

869**Spezialnähmaschine**

Betriebsanleitung

D

Instruction manual

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Foreword

This instruction manual is intended to help the user to become familiar with the machine and take advantage of its application possibilities in accordance with the recommendations.

The instruction manual contains important information on how to operate the machine securely, properly and economically. Observation of the instructions eliminates danger, reduces costs for repair and down-times, and increases the reliability and life of the machine.

The instruction manual is intended to complement existing national accident prevention and environment protection regulations.

The instruction manual must always be available at the machine/sewing unit.

The instruction manual must be read and applied by any person that is authorized to work on the machine/sewing unit. This means:

- Operation, including equipping, troubleshooting during the work cycle, removing of fabric waste,
- Service (maintenance, inspection, repair) and/or
- Transport.

The user also has to assure that only authorized personnel work on the machine.

The user is obliged to check the machine at least once per shift for apparent damages and to immediately report any changes (including the performance in service), which impair the safety.

The user company must ensure that the machine is only operated in perfect working order.

Never remove or disable any safety devices.

If safety devices need to be removed for equipping, repairing or maintaining, the safety devices must be remounted directly after completion of the maintenance and repair work.

Unauthorized modification of the machine rules out liability of the manufacturer for damage resulting from this.

Observe all safety and danger recommendations on the machine/unit! The yellow-and-black striped surfaces designate permanent danger areas, eg danger of squashing, cutting, shearing or collision.

Besides the recommendations in this instruction manual also observe the general safety and accident prevention regulations!

General safety instructions

The non-observance of the following safety instructions can cause bodily injuries or damages to the machine.

1. The machine must only be commissioned in full knowledge of the instruction book and operated by persons with appropriate training.
2. Before putting into service also read the safety rules and instructions of the motor supplier.
3. The machine must be used only for the purpose intended. Use of the machine without the safety devices is not permitted. Observe all the relevant safety regulations.
4. When gauge parts are exchanged (e.g. needle, presser foot, needle plate, feed dog and bobbin) when threading, when the workplace is left, and during service work, the machine must be disconnected from the mains by switching off the master switch or disconnecting the mains plug.
5. Daily servicing work must be carried out only by appropriately trained persons.
6. Repairs, conversion and special maintenance work must only be carried out by technicians or persons with appropriate training.
7. For service or repair work on pneumatic systems, disconnect the machine from the compressed air supply system (max. 7-10 bar). Before disconnecting, reduce the pressure of the maintenance unit. Exceptions to this are only adjustments and functions checks made by appropriately trained technicians.
8. Work on the electrical equipment must be carried out only by electricians or appropriately trained persons.
9. Work on parts and systems under electric current is not permitted, except as specified in regulations DIN VDE 0105.
10. Conversion or changes to the machine must be authorized by us and made only in adherence to all safety regulations.
11. For repairs, only replacement parts approved by us must be used.
12. Commissioning of the sewing head is prohibited until such time as the entire sewing unit is found to comply with EC directives.
13. The line cord should be equipped with a country-specific mains plug. This work must be carried out by appropriately trained technicians (see paragraph 8).



It is absolutely necessary to respect the safety instructions marked by these signs.

Danger of bodily injuries !

Please note also the general safety instructions.



Preface and General Safety Instructions

Part 1: Operating Instructions Class 869

(Edition 03/2009)

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1. Product Description

The **DÜRKOPP ADLER 869** is a single-needle double lockstitch free-arm sewing machine with a lower feed, a needle feed and an alternating foot-upper feed.

Depending on the subclass it comes as single or double needle machine, with or without electropneumatic driven thread trimmer.

- The machines are equipped with a large horizontal hook.
- With a maximum of 20 mm fabric clearance when sewing feet are lifted.
- The residual thread length after thread trimming is about 15 mm.
- A safety clutch prevents a changing of the hook setting or a hook damage in the case of a thread deflection into the shuttle track.
- Automatic wick lubricating with an inspection glass on the arm for machine and hook lubrication.
- All Subclasses, excluding those classes without thread trimmer device, are equipped with a keypad (6 keys). An additional key, within reach of the seamstress, can optionally also be assigned one of the six different functions.
- Integrated bobbin winder

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2. Designated use

The class **869** is a sewing machine head designed for sewing light to medium-heavy material. Such material is generally made of textile fibres, but it may also be leather. It is used in the clothing industry and for domestic and motor-vehicle upholstery.

This special sewing machine can also be used to produce so-called technical seams. In this case, however, the operator must assess the possible dangers which may arise (with which **DÜRKOPP ADLER AG** would be happy to assist), since such applications are on the one hand relatively unusual and, on the other, so varied that no single set of criteria can cover them all. The outcome of this assessment may require appropriate safety measures to be taken.

Generally only dry material may be sewn with this sewing machine head. The material may be no thicker than 10 mm when compressed by the lowered sewing feet. The material may not contain any hard objects, since if it does the machine may not be operated without an eye-protection device. No such eye-protection device is currently available.

The seam is generally produced with textile-fibre sewing thread of gauge up to 10/3 NeB (cotton), 10/3 Nm (synthetic) or 10/4 Nm (covering yarn).

Before using any other thread the possible dangers arising must be assessed and appropriate safety measures taken if necessary.

This special sewing machine may be set up and operated only in dry, well-maintained premises. If the sewing machine is used in premises which are not dry and well-maintained it may be necessary to take further precautions which should be agreed in advance (see EN 60204-31:1999).

As manufacturers of industrial sewing machines we proceed on the assumption that personnel who work on our products will have received training at least sufficient to acquaint them with all normal operations and with any hazards which these may involve.

3. Subclasses

- | | |
|-------------------|--|
| 869-180020 | Single-needle double lockstitch free-arm sewing machine with lower feed, needle feed and alternating foot upper feed. |
| 869-180122 | Single-needle double lockstitch free-arm sewing machine with lower feed, needle feed and alternating foot upper feed, electro-pneumatic thread trimmer, electro-pneumatic seam bartacking and sewing foot lifting. With large hook. |
| 869-180322 | Single-needle double lockstitch free-arm sewing machine with lower feed, needle feed and alternating foot upper feed, electro-pneumatic rapid stroke adjustment, electro-pneumatic thread trimmer, connectable thread tension, electro-pneumatic seam bartacking, electro-pneumatic second stitch length and sewing foot lifting. With large hook and integrated sewing light. |
| 869-280020 | Double-needle double lockstitch free-arm sewing machine with lower feed, needle feed and alternating foot upper feed. |
| 869-280122 | Double-needle double lockstitch free-arm sewing machine with lower feed, needle feed and alternating foot upper feed, electro-pneumatic thread trimmer, electro-pneumatic seam bartacking and sewing foot lifting. With large hook. |
| 869-280322 | Double-needle double lockstitch free-arm sewing machine with lower feed, needle feed and alternating foot upper feed, electro-pneumatic rapid stroke adjustment, electro-pneumatic thread trimmer, connectable thread tension, electro-pneumatic seam bartacking, electro-pneumatic second stitch length and sewing foot lifting. With large hook and integrated sewing light. |

4. Optional Equipment

The following optional equipment is available for the 869.

Order No.	Optional equipment	Subclasses					
		869-180020	869-180122	869-180322	869-280020	869-280122	869-180322
9780 000108	WE-8 maintenance unit for pneumatic optional equipment	x	x	x	x	x	x
0797 003031	Pneumatic connection package For connection of stand with maintenance unit.	x	x	x	x	x	x
0867 490010	Operating panel angle bracket	x	o	o	x	o	o
9822 510001	Halogen sewing light for sewing machine head	x	x	x	x	x	x
9880 867100	Sewing light add-on kit	x	x	x	x	x	x
0798 500088	Sewing light transformer	x	x	x	x	x	x
9880 867103	Sewing light LED	x	x	x	x	x	x
9880 867102	Integrated sewing light	x	x	o	x	x	o
9850 001089	Power supply complete for integrated sewing light and sewing light LED	x	x	o	x	x	o
9850 867001	PCB for oil monitoring		x	o		x	o
0867 590014	Electro-pneumatic needle cooler from the top		x	x			
0867 590344	Mech. sewing foot lifting, with pedal	x			x		
0867 590354	Pneumatic sewing foot lifting; for clutch pos. drive	x			x		
0867 590364	Pneumatic sewing foot lifting; for DC 1550	x			x		
0867 590464	Manual seam tacking	o	x	o	o	x	o
N800 080004	Edge guide, swivelling (like Del Vecchia)	x	x	x	x	x	x
9805 791113	USB memory key for data transfer with the Efka control unit DA321G.	x	x	x	x	x	x
Stands							
MG55 400384	Stand set table top 1200x550 without cut-out	x	x	x	x	x	x
MG55 400394	Stand set table top 1200x550 with cut-out	x	x	x	x	x	x
MG56 400064	Stand set table top 1250x600 divided, foldable, for clutch motors	x			x		
MG56 400074	Stand set table top 1250x600 divided, foldable, for DC 1550	x	x	x	x	x	x

o = Standard equipment

x = Optional equipment

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Further available documents concerning the class 869:

0791 869801 Parts List

0791 869641 Service Instructions

5. Technical data

Noise: Workplace-related emission value in accordance with DIN 45635-48-A-1-KL2

869-180020 LC = _dB (A)

Stitch length: _ mm Sewing-foot stroke: __ mm Speed: ___ min⁻¹

Material:

869-180122 LC = _dB (A)

Stitch length: _ mm Sewing-foot stroke: __ mm Speed: ___ min⁻¹

Material:

869-180322 LC = _dB (A)

