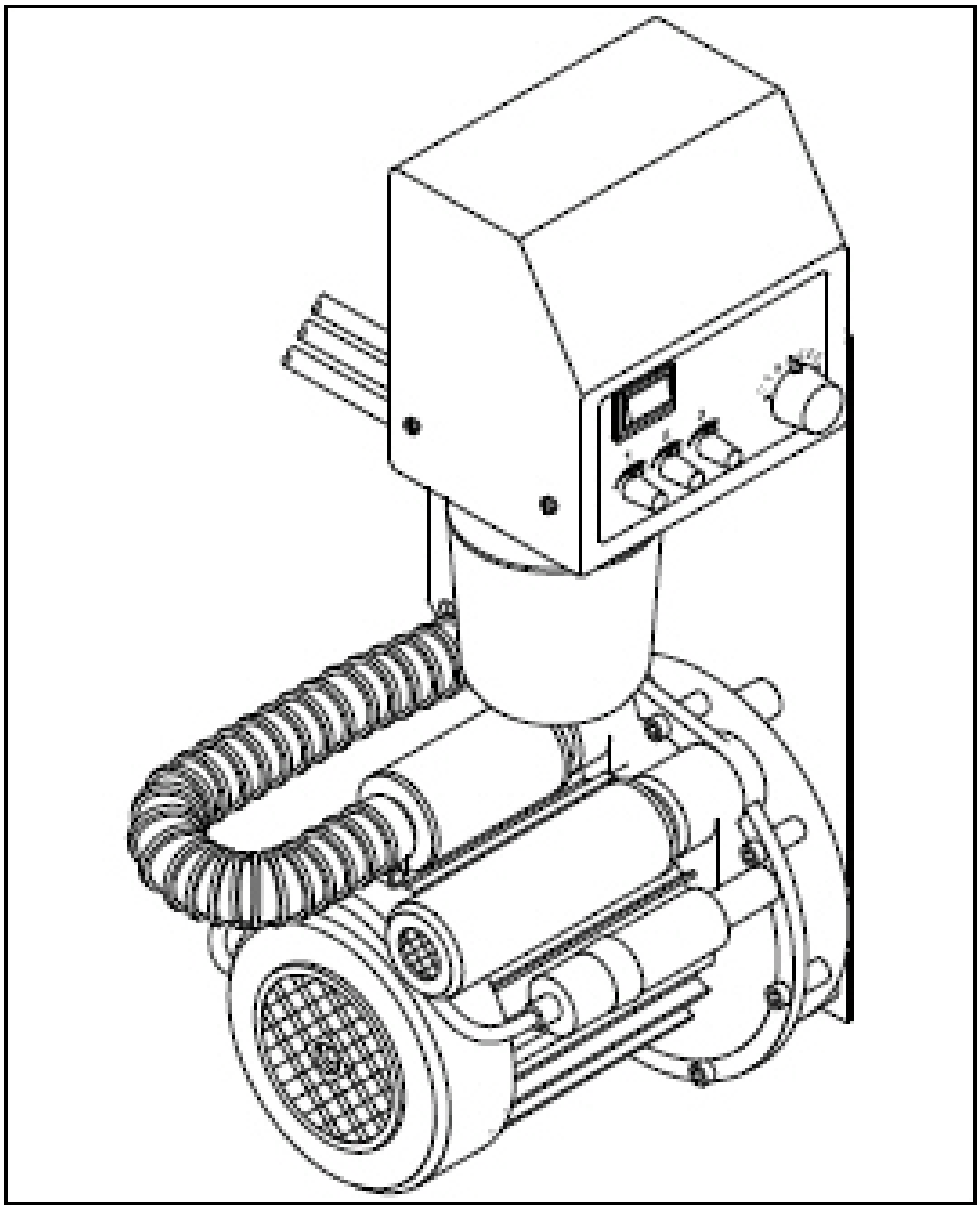
MEDIPRINT Apparatebau GmbH
Glonner Straße 31
85567 Grafing/Germany

AS-30



GB **Powder Sprayer** Service manual **22 ... 41**

HDM-Nr. A1.164.9102
1st edition 03.00

Manufacturer:

MEDIPRINT Apparatebau GmbH
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E-mail: info@mediprint.com
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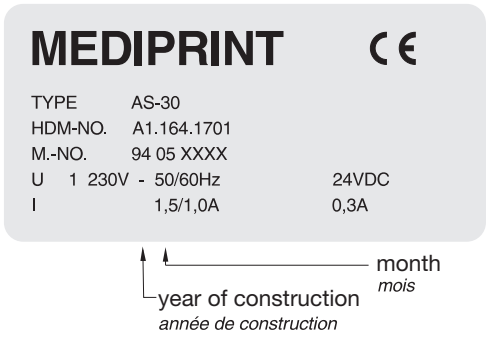
Type: AS-30

Type plate:



Electrical connection:	230 V	1.5/1.0 A	~50/60 Hz
	24 VDC	290 mA	
Total weight:	13 kg		
Noise emission:	55 dB(A)		
Maximum filling quantity (powder):	225 ml		

We reserve the right to make changes without notice!

