DÜRKOPP ADLER

512/532

Operating Instructions

1 About these instructions

These instructions for the special sewing machines 512 and 532 was compiled with the utmost care. It contains information and notes in order to make long-term and reliable operation possible.

Should you notice any discrepancies or if you have improvement requests, then we would be glad to receive your feedback to the *Customer service,* 📖 *S. 34.*

Consider these instructions part of the product and keep it on hand at all times. Be sure to read the instructions completely before using the product for the first time. Only give the product to someone else along with the instructions.

1.1 Scope

These Instructions describes the set-up and intended use of the special sewing machines 512 and 532.

1.2 For whom are these instructions?

These instructions are for:

- Operators:
  This group of employees has been trained in operating the machine and can access the operating manual. Specifically, 📖 *Operation* is intended for this group.
- Technicians:
  This group of employees has the appropriate technical training allowing them to perform maintenance on the sewing unit or to repair faults. Specifically, 📖 *Setup* is intended for technical personnel.
  Service instructions are supplied separately.

With regard to minimum qualification and other requirements to be met by the personnel, please also observe 📖 *Safety instructions*.

1.3 Representation conventions – symbols and characters

Various information in th3ese instructions 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.

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 Information on where something is positioned using the terms “right” or “left” must always be regarded from the operator's point of view if the figure gives no other obvious indication for determining the location.

1.4 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.

1.5 Liability

All information in these instructions were 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 instructions
- Improper use
- Unauthorized modifications to the machine
- Use of untrained personnel
- Use of unapproved replacement parts

1.5.1 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 applies even if the packaging is undamaged.

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 complains to Dürkopp Adler immediately after receiving the product.

1.5.2 Proper use

The Dürkopp Adler 512/532 is intended for sewing light to moderately heavy material.

The machine is only intended for use with dry material. The material cannot contain any hard objects.

The seam is produced using core spun threads, polyester fibers, or cotton threads.

Class 512 thread strength of dimensions 50/3 - 130/3

Class 532 thread strength of dimensions 50/3 - 150/3

The sewing machine is intended for industrial use.

The machine may only be set up and operated in dry conditions on well-maintained premises. If the machine is operated on premises that are not dry and well-maintained, then further measures may be required which must be compatible with EN 60204-31:1999.

Only authorized/trained personnel may operate the machine.

The manufacturer cannot be held liable for damages resulting from improper use.

WARNING

Risk of injury due to electric shock, moving and sharp parts!

Crushing and cutting are possibel.

Follow all instructions provided.

NOTICE

Property damage from non-observance!

Improper use can result in material damage at the machine.

Follow all instructions provided.

2 Technical Specifications

The Dürkopp Adler 512 is a CNC double lockstitch bartack sewing machine. Die Dürkopp Adler 532 is a button sewing machine.

2.1 Characteristics of the 512

The existing programs are scalable and can be saved in this modified form. The machine is equipped with an automatic sewing foot lifter, thread cutter, thread wiper, a needle thread clamp below the stitch plate for reliable sewing-on and an integrated DC direct drive including an operating panel.

Technical features

- The sewing machine is driven by an integrated positioning drive. A controller controls the sewing drive and also 2 stepper motors for the X and Y motions required for generating the seam geometry.
- The clamps are raised by a stepper motor.
- The maximum size of the sewing field is 40 mm in the X direction (lateral to the arm) and 30 mm in the Y direction (parallel to the arm).
- The upper section is oil-free. This means that there is no danger of soiling the sewn material with oil.
- The hook is lubricated by a wick lubrication system, fed from a reservoir visible to the operator.
- 50 pre-programmed bartacks are available. The standard patterns can be temporarily modified (changes to the total length, total width, speed). When the machine is switched off, the modified values of the most recently used bartack are restored when the machine is switched on again.
- 50 additional modified standard patterns can also be stored.
- A maximum of 16,000 stitches can be stored.
- 25 sequence programs with up to 30 seam appearances per sequence can be stored.
- The coordinate entry system has an accuracy of 0.1 mm.
- The machine has a bobbin thread decrementing counter and a daily item counter.
- The arm shaft is directly driven by a brushless DC motor.
- Speeds of up to 3000 min^{-1} can be set, in 100 min^{-1} steps.

2.2 Characteristics of the 532

The existing programs are scalable and can be saved in this modified form. The machine is equipped with an automatic sewing foot lifter, thread cutter, thread wiper, a needle thread clamp below the stitch plate for reliable sewing-on and an integrated DC direct drive including an operating panel.

Technical features

- The sewing machine is driven by an integrated positioning drive. A controller controls the sewing drive and also 2 stepper motors for the X and Y motions required for generating the seam geometry.
- The clamps are raised by a stepper motor.
- The maximum size of the sewing field is 40 mm in the X direction (lateral to the arm) and 30 mm in the Y direction (parallel to the arm).
- The upper section is oil-free. This means that there is no danger of soiling the sewn material with oil.
- The hook is lubricated by a wick lubrication system, fed from a reservoir visible to the operator.
- A maximum of 33 pre-programmed standard button patterns are available. These standard patterns can be temporarily modified (changes to the total length, total width, speed). When the machine is switched off, the modified values of the most recently used bartack are restored when the machine is switched on again.
- A maximum of 16,000 stitches can be stored.
- 25 sequence programs with up to 30 seam appearances per sequence can be stored.
- The coordinate entry system has an accuracy of 0.1 mm.
- The machine has a bobbin thread decrementing counter and a daily item counter
- The arm shaft of the button sewing machine is directly driven by a brushless DC motor.
- Speeds of up to 3000 min^{-1} can be set, in 100 min^{-1} steps.
- Up to 10 user-defined button patterns can be programmed and stored.
- A total of 50 button patterns can be stored under the 25 favorite buttons.

2.3 Declaration of conformity

The machine complies with the European regulations specified in the declaration of conformity or in the installation declaration.

CE

2.4 Technical data

Class		512-211-01	512-212-01	532-211-01
Stitch type		301	301	301
Hook type		Oscillating hook	Oscillating hook	Oscillating hook
Number of needles		1	1	1
Needle system		134 | DPx5	134 | DPx5	135x17 | DPx17
Needle thicknesses		80 - 110 | 12 - 18	80 - 110 | 12 - 18	80 - 110 | 12 - 18
Stitch length	[mm]	Depends on seam appearance (0.1 - 10 mm)	Depends on seam appearance (0.1 - 10 mm)	Depends on seam appearance (0.1 - 6,8 mm)
Empty transport		> 10 possible after thread cutting	> 10 possible after thread cutting	> 10 possible after thread cutting
Max. speed	[min^{-1}]	3000	3000	3000
Speed on delivery	[min^{-1}]	2700	2700	2700
Sewing field size	[mm]	max. in X direction: 40 max. in Y direction: 30	max. in X direction: 8,0 max. in Y direction: 4,0	max. in X direction: 10 max. in Y direction: 10
Number of standard patterns		50	50	33

Class		512-211-01	512-212-01	532-211-01
Number of storable modified patterns		50	50	50
Number of sequences		25	25	25
Number of seam appearances per sequence		30	30	30
Soft start		Can be switched in and out	Can be switched in and out	Can be switched in and out
Operating pressure	[bar]	--	--	--
Air consumption	[NL]	--	--	--
Length, width, height (upper section incl. packaging)	[mm]	870 /430 / 890	870 /430 / 890	870 /430 / 890
Length, width, height (upper section only)	[mm]	660 / 230 / 430	660 / 230 / 430	660 / 230 / 430
Weight (upper section, excluding controller)	[kg]	69	69	69
Length, width, height (controller incl. packaging)	[mm]	600 / 450 / 300	600 / 450 / 300	600 / 450 / 300
Weight (controller only)	[kg]	18	18	18

Dimensional data

Class		512	532
Voltage	[V]	230	230
Frequency	[Hz]	50 / 60	50 / 60
Power	[W]	500	500

3 Safety Information

This section 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 this section. Failure to do so can result in serious injury and damage to the machine.

3.1 Basic safety instructions

The machine may only be used as described in this operating manual.

