

512-211
532-211

Service Instructions



IMPORTANT
READ CAREFULLY BEFORE USE
KEEP FOR FUTURE REFERENCE

All rights reserved.

Property of Dürkopp Adler AG and protected by copyright. Any reuse of these contents, including extracts, is prohibited without the prior written approval of Dürkopp Adler AG.


Copyright © Dürkopp Adler AG 2017

1	About these instructions	3
1.1	For whom are these instructions intended?	3
1.2	Representation conventions – symbols and characters	3
1.3	Other documents	4
1.4	Liability.....	5
2	Safety	7
2.1	Basic safety instructions	7
2.2	Signal words and symbols used in warnings	8
3	Work principles.....	11
3.1	Order of settings	11
3.2	Cable routing	11
3.3	Removing the covers	12
3.3.1	Access to the machine bottom section	12
3.3.2	Removing and fitting the head cover	13
3.3.3	Removing and fitting the arm cover	14
3.3.4	Removing and fitting the right-hand side cover	14
3.3.5	Removing and fitting the left-hand side cover	15
3.3.6	Removing and fitting the rear cover.....	16
3.3.7	Opening and closing the hook flap	17
3.3.8	Removing and inserting the throat plate.....	17
3.4	Surfaces on shafts	19
4	Adjusting the light barriers.....	21
4.1	Light barrier sensor disks	21
4.2	Adjusting the left and right switching flags.....	22
4.3	Thread clamp switching flag	23
5	Adjusting the hook and needle bar.....	24
5.1	Adjusting the needle bar height	24
5.2	Adjusting the loop stroke and needle guard	25
5.3	Adjusting the distance between the hook tip and needle	27
6	Adjusting the thread trimmer	28
7	Adjusting the height of the fabric clamp lift.....	30
8	Adjusting the thread wiper	32
9	Adjusting the thread regulator	33
10	Adjusting the winder	34
10.1	Setting the fill volume	34
10.2	Adjusting the winding tension	35
11	Programming	37
11.1	Basic software operation	37
11.2	Accessing the technician level.....	38
11.2.1	Editing parameters in level 1	38
11.2.2	Editing parameters in level 2	39
11.3	Setting the blade position	39
11.4	Loading software via a USB stick	42
11.4.1	Loading the main program.....	42

11.4.2 Loading sewing patterns.....	42
11.4.3 Setting parameter U085 (class 532).....	43
11.4.4 Checking the software version	43
12 Maintenance.....	45
12.1 Cleaning	46
12.2 Lubricating	48
12.2.1 Checking the oil level.....	49
12.2.2 Lubricating with grease.....	50
12.3 Adjusting the lubrication for the hook	52
13 Decommissioning.....	53
14 Disposal.....	55
15 Troubleshooting	57
15.1 Customer Service	57
15.2 Messages of the software.....	57
15.3 Errors in sewing process	60
16 Appendix	63

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** ( S. 35).

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** ( S. 7).

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** (📖 S. 7).

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	<p>Follow the country-specific safety and accident prevention regulations and the legal regulations concerning industrial safety and the protection of the environment.</p> <p>All the warnings and safety signs on the machine must always be in legible condition. Do not remove!</p> <p>Missing or damaged warnings and safety signs must be replaced immediately.</p>
Requirements to be met by the personnel	<p>Only qualified specialists may:</p> <ul style="list-style-type: none">• set up the machine• perform maintenance work and repairs• perform work on electrical equipment <p>Only authorized persons may work on the machine and must first have understood these instructions.</p>

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 Work principles

3.1 Order of settings

Observe order Always adhere to the specified sequence for the individual setting steps.

Always observe all notes marked with a  in the margin on prerequisites and follow-up settings.

NOTICE

Property damage may occur!

Machine damage possible due to incorrect order.

Always adhere to the working order specified in this manual.

3.2 Cable routing

Binding the cable together Ensure that all cables in the machine are laid in such a way that moving parts are not impaired in their ability to function correctly.



1. Lay excessively long cables neatly in proper cable snakes.
2. Tie the snakes together using a cable tie.



If possible, bind the snakes to fixed parts.
The cables must be fixed firmly in place.

3. Cut off any protruding part of the cable tie.

NOTICE

Property damage may occur!

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

Excess cabling may obstruct moving machine parts in their ability to function correctly. This will affect the sewing function and may cause damage.

Lay excess cabling as described above.

3.3 Removing the covers

NOTICE

Property damage may occur!

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

Excess cabling may obstruct moving machine parts in their ability to function correctly. This will affect the sewing function and may cause damage.

Lay excess cabling as described above.

WARNING



Risk of injury from moving parts!

Crushing possible.

Switch the sewing machine off before you remove the covers or refit them.

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

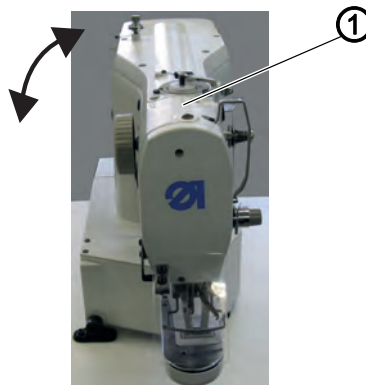
Described here is how to remove the individual covers and how to reattach them. Just the cover that needs to be removed is then specified in the text for that particular type of setting work.

3.3.1 Access to the machine bottom section



In order to access the components at the machine bottom section, you must first tilt the machine upper section to the left.

Fig. 1: Tilting the machine upper section to the left and setting it upright



(1) - Machine upper section

Tilting the machine upper section to the left



1. Tilt the machine upper section (1) to the left as far as possible.

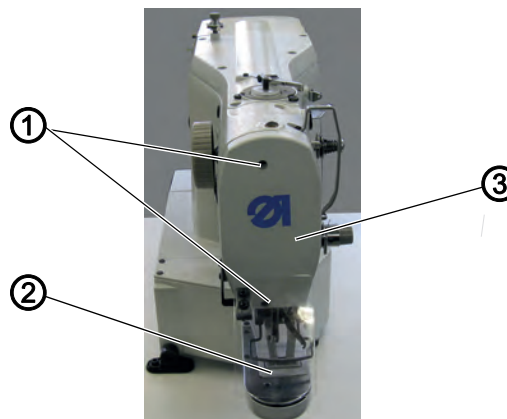
Setting the machine upper section upright



1. Set the upper machine section (1) upright.

3.3.2 Removing and fitting the head cover

Fig. 2: Removing and fitting the head cover



(1) - Screw

(2) - Eye guard

(3) - Head cover

Removing the head cover



1. Unscrew the eye guard (2).
2. Loosen both screws (1).
3. Remove the head cover (3).

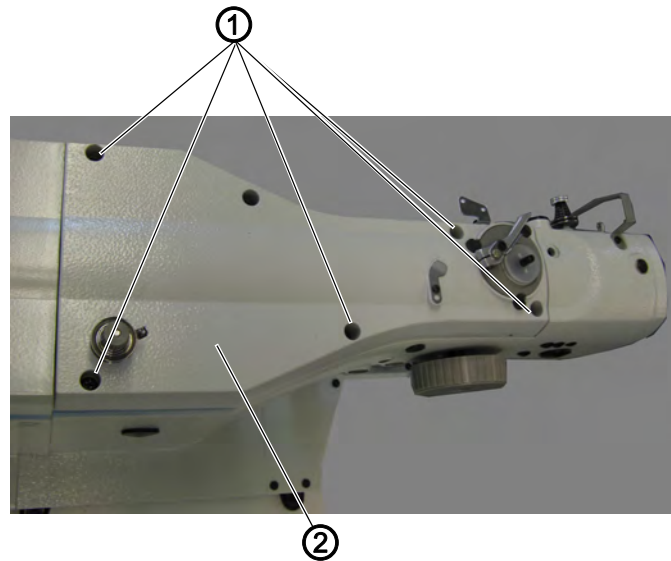
Fitting the head cover



1. Fit the head cover (3).
2. Tighten both screws (1).
3. Tighten the eye guard (2).

3.3.3 Removing and fitting the arm cover

Fig. 3: Removing and fitting the arm cover



(1) - Screw

(2) - Arm cover

Removing the arm cover



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

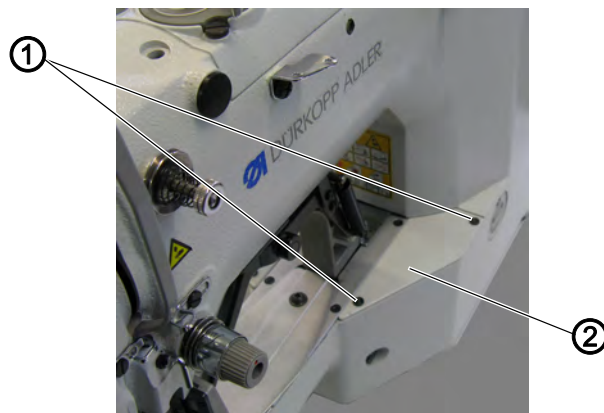
Fitting the arm cover



1. Fit the arm cover (2).
2. Tighten screws (1) firmly in place.

3.3.4 Removing and fitting the right-hand side cover

Fig. 4: Removing and fitting the right-hand side cover



(1) - Screw

(2) - Right-hand side cover

Removing the right-hand side cover



1. Loosen both screws (1).
2. Remove the right-hand side cover (2).

Fitting the right-hand side cover



1. Fit the right-hand side cover(2).
2. Tighten both screws (1).

3.3.5 Removing and fitting the left-hand side cover

Fig. 5: Removing and fitting the left-hand side cover



(1) - Screw

(2) - Left-hand side cover

Removing the left-hand side cover



1. Loosen all 3 screws (1).
2. Remove the left-hand side cover (2).

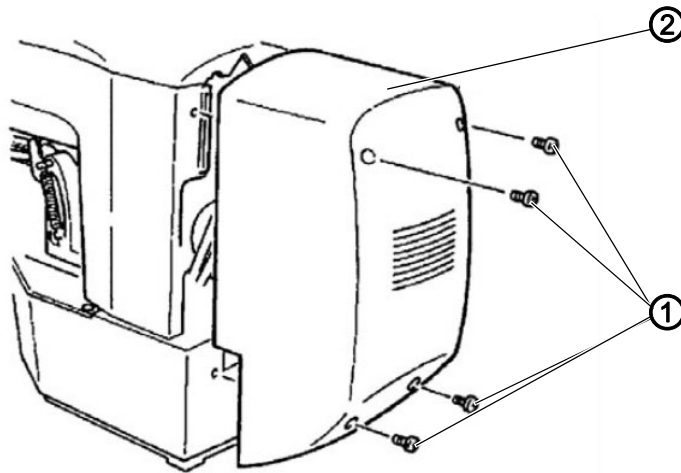
Fitting the left-hand side cover



1. Fit the left-hand side cover (2).
2. Tighten all 3 screws (1) firmly in place.

3.3.6 Removing and fitting the rear cover

Fig. 6: Removing and fitting the rear cover



(1) - Screw

(2) - Rear cover

Removing the rear cover



1. Loosen all 4 screws (1) on the rear cover (2).
2. Remove the rear cover (2).

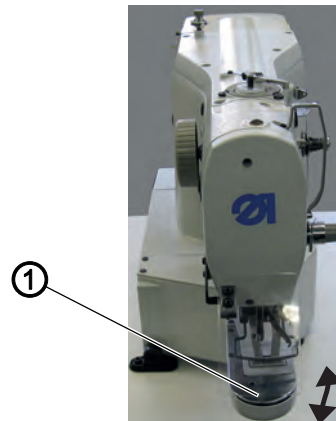
Fitting the rear cover



1. Fit the rear cover (2).
2. Tighten all 4 screws (1) on the rear cover (2) firmly in place.

3.3.7 Opening and closing the hook flap

Fig. 7: Opening and closing the hook flap



(1) - Hook flap



Opening the hook flap

1. Fold down the hook flap (1).



Closing the hook flap

1. Fold up the hook flap (1).

3.3.8 Removing and inserting the throat plate

Fig. 8: Removing and inserting the throat plate (1)



