DÜRKOPP ADLER

512/532

Service Instructions

1 About this service manual

This manual for the 512/532 sewing machines has been compiled with the utmost care. It contains information and notes in order to make long-term and reliable operation possible.

1.1 Scope of the service manual

This manual describes the setting and maintenance work for sewing machines 512/532. It applies to all submodels.
The intended use and set-up is described in the 🕮 *operating manual*.

1.2 Representation conventions – symbols and characters

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

Correct setting
Indicates proper setting.

Malfunctions
Specifies the faults that can occur due to an incorrect setting.

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

Steps to be performed for servicing, maintenance, and installation

Steps to be performed via the software control panel

The individual steps are numbered:

1. 1. First step
2. 2. Second step
... The sequence of the steps must always be followed.

- Lists are identified by bullet points.

Result of performing an operation
Change to the machine or in the display.

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

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

Observe order
Specifies the work to be performed before or after a setting.

References

Reference to another section in the manual.

Safety Important warnings for the machine operator are specially designated. Since safety is of particular importance, hazard symbols, levels of danger and their signal words are described separately in 🕮 *3 Safety information*.

Orientation If the figure is unclear, indications of "right" and "left" are always from the operator's point of view.

1.3 Other documents

This equipment 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 these components is described in each manufacturer's manual.

1.4 Liability

All information in this operating manual was compiled with consideration to the state of the art, and applicable standards and regulations.

The manufacturer cannot be held liable for damages resulting from:

- Breakage and transport damages
- Failure to observe operating manual
- Improper use
- Unauthorized modifications to the machine
- Use of untrained personnel
- Use of unapproved replacement parts

2 Safety information

This section contains basic information for your safety.
Read the information carefully before setting up, programming, maintaining or operating the machine.

Make sure to follow the information included in this section. Failure to do so can result in serious injury and damage to the machine.

2.1 Basic safety instructions

Only authorized personnel should use the machine. Anyone working on the machine should read the operating manual first.

The machine should only be used in accordance with the manual.

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

Observe the generally applicable safety and accident prevention regulations and the legal regulations concerning industrial safety and environmental protection.

If you are using parts from other suppliers, please also observe the safety instructions and the operating manual provided by the respective manufacturer.

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

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

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

Check the machine during use for any externally visible damage. Stop working as soon as you notice any changes to the machine. Report any changes to your supervisor. A damaged machine should no longer be used.

Machines or machine parts that have reached the end of their service life must not continue to be used. They have to be disposed of correctly and in accordance with the applicable statutory provisions.

Only qualified specialists may set up the machine. Anyone setting up the machine must have read the set-up instructions first.

Only qualified specialists may perform maintenance work and repairs. Anyone maintaining or adjusting the machine must have read the service manual first.

Safety equipment should not be removed or deactivated. If this cannot be avoided for a repair operation or service setting, the safety equipment must be refitted and put back into service immediately afterwards.

Only qualified electrical specialists may perform work on electrical equipment.

The power cable must have a plug authorized for the country in which the machine is being used. The power plug may only be connected to the power cable by a qualified specialist.

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

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

2.2 Signal words and symbols used in warnings

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

Signal words

Signal words and the endangerment that they describe:

Signal word	Endangerment
DANGER	Will result in serious injury or death.
WARNING	Can result in serious injury or death.
CAUTION	Can result in minor or moderate injury.
ATTENTION	Can result in property damage.

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

Symbol	Type of danger
	General risk
	Risk of electric shock
	Risk of puncturing
	Risk of crushing

Examples Examples of the layout of the warnings in the text:

DANGER

Type and source of risk

Consequences of non-observance

Measures for avoiding the risk

This is what a warning looks like for a hazard that will result in serious injury or even death if not complied with.

WARNING

Type and source of risk

Consequences of non-observance

Measures for avoiding the risk

This is what a warning looks like for a hazard that could result in serious injury or even death if not complied with.

CAUTION

Type and source of risk

Consequences of non-observance

Measures for avoiding the risk

This is what a warning looks like for a hazard that could result in moderate or minor injury if the warning is not complied with.

CAUTION

Type and source of risk

Measures for avoiding the risk

This is what a warning looks like for a hazard that could result in environmental damage if not complied with.

ATTENTION

Type and source of risk

Measures for avoiding the risk

This is what a warning looks like for a hazard that could result in material damage if not complied with.

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.

ATTENTION

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.

ATTENTION

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

WARNING

Risk of injury!

Crushing injuries from moving parts.

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

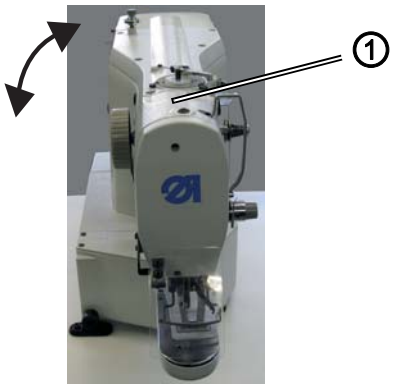
In many types of setting work, you will have to remove the machine covers first in order to access the components.

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.

Figure 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

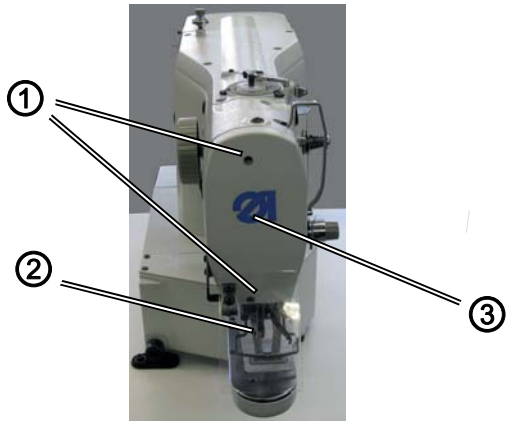
↳ Tilt the machine upper section (1) to the left as far as possible.

Setting the machine upper section upright

↳ Set the upper machine section (1) upright.

3.3.2 Removing and fitting the head cover

Figure 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

Figure 3: Removing and fitting the arm cover

(1) - Screw
(2) - Arm cover

Removing the arm cover

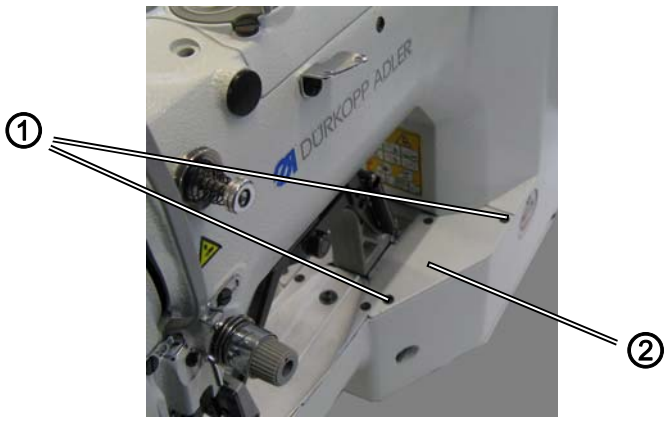
1. Loosen all 6 screws (1).
2. Remove the arm cover (2).

Fitting the arm cover

1. Fit the arm cover (2).
2. Tighten all 6 screws (1) firmly in place.

3.3.4 Removing and fitting the right-hand side cover

Figure 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

Figure 5: Removing and fitting the left-hand side cover

(1) - Screw *(2) - Left-hand side cover*

Removing the left-hand side cover

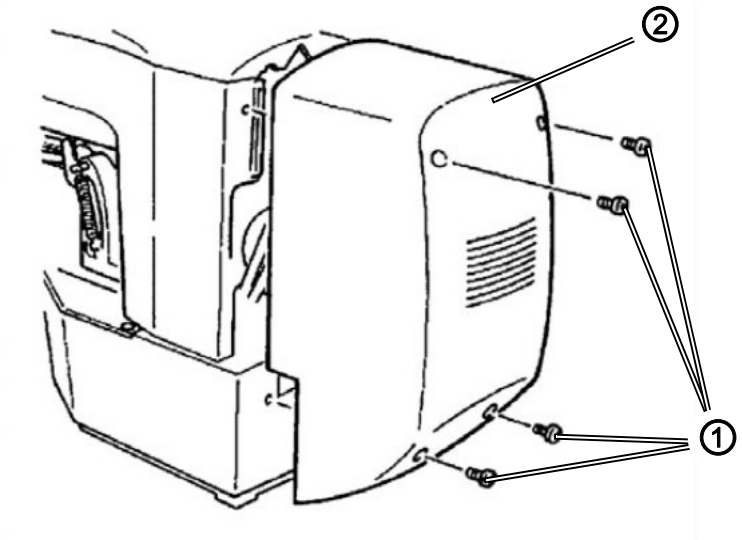
1. Loosen all 3 screws (1).
2. Remove the left-hand side cover (2).

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

Figure 6: Removing and fitting the rear cover



(1) - Screw *(2) - Rear cover*

Removing the rear cover

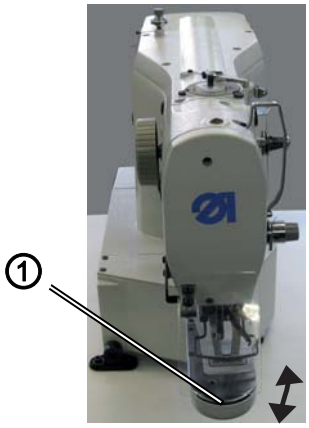
1. Loosen all 4 screws (1) on the rear cover (2).
2. Remove the rear cover (2).

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

Figure 7: Opening and closing the hook flap



(1) - Hook flap

Opening the hook flap

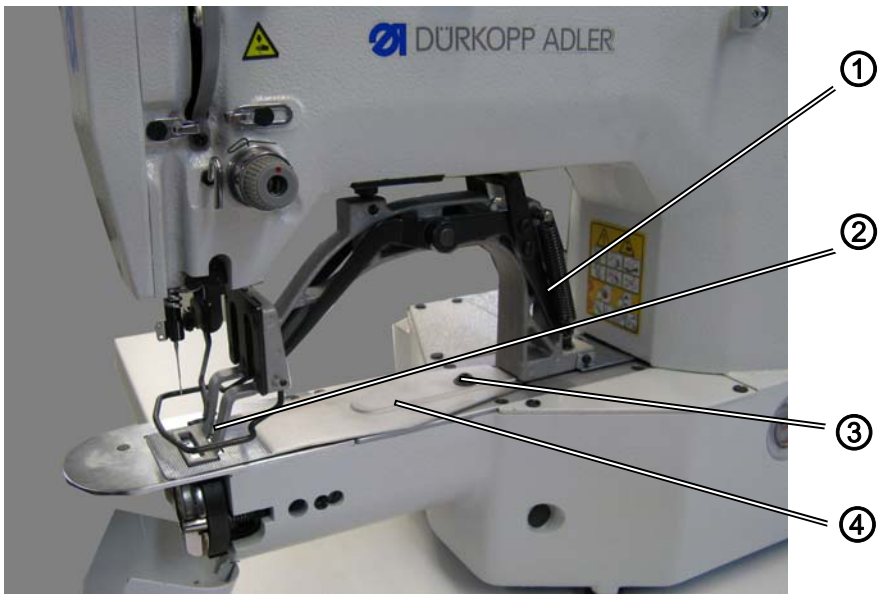
↳ Fold down the hook flap (1).

