DÜRKOPP ADLER

867
867-M
867-M PREMIUM

Additional Instructions

Remaining thread monitor

1 General information

The remaining thread monitor (RTM) can be used with all 1-needle and 2-needle machines equipped with a thread cutter.

1.1 Components of the kit

Check whether the scope of delivery for the kit is correct prior to installation. The different kits for the remaining thread monitor differ in some parts, which are listed separately below.

Part number	Quantity	Description
0667 155824	1	RTM carrier
0699 979265	1	Hose PUR, 0.9 m
9840 120106	3	Cable holder
9815 925002	1	Light barrier
9850 867003	1	Circuit board
9870 867003	1	Cable (RTM cable machine head)
9870 367003	1	Cable (367 valve)
0667 155840	1	Holder
9204 201667	8	Pan-head screw M4x10-H
9830 501010	4	Spacer
9710 900031	1	Connection plate
0911 000478	1	O-ring
0999 240389	1	Hose connector
9203 003097	2	Cylinder-head bolt M3x16
9204 200517	2	Pan-head screw M2x20-H
9710 061200	1	Magnet valve
0667 155930	1	Cover
9203 003157	2	Cylinder-head bolt M3x30
9710 982003	1	Silencer
9840 121002	3	Cable tie
9840 120025	2	Mounting clip
0791 867720 EN	1	Additional Instructions
Kit 0867 590104		
9202 002077	1	Cylinder-head bolt M4x10
0767 150170	3	Bobbin
0867 150240	3	Bobbin

Part number	Quantity	Description
0867150170	1	Compression spring
0570 001847	1	Blanking plug
9203 003177	2	Cylinder-head bolt M3x40
9231 000347	2	Hexagon nut
Kit 0867 590114		
0667 156014	1	Bobbin case
0667 155614	1	Bobbin case
9202 002078	1	Cylinder-head bolt M4x10
0667 150880	3	Bobbin
0867 150560	3	Bobbin
0867 150170	1	Compression spring
0570 001847	1	Blanking plug
9203 003177	2	Cylinder-head bolt M3x40
9231 000347	2	Hexagon nut
Kit 0867 590124		
9202 002077	2	Cylinder-head bolt M4x10
0767 150170	6	Bobbin
0867 150240	6	Bobbin
9790 030020	1	Y-connection
0667 155594	2	Bobbin case
0867 150170	2	Compression spring
Kit 0867 590134		
0667 156014	2	Bobbin case
0667 155614	2	Bobbin case
9202 002078	2	Cylinder-head bolt M4x10
0667 150880	6	Bobbin
0867 150560	6	Bobbin
9790 030020	1	Y-connection
0867 150170	2	Compression spring

1.2 Kits for M-TYPE PREMIUM

!

Important

Machines of the M-TYPE PREMIUM class are not equipped with compressed air. If you want to assemble the remaining thread monitor 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
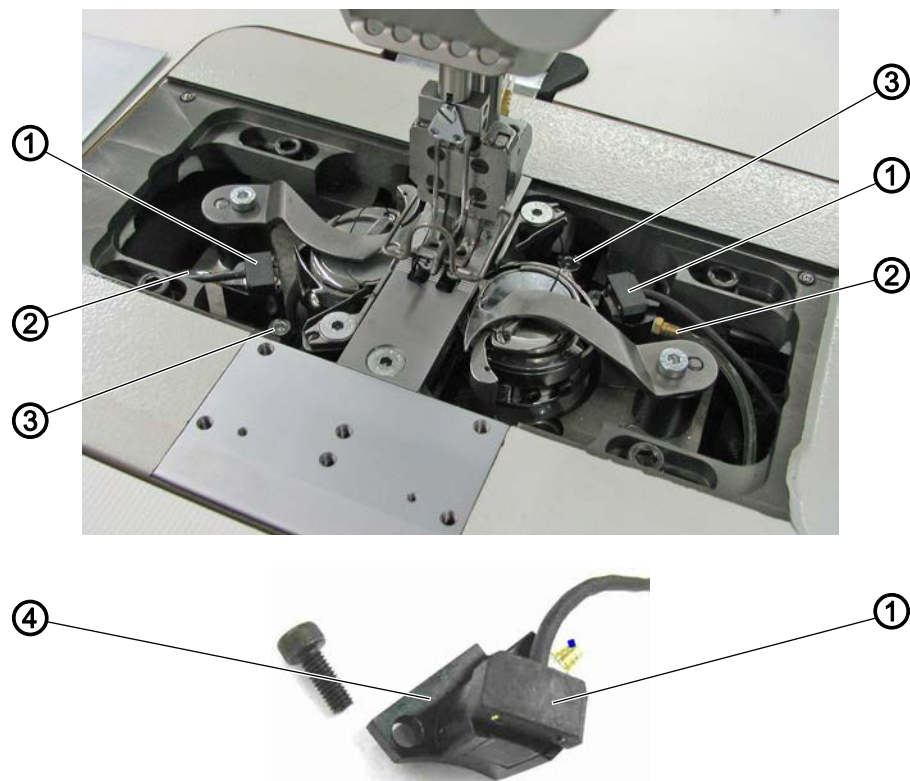
2 Assembling the remaining thread monitor

