



M-TYPE DELTA

Additional Instructions

Remaining thread monitor (RFW)

IMPORTANT
READ CAREFULLY BEFORE USE
KEEP FOR FUTURE REFERENCE

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1 General information



Important

The machine is not equipped with compressed air.
If you want to assemble the remaining thread monitor to the machine, you will need the following additional kits: (see  *Parts List*):

- **9780 000108**: Compressed air maintenance unit
- **0867 594304**: Pneumatic small parts pack
- **0797 003031**: Pressure line K



Information

Fig. 1: General information, new bobbin



To use the remaining thread monitor, you will need to use the new bobbins with flat.
New bobbins are included in the kit.

1.1 Components of the kit 0867 594014 (RFW for 1-needle machines, large hook)

Check whether the scope of delivery for kit 0867 594014 is correct prior to installation.

Part number	Quantity	Designation
0570 001847	1	Blanking plug
0667 155824	1	RFW carrier
0667 155840	1	Holder
0667 155930	1	Cover
0699 979265	1	Hose 0.9 m
0867 150170	1	Compression spring
0867 154570	3	Bobbin Ø 28 mm
9202 002077	1	Cylinder-head bolt
9204 201667	8	Pan-head screw
9710 063420	1	Solenoid valve
9790 201000	1	WI-E coupling
9815 925002	1	Light barrier
9830 501010	4	Spacer
9840 120025	2	Mounting clip
9840 120106	3	Cable holder
9840 121002	3	Cable tie
9850 755001	1	Circuit board
9874 867012	1	Cable
9874 867023	1	Cable
0791 867724 EN	1	Additional Instructions

1.2 Components of the kit 0867 594024 (RFW for 2-needle machines, large hook)

Check whether the scope of delivery for kit 0867 594024 is correct prior to installation.

Part number	Quantity	Designation
0570 001847	1	Blanking plug
0667 155824	2	RFW carrier
0667 155840	1	Holder
0667 155930	1	Cover
0699 979265	1	Hose
0867 150170	2	Compression spring
0867 154570	6	Bobbin Ø 28 mm
9202 002077	2	Cylinder-head bolt
9204 201667	9	Pan-head screw
9710 063420	1	Solenoid valve
9790 030020	1	Y-connection piece
9790 201000	1	WI-E coupling
9815 925002	2	Light barrier
9830 501010	4	Spacer
9840 120025	3	Mounting clip
9840 120106	3	Cable holder
9840 121002	3	Cable tie
9850 755001	1	Circuit board
9874 867012	1	Cable
9874 867023	1	Cable
0791 867724 EN	1	Additional Instructions

1.3 Components of the kit 0867 594034 (RFW for 1-needle machines, extra-large hook)

Check whether the scope of delivery for kit 0867 594034 is correct prior to installation.

Part number	Quantity	Designation
0570 001847	1	Blanking plug
0667 155824	1	RFW carrier
0667 155840	1	Holder
0667 155930	1	Cover
0699 979265	1	Hose 0.9 m
0867 150170	1	Compression spring
0867 150560	3	Bobbin Ø 32 mm
9202 002077	1	Cylinder-head bolt
9204 201667	8	Pan-head screw
9710 063420	1	Solenoid valve
9790 201000	1	WI-E coupling
9815 925002	1	Light barrier
9830 501010	4	Spacer
9840 120025	2	Mounting clip
9840 120106	3	Cable holder
9840 121002	3	Cable tie
9850 755001	1	Circuit board
9874 867012	1	Cable
9874 867023	1	Cable
0791 867724 EN	1	Additional Instructions

1.4 Components of the kit 0867 594044 (RFW for 2-needle machines, extra-large hook)

Check whether the scope of delivery for kit 0867 594044 is correct prior to installation.

Part number	Quantity	Designation
0570 001847	1	Blanking plug
0667 155824	2	RFW carrier
0667 155840	1	Holder
0667 155930	1	Cover
0699 979265	1	Hose
0867 150170	2	Compression spring
0867 150560	6	Bobbin Ø 32 mm
9202 002077	2	Cylinder-head bolt
9204 201667	9	Pan-head screw
9710 063420	1	Solenoid valve
9790 030020	1	Y-connection piece
9790 201000	1	WI-E coupling
9815 925002	2	Light barrier
9830 501010	4	Spacer
9840 120025	3	Mounting clip
9840 120106	3	Cable holder
9840 121002	3	Cable tie
9850 755001	1	Circuit board
9874 867012	1	Cable
9874 867023	1	Cable
0791 867724 EN	1	Additional Instructions

2 Assembling the remaining thread monitor (1-needle machines)

WARNING



Risk of injury from sharp and moving parts!

Puncture or crushing possible.

Switch off the machine before assembling the remaining thread monitor (RFW).

2.1 Assembling solenoid valve and RFW PCB

Fig. 2: Assembling solenoid valve and RFW PCB (1)



