



Operating Instructions

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 827 – Original Instructions

(Edition 01/2012)

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1 Product description

The **DÜRKOPP ADLER 827** is a special sewing machine for universal use.

- It is a flatbed double-lockstitch machine with bottom feed and needle feed.
- Depending on the subclass it comes as single or double needle machine, with electromagnetic thread cutter.
- Equipped with a large two-pieces vertical hook (with CTB Bobbin).
- With a maximum of 16 mm fabric clearance when sewing feet are lifted.
- The residual thread length after thread trimming is about 15 mm without short thread trimming device and about 7 mm with short thread trimming device.
- 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.
- Integrated winder.

2 Designated use

The **827** is a sewing machine designed for sewing light to medium-heavy material. Such material is generally made of textile fibers, 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 machine. 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 device is currently available.

The seam is generally produced with textile-fibre sewing thread of gauge up to 20/3 NeB (cotton), 20/3 Nm (synthetic). 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.

4 Optional equipments

For the **827** the following optional equipments are available:

Order No.	Optional equipment	Subclasses		
		827-160122	827-260122	
0867 590014	Electro-pneumatic needle cooler from the top (NK 20-1)	x	x	
0867 590024	Electro-pneumatic needle cooler from the bottom (NK 20-2)	x	x	
9780 000108	WE-8 maintenance unit for pneumatic optional equipments	x	x	
0867 490010	Operating panel L-bracket	x	x	
9822 510003	Halogen sewing lamp	x	x	
9880 867100	Sewing lamp add-on kit	x	x	
0798 500088	Sewing lamp transformer	x	x	
9880 867103	Sewing lamp LED	x	x	
9880 867102	Integrated LED lamp	x	x	
9850 001089	Power supply for integr. sew. lamp./ LED	x	x	
0797 003031	Pneumatic connection package	x	x	
0867 590464	Mechanical locking			
N800 080021	Edge guide, swivelling	x		
N800 080022	Edge guide / Rule on the slide of the throat plate (2 nd seam distance)	x	x	
N800 005646	Edge guide pneumatic driven with two adjustable seam distances Fixed on the slider of the throat plate	x		
N800 080001	Edge guide, swivelling			
N800 080004	Edge guide, swivelling (like Del Vecchia)			
N800 005650	Seam center guide connectable pneumatically	x	x	
N800 005655	Seam center guide, swivelling (mechanically)	x	x	x
0867 590074	Reflected light barrier for the automatic recognition of the material edge at the end of seam (LR 20-1)	x	x	
9805 791113	USB memory key for data transfer with the Efka control unit DA321G.	x	x	
0868 150434	Low maintenance hook (large)			
9850 867001	PCB for oil monitoring			
0867 590984	Kit FK = Thread clamp with thread wiper function			
9081 300001	Tools - Kit M-Type	x	x	
0867 591244	Visual bobbin monitoring / Window in the throat plate slide + bobbin 32 mm with elongated holes	x	x	
9800 330009	Operating panel Efka V810	x	x	
9800 330010	Operating panel Efka V820	x	x	

x = Optional equipment

o = Standard equipment

Stands

Order No.	Optional equipment	Subclasses		
		827-160122	867-260122	
MG55 400304	Stand set MG 55-3 for motor fitting beneath the table, with pedal Table top size 1060 x 500 mm			
MG55 400314	Stand set MG 55-3 for motor fixed on machine head, with pedal Table top size 1060 x 500 mm	x	x	
MG55 400404	Stand set MG 58-63 for motor fitting beneath the table, with pedal Table top size 1600 x 580 mm			
MG55 400414	Stand set MG 58-63 for motor fixed on machine head, with pedal Table top size 1600 x 580 mm	x	x	

Further optional equipments are available. Please contact our application center (APC).
E-Mail: *marketing@duerkopp-adler.com*

Further available documents concerning the class 867:

0791 827801	Parts list
0791 827641	Service Instructions
0791 100700	Fitting Instructions for Sewing Lamp LED

4 Technical data

Noise: Workplace-related emission value in accordance with DIN EN ISO 10821.

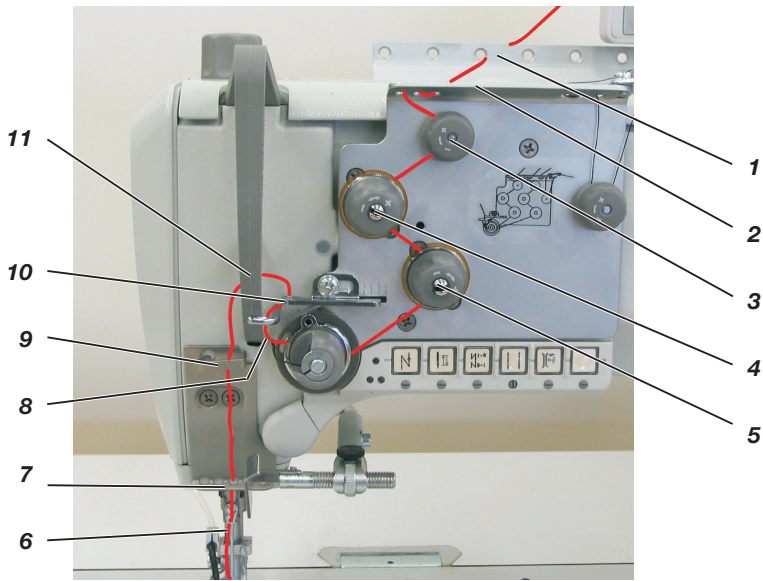
827-160122 **LC = - dB (A)**
Stitch length: - mm Speed: - min⁻¹
Material: -

827-260122 **LC = - dB (A)**
Stitch length: - mm Speed: - min⁻¹
Material:

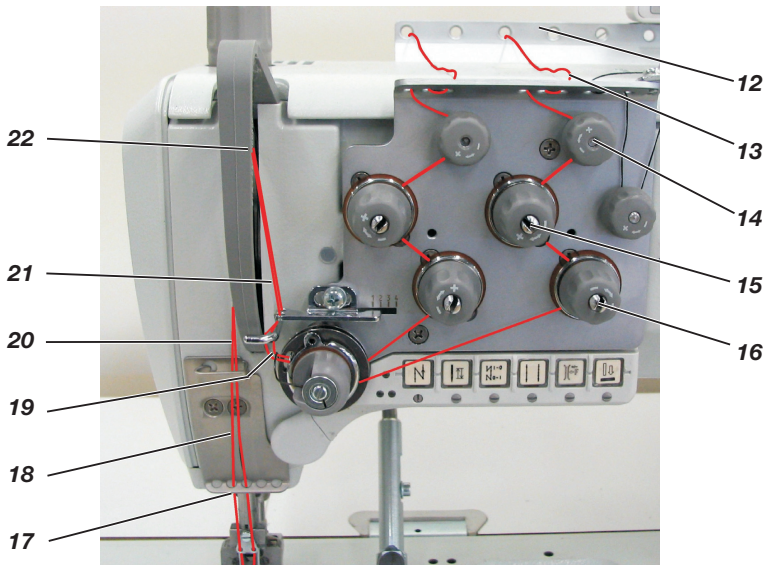
5.1 Technical data subclasses

Subclasses		827-160122	827-260122
Type of stitch	Lockstitch 301		
Hook type		large	large
Number of needles		1	2
Needle system	134-35		
Needle size (depending on E-No.) [Nm]	80 - 130		
Max. thread thickness [Nm]	80/3 - 20/3		
Stitch length - Forward - Backward [mm]	7 7		
Number adj. stitch lengths		1	1
Max. number of stitches [min ⁻¹]		3800	3800
Number of stitches with factory setting [min ⁻¹]		3400	3400
Max. lifting height [mm]		16	16
Needle bar stroke [mm]		36	36
Operating pressure [bar]		6	6
Air consumption per working cycle [NL]		0.7	0.7
Dimensions (L x W x H) [mm]	780 / 370 / 790		
Weight with direct drive [kg]		55 62	55 62

Threading scheme single-needle machine



Threading scheme double-needle machine



5 Operation

5.1 Threading the needle thread



Caution: danger 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.
- Conduct the thread clockwise around the pre-tensioner wheel 3.
- Conduct the thread counter-clockwise around the supplementary tensioner wheel 4.
- Conduct the thread clockwise around the main tensioner wheel 5.
- Pull the thread underneath the thread take-up spring 8 and conduct it through the thread regulator 10 to the thread lever 11.
- Conduct 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.

Threading in the needle thread with double-needle machines

- Put the thread reels 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 for the left needle (as with single-needle machines)

- Thread in the thread through threading guide 1 and 2.
- Conduct the thread clockwise around the pre-tensioner 3.
- Conduct the thread counter-clockwise around the supplementary tensioner 4.
- Conduct the thread clockwise around the main tensioner 5.
- Pull the thread underneath the thread take-up spring 8 and conduct it through the thread regulator 10 to the thread lever 11.
- Conduct 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.
- Conduct the thread clockwise around the pre-tensioner 14.
- Conduct the thread counter-clockwise around the supplementary tensioner 15.
- Conduct the thread clockwise around the main tensioner 16.
- Pull the thread underneath the thread take-up spring 19 and conduct it through the thread regulator 21 to the thread lever 22.
- Conduct the thread through the thread lever 22 and the threading guides 20, 18 and 17 on the needle bar.
- Thread the thread into the eye of the right needle.

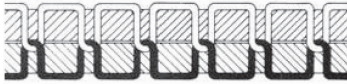
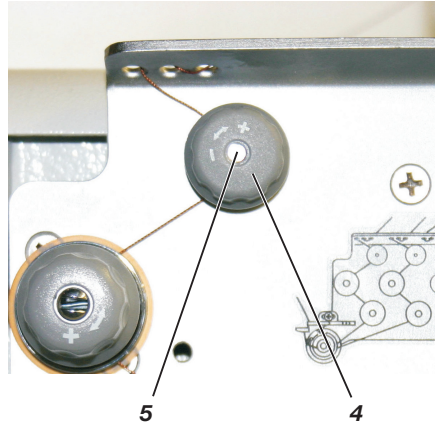
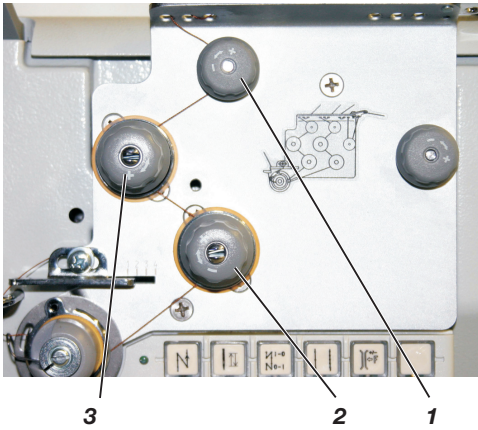


Fig. A: Correct thread interlacing in the center of the material



Fig. B: Needle-thread tension too weak
or
hook-thread tension too strong

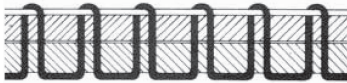


Fig. C: Needle-thread tension too strong
or
hook-thread tension too weak

5.2 Adjusting the needle-thread tension

Pre-tensioner

When the main tensioner 2 and supplementary tensioner 3 are open (e.g. when the sewing feet are raised) 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 anticlockwise.

