trap with black paint.

3 Initialization after closing the flip doors

Once you have closed the flip doors after service work, you must reinitialize the print carriage.

- ✓ The flip doors are closed
- ▶ Initialize print carriage in the software (→ Page 100 / Operating printer functions).

4 Emptying catch tank

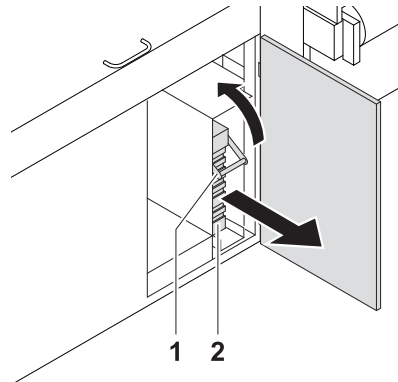


Fig. 75 Emptying catch tank

⚠ WARNING

Contact with ink!

Health hazard

- ▶ Wear protective gloves.
- ▶ Wear safety goggles.
- ▶ Avoid allowing ink to come into contact with skin and eyes.

1. Open door.
2. Slide handle upwards using the grip (1).
3. Pull out catch tank (2).
4. Remove and empty catch tank.
5. Replace empty catch tank in its original position.
6. Slide handle downwards using the grip.
7. Close door.

5 Refilling ink

⚠ WARNING

Contact with ink!

Health hazard

- ▶ Wear protective gloves.
- ▶ Wear safety goggles.
- ▶ Avoid allowing ink to come into contact with skin and eyes.

NOTICE

Unsuitable ink!

Damage to the print heads

► Use only Durst ink.

Placing cubitainer into the loading compartment

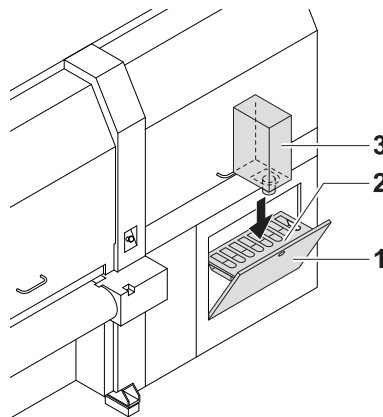


Fig. 76 Placing cubitainer into the loading compartment

1. Pull out cover (1) of the loading compartment (2).
2. Prepare cubitainer (3) for the desired color (Y, M, C or K).
3. Shake cubitainer.
4. Place cubitainer with the connector facing downwards in the loading compartment.

Starting refilling procedure ✓ The cubitainers are located in the loading compartment

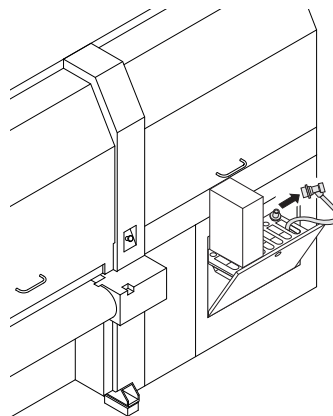


Fig. 77 Removing the filling hose from the park position

5. Once the ink has been identified correctly, remove the respective filling hose from the park position.

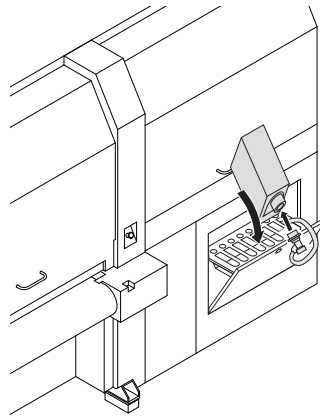
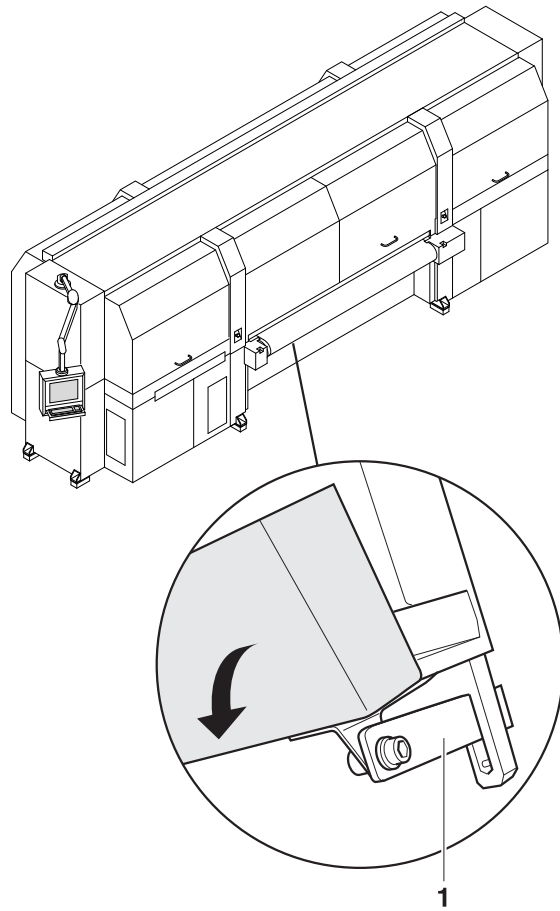


Fig. 78 Connecting the filling hose

6. Attach the quick connector of the filling hose to the connection piece of the cubitainer as follows:
 - Pull coupling back.
 - Attaching coupling to the connection piece.
 - Release coupling.
7. Let ink run into tank.
8. Remove coupling.
9. Return filling hose to the park position.
10. Remove empty cubitainer.

