

Preface and general safety instructions**Part 1: Operating instructions Cl. 467**

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1. Product description

The **DÜRKOPP ADLER 467** is a special sewing machine with a comprehensive range of applications.

- Flat-bed double lockstitch sewing machine with underfeed, needle feed and alternating-foot overfeed.
- Sub-classes available with or without thread cutter beneath the needle plate.
- Thread control with one main tensioner.
- Maximum clearance beneath lifted sewing feet 16 mm.
- Stroke of alternating sewing feet with the sewing machine at a halt adjustable between 1.5 and 6 mm by press-button and handwheel (adjusting cam).
- Three oil-filling points for manual lubrication of sewing head and shuttle bearing.
- Large, two-part vertical shuttle (to the right of the needle) with bobbin-housing lift.
- A safety coupling prevents the shuttle from disturbance or damage if thread gets into the shuttle track, blocking the shuttle.

2. Designated use

The **467** is a special sewing machine designed for use with light to medium-heavy materials. As a rule such materials are fabrics consisting of textile fibres, but they also include leather. They are used in the clothing, domestic-upholstery and automobile-upholstery industries.

This special sewing machine can also be used to execute so-called technical seams. However, the operator must carry out an assessment of the possible dangers (with which **DÜRKOPP ADLER AG** would be happy to assist), as such applications are comparatively unusual and they are potentially of enormous diversity. Depending on the outcome of this assessment it may be necessary to take special safety precautions.

Generally speaking material processed with this special sewing machine must be dry, its thickness when compressed by the lowered sewing feet must not exceed 10 mm and it must contain no hard objects, since otherwise the operator of the machine would have to wear protective goggles (which cannot at present be supplied).

The seam is generally executed with textile-fibre sewing threads of dimensions up to 11/3 NeB (cotton thread), 11/3 Nm (synthetic thread) or 11/4 Nm (covering yarn). The use of any other threads must also be subject to an assessment of the risks involved and the taking of any necessary safety precautions.

The premises in which this special sewing machine is set up and operated must be dry and well-maintained. If it is to be used in premises which are not dry and well-maintained, special precautions may be necessary: these must be the subject of an agreement (see EN 60204-3-1:1990).

As manufacturers of industrial sewing machines we work on the assumption that personnel working on our machines will be at least semi-skilled, so that they can be presumed to be familiar with all normal operations and with the dangers inherent in them.



3. Sub-classes

- 467-183080:** single-needle flat-bed double-lockstitch sewing machine with underfeed, needle feed and alternating-foot overfeed
- 467-183081:** as 467-183080,
but with electromagnetic thread cutter beneath the needle plate

3.1 Optional equipment

Order no.	Optional equipment
RAP 13-4	Electropneumatic seam bartacking and sewing foot lift For sewing machines with thread trimmer (Subclass 467-183081). End bartack foot-operated, intermediate bartack hand-operated, bartack suppression, stitch-in-stitch sewing, sewing foot lift foot-operated.
WE-6	Maintenance unit For electropneumatic optional equipment RAP 13-4.
797 3031	Pneumatic connection package For the pneumatic connection of stands with maintenance unit and pneumatic optional equipment. Consisting of connection hose (length 5 m, diameter 9 mm), hose nozzles, hose clamps, coupling socket and coupling plug.

4. Technical data

Noise: workplace emission value
as specified by DIN 45635-48-A-1-KL2

- 467-183080:**
- Lc = 84 dB (A)**
stitch length: 7,2 mm
sewing-foot stroke: 1.5 mm
stitch rate: 2800 per min.
Sewing material: G1 DIN 23328 4-layer
- Lc = 85 dB (A)**
stitch length: 7.2 mm
sewing-foot stroke: 5.0 mm
stitch rate: 2000 per min.
Sewing material: 2-ply Skai 1.6 mm 900 g/m² DIN 53352
- 467-183081:**
- Lc = 84 dB (A)**
stitch length: 7,2 mm
sewing-foot stroke: 1.5 mm
stitch rate: 2800 per min.
Sewing material: G1 DIN 23328 4-layer
- Lc = 85 dB (A)**
stitch length: 7.2 mm
sewing-foot stroke: 5.0 mm
stitch rate: 2000 per min.
Sewing material: 2-ply Skai 1.6 mm 900 g/m² DIN 53352



needle system:	134-35
needle thickness (depending on the E no.): [Nm]	90 - 160
maximum sewing-thread thickness: - cotton [NeB] - synthetic sewing yarn [Nm] - covering yarn [Nm]	11/3 11/3 11/4
maximum bobbin capacity with synthetic sewing yarn Nm 30/3: ca. [m]	35
maximum stitch rate:	2800 per min.
maximum stitch length: - forwards: [mm] - backwards: [mm]	9 9
maximum sewing-foot stroke: [mm]	6
feeder stroke: (above needle plate) [mm]	0.5
maximum clearance under sewing feet: - when sewing [mm] - when raised [mm]	10 16
Operating pressure: (when equipped with RAP 13-4) [bar]	6
rated voltage:	3 x 400 V, 50 Hz 3 x 230 V, 50 / 60 Hz 1 x 230 V, 50 / 60 Hz
dimensions (H x W x D): [mm]	1570 x 500 x 1050
working height (ex works): [mm]	790
weight (upper part of machine only): ca. [kg]	56

