

BaumPrint 18 OPERATORS MANUAL

Preface

1.1 Notes for the reader

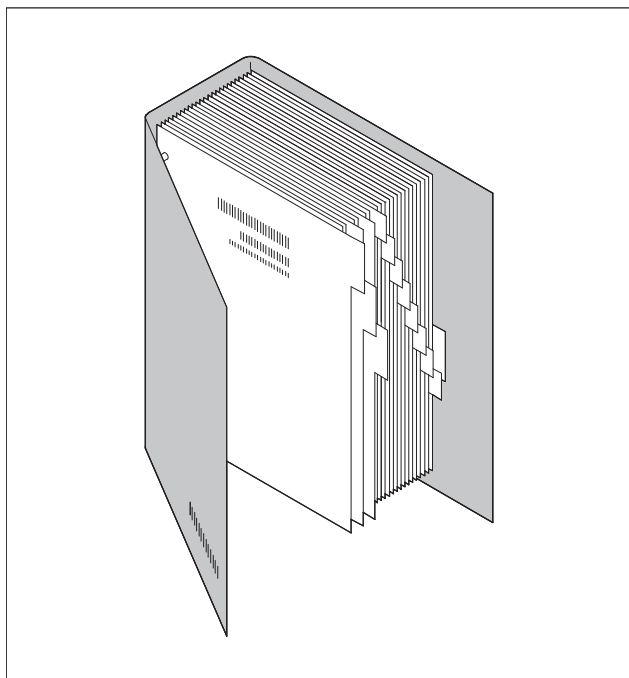


Fig. 1

Target group

This operating manual is addressed to you as an operator of the BaumPrint 18 (BP18). It applies to all presses of this model series. It shows you how to operate the press and how to quickly achieve good results. Keep this manual near the printing press.

Structure of the operating manual

The operating manual is divided into the main chapters A, B, C, D and E, indexed by letters. Main chapters B, C and D are each subdivided into sections indexed by numbers.

Main chapter **A Safety devices** contains all information you require for safely working on your press.

Main chapter **B Control elements** describes the control panels on your press and the functions of the electronic control system.

Main chapter **C Press** describes the typical activities for makeready of the press and for production, as well as basic settings, installation, removal and adjusting the rollers.

Main chapter **D Maintenance** contains all information you need for press maintenance.

Main chapter **E Index** will help you precisely locate particular information.

You will find the appropriate list of contents at the beginning of each chapter.

Control panels and displays

This manual describes the press with its maximum equipment. The control panels and displays on your press can therefore deviate from this - depending on type and equipment.

Abbreviations used in this document

Fig.	Figure
D.S.	Drive side
O.S.	Operator's side
PU	Printing unit
LED	Light-emitting diode

Topicality

The information provided in this manual corresponds to the press series version at the time of publication of this document. We reserve the right to make changes in accordance with the progress of modern technology.

Should you have any questions, please contact your Baum Dealer.

Note on protection

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1.1 Hints for the user and operator of the press

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EC conformity declaration

We herewith declare that the design of the

product:
model/type:
machine no.:
year of manufacture:

meets the following pertinent stipulations as per the version valid at the present time:

- EC Machinery Directive
- EC EMC Directive
- Low-voltage Directive

Harmonized standards used, in particular:

- EN 1010
- EN 60204

- You have received a copy of the EC declaration of conformity together with the invoice documents.
- Attach this copy to the operating manual.

1.3 Structure of the safety instructions

In order to clarify the individual safety instructions, symbols (pictographs) with a specific meaning are as-

signed to each category. Some of the pictographs are also attached to the press as stickers.

First-level safety instruction

These safety instructions warn you of potential dangerous situations. Non-observance of these instructions can lead to serious injury, and in extreme cases, can result in death. In addition, machinery and accessory equipment may be seriously damaged.

Relevant pictographs with keywords:



Warning - General hazards!

Description



Warning - Risk of injury from electric current!

Description



Warning - Risk of injury on hot surfaces!

Description



Warning - Risk of injury due to rotating rollers, cylinders or gear wheels!

Description



Warning - Risk of injury from moving parts!

Description



Warning - Risk of injury from revolving chain gripper systems!

Description



Warning - Risk of injury during automatic non-stop procedure!

Description



Warning - Risk of explosion!

Description



Warning - Risk of cutting injury!

Description



Warning - Risk of injury from falling!

Description

Example:



Warning - Risk of injury due to rotating rollers, cylinders or gear wheels!

Carelessness can lead to crush injuries on your fingers! When you clean the cylinders, make sure that the ball of your hand points in the direction of the infeed nip. The fingers must point in the direction of the outlet nip! Select the corresponding direction of rotation.

Second-level safety instruction

This safety instruction warns you of potentially unwanted situations. Non-observance of these instructions may result in damage to machinery and accessory equipment.

Relevant pictograph with keyword:



Caution - <Brief description of the hazard>

Description

Example:



Caution - Damage to grippers and cylinders!

Print sheets can be bent in reverse direction and can damage grippers, blast tubes and cylinder surfaces. Reverse-inch or position the press only when no sheets are in the press.

1.4 Intended use

The press is designed for printing tabular, flexible printing materials (paper, cardboard, foils). The maximum size and the maximum thickness of the printing material can be found in the section "Technical specifications".

The press may only be controlled and operated by personnel trained and instructed for this purpose. Installation, conversion and dismantling of the press may only be performed by the customer service of the Baum Dealer.

When installing and handling the printing press, the user and his/her employees must observe the national safety and accident prevention regulations.

Improper use and non-observance of the operating manual may jeopardize

- your health
- your life
- presses and equipment.

Safety devices on the press

- must not be removed,
- must not be manipulated,
- must not be bypassed,
- must be checked daily for correct functioning.

Baumfolder takes responsibility only for the delivery state of the press and for any work performed by skilled Baumfolder personnel.

1.5 Your personal protection equipment

When working on the press, wear

- safety shoes,
- close-fitting clothing,
- if necessary, a hairnet,
- protective gloves and safety goggles when cleaning manually or topping up chemicals,
- no jewelry, watches, etc., which might get caught up in grippers, moving parts or roller infeed nips,
- cut-resistant protective gloves when handling sharp-edged components (e.g. chambered blade, washup blade).

Suitable personal ear protection has to be chosen, prepared and used in line with the operator's local health and safety regulations.

1.6 Alcohol, cleaners, inks solvents and varnishes

Alcohol, cleaners, inks, solvents, and varnish can be inflammable, explosive, caustic, toxic and volatile. You should therefore always observe the following instructions:

General notes

- Make provision for good room ventilation.
- No naked flames, no ignition sources.
- Observe explosion prevention measures.
- When working with these substances, do not smoke, drink or eat.
- Wear protective gloves and safety goggles.
- Do not heat substances above their flash point.

- Observe the relevant accident prevention regulations, safety regulations and safety data sheets of the manufacturers.
- Use only cleaners and solvents with the prescribed specifications.
- Only store in suitable containers.
- Do not store on the press or close to UV dryers and IR dryers.
- Dispose of any spilt materials immediately and the proper manner.
- Dispose of any waste in compliance with regulations.
- Any vapors generated by washing fluids and solvents must be kept away from air intake openings.
- Avoid any direct contact with UV colors, coating, washing fluids and solvents. These substances may be unhealthy. Should your skin be contaminated wash the area immediately.
- UV colors and coatings will only harden through exposure to UV light. If your work clothes have been contaminated they must be changed and thoroughly cleaned. Otherwise any UV color and coating residue may diffuse through the clothing and make contact with your skin. Always wash contaminated clothing separately. Store your working clothes for UV colors away from the other clothing.

1.7 Working on the press without risk

Prior to switching on the press, check whether

- railings and handles are firmly fitted,
- guards, covers and moving parts are correctly fitted and engaged,
- any foreign bodies might get into the press (e.g. tools that are left lying around or have been dropped).

Before press start-up and prior to moving the pile up or down, perform a visual check to ensure that nobody is in the danger area of movable parts (especially in the area of the chain gripper systems in the delivery and the pile support plates).

During operation

- When working in the area of the feeder, do not reach beneath the movable parts (e.g. lifting and forwarding suckers, sucker bar and feed table height control bar) and neighboring areas (danger of crush injuries on your fingers).
- When working near the material infeed, avoid hazardous movements. Do not reach into the gap between the guard and the material infeed.

- When working in areas secured by a light barrier system (e.g. DWBA), please be aware that there are still residual risks in this secured area. Therefore do not take hold of or reach under the safeguard. Pay special attention when working in these areas.
- Always supervise a press in operation.
- Keep unauthorized persons out of the danger area.
- When working on the swung-down and activated ink fountain, pay special attention to the movement of the ink fountain roller.
- When working on the delivery (pile change, removal of sample sheet, working with spacer wedges) pay particular attention to the movement of the chain gripper bars.
- Never stay on or underneath the pile support plate when the press is not secured against being put into operation. Never stand, sit or lie on a moving pile support plate.

Makeready, cleaning and maintenance

should be carried out as follows, due to an increased risk of injury:

- With utmost care and attention.
- Only properly trained persons are allowed to work in the areas with travel-limited inching mode.
- When you clean the cylinders, make sure that the ball of your hand points in the direction of the infeed nip. Your fingers must point in the direction of the outlet nip (select the corresponding direction of rotation).
- Clean the swung-down ink fountain only when the ink fountain roller is at standstill. Your fingers must at all times be kept pointing away from the infeed nip.
- Reverse-inch or position the press only when no sheets are in the press. Print sheets can be bent in reverse direction and can damage grippers, blast tubes and cylinder surfaces.
- Observe the instructions for cleaning and maintaining the press. Avoidable dangers may be caused by a press that has been given inadequate care or insufficient maintenance.

Practical utilization of main switch and *Emergency stop* palm button

The following procedure must be used, unless it is in contradiction to national safety and accident prevention regulations (e.g. Lockout/Tagout (USA)).

- **Main switch**

Prior to any **extensive** set-up, maintenance and cleaning work underneath the press, in the area of the press drive, in the feeder, in the delivery or on the units (dry-

er, cooling devices, central air supply, etc.) that **take more than 5 minutes to complete** and prior to any work on voltage-carrying parts:

1. Switch the main switch to **0/OFF**, and lock it with a padlock.
2. Leave a sign with the name of the person authorized to switch on the press.

Result

The press is locked against being switched on as long as the main switch is locked.

Note

The function requires that you wait until the press has been switched off for at least 10 seconds, before switching the press back on again.

- ***Emergency-stop palm button***

The following must be observed for all deliveries with an **access height of less than 800 mm** (press model BP18):

Prior to any work in the delivery that **takes less than 5 minutes to complete**:

1. Press the *Emergency stop* palm button on the delivery control panel.

After the press has been switched off, keep in mind that

- The delivery fans and the blowers in the motor-driven units run for about one minute.
- Dryers and additional devices may still be hot. Allow the dryers and additional devices to cool down before working on them.
- The pneumatic system of the press is still under pressure even after the press is switched off. Parts of the system (e.g. the air chamber of the compressor) may maintain this pressure for weeks. Bleed the pneumatic system before carrying out any work on it. A.1.7

In the case of a malfunction or failure of a safety device

- Stop the press immediately.
- Notify the service department of your Baumfolder Dealer immediately.

Electrical devices

- Any work on the electrical equipment may only be carried out by authorized skilled personnel.
- Keep control cabinets and housings closed at all times.
- Do not connect any additional electrical equipment in the control cabinet.

1.8 Explosion protection and division into zones

Dust (powder and paper dust), alcohol, washing fluids and solvents may be combustible and explosive. The operator must only use inks and varnishes which are unable to produce an explosive atmosphere.

You must therefore observe the following notes on the substances mentioned above:

- Do not store on the press or close to UV and IR dryers.
- Only use suitable containers. The containers need to be sufficiently stable. Gases must be safely prevented from escaping to form an explosive atmosphere (impermeability).
- Only use powders, washing fluids and solvents specified by Baumfolder.
- Do not heat substances above their flash point.
- Dispose of any spilt materials immediately and the proper manner.
- Make provision for good room ventilation.
- Fire, smoking and open light on the system and when working with these substances are prohibited.
- Formation of fire loads, for example by storing combustible waste at the machine, must be prevented.
- Operating instructions are to be drawn up and the employees instructed every year.
- Areas soiled with powder have to be cleaned with a suitable and approved industrial vacuum cleaner according to the degree of soiling (maximum permitted height of dust: 1 mm). The areas should be cleaned at least once a week.
- Ensure that no dust is swirled up, for example never use compressed air to clean out areas soiled with powder.
- Clean dust filters, for example on powder extraction devices, at regular intervals and check them for damage. Observe the information on the filters given by the manufacturer.

- Draw up a cleaning plan.
- Define and comply with explosion prevention measures for the company.
- Have ground connections (equipotential bonding) checked for damage and function by an authorized person at regular intervals (at least once a year).
- Comply with IP54 as the minimum level of protection for electrical equipment.
- Observe the relevant accident prevention regulations and safety data sheets of the manufacturers.

Division into zones (in accordance with EN 1127-1)

When drawing up the explosion protection documents, the operator should also refer to the following zones:

Location	Zone
Delivery, not cleaned	Zone 22
Interior of suction tubes and systems	Zone 22
Washing fluid supply reservoir, interior and filler opening (for $T > 30^{\circ}\text{C}$)	Zone 0
Washing fluid supply reservoir, exterior (if undamaged and watertight)	No zone
Central dampening solution supply - the specifications given by the manufacturer have to be observed! Assumption: If no specifications are given - in particular in the alcohol supply reservoir and at a distance of 30 cm around the filler opening.	Zone 0
Powder exhaust air cabinet, interior during jogging	Zone 21
Powder exhaust air cabinet, exterior (if undamaged and airtight)	No zone
Further possible zones have to be established in the course of the risk evaluation to be performed by the operator.	

Tab. 1 Zone classes

Note

In this context, observe all measures listed with regard to explosion protection in order to operate the entire system safely and in line with the regulations.

1.9 Fire protection in the workplace

- Please ensure that the required steps are taken to detect and assess possible fire risks, e.g. through the printing materials or operating supplies used, such as powder. If necessary, consult a local fire protection expert.
- In order to minimize the risk of fire, only use operating supplies which correspond to the specifications in the operating manual. Please observe the safety data sheets of these operating supplies. For example, never use any ignitable powder, in particular when using a dryer. Use mineral powder in this instance.

Safety devices

- Check the selection of any necessary fire prevention measures and agree these with your insurer in order to prevent any damage to property and/or the environment.
- Required and helpful fire prevention measures could be, for example, a manually operated fire extinguishing system, an additional fire alarm system or an automatic fire extinguishing system. At this point please also note the safety data sheets of the operating supplies used.

2 Accessories and additional equipment

2.1 General note

Baumfolder printing presses can be equipped with various accessories in order to adapt them to special requirements in the production process.

Your press can - depending on press model and equipment - be equipped with all or some of the following accessories:

- Powder spray device
- Dryer
- Automatic washup devices
- Device for dampening solution treatment
- Inking unit temperature control
- Suction system
- Hoisting gear
- Handling system

Your press may also be delivered without any of these accessories.

Safe handling of accessories and additional equipment

- Please observe the special safety rules for the accessories and additional equipment on your press.
- Always follow the corresponding instructions when operating and maintaining the accessories and additional equipment.
- When integrating or attaching accessories and additional equipment, the user must ensure that
 - such accessories and additional equipment,
 - the resulting interface between press and accessory/additional piece of equipment, and
 - the thus modified and/or completed overall press

complies with the applicable and valid safety-related requirements.

2.2 Electrical interface

Additional devices and installations may only be integrated or installed in accordance with the regulations and in line with the pertinent and valid safety-specific requirements. To this end, BAUMFOLDER will provide a defined interface. The relevant instruction, which must be procured via your local BAUMFOLDER dealer, must also be taken into consideration.

2.3 Powder spray device

Powder application

The following notes should be observed with regard to the intended use of anti set-off powder. This mainly applies to combustible powder on the basis of starch or sugar.

- Never use any ignitable powder, in particular when you use a dryer (risk of deflagration). Read and comply with the safety data sheet of the powder manufacturer.
- Usage of powder can cause dust of varying density in the delivery. This can result in powder deposits which may produce an explosive atmosphere locally when swirled up. This generates a risk of explosion and fire.
- You must therefore remove any dust that has settled in and on the press with a vacuum cleaner. Establish adequate cleaning intervals and clean the areas soiled with dust regularly, at least once a week, particularly in the delivery.
- Only use suitable and approved industrial vacuum cleaners and avoid swirling up the dust, for example by removing dust deposits with compressed air.
- Only powder which does not represent a health hazard based on the latest findings in industrial medicine may be used.

2.4 Dryer

Notes on the dryer

- When working with dryers, use only inks and varnishes that do not create any explosive atmosphere through heating up in the dryer. This is indicated as *not useable* under the explosive limit entry in the safety data sheet.
- After having used a dryer you must ensure that the cylinders and press components that are to be cleaned manually have cooled down and are merely warm to the touch (approximately 40 °C).
- When using solvents on the press (e. g. for manual cleaning work), no solvents must enter the dryer area or be used and stored in the dryer area. Failure to comply with this results in an increased risk of explosion due to the heating of solvents.
- When using automatic washup devices, set the wash program in such a way that blankets and impression cylinders are dry before renewed production so that no washing fluid enters the dryer area.
- Parts of the dryer can reach high temperatures during operation. Allow the dryer to cool down before you carry out any work on it.

- Never use any ignitable powder when you use a dryer (risk of deflagration).

Notes on using UV dryers

- If you are working in mixed operation (UV inks and conventional inks), observe the following points prior to each changeover:
Only use washing fluids that are suitable for the respective operating mode (UV or conventional).
Before changing the cleaner, the washing fluid container and supply pipes to the washup devices must have been completely drained.
Failure to do this may result in damage to the press. The cleaners react on each other and can clog up the supply pipes, valves and filters.
In UV mode, only use items that are suitable for UV mode or mixed mode:
 - Inking rollers and dampening rollers
 - Washup devices for blanket and inking rollers
 - Cleaners

Integrating a dryer from a third-party supplier

The user must carry out the following activities and/or observe the following topics, and interpret them in a safety-related way:

- Scattered radiation measurement
- Measurement of the surface temperatures
- Noise measurement
- Ozone measurement
- Measurement of the concentration of solvents in the air inside the press
- Measurement of the concentration of combustible material (e.g. dust, powder) in the air inside the press
- Electroconductive and grounded suction systems (leakage resistance less than 1 megohm)
- Interaction of the main switches of printing press and dryer
- Input of all relevant signals of the interface adapter (e.g. *emergency stop, washup, dryer operation*)
- Installation of hoses and lines
- Electrical equipment according to the national regulations

Please contact your Baumfolder dealer if you have any queries regarding the safe installation of your dryer.

Additional notes on UV dryer preparation with CoolCure system (nitrogen system)

Upon user request, Baumfolder supplies the press together with a preparation for UV dryers with CoolCure

system. The following aspects must be taken into consideration when planning and using the press:

- The CoolCure system only works with nitrogen. Using any other gas is not permitted.
- The dryer manufacturer supplies a UV system that is prepared for nitrogen operation, including the nitrogen distribution in the press. The scope of delivery of the dryer manufacturer ends at the transition valve to the nitrogen supply system.
- Procurement, installation, operation and maintenance of the nitrogen supply system are within the responsibility of the user.
- The user must carry out the following activities and/or observe the following topics, and interpret them in a safety-related way:
 - Quality of the air: Adequate ventilation and air removal must be ensured in the press area.
 - If necessary, observe building license and approval of liquid gas storage.
 - Specify rules of conduct for the operators in the event of uncontrolled gas leakage.
 - Plan the gas supply shutoff system in a safety-related way.

Notes on machines with reduced waiting times for automatic washup

If requested by the customer, Baumfolder can release the press with an option aimed at reducing the waiting times before and after the washup procedure. This option is only valid for the version and owner of the press at the time of release of this option. The following points have to be complied with to be able to operate the press safely:

- The dryers and washup devices used must be classified and released by Heidelberger Druckmaschinen AG.
- Any dryers and washup devices which are added to the machine and which have not been released must be reported to your Baumfolder dealer since the prerequisites for using the option for reduced waiting times have to be retested.
- All changes to the dryer - washup devices system must be reported to your Baumfolder dealer since the prerequisites for using the option for reduced waiting times have to be retested.
- If you have planned to resell your press, this must be communicated to your Baumfolder dealer, since the option for reduced waiting times needs to be revoked.
- Only use recommended and approved washing fluids.

- After using a dryer you must ensure that the hot surfaces on the cylinders and press components that are to be cleaned manually have cooled down and are merely warm to the touch (approximately 40°C).

2.5 Washup devices

Notes on the washing fluid container

- For washing fluid containers with compressed-air supply: Prior to opening the closures, close the compressed-air supply hose and bleed the container.
- Only use washing fluids that satisfy the required specifications.
- Keep sources of heat away from the washing fluid container.

2.6 Dampening system

Integrating a dampening system from a third-party supplier

The user must carry out the following activities and/or observe the following topics, and interpret them in a safety-related way:

- Complying with the safety standard EN 294 (Safety of machinery - Safety distances to prevent danger zones being reached by the upper limbs)
- Installation of hoses and lines
- Storing all removed original parts of the machine in order to be able to restore the machine to its delivery state

Please contact your Baumfolder dealer if you have any queries regarding the safe installation of your dampening system.

2.7 Device for dampening solution treatment

Proper use

- Take care when working with alcohol and dampening solution additives. Remove leaking substances immediately and correctly. Comply with the DIN Standards and safety regulations of the respective manufacturers. Observe the safety instructions on how to deal with inflammable liquids.
- The unit cools the dampening solution, and keeps the alcohol percentage of alcoholic additives at a constant level. It must not be used for cooling bottles, food or similar items.
- The unit works with refrigerants. Installation and maintenance work, as well as servicing and plac-

ing out of operation, may only be carried out by trained personnel.

- Do not operate the device without water.
- Do not place any objects on or in front of the ventilation slots, otherwise the air circulation is interrupted.
- Only allow repairs to the press, additional devices and electrical devices to be performed by trained service staff authorized by Baumfolder

2.8 Inking unit temperature control

- The unit works with refrigerants. Installation and maintenance work, as well as servicing and placing out of operation, may only be carried out by trained personnel.
- Do not place any objects on or in front of the ventilation slots, otherwise the air circulation is interrupted.

2.9 Suction system

- Do not remove any hoses on suction systems for powder, ozone, paper cuttings, etc. If you notice any damage to hoses, notify the Baumfolder service department. Have damaged hoses repaired or replaced by trained service staff authorized by Baumfolder, otherwise the equipotential bonding is no longer guaranteed. There is a risk of deflagration as a result of electrostatic discharge.

2.10 Hoist

If you are working with a hoist for handling components such as ink or varnish screen rollers, you have to observe the following points:

- The hoist must be checked with all accompanying parts in line with the local national safety regulations. This check for function and possible damage must be performed by a trained and competent specialist.
- We recommend performing this check at least once a year.
- Use the checklist provided and the operating manual of the manufacturer of the hoist for the check.

2.11 Handling system

When using a materials handling system for automatic pile loading and unloading (for example for pallets and pile support plates) you must observe the following point:

- In the area of the automatic transport routes, a safety distance of 0.5 m must be maintained to

all surrounding objects such as pillars and walls,
to avoid any crush injuries to the body.

3 Specifications (excerpt)

3.1 Electrical fusing

Voltage	115 V	200 V ... 220 V	230 V ... 240 VBP18-2
BP18-2	32 A, slow-blow	20 A, slow-blow	16 A, slow-blow

Tab. 3 BP18-2: Electrical fusing

3.2 Printing material properties

Maximum sheet size	Minimum sheet size	Thickness of printing material
460 mm x 340 mm	140 mm x 89 mm	0.04 mm... 0.3 mm

Tab. 4 Printing material dimensions

Accessory for minimum sheet size

When using the accessory for the minimum sheet size, you can print on a minimum sheet size of 100 mm x 100 mm.

Minimum sheet size with accessory for minimum sheet size	Thickness of printing material
100 mm x 100 mm	0.06 mm... 0.3 mm

Tab. 5 Accessory for minimum sheet size

3.3 Inks

The press is not suitable for using inks with a flash point of less than 55 °C.

3.4 Feeder and delivery

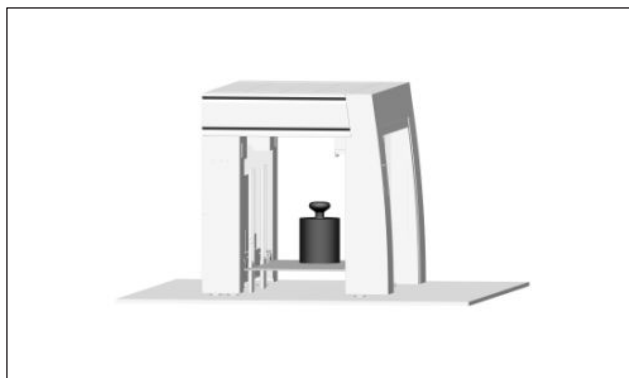


Fig. 2 Basic principle of the feeder



Fig. 3 Basic principle of the delivery

Maximum pile weight

- Feeder: 80 kg
- Delivery: 80 kg

Checking the load capacity

The following checks have been performed in line with the EC Machinery Directive:

- The static check with 1.25 times the maximum weight of the pile has been carried out.
- The dynamic check with 1.1 times the maximum weight of the pile has been carried out.

Both checks have been successfully completed, i.e. no lack of stability was apparent.

3.5 Cleaners for automatic and manual washup

Use only cleaners with the following properties (unless otherwise specified in this manual):

- Flash point > 55 °C
- Benzene content < 0.1 %
- Toluene and xylene content < 1 %
- Aromatic compounds (> C₉) < 1 %
- Cleaners free of chlorinated hydrocarbons, CFCs, terpenes, n-hexane, secondary amines and amides
- Cleaners free of other hazardous substances

You can find more details on the washing fluids in the "Maintenance, General information, Washing fluids and water" chapter.

3.6 Workplace-related emission values in line with EN 13023

Emission level at the control console	Emission level at the delivery
73 dB(A)	78 dB(A)

Tab. 6 Emission levels BP18-2

3.7 Vibrations - effects on human beings

The daily limit values for whole-body vibrations and vibrations in hands and arms are not exceeded. Therefore no technical and/or organizational measures are required to reduce this exposure.

Statement in line with:

- ISO 2631 Whole-body vibrations,
- EN ISO 5349-2 Hand-arm vibrations and
- EC directive 2002/44/EG.

3.8 Workplaces at the press

There are the following workplaces at the press:

- main control panel,
- auxiliary control panel on PU 2 (two-color press only),
- at the feeder,
- at the delivery.

Do not place any tools, containers or other objects on the press. The parts may fall into the press and cause damage.



Caution - Risk of damage to the press!
Do no walk on any parts of the press or use them to stand on.

4 Controls

4.1 Main switch

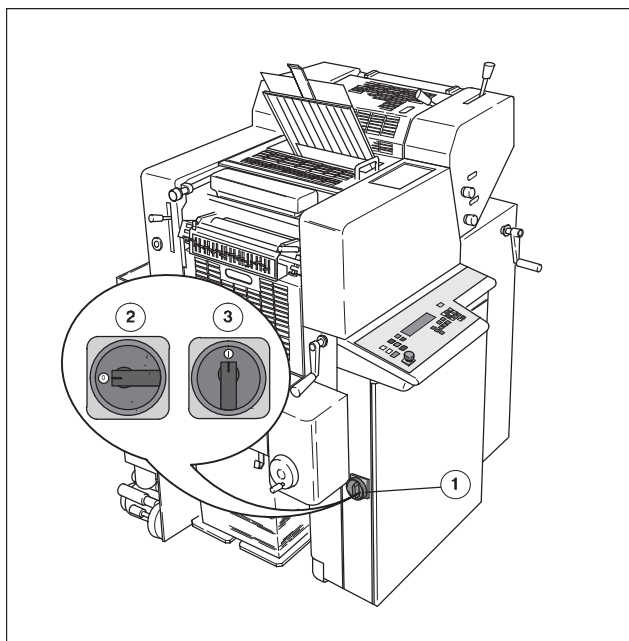


Fig. 4 Main switch

The main switch is located at the control cabinet below the control console on the delivery side on two-color presses (Fig. 4/1).

- Position **O** (Fig. 4/2): press is de-energized.
- Position **I** (Fig. 4/3): press is switched on.

After the main switch is set to ON the press must be run at least one revolution using the *Run* button for the purpose of synchronization, in order to ensure the full functionality.



Warning - Risk of injury from electrical current!

The control cabinet may be opened only by electrical technicians. Even when the main switch is switched off, some components in the control cabinet still carry a voltage.

4.2 Emergency stop button

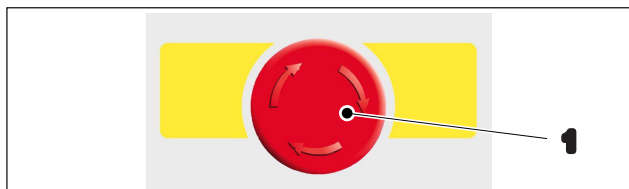


Fig. 5 Emergency stop button

Emergency stop is a red palm button on a yellow background (Fig. 5/1). It is located on the **main control panel**, in the case of two-color presses also on the **auxiliary control panel** at PU 2.

Palm button pressed: the press stops immediately. The button remains locked in this position.

To unlock: Turn the *Emergency stop* button clockwise.



Warning - Risk of injury from electrical current!

The *Emergency stop* button does not make the press voltage-free. To make the press voltage-free, set the main switch to OFF and pull the power plug.

4.3 Control panel selection button

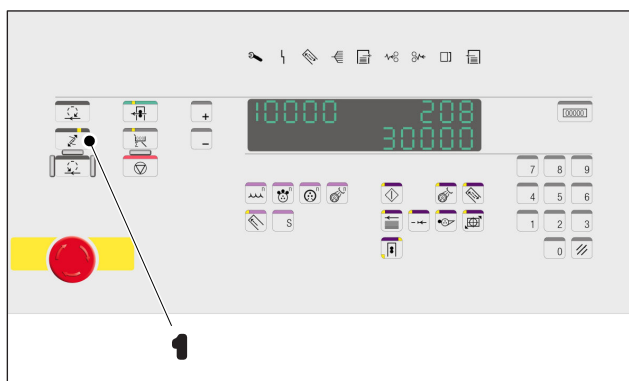


Fig. 6 Main control panel

The *Control panel selection* button is located on the main control panel (Fig. 6/1) and for the BP18-2 also on the auxiliary control panel at PU 2.

Press the *Control panel selection* button **twice**: the LED in the button lights up.

Cancel selection: press the *Control panel selection* button twice: LED goes out.

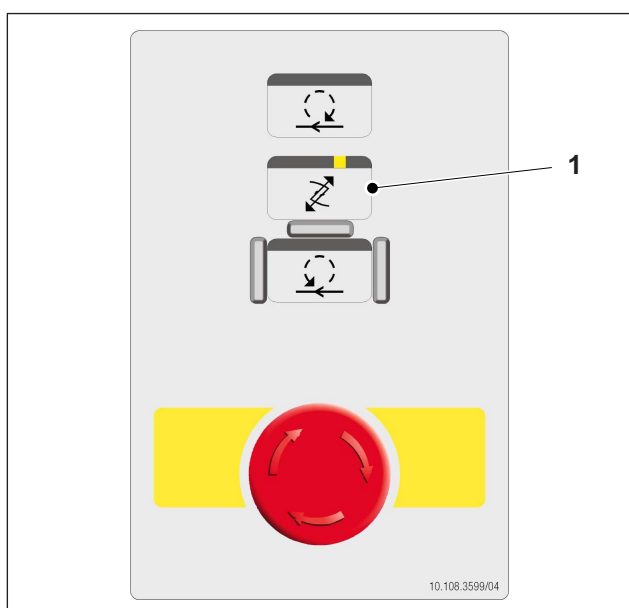


Fig. 7 Auxiliary control panel BP18-2

When the *Control panel selection* button on the auxiliary control panel at the PU 2 (Fig. 7/1) is pressed, no note appears on the main control panel.

4.4 Operating modes when the *Select control panel* button is held down



Warning - Risk of injury due to rotating rollers, cylinders or gear wheels!

Since press motion is possible in inching mode while the guards are open, there is a risk of injury in instances of improper operation.

Inching mode with travel limitation

Forward button: forward inching of the press, if beforehand the *Control panel selection* button was pressed.

Reverse button: reversed inching of the press, if beforehand the *Control panel selection* button was pressed. - The button is demarcated from the other buttons by the raised shoulders.

Inching mode without travel limitation

With closed guards: inching mode without travel limitation (crawl speed). The cylinders rotate as long as the *Forward* or *Reverse* button is pressed.

5 Protective devices

5.1 General information

Movable protective devices are electrically monitored. When a movable protective device is actuated at production speed, the press stops immediately.

The press can be moved only after the *Control panel selection* button is pressed, in the travel-limited **inching mode**. - **Exception:** protecting door, printing unit O.S. (Fig. 8/7) open: no inching mode possible.

Note

If more than one guard is open, no inching mode is possible.

Fixed protective devices are not electrically monitored.



Warning - risk of injury when working with open guards!

Start the press only if all guards are mounted and all protecting doors are firmly screwed on.

5.3 Two-color press (BP18-2)

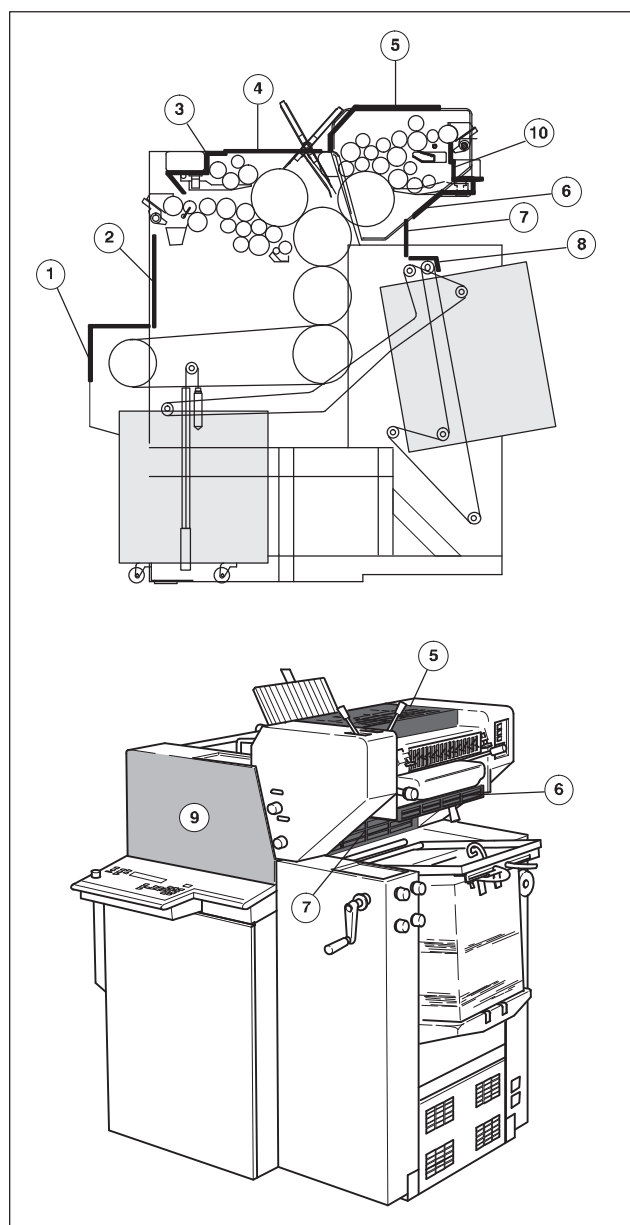


Fig. 9 BP18-2 protective devices

Fig. 9	Protective device	Remarks
1	Delivery guard	fixed guard
2	PU 1 inking unit guard	movable - travel-limited in-ching mode possible at the main control panel, but not from the auxiliary control panel
3	PU 1 dampen-ing system guard	movable - travel-limited in-ching mode possible
4	PU 1 plate cyl-inder guard	movable - travel-limited in-ching mode possible
5	PU 2 inking unit guard	movable - travel-limited in-ching mode possible
6	PU 2 plate cyl-inder guard	movable - travel-limited in-ching mode possible
7	Feeder guard	movable - travel-limited in-ching mode possible
8	Feeder guard	fixed guard
9	Protecting door, PU 1 O.S.	movable - no in-ching mode possible
10	PU 2 dampen-ing system guard	movable - travel-limited in-ching mode possible

Tab. 8 BP18-2 guards

If the guards Fig. 9/2, 3, 4 or 5 are open, the press can **be inched only at the main control panel**.

With guards Fig. 9/6, 7 and 10 open, the press can inched only at the auxiliary control panel.

Note

When the *Control panel selection* button on the auxiliary control panel at the PU 2 is pressed, no note appears on the main control panel.

6 Turning the press by hand

6.1 General notes

You can crank the press manually in an emergency or when performing adjustment or maintenance work.



Warning - Risk of injury!

Prior to starting any of the following operations, press the *Emergency-stop* palm button on the nearest control panel in order to secure the press against being put back into operation.

Note

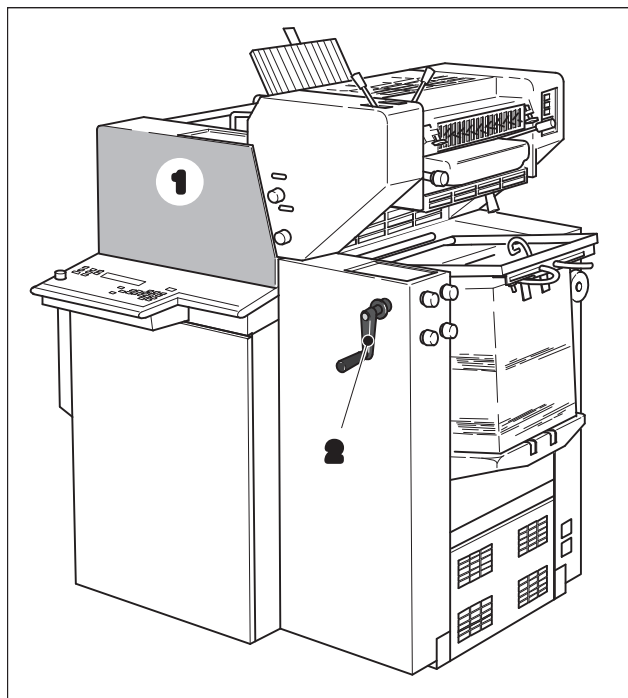
Inform all persons near the press that you intend to crank the press manually.



Caution - Risk of press damage!

If there are still print sheets in the press, you may only crank the press backwards in emergencies. The print sheets may damage sheet-transferring cylinders and grippers when the press is cranked backward.

6.2 Tool and holding fixture



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Tool

Using one of the crank handles for pile transport (Fig. 10/2, feeder), the press can be cranked manually. This requires the crank handle to be removed and to be installed on the supporting device behind the protecting door on the PU (Fig. 10/1).

Supporting device

The supporting device for the crank handle is behind the protecting door on the PU (Fig. 10/1).

Feeder crank handle

The crank handles for the pile transport at the feeder (Fig. 10/2) and delivery are protected against inadvertent removal.

Automatic pile stroke is switched off **when the crank handle is engaged**. The crank handle cannot be pulled off the shaft.

1. Disengage the crank handle and turn it slightly.
2. Pull the crank handle off the shaft.

Fig. 10 Feeder crank handle

6.3 Turning the press by hand

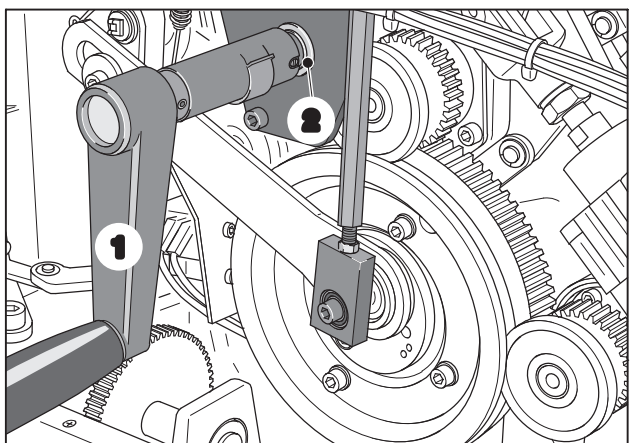


Fig. 11 Turning the press by hand

1. Side frame O.S.: Open the protecting door above the control console. Above the control console, there is a supporting device (Fig. 11/2) for the crank handle.
2. Plug the crank handle (Fig. 11/1) onto the supporting device (Fig. 11/2). You can crank the press now.

Turning direction of the tool

- The press turns forward (same direction of rotation as in production mode) when you turn the crank handle clockwise.
- The press turns backwards when you turn the crank handle counter-clockwise.

Removing the tool

1. Remove the crank handle.
2. Install the crank handle on the shaft for the pile transport on the feeder/delivery.
3. Close the protecting door on the PU.

B Control elements

Control elements

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1 Controls - overview

1.1 Feeder side

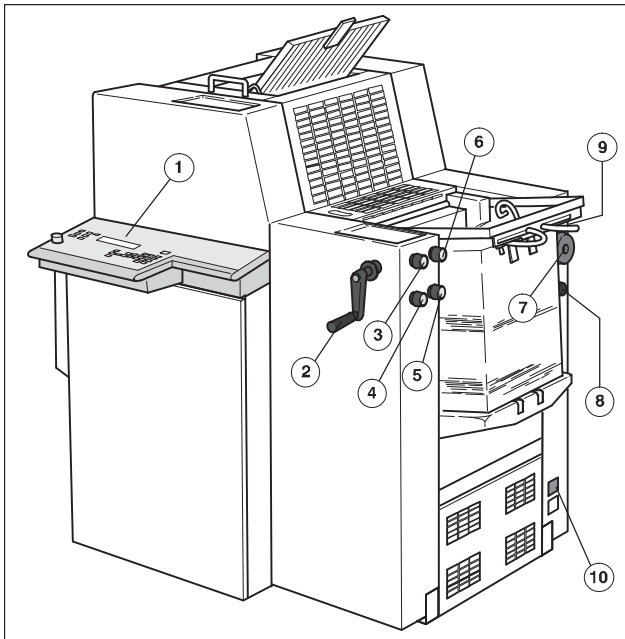


Fig. 1

Two-color press

1 Control console

Main control console with emergency stop button

2 Crank handle

Pile transport at the feeder

3 Control knob

Suction air

4 Control knob

Sheet arrival control

5 Control knob

Height of upper pile edge

6 Control knob

Blast air

7 Handwheel

Sheet width: Central adjustment for feeder and delivery.

8 Control knob

Double sheet detector

9 Control knobs

Blast air for rear edge blowers, lateral sheet separation blowers

10 Switch

Ionizing unit (special accessory)

Two-color press

1 Control knob

Circumferential register, PU 2

2 Control knob

Lateral register, PU 2

3 The lever

Rotates ink fountain roller, PU 2

4 Control knob

Dampening solution amount, PU 2

5 The lever

Switches inking roller washup device on PU 2 on/off

6 The lever

Adjusts the fountain roller sweep on PU 2

7 Auxiliary control panel on PU 2 with emergency stop button

8 The lever

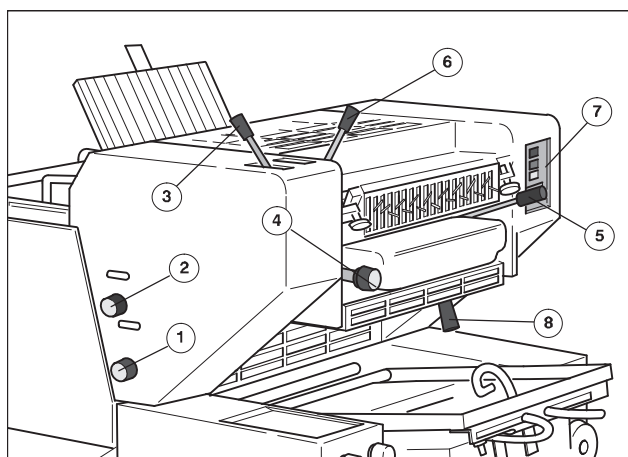


Fig. 2

Washes the dampening system on PU 2

1.2 Delivery side

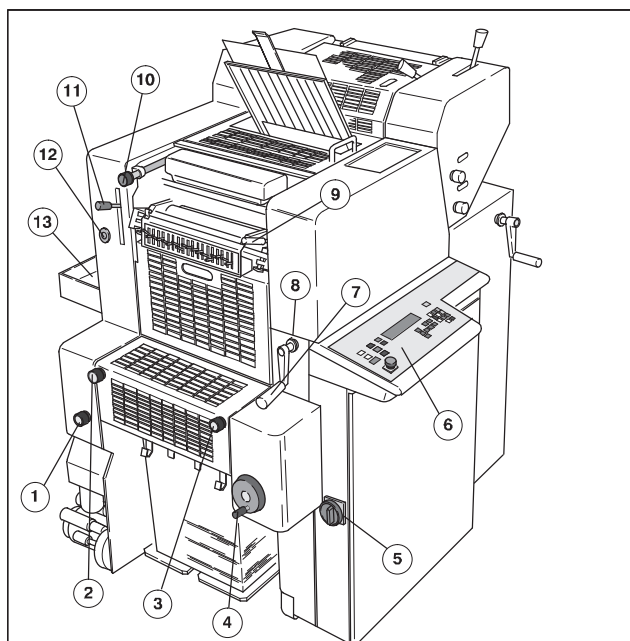


Fig. 3 Controls, delivery side

Two-color press

- 1 Control knob**
Front sheet jogger on/off
- 2 Control knob**
Opening time of the delivery grippers
- 3 Control knob**
Impression cylinder circumferential register for PU 1 and PU 2 jointly
- 4 Crank handle**
Rear sheet stop
- 5 Main switch**
- 6 Control console**
Control console with emergency stop button
- 7 Crank handle**
Pile transport on the delivery
- 8 Changeover socket**
Pile transport fast/slow (crank handle)
- 9 The lever**
Adjusts the fountain roller sweep on PU 1
- 10 Control knob**
Dampening solution amount, PU 1
- 11 The lever**
Rotates ink fountain roller, PU 1
- 12 Adjusting screw**
Impression pressure adjustment
- 13 Tool deposit**

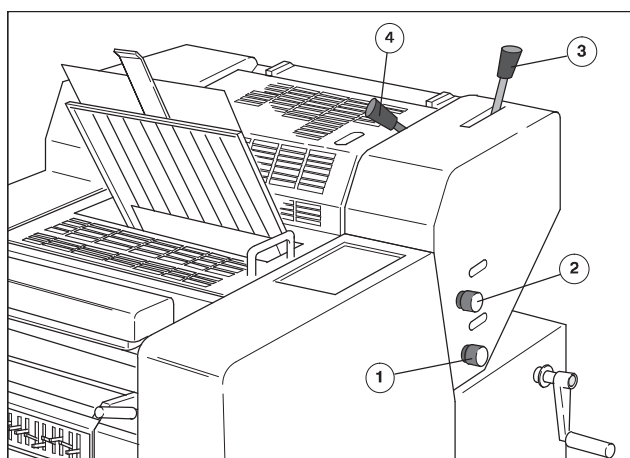


Fig. 4 Controls, delivery side

Two-color press

- 1 Control knob**
Circumferential register, PU 2
- 2 Control knob**
Lateral register, PU 2
- 3 The lever**
Rotates ink fountain roller, PU 2
- 4 The lever**
Adjusts the fountain roller sweep on PU 2

2 Main control panel

2.1 Basics on Operation

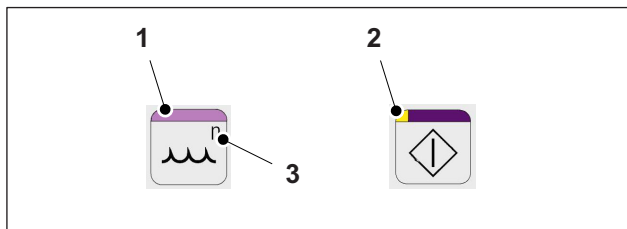


Fig. 5 Identification of the buttons

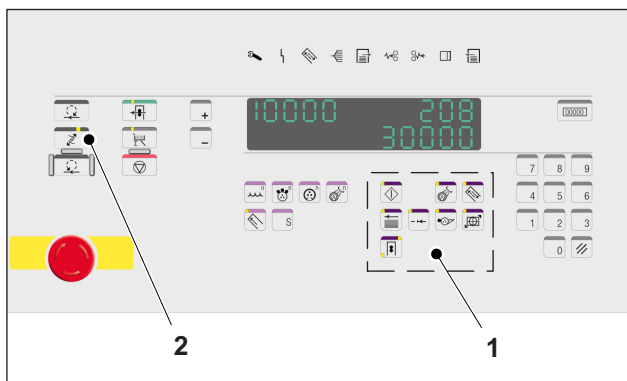


Fig. 6 Main control panel

Switching on the main switch

After the main switch is set to ON the press must be run at least one revolution using the *Run* button for the purpose of synchronization, in order to ensure the full functionality.

Identification of the buttons

- Color bars on the buttons (Fig. 5/1),
- Light-emitting diode (LED, Fig. 5/2),
- Buttons labeled "n" (Fig. 5/3): input required using the \neq or - buttons.

Keyboard functions

- **Direct selection buttons** (Fig. 6/1) immediately trigger a function.
- Pressed buttons **light up** (light-emitting diode - LED).
- **Deactivate illuminated buttons** (LEDs) by **pressing once**.
Exception: The *Control panel selection* button (Fig. 6/2) must be pressed twice to cancel the selection.
- Selectable buttons must **flash** (LED).
Prerequisite: Operator guidance is selected.
- **Rapid flashing** (LED) of the *Plate change* and *Production* buttons: insert printing plate.
- Buttons initiating the **press run** and the *Control panel selection* button must be **pressed twice** (in quick succession - **double-click**). If the press is already running, then these buttons need only be pressed once.

2.2 Automatic buttons

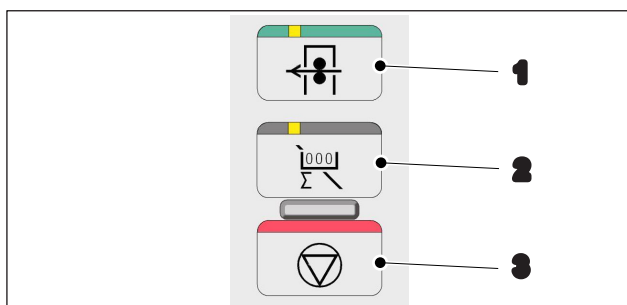


Fig. 7 Automatic buttons

- 1 *Production* (green)
Press at standstill: Press the button twice: Preset program runs automatically. LED lights up.
In production: Press stop. LED flashes.
LED flashes fast: Press button twice. The printing plate is pulled in. The press enters production.
- 2 *Waste sheets* (gray)
Throws the waste-sheet counter on/off, LED lights up if selected. The press remains in production mode, the printed sheets are not counted in the job counter.
- 3 *Stop* (red)

2.3 Inching mode (gray)

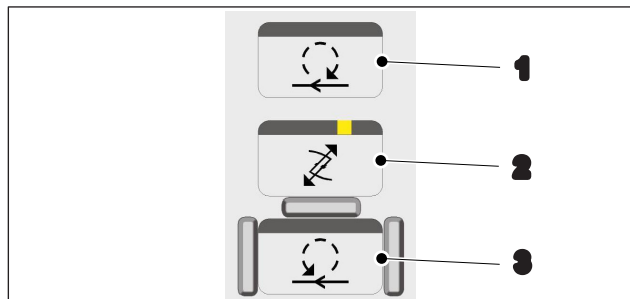


Fig. 8 Inching mode

- 1 **Forward**
Forward inching of the press with and without travel limitation, if *Control panel selection* was pressed beforehand.
- 2 **Control panel selection**
Press the button twice: The LED lights up. **When the guard is open**, the press can be moved only in inching mode with travel limitation.
With closed guards: inching mode without travel limitation (crawl speed). To cancel the selection: push the button twice.
- 3 **Backward**
Backward inching of the press with and without travel limitation, if *Control panel selection* was pressed beforehand. The button is separated from the other buttons by three raised shoulders.

2.4 + and - buttons (gray)

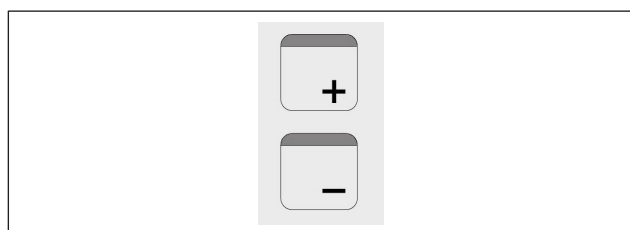


Fig. 9 + and - buttons

Change preselected numeric settings, change the production speed or trigger functions in special programs (*Special functions* button).

2.5 Emergency stop button

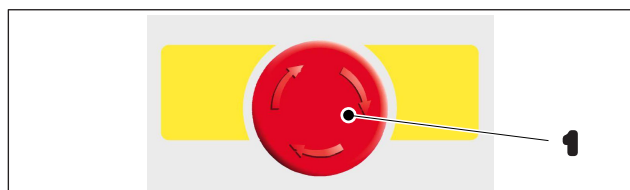


Fig. 10 Emergency stop button

1. **Holding down the Emergency stop button** (Fig. 10/1):
Stops the press as quickly as possible.
2. **To release the Emergency stop button:**
Turn it in direction of the arrow.

2.6 Preselection buttons (light violet)

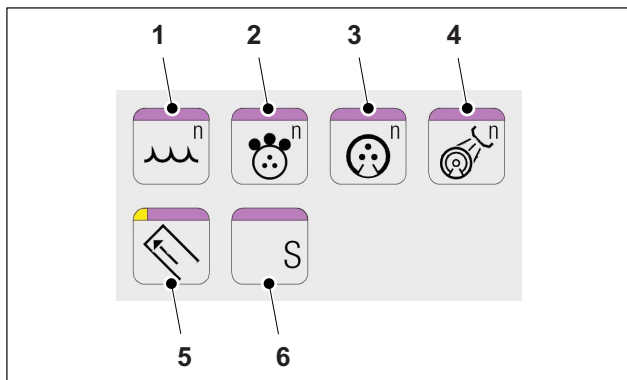


Fig. 11 Selector buttons

With the **two-color press** all settings are valid only for the selected printing unit or for both PUs simultaneously, (selection with the *Printing unit selection* button, Fig. 12/8). The setting values are indicated in the display.

- 1 *Predampen*
Press button, enter number of revolutions using the \pm buttons (max. 9), press button again to confirm the input.
- 2 *Ink up plate*
Press button, enter number of revolutions using the \pm buttons (max. 9), press button again to confirm the input.
- 3 *Ink up blanket*
Press button, enter number of revolutions using the \pm buttons (max. 9), press button again to confirm the input.
- 4 *Blanket washup*
Press button, enter number of revolutions using the \pm buttons (max. 20), press button again to confirm the input.
- 5 *Automatic ejection of printing plate on/off*
The LED lights up when selected.
- 6 *Special functions*
Numeric entries with numeric keypad, shown in display.

2.7 Direct selection buttons (dark violet)

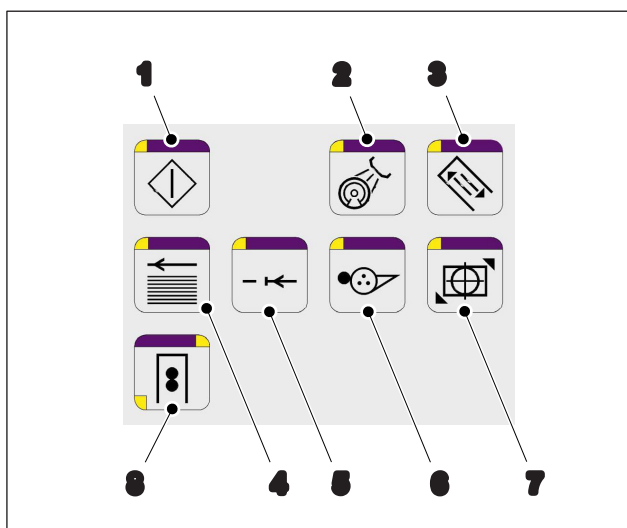


Fig. 12 Direct selection buttons

- 1 *Run*
Press button twice briefly: Press starts up at pre-selected speed; LED lights up. Press in crank handle at the feeder to prevent inching upward of the empty feeder pile board.
- 2 *Blanket washup*
Press button twice briefly: Press runs through the preselected wash revolutions.
- 3 *Plate change/AutoPlate*
Select desired printing unit on BP18-2 by positioning the plate feed table accordingly. Press button **twice**: If the plate is clamped, the plate is firstly ejected, then the plate cylinder is positioned for plate loading. Press button **once**: guard open and plate cylinder has reached clamping/removal position: open or close the plate clamp.
- 4 *Blast air/suction air on/off*
Switches blast air/suction air on/off for adjustment work.

- 5 *Double sheet position run*
Press button twice briefly (LED lights up) to adjust the double sheet detector. Press again: adjust the rear sheet stop and the lateral sheet joggers in the delivery, powdering length.
- 6 *Ink vibrator on/off*
Press button (LED lights up): Ink vibrator takes ink from the ink fountain roller (only with press running).
- 7 *Diagonal register*
Press button twice briefly (LED lights up) to position the plate cylinder in order to manually correct the plate in a diagonal direction.
- 8 *Printing unit selection*
BP18-2: selection of the 1st, the 2nd or both PUs; LED of the selected PU lights up. **Bottom** LED: PU 1, **top** LED: PU 2. Both LEDs: **both** PUs are selected. All preselections refer to the selected PU or to both PUs.

Note

The position of the plate feed table has priority during the plate change over the printing unit selection with this button.

2.8 Numeric keypad (gray)

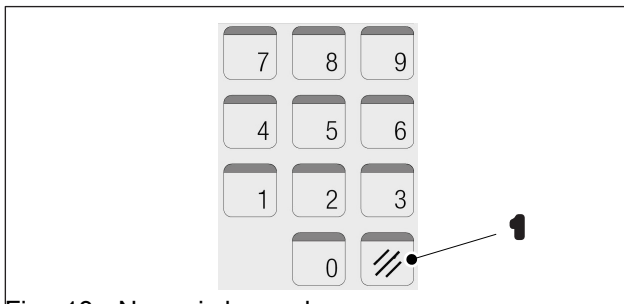


Fig. 13 Numeric keypad

- 1 Input of numeric values, e.g. number of impressions, input of the number codes for special programs (*Special functions* button).

Delete

Deletes incorrect numeric entries.

2.9 Counter (gray)

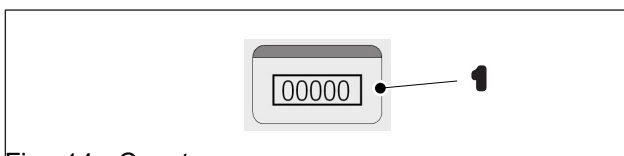


Fig. 14 Counter

- 1 *Premature end of run*
Residual number of impressions indicator is reset to zero; press terminates production program.

AL 901, 0225-0100SERVIND_01

2.10 Display

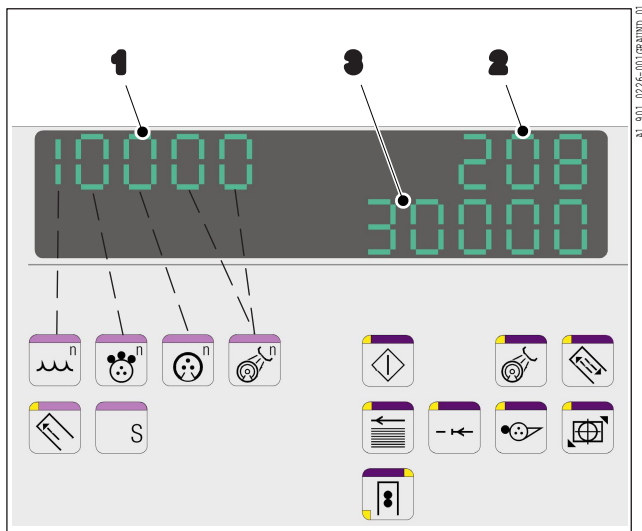


Fig. 15 Display

- 1 Printing speed/washup speed (blanket washup), and preset number of revolutions for "Predamp-en", "Ink up plate", "Ink up blanket", "Blanket washup"
Displays the respective number of revolutions above the corresponding button.
- 2 Residual number of impressions
Counting backward, number of sheets still to be printed; display of the revolutions during blanket washup.
- 3 Run length
Input with the numeric keypad (preselection), waste-sheet counter.

Preselection display

The settings with the preselection buttons are shown in the particular segment of the display above the corresponding buttons for **PU 1 instead of the speed** (Fig. 15/1) (assignment by dashed lines).

The default settings for **PU 2** appear **instead of the residual number of impressions** (Fig. 15/2).

These settings are **always simultaneously displayed for both printing units**. Default settings can be changed only for the selected printing unit or for both PUs simultaneously.

2.11 Information displays

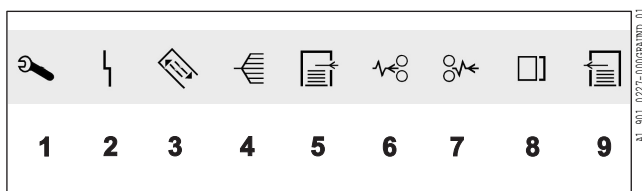


Fig. 16 Information displays

In case of a malfunction these displays **flash** (Fig. 16) **red**.

- 1 Service
Notify Service.
- 2 General malfunction

The press can not be started. The display flashes if

- a guard is open,
- the pressure built up in the compressor after the main switch is set to ON is not sufficient (operating pressure 6.5 bar).

- 3 Printing plate change
No printing plate on the plate cylinder or printing plate ejection/loading stopped before conclusion of the process.
- 4 Peripheral units
- 5 Delivery pile
Delivery pile is full: Insert empty delivery pile carriage.
- 6 Paper jam, delivery

Overrun sheet control in the delivery detects overrunning sheets: Press stops immediately. Remove sheets from the delivery.

7 Paper jam, feeder

Front/rear edge outside the good sheet area: Remove sheets.

8 Sheet monitoring

Double sheet detection: Press goes off impression, remove double sheets from the delivery.

Early/late sheet: All control subassemblies (printing, ink, dampening ...) are stopped, press stops immediately.

Missing sheet: Press goes off impression, a further sheet is suctioned; repeated missing sheet: press continues running in press stop.

9 Feeder pile

Feeder pile is too low/too high:

- appropriately adjust pile height with crank handle, or
- release crank handle if pile is too low and
- wait until the automatic pile transport has inched up the pile.

Service display (Fig. 16/1) flashes in addition: notify your authorized Service agent.

3 Printing unit auxiliary control panel

3.1 Auxiliary control panel PU 2, D.S.

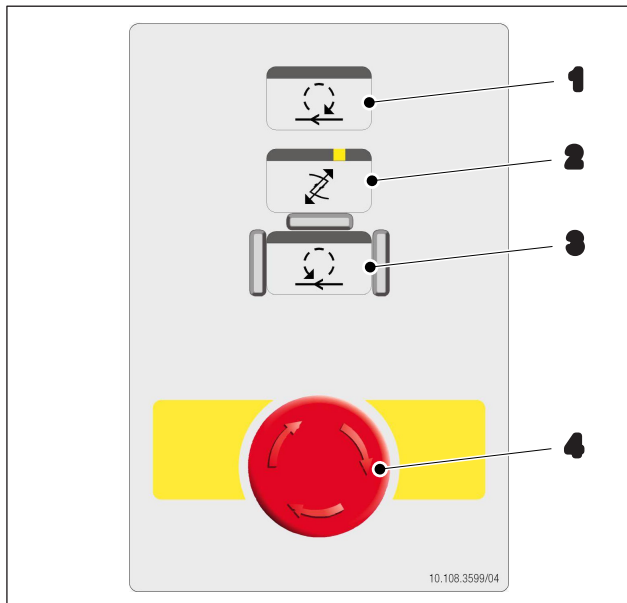


Fig. 17 Auxiliary control panel PU 2

Inching mode is possible only from the selected control panel. **When the delivery guard is open**, the press **cannot** be inched from the auxiliary control panel.

1 Forward

Forward inching of the press with and without travel limitation, if the *Control panel selection* button was pressed beforehand.

Note

If the *Control panel selection* button is pressed on the auxiliary control panel, then this fact is not indicated on the main control panel.

2 Control panel selection

Press the button twice: The LED lights up. **When the guard is open**, the press can be moved only in inching mode with travel limitation.

When the guards are closed: Inching mode without travel limitation (crawl speed).

To cancel the selection: push the button twice.

3 Backward

Backward inching of the press with and without travel limitation, if the *Control panel selection* button was pressed beforehand. The button is separated from the other buttons by three raised shoulders.

4 Emergency stop button

Hold down the palm button: Press comes to a standstill as quickly as possible. To **unlock** the palm button: Turn it in the direction of the arrow.

4 Special functions (SF)

4.1 General information



Fig. 18 SF 03: Blanket wash-up device on/off

The function is selected by pressing the *Special functions* button.

- The display **shows** the letters SF (Fig. 18/1), the identification code of the special function last called up (Fig. 18/2) and the status of the selected function (Fig. 18/3, "On" or "Off"). Fig. 18, for example, shows the *Blanket wash-up device off* function.
- Displays **flash**: see the "Numerical preselection" section.

An overview table listing the special functions can be found on the inside of the protective door on PU 1.

4.2 SF 01 to 06: direct selection functions

For setting and monitoring functions:

1. Press the *Special functions* button. The identification code of the special function called up last is displayed.
2. **Select** the special function by entering the identification code with the numeric keypad.
3. **Change** the status of the function by pressing the \pm buttons (On or Off).
4. **Exit** the function by pressing the *Special functions* button. The direct selection functions (SF 01 through 06) are switched off when the function is exited or another function is selected.

SF01	Dampening form roller on/off
SF02	Inking form rollers on/off
SF03	Blanket wash-up device on/off
SF04	Powder spraying/air blast unit on/off
SF05	Change impression cylinder packing
SF06	Adjust perforating device

4.3 SF 16 to 23: selector functions (on/off)



Fig. 19 SF 16: Operator guidance on/off

1. Press the *Special functions* button. The identification code of the special function called up last is displayed.
2. **Select** the special function by entering the identification code with the numeric keypad.
3. **Change** the status of the function by pressing the \pm buttons (On or Off).
4. **Exit** the function by pressing the *Special functions* button. The preselected state (ON or OFF) is retained when the special function **is exited**.

SF16	Operator guidance on/off
------	--------------------------

SF17	Numbering on/off
SF18	Perforating on/off
SF19	Sheet-length monitoring system on/off
SF20	Block printing on/off : manual insertion of a pile separator in the delivery pile
SF21	(Not assigned)
SF22	clean the impression cylinder,
SF23	Production without impression on/off: If only numbering or perforating is required; SF 17 or SF 18 must be selected additionally.

4.4 SF 31 to 33: numerical preselection

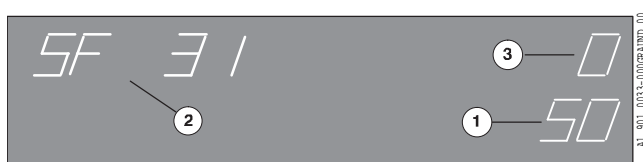


Fig. 20 SF 31: Block preselection tape inserter

1. Press the *Special functions* button. The identification code of the special function called up last is displayed.

Display lights up

2. **Select** the special function by entering the identification code with the numeric keypad.

In addition to the identification code of the special function selected (Fig. 20/2), the last value entered is displayed; in this case SF 31 = tape inserter, block size 50 (Fig. 20/1).

Entering a new block size:

3. Press the *Delete* button. 0 flashes in the display (Fig. 20 /3).
4. Enter the block size with the numeric keypad.
5. Quit the function by pressing the *Special functions* button. When leaving the special function, the preselected block size is saved.

Display flashes

This function was the last to be selected.

6. Press the *Special functions* button again and enter the block size via the numeric keypad.

If the *Numerical preselection* special function is selected in **production mode**, the display shows how the current block is being processed counting backwards above the block size set (Fig. 20/3).

SF31	Block preselection tape inserter
SF32	Interval index numbering
SF33	Preselection dry blanket

4.5 SF 41 ff.: display functions



Fig. 21 SF 45: Total number of impressions / totalizing counter

For inquiries on the phone to the Baumfolder Service (except for special function 45).

1. Press the *Special functions* button. The identification code of the special function called up last is displayed.
2. **Select** the special function by entering the identification code with the numeric keypad.

SF45 Total number of impressions / totalizing counter display

Next to the number of the special function (Fig. 21/1), the bottom row of the display (Fig. 21/2) shows the last 5 digits of the total number of impressions of the press. The top row shows the digits 1 to 3 (Fig. 21/3). Total number of impressions given in figure 21: 5,369,350 impressions.

4.6 SF 56 ff.: diagnostic functions

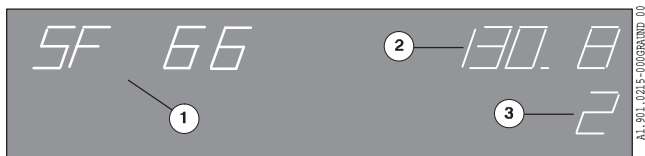


Fig. 22 SF 66: Press angle

For inquiries on the phone by the Baumfolder Service (except for special functions 66 and 68).

1. Press the *Special functions* button. The identification code of the special function called up last is displayed.
2. **Select** the special function by entering the identification code with the numeric keypad.

SF66 Press angle display

Next to the number of the special function (Fig. 22/1), the display shows the current press angle in degrees (Fig. 22/2). Below this, it shows the divergence in degrees (Fig. 22/3), if the circumferential register has been adjusted. A negative sign means the print image has been shifted forwards towards the gripper bite. No sign means it has been shifted towards the rear edge of sheet.

SF68 Sheet arrival display

The sheet arrival display show the arrival of the sheet inside a window. Please refer to Chapter "C Feeder, sheet monitoring" for details.

4.7 SF 16: Operator guidance



Fig. 23 SF 16: Operator guidance on/off

The *Operator guidance* function can be selected and deselected with special function 16. Only **when the operator guidance has been selected** will the LEDs of the selectable buttons flash.

1. Press the *Special functions* button.
2. Enter code 16 with the numeric keypad: code and status (On or Off) are displayed.

If the display shows "Off", select operator guidance using the + button.















If the display shows "On", the operator guidance is selected. The function can be deselected with the - button.

3. Quit the function by pressing the *Special functions* button.

5 Symbols - overview

5.1 Plates on the press

The symbols on the plates on the press are composed of the following elements.

	Cylinder
	Cylinder rotating
	Blanket cylinder
	Impression cylinder
	Color
	Dampening
	Suction air
	Blast air
	Pile with pile support plate
	Directional specification, on/off
	Increase
	Decrease
	Print sheet (side view)
	Print sheet (top view)

5.2 Symbols on the control panels

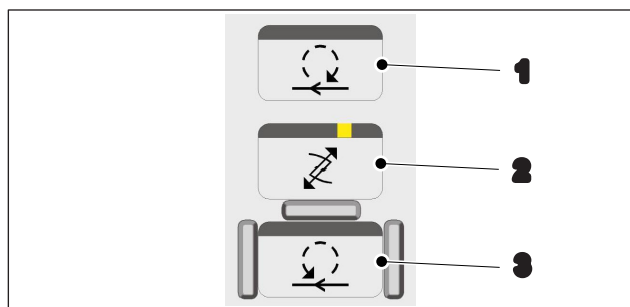


Fig. 24 Inching mode

Inching mode

- Forward (Fig. 24/1)
- Control panel selection (Fig. 24/2)
- Backward (Fig. 24/3)

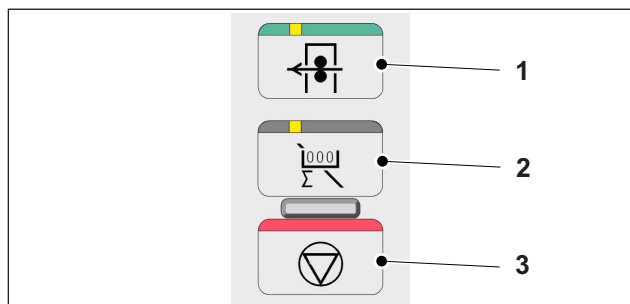


Fig. 25 Automatic buttons

Automatic buttons

- Production (Fig. 25/1)
- Waste-sheet counter (Fig. 25/2)
- Stop (Fig. 25/3)

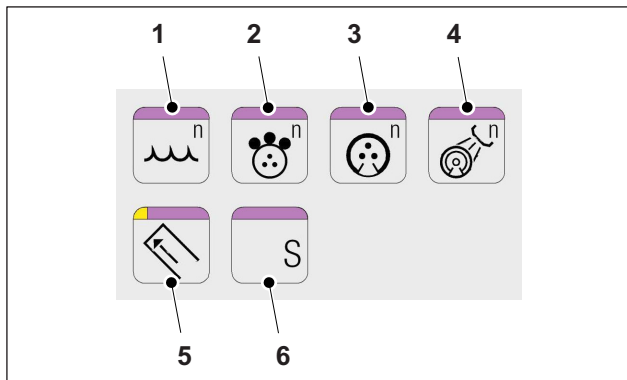


Fig. 26 Selector buttons

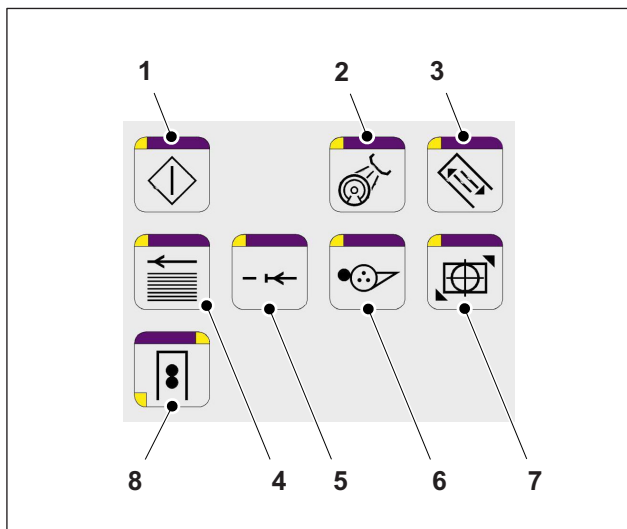


Fig. 27 Direct selection buttons

Selector buttons

- Predampening (Fig. 26/1)
- Ink up plate (Fig. 26/2)
- Ink up blanket (Fig. 26/3)
- Blanket washup (Fig. 26/4)
- Eject printing plate (Fig. 26/5)
- Special functions (Fig. 26/6)

Direct selection buttons

- Operation (Fig. 27/1)
- Blanket washup (Fig. 27/2)
- Plate change/AutoPlate (Fig. 27/3)
- Paper run blast air on/off (Fig. 27/4)
- Double sheet position run (Fig. 27/5)
- Ink ductor (Fig. 27/6)
- Diagonal register (Fig. 27/7)
- Printing unit (Fig. 27/8)

5.3 Information displays

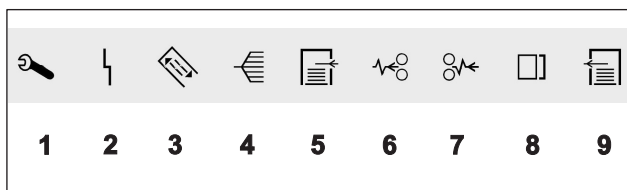


Fig. 28 Information displays

- Service display (Fig. 28/1)
- General malfunction (Fig. 28/2)
- Printing plate change (Fig. 28/3)
- Peripheral equipment (Fig. 28/4)
- Delivery (Fig. 28/5)
- Paper jam, delivery (Fig. 28/6)
- Paper jam, feeder (Fig. 28/7)
- Double sheet (Fig. 28/8)
- Feeder (Fig. 28/9)

6 Overview: preparing and printing a job

6.1 Presettings on the main control panel

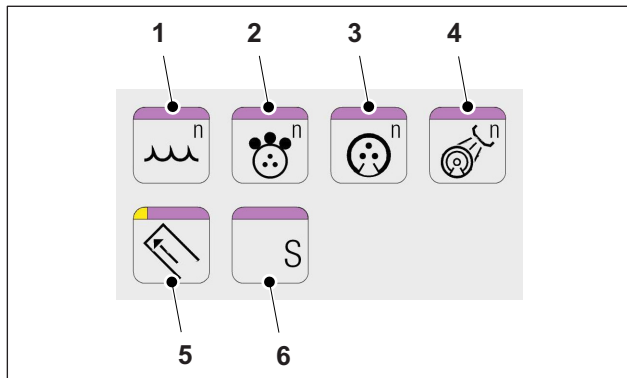


Fig. 29 Selector buttons

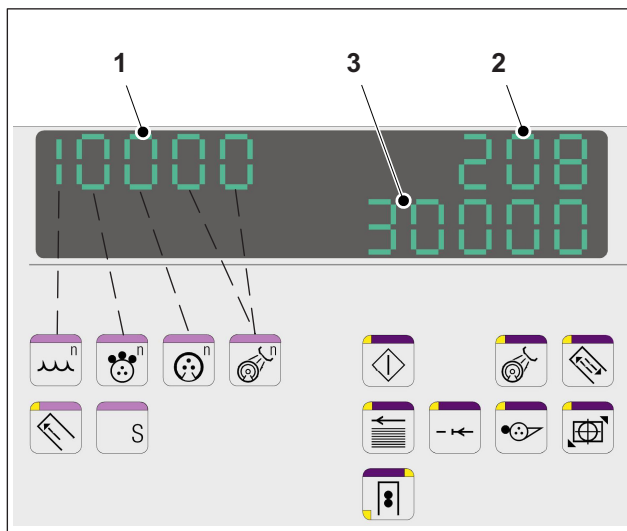


Fig. 30 Display of the numerical presets

Presettings can generally be made using the preselection buttons or the *Special functions* button.

Selector buttons

1 *Predampen*

Predampens the printing plate prior to inking up. Prevents the printing plate from filling up with ink. Use the \pm buttons to enter the number of cylinder revolutions for the predampening of the printing plate (0 to 9).

2 *Ink up plate*

Inks up the printing plate before print start. Use the \pm buttons to enter the number of cylinder revolutions for the inking of the printing plate (0 to 9).

3 *Ink up blanket*

Inks up the blanket before print start. Use the \pm buttons to enter the number of cylinder revolutions for the inking of the blanket (0 to 9).

4 *Blanket washup*

Set the number of wash revolutions using the \pm buttons (0 to 20).

5 *Automatic ejection of printing plate*

If this function is selected, the printing plate in the selected PU is ejected after the end of run.

The numerical settings with the preselection buttons are displayed above the buttons in the respective segment of the display (Fig. 30/1).

Preselection special functions

Call up the special functions by pressing the *Special functions* button and entering the number of the desired special function (SF). The function status can be altered with the \pm buttons (changing values, switching status ...). Exit the special function by pressing the button again.

6 Special functions (SF 16 to 23)

6.2 Presettings on the press

Feeder

1. Turn the pile board downwards.
2. Place a print sheet on the feeder pile board.
3. Set the lateral stops to the format width.
4. Switch off the suckers outside the sheet size.
5. Adjust the forwarding rollers to the sheet size.
6. Set the pulling direction.
7. Insert plate springs at the lateral stops.

8. Insert the printing material.
9. Move the top of the pile up to the bottom graduation.
10. Pull out the crank handle to switch over to the automatic feed pile mechanism.
11. Use the control knob to set the pile height (lowest working height, control knob all the way to the left).
12. Set the sheet separator fingers to the thickness of the printing material.
13. Move the lateral stops to the pile edges so that the plate springs only just touch the pile.
14. Swing down the support frame. Set the rear sheet stops and the rear edge blowers to the sheet size.
15. Press the *Blast air/suction air ON* button.
16. Use the control knob to set the blast air so that the top sheet touches the sheet separator fingers.
17. Adjust the lateral blast air.
18. Set the blast air for the rear edge of the sheet.
19. Press the *Double sheet position run* button. Set the double sheet detector.

Delivery

1. Set the rear stop in the delivery to sheet length.
2. If necessary, position the guide pulleys in the delivery in image-free areas.
3. Check the paper travel after all settings.

Printing unit

1. Mount the printing plate(s).
2. Fill the ink fountain with ink Insert the dampening solution reservoir.
3. Feed in ink and allow it to distribute.
Set the contact pressure.
4. Enter the run length (production is only possible if the run length has been entered).
5. Switch on the waste-sheet counter.
6. Start production by pressing the *Production* button (for test print).
- Check the position and, if necessary, correct it with the circumferential/lateral registers.
7. New test pulls: check the register.
8. Register control: print approximately 20 sheets. Print the sheets a 2nd time: the printed image on the middle 16 sheets must not be misaligned.
9. If all the sheets are OK, switch on the powder spray device and go into production.
10. Switch off the waste-sheet counter after around 5 waste sheets.

6.3 *Production* button

After completing all presets for a print job, the printing process is started by pressing the *Production* button. The printing process runs automatically in accordance with the preselected settings.

After standstill times with a blanket that is still inked, the blanket must be washed **before** printing production is resumed.

Two-color press: Only the selected printing unit of the press goes into production mode. Select PU 1, PU 2, or PU 1 and 2 by pressing the *Printing unit selection* button.

1. Press the flashing *Production* button twice in rapid succession: The LED lights up and the production program is started.
 - Predampening according to the preselected number of revolutions
 - Preinking of the printing plate according to the preselected number of revolutions
 - Inking of the blanket according to the preselected number of revolutions
 - Feeder on
 - Impression on
2. Press the *Production* button once to interrupt the printing process.
3. Remove sample sheets.
4. OK sheet: Press the *Production* button once.
5. If necessary, alter the production speed by pressing the + or - button.

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1 Feeder - safety instructions

1.1 To be observed when working at the press



Warning - Risk of injury from moving parts!

Pay particular attention to moving parts and hazards in the material in-feed area during work on the feeder. Do not reach into the gap of the material infeed.



Warning - Risk of injury from moving parts!

Do not reach into any moving parts, such as lifting and forwarding suckers or forwarding rollers.



Warning - Risk of explosion and fire due to dust deposits!

Dust, such as powder or paper dust, can pose a risk of fire or explosion. You should therefore clean the areas affected by dust regularly, at least once a week, using a vacuum cleaner. Only use suitable and approved industrial vacuum cleaners and avoid working with compressed air, as this could swirl up the dust.

1.2 Pile change



Warning - Risk of injury from moving pile carrier!

Prior to raising or lowering the pile support plate: Ensure by means of a visual inspection that no one is standing in the hazardous area of moving parts and that nothing can be jammed underneath the pile support plate. When the press is switched on: Never stand underneath the pile support plate. Do not sit on the pile support plate. Do not ride on the pile support plate.

2 Pile board

2.1 Raising/lowering pile board

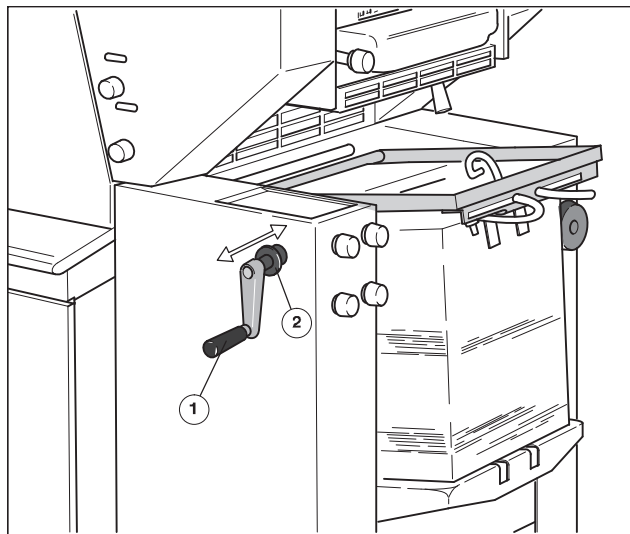


Fig. 1 Pile transport

Max. pile height: 490 mm

Max. pile weight: 80 kg

By engaging the **crank handle** (Fig. 1/1), the feeder pile board can be moved upwards or downwards.

1. Turn the crank handle (Fig. 1/1) on O.S. to move the pile board upwards or downwards.
 - **up:** engage the crank handle and turn it clockwise,
 - **down:** engage the crank handle and turn it anti-clockwise.

Note

When the **crank handle** is **engaged** the **automatic pile transport** is **switched off**.

2. By pushing in/pulling out the **bush** (Fig. 1/2) you can alter the speed by which the pile is moved from slow to fast and vice versa.
 - **fast:** push in the bush up to the stop,
 - **slow:** pull out the bush up to the stop.

Manual pile transport blocks

The manual pile transport (pile moves downwards in the feeder and upwards in the delivery) is blocked and the "malfunction" symbol is flashing:

1. Rotate the press by one revolution using the crank handle or inch it. - Pile can be moved: start up the press; not possible to move the pile: contact the service department of your Heidelberg agency.

3 Inserting the printing material

3.1 Sheet size, thickness of printing material

Maximum size 460 mm x 340 mm

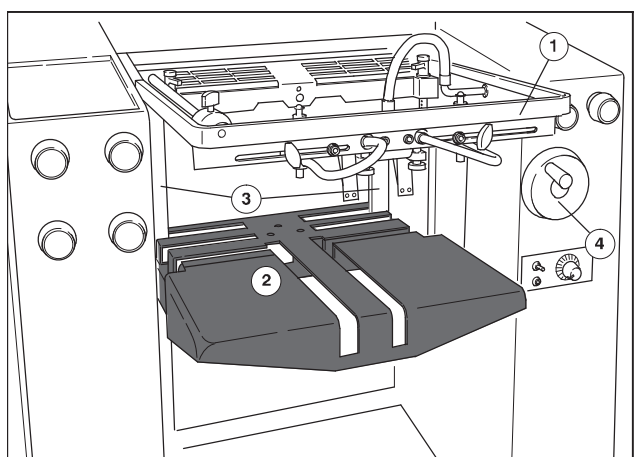
Minimum size: 140 mm x 89 mm; with presses that are configured for processing small sheet sizes: 100 mm x 100 mm

Gripper bite:

- 7 mm for an impression cylinder with cylinder jacket
- 8 mm for an impression cylinder without cylinder jacket

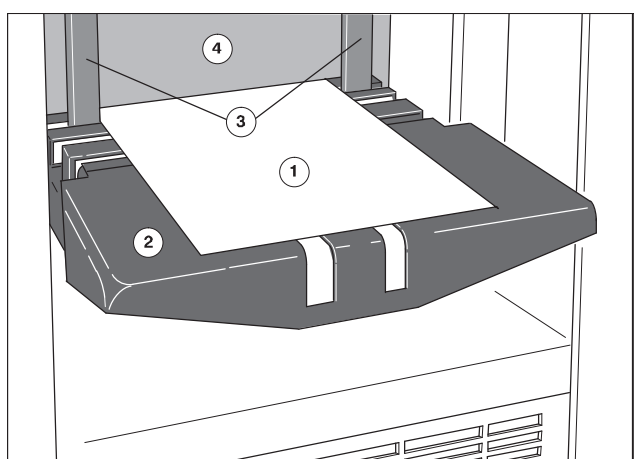
Thickness of the printing material: 0.04 mm to 0.3 mm

3.2 Inserting the feeder pile



1. Lower the feeder pile board (Fig. 2/2) using the crank handle (turn crank handle anti-clockwise).
2. To insert paper, swing the pile frame (Fig. 2/1) upwards.

Fig. 2 Inserting printing material



3. Place a sheet of the printing material (Fig. 3/1) into the middle of the feeder pile board (Fig. 3/2), place the front edge of the sheet against the plate (Fig. 3/4).
4. Position the lateral pile guides (Fig. 3/3) against the sheet edges using the handwheel (Fig. 2/4).
5. Loosen up the printing material before you insert it.

Fig. 3 Feeder pile board: aligning the sheet

3.3 Central setting of the format width for feeder and delivery

When **adjusting** the lateral pile guides to the **format width in the feeder**, the **format width in the delivery** is automatically adjusted as well. Therefore, there should be no paper pile in the delivery.

4 Sheet guides

4.1 Lateral sheet guides

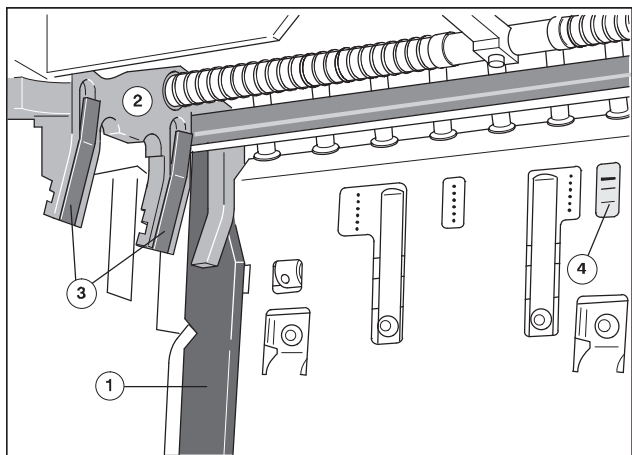


Fig. 4 pile guide rail, plate springs for sheet guidance

1. Engage the crank handle and raise the paper pile up to the desired height.
2. Use the handwheel to position the lateral sheet guide pieces (Fig. 4/2) at a distance of approximately 1 mm from the pile edges.
3. Move the paper pile upwards so that it is positioned just under the lower scale line (Fig. 4/4).
4. Position the sheet guide pieces so that they are in light contact with the pile edges.

Note

When adjusting the lateral pile guide pieces to the format width in the feeder, the format width in the delivery is automatically adjusted. Therefore, there should be no paper pile in the delivery.

For improved sheet guidance, **plate springs** (Fig. 4/3) can be attached to the lateral sheet guide pieces (Fig. 4/2).

Note

Plate springs are only to be attached to the lateral sheet guide pieces which are located on the **side from which the sheet is being pulled away**.

5. Slide the plate springs (Fig. 4/3) onto the lateral sheet guides from underneath. The lateral sheet guides (Fig. 4/2) should only have light contact to the pile edge.

Accessory part for small sheet sizes:

If this accessory part is used, the plate springs (Fig. 4/3) on the lateral sheet guides must be removed.

See the table at the end of this chapter for further information on how to adjust lateral sheet guide pieces.

4.2 Sheet separator fingers

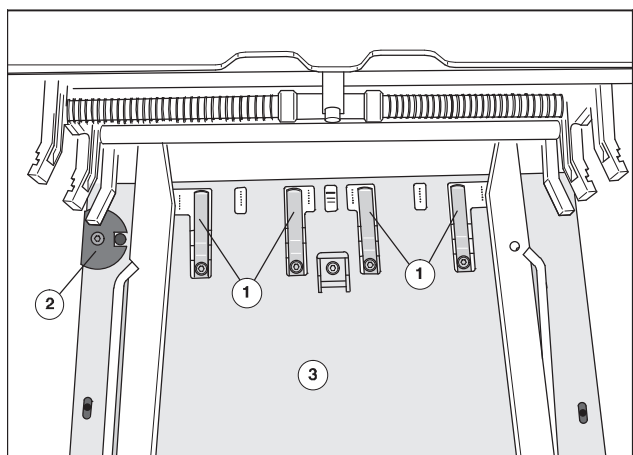


Fig. 5 Sheet separator fingers

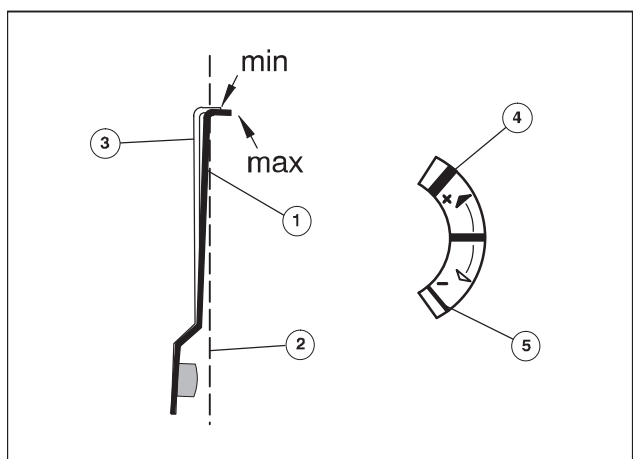


Fig. 6 Adjusting sheet separator fingers

4.3 Rear pile stops

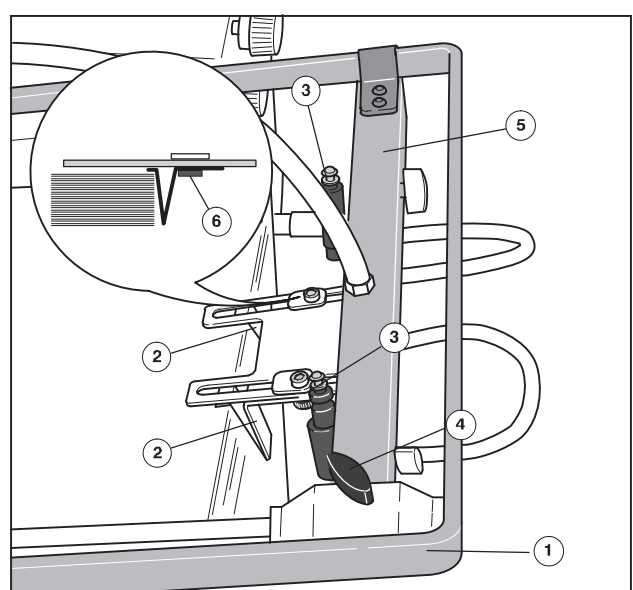


Fig. 7 Pile frame

To ensure proper separation of the sheets, adjust the 4 sheet separator fingers (Fig. 5/1) on the front edge of sheet according to the printing material used (see also the table in Section "Paper travel settings" at the end of this chapter).

Printing material	Direction of rotation of the locking disc
thin = Pos. "max"	Fig. 6/5: towards -, clockwise
thick = Pos. "min"	Fig. 6/4: towards +, anti-clockwise

Tab. 1 Adjusting sheet separator fingers

1. Use the operator tool to adjust the locking disc (Fig. 5/2) to the printing material thickness. **Thicker sheets:** Move the springs away from the front edge of the sheet (Fig. 6/3), **thinner sheets:** position the springs against the front edge of the sheet (Fig. 6/1).

Note

The sheet separator fingers (Fig. 6/1) may only protrude a certain distance in order that **the front edge of the pile** (Fig. 6/2) remains in contact with **the plate** (Fig. 5/3).

The pile frame (Fig. 7/1) supports the rear sheet stops (Fig. 7/2) and the rear edge blowers (Fig. 7/3).

1. After you have inserted the printing material, swing down the pile frame (Fig. 7/1).
2. Slacken the tommy bar screw (Fig. 7/4) and push the guide piece (Fig. 7/5) towards the rear sheet edge until the sheet stops (Fig. 7/2) just touch the rear pile edge. The paper must not be jolted.
3. Tighten the tommy bar screw (Fig. 7/4).

Small sheet sizes

4. It is only necessary to position the sheet stops (Fig. 7/2) further forwards when processing small sheet sizes. To do so, slacken the knurled head screws (Fig. 7/6) on the underside of the mounting supports.
5. Retighten both knurled head screws (Fig. 7/6).

4.4 Adjusting the pile height

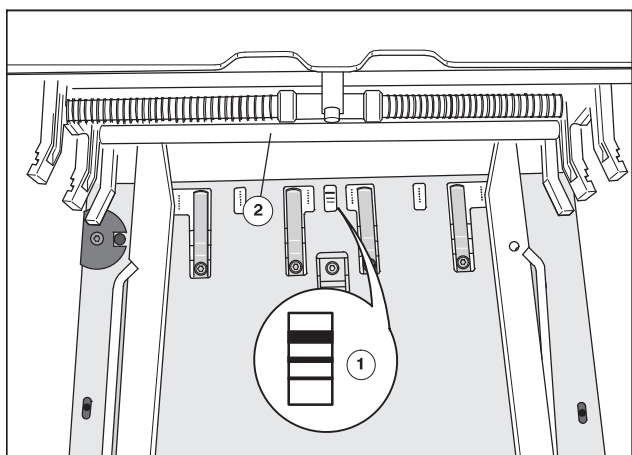


Fig. 8 Aligning the upper edge of pile

Using the control knob (Fig. 9/1) to align the upper edge of the pile on the scale (Fig. 8/1) according to the thickness of printing material.

- **Thick** sheets: thicker mark (top),
- **Thin** sheets: up to the thinner marking (bottom).

See also the table in the "Paper travel adjustments" section at the end of this chapter.

Note

When processing **thin paper** align the top edge of the pile to the bottom line and for **cardboard** to the upper line.

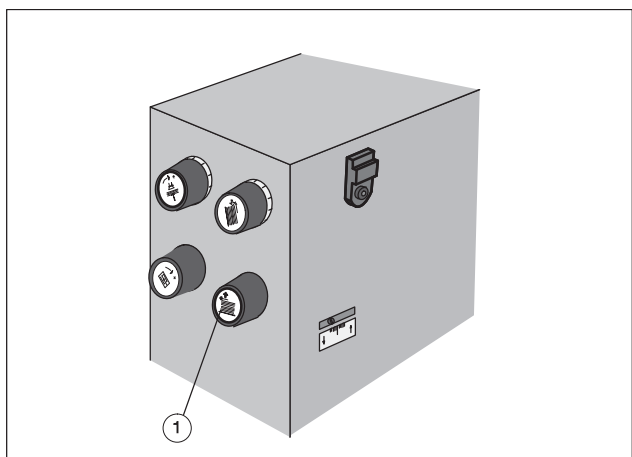


Fig. 9 Control knob for the pile height

1. Crank the pile up until it is below the lowest marking.
2. Turn the control knob for the pile height (Fig. 9/1) anti-clockwise and set it to the lowest working height.
3. Start up the press and thereby also the automatic pile transport.

Make the following setting at **production speed**:

4. If the feed table height control bar (Fig. 8/2) touches the top sheet and stops the automatic feed pile mechanism, turn the control knob (Fig. 9/1) clockwise until the correct pile height is reached.

4.5 Laterally aligning the sheet in paper run and production mode

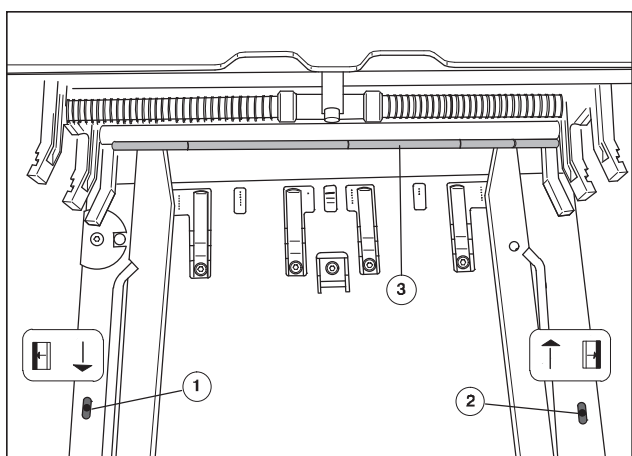


Fig. 10 Lateral sheet alignment

The sheet to be printed is aligned laterally towards D.S. or O.S. with a pull rod fitted with rubber rings (Fig. 10/3).

Direction of pull

1. Put the operator tool through the oblong holes into the borehole of the shaft on O.S. (Fig. 10/1) or D.S. (Fig. 10/2) and turn the shaft upwards or downwards according to the two signs.

Direction of rotation	Direction of pull
downwards	towards O.S. (Fig. 10/1)
upwards	towards D.S. (Fig. 10/2)

Tab. 2 Adjusting the pulling direction

Note

Plate springs are only to be attached to the lateral sheet guide pieces which are located on the **side from which the sheet is being pulled away**.

5 The forwarding rollers

5.1 General information

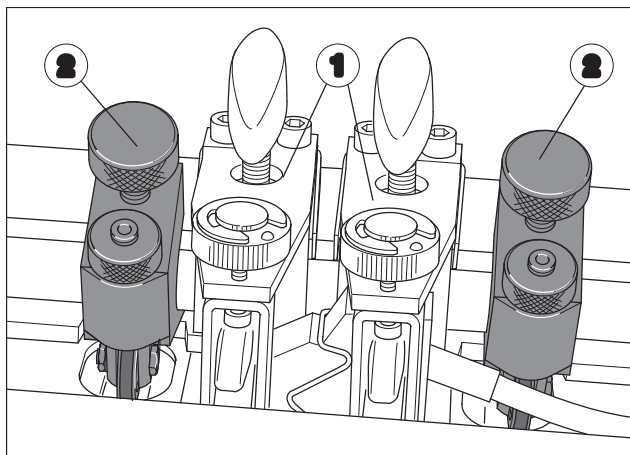


Fig. 11 Forwarding rollers

The forwarding rollers transport the sheet into the press. The standard forwarding rollers (Fig. 11/1) are part of the basic press configuration.

For presses which are equipped with the accessory for small sheet sizes of up to 100 mm x 100 mm, forwarding rollers for small sheet sizes (Fig. 11/2) are used in addition to the standard forwarding rollers. For details, refer to the section "Accessory for small sheet sizes" in this chapter.

5.2 Adjusting forwarding rollers to the format width

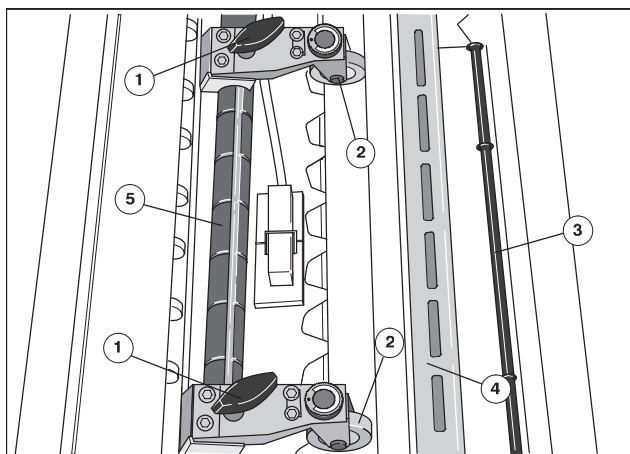


Fig. 12 Adjusting forwarding rollers

1. Inch the press until the forwarding rollers (Fig. 12/2) touch down on the transport roller.
2. Slacken the tommy bar screw (Fig. 12/1).
3. Lift up the forwarding roller (Fig. 12/2) and move it along the shaft (Fig. 12/5) according to sheet size.

Note

Position the forwarding rollers symmetrically on the print sheet. Spacing between the forwarding rollers: about 2/3 of the format width.

4. The forwarding rollers engage lightly when moved.



Caution - Damage to the press!

When moving, ensure that the **forwarding rollers engage properly**. Only then is a collision with the suckers avoided (risk of breakage).

5. Use the tommy bar screw (Fig. 12/1) to fix the forwarding rollers in the lock-in position.

5.3 Contact pressure of the forwarding rollers

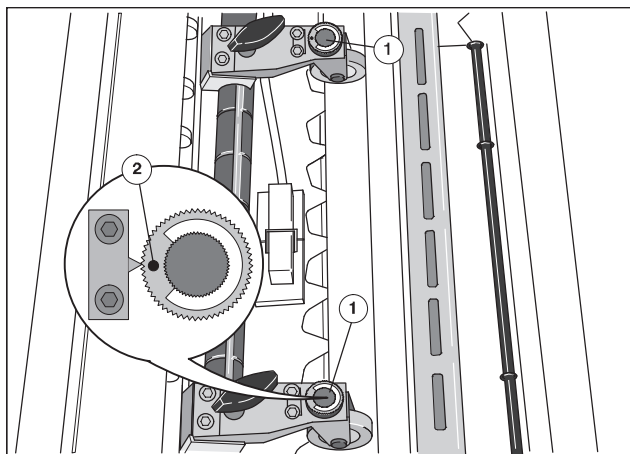


Fig. 13 Setting the contact pressure

Almost all printing materials can be processed at a medium setting of the knurled head screws (Fig. 13/1).
 - Medium setting: the pin (Fig. 13/2) in the knurled head screw is opposite to the recess in the plate spring. Only change the contact pressure **in the event of paper travel problems** (e.g. forming of creases or markings on autocopying paper).

6. Use the knurled head screw (Fig. 13/1) to set the same contact pressure to the transport roller on D.S. and O.S..

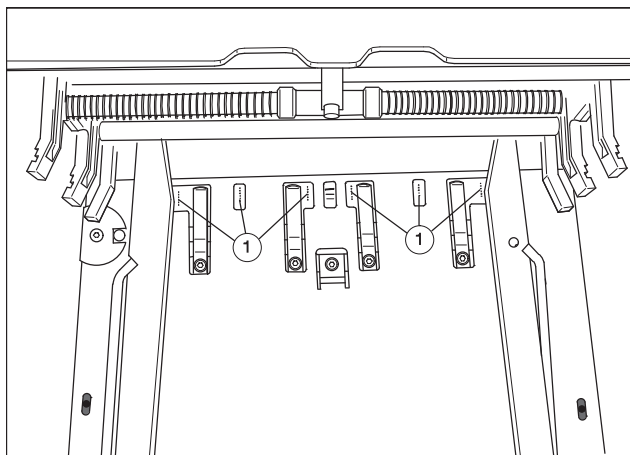
Note

Only change the setting of the contact pressure in very small increments (= in 'click' increments).

