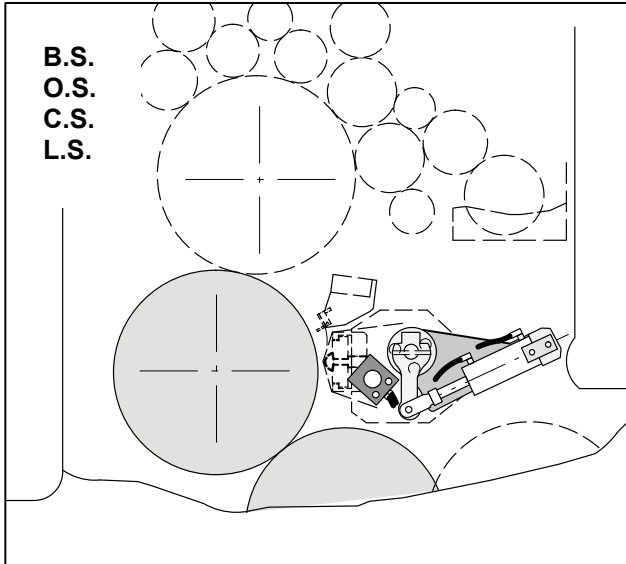


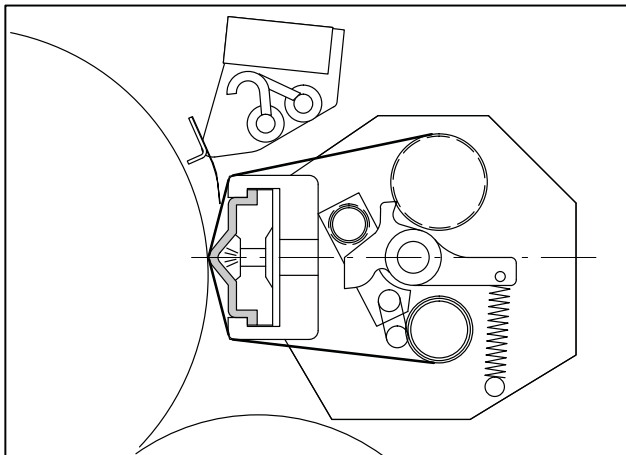
13 Combined blanket/impression cylinder washing device

13.1 Wash functions



III. 424 Combined blanket/impression cylinder washing device

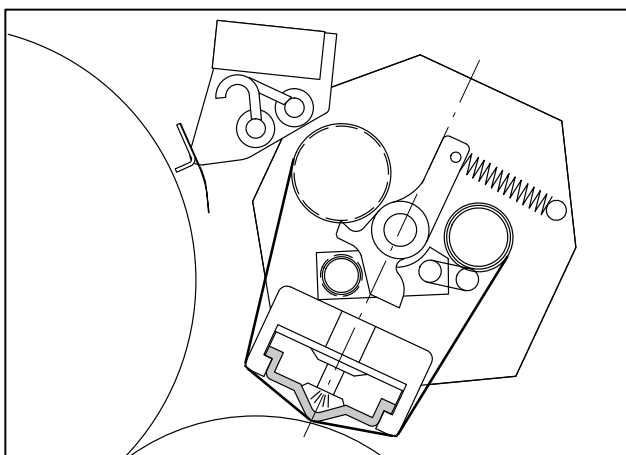
The washing device can be tilted and locked pneumatically. This allows to wash the blanket (III. 425) as well as the impression cylinder (III. 426). The programme blanket washing or cleaning of impression cylinder can be activated on the control console.



III. 425 Cleaning of blanket

Position: Cleaning of blanket

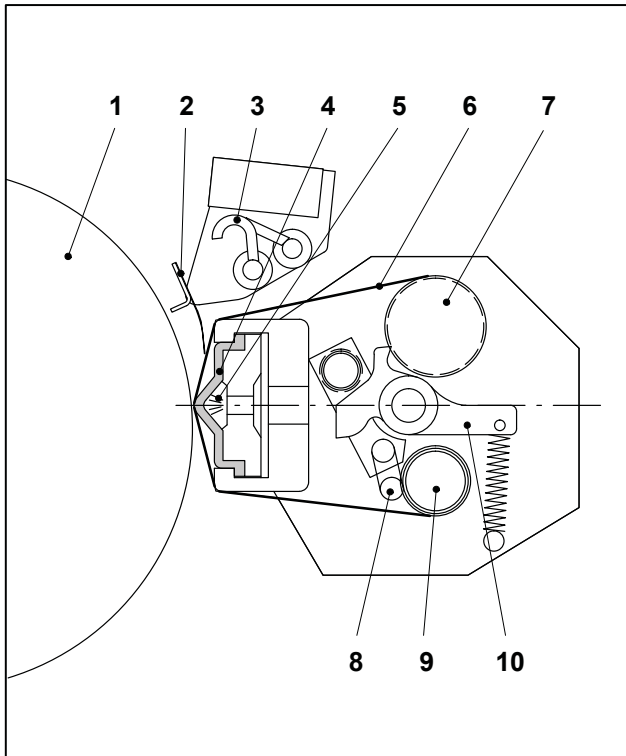
Basic position of the blanket washing device; diaphragm set against blanket cylinder.



III. 426 Cleaning of impression cylinder

Position: Cleaning of impression cylinder

Blanket washing device tilted; diaphragm set against impression cylinder.



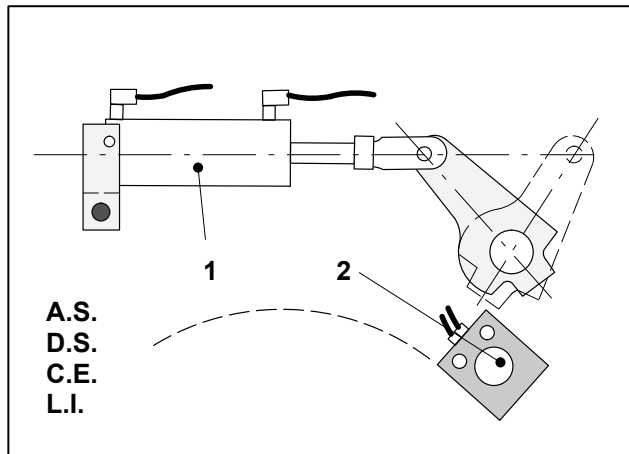
III. 427 Design of the washing device

Components

III.	Designation
427/1	Blanket cylinder
427/2	Distributor
427/3	Drop tubes for water and washup fluid
427/4	Diaphragm (cloth engaging system)
427/5	Blast air (cloth engaging system)
427/6	Washing cloth
427/7	Cloth supply roll
427/8	Feeler
427/9	Spindle for used-cloth roll
427/10	Forward feed of cloth

Table 55

13.2 Pneumatic control functions



Ill. 428 Swinging - blanket washup/cleaning of impression cylinder

Swinging - blanket washup/cleaning of impression cylinder

The programme "cleaning of impression cylinder", positions the washing device to the impression cylinder. If the piston of the pneumatic cylinder (Ill. 428/1) moves forward, the washing device is positioned. Before that, the pistons of the locking cylinders (Ill. 428/2) D.S. and O.S. must be retracted. After positioning, the pistons of the locking cylinders move forward again, locking the washing device at this position.