WARNING
Risk of injury from sharp and moving parts!
Puncture or crushing possible.
Switch off the machine before assembling the residual thread monitor.

2.1 Assembling the remaining thread monitor

Fig. 1: Assembling the remaining thread monitor (1)

(1) - Remaining thread monitor	(3) - Screws
(2) - Hose	(4) - Carrier

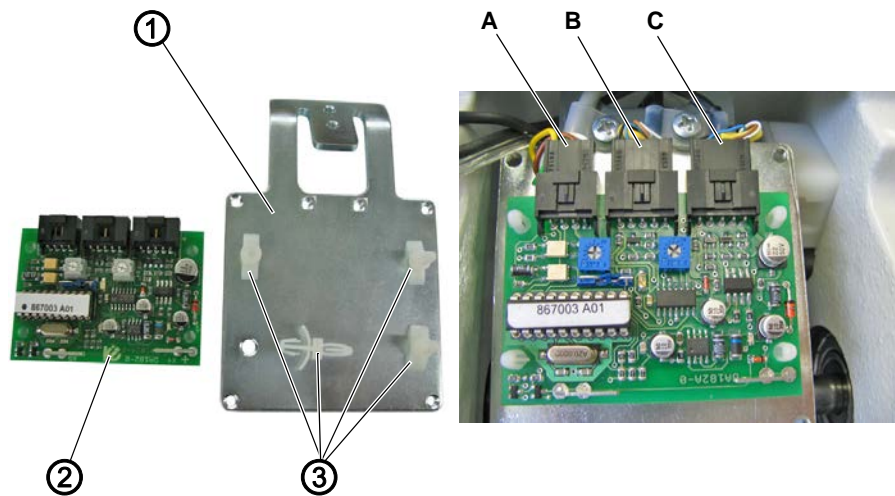To assemble the remaining thread monitor:

1. Remove old bobbin case and replace it with the new bobbin case from the kit.

2. Tighten the pre-assembled carriers (4) using the screws (3).
   As a rule, the front edge of the remaining thread monitor (1) must be assembled parallel to the front edge of the carrier (4).

3. Connect the hose (2) used for the blow-off.

4. Set the position of the remaining thread monitor (1) so that the light beam hits the reflective surface of the bobbin through the slot in the bobbin case.

2.2 Connecting the remaining thread monitor

2.2.1 Connecting the remaining thread monitor on Classic machines

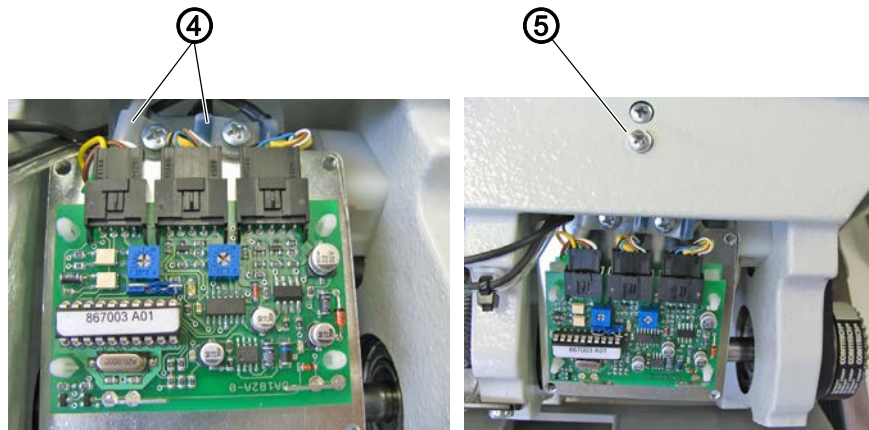*Fig. 2: Connecting the remaining thread monitor on Classic machines (1)*