Closing the hook flap

↳ Fold up the hook flap (1).

3.3.8 Removing and inserting the throat plate

Figure 8: Removing and inserting the throat plate I

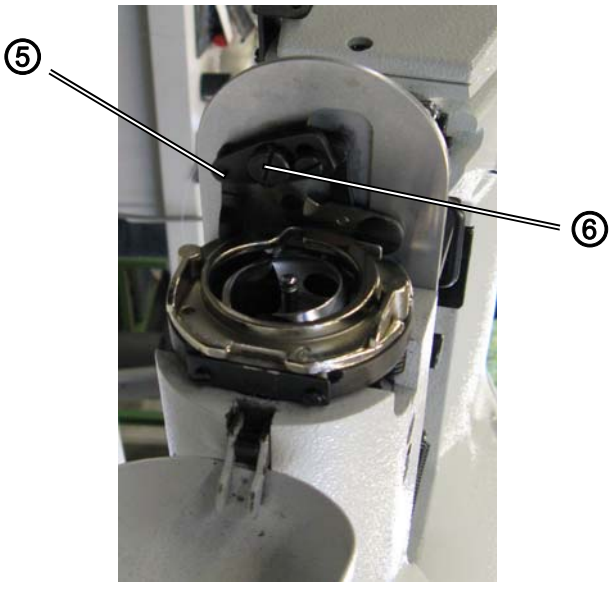


(1) - Springs of the fabric clamp
(2) - Clamp feet
(3) - Screw
(4) - Work surface

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).

Figure 9: Removing and inserting the throat plate II



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

5. Open the hook flap (Section *3.3.7*, page 14).
6. Loosen the screw (6).
7. Unhinge the thread puller blade connecting rod (5).

Figure 10: Removing and inserting the throat plate III

(7) - Throat plate *(8) - Screw*

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

Inserting the throat plate

Figure 11: Removing and inserting the throat plate IV

(9) - Connecting rod pin for needle thread clamp

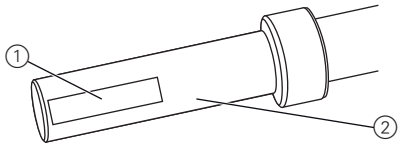
1. Insert the throat plate (7) from above. When doing this make sure that the hole in the needle thread clamp, which is located underneath the throat plate, and the connecting rod pin of the needle thread clamp (9) are mounted.
2. Mount the thread puller blade connecting rod (5) and make sure that the 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 (📖 Section *3.3.7*, page 14).
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

Screw onto the surface

Figure 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!

Crushing injuries from moving parts.

Switch off the sewing machine 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.

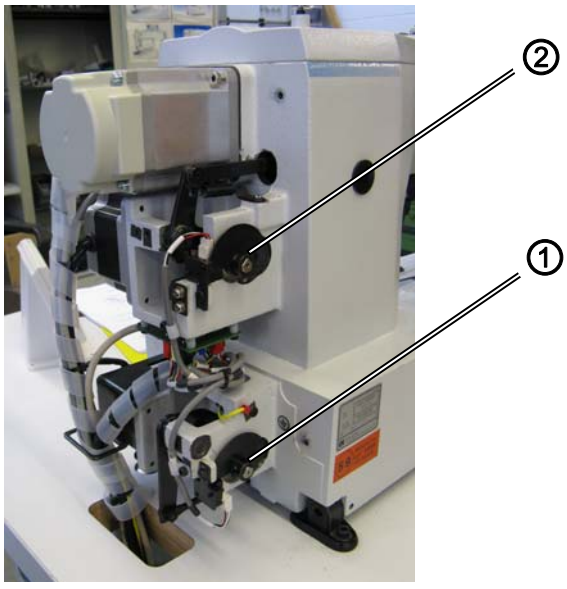
Faults caused by an incorrect setting

- 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 (📖 Section *3.3.6*, page 13).

Figure 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.

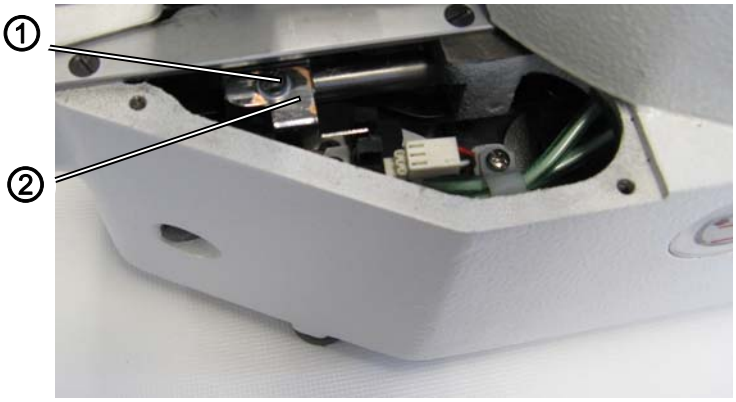
Faults caused by an incorrect setting

- Damage to the needle
- Incorrect needle position

Cover

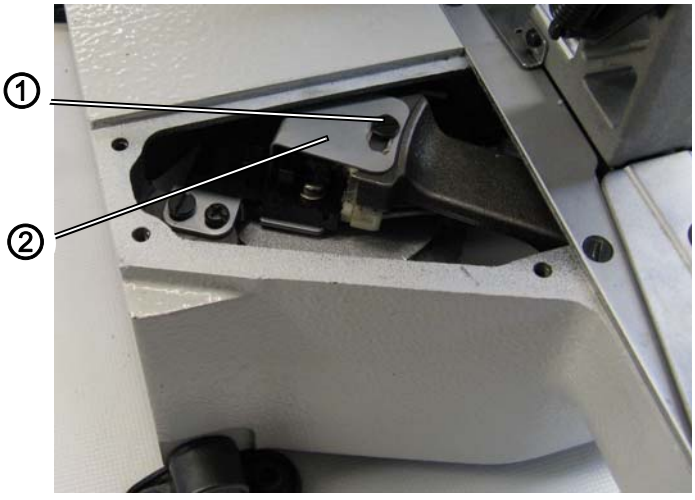
- Remove the right-hand side cover (Section *3.3.4*, page 12).
- Remove the left-hand side cover (Section *3.3.5*, page 13).

Figure 14: Adjusting the right switching flag



(1) - Screw *(2) - Switching flag, right*

Figure 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!

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

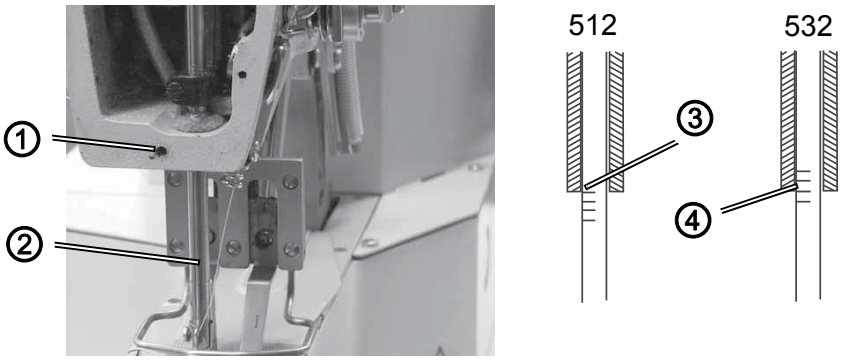
Switch off the sewing machine before adjusting the height of the needle bar.

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 (📖 Section *3.3.2*, page 11).

Figure 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!

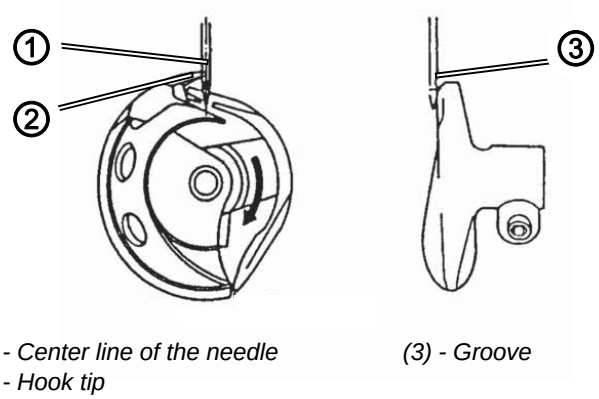
Crushing hazard and puncturing injuries due to moving and sharp parts.

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

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.

Figure 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

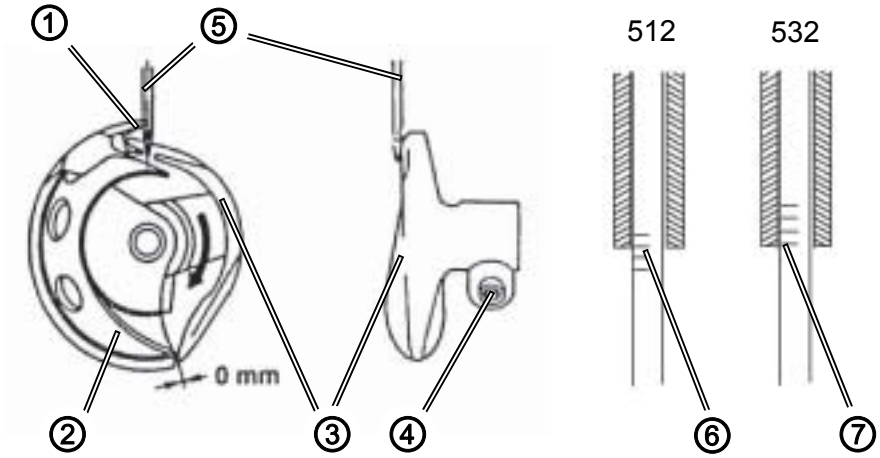
Prerequisite:

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

Cover

- Open the hook flap (Section *3.3.7*, page 14).

Figure 18: Adjusting the loop stroke and needle guard



(1) - Hook tip
(2) - Hook
(3) - Driver
(4) - Screw
(5) - Needle
(6) - Marker line for class 512
(7) - Marker line for class 532

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!