After the procedure "cleaning of impression cylinder", the piston of the pneumatic cylinder (Ill. 428/1) retracts thus swinging back the washing device. Before that, the locking must have been eliminated. As soon as the original position is reached, the two locking cylinders (D.S./O.S.) lock the device by extending the pistons.

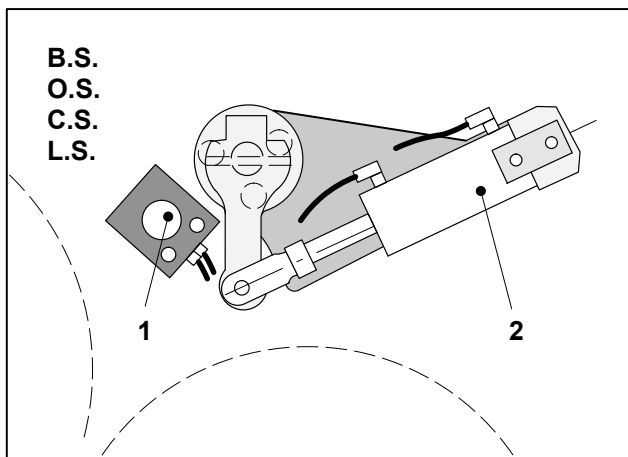
Technical specifications

Pneumatic cylinder "swing into position" (Ill. 428/1)

Quantity:	1
Place of installation:	Printing unit side frame D.S. outside
Output:	Y71
Position:	P 08
Type of cylinder:	Double-acting cylinder
Diameter:	25 mm
Travel:	50 mm

Pneumatic cylinder "locking" (Ill. 428/2)

Quantity:	2
Place of installation:	Printing unit side frame D.S. and O.S. outside
Output:	Y72
Position:	P 9
Type of cylinder:	Double-acting cylinder with extended piston rod
Diameter:	20 mm
Travel:	10 mm



III. 429 Forward feed of cloth

Forward feed of cloth

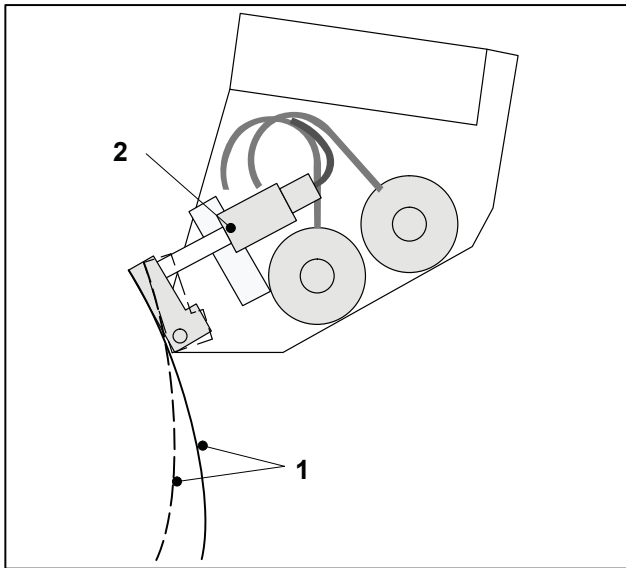
The locking cylinders (III. 429/1) on D.S. and O.S. are extended, locking the washing device. If the programme "cleaning of impression cylinder" has been selected, the pistons of the pneumatic cylinders (III. 429/1) retract and the washing device can be tilted. When the pistons of the locking cylinders retract, the pistons of the pneumatic cylinder "tilt distributor bar" extend.

By retracting and extending of the piston of the cylinder "GTW forward feed of cloth" (III. 429/2) the washing cloth is inched forward during the programme. After initiating the command "washup", all adjustments for the washing program can be entered in the display. After enabling the command, the respective washing program is started.

Technical specifications

Pneumatic cylinder "forward feed of cloth" (III. 429/2)

Quantity:	1
Place of installation:	Printing unit side frame O.S. outside
Output:	Y63
Position:	P 10
Type of cylinder:	Double-acting cylinder
Diameter:	25 mm
Travel:	25 mm



III. 430 Tilting distributor bar

Tilting distributor bar

Distribution of the washup solution and water on the washing cloth is enhanced through a pneumatically tilting distributor bar (III. 430/2).

The pistons of the two "miniature" cylinders (III. 430/1) are pneumatically connected with the locking cylinders (III. 429/1). If the pistons of the locking cylinders are retracted, the pistons of the "miniature" cylinders are extended, and vice versa.

When the pistons are extended, the distributor bars are tilted and the plastic foil is aligned on the washing cloth. This improves distribution of the washup solution and water on the washing cloth. When the washing device is tilted, the distributor bar is tilted back so that it does not interfere with the tilting movement.

Technical specifications

Pneumatic cylinder "distributor bar" (III. 430/2)

Quantity:	2
Place of installation:	on spray bar D.S. and O.S.
Output:	Y72 connected with locking
Position:	P 9
Type of cylinder:	"Miniature" cylinder
Diameter:	6 mm
Travel:	5 mm

13.3 Checklist

Wash problems

List for check-ups and repairs on the washing device

Washup problem	Possible causes
General poor wash result	Supply of washup solution not okay
	Drop tubes for water and washup solution clogged
	Washup fluid and water filled incorrectly into container
	Diaphragm pressure too low Rated value: 0.55 bars (UV 0.65 bars)
	Insufficient pressure in container Rated value: 0.5 bars
Partly smudged	Drop tubes clogged
Light hue of ink after washup procedure	Improper washup fluid