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

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

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

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

Missing or faulty spare parts could impair safety and damage the machine. Make sure you only use original replacement parts from the manufacturer.

Transport Use a sturdy lifting carriage or forklift for transporting the machine. Raise the machine max. 20 mm and secure it against slipping off.

Setup 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.

Obligations of the operator

Observe the country specific safety and accident prevention regulations and the legal regulations concerning industrial safety and the protection of the environment.

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

Requirements to be met by the personnel

The machine should only be set up by qualified technicians.

Maintenance work and repairs should only be carried out by qualified technicians.

Work on electrical equipment may only be carried out by qualified specialists.

Only authorized persons may work on the machine. Every person who works on the machine must have read the operating manual first.

Operation

Inspect the machine while in use for any externally visible damage. Stop working if you notice any changes to the machine. Report any changes to your supervisor. A damaged machine should no longer be used.

Safety equipment

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

3.2 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.

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 material damage if not complied with.

CAUTION

Type and source of risk
Consequences of non-observance
Measures for avoiding the risk
This is a warning note for a hazard that could result in environmental damage if not complied with.

4 Operation

4.1 Threading needle thread

CAUTION

Risk of injury due to sharp and moving parts!

Punctures and crushing are possible.

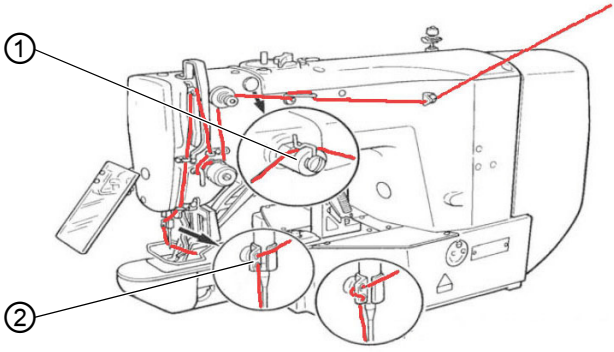
Only thread the needle thread with the sewing machine switched off.

1. Plug the thread reels onto the thread reel holders and feed the needle and hook threads through the unwinding bracket.

↳ The unwinding bracket must stand horizontally above the thread reels.

2. Thread the needle thread as shown in the following figure.

Fig. 1: Threading needle thread

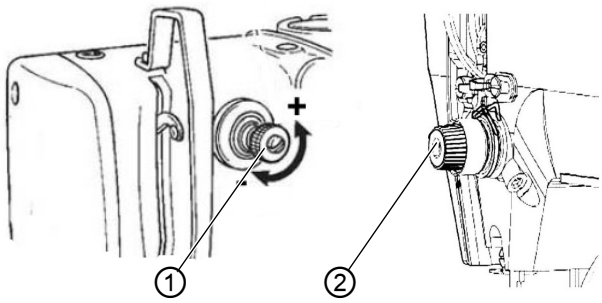


(1) - Silicone lubricator (optional) *(2) - Guide*

3. Pull the needle thread approx. 4 cm through the needle after threading. This ensures reliable sewing-on.
4. When using silicone oil, also thread the needle thread through the optional silicone oiler (1).

4.2 Setting the needle thread tension

Fig. 2: Setting the needle thread tension



(1) - Preliminary tensioner

(2) - Preliminary tensioner

Preliminary tension of the needle thread

With an open primary tensioner (2) a small amount of residual tension of the needle thread is required. The residual tension is generated by the preliminary tensioner (1).

The preliminary tension also affects the length of the cut needle thread end (starting thread for the next seam).

1. Turn the preliminary tensioner (1) clockwise (– direction) for a shorter starting thread.
2. Turn the preliminary tensioner (1) counterclockwise (+ direction) for a longer starting thread.

Primary tension of the needle thread

1. Set the primary tension of the needle thread (2) to be as low as possible.
   The thread interlacing should be exactly in the middle of the material being sewn. With thin sewn material, excessive thread tension can lead to undesired ruffing and thread breakages.

Opening the needle thread tensioner

The primary tensioner (2) is automatically opened during thread cutting.

4.3 Setting the thread regulator

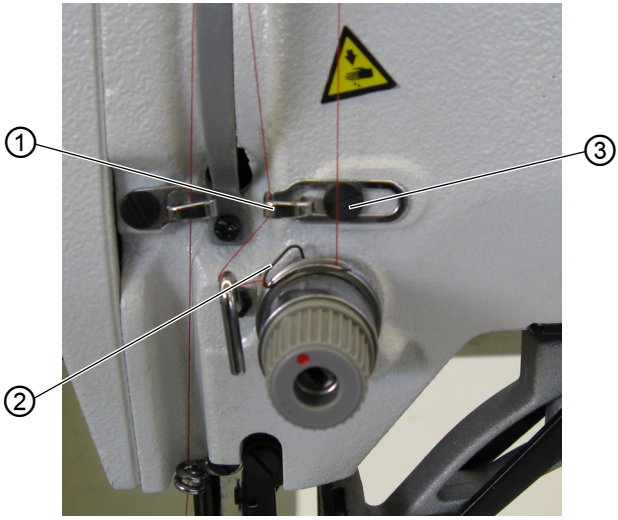
CAUTION

Risk of injury due to sharp parts!

Cutting is possible.

Only thread the needle thread with the sewing machine switched off.

Fig. 3: Setting the thread regulator



(1) - Thread regulator
(2) - Thread tensioning spring
(3) - Screw

The thread regulator (1) regulates the amount of needle thread required for forming the stitch. An optimum sewing result is only possible when the thread regulator is exactly adjusted.

With the correct setting the needle thread loop must slide over the thickest part of the hook at low tension.

1. Loosen the screw (3).

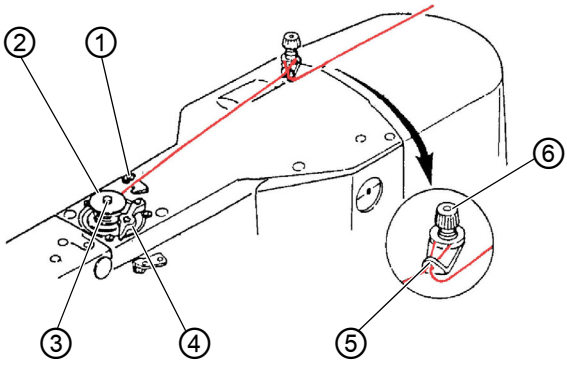
2. Adjust the position of the thread regulator (1).
   Thread regulator to the left = larger amount of needle thread
   Thread regulator to the right = smaller amount of needle thread
3. Tighten the screw (3).

Adjustment note:

When the maximum thread quantity is required then the thread tension spring (2) must be pulled approx. 0.5 mm down from its upper end position. This occurs when the needle thread loop passes the maximum hook diameter.

4.4 Winding the hook thread

Fig. 4: Winding the hook thread



(1) - Thread clamp
(2) - Bobbin
(3) - Winder shaft
(4) - Bobbin lever
(5) - Guide
(6) - Tensioner

1. Fit the bobbin (2) on the bobbin shaft (3).
2. Pull the thread through the guide (5) and around the tensioner (6).
3. Wind the thread counterclockwise approx. 5 x around the bobbin core (2).
4. Press the bobbin lever (4) into the bobbin.

5. Start sewing.

↳ The bobbin winder stops automatically when the configured bobbin filling length has been reached (see Service manual).

6. Tear off the thread at the thread clamp (1) after winding.

Note

If the thread must be wound without sewing then the thread winding mode can be set in the controller.
See chapter bobbin winding (📖 *S. 41*).

4.5 Replacing the hook thread bobbin

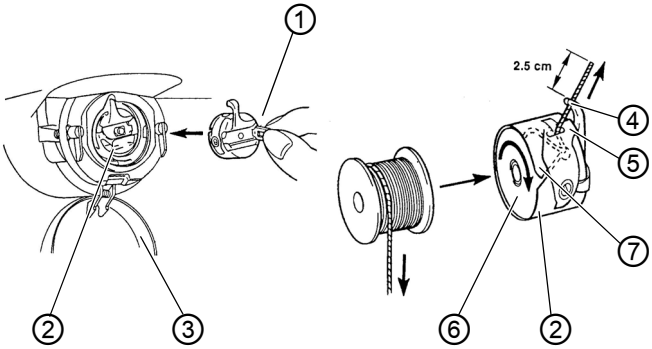
CAUTION

Risk of injury due to sharp and moving parts!