- (1) - Handwheel
- (2) - Belt cover
- (3) - Solenoid valve

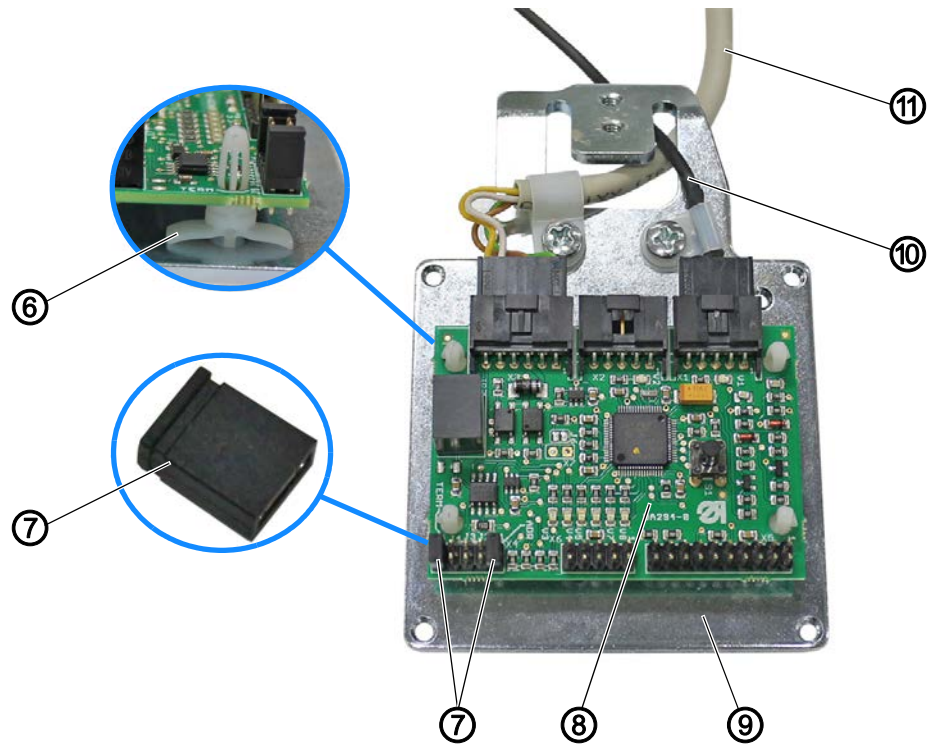
- (4) - Blanking plug
- (5) - Elbow screw joint



To assemble solenoid valve and RFW PCB:

1. Screw the blanking plug (4) at valve output 2 onto the solenoid valve (3).
2. Screw the elbow screw joint (5) at valve output 4 onto the solenoid valve (3).
3. If not yet present, assemble the compressed air maintenance unit to the stand (see *Operating Instructions*).
4. Disassemble the handwheel (1).
5. Disassemble the belt cover (2).

Fig. 3: Assembling solenoid valve and RFW PCB (2)



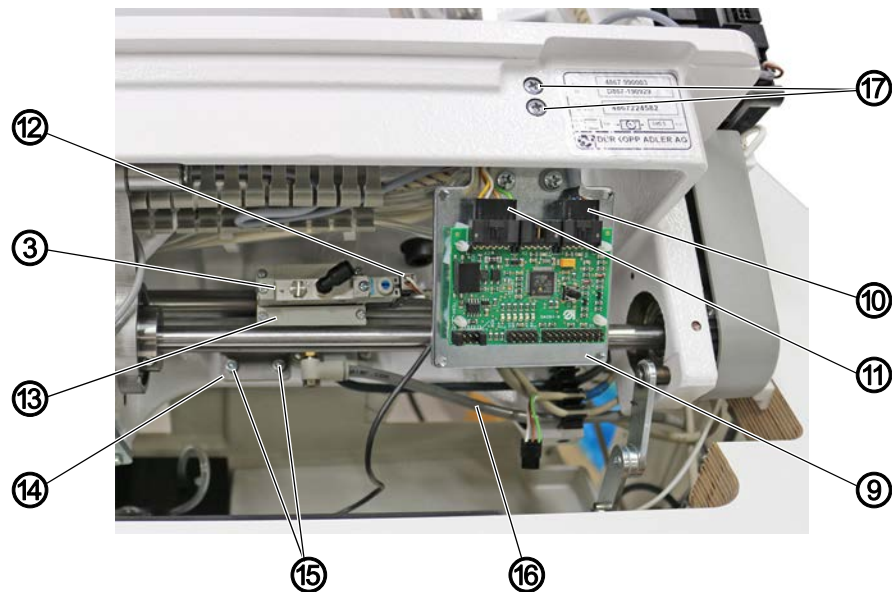
(6) - Spacer
(7) - Jumper
(8) - PCB

(9) - Holder
(10) - Cable RFW sensor
(11) - Cable



6. Assemble the PCB (8) to the holder (9) using 4 spacers (6).
7. Insert the cable (10) at slot **X1** on the PCB (8).
8. Insert the cable (11) at slot **X3** on the PCB (8).
9. Slip 2 jumpers (7) onto the outer pins at slot **X4**.

Fig. 4: Assembling solenoid valve and RFW PCB (3)



- | | |
|-------------------------|--------------------|
| (3) - Solenoid valve | (13) - Valve block |
| (9) - Holder | (14) - Bracket |
| (10) - Cable RFW sensor | (15) - Screws |
| (11) - Cable | (16) - Hose |
| (12) - Cable | (17) - Screws |



10. Tilt the machine head.
11. Remove the dummy plate from the valve block (13).

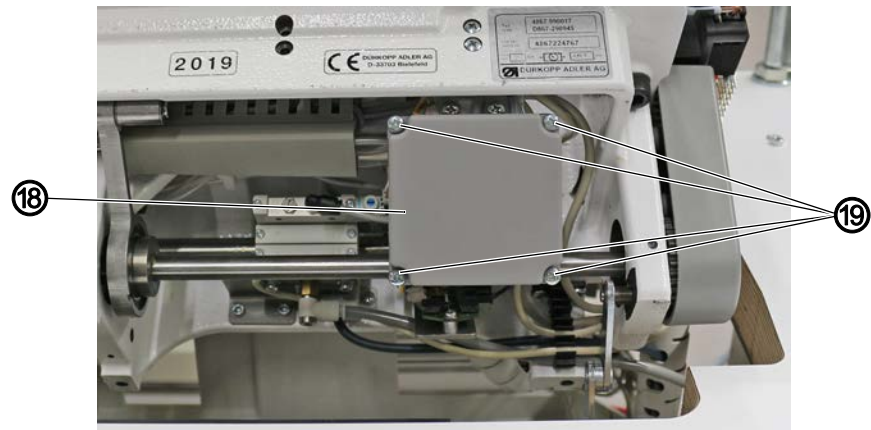


Information

The valve block and the corresponding connectors and hoses are included in the pneumatic small parts pack (part number: 0867 594304).

12. Screw the solenoid valve (3) in at the available space on the valve block (13).
13. If not yet present, tighten valve block (13) and bracket (14) using the screws (15).
14. Connect the hose (16) to the compressed air maintenance unit. Make sure to lay the hose (16) such that it will not be pinched when the machine head is erected.
15. Tighten the holder (9) to the base plate using the screws (17).

