DÜRKOPP ADLER

610-01/630-01

Operating Instructions

IMPORTANT:

READ CAREFULLY BEFORE USE

KEEP FOR LATER REFERENCE

1 About these operating instructions

These operating instructions for the 610-01/630-01 sewing machines have been compiled with the utmost care. They contain information and notes to make long-term and reliable operation possible.

Should you notice any discrepancies or if you have improvement requests, then we would be glad to receive your feedback, 🕮 *5.14 Customer service*, p. 55.

Please regard the operating instructions as part of the product and keep them in a safe place where they can be easily accessed. Read the operating instructions completely prior to using the machine for the first time. Only pass the product on to third parties together with the operating instructions.

1.1 Scope of application of the operating instructions

These operating instructions describe the setup and intended use of the 610-01/630-01 sewing machines.

1.2 For whom are these operating instructions intended?

The operating instructions are intended for:

- Operating personnel:
  This group of employees has been trained in operating the machine and can access the operating instructions. Specifically, 🕮 *5 Operation*, p. 21 is important for this group of employees.
- Specialized staff:
  This group of employees has the appropriate technical training allowing them to perform maintenance on the machine or to repair faults. Specifically, 🕮 *6 Setup*, p. 57 is important for the specialized staff.
  Service instructions are supplied separately.

With regard to minimum qualification and other requirements to be met by the personnel, please also refer to 🕮 *3 Safety instructions*, p. 13.

1.3 Representational conventions – Symbols and characters

Various items of information are depicted or highlighted in these operating instructions by the following characters to make them easier to understand:

Symbol/character	Meaning
•	Lists are identified by bullet points.
1. 2.	Instructions are numbered and have to be performed in the specified order.
🕮	References to further information in these operating instructions or other documents are identified by this symbol.

Safety

Important warnings for the user of the machine are specifically marked. Because safety constitutes an area of major importance, hazard symbols, levels of risk, and their signal words are described separately in Chapter 🕮 *3 Safety instructions*, p. 13.

Location information

Information on where something is positioned using the terms “right” or “left” must always be regarded from the operator’s point of view if the figure gives no other obvious indication for determining the location.

1.4 Other documents

The device contains built-in components from other manufacturers. The respective manufacturers have carried out hazard assessments for these purchased parts and confirmed compliance of the design with the applicable European and national regulations. The intended use of the built-in components is described in the corresponding manuals of the manufacturers.

1.5 Liability

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

The manufacturer cannot be held liable for any damage due to:

- Damage during transport
- Failure to observe the operating instructions
- Improper use
- Unauthorized modifications to the machine
- The deployment of untrained personnel
- Using unapproved spare parts

1.5.1 Transportation

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 in at the time when the damage was identified. This secures any claims towards the transport company.

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

1.5.2 Intended use

Sewing machine 610

The Dürkopp Adler 610 is for smooth sewing or incorporating fullness into the upper and/or lower material layer.

This sewing machine is optimized with grading logic for the programmed pre-ruffing of sleeves (sleeve crown) and programmed taping of armholes, necklines etc. Sewing on tape requires a needle strength of 70-130 Nm.

Sewing machine 630

The Dürkopp Adler 630 is for smooth sewing or incorporating fullness into the upper and/or lower material layer.

This sewing machine is optimized with grading logic for the programmed pre-ruffing of sleeves (sleeve crown). It is equipped with the E1 fitting for pre-ruffing, edge stop, maintenance unit and pneumatic connection package.

General information

The sewing machines are only intended for working with dry material. The material may not contain any hard objects.

The seam is produced using core spun threads, polyester fibers, or cotton threads.

The sewing machines are intended for industrial use.

The sewing machines may only be set up and operated in dry conditions on well-maintained premises. If the sewing machines are operated on premises that are not dry and well-maintained, then further measures may be required which must be compatible with EN 60204-31:1999.

Only authorized/trained persons may work on the sewing machines.

The manufacturer will not be held liable for damage resulting from improper use.

WARNING

Danger due to high voltage, crushing and sharp objects.
Improper use can result in injuries.
Please follow all instructions in the manual.

ATTENTION

Improper use could result in material damage.
Please follow all instructions in the manual.

2 Performance description

Single needle, flat bed, double chain stitch, crossline sewing machine with stitch type 401 and differential bottom and top feed. Suitable for smooth sewing and/or integration of fullness into the sewing material.

Sewing machine 610

The Dürkopp Adler 610 is a sewing machine for pre-ruffing and sewing on tape. The tape is supplied automatically to the fabric support surface by a tape unwinder.

Sewing machine 630

The Dürkopp Adler 630 is a sewing machine for pre-ruffing sleeves (sleeve crowns) with grading logic.

Common features

- Stitch type 401.
- 32 mm needle stroke for light to moderately heavy material.
- Stitch length maximum 4 mm, adjustable via the stepper motor.
- Differential bottom feed up to maximum 6 mm, adjustable via the stepper motor.
- Differential top feed up to maximum 8 mm, adjustable via the stepper motor.
- Sews forwards only.
- Electronically controlled needle and looper thread tension and automatic adjustment of the looper thread quantity to the stitch length for optimal stitch formation, including for looser stitching.
- Sewing foot top feed with automatic stroke adjustment for different material strengths.
- Equipped with drive motor mounted on the sewing machine.
- With electropneumatic sewing foot lifting and electropneumatic thread cutter for needle and looper thread.

2.1 Declaration of conformity

The sewing machines comply with the European regulations specified in the declaration of conformity or in the installation declaration.

CE

2.2 Additional equipment

Using a flexible system of additional equipment, the sewing machines can be equipped optimally and cost-effectively to suit the relevant application.

● Standard equipment

O Optional equipment

Part no.	Additional equipment	610-01	630-01
0176 590044	Tape unwinder for tension-free feeding of tapes.	●	
0176 590064	Tape feeding and cutting device. The tape is automatically fed and cut. Depending on the seam program, either from the start of the seam to the end or in programmed lengths at programmed points of a seam.	●	
9780 000108	Maintenance unit WE-8	●	●
9805 791113	USB stick	●	●
9822 510002	Halogen sewing lamp for table mounting	O	O
9822 510011	Table clamp	O	O
9880 001010	Sewing lamp mounting kit	O	O
9880 610001	OP7000 with holder	●	●

Part no.	Additional equipment	610-01	630-01
0797003031	Pneumatic connection package, comprising connection hose 5 m long, hose sleeves, coupling socket and coupling plug	●	●
N900 012015	Edge stop, right	○	○

2.3 Technical data

Noise emission

Workplace-specific emission value as per DIN EN ISO 10821:

Lc =78 dB (a) +/- 1,48 dB (A) at

- Stitch length: 3 mm
- Sewing foot stroke: 0 mm
- Number of stitches: 3000 min^{-1}
- Sewing material: 2-layer material G1 DIN 23328

Technical data	610-01	630-01
Sewing stitch type	401 Double chain stitch	
Looper type	Crossline	
Number of needles	1	
Needle system	934 RG	
Needle strength [Nm]	70-130	
Max. sewing thread thickness (core spun thread)	70 / 3	
Stitch length, forwards only [mm]	1-4	
Feed length maximum for diff. feed [mm]	6	
Feed length maximum for feed foot [mm]	8	
Maximum number of stitches [rpm]	5000	

Technical data	610-01	630-01
Number of stitches on delivery [rpm]	3200 (recommended number of stitches)	
Needle stroke [mm]	32	
Sewing foot stroke during lifting [mm]	9	
Operating pressure [bar]	6	
Air consumption [NL per working cycle]	0.1	
Length, width, height (packaging) [mm]	1350 / 900 / 1250	1350 / 900 / 1100
Weight of the upper section [kg]	60	54
Total weight (upper section, accessory pack, motor controller, packaging) [kg]	114	108
Rated voltage [V/Hz]	230 V, 50/60 Hz	
Rated power [kVA]	0.5	

2.4 Control panel OP7000

The following settings are performed using the OP7000 control panel:

- Parameter settings for sewing seams.
- Programming, saving and managing seam programs.
- Switching from manual sewing to automatic sewing.

2.5 Tape unwinder (610 only)

- With the tape unwinder, the Dürkopp Adler 610 can be used to tape armholes, necklines etc.
- The tape feed guides the tape automatically during sewing. The tape unwinder makes it possible to sew the tape without tension.
- After a pre-programmed seam length, the tape cutter cuts the tape in the seam. The tape does not therefore project beyond the fabric edges.
- Replaceable pressure feet make it possible to work with 3 different tape widths.

- Taping can be performed in both automatic and manual modes.

3 Safety instructions

This section contains basic instructions for your safety. Read the instructions carefully before setting up or operating the sewing 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.

3.1 Basic safety instructions

The sewing machine may only be used as described in these operating instructions.

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

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

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

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

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

Transportation Use a lifting carriage or forklift to transport the machine. Raise the machine max. 20 mm and secure it against slipping off.

Setup 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 specialist.

Operator's obligations

Observe the country-specific safety and accident prevention regulations and the legal regulations concerning industrial safety and the protection of the environment.

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

Requirements to be met by the personnel

The machine may only be set up by qualified specialists.

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

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

Only authorized persons may work on the machine. Every person who works on the machine must first have understood the operating instructions.

Operation

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 must not be used any further.

Safety equipment

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 afterward.

3.2 Signal words and icons symbols in warnings

Warnings in the text are distinguished by color bars. The color scheme is oriented towards the severity of the danger. Signal words specify the severity of a danger:

Signal words Signal words and the hazard they describe:

Signal word	Hazard
DANGER	Resulting in death or serious injury.
WARNING	Death or serious injury possible.
CAUTION	Moderate to minor injuries possible.
ATTENTION	Material damage possible.

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

Symbol	Type of danger
	General danger
	Danger due to electric shock
	Danger due to sharp objects
	Danger due to crushing

Examples Examples of the layout of the warnings 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 warning looks like for a hazard that will result in serious injury or even death if the warning is 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 warning looks like for a hazard that could result in serious injury or even death if the warning is 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 warning looks like for a hazard that could result in moderate or minor injury if the warning is 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 warning looks like for a hazard that could result in material damage if the warning is 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 warning looks like for a hazard that could result in environmental damage if the warning is not complied with.

4 Device description

Fig. 1: Complete view sewing machine 610

(1) – Tape unwinder
(2) – Reel stand
(3) – Control panel OP7000
(4) – Main switch
(5) – Foot pedal

5 Operation

The operating sequence on the 610-01/630-01 sewing machines consists of several different steps. Fault-free operation is necessary in order to achieve a good sewing result.

The 610 sewing machine is used for pre-ruffing or to sew on tape.

In the following, the steps are listed in chronological order. The structure of this section is oriented towards this sequence.

Operating sequence on the 610 sewing machine.

- Switching on the sewing machine
- Preparing the sewing machine for operation
  - Inserting the thread reel
  - Threading the needle thread
  - Threading the looper thread
  - Adjusting the needle thread quantity for reliable stitch formation
  - Inserting tape (610 sewing machine only)
  - Optional: Carrying out a test run
- Sewing
- Switching off the sewing machine
- Cleaning
- Lubricating

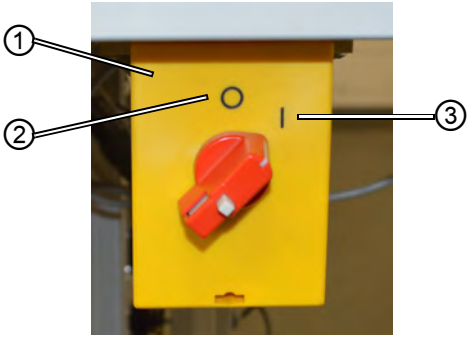
5.1 Switching on the sewing machine

The sewing machine is connected to the compressed air supply and switched on via the main switch.

To switch the sewing machine on:

1. Turn the main switch (1) from the “O” position (2) to the right into the “I” position (3).

Fig. 2: Switching on the main switch



(1) – Main switch
(2) – Position “O”
(3) – Position “I”

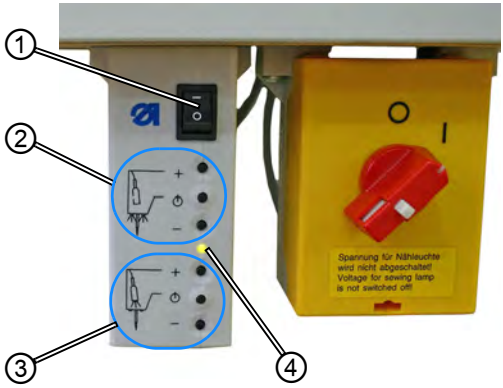
↳ You hear the air being released on the moving parts. The control panel starts up and the start screen appears.

The control panel does not need to be switched on separately; it is activated when the machine is switched on.

5.2 Switching on the sewing lamp

The sewing lamp must be switched on and off independently of the machine's main switch.

Fig. 3: Switching on the sewing lamp



(1) – Toggle switch
(2) – Sewing lamp, needle
(3) – Sewing lamp, head (optional)
(4) – Indicator LED

To switch the sewing lamp on:

1. Set the toggle switch (1) to position "I".

↳ The sewing lamps are ready for operation.

2. As desired, the sewing lamp can be activated in the area of the needle (2) or at the head of the machine (3) (optional equipment).
3. The light can be adjusted to be brighter (+) or darker (-) as required.
4. To switch off the sewing lamps, set the toggle switch (1) to position "0".

↳ The sewing lamps are switched off.

5.3 Preparing the sewing machine for operation

Some preparations are required before the sewing machine can be used to start sewing. The following table shows which aspects have to be checked or met.

Aspect	Reason
Connecting the compressed air	The sewing machine must be connected to the compressed air supply, as otherwise important functions, such as tape feeding, are not possible.
Fitting the thread reel	The thread reels must be fitted as otherwise there will be no thread available for sewing.
Checking the needle	The needle must be present, as sewing cannot take place without a needle. The needle must be aligned correctly, otherwise the looper cannot form a loop and sewing cannot be performed.
Threading the needle thread	The needle thread must be threaded in, as sewing cannot take place without the needle thread.
Threading the looper thread	The looper thread must be threaded in, as sewing cannot be performed without the looper thread.
Inserting tape (610 only)	The tape must be inserted, as without the tape the taping work step cannot be performed.
Optional: Carrying out a test run	A test run can be used to check the settings, but is not mandatory.

5.4 Inserting and replacing the needle

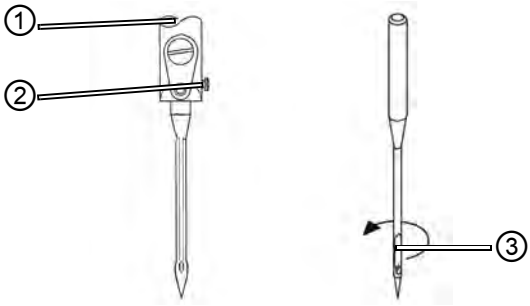
WARNING

Risk of injury from 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 needles with strength 100 or greater, have a technician adjust the needle evasive movement of the looper (ellipsis width). The correct settings are described in the 🕮 *Service Instructions*.

Fig. 4: Inserting and replacing the needle



(1) – Needle bar
(2) – Fastening screw
(3) – 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 downwards.
4. Insert the new needle.

Important: Align the needle so that the groove (3) faces to the rear.

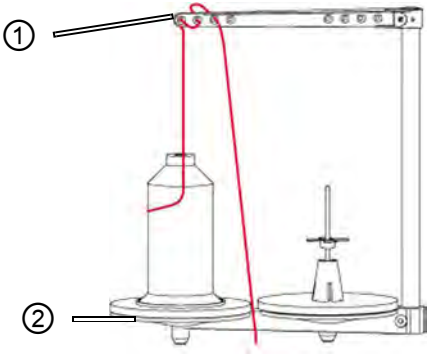
5. Tighten the fastening screw (2).