1. Overview

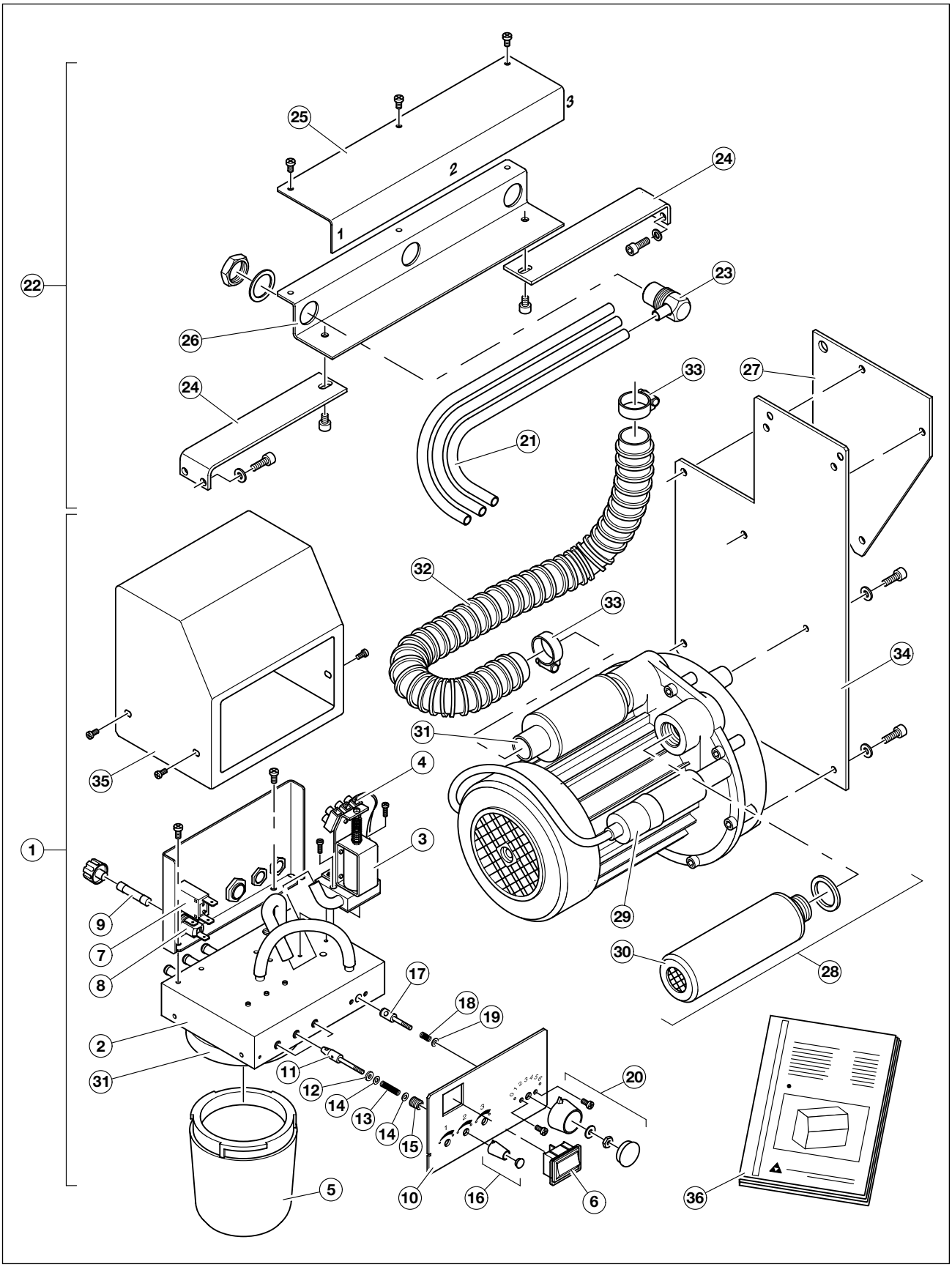


Fig. 1 Overview

2. Replacement parts

No.	Designation	Mediprint-no.	HDM-no.
①	Control unit, complete	BG 0156C	A1.164.1711
②	Distributor	BG 0617C	A1.164.1730
③	Solenoid valve, complete	BG 0514	A4.164.1710
④	Varistor	KE 3902	22.164.1661
⑤	Powder glass, complete	BG 1506A	22.164.1761
⑥	Switch with protective cap	BG 3403	22.164.1781
⑦	Motor protection switch	KE 2602	22.164.1651
⑧	Fuse carrier	KE 2801A	A1.164.1716
⑨	Fine-wire fuse M6.3A/500 V	KE 2701	00.780.2016
⑩	Front plate	BG 3716A	G2.164.1721
⑪	Valve head (part powder quantity)	BG 1902	22.164.1791
⑫	Felt washer	KM 0221	A4.164.1791
⑬	Pressure spring (part powder quantity)	KM 1717	22.164.1712
⑭	Metal washer	KM 0413	22.164.1762
⑮	Screw fitting (part powder quantity)	FM 2901	22.164.1772
⑯	Rotary knob, small	BG 3902	22.164.1763
⑰	Valve (mixture control unit)	EBG 1411A	A4.164.1733
⑱	Pressure spring (mixture control unit)	KM 1708	22.023.014
⑲	Compressive washer	FM 0719	22.164.1743
⑳	Rotary knob (mixture control unit)	BG 3904	22.164.1723
㉑	Powder hose Ø 7.5 x 1.5 x 1320 mm	BG 3343A	A1.164.1751
㉒	Nozzle arrangement, complete	BG 0248 A	A1.164.1731
㉓	Powder nozzle, complete	BG 1317	A1.164.1766
㉔	Bracket (AS/BS)	FM 4354	A1.164.1736
㉕	Covering plate	FM 0167	A1.164.1746
㉖	Elbow (nozzle support)	FM 3520	A4.164.1761
㉗	Machine plate	BG 0945F3A	A1.164.1781
㉘	Blower, complete	BG 0414 A	22.164.1611
㉙	Condenser	KE 1903	22.164.1621
㉚	Sound damper, suction side	BG 4603F1	22.023.004
㉛	Sound damper, pressure side	BG 4602F1	A1.164.1771
㉜	Blower air hose Ø 20 x 450 mm	BG 3354 B	G2.164.1771
㉝	Hose clamp 32C6	KM 2502	00.530.0486
㉞	Blower plate	BG 0943F3	A1.164.1786
㉟	Plate cover	BG 2427 F3	–
㊱	Service manual	TB 2202	A1.164.9102
㊲	Instruction manual		A1.164.9101

▶ Note

In order to **ensure** the **correct** replacement part ordering and supply, the following information must be provided:

- Machine no. of the affected printing machine
- Part designation with HDM number
- The type designation, the make and the machine no. of the powder sprayer

Example:

For machine: AS 952 118

1 Powder glass, complete
HDM-no.: 22.164.1761
for powder sprayer AS-30
Mediaprint machine no.: 9405 3542
(see type plate)

Service manual AS-30

3. Please note!

3.1 User notes on the documentation

Important notes which must be complied with are emphasised in the instructions as follows:

Warning notice

Warning – <general danger>

This safety note warns you about potentially dangerous situations.

