DÜRKOPP ADLER

877-M PREMIUM

Operating Instructions

IMPORTANT

READ CAREFULLY BEFORE USE

KEEP FOR FUTURE REFERENCE

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1 About these instructions

These instructions have been prepared with utmost care.
They contain information and notes intended to ensure long-term and reliable operation.

Should you notice any discrepancies or if you have improvement requests, then we would be glad to receive your feedback through **Customer Service** (🕮 *p. 183*).

Consider these instructions as part of the product and keep it easily accessible.

1.1 For whom are these instructions intended?

These instructions are intended for:

- Operators:
  This group is familiar with the machine and has access to the instructions. Specifically, chapter **Operation** (🕮 *p. 19*) is important for the operators.
- Specialists:
  This group has the appropriate technical training for performing maintenance or repairing malfunctions. Specifically, the chapter **Setup** (🕮 *p. 155*) is important for specialists.

Service Instructions are supplied separately.

With regard to minimum qualification and other requirements to be met by personnel, please also follow the chapter **Safety** (🕮 *p. 9*).

1.2 Representation conventions – symbols and characters

Various information in these instructions is represented or highlighted by the following characters in order to facilitate easy and quick understanding:

Proper setting

Specifies proper setting.

Disturbances

Specifies the disturbances that can occur from an incorrect adjustment.

Cover

Specifies which covers must be disassembled in order to access the components to be set.

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

Steps to be performed for service, maintenance, and installation

Steps to be performed via the software control panel

The individual steps are numbered:

1. First step
2. Second step

... The steps must always be followed in the specified order.

- Lists are marked by bullet points.

Result of performing an operation

Change to the machine or on the display/control panel.

Important

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

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

Order

Specifies the work to be performed before or after an adjustment.

References

Reference to another section in these instructions.

Safety Important warnings for the user of the machine are specifically marked. Since safety is of particular importance, hazard symbols, levels of danger and their signal words are described separately in the chapter **Safety** (*p. 9*).

Location information If no other clear location information is used in a figure, indications of **right** or **left** are always from the user's point of view.

1.3 Other documents

The machine includes components from other manufacturers. Each manufacturer has performed a hazard assessment for these purchased parts and confirmed their design compliance with applicable European and national regulations. The proper use of the built-in components is described in the corresponding manufacturer's instructions.

1.4 Liability

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

Dürkopp Adler cannot be held liable for any damage resulting from:

- Breakage and transport damages,
- Failure to observe these instructions,
- Improper use,
- Unauthorized modifications to the machine,
- Use of untrained personnel,
- Use of unapproved spare parts.

Transport

Dürkopp Adler cannot be held liable for breakage and transport damages. Inspect the delivery immediately upon receiving it. Report any damage to the last transport manager.
This also applies if the packaging is not damaged.

Leave machines, equipment and packaging material in the condition in which they were found when the damage was discovered. This will ensure any claims against the transport company.

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

2 Safety

This chapter contains basic information for your safety. Read the instructions carefully before setting up or operating the machine. Failure to do so can result in serious injury and property damage.

2.1 Basic safety instructions

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

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

Work on live components and equipment is prohibited. Exceptions are defined in the 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 workstation
- Performing maintenance work and repairs
- Threading

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

Transport Use a lifting carriage or stacker to transport the machine. Raise the machine max. 20 mm and secure it to prevent it from slipping off.

Setup The connecting cable must have a power plug approved in the relevant country. The power plug may only be assembled to the power cable by qualified specialists.

Operator's obligations Follow the country-specific safety and accident prevention regulations and the legal regulations concerning industrial safety and the protection of the environment.

All the warnings and safety signs on the machine must always be in legible condition. Do not remove!
Missing or damaged warnings and safety signs must be replaced immediately.

Requirements to be met by the personnel

Only qualified specialists may be used for:

- Setting up the machine
- Performing maintenance work and repairs
- Performing work on electrical equipment

Only authorized persons may work on the machine and must first have understood these instructions.

Operation

Inspect the machine for any externally visible damage during use. Stop working if you notice any changes to the machine. Report any changes to your supervisor. Do not use a damaged machine any further.

Safety equipment

Safety equipment should not be disassembled or deactivated. If it is essential to disassemble or deactivate safety equipment for a repair operation, it must be assembled and put back into operation immediately afterward.

2.2 Signal words and symbols used in warnings

Warnings in the text are distinguished by color bars.
The color scheme is based on the severity of the danger.
Signal words indicate the severity of the danger.

Signal words

Signal words and the hazard they describe:

Signal word	Meaning
DANGER	(with hazard symbol) If ignored, fatal or serious injury will result
WARNING	(with hazard symbol) If ignored, fatal or serious injury can result

CAUTION	(with hazard symbol) If ignored, moderate or minor injury can result
CAUTION	(with hazard symbol) If ignored, environmental damage can result
NOTICE	(without hazard symbol) If ignored, property damage can result

Symbols The following symbols indicate the type of danger to personnel:

Symbol	Type of danger
	General
	Electric shock
	Puncture
	Crushing
	Environmental damage

Examples Examples of the layout of warnings in the text:

DANGER

Type and source of danger!
Consequences of non-compliance.
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 ignored.

WARNING

Type and source of danger!
Consequences of non-compliance.
Measures for avoiding the danger.

↳ This is what a warning looks like for a hazard that could result in serious or even fatal injury if ignored.

CAUTION

Type and source of danger!
Consequences of non-compliance.
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 ignored.

NOTICE

Type and source of danger!

Consequences of non-compliance.

Measures for avoiding the danger.

↳ This is what a warning looks like for a hazard that could result in property damage if ignored.

CAUTION

Type and source of danger!

Consequences of non-compliance.

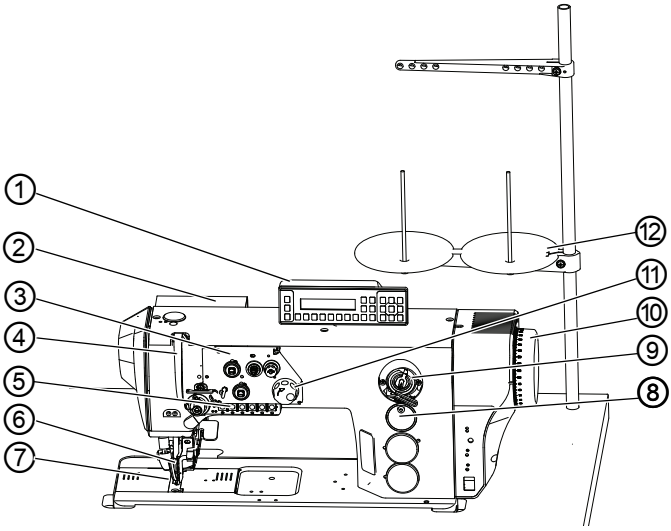
Measures for avoiding the danger.

↳ This is what a warning looks like for a hazard that could result in environmental damage if ignored.

3 Machine description

3.1 Components of the machine

Fig. 1: Components of the machine



(1) - Control panel OP3000
(2) - Cutout
(3) - Tensioning plate
(4) - Thread lever
(5) - Push buttons on the machine arm
(6) - Roller foot with needle
(7) - Hook (under the throat plate)
(8) - Oil level indicator
(9) - Winder
(10) - Handwheel
(11) - Electronic jog dial
(12) - Reel stand

3.2 Proper use

WARNING

Risk of injury from live, moving and cutting parts as well as from sharp parts!

Improper use can result in electric shock, crushing, cutting and punctures.

Follow all instructions provided.

NOTICE

Non-observance will lead to property damage!

Improper use can result in material damage at the machine.

Follow all instructions provided.

The machine may only be used with sewing material that satisfies the requirements of the specific application at hand.

The machine is intended only for use with dry sewing material. The sewing material must not contain any hard objects.

The needle thicknesses permissible for the machine are listed in the **Technical data** (📖 *p. 187*) chapter.

The seam must be completed with a thread that satisfies the requirements of the specific application at hand.

The machine is intended for industrial use.

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

Only authorized persons may work on the machine.

Dürkopp Adler cannot be held liable for damages resulting from improper use.

3.3 Declaration of Conformity

The machine complies with European regulations ensuring health, safety, and environmental protection as specified in the declaration of conformity or in the declaration of incorporation.

CE

4 Operation

4.1 Preparing the machine for operation

WARNING

Risk of injury from moving, cutting and sharp parts!

Crushing, cutting and punctures are possible.

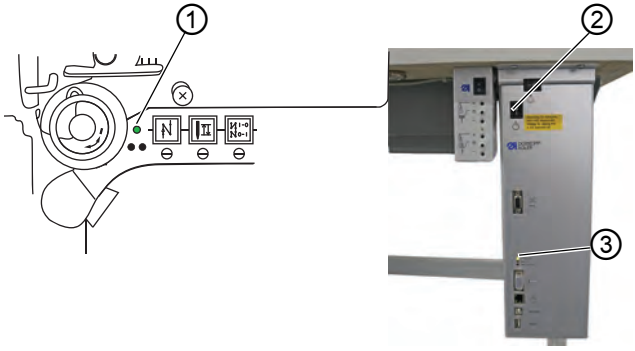
If possible, make preparations only when the machine is switched off.

Complete the following steps in preparation of sewing before starting to work:

- Inserting or changing the needle
- Threading the needle thread
- Threading or winding the hook thread
- Adjusting the thread tensions

4.2 Switching on and off the machine

Fig. 2: Switching on and off the machine



(1) - Indicator LED
(2) - Switch
(3) - POWER LED

Switching on the machine

To switch on the machine:

1. Press the switch (2) to the **I** position.

↳ The indicator LED (1) and the POWER LED (3) illuminate.

Switching off the machine

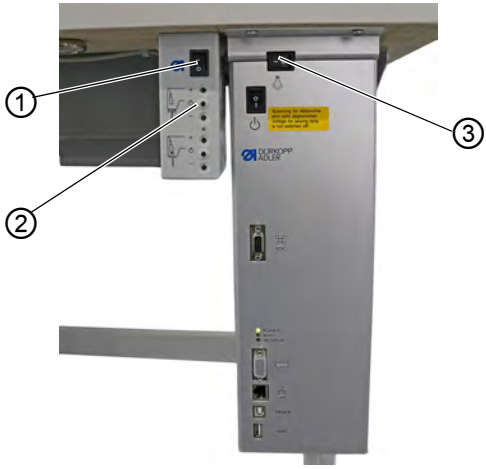
To switch off the machine:

1. Press the switch (2) to the **O** position.
2. The indicator LED (1) and the POWER LED (3) go out.

4.3 Switching on and off the sewing light

The sewing light switches on and off independent of the main switch.

Fig. 3: Switching on and off the machine



(1) - Switch
(2) - Button
(3) - Switch

Switching on the dimmable sewing light

To switch on the dimmable sewing light:

1. Press the switch (3) to the **I** position.
2. Press the switch (1) to the **I** position.

↳ The dimmable sewing light illuminates.

Press button (2) if the sewing light is not yet illuminated.

Switching off the dimmable sewing light

To switch off the dimmable sewing light:

1. Press switch (1) or (3) to the **O** position.

↳ The dimmable sewing light goes out.

4.4 Inserting or changing the needle

CAUTION

Risk of injury from sharp parts!

Puncture possible.

Switch off the machine before you insert or change the needle.

NOTICE

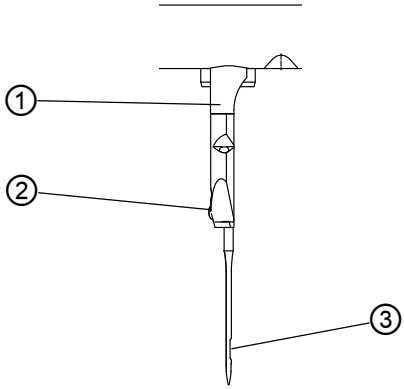
Property damage may occur!

There is a risk of machine damage, needle breakage or thread breaking if the distance between needle and hook tip is incorrect.

Incorrect alignment of the needle can damage the hook tip.

Set the distance to the hook tip after inserting a needle with a different strength.

Fig. 4: Inserting or changing the needle



(1) - Needle bar
(2) - Screw
(3) - Needle groove

1. Turn the handwheel until the needle bar (1) reaches the upper end position.
2. Loosen the screw (2).
3. Pull the needle out towards the bottom.
4. Insert the new needle into the hole in the needle bar (1) until it reaches the end stop.

Important

Align the needle in such a way that the groove (3) faces the hook.

5. Tighten the screw (2).

Order

Always adjust the clearance between the hook and the needle after changing to a different needle strength (📖 *Service Instructions*).

Disturbance

An incorrect hook side clearance can cause the following disturbances:

- Changing to a thinner needle:
  - Skip stitches
  - Thread damage
- Changing to a thicker needle:
  - Damage to the hook tip
  - Damage to the needle

4.5 Threading the needle thread

WARNING

Risk of injury from needle tip and moving parts!
Turn off the sewing machine before threading the thread.

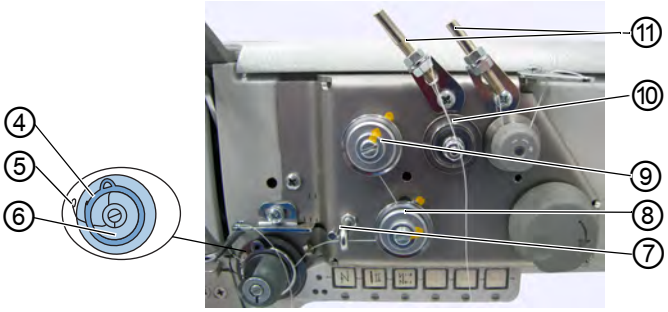
Fig. 5: Threading the needle thread – part 1

(1) - Thread guide
(2) - Reel stand
(3) - Guide on the unwinding bracket

1. Fit the thread reel on the reel stand (2).
2. Insert the thread from the rear to the front through the thread guide on the unwinding bracket (3).
3. Use compressed air to blow the thread through the hose guide (1).

Information
To blow the thread through the hose guide (1) with the help of compressed air, position the compressed air gun together with the end of the thread at the upper end of the hose guide (1). Briefly squeeze the trigger once.

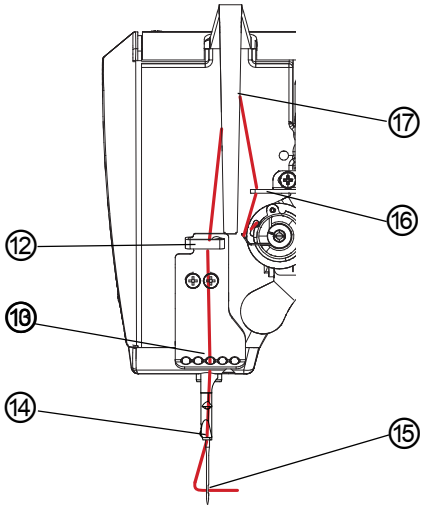
Fig. 6: Threading the needle thread – part 2



(4) - Thread tensioning spring
(5) - Spring arm
(6) - Spring travel limiter
(7) - Guide pin
(8) - Tension 2
(9) - Tension 1
(10) - Pretension
(11) - Thread guide

4. Feed the thread clockwise from the thread guide (11) around the pretension (10).
5. Feed the thread counterclockwise around tension 1 (9).
6. Feed the thread clockwise around tension 2 (8).
7. Feed the thread under the guide pin (7) to the spring travel limiter (6).
8. Lift the thread tensioning spring (4) with the thread.
9. Pull the thread under the spring arm (5).

Fig. 7: Threading diagram for needle thread - part 3



(12) - Upper thread guide
(13) - Upper thread guide
(14) - Thread guide at the needle bar
(15) - Needle eye
(16) - Needle thread regulator
(17) - Thread lever

10. Insert the thread from bottom to top through the hole on the needle thread regulator (16).
11. Insert the thread from the right to the left through the thread lever (17).
12. Insert the thread through the upper thread guide (12).
13. Insert the thread through a hole in the lower thread guide (13).
14. Feed the thread through the thread guide (14) on the needle bar.
15. Insert the thread through the needle eye (15) in such a way that the loose thread end faces the hook.

4.6 Winding on the hook thread

WARNING

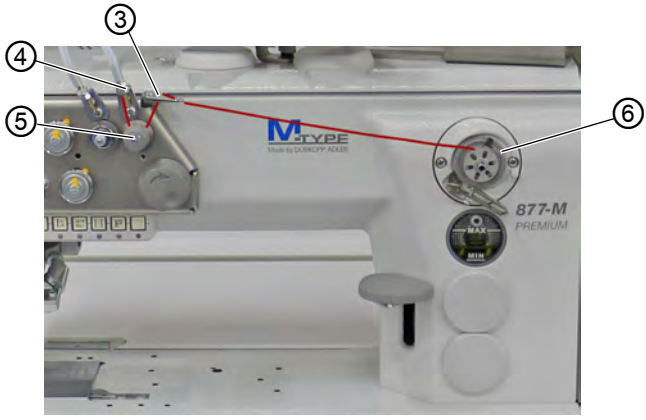
Risk of injury from needle tip and moving parts!
Turn off the sewing machine before threading the thread.

Fig. 8: Winding on the hook thread – part 1

(1) - Thread guide
(2) - Reel stand
(3) - Guide on the unwinding bracket

1. Fit the thread reel on the reel stand (2).
2. Insert the thread from the rear to the front through the thread guide on the unwinding bracket (3).
3. Use compressed air to blow the thread through the hose guide (1).

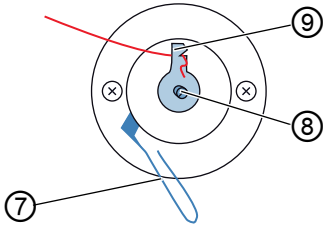
Fig. 9: Winding on the hook thread – part 2



(4) - Thread guide
(5) - Thread guide
(6) - Pretension roller
(7) - Winder

4. Feed the thread counterclockwise from the thread guide (4) around the pretension roller (5).
5. Insert the thread in a wavelike manner through the 2 holes of the thread guide (3): from bottom to top through the left hole and from top to bottom through the right hole.
6. Guide the thread to the winder (6).

Fig. 10: Winding on the hook thread – part 3



(8) - Winder lever
(9) - Bobbin shaft
(10) - Knife

7. Clamp the thread behind the knife (9) and tear off the loose end behind it.
8. Fit the bobbin on the bobbin shaft (8).
9. Turn the bobbin clockwise until it clicks.
10. Pull the winder lever (7) up.

Information
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. For this purpose, use Bobbin Wind mode in the softkey menu (📖 *p. 48*).

NOTICE

Winding without sewing material can damage the roller foot!

Lock the roller foot in place in the raised position.

11. Switch on the sewing machine.
12. Press the pedal forwards.

    ↳ The machine sews and winds the hook thread from the thread reel onto the bobbin. When the bobbin is filled, the winding process stops. The bobbin lever moves down. The knife is automatically moved to its vertical initial position.
13. Pull off the full bobbin.
14. Tear off the thread behind the knife (9).
15. Insert the full bobbin into the hook (📖 *p. 29*).

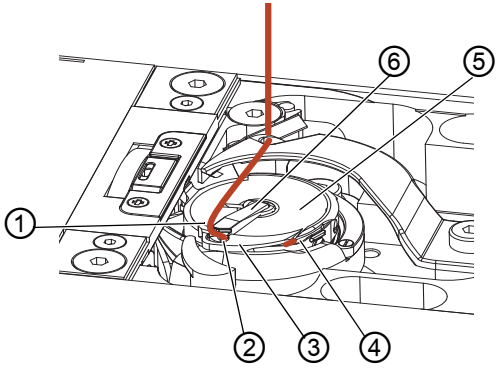
4.7 Changing the bobbin

WARNING

Risk of injury from needle tip and moving parts!
Puncture, cutting and crushing possible.

Turn off the machine before changing the bobbin.

Fig. 11: Changing the bobbin



(1) - Slot
(2) - Guide
(3) - Tension spring
(4) - Slot
(5) - Bobbin
(6) - Bobbin case retainer

1. Swivel up the bobbin case retainer (6).
2. Remove the empty bobbin.
3. Insert a full bobbin:

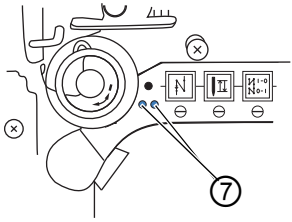
Important

Insert the bobbin so that it moves in the opposite direction of the hook when the thread is pulled out.

4. Feed the hook thread through the slot (4) in the bobbin case retainer.
5. Pull the hook thread under the tension spring (3).
6. Feed the hook thread through the slot (1) and pull it approx. 3 cm further.
7. Close the bobbin case retainer (6).

Machines with automatic remaining thread monitor
If the hook thread needs to be replaced, the LED indicator lamps (7) light up on the machine arm. The left light is for the left-hand hook, and the right light is for the right-hand hook.

Fig. 12: Remaining thread monitor message



(7) - LEDs

Important

Each of the bobbins has a thread supply groove that is embedded in the bobbin core.

Insert the bobbin in the hook in such a way that the thread supply groove faces down. Otherwise, the remaining thread monitor will not work.

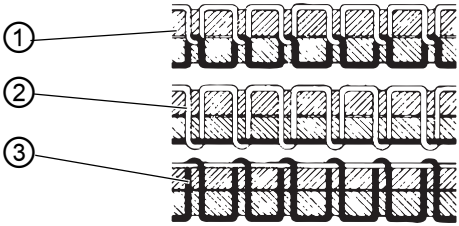
4.8 Thread tension

Together with the hook thread tension, the needle thread tension influences the final seam pattern. With thin sewing material, excessive thread tension can lead to undesired ruffing and thread breaking.

Proper setting

If the tension of needle thread and hook thread is identical, the thread interlace lies in the middle of the sewing material. Adjust the needle thread tension so that the desired seam pattern is achieved with the lowest possible tension.

Fig. 13: Thread tension



(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

4.8.1 Adjusting the needle thread tension

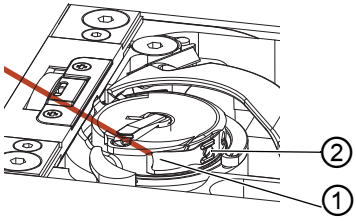
The needle thread tension can only be adjusted using the software of the OP3000. For detailed information, refer to the chapter Programming (📖 *p. 43*).

