M-TYPE CLASSIC
M-TYPE PREMIUM

Additional Instructions

Electropneumatic needle cooling
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1 General information

1.1 Needle cooling at the top

Components of the kit
Check whether the scope of delivery for kit 0867 590014 is correct prior to installation.

<table>
<thead>
<tr>
<th>Part number</th>
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<th>Description</th>
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<tr>
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<td>Block</td>
</tr>
<tr>
<td>Z132 001452</td>
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<td>Blow tube</td>
</tr>
<tr>
<td>0699 979265</td>
<td>1</td>
<td>Hose</td>
</tr>
<tr>
<td>9790 000220</td>
<td>1</td>
<td>Plug nipple</td>
</tr>
<tr>
<td>9731 005004</td>
<td>1</td>
<td>Hose</td>
</tr>
<tr>
<td>9710 920012</td>
<td>1</td>
<td>Throttle valve</td>
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<tr>
<td>9710 061200</td>
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<td>Magnet valve</td>
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<td>9710 982003</td>
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<td>Silencer</td>
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<td>9204 200517</td>
<td>2</td>
<td>Pan-head screw</td>
</tr>
<tr>
<td>9870 367003</td>
<td>1</td>
<td>Cable K</td>
</tr>
<tr>
<td>9710 900031</td>
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<td>2</td>
<td>Cylinder-head bolt</td>
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<tr>
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<td>1</td>
<td>Cylinder-head bolt</td>
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<td>9840 121001</td>
<td>5</td>
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<tr>
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<td>0798 120401</td>
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<tr>
<td>0791 867715 EN</td>
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<td>Additional Instructions</td>
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</table>
1.2 Needle cooling at the bottom

Components of the kit
Check whether the scope of delivery for kit 0867 590024 is correct prior to installation.

<table>
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<th>Description</th>
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<td>Hose</td>
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<td>0999 240394</td>
<td>1</td>
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<td>Throttle valve</td>
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<td>9710 900031</td>
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<td>Connection plate</td>
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<td>Cylinder-head bolt</td>
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<tr>
<td>9204 200517</td>
<td>2</td>
<td>Pan-head screw</td>
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<tr>
<td>9710 061200</td>
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<td>Magnet valve</td>
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<tr>
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<td>Cylinder-head bolt</td>
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<tr>
<td>9710 982003</td>
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<td>Silencer</td>
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<tr>
<td>9840 121002</td>
<td>5</td>
<td>Cable tie</td>
</tr>
<tr>
<td>0791 867715 EN</td>
<td>1</td>
<td>Additional Instructions</td>
</tr>
</tbody>
</table>

Information
If you wish to connect the needle cooling at the bottom to a PREMIUM machine with short thread cutter, you will need the kit with the part number 0867 590054.
1.3 Kits for M-TYPE PREMIUM

Important

Machines of the M-TYPE PREMIUM class are not equipped with compressed air. If you want to connect the electropneumatic needle cooling to a PREMIUM machine, you will need the following additional kits (see Parts List):

- **9780 000108**: Compressed air maintenance unit
- **0867 593534**: pneumatic connection PREMIUM
- **0797 003031**: Pressure line K
2 M-TYPE CLASSIC: Assembling the needle cooling at the top

**WARNING**

Risk of injury from sharp and moving parts!
Puncture or crushing possible.
Switch off the machine before assembling the needle cooling.

Fig. 1: Assembling the needle cooling at the top (1)

To assemble the needle cooling at the top:

1. Disassemble the feeding foot (3).
2. Slip the block (5) onto the feeding foot bar.
3. Tighten the block (5) using the screw (4).
4. Tighten and align the blow tube (2) with the screw (1).
5. Assemble the feeding foot (3).
6. Connect hoses (6) and (8) using the plug nipple (7).
7. Lay the hose (6) through the machine arm.
8. Remove the valve cover.

9. Connect the magnet valve (10) at connector strip X22:
   - Contact 5 (NK)
   - Contact 7 or contact 8 (+24 V)
10. Connect the hose (9) to the pneumatic system.
3 M-TYPE CLASSIC: Assembling the needle cooling at the bottom

**WARNING**

Risk of injury from sharp and moving parts! Puncture or crushing possible.

Switch off the machine before assembling the needle cooling.

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**Fig. 4: Assembling the needle cooling at the bottom (1)**

To assemble the needle cooling at the bottom:

1. Disassemble the old feed dog.
2. Assemble the new feed dog (1).
3. Connect hoses (2) and (4) using the plug nipple (3).
4. Lay the hose (4) below the machine.

5. Connect the magnet valve (6) at connector strip X22:
   - Contact 5 (NK)
   - Contact 7 or contact 8 (+24 V)

6. Connect the hose (5) to the pneumatic system.
4 M-TYPE PREMIUM: Assembling the needle cooling at the top

**WARNING**

Risk of injury from sharp and moving parts!
Puncture or crushing possible.
Switch off the machine before assembling the needle cooling.