Non-compliance could lead to severe injuries. In extreme circumstances to loss of life!

In addition, machines and auxiliary equipment could be severely damaged.

Caution notice

Caution – <brief description of the danger>

This safety note warns you about potentially dangerous situations.

Non-compliance could lead to damage to machines and auxiliary equipment.

General notice

▶ Note

Test instruction/control instruction/chapter note or note regarding supplementary documents.

This note gives you additional information and tips regarding use when operating the printing machines and their auxiliary equipment.

Handling instruction

❶ Execute instruction.

Supplementary explanation of the necessary operating steps.

3.2 Use in accordance with the regulations

- The powder unit is supplied ready-assembled for use as auxiliary equipment to the Heidelberg printing machine Quickmaster QM46. The attachment of the powder unit to another type of printing machine is not permitted.
  It serves:
  1. for powdering of the printed paper sheets in order to prevent their adhesion,
  2. as a stacking aid for the printed sheets.
- The unit may only be used in accordance with the specifications of these instructions. Any other type of use can lead to personal injury and damage to property.

3.3 Safety notes

3.3.1 General notes

- The operating instructions must be completely read and all notes taken into consideration before the installation and commissioning of the unit.

3.3.2 Storage and transport

- In the event of temporary storage before installation the machine components must be protected against wet and damp.

3.3.3 Attachment and installation

- Electric shock from touching live parts!
- Fundamentally work on the electrical parts of the equipment may only be undertaken by qualified electricians.
- Before working on the electrical parts, disconnect the unit from the mains or switch off the master switch and secure it against being switched on.
- Check protective conductor connections regularly for faultless fastening, especially after repair work.

3.3.4 Modifications on the unit

- Only execute reconstruction or retrofit changes to the unit after approval of the manufacturer.

3.3.5 Familiarisation notes

- The unit may only be operated by trained persons. Unless expressly otherwise described, maintenance and repair work may only be undertaken by qualified service technicians.

3.3.6 Safe working

- The unit may only be operated with closed control unit housing.
- Disconnect the installation from the mains supply or switch off the master switch before opening the housing.
- When working with expendable supplies or auxiliary agents you must observe the relevant instructions for handling dangerous substances.

3.3.7 Action in the event of danger

- Stop the machine and secure it against being switched on.

3.3.8 Stipulations and regulations

- You must comply with the relevant national ordinances as well as safety, accident and environmental protection regulations. In addition, you must observe the safety instructions of the manufacturer of the printing machine.

4. Disassembly, reassembly and electrical connection

4.1 Disassembly, reassembly

Warning – prevent inadvertent starting up of the printing machine!

When mechanical work on the machine is taking place the unwanted starting up of the printing machine can lead to severe injuries to those working on it.
Switch off the master switch of the printing machine and protect it against being switched on by others!

Caution – danger of damage to improperly laid powder hoses

When powder hoses are improperly laid, kinking can lead to interruption of powder delivery. If powder hoses touch moving parts of the printing machine, then it can lead to chafing of the hose wall or tearing of the hose.
For this reason always lay powder hoses free of kinks and at a suitable distance from moving parts of the printing machine.

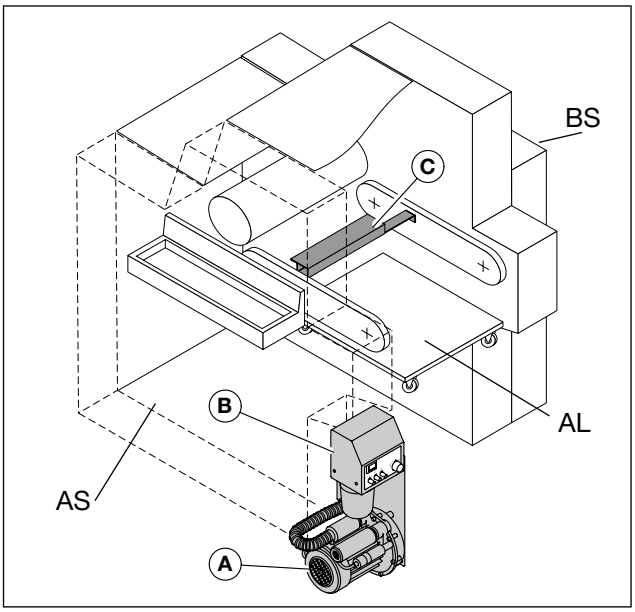


Fig. 2 Arrangement of the components

4.1.1 Arrangement of the components

Ⓐ Blower
Ⓑ Control unit
Ⓒ Nozzle arrangement
AS: Drive side
BS: Operating side
AL: Starting position

4.1.2 Disassemble blower Ⓐ and reassemble

Warning – live connections!

When working on live connections there is an increased danger to life from electric shock. When working on the electrical parts the unit must be switched free from electric current and protected against inadvertent switching on.