Table 56

Cloth infeed

List for check-ups and repairs on the cloth infeed unit

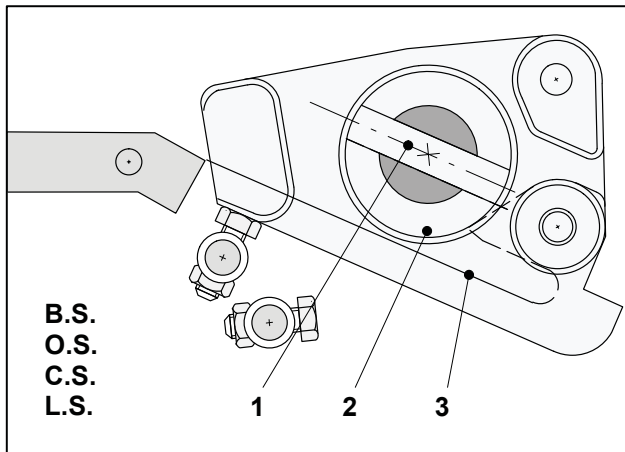
Test points on the press	yes	no
Is the angle position of the engaging dog okay? Check by means of gauge 00.894.1295 (see chapter 13.4).		
Does the cloth feed cylinder reach the limit position?		
Does the 3/2 directional control valve for the diaphragm air work?		
Are there any leaks at the air pipes?		
Does the bevelled side of the sheet guide plate fitted at the hinged bearings under the washup device have sufficient clearance to the washing cloth?		
Is the washing result satisfactory? If not, why?		
Are the metering tubes (drop hooks) clogged?		
Does the switch plate at the washing cloth sensor (side frame D.S.) move easily?		

Table 57

Test points on the wash cartridge	yes	no
Is the driver to the ratchet pawl pinned down at the right angle? Check by means of gauge 00.894.1333 (see chapter 13.4.1).		
Does the pawl engage in the ratchet toothing?		
Does the pawl move easily? (Must not jam!)		
Is the driver damaged (grooves or collision marks)?		
Is the wash cartridge deformed?		
Have original Heidelberg washing cloth sleeves/washing cloths been used? In case of automatic reeling units identify manufacturer of the reeling machine and material of the sleeves.		
Was the locking screw tightened correctly?		
Are the expanding sleeves okay? Is the O-seal defective?		
Is the washing cloth switch plate deformed?		

Table 58

13.4 Guide piece on the side frame O.S.



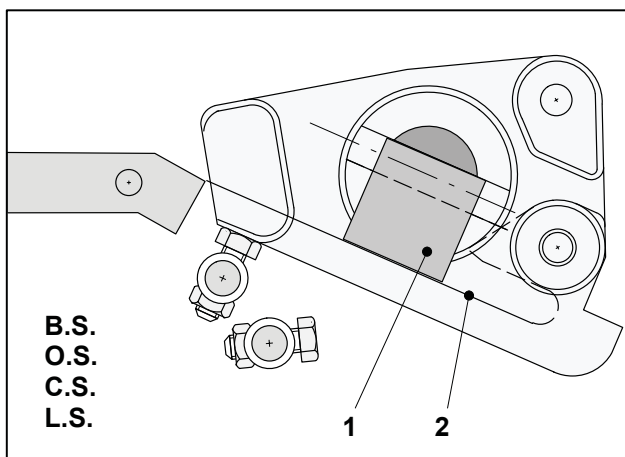
III. 431 Guide piece - side frame O.S.

Check-up and adjustment

The groove (III. 431/1) in the shaft (III. 431/2) must be aligned parallel to the guide piece (III. 431/3) of the wash cartridge.

Tools/gauges

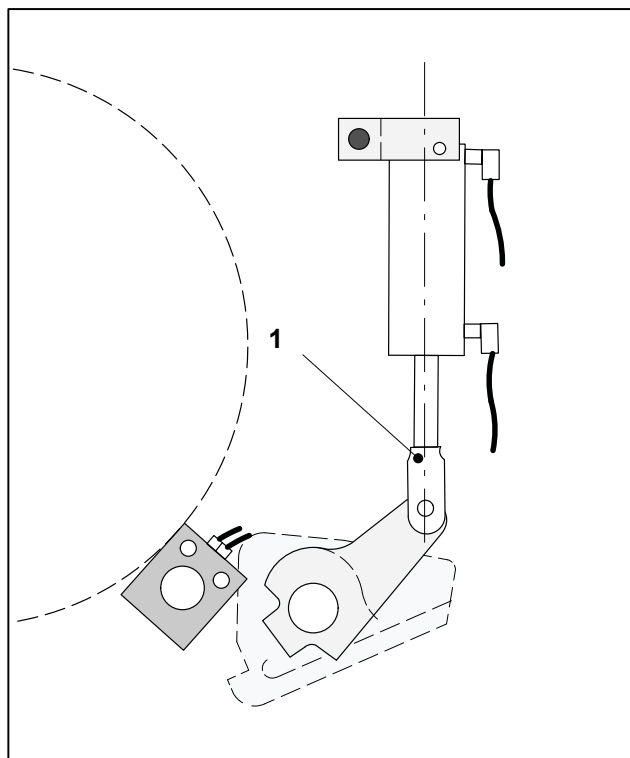
- Gauge 00.894.1295 (BP.005.7614) (III. 432/1)



III. 432 Gauge 00.894.1295

Check-up/adjustment

- ➊ Position the gauge 00.894.1295 (III. 432/1) on the guide piece O.S. (III. 432/2) according to III. 432.
- ➋ The gauge must be positioned entirely on the guide piece, fitting exactly into the groove.



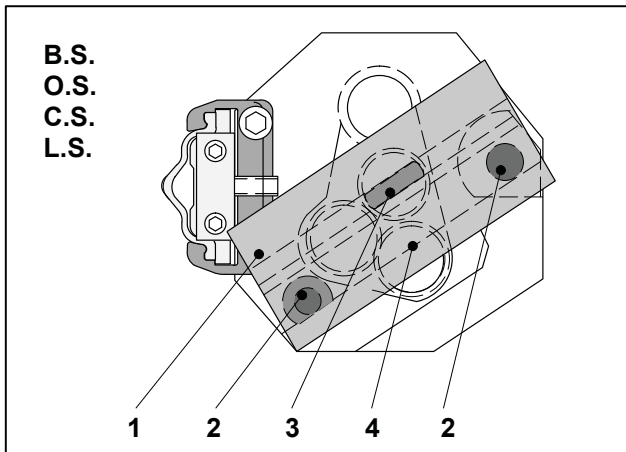
III. 433 Double-acting pneumatic cylinder Y71

- 3 To carry out the adjustment, turn the forkhead (III. 433/1) on the pneumatic cylinder behind the printing unit guard O.S.

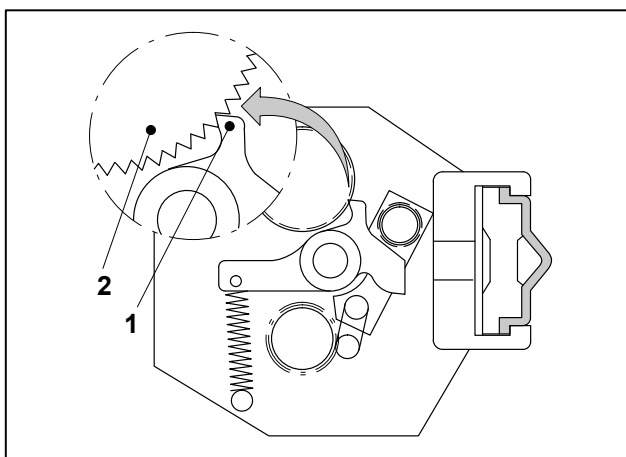
Note:

The forkhead is fixed ex factory and must be provided with Loctite after the adjustment. The range of adjustment of the forkhead is limited to **max. 3 revolutions**.