6 Clean catch tray of scraping blade

⚠ WARNING
Contact with ink! Health hazard <ul style="list-style-type: none">▶ Wear protective gloves.▶ Wear safety goggles.▶ Avoid allowing ink to come into contact with skin and eyes.



1. Press latch (1) upward.
2. Fold catch tray (2) downward.
3. Purge catch tray.

7 Changing filter of the ink separator

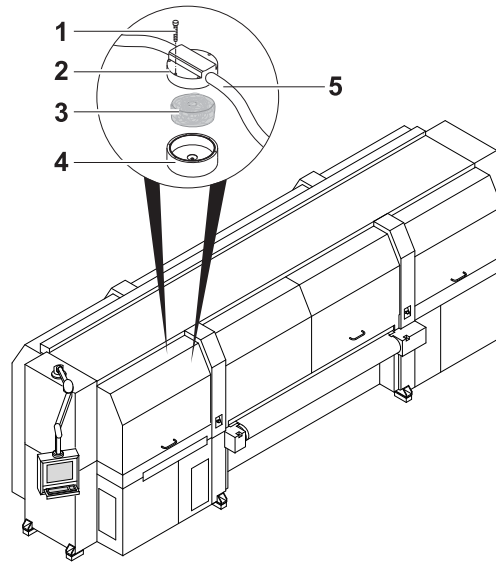


Fig. 79 Changing filters of the ink separators

⚠ WARNING

Energized components!

Risk of death via electric shock

- ▶ Switch off printer with the main switch.
- ▶ Secure the main switch with a lock.

⚠ WARNING

Contact with ink!

Health hazard

- ▶ Wear protective gloves.
- ▶ Wear safety goggles.
- ▶ Avoid allowing ink to come into contact with skin and eyes.

1. Remove hoses (5).
2. Unscrew the ink separator completely and remove it.
3. Loosen all the screws (1) at the top part (2).
4. Remove the filter (3).
5. Place the new filter into the bottom part (4) so that the yellow side faces up.

- i
 The power of the suction strips will drop off if the seal between the top and bottom sections is defective. For this reason, the filter material may not be clamped in between the sealing ring and top part at any point.
- 6. Put on the top part while ensuring that the filter material is not clamped in between the sealing ring and top part at any point when doing so.
- 7. Screw down the top part.
- 8. Screw on the ink separator.
- 9. Connect the hoses.

8 Checking and replacing air filter

⚠ WARNING

Energized components!

Risk of death via electric shock

- ▶ Switch off printer with the main switch.
- ▶ Secure the main switch with a lock.

⚠ WARNING

Hot surfaces!

Risk of burns

- ▶ Wait at least 1 hour after switching off until the UV lamps have cooled down before attempting replacement.
- ▶ Wear protective gloves.

NOTICE

Encoder ruler could be scratched!

Reduced functionality of the printer

- ▶ Do not touch the encoder ruler with hard objects.

1. Switch off printer with the main switch.
2. Secure the main switch with a lock.
3. Manually push the print carriage to a suitable position.
4. Disconnect printer from the power supply.
5. Fold the corresponding front panel up.