Adjusting the hook thread tension

WARNING

Risk of injury from needle tip and moving parts!
Switch off the machine before adjusting the hook thread tension.

Fig. 14: Adjusting the hook thread tension



(1) - Tension spring *(2) - Screw*

The hook thread tension is generated by the tension spring (1) and adjusted via the screw (2).

To increase the tension:

1. Turn the adjusting wheel (1) clockwise.

To reduce the tension:

1. Turn the adjusting wheel (1) counterclockwise.

Average of the hook thread tension

Sewing category	Needle used/Nm	Thread tension/g
light	70 - 80	50
middle	90 - 110	65
heavy	120 - 160	90

4.9 Adjusting the needle thread regulator

WARNING

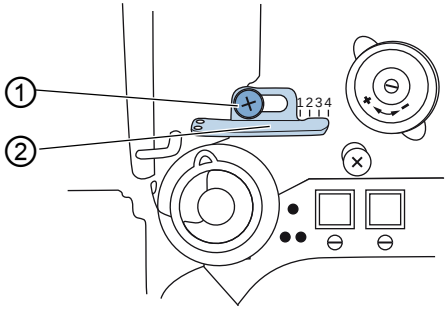
Risk of injury from needle tip and moving parts!
Switch off the machine before adjusting the needle thread regulator.

The needle thread regulator determines the tension applied to guide the needle thread around the hook.

Proper setting:

The loop of the needle thread slides at low tension over the thickest point of the hook.

Fig. 15: Adjusting the needle thread regulator

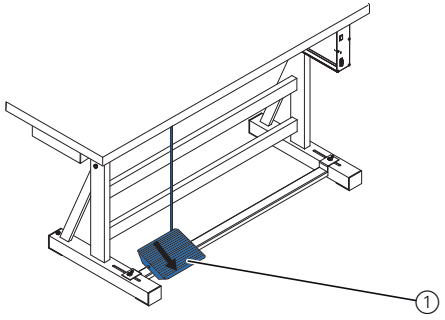


(1) - Regulator screw *(2) - Thread tension regulator*

1. Loosen the regulator screw (1).
   - **To increase the tension:**
     Slide the thread regulator (2) to the right.
   - **To reduce the tension:**
     Slide the thread regulator (2) to the left.
2. Tighten the regulator screw (1).

4.10 Lifting and opening the roller foot

Fig. 16: Lifting the roller foot electronically with the pedal



(1) - Pedal

1. Press the pedal (1) halfway back.

   The machine stops and lifts the roller foot.
   The roller foot remains up as long as the pedal is pressed halfway back.

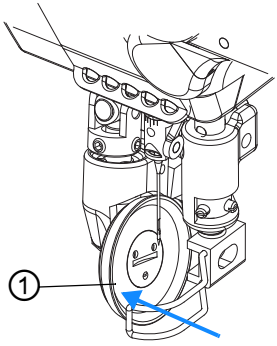
or

1. Press the pedal (1) fully back.

   ↳ Thread cutting is activated, and the roller foot is raised.

Opening the roller foot

Fig. 17: Opening the roller foot



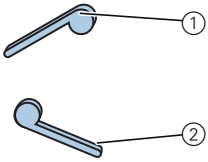
(1) - Roller foot

1. Open the roller foot in the direction of the arrow (1).

4.11 Securing the raised roller foot

A lever on the rear side of the machine is used to secure the raised roller foot.

Fig. 18: Securing the raised roller foot using the lever



(1) - Raised roller foot *(2) - Top dead center removed*

To secure the raised roller foot:

1. Push the lever down.

To release the lock:

1. Push the lever up.

You can also loosen the stroke with the pedal:

1. Press the pedal back just as you would for lifting the roller foot.

↳ The lever swivels back up, and the locking device is released.

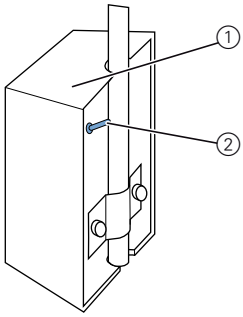
CAUTION

Danger of crushing when lowering the roller foot!
Do not reach under the roller foot when the foot is loosened by means of the pedal or the lever.

4.12 Electric knee lever

The electronic knee lever can be used to control different machine functions, e.g. toggling between two different stitch lengths or two needle thread tension values. You can also lift the foot during sewing. The switch (2) on the back of the knee lever determines whether the corresponding function is applied permanently or only for as long as the knee lever is pressed.

Fig. 19: Knee lever elements



(1) - Main switch of the knee lever (2) - Switch

For permanent conversion:

1. Set the toggle switch (2) to the upper position.
   - **To activate the corresponding function:**
     Press the knee lever (1) to the right.
   - **To deactivate the corresponding function:**
     Press the knee lever (1) to the right again.

For temporary conversion:

1. Set the toggle switch (2) to the lower position.
   - **Switch on:**
     Press the knee lever (1) to the right and keep it pressed.

↳ The new condition applies for as long as the knee lever is pressed to the right.

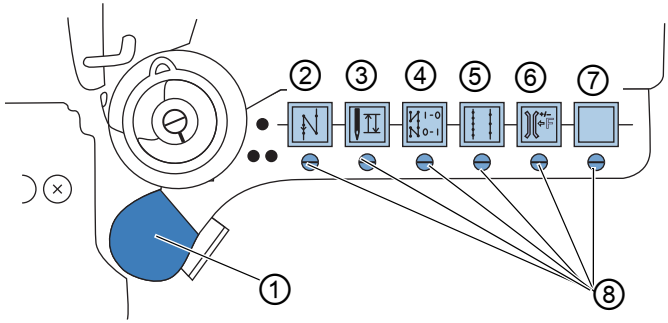
- **Switch off:**
  Release the knee lever (1).

4.13 Quick functions on the push buttons

The machine has push buttons on the machine arm which can be used to activate specific functions while sewing.

4.13.1 Activating function keys

Fig. 20: Push buttons for quick functions



(1) - Favorite button
Buttons for:
(2) - Sewing backwards
(3) - Needle position
(4) - Start bartack/end bartack (Inversion)
(5) - Stitch length preselection
(6) - Additional thread tension
(7) - Proceed to the next seam section (can be assigned freely)
(8) - Screws for assigning the favorite button (1)

Activating a button function

1. Press the button.

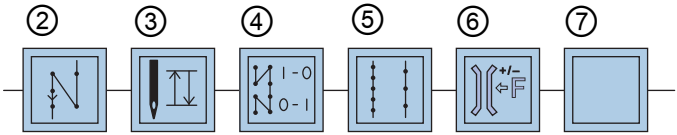
↳ Function is activated. The button lights up.

Deactivating a button function

1. Press the button again.

↳ Function is deactivated. The button turns off.

Fig. 21: Function keys



Button for sewing backwards (2):

When this button (2) is activated, the machine sews backwards.

Needle positioning button (3):

When the button is activated, the needle (3) moves to a specific position. This position is determined individually via the parameter settings. Please read the 🕮 *Service Instructions*. The machine comes configured so that selecting the button (3) will bring the needle up.

Button for start and end bartacks (4):

This button (4) cancels the general setting for sewing start and end bartacks. If bartacks are on, pressing the button (4) skips the next bartack. If bartacks are off, pressing the button (4) sews the next bartack.

Stitch length button (5):

When this button (5) is selected, the machine sews with the greater stitch length that was programmed for this stitch length on the control panel.

Button for the additional thread tension (6):

When this button (6) is activated, the machine sews with the programmed additional thread tension.

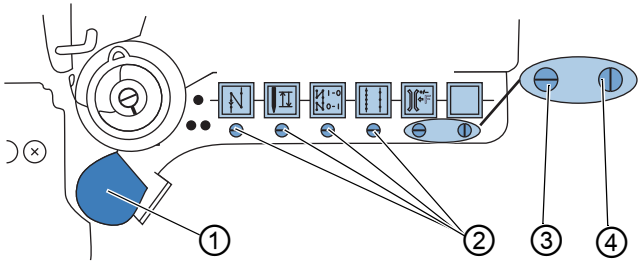
Proceed to the next seam section (7):

You use this button (7) to proceed to the next seam section. The button can be assigned freely. Additional functions can be implemented as necessary.

4.13.2 Assigning a button function to the favorite button

You can transfer the button functions to the favorite buttons. Select a function that you frequently use so that you can switch it on faster while sewing.

Fig. 22: Assigning a button function to the favorite button



(1) - Favorite button
(2) - Screws for assigning the favorite button (1)
(3) - Screw in basic position: slot horizontal
(4) - The screw activates the favorite button (1): slot vertical

The button function is assigned by turning the screw under the button until it is vertical. Only one function at a time can be assigned to the favorite button (1). Therefore, only one of the screws (4) may be in the vertical position.
All screws must be turned back to their original horizontal position before a new function is assigned.

To assign a function to the favorite button:

1. Turn all screws to their original position (2) so that the slots are horizontal.
2. Turn the screw under the desired button 90° so that the slot is vertical (3).

4.14 Control

The machine is operated with the DAC Comfort Control (📖 *p. 43*).

4.15 Upper edge trimmer

WARNING

Risk of injury!

Only adjust the cutting mechanism when the machine is switched off!

Fig. 23: Upper edge trimmer

Stanzmesser an einer Flachbett/
Radtransport/Nähmaschine

https://www.mksewing.com/wp-content/uploads/Stanzmesser.pdf

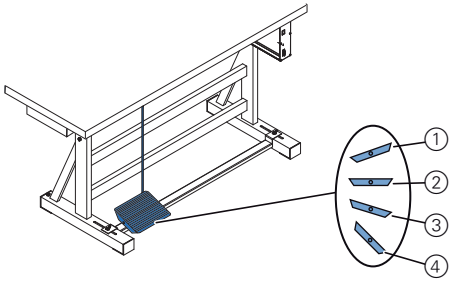
4.16 Sewing

WARNING

Risk of injury from the needle if sewing is started unintentionally!
Do not press the pedal when your fingers are in the area of the needle tip.

The pedal starts and controls the sewing process.

Fig. 24: Sewing with the help of the pedal



(1) - Pedal position +1: Sewing active
(2) - Pedal position 0: Rest position
(3) - Pedal position -1: Lift the sewing foot
(4) - Pedal position -2: Sew the end bartack and cut the thread

Initial position:

- Pedal position 0:

↳ Machine stationary, needle up, roller foot down.

To adjust the position of the sewing material:

1. Press the pedal halfway back to position -1:

↳ The roller foot is raised.

2. Push the sewing material into the initial position.

Sewing:

1. Press the pedal forward to position +1:

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

Stop sewing:

1. Release the pedal in position 0:

↳ The machine stops, needle and roller feet are down.

Continue sewing:

1. Press the pedal forward to position +1:

↳ The machine continues to sew.

To sew over thicker parts of the material:

1. Switch on the increased sewing foot stroke with the knee button (📖 *p. 36*).

To change the stitch length:

1. Activate the 2nd stitch length using the button on the push button panel (📖 *p. 37*).

To increase the thread tension:

1. Activate additional thread tension using the button on the push button panel (📖 *p. 37*).

To sew intermediate bartacks:

1. Activate sewing backwards at the push button panel (📖 *p. 37*).

To finish a seam:

1. Press the pedal fully back to position -2:

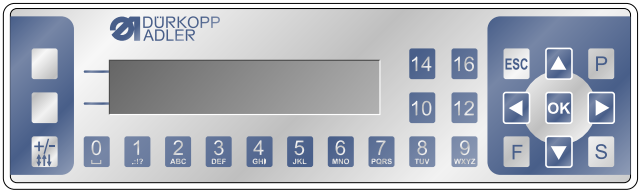
↳ End bartack is sewn, and thread is cut.
The machine stops, needle and roller feet are up.

2. Remove the sewing material.

5 Programming OP3000

5.1 Control panel OP3000

Fig. 25: Control panel of the control



All settings in the software for the machine 877-M PREMIUM are performed using the OP3000 control panel.

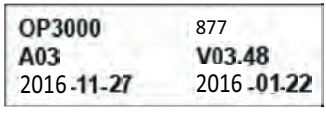
Button	Function
0 to 9	Inputting the parameter value (if the field for the parameters is activated) • Selection of a parameter that is shown on the control panel Press the button under the desired symbol. The function is selected.
ESC	Cancel the function Exit the menu (changes remain saved)
OK	Confirm the settings Activate the input
P	Function is different for each menu
S	Function is different for each menu
F	Function is different for each menu
4	Selection to the right
3	Selection to the left Back one menu level
5	Increase the value Scroll through the list (upwards)

Button	Function
6	Decrease the value Scroll through the list (downwards)
A	Upper softkey assignment is different for each menu
B	Lower softkey
+/-	Change fullness during transport

Information
For information on how to set up the DAC Comfort control, refer to the corresponding parameter lists.

5.2 Switching on the machine

Fig. 26: Displaying firmware and software version



1. Switch on the main switch.

↳ The display briefly shows the software versions:

- On the left side, the firmware of the control panel
- On the right side, the software version of the control software

↳ The machine performs a reference run:
The display shows the program last used, or Manual mode.

Fig. 27: Display of the program last used

Fig. 28: Display in Manual mode

5.3 Operating modes

The software of the 877-M PREMIUM has 3 available operating modes:

- **Manual mode (program 000)**

  Manual mode is the simplest operating mode.
  There are no programs/seam programs and no inputs for individual seam sections.

  Changes to the sewing foot pressure, stroke height, stitch length, thread tension and also the activation of other functions are always implemented immediately.

  All the major sewing parameters can be changed manually during the sewing process.

- **Automatic mode (program 001 - 999)**

  Automatic mode allows for the execution of setups (seam program comprised of only one seam section) or complex seam programs.

  Seam programs are divided into individual seam sections. Each section is assigned its own individual stitch length, thread tension, etc.

- **Programming/edit mode**

  Programming mode allows the operator to create a new seam program in a quick and easy manner. In this mode, the letter **P** flashes above the program number.

  Edit mode can be used to adjust, delete and copy seam programs.

5.4 Manual mode

Fig. 29: Parameters in manual mode

The following table shows the individual symbols (parameters) on the display and the functions of the buttons on the control panel.

The selected parameter is shown with a background of different color on the display. When a parameter is changed, its new value is loaded immediately.

Symbol	Meaning
	**Programming** (after facing) • Press the upper softkey
	**Quick access function** (softkey menu) • Press the lower softkey, 📖 *p. 48*
	**Program number** Value range: 000 to 999 Program 000 indicates that the control is in **Manual mode**. • Use ◀ / ▶ to select the **Program** parameter. • Use ▲ / ▼ to change the program number. Or: • Use numeric buttons **0** through **9** to enter the program number and press the **OK** button to confirm. ↳This allows you to access **automatic mode**.
	**Stitch length** Value range: 0.0 to 7.0 [mm] (depending on the sewing equipment) • Use ◀ / ▶ to select the **Stitch length** parameter. • Use ▲ / ▼ to change the stitch length

Symbol	Meaning
	**Thread tension** Value range: 1 to 99 • Use ◀ / ▶ to select the **Thread tension** parameter. • Use ▲ / ▼ to change the thread tension **Information** If the values for the needle thread tension of the right and the left needle thread are not identical and changed jointly, the difference remains the same. **2-needle machines** • Use ◀/▶ to select the needle thread tension parameter • Press the **OK** button to open the submenu • Use ▲/▼ to select the right or the left needle thread • Press the **OK** button to confirm • Use ▲/▼ to change the needle thread tension • Press the **OK** button to confirm
	**Sewing foot pressure** Value range: 1 to 14 • Use ◀ / ▶ to select the **Sewing foot pressure** parameter. • Use ▲ / ▼ to change the sewing foot pressure
	**Change the fullness during transport between sewing food and feed dog** Value range: 0 to 16 (section after 1) • Use ◀ / ▶ to select the **Fullness during transport** parameter. • Use **+/-** to select the differential direction • Use ▲ / ▼ or the numeric buttons to change the value of the difference
	**Other parameters** 📖 *p. 49*
	**S.p.m. or seam length in mm** After the thread has been cut off, the display is retained. Measurement/counting restarts when sewing starts again.
P	**Create a program** 📖 *p. 54*
+/-	Change fullness during transport (wavy line up - sewing foot feeds faster, wavy line down - sewing feeds more slowly)
ESC, F and S	Without function
OK	Without function

5.4.1 Quick access function (softkey menu)

Here, you have quick access to functions during the sewing process. You can also assign a function to the softkey button.

1. Press the lower softkey .

↳ The following display appears:

Fig. 30: Softkey menu

2. **To select a function:**
   - Press the numeric button under the desired function.

or

To assign a function to the upper softkey button:
   - Press the numeric button under the desired function and the upper softkey button at the same time.

↳ The function is assigned to the upper softkey button and can subsequently be called up using this softkey.

3. Press the ESC button to exit the menu.

Symbol	Meaning
	**Needle position up / down** If sewing is stopped within the seam, the needle is positioned up or down.
	**Threading mode** The needle bar moves to the defined position. The pedal is temporarily locked.
	**Programming** Add new seam program.
	**Bobbin Wind mode** Press the right pedal forward to wind the bobbin. Press the pedal backwards to exit bobbin wind mode.

Symbol	Meaning
	**Reset Bobbin Counter** The defined maximum s.p.m. of the bobbin used is reset to the starting value.
	**Sewing foot up** Press to raise the sewing foot.
	**Thread clamp** Not assembled.
	**Manual sewing backwards** Press to switch transport to sewing backwards.
	**Interrupt bartack**
	**Cut the thread manually** Press to cut the thread during sewing.

5.4.2 Menu for other settings

1. Use ◂ / ▸ to select **Other parameters** P... .
2. Press the **OK** button.
3. Use ▲ / ▼ to select the desired parameters.
4. Press the **OK** button to select the parameter.
5. Change values using the ▲ / ▼ buttons.
6. Confirm with **OK**.
7. Close the menu with ◂ or **ESC**.

Symbol	Meaning
	**Max. speed** Value range: 50 to 2500 (dependent on the stitch length)
	**Thread trimmer** Value range: on/off
	**Thread clamp - not assembled** Value range: on/off
	Alignment stitch **(measuring position)** Value range: 0 to 360° The set value defines the position of the needle bar after a press of the handwheel.
	**Start bartack** Menu for defining the start bartack
	**End bartack** Menu for defining the end bartack
	**Sewing foot stroke** Position of the sewing foot at sewing stop and after thread cutting
	**Remaining thread monitor - available on request** Value range: Off/software/monitor
	Info screen Show additional information on the display
	Corr. (speed correction) Set corrections of different sewing parameters dependent on the speed of the machine.
	Material thickness Set corrections of different sewing parameters dependent on the thickness of the sewing material.

5.4.3 Sewing

Changing the parameters during the seam

1. Set the handwheel to position **0**.
2. Change the desired parameter on the control panel.
3. Press the pedal forward and sew.

↳ The changed parameter value is set.

5.5 Automatic mode

Program numbers 001 to 999.

1. Use ◂ / ▸ to select the **Program** parameter.
2. Use ▲ / ▼ to select program number **1** or a different program number (if available).

↳ The control switches to Automatic mode, and the following information appears on the display:

Fig. 31: Display in Automatic mode

The following table shows the individual symbols on the display and the functions of the buttons on the control panel.

5.5.1 Prior to sewing

Symbol	Meaning
	**Programming** (after facing) • Press the upper softkey
	**Quick access function** (softkey menu) • Press the lower softkey 📖 *p. 48*
	**Program number** Value range: 000 to 999 • Use ◀ / ▶ to select the **Program** parameter. • Use ▲ / ▼ to change the program number. Or: • Enter the program number using the buttons **0 - 9** and confirm with **OK** if necessary. If you select program 000, you will enter Manual mode.
	**Seam Section** Number of seam sections contained in the current program.
	**Stitch length correction factor** Value range: -50 to +50 % Alters the stitch length in all seam sections.
	**Thread tension correction factor** Value range: -50 to +50 % Alters the thread tension in all seam sections.

1. Sew, press the pedal or press the **OK** button.

↳ Switches to the 1st section.

5.5.2 Sewing

1. Press the pedal forward and sew.

↳ The following display appears:

Fig. 32: Sewing in Automatic mode

The parameter values for the current seam section are shown on the display.

The program bar shows the progress of the seam program.

The number under the current seam section shows the number of stitches yet to be sewn / the outstanding length of the seam section.

The program bar shows half the current seam section in bold.

Fig. 33: Seam section in progress

Completed seam sections are shown fully in bold.

Fig. 34: Completed seam section

The following table lists the functions that can be performed in the course of the seam.

Button/Pedal	Function
◀ / ▶	**Seam section forwards/backwards or go to start of seam section**
▲ / ▼	**Correct thread tension** The value is saved.

Button/Pedal	Function
Pedal halfway back	**Lift roller foot**
Pedal fully back	**Cut off** The program remains stopped at the cutoff point.
Lower softkey	**Softkey menu** *p. 46*

5.5.3 Aborting the program

1. Press the pedal fully back after cutting.

↳ The seam program is canceled.

5.6 Programming/edit mode

5.6.1 Creating a new program

If [P+] is assigned to the upper softkey:

1. Press the upper softkey [P+].

↳ The following display appears:

Fig. 35: Programming

2. Continue with step 3 as described below.

If [P+] is not assigned to the upper softkey:

1. Press the [▭] button.

↳ The softkey menu appears.

2. Press the [P+] button.

↳ The control displays the next free program number.

3. Press the **OK** button to load the program number.

Or:

4. Select another program number using ▲/▼ or input a program number using the numeric buttons **0 – 9** and then press the **OK** button.

↳ The following information is shown, and the **P** in the program number field flashes:

Fig. 36: Programming screen

5. Press the upper softkey.

The following table shows the individual symbols on the display and the functions of the buttons on the control panel.