Main tensioner

The main tensioner 2 should be set to the minimum possible tension.

The looping of the threads must be in the center of the material. With thin material excessive thread tension can cause unwanted gathering and thread breakage.

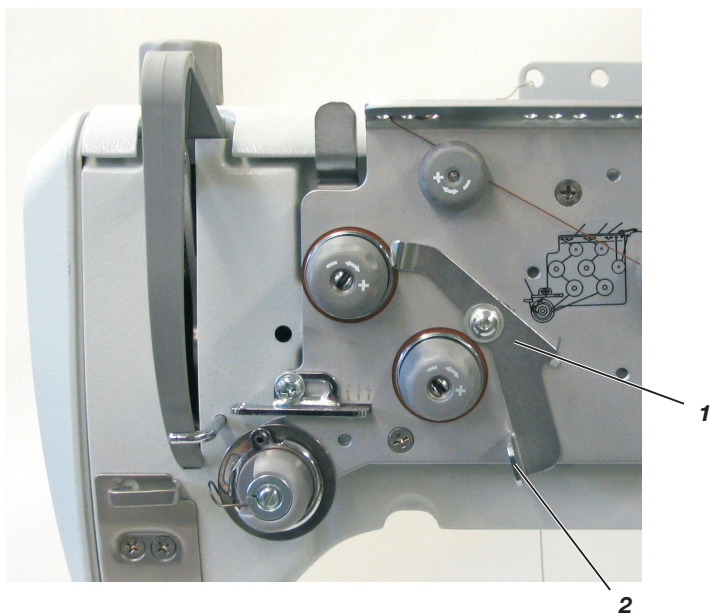
- Adjust the main tensioner 2 so that the stitches are uniform.
To increase tension - turn the knurled nut clockwise
To decrease tension - turn the knurled nut anti-clockwise

Supplementary tensioner

The supplementary tensioner 3 can be switched in to effect a rapid change in needle-thread tension during operation (e.g. with thickened seams).

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

5.3 Switching the supplementary tension on and off



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

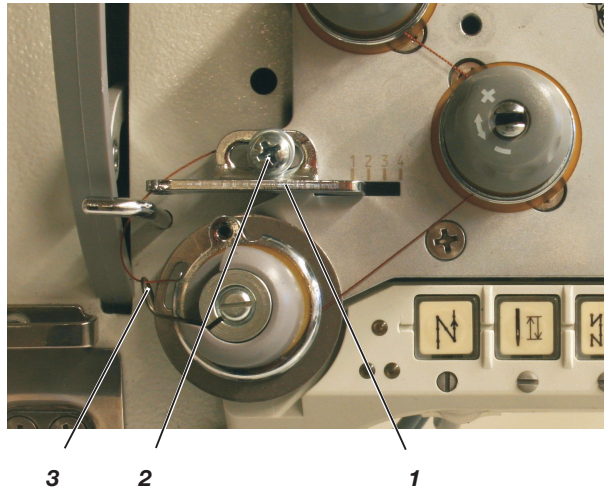
Switching on

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

Switching off

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

5.4 Adjusting the thread regulator



Caution: danger 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.

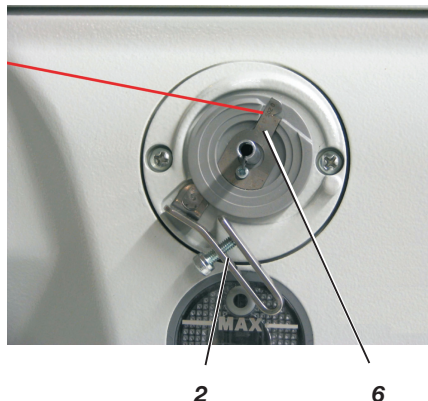
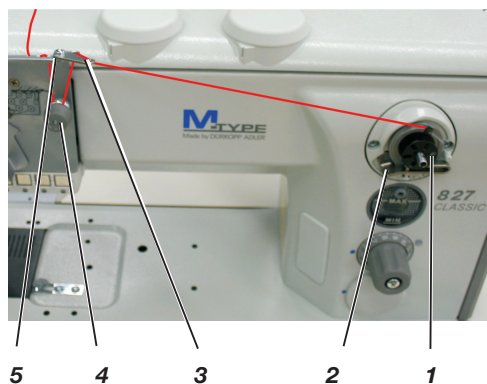
At the correct setting the needle-thread loop must slide at low tension over the thickest point of the hook.

- Undo screw 2.
- Adjust the thread regulator 1.
Thread regulator to the left = more thread
Thread regulator to the right = less thread
- Tighten screw 2.

Adjustment information:

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

5.5 Winding on the hook thread



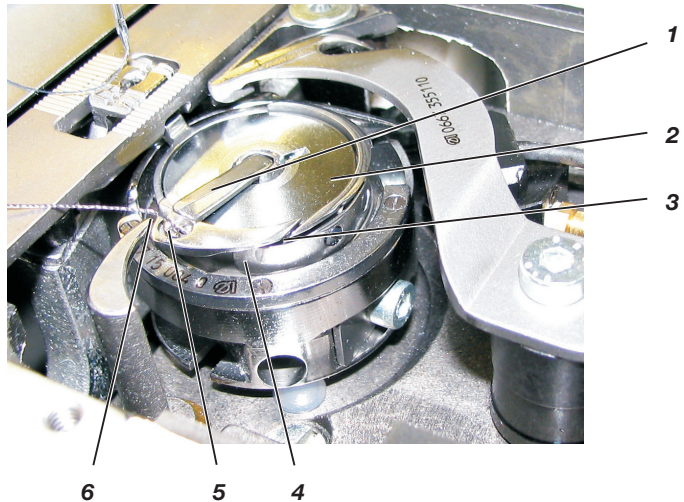
- Put the thread reel on the thread stand and conduct the needle thread through the unwinder arm.
- Conduct the thread through the thread guide **5**, around the tensioner **4** and through the thread guide **3**.
- Place the thread behind the blade **6** and sever it.
- Fit the bobbin **1** onto the bobbin winder.
Hint
There is no need to wind the thread onto 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**, place the thread behind the blade **6** and sever it.
- Fit empty bobbin onto the bobbin winder for the next winding process and press the bobbin-winder lever **2** into the bobbin.



CAUTION !

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



Caution: danger of injury !

Turn off the main switch.

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

Remove the empty bobbin

- Raise up the flap 1 and remove the empty bobbin.

Insert a full bobbin

- Insert the bobbin 2 so that it moves in the opposite direction of the hook when unwinding.
- Conduct the hook thread through the slot 3 and underneath the spring 4.
- Pull the hook thread through the slot 6 and continue pulling until it stands out about 3 cm.
- Close the flap 1 and pull the hook thread through the thread guiding 5 of the flap.

5.7 Setting the hook thread tension



Caution: danger of injury !

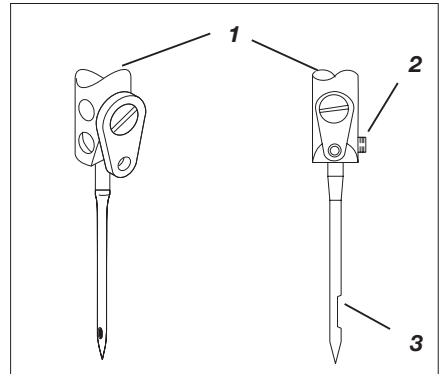
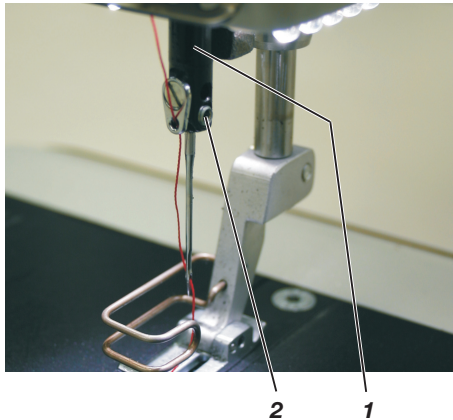
Turn off the main switch.

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

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 counterclockwise

5.8 Inserting and changing the needle with single-needle machines



Caution: danger 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 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.

- Tighten screw 2.



CAUTION!

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:

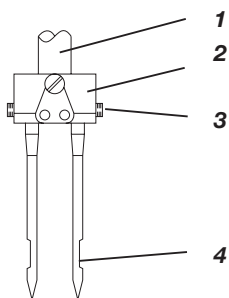
When inserting a thinner needle:

- Missed stitches
- Damage of the thread

When inserting a thicker needle:

- Damage of the hook tip
- Damage of the needle

5.9 Inserting and changing the needle with double-needle machines



Caution Danger 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 screw 3.
- Pull the needle downwards out of the needle holder 2.
- Push the new needle into the hole of the needle holder 2 until it stops.

Attention!

Seen from the operating 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).

- Tighten screw 3.



CAUTION !