- (1) - Springs of the fabric clamp
(2) - Clamp feet

- (3) - Screw
(4) - Work surface

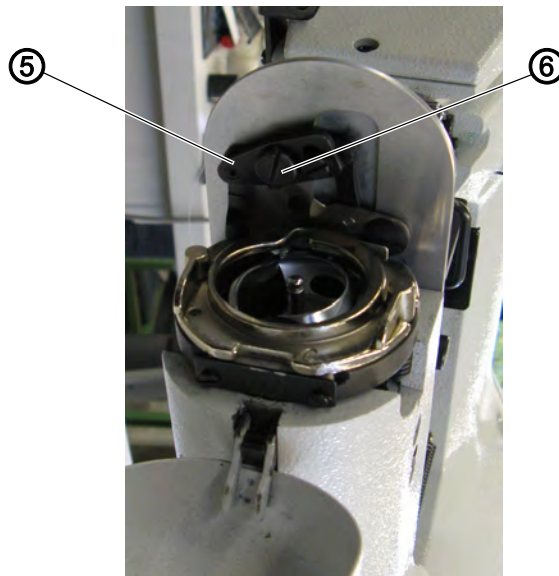


Removing the throat plate

1. Remove both springs of the fabric clamp (1).

2. Raise both clamp feet (2).
3. Loosen the screw (3) for the work surface (4).
4. Remove the work surface (4).

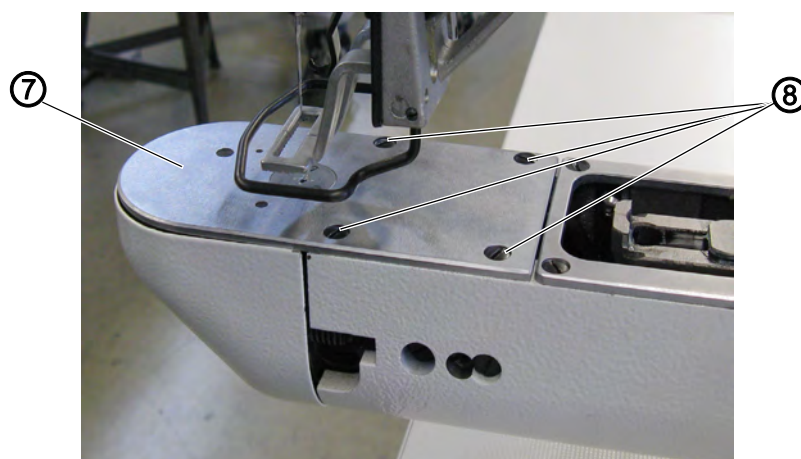
Fig. 9: Removing and inserting the throat plate (2)



(5) - Thread puller blade connecting rod (6) - Screw

5. Open the hook flap (📖 S. 17).
6. Loosen the screw (6).
7. Unhinge the thread puller blade connecting rod (5).

Fig. 10: Removing and inserting the throat plate (3)



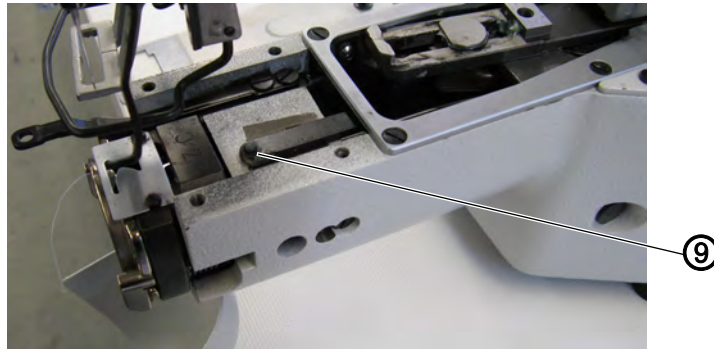
(7) - Throat plate

(8) - Screw


8. Loosen all 4 screws (8).
9. Remove the throat plate (7) upwards.

Inserting the throat plate

Fig. 11: Removing and inserting the throat plate (4)

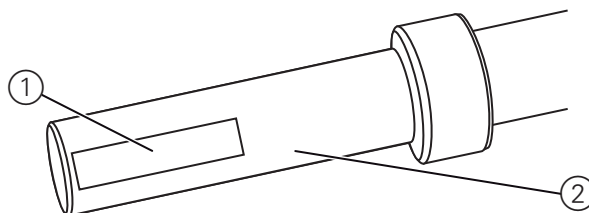


(9) - Connecting rod pin for needle thread clamp

1. Insert the throat plate (7) from above. When doing this make sure that the hole in the needle thread clamp, which is located underneath the throat plate, and the connecting rod pin of the needle thread clamp (9) are mounted.
2. Mount the thread puller blade connecting rod (5) and make sure that the connecting rod grips properly.
3. Tighten all 4 screws (8) of the throat plate firmly in place.
4. Tighten the screw (6).
5. Close the hook flap ( S. 17).
6. Fit the work surface (4).
7. Tighten the screw (3) for the work surface (4) firmly in place.
8. Mount both springs of the fabric clamp (1).

3.4 Surfaces on shafts

Fig. 12: Surfaces on shafts



(1) - Surface

(2) - Shaft

Some shafts have flat surfaces at those points where the components are screwed on. This strengthens the connection and setting work is made easier.



Always make sure that the whole screw is seated completely on the surface.

4 Adjusting the light barriers

WARNING



Risk of injury from moving parts!

Crushing possible.

Switch the sewing machine off before adjusting the light barriers.

4.1 Light barrier sensor disks

The light barrier sensor disks are used as a reference for positioning by the control unit.



Checking the correct setting

- ☞ The 180° disk points to the front and its lower edge is precisely lined up with the light barriers slots.



Faults caused by an incorrect setting

- Damage to fabric, wrinkling
- Incorrect needle position, needle jams in the hole
- Incorrect transport times
- Incorrect thread cutting
- Poor sewing results



Cover


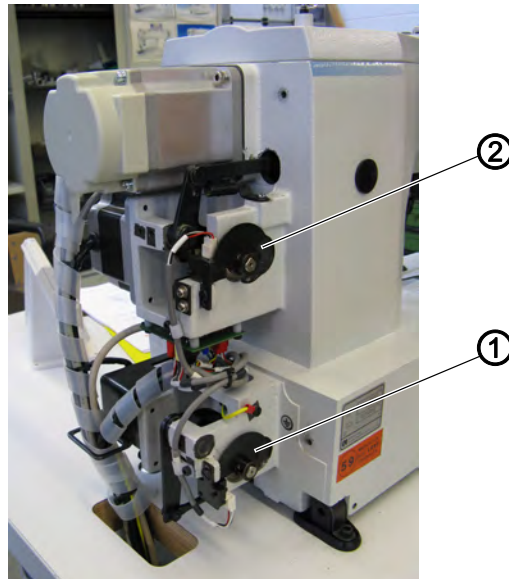
- Remove rear cover ( S. 16).

Fig. 13: Light barrier sensor disks



(1) - Thread trimmer sensor disk

(2) - Thread wiper and fabric clamp sensor disk

4.2 Adjusting the left and right switching flags

The switching flags are used as reference by the control unit for the position of the clamps in an X and Y-direction.



Checking the correct setting

☞ The clamps are centered in both an X and Y-direction.



Faults caused by an incorrect setting

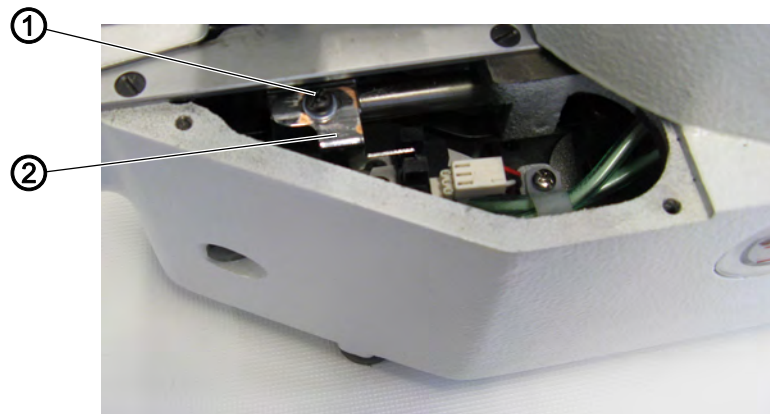
- Damage to the needle
- Incorrect needle position



Cover

- Remove the right-hand side cover (📖 S. 14).
- Remove the left-hand side cover (📖 S. 15).

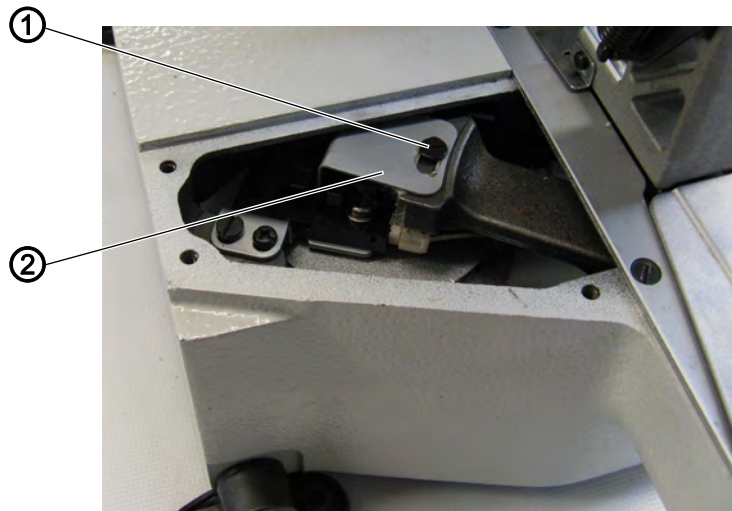
Fig. 14: Adjusting the right switching flag



(1) - Screw

(2) - Switching flag, right

Fig. 15: Adjusting the left switching flag



(1) - Screw

(2) - Switching flag, left



Adjusting steps

1. Loosen the screw (1).
2. Adjust the switching flag (2) accordingly.
3. Set the zero point via the control unit.
4. Tighten the screw (1).
5. Reference the machine.