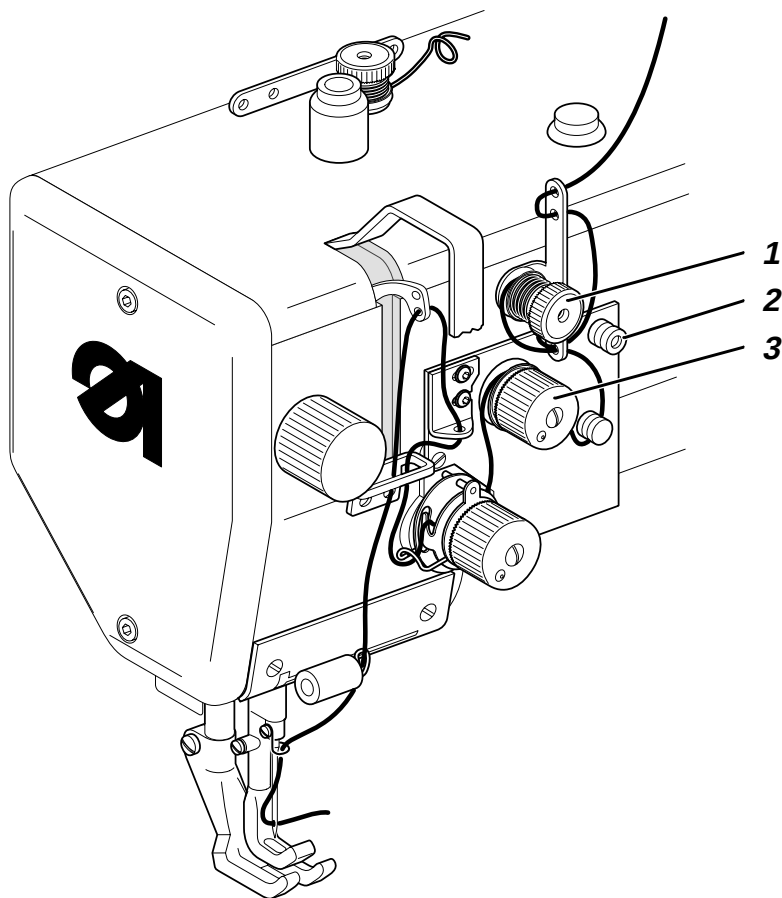


Fig. a: correct thread loop in the centre of the material

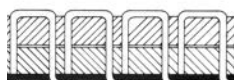


Fig. b: needle-thread tension too strong or too weak



Fig. c: needle-thread tension too strong **or** looper-thread tension too weak



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 at a halt.

- Thread the needle thread as shown in the illustration.

5.2 Adjusting needle-thread tension

Preliminary tension 1

On the **467-183081** machine the needle thread needs to be under residual tension for the thread cutter to function reliably when the main tensioner 3 is open.

The preliminary tension 1 should be set lower than the main tension 3.

- Adjust preliminary tension 1 by rotating the Knurled nut.
- After major changes to preliminary tension 1 the main tension 3 should also be adjusted accordingly.

Main tension 3

The main tension 3 should be set as low as possible.

The looping of the threads must be in the centre of the material (see fig. a).

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

- Adjust the main tension 3 so that the stitches are uniform.

5.3 Opening the needle-thread tensioner

Automatic

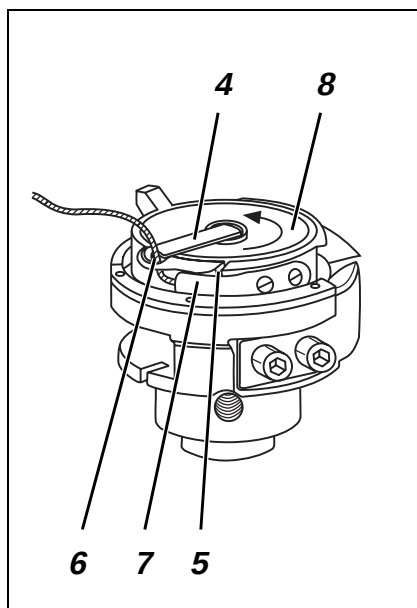
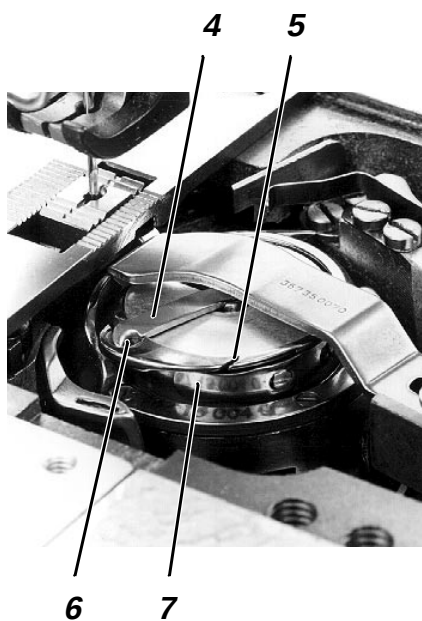
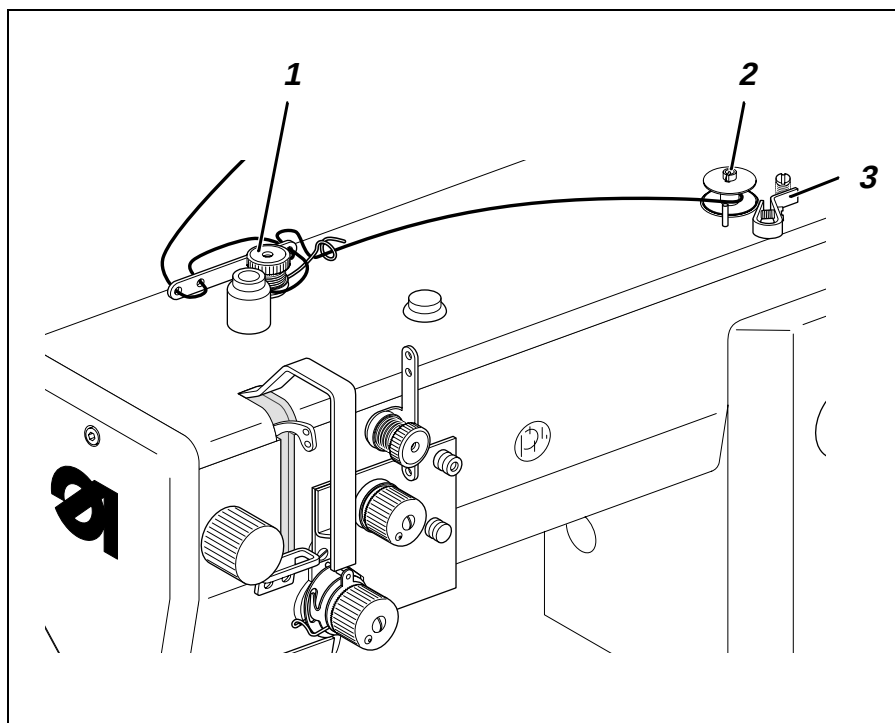
The main tensioner 3 is opened automatically:

- when the thread is severed (sub-class **467-183081**).

Manual

The main tensioner 3 is opened manually:

- when button 2 is pressed.
The main tensioner 3 remains open for as long as button 2 is held down.
- when the sewing feet are raised with the knee lever (see chapter 5.8).
- when the sewing feet are arrested in the up position (see chapter 5.9).





5.4 Winding on the looper thread



Caution - danger of injury

Turn off the main switch.
The looper thread may be threaded for winding on only when the sewing machine is switched off.

- When winding on for sewing with no underlay material: arrest the sewing feet in the up position (see chapter 5.9).
- Thread looper thread as shown in the upper illustration.
- Wind about 5 coils of looper thread anti-clockwise onto the bobbin core.
- Place bobbin on bobbin winder 2.
- Swivel bobbin-winder lever 3 against the bobbin.
- Adjust tension 1.
The looper thread should be wound on with minimal tension.
- Sew.
The bobbin-winder lever 3 terminates the process as soon as the bobbin is full.

5.5 Fitting the looper-thread bobbin



Caution - danger of injury

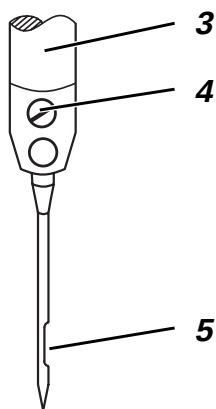
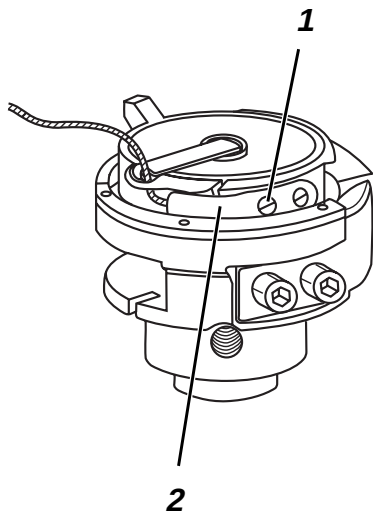
Turn off the main switch.
The looper-thread bobbin may only be changed with the sewing machine at a halt.

Removing empty looper-thread bobbin

- Press leaf spring down and push right-hand needle-plate slide aside.
- Raise bobbin-housing shutter 4.
- Remove empty looper-thread bobbin.

Threading looper thread

- Place full bobbin 8 in bobbin housing:
when the thread is wound off the bobbin must rotate in the direction of the arrow.
- Draw looper thread through slit 5 down to tensioning spring 7.
- Draw looper thread into slit 6.
- Cut looper thread to a length of about 3 cm.
- Close bobbin-housing shutter 4.
- Draw looper thread through the guide of bobbin-housing shutter 4.
- Push needle-plate slide back into place.





5.6 Adjusting looper-thread tension



Caution - danger of injury

Turn off the main switch.
The looper-thread tension may only be adjusted with the sewing machine switched off.

Adjusting tensioning spring 2

- Release right-hand needle-plate slide and push aside.
- Adjust tensioning spring 2 by rotating regulating screw 1.
To increase looper-thread tension: = rotate screw 1 clockwise
To decrease looper-thread tension = rotate screw 1 anti-clockwise
- Push needle-plate slide back into place.

Note:

The conical spring in the bobbin housing has the following functions:

- When the bobbin-housing shutter is open it raises the bobbin slightly for removal.
- It prevents the bobbin from "running on" when the machine halts or if the looper thread is wound off spasmodically.

5.7 Fitting and replacing the needle



Caution - danger of injury

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

- Rotate the handwheel until the needle bar 3 has reached its uppermost position.
 - Undo screw 4.
 - Draw the needle downwards out of the needle bar 3.
 - Insert a new needle as far as it will go into the hole in the needle bar 3.
- Important**
When viewed from the operating side of the sewing machine the furrow 5 of the needle must point to the right (see sketch).
- Tighten screw 4.

