DÜRKOPP ADLER

911-211

Service Instructions

IMPORTANT
READ CAREFULLY BEFORE USE
KEEP FOR FUTURE REFERENCE

1 About these instructions

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

Should you notice any discrepancies or if you have improvement requests, then we would be glad to receive your feedback through **Customer Service** (📖 *p. 160*).

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.

With regard to minimum qualification and other requirements to be met by personnel, please also follow the chapter Safety (📖 *p. 10*).

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 disassembled in order to access the components to be set.

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

Steps to be performed for service, maintenance, and installation

Steps to be performed via the software control panel

The individual steps are numbered:

1. First step
2. Second step

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

- Lists are marked by bullet points.

Result of performing an operation

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

Important

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

Information

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

Order

Specifies the work to be performed before or after 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. 10*).

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, 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
- perform 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

Check the machine during operating 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.

2.2 Signal words and symbols used in warnings

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

Signal words

Signal words and the hazard they describe:

Signal word	Meaning
DANGER	(with hazard symbol) If ignored, fatal or serious injury will result
WARNING	(with hazard symbol) If ignored, fatal or serious injury can result
CAUTION	(with hazard symbol) If ignored, moderate or minor injury can result
CAUTION	(with hazard symbol) If ignored, environmental damage can result
NOTICE	(without hazard symbol) If ignored, property damage can result

Symbols

The following symbols indicate the type of danger to personnel:

Symbol	Type of danger
	General
	Electric shock

Symbol	Type of danger
	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 Working basis

3.1 Order of the settings

The settings for the machine are interdependent.

Always comply with the order of individual setting steps as specified.

It is absolutely essential that you follow all notices regarding prerequisites and subsequent settings that are marked with in the margin.

NOTICE

Property damage may occur!

Machine damage from incorrect order.

It is essential to follow the working order specified in these instructions.

3.2 Cable routing

NOTICE

Machine damage and malfunctions can be caused by laying the cables incorrectly!

Excess cables can impair the functioning of moving machine parts. This impairs the sewing function and can result in damage.

Lay excess cable as described above.

To lay the cables:

1. Lay any excess cabling neatly in proper cable snakes.
2. Bind together the cable loops with cable ties.
   Tie loops wherever possible to fixed parts.

Important

The cables must be secured firmly!

3. Cut off any overlapping cable ties.

3.3 Removing and opening covers

WARNING

Risk of injury from moving parts!

Crushing possible.

Switch the machine off before removing or re-placing covers.

In many types of setting work, you will have to remove the machine covers in order to access the components.

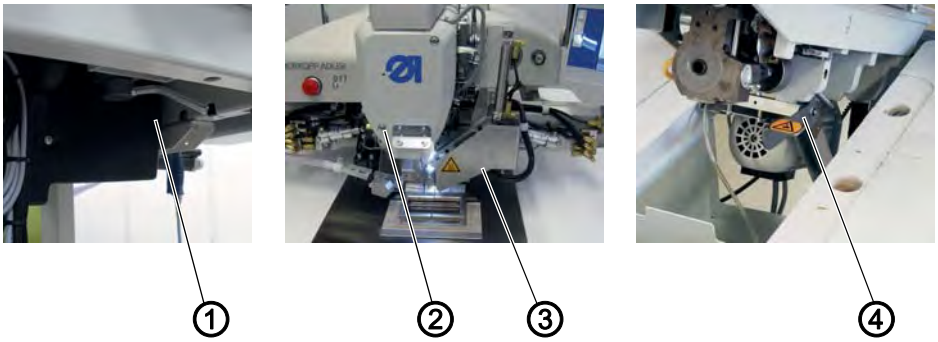
This chapter describes how to remove and then refit the individual covers. The text for each type of setting work then specifies only the cover that needs to be removed at that particular time.

3.3.1 Access to the underside of the machine

Cover

To access the components on the underside of the machine, swivel up the machine head.

Fig. 1: Access to the underside of the machine



(1) - Locking lever
(2) - Head cover
(3) - Drive carriage
(4) - Latch

Swiveling up the machine head

To swivel up the machine head:

1. Release the locking lever (1) under the tabletop.
2. Lift the machine head in the head cover area (2) and swivel up carefully.

↳ The latch (4) latches into place.

Swiveling down the machine head

To swivel down the machine head:

1. Hold the machine head in the head cover area (2).
2. Release the latch (4).
3. Swivel down the machine head.
4. Latch the locking lever (1) under the tabletop.

3.3.2 Removing and assembling the motor cover

Fig. 2: Removing and assembling the motor cover

(1) - Screws *(2) - Motor cover*

Removing the motor cover

To remove the motor cover:

1. Loosen both screws (1).
2. Remove the motor cover (2).

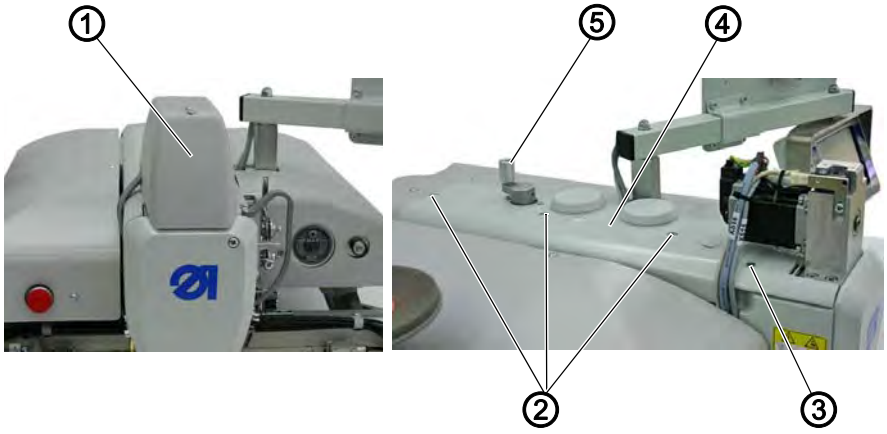
Placing the motor cover

To place the motor cover:

1. Place the motor cover (2).
2. Tighten both screws (1).

3.3.3 Removing and placing the arm cover

Fig. 3: Removing and placing the arm cover



(1) - Motor cover
(2) - Screws
(3) - Countersunk screw
(4) - Arm cover
(5) - Hand crank

Removing the arm cover

To remove the arm cover:

1. Unscrew the motor cover (1).
2. Loosen screws (2) and countersunk screw (3).
3. Remove the arm cover (4).

Placing the arm cover

To place the arm cover:

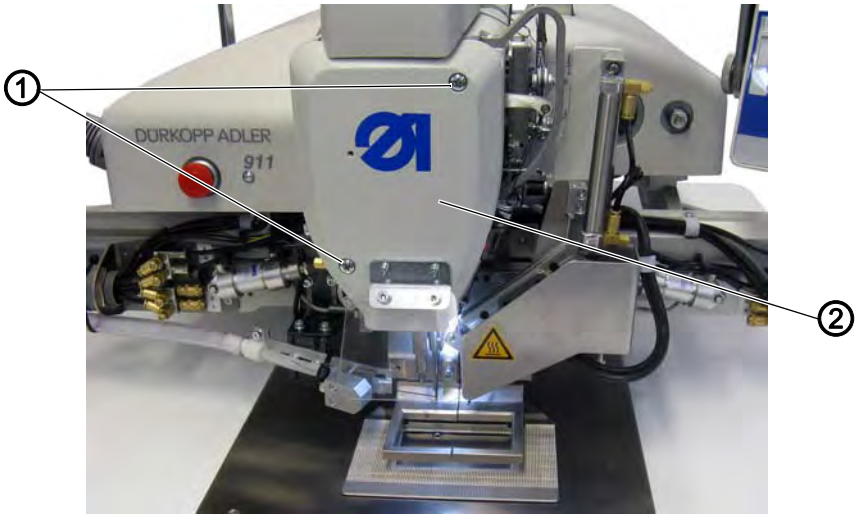
1. Place the arm cover (4).
2. Tighten the countersunk screw (3).
3. Tighten the screws (2).
4. Press down the hand crank (5) and check for ease of movement; adjust the arm cover position if necessary.

↳ The hand crank (5) must disengage.

5. Place the motor cover (1).

3.3.4 Removing and placing the head cover

Fig. 4: Removing and placing the head cover



(1) - Screws *(2) - Head cover*

Removing the head cover

To remove the head cover:

1. Loosen the screws (1).
2. Remove the head cover (2).

Placing the head cover

To place the head cover:

1. Place the head cover (2).
2. Tighten the screws (1).

3.3.5 Removing and placing the rear cover

Fig. 5: Removing and placing the rear cover

(1) - *(2)* -

Removing the rear cover

To remove the rear cover:

1. Loosen all 3 screws (1).
2. Take off the rear cover (2) by moving it back.

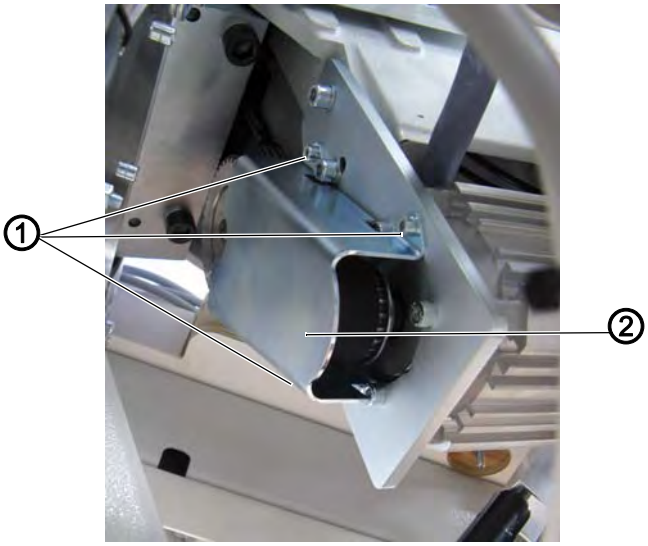
Placing the rear cover

To place the rear cover:

1. Place the rear cover (2).
2. Tighten all 3 screws (1).

3.3.6 Removing and placing the toothed belt cover

Fig. 6: Removing and placing the toothed belt cover



(1) - Screws *(2) - Toothed belt cover*

Removing the toothed belt cover

To remove the toothed belt cover:

1. Loosen all 4 screws (1).
2. Remove toothed belt cover (2).

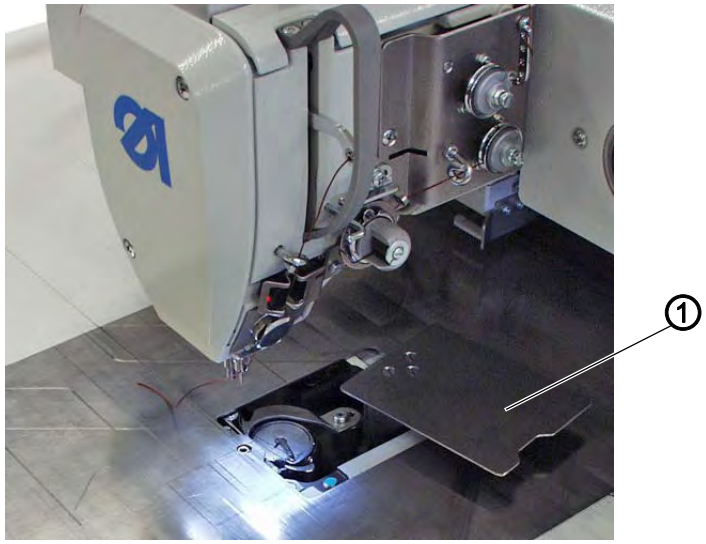
Placing the toothed belt cover

To place the toothed belt cover:

1. Place the toothed belt cover (2).
2. Tighten all 4 screws (1).

3.3.7 Opening and closing the bobbin flap

Fig. 7: Opening and closing the bobbin flap



(1) - Bobbin flap

Opening the bobbin flap

To open the bobbin flap:

1. Switch on the machine and reference it.
2. Remove the sewing material holder.
3. Press the **Threading mode** button.

↳ The bobbin flap (1) pivots to the side.

Closing the bobbin flap

To close the bobbin flap:

1. Release the **Threading mode** button.
2. Place the sewing material holder.

3.3.8 Removing and placing the sliding plate

Fig. 8: Removing and placing the sliding plate

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

Removing the sliding plate

To remove the sliding plate:

1. Reach through the hole (2) from below and lift the sliding plate (1).
2. Remove the sliding plate (1).

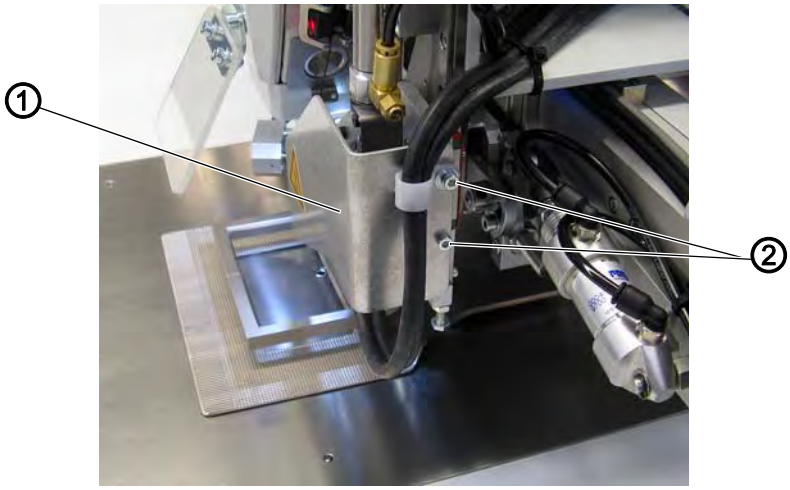
Placing the sliding plate

To place the sliding plate:

1. Place the sliding plate (1).

3.3.9 Removing and installing the burner cover (optional)

Fig. 9: Removing and installing the burner cover



(1) - Burner cover *(2) - Screws*

Removing the burner cover

To remove the burner cover:

1. Loosen both screws (2).
2. Remove the burner cover (1).

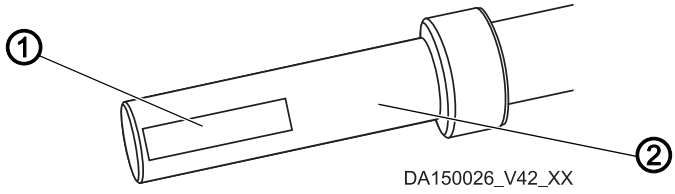
Placing the burner cover

To place the burner cover:

1. Place the burner cover (2).
2. Tighten both screws (1).

3.4 Flats on shafts

Fig. 10: Flats on shafts



(1) - Flat *(2) - Shaft*

Some shafts have flats at those points where the components are clamped on to the shaft. This stabilizes the connection and makes setting easier.

Important

Always ensure that the screws are completely flush with the surface.

3.5 Aligning the machine head

Proper setting

The upper side of the base plate (1) is in level with the cutout in the tabletop (2). Height **X** of the transport system is identical on the left and the right both at the rear and the front position of the carriage.

Check the height using the flat material (3).

Fig. 11: Aligning machine head (1)

(1) - Base plate
(2) - Tabletop
(3) - Flat material

Fig. 12: Aligning machine head (2)

Order

1. Remove the sliding plate (📖 *p. 22*).
2. Check the position of the machine head using the flat material (3).

3. Swivel up the machine head (📖 *p. 15*).
4. Set the height.
5. Check the position of the machine head again.
   - Front
   - Carriage at rear position
   - Carriage at front position

Fig. 13: Aligning machine head (3), carriage at rear position

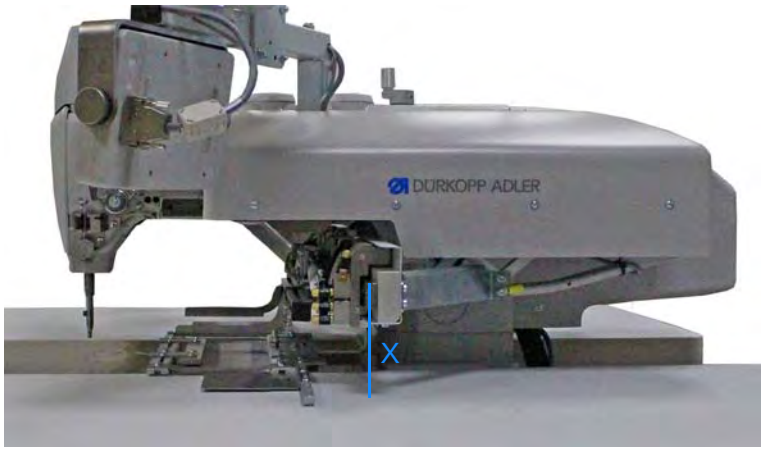


Fig. 14: Aligning machine head (4), carriage at front position

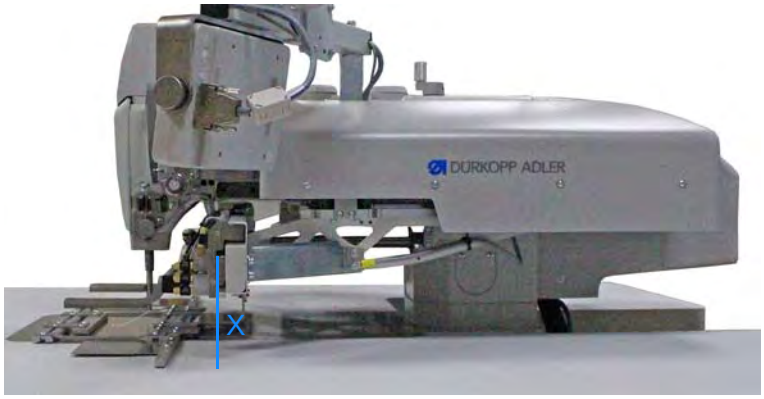
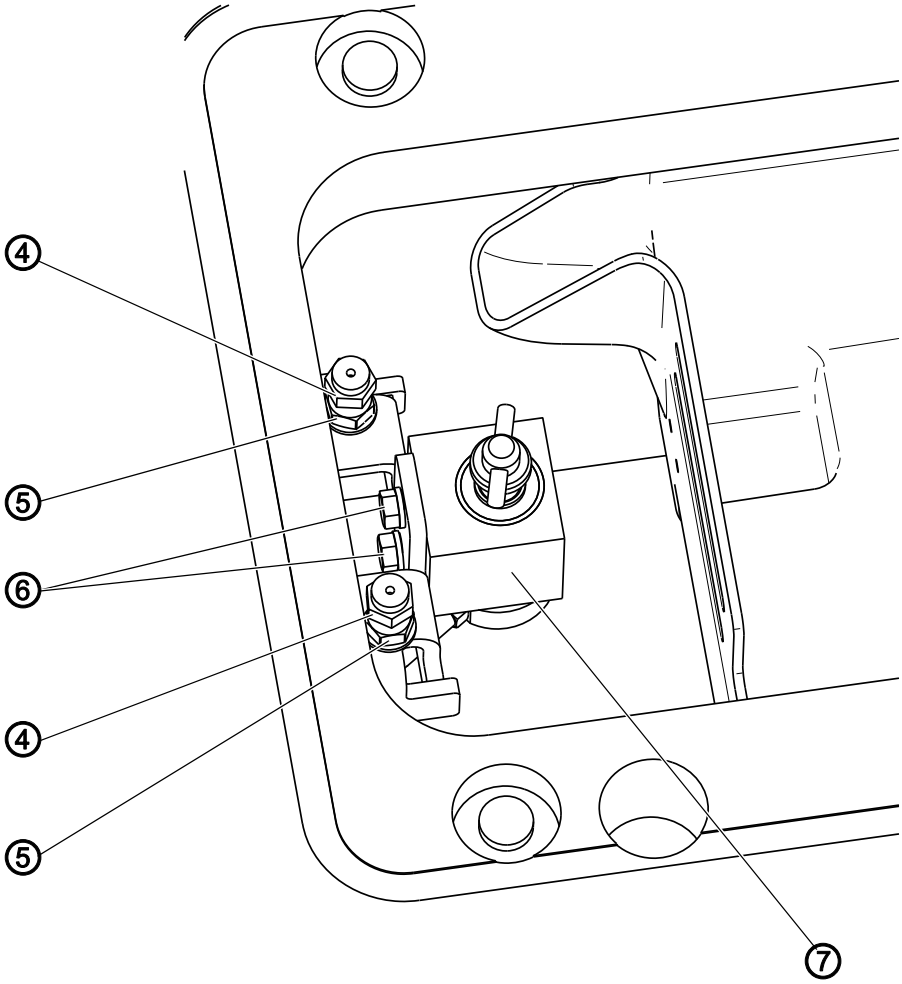


Fig. 15: Aligning machine head (5)



(4) - Screws
(5) - Nuts
(6) - Screws
(7) - Block

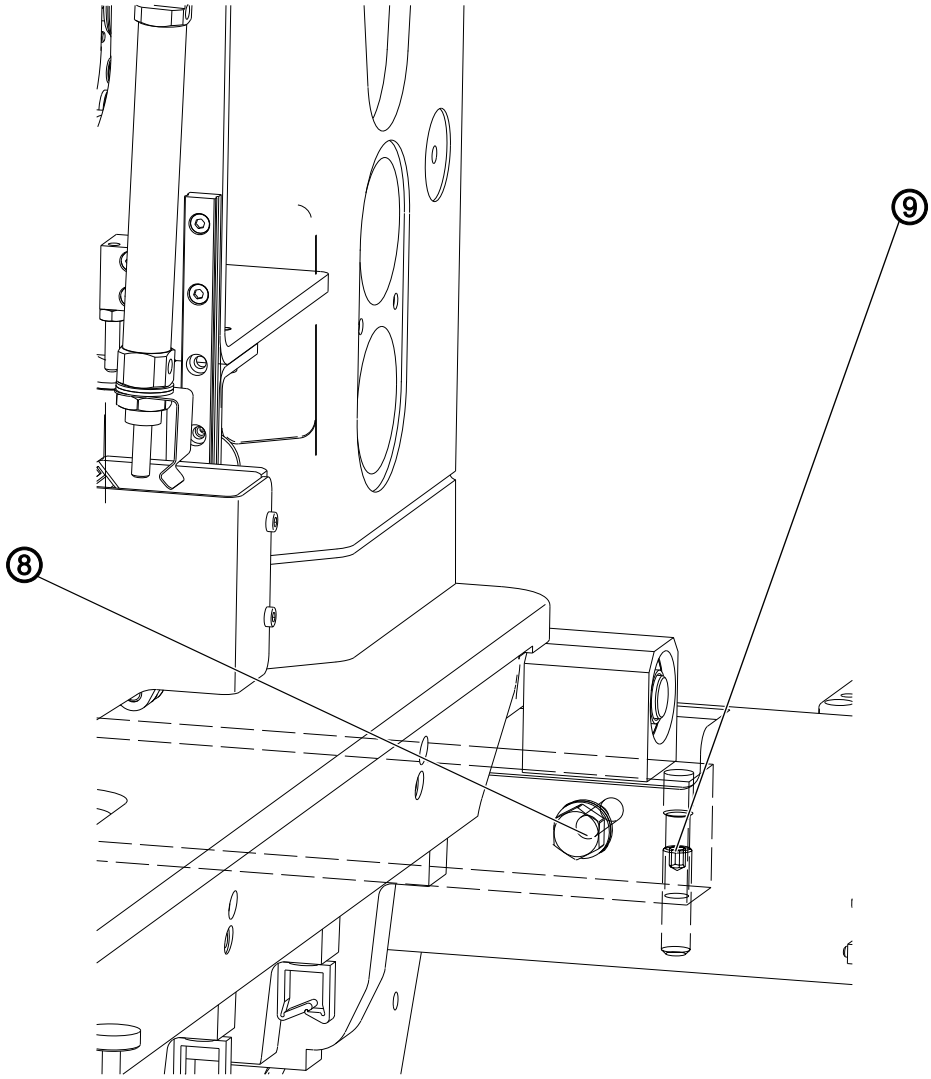
Setting steps

1. Loosen the nuts (5).
2. Swivel down the machine head and lock it in place.
3. Use screws (4) to correct the height of the machine head at the front:
   - higher = turn counterclockwise
   - lower = turn clockwise
4. To adjust the locking mechanism, loosen the screws (6).
5. Move the clamp (7) up or down.
   - To slacken the locking mechanism: Slide the clamp up
   - To tighten the locking mechanism: Slide the clamp down
6. To test the setting, lock the machine head and check the play.

Proper setting

The locking mechanism is set correctly if the machine head can be locked in place with ease while not showing any play at the front bearing when moved up and down.

Fig. 16: Aligning machine head (6)



DA160007_V41_XX

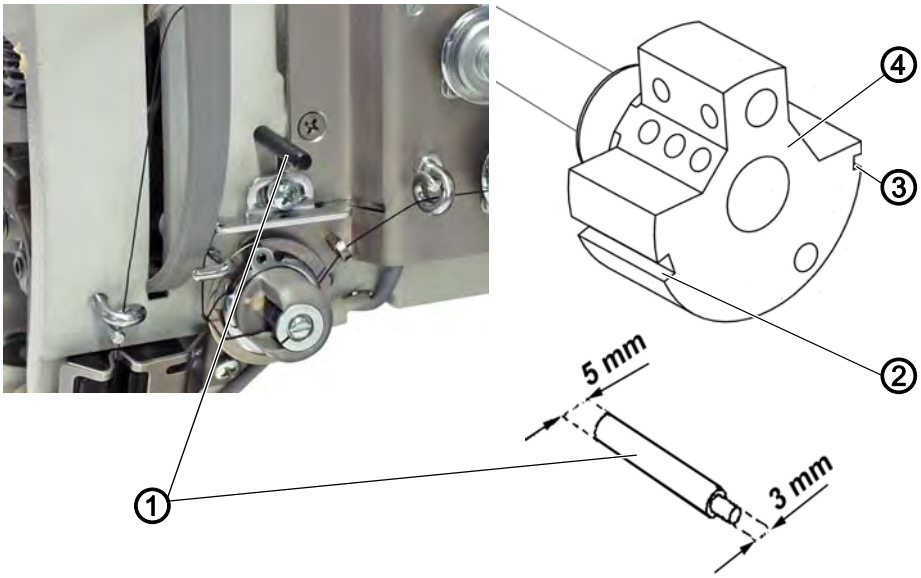
(8) - Screw on the right
(9) - Threaded pin on the right

7. Loosen the screws on the left (not shown) and on the right (8).
8. Use the threaded pins on the left (not shown) and on the right (9) to adjust the height of the machine head at the rear:
   - higher = turn clockwise
   - lower = turn counterclockwise
9. Test the height of the base plate using flat material (3) and adjust as necessary.
10. Check heights **X** and adjust as necessary.
11. Check locking mechanism and adjust as necessary.

3.6 Locking the machine in place

For some settings, the machine must be locked in place. To do this, the locking peg from the accessory pack is inserted into a slot on the arm shaft crank, blocking the arm shaft.

Fig. 17: Lock the machine in place (1)

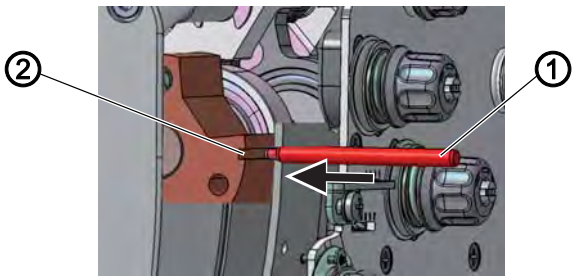


(1) - Locking peg
(2) - Large arresting groove
(3) - Small arresting groove
(4) - Arm shaft crank

There are 2 securing positions:

- **Position 1:** Loop stroke position
  - 5 mm end in the large slot
  - Setting the loop stroke and needle bar height
- **Position 2:** Needle at top dead center
  - 3 mm end in the small slot
  - Checking the top dead center of the needle bar

Fig. 18: Lock the machine in place (2)



(1) - Locking peg
(2) - Large arresting groove

Locking the machine in place

1. Insert the locking peg (6) with the appropriate end into the slot (5) of the arm shaft crank (4).

Removing the lock

1. Pull the locking peg (6) out of the slot (5).

3.7 Putting the machine into position

For some settings, the machine must be put into a certain position, using the hand crank on the arm cover. The machine has no handwheel.

Fig. 19: Putting the machine into position

(1) - Hand crank

To set the machine into position:

Press down and turn the hand crank (1) until the machine is in the setting position.

4 Machine head

4.1 Positioning the arm shaft crank

WARNING

Risk of injury from moving parts!

Crushing possible.

Switch the machine off before you check and set the position of the arm shaft crank.

Proper setting

The 3 threaded pins (2) on the arm shaft crank (1) are seated completely on the flat.

Cover

- Arm cover (*p. 16*)

Fig. 20: Positioning the arm shaft crank

(1) - Arm shaft crank *(2) - Threaded pins*

To set the arm shaft crank:

1. Loosen all threaded pins (2) on the arm shaft crank (1).
2. Turn the arm shaft crank (1) such that the threaded pins (2) are seated completely on the flat of the arm shaft.
3. Push the arm shaft crank (1) to the right as far as it will go.
4. Tighten all the threaded pins (2) on the arm shaft crank (1).

4.2 Positioning the toothed belt wheels

The two toothed belt wheels must be positioned relative to each other such that the toothed belt can run correctly.

Order

- Always check the position of the other toothed belt wheel after making a change on either of the toothed belt wheels.

4.2.1 Setting the upper toothed belt wheel

WARNING

Risk of injury from moving parts!

Crushing possible.

Switch the machine off before you check and set the upper toothed belt wheel.

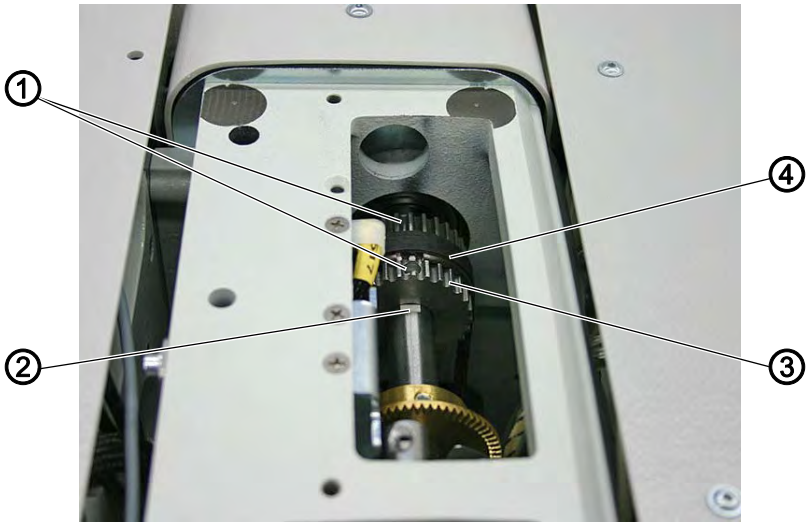
Proper setting

The 2 threaded pins for the upper toothed belt wheel are seated flush on the flat.

Cover

- Arm cover (📖 p. 16)

Fig. 21: Setting the upper toothed belt wheel



(1) - Threaded pins
(2) - Flat of arm shaft
(3) - Upper toothed belt wheel
(4) - Toothed belt

To set the upper toothed belt wheel:

1. Using the screwdriver, push the toothed belt (4) sufficiently far to the side so that the 2 threaded pins (1) can be reached.
2. Loosen the threaded pins (1).
3. Turn the upper toothed belt wheel (3) such that the threaded pins (1) are seated flush on the flat (2) of the arm shaft.
4. Tighten the threaded pins (1).
5. Use the screwdriver to push the toothed belt (4) back again.

4.2.2 Setting the lower toothed belt wheel

WARNING

Risk of injury from moving parts!

Crushing possible.

Switch the machine off before you check and set the lower toothed belt wheel.

Proper setting

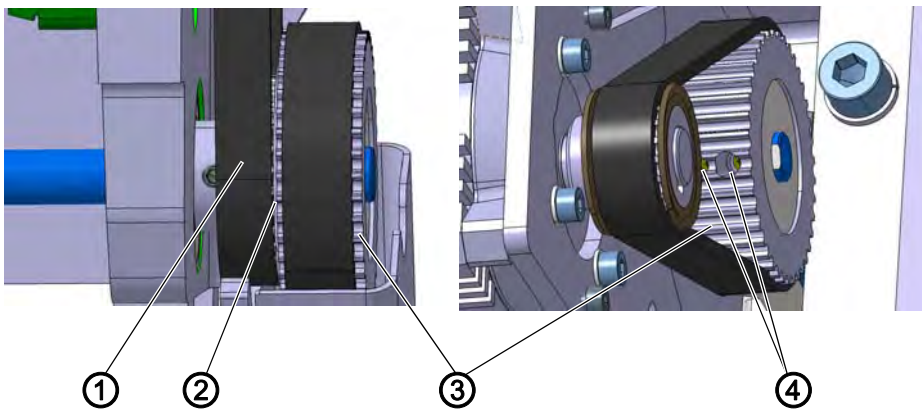
Both threaded pins for the lower toothed belt wheel are seated flush on the flat of the lower shaft.

The toothed belt runs correctly without running against the edge of the offset gear wheel or slipping off.

Cover

- Swivel up the machine head (📖 *p. 15*)
- Toothed belt cover (📖 *p. 20*)

Fig. 22: Setting the lower toothed belt wheel



(1) - Toothed belt
(2) - Edge
(3) - Lower toothed belt wheel
(4) - Threaded pins

To set the lower toothed belt wheel:

1. Loosen both threaded pins (4).
2. Turn the lower toothed belt wheel (3) such that the threaded pins (4) are seated completely on the flat of the lower shaft.
3. Move the lower toothed belt wheel (3) sufficiently far to the side so that the toothed belt (1) makes contact with the edge (2) without being pushed away.
4. Screw both threaded pins (4) firmly in place.

4.3 Aligning the needle bar linkage

WARNING

Risk of injury from moving parts!

Crushing possible.

Switch off the machine before aligning the needle bar linkage sideways.

Order

First, check the following setting:

- A straight and undamaged needle has to be inserted (📖 *Operating Instructions*)

Proper setting

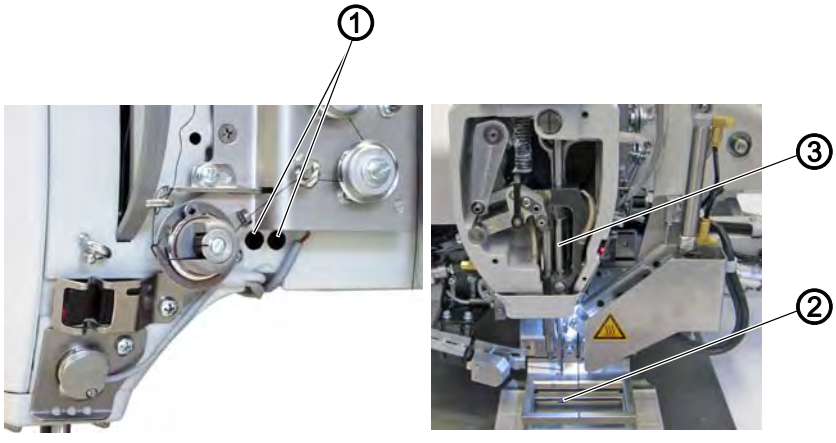
1. Turn the needle bar to the bottom.

↳ The needle must enter the needle hole precisely in the center.

Cover

- Head cover (📖 *p. 18*)

Fig. 23: Aligning the needle bar linkage



(1) - Threaded pins
(2) - Throat plate
(3) - Needle bar linkage

To align the needle bar linkage:

1. Loosen both threaded pins (1).
2. Set the needle bar linkage (3) so that the needle enters the needle hole (2) precisely in the center.
3. Tighten the threaded pins (1).

4.4 Position of the hook and needle

4.4.1 Setting the loop stroke position

WARNING

Risk of injury from sharp and moving parts!

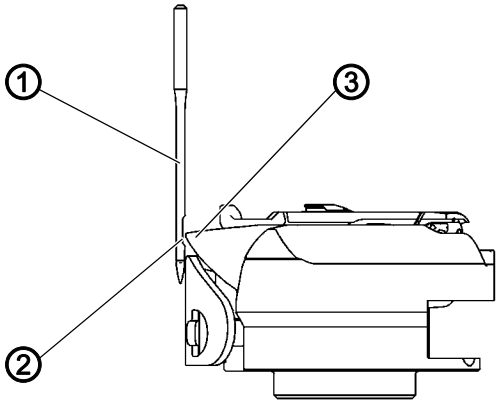
Puncture or crushing possible.

Switch off the machine before you check and set the loop stroke position.

Information

The **loop stroke** is the path length from the bottom dead center of the needle bar up to the height where the hook tip picks up the loop of thread.

Fig. 24: Setting the loop stroke position (1)



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

The loop stroke is precisely 2.4 mm.

Order

First, check the following settings:

- Needle bar linkage (📖 *p. 33*)
- A straight and undamaged needle has to be inserted (📖 *Operating Instructions*)

Proper setting

Machine is locked in place at position 1 (📖 *p. 28*).

↳ The hook tip (3) is precisely at the center (1) of the needle.

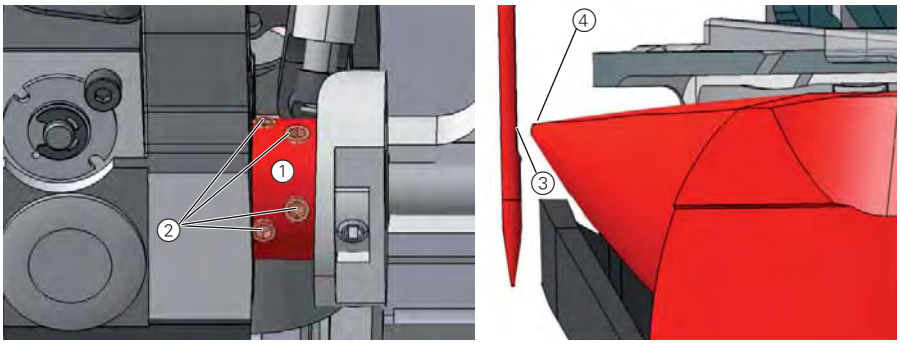
Disturbance caused by an incorrect setting

- Missing stitches

Cover

- Swivel up the machine head (📖 *p. 15*)

Fig. 25: Setting the loop stroke position (2)



(1) - Clamping ring
(2) - Threaded pins
(3) - Groove
(4) - Hook tip

To set the loop stroke position:

1. Lock the machine in place at position 1 (📖 *p. 28*).
2. Loosen all 4 threaded pins (5) for the clamping ring (4) on the hook shaft.
3. Rotate the hook such that the hook tip (7) is precisely at the center of the needle (6).
4. Tighten the threaded pins (5) for the clamping ring (4).
5. Remove the lock (📖 *p. 29*).

Order

Then check the following settings:

- Position of the needle guard (📖 *p. 40*)
- Timing of cutting by the thread cutter (📖 *p. 79*)

4.4.2 Setting the needle bar height

WARNING

Risk of injury from sharp and moving parts!

Puncture or crushing possible.

Switch off the machine before you check and set the needle bar height.

Order

First, check the following settings:

- Loop stroke position (📖 *p. 34*)
- A straight and undamaged needle has to be inserted (📖 *Operating Instructions*)

Proper setting

Machine is locked in place at position 1 (📖 *p. 28*).

↳ The hook tip is level with the lower third of the groove on the needle.

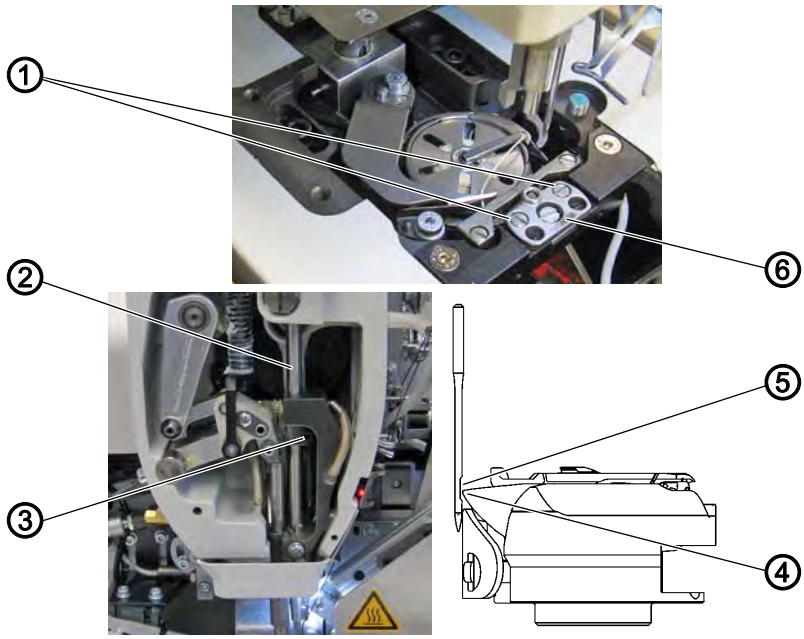
Disturbances caused by an incorrect needle bar height

- Damage to the hook tip
- Jamming of the needle thread
- Missing stitches
- Thread breaking
- Needle breakage

Cover

- Head cover (📖 *p. 18*)
- Bobbin flap (📖 *p. 21*)

Fig. 26: Setting the needle bar height



(1) - Screws
(2) - Needle bar
(3) - Screw
(4) - Hook tip
(5) - Groove
(6) - Throat plate

To set the needle bar height:

1. Lock the machine in place at position **1** (📖 *p. 28*).
2. Loosen the screws (1).
3. Remove the throat plate (6).
4. Loosen the screw (3) of the needle bar (2).
5. Move the height of the needle bar (2) so that the hook tip (4) is in the middle of the lower third of the groove on the needle (5).

Important

When doing this, take care not to twist the needle. The groove (5) must face toward the hook.

6. Tighten the screw (3) for the needle bar (2).
7. Place the throat plate (6).
8. Tighten the screws (1).
9. Remove the lock (📖 *p. 29*).

Order

Then check the following setting:

- Position of the needle guard (📖 *p. 40*)

4.4.3 Setting the hook side clearance

WARNING

Risk of injury from moving parts!

Crushing possible.

Switch off the machine before you check and set the hook side clearance.

Order

First, check the following settings:

- A straight and undamaged needle has been inserted (📖 *Operating Instructions*)
- Needle bar linkage (📖 *p. 33*)
- Loop stroke position (📖 *p. 34*)

NOTICE

Property damage may occur!

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

Check and, if necessary, readjust the distance to the hook tip after inserting a new needle with a different size.

Proper setting

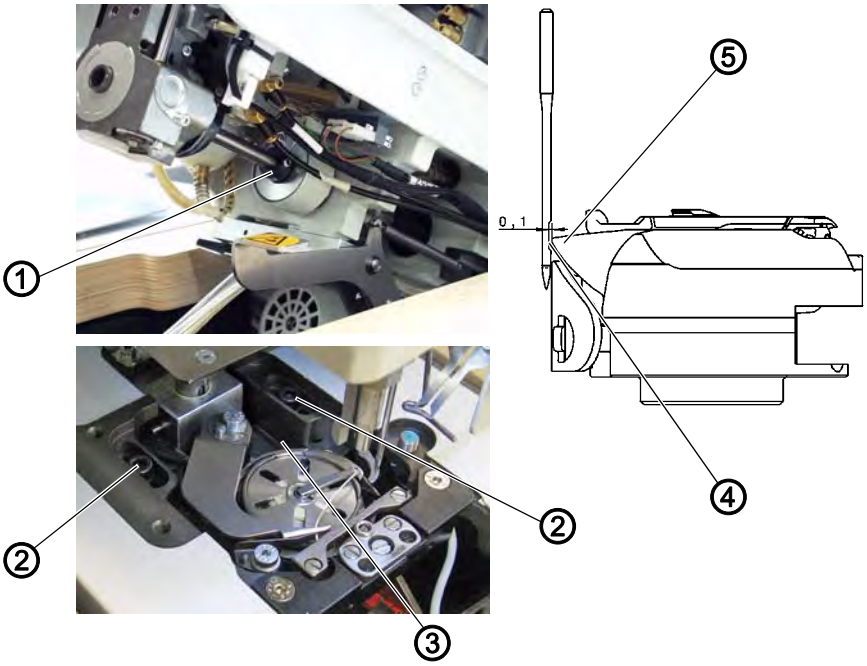
Machine locked in place at position **1** (📖 *p. 28*).

↳ Maximum 0.1 mm distance between the hook tip and the groove for the needle.

Cover

- Swivel up the machine head (📖 *p. 15*)

Fig. 27: Setting the hook side clearance



(1) - Clamping ring
(2) - Screws
(3) - Hook support
(4) - Groove
(5) - Hook tip

To set the hook side clearance:

1. Lock the machine in place at position 1 (📖 *p. 28*).
2. Loosen the screws (2) for the hook support (3).
3. Loosen the threaded pins for the clamping ring (1).
4. Move the hook support (3) sideways such that the distance between the hook tip (5) and the groove for the needle (4) is 0.1 mm at most, without the hook tip (5) touching the needle.
5. Tighten the screws (2) for the hook support (3).
6. Tighten the threaded pins for the clamping ring (1).
7. Check the loop stroke position (📖 *p. 34*).
8. Remove the lock (📖 *p. 29*).

Order

Then check the following setting:

- Position of the needle guard (📖 *p. 40*)

4.4.4 Setting the needle guard

WARNING

Risk of injury from sharp and moving parts!

Puncture or crushing possible.

Switch off the machine before you check and set the needle guard.

The needle guard prevents contact between needle and hook tip.

Order

First, check the following settings:

- Loop stroke position (📖 *p. 34*)
- Hook side clearance (📖 *p. 38*)
- Needle bar height (📖 *p. 36*)
- A straight and undamaged needle has to be inserted (📖 *Operating Instructions*)

NOTICE

Property damage may occur!