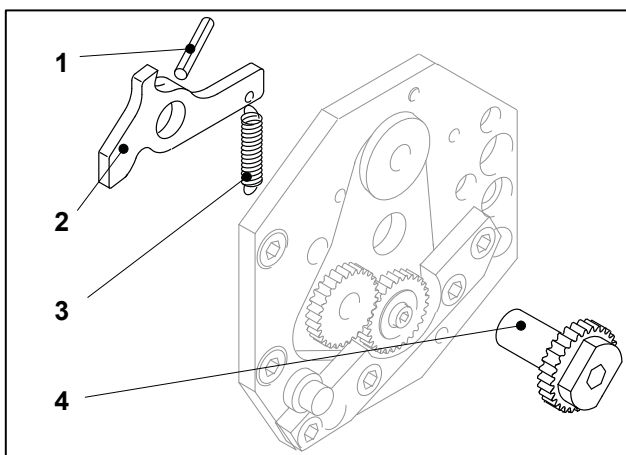
13.4.1 Wash cartridge



III. 434 Wash cartridge in adjustment device



III. 435 Locking position, seen from D.S.



III. 436 Stop lever cpl.

Checking the wash cartridge

Tools/gauges

- Gauge 00.894.1333 (BP.005.8740)

Check-up/adjustment

- 1 Position the gauge 00.894.1333 (Ill. 434/1) on the outside of the side frame O.S. of the wash cartridge according to Ill. 434. The gauge must contact the bottom side of the two pins (Ill. 434/2).

The driver (Ill. 434/3) must be aligned parallel to the edge (Ill. 434/4) of the gauge!

Make sure that the nose (Ill. 435/1) on the stop lever is completely engaged in the gear (Ill. 435/2)!

In case of deviations, replace the complete stop lever.

Note:

Due to extremely small tolerances it is not possible to re-pin it!

Mounting and demounting

- 1 Remove cloth supply roll (Ill. 436/4).
- 2 Remove spring (Ill. 436/3).
- 3 Knock out spring dowel sleeve (Ill. 436/1) and remove the lever (Ill. 436/2) from the shaft.
- 4 Immediately destroy the demounted stop lever and shaft with gear to prevent mixing up with new parts.
- 5 Mount new parts and pin.
- 6 Mount the spring.
- 7 Check the parallel position of driver and edge of the gauge.

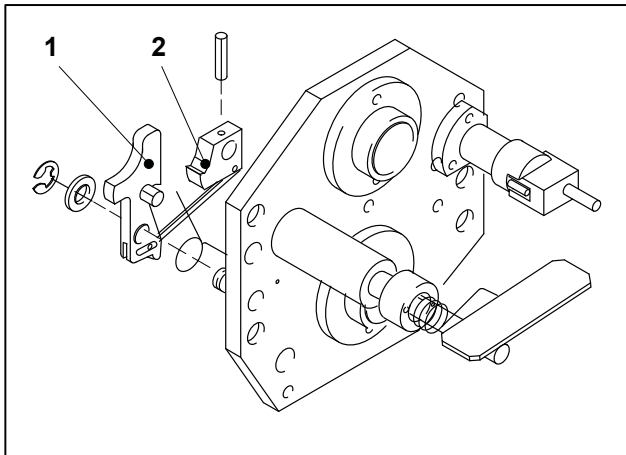
13.4.2 Diaphragm

Adjusting the operating air pressure

The operating air pressure of the diaphragm is **0.55 bars** (**0.65 bars** with UV diaphragm). It can be adjusted on the pressure regulator underneath the feed table.

Replacing the diaphragm

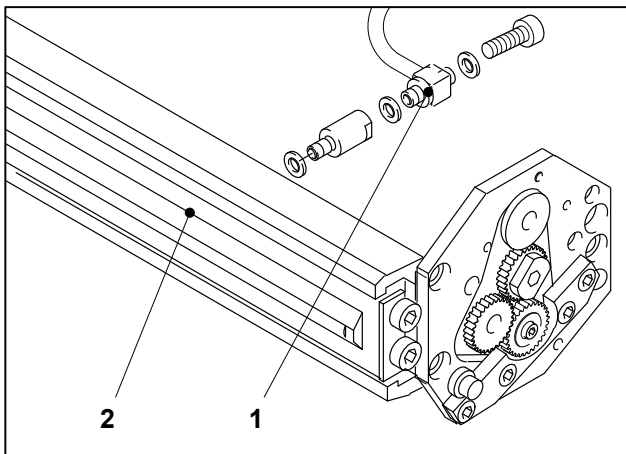
- 1 Remove the complete actuating lever (Ill. 437/1) with snap lever (Ill. 437/2) on D.S.



Ill. 437 Actuating lever

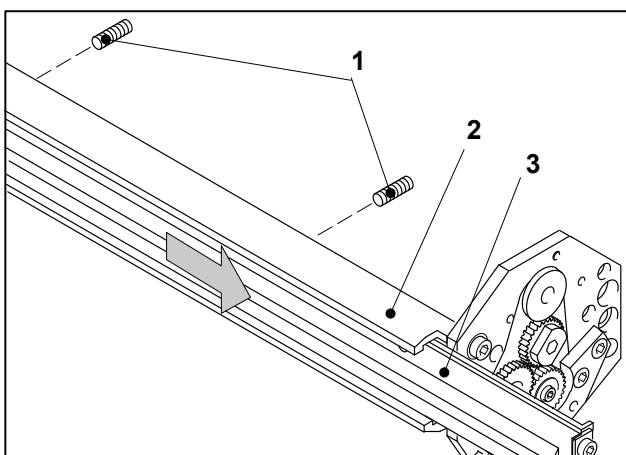
- 2 Remove the air connection (Ill. 438/1) on the pressing bar (Ill. 438/2).

Note:
Up to serial no. 622 220 angled connection (Ill. 438/1).
From serial no. 622 221 straight connection.