Cutting or chrusing are possible.

Only replace the hook thread bobbin with the sewing machine switched off.

Fig. 5: Replacing the hook thread bobbin



(1) - Bobbin housing flap
(2) - Bobbin housing upper section
(3) - Hook cover
(4) - Hole
(5) - Tension spring
(6) - Bobbing
(7) - Bobbin housing slot

Remove the empty bobbin

1. Pull the hook cover (3) downwards.
2. Lift the bobbin housing flap (1).
3. Remove the bobbin housing upper section (2) with the bobbin (6).
4. Remove the empty bobbin from the bobbin housing upper section (2).

Insert a full bobbin

1. Insert the full bobbin into the bobbin housing upper section (2).
2. Feed the hook thread through the bobbin housing slot (7) under the tensioning spring (5) into the hole (4).
3. Pull the hook thread approx. 2.5 cm out of the bobbin housing upper (2).

↳ The bobbin must rotate in the direction of the arrow when pulling out the hook thread.

4. Insert the bobbin housing upper (2).
5. Close the hook cover (3).

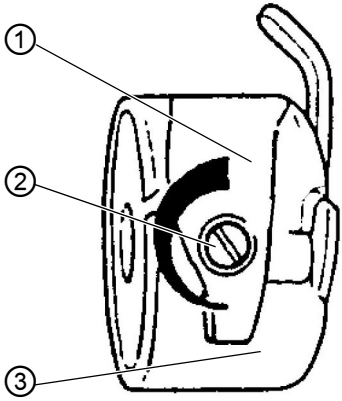
4.6 Setting the hook thread tension

CAUTION

Risk of injury due to sharp and moving parts!
Cutting or crushing are possible.

Only set the hook thread tensioner with the sewing machine switched off.

Fig. 6: Setting the hook thread tension



(1) - Tension spring
(2) - Regulating screw
(3) - Bobbin housing upper section

The required hook thread tension must be generated by the tensioning spring (1). The bobbin housing upper section (3) should slowly fall under its own weight when held by the threaded hook thread.

Adjusting the tensioning spring

1. Remove the bobbin housing upper section (3) with the bobbin.
2. Adjust the tensioning spring (1) via the adjustment screw (2) until the correct tension is set.
3. Insert the bobbin housing upper section (3).

4.7 Changing needle

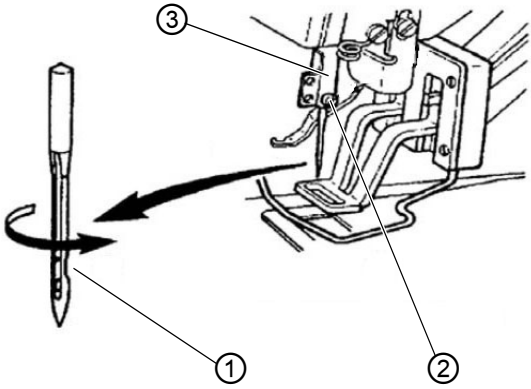
CAUTION

Risk of injury due to sharp and moving parts!

Cutting and crushing are possible.

Only change the needle with the sewing machine switched off.

Fig. 7: Changing needle



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

1. Loosen the screw (2) and remove the needle.
2. Insert the new needle into the hole in the needle bar (3) as far as it will go, taking care to ensure that the groove in the needle (1) faces the hook tip.
3. Tighten the screw (2).
4. Always adjust the clearance between the hook and the needle after changing to a different needle thickness (see 🕮 Service

manual).
Otherwise the following errors can occur:

- Changing to a thinner needle:
  Missing stitches, thread damage
- Changing to a thicker needle: Damage to the hook tip, damage to the needle

4.8 Adjusting the button mount of the button clamp (Class 532)

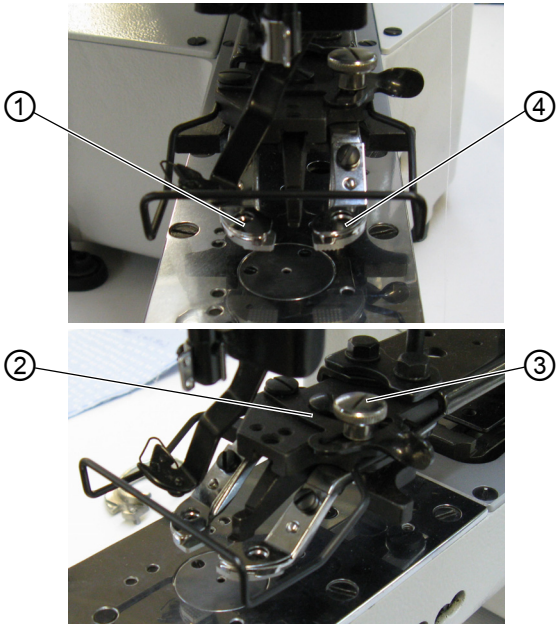
CAUTION

Risk of injury due to sharp and moving parts!

Cutting and crushing are possible.

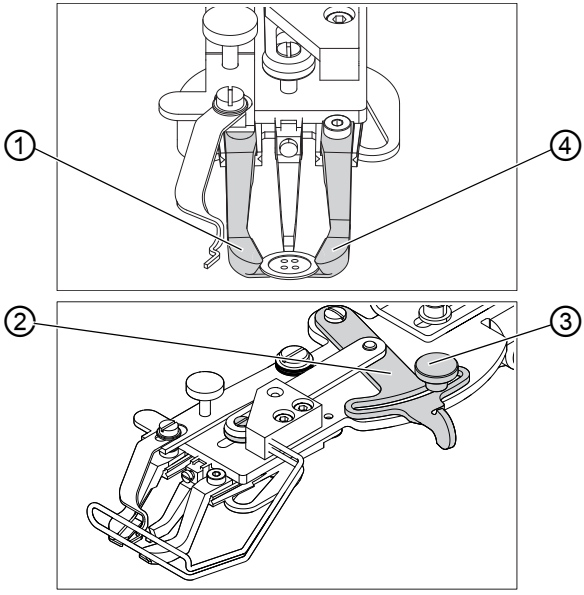
Only adjust the button mount of the button clamp with the sewing machine switched off.

Fig. 8: Adjusting the button mount – standard clamp



(1) - Button mount, left
(2) - Lever
(3) - Knurled screw
(4) - Button mount, right

Fig. 9: Adjusting the button mount – optional clamp



(1) - Button mount, left
(2) - Lever
(3) - Knurled screw
(4) - Button mount, right

The button should be able to slide lightly into the button mount and be easy to align.
However, the button must be securely clamped so that it cannot twist when the sewing material is inserted.

The lever (2) regulates the size of the opening in the button mount.

1. Switch on the sewing machine.
2. Press the **Ready** button.

↳ Clamp raises, pedal ready for sewing.

3. Press the **Ready** button.

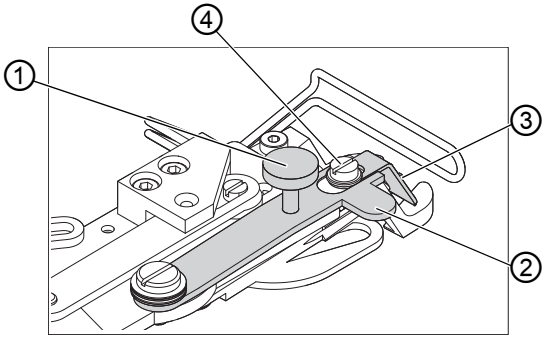
↳ Clamp remains raised, pedal is disabled.

4. Loosen the knurled screw (3).
5. Open the button amount to the correct distance using the lever (2).
6. Insert the button.
7. Tighten the knurled screw (3).

8. Remove the button.
9. Adjust the button mount so that the button is securely held, by loosening the knurled nut (3) and lightly adjusting the lever (2).