Stitch length: _ mm Sewing-foot stroke: __ mm Speed: ___ min⁻¹

Material:

869-280020 LC = _dB (A)

Stitch length: _ mm Sewing-foot stroke: __ mm Speed: ___ min⁻¹

Material:

869-280122 LC = _dB (A)

Stitch length: _ mm Sewing-foot stroke: __ mm Speed: ___ min⁻¹

Material:

869-280322 LC = _dB (A)

Stitch length: _ mm Sewing-foot stroke: __ mm Speed: ___ min⁻¹

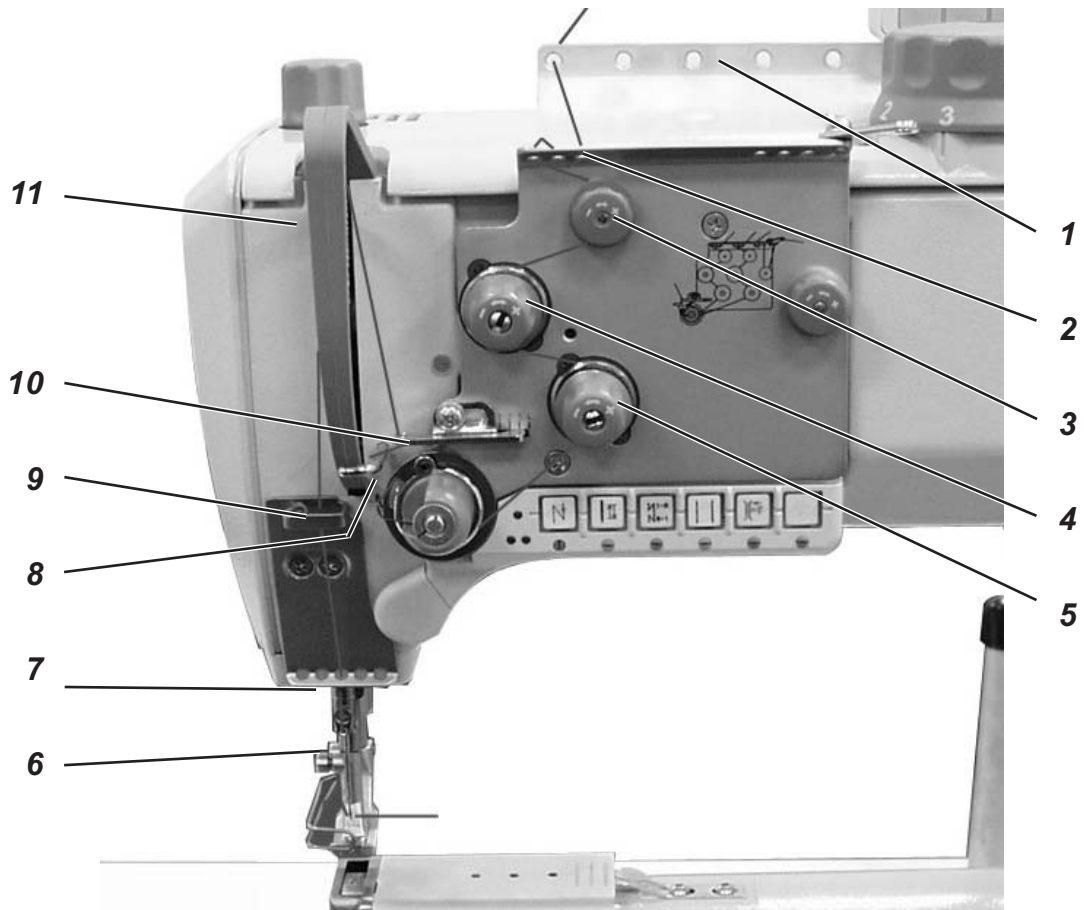
Material:

5.1 Technical data subclasses

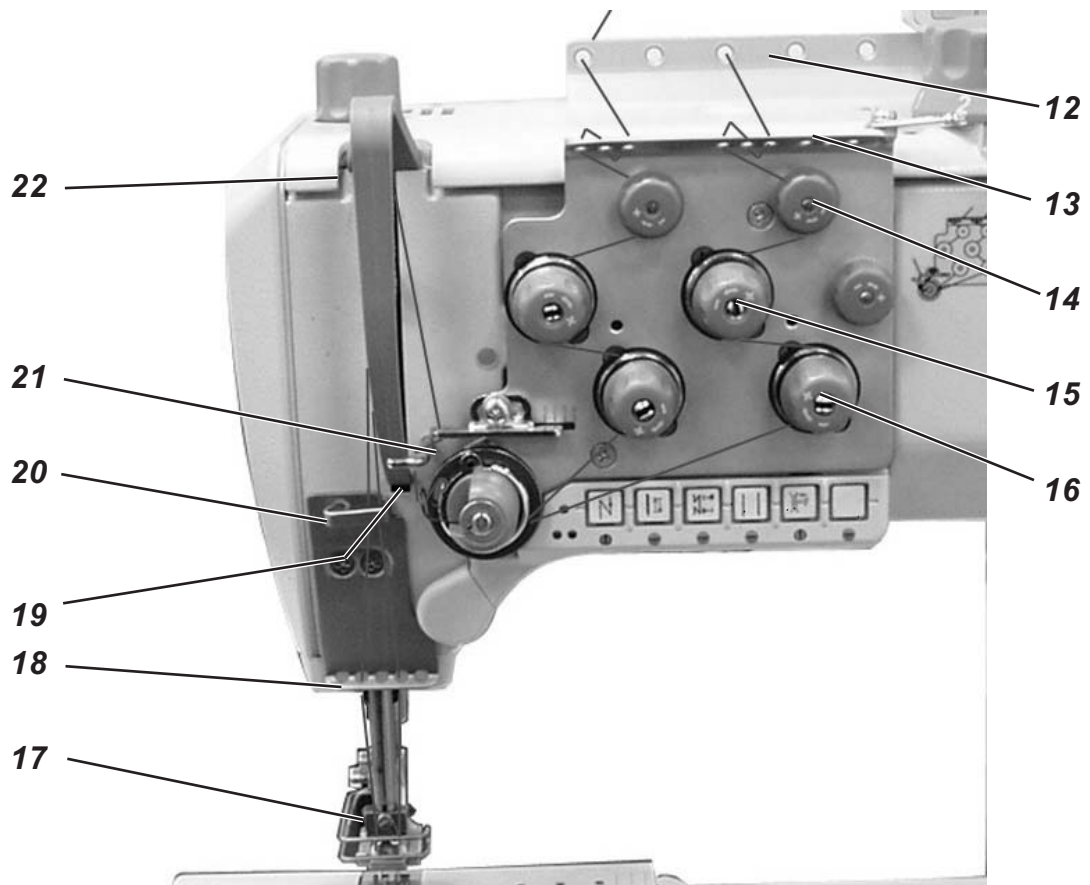
	Subclass					
	869-180020	869-180122	869-180322	869-280020	869-280122	869-180322
Type of stitch	Lockstitch 301					
Hook type	vertical, large					
Number of needles	1		2			
Needle system	134-35					
Needle size max. (depending on E-No.)	[Nm] 180					
Max. thread thickness	[Nm] 80/3 - 10/3					
Needle thread	[Nm] 100/3 - 10/3					
Hook thread	[Nm]					
Stitch length	[mm]					
Forwards	9					
Reverse	9					
Max. speed	[min ⁻¹] 2800					
Speed factory setting	[min ⁻¹] 2800					
Max. sewing-foot stroke	[mm] 9					
Height of the lifted sewing feet max.	[mm] 20					
Operating pressure	[bar] 6					
Air consumption per working cycle	[NL] 0,7					
Dimensions (L x B x H) (with the Efka DC 1550 mounted)	[mm] 600/ 230/ 470 (600/ 300/ 470)			650/ 230/ 470 (650/ 300/ 470)		
Weight (with the Efka DC 1550 mounted)	[kg] 52 (56)			53 (57)		
Rated voltage	[V/Hz] Depending on the drive package					
Rated voltage (factory setting)	[V/Hz] Depending on the drive package					
Rated power	[kVA] Depending on the drive package					

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Threading scheme single-needle machine



Threading scheme double-needle machine



6. Operation

6.1 Threading the needle thread



Caution: Risk of injury!

Turn off the main switch!

The needle thread may only be threaded with the sewing machine switched off.

Threading in the needle thread with single-needle machines

- Put the thread reel on the thread stand and lead the needle thread through the unwinder arm. The unwinder arm must be in vertical position above the thread reels.
- Thread in the thread through threading guide 1 and 2.
- Pass the thread clockwise around the pre-tensioner wheel 3.
- Pass the thread counter-clockwise around the supplementary tensioner wheel 4.
- Pass the thread clockwise around the around the main tensioner wheel 5.
- Pull the thread underneath the thread take-up spring 8 and pass it through the thread regulator 10 to the thread lever 11.
- Pass the thread through the thread lever 11 and the threading guides 9, 7 and 6 on the needle bar.
- Thread the thread into the needle eye.

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Threading in the needle thread with double-needle machines

- Put the thread reels on the thread stand and lead the needle thread and hook thread through the unwinder arm. The unwinder arm must be in vertical position above the thread reels.