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

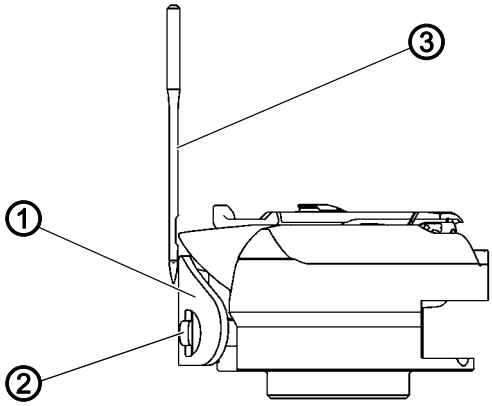
Check and, if necessary, readjust the distance to the hook tip after inserting a new needle with a different size.

Proper setting

Machine locked in place at position 1 (📖 *p. 28*).

↳ The needle guard pushes the needle away just enough so that it is not touched by the hook tip.

Fig. 28: Setting the needle guard



(1) - Needle guard
(2) - Screw
(3) - Needle

To set the needle guard:

1. Press and turn the hand crank and check how far the needle guard (1) pushes the needle (3) away.
2. Turn the screw (2) such that the needle guard (1) just pushes the needle (3) far away enough so that it is not touched by the hook tip:
   - for pushing away more: Turn counterclockwise
   - for pushing away less: Turn clockwise

4.4.5 Setting the needle guide

WARNING

Risk of injury from sharp and moving parts!

Puncture or crushing possible.

Switch off the machine before you check and set the needle guide.

Order

First, check the following setting:

- A straight and undamaged needle has to be inserted (📖 *Operating Instructions*)

Proper setting

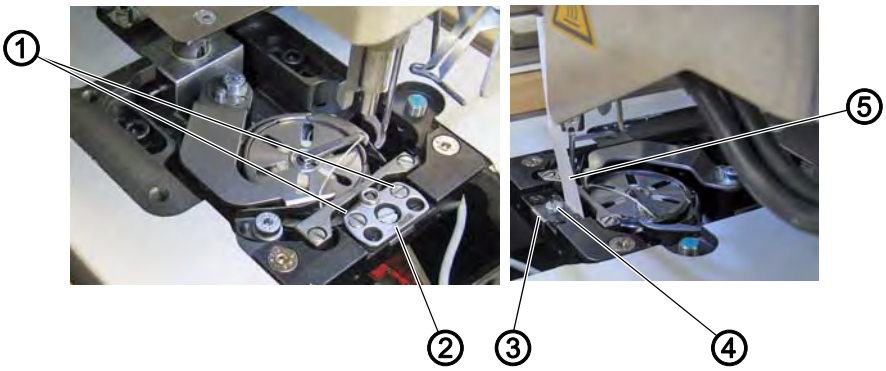
1. Machine locked in place at position 1 (📖 *p. 28*).

↳ The needle guard pushes the needle just enough away so that it cannot be touched by the hook tip.

Disturbances caused by an incorrect setting of the needle guide

- Damage to the needle
- Missing stitches

Fig. 29: Setting the needle guide



(1) - Screws
(2) - Throat plate
(3) - Needle guide
(4) - Screw
(5) - Paper

To set the needle guide:

1. Loosen the screws (1).
2. Remove the throat plate (2).
3. Rotate the machine to position 1 (📖 *p. 28*).
4. Loosen the screw (4).
5. Move the needle guide (3) as close as possible against the needle.
6. Tighten the screw (4).
7. Check this distance using a piece of paper (5).

4.5 Setting the bobbin case lifter

Fig. 30: Setting the bobbin case lifter

(1) - Bobbin case
(2) - Bobbin case lifter
(3) - Nose of the bobbin case
(4) - Middle section holder

The hook pulls the needle thread through between the nose of the bobbin case (3) and the middle section holder (4).

The bobbin case lifter (2) now pushes the bobbin case (1) away so that a gap appears for the thread.

If the hook tip is located below the bobbin case lifter, the bobbin case lifter must open so that the thread can also slide past in that position.

So that the thread can slip through without a problem, the width of the lifting gap and the timing of opening have to be set.

Disturbances caused by an incorrect setting:

- Thread breaking
- Formation of loops on the bottom side of the seam
- Loud machine noise

4.5.1 Setting the lifting gap (standard hook bearing)

WARNING

Risk of injury from moving parts!

Crushing possible.

Switch off the machine before setting the width of the lifting gap.

Order

Always check the width of the lifting gap after making changes to the needle thread size. The correct width of the lifting gap depends on the thickness of the needle thread.

Proper setting

The needle thread slides through unobstructed between the nose of the bobbin case and the middle section holder.

Cover

- Swivel up the machine head (📖 *p. 15*)

Fig. 31: Setting the lifting gap (standard hook bearing)

(1) - Threaded pin
(2) - Screw
(3) - Cover
(4) - Bobbin case lifter

To set the lifting gap:

1. Loosen the screw (2).
2. Push the cover (3) downwards.
3. Loosen the threaded pin (1).
4. Set the bobbin case lifter (4) such that the gap between the nose of the bobbin case and the middle section holder is just big enough for the needle thread to slip through without a problem.
5. Tighten the threaded pin (1).
6. Push the cover (3) upwards.
7. Tighten the screw (2).

4.5.2 Setting the lifting gap (special hook bearing for safety belts)

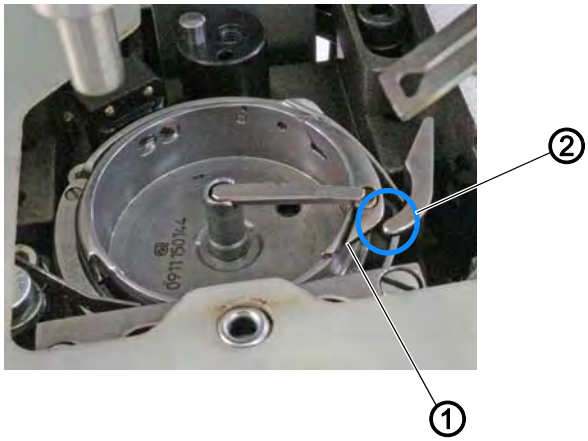
WARNING

Risk of injury from moving parts!

Crushing possible.

Switch off the machine before setting the width of the lifting gap.

Fig. 32: Setting the lifting gap (special hook bearing for safety belts) (1)



(1) - Point *(2) - Passage*

Proper setting

The needle thread slides through the passage (2) unobstructed between bobbin case lifter and bobbin case.
At the moment when the bobbin case lifter is at the point (1), there must be still be a gap between the nose of the bobbin case and the middle section holder.

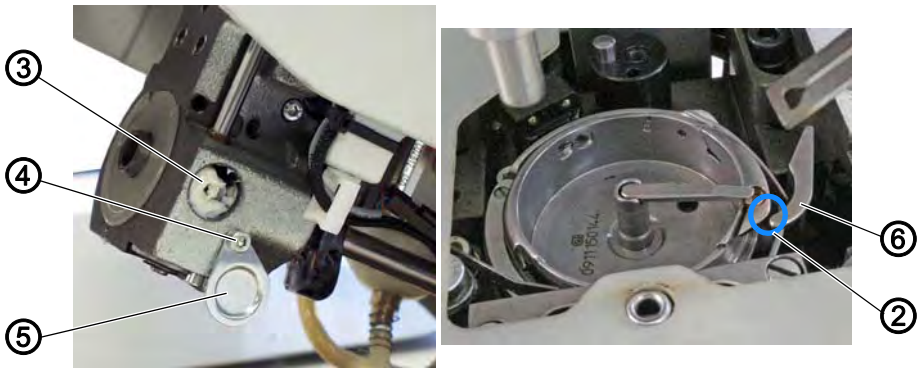
Information

The lifting gap on the special hook bearing used for belts is markedly wider than the gap on the standard hook bearing.
If the hook thread under the seam is too loose when using short stitch lengths, you need to widen the passage between bobbin case lifter and bobbin case.

Cover

- Swivel up the machine head (📖 *p. 15*)

Fig. 33: Setting the lifting gap (2)



(2) - Passage
(3) - Threaded pin
(4) - Screw
(5) - Cover
(6) - Bobbin case lifter

To set the lifting gap:

1. Loosen the screw (4).
2. Push the cover (5) downwards.
3. Loosen the threaded pin (3).
4. Set the bobbin case lifter (6) such that the needle thread can pass through the passage (2) unobstructed between bobbin case lifter (6) and bobbin case.
   At the moment when the bobbin case lifter is at the point (1), there must be still be a gap between the nose of the bobbin case and the middle section holder.
5. Tighten the threaded pin (3).
6. Push the cover (5) upwards.
7. Tighten the screw (4).

4.5.3 Setting the timing for opening

WARNING

Risk of injury from moving parts!

Crushing possible.

Switch off the machine before you check and set the timing for opening.

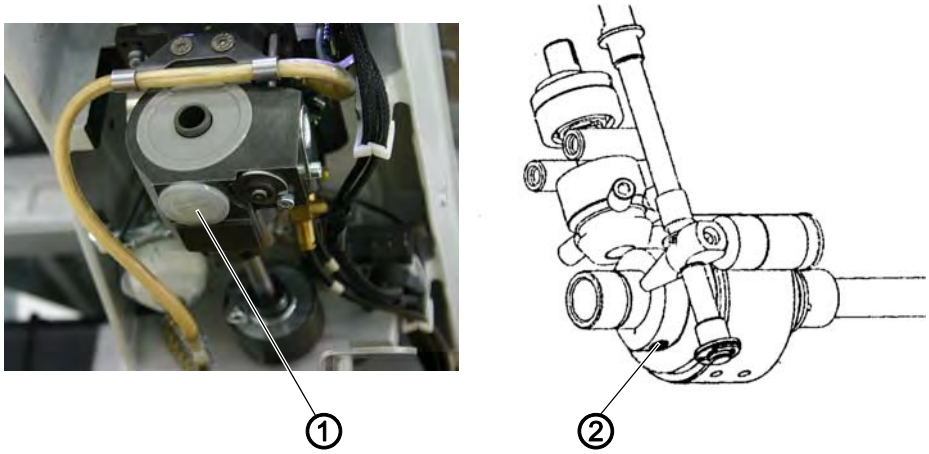
Proper setting

The bobbin case lifter starts to open exactly at the point when the hook tip is located below the bobbin case lifter after the loop is taken up.

Cover

- Swivel up the machine head (📖 *p. 15*)

Fig. 34: Setting the timing for opening



(1) - Plug

(2) - Threaded pin

To set the timing for opening:

1. Remove the plug (1).
2. Press and turn the hand crank until the tip of the needle is level with the throat plate. The threaded pin (2) must be accessible from the underside of the hook support.
3. Slacken the threaded pin (2) and use a hex key to turn the socket-head screw so that the hex key stands exactly vertical.
4. Tighten the threaded pin (2).
5. Insert the plug (1) into the opening.

4.6 Sewing foot lift

4.6.1 Setting the stroke position drive

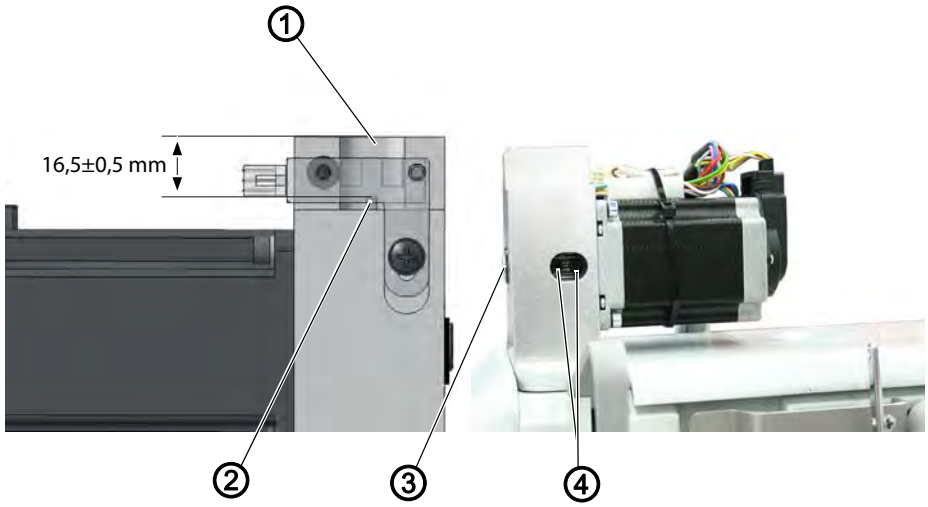
WARNING

Risk of injury from sharp and moving parts!

Puncture or crushing possible.

Switch off the machine before you check and set the stroke position drive.

Fig. 35: Setting the stroke position drive



(1) - Top edge of the stroke position housing
(2) - Toothed rack
(3) - Gear wheel
(4) - Threaded pins

Proper setting

The toothed rack must be 16.5 ± 0.5 mm distant from the top edge (1) of the stroke position housing. The threaded pins must be visible in the long hole and must be horizontal.

Cover

- Motor cover (📖 *p. 16*)

To set the stroke position drive:

1. Loosen the threaded pins (4).
2. Remove the gear wheel (3).
3. Move the toothed rack (2) to 16.5 mm below the upper stop.
4. Insert the gear wheel (3) so that the threaded pins (4) are horizontal.
5. Tighten the threaded pins (4).

4.6.2 Setting the light barrier

WARNING

Risk of injury from sharp and moving parts!

Puncture or crushing possible.

Check and set the light barrier with very great care.

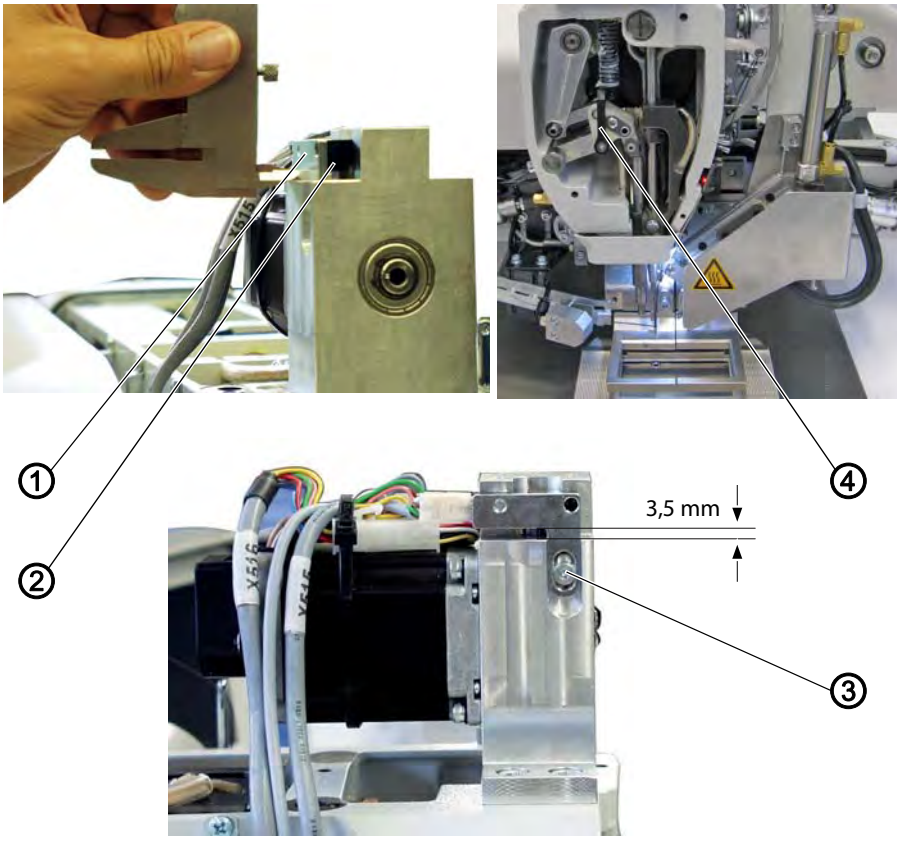
Proper setting

The light barrier with its mounting plate must be installed so that the toothed rack triggers it before reaching the upper stop.

1. Use the `Multitest` program to test the setting.

↳ The distance between the bottom edge of the mounting plate and the stroke position housing should be approx. 3.5 mm.

Fig. 36: Setting the light barrier



(1) - Mounting plate
(2) - Light barrier
(3) - Screw
(4) - Lever

Cover

- Head cover (*p. 18*)
- Motor cover (*p. 16*)

To set the light barrier:

1. Loosen the screw (3).
2. Adjust the mounting plate (2) accordingly.
3. Tighten the screw (3).
4. Switch off and on the machine again.
5. Tap on *Service*.
6. Input the password (25483).
7. Tap on *Multitest* > *Eingänge/Ausgänge testen (Test inputs/outputs)*.
8. Push the lever (4) up and monitor the display.

↳ It will show either +103 or -103.

9. Check that the toothed rack still has about 0.5 mm clearance from the stop.
10. If necessary, set the light barrier again using the mounting plate.

4.6.3 Setting the left stop screw

WARNING

Risk of injury from sharp and moving parts!

Puncture or crushing possible.

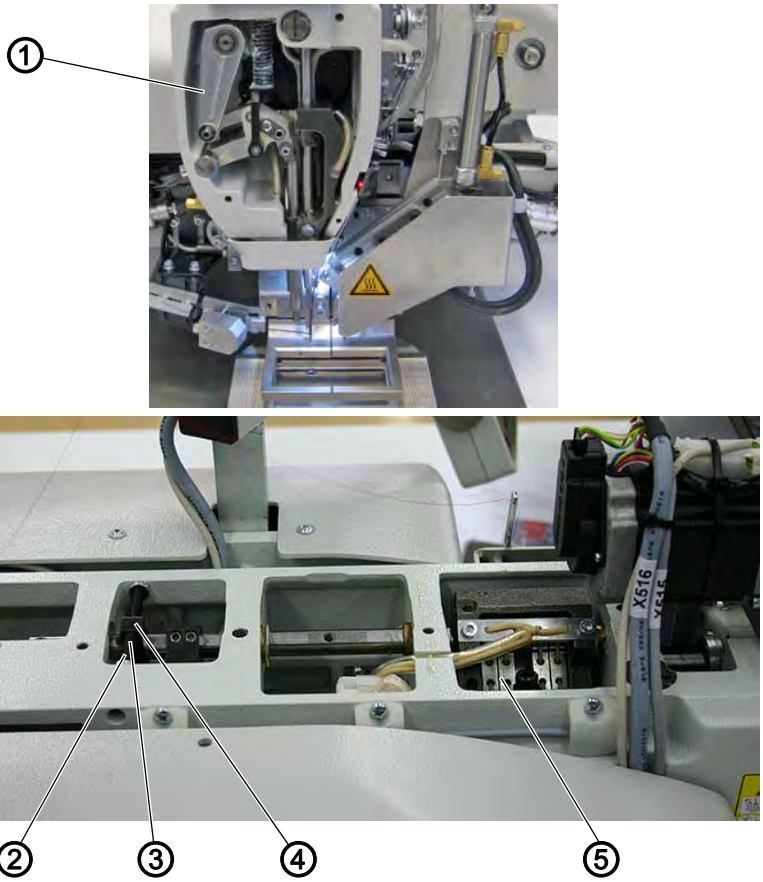
Switch off the machine before you check and set the stop screw.

Proper setting

The left stop screw (3) of the lifting gear must be set so that the lever (1) performs no stroke when it is lying against the stop block (4). The levers of the lifting gear (5) overlap.

1. Switch off and on the machine again.
2. Reference the machine.
3. Tap on *Extras* > *Service* > *Multitest* > *Hublage einstellen (Set stroke position)*.
4. Tap on *Hüpfer/Drücker (Walking foot/presser foot)* until the presser foot is selected.
5. Press and turn the hand crank and check that no stroke is performed.

Fig. 37: Setting the left stop screw



(1) - Lever
(2) - Nut
(3) - Stop screw
(4) - Stop block
(5) - Lifting gear lever

To set the left stop screw:

1. Loosen the nut (2).
2. Turn the stop screw (3) accordingly.
3. Tighten the nut (4).

4.6.4 Setting the sewing foot stroke relative to the needle bar stroke

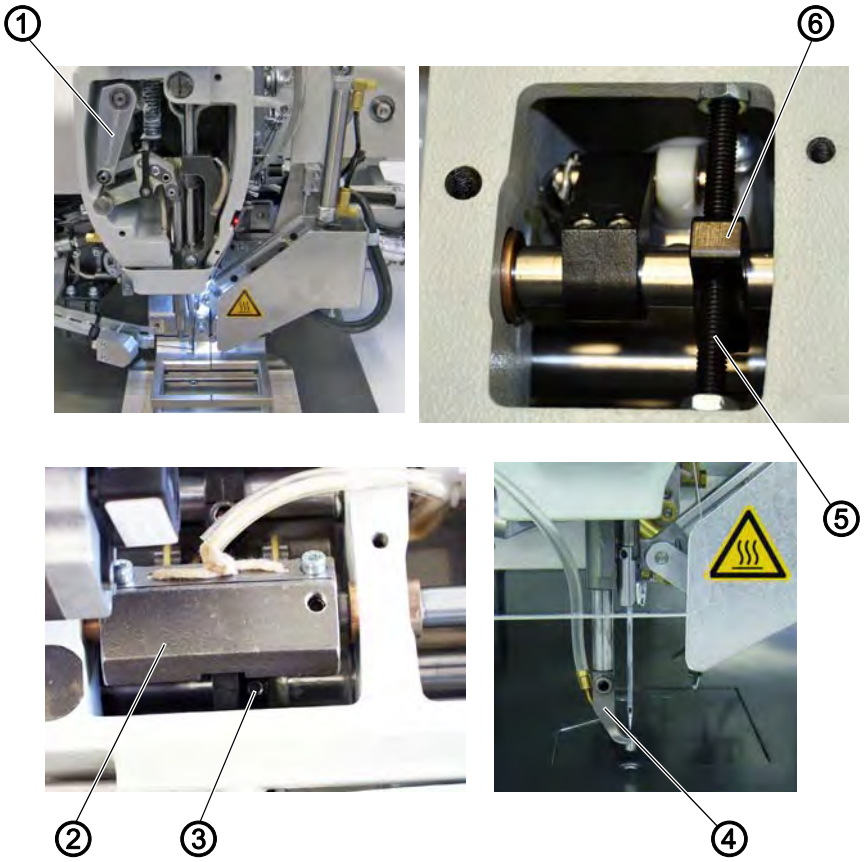
WARNING

Risk of injury from moving parts!

Crushing possible.

Always use the greatest care when testing and setting the sewing foot stroke relative to the needle bar stroke.

Fig. 38: Setting the sewing foot stroke relative to the needle bar stroke



(1) - Lever
(2) - Lifting gear
(3) - Eccentric
(4) - Sewing foot stroke
(5) - Stop screw
(6) - Stop block

Proper setting

The lifting gear (2) must be switched on so that it performs a stroke. The stop block (6) must then lie against the right hand stop screw (5).

The eccentric (3) for the sewing foot stroke must be set so that

- when the needle bar is at bottom dead center - the presser foot is lowered
- after the loop stroke – the sewing foot stroke starts.

To set the sewing foot stroke relative to the needle bar stroke:

1. Switch off and on the machine again.
2. Reference the machine.
3. Tap on *Extras* > *Service* > *Multitest* > *Hublage einstellen (Set stroke position)*.
4. Tap on *Hüpfer/Drücker (Walking foot/presser foot)* until the walking foot is selected.
5. Switch on the sewing foot stroke in the control.
6. Turn the machine head to the loop stroke position.

↳ The lever (1) must make a movement.

7. Loosen both threaded pins on the eccentric (3).
8. Rotate the eccentric (3) on the arm shaft.
9. Tighten both threaded pins on the eccentric (3).
10. Press and turn the hand crank and check that the lever (1) makes a movement.

4.6.5 Setting the sewing foot height

The sewing foot height can be set electronically from 1 mm to a maximum of 10 mm.

WARNING

Risk of injury from sharp and moving parts!

Puncture or crushing possible.

Check and set the sewing foot height only with very great care.

Proper setting

If a height of 1 mm is set in the control, the sewing foot must be 1 mm above the throat plate.

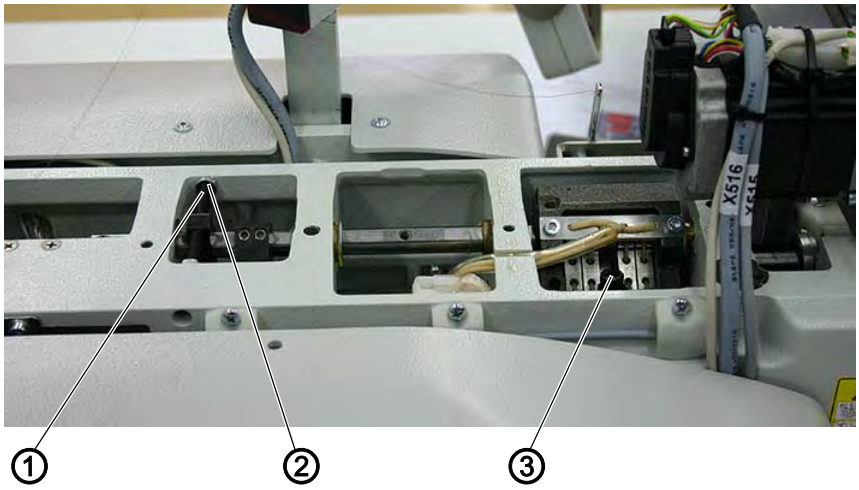
To set the height of the sewing foot:

1. Assemble the walking foot.
2. Tap on *Extras* > *Service* > *Multitest* > *Hublage einstellen (Set stroke position)*.
3. Tap on *Hüpfer/Drücker (Walking foot/presser foot)* until the walking foot is selected.

4. Tap on *Nähfußhub (Sewing foot stroke)*.
5. Enter a sewing foot height of 1.0 mm.
6. Move to position.
7. Turn the sewing foot to bottom dead center.

↳ The distance between the throat plate and sewing foot must be 1 mm.

Fig. 39: Setting the sewing foot height



(1) - Screw
(2) - Nut
(3) - Screw

8. Loosen the screw (3).
9. Turn the pivot shaft so that the distance between throat plate and sewing foot is 1 mm.
10. Tighten the screw (3).
11. Turn the sewing foot to top dead center.

↳ The distance between the throat plate and sewing foot must be 5 mm.

12. Loosen the nut (2).
13. Adjust the screw (1) so that the distance between the throat plate and sewing foot is 5 mm (corresponding to a 4 mm sewing foot stroke).

Information

The distance between minimum and maximum positions may have to be determined. If one of these settings is changed the other setting must be checked again.

4.6.6 Setting the reference light barrier sewing axis

WARNING

Risk of injury from sharp and moving parts!

Puncture or crushing possible.

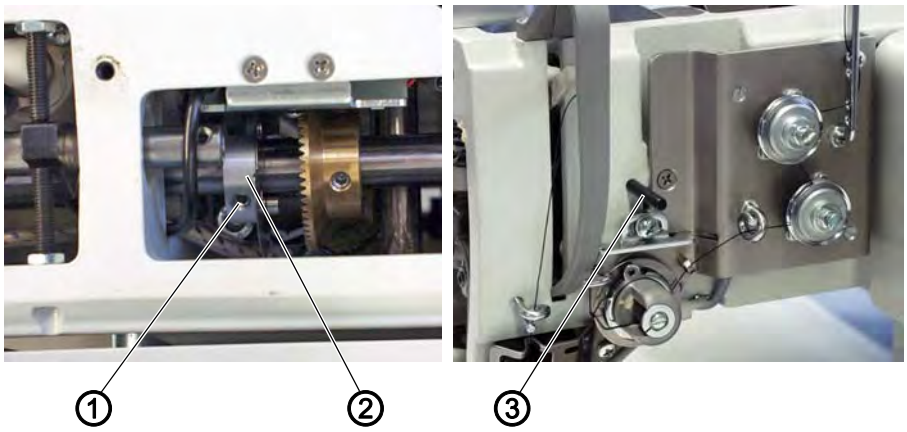
Check and set the reference light barrier only with very great care.

Proper setting

To reference the needle bar, position the machine at top dead center.

1. Switch off and on the machine again.
2. Reference the machine and check that the needle bar is at top dead center.

Fig. 40: Setting the reference light barrier



(1) - Threaded pin
(2) - Take-up lever disk
(3) - Locking peg

Cover

- Arm cover (*p. 17*)

To set the reference light barrier:

1. Switch off and on the machine again.
2. Tap on `Multitest`.
3. Input the password (25483).
4. Tap on `Multitest` > `Eingänge/Ausgänge testen (Test inputs/outputs)`.
5. Turn the needle bar to top dead center and insert the 3 mm end of the locking peg to peg the arm shaft crank to position 2.
6. Loosen the threaded pin (1).

7. Rotate the take-up lever disk (2) on the arm shaft accordingly.

↳ The switch S100 then switches.

8. Tighten the threaded pin (1).
9. Remove the locking peg (3).
10. Switch off and on the machine again.
11. Check that the needle bar is at top dead center.

4.7 Setting the needle thread tension

4.7.1 Setting the needle thread regulator

WARNING

Risk of injury from sharp and moving parts!

Puncture or crushing possible.

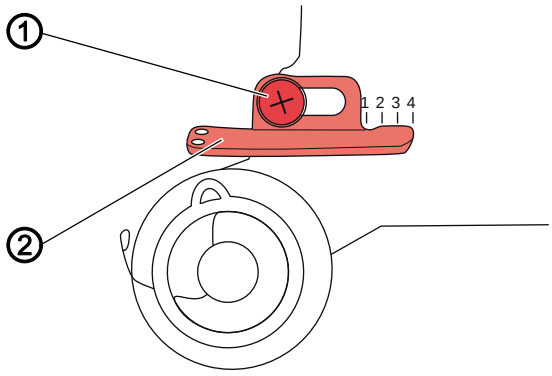
Switch off the machine before you check and set the needle thread regulator.

The needle thread regulator determines the tension applied to guide the needle thread around the hook. The required tension depends on the thickness of the sewing material, the thread strength, and the stitch length.

Proper setting

The loop of the needle thread slides at low tension over the thickest point of the hook, without forming loops or snagging.

Fig. 41: Setting the needle thread regulator



(1) - Screw *(2) - Needle thread regulator*

To set the needle thread regulator:

1. Press and turn the hand crank and monitor the progress of the needle thread around the hook.

2. Loosen the screw (2).
3. Move the needle thread regulator:
   - more thread = slide to the left
   - less thread = slide to the right
4. Tighten the screw (2).

4.7.2 Setting the thread tensioning spring

WARNING

Risk of injury from sharp and moving parts!

Puncture or crushing possible.

Switch off the machine before you check and set the thread tensioning spring.

The thread tensioning spring holds the needle thread under tension from the top dead center of the thread lever up to the point when the needle eye plunges into the sewing material.

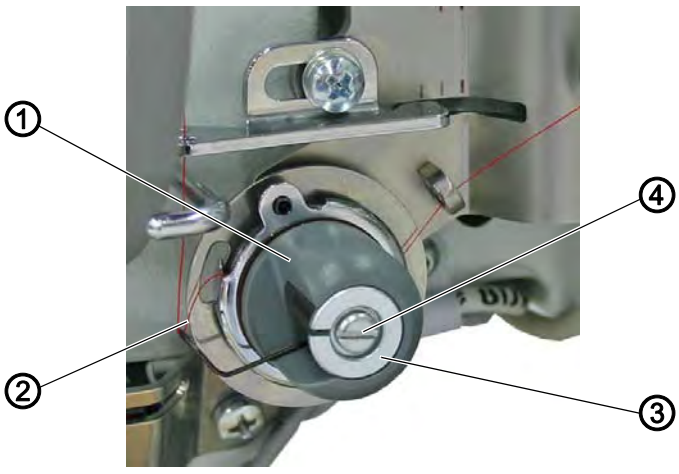
Proper setting

Initial position: The thread tensioning spring does not contact the stop until the needle eye has plunged into the sewing material.

Important

The setting for the thread tensioning spring must be varied according to the sewing material and the required sewing result.

Fig. 42: Setting the thread tensioning spring



(1) - Stop collar
(2) - Spring
(3) - Tension disk
(4) - Screw

To set the thread tensioning spring:

1. Loosen the screw (4).
2. Setting the spring travel: Turn the stop collar (1):
   - longer spring travel: Turn counterclockwise
   - shorter spring travel: Turn clockwise
3. Setting the spring tension: Turn the tension disk (3):
   - greater spring tension: Turn counterclockwise
   - less spring tension: Turn clockwise

Important

Do not twist the stop collar in doing so.

4. Tighten the screw (4).

4.7.3 Setting the thread tension plate

Fig. 43: Setting the thread tension plate

(1) - Screw
(2) - Nut
(3) - Disk
(4) - Tension disk

To set the thread tension plate:

1. Remove the thread from the thread tensioner.
2. Tap on *Extras* > *Service* > *Multitest*.
3. Input the password (25483).
4. Tap on *Fadenspannung (thread tensioner)* > *Kalibrierung (Calibration 3)*.
5. Loosen screw (1) and nut (2).
6. Loosen the disk (3).
7. Turn the disk (3) clockwise, feeling for the stop (until the tension disks lie flush on each other).
8. Use a (lead) pencil to mark 12 o'clock on the disk (3) and turn it approx. 15-30° clockwise.

9. Tap on *ESC* or *OK*.
10. Tap on *Kalibrierung 1 (Calibration 1)*.
11. Turn back the nut (2) until reaching the screw head of the screw (1).
12. Screw in the screw (1) until the nut (2) is positioned approx. 2 mm in front of the disk (3).
13. Loosen the screw (1) until the tension disks tighten.
14. Loosen the screw (1) further by approx. ¼ turn.
15. Tap on *ESC*.
16. Tap on *Kalibrierung 3 (Calibration 3)*.
17. Hold the screw (1) still with a screwdriver, and tighten the nut (2). Once again, take care the disk (3) does not turn with the nut.
18. Tap on *ESC* and check that the tension disks (4) open easily.
19. Tap on *Kalibrierung 1 (Calibration 1)* and check the closure of the tension disks.
20. Repeat the procedure for the 2nd thread tensioner.

4.7.4 Calibrating the thread tension plate

Fig. 44: Calibrating the thread tension plate

(1) - Thread lever *(2) - Thread scale*

To calibrate the thread tension plate:

1. Thread the thread 8/3 times and on to the thread lever (5).
2. With *Kalibrierung 1 (Calibration 1)* selected, measure the thread tension with a thread scale (6).
3. Input the measured value into the control and confirm it with *OK*.
4. Perform the measurement and input also for *Kalibrierung 2 (Calibration 2)* and *Kalibrierung 3 (Calibration 3)*.

Checking the calibration

1. Input the percentage value = 50 in the *Fadenspannung (Thread tension)* menu.
2. Press the *Ein (On)* button to switch on the tension.
3. Test the tension using a thread scale: Setpoint: 1000 cN.
   If necessary, other percentage values can be input.
4. If variations ±10 % are found: Set the thread tensioners once again and repeat the calibration.
5. If the variations persist: Clean any dirt from the thread tensioners including the magnets.

4.8 Thread cutter

4.8.1 Setting the height of the thread-pulling knife

WARNING

Risk of injury from sharp and moving parts!

Puncture or crushing possible.

Switch the machine off before you check and set the height of the thread-pulling knife.

The height of the thread-pulling knife is factory-set such that the distance (5) between the upper edge of the knife carrier (4) and the hook bearing screw-on surface (3) is 10.7 ± 0.05 mm. Fine adjustment is made by means of washers between the knife carrier (4) and the thread-pulling knife (2).

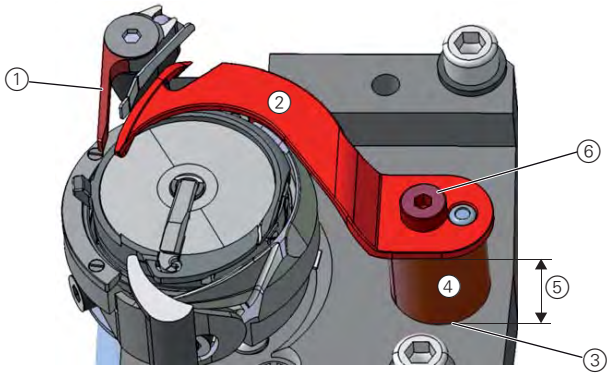
Important

When changing the knives, make sure that you do not lose the washers.

Proper setting

The thread-pulling knife (2) pivots as close as possible above the hook and is at the same height as the counter blade (1).

Fig. 45: Setting the height of the thread-pulling knife



(1) - Counter blade
(2) - Thread-pulling knife
(3) - Hook bearing
(4) - Knife carrier
(5) - Distance
(6) - Screw

To set the height of the thread-pulling knife:

1. Loosen the screw (6).
2. Remove the thread-pulling knife (2).
3. Place as many washers between thread-pulling knife (2) and knife carrier (4) as necessary to ensure that the upper edges of counter blade (1) and thread-pulling knife (2) are at the same height.
4. Non-required washers on the top side between the thread-pulling knife (2) and screw (6) should be kept.
5. Screw down the thread-pulling knife (2) using screw (6).

4.8.2 Setting the cutoff curve

WARNING

Risk of injury from sharp and moving parts!

Puncture or crushing possible.

Switch off the machine before you set the cutoff curve.

Proper setting

The control cam (4) makes direct contact with the clamping ring (1).

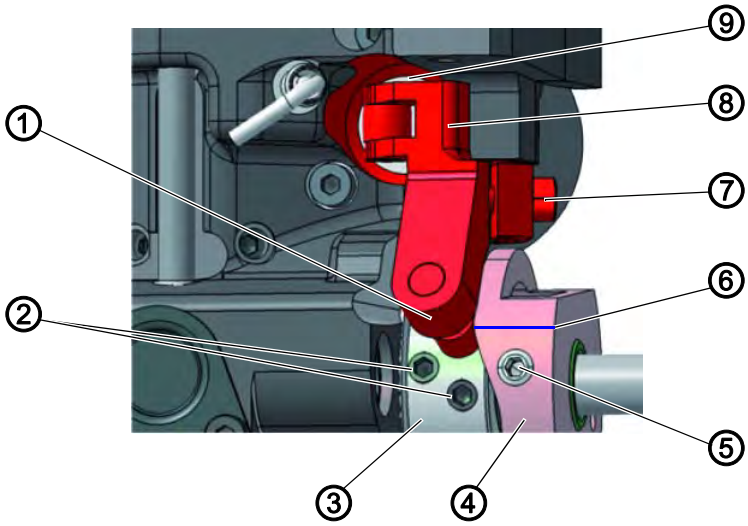
The distance between the widest extent (6) of the control cam (4) and the roller (3) is 0.1 mm at most.

In resting position, the circle mark on the cutting edge of the thread-pulling knife is exactly next to the tip of the counter blade.

Cover

- Swivel up the machine head (🕮 *p. 15*)
- Bobbin flap (🕮 *p. 21*)

Fig. 46: Setting the cutoff curve (1)



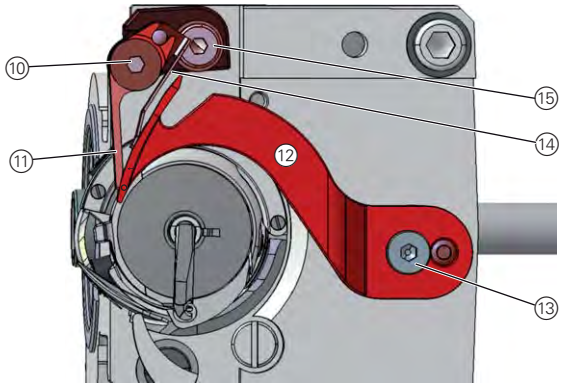
(1) - Roller
(2) - Threaded pins
(3) - Clamping ring
(4) - Control cam
(5) - Threaded pins
(6) - Highest point
(7) - Clamping screws
(8) - Actuating lever
(9) - Solenoid

To set the cutoff curve:

1. Loosen all 4 threaded pins (2) on the clamping ring (3).

2. Push the clamping ring (3) towards the hook bearing as far as it will go.
3. Tighten all 4 threaded pins (2) on the clamping ring (3).
   The clamping ring (3) and control cam (4) are both mutually used as a stop and should not be loosened at the same time.
4. Loosen the threaded pins (5).
5. Press the actuating lever (8) against the solenoid (9).
6. Turn the control cam (4) until its highest point is next to the roller (1).
7. Move the control cam (4) such that the distance between its highest point (6) and the roller (1) is 0.1 mm at most.
8. Tighten the threaded pins (5).
9. Loosen the clamping screw (7) on the actuating lever (8).

Fig. 47: Setting the cutoff curve (2)



(10) - Screw
(11) - Counter blade
(12) - Thread-pulling knife
(13) - Screw
(14) - Hook thread clamp
(15) - Screw

10. Turn the thread-pulling knife (12) such that the circle mark is exactly next to the tip of the counter blade (11).
11. Tighten the clamping screw (7) on the actuating lever (8) such that the actuating lever (8) has no axial play.
12. Loosen all 4 threaded pins (2) on the clamping ring (3).
13. Push the clamping ring (3) to the right as far as it will go and against the control cam (4).

Important

Check the loop stroke position (📖 *p. 34*).

14. Tighten all 4 threaded pins (2) on the clamping ring (3).

4.8.3 Setting the cutting pressure

WARNING

Risk of injury from sharp and moving parts!

Puncture or crushing possible.

Switch off the machine before setting the cutting pressure.

The shape of the thread-pulling knife automatically creates the required cutting pressure as soon as the thread-pulling knife and counter blade make contact.

Proper setting

In resting position, the hook thread clamp makes contact with the thread-pulling knife without any pressure being applied. Any 2 threads with the greatest strength used for sewing can be neatly cut simultaneously.

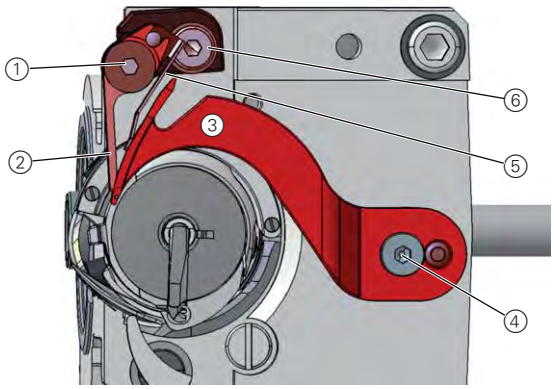
Disturbances caused by an incorrect setting

- Increased knife wear when the pressure is too great
- Problems when sewing if the hook thread clamp is too high
- Problems in cutting the thread

Cover

- Bobbin flap (📖 *p. 21*)

Fig. 48: Setting the cutting pressure



(1) - Screw
(2) - Counter blade
(3) - Thread-pulling knife
(4) - Screw
(5) - Hook thread clamp
(6) - Screw

To set the cutting pressure:

1. Press and turn the hand crank until the thread-pulling knife (3) can be swung out by hand.

2. Loosen the screw (1).
3. Position the thread-pulling knife (3) such that the arrow mark is exactly next to the tip of the counter blade (2).
4. Turn the hook thread clamp (5) such that it rests against the thread-pulling knife (3).
5. Turn the counter blade (2) such that it rests against the thread-pulling knife (3).
6. Tighten the screw (1).

Important

Check the position of the cutters, since the counter blade can easily become warped when the screw is being tightened.

4.8.4 Setting point in time for cutting

WARNING

Risk of injury from sharp and moving parts!

Puncture or crushing possible.

Switch off the machine before you check and set the point in time for cutting.

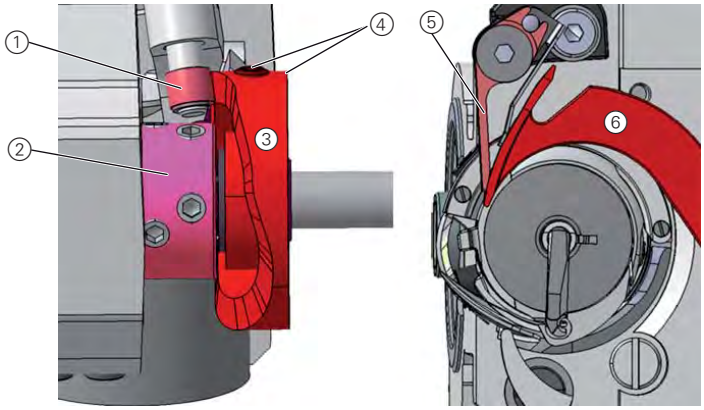
Proper setting

The threads are cut when the thread lever is at the top dead center.

Cover

- Swivel up the machine head (📖 *p. 15*)
- Bobbin flap (📖 *p. 21*)

Fig. 49: Setting point in time for cutting



(1) - Roller
(2) - Clamping ring
(3) - Control cam
(4) - Threaded pins
(5) - Counter blade
(6) - Thread-pulling knife

To set the point in time for cutting:

1. Loosen the threaded pins (4).
2. Press and turn the hand crank until the thread-pulling knife (6) can be swung out by hand.
3. Pivot the thread-pulling knife (6) as far forward until the circle mark is exactly next to the tip of the counter blade (5).
4. Press and turn the hand crank until the thread lever is at the top dead center.
5. Push the control cam (3) to the left as far as it will go and against the clamping ring (2).
6. Turn the control cam (3) such that the roller (1) runs up at the contour of the control cam (3) and the widest extent of the control cam is at the highest point when the thread lever is at the top dead center.
7. Tighten the threaded pins (4).
8. Check the setting:
   - Insert the thread into thread-pulling knife (6) and slowly press and turn the hand crank.
   - Determine the hand crank position at which the thread is cut.
   - Repeat setting steps 1 – 7 if necessary.

4.9 Thread burner (optional)

4.9.1 Setting the upper thread burner

Proper setting

The burner burns the thread off cleanly without damaging the sewing material. The burner pivots quickly without coming into contact with the stop.