(1) - Remaining thread monitor carrier plate (3) - Spacer
(2) - Circuit board

To connect the remaining thread monitor:

1. Insert spacer (3) into the holes of the remaining thread monitor carrier plate (1).
2. Attach the circuit board (2).
3. Connect the cables to the circuit board (2):
   - **A** = Valve circuit board
   - **B** = Light barrier, left needle
   - **C** = Light barrier, right needle

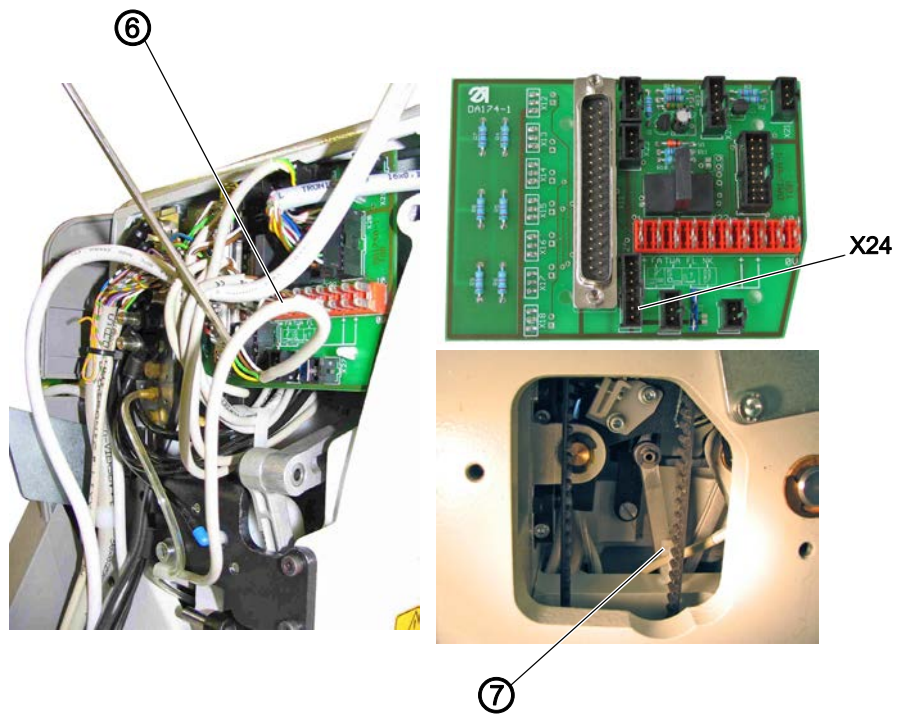*Fig. 3: Connecting the remaining thread monitor on Classic machines (2)*

(4) - Cable clamps   *(5) - Screw*

4. Fasten the cables with the cable clamps (4) to the base plate of the remaining thread monitor control.

5. Screw the remaining thread monitor carrier plate (1) with the circuit board (2) into the base plate using the screws (5).

Fig. 4: Connecting the remaining thread monitor on Classic machines (3)

X24

(6) - Cable   *(7) - Cable holder*

6. Route the cable (6) through the cable holder (7) in the machine arm: from the remaining thread monitor control to the valve circuit board.

7. Connect the cable (6) to plug connection **X24** of the valve circuit board.

8. Guide the cables of the remaining thread monitors through the holes in the base plate and fix them to the existing cables with cable tie.

9. Roll up the remaining thread monitor cables that are too long and fix them to the base plate of the remaining thread monitor control with cable ties.