5.5 Threading the needle thread

WARNING

Risk of injury from the needle point and moving parts.
Switch off the sewing machine before replacing the needle.

Fig. 5: Fitting the needle thread reel



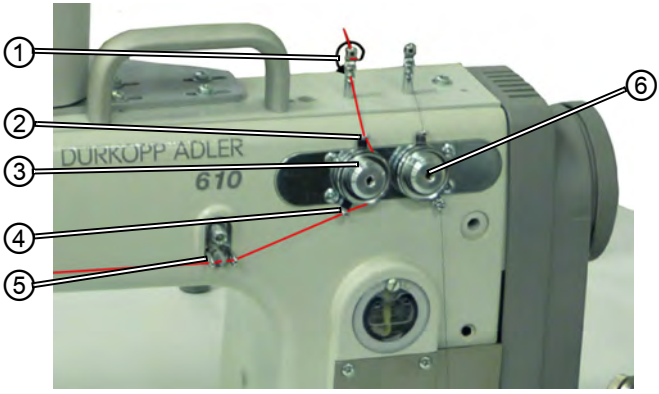
(1) – Guide on unwinding bracket *(2) – Reel stand*

1. Fit the thread reel on the left plate of the reel stand (2).
2. Insert the thread from the back to the front through the first hole and then in a wavelike manner through the next two holes of the guide on the unwinding bracket (1).

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

Fig. 6: Threading diagram for needle thread – General overview

Fig. 7: Threading the needle thread – Part 1



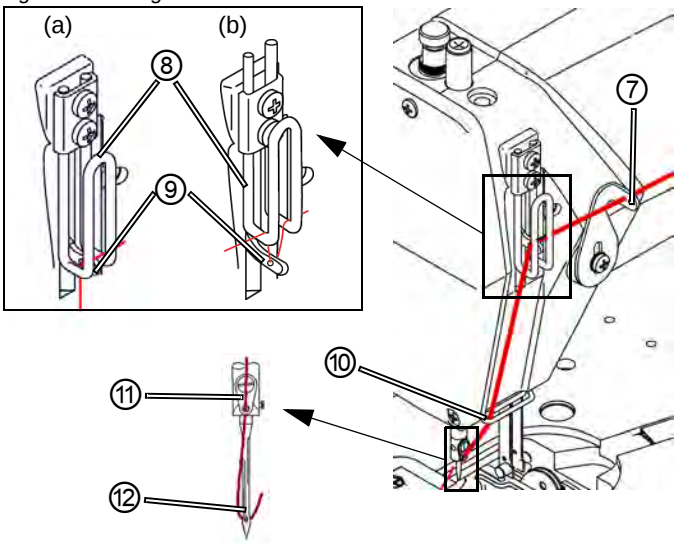
(1) – Thread guide
(2) – Thread guide
(3) – Needle thread tensioner
(4) – Thread guide
(5) – Thread puller
(6) – Looper thread tensioner

3. Feed the thread through the thread guide (1) from above downwards.
4. Guide the thread around the back of the thread guide (1) and from the rear to the front through the bottom hole.
5. Feed the thread from above downwards through the thread guide (2) to the needle thread tensioner (3).
6. Feed the thread clockwise around the needle thread tensioner (3).

Important: The thread must always be fed around the relevant tensioning disk such that it covers the greater distance from thread guide (2) to thread guide (4).

7. Insert the thread through the thread guide (4).
8. Insert the thread from the right to the left through the thread puller (5).

Fig. 8: Threading the needle thread – Part 2



(7) – Deflector
(8) – Thread regulator
(9) – Thread lever
(10) – Thread guide, machine head
(11) – Thread guide, needle bar
(12) – Needle eye

9. Feed the thread from the right to the left through the deflector (7).
10. Insert the thread from right to left through the thread regulator (8) and the thread lever (9):

    - **For tight/normal seams and less elastic threads (detail image (a)):**

    (🕮 *5.7 Adjusting the thread quantity, thread tension and seam appearance*, pg. 32)

    Feed the thread through the thread lever (9) and then directly downwards.

- **For elastic seams (detail image (b)):**

  Feed the thread through the thread lever (9) and then via the left bar of the thread regulator (8) (WARNING – Exaggerated depiction for better visibility).

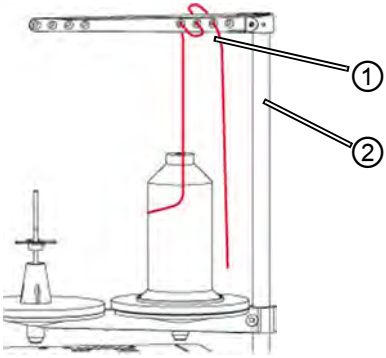
11. Feed the thread from above downwards through the thread guide (10) on the machine head.
12. Feed the thread from above forwards and downwards to the rear through the thread guide (11) on the needle bar.
13. Insert the thread from the front to the back through the needle eye (12).

5.6 Threading the looper thread

WARNING

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

Fig. 9: Fitting the looper thread reel

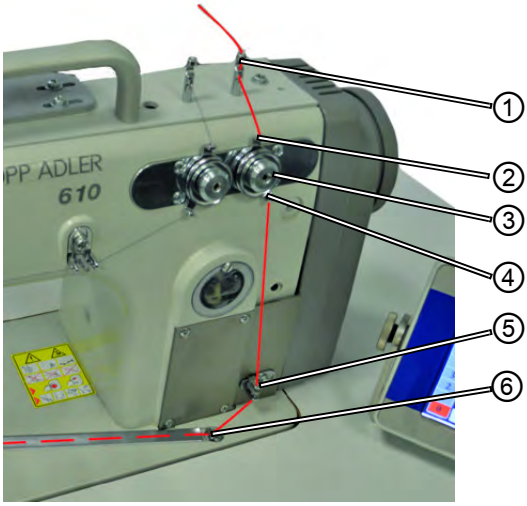


(1) – Guide on unwinding bracket *(2) – Reel stand*

1. Fit the thread reel on the right plate of the reel stand (2).
2. Insert the thread from the back to the front through the first hole and then in a wavelike manner through the next two holes of the guide on the unwinding bracket (1).

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

Fig. 10: Threading the looper thread – Part 1



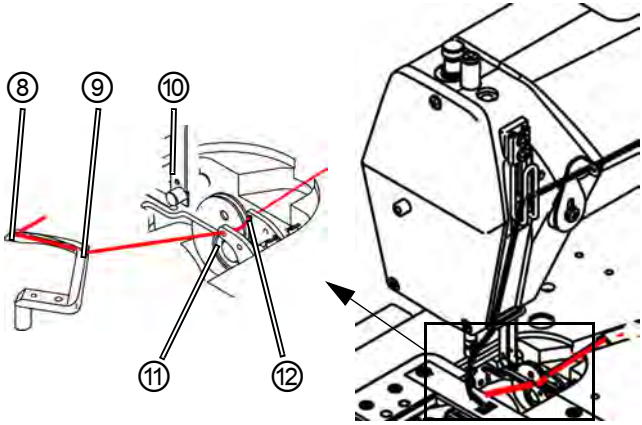
(1) – Thread guide
(2) – Thread guide
(3) – Looper thread tensioner
(4) – Thread guide
(5) – Thread puller
(6) – Thread guide of the thread groove

3. Feed the thread through the thread guide (1) from above downwards.
4. Guide the thread around the back of the thread guide (1) and from the rear to the front through the bottom hole.
5. Feed the thread from above downwards through the thread guide (2) on the looper thread tensioner (3).
6. Guide the thread counterclockwise around the looper thread tensioner (3).

The thread must always be fed around the relevant tensioning disk such that it covers the greater distance from thread guide (2) to thread guide (4).

7. Insert the thread from above downwards through the thread puller (5).
8. Feed the thread through the thread guide of the thread groove (6). Then, pull the thread from the back under the cover plate of the groove.

Fig. 11: Threading the looper thread – Part 2



(8) – Looper hole
(9) – Looper hole
(10) – Thread down-holder
(11) – Hole, looper thread guide
(12) – Hole, looper thread guide

9. Remove the cover plates to the right and left of the throat plate.
10. Lift the thread down-holder (10) from its latching.
11. Insert the thread from the right to the left through the holes (12) and (11) of the looper thread guide.
12. Turn the handwheel until the looper hole (9) is accessible.
13. Insert the thread from right to left through the looper hole (9).
14. Insert the thread from left to right through the looper hole (8) and pull out approx. 3 cm of thread.
15. Press down the thread down-holder (10) and engage.
16. Fit the cover plates to the right and left of the throat plate.

5.7 Adjusting the thread quantity, thread tension and seam appearance

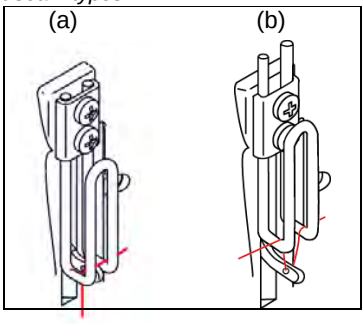
5.7.1 Thread types and seam appearance

Both the thread tension and the thread quantity for stitch formation must be adjusted to the desired seam appearance for both needle thread and looper thread.

A differentiation is made between 3 seam types:

- Tight seams (a)
- Normal seams (a)
- Looser seam (highly elastic) (b)

Fig. 12: Different seam types



(a) – Tight and normal seam *(b) – Looser seam*

5.7.2 Adjusting the thread tension

Correct setting

The desired stitch formation is achieved. The tension of the needle thread must be tighter than the tension of the looper thread.

Faults due to incorrectly set tension

- Excessively tight tensions: The sewing material is pulled together
- Looper thread tension too loose: Missed stitches

The thread tension is set using the control panel.

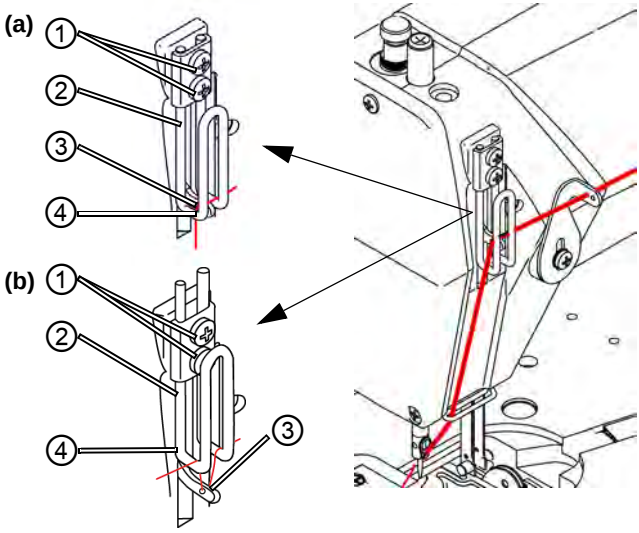
5.7.3 Adjusting the needle thread quantity

WARNING

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

The needle thread quantity released for stitch formation is determined by the thread regulator setting. The required thread quantity depends on the thickness of the sewing material, thread strength and seam type. Furthermore, the threading process is different for different threads and seam types (Page 28).

Fig. 13: Setting the thread regulator



(1) – Fastening screws
(2) – Thread regulator
(3) – Hole of the thread lever
(4) – Thread regulator: Lower bar

Correct setting

- **Less elastic threads:** The hole (3) of the thread lever is visible in the thread lever's bottom position just above the lower bar (4) of the thread regulator: position (a).
- **Very elastic threads:** The hole (3) of the thread lever is visible in the thread lever's bottom position just below the lower bar (4) of the thread regulator: position (b).

Setting the thread regulator

1. Turn the handwheel until the thread lever reaches its lower end position.
2. Loosen the fastening screws (1) of the thread regulator (2).
3. Move the thread regulator (2) to the correct position.
   - **For tight/normal seams and less elastic threads (detail image (a)):**

     (🕮 *5.7.3 Adjusting the needle thread quantity*, pg. 33)

     Feed the thread through the thread lever (3) and then directly downwards.
   - **For elastic seams (detail image (b)):**

     Feed the thread through the thread lever (3) and then via the left bar of the thread regulator (2).
4. Tighten the fastening screws (1) of the thread regulator (2).

5.7.4 Adjusting the looper thread quantity

WARNING

Risk of injury from moving parts.
Switch off the sewing machine before adjusting the thread take-up.

The looper thread take-up adjusts the looper thread quantity to the relevant set stitch length so that the stitch pull is optimal for every length and also for stitch condensing.

The looper thread take-up can be adjusted continuously on a scale from 0 to 5. The larger the value, the greater the released thread quantity and the more elastic the seam.

Correct setting

The correct setting is dependent on the stitch length and the seam type (📖 *5.7.1 Thread types and seam appearance*, pg. 32).

In particular for extreme settings, it must be ensured that the looper thread quantity is not too large:

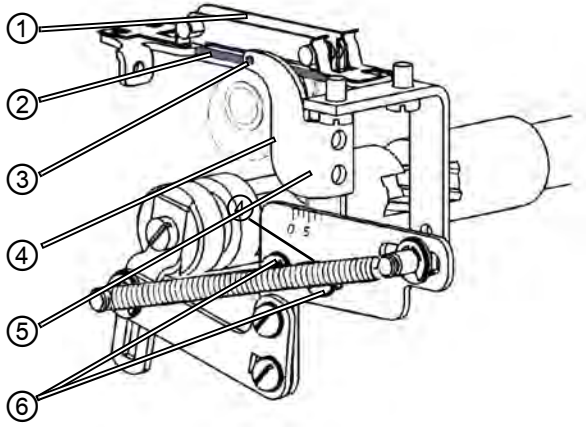
Extreme settings

- Elastic seam (largest possible thread quantity) with very short stitch length
- Considerable enlargement of the stitch length for elastic seams

Faults due to excessively large looper thread quantity

- Missed stitches
- Looper thread jumps off the thread pick-up disk.

Fig. 14: Adjusting the looper thread take-up



(1) – Thread down-holder
(2) – Thread down-holder: Lower bar
(3) – Looper thread take-up: Hole for thread guide
(4) – Looper thread take-up edge: Scale reading point
(5) – Looper thread take-up
(6) – Fastening screw

Adjusting the looper thread take-up

1. Tilt the upper part of the machine backwards.
2. Loosen the fastening screws (6).
3. Move the looper thread take-up (5):
   - **Tighter seam:**
     Move front edge (4) in the direction of **0**.
   - **More elastic seam:**
     Move front edge (4) in the direction of **5**.

Important: Ensure that the height of the looper thread take-up (5) is not changed. The hole (3) must always remain above the bar (2) of the thread down-holder (1).

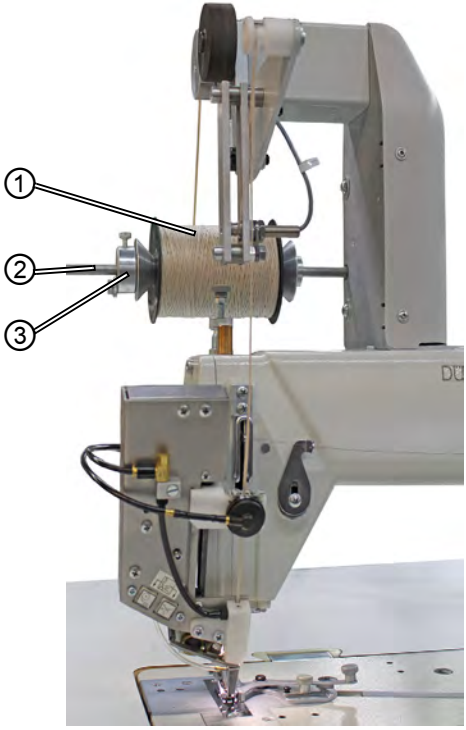
4. Tighten the fastening screws (6).
5. Return the upper part of the machine to the upright position.