Cover

- Burner cover (📖 *p. 23*)

To set the upper thread burner:

1. Tap on *Extras* > *Service* > *Multitest*.
2. Tap on *Fadenbrenner (Thread burner)*.
3. Tap on *Klammer schließen (Close clamp)*.
4. Use *Brenner oben runter (Upper burner down)* to check the movement sequence.

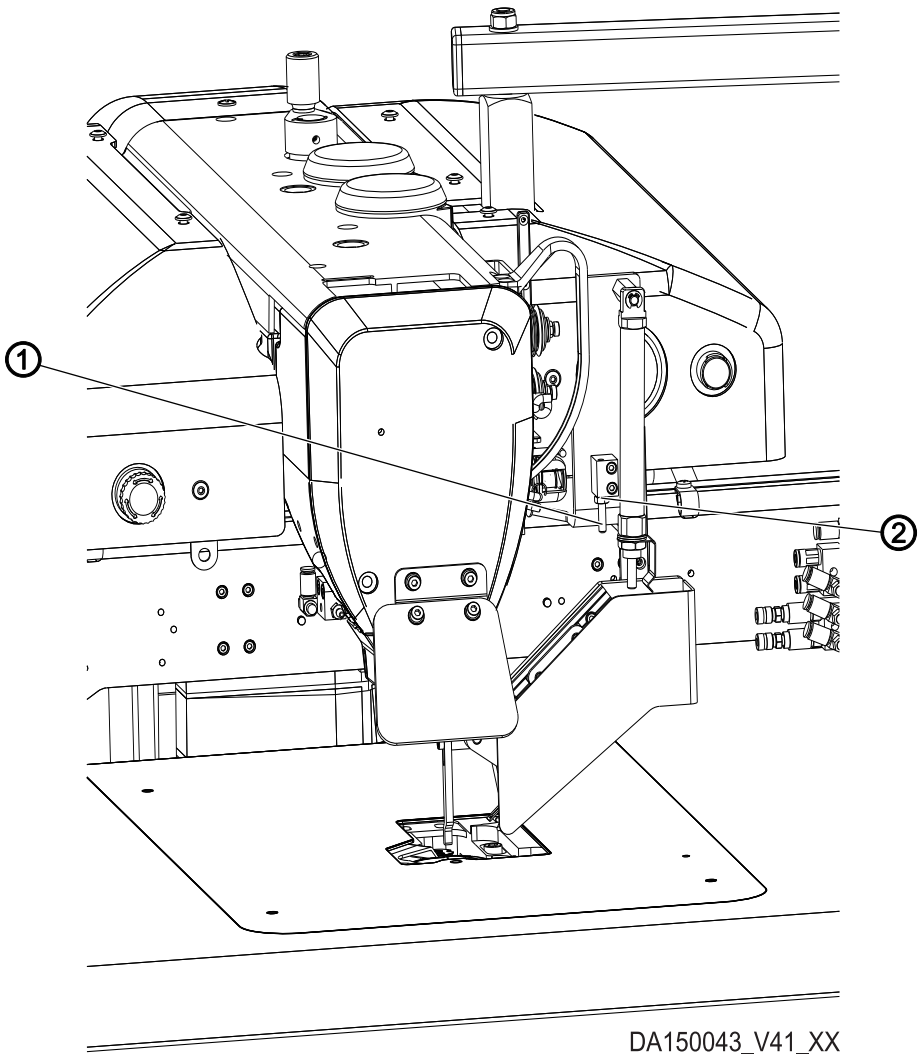
Fig. 50: Setting the upper thread burner

(1) - Threads *(2) - Thread burner*

↳ Both threads (1) are burnt off and sucked in. The burner (2) is positioned slightly to the left opposite the needle hole.

Setting the height

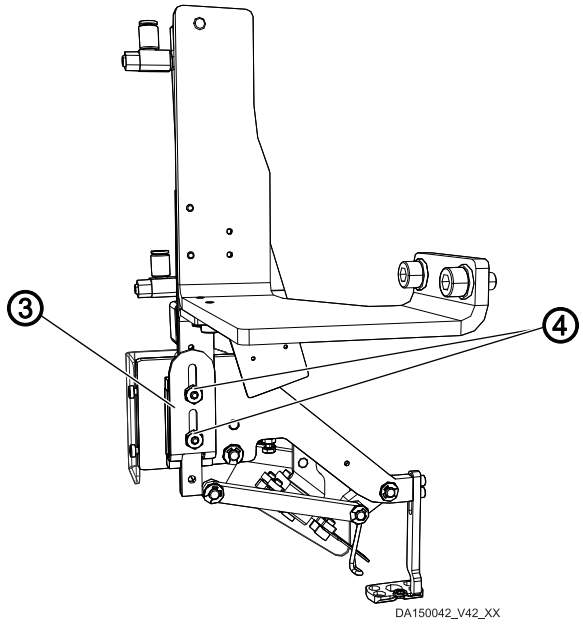
Fig. 51: Setting the height (1)



(1) - Threaded pin

(2) - Nut

Fig. 52: Setting the height (2)

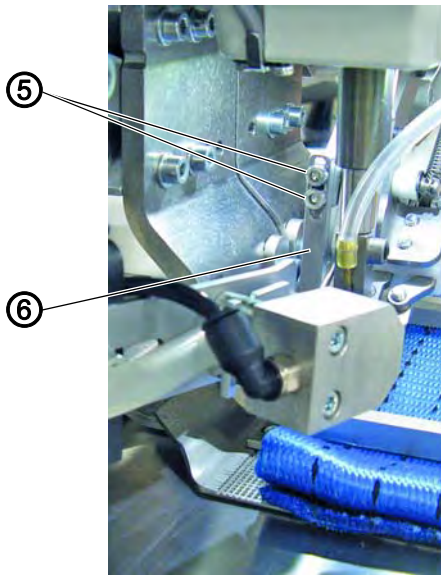


(3) - Bracket *(4) - Nuts*

To set the height of the thread burner:

1. Slightly loosen the nuts (4).
2. Position the bracket (3) at the desired bottom limit.
3. Re-tighten the nuts (4).
4. Use the threaded pin (1) to set the upper limit such that there is as little play as possible when the thread burner is at its topmost position. Lock the upper limit with a nut (2).
5. Insert the sewing material.
6. Check the movement sequence.
7. Set the material thickness scanner in relieved condition if necessary:
   - Loosen the screws (5) and adjust the height of the material thickness scanner (6).
   - Tighten the screws (5).

Fig. 53: Setting the height (3), setting the material thickness scanner



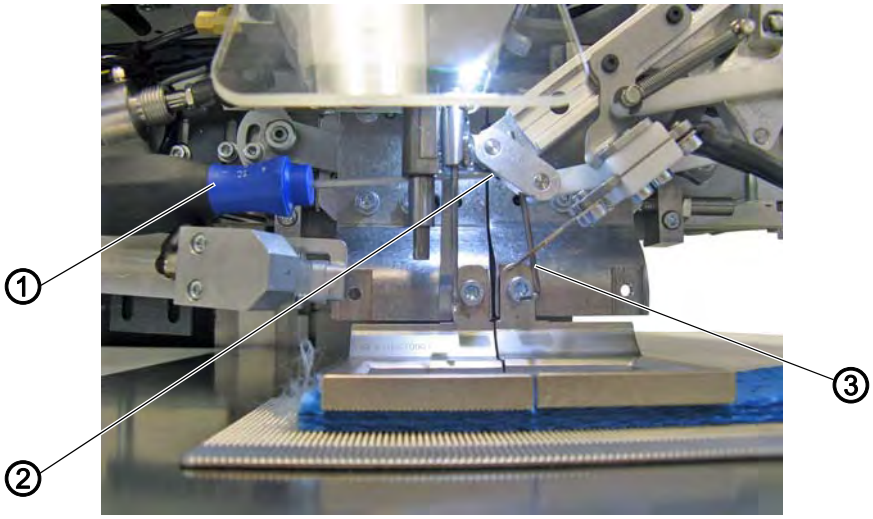
(5) - Screws
(6) - Material thickness scanner

Setting the needle thread advancing device

Proper setting

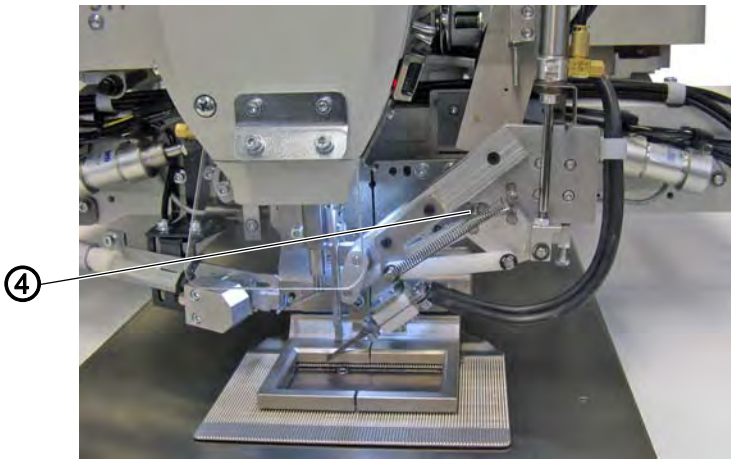
The needle thread advancing device pivots quickly while advancing and slightly pulling back the thread at the same time. It positions the thread for the suction device. When being burnt off, the thread is not under tension.

Fig. 54: Setting the needle thread advancing device (1)



(1) - Screwdriver
(2) - Screw
(3) - Needle thread advancing device

Fig. 55: Setting the needle thread advancing device (2)



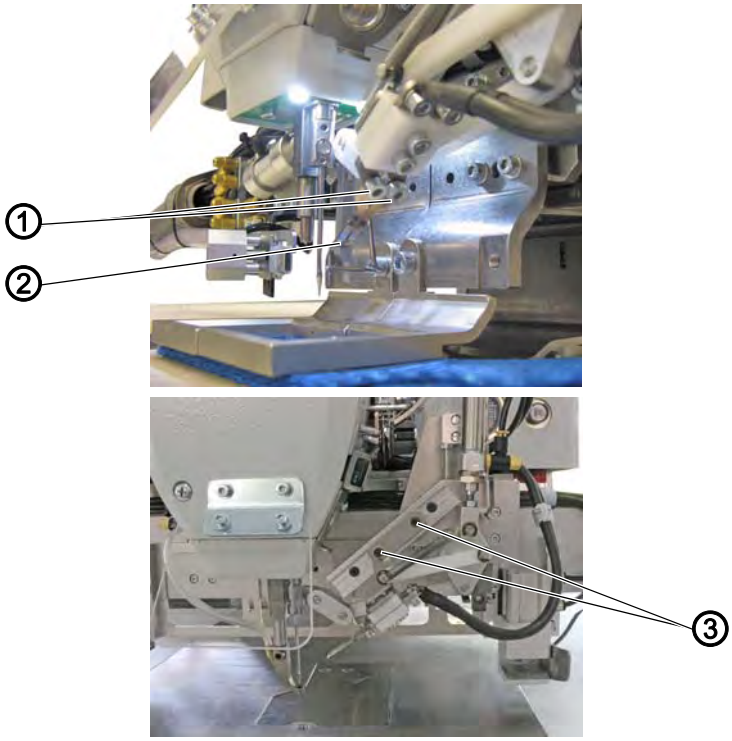
(4) - Stop screw

To set the needle thread advancing device:

1. Loosen the screw (2).
2. Move the needle thread advancing device (3) such that it passes over the clamp and under the sewing foot when completing its forward motion.
3. Tighten the screw (2).
4. Use the stop screw (4) to limit the swivel angle.

Setting the position of the burner tip

Fig. 56: Setting the position of the burner tip



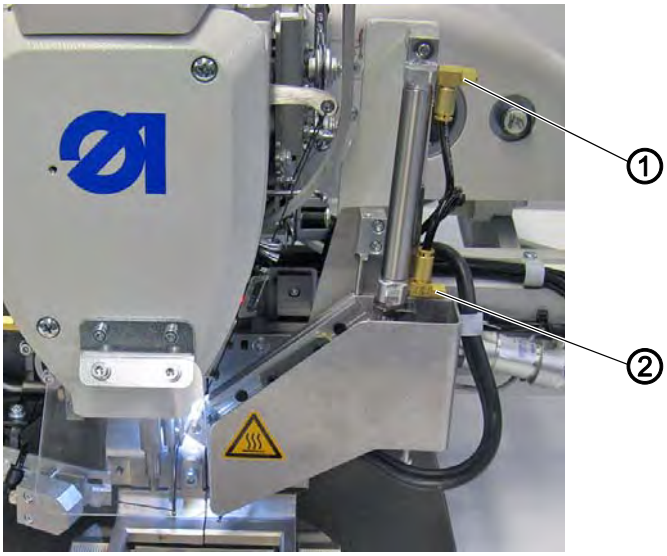
(1) - Screws
(2) - Burner tip
(3) - Screws

To set the position of the burner tip:

1. Loosen the screws (1).
2. Adjust the length of the burner tip (2).
3. Tighten the screws (1).
4. Use the screws (3) to make a height adjustment if necessary.

Setting the throttle valves

Fig. 57: Setting the throttle valves



(1) - Throttle valve - upward movement (2) - Throttle valve - downward movement

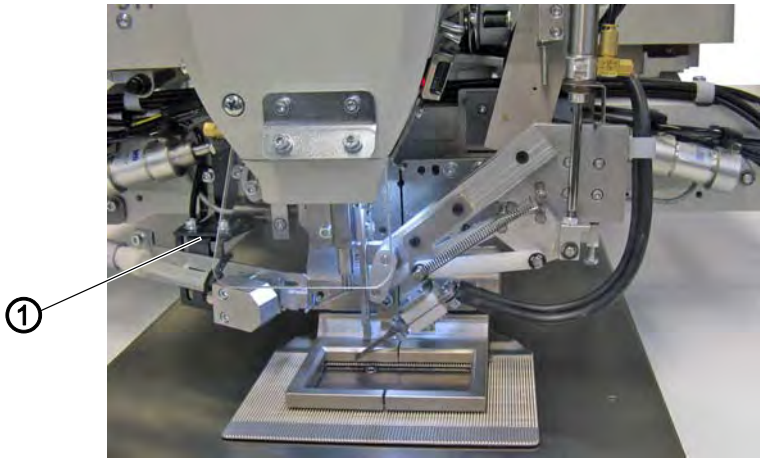
1. Set the throttle valves (1, 2).

Setting the thread suction device

Proper setting

The thread suction device reliably sucks in the thread. Even though positioned closely to the swung-out needle thread advancing device, the thread suction device does not interfere with the swivel motion performed by the needle thread advancing device.

Fig. 58: Setting the thread suction device



(1) - Angle bracket with screws

To set the thread suction device:

1. Depending on the clamping system used, set the position of the thread suction device using the screws on the angle bracket (1).

4.9.2 Setting the lower thread burner

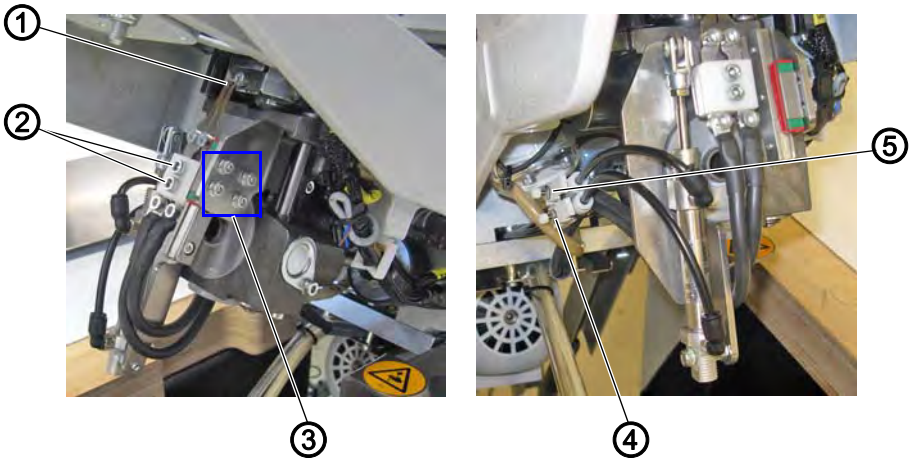
Proper setting

The burner burns the thread off cleanly without damaging the sewing material. The movement is quick.

Cover

- Swivel up the machine head (📖 *p. 15*)

Fig. 59: Setting the lower thread burner



(1) - Thread burner tip
(2) - Screws
(3) - Screws
(4) - Throttle valve - upward movement
(5) - Throttle valve - downward movement

To set the lower thread burner:

1. Loosen the screws (2).
2. Tap on `Extras` > `Service` > `Multitest`.
3. Tap on `Fadenbrenner (Thread burner)`.
4. Tap on `Klammer schließen (Close clamp)`.
5. Use `Brenner unten rauf (Lower burner up)` to check the movement sequence.
6. Adjust the height of the thread burner holder until the thread burner tip is positioned closely under the throat plate.
7. Tighten the screws (2).
8. Loosen the screws (3).
9. Move the thread burner holder sideways until the thread burner tip is positioned in the center, as seen from the top through the needle hole.
10. Tighten the screws (3).
11. Set the throttle valves (4, 5).
12. Check and, if necessary, set the movement sequence again.

4.9.3 Replacing the thread burner tips

WARNING

Risk of injury from hot thread burner tip

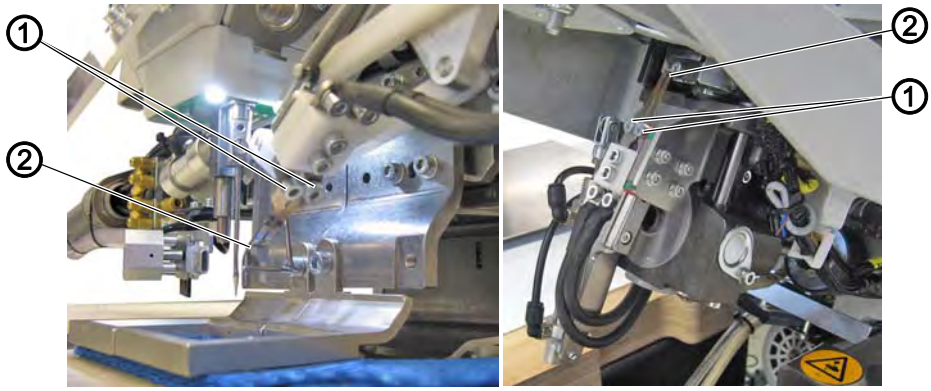
Risk of burns.

NEVER touch the thread burner tip.

Cover

- Burner cover (📖 *p. 23*)
- Swivel up the machine head (📖 *p. 15*)

Fig. 60: Replacing the thread burner tips



(1) - Screws *(2) - Thread burner tip*

To replace the thread burner tips:

1. Loosen the screws (1).
2. Change the burner tips (2).
3. Tighten the screws (1).
4. Tap on *Extras* > *Service* > *Multitest* > *Fadenbrenner (Thread burner)*.
5. Use *Brenner an (Burner on)* to verify that the burner tip is glowing (turns off automatically after 10 s).

4.9.4 Setting the thread advancing device

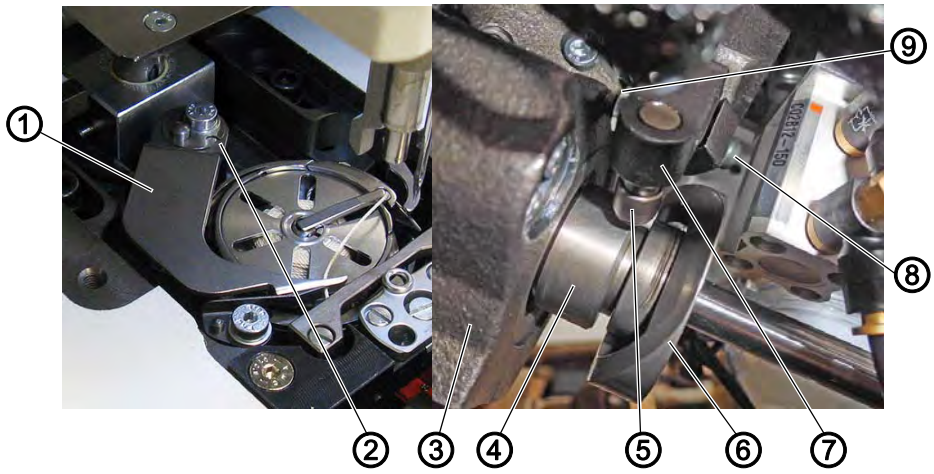
WARNING

Risk of injury from sharp and moving parts!

Puncture or crushing possible.

Switch off the machine before you check and set the thread advancing device.

Fig. 61: Setting the thread advancing device



(1) - Thread advancing device
(2) - Carrier
(3) - Body casting
(4) - Clamping ring
(5) - Roller
(6) - Control cam
(7) - Lever
(8) - Clamping screw
(9) - Threaded pin

Proper setting

- When the thread advancing device (1) is at rest, the distance between the highest point of the control cam (6) and the roller (5) is 0.1 mm
- The control cam (6) makes contact with the clamping ring (4)
- The carrier (2) must have no axial play, but still run smoothly

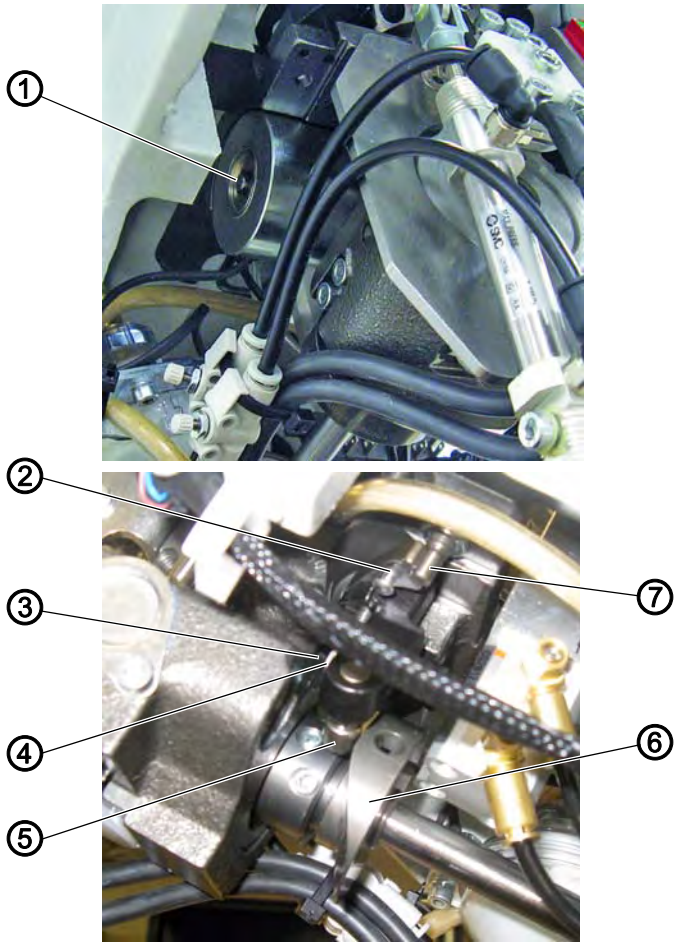
Setting steps

1. Loosen all 4 threaded pins on the clamping ring (4).
2. Push the clamping ring (4) towards the hook bearing as far as it will go.
3. Tighten all 4 threaded pins on the clamping ring (4).
4. Loosen both threaded pins on the control cam (6).
5. Turn the lever (7) so that the threaded pin (9) on the body casting (3) strikes the hook support.
6. Set the distance between the roller (5) and the highest point of the control cam (6) to 0.1 mm.

7. Tighten both threaded pins on the control cam (6).
8. Loosen the clamping screw (8) on the lever (7).
9. Turn the thread advancing device (1) until the bobbin can be removed.
10. Tighten the clamping screw (8). Take care to ensure that there is no axial play.
11. Loosen all 4 threaded pins on the clamping ring (4) and push the clamping ring as far as it will go and against the control cam (6).
12. Tighten all 4 threaded pins on the clamping ring (4).
13. Check the loop stroke.

Setting the locking latch

Fig. 62: Setting the locking latch



(1) - Magnet armature
(2) - Locking latch
(3) - Threaded pin
(4) - Nut
(5) - Roller
(6) - Control cam
(7) - Locking pin

Proper setting

1. Press and turn the hand crank until the roller (5) is at the highest point of the control cam (6).
2. Press against the magnet armature (1).

↳ The locking latch (2) can be swung out without clamping, and the distance between the locking latch (2) and locking pin (7) is not greater than 0.1 mm.

To set the locking latch:

1. Loosen the nut (4).
2. Turn the threaded pin (3) and set the distance.
3. Tighten the nut (4).

4.10 Setting the hook thread clamp

WARNING

Risk of injury from sharp and moving parts!

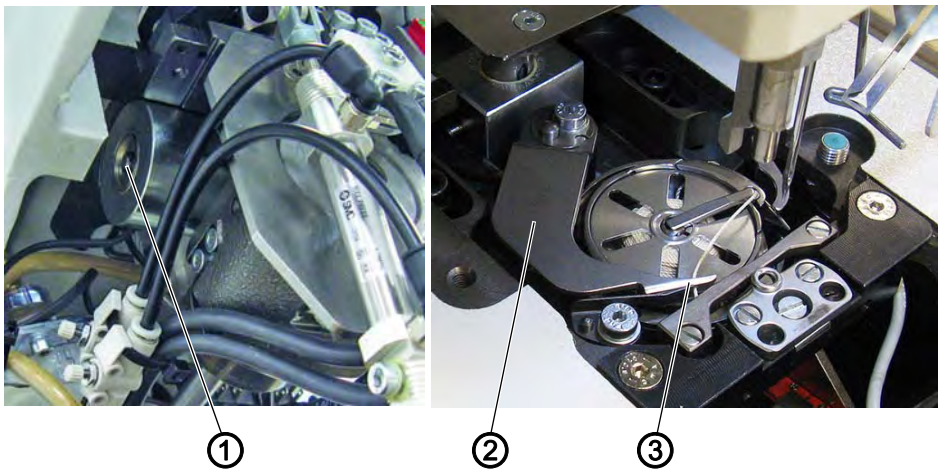
Puncture or crushing possible.

Switch off the machine before you check and set the hook thread clamp.

Cover

- Swivel up the machine head (📖 *p. 15*)
- Bobbin flap (📖 *p. 21*)

Fig. 63: Setting the hook thread clamp



(1) - Magnet armature
(2) - Thread advancing device
(3) - Hook thread clamp

Proper setting

The thread is held in place, but not clamped.

To set the hook thread clamp:

1. Press against the magnet armature (1) while pressing and turning the hand crank until the thread advancing device (2) swings out.
2. Insert the end of the hook thread into the thread advancing device.
3. Press and turn the hand crank until the cutter swings back.
4. Check if the thread is held in place without being clamped.

4.11 Setting the control cam of the thread advancing device

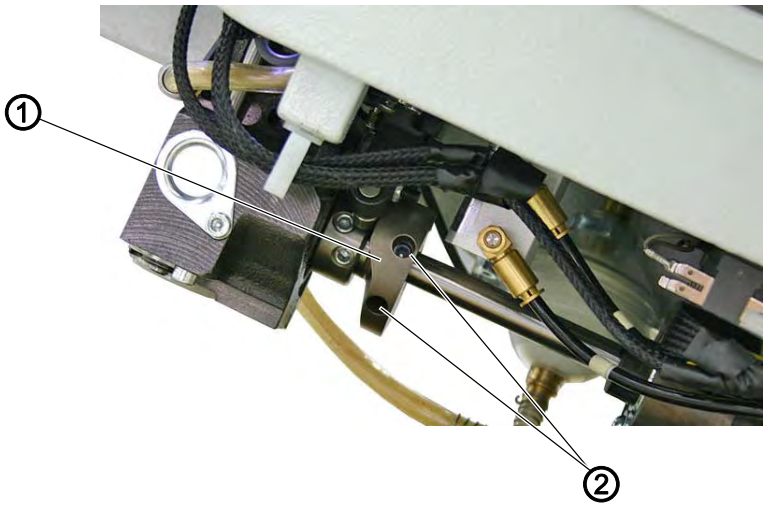
WARNING

Risk of injury from sharp and moving parts!

Puncture or crushing possible.

Switch off the machine before you check and set the control cam of the thread advancing device.

Fig. 64: Setting the control cam of the thread advancing device



(1) - Control cam

(2) - Threaded pins

Proper setting

The thread advancing device is in its idle position when at the position *thread lever at top dead center*. When the machine is at the position *thread lever at top dead center* the control cam (1) is at its highest point.

The thread advancing device captures the hook thread, but not the needle thread. If there are any short pieces of thread in the area of the hook that have been burnt off on both sides, the thread advancing device will capture the needle thread as well. In this case, the control cam will have to be corrected to allow the thread advancing device to swing out with a delay.

To set the control cam of the thread advancing device:

1. Press the hand crank and turn it to the position "thread lever at top dead center".
2. Loosen the threaded pins (2).
3. Rotate the control cam (1).
4. Tighten the threaded pins (2).

4.12 Changing the cloth pressure bar

WARNING

Risk of injury from sharp and moving parts!

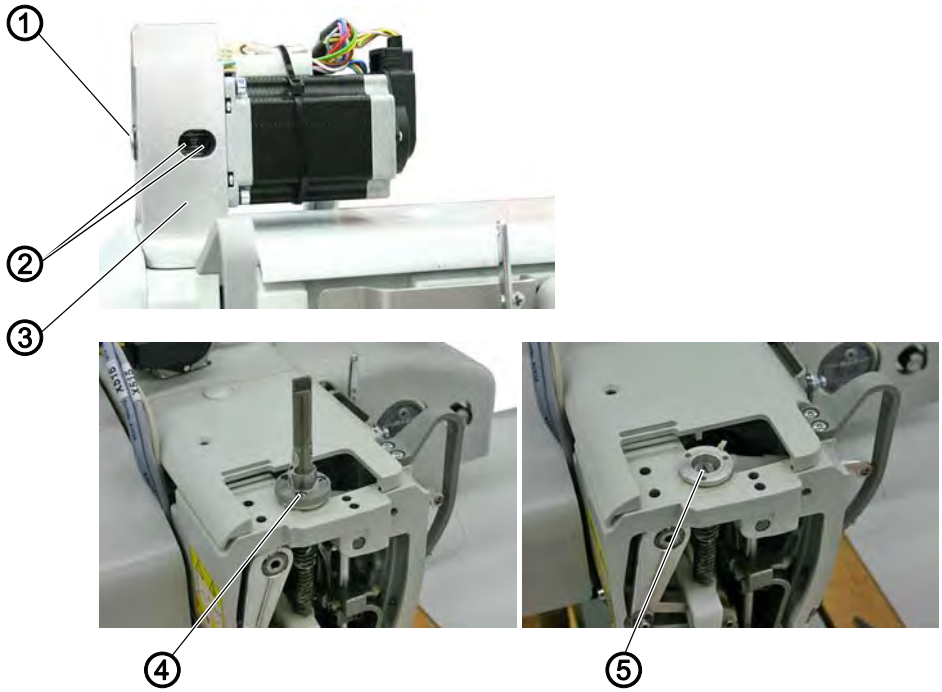
Puncture or crushing possible.

Switch the machine off before you disassemble or assemble the cloth pressure bar.

Cover

- Motor cover (📖 *p. 16*)

Fig. 65: Changing the cloth pressure bar (1)



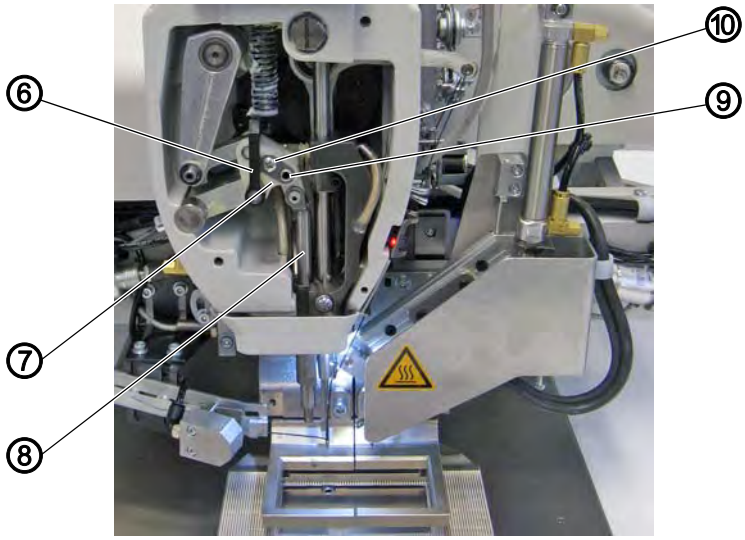
(1) - Bearing with gear wheel
(2) - Threaded pins
(3) - Drive
(4) - Screws
(5) - Screw

Disassembling the cloth pressure bar

To disassemble the cloth pressure bar:

1. Loosen the threaded pins (2) and pull the bearing with the gear wheel (1) out towards the front.
2. Dismantle the drive (3).
3. Loosen all 3 screws (4) and remove the drive shaft.
4. Loosen the screw (5).

Fig. 66: Changing the cloth pressure bar (2)



(6) - Block
(7) - Clip
(8) - Cloth pressure bar
(9) - Sleeve
(10) - Screw

5. Position the clip (7) so that the screw (7) is accessible.
6. Loosen the screw (10) and take off the clip (7).
7. Pull the sleeve (10) out.
8. Pull the clamp (6) right up to the top and pull the cloth pressure bar (8) out upwards.

Assembling the cloth pressure bar

To assemble the cloth pressure bar:

1. Assemble in reverse of removal.

Order

After the drive (3) has been tightened, set the sewing foot height (📖 *p. 53*).

5 Sewing unit

5.1 Checking the machine zero point

The machine zero point is factory-set to the correct value.

Fig. 67: Checking the machine zero point

(1) - Clamp with test bores
(2) - Center point bore
(3) - Test bore

Gage required: Clamp with test bore.

To check the machine zero point:

1. Tap on *Extras* > *Service* > *Multitest*.
2. Tap on *Transportklammer (Feed clamp)*.
3. Assemble the clamp (1).
4. Tap on *Referenzieren (Move to reference position)*.

↳ The machine moves to the reference position.

5. Tap on *Mittelpunkt (Center point)*.

↳ The machine moves to the center position. The needle is positioned within the center point bore (2), and the tip of the needle can be lowered into the bore by turning the arm shaft crank.

6. Tap on *Test*.

↳ The machine moves to the test position. The center of the needle is positioned within the test bore (3), and the tip of the needle can be lowered into the bore by turning the arm shaft crank.

5.2 Changing the drives

WARNING

Risk of injury from sharp and moving parts!

Puncture or crushing possible.

Switch off the machine before changing the drives.

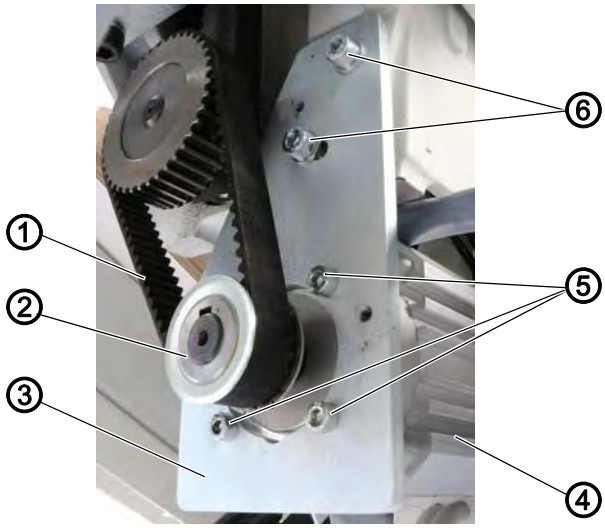
5.2.1 Changing the sewing motor

Disassembling the sewing motor

To disassemble the sewing motor:

1. Cut off the cable ties.
2. Disconnect the motor cable from the control.
3. Removing the toothed belt cover (📖 *p. 20*).

Fig. 68: Disassembling the sewing motor

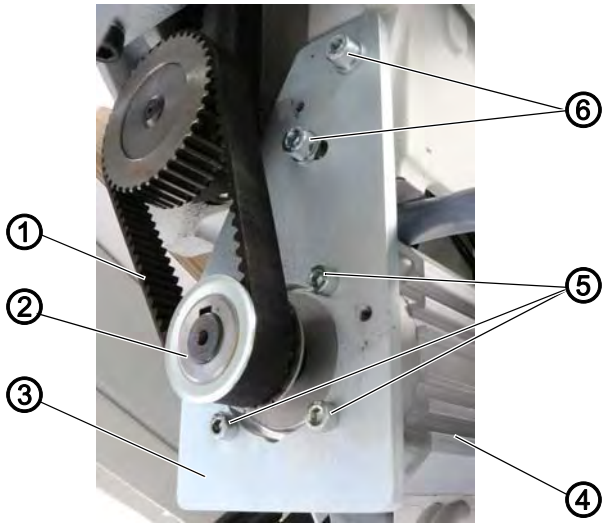


(1) - Toothed belt
(2) - Toothed belt wheel
(3) - Plate
(4) - Motor
(5) - Screws
(6) - Screws

4. Loosen the screws (6).
5. Remove the toothed belt (1).
6. Pull off the plate (3) with the motor (4).
7. Remove the toothed belt wheel (2).
   To do so, loosen the screw on the toothed belt wheel.
8. Loosen the screws (5).
9. Remove the motor (4) from the plate (3).

Assembling the sewing motor

Fig. 69: Assembling the sewing motor



(1) - Toothed belt
(2) - Toothed belt wheel
(3) - Plate
(4) - Motor
(5) - Screws
(6) - Screws

To assemble the sewing motor:

1. Screw the new motor (4) onto the plate (3) using the screws (5).
2. Assemble the toothed belt wheel (2).
   To do so, tighten the screw on the toothed belt wheel.
3. Insert the plate (3) with the motor (4).
4. Slightly tighten the screws (6).
5. Place and tighten the toothed belt (1).

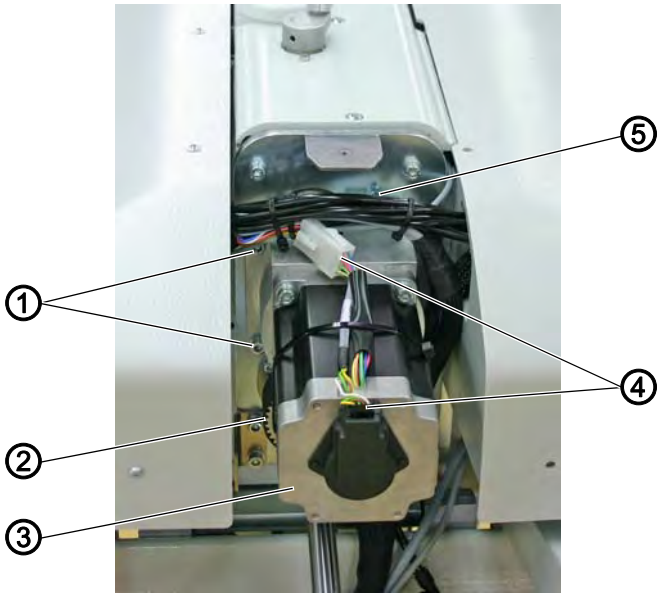
Information

The toothed belt tension is set to the optimum value when the belt oscillates at 284 Hz. Check the oscillation, for instance, using a device made by Contitech.

6. Tighten the screws (6).
7. Check if the toothed belt (1) operates in parallel.
   If necessary, set parallel operation at the toothed belt wheel.
8. Place the toothed belt cover (📖 *p. 20*).
9. Connect the motor plug with the control.

5.2.2 Changing the X drive

Fig. 70: Changing the X drive



(1) - Screws
(2) - Toothed belt
(3) - Motor with flange
(4) - Plug
(5) - Screw

Disassembling the X drive

To disassemble the drive:

1. Disconnect both plugs (4).
2. Loosen all 4 screws (1).
3. Pull off the motor and flange (3).

Assembling the X drive

To assemble the drive:

1. Insert a new motor and flange (3) on to the toothed belt (2).
2. Insert all 4 screws (1) and tighten them loosely.
3. Tension the toothed belt (2) using the screw (5).

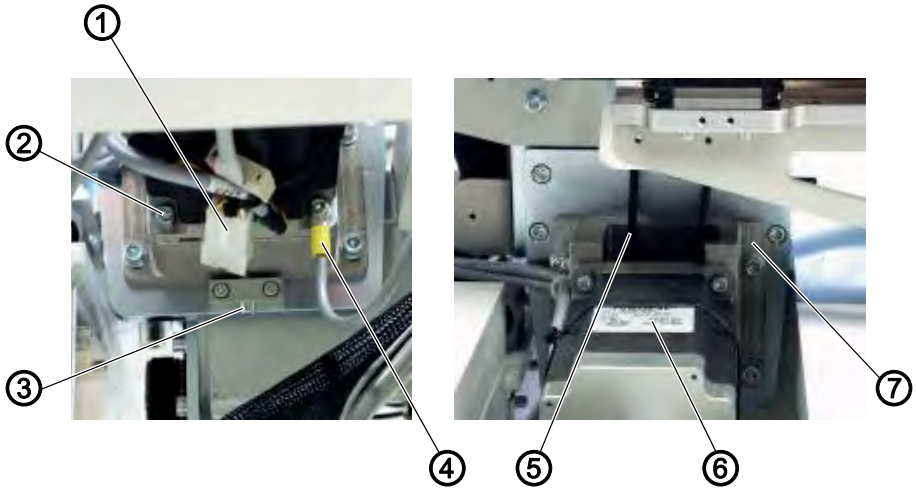
Information

The toothed belt tension is set to the optimum value when the belt oscillates at 384 Hz. Check the oscillation, for instance, using a device made by Contitech.

4. Tighten all 4 screws (1).
5. Connect the plug (4).

5.2.3 Changing the Y drive

Fig. 71: Changing the Y drive



(1) - Plug
(2) - Screws
(3) - Screw
(4) - Equipotential bonding
(5) - Toothed belt
(6) - Motor
(7) - Flange

Disassembling the Y drive

To disassemble the drive:

1. Disconnect the plug (1).
2. Unscrew the equipotential bonding (4).
3. Loosen the screw (3) to release the toothed belt (5) tension.
4. Loosen all 4 screws (2).
5. Pull the motor (6) off the flange (7).
6. Pull off the toothed belt wheel.

Assembling the Y drive

To assemble the drive:

1. Place the toothed belt wheel onto the new motor.
2. Insert the motor (6) into the toothed belt (5) and onto the flange (7).
3. Insert all 4 screws (2) and tighten them loosely.
4. Tension the toothed belt (5) using the screw (3) (185 Hz).

Information

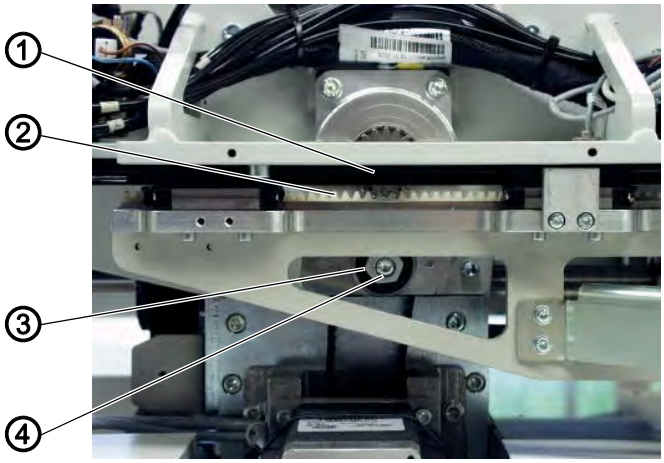
The toothed belt tension is set to the optimum value when the belt oscillates at 185 Hz. Check the oscillation, for instance, using a device made by Contitech.

5. Tighten all 4 screws (2).
6. Connect the plug (1).
7. Tighten the potential bonding (4).

5.3 Checking the play between toothed rack and gear wheel

The play between the toothed rack and the gear wheel must be checked on both sides of the machine. Because the structure is similar on both sides, testing is described here for one side only as an example.

Fig. 72: Checking the play between toothed rack and gear wheel



(1) - Gear wheel
(2) - Toothed rack
(3) - Nut
(4) - Screw

Proper setting

There should be no play between the gear wheel (1) and toothed rack (2).

To check the play between toothed rack and gear wheel:

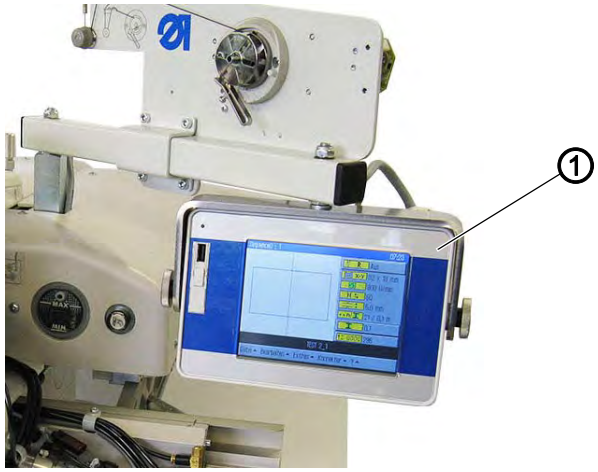
1. Loosen the screw (4).
2. Turn the nut (3) so that there is no play.
3. Tighten the screw (4).
4. Check the play along the entire length.

↳ The carriage can be moved without excessive play or stiffness.

6 Programming

The control is operated via the operating terminal (1) that is found next to the machine head.

Fig. 73: Operating the control



(1) - Operating terminal

The screen is a touchscreen, i.e. the buttons are displayed on the screen rather than using physical buttons. Buttons or functions are activated by tapping the corresponding position on the monitor.