Direction of rotation: clockwise - greater contact pressure; anti-clockwise - less contact pressure.

6 Blast air

6.1 Blower bar at the front edge of sheet

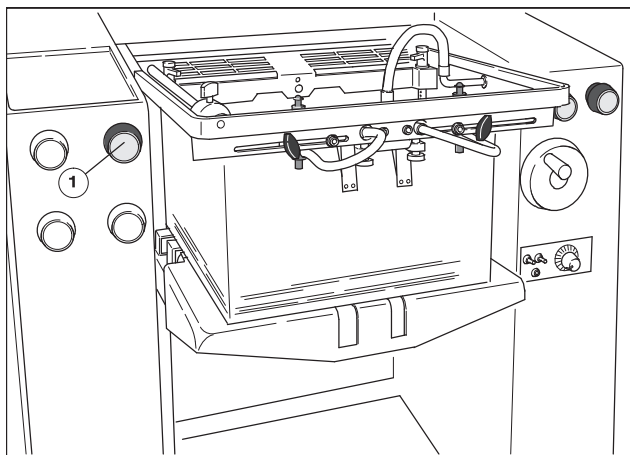


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The blast air for separating the front edge of pile comes out of the blower bar apertures (Fig. 14/1).

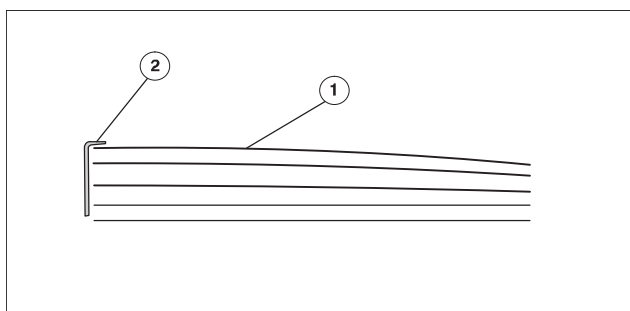
1. Using the control knob (Fig. 15/1) set the blast air so that the top sheet (Fig. 16/1) touches the front sheet separator finger (Fig. 16/2).

Fig. 14 Blower bar at the front edge of sheet



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Fig. 15 Control knob for blast air regulation at the front edge of sheet



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Fig. 16

6.2 Lateral sheet separation blowers, front corner blowers

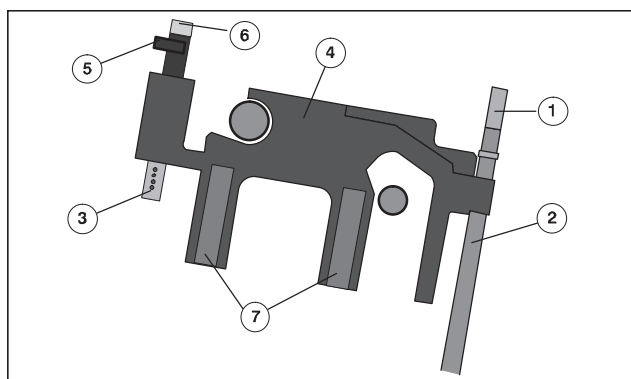


Fig. 17 Lateral sheet separation blowers, front corner blowers

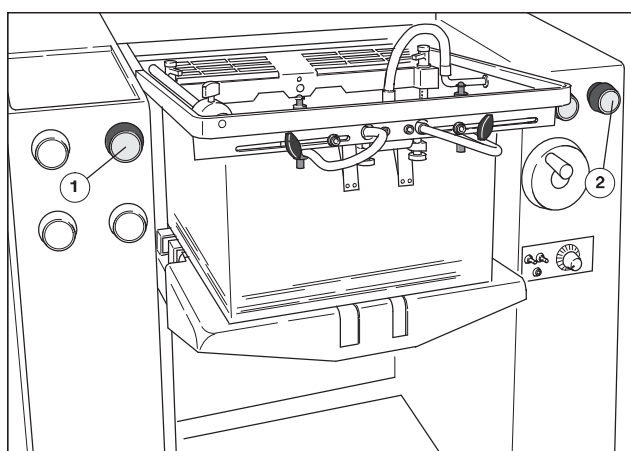


Fig. 18 Blast air at the rear sheet edge

Fig. 17 shows the lateral sheet stop on O.S.

- 1 Knurled head for adjusting the height of the front corner blowers
- 2 Front corner blowers
- 3 Lateral sheet separation blowers
- 4 Lateral sheet stop
- 5 Lever for setting the direction of air blast
- 6 Knurled nut for setting the height
- 7 Leaf springs at the lateral sheet guides

	Front corner blowers (Fig. 17/2)	Lateral sheet separation blowers (Fig. 17/3)
Sheet-size adjustment	together with the lateral sheet guides	together with the lateral sheet guide pieces
Height adjustment	Pull up blower tube (Fig. 17/2): the upper 3 to 8 sheets are separated	Knurled nut (Fig. 17/6); loosen up top 3 to 8 sheets
Blowing direction	Turn the blower tube using the knurled handle (Fig. 17/1)	Turn the blower at the lever (Fig. 17/5)
Basic setting	vertically onto the pile	vertically onto the pile
<i>Thin papers</i>	without corner blowers	diagonal to the back
<i>Cardboard</i>	vertically onto the pile or slightly to the front	vertically onto the pile or slightly to the front
Blast air regulation	Control knob (Fig. 18/1)	Control knob (Fig. 18/2)

Tab. 3 Setting of blast air for the front and lateral sheet separation blowers

6.3 Loosening up the rear sheet edge

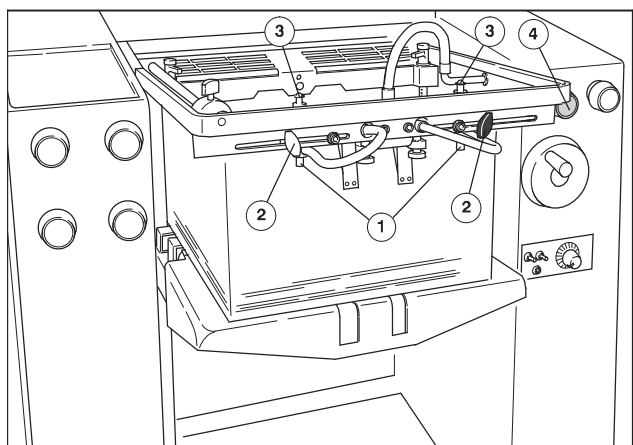


Fig. 19 Blast air at rear sheet edge

When processing **cardboard in the maximum sheet size**, the rear edge blowers improve the paper travel. The two blowers (Fig. 19/1) loosen up the rear pile edge.

Aligning the blowers to the sheet width

1. Slacken the tommy bar screws (Fig. 19/2) and move the blowers on the cross bar inwards by approx. 1/4 of the format width.
2. Fasten the tommy bar screws (Fig. 19/2) to fix the blowers in this position.

Height adjustment

1. Adjust the desired height by turning the knurled nuts (Fig. 19/3); approx. 3 to 8 sheets should be loosened up.

Regulating/shutting off blast air

1. Use the control knob (Fig. 19/4) for stepless **variation** of the blast air volume.
2. If the blowing device is not needed, shut off the blast air. To do so, turn the control knob (Fig. 19/4) to the right up to the stop.

7 Suction air

7.1 Adjusting the suction air

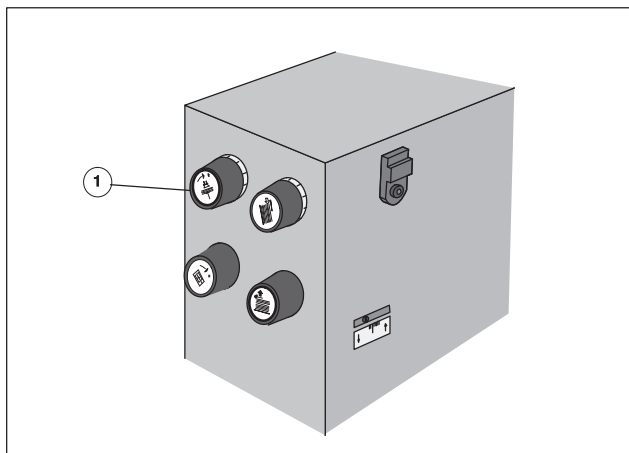


Fig. 20 Control knob for adjusting the suction air

1. Adjust the suction air for the suckers on the sucker bar using the control knob (Fig. 20/1) so that only the top sheet will be picked up.

7.2 Switching suckers On/Off

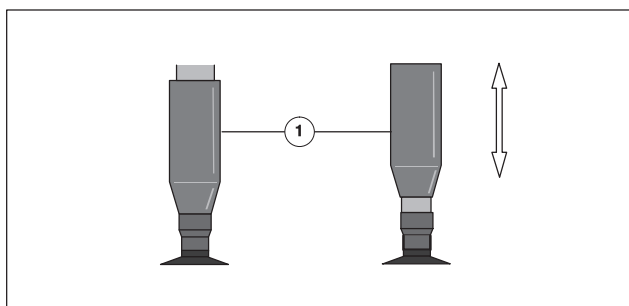


Fig. 21 Shutting off suckers

The suckers outside the sheet format must be shut off.

1. **To shut off:** push up the sleeve (Fig. 21/1) on the upper part of the suckers.
2. **To open:** push the sleeve downwards.

8 Sheet monitoring

8.1 Adjusting the double sheet detector

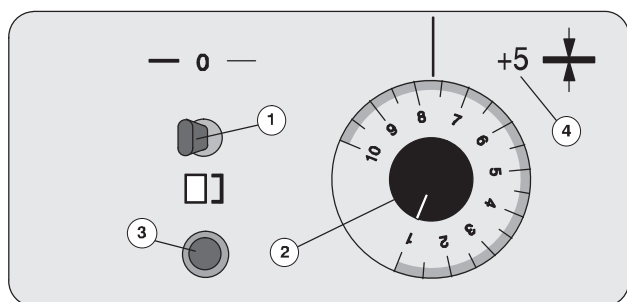


Fig. 22 Adjusting the double sheet detector

Unprinted sheets

1. Adjust the blast and suction air (see Table in section on "Paper run settings" at end of the sub-chapter).
2. Press *Double sheet position run* button twice; LED lights up.

The sucker bar guides a sheet into the press; the press stops, rotates slowly backwards; stops, rotates briefly forwards. The non-print edge of the sheet (7 mm) lies under the electronic eyes of the double sheet detector.

3. Set the toggle switch of the double sheet detector (Fig. 22/1) for thick or thin paper.
4. Turn control knob (Fig. 22/2) counterclockwise until the lamp (Fig. 22/3) lights up.

Note

If the toggle switch is in the left position (thick paper) and the lamp does not light up, then turn the switch clockwise (thin paper).

5. Turn the control knob (Fig. 22/2) clockwise until the lamp goes out.
6. Now continue turning 5 scale lines corresponding to Fig. 22/4; e.g. lamp goes out at pos. "7,7"; turn control knob to pos. "8,2".
7. Press *Double sheet position run* button twice; sheet is deposited in the delivery.
8. Pressing the button again before the sheet is deposited stops the press, in order (e.g.) to adjust the guide pulleys of the delivery drums. Then press *Double sheet position run* button twice; sheet is deposited in the delivery.

Note

During the positioning run for the double sheet detector the **sheet length** is also registered.

Printed sheets

On single-sided printed sheets, the non-print edge should face the press.

1. Enter presetting as with unprinted paper.

Note

Double sheet detection is not possible with **tracing paper**, **intensively inked and thick types of cardboard** or **with metallic foils**. In these cases switch off the double sheet detector (toggle switch position 0).

Double sheet detection

The paper run is interrupted and the press stops. In the information display the red symbol *Double sheet* flashes; procedure:

1. Remove double sheets from the delivery.
2. If no double sheet was present, adjust the double sheet detector again.

The information display *Double sheet* goes out when the next good sheet is detected.

8.2 Missing sheet detector

A missing sheet detector is integrated in the double sheet detector. At the **first missing sheet** the press goes off impression and tries to suction a further sheet.

- If a sheet is suctioned during the 2nd attempt, then the press enters production again.
- If the press detects a 2nd missing sheet, then the press stops.

In both cases, the symbol *Feeder pile* flashes in the information display. The indicator goes out when the next good sheet is detected.

8.3 Sheet travel display

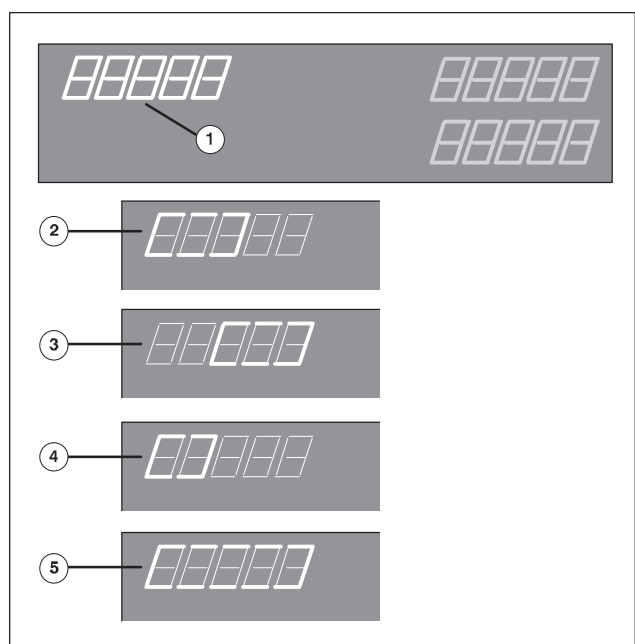


Fig. 23 Sheet travel display



Fig. 24 SF 19: Sheet length monitor ON

- Possible displays instead of the printing speed (Fig. 23/1):
Early sheet (Fig. 23/2),
Late sheet (Fig. 23/3),
Short sheet (Fig. 23/4),
Long sheet (Fig. 23/5).
The residual number of impressions and number of sheets are not displayed.
- Prerequisite for the short and long sheet display: sheet length monitor (SF 19) is switched on (Fig. 24).

Lead or rear edge of sheet lies outside the good sheet area: press stops immediately, all functions OFF, *Control panel selection* button flashes:

1. Inch sheets out of the press.

In the information display the symbol *Feeder paper jam* flashes in case of an early or late sheet.

Explanation of the display and troubleshooting:

- Fig. 23/2: lead edge of sheet too early = early sheet
 - Fig. 23/3: lead edge of sheet too late = late sheet
 - Fig. 23/5: rear edge of sheet too late (front edge in good area = long sheet) - *Feeder paper jam* symbol flashes:
1. Remove sheet from feeder or inch out of press.
 2. Adjust paper run.

3. Correct sheet arrival.
 4. Clean electronic eye of the sheet monitor.
 - Fig. 23/4: rear edge of sheet too early (lead edge of sheet in good area = short sheet):
 1. Remove short sheet from the delivery.
 2. Adjust paper run.
 3. Clean electronic eye of the sheet monitor.
- After removal of the sheet under the electronic eye of the sheet travel monitor, information display *Feeder paper jam* goes out.

8.4 Sheet arrival display, trend display

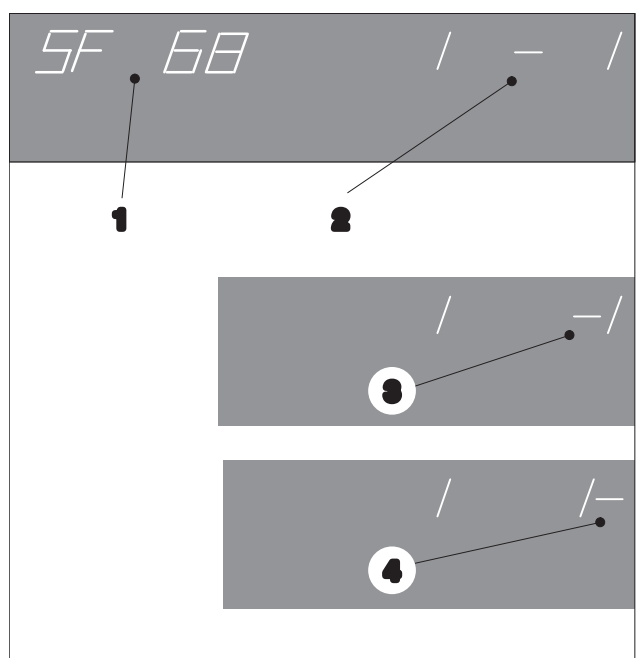


Fig. 25 SF 68: *Sheet arrival*

SF68 Sheet arrival display

The sheet arrival display is a trend display. It shows the sheet arrival within a defined area. There is a good sheet if the sheet arrival is inside this area.

The *Sheet arrival* control knob permits the sheet arrival to be advanced or retarded if the sheet arrival is outside the good sheet area.

The display shows the number of the special function (Fig. 25/1) and by a horizontal line schematically the location of the sheets within the area (Fig. 25/2).

- Sheet inside the good sheet area (Fig. 25/2),
- Sheet inside the good sheet area (Fig. 25/3) in the rear area,
- Sheet outside the good sheet area (Fig. 25/4).

8.5 Sheet length monitor

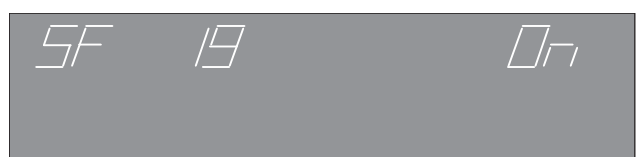


Fig. 26 SF 19: Switch sheet length monitor ON/OFF

The sheet length monitor checks the rear edge, under the condition that the front edge is in the good sheet area. Short and long sheets are detected and offset double sheets are prevented from entering the press. In case of fluctuating sheet length, the sheet length monitor can be switched off.

1. Press the *Special functions* button.
2. Select the special function *Sheet length monitor* (SF 19).
3. Using the *+* or *-* buttons, **change** the functional state ("ON" or "OFF"): *Sheet length monitor ON/OFF*.
4. Exit display by pressing the *Special functions* button.

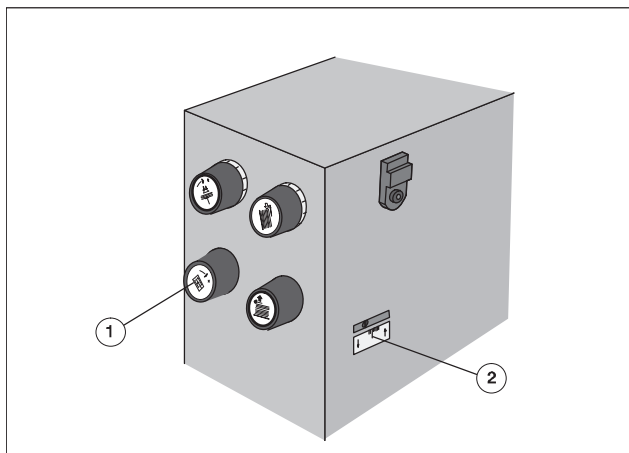
Feeder

Note

The function is set to "ON" after the main switch has been switched on.

9 Sheet arrival

9.1 Adjusting the sheet arrival



The sheet arrival has to be adjusted according to the printing material via the control knob (Fig.27/1). Read the setting on the scale at the side frame on OS (Fig. 27/2).

Setting range: -2 to +5. The slit in the screw points to the respective sheet arrival setting.

1. **Thin printing materials:** turn clockwise, sheet arrives earlier.
2. **Thick printing materials:** turn anti clockwise, sheet arrives later.

For further **details on setting** see the table in the "paper travel adjustments" section at the end of this chapter.

Fig. 27 Sheet arrival: adjustment knob and scale

10 Entering the printing speed and the number of impressions

10.1 Adjusting the printing speed



Fig. 28 Printing speed display

The printing speed can be varied from 3500 to 10000 impressions/h; it is indicated in the display (Fig. 28/1).

1. Press the + or - button in order to set the desired printing speed; change in increments of 50 sheets/h.

The display indicates the current state during production with sheet run errors. The number of sheets and the residual number of impressions are then not displayed.

10.2 Entering the number of impressions



Fig. 29 Entering the number of impressions

In the numeric keypad, press the *Delete* button twice: the **number of impressions** (Fig. 29/2) and **residual number of impressions** (Fig. 29/1) displays are deleted. The numeral 0 flashes in the display (Fig. 29/1).

1. Using the **numeric keypad**, preselect the number of impressions; the entry is displayed at the lower right (Fig. 29/2).

10.3 Waste-sheet counter



Fig. 30 Number of impressions display

Before start of production:

1. Press the *Waste-sheet counter* button, LED lights up; the waste sheets are counted at the bottom in the display (Fig. 30/2).

After the first good sheet:

2. Press the *Waste-sheet counter* button again. The display (Fig. 30/1) counts backwards (residual number of impressions); the preselected number of sheets is displayed below (Fig. 30/2).
3. Press the *Waste-sheet counter* button **in production**: counter interruption. The printed sheets in the counter interruption are counted and indicated; they are not counted in the residual number of impressions/number of sheets display.
4. Press the *Waste-sheet counter* button **in press stop**: delete the residual number of impressions using the *Delete* button (= end of run).

11 Paper travel

11.1 Starting paper travel

Start paper travel to check all the settings:

1. Press the *Run* button twice. The press goes into production mode. The LED in the button lights up.
2. Press the *Blast air/suction air on/off* button once. The LED lights up and the pressure/vacuum pump is switched on. The sheets are transported to the delivery.

11.2 Interrupting the paper travel

1. Press the *Blast air/suction air on/off* button once. The pressure/vacuum pump is switched off. The press remains in production mode.

12 Lateral register

12.1 Adjusting the lateral register

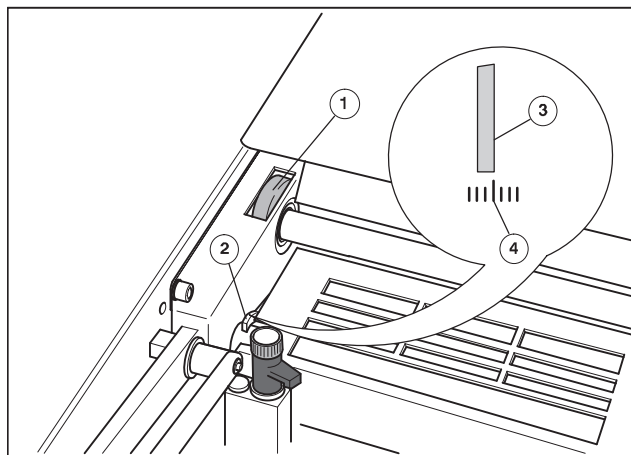


Fig. 31 Lateral register

Moving PU 1 and PU 2 printed image to the print sheet

The sheet can be moved laterally by turning the adjusting wheel (Fig. 31/1) ± 2.5 mm relative to the printed image while the press is running.

The adjustment is indicated on the scale (Fig. 31/2) in mm. Read off the value on the side of the indicator plate **turned towards** the paper (Fig. 31/3) (Fig. 31/4 = "zero" position).

Note

Reset the adjustment of the lateral register to zero after the end of run.

On other register functions, see the sub-chapter on "Printing unit, positioning corrections".

13 Guide plate with brush rollers

13.1 Field of application

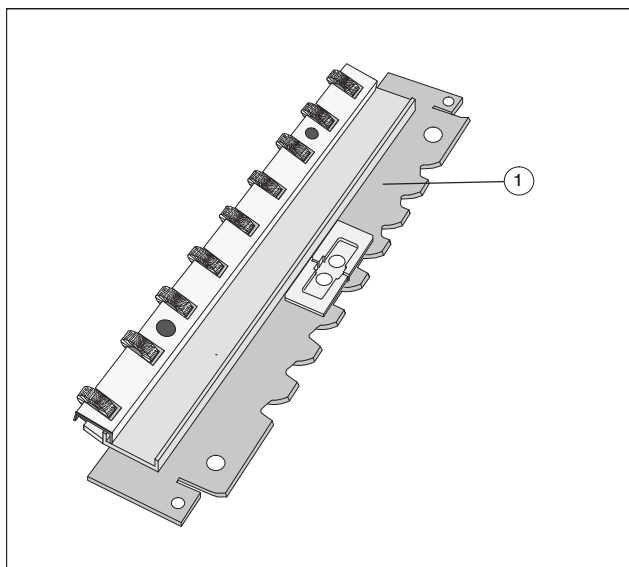


Fig. 32 Guide plate with brush rollers

For print jobs with sensitive printing materials (e.g. Chromolux cardboard), the guide plate with brush rollers (special accessory, Fig. 32/1) should be used.

Brush rollers outside the sheet size or (with previously printed sheets) on the print subject can be left out. For uneven, unstable paper you should use all circular brushes.

13.2 Removing the guide plate

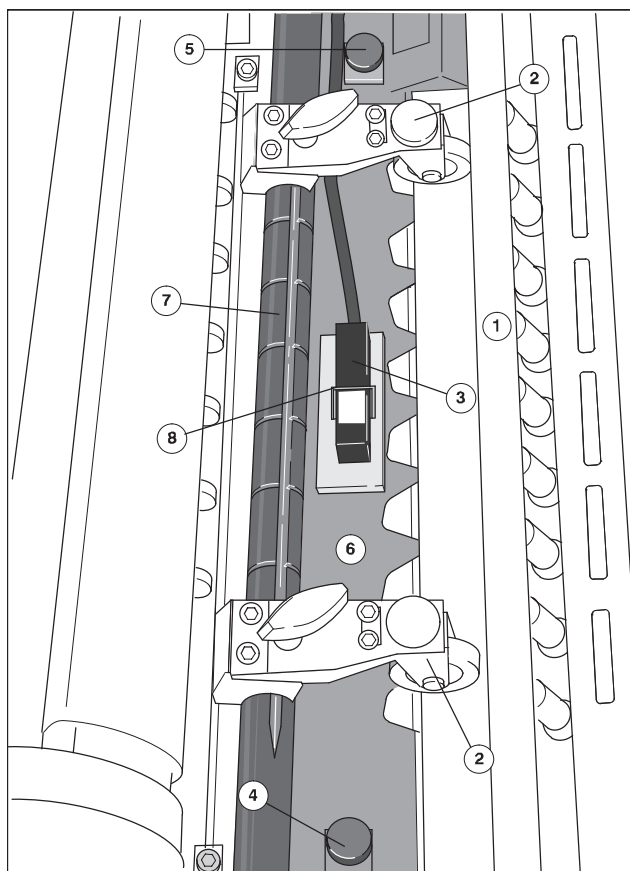


Fig. 33 Inserting the guide plate with brush rollers

1. Rotate the press with the crank handle until the sucker bar (Fig. 33/1) is all the way down.
2. Set both forwarding rollers (Fig. 33/2) fully to the outside up to the side frame on D.S.
3. Remove the sheet monitor (Fig. 33/3).
4. Completely unscrew the knurled screws (Fig. 33/4 and 33/5).
5. Pull out the guide plate (Fig. 33/6) under the forwarding roller axle (Fig. 33/7).
6. Compress and remove the clamp (Fig. 33/8) for the sheet monitor.

13.3 Inserting the guide plate with brush rollers

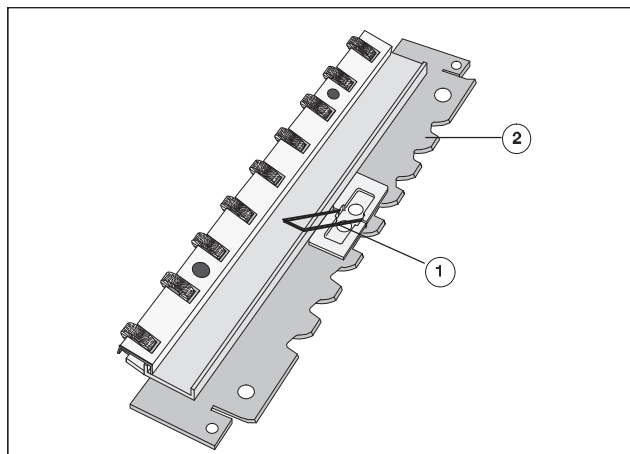


Fig. 34 Guide plate with brush rollers

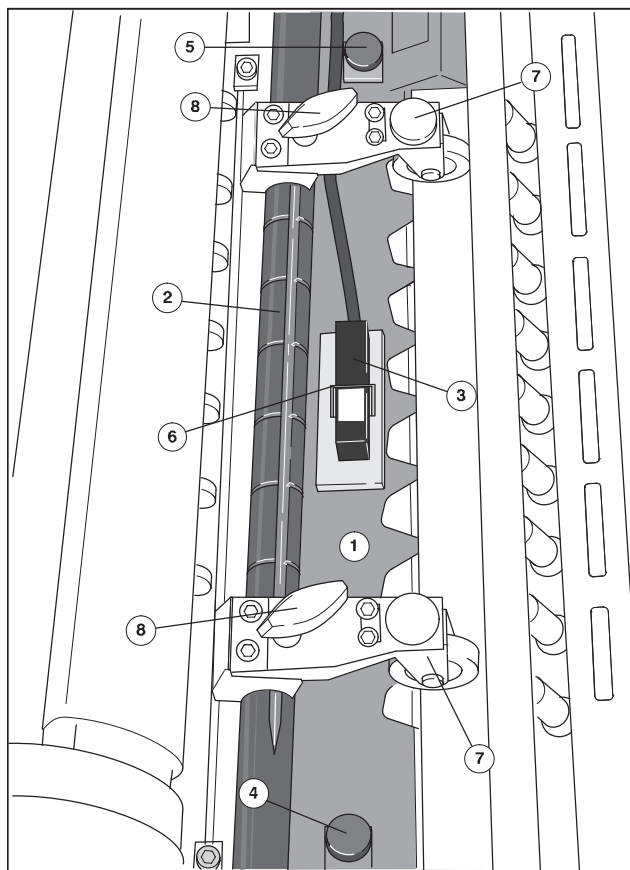


Fig. 35 Inserting the guide plate

1. Insert clamp (Fig. 34/1) for mounting the sheet monitor on the guide plate with brush rollers (Fig. 34/2).
2. Slide the guide plate with brush rollers (Fig. 35/1) through under the forwarding roller axle (Fig. 35/2).
3. Insert the two knurled screws (Fig. 35/4 and 35/5) in the bore holes of the guide plate and tighten slightly.
4. Mount the guide plate first with the knurled screw on O.S. (Fig. 35/4), then tighten the knurled screw on D.S. (Fig. 35/5).
5. Insert the sheet monitor (Fig. 35/3) and fasten with clamp (Fig. 35/6).
6. Align the forwarding rollers (Fig. 35/7) corresponding to the sheet size; when moving, make sure the **forwarding rollers correctly engage**.
7. Fix the forwarding rollers (Fig. 35/8) in place in the lock-in positions using the tommy bar screws.

13.4 Replacing the brush rollers

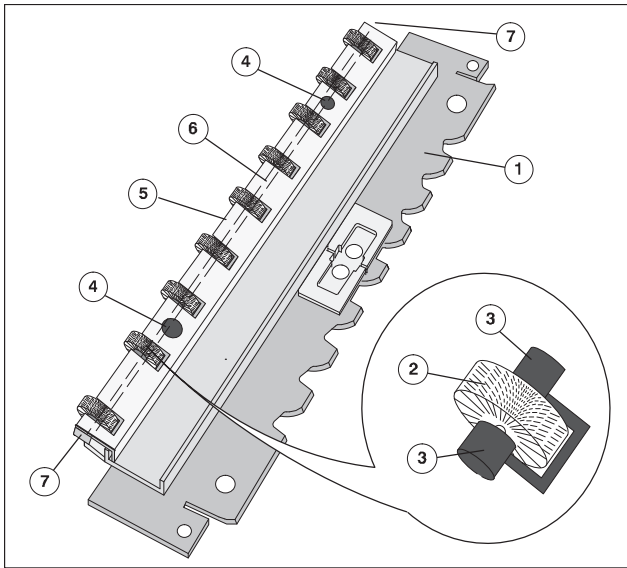


Fig. 36 Replacing the brush rollers at the guide plate

1. To replace the brush rollers (in case of wear), you must remove the guide plate (Fig. 36/1).
2. Using the operator tool, completely unscrew both screws (Fig. 36/4) and remove the cover plate (Fig. 36/5) above the spring clips.
3. Slowly pull the rod (Fig. 36/6) out of the spring clips. The brush rollers (Fig. 36/2) fall out when the rod is pulled out.
4. If necessary, compress the spring clip (Fig. 36/3) and pull out of the guide in the guide plate.
5. To **insert**, let the spring clips (Fig. 36/3) engage in the lateral guide in the guide plate.
6. Insert the rod through the spring clips and set the brush rollers individually on the rod.

Note

Brush rollers outside the sheet size or - with previously printed sheets - on the print subject can be left out as required. For uneven, unstable paper you should use all circular brushes.

7. Place the cover plate (Fig. 36/5) over the spring clips. The connecting links at the faces of the cover plate (Fig. 36/7) secure the inserted rod.

Note

When inserting, make sure that the **U-beam of the cover plate points downwards**.

8. Insert the two screw fasteners (Fig. 36/4) and tighten with the operator tool.
9. Reinstall the guide plate with brush roll

14 Feeder lamp

14.1 Changing the bulb - only on two-colour presses

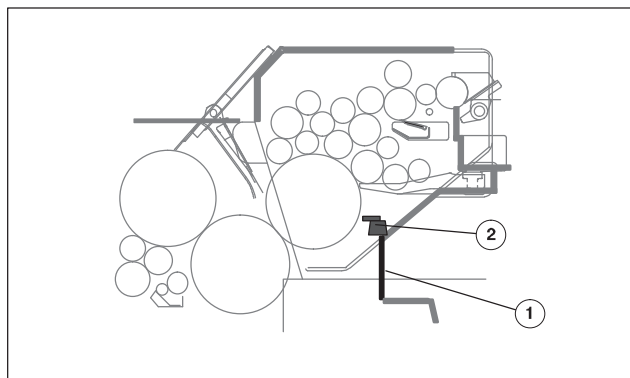


Fig. 37 Location of the feeder lamp

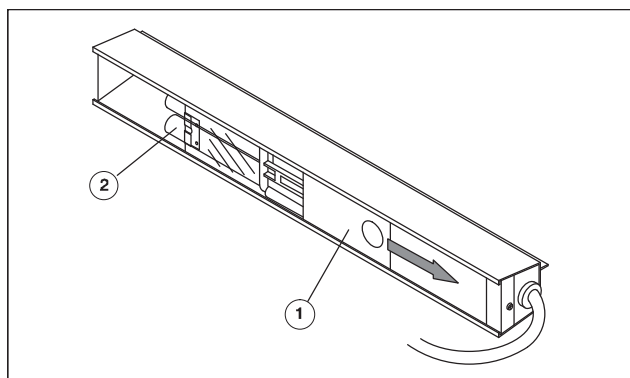


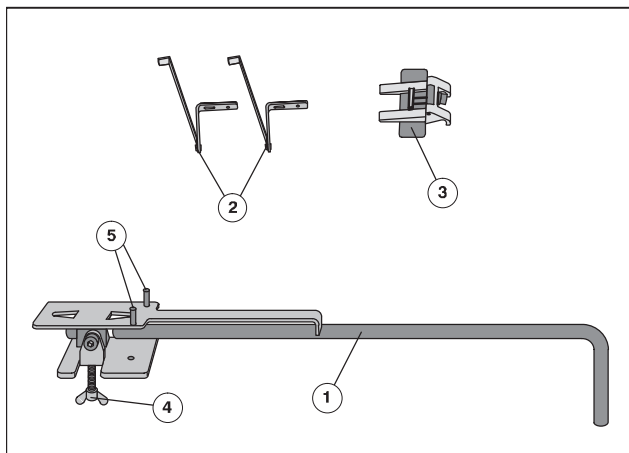
Fig. 38 Feeder lamp

The feeder lamp (Fig. 37/2) is mounted on the cross bar facing the plate cylinder in PU 2.

1. **Before replacing** the bulb of the feeder lamp: **switch off the main switch.**
2. Lift the support frame of the feeder lightly and turn the pile supports downwards.
3. Swing the support frame down.
4. Open the guard over the feeder (Fig. 37/1).
5. Slide back the cover plate (Fig. 38/1) covering the bulb in the direction of the arrow.
6. Carefully remove the bulb (Fig. 38/2) out of the socket.
7. Slide the new bulb into the socket until it clicks into place.
8. Slide the cover plate (Fig. 38/1) back over the bulb.
9. Close the guard above the feeder (Fig. 37/1).
10. Swing the support frame up, turn the supports upwards and place the support frame on the supports.
11. Switch on the main switch. The lamp lights up.

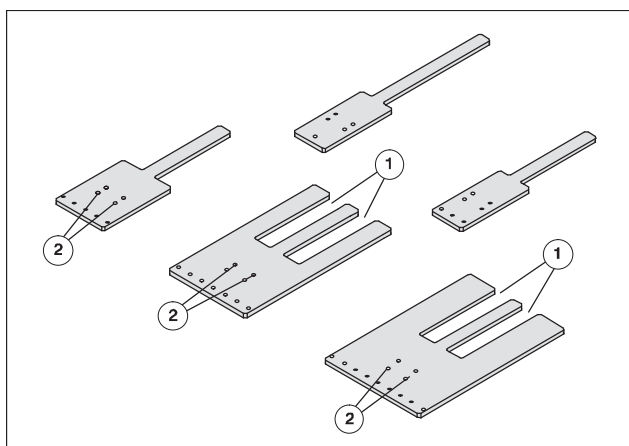
15 Envelope feeder

15.1 Component parts



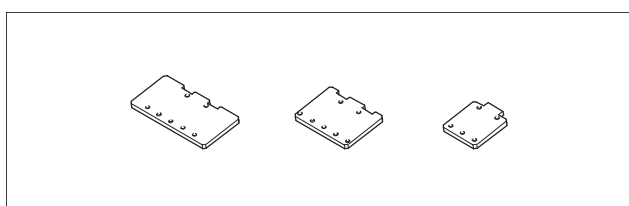
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Fig. 39 Component parts of the envelope feeder



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Fig. 40 Pile boards



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Fig. 41 Pile boards in connection with the accessory for small sheet sizes

You can use the envelope feeder to print envelopes. The upper pile edge can be adjusted to bulky printing material via the inclinable pile board. Observe that the **maximum thickness of printing material is 0.3 mm!**

The envelope feeder consists of the following parts:

- Inclinable feedboard (Fig. 39/1)
- Rear paper stops with extended spring (Fig. 39/2)
- Shoe for fastening on the feed table control bar (Fig. 39/3)
- Pile boards (Fig. 40 and 41)

The envelope feeder includes five different pile boards (Fig. 40). The largest pile boards feature recesses at the rear edge (Fig. 40/1) for the rear sheet stops. The boreholes (Fig. 40/2) of the pile boards are inserted on the aligning pins of the inclinable feedboard (Fig. 39/5). The inclinable feed table is screwed down on the feeder pile board with the wing screw (Fig. 39/4).

Note

Accessory for small sheet sizes: If the envelopes are aligned laterally when printing envelopes, use the pile boards in Fig. 41.

15.2 Inserting the inclinable feed table

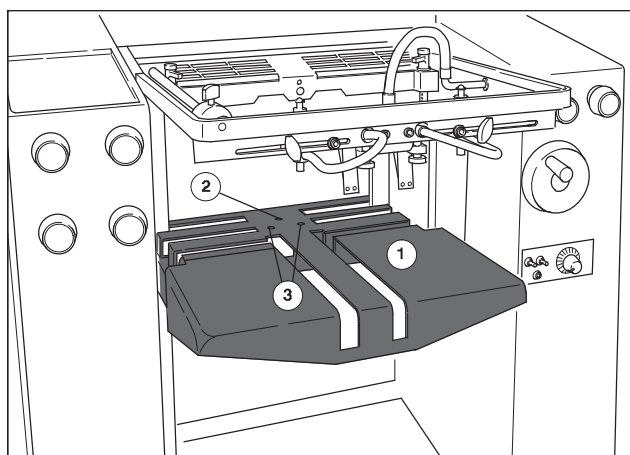


Fig. 42 Feeder pile board

1. Use the crank handle to lower the feeder pile board (Fig. 42/1) until it is accessible from below.
2. Unscrew the wing screw at the inclinable feed table with its sleeve.
3. Insert the pins at the bottom side of the base plate of the inclinable feed table into the two boreholes in the feeder pile board (Fig. 42/3).
4. Push the wing screw through the borehole in the feeder pile board from below (Fig. 42/2) and screw down the feed table (Fig. 43/1) on the feeder pile board (Fig. 43/2).

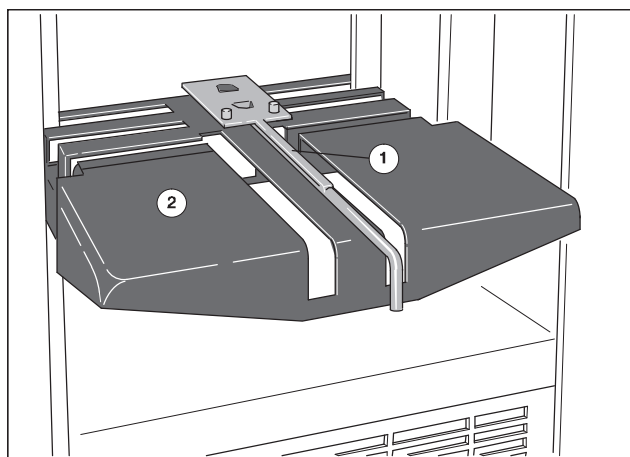


Fig. 43 Inserting the inclinable feed table

15.3 Rear sheet stops

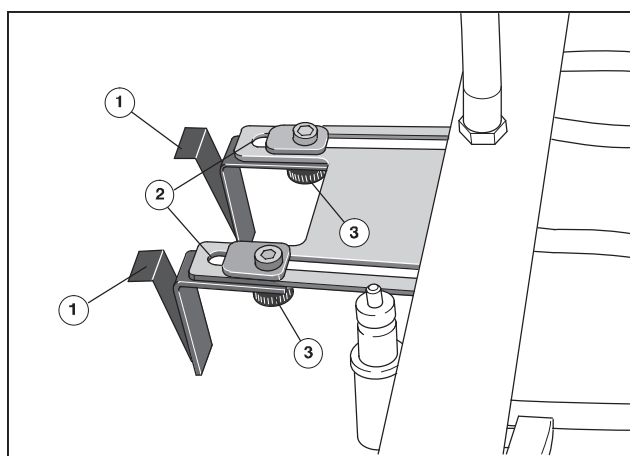


Fig. 44 Rear sheet stops

When printing envelopes the sheet stops with extended spring should be used. They can **only be used for sheet lengths above 200 mm**. For smaller sheet lengths the rear sheet stops should not be replaced.

1. Slacken the knurled head screws (Fig. 44/3) on the rear sheet stops and push the sheet stops (Fig. 44/1) forwards up to the stop (Fig. 44/2).
2. Remove the knurled head screws (Fig. 44/3) with washers and take off the rear stops (Fig. 44/1).
3. Insert the rear sheet stops with extended spring and fasten them with the knurled head screws (Fig. 44/3) and washers.

15.4 Mounting the shoe on the feed table height control bar

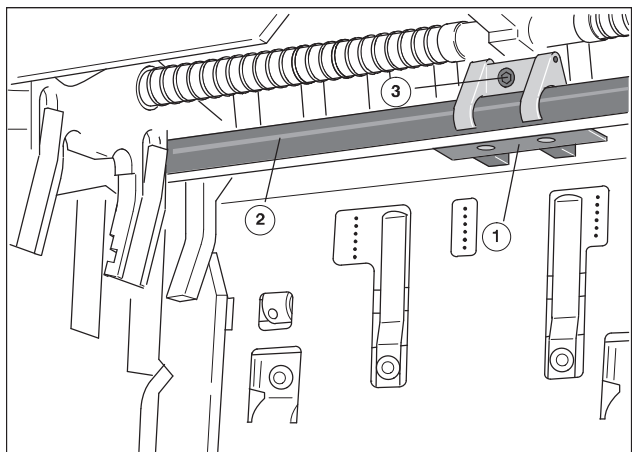


Fig. 45 Mounting the shoe on the feed table height control bar

1. Turn the press using the crank handle until the feed table height control bar (Fig. 45/2) reaches the lowest point.
2. Unscrew the Allen screw (Fig. 45/3) on the shoe (Fig. 45/1) up to the stop.
3. Place the shoe (Fig. 45/1) on the feed table height control bar (Fig. 45/2) and allow it to engage in the recesses of the feed table height control bar.
4. Fix the position of the shoe on the cross bar with the Allen screw (Fig. 45/3) (operator tool).

15.5 Inserting the pile board

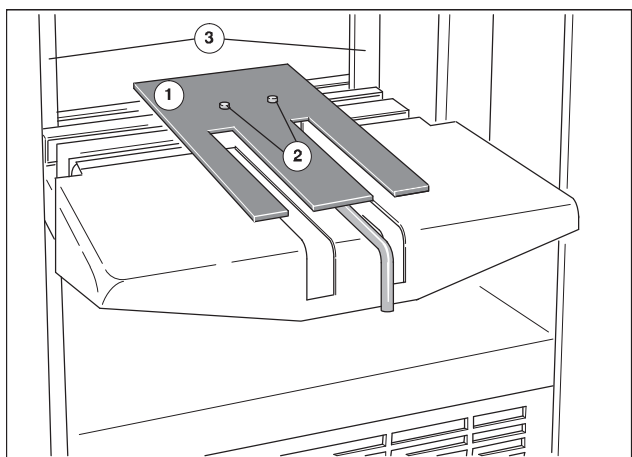


Fig. 46 Inserting the pile board

1. Place the pile board matching the sheet size (Fig. 46/1) on the inclinable feed table and insert the alignment pins (Fig. 46/2) into the boreholes. The pile board must be at least 10 mm narrower than the sheet size being processed.
2. Position an envelope at the center of the pile board and set the lateral pile guide rails (Fig. 46/3).

15.6 Settings

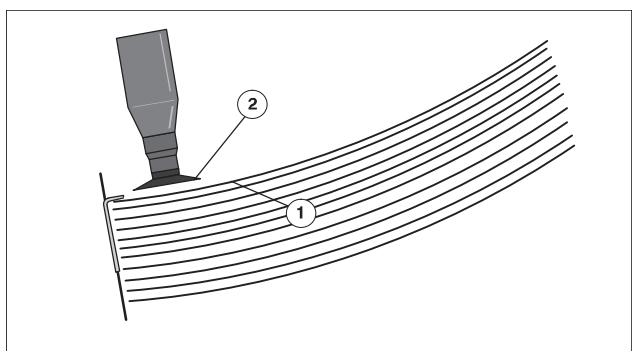


Fig. 47 Aligning the pile surface

Aligning the pile surface

1. After inserting the printing material, align the pile surface (Fig. 47/1) with the lever on the inclinable feed table (Fig. 48/1) in such a way that the envelope at the top is in parallel with the feed table height control bar and the lower edge of the suckers (Fig. 47/2).

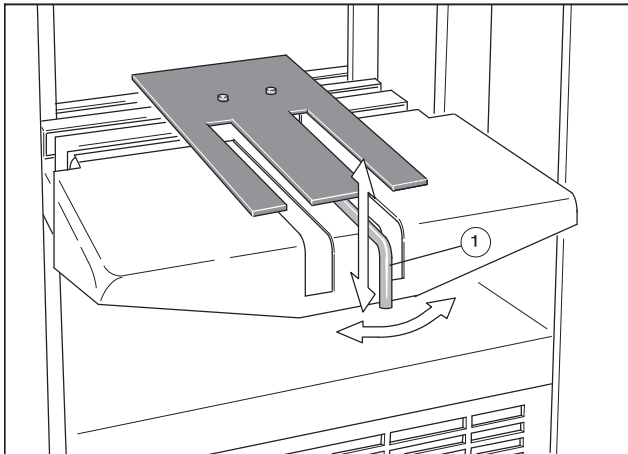


Fig. 48 Lever for aligning the pile surface

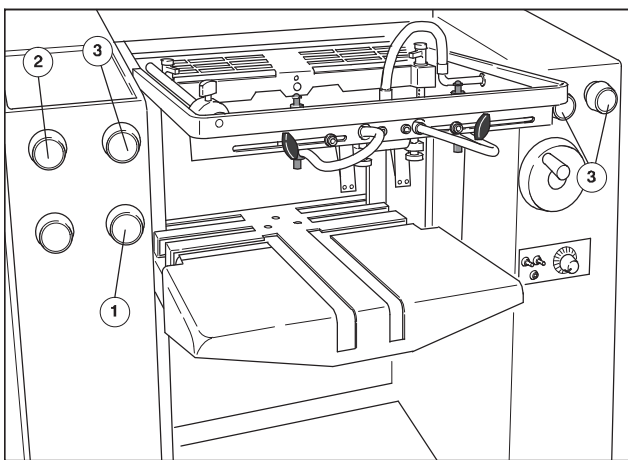


Fig. 49 Adjustment of blast air/suction air

2. **Pile height:** Turn the control knob for the pile height (Fig. 49/1) to the right up to the stop (maximum pile height).

Blast air and suction air

3. Set the control knobs for blast air (Fig. 49/3) and suction air (Fig. 49/2) both to their maximum value.

16 Accessory for small sizes - special accessory

16.1 Overview

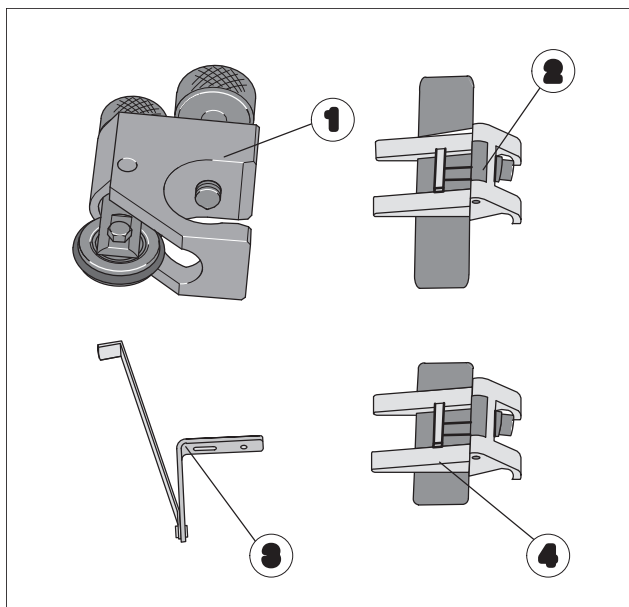


Fig. 50 Small size forwarding rollers, sensor shoe

Using the accessory for small sizes you can process sheet lengths smaller than 140 mm.

This accessory is a special accessory. It can be used only on presses for which the use of this accessory has already been planned ex factory.

You can use this accessory to print sheet sizes of 100 mm x 100 mm, e.g. envelopes in landscape format.

The accessory basically consists of the following parts:

- 1 Small size forwarding rollers (2 x)
- 2 Sensor shoe (wide) for single-side printing materials, sheet width >180 mm
- 3 Rear sheet stops with extended spring (2 x)
- 4 Scanner shoe (narrow), sheet width <180 mm

Added is the guide plate with recesses for the small size forwarding rollers. The guide plate is already installed in the press ex factory.

16.2 Small size forwarding rollers

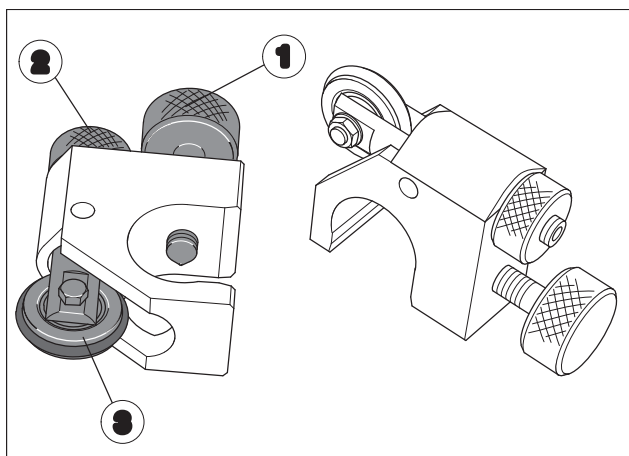


Fig. 51 Small size forwarding rollers

Field of application

Note

With a sheet length **less than 140 mm** **you must** use the small size forwarding rollers (Fig. 51), to ensure correct sheet guiding.

When processing of sheet sizes greater than 140 mm x 89 mm, you can remove the small size forwarding rollers.

- 1 Screw fastener
- 2 Knurled nut for the height adjustment of the roller
- 3 Height-adjustable roller with O-seal

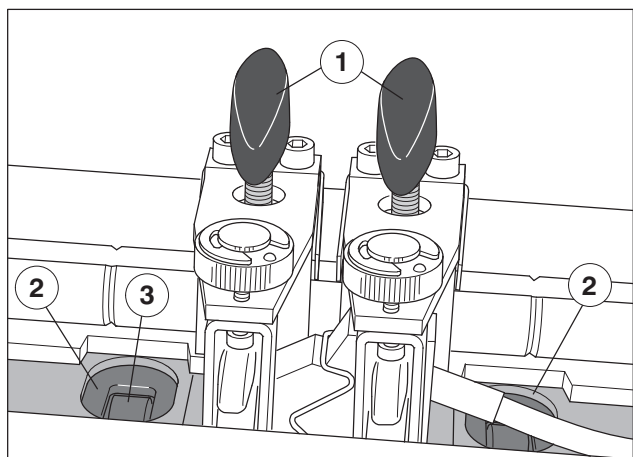


Fig. 52 Standard forwarding rollers

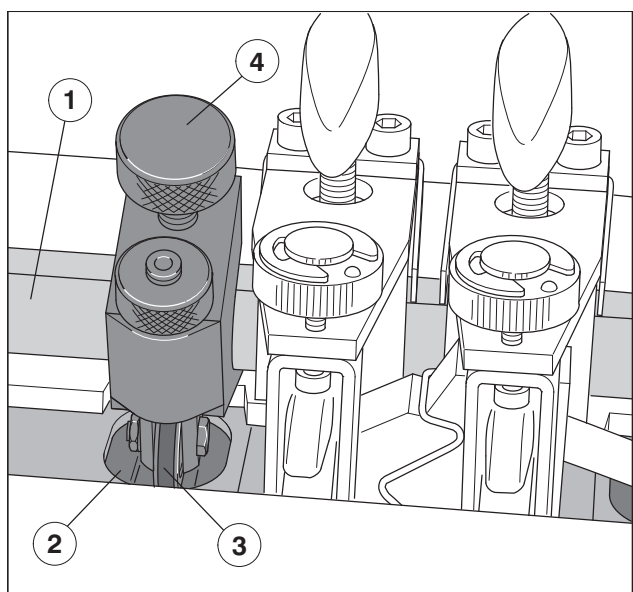


Fig. 53 Positioning the small size forwarding rollers

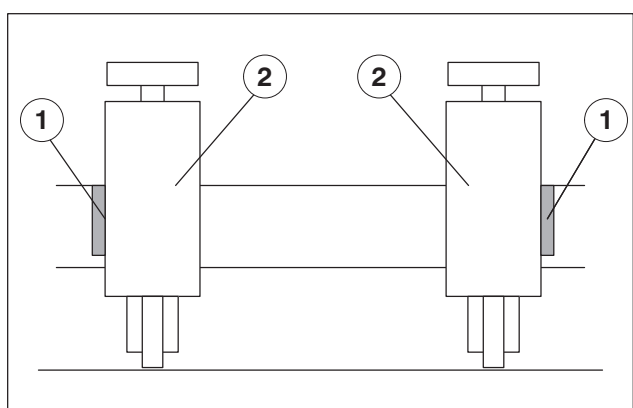


Fig. 54 Positioning aid for small size forwarding rollers

Installing the small size forwarding rollers

1. Select the special function SF 66 (press angle), to display the degree setting of the press.
2. Rotate the press to 270°. The gap of the blanket cylinder faces the forwarding rollers.
3. Loosen the tommy bar screws (Fig. 52/1) and place the standard forwarding rollers in the center position on the shaft.



Caution - Danger of collision between the suckers and the standard forwarding rollers!

To prevent a collision between the suckers and the standard forwarding rollers, never place the standard forwarding rollers in the recesses of the guide plate.

4. Tighten both tommy bar screws (Fig. 52/1) to fix the positions of the forwarding rollers.

The small size forwarding rollers are centered in the recesses in the guide plate (Fig. 52/2).

5. Place a small size forwarding roller on the shaft (Fig. 53/1) so that the roller (Fig. 53/3) is in the center of the recess (Fig. 53/2) in the guide plate.
- Additional aid when positioning: align the small forwarding rollers (Fig. 54/2) so that the outer edge of the forwarding roller lies directly at the edge of the notched yellow mark (Fig. 54/1) on the shaft.
6. Tighten the knurled screw (Fig. 53/4) for fastening the forwarding roller.
7. Fasten the other forwarding roller on the shaft in the same way.

Note

When changing the sheet size to a larger sheet size: always first set the rear sheet stops at the supporting frame for a larger sheet size, to prevent a collision of the stops with the feeder pile.

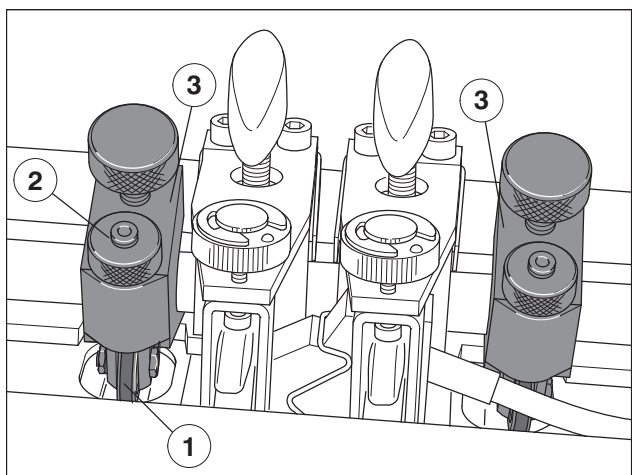


Fig. 55 Printing pressure of the small size forwarding rollers

Printing pressure

The setting of the printing pressure of the small size forwarding rollers of 0.1 mm applies to all printing materials from 60 g/m² to 240 g/m², including envelopes. In case of paper run problems, check the setting and if necessary correct.

1. Select the special function SF 66 (press angle), to display the degree setting of the press.
2. Rotate the press until 100° is displayed. The forwarding rollers (Fig. 55/3) are now lifted from the transport roller.
3. Slide a strip of printing material from the printing material to be processed between the transport roller (Fig. 52/3) and the roller (Fig. 55/1) of the small size forwarding rollers.
4. Turn the knurled nut (Fig. 55/2) until the roller (Fig. 55/1) slightly touches the strip of printing material:
 - clockwise, to lower the roller,
 - counterclockwise, to raise the roller.
5. Now turn the knurled nut (Fig. 55/2) 1/4 revolution counterclockwise.
6. Pull out the strip of printing material and adjust the other forwarding roller in the same way.

Note

After each installation of the small size forwarding rollers, the printing pressure must be checked and if necessary readjusted.

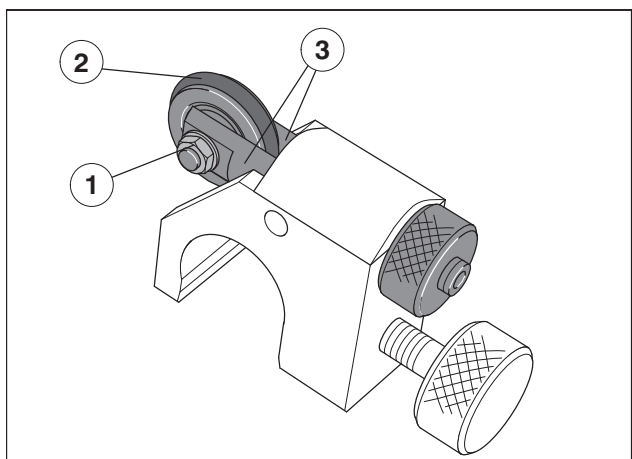


Fig. 56 Changing the O-seal

Changing the O-seal at the roller

In case of wear, you must change the O-seal (Fig. 56/2) on the roller. Changing the O-seal is possible only at the removed small size forwarding roller.

1. Loosen the knurled screw for fastening the small size forwarding roller and remove the forwarding roller from the shaft.
2. Loosen the nut (Fig. 56/1) at the roll shaft using a fork wrench and remove the shaft.
3. Remove the O-seal from the roller and place a new O-seal on the roller.
4. Insert the roller between the holders (Fig. 56/3) of the roller.
5. Insert the shaft through the boreholes in the holders and the roller.
6. Place the washer and the nut on the shaft and tighten the nut.
7. Fasten the forwarding roller on the shaft again if necessary.

16.3 Plate springs at the lateral sheet stop

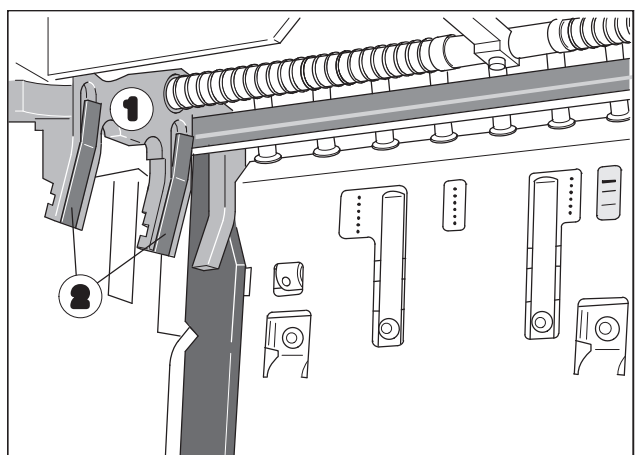


Fig. 57 Plate springs at the lateral sheet stop

When using the accessory for small sizes, you must remove the plate springs (Fig. 57/2) at the lateral sheet guides (Fig. 57/1).

16.4 Sensor shoe for single-side printing materials

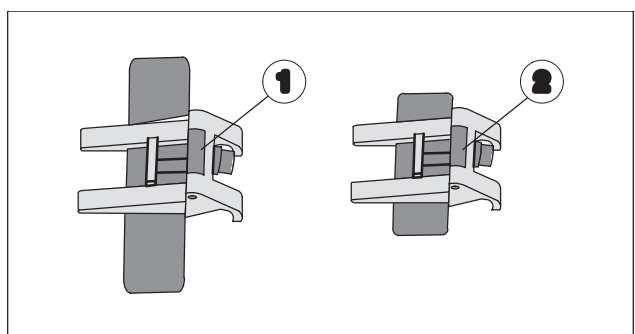


Fig. 58 Sensor shoes

To print single-side printing materials such as envelopes, you can place a sensor shoe on the feeler rod:

- With a sheet width greater than 180 mm, use the wide sensor shoe (Fig. 58/1).
- With a sheet width less than 180 mm, use the narrow sensor shoe (Fig. 58/2).



Caution - Danger of collision with the lateral sheet guides!

To prevent collisions between the lateral sheet guides and the wide sensor shoe, you must install the narrow sensor shoe with sheet widths less than 180 mm.

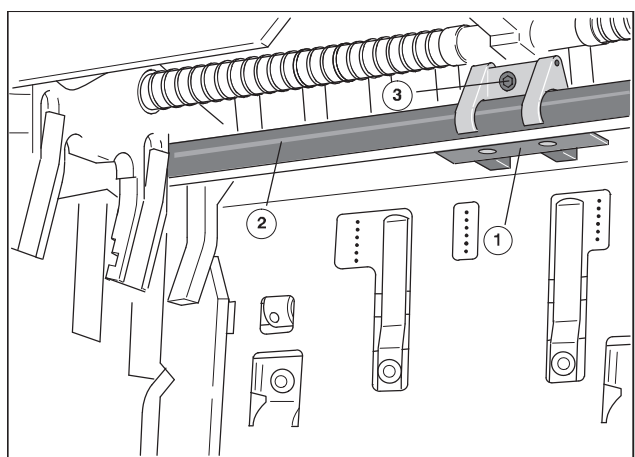


Fig. 59 Installing the sensor shoe

Installing the sensor shoe

1. Rotate the press with the crank handle until the feeler rod (Fig. 59/2) has reached the lowest point.
2. Turn the control knob for the pile height counter-clockwise to the lowest position.
3. Unscrew the Allen screw (Fig. 59/3) at the sensor shoe (Fig. 59/1) up to the stop.
4. Place the sensor shoe (Fig. 59/1) from above on the feeler rod (Fig. 59/2) and let engage in the recesses in the feeler rod.
5. Fix the position of the sensor shoe on the cross bar with the Allen screw (Fig. 59/3) (operator tool).

16.5 Stop at the sheet rear edge of the delivery pile

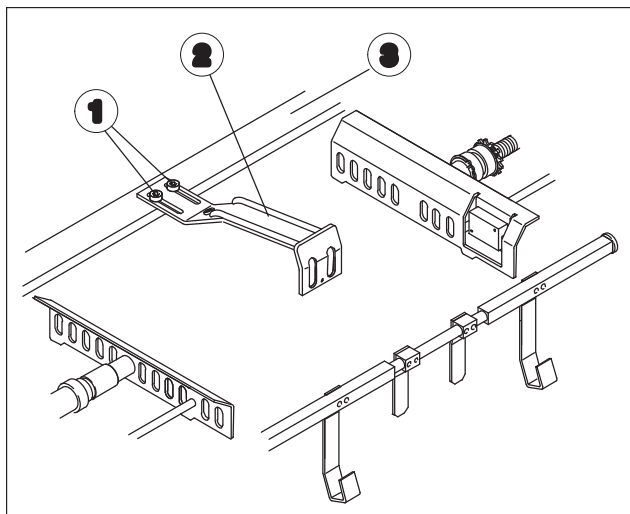


Fig. 60 Rear sheet stop

The sheet stop at the rear edge of the delivery pile (Fig. 60/2) must be moved towards the lead edge of sheet with sheet lengths less than 140 mm.



Caution - Danger of collision with the lateral sheet stops!

To prevent collisions between the lateral sheet stops and the wide sheet support at the rear edge stop, you must remove the sheet support.

1. Using the operator tool loosen the two Allen screws (Fig. 60/1).
2. Pull the rear edge stop (Fig. 60/2) towards the lead edge of sheet up to the stop.
3. Using the operator tool retighten the Allen screws (Fig. 60/1).
4. Using the crank handle position the rear sheet stop (Fig. 60/2) against the rear edge of pile.

Note

If you again print sheets in the maximum sheet size, you must reset the stop.

1. Loosen the two Allen screws (Fig. 60/1).
2. Slide the rear edge stop on the cross bar (Fig. 60/3) away from the delivery pile up to the stop.
3. Tighten the two Allen screws (Fig. 60/1).
4. Using the crank handle position the rear sheet stop against the rear edge of pile.

17 Ionizing unit

17.1 Switching the ionizing unit ON/OFF.

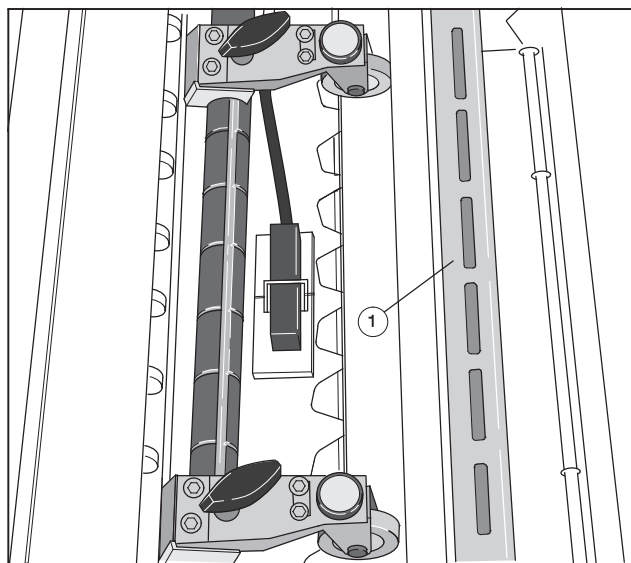


Fig. 61 Ionizing unit

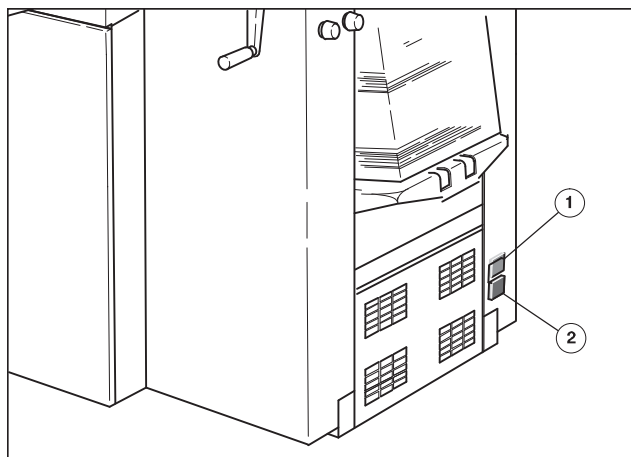


Fig. 62 Ionizing unit switch

The ionizing unit (special accessory) can be used to eliminate static charges on the printing material. One ionizer each is in the feeder (Fig. 61/1) and in the delivery.

1. Switch the ionizing unit off and on with the switch (Fig. 62/1). When switched on, the signal lamp (Fig. 62/2) lights up.

18 Overview of the setting aids on the feeder

18.1 Overview of setting elements on the feeder

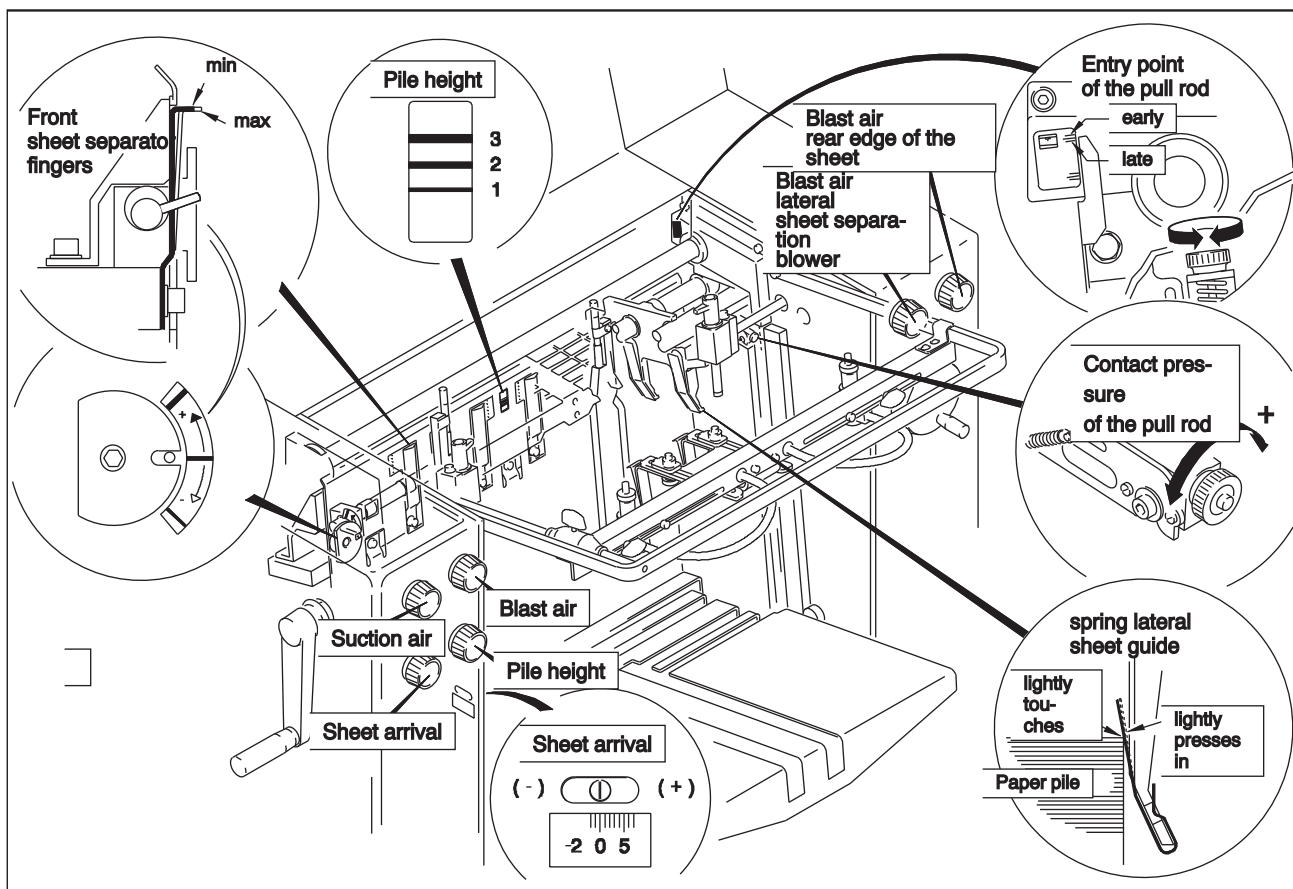


Fig. 63 Setting elements on the feeder, overview

Explanatory notes on Fig. 63 can be found in the following tables.

18.2 Paper run settings

The values stated in the table **only apply to conditioned paper**. Some influences (paper dampness, static charging of the paper, air humidity, unevenly stored piles) require the settings to be altered, e.g. switching on air-blast nozzles, altering the distance of the hickey removers, changing the blast or suction air, altering the pile height.

In order to print in accurate register, the pile of printing material must be correctly cut.

Recommended speeds: for paper weighing 40 - 80 g/m² up to 6,000 sheets/h, for paper of more than 80 g/m² up to 8,000 sheets/h.

When using the small-size accessory for sheet lengths under 140 mm, the values might deviate from the recommendations in the table.

Grain direction of the paper: For thin papers, the **grain direction** of the paper must correspond with the direction of paper run in the press, and for paper above 120

g/m² the grain direction should run parallel to the cylinder shaft.

	40 g - 70 g	>70 g - 120 g	>120 g - 170 g	>170 g
Pile height Blower bar scale	Middle mark or lower	Middle mark up to 2 mm higher	The center between the middle and upper mark or higher	Top mark or slightly lower
Sheet arrival Indicator position	2 Tolerance +2/-1	2 Tolerance +2/-2	1 Tolerance +2/-1	0 Tolerance +2/-2
Suction air Control knob position	7 Tolerance +1/-0.5	6 Tolerance +1.5/-0.5	7 Tolerance +1.5/-1	8 Tolerance +2/-1
Blast air Control knob position	1.5 Tolerance +2/-0.5	4.5 Tolerance +2/-1	7 Tolerance +2/-1	8 Tolerance +2/-1
Corner blowers	no only when necessary	no only when necessary	no only when necessary	no only when necessary
Lateral sheet separation blower	45° towards the rear	45° towards the rear	45° towards the rear, up to 90° towards the pile	no
Rear edge blowers	no	no	yes	yes
Position of the sheet separator fingers	fully extended	fully extended	between fully and half extended	minimally extended
Pull rod				
Starting point	late	late	early	early
Pressure	minimum	minimum	minimum	1/2 maximum
O-seals on the pull rod	-	-	-	2
Lateral pile guide rail finger	Finger touches the pile lightly	Finger touches the pile lightly	Finger touches the pile lightly	Finger presses lightly against the pile

Tab. 4 Feeder settings dependent on printing material

18.3 Corrective measures for Feeder problems

Problem	Corrective measure
Print trips due to early or late sheet	<p>Set earlier/later sheet arrival.</p> <p>Use the control knob to reduce the pile height one rotation at a time. (Attention: If the pile is positioned too low, there is a risk of the corners on thin paper getting bent).</p> <p>Reduce the blast air.</p>
When the first sheet is pulled forwards, the second sheet is dragged along with it	<p>Reduce the front blast air.</p> <p>The lateral sheet separation blowers must blow through the pile right to the back (more blast air, set blowers higher or lower. - Attention: Not too much blast air with thin paper, since the "paper bulge" becomes too big.)</p> <p>Use the control knob to reduce the pile height 1/2 rotation at a time. (Attention: If the pile board is positioned too low, there is a risk of the corners on thin paper getting bent).</p>

Problem	Corrective measure
The first sheet often lies above the sheet separator fingers	<p>Corrections as described above.</p> <p>Switch off the corner blowers.</p> <p>The sheet separator fingers must be positioned in such a way that they hold down the sheets perfectly.</p> <p>The suckers must be able to pull the sheets upwards easily and without causing damage.</p>
Corners folded down when using thin paper	<p>Using the control knob, raise the pile height by 1/2 a rotation at a time. (Attention: A pile board which is positioned too high causes print trips or double sheets.)</p> <p>Engage the corner blowers at a forward angle.</p> <p>Reduce the front blast air.</p> <p>Reduce the speed.</p>
Double sheet	<p>Use the control knob to lower the pile height one rotation at a time. (Attention: If the pile board is positioned too low, there is a risk of the corners on thin paper getting bent).</p> <p>Reduce the suction air.</p>
The sheets are not picked up correctly	<p>Increase the suction air (Caution: double sheet).</p> <p>Increase the blast air.</p> <p>Straighten out buckled sheets by underlaying the pile.</p> <p>When using thin paper, the blast air should blow lightly through the sheet from the front up to the sheet separators.</p> <p>Engage the corner blowers.</p>
Gripper marks	Set the sheet arrival to minus using the control knob.
Poor separation of card-board	<p>Raise the pile right to the very top. Switch on the rear edge blowers so that the rear edge of the pile is blown.</p> <p>Turn up the blast air to the highest setting.</p> <p>Turn back the suction air.</p> <p>Pull the front sheet separator fingers backwards away from the pile.</p> <p>Arrange the corner blowers at an angle of 90° to the pile.</p> <p>Set the sheet arrival to the minus setting with gripper markings.</p>

Problem	Corrective measure
Poor separation of thin paper	<p>- The sheets are picked up poorly: Slightly more blast air from the front. (Avoid overblowing of the sheet separator fingers.) Slightly more suction air (Attention: double sheets).</p> <p>- The second sheet is also pulled forwards or rests on the sheet separator fingers: Engage the lateral sheet separation blowers at an angle of 45° to the back. The lateral sheet separation blowers must blow through the top sheets up to the tail end of the sheet. To do so, adjust the blowers and the blast air correctly. A too big "blow bulge" in the case of thin paper should be avoided. Lower the pile. The lateral blast air is mainly used for thin papers. Thin short-grain sheets, in particular, can only be processed using lateral blast air. Height, direction and blast power of the lateral air-blast nozzles must be set in such a way that they blow through around 10 to 20 sheets through to the rear edge. A big "blow bulge" should be avoided. - Blowers in low position: Many sheets are blown up, there is a tendency towards a bulge. Blowers in high position: Only few top sheets are lightly blown apart.</p> <p>- The corners of the sheets bend downwards. Pile height: Raise the pile (be aware of print trips!). Position the corner blowers at an angle to the front so that the corners are blown upwards.</p>
Settings for a second sheet pass	<p>Position the lateral guide pieces tightly against the pile, see the paper run settings table. (However, the sheets must not be jammed by the guide pieces.) Set as little blast air as possible. If there are deviations in the sheet lengths, set an earlier /lateral sheet arrival. For thin paper, reduce the lateral blast air. (The top sheets, however, must be blown upwards right to the tail end of the sheet.) Change the number of O-seals. Pile height: Set as high as possible. The fingers of the lateral pile guide rail are always located opposite the pull lay stop.</p>

Tab. 5 Corrective measures for feeder problems

Printing unit

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1.1 To be observed when working at the press



Warning - Risk of injury from rotating rollers and cylinders!

Warning - Risk of explosion and fire due to dust deposits!

Caution - Damage caused by incorrect cleaners!

Never use washing fluid (e.g. "ink remover") that contain **dichloromethane (methylene chloride)**, trichloroethylene or other chlorinated or halogenated hydrocarbons.

These washing fluids damage press components, cylinder surfaces, rollers, and blankets.



Caution - Non-approved cleaners can damage the gripper tips!

Depending on the press version, the gripper tips are polyurethane-coated. Non-approved cleaners attack the polyurethane coating and consequently cause malfunctions in the printing process.

Use only approved cleaners when cleaning the gripper tips. There is a list of approved cleaners on the Internet sites of FOGRA and Heidelberger Druckmaschinen AG.

1.2 Washup device - washing fluid container

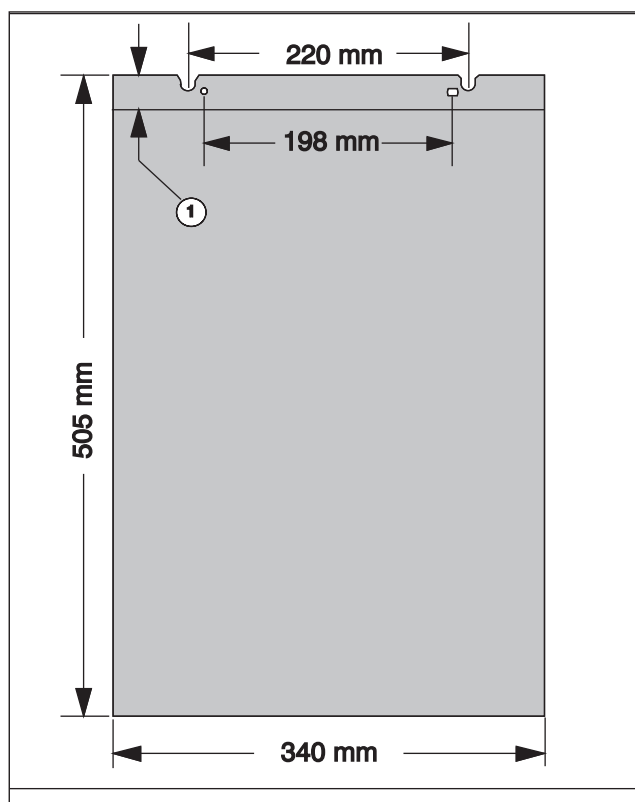


Warning - Risk of explosion from evaporating solvents!

Fill the washing fluid container carefully and only with approved cleaning agents. Do not overfill the washing fluid container. Keep sources of heat away from the washing fluid container. Deal with spilled fluids immediately and in the correct manner.

2 Printing plates

2.1 Usable printing plates



- Metal plates
- Plastic foils

	Dimensions (Fig. 1)
Width	max. 340 mm, min. 240 mm
Length	max. 505 mm
Thickness	0.1 mm to 0.2 mm
First line of print	30 mm from the front edge of plate (Fig. 1/1)

Table 1 Printing plate dimensions

Fig. 1 Printing plate, dimensions

2.2 Prerequisites and conditions

- Underlaying of the blanket occurs in accordance with the **thickness of the plates or foils**.
- Only in the case of a **plate length** of 505 mm is the rear edge of the plate fixed in the rear clamp bar. **Automatic plate ejection** is only possible with a plate length of 505 mm.
- The **printing plates** used must be **punched** along the front edge of the plate. Spacing of the register pins: 220 mm

3 Printing plate punch

3.1 Punching the printing plate

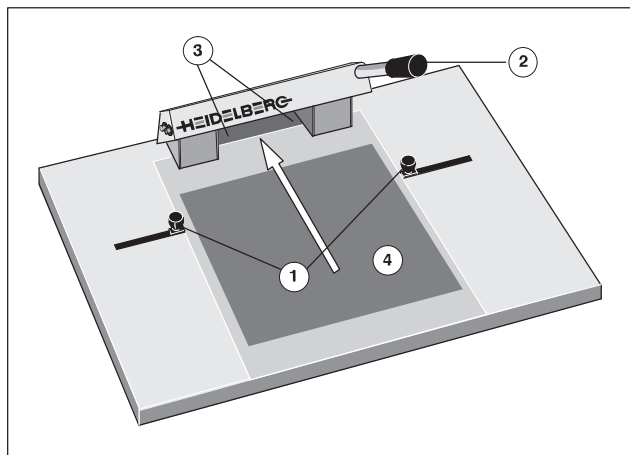


Fig. 2 Printing plate punch

Punching the front edge of the plate

Note

Only one printing plate can be inserted into the plate punch for punching.

1. Move the lateral printing plate stops (Fig. 2/1) as far out as they will go.
2. Place the printing plate (Fig. 2/4) onto the printing plate punch with the coated side facing upwards and slide in the front edge of the plate in the direction of the arrow up to the stop (Fig. 2/3).
3. Place the lateral stops (Fig. 2/1) against the printing plate. The side stops align the printing plate laterally to a central position.
4. Check whether the printing plate is sitting parallel up against the stop and align the plate if necessary.
5. Hold the plate tight and pull the lever (Fig. 2/2) down to the stop in order to punch.
6. Release the lever and take out the punched plate.

3.2 Punching pattern

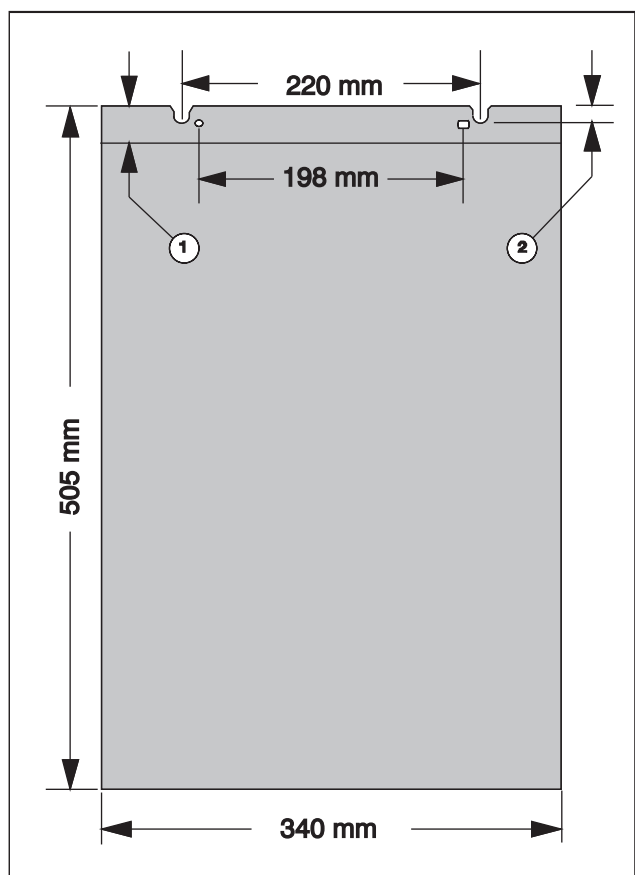


Fig. 3 Punching pattern on a printing plate

3.3 Punch template

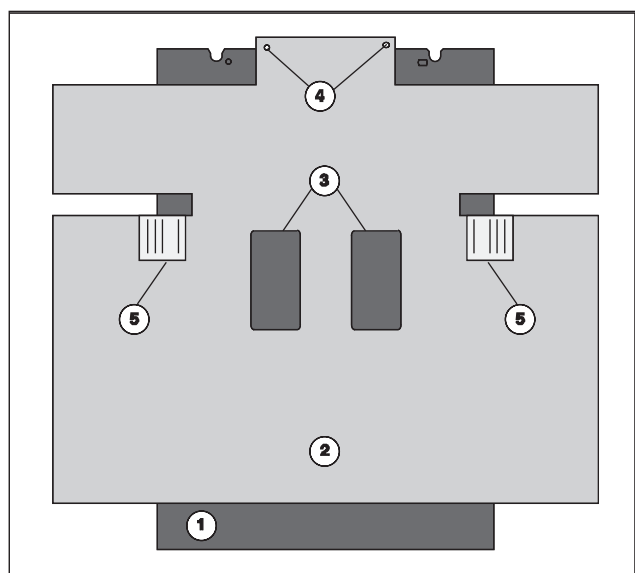


Fig. 4 Punch template

Fig. 3 shows the punching pattern of the printing plate.

- 1 Distance from the front edge of the plate to the first line of the print: 30 mm (Fig. 3/1).
- 2 Front edge of the plate to the register pin: 11 mm (Fig. 3/2).

The shipping list of the plate punch includes an alignment foil to be used as a **punching aid** and **fitting strips** for film assembly and plate exposure.

The **punch template** (Fig. 4/2) is an alignment foil which is hooked onto the plate punch. Its purpose is to correctly align the printing plate prior to punching if, for example, the front edge of the plate has not been cut at right-angles to the plate edges. The printing plate (Fig. 4/1) is slid **under** the punch template.

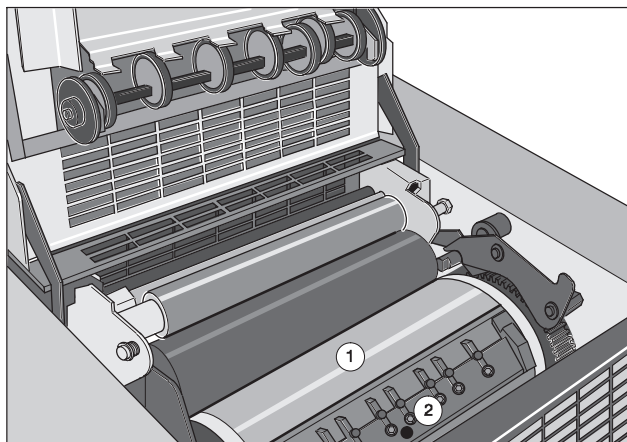
1. Place the punch template (Fig. 4/2) onto the printing plate punch and hook its holes (Fig. 4/4) onto the stop pins of the printing plate punch.
2. Slide the printing plate (Fig. 4/1) under the punch template (Fig. 4/2) up to the stop.
3. Align the printing plate laterally in a central position with the side stops. The lines (Fig. 4/5) make the alignment easier.
4. Position the lateral stops slightly away from the printing plate. Align the print image of the printing plate through the recesses (Fig. 4/3) of the punch template precisely with the millimeter grid of the punch template.

5. Hold the printing plate tightly in place in the recesses (Fig. 4/3) of the punch template and pull the lever of the plate punch down to the stop.
6. Let go of the lever of the plate punch and pull the punched plate out from under the punch template.

Regardless of the angle of the front edge of the plate to the print image, the printing plate can be correctly mounted in the register pins of the clamping bars.

4 Plate cylinder

4.1 PU 1: Two-colour presses



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The chromium-plated plate cylinder (Fig. 5/1) has a diameter of 180 mm and has bearer-to-bearer contact with the blanket cylinder.

When preselecting the plate ejection, the printing plates are automatically ejected **onto** the plate feed table after completion of the print job.

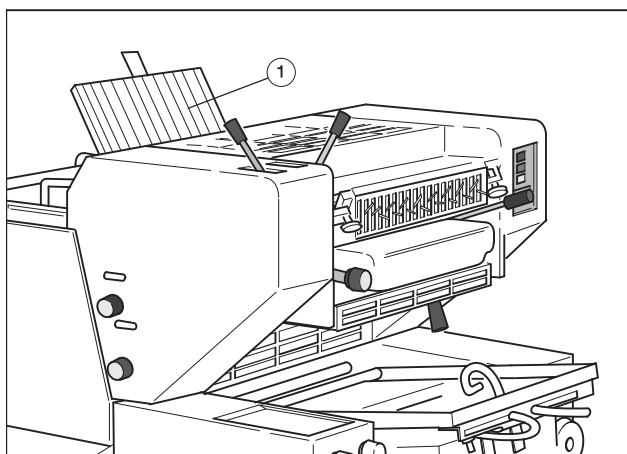
The plate clamping bars (Fig. 5/2, rear clamping bar) open and close automatically when the plate is changed.

Note

Lay the printing plate in **PU 1** with the **printed image facing upwards** onto the plate feed table.

Fig. 5 Plate cylinder

4.2 PU 2 - Two-colour press



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On the two-colour press, the plate feed table is (Fig. 6/1) pivotable.

Plate ejection: The printing plate in PU 2 is ejected **under** the plate feed table. Its **position** determines in which printing unit a printing plate is to be changed, ejected or loaded (in figure 6 PU 2).

Note

Lay the printing plate in **PU 2** with the **print image face down** onto the plate feed table.

Fig. 6 Plate feed table on the two-colour press

5 Plate change/Autoplate

5.1 General information on the plate change



Caution - Risk of damage to the press!

A printing plate may be placed on the plate feed table only when the press is at a standstill and the front plate clamp is open (LED of the *Plate change* button flashes fast).

Trouble-free functioning of the Autoplate and diagonal register adjustment is ensured only with a clean plate cylinder. **The following points must be noted:**

- No ink residue may be under the printing plate.
- The rear side of the printing plate must be dry (not etched).
- The printing plate must not be gummed on the plate cylinder.

5.2 Plate pull-in

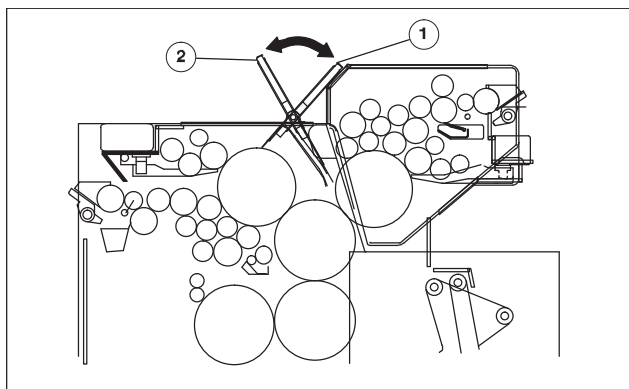


Fig. 7 Plate feed table

Two-color press: the position of the plate feed table determines the PU in which the plate change is performed.

- Plate feed table towards feeder (Fig. 7/1) PU 1, towards delivery (Fig. 7/2) PU 2.

Condition

No plate on the plate cylinder, press ready to run.

1. Press the *Plate change* button twice. The selected plate cylinder is positioned (rotates to plate clamping position); clamping of the front clamping bar is released.

If the **plate cylinder is already positioned**, the clamping bar opens immediately.

After the blanket washup the plate cylinder is positioned and the clamping is released.

- **LED of the *Plate change* button flashes fast:** plate cylinder is in the clamping position **and** the clamping is released.
- 2. Place printing plate on the plate feed table (Fig. 8/1).
PU 1: place plate with the **printed image up**.
PU 2: place plate with the **printed image down**.
- 3. Slide plate in the open front clamping bar. When the printing plate is inserted, the printing plate must lie against the register pin.

Plate change/Autoplate button

4. Press *Plate change* button twice: printing plate is clamped in the front clamping bar and pulled in.

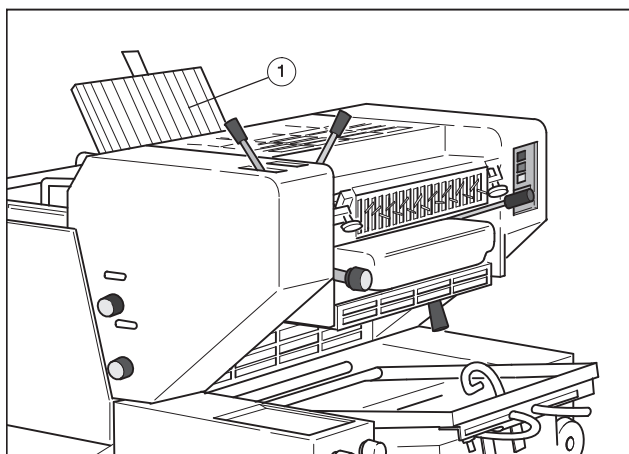


Fig. 8 Printing plate feed table, two-color press

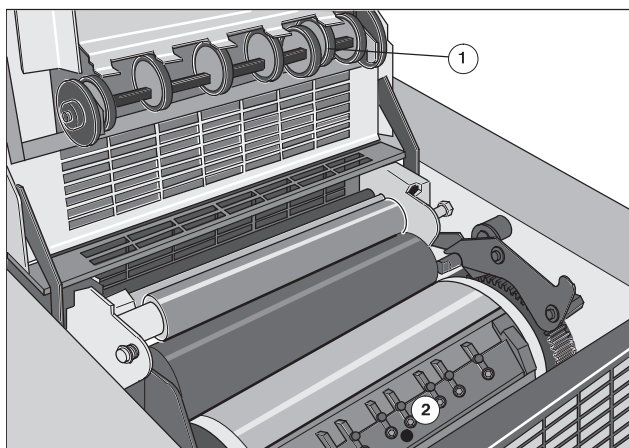


Fig. 9 Plate pull-in guide roller

The guide rollers (Fig. 9/1) hold down the printing plate and guide the rear end of the plate in the rear clamping bar (Fig. 9/2). The rear clamping bar closes and clamps the rear edge of plate.

The blanket cylinder at the plate cylinder presses the printing plate against the plate cylinder during 3 revolutions. The press stops.

Production button

1. Press the *Production* button twice. The press pulls in the plate. The blanket cylinder clamps the plate against the plate cylinder, in the PU 1 for one revolution, in the PU 2 after one revolution. The press enters production corresponding to the default presettings.

Note

After a standstill with the blanket still inked, the blanket must be washed up **before the start of production**.

5.3 Automatic plate ejection

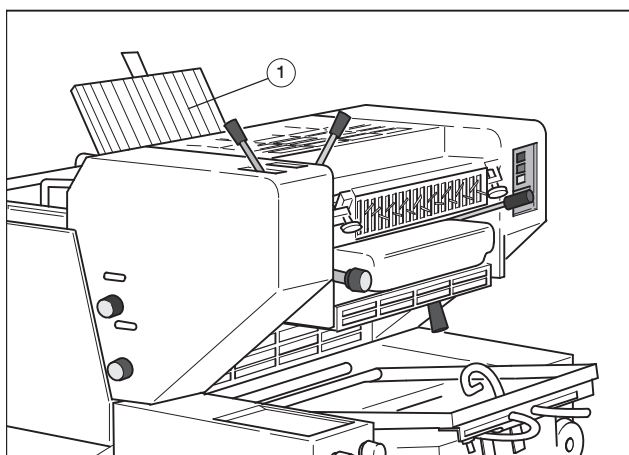


Fig. 10 Plate feed table



Tip

After a longer press standstill, the printing plate should be briefly **predampened** with special function SF 01 **prior to the plate ejection**.

- **Plate ejection preselected**, the LED in the *Plate ejection preselected* button lights up.

Two-color press: the **position of the plate feed table** (Fig. 10/1) determines the PU in which the plate ejection occurs.

PU 1:

At the end of run the plate cylinder turns backwards in the position for plate removal. The rear clamping bar opens, the printing plate is slid **onto** the plate feed table, the front clamping bar opens. The plate cylinder remains in the plate pull-in position. LED flashes fast.

1. Remove ejected printing plate from the plate feed table.

PU 2:

The printing plate is slid out **under** the plate feed table onto the guard over the plate cylinder in PU 1.

2. Remove ejected printing plate.

- **Plate ejection not preselected:**

1. Press *Plate change* button twice after end of run. The press first turns 1/3 revolution forwards. The process then proceeds as with the preselected plate ejection.
2. **Wash the blanket after the printing plate ejection and before the pull-in** of a new printing plate.

5.4 Manual plate ejection

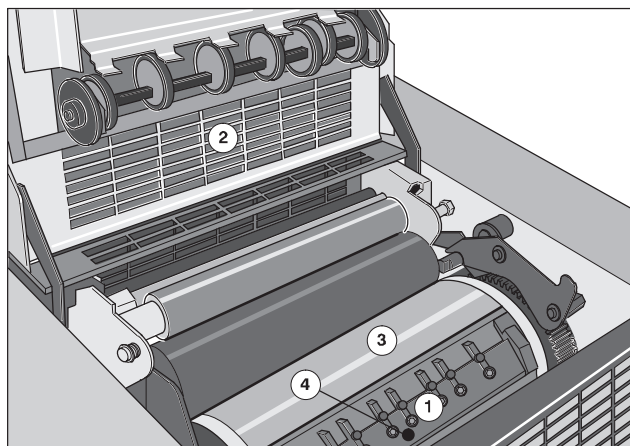


Fig. 11 Manual plate ejection

- **Two-color presses:** the particular printing unit is selected by **positioning the plate feed table**. Manual plate ejection is possible at all times.

Case 1: lead edge of plate and rear edge of plate clamped

1. Open guard (Fig. 11/2) above the plate cylinder PU 1 (Fig. 11/3).
2. Position the press by inching or turning by hand so that the rear clamping bar (Fig. 11/1) is accessible.
3. Insert Allen key in the borehole in the center of the rear clamping bar (Fig. 11/4).
4. Open the clamping bar by tilting the Allen key. The rear edge of plate is released.
5. Close the clamping bar again.
6. Pull out the Allen key and grip the rear edge of plate.
7. At the corresponding control panel, press the *Control panel selection* button twice and tilt backwards until the LED of the *Plate change* button flashes rapidly. In doing so, guide the printing plate by hand out of the press.
8. Press the *Plate change* button once; the front clamping bar opens; remove plate. If the *Plate change* button is pressed when the guard is open, the front clamping bar closes.
9. Close the guard above the plate cylinder for PU 1; press the *Control panel selection* button twice at the corresponding control panel; LED flashes.
10. **Blanket washup** before clamping a new plate.

Case 2: only lead edge of plate is clamped

1. Open the guard above the PU 1 plate cylinder.
2. **Inch the press forwards only** until the rear edge of plate is accessible.
3. Grip the rear edge of plate and inch the press **backwards** until the LED in the *Plate change* button flashes rapidly. In doing so, guide the plate by hand out of the press.
4. Press the *Plate change* button once; the clamping bar opens; remove plate. If the *Plate change* button is pressed when the guard is open, the front clamping bar closes.
5. Close the guard above the plate cylinder for PU 1; press the *Control panel selection* button twice at the corresponding control panel; LED flashes.
6. **Blanket washup** before clamping a new plate.

5.5 BP18-2 Printing with one PU



Caution - Risk of damage to the rollers!
Protect the rollers of the printing unit not being used against dry running by means of non-resinous press oil or **printing aid** (roller protective paste).

5.6 Overview of *Plate change/Autoplate* button - BP18-2

Prerequisite: operator guidance is selected.

<i>Plate change/Auto-plate</i> button	Condition of press	Plate clamped, PU 1	Plate clamped, PU 2	Plate feed table	Actions with <i>Plate change</i> button
LED flashes	Standstill, ready to run	yes	yes	PU 1	Plate ejection in PU 1
		yes	yes	PU 2	Plate ejection in PU 2
		yes	no	PU 2	Position plate cylinder in PU 2 for plate pull-in
		no	yes	PU 1	Position plate cylinder in PU 1 for plate pull-in
		no	no	PU 1 or PU 2	Position plate cylinder in the selected PU
	Press stop	yes	yes	PU 1 or PU 2	Plate ejection in the selected PU
		yes	no	PU 1	Plate ejection in PU 1
		no	yes	PU 2	Plate ejection in PU 2
LED flashes rapidly	Standstill, ready to run	no	no	PU 1 or PU 2	Clamping released, clamp plate in the selected PU
		no	yes	PU 1	Clamping released, clamp plate in PU 1
		yes	no	PU 2	Clamping released, clamp plate in PU 2

Tab. 2 Overview of *Plate change/Autoplate* button

5.7 Overview of *Production* button - BP18-2

Prerequisite: operator guidance is selected.

<i>Production</i> button	Condition of press	Plate clamped, PU 1	Plate clamped, PU 2	Printing unit selection button	Actions with <i>Production</i> button
LED flashes	Standstill, ready to run	yes	yes	PU 1, PU 2 or PUs 1 + 2	Press goes on impression in the selected PU
		yes	no	PU 1	Press goes on impression in PU 1
		no	yes	PU 2	Press goes on impression in PU 2
	Press stop	yes	yes	PU 1, PU 2 or PUs 1 + 2	Press goes on impression in the selected PU
		yes	no	PU 1	Press goes on impression in PU 1
		no	yes	PU 2	Press goes on impression in PU 2
LED lights up	Production	yes	yes	PU 1, PU 2 or PUs 1 + 2	Press stops
		no	yes	PU 1, PU 2 or PUs 1 + 2	Press goes on impression in PU 2
		yes	no	PU 1, PU 2 or PUs 1 + 2	Press goes on impression in PU 2
LED flashes rapidly	Standstill, ready to run	yes	no	Plate feed table, PU 2	Clamping released: plate pull-in in PU 2
		no	yes	Plate feed table, PU 1	Clamping released: plate pull-in in PU 1
		no	no	Plate feed table, PU 1 or PU 2	Clamping released: plate pull-in in the selected PU

Tab. 3 Overview of *Production* button

Explanations of Table 3:

The LED in the **Production** button does not light up, although no malfunction is indicated:

- Press at standstill
 - No number of impressions entered in the sheet number preselection.
 - A PU was selected with the *Printing unit selection* button in which no printing plate is clamped.
- Press in operation
 - No number of impressions entered in the sheet number preselection.
 - A PU was selected with the *Printing unit selection* button in which no printing plate is clamped.
 - The feeder pile has not yet reached the operating height.