Fig. 5: Connecting the remaining thread monitor on Classic machines (4)
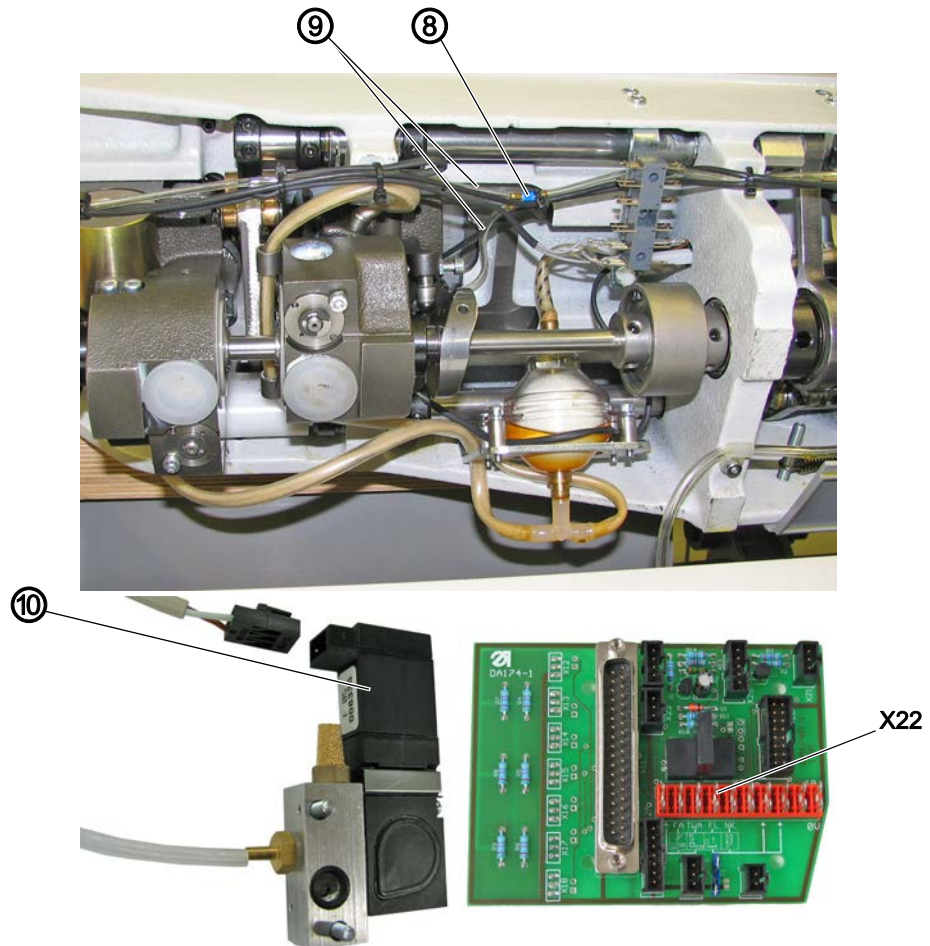
(8) - Y-connection   (10) - Valve
(9) - Hoses

10. Assemble the valve (10).
    Ensure that the sealing washer is in the correct position when doing this.

11. Disassemble the valve unit.

12. Screw the valve (10) to the valve rail.

13. Assemble the valve unit.

14. Connect the hoses (9) of the remaining thread monitor to the valve.
    With right AND left remaining thread monitor: Connect hoses (9)
    to Y-connection (8).

15. Assemble hoses and cables with clips to the oil return line and to the knee lever shaft.

16. Connect the magnet valve electrically to the valve circuit board.

    • X22, PIN 1/7/8 (+) and PIN4 (FL)