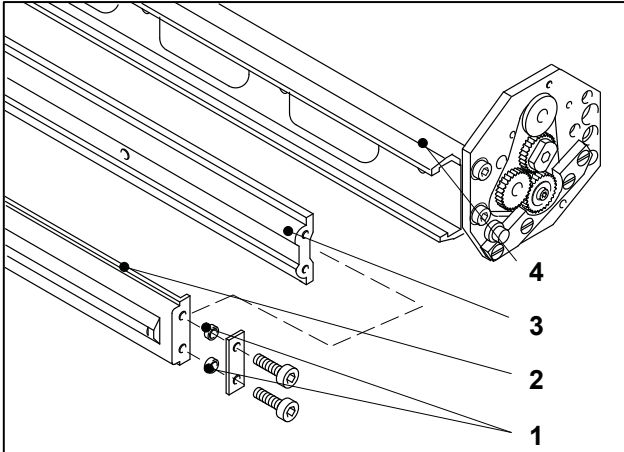


Ill. 438 Diaphragm unit

- 3 Unscrew 6 grub screws (Ill. 439/1) and pull the diaphragm (Ill. 439/3) with pressing bar out of the support profile (Ill. 439/2) to the side.



Ill. 439 Diaphragm



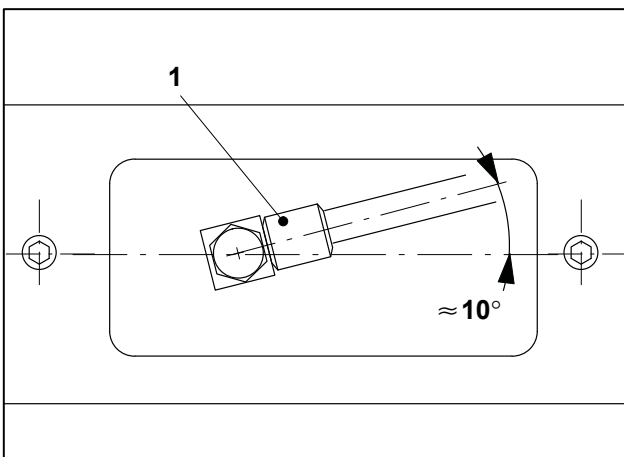
III. 440 Diaphragm unit

- 4 Unscrew the diaphragm (III. 440/2) from the pressing bar (III. 440/3) and replace by new diaphragm.

Attention!

Make sure that the spacer sleeves (III. 440/1) do not drop off.

- 5 Insert the unit consisting of diaphragm and pressing bar into the support profile (III. 440/4) and centre.
- 6 Lock the grub screws by means of thread glue (Loctite S1), screw into the support profile and tighten.



III. 441 Hose connection

- 7 Screw down air connection.

Note:

Up to serial no. 622 220 angled connection (III. 441/1).
From serial no. 622 221 straight connection.

- 8 Adjust the diaphragm.

Checking the wash cartridge after adjusting the diaphragm

- 1 Ink up the diaphragm and install the wash cartridge into the press.
- 2 Set the printing pressure to **0** on CPTronic and push the service button to apply pressure on the diaphragm.

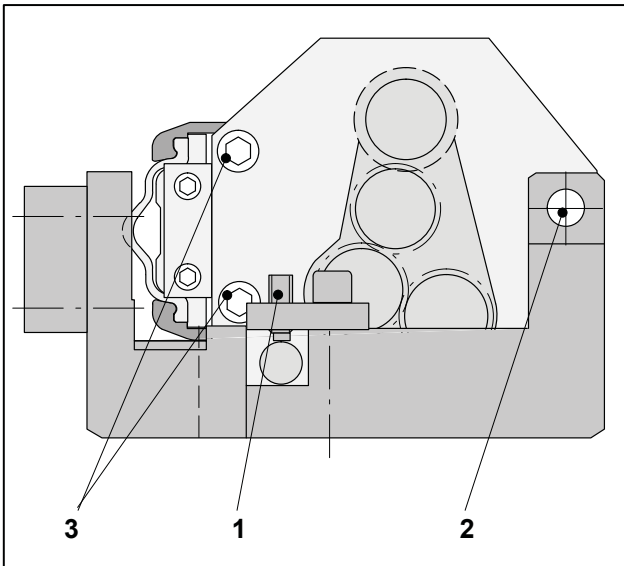
Note:
The air pressure must be set to **0.55 bars** (**0.65 bars** with UV diaphragm).

- 3 Release the air in the diaphragm after approx. **15 seconds**.
- 4 Inch the press forward for some degrees.
- 5 Set the printing pressure to **-0,55** on CPTronic and push the service button to apply pressure on the diaphragm.
- 6 Release the air in the diaphragm after approx. **15 seconds**.
- 7 Check the ink stripe width on the blanket:

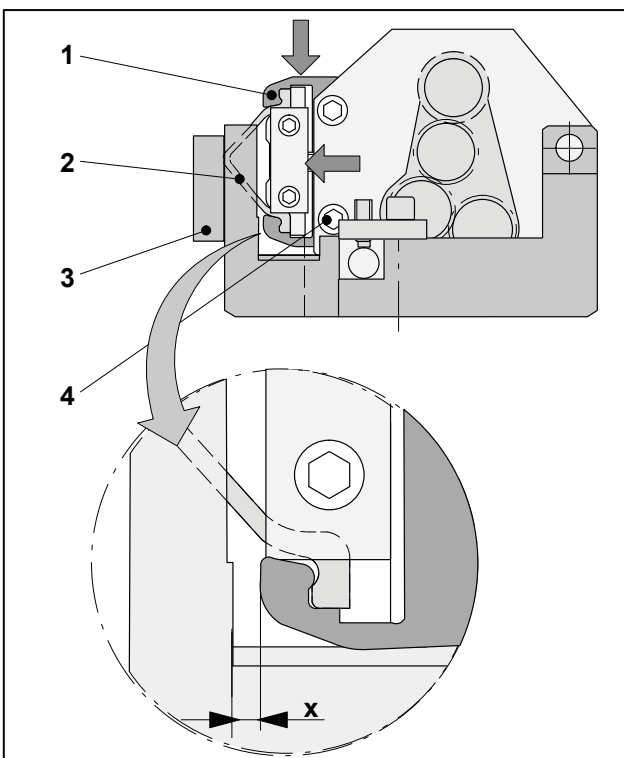
Printing pressure (manually controlled)	Ink stripe width [mm]
0.00	approx. 2.5
-0.55	approx. 2.0

Table 59

- 8 If necessary, adjust by moving the complete diaphragm unit.



III. 442 Wash cartridge in adjustment device



III. 443 Distance x

Adjusting the diaphragm

Tools/gauges

- Adjustment device 00.894.1245 (BP.005.6136)

Adjustment

Note:

The actuating lever must have been removed.