4.3 Thread clamp switching flag

The thread clamp switching flag is used as reference by the control unit for the thread clamp. The switching flag is located underneath the throat plate to the right and is factory set.

5 Adjusting the hook and needle bar

The following 3 settings must be coordinated:

- Height of the needle bar
- Loop stroke position and needle guard
- Hook clearance to the needle

5.1 Adjusting the needle bar height

WARNING



Risk of injury from sharp and moving parts!

Crushing hazard and puncturing injuries due to moving and sharp parts.

Switch off the sewing machine before adjusting the height of the needle bar.



The needle bar has 4 marker lines which serve as an adjusting aid. The top two lines are valid for class 512, while the bottom two lines are valid for class 532.



Cover

- Remove the head cover (📖 S. 13).

Fig. 16: Adjusting the needle bar height



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

- (3) - Marker line for class 512
(4) - Marker line for class 532



Adjusting steps

1. Use the handwheel to set the needle bar at its lowest position.
2. Loosen the screw (1).
3. Adjust the height of the needle bar (2) so that the applicable upper marker line (3/4) is aligned with the needle bar bush.
When doing this make sure that the needle bar (2) is not twisted.
4. Tighten the screw (1).

5.2 Adjusting the loop stroke and needle guard

WARNING



Risk of injury from sharp and moving parts!

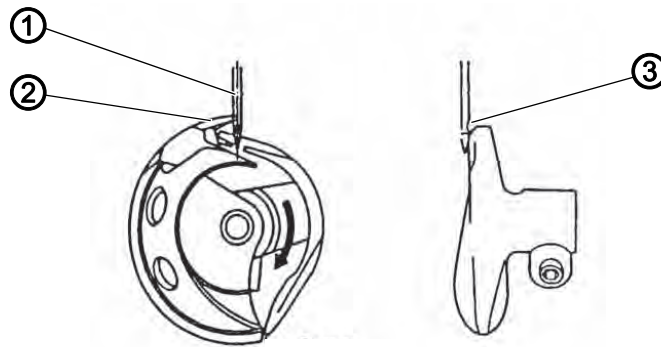
Crushing hazard and puncturing injuries due to moving and sharp parts.

Switch off the sewing machine before adjusting the loop stroke and needle guard.

Loop stroke

The **loop stroke** is the path length from the lower dead center of the needle bar to the position where the hook is in the loop stroke position.

Fig. 17: Loop stroke



(1) - Center line of the needle
(2) - Hook tip

(3) - Groove



Checking the correct setting

When the machine is in the loop stroke position, the hook tip should be located exactly on the center line of the needle. The needle must be aligned so that the surface of the groove is parallel to the running direction of the hook tip. The hook tip should be located in the lower third of the groove.




Faults caused by an incorrect setting

- Damage to the hook
- Damage to the needle
- Missing stitches
- Thread breakage



Order

Prerequisite:

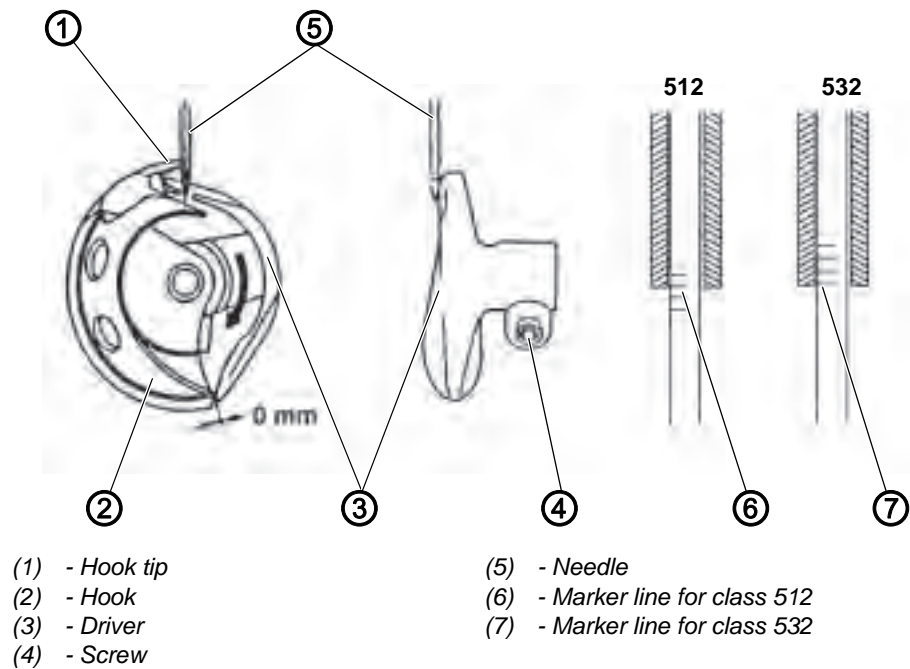
- A straight and undamaged needle must be inserted ( *Operating manual, Section 4.7 Changing needles*).



Cover

- Open the hook flap (S. 17).

Fig. 18: Adjusting the loop stroke and needle guard



Adjusting steps

1. Use the handwheel to adjust the needle bar so that the corresponding marker line (6/7) is aligned with the needle bar bush.
2. Loosen the screw (4).
3. Remove the cover ring. When doing this make sure that the hook (2) does not work loose and fall.
4. Twist the driver (3) accordingly.
5. Shift the driver (3) axially so that the needle (5) rests against the driver tip and is easily pushed aside.
6. Insert the cover ring.
7. Tighten the screw (4).

5.3 Adjusting the distance between the hook tip and needle

WARNING



Risk of injury from sharp and moving parts!

Crushing hazard and puncturing injuries due to moving and sharp parts.

Switch off the sewing machine before adjusting the distance between the hook tip and needle.



Cover


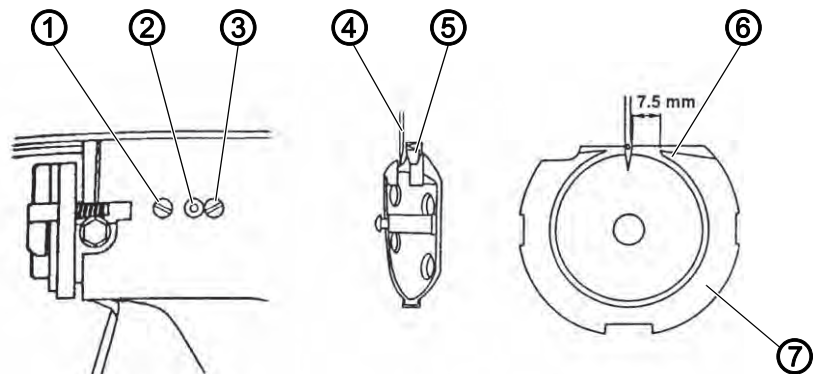
- Open the hook flap ( S. 17).

Fig. 19: Adjusting the distance between the hook tip and needle



- (1) - Screw
(2) - Eccentric
(3) - Eccentric safety screw
(4) - Needle

- (5) - Hook tip
(6) - Tip of the hook path bearing
(7) - Hook path bearing



Checking the correct setting

The hook tip (5) must be as close as possible to the groove of the needle, without touching it.

The tip of the hook path bearing (6) should have a gap of 7.5 mm to the right side of the needle.



Adjusting steps

1. Loosen the screw (1).
2. Loosen the safety screw (3) of the eccentric.
3. Adjust the hook path bearing (7) axially with the eccentric (2):
 - **Eccentric to the left:** reduce distance.
 - **Eccentric to the right:** increase distance.
4. Twist the hook path bearing (7) in such a way that it has a clearance of 7.5 mm to the right-hand side.
5. Tighten the safety screw (3) of the eccentric.
6. Tighten the screw (1).

6 Adjusting the thread trimmer

For the thread trimmer to work correctly, you must set the thread puller blade and the counter blade.

WARNING



Risk of injury from sharp and moving parts!

Crushing hazard and puncturing injuries due to moving and sharp parts.

Switch off the sewing machine before adjusting the blades.



Faults caused by an incorrect setting

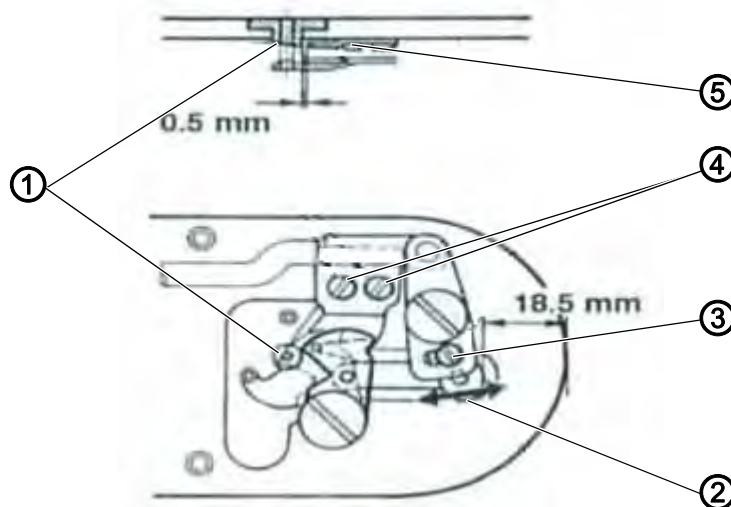
- Threads are not cut
- Threads are cut too long



Cover

- Remove the throat plate (📖 S. 17).

Fig. 20: Adjusting the blades



(1) - Needle guide

(2) - Thread trimmer lever

(3) - Screw for thread trimmer lever

(4) - Counter blade screw

(5) - Counter blade



Adjusting steps

1. Loosen the screw (3).
2. Set a distance of 18.5 mm between the front of the throat plate and the thread trimmer lever (5).
3. Tighten the screw (3).
4. Loosen the counter blade screws (4).

5. Move the counter blade and set a distance of 0.5 mm between the needle guide (1) and the counter blade (5).
6. Tighten the counter blade screws (4).

7 Adjusting the height of the fabric clamp lift

WARNING



Risk of injury from sharp and moving parts!

Crushing hazard and puncturing injuries due to moving and sharp parts.

Switch off the sewing machine before adjusting the fabric clamp lift.



The following maximum heights apply when adjusting the fabric clamp lift:

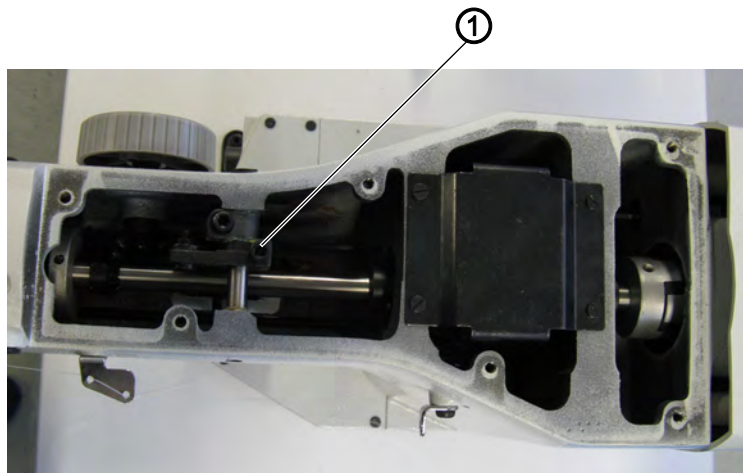
- Max. height for class 512: 15 mm
- Max. height for class 532: 13 mm



Cover

1. Remove the arm cover (📖 S. 14).

Fig. 21: Adjusting the height of the fabric clamp lift



(1) - Screw



Adjusting steps

1. Loosen the screw (1).
2. Adjust the height by turning the fabric clamp lift on the shaft. When doing this observe the values for the maximum height.
3. Tighten the screw (1).