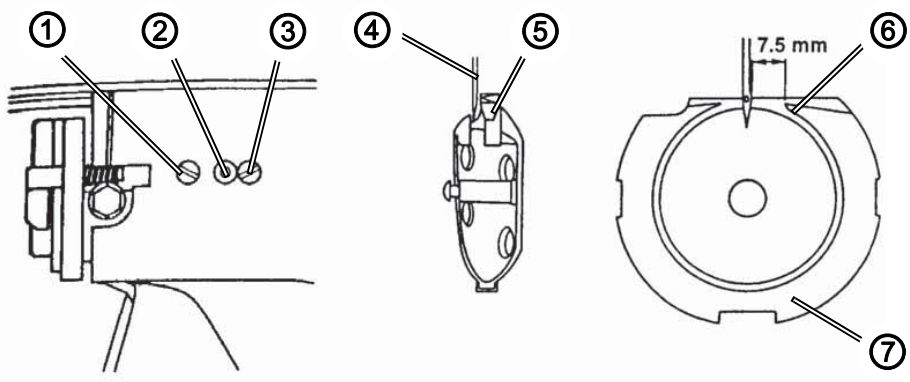
Crushing hazard and puncturing injuries due to moving and sharp parts.

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

Cover

- Open the hook flap (Section *3.3.7*, page 14).

Figure 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!

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

Switch off the sewing machine before adjusting the blades.

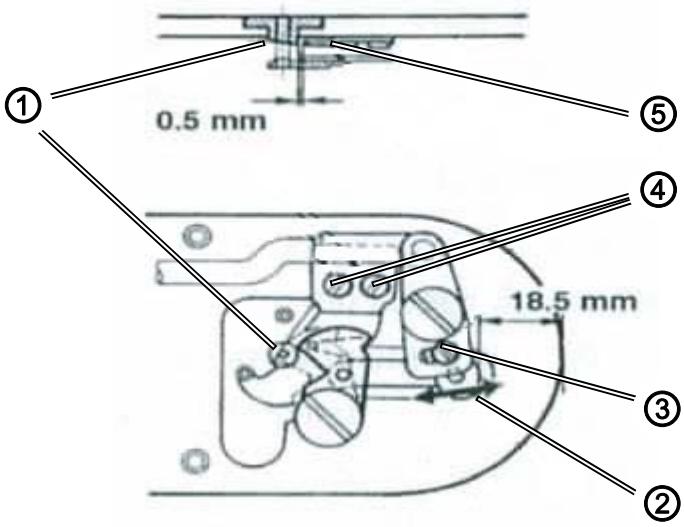
Faults caused by an incorrect setting

- Threads are not cut
- Threads are cut too long

Cover

- Remove the throat plate (Section *3.3.8*, page 15).

Figure 20: Adjusting the blades



(1) - Needle guide
(2) - Thread trimmer lever
(3) - Screw for thread trimmer lever
(4) - Counter blade screws
(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!

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

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

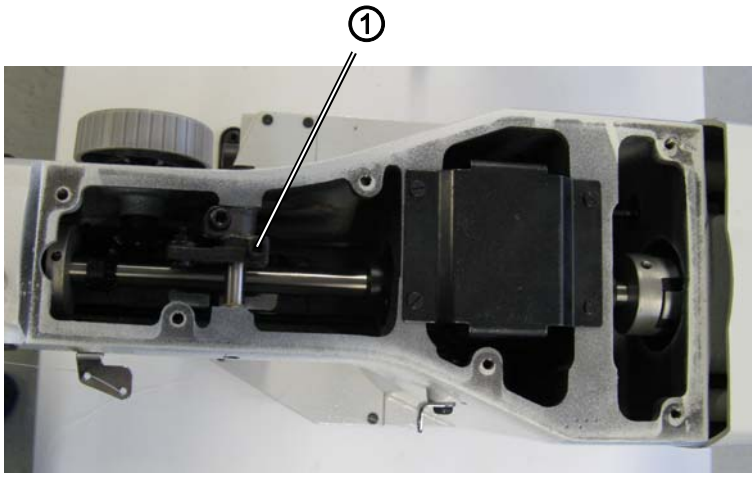
The following maximum heights apply when adjusting the fabric clamp lift:

- Max. height for class 512: 17 mm
- Max. height for class 532: 13 mm

Cover

Remove the arm cover (Section *3.3.3*, page 11).

Figure 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

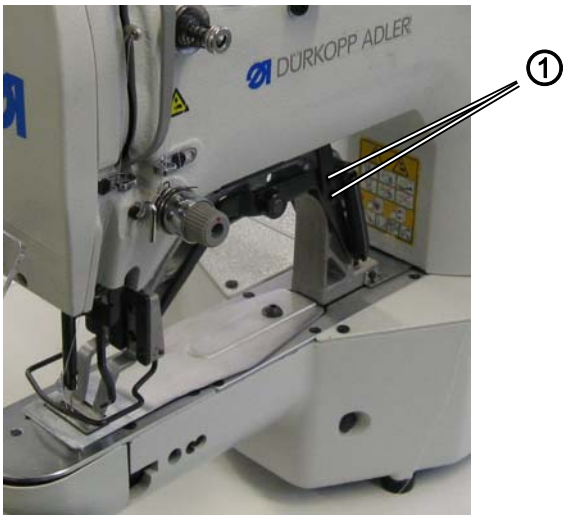
After changing the height of the fabric clamp lift always check the setting of the thread wiper as well.

Adjusting the fabric clamping feet (class 512)

Faults caused by an incorrect setting

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

Figure 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

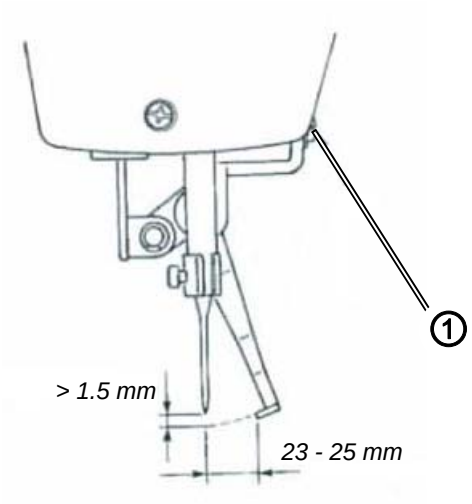
WARNING

Risk of injury!

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

Switch off the sewing machine before adjusting the thread wiper.

Figure 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

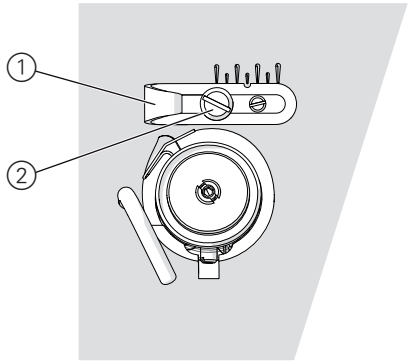
Open the hook flap (📖 Section *3.3.7*, page 14) and observe the thread running around the hook:

↳ The needle thread loop runs without surplus and without jumping around the largest hook diameter.

Faults caused by an incorrect setting

- Poor sewing results

Figure 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*).

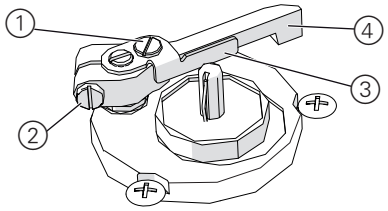
↳ Winding stops automatically when the bobbin is filled to approx. 0.5 mm below the bobbin edge.

ATTENTION

Possible machine damage as a result of winding without sewing.

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.

Figure 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

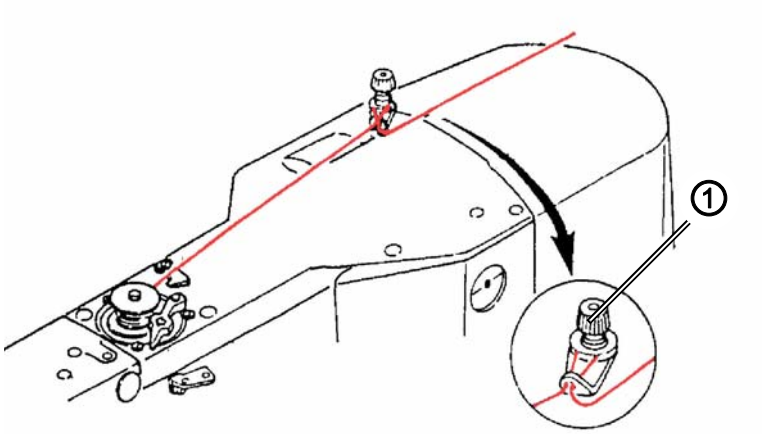
Correct setting

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

Figure 26: Adjusting the winding tension



(1) - Adjusting knob

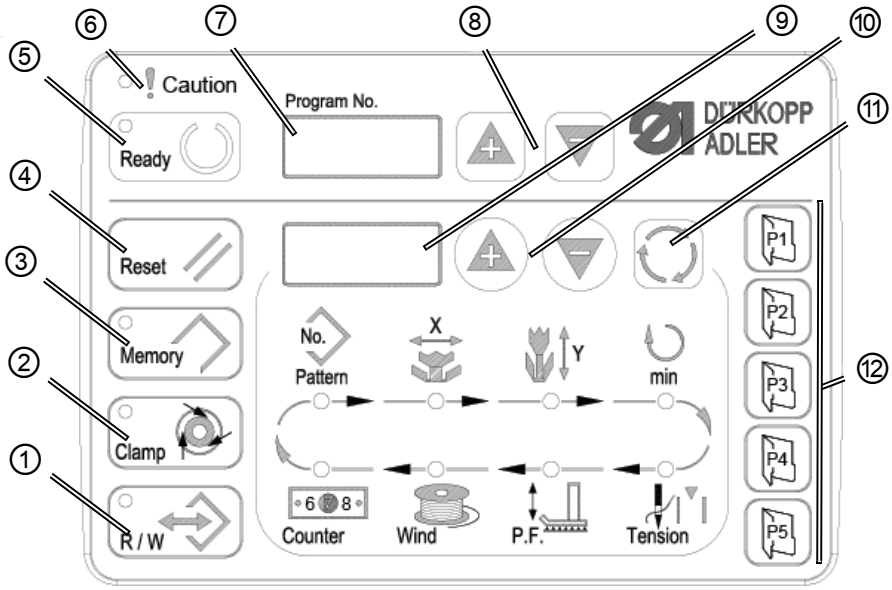
Adjusting steps

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

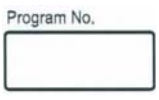
11 Settings via software

11.1 Control panel

Figure 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
	(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.

Button / LED	Pos.	Function
	(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 Switching on the sewing machine

1. Set main switch to ON.

↳ The sewing pattern last sewn is loaded and the sewing pattern number is shown in the **Program** display.

11.3 Reference the machine

1. Press the **Ready** button.

↳ The LED in the button illuminates.

2. Press the **Ready** button.

The LED in the button switches off.

11.4 Selecting a sewing pattern

ATTENTION

Damage to the needle if the sewing pattern size does not match the clamping foot.

Check the clamping foot, adjust if necessary.

Prerequisite:

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

1. Press the **+/- Function** buttons until the desired sewing pattern number appears in the **Function** display.

11.5 Scaling axes

Important

Changes to the axes are only valid temporarily. For permanent changes and the ability to move the sewing pattern, see 📖 *11.14 Storing sewing patterns*, page 40.