Fig. 5: Assembling solenoid valve and RFW PCB (4)



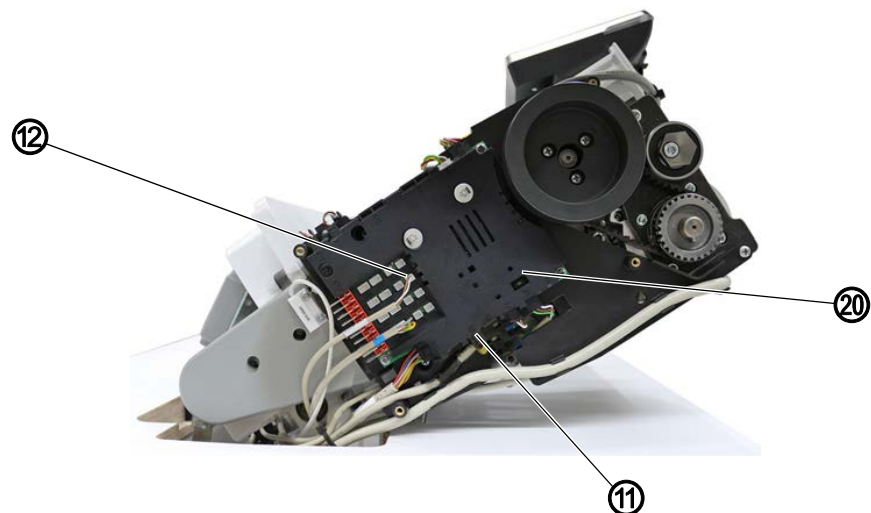
(18) - Cover

(19) - Screws



16. Assemble the cover (18) using the screws (19).

Fig. 6: Assembling solenoid valve and RFW PCB (5)



(11) - Cable
(12) - Cable

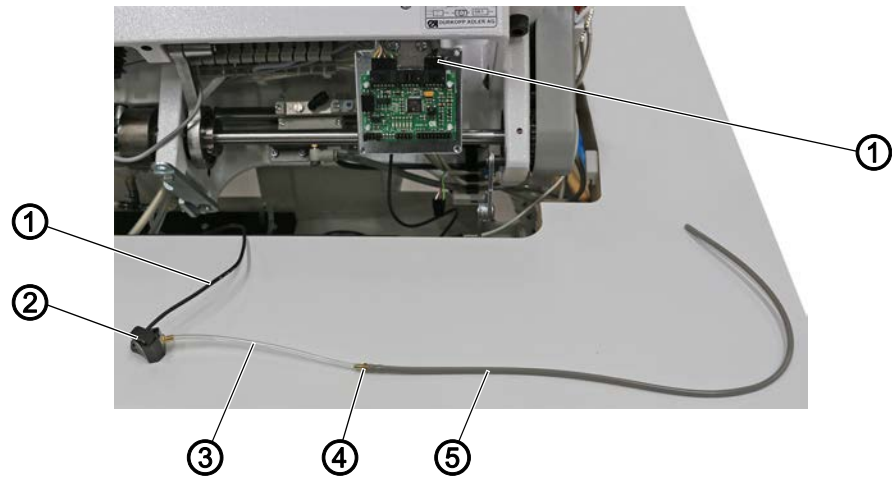
(20) - PCB A2



- 17. Insert cable (12) of the solenoid valve (3) at slot **X22** on PCB A2 (20).
- 18. Insert cable (11) of the PCB (8) at slot **X2** on PCB A2 (20).
- 19. Assemble the belt cover (2).
- 20. Assemble the handwheel (1).

2.2 Assembling the remaining thread monitor

Fig. 7: Assembling the remaining thread monitor (1)



(1) - Cable RFW sensor
(2) - Sensor block
(3) - Hose

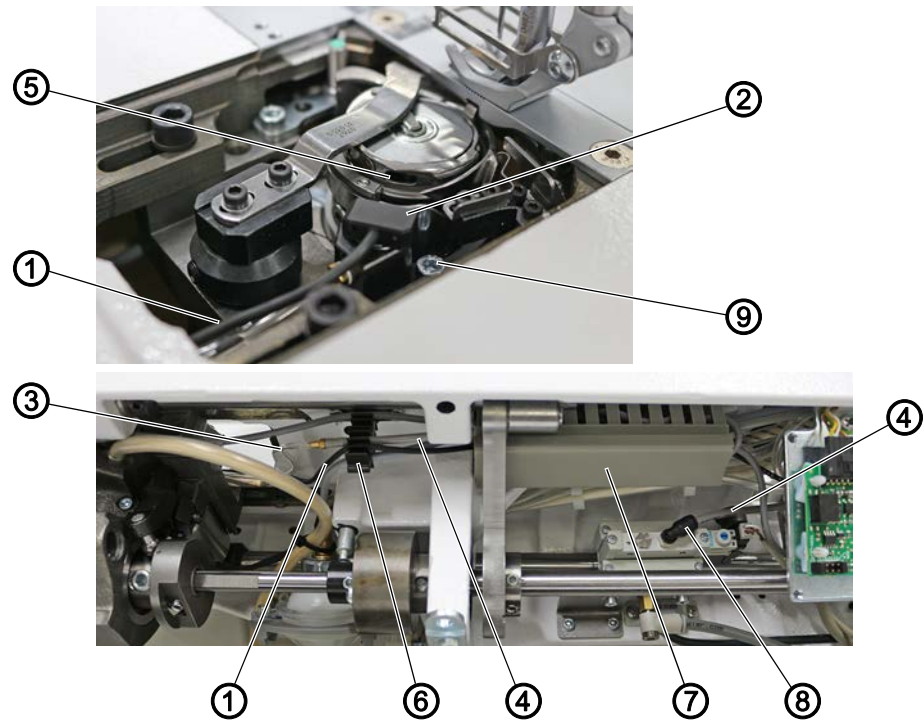
(4) - Plug nipple
(5) - Hose



To assemble the remaining thread monitor:

1. Shorten the hose (3) to a length of approx. 130 mm.
2. Shorten the hose (4) to a length of approx. 400 mm.
3. Connect hose (3) and hose (5) using the plug nipple (4).
4. Insert hose (3) at the sensor block (2).