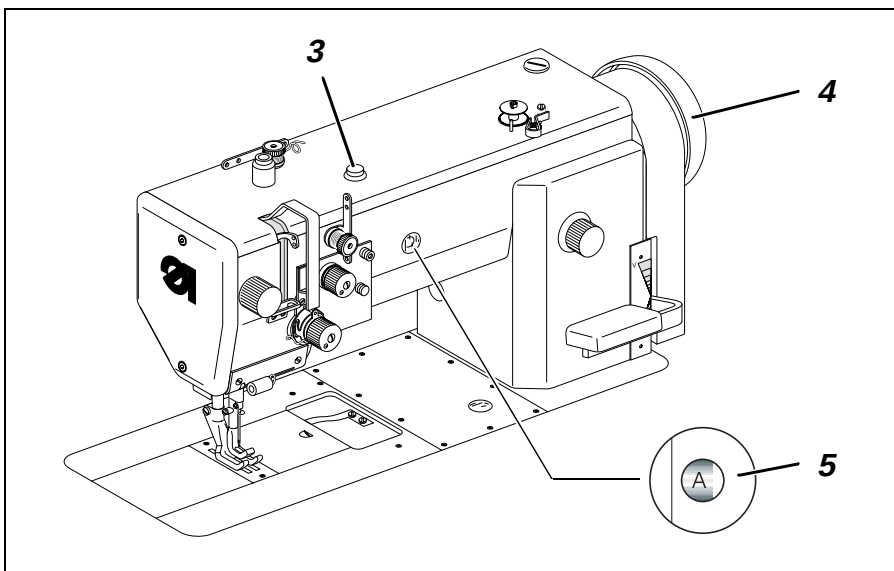
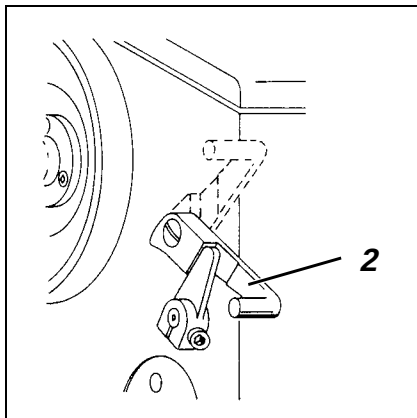
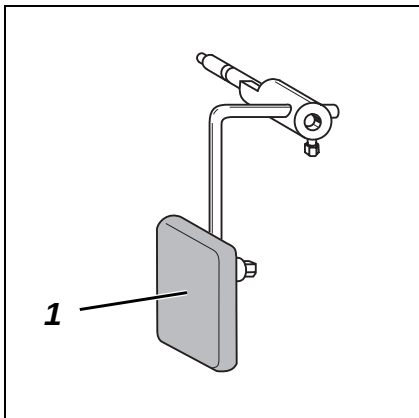


IMPORTANT

When fitting a thicker needle the distance of the shuttle from the needle must be corrected (see Servicing instructions).

Failure to comply with the above note may lead to the following errors:

when fitting a thinner needle:	faulty stitches, damage to thread
when fitting a thicker needle:	damage to the shuttle tip and needle



stitch-length range [mm]	adjusting cam [item]	sewing-foot stroke [mm]	max. stitch rate per min.
0 - 6	A	1,5 ↓	2800
	B		2600
	C		2450
	D		2300
	E		2150
	F		2000
		6,0	



6 - 9

A - F

1.5 - 6.0

2000

5.8 Lifting the sewing feet

With the machine at a halt the sewing feet are mechanically raised with knee lever 1:

- Operate knee lever 1.
- The sewing feet remain lifted for as long as knee lever 1 is operated.

5.9 Arresting the sewing feet in the up position

The mechanically lifted sewing feet are arrested in the up position with lifting lever 2 (e.g. to wind on the looper thread or replace the sewing foot).

Lifting lever 2 is located at the rear of the machine arm.



Caution - danger of injury

Turn off the main switch.
Only arrest the sewing feet with the sewing machine switched off.

- Swivel lifting lever 2 downwards.
The sewing feet are arrested in the up position.
- Swivel lifting lever 2 upwards.
The sewing feet are released.

5.10 Adjusting the sewing-foot stroke

The height of the sewing-foot stroke is adjusted with button 3 and handwheel 4.



Caution - danger of injury

Turn off the main switch.
The sewing-foot stroke may only be adjusted with the sewing machine switched off.

Adjusting the sewing-foot stroke

- Press button 3 and hold it down.
- Rotate handwheel 4 until it locks.
- Continue to rotate the handwheel until the required letter (items **A - F**) appears in inspection window 5.
item **A**: minimum sewing-foot stroke (1.5 mm)
item **F**: maximum sewing-foot stroke (6 mm)

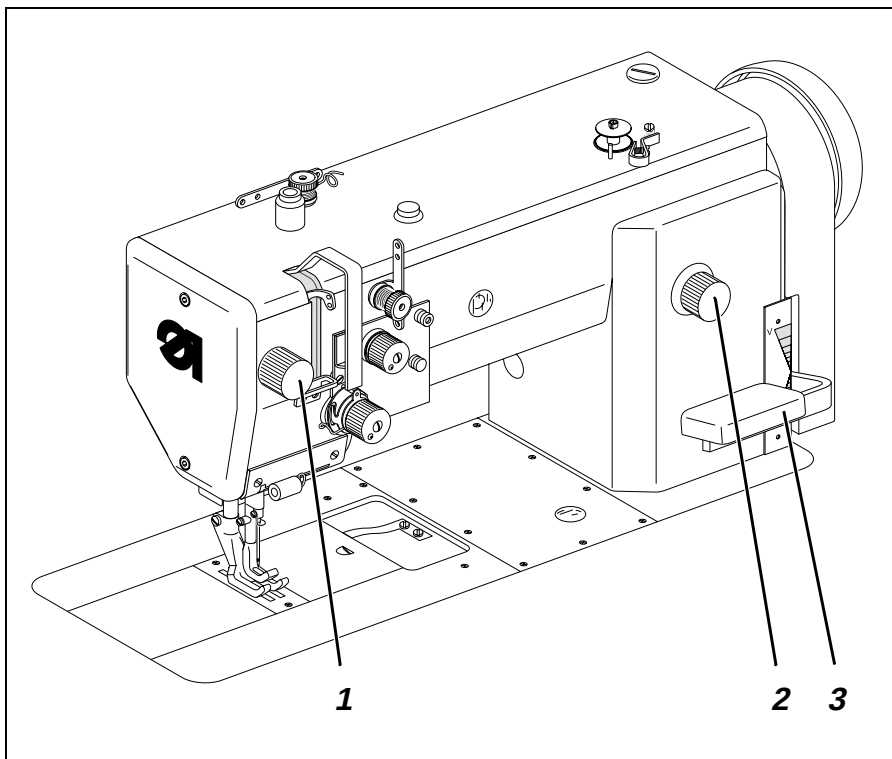


IMPORTANT

Sewing-foot stroke, stitch length and stitch rate are mutually interdependent.
To ensure reliable operation and a long machine life, do not exceed the maximum stitch rate given in the table.