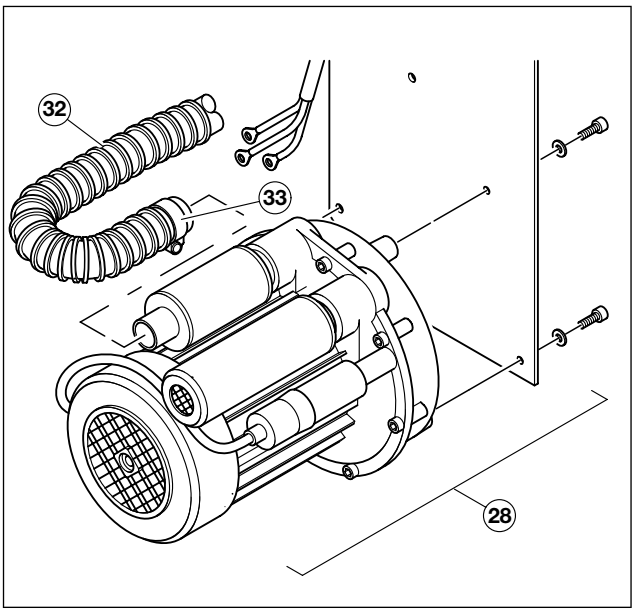


Fig. 3 Disassembly and reassembly of blower

1. Open connection socket on the blower motor.
2. Undo wires of the cable connection to the control unit.
3. Open the cable clamp at the connection socket and draw out the released wires.

   ▶ Note

   When reassembling pay attention to the circuit diagram on page 32!

4. Open hose clamp ㉝ and draw off blower air hose ㉜ from the connection piece.
5. Dismantle blower motor ㉘ from the retaining plate.
6. Reassemble in reverse order of disassembly.

4.1.3 Disassemble, reassemble control unit Ⓑ

Warning – live connections!

When working on live connections there is an increased danger to life from electric shock. When working on the electrical parts the unit must be switched free from electric current and protected against inadvertent switching on.

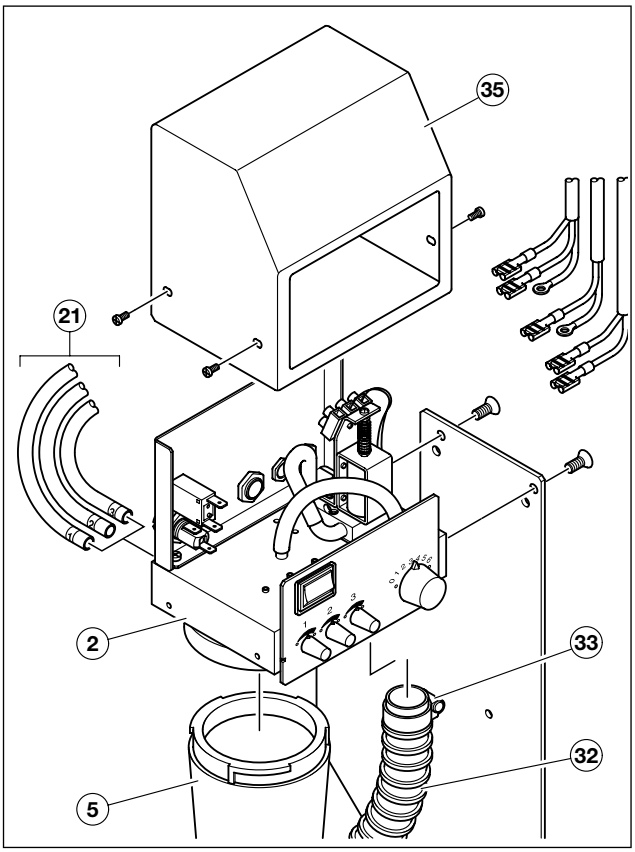


Fig. 4 Disassemble, reassemble control unit

1. Disassemble sheet metal cover ㉟.
2. Draw off the powder hoses ㉑ from the connection pieces at the rear of the distributor ②.

   ▶ Note

   When reassembling the markings of powder nozzle ㉓, powder hose ㉑ and nozzle valve head ⑯ must match (see Fig. 1/Page 23).

3. Take off powder glass ⑤.
4. Open hose clamp ㉝ and draw off blower air hose ㉜ from the connecting piece.
5. Undo the wires of the cable connections to the blower motor, to the timing control and to the power supply in the control unit.

   ▶ Note

   When reassembling pay attention to the circuit diagram on page 32!

6. Mark the arrangement of the cable and the cable conduits on the rear side of the control unit.
7. Open the cable conduits on the rear side of the control unit and draw out the released cables.
8. Dismantle distributor ② from the retaining plate.
9. Reassemble in reverse order of disassembly.

4.1.4 Disassemble, reassemble nozzle arrangement Ⓒ

Warning – prevent inadvertent starting up of the printing machine!

When mechanical work on the machine is taking place the unwanted starting up of the printing machine can lead to severe injuries to those working on it.
Switch off the master switch of the printing machine and protect it against being switched on by others!

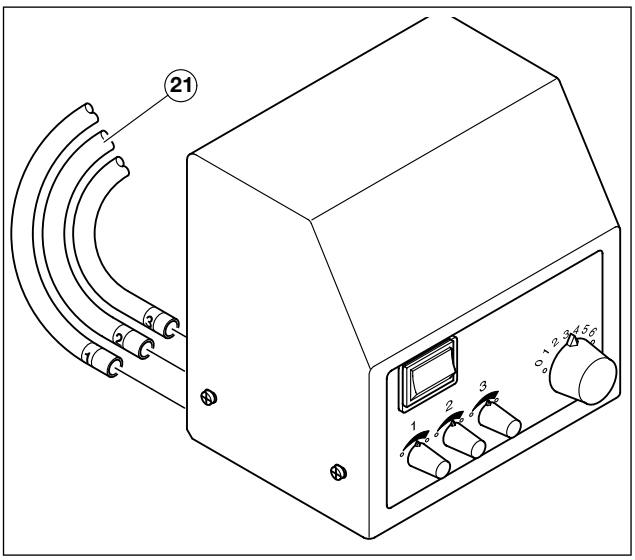


Fig. 5 Draw off powder hoses

1. Draw off the powder hoses (21) from the connection pieces at the rear of the control unit.

   ▶ Note

   When reassembling the markings of powder nozzle (23), powder hose (21) and nozzle valve head (16) must match (see Fig. 1/Page 23).

