DÜRKOPP ADLER

275
Operating Manual

1 About this manual

1.1 Scope of application of the manual

This manual describes the intended use and the set-up of the special sewing machine 275.
It applies to all submodels listed in Section 🕮 *3 Performance description*.

1.2 Damage during transport

Dürkopp Adler cannot be held liable for any damage during transport. Check the delivered product immediately after receiving it. Report any damage to the last transport manager. This also applies if the packaging is not damaged.

Keep the machines, devices, and packaging material in the condition they were at the time the damage was identified. That secures any claims towards the transport company.

Report all other complaints to Dürkopp Adler immediately after receiving the product.

1.3 Limitation of liability

All information and notes in this operating manual have been compiled in accordance with the latest technology and the applicable standards and regulations.

The manufacturer accepts no liability for any damage due to:

- Failure to observe the instructions in the manual
- Improper use
- Unauthorized modifications to the machine
- The deployment of untrained personnel
- Damage during transport
- Using spare parts not approved

1.4 Symbols used

Correct setting
Specifies the correct setting.

Faults
Specifies the faults that can occur due to an incorrect setting.

Steps to be performed when operating the machine (sewing and equipping)

Steps to be performed for servicing, maintenance, and installation

Steps to be performed via the software control panel

The individual steps are numbered:

1. 1. First step
2. 2. Second step
... The sequence of the steps must always be followed.

Result of performing an operation
Change to the machine or in the display.

Important
Special attention must be paid to this point when performing a step.

Information
Additional information, e. g. on alternative operating possibilities.

Sequence
Specifies the work to be performed before or after a setting.
It is vital that this sequence is adhered to.

Reference
A reference is provided to another place in the text.

2 Safety instructions

This section contains basic instructions for your safety. Read the instructions carefully before setting up, programming, maintaining, or operating the machine. Make sure to follow the information included in the safety instructions. Failure to do this can result in serious injury and damage to the machine.

2.1 General safety instructions

Only authorized persons may use the machine.
Every person who works with the machine must have read the operating manual first.

The machine may only be used as described in this manual.

The operating manual must be available at the machine's location at all times.

Also observe the safety instructions and the operating manual for the drive.

Observe the generally applicable safety and accident prevention regulations and the legal regulations concerning industrial safety and the protection of the environment.

All warnings on the machine must always be in legible condition and may not be removed. Missing or damaged labels must be replaced immediately.

For the following work, the machine must be disconnected from the power supply using the main switch or by disconnecting the power plug:

- Threading
- Replacing the needle or other sewing tools
- Leaving the workplace
- Performing maintenance work and repairs

Inspect the machine while in use for any externally visible damage. Interrupt your work if you notice any changes to the machine. Report any changes to your supervisor. A damaged machine may not be used any more.

Machines or machine parts that have reached the end of their service life must not be used any longer. They have to be disposed of correctly and in accordance with the applicable statutory provisions.

The machine may only be set up by qualified specialists.

Maintenance work and repairs may only be carried out by qualified specialists.

Safety equipment may not be removed or put out of service. If this cannot be avoided for a repair operation, the safety equipment must be refitted and put back into service immediately afterwards.

Work on electrical equipment may only be carried out by qualified electrical specialists.

The connecting cable must have a power plug approved in the specific country. The power plug may only be connected to the power cable by a qualified electrical specialist.

Work on live components and equipment is prohibited. Exceptions are defined in DIN VDE 0105.

Missing or faulty spare parts could impair safety and damage the machine. Therefore only use original spare parts from the manufacturer.

2.2 Signal words and symbols used in safety instructions

The safety instruction text is surrounded by colored bars.

Signal words specify the severity of a danger:

Signal word	Degree of severity
DANGER	Resulting in death or serious injury.
WARNING	Death or serious injury possible.
CAUTION	Moderate to minor injuries possible.
ATTENTION	Damage possible.

In the case of dangers to personnel, the following symbols indicate the type of hazard:

Signal word	Type of hazard
	General danger
	Danger due to electric shock
	Danger due to sharp objects
	Danger due to crushing

Examples of the layout of the safety instructions in the text:

DANGER

Type and source of the danger

Consequences in the event of noncompliance

Measures for avoiding the danger

This is what a hazard note looks like for a hazard that will result in serious injury or even death if not complied with.

WARNING

Type and source of the danger

Consequences in the event of noncompliance

Measures for avoiding the danger

This is what a hazard note looks like for a hazard that could result in serious injury or even death if not complied with.

CAUTION

Type and source of the danger

Consequences in the event of noncompliance

Measures for avoiding the danger

This is what a hazard note looks like for a hazard that could result in moderate or minor injury if not complied with.

ATTENTION

Type and source of the danger

Consequences in the event of noncompliance

Measures for avoiding the danger

This is what a hazard note looks like for a hazard that could result in material damage if not complied with.

ENVIRONMENTAL PROTECTION

Type and source of the danger

Consequences in the event of noncompliance

Measures for avoiding the danger

This is what an environmental protection note looks like for a hazard that could result in environmental damage if not complied with.

3 Performance description

3.1 Features

The Dürkopp Adler 275 is a single-needle double lockstitch machine with lower transport and differential foot upper transport for light to moderately heavy material.

General technical characteristics

- Maximum stitch length: 4 mm
- Maximum upper transport length: 8 mm
- Electromagnetic automatic functions:
  - Thread cutter
  - Foot lifting
  - Locking
  - Thread clamp
- Keys for:
  - Intermediate locking in the seam
  - Needle up / down
  - Single stitch
  - Bartack toggle
- Motor screwed to the base plate (direct drive)
- Controller with operating panel incl. fastening bracket and upper section detection (OTE)

3.2 Declaration of conformity

The machine complies with the European regulations specified in the declaration of conformity or in the installation declaration.

3.3 Intended use

The Dürkopp Adler 281 is intended for sewing light to moderately heavy material. The material must not be thicker than 6 mm when pressed together by the lowered sewing feet.

Intended yarn counts:

- 30/2 Nm (synthetic threads)
- 30/3 Nm (core spun thread)

The machine is only intended for processing dry material and may only be operated in dry areas.
The material to be sewn must not contain any hard objects.
The sewing machine is intended for industrial use.
The manufacturer will not be held liable for damage resulting from improper use.

3.4 Technical data

Noise emission

Workspace-specific emission value as per DIN EN ISO 10821 for 275-140342:

L_{pA} = 79,5 dB(A); K_{pA} = 0,38 dB(A).

Features	275-140342-01	275-142342-01	275-740642-01	275-742642-01	275-942342-01
stitch type	Double lockstitch 301				
Hook type	Horizontal hook				
Number of needles	1				
Needle system	134, 797, Sy195501				
Max. needle strength [Nm]	70 - 120				
Max. sewing thread size	30				
Max. stitch length, forwards/backwards [mm]	4 / 4				
Max. number of stitches [min^{-1}]	5000				3200
Number of stitches on delivery [min^{-1}]	4800				2500
Sewing foot stroke when raised [mm]	7				
Operating pressure [bar]	6				
Air consumption [NL]	0.02				
Length/width/height [mm]	780/370/790				
Weight of the upper section net/gross[kg]	72/77				73/78
Rated voltage [V/Hz]	230 V / 50-60 Hz				
Rated power [kVA]	0.5				

3.5 Additional equipment

Additional equipment	Material number	275-140342-01	275-142342-01	275-740642-01	275-742642-01	275-942342-01
Mechanical device for increasing the upper transport while sewing (second pedal)	0275 590015	x		x		
Knee lever retrofit set	0271 000661	x	x	x	x	x
Electromechanical device for increasing the upper transport while sewing (second pedal) **IMPORTANT:** Maintenance unit WE8 and pneumatic connection package required.	0275 590 044	x		x		
Knee switch, switchable between press-only/latching	9880 002005	x		x		●
Suction device underneath, with vacuum pump **IMPORTANT:** Maintenance unit WE8 and pneumatic connection package required.	0275 590124			x	x	●
Suction device above, without vacuum pump If a central vacuum supply is not available then the vacuum fan must be additionally ordered.	0722 002041			x	x	
Suction device underneath, without vacuum pump **IMPORTANT:** If a central vacuum supply is not available then the vacuum fan must be additionally ordered.	0275 590054			x	x	
Vacuum fan For a suction device without a vacuum pump when a central vacuum supply is not available.	9800 810004			x	x	

● = standard equipment
X = optional additional equipment

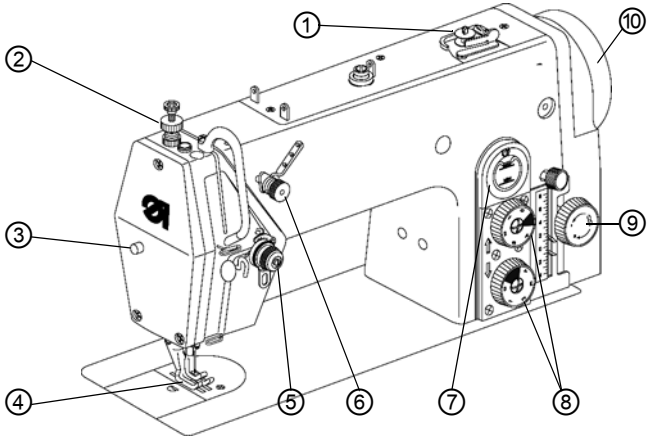
Additional equipment	Material number	275-140342-01	275-142342-01	275-740642-01	275-742642-01	275-942342-01
Light barrier for subsequent functions Z133 027101	0271 590024	x	x	x	x	x
Halogen sewing lamp 12V/20W, without power supply and mounting parts, to be fitted to the upper section of the sewing machine	9822 510003	x	x	x	x	x
Sewing lamp transformer, 12V/20W, switchable, for sewing lamp 9822 510003	0798 500088	x	x	x	x	x
Mounting set for mounting the sewing lamp on the upper section	0APP 001041	x	x	x	x	x
Maintenance unit, WE8	9780 000108	x	x	x	x	●
Pneumatic connection package, consisting of: Connection hose (5 mm long, 9 mm diameter), hose glands, hose ties, coupling socket, plug	0797 003031	x	x	x	x	●
Intermediate plate for especially intensive sewing of multiple widths, pivotable	N900 003601	x	x	x	x	
Edge stop, fastened to the base plate	N900 012015	x	x			
Right-side edge stop, pivotable from above Adjustment range: 0 - 40 mm	N900 020038	x	x			
Right-side edge stop, pivotable from above, with latching at 2 mm, 5 mm, 10 mm (included in the scope of delivery of 275-E2)	N900 04037	x	x			

● = standard equipment
X = optional additional equipment

Additional equipment	**Material number**	**275-140342-01**	**275-142342-01**	**275-740642-01**	**275-742642-01**	**275-942342-01**
Hemmer Split hemmer, pneumatically vertically pivotable, for light material with a hem width of 6 mm. Contains the hemmer from N005 005302 and K N005 005301 with pneumatic switching unit Z100 001041. Used on conjunction with 275-E8 or -E28. **IMPORTANT:** Maintenance unit WE8 and pneumatic connection package required.	N005 225303	x	x			
● = standard equipment X = optional additional equipment						

4 Device description

Figure 1: Complete overview



(1) - Bobbin

(2) - Adjusting wheel for the sewing foot pressure and downforce pressure

(3) - Button for locking the raised sewing foot

(4) - Sewing foot

(5) - Main tensioner

(6) - Preliminary tensioner

(7) - Oil reservoir with oil level indicator

(8) - Adjusting wheels for the stitch length (forwards/reverse)

(9) - Adjusting wheel for the upper transport (multiple width)

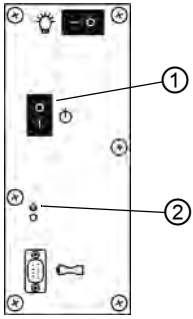
(10) - Handwheel

5 Operation

5.1 Switching the power supply on and off

The controller is underneath the table plate. The main switch (1) on the controller regulates the power supply.

Figure 2: Switching the power supply on and off



(1) - Main power switch
(2) - Indicator lamp on the controller

To switch on the power:

1. Press the main switch (1) down to position I.
   ↳The indicator lamp (2) lights up.

To switch off the power:

1. Press the main switch (1) up to position 0.
   ↳The indicator lamp (2) goes out.

5.2 Inserting and replacing the needle

WARNING

Risk of injury by the needle point and moving parts
Switch off the sewing machine before replacing the needle.
Do not touch the needle point.

Sequence
After changing to a needle of a different size, adjust the clearance between the hook and the needle (🕮 *Service manual*).