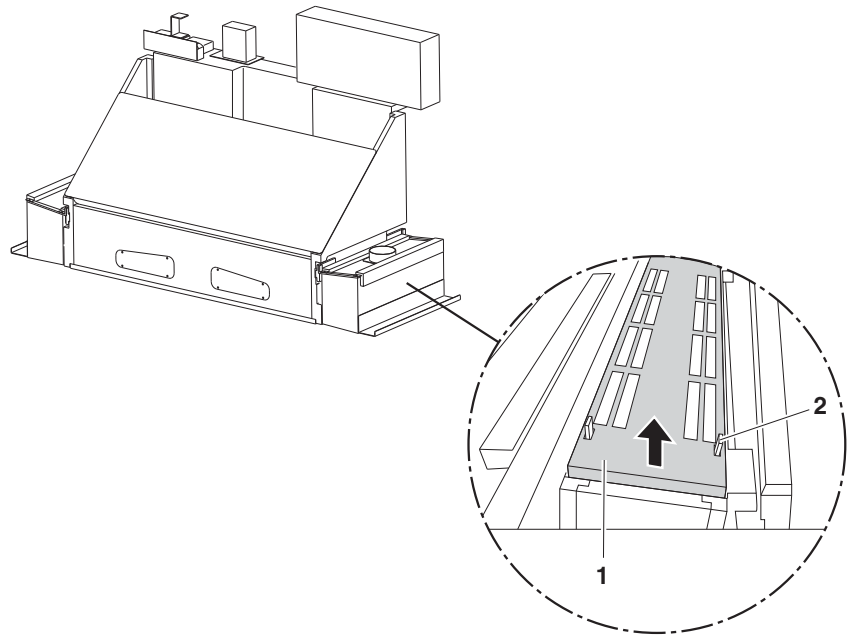


Fig. 80 Removing the air filter

6. Press the retaining brackets (2) slightly apart.
7. Remove mount (1).
8. Check air filter for soiling.

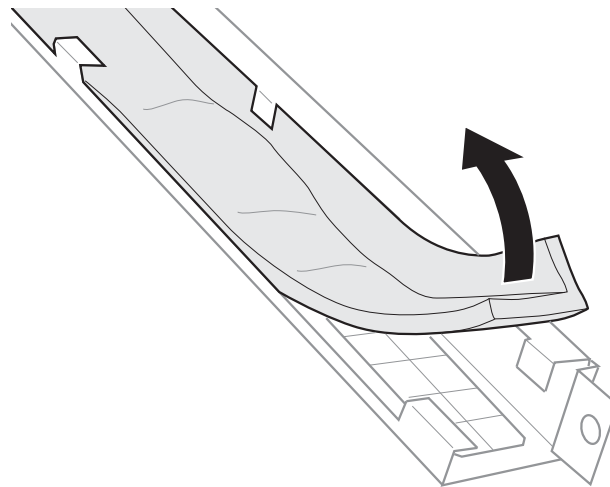


Fig. 81 Checking and, if necessary, replacing the air filter

9. If the air filter is black, replace it.
10. To reassemble, reverse the disassembly procedure.

9 Cleaning housing

⚠ WARNING

Penetration of moisture into the printer!

Electric shock and damage to the printer

- ▶ Do not clean printer with high-pressure cleaner.
- ▶ Use only a slightly moist cloth or dust brush to clean the housing.

- ▶ Use a slightly moist cloth or dust brush to clean the housing.

10 Checking fuses

NOTICE

Wrong fuses!

Damage to the printer

- ▶ Allow only Durst service technicians to change fuses.

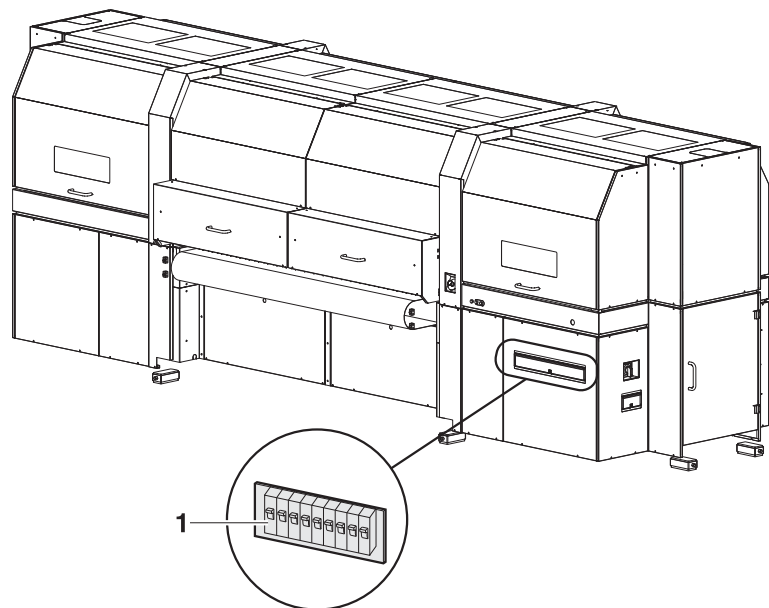


Fig. 82 Checking fuses

1. Check whether fuses (1) are switched off.
2. Switch on fuses if necessary.
3. If fuses switch off again, notify Durst customer service.

11 Changing main ink filters

The main ink filters prevent the print heads from being damaged by soiled inks.

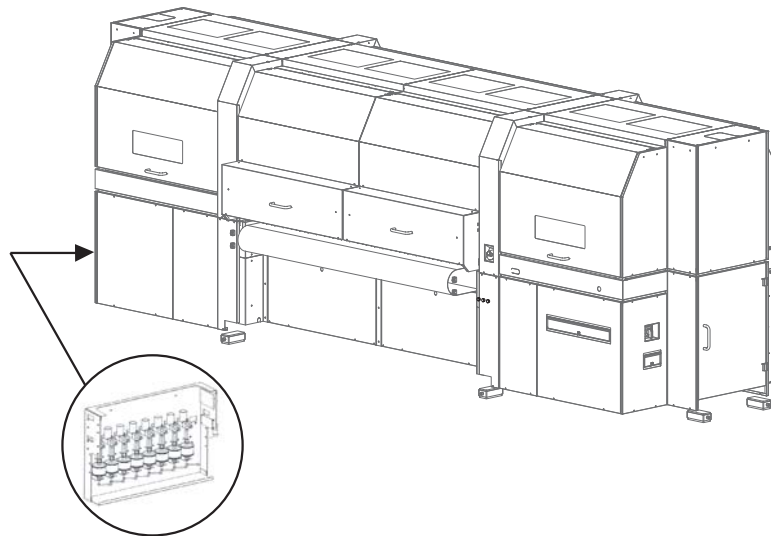


Fig. 83 Location of the main ink filters

⚠ WARNING

Energized components!

Risk of death via electric shock

- ▶ Switch off printer with the main switch.
- ▶ Secure the main switch with a lock.

⚠ WARNING

Starting ink pump!

Danger to health through emitted ink

- ▶ Switch off printer with the main switch.
- ▶ Secure the main switch with a lock.

⚠ WARNING

Contact with ink!

Health hazard

- ▶ Wear protective gloves.
- ▶ Wear safety goggles.
- ▶ Avoid allowing ink to come into contact with skin and eyes.