5.11 Adjusting the sewing-foot pressure



The required sewing-foot pressure is set with knob 1.

- To increase sewing-foot pressure = turn knob 1 clockwise
To decrease sewing-foot pressure = turn knob 1 anti-clockwise

5.12 Adjusting the stitch length

- Set the required stitch length with knob 2.
To increase stitch length = turn knob 2 clockwise
To decrease stitch length = turn knob 2 anti-clockwise
- To sew bar tacks manually press stitch-regulating lever 3 downwards.
The machine sews backwards for as long as stitch-regulating lever 3 is held down.
The stitch length is the same as that set for forwards sewing.
See also chapter 7.



6. Control unit and operating panel



IMPORTANT

This operating manual covers **only** the key functions and change of parameters by the operator.

For a detailed description of the control unit please see the motor manufacturer's current operating manual (attached).

6.1 General

The operating panel is used to program the control unit and to set the seam functions. Depending on the nature of the job, sewing may be executed manually or by seam programming.

For differing jobs seams can be programmed for which the functions (starting bar tack, ending bar tack, stitch count, thread cutting etc.) and parameter values (stitch rate, seam length, rpm etc.) are individually assigned.

Entry is carried out in programming mode.

The parameters and the values assigned are displayed.

The seam programs are not lost even when the sewing machine is switched off (battery buffer).

In order to avoid the inadvertent alteration of pre-set functions, operation is divided into various levels (operator, technician, fitter).

The operator (seamstress) can program directly.

On the other levels access is contingent on the entry of a code number (EFKA).

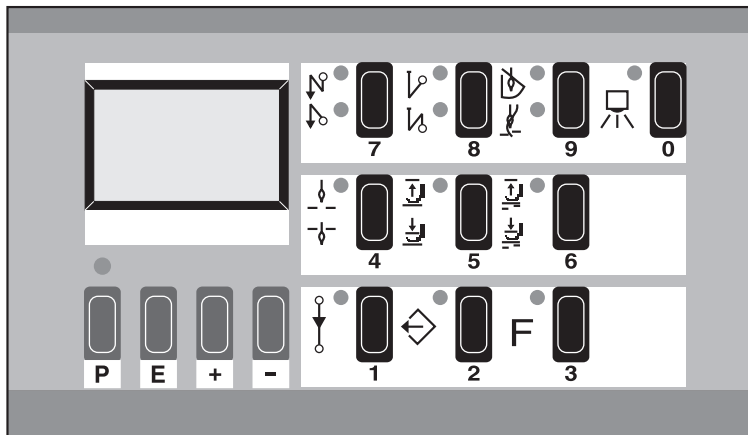
RESET

If the control unit is hopelessly misadjusted, this function allows the technician to reset all adjusted values to their default (ex-works) settings.

This function is described in the Servicing instructions.



6.2 Operating-panel keys



key	function	settings
P	start or end programming mode	
E	confirm a parameter-value change	
+	increase a displayed parameter value	
-	decrease a displayed parameter value	
1	stitch counting	ON / OFF
2	programming / executing seams	
3	function key (programmable)	
4	basic needle position	UP / DOWN
5	auto foot lift on stop in mid-seam ¹	ON / OFF
6	auto foot lift after thread cut-off ¹	ON / OFF
7	starting bar tack ¹	SINGLE / DOUBLE / OFF
8	ending bar tack ¹	SINGLE / DOUBLE / OFF
9	thread cutter	THREAD CUTTER / THREAD CUTTER + TURN BACK / OFF
0	light-barrier function ²	ON / OFF

¹ Only by sewing machines with thread trimmer (Subclass 467-183 081) and electropneumatic seam bartacking and sewing foot lift (RAP 13-4)!

² Key function is not assigned with this machine class!



6.3 Changing parameter values

At the operator level parameter values are changed with the four green keys ("**P**", "**E**", "**+**", "**-**") beneath the display.

The parameter list on the next page lists all the parameters which can be changed from operator level.

1. Start programming mode

- Press "**P**" key.
The LED above the key flashes.
This indicates that the control unit is in programming mode.

2. Display first operator-level parameter

- Press "**E**" key.
The first parameter appears in the display with the corresponding parameter value.

Example: "**Arv 250**"

Arv = abbreviated parameter designation
250 = parameter value set

3. Change displayed parameter value

- Increase or reduce the parameter value with den "**+**" and "**-**" keys.
If the "**+**" or "**-**" key is held down, the parameter value continues to rise or fall until it is released.

4. Save changed parameter value

- Press "**E**" key.
The changed parameter value is saved.
- The next operator-level parameter appears in the display.
Repeatedly pressing the "**E**" key successively calls up all operator-level parameters.

5. Leaving programming mode

- Press "**P**" key.
The last parameter value to have been changed is saved.
- The control unit leaves programming mode.



"Operator-level" parameter list:

parameter	function	setting		
		max.	min.	pre-set value
Arv¹	starting bar-tack stitches forwards	254	0	2
Arr¹	starting bar-tack stitches backwards	254	0	4
Err¹	ending bar-tack stitches backwards	254	0	2
Erv¹	ending bar-tack stitches forwards	254	0	2
LS²	light-barrier differential stitches	254	0	6
LSF²	stitch rate of light-barrier filter for yard goods	254	0	0
LSn²	number of light-barrier seams	15	1	1
Stc	stitch rate of seam with stitch-counting	254	0	10
F	assigns a technician-level parameter to key 3 1 = needle cooling ON / OFF ² 2 = stroke adjustment ON / OFF ² 3 = stroke adjustment ² 4 = softstart	5	1	2
SAv¹	starting ornamental-stitch bar tack - stitch count forwards	254	0	3
SAr¹	starting ornamental-stitch bar tack - stitch count backwards	254	0	3
SEr¹	ending ornamental-stitch bar tack - stitch count backwards	254	0	3
SEv¹	ending ornamental-stitch bar tack - stitch count forwards	254	0	3
cFw²	stitch count residual-thread monitor stitch counting	2540	0	0
FES²	operating mode of thread-drawing mechanism	6	0	0

¹ Only by sewing machines with thread trimmer (Subclass 467-183 081) and electropneumatic seam bartacking and sewing foot lift (RAP 13-4)!