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:

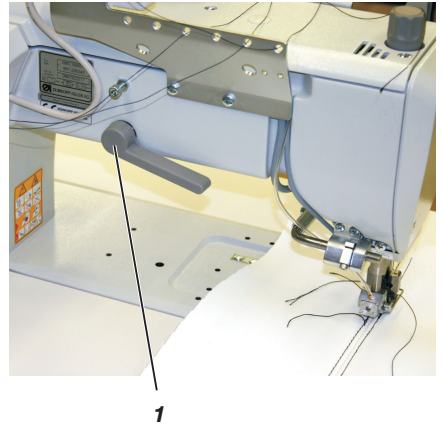
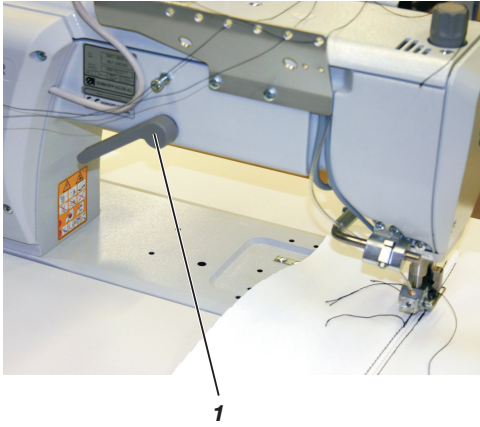
When inserting a thinner needle:

- Missed stitches
- Damage of the thread

When inserting a thicker needle:

- Damage of the hook tip
- Damage of the needle

5.10 Locking the sewing feet in lifted position



- Push the lever 1 downwards.
The sewing feet are locked in lifted position.
- Push the lever 1 upward.
The sewing feet's position is unlocked.

Or

- Lift the sewing feet pneumatically by pushing the knee switch.
The lever 1 then moves back into its initial position.

6.14 Sewing-foot pressure



1

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



CAUTION !

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 anti-clockwise.

5.12 Setting the stitch length



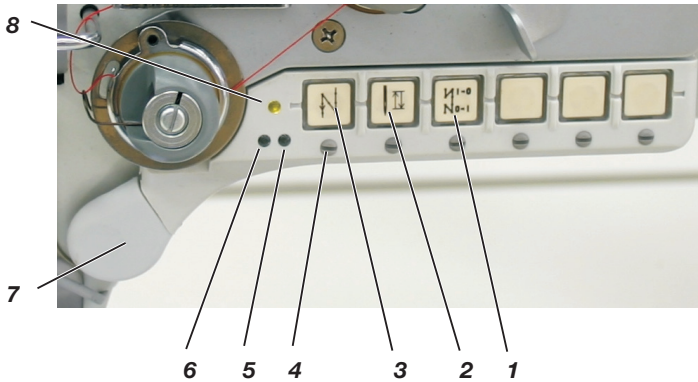
The stitch length is set with the setting wheel 2 on the machine arm.

Setting 1 = min. stitch length

Setting 7 = max. stitch length

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

5.13 Key pad on the machine arm



Key	Function
1	Recalling or suppressing the initial or final bartack. If the initial and final bartacks are generally switched on, the next bartack is switched off by actuating the key. If the initial and final bartacks are generally switched off, the next bartack is switched on by actuating the key.
2	Setting the needle in high or low position. The function of the key can be defined with the parameter F-140. 1 = Needle high 2 = Needle high/low 3 = Single stitch 4 = Single stitch with 2nd stitch length/ short stitch 5 = Needle high, when outside position 2 The factory setting is 1 = Needle high.
3	Manually sewing backward. The machine sews backward stitches as long as the key is being pushed.

LED	Function
5 and 6	Display for empty bobbin with residual thread monitor (left/ right bobbin)
8	LED display "power on"

The function of key 7 can be selected with the screw 4 underneath the key 3.

- Selecting a function.
Example: 3 = Manually sewing backward.
- Turn in the screw 4 underneath the key 3 and turn it 90° to the right (the slot stands vertically).
The function can now be called via both keys 3 and 7.



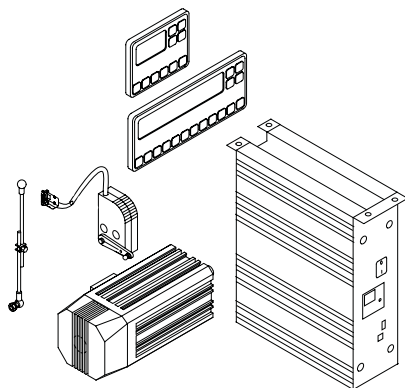
CAUTION!

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

6 Efka DC1550/DA321G direct-current positioning drive

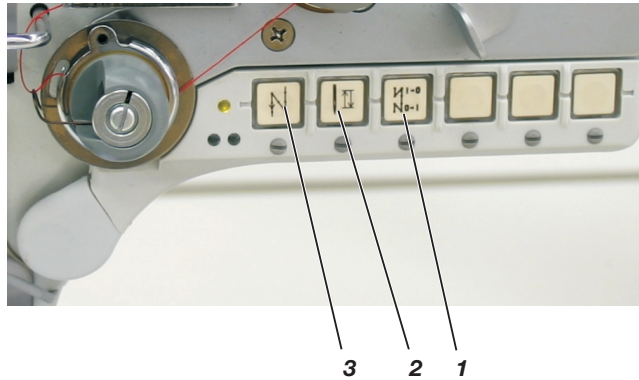
6.1 General

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)

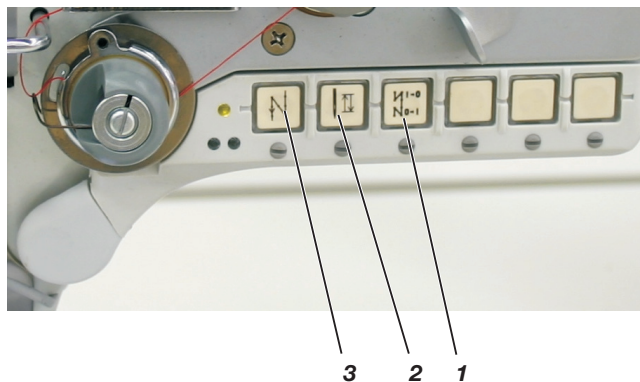


7 Sewing

Operating and function sequence:



Sewing process	Operation / explanation
Prior to sewing	
Starting position	<ul style="list-style-type: none">- Pedal in rest position The machine is at a halt. Needle up, sewing feet down.
Position material correctly for starting the seam.	<ul style="list-style-type: none">- Pull pedal half-way back. The sewing feet are raised.- Push material forward until it touches the needle.
Sewing	
	<ul style="list-style-type: none">- Push pedal forwards and keep it pushed. Subsequently the machine will continue sewing with the rotation speed determined by the pedal.
In mid-seam	
Interrupt the sewing process	<ul style="list-style-type: none">- Release pedal (rest position). The machine halts in the 1st position. The sewing feet are down.
Resume the sewing process (after releasing the pedal)	<ul style="list-style-type: none">- Push pedal forwards. The machine sews at the speed of rotation set by the pedal.



Sewing process	Operation / explanation
Sewing an intermediate bartack	<ul style="list-style-type: none"> - Actuate key 5. The machine sews reverse stitches as long as the key 5 is pressed down. The rotation speed is determined through the pedal
At the seam end	
Remove the material	<ul style="list-style-type: none"> - Push the pedal all the way back and keep it pushed. The final bartack will be sewn (if activated). The thread will be trimmed. The machine halts in the 2nd position. The needles are lifted (Turning back). The sewing feet are lifted. - Remove the material.

8 Maintenance

8.1 Cleaning and testing



Caution: danger of injury !

Turn off the main switch.
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).

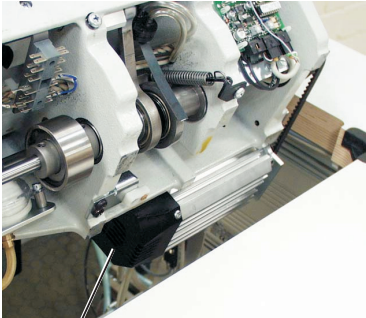
Maintenance intervals may need to be shorter when processing heavy-shedding materials.

A clean machine is a trouble-free machine.



2

1



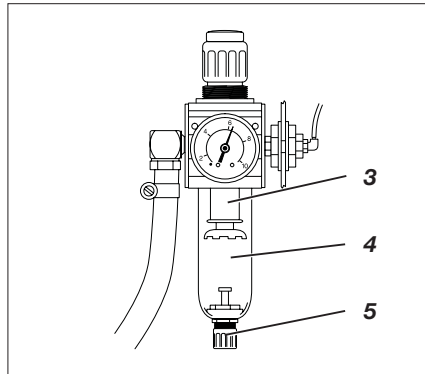
3



Caution: danger of injury !

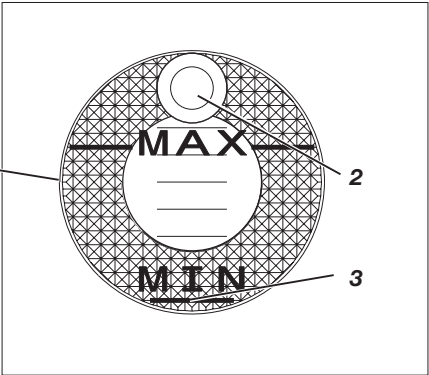
Turn off the main switch before tilting the sewing machine head!

Maintenance work to be carried out	Explanation	Operating hours
Machine head		
- Remove lint, pieces of thread and other debris (e.g. with an air blow gun)	Places in special need of cleaning: <ul style="list-style-type: none">- area under the throat plate 2- feeders- area around the hook 1- bobbin housing- thread trimmer- needle area <p>CAUTION ! Hold the air blow gun in a way that the lint is not blown into the oil collector</p>	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 drive		
Clean fan grille (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
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 Lubrication



Caution: danger of injury

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

CAUTION:

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-liter container: 9047 000012
- 2-liter container: 9047 000013
- 5-liter container: 9047 000014

Maintenance work to be carried out	Explanation	Operating hours
Lubrication of the machine head	<p>The machine head is fitted with a central oil-wick lubrication system. The bearings are supplied out of oil reservoir 1.</p> <p>- The oil level must not fall below the marking line 3 (MIN) of the oil reservoir. If the oil level falls below the marking line 3, the oil reservoir will be lit (only the CLASSIC version).</p> <p>- Fill in oil through the bore hole 2 up to the marking line "Max".</p>	8

10.3 Repair

When the machine is damaged or parts are worn please contact:

DÜRKOPP ADLER AG

Potsdamer Str. 190

D-33719 Bielefeld

Phone: +49 (0) 180 5 383 756

Fax: +49 (0) 521 925 2594

E-mail: service@duerkopp-adler.com

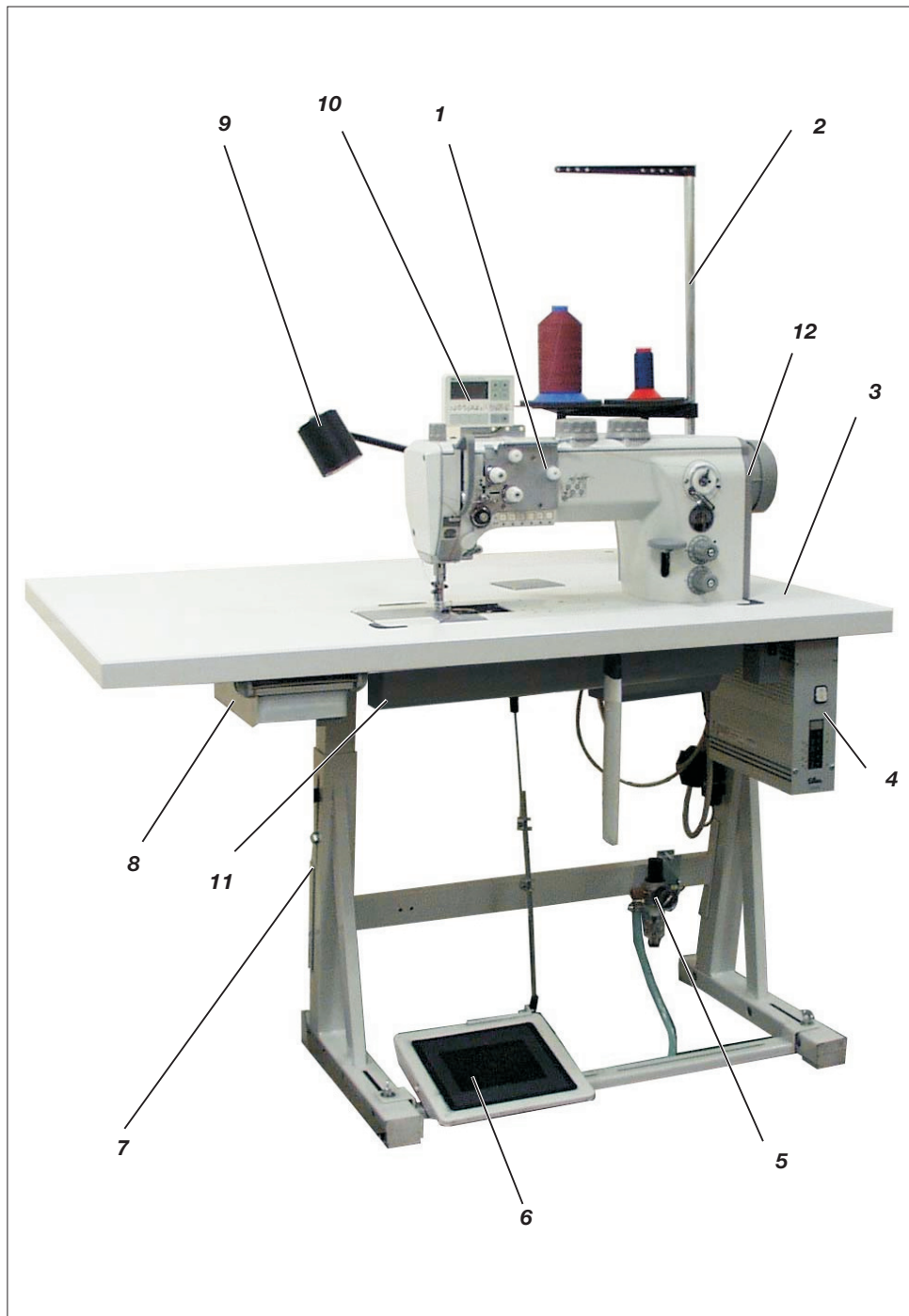
Internet: www.duerkopp-adler.com

Part 2: Installation Instructions Class 827 – Original Instructions

(Edition 01/2012)

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1 Scope of Delivery

What items are supplied **depends on your order**.

Prior to setting up, please check that all the required parts are present.

This description refers to a special sewing machine, of which all individual components can completely be delivered by Dürkopp Adler AG.

- **1** Machine head incl. oil sump

Dürkopp Adler accessory set with:

- **2** Reel stand
- Protection cover (not represented)
- **11** Oil tray

Set of electronic parts, depending on the order, for:

Machines with direct-current actuator

- **4** Sewing-drive control
- **10** Operating panel
- **12** Cover

Machines with positioning actuators

- Main switch
- Sewing-drive
- Synchronizer
- Belt guard

Optional equipment

- **7** Stand (option)
- **6** Pedal and pedal linkage (option)
- **3** Table top (option)
- **8** Drawer (option)

2 General and transport packing



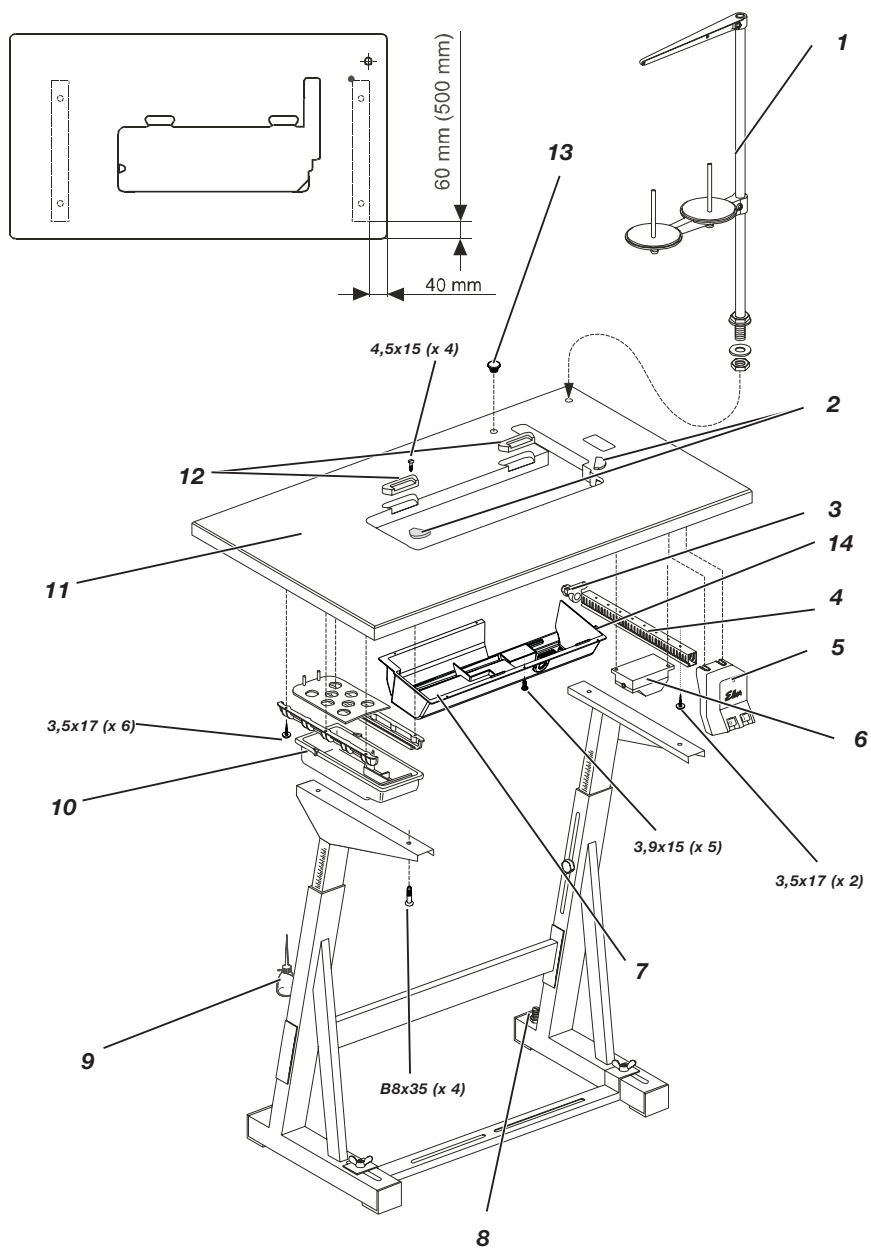
Caution:

The special sewing machine must be set up by trained specialist personnel.

If the special sewing machine you have bought is already set up, the following transport packing must be removed:

- Safety straps and battens on the machine head, table and stand.
- Safety block and straps on the sewing drive

Observe the punch-marks of the table plate!



DIRECT DRIVE

3 Assembling the stand

3.1 Assembling the stand components

- Assemble the individual stand components as shown in the illustration.
- Adjust the set screws 8 to insure the stability of the stand. Make sure that the stand is safe by insuring that every single foot of the stand touches the ground.

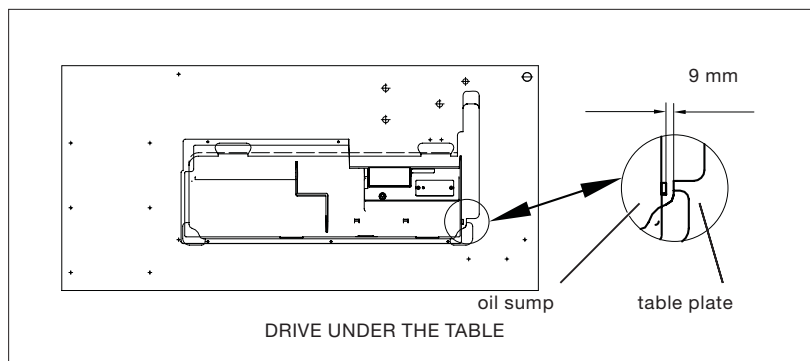
3.2 Assembling the table plate

In order to have an optimal arrangement of the components, follow the layout.

Stand	Layout
MG55 400304	0791 867710
MG55 400314	0791 867711

- Screw the **drawer 10** with its holders onto the left side underneath the table plate.
- Screw the **oil sump 7** under the table plate.
With sewing machine equipped with direct drive, all the three stops should lie against the table opening.
With sewing machine equipped with the drive mounted under the table, the stop **14** must have 9 mm distance from the table top opening.
- Screw the **main switch 5*** to the right side under the table plate.
- Screw the **cable duct 4*** behind the main switch 5 under the table plate.
- Screw the **holder 3** for the traction relief of the connecting cable behind cable duct 4 under the table plate.
- Screw the **sewing-lamp transformer 6** (optional equipment) under the table plate.
- Put the **cap 13** into the bore hole of the table plate.
- Place the **hinge bottoms 12** for the machine head into the cutout of the table plate 9 and tighten the screws.
- Insert the **rubber corner 2**.
- Attach the **table plate 11** to the stand with woodscrews (B8 x 35) (see sketch for position).
- Insert the **yarn stand 1** in the hole in the table plate and secure it with the nuts and washers. Fit and align the yarn reel and unwinding holders. The yarn reel holder and the unwinding arm must be vertically in line.
- Screw the **holder for the oil-can 9** onto the left-hand stand brace.