    OR

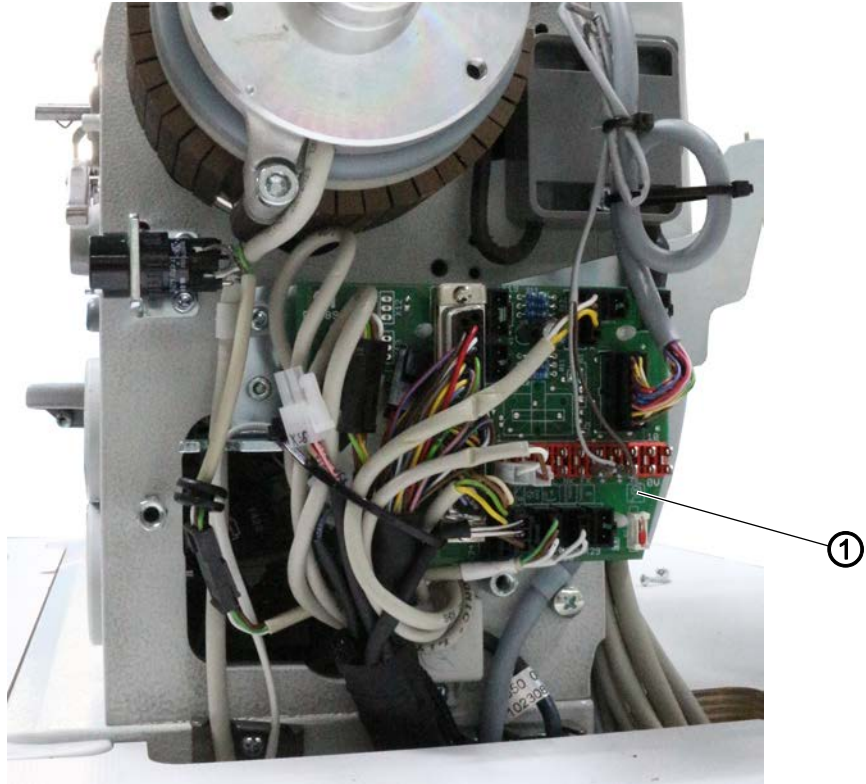   • X22, PIN 1/7/8 (+) and PIN2 (FA)

2.2.2 Connecting the remaining thread monitor on PREMIUM machines

To connect the remaining thread monitor:

• For **XXX PREMIUM** machines: Remove the valve cover

• For **XXX-M PREMIUM** machines: Remove the motor cover

Fig. 6: Connecting the remaining thread monitor on PREMIUM machines (1)
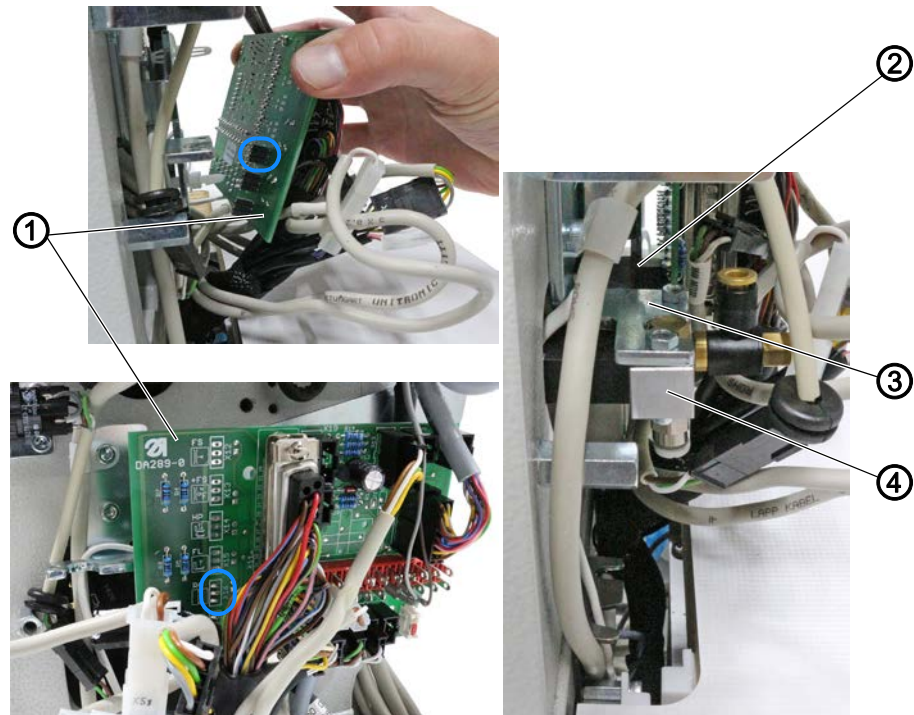

(1)   - Circuit board

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

2. Screw the connection plate and magnet valve together.

Fig. 7: Connecting the remaining thread monitor on PREMIUM machines (2)

(1)	*- Circuit board*	*(3)*	*- Holder*
(2)	*- Magnet valve*	*(4)*	*- Connection plate*

3. 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.