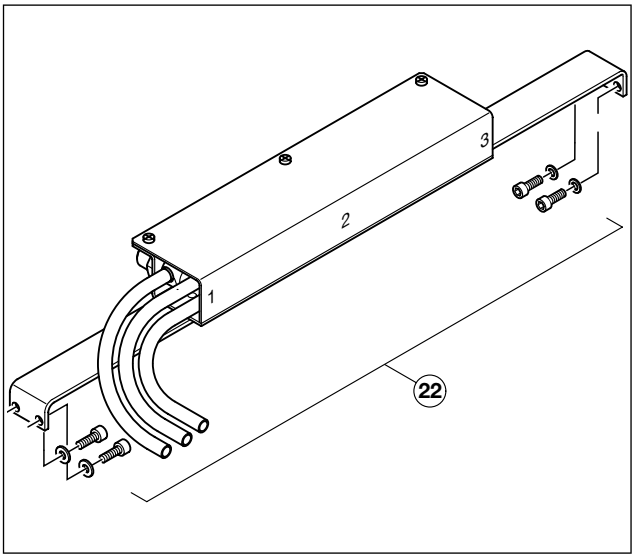


Fig. 6 Reassemble, disassemble nozzle arrangement

2. Unscrew the four screws M6x16 on the brackets of the nozzle arrangement (22) and completely take off the nozzle assembly.
3. Reassemble in the reverse order.

4.2 Electrical connection

4.2.1 Circuit diagram

Warning – live connections!

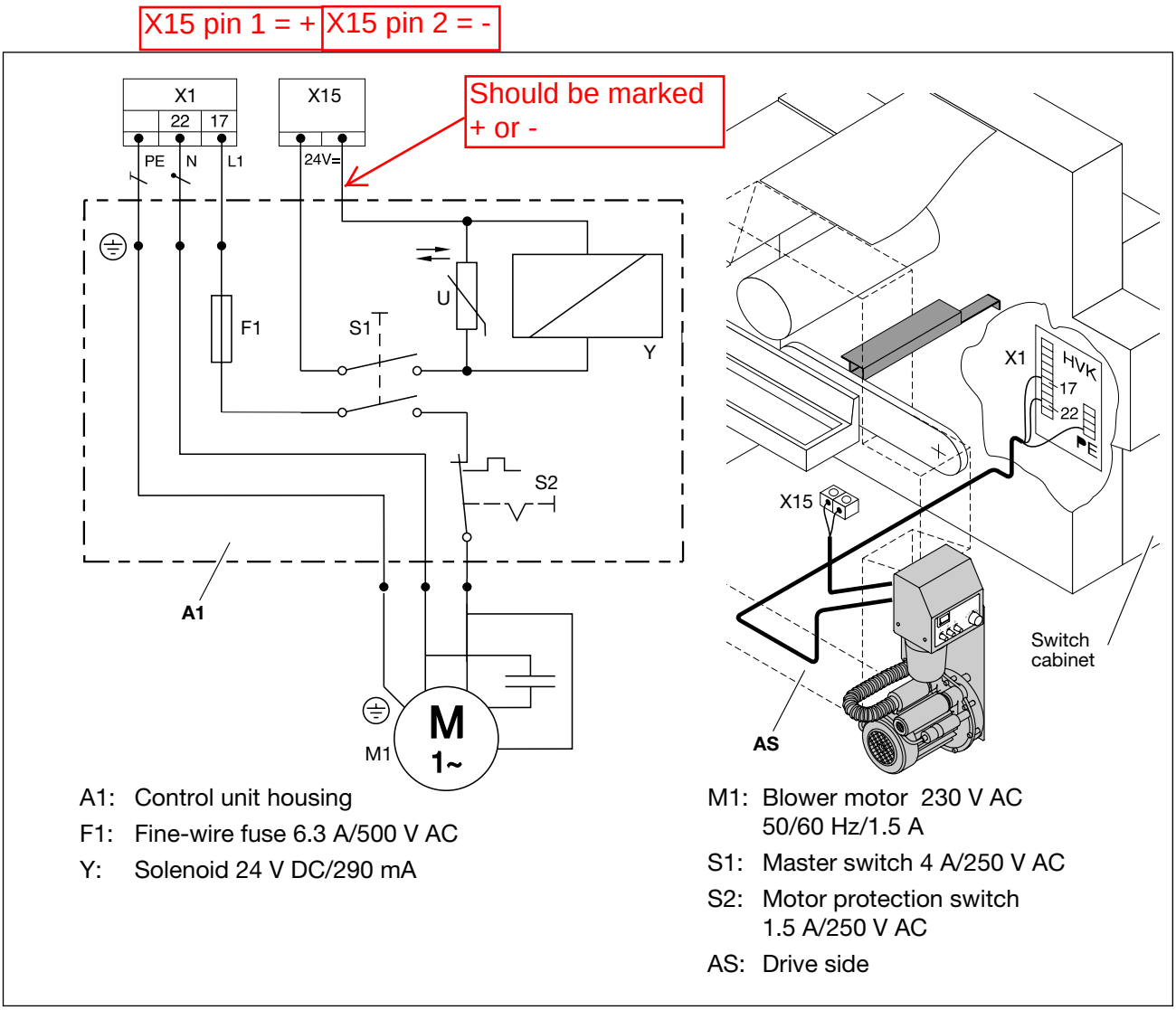
When working on live connections there is an increased danger to life from electric shock. When working on the electrical parts the unit and all live components of the printing machine must be switched free from electric current and protected against inadvertent switching on.

Caution – wrong rotation direction of the blower motor

The blower motor turns anticlockwise. If the connections to the power supply are transposed the rotation direction of the motor changes. When disconnecting the terminals on the blower motor mark them appropriately and do not transpose them when fitting again.