ATTENTION

Damage to the machine, needle breakage, or thread damage is possible due to an incorrect clearance between the needle and hook tip.
Check the clearance to the hook tip after inserting a new needle of a different size. Adjust this if necessary.

Faults caused by an incorrect hook clearance

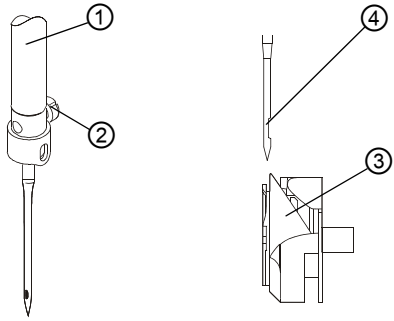
After inserting a thinner needle:

- Missing stitches
- Thread damage

After inserting a thicker needle:

- Damage to the hook tip
- Damage to the needle

Figure 3: Inserting and replacing the needle



(1) - Needle bar
(2) - Fastening screw
(3) - Hook
(4) - Groove

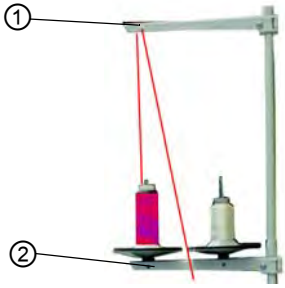
1. Turn the handwheel until the needle bar (1) reaches the upper end position.
2. Loosen the fastening screw (2).
3. Pull the needle out towards the bottom.
4. Insert the new needle.
5. **Important:** Align the needle so that the groove (4) faces the hook (3).
6. Tighten the fastening screw (2).

5.3 Threading in the needle thread

WARNING

Risk of injury by the needle point and moving parts
Switch off the sewing machine before inserting the thread.

Figure 4: Thread guide on the unwinding bracket

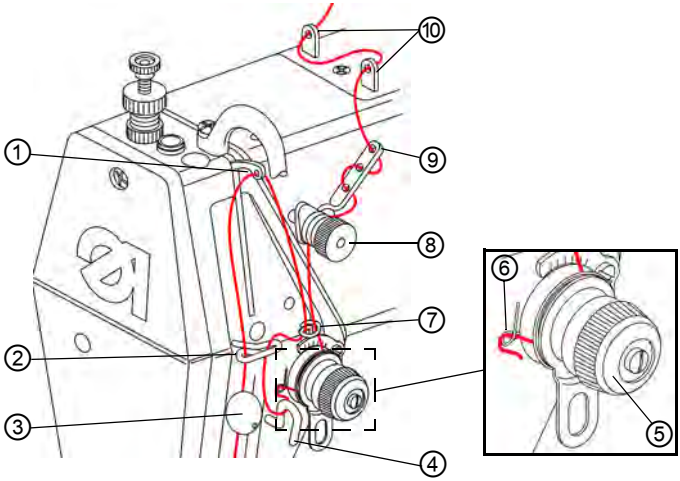


(1) - Unwinding bracket *(2) - Thread stand*

1. Fit the thread reel on the thread stand (2).
2. Insert the thread from the rear to the front through a hole in the guide on the unwinding bracket (1).

Important: The unwinding bracket (1) must be parallel to the thread stand (2).

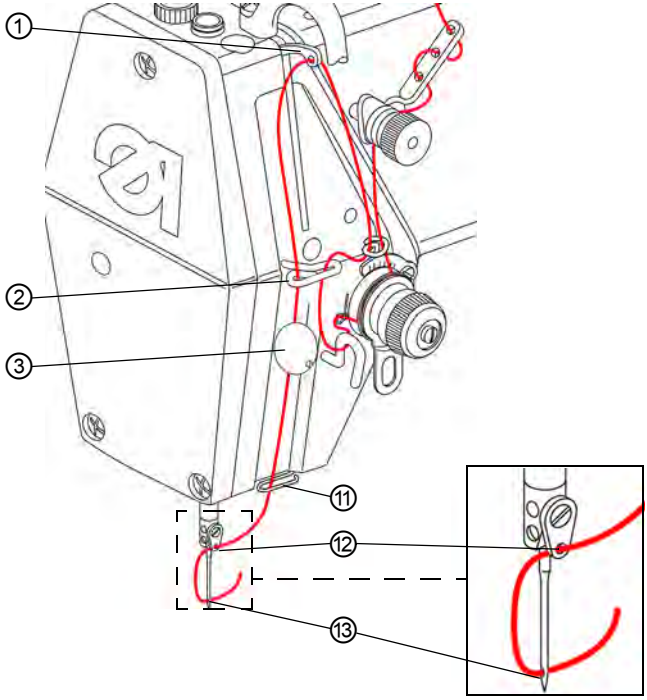
Figure 5: Threading procedure for needle thread – part 1



(1) - Thread lever
(2) - Upper hook
(3) - Thread clamp
(4) - Lower hook
(5) - Main tensioner
(6) - Thread tensioning spring
(7) - Thread regulator
(8) - Pre-tensioner
(9) - 2nd thread guide
(10) - 1st thread guide

3. Insert the thread through the 1st thread guide (10): From the rear to the front through the rear hole and from the front to the rear through the front hole.
4. Insert the thread in a wavelike manner through the holes of the 2nd thread guide (9): From top to bottom through the uppermost hole, from bottom to top through the hole in the middle, and finally from top to bottom through the lowest hole.
5. Guide the thread counterclockwise around the pre-tensioner (8).
6. Feed the thread from top to bottom through the thread regulator (7).
7. Guide the thread clockwise around the main tensioner (5).
8. Pull the thread under the thread tensioning spring (6).
9. Guide the thread from the right to the left under the lower hook (4).
10. Feed the thread from bottom to top through the upper hook (2).
11. Feed the thread from bottom to top through the thread regulator (7).

Figure 6: Threading procedure for needle thread – part 2



(1) - Thread lever
(2) - Upper hook
(3) - Thread clamp
(11) - Thread guide
(12) - Thread guide on the needle bar
(13) - Needle eye

12. Insert the thread from the right to the left through the thread lever (1).
13. Feed the thread from top to bottom through the upper hook (2).
14. Feed the thread from top to bottom through the thread clamp (3).
15. Feed the thread from top to bottom through the thread guide (11).
16. Insert the thread from the front to the rear through the thread guide on the needle bar (12).
17. Insert the thread from the left to the right through the needle eye (13) in such a way that the loose thread end faces the hook.

5.4 Inserting and winding on the hook thread

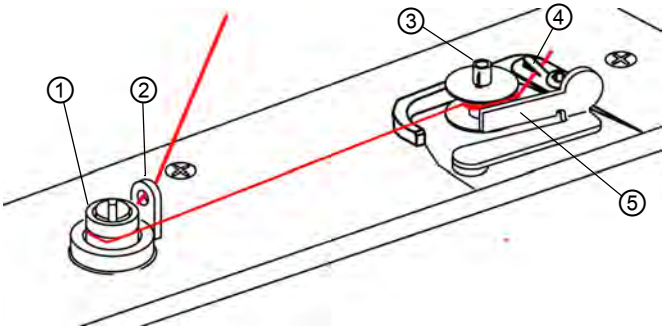
WARNING

Risk of injury from moving parts.
Switch off the sewing machine before inserting the thread.

1. Fit the thread reel onto the thread stand (page 22).
2. Insert the thread from the rear to the front through a hole in the guide on the unwinding bracket.

Important: The unwinding bracket must be parallel to the thread stand.

Figure 7: Winding on the hook thread - part 1



(1) - Bobbin thread winding tension
(2) - Thread guide
(3) - Bobbin shaft
(4) - Cutting clamp
(5) - Bobbin winder flap

3. Fit the empty bobbin onto the bobbin shaft (3).
4. Insert the thread from the right to the left through the thread guide (2).
5. Guide the thread clockwise around the gap in the hook thread winding tensioner (1).
6. Wind some of the thread clockwise onto the bobbin.
7. Pull the thread through the cutting clamp (4) and cut it off after this.
8. Press the bobbin winder flap (5) against the bobbin.
9. Switch on the machine.

10. Press the foot pedal forwards.

    ↳ The machine starts sewing and winds on the hook thread in the process. When the set filling quantity (🕮 *Service manual*) is reached, then the winding process will stop automatically.

The hook thread is normally wound on when sewing is in progress. However, you can also wind on the hook thread without sewing, e.g. if you require a full bobbin in order to start sewing.

ATTENTION

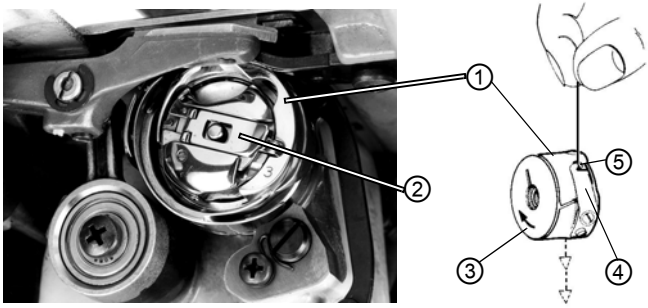
Risk of damaging the machine when winding without material to be sewn.
Lock the sewing foot in place using the button (🕮 Section *5.15 Locking the sewing foot in place in the upper position*, page 42). Take the thread out of the thread lever and the bobbin capsule out of the hook if you wind on the hook thread without sewing the material in the process.

5.5 Replacing the hook thread bobbin

WARNING

Risk of injury from moving parts.
Switch off the sewing machine before replacing the hook thread bobbin.

Figure 8: Replacing the hook thread bobbin



(1) - Spool housing upper section
(2) - Spool housing flap
(3) - Bobbin
(4) - Tensioning spring
(5) - Hole

1. Tilt the sewing machine upper section backwards.
2. Raise the spool housing flap (2).
3. Remove the spool housing upper section (1) together with the bobbin (3).
4. Remove the empty bobbin.
5. Insert a full bobbin.

   Important: Insert the bobbin (3) such that it moves in the direction of the arrow when pulling off the thread.
6. Guide the hook thread through the slot underneath the tensioning spring (4) and into the hole (5).
7. Pull the hook thread approx. 5 cm out of the spool housing upper section (1).
8. Insert the spool housing upper section (1) with the full bobbin.
9. Close the spool housing flap (2).
10. Erect the sewing machine upper section again.

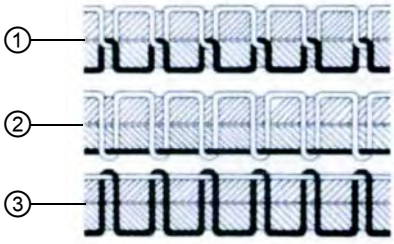
5.6 Thread tension

The tension of needle thread and hook thread determines the position of the thread interlacing.

Correct setting

If the tension of needle thread and hook thread is identical, the thread interlacing lies in the middle of the material to be sewn.

Figure 9: interlacing



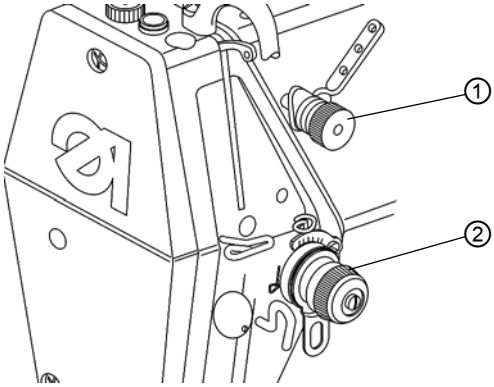
(1) - Identical needle thread and hook thread tension
(2) - Hook thread tension higher than needle thread tension
(3) - Needle thread tension higher than hook thread tension

5.6.1 Adjusting the needle thread tension

Main tensioner

The main tensioner (2) determines the normal tension during sewing.

Figure 10: Adjusting the needle thread tension: Main tensioner



(1) - Pre-tensioner *(2) - Main tensioner*

Correct setting

The main tension should be set as low as possible. The thread interlacing should be exactly in the middle of the material being sewn.

Faults due to excessively high tension

- Ruffing
- Thread breakage

Adjusting the main tension

- **To increase the tension:**
  Turn the adjusting wheel (2) clockwise.
- **To reduce the tension:**
  Turn the adjusting wheel (2) counterclockwise.

Opening the needle thread tensioner

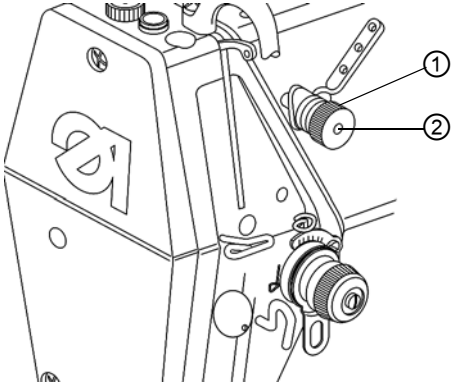
The main tensioner is automatically opened when the thread is cut.