5.8 Malfunctions during plate change

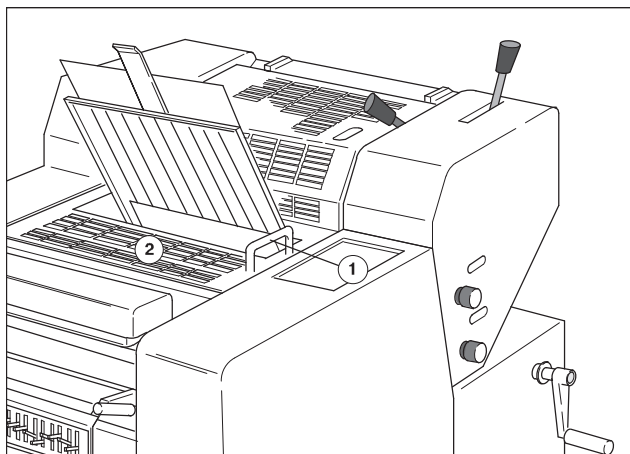


Fig. 12 Guard above the plate cylinder

PU 1 and PU 2

The plate is not completely pulled in or not completely ejected

The red symbol (Autoplate malfunction) at the control console flashes.

1. Open the guard above the plate cylinder (Fig. 12/2) using the handle (Fig. 12/1).
2. Rotate the press with the crank handle until the rear edge of plate is accessible.
3. Grasp the rear edge of plate by hand.
4. At the corresponding control panel, press the *Control panel selection* button twice and tilt backwards or rotate with the crank handle until the LED of the *Plate change* button flashes rapidly.
5. Press the *Plate change* button once; the front clamping bar opens; remove plate.
6. Remove the plate from the front clamping bar.
7. Close the guard above the plate cylinder.

5.9 Aid in case of malfunction when Autoplate is aborted



Fig. 13 SF 56: Autoplate, malfunction message

Fault localization

If the press can no longer be operated after the Autoplate function has been aborted, then proceed as follows:

1. Select **special function SF 56** in order to detect the status code of the press; the display shows the code:
 - **01-05:** The Autoplate function in **PU 1** was aborted (Fig. 13/1).
 - **02-05:** The Autoplate function in **PU 2** was aborted.

If other malfunctions messages have occurred, you can display them by means of the \pm buttons. Scroll forwards with the $+$ button, scroll backwards with the $-$ button.

Troubleshooting

1. Check whether the rear edge of plate in PU 1 is held by the dampening form roller or in PU 2 by the inking rollers: see "Mechanical malfunction"; if not, see "Electrical malfunction".
 - **Mechanical malfunction**
 1. If the rear edge of plate is clamped between the rollers and cannot be directly pulled out by hand, if necessary release the roller locks, remove the roller and pull out the printing plate.
 2. If the plate cannot be pulled out, if necessary cut off the printing plate behind the lead edge of plate and pull out.



Fig. 14 SF 66: Press angle display

3. Continue rotating the press with the crank handle or by inching, in order to release the clamping of the lead edge of plate and to remove the rest of the plate.

- **Electrical malfunction**

1. Close all guards.
2. Select printing unit in which the Autoplate function was aborted, using the *Printing unit* button and the plate feed table.
3. Open the guard above the plate cylinder. If there is no mechanical fault:
4. Call up special function 66 (Press angle display).
5. **PU 1:** rotate press in inching mode forwards to a press angle between 310° and 320°:
The LED in the *Autoplate* button flashes (fast or slow); press button to acknowledge the abort, remove printing plate.
6. **PU 2:** rotate press in inching mode forwards to a press angle between 198° and 210° and proceed as in PU 1.
7. Press the *Special functions* button to exit the display.
8. Close the guard above the plate cylinder.
9. Then rotate the press forwards with the crank handle or in inching mode once beyond the 0°-position.

6 Positioning corrections

6.1 Circumferential register adjustment

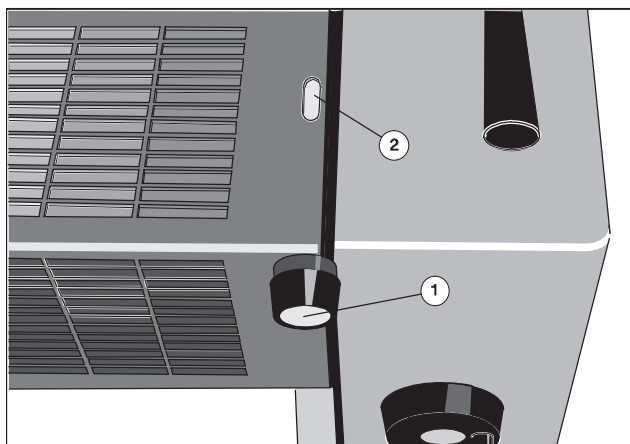


Fig. 15 Circumferential register, PU 1

Note

Reset the circumferential register to zero **after end of run in both printing units** (not when press is at a standstill).

PU 1

The printed image can be moved by 15 mm towards the lead edge of sheet and by 30 mm towards rear edge of sheet **with the press running** by turning the control knob at the delivery (Fig. 15/1). Read the setting at the scale (Fig. 15/2).

- Turn clockwise - printed image towards the lead edge of sheet.
- Turn counterclockwise - printed image towards the rear edge of sheet.

Note

Do **not** adjust the circumferential register when the press is at a **standstill**.

- If the circumferential register was adjusted at standstill, however, rotate the switched-on press for at least 1 revolution by hand or start operation.

After an adjustment of the circumferential register in PU 1, the blanket must not be washed.

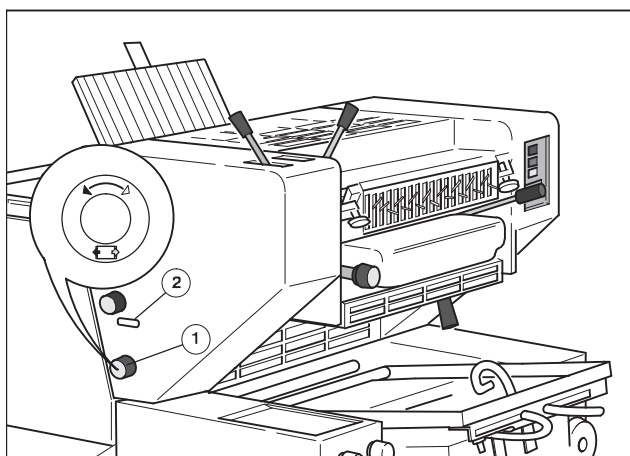


Fig. 16 Circumferential register, PU 2

PU 2 - BP18-2

The printed image can be moved **while the press is running** by turning with the control knob on PU 2 on O.S. (Fig. 16/1) ± 2 mm in the circumferential direction.

1. Press in control knob (Fig. 16/1) and turn.
2. Read the setting at the scale (Fig. 16/2).
- Turn clockwise - printed image towards the rear edge of sheet.
- Turn counterclockwise - printed image towards the front edge of sheet.
3. **After the adjustment** of the circumferential register in PU 2, **wash the blanket**.

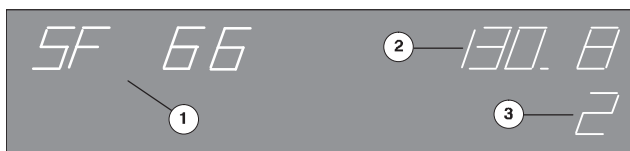


Fig. 17 SF 66: Press angle display

Press angle

1. Select special function SF 66: the display shows, besides the number of the special function (Fig. 17/1), the current press angle in degrees (Fig. 17/2), and under this the deviation in degrees (Fig. 17/3), if the circumferential register was adjusted. A negative sign means the print image has been shifted forwards towards the gripper bite. No sign means it has been shifted towards the rear edge of sheet.

6.2 Lateral register

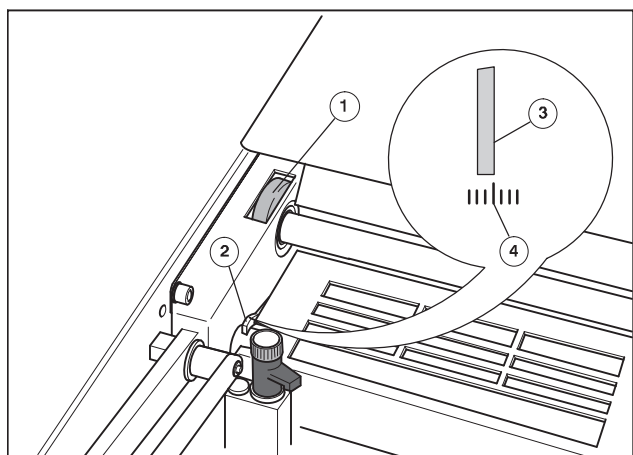


Fig. 18 Lateral register, PU 1

Note

Reset the lateral register to **zero** in both printing units **after the end of run**.

Moving print sheets to the printed image in PU 1 and PU 2

The printed image in PU 1 and PU 2 can be moved ± 2.5 mm to the side by turning the adjusting wheel (Fig. 18/1) at the feeder on O.S.

The adjustment is indicated on the scale (Fig. 18/2) in mm. Read off the value on the side of the indicator plate **turned towards** the paper (Fig. 18/3) (Fig. 18/4 = "zero" position).

1. Read the adjustment of the lateral register at the inside edge of the pointer on the scale (Fig. 18/4).
- Turn towards the printing unit - printed image towards O.S.
- Turn towards the rear edge of pile - printed image towards D.S.

After a change of the circumferential register in PU 1, the blanket must not be washed.

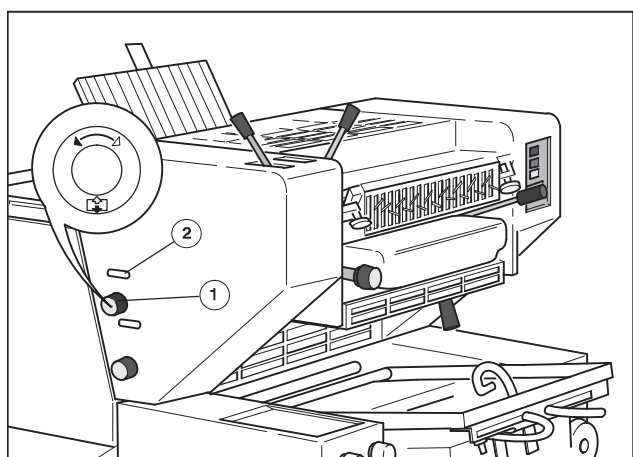


Fig. 19 Lateral register, PU 2

PU 2 - BP18-2

The printed image in can be moved ± 2.5 mm to the side towards the printed image in PU 1 by turning the adjusting wheel at PU 2 on O.S. (Fig. 19/1)

1. Turn the control knob (Fig. 19/1).
2. Read the setting at the scale (Fig. 19/1).
- Turn clockwise - printed image towards D.S.
- Turn counterclockwise - printed image towards O.S.
3. After the adjustment of the lateral register in PU 2, **wash the blanket**.

6.3 Diagonal register

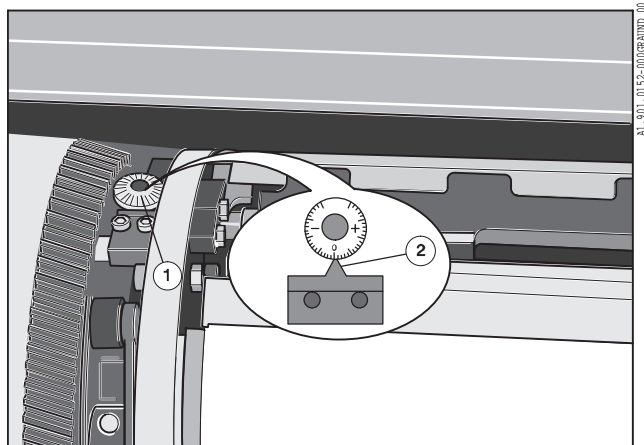


Fig. 20 Adjusting the diagonal register

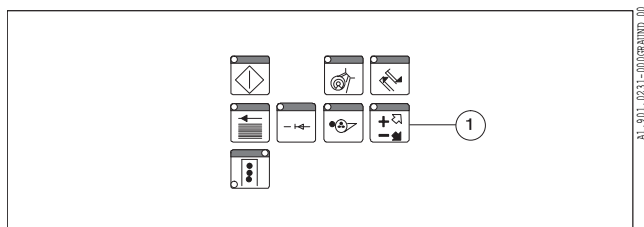


Fig. 21 *Position diagonal correction* button

Note

Reset the diagonal register to zero **after end of run**.

PU 1 and PU 2

Two-color press:

The **position of the plate feed table** determines the PU in which the diagonal register is being changed (not the *Printing unit selection* button!).

Adjustment range: at the end of the plate, 2 mm in both directions.

Case 1: press ready to run:

1. **Press** the *Position diagonal correction* button (Fig. 21/1) **twice**.

Case 2: press in production or in press stop:

1. **Press** the *Position diagonal correction* button (Fig. 21/1) **once**.

The plate cylinder rotates **in both cases** in the selected PU to the correction position, the plate is relaxed.

2. Open the guard above the PU 1 plate cylinder.
3. Set the adjusting wheel (Fig. 20/1) at the plate cylinder on O.S. with the operator tool to the desired value; read setting value at the pointer (Fig. 20/2).
 - Turn clockwise - end of the plate towards D.S.
 - Turn counterclockwise - end of the plate towards O.S.
4. **Wash blanket after the diagonal correction.**

7 Blanket cylinder

7.1 Dimensions

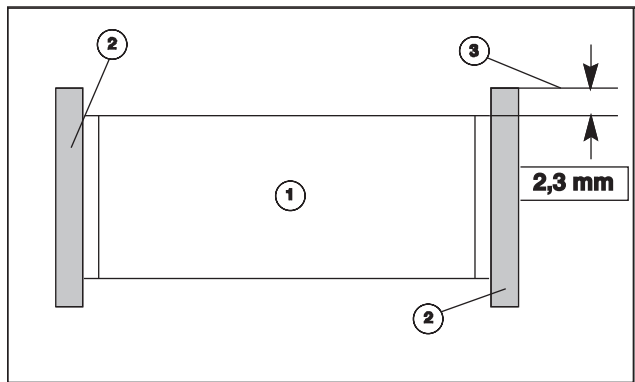


Fig. 22 Blanket cylinder diagram

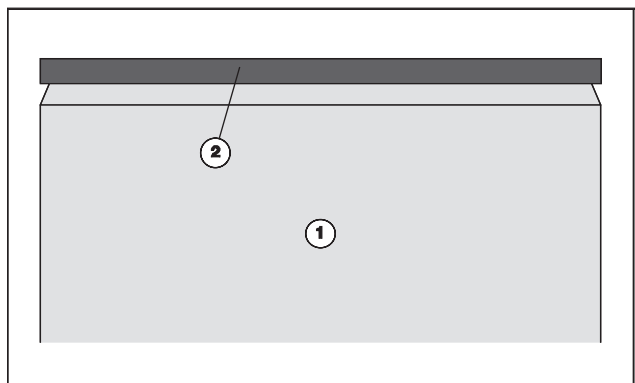


Fig. 23 Blanket, front edge

Blanket cylinder

The blanket cylinder (Fig. 22/1) is bordered on the sides by the bearers (Fig. 22/2). The plate cylinder and blanket cylinder run with the bearer pressure. The distance between these two cylinders cannot be changed.

Two-color presses: both plate cylinders transfer the printed image to a common blanket cylinder.

Bearer diameter of the blanket cylinder: 180 mm;

Cylinder undercut of the blanket cylinder (Fig. 22/3): 2.3 mm (the cylinder surface lies 2.3 mm under the bearer).

Blanket

Blanket (Fig. 23/1): front and rear edges of the blanket are clamped in a **pinch rail** (Fig. 23/2). You only use blankets with pinch rails.

Blanket	
Length	555 mm
Width	337 mm

Tab. 4 Blanket, dimensions

For the blanket to lie at the right height, it must rest on calibrated packing sheets.

Packing sheets	
Length	473 mm
Width	340 mm

Tab. 5 Packing sheets, dimensions

7.2 Packing of the blanket cylinder

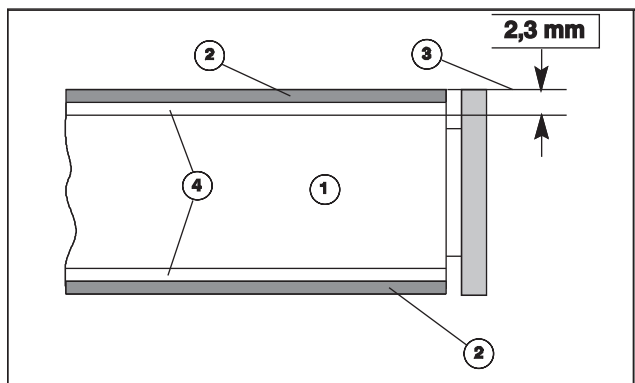


Fig. 24 Cylinder packing

The plate cylinder and blanket cylinder run with the bearer pressure. The distance between these two cylinders is not adjustable.

Cylinder undercut of the blanket cylinder (Fig. 24/3): 2.3 mm (the surface of the blanket cylinder lies 2.3 mm under the bearer).

The **packing** of the blanket cylinder consists of a 1.95 mm thick blanket (Fig. 24/2) and packing sheets (Fig. 24/4).

The **squeeze** between the plate and blanket cylinders should lie **between 0.10 mm and 0.13 mm**.

The squeeze between the plate and blanket cylinder is adjusted by changing the packing sheets under the blanket.

Note

Place **only calibrated packing sheets** underneath.

Example:

With a 1.95 mm thick blanket use packing 0.35 mm thick. With 0.10 mm thick plates the squeeze between the plate and blanket cylinders is then 0.10 mm.

With the use of **thicker printing plates**: remove a packing sheet of corresponding thickness from under the blanket.

Other examples (dimensions in mm):

Plate thickness	0.10	0.15	0.18
Blanket	1.95	1.95	1.95
Packing	0.35	0.30	0.30
Total	2.40	2.40	2.43
- cylinder undercut	2.30	2.30	2.30
= squeeze	0.10	0.10	0.13

Tab. 6 Calculating the squeeze

7.3 Packing the blanket

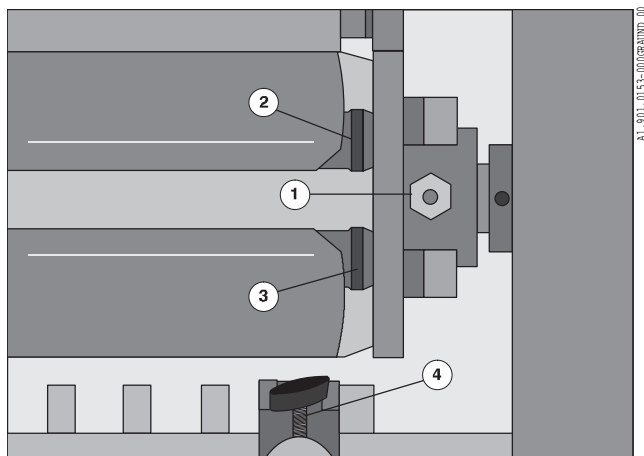


Fig. 25 Blanket clamp shafts

Note

Before inserting the packing sheets, carefully **clean the surface of the blanket cylinder** with a **grease-free cleaner!**

Note

Instead of rotating the press by hand, you can also position it in the travel-limited inching mode.

1. Open the printing unit guard on O.S. and attach crank handle.
2. Open the guard in front of the blanket cylinder.
3. Lower the sucker bar to the lowest point.
4. Move the forwarding rollers (Fig. 25/4) to D.S. and O.S., to prevent damage to the blanket.
5. Rotate the press with the crank handle until the blanket clamp shafts (Fig. 25/2 and 25/3) point towards the feeder.
6. Turn the hexagon-head screw (Fig. 25/1) with the socket wrench counterclockwise until the pinch rails in the clamp shaft become visible.

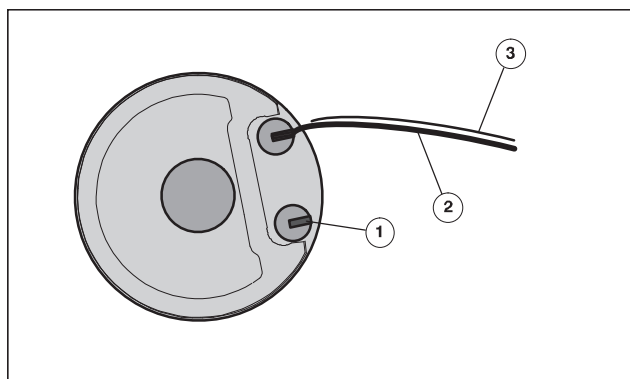


Fig. 26 Packing the blanket

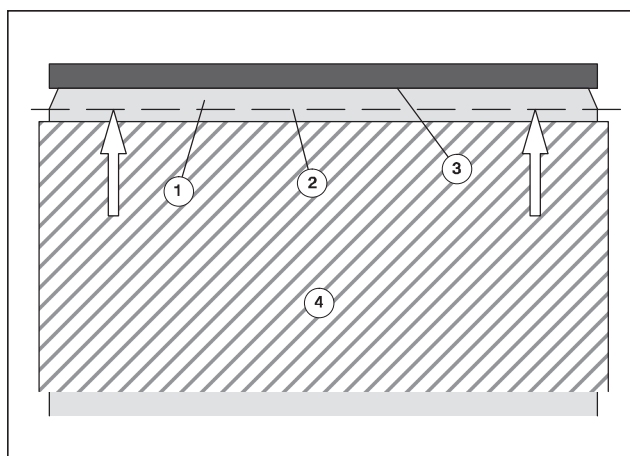


Fig. 27 Inserting the underlay sheets

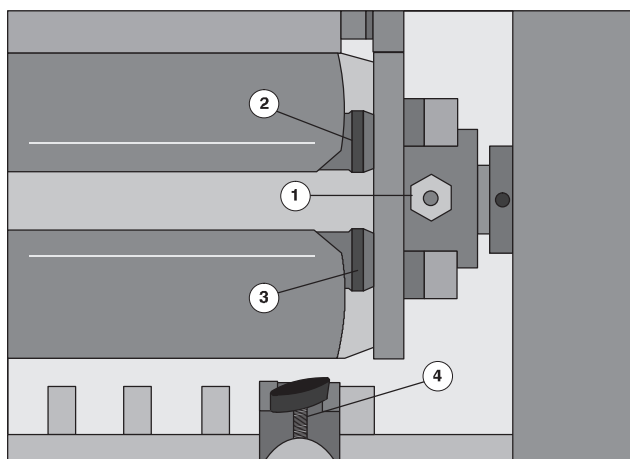


Fig. 28 Blanket clamp shafts

7. Press the rear pinch rail of the blanket lightly against the spring in the clamp shaft towards O.S. and remove from the groove (Fig. 26/1) of the clamp shaft.
8. Rotate the press backwards with the crank handle, while guiding the blanket (Fig. 26/2) and the packing sheet (Fig. 26/3) out of the press by hand.

Note

To prevent shifting of the packing sheets, be sure to follow this procedure.

Inserting the Packing sheets

1. Place new or additional packing sheets (Fig. 27/4, hatched) on the blanket (Fig. 27/1),
2. Aligning the front edges of the packing sheets along the dashed line (Fig. 27/2) (start of the taper). The packing sheets must **not** be placed against the pinch rail (Fig. 27/3).
3. Center the packing sheets laterally with respect to the blanket.
4. Hold the blanket with the packing sheets slightly taut, rotating the press forwards with the crank handle until the rear clamp shaft (Fig. 27/1) is accessible.
5. Insert the pinch rail on O.S. in the groove of the rear clamp shaft (Fig. 27/1), pressing lightly against the spring towards O.S.
6. Press the pinch rail completely in the groove; the pinch rail is pressed by the spring towards D.S. and fixed in the clamp shaft.
7. **Clamp the blanket by firmly turning** the hexagon-head screw (Fig. 28/1) clockwise with the socket wrench.
8. Align the forwarding rollers (Fig. 28/4) again corresponding to the sheet size; when moving, make sure the **forwarding rollers correctly engage**. Fix the forwarding rollers in place in the lock-in positions using the tommy bar screws.
9. Completely rotate the press once again using the crank handle, to make sure that collisions are avoided.

Note

After a few hundred printing runs, **always** firmly retension the blanket.

7.4 Measuring the packing thickness

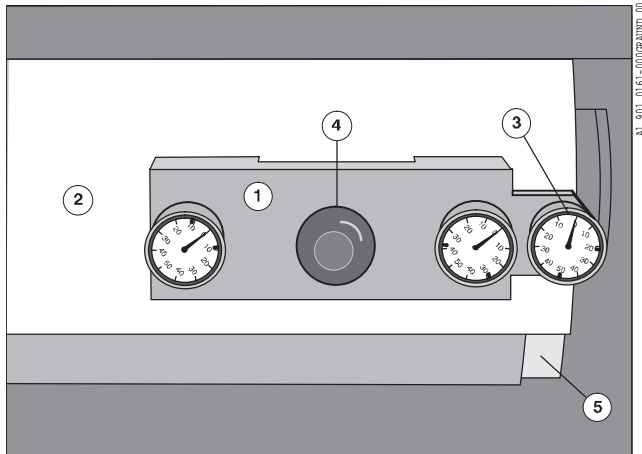


Fig. 29 Measuring the packing thickness

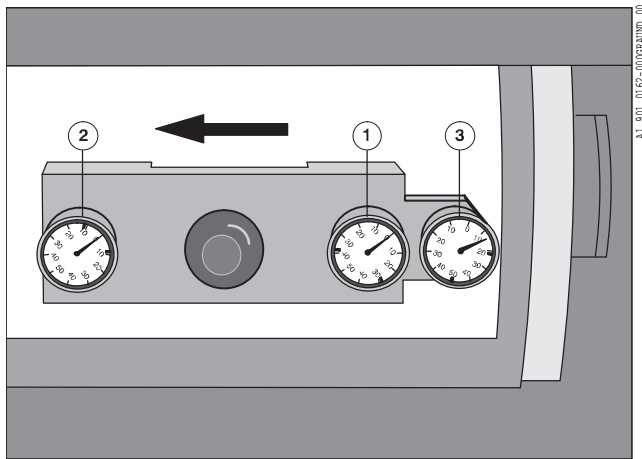


Fig. 30 Measuring the packing thickness

To check the actual final height use the **packing gauge** (Fig. 29/1, *special accessory*). The packing thickness of the blanket cylinder can be determined only in the tensioned condition.

1. Clean the bearers and blanket.
2. Cover the blanket and bearer (Fig. 29/5) with a print sheet (Fig. 29/2), to prevent damage to the blanket.
3. Attach the measuring device parallel to the cylinder shaft so that the feeler of the outer dial indicator (Fig. 29/3) rests at the bearer.
4. Using the red handle (Fig. 29/4), press on the measuring device and set the pointers of the three dial indicators to zero by turning the knurled ring.
5. Move the measuring device to the center of the blanket (Fig. 30, arrow). With the same pressure, the center (Fig. 30/1) and the left dial indicators (Fig. 30/2) still read zero.
6. The right dial indicator (Fig. 30/3) now indicates the difference in height between the blanket and bearer.

Note

With a **new blanket**, make sure that the blanket is set after a few hundred printings.

7. Remeasure the packing thickness and if necessary correct.

7.5 Cleaning the blanket

After the end of shift, **clean the blanket by hand**.

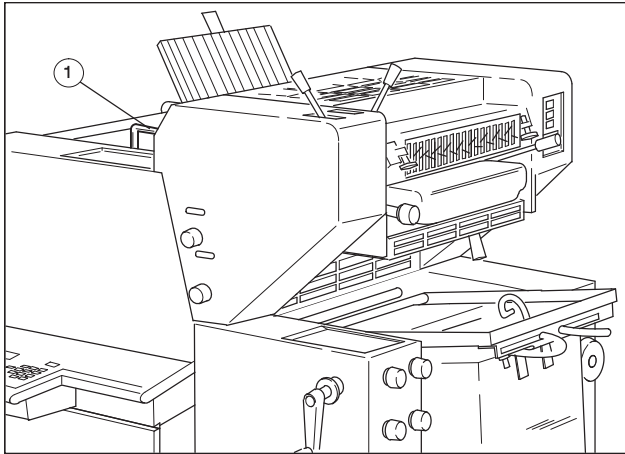
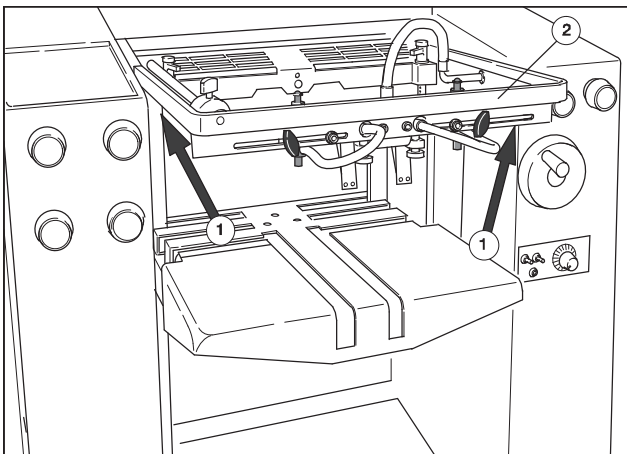


Fig. 32 Opening the guard above the plate cylinder.

7.6 Changing the blanket



Two-color press

1. Open the guard above the plate cylinder (Fig. 32/1).
2. Remove the pressing rollers for the plate feed (see the section on "Cleaning bearers and pressing rollers").

Cleaning by hand.

1. Soften the paper dust on the blanket well with a **water-soaked cloth**.
2. Then rub the blanket with a **cloth soaked with washing fluid**, applying moderate pressure.
3. Thoroughly clean the blanket with a **clean cloth** and washing fluid.

Two-color press

1. Lower the feeder pile.
2. Slightly raise the support frame (Fig. 34/2).
3. Turn the supports of the support frame (Fig. 34/1, arrows) on D.S. (Fig. 35/1) and O.S. downwards.
4. Deposit the support frame (Fig. 34/2) on the supports.
5. Open guard in front of the blanket cylinder.

Fig. 34 Support frame supports

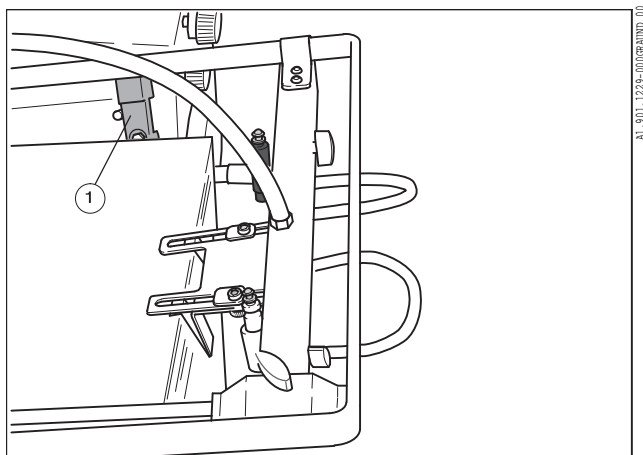


Fig. 35 Support frame supports, D.S.

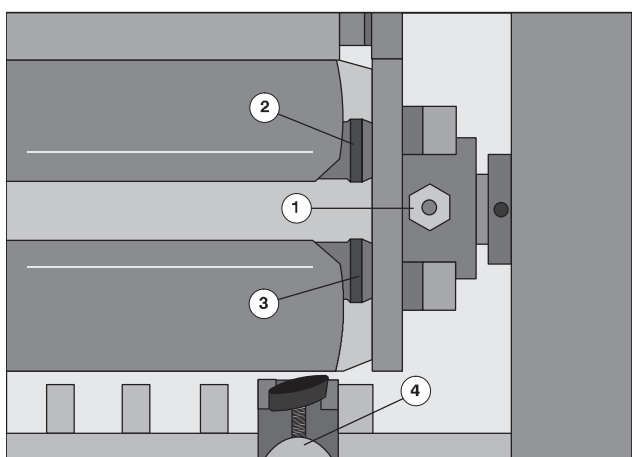


Fig. 36 Blanket change

Procedure

1. To avoid damaging the blanket, push the forwarding rollers (Fig. 36/4) fully towards the outside on D.S. and O.S.
2. Rotate the press with the crank handle, or inch, until the blanket clamp shafts (Fig. 36/2 and 36/3) point towards the feeder.
3. Turn the hexagon-head screw (Fig. 36/1) counterclockwise with the Allen wrench until the pinch rails are approximately perpendicular to the cylinder gap.
4. Press the rear pinch rail of the blanket (Fig. 36/3) lightly against the spring in the clamp shaft towards O.S. and remove from the groove of the clamp shaft.
5. Rotate the press backwards with the crank handle or by inching until the front clamp shaft is visible; in doing so, guide the blanket and packing sheets out of the press with your right hand.
6. Press the front pinch rail of the blanket (Fig. 36/2) lightly against the spring towards O.S. and remove from the groove of the clamp shaft.
7. Insert new blanket with the packing sheets in the analogous reverse order.
8. Clamp the blanket firmly by turning the clamp bolt (Fig. 36/1) clockwise with the socket wrench.
9. Align the **forwarding rollers** again corresponding to the sheet size; when moving, make sure the **forwarding rollers correctly engage**. Fix the forwarding rollers in place in the lock-in positions using the tommy bar screws.
10. Raise the support frame (Fig. 34/2).
11. Turn the supports of the support frame (Fig. 34/1, arrows) on O.S. and D.S. upwards.
12. Deposit the support frame on the supports.

Printing unit

Note

After a few hundred printing runs, **always** retension the blanket.

8 Impression cylinder

8.1 Standard impression cylinder without cylinder jacket

If the press is not planned for numbering or perforating, then a standard impression cylinder without cylinder jacket is installed in the press.

No cylinder jacket can be pulled on the standard impression cylinder. This impression cylinder is **not suitable for numbering or perforating operations**.

Gripper bite	max. print length
7 mm	453 mm

Tab. 7 Standard impression cylinder

8.2 Impression cylinder with cylinder jacket

For all **print jobs without numbering and without perforating**, the chromium-plated brass plate must be pulled on the impression cylinder.

For numbering and perforating jobs, the cylinder jacket of the impression cylinder must be exchanged.

Gripper bite	max. print length
8 mm	452 mm

Tab. 8 Impression cylinder with cylinder jacket

8.3 Impression cylinder jackets

The following cylinder jackets can be mounted on the impression cylinder with cylinder jacket - **special accessory**:

Chromium-plated brass plate	Sheet steel (special accessory)
for all print jobs	for numbering and perforating operations
Thickness of the cylinder jacket: 0.34 mm	Thickness of the cylinder jacket: 0.34 mm

Tab. 9 Impression cylinder jackets

The cylinder jackets are bent at the front and rear edges; the bend at the front edge is larger than at the rear edge. The bent parts of the cylinder jacket are clamped in the front or rear plate clamp in the cylinder gap.



Caution - Danger of damage to the impression cylinder!

Numbering or perforating must never be done against the chromium-plated brass plate, to avoid damaging the impression cylinder! The **sheet steel must be pulled on** for numbering or perforating.

8.4 Special function 05: Change cylinder jacket

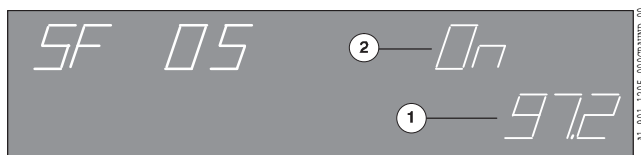


Fig. 37 SF 05: Change impression cylinder jacket

The special function SF 05 indicates the current **Press angle** (Fig. 37/1); during the display, the blanket cylinder can be engaged with the + button at the impression cylinder; the display shows "On" (Fig. 37/2). Disengage with the - button; the display shows "OFF".

The **degree display** in the display flashes (Fig. 37/1) and the LED in the *Control panel selection* button flashes rapidly when the press is in the specified angle range (see following sections).

Note

After the main switch is switched on, the press must first perform 3 revolutions, before special function 05 is activated.

8.5 Removing the cylinder jacket

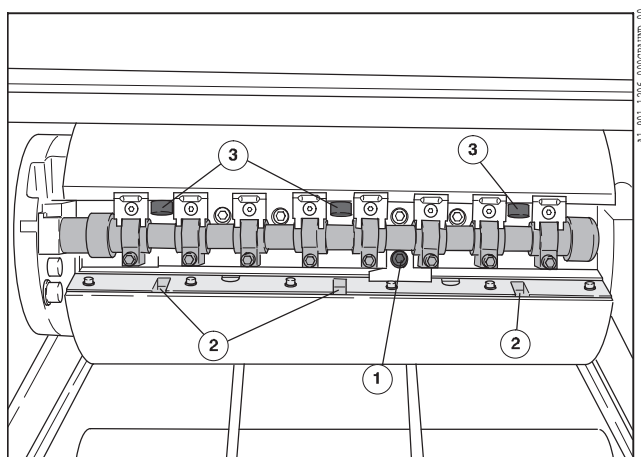


Fig. 38 Changing the cylinder jacket



Caution - Danger of damage to the cylinder jacket!

When changing the **cylinder jacket**, do not bend too much or fold!

1. Select the special function SF 05.
2. Position the press at an angle between 90° and 110° by inching or rotating by hand; the degree display in the display flashes and the LED in the *Control panel selection* button flashes rapidly. The rear plate clamp is now accessible.
3. Release tension in the rear plate clamp with the operator tool by turning the red clamp bolt (Fig. 38/1) counterclockwise; in doing so, firmly hold the jacket rear edge. The jacket rear edge springs out of the plate clamp.
4. Firmly hold the jacket rear edge and inch the press **backwards** to a press angle between 35° and 38°; the degree display in the display flashes and the LED in the *Control panel selection* button flashes rapidly.
5. Set the operator tool at the recesses (Fig. 38/2) of the rear plate clamp and at the lower edge of the gripper operating shaft. The front clamp bolts (Fig. 38/3) are now accessible.
6. Loosen the 3 clamp bolts (Fig. 38/3) at the front plate clamp (approx. 2 revolutions).
7. Firmly hold the jacket rear edge and inch the press **backwards** to an angle between 178° and 183°; the degree display in the display flashes and the LED in the *Control panel selection* button flashes rapidly.
8. **Caution** pull the cylinder jacket with both hands downwards out of the front plate clamp.

8.6 Installing the cylinder jacket

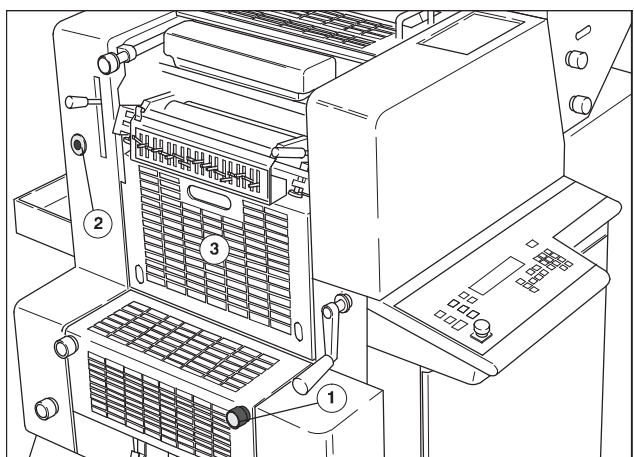


Fig. 39 Inserting the cylinder jacket

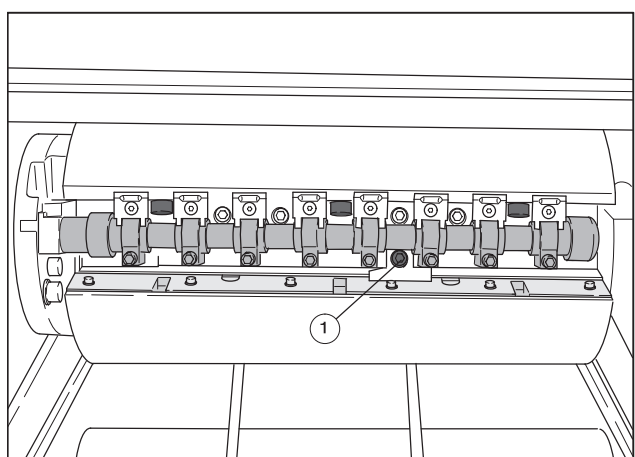
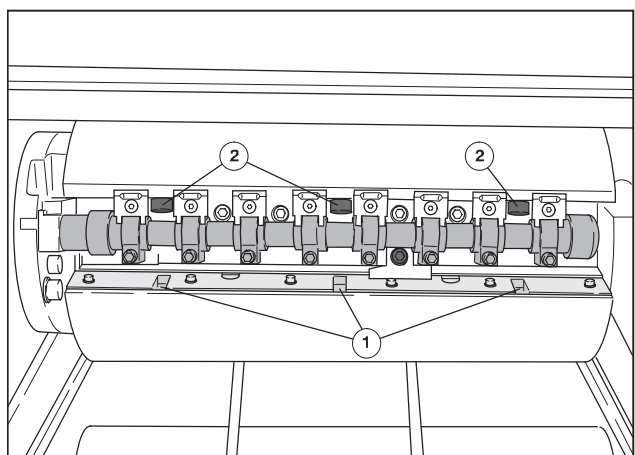
Before inserting the cylinder jacket: clean the surface of the impression cylinder.

Jacket front edge

Note

Do **not** change the circumferential register when the press is at a **standstill**.

1. Start up the press.
2. Move the circumferential register in PU 1 10 mm towards the lead edge of sheet (turn clockwise) using the control knob (Fig. 39/1); the jacket front edge is then pressed by the blanket cylinder in the plate clamp.
3. If the circumferential register was adjusted at a standstill, rotate the switched-on press for at least 1 revolution by hand or start operation.
4. Set the **printing pressure** to the lowest printing material thickness (0.04 mm) (largest squeeze) using the adjusting screw (Fig. 39/2).
5. Select the special function SF 05.
6. Press the + button, in order to engage the blanket cylinder at the impression cylinder; the cylinder jacket is then pressed smoothly against the impression cylinder during the assembly.
7. Rotate the press to an angle between 178° and 183° by inching or rotating by hand; the degree display in the display flashes and the LED in the *Control panel selection* button flashes rapidly.
8. Open the guard in front of the inking unit (Fig. 39/3).
9. **Cautiously** slide the jacket front edge (large bend) in the front plate clamp from below.
10. Center the cylinder jacket laterally relative to the impression cylinder.
11. Firmly hold the jacket rear edge and inch the press **forwards** to an angle between 35° and 38°; the degree display in the display flashes and the LED in the *Control panel selection* button flashes rapidly.



12. Set the operator tool at the recesses (Fig. 40/1) of the rear plate clamp and at the lower edge of the gripper operating shaft. The front clamp bolts (Fig. 40/2) are now accessible.
13. First tighten the center clamp bolt with the operator tool; then tighten the two outer clamp bolts.

Jacket rear edge

1. Firmly hold the jacket rear edge and inch the press **forwards** to an angle between 90° and 110°; the degree display in the display flashes and the LED in the *Control panel selection* button flashes rapidly.
2. Press the bend of the cylinder jacket in the rear plate clamp.
3. Using the operator tool, turn the red clamp bolt (Fig. 41/1) clockwise until the cylinder jacket is slightly clamped.
4. Press the jacket rear edge in the rear plate clamp from the center towards D.S. and O.S. again by hand.
5. Turn the clamp bolt (Fig. 41/1) clockwise until the jacket is tensioned: the screw can be freely turned. Continue turning the clamp bolt until just touching the stop.

Caution - Danger of damage to the impression cylinder!

Do not force the bolt against the stop!

6. Close the guard in front of the inking unit and let the impression cylinder rotate forwards 3 to 5 revolutions with engaged blanket cylinder (in crawl speed or turning with the crank handle).
7. Press the *Special functions* button, in order to exit the display (prerequisite: guard in front of the inking unit and protecting door on O.S. are closed); the blanket cylinder is automatically moved away from the impression cylinder.

The **side edges** of the cylinder jacket must on D.S. and O.S. have the same distance to the impression cylinder (center the front edge when inserting). If this is not the case, then repeat the entire clamping procedure.

The cylinder jacket must squarely lie on the impression cylinder. To check, lightly tap your finger against the cylinder jacket. If the cylinder jacket sounds hollow, repeat the procedure for clamping the jacket rear edge.

9 Blanket cylinder - impression cylinder squeeze

9.1 Adjusting the squeeze

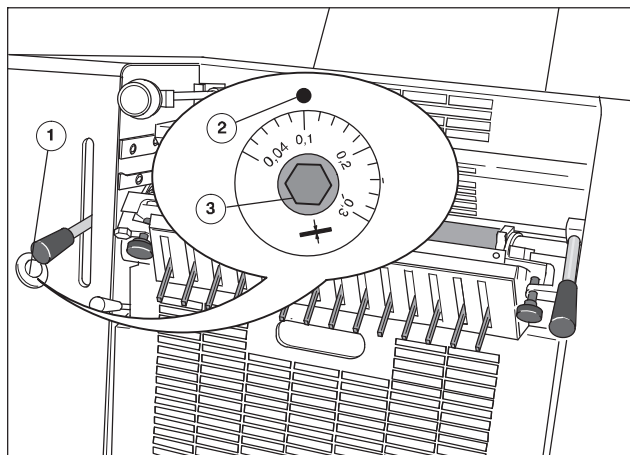


Fig. 42 Blanket cylinder - impression cylinder squeeze

The squeeze between the blanket and impression cylinders must be adapted to the given **thickness of printing material** and the **packing thickness**.

1. Adjust the **thickness of printing material** with the socket wrench on the delivery side (Fig. 42/1) of the PU.

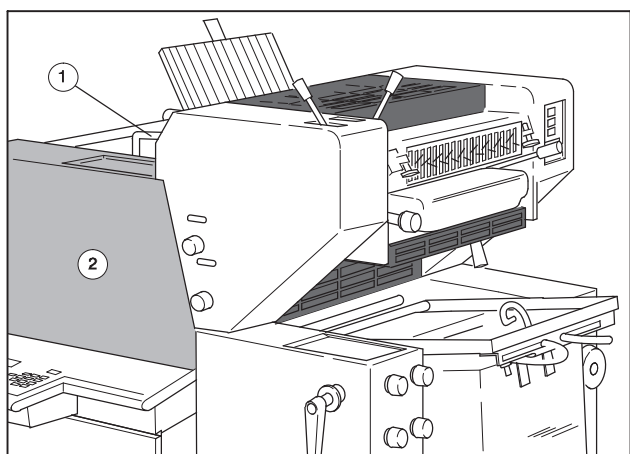
Adjustment range of 0.04...0.3 mm printing material thickness.

The adjusting screw (Fig. 42/3) must be adjusted with the socket wrench to a mark (Fig. 42/2).

Direction of rotation: clockwise rotation increases the squeeze, counterclockwise rotation decreases the squeeze.

10 Cleaning the bearers and pressing rollers

10.1 Cleaning the bearers



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Two-color press

1. Open the protecting door on O.S. (Fig. 44/2) and attach crank handle.
2. Open the guard above the plate cylinder (Fig. 44/1).

Fig. 44 BP18-2, guards open

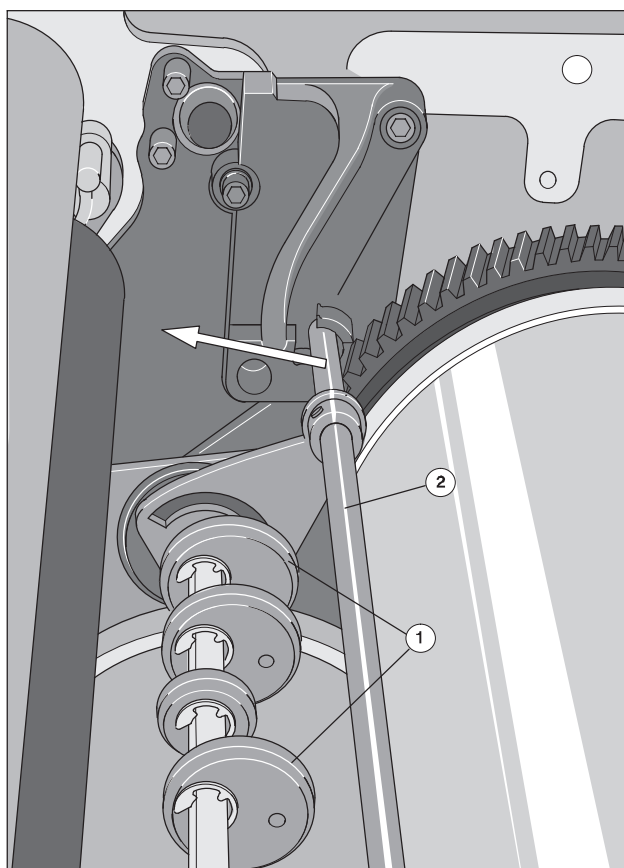


Fig. 45 PU 2: remove the pressing rollers

3. Press the cross bar (Fig. 45/2) with pressing rollers for the plate feed (Fig. 45/1) in PU 2 on O.S. towards the feeder (Fig. 45, arrow) and lift.
4. Pull the cross bar out of the bearing unit on D.S. and remove **pressing rollers** (Fig. 45/1) from the press. The bearers of the plate cylinders (Fig. 46/1) and the blanket cylinder (Fig. 46/2) are accessible.

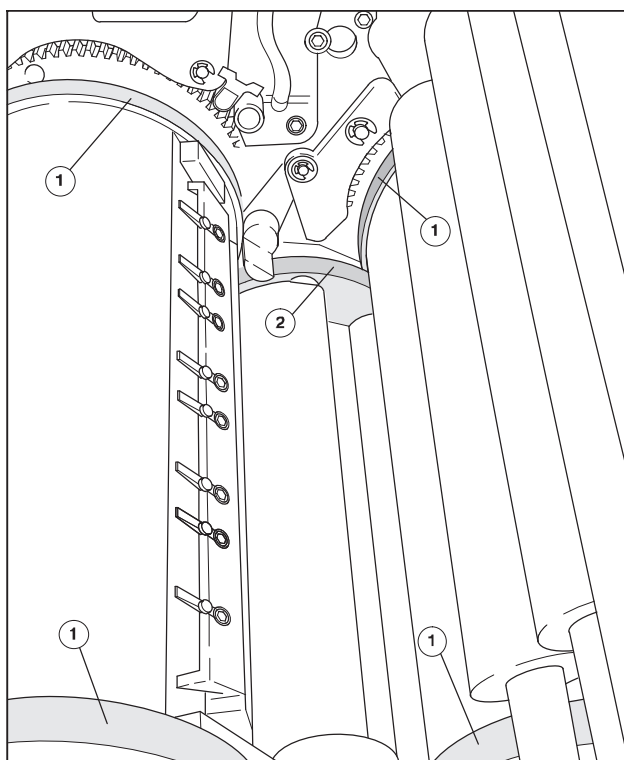


Fig. 46 Cleaning the bearers

5. Rotate the press with the crank handle and clean the bearers (Fig. 46/1 and 46/2) with a cloth soaked in washing fluid.
6. Then reinsert the pressing rollers or clean if necessary.

10.2 Cleaning the pressing rollers

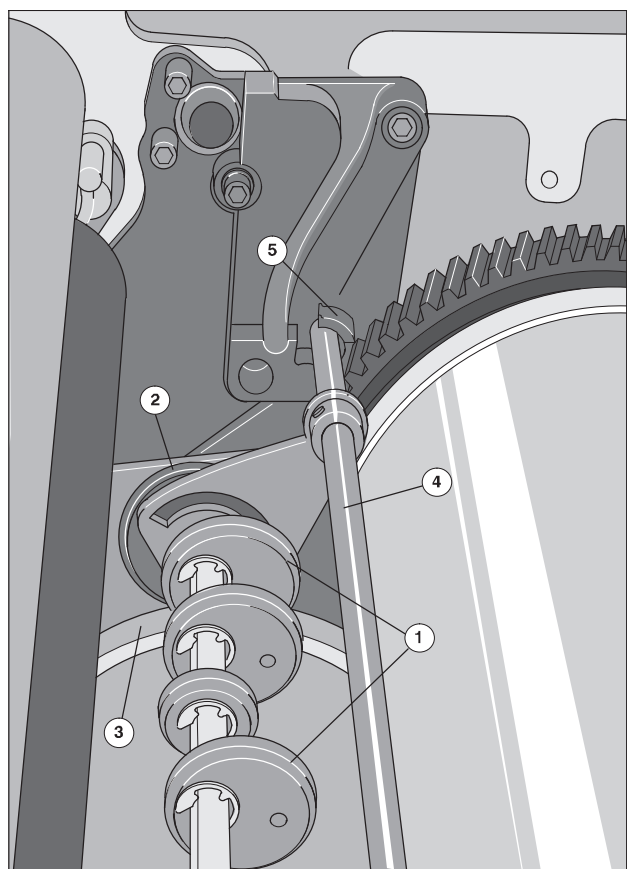


Fig. 47 Inserting pressing rollers, PU 2

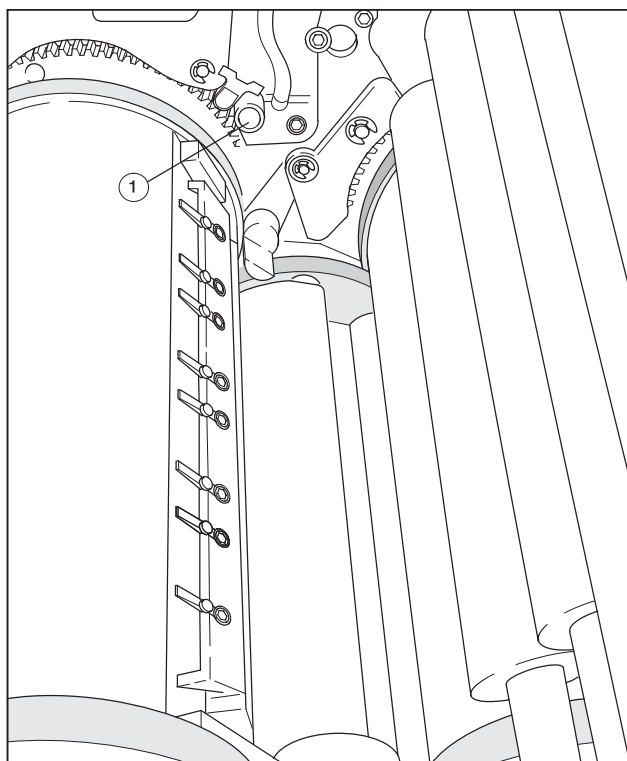


Fig. 48 Pressing rollers, bearings on D.S.

If contaminated, clean the printing plate pressing rollers in both PUs with a cloth soaked in washing fluid.

Press

1. Fold up the guard above the plate cylinder and clean the pressing rollers.

Two-color press

1. Remove the pressing rollers and clean. - Removing the pressing rollers: see the section on "Bearers".
2. Insert the pressing rollers in PU 2: slide the end of the pressing roller cross bar on D.S. in the bearing (Fig. 48/1).

Note

When the pressing rollers (Fig. 47/1) face the inking unit when inserted, then the supporting collars (Fig. 47/2) on the bearers (Fig. 47/3) can roll off. This facilitates the insertion.

3. Lightly press the cross bar on O.S. towards the delivery into the bearing (Fig. 47/2) until you feel the cross bar engage.
4. Close guards.

11 Blanket washup

11.1 Starting the washup procedure

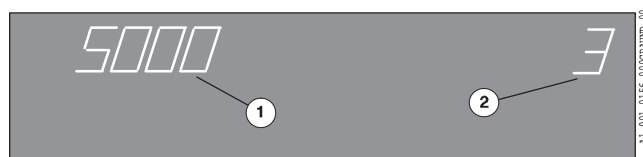


Fig. 49 Display of washup speed and washup revolutions

Prerequisite: the blanket washup device must be inserted in the press. On inserting the blanket washup device, see the section on "Printing unit, blanket washup device".

Note

Before washing the blanket, check whether the **washup felt** of the blanket washup device is **soaked with washing fluid**.

1. To wash the blanket **at press standstill**: press the *Blanket washup* button twice; **in press stop**: press once.

The press rotates during the washup procedure at washup speed (5000 rev./h, Fig. 49/1); the washup device is pneumatically applied to the blanket cylinder. The blanket is washed corresponding to the preselected setting. The display shows the washup speed (Fig. 49/1) and the number of washup revolutions (Fig. 49/2), counting backwards).

- If **no printing plate is clamped**, the press rotates to the clamping position after the washup procedure. The front clamping bar opens and the LED in the *Plate change* button flashes rapidly. If the press is switched off with the main switch, then the clamping bar closes.
- If a **printing plate is clamped**, the press moves to the holding position after the washup procedure.
- If the function **was selected in press stop**, the press enters press stop after the washup.

11.2 Washing the impression cylinder

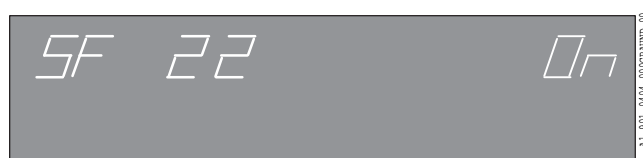


Fig. 50 SF 22: wash the impression cylinder

The impression cylinder can also be washed as required via the blanket.

1. Press the *Special functions* button.
2. Call up special function 22.
3. Change from OFF to ON with the + button.
4. Exit the display with the *Special functions* button.

In the next washup procedure of the blanket cylinder, the impression cylinder will also be washed corresponding to the preselected revolutions.

Note

After ending the washup procedure, the function is automatically set to OFF.

11.3 Drying the blanket



Fig. 51 SF 33: drying the blanket

If required, the blanket can be dried after washup by means of additional press rotations (preselection).
Factory default setting: 10 revolutions.

1. Press the *Special functions* button.
2. Call up special function 33.
3. Press the *Delete* button in the numeric keypad.
The numeral 0 flashes in the display (Fig. 51/1).
4. Enter the number of revolutions (0 to 30) using the numeric keypad.
5. Exit the display with the *Special functions* button.

After the next washup procedure, the blanket is dried corresponding to the preselected revolutions.

12 Blanket washup device

12.1 Structure

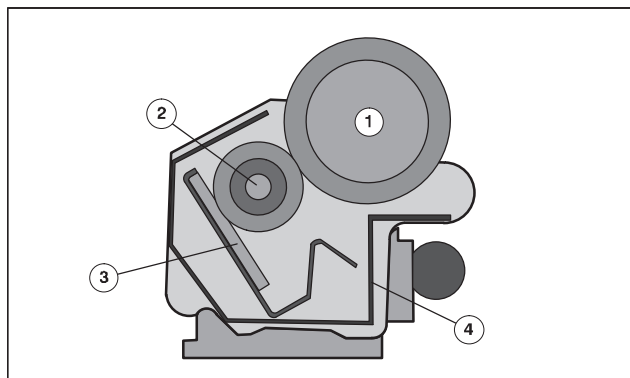


Fig. 52 Blanket washup device

- 1 Washup roller with special rubber lining
- 2 Metering roller
- 3 Washup felt
- 4 Washing fluid trough

12.2 Inserting the blanket washup device

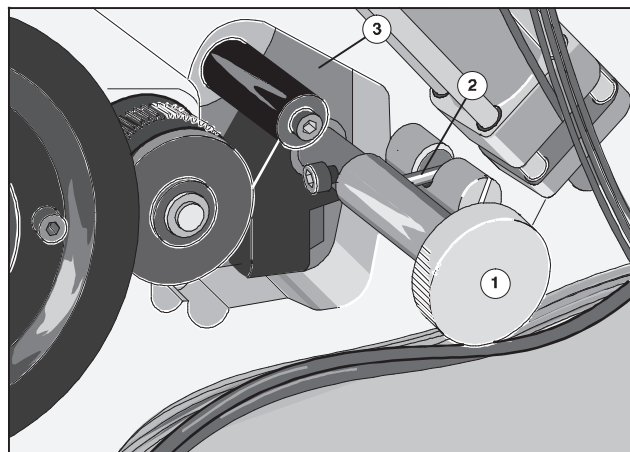


Fig. 53 Blanket washup device inserted

1. Open the guard on the PU 1 on O.S.
2. Insert the blanket washup device through the opening in the side frame on O.S. (Fig. 53/3).
3. Press in the blanket washup device with the handle (Fig. 53/1) up to the stop.
4. Turn the handle clockwise and let blocking piece at the pin (Fig. 53/2) engage.
5. Close the guard door on O.S.

Note

If the blanket washup device is not correctly inserted, then the guard cannot be closed.

12.3 Removing the blanket washup device

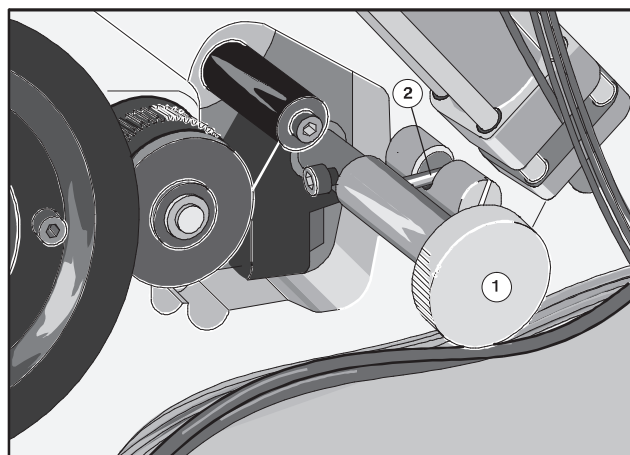


Fig. 54 Removing the blanket washup device

1. Open the guard on the printing unit on O.S.
2. Loosen the locking device (Fig. 54/2) of the blanket washup device by turning the handle (Fig. 54/1) counterclockwise.
3. Using the handle (Fig. 54/1), pull the blanket washup device out of the side frame.
4. Close the guard on the PU on O.S.

12.4 Replacing the washup felt

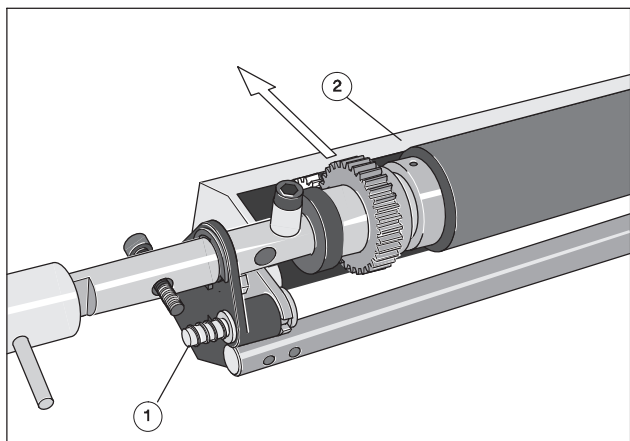


Fig. 55 Removing the washing fluid trough

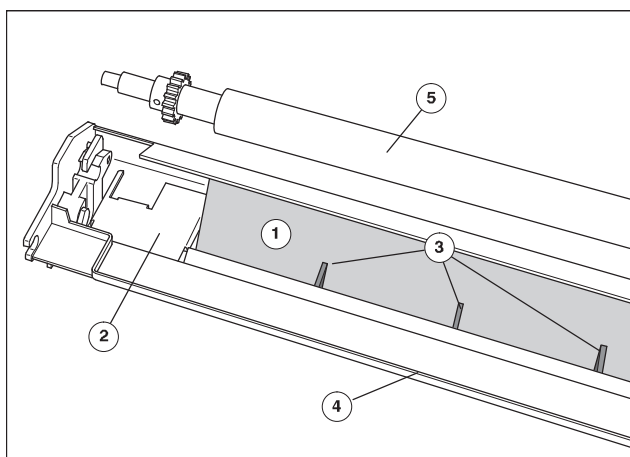


Fig. 56 Washup felt with removed metering roller

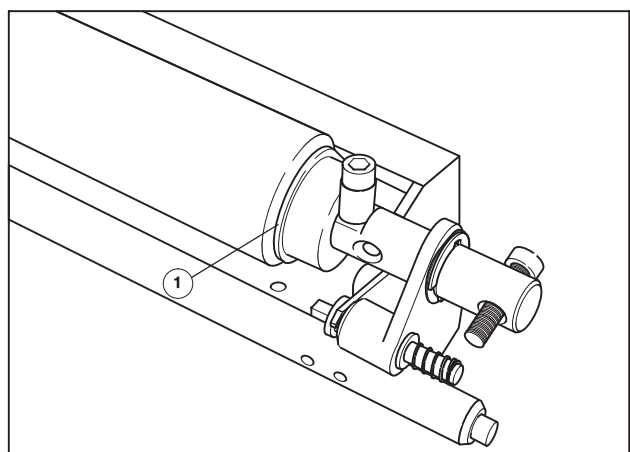


Fig. 57 Blanket washup device, gasket D.S.

Replace the washup felt of the blanket washup device in case of severe contamination.

Dispose of residue of washing fluid properly.

1. Press in the pin on O.S. (Fig. 55/1) and D.S.
2. Press away the washing fluid trough (Fig. 55/2) in the direction of the arrow.
3. Remove the metering roller (see section on "Replacing the washup roller").
4. Remove the support rail (Fig. 56/2) from the washing fluid trough.
5. Remove the washup felt (Fig. 56/1) from the support rail.
6. **Clean** the washing fluid trough (Fig. 56/4) and the support rail cautiously with a cloth soaked with washing fluid.
7. Slide a new washup felt (Fig. 56/1) in the support rail (Fig. 56/2) behind the ribbing (Fig. 56/3).
8. Insert the support rail (Fig. 56/2) in the washing fluid trough (Fig. 56/4).
9. Insert the metering roller (Fig. 56/5) and reassemble the blanket washup device; in doing so, make sure that the gaskets (Fig. 57/1) on the washup roller are aligned so that the radius lies against the metering roller.

12.5 Replacing the washup roller

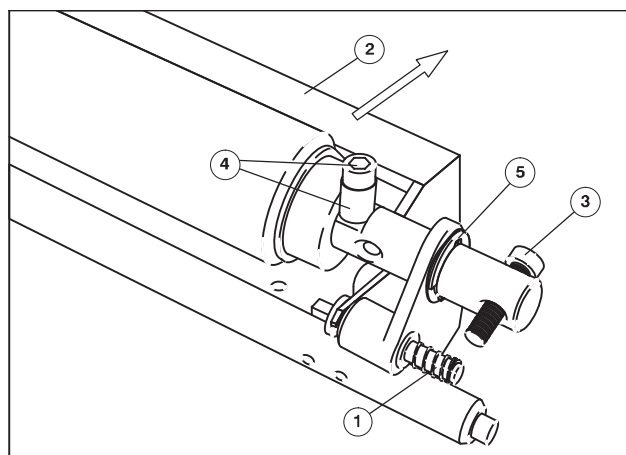


Fig. 58 Replacing washup roller

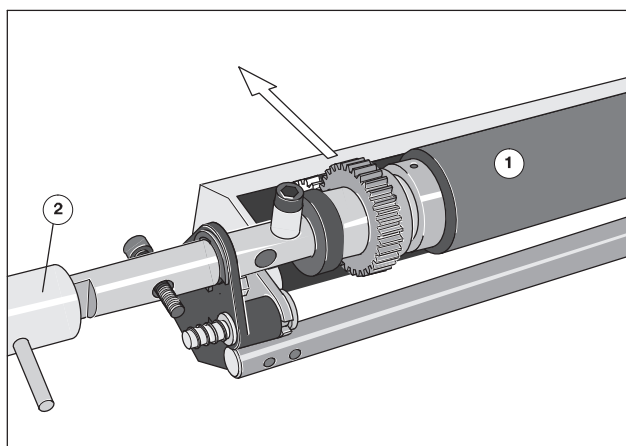


Fig. 59 Blanket washup device, O.S.

1. Remove the blanket washup device from the press.
2. Press in the pin on D.S. (Fig. 58/1) and O.S.
3. Press away the washing fluid trough (Fig. 58/2) in the direction of the arrow.
4. Completely unscrew screw on D.S. (Fig. 58/3).
5. Remove screw on D.S. (Fig. 58/4) and O.S. together with the bush.
6. Remove circlip on D.S. (Fig. 58/5).
7. Firmly hold roller body (Fig. 59/1) and completely pull out shaft towards O.S. with the handle of the washup device (Fig. 59/2).
8. Pull washup roller on D.S. out of the strap and replace.
9. **Install** the new washup roller in the analogous reverse order.
10. **After replacing** the washup roller, **adjust** the rollers of the blanket washup device (see section on "Adjusting the rollers").

12.6 Replacing the metering roller

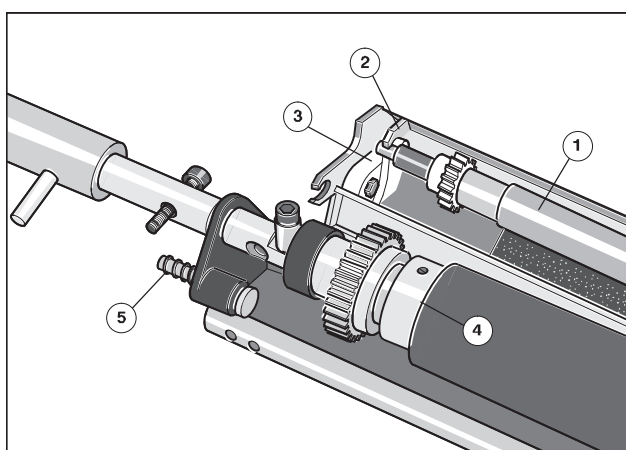


Fig. 60 Replacing the metering roller

1. Pull the metering roller (Fig. 60/1) on D.S. and O.S. against the safety lever (Fig. 60/2) remove from the plastic bearing (Fig. 60/3).
2. Place new metering roller on the two plastic bearings (Fig. 60/3) and press in the bearings. The safety levers (Fig. 60/2) lock the metering roller in the bearing.
3. Slide the washing fluid trough onto the washup roller.
4. Align the gaskets (Fig. 60/4) at the washup roller so that the radius lies at the metering roller.
5. Press in the pins on O.S. (Fig. 60/5) and D.S. and let washing fluid trough engage at the pins.
6. Insert the washup device back in the press.

12.7 Adjusting the rollers

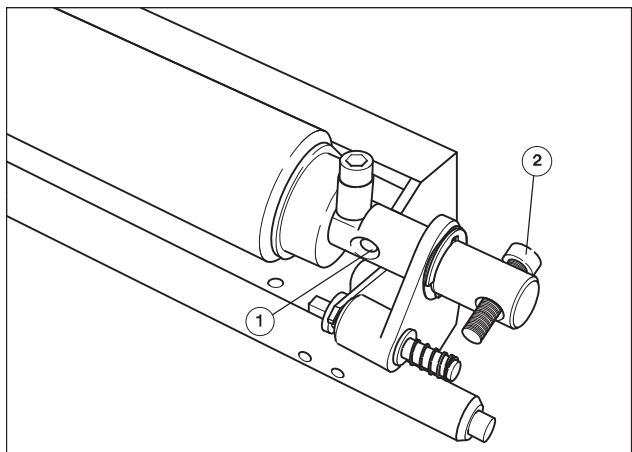


Fig. 61 Adjusting the rollers

Adjust the washup roller to the blanket cylinder and the metering roller to the washup roller.

Note

The contact areas must have the same width along the entire length of the roller.

Metering roller: contact area width: 2.5 mm

1. Turn the adjusting screw on O.S. and D.S. (Fig. 61/1) clockwise: narrower contact area.

Washup roller: contact area width: 4 - 5 mm

2. Turn the adjusting screw on D.S. and O.S. (Fig. 61/2) clockwise: narrower contact area.

12.8 Filling with washing fluid

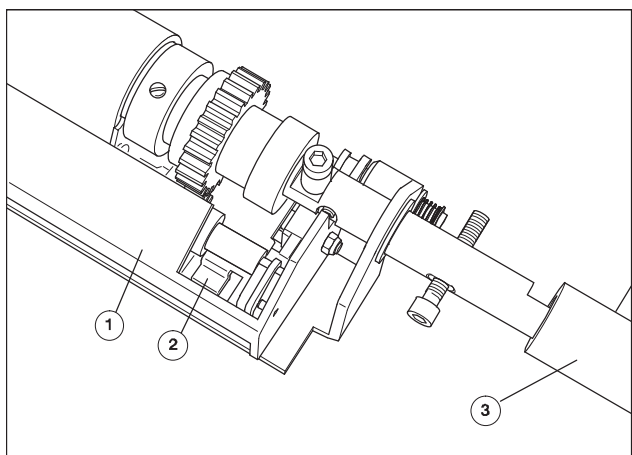


Fig. 62 Filling with washing fluid



Warning - Fire hazard!

Washing fluids can form explosive fumes, be combustible or harmful to health. Use only cleaners and solvents with a flash point of at least 55 °C!

1. Fill the washing fluid in the washing fluid trough (Fig. 62/1) until the connecting link (Fig. 62/2) is just covered by the washing fluid.
2. Cautiously insert the washup device in the press and lock with the handle (Fig. 62/3).

Inking unit

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1.1 To be observed when working at the press



Warning - Risk of injury from rotating ink fountain roller!

Warning - Risk of injury from rotating ink fountain roller!

Caution - Damage caused by incorrect cleaners!

Warning - Risk of injury from rotating parts!

There is a risk of injury when the guard in front of the lateral distribution is open. Close and lock the guard after you have made your adjustments.

2 Ink fountain

2.1 Overview

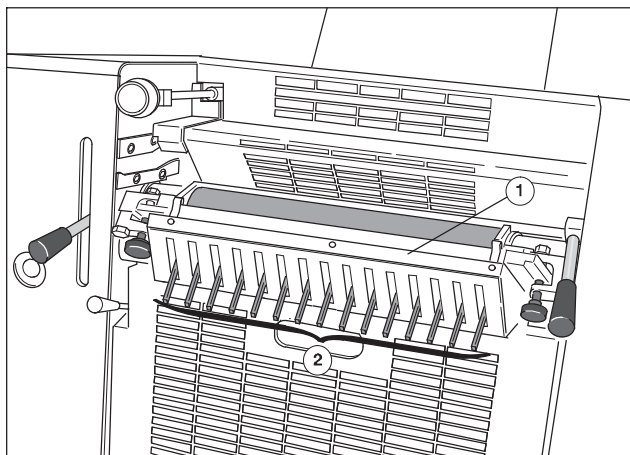


Fig. 1 Overview of the ink fountain

The **ink fountain** (Fig. 1/1) is divided in **15 ink zones**. The slotted ink fountain blade of the ink fountain lies against the ink fountain roller. The ink film thickness is adjusted with the **ink zone levers** (Fig. 1/2).

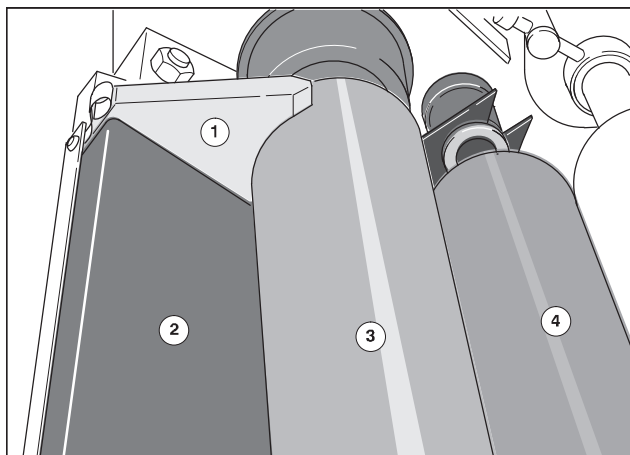


Fig. 2 Ink fountain and ink vibrator

The **ink fountain roller** (Fig. 2/3) rotates when the press is in operation. The **ink fountain blade** (Fig. 2/2) and **ink fountain cheeks** (Fig. 2/1) limit the proximity of the ink fountain to the ink fountain roller.

The **ink vibrator** (Fig. 2/4) transfers the ink from the ink fountain roller to the inking unit.

2.2 Inserting the ink fountain cheeks

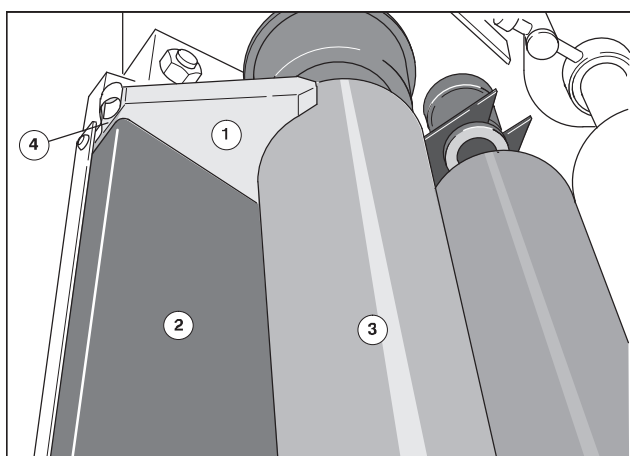


Fig. 3 Inserting the ink fountain cheeks

Before inserting: clean the ink fountain cheek (Fig. 3/1), ink fountain blade (Fig. 3/2) and ink fountain roller (Fig. 3/3).

Note

The radius of the ink fountain cheeks must be clean, so that the ink fountain cheeks correctly seal off the ink fountain roller.

1. Insert the ink fountain cheeks (Fig. 3/1) in the grooves next to the ink fountain blade (Fig. 3/2) on D.S. and O.S.
2. Fold up the ink fountain, bring forward the locking devices and tighten the knurled screws on both sides.

Note BP18-2

: with print jobs with only one PU, set the ink zone lever in the other PU to maximum and disengage the ink vibrator.

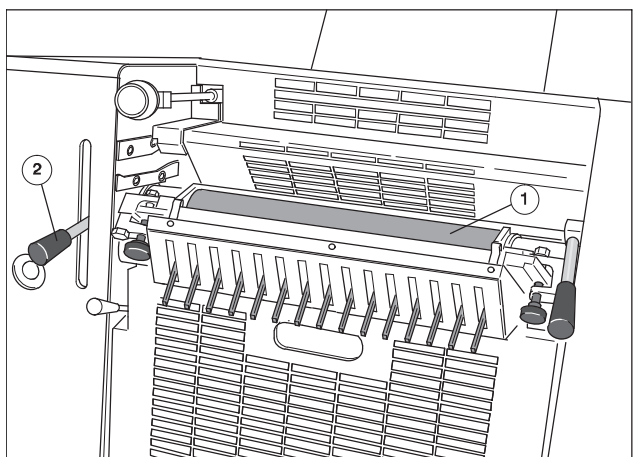
2.3 Introducing ink in the ink fountain

Fig. 4 Introducing ink in the ink fountain

1. Coat the ink fountain roller (Fig. 4/1) with ink using the ink slice.
2. Distribute the ink by rotating the ink fountain roller with the ink fountain roller ratchet (Fig. 4/2).

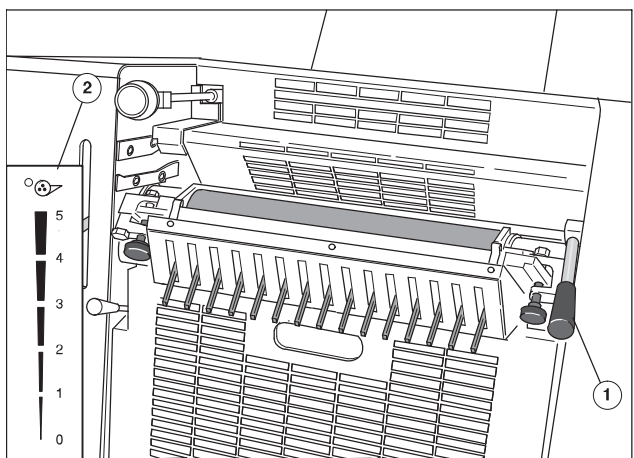
2.4 Adjusting the fountain roller sweep

Fig. 5 BP18-2 fountain roller sweep

The fountain roller sweep (= ink stripe width on the ink fountain roller) determines the inking of the entire printed image. The fountain roller sweep is adjusted on the BP18-2

in the PU 2 with the lever (Fig. 6/1).

1. When making a new printing form ready, start with a maximum fountain roller sweep at minimum ink zone aperture.

Set the fountain roller sweep corresponding to the plate (Fig. 5/2) next to this lever:

lever in position 5: maximum fountain roller sweep (= 45 mm).

lever in position 0: minimum fountain roller sweep (= 0 mm).

Inking unit

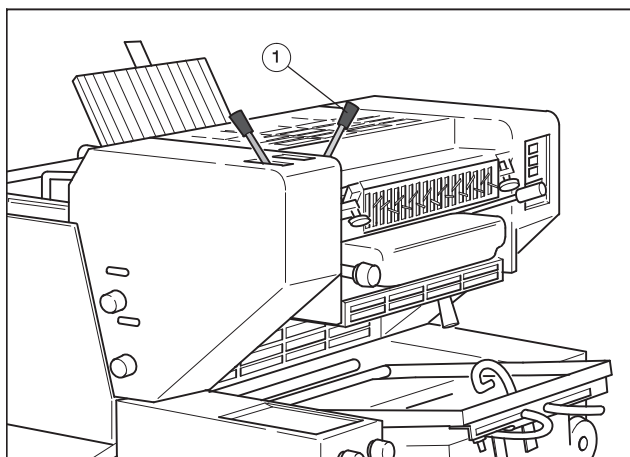


Fig. 6 BP18-2 fountain roller sweep

2.5 Manually rotating the ink fountain roller

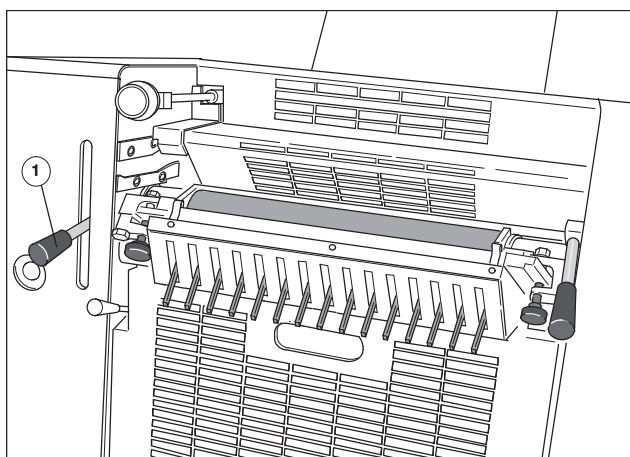


Fig. 7 Ink fountain roller ratchet, PU 1

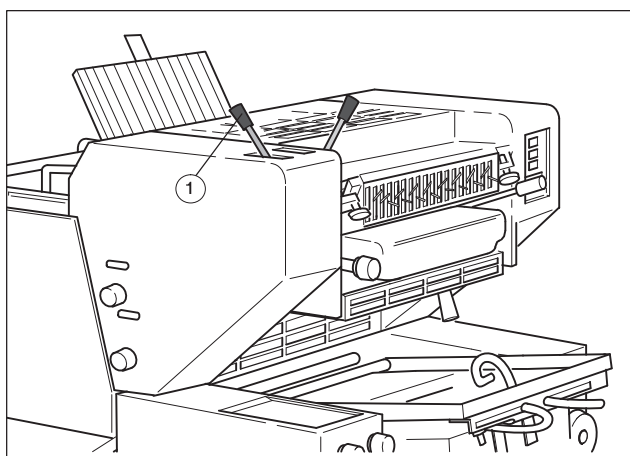


Fig. 8 Ink fountain roller ratchet, PU 2

For cleaning, preinking or overinking, you can rotate the ink fountain roller with the ink fountain roller ratchet; **PU 1** (Fig. 7/1), **PU 2** (Fig. 8/1).

1. Set the ratchet on top and pull downwards.

2.6 Adjusting ink zones

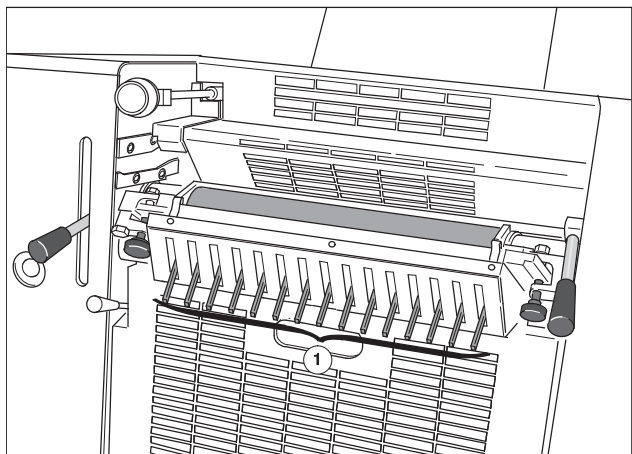


Fig. 9 Ink zone lever

The ink film thickness on the ink fountain roller is changed using the 15 ink zone levers (Fig. 9/1). Individual zones can be adjusted through the slotted ink fountain blade without any side effects.

1. Make the adjustment at the largest possible fountain roller sweep (lever for fountain roller sweep at top).
2. Adjust the ink zone lever according to the **ink requirement of the printed image**.

Moving the ink zone lever **up** increases the ink film thickness, moving the ink zone lever **down** decreases the ink film thickness.

Note

Move the ink zone lever down, then back to the desired position. This improves the repeat accuracy.

2.7 Letting the ink distribute itself

1. Start up the press.
2. Set the lever for the fountain roller sweep (PU 1) in the top position.
3. Press the *Ink vibrator ON/OFF* button; the LED lights up.
4. Let the ink distribute itself.

2.8 Printing with one PU

PU not used

Note

Protect the rollers of the printing unit not being used against dry running by means of **non-resinous press oil or printing aid** (roller protective paste).

2.9 Changing ink

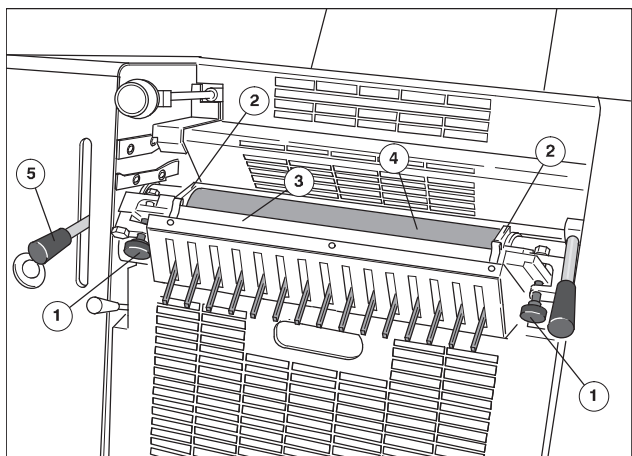


Fig. 10 Changing the ink

1. Remove the ink from the ink fountain using a plastic spatula.
2. Loosen the knurled screws (Fig. 10/1) and swivel the locking devices outwards.
3. Swing down the ink fountain.
4. Take out the ink fountain cheeks (Fig. 10/2) and clean them with roller wash-up solution.
5. Clean the ink fountain blade (Fig. 10/3) and ink fountain roller (Fig. 10/4) with roller wash, rotating the ink fountain roller with the ink fountain roller ratchet (Fig. 10/5).
6. Insert the ink fountain cheek and engage the ink fountain at the ink fountain roller.

7. Bring forward the ink fountain locking devices and tighten the knurled screws (Fig. 10/1).
8. Apply and distribute new ink on the ink fountain roller using a spatula.

2.10 Cleaning the ink fountain

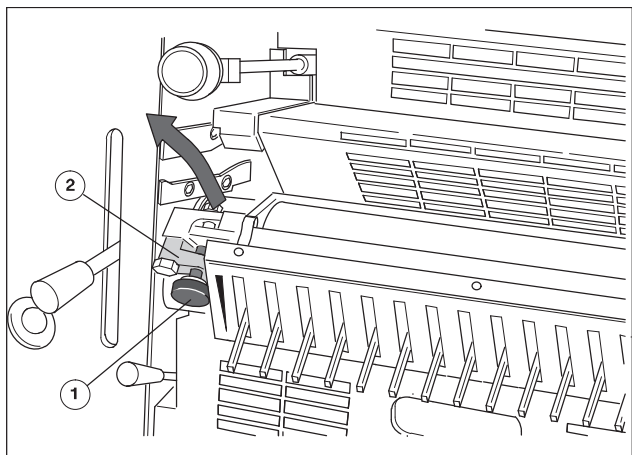


Fig. 11 Folding back the ink fountain

Folding back the ink fountain

The ink fountain can be moved away **for cleaning** the ink fountain roller.

1. Remove ink from ink fountain using a spatula.
2. Loosen the knurled screws on D.S. (Fig. 11/1) and O.S. and turn the latch (Fig. 11/2) outwards in the direction of the arrow.
3. Fold back the ink fountain downwards.

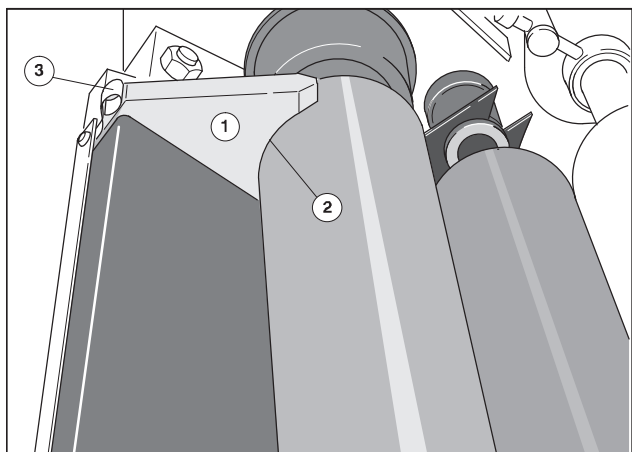


Fig. 12 Ink fountain cheeks

Cleaning the ink fountain cheeks and inserting

1. When the ink fountain has been moved away from the ink fountain roller, the ink fountain cheeks (Fig. 12/1) can be removed for cleaning.
2. Clean the contact area of the ink fountain cheeks with the ink fountain roller (Fig. 12/2) and the groove in the ink fountain using a roller cleaning agent.

The radius of the ink fountain cheeks must be clean, so that the ink fountain cheeks correctly seal off the ink fountain roller.

3. Press the ink fountain cheeks in the groove of the ink fountain.

When the ink fountain is engaged at the ink fountain roller, then the ink fountain cheeks are clamped by the spring (Fig. 12/3).

4. Fold up the ink fountain and bring forward the latch.
5. Secure the latch with knurled screws.

3 Roller diagram

3.1 Overview of PU 1 and PU 2

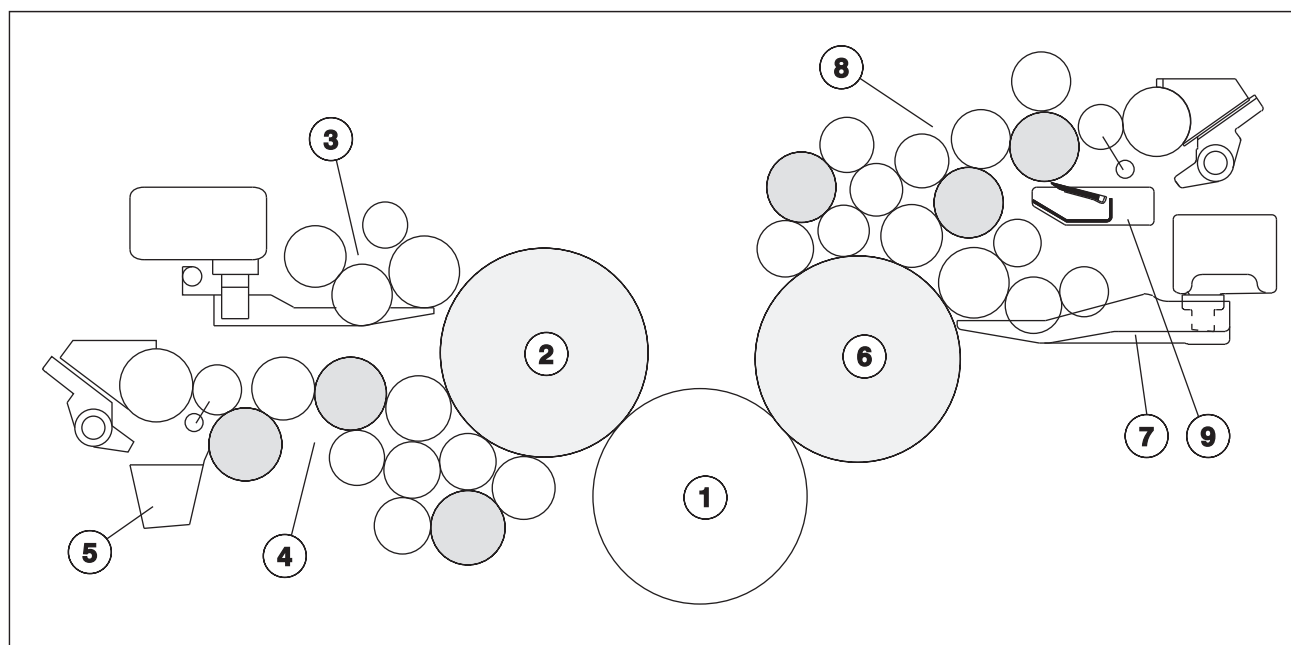


Fig. 13 BP18-2: roller diagram

Fig. 13 diagrams the inking units of a two-color press (PU 1 on left, PU 2 on right), the inking roller washup devices and the dampening systems.

- 1 Blanket cylinder
- 2 Plate cylinder, PU 1
- 3 Dampening system, PU 1
- 4 Inking unit, PU 1
- 5 Inking roller washup device, PU 1
- 6 Plate cylinder, PU 2
- 7 Dampening system, PU 2
- 8 Inking unit, PU 2
- 9 Inking roller washup device, PU 2

3.2 Printing unit 1

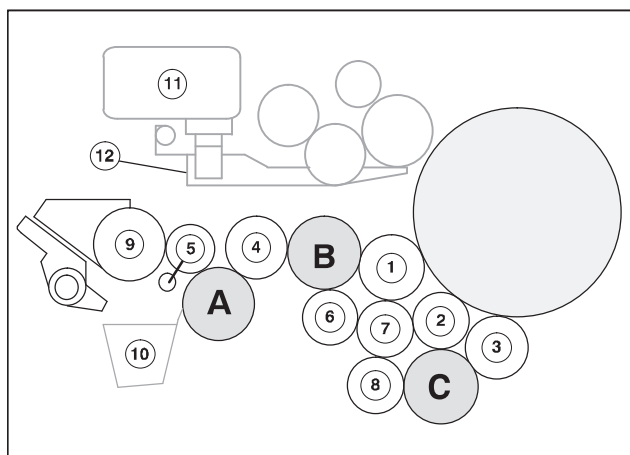


Fig. 14 Installation sequence, PU 1

The removable rollers in PU 1 are numbered in Fig. 14 from 1 to 8. - The numbering indicates the recommended **installation sequence**. The ink distributors A, B, C (Rilsan, Ø 61.2 mm) and the ink fountain roller cannot be removed. The roller journals of the inking form rollers are marked in color.

- 1 1st inking form roller Ø 54.7 mm (yellow)
- 2 2nd inking form roller Ø 45 mm (blue)
- 3 3rd inking form roller Ø 50 mm
- 4 1st ink transfer roller Ø 52 mm
- 5 Ink vibrator Ø 40 mm
- 6 2nd ink transfer roller Ø 48 mm
- 7 3rd ink transfer roller (Rilsan) Ø 46.5 mm
- 8 4th ink transfer roller Ø 48 mm
- 9 Ink fountain roller
- 10 Inking roller washup device
- 11 Dampening solution container
- 12 Dampening solution pan

3.3 Printing unit 2

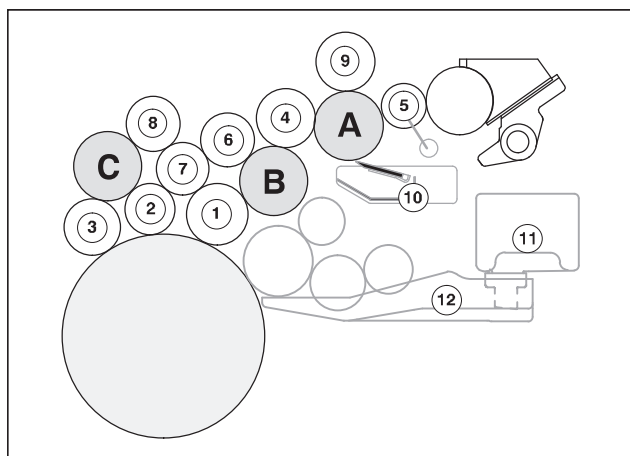


Fig. 15 Installation sequence, PU 2

The removable rollers in PU 2 are numbered in Fig. 15 from 1 to 9. **The ink distributors A, B and C and the ink fountain roller cannot be removed.** - The numbering is the recommended **installation sequence**. The roller journals of the inking form rollers are marked in color.

- 1 1st inking form roller Ø 54.7 mm (yellow)
- 2 2nd inking form roller Ø 45 mm (blue)
- 3 3rd inking form roller ø 50 mm (red)
- 4 1st ink transfer roller Ø 52 mm
- 5 Ink vibrator Ø 40 mm
- 6 2nd ink transfer roller Ø 48 mm
- 7 3rd ink transfer roller (Rilsan) Ø 46.5 mm
- 8 4th ink transfer roller Ø 48 mm
- 9 Rider roller ø 54.7 mm (yellow)
- 10 Inking roller washup device
- 11 Dampening solution container
- 12 Dampening solution pan

4 Removing the inking rollers

4.1 Printing unit 1 - roller removal

Before removing:

1. Remove the dampening solution container.
2. Open the guard above the dampening system.
3. Remove the dampening solution pan.
4. Close the guard.
5. Remove the ink from the ink fountain.
6. Wash the inking unit and dampening system.
7. Remove the inking roller washup device.

Ink ductor

1. Pull the ink vibrator (Fig. 16/1) upwards out of the retainers (Fig. 16/2) on both sides at the journal.

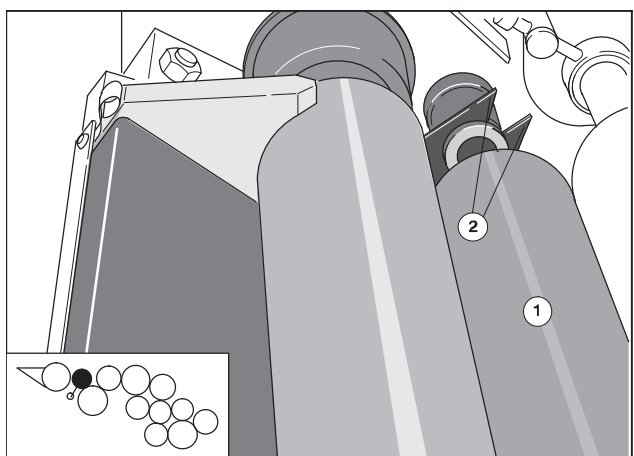


Fig. 16 Removing the ink vibrator

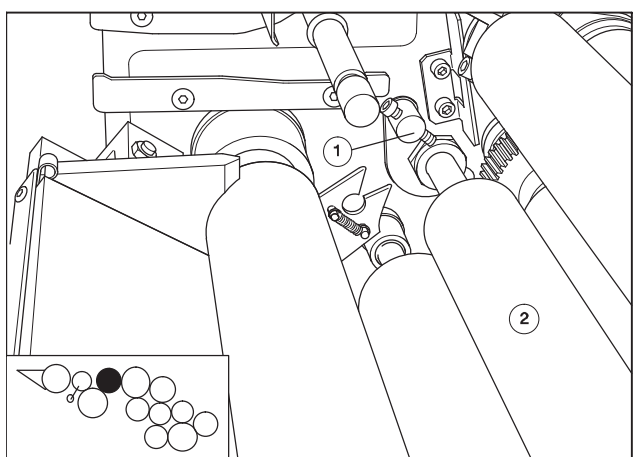


Fig. 17 Removing the 1st ink transfer roller

1st ink transfer roller

1. Press the lever on D.S. (Fig. 17/1) and O.S. downwards.
2. Remove the roller (Fig. 17/2).

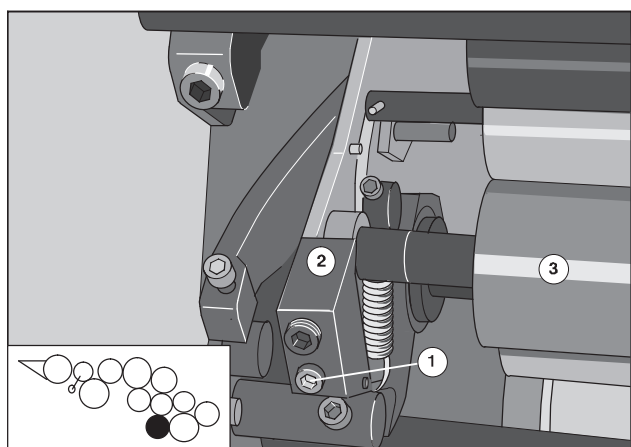


Fig. 18 Removing the 4th ink transfer roller

4th ink transfer roller

1. Unscrew the Allen screw (Fig. 18/1) with the operator tool; the screw remains in the latch (Fig. 18/2) on D.S. and O.S.
2. Fold the lever on D.S. (Fig. 18/2) and O.S. downwards.
3. Pull the 4th ink transfer roller (Fig. 18/3) towards the delivery out of the bearing.

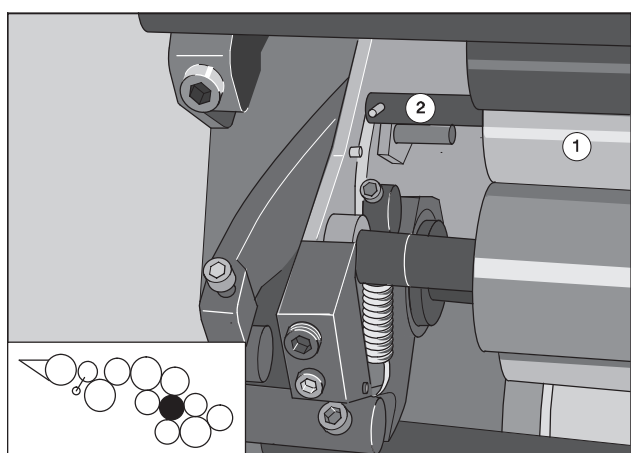


Fig. 19 Removing the 3rd ink transfer roller

3rd ink transfer roller (Rilsan)

1. Grasp the 3rd ink transfer roller (Fig. 19/1) at the roller shafts (Fig. 19/2) and pull out of the bearing unit.

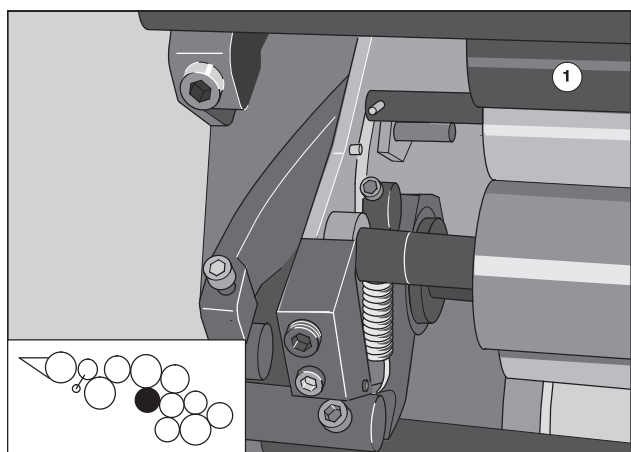


Fig. 20 Removing the 2nd ink transfer roller

2nd ink transfer roller

1. Press the ink transfer roller (Fig. 20/1) towards the impression cylinder out of the bearing and remove.

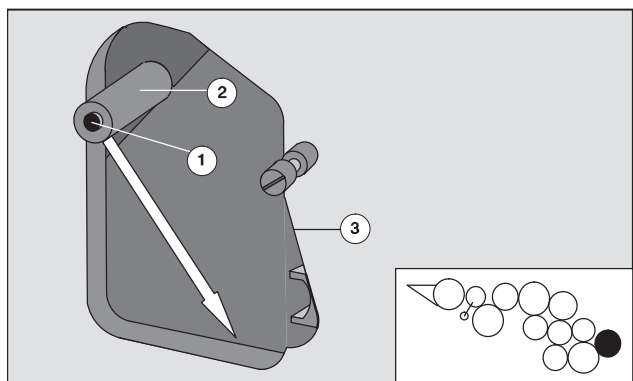


Fig. 21 Removing the 3rd inking form roller

3rd inking form roller

1. Open the guard on the PU 1 on O.S.
2. Remove the blanket washup device.
3. Completely unscrew the Allen screw (Fig. 21/1) with the operator tool.
4. Pull sleeve (Fig. 21/2) off the shaft of the inking form roller.
5. Swivel the inking form roller with the shaft downwards in the direction of the arrow.
6. Cautiously pull the roller from the shaft; do not damage roller at the side frame opening (Fig. 21/3).