² Parameter has no function with this machine class!

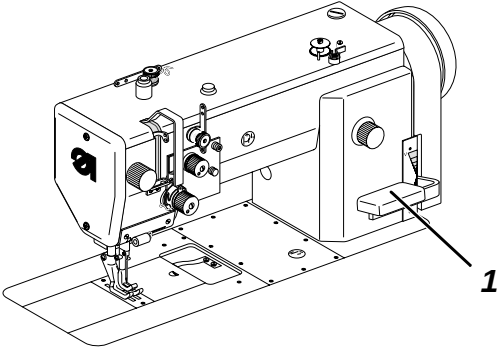


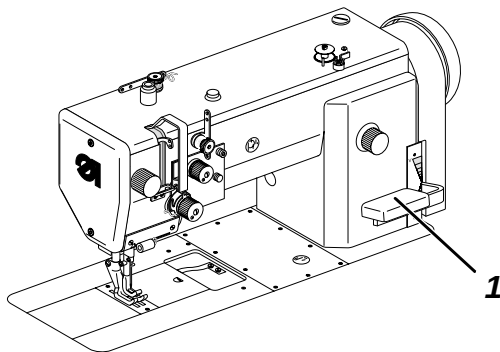
7. Sewing

The description of the sewing process is based on the following:

- The machine in question is a special sewing machine with thread cutter (sub-class 467-183081).
- The following function is set on the operating panel:
Basic needle position: DOWN (item 1)
- Main switch on.
- The last sewing process was terminated by severing the thread.

Operating and function sequence for sewing:

	
sewing process	operation / explanation
Before starting sewing Initial position Position the material at the start of the seam	- Pedal in rest position. Sewing machine at a standstill. Needle up. Sewing feet down. - Operate knee lever. The sewing feet rise. - Bring material into position. - Release knee lever The sewing feet are lowered onto the material.
At the start of the seam Start sewing Sew starting bar tack	- Push pedal forwards and hold it there. The machine sews at the speed determined by the pedal. - Press stitch-regulating lever 1 downwards. The machine sews backwards for as long as the stitch-regulating lever is held down. Speed is determined by the pedal.



sewing process	operation / explanation
In mid-seam Interrupt sewing process Sew the corner Continue sewing process (after releasing the pedal) Sew intermediate bar tack	- Release pedal (rest position). The machine halts in the 1st position (needle down). The sewing feet are down. - Release pedal. The machine halts in the 1st position (needle down). - Operate knee lever. The sewing feet rise. - Rotate the material round the needle. - Release knee lever. The sewing feet are lowered onto the material. - Push the pedal forwards. The machine sews at the speed determined by the pedal. - Press stitch-regulating lever 1 downwards. The machine sews backwards for as long as the stitch-regulating lever is held down. Speed is determined by the pedal.
At the end of the seam Sew ending bar tack. Remove material	- Press stitch-regulating lever 1 downwards. The machine sews backwards for as long as the stitch-regulating lever is held down. Speed is determined by the pedal. - Push the pedal backwards. The thread is severed. The machine halts in the 2nd position. The sewing feet are down. - Operate knee lever. The sewing feet rise. - Remove sewing material.



8. Maintenance



Caution - danger of injury

Turn off the main switch.
Maintenance of the sewing machine may only be carried out when it is switched off.

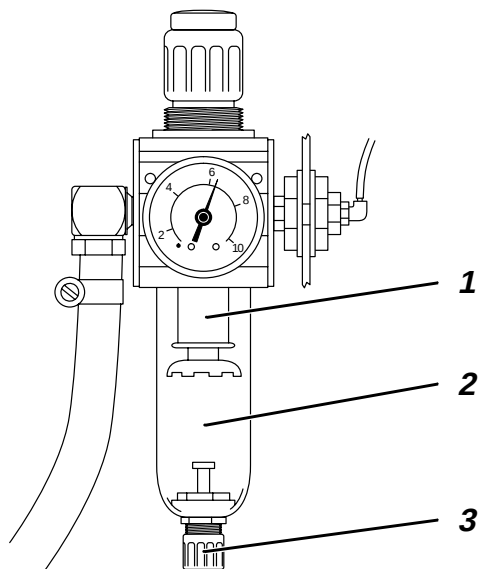
Maintenance work must be carried out no less frequently than at the intervals given in the tables (see "operating hours" column).