Symbol	Meaning
⊢○⊣ >>	**Switch to next automatically** Value range: on/off
⊞	**Add section**
⊠	**Delete section**
P	**Number of the currently created program**
┐┌	**Without function**

Symbol	Meaning
	**Current section** • Use ◀ / ▶ to select the **Section** parameter. • Use ▲ / ▼ to go to the next/previous section. • Use the **OK** button to open the menu containing additional parameters 🕮 *p. 58*
	**Stitch length for the current seam section** Value range: 0.0 to 7.0 mm • Use ◀ / ▶ to select the **Stitch length** parameter. • Use ▲ / ▼ to change the stitch length.
	**Thread tension value (%) for the current seam section** Value range: 0 to 99 • Use ◀ / ▶ to select the **Thread tension** parameter. • Use ▲ / ▼ to change the thread tension.
	**Sewing foot pressure** Value range: 1 to 14 • Use ◀ / ▶ to select the **Sewing foot pressure** parameter. • Use ▲ / ▼ to change the sewing foot pressure
	**Change the fullness during transport between sewing food and feed dog** Value range: 0 to 16 (single steps) • Use ◀ / ▶ to select the **Fullness during transport** parameter. • Use **+/-** to select the differential direction Use ▲ / ▼ or the numeric buttons to change the value of the difference
	**Stitch count /** **length in mm of the seam section**

Programming mode offers two options for creating new seam programs:

- Creating a program by keyboard input
- Creating a program by teach-in

5.6.2 Creating a program by keyboard input

1. Use ▸ to switch to the seam section selection 1.
2. Use [+] to activate the seam section.
3. Set all parameters for this section.
4. Use ▲ to navigate to the next section in section view.
5. Use [+] to activate the section in order to set all parameters.
6. Repeat steps 4 and 5 to define up to 30 steps if necessary.
7. Press the **ESC** button.

↳ The program is saved.
The machine switches to Automatic mode.
The program that was just created is selected.

5.6.3 Creating a program by teach-in

1. Press the **Teach-In** button.
2. Set the parameters for the section (stitch length, thread tension, sewing foot pressure and stroke height).
3. Press the pedal and complete the seam section up to the desired position on the material.
4. To set other parameters for another seam section, use ▲ to add a new seam section.
5. Set the basic parameters.
6. Repeat steps 4 and 5 to define up to 30 steps if necessary.
7. Push the pedal fully back.

↳ The program switches to Edit mode.

8. If necessary, add other parameters for all seam sections (sew bartack, sewing speed, thread trimmer, roller foot stroke).
9. Press the **ESC** button.

↳ The program is saved.
The machine switches to Automatic mode.
The program that was just created is selected.

5.6.4 Editing programs

1. Press the **P** button in automatic mode.

↳ The control switches to Edit mode.
The program previously selected can now be edited.
The following information is shown, and the **P** in the program number field flashes:

Fig. 37: Editing programs

2. Select the seam section you wish to edit using ◀ / ▶ and ▲ / ▼.

↳ The selected seam section is shown in bold in the program bar.

3. Use ◀ / ▶ to select the parameter to be changed for the selected section and use ▲ / ▼ to change it.
4. Use ⊞ to add a new seam section.
5. Use ⊠ to delete the seam section.

5.6.5 Changing other parameters for the current program section

1. Use ◀ / ▶ to select the field 1.
2. Press the **OK** button.

   ↳ The submenu opens.
3. Use ▲ / ▼ to select the desired parameter.
4. Press the **OK** button to activate or deactivate the parameter or use ▲ / ▼ to edit the value or confirm with **OK**.

Symbol	Meaning
	**Stitch counter**
	**Switch to next automatically**
	**Sewing foot pressure**
	**Max. speed**
	**Seq. section end**
	**Start bartack** Menu for defining the start bartack
	**End bartack** Menu for defining the end bartack
	**Needle up**

Symbol	Meaning
	**Foot lifted**
	**FL height**
	**Sewing backwards**

5. Exit the submenu using **ESC** or ◀ .

↳ The changed values are stored immediately.

6. Exit Programming mode using the **ESC** button.

5.6.6 Adjusting parameters for the selected program

This menu allows the parameters for the current seam program to be changed.

1. Use ◀ / ▶ to select the field P... .
2. Press the **OK** button.

↳ The submenu opens.

3. Use ▲/▼ to select the desired parameter.
4. Press the **OK** button to activate or deactivate the parameter or use ▲/▼ to edit the value or confirm with **OK**.

Symbol	Meaning
	**Program name**
	**Seq.Progr. (switch to next program)**
	**Thread tension** Defines the additional thread tension that can be activated during the sewing process with a press of the button.
	**Stitch length** Defines a second stitch length that can be activated during the sewing process with press of the button.
	**Remaining thread monitor**
	**Daily piece counter** - depending on number of sections
	**Alignment stitch (measuring position)** When pressed, the specified position moves in degrees.
	Info screen Show additional information on the display
	**Corr. (speed correction)** Set corrections of different sewing parameters dependent on the speed of the machine.
	**Material thickness** Set corrections of different sewing parameters dependent on the thickness of the sewing material.

5. Exit the submenu using **ESC** or ◂ .

↳ The changed values are stored immediately.

6. Exit Programming mode using the **ESC** button.

5.6.7 Copying the program

The selected program is copied into a new program number.

1. Press the button.

↳ The softkey menu appears.

Fig. 38: Softkey menu

2. Press the button.

↳ The following display appears:

Fig. 39: Copying the program

↳ The control displays the next free program number.

3. Press the **OK** button to load the program number.

   Or:

   Select another program number using ▲/▼ or input a program number using the numeric buttons **0 - 9** and then press **OK**.

↳ The program number is loaded.
The following information is shown on the display, and the program number flashes:

Fig. 40: Display after setting the program number

4. Make the desired changes in the new program.
5. Press the **ESC** button.

↳ The system exits Programming mode and switches to Automatic mode.

5.6.8 Deleting the program

The selected program is deleted.

1. Press the button.

↳ The softkey menu appears.

Fig. 41: Softkey menu

2. Press the button.
3. Press the **ESC** button.

↳ The system exits Programming mode and switches to Automatic mode.

5.7 Simplified display menu

Fig. 42: Control panel of the control

The symbols in the top bar of the display are the same as the ones in the normal menu. The symbols in the lower bar have special functions, which are controlled using the buttons below:

Button	Function
2	Start bartack Switches between off, single and double. The symbol for multiple bartacks is only displayed for special settings. The number of stitches is also adopted from the seam menu.
3	End bartack Switches between off, single and double. The symbol for multiple bartacks is only displayed for special settings. The number of stitches is also adopted from the seam menu.
4	Thread trimmer Value range: on/off
5	Needle position Switches between needle position up or needle position down.
6	Foot lifted Releasing and pressing the pedal will, respectively, raise and lower the foot automatically.

Information
Refer to the service manual for information on how to select between standard and simplified display menus.

6 Programming Commander Basic/Pro

6.1 Commander Basic/Pro control panel

Fig. 43: Commander Basic/Pro control panel

All settings in the software are performed using the Commander Basic/Pro control panel.

Information
If a value is entered that is not within the specified value range, the software will automatically adopt the limit value which is closest to your entry from the value range.

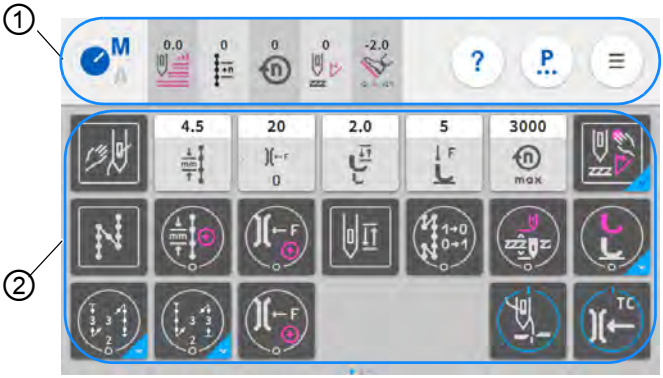
6.2 Navigating the Commander Basic/Pro control panel

You navigate the control panel by tapping the screen with your fingers. There is no need for an input device.

You can open menus by pressing the corresponding button with your finger. Swipe to switch between the different pages of the main screen.

You can modify the information displayed in the status bar (1). You can also adjust the tiles shown on the three pages of the main screen (2). You customize the information using the control panel settings, 📖 *p. 86*.

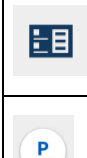
Fig. 44: Navigating the Commander Basic/Pro control panel



(1) - Status bar *(2) - Main screen*

6.2.1 Symbols and buttons

Explanation of recurring symbols:

Icon	Meaning
	The letter shown in blue is active. A = Automatic mode M = Manual mode Press the symbol to toggle between the two modes.
	Programming mode (access via the burger menu), see 📖 *p. 114*.
	Parameters you can set in manual mode.
	Burger menu A window opens that lets you select Automatic mode, Manual mode, Programming mode or Settings.
	Context-sensitive help Start by pressing the gray question mark before pressing the area for which you need help - this brings up a pop-up window containing a Help text. Press anywhere to make the window disappear.
	Bright tiles Parameters for which you can/must enter a numerical value. Values can be input by pressing.
	Dark tiles (latching) You can active or deactivate dark tiles encircled by a white line by pressing. You cannot set any values.

Icon	Meaning
	Dark tiles (multifunction) You can active or deactivate dark tiles encircled by a white line and showing a blue triangle in the corner by pressing. A long press opens a menu that lets you input values.
	Dark tiles (hold to run) You cannot enter any values for dark tiles surrounded by a square white line. The function assigned to the tile is only active for as long as you press the tile.
	Grayed-out tiles Grayed-out tiles merely provide information. You can neither enter values nor active or deactivate these tiles.

6.2.2 Entering values

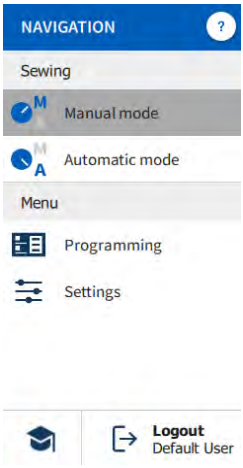
You can input values using the buttons +, − or by typing on the integrated on-screen keyboard.

Values highlighted in red are invalid as they are not within the specified value range. If you enter invalid values, the software will automatically set the limit value of the value range.

6.2.3 Navigating the burger menu

You can open the burger menu with a press of the symbol .

Fig. 45: Navigating the burger menu



to Manual mode (see 🕮 *p. 85*)

to Automatic mode (see 🕮 *p. 109*)

to Programming mode (see 🕮 *p. 114*)

to the Settings (see 🕮 *Service Instructions*)

Open tutorials
Log out user

6.2.4 Navigation during the start of the control panel

You can access the languages and settings without having to wait for the control panel to finish starting up.

You can select these options as soon as their icons are displayed on the control panel. After entering your user login, you will be taken to the language options or the settings - depending on which option you selected.

Symbol	Explanation
	Language selection
	Settings

6.3 User Management

The User Management section allows you to create users and roles with different authorizations.

The factory setting is such that the *Default User* will automatically be logged in when the machine starts and the control panel boots up. You can change this setting at the Technician level as needed.

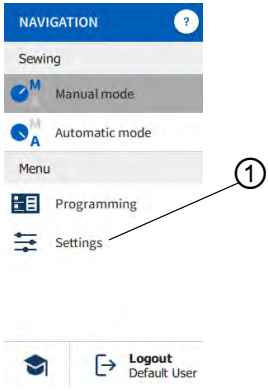
The following is an explanation of the two users set up by default, *Default User* and *Default Technician*. You can set up any number of users and roles that meet your individual requirements.

To access User Management:

1. Press on the symbol ≡ to open the burger menu.

↳ The menu opens.

Fig. 46: User Management (1)

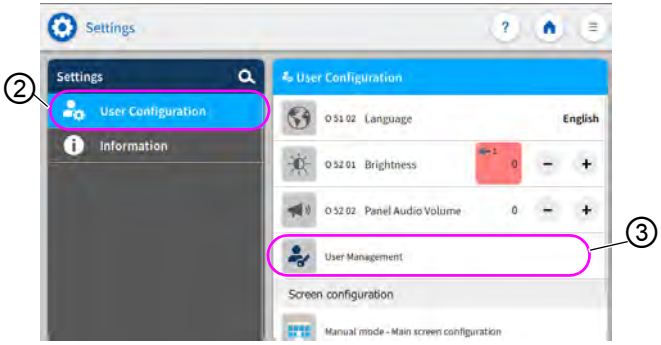


(1) - Settings

2. Press *Settings* (1).

↳ This opens the Settings interface.

Fig. 47: User Management (2)

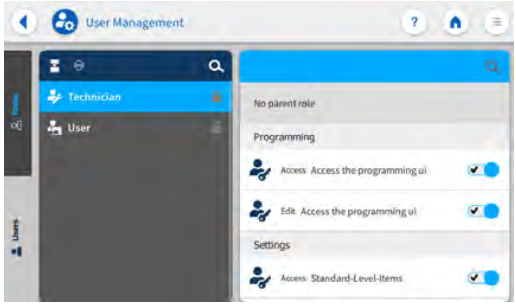


(2) - User Configuration *(3) - User Management*

3. Press the item `User Configuration` (2) on the left.
4. Press the item `User Management` (3) on the right.

↳ The user management interface opens - which may look different depending on the user.

Fig. 48: User Management (3)



5. Define the desired settings (for sample explanations, see 📖 *p. 75* and 📖 *p. 75*).
6. Press ◀ to return to Settings or ⌂ to return to Manual mode.

6.3.1 User login

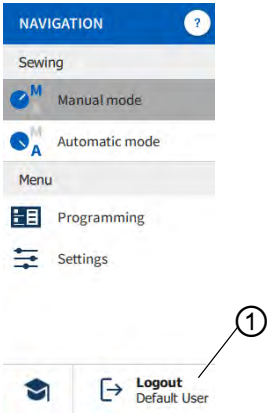
The factory setting of the software is such that the `Default User` will be logged in automatically when the machine is switched on. This neither requires the input of a password nor a USB key or an NFC chip. The following explains how you can switch users.

To access User Management:

1. Press on the symbol ☰ to open the burger menu.

↳ The menu opens.

Fig. 49: User login



(1) - Logout

2. Press `Logout` (1).

↳ This opens the Login interface.

There are three ways to log in. The three options - including the necessary settings in the software - are described below.

6.3.1.1 Logging in with username and password

Assigning a username and password

To assign a username and password:

1. Create a new user in `User Management` and assign this user a username and password (📖 *p. 81*).

↳ The user can log in immediately with this login information.

Logging in with username and password

To log in with username and password:

1. Enter `username` and `password`.
2. Press  .

↳ If the login information is correct, the user will be logged in.

6.3.1.2 Logging in with USB key

Assigning a USB key to a user

To assign a USB key to a user:

1. Select a user in `User Management` or create a new user (📖 *p. 81*).
2. Press the item `Login using USB`.

↳ A new window opens.

3. Plug the USB key into one of the ports on the control panel.
4. Select the USB key you wish to assign to the user for login purposes.

5. To assign the USB key, press *Pair*.

↳ The window disappears, and the function *Login using USB* is active.

Logging in with USB key

To log in with a USB key:

1. Plug the assigned USB key into the control panel.

↳ If the USB key has been assigned correctly, the user will be logged in.

6.3.1.3 Logging in with NFC chip

Assigning an NFC chip to a user

To assign an NFC chip to a user:

1. Select a user in *User Management* or create a new user (📖 *p. 81*).
2. Press the item *Login with NFC chip*.

↳ A new window opens.

3. To assign the NFC chip, hold the chip up to the control panel on the left-hand side.

↳ The window disappears, and the function *Login with NFC chip* is active.

Logging in with NFC chip

To log in with an NFC chip:

1. Hold the assigned NFC chip up to the control panel on the left-hand side.

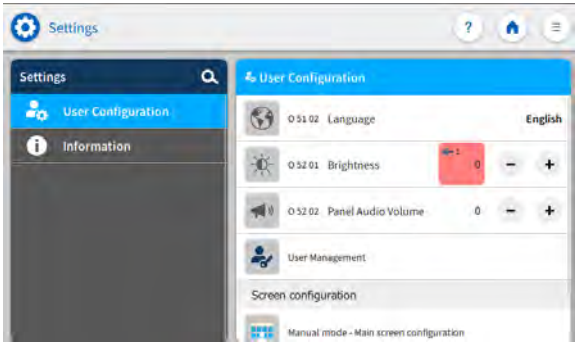
↳ If the NFC chip has been assigned correctly, the user will be logged in.

6.3.2 Authorizations as *Default User*

The factory setting for the `Default User` is such that the default user will be logged in automatically when the machine is switched on. This neither requires the input of a password nor a USB key or an NFC chip.

User management cannot be selected as a `Default User` (📖 *p. 70*):

Fig. 50: Authorizations as `Default User`

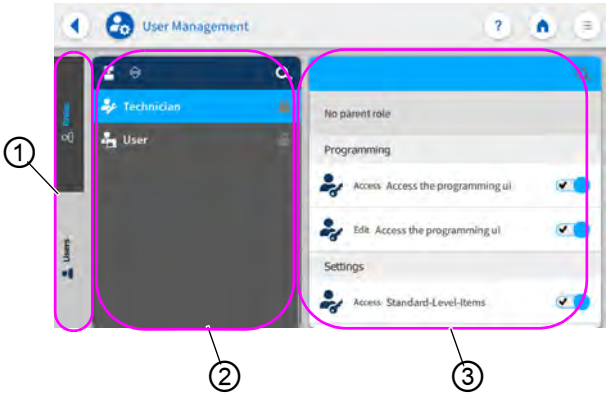


6.3.3 Authorizations as *Default Technician*

The factory setting for the Default Technician requires that the technician enter their username and password (`technician, 25483`). The Default Technician has more far-reaching authorizations than the Default User. They are explained in more detail below.

If selecting User Management as a `Default Technician` (📖 *p. 70*), you will be presented with the following interface:

Fig. 51: Authorizations as `Default Technician`



(1) - Tab for roles and users
(2) - List of roles/users
(3) - Settings roles/users

On the left-hand side, you can select between the tabs (1) reserved for roles (📖 *p. 77*) and users (📖 *p. 81*). Detailed explanations are provided further below. To the right of the tabs you will find the list (2) of created roles / users - varying with the tab (1) you selected. On the far right, you will find the settings (3) associated with the role/user you selected.

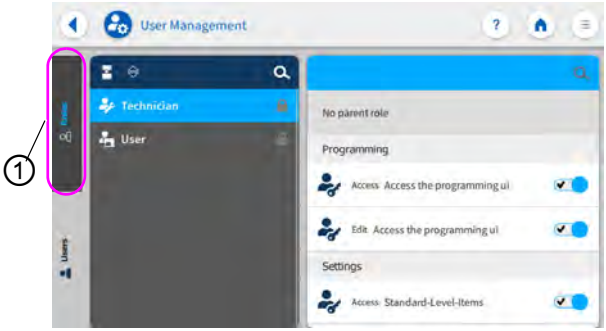
Explanation of role and user

Roles	User
A role defines which authorizations are permitted or forbidden. It is possible to assign more than one role to a single user. You need to be a user to log in; you cannot log in using a role.	You can log in as a user. A user can be assigned one or several roles - this is how they receive their authorizations.

6.3.3.1 Managing roles

If selecting User Management as a `Default Technician` (📖 *p. 70*), you will be presented with the following interface:

Fig. 52: Managing roles



(1) - Tab for roles

Press the tab (1) reserved for the `Roles` on the left-hand side.

Deleting a role

To delete a role:

1. Press the desired role.

↳ The role is highlighted in blue.

2. Press ✖.

↳ The role disappears from the list; it has been deleted.

Information

Roles with a 🔒 symbol behind their names have been created at the factory. They cannot be deleted.

Creating/deriving a new role

To create a new role:

1. Press (only a role with fewer or equal authorizations than your own).

   The list shows a new role.

2. Define the settings for the role (see table below).

Information
When logged in as a *Default Technician*, you can only select role derivations up to the role of *Technician*. You can adjust this setting in the authorizations of the roles (table below).

Settings of the roles

Read/Edit/Access	Menu item
Parent role	
Select from which role the new role is supposed to be derived. The selection shows all previously created roles.	
Programming	
Access	Access the programming ui
Edit	Settings on the programming screen
Settings	
Access	Standard level
Access	Technician level
Manual mode	
Edit	Bartack sewing
Edit	Status bar
Edit	Main screen
Access	Role Main Screen

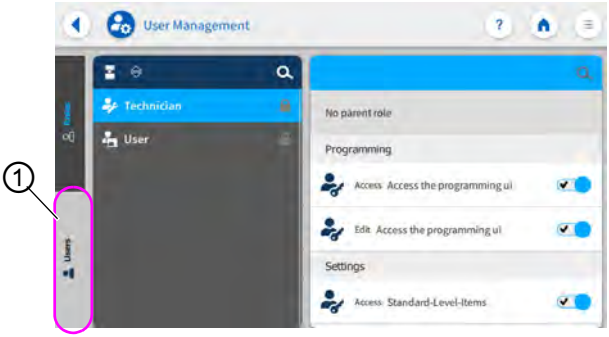
Read/Edit/Access	Menu item
Access	Role Status Bar
Access	Switch to automatic mode
Access	Sewing parameters
Edit	Manual bartack
Edit	Sewing foot lifted
Edit	Position of the needle while adjusting the sewing settings
Edit	Bobbin Wind mode
Edit	Segment abort
Edit	Edge trimmer
Edit	2nd Edge Guide Position
Edit	2nd Edge Guide Height
Edit	Edge Guide reference position
Edit	Stitch length
Edit	Switch Stitch Length
Edit	Needle thread tension
Edit	Switch Thread Tension
Edit	Sewing foot pressure
Edit	Bartack Toggle
Edit	Max. Speed
Edit	Needle Half Stitch
Edit	Enabled Thread Trim
Edit	Needle thread clamp
Edit	Threading Mode
Edit	Light barrier

Read/Edit/Access	Menu item
Edit	Reset Bobbin Counter
Edit	Center guide
Automatic mode	
Access	Program selection
Edit	Program name
Edit	Stitch length correction factor
Edit	Needle thread tension correction factor
Sewing	
Edit	Enable multi functional tiles
Edit	Flat Sew
User Management	
Edit	Current user
Edit	Roles up to technician
Edit	Roles up to vendor
Edit	Users up to technician
Edit	Users up to vendor
Edit	Auto Login Editable

6.3.3.2 Managing users

If selecting User Management as a `Default Technician` (📖 *p. 70*), you will be presented with the following interface:

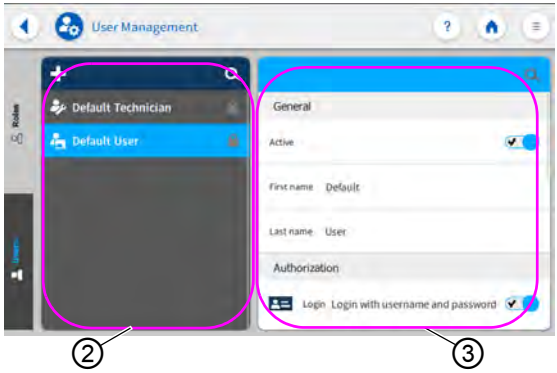
Fig. 53: Managing users (1)



(1) - Tab for users

Press the tab (1) reserved for the `User` on the left-hand side. This interface appears:

Fig. 54: Managing users (2)



(2) - List of users *(3) - Settings of the user*

The left-hand side holds a list of all users (2) that have been created. You will see on the right-hand side which settings (3) have been defined for the selected user.