Order

After changing the height of the fabric clamp lift always check the setting of the thread wiper as well.

Adjusting the fabric clamping feet (class 512)



Faults caused by an incorrect setting

- The two fabric clamping feet do not raise and lower synchronously.

Fig. 22: Adjusting the fabric clamping feet



(1) - Screw



Adjusting steps

1. Loosen the screws (1).
2. Align the fabric clamping feet synchronously.
3. Tighten the screws (1).

8 Adjusting the thread wiper

WARNING

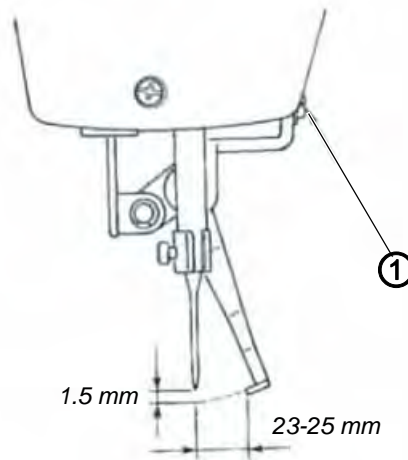


Risk of injury from sharp and moving parts!

Crushing hazard and puncturing injuries due to moving and sharp parts.

Switch off the sewing machine before adjusting the thread wiper.

Fig. 23: Adjusting the thread wiper



(1) - Screw



Adjusting steps

1. Loosen the screw (1).
2. Adjust the thread wiper. When doing this observe the minimum distance of 1.5 mm to the needle and the distance range of 23 to 25 mm when pivoting. When using a thin needle set the distance at 23 mm.
3. Tighten the screw (1).

9 Adjusting the thread regulator

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

Larger thread quantity for



- thick material
- high thread strengths
- large stitch lengths

Lower thread quantity for

- thin material
- low thread strengths
- small stitch lengths



Checking the correct setting

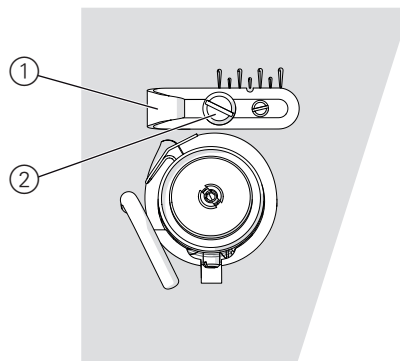
1. Open the hook flap ( S. 17) and observe the thread running around the hook:
 The needle thread loop runs without surplus and without jumping around the largest hook diameter.



Faults caused by an incorrect setting

- Poor sewing results

Fig. 24: Adjusting the thread regulator



(1) - Thread regulator

(2) - Fastening screw



Adjusting steps



1. Turn the handwheel and observe the run of the thread around the hook.
2. Loosen the fastening screw (2).
3. Move the thread regulator (1):
 - **Larger thread quantity:** Turn the regulator counterclockwise
 - **Lower thread quantity:** Turn the regulator clockwise
4. Tighten the fastening screw (2).

10 Adjusting the winder

10.1 Setting the fill volume



Correct setting

1. Wind onto an empty bobbin ( *Operating manual, Section 4.4*).
-  Winding stops automatically when the bobbin is filled to approx. 0.5 mm below the bobbin edge.

NOTICE

Property damage may occur!

When operated without sewing material the sewing feet and bobbin case in the hook can be damaged.


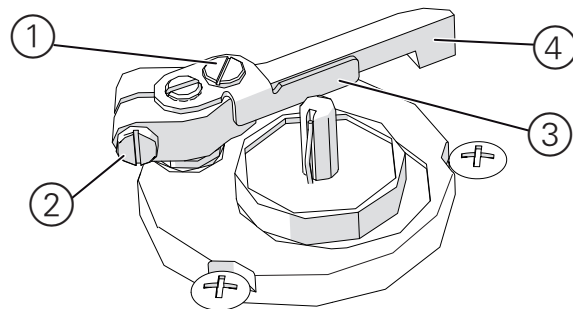
Enable the winding mode ( *Operating manual, Section 5.8 Winding*) and remove the bobbin case from the hook to perform a test winding process.

Fig. 25: Setting the winder fill volume



(1) - Adjusting screw
(2) - Clamping screw

(3) - Thread guide plate
(4) - Actuating lever



Adjusting steps

Rough adjustment

1. Loosen the clamping screw (2).
2. Align the actuating lever (4):
 - **Smaller fill quantity:** Push towards bobbin.
 - **Larger fill quantity:** Push away from bobbin.
3. Tighten the clamping screw (2).

Fine adjustment

4. Loosen the adjusting screw (1).

5. Move the thread guide plate (3):
 - **Smaller fill quantity:** Push towards bobbin.
 - **Larger fill quantity:** Push away from bobbin.
6. Tighten the adjusting screw (1).

10.2 Adjusting the winding tension



Correct setting

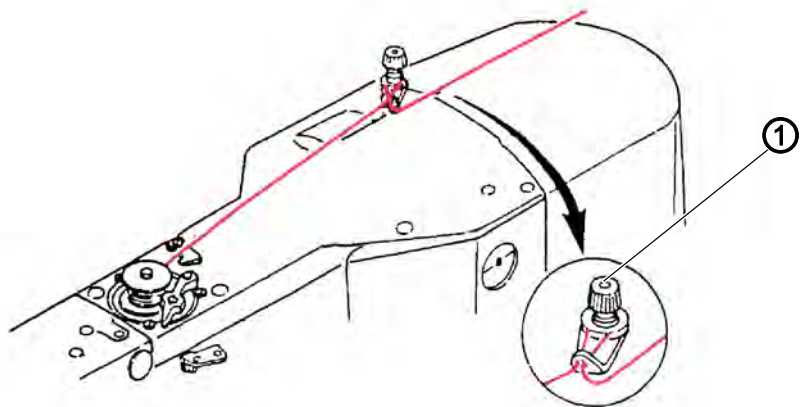
The correct winding tension depends on the anti-friction properties and thickness of the thread.



Faults caused by an incorrect setting

- Wrinkled seams
- Poor sewing results

Fig. 26: Adjusting the winding tension



(1) - Adjusting knob




Adjusting steps

1. Turn the adjusting knob (2):
 - **Greater tension:** Turn clockwise
 - **Less tension:** Turn counterclockwise

11 Programming

This chapter describes service settings such as

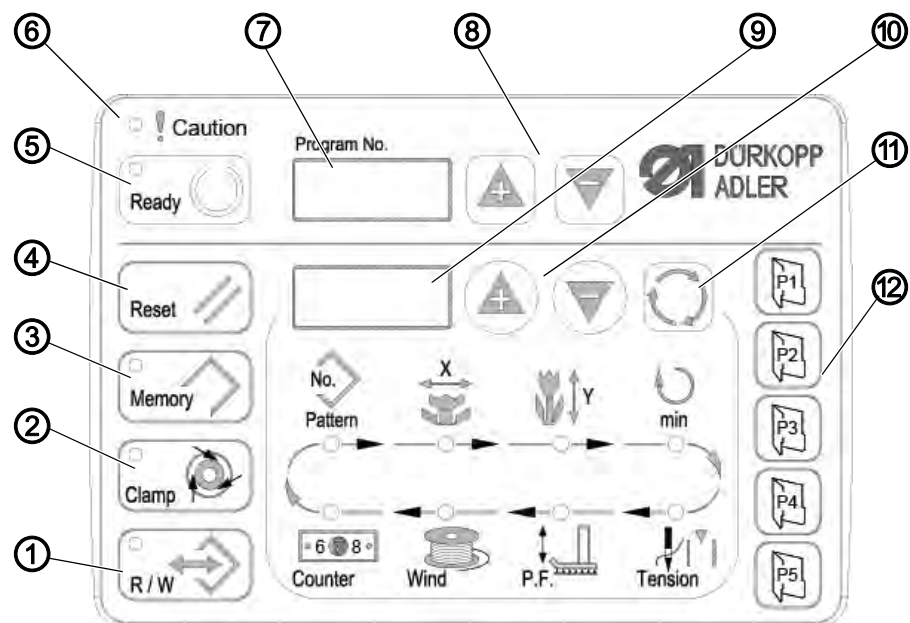
- The basic configuration of the machine
- Test functions for individual elements of the machine
- Calibration functions
- Presets for programs and functions

Information regarding changes to the stitch length, thread tension, curve support, etc. as well as instructions for accessing and creating sewing programs can be found in the operating manual ( *Operating manual, Section 5 Settings via software*).

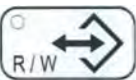

11.1 Basic software operation





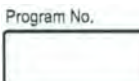





The software is controlled via the control panel.

Fig. 27: Control panel



Control panel buttons:

Button / LED	Pos.	Function
	(1)	USB button with LED Saves/loads a sewing pattern to/from a USB stick.
	(2)	Needle thread clamp button with LED Fixes needle thread during the first stitch. LED on = needle thread clamp on LED off = needle thread clamp off

Button / LED	Pos.	Function
	(3)	Memory button Processes the memory functions.
	(4)	Reset button Deletes an error and restores settings.
	(5)	Ready button with LED Change between programming and sewing mode. LED on = sewing mode LED off = programming mode
	(6)	Error LED LED on = error
	(7)	Program display Displays parameters.
	(8)	+/- Program buttons Changes parameters and navigates forwards/backwards.
	(9)	Function display Displays values of selected functions/programmes.
	(10)	+/- Function buttons Changes values of functions/programmes.
	(11)	Selection button Selects various functions. The corresponding function LED illuminates.
	(12)	Sewing pattern memory buttons Saves sewing patterns.

11.2 Accessing the technician level

All of the settings in the service area are performed at the technician level.

11.2.1 Editing parameters in level 1

Prerequisite:

- The machine is in the programming mode, the LED in the **Ready** button is off.
1. Press and hold the **Memory** button for 3 seconds.
 - ↳ The controller beeps 1x; the LED in the button illuminates.
The **Program** display shows the parameter numbers; the **Function** display shows the parameter values.
 2. Press the **+/- Program** buttons to select other parameters.

3. Press the **Ready** button to confirm the parameter.
↳ The LED in the button illuminates.
4. Press the **+/- Function** buttons to change values.
5. Press the **Reset** button to reset a changed value.
6. Press the **Ready** button to save a change.
↳ The LED in the button switches off.
7. Press the **Memory** button.
↳ The LED in the button switches off.

11.2.2 Editing parameters in level 2

Prerequisite:

- The machine is in the programming mode, the LED in the **Ready** button is off.