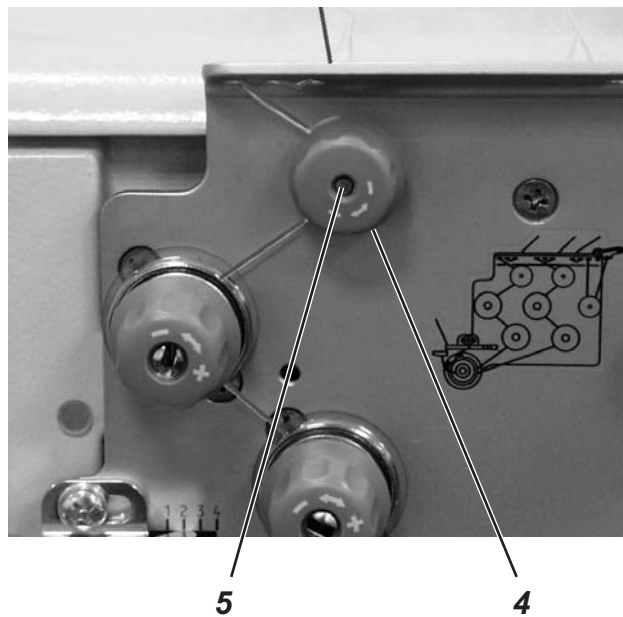
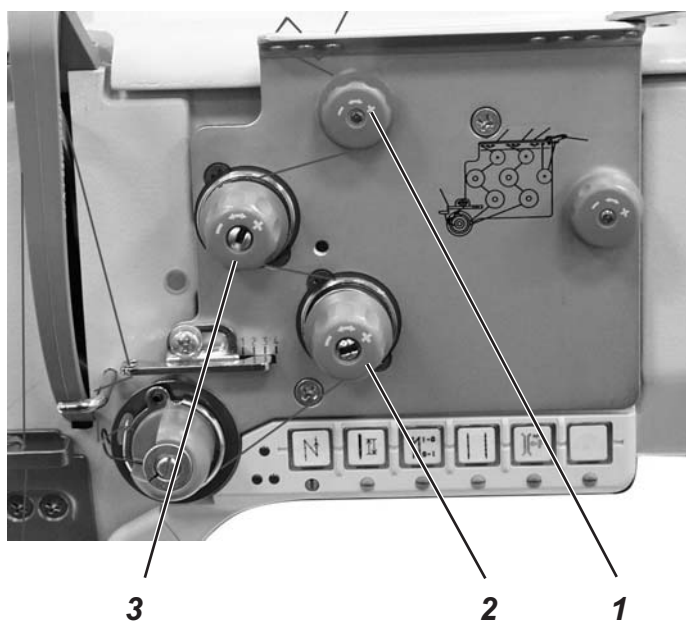
Thread for the left needle (as with single-needle machines)

- Thread in the thread through threading guide 1 and 2.
- Pass the thread clockwise around the pre-tensioner wheel 3.
- Pass the thread counter-clockwise around the supplementary tensioner wheel 4.
- Pass the thread clockwise around the around the main tensioner wheel 5.
- Pull the thread underneath the thread take-up spring 8 and pass it through the thread regulator 10 to the thread lever 11.
- Pass the thread through the thread lever 11 and the threading guides 9, 7 and 6 on the needle bar.
- Thread the thread into the needle eye.

Thread for the right needle

- Thread in the thread through threading guide 12 and 13.
- Pass the thread clockwise around the pre-tensioner wheel 14.
- Pass the thread counter-clockwise around the supplementary tensioner wheel 15.
- Pass the thread clockwise around the around the main tensioner wheel 16.
- Pull the thread underneath the thread take-up spring 19 and pass it through the thread regulator 21 to the thread lever 22.
- Pass the thread through the thread lever 22 and the threading guides 20, 18 and 17 on the needle bar.
- Thread the thread into the needle eye of the right needle.

6.2 Adjusting the needle-thread tension



Pre-tension

When the main tensioner 2 and supplementary tensioner 3 are open, the needle thread must be under slight residual tension. This residual tension is produced by the pre-tensioner 1.

The pre-tensioner 1 simultaneously affects the length of the end of the severed needle thread (the starting thread for the next seam).

- Basic setting:
Turn knurled nut 4 until its front is flush with the bolt 5.
- To shorten the starting thread:
Turn knurled nut 4 clockwise.
- To lengthen the starting thread:
Turn knurled nut 4 counter-clockwise.

Main tension

The main tensioner 2 should be set to the minimum possible tension. The interlacing of the threads must be in the center of the material.

With thin material excessive thread tension can cause unwanted gathering and thread breakage.

- Adjust the main tensioner 2 so that the stitches are uniform.
- To increase tension - Turn the knurled nut clockwise
To decrease tension - Turn the knurled nut counter-clockwise

Supplementary tension

The supplementary tensioner 3 is used for rapid change in needle-thread tension during operation (e.g. with thickened seams).

- Set the supplementary tensioner 3 lower than the main tensioner 2.

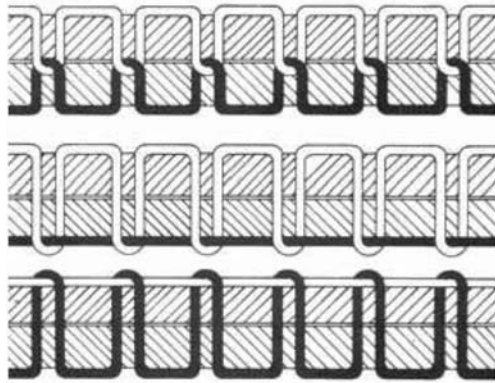


Fig. A Correct thread interlacing in the center of the material

Fig. B Needle-thread tension too weak or Hook-thread tension too strong

Fig. C Needle-thread tension too strong or Hook-thread tension too weak

6.2.1 Function of the main thread tension and the supplementary thread tension in relation to the sewing foot lifting for subclass 869- ...

The thread supplementary tension can, at any time, be switched on or off by actuating key 1 (see chapter 6.15) of the key pad. The parameter F-299 must be set on "1" for this to work.

Parameter Setting	Sewing foot lifting during seam		Sewing foot lifting after thread trimming	
	Thread-main-tension	Thread-supplement.-tension	Thread-main-tension	Thread-supplement.-tension
F-196=0	0	0	0	0
F-196=1	1	1	0	0
F-196=2	0	0	1	1
F-196=3	1	1	1	1

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1 = Thread tension opened mechanically
 0 = Thread tension closed mechanically

- If the supplementary thread tensioner is open, this condition will be maintained when lifting the sewing foot.
- When switching the machine off, the last setting of the supplementary thread tensioner will be maintained through the mains connection.

6.2.2 Function of supplementary thread tension in relation to the sewing foot lifting and the Speedomat for subclass 869- ...

The thread supplementary tension can, at any time, be switched on or off by actuating key 1 (see chapter 6.14) of the key pad. The parameter F-255 must be set on "7" for this to work.

Parameter Setting	Stroke adjustment max. via knee switch	Stroke adjustments setting wheel Reaching of the HP-speed of parameter F-117 (Speedomat)
F-197 = 0	1	1
F-197 = 1	0	1
F-197 = 2	1 (*)	0
F-197 = 3	0	0

(*) If the stroke adjustment (max.) is switched on via the knee switch and the HP-speed (from parameter F-117) is reached through the "Speedomat", then the supplementary thread tensioner will be switched on automatically.

0 = Supplementary thread tension closed mechanically

1 = Supplementary thread tension opened mechanically

- If the supplementary thread tensioner is closed, this condition will be maintained when adjusting the stroke.
- When switching the machine off, the last setting of the supplementary thread tensioner will be maintained through the mains connection.

Basic setting of the control unit for the automatic stepped reduction of the speed (Speedomat) through the setting wheel for the height of the alternating feed stroke

Parameter 188

Step 01-21	Entire Speedomat range
Step 01-10	max. allowed speed, Parameter F-111 = 3000 min ⁻¹
Step 11-18	Linear stepwise reduction of the max. speed (Speedomat)
Step 19-21	max. allowed speed, Parameter F-117 = 1.800 min ⁻¹

6.3 Opening the thread tension

Subclasses

869-180020, 869-280020

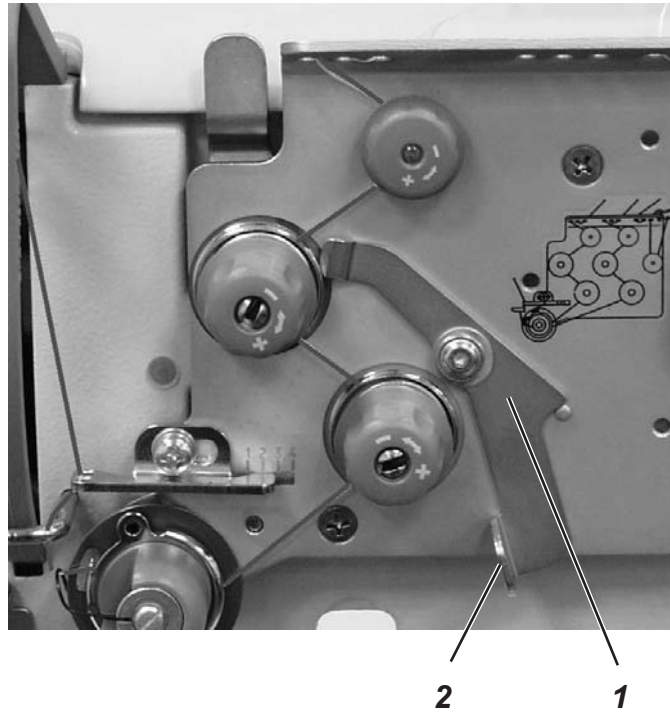
When lifting the sewing feet with the knee lever, the main and supplementary tensioners are automatically opened.

