DÜRKOPP ADLER

806N-111-10/806N-121-10

Service Instructions

IMPORTANT
READ CAREFULLY BEFORE USE
KEEP FOR FUTURE REFERENCE

1 About these instructions

These instructions for the 806N-111-10/806N-121-10 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. 181*).

Consider the instructions part of the product and store them in a place where they are readily available.

1.1 For whom are these instructions intended?

These instructions are intended for:

- Specialists:
  This group has the appropriate technical training for performing maintenance or repairing malfunctions. Specifically, the chapter **Setup** (📖 *Operating Instructions 806N*) is important for specialists.

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 setting.

Cover

Specifies which covers must be removed 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 a setting.

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 damage during transport
- Failure to observe these instructions
- Improper use
- Unauthorized modifications to the machine
- Use of untrained personnel
- Use of unapproved 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. Make sure to follow the information included in the safety instructions. 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.

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

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

For the following work, shut down the PC and switch off the machine at the main switch or disconnect 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 forklift 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.

Obligations of the operator

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:

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

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

Operation

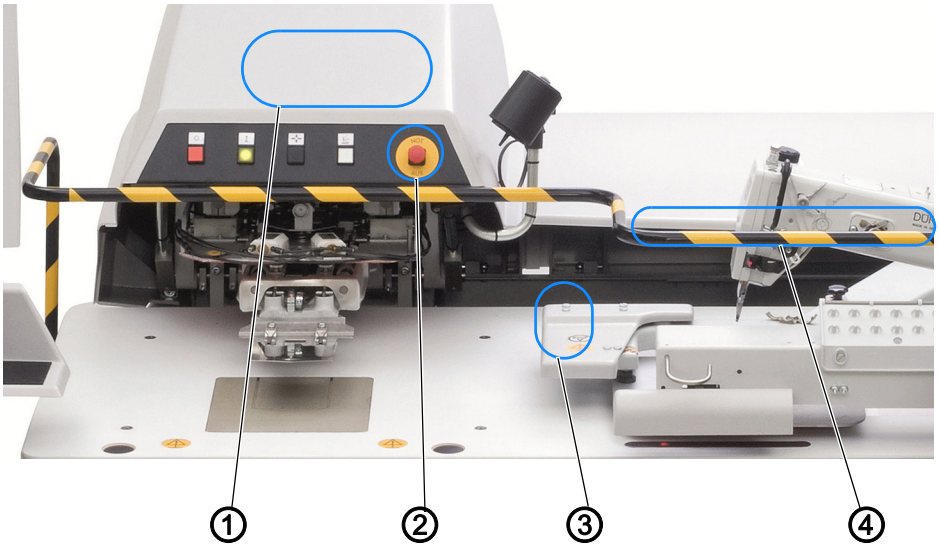
Inspect the machine while in use for any externally visible damage.
Stop working if you notice any changes to the machine. Report any changes to your supervisor. Do not use a damaged machine any further.

Safety equipment

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

The safety equipment is located at the illustrated positions on the machine:

Fig. 1: Safety equipment



(1) - Protective covers
(2) - EMERGENCY STOP button
(3) - Integrated EMERGENCY STOP
(4) - Metal bar

The following safety equipment are mounted on the machine:

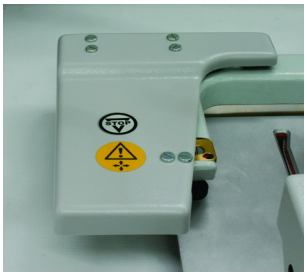
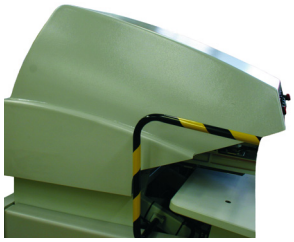
Figure	Naming	Purpose
	EMERGENCY STOP button	The machine is immediately placed in the EMERGENCY STOP state: – The motors are braked and then disconnected from the power. – The cylinders are depressurized.
	EMERGENCY STOP integrated	The machine is immediately placed in the EMERGENCY STOP state: – The motors are disconnected from the power. – The cylinders are depressurized.

Figure	Naming	Purpose
	Metal bar	Defines limits for the operator to provide protection from injury.
	Protective covers	Protects the user from injury and the electrical and mechanical elements of the machine from soiling.

2.2 Signal words and symbols used in warnings

Warnings in the text are distinguished by color bars. The color scheme 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.

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.

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.

3 Basic setting

3.1 Removing/mounting covers

The covers are divided into covers above and below the table level.
The covers above the table level must be removed in order to remove the transport locks.

3.1.1 Removing the covers

NOTICE

Property damage from incorrect order!

The covers above the table level can be damaged when removed/ mounted in the incorrect order.

ALWAYS remove/assemble the covers above the table level in the specified order.

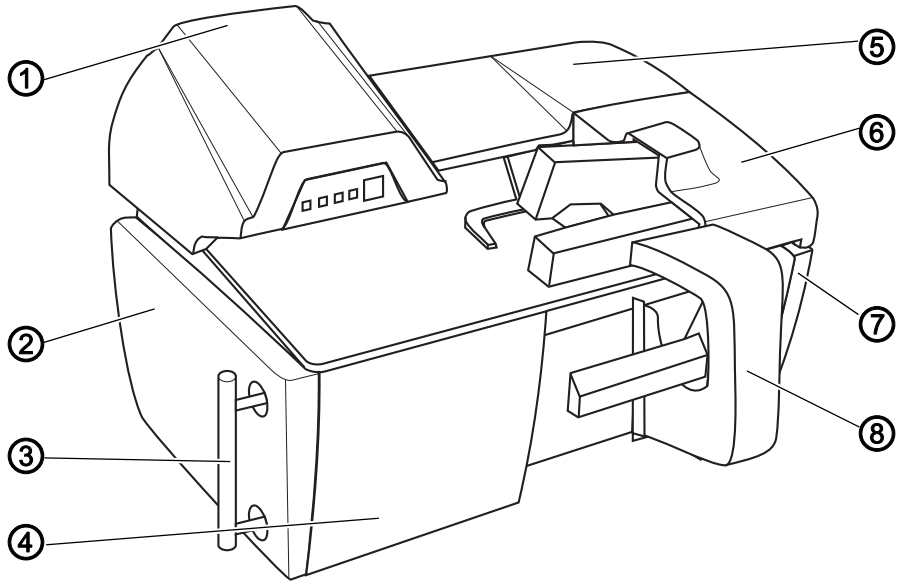
NOTICE

Property damage from incorrect removal!

The covers above the table level are fastened with ball heads that can also damage the protective covers when incorrectly removed.

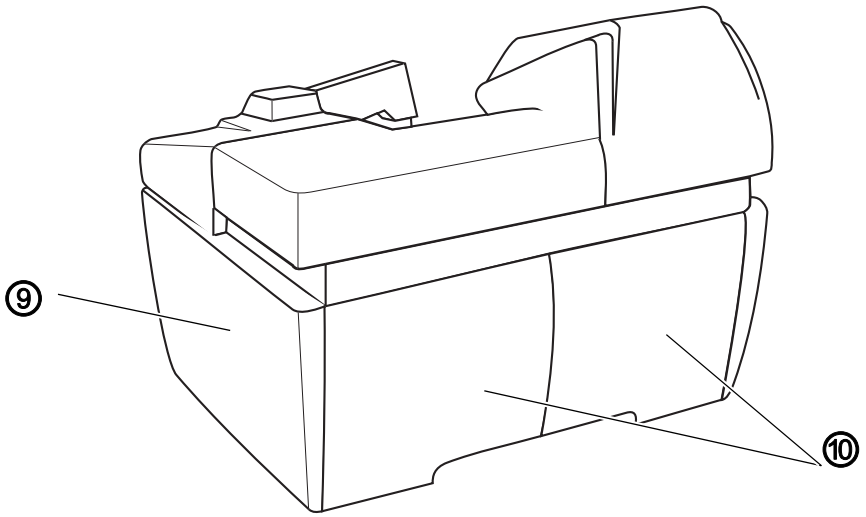
NEVER use force to remove the covers above the table level.

Fig. 2: Covers on the front side of the machine



(1) - Edge folding station cover
(2) - Left side cover
(3) - Retaining bar
(4) - Front left cover
(5) - Carriage cover
(6) - Sewing head cover
(7) - Front right cover
(8) - Stacker cover

Fig. 3: Covers on the rear side of the machine



(9) - Right side cover
(10) - Left and right rear covers

Covers above the table level

To remove the covers above the table level in the correct order:

Sewing head cover (6)

1. Unlock the cover lock using the associated key.
2. Loosen the clamping lever on the thread reel holder by reaching under the cover.
3. Pull out the thread reel holder upwards.
4. Slide the cover to the right.
5. Lift the cover upwards.

Carriage cover (5)

1. Remove the cover upwards.

Edge folding station cover (1)

1. Remove the cover upwards while paying attention to the keypad guide.

Covers below the table level

To remove the covers below the table level in the correct order:

Left and right rear covers (10)

1. Pull the cover upwards.
2. Remove the cover forwards.

Front left cover (4)

1. Pull the cover upwards.
2. Remove the cover forwards.

Front right cover (7)

1. Loosen the screw through the hole using a hex key.
2. Pull the cover upwards.
3. Remove the cover forwards.

Left side cover (2)

This cover does not normally need to be removed. Everything inside the machine is accessible when the rear covers below the table level are removed.

1. Loosen the screws on the retaining bar.
2. Pull put the retaining bar.
3. Pull the cover upwards.
4. Remove the cover forwards.

Right side cover (9)

1. Loosen the screws.
2. Remove the plate.
3. Pull the cover upwards.
4. Remove the cover forwards.

Stacker cover (8)

1. Pivot the stacker towards the machine.
2. Remove the inner ground cable from the cover.
3. Loosen the hex screws at the outer right of the cover.
4. Loosen the slotted screws at the outer left of the cover.
5. Remove the cover forwards.

3.1.2 Assembling the covers

NOTICE

Property damage from incorrect order!

The covers above the table level can be damaged when removed/ mounted in the incorrect order.

ALWAYS remove/assemble the covers above the table level in the specified order.

NOTICE

Property damage from incorrect installation!

The covers below the table level can be damaged when the snap-locks/springs are not correctly fastened.

The snap-locks/springs for the covers below the table level must ALWAYS be correctly latched in place.

Covers above the table level

To assemble the covers above the table level in the correct order:

Edge folding station cover (1)

1. Replace the cover from the top while paying attention to the control panel guide.

Carriage cover (5)

1. Place the cover on the carriage from above.
2. Insert the cover so that it lies on the cover of the edge folding station (1).

Sewing head cover (6)

1. Insert the cover at the top right into the guide of the carriage (5).
2. Insert the thread reel holder from above.
3. Tighten the clamping lever on the thread reel holder by reaching under the cover.
4. Lock the cover lock using the associated key.

Covers below the table level

To assemble the covers below the table level in the correct order:

Right side cover (9)

1. Insert the cover downwards into the guide hooks.
2. Pull the cover upwards.
3. Insert the cover into the guide hooks at the top.

↳ The cover is locked in place by the springs on the guide hooks.

4. Fit the plate.
5. Fasten the plate with the screws.

Left side cover (2)

1. Insert the cover downwards into the guide hooks.
2. Pull the cover upwards.
3. Insert the cover into the guide hooks at the top.

↳ The cover is locked in place by the springs on the guide hooks.

4. Slide the retaining bar into the guide.
5. Fasten the screws on the retaining bar.

Left and right rear covers (10)

1. Insert the cover into the guide hooks at the bottom.
2. Pull the cover upwards.
3. Insert the cover into the guide hooks at the top.

↳ The cover is locked in place by the springs on the guide hooks.

Front left cover (4)

1. Insert the cover into the guide hooks at the bottom.
2. Pull the cover upwards.
3. Insert the cover into the guide hooks at the top.

↳ The cover is locked in place by the springs on the guide hooks.

Front right cover (7)

1. Insert the cover downwards into the guide hooks.
2. Pull the cover upwards.
3. Insert the cover into the guide hooks at the top.
4. Tighten the screw through the front middle hole using a hex key.

Stacker cover (8)

1. Pivot the stacker away from the machine.
2. Insert the cover from above.
3. Tighten the slotted screws at the outer left of the cover.
4. Tighten the hex screws at the outer right of the cover.
5. Attach the ground cable at the inner right.
6. Pivot the stacker towards the machine.

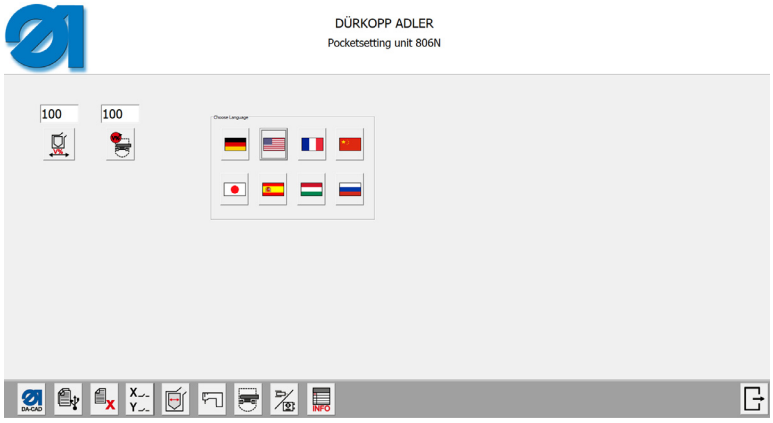
4 Machine head 111

Many settings require that you navigate to the sewing motor level on the control panel.

To access the sewing motor level:

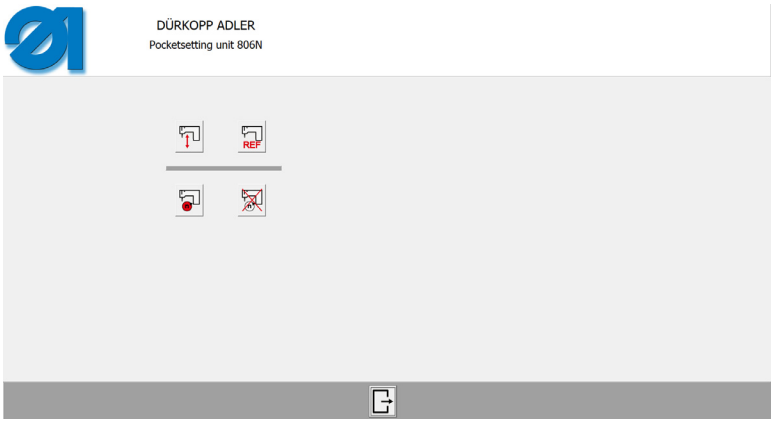
1. Press the **Technician** button on the start screen.
2. Enter password **25483**.

↳ You are on the technician level:



3. Press the **Sewing motor** button.

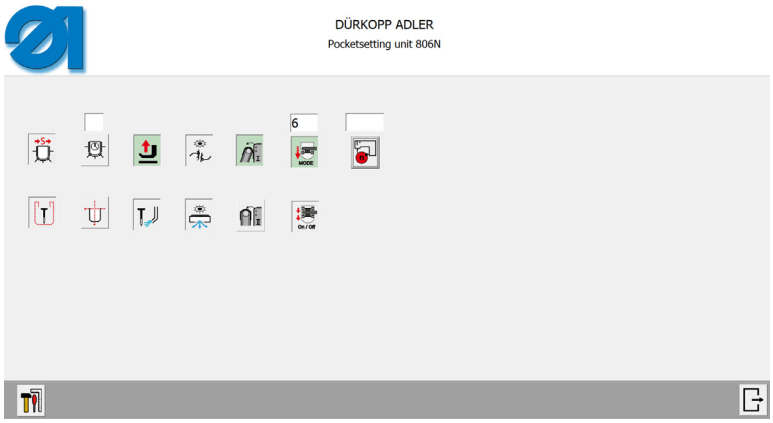
↳ You are on the sewing motor level:



OR

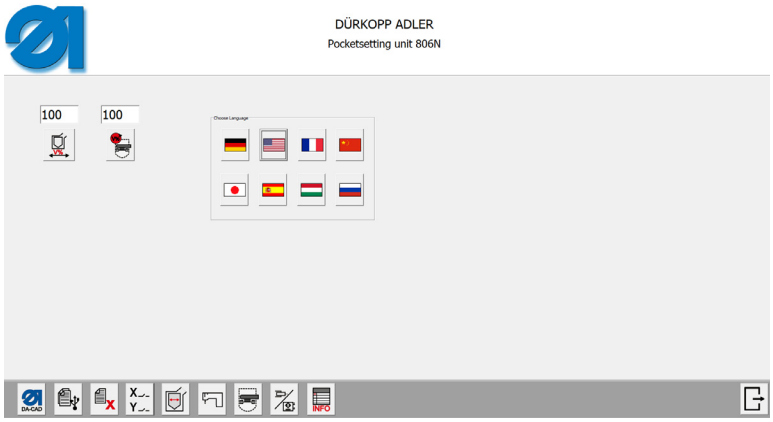
1. When inside a sewing program, press the **Global parameters** button.

↳ You are on user interface 2:



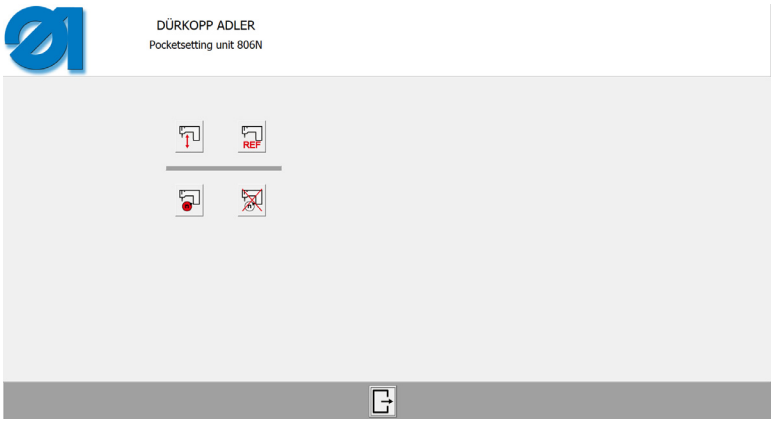
2. Press the **Technician** button.

↳ You are on the technician level:



3. Press the **Sewing motor** button.

↳ You are on the sewing motor level:



4.1 Stitch regulator and transmission lever

4.1.1 Setting the zero position of the stitch regulator

WARNING

Risk of injury from moving parts!

Crushing.

The machine must be set to *Threading mode*.

Proper setting

The needle bar must not oscillate when the machine is completing a zig-zag function.

To set the zero position of the stitch regulator:

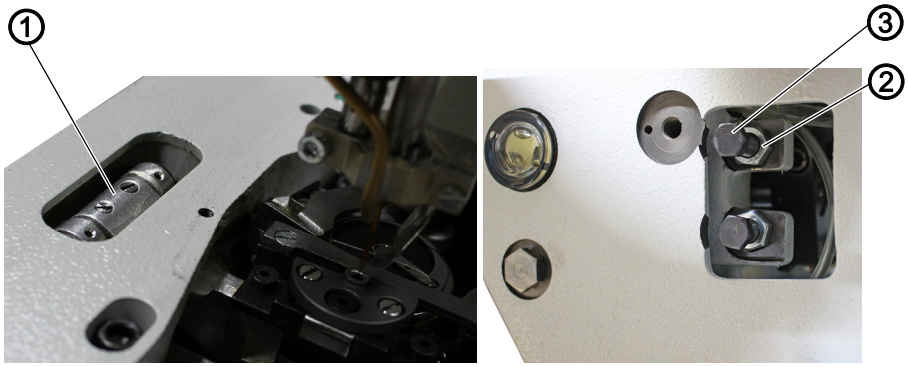
1. Navigate to the user interface.
2. Press the **Lift/lower sewing head** button.

↳ The sewing head lowers.

3. Set a low speed (100 RPM or less).
4. Press the **Sewing motor** button.

↳ The machine is running.

Fig. 4: Setting the zero position of the stitch regulator



(1) - Feed dog
(2) - Counternut
(3) - Screw

↳ The feed dog (1) must not move when the stitch regulator is in zero position.

5. Loosen the counternut (2).
6. Turn the screw (3) to set the zero position of the stitch regulator.

↳ Check if the screw needs to be turned in or out any further.

7. Tighten the counternut (2).
8. Check again if the needle/feed dog is still moving, and correct the setting if necessary.

4.2 Rocker and throat plate

While the needle bar and the throat plate are performing a complete oscillation movement during the zigzag function, the needle bar will move up and down 2 times. This movement is effected by a pair of gear wheels 1 and 2 at a transmission ratio of 1:2.

4.2.1 Setting the position of the rocker

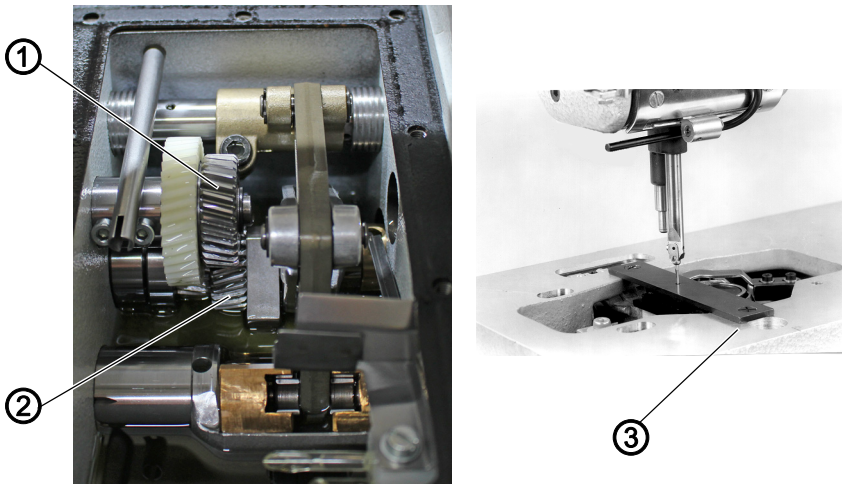
WARNING

Risk of injury from moving parts!

Crushing.

The machine must be set to *Threading mode*.

Fig. 5: Setting the position of the rocker (1)

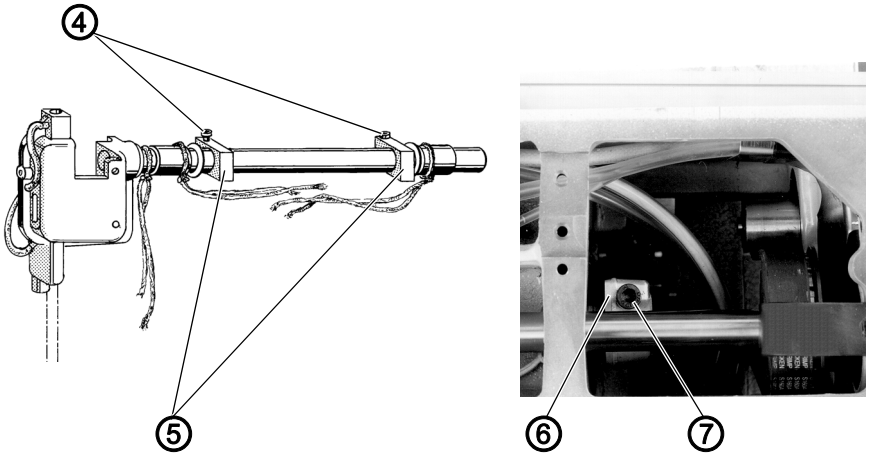


(1) - Gear wheel
(2) - Gear wheel
(3) - Gage

Proper setting

The needle should plunge into the center of the 2 mm hole of gage 3 (part no. 0804 400270) when the machine is not set to zigzag mode.

Fig. 6: Setting the position of the rocker (2)



(4) - Screws
(5) - Setting block
(6) - Drive lever
(7) - Screw

Correction in X direction

1. Press the **Lift/lower sewing head** button.

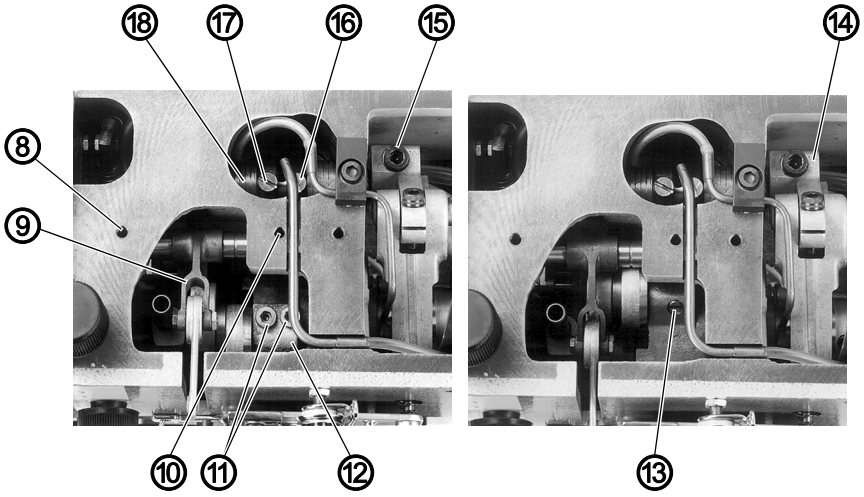
↳ The sewing head lowers.

2. Press the **O** button.

↳ *Threading mode* is switched on.

3. Loosen the screws (4) on the setting block (5).
4. Loosen the clamping screw (7) on the drive lever (6).

Fig. 7: Setting the position of the rocker (3)



(8) - Screw
(9) - Thread lever guide
(10) - Screw
(11) - Clamping screws
(12) - Arm shaft crank
(13) - Position screw
(14) - Block
(15) - Screw
(16) - Adjusting ring
(17) - Adjusting ring
(18) - Stroke shaft

5. Loosen screws (8) and (10) on the bearing of the thread lever guide (5).
6. Loosen the clamping screws (11) on the arm shaft crank (12).
7. Slightly loosen the position screw (13) on the arm shaft crank.
8. Adjust the setting.
9. If required, shift the sewing foot stroke shaft (18) in the axial direction after loosening the following screws:
   - Screws on both adjusting rings (17) and (16)
   - Screw (15) on the block (14).
10. Tighten all previously loosened screws while paying attention to the following:
    - Axial fastening of the rocker
    - horizontal position of the setting block (5)
    - correct position of the wicks
    - lowest possible play of the thread lever guide (9).

Correction in Y direction

1. Press the **Lift/lower sewing head**  button.

↳ The sewing head lowers.

2. Press the **O** button.

↳ *Threading mode* is switched on.

3. Loosen the clamping screw (7) on the drive lever (6).
4. Adjust the position of the rocker accordingly.
5. Tighten the clamping screw (7).

Information

After completing a correction in X direction, check the distance of the needle to the hook and adjust the distance if necessary.

4.2.2 Timing the rocker oscillation (zigzag)

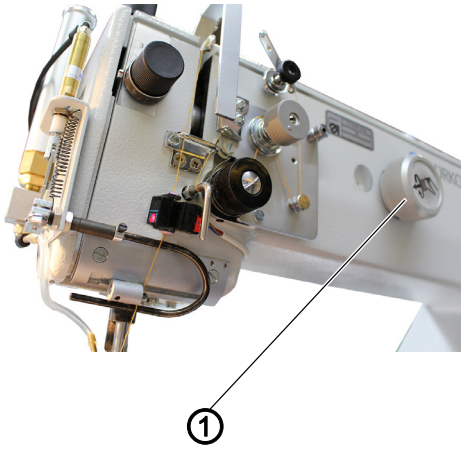
WARNING

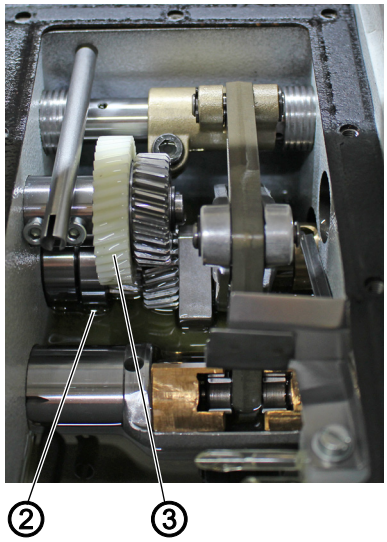
Risk of injury from moving parts!

Crushing.

The machine must be set to *Threading mode*.

Fig. 8: Timing the rocker oscillation (zigzag)





(1) - Adjusting wheel
(2) - Screws
(3) - Gear wheel

Proper setting

In zigzag mode, the needle should drift at the same distance towards the inside when it penetrates at the upper and the lower tack point. Both tack penetrations should have the same distance to the zero stitch, i.e. they must be symmetrical.

To time the rocker oscillation:

1. Press the **Lift/lower sewing head** button.
2. The sewing head lowers.
3. Press the **O** button.

↳ *Threading mode* is switched on.

4. Place a sheet of paper on the sewing material support surface and hold it there.
5. Turn the adjusting wheel (1) to determine the position of the zero stitch.

6. Press the **Zigzag**  button.
7. Manually turn the handwheel once to the front and once to the rear.
8. Check the distances in relation to the zero stitch; they need to be symmetrical.

NOTICE

Property damage may occur!

A wrong setting may cause the needle to break.

Check the distances to the zero stitch.

9. Loosen the screws (2) (2x).
10. Turn the gear wheel (3) on the hook drive shaft accordingly.
11. Tighten the screws (2).
12. Check the setting and correct it if necessary.

4.2.3 Setting the range of the rocker oscillation (zigzag stitch width)

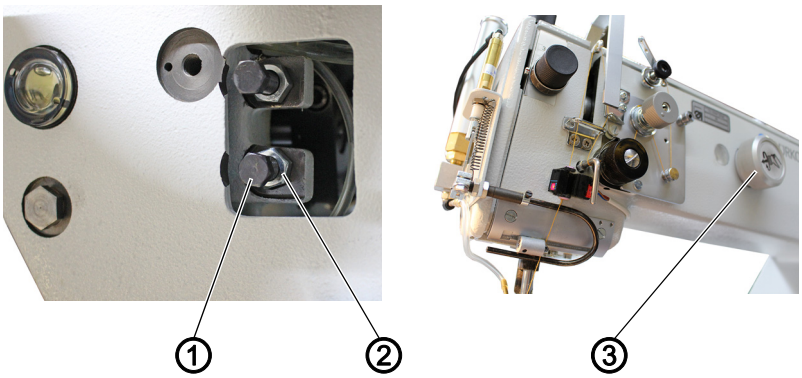
WARNING

Risk of injury from moving parts!

Crushing.

The machine must be set to *Threading mode*.

Fig. 9: Setting the range of the rocker oscillation (zigzag stitch width)



(1) - Stop screw
(2) - Counternut
(3) - Adjusting wheel

Proper setting

In zigzag mode of the machine, the upper and the lower punctures on a piece of paper should have a distance of 4.6 mm. For a sewn-on pocket this will result in a zigzag stitch width of approx. 3 mm, depending on the type of fabric and thread used and on the thread tension.

1. Press the **Lift/lower sewing head** button.

↳ The sewing head lowers.

2. Press the **O** button.

↳ *Threading mode* is switched on.

3. Press the **Zigzag** button.
4. Place a sheet of paper on the sewing material support surface and hold it there.
5. Turn the adjusting wheel (3).
6. Turn the counternut (2) and the stop screw (1) accordingly.

4.2.4 Setting the horizontal position of the throat plate

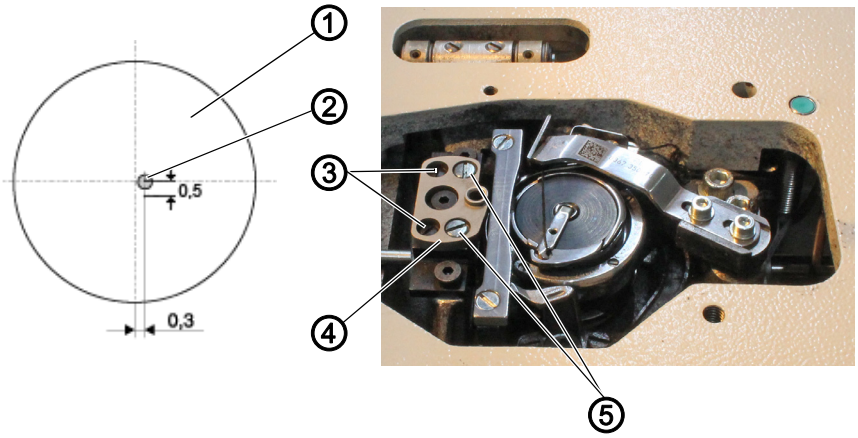
WARNING

Risk of injury from moving parts!

Crushing.

The machine must be set to *Threading mode*.

Fig. 10: Setting the horizontal position of the throat plate



(1) - Throat plate
(2) - Needle shaft
(3) - Screws
(4) - Throat plate
(5) - Screws

Proper setting

In X direction:

In the loop stroke position – or slightly further – the needle shaft (2) should be distanced 0.3 mm from the right side of the throat plate (1).

In Y direction:

In this direction, the needle should plunge into the center of the throat plate.

To set the horizontal position of the throat plate:

1. Press the **Lift/lower sewing head** button.
   - The sewing head lowers.
2. Press the **O** button.
   - *Threading mode* is switched on.
3. Loosen screws (3) and (5).
4. Set the position of the throat plate (4) accordingly.
5. Tighten screws (3) and (5).

4.2.5 Setting the height of the throat plate

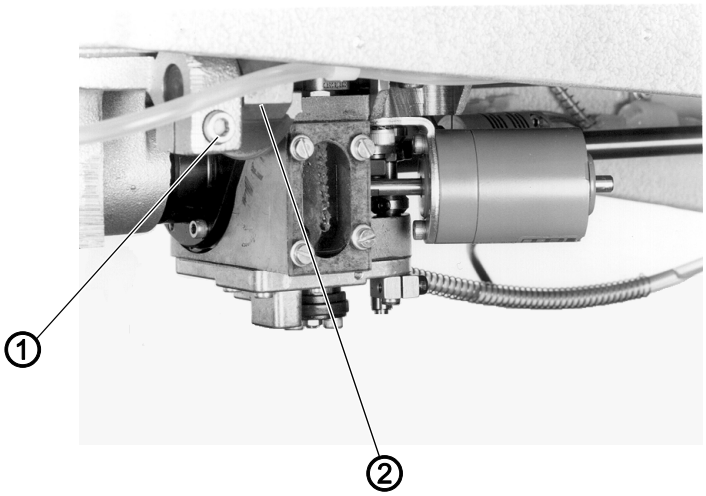
WARNING

Risk of injury from moving parts!

Crushing.

The machine must be set to *Threading mode*.

Fig. 11: Setting the height of the throat plate



(1) - Screw

(2) - Block

Proper setting

The surface of the throat plate (not the throat plate insert) should be 0.5 mm below the upper side of the base plate.

To set the height of the throat plate:

1. Press the **Lift/lower sewing head** button.

↳ The sewing head lowers.

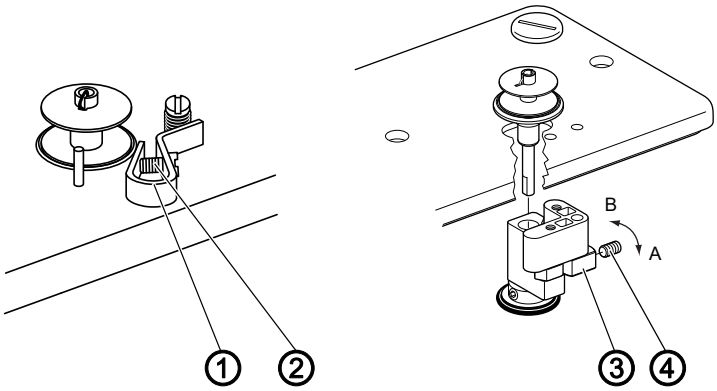
2. Press the **O** button.

↳ *Threading mode* is switched on.

3. Loosen the screw (1).
4. Turn the block (2) accordingly.
5. Tighten the screw (1).

4.3 Setting the winder

Fig. 12: Setting the winder



(1) - Bobbin winder flap
(2) - Screw
(3) - Switch cam
(4) - Screw

Proper setting

The winder should automatically cut off if the bobbin is filled to approx. 0.5 mm below the edge of the winder. The bobbin should be wound cylindrically.

To set the winder:

1. Small changes to the filling quantity

1. Set the bobbin winder flap (1) using the screw (2).

2. Large changes to the filling quantity

1. Remove the arm cover.
2. Loosen the screw (4).
3. Turn the switch cam (3).
   - To set a smaller filling quantity: Turn in arrow direction A
   - To set a larger filling quantity: Turn in arrow direction B
4. Tighten the screw (4).
5. Assemble the arm cover.

4.4 Hook, needle bar, needle guard, and needle guide

WARNING

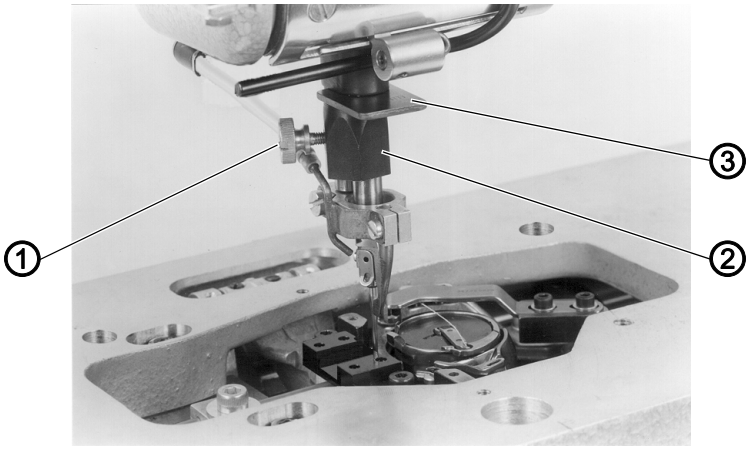
Risk of injury from sharp parts!

Puncture.

The machine must be set to *Threading mode*.

4.4.1 Setting the loop stroke

Fig. 13: Setting the loop stroke (1)



(1) - Screw
(2) - Block
(3) - Gage

Proper setting

The loop stroke is the distance covered by the needle bar from its lower dead center up to the point where the tip of the hook is in line with the middle of the needle. The 1st screw on the hook – as viewed in the direction the hook rotation – is located on the flat of the hook shaft. When fixed in place, the hook cannot rotate on the shaft during the sewing process. If the hook is jammed, the safety clutch will react.

To set the loop stroke:

1. The setting of the rocker position must be correct (📖 *p. 24*).

↳ The loop stroke should amount to 2 mm when the machine in not in zigzag mode.

2. Press the **Lift/lower sewing head**  button.

↳ The sewing head lowers.

3. Press the **O** button.

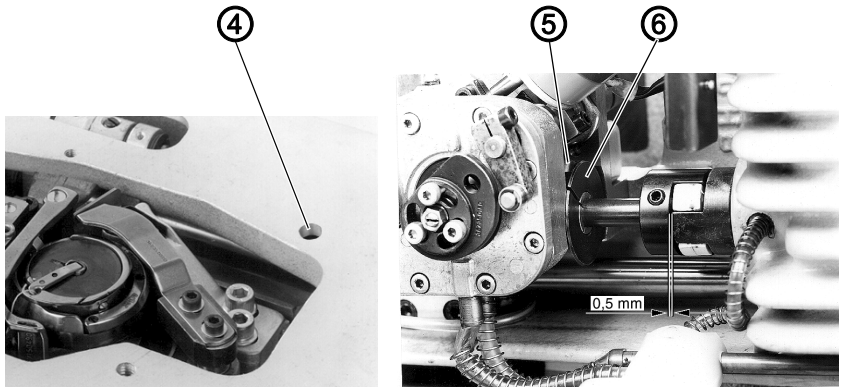
↳ *Threading mode* is switched on.

4. Use the handwheel to turn the needle to the lower dead center.

5. Use block 2 (part no. 0981 150002) to press the gage (3) (part no. 0981 150003) against the rocker.
6. Tighten the screw (1) on the block (2).
7. Pull out the gage (3).
8. Turn the adjusting wheel in arrow direction until the block (2) abuts on the rocker.

↳ In this position, the hook tip should be in line with the middle of the needle.

Fig. 14: Setting the loop stroke (2)



(4) - Hole
(5) - Screw
(6) - Adjusting ring

9. Loosen the clamping screw in hole (4) with a hexagon screwdriver (width across flats 5 mm).
10. The screw (5) is located on the adjusting ring (6).
11. Turn the hook on the drive shaft until the hook tip is in line with the middle of the needle. Ensure that the air gap in the jaw clutch amounts to 0.5 mm.
12. Tighten the screw (5) on hole (4).

4.4.2 Re-engaging the friction clutch

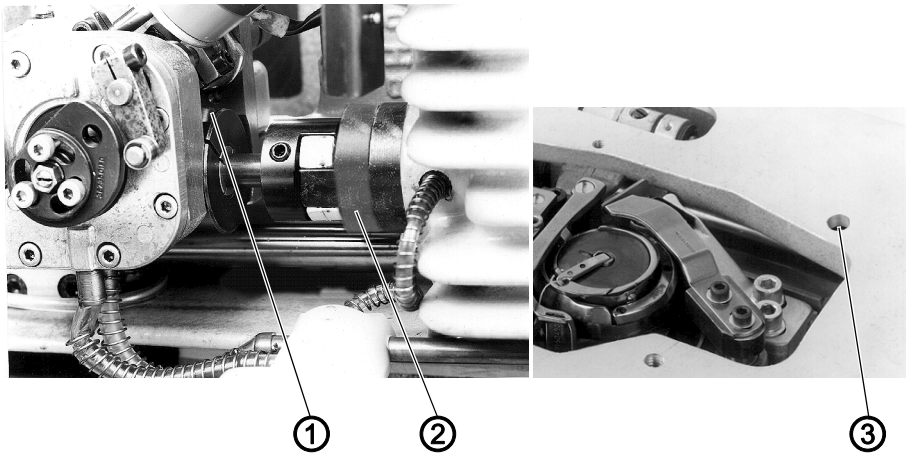
WARNING

Risk of injury from moving parts!

Crushing.

The machine must be set to *Threading mode*.

Fig. 15: Setting the friction clutch



(1) - Clamping screw
(2) - Friction clutch
(3) - Hole

Proper setting

The friction clutch should react when the hook is jammed. The friction clutch (2) must be set such that it will react at a torque of 4 Nm.

To re-engage the friction clutch:

1. Insert a hexagon screwdriver into the screw located in hole 4 and into the clamping screw 2.
2. Turn the handwheel until the clutch re-engages. Correction

Information

If the clutch reacts too frequently, turn in the two screws (width across flats 3 mm) again that are located on the face of the friction clutch (2). A 1/4 turn of **both** screws will increase the torque by approx. 10 %.

4.4.3 Setting the needle bar height

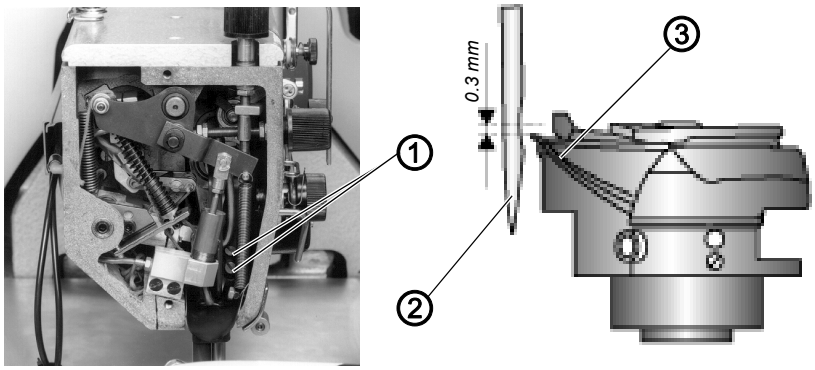
WARNING

Risk of injury from sharp parts!

Puncture.

The machine must be set to *Threading mode*.

Fig. 16: Setting the needle bar height



(1) - Screws
(2) - Needle
(3) - Hook tip

Proper setting

In the loop stroke position, the hook tip (3) should be situated more or less below the middle of the needle groove (2) when the machine is set to zig-zag mode.

To set the needle bar height:

1. Press the **Lift/lower sewing head** button.
   - The sewing head lowers.
2. Press the **O** button.
   - *Threading mode* is switched on.
3. Loosen the screws (1).
4. Change the height of the needle bar in such a way that the tip of the hook is positioned slightly (approx. 0.3 mm) below the middle of the needle groove. Do not move the needle bar while making this adjustment.
5. Tighten the screw (1).

Important

Following a correction, check the position of needle guide and hook guard.

4.4.4 Setting the distance between hook and needle

WARNING

Risk of injury from sharp parts!

Puncture.

The machine must be set to *Threading mode*.

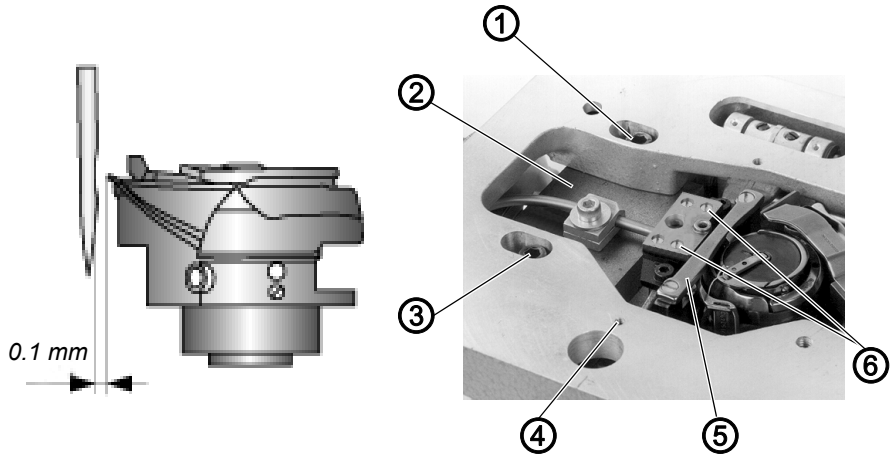
NOTICE

Property damage may occur!

The needle may break, and the hook may become damaged.

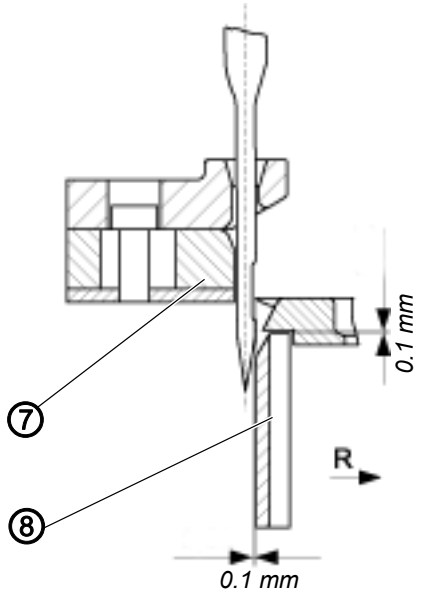
The distance between the hook and the needle must be checked after inserting a needle that belongs to a different size group (80-110 Nm / 120-140 Nm).

Fig. 17: Setting the distance between hook and needle (1)



(1) - Screw
(2) - Hook case
(3) - Screw
(4) - Screw
(5) - Middle section holder
(6) - Screws

Fig. 18: Setting the distance between hook and needle (2)



(7) - Needle guard *(8) - Needle guard*

Proper setting

In the loop stroke position, the distance between the hook tip and the needle groove must amount to 0.1 mm when the machine is not set to zigzag mode.

To set the distance between hook and needle:

1. Remove the throat plate.
2. Loosen the screws on the middle section holder (5).
3. Remove the middle section holder.
4. Loosen the screws of the needle guard that are now accessible to move the needle guard (8) sideways.

NOTICE

Property damage may occur!

A vertical displacement may result in collisions during sewing.

Do not loosen screws securing the vertical position.

5. Move the needle guard (8) in the direction of R.
6. Lower the sewing head.
7. Use the handwheel to turn the needle to the loop stroke position.
8. Check the distance; the needle must not touch the needle guard (7).
9. Make corrections if necessary.
10. Loosen screws (1), (3), and (4).

11. Move the hook case (2) sideways until the distance between the needle groove and the hook tip is 0.1 mm.
12. Tighten screws (1), (3), and (4).
13. Slide the needle guard back until the conical shaft of the needle tip abuts on the hook guard with minimum deflection.
14. Tighten the threaded pins of the needle guard.

NOTICE

Property damage may occur!

The contact between needle guard (8) and hook may generate heat, causing damage to the hook.

Set the needle guard (8) such that it does not come into contact with the hook.

15. Loosen the screws of the needle guard to move the needle guard (8) sideways.
16. Insert the middle section holder.
17. Tighten the screws on the middle section holder (5).
18. Insert the throat plate.

4.4.5 Setting the position of the needle guide

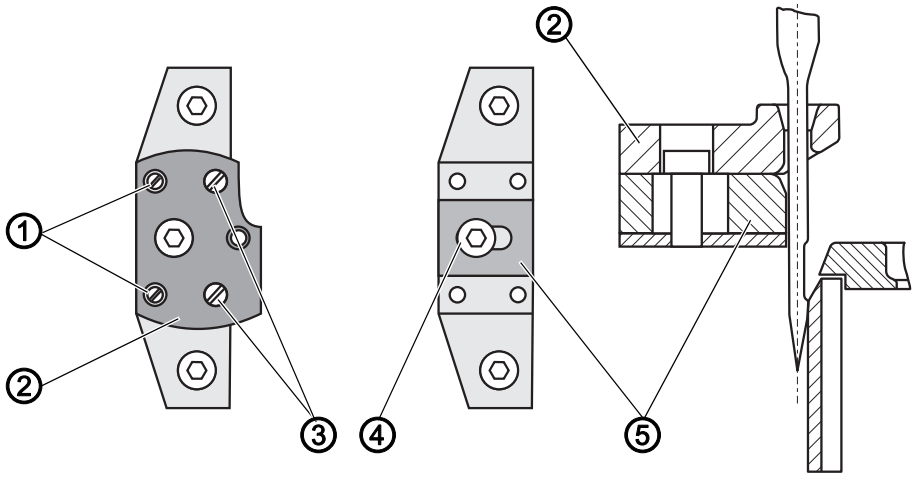
WARNING

Risk of injury from sharp parts!

Puncture.

The machine must be set to *Threading mode*.