* Not applicable with sewing machines with direct drive.



3.3 Setting the working height



- The working height is adjustable between 750 and 900 mm (measured to the upper edge of the table plate).
- Undo screws 1 on the stand braces.
- Adjust the table plate horizontally to the required working height. To prevent tilting, pull the table plate out or push it in by the same distance on both sides.
- Tighten both screws 1.

3.5 Self-manufacture of the table top

If you manufacture the table top yourself, please take the measurements from the illustrations on pages 43 and 44.

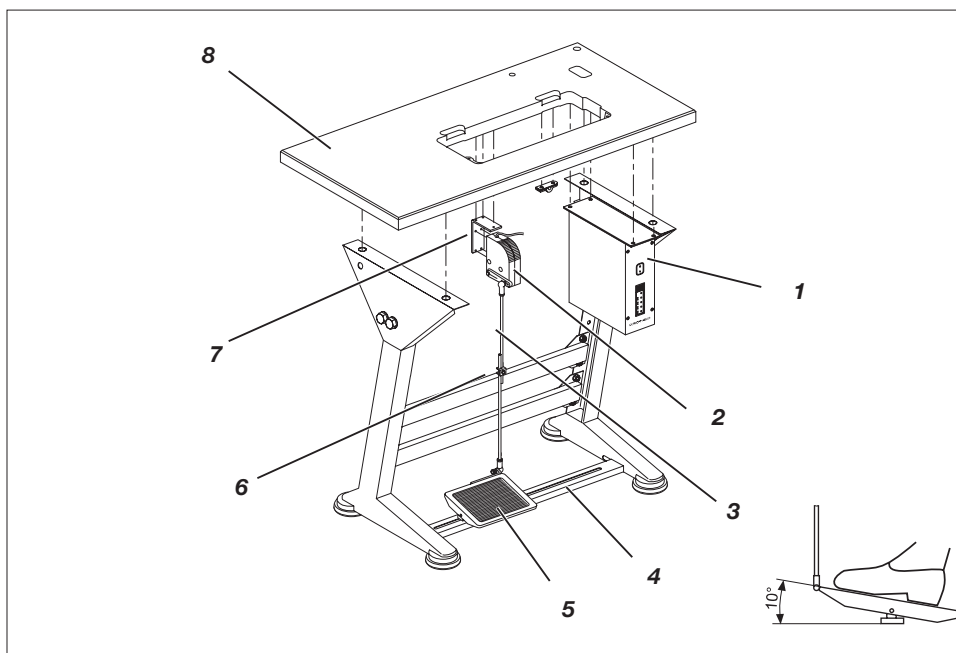
4 Sewing drives

4.1 Drive category, type and use

The following sewing drives are available:

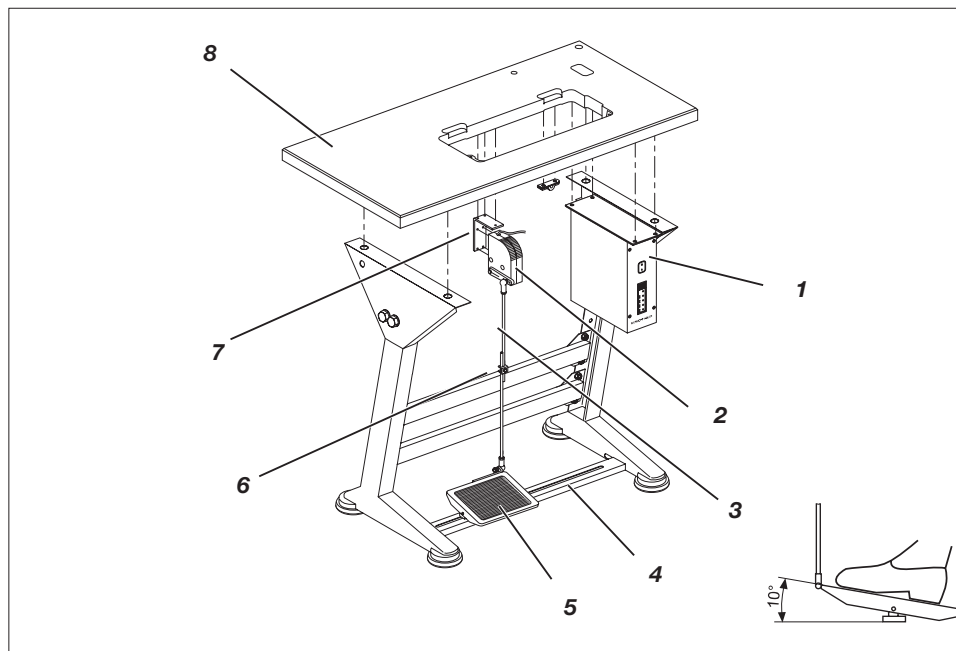
Subclass	Clutch motor	DC-positioning drive
827-160122		
827-260122		Efka DC1550/DA321G

4.2 Fitting the sewing-drive control



- Fix the sewing-drive control 1 with 4 screws underneath the table plate 8.
- Fix the power supply cable of the sewing-drive control with the traction relief clip underneath the table plate.

4.3 Fitting the pedal



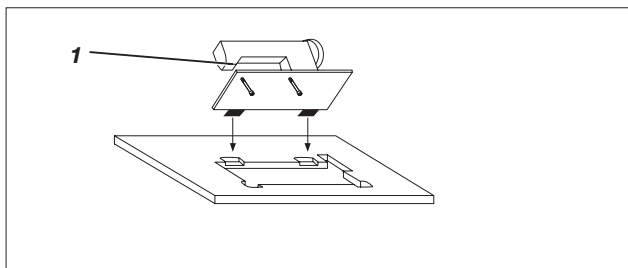
- Attach the pedal 5 to the stand brace 4.
- For ergonomic reasons align the pedal 5 as follows:
The center of the pedal must be approximately under the needle.
There are slots in the stand brace 4 to help align the pedal.
- Screw the ball pins from the middle to the front hole in the lever.
- Hinge the pedal linkage 3 with the ball sockets on the set value initiator 2 and into the pedal 5.
- Loosen screw 6.
- Adjust the height of the pedal linkage 5 as follows:
when released the pedal 4 should be at an angle of about 10°.
- Tighten screw 6.

4.4 Fitting the set value initiator

- Screw L-bracket 7 under the table plate 8.
- Screw the set value initiator 2 onto the L-bracket 7.

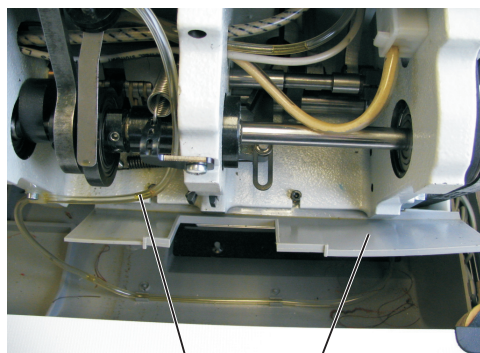
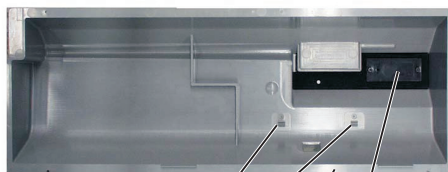
5 Assembling the machine head

5.1 Fitting the machine head



- Fit the machine head 1 into the opening in the table plate.

5.2 Fitting the oil suction tube



5

2

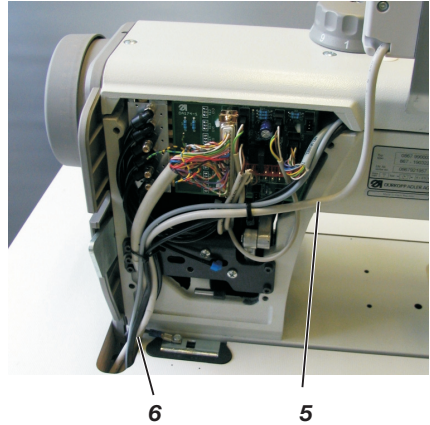
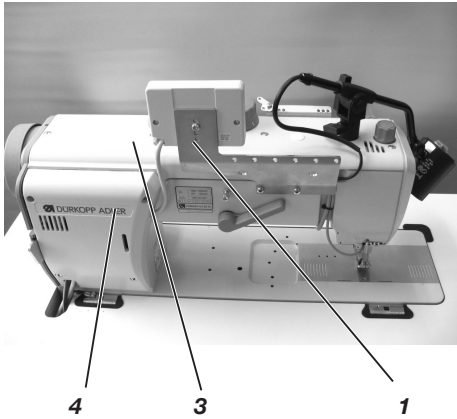
1

3

4

- Remove the plug at the end of the suction tube 3.
- Put the end of the suction tube 3 into the cover 1.
- Snap the suction tube in the hose holder 5.
- Screw the cover 4 to the bed plate.

5.3 Fitting the operating panel



- Unscrew the thread guide 2 from off the sewing machine head.
- Fix the control panel fixing angle 1 together with the thread guide 2.
- Lift off the arm cover 3 and the valve cap 4.
- Lay the power supply cable 5 of the operating panel: along the arm and down through the opening in the table plate 8 or down through the arm and the base plate - and secure it.
- Insert the connection plug into the B776 socket of the drive control.
- Replace the arm cover 3.
- Replace the valve cap 4.