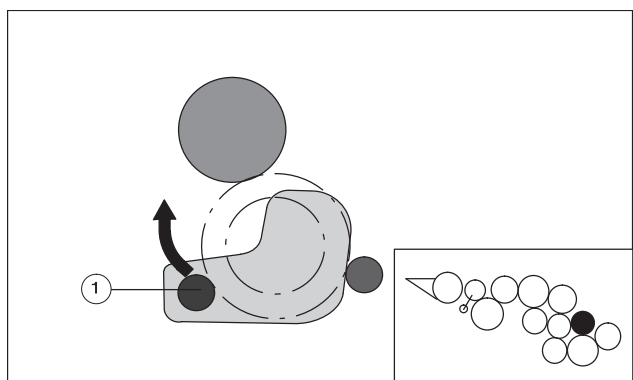


Fig. 22 Removing the 2nd inking form roller

2nd inking form roller

1. Press the levers (Fig. 22/1) at the journal box on D.S. and O.S. upwards up to stop.
2. Remove the inking form roller.

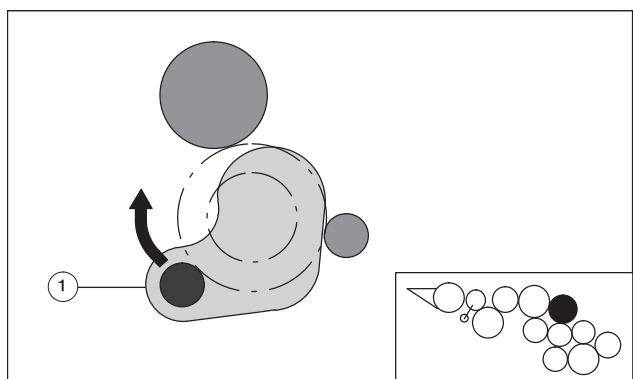


Fig. 23 Removing the 1st inking form roller

1st inking form roller

1. Press the levers at the journal box on D.S. (Fig. 23/1) and O.S. upwards up to stop.
2. Remove the inking form roller upwards.

► **Tip**

When slight pressure is applied to the roller in the direction of the plate cylinder, the levers can be more easily moved.

4.2 Printing unit 2 - roller removal**Before removing the rollers:**

1. Fold back plate feed table towards the delivery.
2. Open the guard above the PU 2 inking unit.

Inking unit

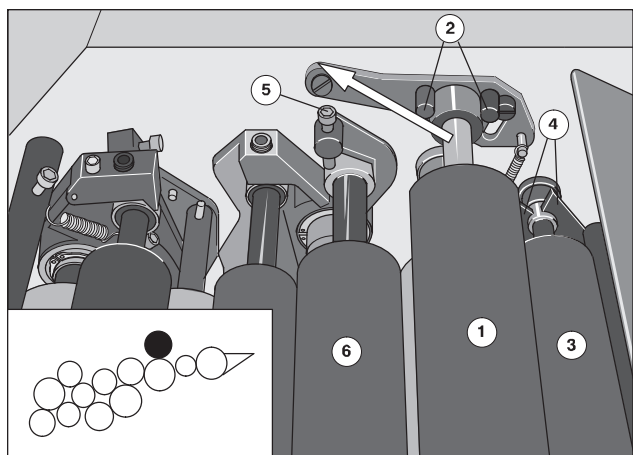


Fig. 24 Removing the rider roller

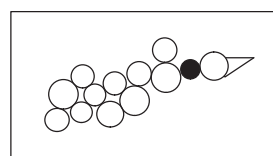


Fig. 25 Ink ductor

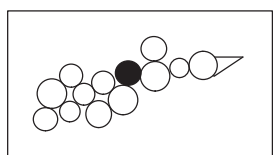


Fig. 26 1st ink transfer roller

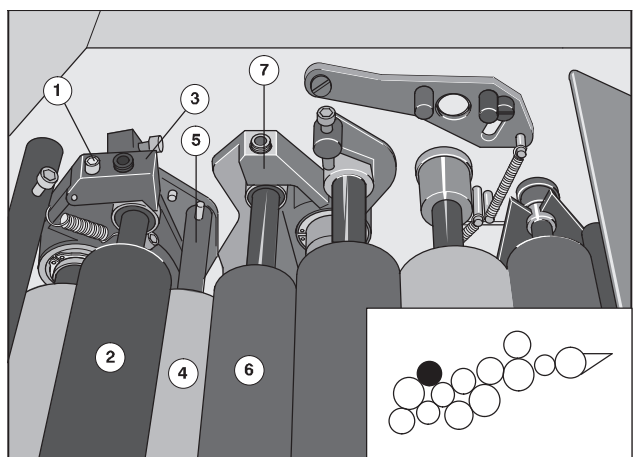


Fig. 27 Removing the 4th ink transfer roller

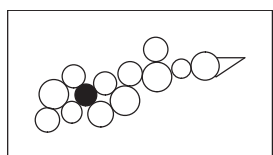


Fig. 28 3rd ink transfer roller

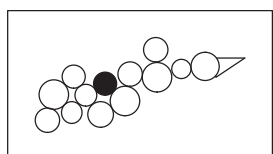


Fig. 29 2nd ink transfer roller

Rider roller

1. Pull out the rider roller (Fig. 24/1) in the direction of the arrow under the locking bolt (Fig. 24/2).

Ink ductor

1. Pull the ink vibrator (Fig. 24/3) upwards out of the retainers (Fig. 24/4) on both sides at the journal.

1st ink transfer roller

1. Press the lever on D.S. (Fig. 24/5) and O.S. towards the ink fountain.
2. Remove the 1st ink transfer roller (Fig. 24/6).

4th ink transfer roller

1. Unscrew the Allen screw (Fig. 27/1) with the operator tool; the screw remains in the latch on D.S. and O.S.
2. Fold up the latch on D.S. (Fig. 27/3) and O.S.
3. Simultaneously remove the 4th ink transfer roller (Fig. 27/2) on both sides from the bearing.

3rd ink transfer roller (Rilsan)

1. Grasp the 3rd ink transfer roller (Fig. 27/4) at the roller shafts (Fig. 27/5) and pull upwards out of the bearing unit.

2nd ink transfer roller

1. Press 2nd ink transfer roller (Fig. 27/6) out of the bearing on D.S. (Fig. 27/7) and O.S. towards the delivery.
2. Remove the 2nd ink transfer roller.

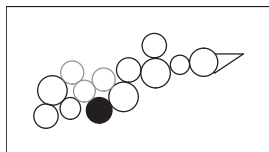


Fig. 30 1st inking form roller

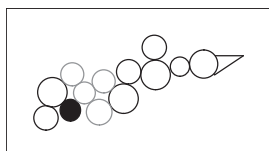


Fig. 31 2nd inking form roller

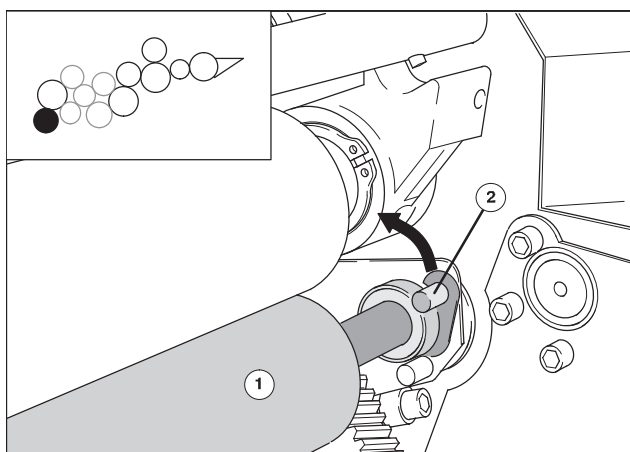


Fig. 32 Remove the 3rd inking form roller, bearing O.S.

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1st inking form roller

1. Press the lever at the journal box on D.S. and O.S. towards the feeder.
2. Remove the inking form roller upwards.

► **Tip**

When slight pressure is applied to the roller in the direction of the plate cylinder, the levers can be more easily moved.

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2nd inking form roller

1. Press the lever at the journal box on D.S. and O.S. towards the feeder.
2. Remove the inking form roller upwards.

► **Tip**

When slight pressure is applied to the roller in the direction of the plate cylinder, the levers can be more easily moved.

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3rd inking form roller

1. Open the guard above the PU 1 plate cylinder.
2. Pull the lever at the journal box on O.S. (Fig. 32/2) and D.S. upwards.
3. Remove the 3rd plate inking roller (Fig. 32/1).

5 Installing and adjusting inking rollers - PU 1

5.1 Installation sequence

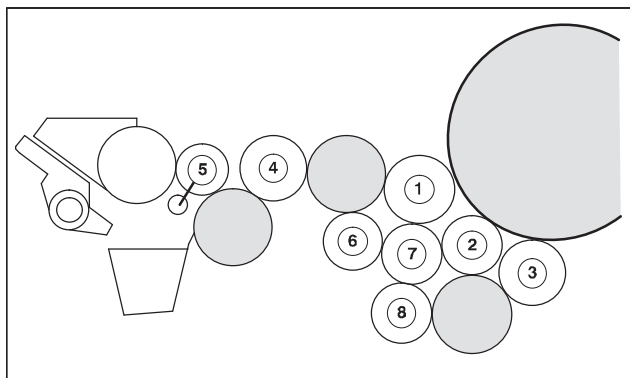


Fig. 33 PU 1: installation sequence of the rollers

Note

Before installing the inking rollers, clamp the printing plate.

The installation sequence of the inking rollers (numbering) shown in Fig. 33 must be maintained.

5.2 Installing the inking rollers

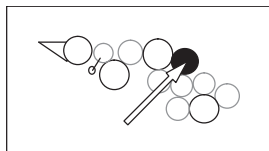


Fig. 34 1st inking form roller

1st inking form roller (yellow)

1. Place the roller in the bearing from the delivery side and press down the lever (if necessary with operator tool). Slight pressure on the roller in the direction of the arrow facilitates the locking.

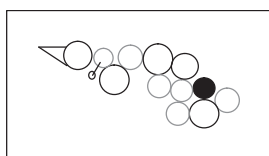


Fig. 35 2nd inking form roller

2nd inking form roller (blue)

1. Place the roller in the bearing from the delivery side and press down the lever.

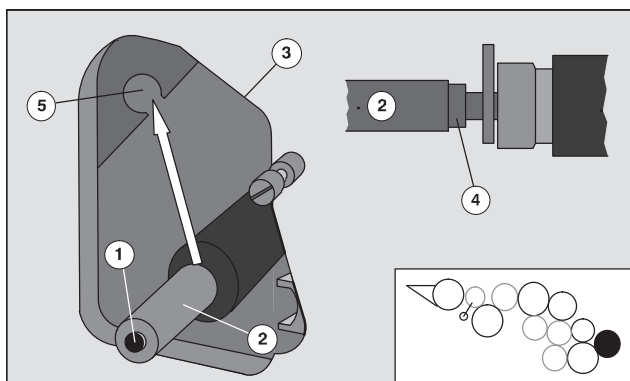


Fig. 36 Inserting the 3rd inking form roller

3rd inking form roller

1. Open the guard on the printing unit on O.S.
2. Slide the inking form roller through the opening in the side frame (Fig. 36/3) onto the shaft up to stop.
3. Slide the handle sleeve (Fig. 36/2) onto the shaft.
4. Swivel the roller upwards. Slide the thinner side of the sleeve (Fig. 36/4) into the recess of the bearing plate (Fig. 36/5).
5. Screw in the Allen screw (Fig. 36/1) and tighten.
6. Close the guard on the printing unit on O.S.

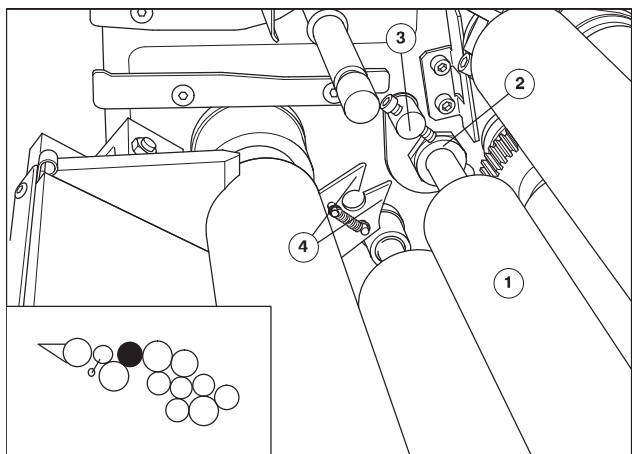


Fig. 37 Inserting the 1st ink transfer roller

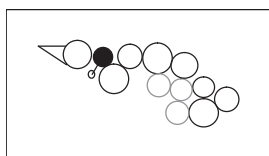


Fig. 38 Ink ductor

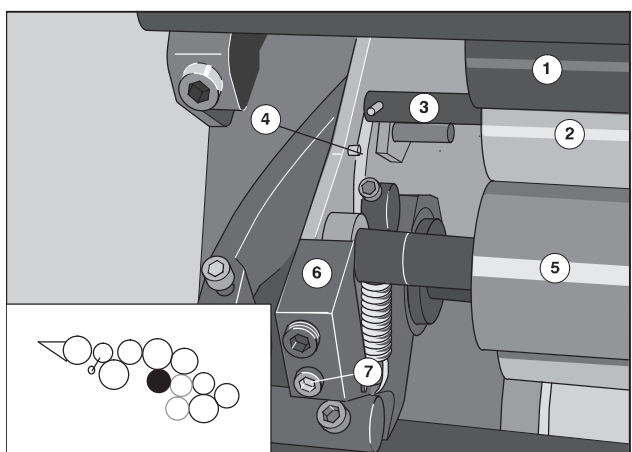


Fig. 39 2nd ink transfer roller (Rilsan)

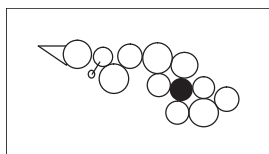


Fig. 40 3rd ink transfer roller

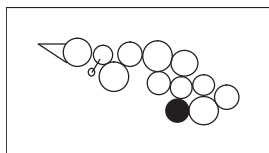


Fig. 41 4th ink transfer roller

1st ink transfer roller

The ends of the 1st ink transfer roller (Fig. 37/1) are beveled.

1. Insert the roller on D.S. and O.S. in the journal boxes (Fig. 37/2).
2. Fold up lever on D.S. (Fig. 37/3) and O.S. up to stop.

Ink ductor

1. Place the roller with the brass bearings in the retainers on D.S. (Fig. 37/4) and O.S.
2. Press the lever in the bearings until the roller engages.

The ink vibrator is pressed by spring pressure against the 1st ink transfer roller or the ink fountain roller.

2nd ink transfer roller

1. Pull the 2nd ink transfer roller (Fig. 39/1) against slight resistance from the plate cylinder into both bearings.

3rd ink transfer roller (Rilsan)

1. Set the 3rd ink transfer roller (Fig. 39/2) against the 2nd ink transfer roller and press the roller shaft (Fig. 39/3) behind the pins on D.S. (Fig. 39/4) and O.S.

4th ink transfer roller

1. Insert the 4th ink transfer roller (Fig. 39/5) on both sides in the bearing.
2. Fold up the latch on D.S. (Fig. 39/6) and O.S.
3. Screw in Allen screw (Fig. 39/7) on D.S. and O.S. using the operator tool.

5.3 Adjusting the inking rollers

Direction of rotation of the adjusting screws:

- **Inking form rollers**
Clockwise: decreases the ink stripe width; counterclockwise: increases the ink stripe width.
- **Ink transfer rollers**
Clockwise: increases the ink stripe width; counterclockwise: decreases the ink stripe width.

Inking the inking unit

1. Apply light ink (e.g. yellow) to the ink vibrator.
2. Start the press with the *Run* button (briefly press twice).
3. Let the ink distribute itself.
4. Stop the press (e.g. *Stop* button).

Ink stripe widths

Inking form rollers to the ink distributors B (Fig. 42/1) and C (Fig. 42/2): each 4 mm, to the plate (Fig. 42/3): 3 mm.

Note

Adjust the inking form rollers **first to the ink distributors**, then to the plate. If possible, check the ink stripes on the rubber rollers or press the ink stripes on paper.

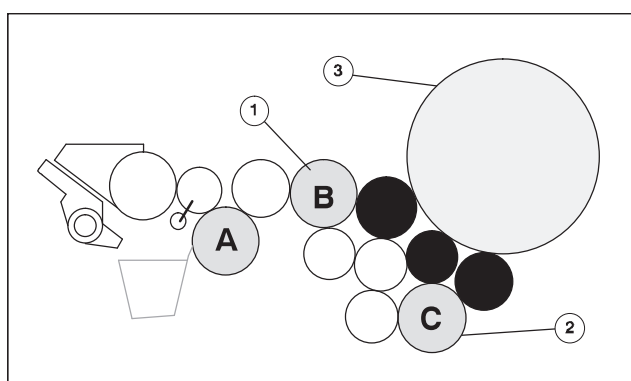


Fig. 42 Adjusting the inking form rollers

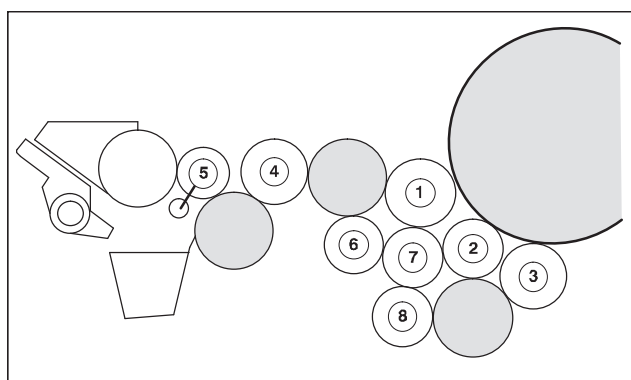


Fig. 43 Roller diagram

Adjust the inking form rollers to the ink distributors:

1. Remove the 3rd ink transfer roller (Fig. 43/7), in order to check the ink stripes of the 1st (1) and 2nd inking form rollers (2) relative to the ink distributors.

Identification of the adjusting screws:

Roller	Color/remark
1st inking form roller 1	yellow/accessible through the elongated hole in the closed guard above the plate cylinder.
2nd inking form roller 2	blue
3rd inking form roller 3	red/set inking form rollers at the plate (special function SF 02 ON).

Tab. 1 Adjusting screws for inking form rollers - ink distributor

Checking the ink stripes

1. Rotate the press a few revolutions with the crank handle, in order to distribute the ink well.
2. Let the press rest a few seconds.

3. Jerk the press forwards/backwards; continue rotating until the ink stripe is visible.
4. Check the stripe and if necessary readjust with the corresponding adjusting screw.
5. Repeat the process until the ink stripes have the required width.

Adjusting to the plate:

1. Let the press rotate at crawl speed or rotate a few revolutions with the crank handle, in order to distribute the ink well.
2. Select PU 1 with the *Printing unit selection* button (only with two-color presses).
3. Press the *Special functions* button in order to set the inking form roller at the plate.
4. Using the numeric keypad, call up special function 02 (Inking form roller ON/OFF).
5. Press the + button; the display shows ON. The inking form rollers are engaged at the plate.
6. Let the press rotate with engaged inking form rollers.
7. Stop the press.
8. Press the - button; the display shows OFF. The inking form rollers are moved away from the plate.
9. Inch the press backwards or rotate with the crank handle until all 3 ink stripes are visible on the plate.
10. Check the ink stripes and if necessary readjust with the adjusting screws.

Note

Adjust the 2nd inking form roller first.

Identification of the adjusting screws:

Roller	Color
1st inking form roller	orange
2nd inking form roller	violet
3rd inking form roller	silver

Tab. 2 Adjusting screws for inking form rollers - plate

11. Repeat the process until the ink stripes have the required width (3 mm).

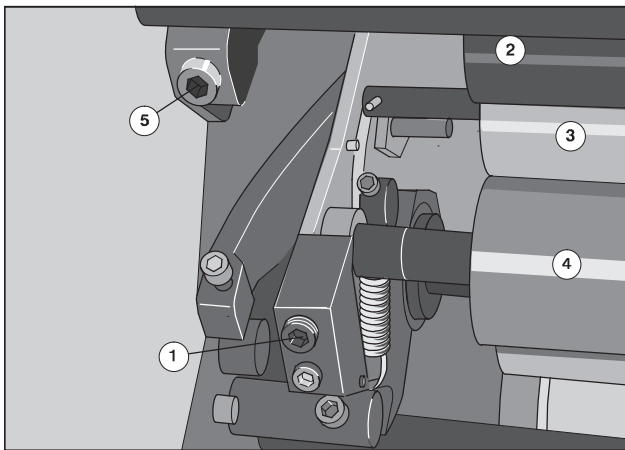


Fig. 44 Adjusting the 2nd to 4th ink transfer rollers

Adjusting the 2nd to 4th ink transfer rollers

- **3rd ink transfer roller**

The ink stripes between the 3rd ink transfer roller and the inking form rollers are preadjusted; they can be indirectly affected by adjusting the 2nd and 4th ink transfer rollers, however.

- **2nd and 4th ink transfer rollers**

Note

The **ink stripes** of the 2nd and 4th ink transfer rollers are **preset**. They may be changed only if the width is less than 3 mm or greater than 5 mm.

1. Check the ink stripes on the ink transfer rollers. - Check the stripes only **when the inking unit is engaged**.

Adjusting screw (Fig. 44/1): adjusts the 4th ink transfer roller (Fig. 44/4) for the ink distributor and for the 3rd ink transfer roller (Fig. 44/3).

Adjusting screw (Fig. 44/5): adjusts the 2nd ink transfer roller (Fig. 44/2) for the ink distributor and for the 3rd ink transfer roller (Fig. 44/3).

- Turning clockwise increases the ink stripe width; turning counterclockwise decreases the ink stripe width.

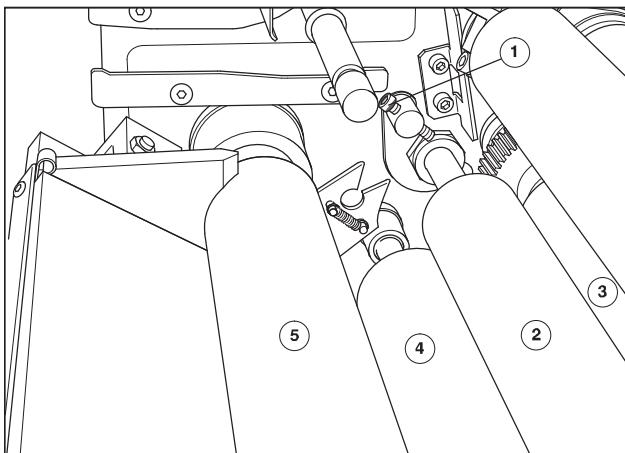


Fig. 45 Adjusting the 1st ink transfer roller

1st ink transfer roller

1. Set the ink stripe between the 1st ink transfer roller (Fig. 45/2) and the ink distributors (Fig. 45/3 and 45/4) to 4 mm using the black adjusting screw (Fig. 45/1).

Ink ductor

The ink vibrator is pressed by spring pressure against the ink fountain roller and the 1st ink transfer roller; it need not be adjusted. - Ink stripe width to the ink fountain roller (Fig. 45/5) and to the ink distributor (Fig. 45/4): 3 mm in each case.

The ink stripe width is not adjustable. If the ink stripe width deviates significantly from this value, change the ink vibrator.

6 Installing and adjusting inking rollers - PU 2

6.1 Installation sequence

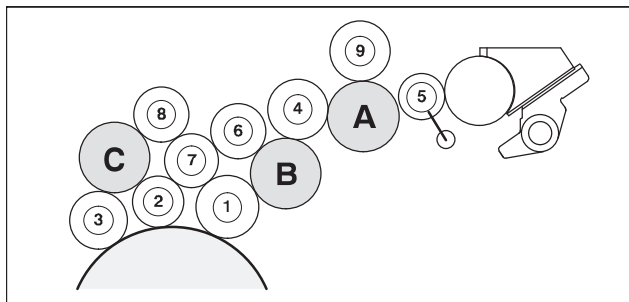


Fig. 46 Installation sequence, PU 2

The **installation sequence** of the rollers (numbering) shown in Fig.46 **must be maintained**.

6.2 Installing the inking rollers

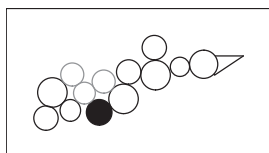


Fig. 47 1st inking form roller

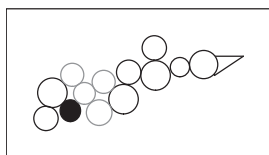


Fig. 48 2nd inking form roller

1. Open the guard above the PU 1 plate cylinder.
2. Open the guard above the PU 2 inking unit.

1st inking form roller (yellow)

1. Insert the roller in the bearing from above.
2. Press the lever at the bearing on D.S. and O.S. towards the delivery, in order to fix the roller in place in the bearing.

2nd inking form roller (blue)

1. Insert the roller from above in the bearing and using light pressure press in the bearing.
2. Press the lever at the bearing on D.S. and O.S. towards the delivery, in order to fix the roller in place in the bearing.

3rd inking form roller (red)

1. Insert the 3rd ink transfer roller (Fig. 49/1) on both sides in the bearings.
2. Press the lever at the journal box on O.S. (Fig. 49/2) and D.S. towards the blanket cylinder.

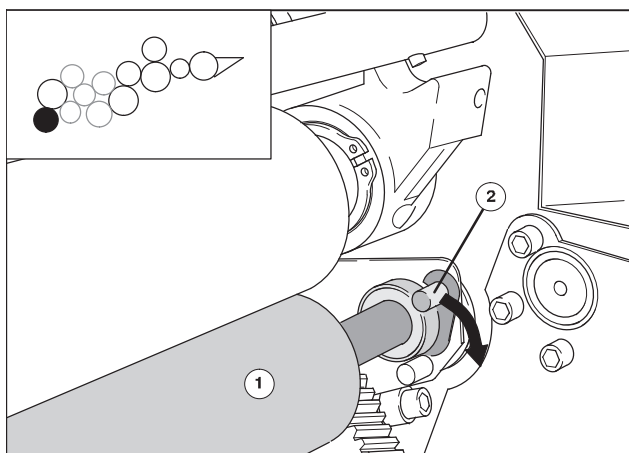


Fig. 49 Inserting the 3rd inking form roller

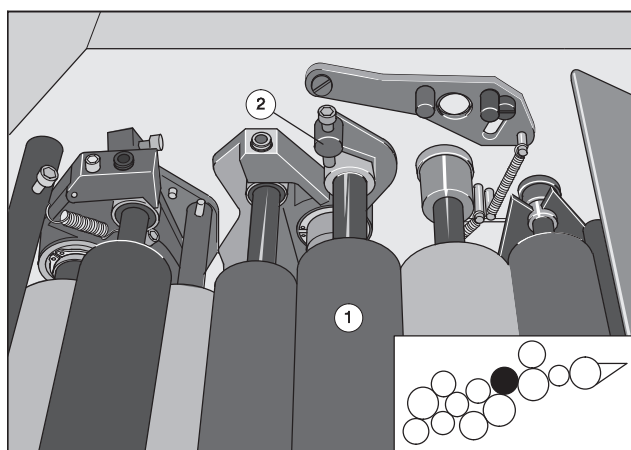


Fig. 50 Inserting the 1st ink transfer roller

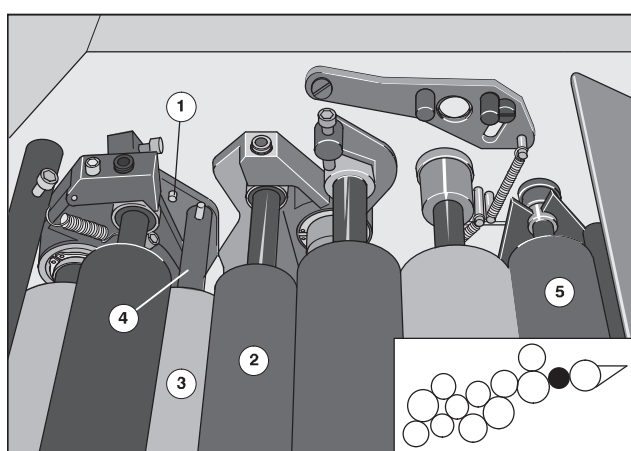


Fig. 51 Inserting the ink vibrator

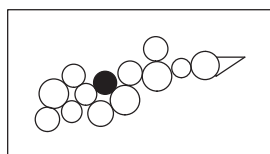


Fig. 52 2nd ink transfer roller

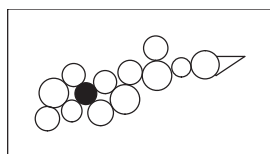


Fig. 53 3rd ink transfer roller

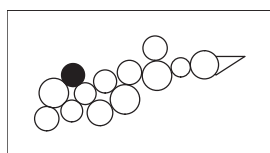


Fig. 54 4th ink transfer roller

1st ink transfer roller

The 1st ink transfer roller (Fig. 50/1) is beveled at the ends.

1. Insert the 1st ink transfer roller in the bearings.
2. Press the lever at the journal box on D.S. (Fig. 50/2) and O.S. towards the delivery across the ball bearing.

Ink ductor

1. Place the ink vibrator (Fig. 51/5) with the brass bearings in the retainers on D.S. and O.S.
2. Press the ink vibrator in the bearings until the roller engages.

2nd ink transfer roller

1. Pull the 2nd ink transfer roller (Fig. 51/2) against slight resistance from the plate cylinder into both bearings.

3rd ink transfer roller (Rilsan)

1. Set the 3rd ink transfer roller (Fig. 51/3) against the 2nd ink transfer roller and press the roller shaft (Fig. 51/4) behind the pins on D.S. (Fig. 51/1) and O.S.

4th ink transfer roller

1. Insert the 4th ink transfer roller (Fig. 55/1) on both sides in the bearings.
2. Place latches (Fig. 55/2) across the ball bearings on both sides.
3. Tighten the Allen screw (Fig. 55/3) with the operator tool.

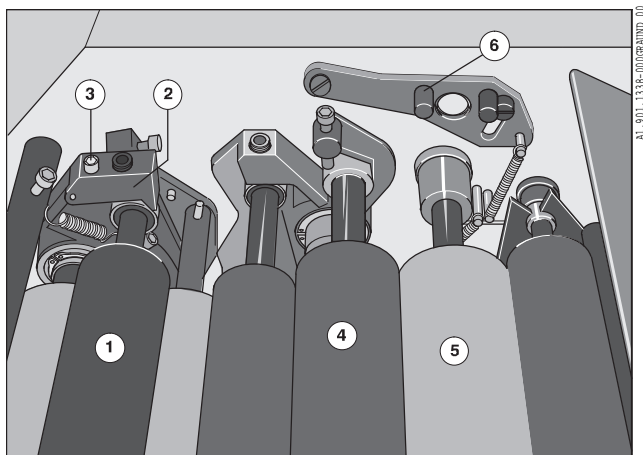


Fig. 55 Inserting the 4th ink transfer roller and rider roller

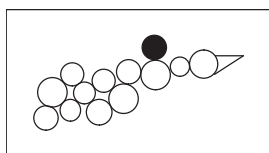


Fig. 56 Rider roller

Rider roller

1. Place the rider roller on the 1st ink transfer roller (Fig. 55/4) and the ink distributor (Fig. 55/5).
2. Press the rider rollers on both sides under the bearing bolts (Fig. 55/6, D.S.).

The rider roller is pressed against the ink distributor (Fig. 55/5) by spring pressure and need not be adjusted.

6.3 Adjusting the inking rollers

Direction of rotation of the adjusting screws:

- **Inking form rollers** Turning clockwise decreases the ink stripe width; turning counterclockwise increases the ink stripe width.
 - **Ink transfer rollers** Turning clockwise increases the ink stripe width; turning counterclockwise decreases the ink stripe width.
1. Apply light ink to the ink vibrator.
 2. Start the press with the *Run* button (briefly press twice).
 3. Let the ink distribute itself.
 4. Stop the press (e.g. *Stop* button).

Ink stripe widths

Inking form rollers to the plate: 3 mm; to the ink distributors B and C: 4 mm each

Note

Adjust the inking form rollers **first to the ink distributors**, then to the plate. If possible, check the ink stripes on the rubber rollers or press the ink stripes on paper.

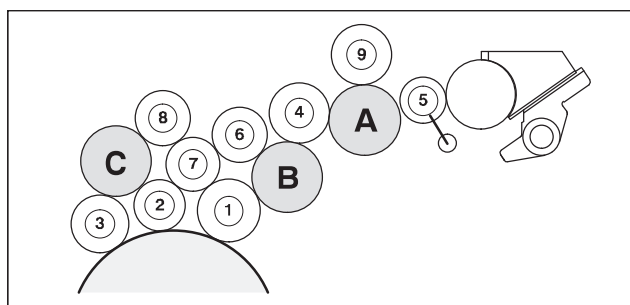


Fig. 57 Installation sequence, PU 2

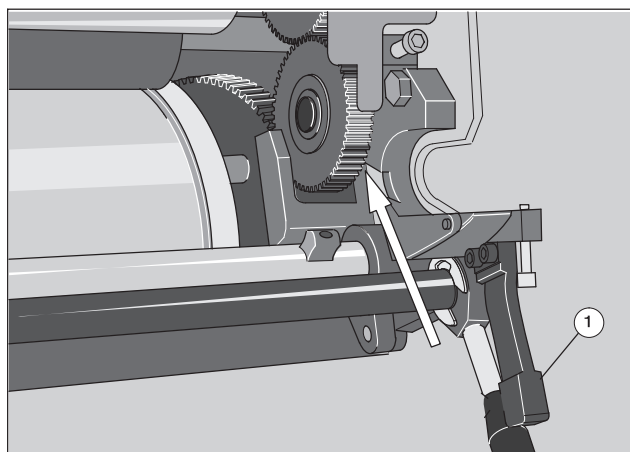


Fig. 58 Adjusting screw of the 1st inking form roller

Adjust the inking form rollers to the ink distributors

1. Remove the 3rd ink transfer roller (Fig. 57/7), in order to check the ink stripes of the inking form rollers.

Identification of the adjusting screws:

- 1st inking form roller, **yellow**: after removal of the dampening system accessible between the gear and side frame on D.S. (Fig. 58, arrow); slightly raise swiveling lever (Fig. 58/1) on D.S.
- 2nd inking form roller, **blue**
- 3rd inking form roller, **red**

Checking the ink stripes:

1. Rotate the press a few revolutions with the crank handle, in order to distribute the ink well.
2. Let the press rest a few seconds.
3. Jerk the press forwards/backwards; continue rotating until the ink stripe is visible.
4. Check the ink stripe and if necessary readjust with the corresponding adjusting screw.
5. Repeat the process until the ink stripes have the required width.

Adjusting the inking form rollers for the plate:

1. Let the press rotate at crawl speed or rotate a few revolutions with the crank handle, in order to distribute the ink well.
2. Select PU 2 with the *Printing unit selection* button.
3. Press the *Special functions* button.
4. Using the numeric keypad, call up special function 02 (Inking form roller ON/OFF).
5. Press the + button; the display shows ON. The inking form rollers are engaged at the plate.
6. Let the press rotate **with engaged inking form rollers**.
7. Stop the press.
8. Press the - button; the display shows OFF. The inking form rollers are moved away from the plate.
9. Inch the press backwards or rotate with the crank handle until all 3 ink stripes are visible on the plate.
10. Check the ink stripes and if necessary readjust with the adjusting screws.

Note

Adjust the 2nd inking form roller first.

Identification of the adjusting screws:

- 1st inking form roller, **orange**
- 2nd inking form roller, **violet**
- 3rd inking form roller, **silver**

- Repeat the process until the ink stripes have the required **width (3 mm)**.

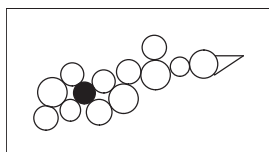


Fig. 59 3rd ink transfer roller

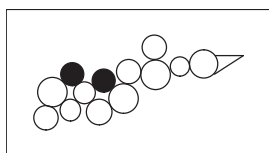


Fig. 60 2nd and 4th ink transfer rollers

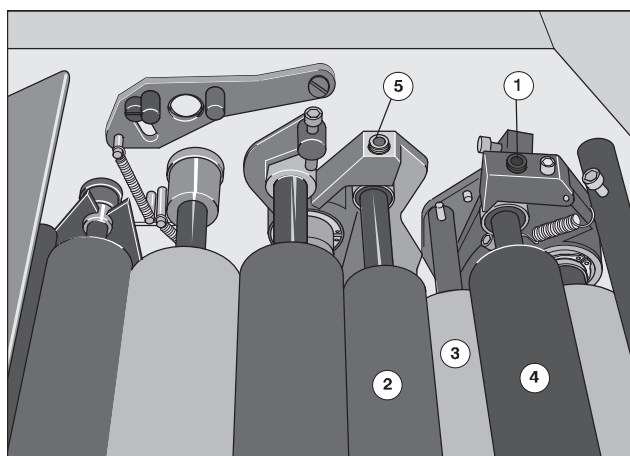


Fig. 61 2nd and 4th ink transfer rollers

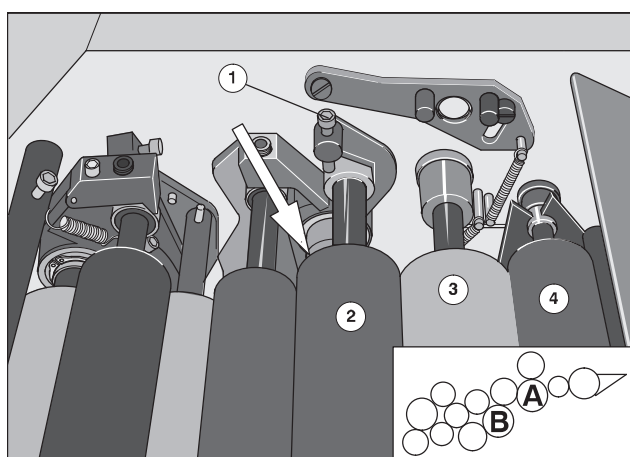


Fig. 62 1st ink transfer roller

Adjusting the 2nd to 4th ink transfer rollers

- 3rd ink transfer roller (Rilsan)

The ink stripes between the 3rd ink transfer roller and the inking form rollers are preadjusted; they can be indirectly affected by adjusting the 2nd and 4th ink transfer rollers.

- 2nd and 4th ink transfer rollers

Note

The **ink stripes** of the 2nd and 4th ink transfer rollers are **preadjusted** and may be changed only if the ink stripe width is less than 3 mm or greater than 5 mm.

- Check the ink stripes on the rollers. - Check the ink stripes only **with the inking form rollers engaged**.
 - Adjusting screw (Fig. 61/1): adjusts the 4th ink transfer roller (Fig. 61/4) for the ink distributor and for the 3rd ink transfer roller (Fig. 61/3).
 - Adjusting screw (Fig. 61/5): adjusts the 2nd ink transfer roller (Fig. 61/2) for the ink distributor and for the 3rd ink transfer roller (Fig. 61/3).
 - **Direction of rotation:** Turning clockwise increases the ink stripe width; turning counterclockwise decreases the ink stripe width.

1st ink transfer roller

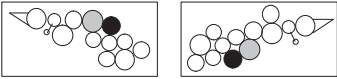
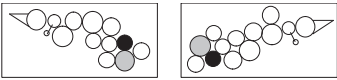
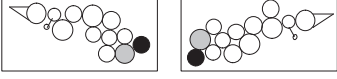
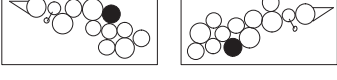
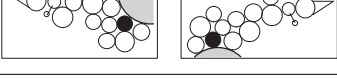
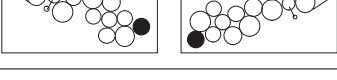
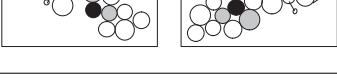

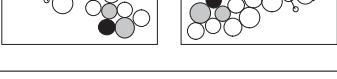
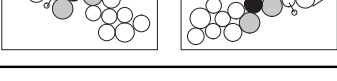
- Set the ink stripe between the 1st ink transfer roller (Fig. 62/2) and the ink distributors (Fig. 62, A and B) to 4 mm using the black adjusting screw (Fig. 62/1).

Ink ductor

Ink stripe width to the ink fountain roller and to the ink distributor (Fig. 62/3): 3 mm in each case. The ink stripe width is not adjustable. If the ink stripe width significantly deviates from this value, then replace the ink vibrator.

7 Overview of the inking unit adjustment

7.1 Adjustment positions

Position of adjustment	PU 1 PU 2	Adjusting screw	Width of contact area
1st inking form roller-distributor roller		yellow	4 mm
2nd inking form roller-distributor roller		blue	4 mm
3rd inking form roller-distributor roller		red	4 mm
1st inking form roller plate		orange	3 mm
2nd inking form roller plate		violet	3 mm
3rd inking form roller plate		silver	3 mm
2nd dampening solution transfer roller to distributor roller and to 3rd dampening solution transfer roller		-	3-5 mm (4 mm) preset
3rd dampening solution transfer roller to 1st and 2nd inking form roller		-	3-5 mm (4 mm) preset
4th dampening solution transfer roller to distributor roller and to 3rd dampening solution transfer roller		-	3-5 mm (4 mm) preset
1st dampening solution transfer roller to the distributor rollers		-	4 mm

Tab. 3 Inking unit adjustment positions

8 Inking unit washup

8.1 Preconditions

Condition

For washing the inking unit, the **inking roller washup device** in the PU to be washed must be inserted in the press (see section on "Inking roller washup device").

8.2 Washing the dampening system

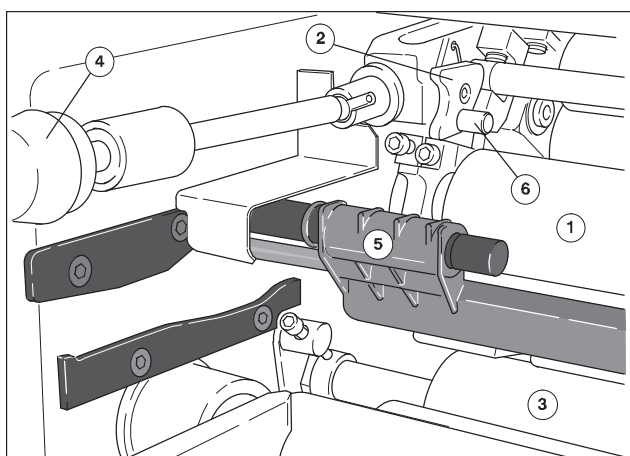


Fig. 63 Connecting dampening system 1 with inking unit 1

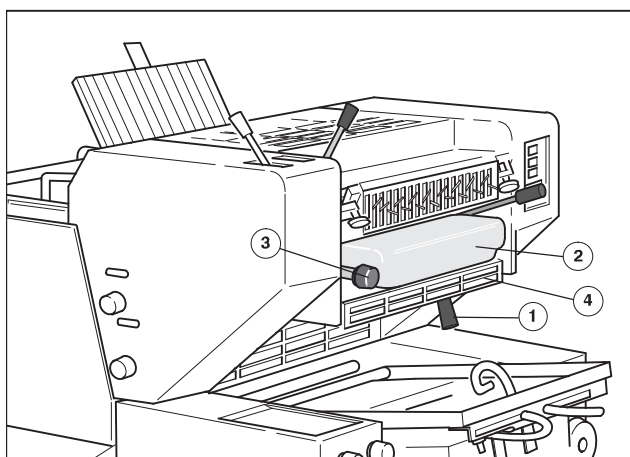


Fig. 64 Connecting dampening system 2 with inking unit 2

PU 1

1. Remove the dampening solution container.
2. Set the control knob for the dampening solution metering (Fig. 63/4) to "5".
3. Open the guard above the dampening system.
4. Detach the rear edge of the **dampening solution pan** (Fig. 63/5) from the two lateral support bolts and **pull out** of the press.
5. Raise levers on D.S. (Fig. 63/2) and O.S. simultaneously.
6. Press the dampening roller (Fig. 63/1) with the bolt (Fig. 63/6) downwards against the spring pressure, to connect the dampening system and inking unit.
7. Close the guard.

PU 2

1. Remove the dampening solution container (Fig. 64/2).
 2. Set the control knob for the dampening solution metering (Fig. 64/3) to "5".
 3. Fold up the guard under the dampening solution container.
 4. Fold down the guard in front of the dampening solution pan (Fig. 64/4).
 5. **Remove the dampening solution pan.**
 6. Close both guards.
 7. Move the lever (Fig. 64/1) upwards, in order to connect dampening system 2 with inking unit 2.
- Both PUs can be washed simultaneously.

8.3 Washup procedure

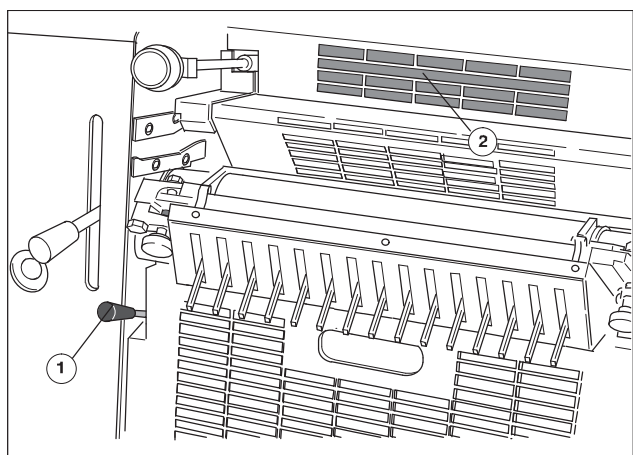


Fig. 65 Washing the inking unit guard, PU 1

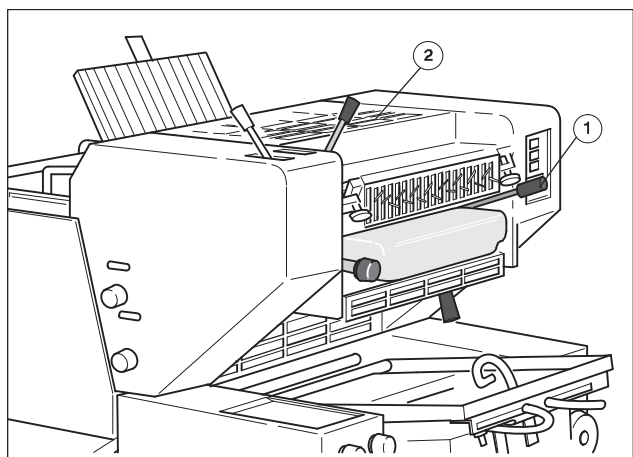


Fig. 66 Washing the inking unit guard, PU 2

1. **Before starting** the washup procedure, **press in the crank handle at the feeder**, in order to avoid inching upward of the feeder pile board.
2. Start up the press.
3. Spray a bit of roller wash through the slot in the guard (PU 1, Fig. 65/2) onto the inking rollers/dampening rollers. On the PU 2 spray through the long slot above the inking unit (Fig. 66/2).

Note

Spray **only small mounts of washing fluid** on the rollers; if necessary spray washing fluid on the rollers several times.

4. Move the lever of the inking roller washup device (PU 1 Fig. 65/1, PU 2 Fig. 66/1) upwards: the washup blade is engaged.
5. Spray the roller wash on the rollers until they are clean.



Caution - Danger of damage to the inking rollers!

The inking roller washup device must **never be engaged on dry inking rollers**.

6. Hold the press.
7. When the washup blade no longer scrapes off any ink, move the lever of the inking roller washup device (PU 1 Fig. 65/1, PU 2 Fig. 66/1) downwards. The washup blade is disengaged.
8. Remove the inking roller washup device daily and clean (see section on "Inking roller washup device").

Note

Immediately dilute any **escaped or spilt washing fluid** with water and remove.

9 Inking roller washup device

9.1 General information

1. Remove and **clean** the inking roller washup devices **daily**.
2. **Properly dispose residue of washing fluid and dissolved ink.**

9.2 Removal

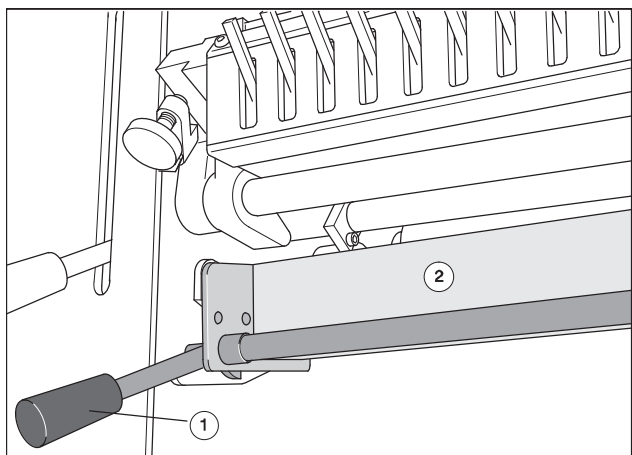


Fig. 67 Inserted inking roller washup device, PU 1

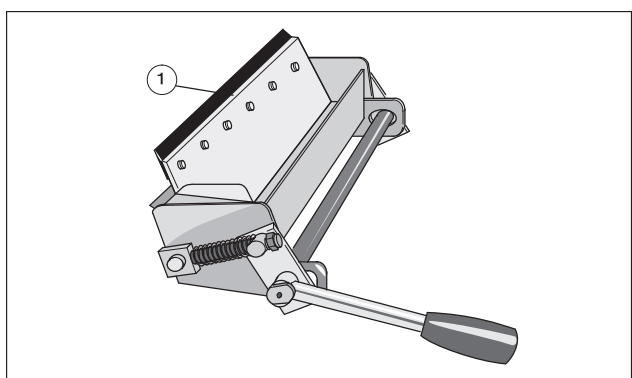


Fig. 68 Inking roller washup device, PU 1

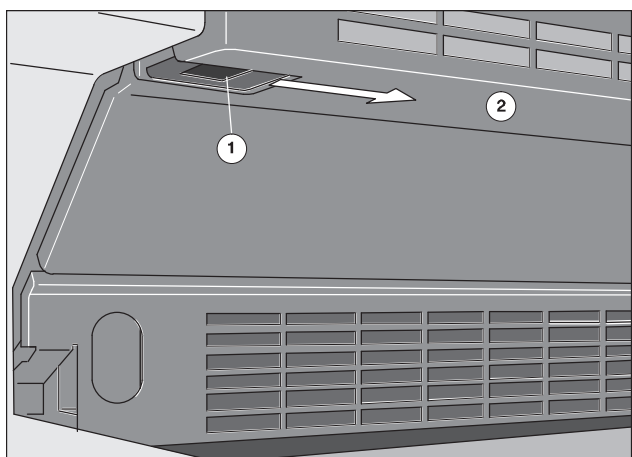


Fig. 69 Open the guard under the dampening system.

PU 1

1. Fold down the inking unit guard.
2. Pull down the lever (Fig. 67/1).
3. Pull out the inking roller washup device (Fig. 67/2).
4. **Clean** the plastic blade (Fig. 68/1) and sludge pan with roller wash.

PU 2 - two-color press

1. Press the locking devices (here O.S., Fig. 69/1) at the guard under the dampening system (Fig. 69/2) on both sides towards the press center and fold the guard downwards.

Inking unit

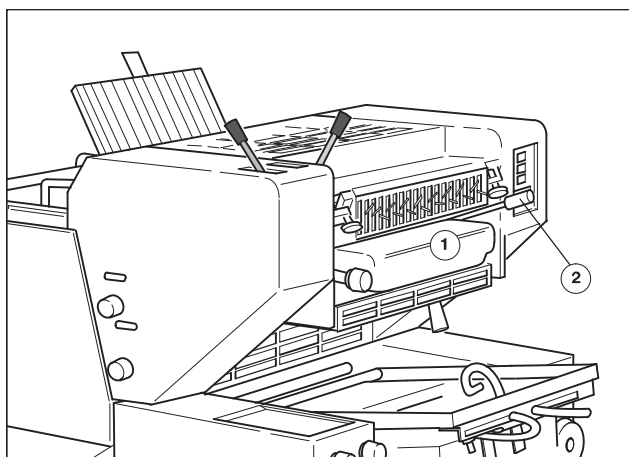


Fig. 70 Remove the dampening solution pan and inking roller washup device.

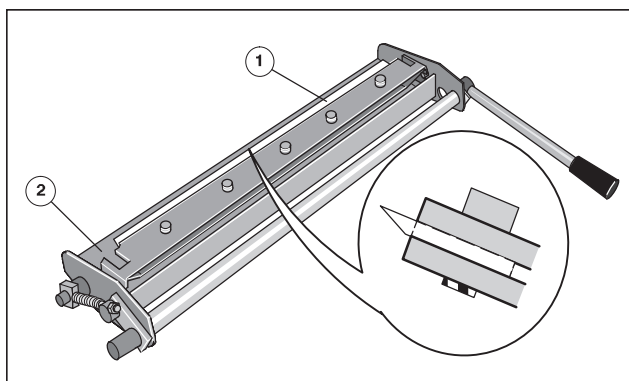


Fig. 71 Inking roller washup device, PU 2

9.3 Changing the plastic lip of the washup device

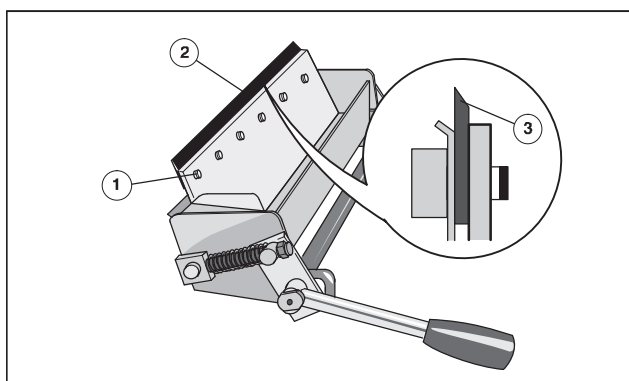


Fig. 72 Washup device, PU 1

2. Remove the dampening solution container (Fig. 70/1).
3. Fold up the guard in front of the dampening system.
4. Remove the dampening solution pan.
5. Press lever (Fig. 70/2) downwards up to stop.
6. Pull the inking roller washup device out of the guides.

7. **Clean** the plastic lip (Fig. 71/1) and sludge pan (Fig. 71/2) with roller wash.

In case of wear or damage, replace the plastic lip and of the washup device.

PU 1

1. Loosen the screw fasteners (Fig. 72/1) of the plastic lip.
2. Replace the plastic lip (Fig. 72/2); the **beveled side** of the plastic lip must be directed **towards the pan** (Fig. 72/3).
3. Retighten the screw fasteners (Fig. 72/1).

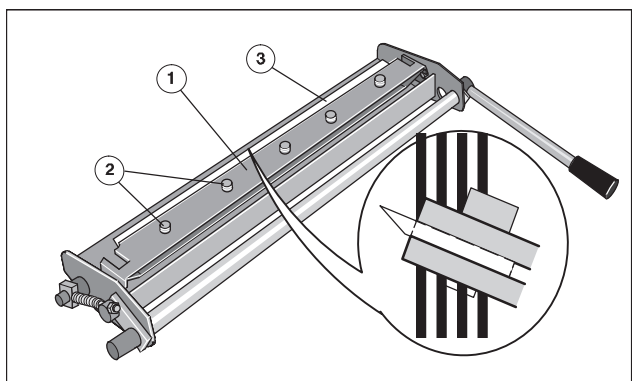


Fig. 73 Washup device, PU 2

PU 2

1. Remove the plastic lip with the support (Fig. 73/1) from the washup device.
2. Loosen all screw fasteners (Fig. 73/2) of the plastic lip.
3. Replace the plastic lip (Fig. 73/3); the **beveled side** of the plastic lip must be directed **downwards**.
4. Retighten the screw fasteners (Fig. 73/2).
5. Insert the plastic lip with the support back in the washup device.

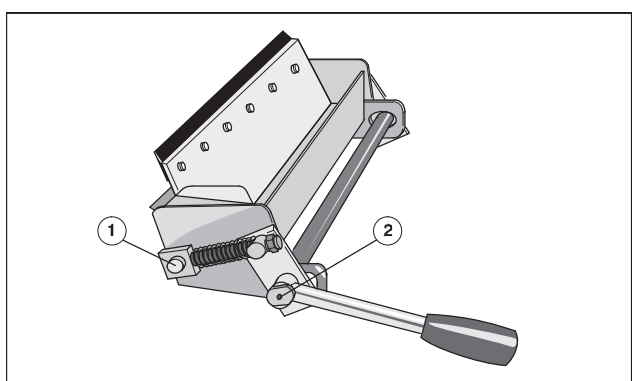
9.4 Installation

Fig. 74 Inking roller washup device

PU 1

1. Insert the inking roller washup device with the pins on D.S. (Fig. 74/1 and 74/2) and O.S. in the guides (Fig. 75/1 and 75/2).

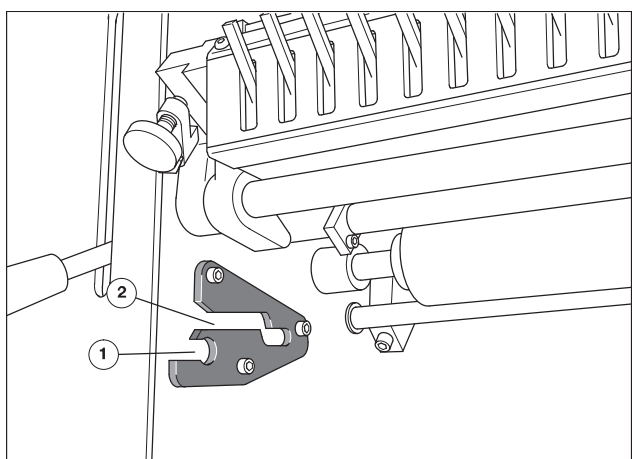


Fig. 75 Inserting the inking roller washup device

Inking unit

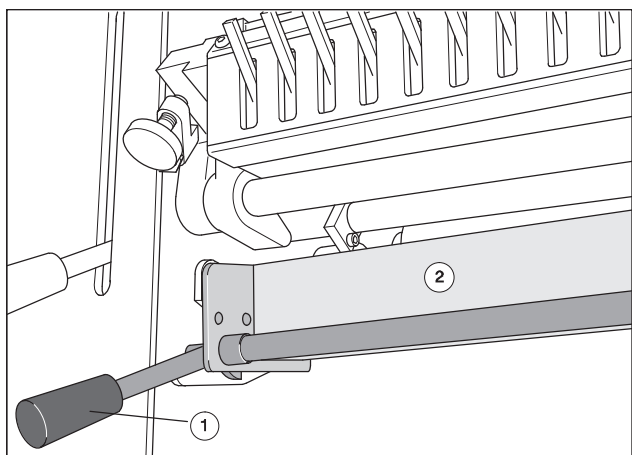


Fig. 76 Inking roller washup device inserted

2. Slide in the inking roller washup device (Fig. 76/2) up to stop. The lever (Fig. 76/1) must be pressed all the way down for insertion.

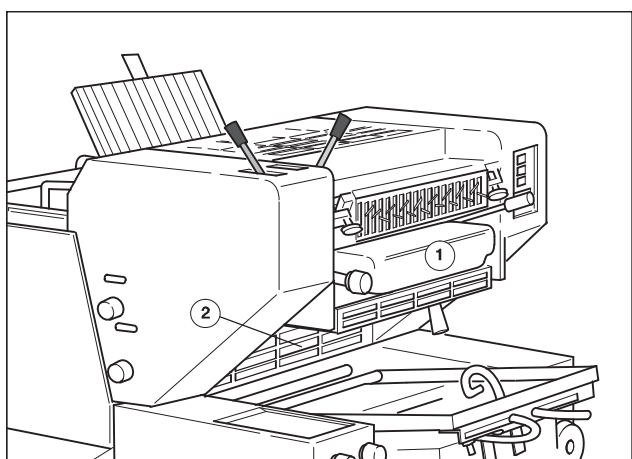


Fig. 77 PU 2: open the guard in front of the dampening system

PU 2 - two-color press

1. Remove the dampening solution container (Fig. 77/1).
2. Fold up the guard in front of the dampening system (Fig. 77/2).

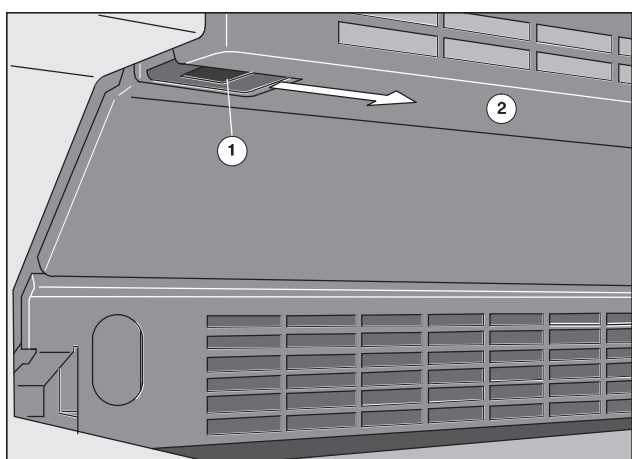


Fig. 78 Removing the dampening solution pan

3. Press the locking devices (here O.S., Fig. 78/1) at the guard under the dampening system (Fig. 78/2) on both sides towards the press center and fold the guard downwards.
4. Remove the dampening solution pan.

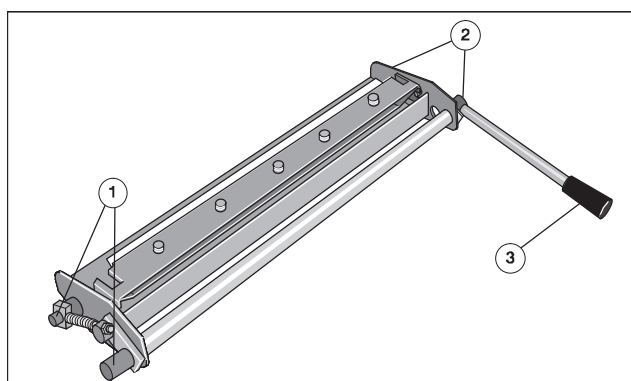


Fig. 79 PU 2: inking roller washup device

5. Insert the inking roller washup device with the pins on O.S. (Fig. 79/1) and D.S. (Fig. 79/2) in the corresponding guides.
6. Slide in the inking roller washup device up to stop.
7. Gently press lever (Fig. 79/3) upwards for insertion.

10 Maintenance and storage of rollers

10.1 Replacing the ball bearings of the rollers

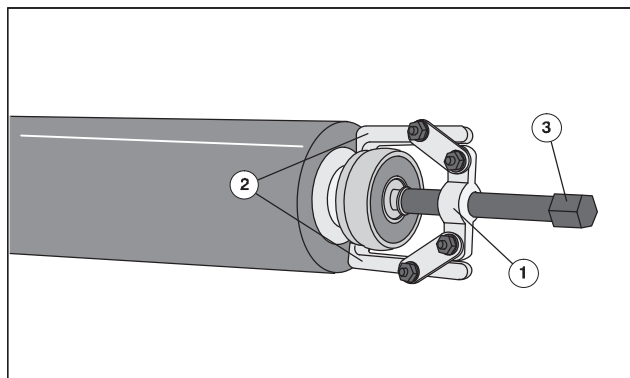


Fig. 80 Pulling off the ball bearings

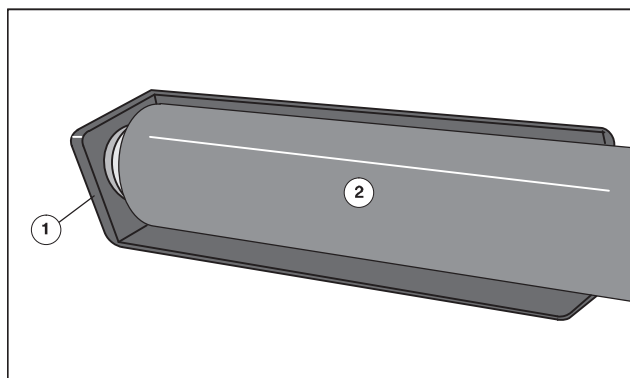


Fig. 81 Attaching the ball bearings

Pulling the ball bearings off the roller journals

An **extractor** (Fig. 80/1) is provided for pulling off the ball bearings.

1. Attach the claws of the extractor to the ball bearing (Fig. 80/2).
2. By turning the hexagon (Fig. 80/3) with a fork wrench, pull the ball bearing off the roller journal.

Attaching the ball bearings to the roller journals

A special tool (angle with welded base plate, Fig. 81/1) is provided for attaching the ball bearings.

Attach the bearing:

1. Attach the ball bearing to the roller journal.
2. Place the angle (Fig. 81/1) against the rubber roller (Fig. 81/2).
3. By gently tapping (rubber or wooden hammer) the base plate, press the ball bearing on the spindle. Make sure that the angle lies flat against the rubber roller.

10.2 Storing the rollers in case of a longer press standstill

1. **Before a longer press standstill**, remove the inking rollers, to prevent print spots on the rollers.
2. Store the rollers **on their sides**, so that they lie with the roller cores on a corresponding device.

Dampening system

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Dampening system

9	Overview of dampening unit adjustment	C.4.25
9.1	PU 1	C.4.25
9.2	PU 2	C.4.25

1 Dampening system - safety instructions

1.1 To be observed when working at the press



Warning - Risk of injury from rotating rollers and cylinders!

When cleaning the rollers and cylinders, the ball of your thumb must point in the direction of the infeed gap and your fingers in the direction of the outlet gap. Select the corresponding direction of rotation.

2 Design of the dampening systems

2.1 Roller diagram

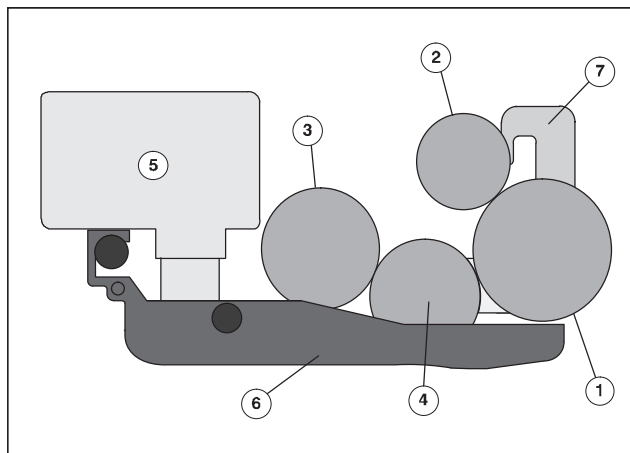


Fig. 1 Dampening system, PU 1

Printing unit 1

- 1 Dampening form roller Ø 63 mm
- 2 Dampening distributor (Rilsan) Ø 42,5 mm
- 3 Dampening roller (rubber) Ø 54 mm
- 4 Water pan roller (hard rubber) Ø 51 mm
- 5 Dampening solution container
- 6 Dampening solution pan
- 7 Lateral gaskets

The water pan roller (Fig. 1/4) is not removable.

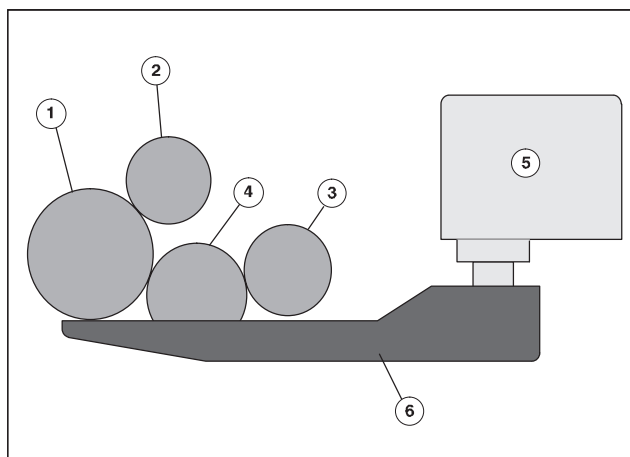


Fig. 2 Dampening system, PU 2

Printing unit 2

- 1 Dampening form roller Ø 63 mm
- 2 Dampening distributor (Rilsan) Ø 42,5 mm
- 3 Metering roller (rubber) Ø 44 mm
- 4 Water pan roller (hard rubber) Ø 51 mm
- 5 Dampening solution container
- 6 Dampening solution pan

The dampening system in PU 2 can be removed completely. See Chapter "Removing the dampening system - PU 2".

The water pan roller cannot be removed from the dampening system.

2.2 Dampening solution container

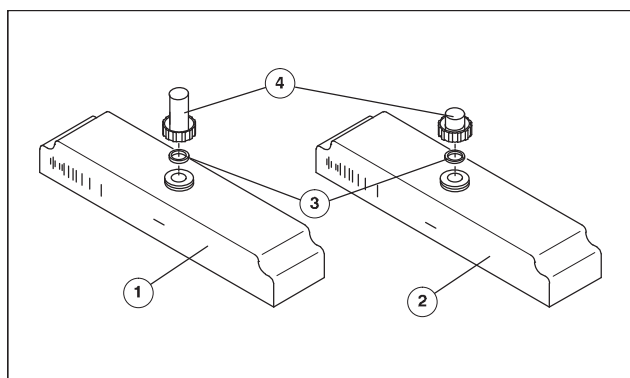


Fig. 3 Dampening solution container

There is a scale on the outside of the dampening solution containers which can be used when filling the containers with dampening solution and additives.

The dampening solution containers are closed with a valve. After inserting the dampening solution containers into the press, the pin in the valve is pressed upwards by the dampening solution pan and the dampening solution runs into the dampening solution pan.

- 1 Dampening solution container PU 1 with scale
- 2 Dampening solution container PU 2 with scale
- 3 Gasket
- 4 Valve

2.3 Topping up dampening solution

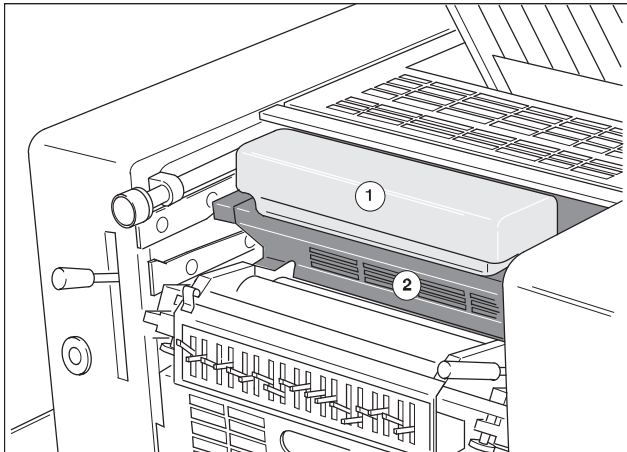


Fig. 4 Dampening solution container PU 1

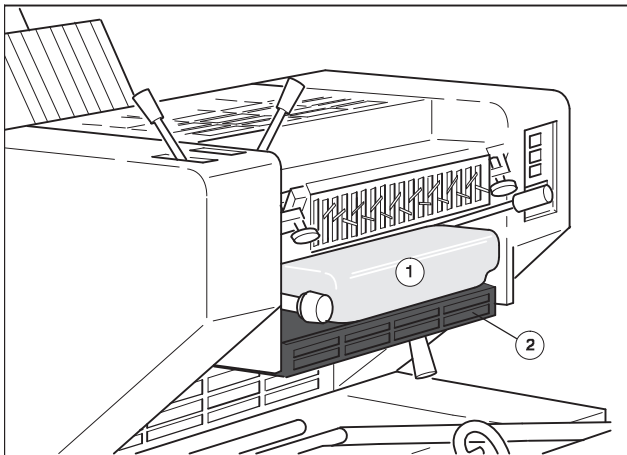


Fig. 5 Dampening solution container PU 2

1. Remove the dampening solution container (PU 1 Fig. 4/1, PU 2 Fig. 5/1).
2. Unscrew the valve on the dampening solution container.
3. Fill up the dampening solution container; the water and additives can be mixed in accordance with the scale on the dampening solution container.
4. Check the gasket on the valve and replace if necessary.
5. Screw the valve firmly back onto the dampening solution container.
6. Insert the dampening solution container together with the valve into the opening on the dampening system guard (PU 1 Fig. 4/2, PU 2 Fig. 5/2).

2.4 Dampening solution pan

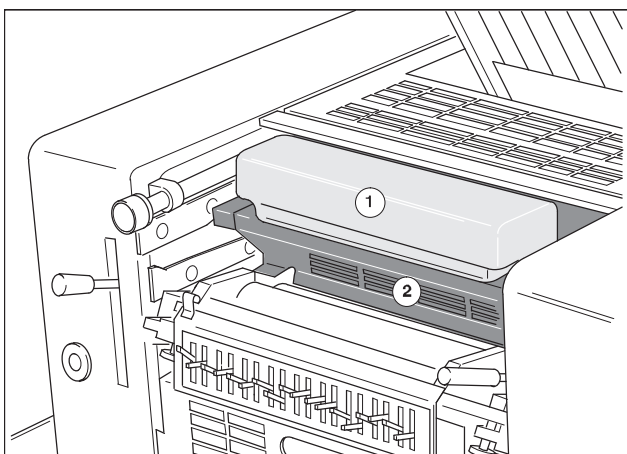


Fig. 6 Dampening solution container, PU 1

PU 1

1. Remove the dampening solution container (Fig. 6/1).
2. Open the guard above the dampening system (Fig. 6/2).

Dampening system

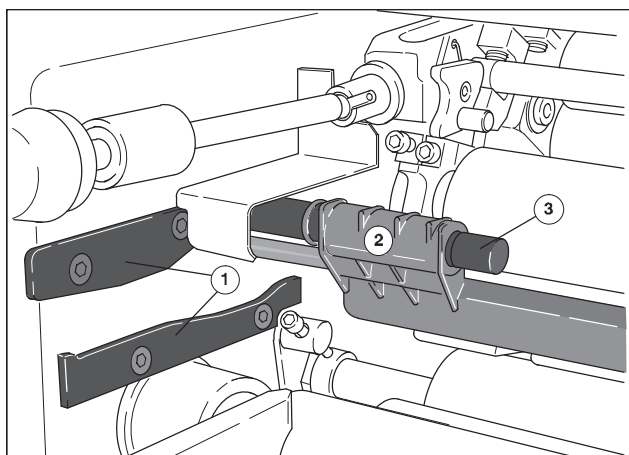


Fig. 7 Dampening solution pan, PU 1

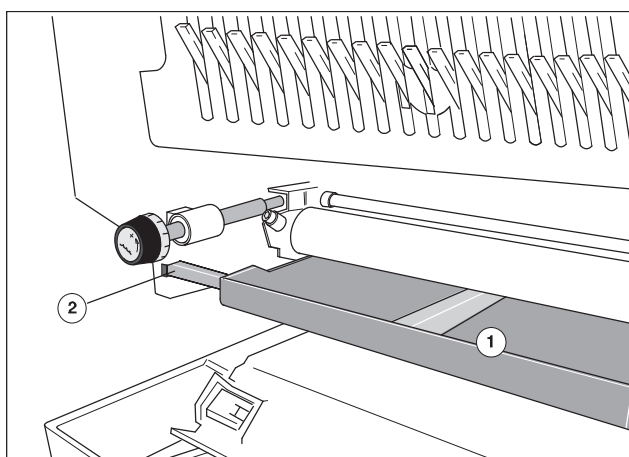


Fig. 8 Dampening solution pan, PU 2

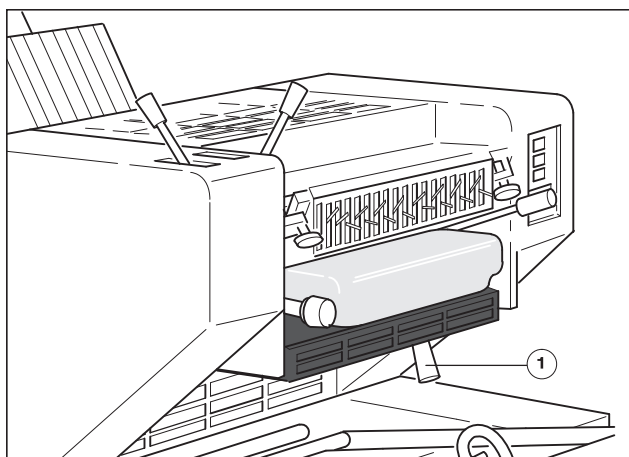


Fig. 9 Lever for separating the inking unit and dampening system

To remove the pan:

1. Unhook the rear edge of the dampening solution pan (Fig. 7/2) from the two lateral support bolts (Fig. 7/3) and remove the pan from the press between the guide pieces (Fig. 7/1).

To insert the pan:

1. Push the dampening solution pan under the two support bolts (Fig. 7/3) into the press. At the same time move the lateral bolts on the pan between the guide pieces in the side wall (Fig. 7/1).
2. Hook the rear edge of the dampening solution pan (Fig. 7/2) onto the two lateral support bolts (Fig. 7/3).

PU 2 - two-color press

1. Remove the dampening solution container.
2. Open the guard under the dampening system.

To remove the pan:

The dampening solution pan (Fig. 8/1) has to be **removed** from the press **before the dampening system can be washed**.

3. Pull the dampening solution pan (Fig. 8/1) out of the press. When doing so, make sure that the pan does not tip towards the press while it is being removed from the support post. The front edge of the pan must not touch the water pan roller.

To insert the pan:

The dampening solution pan **cannot** be inserted into the press if the dampening system is in the **washing position**.

1. Pull the lever (Fig. 9/1) downwards to separate the dampening system from the inking unit.
2. Place the dampening solution pan onto the support bar under the dampening rollers and **carefully** insert the pan horizontally. Here, insert the lateral bolts on the pan into the guide pieces on the side frame (Fig. 8/2).



Caution - Do not damage the water pan roller!

The front edge of the pan must **not touch** the water pan roller.

3 Adjusting the dampening solution amount

3.1 Metering the dampening solution amount

The dampening solution amount is metered with a control knob from 1 (minimum) to 6 (maximum dampening solution amount). The control knob engages in the particular position.

PU 1

1. Press in the control knob (Fig. 10/1) and turn to "+", in order to reduce the squeeze between the water pan roller and dampening form roller; the dampening solution amount increases.

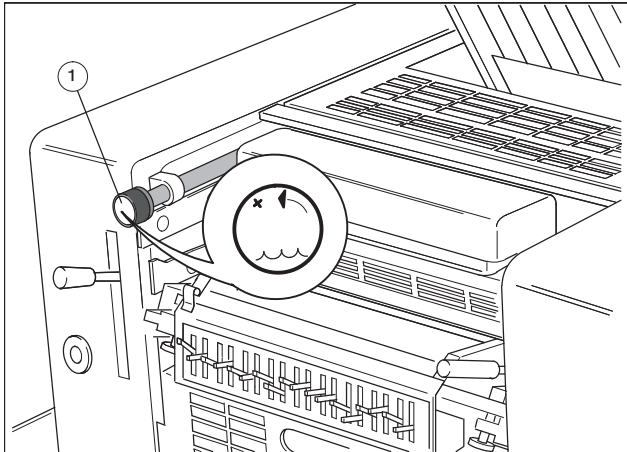


Fig. 10 Control knob for the dampening solution amount, PU 1

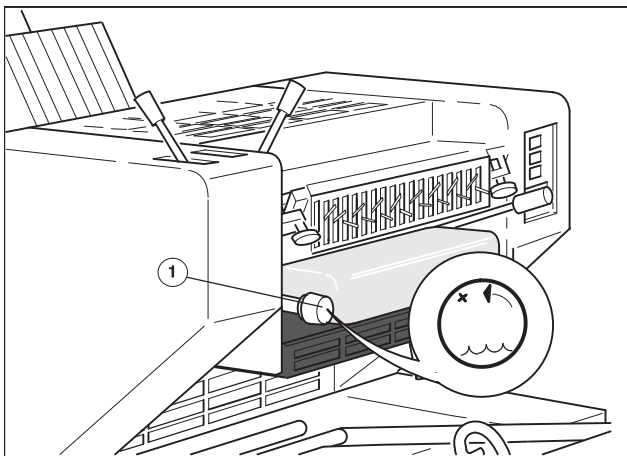


Fig. 11 Control knob for the dampening solution amount, PU 2

PU 2

1. Press in the control knob (Fig. 11/1) and turn to "+", in order to reduce the squeeze between the metering roller and water pan roller; the dampening solution amount increases.

3.2 Predampening the printing plate



Fig. 12 *Predampen plate* button

Before print start, the plate is predampened with the preselected number of revolutions.

Adjustment range: 0 to 9 revolutions.

1. Press the *Predampen plate* button; the display shows above the button the number of revolutions last set, in this case 3 (Fig. 12/1).
2. Set the number of revolutions with the + or - button (max. 9).
3. Press the *Predampen plate* button again to confirm the input; the display again shows the previous state.

Dampening system

3.3 Information on printing

- The dampening solution setting can be different in the two PUs.
- Use as little dampening solution as possible when printing.
- After a longer operating period and/or with low printing speed, it may be necessary to regulate the dampening solution amount again.

4 Dampening system washup

4.1 Preconditions

The dampening system is washed **together with the inking unit**. For this purpose you must

- insert the inking unit washup device (see section on "Inking unit, inking unit washup") and
- connect the dampening system with the inking unit.

4.2 PU 1: engage the dampening roller at the ink distributor

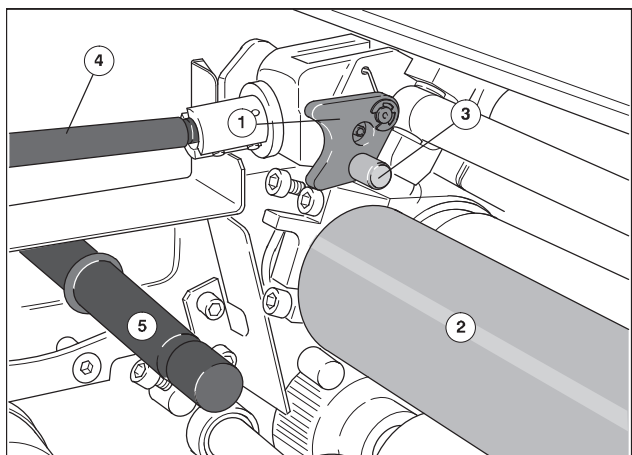


Fig. 13 Connecting the dampening system and the inking unit

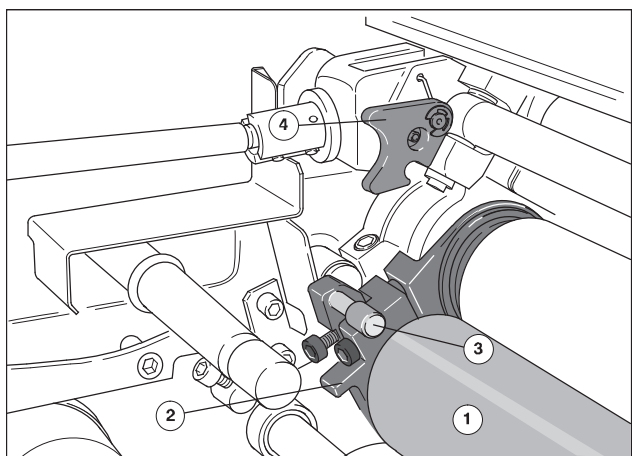


Fig. 14 Dampening distributor in washing position

Connecting the dampening system with the inking unit

1. Remove the dampening solution container.
2. Set the control knob for the dampening solution metering (Fig. 13/4) to position "5".
3. Open the guard above the dampening system.
4. Detach the rear edge of the dampening solution pan from the two lateral support bolts (Fig. 13/5) and pull out of the press.
5. Raise levers (Fig. 13/1) on D.S. and O.S. simultaneously.
6. Press the dampening roller (Fig. 13/2) with the bolt (Fig. 13/3) downwards against the spring pressure, to connect the dampening system and inking unit.
7. Close guard and let press start running.

Washup procedure

1. Spray washing fluid through the opening in the guard first on D.S., then on O.S. (or vice versa) on to the dampening rollers.
2. **After ending the washup procedure**, lift the dampening roller (Fig. 14/1) at the cam plates (Fig. 14/2) on the bearing cap on both sides.
3. Let the bolts (Fig. 14/3) on D.S. and O.S. at the lever (Fig. 14/4) engage.

4.3 PU 2: engage the dampening form roller at the ink distributor

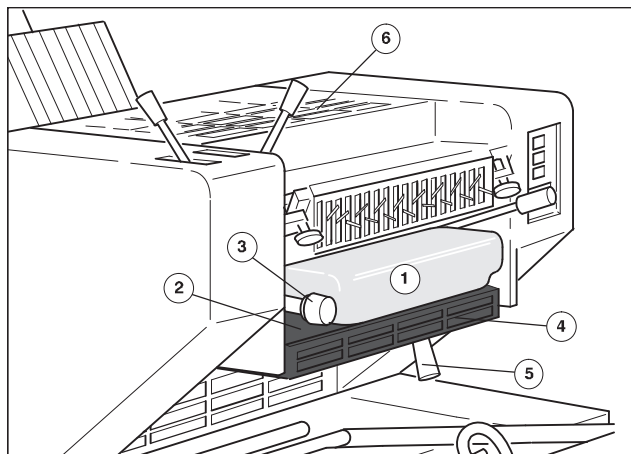


Fig. 15 Dampening solution container and control knob for dampening solution metering

Connecting the dampening system with the inking unit
Both dampening systems can be washed simultaneously.

1. Remove the dampening solution container (Fig. 15/1).
2. Set the control knob for the dampening solution metering (Fig. 15/3) to position "5".
3. Fold up the guard under the dampening solution container (Fig. 15/2).
4. Fold down the guard in front of the dampening solution pan (Fig. 15/4).
5. **Remove the dampening solution pan.**
6. Move the lever (Fig. 15/5) upwards, in order to connect dampening system 2 with inking unit 2.

Washup procedure

1. Close both guards and let press start running.
2. Spray washing fluid on the inking rollers through the slot in the guard above the inking unit (Fig. 15/6). For a better washup result, first spray rollers with washing fluid on one side, then after a while wash the other side.

Note

To prevent contamination through excess washing fluid, spray **only small amounts of washing fluid** on the rollers.

3. After ending the washup procedure, swivel the lever (Fig. 15/5) downwards and thereby separate the dampening system from the inking unit.

Note

Immediately dilute any **escaped or spilt washing fluid** with water and remove.

5 Relieving the rollers

5.1 PU 1: dampening form roller - water pan roller

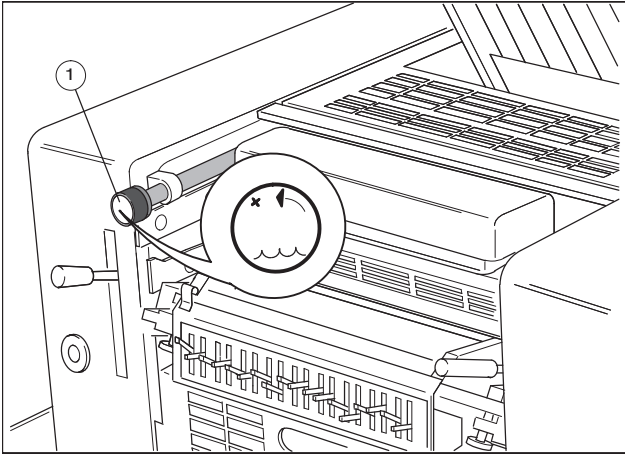


Fig. 16 Dampening solution metering knob, PU 1

Before longer work interruptions (e.g. overnight, end of shift, weekend), separate the dampening form roller and water pan roller.

1. To separate the dampening form roller from the water pan roller, press in the control knob (Fig. 16/1) and turn counterclockwise up to stop.

5.2 PU 2: metering roller - water pan roller

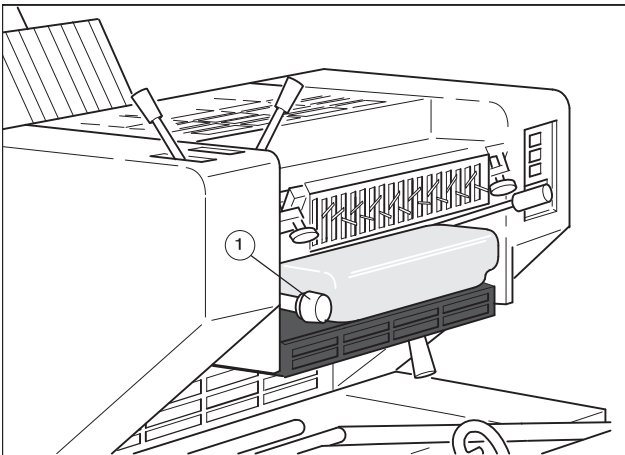


Fig. 17 Dampening solution metering knob, PU 2

Before longer work interruptions (e.g. overnight, end of shift, weekend), move the metering roller away from the water pan roller.

1. To move the metering roller from the water pan roller, press in the control knob (Fig. 17/1) and turn counterclockwise up to stop.

5.3 Longer downtimes of the press

1. **Before longer down times** of the press, remove the dampening rollers.
2. To avoid print spots, store the rollers with the roller cores on top.

Before longer work interruptions (e.g. overnight, weekend)

1. **PU 1:** using the adjusting screws, move the dampening distributor away from the dampening form roller and the dampening form roller away from the water pan roller.
 2. **PU 2:** by turning the metering knob, move the metering roller away from the water pan roller.
- After installation of the rollers, the dampening system need not be adjusted; the adjustment is retained.

6 Dampening solution pan

6.1 PU 1

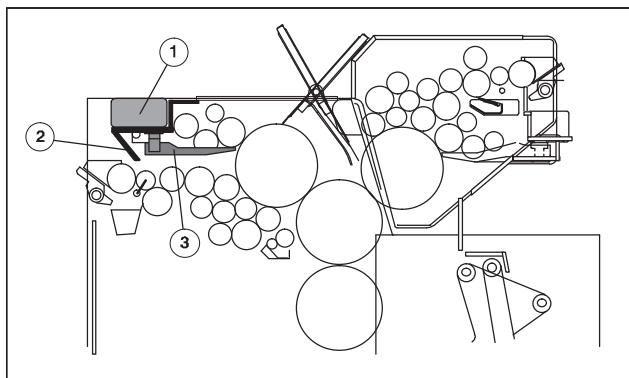


Fig. 18 Removing the dampening solution pan

Removing the dampening solution pan

1. Lift the dampening solution container upwards out of the dampening unit guard. The valve closes automatically.
2. Swing up the guard above the dampening unit.
3. Take out the dampening solution pan.

Insert the dampening solution pan

1. Push the dampening solution pan under the two support bolts into the press; while doing so move the lateral bolts on the pan between the guide pieces on the side frame.
2. Hook the rear edge of the dampening solution pan into the support bolts.

6.2 PU 2

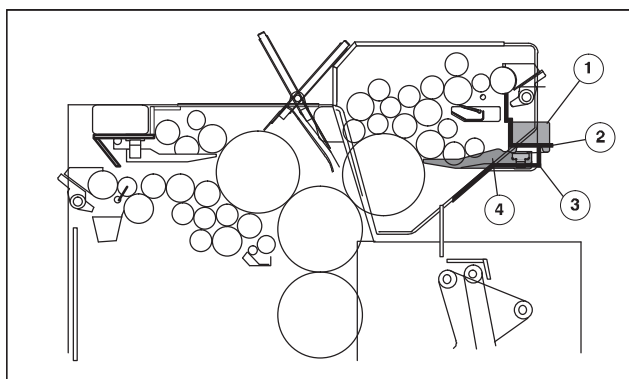


Fig. 19 Removing the dampening solution pan

Remove the dampening solution pan

Note

Remove the dampening solution pan (Fig. 19/4) **before** you put the dampening unit to **the washing position**.

1. Remove the dampening solution container (Fig. 19/1) in an upward direction.
2. Swing up the guard over the dampening unit (Fig. 19/2).
3. Push both locks on the guard under the dampening unit (Fig. 19/3) on OS (Fig. 20/1) and DS towards the middle of the press and swing down the guard.
4. Unhinge the dampening solution pan from the side frame and pull out of the press **horizontally**. In doing so, allow the pan to lie on the supporting rod as long as possible so that the water pan roller is not touched by the front edge of the pan.

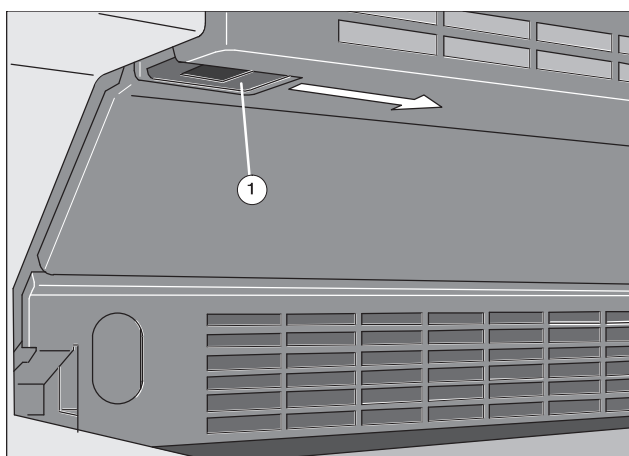


Fig. 20 Guard under the dampening unit: lock

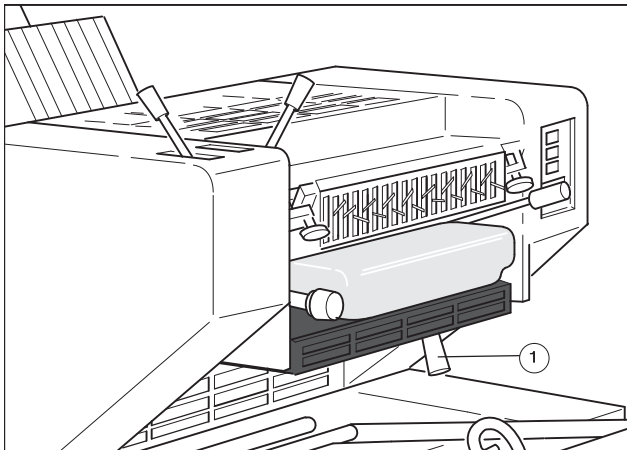


Fig. 21 Separating the inking unit and dampening unit

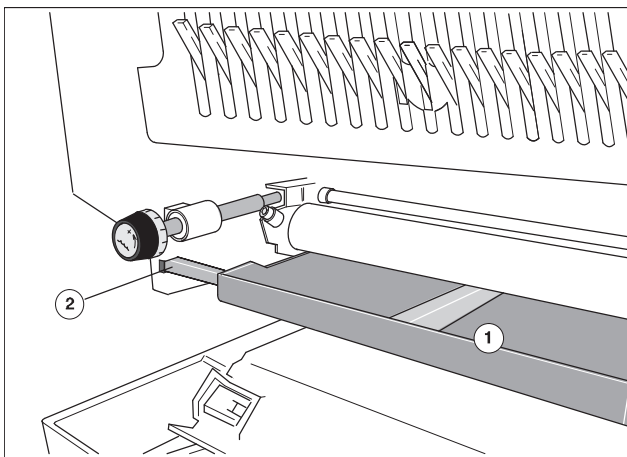


Fig. 22 Inserting the dampening solution pan

Inserting the dampening solution pan

- The dampening solution pan cannot be inserted into the press while the dampening unit is in wash-up position.
1. Move the lever (Fig.21/1) downwards to separate the dampening unit and inking unit.
 2. Push the dampening solution pan (Fig.22/1) under the dampening rollers onto the support post. In this process insert the lateral pins on the pan into the guide pieces on the side frame (Fig. 22/2).
 3. Close the guards.

7 Dampening unit gaskets PU 1

7.1 Removing the gaskets

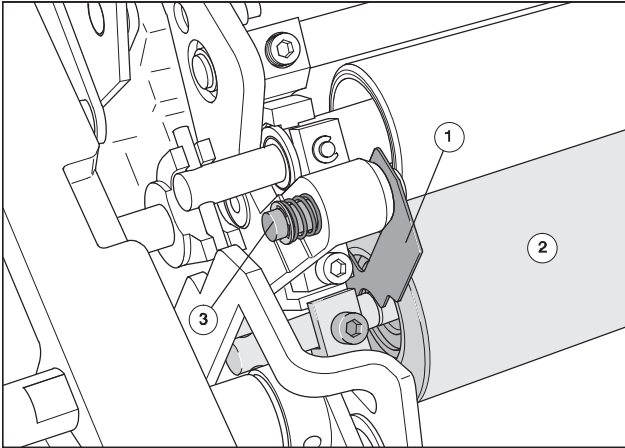


Fig. 23 Dampening unit gaskets

Lateral gaskets (Fig. 23/1) **only exist in the dampening system of PU 1**. They provide a lateral seal of the gap between dampening form roller and water pan roller. They must be removed and **cleaned daily**

Prior to removing the dampening form roller

(Fig. 23/2), you must remove the gaskets (Fig. 23/1).

1. Close the guard above the dampening system.
2. Open the guard above the plate cylinder.
3. Press the spring bolt (Fig. 23/3) on the side frame of the dampening system towards the press center.
4. Pull out the gasket (Fig. 23/1) from the top, and swing it toward the plate cylinder.
5. Use the same procedure to remove the gasket at the other side.
6. **Clean** the gaskets.

There are no gaskets in **PU 2**.

7.2 Inserting gaskets

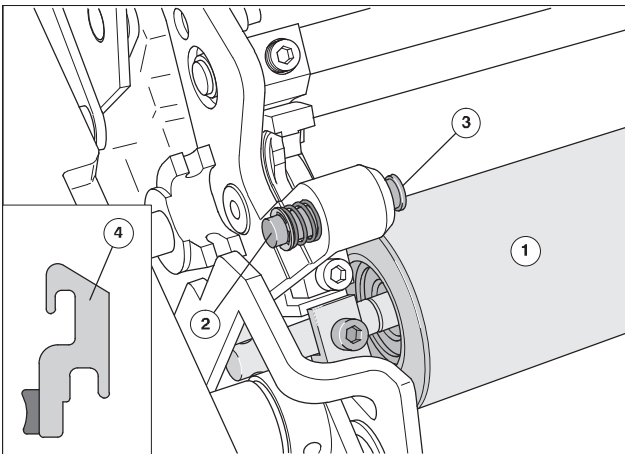


Fig. 24 Inserting the dampening unit gaskets

After cleaning and after the installation of the dampening form roller (Fig. 24/1) and the dampening distributor, the gaskets (Fig. 24/4) must be inserted. The plastic gasket shows towards the roller body, the beveled side of the gasket holder towards the plate cylinder.

1. Push the gasket (Fig. 24/4) between the swiveling lever of the dampening form roller and the end face of the dampening form roller downwards.
2. Press the spring bolt (Fig. 24/2) on the side frame of the dampening system towards the press center.
3. Hook the recess on the gasket holder in the bolt (Fig. 24/3) you have pressed out, and press it slightly down.
4. Release the spring bolt (Fig. 24/2).
5. Use the same procedure to insert the gasket at the other side.
6. Close the guard above the plate cylinder.

8 Dampening rollers

8.1 Removing the rollers - PU 1

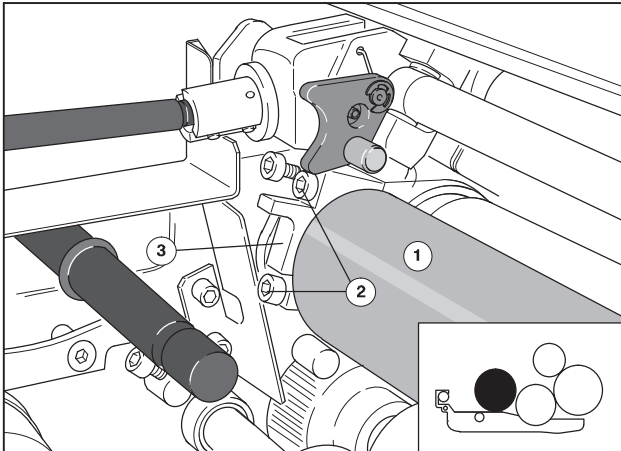


Fig. 25 Removing the dampening roller

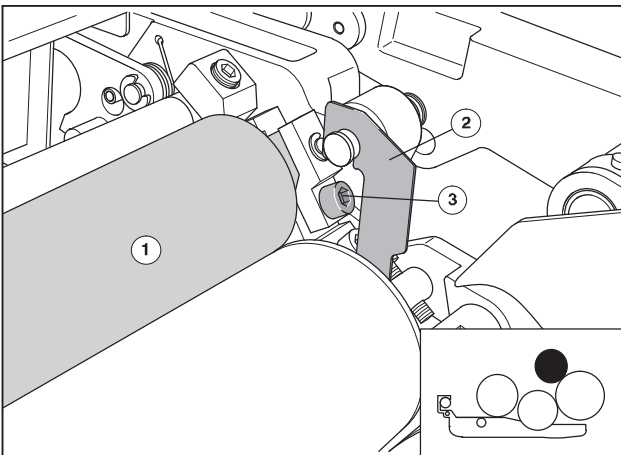


Fig. 26 Removing the dampening distributor

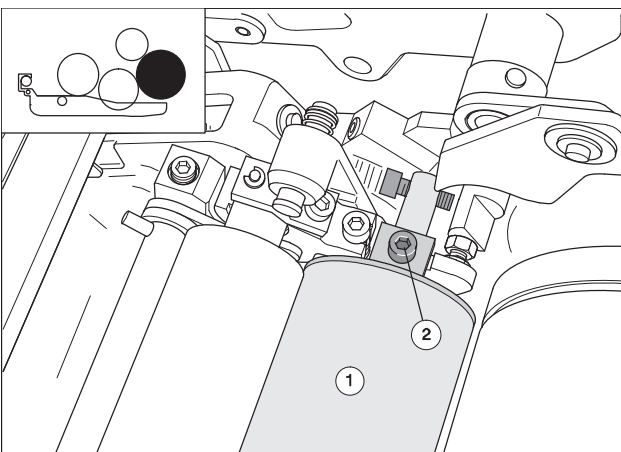


Fig. 27 Removing the dampening form roller

Dampening roller (rubber)

1. Open the dampening system guard.
2. Unscrew the Allen screws (Fig. 25/2) at the bearing cap (Fig. 25/3) using the operator tool. The Allen screws remain in the bearing cap.
3. Remove the bearing cap (Fig. 25/3).
4. Proceed in the same way on the other side.
5. Lift the dampening roller (Fig. 25/1) out of the bearing shells.
6. Close the dampening system guard.

Dampening distributor (Rilsan)

1. Open the guard above the plate cylinder.
2. Remove the dampening system gaskets (Fig. 26/2).
3. Unscrew the Allen screw (Fig. 26/3) on D.S. and O.S. with the operator tool; the screw remains in the cap.
4. Remove the cap.
5. Remove the dampening distributor (Fig. 26/1) with the bearing bushes on the shaft from the bearing. When removing, be careful with the coupling (cross pin in the dampening distributor shaft).

Plate dampening roller

1. Move the dampening system away from the plate cylinder.
2. Turn the dampening solution metering knob counterclockwise up to stop (= position 6).
3. Unscrew the Allen screw (Fig. 27/2) in the shaft of the dampening form roller on D.S. and O.S. with the operator tool; the screw remains in the cap. The screw, cap and spring remain at the shaft of the dampening form roller.
4. Lift the dampening form roller (Fig. 27/1) at the roller shaft out of the bearing shells.

8.2 Installing the rollers - PU 1

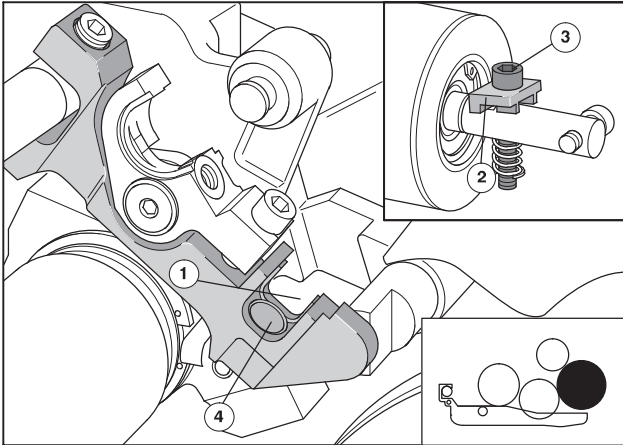


Fig. 28 Inserting the dampening form roller

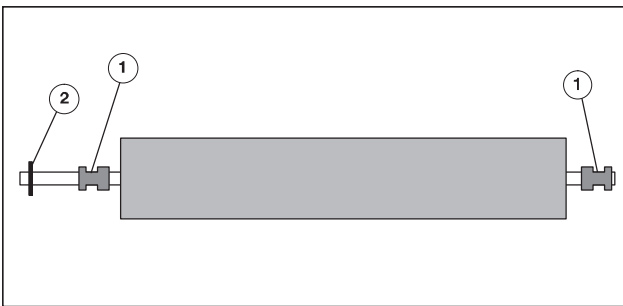


Fig. 29 Dampening distributor

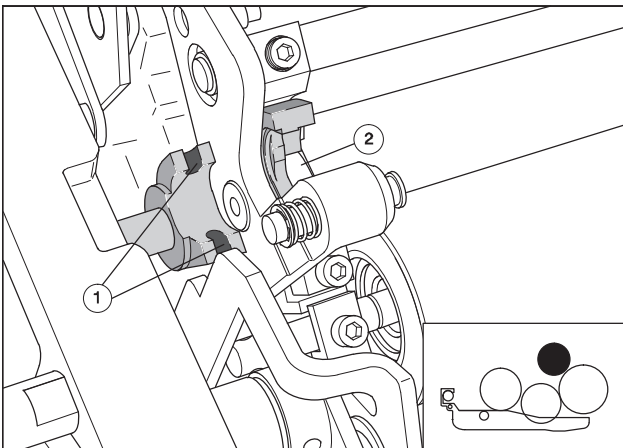


Fig. 30 Inserting the dampening distributor

Plate dampening roller

1. Open the guard above the plate cylinder.
2. **Before inserting** the roller, turn the cap (Fig. 28/2) so that side angled downwards lies in the groove of the roller shaft.
3. Place the shaft of the dampening form roller in the bearing (Fig. 28/1) so that the spring lies against the shaft in the swiveling lever borehole (Fig. 28/4). The **notch** on the shaft must always point to **O.S.**
4. Screw the shaft of the dampening form roller with the Allen screws (Fig. 28/3) in both bearing bores (Fig. 28/4). The cap must not turn when the screw fasteners are turned.