Activating a button/selecting an element:

1. Tap the corresponding button or element with your finger or a touch-screen pen.

6.1 Structure of the software

The software allows the creation and management of seam programs and sequences. During sewing, these programs are called up and processed stitch by stitch.

Seam program:

A seam program consists of a seam contour with parameters defining the individual contour sections.
Up to 99 seam programs can be stored in the system.
Seam programs have a file suffix of *.fnp911* after the filename.

Sequence:

Up to 30 seam programs can be combined in any order to form a sequence.
Up to 20 sequences can be stored in the system.
Sequences have a file suffix of *.seq911* after the filename.

The software is also used to define general settings that apply to all programs. There are also technical menu items for testing and maintaining the machine.

6.2 Overview of the menu structure

The following table provides an overview of the menu structure and the function buttons on the start screen.

Different colors indicate which functions are mainly used for normal sewing operations, which items are used for creating and maintaining seam programs and the menu items that are used for making technical settings.

Green: Menu items for sewing

Blue: Menu items for creating and managing programs

Magenta: Menu items for technician settings and information (can only be opened with password)

Menu items in popup menus				
Menu item	**Function**	**Subitems**	**Subitems**	**Described on**
File	Open existing sewing programs, create new programs, copy or delete existing programs.	**Löschen (Delete)**		🕮 p. 72
		Kopieren (Copy)		🕮 p. 56
		Öffnen (Open)		🕮 p. 43
		Neu (New)	**Nahtprogramm (Seam program)**	🕮 p. 48
			Sequenz (Sequence)	🕮 p. 52
		Speichern unter (Save As)		🕮 p. 55

Menu items in popup menus				
Menu item	**Function**	**Subitems**	**Subitems**	**Described on**
Bearbeiten (Edit)	Define general settings for all programs or modify an existing program.	**Maschinenparameter (Machine Parameters)**		p. 66
		Sequenz (Sequence)		p. 66
		Nahtprogramm (Seam program)	**Parameter**	p. 60
			Konturanpassung (Contour Adjustment)	p. 60
			Konturtest (Contour Test)	p. 51
Extras	Display options: full-screen and zoom Technician menu: Settings, system information and tests	**Vollbild ein/aus (Full-screen on/off)**		p. 42
		Zoom ein/aus (Zoom on/off)		p. 42
		Service (nur mit Passwort - only with password)	**Einstellungen (Settings)**	p. 72
			System-Information (System Information)	p. 79
			Multitest	p. 72
			Initialisierung (Initialization) und Update (and update)	p. 80
			Manufacturer (for DA personnel only)	
Korrektur (Correction)	Short-term sewing with other values	**Fadenspannung (Thread tension)**		p. 44
		Nähdrehzahl (Speed)		p. 45
Buttons on the start screen				
	Continue sewing the contour from a particular point		**Reparatur-Modus (Repair mode)**	p. 47
	Allow for a manual bobbin change		**Spulenwechsel (Bobbin change)**	p. 45
	Reset counter to a particular value		**Zählerreset (Reset counter)**	p. 47

6.3 Starting the software

After being switched on at the main switch, the machine needs to be referenced. After this, the start screen is shown on the operating terminal for a few seconds.

Fig. 74: Starting the software

(1) - Button language selection *(2) - Multitest quick-access button*

Here you can select the user interface language or use `Service` to quickly access the `Multitest` menu.

Information

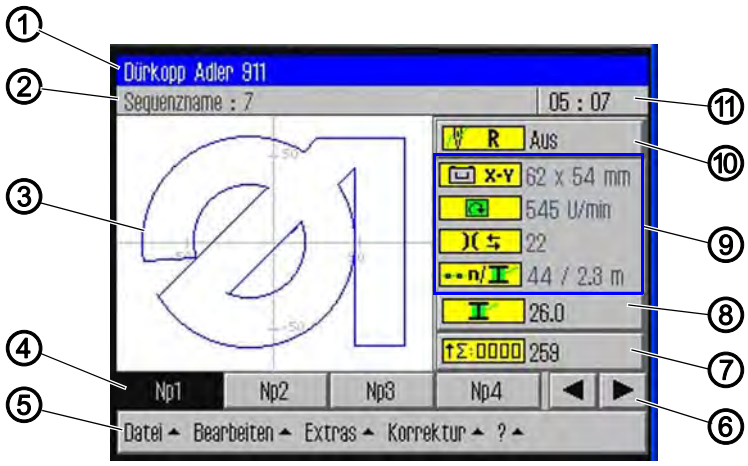
Both functions can also be accessed later from within the program via `Extras` > `Service`.
(See chapters **Testing the functions of the machine** (📖 *p. 133*) and **Changing the language** (📖 *p. 132*))

If you do not tap any buttons, the software automatically switches to the start screen after a few seconds.

The start screen

The start screen is displayed during sewing. When the machine is started, the start screen is opened with the settings of the last sewing program used.

Fig. 75: Start screen



(1) - Title bar
(2) - Status bar
(3) - Main window Display of the seam contour
(4) - Program bar
(5) - Menu bar: Popup menu
(6) - Arrow buttons for navigating within the bar
(7) - Button for resetting the counter
(8) - Button for bobbin change
(9) - Display of the current seam parameters
(10) - Button for repair mode
(11) - Display of time

Structure of the start screen

Title bar (1)

This shows the version of the machine on the start screen. It also contains information on the menu item currently selected in the various menus.

Status bar (2)

On the start screen, the sequence currently open is displayed here, and the time of day (11) is displayed at the right. It also bar contains information on the currently selected step in the various menus.

Main window (3)

The contour to be sewn is displayed here.

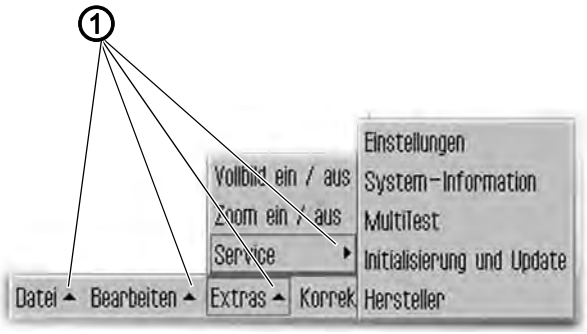
Program bar (4)

The seam programs of the sequence currently open are displayed here. The program currently being executed is highlighted in black. The arrow buttons (6) at the right side of the bar can be used to navigate along the bar and display any additional programs that do not fit on the bar.
If a sequence is not currently open but rather only a single seam program then this program fills the entire bar.

Menu bar (5)

The bar at the bottom contains the popup menus. This allows you to access the various different menu items for creating and editing seam programs and for performing settings and tests on the machine. An arrow (1) next to a menu entry indicates that tapping the entry will display further subitems.

Fig. 76: Popup menu



(1) - Popup arrows

Button for repair mode (10)

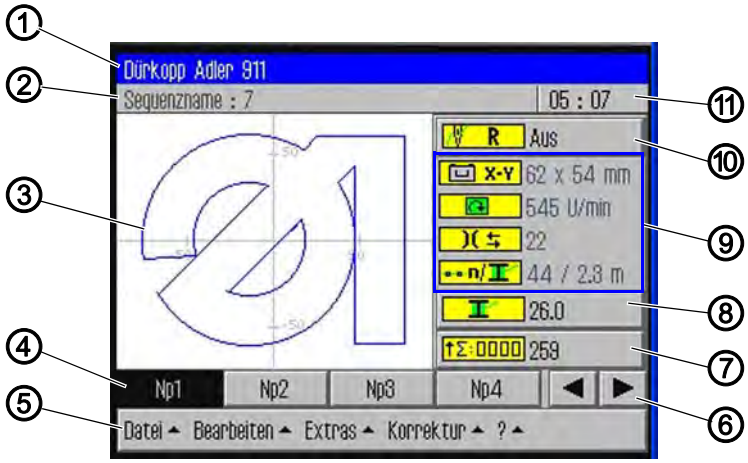
The topmost button at the right side is used for switching the repair mode on and off. The current status (*Ein (On)/Aus (Off)*) is displayed next to the button.

Display of the current seam parameters (9)

The current seam parameters are displayed below the repair mode button

-  - Dimensions of the seam
-  - Speed
-  - Thread tension
-  - Number of stitches / hook thread consumed

Fig. 77: Start screen



(1) - Title bar
(2) - Status bar
(3) - Main window Display of the seam contour
(4) - Program bar
(5) - Menu bar: Popup menu
(6) - Arrow buttons for navigating within the bar
(7) - Button for resetting the counter
(8) - Button for bobbin change
(9) - Display of the current seam parameters
(10) - Button for repair mode
(11) - Display of time

Button for bobbin change (8):

This button is used to inform the system that a new bobbin has been inserted (e.g. after a color change). The hook thread capacity is displayed next to this button.

Button for resetting the counter (7):

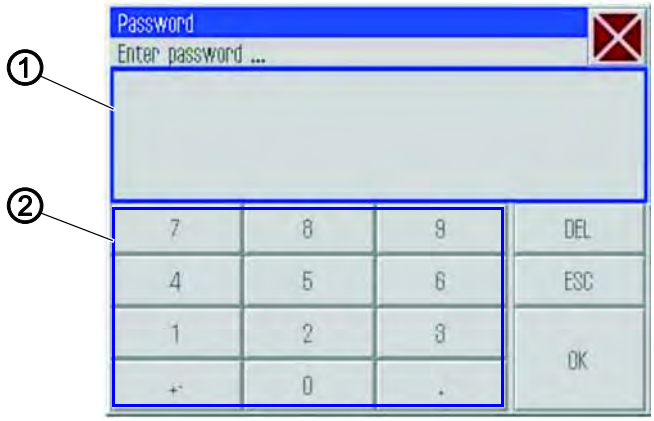
This button can be used for resetting the counter for the sewn programs or sequences. The current counter value is displayed next to this button.

6.4 General operation of the software

6.4.1 Entering a password

Depending on the setting (see chapter **Changing the password options** (📖 *p. 131*)) a password is only required for accessing the technical menus or must be entered every time the machine is started. The password entry screen is displayed when a password is required.

Fig. 78: Entering a password



(1) - Input field *(2) - Numeric buttons*

Entering a password

To enter a password:

1. Use the numeric buttons (2) to enter the password.

Information

The default password on delivery is: 25483.
The password can be changed via the `Extras` menu (📖 *p. 131*).
You can delete incorrect entries via the **DEL** button.

2. Tap the **OK** button.

↳ The previously selected menu item opens.

6.4.2 Closing windows

A number of different buttons can be used for closing the currently open window.

Button	Meaning
	At the upper right in the title bar of all windows: ↳ The program jumps back by one navigation level.
OK **CR**	In windows with data entry or selection fields: ↳ The window is closed, and the entered or selected data is adopted.
DEL **Cancel** **Cancel**	In windows with data entry or selection fields: ↳ The window is closed, and the entered or selected data is discarded.

6.4.3 Display principles

Fig. 79: Display principles

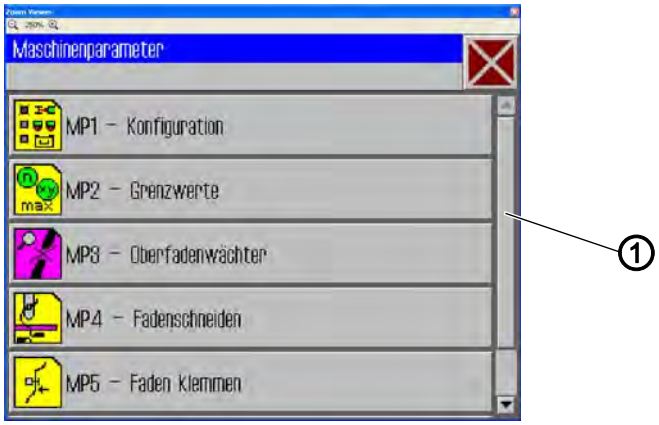
(1) - Grayed-out: Deactivated element (2) - Dark background: Activated element

The currently activated or selected element is highlighted with a dark background (2).

Buttons that are not used in the current context are grayed-out (1).

6.4.4 Scrolling the display

Fig. 80: Scrolling the display



(1) - Scrollbar

A scrollbar (1) is displayed on the right when a displayed image is larger than the screen height.

Moving image up/down

To move the image up or down:

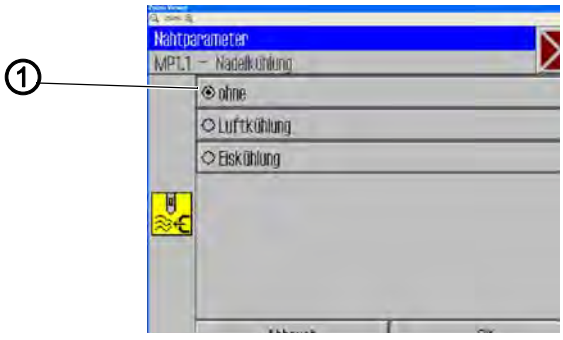
1. Drag the scrollbar (1) up or down.

6.4.5 Selecting options from a list

When selecting options, a distinction is made between round option buttons and square checkboxes.

Selection with option buttons

Fig. 81: Selection with option buttons



(1) - Option buttons: Selected element

With round option buttons only one of the displayed options can be selected.

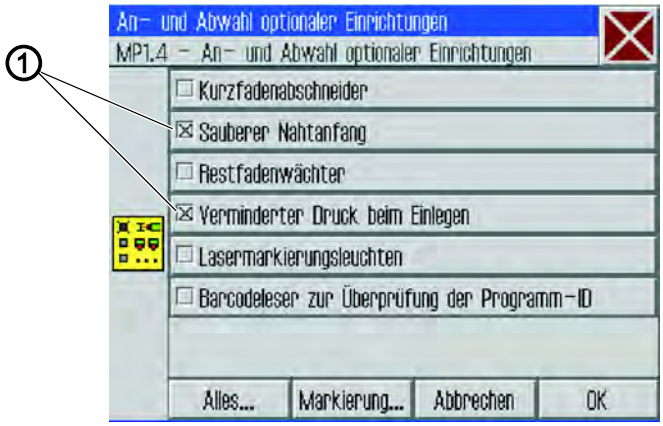
To select options using checkboxes:

1. Tap the desired option.

↳ The selected option (1) is marked with a dot.

Selection with checkboxes

Fig. 82: Selection with checkboxes



(1) - Checkbox: Selected elements

Checkboxes allow for the selection of multiple entries.

To select options using checkboxes:

1. Tap the desired checkboxes.

↳ The selected entries (1) are marked with a cross.

6.4.6 Using file filters

When opening, copying or deleting seam programs a list of all available files is displayed.

You can use the filter functions to make the list more manageable:

To use file filters:

1. Tap the **File Filter** button under the list.

↳ The file filter screen opens.

Fig. 83: File filter

2. Tap the desired filter criterion:
   - `.fnp911`: Seam programs only
   - `.seq911`: Sequences only
   - `All Files`: Seam programs and sequences
3. Tap the **Öffnen (Open)** button.

↳ The list is updated according to the selected filter:

6.4.7 Entering text

A text entry window is displayed when text needs to be entered, e.g. for the name of a program.

Fig. 84: Entering text

(1) - Input line
(2) - Keyboard
(3) - OK (CR): Adopt the entered text
(4) - DEL: Delete a character
(5) - Aa: Switch between uppercase/lowercase

Entering text

1. Use the keyboard (2) displayed to enter the text.

Switch between uppercase/lowercase

1. Tap the **Aa** (5) button.

Delete the last character

1. Tap the **DEL** (4) button.

Adopt the entered text

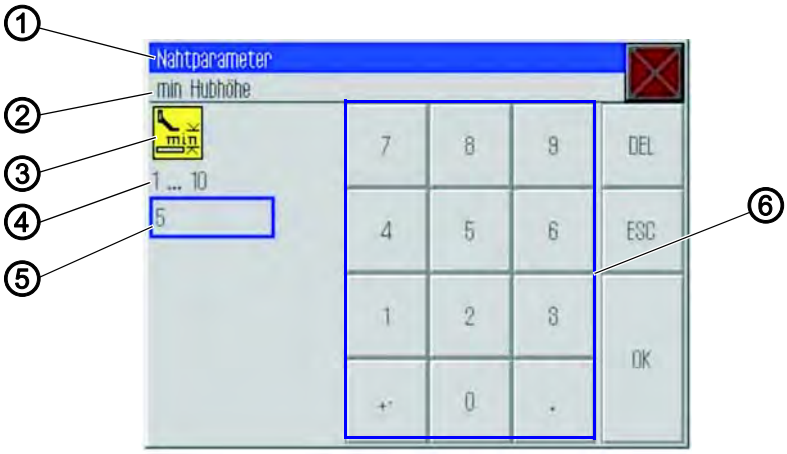
1. Tap the **OK** *(CR)* (3) button.

↳ The entered text is adopted, and the text entry window is closed.

6.4.8 Entering parameter values

A numeric entry window opens when numeric values for program or machine parameters need to be entered.

Fig. 85: Entering parameter values



(1) - Title bar
(2) - Status bar
(3) - Symbol
(4) - Value range
(5) - Input field
(6) - Numeric buttons

The title bar (1) shows the parameter group.

The status bar (2) shows the name of the parameter currently being edited. The symbol (3) for the corresponding parameter is display below the parameter name.

The prescribed value range (4) for the parameter is displayed below the symbol (3).

The current valid value is displayed in the data entry field (5) below the value range (4).

Entering a value

1. Tap the desired numeric buttons (6).

Deleting a value

1. Tap the **DEL** button.

Adopting a value

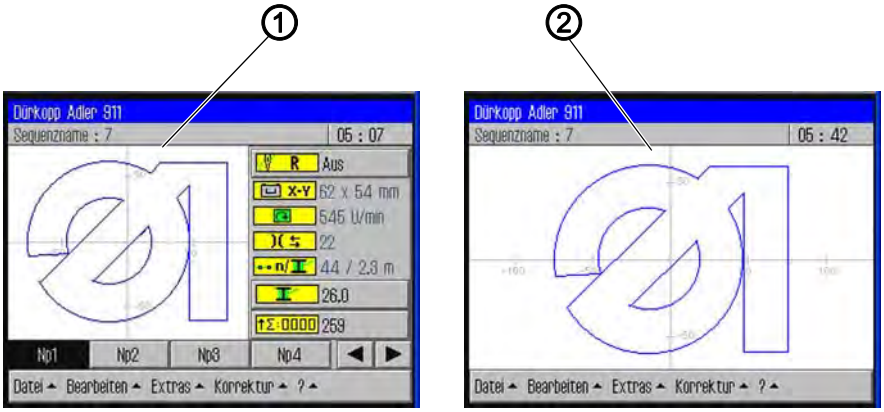
1. Tap the **OK** button.

↳ The entered value is adopted, and the numeric entry window is closed.

6.4.9 Switching the full-screen display on and off

In order to see the seam contour in more detail you can switch the main window (1) to occupy the full screen and hide the buttons (2) on the right side of the start screen.

Fig. 86: Switching the full-screen display on and off



(1) - Full-screen switched off

(2) - Full-screen switched on

To switch full-screen on and off:

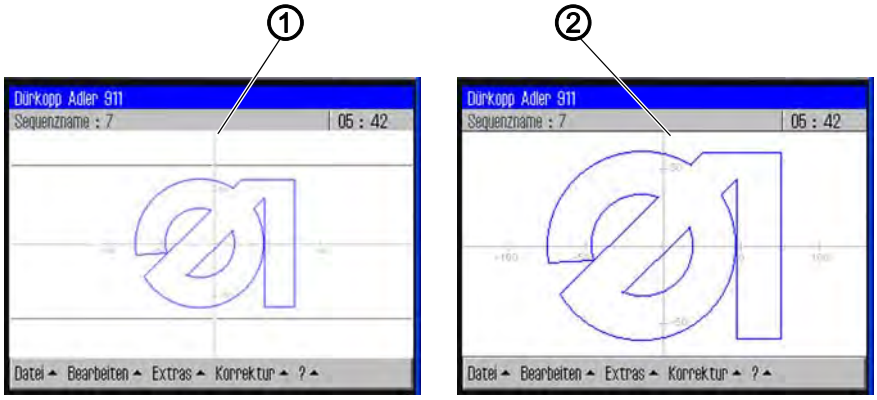
1. Tap the menu items *`Extras`* > *`Vollbild ein/aus (Full-screen on/off)`*.

↳ The display switches to the respective other mode.

6.4.10 Switching zoom on and off

You can magnify the display in order to see the seam contour in more detail. There is only one zoom level that can be switched on or off.

Fig. 87: Switching zoom on and off



(1) - Zoom switched off

(2) - Zoom switched on

To switch zoom on and off:

1. Tap the menu items *Extras* > *Zoom ein/aus (Zoom on/off)*.

↳ The display switches to the respective other mode.

6.5 Opening a seam program or sequence for sewing

You will usually open an existing seam program or an existing sewing sequence.

To open a seam program or sewing sequence:

1. Tap the menu items *Datei (File)* > *Öffnen (Open)*.

↳ The file selection screen is displayed.
All existing seam programs and sequences are displayed.

Information

You can use the *Dateifilter (File Filter)* to make the list more manageable (📖 *p. 100*).

Fig. 88: Opening a seam program or sequence for sewing

2. Tap the desired file.
3. Tap the **Öffnen (Open)** button.

↳ The seam program/sequence is opened on the start screen.

4. Press the pedal forwards to start sewing.

6.6 Briefly sewing with modified values

If you briefly need to with sew a special material or use a particular thread strength with different values, without changing the seam program, you can use the *Korrektur (Correction)* menu item to temporarily change the values for thread tension and speed. The values then apply to all subsequently executed seams until the machine is switched off.

Important

If you wish to adopt the changes then you must modify and save the program. Otherwise the values are automatically reset to the previous settings when the machine is switched off.

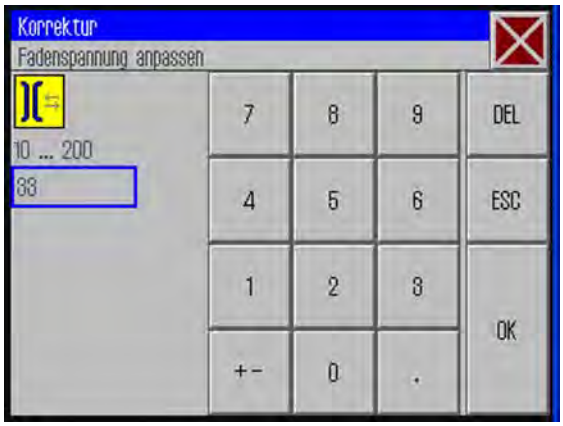
6.6.1 Sewing with a modified thread tension

To sew with a modified thread tension:

1. Tap the menu items *Korrektur (Correction)* > *Fadenspannung (Thread Tension)*.

↳ The window for changing the thread tension appears:

Fig. 89: Sewing with a modified thread tension



2. Enter the desired thread tension value.
3. Tap the **OK** button.

↳ The value is adopted and used for all seams until the machine is switched off.

6.6.2 Sewing with a modified speed

To sew with a modified speed:

1. Tap the menu items *Korrektur (Correction)* > *Nähdrehzahl (Speed)*.

↳ The window for changing the thread tension appears:

Fig. 90: Sewing with a modified speed

2. Enter the desired speed.

3. Tap the **OK** button.

↳ The value is adopted and used for all seams until the machine is switched off.

6.7 Replacing the hook thread bobbin

WARNING

Risk of injury from sharp and moving parts!

Puncture or crushing possible.

Switch the machine to threading mode before changing the hook thread bobbin.

The machine automatically detects when the hook thread has been used up and a new bobbin needs to be inserted.

In this case, or if thread breakage occurs, the *Fadenriss behandeln (Manage Thread Breakage)* window is automatically displayed.

Fig. 91: Replacing the hook thread bobbin

To change the hook thread bobbin:

1. Tap the **Spulenwechsel (Change Bobbin)** button.
2. Replace the hook thread bobbin
3. Use the **Vor (Forwards)** and **Zurück (Back)** buttons to move to the point where sewing is to continue.
4. Tap the **Weiternähen (Continue Sewing)** button.

↳ The program jumps back to the start screen and sewing of the seam continues from the selected point.

Bobbin change without a request from the program

If you wish to independently insert a new bobbin without being requested to do so by the program, e.g. when changing color, then you have to tap the **Spulenwechsel (Bobbin Change)** button on the start screen after changing the bobbin to inform the program that a new bobbin has been inserted and that thread consumption should resume from the value corresponding to the full bobbin capacity.

Updating the bobbin capacity

To update the bobbin capacity:

1. Tap the button  **Spulenwechsel (Bobbon Change)** on the start screen.

↳ The counter for the bobbin capacity begins anew with a full bobbin.

6.8 Continuing a seam in Repair mode after an error

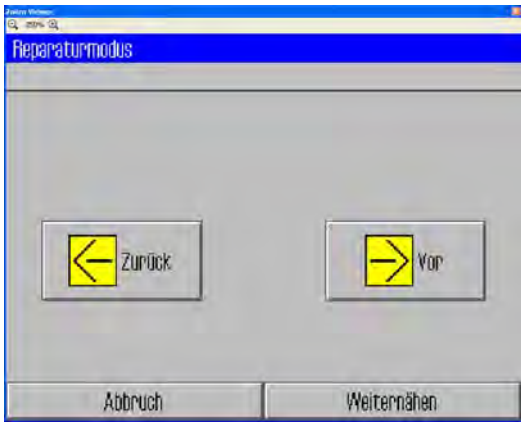
In Repair mode you can move to any desired point on the contour, e.g. in order to continue the seam program from this position after an error has occurred.

To continue a seam in Repair mode after an error:

1. Tap the button  **Reparaturmodus (Repair mode)** on the start screen.

↳ The *Reparaturmodus (Repair mode)* window is displayed.

Fig. 92: Continuing a seam in Repair mode after an error



2. Use the **Vor (Forwards)** and **Zurück (Back)** buttons to move to the point where sewing is to continue.
3. Tap the **Weiternähen (Continue Sewing)** button.

↳ The program jumps back to the start screen and sewing of the seam continues from the selected point.

6.9 Resetting the counter

Depending on the machine parameter settings, the counter counts the sewn programs or sequences up or down. You can use the **Zähler-Reset (Reset Counter)** button to reset the counter to the start value (📖 *p. 130*).

To reset the counter:

1. Tap the button  **Zähler-Reset (Reset Counter)** on the start screen.

↳ The counter is reset to the value defined in the machine parameters.

6.10 Creating a new seam program

New seam programs are created using a Teach-In procedure.

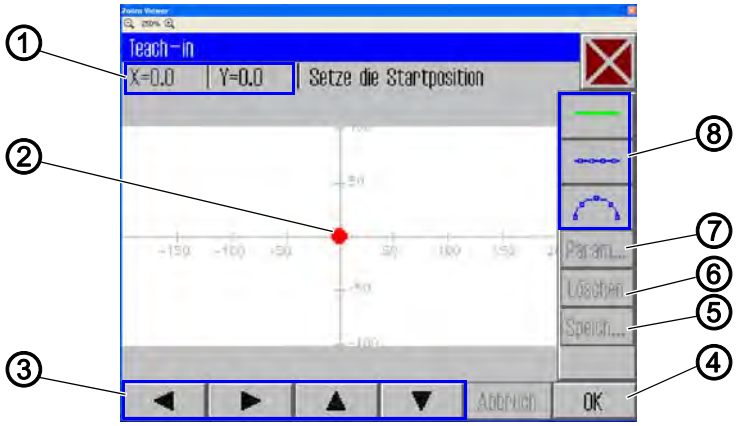
Individual seam paths with specific seam parameters are defined via the operating terminal in order to do this.

To create a new seam program:

1. Tap the menu items *Datei (File)* > *Neu (New)* > *Nahtprogramm (Seam Program)*.

↳ The Teach-In window appears.

Fig. 93: Creating a new seam program



(1) - Cursor position
(2) - Cursor
(3) - Arrow buttons
(4) - OK button: Übernahme (Accept)
(5) - Speichern (Save) button
(6) - Löschen (Delete) button
(7) - Parameter button
(8) - Linienauswahl (Line selection) button

Defining the starting point

2. Define the starting point:

Method	Coordinate-Range
With the **arrow buttons** (3) **Attention** For safety reasons you cannot choose positions over 90,1 oder -92,6 on the Y-axis with the arrow buttons (3). For adjustments in excess of these coordinates you must use the pedal.	X -150 to X 230 Y 90,1 to Y -92,6
With the **pedal** Each pedal step moves the cursor by 0,1 in the direction of the chosen axis (X or Y)	X -150 to X 230 Y 100 to Y -100
Insert the coordinates **directly** by the **cursor postion** (1)	X -150 to X 230 Y 100 to Y -100

3. Tap the **OK** (4) button.

↳ The desired starting point is adopted and marked with a green dot.

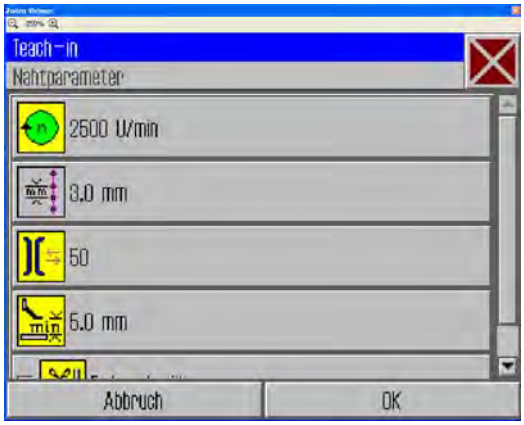
Selecting the line type

4. Use the line selection buttons (8) to select the type of line to be defined.
   -  **Seamless path**:
     The clamps move over this path to the next position without sewing.
   -  **Straight seam**:
     A straight path is sewn.
   -  **Curved seam**:
     A curve is sewn.

↳ After tapping the button for a straight or curved seam the corresponding window for entering the seam parameters for this path opens.

Defining the seam parameters for the path

Fig. 94: Defining the seam parameters for the path



5. Tap the respective parameter.

↳ The window for entering the parameter value opens.

6. Enter the desired value for the parameter (📖 *p. 102*).

Seam parameters for teach-in

Button	Meaning
	Speed
	Stitch length
	Thread tension
	Stroke height
	Cut thread

Drawing a path

7. Use the arrow buttons to move the cursor to the end point of the desired path.

Information

Alternatively, you can tap an arrow button once in order to define the direction and then continue moving in this direction by pressing the pedal.

Important

Take care to ensure that the contour remains within the permissible sewing field of your particular machine. Especially with curved paths, you should remember that the start and end points are not directly connected and that a curve is generated between these two points.

8. Tap the **OK** button.

↳ The seam path is adopted with the specified parameters.

Adding further seam paths

You can now define all further seam paths in the same manner.

1. Add each new seam path by starting at step 4.

Deleting a seam path

1. Tap the **Löschen (Delete)** button.

↳ The last section of the seam path is deleted.

Saving the program

After you have defined all the seam paths you can save the program and specify a name for the program.

1. Tap the **Speich... (Save)** button.

↳ The window for entering the program name opens.

2. Enter the desired name (📖 *p. 101*) and adopt the name by pressing **OK**.

↳ The program is now available under this name for sewing, editing or copying.

Important

Always perform a contour test after creating a new program (📖 *p. 113*). Ensure that the contour lies within the sewing field limits of your particular unit.

NOTICE

Property damage may occur!

If you have entered contour points that lie outside the sewing field, the movement of the clamps during sewing can cause damage to the machine or the sewing material.

Always perform a contour test after creating or editing a contour to ensure that the entire contour lies within the permissible sewing field.

6.11 Performing a contour test

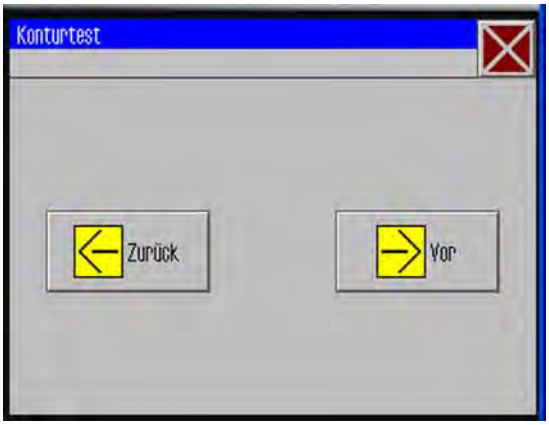
Always perform a contour test every time after creating or editing a program to ensure that the entire contour lies within the permissible sewing field.

To perform a contour test:

1. Tap the menu items *Bearbeiten (Edit)* > *Nahtprogramm (Seam program)* > *Konturtest (Contour test)*.

↳ The *Konturtest (Contour test)* window appears.

Fig. 95: Performing a contour test



2. Move along the contour stitch by stitch using the **Vor (Forwards)** and **Zurück (Back)** buttons.
3. Check that all points lie within the sewing field.

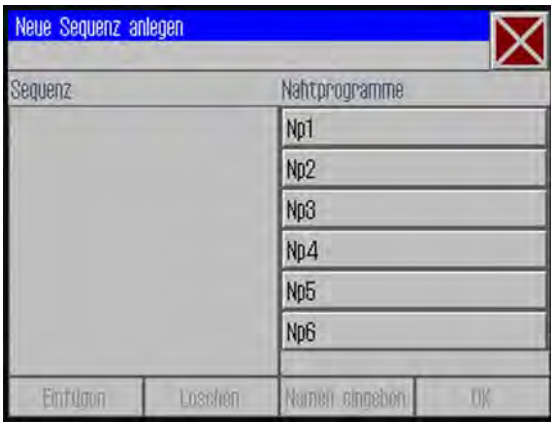
6.12 Creating a new sequence

You can combine up to 30 seam programs to form a sequence. You can create up to 20 sequences.

1. Tap the menu items *Datei (File)* > *Neu (New)* > *Sequenz (Sequence)*.

↳ The window for selecting the seam program appears.

Fig. 96: Creating a new sequence



The existing seam programs are displayed at the right side of the screen. The *Sequenz (Sequence)* field on the left shows the seam programs that have been transferred to the sequence.

2. Tap the desired seam program.

↳ The selected program is highlighted with a dark background.

3. Tap the **Einfügen (Insert)** button.

↳ The seam program is transferred to the sequence and is displayed in the *Sequenz (Sequence)* field on the left side of the screen.

4. Add further seam programs in the same manner.

Removing a program from a sequence

1. Tap the seam program in the *Sequenz (Sequence)* field and then tap the **Löschen (Delete)** button.

↳ The program is removed from the sequence.

Assigning a name to the sequence

1. Tap the **Namen eingeben (Enter Name)** button.

↳ The window for entering the sequence name opens.

2. Enter the desired name and adopt the change by pressing **OK** ((📖 *p. 101*)).

↳ The sequence is now available under this name for sewing, editing or copying.

6.13 Editing an existing sequence

You can edit an existing sequence by adding or removing seam programs.

To edit an existing sequence:

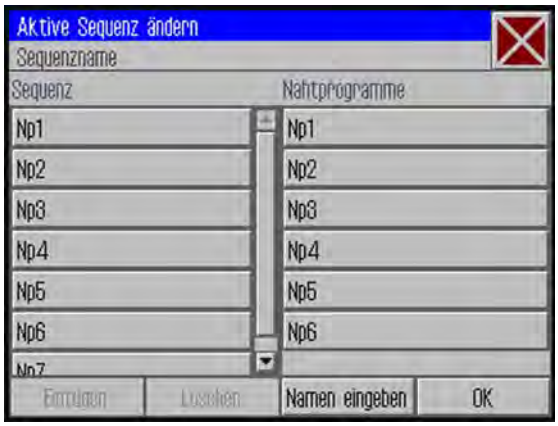
1. Open the program you wish to modify via the menu items *Datei (File)* > *Öffnen (Open)*.

↳ The sequence opens on the start screen.

2. Tap the menu items *Bearbeiten (Edit)* > *Sequenz (Sequence)*.

↳ The window for editing the sequence appears.

Fig. 97: Editing an existing sequence



3. Use the buttons **Einfügen (Insert)** and **Löschen (Delete)** to add programs to the sequence or remove programs from the sequence. The steps correspond to the procedure used for creating a new sequence (🕮 *p. 114*).

6.14 Saving a seam program/sequence under a different name

You can save a seam program or sequence under a different name.

Information

For example, if you wish to create a new program that is similar to an existing program you do not need to create the entire program anew. You can save the existing program under a new name and simply change the respective details.

To save a seam program or sewing sequence under a different name:

1. Tap the menu items *Datei (File)* > *Speichern unter (Save As)*.

↳ A selection window allowing you to select a seam program or sequence appears.

Information

You can use the *Dateifilter (File Filter)* to make the list more manageable (📖 chap. *5.4.6 Using file filters*, p. 38).

2. Tap the desired element.
3. Tap the **Speichern unter (Save As)** button.

↳ The window for entering the new name is opened.

4. Enter the desired name and adopt the change by pressing **OK** ((📖 *p. 101*)).

↳ The program or sequence is now also available under this name for sewing, editing or copying.

6.15 Copying a seam program or sequence

You can also copy seam programs or sequences from a USB key to the control or from the control to a USB key.

Important

Not all commonly available USB keys are suitable for the copying process. You can obtain a suitable USB key from Dürkopp Adler using the part number 9805 791113.

To copy a seam program or sequence:

1. Tap the menu items *Datei (File)* > *Kopieren (Copy)*.

↳ The window for selecting the file to be copied appears:

Fig. 98: Copying a seam program or sequence

(1) - Select the source to be copied *(2) - File selection window*

2. Use the buttons (1) to select whether the data is to be copied from the DAC control or the USB key.

↳ The selected button is highlighted with a dark background.
A selection window (2) lists all files present at this location.

Information

You can use the *Dateifilter (File Filter)* to make the list more manageable (🕮 *p. 100*).

---

3. Tap the desired file.

↳ The selected file is highlighted with a dark background.

4. Tap the **Datei kopieren (Copy File)** button.

↳ The selected file is copied to the USB key or the control.

6.16 Deleting a seam program or sequence

Seam programs or sequences that are no longer required can be deleted from the control.

To delete a seam program or sequence:

1. Tap the menu items *Datei (File)* > *Löschen (Delete)*.

↳ The window for selecting the file to be deleted appears:

Fig. 99: Deleting a seam program or sequence

Information

You can use the *Dateifilter (File Filter)* to make the list more manageable (📖 *p. 100*).

2. Tap the desired file.

↳ The selected file is highlighted with a dark background.

3. Tap the **Löschen (Delete)** button.

↳ The selected file is deleted.

6.17 Editing an existing seam program

You can change the contour and parameters of existing seam programs. The changes are applied to the seam program that is currently open on the start screen.

To edit an existing seam program:

1. Open the program you wish to modify via the menu items *Datei (File)* > *Öffnen (Open)* .

↳ The program opens on the start screen.

6.17.1 Changing the contour of a seam program

NOTICE

Property damage may occur!

If you have entered contour points that lie outside the sewing field, the movement of the clamps during sewing can cause damage to the machine or the sewing material.

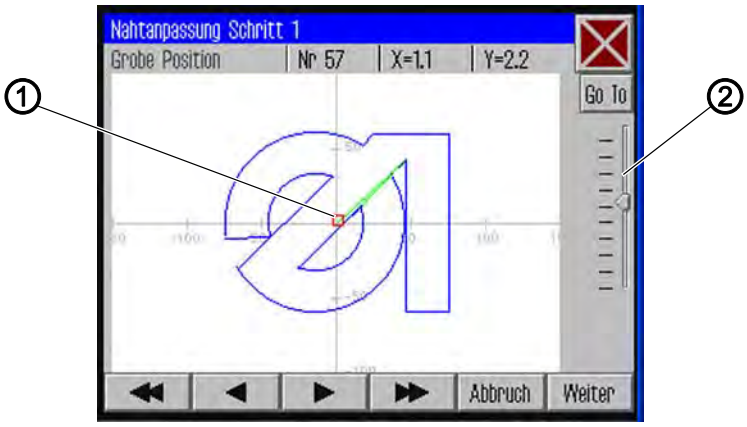
Always perform a contour test after creating or editing a contour to ensure that the entire contour lies within the permissible sewing field.

To edit an existing seam program:

1. Tap the menu items *Bearbeiten (Edit)* > *Nahtprogramm (Seam program)* > *Konturanpassing (Adjust Contour)*.

↳ The contour adjustment window appears:

Fig. 100: Changing the contour of a seam program (1)



(1) - Cursor *(2) - Scale: First to last stitch*

2. Use the arrow buttons to move the cursor (1) to the position on the contour that is to be changed.

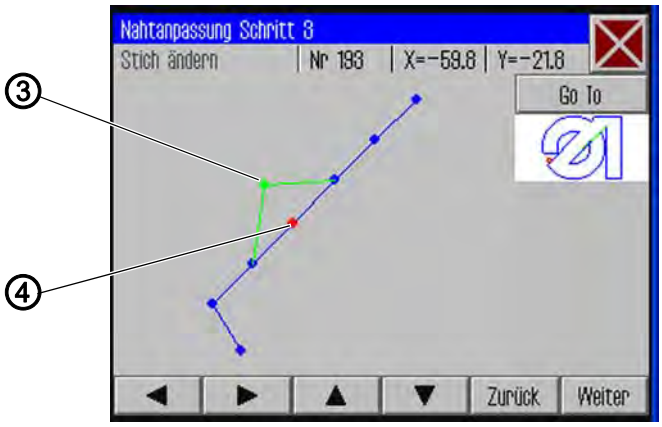
Information

You can also use the slider control on the scale (2) to select the stitching area you wish to change:
The first stitch of the seam is at the top and the last stitch is at the bottom.

3. Tap the **Go To** button.

↳ The selected contour region is displayed in detail.
The stitching point (2) to be modified is marked in red.

Fig. 101: Changing the contour of a seam program (2)



(3) - Old stitching point *(4) - New stitching point*

4. Use the arrow buttons to move the stitching point to the new position (4).

↳ The modified seam path is displayed in green.

5. Tap the **Weiter (Next)** button.

↳ The window for entering the technology operations opens.

Fig. 102: Changing the contour of a seam program (3)

6. Select the desired technology operation(s) for the new seam path (📖 *p. 99*).
7. Confirm the selection with **OK**.

↳ You are returned to the detail window with the modified contour.

8. Tap the **Weiter (Next)** button again.

↳ A query dialog is displayed, asking if you wish to adopt the changes. Agreeing to this dialog will save the modified contour.

Important: Always perform a contour test after modifying a contour to ensure that the new seam path lies within the permissible sewing field (📖 *p. 113*).

6.17.2 Changing the parameters of a seam program

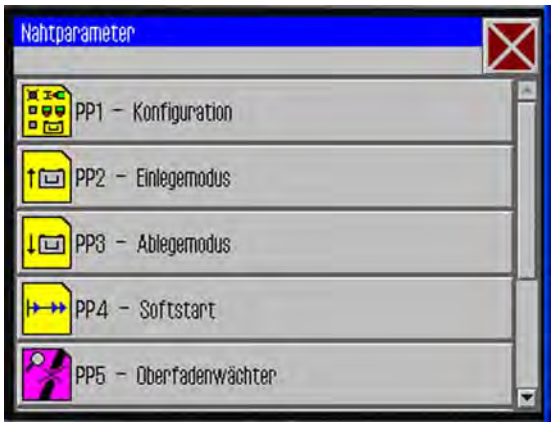
You can also change the general settings that apply to the entire seam program.

To change the parameters of a seam program:

1. Tap the menu items *Bearbeiten (Edit)* > *Nahtprogramm (Seam program)* > *Parameters*.

↳ The window for selecting the program parameter group appears:

Fig. 103: Changing the parameters of a seam program



2. Tap the desired parameter group.

↳ The individual parameters of this group are displayed.

3. Tap the desired parameter.

↳ The window for modifying the parameter value opens.

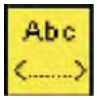
4. Set the parameter to the desired value (📖 *p. 102*).

There are 8 program parameter groups:

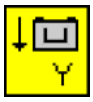
Symbol	Parameter group
	**PP1 - Configuration** General settings
	**PP2 - Insertion mode** Insertion mode and position
	**PP3 - Removal mode** Removal mode and position
	**PP4 - Soft start** Number of stitches and speed
	**PP5 - Needle thread monitor** Sensitivity value for the needle thread monitor
	**PP6 - Thread consumption** Values for determining thread consumption

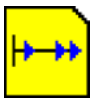
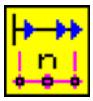
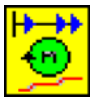
Symbol	Parameter group
	**PP7 - Offset:** Contour is offset in a particular direction
	**PP8 - Scaling:** The size of the contour is changed.

Overview of the individual program parameters

	**PP1 - Configuration**
Symbol	**Meaning**
	**Seam name** max. 20 characters
	**Minimum sewing foot stroke height** (min. = 1.0 .. max. = 10.0; Def. = 5.0 mm) Sets this as the minimum value of the programmable sewing foot stroke height so that only this value needs to be adjusted when sewing thicker materials.
	**Adjusting the thread tension** (min. = 10… max. = 200; Def. = 100%) The thread tension profile for the entire contour is adjusted accordingly. A value of 100% means that no adjustments are made.
	**Adjusting the run-empty speed** (min. = 10… max. = 200; Def. = 100%) The forwarding speeds are adjusted accordingly.
	**Clamp ID code** Barcode (ID code) of max. 10 characters for performing a safety check before the start of sewing (the barcode reader additional equipment must be activated)
	**Marking lamps** Up to four marking lamps for easier alignment of the sewing material can be controlled (the additional equipment must be activated)
	**Needle reversing mode** The following options can be set: **Not active:** The needle remains at the Stop position. **After the entire contour:** After completing all seams in the contour the needle is reversed to the value specified in the machine parameters. **After every seam** (Def.): The needle is reversed after every seam.
	**Needle cooling** (On/Off) Activates/deactivates the needle cooling.
	**Adjusting the speed** (min. = 10… max. = 200; Def. = 100%) The sewing speed is adjusted by the specified percent value.