4.9 Shank shaper (optional)

Fig. 10: Shank shaper



(1) - Adjustment screw
(2) - Pivot lever
(3) - Shank shaper
(4) - Screw

The button clamp can be optionally equipped with a shank shaper (3).

Pivoting the shank shaper in/out

1. Manually swing the pivoting lever (2) with shank shaper (3) in and out, with the button clamp raised.

Setting the shank length

1. Turn the adjusting screw (1):
   - Clockwise = Shank becomes longer.
   - Counterclockwise = Shank becomes shorter.

Adjusting the position of the shank shaper

The position of the shank shaper (3) can be adjusted to suit different button diameters.

1. Loosen the screw (4).
2. Adjust the shank shaper in the Y direction.
3. Tighten the screw (4).

4.10 Sewing

Operating and function sequence when sewing:

Sewing process	Operation / Explanation
Starting situation before sewing	Pedal in the rest position. Sewing machine is at a standstill. Needle raised, clamp raised. The **Ready** button LED illuminates.
Sewing	• Insert the material to be sewn • Press the pedal forwards to the 1st position. The clamp lowers. • Release the pedal. The clamp raises. • Position the sewing material. • Briefly press the pedal fully forwards. The sewing machine sews at the configured speed.
Interrupting the sewing process in the middle of the sewing cycle	Press the **Reset** button or press the pedal backwards. The sewing machine stops. The clamps remain lowered.
Continuing the sewing process in the middle of the sewing cycle	Press the pedal briefly fully forwards or press the **Reset** button.

4.11 Customer service

Contact for repairs if machine is damaged:

Dürkopp Adler AG

Fig. 11: Potsdamer Str. 190
33719 Bielefeld

Tel. +49 (0) 180 5 383 756

Fax +49 (0) 521 925 2594

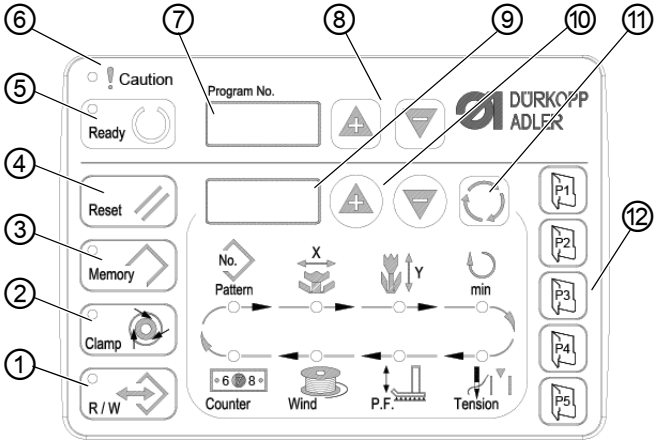
Email: service@duerkopp-adler.com

Internet: www.duerkopp-adler.com

5 Programming

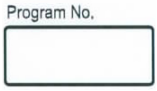
5.1 Control panel

Fig. 12: Control panel



Control panel buttons:

Button / LED	Pos.	Function
	(1)	**USB** button with LED Save/load seam appearances to/from a USB stick.
	(2)	**Needle thread clamp** button with LED Clamps the needle thread on the first stitch. LED on = Needle thread clamp on LED off = Needle thread clamp off
	(3)	**Memory** button Perform memory functions.
	(4)	**Reset** button Delete an error and restore settings.

Button / LED	Pos.	Function
	(5)	**Ready** button with LED Switch between programming and sewing mode. LED on = sewing mode LED off = programming mode
	(6)	**Error** LED LED on = error
	(7)	**Program** display Display parameters.
	(8)	**+/– Program** buttons Change parameters and navigate forwards / backwards.
	(9)	**Function** display Display values for selected functions / programs.
	(10)	**+/– Function buttons** Change values of functions / programs.
	(11)	**Select** button Select different functions. The respective function LED illuminates.
	(12)	**Seam appearance memory** Save the seam appearance.

5.2 Switching on the sewing machine

1. Main power switch ON.

↳ The last seam appearance sewn is loaded and the seam appearance number is shown in the **Program** display.

5.3 Referencing the machine

1. Press the **Ready** button.

↳ The button LED illuminates.

2. Press the **Ready** button.

↳ The button LED goes out.

5.4 Selecting the seam appearance

NOTICE

Property damage may occur!

Damage to the needle if the size of the seam appearance does not match the clamping foot.

Check the clamping foot and adjust if necessary.

Prerequisite:

- Machine is in programming mode, **Ready** button LED is off.

1. Press the **+/– Function** buttons until the seam appearance number is shown in the **Function** display.

5.5 Scaling the axes

Important

Changes to the axes only take effect temporarily. For information on making permanent changes and relocating the seam appearance, see chapter saving seam appearances (📖 *S. 43*).

5.5.1 Scaling the X axis (software version up to M2.10)

1. Press the **Select** button until the **X axis** symbol LED illuminates.
2. Press the **+/– Function** buttons until the desired X axis value is reached. 100 % corresponds to the specified dimensions of the selected seam appearance.

5.5.2 Scaling the X axis (from software version M2.14)

From software version M2.14 the seam appearance can be changed directly at the control panel, by 0.1 mm steps.
A percentage conversion is no longer required.

5.5.3 Scaling the Y axis (software version up to M2.10)

1. Press the **Select** button until the **Y axis** symbol LED illuminates.
2. Press the **+/– Function** buttons until the desired Y axis value is reached. 100 % corresponds to the specified dimensions of the selected seam appearance.

5.5.4 Scaling the Y axis (from software version M2.14)

From software version M2.14 the seam appearance can be changed directly at the control panel, by 0.1 mm steps.
A percentage conversion is no longer required.

5.5.5 Recalculate the button hole clearance (class 532) (software version up to M2.08)

The button hole clearance is preset to 3.4 mm (3.4 mm = 100 %).
The button hole clearance can be set by changing the percentage value.

Button hole clearance [mm]	Value [%]	Button hole clearance [mm]	Value [%]	Button hole clearance [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

Button hole clearance [mm]	Value [%]	Button hole clearance [mm]	Value [%]	Button hole clearance [mm]	Value [%]
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		

5.5.6 Recalculate the button hole clearance (class 532) (from software version M2.10)

The button hole clearance is preset to 3.4 mm. From software version M2.10 the seam appearance can be changed directly at the control panel, by 0.1 mm steps.
A percentage conversion is no longer required.

5.5.7 Recalculate the bartack dimensions (class 512) (software version up to M2.10)

The following formula is used for converting the preset dimensions to the desired dimensions:

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

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

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

5.5.8 Recalculate the bartack dimensions (class 512) (from software version M2.14)

From software version M2.14 the seam appearance can be changed directly at the control panel, by 0.1 mm steps.
A percentage conversion is no longer required.

5.6 Setting the speed

Important

Changes to the speed only take effect temporarily. For information on making permanent changes see chapter Saving seam appearances (📖 *S. 43*).

1. Press the **Select** button until the **Speed** symbol LED illuminates.
2. Press the **+/– Function** buttons until the desired speed is reached.

5.7 Checking the seam appearance

1. Press the **Select** button until the **Seam appearance form** symbol LED illuminates.

↳ The **Program** display shows the current seam appearance form.

2. Press the **Ready** button to confirm the seam appearance.

↳ The **Ready** button LED illuminates.

3. Press the foot pedal forwards.

↳ The clamp lowers.

4. Press the **+/– Function** buttons to sew 1 stitch respectively.

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

5. Press the **Reset** button.

↳ The clamp raises.

6. Press the **Select** button until the **Seam appearance form** symbol LED illuminates.

5.8 Changing the seam appearance

1. Press the **Select** button until the **Pattern Number** symbol LED illuminates.
2. Press the **+/– Function** buttons until the desired seam appearance number is shown in the **Function** display.
3. Press the **Ready** button.

5.9 Bobbin winding

Prerequisite:

- Needle removed.
- Needle thread not threaded.

1. Press the **Ready** button.

↳ The button LED illuminates.

2. Press the **Ready** button.

↳ The button LED goes out.