Dampening distributor (Rilsan)

1. **Before inserting the dampening distributor** in the bearing shells, laterally move the bearing bushes (Fig. 29/1) on the roller shaft corresponding to the bearing shells.

The driving pin (Fig. 29/2) for the lateral distribution lies on O.S.

2. Insert the driving pin (Fig. 29/2) in the shaft of the dampening distributor into the groove (Fig. 30/1) on O.S. Simultaneously insert the dampening distributor with the previously aligned bearing bush in the journal boxes (Fig. 30/2). When inserting the dampening distributor do not tilt the bearing bushes!

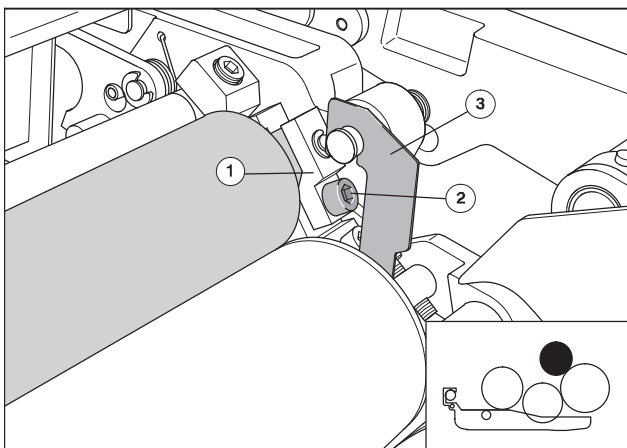


Fig. 31 Inserting the dampening distributor

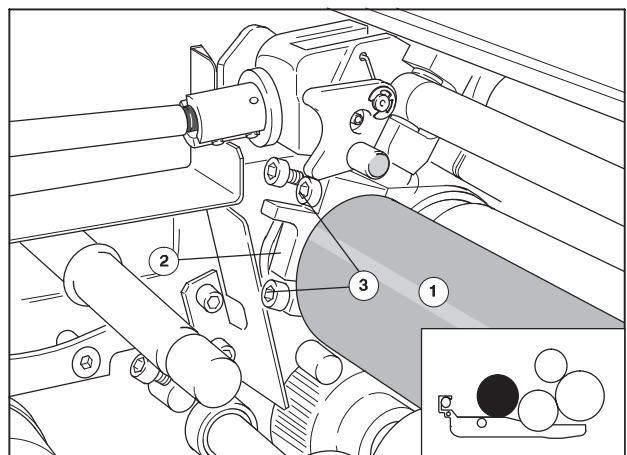


Fig. 32 Inserting the dampening roller

3. Place the cap (Fig. 31/1) on the shaft and screw to the bearing with the Allen screws (Fig. 31/2).
4. Insert the gaskets (Fig. 31/3) again.
5. Close the guard above the plate cylinder.

Dampening roller (rubber)

1. Open the guard above the dampening system.
2. Insert the dampening roller (Fig. 32/1) with the ball bearings in the bearing shells on D.S. and O.S.
3. Place the bearing cap (Fig. 32/2) on the roller shaft; when placing, make sure that the correct caps are inserted on D.S. and O.S.
4. Screw the bearing cap to the bearing with the two Allen screws (Fig. 32/3).
5. Proceed in the same way on the other side.
6. Close the guard above the dampening system.

8.3 Adjusting the rollers - PU 1

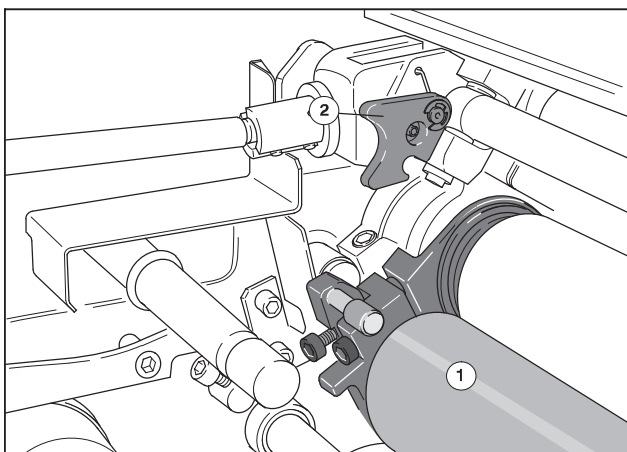


Fig. 33 Inking up the dampening system

For adjusting the rollers:

- all rollers must be inserted,
 - the dampening system must be uniformly inked up (light ink) and
 - a printing plate must be clamped.
1. **For inking up**, engage the dampening roller (Fig. 33/1) at the ink distributor (washup position, Fig. 33).
 2. Uniformly ink up the dampening system.
 3. Swivel the dampening roller (Fig. 33/1) back up and let engage at the levers (Fig. 33/2).
 4. Start the press and hold, wait a few seconds; tilt the press until the ink stripes are visible.

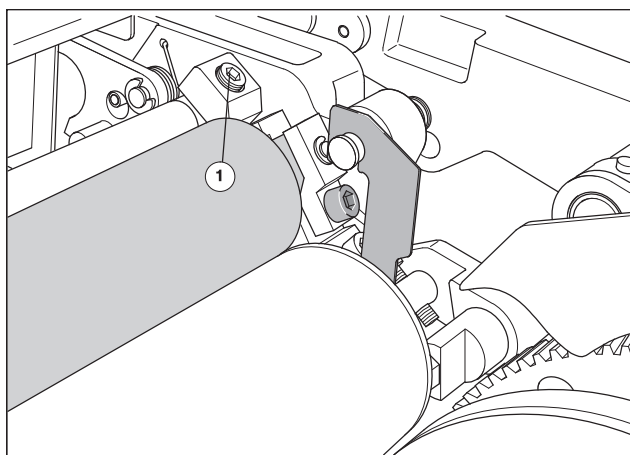


Fig. 34 Adjusting the dampening form roller - water pan roller contact area width

Dampening form roller - water pan roller

The contact area between the dampening form roller and water pan roller is preset to **1 to 1.5 mm** (with maximum dampening solution amount). In case of clear deviation (> 0.2 mm), adjust the contact area as follows:

1. Turn the spindle of the dampening solution metering to position "6".
2. Start the press and hold with the *Stop* button.
3. Check the contact area between the dampening form roller and water pan roller (1 to 1.5 mm). The contact stripes must have the same width on D.S. and O.S.

Correct the contact area width:

4. Turn the grub screw (Fig. 34/1) until the contact area has a width of 1 to 1.5 mm. - Turn clockwise: wider contact area. Turn counterclockwise: narrower contact area.

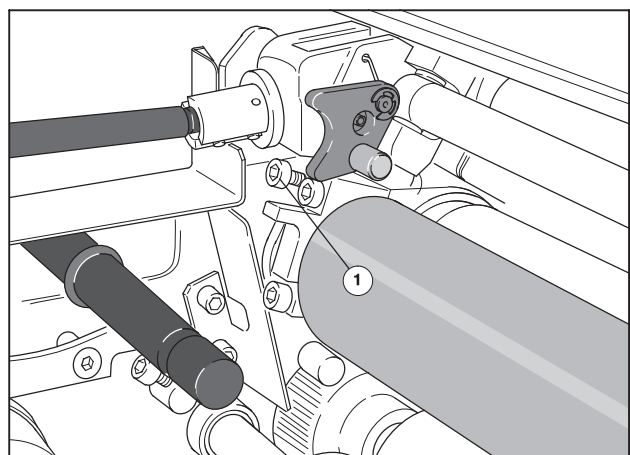


Fig. 35 Adjusting the dampening roller to the water pan roller

Dampening roller - water pan roller

1. Turn the adjusting screws (Fig. 35/1) until the contact area is uniformly 2.5 - 3.5 mm across the entire roller length.

Direction of rotation: clockwise - wider contact area; counterclockwise - narrower contact area.

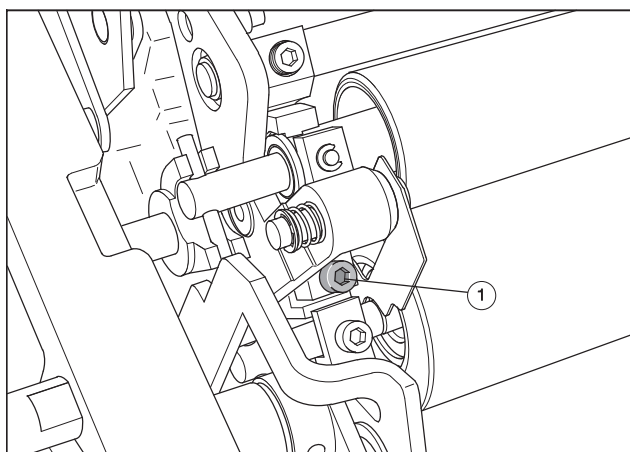


Fig. 36 Adjusting the dampening distributor relative to the plate dampening roller

Dampening distributor (Rilsan) - dampening form roller

1. Using the adjusting screws (Fig. 36/1) on D.S. and O.S., set a uniform ink strip width of 2 mm over the entire roller length.

Direction of rotation: clockwise - wider contact area; counterclockwise - narrower contact area.

Dampening form roller to the plate

1. Turn the spindle of the dampening solution metering to position "1".

2. Ink up the dampening system.
3. Let the press run a few revolutions, in order to distribute the ink well.
4. While the press is running, press the *Special functions* button; the display shows the identification number of the last special function.
5. Using the numeric keypad, call up special function 01 (Engage/disengage the dampening form roller).
6. Press the + button; the display shows ON. The dampening form roller switches onto the plate.
7. Ink up the printing plate for a few revolutions.
8. Stop the press (*Stop* button) and wait a few seconds.
9. Press the - or *Special functions* button; the dampening form roller switches away from the plate.
10. Inch the press until the ink stripe is visible on the plate.

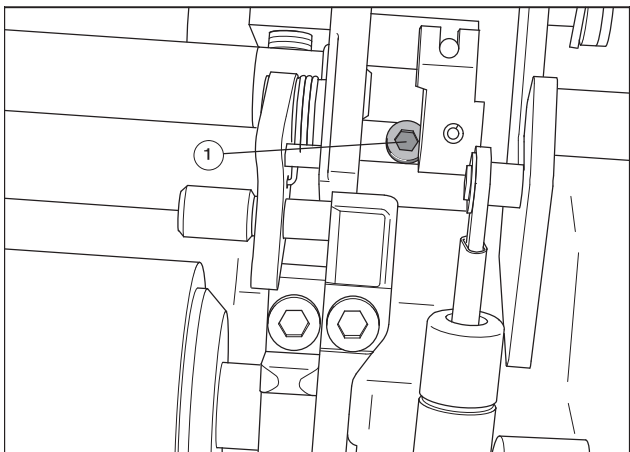


Fig. 37 Adjusting screw for dampening form roller

Ink stripe width: 3 mm (with 0.15 mm plate thickness)

11. Check the ink stripe and if necessary readjust with the adjusting screws in the shaft of the dampening form roller.
12. Close the guard above the plate cylinder.
13. Open the dampening system guard.
14. Correspondingly turn the adjusting screws (Fig. 37/1, here O.S.) using the operator tool.

Direction of rotation: clockwise - narrower ink stripe; counterclockwise - wider ink stripe.

8.4 Splash protection plates, PU 2

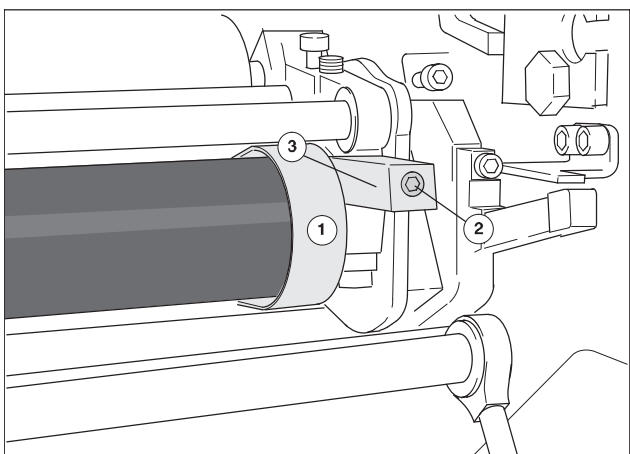


Fig. 38 Removing the splash protection plate from D.S.

Removing and cleaning the splash protection plates

The splash protection plates in front of the metering roller (Fig. 38/1) on D.S. and O.S. must be checked weekly and cleaned of contamination.

1. Open the guard above the dampening system and under the dampening system.
2. Pull out the dampening solution pan.
3. Completely unscrew the Allen screw (Fig. 38/2) with the operator tool. The Allen screw remains in the support (Fig. 38/3) of the splash protection plate.
4. Swivel the splash protection plate (Fig. 38/1) downwards and pull out at the support (Fig. 38/3).
5. Remove the splash protection plate in the same way on the other side.

Dampening system

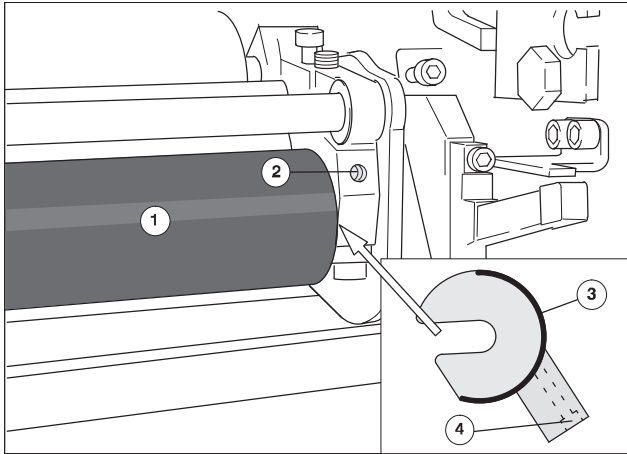


Fig. 39 Installing the splash protection plate on D.S.

Inserting splash protection plates

After cleaning or after installing the dampening system, insert the splash protection plates on both sides of the metering roller (Fig. 39/1).

1. Slide the splash protection plate (Fig. 39/3) with the recess onto the shaft of the metering roller (Fig. 39/1).
2. Swivel the splash protection plate with the support upwards up to stop.
3. Screw the Allen screw (Fig. 39/4) in the borehole at the dampening system (Fig. 39/2) using the operator tool and tighten.
4. Fasten the splash protection plate in the same way on the other side.

8.5 Removing the rollers - PU 2

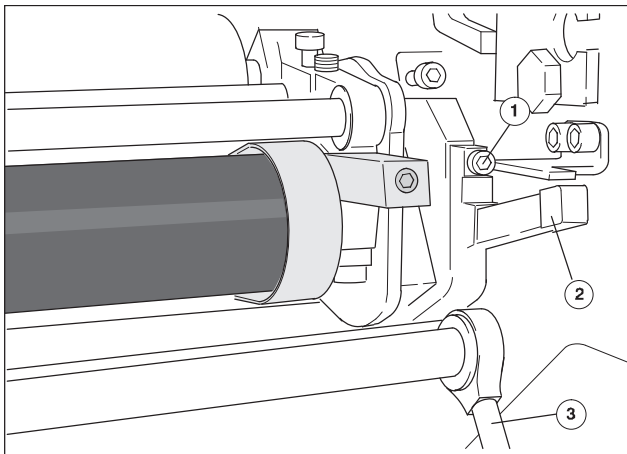


Fig. 40 Removing the dampening system

If washup was performed, separate the dampening system from the inking unit.

1. Press in the control knob for the dampening solution metering, turn counterclockwise up to stop and detach.

Removing the dampening system

To remove the dampening rollers, you must remove the entire dampening system from the press.

2. **Before removing the dampening system**, tilt the press until the distribution has reached the turning point on O.S.
3. Open the guard in front of the dampening system.
4. Unscrew the screws at the swiveling levers on D.S. (Fig. 40/1) and O.S. using the operator tool. The screws remain in the swiveling lever.
5. Fold the swiveling levers (Fig. 40/2) on both sides downwards.
6. Tilt the dampening system slightly to the rear and pull out of the press.

Dampening distributor

1. Completely unscrew the Allen screws (Fig. 41/2) on D.S. and O.S. using the operator tool, remove screws and swivel bearing caps (Fig. 41/3) upwards.
2. Remove the dampening distributor (Fig. 41/1) with the bearing bushings on the shaft from the bearing.

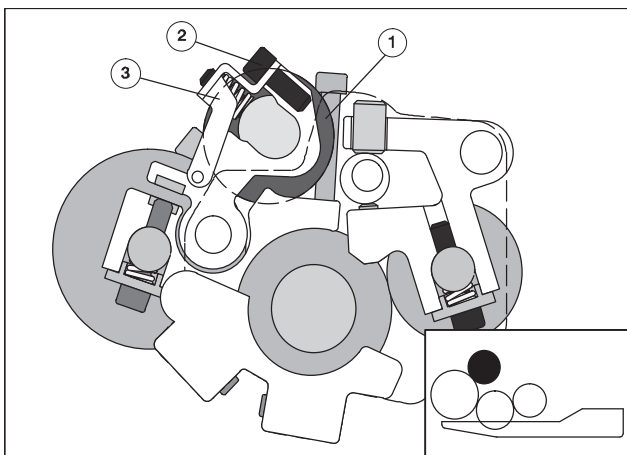


Fig. 41 Removing the dampening distributor

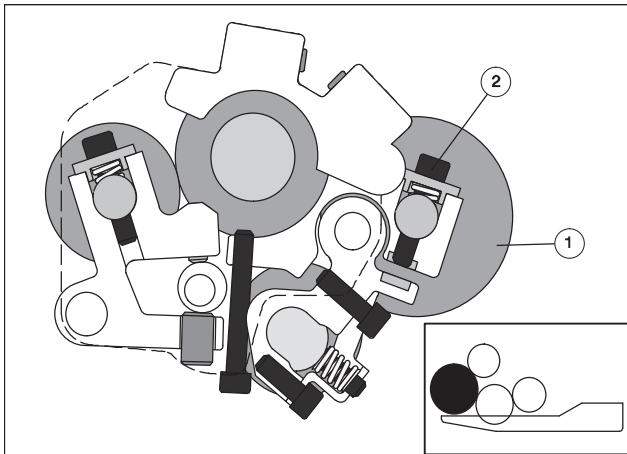


Fig. 42 Removing the dampening form roller

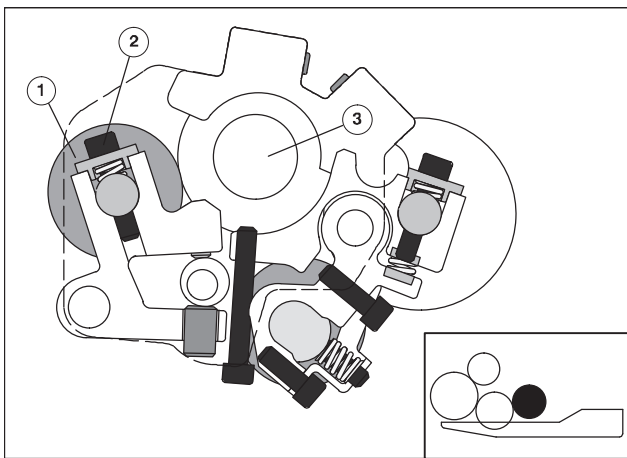


Fig. 43 Removing the metering roller

Plate dampening roller

1. Turn over the dampening system.
2. Completely unscrew the Allen screw (Fig. 42/2) on D.S. and O.S. using the operator tool and remove with cap and spring from the roller shaft.
3. Remove the dampening form roller (Fig. 42/1) from the bearings.

Metering roller (rubber)

1. Completely unscrew the Allen screw (Fig. 43/2) on D.S. and O.S. using the operator tool and remove with cap and spring from the roller shaft.
2. Remove the metering form roller (Fig. 43/1) from the bearings.

The **water pan roller** (Fig. 43/3) is not removable.

8.6 Installing the rollers - PU 2

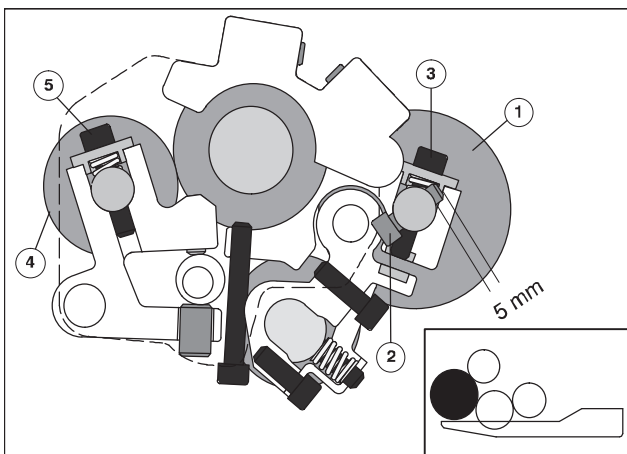


Fig. 44 Inserting the dampening form roller

The dampening form roller (Fig. 44/1) and the metering roller (Fig. 44/4) are screwed in the bearing shell with an Allen screw, to which a cap and a spring are attached. The spring must be inserted in the depression in the shaft with each roller shaft.

Plate dampening roller

1. Turn the dampening system so that the bearing shells of the dampening form roller are directed upwards. The heads of the adjusting screws (Fig. 44/2) in the bearing shaft must point towards the dampening distributor.
2. Place the shaft of the dampening form roller so that the depression in the shaft is directed upwards.

Only if replacing the dampening form roller: make sure that the blue adjusting screws (Fig. 44/2) on D.S. and O.S. project 5 mm from the shaft. If necessary, set the distance to 5 mm by turning the adjusting screw with the operator tool.

3. Insert the Allen screw (Fig. 44/3) with cap and attached spring through the shaft of the damp-

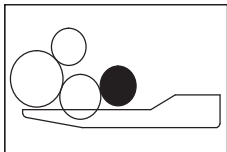


Fig. 45 Metering roller

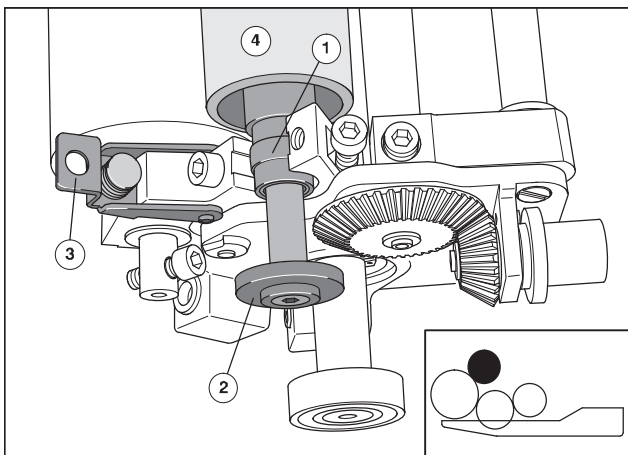


Fig. 46 Inserting the dampening distributor

ening form roller and screw the roller in the bearing.

Metering roller (rubber)

1. Place the shaft of the metering roller so that the depression in the shaft is directed upwards. The notch on the shaft must always point to O.S.
2. Insert the Allen screw (Fig. 44/5) with cap and attached spring through the shaft of the metering roller and screw the roller in the bearing.

Dampening distributor (Rilsan)

1. Turn over the dampening system.
 2. Laterally slide the bearing bushes (Fig. 46/1) on the shaft of the dampening distributor corresponding to the bearing shells. The driver plate of the dampening distributor for the lateral distribution (Fig. 46/2) lies on O.S.
 3. Insert the dampening distributor with the bearing bushes in the bearing shells.
 4. Swivel the bearing caps (Fig. 46/3) over the bearing bushes (Fig. 46/1).
 5. Screw the bearing cap (Fig. 46/3) to the bearing with the Allen screw.
- If the rollers have only been removed and installed **for cleaning**, then the rollers do not have to be readjusted.
 - If the dampening rollers have been replaced, then the dampening system must be adjusted. To do so, screw in **all adjusting screws** until the rollers just touch one another. To check, turn the rollers.

8.7 Inserting the dampening system, PU 2

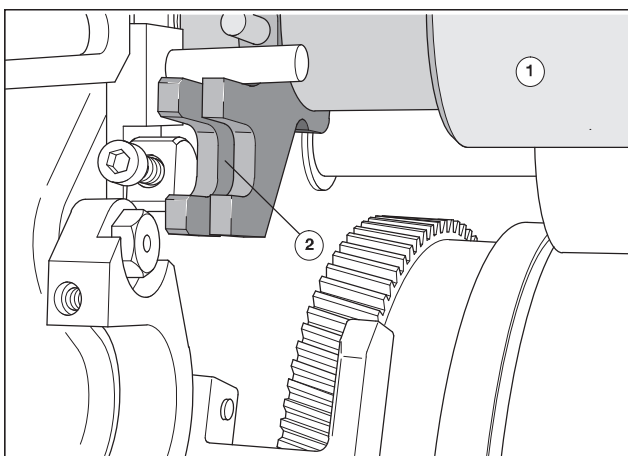


Fig. 47 Driver at the inking unit

Note

Before insertion of the dampening system, the ink distributor (Fig. 47/1) must lie at the turning point on O.S.

1. Align the driver plate (Fig. 48/2) of the dampening distributor (Fig. 48/1) corresponding to the driver at the ink distributor (Fig. 47/2).
2. Slightly lift the dampening system forwards and in a tilting motion insert in the bearing shells on D.S. (Fig. 49/1) and O.S. In doing so, ensure correct meshing on D.S. (Fig. 49/2) and engagement of the trip cams (Fig. 49/5). At the same time, insert the driver plate of the dampening distributor (Fig. 48/2) in the driver of the ink distributor in O.S.
3. Fold up the swiveling lever (Fig. 49/3) and screw to the bearing shell with the screw (Fig. 49/4). Proceed on O.S. in the same way.
4. Suspend the dampening solution metering knob on O.S.

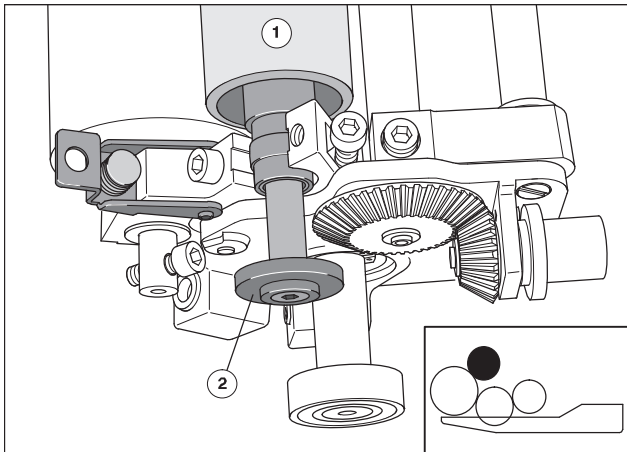


Fig. 48 Driver plate of the dampening distributor

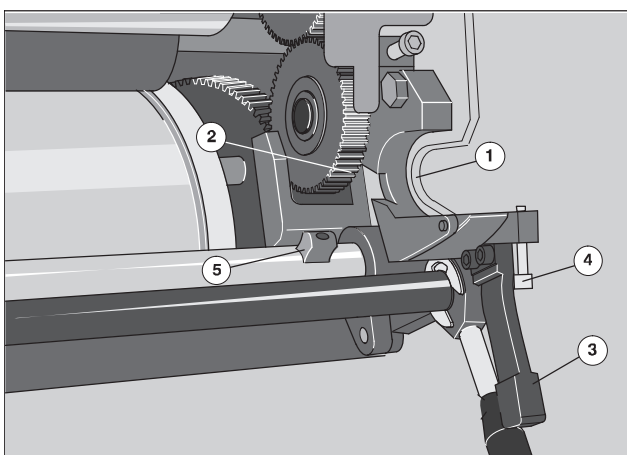


Fig. 49 Inserting the dampening system

8.8 Adjusting the rollers - PU 2

Prerequisites: for adjusting the rollers,

- the dampening system must be uniformly inked up (light ink) and
- a printing plate must be clamped.

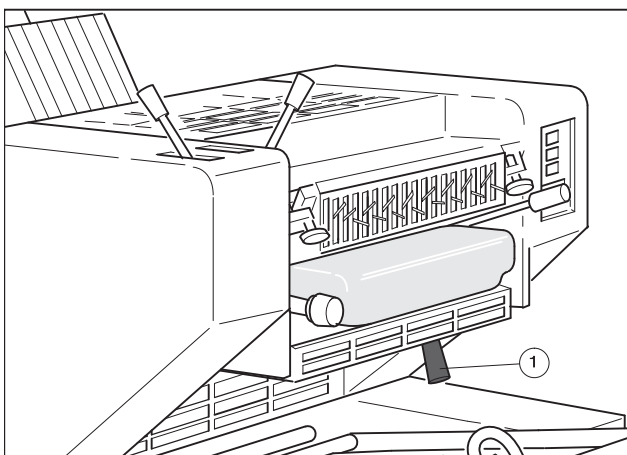


Fig. 50 Connecting the dampening system and the inking unit

1. **For inking up**, connect the dampening system with the inking unit; move lever (Fig. 50/1) upwards.
2. Uniformly ink up the dampening system.
3. Separate the dampening system from the inking unit again.
4. Start the press and hold, wait a few seconds; tilt the press until the ink stripes are visible.

Turning direction of the adjusting screws: *turn clockwise*: wider ink stripe; *turn counterclockwise*: narrower ink stripe. (*Exception*: dampening form roller to the plate).

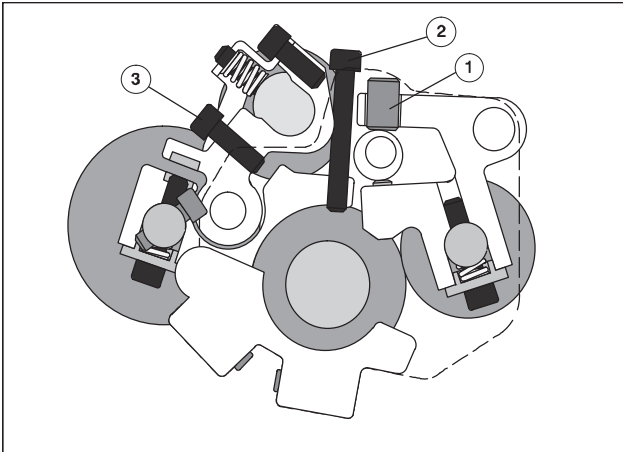


Fig. 51 Adjusting the metering roller to the water pan roller

Metering roller - water pan roller

1. Turn the dampening solution metering knob to position 6.
2. Check the contact area between the metering roller and water pan roller; contact area width on the metering roller: 2 mm.
3. Using the grub screws (Fig. 51/1), adjust a uniformly wide contact area on D.S. and O.S.

Dampening form roller - water pan roller

1. Check the contact area between the dampening form roller and the water pan roller; contact area width on the water pan roller: 3 mm.
2. Using the red adjusting screws (Fig. 51/2), adjust a uniformly wide contact area on D.S. and O.S.

Dampening distributor - dampening form roller

1. Check the contact area between the dampening distributor and the dampening form roller; contact area width on the dampening distributor: 2 mm.
2. Using the blue adjusting screws (Fig. 51/3), adjust a uniformly wide contact area on D.S. and O.S.

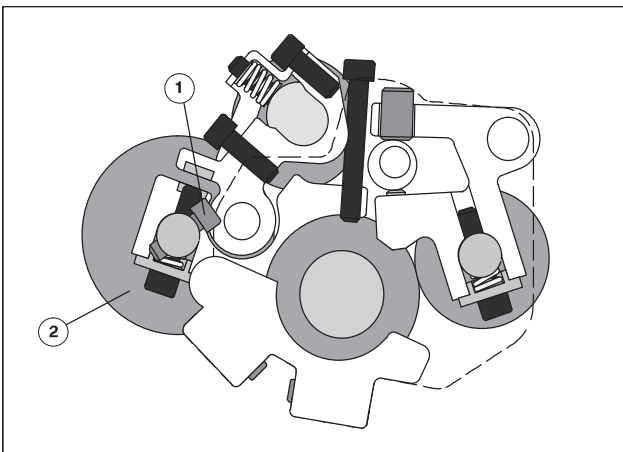


Fig. 52 Adjusting the plate dampening roller relative to the plate

Dampening form roller to the plate

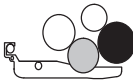
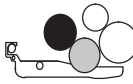


1. Engage the dampening form roller (Fig. 52/2) at the plate using the special function SF 01.
2. Let the press run a few revolutions, in order to ink up the plate with the dampening form roller.
3. Stop the press (*Stop* button) and wait a few seconds.
4. Press the - or *Special functions* button; the dampening form roller switches away from the plate.
5. Inch the press until the ink stripe is visible on the plate.

Ink stripe width: 3 mm (with 0.15 mm plate thickness).

6. Check the ink stripe on the plate and if necessary readjust with the adjusting screws (Fig. 52/1).
Turning direction: turn clockwise: narrower ink stripe; turn counterclockwise: wider ink stripe.





9 Overview of dampening unit adjustment

9.1 PU 1

Position of adjustment	PU 1	Adjusting screw	Width of contact area
Dampening form roller - water pan roller (dampening solution metering in position 6)		Grub screw	2 mm
Distributor roller (rubber) - water pan roller		Adjusting screw	2.5 - 3.5 mm
Dampening distributor (Rilsan) - dampening form roller		Adjusting screw	2 mm
Dampening form roller - plate (for a plate thickness of 0.15 mm)		Adjusting screw	3 mm

Tab. 1 Adjusting positions on the dampening system PU 1

9.2 PU 2

Position of adjustment	PU 2	Adjusting screw	Width of contact area
Metering roller - water pan roller (dampening solution metering in position 6)		Grub screw	2 mm
Dampening form roller - water pan roller		red	3 mm
Dampening distributor - dampening form roller		blue	2 mm
Dampening form roller - plate		Adjusting screw	3 mm

Tab. 2 Adjusting positions on the dampening unit PU 2

Dampening system

Delivery

1	Delivery - safety instructions	C.5.3
1.1	To be observed when working at the press	C.5.3
1.2	Pile change	C.5.3
2	Delivery pile	C.5.4
2.1	Manual pile transport	C.5.4
2.2	Sheet size adjustment - sheet stops	C.5.5
2.3	Sheet jogger	C.5.6
2.4	Removing sample sheets	C.5.7
2.5	Pile change	C.5.7
3	Delivery grippers	C.5.8
3.1	Function of the delivery grippers	C.5.8
3.2	Adjusting the opening time of the grippers	C.5.8
3.3	Overrun sheet control	C.5.8
4	Standard delivery drum	C.5.9
4.1	Inserting the guide pulley	C.5.9
4.2	Cleaning the foil	C.5.9
4.3	Replacing the foil	C.5.10
5	Super Blue delivery drum	C.5.11
5.1	Overview	C.5.11
5.2	Preparing initial installation	C.5.11
5.3	Removing the guide pulleys	C.5.12
5.4	Installation of the Super Blue delivery drum	C.5.12
5.5	Installing the Super Blue base cover	C.5.13
5.6	Pulling on the Super Blue net	C.5.13
5.7	Super Blue Stretch Bands	C.5.14
5.8	Cleaning the Super Blue base cover	C.5.15
6	Delivery fans	C.5.16
6.1	Safety instruction	C.5.16
6.2	Setting the speed	C.5.16
7	Blank Page	C.5.17
7.1	Blank Page	C.5.17
7.2	Blank Page	C.5.17
7.3	Blank Page	C.5.18
7.4	Blank Page	C.5.18
8	Tape inserter	C.5.20

Delivery

8.1	Function	C.5.20
8.2	Block preselection Tape inserter	C.5.20
8.3	Tape inserter in printing operation	C.5.20
8.4	Block preselection: manual tape insertion	C.5.21
8.5	Inserting the paper roll in the tape inserter	C.5.21
8.6	Function test	C.5.22
8.7	Other functions of the tape inserter	C.5.22

1 Delivery - safety instructions

1.1 To be observed when working at the press



Warning - Risk of injury due to rotating gripper bars!

When performing work while the press is running (pile change, removal of sample sheets, work with spacer wedges), pay particular attention to the movement of the chain gripper bars.



Warning - Risk of explosion and fire due to dust deposits!

Dust, such as powder or paper dust, can pose a risk of fire or explosion.

You should therefore clean the areas affected by dust regularly, at least once a week, using a vacuum cleaner.

Only use suitable and approved industrial vacuum cleaners and avoid working with compressed air, as this could swirl up the dust.

1.2 Pile change



Warning - Risk of injury from moving pile carrier!

Prior to raising or lowering the pile support plate: Ensure by means of a visual inspection that no one is standing in the hazardous area of moving parts and that nothing can be jammed underneath the pile support plate. When the press is switched on: Never stand underneath the pile support plate. Do not sit on the pile support plate. Do not ride on the pile support plate.

2 Delivery pile

2.1 Manual pile transport

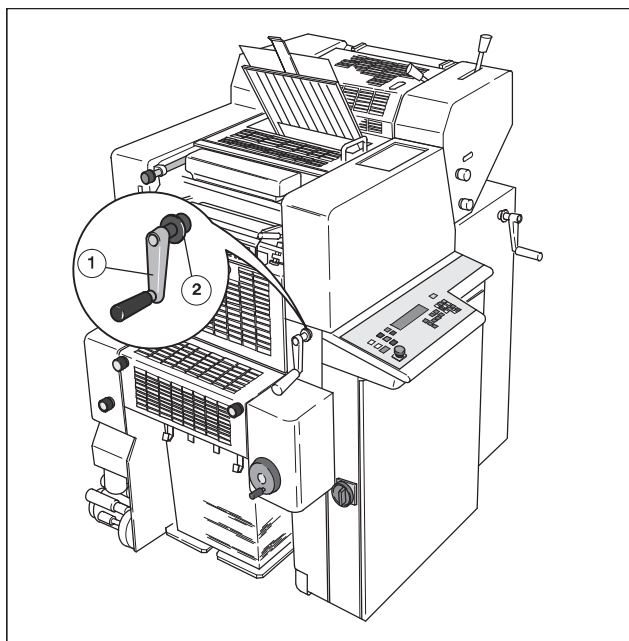


Fig. 1 Delivery pile on/off

The delivery pile is moved upwards/downwards at the delivery with the **crank handle** (Fig. 1/1). The speed is adjusted by moving the **bush** (Fig. 1/2).

Crank handle (Fig. 1/1)	Pile movement
clockwise	upwards
counterclockwise	downwards

Tab. 1 Delivery crank handle

Bush (Fig. 1/2)	Pile transport
pressed in	fast
pulled out	slow

Tab. 2 Bush at the crank handle

1. Press in crank handle.
2. Move up the empty pile carriage under the sheet joggers up to the stop with the crank handle (Fig. 1/1).
3. The crank handle moves back out under spring pressure.

Note

When the crank handle is pressed in, the automatic pile transport is disengaged.

Manual pile transport blocked

The manual pile transport upwards is blocked and the "Malfunction" symbol flashes:

1. Rotate the press one revolution with the crank handle or by inching. - Pile transport possible: start press; pile transport not possible: notify your authorized Service agent.

2.2 Sheet size adjustment - sheet stops

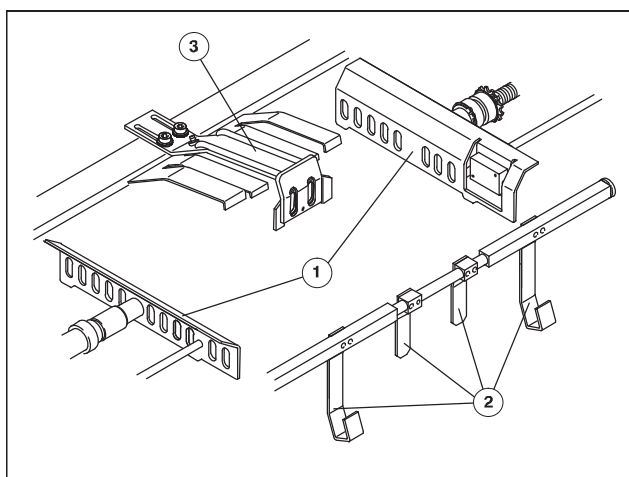


Fig. 2 Delivery sheet stops

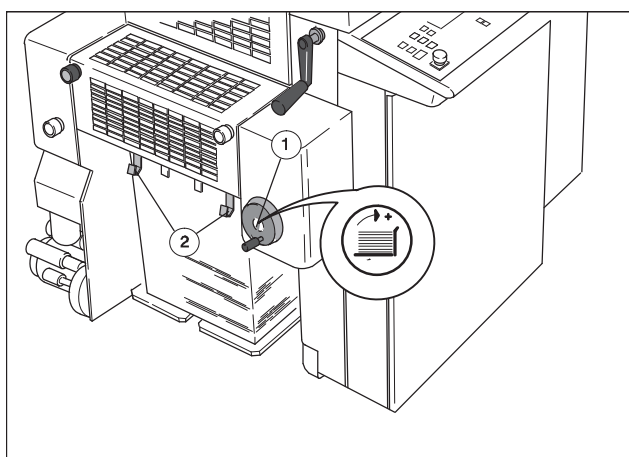


Fig. 3 Delivery sheet size adjustment

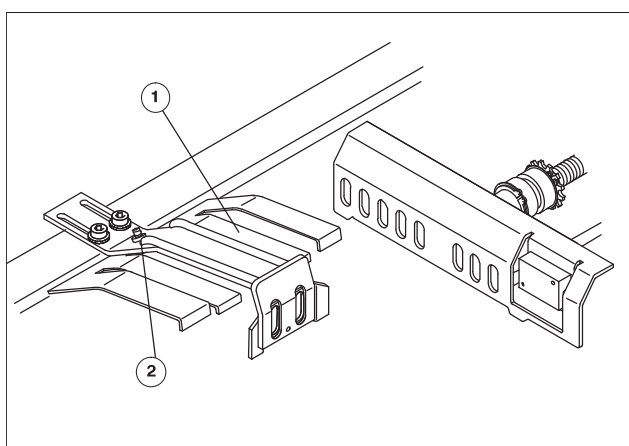


Fig. 4 Rear sheet stop, small sizes

Sheet width - lateral sheet stops

The lateral sheet stops (Fig. 2/1) are adjusted to the sheet width **simultaneously with the central sheet size adjustment** at the feeder.

Sheet length - rear sheet stop

1. Transport print sheet in the delivery after adjusting the double sheet detector and after automatic measurement of the sheet length, by pressing the *Double sheet position run* button again.
2. Place the press sheet at the front sheet stops (Fig. 2/2).
3. Adjust the rear sheet stop (Fig. 2/3) to the sheet length using the crank handle (Fig. 3/1).

or

1. Raise the front sheet stops (Fig. 3/2).
2. Place the sheets on the pile carriage.
3. Fold down the front sheet stops (Fig. 3/2).
4. Place the press sheet at the front sheet stops.
5. Adjust the rear sheet stop (Fig. 2/3) to the sheet length using the crank handle (Fig. 3/1).

Rear sheet stop - small sizes

With sheet lengths less than 280 mm, remove the sheet support (Fig. 4/1) in the delivery at the rear sheet stop with sheet widths less than 210 mm.

When using the accessory for small sizes, you must also remove the sheet support.

1. Rotate the delivery pile carriage all the way down and remove from the delivery.
2. Loosen the Allen screw (Fig. 4/2) at the underside of the sheet stop with the operator tool and remove the sheet support (Fig. 4/1).
3. Retighten the Allen screw (Fig. 4/2).

2.3 Sheet jogger

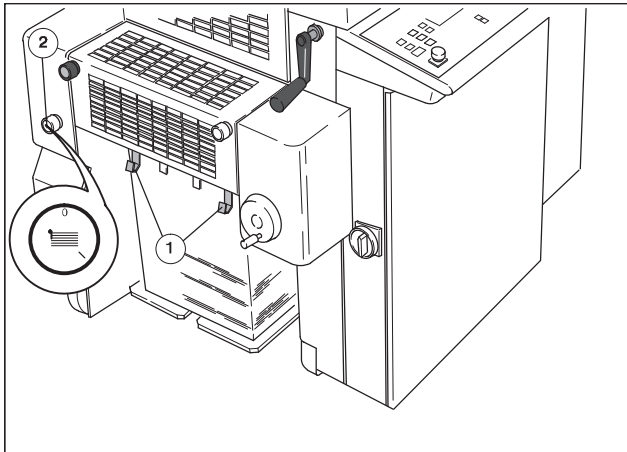


Fig. 5 Front sheet joggers

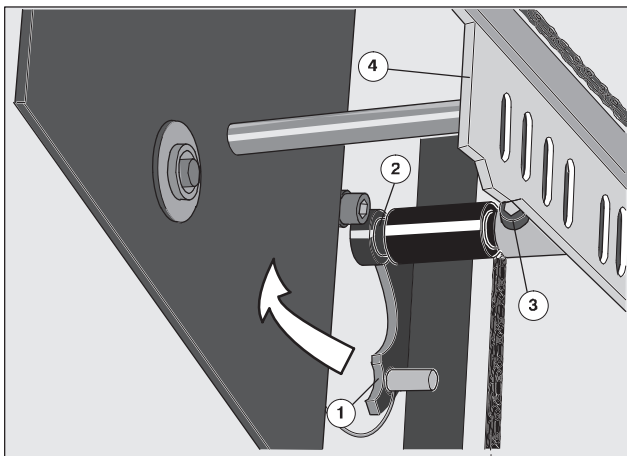


Fig. 6 Lateral sheet jogger

Engaging/disengaging the front sheet joggers

The front sheet stops are simultaneously sheet joggers, for aligning the lead edges of sheets flush.

- 1 Front sheet joggers
- 2 Control knob for engaging/disengaging the front sheet joggers

1. Engage/disengage the front sheet joggers with the control knob on the delivery on D.S.
Turn the control knob (Fig. 5/2) clockwise up to the stop (position "0"): disengage the movement of the sheet joggers; turn counterclockwise up to stop (position "I"): engage.

Between these two positions you can continuously vary the distance of the sheet joggers.

Lateral sheet jogger

Disengage movement:

1. Place a print sheet on the delivery pile carriage.
2. Inch the press until the lateral sheet jogger on D.S. (Fig. 6/4) has reached the outer turning point.
3. Press the sheet jogger against the side frame up to stop.
4. Move the lever (Fig. 6/1) up and let engage in the groove (Fig. 6/2). The lever is kept in its position by spring pressure. The movement of the sheet jogger is disengaged.
5. Loosen the Allen screw (Fig. 6/3) and set the sheet jogger (Fig. 6/4) on D.S. against the print sheet.
6. Retighten the Allen screw (Fig. 6/3).

Engage movement:

1. Press the sheet jogger against the side frame up to stop.
2. Press lever (Fig. 6/1) downwards up to stop.
3. Readjust the sheet jogger to the sheet width.

Adjust to the sheet width:

1. Inch the press until the sheet jogger has reached the inner turning point.
2. Loosen the screw (Fig. 6/3) with the operator tool and readjust the sheet jogger on D.S. (Fig. 6/4) to the sheet size.
3. Retighten the Allen screw (Fig. 6/3).

2.4 Removing sample sheets

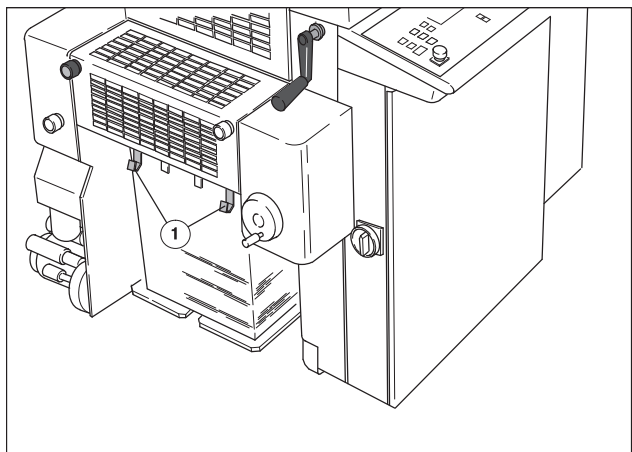


Fig. 7 Pulling sample sheets

Sample sheets are removed from the delivery pile in production.

1. During production, briefly raise the front sheet stops (Fig. 7/1) and place horizontally.
2. Remove the sample sheet (= top sheet) and place the stops back at the front edge of the pile.

2.5 Pile change

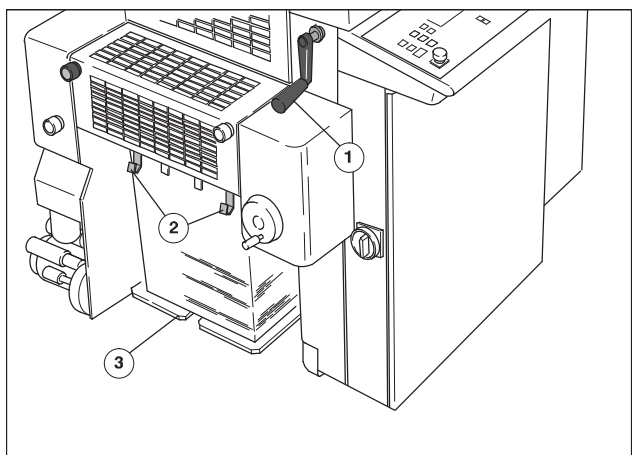


Fig. 8 Delivery pile

When the delivery pile carriage has reached its lowest position, a press stop occurs.

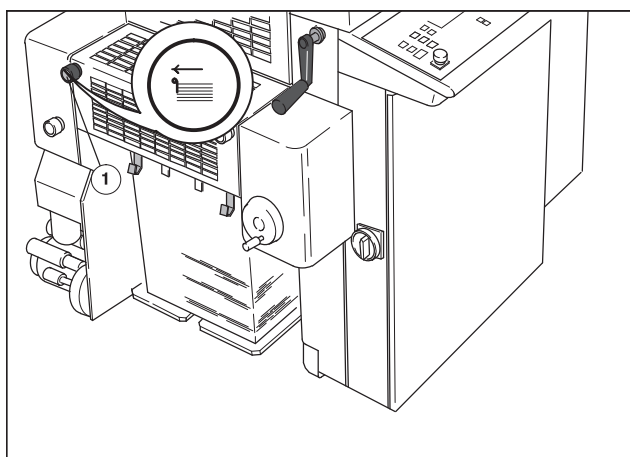
1. Raise the front sheet stops (Fig. 8/2).
2. Move the full delivery pile carriage (Fig. 8/3) out of the delivery.
3. Move an empty pile carriage into the delivery and raise with the crank handle (Fig. 8/1).
4. Fold down the front sheet stops (Fig. 8/2).
5. Continue the printing program with the *Production* button.

3 Delivery grippers

3.1 Function of the delivery grippers

The grippers are mounted on the gripper bars. The gripper bars are mounted on the delivery chains. The grippers receive the print sheet from the impression cylinder and transport it via the delivery pile carriage. When the grippers are open, the sheet is deposited on the delivery pile.

3.2 Adjusting the opening time of the grippers



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The gripper opening time depends on the printing speed and on the printing material.

Note

With thick **printing materials** and with higher **speeds**, select an earlier gripper opening time.

1. Adjust the **opening time** of the grippers with the control knob (Fig. 9/1).
Turn clockwise: grippers open earlier; turn counterclockwise: grippers open later.

Fig. 9 Adjusting the gripper opening time

3.3 Overrun sheet control

If the grippers open too late, then the print sheet was not correctly deposited on the delivery pile. The print sheet shoots beyond the front edge of the pile (overrunning sheet). A strap at the front edge of the pile serves as an overrun sheet control.

In case of an overrunning sheet in the delivery, the press stops immediately and all functions are switched off. The "Delivery paper jam" symbol flashes in the information display.

1. Remove the overrunning sheet from the delivery. The "Delivery paper jam" display goes out.
2. Adjust the gripper opening time corresponding to the printing speed and the printing material.

4 Standard delivery drum

4.1 Inserting the guide pulley

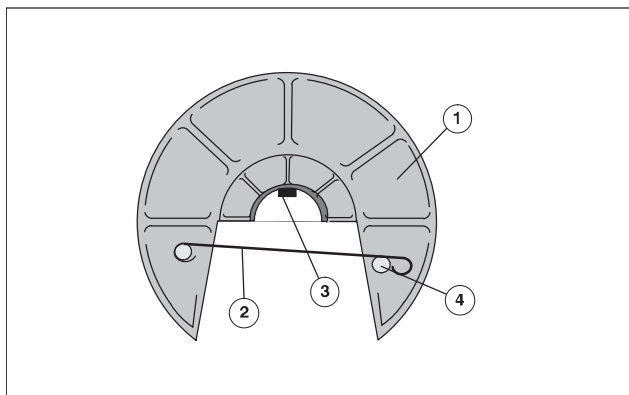


Fig. 10 Delivery drum guide pulley

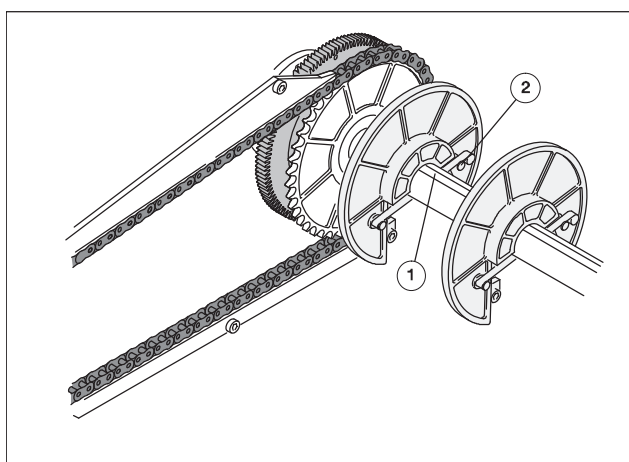


Fig. 11 Delivery drum: shaft with guide pulleys

The standard delivery drum consists of the sprocket wheel shaft (Fig. 11/1), the lateral gears and the guide pulleys. The guide pulleys (Fig. 10/1) on the sprocket wheel shaft prevent the print sheet from collapsing. They must be placed in non-print areas. To prevent smearing of the fresh printing, an ink-resistant foil is attached to the contact area with the print sheet.

1. Inch the press until the groove in the sprocket wheel shaft (Fig. 11/1) faces upwards.
2. Attach the guide pulley so that the fitted piece (Fig. 10/3) lies in the groove of the sprocket wheel shaft (Fig. 11/1).
3. Place the spring clip (Fig. 10/2) at a slant under the sprocket wheel shaft press upwards.
4. Swivel the spring clip on the guide pulley and suspend on the bolt (Fig. 10/4).
5. Insert additional guide pulleys as required.

Align the guide pulleys

1. Place the guide pulleys in non-print areas by laterally moving them on the sprocket wheel shaft.

4.2 Cleaning the foil

The guide pulleys place an ink-resistant **foil** on the contact area with the print sheets. This foil strip must be **cleaned** as required.

1. Remove the guide pulley from the delivery drum.
2. Dampen a cloth with roller wash and remove ink remnants with the cloth.

4.3 Replacing the foil

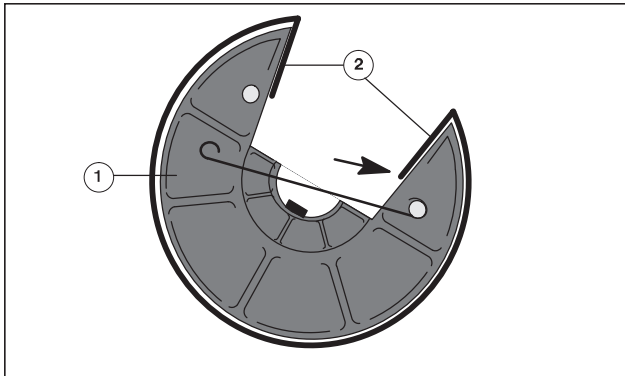


Fig. 12 Guide pulley

1. Pull off the old foil (Fig. 12/2) from the guide pulley (Fig. 12/1).
2. Clean adhesive residue from the segment if necessary.
3. Partly pull off the protective paper of the new foil and stick on the start of the foil, starting in the recess of the segment (arrow in Fig. 12).
4. Pull off the protective paper and stick on foil strip along the circumference of the segment disk by pulling gently and avoiding bubbles.
5. Press down on the adhering foil.

5 Super Blue delivery drum

5.1 Overview

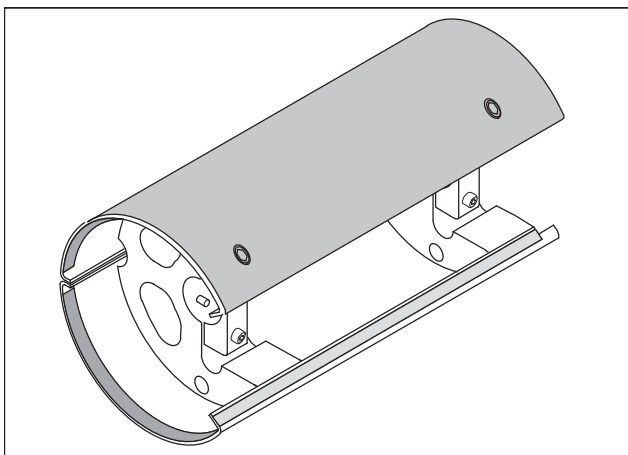


Fig. 13 Super Blue delivery drum

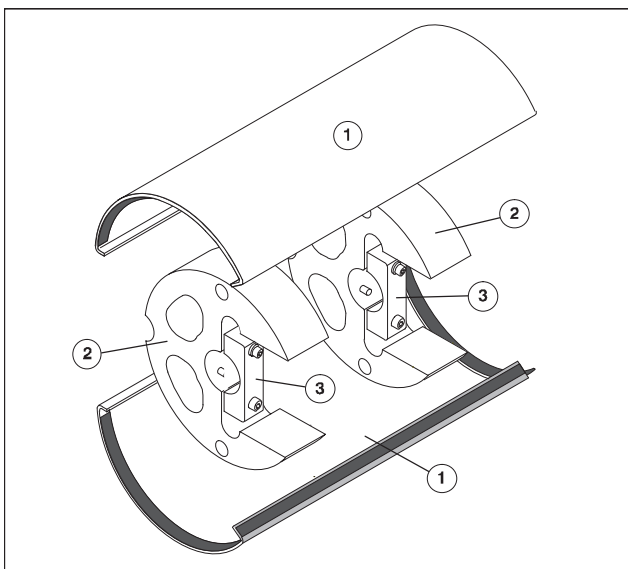


Fig. 14 Super Blue delivery drum, single parts

5.2 Preparing initial installation

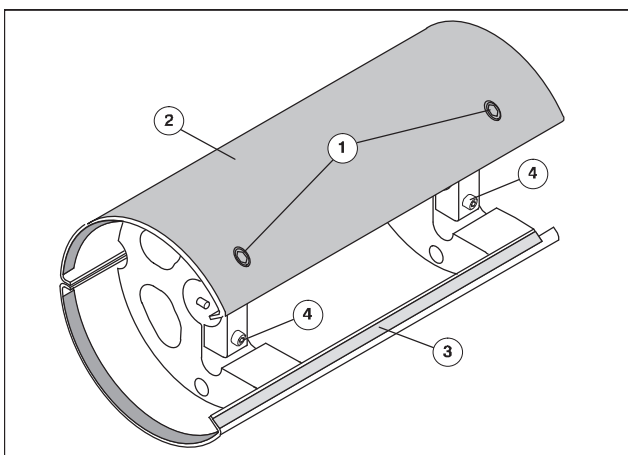


Fig. 15 Super Blue delivery drum

C.5.11

The Super Blue delivery drum (Fig. 13) is a **special accessory**. The ink-resistant Super Blue net allows mark-free sheet guidance.

The Super Blue delivery drum consists of:

- Super Blue base cover with Velcro tape fastening,
- Super Blue net,
- 2 sheet-metal jackets (Fig. 14/1),
- 2 supports (Fig. 14/2) with retaining bridges (Fig. 14/3).
- 2 Super Blue Stretch Bands,

The Super Blue delivery drum is supplied assembled and must be disassembled before installation.

1. Loosen 4 countersunk screws at the sheet-metal jacket (Fig. 15/1) and unscrew.
2. Remove the sheet-metal jacket (Fig. 15/2).
3. Proceed the same way at the other sheet-metal jacket (Fig. 15/3).
4. Unscrew both Allen screws (Fig. 15/4) at each retaining bridge and remove the retaining bridges from the supports.

5.3 Removing the guide pulleys

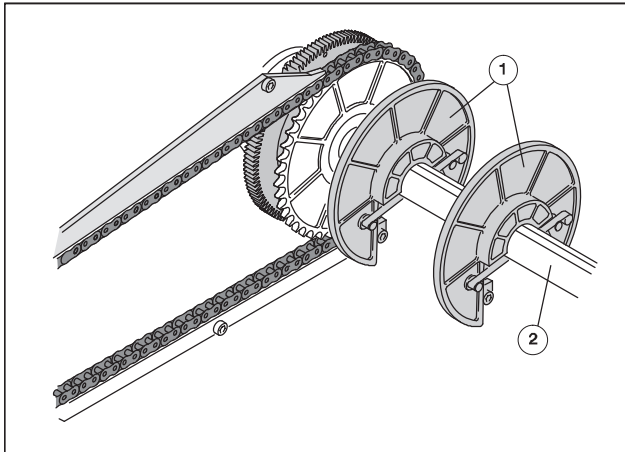


Fig. 16 Removing the guide pulleys



Warning - Risk of injury due to rotating chains!

Whenever working in the delivery area, pay particular attention to the movement of the chain gripper bars (risk of injury!).

1. Remove the guide pulleys (Fig. 16/1) from the sprocket wheel shaft (Fig. 16/2).
2. Remove any dirt from the shaft (Fig. 16/2).

5.4 Installation of the Super Blue delivery drum

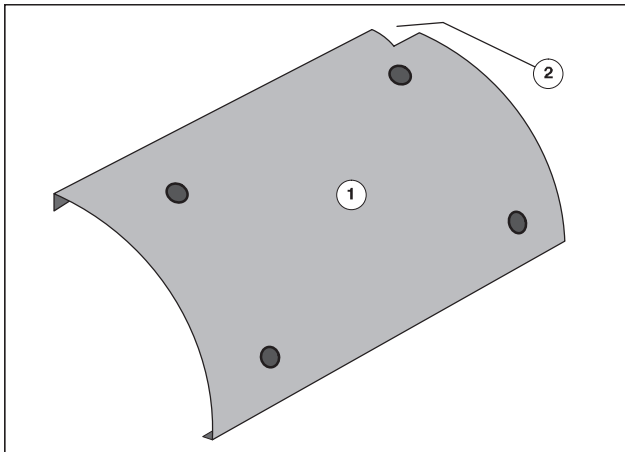


Fig. 17 Super Blue delivery drum, sheet-metal jacket



Caution - Danger of collision between the Super Blue delivery drum and the chain gripper bars!

Install the sheet-metal jacket (Fig. 17/1) so that the **recess** (Fig. 17/2) lies at the gripper bite on O.S.

1. Lay the supports (Fig. 18/1) for the sheet-metal jackets at the shaft so that the aligning pins (Fig. 18/2) lie in the groove of the shaft.
2. Screw the retaining bridges (Fig. 18/3) on D.S. and O.S. to the supports (Fig. 18/1) (Allen screws) so that the supports can still be moved laterally on the shaft.
3. Rotate the press until the boreholes are visible in the supports for mounting the sheet-metal jackets.

Note

Mount the sheet-metal jackets so that the **recess** at the sheet-metal jacket (Fig. 17/2) lies **at the gripper bite on O.S.**

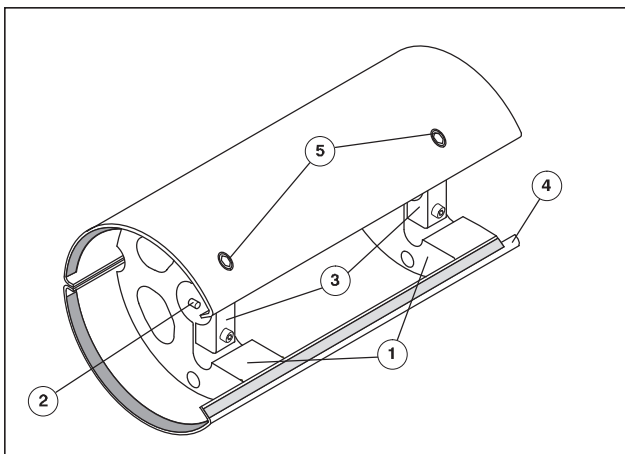


Fig. 18 Super Blue delivery drum, assembly

4. Place the sheet-metal jacket and let engage at the supports.
5. Move the supports laterally until the boreholes in the sheet-metal jacket (Fig. 18/5) lie above the boreholes in the supports.
6. Screw in the 4 countersunk screws at the supports, but do not tighten yet.
7. Further rotate the press and proceed in the same way with the 2nd sheet-metal jacket.
8. Centrally and laterally align the Super Blue delivery drum between the sprocket wheels.



Caution - Danger of collision between the gripper bars and the delivery drum! Cautiously rotate the press through by hand!

Note danger of collision between the drum and the gripper bars!

9. **Tighten the Allen screws** of the retaining bridges!
10. **Tighten the screw fasteners** of the sheet-metal jackets.

5.5 Installing the Super Blue base cover

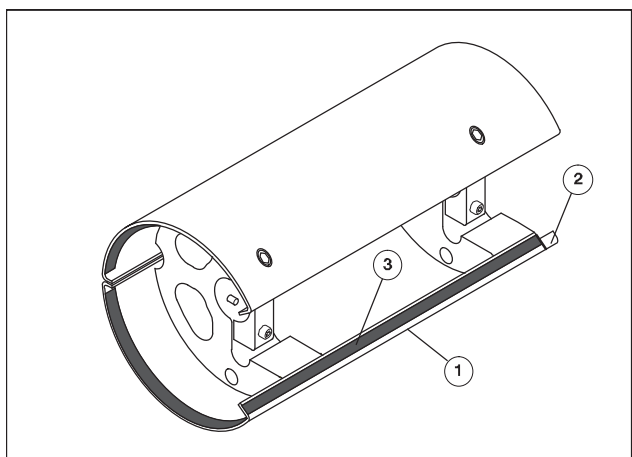


Fig. 19 Super Blue delivery drum: installing the base cover

1. Rotate the press until the front edge (Fig. 19/1) of the Super Blue delivery drum with the black Velcro strip is accessible.
2. Press the blue Velcro tape of the base cover onto the black Velcro tape at the sheet-metal jacket (Fig. 19/3).
3. Firmly press together the Velcro tape at the recess of the base cover and the sheet-metal jacket on O.S. (Fig. 19/2).
4. Keep the rear edge of the base cover tensioned and tilt the press until the rear edge of the Super Blue delivery drum is accessible.
5. Firmly press together the Velcro tape at the rear edge of the base cover and at the delivery drum.
6. Rotate the press and check whether the base cover lies taut and unwrinkled on the sheet-metal jacket; if not, pull on the base cover again.

5.6 Pulling on the Super Blue net

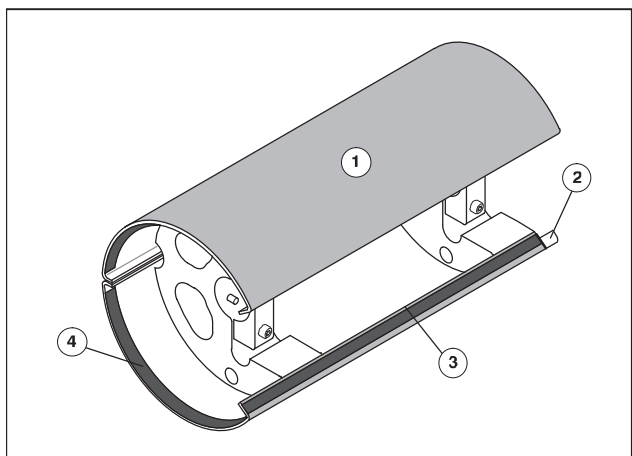


Fig. 20 Super Blue delivery drum, pulling on the net

The Super Blue net (Fig. 20/1) is precut to the right size; the front and rear edges are pressed on the Velcro tape of the base cover. The parts of the net laterally projecting beyond the sheet-metal jackets are pressed on the Velcro strips at the inside of the sheet-metal jackets (Fig. 20/4).

The net shows all 26 light transverse lines, which should lie parallel to the front edge of the sheet-metal jackets after the base cover is pulled on.

1. Position the press so that the front edge of the Super Blue delivery drum with the recess (Fig. 20/2) is accessible.
2. Laterally and centrally align the Super Blue base cover and the Super Blue net with one another.
3. Press the front edge of the Super Blue net against the Velcro tape of the base cover (Fig. 20/3), then press on well by smoothing down from the center towards D.S. and O.S. (e.g. using a circular brush).
4. Retain the Super Blue net and inch the press until the rear edge of the delivery drum is accessible.

5. Pull the Super Blue net over the rear edge of the delivery drum until it completely covers the Velcro tape at the rear edge. The net must not project beyond the Velcro tape.
6. Press on the Super Blue net at the Velcro tape (e.g. with a circular brush).
7. Uniformly distribute the Super Blue net on the base cover by smoothing down and fasten at the Velcro tape at the inside of the delivery drum on D.S. (Fig. 20/4) and O.S.
8. At the recess at the front edge of the delivery drum (Fig. 20/2), press on the Super Blue net at the Velcro tape.

5.7 Super Blue Stretch Bands

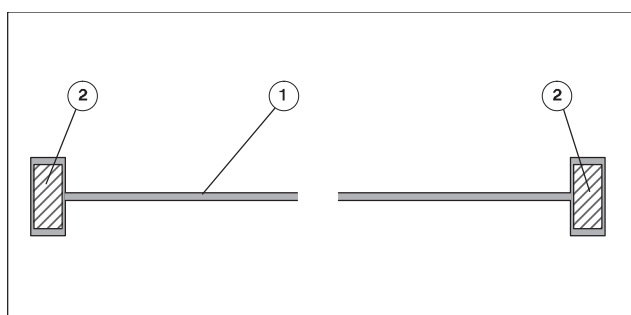


Fig. 21 Super Blue Stretch Band

Properties

The Super Blue Stretch Bands (Fig. 21/1) are elastic bands that can be used in case of printing problems related to heavy printing materials or narrow track cardboard. They support the smear-free sheet transport over the delivery drum. 2 Stretch Bands are included with the Super Blue delivery drum. The Stretch Bands are fastened with the Velcro strips (Fig. 21/2) in the channel of the delivery drum.

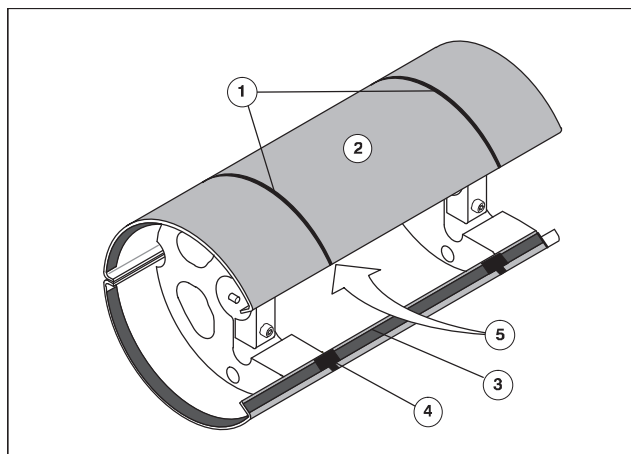


Fig. 22 Super Blue Stretch Bands

Inserting the Stretch Bands

Note

The Stretch Bands (Fig. 22/1) are mounted on the Super Blue net (Fig. 22/2) that has been pulled on. Place Stretch Bands only in non-print areas in the circumferential direction of the printed image!

1. Tilt the press until the Velcro strip at the front edge of the base cover (Fig. 22/3) is accessible.
2. Press a Velcro strip of the Stretch Band (Fig. 22/4) on the Velcro strip of the delivery drum (Fig. 22/3).
3. Inch the press forwards, holding fast the rear end of the Stretch Band.
4. Firmly press the rear Velcro strip of the Stretch Band (Fig. 22/5) against the Velcro strip at the rear edge of the base cover.
5. If necessary, mount additional Stretch Bands in the same way.

The number of Stretch Bands and the distribution on the delivery drum depend on the format and on the print subject.

Removing the Stretch Bands

After end of job remove the Stretch Bands again.

1. Loosen the Velcro tape of a Stretch Band at the rear edge of the delivery drum.
2. Inch the press backwards and guide the Stretch Band out of the press.
3. Loosen the Stretch Band at the front edge of the delivery drum.

5.8 Cleaning the Super Blue base cover

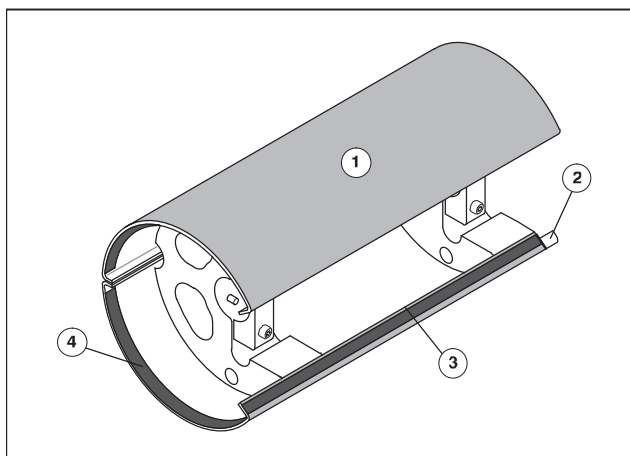


Fig. 23 Super Blue delivery drum

1. **Before cleaning** the base cover, cautiously remove the Super Blue net (Fig. 23/1) from the base cover.
2. Loosen the Super Blue net at the inside surfaces of the sheet-metal jackets (Fig. 23/4) and at the rear edge.
3. Inch the press forwards up to the front edge (Fig. 23/3) of the Super Blue net.
4. Detach the front edge of the Super Blue net from the base cover and remove the net from the press.
5. Remove the ink buildup on the base cover with a mixture of 50 % water and 50 % alcohol, if necessary with roller wash.

Note

More aggressive cleaners can render the base cover unusable.

6. After cleaning the base cover, pull the Super Blue net back on. If ink has built up on the Super Blue net, then replace the net.

6 Delivery fans

6.1 Safety instruction



Warning - Risk of injury after switching off the delivery fans!

After switching off the fans or opening the delivery guard, the fans continue running for some time until they come to a standstill.

6.2 Setting the speed

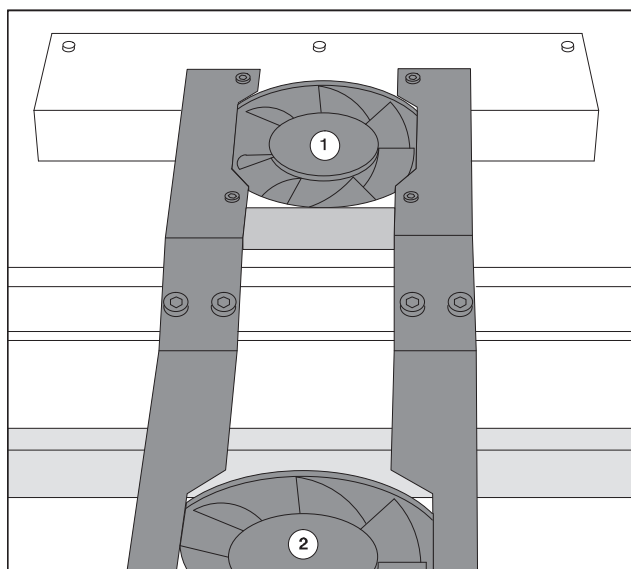


Fig. 24 Delivery fans

There are 2 fans above the delivery pile (Fig. 24/1 and 2) to improve the delivery of the printed sheets.

Application: improved sheet delivery for thin paper.

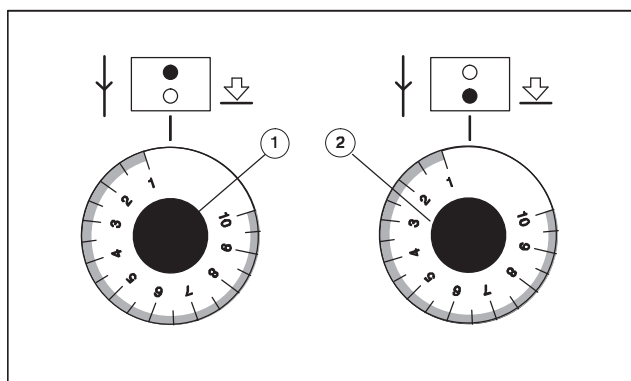


Fig. 25 Delivery fans, setting the speed

Setting the speed of the fans

1. Set the speed of the fans infinitely via the corresponding control knob. Control knob (Fig. 25/1): rear fan (Fig. 24/1); control knob (Fig. 25/2): front fan (Fig. 24/2). - Position of the control knobs as shown in Fig. 25: fans are switched off.

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8 Tape inserter

8.1 Function

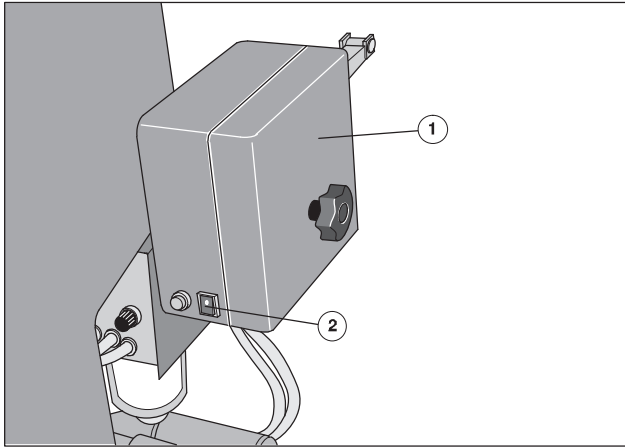


Fig. 32 Tape inserter

The tape inserter (Fig. 32/1) is used to insert a strip of paper in the delivery pile after a preselected number of print sheets (= block size).

Condition

The tape inserter is switched on (Fig. 32/2), the function *Tape inserter ON* is preselected at the control console, the device (Fig. 32/1) is swiveled onto the press; in Fig. 32 the tape inserter is swiveled off.

8.2 Block preselection Tape inserter



Fig. 33 SF 31: *Tape inserter block preselection*

1. Press the *Special functions* button; the display shows the identification number of the last special function.
2. Using the numeric keypad, call up special function 31 *Tape inserter block preselection*, indication in the display (Fig. 33).
3. Press the *Delete* button.
4. Using the numeric keypad, enter the block size (number of print sheets) (minimum block size: 10). Fig. 33/2 shows the entered block size (here 50 sheets).
5. Press the *Special functions* button to exit the display.

8.3 Tape inserter in printing operation



Fig. 34 SF 31: *Tape inserter block preselection*

In production, the **counter** (Fig. 34/1) indicates the number of printed sheets of the block. After the pre-selected block size is attained, the counter (Fig. 34/1) is reset to 0 and a strip of paper is inserted in the delivery pile.

When the **block size is changed** in production, the value entered first applies for the started block. The next block then has the new block size.

Note

If the entered block size **flashes** (Fig. 34/2), then a block size less than 10 was entered (minimum block size 10 sheets).

If the *Premature end of run* button is pressed in **production**, then the block size is set to zero, a tape is inserted and the next block starts.

8.4 Block preselection: manual tape insertion



Fig. 35 SF 20: Block printing ON/OFF

If no tape inserter is present, then after the printing of the preselected block size, a strip of paper can be manually inserted in the delivery pile.

1. Preselect the block size (special function SF 31).
2. Press the *Special functions* button.
3. Using the numeric keypad, call up special function 20 *Block printing ON/OFF* (Fig. 35).
4. Using the + button, activate the function (display shows "ON", Fig. 35).
5. Exit the display with the *Special functions* button.

The press prints the preselected block size and a press stop occurs.

6. Insert a strip of paper or cardboard in the delivery pile for block separation and recommence production.

8.5 Inserting the paper roll in the tape inserter

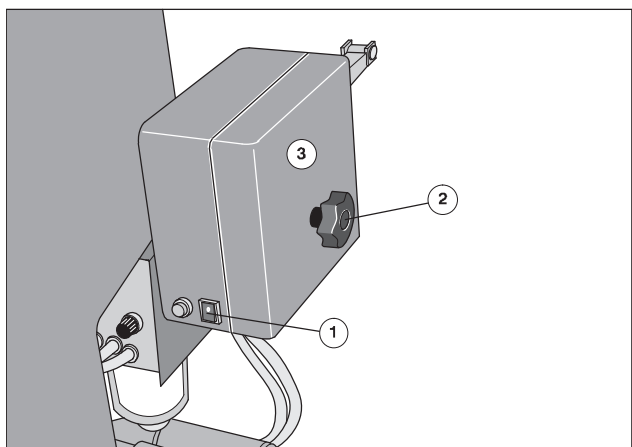


Fig. 36 Opening the tape inserter

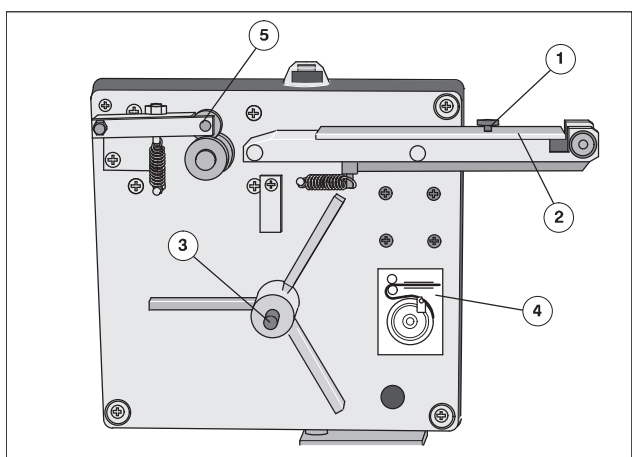


Fig. 37 Tape inserter opened

1. Switch off the tape inserter at the mains switch (Fig. 36/1).
2. Loosen the star knob (Fig. 36/2) and remove the cover (Fig. 36/3).

3. Open the knurled nut (Fig. 37/1), in order to remove paper remnants and paper dust in the the paper channel (Fig. 37/2).
4. Remove empty roll sleeve from the shaft (Fig. 37/3).
5. Place new paper roll on the shaft (Fig. 37/3) and insert in the tape inserter (Fig. 37/4) according to the diagram. In doing so, slightly raise the roller (Fig. 37/5).
6. Close the paper channel and tighten the knurled nut (Fig. 37/1).
7. Retighten the cover (Fig. 36/3) to the device with the star knob (Fig. 36/2).

8.6 Function test

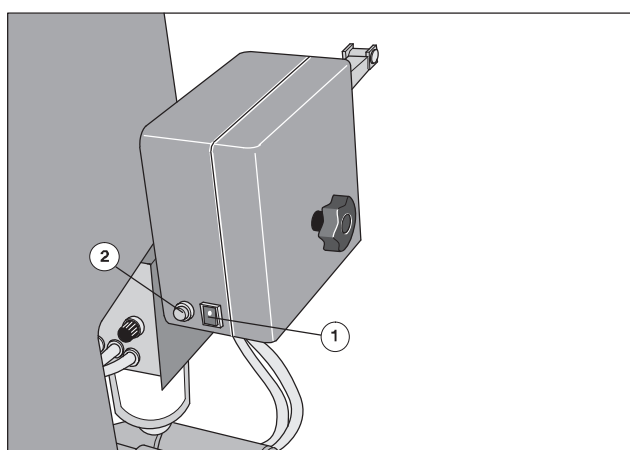


Fig. 38 Tape inserter function test

1. Switch on the mains switch (Fig. 38/1).
2. Press the button (Fig. 38/2) in order to advance and cut off a strip of paper.

8.7 Other functions of the tape inserter



Fig. 39 *Waste-sheet counter, Premature end of run* buttons

- When the *Waste-sheet counter* button (Fig. 39/1) is pressed, then the waste sheets are separated from the good sheets through the insertion of a strip. When the button is pressed again, another strip is inserted.
- When the remaining sheets counter reaches the value 0 or the *Premature end of run* button (Fig. 39/2) is pressed, then two strips are inserted.

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1 Numbering and imprinting - Safety instructions

1.1 To be observed when working at the press



Warning - Risk of injury from rotating rollers and cylinders!

When cleaning the rollers and cylinders, the ball of your thumb must point in the direction of the infeed gap and your fingers in the direction of the outlet gap. Select the corresponding direction of rotation.

1.2 Numbering inking unit



Warning - Risk of injury from rotating rollers and cylinders!

Only operate the numbering inking unit with the washup tray installed. The washup tray acts as a safeguard against reaching into the rollers.

2 Numbering device

2.1 Overview

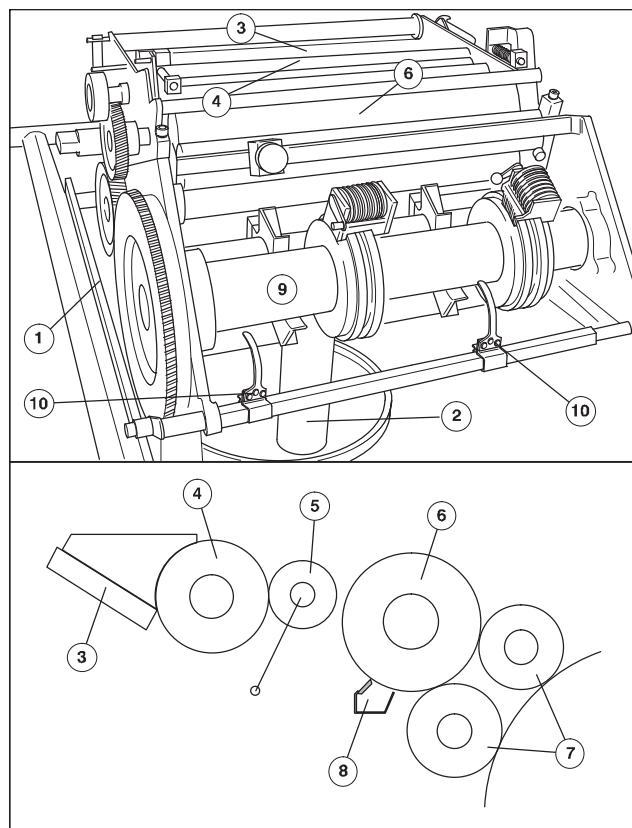


Fig. 1 Numbering device

The numbering device of the BP18 is a **special accessory**. It consists of

- 1 the **numbering slide-in unit**, which is
- 2 slid into the printing press from a **movable slide-in carriage**.

The numbering slide-in unit consists of:

- 3 Ink fountain
- 4 Ink fountain roller
- 5 Ink ductor
- 6 Ink distributor
- 7 2 inking form rollers
- 8 Washup blade
- 9 Numbering shaft with two mounting rings for numbering boxes and block holder
- 10 Sheet guide springs

In addition the numbering device includes the washing fluid pipe and the drip pan.

Numbering boxes, block holders, cams and additional mounting rings are available from your Heidelberg agency.

In addition, you must pull the **sheet steel** on the **impression cylinder** (see section on "Printing unit, impression cylinder").



Caution - Danger of damage to the impression cylinder!

Numbering must never be done against the chromium-plated brass plate, to avoid damaging the impression cylinder!
For numbering, the **sheet steel** must be pulled on (see section on "Printing unit, impression cylinder").

2.2 Mounting rings

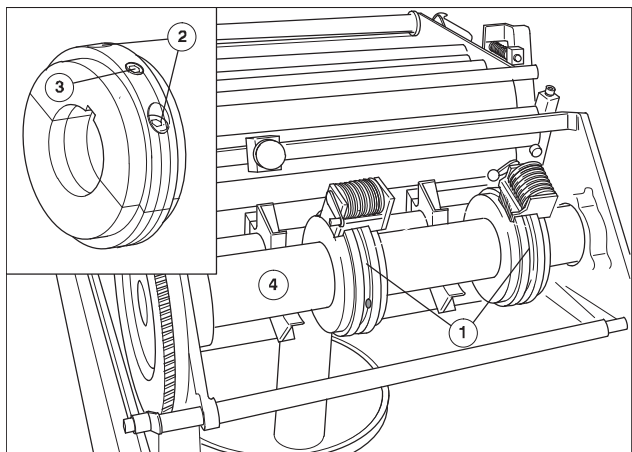


Fig. 2 Mounting rings

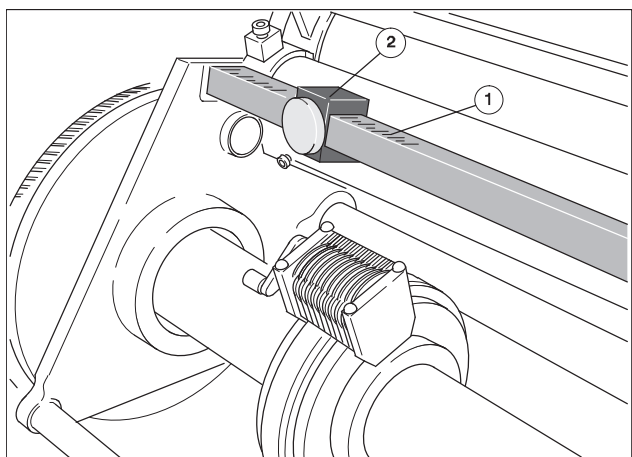


Fig. 3 Vernier caliper

The mounting rings (Fig. 2/1) are mounted on the numbering shaft (Fig. 2/4) outside the press. Four mounting rings can be mounted on the numbering shaft.

8 straight numbering boxes and 4 transverse numbering boxes can be mounted on a single mounting ring.

The mounting rings consist of two half-rings that can be removed from the numbering shaft after loosening the screws (Fig. 2/2) .

1. Loosen the Allen screw (Fig. 2/3) with the operator tool, in order to move the mounting rings laterally along the numbering shaft.
2. Fix the position of the mounting rings with the Allen screw (Fig. 2/3).

To position the mounting rings corresponding to the specified status, please use the vernier caliper (Fig. 3/2) and the scale (Fig. 3/1).

2.3 Numbering boxes

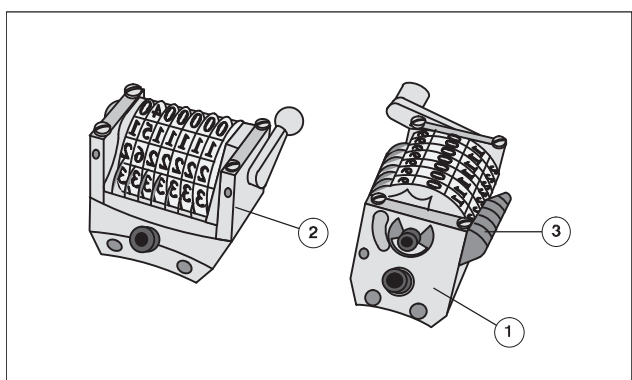


Fig. 4 Numbering boxes

Note

The same numbering boxes can be used for the numbering device of the BP18

The numbering boxes are available from your Baum Dealer as straight (Fig. 4/1) and transverse numbering boxes (Fig. 4/2), counting forwards and backwards, respectively, in various fonts and font sizes.

8 straight numbering boxes and 4 transverse numbering boxes can be mounted on a single mounting ring. The printing rows of numbers are indicated in Fig. 4 by an arrow. The rows of numbers are indexed by the front grippers (Fig. 4/3).

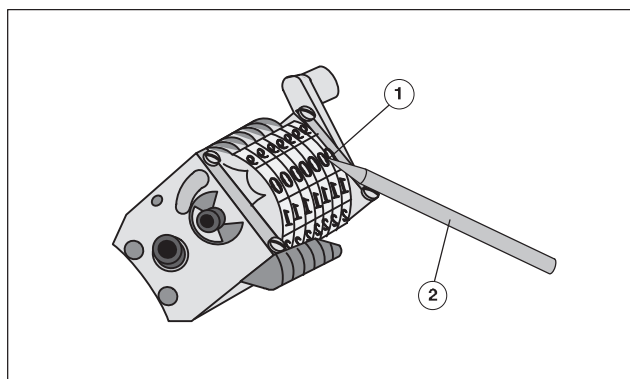


Fig. 5 Straight numbering box

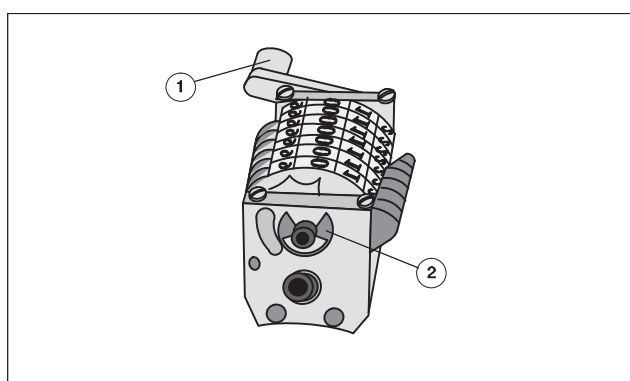


Fig. 6 Straight numbering box: turn over control lever

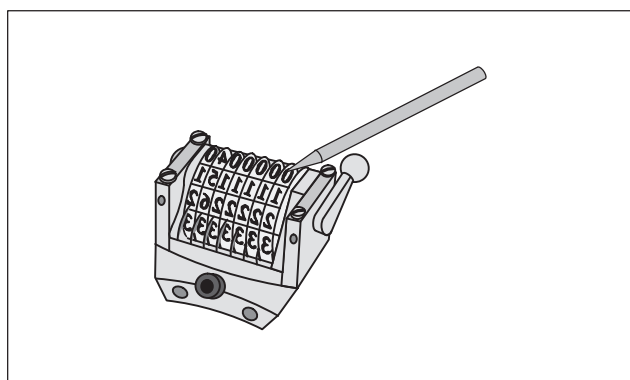


Fig. 7 Convex numbering box

Straight numbering boxes

The **numbers** of the straight numbering boxes (Fig. 5/1) are **parallel to the cylinder shaft**.

The straight numbering boxes are equipped with six sinkable zeros, so that numbering can occur from the 1st to the 7th digit, starting at 1 (instead of 0000001).
- Sinkable zero: 0 can be pressed in (= sunk), so that it is not printed as a leading number.

Setting the sinkable zeros

1. Using the tip of the plastic pin (Fig. 5/2), rotate the number zero forwards a bit and press in.
2. Turn back the number with the plastic pin; the "sunk" zero does not print.

Turning over the control lever

The numbering boxes can be indexed from the right or the left by the drive cams. To do so, insert the control lever (Fig. 6/1) on the corresponding side of the numbering box; this does not change the counting method of the numbering box (forwards/backwards).

1. Pull off the circlip (Fig. 6/2).
2. Pull out the control lever (Fig. 6/1) with the shaft.
3. Slide in the control lever with the shaft on the other side of the numbering box.
4. Press the circlip (Fig. 6/2) back on the shaft.

Note

After inserting the control lever on the other side, use another cam.

Convex numbering box

The **numbers** of the convex numbering boxes (Fig. 7/) are **perpendicular to the cylinder shaft**.

Adjust the sinkable zeros as with the straight numbering boxes.

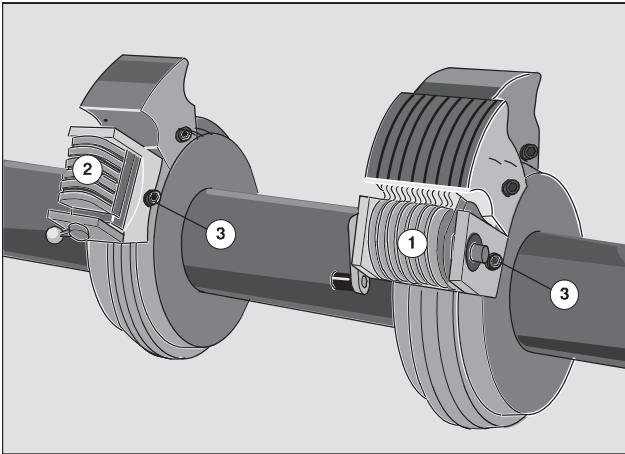


Fig. 8 Mounting the numbering boxes

2.4 Cams

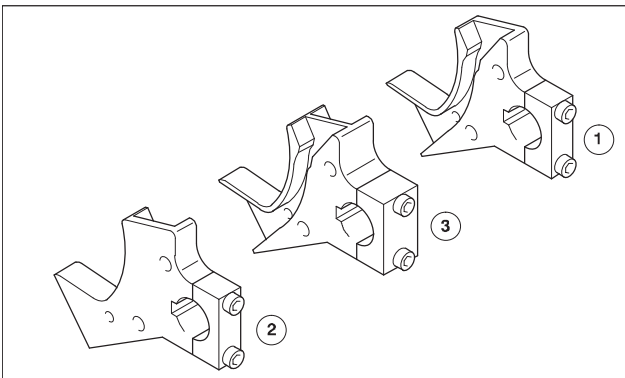


Fig. 9 Cams

Mounting the numbering boxes

1. Remove dust or dirt from the mounting ring and underside of the numbering box.
2. Place the numbering box on the mounting ring (straight numbering box: Fig. 8/1, convex numbering box: Fig. 8/2).
3. Tighten the locking screw (Fig. 8/3) at the numbering box using an Allen key. While tightening the locking screw, you must press the numbering box towards the mounting ring.

Types

Aids for selecting and positioning cams and numbering boxes are the **positioning foils** at the end of this sub-chapter and the positioning foil in the scale of 1:1 supplied with the numbering device.

The control lever of the numbering boxes is guided in the cam track of the cams for indexing. For switching the numbering boxes there are three different cams; the cam to be used in each case is determined by the positioning foil.

- **LH cam** (Fig. 9/2): the cam track is on the left side of the cam; the numbering boxes are mounted to the left of the cam.
- **RH cam** (Fig. 9/1): the cam track is on the right side of the cam; the numbering boxes are mounted to the right of the cam.
- **D cam** (Fig. 9/3): double cam: cam tracks are arranged on both sides of the cam. Numbering boxes can be mounted on the left and right of the cam.

Inserting the cams

1. Loosen the Allen screws (Fig. 10/2) at the cam (Fig. 10/1).
2. Remove the rear half-shell (Fig. 10/3).
3. Slide cam (Fig. 10/1) to the control shaft (Fig. 10/4).
4. Place the half-shell (Fig. 10/3) at the control shaft and screw to the cam with the Allen screws (Fig. 10/2). Only tighten the screws after the cam is correctly positioned.

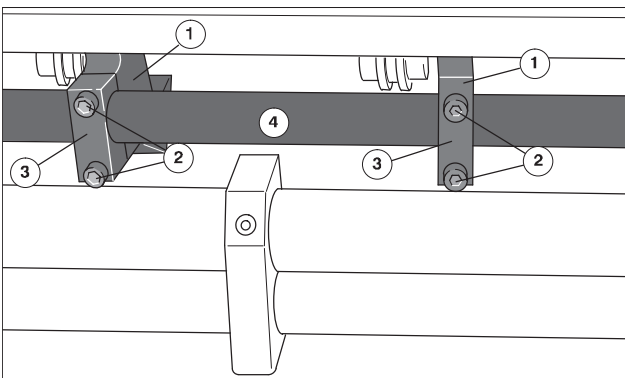


Fig. 10 Inserting the cams

Numbering and imprinting

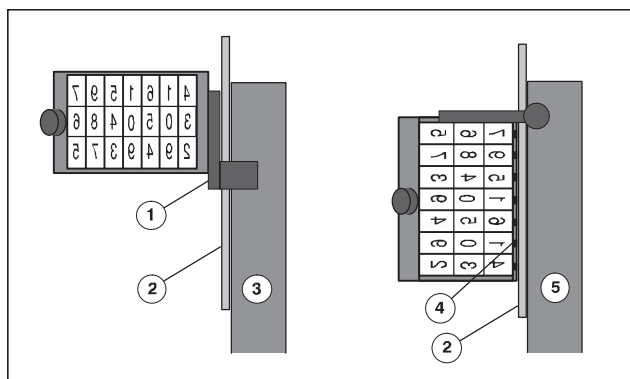


Fig. 11 Adjusting the cam

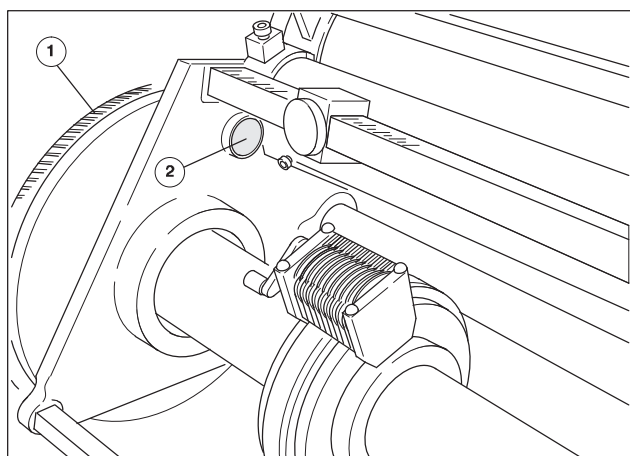


Fig. 12

Adjusting the cams to the numbering boxes

The lateral distance between the numbering box and the cam is determined using the **setting gauge** (Fig. 11/2, special accessory) (1.25 mm, Leibinger setting gauge, no. 329.422). This adjustment must be made with the utmost care, to **prevent damage**.

- **Straight numbering boxes:** a distance of 1.25 mm must lie between the control lever (Fig. 11/1) and the cam (Fig. 11/3).
- **Convex numbering boxes:** a distance of 1.25 mm must lie between the back of the rear gripper (Fig. 11/4) and the cam (Fig. 11/5).

After adjusting the cams and numbering boxes:

1. turn back the brass screw (Fig. 12/2) up to stop.
2. Turn the drive gear (Fig. 12/1) until the latch engages at the gear.

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3 Imprinting with printing block holders

3.1 Printing block holders

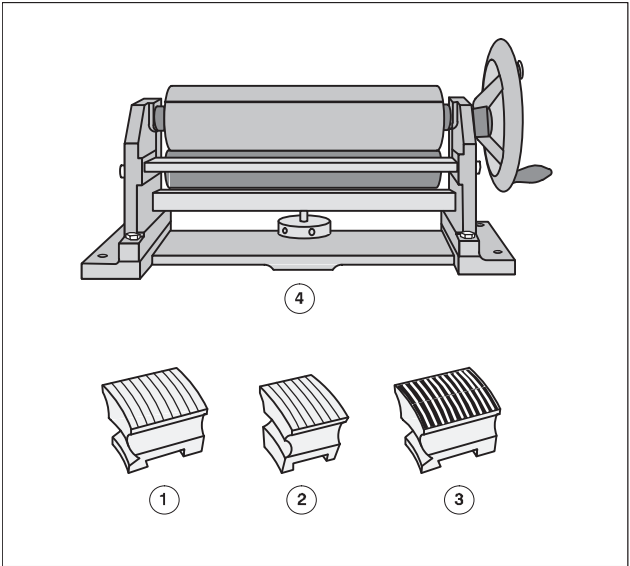


Fig. 13 Printing block holders, bending and beveling device

The entire imprinting device is an **extra accessory**. After manufacture, the imprinting printing blocks are bent or bevelled on the bending and beveling device and then glued onto the printing block holders. Various printing block holders can be used for imprinting:

Size (mm x mm)	Properties
45 x 45 Fig.13/1	can only be combined with straight numbering boxes on the same mounting ring
35 x 45 Fig.13/2	can be used with straight and convex numbering boxes on the same mounting ring
Fig.13/3	Printing block holders with magnetic insert allow printing blocks to be changed rapidly

Tab. 1 Printing block holders

With printing block holders with an undercut of 2.0 mm, 1.75 mm thick printing blocks can be used in connection with a 0.25 mm thick double sided-sided adhesive foil. Other undercuts are also available:

Printing block holder	Undercut
45 x 45 mm	2.0 mm 1.1 mm
35 x 45 mm	2.0 mm 1.1 mm
Magnetic insert (45 x 45 mm)	0.94 mm

Tab. 2 Undercuts of the printing block holders

Flexible rubber and plastic printing blocks can be glued directly onto the printing block holders and also removed again.