Pre-tensioner

The pre-tensioner (1) holds the thread in position while the main tensioner is open when cutting the thread.

The pre-tensioner (1) also determines the length of the initial thread for the new seam when the thread is cut:

Figure 11: Adjusting the needle thread tension: Pre-tensioner



(1) - Pre-tensioner *(2) - Bolt*

In the basic position, the upper side of the adjusting wheel for the pre-tensioner (1) is flush with bolt (2) in the center.

To adjust the pre-tensioner:

- **Shorter initial thread:**
  Turn the adjusting wheel (1) clockwise.
- **Longer initial thread:**
  Turn the adjusting wheel (1) counterclockwise.

Sequence

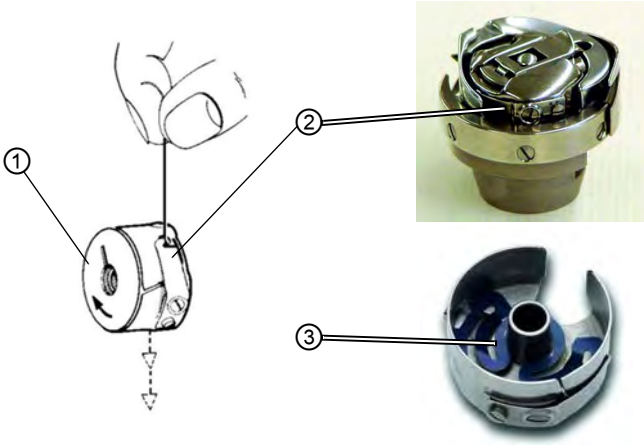
Check the tension of the needle thread after making major changes to the pre-tensioning. If necessary, adjust the main tension in order to achieve the desired result.

5.6.2 Adjusting the hook thread tension

WARNING

Risk of injury from moving parts.
Switch off the sewing machine before adjusting the hook thread tension.

Figure 12: Adjusting the hook thread tension



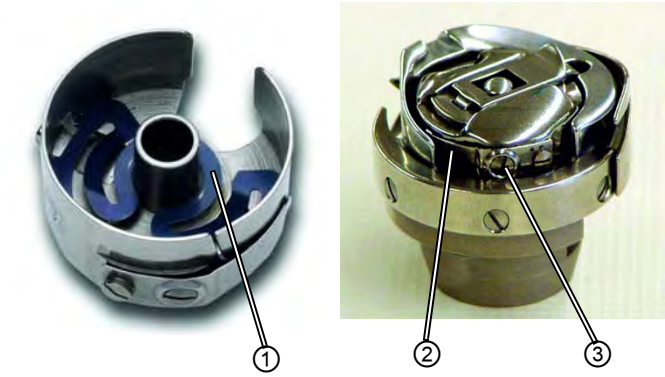
(1) - Bobbin
(2) - Tensioning spring
(3) - Braking spring

The braking spring (3) and tensioning spring (2) together determine the hook thread tension. The braking spring (3) also prevents the bobbin from running on when the thread is cut.

Correct setting

- The thread interlacing should be exactly in the middle of the material being sewn (🕮 Section *5.6 Thread tension*, page 28).
- If the loose thread end is held tightly, then the spool housing should slowly lower through its own weight when the bobbin (1) is full.
- The total value of the hook thread tension should be applied 50% respectively through the braking spring (3) and the tensioning spring (2).

Figure 13: Adjusting the tension values for the hook thread



(1) - Braking spring

(2) - Tensioning spring
(3) - Adjusting screw

Adjusting the tension values for the hook thread tension

1. Turn back the adjusting screw (3) such that the tension on the tensioning spring (2) is completely removed.
2. Bend the braking spring (1) such that 50% of the recommended hook thread tension value is applied through the braking spring (1).
3. Insert the bobbin into the spool housing upper section and thread in the hook thread (Section *5.4 Inserting and winding on the hook thread*, page 25).
4. Insert the spool housing together with the bobbin into the hook.
5. Hold tight the free thread end with one hand.
6. Turn the handwheel until the sewing machine carries out one stitch.
7. Pull the hook thread onto the upper side of the needle hole using the needle thread.
8. Remove the hook thread in the direction of sewing at an angle of 45°.

   ↳ Fifty percent of the tension value should be achieved.
9. Then tighten the adjusting screw (3) up to the total tension value.

5.7 Setting the thread regulator

WARNING

Risk of injury from moving parts.
Switch off the sewing machine before setting the thread regulator.

The thread regulator determines the needle thread quantity to be guided around the hook. The required thread quantity depends on the thickness of the material to be sewn, thread strength, and stitch length.

Larger thread quantity for

- thick material
- high thread strengths
- large stitch lengths

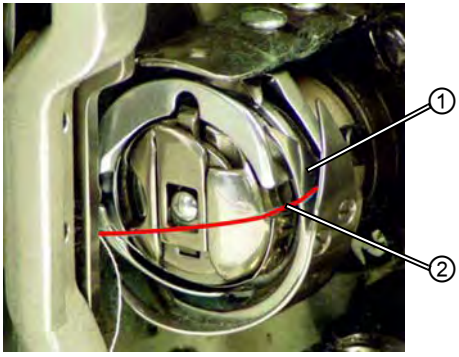
Lower thread quantity for

- thin material
- low thread strengths
- small stitch lengths

Correct setting:

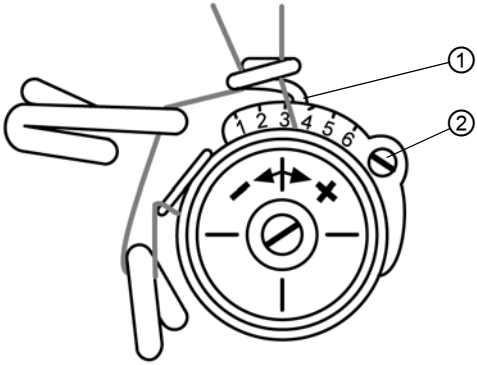
The loop of the needle thread (2) slides at low tension over the thickest point of the hook (1).

Figure 14: Setting the thread regulator: Correct needle thread quantity



(1) - Hook *(2) - Needle thread loop*

Figure 15: Setting the thread regulator



(1) - Thread regulator *(2) - Fastening screw*

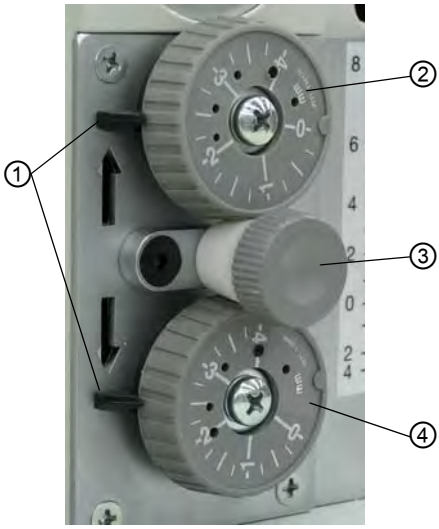
Setting the thread regulator

1. Loosen the fastening screw (2).
2. Move the thread regulator (1):
   - **Lower thread quantity:**
     Slide the thread regulator (1) to the right
   - **Larger thread quantity:**
     Slide the thread regulator (1) to the left
3. Tighten the fastening screw (2).

5.8 Adjusting the stitch length

The stitch length can be continuously adjusted between 1 and 4 mm by turning the adjusting wheels on the machine column. The upper adjusting wheel is for the stitch length when sewing forwards and the lower adjusting wheel is for the stitch length when sewing in reverse. The adjusting marks to the left of the wheels indicate the stitch length that is currently set. The blocking mechanism between the adjusting wheels prevents unintentional misadjustment of the stitch length.

Figure 16: Adjusting the stitch length



(1) - Adjusting mark
(2) - Stitch length adjusting wheel for forward sewing
(3) - Blocking mechanism
(4) - Stitch length adjusting wheel for reverse sewing

Adjusting the stitch length

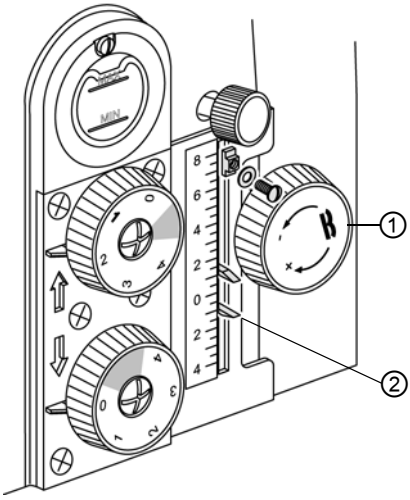
1. Turn the blocking mechanism (3) counterclockwise until the adjusting wheels can be moved.
2. Turn the desired adjusting wheel (2 or 4):
   - **Larger stitch length:**
     Turn the adjusting wheel counterclockwise.
   - **Smaller stitch length:**
     Turn the adjusting wheel clockwise.
3. Turn the blocking mechanism (3) clockwise until the adjusting wheels can no longer be moved.

5.9 Setting the upper transport (multiple width)

When the stitch length for sewing forwards is changed at the adjusting wheel the upper transport length is automatically adjusted to suit.

The upper transport length can also be manually set via the adjusting wheel (1). The pointer (2) shows the value that is currently set.

Figure 17: Setting the upper transport



(1) - Upper transport length adjusting wheel

(2) - Pointer

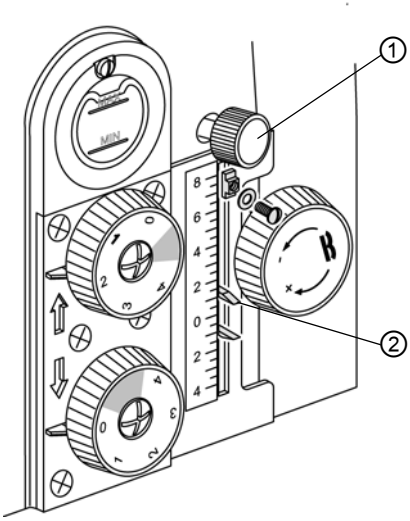
Setting the upper transport length

1. Turn the adjusting wheel (1):
   - **Larger upper transport length:**
     Turn the adjusting wheel counterclockwise.
   - **Smaller upper transport length:**
     Turn the adjusting wheel clockwise.

5.10 Setting the second upper transport length

When using mechanically or electropneumatically switched multiple widths (additional equipment) a second (larger) upper transport length can be set at the adjusting wheel (1). The currently set value is can be read at the pointer (2).

Figure 18: Setting the second upper transport length



(1) - Second upper transport adjusting wheel

(2) - Pointer

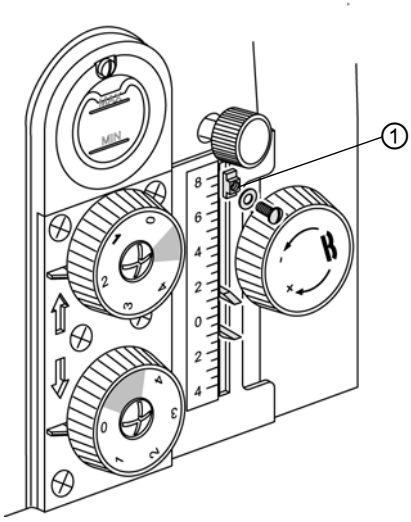
Setting the second upper transport length

1. Turn the adjusting wheel (1):
   - **Larger second upper transport length:** Turn the adjusting wheel counterclockwise.
   - **Smaller second upper transport length:** Turn the adjusting wheel clockwise.

5.11 Limiting the upper transport length

Certain equipment (🕮 *Sewing equipment parts list*) requires the maximum upper transport length to be limited to a value less than 8 mm. The limiter (1) for this is supplied with the corresponding sewing equipment.

Figure 19: Limiting the upper transport length



(1) - Limiter

Setting the limiter for maximum upper transport length

1. Complete the assembly of the limiter (1) with washer and screw.
2. Insert the limiter (1) into the slot and turn by 90°.
3. Slide the limiter (1) to the value on the scale corresponding to the maximum upper transport length for the sewing equipment being used.
4. Screw the limiter (1) tight at the desired position with the screw.

5.12 Setting the sewing foot pressure

The adjusting wheel (1) on the machine head determines the contact pressure of the sewing foot on the material to be sewn. The pressure can be adjusted continuously by turning the wheel.