1. Switch off printer with the main switch.
2. Secure the main switch with a lock.
3. Screw off cover plate.
4. Lay a cloth under the ink filter to catch any emitted ink.



Fig. 84 Opening top fitting

5. Screw off fitting of top connection and detach hose of the ink filter.



Fig. 85 Closing ink filter

6. Close ink filter with fitting.
7. To prevent ink from flowing from the ink filter when removing ink, swivel ink filter with the top down.

i When screwing off the bottom fitting, ink may flow from the bottom connection line.

8. Screw off fitting on the bottom connection and carefully remove ink filter.



Fig. 86 Inserting new ink filter

9. Connect new ink filter at bottom and top connections.
10. Remove the cloth.
11. Screw on cover plate.
12. Dispose of used ink filters according to local regulations.

12 Print head maintenance

12.1 Required tools/accessories

- Protective gloves
- Protective goggles
- Cleaning cloths (WW3009)
- Cleaning solution (face plate solution)
- New silicone tube from closed package

12.2 Daily print head maintenance

12.2.1 Beginning of shift and, if necessary, during the shift

Nozzles can fail due to soiled media or longer downtimes. The following work has to be carried out daily before starting work (once every 24 hours in case of 24-hour operation) and, if necessary, during the shift:

1. Initiate the long purge cycle (→ Page 133 / Carrying out the long purge cycle).
2. Wipe all the print heads wet (→ Page 134 / Wiping print heads wet).
3. Begin with printing within the next half an hour. The print should fulfill at least the following parameters:
 - Duration: min. 20 min
 - Width: 2 m
 - Material: Kapa
 - Quality: 4-pass bidirectional
 - Tone: Dark images
4. If several nozzles have failed and angled jets are evident: Suck out nozzles (→ Page 136 / Vacuuming out soiled nozzles).
5. If the quality issues have not been remedied: Notify Durst customer service.

i Warranty and guarantee claims can only be made if the test images have been retained.

6. Archive test image (→ Page 141 / Documentation of the print head state).

12.3 Weekly print head maintenance

12.3.1 Shutdown for the weekend or up to a max. of 4 days

The following work has to be carried out at the beginning of the shift on the last workday:

NOTICE

Ink residue at the nozzle edges after purge cycle!

Damage to the print heads due to insufficient cleaning

- ▶ Wipe all the print heads wet after the long purge cycle.

1. Initiate the long purge cycle (→ Page 133 / Carrying out the long purge cycle).
2. Wipe all the print heads wet (→ Page 134 / Wiping print heads wet).
3. Print a test image.
4. Begin with printing within the next half an hour. The print should fulfill at least the following parameters:
 - Duration: min. 20 min
 - Width: 2 m
 - Material: Kapa
 - Quality: 4-pass bidirectional
 - Tone: Dark images
5. If an additional long purge cycle is carried out on the same day, wipe at least the YM and MY print heads wet afterwards.

12.3.2 Beginning of shift after a weekend or a longer shutdown

1. Create a test image with the date and serial number of the printer.
 - Warranty and guarantee claims can only be made if the test images have been retained.
2. Archive test image (→ Page 141 / Documentation of the print head state).

12.4 Preparatory work at the cleaning access point**12.4.1 Opening/closing cleaning access point**

The print heads are accessed for wiping and suction via the cleaning access point. Before beginning work, the cleaning access point must be prepared as follows:

- ✓ The print carriage stands in the reference position.

WARNING

Contact with ink!

Health hazard

- ▶ Wear protective gloves.
- ▶ Wear safety goggles.
- ▶ Avoid allowing ink to come into contact with skin and eyes.

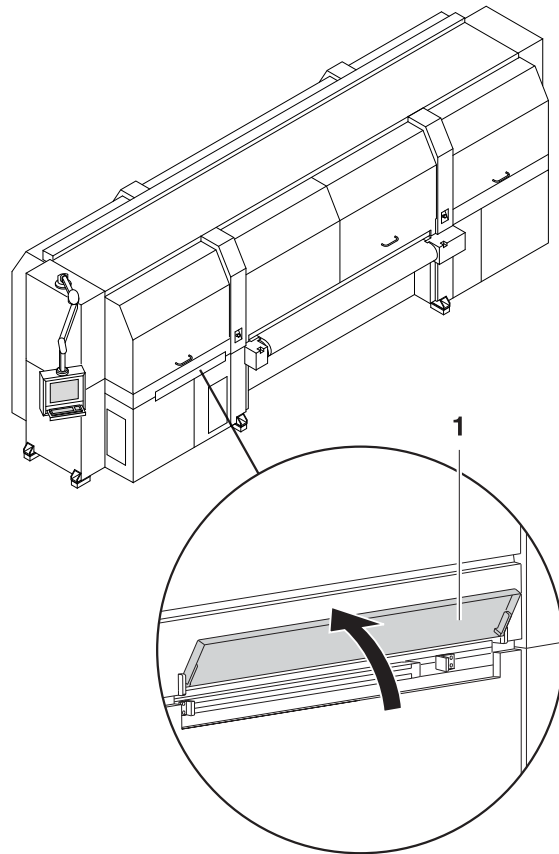
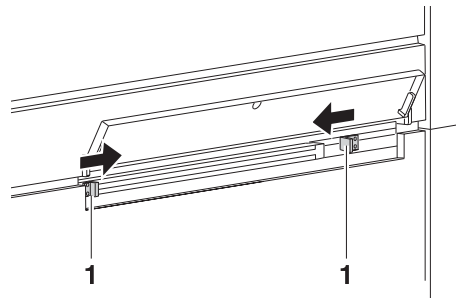