▶ Note

See also the service manual of the printing machine.



A1: Control unit housing
F1: Fine-wire fuse 6.3 A/500 V AC
Y: Solenoid 24 V DC/290 mA

M1: Blower motor 230 V AC 50/60 Hz/1.5 A
S1: Master switch 4 A/250 V AC
S2: Motor protection switch 1.5 A/250 V AC
AS: Drive side

Fig. 7 Circuit diagram

5. Maintenance and replacement

5.1 Clean the air filter grill in the sound damper on the suction side ㉚ every month

Clean the protective grill if there is diminished powder output or visible contamination.

Caution – danger of damage from sucked-in parts

When operating the unit without air filter, parts can be sucked in and damage the blower wheel or the blower motor.
Never operate the unit without air filter.

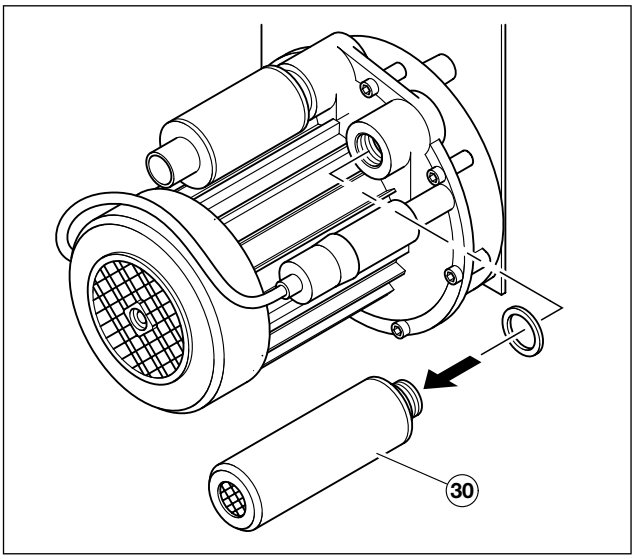


Fig. 8 Clean air filter grill

1. Unscrew sound damper ㉚.
2. Blow out the sound damper from the air outlet by means of compressed air (see arrow, Fig. 8).
3. Screw on sound damper again.

Warning – danger of injury when handling compressed air!

Ensure responsible handling of the compressed air pistol. There is a considerable danger of injury if the compressed air pistol is improperly handled.
When blowing out with compressed air detached solid bodies or whirled-up powder dust can cause eye injuries.
Always wear protective goggles when cleaning the powder hoses.

Warning – danger to health by inhaling powder dust!

The inhalation of airborne particles can endanger your health.
When cleaning the powder hoses always wear a dust protection mask.

Caution – clogging of powder nozzles and powder channels by oily or fat-containing substances

When using “oily” compressed air lumping of the powder can occur and in this way can lead to clogging of the powder nozzles and powder channels in the unit. If the end of a powder hose comes into contact with fatty substances, powder deposits can lead to clogging of the hose.
Therefore for blowing out powder channels always use compressed air from oil-free systems.
When hose ends are contaminated by fat-containing substances shorten them by 10–15 mm.

5.2 Clean powder channels weekly

When there is irregular powder output clean the powder channels.
In the case of frequent use blow out the powder hoses weekly.

▶ Note

All part designations on this page refer to Fig. 1/Page 23.

1. Draw off powder hoses (21) and blower air hose (32) at the distributor (2).
2. Fully open the nozzle valve heads (16) and mixture control unit (20).
3. Take off powder glass (5).
4. Blow out the holes on the underside and hose connection on the rear side of the distributor (2) with compressed air.
5. Blow out powder hoses (21) with compressed air.
6. Replace defective powder hoses.
7. Only clean powder nozzle slot with plastic or wood stick, then blow out with compressed air.
8. Fit back powder hoses (21), blower air hose (32), and powder glass (5).

▶ Note

Powder hoses must be laid free of kinks and safe from contact with moving parts.

▶ Note

The markings of powder nozzle (23), powder hose (21) and nozzle valve head (16) must match.

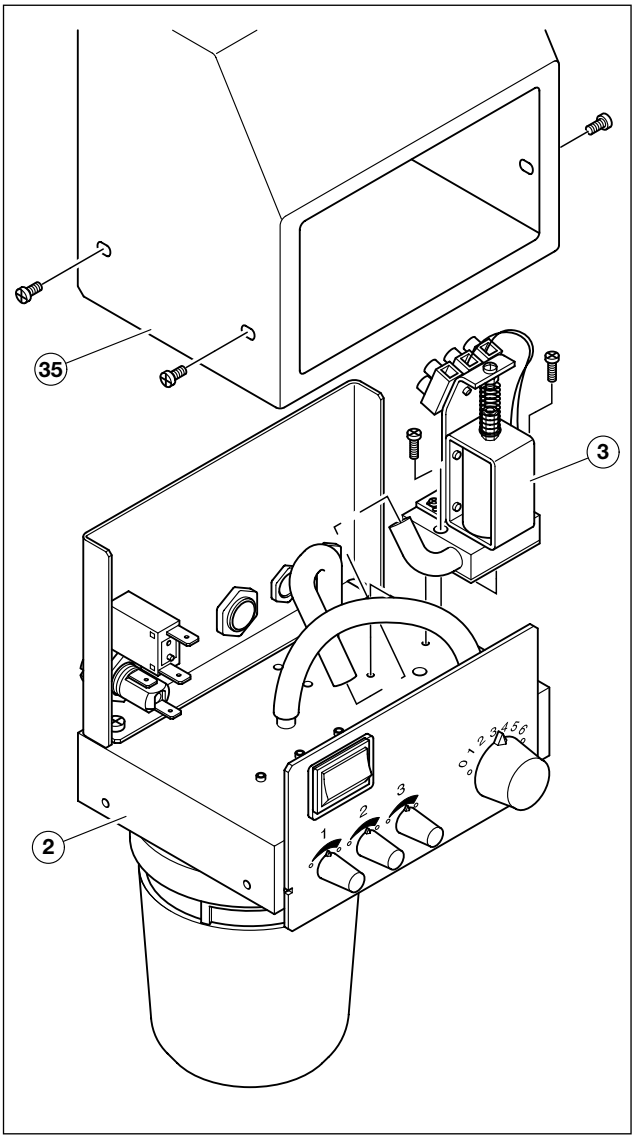


Fig. 9 Disassemble solenoid valve

5.3 Disassemble, reassemble solenoid valve

Warning – live connections!