Correct setting

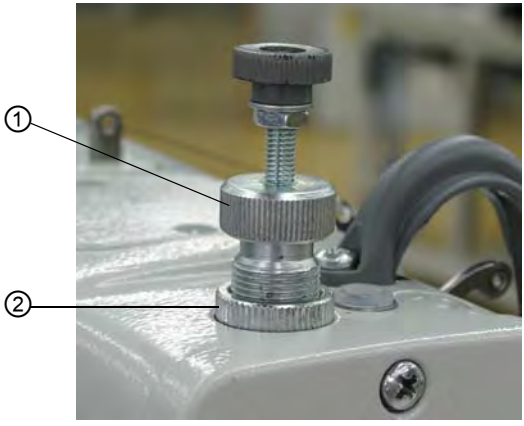
The material being sewn does not slip and is correctly transported. The correct pressure depends on the material to be sewn.

Important: The upper transport foot must lie on the transporter when checking the sewing foot pressure.

Faults due to incorrectly set sewing foot pressure

- Excessively high pressure: Tearing of the material being sewn
- Excessively low pressure: Slipping of the material being sewn

Figure 20: Setting the sewing foot pressure



(1) - Adjusting wheel *(2) - Counternut*

Setting the sewing foot pressure:

1. Release the counternut (2).
2. Turn the adjusting wheel (1):
   - **To increase the sewing foot pressure**: Turn the adjusting wheel (1) clockwise.
   - **To reduce the sewing foot pressure**: Turn the adjusting wheel (1) counterclockwise.
3. Tighten the counternut (2).

5.13 Setting the downforce pressure for the upper transport foot

The downforce pressure for the upper transport foot (gripper transport) is set using the adjusting wheel (1) on the machine head. The pressure can be adjusted continuously by turning the wheel.

Correct setting

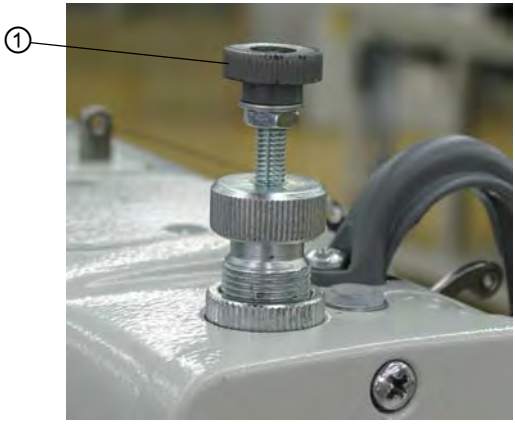
The material being sewn does not slip and is correctly transported. The correct pressure depends on the material to be sewn.

Important: The upper transport foot must lie on the transporter when checking the upper transport foot downforce pressure.

Faults due to incorrectly set sewing foot pressure

- Excessively high pressure: Tearing of the material being sewn
- Excessively low pressure: Slipping of the material being sewn

Figure 21: Setting the downforce pressure for the upper transport foot



(1) - Adjusting wheel

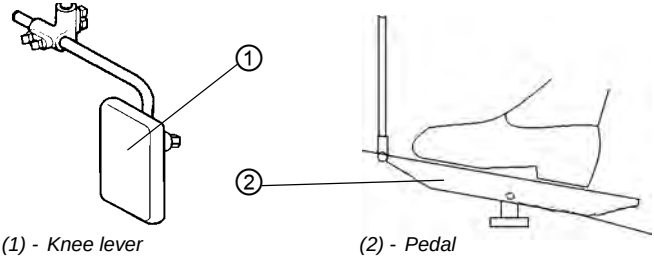
Setting the downforce pressure:

1. Turn the adjusting wheel (1):
   - **To increase the downforce pressure**: Turn the adjusting wheel (1) clockwise.
   - **To reduce the downforce pressure**: Turn the adjusting wheel (1) counterclockwise.

5.14 Lifting the sewing foot

The sewing foot can be lifted mechanically using the knee lever (additional equipment) or electromagnetically using the foot pedal to insert or move the material being sewn.

Figure 22: Lifting the sewing foot using the knee lever



(1) - Knee lever *(2) - Pedal*

Lifting the sewing foot using the knee lever

1. Push the knee lever (1) to the right.

   ↳The sewing foot is lifted and stays up for as long as the knee lever is pressed.

Lifting the sewing foot using the foot pedal

1. Press the foot pedal (2) halfway back.

   ↳The sewing foot is raised and remains raised while the pedal is held in position.

At the end of the seam:

1. Press the foot pedal (2) fully back.

   ↳The sewing foot is raised and the thread cutter is activated.

Lowering the sewing foot

CAUTION

Risk of crushing when lowering the sewing foot.
Do not put your hands underneath the lifted sewing foot.

Lowering the sewing foot

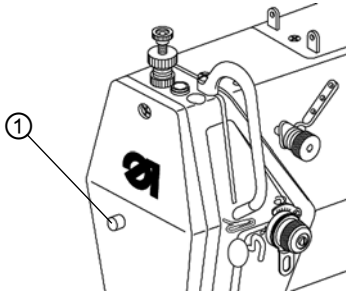
1. Release the knee lever (1) or return the pedal (2) back to the neutral position.

   ↳The sewing foot is lowered.

5.15 Locking the sewing foot in place in the upper position

The button on the machine head can be used to hold the lifted sewing foot in the upper position, e. g. in order to wind on the hook thread.

Figure 23: Locking the sewing foot in the raised position



(1) - Locking button

Locking the sewing foot in the raised position

1. Raise the sewing foot with the knee lever or pedal. (🕮 Section *5.14 Lifting the sewing foot*, page 41)
2. Press the locking button (1).
3. Release the knee lever or pedal.

   ↳The sewing foot is locked in place in the upper position.

Removing the lock

CAUTION

Risk of crushing when lowering the sewing foot.
Do not put your hands underneath the sewing foot if the locking mechanism is removed.

1. Press the lever to the right again or press the pedal halfway back.

   ↳The sewing foot is lowered. The locking mechanism is removed.

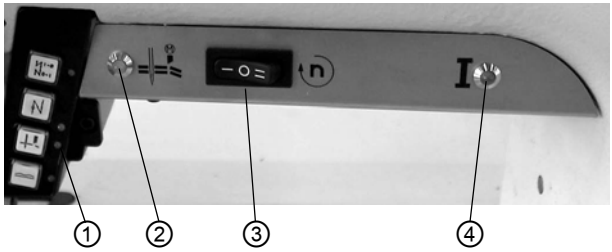
5.16 Operating the edge cutter

The lowering and raising of the edge cutter is defined via the parameter settings in the controller.
Read the 🕮 *Operating manual* for the DAC classic or DAC basic controller for information on this. The operating manual for the controller is provided in the accessory pack delivered with the controller.
The operating manual for the controller is also available in the download area at *www.duerkopp-adler.com*.
The cutting speed of the edge cutter is defined via a 3-position switch. The positioning of the switch depends on whether or not the DAC mini controller is used.

5.16.1 Setting the edge cutter without a DAC mini

On machines without a DAC mini the switch (3) for the edge cutter is located on the machine arm. The LED (4) lights up green when the machine is switched on.

Figure 24: Setting the edge cutter without a DAC mini



(1) - Edge cutter LED
(2) - Edge cutter LED
(3) - Edge cutter switch
(4) - Machine on/off LED

Setting the edge cutter without a DAC mini

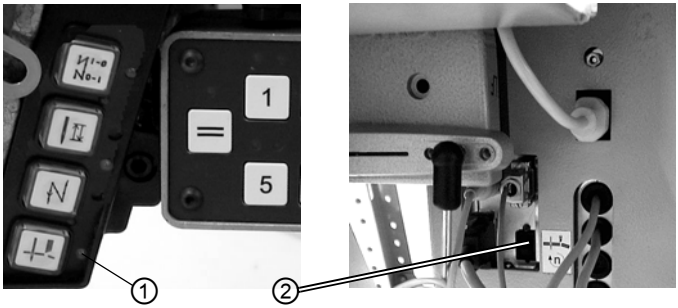
1. Set the switch (3) to the desired position:
   - **Switch off the edge cutter**: Position 0
     ↳LEDs (1) and (2) are off.
   - **Low speed**: Position I
     (for small to medium stitch lengths)
   - **High speed**: Position II
     (for medium to large stitch lengths)

↳ After moving the switch (3) to position I or II the LED (2) flashes. At the start of sewing the edge cutter switches on automatically after the 1st stitch. The LEDs (1) and (2) light up constantly while the edge cutter is working.

5.16.2 Setting the edge cutter with a DAC mini

On machines with a DAC mini the switch (2) for the edge cutter is located on the rear side of the DAC mini under the table plate.

Figure 25: Setting the edge cutter with a DAC mini



(1) - Edge cutter LED

(2) - Edge cutter switch

Setting the edge cutter with a DAC mini

1. Set the switch (2) to the desired position:
   - **Switch off the edge cutter**: Position 0
     ↳The LED (1) is off.
   - **Low speed**: Position I
     (for small to medium stitch lengths)
   - **High speed**: Position II
     (for medium to large stitch lengths)

↳ After moving the switch (2) to position I or II the LED 1) flashes. At the start of sewing the edge cutter switches on automatically after the 1st stitch. The LED (1) lights up constantly while the edge cutter is working.

5.16.3 Enabling the edge cutter with a DAC mini

The edge cutter must be enabled via the DAC mini (🕮 Section *5.17 Multiple width control using the DAC mini*, page 45) for every sequence in which it is to work.

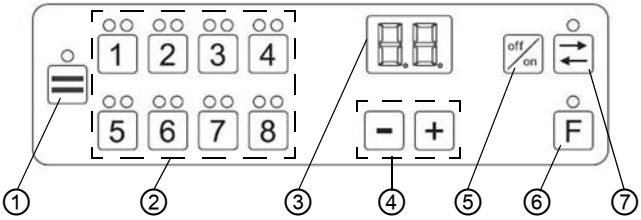
Enabling the edge cutter with a DAC mini

1. Press the **F** key on the DAC mini control panel.
   ↳The green LED above the **F** key lights up.
   The edge cutter is enabled.

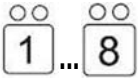
5.17 Multiple width control using the DAC mini

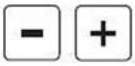
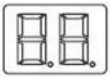
The DAC mini allows programming and semi-automatic calling of different multiple widths within a seam. You can save up to 30 different programs, each with up to 8 different multiple width sequences. The current multiple width is shown in the display in every sequence and can be manually changed at any time. Switching from one sequence to the next is performed using the knee switch or automatically when the thread is cut at the end of a seam.

Figure 26: DAC mini control panel



(1) - Key for smooth sewing
(2) - Sequence keys
(3) - Display
(4) - Plus/Minus keys
(5) - (De-) Activation key
(6) - F key (Enable/Function)
(7) - Direction change key 0

Key	Function
	**Key for smooth sewing** The Plus/Minus keys should be used to assign an upper transport value to this key, which is to be used for sewing material without crimping. The green LED above the key lights up when the function is switched on.
	**Sequence keys 1 to 8** Each of the sequence keys can be assigned its own upper transport value via the Plus/Minus keys. The LEDs above the keys indicate the following states: • Red LED on = sequence is active • Both LEDs off = sequence is activated but not currently being executed • Green LED on = Sewing sequence currently being executed

Key	Function
	**Plus/Minus keys** These keys are used to setting the upper transport length for the respective sequence or for smooth sewing. Values from 1 to 8 can be set. The upper transport length can only be a maximum of 1 mm smaller than the stitch length. If the upper transport length is reduced further then the stitch length is also reduced.
	**(De-) Activation key** Pressing this key and a sequence key at the same time switches the corresponding sequence from active to inactive and vice-versa. The red LED above the sequence key lights up for inactive sequences and goes out for active sequences.
	**Key for automatic direction change** The sequences are normally processed in increasing order. After the last sequence the controller begins again with the first sequence. When the key for automatic direction change is actuated, the sequences are processed alternately, first in increasing order and then in decreasing order. The green LED above the key lights up when this function is active.
	**F key** This key can be used for enabling the edge cutter for every sequence and for smooth sewing (📖 Section *5.16.3 Enabling the edge cutter with a DAC mini*, page 44). The green LED above the key lights up when the edge cutter is active.
	**Display** The display shows the current upper transport length. The values can lie between 1.0 and 8.0. In the case of errors the error code is displayed.

Machine start

The machine performs an internal system self-test when switched on. The machine is not ready for operation during this self-test. On completion of the system self-test the last program used is briefly shown in the display. After this, the LED above the key for the first active sequence of this program is switched on and the associated upper transport length is displayed.

↳ The machine is ready for operation.