	**PP2 - Insertion mode**
Symbol	**Meaning**
	**Insertion mode** The following options can be set: **Mode 1** (Def.) Clamp is opened in the loading position. The clamp is closed when the pedal is pressed. Pressing the pedal again starts sewing of the seam. **Mode 2** Clamp is opened in the loading position. Pressing the pedal closes the left part of the two-piece clamp for angle mounting. Pressing the pedal again closes the right part. Pressing the pedal again starts sewing of the seam. **Mode 3** Clamp is opened in the loading position. Pressing the pedal closes the right part of the two-piece clamp for angle mounting. Pressing the pedal again closes the left part. Pressing the pedal again starts sewing of the seam. **Mode 4** Quick-start mode: Clamp is opened in the loading position. The clamp is closed and sewing of the seam is started when the pedal is pressed. With the alternating clamp the seam is automatically started after insertion. This mode is only active when quick-start is enabled in the machine parameters. The machine must be switched off and on in order to enable the quick-start mode. **Mode 5** Clamp is remains closed in the loading position. Pressing the pedal again starts sewing of the seam.
	**Loading position** (On/Off) With the loading position activated the clamps move to the desired position for convenient insertion of the sewing material.
	**Loading position X** The value range varies depending on the subclass and sewing field size.
	**Loading position Y** The value range varies depending on the subclass and sewing field size.

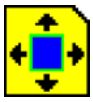
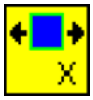
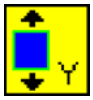
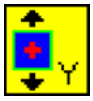
	**PP3 - Removal mode**
Symbol	**Meaning**
	**Removal mode** The following options can be set: **Mode 1** (Def.) Clamp is opened in the removal position. **Mode 2** Clamp remains closed in the removal position. The clamp is opened when the pedal is pressed. **Mode 3** Clamp remains closed in the removal position. Pressing the pedal opens the left part of the two-piece clamp for angle mounting. Pressing the pedal again opens the right part. **Mode 4** Clamp remains closed in the removal position. Pressing the pedal opens the right part of the two-piece clamp for angle mounting. Pressing the pedal again opens the left part. **Mode 5** Clamp remains closed in the removal position.
	**Removal position** (On/Off) With the removal position activated the clamps move to the desired position for convenient removal of the sewing material after the sewing procedure.
	**Removal position X** The value range varies depending on the subclass and sewing field size.
	**Removal position Y** The value range varies depending on the subclass and sewing field size.

	**PP4 - Soft start**
Symbol	**Meaning**
	**Number of soft start stitches** (min. = 0 .. max. = 10; Def. 5)
	**Soft start speed** (min. = 100 .. max. 2000; Def. 300 rpm)

	**PP5 - Needle thread monitor**
	(min.=0..max.= 99: Def. 5) Is only active if activated in the machine parameters. (A higher value makes the needle thread monitor less sensitive. 99 = Needle thread monitor switched off in this program only.)

	**PP6 - Thread consumption**
Symbol	**Meaning**
	**Sewing material thickness** (min. = 0.. max. 20.0; Def. 0) The thickness of the sewing material when pressed together.
	**Material consumption adjustment** (min. = -10.0 .. max. 10.0; Def. 0) Correction of the calculated values.

	**PP7 - Offset**
Symbol	**Meaning**
	**X offset** (min. = -5.0… max. = 5.0; Def. = 0.0 mm)
	**Y offset** (min. = -5.0… max. = 5.0; Def. = 0.0 mm)

	**PP8 - Scaling**.
Symbol	**Meaning**
	**X scaling** (min. = 80… max. = 120; Def. = 100 %) 100% corresponds to the original size.
	**Y scaling** (min. = 80… max. = 120; Def. = 100 %)
	**X scaling origin** (min. = -150.0… max. = 150.0; Def. = 0.0 mm)
	**Y scaling origin** (min. = -150.0… max. = 150.0; Def. = 0.0 mm)

6.18 Editing machine parameters

You use the machine parameters to define the basic machine settings that apply to all programs.

To edit the machine parameters:

1. Tap the menu items *Bearbeiten (Edit)* > *Machinenparameter (Machine parameters)*.

↳ The window for selecting the machine parameter group appears.

Fig. 104: Editing machine parameters

2. Tap the desired parameter group.

↳ The individual parameters of this group are displayed.

3. Tap the desired parameter.

↳ The window for modifying the parameter value opens.

4. Set the parameter to the desired value (📖 *p. 102*).

There are 6 machine parameter groups:

Symbol	Parameter group
	**MP1 - Configuration** General settings
	**MP2 - Limit values** Limit values for speeds and positions
	**MP3 - Needle thread monitor** Behavior after thread breakage
	**MP4 - Thread cutting** Speed, position and tension
	**MP5 - Thread clamping** Starting angle
	**MP6 - Counters** Settings for program and bobbin counters

Overview of the individual machine parameters

	**MP1 - Configuration**
Symbol	**Meaning**
	**Needle cooling** The following options can be set: **None**: No type of needle cooling is active. **Air cooling** (Def.): The needle is cooled with air while sewing the seam. **Ice cooling**: Optional equipment.
	**Foot mode** The foot can be operated in the following modes: **Hopper**: The foot only presses on the sewing material while the needle is in the sewing material. **Presser**: The foot presses continuously on the sewing material.
	**Sewing field size** Take care to ensure a valid sewing field size for your subclass when making the selection. (See chapter **Technical data** (📖 *p. 168*)). **Normal sewing field** (Def.): A sewing field of up to 200 x 300mm is available. **Extra-large sewing field**: A larger sewing field can be used in conjunction with the alternating clamps.
	**Optional equipment** **Reduced clamp pressure:** Optional equipment limiting the amount of clamp pressure to allow for better alignment on insertion. **Marking lamps:** Optional equipment providing orientation lines on insertion for easier alignment. Up to 4 marking lamps can be switched on for each program. This setting only activates the option; the actual switching is defined in the program parameters (see **Marking lamps** (📖 *p. 122*)). **Barcode scanner:** Optional equipment for performing a safety check before sewing. A barcode can be stored with each program. Agreement with the barcode on the clamp is checked. Sewing only proceeds when the barcodes agree. You enter the barcode ID in the program parameters (see **Clamp ID code** (📖 *p. 122*)). **Neat seam beginning:** Not available **Remaining thread monitor:** Optional device that monitors the thread remaining on the bobbin. Will issue an alert before shortly before the thread is used up. **Thread burner:** Device for burning off the thread. Instead of cutting using a thread cutter.
	**Clamp type** The following clamp types are available: **Single clamp:** One-piece parallel clamp with angle mount **Single clamp with hanger** (Def.): One-piece parallel clamp with hanger mount **Double clamp:** Two-piece parallel clamp with angle mount **Alternating clamp:** Removable clamp **Special clamp:** Special clamp

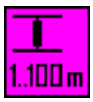
Symbol	Meaning
	**Clamp limits** **Standard limits** (Def.) No additional structures are taken into account. **Special limits** Individual limits are taken into account.
	**Pedal mode** The following options are available: **Mode 1:** The current position of the pedal is evaluated. **Mode 2** (Def.): The pedal must be returned to the initial position after every actuation before a new actuation is recognized. **Mode 3:** The current position of the pedal is evaluated. The quick-start mode is also enabled (see **Insertion mode** (📖 *p. 123*)). The machine must be switched off and on in order to enable the quick-start mode. **Push button:** In push button mode one sensor is used only for controlling the clamp motion (up and down). The other sensor is used for starting the sewing process.

	**MP2 - Limit values**
Symbol	**Meaning**
	**Max. speed** (min. = 500 .. max. 1400; Def. 900 rpm) All sewing programs are limited to this maximum speed.
	**Max. run-empty speed** (min. = 10 .. max. 100; Def. 100%) Limits all clamp movements between the seams to this value.
	**Feed starting angle** (min. = 30 .. max. 350; Def. 300 degrees) The clamp motion during the stitch starts at this angle of needle motion.
	**Feed phase** (min. = 30 .. max. 100; Def. 30%) This parameter defines how the clamp is to be moved during the stitch. (A value of 100% means that the desired clamp motion is distributed over the entire stitch.)
	**Needle reversing position** (min. = 0 .. max. 359; Def. 0 degrees, with thread burner 20 degrees) The needle is reversed at this angle in order to increase the clearance to the clamp.
	**Edit time paths** This function is only for Dürkopp Adler Service personnel.

	**MP3 - Needle thread monitor**
Symbol	**Meaning**
	**Needle thread monitor mode** The following options are available: **Threading position**: After detection of a thread breakage the thread is cut and the clamp then moves to the threading position. **Cut thread** (Def.): After detection of a thread breakage the thread is cut and the clamp then moves to the contour position according to the defined reversing path. **Remain in position:** After detection of a thread breakage, seam motion is stopped. **Not active:** The needle thread monitor is ignored.
	**Reversing path after thread breakage** (min. = 0 .. max. 20; Def. 5 stitches) Number of stitches to be taken into account when reversing after a thread breakage.
	**Bobbin change X position** The value range varies depending on the subclass and sewing field size.
	**Bobbin change Y position** The value range varies depending on the subclass and sewing field size.

	**MP4 - Thread cutting**
Symbol	**Meaning**
	**Cutting speed** (min. = 70 .. max. 500; Def. 150 rpm) Speed of the cutting stitch.
	**Cutting position on** (min. = 0° .. max. 359°; Def. 180°) Angular position of the needle at which the thread cutting knife is switched on.
	**Cutting position off** (min. = 0° .. max. 359°; Def. 359°) Angular position of the needle at which the thread cutting knife is switched off.
	**Thread tension during thread cutting** (min. = 00 .. max. 100; Def. 10%, 50% with thread burner) Thread tension of the cutting stitch.
	**Position for thread tension during thread cutting** (min. = 0° .. max. 400°; Def. 370°) Starting angle for the thread tension during the cutting stitch. (At an angle greater than 359° the thread tension is activated in the next stitch.)

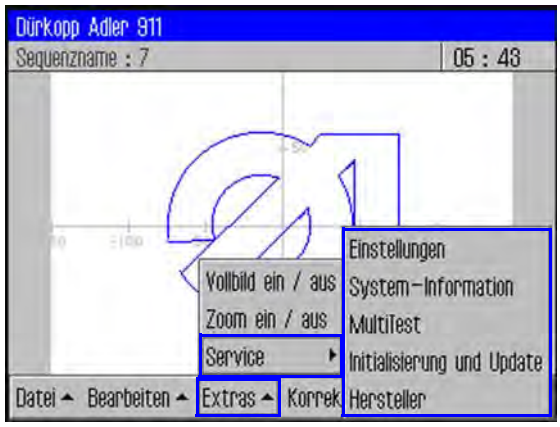
	**MP5 - Thread clamping (for TC machines only)**
Symbol	**Meaning**
	**Close thread clamp at 1st stitch** (min. = 0° .. max. 250°; Def. 180°) Starting angle for closing the thread clamp during the first stitch.
	**Open thread clamp at 1st stitch** (min. = 0° .. max. 359°; Def. 340°) Starting angle for opening the thread clamp during the first stitch. If the closing and opening angles are the same then the thread clamp is not activated.

	**MP6 - Counters**
Symbol	**Meaning**
	**Counter type** The following options are available: **Piece counter increments** (Def.) The counter is incremented after each sewn program. **Piece counter decrements** The counter is decremented after each sewn program. **Sequence counter increments** The counter is incremented after each sewn sequence. **Sequence counter decrements** The counter is decremented after each sewn sequence.
	**Reset value for the counters** (min. = 0 .. max. 9999; Def. 0) Value to which the counter is set when a counter reset is performed.
	**Seam counting for bobbin supply** (min. = 0 .. max. 100; Def. 0) A message is displayed to the user after the number of seams specified here have been sewn. A value of 0 deactivates the function.
	**Bobbin supply capacity** (min. = 0.0 .. max. 400.0; Def. 0.0m) A message is displayed to the user after the bobbin supply capacity has been consumed. A value of 0 deactivates the function.

6.19 Checking and changing the technical settings

The technical settings are made via the menu item *Extras* > *Service*.

Fig. 105: Checking and changing the technical settings



Important

A password must always be entered in order to access the additional menu items in *Extras* > *Service* (🕮 *p. 97*).

Changing the password options

The default password on delivery is: 25483.

You can change this password and also define whether the password only applies to the technical menu items or must always be entered after the machine is switched on.

Changing the password

To change the password:

1. Tap the menu items *Extras* > *Service* > *Einstellungen (Settings)*.

↳ The *Einstellungen (Settings)* window appears.

2. Tap the *Operator Passwort (Password)* option.
3. In the following window tap the option *Passwort ändern (Change password)*.

↳ The window for entering the new password appears.

4. Enter the new password(🕮 *p. 97*).

Important

The password must not have more than 5 digits.

5. Confirm the new password with **OK**.

Defining the password protected areas

To define the password protected areas:

1. Tap the menu items *Extras* > *Service* > *Einstellungen (Settings)*.

↳ The *Einstellungen (Settings)* window appears.

2. Tap the *Operator* *Passwort (Password)* there.

↳ In the next window the *Aktivieren/De-aktivieren (Activate/Deactivate)* option indicates the type of password protection:

- ☒ - Comprehensive password protection activated:
  Password protection of the first action after switching on
- ❑ - Comprehensive password protection deactivated:
  Password protection for the technical menu items only

3. Tap the *Aktivieren/De-aktivieren (Activate/Deactivate)* option to switch between each respective setting.
4. Confirm with **OK**.

Important

Switch the machine off and on again to adopt the setting.

Changing the language

To change the language:

1. In the menu item *Extras* > *Service* > *Einstellungen (Settings)* tap the *Sprache (Language)* option.

↳ The list of available languages is displayed.

2. Tap the desired language.
3. Confirm with **OK**.

↳ The screen is reloaded in the selected language.

Setting the date and time

To set date and time:

1. In the menu item *Extras* > *Service* > *Einstellungen (Settings)* tap the option *Datum (Date)* and *Uhrzeit (Time)*.

↳ The data entry window for date and time is displayed.

2. Enter the date and/or time.
3. Confirm with **OK**.

↳ The entered values are adopted

Setting the brightness

To set the brightness:

1. In the menu item *Extras* > *Service* > *Einstellungen (Settings)* tap the *Bedienfeld-Einstellungen (Control panel settings)* option.
2. In the following window tap the *Kontrast (Contrast)* *Helligkeit (Brightness)* option.

↳ A window with slider controls is displayed.

3. Pull the corresponding slider control up or down to change the value.

↳ The changes are immediately visible on the display.

Testing the touchscreen

You can use the *Extras* > *Service* > *Einstellungen (Settings)* menu item to check that the touchscreen is functioning correctly over all areas of the screen.

To test the touchscreen:

1. In the menu item *Extras* > *Service* > *Einstellungen (Settings)* tap the *Bedienfeld-Einstellungen (Control panel settings)* option.
2. In the following window tap the *Touch Test* option.

↳ An empty window is opened.

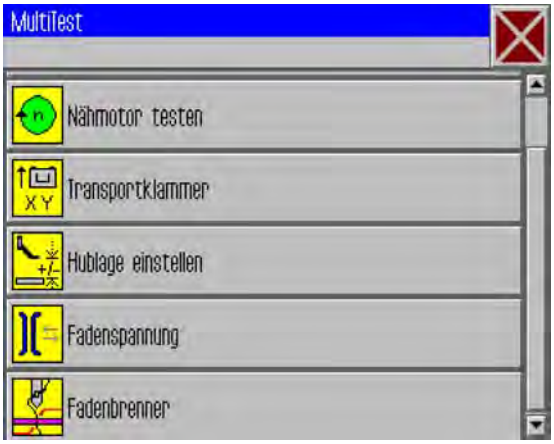
3. Use your finger to tap various different points or draw lines.

↳ When the touchscreen is functioning correctly all touched points of the screen are marked.

Testing the functions of the machine

You can use the *Extras* > *Service* > *Multitest* menu item to check the inputs and outputs, test the sewing motor and set the stroke position.

Fig. 106: Testing the functions of the machine



Information

The functions  *Transportklammer (Feed clamp)* and  *Fadenbrenner (Thread burner)* are only intended for use by Dürkopp Adler Service personnel.

Testing inputs and outputs

Important

The instructions only provide an overview of the test possibilities.

The tests may only be performed by qualified specialists that have received training from Dürkopp Adler.

WARNING

Risk of injury from sharp and moving parts!

Puncture or crushing possible.

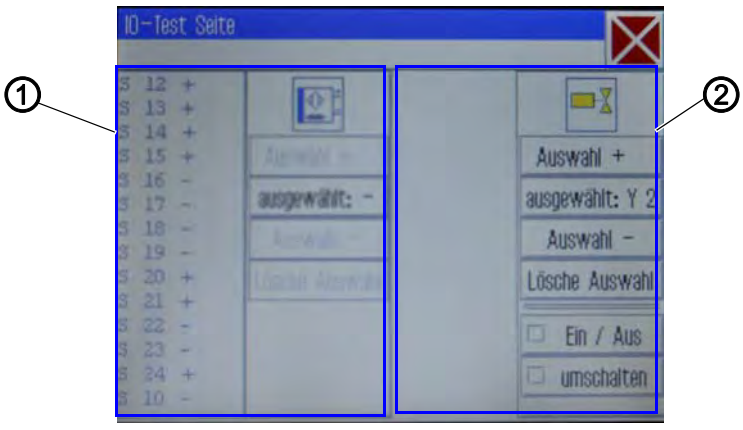
Do not reach into the machine during function testing of inputs and outputs.

To test inputs and outputs:

1. In the menu item *Extras* > *Service* > *Multitest* tap the *Eingänge / Ausgänge testen (Test inputs / outputs)* option.

↳ The *IO-Test (IO Test) Seite (Page)* window is displayed.

Fig. 107: Testing inputs and outputs



(1) - Area for input elements *(2) - Area for output elements*

The input elements are listed and selected at the left side (1) and the output elements at the right side (2).

2. Use *Auswahl (Select) +* or *Auswahl (Select) -* to select the desired element in the respective area.

↳ The number of the element is displayed on the *ausgewählt: (selected:)* button.

3. Tap the *ausgewählt: (selected:)* button.
4. Test the element using the *Ein/Aus (On/Off)* or *umschalten (switchover)* buttons, depending on the type of the input or output element.

	**Input elements**
No.	**Meaning**
S1	Lower right clamp
S2	Lower left clamp
S9	Needle thread monitor active
S10	Bobbin cover closed
S11	Machine head latch closed
S13	Pedal forwards
S14	Pedal backwards
S16	Pressure monitor
S17	Quick stop
S100	Sewing motor reference
S101	X-axis reference
S102	Y-axis reference
S103	Z-axis reference

	**Output elements**
No.	**Meaning**
Y1	Foot mode
Y2	Bobbin cover
Y3	Needle cooling on
Y4	Right clamp
Y5	Left clamp
Y9	Threading switch lamp on
Y10	Oil level indicator warning light on
Y11	Burner transformer on
Y12	Upper burner
Y13	Lower burner
Y14	Thread suction device
Y25	Marking lamp 1 (Z)
Y26	Marking lamp 2 (Z)
Y27	Marking lamp 3 (Z)
Y28	Marking lamp 4 (Z)

Setting the stroke position

WARNING

Risk of injury from sharp and moving parts!

Puncture or crushing possible.

Do not reach into the machine when setting the stroke position.
Switch off the power to the drives when you wish to test the freedom of motion of the sewing foot rod.

To set the stroke position:

1. In the menu item *Extras* > *Service* > *Multitest* tap the *Hublage einstellen (Set strokeposition)* option.

↳ The following options are displayed:

	**Setting the stroke position**
Symbol	**Meaning**
	**Perform a reference run** Check the movement
	**Switch between a hopper and presser foot** Switch over the mode of operation
	**Move to position** Set the sewing foot height
	**Switch off the power to the drives** Manually check the freedom of motion of the sewing foot rod

2. Tap the desired symbol and execute the function.

Test sewing motor

WARNING

Risk of injury from sharp and moving parts!

Puncture or crushing possible.

Do not reach into the machine during the function test of the sewing motor.

To test the sewing motor:

1. In the menu item *Extras* > *Service* > *Multitest* tap the *Nähmotor testen (Test sewing motor)* option.

↳ The sewing motor test screen is displayed:

Fig. 108: Test sewing motor

Important

Remove the thread from the needle and the thread lever before starting the test.

2. Tap the button.

↳ The window for entering the speed opens.

3. Enter the desired value (300 - 2000 rpm).

4. Tap the button.

↳ The window for entering the cutting speed opens.

5. Enter the desired value (70 - 500 rpm).

6. Tap the button.

↳ The sewing motor runs at the entered speed.

7. Tap the  button.

↳ The sewing motor stops.

8. Tap the  button.

↳ The sewing motor runs at the entered speed.

9. Tap the  button.

↳ The sewing motor stops, and the thread cutter is actuated.

Calling up log displays and error lists

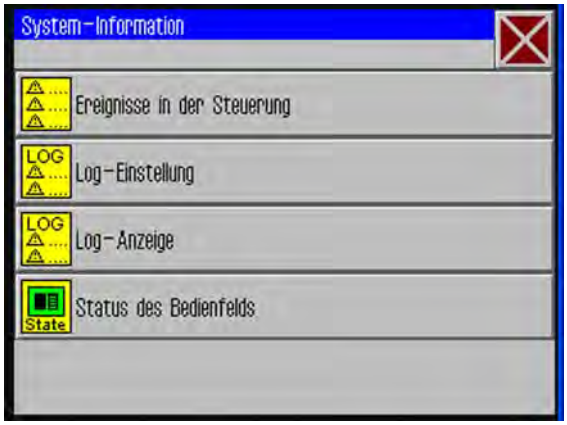
You can access the log settings and error lists via *Extras* > *Service* > *System-Information (System Information)*.

To call up log displays and error lists:

1. Tap the menu items *Extras* > *Service* > *System-Information (System Information)*.

↳ The selection screen for system information appears.

Fig. 109: Calling up log displays and error lists



2. Tap the desired symbol.

Symbol	Meaning
	**Control events** List of the latest errors
	**Log settings** Only for Dürkopp Adler Service personnel
	**Log display** List of the last log settings
	**Control panel status** Status appears in the log display

Initializing the control and performing updates

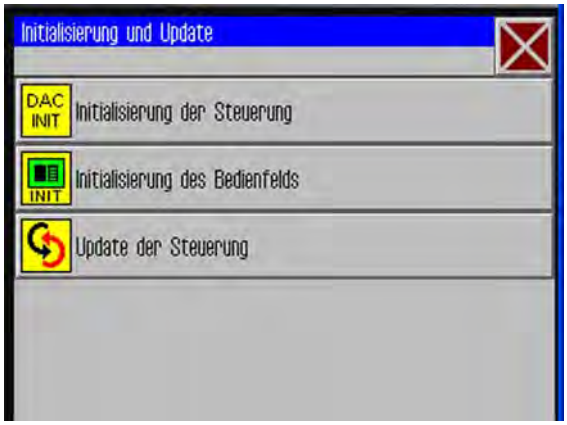
You can use *Extras* > *Service* > *Initialisierung (Initialization) and Update* to reset the control and control panel to the factory defaults and to update the control with a new software version.

To initialize the control and perform updates:

1. Tap the menu items *Extras* > *Service* > *Initialisierung (Initialization) and Update*.

↳ The screen for initialization and update appears.

Fig. 110: Initializing the control and performing updates



Initializing the control

Important

Initializing the control resets all values to the factory default settings.
All changes are lost.
Only execute this option if you really want to return to the factory settings.

Order

Save your seam programs and sequences to a USB key before performing initialization.

1. Tap the *Initialisierung (Initialize) Steuerung (Control)* option.

↳ The control is completely reset to the factory default settings.

Initializing the control panel

Important

Initializing the control panel resets all values to the factory default settings. All changes are lost.
Only execute this option if you really want to return to the factory settings.

1. Tap the *Initialisierung des Bedienfelds (Initialize control panel)* option.

↳ The control panel is completely reset to the factory default settings.

Updating the control

Information

The latest software version is available in the download area at *www.duerkopp-adler.com*.

You can easily transfer a new software version from a USB key to the control.

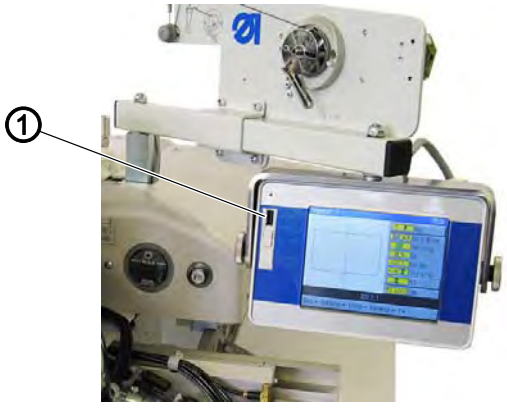
Important

Not all commonly available USB keys are suitable for the copying process. You can obtain a suitable USB key from Dürkopp Adler using the part number 9805 791113.

To perform an update of the control:

1. Switch off the machine.
2. Insert the USB key into the USB port (1) on the operating terminal.

Fig. 111: Updating the control



(1) - USB port

3. Switch on the machine.

↳ The software update is performed automatically.

Information

If the automatic update does not function then you can use the menu items *Extras* > *Service* > *Initialisierung (Initialize) and Update* > Option *Update der (the) Steuerung (control)* to load a specific software version.

Contact the Dürkopp Adler Service Hotline for this.

Displaying software version information

The menu item ***?*** displays information on the software currently installed on the machine.

To display information on the software version currently used:

1. Tap menu items *?* > Tap on *Info*.

↳ The following information is displayed:

- Class
- Subclass
- Software version
- Date of creation of this software version

7 Creating programs with DA-CAD 5000

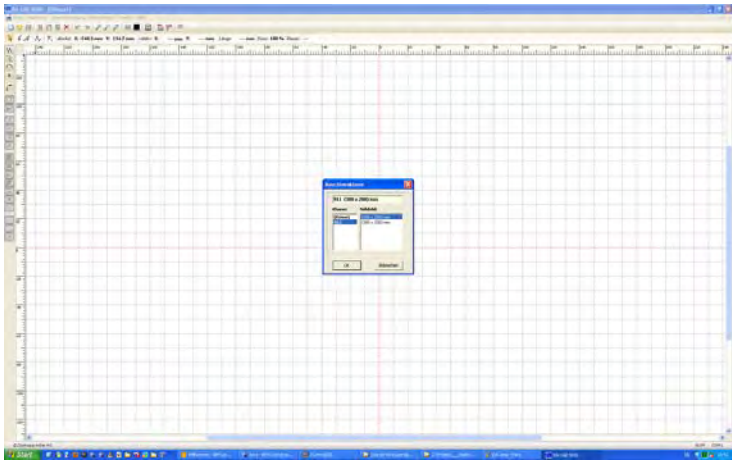
You can use the DA CAD-5000 program to create seam programs on a PC. The DA-CAD 5000 program is available as additional equipment.

This section only provides an overview of the program steps. A detailed description is provided in the 🕮 *Operating Instructions* for the DA-CAD 5000 program.

Selecting the class

The first step is to select the class.

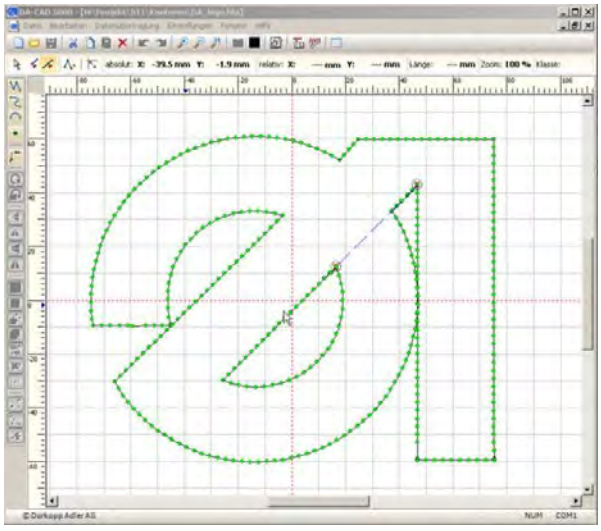
Fig. 112: Selecting the class



Creating the seam contour

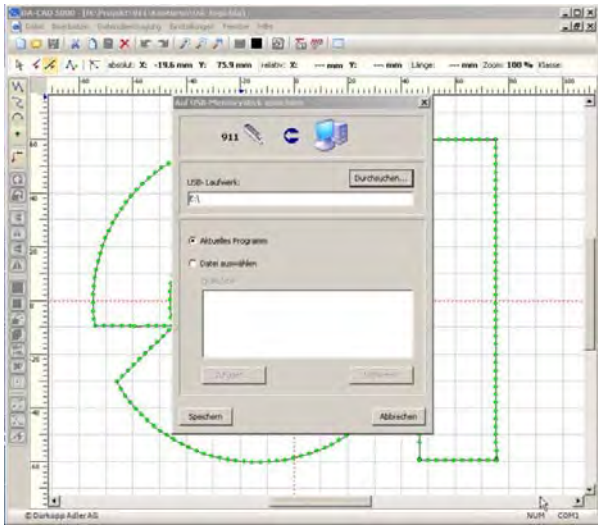
The next step is to draw the seam contour.

Fig. 113: Creating the seam contour



Saving the seam contour

Fig. 114: Saving the seam contour



The final step is to save the finished seam program and copy it to a USB key.

Important

Not all commonly available USB keys are suitable for the copying process. You can obtain a suitable USB key from Dürkopp Adler using the part number 9805 791113.

To save a seam contour:

1. Select the menu items *Datenübertragung (Data transfer)* > *USB-Memorystick (USB memory stick)* > *Speichern (Save)* (*PC->>USB*).

Order

After successfully saving to the USB key the following steps must be performed at the machine:

Transferring the program to the machine

NOTICE

Property damage may occur!

If you have entered contour points that lie outside the sewing field, the movement of the clamps during sewing can cause damage to the machine or the sewing material.

Always perform a contour test after creating or editing a contour to ensure that the entire contour lies within the permissible sewing field.

To transfer a program to the machine:

1. Insert the USB key and copy the desired file to the DAC(📖 *p. 117*).
2. Open the copied program (📖 *p. 104*).
3. Adjust the program parameters (especially the sewing foot height) (📖 *p. 121*).
4. Perform a contour test to check the clamp motion (📖 *p. 113*).

↳ Sewing with the program can begin after successful testing/adjustment.

8 Maintenance

8.1 Cleaning

WARNING

Risk of injury from flying particles!

Flying particles can enter the eyes, causing injury.

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

NOTICE

Property damage from soiling!

Lint and thread remnants can impair the operation of the machine.

Clean the machine as described.

NOTICE

Property damage from solvent-based cleaners!

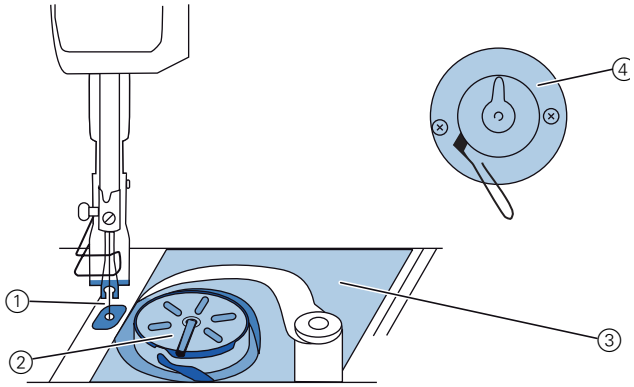
Solvent-based cleaners will damage paintwork.

Use only solvent-free substances for cleaning.

8.1.1 Cleaning the machine

Lint and thread remnants should be removed after every 8 operating hours using a compressed air gun or a brush. If very fluffy sewing material is being sewn the machine must be cleaned more frequently.

Fig. 115: Cleaning the machine



(1) - Area around the needle
(2) - Hook
(3) - Area under the throat plate
(4) - Cutter on the bobbin winder

Areas particularly susceptible to soiling:

- Cutter on the winder for the hook thread (4)
- Area under the throat plate (3)
- Hook (2)
- Area around the needle (1)

To clean the machine:

1. Remove any dust and thread remnants using a compressed air gun or a brush.

8.1.2 Cleaning the motor fan mesh

The motor fan mesh must be cleaned once a month using a compressed air gun. When very fluffy material is used for sewing, the motor fan mesh must be cleaned more frequently.

Fig. 116: Cleaning the motor fan mesh

(1) - Motor fan mesh

To clean the motor fan mesh.

1. Remove any sewing dust and thread remnants using a compressed air gun.

8.2 Lubricating

CAUTION

Risk of injury from contact with oil!

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

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

NOTICE

Property damage from incorrect oil!

Incorrect oil types can result in damage to the machine.

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

CAUTION

Risk of environmental damage from oil!

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

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

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

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

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

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

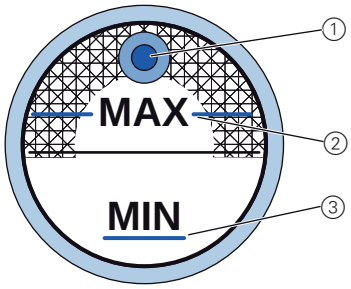
Container	Part no.
250 ml	9047 000011
1 l	9047 000012
2 l	9047 000013
5 l	9047 000014

8.2.1 Lubricating the machine head

Proper setting

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

Fig. 117: Lubricating the machine head



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

To lubricate the machine head:

1. Check the oil level indicator every day.

If the oil level is below the minimum level marking (3):
Pour oil through the refill opening (1) but no higher than the maximum level marking (2).

8.2.2 Lubricating the hook

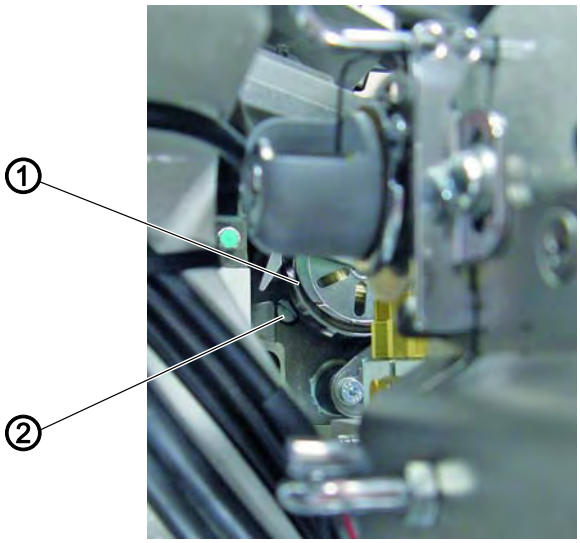
The approved oil quantity for hook lubrication is a factory specification.

Proper setting

1. Hold a piece of blotting paper next to the hook (1) while sewing.

↳ After sewing a stretch of approx. 1 m, the blotting paper will have been sprayed with a thin and even film of oil.

Fig. 118: Lubricating the hook



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

To lubricate the hook:

1. Turn the screw (2):
   - **Turn counterclockwise:** more oil is released
   - **Turn clockwise:** less oil is released

Information

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

8.3 Servicing the pneumatic system

8.3.1 Setting the operating pressure

NOTICE

Property damage from incorrect setting!

Incorrect operating pressure can result in damage to the machine.

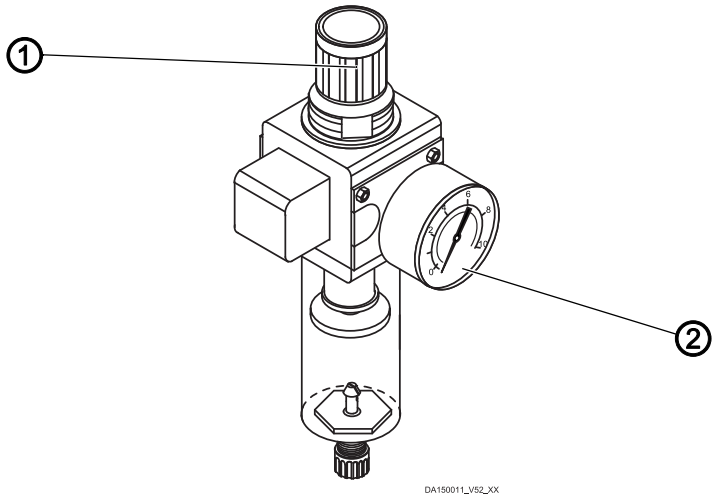
Ensure that the machine is only used when the operating pressure is set correctly.

Proper setting

Refer to the **Technical data** (📖 *p. 168*) 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. 119: Setting the operating pressure



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

To set the operating pressure:

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

8.3.2 Draining the water condensation

NOTICE

Property damage from excess water!

Excess water can cause damage to the machine.

Drain water as required.

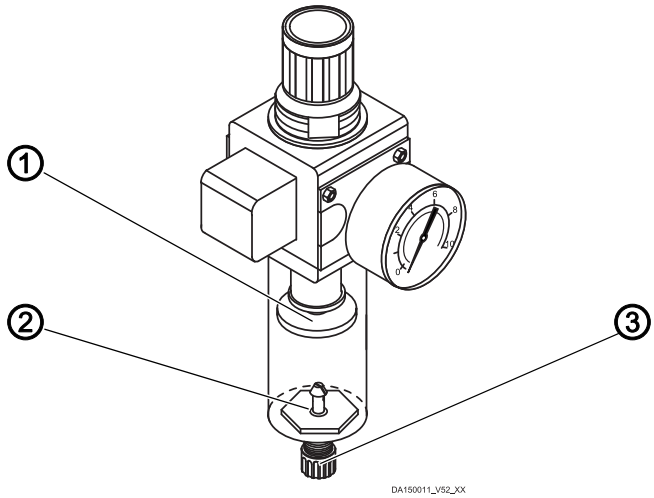
Water condensation accumulates in the water separator (2) of the pressure controller.

Proper setting

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

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

Fig. 120: Draining the water condensation



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

To drain water condensation:

1. Disconnect the machine from the compressed air supply.
2. Place the collection tray under the drain screw (3).
3. Loosen the drain screw (3) completely.
4. Allow water to drain into the collection tray.
5. Tighten the drain screw (3).
6. Connect the machine to the compressed air supply.

8.3.3 Cleaning the filter element

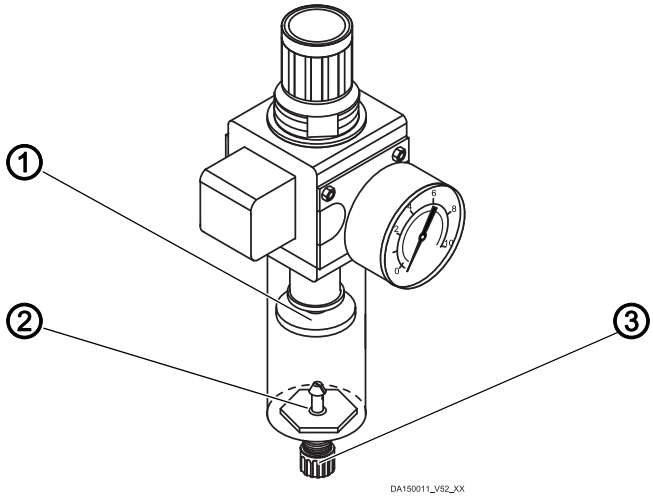
NOTICE

Damage to the paintwork from solvent-based cleaners!

Solvent-based cleaners damage the filter.

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

Fig. 121: Cleaning the filter element



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

To clean the filter element:

1. Disconnect the machine from the compressed air supply.
2. Drain the water condensation (📖 *p. 153*).
3. Loosen the water separator (2).
4. Loosen the filter element (1).
5. Blow out the filter element (1) using a compressed air gun.
6. Wash out the filter tray using benzine.
7. Tighten the filter element (1).
8. Tighten the water separator (2).
9. Tighten the drain screw (3).
10. Connect the machine to the compressed air supply.

8.4 Checking the toothed belt

WARNING

Risk of injury from moving parts!

Crushing possible.

Switch off the machine before checking the condition of the toothed belt.

The condition of the toothed belt must be checked once a month.

Important

A damaged toothed belt must be replaced immediately.

Proper setting

- The toothed belt exhibits no cracks or fragile areas.
- When pressed with a finger, the toothed belt must yield no more than 10 mm.

8.5 Checking the thread suction device

Proper setting

The thread is sucked in properly. Check on a regular basis if the thread suction device sucks in the thread properly without the walls of the hose sticking together.

To check the thread suction device:

1. As soon as the thread is no longer sucked in properly, blow talcum powder into the hose through the opening of the thread suction device.

8.6 Parts list

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

www.duerkopp-adler.com

9 Decommissioning

You need to perform a number of activities if the machine is to be shut down for a longer period of time or completely decommissioned.

WARNING

Risk of injury from a lack of care!

Serious injuries may occur.

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

CAUTION

Risk of injury from contact with oil!

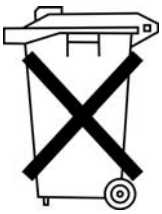
Oil can cause a rash if it comes into contact with skin.

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

To decommission the machine:

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

10 Disposal



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

The machine must be disposed of in a suitable and proper manner and 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 legal 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 applicable national regulations when disposing of these materials.

11 Troubleshooting

11.1 Customer Service

Contact for repairs and issues with the machine:

Dürkopp Adler AG

Potsdamer Str. 190
33719 Bielefeld, Germany

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

11.2 Messages of the software

Error code	Description	Troubleshooting
Sewing motor		
1051	Sewing motor timeout • Cable to sewing motor reference switch defective • Reference switch defective • Machine head does not move freely or has excessive toothed belt tension	• Replace the cable • Replace the reference switch • Check the ease of movement and toothed belt tension of the machine head
1052	Sewing motor excess current • Sewing motor cable defective • Sewing motor defective • Control defective	• Replace the sewing motor cable • Replace the sewing motor • Replace the control
1053	Sewing motor line voltage too high	Check the line voltage
1055	Sewing motor overload • Sewing motor blocked/not moving freely • Sewing motor defective • Control defective	• Fix blockage/sluggishness • Check the sewing motor • Check the control
1056	Sewing motor overtemperature • Sewing motor not moving freely • Sewing motor defective • Control defective	• Eliminate seizing • Replace the sewing motor • Replace the control
1058 1302 1342 1344	Sewing motor speed • Sewing motor defective Sewing motor error Control not receiving pulses from pulse encoder in motor Sewing motor error Internal error	• Replace the sewing motor • Check the cable from the pulse encoder in the motor to the control • Switch off and on the machine again • Software update
Stepper motors		
2101	X-axis stepper motor referencing timeout • Faulty reference switch setting • Faulty cable to the reference switch • Reference switch defective	• Adjust reference switch • Replace the cable • Check the reference switch
2102	X-axis stepper motor current error • Stepper motor blocked • Encoder cable not connected or defective • Encoder defective	• Fix blockage • Check/replace the encoder cable • Replace the stepper motor
2152	X-axis stepper motor excess current	• Replace the stepper motor • Replace the control
2153	X-axis stepper motor overvoltage • Too high line voltage	• Check the line voltage
2155	X-axis stepper motor overload • Feed system not moving freely • Obstacle to feed motion	• Eliminate sluggishness • Remove obstacles/adjust the motion

Error code	Description	Troubleshooting
2156	X-axis stepper motor overtemperature • Stepper motor sluggish • Stepper motor faulty • Control defective	• Eliminate seizing • Replace the stepper motor • Replace the control
2201	Y-axis stepper motor referencing timeout • Faulty reference switch setting • Faulty cable to the reference switch • Reference switch defective	• Adjust reference switch • Replace the cable • Replace the reference switch
2202	Y-axis stepper motor current error • Stepper motor blocked • Encoder cable not connected or defective • Encoder defective	• Fix blockage • Check/replace the encoder cable • Replace the encoder
2252	Y-axis stepper motor excess current	• Replace the stepper motor • Replace the control
2253	Y-axis stepper motor overvoltage • Too high line voltage	• Check the line voltage
2255	Y-axis stepper motor overload • Feed system not moving freely • Obstacles to the feed motion	• Eliminate sluggishness • Remove obstacles/adjust the motion
2256	Y-axis stepper motor overtemperature • Feed system not moving freely • Stepper motor faulty • Control defective	• Eliminate seizing • Replace the stepper motor • Replace the control
2301	Stroke position stepper motor referencing timeout • Faulty reference switch setting • Faulty cable to the reference switch • Reference switch defective	• Adjust reference switch • Replace the cable • Replace the reference switch
2302	Stroke position stepper motor current error • Stepper motor blocked • Encoder cable not connected or defective • Encoder defective	• Fix blockage • Check/replace the encoder cable • Replace the encoder
2352	Stroke position stepper motor excess current	• Replace the stepper motor • Replace the control
2353	Stroke position stepper motor overvoltage • Too high line voltage	• Check the line voltage
2355	Stroke position step motor overload • Feed system not moving freely • Obstacles to the feed motion	• Eliminate sluggishness • Remove obstacles/adjust the motion

Error code	Description	Troubleshooting
2356	Stroke position stepper motor overtemperature • Feed system not moving freely • Stepper motor faulty • Control defective	• Eliminate sluggishness • Replace the stepper motor • Replace the control
Machine control		
3100	Machine control voltage • Temporary line voltage interruption	• Check the line voltage
3102	Machine voltage in sewing motor intermediate circuit • Temporary line voltage interruption	• Check the line voltage
3103	Machine voltage in stepper motor intermediate circuit • Temporary line voltage interruption	• Check the line voltage
3107	Machine temperature • Ventilation openings closed • Ventilation grille dirty	• Clean ventilation grille • Check ventilation openings
3109	Threading mode is switched on	Switch off threading mode
3121	Compressed air is missing or insufficient	Turn on the compressed air, stabilize
3123	Oil sensor active	Top off oil
3210	Thread broken	Re-thread the thread
3215	Bobbin empty (remaining thread counter)	Insert full bobbin
3220	Bobbin empty (remaining thread counter)	Insert full bobbin
3500	Error in calculating the contour data	• Reload the contour data • Check the contour data
3501	Target position of the XY clamps outside the motion limits	Adjust the contour data
3502	Target position of the XY clamps within the "forbidden areas"	Adjust the contour data
3721 3722	Internal error	• Switch off and on the machine • Software update • Notify DA Service
4201	Internal CF card defective	• Switch off and on the machine • Retrofit/replace control
5301	Program cannot be sewn	Copy program to DAC

Error code	Description	Troubleshooting
6551 6554 6651 6653 6751 6761	Error in machine head position/AD converter/process error Internal error	• Switch off and on the machine • Software update • Notify DA Service
6952	Stepper motor driver error Internal error	• Switch off and on the machine • Software update • Notify DA Service
Communication		
7801	Control panel interface communication • Cable disturbance • Cable	• Switch off and on the machine • Software update • Notify DA Service
8151 8156 8159	IDMA error • Disturbance • Control defective	• Switch off and on the machine • Replace the control
8152 8154	IDMA error • Internal error	• Switch off and on the machine • Software update • Notify DA Service
8252 8257 8258 8256 8254	ADSP Boot/Xilinx Boot/ Boot error Disturbance	• Switch off and on the machine
8351	Test pins error	• Switch off and on the machine • Software update • Notify DA Service
9601	Stop while sewing on the contour Continue sewing?	• OK button = Continue the sewing process • ESC button = Interrupt the sewing process
9700	Bobbin case retainer not closed	Close the bobbin case retainer
9701	Parallel clamps not lowered	• Remove obstacles • Adjust sensors
9900	Incorrect machine parameters	Initialize the data
9901	Incorrect sequences	Initialize the data
9902	Incorrect program parameters	Initialize the data

11.3 Information messages

Information code	Description	Troubleshooting
8400	Control panel has no valid program for the DAC.	Load the current program into the control panel from a USB key.
8401 8402	Control panel has no valid program for the DAC.	Load the current program into the control panel from a USB key.
8403	Program in DAC is no longer current.	Load the current program into the DAC.
8404 8407	DAC update failed.	• Attempt the update again • Check cable connections • Replace the DAC
8408	Waiting for a DAC reset.	Wait until the restart has been performed (Duration: several seconds).
8411	DAC program check is active.	Wait until the test has been performed (Duration: several seconds).
8414	DAC update succeeded.	
8801 8805 8806 8890 8891	Error in test pins/signal processing/event processing/ Memory wrapper/ list functions Internal error	• Switch off and on the machine • Software update • Notify DA Service
System		
9000	Reference run active	
9002	Machine head not locked	Lock the machine head
9006	Quick-stop button is active.	Release the Quick-stop button
9016	Incorrect barcode ID	Change the program
9100	The counter has not reached the specified value.	Tap the OK button. The counter is reset.