11.5.1 Scaling the X-axis

1. Press the **Selection** button until the **X-axis** LED illuminates.
2. Press the **+/- Function** buttons until the value for the X-axis is reached. 100 % corresponds to the specified dimensions for the selected sewing pattern.

11.5.2 Scaling the Y-axis

1. Press the **Selection** button until the **Y-axis** LED illuminates.
2. Press the **+/- Function** buttons until the value for the Y-axis is reached. 100 % corresponds to the specified dimensions for the selected sewing pattern.

11.5.3 Converting the buttonhole gap (class 532)

The buttonhole gap is preset to 3.4 mm (3.4 mm = 100 %). The buttonhole gap can be adjusted by changing the percentage value.

Buttonhole gap [mm]	Value [%]	Buttonhole gap [mm]	Value [%]	Buttonhole gap [mm]	Value [%]
1	29	2,9	85	4,8	141
1,1	32	3	88	4,9	144
1,2	35	3,1	91	5	147
1,3	38	3,2	94	5,1	150
1,4	41	3,3	97	5,2	153
1,5	44	3,4	100	5,3	156
1,6	47	3,5	103	5,4	159
1,7	50	3,6	106	5,5	162
1,8	53	3,7	109	5,6	165
1,9	56	3,8	112	5,7	168
2	59	3,9	115	5,8	171
2,1	62	4	118	5,9	174
2,2	65	4,1	121	6	176
2,3	68	4,2	124	6,1	179
2,4	71	4,3	126	6,2	182
2,5	74	4,4	129	6,3	185
2,6	76	4,5	132	6,4	188
2,7	79	4,6	135	6,5	191
2,8	82	4,7	138		

11.5.4 Converting the backtack dimensions (class 512)

To convert the preset dimensions to the desired dimensions, apply the following formula:

Value to be set =
(100 % : preset dimension) * desired value

Example Preset dimension in X-direction = 16 mm
Desired value in X-direction = 10 mm

Value to be set = (100 % : 16 mm) * 10 mm = **62.5 %**

11.6 Setting the speed

Important

Changes to the speed are only valid temporarily. For permanent changes see 📖 *11.14 Storing sewing patterns*, page 40.

1. Press the **Selection** button until the **Speed** LED illuminates.
2. Press the **+/- Function** buttons until the desired speed is reached.

11.7 Checking the sewing pattern

1. Press the **Selection** button until the **Sewing pattern shape** LED illuminates.

↳ The **Program** display shows the current sewing pattern shape.

2. Press the **Ready** button to confirm the sewing pattern.

↳ The LED in the **Ready** button illuminates.

3. Press the foot pedal forwards.

↳ The clamp is lowered.

4. Press the **+/- Function** buttons to sew 1 stitch each.

↳ The **Function** display shows the current number of stitches.

5. Press the **Reset** button.

↳ The clamp is raised.

6. Press the **Selection** button until the **Sewing pattern shape** LED illuminates.

11.8 Changing the sewing pattern

1. Press the **Selection** button until the **No. Pattern** LED illuminates.
2. Press the **+/- Function** buttons until the desired sewing pattern number appears in the **Function** display.
3. Press the **Ready** button.

11.9 Winding

Prerequisite:

- Needle removed.
- Needle thread not threaded.

1. Press the **Ready** button.

↳ The LED in the button illuminates.

2. Press the **Ready** button.

↳ The LED in the button switches off.

3. Press the **Selection** button until the **Wind** LED illuminates.
4. Press the **Ready** button.

↳ The LED in the button illuminates, the clamp is lowered.

5. Press the pedal forwards.

↳ Winding starts.

6. To stop winding, briefly press the pedal completely forwards.
7. Press the **Ready** button.

↳ The LED in the button switches off, the clamp is raised.

11.10Sewing

Prerequisite:

- The machine is in the sewing mode, the LED in the **Ready** button is illuminated.
- Needle fitted.
- Needle thread threaded.
- Sewing pattern selected.

1. Insert the material.
2. Press the foot pedal forwards to the first position.

↳ The clamp is lowered.
If the pedal is released, the clamp is raised.

3. Briefly press the foot pedal completely forwards.

↳ The sewing process starts. At the end of sewing the clamp is automatically raised.

11.11Counter

The counter can be used as a unit counter (parameter number U020) or as an automatic stop counter (parameter number U076).

Prerequisite:

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

1. Press the **Selection** button until the **Counter** LED illuminates.
2. Press the **Reset** button to set the counter to 0.
3. Press the **+/- Function** buttons to set the cycle count.
   Each sewing end decrements the counter by 1.
   After reaching the number of cycles, a message appears in the display.
4. Insert a new bobbin.
5. Press the **Reset** button.

↳ The counter is reset.

11.12Interrupting sewing

1. Press the **Reset** button or press the pedal back.

↳ The sewing process is interrupted; the display shows error message E-50.

2. To continue sewing, press the **Reset** button or press the pedal forwards.

11.13Protecting standard sewing patterns

Standard sewing patterns can be protected so that they are no longer displayed.

Prerequisite:

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

1. Press the **Memory** and **P1** buttons in quick succession.

↳ The **Program** display shows the sewing pattern number; the **Function** display shows 0 or 1:
0 = sewing pattern is displayed.
1 = sewing pattern is protected.

2. Press the **+/- Program** buttons to select another sewing pattern.
3. Press the **Ready** button to confirm the sewing pattern.
4. Press the **+/- Function** buttons to change between 0 and 1.
5. Press the **Ready** button to confirm the value.
6. Press the **Memory** button.

11.14Storing sewing patterns

Standard sewing patterns can be stored on the sewing pattern memory buttons **P1** to **P5**; 50 memory slots are available for this.
The memory slots are accessed using the **+/- Function** buttons; memory slots up to 25 can also be accessed using the sewing pattern memory buttons and combinations thereof.

Shortcuts for sewing pattern memory buttons

Memory slot no.	Shortcut	Memory slot no.	Shortcut	Memory slot no.	Shortcut	Memory slot no.	Shortcut
P1	P1	P8	P1 + P4	P15	P4 + P5	P22	P2 + P3 + P4
P2	P2	P9	P1 + P5	P16	P1 + P2 + P3	P23	P2 + P3 + P5
P3	P3	P10	P2 + P3	P17	P1 + P2 + P4	P24	P2 + P4 + P5
P4	P4	P11	P2 + P4	P18	P1 + P2 + P5	P25	P3 + P4 + P5
P5	P5	P12	P2 + P5	P19	P1 + P3 + P4		
P6	P1 + P2	P13	P3 + P4	P20	P1 + P3 + P5		
P7	P1 + P3	P14	P3 + P5	P21	P1 + P4 + P5		

11.14.1Mapping memory buttons

Prerequisite:

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

1. Press the **Memory** and **P2** buttons simultaneously.
2. Press the **+/- Program** buttons to select a memory slot.
3. Press the **Ready** button to confirm the memory slot.
4. Select the sewing pattern (📖 *11.4 Selecting a sewing pattern*, page 35).
5. Scale the axes (📖 *11.5 Scaling axes*, page 35).
6. Set the speed (📖 *11.6 Setting the speed*, page 37).
7. Moving the position of the sewing pattern:

   - Press the **Selection** button until the **X-axis** LED flashes.
   - Press the **+/- Function** button and set the values: -5/+5.

   - Press the **Selection** button until the **Y-axis** LED flashes.
   - Press the **+/- Function** button and set the values: -4 /+4.

8. Press the **Ready** button to confirm the settings.
9. Press the **Memory** button to quit the memory mode.
10. Check the sewing pattern
    (📖 *11.7 Checking the sewing pattern*, page 37).

11.14.2Sewing with memory buttons

1. Press the sewing pattern memory button/button combination.
2. Press the **Ready** button.
3. Check the sewing pattern.
4. Sew.

11.14.3Deleting the memory button assignments

Prerequisite:

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

1. Press the **Memory** and **P2** buttons simultaneously.
2. Press the **+/- Program** buttons to select a memory slot.
3. Press the **Ready** button to confirm the memory slot.
4. Press the **Reset** button to delete the memory assignment.
5. Press the **Ready** button to confirm the deletion.
6. Press the **Memory** button to quit the memory mode.

11.15Storing sewing pattern sequences

Besides the sewing patterns in memory slots P1 ~ P50, the automatic sewing machine also lets you use memory slots C01 ~ C25.

Prerequisite:

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

1. Press the **Memory** and **P3** buttons simultaneously.
2. Press the **+/- Program** buttons to select a memory slot (C01 ~ C25).
3. Press the **Ready** button to save the sewing pattern sequence.
4. Press the **+/- Function** buttons to select the 1st sewing pattern.
5. Press the **+/- Program** buttons to select the 2nd sewing pattern.
6. Press the **+/- Function** buttons to select the 3rd sewing pattern.
7. Press the **+/- Program** buttons to select the 4th sewing pattern, etc.
8. Press the **Ready** button to confirm the sewing pattern sequence.

↳ The **Program** display shows the memory slot; the **Function** display shows the number of sewing patterns.

9. Press the **Memory** button to quit the memory mode.

11.16Processing sewing pattern sequences

Prerequisite:

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

1. Press the **+/- Function** buttons to select a sewing pattern sequence.
2. Press the **Ready** button to confirm the sewing pattern sequence.

↳ The **Program** display shows the sewing pattern sequence, e.g. <1.1>; The **Function** display shows the sewing pattern number.

3. Briefly press the pedal completely forwards.

↳ The sewing pattern is sewn. After completing sewing, the **Program** display shows the further sewing pattern sequence, e.g. <1.2>; the **Function** display shows the next sewing pattern number, etc.

4. To change between sewing patterns in a sequence, press the **+/- Program** buttons and select the sewing pattern.

11.17Deleting sewing pattern sequences

Prerequisite:

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

1. Press the **Memory** and **P3** buttons simultaneously.
2. Press the **+/- Program** buttons to select a sewing pattern sequence (C01 ~ C25).
3. Press the **Ready** button to confirm the sewing pattern sequence.
4. Press the **Reset** button to delete the sewing pattern sequence.
5. Press the **Ready** button to confirm the deletion.
6. Press the **Memory** button to quit the memory mode.

11.18Stopping sewing

CAUTION

Risk of injury from needle and moving parts.

Do not place your hand below the raised clamp.

1. Press the **Ready** button.

↳ The LED in the button illuminates. The control unit is in the sewing mode.

2. Set main switch to OFF.

Note

If the automatic sewing machine is switched off without pressing the **Ready** button, any modified values will not be saved.

11.19Editing parameters in the memory

11.19.1Editing parameters in level M1

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.

11.19.2Editing parameters in level M2

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.

11.20Resetting parameters to factory settings

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 U098 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.

↳ The controller beeps 1x. If the controller beeps 3x, the reset was unsuccessful.

6. Set parameter U085 for class 532.

Setting parameter U085 (class 532)

After resetting the parameters to the factory setting, 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.