5.17.1 Smooth sewing

1. Press the **=** key for smooth sewing.

   ↳ The green LED above the key lights up.
   The display shows the current upper transport length.

The upper transport length can be adjusted using the Plus/Minus keys if the sewing results are not satisfactory. The changed setting of the upper transport length is stored immediately.

5.17.2 Sewing with multiple widths

1. Deactivate all sequence keys that are not required:
   To do this, press the corresponding sequence key and the (De-) Activation key (🕮 page 46) at the same time.

   ↳ The red LEDs above the deactivated keys light up.

If the key for the desired sequence is deactivated (red LED is lit):

2. Activate the key for the desired sequence:
   To do this, press the desired sequence key and the (De-) Activation key (🕮 page 46) at the same time.

   ↳ The red LED goes out. The key is activated.

3. Press the key for the desired sequence.

   ↳ The green LED above the key lights up.
   The display shows the upper transport value for this sequence.

The upper transport length can be adjusted using the Plus/Minus keys if the sewing results are not satisfactory. The changed setting of the upper transport length is stored immediately.

5.17.3 Changing between smooth sewing and a single multiple width

1. Press the **=** key for smooth sewing and the key for the desired multiple width sequence at the same time.

   ↳ The green LEDs above both keys light up.
2. **Changing between smooth sewing and multiple width**: Actuate the knee switch (or at the end of the seam, press the foot pedal all the way back to cut the thread).
3. **Switching off the alternating processing mode:**
   Press the =key for smooth sewing.

5.17.4 Sewing with up to 8 different multiple widths

1. Deactivate all sequence keys that are not required:
   To do this, press the corresponding sequence key and the (De-) Activation key (🕮 page 46) at the same time.

   ↳ The red LEDs above the deactivated keys light up.
2. Activate all keys for the desired sequences:
   To do this, press the desired sequence key and the (De-) Activation key (🕮 page 46) at the same time.

   ↳ The red LEDs go out. The keys are activated.

↳ The first activated sequence is started when sewing starts.

↳ The green LED above the currently sewn sequence lights up and the display shows the current upper transport value.

3. **Changing to the next sequence**:
   Actuate the knee switch (or at the end of the seam, press the foot pedal all the way back to cut the thread).

↳ The machine automatically switches to the first multiple width sequence after the last multiple width sequence

If the desired multiple width cannot be achieved in a sequence then the upper transport length can be changed using the Plus/ Minus keys. The change is saved as soon as the next sequence is switched to.

5.17.5 Alternately sewing left and right parts with programmed multiple widths

1. Press the **Automatic direction change** key. (📖 page 46)

   ↳ The green LED above the key lights up.
   The sequences are processed alternately in increasing order and then in decreasing order.

When this function is activated, under the settings provided on delivery, two thread cutting procedures are required in the first and last sequences in order to switch to the next sequence.

5.17.6 Sequence switching via thread cutting

The setting provided on delivery causes the next multiple width sequence to be automatically activated by the thread cutting procedure (pedal pressed fully backwards). When the automatic direction change is activated then two thread cutting procedures are required in the first and last sequences in order to switch to the next sequence.

2 other settings can be selected if this is not desired:

- No sequence switching on thread cutting
- Sequence switching on thread cutting but without double thread cutting when automatic direction change is activated.

(📖 Section *6.14 Setting the DAC mini multiple width controller*, page 79)

5.17.7 Switching the edge cutter on or off

On machines with an edge cutter, this must be enabled for every sequence and for smooth sewing.
(📖 Section *5.16.3 Enabling the edge cutter with a DAC mini*, page 44)

1. In the sequence before the start of sewing, press the **F** (📖 page 46) key.

   ↳ The green LED above the **F** key lights up.
   The edge cutter is activated.

Switching off the edge cutter:

2. Press the **F** (📖 page 46) key again.

   ↳ The green LED above the **F** key goes out.
   The edge cutter is deactivated.

5.17.8 Selecting the program

After the machine is switched on, the current program is displayed briefly.

A program consists of a series of sequences, each of which having a particular upper transport value.
The sequences are processed consecutively from 1 to 8. Individual sequences can be deactivated but the sequences cannot be assigned more than once and their consecutive positions cannot be changed.

Selecting the program

1. Press and hold the (De-) Activation key (📖 page 46) and also press the **=** key for smooth sewing.

   ↳The current program number is displayed briefly.
   The LED above the **F** key flashes to indicate that you are in the **program selection** function.
   The sewing drive is not ready for operation during program selection.
2. Set the desired program number using the Plus/Minus keys.
3. Press the **F** (📖 page 46) key.

   ↳The LED above the **F** key goes out.
   The program selection function exits.
   The selected program is activated.

After changing the program number, sewing starts with the first activated sequence of the new program.
If the program selection is exited without changing the program number then you are returned to the sequence from which the program selection was called.

5.17.9 Creating and changing programs

All changes to sequences and programs are immediately adopted and are save on the transition to the next step.

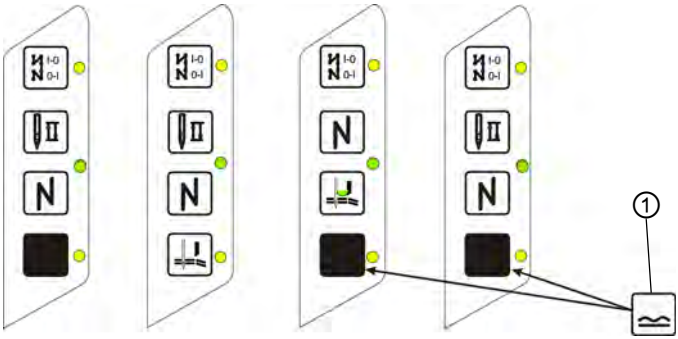
1. Set the desired program number.
   (📖 Section *5.17.8 Selecting the program*, page 50)
2. Make the desired settings.
3. Change to next step.

↳ The settings are now saved.

5.18 Keypad on the machine arm

A keypad is located on the machine arm, which is equipped with different keys depending on the subclass and installed equipment.

Figure 27: Keypad variants



(1) - Additional equipment

Element	Function/Meaning
	**Bartack toggle** When bartacking is generally switched on then this key switches off the next bartack. When bartacking is generally switched off then this key switches on the next bartack.
	**Setting the needle to the high/low positions** The procedure for setting the position is described in the controller 🕮 *Operating Manual*.
	**Manual reverse sewing** The machine sews in reverse while the key is pressed.
	**Edge cutter** Switch the edge cutter on and off
	**Multiple width** Switch additional multiple widths on and off
Yellow LED	Lights up when a function is activated
Green LED	Lights up when the sewing drive is switched on.

5.19 Operating the controller

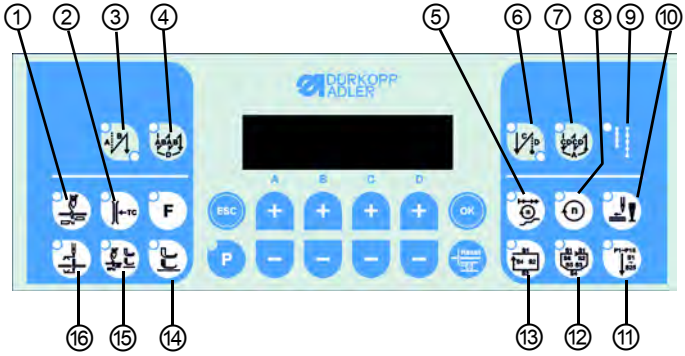
The machine is operated using the DAC basic or DAC classic controller. Operating the controller is described in an individual 🕮 *Operating Manual*.

The operating manual for the DAC basic or DAC classic is provided in the accessory pack delivered with the controller. The operating manual for the controller is also available in the download area at *www.duerkopp-adler.com*.

5.19.1 Control panel for the controller

The controller is equipped with the OP 1000 control panel.

Figure 28: Control panel for the controller



Switch on/off function

1. Press the appropriate key.
   ↳The LED on the key indicates the status.

Important: The functions only work on the machine if the appropriate equipment is available.

Overview of the functions on the control panel

Key	Function	Status	LED display
1	Thread cutter	Off	LED off
		On	LED on
2	Thread clamp	Off	LED off
		On	LED on
3	Initial bartack	Off	LEDs off
		Single bartack	Lower right LED on
		Double bartack	Both LEDs on
4	Multiple initial bartack	Off	LED off
		On	LED on
5	Softstart	Off	LED off
		On	LED on
6	Final bartack	Off	LEDs off
		Single bartack	LED top left on
		Double bartack	Both LEDs on
7	Multiple final bartack	Off	LED off
		On	LED on
8	Reduced sewing speed Input via +/- keys	Off	LED off
		On	LED on
9	2nd stitch length	Off	LED off
		On	LED on
10	Light barrier	Off	LED off
		On	LED on
11	Seam program III	Off	LED off
		On	LED on
12	Seam program II	Off	LED off
		On	LED on
13	Seam program I	Off	LED off
		On	LED on
14	Sewing foot lifting after sewing stop	Sewing foot down	LED off
		Sewing foot up	LED on
15	Sewing foot position after thread is cut	Sewing foot down	LED off
		Sewing foot up	LED on

Key	Function	Status	LED display
16	Needle position after sewing stop	Needle down	LED off
		Needle up	LED on
F	Freely programmable key		
ESC	Escape key, abort		
P	Programming key	Ready for programming	LED on
+	Increase value		
-	Decrease value		
OK	Confirmation		
Reset	Bobbin supply		

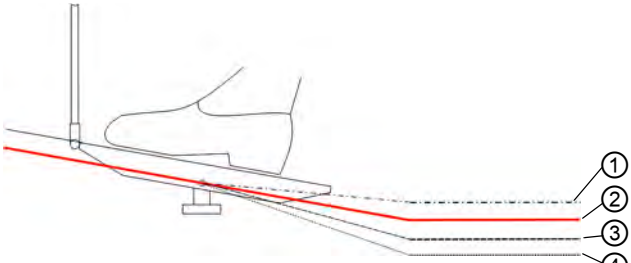
5.20 Sewing

WARNING

Risk of injury from the needle tip when sewing is started unintentionally.
Take care not to accidentally press the foot pedal when your fingers are in the needle tip area.

The foot pedal starts and controls the sewing process.

Figure 29: Sewing with the foot pedal



(1) - Pedal position +1: sewing active
(2) - Pedal position 0: rest position
(3) - Pedal position -1: moves the sewing foot up
(4) - Pedal position -2: sewing the final bartack and cutting off the thread

The following settings are assumed in the subsequent sewing descriptions:

- Start and end bartacks are generally switched on.
- The sewing foot position is down before and after cutting.
- The needle position is down before cutting.
- The last seam ends with an end bartack and thread cutting.

SEWING START

Initial situation

1. Switch on the sewing machine.
2. Pedal position 0:

   ↳Machine stationary, needles up, sewing foot down.

to position sewing material

1. Press the foot pedal halfway back in pedal position -1:
   ↳The sewing foot is raised.
2. Push the material to be sewn into the initial position.
3. Release the foot pedal in pedal position 0:
   ↳The sewing foot lowers onto the material.

Start the seam

Without start bartack:

1. Activate the bartack toggle key (🕮 page 51).

With start bartack:

2. Press the foot pedal forwards in pedal position +1:
   ↳The machine sews. The sewing speed increases the further forward the pedal is pressed.

WHEN SEWING

Interrupt the seam

1. Release the foot pedal in pedal position 0:
   ↳The machine stops, needles and sewing foot are down.

Continue the seam

1. Press the foot pedal forwards in pedal position +1:
   ↳The machine continues to sew.

Sew a corner

1. Press the foot pedal halfway back in pedal position -1:
   ↳The machine stops with the needle lowered. The sewing foot is raised.
2. Turn the material around the needle.

Sewing a multiple width without a DAC mini

1. Activate the multiple width key (🕮 page 51).
   ↳The multiple width is sewn with the set value (🕮 page 36).
2. Deactivate the multiple width key (🕮 page 51).
   ↳Sewing continues without multiple width.

Sewing a multiple width with a DAC mini

Section *5.17 Multiple width control using the DAC mini*, page 45

Sew an intermediate bartack

1. Activate the manual reverse sewing key (page 51).

   The machine sews in reverse while the key is pressed.
   The speed is determined by the pedal.

AT THE END OF THE SEAM

Finish the seam

Without end bartack:

1. Activate the bartack toggle key (page 51).

With end bartack:

2. Press the foot pedal fully back to pedal position -2 and hold it in this position.

   The thread is cut.
   The machine stops.
   The needle and needle foot are raised.
3. Remove the sewn material.