11.4 Errors in sewing process

Error	Possible causes	Remedial action
Unthreading at seam beginning	Needle thread tension is too firm	Check needle thread tension
Thread breaking	Needle thread and hook thread have not been threaded correctly	Check threading path
	Needle is bent or sharp-edged	Replace the needle
	Needle is not inserted correctly into the needle bar	Insert the needle correctly into the needle bar
	The thread used is unsuitable	Use recommended thread
	Thread tensions are too tight for the thread used	Check thread tensions
	Thread-guiding parts, such as thread tube, thread guide or thread take-up disk, are sharp-edged	Check threading path
	Throat plate, hook or spread have been damaged by the needle	Have parts reworked by qualified specialists
Missing stitches	Needle thread and hook thread have not been threaded correctly	Check threading path
	Needle is blunt or bent	Replace the needle
	Needle is not inserted correctly into the needle bar	Insert the needle correctly into the needle bar
	The needle thickness used is unsuitable	Use recommended needle thickness
	The reel stand is installed incorrectly	Check the assembly of the reel stand
	Thread tensions are too tight	Check thread tensions
	Throat plate, hook or spread have been damaged by the needle	Have parts reworked by qualified specialists

Error	Possible causes	Remedial action
Loose stitches	Thread tensions are not adjusted to the sewing material, the sewing material thickness or the thread used	Check thread tensions
	Needle thread and hook thread have not been threaded correctly	Check threading path
Needle breakage	Needle thickness is unsuitable for the sewing material or the thread	Use recommended needle thickness

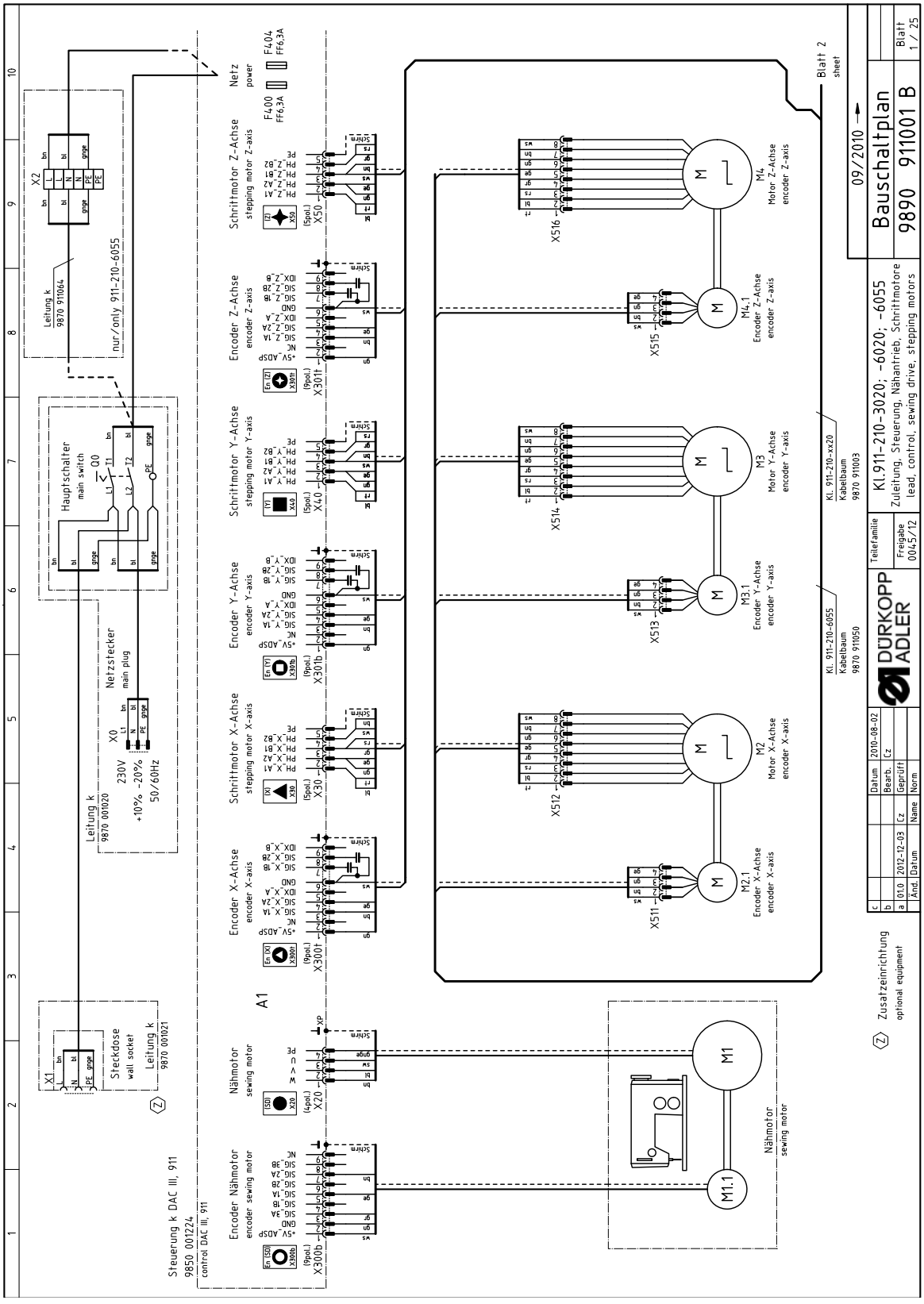
12 Technical data

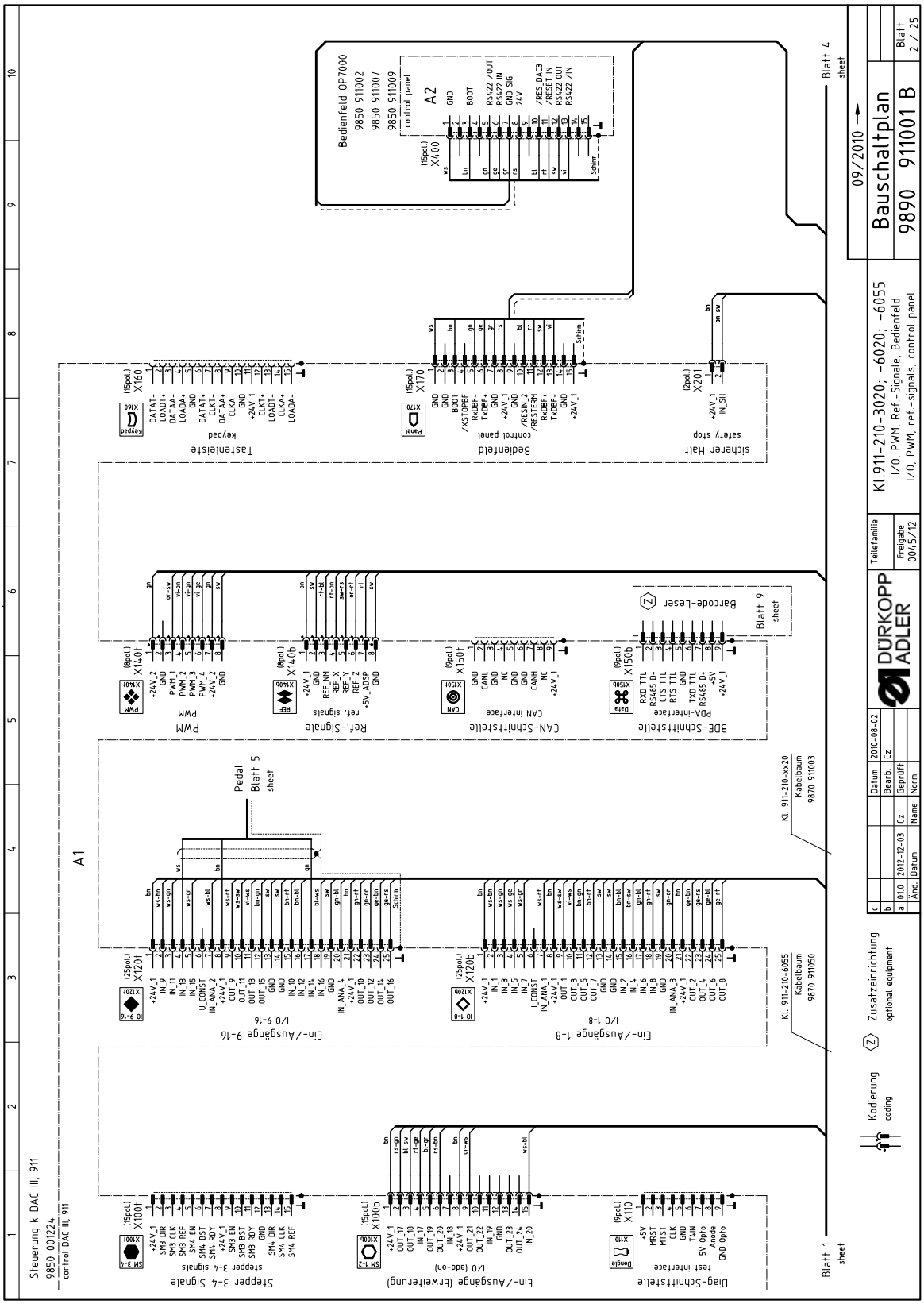
Data and characteristic values

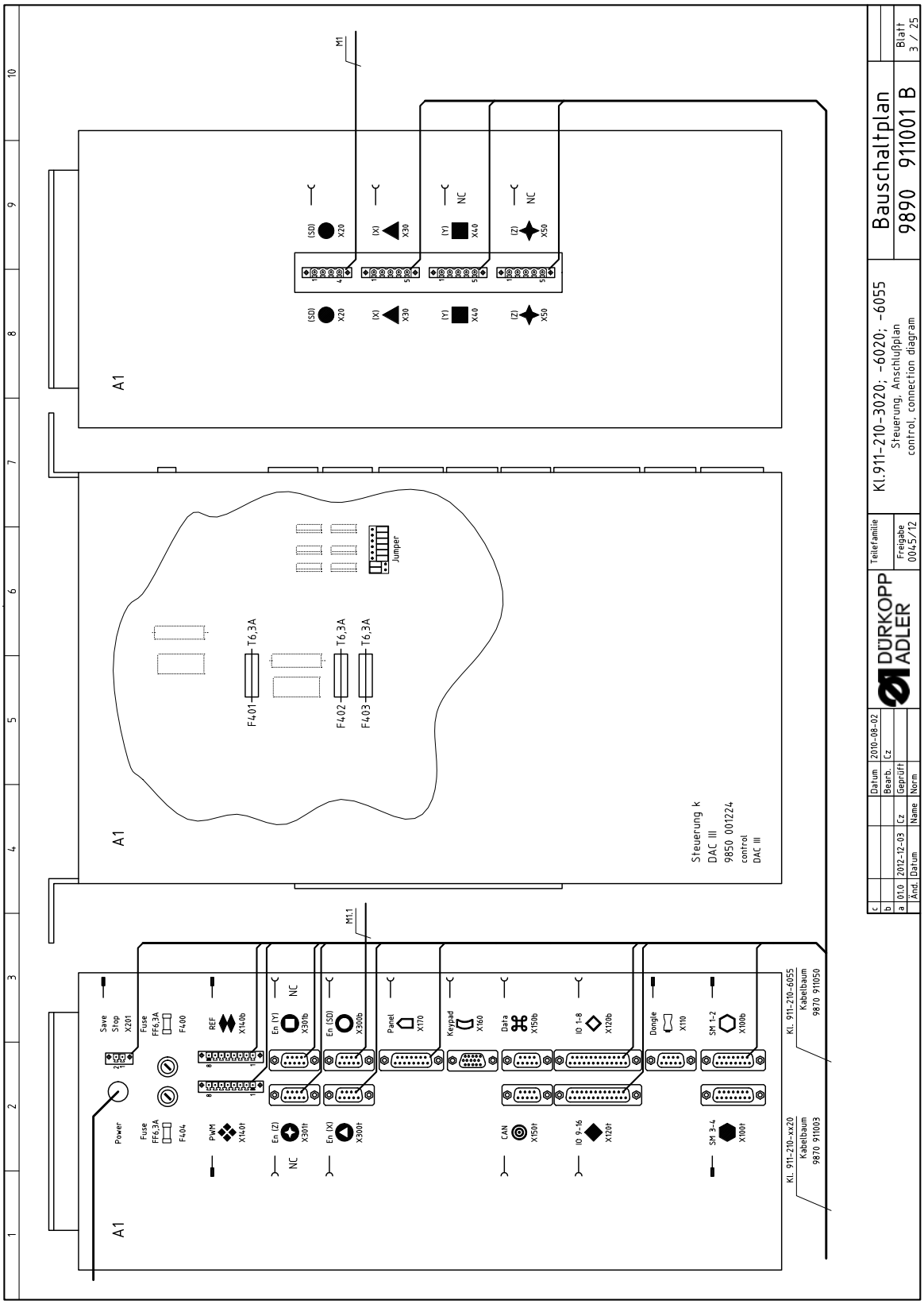
Characteristic	911-211-2010	911-211-3020
Machine type	CNC sewing unit	
Stitch type	301	
Hook type	Vertical hook	
Needle system	794 on request 7x23 (328 is possible with upgrade)	
Needle strength [Nm]	140 - 230	
Number of needles	1	
Thread strength [Nm] (depending on material thickness and composition) - Min. - Max.	 20/3 8/3	
Stitch length (programmable) [mm]	Maximum 12.7mm (dependent on seam pattern)	
Maximum speed [min^{-1}] (intermittent and dependent on the stitch length and sewing material thickness)	1400	
Clamp stroke [mm]	30 (24 with material thickness monitoring)	
Foot lifter [mm]	20	
Sewing foot stroke [mm] (can also be switched on and off pneumatically during the seam)	4	
Sewing field size [mm]	200 x 100	300 x 200
Number of free seam contours	99	
Operating pressure [bar]	6	
Air consumption [NL]	2	
Table height - Min. - Max.	 760 or 800 (with 0911 407524) 900 or 1050 (with 0911 407524)	
Length/width [mm]	940/1100	1200/1200
Weight (fitted) [kg]	230	
Line voltage [V]	230	
Mains frequency [Hz]	50/60	
Power [W]	450	

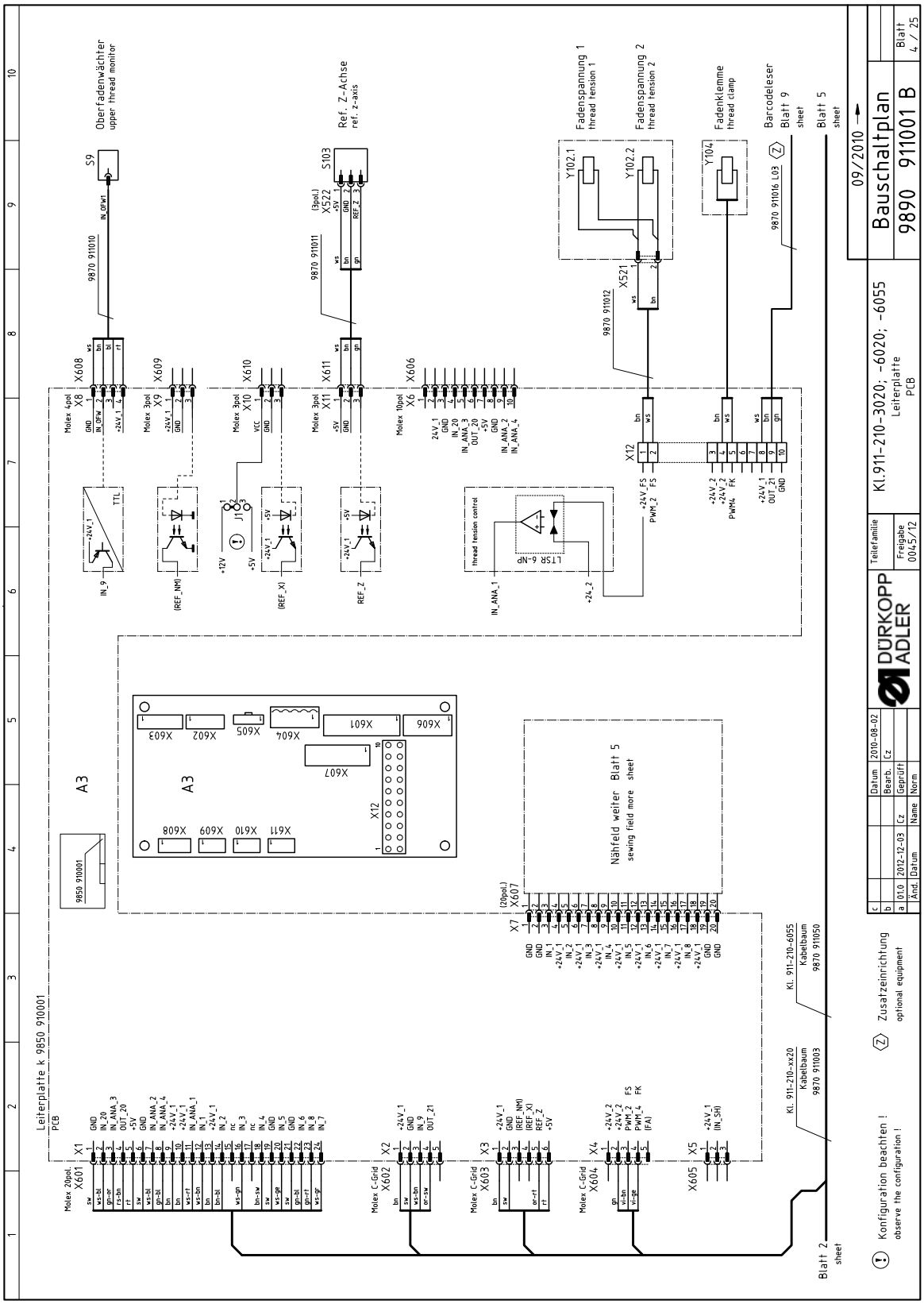
13 Appendix

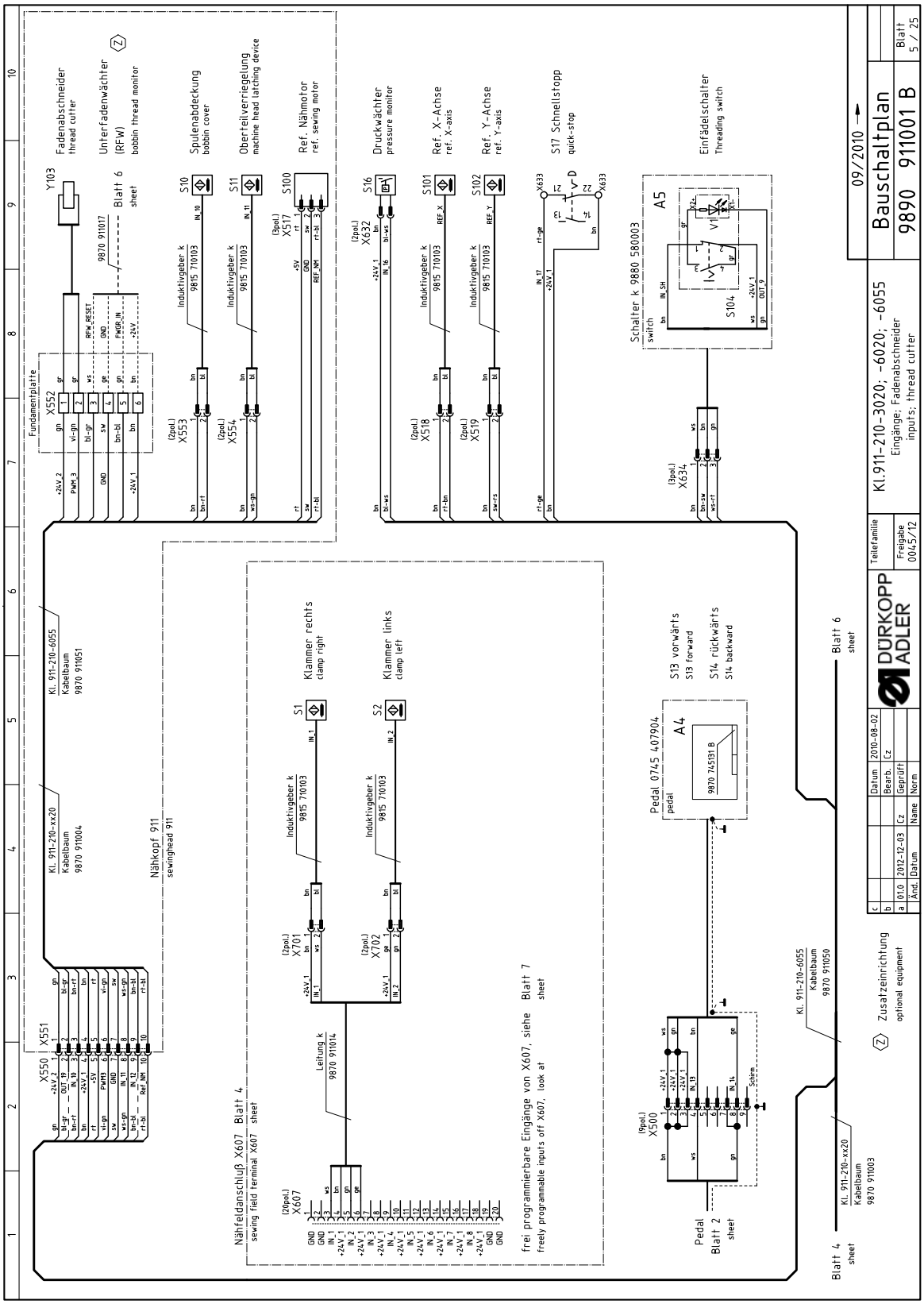
13.1 Wiring diagram

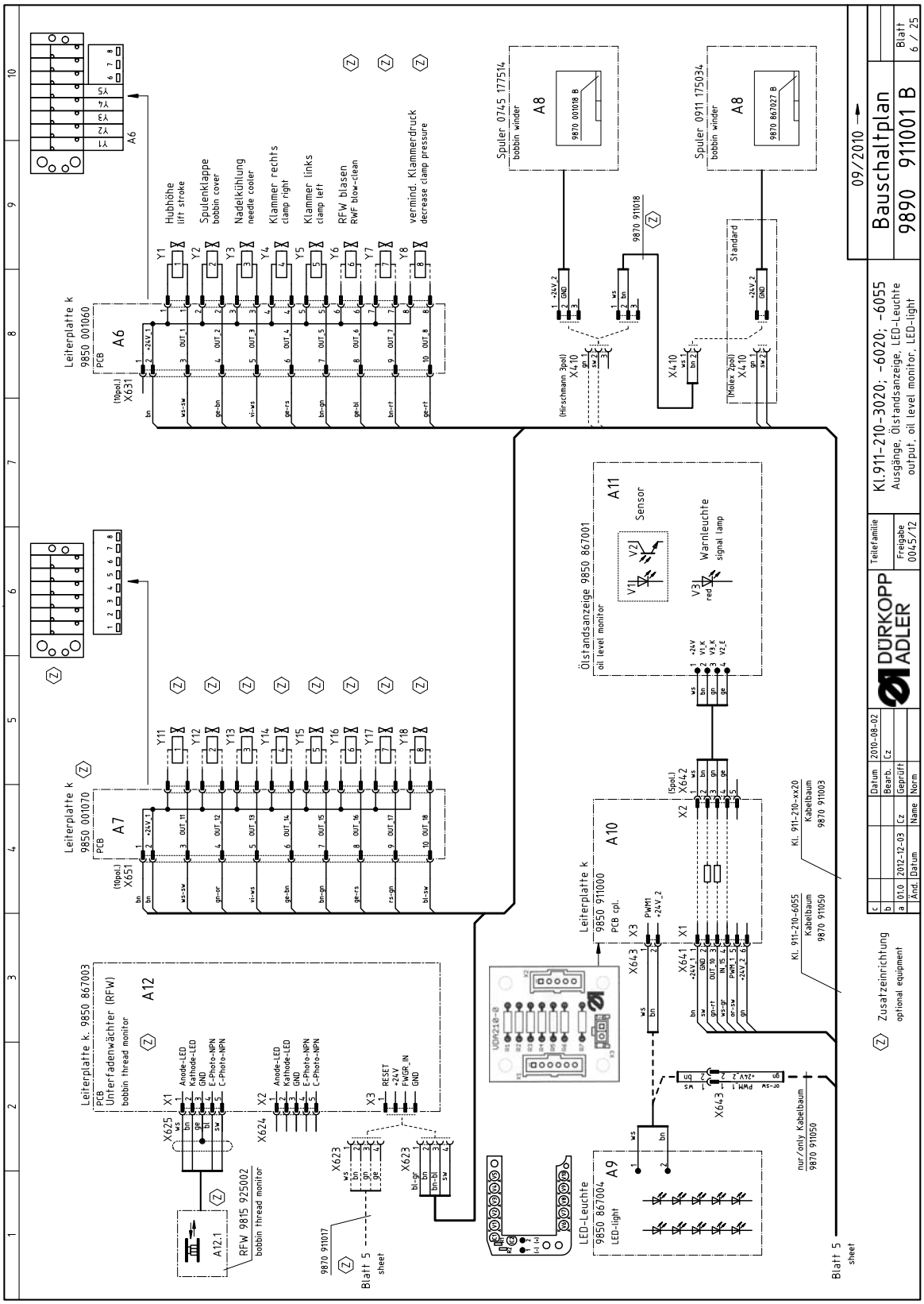


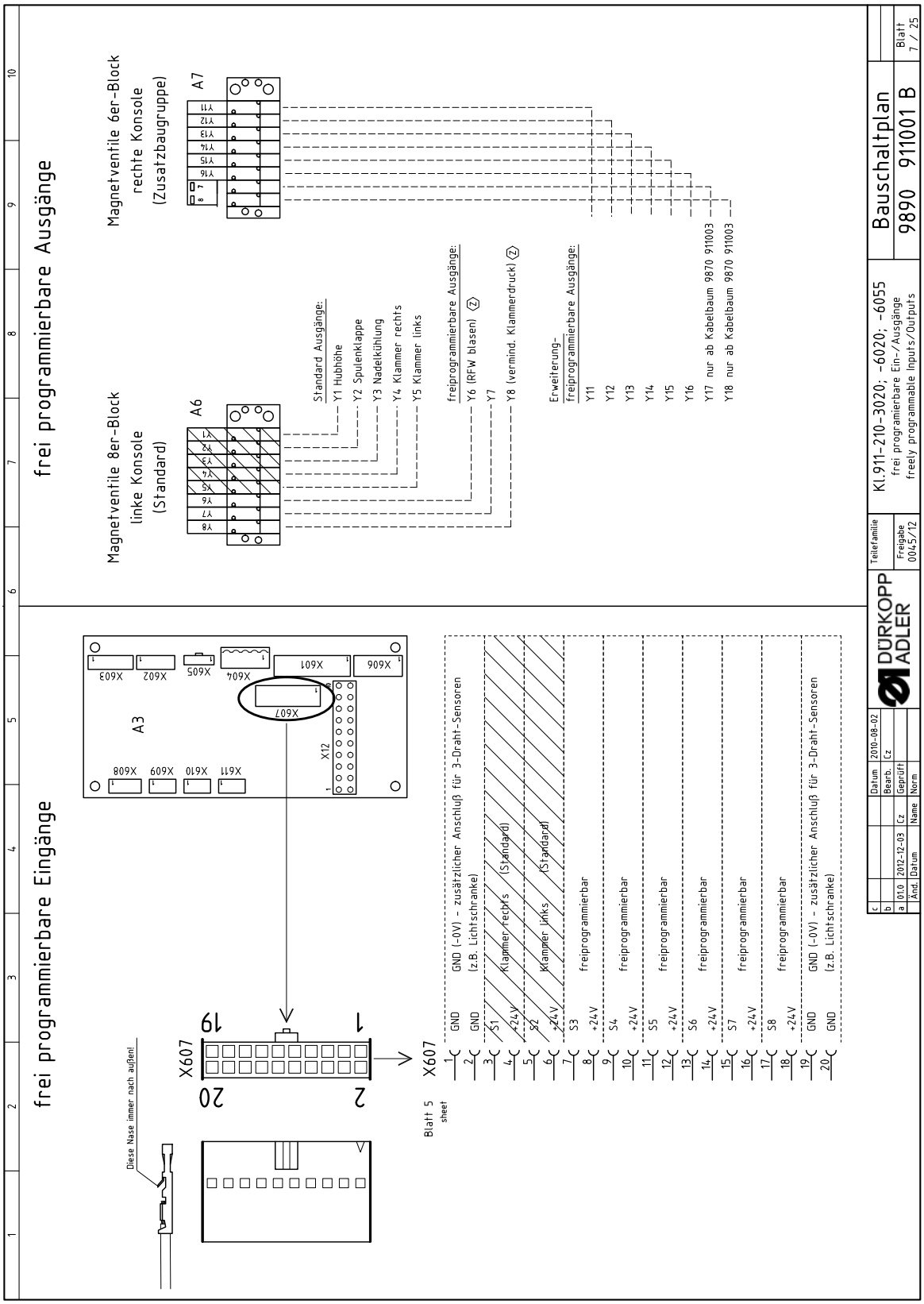

Steuerung k DAC III, 911
9850 001224
control DAC III, 911
A1
Bedienfeld OP7000
9850 911002
9850 911007
9850 911009
control panel
A2
Blatt 4
sheet
09/2010
Bauschaltplan
9890 911001 B
Blatt 2 / 25
KL.911-210-3020; -6020; -6055
I/O, PWM, Ref.-Signale, Bedienfeld
I/O, PWM, ref.-signals, control panel
Teilefamilie
Freigabe 0045/12
DÜRKOPP ADLER
Datum 2010-08-02
Bearb. Cz
Geprüft
Norm
Name
Cz
2012-12-03
01.0
Änd. Datum
Tastenfeld
keypad
Bedienfeld
control panel
sicherer Halt
safety stop
PWM
Ref.-Signale
ref. signals
CAN-Schnittstelle
CAN interface
BDE-Schnittstelle
PDA-interface
Barcode-Leser
Blatt 9
sheet
Pedal
Blatt 5
sheet
Ein-/Ausgänge 9-16
I/O 9-16
Ein-/Ausgänge 1-8
I/O 1-8
Kl. 911-210-xx20
Kabelbaum
9870 911003
Kl. 911-210-6055
Kabelbaum
9870 911050
Stepper 3-4 Signale
stepper 3-4 signals
Ein-/Ausgänge (Erweiterung)
I/O (add-on)
Diag-Schnittstelle
test interface
Blatt 1
sheet
Kodierung
coding
Zusatzeinrichtung
optional equipment

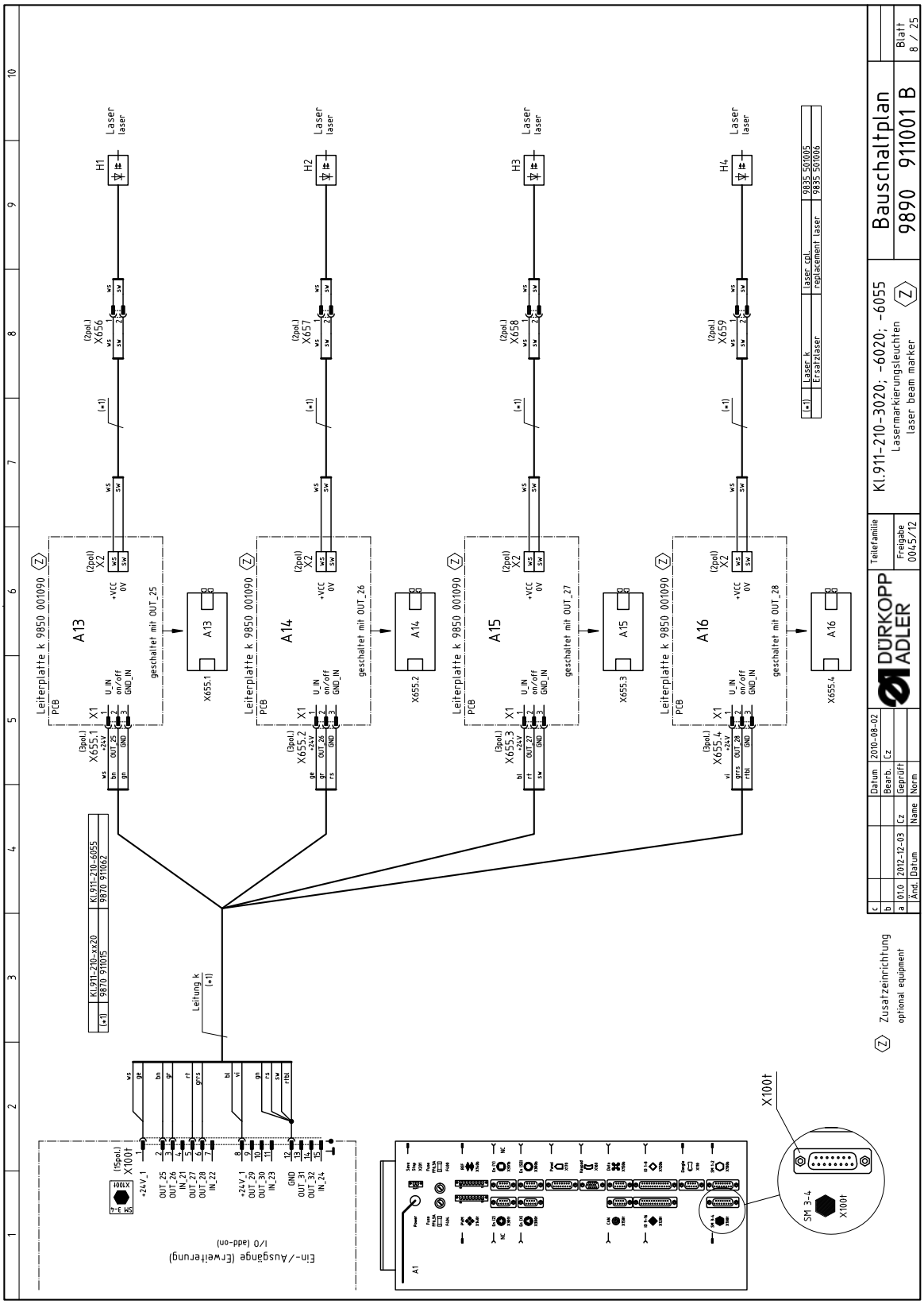

Bauschaltplan
9890 911001 B
Kl.911-210-3020; -6020; -6055
Steuerung, Anschlußplan
control, connection diagram
Blatt 3 / 25
Teilefamilie
Freigabe 0045/12
DÜRKOPP ADLER
2010-08-02
2012-12-03
Steuerung k
DAC III
9850 001224
control
DAC III
A1
M1
M1.1
F401 T6,3A
F402 T6,3A
F403 T6,3A
Jumper
Save Stop X201
Fuse FF6,3A F400
REF X140b
En (Y) X30b
En (SD) X300b
Panel X170
Keypad X160
Data X150b
IO 1-8 X120b
Dongle X110
SM 1-2 X100b
Power
Fuse FF6,3A F404
PWM X140f
En (Z) X30f
En (X) X300f
CAN X150f
IO 9-16 X120f
SM 3-4 X100f
Kl. 911-210-6055 Kabelbaum 9870 911050
Kl. 911-210-xx20 Kabelbaum 9870 911003
Steuerung k DAC III 9850 001224 control DAC III

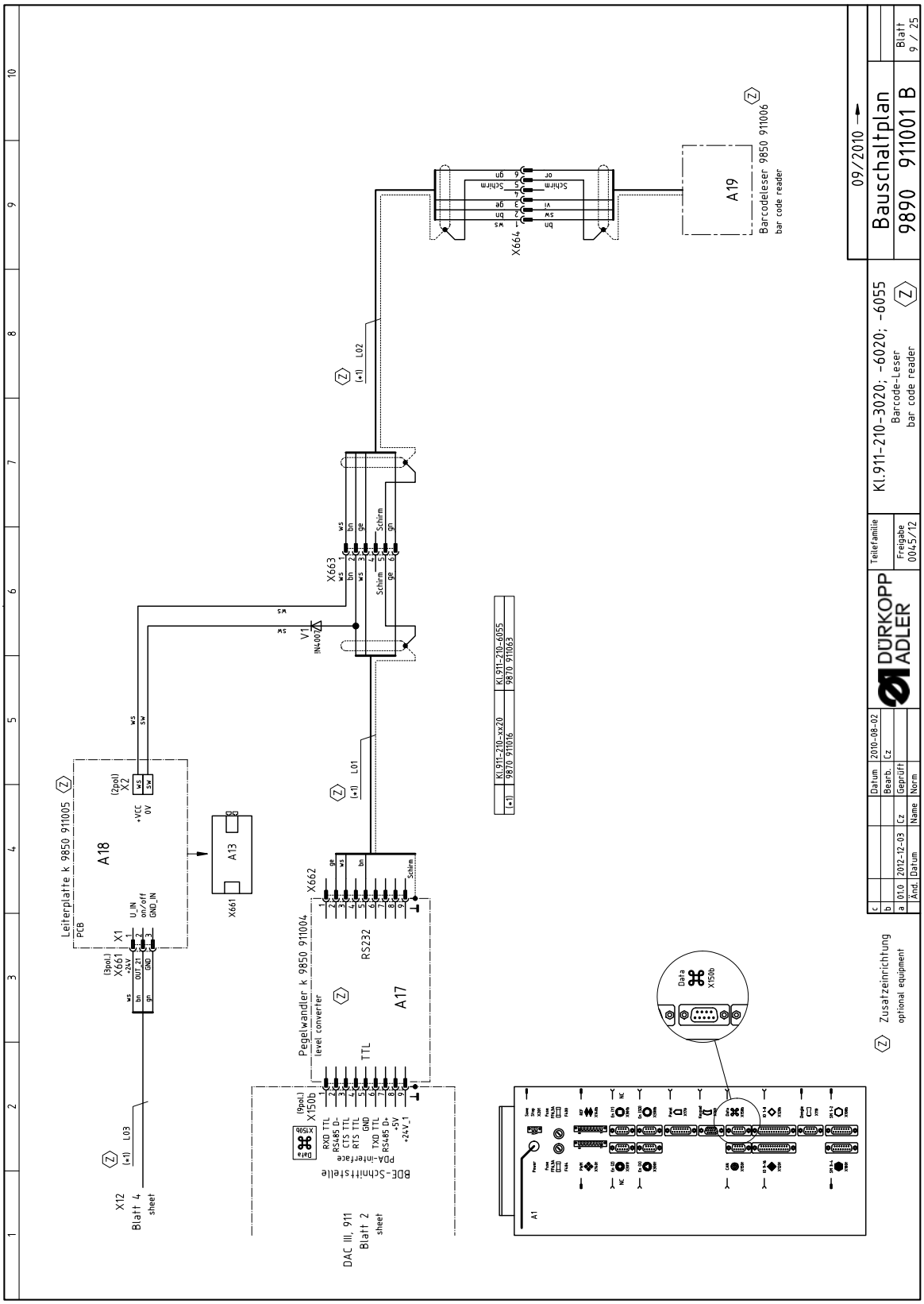

Leiterplatte k 9850 910001
PCB
A3
Oberfadenwächter
upper thread monitor
Ref. Z-Achse
ref. z-axis
Fadenspannung 1
thread tension 1
Fadenspannung 2
thread tension 2
Fadenklemme
thread clamp
Barcodeleser
Blatt 9
sheet
Blatt 5
sheet
Blatt 2
sheet
Nähfeld weiter Blatt 5
sewing field more sheet
thread tension control
LTSR 6-NP
Kl. 911-210-3020; -6020; -6055
Leiterplatte
PCB
09/2010
Bauschaltplan
9890 911001 B
Blatt 4 / 25
Kl. 911-210-6055
Kabelbaum
9870 911050
Kl. 911-210-xx20
Kabelbaum
9870 911003
Konfiguration beachten !
observe the configuration !
Zusatzeinrichtung
optional equipment

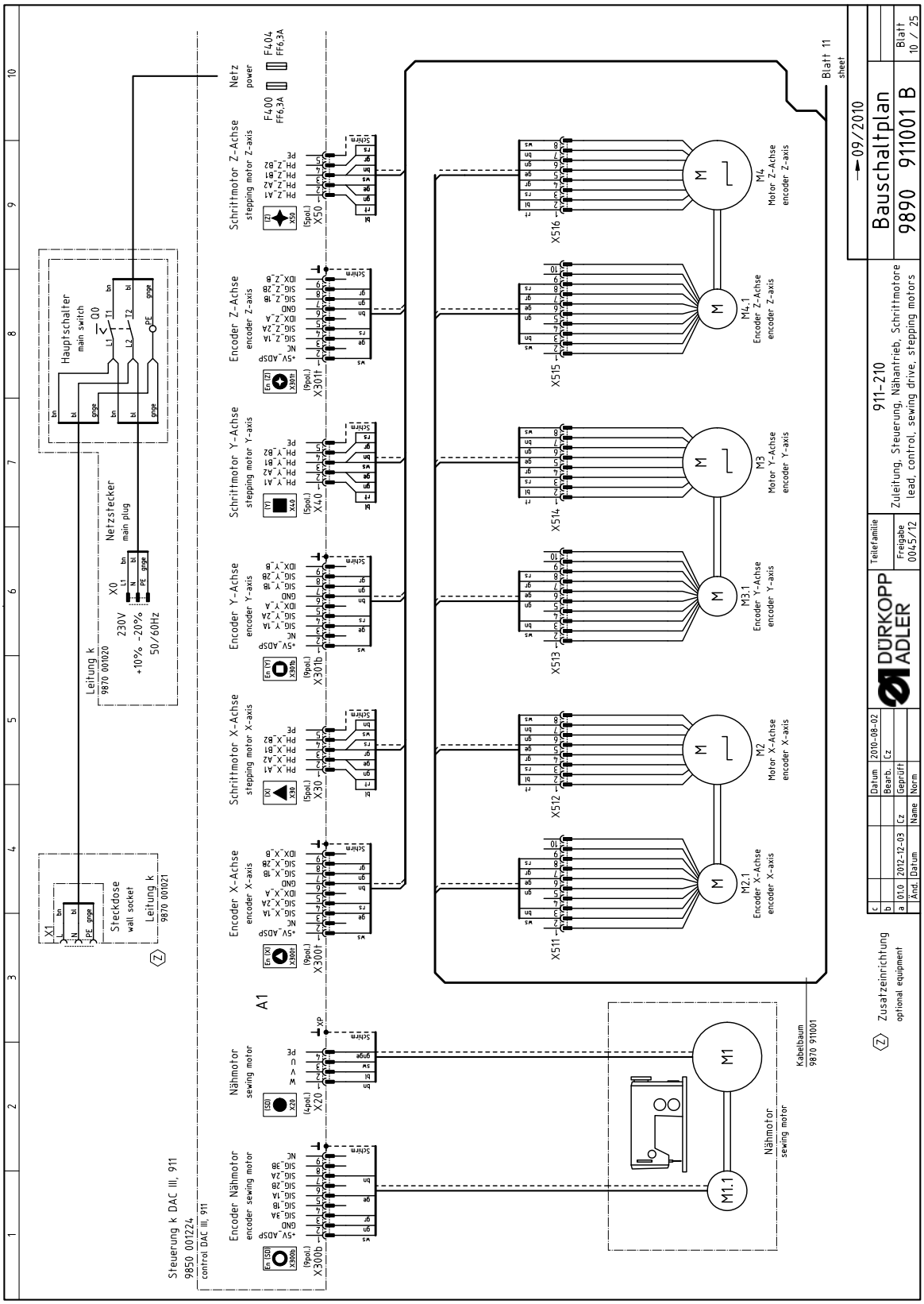

Bauschaltplan
9890 911001 B
09/2010
Kl.911-210-3020; -6020; -6055
Eingänge; Fadenabschneider
inputs; thread cutter
Blatt 5 / 25
Nähkopf 911
sewinghead 911
Nähfeldanschluß X607 Blatt 4
sewing field terminal X607 sheet
frei programmierbare Eingänge von X607, siehe Blatt 7
freely programmable inputs off X607, look at sheet
Fadenabschneider
thread cutter
Unterfadenwächter (RFW)
bobbin thread monitor
Spulenabdeckung
bobbin cover
Oberteilverriegelung
machine head latching device
Ref. Nähmotor
ref. sewing motor
Druckwächter
pressure monitor
Ref. X-Achse
ref. X-axis
Ref. Y-Achse
ref. Y-axis
S17 Schnellstopp
quick-stop
Einfädelschalter
Threading switch
Klammer rechts
clamp right
Klammer links
clamp left
S13 vorwärts
S13 forward
S14 rückwärts
S14 backward
Pedal 0745 407904
pedal
Induktivgeber k
9815 710103
Schalter k 9880 580003
switch
Kl. 911-210-xx20
Kabelbaum
9870 911004
Kl. 911-210-6055
Kabelbaum
9870 911051
Kl. 911-210-6055
Kabelbaum
9870 911050
Kl. 911-210-xx20
Kabelbaum
9870 911003
Leitung k
9870 911014
Zusatzeinrichtung
optional equipment
Pedal
Blatt 2
sheet
Blatt 4
sheet
Blatt 6
sheet
Blatt 7
sheet
Störm
DÜRKOPP ADLER
Teilefamilie
Freigabe
0045/12
2010-08-02
2012-12-03
Datum
Name
Bearb.
Cz
Geprüft
Norm
Änd.
Datum
01.0