Fig. 19: Setting the position of the needle guide



(1) - Positioning aids
(2) - Throat plate
(3) - Screws
(4) - Clamping screw
(5) - Needle guide

The needle guide (5) should guide the needle during the sewing process in order to avoid its excessive deflection by the sewing material. Otherwise, skipped stitches can occur. The distance between the hook and the needle must be checked after inserting a needle that belongs to a different size group (80-110 Nm / 120-140 Nm).

Proper setting

When the needle is at its lowest position, its distance to the needle guide should be as small as possible, but the needle should not touch the guide. If the distance is too narrow, the needle may break in the area of the groove. If the distance is too wide, skipped stitches can occur on account of the needle being deflected excessively by the sewing material.

To set the position of the needle guide:

1. Press the **Lift/lower sewing head** button.

↳ The sewing head lowers.

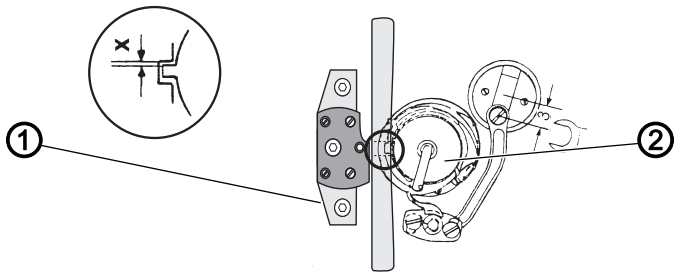
2. Press the **O** button.

↳ *Threading mode* is switched on.

3. Loosen the screws (3).
4. Remove the throat plate (2).
   Ensure that the positioning aids (1) are well fastened and cannot be displaced.
5. Loosen the clamping screw (4).
6. Press the Zigzag  button repeatedly.
7. Set the position of the needle guide (5) accordingly.
8. Tighten the clamping screw (4).
9. Press the Zigzag  button repeatedly.
10. Check and, if necessary, correct the position of the needle guide.
11. Insert the throat plate (2).
    Make sure that the positioning aids (1) are seated in the holes of the throat plate.
12. Tighten the screws (3).

4.5 Bobbin capsule lifter

Fig. 20: Bobbin capsule lifter



(1) - Holder *(2) - Bobbin capsule*

The thread lever must pass the thread between the bobbin capsule (2) and its holder (1). Unhindered passage of the thread requires that the bobbin capsule be lifted at the right moment by the bobbin capsule lifter.

This will ensure the desired seam pattern with the lowest possible thread tension.

Incorrect settings can have the following effects:

- Thread breakage
- Eyelets on the underside of the sewing material
- High noise level

4.5.1 Setting the amount of finger travel

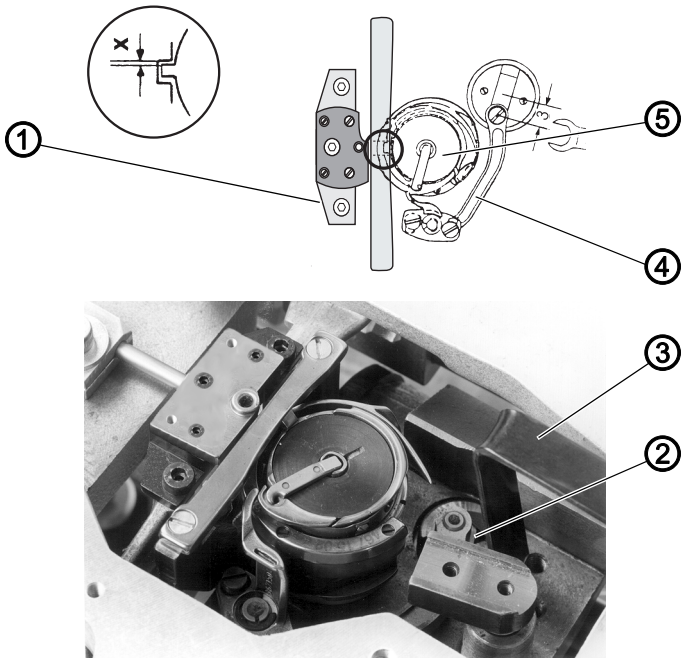
WARNING

Risk of injury from moving parts!

Crushing.

The machine must be set to *Threading mode*.

Fig. 21: Bobbin capsule lifter



(1) - Holder
(2) - Nut
(3) - Special wrench
(4) - Lever
(5) - Bobbin capsule

Proper setting

The support of the lever (4) should be off-centered by 3 mm. This will be ensured when the nut (2) is flush with the outer edge of the shaft.

To set the amount of finger travel:

1. Press the **Lift/lower sewing head** button.
   ↳ The sewing head lowers.
2. Press the **O** button.
   ↳ *Threading mode* is switched on.
3. Use the special wrench (3) to loosen the nut (2) and set the eccentricity accordingly.
4. Tighten the nut (2).

Important

Following a correction, check the path and timing of the lifting motion.

4.5.2 Setting the size of the lifting gap (position of finger travel)

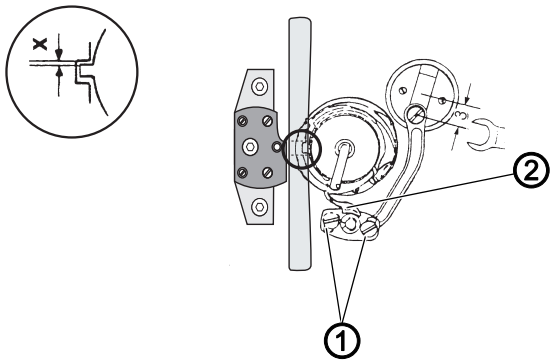
WARNING

Risk of injury from moving parts!

Crushing.

The machine must be set to *Threading mode*.

Fig. 22: Setting the size of the lifting gap (position of finger travel)



(1) - Screw

(2) - Finger

Proper setting

Distance X between the lifted bobbin capsule and its holder should be 0.5-0.7 mm.

To set the size of the lifting gap:

1. Press the **Lift/lower sewing head** button.

↳ The sewing head lowers.

2. Press the **O** button.

↳ *Threading mode* is switched on.

3. Loosen the screws (1).
4. Set the position of the finger (2) accordingly.
5. Tighten the screws (1).

4.5.3 Timing the bobbin capsule lifting

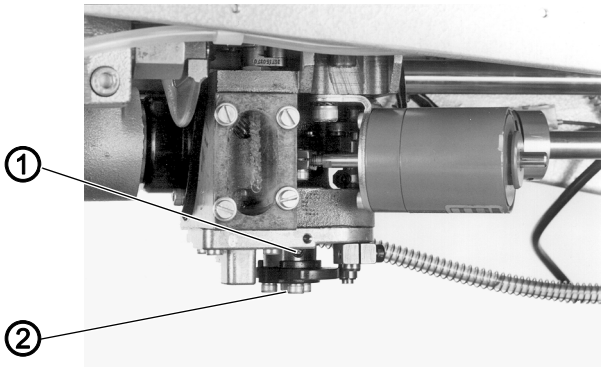
WARNING

Risk of injury from moving parts!

Crushing.

The machine must be set to *Threading mode*.

Fig. 23: Timing the bobbin capsule lifting



(1) - Screws
(2) - Shaft
(3) - Holder
(4) - Bobbin capsule

Proper setting

The bobbin capsule should be at its lifted position when the thread passes between the bobbin capsule 3 and its holder 4.

To time the lifting of the bobbin capsule:

1. Press the **Lift/lower sewing head** button.
   ↳ The sewing head lowers.
2. Press the **O** button.
   ↳ *Threading mode* is switched on.
3. Turn the handwheel.

4. Watch the thread passage.
5. Loosen the screws (1) (2x).
6. Turn the handwheel until the hook tip is at the *3 o'clock position* after the loop has been picked up.
7. Use a hexagon screwdriver (width across flats 2.5 mm) to turn the shaft (2) until the finger is at the front inversion point, where the capsule is completely lifted.
8. Tighten the screws (1) (2x).

4.6 Sewing foot

WARNING

Risk of injury from moving parts!

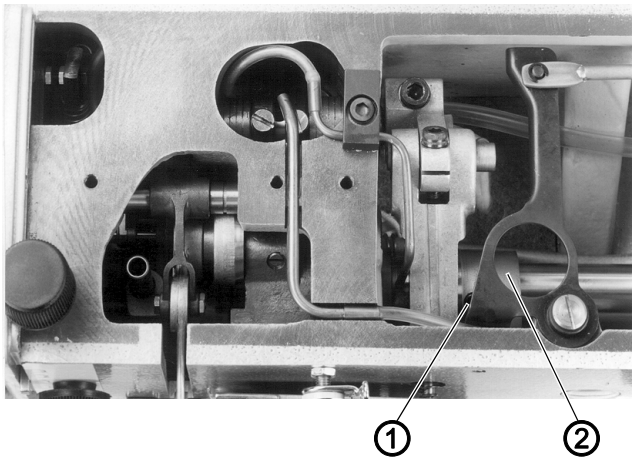
Crushing.

The machine must be set to *Threading mode*.

For the adjustment of the lower and upper stroke position of the sewing foot, refer to 🕮 chapter 4.11 of the Operating Instructions.

4.6.1 Timing the sewing foot movement

Fig. 24: Timing the sewing foot movement



(1) - Screws *(2) - Eccentric*

Proper setting

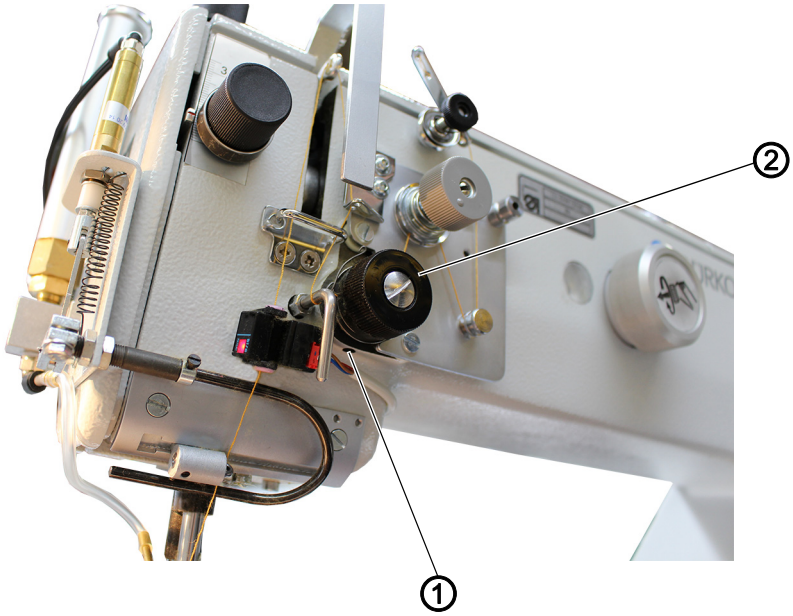
The sewing foot should start moving upwards when in the foot stroke position.

To time the movement of the sewing foot:

1. Press the **Lift/lower sewing head** button.
↳ The sewing head lowers.
2. Press the **O** button.
↳ *Threading mode* is switched on.
3. Loosen the screws (1) (2x).
4. Turn the eccentric (2) on the shaft accordingly.
5. Tighten the screws (1) (2x).

4.7 Setting the thread tensioning spring

Fig. 25: Setting the tensioning spring (1)



(1) - Screw

(2) - Adjusting wheel

Proper setting

The travel and the tension of the thread tensioning spring should be set in a way that the needle plunges into the sewing material down to the eye at the moment when the thread tensioning spring reaches its upper position.

To set the thread tensioning spring:

1. Let the machine to sew at a slow speed.
2. Watch the thread tensioning spring.
3. Stop the machine while sewing with a press of the **O** button.
4. Turn the handwheel manually once and watch the thread tensioning spring again.

Correcting the travel

1. Use a hexagon screwdriver to loosen the screw (1) on the arm.
2. Use the adjusting wheel (2) to turn the entire thread tensioning unit.
3. Tighten the screw (1).

Correcting the tension

Fig. 26: Setting the tensioning spring (2)

(2) - Adjusting wheel *(3) - Screw*

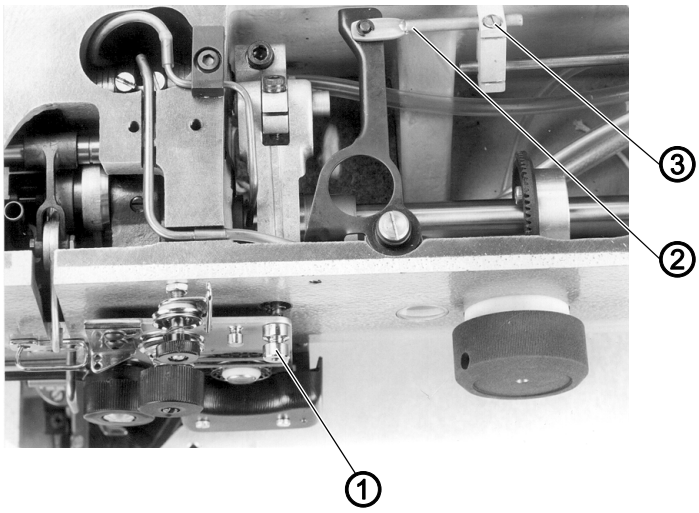
1. Press the **O** button.

↳ *Threading mode* is switched on.

2. Loosen the screw (2) on the machine arm.
3. Pull out the thread tensioning unit.
4. Loosen the screw (3).
5. Turn the adjusting wheel (2) accordingly.
6. Tighten the screw (3).
7. Reinsert the thread tensioning unit.
8. Tighten the screw (2).

4.8 Setting the thread tension lift

Fig. 27: Setting the thread tension lift



(1) - Pushbutton
(2) - Pull rod
(3) - Screw

The thread tensioner will be lifted during the cutting process or after a press on the pushbutton (1) on the support plate.

Proper setting

The thread must pass freely through the lifted tensioner during the cutting process.

To set the thread tension lift:

1. Use the pull rod (2) to lift the thread tensioner as far as it will go.
2. Press the **O** button.
   ↳ *Threading mode* is switched on.
3. Loosen the screw (3).
4. Set the position of the pull rod (2) accordingly.
5. Tighten the screw (3).

4.9 Setting the thread advancing device

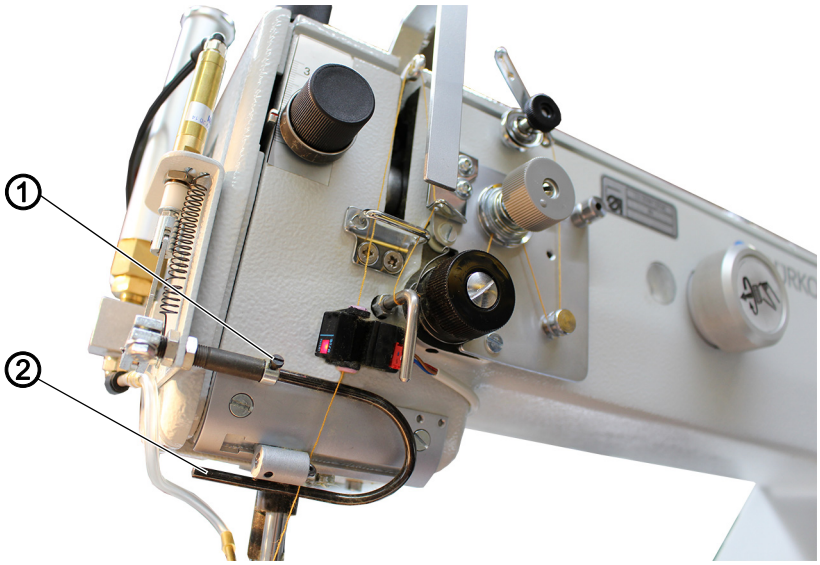
WARNING

Risk of injury from moving parts!

Crushing.

Only set the thread advancing device with the machine switched off.

Fig. 28: Setting the thread advancing device



(1) - Screw *(2) - Thread advancing device*

During the cutting process, the thread advancing device (2) will be moved forwards after picking up the loop and be returned during the 2nd movement phase of the thread-pulling knife.

The thread advancing device has been timed by the control. No changes are possible. The thread advancing device ensures a defined thread length, required for starting the seam, and offsets any thread elongation.

Proper setting

The thread advancing device (2) should advance enough thread to meet the following requirements for the next sewing cycle:

- Safe seam beginning.
- Pulling the thread end under the sewing material.
- No thread deflection into the hook.

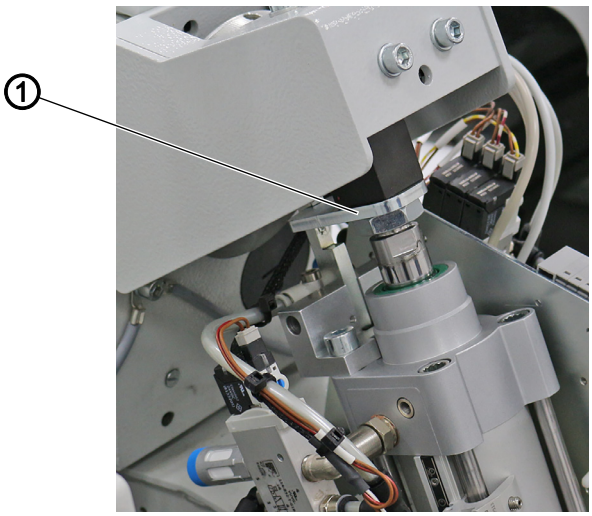
To set the thread advancing device:

1. Loosen the screw (1).
2. Set the position of the thread advancing device (2) accordingly.

3. Tighten the screw (1).

4.10 Machine arm

Fig. 29: Machine arm



(1) - Latch

The switches on the cylinder are actuated by the magnet core on the piston rod when the sewing head is lifted or lowered. The latch (1) is used to lock the sewing head in its upper position when the pneumatic system is depressurized, e.g. after pushing the button **O** or after switching off the machine.

4.10.1 Setting the lower position of the machine arm

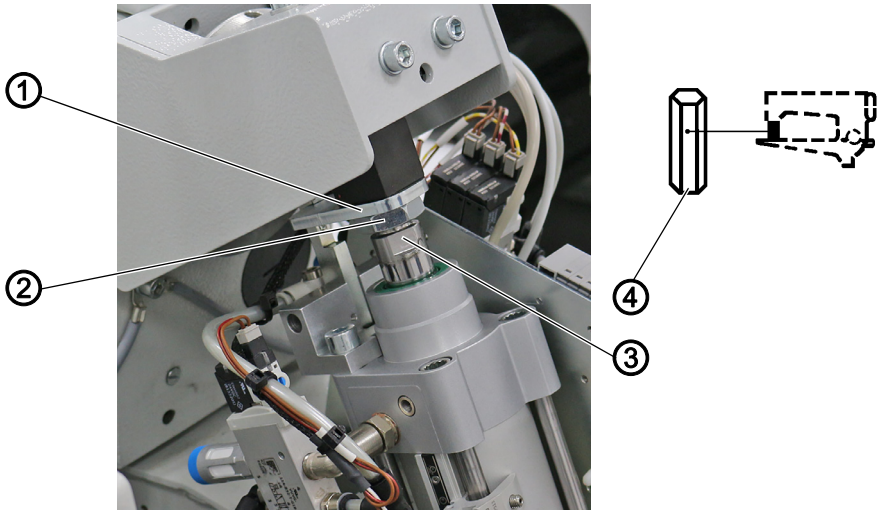
WARNING

Risk of injury from moving parts!

Crushing.

The machine must be set to *Threading mode*.

Fig. 30: Setting the lower position of the machine arm



(1) - Latch
(2) - Counternut
(3) - Piston rod
(4) - Distance gage

Proper setting

In the lowered position of the arm, the hexagonal distance gage 4 (82.8 mm tall) should fit between the base plate and the underside of the machine arm.

To set the position of the machine arm:

1. Press the **Lift/lower sewing head** button.
   - The sewing head lowers.
2. Press the **O** button.
   - *Threading mode* is switched on.
3. Loosen the counternut (2).
4. Turn the piston rod (3) accordingly.
5. Tighten the counternut (2).

Information

Following this adjustment, the upper position of the machine arm will be determined by the piston rod path of the cylinder.

4.10.2 Setting the speed Lift/lower sewing head

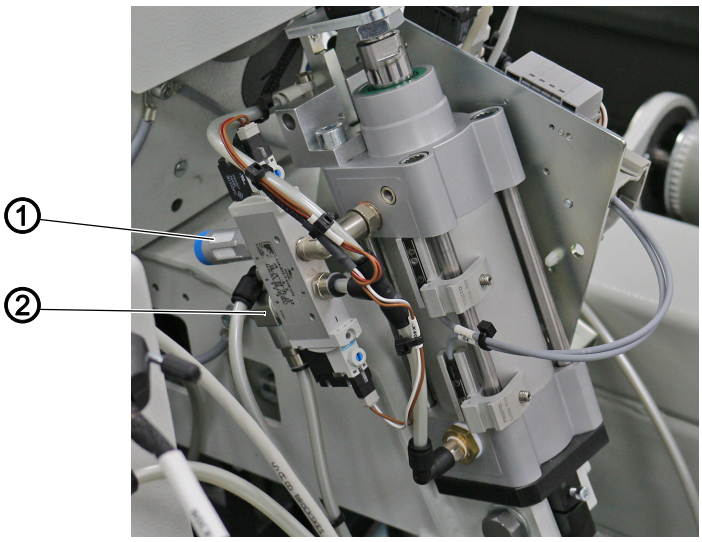
WARNING

Risk of injury from moving parts!

Crushing.

Do not reach into the area of moving machine parts.

Fig. 31: Setting the speed Lift/lower sewing head



(1) - Throttle valve *(2) - Throttle valve*

Proper setting

The sewing head should move swiftly and evenly.

To set the speed Lift/lower sewing head:

1. Press the **Lift/lower sewing head** button repeatedly.
2. Use the throttle valves (1) and (2) to regulate the air exiting the cylinder.

4.10.3 Setting the end position damping of the cylinder

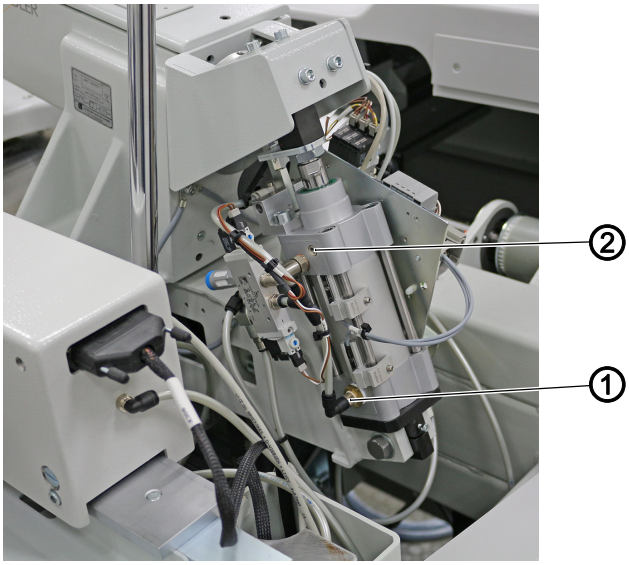
WARNING

Risk of injury from moving parts!

Crushing.

Do not reach into the area of moving machine parts.

Fig. 32: Setting the end position damping of the cylinder



(1) - End position (hidden) *(2) - End position*

The speed of the piston rod is reduced approximately 10 mm from the end position in order to brake the heavy sewing head gently.

Proper setting

The piston rod should move gently into both end positions.

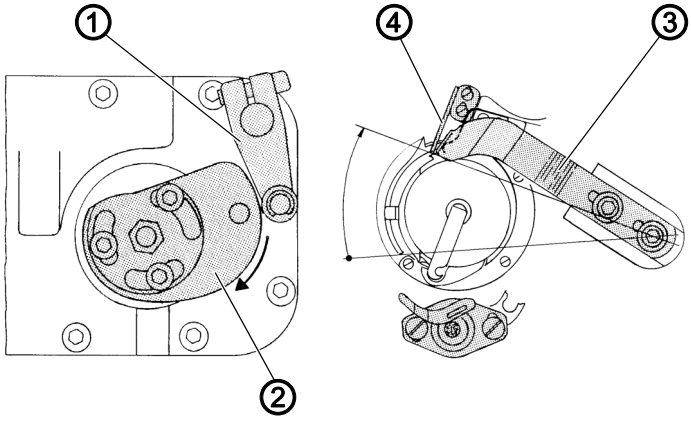
To set the end position damping of the cylinder:

1. Press the **Lift/lower sewing head** button repeatedly.
2. Set the end positions (1) and (2) accordingly.

4.11 Thread cutter

4.11.1 Checking the function sequence

Fig. 33: Checking the function sequence



(1) - Roller lever
(2) - Control cam
(3) - Thread-pulling knife
(4) - Counter blade

Following the release of the thread cutting process, the drive will stop briefly after the needle has been positioned. The magnet will press the roller lever (1) against the lowest point of the control cam (2). The thread-pulling knife (4) will be moved completely away from the counter blade (3).

The sewing machine operates at a cutting speed of 150 min^{-1}.

When the control cam (2) of the thread-pulling knife (3) is moved towards the counter blade (4), the thread-pulling knife moves, during the 1st movement phase, towards the bobbin capsule and stops shortly before reaching its lug. This ensures that the thread-pulling knife (3) remains outside the movement range of the bobbin capsule lifter.

At the onset of the 2nd movement phase, the thread-pulling knife catches the hook thread and the needle thread. The thread tensioner is lifted. From this moment onwards, the thread-pulling knife will unwind the thread from the reel. Shortly before the thread lever reaches its upper position, the threads are cut, and the hook thread is clamped.

As soon as the upper position of the thread lever and, consequently, the 2nd position is reached, the drive stops. The magnet for the thread tension lift and the magnet for the thread cutter will be switched off.

4.11.2 Setting the lateral position of the thread-pulling knife

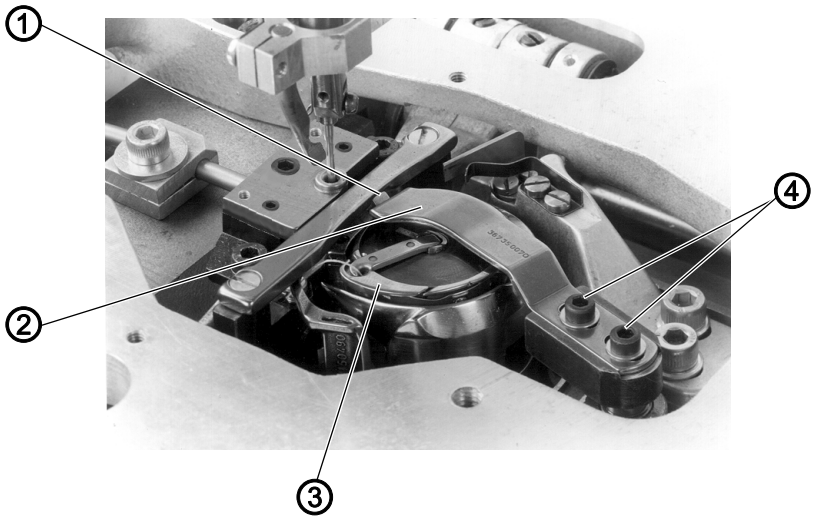
WARNING

Risk of injury from moving parts!

Crushing.

The machine must be set to *Threading mode*.

Fig. 34: Setting the lateral position of the thread-pulling knife



(1) - Bobbin capsule lug
(2) - Thread-pulling knife
(3) - Bobbin capsule
(4) - Screws

Proper setting

The thread-pulling knife 2 should travel at a safe distance along the bobbin capsule lug 1.

The thread-pulling knife 2 must not collide with the bobbin capsule 3.

To set the lateral position of the thread-pulling knife:

1. Press the **Lift/lower sewing head** button.
   - The sewing head lowers.
2. Press the **O** button.
   - *Threading mode* is switched on.
3. Loosen the screws (4).
4. Set the position of the thread-pulling knife (2) accordingly.
5. Tighten the screws (4).

4.11.3 Setting the height of the thread-pulling knife

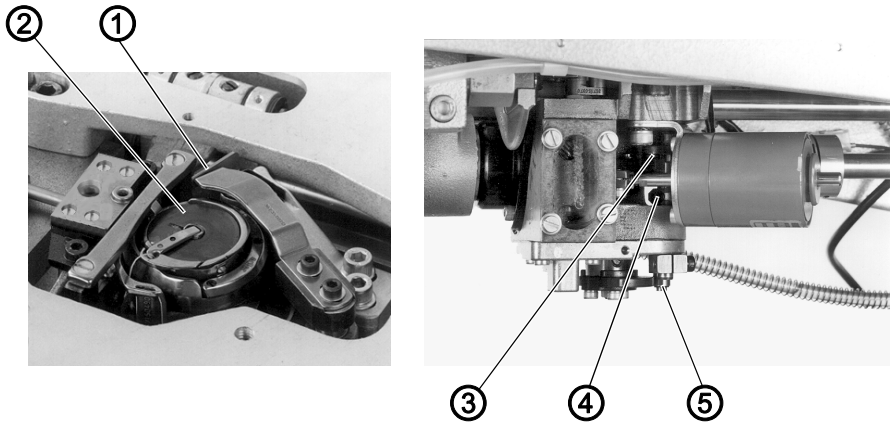
WARNING

Risk of injury from moving parts!

Crushing.

The machine must be set to *Threading mode*.

Fig. 35: Setting the height of the thread-pulling knife



(1) - Thread-pulling knife
(2) - Bobbin
(3) - Screw
(4) - Screw
(5) - Shaft

Proper setting

The thread-pulling knife (1) should be as close to the bobbin as possible when it crosses the bobbin (2), however without touching the latter.

To set the height of the thread-pulling knife:

1. Press the **Lift/lower sewing head** button.
   - The sewing head lowers.
2. Press the **O** button.
   - *Threading mode* is switched on.
3. Loosen the screws (3) and (4) on the adjusting rings.
4. Set the height of the thread-pulling knife accordingly.
5. Use the two adjusting rings to fix the shaft (5) in place so that the thread-pulling knife can be moved easily without any play.
6. Tighten the screws (3) and (4) on the adjusting rings.

Important

An incorrect setting can have the following effects:

- No reliable catching of the thread
- Contact with the sewing material support surface
- Damage to the bobbin

4.11.4 Setting the position of the counter blade in relation to the thread-pulling knife

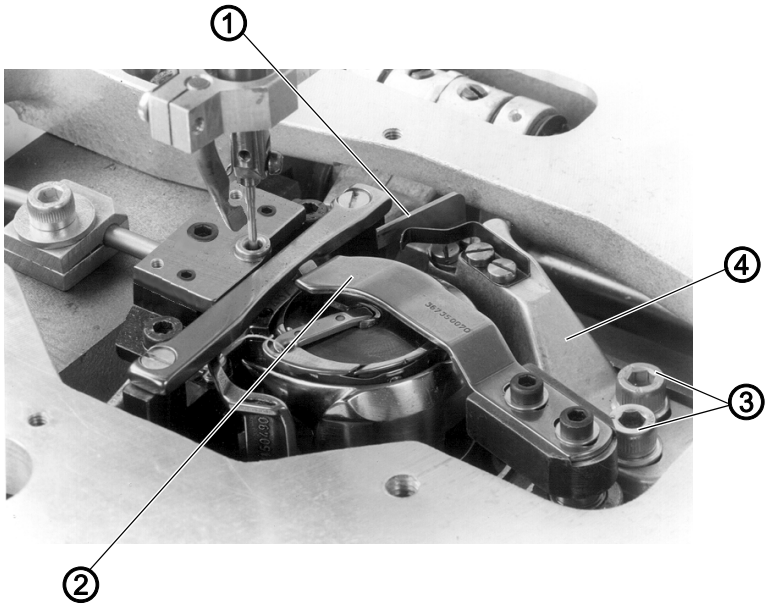
WARNING

Risk of injury from moving parts!

Crushing.

The machine must be set to *Threading mode*.

Fig. 36: Setting the position of the counter blade in relation to the thread-pulling knife



(1) - Counter blade
(2) - Thread-pulling knife
(3) - Screws
(4) - Counter blade support

Proper setting

The counter blade support (4) should be positioned as close to the cast edge on the rear as possible.

The pressure exerted by the counter blade (1) against the thread-pulling knife (2) should be as low as possible but high enough to cut the threads reliably. Normally, this is the case if the counter blade barely touches the thread-pulling knife at the moment when the knives overlap halfway.

To set the position of the counter blade in relation to the thread-pulling knife:

1. Press the **Lift/lower sewing head** button.

↳ The sewing head lowers.

2. Press the **O** button.

↳ *Threading mode* is switched on.

3. Loosen the screws (3) and shift the counter blade support/counter blade accordingly.
4. Re-tighten the screws (3).

Important

An excessive counter blade pressure will result in increased knife wear.

4.11.5 Setting the position of the hook thread clamp

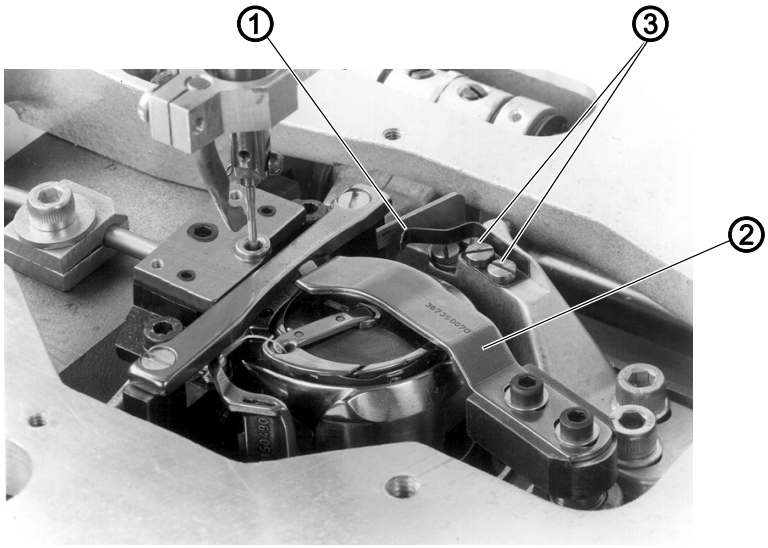
WARNING

Risk of injury from moving parts!

Crushing.

The machine must be set to *Threading mode*.

Fig. 37: Setting the position of the hook thread clamp



(1) - Hook thread clamp
(2) - Thread-pulling knife
(3) - Screws

Proper setting

The purpose of the hook thread clamp (1) is to clamp the hook thread during the cutting process so that it can be safely caught by the needle thread when starting the seam.

The hook thread should be held safely at the lowest pressure possible.

To set the position of the hook thread clamp:

1. Cut the threads with the hand-operated thread-pulling knife (2).
2. Pull the thread out of the hook thread clamp in order to check the clamping efficiency.
3. Loosen the screws (3).
4. Shift the hook thread clamp (1) accordingly.
5. Tighten the screws (3).

Important

An incorrect setting may cause problems when starting the seam.

4.11.6 Setting the control cam position

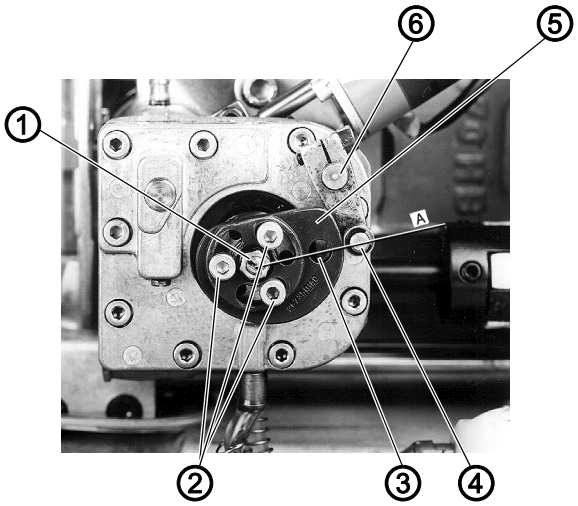
WARNING

Risk of injury from moving parts!

Crushing.

The machine must be set to *Threading mode*.

Fig. 38: Setting the control cam position



(1) - Shaft
(2) - Screws
(3) - Hole
(4) - Roller
(5) - Control cam
(6) - Lever

The control cam (5) determines the sequence of movements of the thread-pulling knife.

Proper setting

In the upper position of the thread lever, the hole (3) in the control cam (4) should be located on the connecting line A between the shaft (1) and the roller (4) of the lever (6).

To set the position of the control cam:

1. Loosen the screws (2).
2. Turn the control cam (5) accordingly.
3. Tighten the screws (2).

4.11.7 Setting the swivel range of the thread-pulling knife

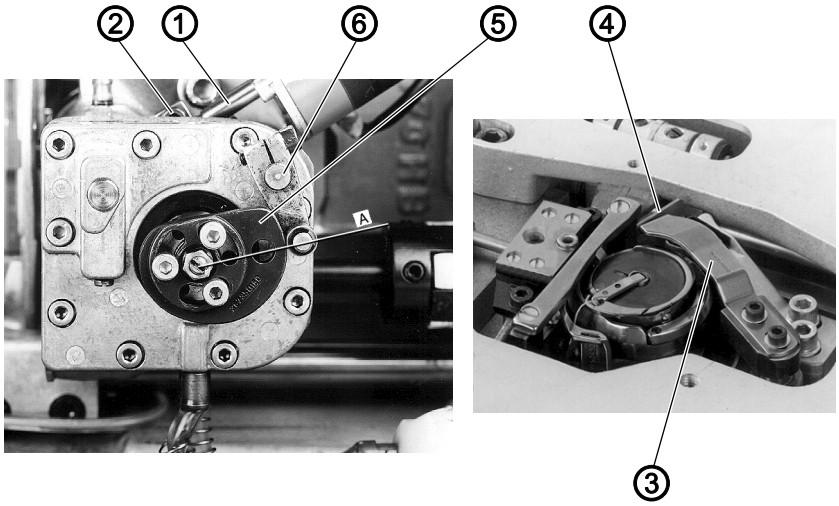
WARNING

Risk of injury from moving parts!

Crushing.

The machine must be set to *Threading mode*.

Fig. 39: Setting the control cam position



(1) - Magnet armature
(2) - Screw
(3) - Thread-pulling knife
(4) - Counter blade
(5) - Control cam
(6) - Roller lever

Proper setting

The back of the thread-pulling knife (3) should be flush with the blade of the counter knife (4) when the magnet armature (1) is fully extended.

To set the swivel range of the thread-pulling knife:

1. Loosen the screw (2) on the clamping block.
2. Turn the magnet armature (1) accordingly.
3. Tighten the screw (2) on the clamping block.

Information

The position of the swung-out thread-pulling knife is determined by the lowest position of the roller lever (6) when it is in contact with the control cam (5).

4.11.8 Setting the position of the roller lever in relation to the control cam

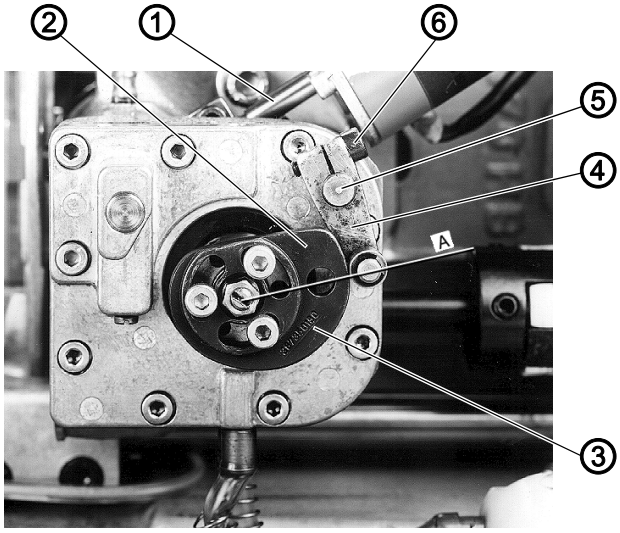
WARNING

Risk of injury from moving parts!

Crushing.

The machine must be set to *Threading mode*.

Fig. 40: Setting the position of the roller lever in relation to the control cam



(1) - Magnet armature
(2) - Roller
(3) - Control cam
(4) - Roller lever
(5) - Shaft
(6) - Screw

Proper setting

The control cam (3) should not touch the roller lever (4) during the sewing process.

The distance of the roller lever (4) to the topmost point of the control cam (3) should amount to 0.1 mm when the magnet armature (1) is fully extended.

To set the position of the roller lever in relation to the control cam:

1. Loosen the screw (6) on the roller lever (4).
2. Turn the roller lever (4) on the shaft (5) accordingly.
   ↳ Make sure that the roller (2) is centered relative to the control cam (3).
3. Tighten the screw (6).

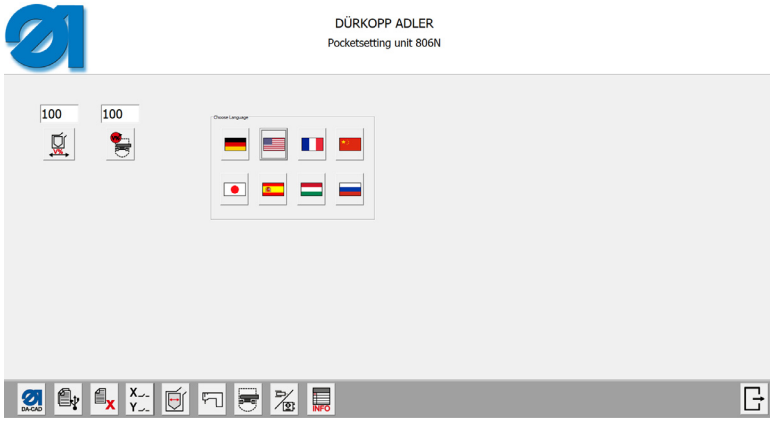
5 Machine head 121

Many settings require that you navigate to the sewing motor level on the control panel.

To access the sewing motor level:

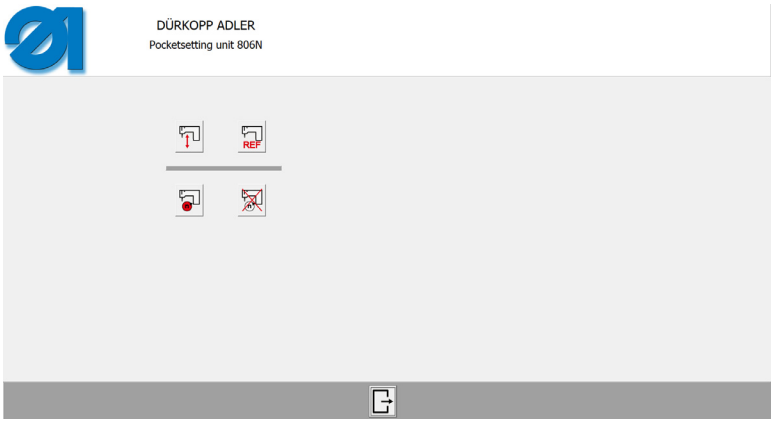
1. Press the **Technician** button on the start screen.
2. Enter password **25483**.

↳ You are on the technician level:



3. Press the **Sewing motor** button.

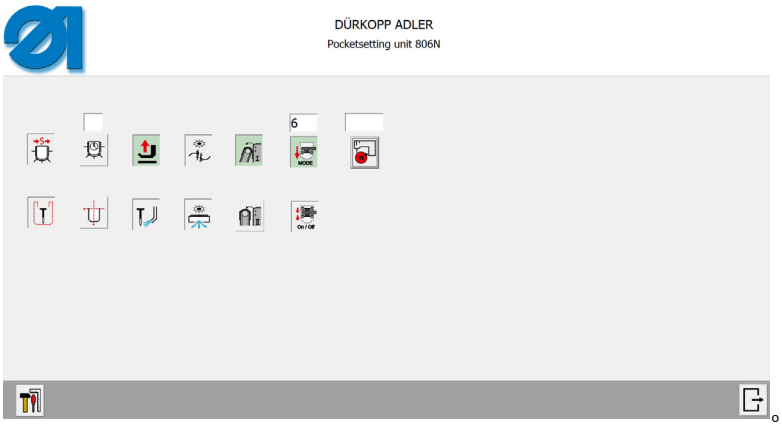
↳ You are on the sewing motor level:



OR

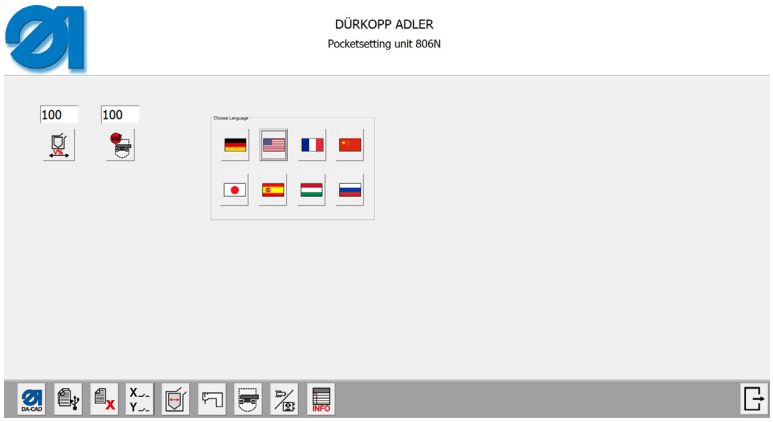
1. When inside a sewing program, press the **Global parameters** button  .

↳ You are on user interface 2:



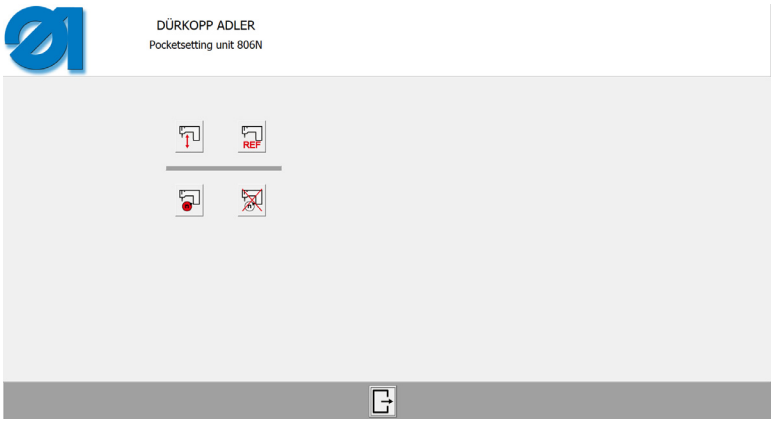
2. Press the **Technician**  button.

↳ You are on the technician level:



3. Press the **Sewing motor** button.

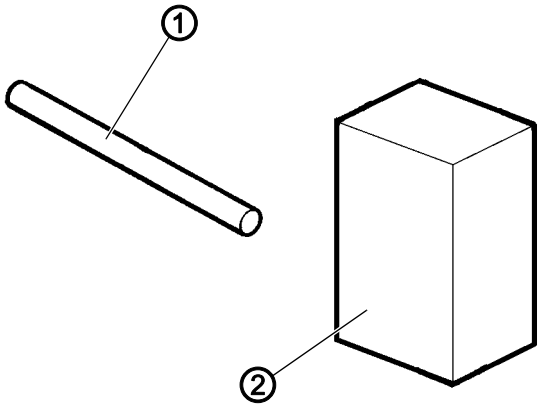
↳ You are on the sewing motor level:



5.1 Adjustment aids

5.1.1 Gage set

Fig. 41: Gage set



(1) - Setting peg

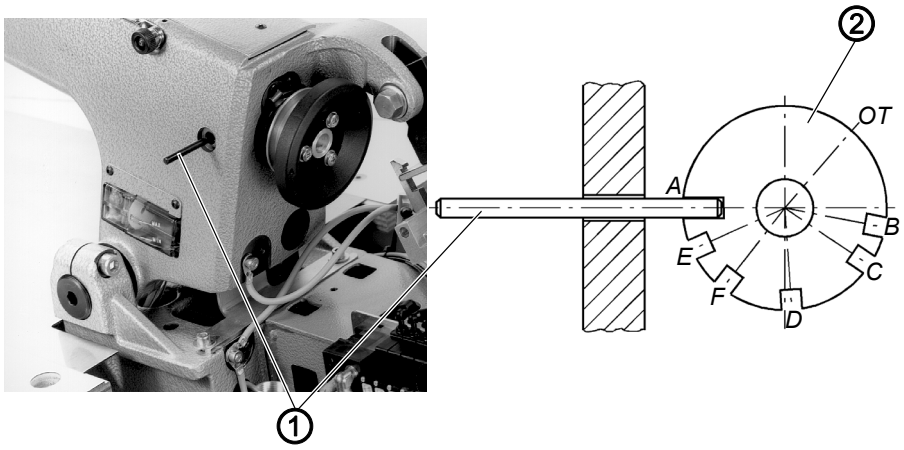
(2) - Distance gage

The setting gages described below allow for a precise setting and checking of the machine head.

Gage	Part number	Use
Setting peg	9301 022608	Lock the machine in place at position A-F
Gage	Z124 000443	Distance gage

5.1.2 Integrated adjusting disk

Fig. 42: Integrated adjusting disk



(1) - Locking peg *(2) - Adjusting disk*

Use the locking peg (1) and the adjusting disk (2) integrated on the toothed belt wheel of the arm shaft to lock the machine in place at all setting positions.

For this purpose, the adjusting disk is equipped with six slots which are identified on the handwheel with the letters A, B, C, D, E and F. The letters indicate the position of the slots in which the machine can be locked in place using the locking peg (1).

Slot **A** (loop stroke position) is deeper than the other slots.

The following can be set in the individual positions:

Slot	Setting
A	Adjusting disk relative to the groove in the arm shaft crank Parallel position Belt pulley Loop stroke Distance of hook tip to needle
B	not assigned
C	2. Needle position
D	Control cam for the thread cutter
E	Needle bar height
F	not assigned
OT	Top dead center: Setting the phase position of the lifting eccentric

5.1.3 Setting the position of the integrated adjusting disk relative to the arm shaft

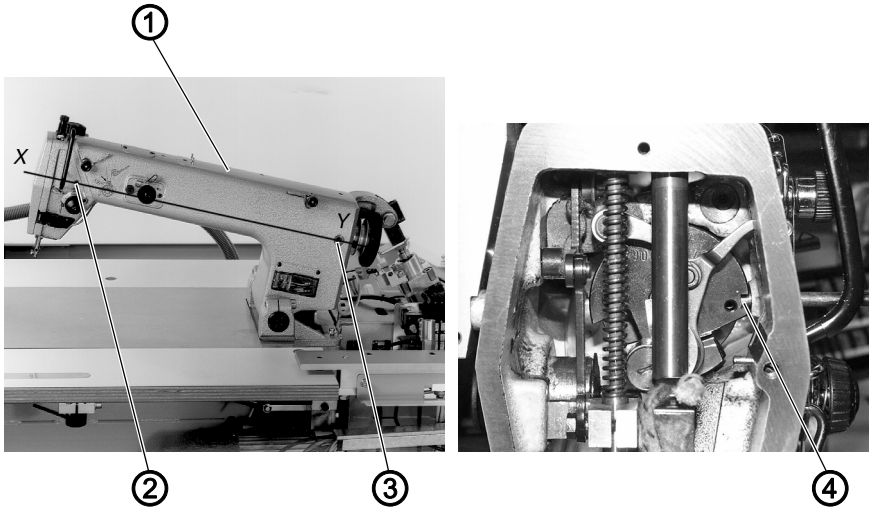
WARNING

Risk of injury from moving parts!