Fig. 8: Assembling the remaining thread monitor (2)



- | | |
|------------------------|-------------------------|
| (1) - Cable RFW sensor | (6) - Cable holder |
| (2) - Sensor block | (7) - Cable duct |
| (3) - Hose | (8) - Elbow screw joint |
| (4) - Hose | (9) - Screw |
| (5) - Slot | |



5. Guide the sensor block (2) along below the machine.
6. Screw the sensor block (2) to the hook support using the screw (9). Make sure to use the hole that is closer to the hook.



Information

To allow for easier assembly of the sensor block (2), turn the handwheel such that the movable blade can be swung out of the way by hand.

The sensor block (2) is positioned correctly when the sensor block abuts on the casting. The light beam of the sensor will then hit the flat of the bobbin through the slot (5) in the hook housing.

7. Feed the cable (1) and hoses (3) and (4) through the cable holder (6) and the cable duct (7).
8. Connect the hose (4) to the elbow screw joint (8).

3 Assembling the remaining thread monitor (2-needle machines)

WARNING



Risk of injury from sharp and moving parts!

Puncture or crushing possible.

Switch off the machine before assembling the remaining thread monitor (RFW).

3.1 Assembling solenoid valve and RFW PCB

Fig. 9: Assembling solenoid valve and RFW PCB (1)



- (1) - Handwheel
- (2) - Belt cover
- (3) - Solenoid valve

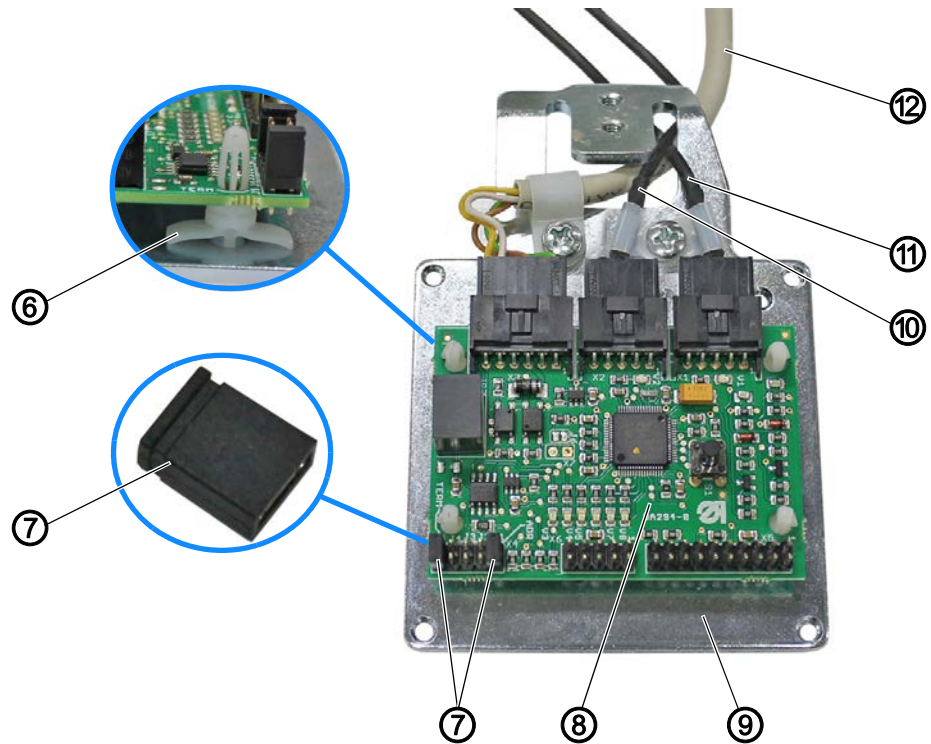
- (4) - Blanking plug
- (5) - Elbow screw joint



To assemble solenoid valve and RFW PCB:

1. Screw the blanking plug (4) at valve output 2 onto the solenoid valve (3).
2. Screw the elbow screw joint (5) at valve output 4 onto the solenoid valve (3).
3. If not yet present, assemble the compressed air maintenance unit to the stand (see *Operating Instructions*).
4. Disassemble the handwheel (1).
5. Disassemble the belt cover (2).

Fig. 10: Assembling solenoid valve and RFW PCB (2)



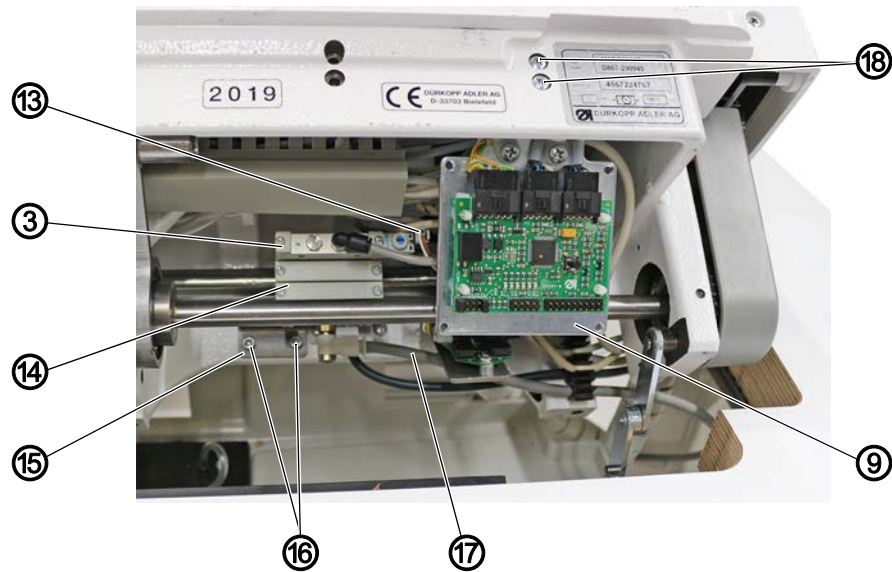
- (6) - Spacer
- (7) - Jumper
- (8) - PCB
- (9) - Holder

- (10) - Cable RFW sensor left
- (11) - Cable RFW sensor right
- (12) - Cable



6. Assemble the PCB (8) to the holder (9) using 4 spacers (6).
7. Insert the cable RFW sensor left (10) at slot **X2** on the PCB (8).
8. Insert the cable RFW right (11) at slot **X1** on the PCB (8).
9. Insert the cable (12) at slot **X3** on the PCB (8).
10. Slip 2 jumpers (7) onto the outer pins at slot **X4**.