3. Press the **Select** button until the **Bobbin** symbol LED illuminates.
4. Press the **Ready** button.

↳ The button LED illuminates, the clamp lowers.

5. Press the pedal forwards.

↳ The bobbin winding process starts.

6. Press the pedal fully forwards to stop the bobbin winding process.
7. Press the **Ready** button.

↳ The button LED goes out, the clamp raises.

5.10 Sewing

Prerequisite:

- Machine is in sewing mode, **Ready** button LED illuminates.
- Needle is fitted.
- Needle thread is threaded.
- Seam appearance is selected.

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

↳ The clamp lowers.
The clamp raises when the pedal is released.

3. Briefly press the foot pedal fully forwards.

↳ Sewing process starts. The clamp raises automatically at the end of sewing.

5.11 Counter

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

Prerequisite:

- Machine is in programming mode, **Ready** button LED is off.

1. Press the **Select** button until the **Counter** symbol LED illuminates.
2. Press the **Reset** button to set the counter to 0.
3. Press the **+/– Function** buttons to select the cycle number.
Each end of sewing decrements the counter by 1.
A message is shown in the display when the cycle number is reached.
4. Insert a new bobbin.
5. Press the **Reset** button.

↳ Counter is reset.

5.12 Pausing sewing

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

↳ Sewing process paused, display shows error message E-50.

2. Press the **Reset** button or press the pedal forwards to continue sewing.

5.13 Disabling standard seam appearances

Standard seam appearances can be disabled so that they are no longer displayed.

Prerequisite:

- Machine is in programming mode, **Ready** button LED is off.

1. Press the **Memory** button and button **P1** at the same time.

↳ The **Program** display shows the seam appearance number, the **Function** shows 0 or 1:
0 = Seam appearance is displayed.
1 = Seam appearance is disabled.

2. Press the **+/– Function** buttons to select a different seam appearance.
3. Press the **Ready** button to confirm the seam appearance.
4. Press the **+/– Function** buttons to select between 0 and 1.
5. Press the **Ready** button to confirm the value.
6. Press the **Memory** button.

5.14 Saving seam appearances

Standard seam appearances can be stored under the seam appearance buttons **P1** to **P5**, with a total of 50 memory locations available.
The memory locations are called up via the **+/– Function** buttons, the memory locations up to number 25 can also be called up using single seam appearance buttons and combinations of these.

Sewing appearance memory button combinations

Memory number	Button combination	Memory number	Button combination	Memory number	Button combination	Memory number	Button combination
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		

5.14.1 Assigning the memory buttons

Prerequisite:

- Machine is in programming mode, **Ready** button LED is off.

1. Press the **Memory** button and button **P2** at the same time.
2. Press the **+/– Program** buttons to select a memory location.
3. Press the **Ready** button to confirm the memory location.
4. Select a seam appearance (📖 *S. 37*).
5. Scale the axes (📖 *S. 37*).
6. Set the speed (📖 *S. 40*).
7. Relocating the sewing appearance position:

- Press the **Select** button until the **X axis** symbol LED flashes.
- Press the **+/– Function** buttons and set the values: –5/+5.

- Press the **Select** button until the **Y axis** symbol LED flashes.
- Press the **+/– Function** buttons and set the values: –4 / +4.

8. Press the **Ready** button to confirm the settings.
9. Press the **Memory** button to exit the memory mode.
10. Check the seam appearance (📖 *S. 40*).

5.14.2 Sewing with the memory buttons

1. Press the desired seam appearance memory button (or button combination).
2. Press the **Ready** button.
3. Check the seam appearance form.
4. Sew with the selected seam appearance.

5.14.3 Deleting the memory button assignments

Prerequisite:

- Machine is in programming mode, **Ready** button LED is off.

1. Press the **Memory** button and button **P2** at the same time.
2. Press the **+/– Program** buttons to select a memory location.
3. Press the **Ready** button to confirm the memory location.
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 exit the memory mode.

5.15 Saving seam appearance sequences

In addition to the seam appearances stored in memory locations P1 ~ P50, the sewing machine also allows the use of seam appearances stored in memory locations C01 ~ C25.

Prerequisite:

- Machine is in programming mode, **Ready** button LED is off.

1. Press the **Memory** button and button **P3** at the same time.
2. Press the **+/– Program** buttons to select a memory location (C01 ~ C25).
3. Press the **Ready** button to save the seam appearance sequence.
4. Press the **+/– Function** buttons to sew the 1st seam appearance.
5. Press the **+/– Function** buttons to sew the 2nd seam appearance.
6. Press the **+/– Function** buttons to sew the 3rd seam appearance.
7. Press the **+/– Function** buttons to sew the 4th seam appearance.
8. Press the **Ready** button to confirm the seam appearance sequence.

   ↳ The **Program** shows the memory location, the **Function** display shows the number of seam appearances.
9. Press the **Memory** button to exit the memory mode.

5.16 Sewing with a seam appearance sequence

Prerequisite:

- Machine is in programming mode, **Ready** button LED is off.

1. Press the **+/– Function** buttons to select a seam appearance.
2. Press the **Ready** button to confirm the seam appearance sequence.

↳ The **Program** display shows the seam appearance sequence, e. g. <1.1>,
The **Function** display shows the seam appearance number.

3. Briefly press the pedal fully forwards.

↳ The seam appearance is sewn. At the end of sewing, the **Program** display shows the next seam appearance sequence, e. g. <1.2>, the **Function** display shows the next seam appearance number etc.

4. To switch between seam appearances in a sequence, press the **+/– Program** buttons and select the desired seam appearance.

5.17 Deleting a seam appearance sequence

Prerequisite:

- Machine is in programming mode, **Ready** button LED is off.

1. Press the **Memory** button and button **P3** at the same time.
2. Press the **+/– Program** buttons to select a seam appearance sequence (C01 ~ C25).
3. Press the **Ready** button to confirm the seam appearance sequence.
4. Press the **Reset** button to delete the seam appearance sequence.
5. Press the **Ready** button to confirm the deletion.
6. Press the **Memory** button to exit the memory mode.

5.18 Finishing sewing

CAUTION

Risk of injury due to sharp and moving parts!
Cutting or crushing are possible.
Do not reach under the raised clamp.

1. Press the **Ready** button.

↳ The button LED illuminates. The controller is in the sewing mode.

2. Main power switch OFF.

Note

If the sewing machine is switched off without pressing the **Ready** button then any changed values are not saved.

5.19 Editing parameters in memory

5.19.1 Editing parameters at the M1 level

Prerequisite:

- Machine is in programming mode, **Ready** button LED is off.

1. Press and hold the **Memory** button for 3 s.

↳ The controller beeps once, the button LED lights up. The **Program** display shows the parameter number, the **Function** display shows the parameter value.

2. Press the **+/– Program** buttons to select a different parameter.
3. Press the **Ready** button to confirm the parameter.

↳ The button LED illuminates.

4. Press the **+/– Function** buttons to change values.

5. Press the **Reset** button to return a changed value to the original value.
6. Press the **Ready** button to save a change.

↳ The button LED goes out.

7. Press the **Memory** button.

↳ The button LED goes out.

5.19.2 Editing parameters at the M2 level

Prerequisite:

- Machine is in programming mode, **Ready** button LED is off.

1. Press and hold the **Memory** button for 6 s.

↳ The controller beeps twice, the button LED lights up.
The **Program** display shows the parameter number, the **Function** display shows the parameter value.

2. Press the **+/– Program** buttons to select a different parameter.
3. Press the **Ready** button to confirm the parameter.

↳ The button LED illuminates.

4. Press the **+/– Function** buttons to change values.
5. Press the **Reset** button to return a changed value to the original value.
6. Press the **Ready** button to save a change.

↳ The button LED goes out.

7. Press the **Memory** button.

↳ The button LED goes out.

5.20 Resetting parameters to factory defaults

Prerequisite:

- Machine is in programming mode, **Ready** button LED is off.

1. Press and hold the **Memory** button for 6 s.

↳ The button LED illuminates.

2. Use the **+/– Program** buttons to set parameter number U098.
3. Press the **Ready** button.
4. Use the **+/– Function** buttons to enter a function value of 1.
5. Press the **Select** button.