5.21 Maintenance

This section describes simple maintenance work that needs to be carried out on a regular basis. This maintenance work can be carried out by the operating personnel.

Advanced maintenance work may only be carried out by qualified specialists. Advanced maintenance work is described in the 🕮 *Service Manual*.

5.21.1 Cleaning work

WARNING

Risk of injury due to flying particles.
Switch off the machine at the main power switch before starting any cleaning work.
Flying dirt particles can get in the eyes, causing injury.
Hold the compressed-air pistol in such a way that no particles fly near persons.
Take care that no particles fly into the oil pan.

ATTENTION

Malfunctions possible due to machine contamination.
Sewing dust and thread remains can impair the operation of the machine.
Clean the machine at regular intervals as described in the manual.
Adhere to the cleaning intervals specified in the table. The machine must be cleaned more frequently in the case of very fluffy material.

Positions that must be specially cleaned and cleaning intervals

Machine area	Cleaning interval
• Area under the needle plate • Feed-dog • Area around the hook • Bobbin housing • Thread cutter • Area around the needle	Every 8 operating hours
• Oil pan	Every 40 operating hours

Cleaning steps

1. Switch off the power supply at the main switch.
2. Remove any sewing dust and thread remains using a compressed-air pistol or a brush.
3. Remove sewing dust and cutting waste from the oil pan.

ATTENTION

Possible damage to the paintwork from solvent-based cleaners.

Solvent-based cleaners damage the paintwork of the machine.

Only use solvent-free substances for wiping the machine.

5.21.2 Oil lubrication

WARNING

Skin injuries due to contact with oil
Oil can cause a rash if it comes into contact with the skin.
Avoid any skin contact with the oil.
If oil gets on your skin, wash the affected skin areas thoroughly.

ENVIRONMENTAL PROTECTION

Risk of environmental damage from oil.
Oil is a pollutant and must not enter the sewage system or the soil.
Collect waste oil carefully and dispose of it and oily machine parts in accordance with the applicable statutory regulations.

ATTENTION

Machine damage possible due to incorrect oil level.
Too little or too much oil can cause damage to the machine.
Make sure that there is always sufficient oil in the respective reservoir.

ATTENTION

Machine damage possible due to incorrect oil.
An incorrect oil type can cause damage to the machine.
Only use oil that complies with the data in the operating manual.

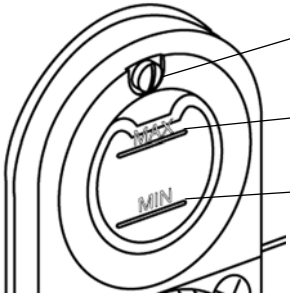
Oil to be used:

Only DA 10 lubricating oil with the following properties or an oil of equivalent quality may be used for lubricating the machine:

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

Lubrication of the upper part of the machine

Figure 30: Oil level indicator



(1) - Refill opening
(2) - Maximum level mark
(3) - Minimum level mark

Checking the oil level

1. Check the oil level indicator every day.

Correct setting

The oil level must always be between the minimum level marking (3) and the maximum level marking (2).

Topping up with oil

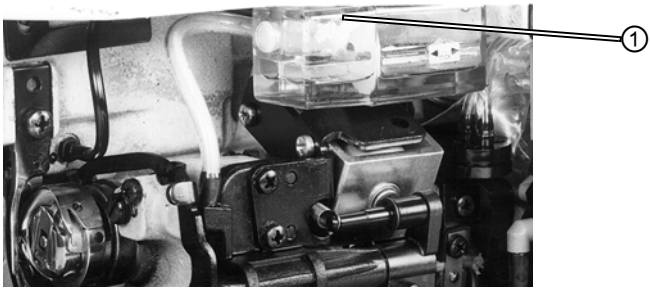
Pour in oil through the refill opening (1) as required.

1. Switch off the sewing machine at the main switch.
2. Pour in oil, up to but not past the maximum level marking (2).
3. Switch on the sewing machine at the main switch.

Hook lubrication

Check the oil level for hook lubrication approx. once every week.

Figure 31: Hook lubrication



(1) - Oil reservoir

Correct setting

The oil level must always be between the minimum level marking and the maximum level marking.

Checking the oil level

1. Switch off the sewing machine at the main switch.
2. Tilt the machine upper section backwards.
3. Check the quantity of oil in the reservoir (1).
4. Pour in oil through the refill hole as required.

5.22 Customer service

Contacts for repair in the event of damage to the machine:

Dürkopp Adler AG
Potsdamer Str. 190
33719 Bielefeld
Ph. +49 (0) 180 5 383 756
Fax +49 (0) 521 925 2594
Email: service@duerkopp-adler.com
Internet: www.duerkopp-adler.com

6 Set-up

WARNING

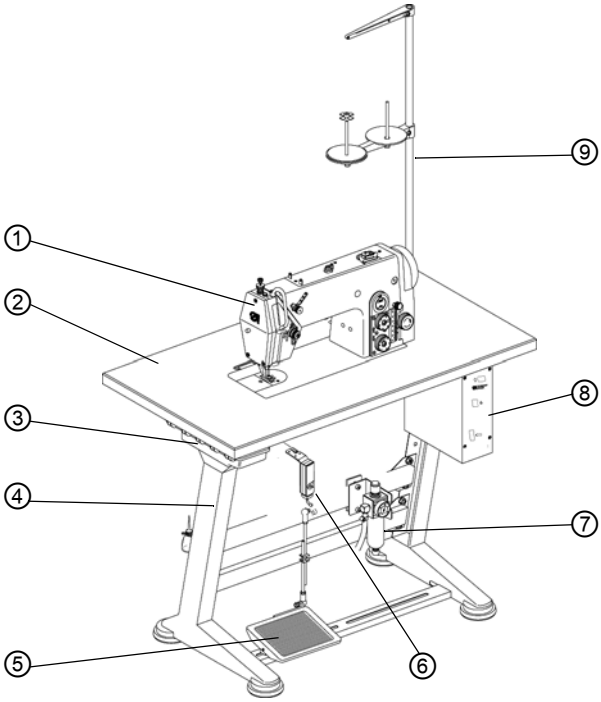
Risk of injury.
The machine may only be set up by trained specialists.
Wear safety gloves and safety shoes when unpacking and setting up.

6.1 Checking the scope of delivery

Important: The scope of delivery depends on your specific order.

1. Prior to set-up, check that all parts are present.

Figure 32: Example of scope of delivery



(1) - Machine upper section
(2) - Table plate
(3) - Drawer
(4) - Frame
(5) - Pedal
(6) - Setpoint device
(7) - Maintenance unit
(8) - Controller
(9) - Thread stand

Standard equipment:

- Upper part of machine (1)
- Oil pan (not illustrated) - in the accessory kit
- Thread stands with unwinding bracket (9) - in the accessory kit
- Controller (8)
- Control panel for the controller (not illustrated)
- Setpoint device (6) with rod
- Pedal (5) with rod
- Small parts in an accessory pack

Optional additional equipment:

- Table plate (2)
- Drawer (3)
- Frame (4)
- Pneumatic maintenance unit (7)
- DAC mini controller with control panel (not illustrated)

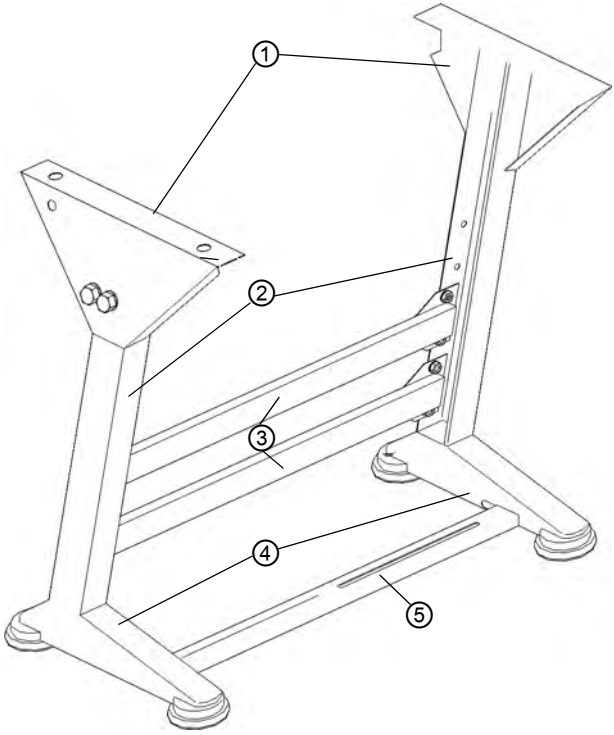
6.2 Removing the transport securing devices

All transport securing devices must be removed prior to set-up.

1. Remove the lashing straps and wooden blocks from the machine upper section, the table, and the frame.
2. Remove the supporting wedges between the machine arm and needle plate.

6.3 Fitting the frame components

Figure 33: Fitting the frame components

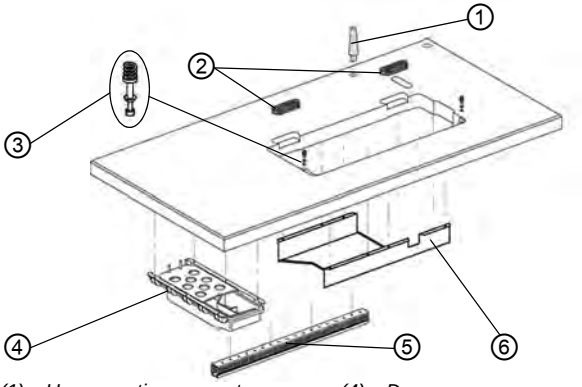


(1) - Head sections
(2) - Frame bars
(3) - Cross bars
(4) - Foot struts
(5) - Cross strut

1. Screw the cross bars (3) onto the frame bars (2).
2. Screw the cross strut (5) onto the foot struts (4).
3. Screw the head sections (1) onto the frame bars (2).

6.4 Completing the table plate

Figure 34: Completing the table plate



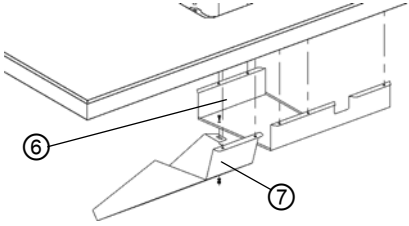
(1) - Upper section support
(2) - Rubber inlays
(3) - Rest plugs
(4) - Drawer
(5) - Cable duct
(6) - Oil pan

1. Insert the upper section support (1) into the holes in the table plate.
2. Fit the rubber inserts (2) into the recesses.
3. Insert the rest plugs (3) and slide on with compression springs.
4. Screw the drawer (4) and its brackets under the table plate at the left.
5. Screw the cable duct (5) under the table plate at the rear.
6. Center punch the screw positions of the oil pan (6) and screw the oil pan into position under the table plate cutout using wood screws.

In addition, for machines with an edge cutter:

Waste chute for edge cutter

Figure 35: Install the waste chute for edge cutter



(6) - Oil pan
(7) - Waste chute

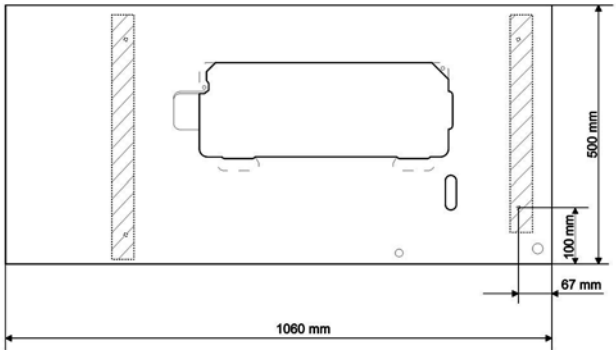
7. Center punch the screw positions of the waste chute (7) and screw the waste chute into position under the table plate cutout.
8. Connect the oil pan (6) and waste chute (7) with screws.

6.5 Fastening the table plate to the frame

Machines without a DAC mini multiple width controller

1. Fasten the table plate to the frame with wood screws (B8 x 35) according to the dimensions on the diagram.

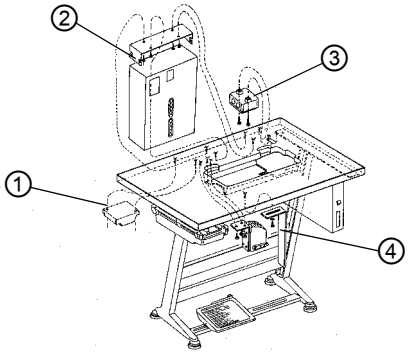
Figure 36: Dimensions for fastening the table plate to the frame



6.6 Table plate installation with DAC mini

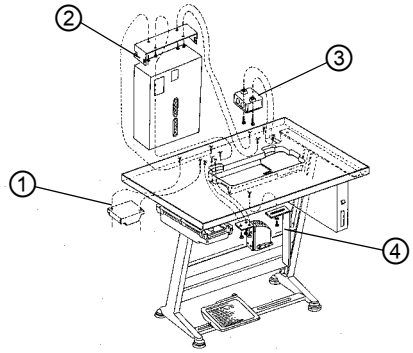
For machines with a DAC mini multiple width controller and edge cutter, in addition to the normal steps for completing the table plate (page 66), the DAC mini (2), distribution box (3), sewing lamp transformer (1) and knee switch (4) must also be installed.