Fig. 87 Opening the flap

1. Open the flap (1).



2. To unlock the guide rails press the latch (1) inwards.

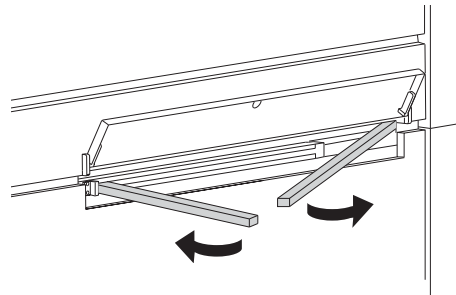


Fig. 88 Folding out the guide rails

3. Fold out the guide rails.

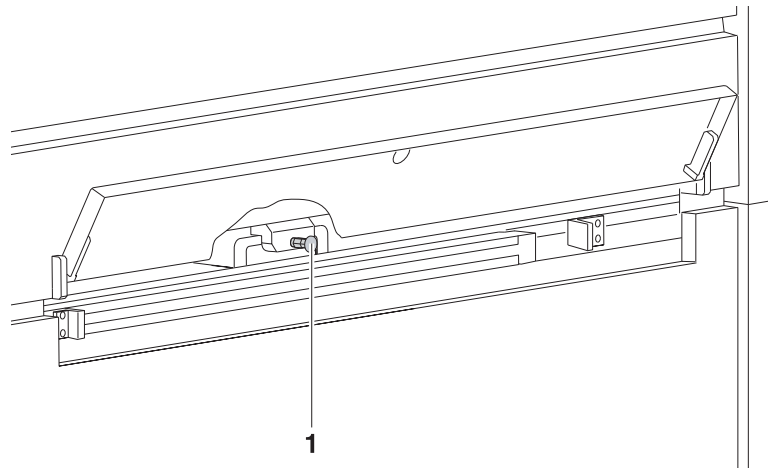


Fig. 89 Loosening the grip

4. Pull out the locking knob (1) and loosen the grip.

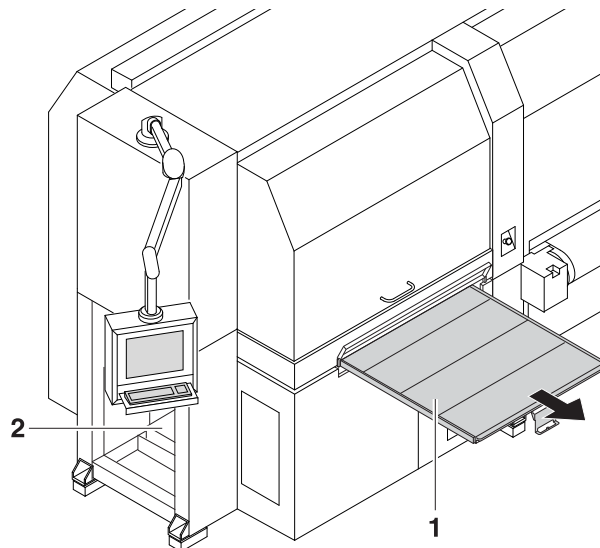


Fig. 90 Pulling out the light trap carrier

5. Pull out the light trap carrier (1) using the grip.
6. Open cleaning access point (2).
7. Carry out cleaning.
8. Push in light trap carrier.

12.5 Purge cycle

12.5.1 Carrying out the long purge cycle

1. Press the **Printer** button in the software.
2. Press the **Purge** tab.

3. Press the **Long** button under **Purge Cycle**.
 - ↳ The print carriage moves over the catch tank.
 - ↳ The purge cycle is started.
 - ↳ All the print heads are first purged and then cleaned by the suction strip row by row.
 - ↳ The ink is collected in the catch tank.
 - ↳ After purging has been completed, the print carriage moves into the park position.

12.6 Wiping print heads

12.6.1 Wiping print heads wet

- ✓ The long purge cycle has been carried out.

⚠ WARNING
<p>Contact with ink!</p> <p>Health hazard</p> <ul style="list-style-type: none"> ▶ Wear protective gloves. ▶ Wear safety goggles. ▶ Avoid allowing ink to come into contact with skin and eyes.

NOTICE
<p>Cleaning with unsuitable cleaning tools!</p> <p>Damage to the print heads</p> <ul style="list-style-type: none"> ▶ Clean print heads with the specified cleaning cloths and cleaning solution only.

1. Prepare cleaning access point for print head maintenance (→ Page 131 / Opening/closing cleaning access point).
2. Pour cleaning solution into dispenser bottle.