1. Press and hold the **Memory** button for 6 seconds.
↳ The controller beeps 2x; the LED in the button illuminates.
The **Program** display shows the parameter numbers; the **Function** display shows the values.
2. Press the **+/- Program** buttons to select other parameters.
3. Press the **Ready** button to confirm the parameter.
↳ The LED in the button illuminates.
4. Press the **+/- Function** buttons to change values.
5. Press the **Reset** button to reset a changed value.
6. Press the **Ready** button to save a change.
↳ The LED in the button switches off.
7. Press the **Memory** button.
↳ The LED in the button switches off.

11.3 Setting the blade position

Prerequisite:

- The machine is in the programming mode, the LED in the **Ready** button is off.

1. Press and hold the **Memory** button for 6 seconds.
↳ The controller beeps 2x; the LED in the button illuminates.
The **Program** display shows the parameter numbers; the **Function** display shows the values.
2. Press the **+/- Program** buttons and select parameter U099.

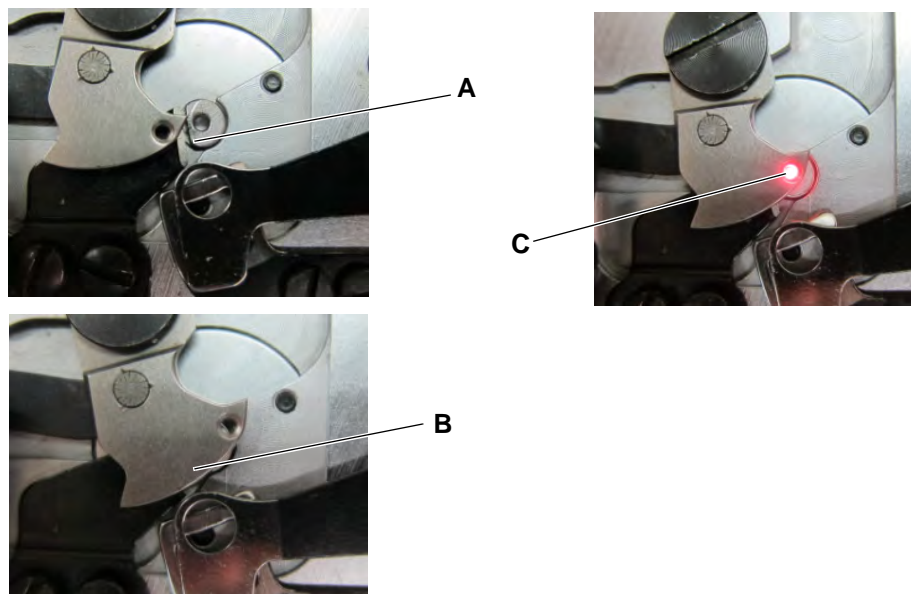
3. Press the **Ready** button to confirm the parameter.
 - ↳ The LED in the button illuminates. The **Program** display shows "°°20".
4. Press button **P1**.
 - ↳ The thread trimmer sensor disk travels to position.

Fig. 28: Setting the blade position



5. Check to see if the hole of the thread puller blade and the needle guide of the throat plate are aligned:

Fig. 29: Checking the hole of the thread puller blade



- **Case A:** The setting is wrong; the thread puller blade overlaps the counter blade:
Adjust blade sensor upwards.
 - **Case B:** The setting is wrong; the thread puller blade overlaps the needle guide:
Adjust blade sensor downwards.
 - **Case C:** The setting is correct.
6. Press button **P1**.
 - ↳ The thread trimmer sensor disk travels to position again.

7. Check once again to see if the hole of the thread puller blade and the needle guide of the throat plate are accurately aligned.
8. Press the **Ready** button to save the change.
 - ↳ The LED in the button switches off.
9. Press the **Memory** button.
 - ↳ The LED in the button switches off.

11.4 Loading software via a USB stick

NOTICE

Property damage may occur!

Damage to the machine as a result of interrupting the copying process.

Never remove the USB stick during the copying process.

Only remove the USB stick after observing the specified time period.

If a new version of the software becomes available, it can be downloaded from www.duerkopp-adler.com and loaded onto a USB stick.



Important

The following files must be saved to the USB stick:

- FUYSTS.BT
- LEEYSTS.BT1
- BT1mot
- BT1PAT

11.4.1 Loading the main program



1. Switch on the controller.
 2. Insert the USB stick.
 3. Press the **USB** button and wait approx. 3 seconds.
 4. Press the **Memory** button.
 5. Press the **+/- Function** buttons to set value 5 in the **Function** display.
 6. Press the **Selection** button.
- ↳ The process for downloading to the controller starts.



Important

If a value is no longer shown in the **Function** display, the download process is complete. Now wait at least **25 seconds**, otherwise it could corrupt the controller!

7. Switch off the controller.
8. Remove the USB stick.

11.4.2 Loading sewing patterns



1. Switch on the controller.
- ↳ The current software version is briefly displayed.
2. Insert the USB stick.
 3. Press the **USB** button and wait approx. 3 seconds.

4. Press the **Memory** button.
5. Press the **P5** button.
- ↳ The process for downloading to the controller starts. This will take approx. 4 minutes.
6. Press the **Reset** button.
7. Remove the USB stick.
- ↳ The software transfer is complete.

11.4.3 Setting parameter U085 (class 532)

After installing new software, parameter U085 must be set for the button sewing machine.

Prerequisite:

- The machine is in the programming mode, the LED in the **Ready** button is off.

1. Press and hold the **Memory** button for 6 seconds.
- ↳ The LED in the button illuminates.
2. Select parameter number U085 by using the **+/- Program** buttons.
3. Press the **Ready** button.
4. Enter the function value 1 by using the **+/- Function** buttons.
5. Press the **Selection** button.

11.4.4 Checking the software version

1. Press and hold the **Memory** button for 6 seconds.
- ↳ The controller beeps 2x; the LED in the button illuminates.
2. Press the **+/- Program** buttons and select parameter **U097**.
3. Press the **Ready** button.
- ↳ The current software versions are displayed:
 - M X.XX = Main program
 - P X.XX = Control panel
 - T X.XX = Servo motors
 - A X.XX = Sewing patterns
4. Press the **+/- Function** buttons and check the respective software version.
5. Press the **Ready** button.
6. Press the **Memory** button.
- ↳ The LED in the button switches off.

12 Maintenance

WARNING



Risk of injury from sharp parts!

Punctures and cutting possible.

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

WARNING



Risk of injury from moving parts!

Crushing possible.

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

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

Work to be carried out	Operating hours			
	8	40	160	1000
Removing lint and thread remnants	•			
Clearing the fan screen at the control box	•			
Refilling oil	•			
Lubricating the sewing automat				•

12.1 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

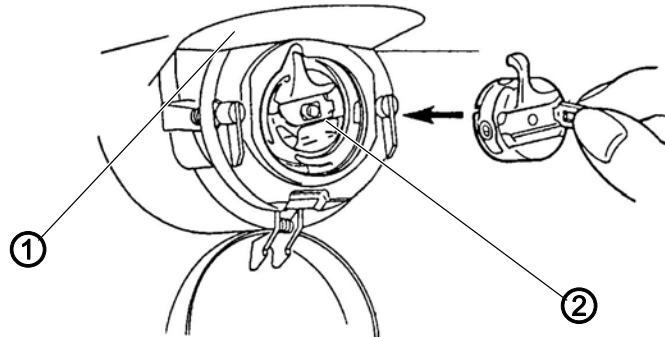
Property damage from solvent-based cleaners!

Solvent-based cleaners will damage paintwork.

Use only solvent-free substances for cleaning.

Lint and thread remnants should be removed after every 8 hours of operation using a compressed air gun or a brush. When sewing very fluffy material, the machine should be cleaned more frequently.

A clean sewing machine provides protection from faults.

Points that need to be cleaned particularly thoroughly:*Fig. 30: Cleaning and checking*

(1) - Underside of throat plate

(2) - Hook

- Area under the throat plate (1)
- Area around the hook (2)
- Bobbin housing and interior
- Thread cutter
- Area around the needle

12.2 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:

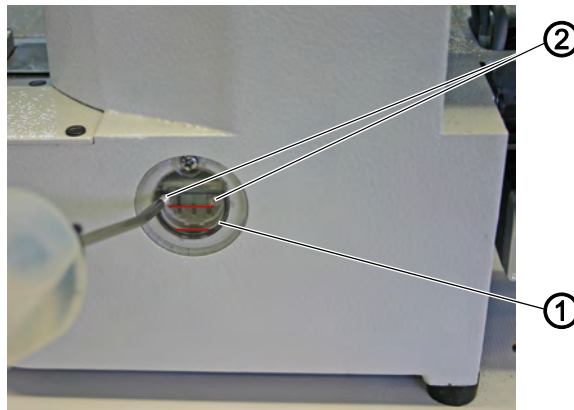
Container	Part no.
250 ml	9047 000011
1 l	9047 000012
2 l	9047 000013
5 l	9047 000014

12.2.1 Checking the oil level

Checking the oil level of the hook

The sewing automat is equipped with a oil-wick lubrication system. The hook is supplied from the oil reservoir (1).

Fig. 31: Checking the oil level of the hook



(1) - Oil reservoir

(2) - Oil filler opening

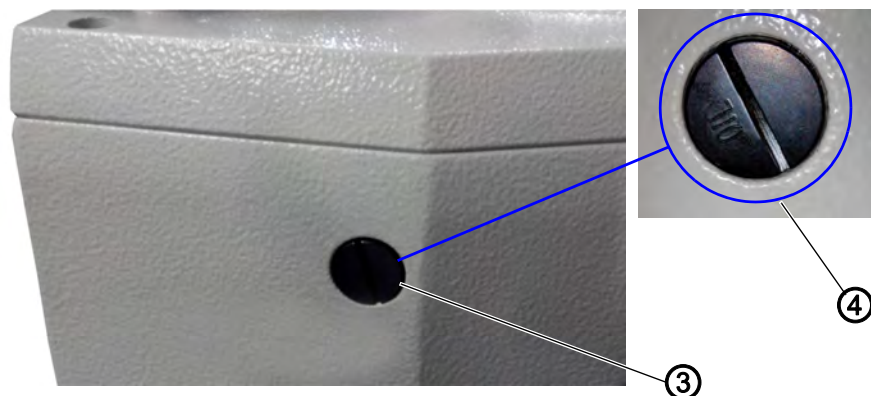


The oil level in the oil reservoir (1) must not drop below the lower red marking or be above the upper red marking.