5.8 Inserting tape (610 only)

WARNING

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

Fig. 15: Tape unwinder



(1) – Tape reel
(2) – Reel holder
(3) – Counterbearing

1. Place tape reel (1) on the reel holder (2) and lock with the counterbearing (3).

Important

Thread in the tape when the sewing machine is switched off, ensuring that it is not **twisted**.

2. Ensure when tightening that the counterbearing (3) is pressed against the tape reel (1).

Important

Viewing the head cover from above, the tape reel (1) must turn clockwise when unwinding.

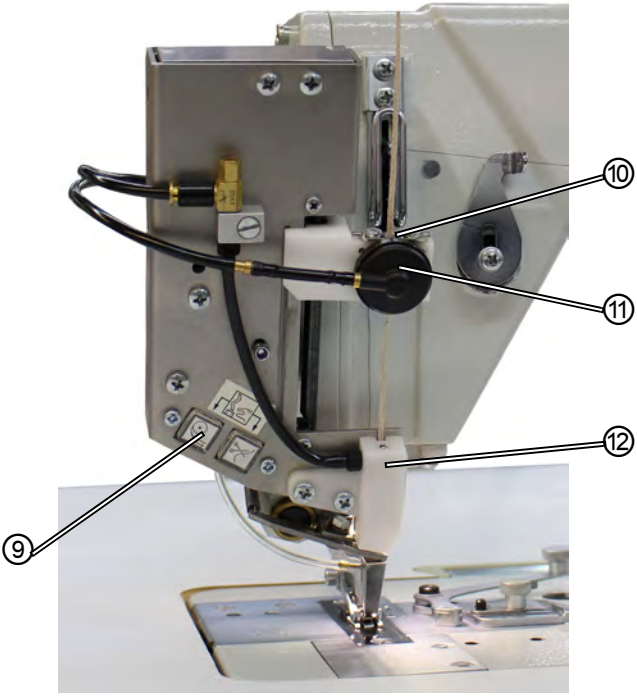
Fig. 16: Direction of rotation of the tape reel

(4) – Guide
(5) – Transport roller
(6) – Press roller
(7) – Guide
(8) – Sensor

3. Thread the tape through the guide (4).
4. Guide between the transport roller (5) and spring-mounted press roller (6).
5. Thread underneath the sensor (8).

6. Thread the tape through the guide (7).

Fig. 17: Threading the tape



(9) – Key panel
(10) – Guide
(11) – Pneumatic clamp
(12) – Guide piece

7. Thread the tape through the guide (10).
8. Adjust guide (10) approximately to the width of the tape used.
9. Guide the tape through the pneumatic clamp (11).
10. Switch on the sewing machine.
11. Activate threading mode.

    For this purpose, press both keys on the key panel (9) at the same time. The clamp is released and compressed air is provided to feed the tape into the guide piece (12).
12. Introduce tape into the guide piece (12) and let it run through until there is no excess tape any longer between the pneumatic clamp (11) and the guide piece (12). Grip the tape with, e.g., tweezers.
13. End threading mode by pressing on one of the two keys on

the key panel (9).

The tape is cut at the bottom end of the guide piece (12).

Important

If the piece of tape cut off is too short, it can be pulled into the bushing and prevent the feeding of the tape.

5.8.1 Feeding the tape

🕮 *7 Settings via software*, pg. 67

5.9 Setting the sewing foot pressure

The adjusting wheel (1) and rotary button (2) on the machine head are used to regulate the pressure of the sewing feet on the sewing material. Here, the center foot and top feed foot can be adjusted separately.

Correct setting

The sewing material does not slip and is fed through correctly. The correct sewing foot pressure depends on the sewing material.

Faults due to incorrectly set sewing foot pressure

- Excessively high sewing foot pressure:
  Indentations in the sewing material, possible ruffing of the sewing material.
- Excessively low sewing foot pressure:
  Slipping of the sewing material, stitch length too short.

Fig. 18: Setting the sewing foot pressure

(1) – Adjusting wheel
(2) – Rotary knob
(3) – Counternut
(4) – Handwheel

Setting the sewing foot pressure on the center foot:

Important: Only check the sewing foot pressure of the center foot if the feed is projecting from the throat plate or if the handwheel (4) is in **position E**.

1. Release the counternut (3).
2. Set the sewing foot pressure.
   - **To increase the sewing foot pressure**:
     Turn the rotary knob (2) clockwise.
   - **To reduce the sewing foot pressure**:
     Turn the rotary knob (2) counterclockwise.

Important: Hold the adjusting wheel (1) so that the pressure of the top feed foot is not unintentionally adjusted.

3. Tighten the counternut (3) again.

Setting the sewing foot pressure on the top feed foot:

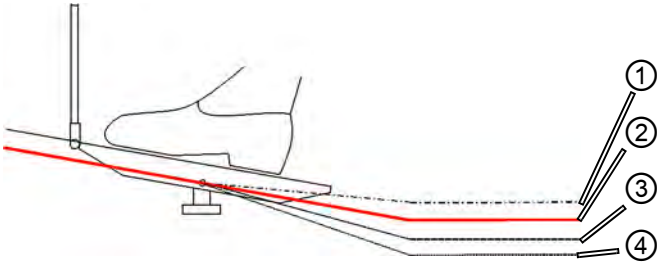
Important: Only check the sewing foot pressure of the top feed foot if the top feed foot is lying on the feed.

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

5.10 Lifting the sewing foot

To insert or feed the sewing material, the sewing foot is lifted electropneumatically with the foot pedal.

Fig. 19: Lifting the sewing foot



(1) – Pedal position +1:
Sewing active
(2) – Pedal position 0:
Rest position
(3) – Pedal position -1:
Lifts sewing foot
(4) – Pedal position -2:
Sews stitch condensing and cuts thread

1. Press the foot pedal half-way back: Pedal position -1 (3).

↳ The sewing foot is lifted and remains up as long as the foot pedal is kept in that position.

End of sewing

1. Press the foot pedal fully back: Pedal position -2 (4).

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

Lowering the sewing foot

CAUTION

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

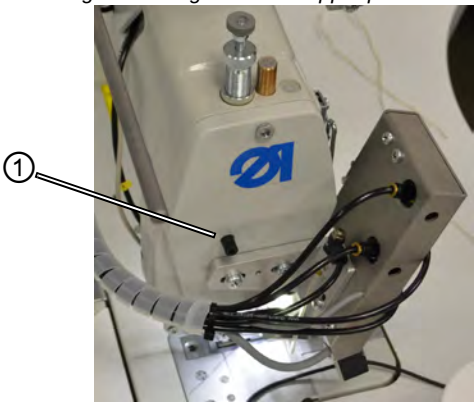
1. Bring the foot pedal (1) back into the neutral position.

↳ The sewing foot is lowered.

5.11 Locking the sewing foot in the upper position

The pushbutton on the machine head can be used to hold the lifted sewing foot in the upper position.

Fig. 20: Locking the sewing foot in the upper position



(1) – Locking pushbutton

Locking the sewing foot in the upper position

1. Lifting the sewing foot using the foot pedal (🕮 *5.10 Lifting the sewing foot*, pg. 42).
2. Press the locking pushbutton (1).
3. Release the foot pedal.

↳ The sewing foot is locked in the upper position.

Canceling the lock:

CAUTION

Risk of crushing when lowering the sewing foot.
Do not put your hands underneath the sewing foot when the lock is being canceled.

1. Press the foot pedal half-way back again.

↳ The sewing foot is lowered. The lock is canceled.

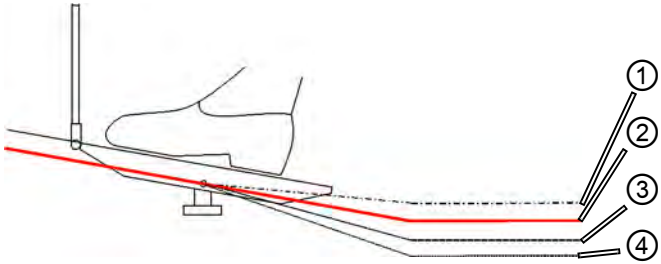
5.12 Sewing

WARNING

Risk of injury from the needle tip on unintentional start of sewing.
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.

Fig. 21: Sewing with the foot pedal



(1) – Pedal position +1: Sewing active
(2) – Pedal position 0: Rest position
(3) – Pedal position -1: Lifts sewing foot
(4) – Pedal position -2: Sews stitch condensing and cuts thread

START OF SEWING

Initial position

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

↳ Machine stationary, needle up, sewing foot down.

To position the sewing material

1. Press the foot pedal half-way back to pedal position -1:

↳ The sewing foot is raised.

2. Push the sewing material into the initial position.
3. Release the foot pedal to pedal position 0.

↳ The sewing foot lowers onto the sewing material.

To start sewing

1. Press the foot pedal forwards to pedal position +1:

↳ The machine sews. The sewing speed increases the further forward the pedal is pressed.

WHEN SEWING

To interrupt sewing

1. Release the foot pedal to pedal position 0:

↳ The machine stops, needles and sewing foot are down or up, as appropriate.

To continue sewing

1. Press the foot pedal forwards to pedal position +1:

↳ The machine continues to sew.

END OF SEWING

To finish sewing

1. Press the foot pedal back completely to pedal position -2 and hold it there.

↳ The thread is cut.
The machine stops.
Needle and sewing foot are raised or lowered, as appropriate.

2. Remove the sewing material.

5.13 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.

The maintenance work must be performed after the maintenance intervals specified in the tables at the latest (see “Interval” column).

Shorter maintenance intervals are possible when working with materials that generate a lot of lint.

A clean sewing machine provides protection from faults. Advanced maintenance work must only be carried out by qualified specialists. Advanced maintenance work is described in the 🕮 *Service Instructions*.

5.13.1 Cleaning

CAUTION

Needle-prick injuries and crushing by the sewing foot

During maintenance work, the sewing machine can start unintentionally and cause needle-prick injuries or crushing by the sewing foot.

Switch off the main switch.

Always switch off the sewing machine before performing maintenance.

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 instructions.
Observe the cleaning intervals set out in the table. In the case of materials with a high lint content, the machine must be cleaned more frequently.

Places that need to be cleaned particularly thoroughly and cleaning intervals

Machine area	Cleaning interval
• Area under the throat plate • Area around the looper • Area around the thread pick-up disk • Thread cutter • Area around the needle • Air inlet openings on the motor fan sieve	Every 8 operating hours
• Oil pan	Every 40 operating hours

Cleaning steps

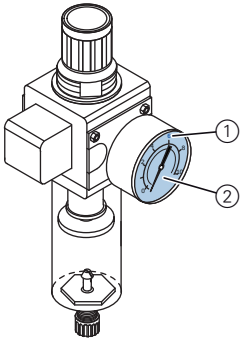
1. Switch off the power supply at the main switch.
2. Remove any sewing dust and thread remains using a compressed-air pistol or a brush.
3. Remove any sewing dust and cutoffs from the oil pan.

ATTENTION

Possible damage to the paintwork from solvent-based cleaners.
Solvent-based cleaners damage the paintwork of the machine.
Use only solvent-free substances when wiping down the machine.

5.13.2 Checking the pneumatic system

Fig. 22: Pressure indicator on the maintenance unit



(1) – Reference value: 6 bar *(2) – Pressure indicator*

Check the pressure:

1. Check the pressure on the pressure indicator (2) each day.

   Reference value: 6 bar.

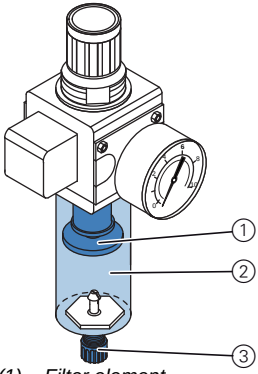
Important: The pressure must not deviate from the reference pressure by more than 1 bar.

ATTENTION

Machine damage possible due to incorrect pressure.
Incorrect pressure can cause damage to the machine.
Check the pressure on a daily basis.
Have the pressure adjusted by qualified specialists if the pressure deviates from the reference value.

Condensed water accumulates in the water separator of the maintenance unit.

Fig. 23: Water level in the maintenance unit



(1) – Filter element
(2) – Water separator
(3) – Drain screw

Checking the water level:

1. Check the water level every day.

Important: The condensed water must not rise to the level of the filter element (1).

Drain water as required:

1. Switch off the sewing machine at the main switch.
2. Place the collection tray under the drain screw (3).
3. Disconnect the compressed air hose from the compressed air supply.
4. Unscrew the drain screw (3) completely.
5. Allow water to drain into the collection tray.
6. Re-tighten the drain screw (3).
7. Connect the compressed air hose to the compressed air supply.
8. Switch on the sewing machine at the main switch.

ATTENTION

Machine damage possible due to excess water.
Excess water can cause damage to the machine.
Check the water level every day and drain the condensed water if there is too much water in the water separator.

5.13.3 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 area 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.

Ensure that there is always sufficient oil in the relevant reservoir.

ATTENTION

Machine damage possible due to incorrect oil.

Using the wrong oil type can cause damage to the machine.

Only use oil that complies with the data in the operating instructions.

ATTENTION

A lack of oil leads to premature wearing of moving parts within the sewing machine

Check the oil level in the reservoir (4) and looper drive housing (6) every 8 operating hours.

If the oil level is low, top up the oil reservoir.

Use only **DA 10** lubricant or an equivalent oil conforming to the following specifications to lubricate the special sewing machine:

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

DA 10 can be obtained from **DÜRKOPP ADLER AG** sales offices under the following part no.:

Container size	Part no.
250 ml container	9047 000011
1 L container	9047 000012
2 L container	9047 000013
5 L container	9047 000014

Maintenance	Explanations	Interval
Machine upper section • Remove any sewing dust and thread remains (e.g. using the compressed-air pistol)	Points that need to be cleaned particularly thoroughly: • Area under the throat plate • Area around the looper • Area around the thread pick-up disk • Thread cutter • Area around the needle **Attention** Hold the compressed-air pistol in such a way that the sewing dust is not blown into the oil pan.	8 operating hours
Sewing drive Clean the motor fan sieve (e.g. with the compressed-air pistol)	Clean the sewing dust and thread residue from the air inlet openings.	8 operating hours

Maintenance	Explanations	Interval
Pneumatic system		
Check the water level in the pressure controller	The water level must not rise to the level of the filter element (1). • Drain the water under pressure from the water separator (2) after unscrewing the drain screw (3).	40 operating hours
Clean the filter element	Dirt and condensation are separated by the filter element (1). • Disconnect the sewing machine from the compressed air supply. • Unscrew the drain screw (3). The pneumatic system of the sewing machine must be depressurized. • Unscrew water separator (2). • Unscrew filter element (1). Wash out the dirty filter tray and filter element using petroleum ether (no solvent) and blow clean. • Reassemble the maintenance unit again.	500 operating hours
Check the leak tightness of the system		500 operating hours

Lubrication of the upper part of the machine

Fig. 24: Lubrication of the upper part of the machine

(1) – Refill opening
(2) – Maximum level marking
(3) – Minimum level marking

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

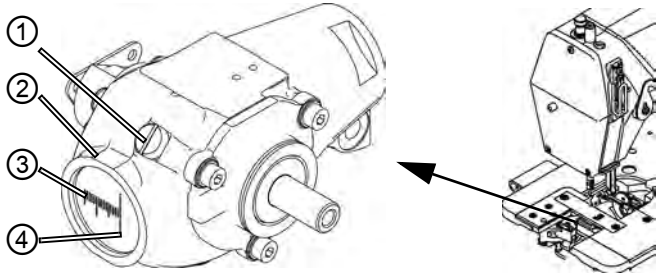
Pour in oil through the refill opening (1) as required:

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.

Looper lubrication

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

Fig. 25: Looper lubrication



(1) – Locking screw
(2) – Oil reservoir
(3) – Minimum level marking
(4) – Maximum level marking

Checking the oil level

1. Switch off the sewing machine at the main switch.
2. Tilt the upper part of the machine back through 90°.
3. Check the quantity of oil in the reservoir (2).