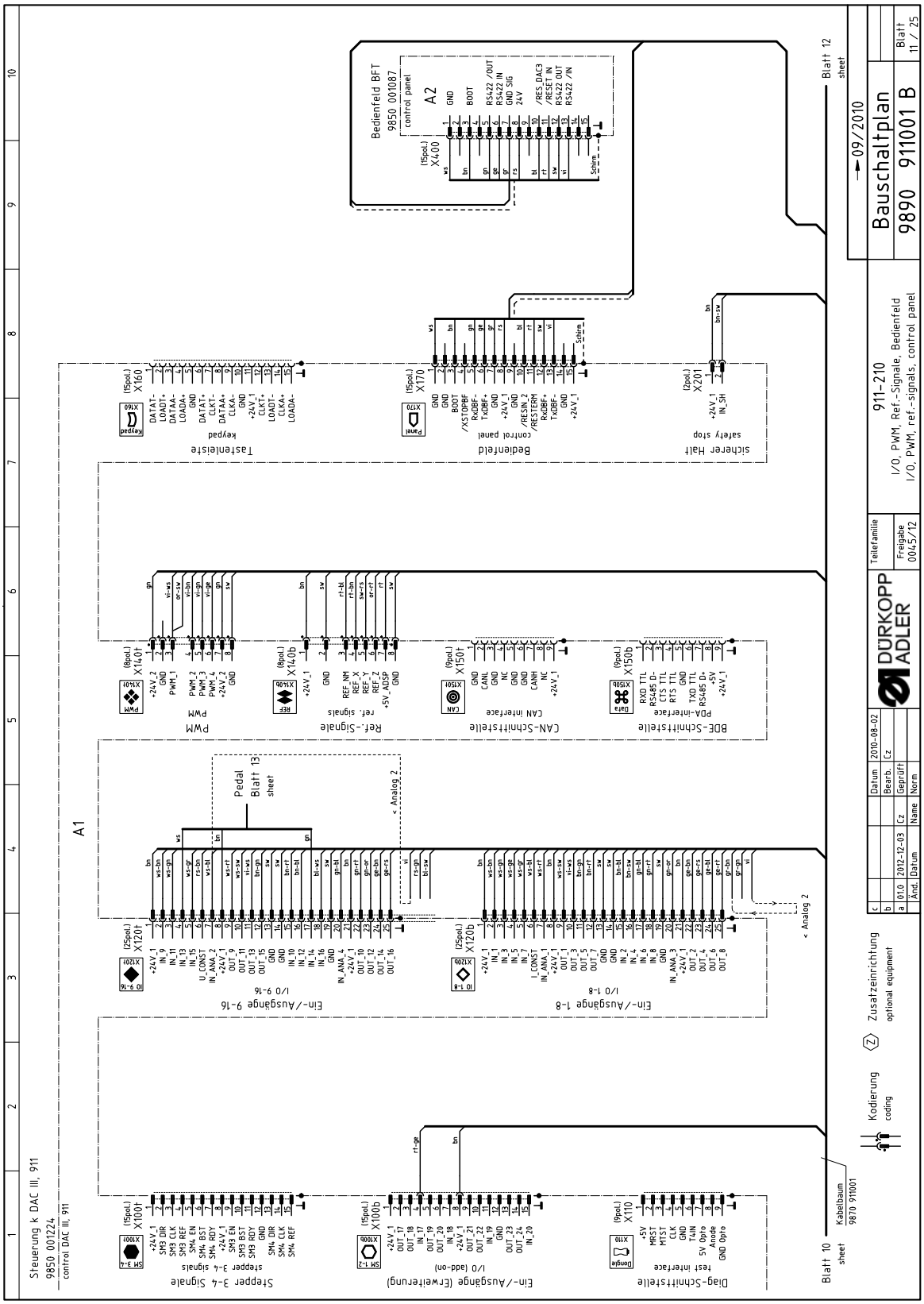

Bauschaltplan
9890 911001 B
Kl.911-210-3020; -6020; -6055
Ausgänge, Ölstandsanzeige, LED-Leuchte
output, oil level monitor, LED-light
09/2010
Blatt 6 / 25
Leiterplatte k 9850 001060 A6
Leiterplatte k 9850 001070 A7
Leiterplatte k 9850 911000 A10
Leiterplatte k. 9850 867003 A12
Ölstandsanzeige 9850 867001 A11
LED-Leuchte 9850 867004 A9
Spuler 0745 177514 bobbin winder A8
Spuler 0911 175034 bobbin winder A8
Hubhöhe lift stroke
Spulenklappe bobbin cover
Nadelkühlung needle cooler
Klammer rechts clamp right
Klammer links clamp left
RFW blasen RWF blow-clean
vermind. Klammerdruck decrease clamp pressure
Sensor
Warnleuchte signal lamp
Unterfadenwächter (RFW) bobbin thread monitor
RFW 9815 925002 bobbin thread monitor
Kl. 911-210-xx20 Kabelbaum 9870 911003
Kl. 911-210-6055 Kabelbaum 9870 911050
nur/only Kabelbaum 9870 911050
Zusatzeinrichtung optional equipment
Blatt 5 sheet

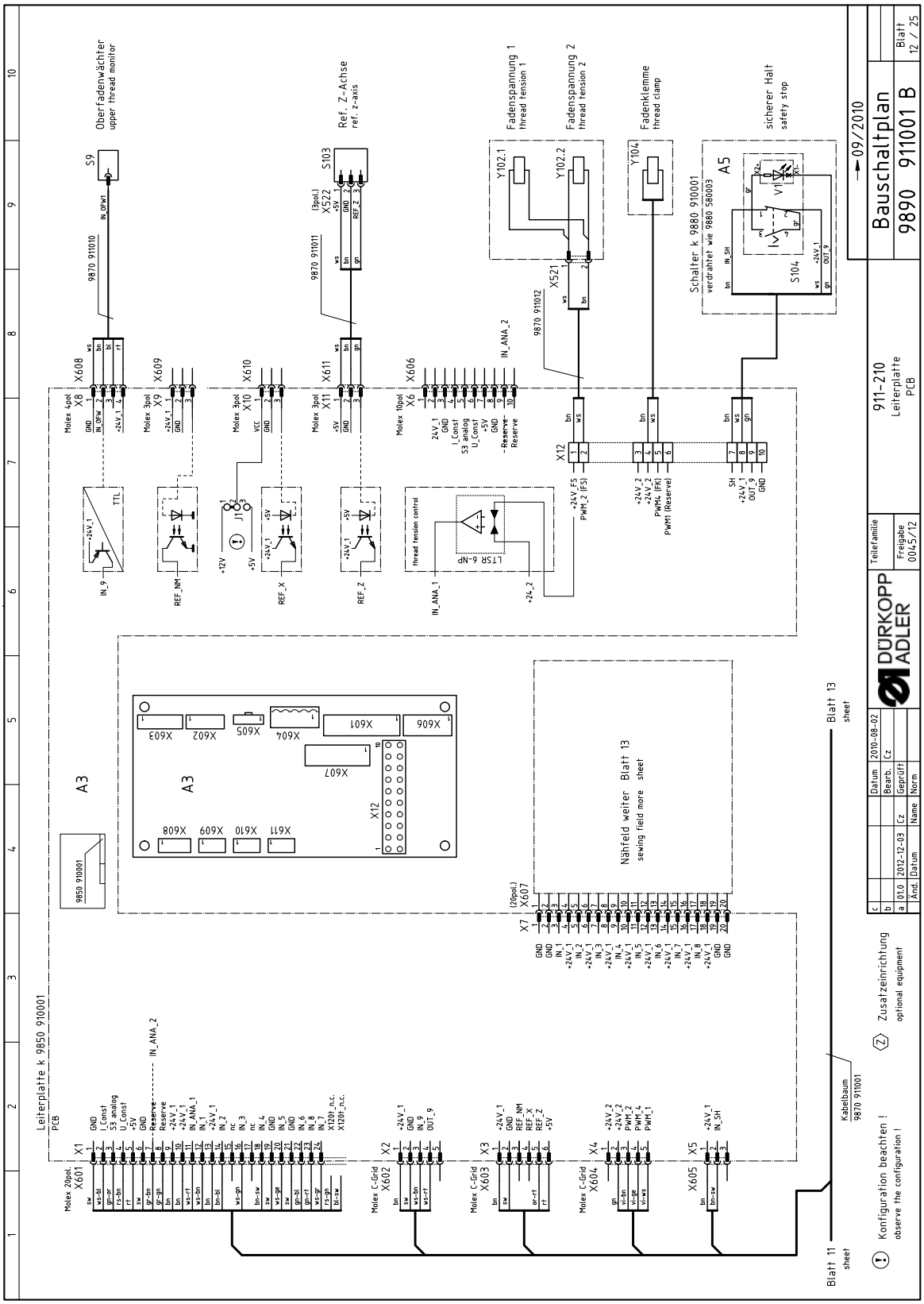

frei programmierbare Ausgänge
Magnetventile 8er-Block
linke Konsole
(Standard)
A6
Magnetventile 6er-Block
rechte Konsole
(Zusatzbaugruppe)
A7
Standard Ausgänge:
Y1 Hubhöhe
Y2 Spulenklappe
Y3 Nadelkühlung
Y4 Klammer rechts
Y5 Klammer links
freiprogrammierbare Ausgänge:
Y6 (RFw blasen) Z
Y7
Y8 (vermind. Klammerdruck) Z
Erweiterung-
freiprogrammierbare Ausgänge:
Y11
Y12
Y13
Y14
Y15
Y16
Y17 nur ab Kabelbaum 9870 911003
Y18 nur ab Kabelbaum 9870 911003
frei programmierbare Eingänge
A3
X601
X602
X603
X604
X605
X606
X607
X608
X609
X610
X611
X12
X607
19
1
20
2
Diese Nase immer nach außen!
Blatt 5
sheet
1 GND GND (-0V) - zusätzlicher Anschluß für 3-Draht-Sensoren
2 GND (z.B. Lichtschranke)
3 S1 Klammer rechts (Standard)
4 +24V
5 S2 Klammer links (Standard)
6 +24V
7 S3 freiprogrammierbar
8 +24V
9 S4 freiprogrammierbar
10 +24V
11 S5 freiprogrammierbar
12 +24V
13 S6 freiprogrammierbar
14 +24V
15 S7 freiprogrammierbar
16 +24V
17 S8 freiprogrammierbar
18 +24V
19 GND (-0V) - zusätzlicher Anschluß für 3-Draht-Sensoren
20 GND (z.B. Lichtschranke)
DÜRKOPP ADLER
Teilefamilie
Freigabe 0045/12
Kl.911-210-3020; -6020; -6055
frei programmierbare Ein-/Ausgänge
freely programmable Inputs/Outputs
Bauschaltplan
9890 911001 B
Blatt 7 / 25
Datum 2010-08-02
Bearb. Cz
Geprüft
Norm
c
b
a 01.0 2012-12-03 Cz
Änd. Datum Name

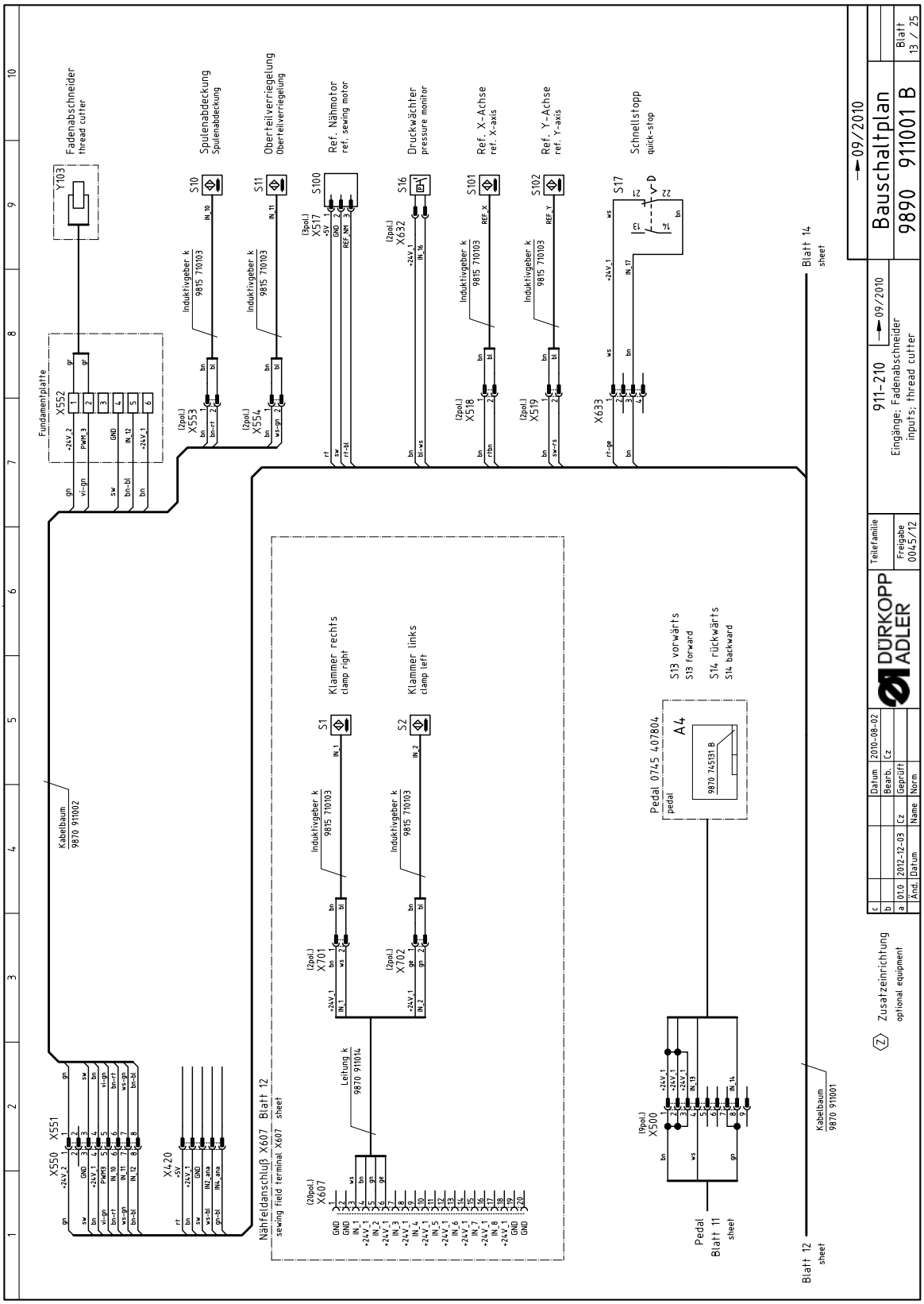

Bauschaltplan
9890 911001 B
Kl.911-210-3020; -6020; -6055
Lasermarkierungsleuchten
laser beam marker
Laser
laser
Leiterplatte k 9850 001090
PCB
A13
A14
A15
A16
geschaltet mit OUT_25
geschaltet mit OUT_26
geschaltet mit OUT_27
geschaltet mit OUT_28
Leitung k
Zusatzeinrichtung
optional equipment
Ein-/Ausgänge (Erweiterung)
I/O (add-on)
Laser k
Ersatzlaser
laser col.
replacement laser
9835 501005
9835 501006

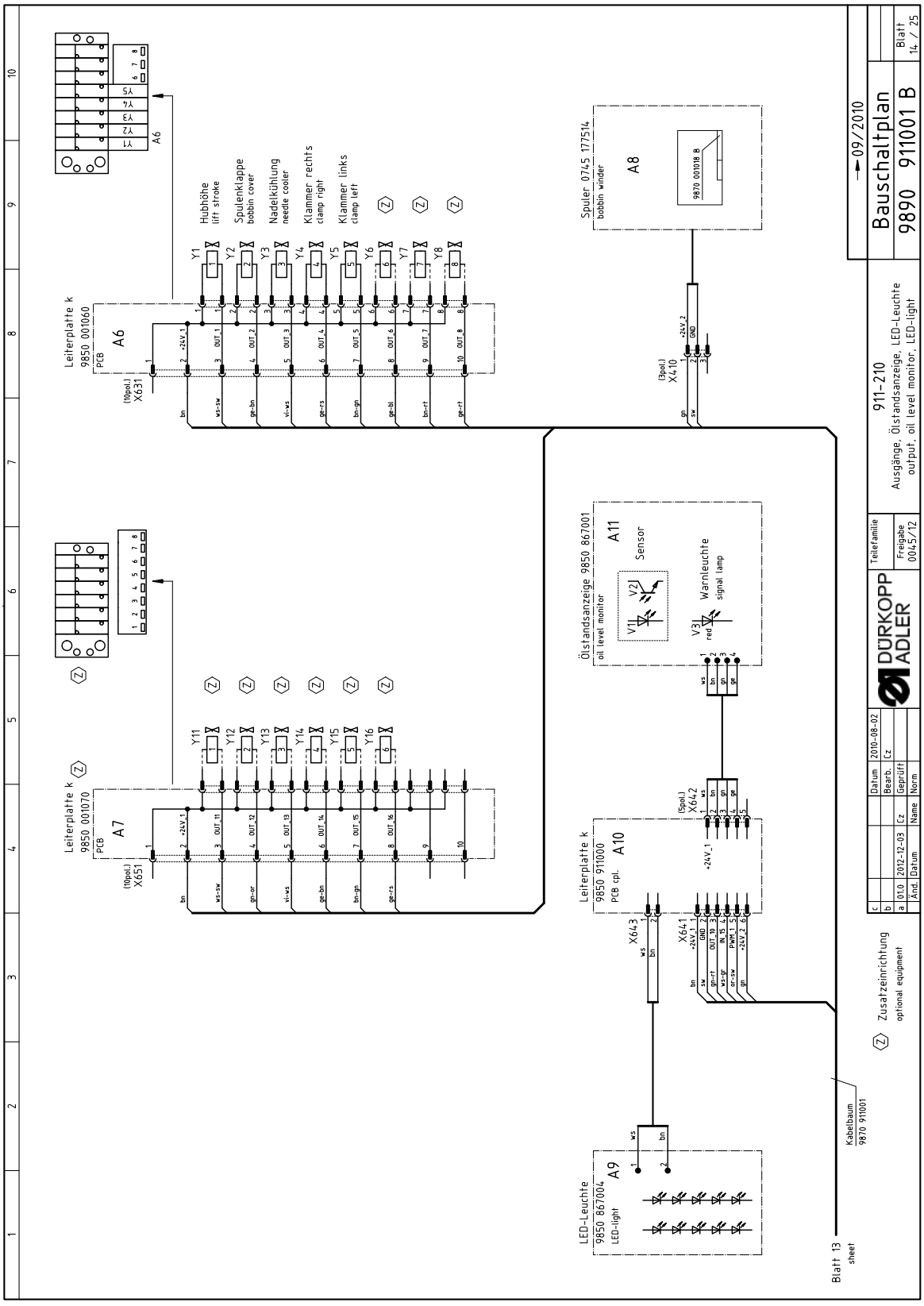

Bauschaltplan
9890 911001 B
Blatt 9 / 25
09/2010
KL.911-210-3020; -6020; -6055
Barcode-Leser
bar code reader
Teilefamilie
Freigabe 0045/12
DÜRKOPP ADLER
Datum 2010-08-02
Bearb. Cz
Geprüft
Norm
Name
Cz
2012-12-03
01.0
Änd. Datum
Zusatzeinrichtung
optional equipment
A19
Barcodeleser 9850 911006
bar code reader
X664
X663
V1
1N4007
L02
L01
L03
A18
Leiterplatte k 9850 911005
PCB
X1
X2
X661
X12
Blatt 4
sheet
A13
X662
A17
Pegelwandler k 9850 911004
level converter
RS232
TTL
X150b
X150a
BDE-Schnittstelle
PDA-Interface
DAC III, 911
Blatt 2
sheet
KL.911-210-xx20
9870 911016
KL.911-210-6055
9870 911063
X150b
Data
A1

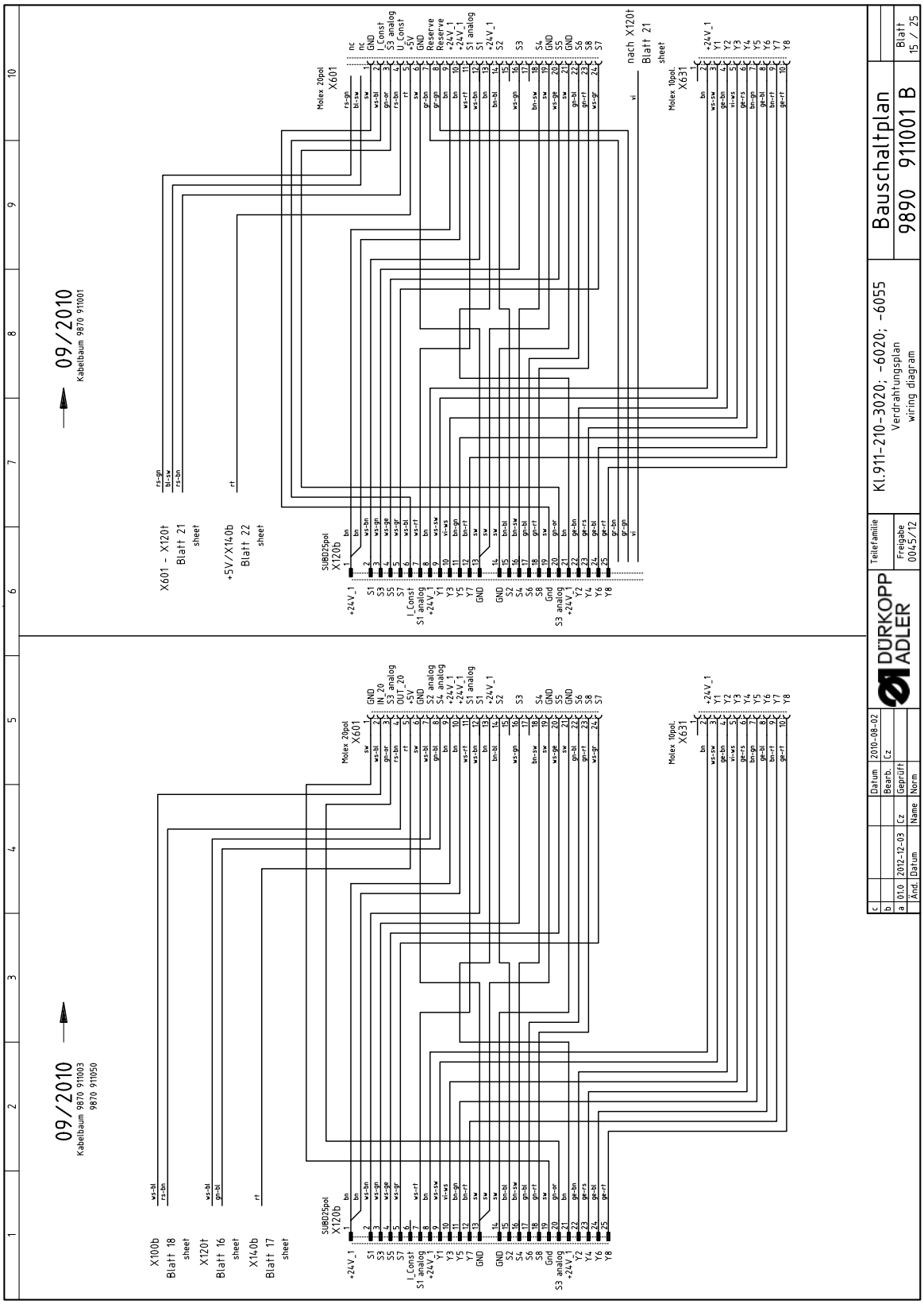

Bauschaltplan
9890 911001 B
911-210
Zuleitung, Steuerung, Nähantrieb, Schrittmotore
lead, control, sewing drive, stepping motors
09/2010
Blatt 11
sheet
Hauptschalter
main switch
Netzstecker
main plug
Steckdose
wall socket
Leitung k
9870 001020
Leitung k
9870 001021
Steuerung k DAC III, 911
9850 001224
control DAC III, 911
Encoder Nähmotor
encoder sewing motor
Nähmotor
sewing motor
Encoder X-Achse
encoder X-axis
Schrittmotor X-Achse
stepping motor X-axis
Encoder Y-Achse
encoder Y-axis
Schrittmotor Y-Achse
stepping motor Y-axis
Encoder Z-Achse
encoder Z-axis
Schrittmotor Z-Achse
stepping motor Z-axis
Netz
power
Motor X-Achse
encoder X-axis
Motor Y-Achse
encoder Y-axis
Motor Z-Achse
encoder Z-axis
Kabelbaum
9870 911001
Zusatzeinrichtung
optional equipment
DÜRKOPP ADLER
Teilefamilie
Freigabe
0045/12
Datum
Bearb.
Gepruft
Norm
2010-08-02
2012-12-03

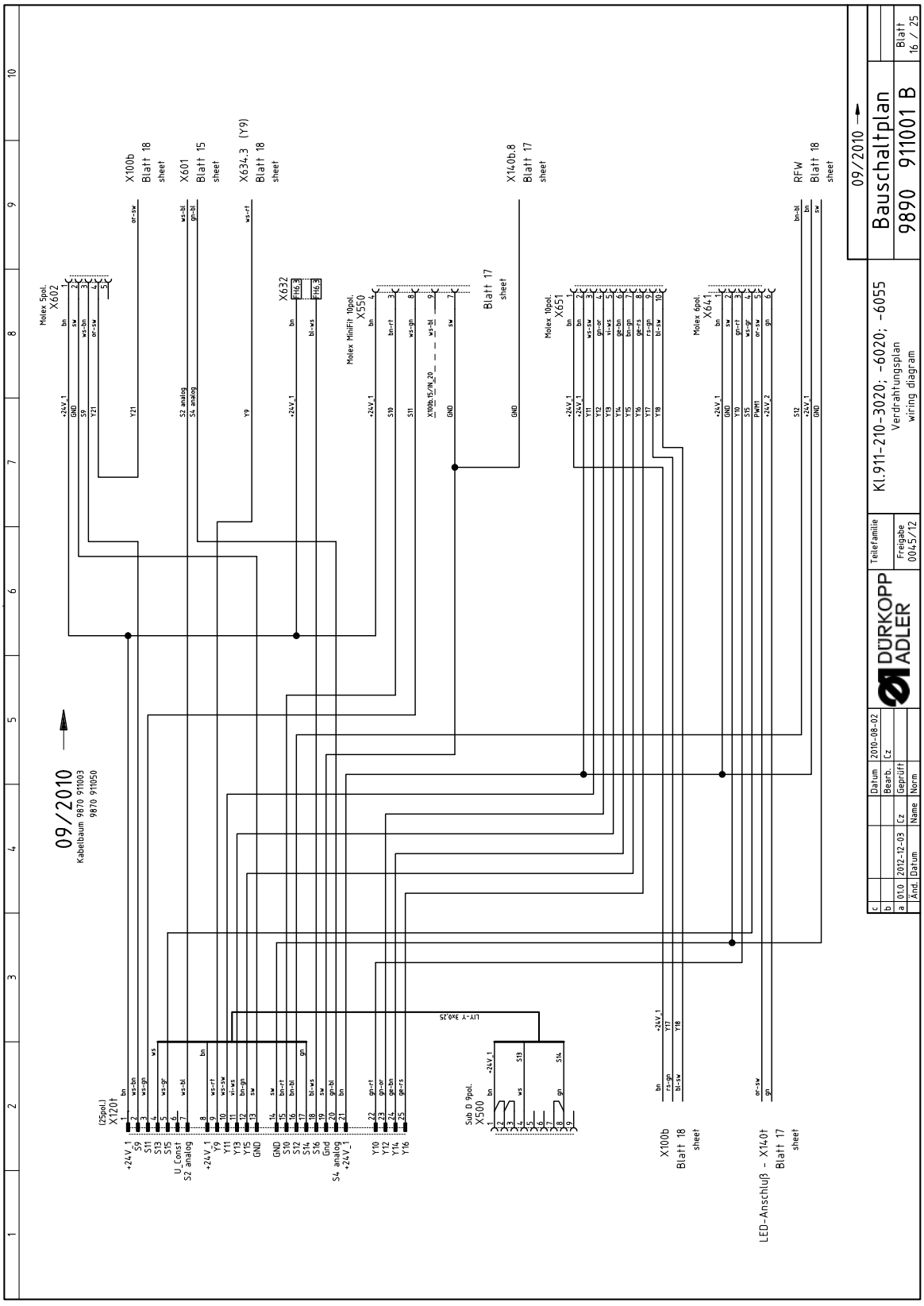

Steuerung k DAC III, 911
9850 001224
control DAC III, 911
A1
Bedienfeld BFT
9850 001087
control panel
A2
Bauschaltplan
9890 911001 B
09/2010
911-210
I/O, PWM, Ref.-Signale, Bedienfeld
I/O, PWM, ref.-signals, control panel
Blatt 12
sheet
Blatt 10
sheet
Kabelbaum
9870 911001
Pedal
Blatt 13
sheet
< Analog 2
Tastenfeld
keypad
Bedienfeld
control panel
sicherer Halt
safety stop
PWM
Ref.-Signale
ref. signals
CAN-Schnittstelle
CAN interface
BDE-Schnittstelle
PDA-interface
Ein-/Ausgänge 1-8
I/O 1-8
Ein-/Ausgänge 9-16
I/O 9-16
Stepper 3-4 Signale
stepper 3-4 signals
Ein-/Ausgänge (Erweiterung)
I/O (add-on)
Diag-Schnittstelle
test interface
Kodierung
coding
Zusatzeinrichtung
optional equipment

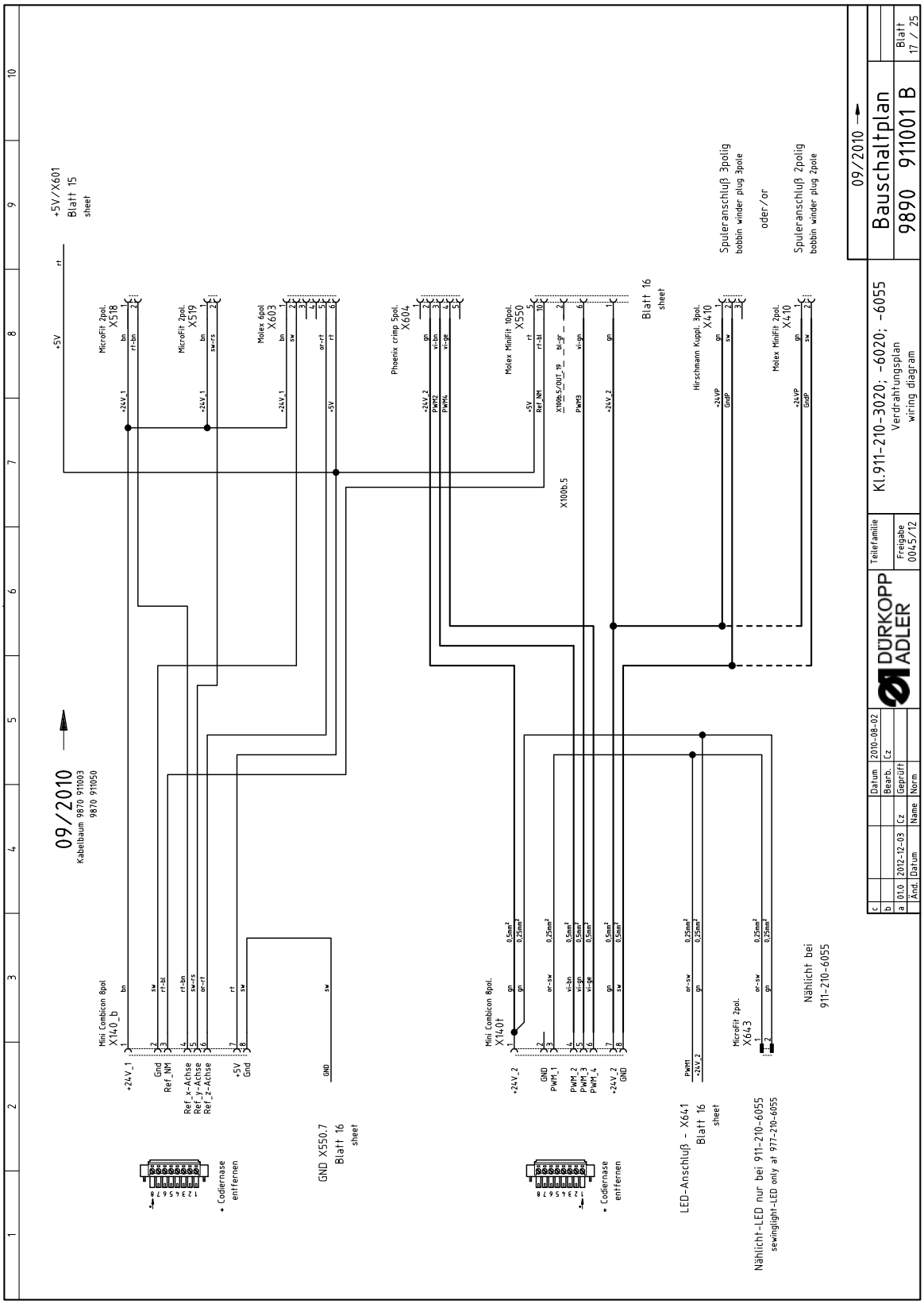

Leiterplatte k 9850 910001
PCB
911-210
Leiterplatte
PCB
Bauschaltplan
9890 911001 B
09/2010
Blatt 12 / 25
Oberfadenwächter
upper thread monitor
Ref. Z-Achse
ref. z-axis
Fadenspannung 1
thread tension 1
Fadenspannung 2
thread tension 2
Fadenklemme
thread clamp
Sicherer Halt
safety stop
Schalter k 9880 910001
verdrahtet wie 9880 580003
Nähfeld weiter Blatt 13
sewing field more sheet
Blatt 13
sheet
Blatt 11
sheet
Kabelbaum
9870 911001
Zusatzeinrichtung
optional equipment
Konfiguration beachten !
observe the configuration !
DÜRKOPP ADLER
Teilefamilie
Freigabe
0045/12
Datum 2010-08-02
Bearb. Cz
Geprüft
Norm
01.0 2012-12-03 Cz
And. Datum Name

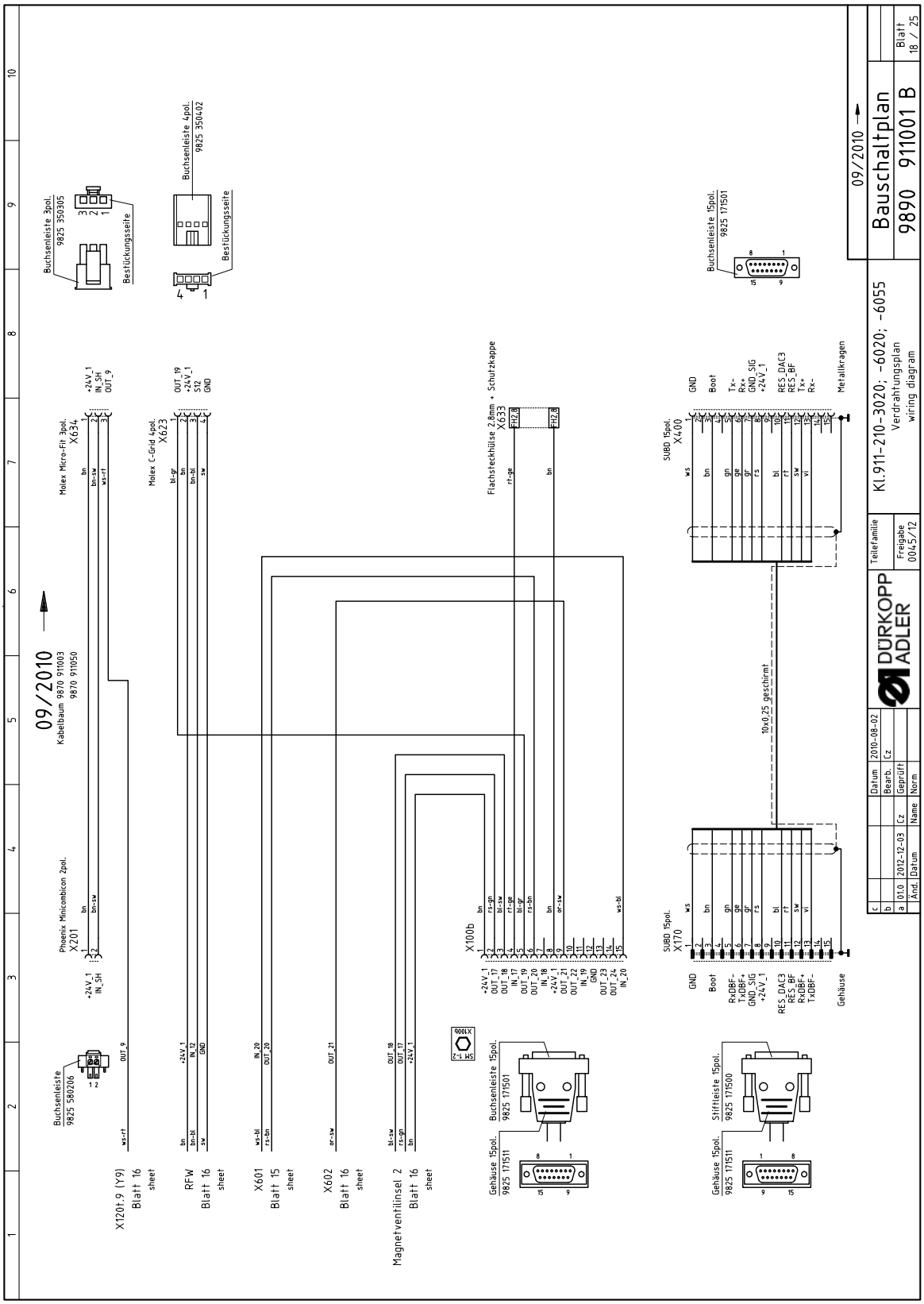

Bauschaltplan
9890 911001 B
911-210
Eingänge; Fadenabschneider
inputs; thread cutter
09/2010
Blatt 13 / 25
Fadenabschneider
thread cutter
Spulenabdeckung
Spulenabdeckung
Oberteilverriegelung
Oberteilverriegelung
Ref. Nähmotor
ref. sewing motor
Druckwächter
pressure monitor
Ref. X-Achse
ref. X-axis
Ref. Y-Achse
ref. Y-axis
Schnellstopp
quick-stop
Induktivgeber k
9815 710103
Fundamentplatte
Kabelbaum
9870 911002
Nähfeldanschluß X607 Blatt 12
sewing field terminal X607 sheet
Klammer rechts
clamp right
Klammer links
clamp left
Leitung k
9870 911014
Pedal 0745 407804
pedal
S13 vorwärts
S13 forward
S14 rückwärts
S14 backward
9870 745191 B
Pedal
Blatt 11
sheet
Blatt 12
sheet
Blatt 14
sheet
Zusatzeinrichtung
optional equipment
DÜRKOPP ADLER
Teilefamilie
Freigabe
0045/12
Datum
Bearb.
Geprüft
Norm
Name
Cz
2010-08-02
2012-12-03
01.0
Änd. Datum

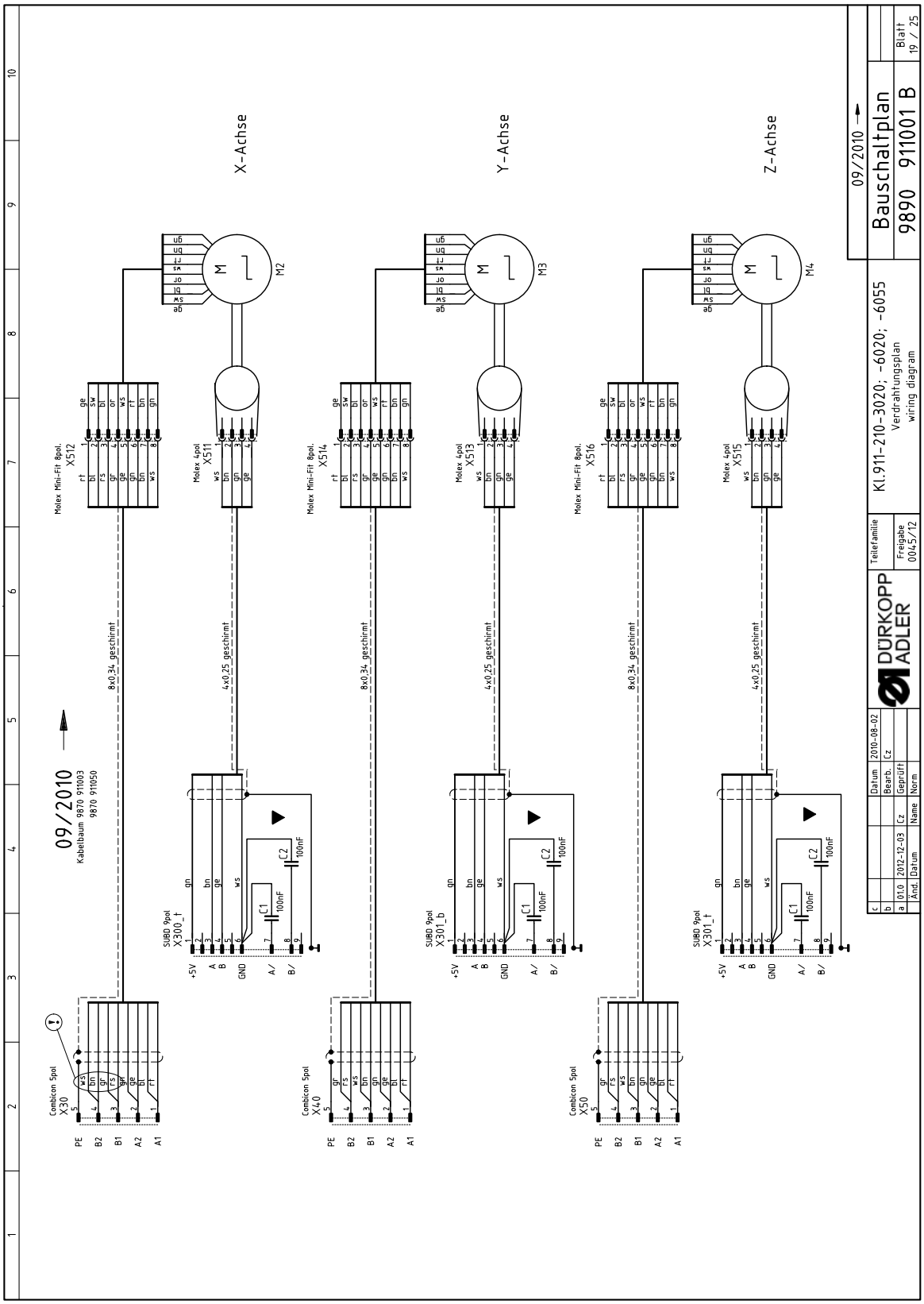

09/2010
Bauschaltplan
9890 911001 B
Blatt 14 / 25
911-210
Ausgänge, Ölstandsanzeige, LED-Leuchte
output, oil level monitor, LED-light
Hubhöhe
lift stroke
Spulenklappe
bobbin cover
Nadelkühlung
needle cooler
Klammer rechts
clamp right
Klammer links
clamp left
Leiterplatte k
9850 001060
PCB
A6
Leiterplatte k
9850 001070
PCB
A7
Spuler 0745 177514
bobbin winder
A8
Ölstandsanzeige 9850 867001
oil level monitor
A11
Sensor
Warnleuchte
signal lamp
Leiterplatte k
9850 911000
PCB cpl.
A10
LED-Leuchte
9850 867004
LED-light
A9
Kabelbaum
9870 911001
Zusatzeinrichtung
optional equipment
DÜRKOPP ADLER
Teilefamilie
Freigabe
0045/12
Datum
Bearb.
Geprüft
Norm
2010-08-02
Cz
2012-12-03
Name
Blatt 13
sheet