1. Fill oil through the oil filler opening (2) up to the upper red marking.

Checking the oil level of the gear

Fig. 32: Checking the oil level of the gear (1)



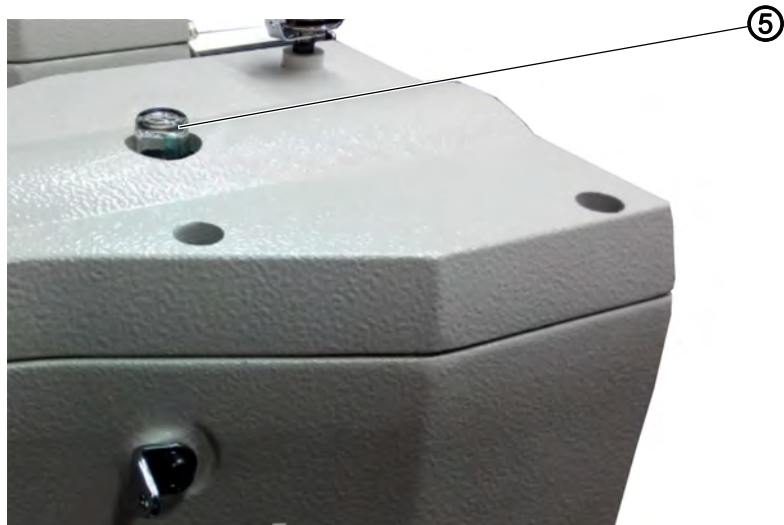
(3) - Oil filler opening

(4) - Screw



1. Unscrew the screw (4) from the oil filler opening at the back of the machine.
 2. Fill oil through the oil filler opening (3).
- ⚠ For lubricating the gear maximum 110 ml are necessary.

Fig. 33: Checking the oil level of the gear (2)



(5) - Oil gauge glass

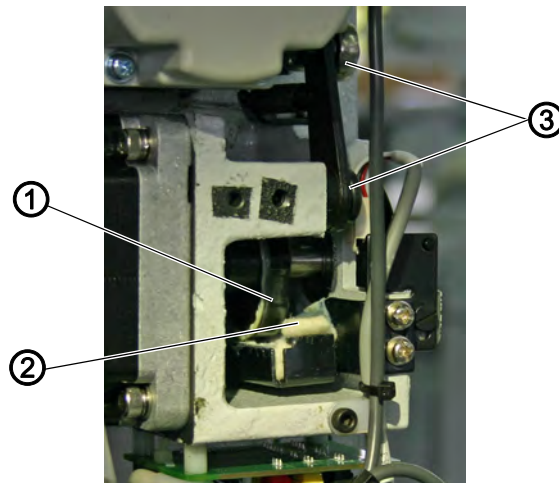
✎ When oil splashes at the oil gauge glass during operation enough oil is filled in.

12.2.2 Lubricating with grease

Allowing the machine to operate at peak efficiency requires that its moving parts be lubricated sufficiently.

Lubrication points on the rear of the machine

Abb. 34: Lubrication points on the rear of the machine (1)



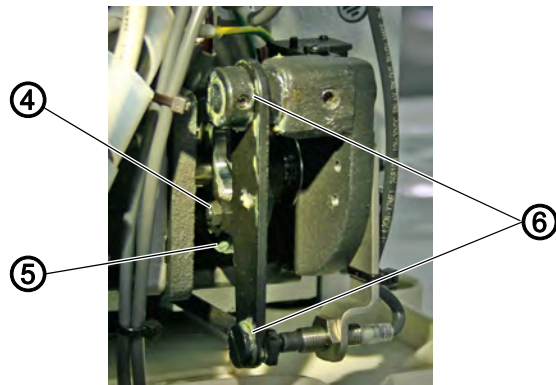
(1) - Cam disk
(2) - Fleece

(3) - Joints



1. Apply an adequate amount of grease to the fleece (2) to lubricate the outer side of the cam disk (1).
2. Apply a small amount of grease to the joints (3) to ensure they remain flexible.

Abb. 35: Lubrication points on the rear of the machine (2)



(4) - Roller

(5) - Guide groove

(6) - Joints

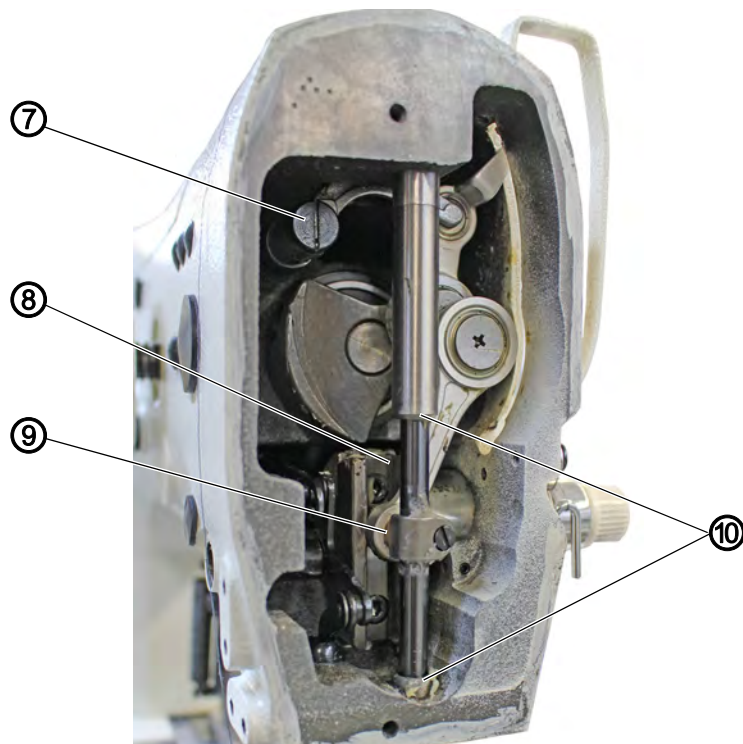


3. Apply a small amount of grease to the inner guide groove (5) and the roller (4) from the outside.

4. Apply a small amount of grease to the joints (6).

Lubrication points on the machine head

Abb. 36: Lubrication points on the machine head



(7) - Thread lever guide

(8) - Groove

(9) - Cross head backside

(10) - Connectors



1. Apply grease to cross head backside (9) and the connectors (10).

2. Lubricate the groove (8).

3. Lubricate the thread lever guide (7).

12.3 Adjusting the lubrication for the hook

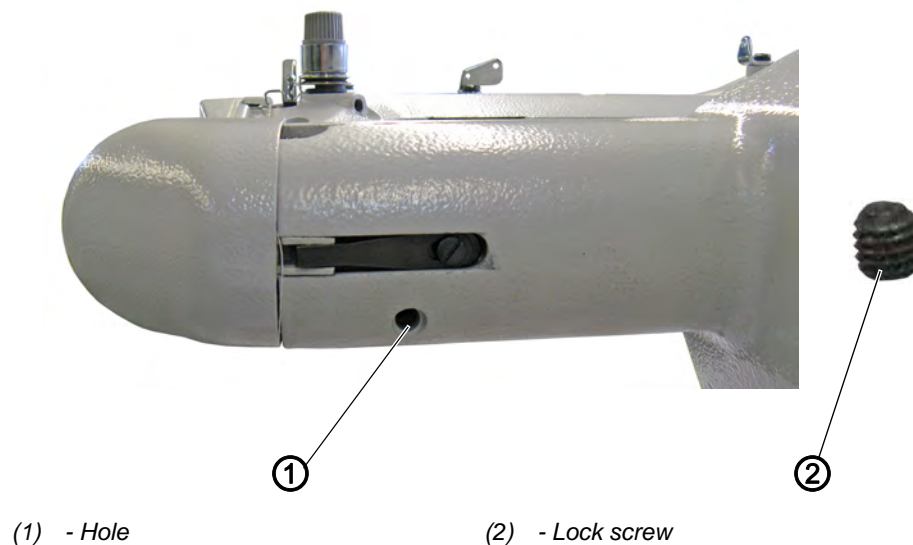
NOTICE

Property damage may occur!

Damage to the oil wick when the screw is too tight.

Turn the lubricating screw maximum ½ turn.

Fig. 37: Adjusting the lubrication for the hook



To adjust the lubrication for the hook:

1. Tilt the machine head.
2. Loosen and remove the lock screw (2).
- ↳ The lubricating screw is located underneath the screw. The lubricating screw presses against the oil wick of the hook lubricator.
3. Adjusting the lubricating screw:
 - **Increasing the lubrication:** turn the lubricating screw counterclockwise
 - **Reducing the lubrication:** turn the lubricating screw clockwise



Important

Turn the lubricating screw **maximum ½ turn** clockwise or counterclockwise.

4. Insert and tighten the lock screw (2).

13 Decommissioning

WARNING



Risk of injury from a lack of care!

Serious injuries may occur.

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

CAUTION



Risk of injury from contact with oil!

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

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



To decommission the machine:

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

14 Disposal

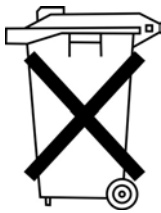
CAUTION



Risk of environmental damage from improper disposal!

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

ALWAYS comply with the national regulations regarding disposal.



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

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

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

15 Troubleshooting

15.1 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.com



15.2 Messages of the software

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

Error					Meaning	Possible cause	Remedial measures Process in the order specified!
E				8	Error table data	Unable to read the table data	<ul style="list-style-type: none"> Save the table data again.
E			1	0	Error sewing pattern number	The selected sewing pattern is not saved in ROM or is set to non-readable. The sewing pattern is "0"	<ul style="list-style-type: none"> Press the Reset button to confirm the sewing pattern number.
E			3	0	Error needle bar position top	The needle bar is not at the top position	<ul style="list-style-type: none"> Check the connections. Turn the needle bar to the top dead center position.
E			4	0	Error sewing field	Sewing field exceeded	<ul style="list-style-type: none"> Press the Reset button. Check X/Y scaling.
E			4	2	Error scaling	Sewing length is below 10 mm	<ul style="list-style-type: none"> Press the Reset button. Check sewing pattern and X/Y scaling.
E			4	5	Error sewing pattern data	Sewing pattern data cannot be applied	<ul style="list-style-type: none"> Press the Reset button. Check ROM.
E			5	0	Pause	Reset button pressed while sewing. Sewing machine stopped.	<ul style="list-style-type: none"> Press the Reset button. Actuate the thread trimmer. Restart the sewing process.
E		3	0	2	Error machine head	Machine head has moved.	<ul style="list-style-type: none"> Fold back machine head.