Correct setting

With the upper part of the machine tilted half-way back, the oil level must not fall below the minimum level marking (3).

Topping up with oil

1. Switch off the sewing machine at the main switch.
2. Tilt the upper part of the machine back through 90°.
3. Loosen the locking screw (1) on the refill opening.
4. Pour in oil, up to but not past the maximum level marking (4).
5. Tighten the locking screw (1).
6. Return the upper part of the machine to the upright position.
7. Switch on the sewing machine at the main switch.

5.14 Customer service

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

Dürkopp Adler AG
Potsdamer Str. 190
33719 Bielefeld, Germany

Tel. +49 (0) 180 5 383 756
Fax +49 (0) 521 925 2594
Email: service@duerkopp-adler.com
Internet: www.duerkopp-adler.com

6 Setup

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 Scope of delivery

The scope of delivery depends on your specific order.

1. Check the delivery to make sure it is complete.

6.2 Removing the transport securing devices

1. Remove the following transport securing devices:
   - Wooden blocks on the machine upper section
   - Securing clips on the frame feet

6.3 Installation

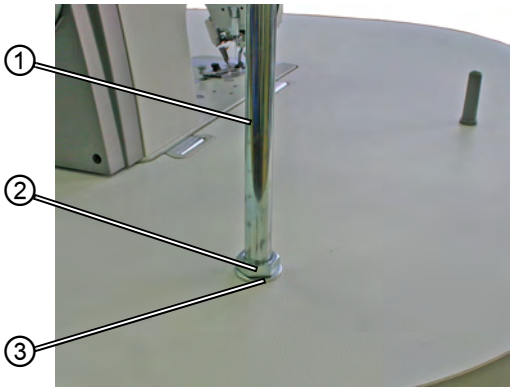
6.3.1 Installing the reel stand

Fig. 26: Completely installed reel stand

The position of the reel stand is shown in the photo above. The precise installation is described here:

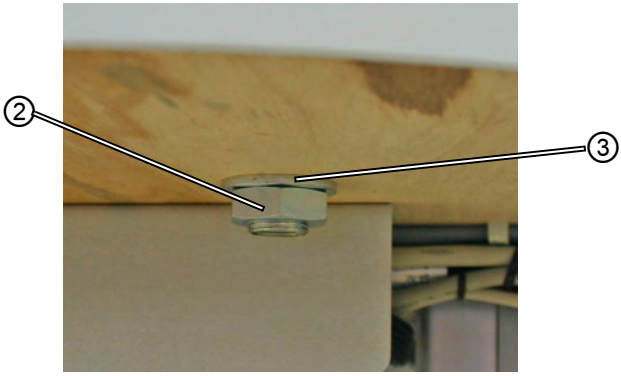
1. Insert the reel stand tube (1) into the hole of the table plate.
2. Secure the reel stand tube (1) with the enclosed nuts (2) and washers (3).

Fig. 27: Installing the reel stand (upper side of table plate)



(1) – Reel stand tube
(2) – Securing nuts
(3) – Washers

Fig. 28: Installing the reel stand (underside of table plate)



(2) – Securing nuts
(3) – Washers

6.3.2 Testing the table plate

CAUTION

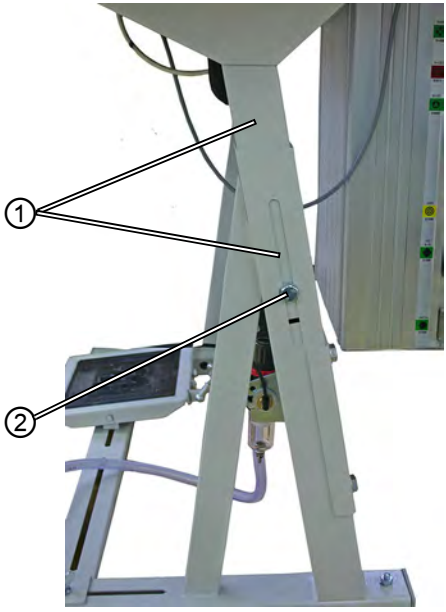
Risk of injury due to in-house manufactured table plate having too low a bearing capacity

Ensure that the table plate displays the required bearing capacity and strength.

The cutouts of in-house manufactured table plates must have the dimensions specified in the drawing (see appendix).

6.4 Setting the working height

Fig. 29: Setting the working height



(1) – Scale *(2) – Screw*

The working height is continuously adjustable between 750 and 950 mm (measured to the upper edge of the table plate). The frame height should be appropriate to the height and position of the operator.

1. Release the screws (2) on both bars of the frame.
2. Pull out or push in the table plate evenly at both sides to prevent it from jamming.

   The scales (1) on the outside of the bars serve as an adjustment aid.
3. Tighten both screws (2).

6.4.1 Electrical connection

DANGER

Risk of injury from electricity.
Unprotected contact with electricity can result in serious injuries or death.
Work on the electrical system must ONLY be performed by qualified electricians or appropriately trained and authorized personnel.
ALWAYS unplug the power plug before working on the electrical equipment.

6.4.2 Checking the mains voltage

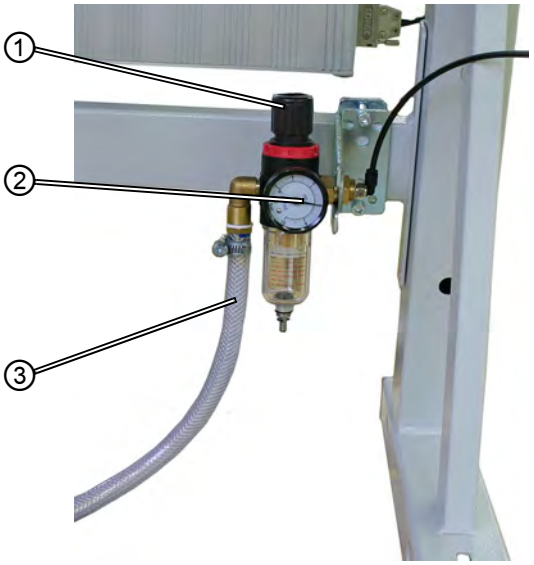
The rated voltage and mains voltage specified on the controller type plate must be the same.

6.4.3 Pneumatic connection

The pneumatic system of the sewing station and the auxiliary devices must be supplied with moisture-free compressed air.

The supply pressure must be between 8 and 10 bar.

Fig. 30: Pneumatic connection



(1) – Rotary handle
(2) – Pressure gauge
(3) – Connection hose

Connecting the compressed air maintenance unit

1. Connect the connection hose (3) (Part no. 0797 003031) to the compressed air supply with an R ¼" hose coupling.

Setting the operating pressure

The operating pressure is 6 bar.

This can be read on the pressure gauge (2).

To increase the pressure:

- Raise the rotary handle (1) and turn it clockwise.

To reduce the pressure:

- Raise the rotary handle (1) and turn it anti-clockwise.

6.5 Sewing test

Once the setup work is complete, a sewing test is performed.

CAUTION

Risk of injury from the needle point and moving parts.

Thread the needle and looper thread only when the sewing machine is switched off.

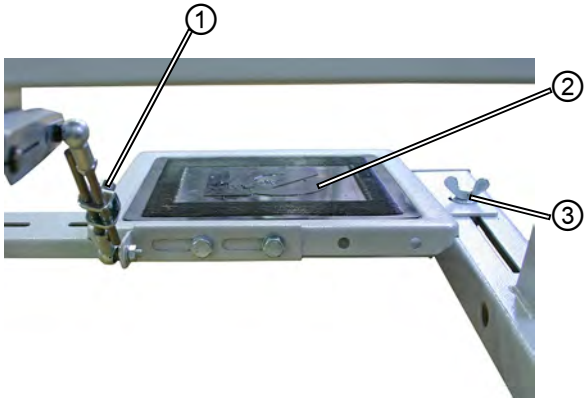
1. Insert the power plug.
2. Main switch to OFF.
3. Thread the needle and looper threads.
4. Main switch to ON.
5. Choose sewing material.
6. Start sewing test at low speed and increase the speed continuously.
7. Check whether the seams meet the desired requirements. If not, see 🕮 *5.7.2 Adjusting the thread tension*, pg. 32.

6.6 Foot pedal position

ATTENTION

Material damage possible as a result of careless setting.
Always adjust the incline and position of the foot pedal in relation to one another. A separate setting can lead to material damage of the machine if care is not taken.

Fig. 31: Foot pedal position



(1) – Screw *(2) – Foot pedal*

Inclination of the foot pedal

The foot pedal (2) should be inclined such that the operator can operate it forwards and backwards unhindered.

1. Loosen the screw (1).
2. Adjust the foot pedal (2) accordingly.
3. Re-tighten the screw (1).

Position of the foot pedal

The foot pedal (2) can be secured to the cross strut of the frame. The position of the foot pedal can be adjusted individually by moving the cross strut.

1. Loosen the wing screws (3) on both sides of the frame.
2. Move the cross strut with the foot pedal (2) forward or backward.
3. Tighten the wing screws (3) on both sides of the frame.

7 Settings via software

7.1 Control panel OP7000

All settings on the 610-01/630-01 sewing machine are made using the OP7000 control panel.

Fig. 32: Control panel OP7000

The sewing motor and the stepper motors are actuated via the DAC3 controller in conjunction with the OP7000 control panel with its icon-display user interface.

The automated programming enables manual or automatic fullness control, either at the top or the bottom, curve support as well as the programming of segments with individual parameters.

Up to 999 sewing programs can be saved.

Each sewing program can contain up to 30 segments. Every segment can be assigned various parameters such as stitch length, fullness amounts, curve support, thread tension, segment length etc.

The seam programs are shown continuously during sewing. It is possible to mirror a program for the other side of the sewing material.

7.2 Switching on the sewing machine

1. Switch on the main switch.

↳ The OP7000 control panel is switched on.

- On the display, the machine class is shown on the left and the firmware on the right.
- The sewing machine references.
- Then, the control panel goes to the mode that was active when it was switched off – **MAN** or **AUTO**.

7.3 Controller operating modes

The controller has four operating modes:

- **Manual mode MAN**

  Manual mode is the simplest of the operating modes.

  There are no seam programs and no inputs for individual segments.

  Changes to fullness, stitch length, thread tension, curve support as well as the switching of other functions are implemented immediately.

  In this way all the essential sewing parameters can be changed manually during the sewing process.

- **Automatic mode AUTO**

  In automatic mode, seam programs are sewn.

  The seams in the seam programs are subdivided into individual segments, to which individual sewing parameters such as fullness etc. are assigned.

- **Programming mode**

  In programming mode, new seam programs can be created (PROGRAMMING), existing seam programs can be amended, deleted, copied and mirrored (EDIT).

- **Service mode SERVICE**

  In service mode, there are functions that can be used for servicing work.

  Service mode is password-protected, in order to avoid unintentionally making incorrect machine settings.

7.4 General operation of the controller

Operation takes place via the control panel. All functions and inputs are initiated by touch.

In the individual operating modes, numerical values can be input for the individual parameters and text can be input for the program names.

The inputs are made on separate user interfaces.

7.4.1 Inputting numerical values

Fig. 33: Inputting numerical values

The user interface for inputting numerical values comprises the following elements:

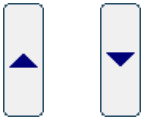
Header, comprising:

- Icon of the selected parameter
- Name of the parameter
- Value range of the parameter
- Icon for exiting the user interface

Input line for the value

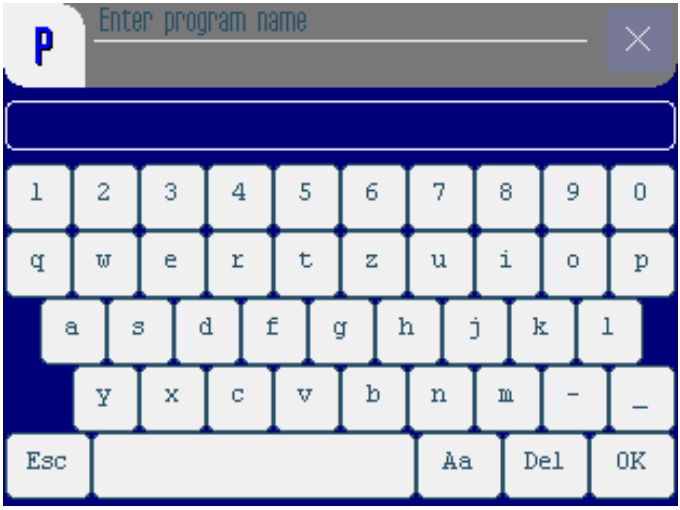
Key panel

Meaning of the buttons

Icons/buttons	Meaning
	Input value.
	Change preceding sign.
	Input a decimal point for values that permit decimal places.
	Change the value by one increment up or down. Deletes position of the value in the input line.
	Delete the entered value.
	Exit the user interface without inputting or saving a value.
	Save an input value and exit the user interface.

7.4.2 Inputting text

Fig. 34: Inputting text



The user interface for inputting text comprises the following elements:

Header, comprising:

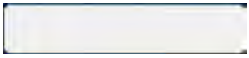
- “New seam program” icon
- Icon for exiting the user interface

Input line for text

Key panel

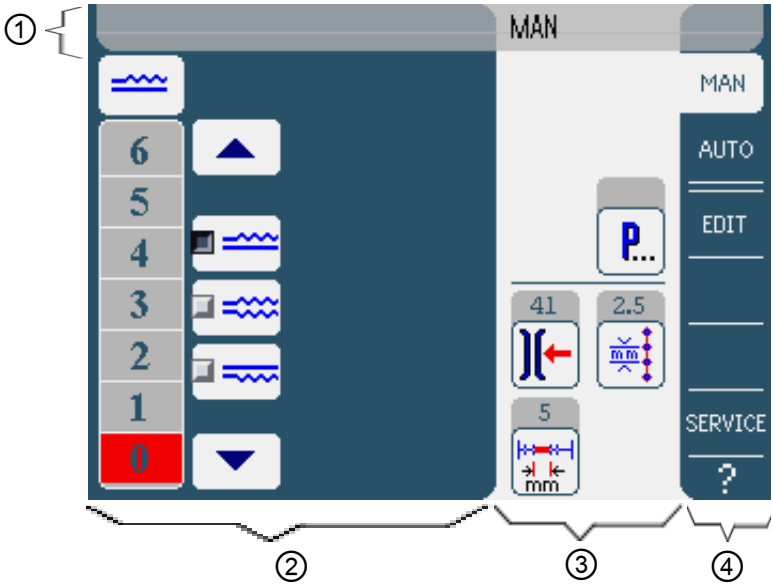
Meaning of the buttons

Icons/buttons	Meaning
0 9	Input figures in the text.
a z	Input text.

Icons/buttons	Meaning
	Input a hyphen.
	Input an underscore.
	Exit the user interface without inputting or saving text.
	Input a space.
	Switch between upper and lower case.
	Delete letter/number in the input line.
	Save an input value and exit the user interface.

7.5 Manual mode MAN

Fig. 35: Manual mode MAN



Header (1)

The operating mode **MAN** is displayed.

Left-hand area (2)

Here there are buttons to manually input fullness.

Right-hand area (3)

This is where the icons of all adjustable parameters in manual mode are located. The relevant current values are displayed in the gray fields above the parameter icons.

Right edge (4)

Here you can select other user interfaces or a different operating mode.

7.5.1 Adjustable parameters in MAN mode

The following table describes the adjustable parameters in the manual operating mode **MAN**.

Icons	Meaning
	Set fullness, pg. 75.
	Enter the needle thread tension.
	Enter stitch length in mm.
	Other program parameters in the manual mode **MAN,** pg. 76.

1. Press the desired button.

↳ The user interface for adjusting the desired parameter is displayed.