Subclasses

869-180122, 869-180322, 869-280122, 869-280322

The needle thread tension is automatically opened when trimming the thread.

6.4 Turning the supplementary thread tension on and off for subclasses 869-180020, 869-280020, 869-180122 and 869-280122



The supplementary tension is being switched on and off with lever 1.

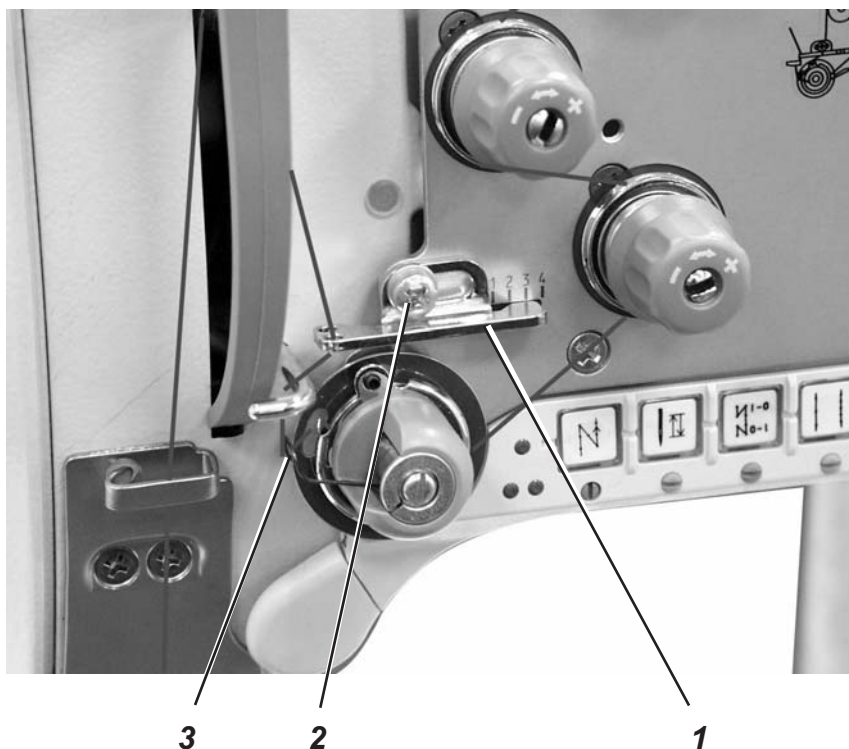
Switching on

- Push the handle 2 of lever 1 to the left.

Switching off

- Push the handle 2 of lever 1 to the right.

6.5 Adjusting the thread regulator



Caution: Risk of injury!

Turn off the main switch.

The thread regulator may only be adjusted with the sewing machine switched off.

The thread regulator 1 controls the quantity of needle thread required for stitch formation.

The thread regulator must be precisely adjusted for an optimum result.

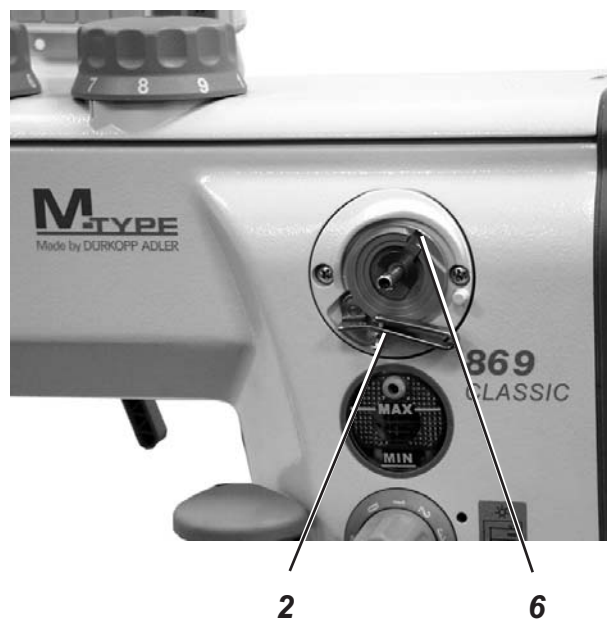
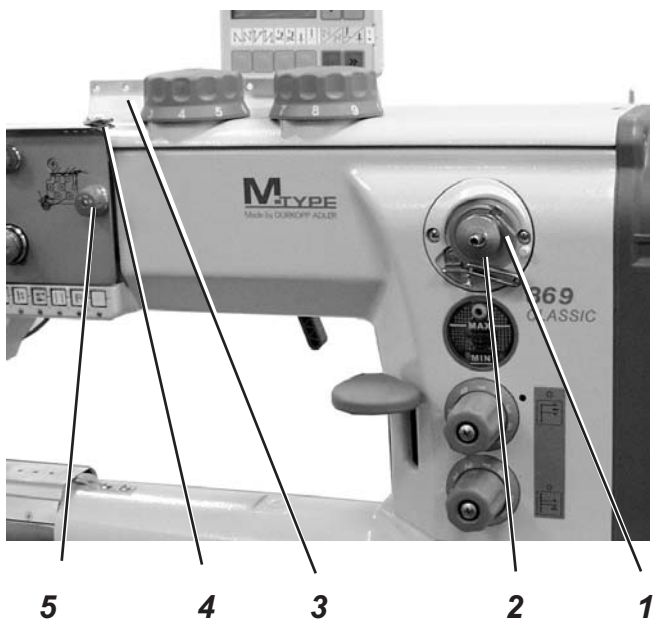
At the correct setting the needle thread loop must be able slide with low tension over the thickest point of the hook.

- Loosen the screw 2.
- Change the position of the thread regulator 1.
Thread regulator to the left = more thread
Thread regulator to the right = less thread
- Fasten the screw 2.

Adjustment information:

If the maximum quantity of thread is required, the thread take-up spring 3 must be pulled upwards about 0.5 mm from its lower end position. This is the case when the needle-thread loop passes the maximum hook diameter.

6.6 Winding on the hook thread



- Put the thread reel on the thread stand and lead the needle thread through the unwinder arm.
- Pull the thread through the thread guide 3, the tensioner 5 and the thread guide 3.
- Clamp the thread behind the blade 6 and tear it off.
- Fit the bobbin 1 on the bobbin winder.
- There is no need to wind the thread around the bobbin by hand.
- Press the bobbin-winder lever 2 into the bobbin.
- Sewing.
- The bobbin-winder lever terminates the process as soon as the bobbin is full.
- The bobbin winder always stops in such a position that the blade 6 is in the insertion position (see right-hand illustration)
- Remove the full bobbin 1, clamp the thread behind the blade 6 and tear it off.
- Fit empty bobbin on the bobbin winder for the next winding process and press the bobbin-winder lever 2 into the bobbin.

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Attention: Danger of breakage!

If the thread is not to be wound on during sewing, it is essential for the sewing foot to be locked in the raised position and the sewing-foot stroke set to the smallest value.

6.7 Changing the hook-thread bobbin



1



2



Caution: Risk of injury!

Turn off the main switch.

The hook-thread bobbin may only be changed with the machine switched off.

Remove the empty bobbin

- Slide the cover 1 sideways, raise up the flap 7 and remove the empty bobbin 2.



Insert a full bobbin

- Insert the bobbin 2 so that it moves in the opposite direction of the hook when unwinding.
- Pass the hook thread through the slit 3 and underneath the spring 4.
- Pull the hook thread through the slit 6 and continue pulling until it stands out about 3 cm.
- Close the flap 7 and pull the hook thread through the thread guide 5 of the flap.

6.8 Setting the hook thread tension



1



Caution: Risk of injury!

Turn the main switch off!

The hook thread tension may only be adjusted with the sewing machine switched off.

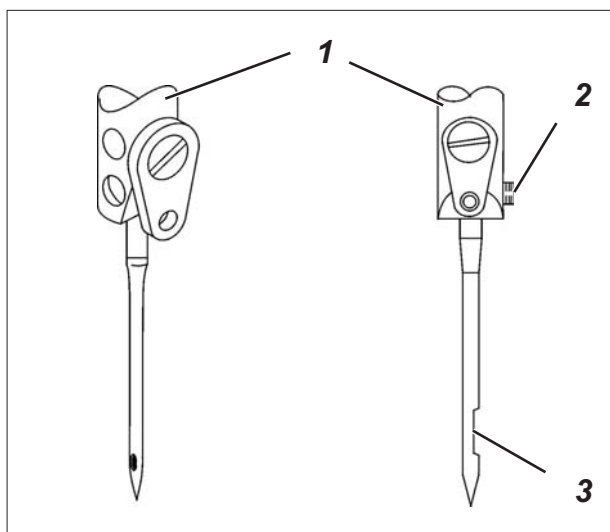
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Setting the tension spring 2

- Set the tension spring 2 by turning the adjustment screw 1.
Increase the hook thread tension =
Turn screw 1 clockwise

Decrease the hook thread tension =
Turn screw 1 counter-clockwise.

6.9 Inserting and changing the needle with single-needle machines



1



Caution: Risk of injury!

Turn off the main switch.

The needle may only be changed with the sewing machine switched off.

- Turn the hand wheel, until the needle bar 1 has reached its highest position.
- Loosen the screw 2.
- Pull the needle downwards out of the needle bar 1.
- Push in the new needle into the hole of the needle bar 1 until it stops.
ATTENTION!
The needle scarf 3 must point towards the hook.
- Fasten the screw 2.



ATTENTION!

When changing to another needle size, the distance between hook and needle must be readjusted (see service instructions).