↳ The controller beeps once. If the controller beeps three times then the reset was not successful.

6. For Class 532 set the parameter U085.

Setting parameter U085 (Class 532)

With the button sewing machine, parameter U085 must also be adjusted after resetting the parameters to factory defaults.

Prerequisite:

- Machine is in programming mode, **Ready** button LED is off.

1. Press and hold the **Memory** button for 6 s.

↳ The button LED illuminates.

2. Use the **+/– Program** buttons to set parameter number U085.
3. Press the **Ready** button.
4. Use the **+/– Function** buttons to enter a function value of 1.

↳ Press the **Select** button.

5.21 Externally editing seam appearances

NOTICE

Property damage may occur!

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

Check the clamping foot and adjust if necessary.

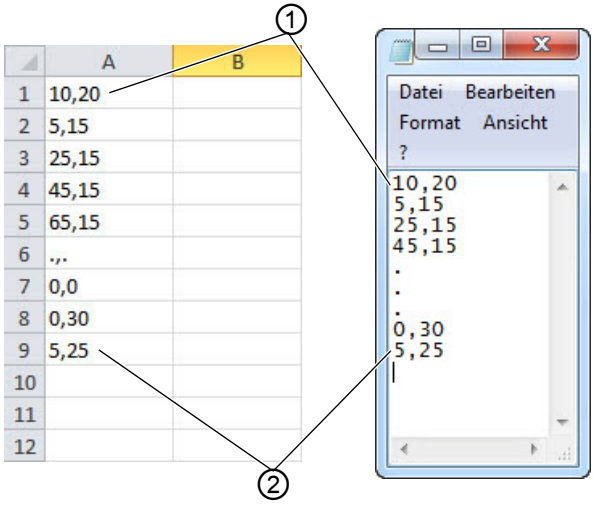
Seam appearances can externally created and edited on a PC, e.g. using MS Excel or a text editor.

Each line represents a stitch coordinate in the X and Y directions. The seam appearance has a maximum size of 400 x 300 x 1/10 mm.

Negative values and comma-separated values must not be entered.

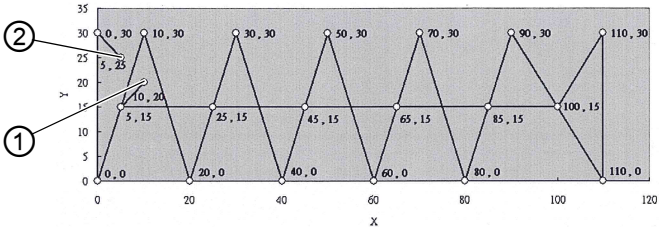
The operator does not need to perform any calculations in order to center the seam appearance. The machine automatically centers the seam appearance in the middle of the sewing field. To subsequently relocate the seam appearance, see chapter saving seam appearances (📖 *S. 43*).

Fig. 13: Sample stitch appearance coordinates in MS Excel or a text editor



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

Fig. 14: Seam appearance example



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

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

Important

In a text editor, the last coordinate line must be actively terminated with a line break so that the cursor is in the next empty line.

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

Information

It is also possible to create seam appearances using DA-CAD 5000 and save these as CSV files.

5.22 Working with a USB stick

Up to 10 custom seam appearances can be loaded into the controller via a USB stick.

Prerequisite:

- Machine is in programming mode, **Ready** button LED is off.

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

↳ The controller beeps briefly.

2. Press the **USB** button.

↳ The button LED illuminates, the **Program** display shows parameter number U01.

3. Press the **+/– Program** and select a memory location (U01 ~ U10).
4. Press the **Ready** button.

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

- 1: Load seam appearance from USB stick.
- 2: Save seam appearance to USB stick.
- 3: Delete seam appearance from controller.
- 4: Edit seam appearance.

Loading a seam appearance into the controller from the USB stick : Value 1

1. Use the **+/– Function** buttons to set a value of 1.
2. Press the **Select** button and select the desired seam appearance file (HSR2000.csv ~ HSR2099.csv).
3. Press the **Select** button to load the seam appearance from the USB stick.

↳ The **Function** display shows the value **ok**,the controller beeps and the seam appearance is now saved.

4. Press the **Reset** button twice.

Saving a seam appearance from the controller to the USB stick: Value 2

1. Use the **+/– Function** buttons to set a value of 2.
2. Press the **Select** button to save the seam appearance to the USB stick (HSW2001.csv = U01 ~ HSW2010.csv = U10).
3. Press the **Select** button to confirm the save operation.

↳ The **Function** display shows the value **ok**,the controller beeps and the seam appearance is now saved.

4. Press the **Reset** button twice.

Deleting a seam appearance from the controller: Value 3

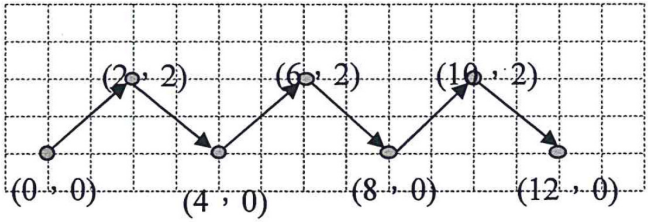
1. Use the **+/– Function** buttons to set a value of 3.

2. Press the **Select** button.
3. Press the **Reset** button to confirm the deletion.

↳ **Function** display shows “----”.

Editing a seam appearance / contour test: Value 4

Fig. 15: Editing a seam appearance



1. Use the **+/– Function** buttons to set a value of 4.
2. Press the **Select** button.

↳ The **Program** display shows 1 for the first stitch, the **Function** display shows the value for the X axis, the **X axis** symbol LED illuminates.

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

↳ The **Y axis** symbol LED illuminates, the **Function** display shows the value for the Y axis.

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

↳ The button LED goes out.

10. Press the **USB** button.

↳ The button LED goes out.

5.23 Error messages

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

Error message					Description	Possible cause	Remedy
E				8	Table data error	Table data could not be read	• Save the table data anew.
E			1	0	Seam appearance number error	The selected seam appearance is not stored in ROM or has been disabled. Seam appearance “0”	• Press the Reset button to confirm the seam appearance number.
E			3	0	Needle bar position raised error	Needle bar is not in the upper position	• Check the connections. • Rotate the needle bar to the upper dead point.
E			4	0	Needle field area error	Needle field area error exceeded	• Press the Reset button. • Check the X/Y scaling.
E			4	2	Enlargement error	Sewing length is beyond 10 mm	• Press the Reset button. • Check the seam appearance and the X/Y scaling.
E			4	5	Seam appearance data error	Seam appearance data could not be accepted	• Press the Reset button. • Check the ROM.
E			5	0	Pause	Reset button pressed while sewing. Sewing machine stopped.	• Press the Reset button. • Trigger the thread cutter. • Start the sewing process anew.
E		3	0	2	Supper section error	Upper section is tilted over.	• Tilt the upper section back into place.
E		3	0	5	Thread cutter position error	Thread cutter knife not in the home position	• Main power switch OFF. • Check the sensor.
E		3	0	6	Thread catcher position error	Thread catcher not in the home position	• Main power switch OFF. • Check the sensor.
E		3	3	2	Clamp foot position error	Clamp foot not in the home position	• Main power switch OFF. • Check the sensor.
E		5	0	1	Data read error	Data not present or stored in the wrong format	• Store the data anew on the USB stick.
E		5	0	2	USB read error	MOT file faulty	• Store the data anew on the USB stick.