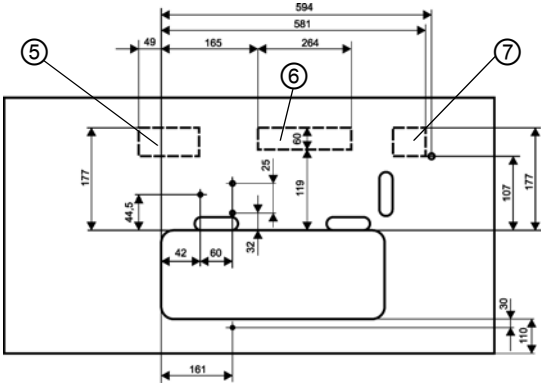
Figure 37: Fasten the DAC mini to the table plate



(1) - Sewing lamp transformer
(2) - DAC mini
(3) - Distribution box
(4) - Knee switch

Figure 38: Fastening positions for machines with DAC mini



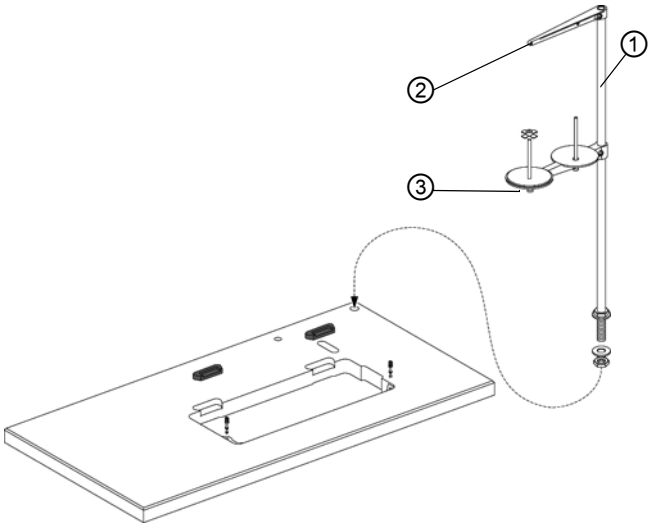


(1) - Sewing lamp transformer
(2) - DAC mini
(3) - Distribution box
(4) - Knee switch
(5) - Position for sewing lamp transformer
(6) - Position for DAC mini
(7) - Position for distribution box

1. Mount the sewing lamp transformer (1) at position (5)
2. Mount the DAC mini (2) at position (6)
3. Mount the distribution box (3) at position (7)
4. Screw the knee switch (4) under the table plate in a position allowing it to be easily operated using the right knee.

6.6.1 Fitting the thread stands

Figure 39: Fitting the thread stands



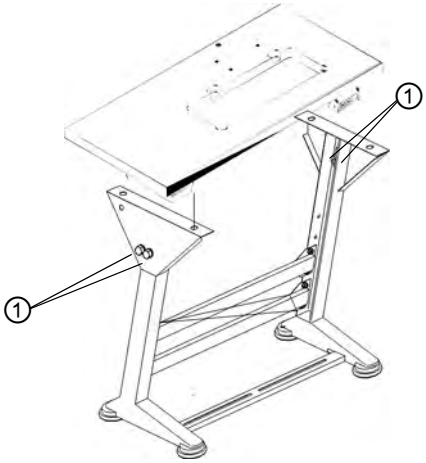
(1) - Thread stand
(2) - Unwinding bracket
(3) - Thread reel holder

1. Insert the thread stand (1) into the hole.
2. Fasten the thread stand (1) with nut and washer.
3. Screw the thread reel holder (3 and the unwinding bracket (2) onto the thread stands (1) in such a way that they are exactly parallel above each other.

6.7 Setting the working height

The working height is continuously adjustable between 750 and 900 mm (clearance between the floor and upper edge of the table plate).

Figure 40: Setting the working height



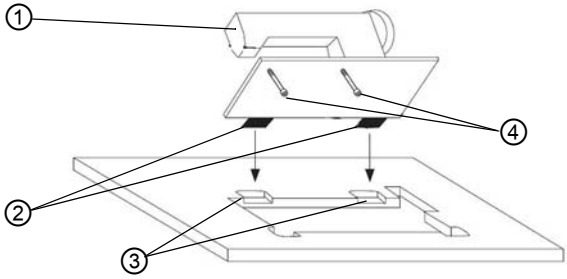
(1) - Screws

1. Loosen all four screws (1) on the head sections.
2. Set the table plate to the desired height.

   Important: Pull out or push in the table plate evenly at both sides to prevent it from jamming.
3. Tighten the screws (1) on the head sections.

6.8 Inserting the machine upper section

Figure 41: Inserting the machine upper section



(1) - Machine upper section
(2) - Upper hinge parts
(3) - Rubber inlays
(4) - Supporting screws

WARNING

Risk of crushing
The machine upper section is heavy.
Take care not to jam your hands when fitting the machine upper section.
This especially applies when fitting the upper hinge parts into the rubber inlays.

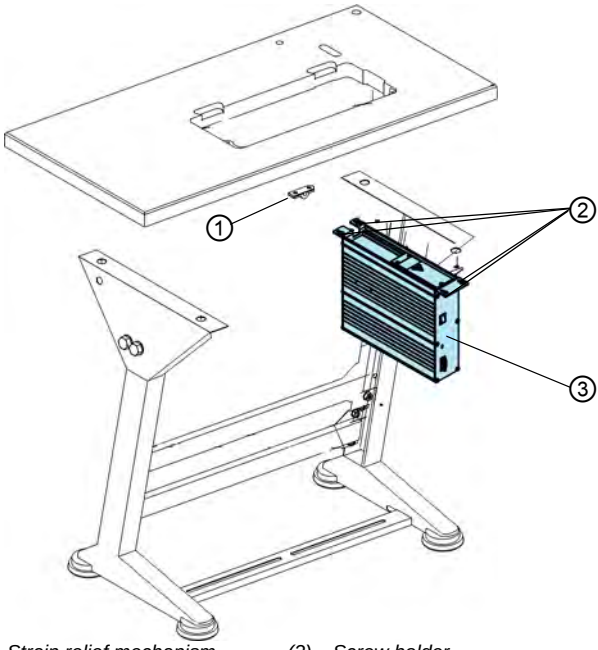
Important: Remove the supporting screws (4) at the front and in the middle before fitting the machine upper section!

1. Remove the supporting screws (4) at the front and in the middle.
2. Fit the machine upper section (1) from above at an angle of 45°.
3. Insert the upper hinge parts (2) into the rubber inlays (3).
4. Fold the machine upper section (1) down and insert it in the recess.

6.9 Fitting the controller

The machine is operated using the DAC basic or DAC classic controller with the OP 1000 control panel.

Figure 42: Fitting the controller



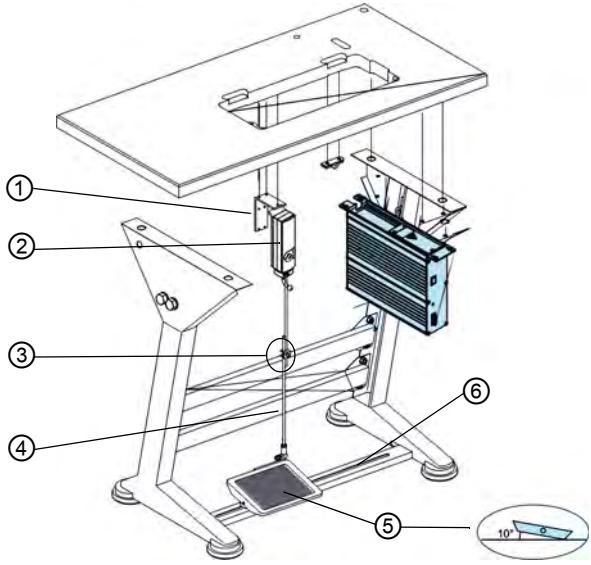
(1) - Strain relief mechanism
(2) - Screw holder
(3) - Controller

1. Screw the controller (3) onto the four screw holders (2) under the table plate.
2. Clamp the power cable for the controller into the strain relief mechanism (1).
3. Screw the strain relief (1) under the table plate.

6.10 Fit the pedal and setpoint device

6.10.1 Machines without DAC mini

Figure 43: Install the pedal and setpoint device (without DAC mini)



(1) - Angle piece
(2) - Setpoint device
(3) - Screw
(4) - Pedal rod
(5) - Pedal
(6) - Cross strut

1. Fit the pedal (5) onto the cross strut (6) and align it in such a way that the middle of the pedal is under the needle. The cross strut has elongated holes to allow alignment of the pedal.
2. Screw the pedal (5) firmly onto the cross strut (6).
3. Screw the setpoint device (2) onto the angle piece (1).
4. Screw the angle piece (1) under the table plate so that the pedal rod (4) runs vertically to the pedal (5) from the setpoint device (2).
5. Hang the pedal rod (4) with the ball socket on the setpoint device (2) and attach to the pedal (5).
6. Pull the pedal rod (4) to the correct length:

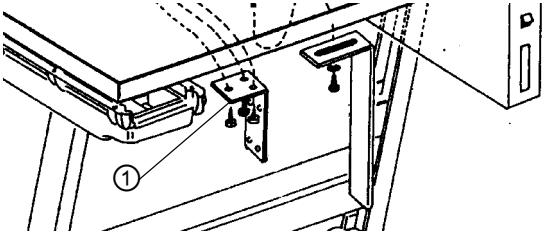
   Correct setting: 10° inclination with pedal (5) released
7. Tighten the screw (3).

6.10.2 Machines with DAC mini

On machines with DAC mini the setpoint device is installed at a different position.

Important: With this subclass a large number of assemblies are fitted under the table plate. For this reason it is essential to observe the dimensional diagram of the table plate (page 67).

Figure 44: Install the setpoint device (with DAC mini)



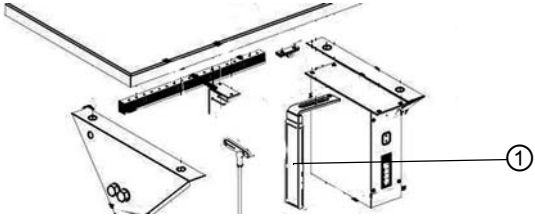
(1) - Angle piece

1. Screw the angle bracket (1) under the table plate at the position shown in the diagram.
2. Screw the setpoint device onto the angle piece (1).
3. Install the pedal in the same manner as with a machine without a DAC mini (page 73).

6.11 Installing the knee switch

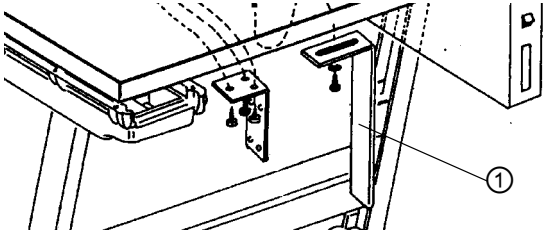
The knee switch is screwed under the table plate. Different positions are used for machines without a DAC mini and machines with a DAC mini.

Figure 45: Position of the knee switch: Machines without a DAC mini



(1) - Knee switch

Figure 46: Position of the knee switch: Machines with DAC mini



(1) - Knee switch

1. Screw the knee switch (1) under the table plate in the correct position for the respective machine.

6.12 Electrical connection

DANGER

Danger to life due to electric shock.
The machine may only be connected by trained electrical specialists.
Disconnect the power plug before carrying out work on the electrical equipment.
Make sure the power plug cannot be unintentionally reinserted.
The voltage on the type plate of the sewing drive must correspond to the mains voltage.

6.12.1 Checking the mains voltage

Important: The voltage on the type plate of the sewing drive must correspond to the mains voltage.

1. Check the mains voltage before connecting the machine.

6.12.2 Connecting the controller

DANGER

Danger to life due to electric shock.
Disconnect the power plug before connecting the controller.
Make sure the power plug cannot be unintentionally reinserted.