Deleting a user

To delete a user:

1. Press the desired user.

↳ The user is highlighted in blue.

2. Press .

↳ The user disappears from the list; it has been deleted.

Information

Users with a symbol behind their names have been created at the factory. They cannot be deleted.

Creating a new user

To create a new user:

1. Press .

↳ The list shows a new user.

2. Define the settings for the user (see table below).

User settings

Icon	Settings	Explanation
General		
	First name	Name of the user, NOT to be confused with the data used for logging in!
	Last name	
Authorization		
	*Login with username and password*	On/Off
		Username Name for logging in
		Password Password for logging in
	*Login with NFC token*	Login by NFC chip allowed or not allowed
	Login using USB	Login by USB key allowed or not allowed
	*Automatic login during system start*	Automatic login when machine starts; no login required

Icon	Settings	Explanation
Roles (📖 *p. 77*)		
	*Technician*	Slider control active/inactive; for assigning the role
	*User*	Slider control active/inactive; for assigning the role

Information
When logged in as a *Default Technician*, you can only assign roles up to the role of *Technician*. You can adjust this setting in the authorizations of the roles (📖 *p. 77*).

6.4 Software operating modes

The software of the control panel offers various operating modes:

- **Manual mode**

  Manual mode is the simplest operating mode. There are no programs/seam programs and no inputs for individual seam sections.

  Changes to the sewing foot pressure, stroke height, stitch length, needle thread tension and, also, the activation of other functions are always implemented immediately.

  All the major sewing parameters can be changed manually during the sewing process.

- **Automatic mode**

  Automatic mode allows for the execution of setups (seam program comprised of only one seam section) or complex seam programs (comprising 2 or more seam sections).

  Seam programs are divided into individual seam sections. Each section is assigned its own individual stitch length, needle thread tension, etc.

- **Programming**

  Programming mode makes it possible to create, adjust or delete a seam program in a quick and easy manner.

The individual modes and their uses are explained in detail later on.

6.5 Using Manual mode

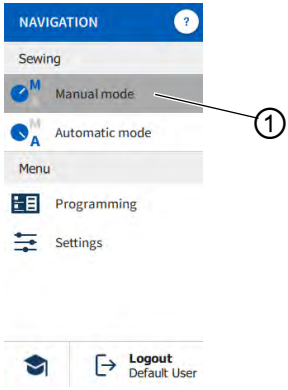
In manual mode, no programs have been saved, allowing you to use all parameters in a variable manner.

To access the Manual mode:

1. Press the symbol to bring up the navigation pane.

↳ This opens the navigation interface.

Fig. 55: Using Manual mode



(1) - Manual mode

2. Press `Manual mode` (1).

↳ The interface of Manual mode opens.

6.5.1 Setting up the user interface

You can customize the arrangement of the tiles and the appearance of the status bar in Manual mode.

Arranging the tiles on the main screen

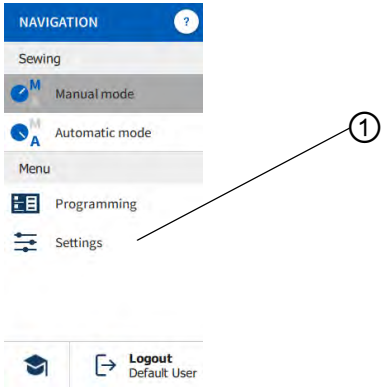
The main screen consists of three pages, which you can customize to your individual needs.

To adjust the tiles on the main screen:

1. Press the symbol to bring up the navigation pane.

↳ This opens the navigation interface.

Fig. 56: Setting up the user interface (1)

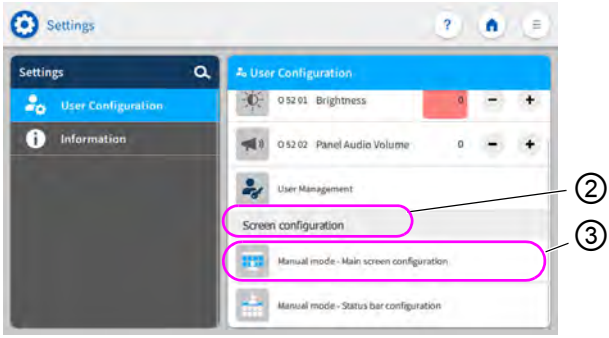


(1) - Settings

2. Press `Settings` (1).

↳ This opens the Settings interface.

Fig. 57: Setting up the user interface (2)

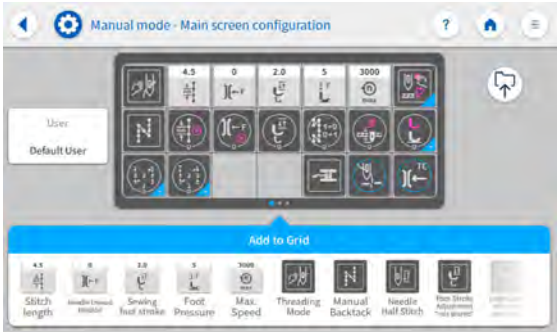


(2) - Screen configuration *(3) - Main screen configuration*

3. Go to `Screen configuration` (2) and press on `Manual mode - Main screen configuration` (3).

The interface used for configuring the main screen opens.

Fig. 58: Setting up the user interface (3)



4. Press and hold the desired tile and drag it to move it into or out of the grid.

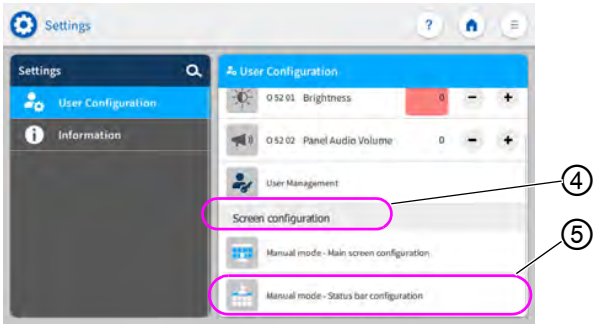
5. Press ◀ to return to Settings or ⌂ to return to Manual mode.

Adjusting the information displayed in the status bar

To adjust the appearance of the status bar:

1. Go to *Settings* (see above).

Fig. 59: Setting up the user interface (4)

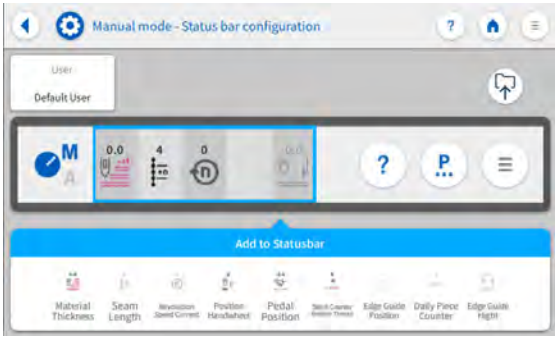


(4) - Screen configuration *(5) - Status bar configuration*

2. Go to *Screen configuration* (4) and press on *Manual mode - Status bar configuration* (5).

↳ The interface used for configuring the status bar opens.

Fig. 60: Setting up the user interface (5)

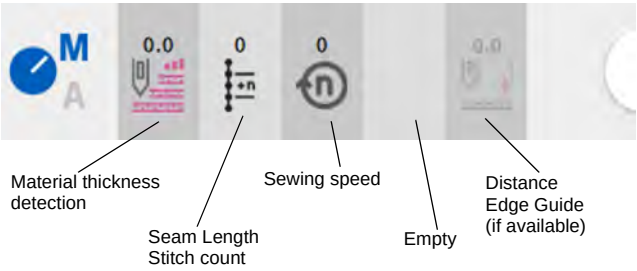


3. Press and hold the desired symbol and drag it to move it into or out of the status bar.

4. Press to return to Settings or to return to Manual mode.

Default status bar settings

Fig. 61: Default status bar



6.5.2 Setting the parameters

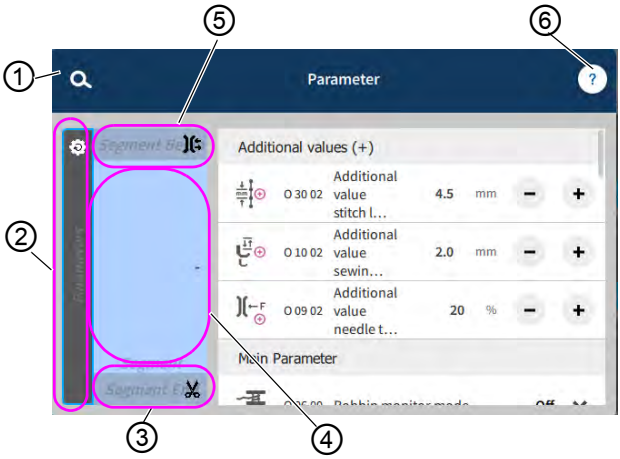
In Manual mode, you can set a variety of parameters. The functions and how they affect the parameters are described further below.

To access the parameter settings:

1. Press the symbol to bring up the parameter pane.

↳ This opens the parameter settings interface.

Fig. 62: Setting the parameters



(1) - Search
(2) - Parameters cross-segment
(3) - Parameters Segment End
(4) - Parameters Segment
(5) - Parameters Segment Begin
(6) - Context-sensitive help

6.5.3 Setting cross-segment *parameters*

There are various options for setting the cross-segment parameters. The following table lists all possible options.

Settings that are more complex and therefore require further explanation are described in more detail after the table.

Icon	Parameter	Settings
Additional values (+)		
	Additional value stitch length (+) The 2nd value for the stitch length can be switched on using a button on the push button panel or the tile on the control panel.	Value range 0.1 to 7.0 [mm] (depending on sewing equipment and subclass)
	Additional value needle thread tension (+) The 2nd value for the needle thread tension can be switched on using a button on the push button panel or the tile on the control panel.	Value range 01 to 99 [%]

Icon	Parameter	Settings
	*Additional value of upper fullness (+)* The 2nd value for the upper fullness can be switched on using a button on the push button panel, with the knee button or with the button on the control panel.	Value range -6 to 16
	*Additional value of lower fullness (+)* The 2nd value for the lower fullness can be switched on using a button on the push button panel, with the knee button or with the button on the control panel.	Value range -6 to 16
	*Gap (2nd value)* The 2nd value for the gap between the motor-driven edge guide and the needle (factoring in the defined safety distance to the sewing feet).	Value range 8.0 to 45.0 [mm]
Main Parameter		
	`Bobbin monitor mode`	(see 🕮 *p. 93*)
	`Point position` The distance of the needle from the material can be adjusted to allow precise positioning of the sewing material when starting sewing. The value entered here corresponds to the degree number on the handwheel.	Value range 000–359 [°]
	*Flat Sew* Transport correction at zero difference for Flat Sew.	Value range -20 to 20
	*Gap* Value for the gap between the motor-driven edge guide and the needle (factoring in the defined safety distance to the sewing feet).	Value range 8.0 to 45.0 [mm]
Correction speed effect		
	`Correction speed effect`	Value range On/Off (see 🕮 *p. 95*)

Icon	Parameter	Settings
	*Stitch length*	The stitch length changes slightly depending on the speed. For this reason, the stitch length can be adjusted at different speeds by the software.
	*Needle thread tension*	Depending on the speed, the needle thread tension can be adjusted at different speeds by the software.
	*Sewing foot pressure*	Depending on the speed, the sewing foot pressure can be adjusted at different speeds by the software.
Material thickness detection		
	`Material thickness detection`	Value range On/Off (see 🕮 *p. 98*)
	*Stitch length*	The stitch length changes slightly depending on the material thickness. For this reason, the stitch length can be adjusted to different material thicknesses by the software.
	*Needle thread tension*	Depending on the material thickness, the needle thread tension can be adjusted to different material thicknesses by the software.
	*Sewing foot pressure*	The sewing foot pressure can be adjusted to different material thicknesses by the software.
	`Max. Speed`	The maximum sewing speed can be adjusted to different material thicknesses by the software.
Output		
	`Output 1-16`	(see 🕮 *p. 102*)

6.5.3.1 Setting the *Bobbin monitor mode* parameters

The amount of remaining thread on the bobbin can be monitored optically or by software using this setting.

Menu item	Setting option 1	Setting option 2
Off		
Monitor Monitor mode can only be used if the additional equipment of the remaining thread monitor is present on the machine. Monitor mode allows for optical monitoring of the bobbin.	*Sewing stop*  Sewing stops and a notice is shown on the display when the bobbin is detected to be nearly empty. If the parameter is not activated, only the LEDs on the machine arm give a warning if the bobbin is empty.	Value range On/Off
	Sewing foot lower position 	Value range On/Off
	t Clean  Duration for which the lens is blown clear with compressed air. The process takes place as the thread is cut.	Value range 0000–5000 [ms]

Menu item	Setting option 1	Setting option 2
Software / Stitch Counter In Software mode, the bobbin is monitored by the software based on the number of stitches sewn.	*Counter Type*  4 different counters can be applied. The following 3 sub-items can be set for each of the counters.	Value range A/B/C/D
	Counter value  Bobbin supply capacity in stitches. This is a very variable value, which depends on the size of the bobbin and the thickness of the thread.	Value range 00000 to 99999
	Sewing stop  Sewing stops and a notice is shown on the display when the bobbin is detected to be nearly empty. If the parameter is not activated, only the LEDs on the machine arm give a warning if the bobbin is empty.	Value range On/Off
	Sewing foot lower position 	Value range On/Off
	Reset necessary  It is only possible to resume sewing after changing the bobbin and confirming the message on the control panel.	Value range On/Off

6.5.3.2 Setting the *Correction speed effect* parameters

Some parameters are affected by high speeds because of the resulting physical effects. To counteract these effects and to achieve consistent results, even at high speeds, adjustment factors can be set depending on the speed.

Overview of settings modes

The correction of the effects of high speeds can be identified in various modes and responded to depending on the setting. This general explanation can be applied to the following specific parameters.

Setting mode	Description
linear	In the linear setting, the size of the parameter increases or decreases steadily as the speed increases. The increase/decrease of the parameter depends on the limits set for the minimum and maximum speed.
2. Value On/Off	If a certain speed is exceeded, the 2nd value of the parameter is activated. If the speed then falls below this level again, it switches to the base value for the parameter.
2. Value On	If a certain speed is exceeded, the 2nd value of the parameter is activated. If the speed then falls below this level again, it does NOT switch to the base value for the parameter. Only after finishing the seam by cutting the thread is the base value for the parameter set again.

Setting options *Stitch length*

Menu item	Setting 1	Setting 2
linear	*Stitch length* Value range -50 – 50 [%]	Maximum stitch length variation reached at the upper speed limit.
	Min. Sewing speed Value range 0000-4000 [1/min] (depending on subclass)	Speed at which the increase/reduction of the stitch length should start.
	Max. Sewing speed Value range 0000-4000 [1/min] (depending on subclass)	Speed up to which the increase/reduction of the stitch length should occur.
2. Value On/Off	*Min. Sewing speed* Value range 0000-4000 [1/min] (depending on subclass)	Speed from which the 2nd stitch length should be used.
2. Value On	*Min. Sewing speed* Value range 0000-4000 [1/min] (depending on subclass)	Speed from which the 2nd stitch length should be used.

Options for setting the *Needle thread tension* parameter

Menu item	Setting 1	Setting 2
linear	*Needle thread tension* Value range 00 to 99 [%]	Maximum needle thread tension reached at the upper speed limit.
	Min. Speed Value range 0000-4000 [1/min] (depending on subclass)	Speed at which the increase in needle thread tension should start.
	Max. Speed Value range 0000-4000 [1/min] (depending on subclass)	Speed up to which the increase in needle thread tension should occur.
2. Value On/Off	*Min. Speed* Value range 0000-4000 [1/min] (depending on subclass)	Speed from which the 2nd needle thread tension should be used.
2. Value On	*Min. Speed* Value range 0000-4000 [1/min] (depending on subclass)	Speed from which the 2nd needle thread tension should be used.

Setting options *Sewing foot pressure*

Menu item	Setting 1	Setting 2
linear	*Sewing foot pressure* Value range 00 to 20	Maximum sewing foot pressure reached at the upper speed limit.
	Min. Speed Value range 0000-4000 [1/min] (depending on subclass)	Speed at which the increase in sewing foot pressure should start.
	Max. Speed Value range 0000-4000 [1/min] (depending on subclass)	Speed up to which the increase in sewing foot pressure should occur.

6.5.3.3 Setting the *Material thickness detection* parameters

To achieve consistently good sewing results for different material thicknesses, some parameters can be adjusted specifically to the material thickness.

Overview of settings modes

The material thickness can be identified in various modes and responded to depending on the setting. This general explanation can be applied to the following specific parameters.

Setting mode	Description
linear	In the linear setting, the size of the parameter increases or decreases steadily as the material thickness increases. The increase/decrease of the parameter depends on the limits set for the minimum and the maximum material thickness.
2. Value On/Off	If a certain material thickness is exceeded, the 2nd value of the parameter is activated. If the material thickness then falls below this level again, it switches to the base value for the parameter.
2. Value On	If a certain material thickness is exceeded, the 2nd value of the parameter is activated. If the material thickness then falls below this level again, it does NOT switch to the base value for the parameter. Only after finishing the seam by cutting the thread is the base value for the parameter set again.

Setting options *Stitch length*

Menu item	Setting 1	Setting 2
linear	*Stitch length* Value range -50 – 50 [%]	Maximum stitch length variation reached at the upper material thickness limit.
	Min. Material thickness Value range 00.0 to 10.0 [mm]	Material thickness at which the increase/ reduction of the stitch length should start.
	Max. Material thickness Value range 00.0 to 10.0 [mm]	Material thickness up to which the increase/ reduction of the stitch length should occur.
2. Value On/ Off	*Min. Material thickness* Value range 00.0 to 10.0 [mm]	Material thickness from which the 2nd stitch length should be used.
2. Value On	*Min. Material thickness* Value range 00.0 to 10.0 [mm]	Material thickness from which the 2nd stitch length should be used.

Options for setting the *Needle thread tension* parameter

Menu item	Setting 1	Setting 2
linear	*Needle thread tension* Value range 00 to 99 [%]	Maximum needle thread tension reached at the upper material thickness limit.
	Min. Material thickness Value range 00.0 to 10.0 [mm]	Material thickness at which the increase in needle thread tension should start.
	Max. Material thickness Value range 00.0 to 10.0 [mm]	Material thickness up to which the increase in needle thread tension should occur.
2. Value On/ Off	*Min. Material thickness* Value range 00.0 to 10.0 [mm]	Material thickness from which the 2nd needle thread tension should be used.
2. Value On	*Min. Material thickness* Value range 00.0 to 10.0 [mm]	Material thickness from which the 2nd needle thread tension should be used.

Setting options *Sewing foot pressure*

Menu item	Setting 1	Setting 2
linear	*Sewing foot pressure* Value range 00 to 20	Maximum sewing foot pressure reached at the upper material thickness limit.
	Min. Material thickness Value range 00.0 to 10.0 [mm]	Material thickness at which the increase in sewing foot pressure should start.
	Max. Material thickness Value range 00.0 to 10.0 [mm]	Material thickness up to which the increase in sewing foot pressure should occur.

Setting options *Max. sewing speed*

Menu item	Setting 1	Setting 2
linear	*Max. Speed* Value range 0000 to 4000 [1/min]	Maximum speed reached at the upper material thickness limit.
	Min. Material thickness Value range 00.0 to 10.0 [mm]	Material thickness at which the increase in sewing speed should start.
	Max. Material thickness Value range 00.0 to 10.0 [mm]	Material thickness up to which the increase in sewing speed should occur.

6.5.3.4 Setting the *Outputs (Output)* parameter

This parameter provides virtual outputs that can be assigned customer-specific functions. They can be used when customer-specific applications require a signal from the control of the machine.

This parameter cannot be used unless the virtual outputs have been assigned to a physical output at the Technician level. This requires that the parameter `Additional I/O Configuration` can be configured at the Technician level; for more details, refer to the explanation in the 🕮 *Service Instructions*.

6.5.4 Setting the *Segment Begin* parameters

There are various options for setting the Segment Begin parameters. The following table lists all possible options.

Settings that are more complex and therefore require further explanation are described in more detail after the table.