Fig. 11: Assembling solenoid valve and RFW PCB (3)



- | | |
|----------------------|----------------|
| (3) - Solenoid valve | (15) - Bracket |
| (9) - Holder | (16) - Screws |
| (13) - Cable | (17) - Hose |
| (14) - Valve block | (18) - Screws |



11. Tilt the machine head.
12. Remove the dummy plate from the valve block (14).

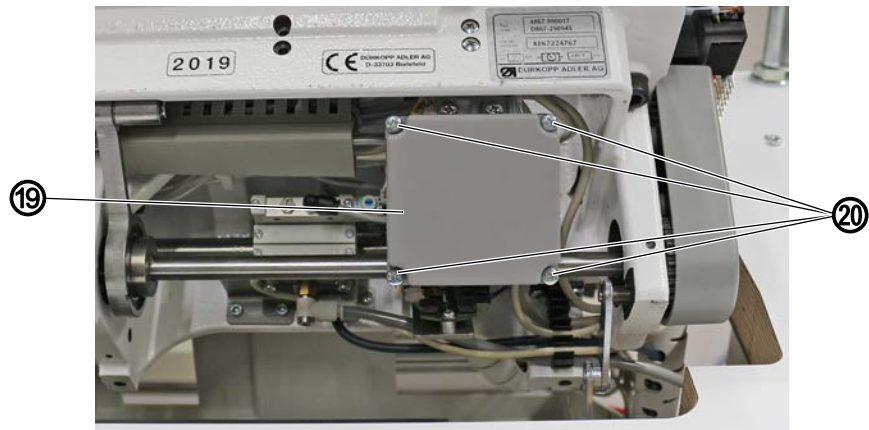


Information

The valve block and the corresponding connectors and hoses are included in the pneumatic small parts pack (part number: 0867 594304).

13. Screw the solenoid valve (3) in at the available space on the valve block (14).
14. If not yet present, tighten valve block (14) and bracket (15) using the screws (16).
15. Connect the hose (17) to the compressed air maintenance unit. Make sure to lay the hose (17) such that it will not be pinched when the machine head is erected.
16. Tighten the holder (9) to the base plate using the screws (18).

Fig. 12: Assembling solenoid valve and RFW PCB (4)



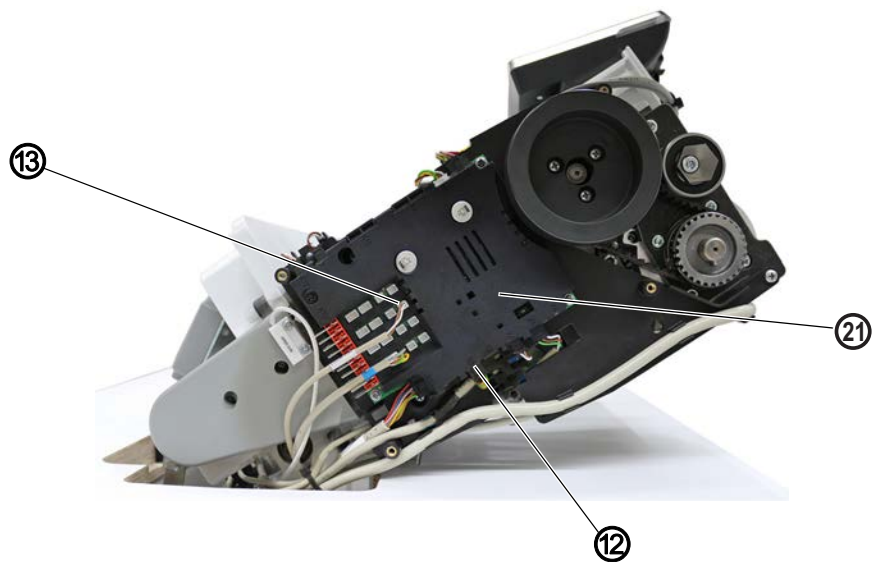
(19) - Cover

(20) - Screws



17. Assemble the cover (19) using the screws (20).

Fig. 13: Assembling solenoid valve and RFW PCB (5)



(12) - Cable

(21) - PCB A2

(13) - Cable



18. Insert cable (13) of the solenoid valve (3) at slot **X22** on PCB A2 (21).

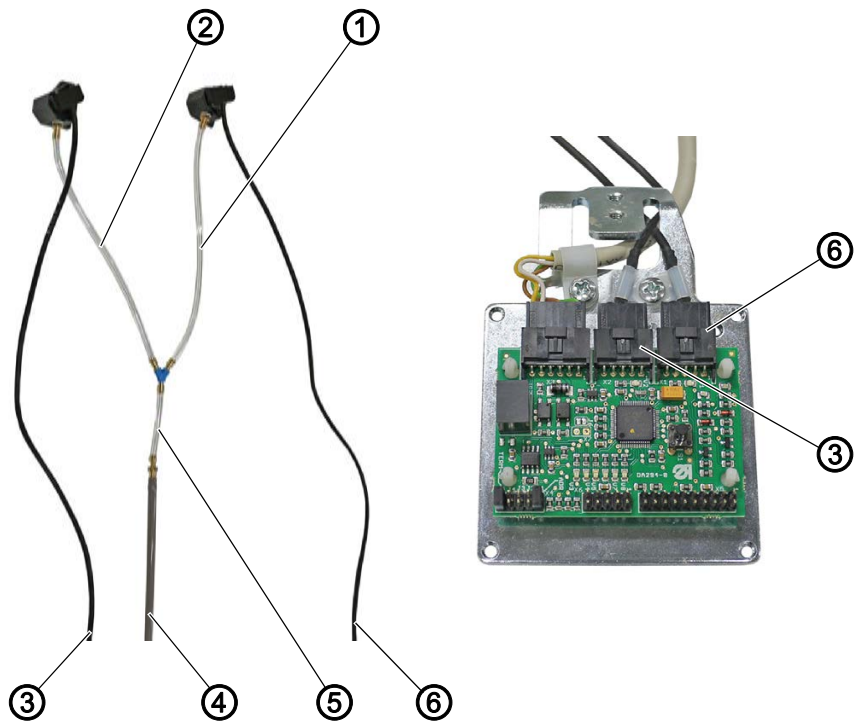
19. Insert cable (12) of the PCB (8) at slot **X2** on PCB A2 (21).