↳ Press the **Selection** button.

11.21Editing sewing patterns externally

ATTENTION

Damage to the clamp if the sewing field size does not match the clamping feet.

Check the clamping foot, adjust if necessary.

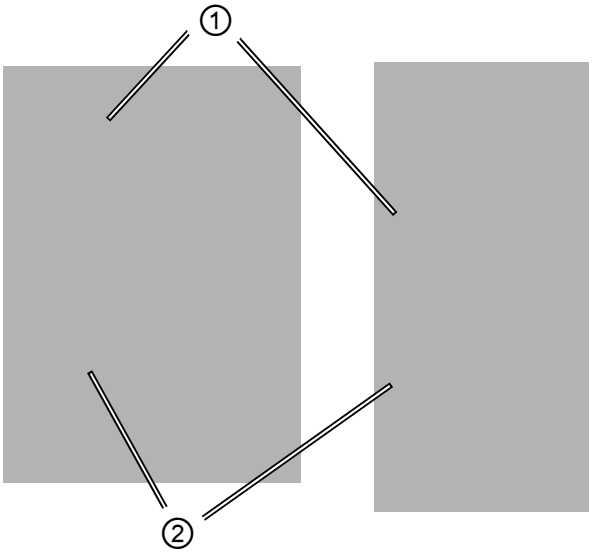
Sewing patterns can be created and edited externally on a PC, e.g. using MS Excel or a text editor.

Each row represents a stitch coordinate in an X and Y-direction. The maximum size of a sewing pattern is 400 x 300 x 1/10 mm.

Negative values or comma separated values should not be entered.

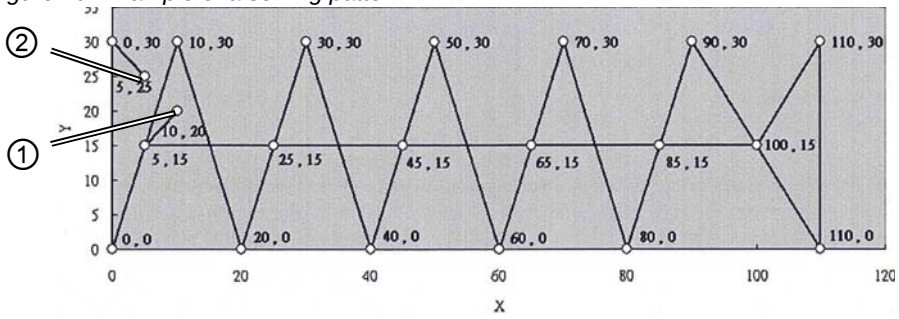
The operator does not have to perform any calculations to center the sewing pattern. The machine automatically centers the sewing pattern in the middle of the sewing field. To subsequently move the sewing pattern, see 🕮 *11.14 Storing sewing patterns*, page 40.

Figure 28: Example of stitch coordinates in MS Excel or a text editor



(1) - Starting point/first stitch *(2) - End point/last stitch*

Figure 29: Example of a sewing pattern



(1) - Starting point/first stitch *(2) - End point/last stitch*

1. Enter the stitch coordinates in MS Excel or a text editor.
   The coordinates are accurate to a precision of 0.1 mm and are separated by a comma.

Important

In the text editor, the last row of coordinates must be terminated with a break so that the cursor is positioned in the next free row.

2. Saving a file:
   - File name: HSR2000 ~ HSR2099
   - File format: .CSV
3. Save the file to a USB stick.

Information

It is also possible to create sewing patterns with DA-CAD 5000 and save them as a CSV file.

11.22Working with a USB stick

Up to 10 of your own sewing patterns can be saved to the controller via a USB stick.

Prerequisite:

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

1. Insert the USB stick into the USB port on the controller.

↳ The controller beeps briefly.

2. Press the **USB** button.
3. The LED in the button illuminates; the **Program** display shows parameter number U01.
4. Press the **+/- Program** buttons and select a memory slot (U01 ~ U10).

5. Press the **Ready** button.

↳ The **Function** display shows values 1 to 4:

- 1: Load a sewing pattern from a USB stick.
- 2: Load a sewing pattern onto a USB stick.
- 3: Delete a sewing pattern on the controller.
- 4: Edit a sewing pattern.

Saving a sewing pattern from a USB stick onto the controller: Value 1

1. Press the **+/- Function** buttons to set value 1.
2. Press the **Selection** button and select the sewing pattern file (HSR2000.csv ~ HSR2099.csv).
3. Press the **Selection** button to load a sewing pattern from the USB stick.

↳ The **Function** display shows the value **ok**; the controller beeps, the sewing pattern is saved.

4. Press the **Reset** button 2x.

Saving a sewing pattern from the controller to the USB stick: Value 2

1. Press the **+/- Function** buttons to set value 2.
2. Press the **Selection** button to save the sewing pattern to the USB stick (HSW2001.scv = U01 ~ HSW2010.scv = U10).
3. Press the **Selection** button to confirm you want to save it.

↳ The **Function** display shows the value **ok**; the controller beeps, the sewing pattern is saved.

4. Press the **Reset** button 2x.

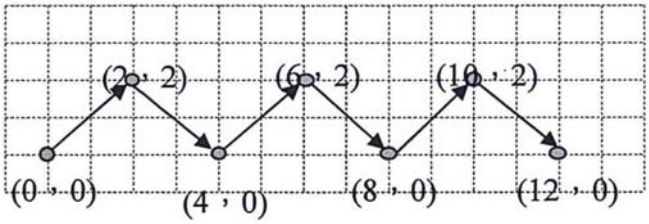
Deleting a sewing pattern on the controller: Value 3

1. Press the **+/- Function** buttons to set value 3.
2. Press the **Selection** button.
3. Press the **Reset** button to confirm the deletion.

↳ The **Function** display shows "----".

Editing a sewing pattern / contour test: Value 4

Figure 30: Editing a sewing pattern



1. Press the **+/- Function** buttons to set value 4.
2. Press the **Selection** button.

↳ The **Program** display shows a 1 for the first stitch; the **Function** display shows the value for the X-axis; the **X-axis** LED illuminates.

3. Press the **+/- Function** buttons to set the coordinates of the 1st stitch for the X-axis.
4. Press the **Selection** button.

↳ The **Y-axis** LED illuminates; the **Function** display shows the value for the Y-axis.

5. Press the **+/- Function** buttons to set the coordinates of the 1st stitch for the Y-axis.
6. Press the **+/- Program** buttons to select the next stitch.
7. Repeat steps 3 to 5 for all additional stitches.
8. Press the **Ready** button to save the edited sewing pattern.
9. Press the **Reset** button.

↳ The LED in the button switches off.

10. Press the **USB** button.

↳ The LED in the button switches off.

11.23Error messages

If an error occurs, the **Error** LED illuminates.

Error					Description	Possible cause	Remedy
E				8	Error table data	Unable to read the table data	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"	Press the Reset button to confirm the sewing pattern number.

Error					Description	Possible cause	Remedy
E			3	0	Error needle bar position top	The needle bar is not at the top position	Check the connections. Turn the needle bar to the top dead center position.
E			4	0	Error sewing field	Sewing field exceeded	Press the Reset button. Check X/Y scaling.
E			4	2	Error scaling	Sewing length is below 10 mm	Press the Reset button. Check sewing pattern and X/Y scaling.
E			4	5	Error sewing pattern data	Sewing pattern data cannot be applied	Press the Reset button. Check ROM.
E			5	0	Pause	Reset button pressed while sewing. Sewing machine stopped.	Press the Reset button. Actuate the thread trimmer. Restart the sewing process.
E		3	0	2	Error machine head	Machine head has moved.	Fold back machine head.
E		3	0	5	Error thread trimmer position	Thread trimmer blade not at home position	Set main switch to OFF. Check sensor.
E		3	0	6	Error thread catcher position	Thread catcher not at home position	Set main switch to OFF. Check sensor.
E		3	3	2	Error clamp foot position	Clamp foot not at home position	Set main switch to OFF. Check sensor.
E		5	0	1	Data read error	Data not available or saved in the wrong format	Save the data to a USB stick again.
E		5	0	2	USB read error	MOT file error	Save the data to a USB stick again.
E		5	0	3	SUM read error	CHECKSUM data error in MOT file	Save the CHECKSUM file to a USB stick again.
E		5	0	4	End block error	No end block in the MOT file	Save the end block file to a USB stick again.
E		5	0	5	USB read error	USB stick not found	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.	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	Download the data again.
E		5	0	8	File error own sewing patterns	U01 ~ U10 read error	Check file type.
E		5	0	9	File error own sewing patterns	U01 ~ U10 read error	Check file type.

Error					Description	Possible cause	Remedy
E		5	1	0	File error own sewing patterns	U01 ~ U10 read error	Check file type. Save data to USB again.
E		5	1	1	USB write error	File with the same name already exists	Delete or rename file.
E		5	1	2	USB read error	Data cannot be loaded from USB stick	Check USB stick. Reinsert USB stick.
E		5	1	3	USB write error	Data cannot be copied to USB stick.	Check USB stick. Reinsert USB stick.
E		5	5	0	Data write error	Flash memory transfer error	Set main switch to OFF. Repeat process. Replace the mainboard.
E		5	5	1	Internal process error	Software error	Set main switch to OFF. Repeat process. Replace the mainboard. Update software.
E		7 7	0 3	7 5	Motor signal error	Encoder / motor has no signal	Check motor / encoder.
E		7	3	6	Motor rotation error	Motor stops after some time / encoder has no signal	Check motor / encoder.
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.

11.24Loading software via a USB stick

ATTENTION

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

11.24.1Loading 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.

11.24.2Loading 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.

11.24.3Setting 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.

11.24.4Checking 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 Service settings via software

This chapter describes service settings such as

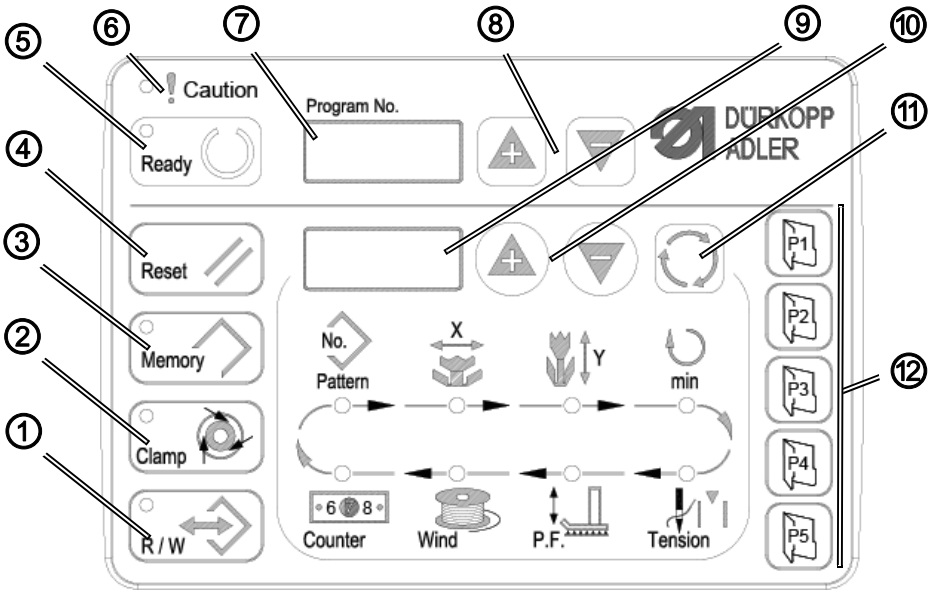
- The basic configuration of the machine
- Test functions for individual elements of the machine
- Calibration functions
- Presets for programs and functions

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*).