Icon	Parameter	Settings
Parameter Seam Begin		
	*Needle thread clamp* The needle thread clamp is closed at the 1st stitch of the seam to ensure that the needle thread lies on the underside of the sewing material.	Value range On/Off
Seam begin bartack parameters		
	*Bartack at seam begin*	Value range On/Off
	*Number of stitches backwards*	Value range 01 to 50
	*Number of stitches forward*	Value range 01 to 50

Icon	Parameter	Settings
	*Number of bartack sections* A bartack consists of several sections. If the sewing direction is changed, a new section is started. The number of sections in a bartack can be set here.	Value range 01 to 99
	*Stop-Time for direction change* The waiting time at the turning points (e.g. for a change of sewing direction) is set at this point. A short waiting time in milliseconds should ensure consistent seam quality (ornamental-stitch bartack).	Value range 0000–1000 [ms]
	*Stitch length default* If this function is active, the same needle stitch length is used for the bartack as the one set in Manual mode. If this function is deactivated, a custom input can be entered.	On/Off
		Stitch length of stitches forward Value range 0.1 to 7.0 [mm] (depending on subclass)
		Stitch length of backwards stitches Value range 0.1 to 7.0 [mm] (depending on subclass)
	*Speed in bartack*	Value range 50 to 2000 [1/min]
	*Single stitches per pedal* If this function is activated, each stitch in the bartack can be sewn individually by pressing the pedal. This function can only be used meaningfully if the speed is set very low for the bartack.	Value range On/Off
	*Needle thread tension default* If this function is active, the same needle thread tension is used for the bartack as the one set in Manual mode. If this function is deactivated, a custom input can be entered.	Value range On/Off

Icon	Parameter	Settings
	*Catch bartack* To ensure a safe sewing start and complete sewing of the start bartack, an additional bartack can precede the start bartack. Only the number of forward and backward stitches can be selected. The stitch length cannot be set individually – it corresponds to the stitch length of the normal start bartack.	On/Off
		Number of stitches backwards Value range 01 to 50
		Number of stitches forward Value range 01 to 50
		Number of bartack sections Value range 01 10
	*First bartack section* The 1st section of the bartack can be programmed with a different number of stitches. All subsequent sections have the preset number of stitches from the settings for the start bartack.	On/Off
		Number of stitches Value range 01 to 50
	*Last bartack section* The last section of the bartack can be programmed with a different number of stitches. All previous sections have the preset number of stitches from the settings for the end bartack.	On/Off
		Number of stitches Value range 01 to 50
	*Invert bartack direction* Normally, a bartack starts either with the sewing direction (forwards – even number of sections) or against the sewing direction (backwards – odd number of sections), depending on the number of sections. Setting this parameter inverts the sewing direction of the bartack.	Value range On/Off

6.5.5 Setting the *Segment* parameters

There are various options for setting the parameters in the segment. The following table lists all possible options.

Settings that are more complex and therefore require further explanation are described in more detail after the table.

Icon	Parameter	Settings
Seam Parameter		
	*Stitch length*	Value range 0.1 to 7.0 [mm] (depending on the sewing equipment and the subclass)
	*Needle thread tension*	Value range 01 to 99 [%]
	*Upper difference*	Value range -6 to 16
	*Lower difference*	Value range -6 to 16
	*Sewing foot pressure*	Value range 01 to 14
	*Max. Speed* It is possible to reduce the maximum sewing speed at this point. The maximum sewing speed can be set in the software at the Technician level.	Value range 0050-2500 [1/min] (depending on subclass)

Icon	Parameter	Settings
	*Sewing foot lift at stop*	Value range On/Off
	*Height of sewing foot lift at stop*	Value range 00 to 13 [mm] (depending on subclass)
	*Light barrier* (optional additional equipment) The light barrier detects the beginning and the end of the material. After a signal was detected, sewing can continue automatically with the specifically set parameters.	Value range On/Off (see 🕮 *p. 136*)

6.5.6 Setting the *Segment End* parameters

There are various options for setting the Segment End parameters. The following table lists all possible options.

Settings that are more complex and therefore require further explanation are described in more detail after the table.

Icon	Parameter	Settings
Parameter Seam End		
	*Sewing foot lift after trim*	Value range On/Off
	*Height of sewing foot lift after trim*	Value range 00 to 13 [mm] (depending on subclass)
	*Thread trimmer*	Value range On/Off

Icon	Parameter	Settings
Adjustments for seam end bartack parameters		
	*Bartack at seam end*	Value range On/Off
	*Number of stitches backwards*	Value range 01 to 50
	*Number of stitches forward*	Value range 01 to 50
	*Number of bartack sections* A bartack consists of several sections. If the sewing direction is changed, a new section is started. The number of sections in a bartack can be set here.	Value range 01 to 99
	*Stop-Time for direction change* The waiting time at the turning points (e.g. for a change of sewing direction) is set at this point. A short waiting time in milliseconds should ensure consistent seam quality (ornamental-stitch bartack).	Value range 0000–1000 [ms]
	*Stitch length default* If this function is active, the same needle stitch length is used for the bartack as the one set in Manual mode. If this function is deactivated, a custom input can be entered.	On/Off
		Stitch length of stitches forward Value range 0.1 to 7.0 [mm] (depending on subclass)
		Stitch length of backwards stitches Value range 0.1 to 7.0 [mm] (depending on subclass)
	*Speed in bartack*	Value range 50 to 2000 [1/min]

Icon	Parameter	Settings
	*Single stitches per pedal* If this function is activated, each stitch in the bartack can be sewn individually by pressing the pedal. This function can only be used meaningfully if the speed is set very low for the bartack.	Value range On/Off
	*Needle thread tension default* If this function is active, the same needle thread tension is used for the bartack as the one set in Manual mode. If this function is deactivated, a custom input can be entered.	Value range On/Off
	*Catch bartack* To ensure a safe sewing start and complete sewing of the start bartack, an additional bartack can precede the start bartack. Only the number of forward and backward stitches can be selected. The stitch length cannot be set individually – it corresponds to the stitch length of the normal start bartack.	On/Off
		Number of stitches backwards Value range 01 to 50
		Number of stitches forward Value range 01 to 50
		Number of bartack sections Value range 01 to 10
	*First bartack section* The first section of the bartack can be programmed with a different number of stitches. All subsequent sections have the preset number of stitches from the settings for the start bartack.	On/Off
		Number of stitches Value range 01 to 50

Icon	Parameter	Settings
	Last bartack section The last section of the bartack can be programmed with a different number of stitches. All previous sections have the preset number of stitches from the settings for the end bartack.	On/Off *Number of stitches* Value range 01 to 50
	Invert bartack direction Normally, a bartack starts either with the sewing direction (forwards – even number of sections) or against the sewing direction (backwards – odd number of sections), depending on the number of sections. Setting this parameter inverts the sewing direction of the bartack.	Value range On/Off

6.6 Using Automatic mode

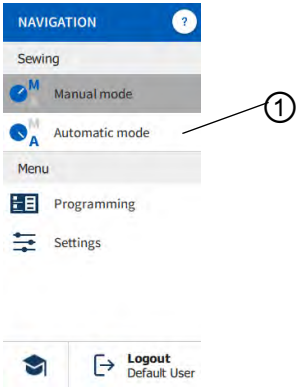
Automatic mode is comprised of all stored programs.

To access the Automatic mode:

1. Press the symbol ☰ to bring up the navigation pane.

   This opens the navigation interface.

Fig. 63: Using Automatic mode (1)



(1) - Automatic mode

2. Press `Automatic mode` (1).

↳ The interface of Automatic mode opens.
The program stored last is loaded.

The display shows tiles and information below the upper bar that vary with the selected program:

Fig. 64: Using Automatic mode (2)

Explanations of icons/symbols in Automatic mode:

Symbol/Icon	Meaning
	Selected program
	Move to the next or previous step in seams/ segments – also during the seam
X	Abort a seam program
	Seam/segment including information on the settings for seam beginning, seam and seam end
	Display of the entire program including its seams and segments.
	Adjustment factors that can still be adjusted during the seam.
	Grayed-out tiles for information on the set parameters can be adjusted by programming (📖 *p. 114*).
	Dark gray tiles can only be activated or deactivated. You define which tiles will be visible by programming (📖 *p. 114*).

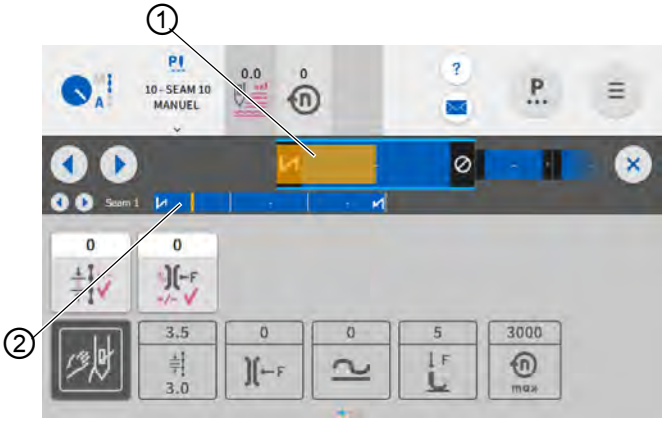
6.6.1 Sewing in Automatic mode

To sew in Automatic mode:

1. Select the program.
2. Press the pedal forward and sew.

↳ You can see the following on the control panel:

Fig. 65: Sewing in Automatic mode



(1) - Progress in the segment *(2) - Progress in the program*

Possible actions in the course of the seam

The following table lists the functions that can be performed in the course of the seam.

Button/Pedal	Function
	Go to the next or previous step in the seams/ segments
Press the pedal halfway back.	Lift sewing foot.
Press the pedal fully back or cancel by pressing the **X**.	Cut off or cancel the program. The program remains stopped at the cutoff point.

6.6.2 Canceling a program in Automatic mode

To cancel a program in Automatic mode:

1. Press the pedal fully back.

↳ The program is canceled and the thread cut. The machine takes note of where the program was canceled, and then continues from the same point when sewing resumes.

2. To cancel the program completely, press the pedal all the way backwards again.

↳ The program is canceled, and the machine starts from the first seam section in the program when sewing resumes.

Important

Canceling by pedal is only possible if the parameter segment switch by pedal is NOT active in the program defaults at the Technician level.
If the parameter is still active, you can cancel the program only by pressing the cross on the control panel.

6.7 Using Programming mode

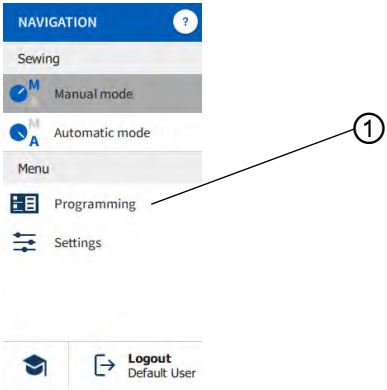
Programming mode allows you to create new programs and copy and adjust existing programs.

To access Programming mode:

1. Press the symbol ☰ to bring up the navigation pane.

↳ This opens the navigation interface.

Fig. 66: Using Programming mode (1)

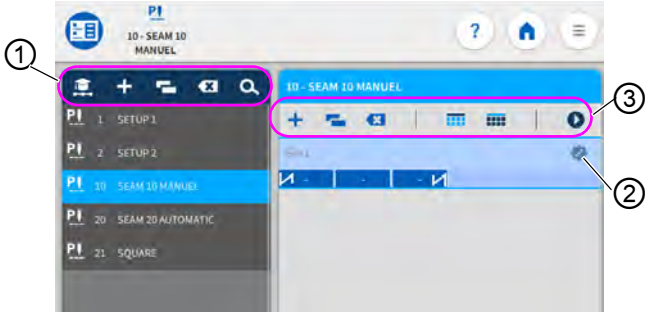


(1) - Programming mode

2. Press `Programming`.

↳ The user interface for Programming mode opens.

Fig. 67: Using Programming mode (2)



(1) - Managing programs
(2) - Edit the seams/segments
(3) - Manage the seams/segment

6.7.1 Managing programs

You can create, delete and copy programs. Managing the items is quick and easy thanks to the buttons listed below.

	Create a new program
	Delete a selected program
	Copy and insert a program
	Search for a program name

6.7.2 Managing seams

You can also add tiles to the main screen or the status bar. You can also add tiles to the main screen or the status bar. Managing the items is quick and easy thanks to the buttons listed below.

Settings in the selected program (edit seam)	
	Add seam
	Delete seam
	Copy and insert a seam
	Place tiles on the main screen of the program (grid), see 📖 *p. 86*.
	Place information in the status bar of the program, see 📖 *p. 86*.
	Exit Programming/Edit and return to the beginning of the program (in Automatic mode)

6.7.3 Editing the segments of a seam

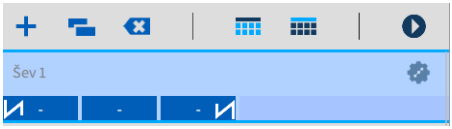
This section allows you to set the parameters for the current seam.

To edit the segments of a seam:

1. Press on the desired seam.

↳ The seam is highlighted in blue.

Fig. 68: Editing the segments of a seam (1)



2. Press on the symbol .

↳ The interface used for setting the parameters opens.

Fig. 69: Editing the segments of a seam (2)

(1) - Managing segments
(2) - Parameters cross-segment
(3) - Parameters Segment
(4) - Parameters Segment End/ Seam end
(5) - Parameters Segment Begin/ Seam Begin
(6) - List of adjustable parameters

6.7.4 Managing segments

You can create, delete and copy segments. Managing the items is quick and easy thanks to the buttons listed below.

Edit segments	
	Add segment
	Delete segment
	Copy and insert a segment

6.7.5 Setting program parameters

There are various options for setting the cross-program parameters. The following table lists all possible options.

Settings that are more complex and therefore require further explanation are described in more detail after the table.

Icon	Parameter	Settings
Additional values (+)		
	*Additional value stitch length (+)* The 2nd value for the stitch length can be switched on using a button on the push button panel or the tile on the control panel.	Value range 0.1 to 7.0 [mm] (depending on sewing equipment and subclass)
	*Additional value needle thread tension (+)* The 2nd value for the needle thread tension can be switched on using a button on the push button panel or the tile on the control panel.	Value range 01 to 99 [%]
	*Additional value of lower difference (+)* The 2nd value for the difference can be switched on using a button on the push button panel, with the knee button or with the button on the control panel.	Value range -6 to 16

Icon	Parameter	Settings
	*Gap (2nd value)* The 2nd value for the gap can be switched on using a button on the push button panel or the tile on the control panel.	Value range 01.0 to 45.0 [mm]
Program Cycle		
P→Px	*Next program* A subsequent program can be defined. Input via program number.	
	*Program Cycle* The program is executed as a loop, which is useful, for instance, for ornamental stitch seams. You select the start segment and the end segment from a program and define how often you wish the selected segments to be sewn.	On/Off
		`Start Segment` Value range 00 – 30 (0 = the cycle starts with the first segment)
		`End Segment` Value range 00 – 30 (0 = the cycle ends with the last segment)
		`Repetitions` Value range 00 – 99 (0 = the cycle continues until the next segment is activated manually)
Main Parameter		
	*Needle thread clamp* The needle thread clamp is closed at the 1st stitch of the seam to ensure that the needle thread lies on the underside of the sewing material.	Value range On/Off
	`Bobbin monitor mode`	(see 🕮 *p. 121*)

Icon	Parameter	Settings
	*Counter Mode* Daily piece counter, can be set to count either up or down.	`Off/Up/Down`
		`Reset` When the daily piece counter is activated, it must be reset once after entering a value to ensure it counts correctly.
	`Point position` The distance of the needle from the material can be adjusted to allow precise positioning of the sewing material when starting sewing. The value entered corresponds to the degree number on the handwheel.	000–359 [°]
	*Flat Sew* Transport correction at zero difference for Flat Sew.	Value range -20 to 20
Correction speed effect		
	`Correction speed effect`	Value range On/Off (see 🕮 *p. 123*)
	*Stitch length*	The stitch length changes slightly depending on the speed. For this reason, the stitch length can be adjusted at different speeds by the software.
	*Needle thread tension*	Depending on the speed, the needle thread tension can be adjusted at different speeds by the software.
	*Sewing foot pressure*	Depending on the speed, the sewing foot pressure can be adjusted at different speeds by the software.
Material thickness detection		
	`Material thickness detection`	Value range On/Off (see 🕮 *p. 126*)

Icon	Parameter	Settings
	*Stitch length*	The stitch length changes slightly depending on the material thickness. For this reason, the stitch length can be adjusted to different material thicknesses by the software.
	*Needle thread tension*	Depending on the material thickness, the needle thread tension can be adjusted to different material thicknesses by the software.
	*Sewing foot pressure*	The sewing foot pressure can be adjusted to different material thicknesses by the software.
	`Max. Speed`	The maximum sewing speed can be adjusted to different material thicknesses by the software.

6.7.5.1 Setting the *Bobbin monitor mode* parameters

The amount of remaining thread on the bobbin can be monitored optically or by software using this setting.

Menu item	Setting 1	Setting 2
Off		
Monitor Monitor mode can only be used if the additional equipment of the remaining thread monitor is present on the machine. Monitor mode allows for optical monitoring of the bobbin.	*Sewing stop*  Sewing stops and a notice is shown on the display when the bobbin is detected to be nearly empty. If the parameter is not activated, only the LEDs on the machine arm give a warning if the bobbin is empty.	Value range On/Off
	Sewing foot lower position 	Value range On/Off
	t Clean  Duration for which the lens is blown clear with compressed air. The process takes place as the thread is cut.	Value range 0000–5000 [ms]

Menu item	Setting 1	Setting 2
Software / Stitch Counter In Software mode, the bobbin is monitored by the software based on the number of stitches sewn.	*Counter Type*  A-D Σ 4 different counters can be applied. The following 3 sub-items can be set for each of the counters.	Value range A/B/C/D
	Counter value  Σ:0000 Bobbin supply capacity in stitches. This is a very variable value, which depends on the size of the bobbin and the thickness of the thread.	Value range 00000 to 99999
	Sewing stop  Sewing stops and a notice is shown on the display when the bobbin is detected to be nearly empty. If the parameter is not activated, only the LEDs on the machine arm give a warning if the bobbin is empty.	Value range On/Off
	Sewing foot lower position 	Value range On/Off
	Reset necessary  It is only possible to resume sewing after changing the bobbin and confirming the message on the control panel.	Value range On/Off

6.7.5.2 Setting the *Correction speed effect* parameters

Some parameters are affected by high speeds because of the resulting physical effects. To counteract these effects and to achieve consistent results, even at high speeds, adjustment factors can be set depending on the speed.

Overview of settings modes

The correction of the effects of high speeds can be identified in various modes and responded to depending on the setting. This general explanation can be applied to the following specific parameters.

Setting mode	Description
linear	In the linear setting, the size of the parameter increases or decreases steadily as the speed increases. The increase/decrease of the parameter depends on the limits set for the minimum and maximum speed.
2. Value On/Off	If a certain speed is exceeded, the 2nd value of the parameter is activated. If the speed then falls below this level again, it switches to the base value for the parameter.
2. Value On	If a certain speed is exceeded, the 2nd value of the parameter is activated. If the speed then falls below this level again, it does NOT switch to the base value for the parameter. Only after finishing the seam by cutting the thread is the base value for the parameter set again.

Setting options *Stitch length*

Menu item	Setting 1	Setting 2
linear	*Stitch length* Value range -50 – 50 [%]	Maximum stitch length variation reached at the upper speed limit.
	Min. Speed Value range 0000-4000 [1/min] (depending on subclass)	Speed at which the increase/reduction of the stitch length should start.
	Max. Speed Value range 0000-4000 [1/min] (depending on subclass)	Speed up to which the increase/reduction of the stitch length should occur.
2. Value On/ Off	*Min. Speed* Value range 0000-4000 [1/min] (depending on subclass)	Speed from which the 2nd stitch length should be used.
2. Value On	*Min. Speed* Value range 0000-4000 [1/min] (depending on subclass)	Speed from which the 2nd stitch length should be used.

Options for setting the *Needle thread tension* parameter

Menu item	Setting 1	Setting 2
linear	*Needle thread tension* Value range 00 to 99 [%]	Maximum needle thread tension reached at the upper speed limit.
	Min. Speed Value range 0000-4000 [1/min] (depending on subclass)	Speed at which the increase in needle thread tension should start.
	Max. Speed Value range 0000-4000 [1/min] (depending on subclass)	Speed up to which the increase in needle thread tension should occur.
2. Value On/ Off	*Min. Speed* Value range 0000-4000 [1/min] (depending on subclass)	Speed from which the 2nd needle thread tension should be used.
2. Value On	*Min. Speed* Value range 0000-4000 [1/min] (depending on subclass)	Speed from which the 2nd needle thread tension should be used.

Setting options *Sewing foot pressure*

Menu item	Setting 1	Setting 2
linear	*Sewing foot pressure* Value range 00 to 20	Maximum sewing foot pressure reached at the upper speed limit.
	Min. Speed Value range 0000-4000 [1/min] (depending on subclass)	Speed at which the increase in sewing foot pressure should start.
	Max. Speed Value range 0000-4000 [1/min] (depending on subclass)	Speed up to which the increase in sewing foot pressure should occur.

6.7.5.3 Setting the *Material thickness detection* parameters

To achieve consistently good sewing results for different material thicknesses, some parameters can be adjusted specifically to the material thickness.

Overview of settings modes

The material thickness can be identified in various modes and responded to depending on the setting. This general explanation can be applied to the following specific parameters.

Setting mode	Description
linear	In the linear setting, the size of the parameter increases or decreases steadily as the material thickness increases. The increase/decrease of the parameter depends on the limits set for the minimum and the maximum material thickness.
2. Value On/Off	If a certain material thickness is exceeded, the 2nd value of the parameter is activated. If the material thickness then falls below this level again, it switches to the base value for the parameter.
2. Value On	If a certain material thickness is exceeded, the 2nd value of the parameter is activated. If the material thickness then falls below this level again, it does NOT switch to the base value for the parameter. Only after finishing the seam by cutting the thread is the base value for the parameter set again.

Setting options *Stitch length*

Menu item	Setting 1	Setting 2
linear	*Stitch length* Value range -50 – 50 [%]	Maximum stitch length variation reached at the upper material thickness limit.
	Min. Material thickness Value range 00.0 to 10.0 [mm]	Material thickness at which the increase/reduction of the stitch length should start.
	Max. Material thickness Value range 00.0 to 10.0 [mm]	Material thickness up to which the increase/ reduction of the stitch length should occur.
2. Value On/ Off	*Min. Material thickness* Value range 00.0 to 10.0 [mm]	Material thickness from which the 2nd stitch length should be used.
2. Value On	*Min. Material thickness* Value range 00.0 to 10.0 [mm]	Material thickness from which the 2nd stitch length should be used.