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

8.1 Cleaning and testing

A clean sewing machine is a trouble-free sewing machine.

maintenance work to be carried out	explanation	operating hours
Upper part of machine - Remove lint, pieces of thread and other debris. - Clean oil collector.	Places in special need of cleaning: - area under the needle plate - feeder - area around the shuttle - bobbin housing - thread cutter - needle-thread tensioner - Remove lint and oil spills with a cloth	8 8
Sewing drive - Check the condition and tension of the V-belt.	It must be possible to depress the V-belt by about 10 mm by pressing it with a finger at its mid-point.	160

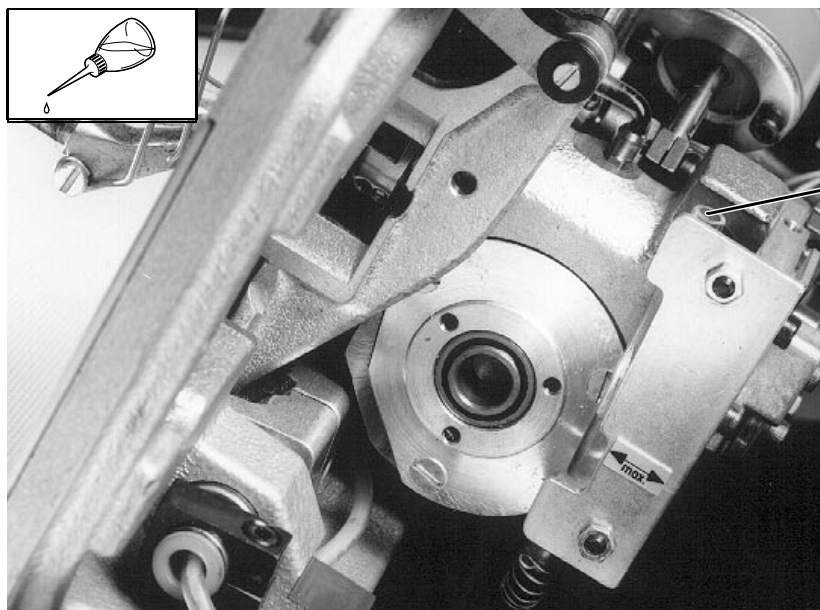
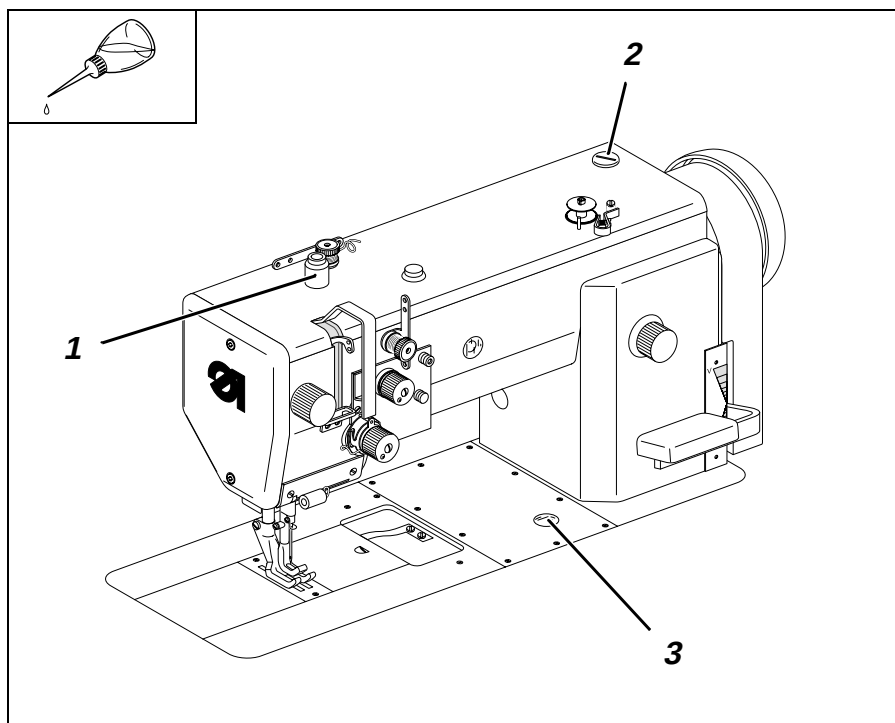




Compressed air maintenance unit (optional equipment)

If the special sewing machine is equipped with the compressed air maintenance unit WE-6, the maintenance work listed in the table below is also to be conducted.

Required maintenance work	Remarks	Operating hours
Compressed air maintenance unit - Check the water level in the pressure regulator.	The water level should not climb to the filter insert 1. - After screwing in the drain screw 3, blow the water out of the waterseparator 2 under pressure. Note: The water separator 2 is equipped with a semi-automatic condensation drain. When falling below a certain pressure, the condensation is automatically drained.	40
- Clean the filter insert.	Dirt and condensation are removed through filter insert 1. - Separate the machine from the compressed air supply. - Screw in the drain screw 3. The pneumatic system of the machine must be pressure-free. - Screw water separator 2 off. - Screw filter insert 1 off Wash out the filter case and filter insert with naphtha (no solvents!) and blow out clean. - Reassemble the maintenance unit again and connect.	500





8.2 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.



IMPORTANT

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 **ESSO SP-NK 10** lubricating oil or an equivalent oil of the following specification:

- viscosity at 40° C : 10 mm²/s
- flashpoint: 150 °C

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

2-litre container: 9047 000013

5-litre container: 9047 000014

maintenance work to be carried out	explanation	operating hours
- Lubricate the upper part of the machine.	- Fill tube 1 to the brim with oil. The oil slowly reaches the upper part of the machine through the felt beneath the tube.	8
- Lubricate the shuttle.	- Remove knee lever. - Turn the upper part of the machine over. - Fill tube 4 with oil up to the "max." mark.	8
- Lubricate the lower part of the machine.	- Unscrew oil-filler cap 2. - Top up with oil. - Check oil level at sight glass 3. The oil level must be between the upper red line and the "LEER" □ line. - Replace oil-filler cap. - Remove any oil which has overflowed into the oil collector.	40