4. Assemble the circuit board (1).

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

Fig. 8: Connecting the remaining thread monitor on PREMIUM machines (3)
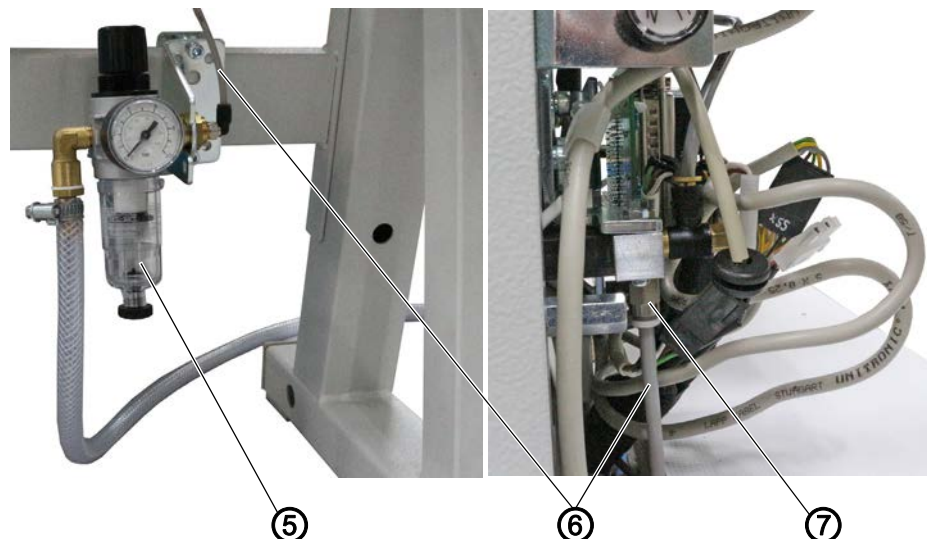
(5)	*- Compressed air maintenance unit*	*(7)*	*- Valve*
(6)	*- Hose*		

6. Assemble the compressed air maintenance unit (5) to the stand.

7. Use an R 1/4" hose coupling to connect the connection hose to the compressed air supply.

8. Set the operating pressure to 6 bar.

9. Connect the hose (6) to the valve (7).

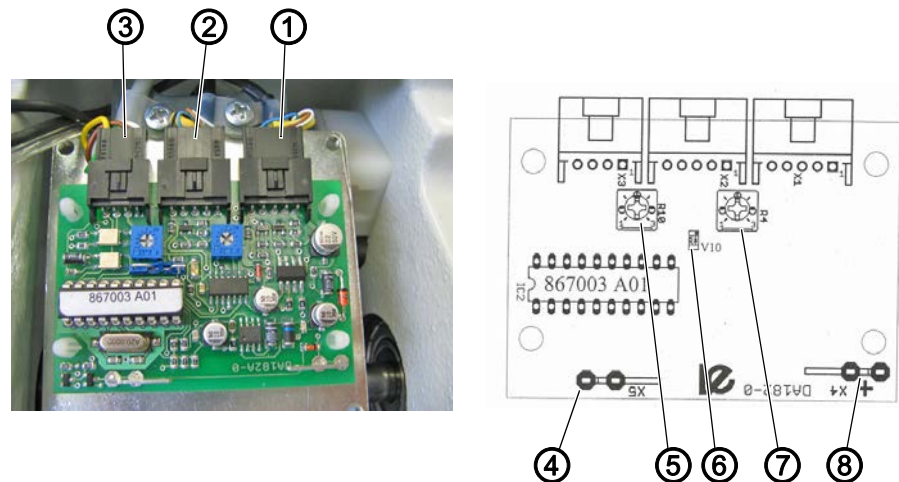## 2.3 Setting the remaining thread monitor electrically

Important

The remaining thread monitor is delivered with a basic setting.
As a rule, the sensitivity of the residual thread monitor does NOT have to be set!
The pre-set sensitivity of the remaining thread monitor may only be changed if the remaining thread monitor is not working properly.