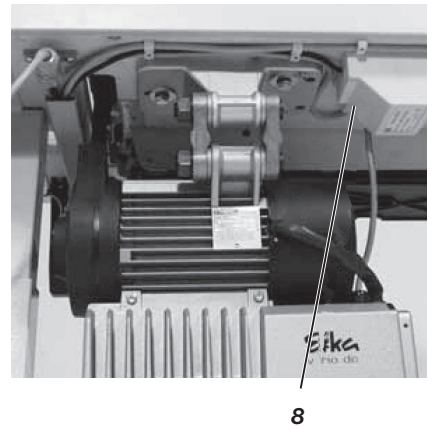
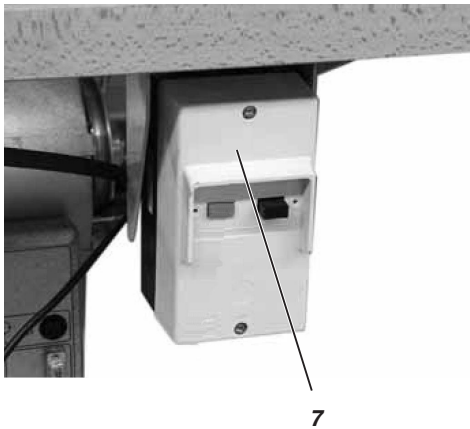
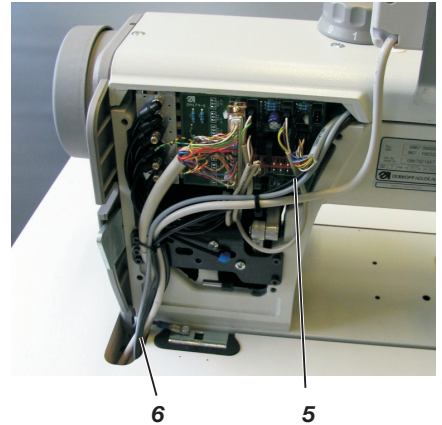
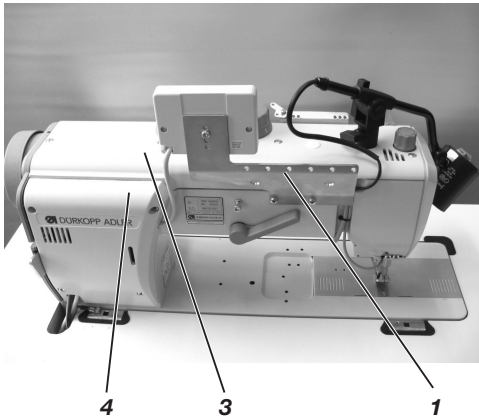
5.6 Fitting the sewing lamp (optional equipment)



Caution !

Turning off the main switch does not turn off the current to the sewing lamp.

Remove the mains plug before connecting.



The sewing lamp can be mounted on the operating-panel bracket if present.

- Stick the safety warning label on the front of the main switch 7.
- Fix the sewing light on the holder 2.
- Lift off the arm cover 3 and the valve cap 4.
- Lay the power supply cable in the cutout of the machine arm.
- Pass the power supply cable down through the hole in the table plate or the arm and the base plate.
- Attach the transformer 8 under the table plate with chipboard screws.
- Attach the power supply cable under the table plate with cable ties.
- Plug in the sewing-light transformer lead.
- Fit the arm cover 1 and valve cap 4.

6 Electrical connection

6.1 General



Caution !

All work on the electrical equipment of this special sewing machine may only be carried out by qualified electricians or other appropriately trained persons.

The mains plug must be removed.

6.2 Checking the mains voltage



Caution !

The mains voltage must agree with the rated voltage specified on the model-identification plate.

6.3 Connecting the sewing drive

6.3.1 Connecting the clutch motor

- Lay the connection cable from the main switch through the cable conduit to the sewing drive and connect it to the sewing drive. See connection diagram 9800 169002 B (in the connection pack) or the circuit diagram on the clutch motor.
- Lay the mains cable from the main switch back through the cable conduit and attach to the mains-lead cleat.

6.3.2 Connecting the coupling-positioning actuator

- Lay the connection cable from the motor-protection switch through the cable conduit to the sewing drive and connect it to the sewing drive. See connection diagram 9800 129002 B (in the connection pack) or the circuit diagram on the coupling-positioning actuator.
- Lay the mains cable from the main switch back through the cable conduit and attach to the mains-lead cleat.
- Plug the cable from the set-point generator into socket b80 of the drive control. See figure page 20.

6.3.3 Connecting the direct-current positioning actuator

- Lay the connection cable from the main switch through the cable conduit to the sewing drive and connect it to the sewing drive. See connection diagram 9800 139001 B (in the connection pack).
- Lay the mains cable from the main switch back through the cable conduit and attach to the mains-lead cleat.
- Plug the lead from the set-point generator into socket b80 of the drive control. See figure page 20.

6.4 Earthing



The earthing cable 1 is in the machine's accessory pack.

The earthing cable 1 takes static charges from the machine head to earth via the motor base.

- Connect the earthing cable 1 to the flat plug 2 (already screwed on the machine head) and lay it through the cable duct to the motor base.
- Screw the earthing cable 1 onto the motor base at the point provided.
- Attach the earthing cable 1 under the table plate with the nail clamps.



Caution!

Please make sure that the earthing cable 1 does not touch the drive belt.

Hint

You do not need to care for the earthing with machines having the sewing motor fit onto the machine head, since it is already established through the fitted motor.

6.5 Connecting the sewing drive to the mains



Caution:
The sewing machine must be connected to the mains with a plug.

Clutch motors and **coupling-positioning actuators** must be connected to a 3 x 380 - 415V 50/60 Hz or 3 x 220 - 240V 50/60 Hz three-phase supply (see tables in section 4.1).
Connection takes place in accordance with connection diagram 9800 169002 B or 9800 129002 B.

The **direct-current positioning actuator** is operated with a single-phase alternating current of 190 - 240V 50/60 Hz. Connection takes place in accordance with connection diagram 9800 139001 B.
If it is connected to a three-phase supply of 3 x 380V, 3 x 400V or 3 x 415V the sewing drive is connected to one phase and the neutral conductor.

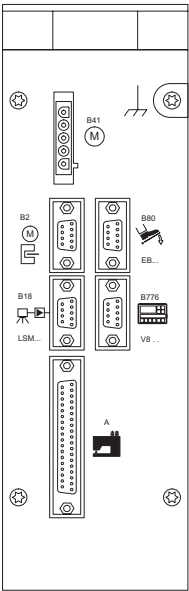
If the mains supply is three-phase 3 x 200V, 3 x 220V, 3 x 230V or 3 x 240V the sewing drive is connected to two phases.

If a number of direct-current positioning actuators are connected to a three-phase mains supply they should be equally distributed over all phases to avoid overloading any one of them.

6.6 Drive-control connection sockets

Steuerung DA321G

Steuerung DAC Classic



Check the operating instructions to see the wiring diagram.

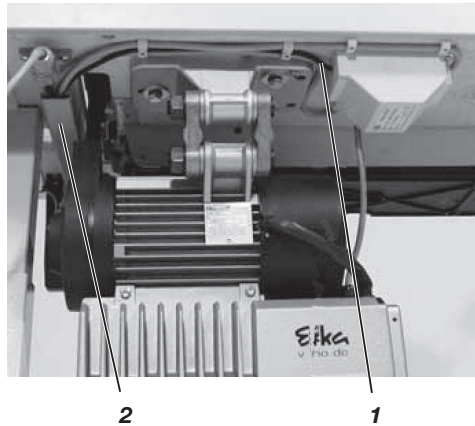
6.7 Connecting the machine head

Connections

- The 9870 367004 or 9870 867000 cable is plugged onto the 9850 867000 distributor in the upper part and passed down inside the upper part.
- Plug the 37-pole plug of the cable into socket A of the sewing drive and secure with the screw.

6.8 Connecting the sewing light transformer (optional equipment)

6.8.1 Attaching and connecting the sewing light transformer (optional equipment)



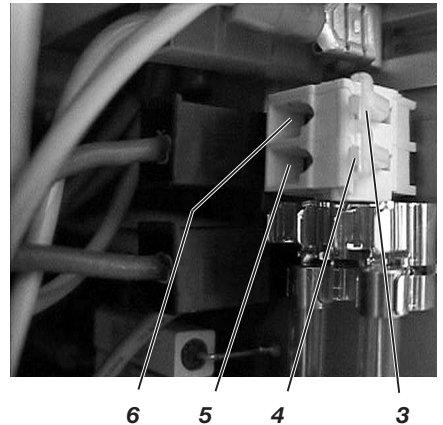
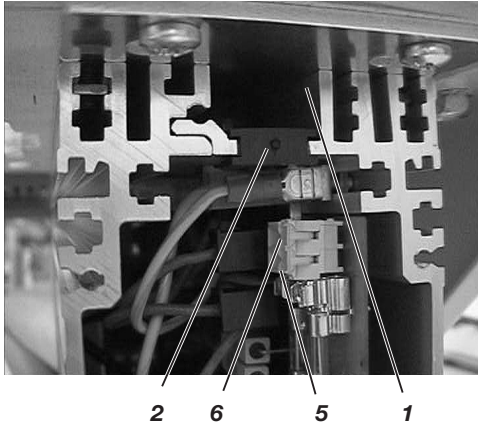
- Remove the machine's mains plug.
- Pass the mains cable 1 of the sewing-lamp transformer through the cable conduit 2 to the main switch.
- It is connected to the mains-connection side of the main switch (or motor-protection switch). See connection diagram 9800 169002 B, 9800 129002 B or 9800 139001 B.
- Stick the adhesive label with the safety instruction on the front of the main switch .
- If the sewing-lamp transformer is connected to a 3 x 380 - 415V three-phase supply it must have a neutral conductor.



Caution !

The sewing-light transformer is directly connected to the mains. It is therefore live even when the main switch is switched off. The mains plug must be removed before carrying out any work on the sewing-light transformer, e.g. changing the fuse.

6.8.2 Connection to the DA321G



- Loosen the 4 screws on the front plate of the controls.
- Remove the front plate.
- Push the cable from the back through the cable duct 1 into the controls.
- Remove the black rubber grommet 2.
- Push through the round opening of the rubber grommet with a screwdriver.
- Guide the cable of the sewing light transformer through the resulting opening in the rubber grommet.
- Insert the rubber grommet again.
- With a small screwdriver press on the terminal openings 4 and 3 to open the terminals 5 and 6.
- Connect the blue cable to terminal 6 and the brown cable to terminal 5.
- Fasten the front plate with the 4 screws again.

6.9 Connecting the direct drive

6.9.1 Connecting the Hall-effect sensor (Optional Equipment)

Only with DC 1550 drive:

- Motor mounted under the table
- Gear reduction motor - machine 1,55:1

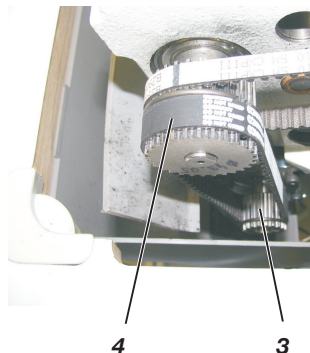
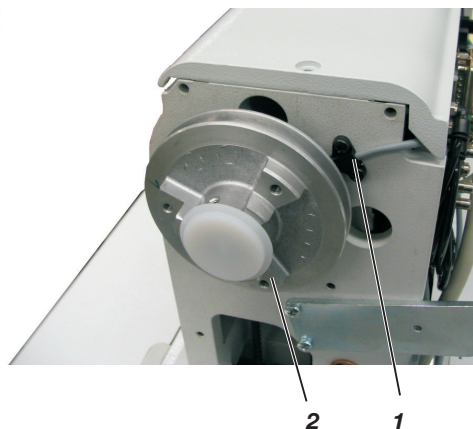


Attention !