With some parameters, the setting extends beyond a numerical value. These parameters are explained in the following.

MAN mode **Setting the fullness**

The following table explains the individual icons and buttons for the manual adjustment of fullness.

Icons/buttons	Meaning
	Input fullness Set fullness is displayed by a button marked in red.
	Selection of fullness: • Top (top feed) • Bottom (bottom feed) • Top and bottom (differential between top and bottom feed). The selected fullness is displayed by an activated control field.
	Display of further buttons used to input fullness. The buttons from 0 to 16 are available for inputting figures.

1. Select type of fullness.

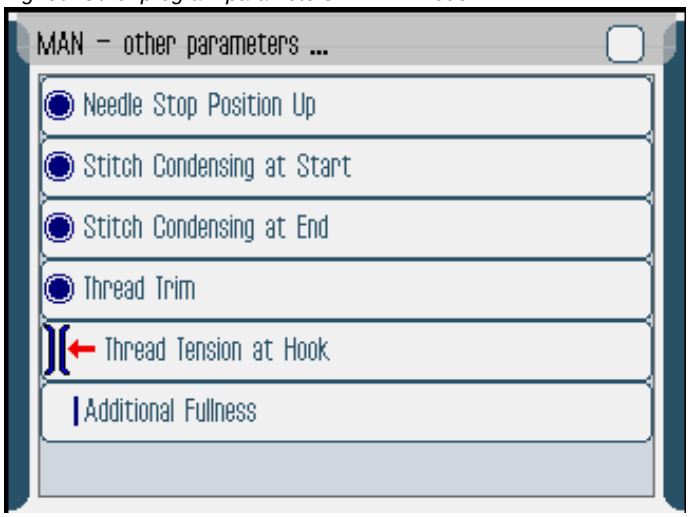
↳ The selected type is displayed by an activated control field in the icon.

2. If a higher or lower fullness is required, display further buttons using the arrow buttons.
3. Input fullness with the buttons **0** to **16**.

MAN mode **Other program parameters**

After pressing the button **Other program parameters**, an overview of all available parameters is displayed.

Fig. 36: Other program parameters in MAN mode

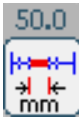


Parameter	Meaning
Needle Stop Position Up	When sewing stops the needle position is up (activated) or down (not activated)
Stitch Condensing at Start	Stitch condensing at start of sewing on (activated) or off (not activated)
Stitch Condensing at End	Stitch condensing at end of sewing on (activated) or off (not activated)
Thread Trim	Thread cutter on/off. Value range: 0, 1
Thread Tension at Hook	Looper thread tension. Value range: 0…99
Additional Fullness	Additional fullness Value range: -50…50 (%)

7.5.2 Sewing process

Sewing without fullness

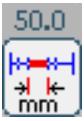
1. Set all fullness values to 0 (🕮 pg. 74).
2. Input values for **needle thread tension** and **stitch length**.
3. Press the foot pedal forwards and sew.



↳ The distance covered in mm is displayed. If the thread is cut, the display is reset.

Sewing with fullness

1. Change desired fullness (🕮 pg. 74).
2. Press the foot pedal forwards and sew.



↳ The distance covered in mm is displayed. If the thread is cut, the display is reset.

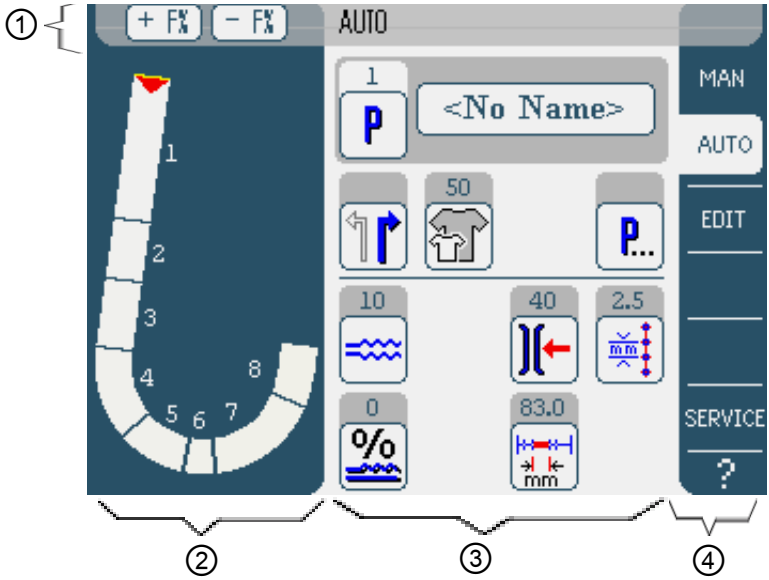
Changing parameters during sewing

1. Bring the foot pedal to position 0.
2. Change desired parameters on the control panel (🕮 pg. 74).
3. Press the foot pedal forwards again and sew.

↳ The changed parameter value is used.

7.6 Automatic mode AUTO

Fig. 37: Automatic mode AUTO



Header (1)

The operating mode **AUTO** is displayed. The buttons **+F%** and **-F%** offer quick access to the setting, fullness correction in %.

Left-hand area (2)

The graphic display of the entire seam is shown here, divided into the programmed number of segments. A red bar with arrow point indicates the sewing direction and the course of the sewn seam.

Right-hand area (3)

This is where the number and name of the selected seam program and the icons of all adjustable parameters are located. The relevant current values are displayed in the gray fields above the parameter icons.

Right edge (4)

Here you can select another user interface or a different operating mode.

7.6.1 Adjustable parameters AUTO

The following table describes the adjustable parameters in the automatic operating mode **AUTO**.

Icons	Meaning
	Program selection, pg. 80
	Select right or left sewing part
	Set the sewing material size, pg. 81
	Other program parameters in automatic mode **AUTO**, pg. 84.
	Set fullness temporarily until the next segment, pg. 82
	Correct fullness in % for all segments, pg. 83
	Adjust the needle thread tension. If the value is changed in automatic mode AUTO, it is saved permanently in the program.
	Set stitch length in mm. If the value is changed in automatic mode AUTO, it is saved permanently in the program.

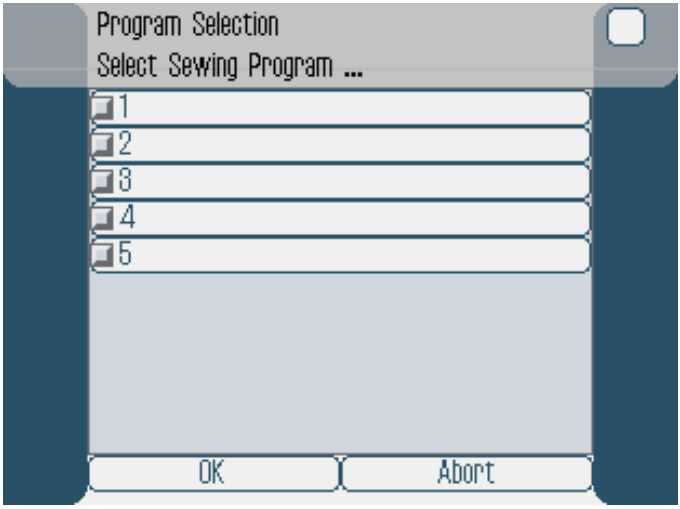
1. Press the desired button.

↳ The user interface for adjusting the desired parameter is displayed.

With some parameters, the setting extends beyond a numerical value. These complex-structured parameters are explained in the following.

AUTO mode **Program selection**

Fig. 38: Program selection parameter



1. Press the desired seam program.

↳ The selected seam program is marked by an activated control field in the line.

2. Press the **OK** button.

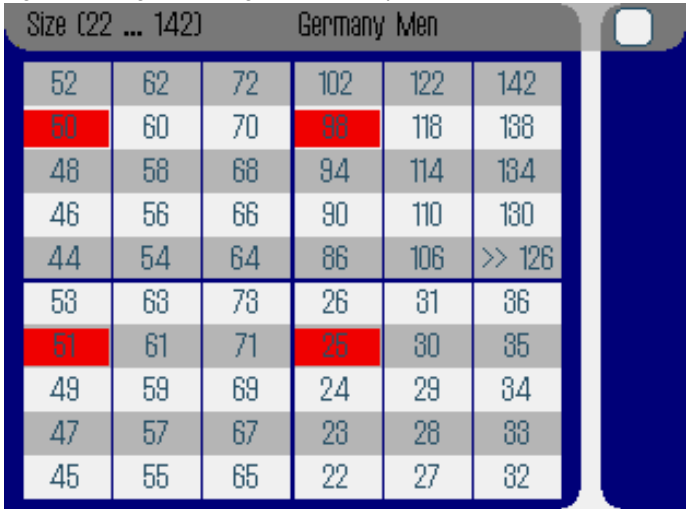
↳ Selected seam program is accepted in automatic mode **AUTO**.

3. Press the **Abort** button in order to cancel the program selection.

↳ If required, the selected seam program is rejected and the user interface of automatic mode **AUTO** is displayed.

AUTO mode **Setting the sewing material size**

Fig. 39: Setting the sewing material size parameter



The following information is displayed:

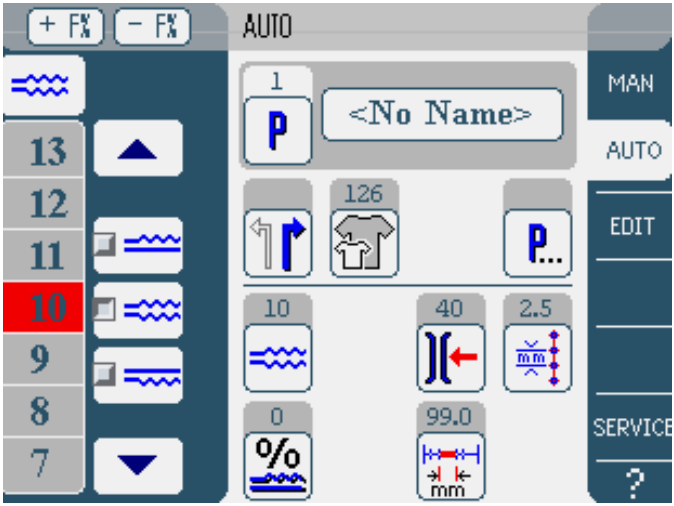
- The currently selected size is marked with a double arrow (>>).
- The sizes marked in red represent the reference sizes for the grading logic.

1. Press the desired sewing material size.

↳ The user interface of automatic mode **AUTO** is displayed.

AUTO mode **Correct fullness temporarily until the next segment**

Fig. 40: Correct fullness temporarily parameter



The area on the left contains buttons used to manually input fullness.

Icons/buttons	Meaning
	Input fullness Set fullness is displayed by a button marked in red.
	Select type of fullness: • Top (top feed) • Bottom (bottom feed) • Top and bottom (differential between top and bottom feed) The selected fullness is displayed by an activated control field.
	Display of further buttons used to input fullness. The buttons from 0 to 16 are available for inputting figures.

1. Select type of fullness.

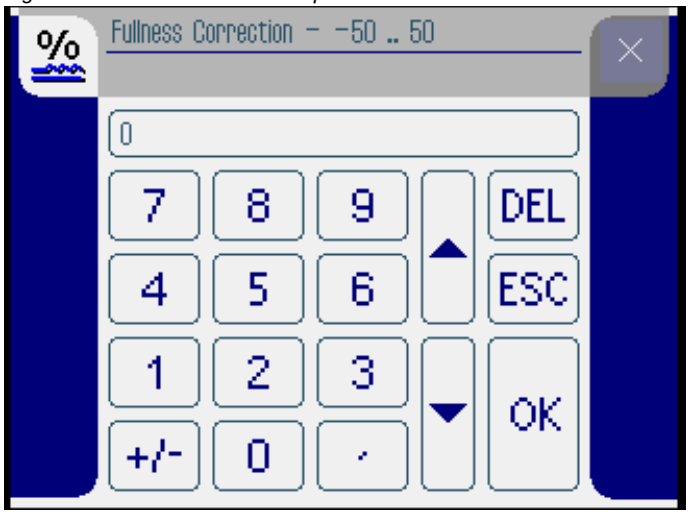
↳ The selected type is displayed by an activated control field in the icon.

2. If a higher or lower fullness is required, display further buttons using the arrow buttons.
3. Input fullness with the buttons **0** to **16**.

The fullness setting remains active until the next segment.

AUTO mode **Correct fullness ratio**

Fig. 41: Fullness correction in % parameter



1. Input the correction value for the fullness as a percentage.

   Information on inputting numerical values: 🕮 pg. 69.

2. Press the **OK** button.

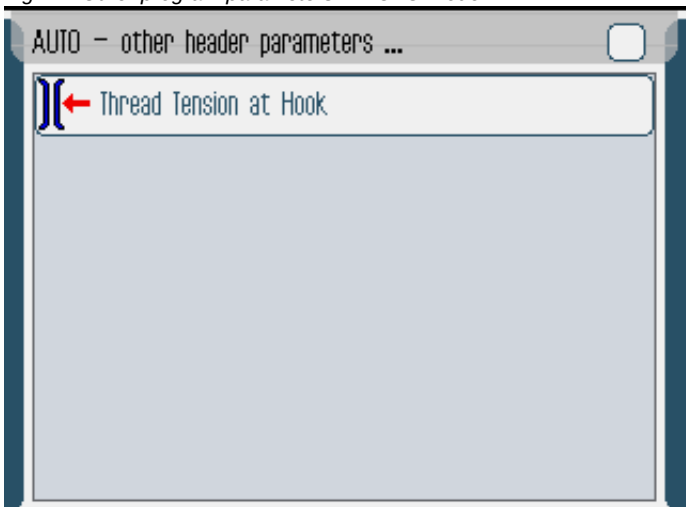
↳ Correction value is saved and the preceding user interface is displayed again.

If the new correction value is changed in automatic mode AUTO, it remains active until the next time the program is changed.

AUTO mode **Other program parameters**

After pressing the button **Program parameters**, an overview of all available parameters is displayed.

Fig. 42: Other program parameters in AUTO mode



Parameter	Meaning
Thread Tension at Hook	Looper thread tension. Value range: 0…99

7.6.2 Sewing process

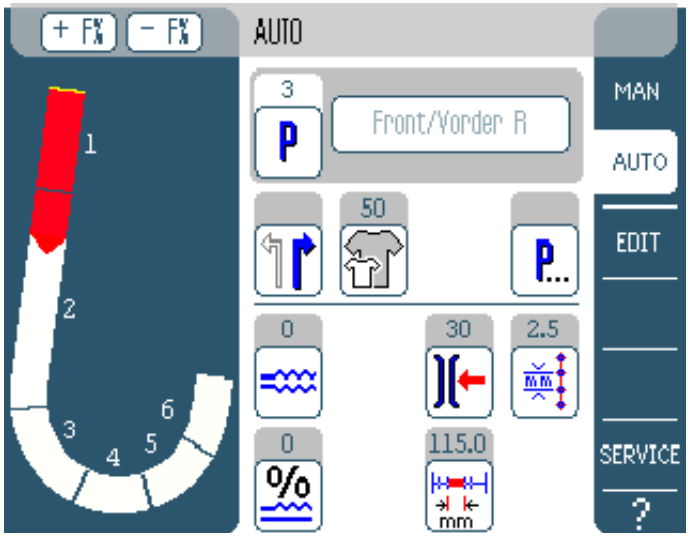
1. Select the seam program, 🕮 pg. 80.

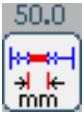
↳ The program number and name of the seam program are displayed on the user interface. If the selected seam program was saved without a name, <No Name> is displayed.

2. Select right or left sewing part.
3. Select the size of the sewing part, 🕮 pg. 81.
4. Press the foot pedal forwards and sew the seam.

↳ In the area on the left, the sewing progress is shown graphically via a red bar.

Fig. 43: Sewn segments and segment in process





↳ The remaining sewing length per segment is also shown.