12.1 Basic software operation

The software is controlled via the control panel.

Figure 31: Display and control panel for the software



(1) - USB button with LED
(2) - Needle thread clamp button with LED
(3) - Memory button
(4) - Reset button
(5) - Ready button with LED
(6) - Error LED
(7) - Program display
(8) - +/- Program buttons
(9) - Function display
(10) - +/- Function buttons
(11) - Selection button
(12) - Sewing pattern memory buttons

12.2 Accessing the technician level

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

12.2.1 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.

12.2.2 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.

12.3 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.

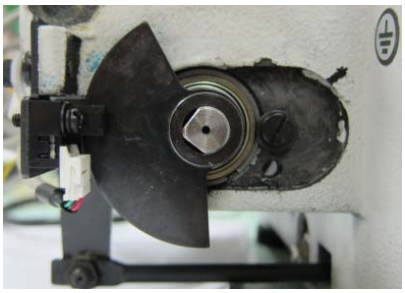
2. Press the **+/- Program** buttons and select parameter U099.
3. Press the **Ready** button to confirm the parameter.

↳ The LED in the button illuminates. The **Program** display shows "°°20".

4. Press button **P1**.

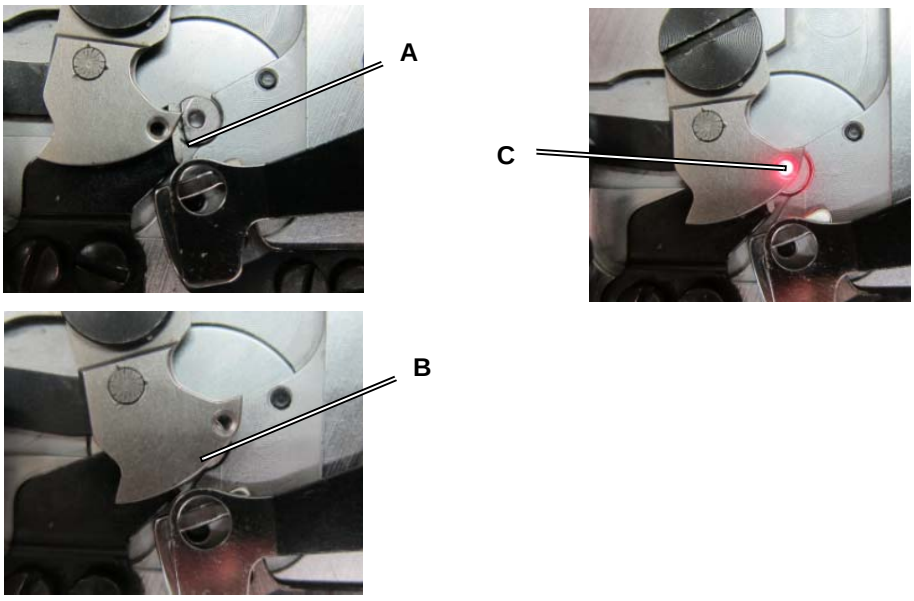
↳ The thread trimmer sensor disk travels to position.

Figure 32: Thread trimmer sensor disk



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

Figure 33: 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.

12.4 Loading software via a USB stick

ATTENTION

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

12.4.1 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.

12.4.2 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.

12.4.3 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.

12.4.4 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.

13 Maintenance work

13.1 Lubrication

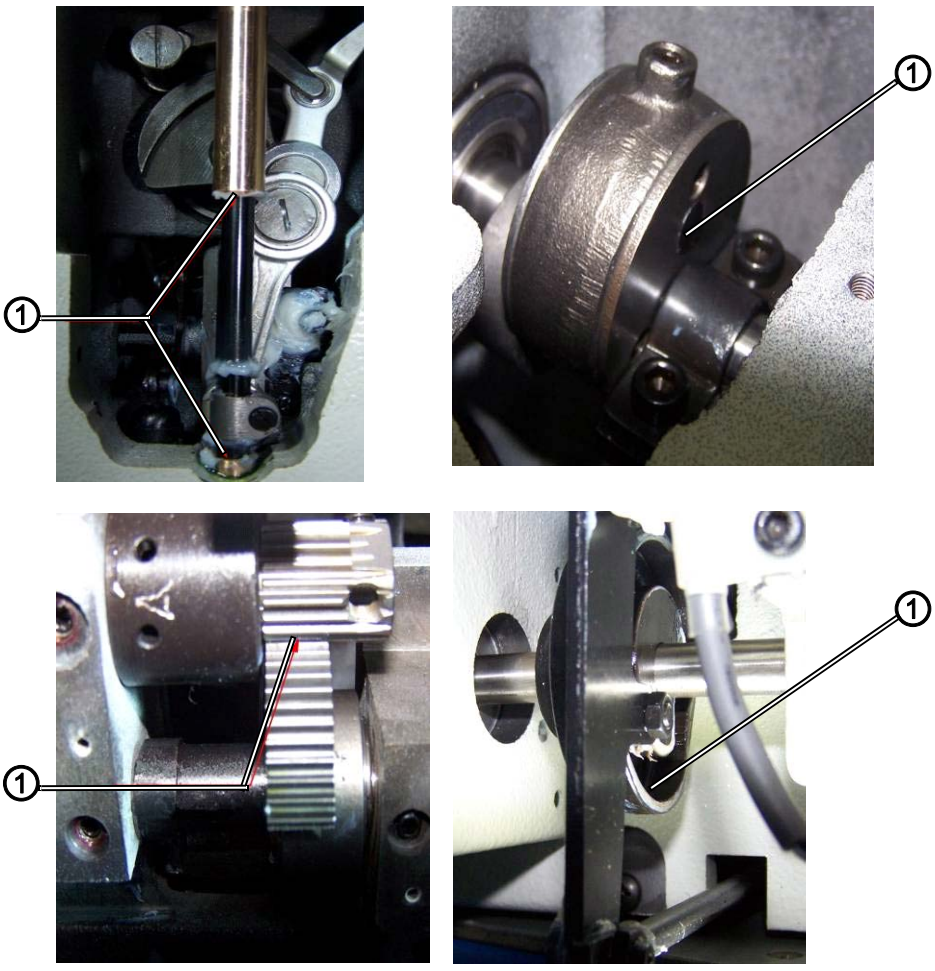
ATTENTION

Environmental damage due to lubricating grease

Lubricating grease is a pollutant and must not enter the sewage system or the soil.
Collect residual lubricating grease carefully and dispose of it along with greasy machine parts in accordance with the applicable statutory regulations.

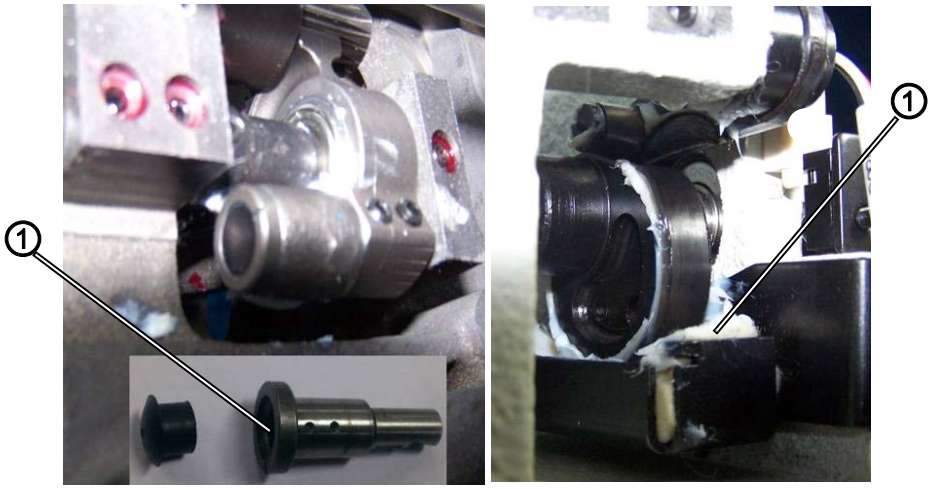
Please observe all safety and environmental protection instructions provided by the lubricant manufacturer.

Figure 34: Lubrication I



(1) - Points of lubrication

Figure 35: Lubrication II



(1) - Points of lubrication

Special grease for lubricating the machine components is available in the accessory kit. It can also be purchased from DÜRKOPP ADLER AG retail outlets under the following part number:

- 9047 098004

Maintenance work:

Maintenance work	Explanation	Operating hours
Lubricating the sewing machine	Grease the points shown (1) on the sewing machine with special grease.	1000

13.2 Adjusting the lubrication for the hook

Figure 36: Adjusting the lubrication for the hook

(1) - Screw

Adjusting steps

1. Loosen and remove the screw (1).

↳ The lubricating screw is located underneath the screw. The lubricating screw presses against the oil wick of the hook lubricator.

2. Adjusting the lubricating screw:
   - **Loosening the screw**: Increases lubrication for the hook
   - **Tightening the screw**: Reduces lubrication for the hook
3. Insert and tighten the screw (1).

13.3 Cleaning work

Lint and thread remnants should be removed after every eight hours of operation using a compressed-air pistol or a brush.

Points that need to be cleaned particularly thoroughly:

- Hook
- Throat plate
- Handwheel filter

This cleaning work is described in the operating manual (📖 *Operating manual, Section 6 Maintenance*).

ATTENTION

Damage to the paintwork due to solvent-based cleaners.
Solvent-based cleaners will damage paintwork on the machine.

Only use solvent-free substances when cleaning the machine.