Ignoring the above mentioned hint can cause the following mistakes:

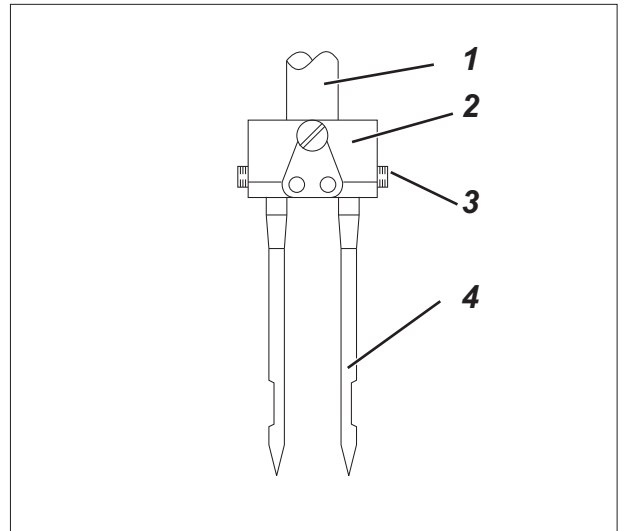
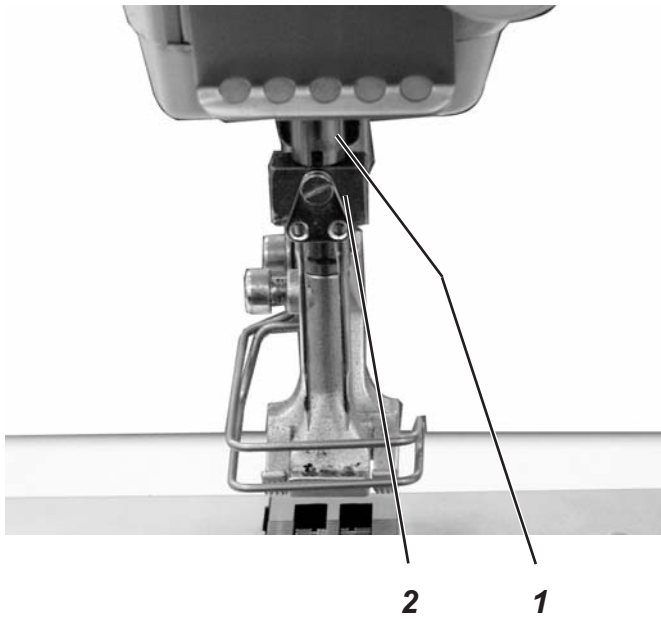
When inserting a thinner needle:

- Missed stitches
- Damage of the thread

When inserting a thicker needle:

- Damage of the hook tip
- Damage of the needle

6.10 Inserting and changing the needle with double-needle machines



Caution: Risk of injury!

Turn the main switch off!

The needle may only be changed with the sewing machine switched off.

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- Turn the hand wheel, until the needle bar 1 has reached its highest position.
- Loosen the screw 3.
- Pull the needle downwards out of the needle holder 2.
- Push in the new needle into the hole of the needle holder 2 until it stops.
ATTENTION!
Seen from the operator's side, the needle scarf 4 of the right needle must point to the right side and the needle scarf of the left needle point to the left side (see drawing).
- Fasten the screw 3.



ATTENTION!

When changing to another needle size, the distance between hook and needle must be readjusted (see service instructions).

Ignoring the above mentioned hint can cause the following mistakes:

When inserting a thinner needle:

- Missed stitches
Damage of the thread

When inserting a thicker needle:

- Damage of the hook tip
Damage of the needles

6.11 Lifting the sewing foot



Subclass

869-180020, 869-280020

The sewing feet can be lifted mechanically by actuating the knee lever 1.

Subclasses

869-180112, 869-180322, 869-280122, 869-280322

The sewing feet can be lifted electro-pneumatically by actuating the pedale 2 or the knee lever 1.

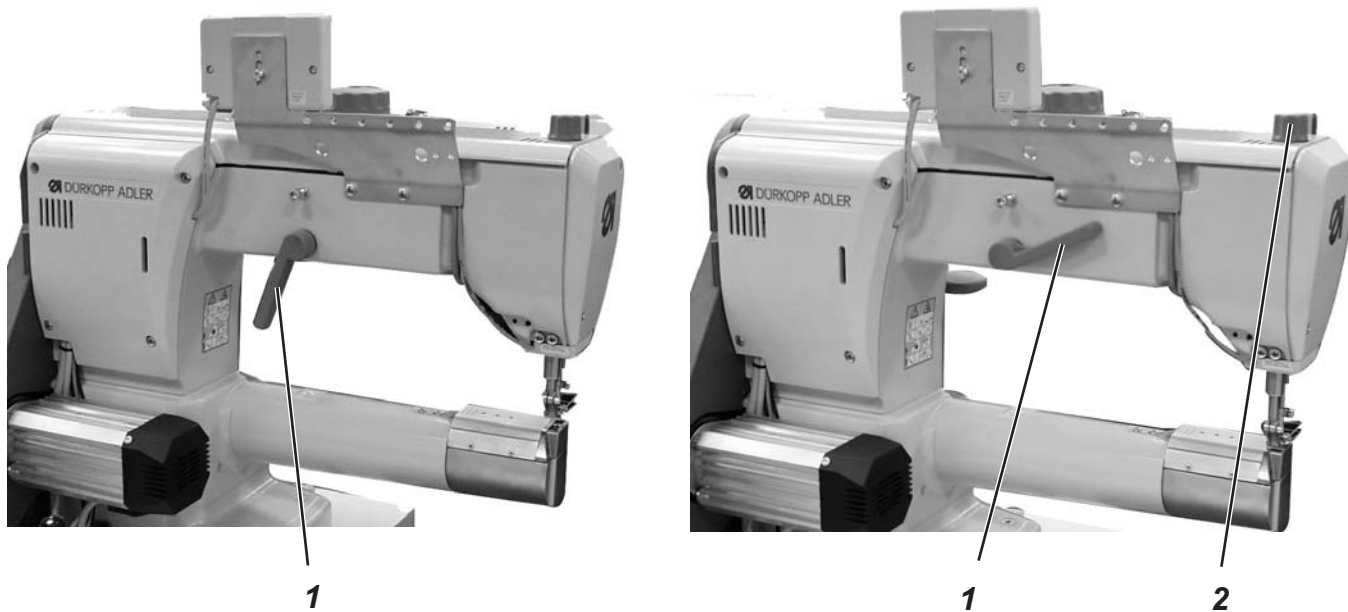
Mechanical sewing foot lifting (Knee lever)

- To adjust the position of the material (e.g. for corrective purposes), push the knee lever 1 (optional) to the right.
The sewing foot remains in the raised position as long as pressure is maintained on the knee lever 1.

Raising the sewing foot electro-pneumatically (pedal)

- Press the pedal 2 half-way back.
The sewing feet are raised with the machine at a halt.
- Press the pedal 2 all the way back.
The thread trimmer is activated and the sewing foot raised.

6.12 Locking the sewing feet in lifted position



- Push the lever 1 downwards.
The sewing feet are locked in lifted position.
 - Push the lever 1 upwards.
The sewing feet are released.
- or
- Lift the sewing feet pneumatically or by pushing the knee lever.
The lever 1 then moves back into its initial position.

GB

6.13 Sewing foot pressure

The required sewing-foot pressure is set with the setting wheel 2.



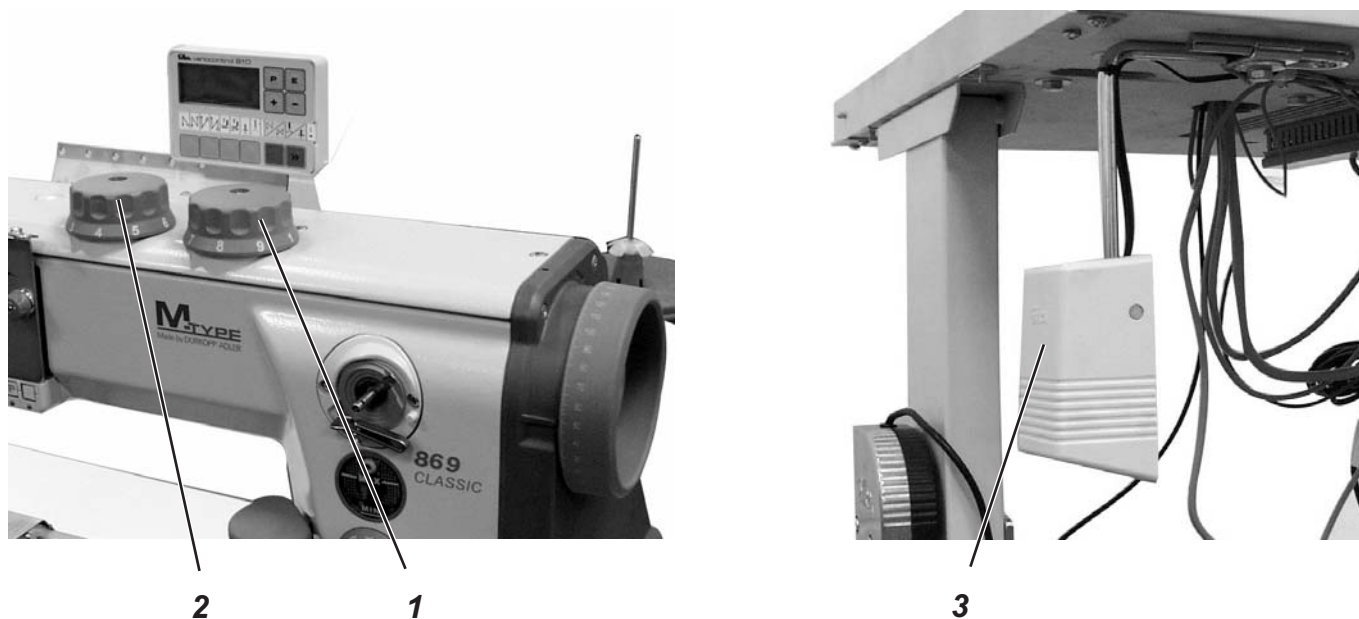
ATTENTION!