3.2 Bending and bevelling the printing blocks

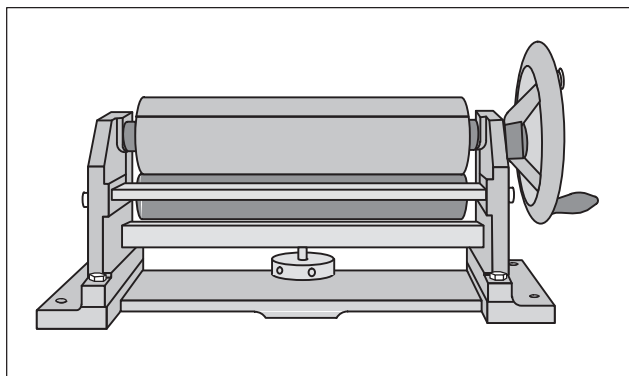


Fig. 14 The bending and bevelling device

Zinc and nyloprint printing blocks with steel underlay have to be adapted to the curve of the printing block holders before being glued on. The bending and bevelling device (Fig.14) (extra accessory) simplifies this adaptation process.

4 Numbering inking unit

4.1 Overview

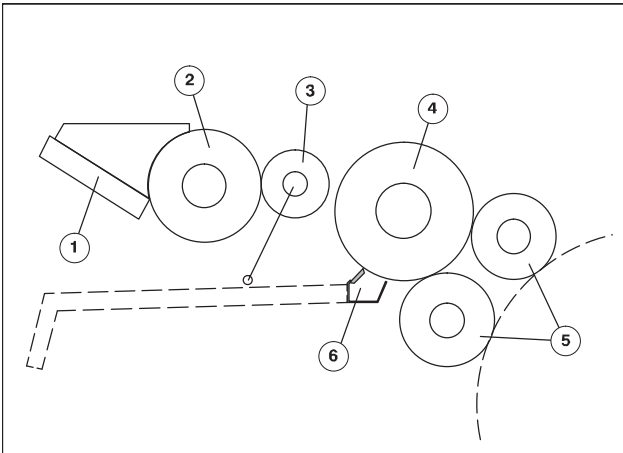


Fig. 15 Numbering inking unit, diagram

The numbering inking unit consists of the following components:

- 1 Ink fountain with ink fountain blade and ink fountain cheeks
- 2 Ink fountain roller
- 3 Ink ductor
- 4 Ink distributor
- 5 2 inking form rollers
- 6 Washup blade

An Allen key (2.5 mm) is provided for installing and removing the rollers.

The inking form rollers and the ink vibrator can be removed.



Caution - Danger of collision between the drip pan under the inking unit and the numbering device!

Before inserting the numbering device, remove the drip pan in PU 1 under the inking unit from the press.

4.2 Ink fountain

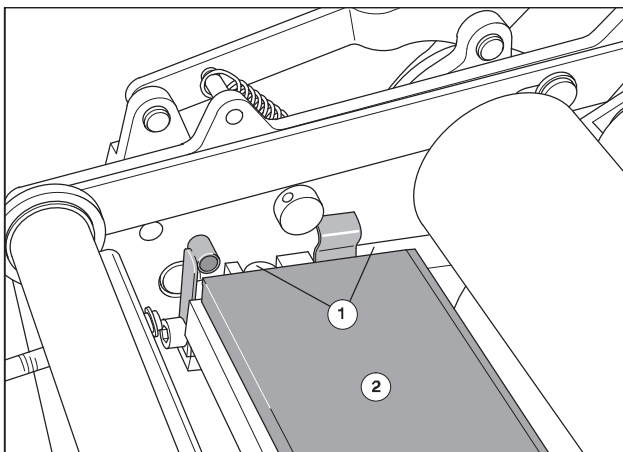


Fig. 16 Ink fountain

Ink fountain cheeks

1. Insert the ink fountain cheeks in the groove (Fig. 16/1) on both sides of the ink fountain blade (Fig. 16/2). They are held in position by spring pressure.

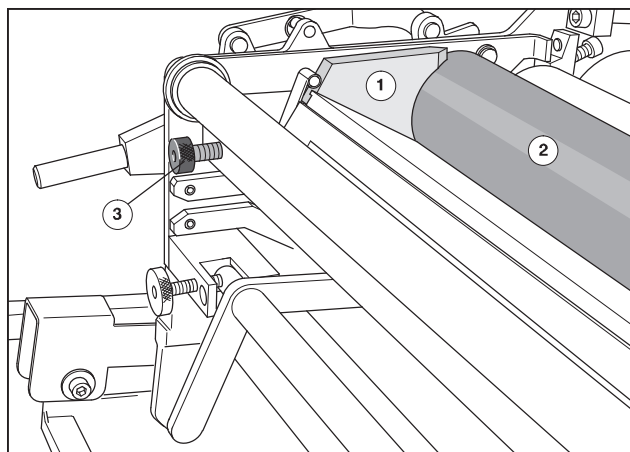


Fig. 17 Ink fountain

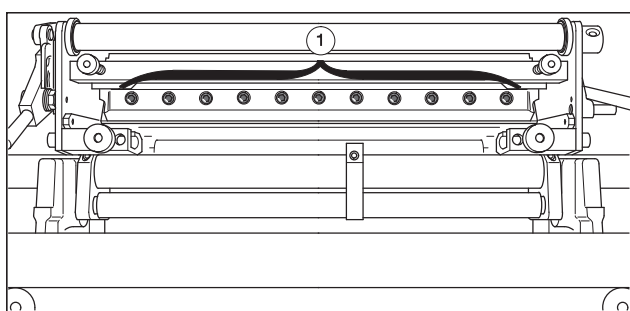


Fig. 18 Zone screws

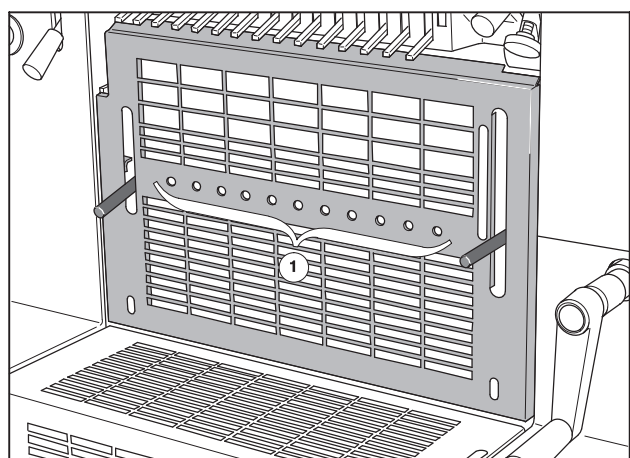


Fig. 19 Adjusting the ink zones

Placing the ink fountain at the ink fountain roller

1. After inserting the ink fountain cheeks (Fig. 17/1) fold up the ink fountain; the ink fountain cheeks lie slightly against the ink fountain roller (Fig. 17/2).
2. Screw in the knurled screws (Fig. 17/3) on both sides until the ink fountain blade lies against the ink fountain roller.

Adjusting the ink zones

The 11 ink zones are adjusted using the zone screws (Fig. 18/1) at the underside of the ink fountain blade.

The ink zones of the numbering inking unit are accessible through the openings (Fig. 19/1) in the guard even with the inking unit guard closed and can be adjusted in production.

Direction of rotation: clockwise - close ink zones; counterclockwise - open ink zones.

1. Adjust the zone screws (Fig. 19/1) using the 4 mm hex head screwdriver corresponding to the positions of the numbering boxes or block holder.

4.3 Introducing ink in the ink fountain

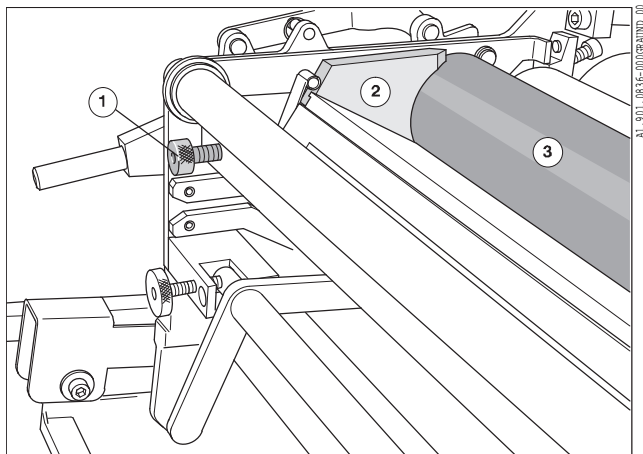


Fig. 20 Introducing ink in the ink fountain

Usable inks: any ink can be used when numbering.

1. Check that the ink fountain cheeks are inserted (Fig. 20/2) and that the ink fountain has been set against the ink fountain roller (Fig. 20/3) with the knurled screws (Fig. 20/1).
2. Coat the ink fountain roller with ink using the ink slice; if only one mounting ring is used, coat the vicinity of the mounting ring.

4.4 Ink fountain roller

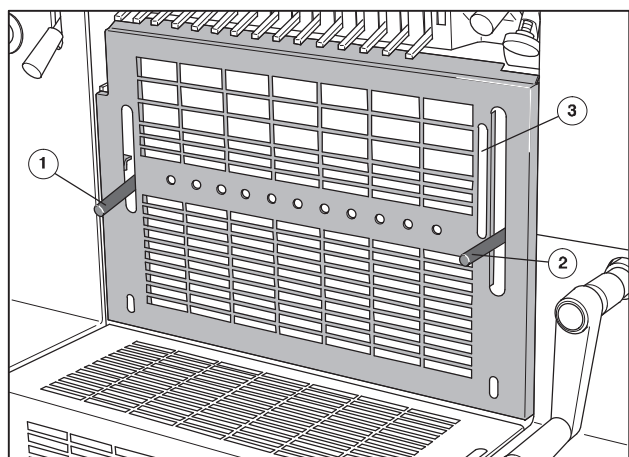


Fig. 21 Inking unit guard

1. Adjust the **fountain roller sweep** with the lever on D.S. (Fig. 21/1).
Lever down: ink fountain roller disengaged; lever up: maximum fountain roller sweep.
2. **Turn the ink fountain roller** with the lever on O.S. (Fig. 21/2).

The borehole in the shaft is accessible through the slot in the inking unit guard (Fig. 21/3), in order to **engage or disengage the ink vibrator** (see the following section).

4.5 Engaging/disengaging the ink vibrator

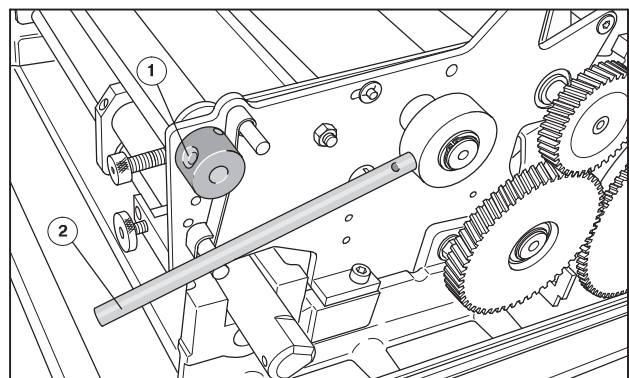


Fig. 22 Engaging/disengaging the ink vibrator

1. Insert the operator tool through the slot in the inking unit guard on O.S. into the borehole of the shaft (Fig. 22/1).
2. Turn the shaft with the operator tool, in order to engage or disengage the ink vibrator.

Rotation up: ink vibrator disengaged; **down:** ink vibrator engaged.

4.6 Washup device

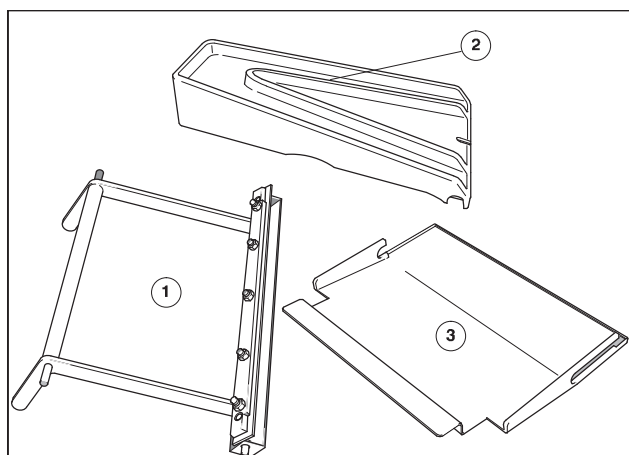


Fig. 23 Washup device

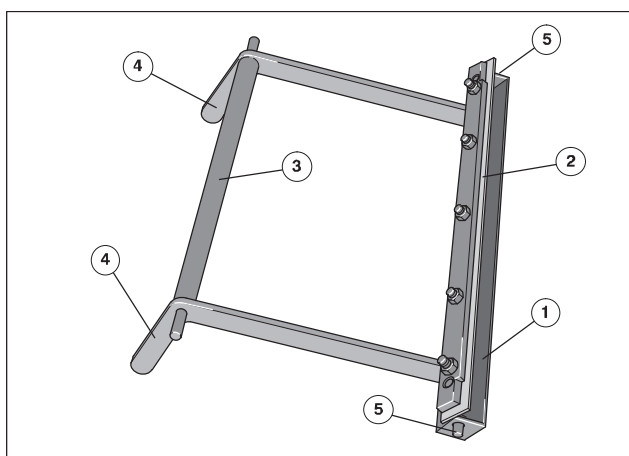


Fig. 24 Washup blade

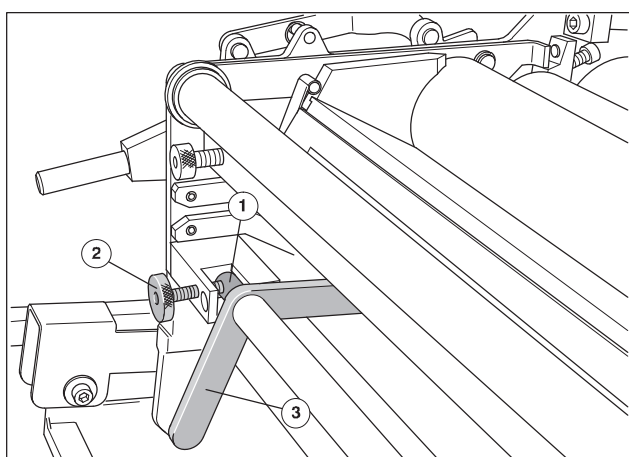


Fig. 25 Washup blade inserted

Overview

The washup device of the numbering inking unit contains:

- the washup blade (Fig. 23/1),
- the feed for washing fluid (Fig. 23/2), when the numbering inking unit in the press is to be cleaned,
- the drip pan (Fig. 23/3) under the numbering inking unit.

If the numbering inking unit is to be washed outside the press, then the feed is not used.

Washup blade

The washup blade (Fig. 24) consists of the tray (Fig. 24/1), the blade lip (Fig. 24/2) and the support (Fig. 24/3). The handles (Fig. 24/4) serve to slide the support in the numbering device. The lateral pins (Fig. 24/5) at the trough guide the insertion. When inserted up to the stop, the blade is set against the ink distributor; fix the washup position with the knurled screws.

Engaging the washup blade

1. Open the inking unit guard.
2. Insert the washup blade with the handles (Fig. 25/3) into the numbering device up to stop under the ink fountain.
3. In doing so, insert the two bolts on D.S. (Fig. 25/1) and O.S. in the corresponding recesses.
4. Uniformly screw in the knurled screws in D.S. (Fig. 25/2) and O.S. until the washup blade lies against the ink distributor for the washup.
5. **Engage the washup blade:** loosen the knurled screws on D.S. (Fig. 25/2) and O.S.; spring pressure pushes the blade way from the ink distributor.

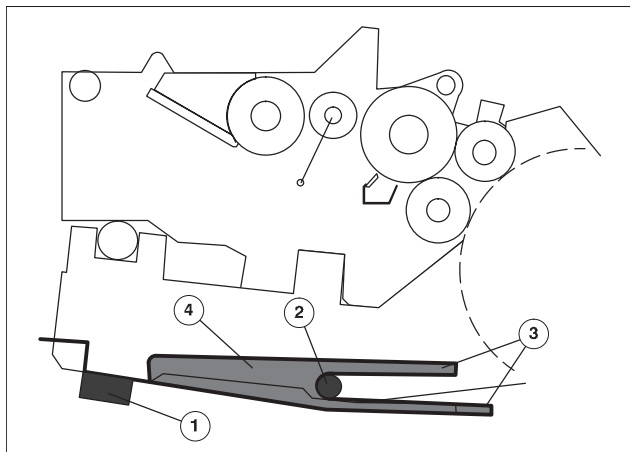


Fig. 26

Inserting the drip pan

1. Insert the drip pan (Fig. 26/4) above the cross bar (Fig. 26/1) in the numbering slide-in unit. In doing so, make sure that the cross bar (Fig. 26/2) lies between the two lateral guides (Fig. 26/3).

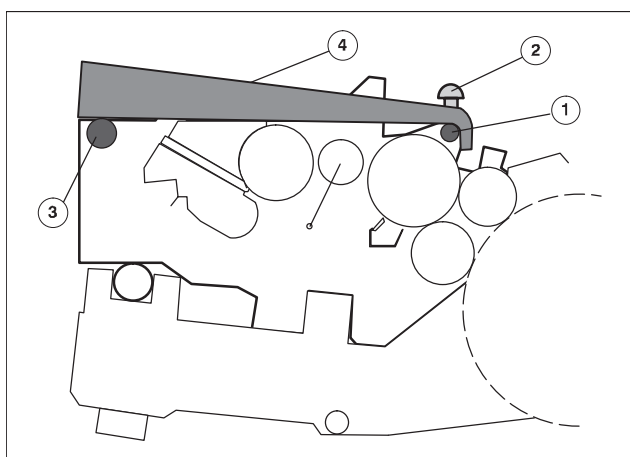


Fig. 27

Inserting the pipe for washing fluid

1. Insert the pipe for washing fluid (Fig. 27/4) in the press above the numbering slide-in unit. The bolt (Fig. 27/2) serves to fix and lock the position on the cross bar (Fig. 27/1).
2. Deposit the feed on the cross bar (Fig. 27/3).
3. Close the inking unit guard.

4.7 Numbering inking unit washup

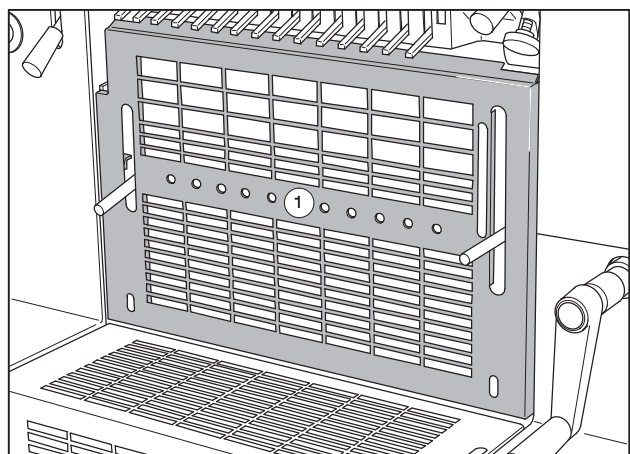


Fig. 28 Inking unit guard

Washing the numbering inking unit in the press

Prerequisites: washup blade, washing fluid pipe and drip pan are inserted in the numbering slide-in unit and the washup blade is engaged at the distributor roller.

1. Disengage the ink vibrator using the operator tool.
2. Start up the press.
3. Spray washing fluid onto the inserted washing fluid pipe through the openings in the inking unit guard (Fig. 28/1).
4. Stop the press after a few revolutions and remove the numbering slide-in unit from the press, in order to check the washup result.
5. If the rollers are not yet sufficiently clean, slide in the numbering slide-in unit and start the washup procedure again.
6. Manually clean the ink fountain and ink fountain roller.

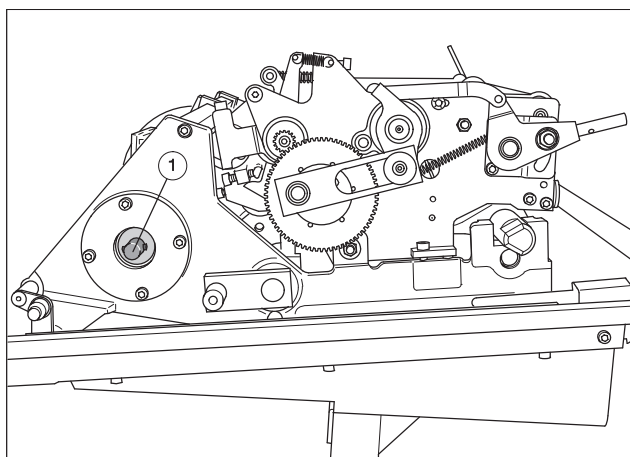


Fig. 29 Attaching the crank handle

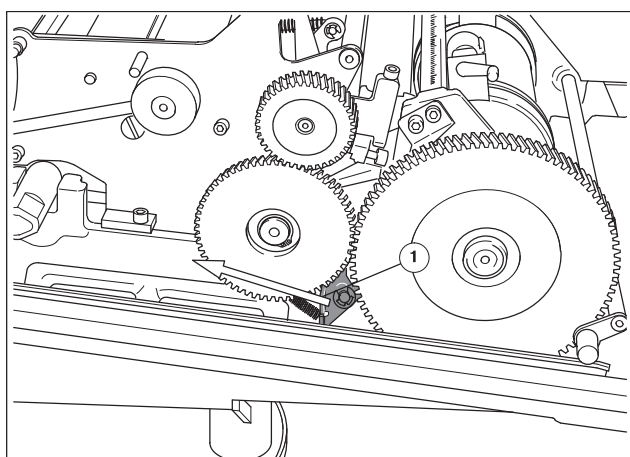


Fig. 30 Releasing the ratchet pawl

4.8 Changing the ink

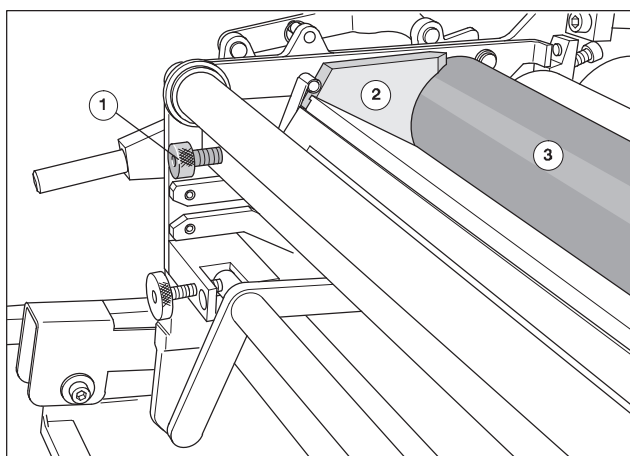


Fig. 31 Changing the ink

Washing the numbering inking unit outside the press

Prerequisites: washup blade and drip pan are inserted in the numbering slide-in unit and the washup blade is engaged at the distributor roller.

1. Remove the numbering slide-in unit from the press.
2. Attach the delivery crank handle to the shaft on D.S. with the mounting rings (Fig. 29/1).
3. Spray washing fluid on the rollers of the numbering inking unit with the spray bottle.
4. Press the ratchet pawl at the drive gear (Fig. 30/1) in the direction of the arrow and keep pressed during the washup procedure.
5. Turn the numbering inking unit with the crank handle counterclockwise until the washup procedure is concluded. If necessary add more washing fluid.
6. Manually clean the ink fountain and ink fountain roller.

1. Disengage the ink vibrator using the operator tool.
2. Wash the numbering inking unit.
3. Remove the numbering slide-in unit from the press.
4. Remove ink from ink fountain using the spatula.
5. Loosen the knurled screws (Fig. 31/1) on both sides.
6. Fold back the ink fountain downwards.
7. Remove and clean the ink fountain cheeks (Fig. 31/2).
8. Clean the ink fountain blade.
9. Clean the ink fountain roller (Fig. 31/3).
10. Insert the ink fountain cheeks.
11. Engage the ink fountain blade with the ink fountain cheeks at the ink fountain roller.
12. Lock the ink fountain with the knurled screws (Fig. 31/1).
13. Coat the ink fountain roller with new ink using the spatula.

4.9 Separating the numbering boxes and rollers

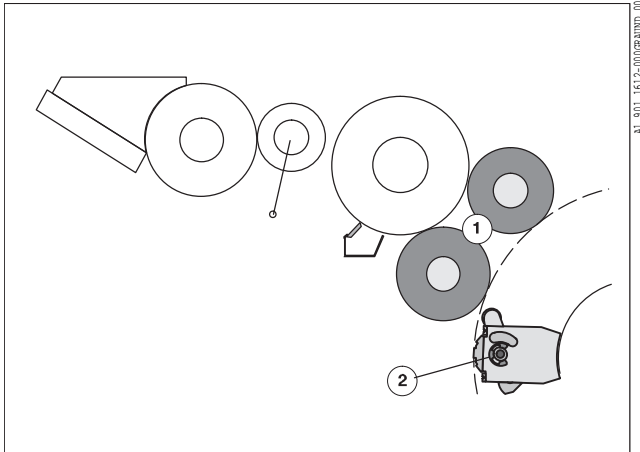


Fig. 32 Separating the inking form rollers and numbering boxes

To avoid print spots on the rollers, separate the rollers and numbering boxes after concluding the numbering procedure.

1. Remove the numbering device from the press (see section on "Inserting and removing the numbering device").
2. **Separate inking form roller and numbering boxes:** turn the numbering shaft so that the two inking form rollers (Fig. 32/1) no longer make contact with the numbering boxes (Fig. 32/2).

When not used for longer periods of time:

1. Remove the ink vibrator and inking form rollers from the numbering device and store the rollers on the ball bearings. - Removal of the rollers: see following sections.

Checking the ink stripes on the rollers

1. With the ink vibrator disengaged, apply light ink on the ink distributor using the ink slice.
2. Attach the crank handle to the numbering shaft and turn until the rollers of the numbering inking unit are uniformly inked.
3. Stop turning the numbering device and wait a few seconds.
4. Cautiously continue turning the numbering device until the ink stripe at the roller to be checked is visible.
5. Check the ink stripe for uniform width along the entire roller length and width of the ink stripe; if necessary readjust.

4.10 Replacing the ink vibrator

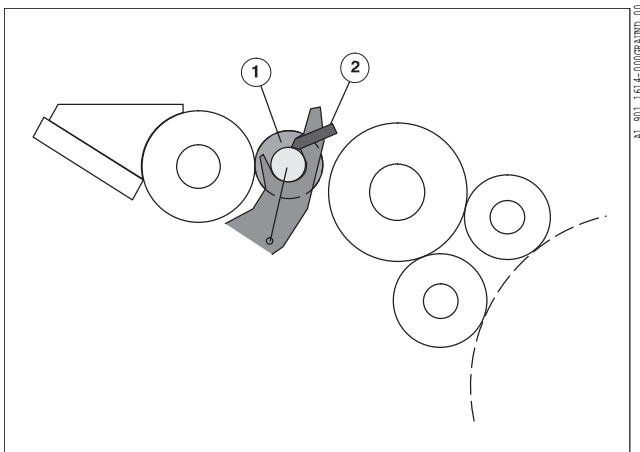


Fig. 33 Ink vibrator

Checking the ink stripe

The ink vibrator is factory-adjusted for an ink stripe of 2 to 3 mm; the ink stripe width cannot be changed. If the width of the ink stripe significantly deviates from this value, you must replace the ink vibrator.

Removing the ink vibrator

1. Unscrew the screw (Fig. 33/2) in the bearing plate of the ink vibrator on D.S. and O.S.
2. Lift the ink vibrator (Fig. 33/1) out of the bearings on both sides.

Inserting the ink vibrator

1. Insert the ink vibrator in the bearings on both sides.
2. Using the 2.5 mm hex wrench, tighten the screw in the bearing plate.

4.11 Removing and installing the inking form rollers

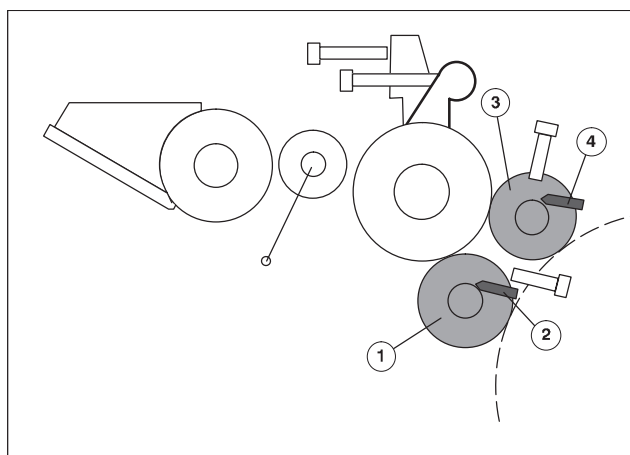


Fig. 34 Removing/installing the inking form rollers

Removing the upper inking form roller

1. Unscrew the screw (Fig. 34/4) in the bearing plate of the inking form roller on D.S. and O.S. using the 2.5 mm hex wrench.
2. Lift the inking form roller (Fig. 34/3) upwards out of the bearing.

Removing the lower inking form roller

Prerequisite: the upper inking form roller is removed.

1. Unscrew the screw (Fig. 34/2) in the bearing plate of the inking form roller on D.S. and O.S. using the 2.5 mm hex wrench.
2. Remove the inking form roller (Fig. 34/1) from the bearing in the direction of the numbering shaft.

Installing the lower inking form roller

First install the lower inking form roller.

1. Insert the inking form roller (Fig. 34/1) on D.S. and O.S. in the bearings.
2. Turn screw (Fig. 34/2) in the bearing plate of the inking form roller on D.S. and O.S. using the 2.5 mm hex wrench.

Installing the upper inking form roller

1. Insert the inking form roller (Fig. 34/3) into the bearing from above.
2. Turn screw (Fig. 34/4) in the bearing plate of the inking form roller on D.S. and O.S. using the 2.5 mm hex wrench.

Note

If the inking form rollers have only been removed and installed, then the rollers do not have to be adjusted.

4.12 Adjusting the inking form rollers

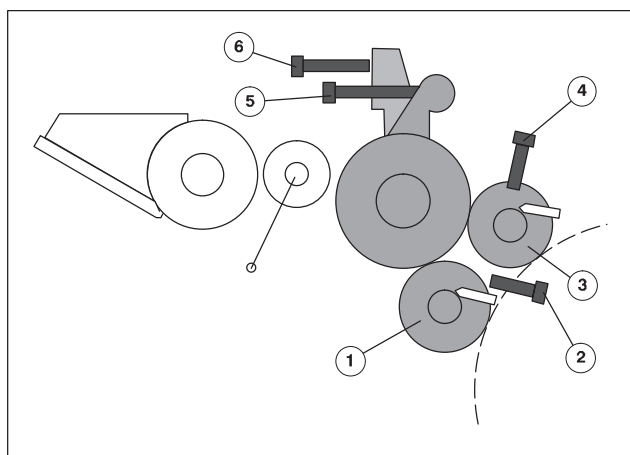


Fig. 35 Adjusting the inking form rollers

Ink stripe widths: the ink stripes between the inking form rollers and the ink distributor must be adjusted to a width of 3 mm.

Color of the adjusting screw	Position in Fig. 35	Position of adjustment
yellow	2	lower inking form roller to the distributor roller
blue	4	upper inking form roller to the distributor roller

Color of the adjusting screw	Position in Fig. 35	Position of adjustment
pink	5	upper inking form roller to the numbering boxes
orange	6	lower inking form roller to the numbering boxes

Tab. 3 Adjusting screws

Adjusting the inking form rollers to the distributor roller

1. **Lower inking form roller** (Fig. 35/1): turn yellow adjusting screw (Fig. 35/2) clockwise with the operator tool: the ink stripe becomes wider
2. **Upper inking form roller** (Fig. 35/3): turn blue adjusting screw (Fig. 35/4) clockwise with the operator tool: the ink stripe becomes wider

Adjusting the inking form rollers to the numbering boxes

Note

The inking form roller is **correctly engaged** if the number surface of the numbering boxes is inked, but no squeezed off ink is visible at the number edge. Too much pressure leads to premature wear of the inking form rollers.

• Directly adjusting the inking form rollers

1. Turn the numbering shaft so that the inking form roller to be adjusted faces a numbering box.
2. **Upper inking form roller** (Fig. 36/3): turn pink adjusting screw (Fig. 36/6) clockwise: the contact pressure relative to the numbering boxes increases.
3. **Lower inking form roller** (Fig. 36/1): turn orange adjusting screw (Fig. 36/5) clockwise: the contact pressure relative to the numbering boxes decreases.

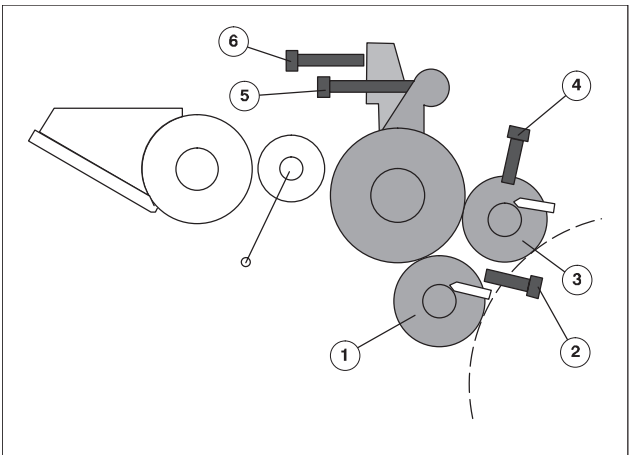


Fig. 36 Adjusting the inking form rollers

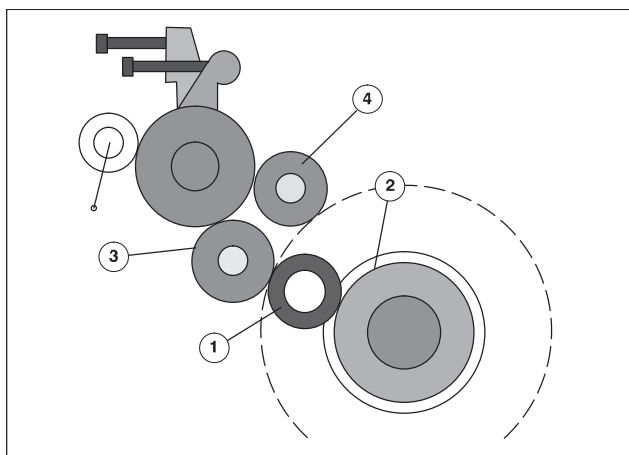


Fig. 37 Adjusting the inking form rollers with the adjusting ring

- **Adjusting with the adjusting ring**

The inking form rollers can also be adjusted to the numbering boxes using the adjusting ring (Fig. 37/1). The outside diameter of the adjusting ring corresponds to the height of a numbering box.

1. Attach the adjusting ring to the mounting ring holder (Fig. 37/2) and then push through under the inking form roller (Fig. 37/3).

The inking form roller is correctly adjusted when an **ink stripe of approx. 2 mm width** is visible on the adjusting ring.

2. Proceed in the same way with the upper inking form roller (Fig. 37/4).

5 Numbering presettings

5.1 Preselecting numbering (SF 17)



Fig. 38 SF 17: *Numbering on/off*

Prerequisite for numbering: the special function *Numbering on/off* (SF 17) has been preselected.

1. Press the *Special functions* button.
2. Call up special function 17 via the numerical keypad (*Numbering on/off*).
3. With the + button, switch from OFF to ON (Fig. 38/1).
4. Press the *Special functions* button to exit the display.

End of numbering job

After completion of the numbering job, the special function 17 (*Numbering on/off*) must be de-selected again.

1. Press the *Special functions* button.
2. Call up special function 17 via the numerical keypad (*Numbering on/off*).
3. Switch over from ON to OFF with the - button.
4. Press the *Special functions* button to exit the display.
5. If required, also de-select the special function for *Numbering without printing* (SF 23).

5.2 Interval indexing, numbering (SF 32)

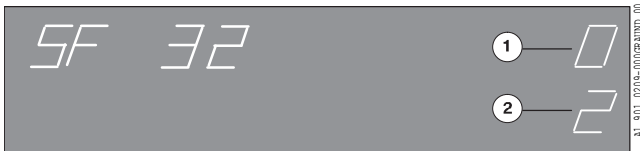


Fig. 39 SF 32: Interval index numbering

With this special function (SF 32) the number of sheets to be printed with the same number can be entered; the default setting is 1. The value entered last is saved.

1. Press the *Special functions* button.
2. Call up special function 32 (*Interval indexing numbering*) via the numerical keypad.
At the top, the display shows (Fig. 39/1) the number of sheets of the interval which have already been printed, (Fig. 39/2) the lower figure is the total number of sheets per interval to be printed with the same number.
3. Enter the desired interval size (number of sheets with the same number) via the numeric keypad (in this case 2).
4. Press the *Special functions* button to exit the display.

5.3 Numbering without printing (SF 23)

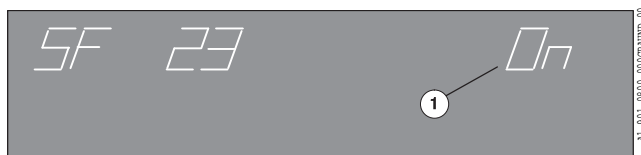


Fig. 40 SF 23: Numbering without printing

If you only want to number (numbering sheets which are already printed) then you need to select special function SF 23 **in addition to** special function 17. If this function is selected, the blanket cylinder is engaged to the impression cylinder to achieve better sheet guidance.

1. Press the *Special functions* button.
2. Call up special function 23 (*Numbering without printing*) with the numeric keypad.
3. With the + button, switch from OFF to ON (Fig. 40/1).
4. Press the *Special functions* button to exit the display.

6 Preparing a job

6.1 Fitting example

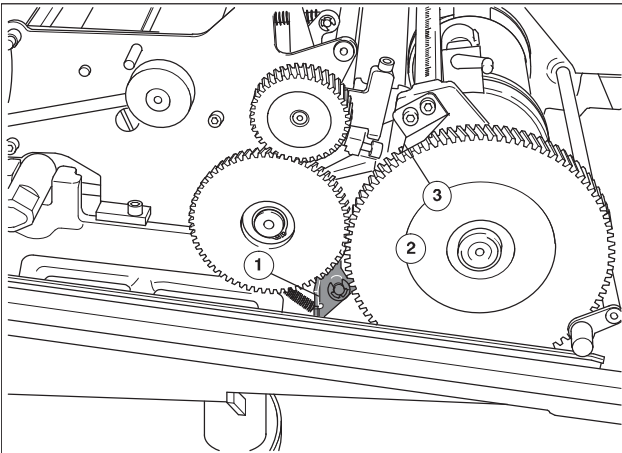


Fig. 41 Positioning the numbering boxes

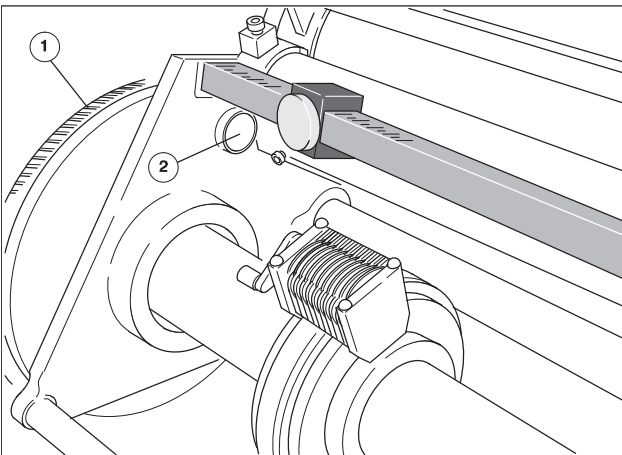


Fig. 42 Locking the drive gear into place

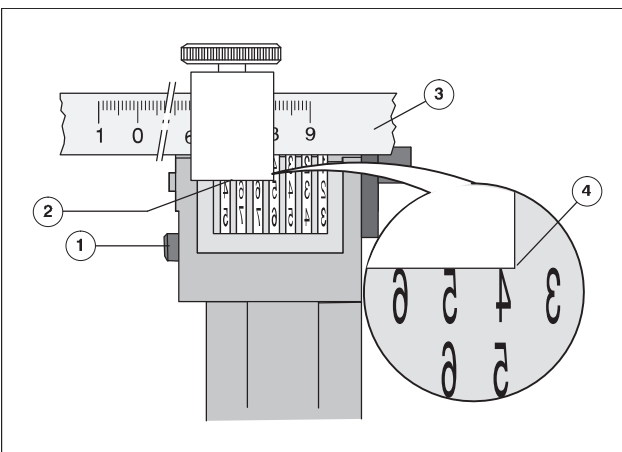


Fig. 43 Aligning the numbering boxes vertically

The numbering boxes are mounted true to register **outside the press**.

Max. sheet size: 460 mm x 343 mm

Max. print format: 452 mm x 330 mm

Positioning the figure to be printed on the positioning sheet:

- vertically (= in circumferential direction): 70 mm away from the front edge of the sheet, horizontally (= laterally): 91.5 mm away from the sheet edge

Vertical setting:

1. Release the drive gear (Fig. 41/2) by lifting the ratchet pawl (Fig. 41/1).
2. Turn the drive gear (Fig. 41/2) until the edge of the measuring index (Fig. 41/3) points to the value 7 (7 corresponds to 70 mm in front of the front edge of the sheet).
3. Fix the position of the drive gear (Fig. 42/1) with the brass screw (Fig. 42/2).
4. Release the locking screw (Fig. 43/1) on the numbering box.
5. Move the numbering box on the supporting ring until the first line of print of the numbers (Fig. 43/4) of the numbering box is flush with the front edge (Fig. 43/2) of the caliper. The strings of digits to be printed are marked in Fig. 44 by an arrow.
6. Tighten the locking screw (Fig. 43/1) on the numbering box.

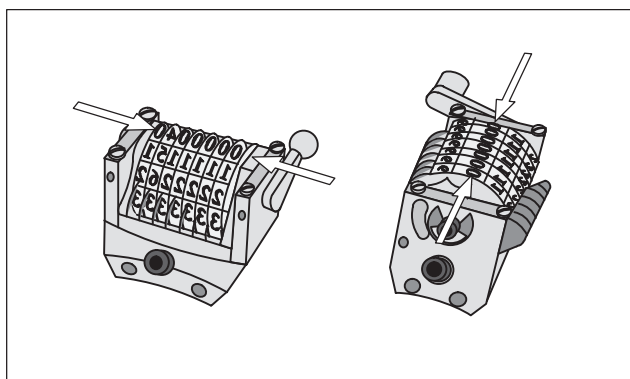


Fig. 44 String of printing digits on the numbering boxes

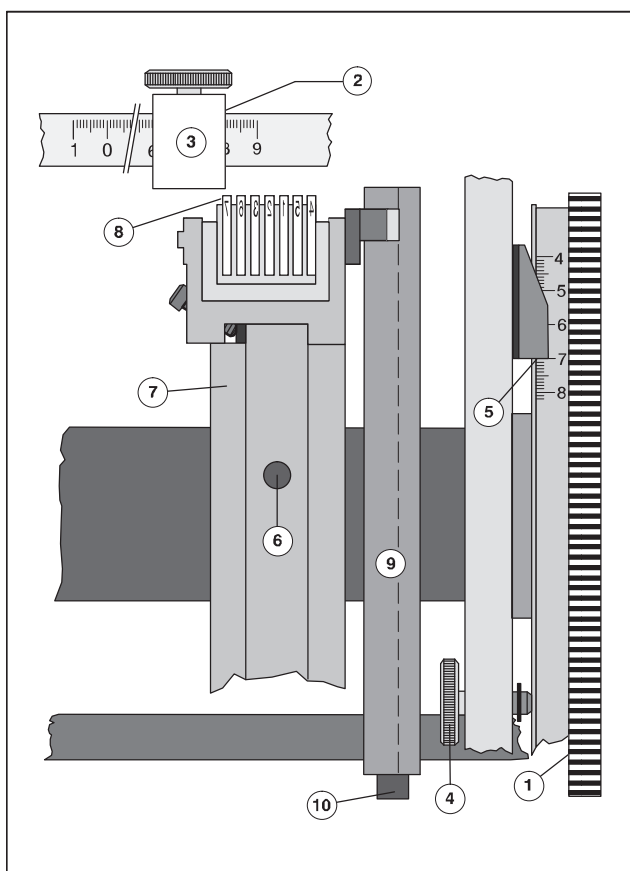


Fig. 45 Aligning the numbering boxes horizontally

Horizontal setting:

Calculation:

- 91.5 mm from the sheet edge
 - Sheet size (width): 343 mm
Half of the sheet size: 171.5 mm
 - Horizontal positioning of the figure from the sheet edge: 171.5 mm minus 91.5 mm = 80 mm; corresponds to a setting of 8 on the measuring scale (Fig. 45/2).
1. Slide the caliper (Fig. 45/3) to the right, set the outer edge to 8 and secure the position with knurled head screw.
 2. Slacken the Allen screw (Fig. 45/6) on the mounting ring.
 3. Move the mounting ring (Fig. 45/7) until the outer edge of the digit of the unit wheel (Fig. 45/8) is in line with the caliper edge (Fig. 45/2).
 4. Retighten the Allen screw (Fig. 45/6) to fix the mounting ring in place.
 5. Place the setting gauge to the numbering box (see the "Drive cams" section).
 6. Push the drive cam (Fig. 45/9, here LH) to the setting gauge and secure the position with the two Allen screws (Fig. 45/10) on the control shaft.

6.2 Numbering at the rear end of sheet - sheet guidance springs

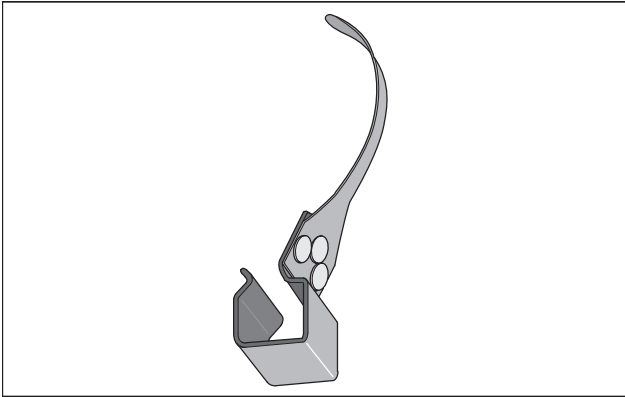


Fig. 46 Sheet guidance spring

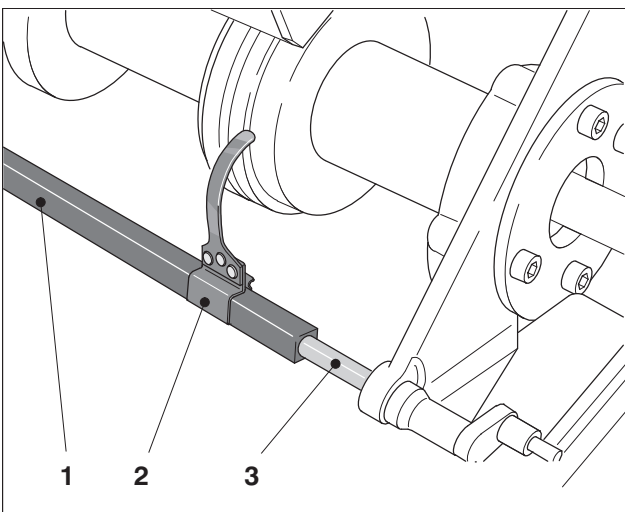


Fig. 47 Inserting the sheet guidance springs

Function of the sheet guides

2 sheet guidance springs are supplied together with the numbering device. The sheet guidance springs hold the sheet on the impression cylinder. They are used to ensure register-true numbering in the rear sheet half when printing maximum sizes.

Inserting and removing the sheet guides

The sheet guides are slid onto the feeder side square cross bar (Fig. 47/1) of the numbering inking unit outside the press. They press the print sheet against the impression cylinder during the numbering process. They must be positioned in image-free areas to avoid damage to the print image.

1. Place the sheet guidance spring on the rounded side of the square cross bar (Fig. 47/3) onto the cross bar. The bend of the sheet guide must point away from the numbering boxes (Fig. 47)
2. Arrange the sheet guidance spring (Fig. 47/2) on the square cross bar in such a way that it is positioned in the image-free area of the print image.
3. Proceed accordingly with the other sheet guidance spring.

If the sheet guides are no longer required after numbering has been completed, they must be removed from the numbering device.

4. Take the numbering inking unit out of the press.
5. Move the sheet guidance springs on the square cross bar to the rounded edge (Fig. 47/3) and take them off the cross bar.

7 Printing pressure adjustment

7.1 New numbering boxes

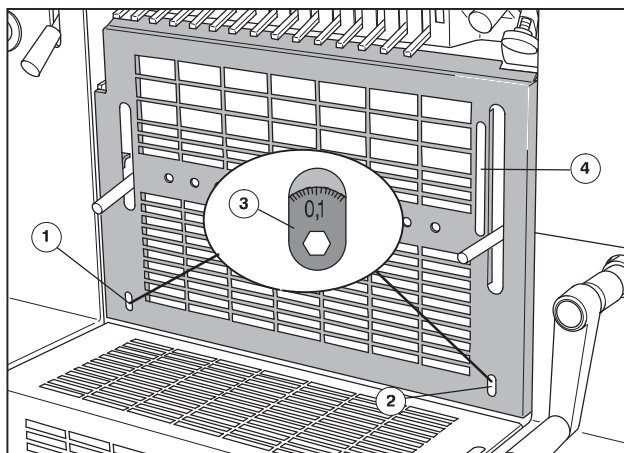


Fig. 48 Printing pressure adjustment

The precision setting of the print can be carried out with the guard closed and the press running.

1. **Preset the paper thickness to be processed** (e.g. 0.1 mm) using the pressure adjusting screw on D.S. (Fig. 48/1) and O.S. (Fig. 48/2) .
2. Insert the operator tool through the corresponding oblong hole in the guard (Fig. 48/4) and set the printing pressure adjustment in accordance with the scale (here 0.1 mm, Fig. 48/3).

Direction of rotation:

Turning clockwise: increases the pressure. Turning anti-clockwise: reduces the pressure.

The knurling on the **pressure adjustment screw** allows adjustment of the contact pressure in very small increments. Three teeth of the knurled screw represent an adjustment of 0.02 mm.

The adjusting range of the pressure adjustment screw (0 to 0.5 mm = 1 rotation) is limited to 0.5 mm by means of a stop.

7.2 Even printout

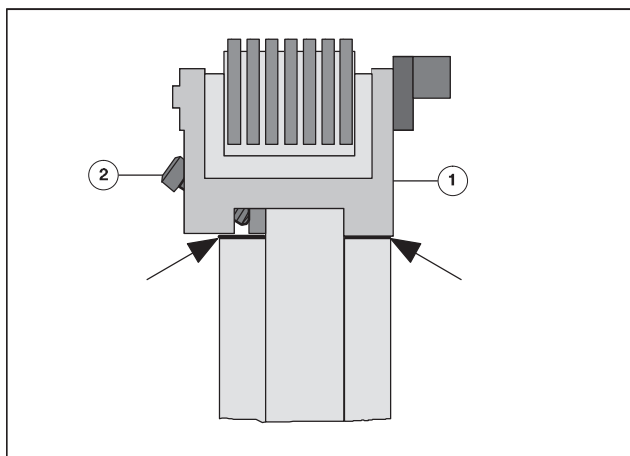


Fig. 49 Underlaying the numbering box

If one numbering box/printing block holder requires more pressure than another, e.g. due to greater wear and tear, compensate the pressure by underlaying the numbering box (Fig. 49/1) /the printing block holder:

1. Unscrew the Allen screw (Fig. 49/2) of the numbering box/printing block holder.
2. Insert strips of paper of the required thickness on both sides (Fig. 49, arrows) between the mounting ring and the numbering box/printing block holder.

7.3 Worn numbering boxes

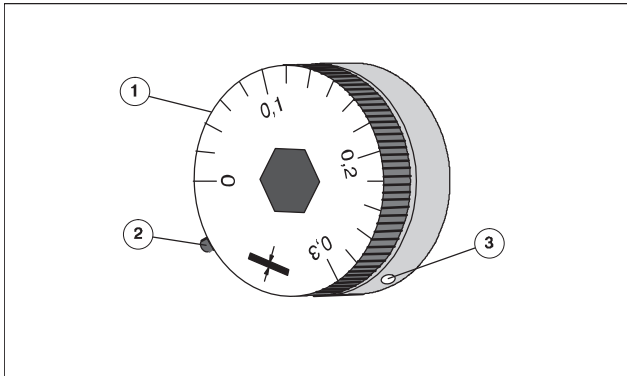


Fig. 50 Printing pressure adjustment screw

When using heavily worn numbering boxes, the print-out on the sheet may be insufficient, despite the maximum printing pressure adjustment (scale value 0, adjusting screw at stop). In this case, the basic setting of the printing pressure adjustment screw on D.S. and O.S. must be adjusted.

The printing pressure adjustment screw (Fig. 50/1) is preset in the factory so that there is a green dot on the stop at the 0.3 mm value (Fig. 50/3) .

To increase the possible adjustment of printing pressure, for example by 0.1 mm:

1. Slacken the grub screw (Fig. 50/2) at the stop.
2. Turn the stop anti-clockwise until the green dot is positioned at the scale value 0.2 (original value 0.3 minus correction value 0.1 = 0.2).
3. Retighten the grub screw.

Note

If **new numbering boxes** are used in the place of the worn numbering boxes, the stop must be turned back to its original position (green dot at 0.3).

8 Inserting and removing the numbering device

8.1 Height adjustment of the slide-in carriage

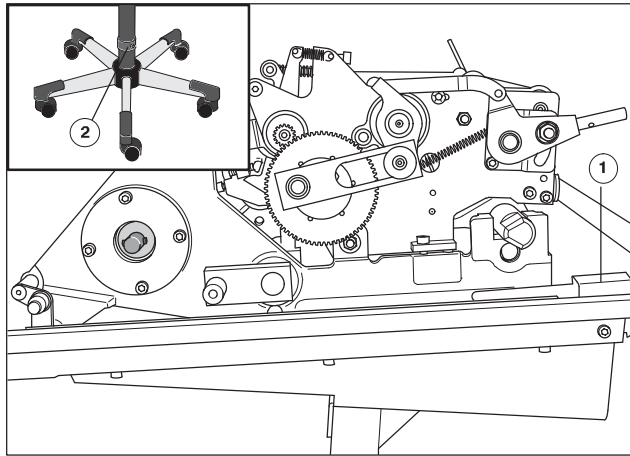


Fig. 51 Slide-in carriage

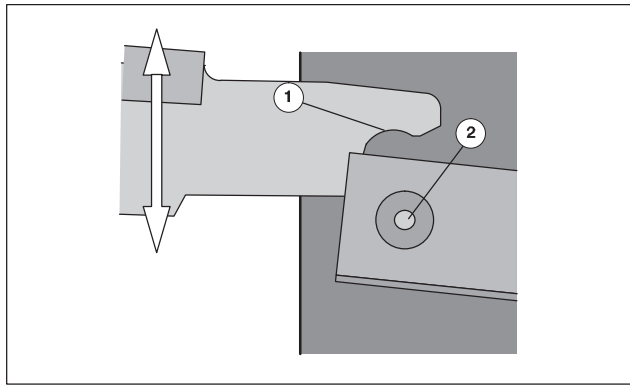


Fig. 52 Docking rail

8.2 Docking the slide-in carriage

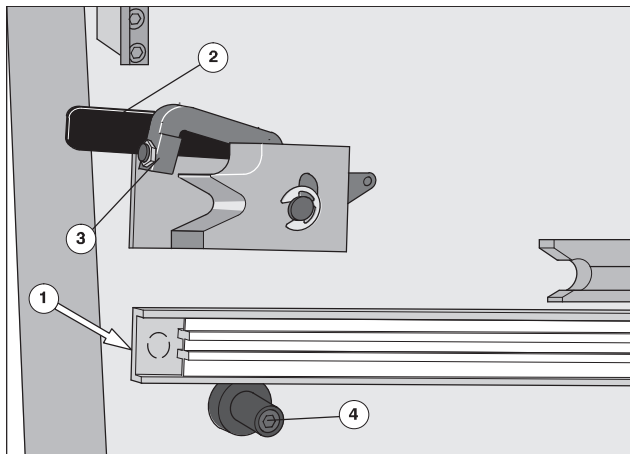


Fig. 53 Guide rail and coupling for the numbering slide-in unit at the press

Condition

Before inserting the numbering device in the press, you must adjust the correct height of the slide-in carriage.

1. Press the latch at the slide-in carriage (Fig. 51/1) and remove the numbering slide-in unit from the slide-in carriage.

Note

Do not set the numbering slide-in unit on the printing pressure screws.

2. Open the guard in front of the inking unit.
3. Slide the slide-in carriage onto the press so that the both ends of the docking rail (Fig. 52/1) are opposite the guide pins in the press (Fig. 52/2).
4. Loosen the Allen screw (Fig. 51/2) at the base of the slide-in carriage.
5. Pull up the upper portion of the slide-in carriage.
6. Lower the upper portion of the slide-in carriage until the recesses at the guide rails of the slide-in carriage (Fig. 52/1) lie on the bolts in the press (Fig. 52/2).
7. Using the level, check whether the slide-in carriage lies horizontally in the running direction of paper; if necessary correct by lifting or lowering the carriage upper part.
8. Tighten the Allen screw (Fig. 51/2) at the base of the slide-in carriage.
9. Place the numbering slide-in unit on the slide-in carriage and let latch (Fig. 51/1) engage.

Before docking, the slide-in carriage must be adjusted to the correct height.

1. Open the guard in front of the inking unit.
2. Pull the locking lever on D.S. (Fig. 53/2) and O.S. towards the delivery up to stop; the coupling (Fig. 53/3) for the numbering slide-in unit opens.
3. When sliding the slide-in carriage to the guide pins in the side frame, press the handle rod at the slide-in carriage (Fig. 54/1) downwards. The tips of the guide rails of the carriage can then easily slide over the guide pins (Fig. 53/4) at the press.

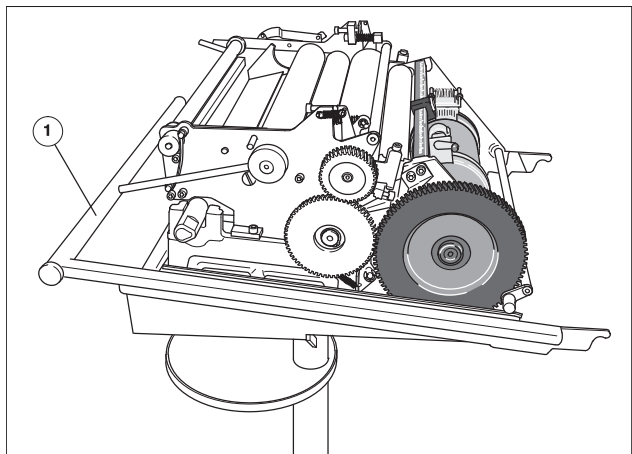


Fig. 54 Numbering slide-in unit

8.3 Positioning the printing press

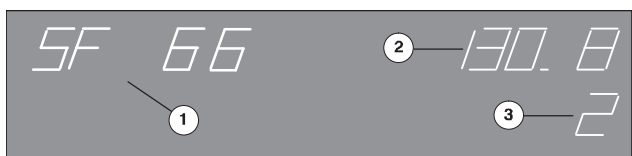


Fig. 55 SF 66: Press angle

The numbering slide-in unit can be correctly slid in the press only at a certain press angle (228.0°).

1. Press the *Special functions* button.
2. Using the numeric keypad, call up special function 66 *Press angle* (Fig. 55/1). The display shows the current press angle (Fig. 55/2) and the position of the circumferential register (Fig. 55/3).
3. Open the printing unit guard on O.S. and attach crank handle.
4. After switching on the main switch, first rotate the press past the 0° position using the crank handle, then continue rotating until the display shows the value 228.0.
5. Exit display by pressing the *Special functions* button.

8.4 Inserting the numbering device

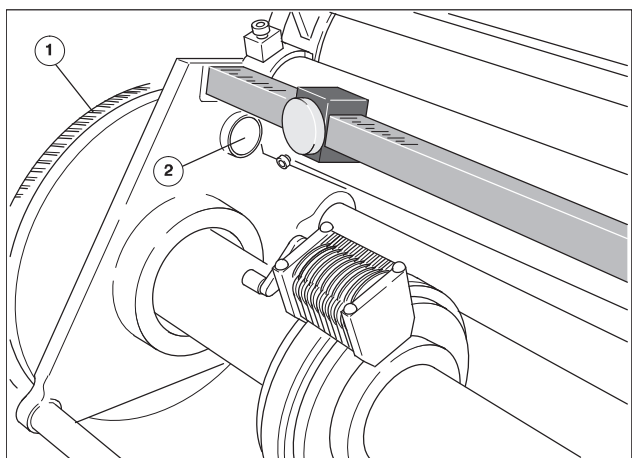


Fig. 56 Locking device at the drive gear

Condition

The press is in the position (press angle 228.0°) in which the numbering device can be slid in and the locking levers are open.

1. Turn back the brass screw (Fig. 56/2) up to stop to lock the drive gear.

Numbering and imprinting

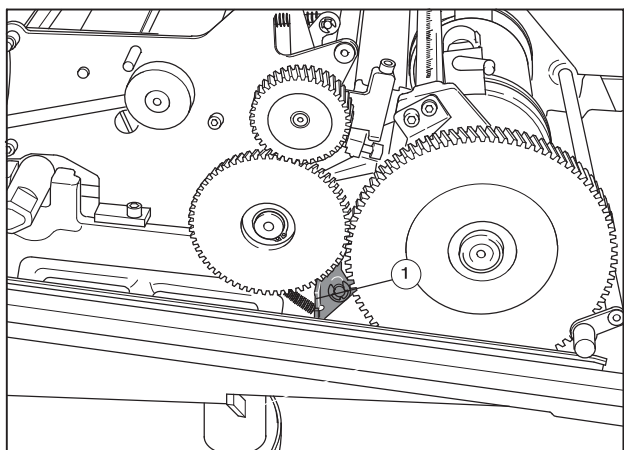


Fig. 57 Ratchet pawl at the drive gear

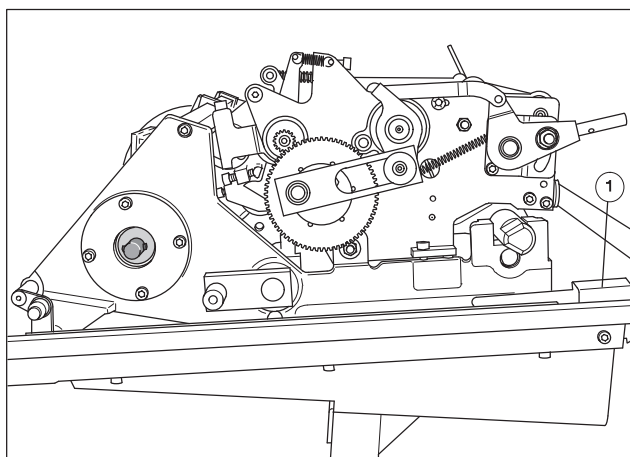


Fig. 58 Numbering slide-in unit ratchet pawl

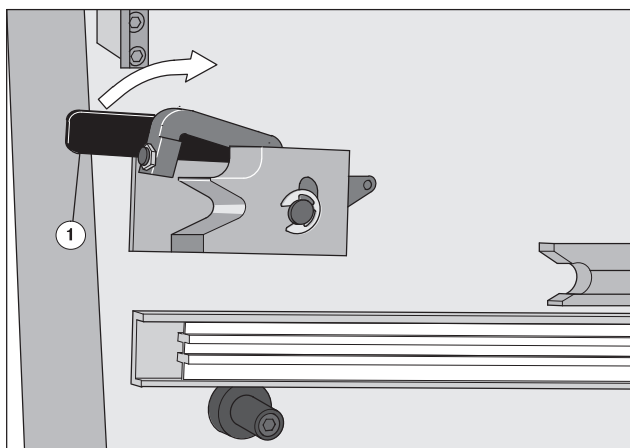


Fig. 59 Numbering slide-in unit locking device

2. Turn the drive gear (Fig. 56/1) until the latch (Fig. 57/1) engages at the gear.

3. Press the ratchet pawl at the slide-in carriage (Fig. 58/1).
4. Cautiously slide the numbering slide-in unit into the press until the gears engage.

5. Press the locking lever on D.S. (Fig. 59/1) and O.S. towards the feeder up to stop.
6. Uncouple the slide-in carriage from the press by pressing on the handle rod.
7. Close the guard in front of the inking unit.

8.5 Removing the numbering device

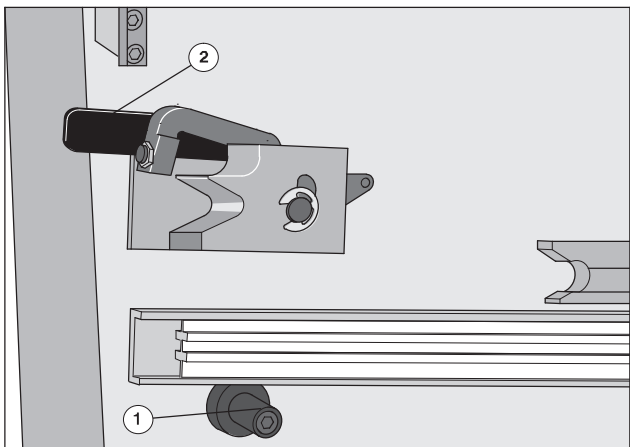


Fig. 60 Numbering slide-in unit locking device

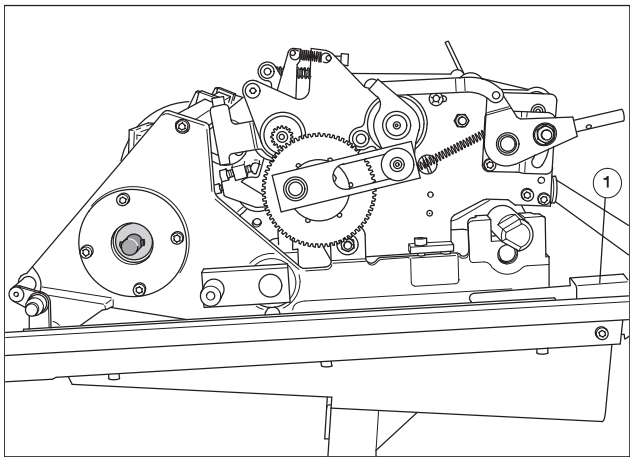


Fig. 61 Numbering slide-in unit ratchet pawl

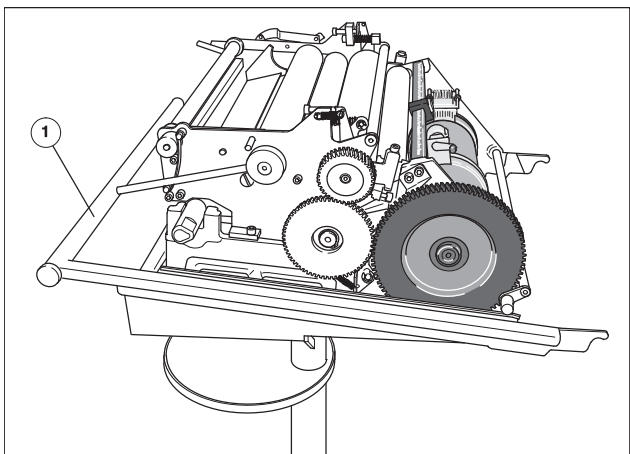


Fig. 62 Slide-in carriage

1. Open the guard in front of the inking unit.
2. Move the slide-in carriage up to the press. Let the tips of the guide rails of the slide-in carriage engage at the guide pins (Fig. 60/1) of the press.
3. Pull the locking lever on D.S. (Fig. 60/2) and O.S. towards the delivery up to stop.
4. Loosen the numbering slide-in unit from the meshing and pull out about 10 cm.
5. Press the locking lever on D.S. (Fig. 60/2) and O.S. towards the feeder up to stop.
6. Pull out the numbering slide-in unit and pull onto the slide-in carriage up to stop.
7. Check whether the ratchet pawl is engaged at the slide-in carriage (Fig. 61/1).

8. Uncouple the slide-in carriage with the numbering device from the press by pressing the handle rod (Fig. 62/1).
9. Close the guard in front of the inking unit.
10. **In case the numbering device has not been used for a longer period of time:** after pulling out of the plug-in unit, turn the numbering shaft so that the inking form roller no longer makes contact with the numbering boxes.

9 Positioning corrections

9.1 Check the position of the numbering

1. Start the press.
2. Press the *Waste-sheet counter* button.
3. Press the *Production* button. The press prints and numbers, without indexing the numbering boxes.
4. After the first print, verify the position of the numbering corresponding to the original.

9.2 Lateral corrections

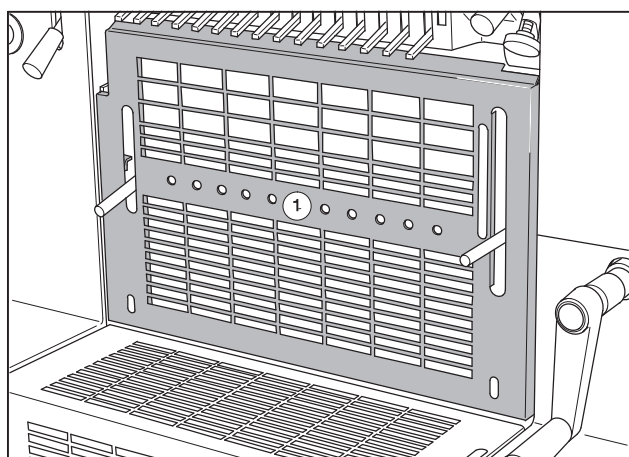


Fig. 63 The inking unit guard

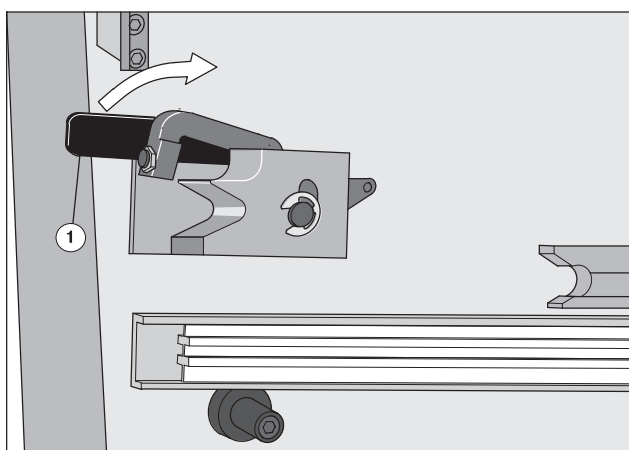


Fig. 64 The locking mechanism of the plug-in numbering unit

Carry out the lateral positioning corrections by **repositioning the mounting rings** on the numbering shaft.

1. Stop the press and open the inking unit guard (Fig. 63/1).
2. Pull out the numbering unit up to the stop.
3. Slacken the Allen screws on the drive cam and mounting ring.
4. Reposition the drive cam and mounting ring on the numbering shaft.
5. Fix the mounting ring in position using the Allen screw.
6. Slide the drive cam up to the gauge on the numbering box and tighten the Allen screws.
7. Use the crank handle to position the press at an angle of 228.0° .
8. Allow the latch to engage in the drive gear of the numbering unit.
9. Insert the numbering unit carefully into the press until the gearwheels mesh.
10. Press the locking lever on D.S. (Fig. 64/1) and O.S. up to the stop in the direction of the feeder.
11. Close the inking unit guard (Fig. 63/1).

9.3 Corrections in circumferential direction

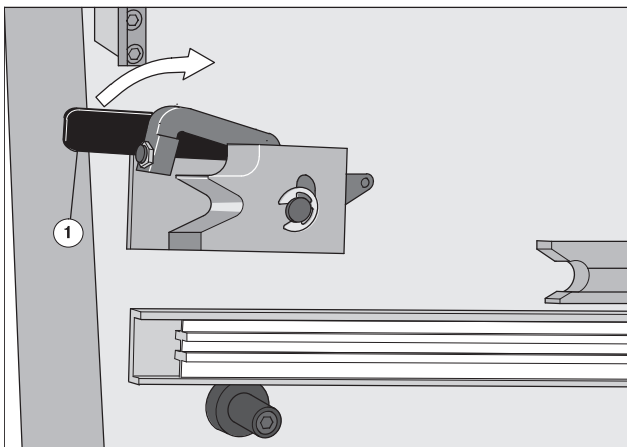


Fig. 65 The locking mechanism of the plug-in numbering unit

Carry out the positioning corrections in circumferential direction by **repositioning the numbering boxes** on the mounting rings.

1. Pull out the numbering unit up to the stop.
2. Slacken the fixing bolt of the numbering boxes.
3. **Reposition the numbering boxes** on the mounting rings.
4. Afterwards retighten the fixing bolt of the numbering boxes again.
5. Use the crank handle to position the press at an angle of 228.0° .
6. Allow the latch to engage in the drive gear of the numbering unit.
7. Insert the numbering unit carefully into the press until the gearwheels mesh.
8. Press the locking lever on D.S. (Fig. 65/1) and O.S. up to the stop in the direction of the feeder.

10 Print trips during numbering - Troubleshooting

10.1 Paper stoppage during numbering

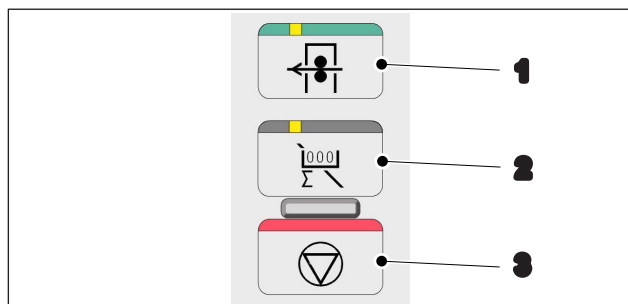


Fig. 66 Automatic buttons

In the event of a print trip during numbering or an emergency stop, the control system switches off the cams.

If several numbering boxes are in use in the circumferential direction, the first numbering boxes might have passed through the drive cam already. The subsequent numbering boxes, however, are not yet indexed.

1. Remove the sheet that caused the paper stoppage and the partially numbered sheet.
2. If several numbering boxes are in use in the circumferential direction, check which numbering boxes have been indexed.
3. If necessary, correct the setting on the indexed numbering boxes with the pin.
4. A waste sheet might be printed first.
5. Press the *Waste-sheet counter* button (Fig. 66/2) and check the printed image.
6. Press the *Waste-sheet counter* button again and continue to print the job.

11 Cleaning and lubricating the numbering boxes

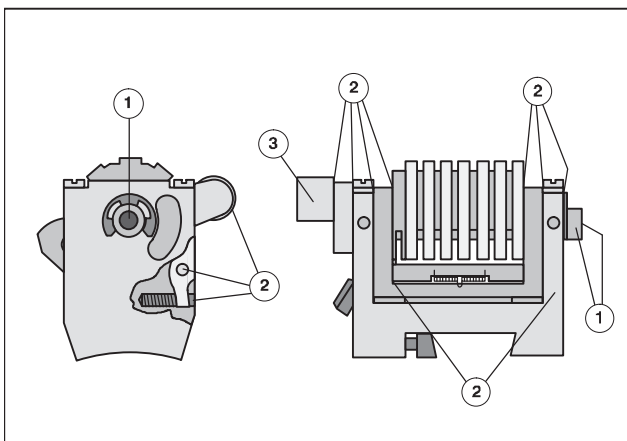
11.1 Cleaning

1. After use, clean the numbering boxes with a soft, fluffless cloth and a grease-containing washing fluid.
2. In addition, brush out numbering boxes in a kerosine bath at least once a week.
3. Use ink solvent in case of severe contamination.
4. After cleaning with a grease-dissolving agent, always oil or grease the numbering boxes.

11.2 Storage

1. Store the cleaned numbering boxes together with the plastic pin and the wrench in the supplied boxes.

11.3 Lubrication



AL 901.1611-000GRAND_00

After each washup

The lubricating points of the numbering boxes are shown in Fig. 67.

Lubricant

Oil: light spindle oil, 1.1 E/20 °C

Grease: HL 2 180° BV Aral

1. Oil the hole in the trip shaft (Fig. 67/1) with several drops of spindle oil.
2. Oil the lubricating points (Fig. 67/2) with one drop of spindle oil.
3. Grease the surface of the crank (Fig. 67/3).

Fig. 67

12 Positioning foil

12.1 General information

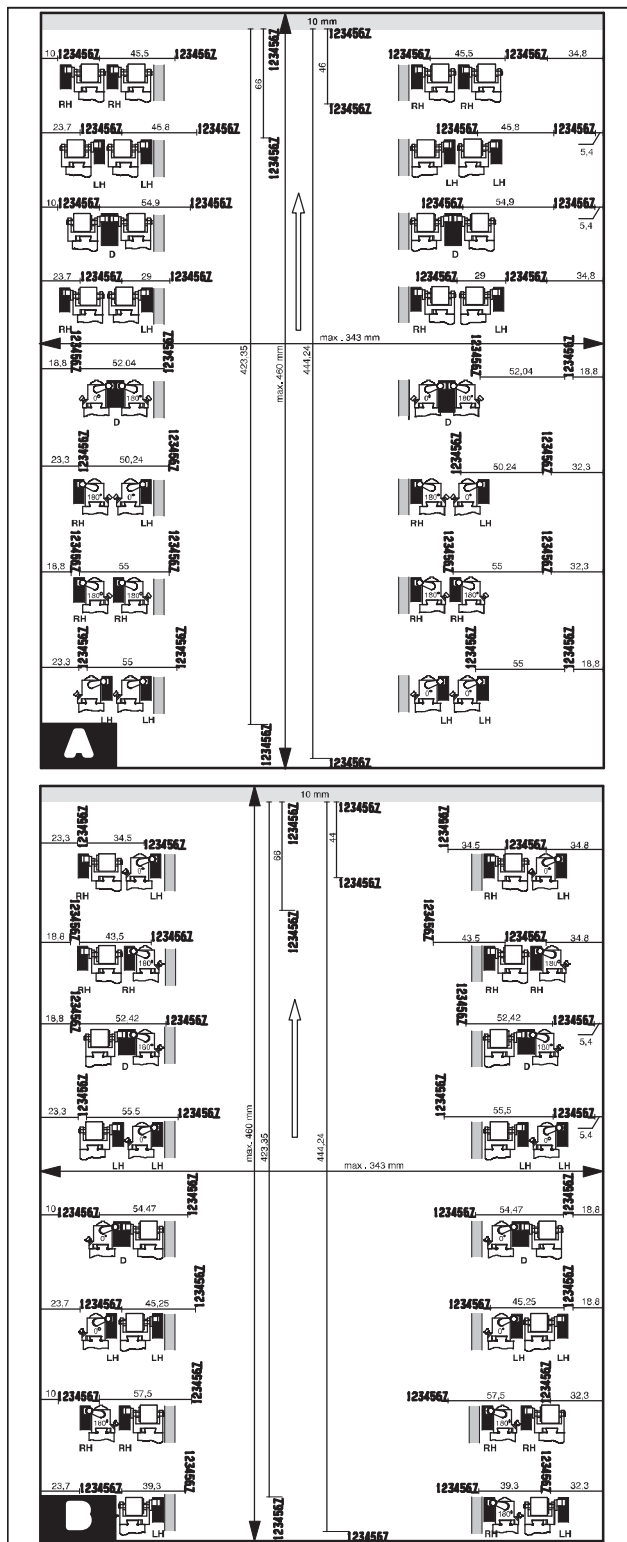


Fig. 68 Positioning foil A and B

The positioning foils A and B at the end of this chapter are the basis for selecting and positioning drive cams and numbering boxes.

- The two positioning foils show the smallest margins for the maximum sheet size to the sheet edge and between digits on the print sheet.
- Outlines of the numbering boxes and drive cams: Viewing direction towards the numbering unit when installed.
- The digits on the positioning foil correspond to the position on the print sheet; pay attention to the front edge of the sheet (large arrow)!
- For the number on the left-hand margin of the print sheet (with maximum sheet size), the mounting ring must be moved right up against the right-hand side frame of the numbering unit.

Positioning foil A (Fig. 68, at the top) shows the combining of straight numbering boxes with one another and convex numbering boxes with one another.

Positioning foil B (Fig. 68, at the bottom) shows the combination of straight numbering boxes and convex numbering boxes.

12.2 Explanatory notes on the positioning foil

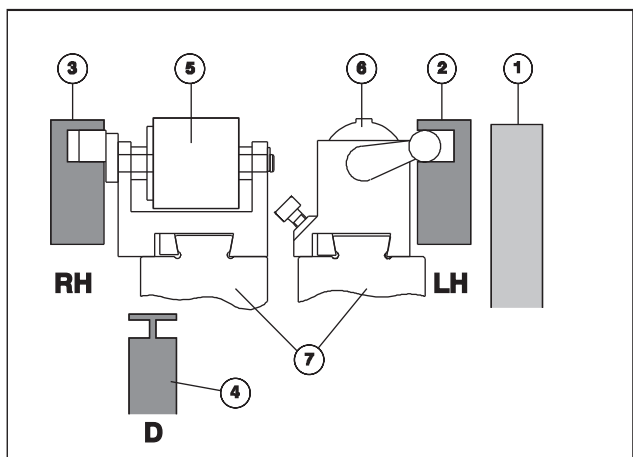


Fig. 69 Positioning foil, notes

Fig. 69 shows the elements used in the positioning foils A and B. **Representation:** The **drive cams** in the positioning foils are **blue**, the **side frame** is **gray**, and the **numbers** to be printed are **red**.

The **measures** are given in mm. The large **arrows** in the positioning foils indicate the travel direction of the sheets in the press.

Viewing direction towards the numbering unit when installed:

- 1 Side frame of the numbering unit
- 2 Drive cam LH
- 3 Drive cam RH
- 4 Drive cam D
- 5 Straight numbering box
- 6 Convex numbering box
- 7 Mounting ring

Some of the numbering boxes in the positioning foils have the following **marking**:

- **0°** - The unit wheel of the numbering box points towards the front edge of sheet.
- **180°** - The unit wheel of the numbering box points towards the rear edge of sheet.

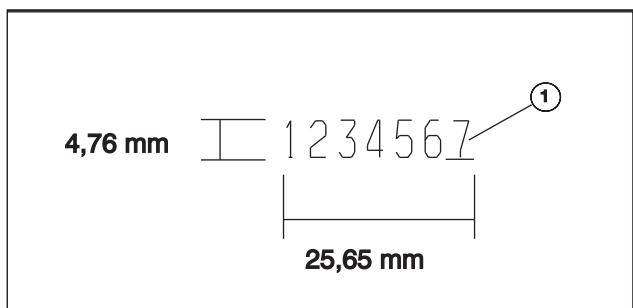


Fig. 70 Numbering box, example of the font size

Fig. 70 shows the **dimensions** of the **font size** used in the positioning foils. The last position of the printed group of numbers, the single units, is printed by the **single unit wheel** (Fig. 70/1). The position of the single unit wheel is **underlined** on the positioning foil.

12.3 Example of application

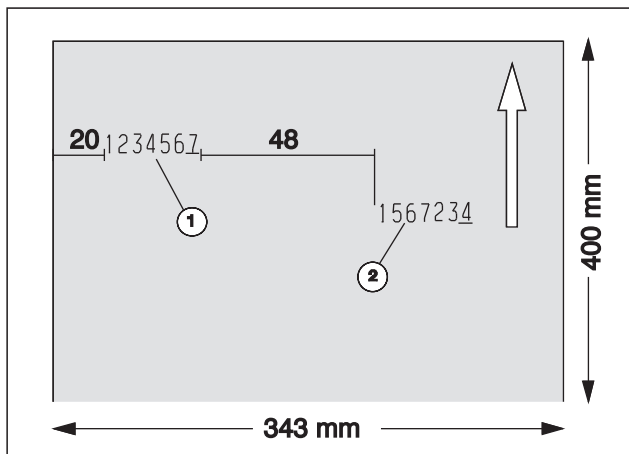


Fig. 71 Positioning foil, example of use

A job is to be printed with the numbers as shown in figure 71.

Sheet width: 343 mm (maximum format), sheet length: 400 mm

The arrow in figure 71 points to the front edge of the sheet.

1. Lay the two positioning foils on the right and left next to the print job.
2. The digit at the top left (Fig. 71/1) has a margin of 20 mm to the edge of the sheet. The lateral distance to the digit, positioned diagonally beneath (Fig. 71/2) is 48 mm.
Due to the sheet size, the two numbers can only be printed with straight numbering boxes.
3. Check on the two positioning foils, with which numbering boxes and drive cam arrangement the required left-hand margin (20 mm) can be printed.
4. Only look at the arrangements on the left-hand side of the respective positioning foil.

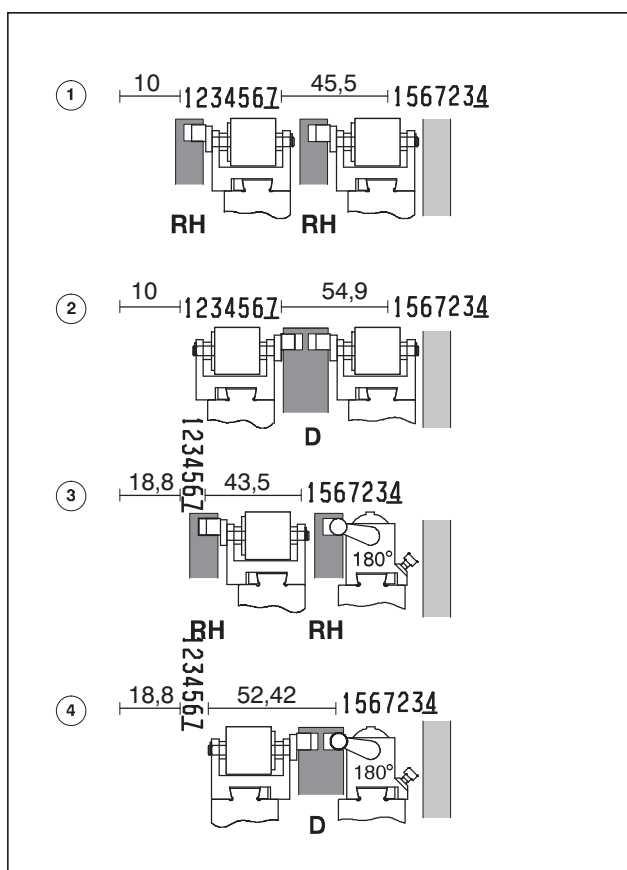


Fig. 72 Positioning foil, usage

Fig. 72 shows the four possibilities with which the margin of 20 mm can be maintained. The second number (Fig. 71/2) can only be printed using a straight numbering box.

As this number lying diagonally beneath has a lateral offset of 48 mm, only the upper option (Fig. 72/1) comes into question.

You need: 2 drive cams RH, with the right-hand mounting ring for the number 1234567 lying directly up against the right-hand side frame of the numbering unit; then there is the drive cam RH, the left mounting ring for the digits 1567234, drive cam RH.

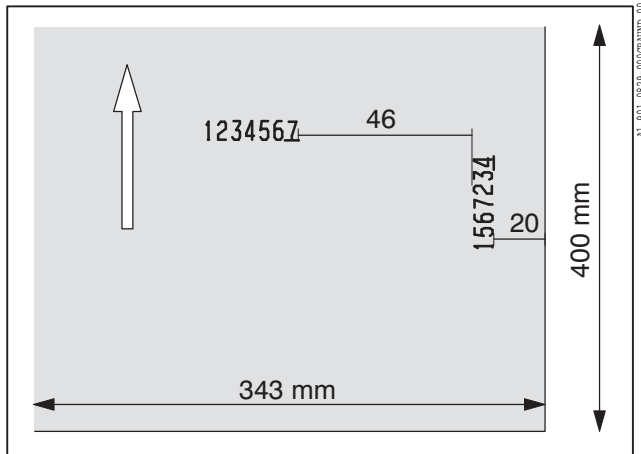
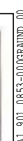


Fig. 73 Positioning foil, example of use

1. Please make the same considerations for the two numbers in Fig. 73.

The only arrangement possible is found in positioning foil B in the right-hand half of the third example from the bottom.

13.1 Positioning foil A



C.6.40

13.2 Positioning foil B

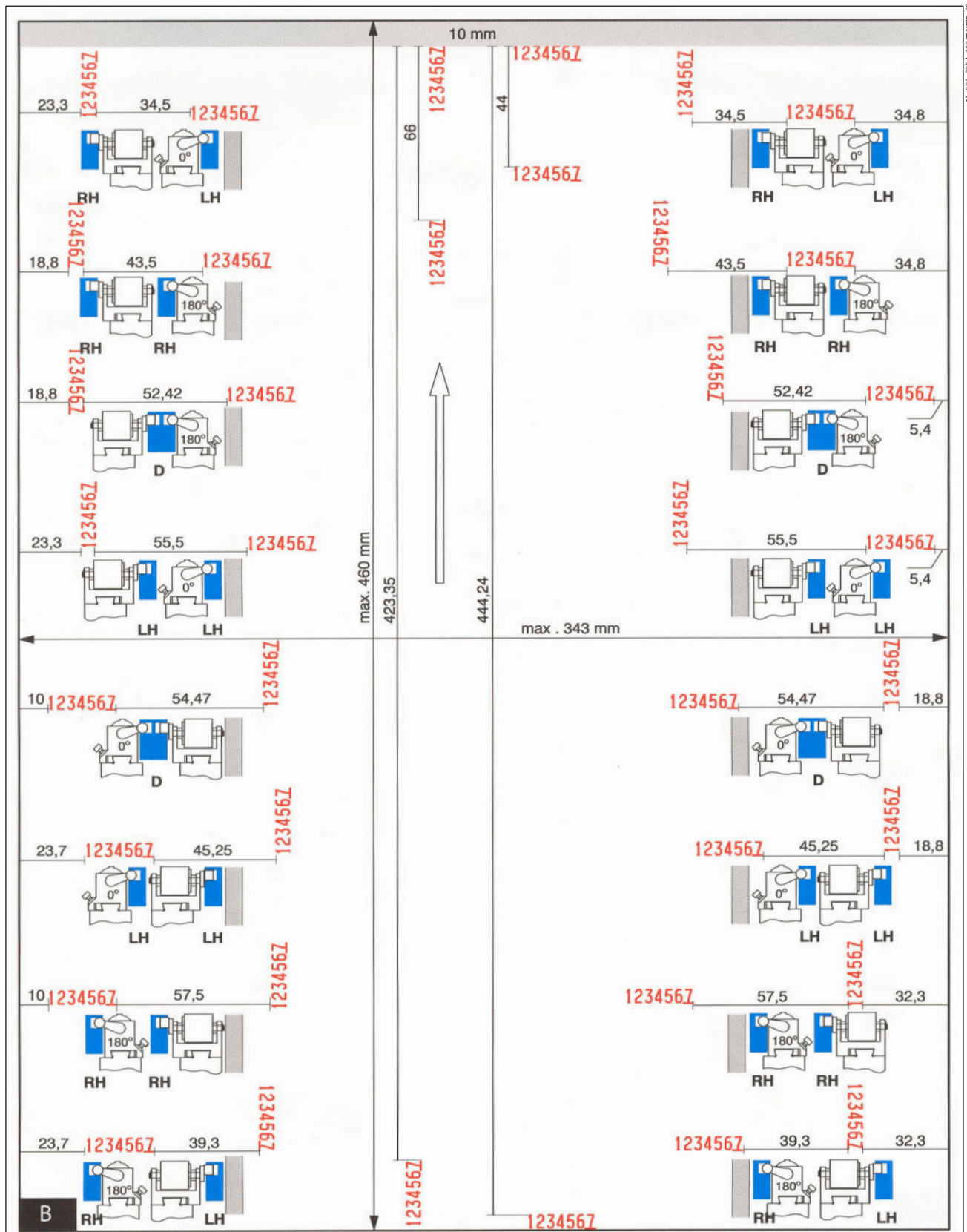


Fig. 75 Positioning foil B, not to scale

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Perforating

1 Perforating - Safety instructions

1.1 To be observed when working at the press



Warning - Risk of injury from rotating rollers and cylinders!

When cleaning the rollers and cylinders, the ball of your thumb must point in the direction of the infeed gap and your fingers in the direction of the outlet gap. Select the corresponding direction of rotation.

2 Perforating device

2.1 Overview

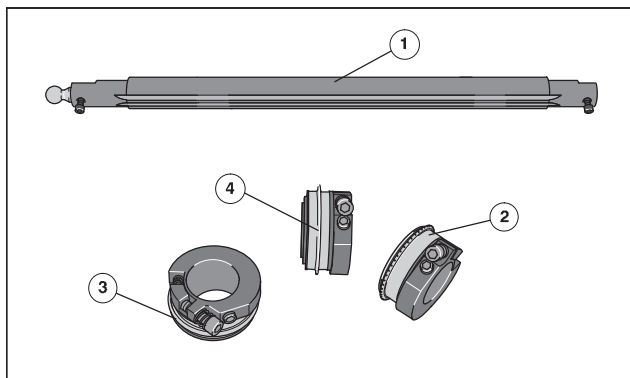


Fig. 1 Perforating device

The perforating device (Fig. 1) is an extra accessory. The following are part of the supply:

- 1 perforating shaft with fixing bolts,
- 2 perforating disc.

The perforating set can be substituted by

- 3 a slitting wheel or
- 4 a creasing wheel.

At the most, 9 perforating discs can be mounted at the same time on the perforating shaft.

Simultaneous numbering and perforating is possible.

2.2 Perforating shaft

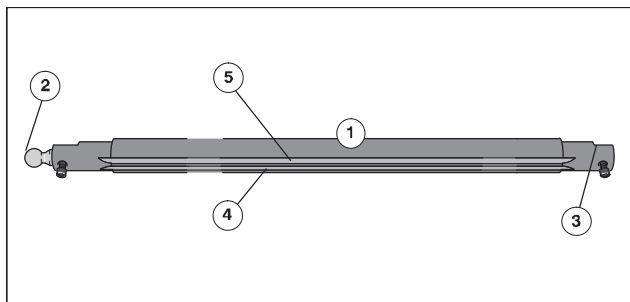


Fig. 2 Perforating shaft

The spherical end (Fig. 2/2) of the perforating shaft (Fig. 2/1) is on D.S., the recess side (Fig.2/3) on O.S.. After insertion of the perforating shaft in the press, it is screwed into the bearing bushings on D.S. and O.S. using an Allen screw.

The two longitudinal grooves on the perforating shaft are for fixing the perforating discs. The lower groove (Fig. 2/4) is the position for disengaging and the upper groove is the position for engaging (Fig. 2/5) to the impression cylinder; i.e. the stop screw of the perforating discs must be turned into one of the two grooves.

2.3 Perforating disc, slitting wheel, creasing wheel

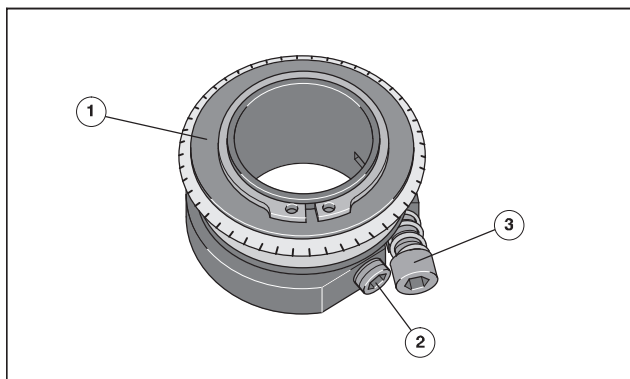


Fig. 3 Perforating disc

The following information about fixing, engaging/disengaging and adjusting the perforating disc also applies to the slitting wheel and the creasing wheel.

Using the slitting wheel sheets can be cut in a circumferential direction on a steel plate cylinder packing on the impression cylinder. Using the creasing wheel sheets can be grooved in a circumferential direction on the impression cylinder.

Up to 9 perforating discs can be fitted on the perforating shaft at the same time.

1. Sliding the perforating disc (Fig. 3/1) onto the perforating shaft.
2. Fix the perforating disc on the perforating shaft using the stop screw (Fig. 3/2).
3. The stop screw (Allen screw, fig. 3/2) is screwed into the **lower groove** of the perforating shaft; in the **disengaging position**. For **adjusting and perforating**, the stop screw must be loosened, the perforating disc is turned on the perforating shaft and fixed in the **upper groove** with the stop screw.

After engaging the perforating shaft the perforating disc is adjusted to the impression cylinder by means of the **adjusting screw** (Fig. 3/3) using the Allan key supplied together with the press. - Direction of rotation: turn clockwise to bring the perforating disc into contact with the impression cylinder.

2.4 Mounting the perforating disc onto the perforating shaft

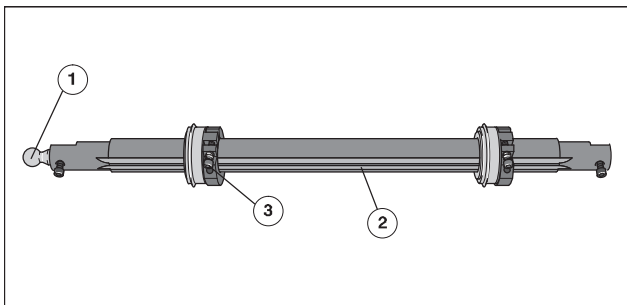


Fig. 4 Mounting the perforating disc

The perforating disc is mounted onto the perforating shaft outside the press. The spherical end of the perforating shaft (Fig. 4/1) is on D.S.

1. Place the perforating shaft onto a suitable base, lift one side up and push the perforating disc onto the perforating shaft.

Note

The stop screw and adjusting screw must point towards O.S..

2. Fix perforating disc with the stop screw (Fig.4/3) in the lower groove (= disengaging position, Fig. 4/2). Tighten the stop screw using the Allan key supplied with the perforating device.

3 Default settings

3.1 Preselection of *Perforating* (SF 18)



Fig. 5 SF 18: *Perforating ON/OFF*

Prerequisite for perforating: special function *Perforating ON/OFF* (SF 18) is preselected. When the press goes into production, the perforating wheels are automatically engaged at the impression cylinder.

1. Press the *Special functions* button.
2. Using the numeric keypad, call up special function 18 *Perforating ON/OFF* (Fig. 51).
3. Change from OFF to ON with the + button (Fig. 5/2).
4. Press the *Special functions* button to exit the function.

3.2 Preselection of *Perforating without printing*

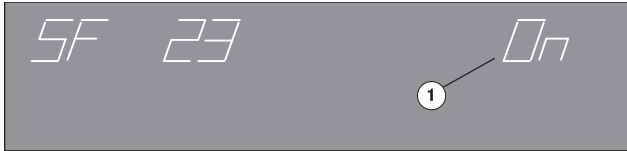


Fig. 6 SF 23: *Numbering without printing*

If only perforating is to occur (perforating of previously printed sheets), then the special function SF 23 must be selected **in addition** to special function 17. When the function is selected, the blanket cylinder is engaged at the impression cylinder for better sheet guidance.

1. Press the *Special functions* button.
2. Call up special function 23 (*Numbering without printing*) using the numeric keypad.
3. Change from OFF to ON with the + button (Fig. 6/1).
4. Press the *Special functions* button to exit the display.

3.3 Impression cylinder jacket



Caution - Danger of damage to the impression cylinder!

For perforating, you must pull a **sheet steel** onto the **impression cylinder**, in order to prevent damage to the impression cylinder during perforating. Perforating must **never** occur against the chromium-plated brass plate.

Pulling the sheet steel jacket on the impression cylinder: see section on "Printing unit, impression cylinder".

4 Inserting and adjusting the perforating device

4.1 Inserting the perforating device

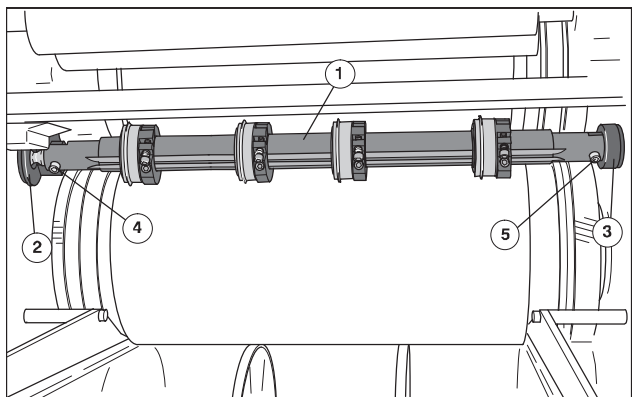


Fig. 7 Installing the perforating device

1. Press the spherical end of the perforating shaft (Fig. 7/1) against a light spring pressure into the bearing bushing on D.S. (Fig. 7/2).
2. Insert the other side of the perforating shaft into the bearing bushing on O.S. (Fig. 7/3). The perforating shaft is pushed into the bearing bushing on O.S. by spring pressure.
3. Using the operator tool screw the perforating shaft into place in the bearing bushing with one Allen screw each on D.S. (Fig. 7/4) and on O.S. (Fig. 7/5).

4.2 Adjusting the perforating disc

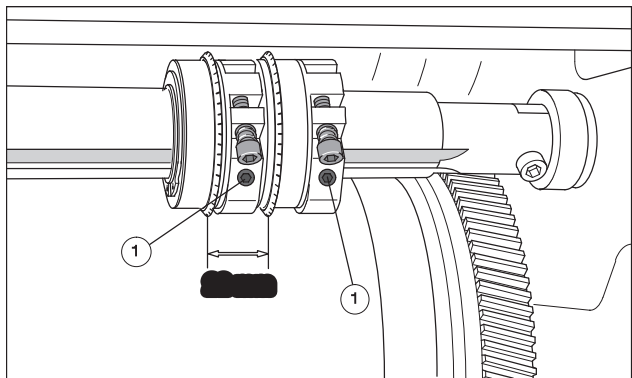


Fig. 8 Adjusting the perforating disc

Lateral alignment of the perforating disc

The following operations for adjusting the perforating disc also apply to the cutting wheel and creasing wheel.

The **minimum lateral gap of 22 mm** between two perforating saws on the print sheet is achieved by mounting two perforating discs next to one another. The perforating saws face one another (Fig. 8).

1. Inch the print sheet onto the impression cylinder.
2. Slacken the fixing bolt (Fig. 8/1) on the perforating disc.
3. Move the perforating disc laterally to the desired position.
4. Fix the perforating disc into place by tightening the fixing bolt (Fig. 8/1) using the Allan key.
5. Transport the print sheet into the delivery.

Adjusting the perforating disc to the impression cylinder

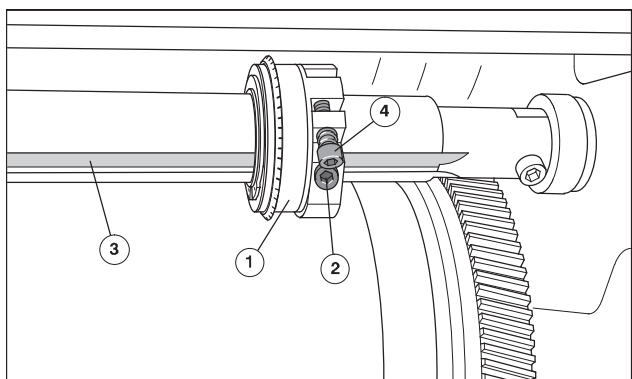


Fig. 9 Adjusting the perforating disc

1. Slacken the fixing bolt (Fig. 9/2) on the perforating disc (Fig. 9/1).
2. Turn the perforating disc on the perforating shaft to the impression cylinder until the fixing bolt (Fig. 9/2) lines up under the upper groove (Fig. 9/3).
3. Fix the perforating disc into place in the upper slot using the fixing bolt (Fig. 9/2); when doing so, do not alter the lateral alignment.
4. Press the SPECIAL FUNCTIONS button. Select the special function 06, to engage the perforating device to the impression cylinder. With the + button, switch from OFF to ON and the perforating device is brought into contact with the impression cylinder.

Perforating

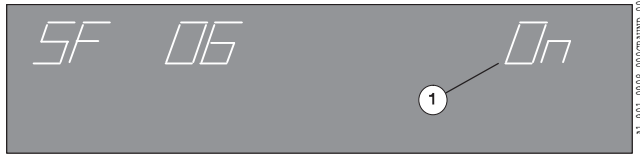


Fig. 10 SF 06: Bringing the perforating device into contact with the impression cylinder

5. Turn the adjusting screw (Fig. 9/4) on the perforating disc so that the perforating disc can just be turned against the impression cylinder.

Direction of rotation: turning clockwise with the Allan key to engage the perforating disc to the impression cylinder, turning anti clockwise to disengage it from the impression cylinder.

6. Press the SPECIAL FUNCTIONS button, to exit the display again; in so doing, the perforating device is moved away from the impression cylinder.

5 Changing the perforating insert

5.1 Procedure

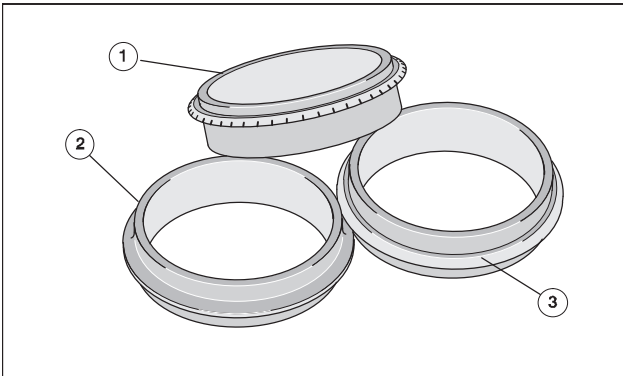


Fig. 11 Changing the perforating disc

In the case of heavy wear and tear, the perforating insert must be changed. The perforating insert is asymmetrical (Fig. 11/1).