Crushing.

Do not correct the position of the arm shaft unless the machine is switched off.

Fig. 43: Setting the position of the integrated adjusting disk relative to the arm shaft (1)



(1) - Arm cover
(2) - Hole
(3) - Hole
(4) - Groove

Important

All settings made using the adjusting disk are only correct if they are set as described in the rules. When adjusting the arm shaft, check and, if necessary, correct all settings listed below.

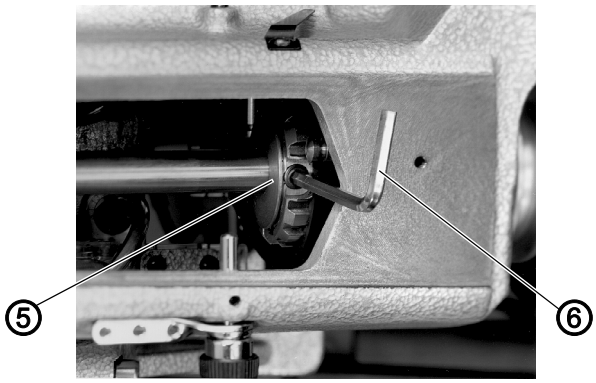
Proper setting

The groove (4) and slot **A** of the adjusting disk integrated on the toothed belt wheel must be aligned with line **X - Y**.

To set the position of the integrated adjusting disk relative to the arm shaft:

1. Lock the arm shaft in place through the hole (2) in the groove (4) using a locking peg or a Ø 5 mm pin.
   - It must be possible to insert the locking peg into the integrated adjusting disk through the hole (3) at position **A**.
2. Remove the arm cover (1).

Fig. 44: Setting the position of the integrated adjusting disk relative to the arm shaft (2)



(5) - Toothed belt wheel *(6) - Hexagon screwdriver*

3. Use a hexagon screwdriver (6) to loosen the screws of the toothed belt wheel (5).
4. Use the locking peg to lock the toothed belt wheel in place at position **A**.
5. Insert a 5 mm pin into the hole (3) and allow it to engage in the groove (4).
6. Tighten the screws on the toothed belt wheel (6).

5.2 Setting the sewing foot height

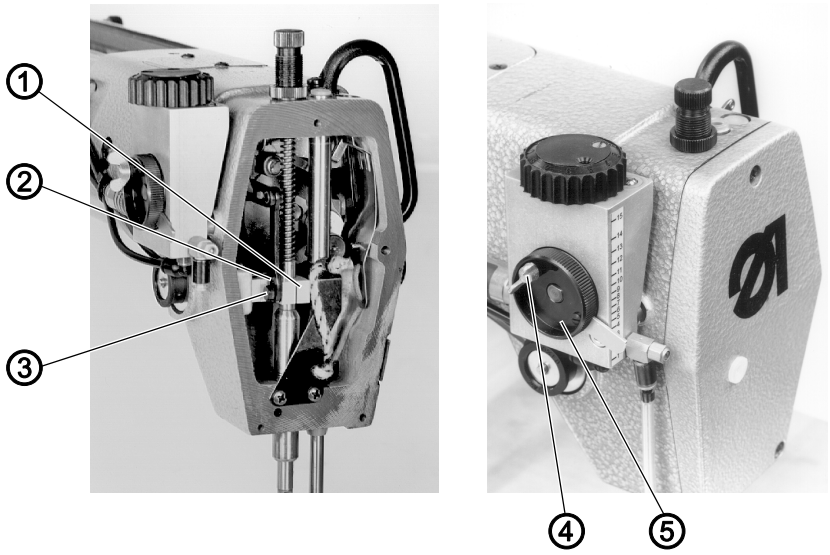
WARNING

Risk of injury from moving parts!

Crushing.

The machine must be set to *Threading mode*.

Fig. 45: Setting the sewing foot height



(1) - Block
(2) - Bolt
(3) - Screw
(4) - Wing screw
(5) - Adjusting wheel

To set the height of the sewing foot:

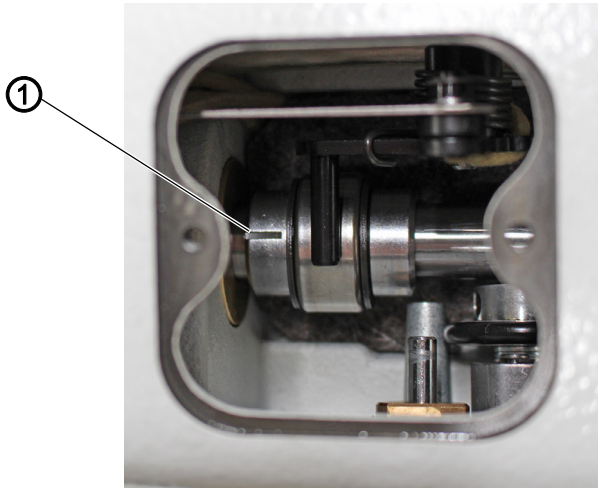
1. Press the **Lift/lower sewing head** button.
   - The sewing head lowers.
2. Press the **O** button.
   - *Threading mode* is switched on.
3. Remove the head cover.
4. Loosen the wing screw (4).
5. Set the adjusting wheel (5) to the lowest value.
6. Use the handwheel to move the sewing foot to the bottom dead center.
   - The distance between sewing foot and throat plate should be 0.5 mm.
7. Loosen the screw (3).
8. Move the block (1) in such a way that the distance between the bolt (2) and the lower end of the slotted hole is 1 mm.
9. Re-tighten the screw (3).
10. Replace the head cover.

Setting the phase position of the sewing foot eccentric

Important

An incorrect eccentric phase position can lead to gathering and thread breaking.

Fig. 46: Setting the phase position of the sewing foot eccentric (1)



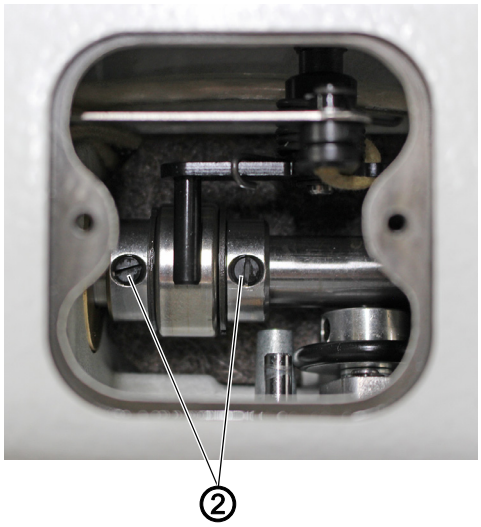
(1) - Eccentric notch

Proper setting

The sewing foot must lift following the *end of the loop stroke*.

When the needle bar is at the bottom dead center, the eccentric notch (1) must point up vertically.

Fig. 47: Setting the phase position of the sewing foot eccentric (2)



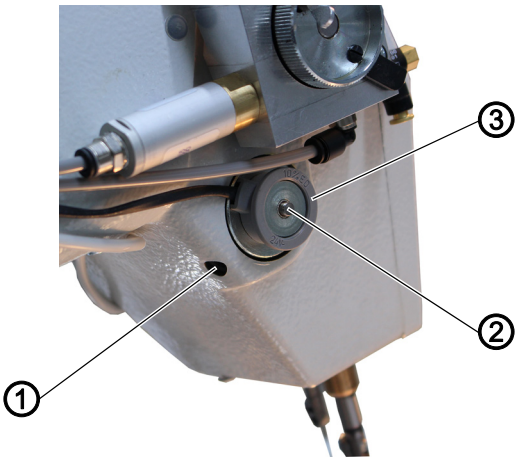
(2) - Screws

To set the phase position of the sewing foot eccentric:

1. Use the handwheel to turn the needle bar up.
2. Loosen the screws (2) on the eccentric.
3. Turn the eccentric on the shaft.
4. Tighten the screws (2).

5.3 Setting the needle thread tension release

Fig. 48: Setting the needle thread tension release



(1) - Screw
(2) - Axle
(3) - Magnet

Proper setting

Exerting pressure on the axle (2) causes the needle thread tensioner to open by approx. 1 mm.

To set the tension thread tension release:

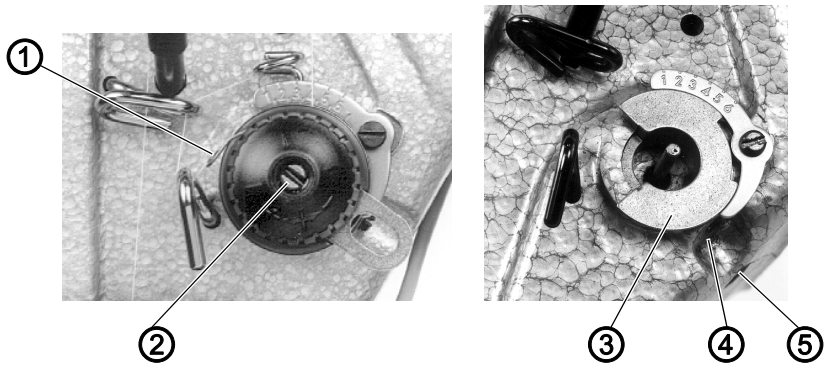
1. Loosen the screw (1).
2. Shift the magnet (3).

↳ When the needle thread tensioner is fully tightened and there is no thread between the tensioner disks, the axle (2) should have a play of approx. 0.3 mm.

3. Re-tighten the screw (1).

5.4 Setting the thread tensioning spring

Fig. 49: Setting the thread tensioning spring



(1) - Thread tensioning spring
(2) - Tension bolt
(3) - Socket
(4) - Screw
(5) - Screw

Proper setting

The thread tensioning spring (1) should hold the needle thread tensioned at least until the tip of the needle penetrates the sewing material.

Correction of the spring travel

To correct the spring travel:

1. Loosen the screw (4).
2. Turn the socket (3).

   The thread tensioning spring (1) must pre-tension the needle thread almost until the tip of the needle plunges into the sewing material.
3. Re-tighten the screw (4).

Correction of the spring force

To correct the spring force:

1. Loosen the screw (5).
2. Set the tension value by turning the tension bolt (2).

   The tension of the thread tensioning spring must range between 20 and 50 cN (1 cN = 1 g), depending on the type of the yarn and the sewing material.
3. Tighten the screw (5).

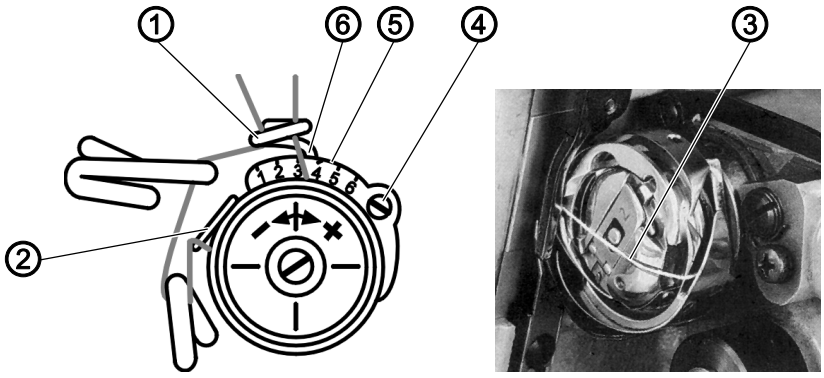
5.5 Setting the needle thread regulator

The thread regulator regulates the amount of needle thread required for forming the stitch.

The setting of the needle thread regulator depends on the following factors:

- Stitch length
- Thickness of the sewing material
- Properties of the yarn used

Fig. 50: Setting the needle thread regulator



(1) - Needle thread regulator
(2) - Thread tensioning spring
(3) - Needle thread loop
(4) - Screw
(5) - Scale
(6) - Wire

Proper setting

The needle thread loop must slide over the hook without surplus and at low tension.

When the needle thread loop (3) passes the maximum hook circumference, the thread tensioning spring (2) must be pulled approx. 0.3 mm down from its upper end position.

The measurement of 0.3 mm serves as a reference value. The value can be greater or smaller depending on the tension of the thread tensioning spring (2).

To set the needle thread regulator:

1. Loosen the screw (4).
2. Set the thread regulator (1).

↳ The vertical wire (6) in conjunction with the scale (4) serves as an adjustment aid.

↳ Reference value: 2.0

3. Tighten the screw (4).

5.6 Winder

5.6.1 Setting the winder

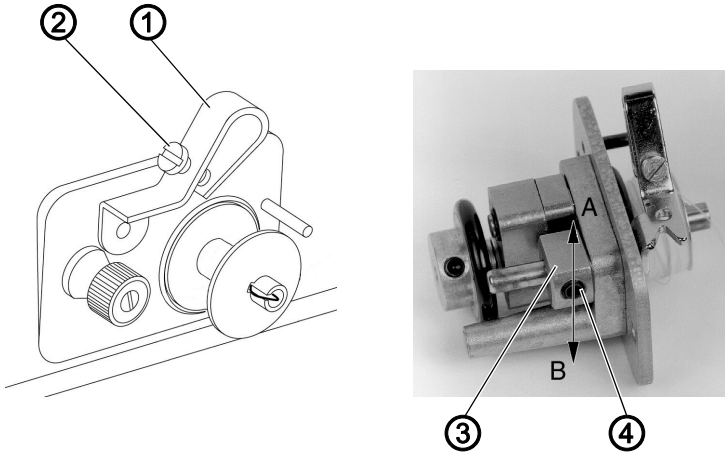
WARNING

Risk of injury from moving parts!

Crushing.

Only set the winder with the machine switched off.

Fig. 51: Setting the winder



(1) - Bobbin winder flap
(2) - Screw
(3) - Switch cam
(4) - Screw

Proper setting

The winder cuts off automatically when the bobbin is filled to approx. 0.5 mm below the edge of the winder. The bobbin should be wound cylindrically.

Setting minor changes in the filling amount

To set minor changes in the filling amount:

1. Set the bobbin winder flap (1) using the screw (2).

Setting major changes in the filling amount

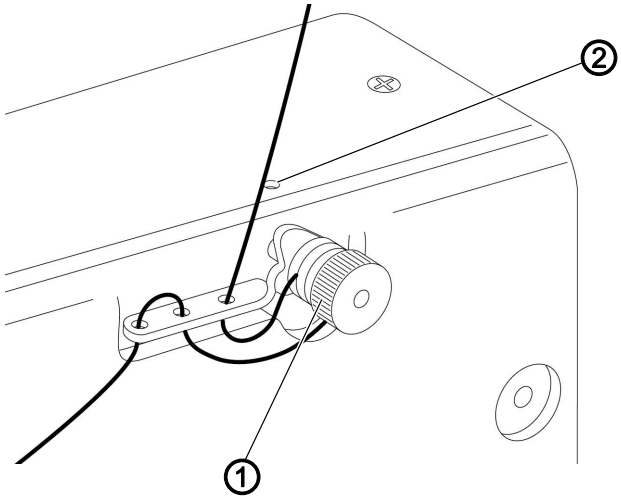
To set major changes in the filling amount:

1. Remove the winder lid.
2. Loosen the screw (4).
3. Turn the switch cam (3).
   - To set a smaller filling quantity: Turn in arrow direction **A**
   - To set a larger filling quantity: Turn in arrow direction **B**

4. Tighten the screw (4).
5. Replace the winder lid.

5.6.2 Canceling cylindrical winding

Fig. 52: Canceling cylindrical winding



(1) - Voltage *(2) - Screw*

The bobbin thread must be wound evenly onto the winder.

To cancel cylindrical winding:

1. Loosen the screw (2).
2. Shift the tensioner (1).
   - If the thread is wound too far on the outside: Press the tensioner inward
   - If the thread is wound too far on the inside: Pull the tensioner outward
3. Tighten the screw (2).

5.6.3 Exchanging the friction ring

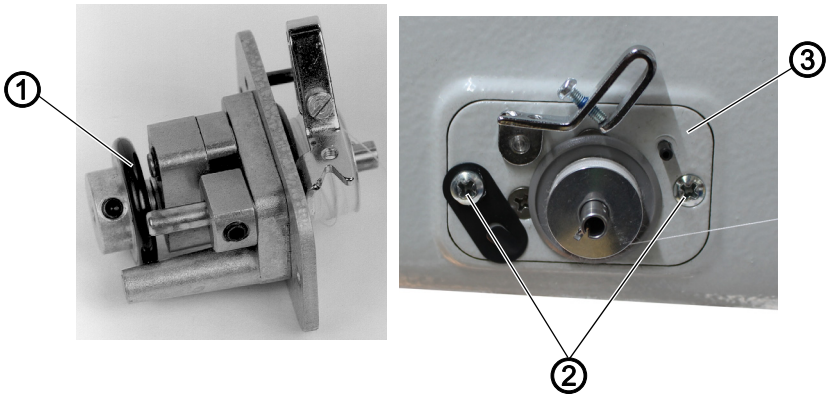
WARNING

Risk of injury from moving parts!

Crushing.

Only set the winder with the machine switched off.

Fig. 53: Exchanging the friction ring



(1) - Friction ring
(2) - Screws
(3) - Winder lid

The rubberized friction ring (1) is seated on the winder drive wheel.

To replace the friction ring:

1. Loosen the screws (2).
2. Remove the winder lid (3).
3. Exchange the friction ring (1).
4. Replace the winder lid (3).

5.6.4 Resetting the winder wheel

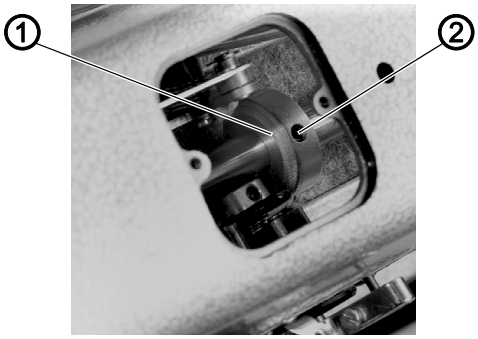
WARNING

Risk of injury from moving parts!

Crushing.

Only set the winder with the sewing machine switched off.

Fig. 54: Resetting the winder wheel



(1) - Winder wheel *(2) - Screw*

The winder wheel must drive the winder as soon as the bobbin winder is switched on.

To reset the winder wheel:

1. Use the handwheel to turn the machine head to the upper needle position.
2. Loosen the screws (2) (2x) on the winder wheel (1).
3. Displace the winder wheel (1) on the axle.
4. Tighten the screws (2) (2x).

5.7 Setting the needle bar height

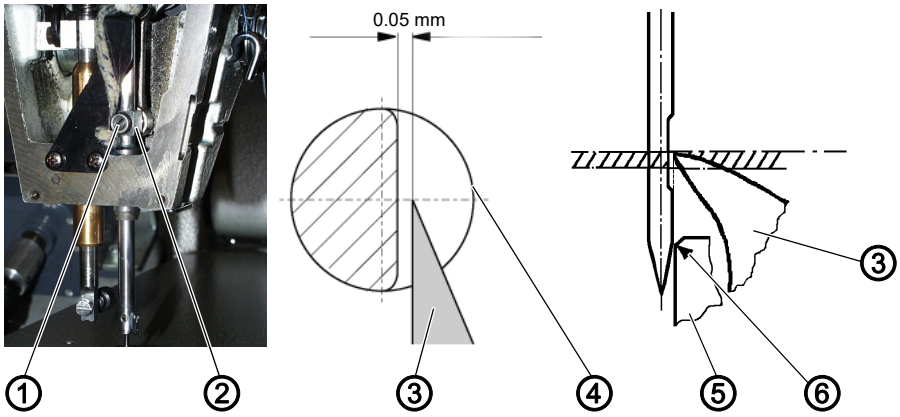
WARNING

Risk of injury from sharp parts!

Puncture.

The machine must be set to *Threading mode*.

Fig. 55: Setting the needle bar height



(1) - Screw
(2) - Crosshead
(3) - Hook tip
(4) - Needle
(5) - Hook middle section
(6) - Needle guard top edge

To set the needle bar height:

1. Remove sewing material support surface, throat plate, and sewing foot.
2. Lock the arm shaft in place at position **A** (📖 *p. 69*).

↳ The needle bar is at the loop stroke position.

3. Loosen the screw (1) on the crosshead (2).
4. Slide the needle bar with the needle (4) against the needle guard top edge (6) of the hook middle section (5) until it makes slight contact.

↳ The hook tip must be situated in the lower third of the needle.

5. Tighten the screw (1).
6. Replace throat plate and sewing foot.
7. Reinsert the sewing material support surface into the tabletop.

5.8 Hook settings

5.8.1 Setting the loop stroke and hook tip distance to the needle

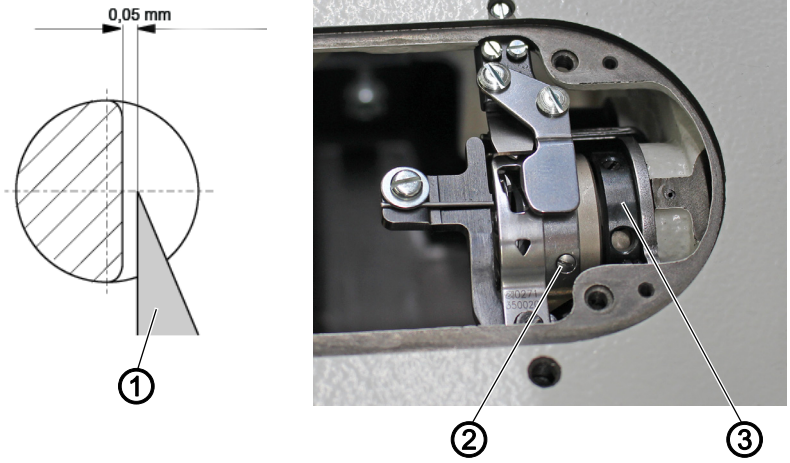
WARNING

Risk of injury from sharp parts!

Puncture.

The machine must be set to *Threading mode*.

Fig. 56: Setting the loop stroke and hook tip distance to the needle (1)



(1) - Hook tip
(2) - Fastening screw
(3) - Adjusting ring

The loop stroke is the path of the needle bar from the lower dead center to the point where the hook tip is at the center of the needle. The loop stroke is 1.8 mm.

To set the loop stroke and the hook tip distance to the needle:

1. Press the **Lift/lower sewing head** button.
   - The sewing head lowers.
2. Press the **O** button.
   - *Threading mode* is switched on.
3. Lock the arm shaft in place at position **A** (📖 *p. 69*).
4. Remove sewing foot and throat plate.
5. Insert the new needle.

6. Loosen the fastening screws (2) of the hook.
7. Set the hook tip (1) to the center of the needle.

↳ The distance between the hook tip 1 and the groove of the needle must be 0.1 mm.

↳ In this position, the distance between the hook and the adjusting ring (3) is approx. 0.4 mm.

↳ If the distance of 0.4 mm is not reached, the hook drive housing needs to be adjusted.

8. Re-tighten the fastening screws (2) of the hook.
9. Replace sewing foot and throat plate.

5.8.2 Aligning the hook drive housing

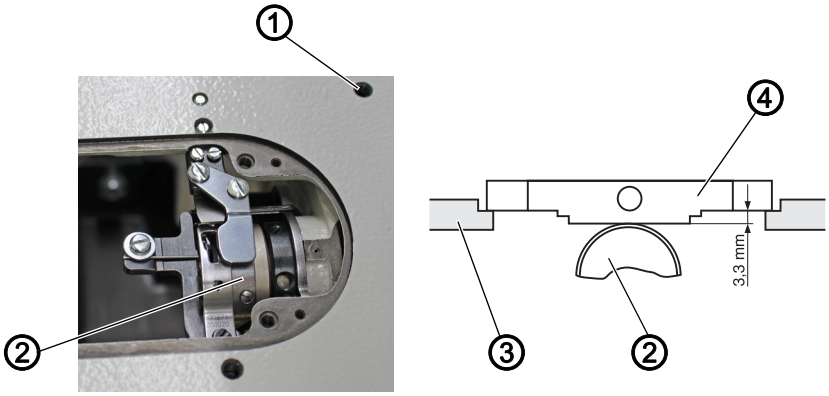
WARNING

Risk of injury from moving parts!

Crushing.

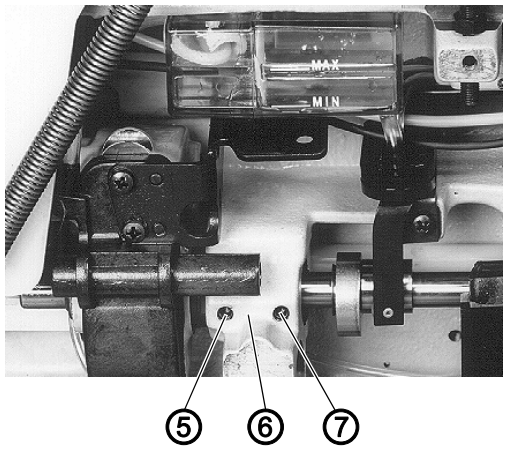
Only set the hook drive housing with the sewing machine switched off.

Fig. 57: Aligning the hook drive housing (1)



(1) - Screw
(2) - Thread pulling plate
(3) - Throat plate support surface
(4) - Gage

Fig. 58: Aligning the hook drive housing (2)



(5) - Screw
(6) - Hook drive housing
(7) - Screw

Important

The hook drive housing 6 has been aligned at the factory. It may only be adjusted in exceptional cases.

Proper setting

If the alignment of the hook drive housing is correct, the distance between the hook and the adjusting ring must amount to 0.4 mm.

To align the hook drive housing:

1. Loosen the screw (1).
   - A stop screw is located below the screw.
2. Set the stop screw.
3. Re-tighten the screw (1).
4. Loosen screws (5) and (7) of the hook drive housing.
5. Shift the hook drive housing (6).
   - The distance between the hook and the adjusting ring must be approx. 0.4 mm.
6. Re-tighten screws (5) and (7).
   - Check and, if necessary, correct the distance of the hook tip to the needle (📖 *p. 81*).

5.8.3 Aligning the bobbin case support

WARNING

Risk of injury from moving parts!

Crushing.

Only align the bobbin case support with the machine switched off.

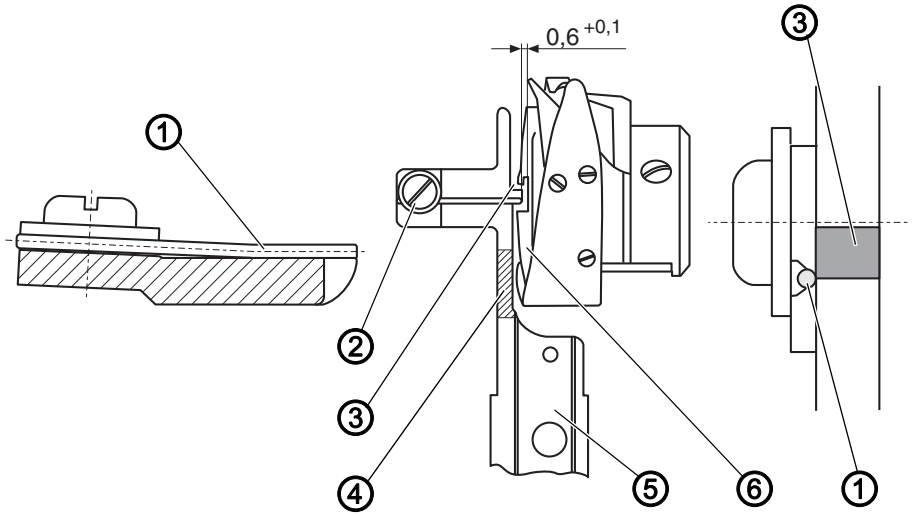
NOTICE

Property damage may occur!

Breakage of the bobbin case support.

Always follow the instructions below when aligning the bobbin case support.

Fig. 59: Aligning the bobbin case support



(1) - Spring wire
(2) - Screw
(3) - Holding lug
(4) - Hatched area
(5) - Bobbin case support
(6) - Bobbin case bottom part

The bobbin case support has been aligned at the factory. After replacing the support, you must align the new holder.

Proper setting

The spring wire (1) should rest flush on the bobbin case bottom part and without any gap. Half of the width of the spring wire (1) should cover the holding lug (3).

To align the bobbin case support:

1. Align the bobbin case support (5).

↳ The distance between the holding lug (3) of the bobbin case support (5) and the bobbin case bottom part (6) should amount to 0.6 +0.1 mm.

2. Loosen the screw (2).
3. Shift the spring wire (1) so that it abuts flush on the holding lug (3).
4. Tighten the screw (2).

Information

The holding wire can be used on both sides.

5.8.4 Setting the throat plate

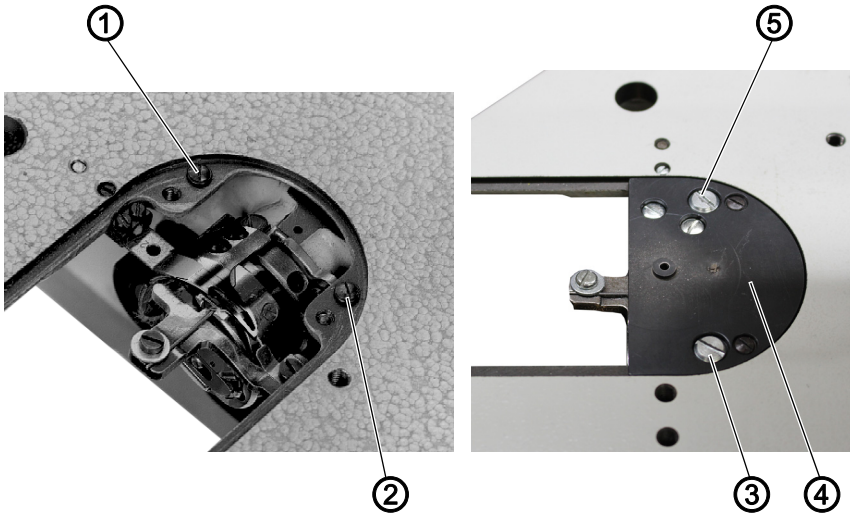
WARNING

Risk of injury from sharp parts!

Puncture.

The machine must be set to *Threading mode*.

Fig. 60: Setting the throat plate



(1) - Screw
(2) - Screw
(3) - Screw
(4) - Throat plate
(5) - Screw

Information

For cleaning purposes, the throat plate (4) can be removed after loosening the screws (3) and (5), without causing any adjustment changes. The adjusting washers under the screws (1) and (2) will position the throat plate again.

Proper setting

The needle should plunge into the center of the throat plate.

To set the throat plate:

1. Press the **Lift/lower sewing head**  button.

↳ The sewing head lowers.

2. Press the **O** button.

↳ *Threading mode* is switched on.

3. Loosen screws (1), (2), (3), and (5).
4. Align the throat plate (4).
5. Tighten screws (1), (2), (3), and (5).

5.8.5 Setting the needle guard

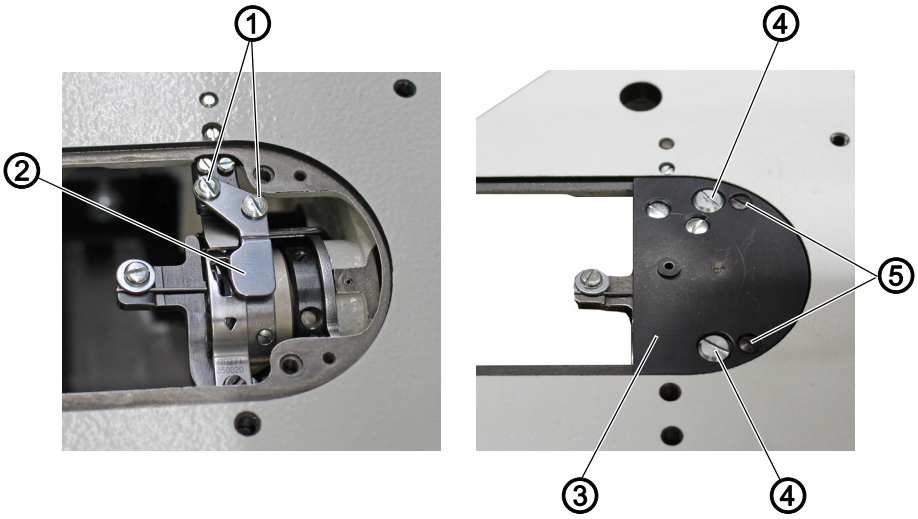
WARNING

Risk of injury from sharp parts!

Puncture.

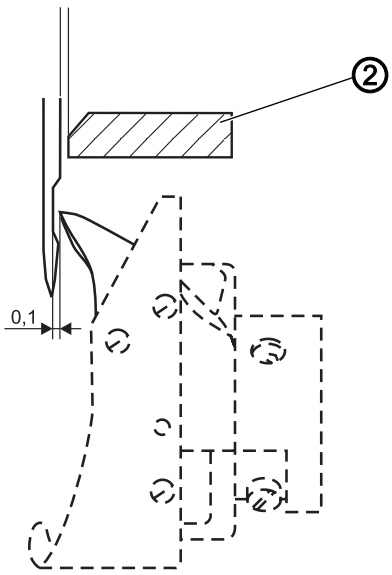
The machine must be set to *Threading mode*.

Fig. 61: Setting the needle guard (1)



(1) - Screws
(2) - Needle guard
(3) - Throat plate
(4) - Positioning aids
(5) - Screws

Fig. 62: Setting the needle guard (2)



(2) - Needle guard

Proper setting

The needle guard (2) must be adjusted such that the needle guard (2) is in contact with the needle, but without deflecting the latter.

To set the needle guard:

1. Press the **Lift/lower sewing head**  button.

↳ The sewing head lowers.

2. Press the **O** button.

↳ *Threading mode* is switched on.

3. Loosen the screws (5).
4. Remove the throat plate (3).

↳ Ensure that the positioning aids (4) are well fastened and cannot be displaced.

5. Check the position of the needle guard (2).
6. Loosen the screws (1).
7. Set the position of the needle guard (2) accordingly.
8. Tighten the screws (1).
9. Insert the throat plate (3).

↳ Make sure that the positioning aids (4) are seated in the holes of the throat plate (3).

10. Tighten the screws (5).

5.9 Thread cutter

The control cam determines the movement of the thread cutter and the timing of the cutter movement. Consequently, the timing corresponds to the sequence of movements performed by the stitch-forming elements.

The thread cutter is switched on by electromagnetic means.

5.9.1 Setting the control cam for timing the knife movement

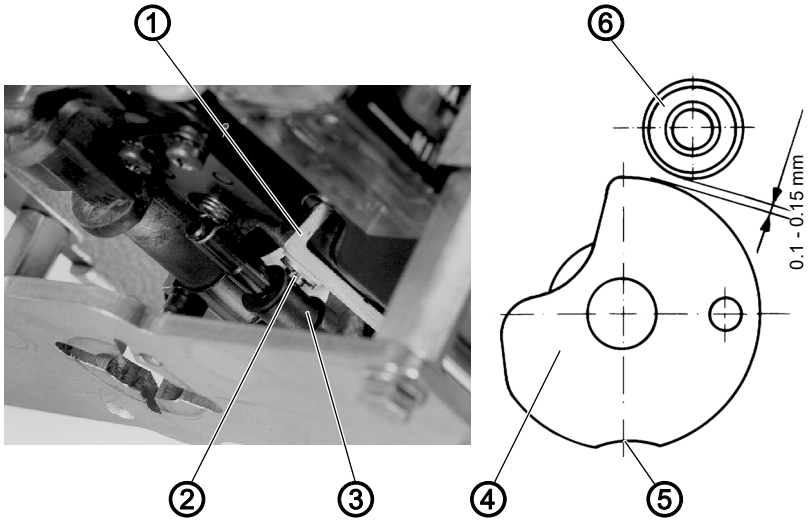
WARNING

Risk of injury from moving parts!

Crushing.

Only set the control cam with the machine switched off.

Fig. 63: Setting the control cam for timing the knife movement



(1) - Magnet
(2) - Tappet
(3) - Roller
(4) - Control cam
(5) - Recess
(6) - Ball bearing

Proper setting

When the thread cutter is in neutral position, the distance between the outer diameter of the control cam (4) and the ball bearing (6) must range between 0.1 and 0.15 mm. When the machine is locked in place at position **D** (📖 *p. 68*), the ball bearing (6), lowered by hand, must snap into the recess (5) of the control cam (4).

To set the control cam for timing the knife movement:

1. Loosen the fastening screws of the magnet (1).
2. Shift the magnet (1).
   - The distance between the control cam (4) and the ball bearing (6) must range between 0.1 - 0.15 mm.
   - The roller (3) must be in contact with the tappet (2).
3. Tighten the fastening screws of the magnet (1).
4. Lock the sewing machine in place at position **D** (📖 *p. 68*).

5. Loosen the fastening screws of the control cam (4).
6. Turn the control cam on the lower shaft.

↳ When pressed down by hand, the ball bearing (6) must snap into the recess (5) of the control cam.

↳ Select the axial position so that the control cam (4) and the roller (6) face each other.

7. Tighten the fastening screws of the control cam (4).

5.9.2 Setting the position of the stationary knife

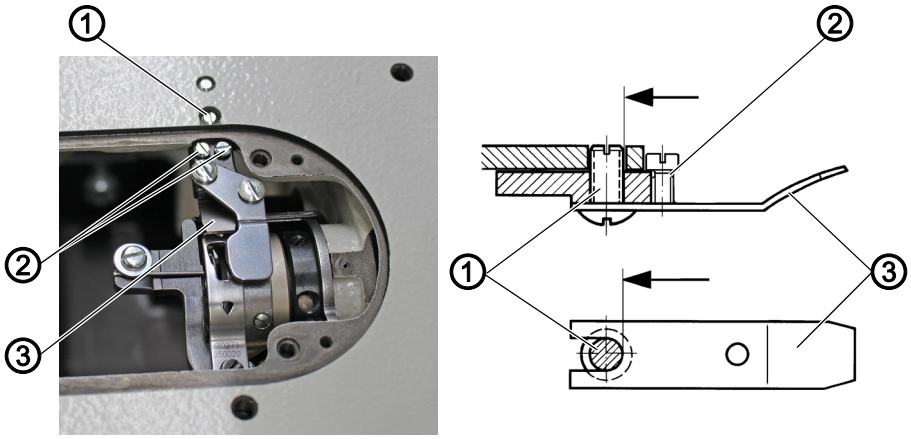
WARNING

Risk of injury from sharp parts!

Cutting.

Only set the stationary knife with the machine switched off.

Fig. 64: Setting the position of the stationary knife



(1) - Screw
(2) - Cutting pressure screws
(3) - Knife

Proper setting

The stationary knife (3), as viewed in arrow direction, must be in contact with the screw (1) (see diagram).

To set the position of the stationary knife:

1. Turn back the cutting pressure screws (2).
2. Loosen the screw (1) from below.
3. Slide the knife (3) in arrow direction against the screws (1).
4. Tighten the screw (1) slightly from above.
5. Set the cutting pressure (📖 *p. 95*).
6. Tighten the screw (1) from below.

5.9.3 Regrinding the stationary knife

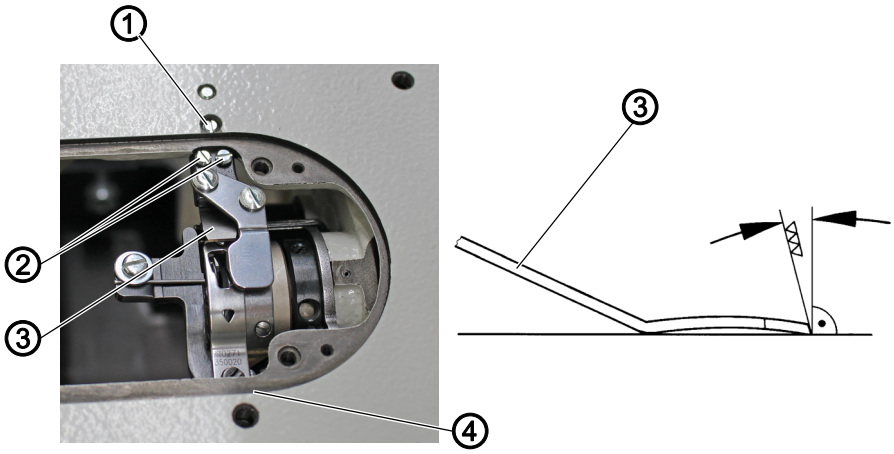
WARNING

Risk of injury from sharp parts!

Cutting.

Only regrind the stationary knife with the machine switched off.

Fig. 65: Regrinding the stationary knife



(1) - Screw
(2) - Screws
(3) - Knife
(4) - Edge

Proper setting

The cutting angle of the stationary knife (3) amounts to 15° (see diagram).

Important

Make sure to use a fine grain stone for regrinding.

Reground knives that have lost more than 0.5 mm of their original length must be replaced with a new knife. If knives that have become too short are not replaced, the thread will no longer be cut correctly and may tear.

To grind the stationary knife:

1. Loosen the screws (2).
   ↳ The pre-tension of the stationary knife (3) will be reduced.
2. Remove the knife (3).
3. Regrind the knife.
4. Install the knife.
   ↳ The cutting angle of the stationary knife (3) amounts to 15°.

5. Align the knife (3) in such a way that the distance between the cutting edge of the knife (3) and the edge (4) of the throat plate cut-out amounts to 38 mm.

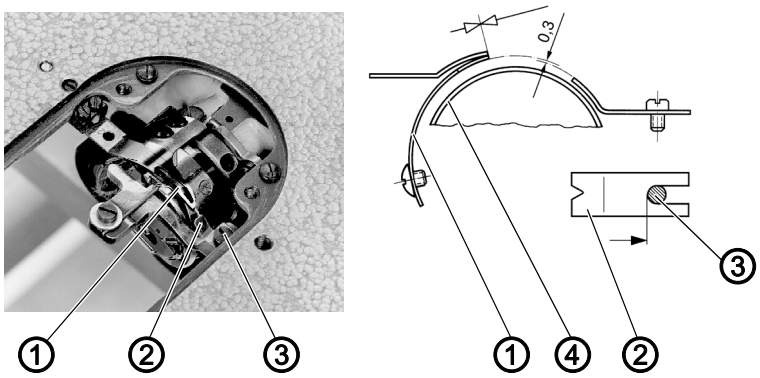
Important

When installing a reground knife (3) ensure that it does not touch the screw (1). If coming into contact with the screw (1), the knife (3) is positioned too far back and will no longer cut.

6. Tighten the screw (1).
7. Readjust the position of the thread-pulling knife (📖 *p. 93*) and the cutting pressure (📖 *p. 95*).

5.9.4 Installing the thread guide plate

Fig. 66: Installing the thread guide plate



(1) - Thread-pulling knife
(2) - Thread guide plate
(3) - Screw
(4) - Thread pulling plate

Important

Check the distances to the thread pulling plate (4) of the hook and to the thread-pulling knife (1) after inserting the thread guide plate.

To install the thread guide plate:

1. Slightly loosen the screw (3).
2. Remove the thread guide plate (2) to align it.
3. Align the thread guide plate (2).
4. Install the thread guide plate (2).
5. Tighten the screw (3).

5.9.5 Setting the thread-pulling knife

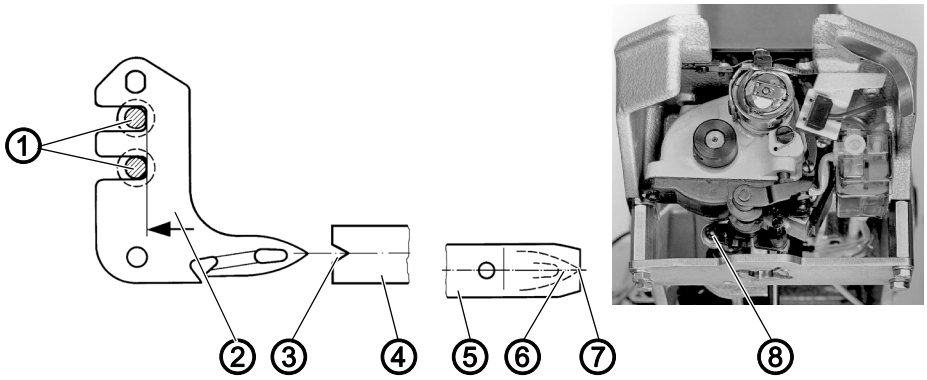
WARNING

Risk of injury from sharp parts!

Cutting.

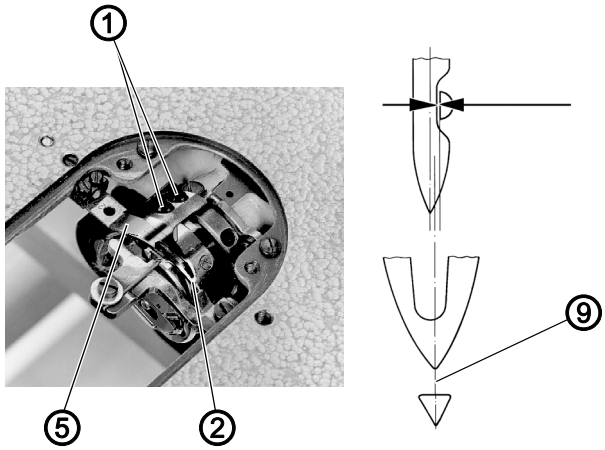
Only set the thread-pulling knife with the machine switched off.

Fig. 67: Setting the thread-pulling knife (1)



(1) - Screws
(2) - Thread-pulling knife
(3) - Triangle
(4) - Thread guide plate
(5) - Knife
(6) - Tip
(7) - Cutting edge
(8) - Screw

Fig. 68: Setting the thread-pulling knife (2)



(1) - Screws
(2) - Thread-pulling knife
(5) - Knife
(9) - Line

Proper setting

The thread-pulling knife (2), as viewed in arrow direction, must rest against the two screws (1).

In neutral position of the thread-pulling knife, its tip (6) and the cutting edge (7) must be flush with the stationary knife (5).

During the movement of the knife, the tip (6) of the thread-pulling knife (2) must be positioned below the tip of the triangle (3) in the thread guide plate (4) so that it lines up with the tip of the triangle.

If the alignment of the thread-pulling knife (2) is correct, the tip (6) will move along the line (9) during the cutting process. The line (9) extends approximately between the middle of the needle and the tip of the hook.

To set the thread-pulling knife:

1. Swing the thread-pulling knife (2) forwards by hand.
2. Loosen the screws (1) of the thread-pulling knife (2).
3. Slide the thread-pulling knife (2) in arrow direction against the screws (1).
4. Re-tighten the screws (1).
5. Loosen the screw (8).
6. Set the neutral position of the thread-pulling knife (2).

   ↳ In neutral position of the thread-pulling knife (2), its tip (6) and the cutting edge (7) must be flush with the stationary knife (5).
7. Tighten the screw (8).
8. Actuate the thread-pulling knife (2) by hand.
9. Check if the tip (6) of the thread-pulling knife (2) is lined up with the tip of the triangle (3).
10. To correct the position, loosen the screws (1) and shift the thread-pulling knife (2) in axial direction.

5.9.6 Setting the cutting pressure

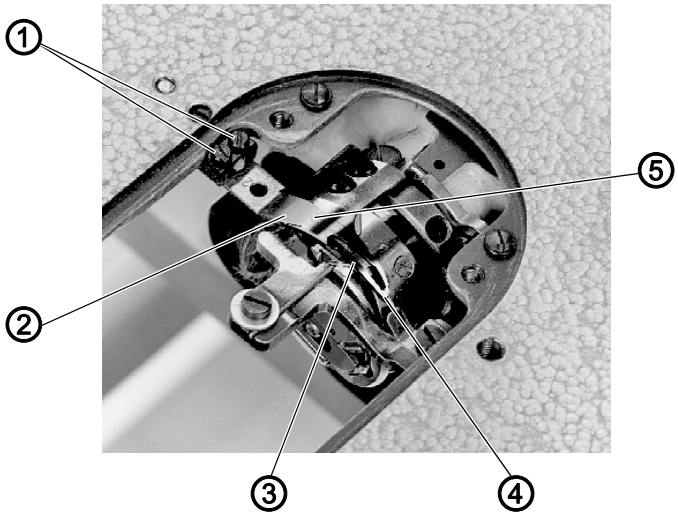
WARNING

Risk of injury from sharp parts!

Cutting.

Only set the cutting pressure with the machine switched off.

Fig. 69: Setting the cutting pressure



(1) - Screws
(2) - Knife
(3) - Thread-pulling knife
(4) - Blade
(5) - Blade

Proper setting

The thread must be cut at a pressure that is as low as possible. A low cutting pressure will keep wear at a minimum.

Two of the thickest threads used must be reliably cut at the same time.

To set the cutting pressure:

1. Loosen the screws (1).
2. Swing the thread-pulling knife (3) under the stationary knife (2).
   - The blade (4) of the thread-pulling knife (3) must be situated below the blades (5) of the stationary knife (2).
3. Set the stationary knife (2) against the thread-pulling knife (3) by tightening the screws (1).
4. Place the thread to be cut alternately to the left and the right.

5. Regulate the corresponding screw (1).

↳ If the installed spring fails to return the cutting mechanism to its initial position, the cutting pressure is set too high.