Error					Meaning	Possible cause	Remedial measures Process in the order specified!
E		3	0	5	Error thread trimmer position	Thread trimmer blade not at home position	<ul style="list-style-type: none"> • Set main switch to OFF. • Check sensor.
E		3	0	6	Error thread catcher position	Thread catcher not at home position	<ul style="list-style-type: none"> • Set main switch to OFF. • Check sensor.
E		3	3	2	Error clamp foot position	Clamp foot not at home position	<ul style="list-style-type: none"> • Set main switch to OFF. • Check sensor.
E		5	0	1	Data read error	Data not available or in the wrong format	<ul style="list-style-type: none"> • Save the data to a USB stick again.
E		5	0	2	USB read error	MOT file error	<ul style="list-style-type: none"> • Save the data to a USB stick again.
E		5	0	3	SUM read error	CHECKSUM data error in MOT file	<ul style="list-style-type: none"> • Save the CHECKSUM file to a USB stick again.
E		5	0	4	End block error	No end block in the MOT file	<ul style="list-style-type: none"> • Save the end block file to a USB stick again.
E		5	0	5	USB read error	USB stick not found	<ul style="list-style-type: none"> • Set main switch to OFF. • Set main switch to ON. • Reinsert USB stick.
E		5	0	6	USB read error	Unable to read U01 ~ U10.	<ul style="list-style-type: none"> • Set main switch to OFF. • Set main switch to ON. • Reinsert USB stick.
E		5	0	7	Read error own sewing patterns	U01 ~ U10 read error	<ul style="list-style-type: none"> • Download the data again.
E		5	0	8	File error own sewing patterns	U01 ~ U10 read error	<ul style="list-style-type: none"> • Check file type.
E		5	0	9	File error own sewing patterns	U01 ~ U10 read error	<ul style="list-style-type: none"> • Check file type.
E		5	1	0	File error own sewing patterns	U01 ~ U10 read error	<ul style="list-style-type: none"> • Check file type. • Save data to USB again.
E		5	1	1	USB write error	File with the same name already exists	<ul style="list-style-type: none"> • Delete or rename file.
E		5	1	2	USB read error	Data cannot be loaded from USB stick	<ul style="list-style-type: none"> • Check USB stick. • Reinsert USB stick.
E		5	1	3	USB write error	Data cannot be copied to USB stick.	<ul style="list-style-type: none"> • Check USB stick. • Reinsert USB stick.
E		5	5	0	Data write error	Flash memory transfer error	<ul style="list-style-type: none"> • Set main switch to OFF. • Repeat process. • Replace the mainboard.
E		5	5	1	Internal process error	Softwar error	<ul style="list-style-type: none"> • Set main switch to OFF. • Repeat process. • Replace the mainboard. • Update software.
E		7	0	7	Motor signal error	Encoder / motor has no signal	<ul style="list-style-type: none"> • Check motor / encoder.
E		7	3	6	Motor rotation error	Motor stops / encoder has no signal	<ul style="list-style-type: none"> • Check motor / encoder.

Error					Meaning	Possible cause	Remedial measures Process in the order specified!
E		7	3	7	Error Z phase	Z signal no longer changes	• Check motor / encoder.
E		7	3	8	Error Z phase	Z signal inaccurate / encoder has no signal	• Check motor / encoder.
E		9	0	7	Error search X-axis	X-axis sensor does not respond	• Set main switch to OFF. • Check sensor.
E		9	0	8	Error search Y-axis	Y-axis sensor does not respond	• Set main switch to OFF. • Check sensor.
E		9	1	0	Error clamp foot search	Clamp foot sensor does not respond	• Set main switch to OFF. • Check sensor.
E		9	1	1	Error clamp foot motor	Clamp foot motor does not operate correctly	• Set main switch to OFF. • Check motor and connection.
E		9	1	2	Internal error	-	• Notify DA Service
E		9	1	3	Error thread catcher search	Thread catcher sensor does not respond	• Set main switch to OFF. • Check sensor.
E		9	1	4	Error thread catcher motor	Thread catcher motor does not operate correctly	• Set main switch to OFF. • Check motor and connection.

15.3 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

16 Appendix

Wiring diagram

Fig. 38: Wiring diagram (1)

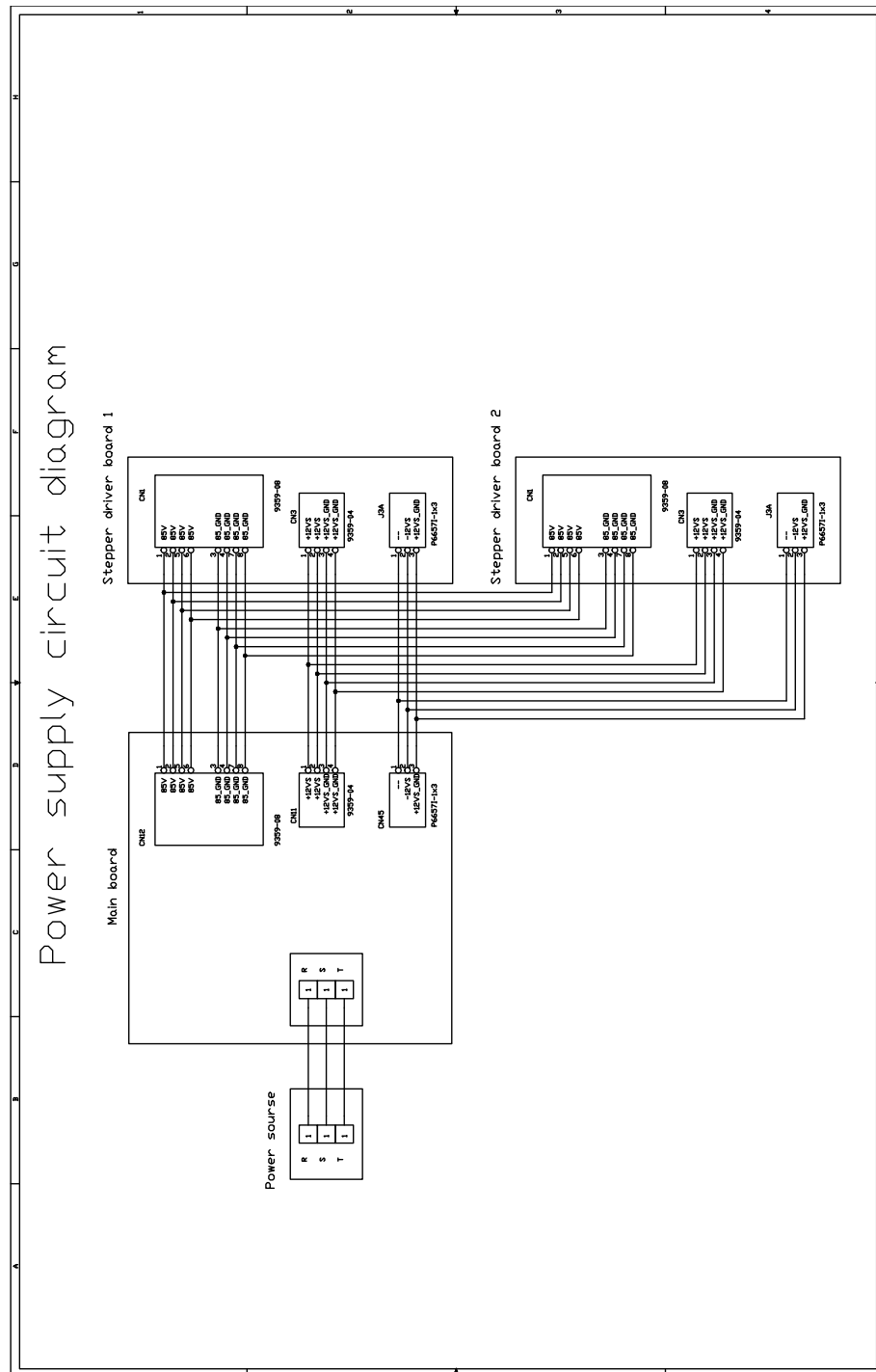


Fig. 39: Wiring diagram (2)

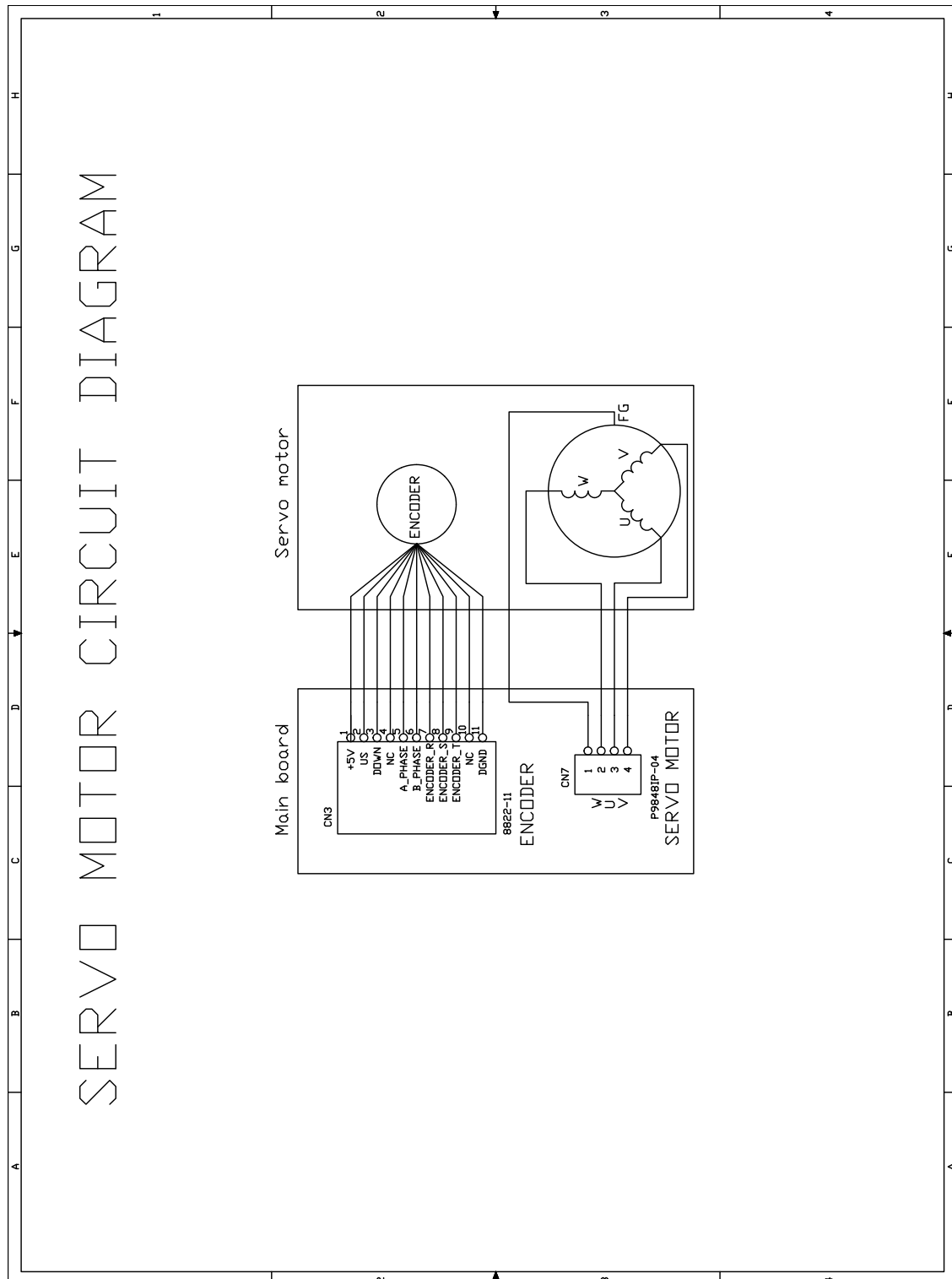


Fig. 40: Wiring diagram (3)