A **cutting** (Fig. 11/2) or **creasing insert** (Fig. 11/3) can also be attached to the bearing ring in place of the perforating insert.

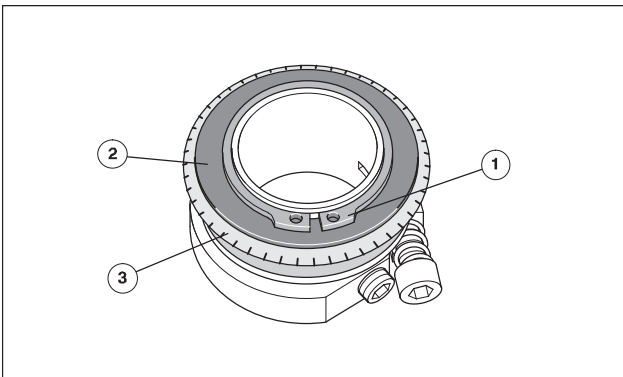


Fig. 12 Changing the perforating disc

1. Remove the circlip (Fig. 12/1) on the perforating disc.
2. Remove the intermediate ring (Fig. 12/2) on the perforating disc.
3. Remove the perforating insert (Fig. 12/3) and mount a new perforating/cutting/creasing insert.
4. Insert the intermediate ring (Fig. 12/2).
5. Secure the perforating insert with a circlip (Fig. 12/1).

Perforating

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1 General information on maintenance

1.1 Maintenance reduces costs!

Regular thorough maintenance and cleanliness on the press and the peripheral units means maintaining the press availability by reducing downtime and repair times.

Following the maintenance instructions and observing the maintenance intervals that are provided in this manual is a prerequisite for obtaining a long service life of your press and the peripheral units, as well as for maintaining their value in an optimum way.

The maintenance instructions for your press and its peripheral units are generally valid and must be observed. Please have your Baumfolder dealer carry out all maintenance work you are not able to carry out yourselves because of constructional reasons in your pressroom.

Furthermore, you can define your own individual regulations that are adapted to your print shop: This means that pollution is kept to a minimum and removed as required, even before the defined maintenance interval.

Check your printing press and the peripheral units at regular intervals: For example the cooling air ducts of the main driving motor for powder dust and ink deposits. Remove the deposits with dry blast air and a brush. Avoid lubricant accumulation on the floor and on components.

Ensure proper air conditioning and ventilation of your pressroom. Please refer to the "Technical information", that is enclosed in the document case, for the relevant details.

All these measures reduce costs and ensure productivity.

1.2 Notes on the "Maintenance" main chapter

Note

In the first place, follow the maintenance instructions on plates directly on the press, then follow the maintenance instructions in this manual.

- The main chapter "Maintenance" is the basis for performing maintenance work on your press.
- The chapters entitled "General information" and "Checklists" facilitate the approach to this documentation.

Please note!

The checklists existing in this manual are your originals.

Please always use copies for your work.

- The maintenance schedule provides you with an overview of the maintenance points and the maintenance work on the printing press. The intervals for maintenance work are color-coded. For detailed information please refer to "Maintenance interval". The maintenance schedule is enclosed in the document case.
Please note!
The specifications concerning maintenance intervals given in the manual and the legend on the maintenance schedule are your originals.
Please always use copies for your work.
- The checklists are related to subassemblies, containing all maintenance work which must be performed on the printing press and its peripheral units.
The checklists include information on the following items:
 - Part
 - Maintenance work/location
 - Required resources (e.g. lubricant)
 - Required spare part
 - Maintenance interval
- The chapters "Maintenance work on ..." are related to subassemblies and describe the maintenance work to be carried out.
The descriptions always start with an overview of the location of the maintenance points (illustration).
The location of the maintenance point is described.
- Lubrication and maintenance points are described in tables (for example: maintenance interval, type of lubricating point, color code, etc.).
- The lubricating points are assigned to the individual maintenance intervals by color coding (see relevant table).
- Additional, important hints are specially marked.

1.3 Peripheral units

The optimum value of your peripheral units is maintained by regular and thorough maintenance and cleanliness. Please follow these instructions!

The maintenance instructions for your peripheral units are generally valid and must be observed. Please have your Baumfolder dealer carry out all maintenance work you are not able to carry out yourselves because of constructional reasons in your pressroom.

Check the peripheral units at regular intervals: For example the cooling air ducts of the main driving motor for powder dust and ink deposits. Remove the deposits with dry blast air and a brush. Avoid lubricant accumulation on the floor and on components.

The maintenance work to be carried out on each peripheral unit is summarized in a checklist. All checklists can be found in the chapter "Checklists for peripheral units".

Please refer to the documentation of the peripheral supplier for a detailed specification of the maintenance work to be done on the peripheral units (e.g. compressors, central air supply and accessories). Please observe the relevant information in the respective manuals.

2 Notes on the maintenance schedule

2.1 General information










Note

The maintenance schedule is enclosed in the document case.

The maintenance schedule provides you with an overview of the maintenance points and the maintenance work on the printing press. The intervals for maintenance work are color-coded. For detailed explanations please refer to "Maintenance interval".

The following legend explains the symbols used in the maintenance schedule. The symbols illustrate the maintenance works. For precise instructions, please refer to the following chapters.

2.2 Legend

Maintenance work	Symbol
Checking	
Cleaning	
Lubricating with the oil bottle	
Lubricating with the small grease gun	
Lubricating with the grease gun	
Lubricating with lubricant spray	
Lubricating with lubricant spray in the pump bottle	
Lubricating with grease and brush	
Replacing parts	

Tab. 1

AL 904.0011-000FREN_02

3 Maintenance interval

3.1 Definition

Maintenance periods are called maintenance intervals.

A maintenance interval is either the time until a certain number of press revolutions is reached or a fixed time.

Five maintenance intervals have been defined.

Maintenance intervals		Color code of the lubricating point
I	25,000 revolutions or daily	Red
II	125,000 revolutions or once a week	Yellow
III	500,000 revolutions or once a month	Blue
IV	2,500,000 revolutions or twice a year	Green
V	5,000,000 revolutions or once a year	Violet

Tab. 2 Maintenance intervals BP18

The number of revolutions is shown in the menu **Special function 41** of the control station display.

3.2 Press revolutions

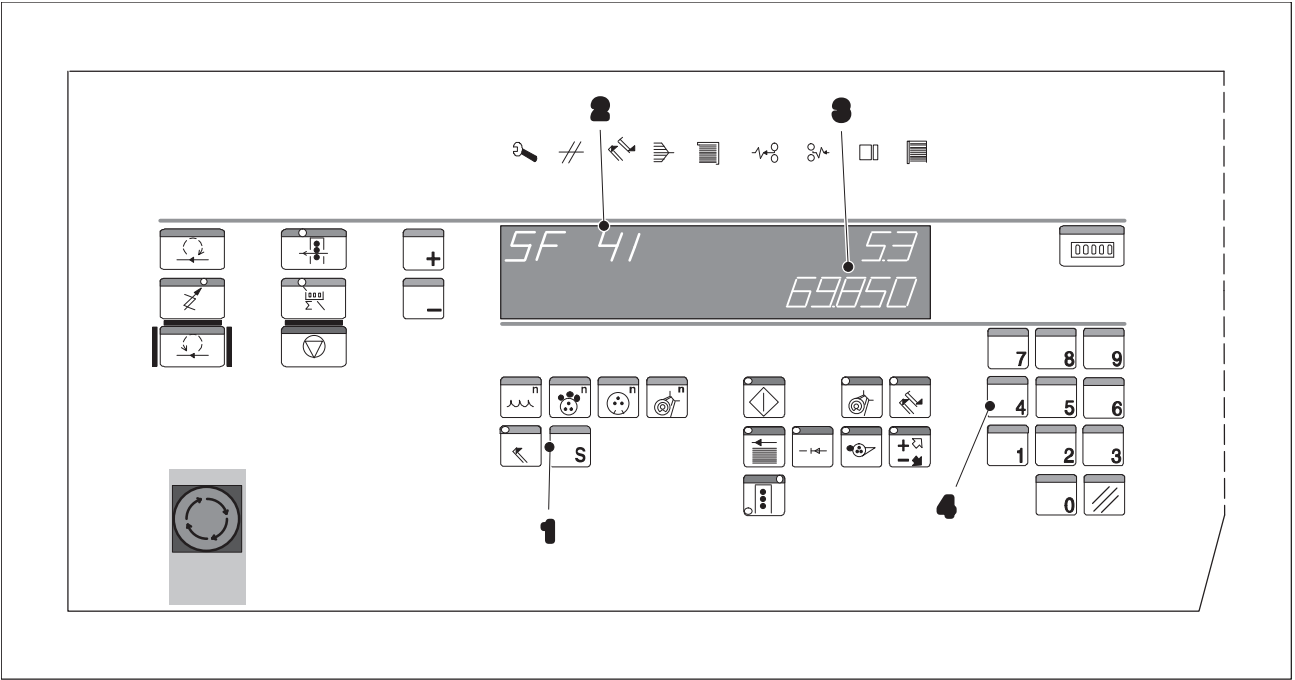


Fig. 1 Press revolutions (special function 41)

How to find out the number of press revolutions

1. Select the **Special functions** menu: touch the *Special functions* button (Fig. 1/1).

AL 904.0050-000BRAUN_00

Result

The letters "SF", the identification number of the special function selected last and additional information are displayed (Fig. 1/2).

2. Use the numeric keypad (Fig. 1/4) to enter the identification number 41 for the press revolutions.

Result

The display will show the total number of press revolutions (Fig. 1/3).

Explanations for the display in figure 1:
5.369.850 impr.(digit 1-3: upper line; digit 4-8: bottom line).

3. Exit the special function by touching the *Special functions* key (Fig. 1/1) again.

AL 904 001C-000FREN_02

4 Manual grease lubrication

4.1 Types of lubricating points

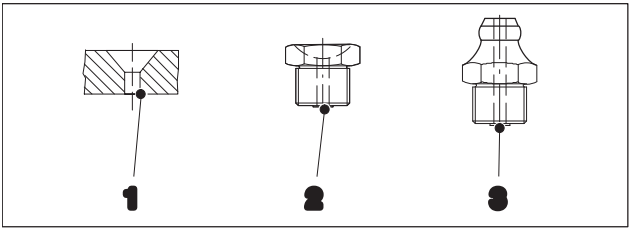


Fig. 2 Types of lubricating points

- 1 Open oil or grease lubrication hole**
Lubricate the lubricating points either with the oil can or with the grease gun.
- 2 Recessed grease nipple**
Lubricate the lubricating points with the small grease gun.
- 3 Conical head lubrication nipple**
Lubricate the lubricating points with the grease gun.

4.2 Lubricating devices

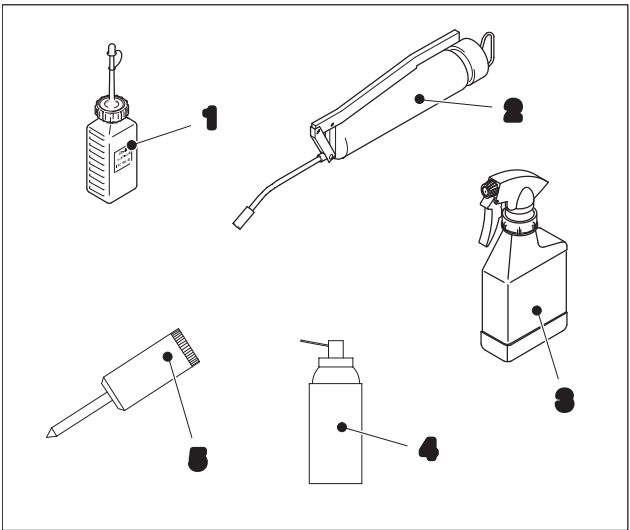


Fig. 3 Lubricating devices

- 1 Oil bottle**
To be used for open oil lubrication holes and oil lubricating points.
- 2 Grease gun**
To be used for conical head lubrication nipples.
- 3 Hand sprayer with lubricant spray**
- 4 Lubricant spray**
- 5 Small grease gun**
To be used for open grease lubricating points and recessed grease nipples.

4.3 How to apply lubricant

Remove any dirt from the lubricating points before each lubrication procedure.

Unless otherwise stated, fill lubricant into the lubricating points until the new lubricant emerges from the corresponding bearing point. Remove the emerging, used lubricant by means of a rag.

5 Lubricants

5.1 Approved lubricants



Caution - Press damage!

Always use lubricant of one manufacturer for lubrication.

If you use lubricants of various manufacturers, check with the manufacturers whether the lubricants are compatible and can be mixed.

Note

The lubricants currently used in the factory are listed in the parts catalog.

Range of application			
manual lubrication with oil	Manual lubrication with grease	Central manual lubrication	Other lubricating points
LFC 3068 oil bottle, Chemie-Technik GmbH <i>Numbering boxes</i> Light spindle oil 1.1 E/20°C	Fuchs Renolit MP <i>Numbering boxes</i> ARAL HL 2 80° BV	Dow Corning Molykote G 67	<i>Lubricant spray:</i> FLC 1012, by ELKALUB <i>Lubricant for delivery chains</i> Emerald 2000 One Step Chain Saver

Tab. 3

6 Cleaners and washing fluids

6.1 Properties of the approved cleaners

From a safety point of view, cleaners for manual cleaning and for the automatic washup devices must meet the specifications of the standard pr EN 1010-2 "Safety of Machinery - Safety requirements for the design and construction of printing and paper-converting machines". They must meet the following criterion:

- Flash point > 55 °C

Furthermore, the Employers' Liability Insurance Association demands that cleaners meet the following requirements:

- Benzene percentage < 0.1 %
- Toluene-xylene content < 1 %
- Aromatics content (> C₉) < 1 %
- Solutions free from chlorinated hydrocarbon, CFC, terpenes, n-hexane, secondary amines and amides
- Solutions free from other substances, which might constitute a risk to health.

The cleaners that comply with the above-mentioned requirements have been approved in the following lists:

- Graphic Technology Research Association (FOGRA),

The lists are available in the internet under:

- <<http://www.fogra.org>>

6.2 Non-approved cleaners

For safety reasons, the cleaners must meet the specifications of the following standard: pr EN 1010-2 "Safety of Machinery - Safety requirements for the design and construction of printing and paper-converting machines". The following cleaners do not meet these specifications. Therefore, they must not be used:

- Alcohol
- Cleaners containing acetone

The following cleaners must not be used either:

- Scouring powder
- Cream cleansers
- Chrome polish
- Cleaners on orange terpene base
- Strong acid / intensive cleaners (e.g. plate cleaners, phosphoric cleaners, tartaric acids)

- Cleaners containing chlorine (e.g. sanitary cleaners)
- Strong lye (e.g. concentrated soap cleaners)
- Chlorinated hydrocarbons/chlorofluorocarbons (CHC/CFC)

Current exceptions are:

- **Alcohol:**
Alcohol may be used in small quantities for cleaning the following parts:
 - Dampening rollers
 - Sensors
 - Control panels
 - User interface of the control system (touch screen)
 - Display
 - Rotary valve
 - Suction discs of the forwarding suckers
 - Bearers
 - Glass guard of the laser optics
- **Tartaric acid:**
Tartaric acid may be used to clean demounted rollers with rubber sleeves.
- **Cleaners containing acetone:**
Cleaners containing acetone may be used in small quantities to clean dampening rollers without rubber sleeves.



Caution - Risk of damaging the surface!

Cleaners containing acetone attack the varnish of the printing press.

6.3 General information for manual cleaning work

After each manual cleaning, all parts must be cleaned again with a cloth moistened with water.

6.4 Approved cleaners for manual cleaning



Caution - Risk of damaging the surface!

Never spray alcohol or cleaners containing acetone directly onto the rollers. Always apply cleaners to a soft, fluffless cloth for cleaning.

Part		Cleaner with test certificate (Fogra)	UV cleaner with test certificate (FOGRA)	Cleaner containing acetone (e.g. Rolomatik)	Alcohol (e.g. isopropanol)	Tartaric acid
Sheet-transferring cylinders: transfer gripper, feed drum, transfer cylinder I, transfer drum II, transfer cylinder III Storage drum, reversing drum (only with perfector)		X	X			
Front lays and cover guides		X	X			
Impression cylinder	with chromium-plated surface	X	X			
	with refined cylinder jacket	X	X			
	with Perfect-Jacket	X	X ¹			
Plate cylinder		X	X			
Blanket cylinder	with chromium-plated surface	X	X			
	with galvanized surface	X				
Inking rollers	with rubber sleeve	X	X			X ³
	without rubber sleeve	X	X			
Dampening rollers	with rubber sleeve				X	X ³
	without rubber sleeve			X ²	X	
Sensors, display		X			X	

Tab. 4

Legend

- ¹ A long-term application (≥ 1 h) of the cleaner is not allowed.
- ² Clean the metering roller with alcohol after cleaner has been applied.
- ³ Inking and dampening rollers with rubber sleeves must be removed when they are cleaned with tartaric acid.

6.5 Approved cleaners for automatic cleaning work

Part	Cleaner with test certificate (Fogra)	UV cleaner with test certificate (Fogra)
Automatic washup device	X	X

Tab. 5

6.6 Properties of the washing fluid

The washing fluid for manual cleaning of rollers and cylinders, as well as for the automatic washup devices must meet the following criteria:

- The washing fluid must be distilled and/or fully demineralized.
- Washing fluid that is partly demineralized and re-hardened by treatment with an ion exchanger or a reverse osmosis filter may also be used.
- The water must not contain any fine particles or suspended matter.
- To prevent clogging up in the washing fluid container (e.g. by algae growth), a germicide must be added to the washing fluid.

Germicide	Packet size	Part no.	Remark
Mikropur MT 10	40 tablets	00.580.6091/	One tablet is sufficient for a water volume of up to 10 liters.
Mikropur flüssig	100 ml	00.580.3902/	100 ml are sufficient for a water volume of up to 1 000 liters.
Aqua Clean AC5	100 tablets	00.580.6353/	One tablet is sufficient for a water volume of up to 5 liters.
Aqua Clean AC20	100 tablets	00.580.6354/	One tablet is sufficient for a water volume of up to 20 liters.
Aqua Clean AC10.000	100 g powder	00.580.6355/	100 g powder is sufficient for a water volume of up to 10 000 liters.

Tab. 6

6.7 Approved water for manual cleaning

Part	Distilled or partly demineralized water	Tap water	Tap water with commercially available soap (e.g. dish-washing liquid)
Rollers and cylinders	X		
Others (e.g. screens, guards, footsteps, etc.)	X	X	X

Tab. 7

6.8 Approved washing fluid for automatic cleaning work

Part	Distilled or partly demineralized water with disinfectant
Automatic washup device	X

Tab. 8

Checklists

1	Note on the maintenance checklists	D.2.3
1.1	Using the checklists	D.2.3
2	Feeder checklist	D.2.4
2.1	Maintenance work on the feeder	D.2.4
3	Checklist for the printing unit	D.2.6
3.1	Maintenance work on the printing unit	D.2.6
4	Checklist for the delivery	D.2.11
4.1	Maintenance work on the delivery	D.2.11
5	Checklist peripheral units	D.2.12
5.1	Maintenance work on the peripheral units	D.2.12

1.1 Using the checklists



The maintenance checklists allow you to gain an overview of, and carry out all the necessary maintenance work.

More precise descriptions of the individual maintenance tasks on the peripheral units can be found in the corresponding operating manuals of the device manufacturers.

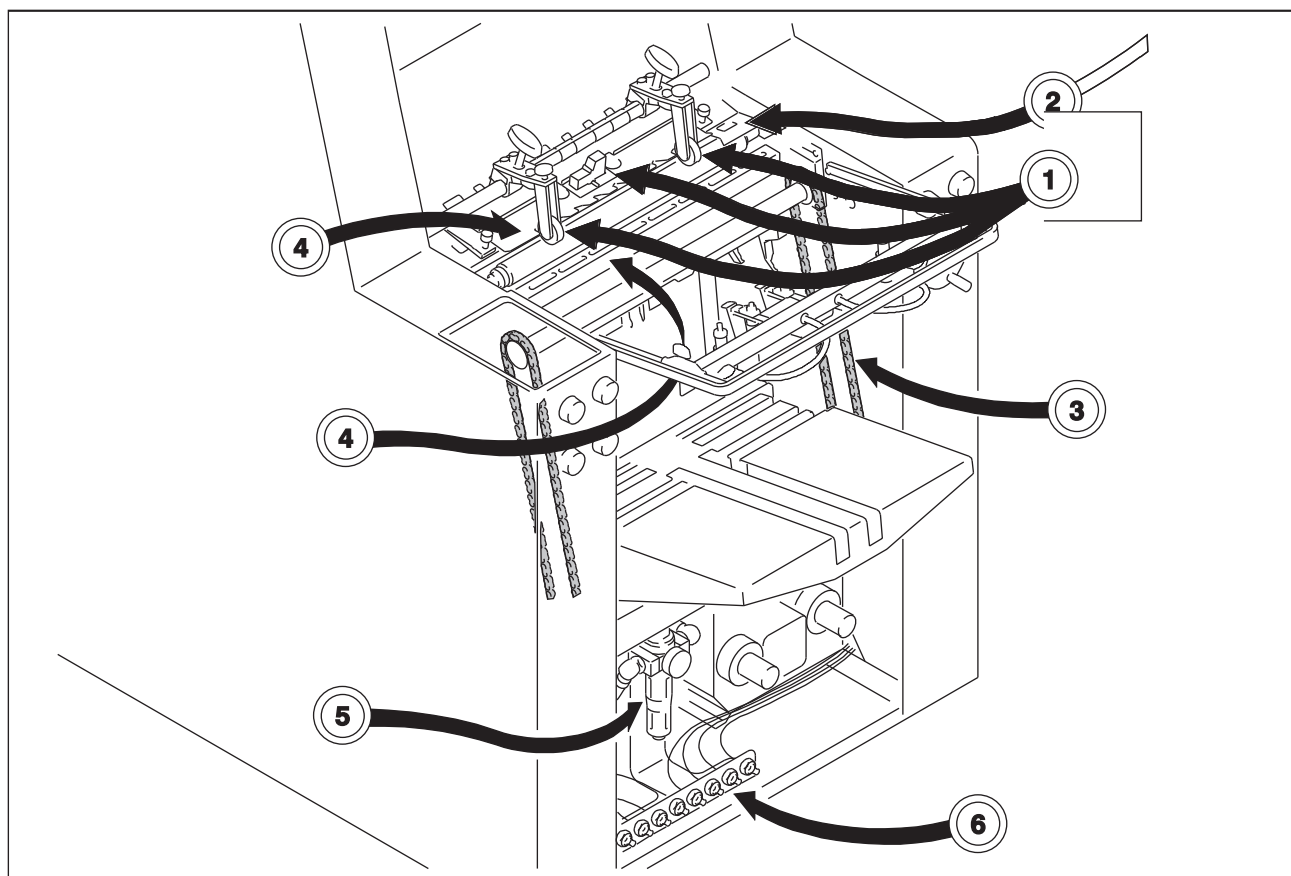
The checklists contained in the manual and the signature box are your master copies.

Use the copies for all maintenance work that is to take place at specific intervals and also document this. Please also complete the entries in the signature field. This is confirmation that the maintenance has been performed correctly.

2 Feeder checklist

2.1 Maintenance work on the feeder

AL-904.1101-000FEED00_01



AL-904.0073-002GRAND_00

No.	Part	Maintenance work/maintenance location	Required resources	Part required	Maintenance interval				
					I	II	III	IV	V
1	Maintenance points on the feed table:								
	Forwarding rollers	Clean two forwarding rollers.	Observe "Approved cleaners"			X	X	X	X
	Automatic sheet arrival control	Lubricate the gear of the tape driving roller through the recess on the lower guide plate. D.S.	Molykote G 67; brush				X	X	X
		Lubricate the gear of the tape driving roller for small-format forwarding rollers through the recess on the lower guide plate. O.S.	Molykote G 67; brush				X	X	X
	Double sheet detector	Clean sensor and light barriers.	Soft, fluffless cloth; note "Approved cleaners"			X	X	X	X

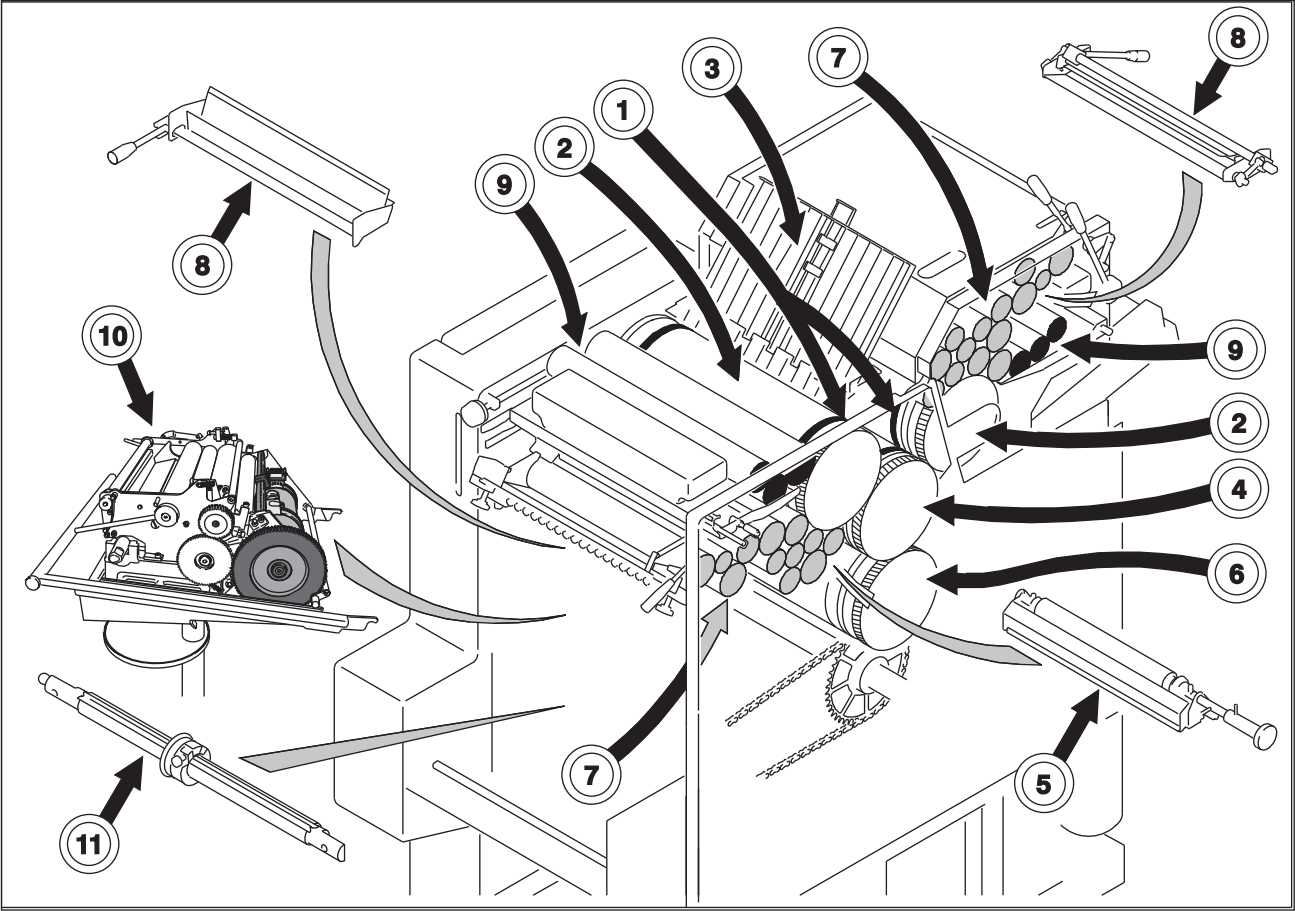
No.	Part	Maintenance work/maintenance location	Required resources	Part required	Maintenance interval				
					I	II	III	IV	V
	Guide plates	Clean the guide plates.	Observe "Approved cleaners"			X	X	X	X
	Ionizing unit	Clean the ionizer.	Brush				X	X	X
2	Maintenance points on the pile guide rail and pile transport:								
	Pile chains	Clean and lubricate two pile chains. D.S. / O.S.	Lubricant spray Elkalub FLC 1012				X	X	X
3	Maintenance points on the air supply:								
	Compressed-air control unit	Check the level of the condensation water in the compressed-air control unit; drain the compressed-air control unit, if necessary.	Collecting vessel			X	X	X	X
4	Maintenance points on the central lubrication:								
	Lubricating points/ feeder cams and impression cylinder	4 conical head lubrication nipples (right), a quarter of a stroke of the grease gun per lubricating nipple.	Molykote G 67; grease gun				X	X	X
	Lubricating points / feeder drive and impression cylinder gear	4 conical head lubrication nipples (left), a quarter of a stroke of the grease gun per lubricating nipple.	Molykote G 67; grease gun				X	X	X

Tab. 1

3 Checklist for the printing unit

3.1 Maintenance work on the printing unit

AL 904-01-000THERM_01



AL 904-0074-00GRUND_00

No.	Part	Maintenance work/maintenance location	Required resources	Part required	Maintenance interval				
					I	II	III	IV	V
1	Maintenance points on the plate cylinder:								
	Cylinder surface	Clean.	Soft, fluffless cloth; note "Approved cleaners".		X	X	X	X	X
	Bearers	Clean. D.S. / O.S.	Observe "Approved cleaners"		X	X	X	X	X
	Gears of the plate cylinders	Clean and lubricate. O.S.	Molykote G 67; grease gun; brush				X	X	X
2	Maintenance points on Autoplate:								
	Pressing rollers	Clean the pressing rollers.	Observe "Approved cleaners"				X	X	X

No.	Part	Maintenance work/maintenance location	Required resources	Part required	Maintenance interval				
					I	II	III	IV	V
3	Maintenance points on the blanket cylinder:								
	Cylinder surface	Clean the surface.	Observe "Approved cleaners"		X	X	X	X	X
	Blanket	Clean manually.	Soft, fluffless cloth; note "Approved cleaners".		X	X	X	X	X
	Bearers	Clean. D.S. / O.S.	Observe "Approved cleaners"		X	X	X	X	X
	Gears	Clean and lubricate. O.S.	Molykote G 67; grease gun; brush				X	X	X
4	Maintenance points on the blanket washup device:								
	Blanket washup device	Clean washing fluid trough and support rail.	Soft, fluffless cloth; note "Approved cleaners"		X	X	X	X	X
5	Maintenance points on the impression cylinder:								
	Cylinder surface	Clean.	Soft, fluffless cloth; note "Approved cleaners".		X	X	X	X	X
	Gears	Clean and lubricate. D.S./O.S. inside.	Molykote G 67; grease gun; brush				X	X	X
	Planetary gearing	Lubricate 1 recessed grease nipple. O.S.	Renolit MP; small grease gun					X	X
	Gripper shaft bearing	Lubricate 2 gripper shaft bearings. D.S. / O.S.	LFC 3068 oil bottle, by Chemie-Technik					X	X
6	Maintenance points on the inking unit:								
	Inking rollers	Clean.	Soft, fluffless cloth; note "Approved cleaners".		X	X	X	X	X
	Gears (only PU 1)	Clean and lubricate 4 gears. O.S.	Molykote G 67; grease gun; brush				X	X	X
	Vibrator cam (PU 1 only)	Lubricate the vibrator cam. O.S.	Molykote G 67; grease gun; brush					X	X

Checklists

No.	Part	Maintenance work/maintenance location	Required resources	Part required	Maintenance interval				
					I	II	III	IV	V
	Blade-type ink fountain	Clean.	Observe "Approved cleaners"		X	X	X	X	X
7	Maintenance points on the inking roller washup device:								
	Washup tray and washup blade	Clean washup tray and washup blade.	Observe "Approved cleaners"		X	X	X	X	X
	Inking roller washup device	Check the function. Check for wear; replace the plastic lip of the washup blade, if necessary.		X					X
	Drip pan (only PU 1)	Check the drip pan under the inking unit, clean, if necessary.				X	X	X	X
8	Maintenance points on the dampening system:								
	Dampening rollers	Clean roller surfaces.	Observe "Approved cleaners"		X	X	X	X	X
		Clean the faces. D.S. / O.S.	Soft, fluffless cloth; note "Approved cleaners".			X	X	X	X
		Adjust.	Ink stripe					X	X
	End gaskets for water pan roller/ dampening form roller	Clean. D.S. / O.S.	Observe "Approved cleaners"		X	X	X	X	X
	Dampening distributor (PU 1)	Lubricate the connecting points for the driver (tappet in the bearing).	Brush; small grease gun; Renolit MP				X	X	X
		Clean and lubricate angle joint and pivoted lever.	Brush; small grease gun; Renolit MP				X	X	X
	Dampening distributor (PU 2)	Lubricate the connecting points for the driver (driver plate).	Brush; small grease gun; Renolit MP				X	X	X
	Splash protection plates on the metering roller (PU 2)	Clean. D.S. / O.S.	Soft, fluffless cloth; note "Approved cleaners".			X	X	X	X
	Dampening solution pan	Clean.	Soft, fluffless cloth; note "Approved cleaners".		X	X	X	X	X
	Dampening solution container	Check the damping solution level, top up, if necessary.	Water; additives		X	X	X	X	X

No.	Part	Maintenance work/maintenance location	Required resources	Part required	Maintenance interval				
					I	II	III	IV	V
		Check the gasket; replace, if necessary.		X			X	X	X
9	Maintenance points on the numbering device:								
	Numbering inking unit	Clean inking rollers.	Soft, fluffless cloth; note "Approved cleaners".			X	X	X	X
		Lubricate inking roller journal box.	Molykote G 67; grease gun; brush			X	X	X	X
		Adjust the inking rollers.	Ink stripe					X	X
		Clean and lubricate the gears. D.S. / O.S.	Molykote G 67; grease gun; brush				X	X	X
		Clean the ink fountain.	Ink slice; soft, lint-free cloth; observe "Approved cleaners".		X	X	X	X	X
		Lubricate the groove of the distributor roller cam. D.S.	Molykote G 67; grease gun; brush						X
		Lubricate the cam. D.S.	Molykote G 67; grease gun; brush						X
	Numbering inking unit washup device	Clean washup tray and lip of the washup blade.	Observe "Approved cleaners"		X	X	X	X	X
		Check the function. Check for wear; replace the lip of the washup blade, if necessary.		X					X
		Check the drip pan under the inking unit, clean, if necessary.				X	X	X	X
	Numbering box	Clean and lubricate the numbering box.	Brush; observe "Approved cleaners"; light spindle oil 1,1 E/20°C			X	X	X	X
		Lubricate the boring in the control shaft.	Light spindle oil, 1.1 E/20 °C			X	X	X	X
		Lubricate the surface of the crank pin.	Aral HL 2 180 °BV			X	X	X	X
10	Maintenance points on the perforating device:								

Checklists

No.	Part	Maintenance work/maintenance location	Required resources	Part required	Maintenance interval				
					I	II	III	IV	V
	Perforating device	Lubricate the open oil lubrication hole on the perforating disc.	LFC 3068 oil bottle, by Chemie-Technik						X
		Lubricate the open oil lubrication hole on the perforating disc holder.	LFC 3068 oil bottle, by Chemie-Technik						X

Tab. 2

4 Checklist for the delivery

4.1 Maintenance work on the delivery

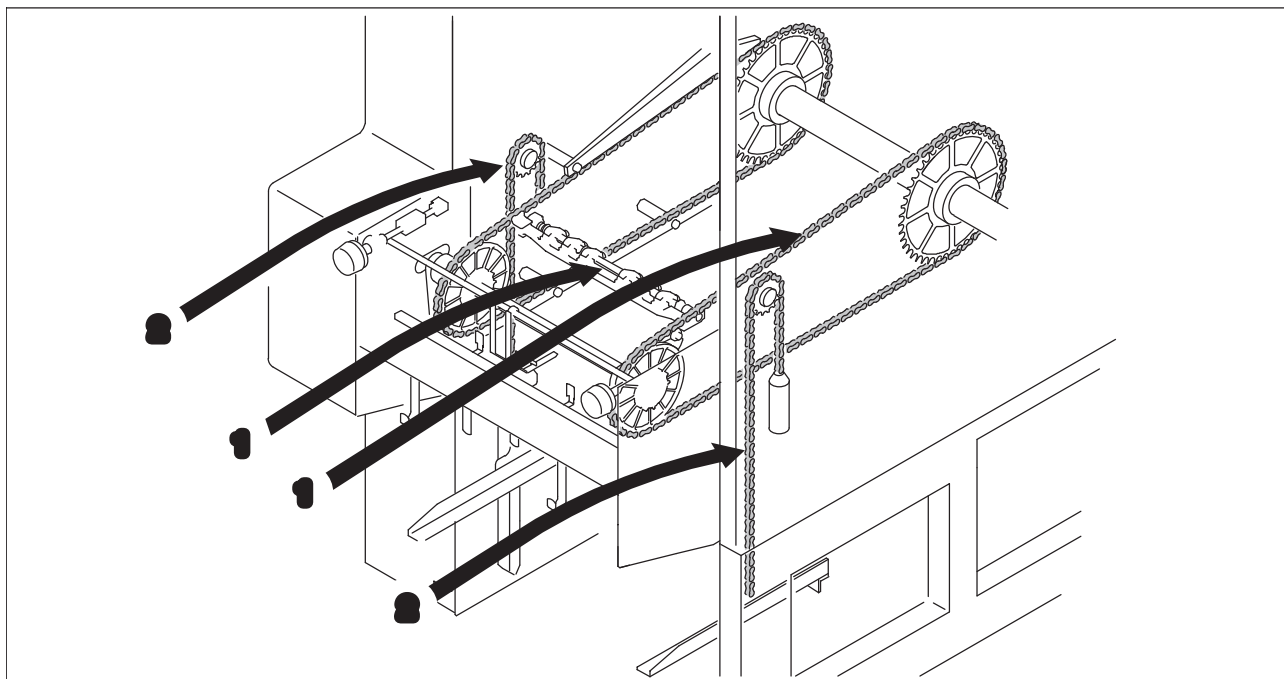


Fig. 4 Maintenance locations on delivery

No.	Part	Maintenance work/maintenance location	Required resources	Part required	Maintenance interval				
					I	II	III	IV	V
1	Maintenance points on the sheet transport:								
	Delivery chains	Clean and lubricate 2 delivery chains. D.S. / O.S.	Brush, chain lubricant Emerald 2000 (One Step Chain Saver)			X	X	X	X
	Gripper bars	Clean and lubricate 3 gripper bars. D.S. / O.S.	Soft, fluffless cloth; lubricant spray Elkalub FLC 1012				X	X	X
2	Maintenance points on the pile guide rail and pile transport:								
	Pile transport	Clean and lubricate 2 pile chains. D.S. / O.S.	Brush; lubricant spray Elkalub FLC 1012				X	X	X

Tab. 3

5 Checklist peripheral units

5.1 Maintenance work on the peripheral units

No.	Part	Maintenance work/maintenance location	Required resources	Part required	Maintenance interval					
					I	II	III	IV	V	
1	Maintenance points on the powder spray device AS-30 (Mediprint): Instruction manual, part number: A1.164.9101/ , service manual, part number: A1.164.9102/									
	Powder hoses	Blow air through the powder hoses, replace any defective hoses and clean the powder lines.	Compressed air, safety goggles	X		X	X	X	X	
	Air filter grid	Clean the air filter grid in the sound absorber (D.S.).				X	X	X		
2	Maintenance points on the pneumatic compressor 0833-13 AK and AH and AE, type 4 CPTronic (Dürr): Maintenance manual, part number: G1.102.9201/									
	Filter	Replace the filter cartridge.		X				X	X	
	Condensation water container	Clean. Actuate the manual condensation water outlet.					X	X		
	Safety valve	Tighten the knurled screw on the safety valve. (from time to time)					X	X		
	Compressed air hoses	Retighten the union joints of the compressed air hoses (from time to time)					X	X		
3	Maintenance points on the pressure/vacuum pump KLT 15 DV and. KLT 25 DV (Rietschle): Instruction manual, part no.: G2.102.9100/									
	Filter	Clean the 3 filter cartridges.					X			
		Replace the 3 filter cartridges.		X				X	X	
4	Maintenance points on the tape inserter STR-2 06 AS (Mediprint): Service manual, part number: A1.169.9100/									
	Rotary knife	Check the gap between the cutting edge of the rotating knife and the cutting bed (0.7-0.8 mm). Adjust, if necessary.	Feeler gauge					X	X	

Tab. 4

Maintenance on the feeder

1	Feeder - safety instructions	D.3.3
1.1	To be observed when working at the press	D.3.3
2	Overview of the maintenance operations on the feeder	D.3.4
2.1	Overview	D.3.4
3	Feed table	D.3.5
3.1	Forwarding rollers	D.3.5
3.2	Double sheet detector	D.3.6
4	Pile guidance and pile transport	D.3.7
4.1	Pile chains	D.3.7
5	Air supply	D.3.8
5.1	Compressed-air control unit	D.3.8
6	Central lubrication	D.3.10
6.1	Central manual lubrication	D.3.10

Maintenance on the feeder

1 Feeder - safety instructions

1.1 To be observed when working at the press



Warning - Risk of injury!

Before performing maintenance work, follow the instructions in the main chapter "Safety".



Warning - Risk of injury from press motion!

Since press motion is possible whilst the guards are open, there is a risk of injury if improperly operated. Carelessness can lead to fingers getting crushed!

When performing maintenance work on the feeder, be aware of moving parts and do not reach into the gap between the guard and the sheet infeed!



Warning - Risk of fire by cleaners!

Only use cleaners with a flash point of at least 55 °C.

2 Overview of the maintenance operations on the feeder

2.1 Overview

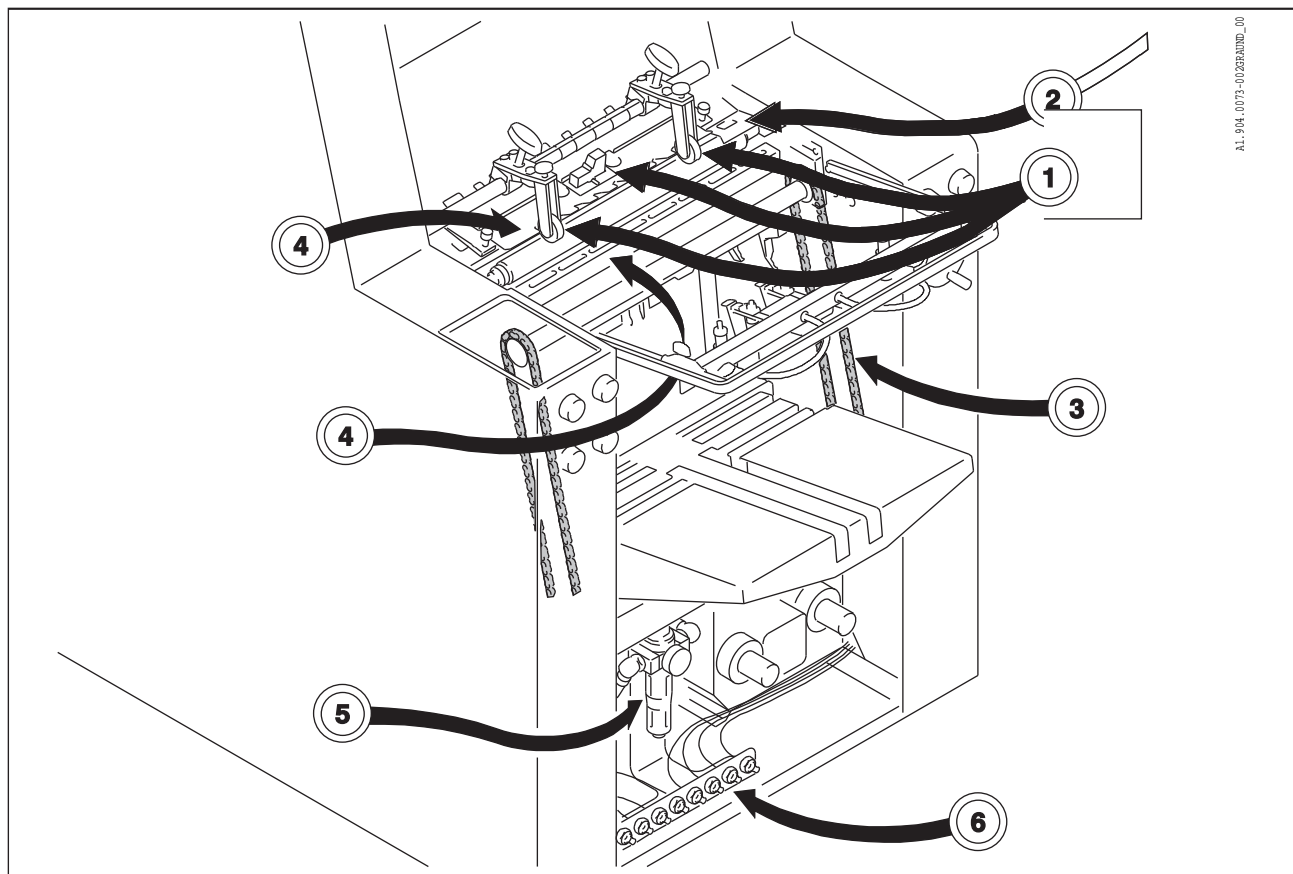


Fig. 1 Maintenance points on the feeder

- 1 Maintenance points on the feed table
- 2 Maintenance points on the sheet alignment system
- 3 Maintenance points on the pile guide rail and the pile transport
- 4 Maintenance points on the sheet guide
- 5 Maintenance points on the air supply
- 6 Maintenance points on the central lubrication unit

3 Feed table

3.1 Forwarding rollers

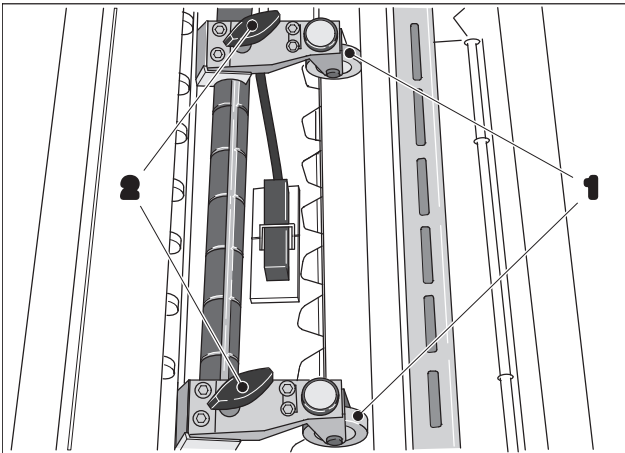


Fig. 2 Place of installation of the forwarding rollers

Place of installation

- 1 Forwarding rollers
- 2 Tommy bar screws

The forwarding rollers are adjustable along the shaft and snap into their correct position.

The forwarding rollers rest on the tape driving roller.

3.1.1 Cleaning the forwarding rollers

Description of maintenance points	
Maintenance interval	II
Maintenance location	D.S. / O.S.
Accessing the maintenance point	Undo the Tommy bar screw at the forwarding roller. Lift up the forwarding roller. After you have cleaned the forwarding rollers, reset them to the required sheet size (see note).
Maintenance work	Clean the forwarding rollers from any paper dust deposits.
Required resources	Soft, fluffless cloth
Cleaning solution	Note "Approved cleaners".

Tab. 1



Caution - Press damage!

When fixing the forwarding rollers with the Tommy bar screws make sure they are properly engaged.

If wrongly positioned there is a risk of collision with the suckers.

3.2 Double sheet detector

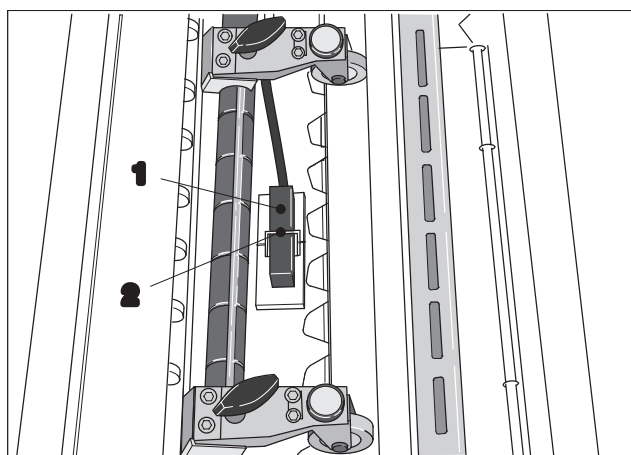


Fig. 3 Place of installation of the double sheet detector

3.2.1 Cleaning the double sheet detector

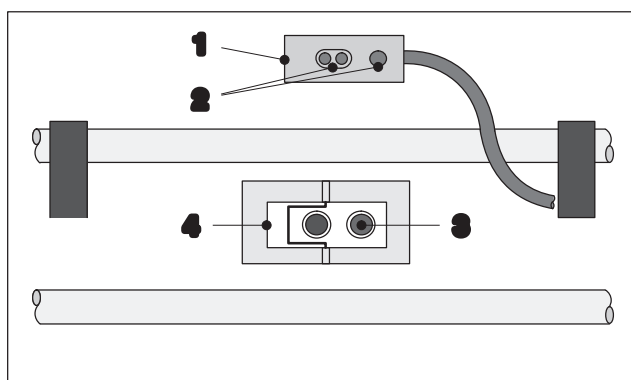


Fig. 4 Cleaning the double sheet detector.

Place of installation

- 1 Double sheet detector
- 2 Retaining spring

The double sheet detector is installed in front of the forwarding roller shaft on the guide plate.

- 1 Top part of housing
- 2 Sensor and light barrier
- 3 Light barrier
- 4 Cut-out on the guide plate

Note

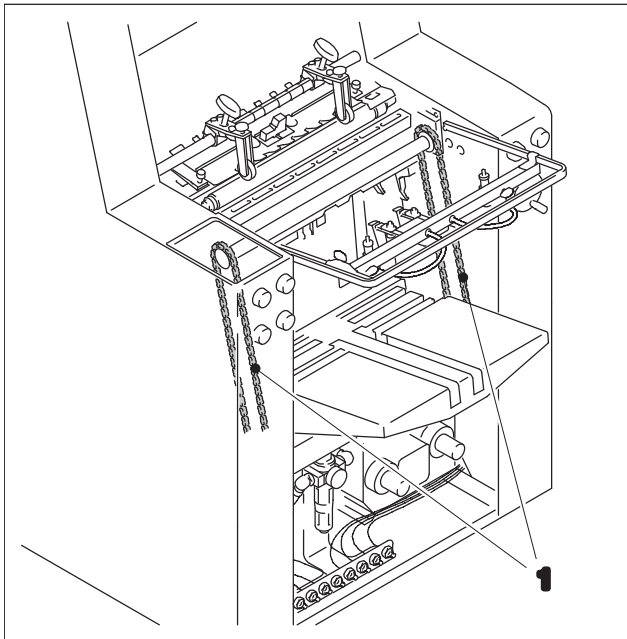
When installing the monitoring devices make sure that the housing fits into the cut-out (Fig. 4/4) of the guide plate and clicks into place. Fasten the sheet monitoring device to the guide plate with the retaining spring (Fig. 3/2).

Description of maintenance points	
Maintenance interval	II
Maintenance location	Center
Accessing the maintenance point	Release the retaining spring. Take the top part of the housing off the holder.
Maintenance work	Clean the sensor and light barrier in the top part of the housing using a soft lint-free washup cloth. Clean the light barrier in the bottom part of the housing using a dry cotton bud or compressed air.
Required resources	Soft, lint-free cloth; cotton bud
Cleaning solution	Note "Approved cleaners".

Tab. 2

4 Pile guidance and pile transport

4.1 Pile chains



AL 904_002-002FREN_00

Installation site

1 Pile chains

There is a pile chain on D.S. and one on O.S.

The pile chains are diagrammed in Figure 5 and can be accessed through the feeder side.

Fig. 5 Place of installation of the pile chain

4.1.1 Cleaning and lubricating pile chains

Lubricating point description	
Maintenance interval	III
Color code	-
Maintenance location	D.S. / O.S.
Access to lubrication point	Lower the pile table and remove the paper pile.
Number/type/maintenance work	Clean 2 pile chains (one on D.S. and one on O.S.) and spray them with lubricant spray.
Required resources	Lubricant spray
Lubricant	Elkalub FLC 1012

Tab. 3

5 Air supply

5.1 Compressed-air control unit

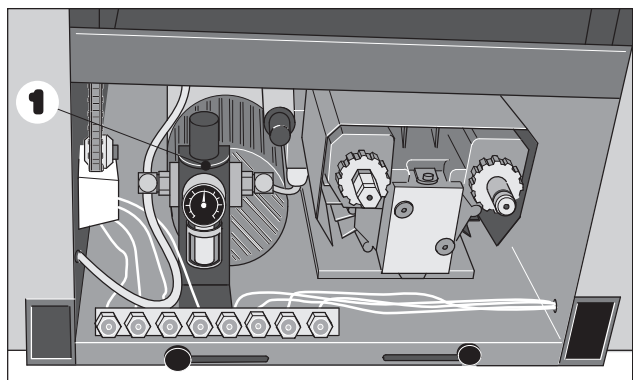


Fig. 6 Location of the compressed-air control unit

5.1.1 Checking the condensate level

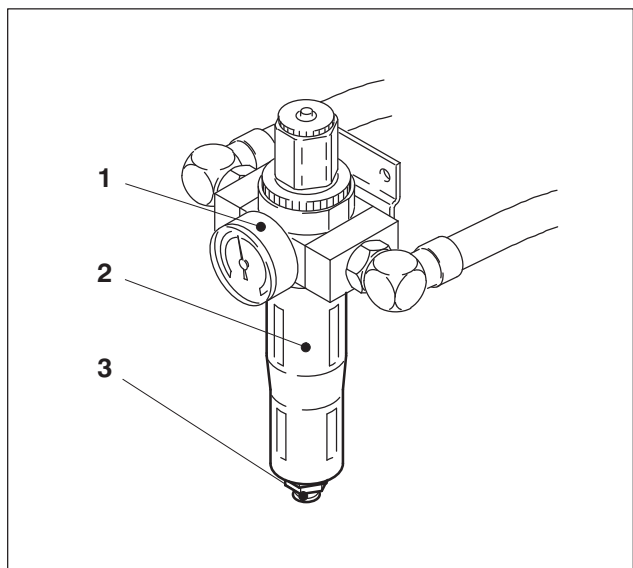


Fig. 7 Compressed-air control unit at the pneumatic compressor

Place of installation

1 Compressed-air control unit

The compressed-air control unit becomes accessible after the guard cover under the feeder is removed.

1 Manometer

2 Condensation tank

3 Bottom screw

Note

The condensation tank of the compressed-air control unit must always be empty. Otherwise, the condensation water may penetrate into the pneumatic system and destroy pneumatic valves and cylinders.

Description of maintenance points	
Maintenance interval	II
Maintenance location	Feeder side, bottom
Accessing the maintenance point	Remove the guard cover beneath the feed table.
Number/type/maintenance work	Check the condensation water level in the compressed-air control unit and drain condensation water, if necessary (see "Carrying out the maintenance work"). Check the operating pressure of the pneumatic system
Required resources	Collecting vessel
Cleaning solution	-

Tab. 4

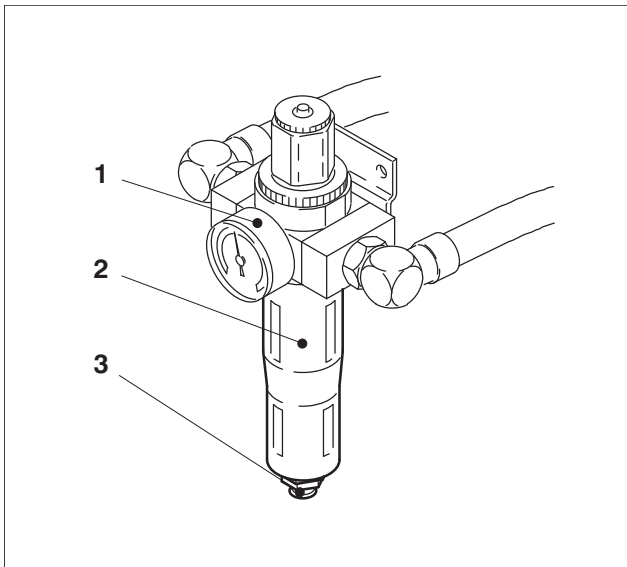


Fig. 8 Draining the filter controller

Carrying out the maintenance work

- 1 Manometer
- 2 Condensation tank
- 3 Bottom screw



Caution - Press damage!

The system pressure drops (6 ± 0.3 bars) when you drain the condensation tank. Never drain the condensation tank while the press is on "Production" or "Paper run".

1. Ensure that the compressor is turned off (either with the switch on the compressor unit or with the main switch of the press).
2. Remove the guard cover beneath the feed table on D.S.. The compressed-air control unit is now accessible.
3. Slacken the bottom screw on the compressed-air control unit. You can hear the air escaping.
4. As soon as the condensation tank is completely drained, tighten the bottom screw again.
5. Switch on the press and check whether the pointer of the manometer is in the green range.

6 Central lubrication

6.1 Central manual lubrication

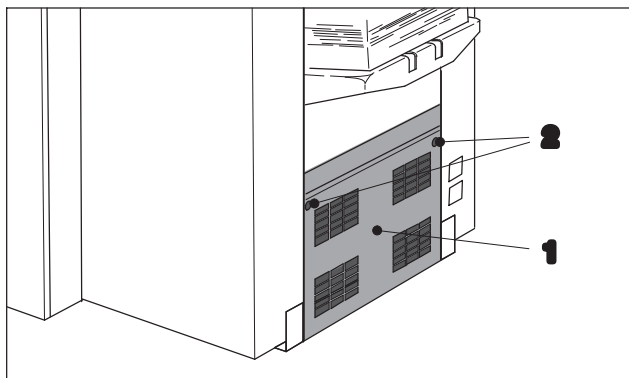


Fig. 9 Location of the central manual lubrication

Place of installation

- 1 Guard cover
- 2 Screws

The central manual lubrication is located behind the guard cover. The guard cover can be opened by turning the two screws half a revolution counterclockwise and closed again by turning them clockwise.

6.1.1 Lubricating points for feeder cams and lubricating the impression cylinder

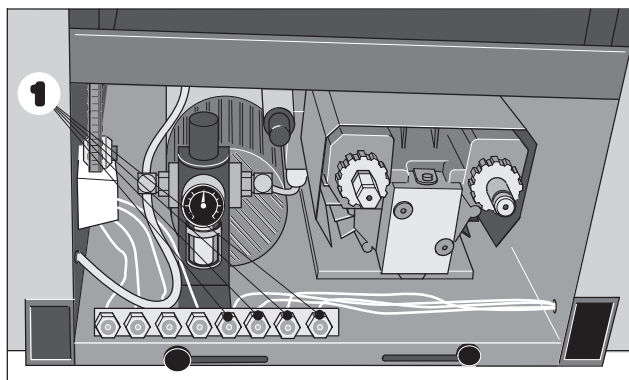


Fig. 10 Lubricating points/feeder cams and impression cylinder

- 1 Conical head lubrication nipple

Description of the lubricating point	
Maintenance interval	III
Color code	Blue
Maintenance location	Feeder side, bottom
Access to lubrication point	Remove the guard cover under the feed table.
Number/type/maintenance work	Lubricate 4 conical head lubrication nipples (right). For each lubricating nipple press in a quarter of a stroke of grease.
Required resources	Grease gun
Lubricant	Molykote G 67

Tab. 5

6.1.2 Lubricating points for the feeder drive and impression cylinder gear

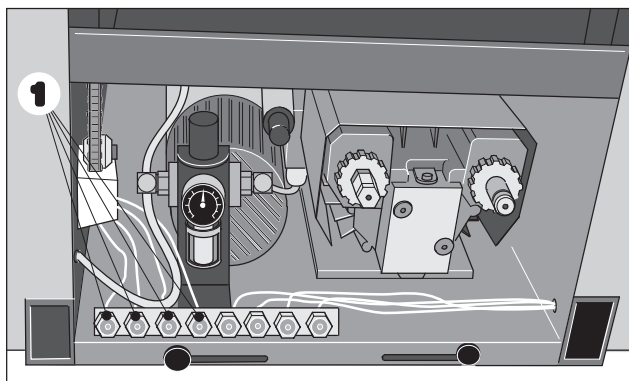


Fig. 11 Lubricating points / feeder drive and impression cylinder gear

- 1 Conical head lubrication nipple

Description of the lubricating point	
Maintenance interval	III
Color code	Blue
Maintenance location	Feeder side, bottom
Access to lubrication point	Remove the guard cover under the feed table.

Description of the lubricating point	
Number/type/maintenance work	Lubricate 4 conical head lubrication nipples (left). For each lubricating nipple press in a quarter of a stroke of grease.
Required resources	Grease gun
Lubricant	Molykote G 67

Tab. 6

Maintenance on the feeder

Maintenance on the printing unit

1	Printing unit - safety instructions	D.4.3
1.1	To be observed when working at the press	D.4.3
2	Overview of the maintenance operations on the printing unit	D.4.4
2.1	Overview	D.4.4
3	Blank Page	D.4.6
4	BP18-2 impression control mechanism	D.4.7
4.1	Bearers	D.4.7
5	Blank Page	D.4.10
6	BP18-2 plate cylinder	D.4.12
6.1	Plate cylinder	D.4.12
7	Autoplate PU 1	D.4.14
7.1	Autoplate	D.4.14
8	Autoplate PU 2	D.4.15
8.1	Autoplate	D.4.15
9	Blank Page	D.4.16
10	Blanket cylinder BP18-2	D.4.18
10.1	Blanket cylinder	D.4.18
11	Blanket washup device	D.4.20
11.1	Blanket washup device	D.4.20
12	Impression cylinder	D.4.23
12.1	Impression cylinder	D.4.23
13	Inking unit PU 1	D.4.26
13.1	Inking unit	D.4.26
13.2	Vibrator cam	D.4.27
13.3	Blade-type ink fountain	D.4.28
14	Inking unit PU 2	D.4.30
14.1	Inking unit	D.4.30
14.2	Blade-type ink fountain	D.4.31
15	Inking roller washup device PU 1	D.4.32

Maintenance on the printing unit

15.1	Inking roller washup device	D.4.32
15.2	Drip pan	D.4.33
16	Inking roller washup device PU 2	D.4.35
16.1	Inking roller washup device	D.4.35
17	Dampening system PU 1	D.4.37
17.1	Dampening system	D.4.37
17.2	Face gaskets for pan roller/dampening form roller	D.4.39
17.3	Dampening distributor	D.4.40
17.4	Dampening solution pan	D.4.41
17.5	Dampening solution container	D.4.42
18	Dampening system PU 2	D.4.44
18.1	Dampening system	D.4.44
18.2	Dampening distributor	D.4.46
18.3	Splash protection plate on the metering roller	D.4.47
18.4	Dampening solution pan	D.4.48
18.5	Dampening solution container	D.4.49
19	Numbering device	D.4.51
19.1	Numbering inking unit	D.4.51
19.2	Numbering inking unit washup device	D.4.55
19.3	Numbering box	D.4.57
20	Perforating device	D.4.60
20.1	Perforating device	D.4.60

1 Printing unit - safety instructions

1.1 To be observed when working at the press



Warning - Risk of injury!

Before performing maintenance work, it is vital that you follow the instructions in the main chapter "Safety".



Warning - Risk of injury from rotating rollers and cylinders!

Since press motion is possible whilst the guards are open, there is a risk of injury if improperly operated. Carelessness can lead to fingers getting crushed!

When cleaning the cylinders, the balls of your thumbs must point toward the infeed nip and your fingers toward the outlet nip whenever possible! Select the corresponding direction of rotation.

When performing maintenance work on the disengaged and engaged ink fountain, pay special attention to the movement of the ink fountain roller.



Warning - Risk of fire by cleaners!

Only use cleaners with a flash point of at least 55 °C.

2 Overview of the maintenance operations on the printing unit

2.1 Overview

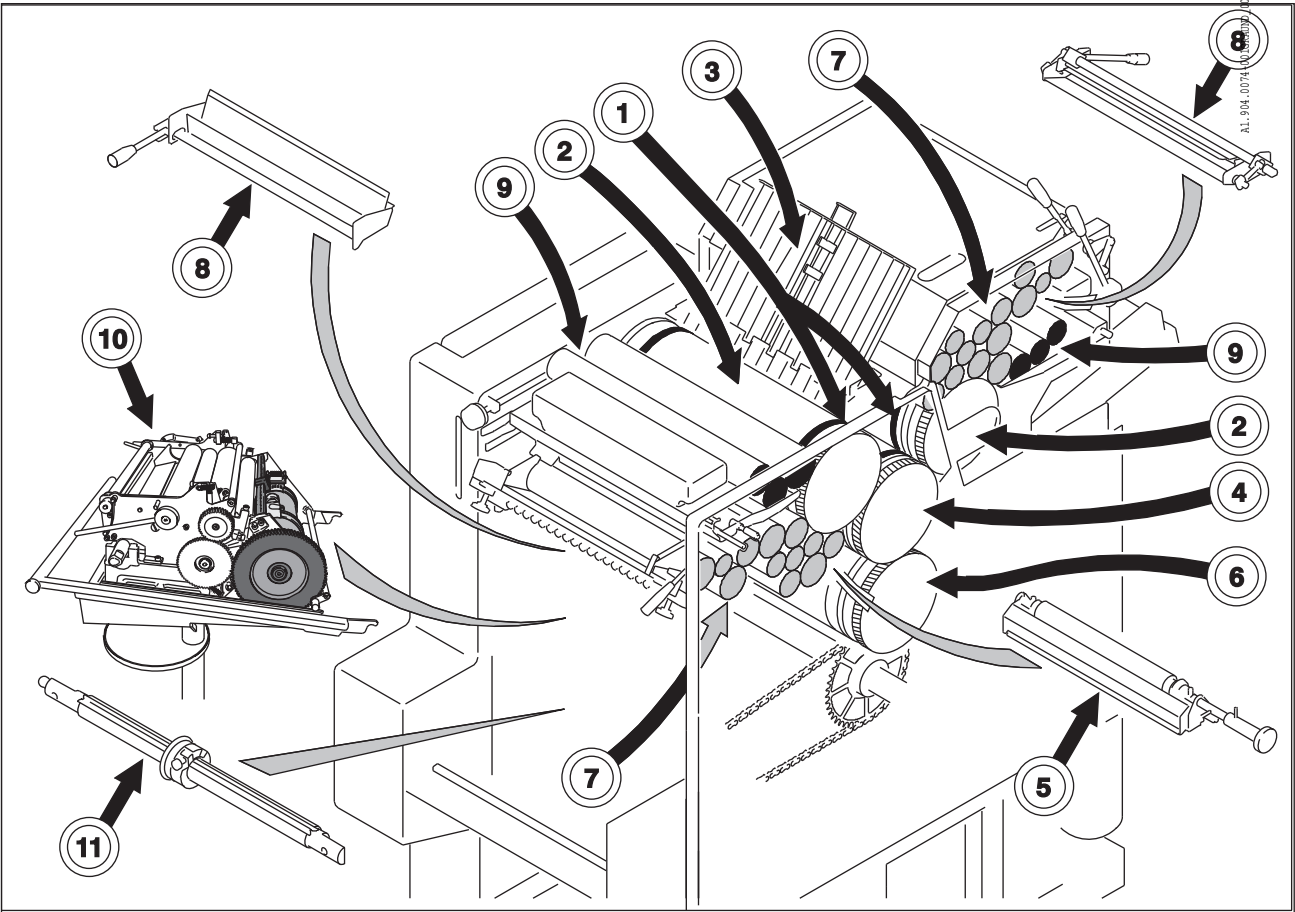


Fig. 1 Maintenance points on the printing unit

- 1 Maintenance points on the BP18-2 impression control mechanism
- 2 Maintenance points on the BP18-2 plate cylinder
- 3 Maintenance points on the Autoplate PU 1
Maintenance points on the Autoplate PU 2
- 4 Maintenance points on the BP18-2 blanket cylinder
- 5 Maintenance points on the blanket washup device
- 6 Maintenance points on the impression cylinder
- 7 Maintenance points on the inking unit PU 1
Maintenance points on the inking unit PU 2

- 8 Maintenance points on the inking roller washup device PU 1
Maintenance points on the inking roller washup device PU 2
- 9 Maintenance points on the dampening unit PU 1
Maintenance points on the dampening unit PU 2
- 10 Maintenance points on the numbering device
- 11 Maintenance points on the perforating device

3 Blank Page

4 BP18-2 impression control mechanism

4.1 Bearers

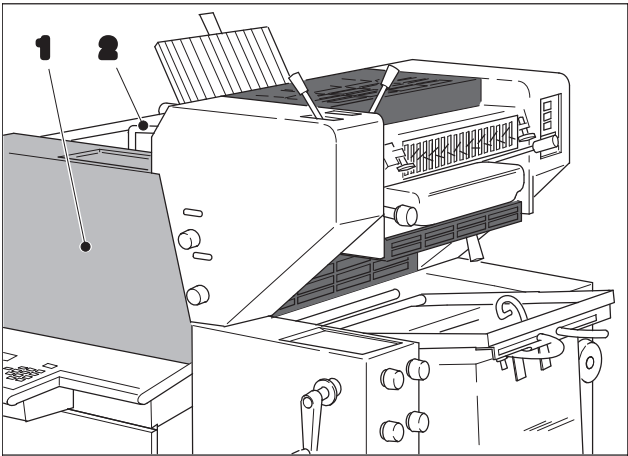


Fig. 4 BP18

Place of installation

- 1 "Printing unit PU 1 O.S." protecting door
- 2 "Plate cylinder PU 1" guard

On BP18-2 presses the two plate cylinders and the blanket cylinder can only be accessed from the top through the "plate cylinder PU 1" guard.

The cylinder bearers are arranged on D.S. and O.S. on the three cylinders.

For maintenance purposes you need to remove the cross bar together with the pressing rollers and supporting collars (see "Accessing the maintenance point").

4.1.1 Cleaning the bearers

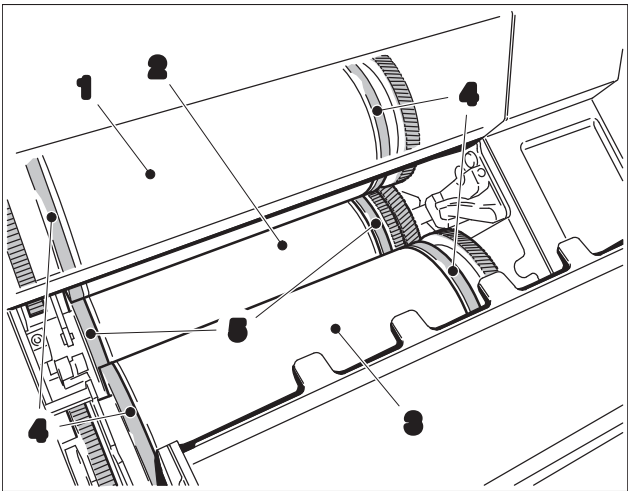


Fig. 5 Cleaning the bearers

- 1 Plate cylinder PU 2
- 2 Blanket cylinder
- 3 Plate cylinder PU 1
- 4 Cylinder bearers on the plate cylinder
- 5 Cylinder bearers on the blanket cylinder

Note

Never use cleaners that contain acid for cleaning the bearers.

Description of maintenance points	
Maintenance interval	I
Maintenance location	D.S. / O.S.
Accessing the maintenance point	Open the "plate cylinder PU 1" guard and remove the cross bar together with the pressing rollers and supporting collars (see below). Turn the press using the crank handle.
Maintenance work	Clean the bearers.
Required resources	Soft, fluffless cloth
Cleaning solution	Note "Approved cleaners".

Tab. 2

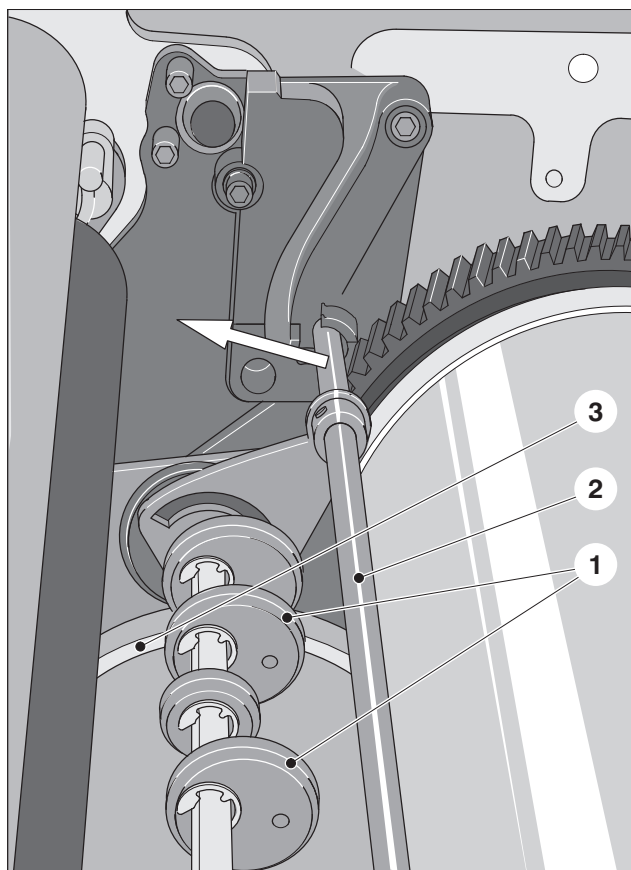


Fig. 6 Removing the cross bar

Accessing the maintenance point

- 1 Pressing rollers
 - 2 Cross bar
 - 3 Bearer
1. Press the cross bar (Fig. 6/2) with the pressing rollers for feeding the plates (Fig. 6/1) towards the feeder (Fig. 6, arrow). Take the cross bar out of the bearing on O.S. first.
 2. Pull the cross bar with the pressing rollers (Fig. 6/1) out of the bearing on D.S. and take it out of the press.
 3. Clean the plate cylinder and blanket cylinder bearers on D.S. and O.S.

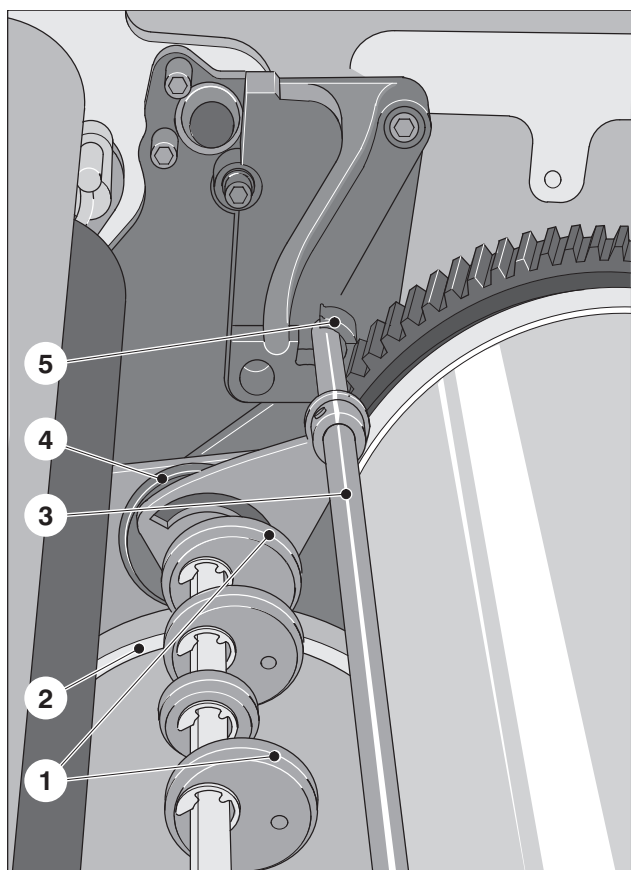


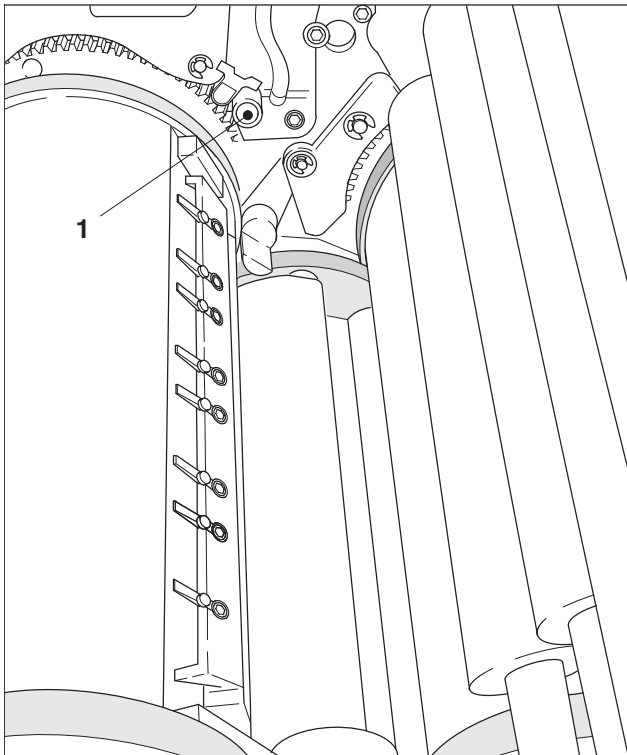
Fig. 7 Mounting the cross bar

- 1 Pressing rollers
- 2 Bearer
- 3 Cross bar
- 4 Supporting collar
- 5 Bearing

► Tip

For an easier insertion of the cross bar, the pressing rollers (Fig. 7/1) should point towards the inking unit. The supporting collars (Fig. 7/4) roll on the bearers (Fig. 7/2).

4. Insert the cross bar (Fig. 7/3) with the pressing rollers in PU 2. To do so, push the end of the cross bar on D.S. into the bearing (Fig. 8/1).
5. Overcoming a light resistance, press the cross bar (Fig. 7/3) on O.S. towards the delivery into the bearing (Fig. 7/5) until the crossbar clicks into place.



1 Bearing D.S.

Fig. 8 Pressing rollers, bearing on D.S.

5 Blank Page

5.1.2 BLANK PAGE

6 BP18-2 plate cylinder

6.1 Plate cylinder

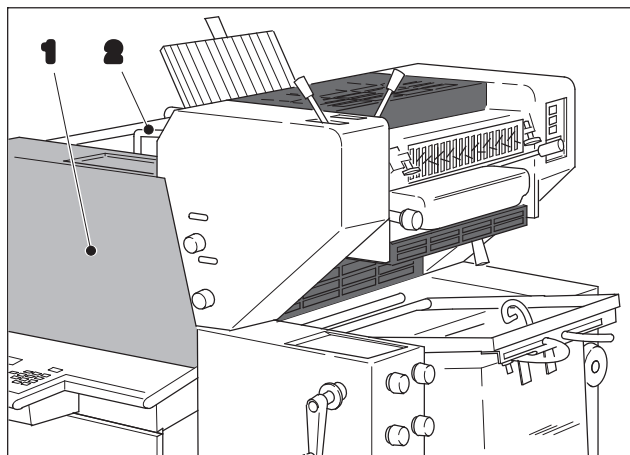


Fig. 12 BP18-2

Place of installation

- 1 "Printing unit PU 1 O.S." protecting door
- 2 "Plate cylinder PU 1" guard

The plate cylinder is mounted under the "plate cylinder PU 1" guard.

For maintenance purposes you need to remove the cross bar together with the pressing rollers and the supporting collars.

Note

Refer to the subchapter "Impression control mechanism BP18-2, Accessing the maintenance point" for a description of how to install and remove the cross bar.

6.1.1 Cleaning the cylinder surface

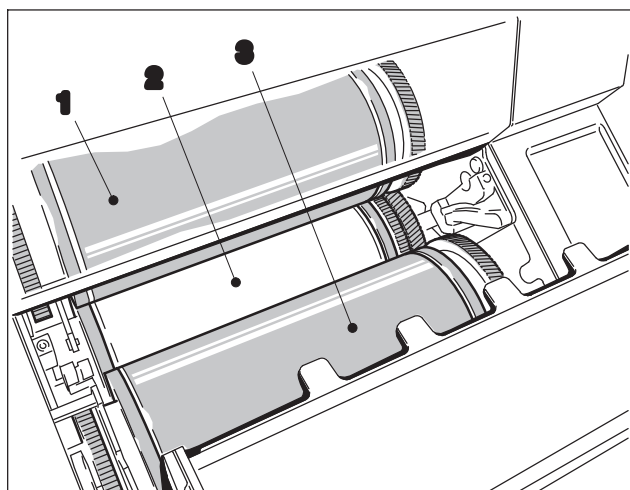


Fig. 13 Cleaning the cylinder surface

- 1 Plate cylinder PU 2
- 2 Blanket cylinder
- 3 Plate cylinder PU 1

Note

Never use cleaners that contain acid for cleaning the cylinder surface.

Description of maintenance points	
Maintenance interval	I
Maintenance location	From D.S. to O.S.
Accessing the maintenance point	Open the "Plate cylinder PU 1" guard. Remove the cross bar together with the pressing rollers. Turn the press using the crank handle.
Maintenance work	Clean the cylinder surface.
Required resources	Soft, fluffless cloth
Cleaning solution	Note "Approved cleaners".

Tab. 5

6.1.2 Lubricating the gears

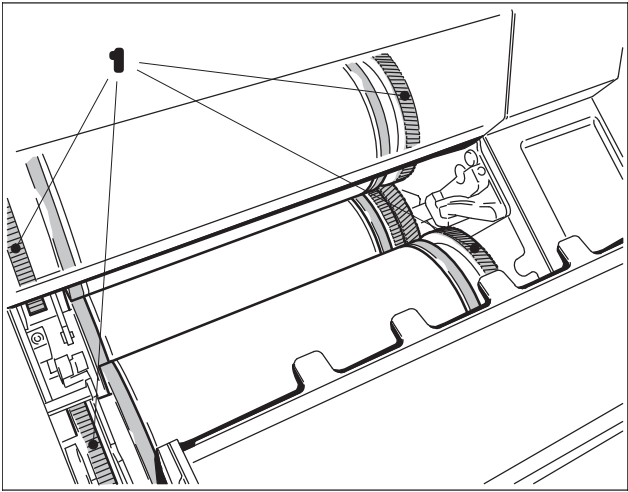


Fig. 14 Lubricating the gears

1 Gears

Description of lubricating points	
Maintenance interval	III
Color code	-
Maintenance location	D.S. / O.S.
Access to lubrication point	Open the "plate cylinder PU 1" guard. Turn the press using the crank handle.
Number/type/maintenance work	Lubricate the gears.
Required resources	Grease gun, small brush
Lubricant	Molykote G 67

Tab. 6

7 Autoplate PU 1

7.1 Autoplate

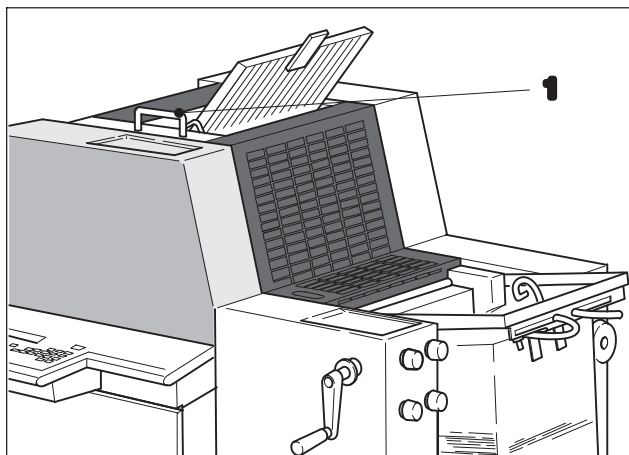


Fig. 15 QM 46-1

Place of installation

1 "Plate cylinder" guard

The cross bar together with the pressing rollers and supporting collars (Fig. 16) are part of the Autoplate system.

The cross bar is firmly mounted on the underside of the "plate cylinder" guard.

7.1.1 Cleaning the pressing rollers

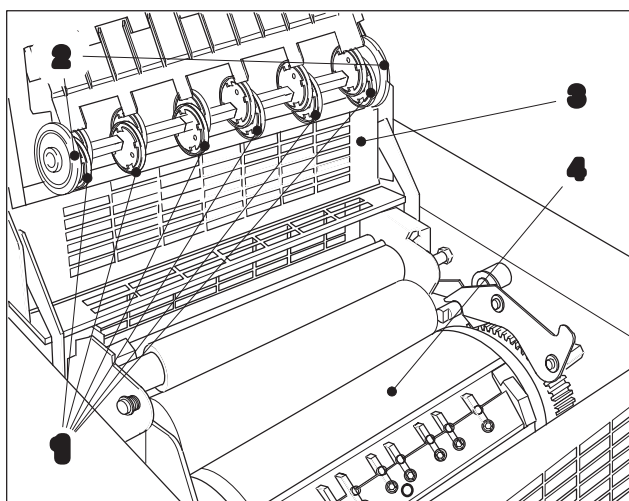


Fig. 16 Cleaning the pressing rollers of the cross bar

1 Pressing rollers

2 Supporting collars

3 "Plate cylinder" guard

4 Plate cylinder

Description of maintenance points	
Maintenance interval	III
Maintenance location	From D.S. to O.S.
Accessing the maintenance point	Open the "plate cylinder" guard.
Maintenance work	Clean the pressing rollers.
Required resources	Soft, fluffless cloth
Cleaning solution	Note "Approved cleaners".

Tab. 7

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8 Autoplate PU 2

8.1 Autoplate

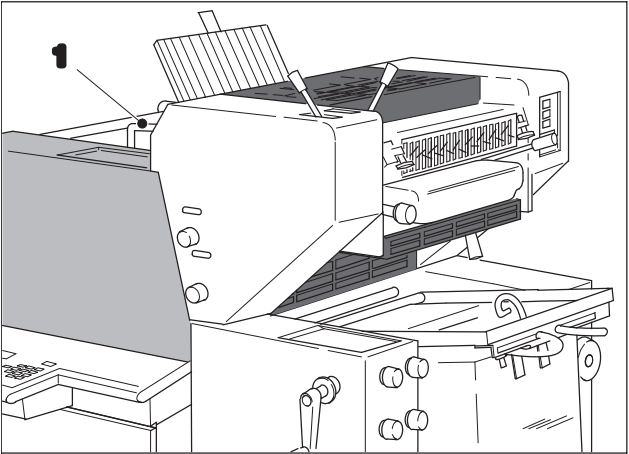


Fig. 17 BP18-2

Place of installation

- 1 "Plate cylinder PU 1" guard

The cross bar together with the pressing rollers and supporting collars (Fig. 18) is part of the Autoplate system.

The cross bar is located under the "plate cylinder PU 1" guard between the two plate cylinders.

You can remove the cross bar for maintenance purposes.

Note

Refer to the subchapter "Impression control mechanism BP18-2, Accessing the maintenance point" for a description of how to install and remove the cross bar.

8.1.1 Cleaning the pressing rollers

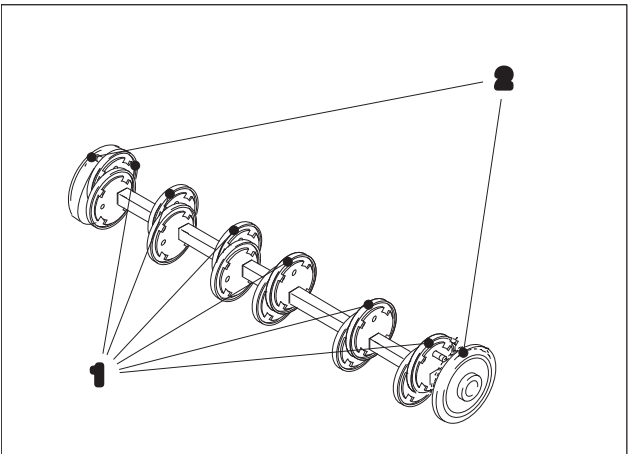


Fig. 18 Cleaning the pressing rollers of the cross bar

- 1 Pressing rollers
2 Supporting collars

Description of maintenance points	
Maintenance interval	III
Maintenance location	From D.S. to O.S.
Accessing the maintenance point	Open the "plate cylinder PU 1" guard. Remove the cross bar.
Maintenance work	Clean the pressing rollers.
Required resources	Soft, fluffless cloth
Cleaning solution	Note "Approved cleaners".

Tab. 8

10 Blanket cylinder BP18-2

10.1 Blanket cylinder

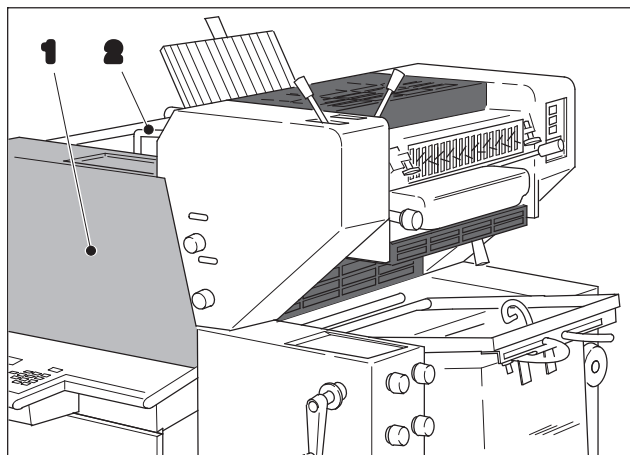


Fig. 22 BP18-2

Place of installation

- 1 "Printing unit O.S." protecting door
- 2 "Plate cylinder PU 1" guard

On BP18-2 presses, the blanket cylinder can only be accessed from the top through the "Plate cylinder PU 1" guard.

For maintenance purposes you need to remove the cross bar together with the pressing rollers and the supporting collars.

Note

Refer to the subchapter "Impression control mechanism BP18-2, Accessing the maintenance point" for a description of how to install and remove the cross bar.

10.1.1 Cleaning the cylinder surface

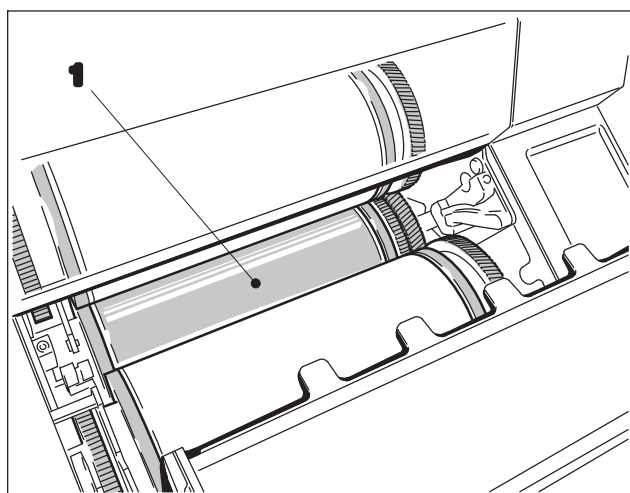


Fig. 23 Cleaning the cylinder surface

- 1 Blanket cylinder

Note

Never use cleaners that contain acid for cleaning the cylinder surface.

Description of maintenance points	
Maintenance interval	I
Maintenance location	From D.S. to O.S.
Accessing the maintenance point	Open the "plate cylinder PU 1" guard. Remove the cross bar together with the pressing rollers. Turn the press using the crank handle.
Maintenance work	Clean the cylinder surface.
Required resources	Soft, fluffless cloth
Cleaning solution	Note "Approved cleaners".

Tab. 12

10.1.2 Cleaning the blanket

Note

Never use cleaners that contain acid for cleaning the blanket.

Description of maintenance points	
Maintenance interval	I
Maintenance location	From D.S. to O.S.
Accessing the maintenance point	Open the "plate cylinder PU 1" guard. Turn the press using the crank handle.
Maintenance work	Clean the blanket by hand.
Required resources	Soft, fluffless cloth
Cleaning solution	Note "Approved cleaners".

Tab. 13

10.1.3 Lubricating the gears

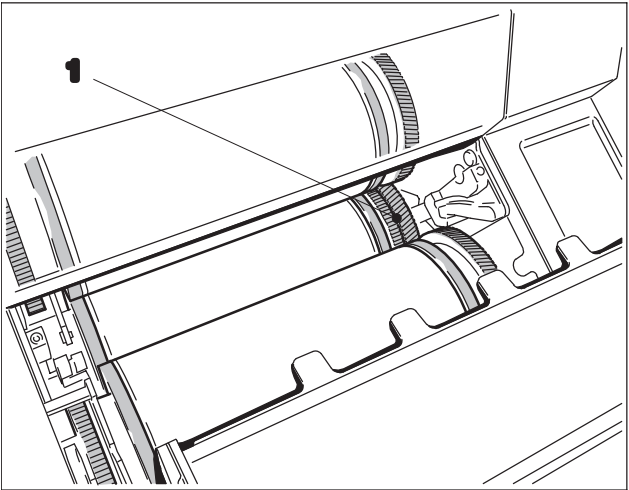


Fig. 24 Lubricating the gears

- 1 Gears
- 2 Blanket cylinder

Description of lubricating points	
Maintenance interval	III
Color code	-
Maintenance location	O.S.
Access to lubrication point	Open the "plate cylinder PU 1" guard. Turn the press using the crank handle.
Number/type/maintenance work	Lubricating 2 gears.
Required resources	Grease gun, small brush
Lubricant	Molykote G 67

Tab. 14

11 Blanket washup device

11.1 Blanket washup device

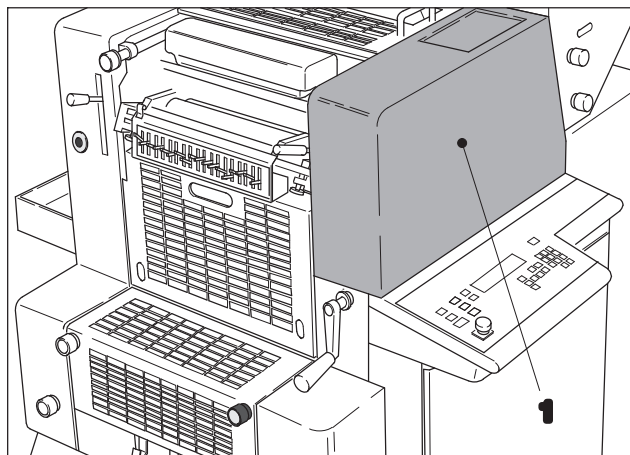


Fig. 25 BP18-2, place of installation of the blanket washup device

Place of installation

1 "Printing unit PU 1 O.S." protecting door

The place of installation of the blanket washup device is identical for the BP18-2 model lines.

The blanket washup device is fitted in a slide-in unit behind the "printing unit PU 1 O.S" protecting door. (Fig. 25/1).

For maintenance work the blanket washup device must be removed from the slide-in unit.

11.1.1 Cleaning the washing fluid trough and support rail

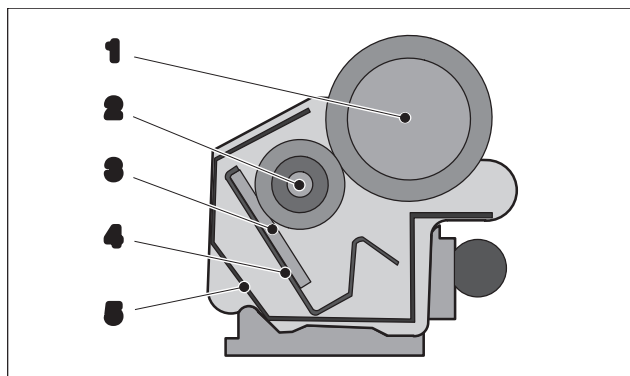


Fig. 26 Blanket washup device

- 1 Washup roller with special rubber covering
- 2 Metering roller
- 3 Washup felt
- 4 Support rail
- 5 Washup trough

Note

Do not use any acidic cleaners when cleaning the washing fluid trough and the support rail.

Description of maintenance points	
Maintenance interval	II
Maintenance location	-
Accessing the maintenance point	See "Removing and installing".
Maintenance work	Clean the washing fluid trough and support rail, replace the washup felt.
Required resources	Soft, fluffless cloth
Cleaning solution	Note "Approved cleaners".

Tab. 15

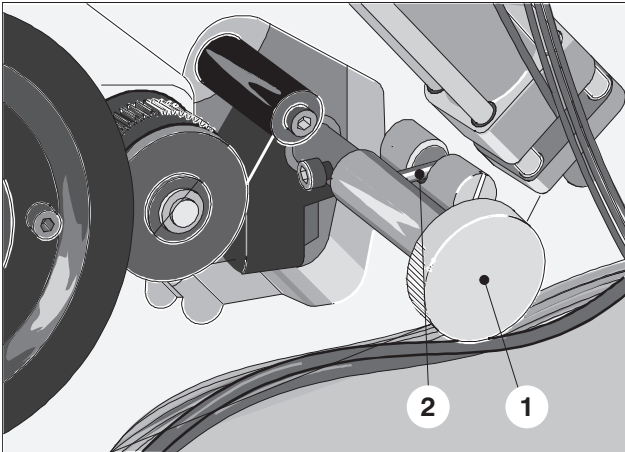


Fig. 27 Removing the blanket washup device

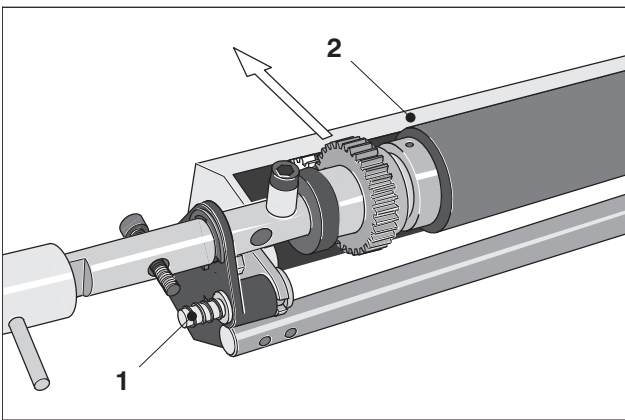


Fig. 28 Taking off the washing fluid trough

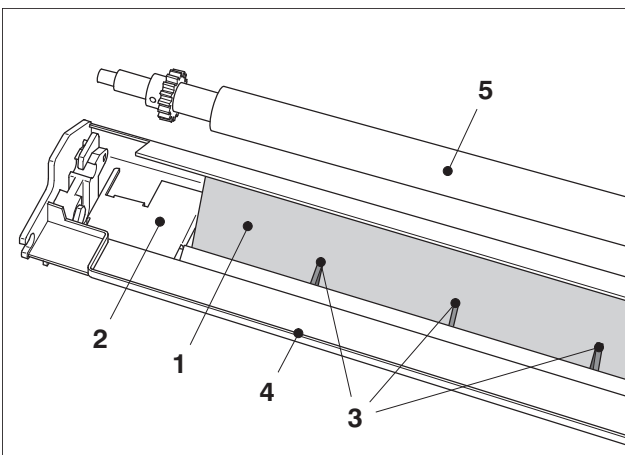


Fig. 29 Washup felt with removed metering roller

Removal and installation

1. Open the "printing unit PU 1 O.S." protecting door.
2. Turn the handle (Fig. 27/1) counterclockwise to release the interlock mechanism (Fig. 27/2) of the blanket washup device.
3. Pull the blanket washup device out of the side frame by the handle (Fig. 27/1).
4. Press in the pins on O.S. (Fig. 28/1) and D.S.
5. Slide the washing fluid trough (Fig. 28/2) in the direction of the arrow.
6. Remove the metering roller (Fig. 29/5).
7. Remove the support rail (Fig. 29/2) from the washing fluid trough.
8. Remove the washup felt (Fig. 29/1) from the support rail.
9. Carefully clean the washing fluid trough (Fig. 29/4) and the support rail using a cloth soaked in washing fluid.
10. Insert the new washup felt (Fig. 29/1) behind the fins (Fig. 29/3) into the support rail (Fig. 29/2).
11. Place the support rail (Fig. 29/2) inside the washing fluid trough (Fig. 29/4).

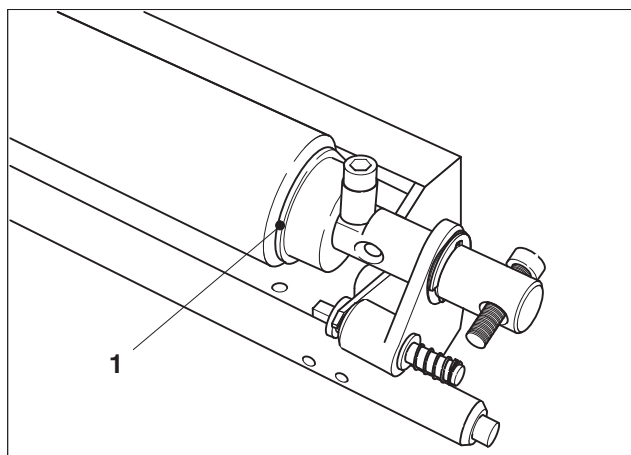


Fig. 30 Blanket washup device, gasket D.S.

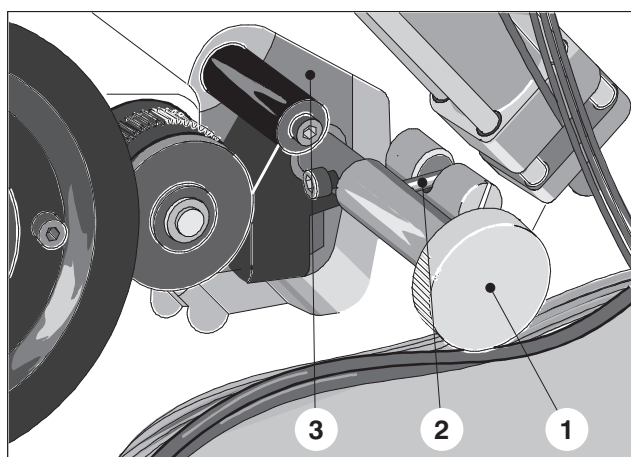


Fig. 31 Installed blanket washup device

12. Insert the metering roller (Fig. 29/5) and assemble the blanket washup device. Make sure that the gaskets (Fig. 30/1) on the washup roller are properly aligned and the radius touches the metering roller.

13. Slide the blanket washup device through the opening in the side frame on O.S. (Fig. 31/3).
14. Push in the blanket washup device by the handle (Fig. 31/1) up to the stop. Turn the handle counterclockwise and allow the blocking piece on the pin (Fig. 31/2) to lock into place.
15. Close the protecting door on O.S.

Note

The protecting door will not close if the blanket washup device is not inserted properly.

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12 Impression cylinder

12.1 Impression cylinder

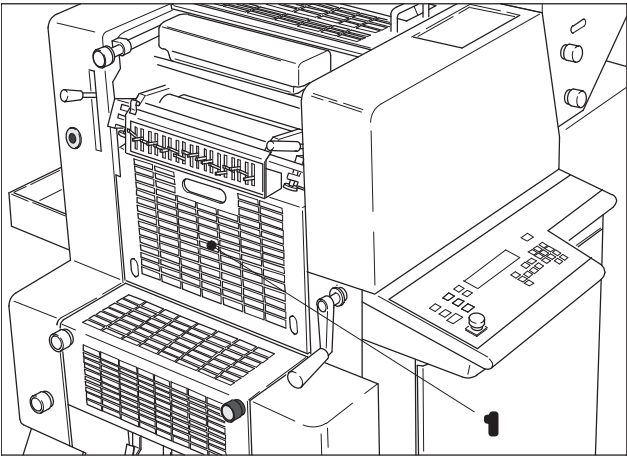


Fig. 32 BP18-2, Place of installation of the impression cylinder

Place of installation

1 "Inking unit" guard

On presses in the BP18-2 model lines, the impression cylinder is installed behind the "inking unit" guard.

12.1.1 Cleaning the cylinder surface

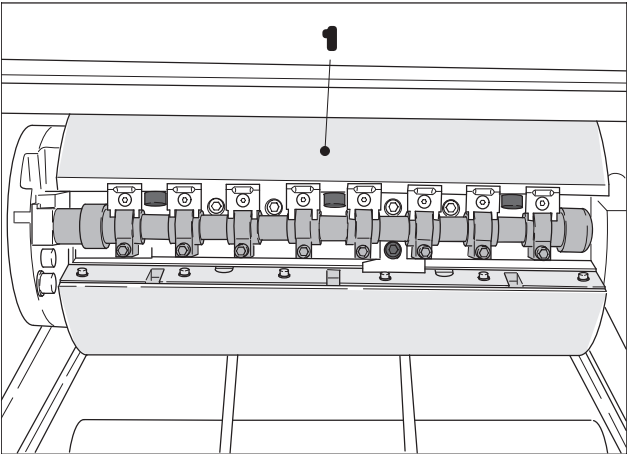


Fig. 33 Cleaning the cylinder surface

1 Cylinder surface

Note

Never use cleaners that contain acid for cleaning the cylinder surface.