Error message					Description	Possible cause	Remedy
E		5	0	3	SUM read error	CHECKSUM data in MOT file faulty	• Store the CHECKSUM file anew on the USB stick.
E		5	0	4	Endblock error	No Endblock in the MOT file	• Store the Endblock file anew on the USB stick.
E		5	0	5	USB read error	USB stick not found	• Main power switch OFF. • Main power switch ON. • Plug in the USB stick again.
E		5	0	6	USB read error	Reading from U01 ~ U10 not possible.	• Main power switch OFF. • Main power switch ON. • Plug in the USB stick again.
E		5	0	7	Own seam appearances read error	Read error U01 ~ U10	• Download data again.
E		5	0	8	Own seam appearances file error	Read error U01 ~ U10	• Check the file type.
E		5	0	9	Own seam appearances file error	Read error U01 ~ U10	• Check the file type.
E		5	1	0	Own seam appearances file error	Read error U01 ~ U10	• Check the file type. • Store the data anew on the USB stick.
E		5	1	1	USB write error	File with the same name already present	• Delete or rename the file.
E		5	1	2	USB read error	Data cannot be loaded from the USB stick	• Check the USB stick. • Plug in the USB stick again.
E		5	1	3	USB write error	Data cannot be copied to the USB stick.	• Check the USB stick. • Plug in the USB stick again.
E		5	5	0	Data write error	Flash memory transfer error	• Main power switch OFF. • Repeat the procedure. • Replace the mainboard.

Error message					Description	Possible cause	Remedy
E		5	5	1	Internal process error	Software error	• Main power switch OFF. • Repeat the procedure. • Replace the mainboard. • Replace the software.
E		7 7	0 3	7 5	Motor signal error	Encoder / motor has no signal	• Check the motor / encoder.
E		7	3	6	Motor rotation error	Motor stops after a certain time / encoder has no signal	• Check the motor / encoder.
E		7	3	7	Z phase error	Z signal no longer changes	• Check the motor / encoder.
E		7	3	8	Z phase error	Z signal inaccurate / encoder has no signal	• Check the motor / encoder.
E		9	0	7	X axis search error	X axis sensor not responding	• Main power switch OFF. • Check the sensor.
E		9	0	8	Y axis search error	Y axis sensor not responding	• Main power switch OFF. • Check the sensor.
E		9	1	0	Clamp foot search error	Clamp foot sensor not responding	• Main power switch OFF. • Check the sensor.
E		9	1	1	Clamp foot motor error	Clamp foot motor not running correctly	• Main power switch OFF. • Check the motor and connections.
E		9	1	2	Internal error	–	• Notify DA Service
E		9	1	3	Thread catcher search error	Thread catcher sensor not responding	• Main power switch OFF. • Check the sensor.
E		9	1	4	Thread catcher motor error	Thread catcher motor not running correctly	• Main power switch OFF. • Check the motor and connections.

5.24 Loading software from a USB stick

NOTICE

Property damage may occur!

Interrupting the copy process can damage the machine.

Never pull out the USB during the copy process.
Only pull out the USB after the specified copying time.

When a new software version is available, this can be downloaded from www.duerkopp-adler.com and loaded into the controller via a USB stick.

Important

The following files must be stored on the USB stick:

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

5.24.1 Loading the main program

1. Switch on the controller.
2. Plug in the USB stick.
3. Press the **USB** button and wait approx. 3 seconds.
4. Press the **Memory** button.
5. Use the **+/– Function** buttons to set a value of 5 in the **Function** display.
6. Press the **Select** button.

↳ The download into the controller starts.

Important

The download is finished when no more values are shown in the **Function** display. You must now wait at least **25 seconds** before continuing, otherwise the controller can be damaged!

7. Switch off the controller.
8. Pull out the USB stick.

5.24.2 Loading seam appearances

1. Switch on the controller.

↳ The current software version is briefly shown in the display.

2. Plug in the USB stick.
3. Press the **USB** button and wait approx. 3 seconds.
4. Press the **Memory** button.
5. Press the **P5** button.

↳ The download into the controller starts. Duration is approx. 4 min.

6. Press the **Reset** button.
7. Pull out the USB stick.

↳ The software transfer is complete.

5.24.3 Setting parameter U085 (Class 532)

With the button sewing machine, the parameter U085 must be set after loading new software.

Prerequisite:

- Machine is in programming mode, **Ready** button LED is off.

1. Press and hold the **Memory** button for 6 s.

↳ The button LED illuminates.

2. Use the **+/– Program** buttons to set parameter number U085.
3. Press the **Ready** button.
4. Use the **+/– Function** buttons to enter a function value of 1.
5. Press the **Select** button.

5.24.4 Checking the software version

1. Press and hold the **Memory** button for 6 s.

↳ The controller beeps twice, the button LED lights up.

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 = Seam appearances

4. Press the **+/– Function** buttons and check the respective software version.
5. Press the **Ready** button.
6. Press the **Memory** button.

↳ The button LED goes out.

6 Maintenance

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

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

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				●

6.1 Cleaning

WARNING

Risk of injury from flying particles!
Cleaning with compressed air can cause injuries to the eyes or respiratory organs.

NEVER blow particles towards other persons.

CAUTION

Risk of injury from the point of the needle and moving parts
Only maintain the sewing automat when it is switched off.

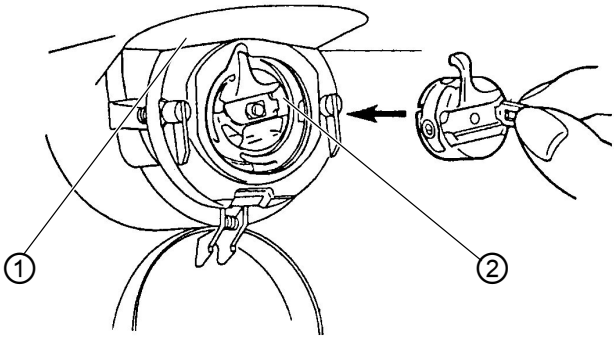
Lint and thread remnants should be removed after every 8 hours of operation using a compressed air gun or a brush. When sewing very fluffy material, the machine should be cleaned more frequently.

A clean sewing machine provides protection from faults.

Points that need to be cleaned particularly thoroughly:

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

Fig. 16: Cleaning and checking



(1) - Underside of throat plate *(2) - Hook*

6.2 Lubrication

WARNING

Risk of injuries due to contact with oil!
Contact with oil can cause irritation, rashes, allergies or skin injuries.
ALWAYS avoid long-term contact with oil.
ALWAYS thoroughly wash the affected areas if contact with oil occurs.

CAUTION

Risk of environmental damage from old oil!
Incorrect handling of old oil can result in severe environmental damage.
ALWAYS observe the legally prescribed regulations for handling and disposal of mineral oil.
Take care to ensure that oil is NEVER spilled.

For lubricating the sewing automat, use only lubrication oil DA-10 or oil of equivalent quality with the following specifications:

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

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

- 250 ml container: 9047 000011
- 1 liter container: 9047 000012
- 2 liter container: 9047 000013
- 5 liter container: 9047 000014

The special grease for lubricating the machine components is provided in the accessory pack. It can also be obtained from DÜRKOPP ADLER AG sales offices using the following part number:

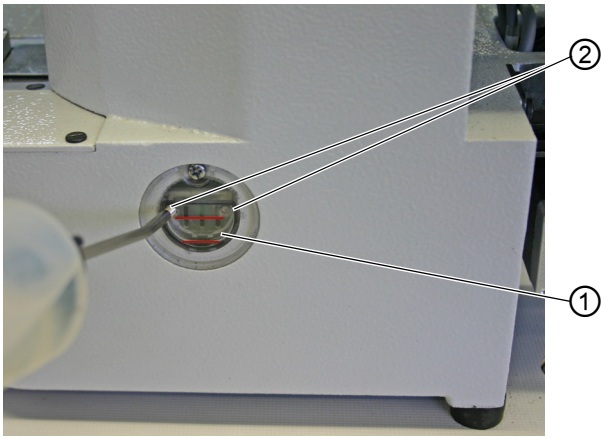
- 9047 098004

6.2.1 Checking the oil level

Checking the oil level of the hook

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

Fig. 17: Refilling oil (1)



(1) - Oil reservoir *(2) - Oil filler opening*

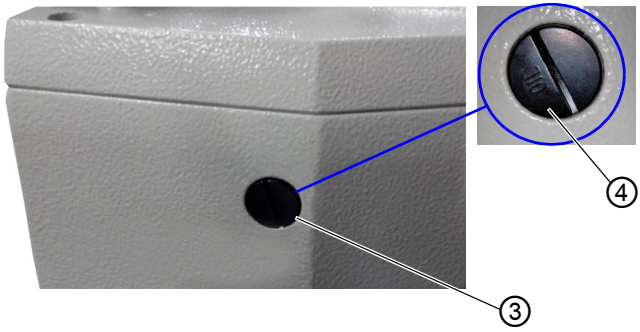
Proper setting

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. 18: Refilling oil (2)