Fig. 91 Saturating cleaning cloth with cleaning solution

3. Saturate cleaning cloth with cleaning solution.



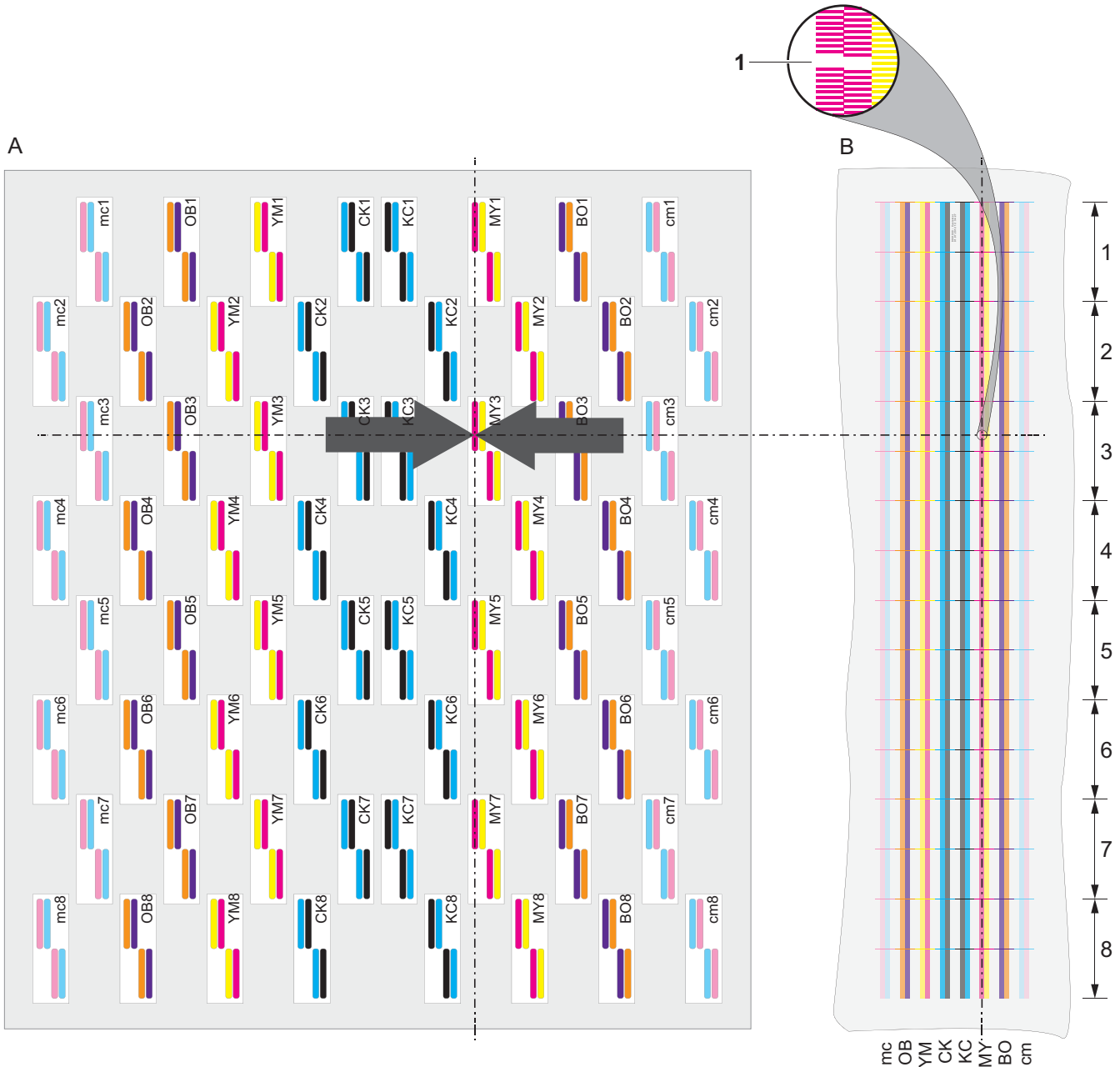
Fig. 92 Wiping print head

4. Depending on the requirements, wipe the YM and MY print heads or all the print heads wet along the slot once from back to front until all remaining color residues or coatings have been removed. The print head surface must be bare.
5. Prepare cleaning access point for printing.
6. Print to stabilize the nozzles.

12.7 Vacuuming out soiled nozzles

Soiled nozzles can be vacuumed out either with the integrated vacuum system or a syringe.

12.7.1 Locating soiled nozzles



A Print carriage from above
 B Test image from above

1 Location of the soiled nozzle

► Locate position of the soiled nozzles with the test image.

12.7.2 Vacuuming out print heads with vacuum system

⚠ WARNING

Contact with ink!

Health hazard

- ▶ Wear protective gloves.
- ▶ Wear safety goggles.
- ▶ Avoid allowing ink to come into contact with skin and eyes.

1. Prepare cleaning access point for print head maintenance (→ Page 131 / Opening/closing cleaning access point).



Fig. 93 Placing silicone tube on the vacuum hose.

2. Place a new silicone tube on the vacuum hose.



Fig. 94 Opening the valve

3. Open valve (1).



Fig. 95 Vacuuming out the print head

4. Vacuum off print head at the location of the dirty nozzles with the vacuum hose. When doing so, move vacuum hose back and forth approx. 2 cm several times.
5. Empty the catch glass when it is half full.
- **i** If the valve is not closed after vacuuming, the vacuum for degassing the ink drops off. This could cause nozzles to fail during printing.
6. Close valve.
7. Prepare cleaning access point for printing.

12.7.3 Vacuuming out print heads with syringe

⚠ WARNING

Contact with ink!

Health hazard

- ▶ Wear protective gloves.
- ▶ Wear safety goggles.
- ▶ Avoid allowing ink to come into contact with skin and eyes.