To assemble the needle cooling at the top:

1. Remove the motor cover.

*Fig. 7: Assembling the needle cooling at the top (1)*

2. Loosen the circuit board (1).
   To do so, push the circuit board (1) down and off the white spacers.

3. Screw the connection plate and magnet valve together.
4. Insert the magnet valve (2) into socket X16 on the circuit board (1).
   If socket X16 is already occupied, use socket X17 or socket X18.

5. Assemble the circuit board (1).

6. Tighten the connection plate (4) on the holder (3).

Fig. 9: Assembling the needle cooling at the top (3)
7. Assemble the compressed air maintenance unit (5) to the stand.
8. Use an R 1/4" hose coupling to connect the connection hose to the compressed air supply.
9. Set the operating pressure to 6 bar.
10. Connect the hose (6) to the valve (7).
11. Raise the sewing feet.
12. Disassemble the needle.
13. Disassemble the feeding foot.

Fig. 10: Assembling the needle cooling at the top (4)

14. Screw the blow tube (9) to the block (8).
15. Screw the block (8) with the blow tube (9) to the feeding foot bar.
16. Insert the needle.
17. Align the blow tube (9) with the needle so that the blow tube (9) is at the center relative to the needle eye.
18. Assemble the feeding foot.
When the presser foot is lowered, the distance A must be 26 mm.
On machines with short thread cutter the distance A must be 24 mm.

19. Remove the arm cover.
20. Connect the hose (10) to the valve (11).

21. Lay hose (10) through the machine arm and connect it with hose (12) using the plug nipple (13).

22. Shorten the hose (12) to the exact length that allows for the hose (12) to be connected to the blow tube (9).

23. Place the arm cover.

24. Place the motor cover.

25. Assemble the handwheel.
Important
PREMIUM machines require that the valve output be enabled for electro-pneumatic needle cooling via software.

**NOTICE**

**Property damage may occur!**
Defect of the stepper motor cards.
To prevent a defect of the stepper motor cards, install the correct software version or adjust the sewing foot lifting height.

The software version must be higher than **A04.30**.
If the software version is **A04.30 or lower**:

- perform a software update ([Service Instructions](#))
  OR
- limit the sewing foot lifting height to 16 mm (for short thread cutter 14 mm)

To enable the valve output via software:

1. Call up the Technician level.
   - Switch on the machine.
   - Press the **P** and **S** buttons at the same time.
   - Enter password (25483).
   - You are on the Technician level:
2. Open the submenu **User config. > Output Config** and select the parameter **T 56 00**.
3. Assign mode 1 (NeedleCooling) to the output at which the needle cooling is connected.

<table>
<thead>
<tr>
<th>Machine output signal</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>RA (X16)</td>
<td>X120B.12</td>
</tr>
<tr>
<td>STL (X17)</td>
<td>X120B.22</td>
</tr>
<tr>
<td>STL (FA) (X18)</td>
<td>X120B.23</td>
</tr>
</tbody>
</table>
5 M-TYPE PREMIUM: Assembling the needle cooling at the bottom

WARNING

Risk of injury from sharp and moving parts!
Puncture or crushing possible.

Switch off the machine before assembling the needle cooling.

To assemble the needle cooling at the bottom:

1. Remove the motor cover.

Fig. 13: Assembling the needle cooling at the bottom (1)

2. Loosen the circuit board (1).
   To do so, push the circuit board (1) down and off the white spacers.

3. Screw the connection plate and magnet valve together.

(1) - Circuit board
4. Insert the magnet valve (2) into socket X16 on the circuit board (1). If socket X16 is already occupied, use socket X17 or socket X18.

5. Assemble the circuit board (1).

6. Tighten the connection plate (4) on the holder (3).

Fig. 15: Assembling the needle cooling at the bottom (3)

(5) - Compressed air maintenance unit
(6) - Hose
(7) - Valve
7. Assemble the compressed air maintenance unit (5) to the stand.
8. Use an R 1/4" hose coupling to connect the connection hose to the compressed air supply.
9. Set the operating pressure to 6 bar.
10. Connect the hose (6) to the valve (7).
11. Open the throat plate slide.
12. Disassemble the throat plate.
13. Disassemble the feed dog.

Fig. 16: Assembling the needle cooling at the bottom (4)

14. Assemble the new feed dog (8).
15. Tilt the machine head.

Fig. 17: Assembling the needle cooling at the bottom (5)
16. Connect the hose (9) to the feed dog (8).
17. Connect hoses (9) and (10) using the plug nipple (12).
18. Lay the hose (10) below the machine using plug nipples.
19. Connect the hose (10) to the valve (11).
20. Erect the machine head.
21. Place the motor cover.
22. Assemble the handwheel.

**Important**

PREMIUM machines require that the valve output be enabled for electro-pneumatic needle cooling via software.

To enable the valve output via software:

1. Call up the Technician level.
   - Switching on the machine
   - Press the P and S buttons at the same time.
   - Enter password (25483).
   - You are on the Technician level:
2. Open the submenu *User config. > Output Config* and select the parameter T 56 00.
3. Assign mode 1 (NeedleCooling) to the output at which the needle cooling is connected.

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M-TYPE PREMIUM: Assembling the needle cooling at the bottom