20. Assemble the belt cover (2).

21. Assemble the handwheel (1).

3.2 Assembling the remaining thread monitor

Fig. 14: Assembling the remaining thread monitor (1)



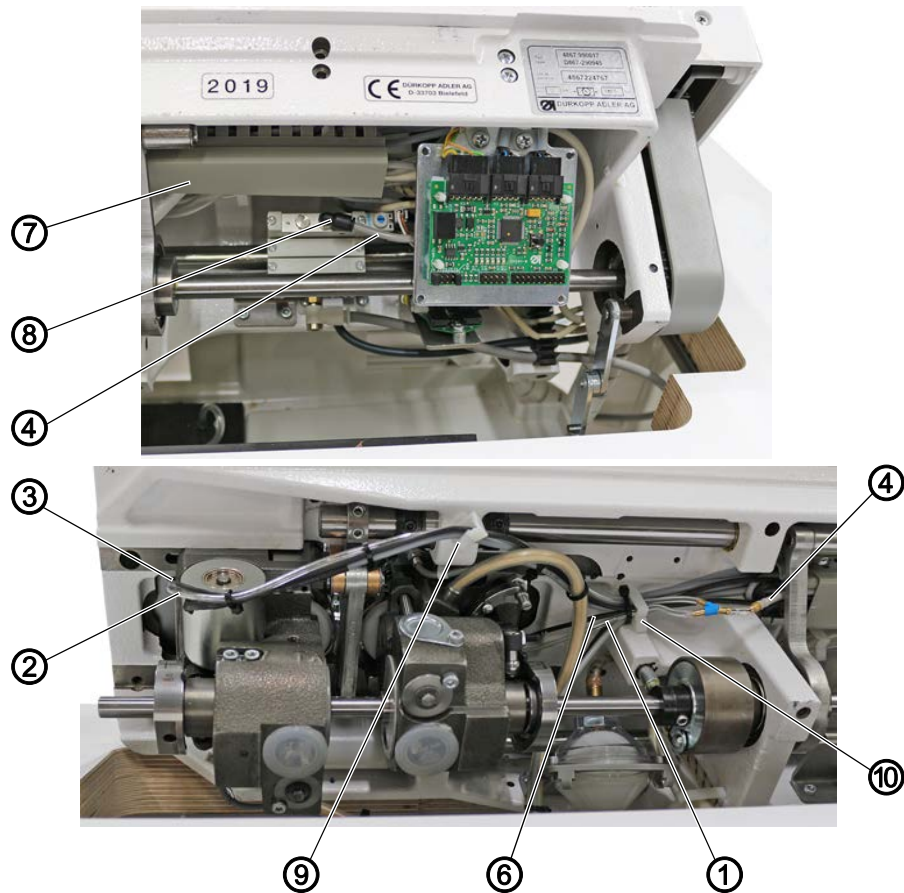
- | | |
|-----------------------------|------------------------------|
| (1) - Hose | (4) - Hose |
| (2) - Hose | (5) - Hose |
| (3) - Cable RFW sensor left | (6) - Cable RFW sensor right |



To assemble the remaining thread monitor:

1. Shorten the hose (1) to a length of approx. 130 mm.
2. Shorten the hose (4) to a length of approx. 400 mm.
3. Connect hose (4) and hose (5) to one another using the plug nipple.
4. Connect hose (1) and hose (2) to hose (5) using a Y-piece.

Fig. 15: Assembling the remaining thread monitor (2)

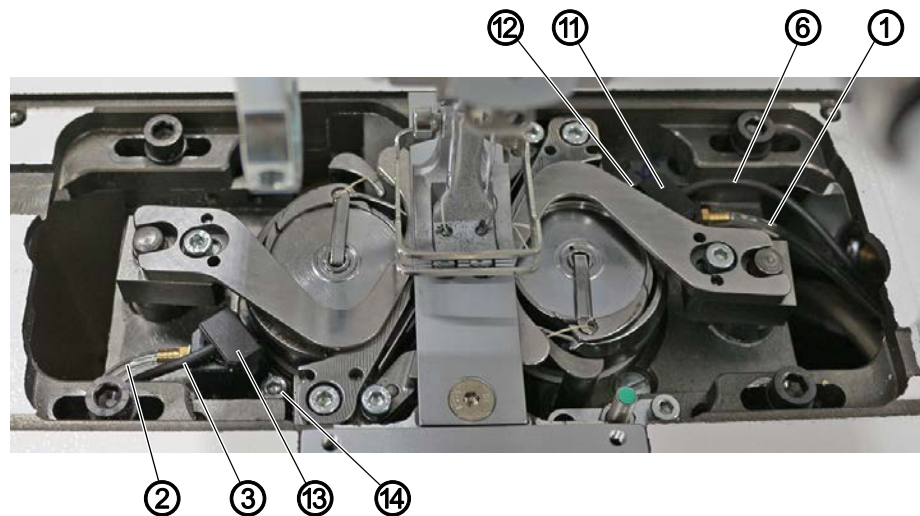


- | | |
|------------------------------|-------------------------|
| (1) - Hose | (7) - Cable duct |
| (2) - Hose | (8) - Elbow screw joint |
| (3) - Cable RFW sensor left | (9) - Clip |
| (4) - Hose | (10) - Clip |
| (6) - Cable RFW sensor right | |



5. Connect the hose (4) to the elbow screw joint (8).
6. Feed cable RFW sensor left (3), cable RFW sensor right (6) and hoses (1) and (2) through the cable duct (7) and clip (10).
7. Feed cable RFW sensor right (6) with sensor block and hose (1) to the right hook.
8. Feed cable RFW sensor left (3) with sensor block and hose (2) through the clip (9).
9. Feed cable RFW sensor left (3) with sensor block and hose (2) to the left hook.