Options for setting the *Needle thread tension* parameter

Menu item	Setting 1	Setting 2
linear	*Needle thread tension* Value range 00 to 99 [%]	Maximum needle thread tension reached at the upper material thickness limit.
	Min. Material thickness Value range 00.0 to 10.0 [mm]	Material thickness at which the increase in needle thread tension should start.
	Max. Material thickness Value range 00.0 to 10.0 [mm]	Material thickness up to which the increase in needle thread tension should occur.
2. Value On/ Off	*Min. Material thickness* Value range 00.0 to 10.0 [mm]	Material thickness from which the 2nd needle thread tension should be used.
2. Value On	*Min. Material thickness* Value range 00.0 to 10.0 [mm]	Material thickness from which the 2nd needle thread tension should be used.

Setting options *Sewing foot pressure*

Menu item	Setting 1	Setting 2
linear	*Sewing foot pressure* Value range 00 to 20	Maximum sewing foot pressure reached at the upper material thickness limit.
	Min. Material thickness Value range 00.0 to 10.0 [mm]	Material thickness at which the increase in sewing foot pressure should start.
	Max. Material thickness Value range 00.0 to 10.0 [mm]	Material thickness up to which the increase in sewing foot pressure should occur.

Setting options *Max. sewing speed*

Menu item	Setting 1	Setting 2
linear	*Max. Sewing speed* Value range 0000 to 4000 [1/min]	Maximum speed reached at the upper material thickness limit.
	Min. Material thickness Value range 00.0 – 10.0 [mm]	Material thickness at which the increase in sewing speed should start.
	Max. Material thickness Value range 00.0 to 10.0 [mm]	Material thickness up to which the increase in sewing speed should occur.

6.7.6 Setting the *Seam Begin/Segment Begin* parameters

There are various options for setting the Seam Begin/Segment Begin parameters. The following table lists all possible options.

Settings that are more complex and therefore require further explanation are described in more detail after the table.

Icon	Parameter	Settings
Seam begin bartack parameters		
	*Bartack at seam begin*	Value range On/Off
	*Number of stitches backwards*	Value range 01 to 50
	*Number of stitches forward*	Value range 01 to 50
	*Number of bartack sections* A bartack consists of several sections. If the sewing direction is changed, a new section is started. The number of sections in a bartack can be set here.	Value range 01 to 99
	*Stop-Time for direction change* The waiting time at the turning points (e.g. for a change of sewing direction) is set at this point. A short waiting time in milliseconds should ensure consistent seam quality (ornamental-stitch bartack).	Value range 0000–1000 [ms]

Icon	Parameter	Settings
	*Stitch length default* If this function is active, the same needle stitch length is used for the bartack as the one set in Manual mode. If this function is deactivated, a custom input can be entered.	On/Off
		Stitch length of stitches forward Value range 0.1 to 7.0 [mm] (depending on subclass)
		Stitch length of backwards stitches Value range 0.1 to 7.0 [mm] (depending on subclass)
	*Speed in bartack*	Value range 50 to 2000 [1/min]
	*Single stitches per pedal* If this function is activated, each stitch in the bartack can be sewn individually by pressing the pedal. This function can only be used meaningfully if the speed is set very low for the bartack.	Value range On/Off
	*Needle thread tension default* If this function is active, the same needle thread tension is used for the bartack as the one set in Manual mode. If this function is deactivated, a custom input can be entered.	Value range On/Off
	*Catch bartack* To ensure a safe sewing start and complete sewing of the start bartack, an additional bartack can precede the start bartack. Only the number of forward and backward stitches can be selected. The stitch length cannot be set individually – it corresponds to the stitch length of the normal start bartack.	On/Off
		Number of stitches backwards Value range 01 to 50
		Number of stitches forward Value range 01 to 50
		Number of bartack sections Value range 01 to 10

Icon	Parameter	Settings
	*First bartack section* The 1st section of the bartack can be programmed with a different number of stitches. All subsequent sections have the preset number of stitches from the settings for the start bartack.	On/Off *Number of stitches* Value range 01 to 50
	*Last bartack section* The last section of the bartack can be programmed with a different number of stitches. All previous sections have the preset number of stitches from the settings for the end bartack.	On/Off *Number of stitches* Value range 01 to 50
	*Invert bartack direction* Normally, a bartack starts either with the sewing direction (forwards – even number of sections) or against the sewing direction (backwards – odd number of sections), depending on the number of sections. Setting this parameter inverts the sewing direction of the bartack.	Value range On/Off

6.7.7 Setting the *Segment* parameters

There are various options for setting the parameters in the segment. The following table lists all possible options.

Settings that are more complex and therefore require further explanation are described in more detail after the table.

Icon	Parameter	Settings
Seam Parameter		
	*Stitch length*	Value range 0.1 to 7.0 [mm] (depending on the sewing equipment and the subclass)
	*Needle thread tension*	Value range 01 to 99 [%]
	*Sewing foot pressure*	Value range 01 to 14
	*Differentiation*	Value range -6 to 16
	*Type of differentiation*	Range Upper/lower
 	*Seam segment length* or *Number of stitches in segment*	You can set the active option at the Technician level *Machine configuration > Mode segment size*. The s.p.m. option is set at the factory. The display remains after the thread has been cut, while counting/ measuring will begin when sewing starts again.
	*Max. Speed* It is possible to reduce the maximum sewing speed at this point. The maximum sewing speed can be set in the software at the Technician level.	Value range 0050-2500 [1/min] (depending on subclass)

Icon	Parameter	Settings
	*Positioning of the needle* Position of the needle when sewing stops.	Value range On/Off
	*Sewing foot lift at stop*	Value range On/Off
	*Height of sewing foot lift at stop*	Value range 00 to 13 [mm] (depending on subclass)
	*Backwards* When the parameter is activated, the section is sewn backwards.	Value range On/Off
	*Center guide* (only on 2-needle machines, optional additional equipment)	Value range On/Off
	*Puller* (optional additional equipment) The feed dog supports the transport of the sewing material. The feed of the two rollers is calculated automatically based on the stitch length of the machine. An adjustment may be necessary depending on the application. The rollers of the feed dog can be adjusted separately. The input is in percent: a positive value increases the roller feed while a negative value reduces the feed.	On/Off *Correction top roller* Value range -100 - 100 [%] *Correction bottom roller* Value range -100 - 100 [%]
	*Gap* (optional additional equipment) The edge guide helps to precisely position the sewing material. The value set indicates the distance between the needle and edge guide/material edge.	Value range 01.0 - 45.0 [mm]

Icon	Parameter	Settings
	*Light barrier* (optional additional equipment) The light barrier detects the beginning and the end of the material. After a signal was detected, sewing can continue automatically with the specifically set parameters.	Value range On/Off (see 🕮 *p. 136*)
Output		
	*Output 01-16*	(see 🕮 *p. 137*)

6.7.7.1 Setting the *Light barrier* parameters

The light barrier detects the beginning and the end of the material. After a signal was detected, sewing can continue automatically with the specifically set parameters.

Icon	Menu item	Settings
	*Distance* Distance from the detection of the signal to the end of the material. The distance signifies the path from the needle to the light barrier. The path is specified in millimeters and used by the machine to independently calculate the number of stitches.	Value range 0 to 255
	*Signal detection at seam begin* The signal scan of the light barrier is performed at the beginning of the seam. If the function is activated, the light barrier must detect a signal to allow the machine to sew. If the function is inactive, sewing can take place without signal detection.	Value range On/Off
	*Signal detection at seam end* The signal scan of the light barrier is performed at the end of the seam. If the function is active, the machine will continue to sew with the specifically set parameters following the signal detection. If the function is inactive, nothing will happen.	Value range On/Off
	*Seams* Input of the number of signal detections after which the machine is supposed to continue with the specifically set parameters.	Value range 1 to 255
	*Filter stitches* Loosely woven fabric with stitches may cause the light barrier to wrongly detect a signal. To prevent this from happening, you enter the number of filter stitches. This number represents the minimum number of stitches with signal detection following the 1st detection of the signal.	Value range 0 to 255

6.7.7.2 Setting the Outputs (*Output*) parameter

This parameter provides virtual outputs that can be assigned customer-specific functions. They can be used when customer-specific applications require a signal from the control of the machine.

This parameter cannot be used unless the virtual outputs have been assigned to a physical output at the Technician level. This requires that the parameter *Additional I/O Configuration* can be configured at the Technician level; for more details, refer to the explanation in the 🕮 *Service Instructions*.

6.7.8 Setting the *Segment End/Seam End* parameters

There are various options for setting the Segment End parameters. The following table lists all possible options.

Settings that are more complex and therefore require further explanation are described in more detail after the table.

Icon	Parameter	Settings
Parameter Seam End		
	*Sewing stop*	Value range On/Off Setting as to what will happen at the end of a segment/seam. (see 🕮 *p. 140*)
Adjustments for seam end bartack parameters		
	*Bartack at seam end*	Value range On/Off
	*Number of stitches backwards*	Value range 01 to 50
	*Number of stitches forward*	Value range 01 to 50

Icon	Parameter	Settings
	*Number of bartack sections* A bartack consists of several sections. If the sewing direction is changed, a new section is started. The number of sections in a bartack can be set here.	Value range 01 to 99
	*Stop-Time for direction change* The waiting time at the turning points (e.g. for a change of sewing direction) is set at this point. A short waiting time in milliseconds should ensure consistent seam quality (ornamental-stitch bartack).	Value range 0000–1000 [ms]
	*Stitch length default* If this function is active, the same needle stitch length is used for the bartack as the one set in Manual mode. If this function is deactivated, a custom input can be entered.	On/Off
		Stitch length of stitches forward Value range 0.1 to 7.0 [mm] (depending on subclass)
		Stitch length of backwards stitches Value range 0.1 to 7.0 [mm] (depending on subclass)
	*Speed in bartack*	Value range 0000 to 2000 [1/min]
	*Single stitches per pedal* If this function is activated, each stitch in the bartack can be sewn individually by pressing the pedal. This function can only be used meaningfully if the speed is set very low for the bartack.	Value range On/Off
	*Needle thread tension default* If this function is active, the same needle thread tension is used for the bartack as the one set in Manual mode. If this function is deactivated, a custom input can be entered.	Value range On/Off

Icon	Parameter	Settings
	*Catch bartack* To ensure a safe sewing start and complete sewing of the start bartack, an additional bartack can precede the start bartack. Only the number of forward and backward stitches can be selected. The stitch length cannot be set individually – it corresponds to the stitch length of the normal start bartack.	On/Off
		Number of stitches backwards Value range 01 to 50
		Number of stitches forward Value range 01 to 50
		Number of bartack sections Value range 01 to 10
	*First bartack section* The 1st section of the bartack can be programmed with a different number of stitches. All subsequent sections have the preset number of stitches from the settings for the start bartack.	On/Off
		Number of stitches Value range 01 to 50
	*Last bartack section* The last section of the bartack can be programmed with a different number of stitches. All previous sections have the preset number of stitches from the settings for the end bartack.	On/Off
		Number of stitches Value range 01 to 50
	*Invert bartack direction* Normally, a bartack starts either with the sewing direction (forwards – even number of sections) or against the sewing direction (backwards – odd number of sections), depending on the number of sections. Setting this parameter inverts the sewing direction of the bartack.	Value range On/Off

6.7.8.1 Setting the *Sewing stop* parameters

You can set additional parameters for the *Sewing stop*. Possible settings and the corresponding value ranges are listed in the table.

Icon	Menu item	Setting option
	*Needle up position*	Value range On/Off
	*Thread trimmer* (can only be set in the last segment)	Value range On/Off
	*Sewing foot lift at segment end*	Value range On/Off
	*Height of sewing foot lift after trim/at segment end*	Value range 00 to 13 [mm] (depending on subclass)

6.8 Importing/exporting programs

Programs cannot be imported or exported by the Default User.

This process requires that the user be logged in as a technician, 🕮 *Service Instructions*.

6.9 Performing a software update

A software update - for control panel or control - is always performed on the control panel. The software of the control is updated automatically whenever a software update is performed for the control panel. The files necessary for updating the control are already included in the file updates of the control panel.

To perform a software update:

1. Log in as a user with the access rights necessary to perform a software update (see 📖 *p. 70* on how to define this setting).
2. Download the software version from the Internet (www.duerkopp-adler.com) and save it to a USB key.
3. Plug the USB key into the port on the control panel.
4. Open the burger menu and select the menu *Settings – Software Update*.

↳ A window listing the files stored on the USB key opens.

5. Select the file containing the software update.

↳ Another window opens.

6. To start the software update, press on the *Start Update* button.
7. Wait until advised that the USB key can be removed OR that the control panel was restarted.

Information

If detecting - while the control panel is being restarted - that the software of the control requires an update as well, the system will start this update automatically.

It may take up to 15 minutes for the system to complete the update and restart the control panel successfully.

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8. Once the control panel has been restarted, the machine can be used again.
9. If you have not already done so, you can now remove the USB key.

7 Maintenance

WARNING

Risk of injury from sharp parts!

Punctures and cutting possible.

Prior to any maintenance work, switch off the machine or set the machine to threading mode.

WARNING

Risk of injury from moving parts!

Crushing possible.

Prior to any maintenance work, switch off the machine or set the machine to threading mode.

This chapter describes maintenance work that needs to be carried out on a regular basis to extend the service life of the machine and achieve the desired seam quality.

Advanced maintenance work may only be carried out by qualified specialists (🕮 *Service Instructions)*.

Maintenance intervals

Work to be carried out	Operating hours			
	8	40	160	500
Cleaning				
Removing sewing dust and thread residues	●			
Lubricating				
Lubricating the machine head	●			
Lubricating the hook		●		

Work to be carried out	Operating hours			
	8	40	160	500
Servicing the pneumatic system				
Adjusting the operating pressure	●			
Draining the water condensation	●			
Cleaning the filter element		●		

7.1 Cleaning

WARNING

Risk of injury from flying particles!

Flying particles can enter the eyes, causing injury.

Wear safety goggles.
Hold the compressed air gun so that the particles do not fly close to people.
Make sure no particles fly into the oil pan.

CAUTION

Property damage from soiling!

Sewing dust and thread residues can impair the operation of the machine.

Clean the machine as described.

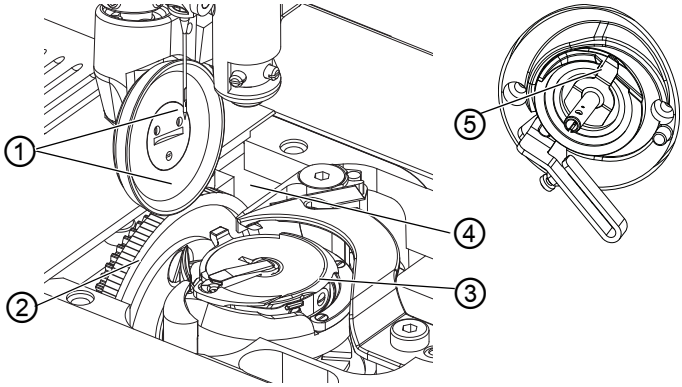
NOTICE

Property damage from solvent-based cleaners!

Solvent-based cleaners will damage paintwork.

Use only solvent-free substances for cleaning.

Fig. 70: Areas requiring special attention when cleaning



(1) - Area around the needle and the roller foot
(2) - Feed dog
(3) - Hook
(4) - Area under the throat plate
(5) - Knife on the winder

Areas particularly susceptible to soiling:

- Knife on the winder for the hook thread (5)
- Area under the throat plate (4)
- Hook (3)
- Feed dog (2)
- Area around the needle and the roller foot (1)

Cleaning steps:

1. Switch off the machine at the main switch.
2. Remove any lint and thread residues using a compressed air gun or a brush.

7.2 Lubricating

CAUTION

Risk of injury from contact with oil!

Oil can cause a rash if it comes into contact with skin.

Avoid skin contact with oil.
If oil has come into contact with your skin, wash the affected areas thoroughly.

NOTICE

Property damage from incorrect oil!

Incorrect oil types can result in damage to the machine.

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

CAUTION

Risk of environmental damage from oil!

Oil is a pollutant and must not enter the sewage system or the soil.

Carefully collect up used oil.
Dispose of used oil and oily machine parts in accordance with national regulations.

The machine is equipped with a central oil-wick lubrication system. The bearings are supplied from the oil reservoir.

For topping off the oil reservoir, use only lubricating oil **DA 10** or oil of equivalent quality with the following specifications:

- Viscosity at 40 °C: 10 mm^2/s
- Flash point: 150 °C

You can order the lubricating oil from our sales offices using the following part numbers.

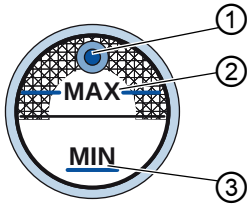
Container	Part no.
250 ml	9047 000011
1 l	9047 000012
2 l	9047 000013
5 l	9047 000014

7.2.1 Lubricating the machine head

Proper setting

The oil level is between the minimum level marking and the maximum level marking.

Fig. 71: Lubricating the machine head



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

To lubricate the machine head:

1. Check the oil level indicator at the inspection glass every day.
2. If the inspection glass lights up red, the machine is not sufficiently supplied with oil.
3. If the oil level is below the minimum level marking (3): Pour oil through the refill opening (1) but no higher than the maximum level marking (2).

7.2.2 Lubricating the hook

CAUTION

Risk of injury!

Crushing and puncture possible.

Only lubricate the hook when the machine is switched off. Carry out function tests with utmost caution when the sewing machine is switched on.

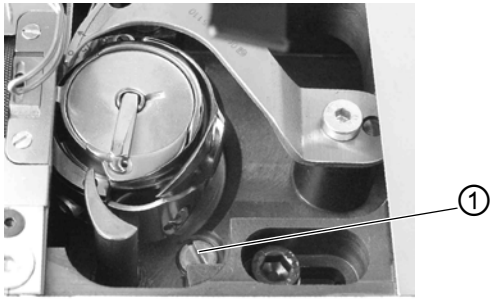
The approved oil quantity for hook lubrication is a factory specification.

Proper setting

1. Hold a piece of blotting paper next to the hook.
2. Allow the machine to run without thread and sewing material for 10 seconds with the sewing feet lifted and at a high speed.

↳ The blotting paper will show a thin strip of oil when sewing is complete.

Fig. 72: Lubricating the hook



(1) - Screw

To lubricate the hook:

1. Turn the screw (1):
   - counterclockwise: more oil is released
   - clockwise: less oil is released

Important

The released amount of oil does not change until the operating time has run a few minutes. Sew for several minutes before you check the setting again.

7.3 Servicing the pneumatic system

7.3.1 Adjusting the operating pressure

NOTICE

Property damage from incorrect adjustment!

Incorrect operating pressure can result in damage to the machine.

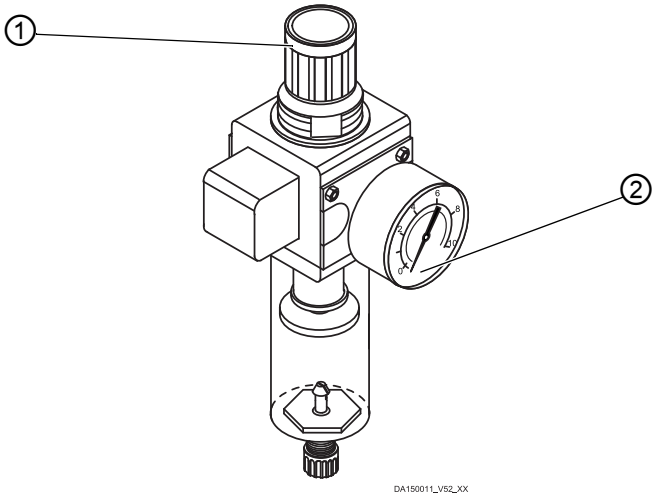
Ensure that the machine is only used when the operating pressure is set correctly.

Proper setting

Refer to the **Technical Data** (📖 *p. 187*) chapter for the permissible operating pressure. The operating pressure cannot deviate by more than ±0.5 bar.

Check the operating pressure on a daily basis.

Fig. 73: Adjusting the operating pressure



(1) - Pressure regulator *(2) - Pressure gage*

To adjust the operating pressure:

1. Pull the pressure regulator (1) up.
2. Turn the pressure regulator until the pressure gage (2) indicates the proper setting:
   - Increase pressure = turn clockwise
   - Reduce pressure = turn counterclockwise
3. Push the pressure regulator (1) down.

7.3.2 Draining the water condensation

NOTICE

Property damage from excess water!

Excess water can cause damage to the machine.

Drain water as required.

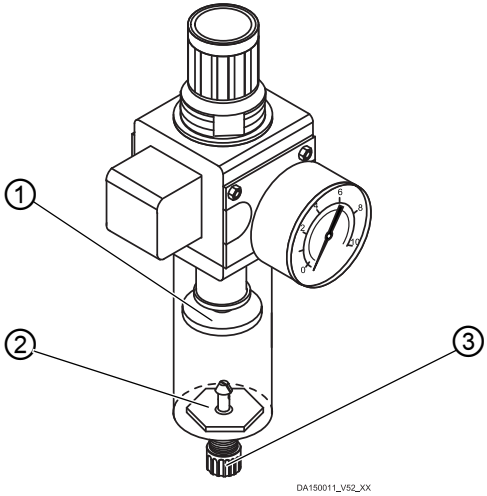
Water condensation accumulates in the water separator (2) of the pressure controller.

Proper setting

Water condensation must not rise up to the level of the filter element (1).

Check the water level in the water separator (2) on a daily basis.

Fig. 74: Draining the water condensation



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

To drain water condensation:

1. Disconnect the machine from the compressed air supply.
2. Place the collection tray under the drain screw (3).
3. Loosen the drain screw (3) completely.

4. Allow water to drain into the collection tray.
5. Screw in the drain screw (3).
6. Connect the machine to the compressed air supply.

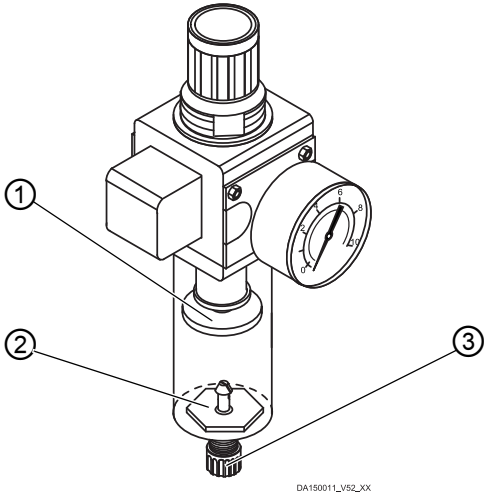
7.3.3 Cleaning the filter element

CAUTION

Damage to the paintwork from solvent-based cleaners!
Solvent-based cleaners damage the filter.