Quick correction of the fullness before or during sewing

1. Bring the foot pedal to **position 0**.
2. Change the fullness by pressing on the buttons **+F%** and **-F%**.
3. Press the foot pedal forwards again and sew.

↳ The changed fullness is used for sewing and displayed on the control panel.

Changing parameters during sewing

1. Bring the foot pedal to **position 0**.
2. Change desired parameters on the control panel.
3. Press the foot pedal forwards again and sew.

↳ The changed parameter value is used.

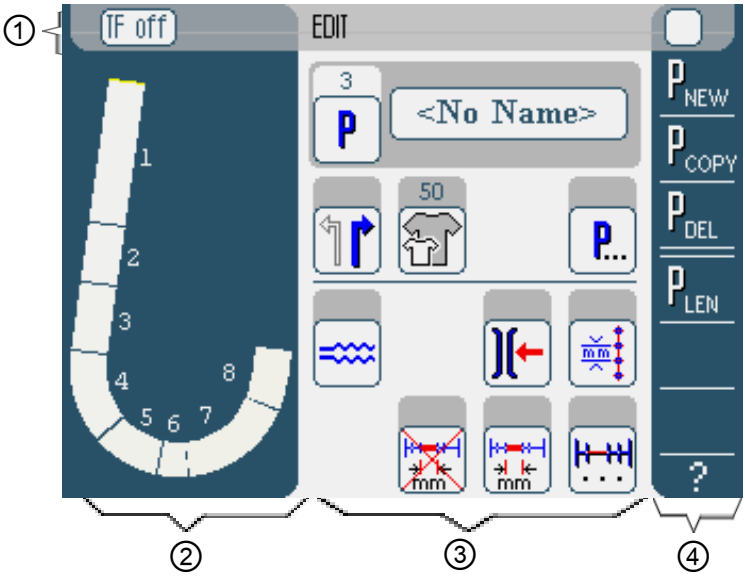
Canceling the seam program

1. Release pedal completely.

↳ The seam program is canceled.

7.7 Programming mode

Fig. 44: Programming mode



Header (1)

The operating mode **EDIT** is displayed. Using the buttons **TF on** or **TF off**, the tape feed is switched on and off (only 610 sewing machine).

Left-hand area (2)

The graphic display of the entire seam is shown here, divided into the programmed number of segments.

Central area (3)

Here existing seam programs can be modified 🕮 pg. 88. The number and the name of the selected seam program and the icons of all adjustable parameters are displayed. The gray fields above the parameter icons display the relevant current values.

Right-hand area (4)

Here new seam programs can be created 🕮 pg. 93, existing seam programs can be deleted, 🕮 pg. 103 copied 🕮 pg. 103 and optimized 🕮 pg. 104 (Length Correction).

7.7.1 Edit existing program (EDIT)

The following table describes the adjustable parameters in the programming mode **EDIT**.

Icons	Meaning
	Edit program names
	In the **EDIT** mode, only one display. The next free channel is automatically assigned to a new program.
	Select right or left sewing part
	Set the sewing material size, 🕮 pg. 89
	Other program parameters in the programming mode **EDIT,** 🕮 pg. 91.
	Set fullness in the current segment, 🕮 pg. 90
	Set needle thread tension in the current segment
	Set stitch length in mm in the current segment
	Switch path measurement on and off in the current segment
	Other segment parameters in the programming mode **EDIT**, 🕮 pg. 92.

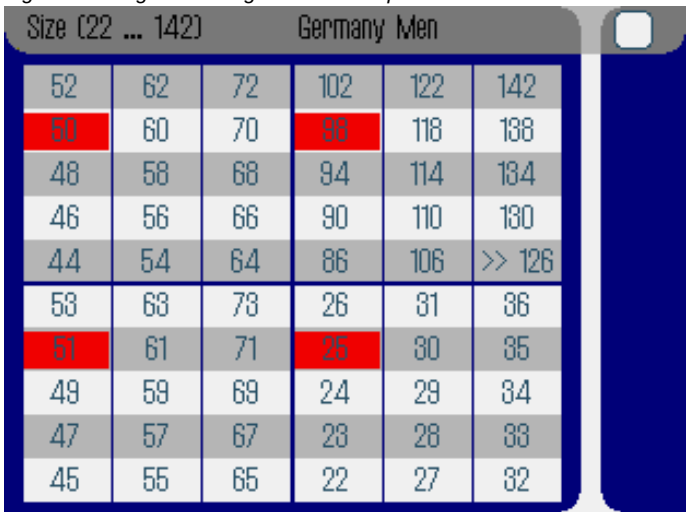
1. Press the desired button.

↳ The user interface for adjusting the desired parameter is displayed.

With some parameters, the setting extends beyond a numerical value. These structured parameters are explained in the following.

EDIT mode **Setting the sewing material size**

Fig. 45: Setting the sewing material size parameter



The following information is displayed:

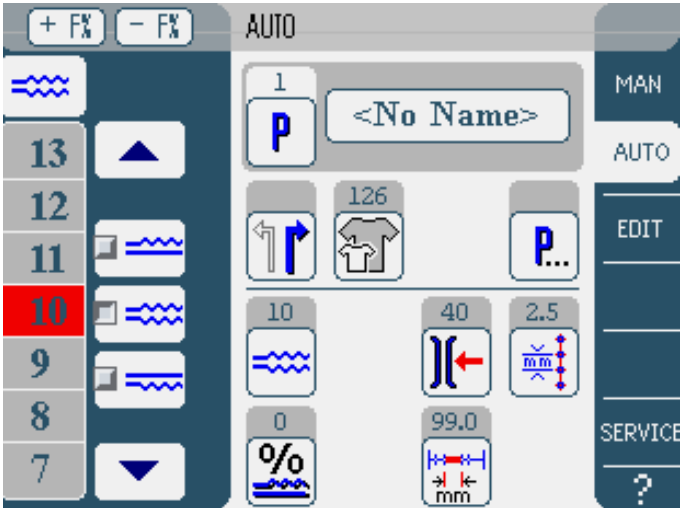
- The currently selected size is marked with a double arrow (>>).
- The sizes marked in red represent the reference sizes for the grading logic.

1. Press the desired sewing material size.

↳ The user interface of the programming mode **EDIT** is displayed.

EDIT mode **Correct fullness in the current segment**

Fig. 46: Correct fullness parameter



The area on the left contains buttons for the manual input of fullness.

Icons/buttons	Meaning
	Input fullness. Set fullness is displayed by a button marked in red.
	Select type of fullness: • Top (top feed) • Bottom (bottom feed) • Top and bottom (differential between top and bottom feed) The selected fullness is displayed by an activated control field.
	Display of further buttons used to input fullness. The buttons from 0 to 16 are available for inputting figures.

1. Select type of fullness.

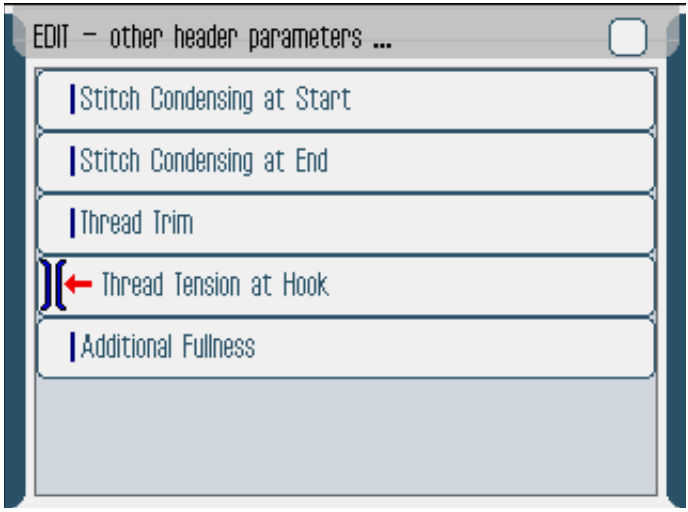
↳ The selected type is displayed by an activated control field in the icon.

2. If a higher or lower fullness is required, display further buttons using the arrow buttons.
3. Input fullness with the buttons **0** to **16**.

EDIT mode **Other program parameters**

After pressing the button **Program parameters**, an overview of all available parameters in **EDIT** mode is first displayed.

Fig. 47: Program parameters in the programming mode EDIT.



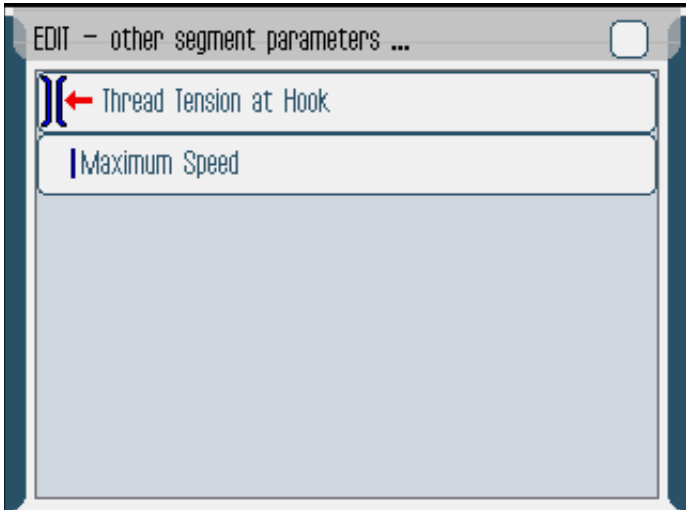
Parameter	Meaning
Stitch Condensing at Start	Stitch condensing at the start of the seam on/off Value range: 0, 1
Stitch Condensing at End	Stitch condensing at the end of the seam on/off Value range: 0, 1

Parameter	Meaning
Thread Trim	Thread cutter on/off Value range: 0, 1
Thread Tension at Hook	Looper thread tension. Value range: 0…99
Additional Fullness	Setting the additional fullness

EDIT mode **Other segment parameters**

After pressing the button **Segment parameters**, an overview of all available parameters is displayed.

Fig. 48: Other segment parameters in the programming mode EDIT



Parameter	Meaning
Thread Tension at Hook	Looper thread tension. Value range: 0…99
Maximum Speed	Sewing speed/speed. Value range: 100…4,000

7.7.2 Create new program (PROGRAMMING)

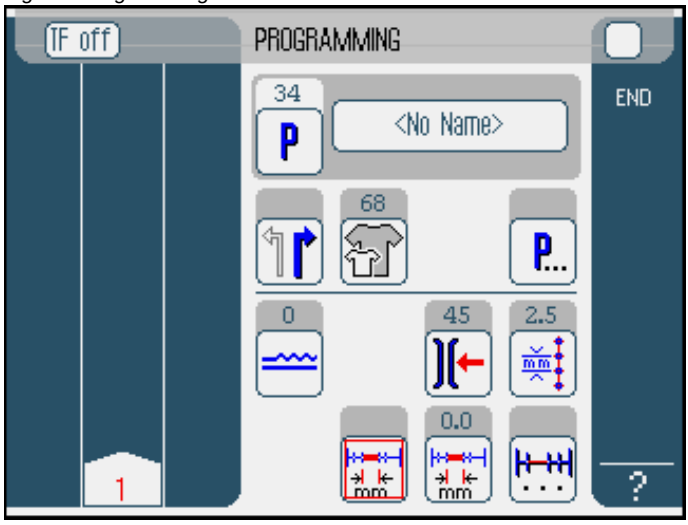
Prerequisite:

- The operating mode **EDIT** is displayed.

1. Press the **P$_{NEW}$** button.

↳ The **PROGRAMMING** user interface is displayed. The number of the next free channel is displayed via the **P** button.

Fig. 49: Programming mode PROGRAMMING



2. Press **<No Name>** and enter name.

   Information on inputting text: 🕮 pg. 71.

If no name is entered for the seam program, <No Name> continues to be displayed.

↳ In the area on the left, the first segment with number is shown.

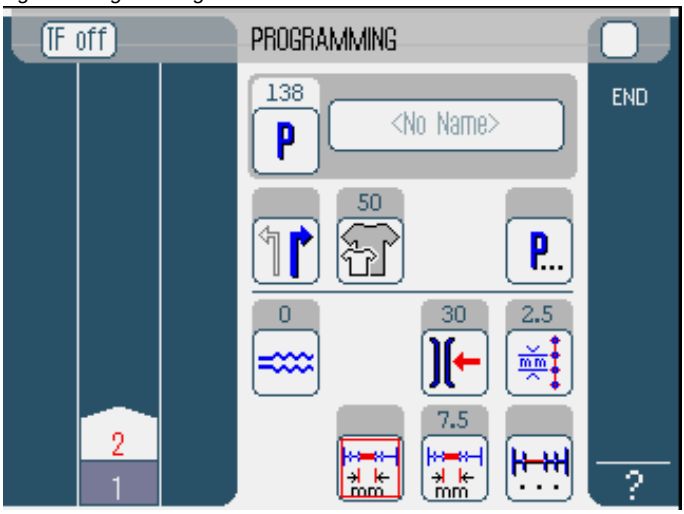
3. All parameters are input for the first segment.
4. Using the buttons **TF on** and **TF off**, set whether the tape feed is switched on or off in the segment (only applies to 610 sewing machine).

All inputs refer only to the relevant segment.

5. Sew the first segment or input the length of the segment by hand via the path measurement parameter.
6. Choose the next segment by pressing on the number of the first segment or the knee switch.

↳ In the area on the left, the second segment with number is shown.

Fig. 50: Programming mode PROGRAMMING continued



7. Repeat step 2, until all segments are programmed.
8. When all segments are programmed, press button **END** or cut thread.

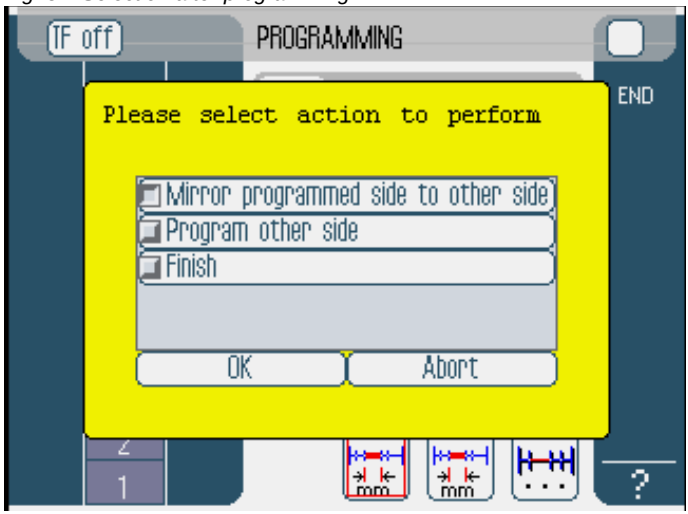
↳ There are three variants in terms of how the program reacts – depending in the input method used by the operator:

Variant	Program display
The last programmed segment was sewn, but not cut, then ended with **END**.	continue with step 9
The last programmed segment was sewn and cut.	continue with step 10
All segments were input manually and ended with **END**.	continue with step 10

9. If the thread was not cut after sewing, this message appears: Cut thread.

↳ The message disappears and the selection window appears.

Fig. 51: Selection after programming



10. Select whether the new seam program is to be mirrored for the other side of the sewing material (Mirror programmed side to other side), programmed for the other side of the sewing material (Program other side) or whether the programming is to be ended (Finish).
11. Select the desired function.

↳ The selected function is represented by an activated control field.

12. Press the **OK** button.

↳ Seam program is saved. Depending on the selected function, you are presented with different interfaces:

Function	Interface
Mirror programmed side to other side	AUTO mode
Program other side	PROGRAMMING mode
Finish	AUTO mode

↳ By pressing the **Abort** button, the selection window is closed and the **AUTO** user interface is displayed again. All data input is then deleted!

Adjustable parameters

The following table describes the adjustable parameters in the programming mode **PROGRAMMING**.