6. Regrind or replace the stationary knife (2) (📖 *p. 91*).

5.10 Replacing the right arm shaft bearing

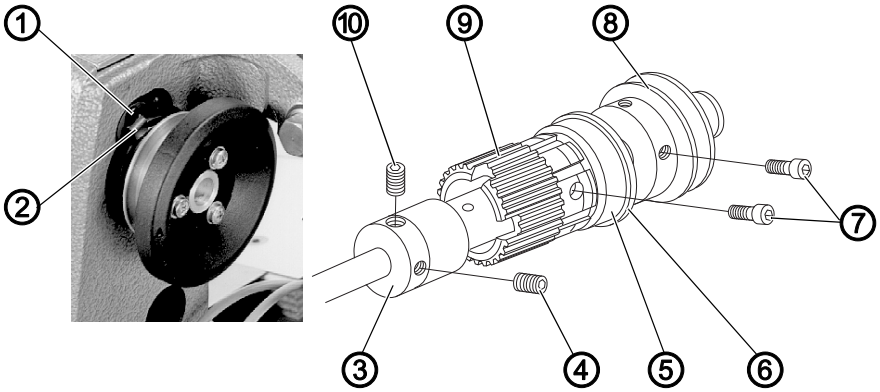
WARNING

Risk of injury from moving parts!

Crushing.

Only replace the arm shaft bearing with the machine switched off.

Fig. 70: Replacing the right arm shaft bearing (1)



(1) - Screw
(2) - Springs
(3) - Socket
(4) - Threaded pin
(5) - Groove ball bearing
(6) - Retaining ring
(7) - Pan-head screws
(8) - Handwheel flange
(9) - Toothed belt wheel
(10) - Threaded pin

The right-hand arm shaft bearing has to be replaced if the arm shaft is running with difficulty.

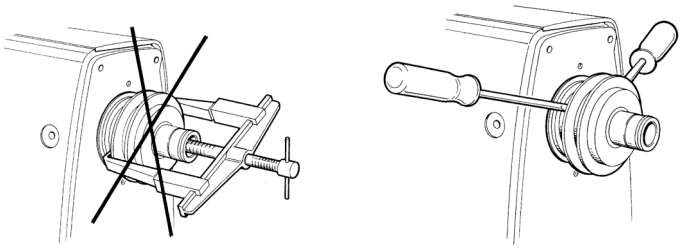
NOTICE

Property damage may occur!

Axial pressure must not be exerted on the arm shaft if you are removing or installing the right-hand arm shaft bearing.
Axial pressure towards the head cover will damage the thread lever.

Do not use an extractor.

Fig. 71: Replacing the right arm shaft bearing (2)



To replace the right arm shaft bearing:

1. Remove both head covers.
2. Loosen the screw (1).
3. Remove the springs (2) (2x).
4. Loosen threaded pins (10) and (4).
5. Push the toothed belt to the left and off the upper toothed belt wheel.
6. Use 2 screwdrivers or similar devices to pry off the drive unit.

↳ The drive unit consists of: Toothed belt wheel (9), handwheel flange (8) and groove ball bearing (5).

7. Remove the handwheel flange (8).
8. Replace the toothed belt wheel (9), consisting of positions (3), (4), (5), (6), (8) and (9), completely (part no.: 0271 000322) or pull off the groove ball bearing (5) with an extractor and press on a new groove ball bearing (part no.: 0211 000362).
9. Re-install the handwheel flange (8).
10. Install the drive unit.
11. Re-attach the previously removed parts.

Important

After replacing the arm shaft bearing, you need to readjust the machine.

NOTICE

Property damage may occur!

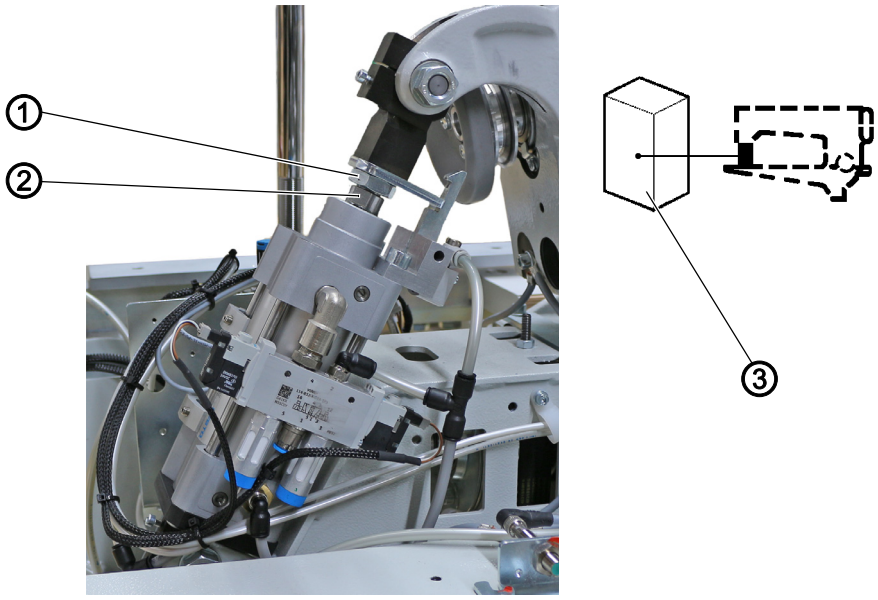
Needle breakage and damage if needle penetrates incorrectly.

Readjust the machine after replacing the arm shaft bearing.

5.11 Machine arm position

5.11.1 Setting the lower position of the machine arm

Fig. 72: Setting the lower position of the machine arm



(1) - Counternut
(2) - Piston rod
(3) - Gage

Proper setting

When the arm is in its lowered position, the square gage (3) should fit exactly between the throat plate and the bottom of the machine arm.

1. Press the **Lift/lower sewing head** button.

↳ The sewing head lowers.

2. Press the **O** button.

↳ *Threading mode* is switched on.

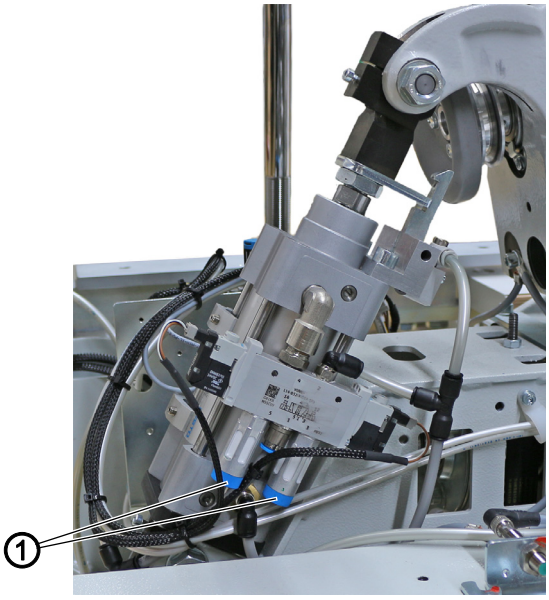
3. Loosen the counternut (1).
4. Turn the piston rod (2) accordingly.
5. Tighten the counternut (1).

Information

The upper position of the machine arm is determined by the path of the piston rod.

5.11.2 Setting the speed of the machine arm

Fig. 73: Setting the speed of the machine arm



(1) - Throttle valves

Proper setting

The sewing head should move swiftly and evenly.

To set the speed of the machine arm:

1. Press the **Lift/lower sewing head** button repeatedly.
2. Set the throttle valves (1) (2x) accordingly.

5.11.3 Setting the end position damping of the cylinder

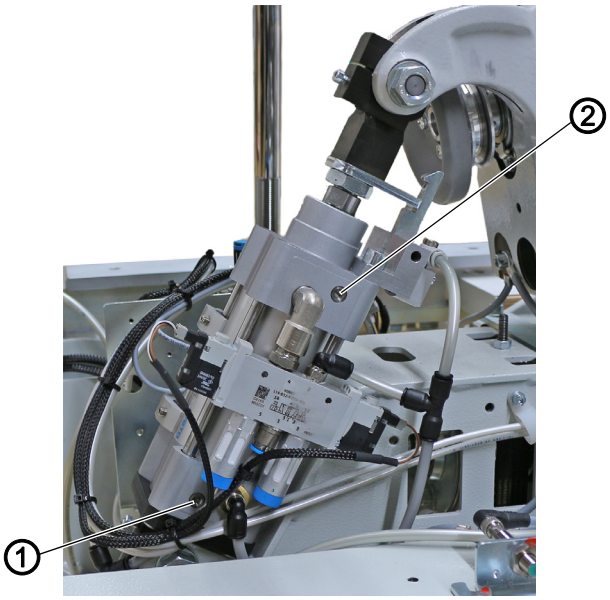
WARNING

Risk of injury from moving parts!

Crushing.

Do not reach into the area of moving machine parts.

Fig. 74: Setting the end position damping of the cylinder



(1) - End position *(2) - End position*

The speed of the piston rod is reduced approximately 10 mm from the end position in order to brake the heavy sewing head gently.

Proper setting

The piston rod should move gently into both end positions.

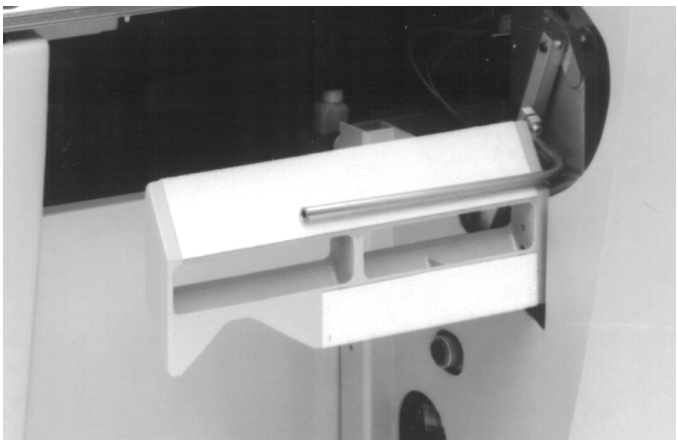
To set the end position damping of the cylinder:

1. Press the **Lift/lower sewing head** button repeatedly.

Set the end positions (1) and (2) accordingly.

6 Stacker

Fig. 75: Stacker



The stacker with outfeed roller makes it to possible to stack workpieces whose lower edge is at least 310 mm from the seam end of the pocket. Normally, this requirements is met by all parts of trousers and shirts.

The stacker equipped with an advance roller also allows for the stacking of shorter workpieces. The lower edge of these workpieces is distanced 130 mm and 310 mm from the seam end of the pocket.

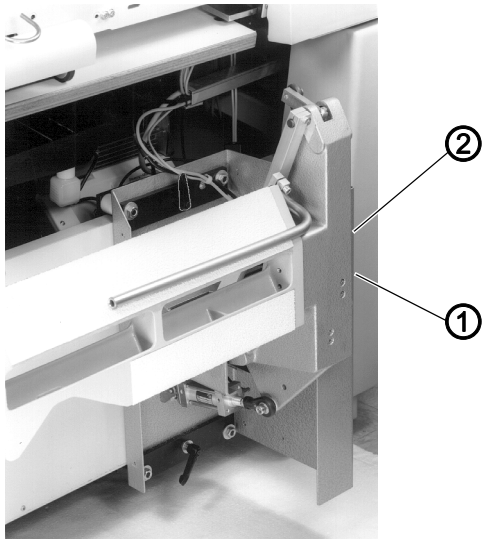
The tray of the stacker can be rotated by 180°. The side with the slot is intended for the stacking of shirts with button stay. For all other workpieces, use the side without the slot.

6.1 Rotating the stacker tray

The stacker tray can be rotated by 180° in order to adjust it to different types of sewing material:

- Shirts with button stay - side with the slot
- Other sewing material - side without the slot

Fig. 76: Stacker tray



(1) - Screw *(2) - Screw*

To rotate the stacker tray:

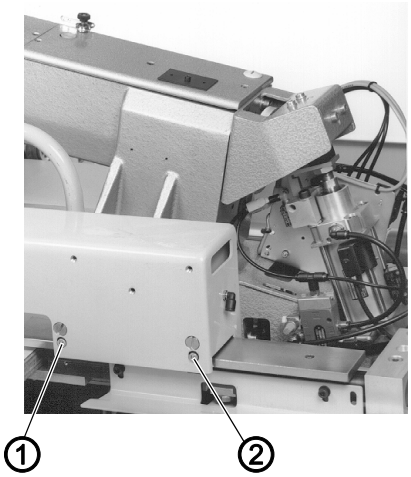
1. Remove the stacker cover (📖 *p. 18*).
1. Loosen screws (1) and (2).
2. Turn the desired side of the tray up.
3. Re-tighten screws (1) and (2).

6.2 Lateral position of outfeed roller and stacker

To allow for effective stacking, the lateral position of stacker and outfeed roller must be adjusted to the proper setting.

6.2.1 Setting the lateral outfeed roller position

Fig. 77: Setting the lateral outfeed roller position



(1) - Screw

(2) - Screw

Proper setting

To allow for effective stacking, set the position of the outfeed roller as follows:

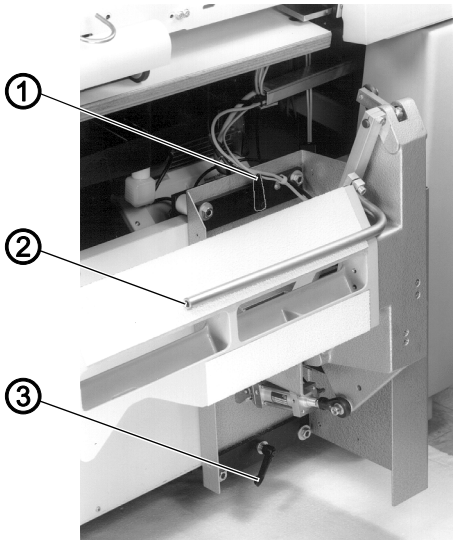
- For shirts with button stay: The left roller should be situated above the button stay.
- For all other workpieces: The rollers should be centered relative to the basic part.

To set the lateral outfeed roller position:

1. Start the automatic sewing process.
2. Watch the position of the rollers.
3. Remove the sewing head cover (📖 *p. 17*).
4. Loosen screws (1) and (2).
5. Set the lateral outfeed roller position.
6. Re-tighten screws (1) and (2).

6.2.2 Setting the lateral stacker position

Fig. 78: Setting the lateral stacker position



(1) - Clamping lever
(2) - Tray
(3) - Clamping lever

Proper setting

To allow for effective stacking, set the position of the stacker as follows:

- For shirts with button stay: The button stay of the stacked workpiece should be in the slot of the tray (2).
- For all other workpieces: The stacked workpiece should lie on the tray with its entire width.

To set the lateral stacker position:

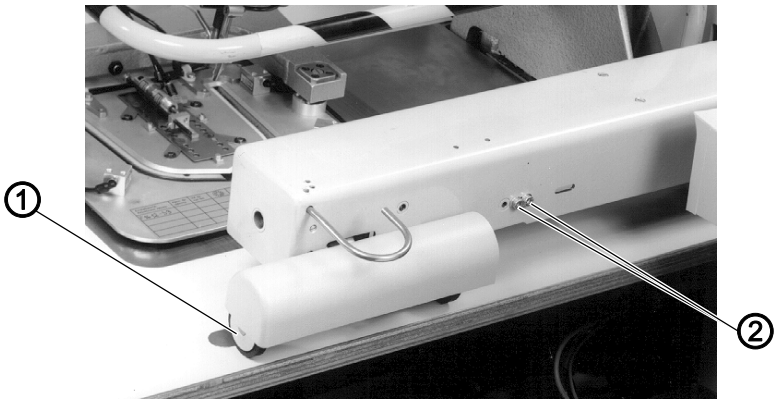
1. Start the automatic sewing process.
2. Watch the position of the stacker and the stacked workpieces.
3. Loosen clamping levers (1) and (3).
4. Set the lateral stacker position.
5. Re-tighten clamping levers (1) and (3).

6.3 Outfeed roller

The outfeed roller must be set correctly, as the sewing material will otherwise not be stacked properly.

6.3.1 Setting the lower outfeed roller position

Fig. 79: Setting the lower outfeed roller position



(1) - Roller *(2) - Screws*

Proper setting

The outfeed roller must be able to roll the sewing material with ease when the sewing material is rolled out and stacked. If the outfeed roller is set to tight, the sewing material will be pulled out of shape when rolled out. If the outfeed roller is set too loose, the sewing material may not be rolled out at all.

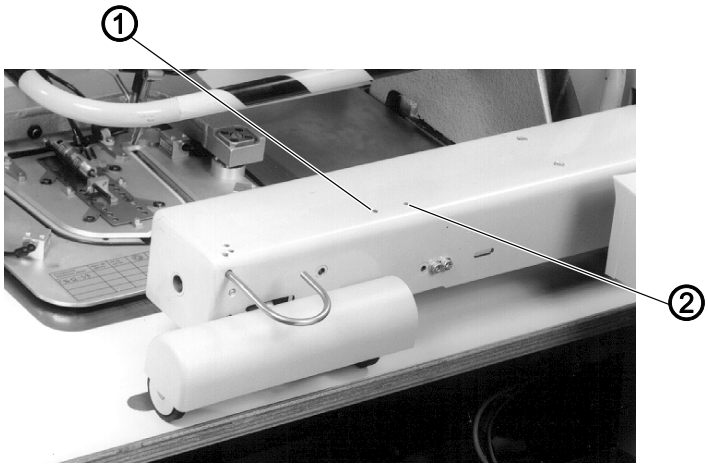
In the lower position, the foam ring at the roller (1) should be slightly compressed.

To check that the lower position of the outfeed roller:

1. Press the **Outfeed roller** button on the user interface intended for technicians.
   - The *Outfeed roller* screen opens.
2. Press the **Test outfeed roller** button.
   - The outfeed roller is moved to the lower position.
3. Check the position and the condition of the foam ring (1).
4. Loosen the screws (2).
5. Shift the cylinder, kept in place by the screws, sideways until it has reached the correct position.
6. Re-tighten the screws (2).

6.3.2 Setting the movement of the ejection rollers

Fig. 80: Setting the movement of the ejection rollers



(1) - Throttle valve *(2) - Throttle valve*

Proper setting

The ejection rollers should move swiftly and evenly up and down.

To set the movement of the ejection rollers:

1. Press the **Outfeed roller** button on the user interface intended for technicians.

   The Outfeed roller screen opens.

2. Press the **Test outfeed roller** button.

   The outfeed roller is moved to the lower position.

3. Press the **Test outfeed roller** button again.

   The outfeed roller is moved to the upper position.

4. Watch the speed of the outfeed roller movement.
5. Set the speed of the movement by regulating the throttle valves (1) and (2).
   - To set a faster movement speed: Turn the screws on the throttle valves counterclockwise
   - To set a slower movement speed: Turn the screws on the throttle valves clockwise

6.4 Setting the position of the open inner shackle

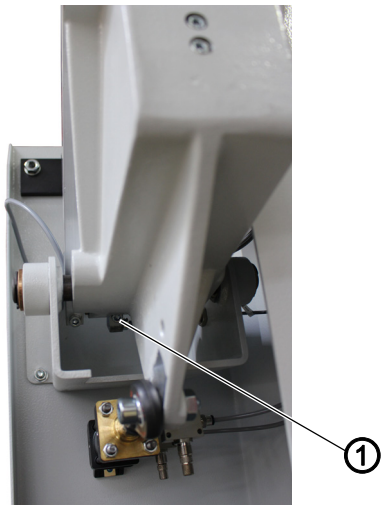
WARNING

Risk of injury from moving parts!

Crushing.

Do NOT reach into the area of moving parts.

Fig. 81: Setting the position of the open inner shackle



(1) - Clamping screw

The correct position of the inner shackle allows for the proper stacking of the sewing material.

Proper setting

The open inner shackle should be, in the horizontal direction, at least 10 mm away from the sewing material support surface.

The inner shackle must be clamped to the fabric rest.

To set the position of the open inner shackle:

1. Set the machine to its initial position.
2. Check the position of the inner shackle.
3. Switch off the machine or set the machine to idle mode by triggering an EMERGENCY STOP.
4. Remove the stacker cover (🕮 *p. 18*).
5. Loosen the clamping screw (1).
6. Set the position of the inner shackle.
7. Tighten the clamping screw (1) again.
8. Fasten the stacker cover again (🕮 *p. 20*).

9. Trigger an EMERGENCY STOP.
10. Perform a reference run.

6.5 Setting the movement of outer and inner shackle and of the tray

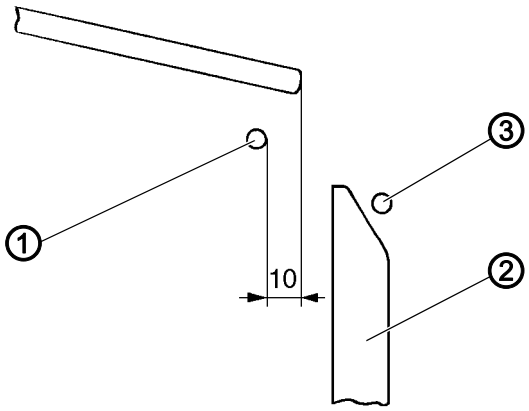
WARNING

Risk of injury from moving parts!

Crushing.

Do NOT reach into the area of moving parts.

Fig. 82: Setting the movement of outer and inner shackle and of the tray (1)



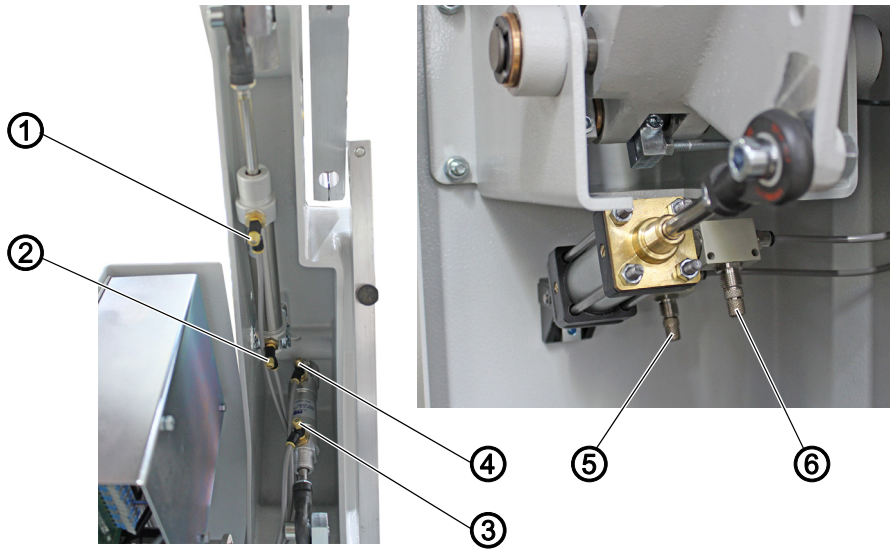
(1) - Inner shackle
(2) - Outer shackle
(3) - Tray

Proper setting

Shackles and tray must be set as follows:

- All elements should move swiftly and evenly.
- The outer shackle (2) should be opened all the way when the workpiece is ejected.
- The tray (3), which is swinging forward, should reach the workpiece hanging from the sewing material support surface at the same time as the inner shackle (1). This requirement must be met to ensure that the workpieces are clamped and stacked properly.

Fig. 83: Setting the movement of outer and inner shackle and of the tray (2)



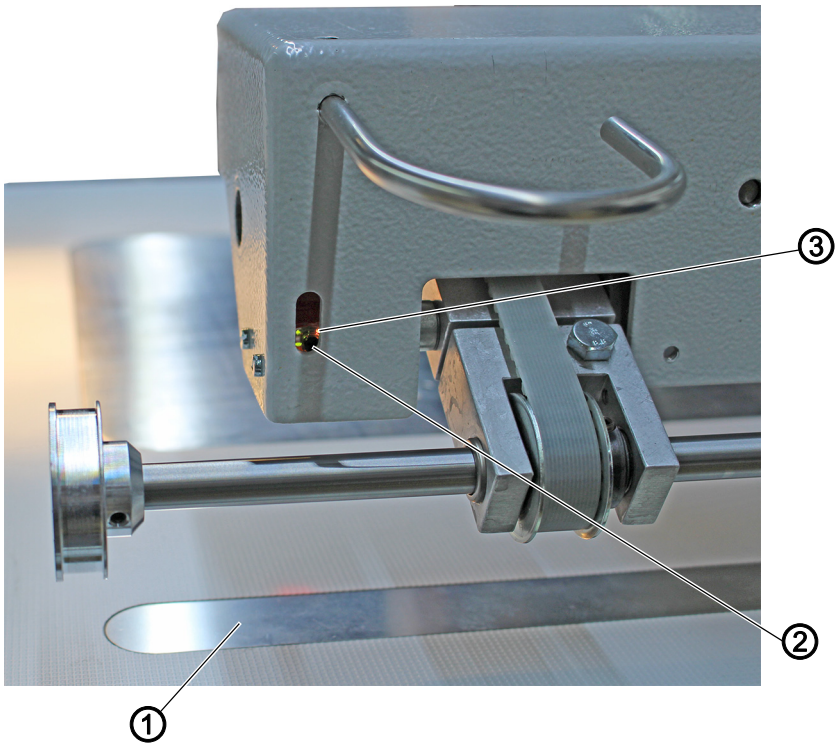
(1) - Throttle valve - close outer shackle
(2) - Throttle valve - open outer shackle
(3) - Throttle valve - close inner shackle
(4) - Throttle valve - open inner shackle
(5) - Throttle valve - swivel tray down
(6) - Throttle valve - swivel tray forward

To set the movement of outer and inner shackle and of the tray:

1. Start the automatic sewing process.
2. Watch the speed and movement of shackles and tray while the workpieces are being stacked.
3. Set the speed of the movement by regulating the throttle valves shown in the figure *Setting the movement of outer and inner shackle and of the tray (2)* (📖 *p. 109*).
   - To set a faster movement speed: Turn the screws on the throttle valves counterclockwise
   - To set a slower movement speed: Turn the screws on the throttle valves clockwise
4. Check the movement of the elements during the automatic sequence.

6.6 Setting the sensitivity of the light barrier

Fig. 84: Setting the sensitivity of the light barrier



(1) - Plate
(2) - Screw
(3) - yellow lamp

To correct the sensitivity of the light barrier:

1. Set the screw (2) through the sight opening of the light barrier.
   - To increase the sensitivity of the light barrier: Turn screw (2) clockwise
   - To reduce the sensitivity of the light barrier: Turn screw (2) counterclockwise
2. Use a piece of fabric to check the setting of the light barrier.
3. Slide the fabric piece under the light barrier across the plate (1).

↳ The yellow lamp (3) will go out if the setting of the light barrier is correct.

↳ If the setting is incorrect, the yellow lamp (3) is off or flickering.

6.7 Setting the air nozzle

The air nozzle should blow down the workpiece rolled from the sewing material support surface so that the workpiece is transported to inner shackle and tray.

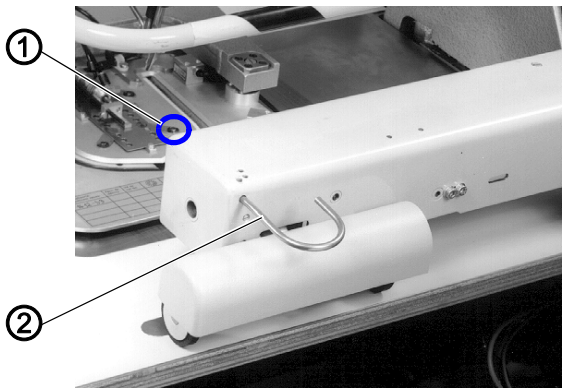
If exposed to excess air, the workpiece will drift away, making it impossible to stack the workpiece. If there is too little air, the workpiece will not reach its designated position and cannot be stacked.

Proper setting

The air stream should be directed downward in vertical direction.

The air nozzle should serve its purpose at the lowest possible air stream intensity.

Fig. 85: Setting the air nozzle



(1) - Screw *(2) - Blower*

To set the air nozzle:

1. To correct the blowing direction, set the position of the blower (2) manually.
2. To correct the intensity of the air stream, turn the screw (1) on the throttle valve.
3. Watch the blowing direction and the intensity of the air stream while the workpieces are being rolled out and stacked.

7 Edge folding device

7.1 Outer frame

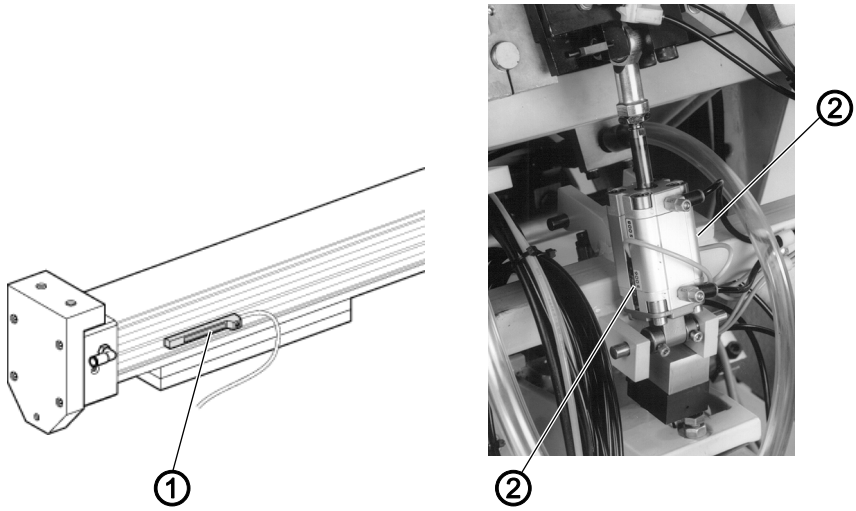
The outer frame supports following functional elements:

- Inner frame
- Lateral slides
- Front slides
- Corner tucker

The fine adjustment of the individual functional elements will be explained separately in the following.

7.1.1 Setting the actuating time of the outer frame switch

Fig. 86: Setting the actuating time of the outer frame switch



(1) - Switch S3
(2) - Switch S8
(3) - Switch S6

Before you can adjust the actuating time of the outer frame switch, you need to remove the cover from the edge folding station (📖 *p. 17*).

Proper setting

The switches S3, S6 and S8 should be operated shortly before the end position of the outer frame.

To set the end position damping of the outer frame cylinder:

1. Watch the damping during the automatic sequence.

OR

1. Access **User interface 2** and press the **Work step by step** button.
2. Press **Push button 1** and watch the damping during the individual steps of the cylinder.
3. Set the end positions (1) and (2) so that the outer frame moves gently into the end positions.

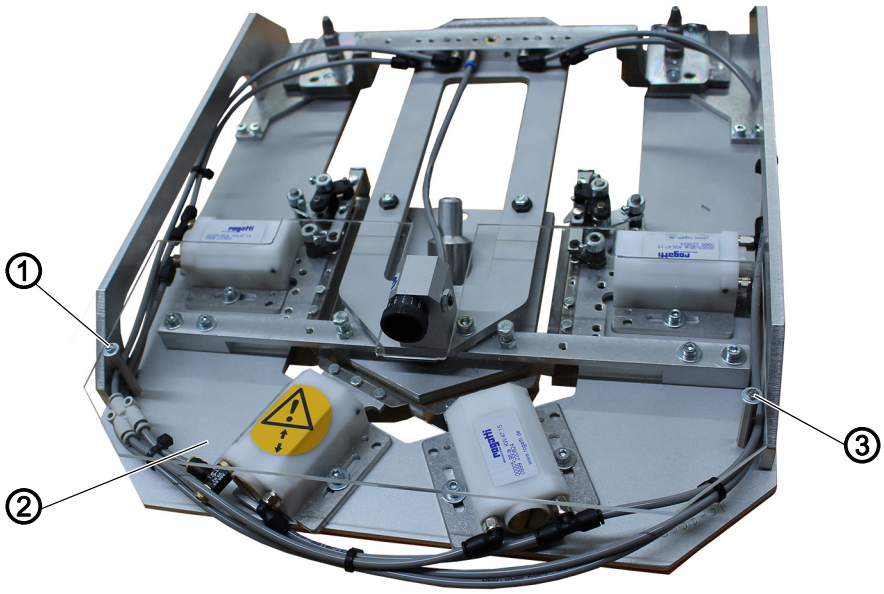
7.2 Setting the adjusting wheels on the inner frame

The inner frame is elastically linked to its support at three points. The vacuum field below the inner frame sucks the middle slide so that it can be pulled up into the folding position.

Important

A safety plate has been installed to protect against injury and prevent inadvertent adjustments. It must be removed prior to any work on the inner frame.

Fig. 87: Setting the adjusting wheels on the inner frame



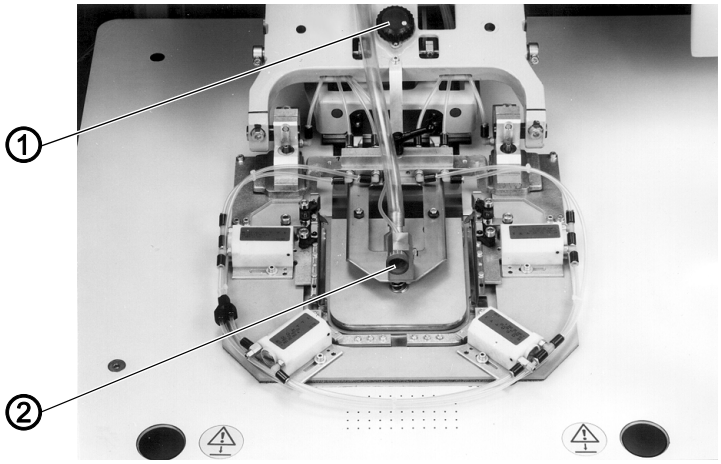
(1) - Screw
(2) - Safety plate
(3) - Screw

To remove the safety plate:

1. Loosen screws (1) and (3).
2. Remove the safety plate (2).

7.2.1 Functionality of the adjusting wheels

Fig. 88: Functionality of the adjusting wheels



(1) - Adjusting wheel rear *(2) - Adjusting wheel front*

Use can use the adjusting wheels (1) and (2) to influence the folding position of the inner frame and, along with it, the folding position of the middle slide.

Information

The following applies to both adjusting wheels:

The thicker the material to be processed is, the greater the number set on the adjusting wheel needs to be.

If already determined, the adjusting wheel position that is ideal for the type of fabric to be sewn is indicated on the transfer plate.

Adjusting wheel front

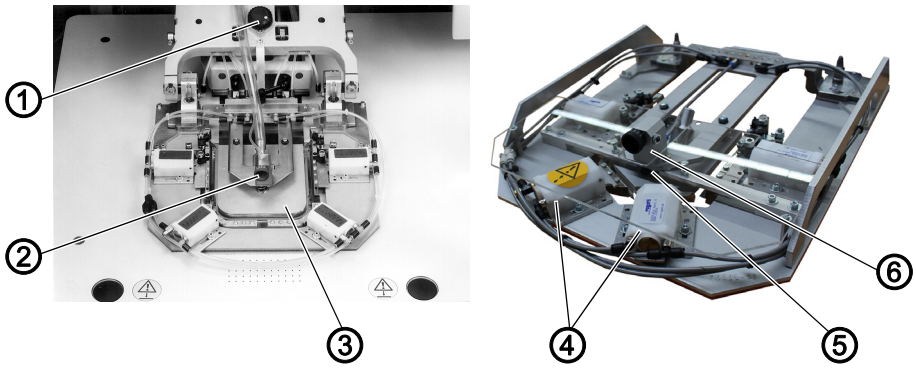
Adjustments of the adjusting wheel at the front (2) mainly affect the folding position in the lower area of the pocket. The adjusting wheel at the front (2) regulates the distance of the middle slide to the edge folding station.

Adjusting wheel rear

Adjustments of the adjusting wheel at the rear (1) mainly affect the folding position in the upper area of the pocket.

7.2.2 Setting the adjustment range of the front adjusting wheel

Fig. 89: Setting the adjustment range of the front adjusting wheel



(1) - Adjusting wheel rear
(2) - Adjusting wheel front
(3) - Inner frame
(4) - Front slides
(5) - Counternut
(6) - Cylinder

Proper setting

When the two adjusting wheels are set to position **0** and the inner frame is in the folding position, it must be possible to move the front slides under the middle slide at the smallest distance.

To set the adjustment range of the front adjusting wheel:

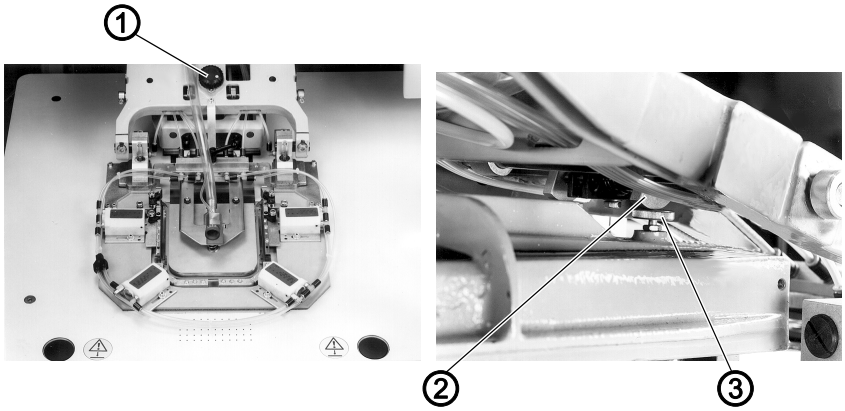
1. Turn the adjusting wheel at the front and the adjusting wheel at the rear to position **0**.
2. Access **User interface 2** and press the **Work step by step** button.
3. Press **Push button 1** repeatedly until the inner frame (3) is situated in the edge folding station and the front slides (4) can be moved to the front by hand.
4. Check the distance of the front slides (4) to the middle slide.
5. Correct the distance if necessary: Turn the adjusting wheel at the front until the proper distance has been reached.

If the front adjusting wheel alone is not sufficient:

6. Loosen the counternut (5) on the bracket of the inner frame (3).
7. Turn the piston rod of the cylinder (6) accordingly.
8. Re-tighten the counternut (5).

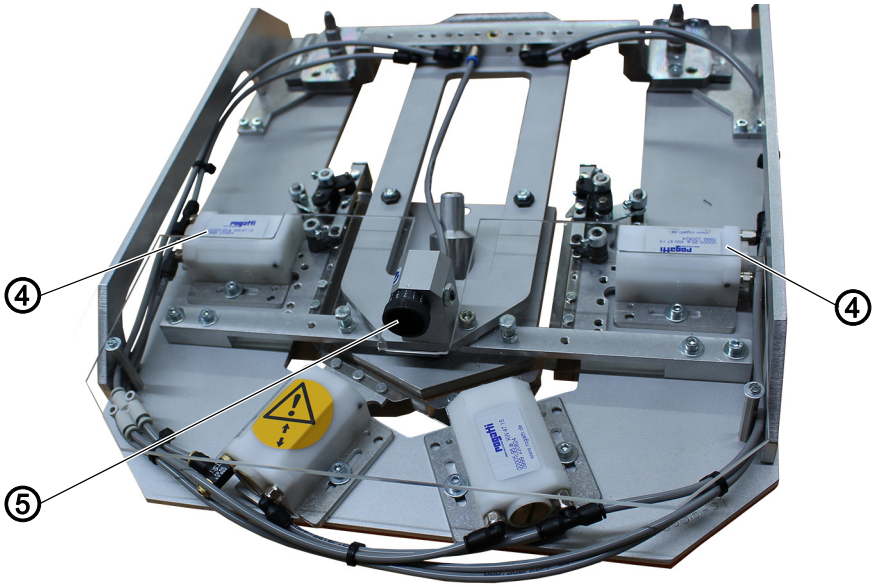
7.2.3 Setting the adjustment range of the rear adjusting wheel

Fig. 90: Setting the adjustment range of the rear adjusting wheel (1)



(1) - Adjusting wheel rear
(2) - Eccentric
(3) - Stop screws

Fig. 91: Setting the adjustment range of the rear adjusting wheel (2)



(4) - Lateral slides
(5) - Adjusting wheel front

Proper setting

When the two adjusting wheels are set to position **0** and the inner frame is in the folding position, it must be possible to move the lateral slides under the middle slide at the smallest distance.

To set the adjustment range of the rear adjusting wheel:

1. Turn the adjusting wheel at the front (5) and the adjusting wheel at the rear (1) to position **0**.
2. Access **User interface 2** and press the **Work step by step** button.

3. Press **Push button 1** repeatedly until the inner frame is situated in the edge folding station and the lateral slides (4) can be moved to the front by hand.
4. Check the distance of the lateral slides (4) to the middle slide.
5. Correct the distance if necessary: Turn the adjusting wheel at the rear until the proper distance has been reached.

If the rear adjusting wheel alone is not sufficient:

6. Change the position of the stop screws (3) on the carriage of the middle slide.
   Make sure that the eccentrics (2) rests on both stop screws.

7.3 Middle slide

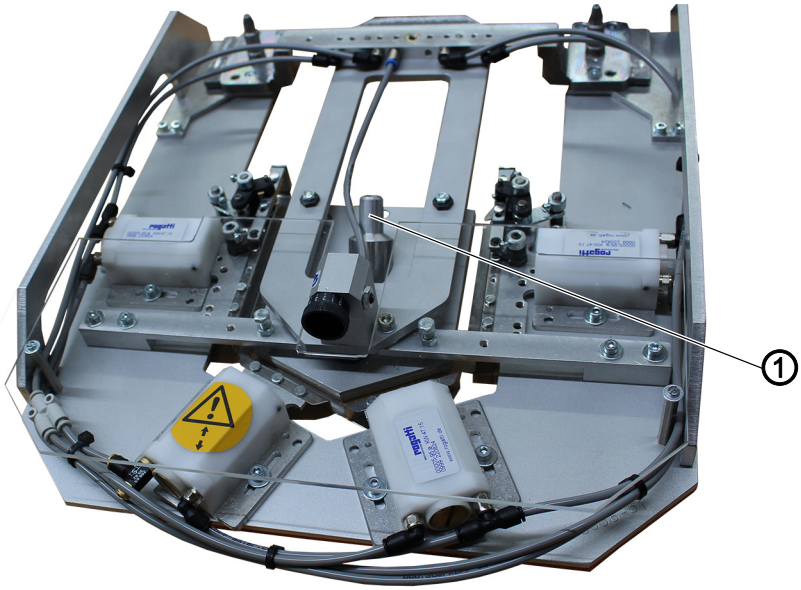
WARNING

Risk of injury from moving parts!

Crushing.

Do NOT reach under the middle slide.

Fig. 92: Middle slide



(1) - Nozzle

The middle slide determines the outer contour of the pocket to be sewn on. It is sucked against the inner frame.

The nozzle (1) housed in the actuator pulls the inner frame and, thus, the middle slide up into the folding position. This position varies with the material thickness and can be adjusted using the adjusting wheels (📖 *p. 114*).

7.3.1 Setting the basic height of the middle slide

The basic height of the middle slide is important to the folding quality. If the middle slide is positioned too low, the quality of the folding is good, but the folding will be undone when the middle slide is pulled out.
If the middle slide is positioned too high, material and middle slide are not sufficiently sucked. The result is that the folded material will unroll again.

Proper setting

It must be possible to still slightly move the sewing material even if the middle slide is lowered.

To set the basic height of the middle slide:

1. Access **User interface 2** and press the **Work step by step** button.
2. Access the **User interface** intended for technicians and press the **Output-input** button.

↳ The overview of all inputs and outputs opens.

3. Place the sewing material onto the sewing material support surface located below the middle slide.
4. Press the output YC113 (Middle slide forwards).

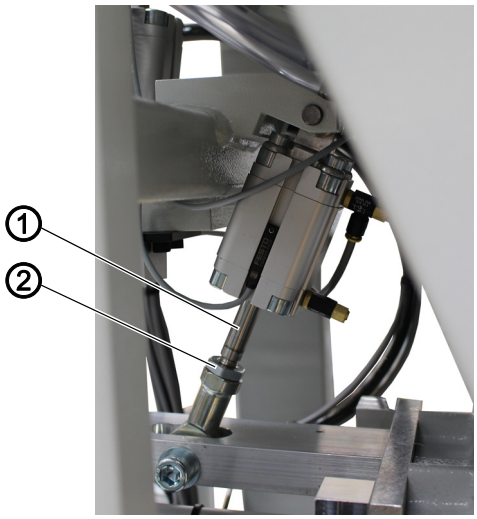
↳ The middle slide moves forwards.

5. Press the output YC108 (lower middle slide).

↳ The middle slide lowers.

6. Check if the sewing material can still be slightly moved.
7. If necessary, correct the basic height of the middle slide.

Fig. 93: Setting the basic height of the middle slide



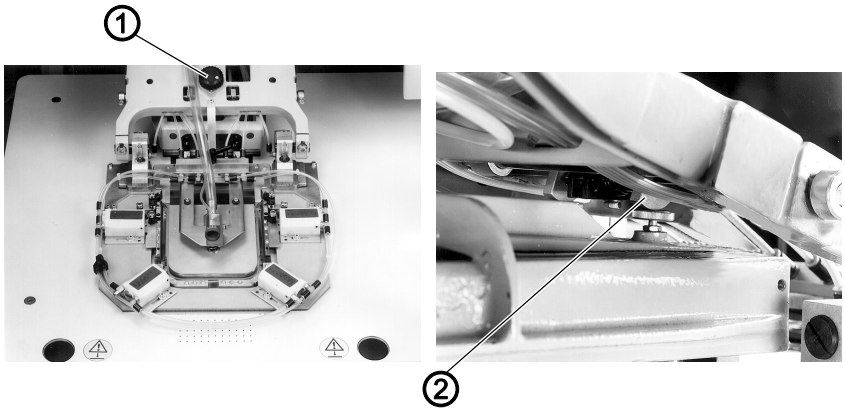
(1) - Piston rod *(2) - Counternut*

8. Leave the middle slide in the lowered position.
9. Loosen the clamping nut (2) on the piston rod (1).
10. Turn the piston rod (1) so that the sewing material under the middle slide can be slightly moved.
11. Tighten the counternut (2), thus locking the position of the piston rod (1).

7.3.2 Setting the basic height of the middle slide relative to the outer frame

The relation between middle slide and outer frame is essential for the clean folding of the pockets.

Fig. 94: Setting the basic height of the middle slide relative to the outer frame



(1) - Adjusting wheel rear *(2) - Eccentric*

To set the basic height of the middle slide relative to the outer frame:

1. Access **User interface 2** and press the **Work step by step** button.

2. Press **Push button 1** repeatedly until middle slide and outer frame are lowered.
3. Set the adjusting wheel on the rear (1) to position **0**.

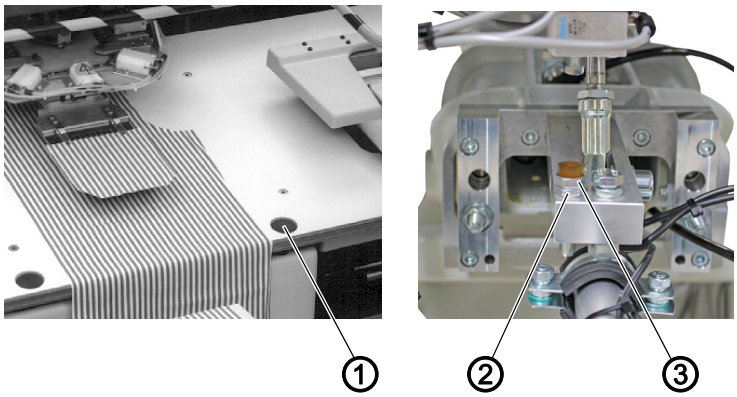
↳ The eccentrics (2) are now automatically set to their initial position.

4. Adjust the screws in the frame of the middle slide so that the eccentrics (2) underneath abut on the middle slide without pressure. A distance of up to 0.1 mm is acceptable.

7.3.3 Setting the alignment position of the middle slide

When the pocket blank is positioned on the middle slide, the middle slide can be lowered using **Push button 2**. This position makes it to possible to align the basic part with the pocket blank according to the pattern.

Fig. 95: Setting the alignment position of the middle slide



(1) - Push button 2
(2) - Screw
(3) - Counternut

Proper setting

It must be possible to still slightly move the sewing material even if the middle slide is lowered.

To set the alignment position of the middle slide:

1. Place the basic part and pocket blank onto the machine.
2. Press **Push button 2** (1).

↳ The middle slide lowers.

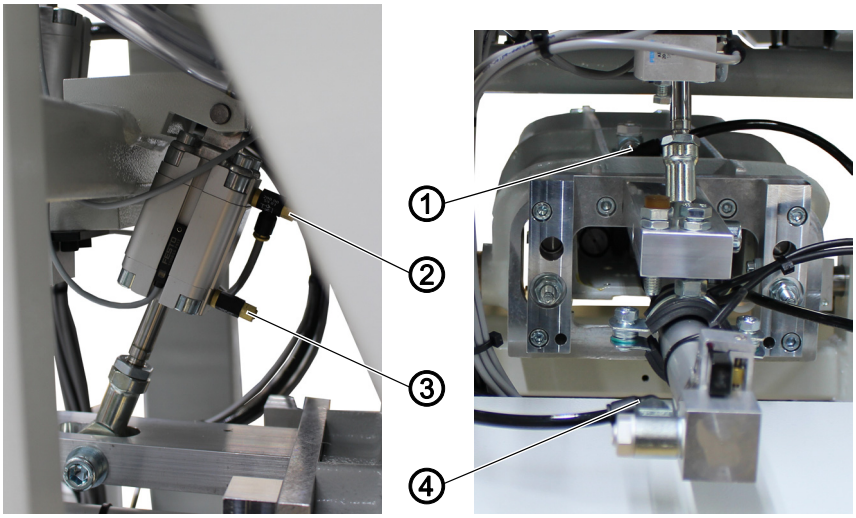
↳ The middle slide is now lowered slightly above the basic part and, thus, set to the alignment position.

3. Check and, if necessary, correct the distance between middle slide and basic part.
4. Loosen the counternut (3).
5. Turn the screw (2) to move the middle slide to the correct position.
6. Re-tighten the counternut (3).

↳ The middle slide is now at the correct alignment position.

7.3.4 Setting the movement of the middle slide

Fig. 96: Setting the movement of the middle slide



(1) - Throttle valve 1 (forwards)
(2) - Throttle valve 2 (down)
(3) - Throttle valve 3 (up)
(4) - Throttle valve 4 (backwards)

Proper setting

The middle slide should move swiftly and evenly forwards and backwards as well as up and down. The proper setting can be observed best by monitoring the forward movement during the folding process.

To set the **Movement up and down**:

1. Access **User interface 2** and press the **Work step by step** button.
2. Press **Push button 1** repeatedly until the middle slide lowers.
3. Press **Push button 2** to raise the middle slide.
4. Watch the movement of the middle slide.
5. Turn the screws on throttle valve 4 (up) to set the speed.
   - To set a faster movement speed: Turn throttle valve 4 counterclockwise
   - To set a slower movement speed: Turn throttle valve 4 clockwise
6. Turn the screws on throttle valve 2 (down) to set the speed.
   - To set a faster movement speed: Turn throttle valve 2 counterclockwise
   - To set a slower movement speed: Turn throttle valve 2 clockwise

To set the **Movement forwards and backwards**:

1. Access **User interface 1** and press the **Slide automatically forward** button.

↳ The middle slide moves forwards.