When working on live connections there is an increased danger to life from electric shock. When working on the electrical parts the unit and all live components of the printing machine must be switched free from electric current and protected against inadvertent switching on.
Set the master switch on the switch cabinet to position “0”.

1. Switch the installation free of current.
2. Dismantle the sheet-metal covering ㉟.
3. Mark the connection lines to the timed control and to the master switch and separate at the lustre terminals on the solenoid valve ③.
4. Draw off the air hose from the distributor ② to the base of the solenoid valve ③.

Caution – the solenoid valve can only be positioned on the base by the manufacturer

If the solenoid valve is disassembled without base then the manufacturer's installation positioning of the powder sprayer must be made.
Do not undo the screws on the rear side of the solenoid valve. Only disassemble the solenoid valve together with the base.

5. Undo the screws at the base of the solenoid valve ③ and completely take off the solenoid valve.
6. Reassemble in the reverse order of disassembly.

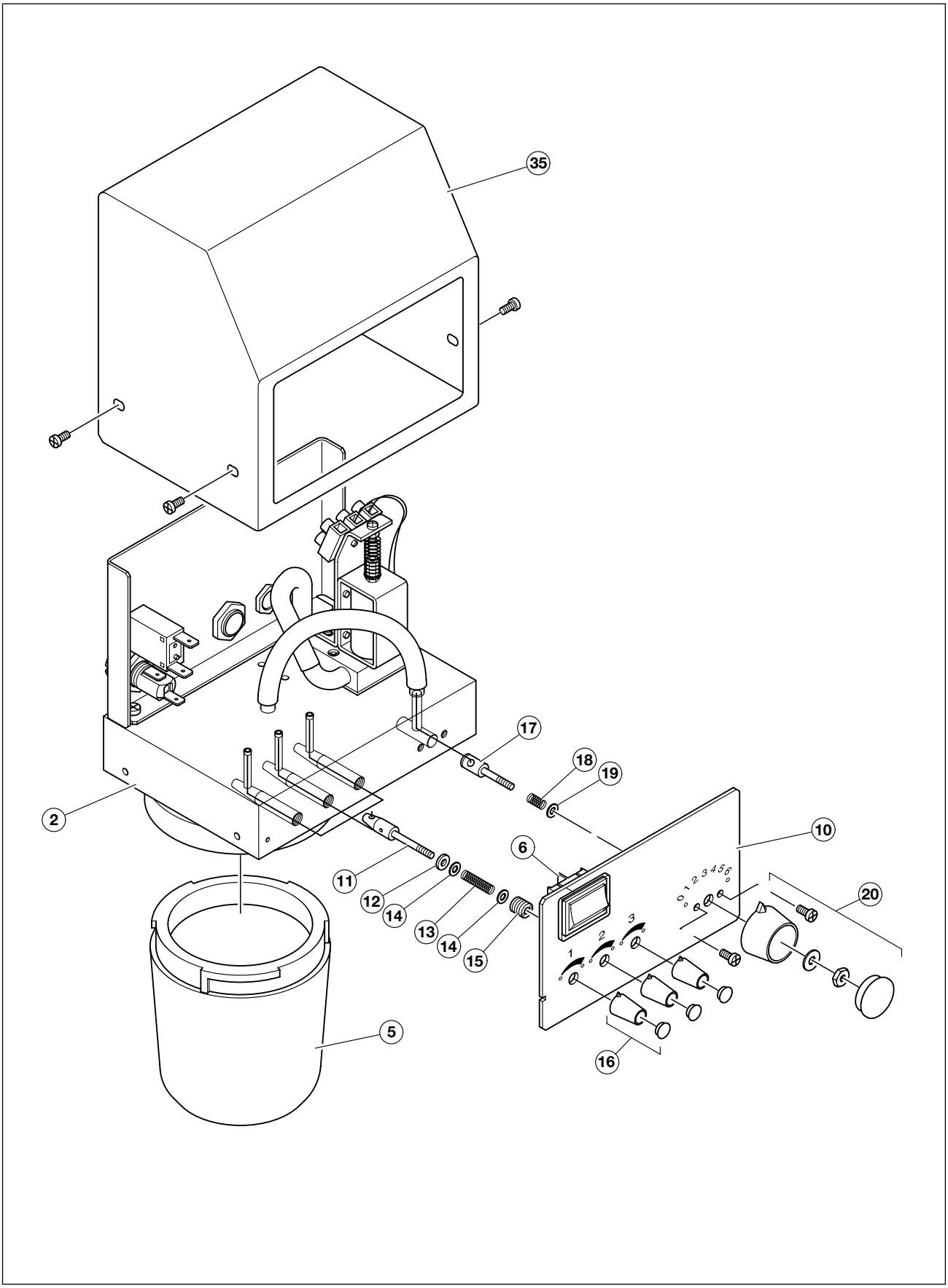


Fig. 10 Disassemble and reassemble valves

Warning – danger of injury from whirled-up solid particles!

Ensure responsible handling of the compressed air pistol. There is a considerable danger of injury if the compressed air pistol is improperly handled.
When blowing out with compressed air detached solid bodies or whirled-up powder dust can cause eye injuries.
Always wear protective goggles when cleaning the powder hoses.