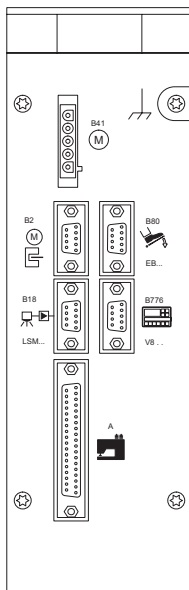
Turn off the main switch.

Connect the Hall-effect sensor with the sewing machine switched off.

- Fit the Hall-effect sensor 1 onto the machine head.



- Check whether a magnet is fitted into the belt pulley 2 of the machine. The magnet is positioned on the inner side of the belt pulley towards the machine.
- If no magnet is fitted into the belt pulley 2, it must be exchanged. If the belt pulley is fitted correctly, the magnet must be positioned above the Hall-effect sensor, when the tip of the needle penetrates into the throat plate.



- Connect the 9-pole SuB-D plug of the Hall-effect sensor to the bushing "B18" (IPG / HSM / LSM) of the Efka control drive DA321G.
- Set the correct machine class with parameter F-290 according to the corresponding parameter sheet 9800 331104 PBXX.
- In order to position the machine correctly and to optimize all functions the following parameters must still be set:

Parameter F-111: set to 3,000 rpm or less.

Parameter F-270: set to 6 (selection according to the position sensor)

Parameter F-272: can be calculated according to the formula below:

$$\frac{\text{Motor pulley diameter (teeth)}}{\text{Machine pulley diameter (teeth)}} \times 1000$$

Inserted needle: up to a thickness of 160.

Due to the gear reduction of 1.55:1 the maximum possible speed is 3,000 rpm.

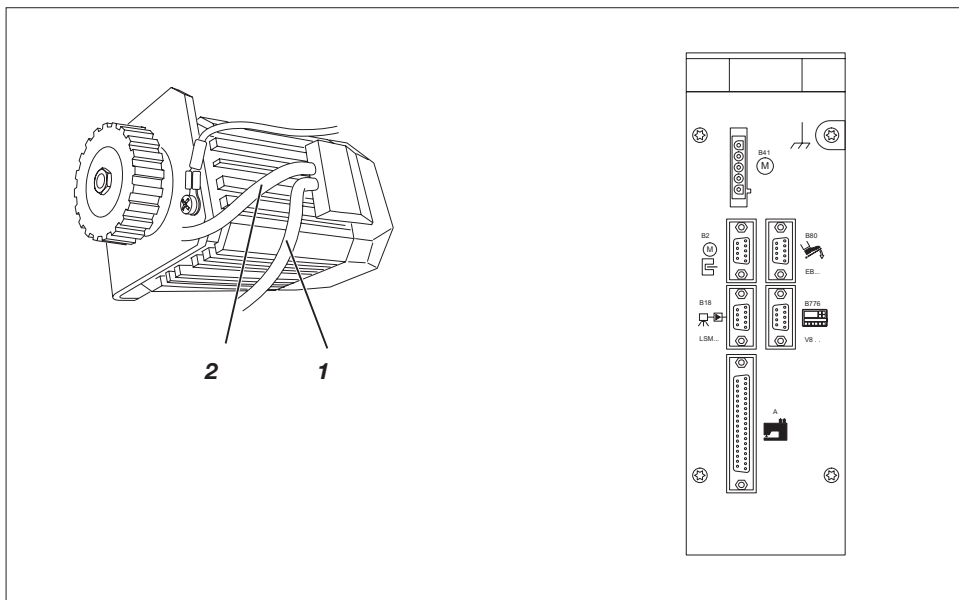
Due to the new transmission ratio of 1,55:1 a higher torque and a higher penetration force of the needle of about 30% above a transmission rate of 1:1 is achieved.

In order to achieve an even higher penetration force, the parameter F-225 can be set from value "0" to value "1".

It may happen, that the motor produces a snarling noise.

If this is the case, the toothed belt between motor and machine must be tightened.

6.9.2 Connecting the DA321G control unit



- Insert the lead from the controller (pedal) into socket B80 of the controls.
- Insert the lead from the motor sensor 1 into socket B2 of the controls.
- Insert the lead 2 from the motor into socket B41 of the controls.
- Insert the lead to the sewing machine into socket A of the controls.
- Lay all leads through the cable duct.
- Insert the lead from the control panel (if present) into socket B776.

6.9.3 Connecting the DAC Classic control unit

Check operating instructions DAC Classic.

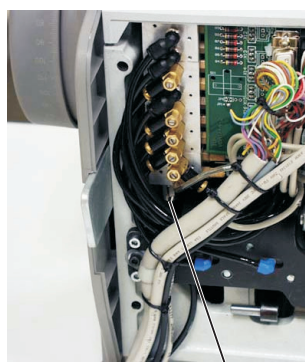
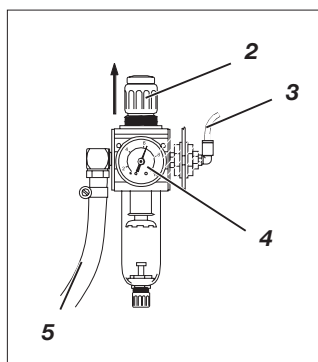
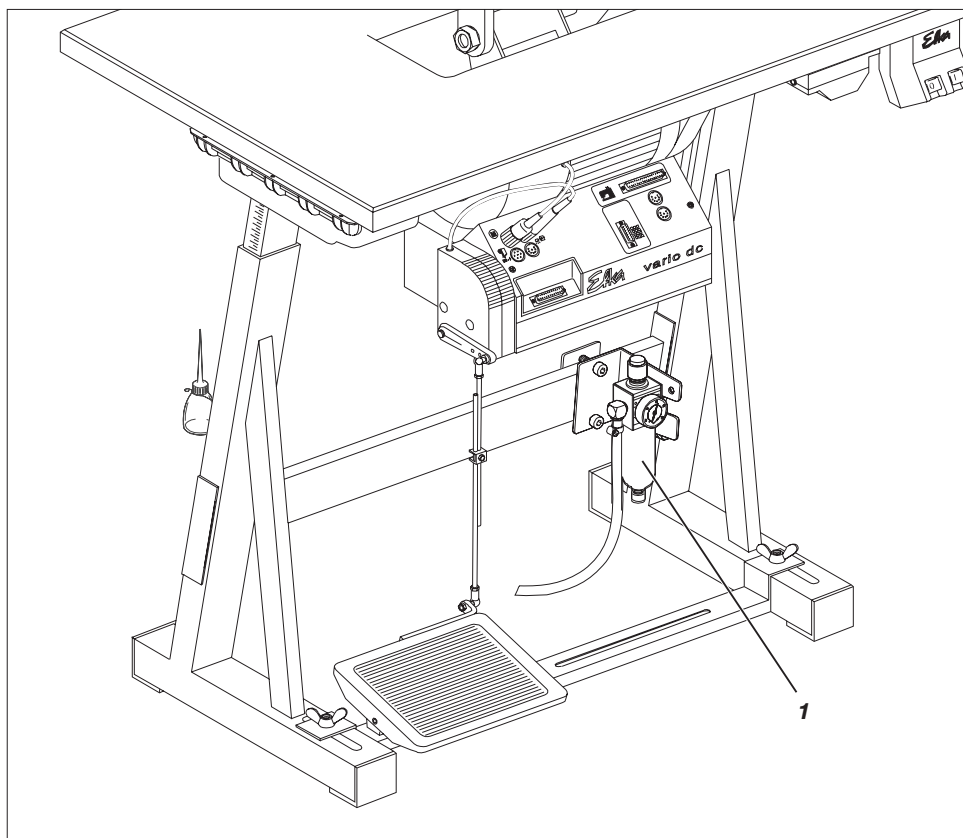
6.10 Setting machine-specific parameters

6.10.1 General

The functions of the sewing-drive control are determined by the program and the parameter settings.
All parameter values for the relevant machine class and subclass are pre-set by Efka prior to delivery of the sewing drives. For each class and subclass some parameters at technician and manufacturer level must be changed so that the control is perfectly coordinated with the machine. The parameters concerned are listed in the parameter sheet (in the accessory pack).

6.10.2 Autoselect

The control "recognizes" which machine series is connected by measuring the Autoselect resistance in the machine. Autoselect selects control functions and the pre-set parameter values. If the control fails to recognize a valid Autoselect resistance (or any at all), the drive runs only with the so-called emergency operating functions to prevent machine damage.



7 Pneumatic connection



Caution:

The pneumatic units will only operate properly at a supply pressure of 8 to 10 bar. The special sewing machine's operating pressure is 6 bar.

Pneumatic-connection pack

A pneumatic-connection pack for stands with compressed-air maintenance units is available (Order No. 0797 003031).

It contains the following components:

- Connection hose, 5 m long ($\varnothing = 9$ mm)
- Hose nozzles and ties
- Plug-and-socket connector

Connecting the compressed-air maintenance unit

- Attach the compressed-air maintenance unit 1 with bracket, screws and strap to the stand-brace.
- Connect the unit to the compressed-air supply with the connection hose 4 ($\varnothing = 9$ mm) and connector R1/4".

Connecting the compressed-air maintenance unit to the upper part of the sewing machine

- Unscrew and remove the cover 6.
- Connect the hose 3 (in the accessory pack) to the distributor plate on the machine head.
- Replace the cover 6.

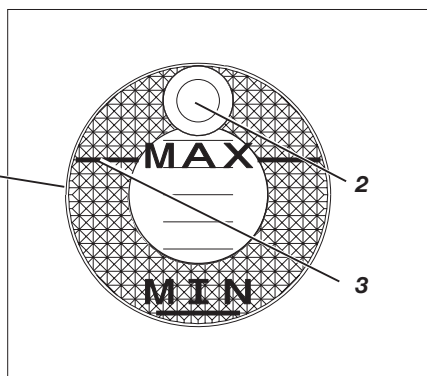
Adjusting the operating pressure

The operating pressure is 6 bar.