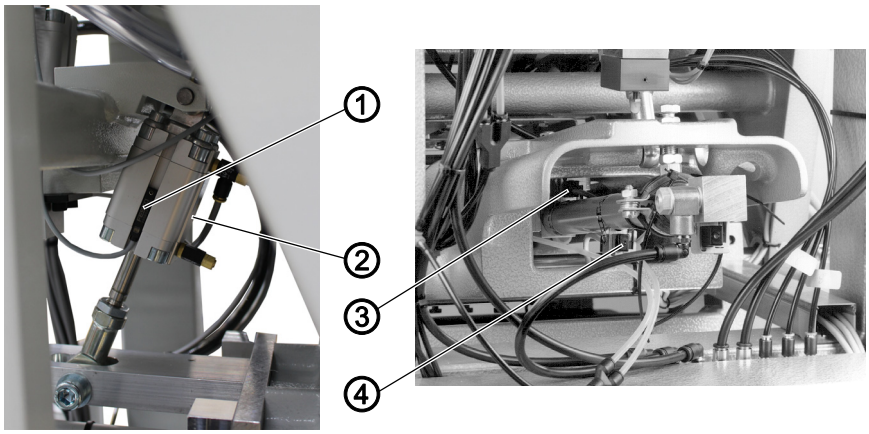
2. Press the **Slider automatically forward** button again.

↳ The middle slide moves backwards.

3. Turn the screws on throttle valve 1 (forwards) to set the speed.
   - To set a faster movement speed: Turn throttle valve 1 counterclockwise
   - To set a slower movement speed: Turn throttle valve 1 clockwise

7.3.5 Setting the actuating time of the middle slide switches

Fig. 97: Setting the actuating time of the middle slide switches



(1) - Switch S11
(2) - Switch S10
(3) - Switch S12
(4) - Switch S15

Proper setting

The switches of the middle slide trigger signals at specific positions:

Switch	Actuating time/deactivation
S15	Switch activated when the middle slide is positioned before the rear end position.
S12	Switch activated when the middle slide is positioned in the front position.
S11	Switch activated when the middle slide is positioned in the lower end position.
S10	Switch activated when the middle slide is in the folding position, i.e. in the position where the pocket is folded.

To set the actuating times of the middle slide switches:

1. Access the **User interface** intended for technicians and press the **Output-input** button.

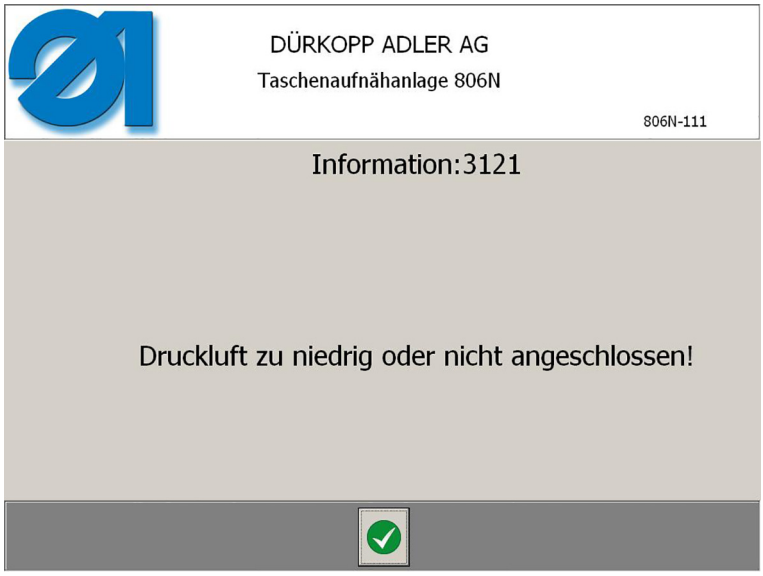
↳ The overview of all inputs and outputs opens.

2. Close the compressed air valve.
3. Vent any residual air using the compressed air gun.

↳ The parts of the edge folding station can now move freely.

4. Move the middle slide by hand so that all actuating times of the switches can be checked.
5. Correct the actuating times if necessary.
6. Open the compressed air valve again.
7. Press the **Exit** button.

↳ The following error message appears:



8. Press the **Confirm** button.
9. Check the actuating times if necessary.
10. Loosen the clamping screw of the switch you wish to adjust.
11. Correct the position of the switch.
12. Re-tighten the clamping screw of the switch.

7.4 Setting the distance of lateral and front slides

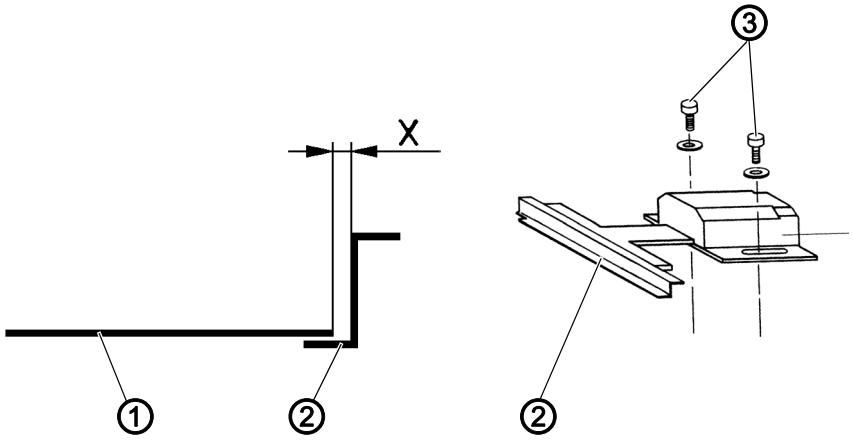
WARNING

Risk of injury from moving parts!

Crushing.

Do not reach into the area of moving parts.

Fig. 98: Setting the distance of lateral and front slides



(1) - Middle slide
(2) - Slide
(3) - Screws

The lateral and front slides fold the pocket blank around the middle slide when the latter has been moved to the folding position by the inner frame.

To set the distance of the lateral and the front slides:

1. Access **User interface 2** and press the **Work step by step** button.
2. Press **Push button 1** repeatedly until the slides can be moved without pressure and by hand.
3. Check distance **X** between middle slide and the slides by hand.

   The lateral distance **X** should correspond to the medium sewing material thickness, i.e. the sliders should abut without pressure.
4. If necessary, correct the distance of the sliders.
5. Loosen the screws (3) on the slide (2).
6. Set the slider plates in such a way that they abut without pressure.
7. Re-tighten the screws (3).

7.5 Corner tucker

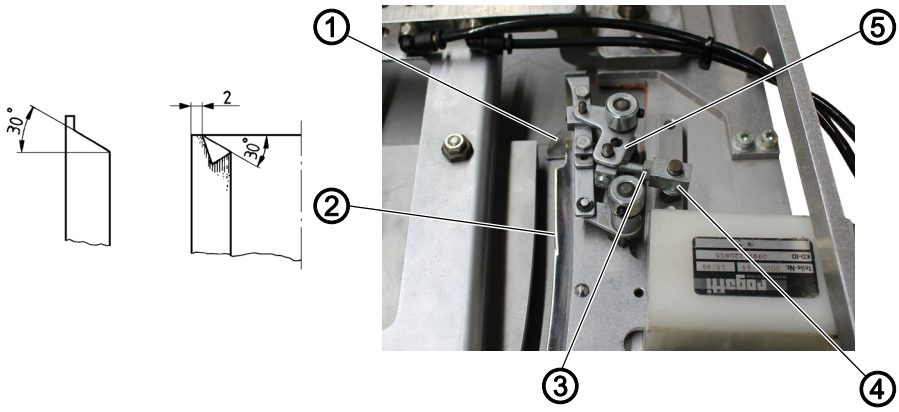
WARNING

Risk of injury from moving parts!

Crushing.

Do not reach into the area of moving parts.

Fig. 99: Corner tucker (1)



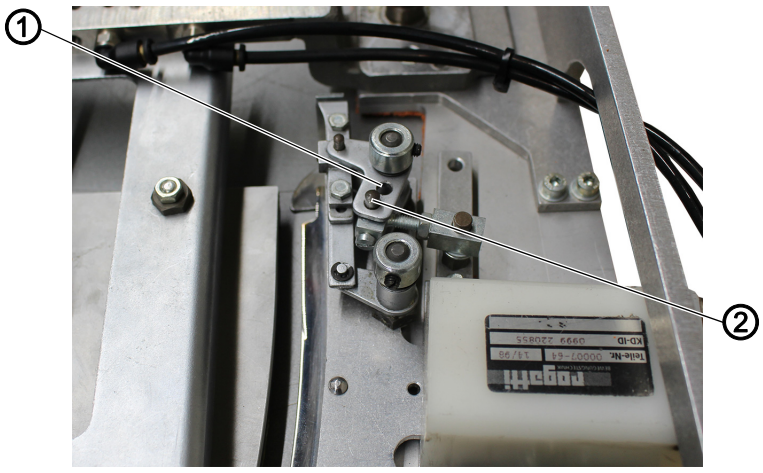
(1) - Corner tucker
(2) - Lateral slide plate
(3) - Screw
(4) - Spindle K
(5) - Spacer strip

Proper setting

The corner tucker (1) should place the fabric of the pocket blank under the 30° edge of the lateral slide plate (2). This ensures that the folded fabric will not show in the area of the pocket opening.

Important

Fig. 100: Corner tucker (2)



(1) - Hole 1
(2) - Hole 2

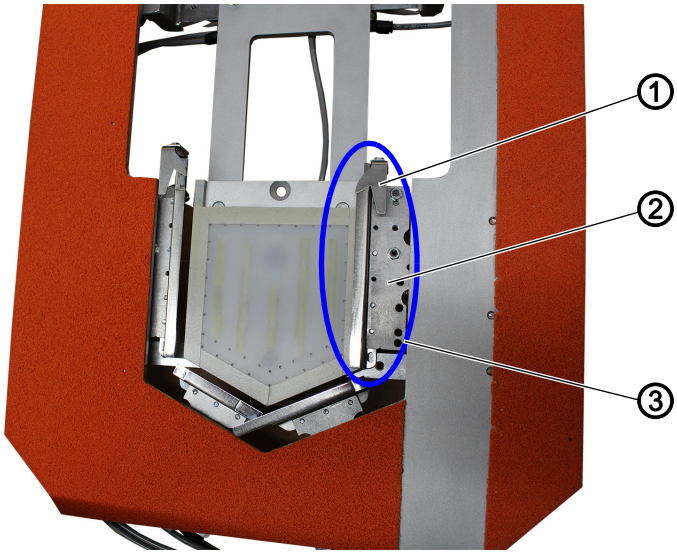
For **806N-111-10**:

In this class, you must observe the defined pivot point position.

- Double seam: Pin in hole 2 (2) for a longer stroke
- Single seam: Pin in hole 1 (1) for a shorter stroke

7.5.1 Setting the position of the swung-in corner tucker

Fig. 101: Setting the position of the swung-in corner tucker (1)



(1) - Corner tucker
(2) - Lateral slide plate
(3) - Overlap

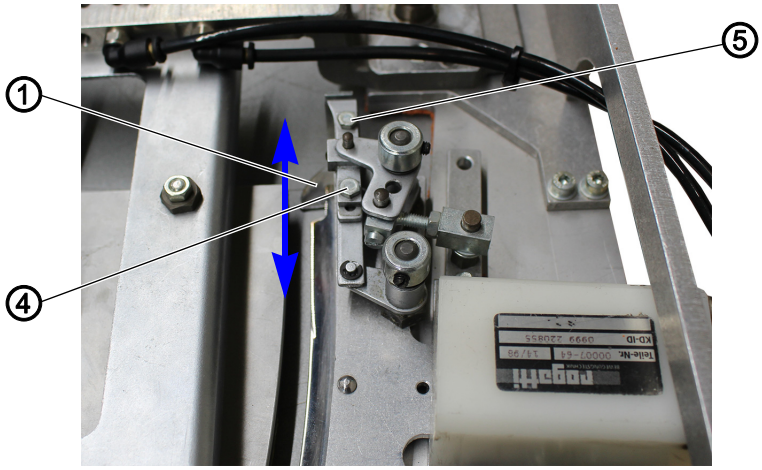
Proper setting

The overlap (3) between the swung-in corner tucker (1) and the lateral slide plate (2) should be 1-2 mm depending on the type of fabric used.

To set the position of the corner tucker:

1. Access **User interface 2** and press the **Work step by step** button.
2. Press **Push button 1** repeatedly until the slides can be moved without pressure and by hand.
3. Check the overlap between the swung-in corner tucker (1) and the lateral slide plate (2).
4. Correct the overlap if necessary.

Fig. 102: Setting the position of the swung-in corner tucker (2)



(1) - Corner tucker
(4) - Screw
(5) - Screw

1. Loosen screws (4) and (5).
2. Correct the position of the corner tucker (1) along the direction of the arrow.
3. Re-tighten screws (4) and (5).
4. Check the folding as described above.

OR

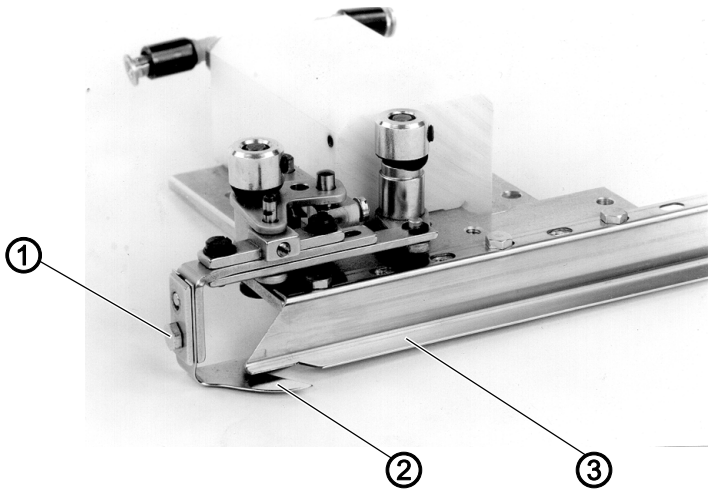
1. Access **User interface 2** and press the **Work step by step** button.
2. Carry out the sewing process until the pocket blank has been folded.
3. Check the folding.

↳ No fabric must protrude at the corners.

4. Continue the sewing process to sew on the pocket.
5. Check the sewn pocket.
6. Correct the overlap if necessary.
7. Loosen screws (4) and (5).
8. Correct the position of the corner tucker (1) along the direction of the arrow.
9. Re-tighten screws (4) and (5).
10. Check the folding as described above.

7.5.2 Setting the height of the corner tucker

Fig. 103: Setting the height of the corner tucker



(1) - Screw
(2) - Corner tucker
(3) - Lateral slide plate

Proper setting

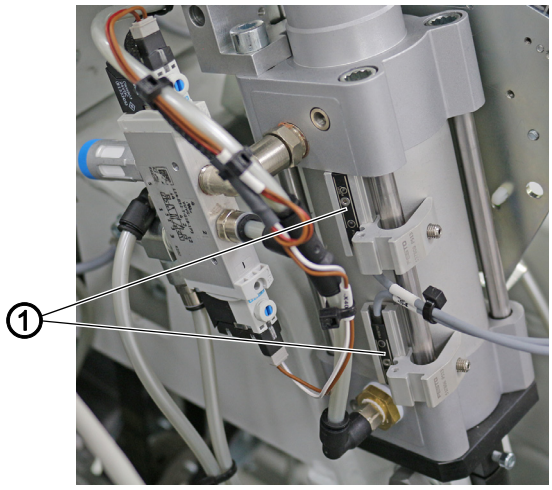
The distance between the swung-in corner tucker (2) and the lateral slide plate (3) should correspond to the thickness of the fabric.

To set the height of the corner tucker:

1. Access **User interface 2** and press the **Work step by step** button.
2. Press **Push button 1** repeatedly until the slides can be moved without pressure and by hand.
3. Check the distance between the swung-in corner tucker (2) and the lateral slide plate (3).
4. Correct the distance if necessary.
5. Loosen the screw (1).
6. Correct the distance between the corner tucker (2) and the lateral slide plate (3).
7. Re-tighten the screw (1).

7.6 Adjusting the proximity switch for the end position

Fig. 104: Adjusting the proximity switch for the end position (1)

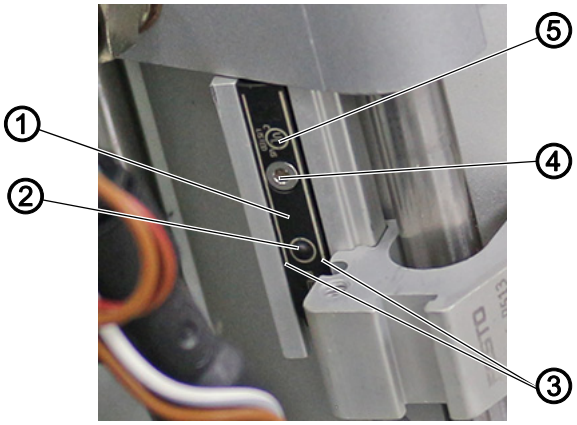


(1) - Proximity switch

Information

The proximity switches (1) are taught automatically during initial startup. During Auto Teach-In, every stop > 100 ms of the piston is output as a switching point within the detection range. If the piston reverses its direction of movement at this position and exits the detection range without making an additional stop, this switching point is saved to temporary memory.
If the piston stops at the same position 4x in a row, reverses its direction of movement and exits the detection range without making an additional stop, this position is saved as the final switching point.
Auto Teach-In is complete.
If the switching window is too narrow, you can use the capacitive control button to adjust it.

Fig. 105: Adjusting the proximity switch for the end position (2)



(1) - Proximity switch
(2) - Detection range marking
(3) - Fastening screw
(4) - Capacitive user button
(5) - LED

To set a switching point:

1. Move the piston into the detection range (2) of the proximity switch (1).
2. Press the capacitive user button (4) 3x to activate setup mode.
3. Press the capacitive user button (4) 1x to switch to the menu item *Switching point with variable switching window width*.
4. Press the capacitive user button (4) 1x.

↳ The current piston position is taught as a switching point.

To set a switching point with a variable switching window width:

1. Move the piston into the detection range (2) of the proximity switch (1).
2. Press the capacitive user button (4) 3x to activate setup mode.
3. Press the capacitive user button (4) 1x to switch to the menu item *Switching point with variable switching window width*.
4. Press the capacitive user button (4) 1x.

↳ The current piston position is taught as a switching point with a switching window width of approx. 2 mm.
Each additional press of the button increases the switching window width by approx. 1 mm. (up to 15 mm).

8 Transfer carriage

Moved by two motors in X and Y direction, the transfer carriage serves the following purposes:

- Transporting the sewing material from the edge folding station to the sewing station by means of the transfer plate
- Moving the sewing material during the sewing process in accordance with the pocket seam program

The sewing result can be improved by the following constructive measures:

- The parallel-action joint housed in the transfer arm ensures that the transfer plate is nearly parallel to the tabletop when lifted. This prevents sewing material of different thicknesses from being shifted by the transfer carriage.
- The springs of the reception fork ensure any irregularities in the sewing material are reliably offset. This feature guarantees that the sewing material will be subjected to the same downforce pressure in all places.

8.1 Aligning the transfer plate

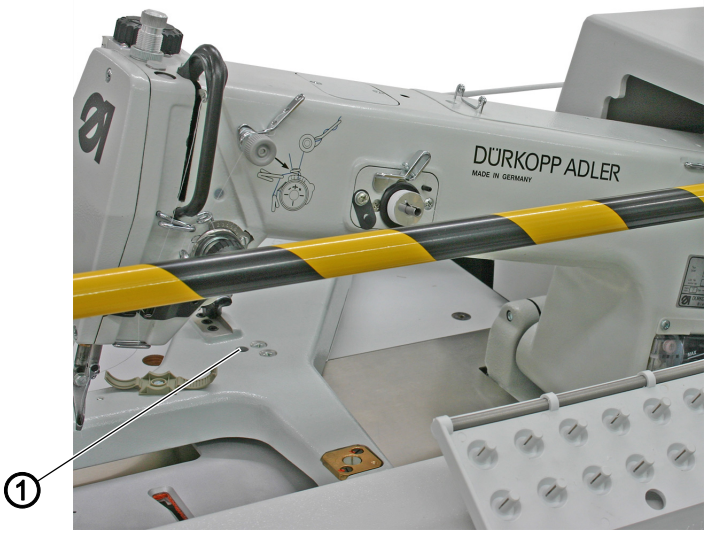
WARNING

Risk of injury from moving parts!

Crushing.

Do NOT reach into the area of the transfer plate.

Fig. 106: Aligning the transfer plate



(1) - Screw

Aligning the transfer plate is important, as the sewing material will otherwise not be moved properly to the sewing unit following the edge folding process.

Proper setting

The transfer plate must be parallel to the tabletop when it has been lowered and depressurized.

To align the transfer plate:

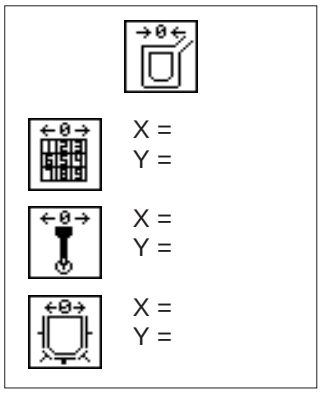
1. Depressurize the machine by pressing the EMERGENCY STOP button.
2. Check the alignment of the transfer plate.
3. Correct the alignment if necessary.
4. Set the screw (1) as necessary.

8.2 Calibrating the positions

A calibration of the transfer carriage positions must be performed if:

- the machine head was replaced
- the belt was replaced or re-tightened
- the reference point and the limit switches were readjusted

Fig. 107: Calibrating the positions (1)



The sticker on the machine shows the coordinates of the positions as set at the factory. The symbols on the sticker correspond to those displayed during the calibration of the positions. You can use these values as reference values when adjusting the positions.

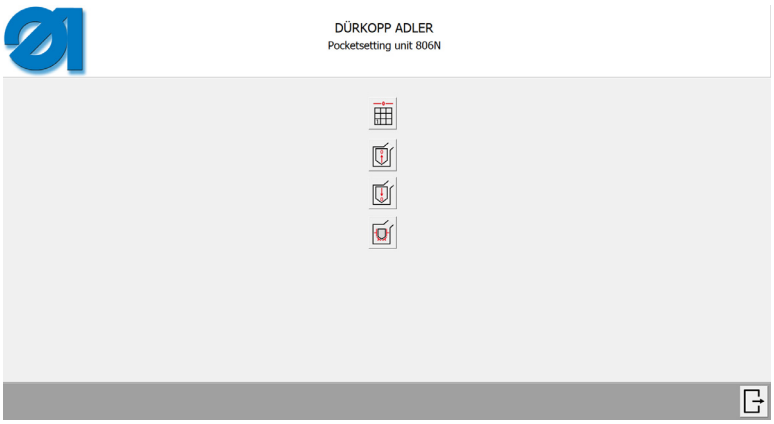
To perform a position calibration:

1. Press the **Technician** button to access the **User interface** intended for technicians.

2. When on the **User interface** intended for technicians, press the **Position calibration**  button.

↳ The display shows the following submenu:

Fig. 108: Calibrating the positions (2)



Symbol	Function
	Position calibration for reading the coding
	Position calibration relative to the upper sewing position
	Position calibration relative to the lower sewing position This position is merely a control position and, therefore, not included on the sticker applied to the machine.
	Position calibration relative to the edge folding station

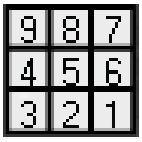
There is a number of recurring symbols that are shown on the display during the various position calibrations. The following is a description of these symbols:

Symbol	Function
	Lift and lower transfer plate
	Lift and lower sewing head
	Step width 0.1 mm The transfer plate will be advanced by this value with each press of the arrow buttons.

Symbol	Function
	Step width 1 mm The transfer plate will be advanced by this value with each press of the arrow buttons.
	Confirm and save input
	Exit the menu

8.2.1 Reading the coding

Fig. 109: Reading the coding



Before you can calibrate this position, you need to prepare the transfer plate first.

To read the coding:

1. Use a piece of reflecting foil (11x11 mm) to mask the number **1** in the coding field (see figure above) that is located on the rear of the transfer plate.

↳ Do NOT mask any of the other fields.

2. Insert the transfer plate prepared in this way into the machine.

↳ You are returned to the **Start screen**.

3. Do not perform a reference run.
4. Press the **Technician**  button to access the **User interface** intended for technicians.
5. Perform the position calibration.
6. Press the **Read coding**  button in the submenu Position calibration.

↳ The transfer carriage moves to the position where the coding can be read.

↳ The submenu Read coding opens.

↳ Apart from the known symbols, the screen shows a button indicating whether the light barrier is capturing a signal:  .

Determining the X value

7. Press and hold the arrow button to the left until the red line on the light barrier symbol disappears.
8. Write down the X value.
9. Press and hold the arrow button to the right until the red line on the light barrier symbol appears before disappearing again.
10. Write down the X value.
11. Subtract the greater X value from the smaller X value.
12. Divide the result by 2.
13. Add the result to the smaller X value.

↳ The X value for reading the coding has been determined.

14. Enter the result into the field for the X value.

Determining the Y value

15. Press and hold the arrow button upwards until the red line on the light barrier symbol disappears.
16. Write down the Y value.
17. Press and hold the arrow button downwards until the red line on the light barrier symbol appears before disappearing again.
18. Write down the Y value.
19. Subtract the greater Y value from the smaller Y value.
20. Divide the result by 2.
21. Add the result to the smaller Y value.

↳ The Y value for reading the coding has been determined.

22. Enter the result into the field for the Y value.
23. Press the **Confirm** button to save the values you entered.
24. Press the **Exit** button to exit the submenu.

8.2.2 Calibrating the top sewing position

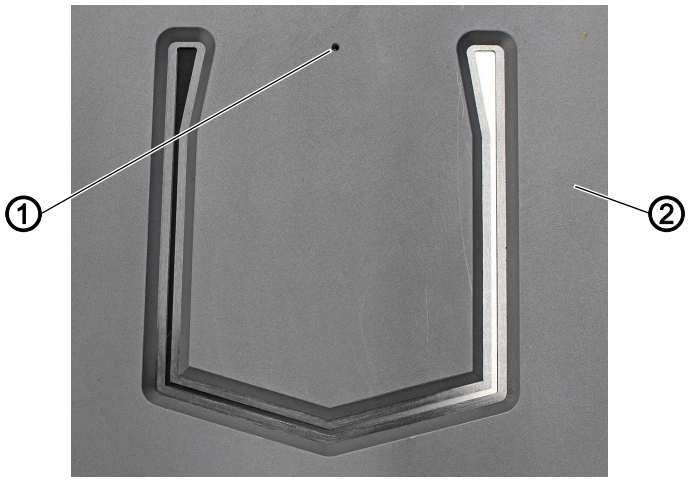
NOTICE

Property damage may occur!

Breakage of needle and sewing foot.

Remove needle and sewing foot prior to the position calibration.

Fig. 110: Calibrating the top sewing position



(1) - Hole *(2) - Transfer plate*

To calibrate the top sewing position:

1. Remove needle and sewing foot.
2. Press the **Sewing position top** button in the submenu Position calibration.
   - The transfer plate (2) moves to the zero position.
3. Insert the 2 mm pin into the needle bar.
4. Press the **Transfer plate up/down** button.
   - The transfer plate lowers (2).
5. Press the **Sewing head up/down** button.
   - The sewing head lowers.
6. Use the arrow buttons to move the transfer plate (2) in such a way that the 2 mm pin is located above the upper hole (1) in the transfer plate (2).
7. Turn the handwheel and check if the 2 mm pin plunges into the hole (1) of the transfer plate (2).
8. If necessary, correct the position of the pin using the arrow buttons.
   - The fields holding the X and Y values will now show the coordinates.

Important

The transfer plate (2) can be shifted inside the guides by moving the transfer plate (2) when lowered. It is, therefore, necessary to check the position again and correct it if necessary.

9. Use the buttons **Sewing head up/down** and **Transfer plate up/down** to lift the sewing head and the transfer plate (2) once and to lower them again.
10. If necessary, correct the position of the pin.
11. Raise the sewing head and the transfer plate (2) again.

12. Press the **Confirm** button to save the settings.

↳ The settings have been saved, the submenu closes, and you are returned to the *Position calibration* menu.

8.2.3 Calibrating the position of the edge folding station

The position of the edge folding station must be calibrated, for example, following the installation of a new control.

To calibrate the position of the edge folding station:

1. Press the **Sewing position folding station** button in the submenu Position calibration.

↳ The middle slide moves forward and lowers.

↳ The transfer carriage moves to the edge folding station.

2. Press the **Transfer plate up/down** button.

↳ The transfer plate lowers.

3. Use the arrow buttons to align the transfer plate in such a way that the middle slide projects equally far into the sewing contour of the transfer plate on all sides.

4. Use the **Transfer plate up/down** button to lift the transfer plate once and to lower it again.

5. If necessary, correct the position of the transfer plate.

↳ The fields holding the X and Y values will now show the coordinates.

6. Lift the transfer plate again.

7. Press the **Confirm** button to save the settings.

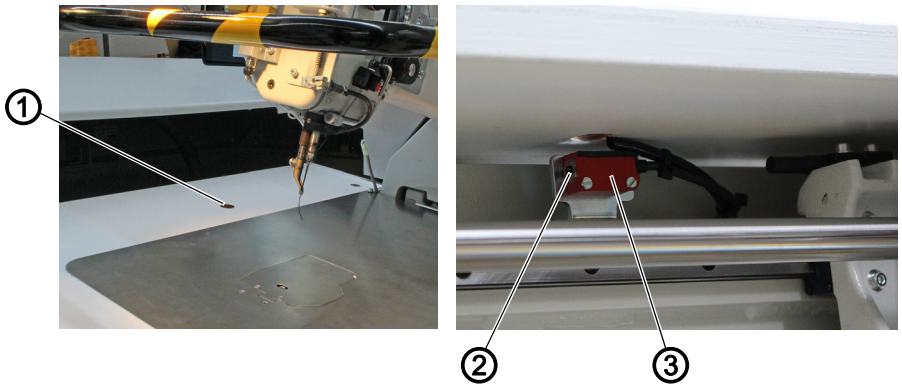
↳ The settings have been saved, the submenu closes, and you are returned to the Position calibration menu.

8.3 Setting the light barrier for reading the transfer plate coding

If too few or too many fields of the coding field are detected during the scanning of the transfer plate coding, the light barrier (3) must be set again.

The light barrier (3) used to read the transfer plate coding is located below the tabletop. The light barrier (3) reads the transfer plate code through the hole (1) in the tabletop.

Fig. 111: Setting the light barrier for the coding



(1) - Hole
(2) - Potentiometer
(3) - Light barrier

To set the light barrier for the transfer plate coding:

1. Remove the sewing head cover and the carriage (📖 *p. 15*).
2. Start up the machine.

↳ The machine performs a reference run.

3. Press the **User interface** button.
4. Press the **Sewing motor** button.

↳ The transfer plate moves to the side.

5. Use a screwdriver to adjust the potentiometer in order to align the light barrier.
   - Increase the sensitivity: turn clockwise
   - Reduce the sensitivity: turn counterclockwise
6. Press the **Exit** button repeatedly until you reach the start screen.
7. Press the I button.

↳ The machine performs a reference run and reads the code of the transfer plate.

8. Correct the sensitivity of the light barrier if necessary.
9. Replace the sewing head cover and the carriage (📖 *p. 18*).

9 Service settings via software

The software of the 806N features a dedicated user interface that is intended for technicians. Access to this user interface requires a password. This chapter describes how to access and adjust the settings available on the user interface.

All settings that can also be set by the user are described in great detail in the 🕮 *Operating Instructions 806N-111/806N-121*.
These instructions also include a comprehensive description of the software including its various screens.

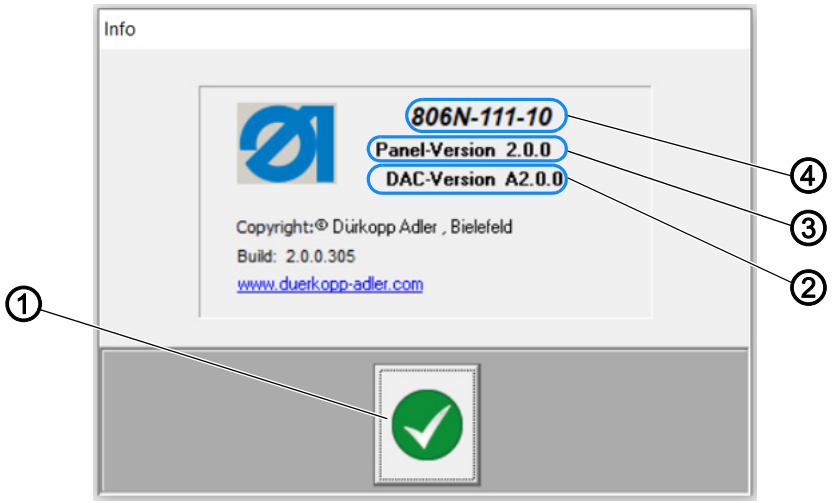
9.1 Operating software version

The operating software version is important for the technicians. It must be easy to find when requested.

At the top right of **User interface 1** you will find the designation of the machine (806N-121 oder 806N-111).

Pressing the designation displays the following window:

Fig. 112: Operating software version



(1) - Exit the version screen (to user interface 1)
(2) - Version of the DAC software
(3) - Version of the operating terminal software
(4) - Machine name

9.2 Access to the user interface intended for technicians

There are two ways to access the user interface intended for technicians.

Information

A prompt for the access password to the user interface will be displayed only once; afterwards, the technician will be able to access any setting available in the program. For this reason, it is important to exit the program or to shut down the PC as soon as all service settings have been set via software.

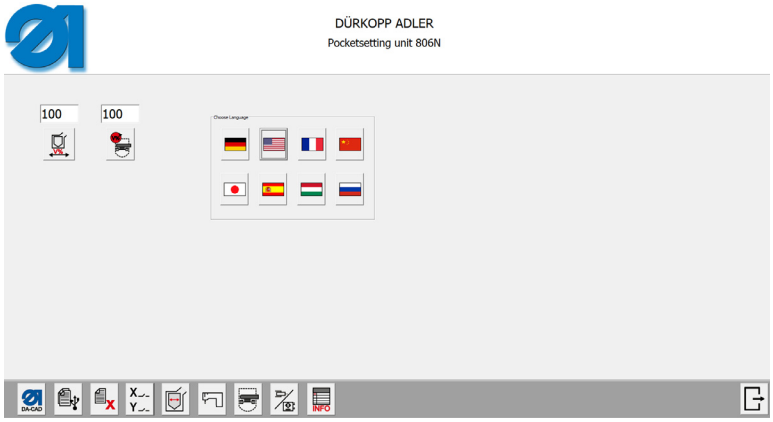
9.2.1 Calling up the start screen of the user interface intended for technicians

To enter the user interface from the **Start screen**:

1. Navigate to the **Start screen**, 🕮 *Operating Instructions 806N*.
2. Press the **User interface** button.
3. Enter password **25483**.

↳ The **User interface** intended for technicians appears:

Fig. 113: Calling up the start screen of the user interface intended for technicians



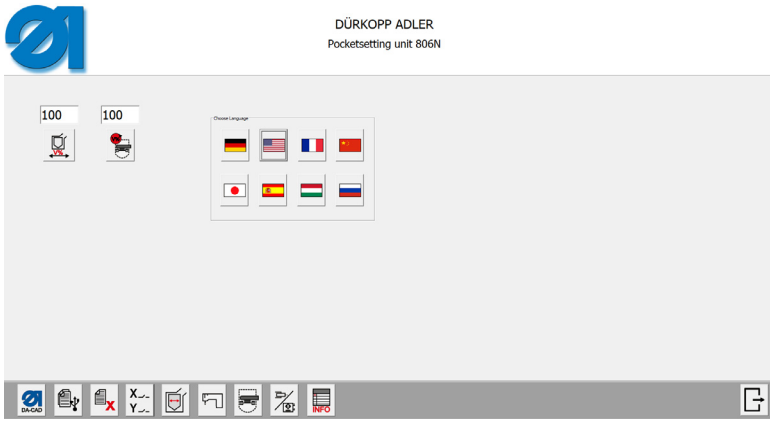
9.2.2 Calling up the user interface intended for technicians from user interface 2

To enter the user interface from the **User interface 2**:

1. Navigate to **User interface 2**, 🕮 *Operating Instructions 806N*.
2. Press the **User interface** button.
3. Enter password **25483**.

↳ The **User interface** intended for technicians appears:

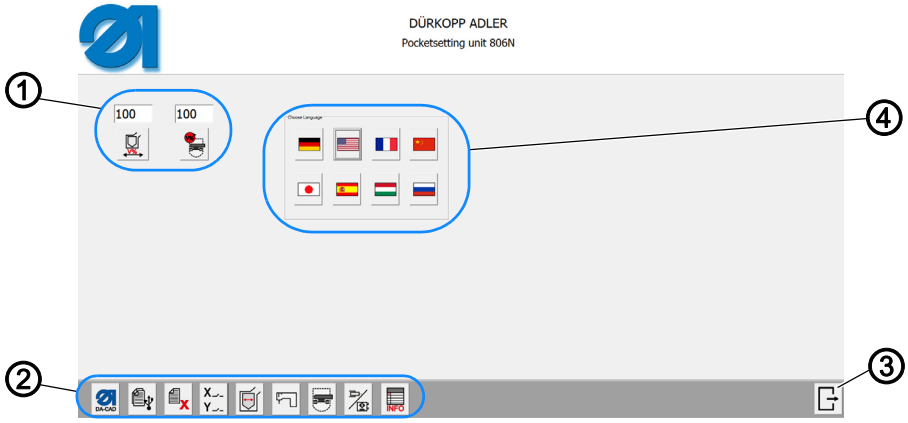
Fig. 114: Calling up the user interface intended for technicians from user interface 2



9.3 Structure of the user interface intended for technicians

This section shows the structure of the **User interface** intended for technicians at a glance.

Fig. 115: Structure of the user interface intended for technicians



(1) - Set speed
(2) - Setting options
(3) - Select language
(4) - Exit the user interface

All buttons and their functions are described in more detail in the following chapters.

9.4 Setting options on the user interface intended for technicians

The user interface for technicians allows you to set various settings or test components. Some menus branch into submenus that are described below.

9.4.1 Selecting the language

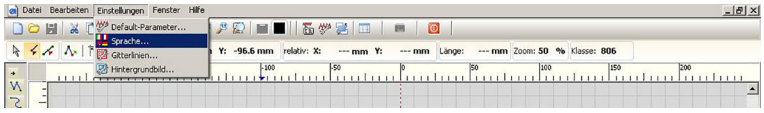
Fig. 116: Selecting the language (1)

The language of the operating software can be changed while operation is ongoing. To do so, press the button with the national flag of the desired language.

Information

Selecting the language on the user interface intended for technicians does not affect the language in DA-CAD. The language in DA-CAD must be set separately:

Fig. 117: Selecting the language (2)



9.4.2 Setting the speed of the transfer plate

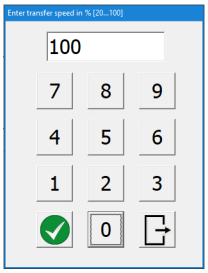
You can set the speed of the transfer from the sewing unit to the edge folding device. The speed is indicated in %. This value is an empirical value and can be set at any time.

To set the speed of the transfer plate:

1. Press the **Transfer plate speed**  button.

↳ The following window appears:

Fig. 118: Setting the speed of the transfer plate (2)



2. Press the buttons to enter a value between 20 and 100.

↳ The entered value appears in the input field above.

3. Press the **Confirm** button to confirm the entered value.

↳ The selection window closes, and the entered value appears in the field above the **Transfer plate speed** button.

4. Press the **Exit** button to correct the entered value.

↳ The entered value is deleted.

5. To exit the selection window, press the **Exit** button again.

↳ The selection window closes, and you are returned to the **User interface** intended for technicians.

9.4.3 Setting the outfeed roller speed

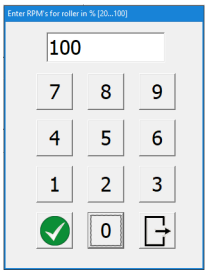
You can set the speed of the outfeed roller. The speed is indicated in %. The setting does NOT affect the roll-out length, but merely applies to the ejection of the sewing material. If the material is not ejected fast enough, the sewing material may not properly rest on the stacker.

To set the speed of the outfeed roller:

1. Press the **Outfeed roller speed** button.

↳ The following window appears:

Fig. 119: Setting the outfeed roller speed



2. Press the buttons to enter a value between 20 and 100.

↳ The entered value appears in the input field above.

3. Press the **Confirm** button to confirm the entered value.

↳ The selection window closes, and the entered value appears in the field above the **Outfeed roller speed** button.

4. Press the **Exit** button to correct the entered value.

↳ The entered value is deleted.

5. To exit the selection window, press the **Exit** button again.

↳ The selection window closes, and you are returned to the **User interface** intended for technicians.

9.4.4 Launching DA-CAD

NOTICE

Property damage may occur!

A transfer plate that does not fit or has been programmed incorrectly can cause the machine to run into the transfer plate and damage the machine.

Make sure to insert a transfer plate that fits and has been programmed correctly.

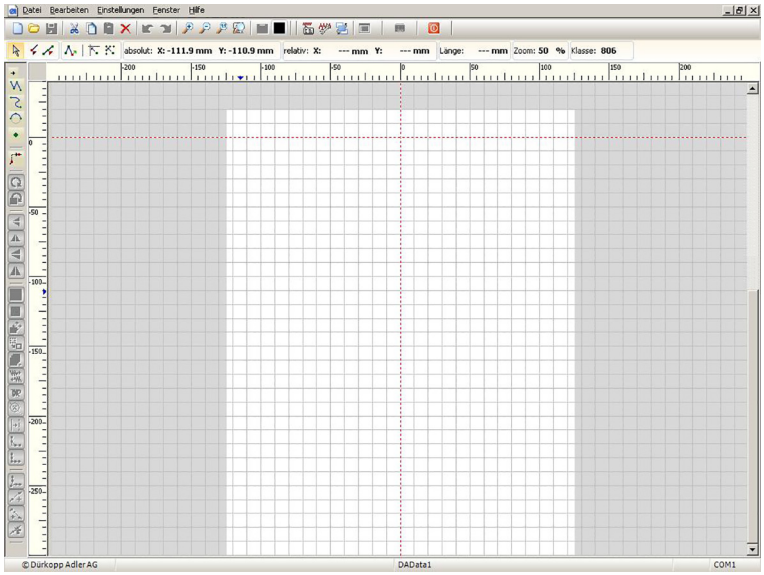
DA-CAD is a CAD tool that can be used to set up the pocket seam programs.

Information

The screen you will see after launching DA-CAD depends on whether you accessed the user interface from the Start screen (📖 *p. 142*) or from user interface 2 (📖 *p. 142*).

From the start screen

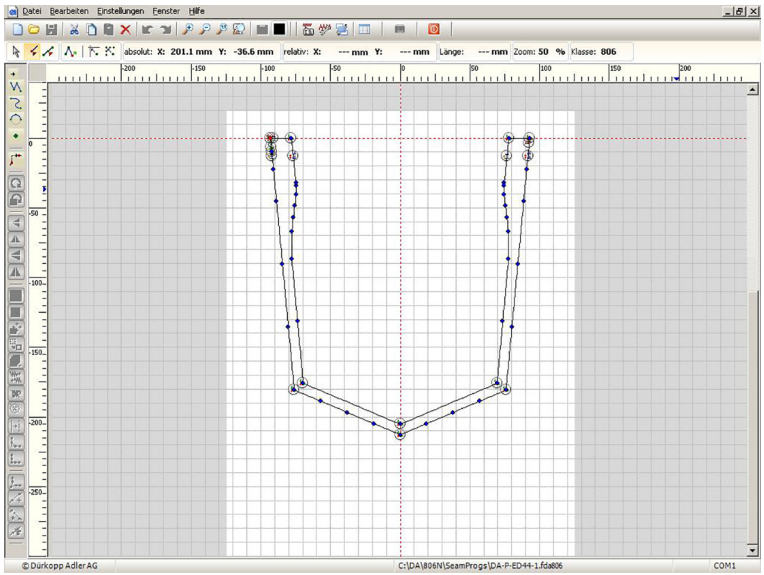
Fig. 120: Launching DA-CAD (1)



If you accessed the user interface intended for technicians from the start screen, you will see a blank document. You use this document to perform general work on the seam programs. When you exit DA-CAD, the machine will perform a reference run.

From user interface 2

Fig. 121: Launching DA-CAD (2)



If you accessed the user interface intended for technicians from user interface 2, you will see the currently selected pocket. Here, you can modify the seam pattern directly. When you exit DA-CAD, the machine will NOT perform a reference run, but show the selected pocket instead.

A Help file has been stored on the computer that explains how to use DA-CAD. You can access the help file by pressing the **Help** button in the bar at the top. You can also download a DA-CAD training document from the Internet (www.duerkopp-adler.com).

9.4.5 Copying files to the PC

The files to which the pocket seam programs have been saved can be copied to the PC from the USB key or from the PC back to the USB key.

Information

Files with the same name will not be overwritten when moved. Instead, they will be assigned a consecutive number.

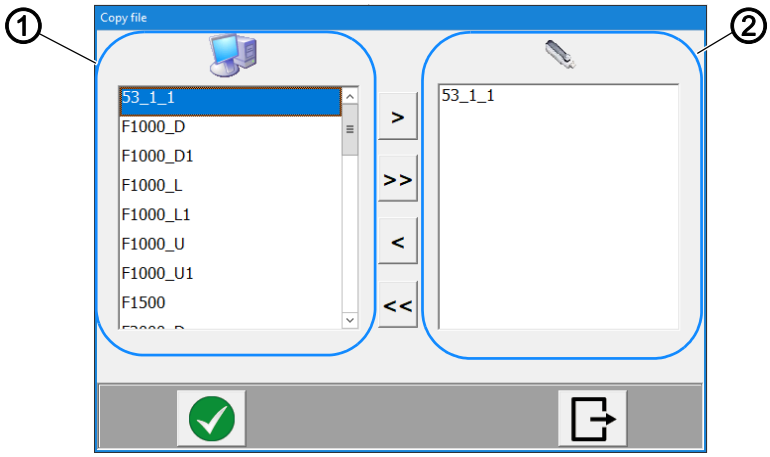
The PC displays an error message if no USB key is connected. If a USB key is connected, but no files are displayed, there may be an issue with the directory structure on the USB key. The files must not be stored in a subdirectory, as they will otherwise not be recognized by the PC.

To copy/move files:

1. Plug the USB key into the port on the screen.
2. Press the **Copy files** button.

↳ The following window opens:

Fig. 122: Copying files to the PC



(1) - Files on the PC *(2) - Files on the USB key*

Copying files from the PC to the USB key

3. Press on the file on the left side to select it.

↳ The file is highlighted in blue.

4. Press the **Arrow right** > button.

↳ The file is copied to the right side, i.e. to the USB key.

↳ To move all files from the PC to the USB key, press the **Double arrow right** >> button.

↳ All files are stored on the USB key.

Copying files from the USB key to the PC

5. Press on the file on the right side to select it.

↳ The file is highlighted in blue.

6. Press the **Arrow left** < button.

↳ The file is copied to the left side, i.e. to the PC.

7. To move all files from the USB key to the PC, press the **Double arrow left** << button.

↳ All files are stored on the PC.

8. Press the **Exit** button or the **Confirm** button.

↳ Both buttons will return you to the **User interface** intended for technicians.

9.4.6 Viewing the file directory and deleting files

This option allows you to view all files stored on the PC and delete the files you no longer need.

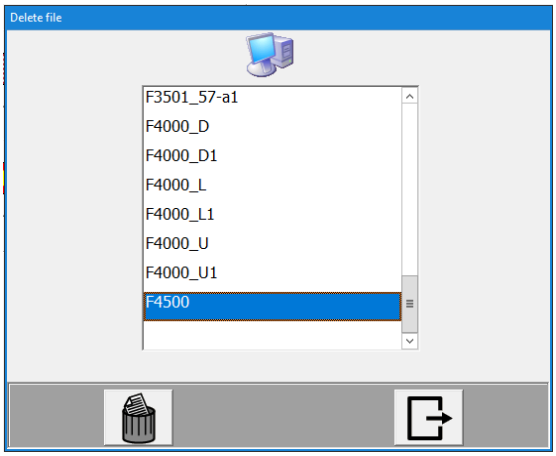
To view or delete files:

Viewing files

1. Press the **File directory** button.

↳ The following window opens:

Fig. 123: Viewing the file directory and deleting files (1)



The directory shows all valid pocket seam programs. All programs ending in fda806 or fnp are valid programs.

2. Move the scroll bar to the right to view all files.

Deleting files

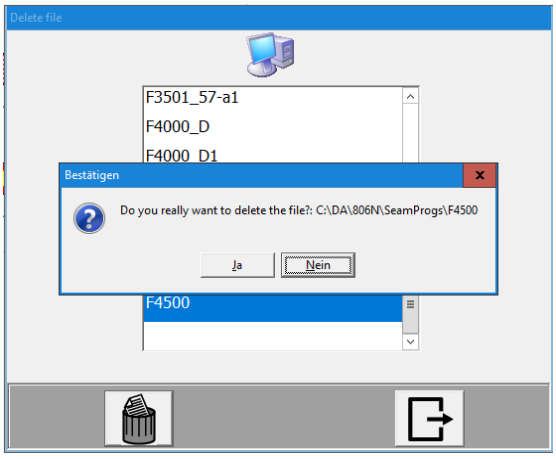
3. Select the file you wish to delete by pressing on it.

↳ The file is highlighted in blue.

4. Press the **Delete** button.

↳ The following message appears:

Fig. 124: Viewing the file directory and deleting files (2)



5. To delete the file: Press the **YES** Ja button.

↳ The file has been deleted. You are still on the screen with the file directory.

6. To keep the file: Press the **NO** Nein button.

↳ The file has not been deleted. You are still on the screen with the file directory.

7. Repeat steps 3 to 5 as necessary.

8. To exit the file directory, press the **Exit** button.

↳ You are returned to the **User interface** intended for technicians.