Fig. 9: Setting the remaining thread monitor electrically

(1) - *Plug connection light barrier, right hook*
(2) - *Plug connection light barrier, left hook*
(3) - *Plug connection inputs and outputs of the control*
(4) - *Plug connection switched output*
(5) - *Potentiometer left hook*
(6) - *LED*
(7) - *Potentiometer right hook*
(8) - *Plug connection auxiliary output*

After the machine has been switched on and before it starts sewing, the remaining thread monitor is in setting mode.

To set the remaining thread monitor:

1. Switch on the machine.

2. Insert an empty bobbin into the hook.

3. Turn the hook to a position that the light beam falls through the slot in the hook housing onto the bobbin.

4. Set the potentiometer (5) or (7) to the highest sensitivity.
   To do this, turn the potentiometer clockwise.

5. Turn the hook until the light beam hits the reflective surface on the bobbin.

   ✤ The LED (6) lights up for 1 second with each reflection in the setting mode.
   The output to the control and the auxiliary output are switched on.

6. Turn potentiometer (5) or (7) counterclockwise to reduce the sensitivity until the reflection can just be detected.

When sewing begins, the system leaves setting mode automatically.

2.4 Software settings

2.4.1 Parameter settings for classes 867 and 867-M

DAC classic control

Parameter	Value	Function
Operator level		
o 06 00	4	Remaining thread monitor
o 06 05	0 - 9999	Number of stitches for the remaining thread monitor
o 06 06	0 - 1	Stop sewing motor when the counter reaches 0 0 = No 1 = Yes
o 06 07	0 - 1	Sewing foot stays down after thread cutting 0 = No 1 = Yes
Technician level		
t 06 00	0 - 2	Activation of the remaining thread monitor 0 = Off 1 = Right 2 = Left & right
t 06 01	0 - 1	Remaining thread monitor mode 0 = Dynamic 1 = Static
t 06 02	0.0 - 3.300 V	Threshold right
t 06 03	0.0 - 3.300 V	Intensity right
t 06 04	0.0 - 3.300 V	Threshold left
t 06 06	0.0 - 3.300 V	Intensity left
t 06 06	0 - 1	Confirmation required after warnings 0 = No 1 = Yes

Efka control (class 867 only)

Recommended mode for remaining thread monitor function:
Parameter F-195 on value "3"

Parameter	Value	Function
F-195	0	Remaining thread monitor off
F-195	1	No stop after 1st detection *Bobbin empty*, after thread cutting, sewing foot down
F-195	2	With stop after 1st detection *Bobbin empty*, after thread cutting, sewing foot up
F-195	3	With stop after 1st detection *Bobbin empty*, after thread cutting, sewing foot down
F-195	4	Hook thread monitoring via preset number of stitches Light barrier remaining thread monitor control without function
F-195	1 - 3	
085	0 - 9990	Number of stitches for remaining thread Count from 1st detection *Bobbin empty* until stop
F-195	4	
085	0 - 9990	Number of stitches A for hook thread monitoring Pre-set number of stitches is counted downwards to "0". When the value "0" is reached: Stop at value 0 and after thread cutting sewing foot down.
086	0 - 9990	Number of stitches B for hook thread monitoring Pre-set number of stitches is counted downwards to "0". When the value "0" is reached: Stop at value 0 and after thread cutting sewing foot down.
086	0 - 9990	Number of stitches C for hook thread monitoring Pre-set number of stitches is counted downwards to "0". When the value "0" is reached: Stop at value 0 and after thread cutting sewing foot down.

Information

A detailed functional description of the remaining thread monitor functions and the stitch counts can be found in the instructions for use of the DA82GA or DA321G controls.

2.4.2 Parameter settings for class 867-M PREMIUM

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.

    • 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 2 (cleaning signal for RTM) to the output to which the remaining thread monitor is connected.

Machine output signal	Output
RA (X16)	X120B.12
STL (X17)	X120B.22
STL (FA) (X18)	X120B.23

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