It can be read off at the pressure gauge 4.

- To adjust the operating pressure raise and turn handle 2:
Clockwise to increase the pressure.
Counter-clockwise to reduce the pressure.
- Press the handle 2.

8 Lubrication



Caution: danger of injury !

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



CAUTION !

The handling and disposal of mineral oil 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 mm/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-liter container:	9047 000012
2-liter container:	9047 000013
5-liter container:	9047 000014

Lubricating the machine head (first filling)

NB:

All wicks and felts are saturated with oil prior to delivery. This oil is returned to the oil reservoir 1, which should therefore not be overfilled.

- Top up the oil reservoir 1 through the hole 2 to the “**max.**” mark 3.

9 Sewing test

A sewing test must be carried out when setting-up is complete.

- Insert the mains plug.



Caution: danger of injury !

Turn off the main switch.

The needle and hook threads may only be threaded with the sewing machine switched off.

- Thread the bobbin-winder thread (see operating instructions).
- Turn on the main switch.
- Lock the sewing feet in the up position (see operating instructions).
- Fill the bobbin at low speed.
- Turn off the main switch.
- Thread the needle and hook threads (see operating instructions).
- Select the material to be processed.
- Carry out the sewing test, first at low speed and then gradually increasing it.
- Check that the seams are of the requisite quality.
If not, alter the thread tensioners (see operating instructions).
If necessary the settings given in the servicing instructions should also be checked and corrected

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Änderung der technischen Dokumentation
Modification of the technical documentation
Modification de la documentation technique
Modificación de la documentación técnica
Modificazione della documentazione tecnica

**DÜRKOPP
ADLER AG**

- (D) Die vorliegende Anleitung hat sich nach Drucklegung geändert.
Bitte tauschen Sie die beiliegenden Seiten in Ihrer Landessprache aus.
- (GB) The present instructions have changed since their last print out.
Please insert the present new pages for replacing the old ones.
- (F) Les présentes instructions ont subi un changement depuis leur dernière impression. Veuillez insérer les nouvelles pages pour remplacer les vieilles.
- (E) Las presentes instrucciones han subido una modificación desde su última impresión. Por consiguiente hay que insertar las nuevas páginas para reemplazar las viejas.
- (P) Las presentes instrucciones han subido una modificación desde su última impresión. Por consiguiente hay que insertar las nuevas páginas para reemplazar las viejas.
- (I) Le seguenti istruzioni hanno subito una modifica dopo la loro stampa.
Per favore inserite le nuove pagine sostituendo le vecchie.




Additional Instructions

Machines with Integrated Motor

1 About this manual

These additional instructions are supplementary to the manual of class 887 machines. They describe operation and functioning measures of machines with integrated motor that differ from machines without integrated motor.

The additional instructions do not constitute a self-contained document, but are only valid in combination with the respective instruction manual.

Make sure to read the  *instruction manual* before setting up and operating the machine.



By all means, pay heed to the general safety instructions of the instruction manual. Ignoring them can result in serious bodily injury and/or property damages.

2 Identification marks of machines with integrated motor

Machines of subclasses ending with -M, have the motor integrated in the machine post.

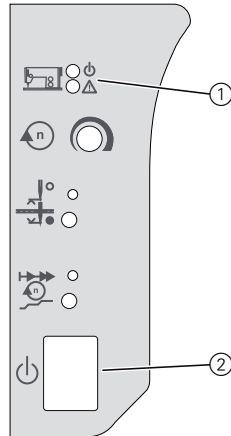
ECO-machines have the motor and the control unit integrated in the machine post.

CLASSIC-machines have the motor integrated in the machine post and the control unit underneath the table top.

3 ECO-machines

3.1 Operation

Fig. 1: Switching ECO-machines on and off



(1) - LEDs indicating the status

(2) - Main switch for the power supply

ECO-machines with integrated motor are switched on and off via the main switch (5) on the machine post.

Switching the machine on



1. Press the main switch (2).

✦ Of the two LED lights (1) indicating the status, the top one will be lit.

Switching the machine off




1. Press the main switch (2).

✦ Of the two LED lights (1) indicating the status, the top one will go out again.

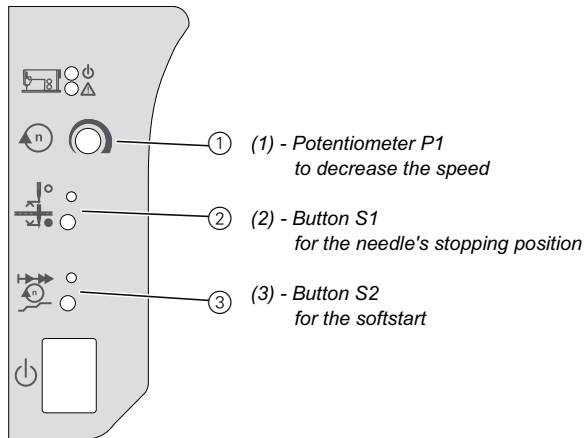


The bottom LED (1) serves as feedback when copying software updates.

The copying of software and the programming of the functions is described in the  *DAC ECO instruction manual*.

The following settings for the sewing are effectuated on the operating panel on the machine post.

Fig. 2: Operator settings with ECO-machines



Setting the maximum speed



1. Turn the potentiometer P1 (1).
 - To decrease the speed: Turn counter-clockwise.
 - To increase the speed: Turn clockwise



The initial value is the maximum speed defined for this machine class. It cannot be increased, only decreased.

⚡ This setting will be memorized and will also be valid after restarting the machine.

Switching the needle's lifted position at sewing stop on / off



1. Press button S1 (2).
 - ⚡ The LED above button S1 is lit:
At sewing stop the needle will be lifted to top position.
 2. Press button S1 (2) again.
 - ⚡ The LED above button S1 goes out:
The needle's lifted position at sewing stop is switched off.
- ⚡ The respective setting will be memorized and will also be valid after restarting the machine.

Switching the softstart on and off



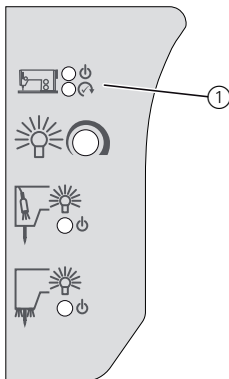
1. Press button S2 (3).
 - ⚡ The LED above the button S2 is lit:
Sewing start with softstart.
 2. Press button S2 (3) again.
 - ⚡ The LED above the button S2 goes out. Sewing start without softstart.
- ⚡ The respective setting will be memorized and will also be valid after restarting the machine.

4 CLASSIC-machines

4.1 Operation

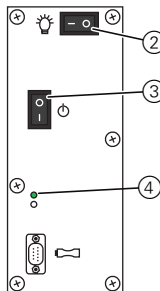
Fig. 3: Switching CLASSIC-machines on and off

Operating panel on the machine post



(1) - LEDs indicating the status


Control beneath the table top



(2) - Button for the sewing light

(3) - Main switch for power supply

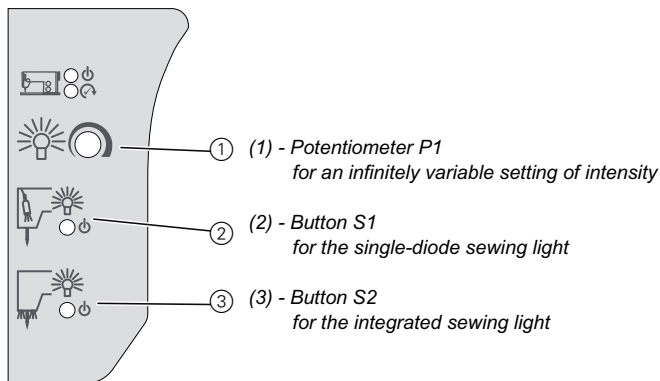
(4) - Control light

CLASSIC-machines are switched on and off at the control underneath the table top ( *instruction manual*).

The two LEDs (1) on the machine post indicate the status of the power supply.

- Main switch (3) for the power supply is pressed:
 - ↳ Both status indicating LEDs (1) are lit:
The machine is ready for sewing and the sewing light is energized.
- Switch for the sewing light (2) is pressed:
 - ↳ Only the top one of the two status-indicating LEDs (1) is lit:
The sewing light energized, but the machine is not ready for sewing.

Fig. 4: Switching the sewing light on and setting the light intensity



Switching the sewing lights on and off



1. Press the button for the requested sewing light (S1 or S2).
☞ The lamp lights up.
2. Press button (S1 or S2) again.
☞ The lamp goes out.



Setting the light intensity

1. Keep the button for the requested sewing light (s1 or S2) pressed, until the lamp briefly flickers.
2. Release the button.
3. Set the desired light intensity on the potentiometer (1):
 - **Brighter:** Turn clockwise
 - **Less bright:** Turn counter-clockwise
4. Press the same button again.
☞ The lamp briefly lights up with the highest intensity. Then it goes out and lights up again with the intensity set with the potentiometer (1).
☞ This setting will be memorized and will also be valid after restarting the machine.

4.2 Sewing light connection

DANGER



Risk of death due to electric shock

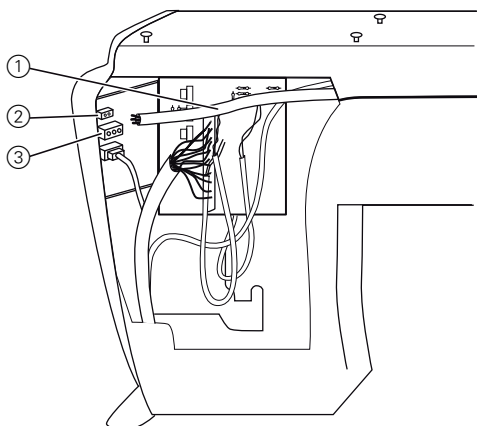
The sewing light control is directly connected to the mains supply and is live even when the main switch is switched off.

Therefore it is essential to pull out the mains plug, before you connect the sewing light.

Make sure that the mains plug cannot be plugged in again by mistake.

The PCB plug connector for the for the sewing light cable is situated on an extra PCB on the left side behind the valve cap.

Fig. 5: Connecting the sewing light cable



(1) - Sewing light cable

(2) - Plug connection for the cable of the integrated sewing light

(3) - Plug connection for the cable of the single-diode light



Connecting the sewing light cable:

- Cable of the integrated sewing light: Plug connector on the top (2)
- Cable of the single-diode sewing light: Plug connector in the center (3)



Use the adapter 9870 867022.



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