9.4.7 Measuring the end positions of the transfer carriage

NOTICE

Property damage may occur!

The machine moves and can be damaged by objects lying in its travel path.

Do NOT leave any objects in the travel path of the machine.

The machine circumscribes its radius of movement at this point, allowing you to define a valid work area. The X value and the Y value limit the maximum travel path to the left and in downward direction, respectively.

To measure the maximum positions:

1. Press the **Measure X-Y** button.

↳ The machine travels to the maximum positions it can reach.
The following window appears containing the maximum position coordinates in mm:

2. Write down the coordinates if necessary.

3. Press the **OK** OK button to close the window.

↳ The window closes, and you are returned to the **User interface** intended for technicians.

9.4.8 Calibrating the positions

You can use this function to calibrate the important transfer carriage positions listed below. For a detailed description, refer to the 🕮 *Operating Instructions 806N111/806N-121*.

A calibration of the transfer carriage positions must be performed if:

- the machine head was replaced
- the belt was replaced or re-tightened
- the reference point and the limit switches were readjusted

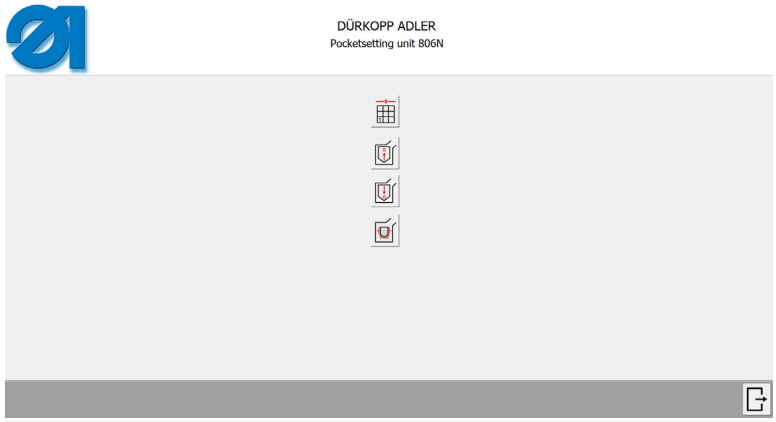
Information

The sticker on the machine shows the coordinates of the positions as set at the factory.

To open the position calibration menu, access the **User interface** intended for technicians and press the **Position calibration** button.

The display shows the following submenu:

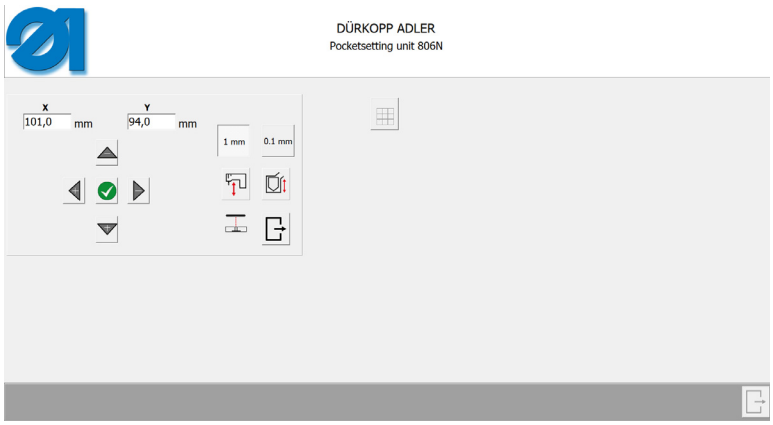
Fig. 125: Calibrating the positions (1)



The description shows the different levels associated with the positions.

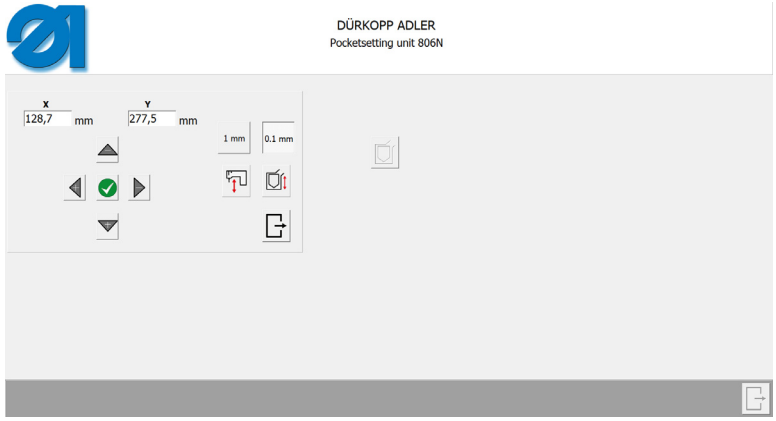
Reading the coding

Fig. 126: Calibrating the positions (2)



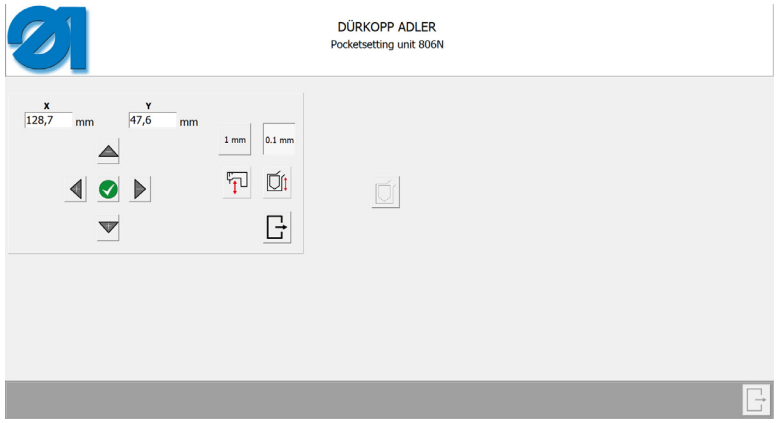
Sewing position top

Fig. 127: Calibrating the positions (3)



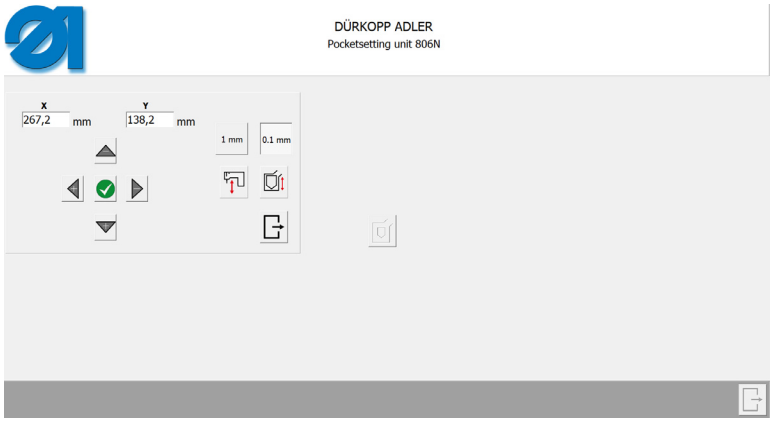
Sewing position bottom

Fig. 128: Calibrating the positions (4)



Position edge folding station

Fig. 129: Calibrating the positions (5)



9.4.9 Checking and setting the sewing motor

NOTICE

Property damage may occur!

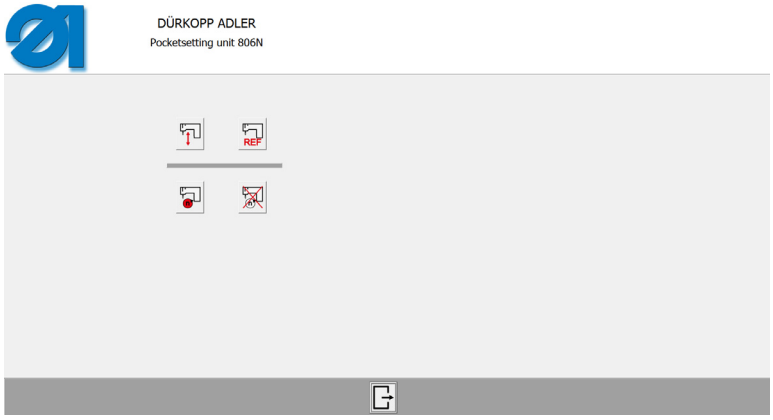
The machine moves and can be damaged by objects lying in its travel path.

Do NOT leave any objects in the travel path of the machine.

You can use this submenu to test the functionality of the sewing head and to check and, if necessary, set the settings on the sewing head.

A press on the **Sewing motor** button opens the following window:

Fig. 130: Checking and setting the sewing motor (1)



This screen contains five buttons that can be used to test different functions. The following is a description of these buttons.

Lift/lower sewing head

You can lower and lift the sewing head to check the speed of the process and adjust the process if necessary by regulating the throttle valves (p. 99).

To lift/lower the sewing head:

1. Press the **Lift/lower sewing head** button.

↳ The thread lever is moved to the upper position, and the sewing head is raised/lowered.

2. Press the Sewing head button again.

↳ The thread lever remains at the upper position, and the sewing head is lowered/raised.

Thread lever position

This option allows you to check or, if necessary, correct the correct position of the thread lever.

To check the position of the thread lever:

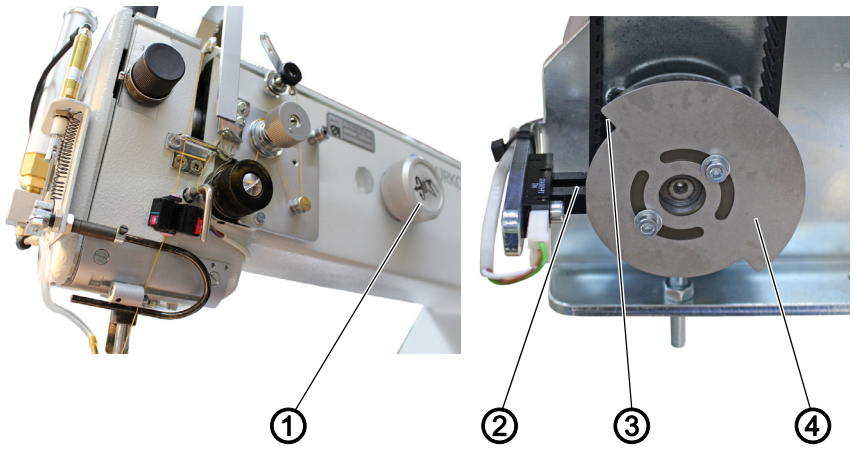
1. Press the **Thread lever** button.

↳ The sewing motor will rotate as far as the light barrier will allow - ideally, until the thread lever is at top dead center.

2. Check the position of the thread lever.
3. If necessary, correct the position of the thread lever.

To correct the position of the thread lever:

Fig. 131: Thread lever position (1)

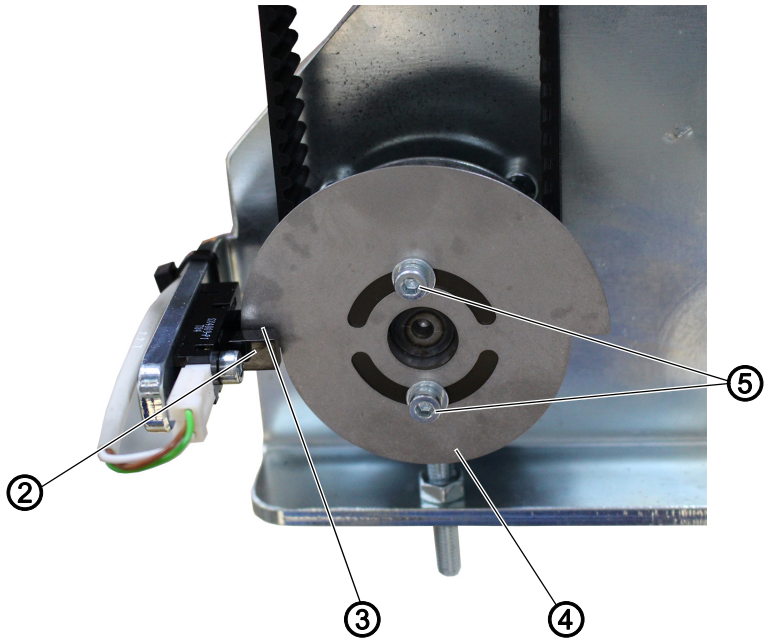


(1) - Handwheel
(2) - Forked light barrier
(3) - Edge
(4) - 180° disk

1. Switch off the machine.
2. Use the handwheel (1) to turn the thread lever to the top dead center.

↳ The edge (3) of the 180° disk (4) will no longer be captured by the fork light barrier (2).

Fig. 132: Thread lever position (2)



(2) - Forked light barrier
(3) - Edge
(4) - 180° disk
(5) - Screws

3. Loosen the screws (5) on the 180° disk (4).
4. Turn the 180° disk (4) until the edge (3) of the 180° disk (4) is captured by the forked light barrier (2) (see figure above).

Sewing motor test

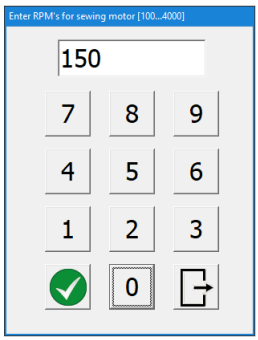
The Sewing motor test is used to, for example, test the oil pump and the concentricity of the motor.

To test the functionality of the sewing motor:

1. Press the **Sewing motor test** button.

↳ The following window appears:

Fig. 133: Checking and setting the sewing motor (2)



2. Press the buttons to enter a value between 100 and 3800 (806N-111) / 4000 (806N-121).

↳ The entered value appears in the input field above.

3. Press the **Confirm** button to confirm the entered value.

↳ The selection window closes, and the sewing motor operates at the selected speed.

4. Press the **Exit** button to correct the entered value.

↳ The entered value is deleted.

5. To exit the selection window, press the **Exit** button again.

↳ The selection window closes, and you are returned to the Sewing motor screen.

Sewing motor stop

To stop the sewing motor:

1. Press the **Sewing motor stop** button.

↳ The sewing motor stops and completes one cutting cycle.

Bartack (only 806N-111-10)

To check the sequence of movements while sewing a bartack:

1. Press the Bartack button.

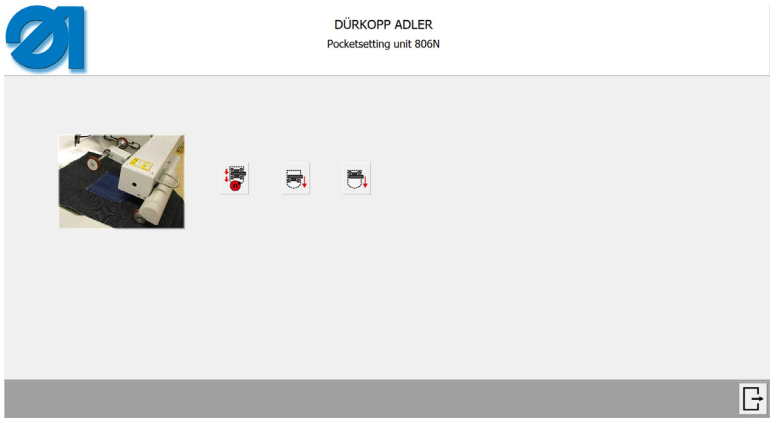
↳ Zigzag is activated.

9.4.10 Test roll-off device

This option lets you test the operation and speed of the two outfeed rollers.

A press on the **Outfeed roller** button opens the following window:

Fig. 134: Test roll-off device



Test outfeed roller speed

This option can be used to test whether the selected speed is suitable or needs to be corrected.

The speed setting is adjusted on the user interface intended for technicians (📖 *p. 145*).

To check the speed of the outfeed roller:

1. Press the **Test speed** button.

↳ All installed rollers (outfeed roller/advance roller) rotate at the entered speed regardless of whether they are lifted or lowered.
The rollers will switch off again automatically after a certain period of time.

Test outfeed roller

This button starts a function test to determine if the outfeed roller is lowered / raised.

To check the operation of the outfeed roller:

1. Press the **Test outfeed roller** button.

↳ The outfeed roller is raised/lowered.

2. Press the **Test outfeed roller** button again.

↳ The outfeed roller is lowered/raised.

Test advance roller

The advance roller is a piece of additional equipment that is available for the machine. This button starts a function test to determine if the advance roller is lowered / raised.

To check the operation of the outfeed roller:

1. Press the **Test advance roller** button.

↳ The outfeed roller is raised/lowered.

2. Press the **Test advance roller** button again.

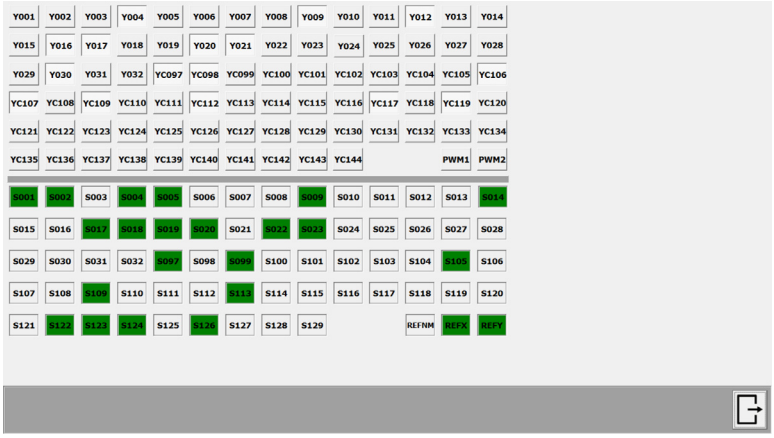
↳ The outfeed roller is lowered/raised.

9.4.11 Check output-input

The overview of the outputs and inputs is used as a diagnostic tool which can test and localize the functions and the parts of the machine, respectively.

A press on the **Output-Input** button brings up the following screen:

Fig. 135: Check output-input



Outputs

The outputs are listed in the upper portion. You can activate or deactivate the outputs by tapping the buttons.

Buttons PWM1 and PWM2: Pulse-width-modulated outputs with magnets. PWM1: Thread cutter. PWM2: Thread tension.

Inputs

The inputs are listed in the lower portion. You can switch them on and off by tapping on them. The inputs are highlighted in green if receiving a signal. They are displayed in gray if no signal is received.

Button REFNM: Light barrier. Buttons REFX and REFY: X and Y axis.

Assignment of outputs and inputs

The tables shown below list the assignments of the outputs and inputs.

Apart from the wiring diagrams, the appendix contains an additional list of the outputs and inputs which groups them according to the different areas on the 806N.

OUTPUTS

OUTPUT	Function
Y01	Blow light barrier clear
Y02	Needle cooling
Y03	Stroke position adjustment
Y04	Lift sewing head
Y05	Lower sewing head
Y06	Switch on zigzag
Y07	Thread advancing device forwards
Y08	Reserve
Y120	Lateral slides forwards
Y119	Lateral slides backwards
Y118	Front slides forwards
Y117	Front slides backwards
Y116	Lift inner frame
Y115	Suck middle slide
Y114	Quick-change device on
Y113	Lower middle slide
Y112	Lift middle slide
Y111	Stop forwards (limit middle slide forwards)
Y110	Lower outer frame
Y109	Lift outer frame
Y108	Middle slide forwards
Y107	Middle slide backwards
Y106	Outer frame backwards
Y105	Outer frame forwards
Y104	Lift flap clamp
Y103	Reserve
Y102	Reserve
Y101	Reserve
Y17	Stacker tray backwards
Y18	Stacker tray forwards
Y19	Inner stacker shackle close
Y20	Inner stacker shackle open
Y21	Outer stacker shackle close

OUTPUT	Function
Y22	Outer stacker shackle open
Y14	Reserve
Y13	2nd ejection roller down
Y12	2nd ejection roller up
Y11	Blow out roller
Y10	1st ejection roller down
Y09	2nd ejection roller up
Y25	Counter pressure (hose insert)
Y26	Lower transfer plate
Y29	Vacuum 3
Y28	Vacuum 2
Y27	Vacuum 1
Y30	Lower inner slide
Y31	Lift inner slide
Y32	Inner slide backwards
Y97	Inner slide forwards
Y98	Lift transfer plate
Y99	Vacuum throat plate 2 (flap)
Y100	Vacuum throat plate 1 (flap)
H1	LED **Threading mode**
H2	LED **Start button**
Y23	Marking lamp 1 on
Y24	Marking lamp 2 on

INPUTS

INPUT	Function
S1	Needle thread monitor
S2	Machine head swiveled out
S3	Sewing head down
S4	Sewing head up
S5	Hook clamp closed (806N-111)
S6	Reserve
S7	Reserve
S8	Reserve
S121	Outer frame front
S122	Outer frame rear
S123	Auto vacuum
S124	Outer frame up
S125	Outer frame down
S126	Middle slide up
S127	Middle slide down
S128	Middle slide front
S113	Middle slide rear
S115	Reserve
S116	Reserve
S20	Stacker tray in initial position
S09	1st ejection roller off
S10	2nd ejection roller up
S34	Reference point X-axis
S21	X-end position
S105	Pressure monitor
S106	Push button 1 Start process
S107	Push button 2 Lower/lift middle slide
S108	Transfer plate identification
S109	Pedal Vacuum on/off
S111	Reserve
S112	Reserve
S17	Emergency stop
S14	Stop button (red)

INPUT	Function
S15	Start button (green)
S16	Cancel button (black)
S17	Safety switch
S24	Y-end position
S35	Reference Y-axis
S97	Transfer plate raised
S98	Transfer plate lowered
S99	Transfer plate existing
S100	inner frame in rear position
S104	Reserve

9.4.12 Showing the information list

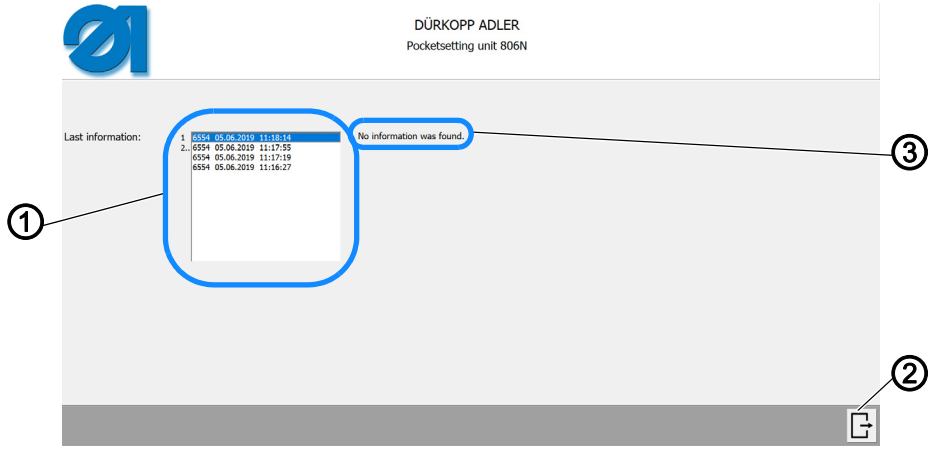
Itemized on the information list are the last 10 error numbers including date and time. The most current and the oldest message is shown at the top and the bottom, respectively.

To display the information list:

1. Press the **Information list** button.

↳ The following window opens:

Fig. 136: Showing the information list



(1) - List of the last 10 messages
(2) - Info text
(3) - Exit the screen (back to the user interface intended for technicians)

The most recent message is listed at the top.

2. Press the desired message to select it.

↳ The message is highlighted in blue. If a brief information text (2) has been stored, the text will be shown at the top right next to the message.

3. To exit the screen, press the **Exit** button.

↳ You are returned to the **User interface** intended for technicians.

9.5 Exiting the user interface intended for technicians

To exit the user interface intended for technicians, press the **Exit** button.

Information

To keep unauthorized persons from accessing the user interface intended for technicians, close the program or shut down the PC. The user interface intended for technicians will not be protected unless these steps have been performed.

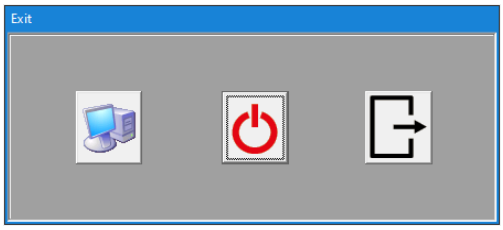
Exiting the program

To exit the program:

1. Press the **Exit** button on the start screen.

↳ The touchscreen displays the Exit selection window:

Fig. 137: Exiting the user interface intended for technicians (1)



2. Press the **Desktop** button.
3. Enter password **25486**.

↳ The operating software is closed.

↳ You are returned to the desktop of the computer.

4. Launch the operating software to work at the machine.

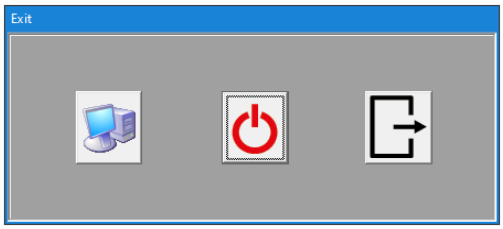
Shutting down and restarting the PC

To shut down and restart the PC:

1. Press the **Exit** button on the start screen.

↳ The selection window appears on the touchscreen:

Fig. 138: Exiting the user interface intended for technicians (2)

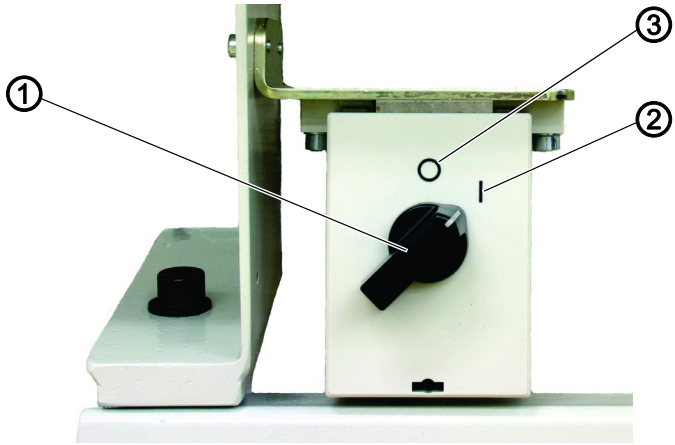


2. Press the **Shut down** button.

↳ The operation display shuts down. The screen becomes black.

↳ The LED light on the screen switches from green to orange.

Fig. 139: Exiting the user interface intended for technicians (3)



(1) - Main switch
*(2) - Position **I***
*(3) - Position **O***

3. Turn the main switch (1) from position **I** (2) to position **O** (3).

↳ You will hear the residual air escaping.

↳ Middle slide, edge folding frame and transfer plate are lowered a bit and depressurized.

4. Turn the rotary switch from position **O** (3) to position **I** (2).

↳ The control for the machine starts up and clicks once. You hear the air being released onto the moving parts.
The **Threading mode** is lit.
The operating terminal start up, and the **Start screen** appears.

10 Maintenance

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.

Work to be carried out	Operating hours			
	8	40	160	500
Removing lint and thread remnants	●			
Cleaning the oil pan	●			
Checking the oil level		●		
Topping up with oil		●		
Lubricating the wicks and felt		●		
Lubricating spherical bush and carriage of the linear rails			●	
Lubricating the spherical heads and the joint heads			●	

10.1 Cleaning

WARNING

Risk of injury from flying particles!

Cleaning with compressed air can cause injuries to the eyes or respiratory organs.

NEVER blow particles towards other persons.

CAUTION

Risk of injury from sharp and moving objects!

Puncture or crushing.

Do NOT service the sewing unit unless it is switched off.

NOTICE

Property damage may occur!

Blowing remnants of fabric or thread under the covers can damage or destroy the machine motors.

NEVER blow remnants of fabric or thread under the protective covers, but rather forwards or to the side..

NOTICE

Property damage may occur!

If the throat plate is not lifted carefully the equipotential bonding connected to the plate can be damaged or ripped off.

ALWAYS lift the throat plate carefully.

Pay attention to the equipotential bonding when lifting.

To clean the machine:

1. Shut down the operating terminal.
2. Switch off the main switch.
3. Do not close the compressed air shut-off valve because compressed air for cleaning will then no longer be available.
4. Blow off lint and thread remnants to the front or the side using the compressed air gun.

Points that need to be cleaned particularly thoroughly:

- Sewing material support surface
- Bobbin area
- Hook and surrounding area
- Thread cutter

5. Clean the oil pan with a cloth.

10.2 Lubricating (806N-121-10)

WARNING

Risk of injuries from contact with oil!

Contact with oil can cause irritation, rashes, allergies or skin injuries.

ALWAYS avoid long-term contact with oil.

ALWAYS thoroughly wash the affected areas if skin contact with oil occurs.

CAUTION

Risk of environmental damage from old oil!

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

ALWAYS observe the legally prescribed regulations for handling and disposal of mineral oil.

Take care to ensure that oil is NEVER spilled.

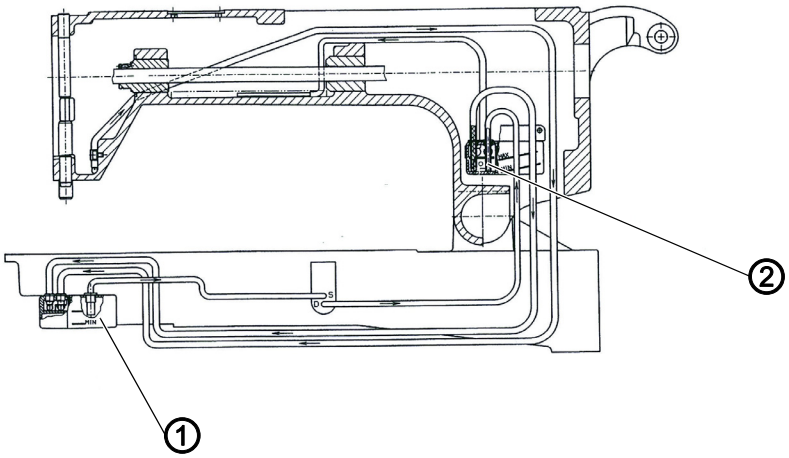
For lubricating the machine, use only lubricating oil DA 10 or oil of equivalent quality with the following specifications:

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

DA 10 can be obtained from DÜRKOPP ADLER GmbH sales offices using the following part number:

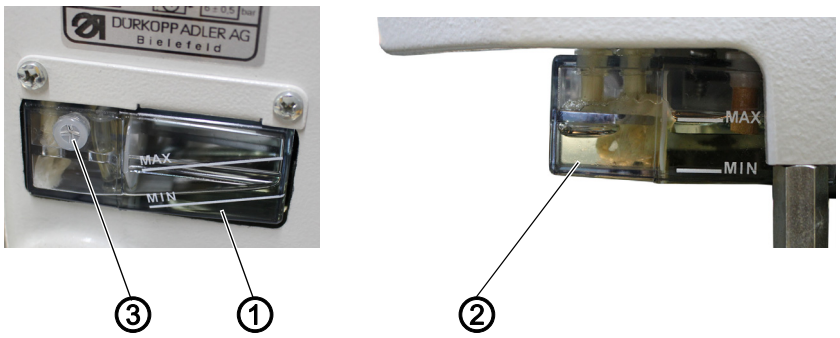
Container	Part number
250 ml	9047 000011
1 l	9047 000012
2 l	9047 000013
5 l	9047 000014

Fig. 140: Lubricating (806N-121) (1)



(1) - Oil reservoir 1
(2) - Oil reservoir 2

Fig. 141: Lubricating (806N-121) (2)



(1) - Oil reservoir 1
(2) - Oil reservoir 2
(3) - Oil filling neck

Oil reservoir 1 (1) supplies oil to the sewing machine head. Oil flows from oil reservoir 2 (2) to the hook oil reservoir via a wick connection.

Oil exceeding the MAX mark in oil reservoir 2 (2) is fed back into oil reservoir 1 (1) by a pump.

Checking the oil level

To check the oil level:

1. Check the oil level at oil reservoir 1 (1).
   ↳ The oil level must be between the MIN marking and the MAX marking.
2. If the oil level is below the MIN marking, check the oil level at oil reservoir 2 (2).
   ↳ Do not top up oil if the oil level in oil reservoir 2 (2) is above the MAX marking. Instead, perform 20 sewing cycles before checking the oil level again.
3. If the oil level in oil reservoir 2 (2) is at the MIN marking, you will have to top up the oil.

Topping up with oil

To top up with oil:

1. Top up the oil via the oil filling neck (3) on oil reservoir 1 (1) until reaching the MAX marking.
2. Check the oil feed in oil reservoir 1 (1).

↳ Bubbles must be visible when the machine is running.

10.3 Lubricating (806N-111-10)

WARNING

Risk of injuries from contact with oil!

Contact with oil can cause irritation, rashes, allergies or skin injuries.

ALWAYS avoid long-term contact with oil.

ALWAYS thoroughly wash the affected areas if skin contact with oil occurs.

CAUTION

Risk of environmental damage from old oil!

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

ALWAYS observe the legally prescribed regulations for handling and disposal of mineral oil.

Take care to ensure that oil is NEVER spilled.

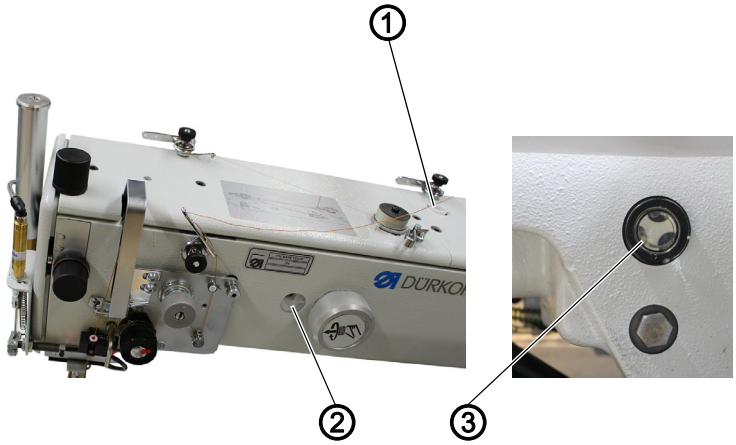
For lubricating the machine, use only lubricating oil DA 10 or oil of equivalent quality with the following specifications:

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

DA 10 can be obtained from DÜRKOPP ADLER GmbH sales offices using the following part number:

Container	Part number
250 ml	9047 000011
1 l	9047 000012
2 l	9047 000013
5 l	9047 000014

Fig. 142: Lubricating (806N-111)



(1) - Oil filling neck
(2) - Inspection glass
(3) - Inspection glass

Checking the oil level

To check the oil level:

1. Check the oil level at the inspection glass (3).

↳ The oil level must be between the middle and the upper edge of the inspection glass (3).

2. Check the oil feed at the inspection glass (2) when the machine is running.

↳ An air bubble is visible in the inspection glass.

Topping up with oil

To top up with oil:

1. Top up oil through the oil filling neck (1).

↳ The oil must fill 3/4 of the inspection glass (3).

10.4 Servicing the transfer carriage

The following assemblies of the transfer carriage require monthly lubrication:

- Spherical bush of the torque shaft
- Carriage of the linear rails
- Spherical heads

10.4.1 Lubricating the spherical bush of the torque shaft

Fig. 143: Lubricating the spherical bush of the torque shaft

(1) - Lubrication point *(2) - Lubrication point*

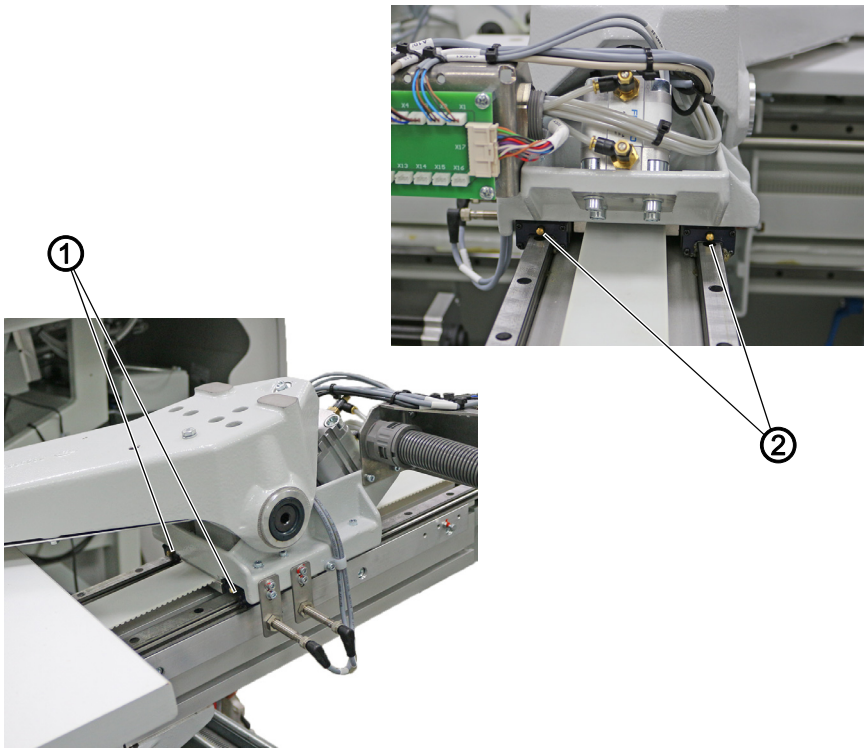
To lubricate the spherical bush of the torque shaft:

1. Install the grease gun adapter included in the accessory pack.
2. Grease lubrication points (1) and (2) using the grease gun.

↳ The old grease must be pressed out completely.

10.4.2 Lubricating the carriage of the linear rails

Fig. 144: Lubricating the carriage of the linear rails



(1) - Lubrication point

(2) - Lubrication point

To lubricate the carriage of the linear rails:

1. Install the grease gun adapter included in the accessory pack.
2. Grease lubrication points (1) and (2) using the grease gun.

↳ The old grease must be pressed out completely.

10.4.3 Lubricating the spherical heads

Information

Use ordinary installation paste (e.g. OKS 260) to lubricate the spherical heads.

10.5 Servicing the pneumatic system

Setting the operating pressure

NOTICE

Property damage from incorrect setting!

Incorrect operating pressure can result in damage to the machine.

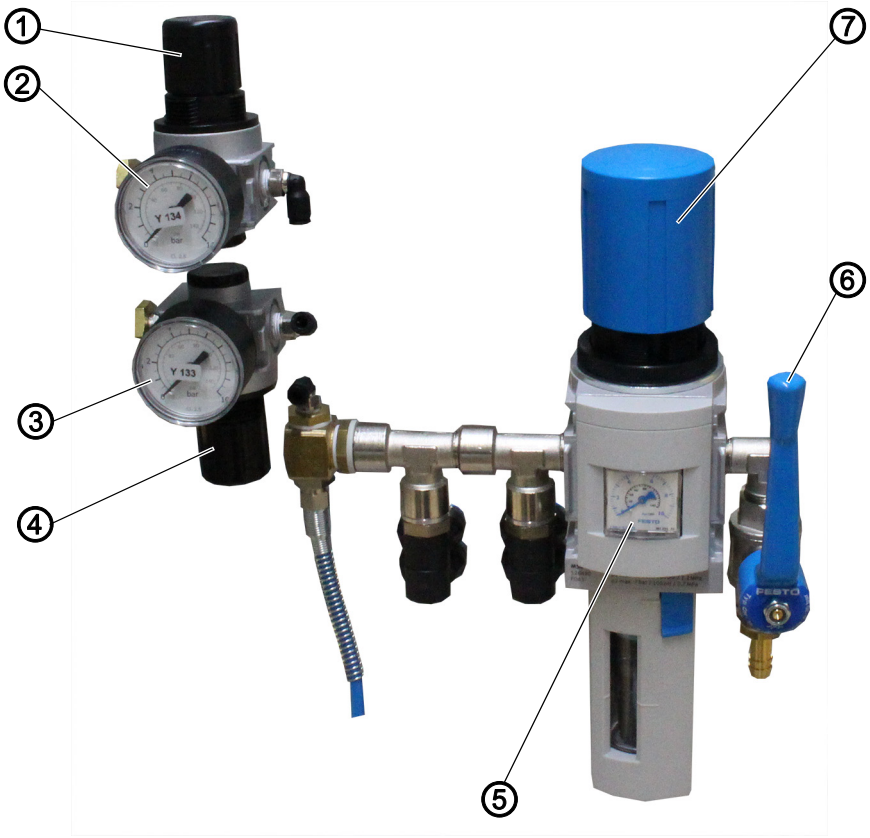
Ensure that the machine is only used when the operating pressure is set correctly.

Proper setting

Refer to the **Technical data** (📖 *p. 185*) 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. 145: Setting the operating pressure



(1) - Pressure controller
(2) - Pressure gage transfer plate (output y 134)
(3) - Pressure gage vacuum (output y 133)
(4) - Pressure controller
(5) - Pressure gage
(6) - Shut-off valve
(7) - Pressure controller operating pressure

To set the operating pressure:

1. Turn the shut-off valve (6) to the horizontal position.
2. Pull the pressure controller operating pressure (7) up.
3. Turn the pressure controller until the pressure gage (5) indicates the proper setting:
   - Increase pressure: turn clockwise
   - Reduce pressure: turn counterclockwise
4. Push the pressure controller (6) back down.

NOTICE

Property damage may occur!

Excessive pressure on the vacuum device may cause damage to the machine.

Do not supply the vacuum device with compressed air of more than 3.5 bar.

Pressure gages (2) and (3) indicate the pressure with which transfer plate and vacuum device are supplied.

Important

Do not supply the vacuum device with compressed air of more than 3.5 bar.

To set the pressure for transfer plate and vacuum device:

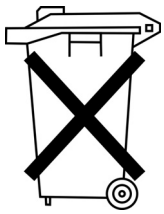
1. Pull pressure controller (1) or (4) down.
2. Turn the pressure controller until the pressure gage (2) or (3) indicates the proper setting:
   - Increase pressure: turn clockwise
   - Reduce pressure: turn counterclockwise
3. Push the pressure controller up.

10.6 Parts list

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

www.duerkopp-adler.com

11 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.

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.

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 these materials.

12 Troubleshooting

12.1 Customer Service

Contact for repairs and issues with the machine:

Dürkopp Adler GmbH

Potsdamer Str. 190
33719 Bielefeld, Germany

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

12.2 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.

Error messages

ERROR	Meaning
1000	Sewing motor encoder not plugged
1010	Sewing motor sync plug not connected
1051	Sewing motor timeout
1052	Sewing motor excess current
1053	Sewing motor overcurrent
1055	Sewing motor overload
1056	Sewing motor overtemperature
1058	Sewing motor speed not achieved
1059	Sewing motor speed inverted
1062	Sewing motor IDMA auto increment
1205	Sewing motor needle not in OT position
1301	Sewing motor referencing timeout
1302	Sewing motor current feed fault
1320	Sewing motor general fault
2101	X-axis stepper motor referencing timeout
2103	X-axis stepper motor step loss
2162	X-axis stepper motor IDMA auto increment
2201	Y-axis stepper motor referencing timeout
2203	Y-axis stepper motor step loss
2262	Y-axis stepper motor IDMA auto increment
2911	Stepper motor non-defined state
3100	Control voltage
3101	Power voltage
3102	Intermediate circuit voltage sewing motor
3103	Intermediate circuit voltage stepper motor
3107	Control internal temperature
3010	Voltage error 100 V (startup)
3011	Voltage error 100 V (short circuit)
3012	Voltage error 100 V (overload)
3020	Voltage error 24 V (startup)
3021	Voltage error 24 V (short circuit)
3022	Voltage error 24 V (overload)
3030	Sewing motor phase failure

ERROR	Meaning
3100	Control voltage
3101	Power voltage
3102	Intermediate circuit voltage sewing motor
3103	Intermediate circuit voltage stepping motor
3107	Control box temperature
3121	Compressed air too low or not connected
3726	Software version incorrect (firmware)
3727	Internal CAN card not detected
5301	Contour data - no data
5302	Contour data - sewing program too large
5305	Contour data - storage not permitted
5306	Contour data - impermissible data call
6361	No machine ID connected or failure
8151	IDMA not active
9112	Initialization error
9113	Machine not yet referenced
9114	Stepper motor coordinate incorrect
9115	Stepper motor line of travel not reached
9116	Unknown pocket form
9117	Technology point initial prompt incorrect
9119	Transfer plate coding incorrect
9120	Change of shape not enabled
9121	Change of winder not enabled
9150	Unknown subclass
9160	Measure Timeout Machine
9161	Maschine ausmessen: Werte sind nicht zulässig
9170	No transfer plate
9180	No technology point for transfer plate changeover
9211	Transfer arm not up
9212	Transfer arm not down
9213	Transfer plate slide not back
9221	Push button pressed too long
9222	Green push button pressed too long
9223	Red push button pressed too long

ERROR	Meaning
9224	Cancel push button pressed too long
9225	Left push button pressed too long
9226	Right push button pressed too long
9250	Emergency stop
9311	Edge folding initialization error
9312	Middle slide of edge folding station not at rear position
9313	Middle slide of edge folding station not at front position
9314	Middle slide of edge folding station not at lowered position
9315	Middle slide of edge folding station not at raised position
9316	Edge folding station not at rear position
9317	Edge folding station not at front position
9318	Edge folding station not at lowered position
9319	Edge folding station not at raised position
9411	Sewing head not at raised position
9412	Sewing head not at lowered position
9414	Bobbin flap open
9415	Sewing head not engaged
9511	Initial position of stacker not reached
9512	Stacker light barrier not reflecting
9513	Stacker light barrier not covered or advance roller not installed
9611	Flap feeder not at left position
9612	Flap feeder not at right position
9613	Flap folder not at front position
9614	Flap folder not at rear position
9615	Flap crank not at pocket or flap position
9616	Flap crank not at pocket position
9617	Flap crank not at flap position
9618	Flap crank sensors mixed up
9999	No error description available

13 Technical data

Data and characteristic values

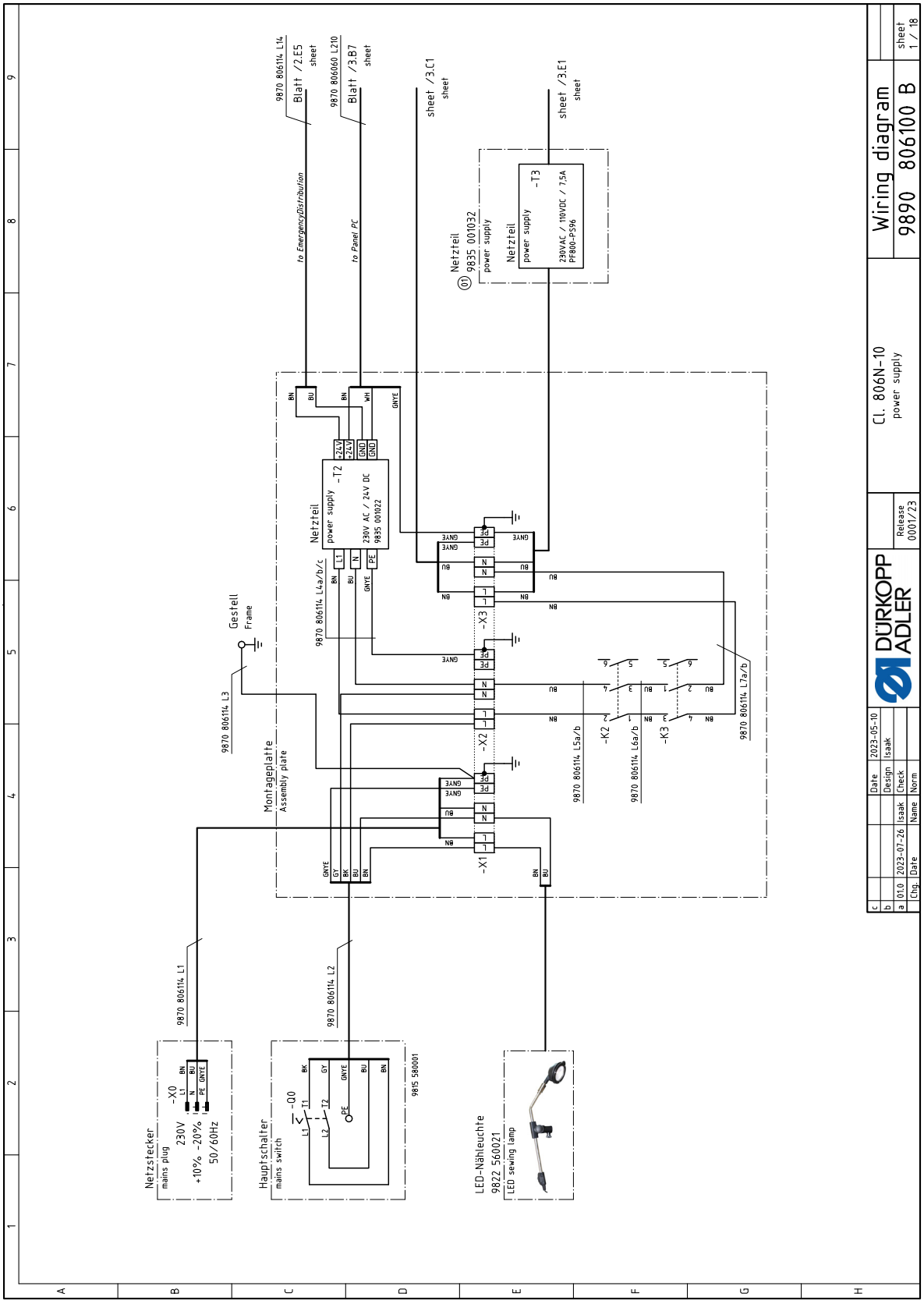
Technical data	Unit	806N-111-10	806N-121-10
Machine type		Sewing unit	
Hook type		Vertical hook, big (L)	Horizontal hook, small (S)
Stitch type		301/Double lockstitch	
Number of needles		1	
Needle system		134	
Needle strength	[Nm]	80-140	70-100
Thread strength	[Nm]	12/3	50/2
Stitch length	[mm]	3,5	3
Max. speed	[min^{-1}]	3800	4000
Mains voltage	[V]	1 x 230	
Operating pressure	[bar]	6	
Length	[mm]	2300	
Width	[mm]	1750	
Height	[mm]	1750	
Weight	[kg]	630	600

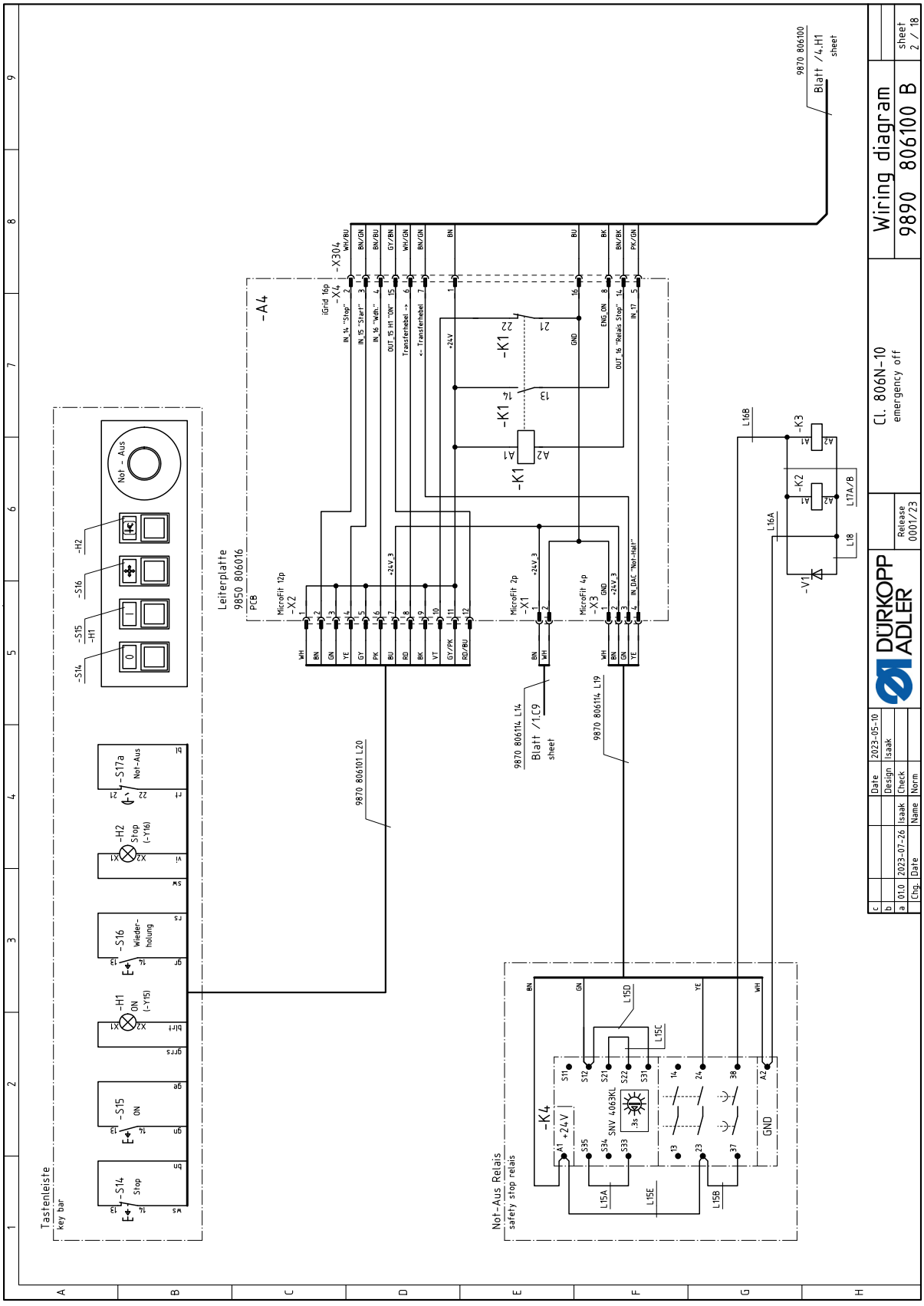
13.1 Requirements for fault-free operation

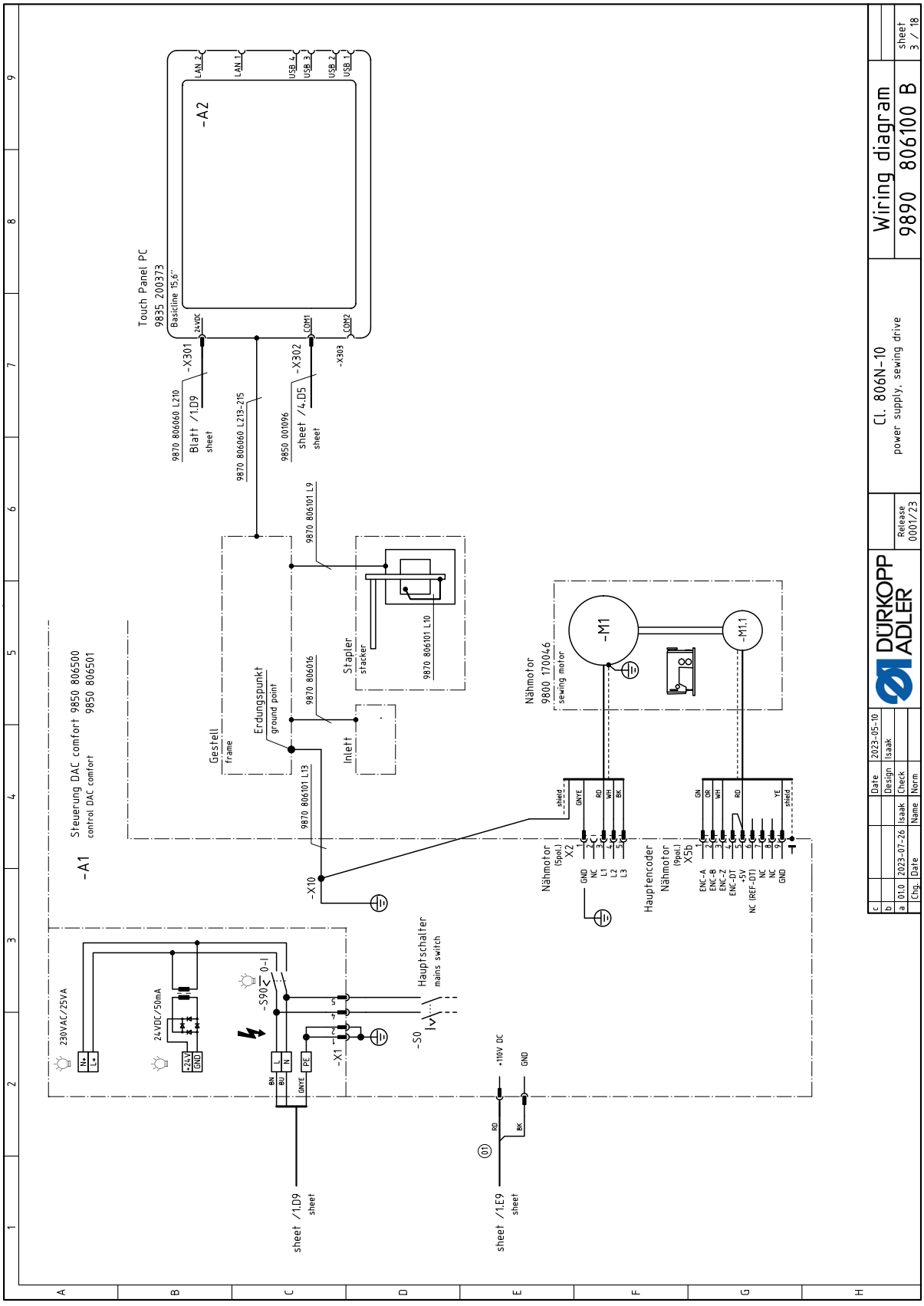
Compressed air quality must conform to ISO 8573-1: 2010 [7:4:4].