Warning – danger to health by inhaling powder dust!

The inhalation of airborne particles can endanger your health.
When cleaning the powder hoses always wear a dust protection mask.

Caution – clogging of powder nozzles and powder channels by oily or fat-containing substances

When using “oily” compressed air lumping of the powder can occur and in this way can lead to clogging of the powder nozzles and powder channels in the unit. If the end of a powder hose comes into contact with fatty substances, powder deposits can lead to clogging of the hose.
Therefore for blowing out powder channels always use compressed air from oil-free systems.
When hose ends are contaminated by fat-containing substances shorten them by 10–15 mm.

5.4 Disassemble, reassemble valves

1. Disassemble control unit Ⓑ (see Page 30).
2. Disassemble sheet metal cover ㉟.
3. Draw off plug connection at the switch ⑥.
4. Lever off the cover caps of the rotary knobs ⑯ and ⑳.
5. Undo locking screws and draw off rotary knobs ⑯.
6. Unscrew hexagonal nut, remove washer and draw off rotary knob ⑳.
7. Dismount front plate ⑩.
8. Mark the position and arrangement of the valve head ⑪.

   ▶ Note

   The valve heads must not be reinstalled rotated by 180°. The valve heads must be installed again in the same seating as they were disassembled from.

9. Unscrew the threaded connection ⑮ and draw out the valve heads together with washers ⑫, ⑭ and the springs ⑬.

   ▶ Note

   When reinstalling pay attention to the markings made.

10. Draw out mixture control valve ⑰ together with spring ⑱ and washers ⑭, ⑲n.
11. Take off powder glass ⑤.
12. Blow out all components with compressed air and blow out all holes.
13. For reassembly repeat working steps 10 to 7 in reverse order.
14. Bring the holes in the valve heads ⑪ into line with the holes in the underside of the distributor ② in order that a bit Ø 3 mm sticks in.

    ▶ Note

    From the underside of the distributor look into the holes and turn the valve head until the holes align.

(Working steps 15 to 22 on the next page)

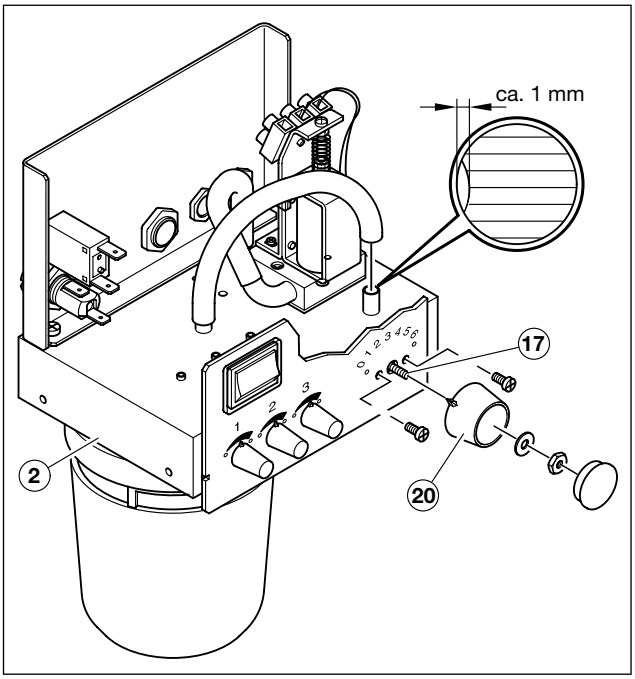


Fig. 11 Adjustment of mixture control valve

Continued: **5.4 Disassemble, reassemble valves**

15. Push the rotary knobs ⑯ on the outlined valve head ⑪ into the maximum position and screw tight (0.5 mm distance to the front plate) (see Fig. 10/Page 36).
16. Take out bit.
17. Draw off the air hose from the connection piece of the mixture control valve ⑰.
18. Turn the mixture control valve in such a way that the start of the curve is approx. 1 mm from left edge of the hole in the distributor ② (see Fig. 11).

▶ Note

Illuminate the hole in the distributor with a torch.

19. Fit rotary knob ⑳ in position “1”, put on washer and tighten the hexagonal nut (0.5 mm distance to the front plate).

▶ Note

Check once again the position of the mixture control valve.

20. Execute working steps 4 to 1 in the reverse order (see Page 37).
21. Insert powder glass ⑤.
22. Check the correct setting of the mixture control valve ⑰ by a test run.

6. Clearance of malfunctions

Possible cause	Fault clearance	Note
1. Blower motor does not run		
1.1 Unit fuse (9) defective	• Change unit fuse, check electrical connections	• Page 32
1.2 Motor protection switch (7) triggered on printing machine	• Check electrical connections • Press motor protection switch	• Service manual of the printing machine
1.3 Cable break	• Check electrical connections	• Page 32
1.4 Blower motor defective	• Replace blower	• Page 29
2. Cycling of the blowing air no longer audible		
2.1 Solenoid valve (3) defective	• Replace solenoid valve	• Page 35
2.2 Cable break	• Check electrical connections	• Page 32
2.3 Cycle control of printing machine defective	• Check cycle control	• Service manual of the printing machine
3. Powder quantity at the powder nozzles can no longer be metered		
3.1 Powder channels blocked	• Clean powder channels	• Page 34
3.2 Powder hoses (21) defective	• Replace defective powder hoses	• Page 34
3.3 Valves blocked	• Dismantle and blow out valves	
4. Powdering air stream too weak		
4.1 Air filter blocked	• Clean/replace air filter	• Page 33
4.2 Powder channels blocked	• Clean powder channels	• Page 34
4.3 Blower air hose (32),powder hoses (21) leaky or defective	• Clear leakages; replace defective hoses	• Page 34
4.4 Valves blocked	• Dismantle and blow out valves	• Page 35

▶ Note

The part designations given here refer to fig. 1/page 23.

7. Index