The material must not “swim”.

Do not set a higher pressure than is necessary.

- To increase the sewing-foot pressure = Turn the setting wheel 2 clockwise.
- To decrease the sewing-foot pressure = Turn the setting wheel 2 counter-clockwise.

6.14 Sewing-foot stroke



The special sewing machine 869 has, depending on the subclass, as standard equipment two setting wheels for the sewing foot stroke. With the left setting wheel 2 the standard sewing foot stroke from 1 to 9 mm is selected.

With the right setting wheel 1 an increased sewing foot stroke from 1 to 9 mm is selected.

- Turning the setting wheel 1 and 2 (1 to 9)
1 = minimal sewing foot stroke
9 = maximal sewing foot stroke

Automatic limiting of the speed

Machines without thread trimmer

With these machines the speed is not controlled

Please take into consideration the hint and the chart on the next side.

Machines with thread trimmer

The sewing-foot stroke and the speed are interdependent. A potentiometer is linked mechanically with the adjusting wheel. By means of this potentiometer the control unit detects what foot-stroke has been set and restricts the speed of rotation accordingly.

Machines with electro-pneumatic rapid stroke adjustment

With fabric parts that are thicker or in order to sew over cross seams, the increased sewing foot stroke (setting wheel 1) can be switched on during the sewing process by actuating the knee switch 3 beneath the table top.

As with the machines that are equipped with a thread trimmer, the potentiometer is also available.



ATTENTION! Danger of breakage!

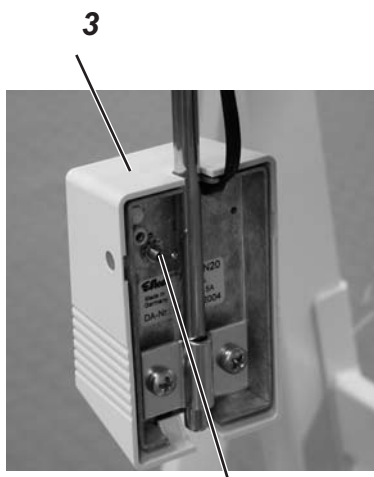
The standard sewing foot stroke that is set with the setting wheel 2 may never exceed the stroke set with the setting wheel 1.

Operation mode of the quick stroke adjustment

The activation period of the maximum sewing foot stroke depends on the set operation mode. It is possible to choose between three operation modes.

The individual operation modes are determined by the setting of the parameters F-138 and F-184 at the control panel (see enclosed instructions of the motor manufacturer).

Operation mode	Operation / Explanation
Keystroke F-138 = 0 F-184 = 0	The maximum sewing foot stroke remains activated as long as the knee switch 3 is actuated.
Push-lock F-138 = 1	The maximum sewing foot stroke is activated by actuating the knee switch 3. By actuating the knee switch once again the maximum sewing foot stroke is deactivated.
Keystroke with lowest speed F-138 = 0 F-184 0 < 100	The maximum sewing foot stroke remains activated as long as knee switch 3 is actuated. After releasing the knee switch the machine sews with the maximum sewing foot stroke until the set minimum number of stitches is reached (parameter F-184). Afterwards, the seam is continued with normal sewing foot stroke.



Please note!

The switch 4 on the rear of the knee switch 3 can also be used to switch between the “keystroke” and “push-lock” operation modes.

Hint!

In order to ensure an operation as safe as possible and a high durability, the max. speed as shown in the chart should not be exceeded.

GB

4

Subclass	Stitch length range Setting wheel position	Sewing-foot stroke [mm]	max. Speed [min ⁻¹]
869-180020	0-6	1-3	2800
869-180112		4	2500
869-180322		5	2100
869-280020		6-9	1800
869-280122		6-9	1-4
869-280322	5		2100
	6-9		1800

6.15 Setting the stitch length



4



3

2

1

The special sewing machine 869 has, depending on the subclass, as standard equipment two setting wheels. Thus, two different stitch lengths can be sewn, that are activated by actuating the key 4 (see chapter 6.15).

The two stitch lengths are set with the setting wheels 1 and 2 on the machine arm.

- Set the higher stitch length with the upper setting wheel 1.
Setting 1 = min. stitch length
Setting 9 = max. stitch length
- Set the smaller stitch length with the lower setting wheel 2.
Setting 1 = min. stitch length
Setting 9 = max. stitch length

The stitch length are the same for both, forward and backward sewing.

- For the manual sewing of tacks, push the stitch regulator lever 3 downwards.
The machine sews backward as long as the stitch regulator lever 3 is pressed down.

Please note:

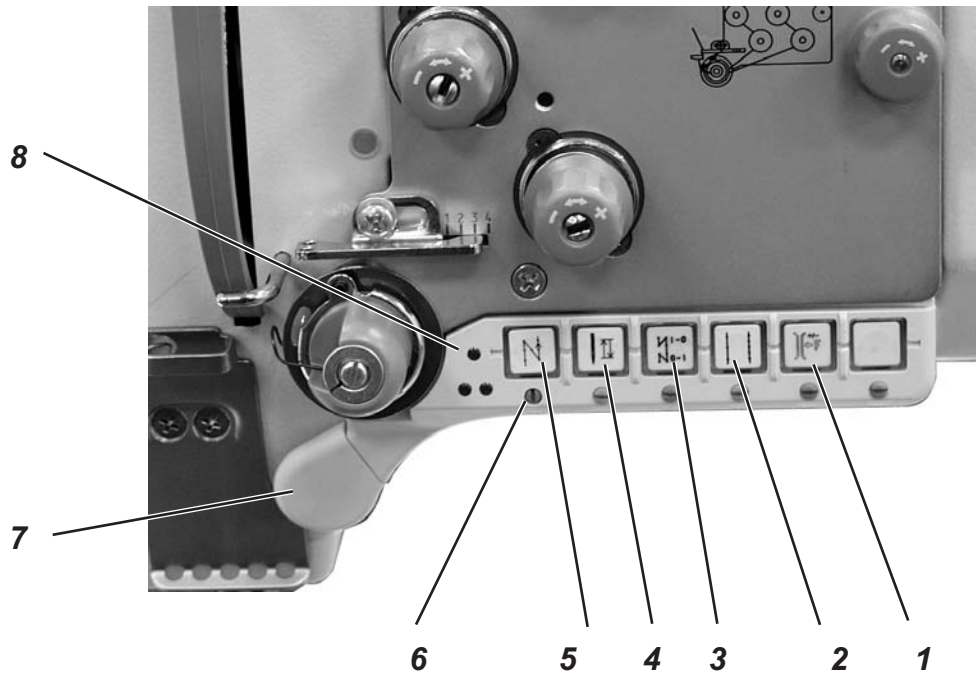
In order to facilitate the setting of stitch lengths, the stitch length that remains unchanged should be activated with key 2 (see chapter 6.15).



ATTENTION! Danger of breakage!

The stitch length set with the lower setting wheel 2 must not exceed the stitch length set with the upper setting wheel 1.

6.16 Key pad on the machine arm



Key	Function
1	<p>Supplementary tread tension</p> <p>Button is back-lit: the supplementary thread tension is activated.</p> <p>Button is not back-lit: the supplementary thread tension is not activated.</p>
2	<p>2nd stitch length</p> <p>Button is back-lit: long stitch length (upper setting wheel) is activated</p> <p>Button is not back-lit: small stitch length (lower setting wheel) is activated</p>
3	<p>Recalling or suppressing the initial or final bartack.</p> <p>If the initial and final bartacks are activated, then the next bartack is deactivated when the button is pressed.</p> <p>If the initial and final bartacks are not activated, then the next bartack is activated when the button is pressed.</p>
4	<p>Move the needle to the upper or lower position.</p> <p>The function of the button can be set with the parameter F-242.</p> <p>1 = needle up/down</p> <p>2 = needle up</p> <p>3 = single stitch</p> <p>4 = full stitch</p> <p>5 = needle to position 2</p> <p>The factory setting is 1 (needle up/down).</p>
5	<p>Manually sewing backward.</p> <p>The machine sews backwards for as long as the button is held down.</p>

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Key	Function
8	LED display "Power On"

The function of key 7 can be selected with the screw 6 under the keys.

- Selecting a function.
Example: 6 = Manually sewing backward.
- Turn in the screw 6 under the key 5 and turn it 90° to the right (the slot stands vertically).
The function can now be called via both keys 5 and 7.