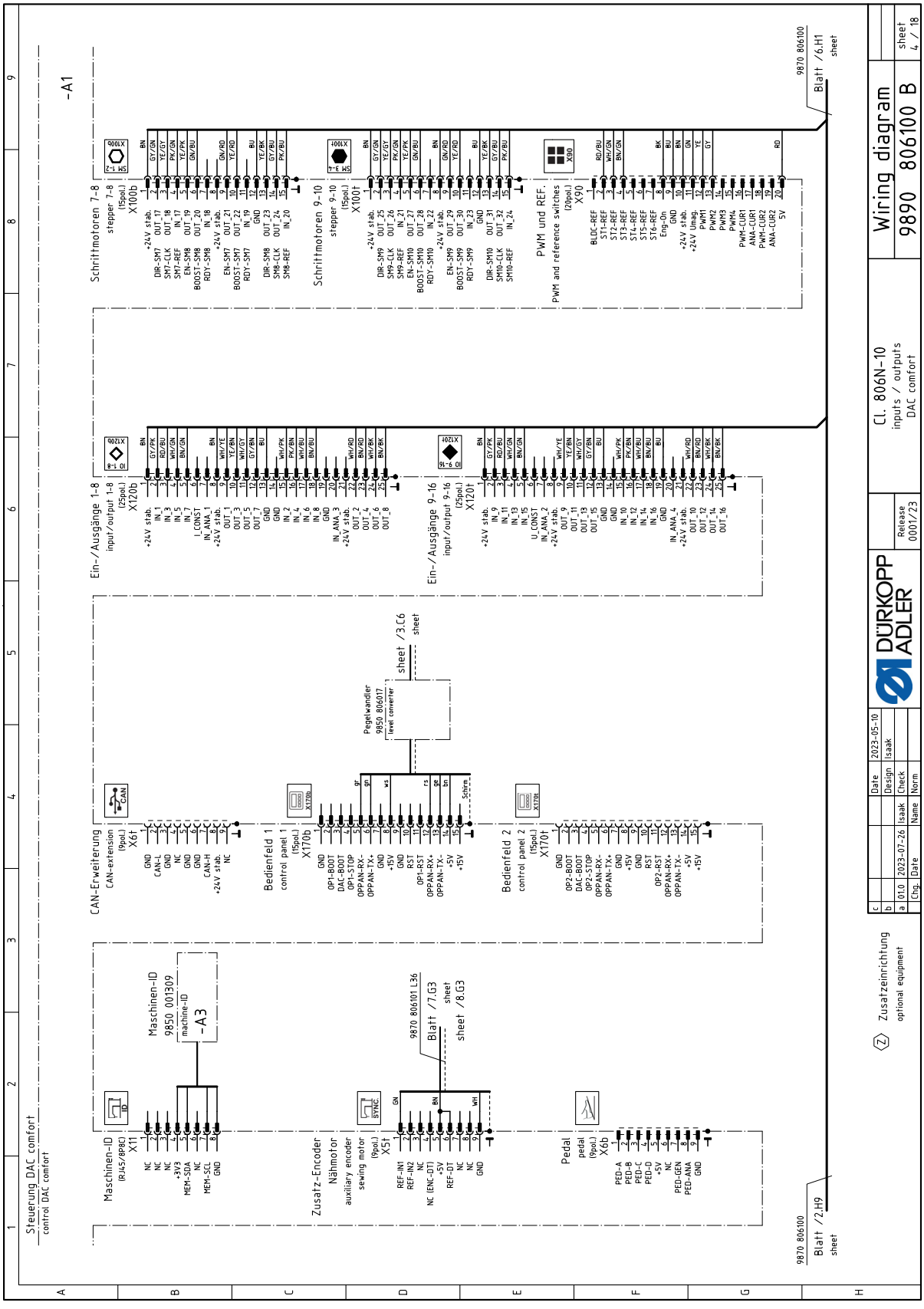
14 Appendix

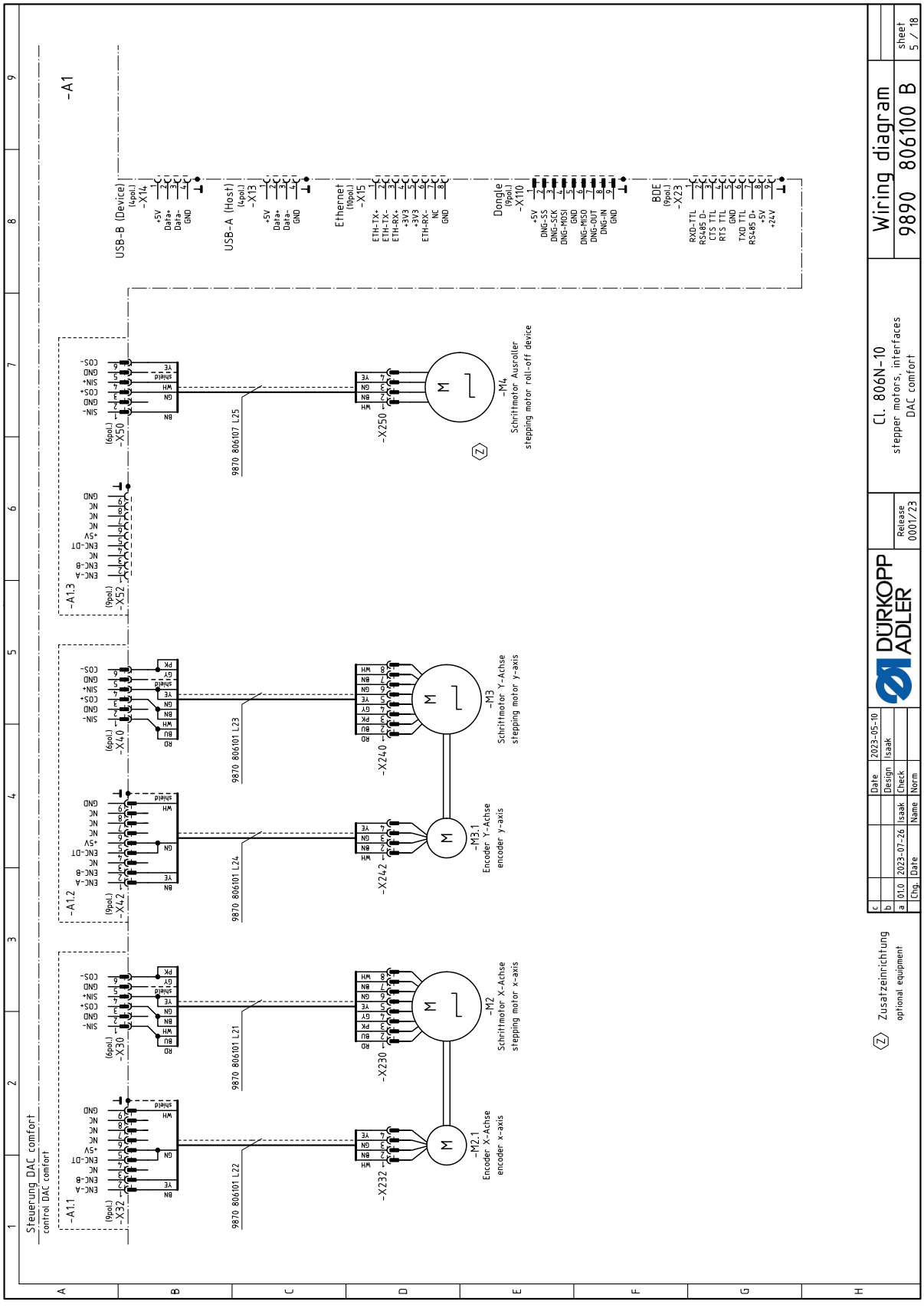
Wiring diagram

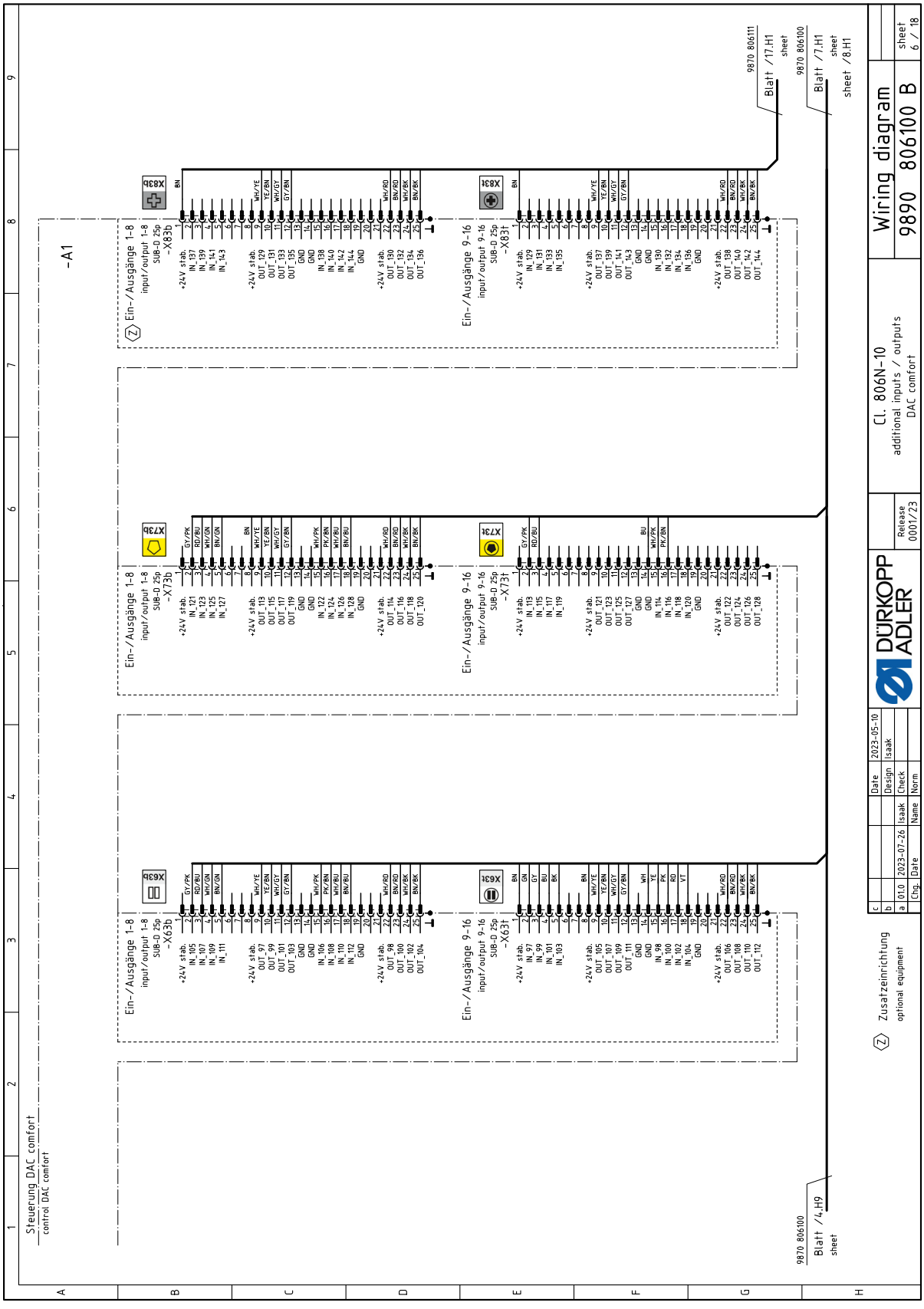


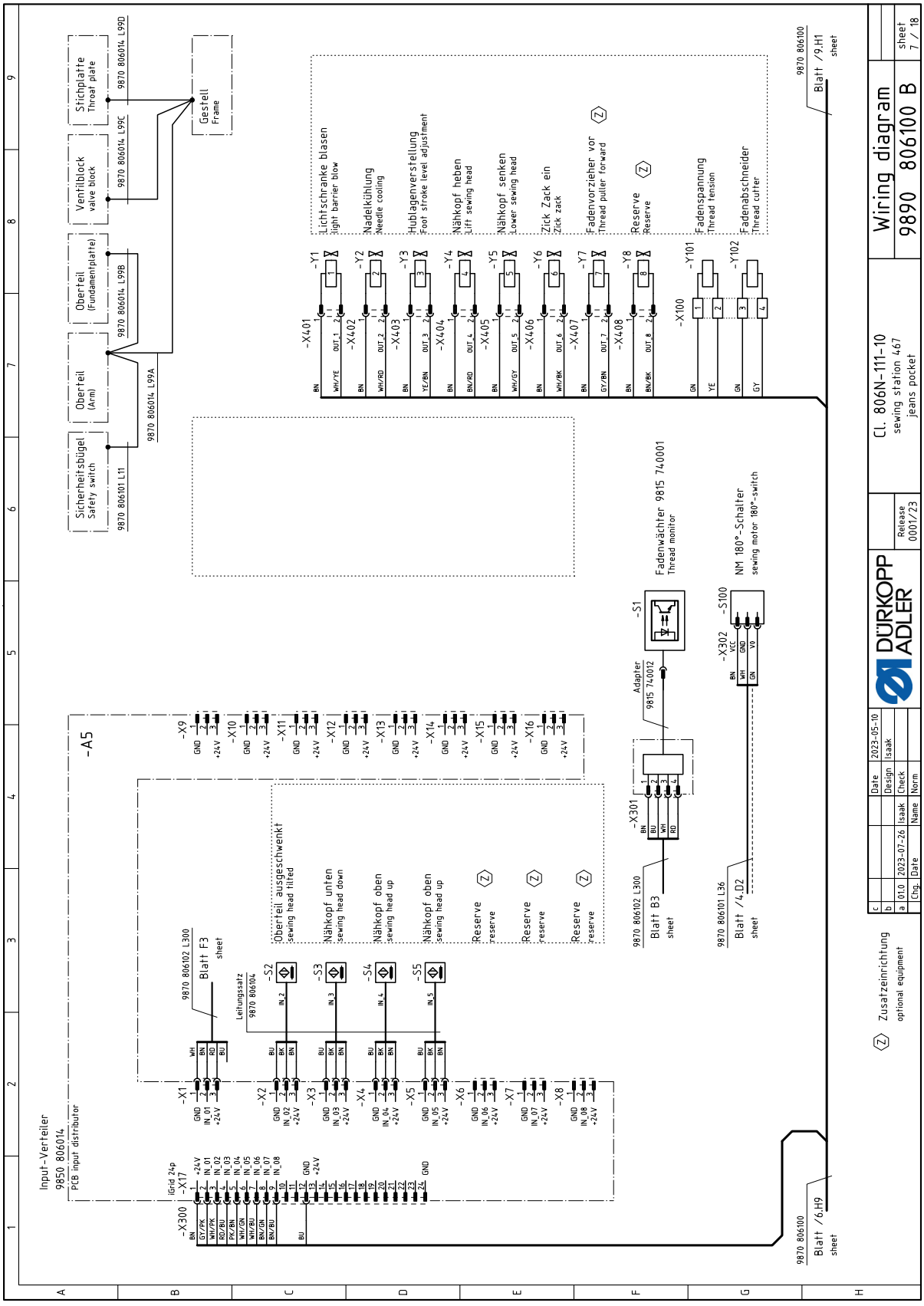

Wiring diagram
9890 806100 B
Cl. 806N-10
emergency off
Release 0001/23
Leiterplatte
9850 806016
PCB
-A4
-K1
-K2
-K3
-K4
-V1
-S14 Stop
-S15 ON
-S16 Wieder-holung
-S17a Not-Aus
-H1 ON (-Y15)
-H2 Stop (-Y16)
Not - Aus
Tastenleiste
key bar
Not-Aus Relais
safety stop relais
SNV 4063KL
GND
9870 806100 Blatt /4,H1 sheet
9870 806101 L20
9870 806114 L14 Blatt /1,C9 sheet
9870 806114 L19
L16B
L16A
L17A/B
L18
L15A
L15B
L15C
L15D
L15E

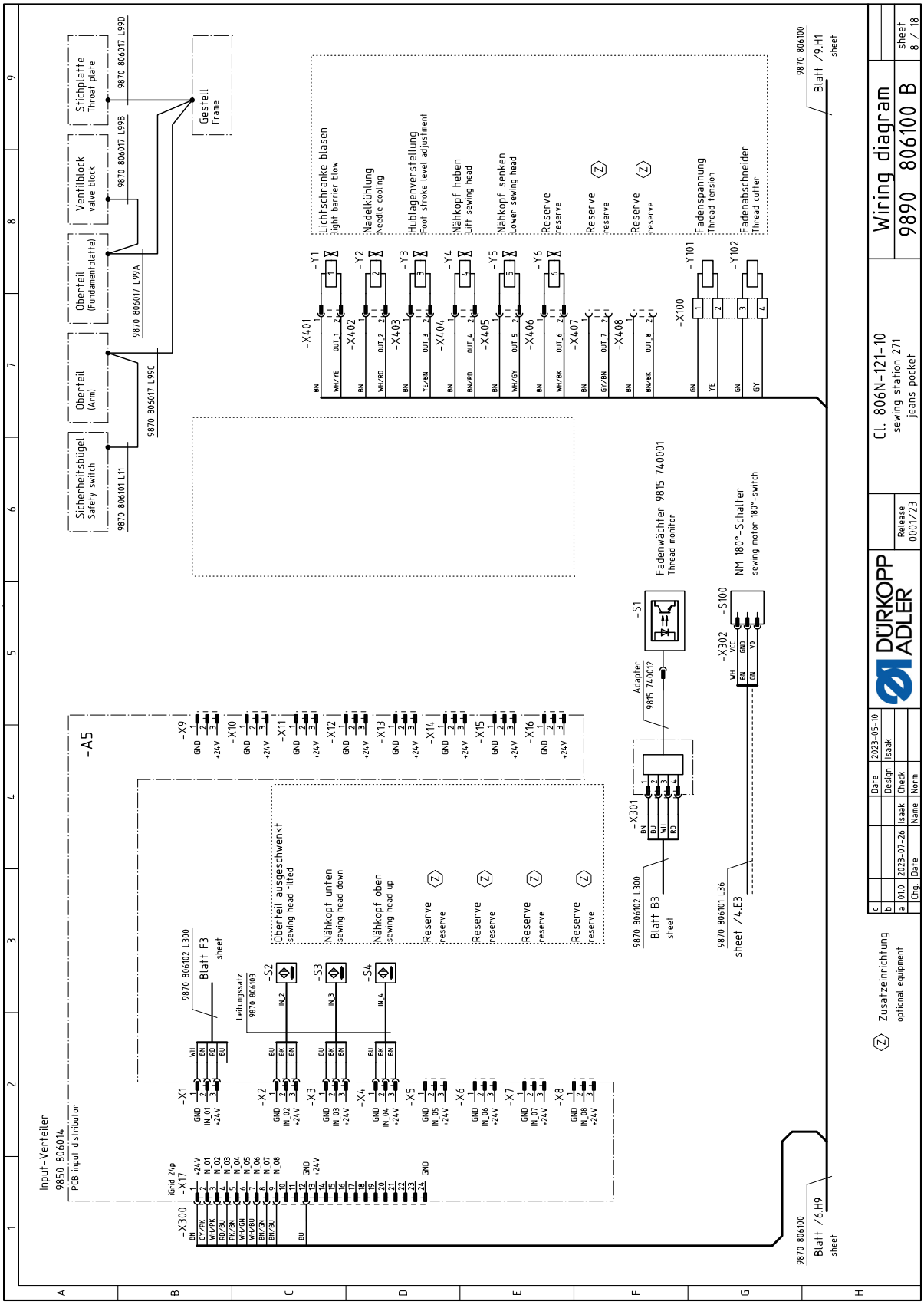

Touch Panel PC
9835 200373
Basicline 15.6"
-A2
LAN 2
LAN 1
USB 4
USB 3
USB 2
USB 1
24VDC
COM1
COM2
-X301
-X302
-X303
9870 806060 L210
Blatt /1.D9
sheet
9870 806060 L213-215
9850 001096
sheet /4.D5
sheet
9870 806101 L9
9870 806101 L10
Stapler
stacker
Gestell
frame
Erdungspunkt
ground point
9870 806016
Inlett
9870 806101 L13
Steuerung DAC comfort 9850 806500
control DAC comfort 9850 806501
-A1
-X10
Nähmotor
9800 170046
sewing motor
-M1
-M1.1
Nähmotor
(5pol.)
X2
shield
GNYE
RD
WH
BK
GND
NC
L1
L2
L3
Hauptencoder
Nähmotor
(9pol.)
X5b
GN
OR
WH
RD
YE
shield
ENC-A
ENC-B
ENC-Z
ENC-DT
+5V
NC (REF-DT)
NC
NC
GND
230VAC/25VA
24VDC/50mA
+24V
GND
-S90
0-I
Hauptschalter
mains switch
-S0
-X1
L
N
PE
BN
BU
GNYE
+110V DC
GND
RD
BK
sheet /1.D9
sheet
sheet /1.E9
sheet
Date
2023-05-10
Design
Isaak
Check
Norm
Name
Isaak
2023-07-26
Date
Chg.
01.0
a
b
c
DÜRKOPP ADLER
Release
0001/23
Cl. 806N-10
power supply, sewing drive
Wiring diagram
9890 806100 B
sheet
3 / 18

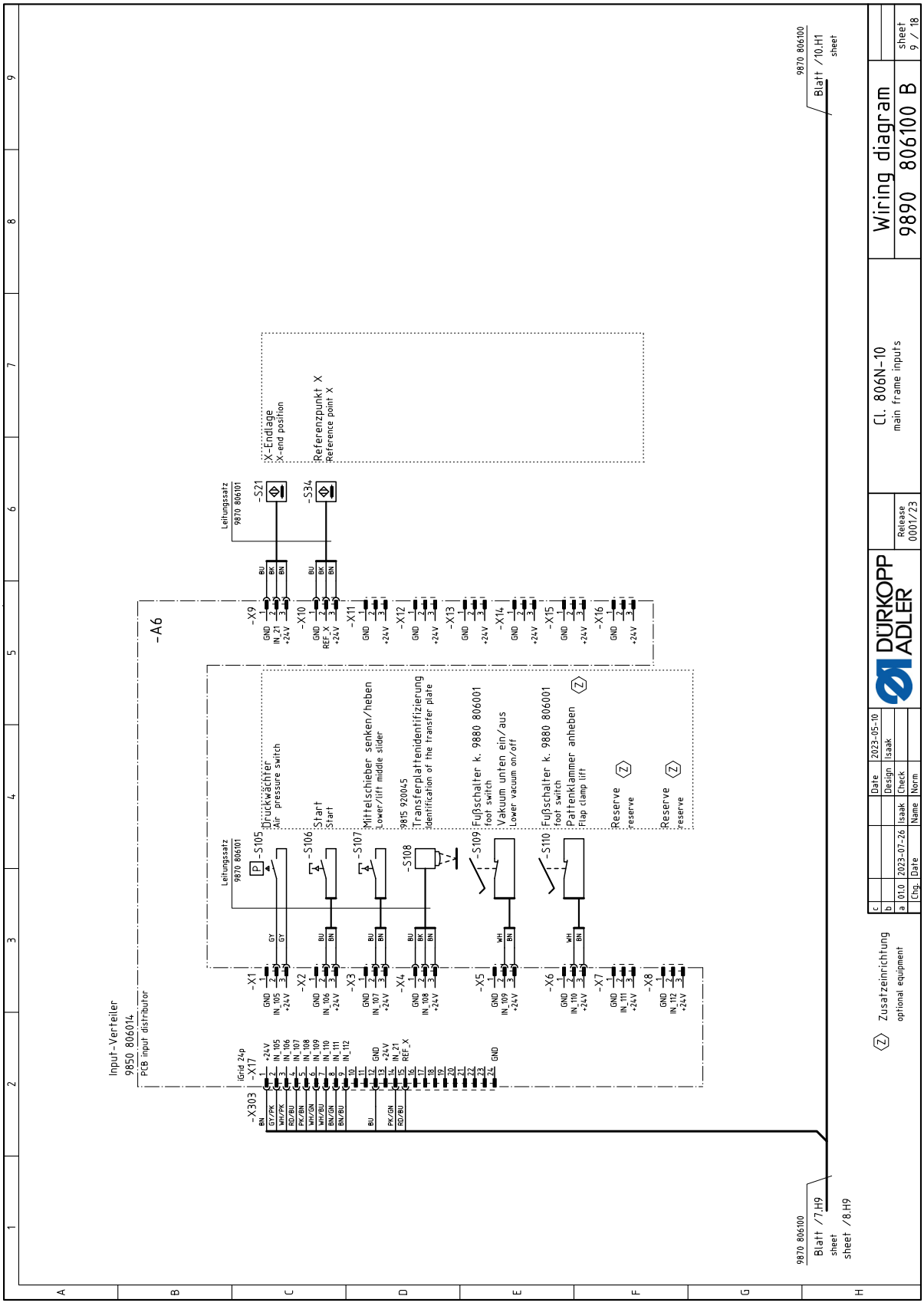

Steuerung DAC comfort
control DAC comfort
-A1
CAN-Erweiterung
CAN-extension
Bedienfeld 1
control panel 1
Bedienfeld 2
control panel 2
Ein-/Ausgänge 1-8
input/output 1-8
Ein-/Ausgänge 9-16
input/output 9-16
Schrittmotoren 7-8
stepper 7-8
Schrittmotoren 9-10
stepper 9-10
PWM und REF.
PWM and reference switches
Maschinen-ID
machine-ID
-A3
Zusatz-Encoder Nähmotor
auxiliary encoder sewing motor
Pedal
Pegelwandler 9850 806017
level converter
Cl. 806N-10
inputs / outputs
DAC comfort
Wiring diagram
9890 806100 B
Release 0001/23
Zusatzeinrichtung
optional equipment

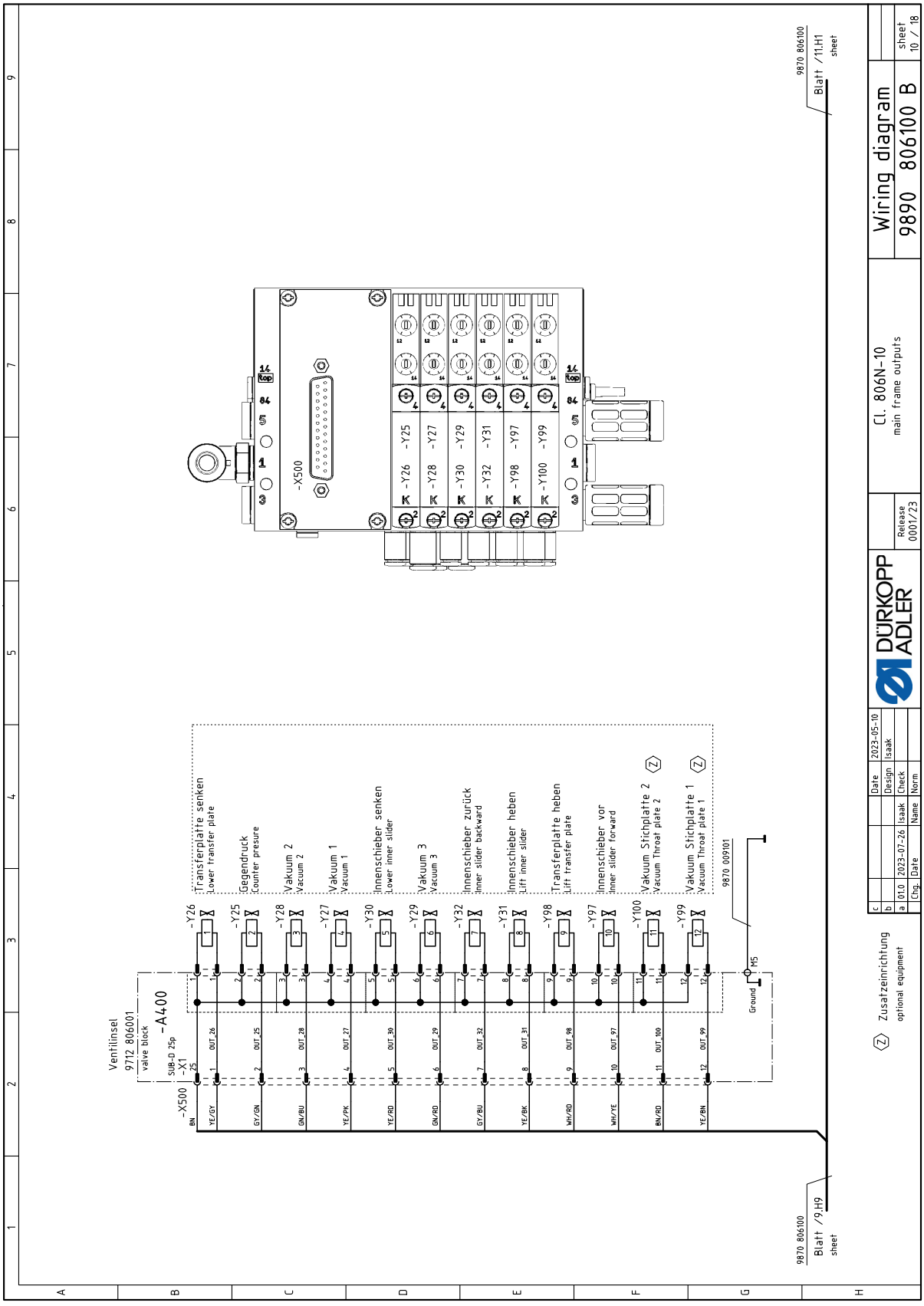

-A1
USB-B (Device)
(4pol.)
-X14
+5V
Data+
Data-
GND
USB-A (Host)
(4pol.)
-X13
Ethernet
(10pol.)
-X15
ETH-TX+
ETH-TX-
ETH-RX+
+3V3
+3V3
ETH-RX-
NC
GND
Dongle
(9pol.)
-X110
+5V
DNG-SS
DNG-SCK
DNG-MOSI
GND
DNG-MISO
DNG-OUT
DNG-IN
GND
BDE
(9pol.)
-X23
RXD-TTL
RS485 D-
CTS TTL
RTS TTL
GND
TXD TTL
RS485 D+
+5V
+24V
-A1.1
-X32
-A1.2
-X42
-A1.3
-X52
-X30
-X40
-X50
-X232
-X242
-X252
-X230
-X240
-X250
-M2.1
Encoder X-Achse
encoder x-axis
-M2
Schrittmotor X-Achse
stepping motor x-axis
-M3.1
Encoder Y-Achse
encoder y-axis
-M3
Schrittmotor Y-Achse
stepping motor y-axis
-M4
Schrittmotor Ausroller
stepping motor roll-off device
9870 806101 L22
9870 806101 L21
9870 806101 L24
9870 806101 L23
9870 806107 L25
Steuerung DAC comfort
control DAC comfort
Zusatzeinrichtung
optional equipment
DÜRKOPP ADLER
Release
0001/23
Cl. 806N-10
stepper motors, interfaces
DAC comfort
Wiring diagram
9890 806100 B
sheet
5 / 18
Date
Design
Check
Norm
Isaak
2023-05-10
Chg.
Date
Name
2023-07-26
Isaak
01.0

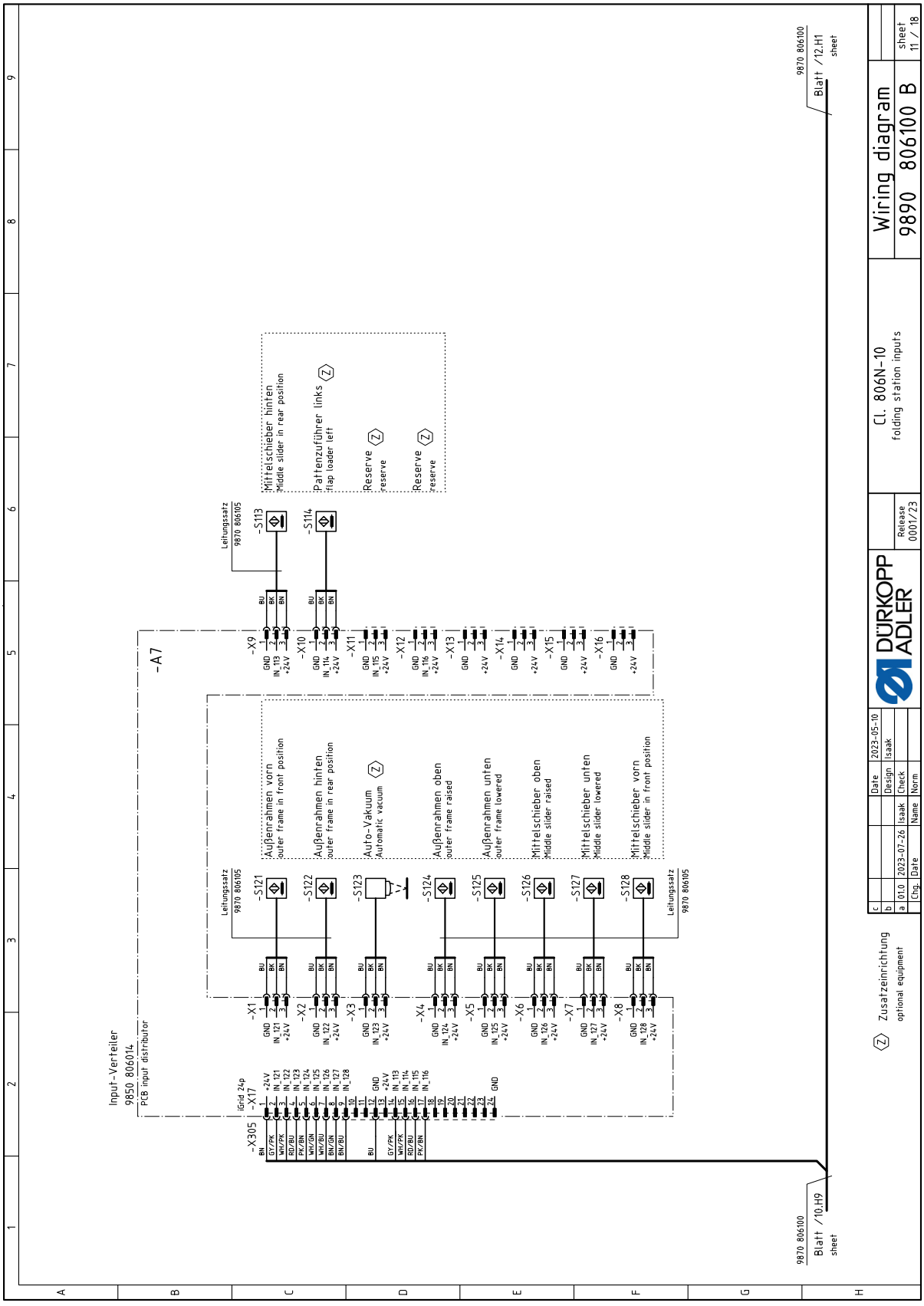

Steuerung DAC comfort
control DAC comfort
-A1
Ein-/Ausgänge 1-8
input/output 1-8
SUB-D 25p
-X63b
Ein-/Ausgänge 9-16
input/output 9-16
-X63t
-X73b
-X73t
-X83b
-X83t
+24V stab.
OUT_129
OUT_131
OUT_133
OUT_135
GND
IN_138
IN_140
IN_142
IN_144
OUT_130
OUT_132
OUT_134
OUT_136
IN_137
IN_139
IN_141
IN_143
IN_121
IN_123
IN_125
IN_127
OUT_113
OUT_115
OUT_117
OUT_119
IN_122
IN_124
IN_126
IN_128
OUT_114
OUT_116
OUT_118
OUT_120
IN_113
IN_115
IN_117
IN_119
OUT_121
OUT_123
OUT_125
OUT_127
IN_114
IN_116
IN_118
IN_120
OUT_122
OUT_124
OUT_126
OUT_128
IN_97
IN_99
IN_101
IN_103
OUT_105
OUT_107
OUT_109
OUT_111
IN_98
IN_100
IN_102
IN_104
OUT_106
OUT_108
OUT_110
OUT_112
IN_105
IN_107
IN_109
IN_111
OUT_97
OUT_99
OUT_101
OUT_103
IN_130
IN_132
IN_134
IN_136
OUT_138
OUT_140
OUT_142
OUT_144
IN_129
IN_131
IN_133
IN_135
OUT_137
OUT_139
OUT_141
OUT_143
9870 806111
Blatt /17.H1
sheet
9870 806100
Blatt /7.H1
sheet
sheet /8.H1
9870 806100
Blatt /4.H9
sheet
Zusatzeinrichtung
optional equipment
Cl. 806N-10
additional inputs / outputs
DAC comfort
Wiring diagram
9890 806100 B
sheet 6 / 18
Release 0001/23
Date 2023-05-10
Design Isaak
Check
Norm
Name
Chg. Date
a 01.0 2023-07-26 Isaak

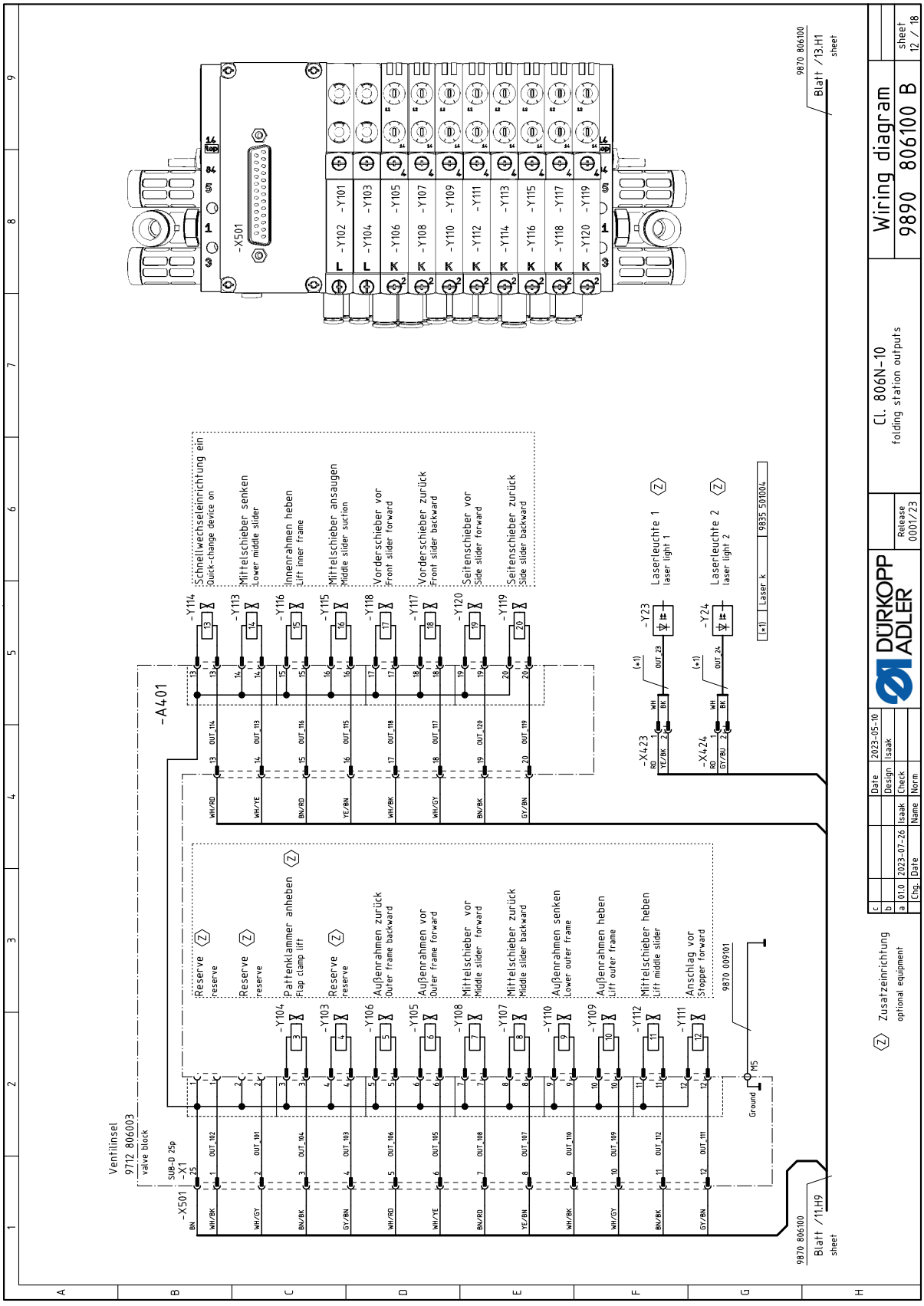

Wiring diagram
9890 806100 B
Cl. 806N-111-10
sewing station 467
Jeans pocket
Release 0001/23
Input-Verteiler
9850 806014
PCB input distributor
-A5
Sicherheitsbügel
Safety switch
Oberteil (Arm)
Oberteil (Fundamentplatte)
Ventilblock
valve block
Stichplatte
Throat plate
Gestell
Frame
Lichtschranke blasen
light barrier blow
Nadelkühlung
Needle cooling
Hublagenverstellung
Foot stroke level adjustment
Nähkopf heben
Lift sewing head
Nähkopf senken
Lower sewing head
Zick Zack ein
Zick zack
Fadenvorzieher vor
Thread puller forward
Reserve
Reserve
Fadenspannung
Thread tension
Fadenabschneider
Thread cutter
Fadenwächter 9815 740001
Thread monitor
NM 180°-Schalter
sewing motor 180°-switch
Adapter
9815 740012
Oberteil ausgeschwenkt
sewing head tilted
Nähkopf unten
sewing head down
Nähkopf oben
sewing head up
Nähkopf oben
sewing head up
Reserve
reserve
Reserve
reserve
Reserve
reserve
Leitungssatz
9870 806104
Zusatzeinrichtung
optional equipment