Icons	Meaning
	Input program names.
	In the **PROGRAMMING** mode, only one display. The next free channel is automatically assigned to a new program.
	Select right or left sewing part
	Set the sewing material size, 🕮 pg. 98
	Other program parameters in the programming mode **PROGRAMMING,** 🕮 pg. 100.
	Set fullness in the current segment, 🕮 pg. 99
	Set needle thread tension in the current segment

Icons	Meaning
	Set stitch length in mm in the current segment
	Switch path measurement on and off in the current segment
	Other segment parameters in the programming mode **PROGRAMMING**, 🕮 pg. 102

1. Press the desired button.

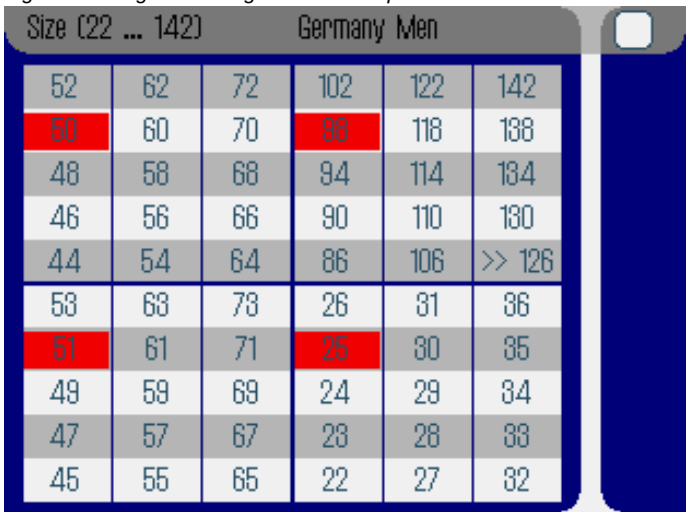
↳ The user interface for adjusting the desired parameter is displayed.

With some parameters, the setting extends beyond a numerical value. These structured parameters are explained in detail in the following.

PROGRAMMING mode

Setting the sewing material size

Fig. 52: Setting the sewing material size parameter



The following information is displayed:

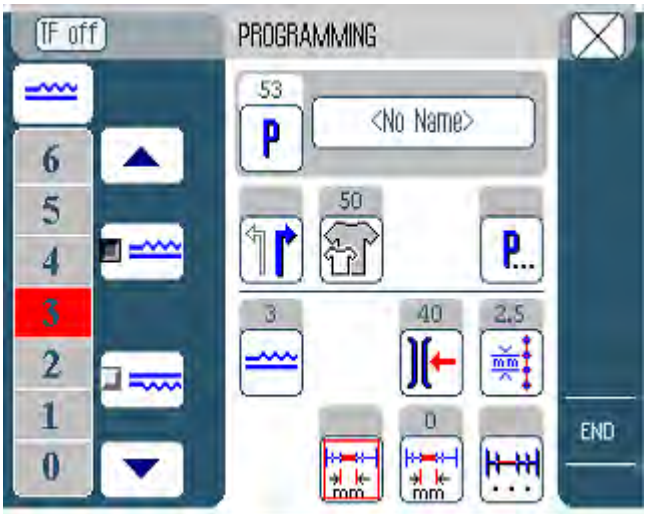
- The currently selected size is marked with a double arrow (>>).

1. Select size system in the area on the right.
2. Press the desired sewing material size.

↳ The user interface of the programming mode **PROGRAMMING** is displayed.

PROGRAMMING mode **Setting the fullness**

Fig. 53: Set fullness parameter



The area on the left contains buttons for the manual input of fullness.

Icons/buttons	Meaning
	Input fullness. Set fullness is displayed by a button marked in red.
	Select type of fullness: • Top (top feed) • Bottom (bottom feed) • Top and bottom (differential between top and bottom feed) The selected fullness is displayed by an activated control field.
	Display of further buttons used to input fullness. The buttons from 0 to 16 are available for inputting figures.

1. Select type of fullness.

↳ The selected type is displayed by an activated control field in the icon.

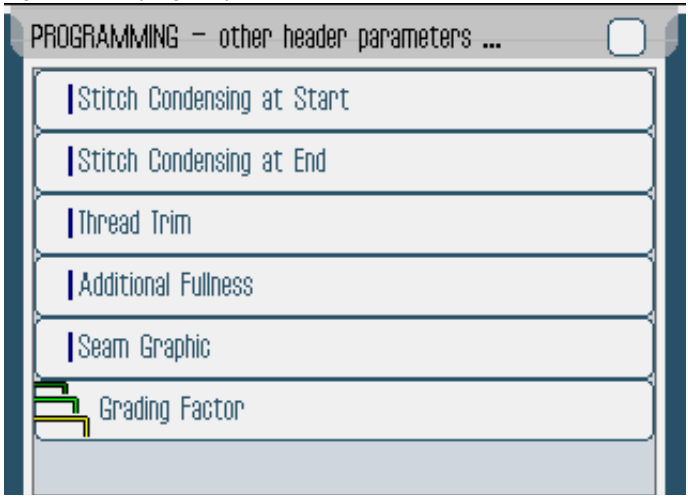
2. If a higher or lower fullness is required, display further buttons using the arrow buttons.
3. Input fullness with the buttons **0** to **16**.

PROGRAMMING mode

Other program parameters

After pressing the button **Other program parameters**, an overview of all available parameters is displayed.

Fig. 54: Other program parameters



Parameter	Meaning
Stitch Condensing at Start	Bartack at start of seam. Value range: on/off
Stitch Condensing at End	Bartack at end of seam. Value range: on/off
Thread Trim	Thread cutter on/off. Value range: 0, 1

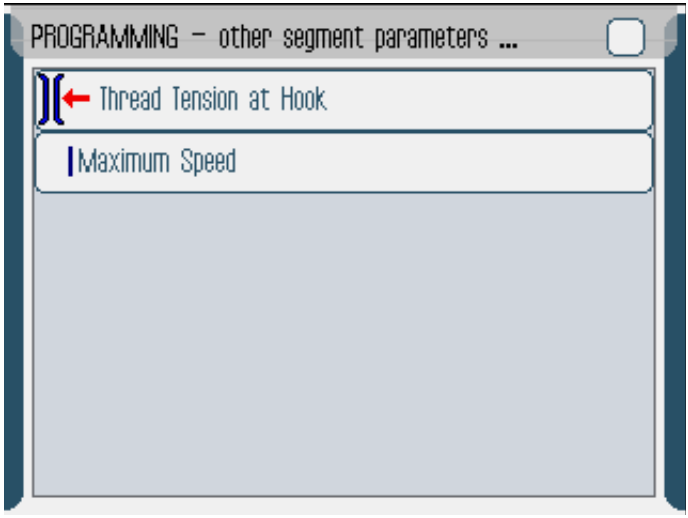
Parameter	Meaning
Additional Fullness	Additional fullness Value range: -50…50 (%)
Seam Graphic	Seam appearance. 1 = Ellipsis 2 = Front part, looper 3 = Back part, looper
Grading Factor	Grading factor. Value range: 0.0…6.0 (% per size)

PROGRAMMING mode

Other segment parameters

After pressing the button **Other segment parameters**, an overview of all available parameters is displayed.

Fig. 55: Other segment parameters



Parameter	Meaning
Thread Tension at Hook	Looper thread tension. Value range: 0…99
Maximum Speed	Sewing speed/speed. Value range: 100…4,000

7.7.3 Copying a seam program

Prerequisite:

- The operating mode **EDIT** is displayed.

1. Select the seam program, 📖 pg. 80.
2. 

Press the **P_{COPY}** button.

↳ Seam program is copied and saved on the next free channel. A message to that effect is displayed.

7.7.4 Deleting a seam program

Prerequisite:

- The operating mode **EDIT** is displayed.

1. Select the seam program, 📖 pg. 80.
2. 

Press the **P_{DEL}** button.

↳ A message asking whether the active seam program is to be deleted is displayed.

3. Confirm deletion by pressing the **Yes** button.

Seam program is deleted. A message to that effect is displayed.

7.7.5 Correcting length (LENGTH CORRECTION)

All segments are graded with the same factor. In some segments it is important for the quality of the result that the grading be increased or decreased. In order to eliminate these localized deviations, you can use the length correction function.

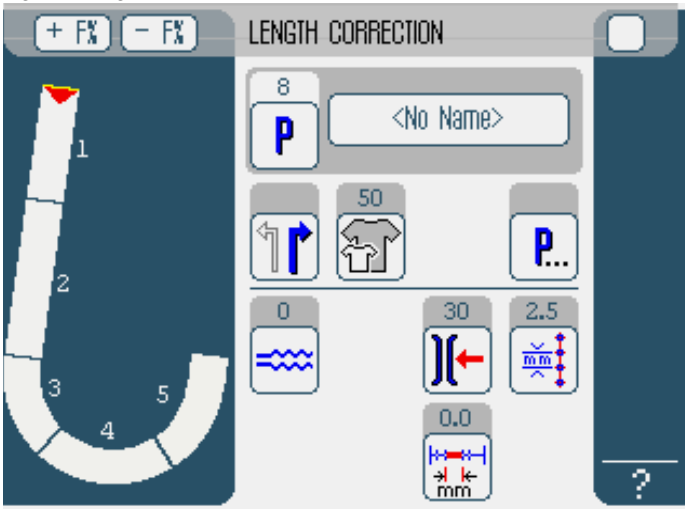
Prerequisite:

- The operating mode **EDIT** is displayed.

1. Press the **P_{LEN}** button.

↳ The length correction user interface is displayed.

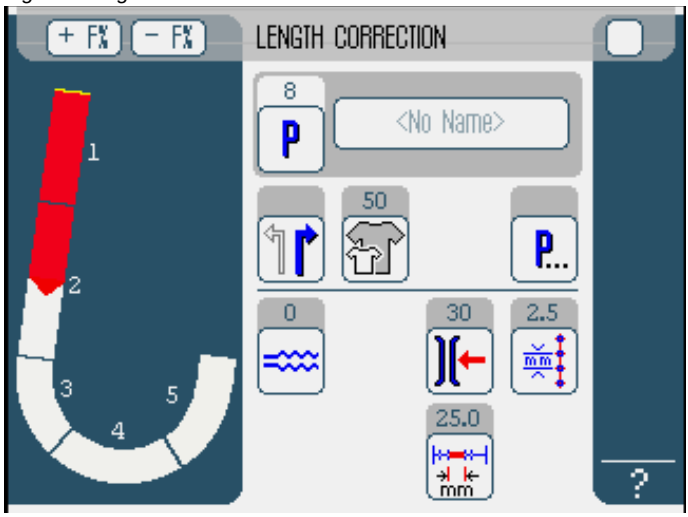
Fig. 56: Length correction interface



2. Sew the segment.
3. Switch to the next segment by hand on the control panel or using the knee switch.

↳ Sewing progress is displayed graphically.

Fig. 57: Length correction continued



4. Proceed in this manner for all other segments.
5. After the last segment, press the **END** button.

↳ Length correction is completed, the **EDIT** programming mode opens.

7.8 Service mode SERVICE

In service mode, there are functions that can be used for servicing work.

Service mode is password-protected, in order to avoid unintentionally making incorrect machine settings.

More precise information on the contents of service mode are provided in 🕮 *Service Instructions*.

8 Decommissioning

A number of activities must be performed if the sewing machine is to be shut down for a prolonged period of time or be completely decommissioned.

WARNING

Risk of injury due to a lack of care.
A lack of care or a lack of sufficient technical knowledge when decommissioning the sewing machine can result in serious injuries.

- ONLY clean the sewing machine when it is switched off.
- Avoid contact with oil residues.
- Allow ONLY trained personnel to disconnect the machine.

Decommission the sewing machine as follows:

1. Switch off the main switch.
2. Turn the compressed-air shut-off valve to the right into the horizontal position.
3. Unplug the power plug.
4. Disconnect the pneumatic connection.
5. Cover the control panel to protect it from soiling.
6. Cover the entire sewing machine if possible to protect it from soiling and damage.

9 Packing, transportation

The aspects relating to packing and transportation are described below. Keep to the procedure described here to ensure fault-free operation of the machine.

Transport securing devices

The transport securing devices must be re-fitted in order to protect the sewing machine from damage during transport.

Packing

WARNING

Risk of injury due to the machine's own weight and packaging materials.

Contact with the packaging materials without wearing appropriate protective clothing can result in serious injuries.

ALWAYS wear gloves and safety shoes when packing the machine.

ALWAYS watch out for sharp edges on clamps, paper and packing straps.

Pack the sewing machine so that it cannot slip or fall over. Use a stable base and fasten the sewing machine to this. Furthermore, protect the sewing machine from external damage.

Transportation

WARNING

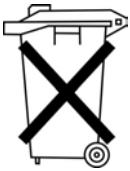
Danger of crushing due to unstable transport.

Incorrect transport of the sewing machine can result in severe crushing injuries.

- ALWAYS use a sturdy lifting carriage.
- ALWAYS wear safety shoes and gloves.
- Raise the sewing machine a maximum of 20 mm.
- Always securely fasten the sewing machine.

Ensure the highest possible degree of safety when transporting the sewing machine. Fasten the sewing machine and wear the prescribed safety clothing.

10 Disposal



The machine must not be disposed of in normal household waste.

The machine must be disposed of in an appropriate and correct manner according to the national regulations.

ATTENTION

Risk of environmental damage due to incorrect disposal.

Incorrect disposal of the machine can result in severe environmental damage.

ALWAYS observe the legally prescribed regulations for disposal.

When disposing of the machine, be aware that it consists of a range of different materials (steel, plastic, electronic components, etc.). Observe the applicable national regulations for disposal.