Use only solvent-free substances for washing out the filter tray.

Fig. 75: Cleaning the filter element



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

To clean the filter element:

1. Disconnect the machine from the compressed air supply.
2. Drain the water condensation (📖 *p. 151*).
3. Loosen the water separator (2).
4. Unscrew the filter element (1).
5. Blow out the filter element (1) using a compressed air gun.
6. Wash out the filter tray using benzine.
7. Screw in the filter element (1).
8. Screw in the water separator (2).
9. Screw in the drain screw (3).
10. Connect the machine to the compressed air supply.

7.4 Parts list

A parts list can be ordered from Dürkopp Adler. Or visit our website for further information at:

www.duerkopp-adler.com

8 Setup

WARNING

Risk of injury!
Only qualified specialists may set up the machine.
Wear safety gloves and safety shoes when unpacking and setting up.

8.1 Checking the scope of delivery

Important

The scope of delivery depends on your specific order.

1. Check whether the scope of delivery is correct prior to setup.

Standard equipment:

- Machine head
- Oil pan
- Reel stand with unwinding bracket
- Control box
- Control panel
- Sewing light

Optional additional equipment:

- Tabletop
- Drawer
- Stand
- Pedal
- Electric knee lever

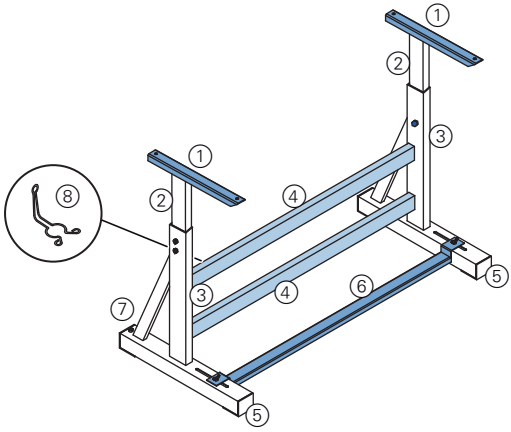
8.2 Removing the transport locks

All transport securing devices must be removed prior to installation.

1. Remove the lashing straps and wooden blocks from the machine head, the table, and the stand.
2. Remove the support wedges between the machine arm and throat plate.

8.3 Assembling the stand

Fig. 76: Assembling the stand



(1) - Inner bar head sections
(2) - Inner bars
(3) - Stand bars
(4) - Cross bar
(5) - Foot strut
(6) - Cross strut
(7) - Adjusting wheel
(8) - Holder for oil can

1. Tighten the cross members (4) to the stand bars (3).
2. Screw the oil can holder (8) at the rear to the upper cross bar (4).
3. Screw the cross strut (6) to the foot struts (5).
4. Insert the inner bars (2) in such a way that the longer end of the head section (1) is above the longer end of the foot struts (5).
5. Tighten the inner bars (2) down so that both head sections (1) are at the same height.

Important

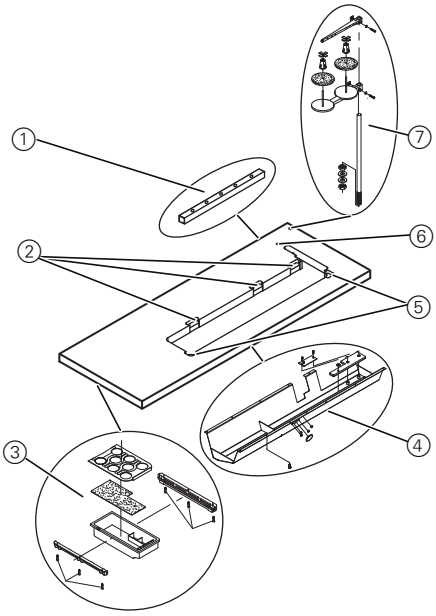
6. Turn the adjusting wheel (7) so that the stand has even contact with the ground.

8.4 Completing the tabletop

Information

The tabletop is optional.
Drawings are provided in the appendix to allow you to independently assemble a tabletop (📖 *p. 189*).

Fig. 77: Completing the tabletop



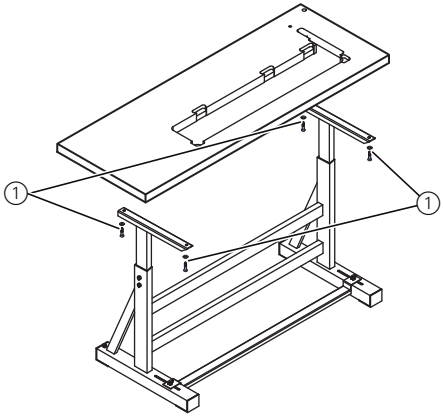
(1) - Cable duct
(2) - Slot for lower hinge parts
(3) - Drawer
(4) - Oil pan
(5) - Protrusion
(6) - Hole
(7) - Reel stand

1. Screw the drawer (3) with the left-hand bracket to the underside of the tabletop.

2. Screw the oil pan (4) in place under the slot for the machine.
3. Screw the cable duct (1) to the underside of the tabletop.
4. Insert the reel stand (7) into the hole.
5. Assemble the reel stand (7) with nut and washer.
6. Tighten the thread reel holder and the unwinding bracket on the reel stand (7) in such a way that they are exactly opposite each other.
7. Insert the plug (6) in the hole.
8. Insert the lower hinge parts into the slots (2).
9. Fit the rubber corners in the corner protrusions (5).

8.5 Assembling the tabletop to the stand

Fig. 78: Assembling the tabletop to the stand



(1) - Screw holes and screws

1. Place the tabletop on the head sections of the inner bars.
2. Use the screws (1) to fasten the tabletop at the screw holes of the head sections (📖 *p. 189*).

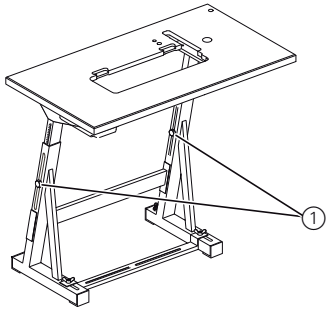
8.6 Adjusting the working height

WARNING

Risk of crushing!
The tabletop can sink under its own weight when the screws on the stand bars are loosened.
The tabletop is even more likely to drop when the machine head has already been inserted.
Make sure not to crush your hand when loosening the screws.

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

Fig. 79: To adjust the working height:



(1) - Screws

1. Loosen the screws (1) on the stand bars.
2. Adjust the tabletop to the desired height.

Important

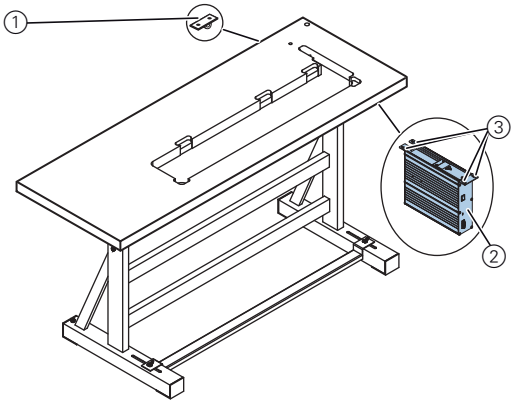
Pull out or push in the tabletop evenly at both sides to prevent it from jamming.

3. Tighten the screws (1) on the stand bars.

8.7 Control

8.7.1 Assembling the control box

Fig. 80: Assembling the control box

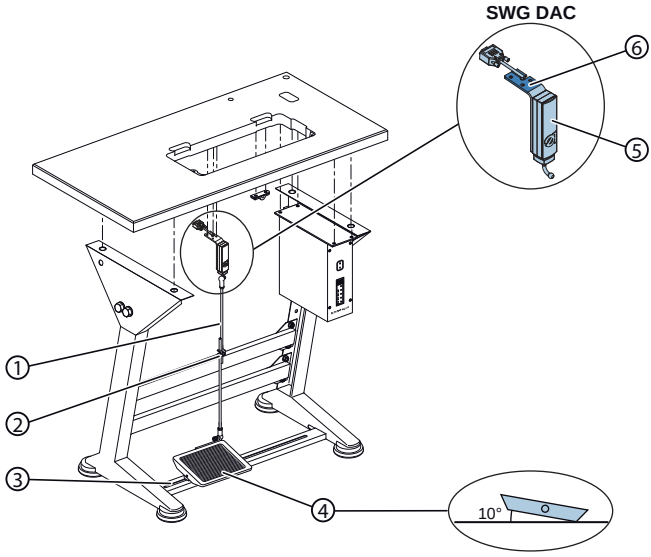


(1) - Strain relief mechanism
(2) - Control box
(3) - Screw holder

1. Screw the control (2) onto the 4 screw holders (3) under the tabletop.
2. Clamp the power cable of the control (2) into the strain relief mechanism (1).
3. Screw the strain relief mechanism (1) under the tabletop.

8.7.2 Assembling the pedal and setpoint device of the pedal position

Fig. 81: Assembling the setpoint device of the pedal position



(1) - Pedal rod
(2) - Screw
(3) - Cross strut
(4) - Pedal
(5) - Setpoint device of the pedal position
(6) - Bracket

1. Fit the pedal (4) on the cross strut (3) and align it in such a way that the middle of the pedal is under the needle. The cross strut has slotted holes to allow for the alignment of the pedal.
2. Tighten the pedal (4) on the cross strut (3).
3. Screw the bracket (6) under the tabletop so that the pedal rod (1) runs to the pedal (4) at right-angles to the setpoint device of the pedal position (5).
4. Screw the setpoint device of the pedal position (5) onto the bracket (6).
5. Attach the pedal rod (1) with the ball sockets to the setpoint device of the pedal position (5) and to the pedal (4).
6. Pull the pedal rod (1) to the correct length:

Proper setting

10° inclination with pedal (4) released

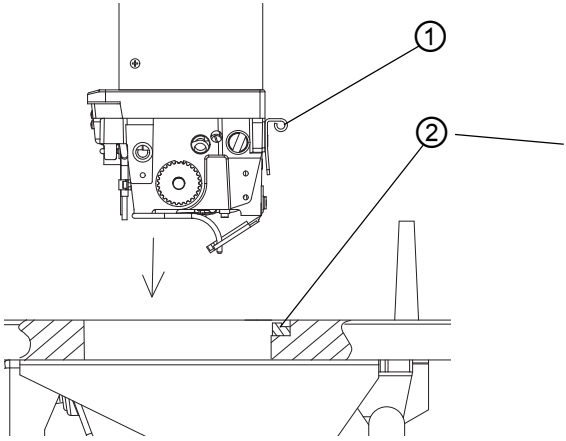
7. Tighten the screw (2).

8.8 Inserting the machine head

WARNING

Risk of crushing!
The machine head is very heavy.
Ensure that your hands are not jammed when inserting the machine head.
This especially applies when inserting the upper hinge parts into the rubber inlays.

Fig. 82: Inserting the machine head

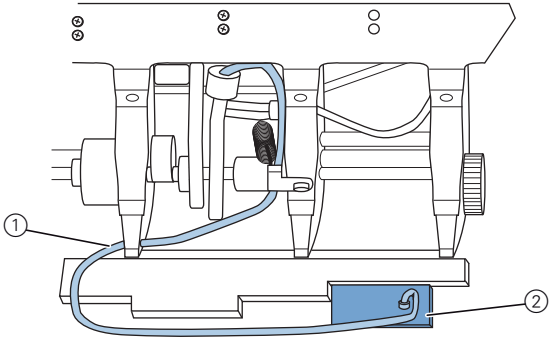


(1) - Upper hinge parts *(2) - Rubber inlays*

1. Tighten the upper hinge parts (1) onto the machine head.
2. Insert the machine head vertically into the tabletop cutout.
3. Insert the upper hinge parts (1) into the rubber inlays (2).

8.9 Assembling the oil extraction line

Fig. 83: Assembling the oil extraction line

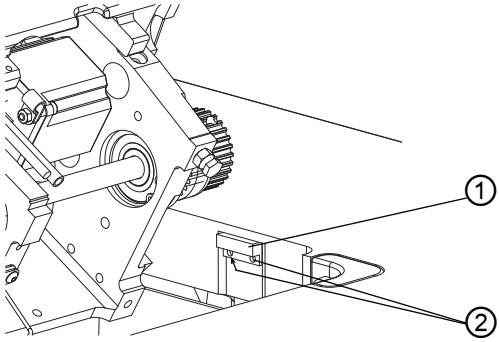


(1) - Oil extraction line hose *(2) - Filter*

1. Tilt the machine head.
2. Tighten the filter (2) inside the oil pan with the plastic adapter to the right.
3. Insert the tube of the oil extraction line (1) into the plastic adapter.

8.10 Installation of the machine's tilt sensor

Fig. 84: Installation of the machine's tilt sensor

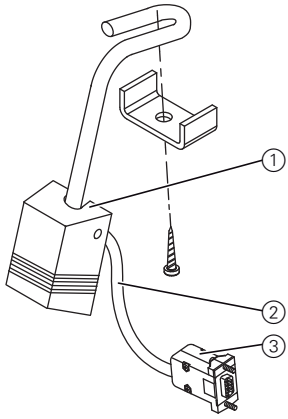


(1) - Sensor
(2) - Screws

1. Tilt the machine head.
2. Insert the sensor (1) into the slot in the tabletop.
3. Tighten the sensor (1) using the two screws (2).

8.11 Assembling the knee lever

Fig. 85: Assembling the knee lever



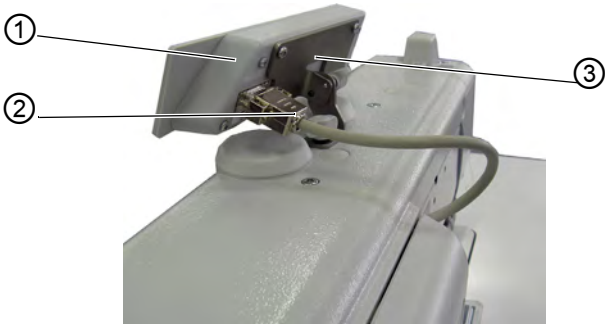
(1) - Knee lever
(2) - Connecting cable
(3) - Plug

1. Screw the knee button (1) in front of the oil pan firmly in place under the tabletop.
2. Guide the connecting cable (2) to the back between the oil pan and the control.
3. Insert the plug (3) of the connecting cable into the socket of the control.

8.12 Assembling the control panel

8.12.1 Assembling OP3000

Fig. 86: Assembling OP3000

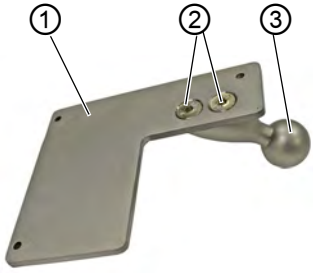


(1) - Control panel
(2) - Connecting cable with plug
(3) - Control panel bracket

1. Tighten the control panel (1) on the bracket (3).
2. Insert the plug (2) of the connecting cable into the socket of the control panel (1).

8.12.2 Assembling the Commander Basic/Pro

Fig. 87: Assembling the Commander Basic/Pro (1)

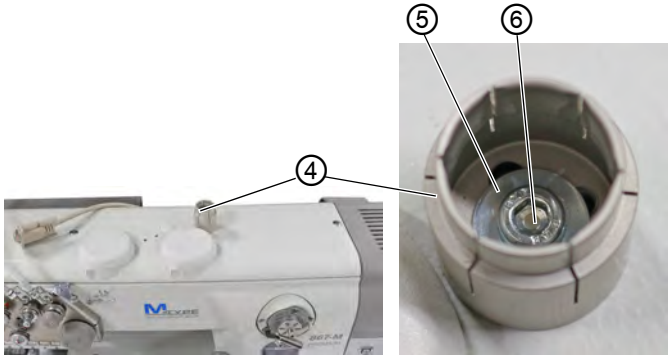


(1) - Control panel bracket
(2) - Countersunk screws
(3) - Ball head

To assemble the Commander Basic/Pro control panel:

1. Screw the ball head (3) to the control panel holder (1) using 2 countersunk screws (2).

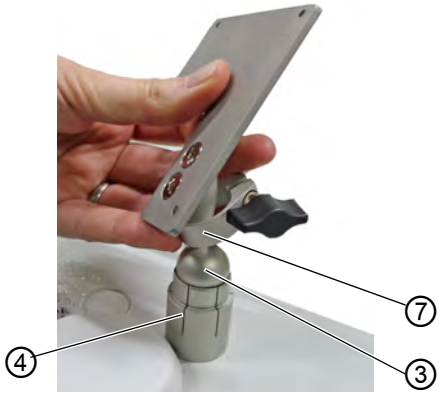
Fig. 88: Assembling the Commander Basic/Pro (2)



(4) - Ball socket
(5) - Washer
(6) - Screw

2. Place the arm cover (📖 *Service Instructions*).
   The arm cover is tightened by only 3 screws.
3. Screw the ball socket (4) to the arm cover using washer (5) and screw (6).

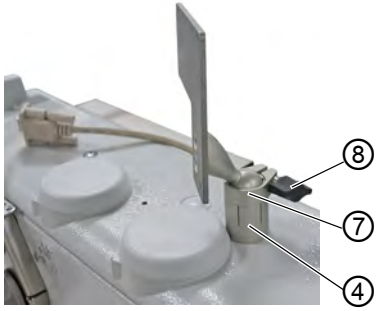
Fig. 89: Assembling the Commander Basic/Pro (3)



(3) - Ball head
(4) - Ball socket
(7) - Clip

4. Slip the clip (7) over the ball head (3).
5. Press the ball head (3) into the ball socket (4), allowing it to slightly gyrate.

Fig. 90: Assembling the Commander Basic/Pro (4)



(4) - Ball socket
(7) - Clip
(8) - Wing screw

6. Slide the clip (7) onto the ball socket (4).
7. Tighten the wing screw (8).

Fig. 91: Assembling the Commander Basic/Pro (5)

(9) - Control panel Commander Basic/Pro
(10) - Screws

8. Tighten the Commander Basic/Pro control panel (9) to the control panel holder using the screws (10).
9. Insert and tighten the cable at the Commander Basic/Pro control panel (9).

Information
Another option is to assemble the ball socket (4) on the tabletop using a chipboard screw.
This requires that you pre-drill the hole in the tabletop to prevent damage to the tabletop surface.

10. Switch on the machine.

The control panel is recognized by the control. The first initialization can take up to 15 minutes - do NOT switch off the machine!

11. The machine is ready for operation when the Commander Basic/Pro user interface is visible.

8.13 Electrical connection

DANGER

Risk of death from electric shock!
Only qualified specialists may perform work on electrical equipment.
Disconnect the power plug before carrying out work on the electrical equipment.
Make sure the power plug is not accidentally plugged back in.
The voltage on the type plate of the sewing motor must correspond to the mains voltage.

8.13.1 Checking the mains voltage

Important

The voltage on the type plate of the sewing motor must correspond to the mains voltage.

1. Check the mains voltage before connecting the machine.

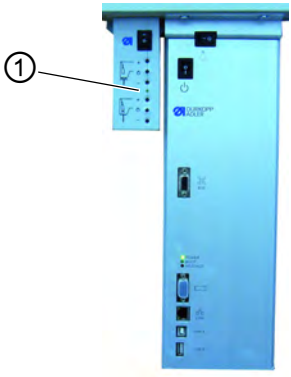
8.13.2 Assembling and connecting the sewing light and sewing light transformer

DANGER

Risk of death from electric shock!
If you disconnect the sewing machine from the electricity using the main switch, the power supply to the lighting of the sewing machine remains switched on.
Disconnect the power plug before assembling the sewing light with sewing light transformer.
Make sure the power plug is not accidentally plugged back in.

Assembling the sewing light transformer

Fig. 92: Assembling the sewing light transformer

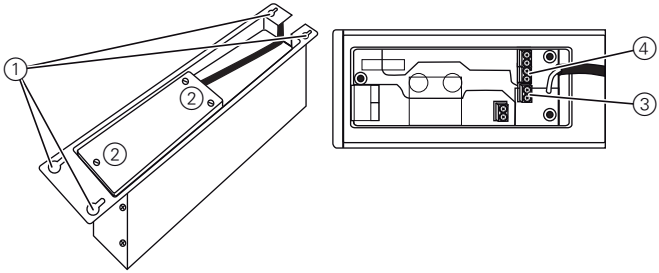


(1) - Sewing light transformer

1. Screw the sewing light transformer (1) in place at the pre-drilled holes under the tabletop.
2. Assemble the connecting cable under the tabletop using cable ties.
3. Establish the plug connection to the supply line for the sewing light.

Connecting the sewing light transformer

Fig. 93: Connecting the sewing light transformer



(1) - Screw holder
(2) - Adapter cover screws
(3) - 24V/X5 connection
(4) - X3 connection

1. Loosen the screw holder (4) for the control until the control can be removed.
2. Remove the control.
3. Loosen the adapter cover screws (3).
4. Connect the supply line:
   - for additional sewing lights to be assembled to the X3 connection (1)
   - for integrated LED sewing lights connected to the 24V/X5 connection (2)

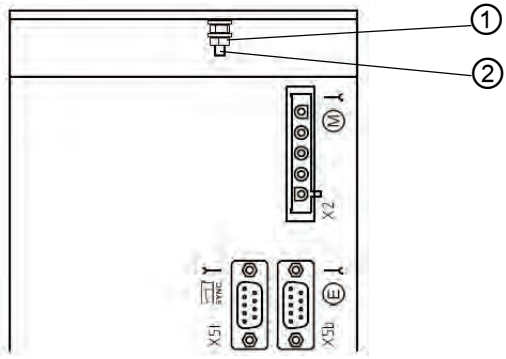
8.13.3 Establishing equipotential bonding

DANGER

Risk of death from electric shock!
Disconnect the power plug before establishing equipotential bonding.
Make sure the power plug is not accidentally plugged back in.