1. Prepare cleaning access point for print head maintenance (→ Page 131 / Opening/closing cleaning access point).



Fig. 96 Placing silicone tube on the tip of the syringe

2. Place a new, clean silicone tube (1) on the tip of the syringe.

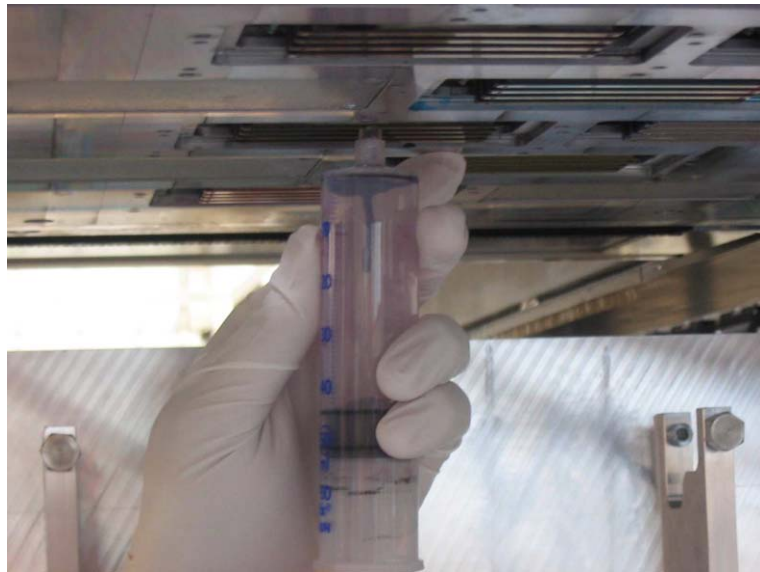


Fig. 97 Vacuuming out the print head

3. Vacuum off print head at the location of the dirty nozzles by drawing out the syringe piston. When doing so, move syringe back and forth approx. 2 cm several times.
4. Prepare cleaning access point for printing.

12.8 Cleaning the printing plate

12.8.1 Wiping printing plate

⚠ WARNING

Contact with ink!

Health hazard

- ▶ Wear protective gloves.
- ▶ Wear safety goggles.
- ▶ Avoid allowing ink to come into contact with skin and eyes.

NOTICE

Improper wiping!

Penetration of dirt into the print heads

- ▶ Wipe printing plate dry only.
- ▶ Do not touch print heads with cleaning cloth.

1. Prepare cleaning access point (→ Page 131 / Opening/closing cleaning access point).

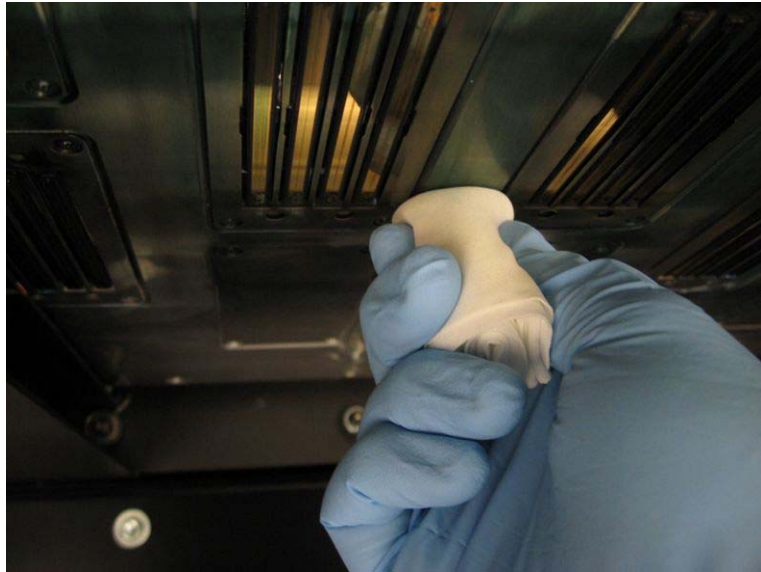


Fig. 98 Wiping printing plate

2. Carefully wipe printing plate around the print heads.
3. Prepare cleaning access point for printing.

12.9 Documentation of the print head state

12.9.1 Documenting the state of the print heads

1. Create a test image with the date and serial number of the printer.

i Warranty and guarantee claims can only be made if the test images have been retained.

2. Archive test image.

13 Disposal

13.1 Disposing of ink, cleaning cloths and cubitainers

- ▶ Dispose of ink, cleaning cloths and air filters in an environmentally friendly way according to local regulations.

H Decommissioning and disassembly

Decommissioning and disassembly are performed by service technicians authorized by Durst Phototechnik AG.