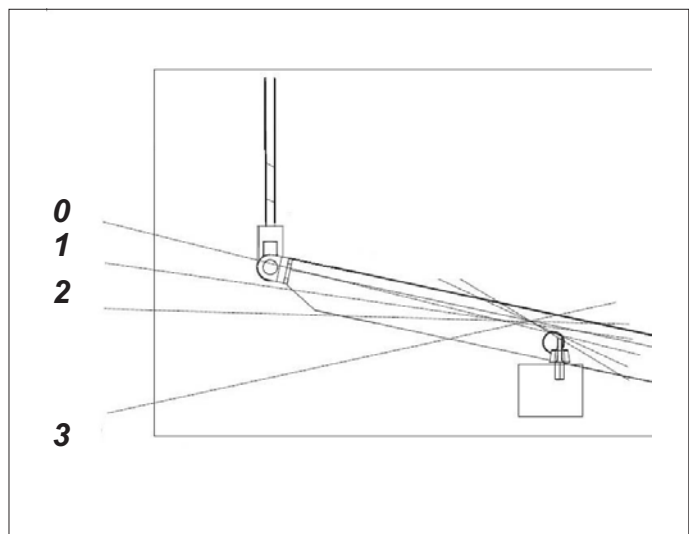
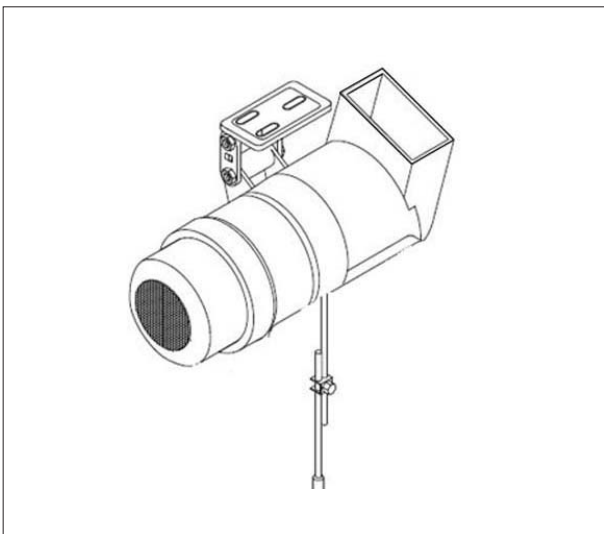
ATTENTION!

Before key 7 can be programmed with a new function, the former setting must be deactivated.

7. Sewing

7.1 Sewing with machines using the FIR clutch positioning drive

For a detailed description of the control unit, please consult the enclosed current issue of the operating manual of the motor manufacturer (see also www.efka.net).



With pedal

- 0 At rest
- 1 Sewing forwards with minimum speed
- 2 Sewing forwards with higher speed
- ...
- 3 Sewing forwards with maximum speed

7.2 Sewing with machines using the Efka DC1550/DA321G positioning drive

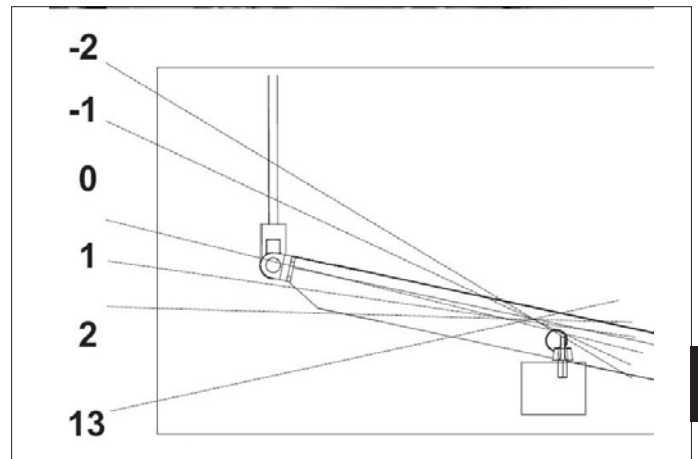
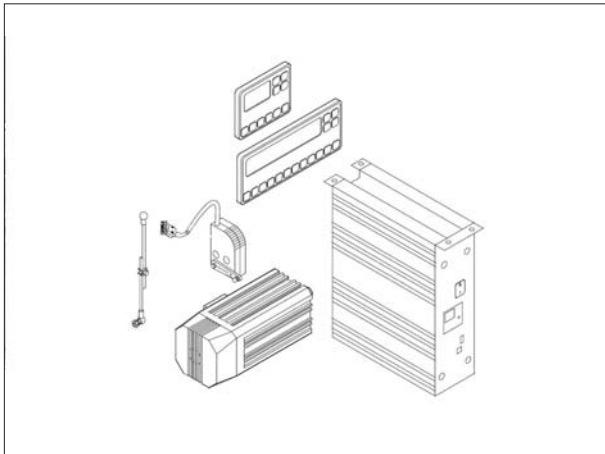
The control unit DA321G contains all required operational interfaces for switching functions and setting parameters.

It is possible to operate without an operating panel, but the seam programming cannot be carried out.

The V810 and V820 operating panels can also be connected to the control unit.

They are deliverable as optional equipment. Seam programming can be performed with the V820 operating panel.

For a detailed description of the control unit, please consult the enclosed current issue of the operating manual "Efka DC1550 - DA321G" of the motor manufacturer (see also www.efka.net).



GB

With pedal

The pedal position is detected using a sampling detector with 16 different levels.

Their meanings are listed in the table below:

Pedal position	Pedal movement	Meaning
-2	Completely backwards	Command for cutting the thread (end of seam)
-1	Half backwards	Command for raising the sewing foot
0	Rest position	see remark below
1	Slightly forwards	Command for lowering the sewing foot
2	More forwards	Sew with minimal speed (first step)
3	More forwards	Sew with more speed (second step)
:::		
13	Entirely forwards	Sew with maximal speed (12th step)

Remark

The following functions can be programmed to correspond with the rest position:

- Needle position (down/up) and sewing-foot position (down/up) when stop in seam.
- Sewing-foot position (up/down) after end of seam. (Pedal fully backwards, then in rest position)

Sewing over a cross seam.
(max. sewing foot stroke)

The maximum sewing-foot stroke is activated.
The speed is limited to 1600 min⁻¹.
Operating modes for maximum sewing-foot stroke:

- Press the knee switch briefly for activating the maximum sewing-foot stroke.
- Press the knee switch briefly again for deactivating the maximum sewing-foot stroke.

Sewing the 2nd stitch length
during sewing
(max. stitch length)

- Actuate key 2.

Increase the thread tension during
the sewing process

- Actuate key 1.

At the seam end

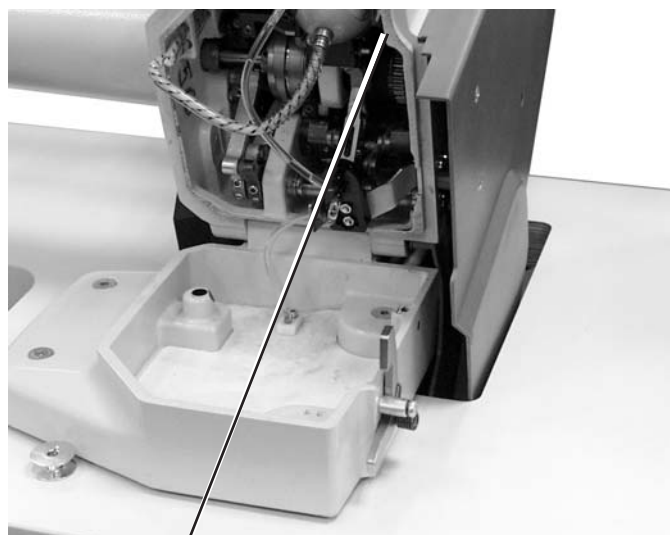
Remove the material

- Push the pedal all the way back and keep it pushed.
The final bartack is sewn (when activated).
The thread is cut.
The machine stops in the second position.
The needles are up (reverse rotation).
The sewing feet are up.
- Remove the material.

8. Tilting Back the Machine Head



1



2



Caution Crushing Hazard!

Do not reach between the base and the machine arm while tilting back the machine head.

Tilting back the machine head

- Pull lever 1 upwards.
The locking mechanism is then released.
- Tilt the machine head 2 cautiously to the rear.

Re-closing the machine head

- Tilt the machine head 2 forwards.
The head tilts back to the position shown in the illustration below.
- Pull lever 1 upwards and cautiously tilt the head downwards.



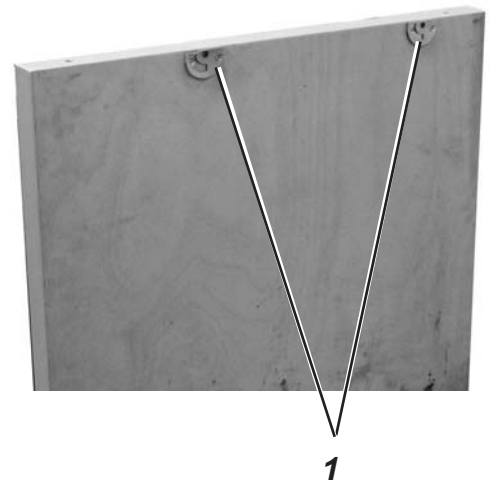
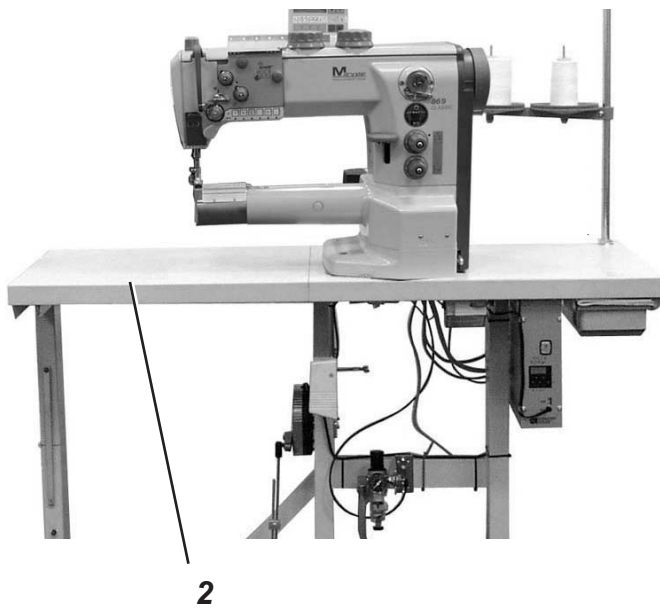
1



Attention !