The grounding wire conducts away any static charging of the machine head.

Fig. 94: Establishing equipotential bonding



(1) - Nut *(2) - Grounding wire connection*

1. Loosen the nut (1).
2. Guide the gray cable of the motor cable through the grounding wire connection (2).
3. Screw in the nut (1) and tighten it.

Information
If the machine also comes with a knee lever with grounding wire, it must be attached in the same way at the control box.

8.13.4 Assembling the control box

DANGER

Risk of death from electric shock!
Disconnect the power plug before connecting the control box.
Make sure the power plug is not accidentally plugged back in.

To connect the control box:

- Insert the plugs of all connecting cable into the sockets on the back of the control box.
- Use a network cable to connect the control box to the mains grid.

1. Connect the control box as specified in the wiring diagram (📖 *p. 192*).

8.14 Pneumatic connection (optional)

NOTICE

Property damage from oily compressed air!
Oil particles in the compressed air can cause malfunctions of the machine and soil the sewing material.

Ensure that no oil particles enter the compressed air supply.

NOTICE

Property damage from incorrect adjustment!
Incorrect system pressure can result in damage to the machine.

Ensure that the machine is only used when the system pressure is set correctly.

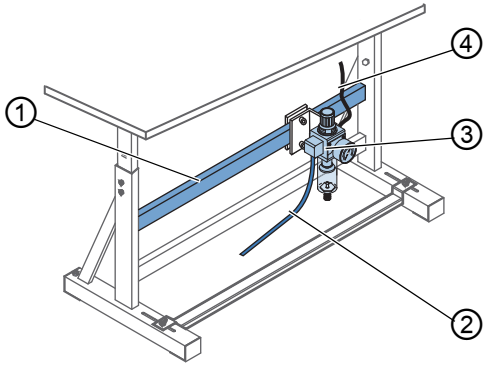
The pneumatic system of the machine and of the additional equipment must be supplied with dry and oil-free compressed air.
The supply pressure must lie between 8 and 10 bar.

Information
The pneumatic connection package is available under part number 0797003031. It consists of:

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

8.14.1 Assembling the compressed air maintenance unit

Fig. 95: Assembling the compressed air maintenance unit



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

To assemble the compressed air maintenance unit:

1. Assemble the maintenance unit (3) to the upper cross bar (1) of the stand using the bracket, screws and clip.
2. Connect the machine hose (4) coming out of the machine head to the maintenance unit (3) at the top right.
3. Connect the system connection hose (2) to the pneumatic system.

8.14.2 Adjusting the operating pressure

NOTICE

Property damage from incorrect adjustment!

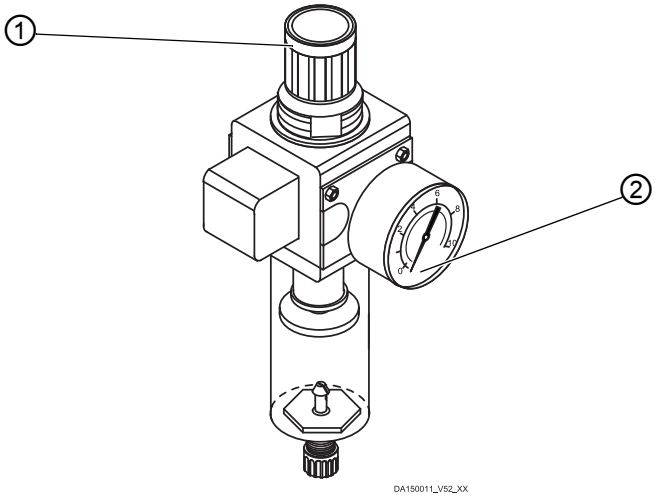
Incorrect operating pressure can result in damage to the machine.

Ensure that the machine is only used when the operating pressure is set correctly.

Proper setting

Refer to the **Technical Data** (📖 *p. 187*) chapter for the permissible operating pressure. The operating pressure cannot deviate by more than ±0.5 bar.

Fig. 96: Adjusting the operating pressure



(1) - Pressure regulator *(2) - Pressure gage*

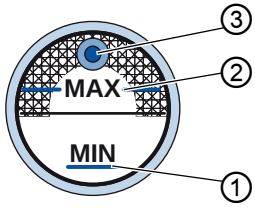
To adjust the operating pressure:

1. Pull the pressure regulator (1) up.
2. Turn the pressure regulator until the pressure gage (2) indicates the proper setting:
   - Increase pressure = turn clockwise
   - Reduce pressure = turn counterclockwise
3. Push the pressure regulator (1) down.

8.15 Checking the lubrication

All wicks and felt bits of the machine head are soaked in oil at the factory. This oil is conveyed to the reservoir during use. This is why you should avoid filling too much oil during initial filling.

Fig. 97: Checking the lubrication



(1) - Minimum level marking
(2) - Maximum level marking
(3) - Inspection glass

1. Sew with the machine for approx. 1 minute.
2. Check at the inspection glass (3) whether the warning indicator is lit red or the oil level has dropped below the minimum marking (1).
3. If this is the case, top off oil (📖 *p. 147*).

8.16 Sewing test

Carry out a sewing test before starting up the machine. To this end, adjust the machine to the sewing material requirements.

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

WARNING

Risk of injury from moving, cutting and sharp parts!
Crushing, cutting and punctures are possible.
If possible, only change settings when the machine is switched off.

Sewing test

1. Insert the needle (🕮 *p. 21*).
2. Wind on the hook thread (🕮 *p. 26*).
3. Insert the bobbin (🕮 *p. 29*).
4. Thread the hook thread (🕮 *p. 26*).
5. Thread the needle thread (🕮 *p. 23*).
6. Adjust the thread tensions to the sewing material being sewn (🕮 *p. 30*).
7. Adjust the needle thread regulator to the sewing material being sewn (🕮 *p. 32*).
8. Adjust the roller foot pressure to the sewing material being sewn.
9. Adjust the roller foot stroke to the sewing material being sewn.
10. Adjust the stitch length.
11. Transfer the desired quick function from the push button to the favorite button (🕮 *p. 37*).
12. Start the sewing test at low speed.
13. Gradually increase the speed until the working speed is reached.

9 Decommissioning

WARNING

Risk of injury from a lack of care!

Serious injuries may occur.

ONLY clean the machine when it is switched off. Allow ONLY trained personnel to disconnect the machine.

CAUTION

Risk of injury from contact with oil!

Oil can cause a rash if it comes into contact with skin.

Avoid skin contact with oil.
If oil has come into contact with your skin, wash the affected areas thoroughly.

To decommission the machine:

1. Switch off the machine.
2. Unplug the power plug.
3. If applicable, disconnect the machine from the compressed air supply.
4. Remove residual oil from the oil pan using a cloth.
5. Cover the control panel to protect it from soiling.
6. Cover the control to protect it from soiling.
7. Cover the entire machine if possible to protect it from contamination and damage.

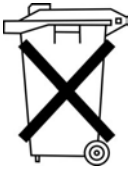
10 Disposal

CAUTION

Risk of environmental damage from improper disposal!

Improper disposal of the machine can result in serious environmental damage.

ALWAYS comply with the national regulations regarding disposal.



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

The machine must be disposed of in a suitable manner in accordance with all applicable national regulations.

When disposing of the machine, be aware that it consists of a range of different materials (steel, plastic, electronic components, etc.). Follow the national regulations when disposing of these materials.

11 Troubleshooting

11.1 Customer Service

Contact for repairs and issues with the machine:

Dürkopp Adler GmbH

Potsdamer Str. 190
33719 Bielefeld

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

11.2 Messages of the software

Please contact customer service if an error occurs that is not described here. Do not attempt to correct the error yourself.

11.3 Errors in sewing process

Error	Possible causes	Remedial action
Unthreading at seam beginning	Needle thread pretension is too firm.	Check needle thread pretension (📖 *p. 31*).
Thread breaking	Needle thread and hook thread have not been threaded correctly.	Check threading path (📖 *p. 23*, 📖 *p. 29*).
	Needle is bent or sharp-edged.	Replace the needle (📖 *p. 21*).
	Needle is not inserted correctly into the needle bar.	Insert the needle correctly into the needle bar (📖 *p. 21*).
	The thread used is unsuitable.	Use recommended thread (📖 *p. 187*).
	Thread tensions are too tight for the thread used.	Check thread tensions (📖 *p. 30*).
	Thread-guiding parts, such as thread guides, are sharp-edged.	Check threading path (📖 *p. 23*).
	Throat plate or hook have been damaged by the needle.	Have parts reworked by qualified specialists.

Error	Possible causes	Remedial action
Skip stitches	Needle thread and hook thread have not been threaded correctly.	Check threading path (📖 *p. 23*, 📖 *p. 29*).
	Needle is blunt or bent.	Replace the needle (📖 *p. 21*).
	Needle is not inserted correctly into the needle bar.	Insert the needle correctly into the needle bar (📖 *p. 21*).
	The needle strength used is unsuitable.	Use recommended needle strength (📖 *p. 187*).
	The reel stand is assembled incorrectly.	Check the assembly of the reel stand.
	Thread tensions are too tight.	Check thread tensions (📖 *p. 30*).
	Throat plate or hook have been damaged by the needle.	Have parts reworked by qualified specialists.
Loose stitches	Thread tensions are not adjusted to the sewing material, the sewing material thickness or the thread used.	Check thread tensions (📖 *p. 30*).
	Needle thread and hook thread have not been threaded correctly.	Check threading path (📖 *p. 23*, 📖 *p. 29*).
Needle breakage	Needle strength is unsuitable for the sewing material or the thread.	Use recommended needle strength (📖 *p. 187*).

12 Technical data

12.1 Data and characteristic values

Technical data	Unit	877-163742-M
Machine type		Surfaces
Type of stitches		Double lockstitch 301
Hook type		vertical, extra-large (XXL)
Number of needles		1
Needle system		134
Needle strength	[Nm]	70 - 160
Thread strength	[Nm]	80/3 - 10/3
Stitch length	[mm]	7
Max. sewing foot stroke	[mm]	13
Max. material thickness	[mm]	8
Cutting margin of the needle	[mm]	1.2 - 2.0 mm
Speed maximum	[min^{-1}]	2500
Speed on delivery	[min^{-1}]	2500
Mains voltage	[V]	230
Mains frequency	[Hz]	50/60
Operating pressure	[bar]	6 (only required in combination with optional equipment)
Length	[mm]	540
Width	[mm]	220
Height	[mm]	460

Technical data	Unit	877-163742-M
Weight	[kg]	50
Rated power: - StandBy - Operation	[W]	 20 375
Power input	[W]	1500

12.2 Requirements for fault-free operation

The quality of the compressed air must correspond to ISO 8573-1: 2010 [7: 4: 4].

13 Appendix

13.1 Tabletop drawing

Fig. 98: Tabletop drawing, part 1

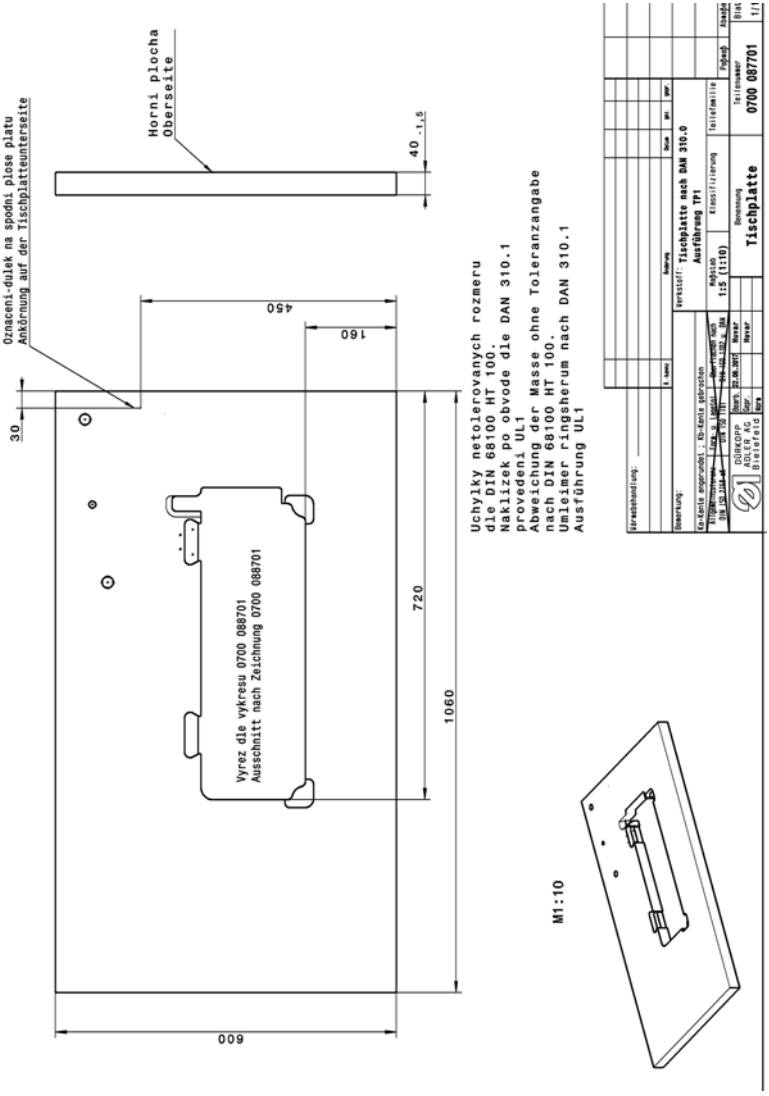
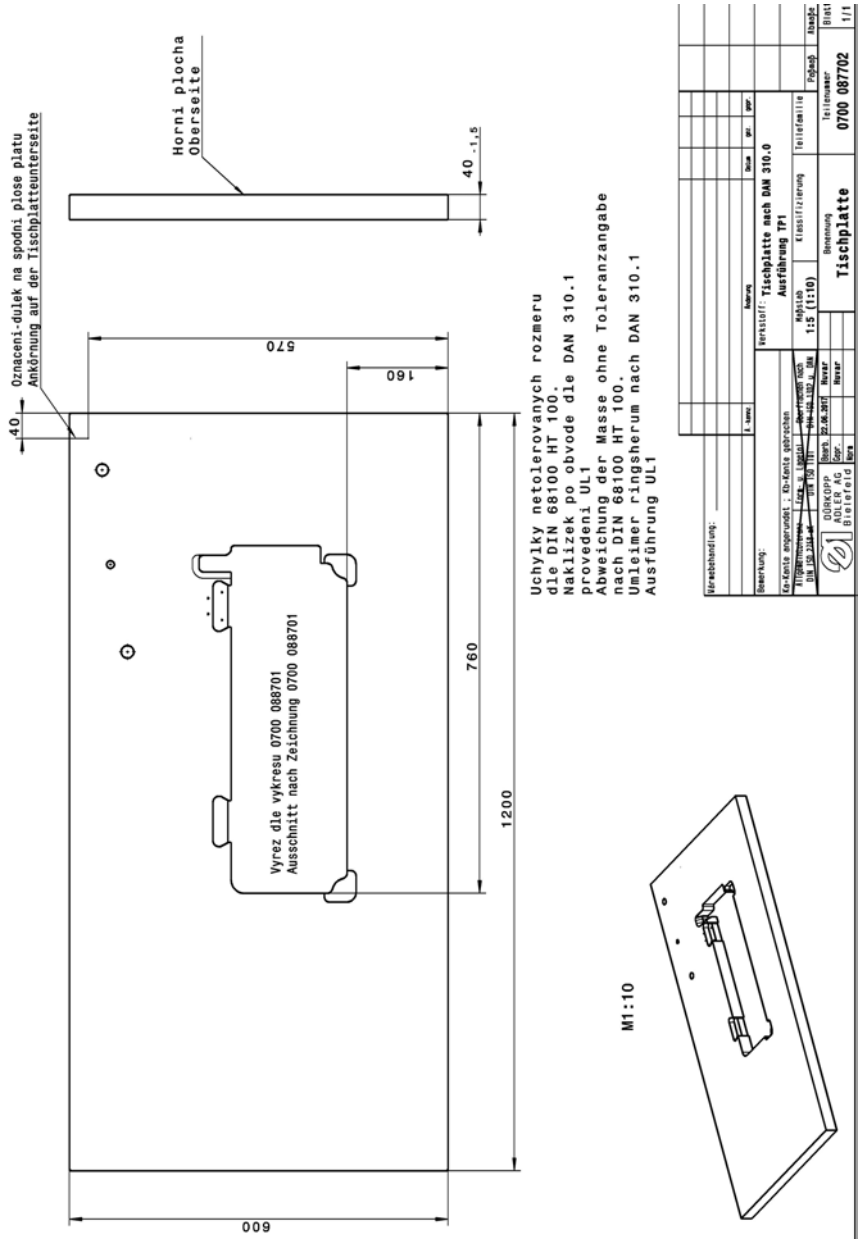
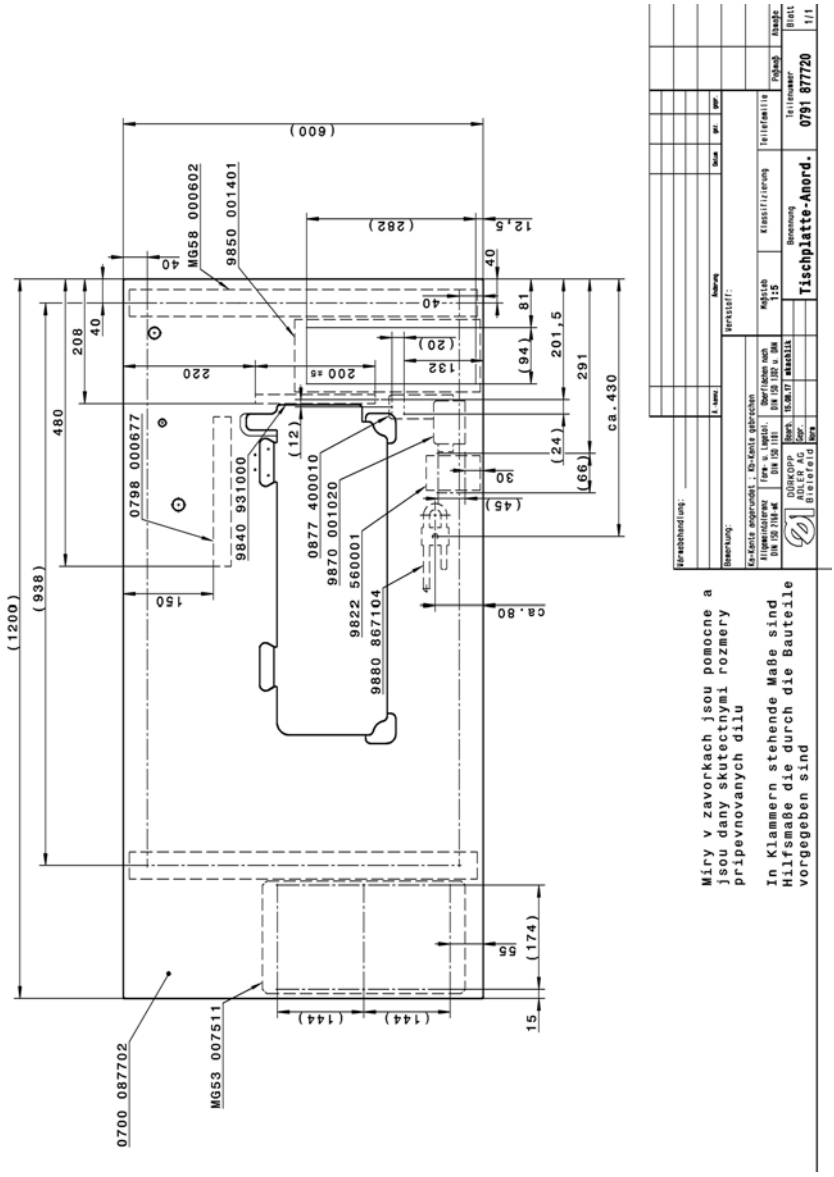


Fig. 99: Tabletop drawing, part 2



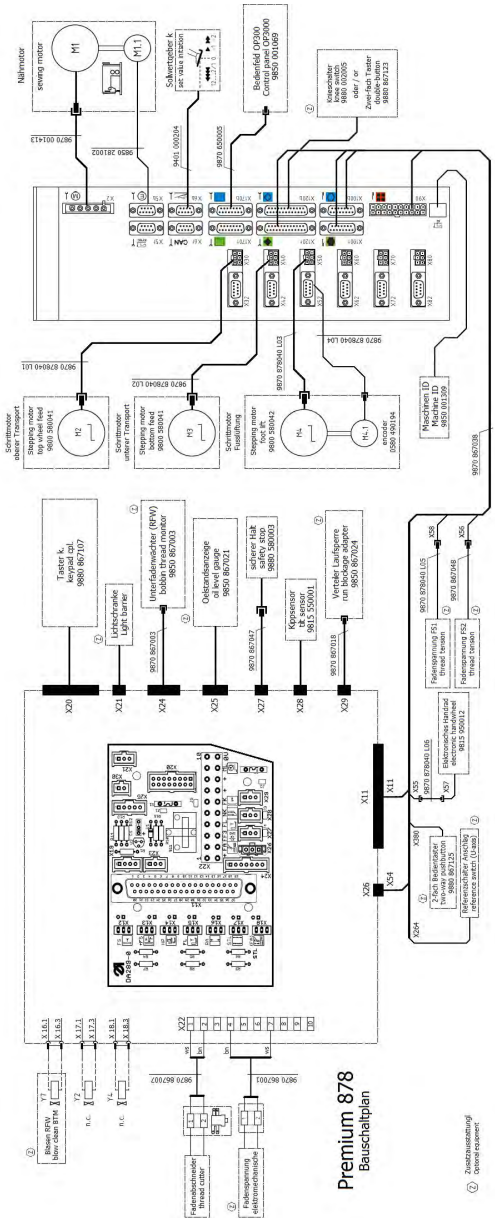
13.2 Layout of components on the underside of the tabletop

Fig. 100: Tabletop drawing, part 2



13.3 Wiring diagram

Fig. 101: Wiring diagram



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