Appendix

1 Technical data

1.1 General specifications

Parameter		Value
Power supply	Europe	230/400 V AC, 3 N AC, 50 Hz, 60 kVA
	US	Via external transformer only
Max. current consumption	Europe	86 A/phase
	US	48 A
Compressed-air input		<ul style="list-style-type: none"> ■ Max. 6 to 8 bar at 5 L/min (87 to 116 psi at 1.3 gal/min) ■ Dry air only
Compressed-air connection on printer		Coupling standard MIGNON Interior diameter of line: min. 8 mm (315 mill)
Fuses		Fuse type F374-63/0.5 (500 mA)
Dimensions	Width	720 cm + 180 cm with swiveling monitor
	Length	With feed table: 11 m
	Height	<ul style="list-style-type: none"> ■ With closed doors: 237 cm ■ With opened doors: 259 cm
Space requirement	Area	11 x 15 m
	Required room height	280 cm
Weight		8500 kg
Emission sound pressure level		76 dB(A)
Safety standards		Pursuant to applicable guidelines

1.2 Print specifications

Parameter		Value
Printing mode	Draft Mode	<ul style="list-style-type: none"> ■ Rho 1012: 490 m²/h ■ Rho 1030: 1000 m²/h
	High Speed	<ul style="list-style-type: none"> ■ Rho 1012: 450 m²/h ■ Rho 1030: 850 m²/h
	Productivity Mode	<ul style="list-style-type: none"> ■ Rho 1012: 380 m²/h ■ Rho 1030: 700 m²/h
	POP Production Mode	<ul style="list-style-type: none"> ■ Rho 1012: 250 m²/h ■ Rho 1030: 450 m²/h
	POP/Backlit Quality Mode	<ul style="list-style-type: none"> ■ Rho 1012: 190 m²/h ■ Rho 1030: 350 m²/h
	High Quality Mode	<ul style="list-style-type: none"> ■ Rho 1012: 125 m²/h ■ Rho 1030: 230 m²/h
Resolution		<ul style="list-style-type: none"> ■ Rho 1012: 1000 dpi ■ Rho 1030: 600 dpi
Colors	Standard	CMYK
	Optional	<ul style="list-style-type: none"> ■ CMYKW and 1 spot color ■ CMYK and 2 light and 2 spot (white/white or white/varnish) ■ CMYKcm ■ Orange ■ Violet ■ Rigid Board Ink Set ■ POP Ink Set ■ Process Color Addition (combination of 2 colors): Orange + Blue or Orange + Green
Ink supply unit		<ul style="list-style-type: none"> ■ Continuous ink feed with 10 L (2.19 gal) ink tanks per color ■ Color can be refilled during operation ■ Refill ink comes in 5 L (1.09 gal) cubitainers (can be disposed of while assembled)
RIP	Software	Caldera Grand RIP + with the Durst Rho 1012/1030 printer driver for Linux and Macintosh operating systems
	RIP input file formats	All formats supported by Caldera®

1.3 Media specifications

Parameter	Value
Rigid media	Uncoated and coated plate media. Examples: <ul style="list-style-type: none"> ■ Rigid-foam plates ■ Flexible-foam plates ■ Aluminum ■ Acrylic glass ■ Polycarbonate
Minimum ignition temperature	150 °C (302 °F)
Maximum printing width	250 cm
Maximum printing length	Limited only by medium length
Maximum medium thickness	<ul style="list-style-type: none"> ■ Standard: 40 mm ■ Industrial model: 70 mm
Minimum plate size	<ul style="list-style-type: none"> ■ For manual loading: DIN A3 (29.7 x 42 cm) ■ Automation depending on loading unit

1.4 Workstation

Parameter	Value
Operating system	Red Hat Enterprise Linux
Connections	<ul style="list-style-type: none"> ■ USB ■ Ethernet: 100/1000 Mbps

1.5 Requirements for installation site

Parameter	Value
Maximum altitude	2400 m (8000 ft) above sea level
Temperature range	+20 °C to +30 °C
Relative humidity	25 to 80%, non-condensing
Hot air output/feed	4500 m ³ /h (158900 cu.ft./h)
Compressed-air connection	6 to 8 bar with 5 L/min (70 psi at 1.3 gal/min) (dry air only)
Exhaust quantity of the exhaust equipment	Min. 1000 m ³ /h (35,315 cu.ft./h) Recommended: 2300 m ³ /h (81,224 cu.ft./h)
Illumination	Min. 500 lx

2 Accessories and spare parts

Accessory/Spare part	Description		Order code
<ul style="list-style-type: none"> ■ Rho POP Ink Set ■ Rho Paper & Board Ink Set ■ Rho DS Ink Set 	8 colors each to be selected from: <ul style="list-style-type: none"> ■ Cyan ■ Magenta ■ Yellow ■ Black ■ Light cyan ■ Light magenta ■ Orange ■ Violet ■ Green 	2 x 5 L (2 x 1.3 gal)	On request
Air filter for the UV lamp heads	–		LB2099041
Adjusted print head	Fully pre-adjusted print head with distributor tank, mounting structure and electronics		LC2021400
Hardware service contract	–		Rho Hardware Contract
Protective gloves	Nitrile protective gloves N-DEX		4235060
Protective goggles	Safety goggles UVEX 9195		1351015
Cleaning cloths	WW3009 150 x		1473245
Cleaning solution	Faceplate Solution		IR30001
Syringe (optional)	50 mL syringe		E4235850
Silicone tubes	Hose sections		E1460180



Durst Phototechnik
Digital Technology GmbH
Julius-Durst-Straße 11
A-9900 Lienz, Austria
Phone +43/4852/7 17 77
Fax +43/4852/7 17 77 50
www.durst-online.com
info@durst-online.at

The latest technical developments are constantly being incorporated into Durst products. Illustrations and descriptions are therefore subject to modification. All rights reserved on images and illustrations.

© Durst Phototechnik AG
Durst Rho 1012/1030, Issued 07/2013