Only tilt the machine head up for a short period (for example for maintenance work).
If the machine head is tilted back for a longer period (for a night or weekend), oil can leak out in the hook area.

9. Folding Down the Table Top with the MG 56-2 Stand

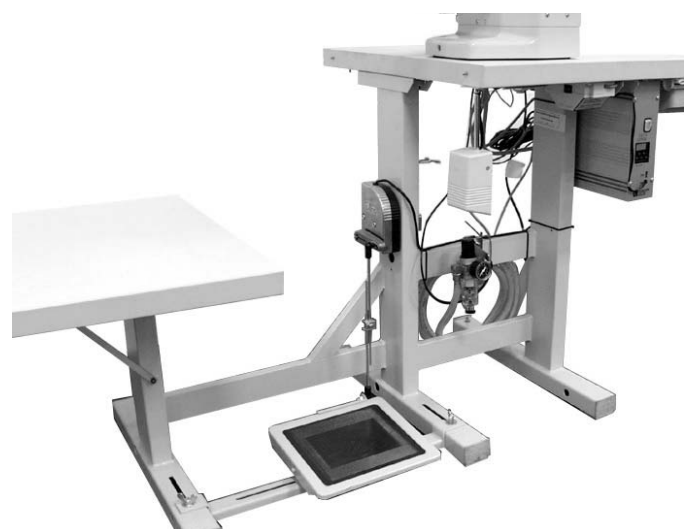
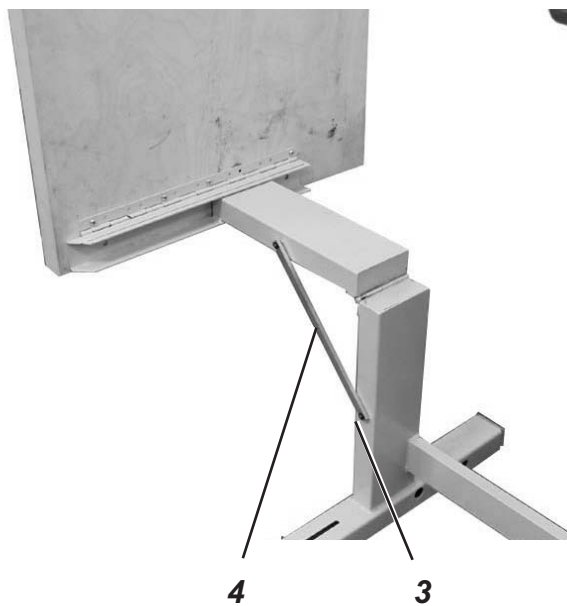


Caution: Risk of injury!

Always hold the table top with both hands when pulling it out.

GB

- Loosen the table top latch 1 located under the table top.
- Pull out the table top 2 to the left and fold out.
- Hook in the diagonal brace 4 to the bolts 3.
- Fold down the table top
- Follow these steps in the opposite order to raise the table top.



10. Maintenance

10.1 Cleaning and Checking



Caution: Risk of injury!

Turn the main switch off!
Maintenance may only be carried out with the machine switched off!

Maintenance work must be carried out no less frequently than at the intervals given in the tables (see “operating hours” column).

Maintenance intervals may need to be shorter when processing heavy-shedding materials.

A clean machine is a trouble-free machine.



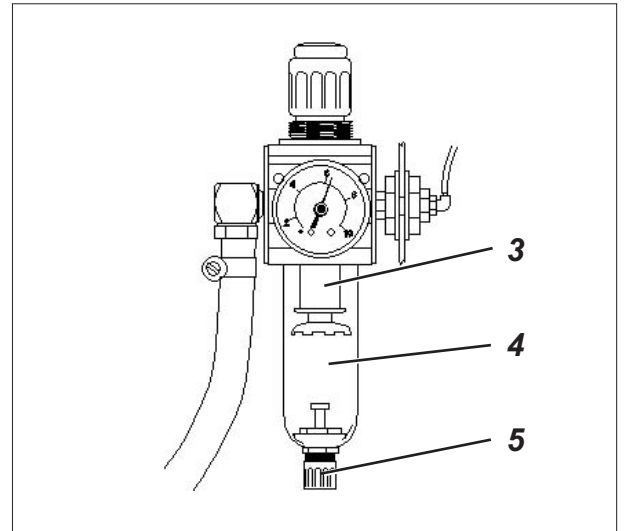
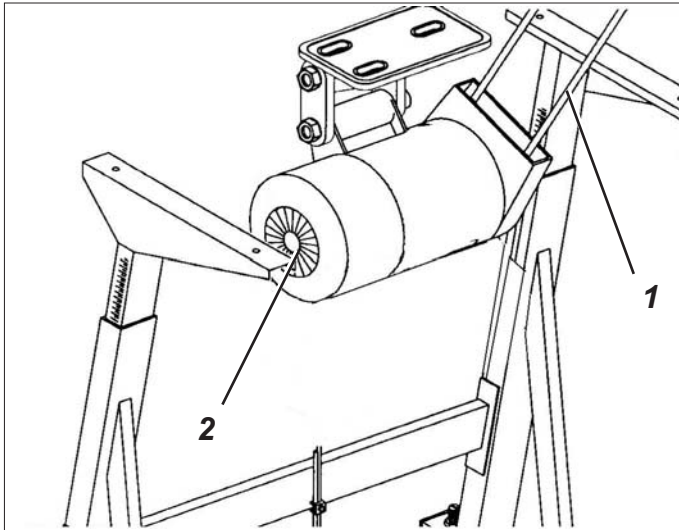
2

1



3

Maintenance work to be carried out	Explanation	Operating hours
Machine head		
- Remove lint, pieces of thread (e.g. with an air blow gun)	Places in special need of cleaning: - area under the throat plate 2 - area around the hook 1 - bobbin housing - thread trimmer - needle area	8
Direct drive		
Clean fan grille 3. (e.g. with an air blow gun)	Remove lint and pieces of thread from air-intake openings.	8



Maintenance work to be carried out

Explanation

Operating hours

Sewing motor

Clean fan grille 2.
(e.g. with an air blow gun)

Remove lint and pieces of thread from air-intake openings.

8

Check condition and tension of V-belt 1

It must be possible to depress the V-belt by about 10 mm by pressing it with a finger at its mid-point.

160

GB

Pneumatic system

Check water level in pressure regulator.

The water level must not rise to the level of the filter cartridge 3.
- After unscrewing the drain screw 5, the water under pressure will flow out of the water separator 4.

40

Clean filter cartridge.

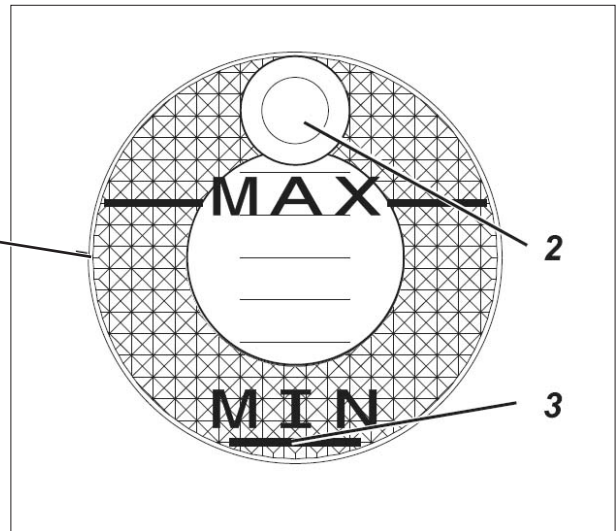
Dirt and condensation are separated out by the filter cartridge 3.
- Disconnect the machine from the compressed-air supply.
- Unscrew the drain screw 5. There must be no pressure in the machine's pneumatic system.
- Unscrew water separator 4.
- Unscrew filter cartridge 3. Wash the filter shell and cartridge with cleaning fluid (not solvent) and blast clean.
- Re-assemble the maintenance unit.

500

- Check the system for leaks.

500

10.2 Oil Lubrication



Caution: Risk of injury!

Oil can cause skin eruptions.
Avoid protracted contact with the skin.
In the event of contact, thoroughly wash the affected area.

ATTENTION!

The handling and disposal of mineral oils is subject to legal regulation.
Deliver used oil to an authorised collection point.
Protect your environment.
Take care not to spill oil.



To lubricate the special sewing machine use only **DA-10** lubricating oil or an equivalent oil of the following specification:

- Viscosity at 40° C: 10 mm²/s
- Flashpoint: 150° C

DA-10 is available from **DÜRKOPP ADLER AG** retail outlets under the following part numbers:

- 250-ml container: 9047 000011
- 1-litre container: 9047 000012
- 2-litre container: 9047 000013
- 5-litre container: 9047 000014

Maintenance work to be carried out	Explanation	Operating hours
Lubrication of the machine head	<p>The head is equipped with centralized oil wick lubrication. The bearings are supplied by the oil reservoir 1.</p> <ul style="list-style-type: none"> - The oil level must not drop below the mark 3 on the oil reservoir. The oil reservoir illuminates when the oil level falls below the mark 3. (Only for subclass 869-180322, 869-280322) - Refill oil through the hole 2 until it reaches the "Max" mark. 	8