Connecting the controller consists of the following work:

- Insert the plugs of all connecting cables in the sockets on the back of the controller.
- Connect the controller to the power supply using the power cable.

To do this, read the 🕮 *Operating manual* for the DAC basic or DAC classic controller. The operating manual is provided in the controller accessory pack. The operating manual for the controller is also available in the download area at *www.duerkopp-adler.com*.

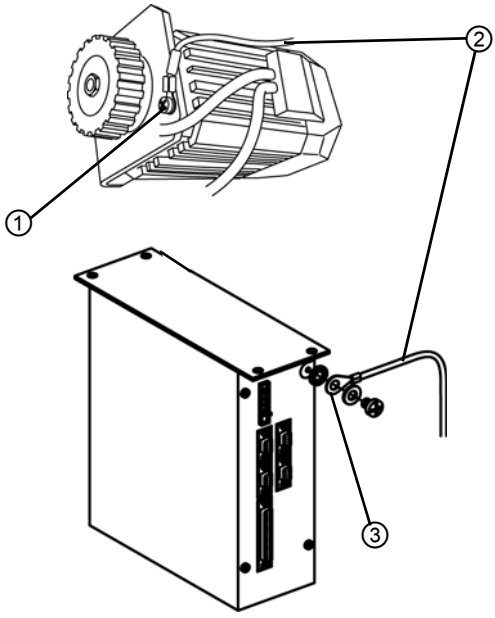
6.12.3 Establishing equipotential bonding

DANGER

Danger to life due to electric shock.
Disconnect the power plug before establishing equipotential bonding.
Make sure the power plug cannot be unintentionally reinserted.

The grounding wire conducts any static charging to ground.

Figure 47: Establishing equipotential bonding



(1) - Fastening screw
(2) - Grounding wire
(3) - Cable lug

1. Attach the grounding wire (2) to the motor using the fastening screw (1).
2. Lay the grounding wire (2) to the rear side of the controller.
3. Attach the cable lug (3) of the grounding wire (2) to the rear side of the controller.

6.13 Checking the needle positions

The needle positions were correctly set before delivery. Despite this, the needle positions should be checked before starting the machine.

Requirements

The following requirements must be satisfied for performing the test:

- Sewing foot locked in place in the upper position. (🕮 page 42)
- During an intermediate stop the machine stops in position 1 (needle down) (🕮 page 52).

Checking needle position 1

1. Switch on the main switch
2. Briefly press the pedal forwards and then back to the home position.
3. Check the needle position

Correct setting

The needle is in position 1 (handwheel position "F")

Checking needle position 2

1. Switch on the main switch
2. Press the pedal forwards and then all the way backwards.
3. Check the needle position

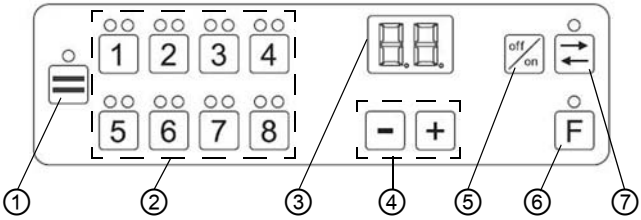
Correct setting

The needle is in position 2 (handwheel position "C")

If any of the needle positions are not correct then the needle positions must be corrected.
Read the controller 🕮 *Operating manual* for more information.

6.14 Setting the DAC mini multiple width controller

Figure 48: DAC mini control panel



(1) - Key for smooth sewing
(2) - Sequence keys
(3) - Display
(4) - Plus/Minus keys
(5) - (De-) Activation key
(6) - F key
(7) - Direction-change key

Checking the basic settings of the controller

After setting up the machine the basic settings of the controller must be checked and adjusted if necessary.

Calling up the special functions

1. Hold key **F** (6) pressed and switch on the machine at the main switch.

   ↳The green LED above the **F** (6) key lights up.

2. Release the **F** (6) key.

   ↳The green LED above the **F** (6) key flashes.
   After the internal system test has completed, the display (3) shows the **Special functions** selection:

The various special functions are called up by pressing the sequence keys (2) with the numbers 1 to 7. The green LEDs above the keys indicate the respective function that has been called up.

The following sections describes the special functions of keys **2**, **4** and **5**. The other special functions are described in the 🕮 *Service manual*.

Setting the brightness of the LEDs and the display

1. After calling up the special functions (🕮 page 79), press sequence key **2**.
   ↳All LEDs are switched on.
   The display (3) shows the **Brightness** selection:

2. Set the brightness using the Plus/Minus keys (4).

   The brightness can be changed in 8 levels.
   Level 3 is set when the machine is delivered.

3. Save the desired brightness by pressing the **F** (6) key twice.
   ↳The LED above the key goes out.
   The system switches out of the special function mode back into normal operation.

Moving to the reference position after every thread-cutting operation.

After switching on the machine the stepper motor for setting the length of the upper transport moves to the reference position once. To allow the position of the stepper motor to be checked more frequently, the stepper motor can also be moved to the reference position after every thread-cutting operation.

1. After calling up the special functions (🕮 page 79), press sequence key **4**.
   ↳The display (3) shows the **Reference** selection:

2. Change the setting using the Plus/Minus keys (4):
   - Move the machine to the reference position **only at switch-on**: Set the display to **00**.
   - Move the machine to the reference position **after every thread cutting operation**: Set the display to **01**.

   The machine is set to 00 when delivered

3. Save the desired Setting by pressing the **F** (6) key twice.
   ↳The LED above the key goes out.
   The system switches out of the special function mode back into normal operation.

Continue switching the sewing sequence vie thread cutting

When sewing multiple widths in a program the next sequence is usually activated by cutting the thread. 3 methods of switching the next sequence via thread cutting are available:

1. After calling up the special functions (🕮 page 79), press sequence key **5**.

   ↳The display (3) shows the **A5** selection:

2. Select the desired setting using the Plus/Minus keys (4):
   - **Thread cutting does not switch to the next sequence**: Set the display to **00**.
   - **Thread cutting does switches to the next sequence**: Set the display to **01**.
   - **Switch to the next sequences after every thread cutting operation and after 2 thread cutting operations when automatic direction changing is set**in the 1st and the last sequence (the 1st thread cutting operation triggers the direction change, the 2nd thread cutting operation activates the next sequence): Set the display to **02**.

   The machine is set to **02** when delivered

3. Save the desired Setting by pressing the **F** (6) key twice.

   ↳The LED above the key goes out.
   The system switches out of the special function mode back into normal operation.

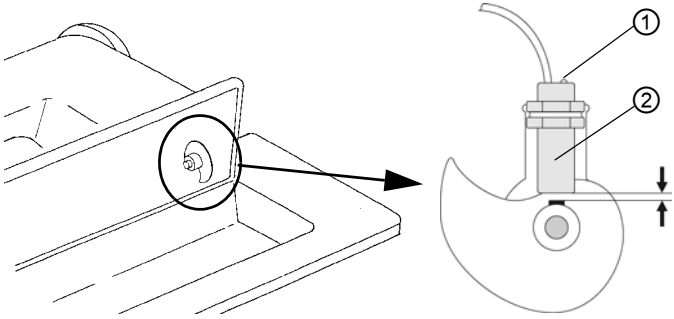
6.15 Rotating to the reference position

Each time the machine is switched on the stepper motor rotates to the reference position and then returns to the current upper transport length in order to set the upper transport length. This is necessary to ensure that the value shown in the display agrees with the actual upper transport length.

WARNING

Risk of injury from sharp and moving parts.
Do not reach into the area of moving machine parts while testing the reference position.

Figure 49: Checking the reference position



(1) - LED *(2) - Inductive sensor*

Checking rotation to the reference position

1. Tilt the machine upper section backwards.
2. Switch on the machine at the main power switch.
   - ↳After the internal system test has completed, the stepper motor rotates to the reference position.
   - ↳When the reference position has been reached, the LED (1) on the inductive sensor (2) lights up briefly.
   - ↳The motor then rotates to the current upper transport length position.
3. Erect the machine upper section again.

6.16 Pneumatic connection

6.16.1 Fitting the maintenance unit

The pneumatic connection package is available under order number 0797 003031. It consists of:

- System connection hose
  (length 5 m, diameter 9 mm)
- Hose connectors and hose clamps
- Coupling socket and coupling plug

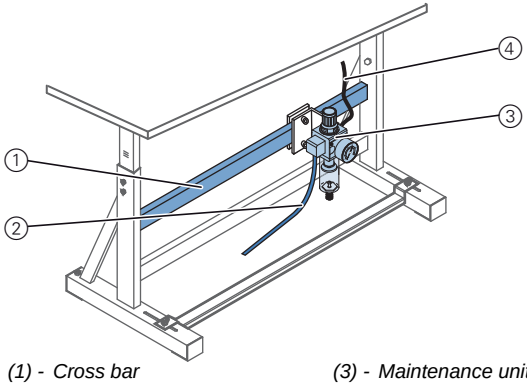
Correct setting

The system pressure for the pneumatic unit is 8 – 10 bar.

ATTENTIO

Machine damage possible due to incorrect pressure.
An incorrect pressure can cause damage to the machine.
Make sure that the system pressure is set to 8 – 10 bar before fitting the pneumatic unit.

Figure 50: Fitting the pneumatic maintenance unit



(1) - Cross bar
(2) - System connection hose
(3) - Maintenance unit
(4) - Machine hose

1. Attach the maintenance unit (3) to the upper cross bar (1) of the frame using the bracket, screws and clip.
2. Connect the machine tube (4) coming out of the upper section to the maintenance unit (3) at the top right.
3. Connect the system connection tube (2) to the pneumatic system.

6.16.2 Setting the operating pressure

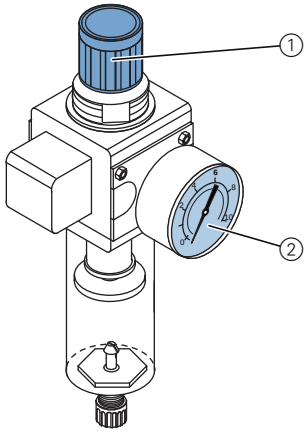
Correct setting

The operating pressure for the pneumatic unit is 6 bar.

ATTENTIO

Machine damage possible due to incorrect pressure.
An incorrect pressure can cause damage to the machine.
Make sure that the operating pressure is set correctly before putting the machine into operation.

Figure 51: Setting the operating pressure



(1) - Rotary handle
(2) - Pressure indicator

1. Pull the turning handle (1) up.
2. Set the operating pressure in such a way that the pressure indicator (2) indicates 6 bar:
   - **To increase the pressure:** Turn the rotary handle (1) clockwise.
   - **To reduce the pressure:**Turn the rotary handle (1) counterclockwise.
3. Push the turning handle (1) down.

6.17 Oil lubrication

Section *5.21.2 Oil lubrication*, page 60

6.18 Sewing test

Carry out a sewing test before starting up the machine. Adjust the machine to the requirements of the material to be sewn.

To do this, read the corresponding sections in the 🕮 *Operating manual*. Read the corresponding sections in the 🕮 *Service manual* in order to make adjustments to the machine if the sewing results do not conform to the requirements.

WARNING

Risk of injury by the needle point and moving parts
Switch off the sewing machine before replacing the needle, insert the thread, insert the hook thread reel, adjust the hook thread tension and the thread regulator.

Performing a sewing test

1. Insert the needle. (🕮 page 20)
2. Wind on the hook thread. (🕮 page 25)
3. Insert the hook thread reel. (🕮 page 27)
4. Thread in the hook thread. (🕮 page 25)
5. Thread in the needle thread. (🕮 page 22)
6. Adjust the thread tension to the material to be sewn. (🕮 page 28)
7. Adjust the thread regulator to the material to be sewn. (🕮 page 33)
8. Adjust the sewing foot pressure (🕮 page 39) and downforce pressure (🕮 page 40) to suit the material to be sewn.
9. Adjust the stitch length. (🕮 page 35)
10. Adjust the multiple width to suit the material to be sewn. (🕮 page 36 and 🕮 page 45)
11. Start the sewing test at low speed.
12. Increase the sewing speed continuously until the working speed is reached.

7 Disposal

The customer is responsible for disposal of the machine and packaging materials.

The machine must not be disposed of via the normal household waste. The machine must be disposed of in an appropriate and correct manner according to the national regulations.

ENVIRONMENTAL PROTECTION

Risk of environmental damage due to incorrect oil disposal.

Incorrect disposal of old oil can result in severe environmental damage.

Always follow the statutory rules in regard of disposal.

When disposing of the machine, be aware that it consists of a range of different materials (e. g. steel, plastic, electronic components, oily parts). Observe the respectively applicable national regulations for each type of material.

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