14 Appendix

14.1 Software error messages

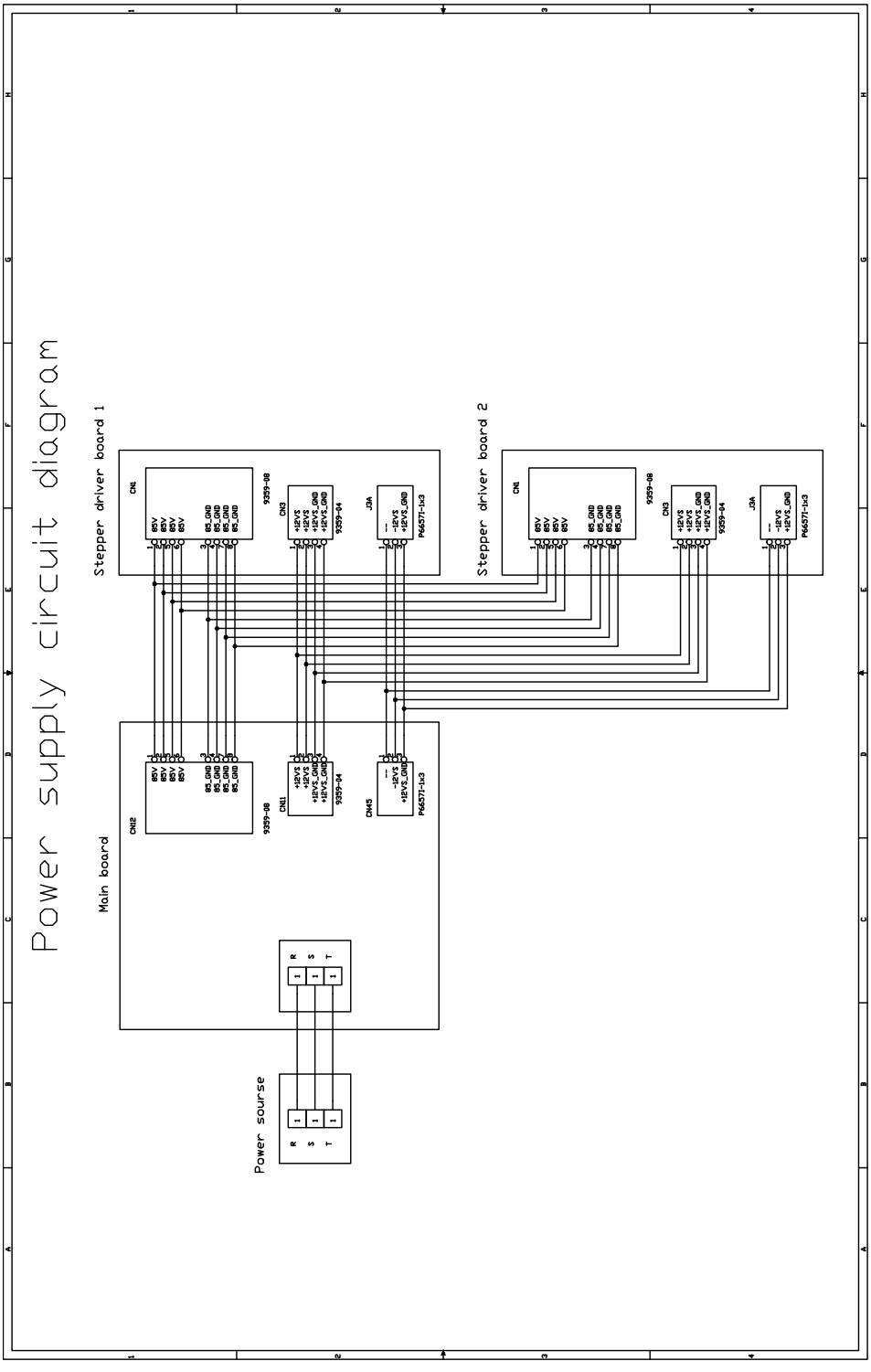
The remedial measures are to be processed in the order specified.

Error					Meaning	Possible cause	Remedial measures Process in the order specified!
E				8	Error table data	Unable to read the table data	• 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"	• 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	• Check the connections. • Turn the needle bar to the top dead center position.
E			4	0	Error sewing field	Sewing field exceeded	• Press the Reset button. • Check X/Y scaling.
E			4	2	Error scaling	Sewing length is below 10 mm	• Press the Reset button. • Check sewing pattern and X/Y scaling.
E			4	5	Error sewing pattern data	Sewing pattern data cannot be applied	• Press the Reset button. • Check ROM.
E			5	0	Pause	Reset button pressed while sewing. Sewing machine stopped.	• Press the Reset button. • Actuate the thread trimmer. • Restart the sewing process.
E		3	0	2	Error machine head	Machine head has moved.	• Fold back machine head.
E		3	0	5	Error thread trimmer position	Thread trimmer blade not at home position	• Set main switch to OFF. • Check sensor.
E		3	0	6	Error thread catcher position	Thread catcher not at home position	• Set main switch to OFF. • Check sensor.
E		3	3	2	Error clamp foot position	Clamp foot not at home position	• Set main switch to OFF. • Check sensor.
E		5	0	1	Data read error	Data not available or in the wrong format	• Save the data to a USB stick again.
E		5	0	2	USB read error	MOT file error	• Save the data to a USB stick again.
E		5	0	3	SUM read error	CHECKSUM data error in MOT file	• Save the CHECKSUM file to a USB stick again.
E		5	0	4	End block error	No end block in the MOT file	• Save the end block file to a USB stick again.
E		5	0	5	USB read error	USB stick not found	• 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.	• Set main switch to OFF. • Set main switch to ON. • Reinsert USB stick.

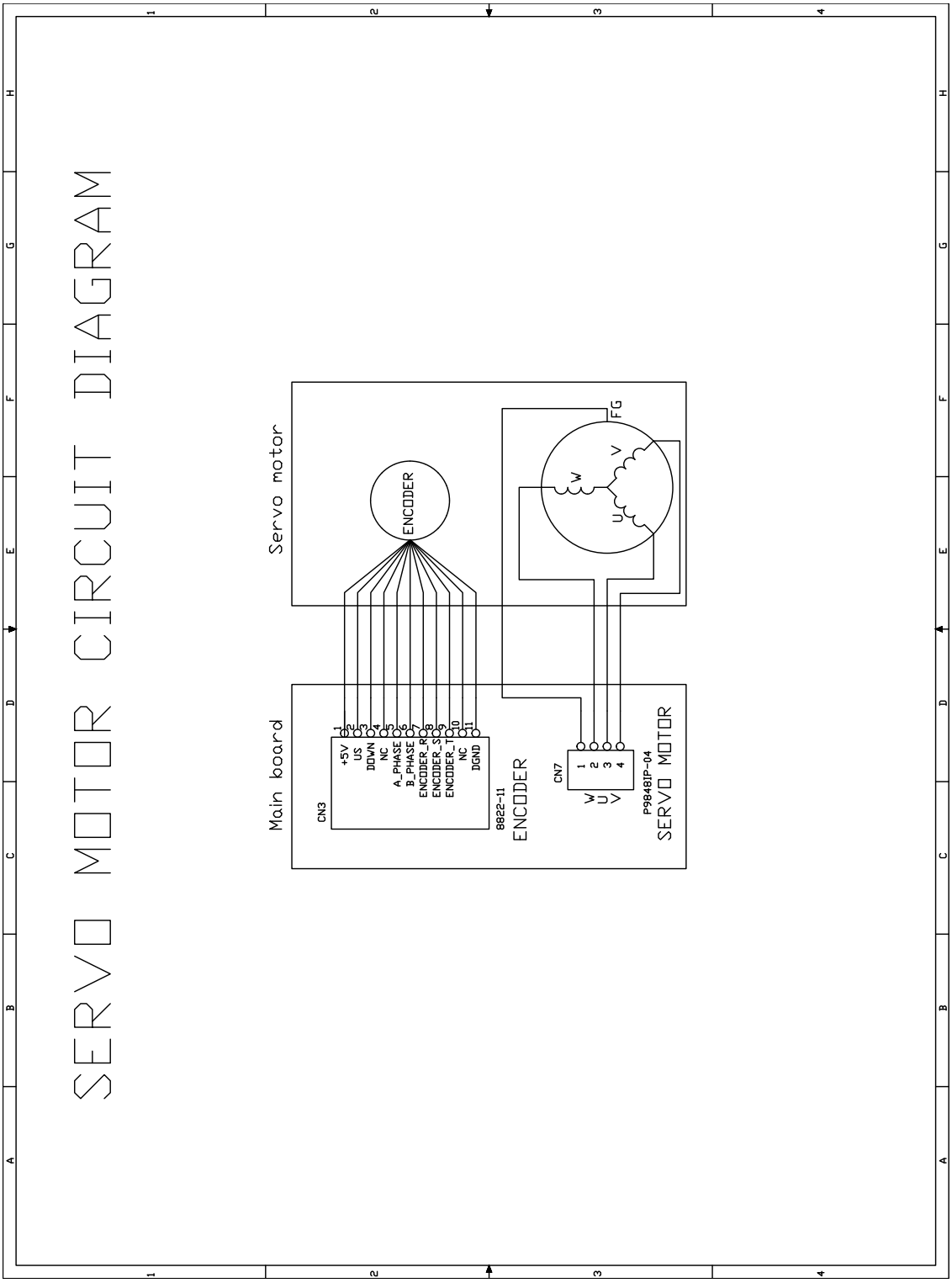
Error					Meaning	Possible cause	Remedial measures Process in the order specified!
E		5	0	7	Read error own sewing patterns	U01 ~ U10 read error	• Download the data again.
E		5	0	8	File error own sewing patterns	U01 ~ U10 read error	• Check file type.
E		5	0	9	File error own sewing patterns	U01 ~ U10 read error	• Check file type.
E		5	1	0	File error own sewing patterns	U01 ~ U10 read error	• Check file type. • Save data to USB again.
E		5	1	1	USB write error	File with the same name already exists	• Delete or rename file.
E		5	1	2	USB read error	Data cannot be loaded from USB stick	• Check USB stick. • Reinsert USB stick.
E		5	1	3	USB write error	Data cannot be copied to USB stick.	• Check USB stick. • Reinsert USB stick.
E		5	5	0	Data write error	Flash memory transfer error	• Set main switch to OFF. • Repeat process. • Replace the mainboard.
E		5	5	1	Internal process error	Softwar error	• Set main switch to OFF. • Repeat process. • Replace the mainboard. • Update software.
E		7 7	0 3	7 5	Motor signal error	Encoder / motor has no signal	• Check motor / encoder.
E		7	3	6	Motor rotation error	Motor stops / encoder has no signal	• Check motor / encoder.
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 corrrectly	• 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 corrrectly	• Set main switch to OFF. • Check motor and connection.