11 Appendix

Fig. 58: Wiring diagram 610-01/630-01, Sheet 1

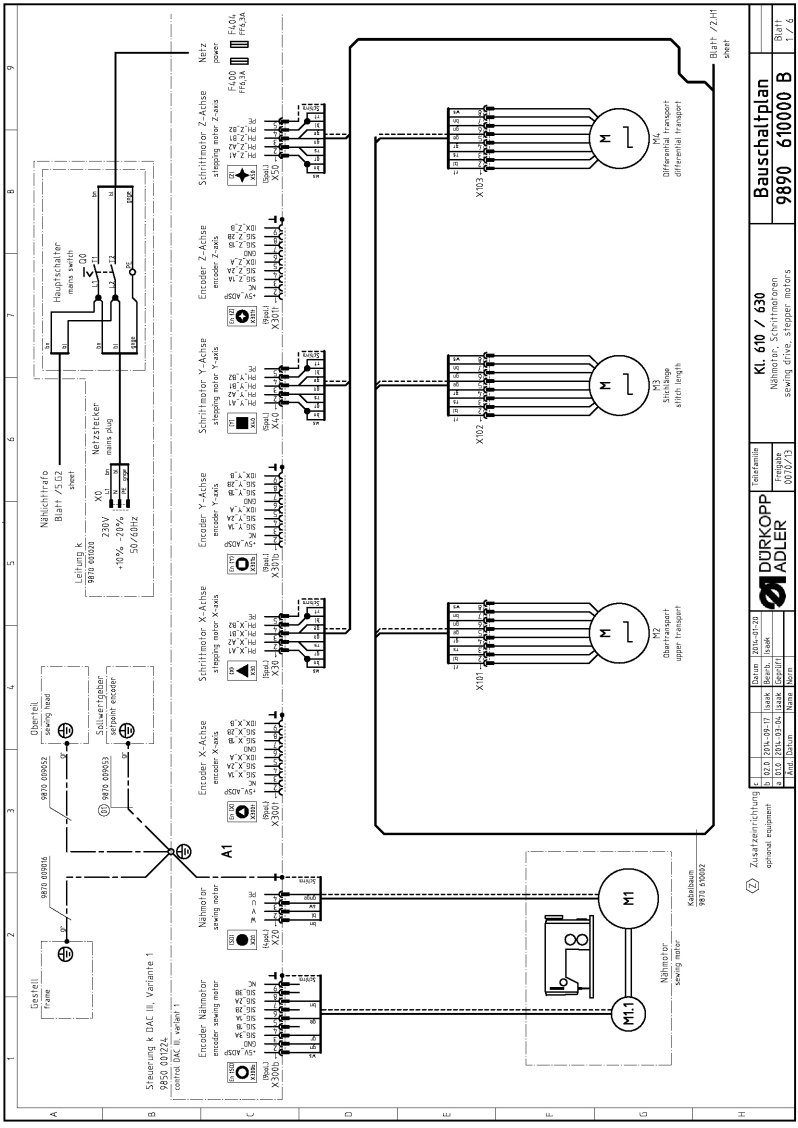


Fig. 59: Wiring diagram 610-01/630-01, Sheet 2

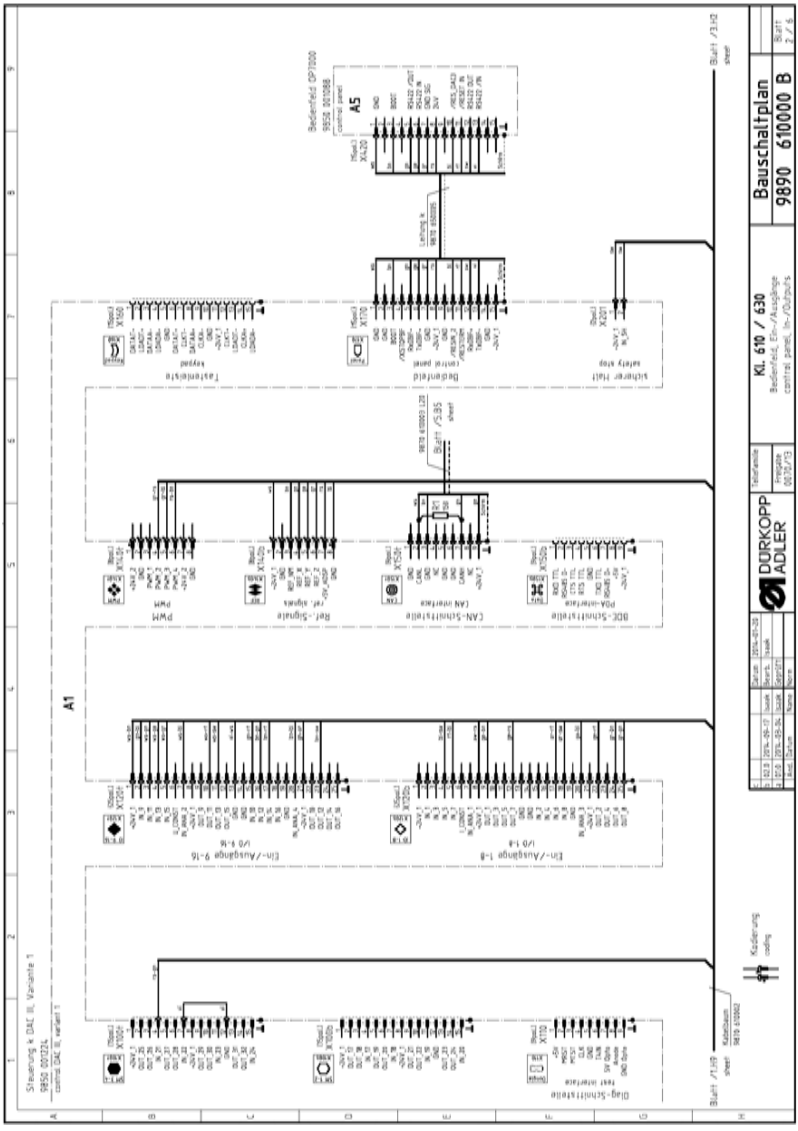


Fig. 60: Wiring diagram 610-01/630-01, Sheet 3

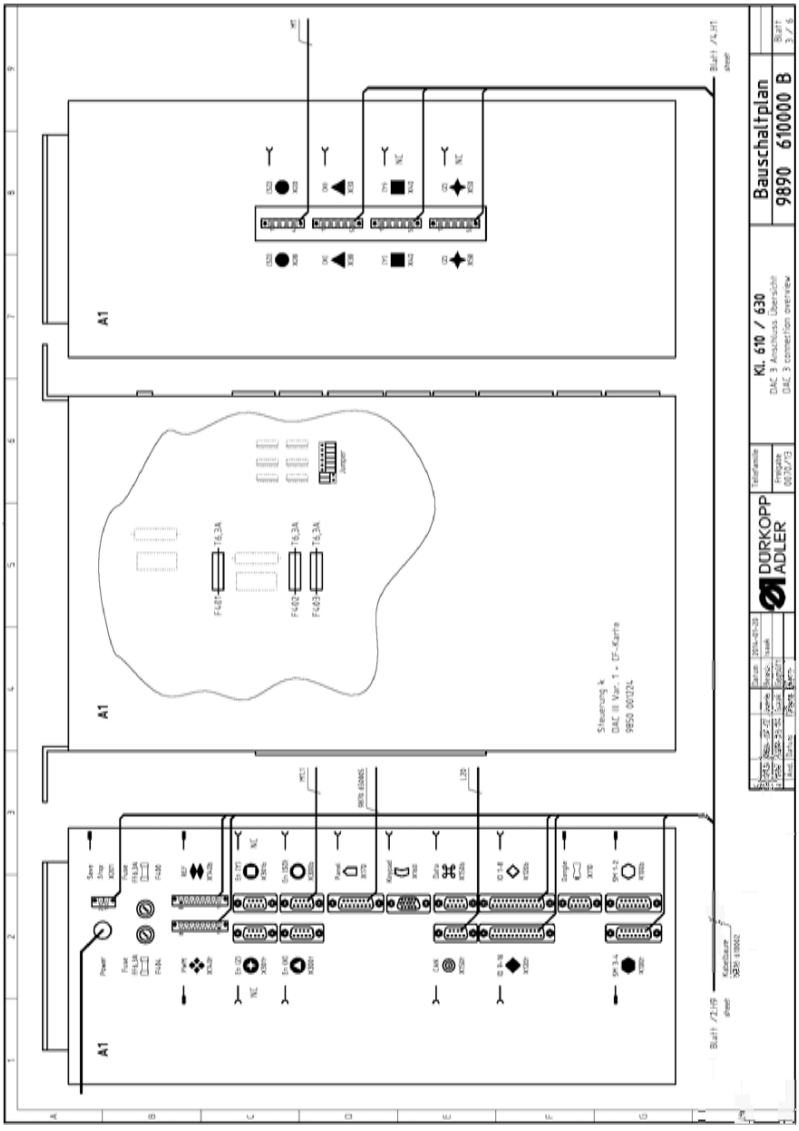


Fig. 61: Wiring diagram 610-01/630-01, Sheet 4

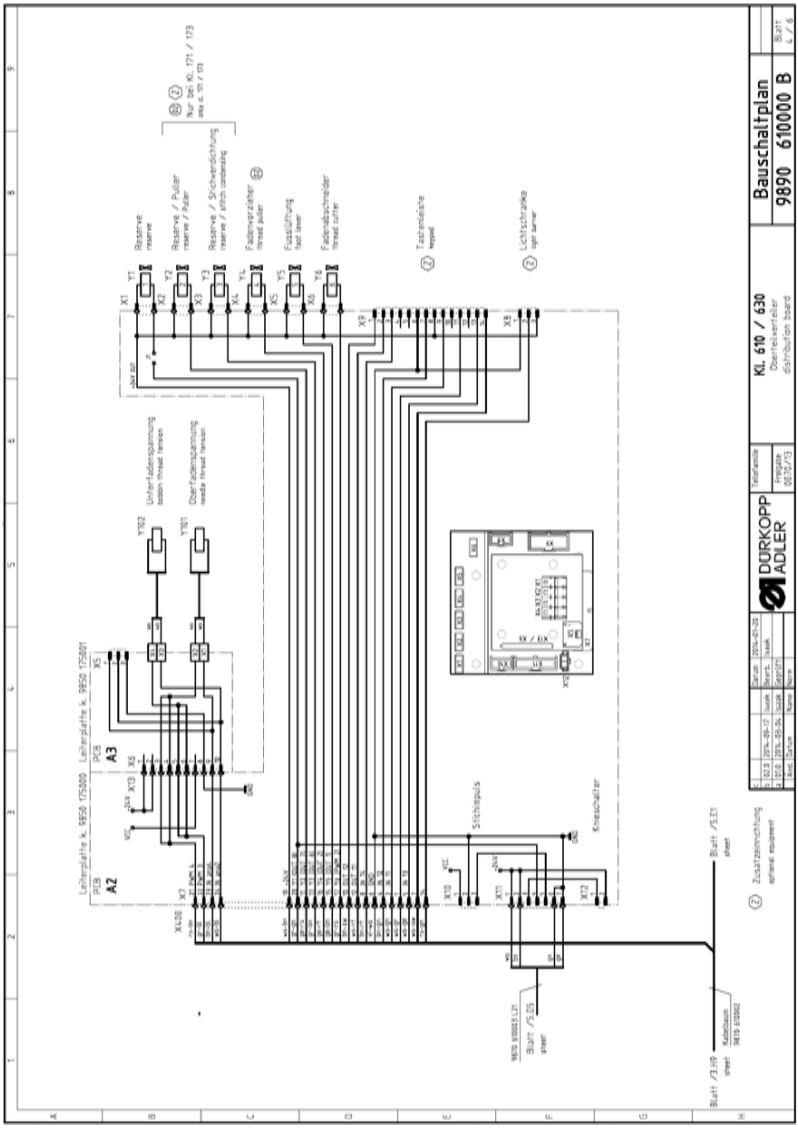


Fig. 62: Wiring diagram 610-01/630-01, Sheet 5

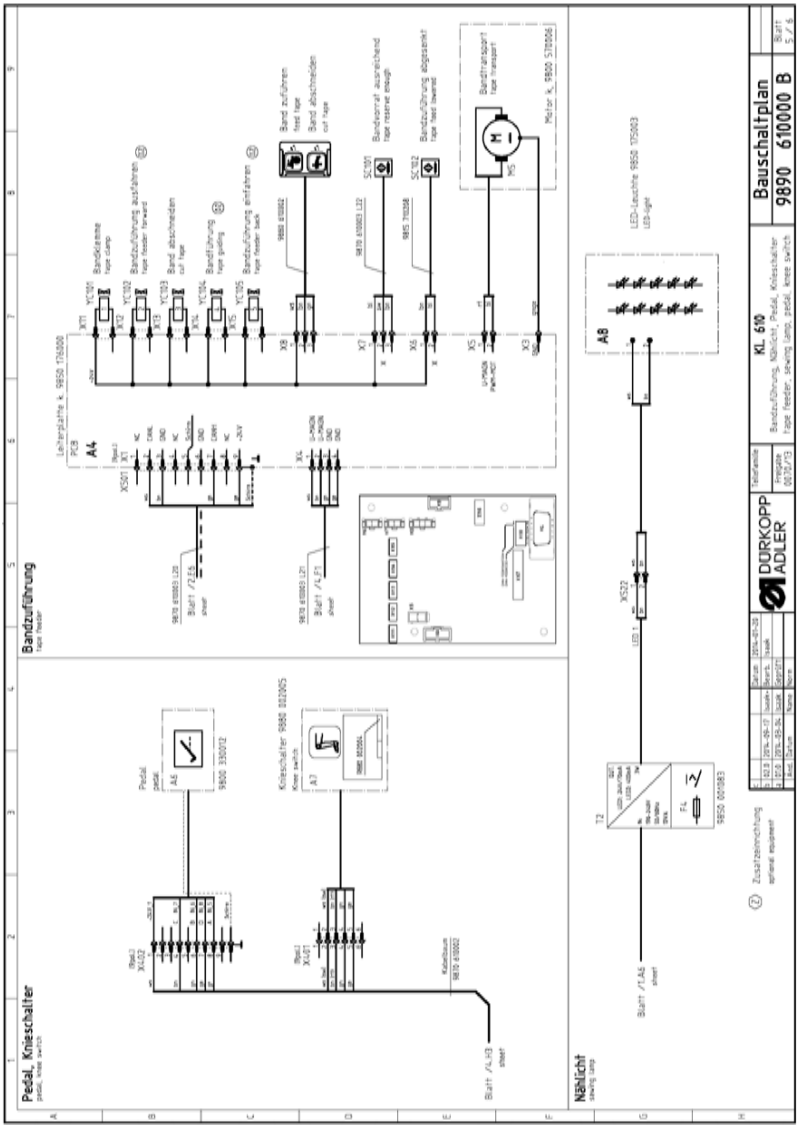
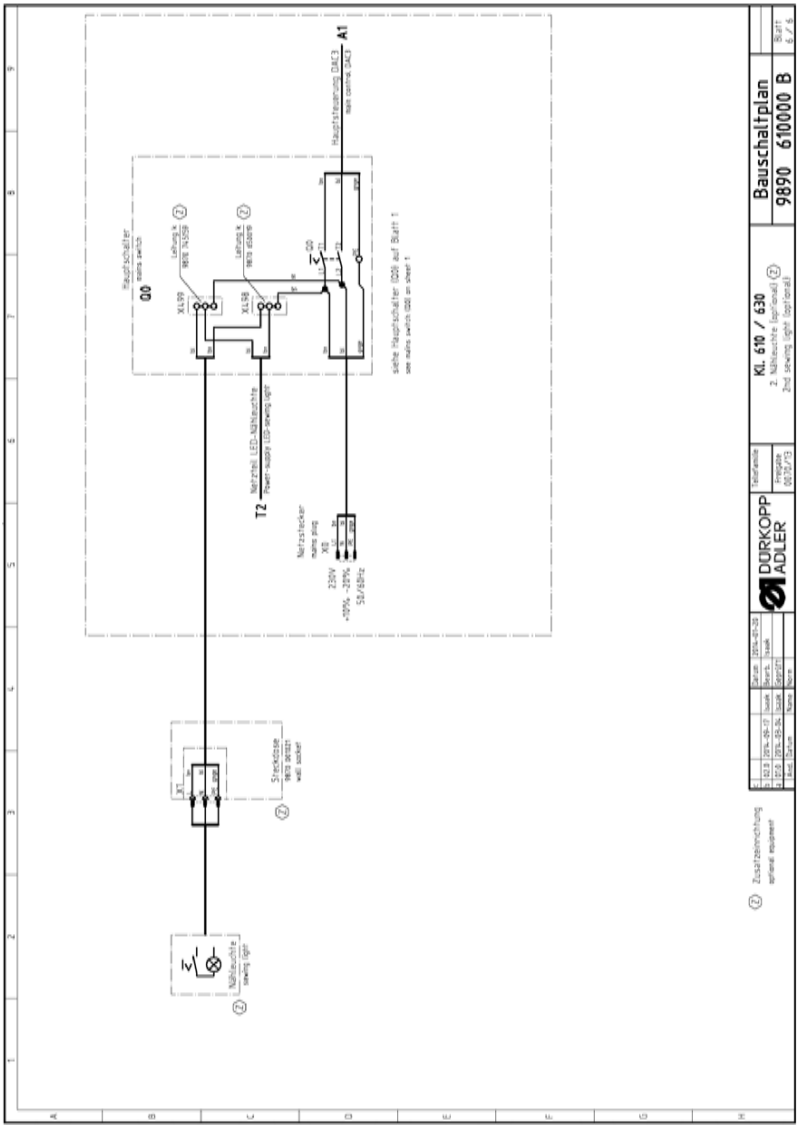


Fig. 63: Wiring diagram 610-01/630-01, Sheet 6



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Subject to design changes - Part of the machines shown with additional equipment - Printed in Germany