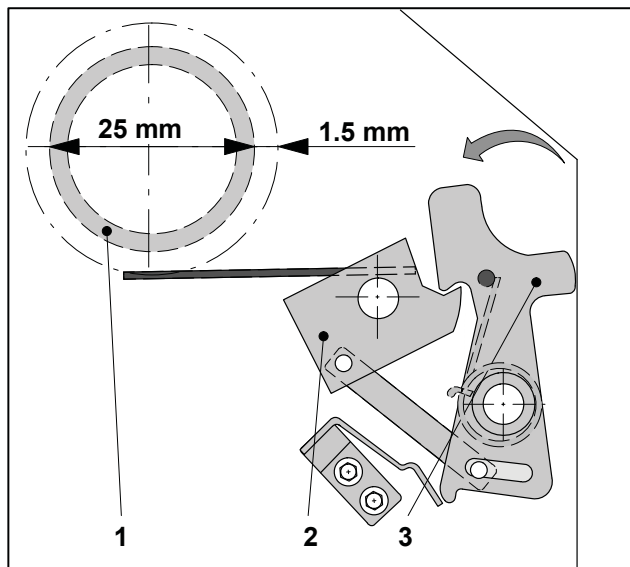
- 1 Insert complete wash cartridge into the adjustment device and fix on both sides by means of grub screw (III. 442/1) and snap bolt (III. 442/2).
- 2 Use an extension hose to connect the wash cartridge on the air connecting piece in the side frame.
- 3 Open Allen screws (III. 442/3) on D.S. and O.S.
- 4 Use the service button to apply pressure on the diaphragm approx. ten times and release the air again so that the rubber of the diaphragm is allowed to stretch a bit.

Note:

The air pressure must be set to **0.55 bars** (**0.65 bars** with UV diaphragm).

- 5 Apply pressure on the diaphragm by means of the service button.
- 6 Position the support profile (III. 443/1) on the adjustment device and push in direction of the arrow until the diaphragm (III. 443/2) **slightly** touches the support bar (III. 443/3).
- 7 The distance **x** must be identical on D.S. and O.S.
- 8 Tighten the Allen screws (III. 443/4) on D.S. and O.S.
- 9 Release the air on the diaphragm.
- 10 Remove the wash cartridge from the adjustment device.
- 11 Mount the actuating lever on D.S.

13.4.3 Checking the cloth supply roll

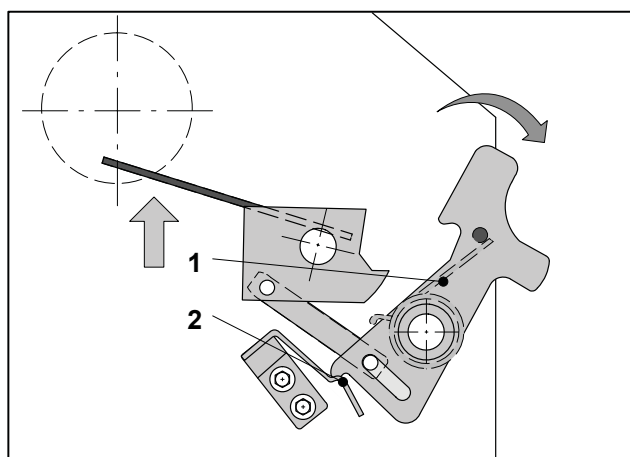


III. 444 Cloth supply mechanism

Functional check-up

To ensure that the sensor for the cloth supply roll responds at the end of the cloth, check the following points:

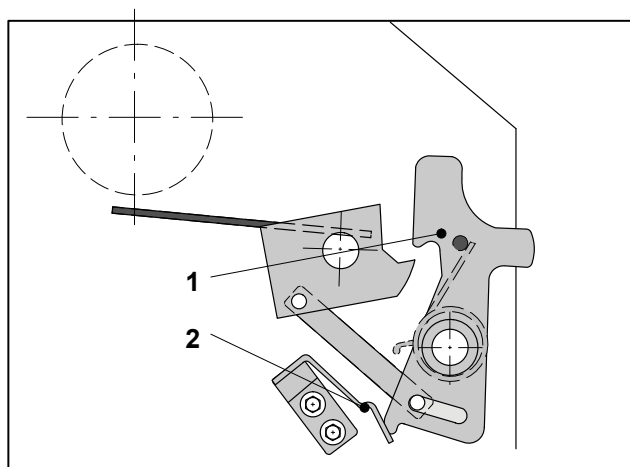
- 1 With a total diameter of **approx. 28 mm** (empty sleeve (III. 444/1) plus some layers of absorbent cloth) the blocking piece (III. 444/2) should just release the actuating lever (III. 444/3). The actuating lever will then swing in anticlockwise direction.



III. 445 Actuating lever

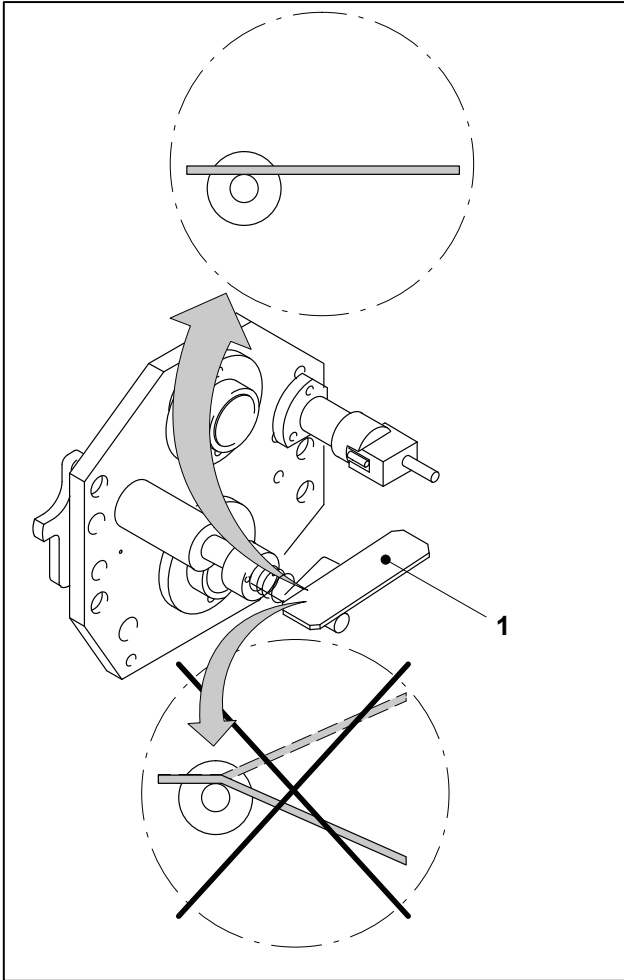
The actuating lever (III. 445/1) must be pulled beyond the high point of the plate spring (III. 445/2) through the force of the spring on the lever for the cloth supply roll.