9. Optional Equipment

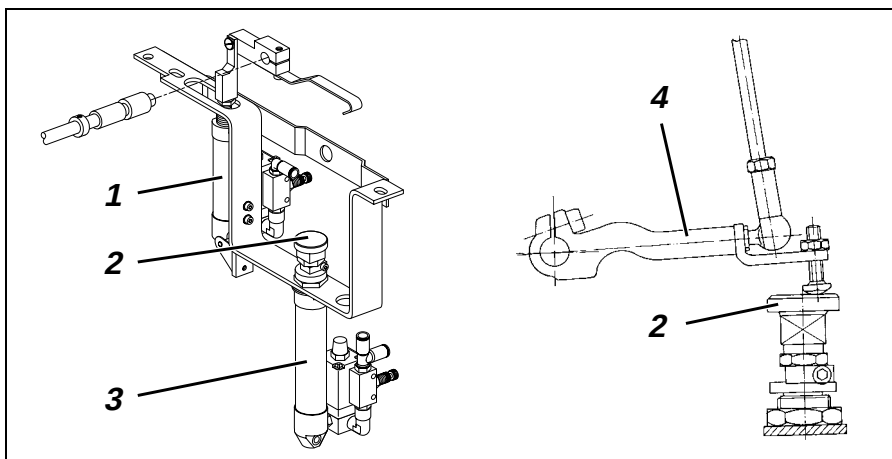
9.1 Electropneumatic Seam Bartacking and Sewing Foot Lift (RAP 13-4)

The electropneumatic seam bartacking and sewing foot lift (**RAP 13-4**) is only available for special sewing machines with thread trimmer (Subclass **467-183 081**).

It makes possible the following supplementary functions:

- Beginning and end bartack sewing, foot-operated (via pedal)
- Bartack suppression
- Stitch-in-stitch sewing (fancy bartacking)
- Intermediate bartack sewing, hand-operated (via key on the machine arm)
- Sewing foot lift, foot-operated (via pedal)

9.1.1 Function



Seam bartacking

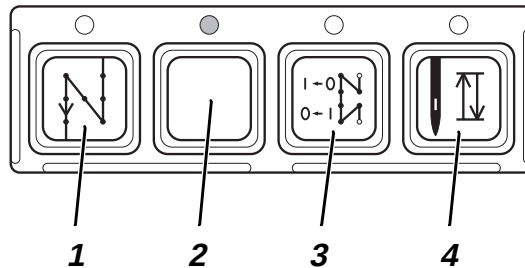
- At the beginning of the bartack the piston rod of cylinder 1 runs out and moves the stitch regulator into the position for sewing in reverse.
- The machine sews in reverse as long as the piston rod is run out. The stitch length corresponds to the stitch length set for sewing forward. During the seam bartacking, the bartacking rpm (factory setting 1200 min⁻¹) is in effect.

Sewing foot lift

- Step the pedal half back. The piston rod of cylinder 3 runs out and operates the lever 4 via the slide 2.
- The sewing feet lift.



9.1.2 Keys on the Machine Arm



Key	Function / Operation
1	Activating the intermediate bartack during sewing - Press key 1 and hold down. The intermediate bartack is sewn. The machine sews in reverse as long as key 1 is held down.
2	without function!
3	Suppressing the beginning or end bartack - Press key 3. The next beginning or end bartack is not sewn.
4	Positioning the needle in the high or low position - Press key 4. The needle positions in the high or low position.

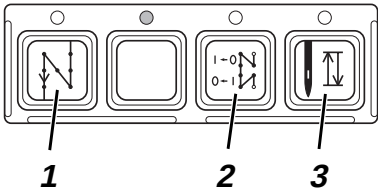


9.1.3 Sewing

In the description of the sewing, the following preconditions are assumed:

- Special sewing machine with thread trimmer (Subclass 467-183081) and electropneumatic seam bartacking and sewing foot lift (RAP 13-4).
- The following functions are set on the control panel:
 Beginning and end bartack: ON
 Sewing foot position before and after trimming: DOWN
 Needle position before trimming: DOWN (position 1)
- The last sewing sequence was completed with end bartack and thread trimming.

Operation and function sequence during sewing:

	
Sewing sequence	Operation / Remarks
Before the start of sewing Initial position Position the material at the seam beginning	- Pedal in the rest position. Sewing machine is stopped. Needle up. Sewing feet down. - Press key 3. The needle positions in the low position. - Step the pedal half back. The sewing feet lift. - Push the material toward the needle. - Release the pedal. The sewing feet lower onto the material.
At the seam beginning Beginning bartack and continue sewing Only sew beginning bartack Not sewing the beginning bartack	- Step the pedal forward and hold down. The beginning bartack is sewn. Then the machine continues sewing with the rpm determined via the pedal. - Step the pedal briefly forward. The machine stops in the 1st position (needle down) after the sewing of the beginning bartack. - Press key 2 (bartack suppression). - Step the pedal forward. The machine sews with the rpm determined via the pedal.



Sewing sequence	Operation / Remarks
At the seam middle Interrupting the sewing sequence Sewing the corner Continuing the sewing sequence (after release of the pedal) Sewing the intermediate bartack	- Release the pedal (rest position) . The machine stops in the 1st position (needle down). The sewing feet are down. - Step the pedal half back. The machine stops in the 1st position (needle down). The sewing feet are raised. - Turn the material around the needle. - Step the pedal forward. The machine sews with the rpm determined via the pedal. The beginning bartack is not sewn. - Press key 1 and hold the pedal . The machine sews in reverse as long as key X is pressed. The rpm is determined via the pedal.
At the seam end Removing the material Not lifting the sewing feet. Not sewing the end bartack	- Step the pedal completely back and hold down. The end bartack is sewn. The thread is trimmed. The machine stops in the 2nd position. The sewing feet are lifted. - Briefly step the pedal completely back. The end bartack is sewn. The thread is trimmed. The machine stops in the 2nd position. The sewing feet are down. - Press key 2 (bartack suppression). Step the pedal completely back. The end bartack is not sewn. The thread is trimmed. The machine stops in the 2nd position. The position of the sewing feet is dependent on the position of the pedal: a) Pedal stepped back and held down: - Sewing feet lifted. b) Pedal released (rest position): - Sewing feet down.