Fig. 16: Assembling the remaining thread monitor (3)



- | | |
|------------------------------|---------------------------|
| (1) - Hose | (11) - Sensor block right |
| (2) - Hose | (12) - Screw |
| (3) - Cable RFW sensor left | (13) - Sensor block left |
| (6) - Cable RFW sensor right | (14) - Screw |



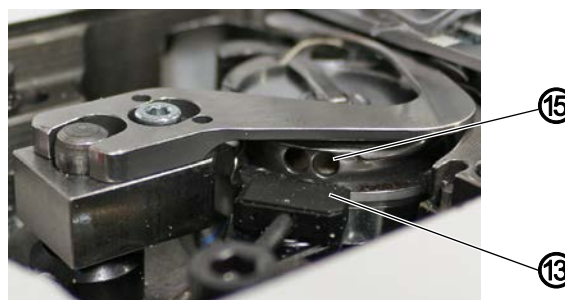
10. Screw the sensor block (11) to the right hook support using the screw (12).
Make sure to use the hole that is closer to the hook.
11. Screw the sensor block (13) to the left hook support using the screw (14).
Make sure to use the hole that is closer to the hook.



Information

To allow for easier assembly of the RFW sensor blocks, turn the hand-wheel such that the movable blade can be swung out of the way by hand.

Fig. 17: Assembling the remaining thread monitor (4)















- | | |
|---------------------|-------------|
| (13) - Sensor block | (15) - Slot |
|---------------------|-------------|

The sensor blocks are positioned correctly when sensor block (13) abuts on the casting. The light beam of the sensor will then hit the flat of the bobbin through the slot (15) in the hook housing.

4 Software settings



To activate the remaining thread monitor in the software:

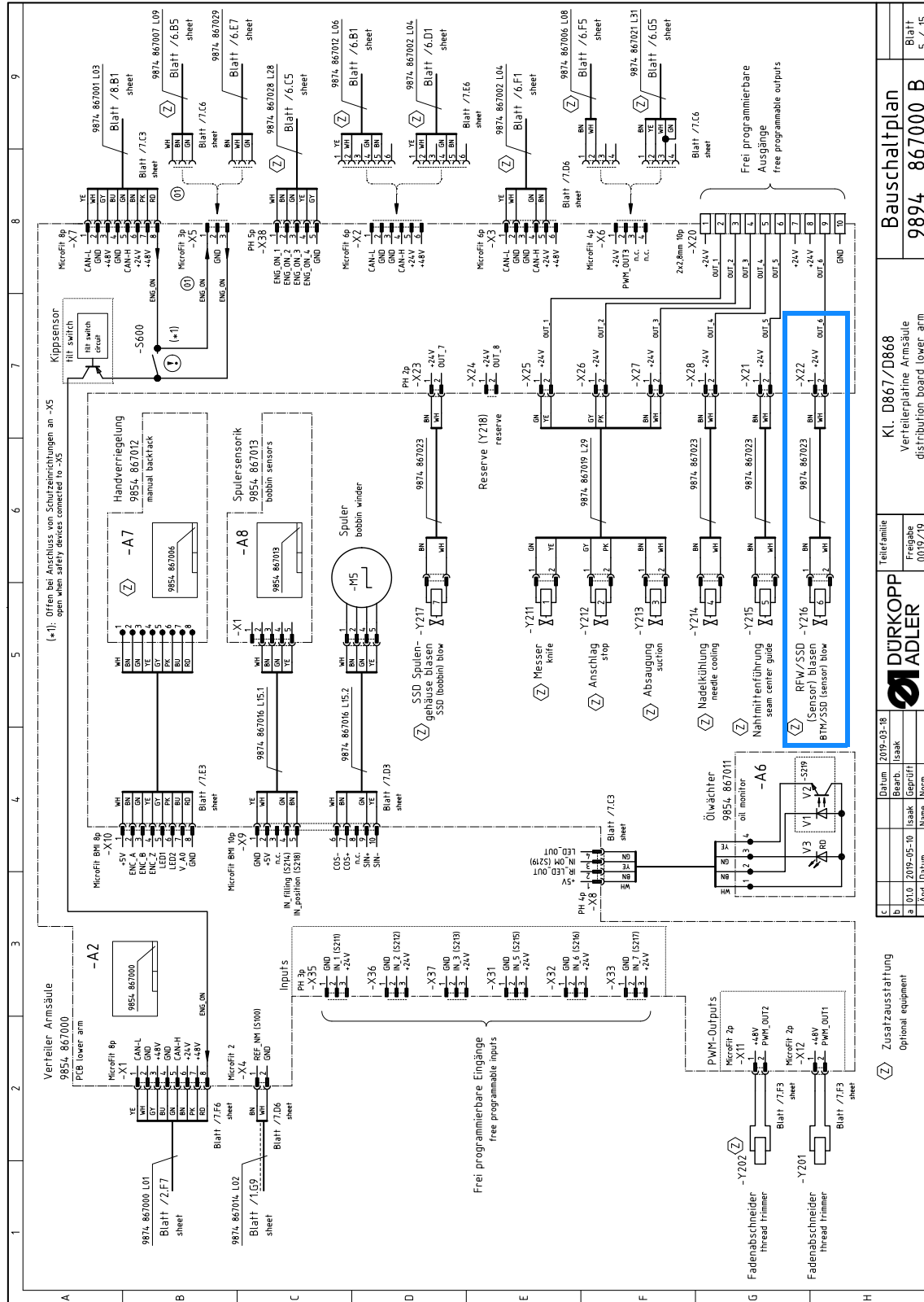
1. Log in as a technician ( *Operating Instructions*).
User: technician
Password: 25483
2. Open the menu  *Navigation* >  *Settings* >  *Machine Configuration* and press the  **Input/Output Configuration** button.
3. Press the  **Configuration of the outputs** button.
4. Check in the section  *OUT06 (A2.X22.02)* if the value is set to **2**.
5. Open the menu  *Machine Configuration* and press the  **RFW/SSD** button.
6. Turn on the checkbox in the  *t 06 00* parameter.
7. Set each of the following parameters to the value **1.7**:
 - *t 06 02* (RFW limit, right side)
 - *t 06 03* (RFW intensity, right side)
 - *t 06 04* (RFW limit, left side)
 - *t 06 05* (RFW intensity, left side)
8. Press the  *Navigation* button.
- ↳ The control panel shows a prompt to restart the machine.
9. Switch off the machine.
10. Switch on the machine again.
11. Open the menu *P > Main Parameters* and press on the text next to the parameter *0 06 00*  **Bobbin monitor mode**.
12. Set the value to **Monitor**.
- ↳ The remaining thread monitor is activated.