14.2 Circuit diagram

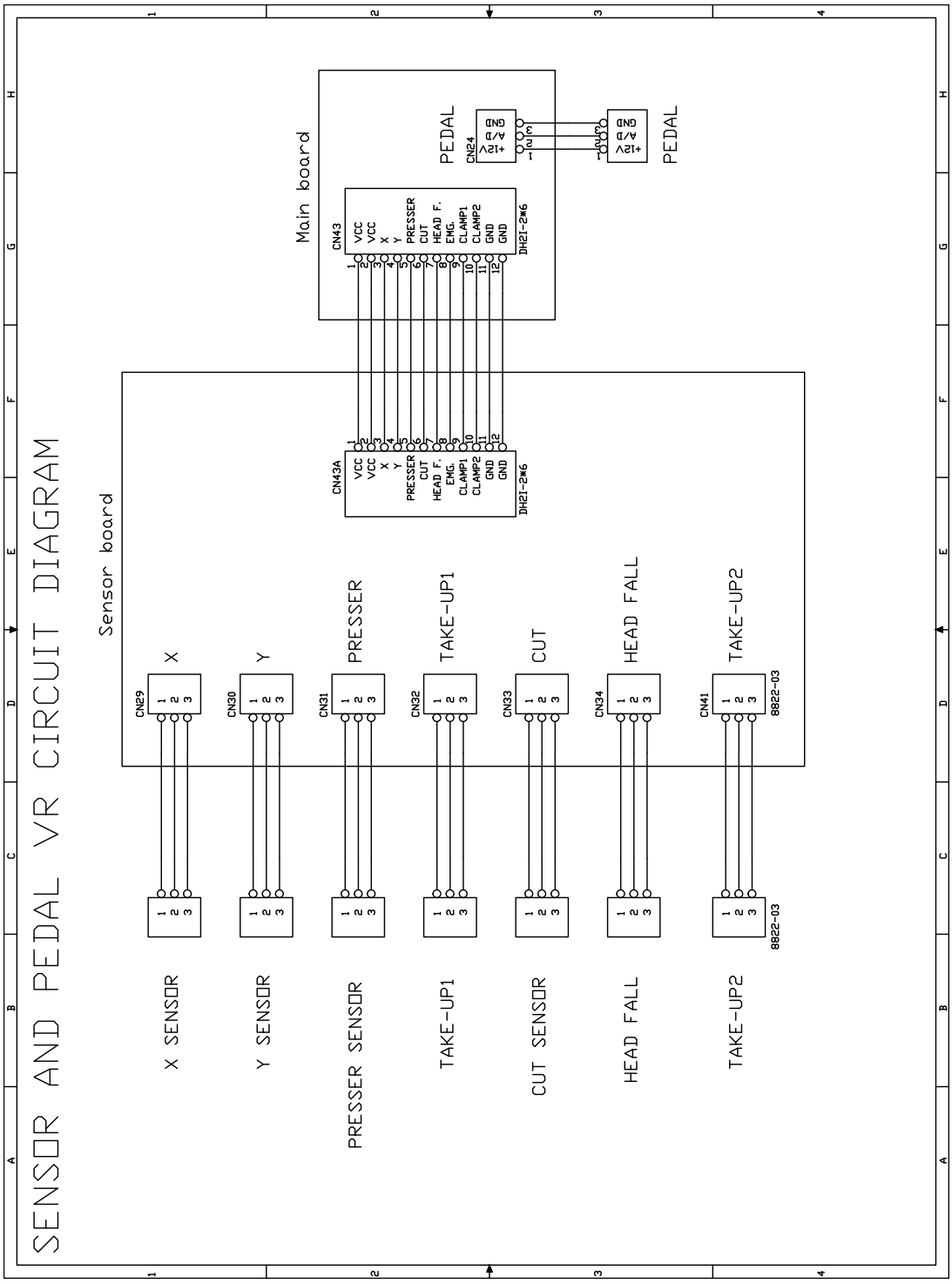
Circuit diagram - Sheet 1



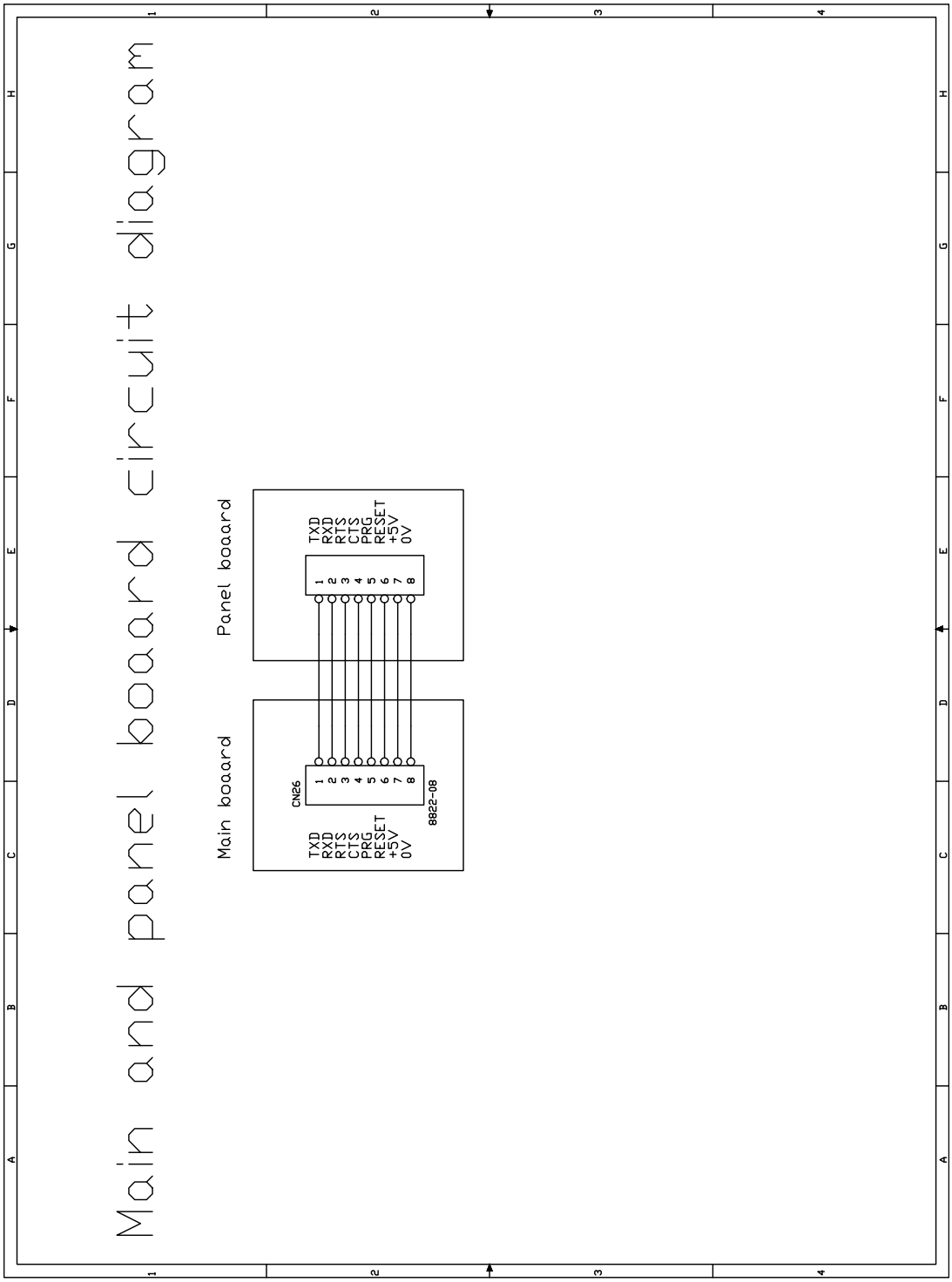
Circuit diagram - Sheet 2



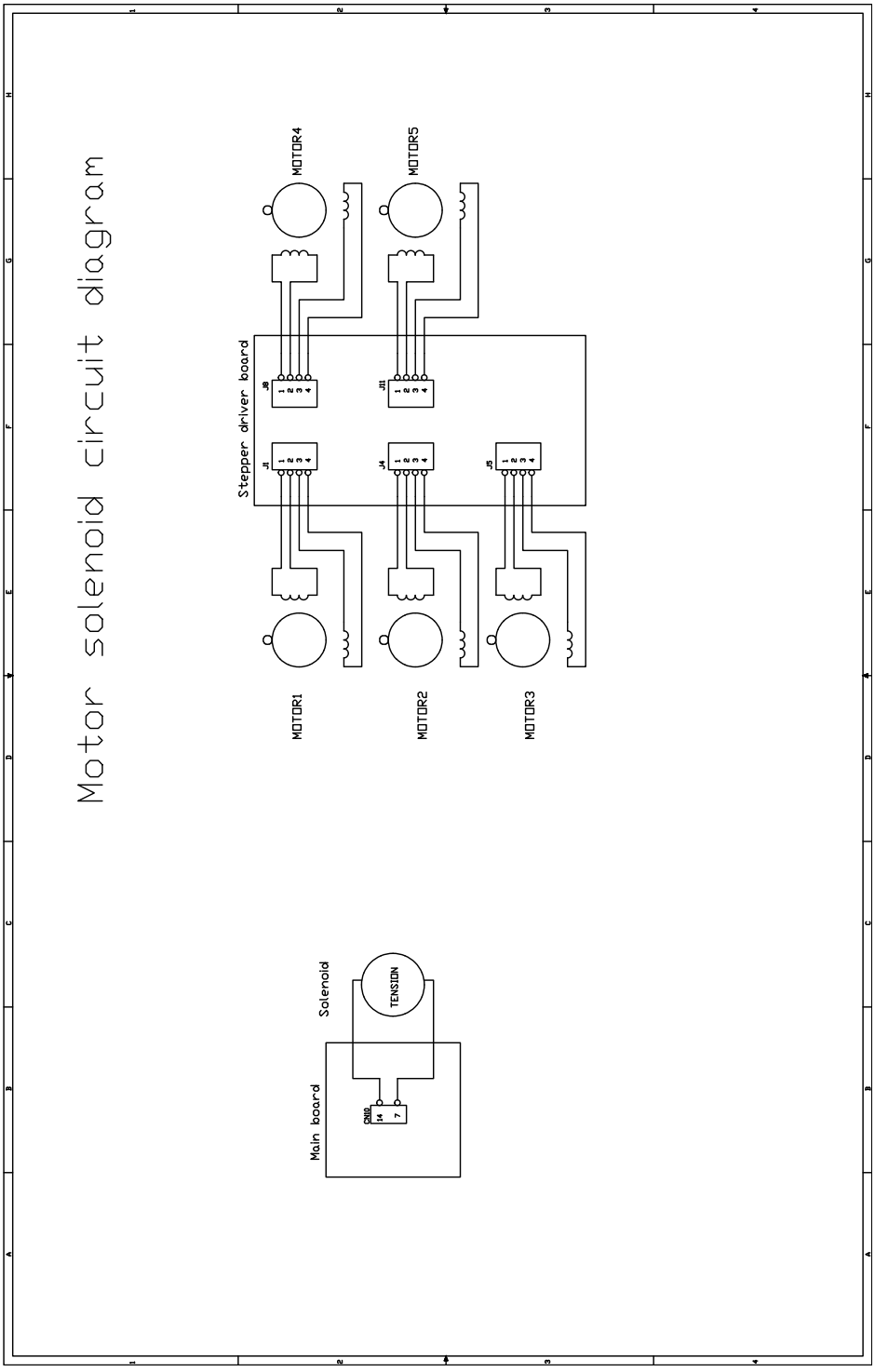
Circuit diagram - Sheet 3



Circuit diagram - Sheet 4



Circuit diagram - Sheet 5



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