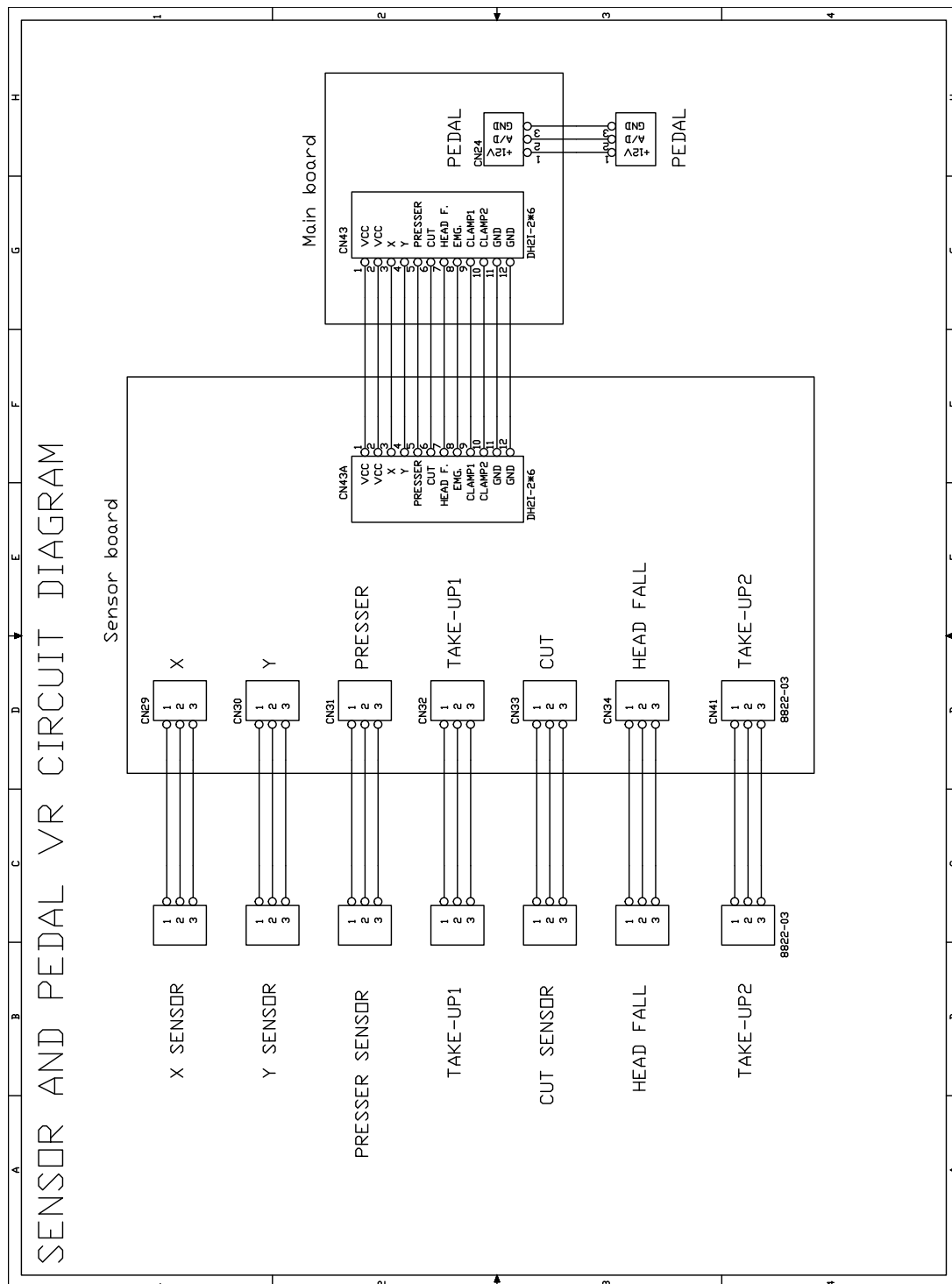


Fig. 41: Wiring diagram (4)

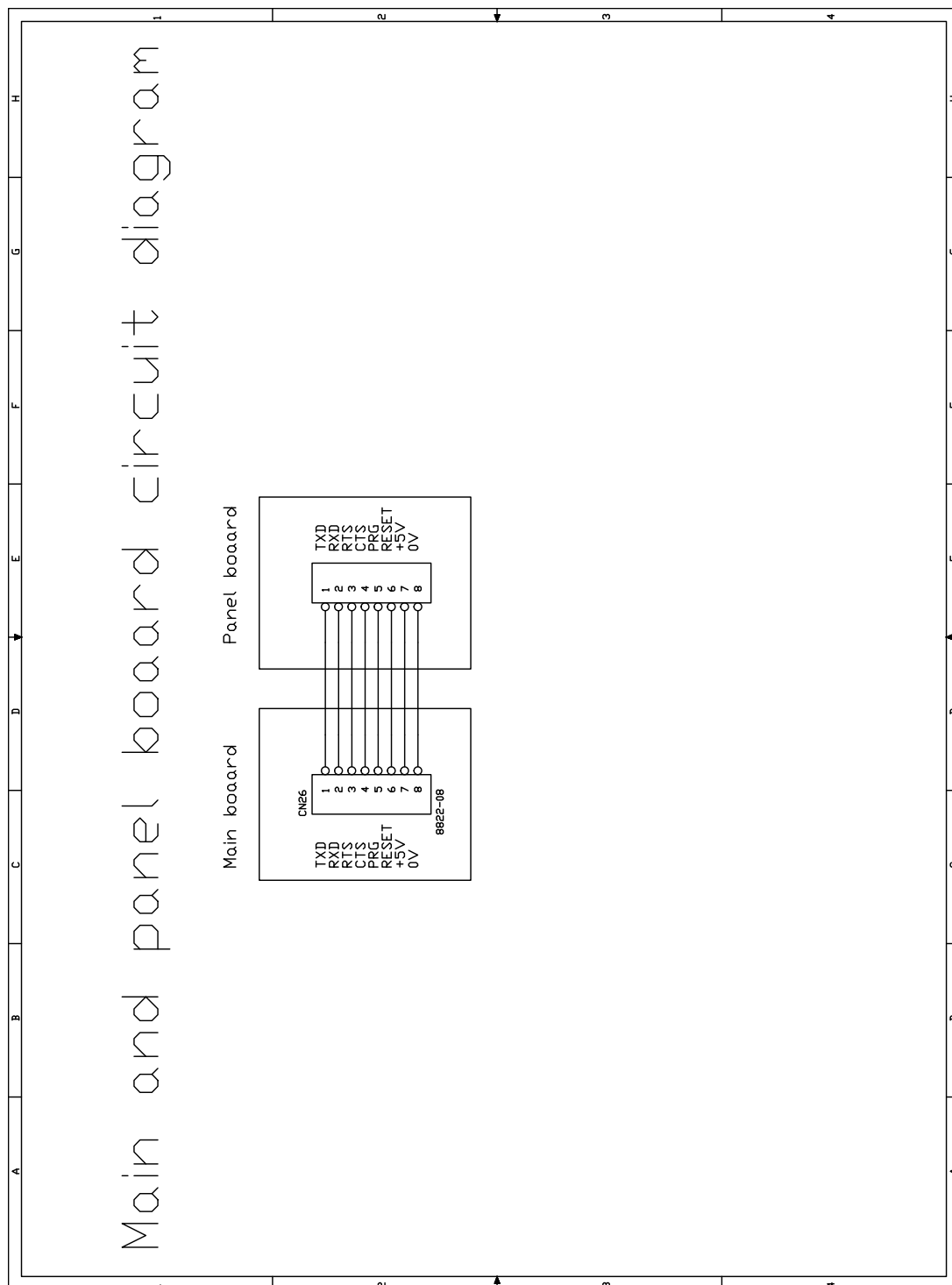
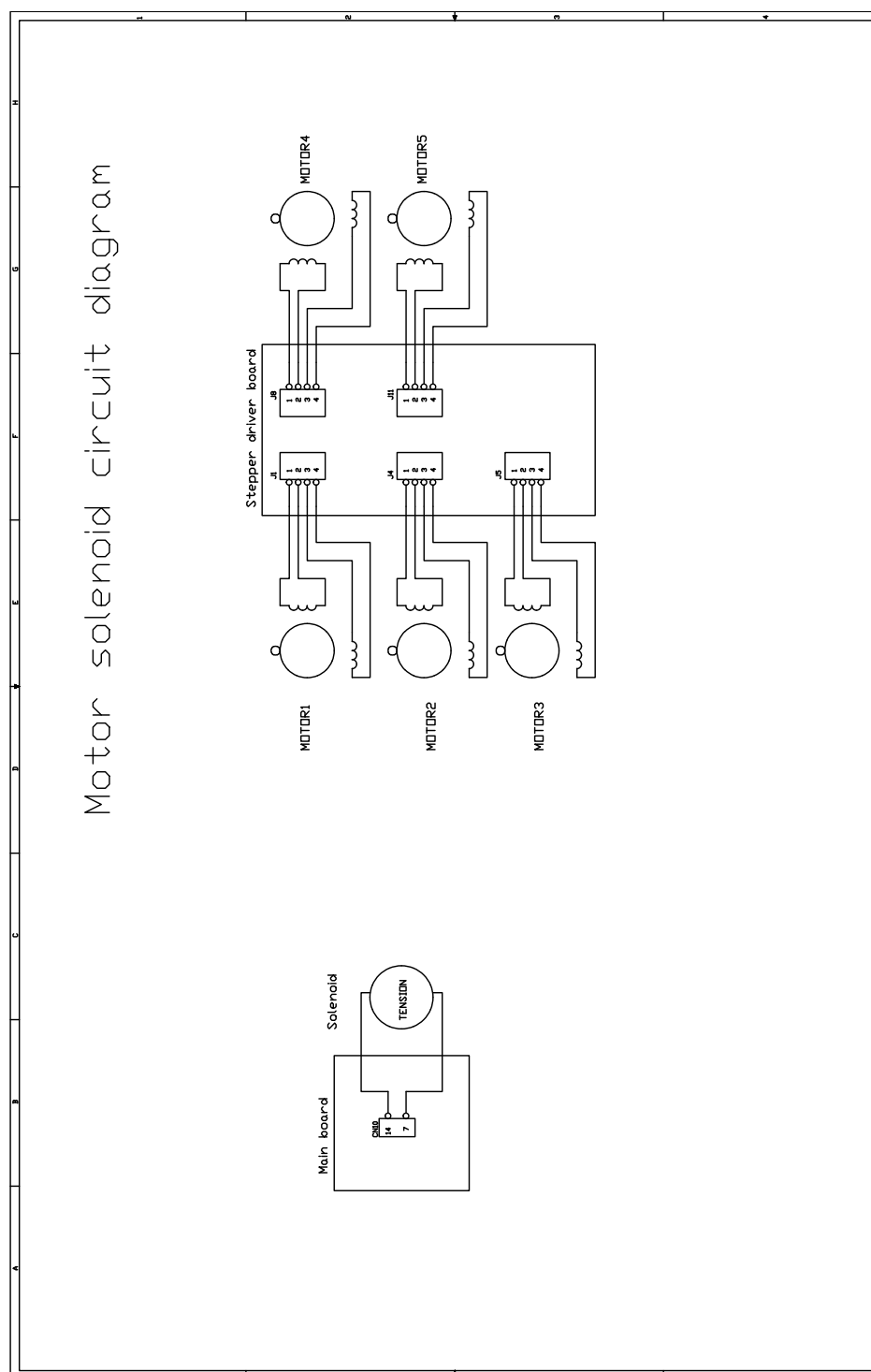


Fig. 42: Wiring diagram (5)



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