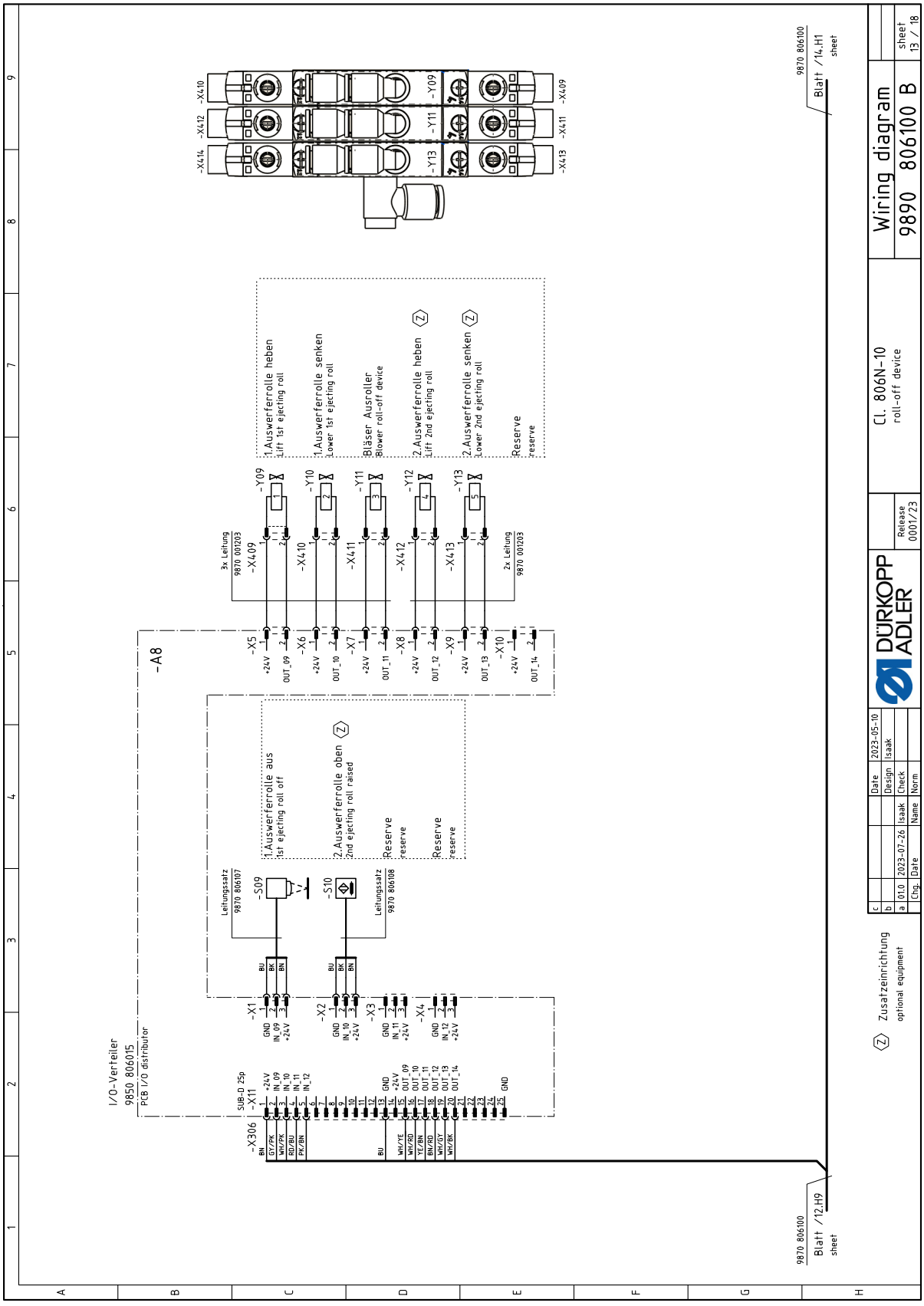

Wiring diagram
9890 806100 B
Cl. 806N-121-10
sewing station 271
jeans pocket
Release 0001/23
DÜRKOPP ADLER
Input-Verteiler
9850 806014
PCB input distributor
-A5
Sicherheitsbügel
Safety switch
Oberteil (Arm)
Oberteil (Fundamentplatte)
Ventilblock
valve block
Stichplatte
Throat plate
Gestell
Frame
9870 806017 L11
9870 806017 L99A
9870 806017 L99C
9870 806017 L99B
9870 806017 L99D
Lichtschranke blasen
light barrier blow
Nadelkühlung
Needle cooling
Hublagenverstellung
Foot stroke level adjustment
Nähkopf heben
Lift sewing head
Nähkopf senken
Lower sewing head
Reserve
reserve
Fadenspannung
Thread tension
Fadenabschneider
Thread cutter
Oberteil ausgeschwenkt
sewing head tilted
Nähkopf unten
sewing head down
Nähkopf oben
sewing head up
Fadenwächter 9815 740001
Thread monitor
NM 180°-Schalter
sewing motor 180°-switch
Adapter
9815 740012
9870 806102 L300
Blatt F3
Leitungssatz
9870 806103
9870 806101 L36
sheet /4.E3
9870 806100
Blatt /6.H9
Blatt /9.H1
Zusatzeinrichtung
optional equipment
2023-05-10
Isaak
2023-07-26
Isaak
sheet 8 / 18

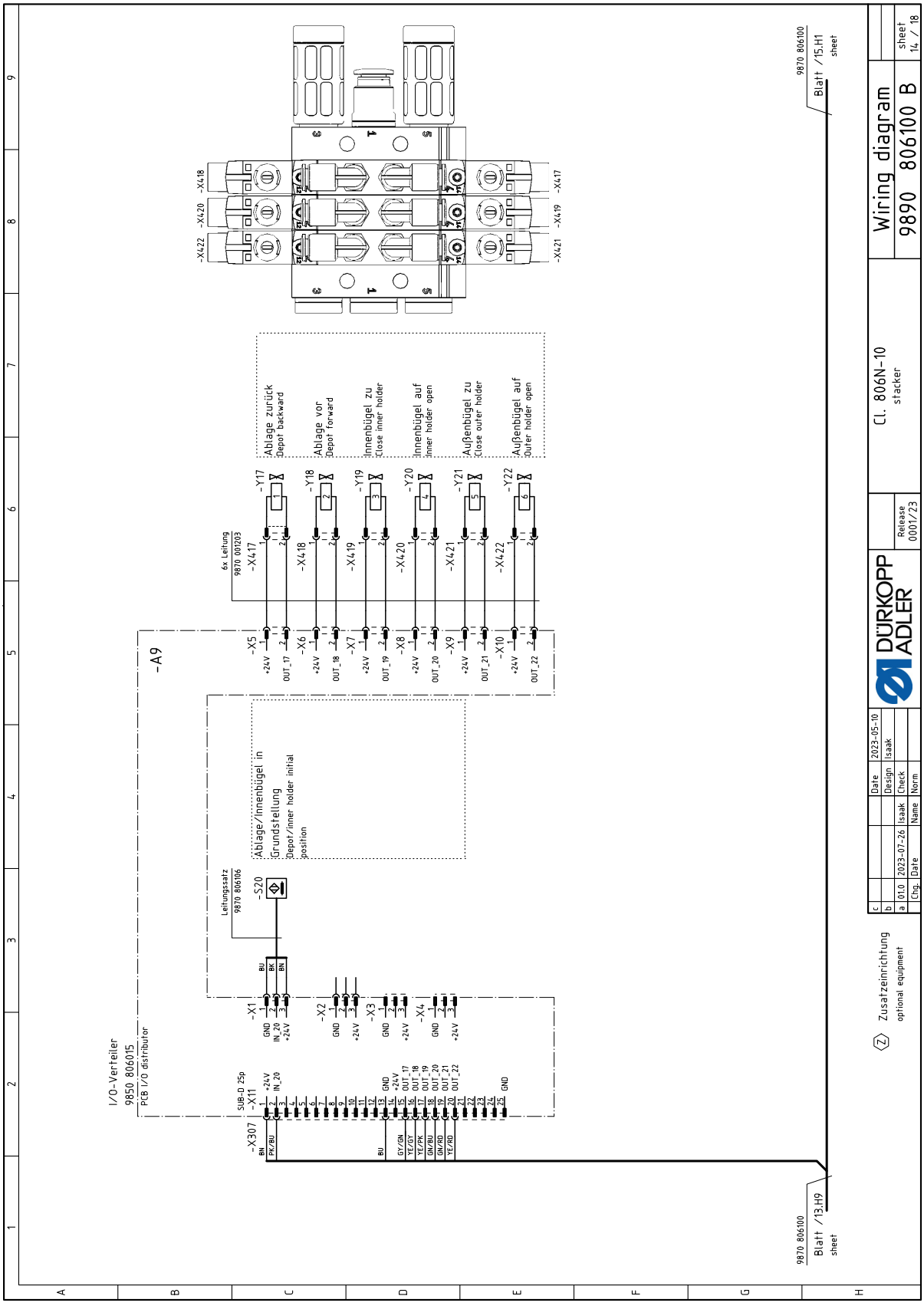

Input-Verteiler
9850 806014
PCB input distributor
-A6
Leitungssatz
9870 806101
-S21
-S34
X-Endlage
X-end position
Referenzpunkt X
Reference point X
-S105
Druckwächter
Air pressure switch
-S106
Start
Start
-S107
Mittelschieber senken/heben
Lower/lift middle slider
-S108
9815 920045
Transferplattenidentifizierung
Identification of the transfer plate
-S109
Fußschalter k. 9880 806001
Foot switch
Vakuum unten ein/aus
Lower vacuum on/off
-S110
Fußschalter k. 9880 806001
Foot switch
Paffenklammer anheben
Flap clamp lift
Reserve
reserve
Reserve
reserve
-X1
-X2
-X3
-X4
-X5
-X6
-X7
-X8
-X9
-X10
-X11
-X12
-X13
-X14
-X15
-X16
-X17
-X303
iGrid 24p
Zusatzeinrichtung
optional equipment
9870 806100
Blatt /7.H9
sheet /8.H9
9870 806100
Blatt /10.H1
sheet
Cl. 806N-10
main frame inputs
Wiring diagram
9890 806100 B
sheet 9 / 18
DÜRKOPP ADLER
Release 0001/23
Date 2023-07-26
Name Isaak
Chg. Date
01.0
Date 2023-05-10
Design Isaak
Check
Norm

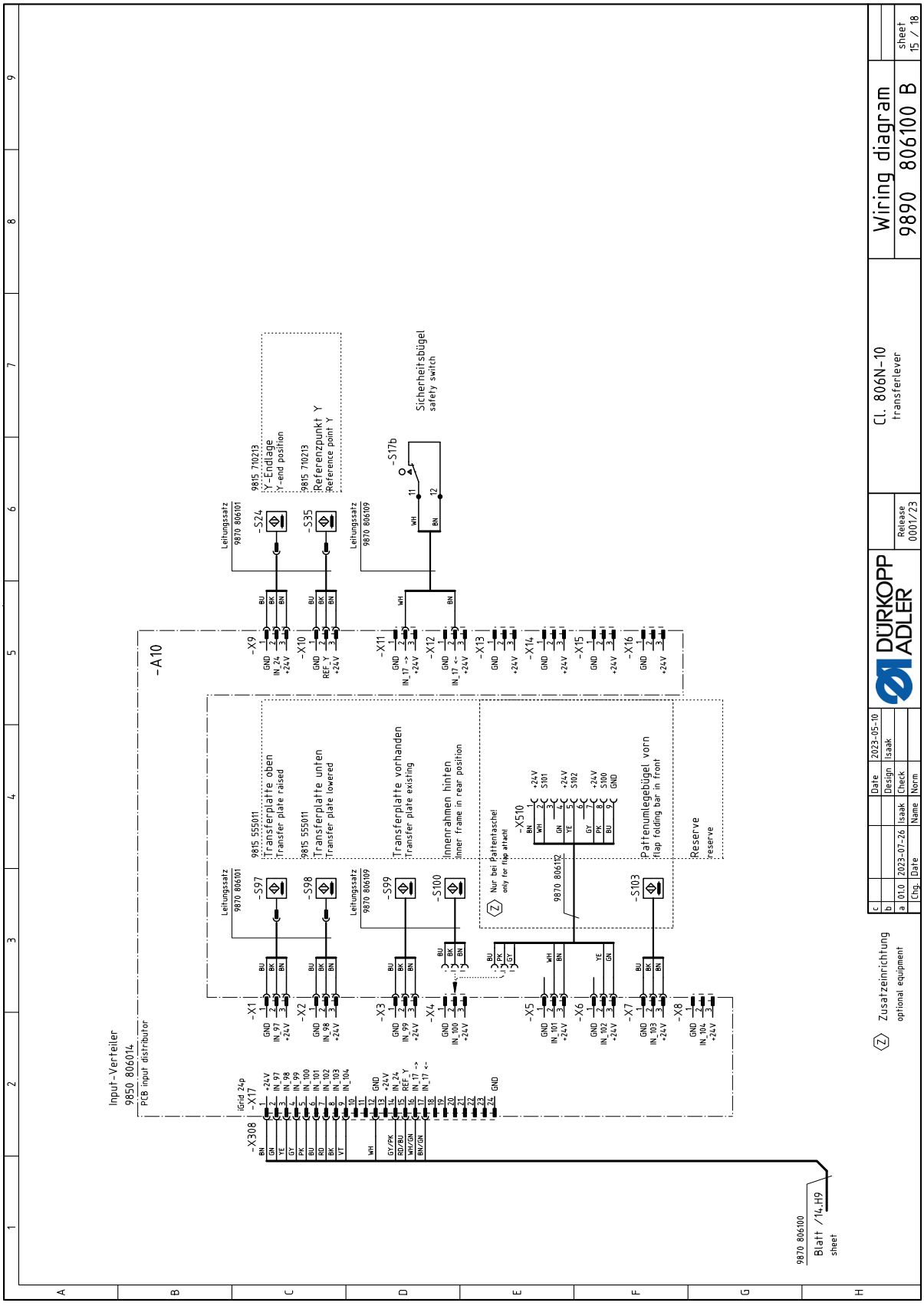

Wiring diagram
9890 806100 B
Cl. 806N-10
main frame outputs
Release 0001/23
DÜRKOPP ADLER
Ventilinsel
9712 806001
valve block
-A400
-X1
SUB-D 25p
-X500
-X500
-Y26 -Y25 -Y28 -Y27 -Y30 -Y29 -Y32 -Y31 -Y98 -Y97 -Y100 -Y99
Transferplatte senken
Lower transfer plate
Gegendruck
Counter presure
Vakuum 2
Vacuum 2
Vakuum 1
Vacuum 1
Innenschieber senken
Lower inner slider
Vakuum 3
Vacuum 3
Innenschieber zurück
Inner slider backward
Innenschieber heben
Lift inner slider
Transferplatte heben
Lift transfer plate
Innenschieber vor
Inner slider forward
Vakuum Stichplatte 2
Vacuum Throat plate 2
Vakuum Stichplatte 1
Vacuum Throat plate 1
Ground
M5
9870 009101
Zusatzeinrichtung
optional equipment
9870 806100
Blatt /9 H9
sheet
9870 806100
Blatt /11 H1
sheet
Date 2023-05-10
Design Isaak
Check
Norm
Name
Chg. Date
a 01.0 2023-07-26 Isaak
sheet 10 / 18

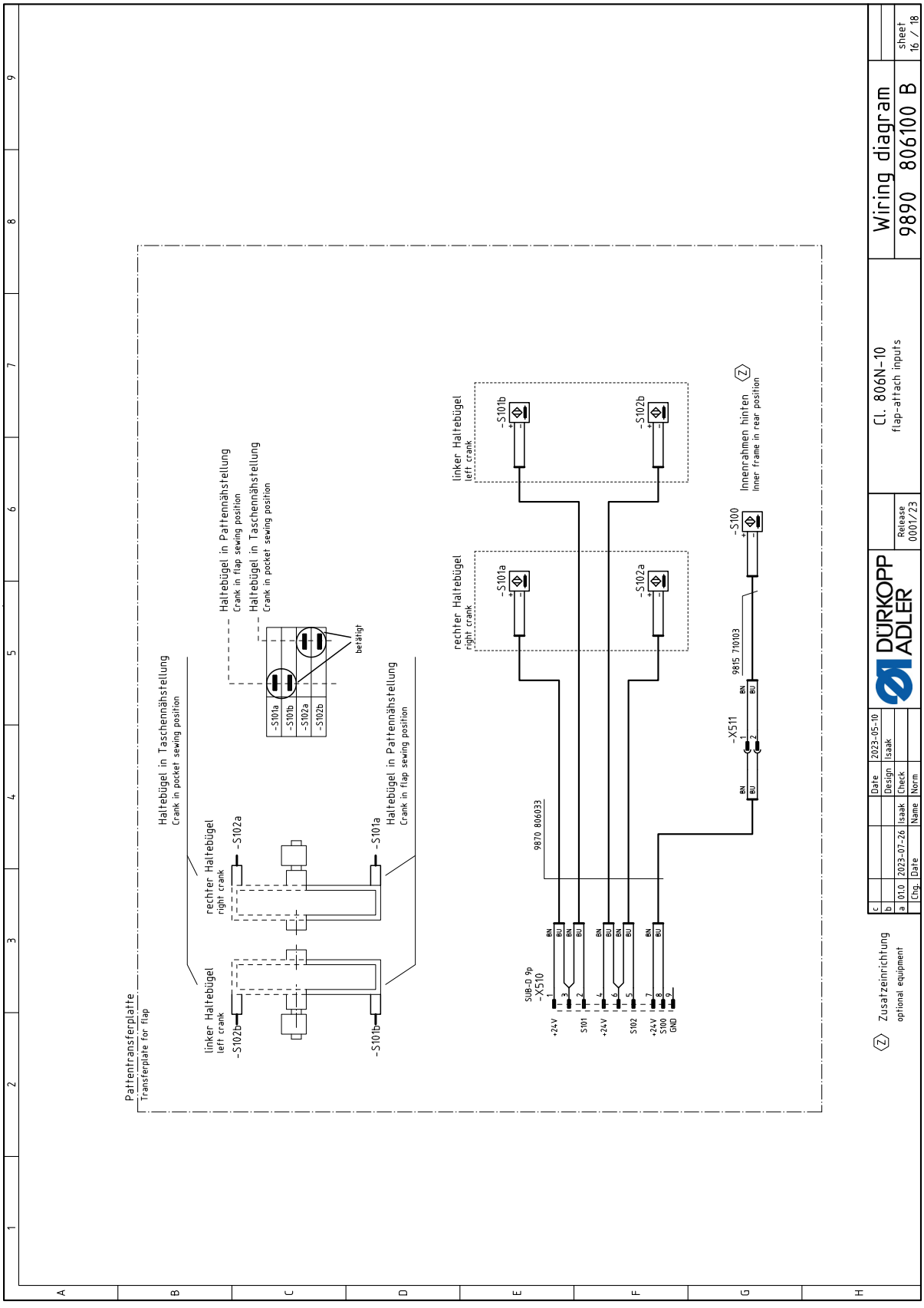

Wiring diagram
9890 806100 B
Cl. 806N-10
folding station inputs
Release 0001/23
DÜRKOPP ADLER
Date 2023-05-10
Design Isaak
Check
Norm
Name
Chg. Date
a 01.0 2023-07-26 Isaak
sheet 11 / 18
Input-Verteiler
9850 806014
PCB input distributor
-A7
Leitungssatz 9870 806105
Außenrahmen vorn
outer frame in front position
Außenrahmen hinten
outer frame in rear position
Auto-Vakuum
Automatic vacuum
Außenrahmen oben
outer frame raised
Außenrahmen unten
outer frame lowered
Mittelschieber oben
Middle slider raised
Mittelschieber unten
Middle slider lowered
Mittelschieber vorn
Middle slider in front position
Mittelschieber hinten
Middle slider in rear position
Pattenzuführer links
Flap loader left
Reserve
reserve
Zusatzeinrichtung
optional equipment
9870 806100
Blatt /10.H9
Blatt /12.H1
sheet

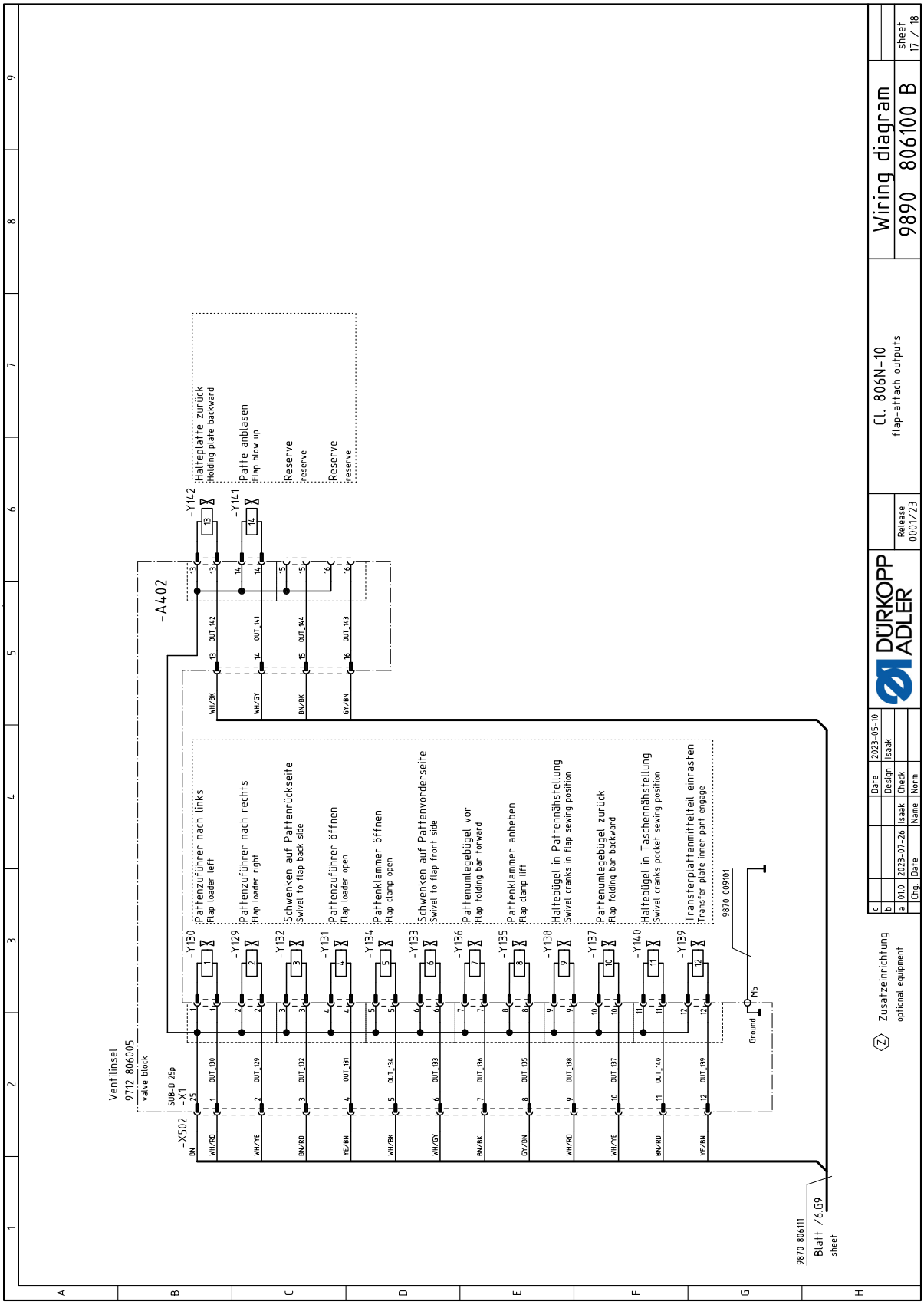

Cl. 806N-10
folding station outputs
Wiring diagram
9890 806100 B
sheet 12 / 18
DÜRKOPP ADLER
Release 0001/23
Date 2023-05-10
Design Isaak
Check
Norm
Name
Date 2023-07-26 Isaak
Chg.
a 01.0
b
c
-A401
-X501
-X1
SUB-D 25p
25
Ventilinsel
9712 806003
valve block
-X423
-X424
-X501
-X1
-Y23
-Y24
Laserleuchte 1
laser light 1
Laserleuchte 2
laser light 2
Laser K
9835 501004
Schnellwechseleinrichtung ein
Quick-change device on
Mittelschieber senken
Lower middle slider
Innenrahmen heben
Lift inner frame
Mittelschieber ansaugen
Middle slider suction
Vorderschieber vor
Front slider forward
Vorderschieber zurück
Front slider backward
Seitenschieber vor
Side slider forward
Seitenschieber zurück
Side slider backward
Reserve
reserve
Reserve
reserve
Paftenklammer anheben
Flap clamp lift
Reserve
reserve
Außenrahmen zurück
Outer frame backward
Außenrahmen vor
Outer frame forward
Mittelschieber vor
Middle slider forward
Mittelschieber zurück
Middle slider backward
Außenrahmen senken
Lower outer frame
Außenrahmen heben
Lift outer frame
Mittelschieber heben
Lift middle slider
Anschlag vor
Stopper forward
Ground
9870 009101
M5
Zusatzeinrichtung
optional equipment
9870 806100
Blatt /11.H9
sheet
9870 806100
Blatt /13.H1
sheet


Wiring diagram
9890 806100 B
Cl. 806N-10
roll-off device
Release 0001/23
DÜRKOPP ADLER
I/O-Verteiler
9850 806015
PCB I/O distributor
-A8
-X306
-X11
-X1
-X2
-X3
-X4
-X5
-X6
-X7
-X8
-X9
-X10
-X409
-X410
-X411
-X412
-X413
-X414
-S09
-S10
-Y09
-Y10
-Y11
-Y12
-Y13
1.Auswerferrolle aus
1st ejecting roll off
2.Auswerferrolle oben
2nd ejecting roll raised
1.Auswerferrolle heben
Lift 1st ejecting roll
1.Auswerferrolle senken
Lower 1st ejecting roll
Bläser Ausroller
Blower roll-off device
2.Auswerferrolle heben
Lift 2nd ejecting roll
2.Auswerferrolle senken
Lower 2nd ejecting roll
Reserve
reserve
Leitungssatz
9870 806107
Leitungssatz
9870 806108
3x Leitung
9870 001203
2x Leitung
9870 001203
Zusatzeinrichtung
optional equipment
9870 806100
Blatt /12_H9
sheet
9870 806100
Blatt /14_H1
sheet
sheet
13 / 18


Wiring diagram
9890 806100 B
Cl. 806N-10
stacker
Release 0001/23
I/O-Verteiler
9850 806015
PCB I/O distributor
-A9
Zusatzeinrichtung
optional equipment
Ablage zurück
Depot backward
Ablage vor
Depot forward
Innenbügel zu
Close inner holder
Innenbügel auf
Inner holder open
Außenbügel zu
Close outer holder
Außenbügel auf
Outer holder open
Ablage/Innenbügel in Grundstellung
Depot/inner holder initial position
6x Leitung
9870 001203
Leitungssatz
9870 806106
-X307
-X11
-X1
-X2
-X3
-X4
-X5
-X6
-X7
-X8
-X9
-X10
-X417
-X418
-X419
-X420
-X421
-X422
-S20
-Y17
-Y18
-Y19
-Y20
-Y21
-Y22
9870 806100
Blatt /15.H1
sheet
9870 806100
Blatt /13.H9
sheet
sheet 14 / 18


Wiring diagram
9890 806100 B
Cl. 806N-10
transferlever
Release 0001/23
sheet 15 / 18
Input-Verteiler
9850 806014
PCB input distributor
-A10
Sicherheitsbügel
safety switch
-S17b
Transferplatte oben
Transfer plate raised
Transferplatte unten
Transfer plate lowered
Transferplatte vorhanden
Transfer plate existing
Innenrahmen hinten
Inner frame in rear position
Nur bei Plattentasche
only for flap attach
Plattenumlegebügel vorn
flap folding bar in front
Reserve
reserve
Zusatzeinrichtung
optional equipment
Leitungssatz
9870 806101
Leitungssatz
9870 806109
9870 806100
Blatt /14.H9
sheet


Wiring diagram
9890 806100 B
sheet 16 / 18
Cl. 806N-10
flap-attach inputs
Release 0001/23
DÜRKOPP ADLER
Date 2023-05-10
Design Isaak
Check
Norm
Name Isaak
Date 2023-07-26
Chg. 01.0
Pattentransferplatte
Transferplate for flap
Haltebügel in Taschennähstellung
Crank in pocket sewing position
linker Haltebügel
left crank
-S102b
-S101b
rechter Haltebügel
right crank
-S102a
-S101a
Haltebügel in Pattennähstellung
Crank in flap sewing position
Haltebügel in Taschennähstellung
Crank in pocket sewing position
-S101a
-S101b
-S102a
-S102b
betätigt
linker Haltebügel
left crank
-S101b
-S102b
rechter Haltebügel
right crank
-S101a
-S102a
-S100
Innenrahmen hinten
Inner frame in rear position
9815 710103
-X511
BN
BU
9870 806033
SUB-D 9p
-X510
+24V
S101
+24V
S102
+24V
S100
GND
Zusatzeinrichtung
optional equipment


Wiring diagram
9890 806100 B
Cl. 806N-10
flap-attach outputs
DÜRKOPP ADLER
Release 0001/23
Date 2023-05-10
Design Isaak
Check
Norm
Name
Chg. Date
a 01.0 2023-07-26 Isaak
sheet 17 / 18
Ventilinsel
9712 806005
valve block
SUB-D 25p
-X1
25
-X502
BN
-A402
-Y130 Pattenzuführer nach links
Flap loader left
-Y129 Pattenzuführer nach rechts
Flap loader right
-Y132 Schwenken auf Pattenrückseite
Swivel to flap back side
-Y131 Pattenzuführer öffnen
Flap loader open
-Y134 Pattenklammer öffnen
Flap clamp open
-Y133 Schwenken auf Pattenvorderseite
Swivel to flap front side
-Y136 Pattenumlegebügel vor
Flap folding bar forward
-Y135 Pattenklammer anheben
Flap clamp lift
-Y138 Haltebügel in Pattennähstellung
Swivel cranks in flap sewing position
-Y137 Pattenumlegebügel zurück
Flap folding bar backward
-Y140 Haltebügel in Taschennähstellung
Swivel cranks pocket sewing position
-Y139 Transferplattenmittelteil einrasten
Transfer plate inner part engage
9870 009101
M5
Ground
-Y142 Halteplatte zurück
Holding plate backward
-Y141 Patte anblasen
Flap blow up
Reserve
reserve
Reserve
reserve
Zusatzeinrichtung
optional equipment
9870 806111
Blatt /6.G9
sheet

I-/O list class 806N / 806N-10

sewing station inputs

806N	806N-10	DAC	Denomination
S1	-S1	IN_01	thread monitor
S2	-S2	IN_02	sewing head tilted over
S3	-S3	IN_03	sewing head lowered
S4	-S4	IN_04	sewing head raised
S5	-S5	IN_05	hook cover closed (467)
S6	-S6-S8	IN_06-08	reserve

folding station inputs

806N	806N-10	DAC	Denomination
SC101	-S121	IN_121	outer frame in front position
SC102	-S122	IN_122	outer frame in rear position
SC103	-S123	IN_123	Ⓩ automatic vacuum
SC104	-S124	IN_124	outer frame raised
SC105	-S125	IN_125	outer frame lowered
SC108	-S126	IN_126	middle slider raised
SC109	-S127	IN_127	middle slider lowered
SC110	-S128	IN_128	middle slider in front position
SC111	-S113	IN_113	middle slider in rear position
SC107	-S114	IN_114	Ⓩ flap loader left (flap)
SC106	-S115	IN_115	reserve
SC112	-S116	IN_116	reserve

stacker inputs

806N	806N-10	DAC	Denomination
SC114	-S20	IN_20	depot / inner holder initial position
SC115			reserve
SC116			reserve

Ⓩ roll-off device inputs

806N	806N-10	DAC	Denomination
SC117	-S09	IN_09	1st ejecting roll off
SC118	-S10	IN_10	Ⓩ 2nd ejecting roll raised

frame inputs

806N	806N-10	DAC	Denomination
S101	-S34	REF_X	referenz point X-axis
S13	-S21	IN_21	X-end position
SC123	-S105	IN_105	air pressure switch
SC121	-S106	IN_106	start
SC120	-S107	IN_107	lower / lift middle slider
SC119	-S108	IN_108	identification of the transfer plate
SC122	-S109	IN_109	foot switch vacuum on/off
SC124	-S110	IN_110	Ⓩ foot switch flap clamp lift
SC125	-S111	IN_111	reserve
SC126	-S112	IN_112	reserve
SC127			reserve
SC128			reserve
SC129			reserve

key bar inputs

806N	806N-10	DAC	Denomination
S17	-S17	K4/IN_17	emergency stop
S14	-S14	IN_14	STOP
S15	-S15	IN_15	ON
S16	-S16	IN_16	repeat

transferlever inputs

806N	806N-10	DAC	Denomination
S17	-S17	K4/IN_17	safety switch
S12	-S24	IN_24	Y-end position
S102	-S35	REF_Y	referenz Y-axis
SC137	-S97	IN_97	transfer plate raised
SC138	-S98	IN_98	transfer plate lowered
SC136	-S99	IN_99	transfer plate existing
SC139	-S100	IN_100	inner frame in rear position
SC133	-S101	IN_101	Ⓩ crank in flap sewing position
SC134	-S102	IN_102	Ⓩ crank in pocket sewing position
SC135	-S103	IN_103	Ⓩ flap folding bar in front
SC140	-S104	IN_104	reserve
SC141			reserve

sewing station outputs

806N	806N-10	DAC	Denomination
Y01	-Y01	OUT_01	light barrier blow
Y02	-Y02	OUT_02	needle cooling
Y03	-Y03	OUT_03	foot stroke level adjustment
Y04	-Y04	OUT_04	lift sewing head
Y05	-Y05	OUT_05	lower sewing head
Y06	-Y06	OUT_06	zick-zack on (467)
Y07	-Y07	OUT_07	Ⓩ thread puller forward (467)
Y08	-Y08	OUT_08	Ⓩ reserve
Y09			reset thread monitor (not for 806N)
Y10			recieve thread monitor (n.f. 806N)

folding station outputs

806N	806N-10	DAC	Denomination
YC101	-Y120	OUT_120	side slider forward
YC102	-Y119	OUT_119	side slider backward
YC103	-Y118	OUT_118	front slider forward
YC104	-Y117	OUT_117	front slider backward
YC105	-Y116	OUT_116	lift inner frame
YC106	-Y115	OUT_115	middle slider suction
YC107	-Y114	OUT_114	quick-change device on
YC108	-Y113	OUT_113	lower middle slider
YC109	-Y112	OUT_112	lift middle slider
YC110	-Y111	OUT_111	stopper forward

folding station outputs

806N	806N-10	DAC	Denomination
YC111	-Y110	OUT_110	lower outer frame
YC112	-Y109	OUT_109	lift outer frame
YC113	-Y108	OUT_108	middle slider forward
YC114	-Y107	OUT_107	middle slider backward
YC115	-Y106	OUT_106	outer frame backward
YC116	-Y105	OUT_105	outer frame forward
YC117	-Y104	OUT_104	Ⓩ flap clamp lift (flap)
YC118	-Y103	OUT_103	Ⓩ reserve
YC119	-Y102	OUT_102	Ⓩ reserve
YC120	-Y101	OUT_101	Ⓩ reserve

stacker outputs

806N	806N-10	DAC	Denomination
YC121	-Y17	OUT_17	depot backward
YC122	-Y18	OUT_18	depot forward
YC123	-Y19	OUT_19	close inner holder
YC124	-Y20	OUT_20	open inner holder
YC125	-Y21	OUT_21	close outer holder
YC126	-Y22	OUT_22	open outer holder

Ⓩ roll-off device output

806N	806N-10	DAC	Denomination
YC127	-Y14	OUT_14	Ⓩ reserve
YC128	-Y13	OUT_13	Ⓩ lower 2nd ejecting roll
YC129	-Y12	OUT_12	Ⓩ lift 2nd ejecting roll
YC130	-Y11	OUT_11	blower roll-off device
YC131	-Y10	OUT_10	lower 1st ejecting roll
YC132	-Y09	OUT_09	lift 1st ejecting roll

frame outputs

806N	806N-10	DAC	Denomination
YC133	-Y25	OUT_25	counter pressure
YC134	-Y26	OUT_26	lower transfer plate
YC135	-Y29	OUT_29	vacuum 3
YC136	-Y28	OUT_28	vacuum 2
YC137	-Y27	OUT_27	vacuum 1
YC138	-Y30	OUT_30	lower inner slider
YC139	-Y31	OUT_31	lift inner slider
YC140	-Y32	OUT_32	inner slider backward
YC141	-Y97	OUT_97	inner slider forward
YC142	-Y98	OUT_98	lift transferplate
YC143	-Y99	OUT_99	Ⓩ vacuum throat plate 2 (flap)
YC144	-Y100	OUT_100	Ⓩ vacuum throat plate 1 (flap)

key bar outputs

806N	806N-10	DAC	Denomination
H1	-H1	OUT_15	LED "start"
H2	-H2	OUT_16	LED "safe stop"

laser outputs

806N	806N-10	DAC	Denomination
YC149	-Y23	OUT_23	Ⓩ laser 1
YC150	-Y24	OUT_24	Ⓩ laser 2

Ⓩ outputs flap

806N	806N-10	DAC	Denomination
YC151	-Y129	OUT_129	flap loader right
YC152	-Y130	OUT_130	flap loader left
YC153	-Y131	OUT_131	open flap loader
YC154	-Y132	OUT_132	swivel to flap back side
YC155	-Y133	OUT_133	swivel to flap front side
YC156	-Y134	OUT_134	open flap clamp
YC157	-Y135	OUT_135	lift flap clamp
YC158	-Y136	OUT_136	flap folding bar forward
YC159	-Y137	OUT_137	flap folding bar backward
YC160	-Y138	OUT_138	swivel cranks in flap sewing position
YC161	-Y139	OUT_139	transfer plate inner part engage
YC162	-Y140	OUT_140	swivel cranks in pocket sewing position
YC163	-Y141	OUT_141	flap blow up
YC164	-Y142	OUT_142	holding plate backward
	-Y143	OUT_143	reserve
	-Y144	OUT_144	reserve

c				Date	2023-05-10
b				Design	Isaak
a	01.0	2023-07-26	Isaak	Check	
	Chg.	Date	Name	Norm	

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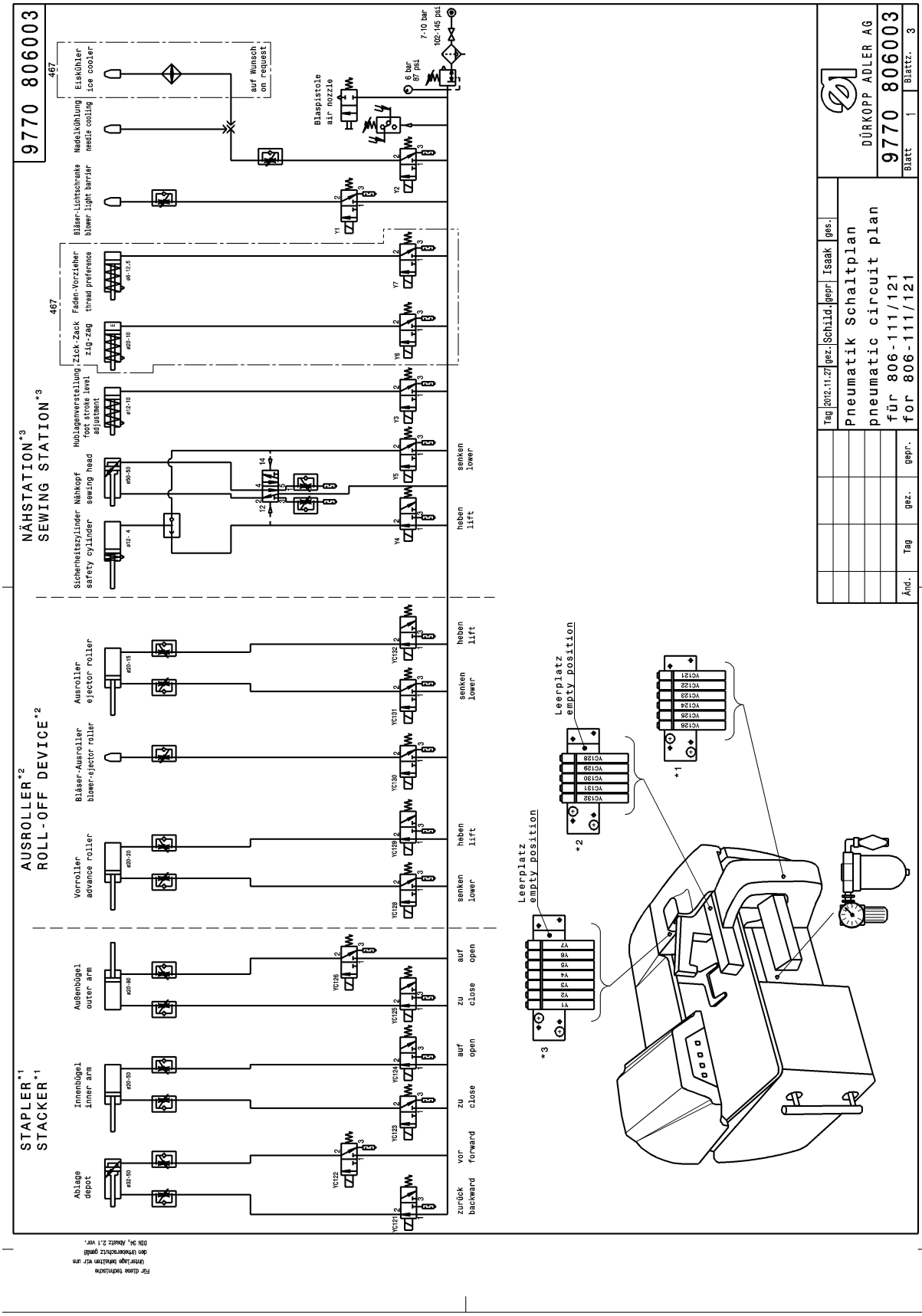
Release 0001/23

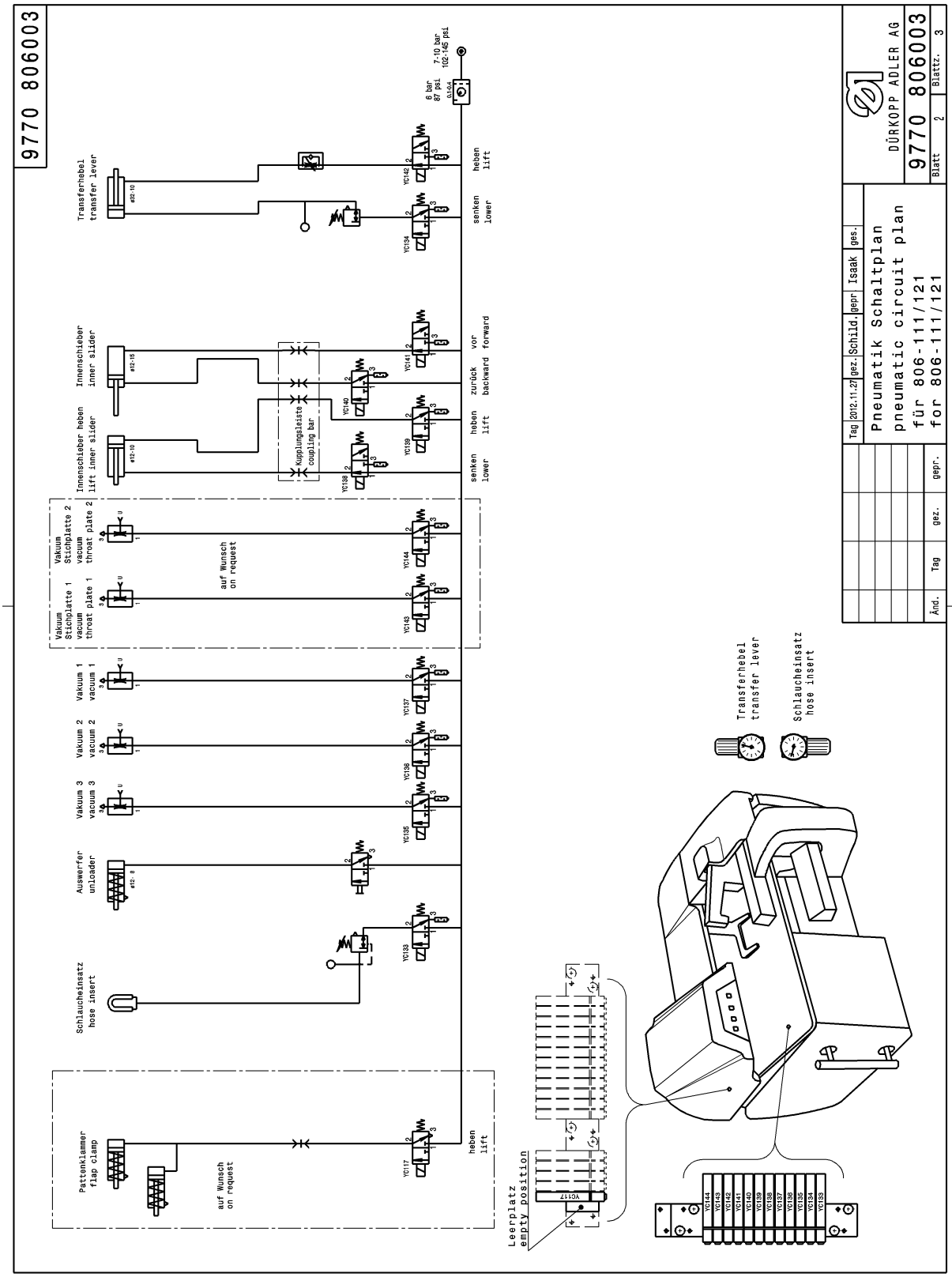
Cl. 806N-10
I/O-list

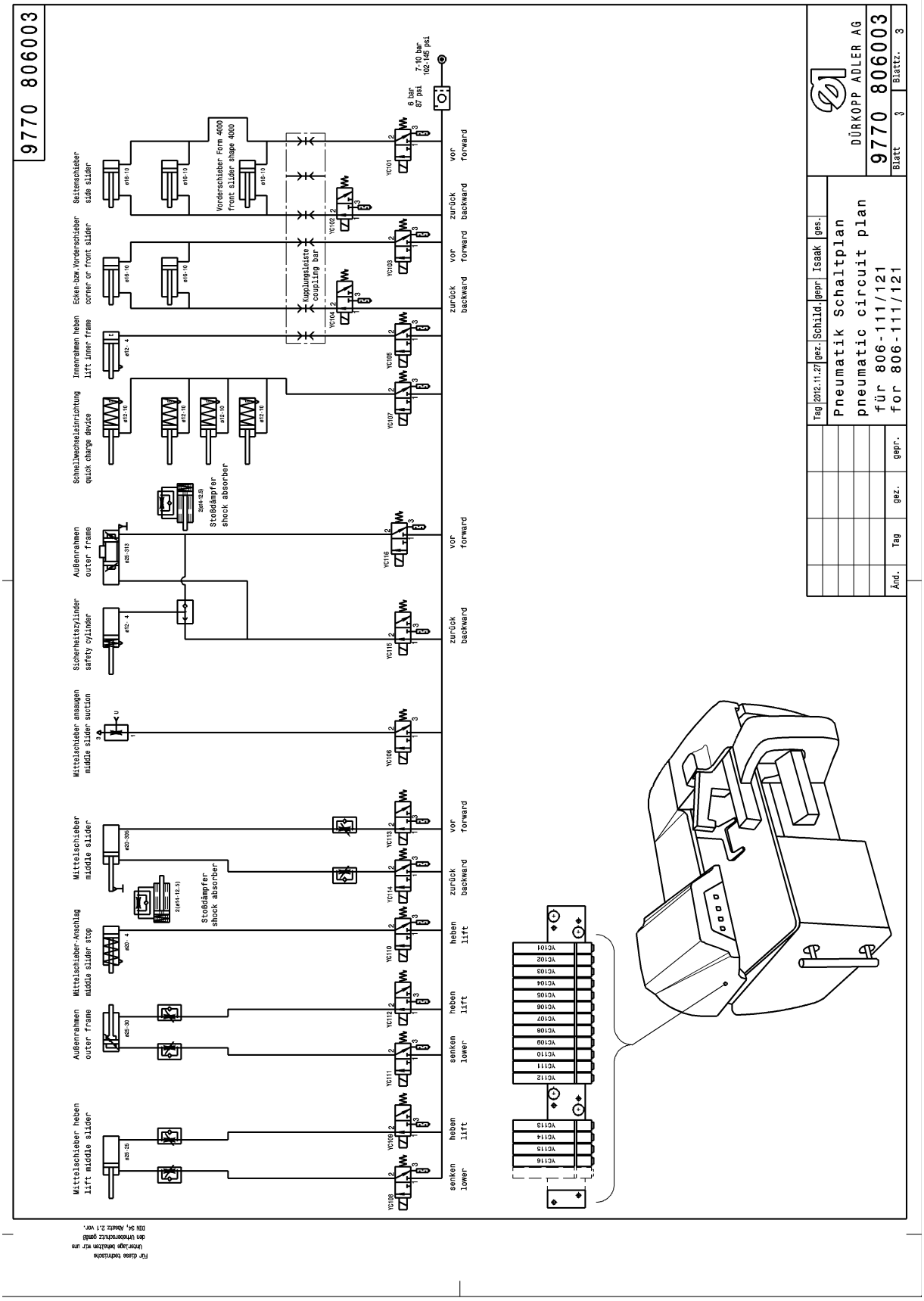
Wiring diagram
9890 806100 B

sheet 18 / 18

Pneumatic diagram




9770 806003
Pneumatik Schaltplan
pneumatic circuit plan
für 806-111/121
for 806-111/121
DÜRKOPP ADLER AG
9770 806003
Blatt 2 Blattz. 3
Tag 2012.11.27 gez. Schild gepr. Isaak ges.
Änd. Tag gez. gepr.
Transferhebel
transfer lever
Schlaucheinsatz
hose insert
Leerplatz
empty position
Vakuum Stichplatte 2
vacuum throat plate 2
Vakuum Stichplatte 1
vacuum throat plate 1
auf Wunsch
on request
Innenschieber heben
lift inner slider
Innenschieber
inner slider
Kupplungsleiste
coupling bar
Vakuum 1
vacuum 1
Vakuum 2
vacuum 2
Vakuum 3
vacuum 3
Auswerfer
unloader
Schlaucheinsatz
hose insert
Pattenklammer
flap clamp
heben
lift
senken
lower
zurück
backward
vor
forward
6 bar
87 psi
7-10 bar
102-145 psi


9770 806003
Pneumatik Schaltplan
pneumatic circuit plan
für 806-111/121
for 806-111/121
DÜRKOPP ADLER AG
9770 806003
Blatt 3 Blattz. 3
Tag 2012.11.27 gez. Schild gepr. Isaak ges.
Änd. Tag gez. gepr.
Vorderschieber Form 4000
front slider shape 4000
Kupplungsleiste
coupling bar
Stoßdämpfer
shock absorber
Schnellwechseleinrichtung
quick change device
Innenrahmen heben
lift inner frame
Ecken bzw. Vorderschieber
corner or front slider
Seitenschieber
side slider
Außenrahmen
outer frame
Sicherheitszylinder
safety cylinder
Mittelschieber ansaugen
middle slider suction
Mittelschieber
middle slider
Mittelschieber-Anschlag
middle slider stop
Mittelschieber heben
lift middle slider
vor
forward
zurück
backward
heben
lift
senken
lower
6 bar
87 psi
7-10 bar
102-145 psi

DÜRKOPP ADLER GmbH
Potsdamer Str. 190
33719 Bielefeld
Germany
Phone: +49 (0) 521 925 00
Email: service@duerkopp-adler.com
www.duerkopp-adler.com