5 Appendix

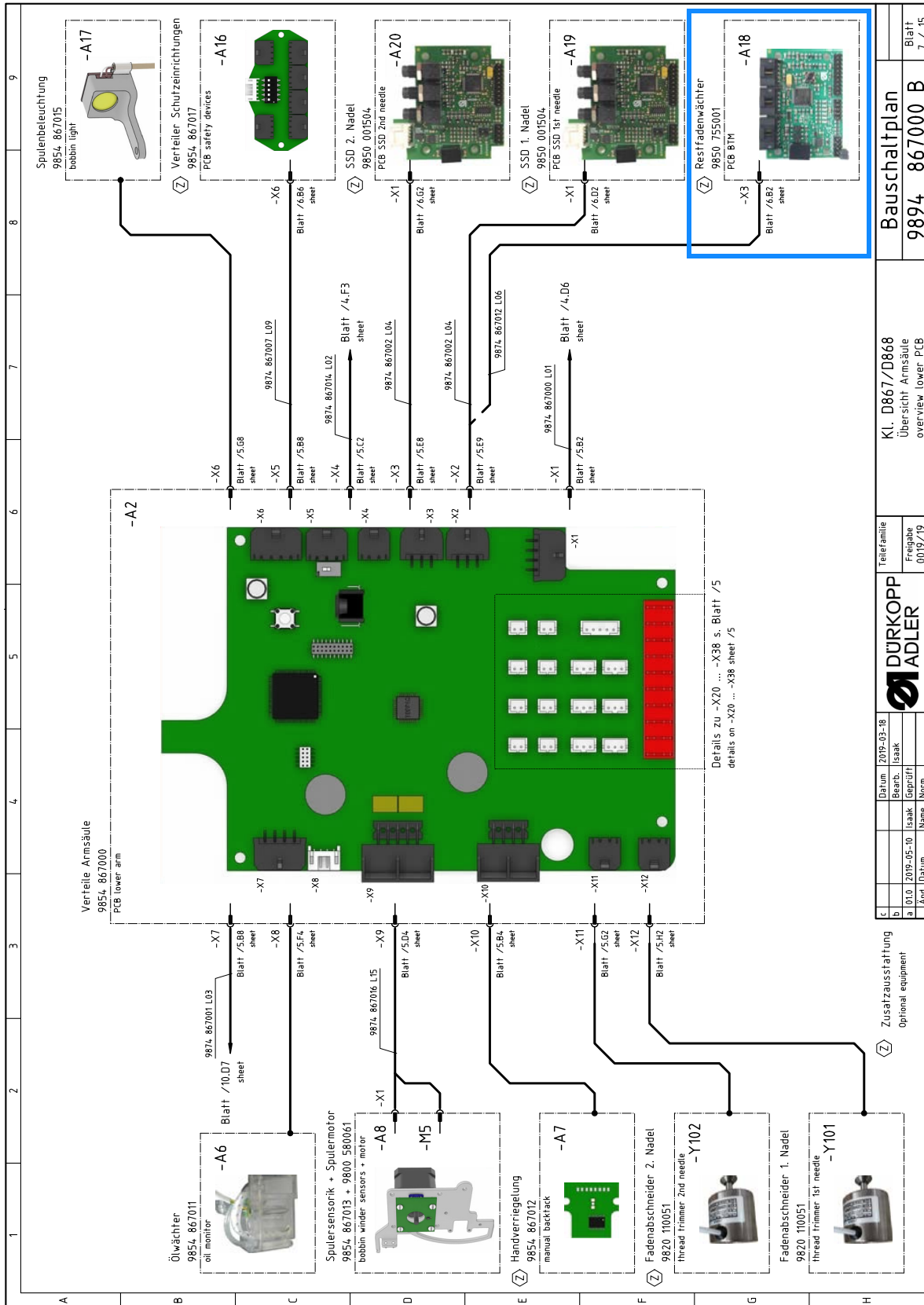
Wiring diagram

Fig. 18: Wiring diagram, connection RFW



Bauschaltplan		Blatt 5 / 15	
9894 867000 B			
Kl. D867/D868		Verteilertafel Armsäule	
		distribution board lower arm	
Teilfamilie		Freigabe	
DÜRKOPP ADLER		0019/19	
Datum 2019-03-18		Rearb. Iszaak	
b 01.0. 2019-05-10		Isaak	
Blatt / Datum		Name Norm	
Zusatzausstattung		Optional equipment	

Fig. 19: Wiring diagram, connection RFW



c		Datum		2019-03-18		Teilerfamilie		Bauschaltplan		Blatt	
b		Bearb.		Isaak		Freigabe		9894_867000 B		7 / 15	
a		010 / 2019-05-10		Isaak		0019 / 19		KI_D867/D868		Übersicht Armsäule	
Amf.		Datum		Name		Norm		overview lower PCB			



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