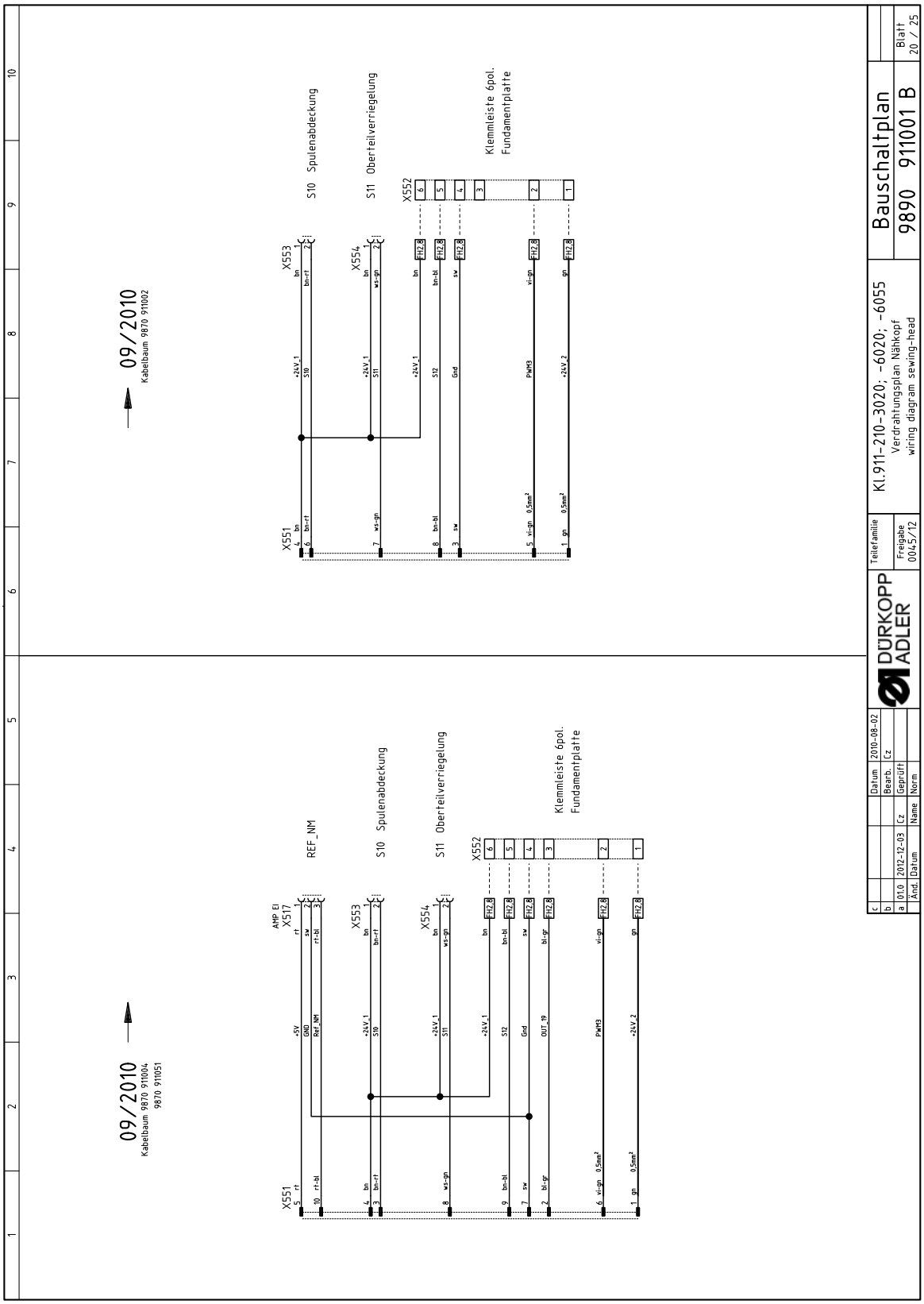

09/2010
Kabelbaum 9870 911001
09/2010
Kabelbaum 9870 911003
9870 911050
Bauschaltplan
9890 911001 B
Kl.911-210-3020; -6020; -6055
Verdrahtungsplan
wiring diagram
DÜRKOPP ADLER
Molex 20pol X601
SUBD25pol X120b
Molex 10pol. X631
X601 - X120t
Blatt 21
+5V/X140b
Blatt 22
X100b
Blatt 18
X120t
Blatt 16
X140b
Blatt 17
nach X120t
Blatt 21

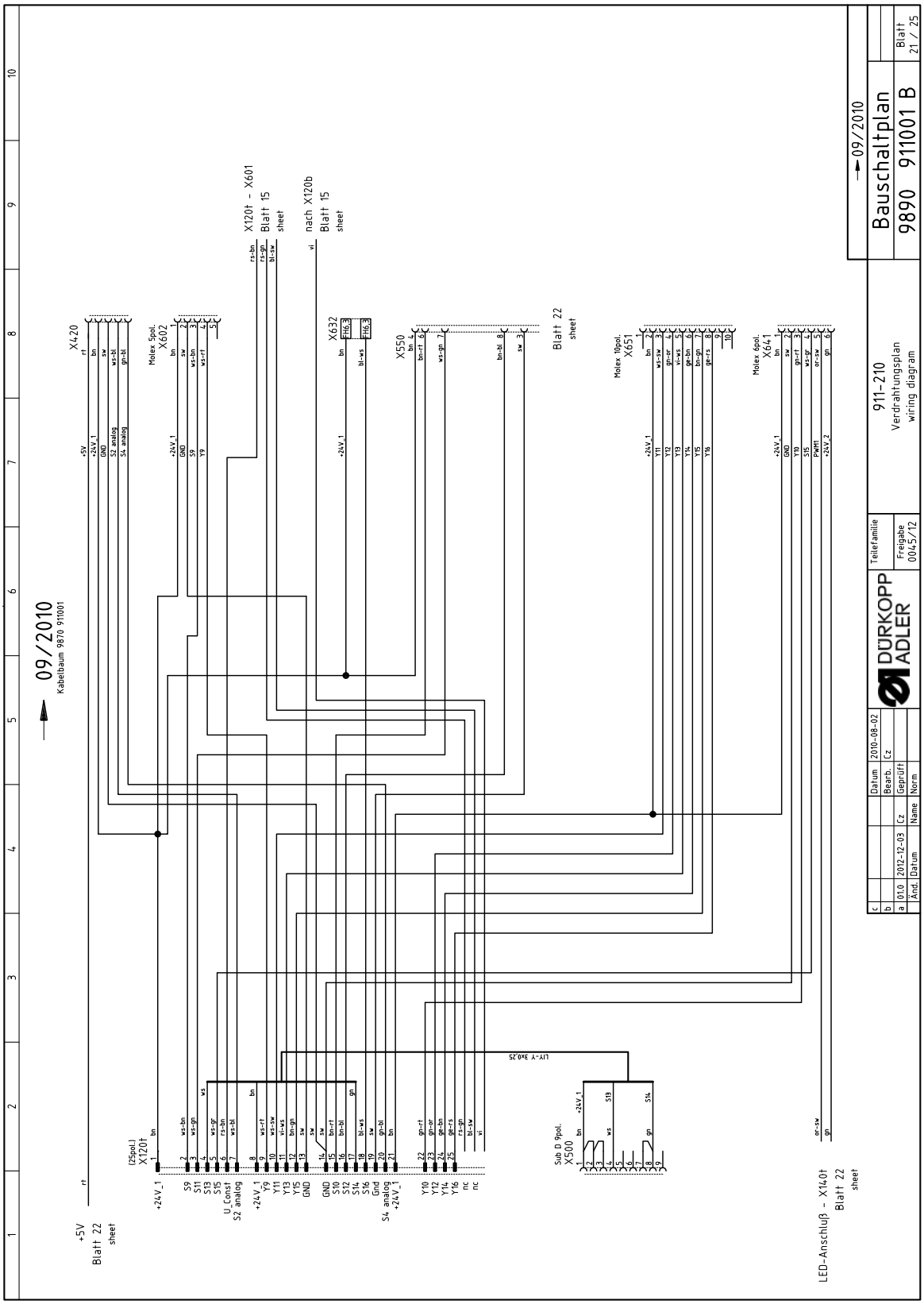

09/2010
Kabelbaum 9870 911003
9870 911050
Bauschaltplan
9890 911001 B
Blatt 16 / 25
KL.911-210-3020; -6020; -6055
Verdrahtungsplan
wiring diagram
DÜRKOPP ADLER
Teilefamilie
Freigabe 0045/12
2010-08-02
2012-12-03
X100b Blatt 18 sheet
X601 Blatt 15 sheet
X634.3 (Y9) Blatt 18 sheet
X140b.8 Blatt 17 sheet
RFW Blatt 18 sheet
Blatt 17 sheet
X632
X602
X550
X651
X641
X120t
X500
LED-Anschluß - X140t Blatt 17 sheet

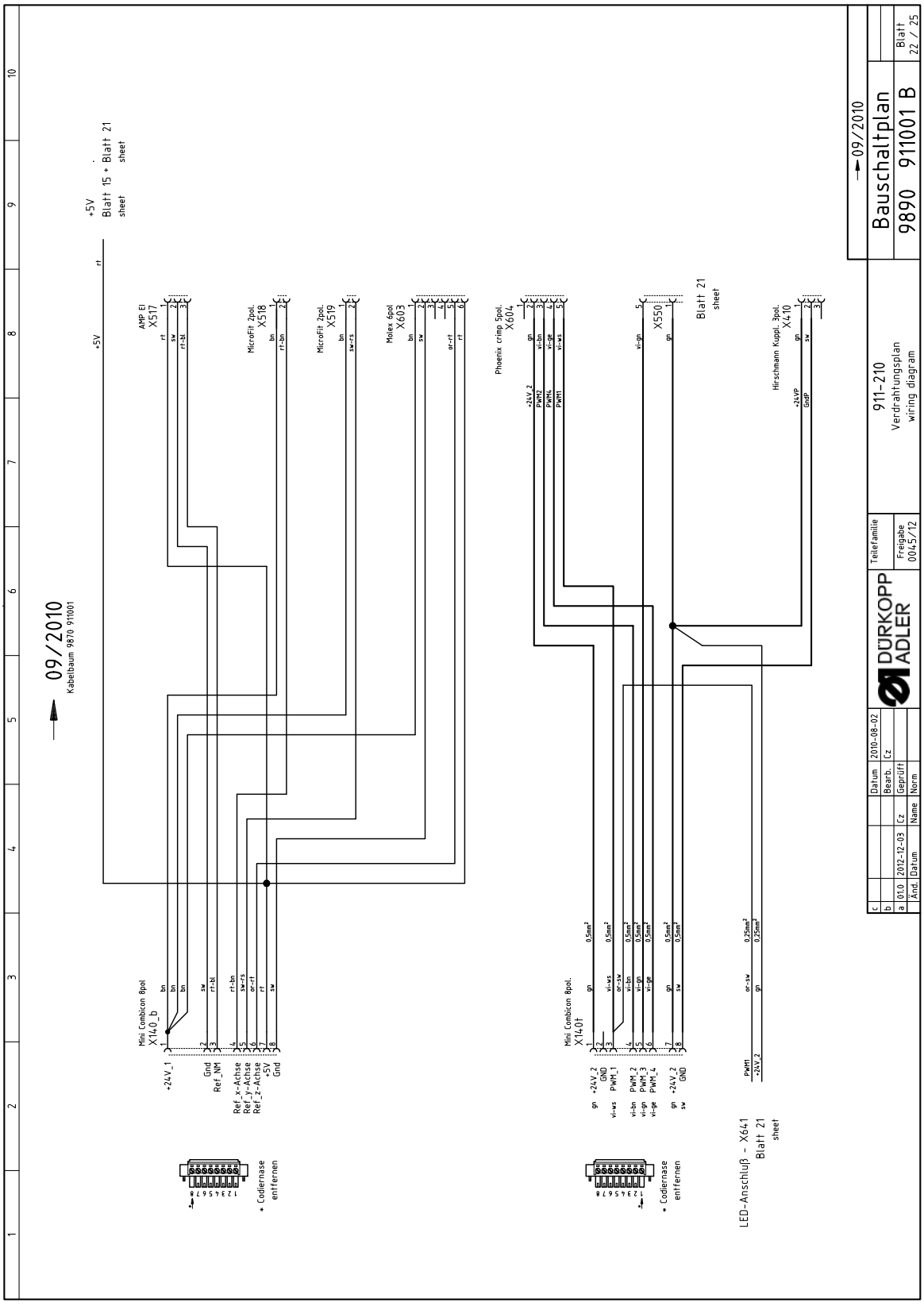

09/2010
Kabelbaum 9870 911003
9870 911050
+5V/X601
Blatt 15
sheet
MicroFit 2pol. X518
MicroFit 2pol. X519
Molex 4pol X603
Phoenix crimp 5pol. X604
Molex MiniFit 10pol. X550
Blatt 16
sheet
Hirschmann Kuppl. 3pol. X410
Molex MiniFit 2pol. X410
Spuleranschluß 3polig
bobbin winder plug 3pole
oder/or
Spuleranschluß 2polig
bobbin winder plug 2pole
Mini Combicon 8pol. X140_b
Mini Combicon 8pol. X1401
Microfit 2pol. X643
+24V_1
Gnd
Ref_NM
Ref_x-Achse
Ref_y-Achse
Ref_z-Achse
+5V
Gnd
+24V_2
GND
PWM_1
PWM_2
PWM_3
PWM_4
+24V_2
GND
PWM
+24V_2
+ Codiernase entfernen
+ Codiernase entfernen
GND X550.7
Blatt 16
sheet
LED-Anschluß - X641
Blatt 16
sheet
Nählicht-LED nur bei 911-210-6055
sewinglight-LED only at 977-210-6055
Nählicht bei
911-210-6055
DÜRKOPP ADLER
Teilefamilie
Freigabe
0045/12
Kl.911-210-3020; -6020; -6055
Verdrahtungsplan
wiring diagram
09/2010
Bauschaltplan
9890 911001 B
Blatt
17 / 25
Datum 2010-08-02
Bearb. Cz
Geprüft
Norm
Name
Cz
2012-12-03
Änd. Datum
01.0

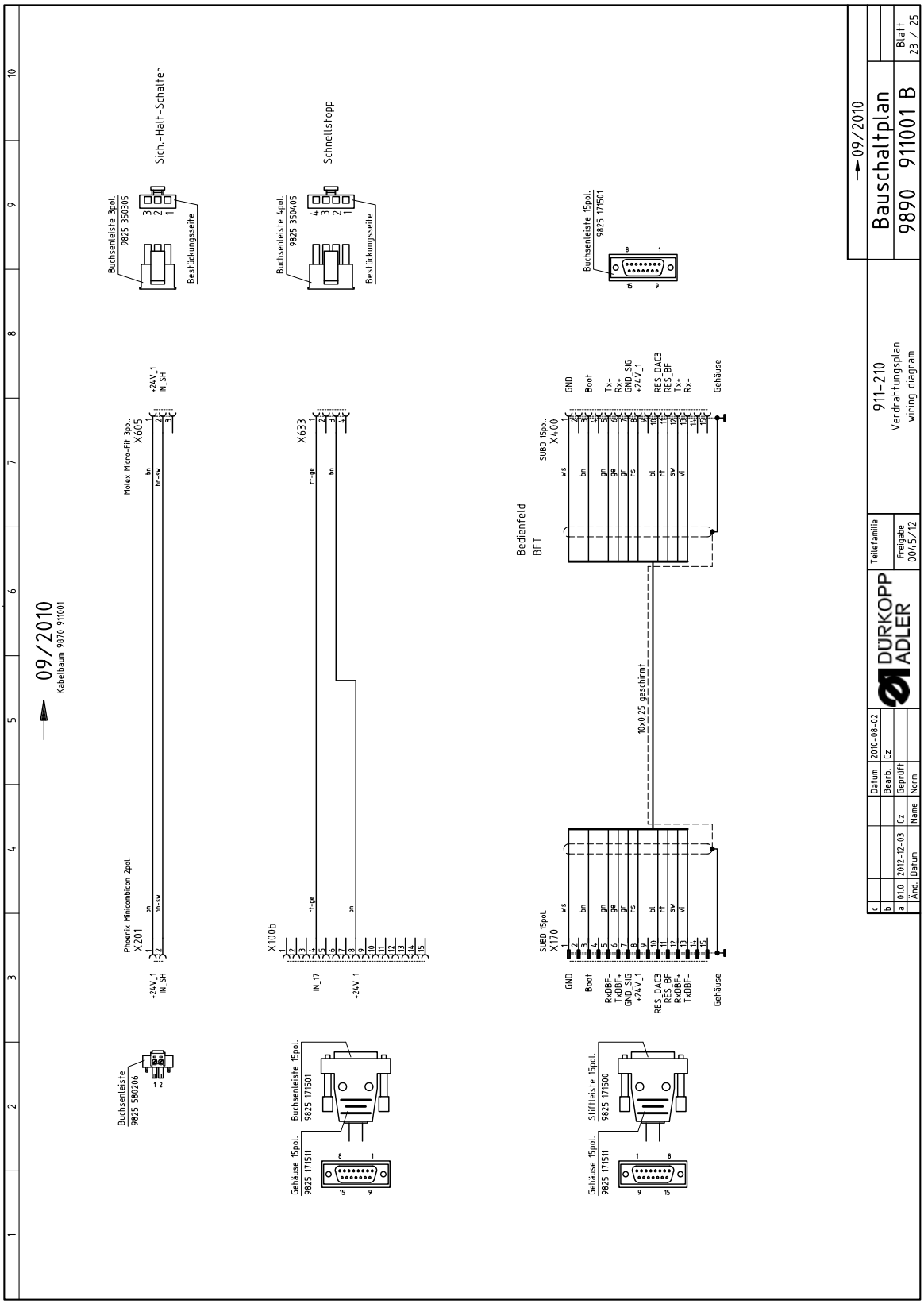

09/2010
Kabelbaum 9870 911003
9870 911050
Phoenix Minicombicon 2pol.
X201
Molex Micro-Fit 3pol.
X634
Molex C-Grid 4pol.
X623
Flachsteckhülse 2.8mm + Schutzkappe
X633
X100b
SUBD 15pol.
X400
SUBD 15pol.
X170
Buchsenleiste 3pol.
9825 350305
Bestückungsseite
Buchsenleiste 4pol.
9825 350402
Bestückungsseite
Buchsenleiste 15pol.
9825 171501
Buchsenleiste
9825 580206
Gehäuse 15pol.
9825 171511
Stiftleiste 15pol.
9825 171500
Gehäuse 15pol.
9825 171511
Metallkragen
10x0.25 geschirmt
X1201.9 (Y9)
Blatt 16
RFW
Blatt 16
X601
Blatt 15
X602
Blatt 16
Magnetventilinsel 2
Blatt 16
sheet
DÜRKOPP ADLER
Teilefamilie
Freigabe
0045/12
KL.911-210-3020; -6020; -6055
Verdrahtungsplan
wiring diagram
Bauschaltplan
9890 911001 B
Blatt
18 / 25
Datum
Bearb.
Cz
Geprüft
Norm
Name
2010-08-02
2012-12-03
Cz
Änd.
Datum

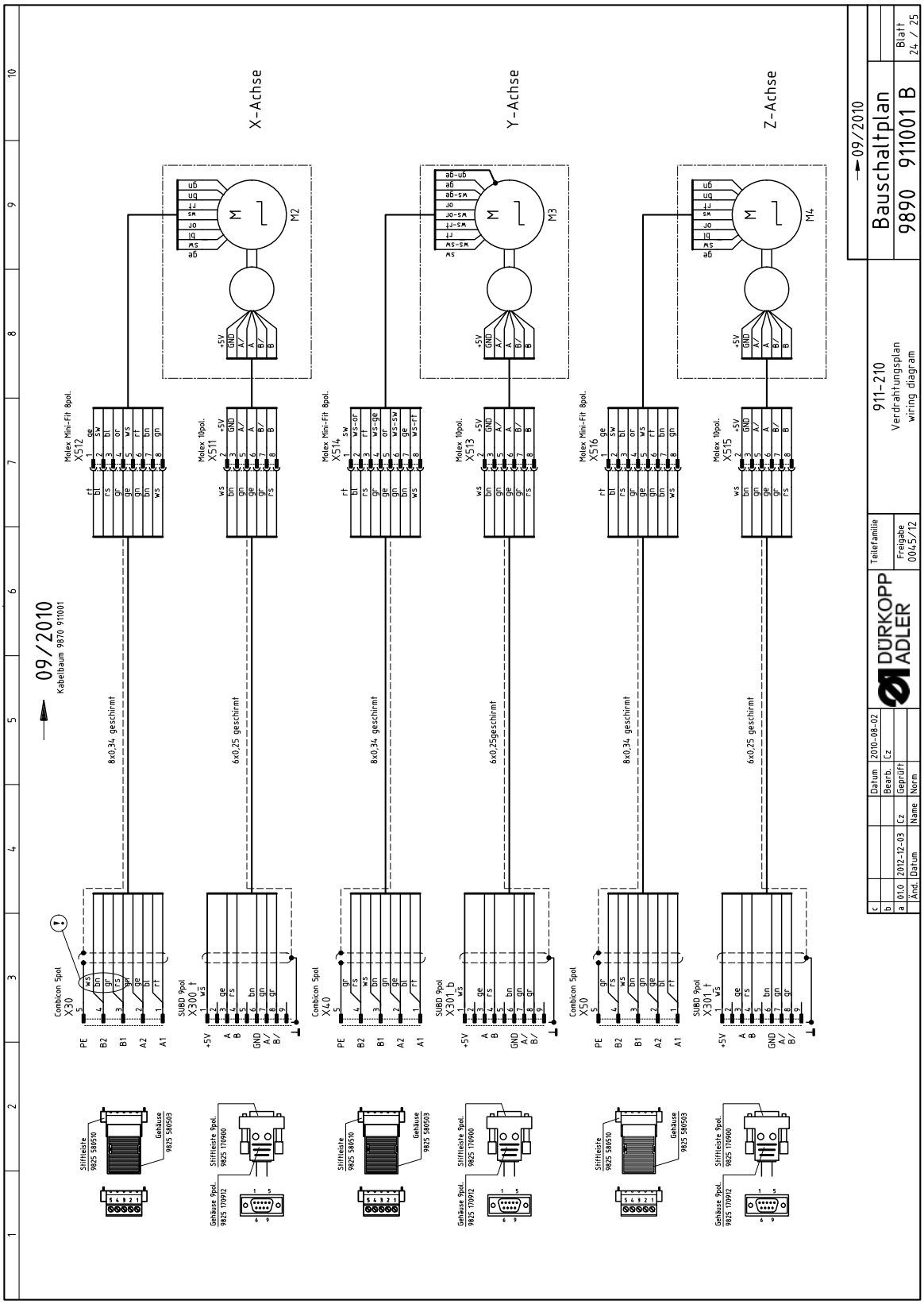

X-Achse
Y-Achse
Z-Achse
09/2010
Kabelbaum 9870 911003
9870 911050
09/2010
Bauschaltplan
9890 911001 B
Blatt 19 / 25
KL.911-210-3020; -6020; -6055
Verdrahtungsplan
wiring diagram
DÜRKOPP ADLER
Teilefamilie
Freigabe 0045/12
Datum 2010-08-02
Bearb. Cz
Geprüft
Norm
Name
Cz
2012-12-03
Änd. Datum
01.0
Combicon 5pol X30
Combicon 5pol X40
Combicon 5pol X50
Molex Mini-Fit 8pol. X512
Molex 4pol X511
Molex Mini-Fit 8pol. X514
Molex 4pol X513
Molex Mini-Fit 8pol. X516
Molex 4pol X515
SUBD 9pol X300_1
SUBD 9pol X301_b
SUBD 9pol X301_1
8x0,34 geschirmt
4x0,25 geschirmt
C1 100nF
C2 100nF
M2
M3
M4
PE
B2
B1
A2
A1
+5V
A
B
GND
A/
B/


09/2010
Kabelbaum 9870 911002
09/2010
Kabelbaum 9870 911004
9870 911051
X551
X553
X554
X552
S10 Spulenabdeckung
S11 Oberteilverriegelung
Klemmleiste 6pol.
Fundamentplatte
REF_NM
AMP EI
X517
Bauschaltplan
9890 911001 B
Kl.911-210-3020; -6020; -6055
Verdrahtungsplan Nähkopf
wiring diagram sewing-head
DÜRKOPP ADLER
Teilefamilie
Freigabe
0045/12
Datum
Bearb.
Geprüft
Norm
2010-08-02
Cz
Name
Blatt
20 / 25


09/2010
Kabelbaum 9870 911001
09/2010
Bauschaltplan
9890 911001 B
Blatt 21 / 25
911-210
Verdrahtungsplan
wiring diagram
Teilefamilie
Freigabe
0045/12
DÜRKOPP ADLER
2010-08-02
2012-12-03
Cz
Name
Datum
Bearb.
Geprüft
Norm
X420
X602
X632
X550
X651
X641
X1201
X500
X120f - X601
nach X120b
Blatt 15
Blatt 22
LED-Anschluß - X140f
Sub D 9pol.
Molex 5pol.
Molex 10pol.
Molex 6pol.
(25pol.)
LiY-Y 3x0,25


09/2010
Kabelbaum 9870 911001
+5V
Blatt 15 + Blatt 21
sheet
AMP EI
X517
MicroFit 2pol.
X518
MicroFit 2pol.
X519
Molex 6pol
X603
Phoenix crimp 5pol.
X604
Hirschmann Kuppl. 3pol.
X410
Mini Combicon 8pol
X140_b
Mini Combicon 8pol.
X1401
Blatt 21
sheet
X550
+24V_1
Gnd
Ref_NM
Ref_x-Achse
Ref_y-Achse
Ref_z-Achse
+5V
Gnd
+24V_2
GND
PWM_1
PWM_2
PWM_3
PWM_4
+24V_2
GND
PWM1
+24V_2
LED-Anschluß - X641
Blatt 21
sheet
* Codiernase entfernen
* Codiernase entfernen
09/2010
Bauschaltplan
9890 911001 B
Blatt 22 / 25
911-210
Verdrahtungsplan
wiring diagram
DÜRKOPP ADLER
Teilefamilie
Freigabe 0045/12
Datum 2010-08-02
Bearb. Cz
Geprüft
Norm
Name
Datum
Änd.
01.0 2012-12-03 Cz


09/2010
Kabelbaum 9870 911001
Sich.-Halt-Schalter
Buchsenleiste 3pol.
9825 350305
Bestückungsseite
Schnellstopp
Buchsenleiste 4pol.
9825 350405
Bestückungsseite
Buchsenleiste 15pol.
9825 171501
Bedienfeld
BFT
SUBD 15pol.
X400
GND
Boot
Tx+
Rx+
GND_SIG
+24V_1
RES_DAC3
RES_BF
Tx+
Rx-
Gehäuse
10x0,25 geschirmt
SUBD 15pol.
X170
GND
Boot
RxDBF-
TxDBF+
GND_SIG
+24V_1
RES_DAC3
RES_BF
RxDBF+
TxDBF-
Gehäuse
Phoenix Minicombicon 2pol.
X201
+24V_1
IN_SH
Molex Micro-Fit 3pol.
X605
+24V_1
IN_SH
X633
IN_17
+24V_1
X100b
Buchsenleiste
9825 580206
Buchsenleiste 15pol.
9825 171501
Gehäuse 15pol.
9825 171511
Stiftleiste 15pol.
9825 171500
Gehäuse 15pol.
9825 171511
DÜRKOPP ADLER
Teilefamilie
Freigabe
0045/12
911-210
Verdrahtungsplan
wiring diagram
09/2010
Bauschaltplan
9890 911001 B
Blatt
23 / 25
Datum
Bearb.
Geprüft
Norm
2010-08-02
Cz
2012-12-03
Name
Änd.
Datum


09/2010
Kabelbaum 9870 911001
X-Achse
Y-Achse
Z-Achse
M2
M3
M4
Molex Mini-Fit 8pol. X512
Molex 10pol. X511
Molex Mini-Fit 8pol. X514
Molex 10pol. X513
Molex Mini-Fit 8pol. X516
Molex 10pol. X515
Combicon 5pol X30
SUBD 9pol X300 †
Combicon 5pol X40
SUBD 9pol X301 b
Combicon 5pol X50
SUBD 9pol X301 †
8x0,34 geschirmt
6x0,25 geschirmt
6x0,25geschirmt
Stiftleiste 9825 580510
Gehäuse 9825 580503
Stiftleiste 9pol. 9825 170900
Gehäuse 9pol. 9825 170912
09/2010
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Freigabe 0045/12
2010-08-02
2012-12-03
Datum
Bearb.
Cz
Geprüft
Norm
Name

Kurzzeichen	Teilenummer	Benennung	denomination	Typ	Bemerkung
Q0	9815 580008	Netzschalter	main switch		rot-gelb
S1	9815 710103	Induktivgeber	approximate switch	M8x1x40	konf. ET 9815 710100
S2	9815 710103	Induktivgeber	approximate switch	M8x1x40	konf. ET 9815 710100
S9	9815 740001	Oberfadenwächter	thread monitor	IDS/D	
S10	9815 710103	Induktivgeber	approximate switch	M8x1x40	konf. ET 9815 710100
S11	9815 710103	Induktivgeber	approximate switch	M8x1x40	konf. ET 9815 710100
S16	0999 220829	Druckschalter	pressure switch		Druckwächter
S17	9815 101010	Taster	push-button		rot
S17	9815 101085	Schaltelement	switch-element		Schnellstopp
S100	9815 935006	Lichtschranke	light barrier		Ref. Nähmotor
S101	9815 710103	Induktivgeber	approximate switch	M8x1x40	konf. ET 9815 710100
S102	9815 710103	Induktivgeber	approximate switch	M8x1x40	konf. ET 9815 710100
S103	9815 935006	Lichtschranke	light barrier		Ref. Z-Achse
X0	9625 190104	Netzstecker	mains plug	Schuko (DE)	(on request/auf Wunsch)
X1	9625 190103	Steckdose	wall socket	Schuko (DE)	
Y102	9820 110021	Hubmagnet	solenoid DC		Fadenspannung 1+2
Y103	9820 110016	Hubmagnet	solenoid DC		Fadenabschneider
Y104	9820 110037	Hubmagnet	solenoid DC		Fadenklemme

Kurzzeichen	Teilenummer	Benennung	denomination	Typ
A1	9850 001224	Steuerung k	control	DAC III
A2	9850 911002	Bedienfeld k	control panel	OP7000 m.Prog
A2	9850 911007	Bedienfeld k	control panel	OP7000 m.Prog
A2	9850 911009	Bedienfeld k	control panel	OP7000 m.Prog
A3	9850 910001	Leiterplatte k	PCB	
A4	0745 407904	Fuß-Schalter	foot-switch	
A5	9880 580003	Schalter k	switch	
A5	9805 320005	LED	LED	
A6	9850 001060	Leiterplatte k	PCB	8 Magnetventile
A7	9850 001060	Leiterplatte k	PCB	8 Magnetventile
A8	0745 177514	Spuler	bobbin winder	
A8	0867 170204	Spuler	bobbin winder	
A9	9850 867004	Leiterplatte k	PCB	
A10	9850 911000	Leiterplatte k	PCB	
A11	9850 867001	Leiterplatte k	PCB	
A12	9850 867003	Leiterplatte k	PCB	
A12.1	9815 925002	Lichtschranke	light barrier	
A13	9850 001090	Leiterplatte k	PCB	
A14	9850 001090	Leiterplatte k	PCB	
A15	9850 001090	Leiterplatte k	PCB	
A16	9850 001090	Leiterplatte k	PCB	
A17	9850 911004	Pegelwandler	Leiterplatte k	
A18	9850 911005	Leiterplatte k	PCB	
A19	9850 911006	Barcodeleser k	bar code reader cpl.	
F400	9825 810107	Sicherung	fuse	FF6.3A
F401	9825 810417	Sicherung	fuse	T6.3A
F402	9825 810417	Sicherung	fuse	T6.3A
F403	9825 810417	Sicherung	fuse	T6.3A
F404	9825 810107	Sicherung	fuse	FF6.3A
H1.2.3.4	9835 501005	Laser k	laser cpl.	
H1.2.3.4	9835 501006	Laser	laser	
M1/M1.1	9800 170034	Nähantrieb o.S.	sewing motor	750W, HoSing
M2	9800 580034	Schrittmotor	stepper	
M2.1	0580 490194	Drehgeber k	encoder	
M3	9800 580038	Schrittmotor	stepper	
M3.1	0580 490194	Drehgeber k	encoder	
M4	9800 580033	Schrittmotor	stepper	
M4.1	0580 490194	Drehgeber k	encoder	

Bemerkung
mit Speichererweiterung
911-210-3020
911-210-6020
911-210-6055
Verteiler / FS-Regelung
2-stufig S13+S14
Einfädelschalter, LED gelb 24V
Standard
optional
911-210-3020/6020
911-210-6055
LED-light
Verteiler
Oistandsanzeige S15,Y10
RFW
RFW S12
Lasernetzteil
Lasernetzteil
Lasernetzteil
Lasernetzteil
TTL / RS232
Netzteil
konf. ET 9835 501010
5x20mm
5x20mm
5x20mm
5x20mm
5x20mm
incl. Verlängerung 9835 501008
Ersatz Laser
für DAC III
X-Achse *(nur montiert lieferbar)*
Y-Achse *(nur montiert lieferbar)*
Z-Achse *(nur montiert lieferbar)*

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c			Datum	2010-08-02
b			Bearb.	Cz
a	01.0	2012-12-03	Cz	Geprüft
	Änd.	Datum	Name	Norm

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Teilefamilie

Freigabe 0045/12

Kl.911-210-3020; -6020; -6055

Teileliste

parts list

Bauschaltplan

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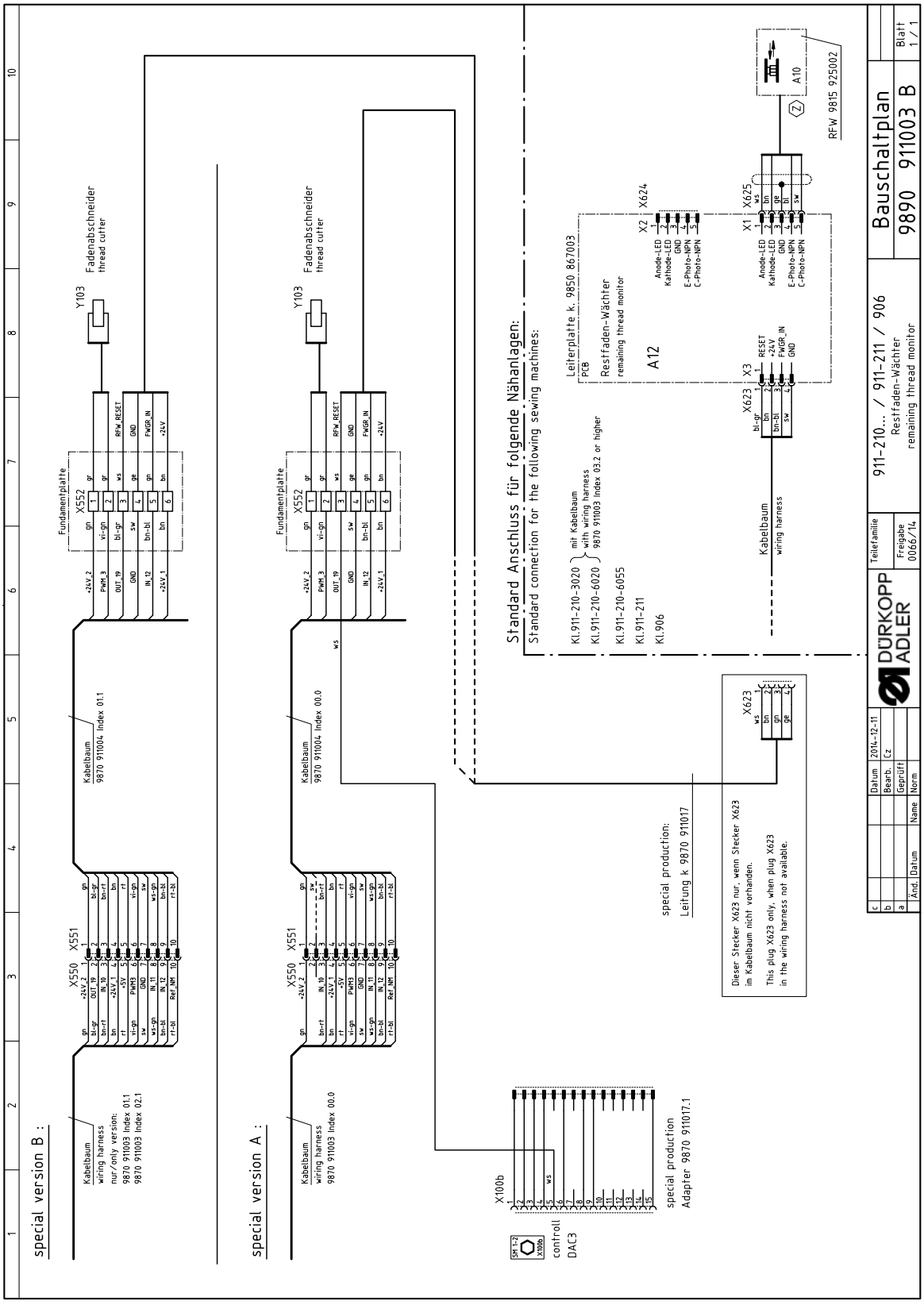
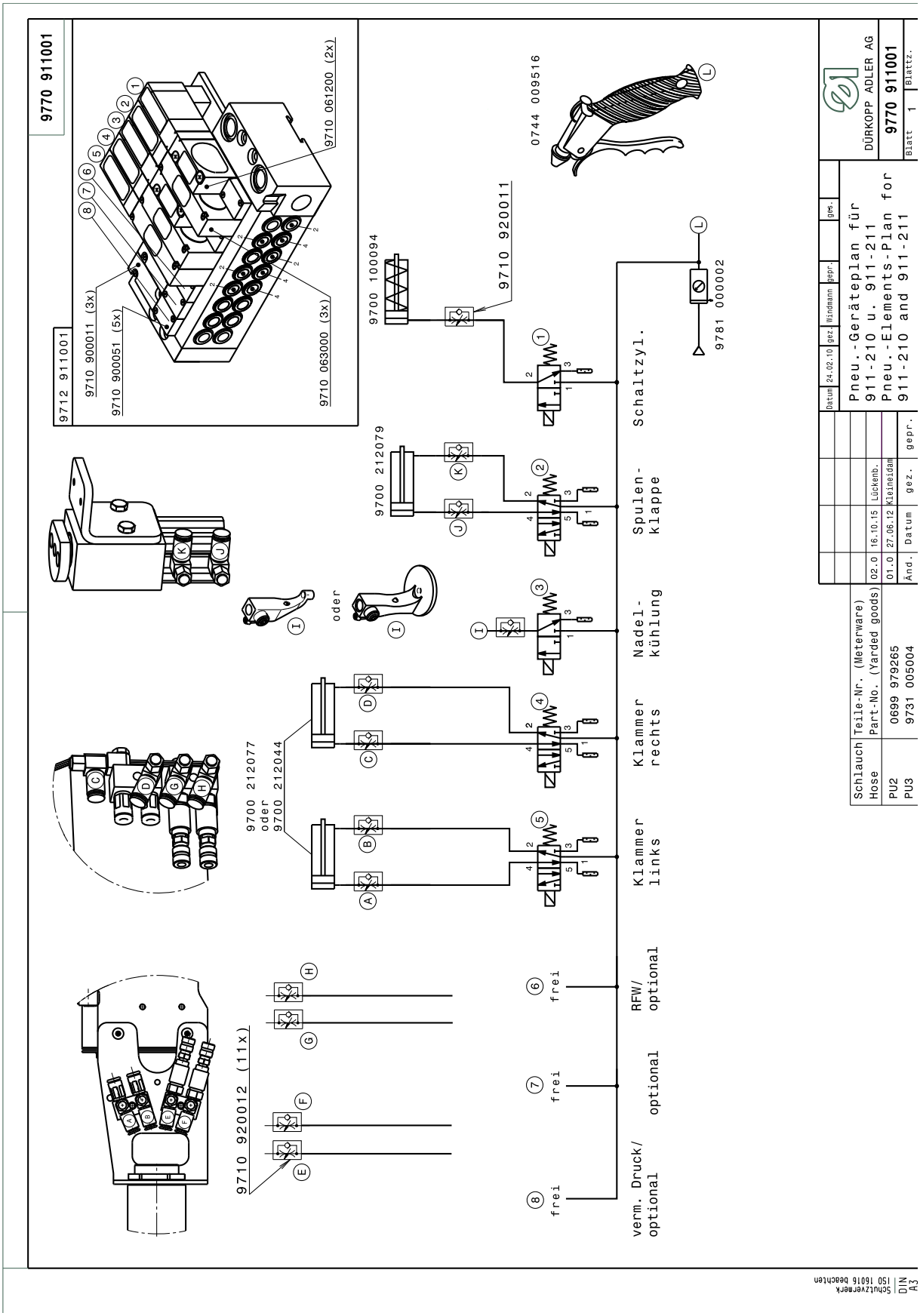
Blatt 25 / 25

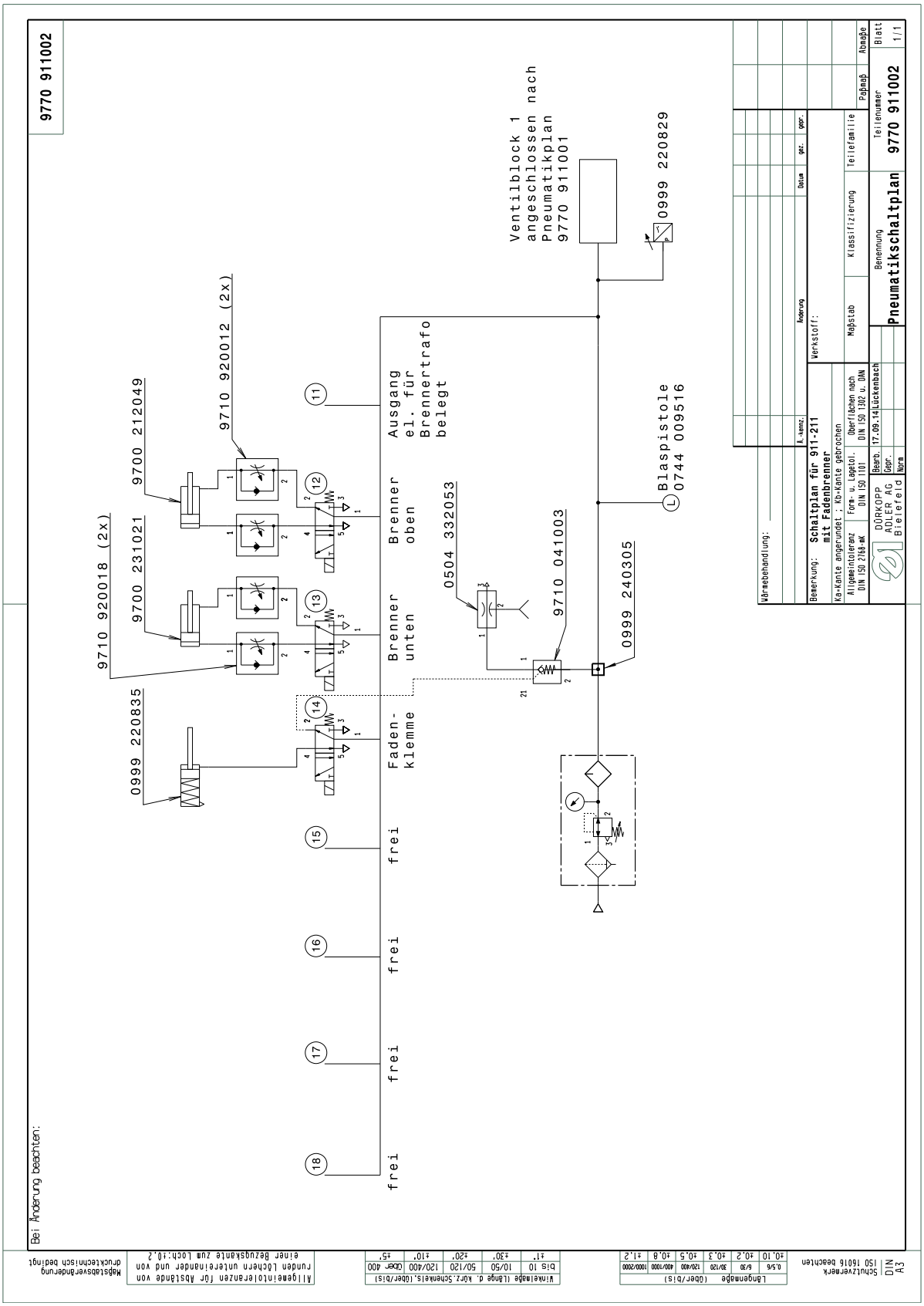
13.2 Wiring diagram - remaining thread monitor



13.3 Pneumatic diagram



13.4 Pneumatic diagram for machines with remaining thread monitor



DÜRKOPP ADLER AG
Potsdamer Straße 190
33719 Bielefeld
GERMANY
Phone +49 (0) 521 / 925-00
E-mail service@duerkopp-adler.com
www.duerkopp-adler.com