So, when you remove the empty cloth supply roll, the actuating lever should swing back to its original position.



III. 446 Actuating lever

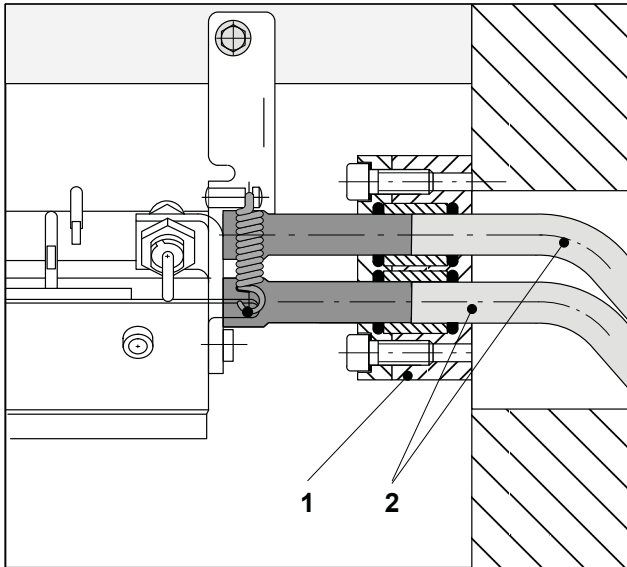
- 2 If the actuating lever (III. 446/1) remains in the position shown in III. 446, shift the plate spring (III. 446/2) accordingly. Bend the plate spring only if absolutely necessary.



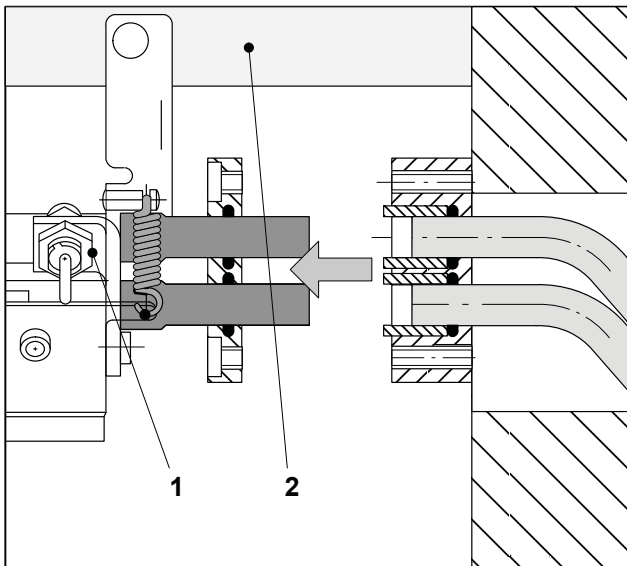
Note:
The plate (Ill. 447/1) on the feeler for cloth supply roll must not be bent.

Ill. 447 Feeler for cloth supply roll

13.4.4 Drop tubes for water and washup solution



III. 448 Hoses for washup solution and water



III. 449 Hoses for washup solution and water

Mounting and demounting

- 1 Demount the wash cartridge.
- 2 Disconnect the connecting piece (III. 448/1) by means of a shortened Allan key, width across flats 4 mm.

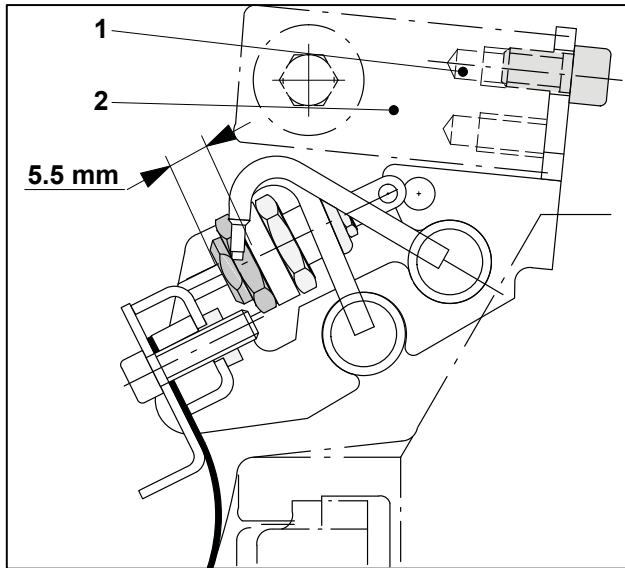
Note:

The hoses for washup solution (III. 448/2) should remain in the wider part of the connecting piece.

- 3 Disconnect the hoses on the pneumatic cylinders (III. 449/1). Replace the pneumatic hoses, if necessary. Remember the hose connections!
- 4 Unscrew the drop tube from the cross bar (III. 449/2) and remove from the press.
- 5 Clean the Nirosta drop tube. Use a needle to open any clogged drop tubes. Fill drop tube with roller washup solution and blow through with compressed air.

Attention!

Risk of injury! Wear protective goggles and protective gloves!

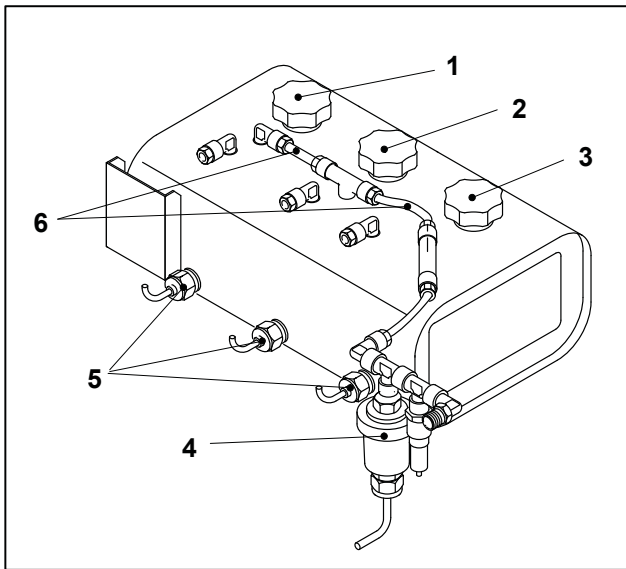


Ill. 450 Pneumatic cylinder

- 6 Check the distance of **5.5 mm** on the pneumatic cylinders of the distributor bar and adjust, if necessary.
- 7 Position the cleaned drop tube into the press.
- 8 Connect pneumatic hoses. Make sure to install the hoses correctly. The hoses should be installed as before the removal of the drop tube.
- 9 Fasten the drop tube on the **upper** borings (Ill. 450/1) of the cross bar (Ill. 450/2).
- 10 Check pneumatic and washup solution hoses for leaks.
- 11 Check the function of the cleaned drop tube.