Description of maintenance points	
Maintenance interval	I
Maintenance location	-
Accessing the maintenance point	Open the "Inking unit" guard. Turn the press using the crank handle.
Maintenance work	Clean the cylinder surface.
Required resources	Soft, fluffless cloth
Cleaning solution	Note "Approved washing fluids".

Tab. 16

12.1.2 Cleaning and lubricating gears

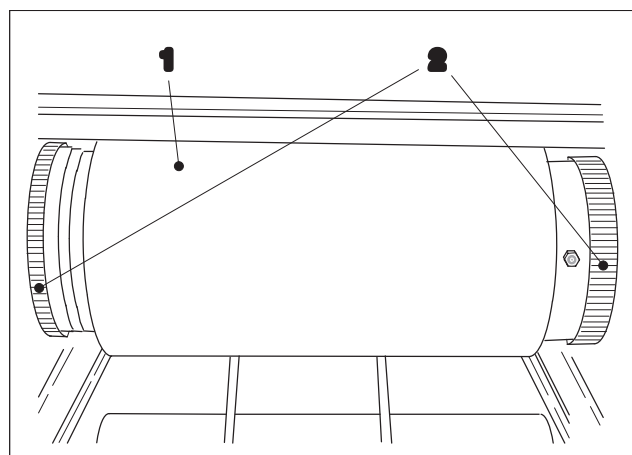


Fig. 34 Cleaning and lubricating gears

1 Impression cylinder

2 Gears

Description of lubricating points	
Maintenance interval	III
Color code	-
Maintenance location	D.S. / O.S.
Access to the lubricating point	Open the "Inking unit" guard. Turn the press using the crank handle.
Number/type/maintenance work	Clean and lubricate 2 gears.
Required resources	Grease gun, small brush
Lubricant	Molykote G 67

Tab. 17

12.1.3 Lubricating the planetary gearing

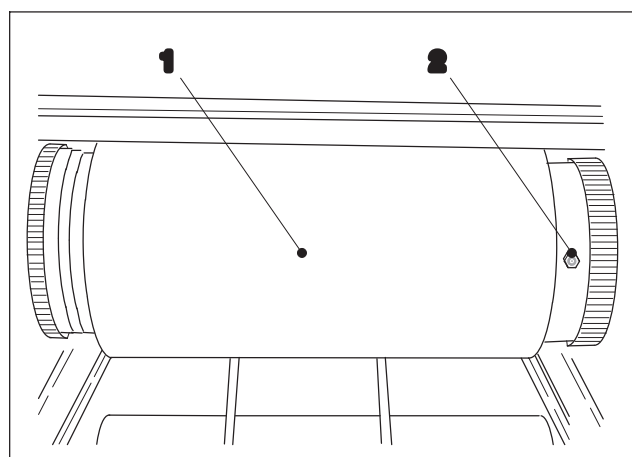


Fig. 35 Lubricating the planetary gearing

1 Impression cylinder

2 Recessed grease nipple

Description of lubricating points	
Maintenance interval	IV
Color code	Green
Maintenance location	O.S.
Access to the lubricating point	Open the "Inking unit" guard. Turn the press with the crank handle until you can access the recessed grease nipple.
Number/type/maintenance work	Lubricate 1 recessed grease nipple.
Required resources	Small grease gun
Lubricant	Renolit Mp

Tab. 18

12.1.4 Lubricating the gripper shaft bearing

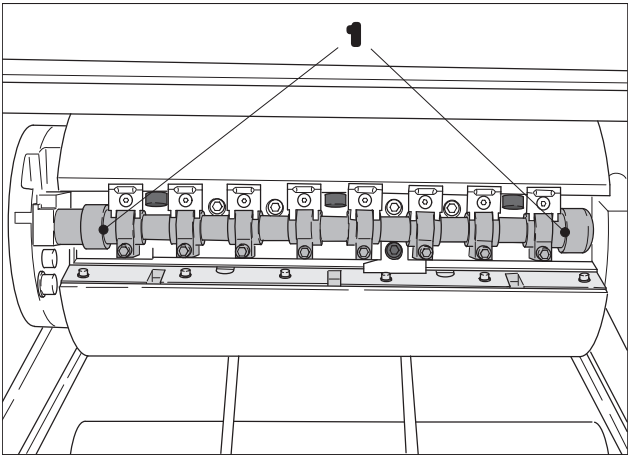


Fig. 36 Lubricating the gripper shaft bearing

1 Gripper shaft bearing

Description of lubricating points	
Maintenance interval	IV
Color code	-
Maintenance location	D.S. / O.S.
Access to the lubricating point	Open the "Inking unit" guard. Turn the press with the crank handle until you can access the gripper shaft.
Number/type/maintenance work	Lubricate 2 gripper shaft bearings.
Required resources	Oil bottle
Lubricant	LFC 3068, Chemie-Technik

Tab. 19

13 Inking unit PU 1

13.1 Inking unit

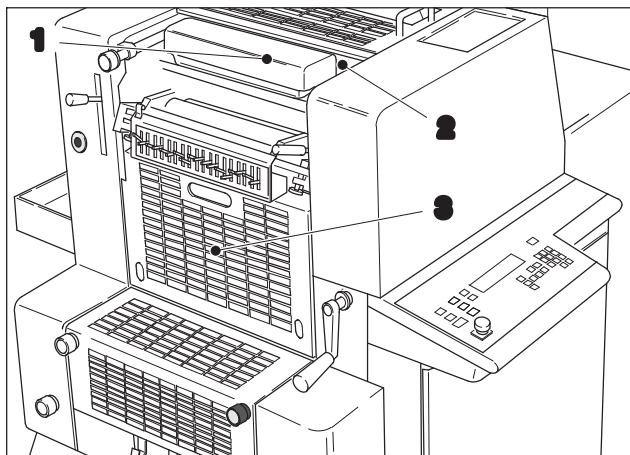


Fig. 37 Location of the inking unit in PU 1

13.1.1 Cleaning the inking rollers

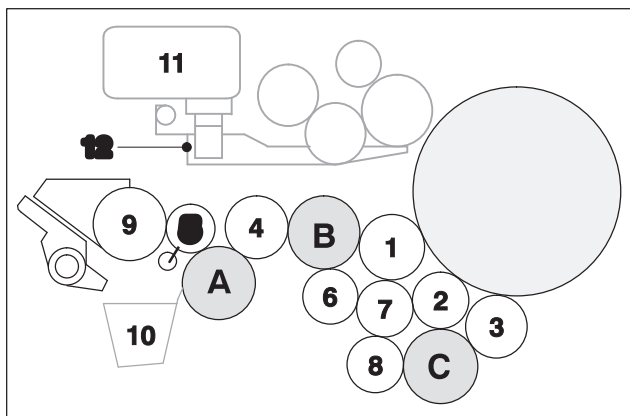


Fig. 38 Installation sequence PU 1

Place of installation

- 1 Dampening solution container
- 2 "Dampening system" guard
- 3 "Inking unit" guard

In order to reach the inking unit of the first printing unit you need to remove the dampening solution container and open the "dampening system" guard and the "inking unit" guard. The dampening solution pan needs to be removed.

Arrangement of cylinders

In Fig. 38 the removable rollers in PU 1 are numbered from 1 to 8. The numbering also represents the recommended sequence of installation. The distributor rollers A, B, C (Rilsan, Ø 61.2 mm) and the ink fountain roller cannot be removed. The roller journals of the inking form rollers are color-coded.

- 1 Inking form roller 1 Ø 54.7 mm (yellow)
- 2 Inking form roller 2 Ø 45 mm (blue)
- 3 Inking form roller 3 Ø 50 mm
- 4 Ink transfer roller 1 Ø 52 mm
- 5 Ink vibrator Ø 40 mm
- 6 Ink transfer roller 2 Ø 48 mm
- 7 Ink transfer roller 3 (Rilsan) Ø 46.5 mm
- 8 Ink transfer roller 4 Ø 48 mm
- 9 Ink fountain roller
- 10 Inking roller washup device
- 11 Dampening solution container
- 12 Dampening solution pan

Description of maintenance points

Maintenance interval	I
Maintenance location	-

Description of maintenance points	
Accessing the maintenance point	Take off the dampening solution container. Open the "inking unit" and "dampening system" guards. Remove the dampening solution pan.
Maintenance work	Clean inking rollers.
Required resources	Soft, fluffless cloth
Cleaning solution	Note "Approved cleaners".

Tab. 20

13.1.2 Lubricating the gears

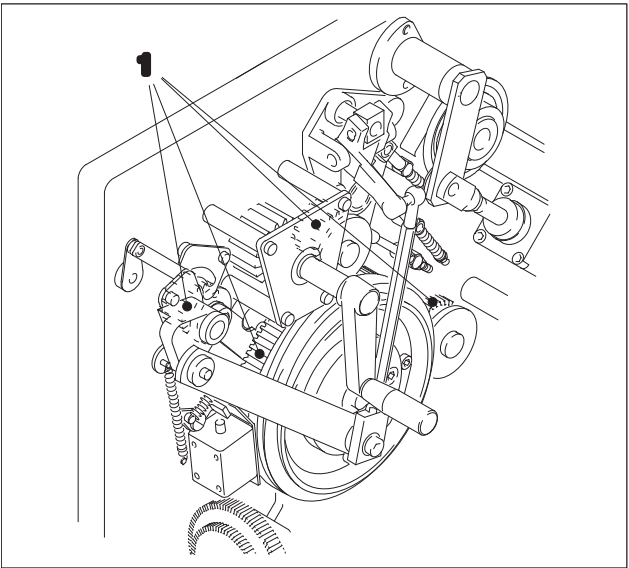


Fig. 39 Lubricating inking unit gears

1 Gears

Description of lubricating points	
Maintenance interval	III
Color code	-
Maintenance location	O.S.
Access to lubrication point	Open the "inking unit" guard.
Number/type/maintenance work	Clean and lubricate 4 gears of the inking unit.
Required resources	Small brush; grease gun
Lubricant	Molykote G 67

Tab. 21

13.2 Vibrator cam

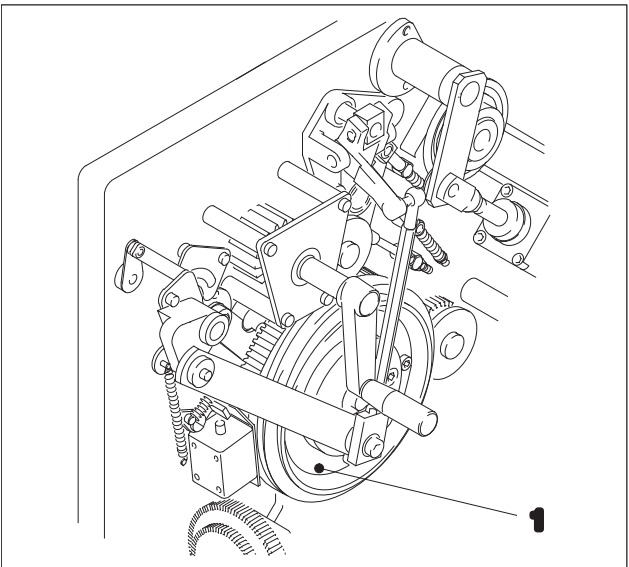


Fig. 40 Place of installation of the vibrator cam

Place of installation

1 Vibrator cam

The vibrator cam is located behind the "printing unit O.S." protecting door

Figure 40 shows the location of the vibrator cam in the first printing unit.

13.2.1 Lubricating the vibrator cam

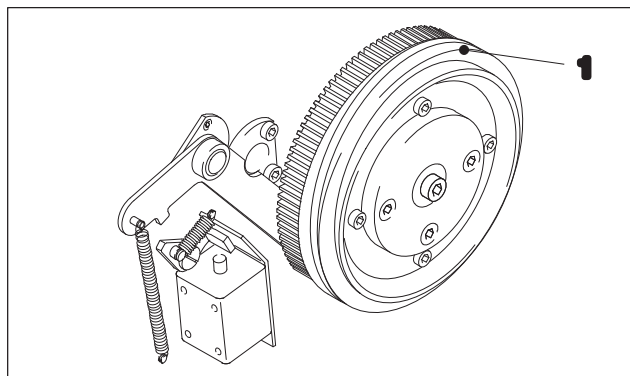


Fig. 41 Lubricating the vibrator cam

1 Vibrator cam

Description of lubricating points	
Maintenance interval	III
Color code	-
Maintenance location	O.S.
Access to lubrication point	Open the "printing unit O.S." protecting door.
Number/type/maintenance work	Lubricate the vibrator cam.
Required resources	Small brush; grease gun
Lubricant	Molykote G 67

Tab. 22

13.3 Blade-type ink fountain

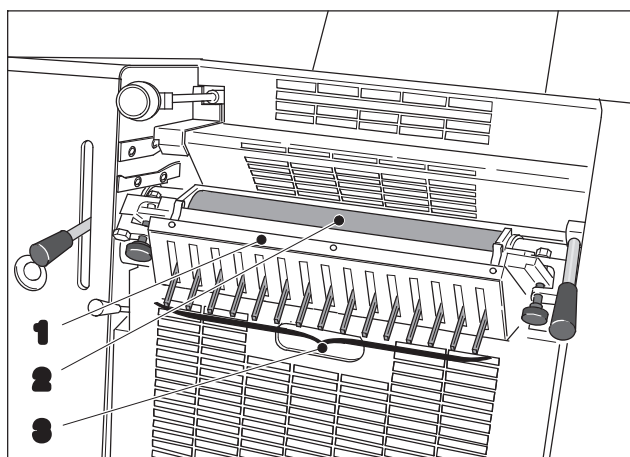


Fig. 42 Blade-type ink fountain

Place of installation

- 1 Blade-type ink fountain
- 2 Ink fountain roller
- 3 Ink zone lever

Figure 42 shows the location of the blade-type ink fountain.

To clean the ink fountain roller you need to swing down the blade-type ink fountain.

13.3.1 Cleaning the ink fountain

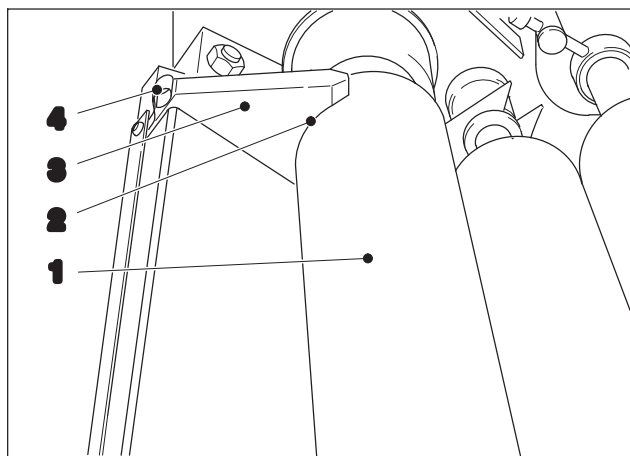


Fig. 43 Cleaning the ink fountain

- 1 Ink fountain roller
- 2 Contact area between the ink fountain dividers and the fountain roller
- 3 Ink fountain dividers
- 4 Spring

Description of maintenance points	
Maintenance interval	I
Maintenance location	-
Accessing the maintenance point	Swing down the blade-type ink fountain. Take out the ink fountain dividers.

Description of maintenance points	
Maintenance work	Remove the ink from the ink fountain using a spatula. Clean the ink fountain dividers and the contact areas.
Required resources	Spatula; soft, lint-free cloth
Cleaning solution	Note "Approved cleaners".

Tab. 23

14 Inking unit PU 2

14.1 Inking unit

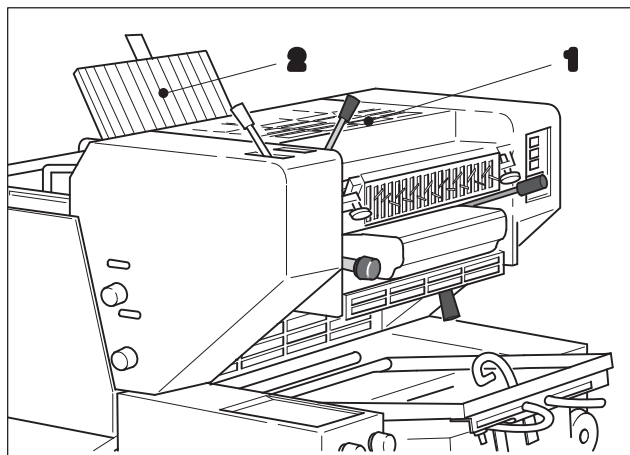


Fig. 44 Place of installation of the inking unit in PU 2

14.1.1 Cleaning the inking rollers

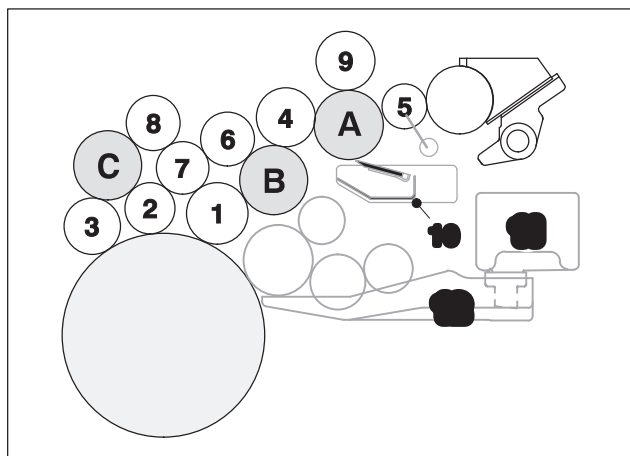


Fig. 45 Installation sequence PU 2

Place of installation

- 1 "Inking unit PU 2" guard
- 2 Plate feeding table

To access the inking unit in the second printing unit you need to fold away the plate feeding table towards the delivery. Open the "inking unit PU 2" guard.

Arrangement of cylinders

The removable rollers in PU 2 are numbered from 1 to 9 in Fig. 45. The distributor rollers A, B, C and the ink fountain roller cannot be removed. The numbering also represents the recommended sequence of installation. The roller journals of the inking form rollers are color-coded.

- 1 Inking form roller 1 Ø 54.7 mm (yellow)
- 2 Inking form roller 2 Ø 45 mm (blue)
- 3 Inking form roller 3 Ø 50 mm (red)
- 4 Ink transfer roller 1 Ø 52 mm
- 5 Ink vibrator Ø 40 mm
- 6 Ink transfer roller 2 Ø 48 mm
- 7 Ink transfer roller 3 (Rilsan) Ø 46.5 mm
- 8 Ink transfer roller 4 Ø 48 mm
- 9 Rider roller Ø 54.7 mm (yellow)
- 10 Inking roller washup device
- 11 Dampening solution container
- 12 Dampening solution pan

Description of maintenance points	
Maintenance interval	I
Maintenance location	-
Accessing the maintenance point	Fold away the plate feeding table towards the delivery. Open the "inking unit PU 2" guard.

Description of maintenance points	
Maintenance work	Clean inking rollers.
Required resources	Soft, fluffless cloth
Cleaning solution	Note "Approved cleaners".

Tab. 24

14.2 Blade-type ink fountain

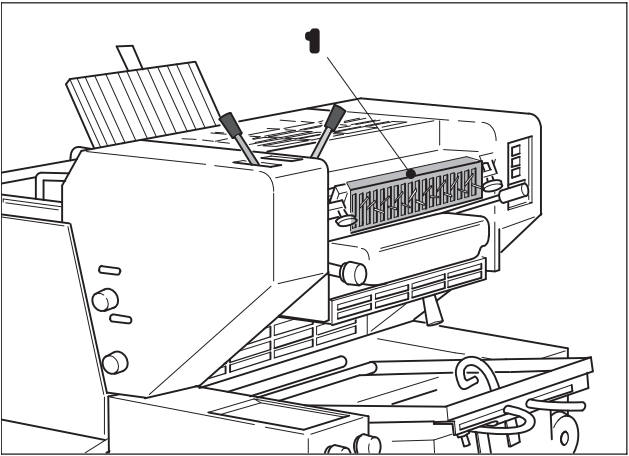


Fig. 46 Blade-type ink fountain

Place of installation

1 Blade-type ink fountain

Figure 46 shows the location of the blade-type ink fountain.

To clean the ink fountain roller you need to swing down the blade-type ink fountain.

14.2.1 Cleaning the ink fountain

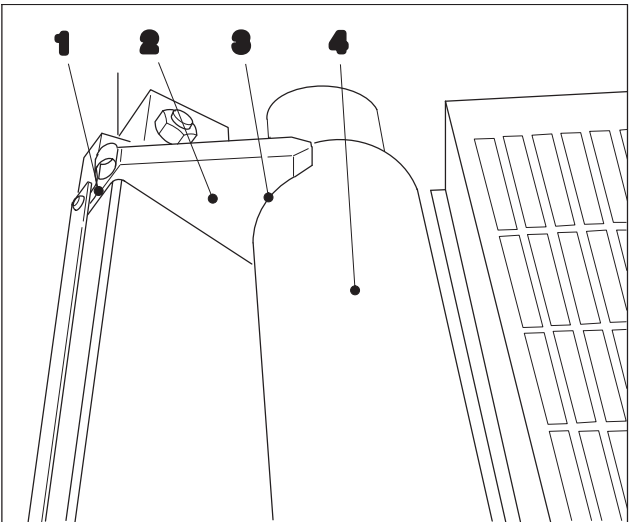


Fig. 47 Cleaning the ink fountain

- 1 Spring
- 2 Ink fountain dividers
- 3 Contact area between the ink fountain dividers and the fountain roller
- 4 Ink fountain roller

Description of maintenance points	
Maintenance interval	I
Maintenance location	-
Accessing the maintenance point	Swing down the blade-type ink fountain. Take out the ink fountain dividers.
Maintenance work	Remove the ink from the ink fountain using a spatula. Clean the ink fountain dividers and the contact areas.
Required resources	Spatula; soft, lint-free cloth
Cleaning solution	Note "Approved cleaners".

Tab. 25

15 Inking roller washup device PU 1

15.1 Inking roller washup device

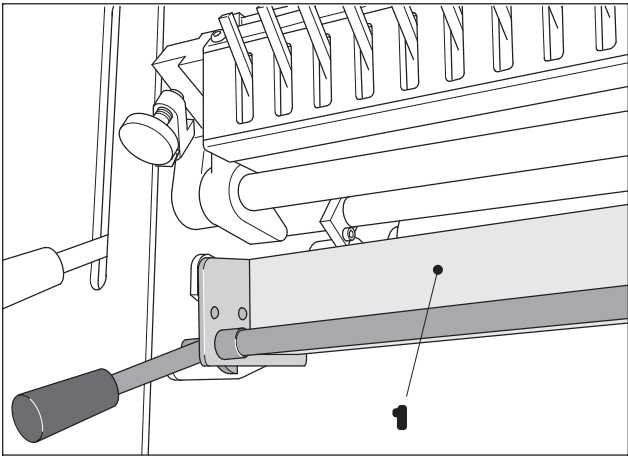


Fig. 48 BP18-2, place of installation of the inking roller washup device

Place of installation

- 1 Inking roller washup device

Fig.48 shows the inking roller washup device.

15.1.1 Cleaning the washup tray and washup blade

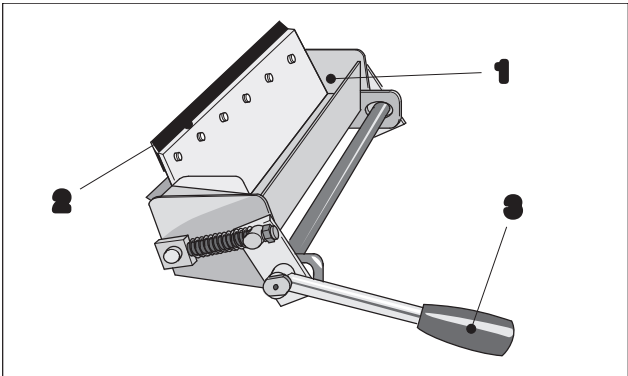


Fig. 49 Inking roller washup device

- 1 Washup tray
- 2 Plastic lip of the washup blade
- 3 The lever

Description of the maintenance point	
Maintenance interval	I
Maintenance location	-
Accessing the maintenance point	Open the "inking unit" guard. Pull down the lever and remove the inking roller washup device.
Maintenance work	Clean the washup tray and plastic lip of the washup blade.
Required resources	Soft, fluffless cloth
Cleaning solution	Note "Approved cleaners".

Tab. 26

15.1.2 Checking the plastic lip

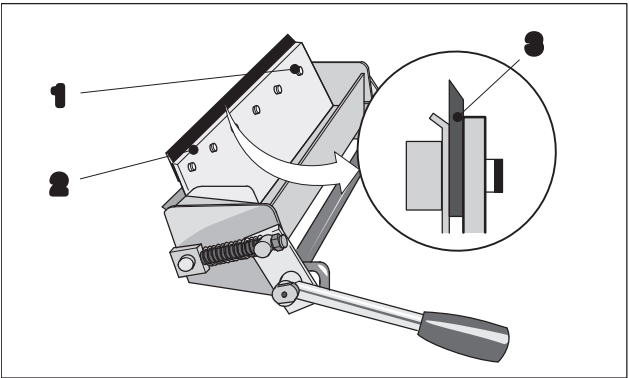


Fig. 50 Inking roller washup device

- 1 Screw fastener
- 2 Washup blade
- 3 Plastic lip of the washup blade

Note
When replacing the plastic lip make sure that the tapered edge points towards the trough. See the "Inking unit" chapter for further details.

Description of the maintenance point	
Maintenance interval	V
Maintenance location	-
Accessing the maintenance point	Slacken the screw fasteners.
Maintenance work	Check the condition of the plastic lip and replace it, if necessary.
Required resources	-
Cleaning solution	-

Tab. 27

15.2 Drip pan

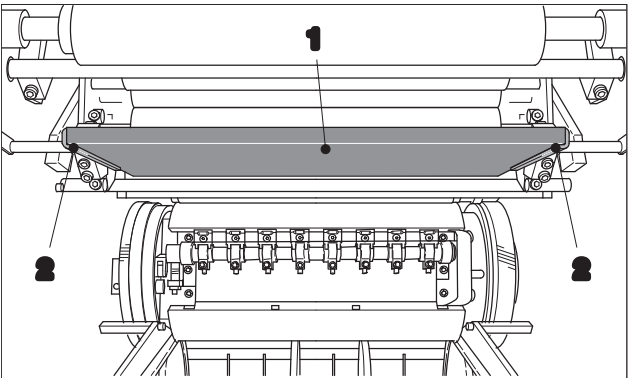


Fig. 51 Place of installation of the drip pan

Place of installation

- 1 Drip pan
- 2 Guides

Figure 51 shows the location of the drip pan. For cleaning purposes you can remove the drip pan by pulling it off the guides in the direction of the delivery.

15.2.1 Cleaning the drip pan

Description of maintenance points	
Maintenance interval	II
Maintenance location	Beneath the inking unit
Accessing the maintenance point	Remove the delivery pile and inking roller washup device. Pull the drip pan out of its guides.

Maintenance on the printing unit

Description of maintenance points	
Maintenance work	Check the drip pan. Remove any washing fluid and ink residues from the drip pan.
Required resources	Spatula; soft, lint-free cloth
Cleaning solution	Note "Approved cleaners".

Tab. 28

AL 904 0065-000FREN_01

16 Inking roller washup device PU 2

16.1 Inking roller washup device

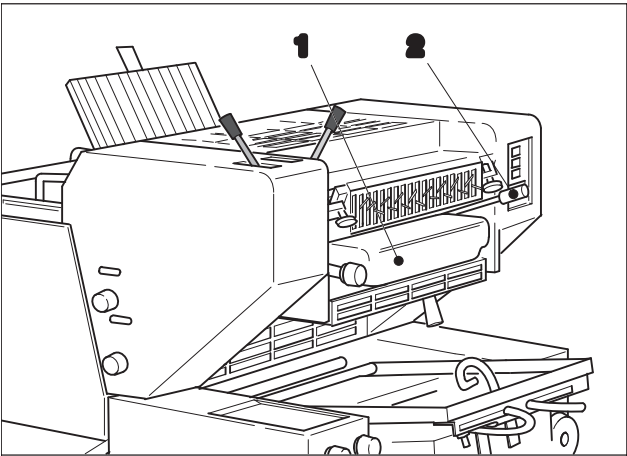


Fig. 52 BP18-2, place of installation of the inking roller washup device

Place of installation

- 1 Dampening solution container
- 2 Lever of the inking roller washup device

The inking roller washup device of PU 2 is installed behind the dampening solution container.

In order to carry out maintenance work you need to first remove the dampening solution container, open the "dampening system PU 2" guard and then remove the inking roller washup device.

16.1.1 Cleaning the washup tray and washup blade

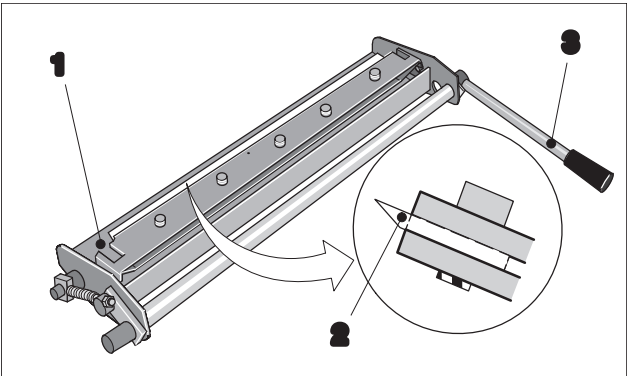


Fig. 53 Inking roller washup device

- 1 Washup tray
- 2 Plastic lip of the washup blade
- 3 Lever of the inking roller washup device

Description of the maintenance point	
Maintenance interval	I
Maintenance location	-
Accessing the maintenance point	Take off the dampening solution container. Open the "dampening system PU 2" guard. Pull down the lever and remove the inking roller washup device.
Maintenance work	Clean the washup tray and plastic lip of the washup blade.
Required resources	Soft, fluffless cloth
Cleaning solution	Note "Approved cleaners".

Tab. 29

16.1.2 Cleaning the plastic lip

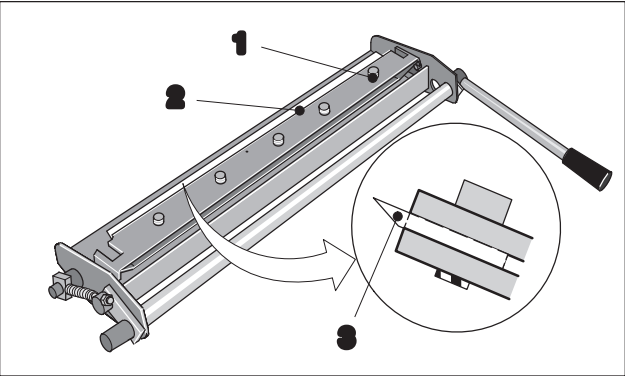


Fig. 54 Inking roller washup device

- 1 Screw fastener
- 2 Washup blade
- 3 Plastic lip of the washup blade

Note
When replacing the plastic lip make sure that the tapered edge points downwards. See the "Inking unit" chapter for further details.

Description of the maintenance point	
Maintenance interval	V
Maintenance location	-
Accessing the maintenance point	Remove the plastic lip together with the holder from the inking roller washup device. Slacken the screw fasteners.
Maintenance work	Check the condition of the plastic lip and replace it if necessary.
Required resources	-
Cleaning solution	-

Tab. 30

AL 904.0056-000FREN_01

17 Dampening system PU 1

17.1 Dampening system

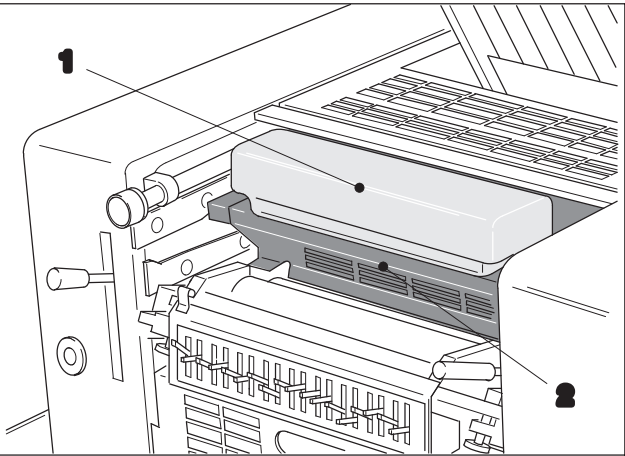


Fig. 55 Location of the dampening system

Place of installation

- 1 Dampening solution container
- 2 "Dampening system" guard

The dampening system is located behind the "dampening system" guard.

You need to take off the dampening solution container to open the "dampening system" guard.

17.1.1 Cleaning the roller surface

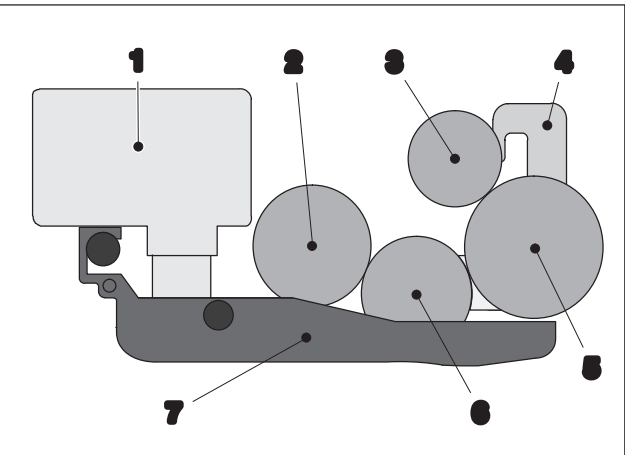


Fig. 56 Dampening system in PU 1

- 1 Dampening solution container
- 2 Dampening roller (rubber) Ø 54 mm
- 3 Dampening distributor (Rilsan) Ø 42.5 mm
- 4 Lateral gaskets
- 5 Dampening form roller Ø 63 mm
- 6 Pan roller (hard rubber) Ø 51 mm
- 7 Dampening solution pan

Note

Never use cleaners that contain acid for cleaning the cylinder surface of the dampening rollers.

Description of the maintenance point	
Maintenance interval	I
Maintenance location	-
Accessing the maintenance point	Take off the dampening solution container. Open the "dampening system" guard.
Maintenance work	Clean the surface of the dampening rollers.

Description of the maintenance point	
Required resources	-
Cleaning solution	Note "Approved cleaners".

Tab. 31

17.1.2 Cleaning the roller ends

Note

Never use cleaners that contain acid for cleaning the ends of the dampening rollers.

Description of the maintenance point	
Maintenance interval	II
Maintenance location	-
Accessing the maintenance point	Take off the dampening solution container. Open the "dampening system" guard.
Maintenance work	Clean the dampening roller ends.
Required resources	Soft, fluffless cloth
Cleaning solution	Note "Approved cleaners".

Tab. 32

17.1.3 Checking and adjusting dampening rollers

Note

See chapter C "Dampening system, Dampening rollers, Adjusting rollers".

Description of the maintenance point	
Maintenance interval	IV
Maintenance location	-
Accessing the maintenance point	Take off the dampening solution container. Open the "dampening system" guard.
Maintenance work	Check and, if necessary, adjust the dampening rollers with the help of the ink stripes.
Required resources	Ink stripe
Cleaning solution	-

Tab. 33

17.2 Face gaskets for pan roller/dampening form roller

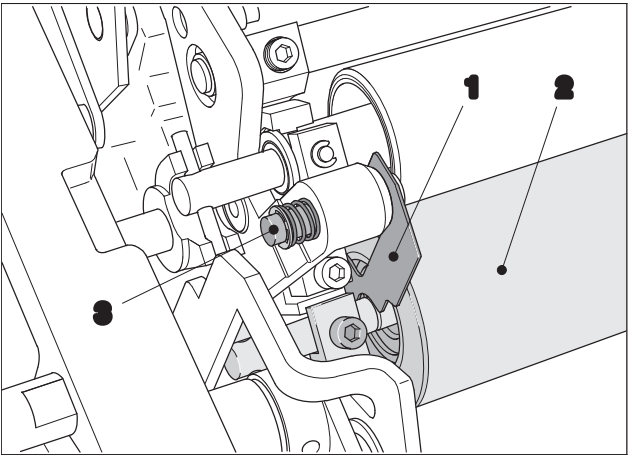


Fig. 57 Place of installation of the face gaskets

Place of installation

- 1 Face gaskets
- 2 Dampening form roller
- 3 Spring bolt

Face gaskets are only used in the dampening system of PU 1. They seal the lateral gap between dampening form roller and pan roller.

17.2.1 Cleaning face gaskets

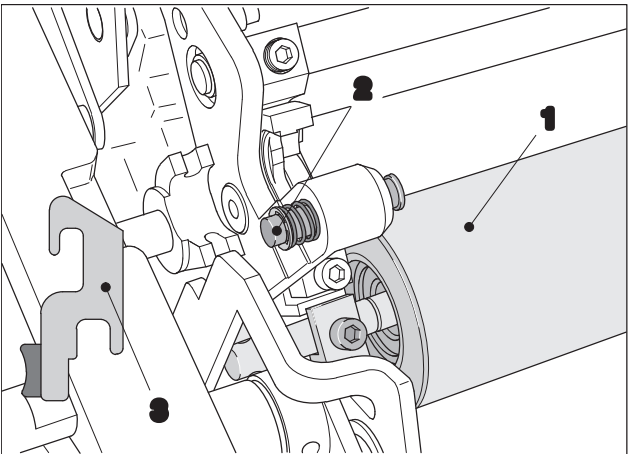


Fig. 58 Cleaning face gaskets

- 1 Face gaskets
- 2 Dampening form roller
- 3 Spring bolt

Description of maintenance points	
Maintenance interval	I
Maintenance location	D.S. / O.S.
Accessing the maintenance point	Open the "plate cylinder" guard. Press in the spring bolt and pull out the face gasket upwards. While doing so, do not tilt the face gasket in the direction of the plate cylinder.
Maintenance work	Clean the face gaskets.
Required resources	Soft, fluffless cloth
Cleaning solution	Note "Approved cleaners".

Tab. 34

17.3 Dampening distributor

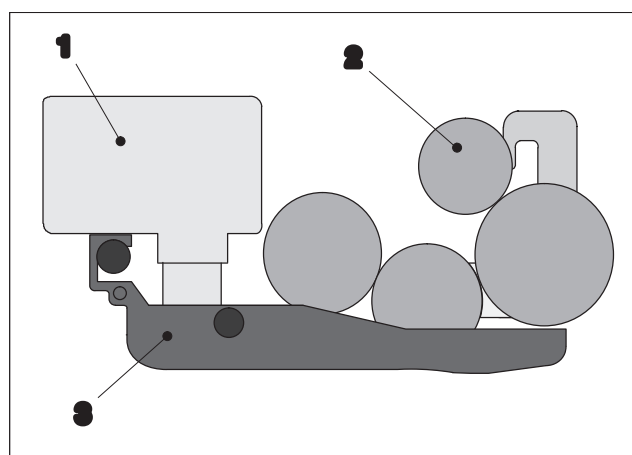


Fig. 59 Place of installation of the dampening distributor

Place of installation

- 1 Dampening solution container
- 2 Dampening distributor
- 3 Dampening solution pan

Figure 59 shows a diagram of the location of the dampening distributor in the first printing unit.

17.3.1 Lubricating the drivers

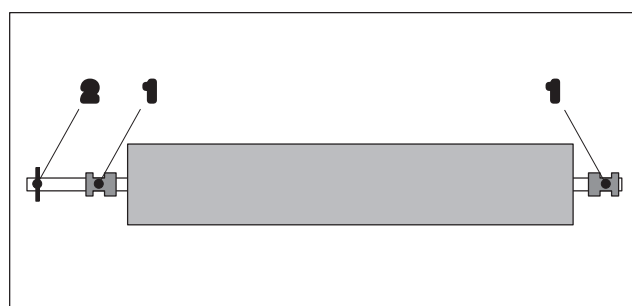


Fig. 60 Dampening distributor

- 1 Bearing bushes
- 2 Driver pin

Description of the lubricating points	
Maintenance interval	III
Color code	-
Maintenance location	D.S. / O.S.
Access to lubrication point	Take off the dampening solution container. Open the "dampening system" guard.
Number/type/maintenance work	Lubricate the connecting points for the driver (tappet in the bearing).
Required resources	Small brush; small grease gun
Lubricant	Renolit Mp

Tab. 35

17.3.2 Cleaning the angle joint and the pivoted lever

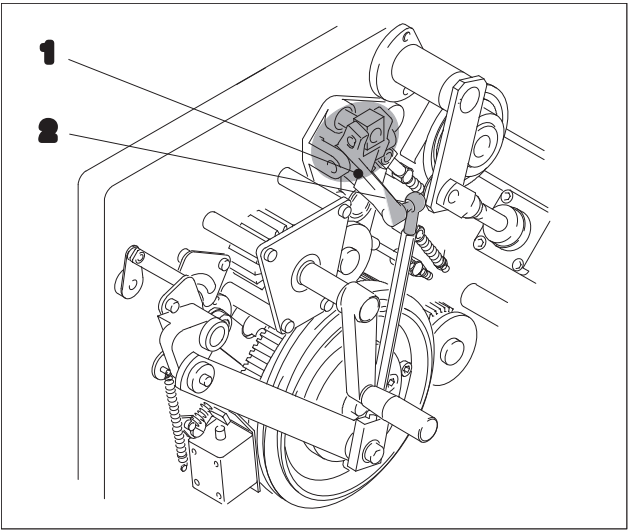


Fig. 61 Angle joint and pivoted lever

- 1 Pivoted lever
- 2 Angle joint

Note
Never use cleaners that contain acid for cleaning the angle joint and the pivoted lever. Note "Approved cleaners".

Description of lubricating points	
Maintenance interval	III
Color code	-
Maintenance location	O.S.
Access to lubrication point	Open the "printing unit O.S." protecting door.
Number/type/maintenance work	Clean and lubricate angle joint and pivoted lever.
Required resources	Small brush; small grease gun
Lubricant	Renolit Mp

Tab. 36

17.4 Dampening solution pan

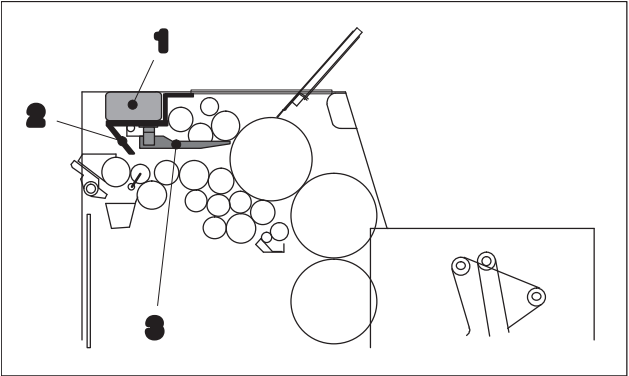


Fig. 62 Place of installation of the dampening solution pan

- Place of installation**
- 1 Dampening solution container
 - 2 "Dampening system" guard
 - 3 Dampening solution pan

Figure 62 shows the location of the dampening solution pan in PU 1.

17.4.1 Cleaning the dampening solution pan

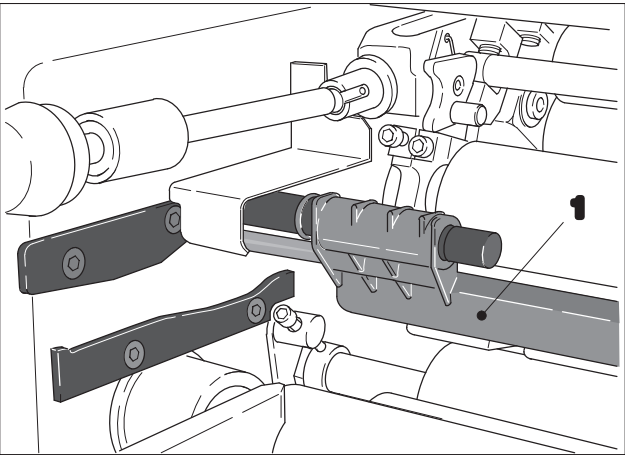


Fig. 63 Dampening solution pan

1 Dampening solution pan

Note
Never use cleaners that contain acid for cleaning the dampening solution pan.

Description of maintenance points	
Maintenance interval	I
Maintenance location	-
Accessing the maintenance point	Take off the dampening solution container. Open the "dampening system" guard. Remove the dampening solution pan.
Maintenance work	Clean the dampening solution pan.
Required resources	Soft, fluffless cloth
Cleaning solution	Note "Approved cleaners".

Tab. 37

17.5 Dampening solution container

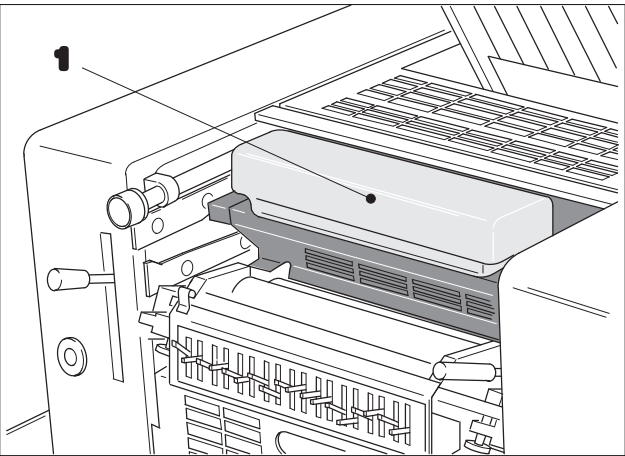


Fig. 64 Place of installation of the dampening solution container

Place of installation

1 Dampening solution container

Figure 64 shows the dampening solution container in PU 1.

17.5.1 Checking the dampening solution level

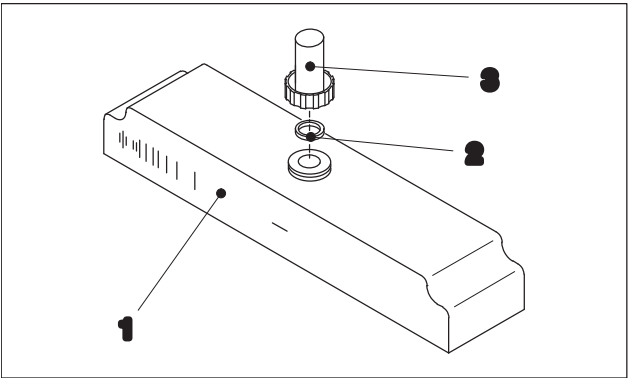


Fig. 65 Dampening solution container PU 1

- 1 Dampening solution container PU 1 with scale
- 2 Gasket
- 3 Valve

Description of maintenance points	
Maintenance interval	I
Maintenance location	-
Accessing the maintenance point	Only remove the dampening solution container if you want to refill dampening solution (unscrew the valve).
Maintenance work	Check the level of the dampening solution container. Top up with dampening solution if necessary.
Required resources	Water and additives
Cleaning solution	-

Tab. 38

17.5.2 Checking the gasket

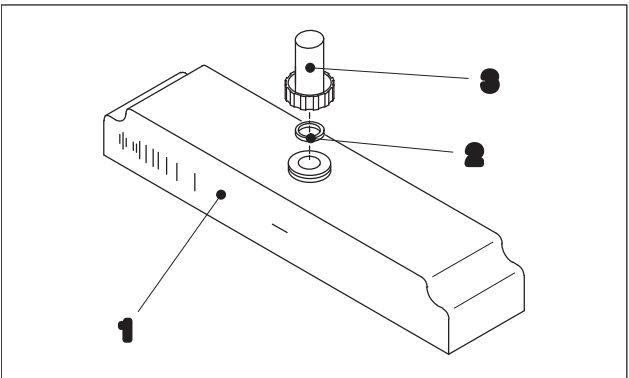


Fig. 66 Dampening solution container PU 1

- 1 Dampening solution container PU 1 with scale
- 2 Gasket
- 3 Valve

Description of maintenance points	
Maintenance interval	III
Maintenance location	-
Accessing the maintenance point	Take off the dampening solution container. Screw off the valve. Remove the gasket.
Maintenance work	Check the gasket; replace, if necessary.
Required resources	-
Cleaning solution	-

Tab. 39

18 Dampening system PU 2

18.1 Dampening system

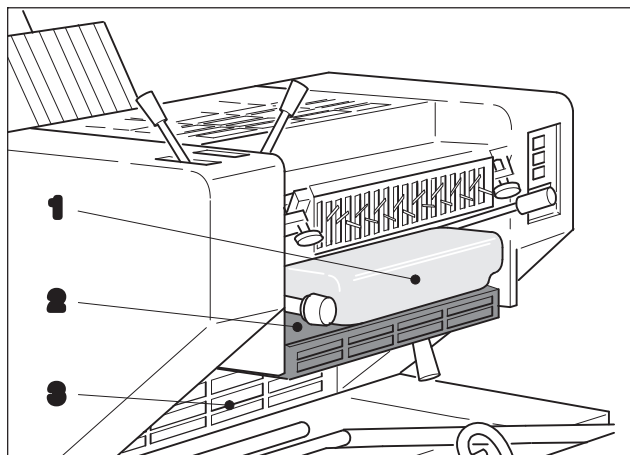


Fig. 67 Place of installation of the dampening system

Place of installation

- 1 Dampening solution container
- 2 "Dampening system PU 2" guard
- 3 "Feeder" guard

The dampening system is located behind the dampening solution container and the "dampening system PU 2" guard.

18.1.1 Cleaning the roller surface

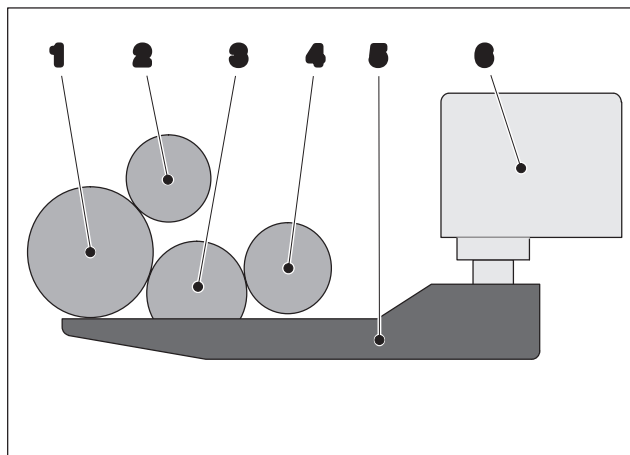


Fig. 68 Schematic view of the dampening system in PU 2

- 1 Dampening form roller Ø 63 mm
- 2 Dampening distributor (Rilsan) Ø 42.5 mm
- 3 Pan roller (hard rubber) Ø 51 mm
- 4 Metering roller (rubber) Ø 44 mm
- 5 Dampening solution pan
- 6 Dampening solution container

Note

Never use cleaners that contain acid for cleaning the cylinder surface of the dampening rollers.

Description of the maintenance point	
Maintenance interval	I
Maintenance location	-
Accessing the maintenance point	Take off the dampening solution container. Open the "dampening system" guard and the "feeder" guard.
Maintenance work	Clean the dampening roller surfaces.

Description of the maintenance point	
Required resources	-
Cleaning solution	Note "Approved cleaners".

Tab. 40

18.1.2 Cleaning the roller ends

Note

Never use cleaners that contain acid for cleaning the ends of the dampening rollers.

Description of the maintenance point	
Maintenance interval	II
Maintenance location	-
Accessing the maintenance point	Take off the dampening solution container. Open the "dampening system" guard and the "feeder" guard.
Maintenance work	Clean the dampening roller ends.
Required resources	Soft, fluffless cloth
Cleaning solution	Note "Approved cleaners".

Tab. 41

18.1.3 Checking and adjusting dampening rollers

Note

See chapter C "Dampening system, Dampening rollers, Adjusting rollers".

Description of the maintenance point	
Maintenance interval	IV
Maintenance location	-
Accessing the maintenance point	Take off the dampening solution container. Open the "dampening system" guard.
Maintenance work	Check and, if necessary, adjust the dampening rollers with the help of ink stripes.
Required resources	Ink stripe
Cleaning solution	-

Tab. 42

18.2 Dampening distributor

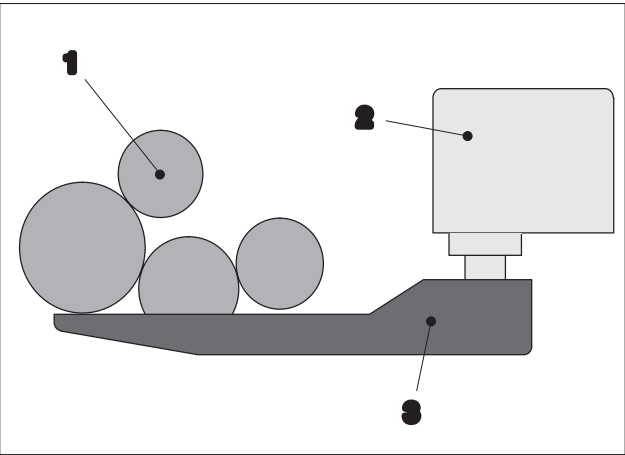


Fig. 69 Place of installation of the dampening distributor

18.2.1 Lubricating the driver

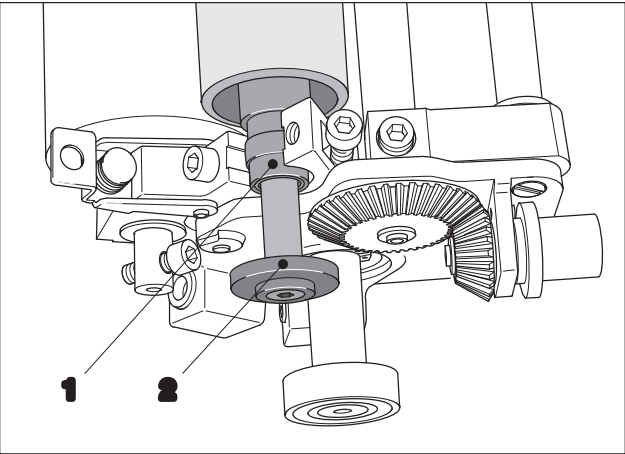


Fig. 70 Dampening distributor

Place of installation

- 1 Dampening distributor
- 2 Dampening solution container
- 3 Dampening solution pan

Figure 69 shows the location of the dampening distributor in PU 2.

- 1 Bearing bush
- 2 Driver plate

Description of the lubricating points	
Maintenance interval	III
Color code	-
Maintenance location	D.S. / O.S.
Access to lubrication point	Take off the dampening solution container. Open the "dampening system" guard.
Number/type/maintenance work	Lubricate the connecting points for the driver (driver plate).
Required resources	Small brush; small grease gun
Lubricant	Renolit Mp

Tab. 43

18.3 Splash protection plate on the metering roller

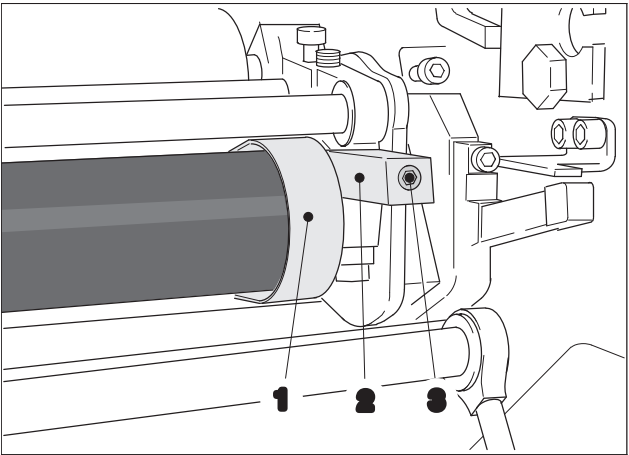


Fig. 71 Removing the splash protection plate on D.S.

Place of installation

- 1 Splash protection plate in front of the metering roller D.S.
- 2 Support
- 3 Allen screw

The splash protection plates are fitted in front of the metering roller on D.S. and O.S.

18.3.1 Cleaning the splash protection plates

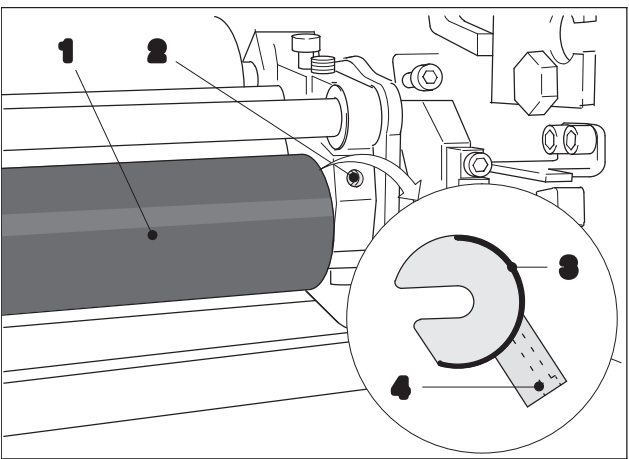


Fig. 72 Fitting the splash protection plate on D.S.

- 1 Metering roller
- 2 Threaded hole on the dampening system
- 3 Splash protection plate
- 4 Allen screw

Note

Never use cleaners that contain acid for cleaning the splash protection plates.
Note "Approved cleaners".

Description of maintenance points	
Maintenance interval	II
Maintenance location	D.S. / O.S.
Accessing the maintenance point	Take off the dampening solution container. Open the "dampening system" guard. Pull out the dampening solution pan. Slacken the Allen screws. The screws remain in the holder for the splash protection plate. Swing down the splash protection plates and pull them out at the holder.
Maintenance work	Clean the splash protection plates.
Required resources	Soft, fluffless cloth
Cleaning solution	Note "Approved cleaners".

Tab. 44

18.4 Dampening solution pan

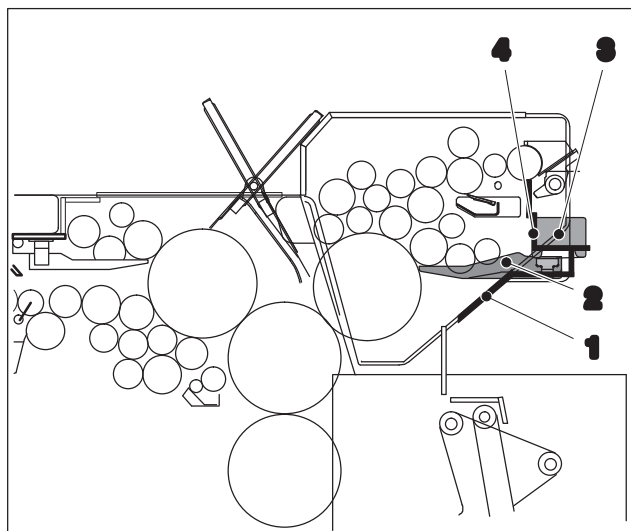


Fig. 73 Place of installation of the dampening solution pan

18.4.1 Cleaning the dampening solution pan

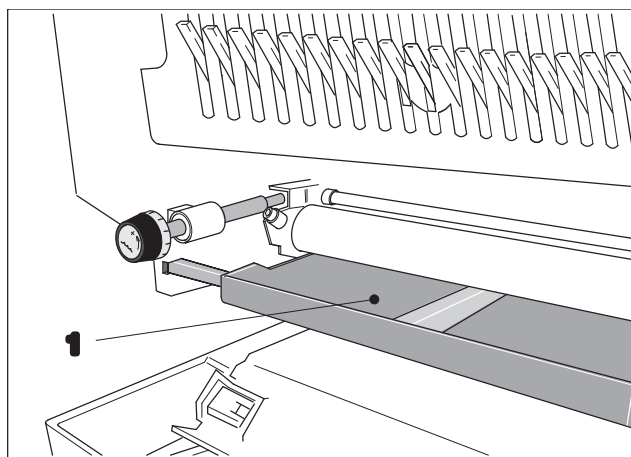


Fig. 74 Dampening solution pan

Place of installation

- 1 "Plate cylinder PU 2" guard
- 2 Dampening solution pan
- 3 Dampening solution container
- 4 "Dampening system PU 2" guard

The dampening solution pan is located behind the "plate cylinder PU 2" guard.

1 Dampening solution pan

Note

Never use cleaners that contain acid for cleaning the dampening solution pan.

Description of maintenance points	
Maintenance interval	I
Maintenance location	-
Accessing the maintenance point	Take off the dampening solution container. Open the "dampening system PU 2" and "plate cylinder PU 2" guards. Remove the dampening solution pan.
Maintenance work	Clean the dampening solution pan.
Required resources	Soft, fluffless cloth
Cleaning solution	Note "Approved cleaners".

Tab. 45

18.5 Dampening solution container

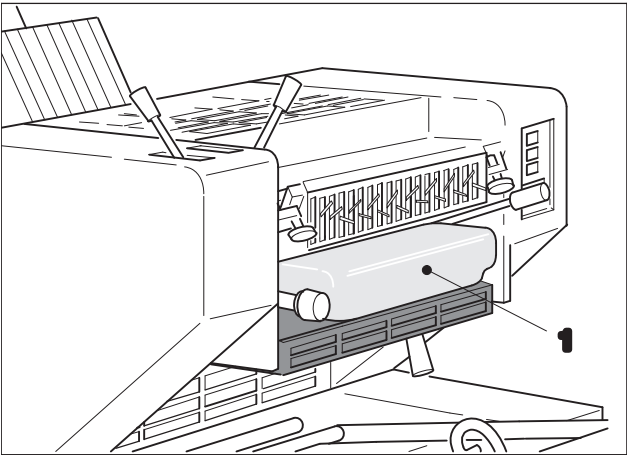


Fig. 75 Place of installation of the dampening solution container

Place of installation

- 1 Dampening solution container

Figure 75 shows the dampening solution container in PU 2.

18.5.1 Checking the dampening solution level

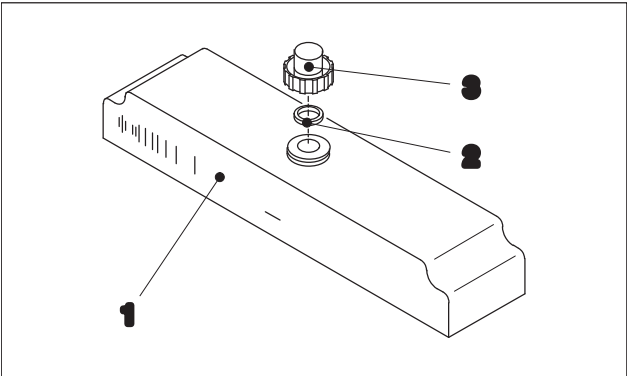


Fig. 76 Dampening solution container PU 2

- 1 Dampening solution container PU 2 with scale
2 Gasket
3 Valve

Description of maintenance points	
Maintenance interval	I
Maintenance location	-
Accessing the maintenance point	Take off the dampening solution container to refill dampening solution. Screw off the valve.
Maintenance work	Check the level of the dampening solution container. Top up with dampening solution, if necessary.
Required resources	Water and additives
Cleaning solution	-

Tab. 46

18.5.2 Checking the gasket

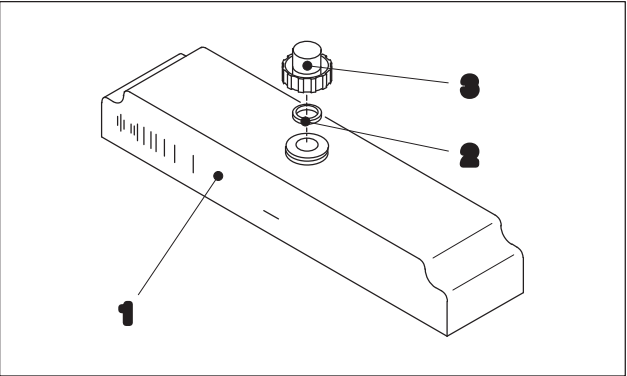


Fig. 77 Dampening solution container PU 2

- 1 Dampening solution container PU 2 with scale
- 2 Gasket
- 3 Valve

Description of maintenance points	
Maintenance interval	III
Maintenance location	-
Accessing the maintenance point	Take off the dampening solution container. Unscrew the valve. Remove the gasket.
Maintenance work	Check the gasket; replace, if necessary.
Required resources	-
Cleaning solution	-

Tab. 47

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19 Numbering device

19.1 Numbering inking unit

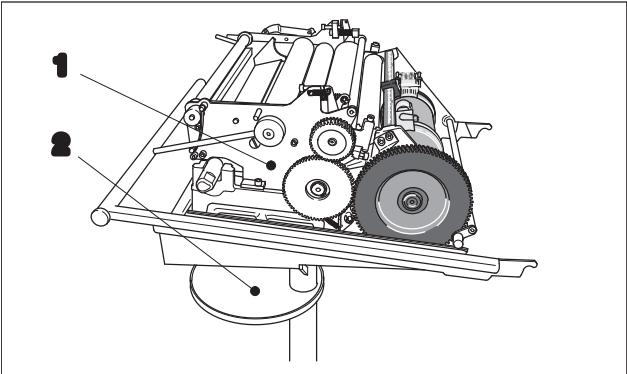


Fig. 78 Slide-in carriage with numbering device

Place of installation

- 1 Numbering device
- 2 Slide-in carriage

The numbering device of the BP18-2 model line is an optional accessory.

To carry out maintenance work on the numbering device you need to remove it from the press.

See the chapter "Press, Inserting the numbering device into the press and removing it" for details.

The washing fluid pipe and the drip pan belong to the numbering device.



Caution - Damage to the impression cylinder!

Never number against the chromium-plated brass plate. This will damage the impression cylinder! Mount the steel plate to carry out numbering jobs.

19.1.1 Cleaning the inking rollers

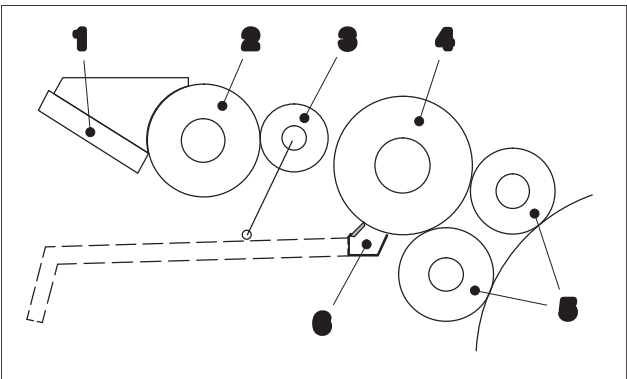


Fig. 79 Arrangement of cylinders in the numbering device

- 1 Ink fountain
- 2 Ink fountain roller
- 3 Ink vibrator
- 4 Ink distributor roller
- 5 Inking form rollers
- 6 Washup blade

Note

Never use cleaners that contain acid for cleaning the inking rollers.

Description of the maintenance point	
Maintenance interval	II
Maintenance location	-
Accessing the maintenance point	Remove the numbering device.
Maintenance work	Clean the inking rollers. For details see the chapter "Press, Numbering inking unit, Cleaning the numbering inking unit"
Required resources	Soft, fluffless cloth
Cleaning solution	Note "Approved cleaners".

Tab. 48

19.1.2 Lubricating the inking roller bearings

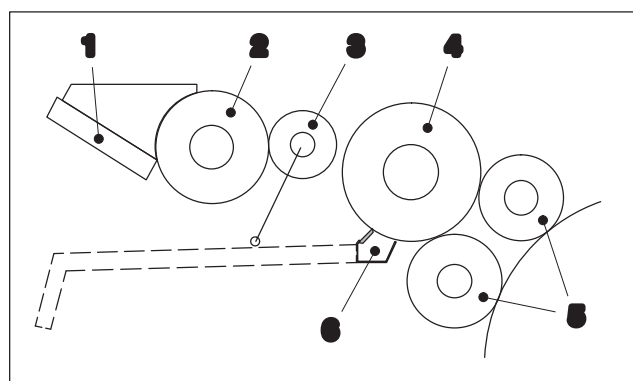


Fig. 80 Arrangement of cylinders in the numbering device

- 1 Ink fountain
- 2 Ink fountain roller
- 3 Ink vibrator
- 4 Ink distributor roller
- 5 Inking form rollers
- 6 Washup blade

Description of the lubricating point	
Maintenance interval	II
Color code	-
Maintenance location	-
Access to lubrication point	Remove the numbering device.
Number/type/maintenance work	Lubricate the bearings of all inking rollers.
Required resources	Small brush, grease gun
Lubricant	Molykote G 67

Tab. 49

19.1.3 Adjusting inking rollers

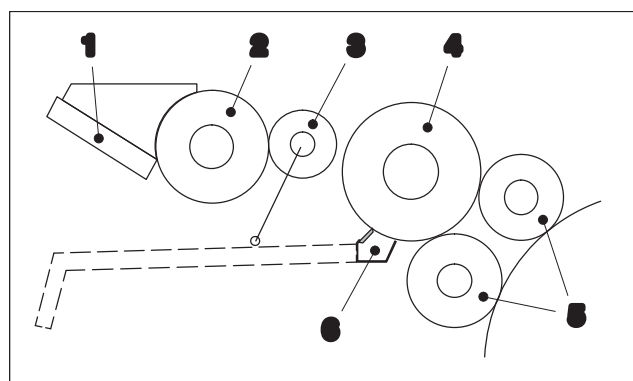


Fig. 81 Arrangement of cylinders in the numbering device

- 1 Ink fountain
- 2 Ink fountain roller
- 3 Ink vibrator
- 4 Ink distributor roller
- 5 Inking form rollers
- 6 Washup blade

Note

For details, see the chapter "Press, Numbering inking unit, Adjusting inking form rollers".

Description of the maintenance point	
Maintenance interval	IV
Maintenance location	-
Accessing the maintenance point	Remove the numbering device.
Maintenance work	Check the inking form rollers with the help of ink stripes and adjust them, if necessary.
Required resources	Ink stripe
Cleaning solution	-

Tab. 50

19.1.4 Lubricating the gears

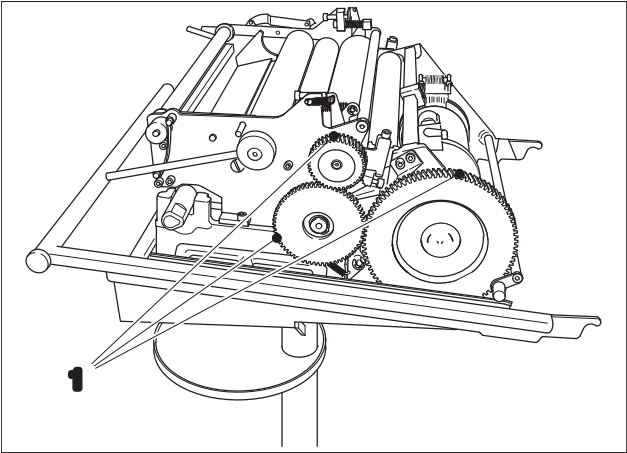


Fig. 82 Gears on O.S.

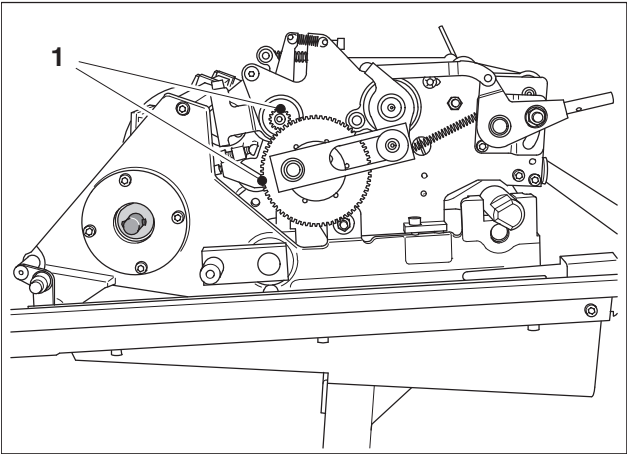


Fig. 83 Gears on D.S.

1 Gears on O.S.

Description of lubricating points	
Maintenance interval	III
Color code	-
Maintenance location	D.S. / O.S.
Access to lubrication point	Remove the numbering slide-in unit.
Number/type/maintenance work	Clean and lubricate the gears.
Required resources	Small brush, grease gun
Lubricant	Molykote G 67

Tab. 51

1 Gears on D.S.

19.1.5 Cleaning the ink fountain

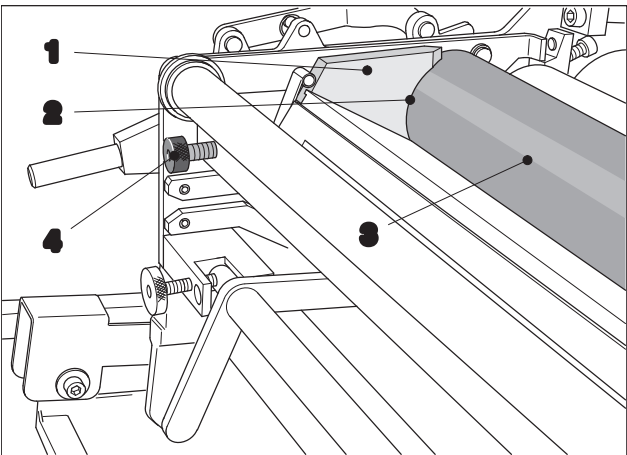


Fig. 84 Ink fountain

- 1 Ink fountain dividers
- 2 Contact area between the ink fountain dividers and the fountain roller
- 3 Ink fountain roller
- 4 Knurled screw

Description of maintenance points	
Maintenance interval	I
Maintenance location	-
Accessing the maintenance point	Slacken the knurled screw. Swing away the ink fountain. Take out the ink fountain dividers.
Maintenance work	Remove the ink from the ink fountain using a spatula. Clean the ink fountain dividers and the contact areas.

Description of maintenance points	
Required resources	Spatula; soft, lint-free cloth
Cleaning solution	Note "Approved cleaners".

Tab. 52

19.1.6 Lubricating the distributor roller cam

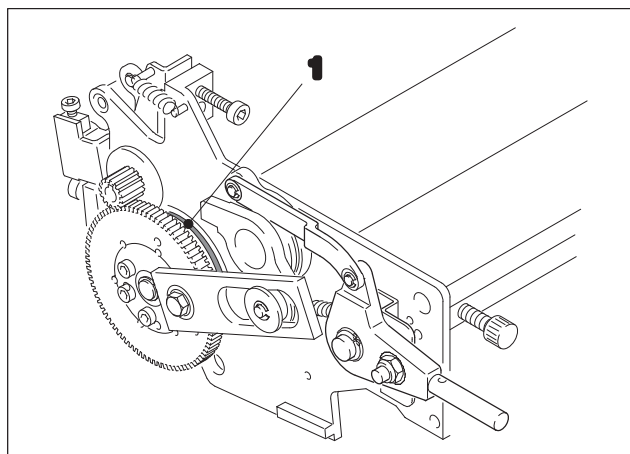


Fig. 85 Groove in the distributor roller cam

1 Groove in the distributor roller cam.

Description of lubricating points	
Maintenance interval	V
Color code	-
Maintenance location	D.S.
Access to lubrication point	Remove the numbering device.
Number/type/maintenance work	Lubricate the groove of the distributor roller cam.
Required resources	Small brush, grease gun
Lubricant	Molykote G 67

Tab. 53

19.1.7 Lubricating the cam

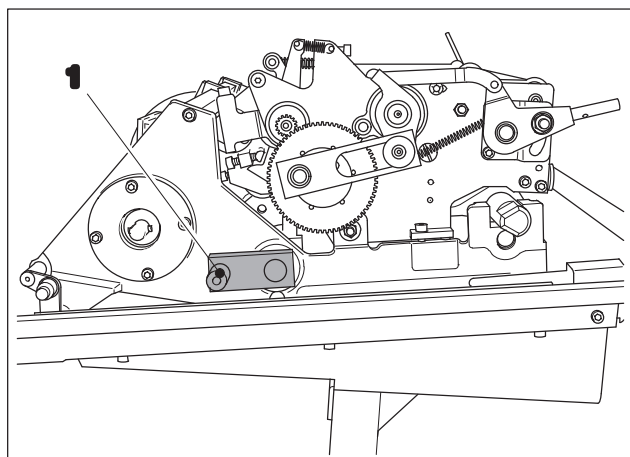


Fig. 86 Cam

1 Cam

Description of lubricating points	
Maintenance interval	V
Color code	-
Maintenance location	D.S.
Access to lubrication point	Remove the numbering device.
Number/type/maintenance work	Lubricate the cam.
Required resources	Small brush, grease gun
Lubricant	Molykote G 67

Tab. 54

19.2 Numbering inking unit washup device

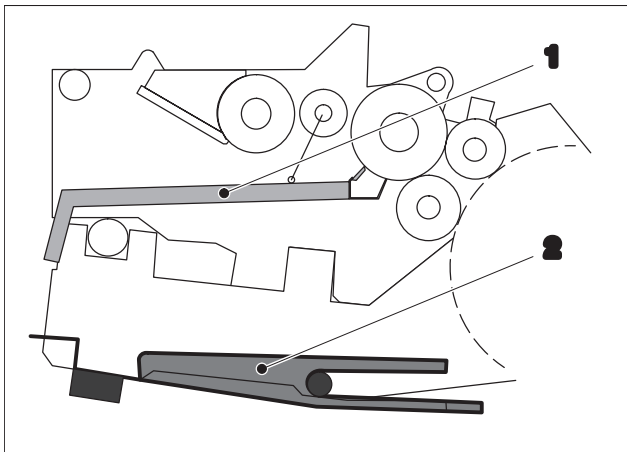


Fig. 87 Place of installation of the numbering inking unit washup device

Place of installation

- 1 Washup blade
- 2 Drip pan

The washup device of the numbering inking unit comprises:

- the feed line for the washing fluid (Fig. 88/1) for cleaning the numbering inking unit inside the press,
- the drip pan (Fig. 88/2) under the numbering inking unit and
- the washup blade (Fig. 88/3).

The feed line is not needed if you clean the numbering inking unit outside the press.

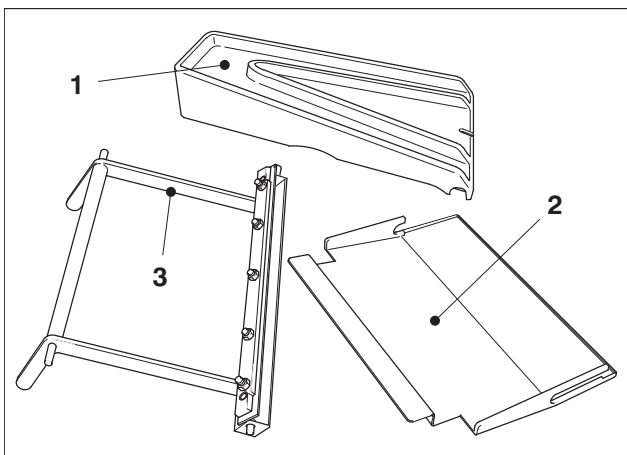


Fig. 88 Numbering inking unit washup device

- 1 Feed line for washing fluid
- 2 Drip pan
- 3 Washup blade

19.2.1 Cleaning the washup tray and washup blade

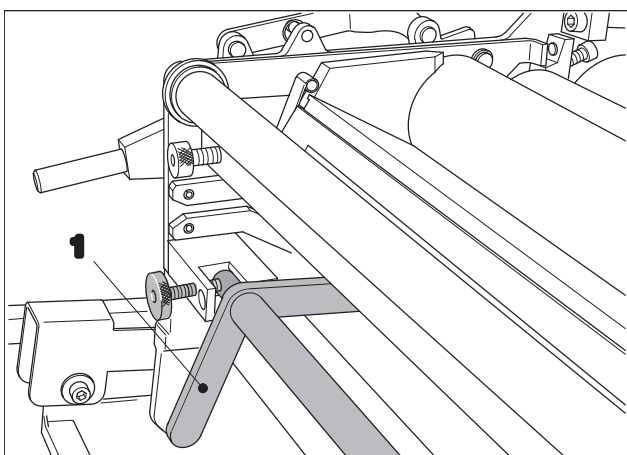


Fig. 89 Place of installation of the blade trough

- 1 Washup blade

Note

See the chapter "Press, Numbering inking unit, Washup device" for a description of how to engage the washup blades to the rollers and cleaning them.

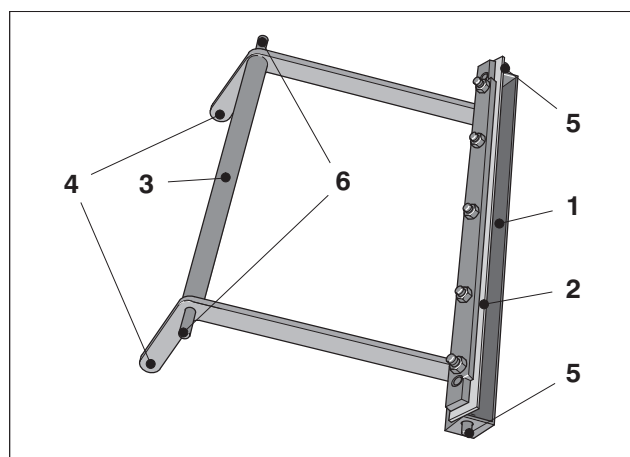


Fig. 90 Design of the washup blade

- 1 Washup tray
- 2 Doctor blade
- 3 Support
- 4 Handles
- 5 Lateral pins
- 6 Pins

The washup blade (Fig. 90) consists of the washup tray (Fig. 90/1), the blade (Fig. 90/2) and the carrier (Fig. 90/3). The carrier is pushed into the numbering device by the handles (Fig. 90/4). The lateral pins (Fig. 90/5) on the trough facilitate the insertion process. When inserting the numbering device up to the stop, the blades are brought into contact with the ink distributor. Fix the pin (Fig. 90/6) in washing position using the knurled screws.

Description of maintenance points	
Maintenance interval	I
Maintenance location	-
Accessing the maintenance point	Remove the numbering inking unit washup device.
Maintenance work	Clean the washup tray and doctor blade.
Required resources	Soft, fluffless cloth
Cleaning solution	Note "Approved cleaners".

Tab. 55

19.2.2 Checking and, if necessary, replacing the blade

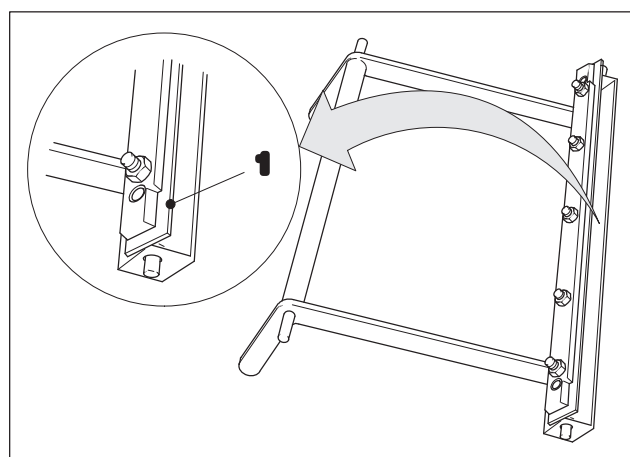


Fig. 91 Blade with support bar

- 1 Doctor blade

Description of maintenance points	
Maintenance interval	V
Maintenance location	-
Accessing the maintenance point	-
Maintenance work	Check the function and condition (wear) of the numbering inking unit washup device and replace the blades, if necessary.
Required resources	-
Cleaning solution	-

Tab. 56

19.2.3 Checking and, if necessary, cleaning the drip pan

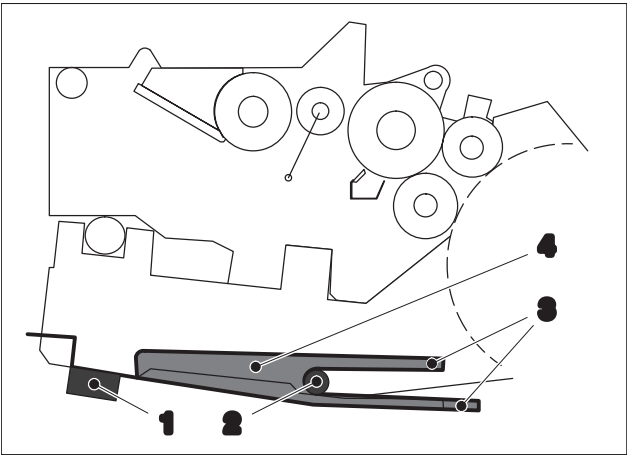


Fig. 92 Place of installation of the drip pan

- 1 Cross bar
- 2 Cross bar
- 3 Lateral guides
- 4 Drip pan

Note
Never use cleaners that contain acid for cleaning the drip pan.

Description of maintenance points	
Maintenance interval	II
Maintenance location	-
Accessing the maintenance point	Remove the drip pan.
Maintenance work	Check and, if necessary, clean the drip pan.
Required resources	-
Cleaning solution	Note "Approved cleaners".

Tab. 57

19.3 Numbering box

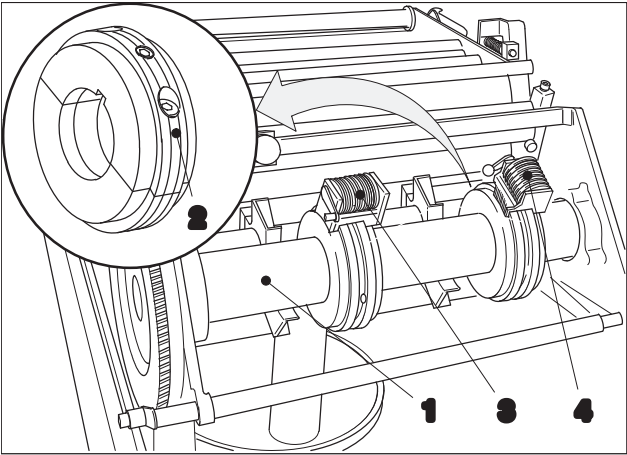


Fig. 93 Place of installation of the numbering box

- Place of installation**
- 1 Numbering shaft
 - 2 Mounting rings
 - 3 Straight numbering box
 - 4 Convex numbering box

Attach the numbering boxes (Fig. 93/3 and 4) to the mounting rings.

There are straight numbering boxes (Fig. 93/3) and convex numbering boxes (Fig. 93/4).

The mounting rings (Fig. 93/2) are made up of two half rings and are fitted on the numbering shaft (Fig. 93/1).

You can fit a maximum of 4 mounting rings on the numbering shaft. On one mounting ring you can attach 8 straight numbering boxes or 4 convex numbering boxes.

19.3.1 Cleaning the numbering box

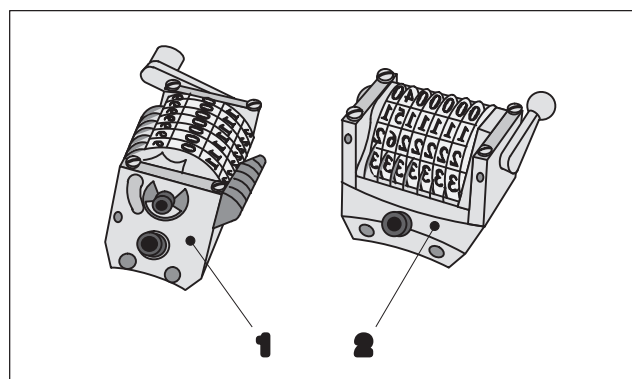


Fig. 94 Straight and convex numbering boxes

- 1 Straight numbering box
- 2 Convex numbering box

Description of maintenance points	
Maintenance interval	II
Maintenance location	-
Accessing the maintenance point	Remove numbering box.
Maintenance work	Clean the numbering box with a brush in a kerosine bath. Use ink solvent if necessary. Clean with a soft lint-free cloth and a grease-cutting washing fluid. Oil with a grease-containing agent.
Required resources	Soft, fluffless cloth, brush
Cleaning solution	Note "Approved cleaners".

Tab. 58

19.3.2 Lubricating the numbering box

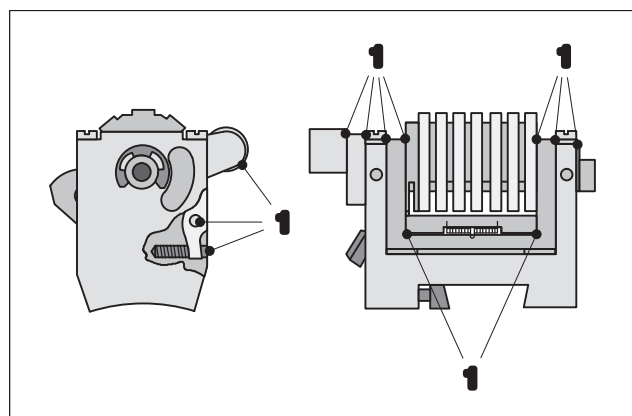


Fig. 95 Lubrication points on the numbering box

- 1 Lubricating points

Note

Clean the numbering box before lubricating it.

Description of the lubricating points	
Maintenance interval	II
Color code	-
Maintenance location	-
Access to lubrication point	Remove numbering box.
Number/type/maintenance work	Lubricate 12 lubrication points (Fig. 95/1).
Required resources	-
Lubricant	Light spindle oil, 1.1 E/20 °C

Tab. 59

19.3.3 Lubricating the control shaft

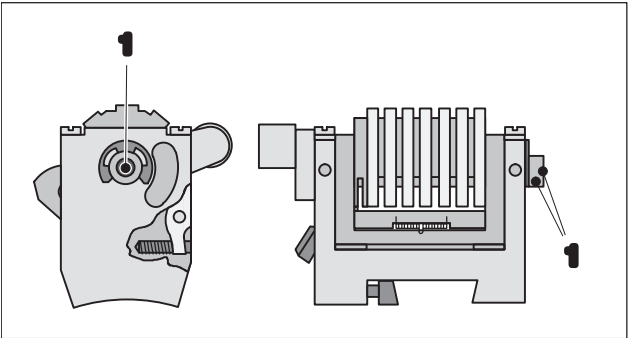


Fig. 96 Control shaft

1 Borehole in the control shaft

Note

Clean the numbering box before lubricating it.

Description of the lubricating points	
Maintenance interval	II
Color code	-
Maintenance location	-
Access to lubrication point	Remove numbering box.
Number/type/maintenance work	Lubricate the borehole in the control shaft (Fig. 96/1).
Required resources	-
Lubricant	Light spindle oil 1.1 E/20 °C

Tab. 60

19.3.4 Lubricating the crank

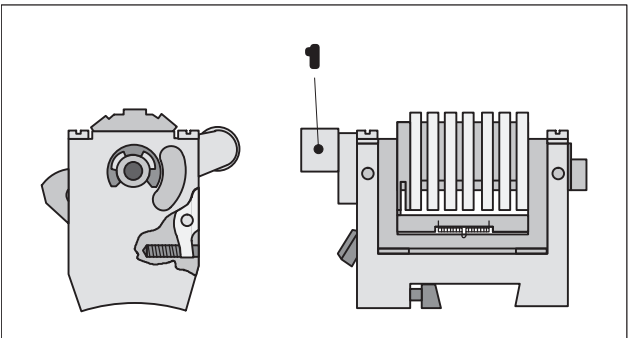


Fig. 97 Crank pin

1 Crank pin

Note

Clean the numbering box before lubricating it.

Description of the lubricating points	
Maintenance interval	II
Color code	-
Maintenance location	-
Access to lubrication point	Remove numbering box.
Number/type/maintenance work	Lubricate the surface of the crank pin.
Required resources	-
Lubricant	Aral, HL 2 180° BV

Tab. 61

20 Perforating device

20.1 Perforating device

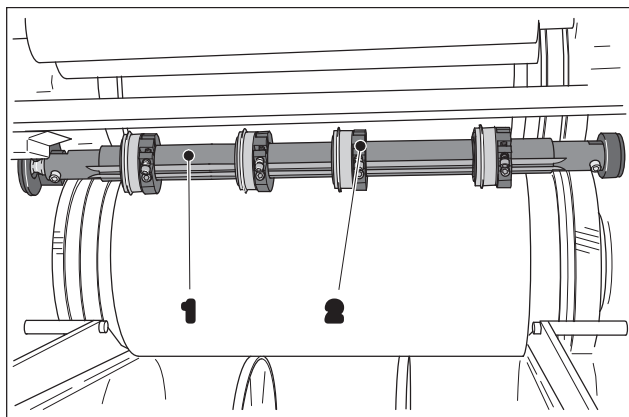


Fig. 98 Perforating device

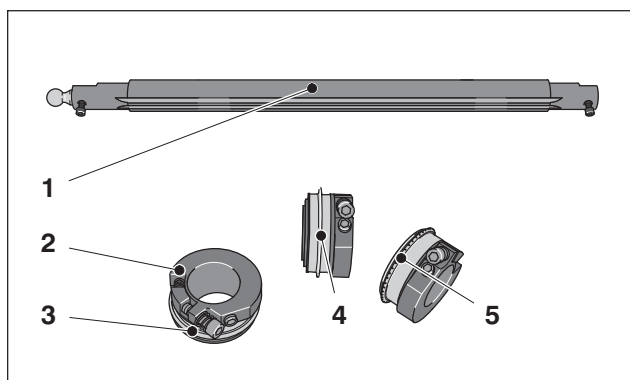


Fig. 99 Perforating shaft, perforating disc holder and various perforating inserts

Place of installation

- 1 Shaft
- 2 Perforating disc holder

The perforating device is an extra accessory. It consists of the shaft and one or more perforating disc holders with perforating inserts.

- 1 Shaft
- 2 Perforating disc holder
- 3 Slitting disc
- 4 Creasing wheel
- 5 Perforating discs

You can use perforating discs, slitting discs or creasing wheels as perforating inserts.

For maintenance purposes you need to remove the perforating device.

20.1.1 Lubricating the perforating disc holder

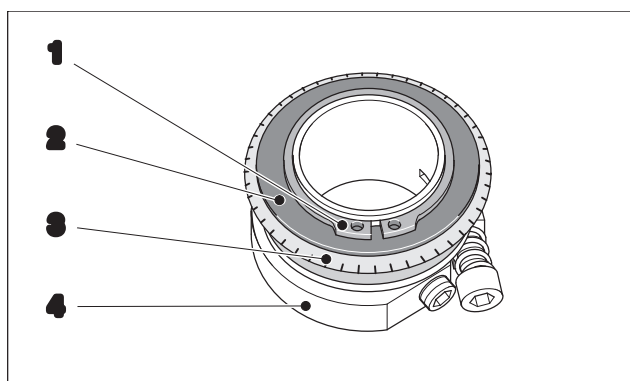


Fig. 100 Perforating disc on the perforating disc holder

- 1 Circclip
- 2 Intermediate ring
- 3 Perforating insert (perforating disc)
- 4 Perforating disc holder

Description of the lubricating points	
Maintenance interval	V
Color code	-
Maintenance location	-
Access to the lubricating point	Take off the circclip and the intermediate ring (see below).
Number/type/maintenance work	Lubricate the open oil lubrication hole on the perforating disc holder.

Description of the lubricating points	
Required resources	Oil bottle
Lubricant	LFC 3068, Chemie-Technik

Tab. 62

1. Take off the circlip on the perforating insert.
2. Take off the intermediate ring on the perforating insert.
3. Lubricate the open oil lubrication hole on the perforating disc holder.
4. Insert the intermediate ring.
5. Secure the perforating insert (the figure shows a perforating disc) with the circlip.

Maintenance on the printing unit

Maintenance on the delivery

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4	Pile guidance and pile transport	D.5.7
4.1	Pile chains	D.5.7

Maintenance on the delivery

1 Delivery - safety instructions

1.1 To be observed when working at the press



Warning - Risk of injury!

Before performing maintenance work, it is vital that you follow the instructions in the main chapter "Safety".



Warning - Risk of injury from press motion!

Since press motion is possible whilst the guards are open, there is a risk of injury if improperly operated. Carelessness can lead to fingers getting crushed!



Warning - Risk of injury from revolving chain gripper systems!

Revolving chain gripper systems can lead to serious injury if sufficient care is not taken! Therefore, carry out the following measure before starting maintenance work in the delivery:

Prior to any work in the delivery:

- Press the *Emergency-stop* palm button on the delivery control panel.



Warning - Risk of crushing by delivery pile!

Prior to raising or lowering the delivery pile, ensure by means of a visual inspection that nobody is standing in the hazardous area of moving parts and nothing can be jammed under the delivery pile.

Never stand underneath or on top of the delivery pile when the press is switched on.



Warning - Risk of fire by cleaners!

Only use cleaners with a flash point of at least 55 °C.

2 Overview of the maintenance operations on the delivery

2.1 Overview

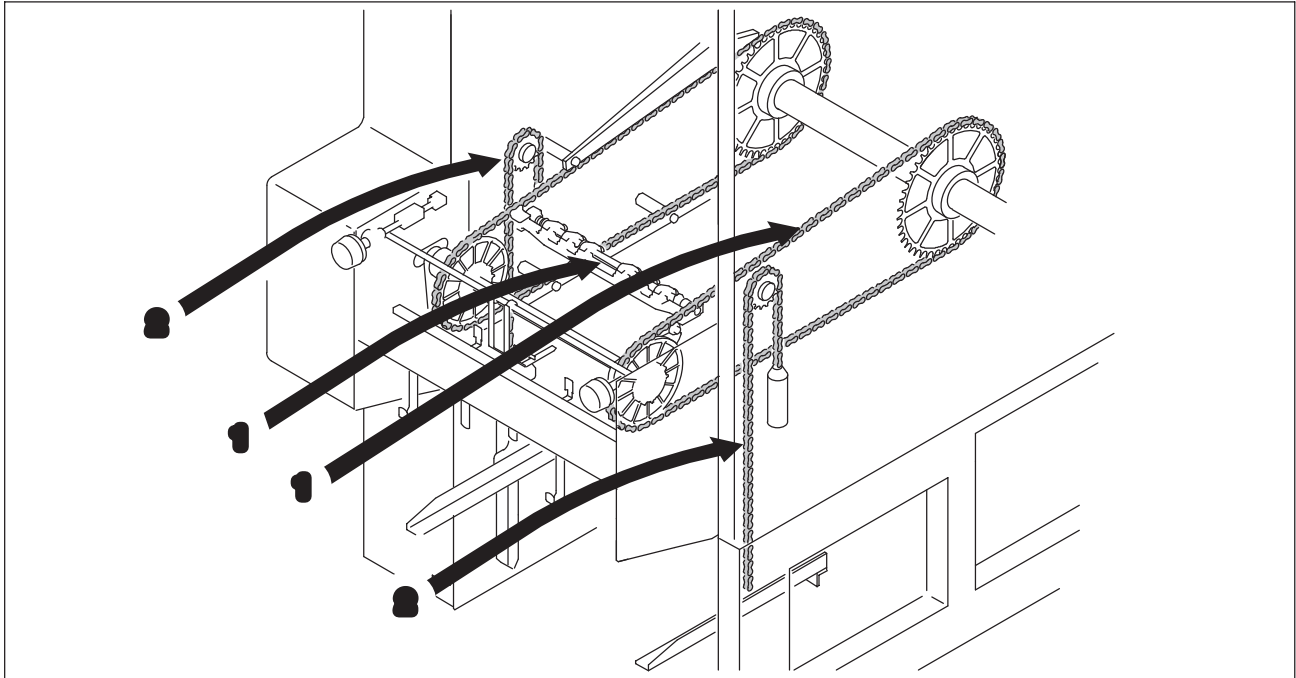


Fig. 1 Maintenance locations on delivery

- 1 Maintenance points on the sheet transport
- 2 Maintenance points on the pile guide rail and the pile transport

3 Sheet transport

3.1 Delivery chains

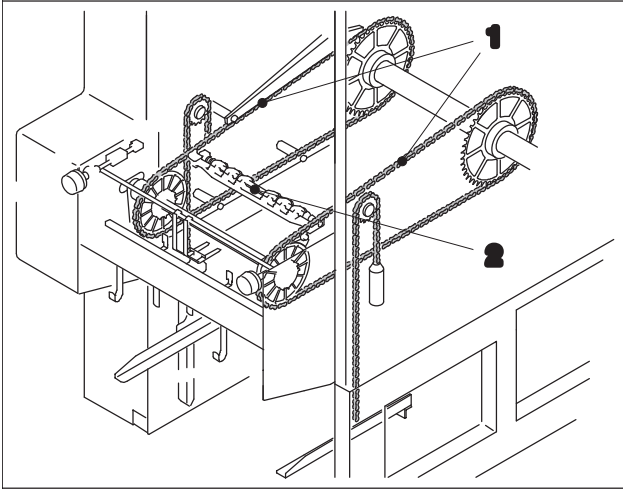


Fig. 2 Place of installation of the delivery chains

Place of installation

1 Delivery chains

2 Gripper bar

Delivery chains are fitted both on D.S. and on O.S.

3.1.1 Cleaning and lubricating the delivery chains

Description of maintenance points	
Maintenance interval	II
Maintenance location	D.S. / O.S.
Accessing the maintenance point	Open the "inking unit" guard. Turn the press using the crank handle.
Maintenance work	Spray the soiled delivery chains with chain lubricant and depending on the degree of soiling allow it to soak in for about 5 to 15 minutes. Clean the two delivery chains with a brush and spray them with chain lubricant again.
Required resources	Brush
Cleaner/lubricant	Chain lubricant Emerald 2000 (One Step Chain Saver)

Tab. 1

3.2 Gripper bars

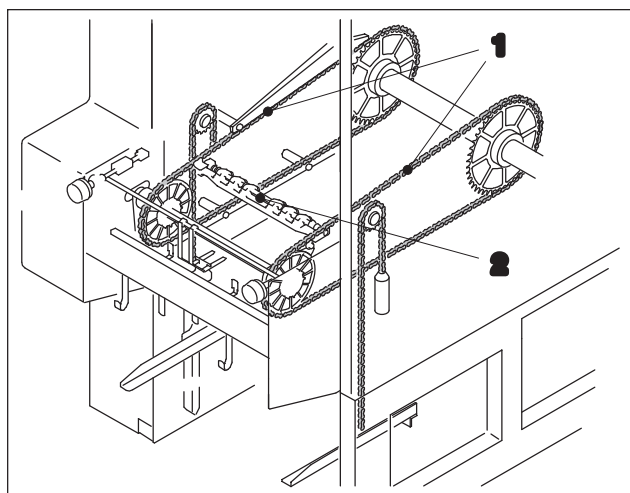


Fig. 3 Place of installation of the gripper bars

Place of installation

1 Delivery chains

2 Gripper bar

3 gripper bars are fitted equally spaced apart between the delivery chains on D.S. and O.S.

3.2.1 Cleaning and lubricating gripper bars

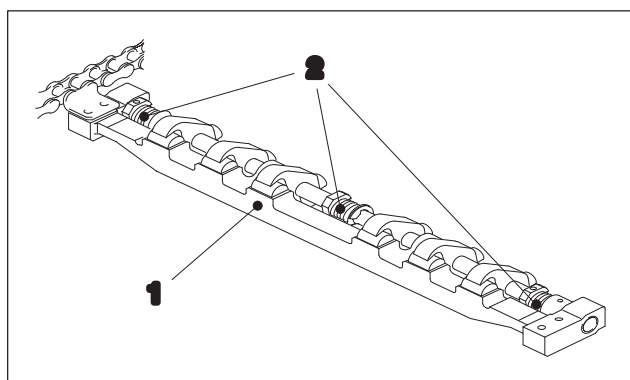


Fig. 4 Spraying torsion springs

1 Gripper bar

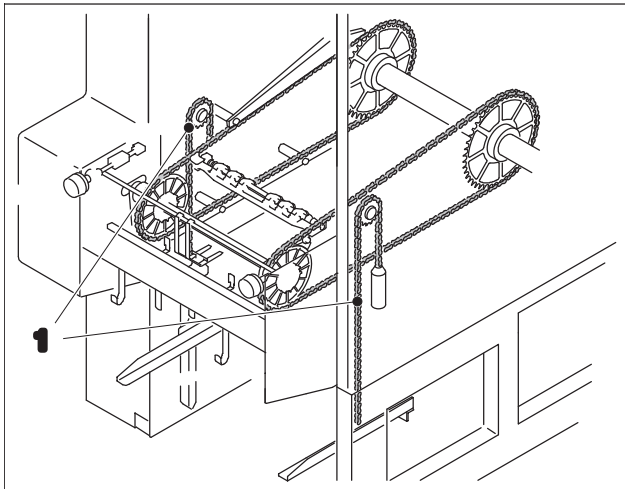
2 Torsion springs

Description of maintenance points	
Maintenance interval	III
Maintenance location	From D.S. to O.S.
Accessing the maintenance point	Open the "inking unit" guard. Turn the press using the crank handle.
Maintenance work	Clean the 3 soiled gripper bars. Spray the 3 torsion springs on each gripper bar with Elkalub FLC 1012 lubricant spray.
Required resources	Soft, fluffless cloth
Lubricant	Lubricant spray Elkalub FLC 1012

Tab. 2

4 Pile guidance and pile transport

4.1 Pile chains



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Place of installation

1 Pile chains

Pile chains are fitted both on D.S. and on O.S.

Fig. 5 Place of installation of the pile chains

4.1.1 Cleaning and lubricating pile chains

Description of maintenance points	
Maintenance interval	III
Maintenance location	D.S. / O.S.
Accessing the maintenance point	Lower the pile table using the crank handle. If there is still a paper pile on the pile board, remove it.
Maintenance work	Clean the pile chain on D.S. and O.S. using a small brush. Then spray the chains using Elkalub FLC 1012 lubricant spray.
Required resources	Small brush
Lubricant	Lubricant spray Elkalub FLC 1012

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