During operation, water and washup solution must be distributed evenly over the entire width of the blanket cylinder.

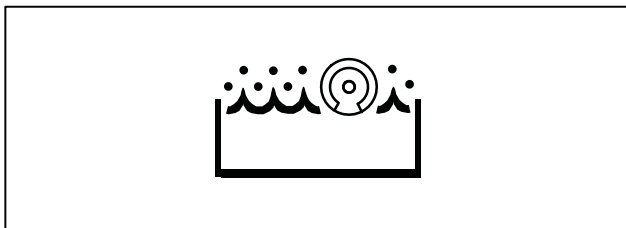
13.4.5 Supply of washup solution and water



III. 451 Container for presses with up to 2 PUs

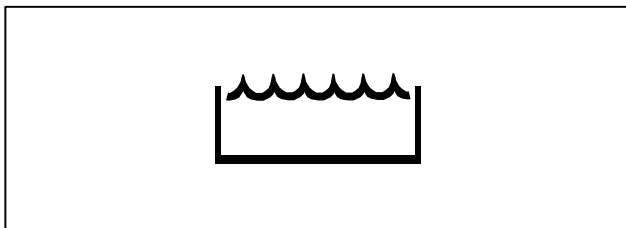
The washup solution container is located underneath the foot step O.S.

Liquid levels are checked by means of a level controller (float switch) (III. 451/5). The pressure is monitored by a pressure sensor (III. 451/4). Uniform pressure of the liquids on the distributor bars is achieved through line connections (III. 451/6) between the tanks.

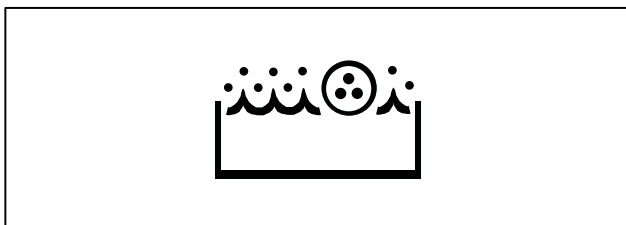


III. 452 Blanket washing fluid

The washup fluid for the inking unit washing device (III. 451/1, 454), water (III. 451/2, 453) and the washup fluid of the combined blanket/impression cylinder washing device (III. 451/3, 452) reaches the washing devices via hydraulic valves.



III. 453 Water



III. 454 Roller washup fluid

13.4.6 Tested washup fluids

The following cleaning solutions for washing devices have been tested by Heidelberger Druckmaschinen AG:

Category	Washup fluids	Manufacturer/supplier	Suitable for:
A III - Medium	Blanket washup fluid 63 E	Siegel GmbH & Co. KG D-45329 Essen	Blanket washing device Inking unit washing device
	AWC 2000	DC DruckChemie GmbH D-72199 Ammerbuch	Blanket washing device Inking unit washing device
	Böttcherin 60	Felix Böttcher GmbH & Co. D-50933 Köln	Blanket washing device
	Ronabal E	Franz Aigner Druckchemikalien A-1210 Wien	Blanket washing device Inking unit washing device
	Roto Wash 60	DS Druckerei-Service GmbH D-72766 Reutlingen	Blanket washing device Inking unit washing device
	Shellsol IC-1	Deutsche Shell Chemie GmbH D-65760 Eschborn	Blanket washing device Inking unit washing device
	Solstar 4060	Solco Offsetproducts B-9150 Kruibeke	Blanket washing device Inking unit washing device
	Solstar 4080	Solco Offsetproducts B-9150 Kruibeke	Blanket washing device Inking unit washing device
	Eurostar 65	DC DruckChemie GmbH D-72199 Ammerbuch	Blanket washing device
	Uniwash 3G 60	DC DruckChemie GmbH D-72199 Ammerbuch	Blanket washing device
	Uniwash 4G	DC DruckChemie GmbH D-72199 Ammerbuch	Blanket washing device
	Wash V60	Varn Products Company GmbH D-47877 Willich	Blanket washing device Inking unit washing device
	Böttcherin 100	Felix Böttcher GmbH & Co. D-50933 Köln	Blanket washing device Inking unit washing device

Category	Washup fluids	Manufacturer/supplier	Suitable for:
High-boiling	Novoplast	Franz Aigner Druckchemikalien A-1210 Wien	Blanket washing device Inking unit washing device
	Roto Wash 100	DS Druckerei-Service GmbH D-72766 Reutlingen	Blanket washing device Inking unit washing device
Vegetable oil derivatives	AWC 4000 = Bal-kleen Naturelle	DC DruckChemie GmbH D-72199 Ammerbuch	Blanket washing device Inking unit washing device
	Avisol VCA 375	Avis-Kranenburg C.V. NL-7300 AD Appeldoorn	Blanket washing device Inking unit washing device
	Clean Quick soft	CFM GmbH D-84453 Mühldorf	Blanket washing device Inking unit washing device
	Feboclean Bio 2K	Felix Böttcher GmbH & Co. D-50933 Köln	Blanket washing device Inking unit washing device
	Feboclean Bio 2 plus	Felix Böttcher GmbH & Co. D-50933 Köln	Blanket washing device Inking unit washing device
	Geo Wash K	DC DruckChemie GmbH D-72199 Ammerbuch	Blanket washing device Inking unit washing device
	Uniwash 5G nat. = Cleanapur	DC DruckChemie GmbH D-72199 Ammerbuch	Blanket washing device Inking unit washing device
	Vegeol CEG	Aarhus Oliefabrik A/S DK-8100 Aarhus	Blanket washing device Inking unit washing device

Table 60

The list of tested washup fluids for programme-controlled washing devices is effective from March 1996.

Attention!

Heidelberger Druckmaschinen AG does not assume liability for the composition of the washup fluid, especially in case of subsequent changes of the composition.

13.4.7 Water

Calcium formation

Only distilled or demineralized water may be used for the washing device to prevent calcification of the drop tubes.

Growth of algae

Growth of algae may be promoted through stale water; algae might clog nozzles and impair the function of the solenoid valves.

Note:

Water degerming agents should be used when filling the water tank to prevent the growth of algae in the tank and in the water tubes.

Normal, commercially available degerming agents may be used.

The following degerming agent produced by Messrs. Katadyn Produkte AG, CH-8304 Walliseilen is available from HDM:

Designation	Part no.
Micropur MT 5 Contents: 40 tablets Dosage: 1 tablet per 5 litres	00.580.4080
Micropur MT 20 Contents: 20 tablets Dosage: 1 tablet per 20 litres	00.580.3721

Table 61

Note:

Micropur MT 5 is delivered as a sample for presses with up to two printing units and Micropur MT 20 is delivered for presses with four and more printing units.

Furthermore, several other degerming agents by other manufacturers are available on the market.