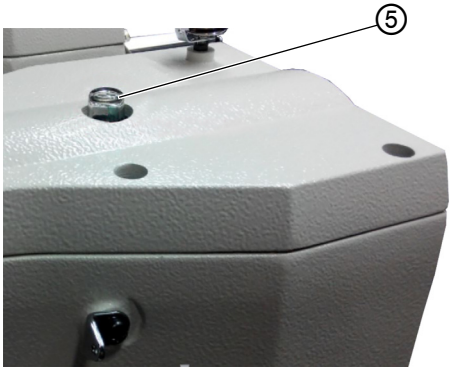


(3) - Oil filler opening *(4) - Screw*

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. 19: Refilling oil (3)



(5) - Oil gauge glass

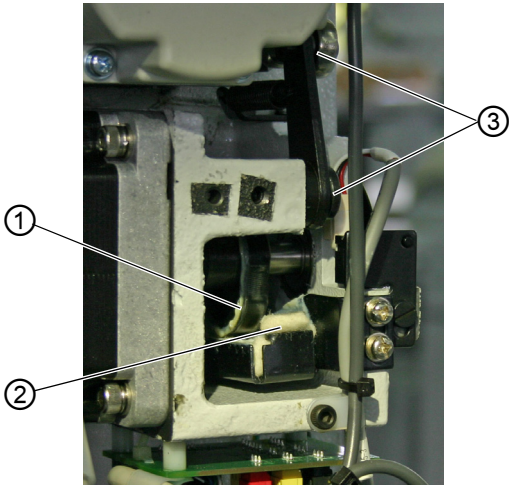
↳ When oil splashes at the oil gauge glass during operation enough oil is filled in.

6.2.2 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

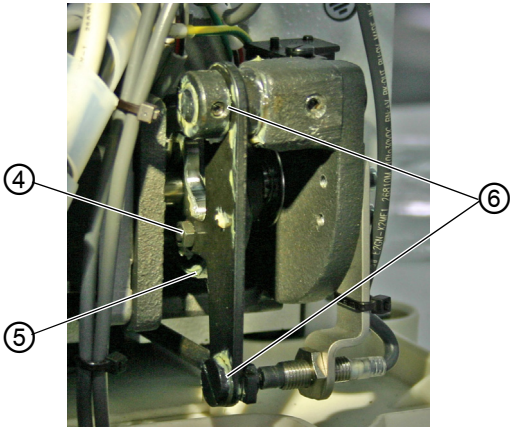
Fig. 20: Lubrication (1)



(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.

Fig. 21: Lubrication (2)

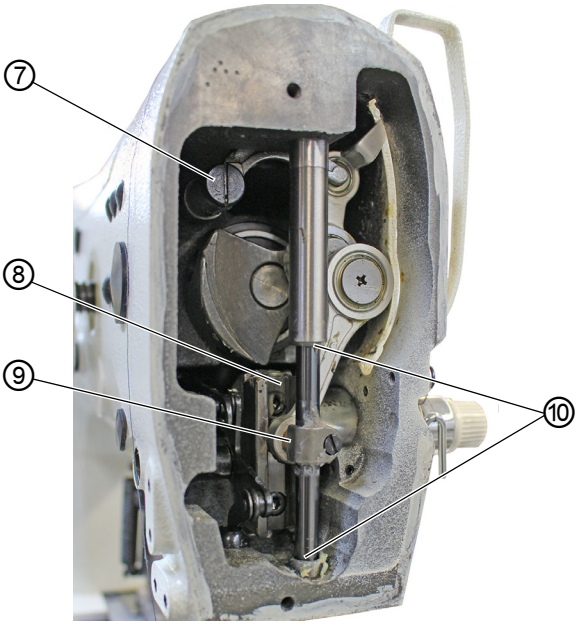


(4) - Roller
(5) - Guide groove
(6) - Joints

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

Fig. 22: Lubrication (3)

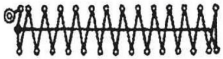


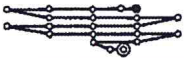
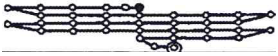
(7) - Thread lever guide
(8) - Groove
(9) - Cross head backside
(10) - Connectors

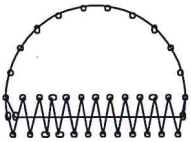
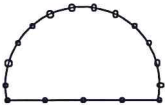
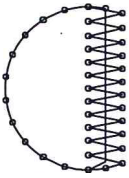
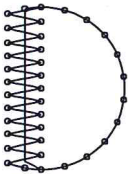
1. Apply grease to cross head backside (9) and the connectors (10).
2. Lubricate the groove (8).
3. Lubricate the thread lever guide (7).

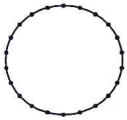
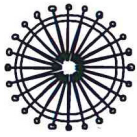
7 Seam appearances

7.1 Standard seam appearances for class 512

No.	Stitch diagram	Number of stitches	Size (mm) X x Y
1		42	16 x 2
2			10 x 2
3			16 x 2.5
4			24 x 3
5		28	10 x 2
6			16 x 2
7		36	10 x 2
8			16 x 2.5
9		56	24 x 3
10		64	24 x 3
11		21	6 x 2.5
12		28	6 x 2.5
13		36	6 x 2.5
14		14	8 x 2

No.	Stitch diagram	Number of stitches	Size (mm) X x Y
15		21	8 x 2
16		28	8 x 2
17		21	10 x 0.1
18		28	10 x 0.1
19			25 x 0.1
20		36	25 x 0.1
21		41	25 x 0.1
22		44	35 x 0.1
23		28	4 x 20
24		36	
25		42	
26		56	

No.	Stitch diagram	Number of stitches	Size (mm) X x Y
27		18	0.1 x 20
28		21	0.1 x 10
29			0.1 x 20
30		28	0.1 x 20
31		52	10 x 7
32		63	12 x 7
33		24	10 x 6
34		31	12 x 6
35		48	7 x 10
36		48	7 x 10
37		90	24 x 3

No.	Stitch diagram	Number of stitches	Size (mm) X x Y
38		28	8 x 2
39		28	Ø 12
40		48	
41		29	2.5 x 20
42		39	2.5 x 25
43		45	2.5 x 25
44		58	2.5 x 30
45		75	2.5 x 30
46		42	2.5 x 30
47		91	Ø 8
48		99	
49		148	
50		164	

7.2 Standard seam images for class 532

No.	Stitch pattern	Stitch distribution	Size (mm) X x Y	No.	Stitch pattern	Stitch distribution	Size (mm) X x Y
1 / 34		6 - 6	3.4 x 3.4	18 / 44		6	3.4 x 0
2 / 35		8 - 8		19 / 45		8	
3		10 - 10		20		10	
4		12 - 12		21		12	
5 / 36		6 - 6	3.4 x 3.4	22		16	
6 / 37		8 - 8		23 / 46		6	0 x 3.4
7		10 - 10		24		10	
8		12 - 12		25		12	
9 / 38		6 - 6	3.4 x 3.4	26 / 47		6 - 6	3.4 x 3.4
10 / 39		8 - 8		27		10 - 10	
11		10 - 10		28 / 48		6 - 6	3.4 x 3.4
12 / 40		6 - 6	3.4 x 3.4	29		10 - 10	
13 / 41		8 - 8		30 / 49		5 - 5 - 5	3 x 2.5
14		10 - 10		31		8 - 8 - 8	
15 / 42		6 - 6	3.4 x 3.4	32 / 50		5 - 5 - 5	3 x 2.5
16 / 43		8 - 8		33		8 - 8 - 8	
17		10 - 10					

8 Setup

WARNING

Risk of injury!

Crushing is possible.

The machine may only be set up by trained specialists.
Wear safety gloves and safety shoes when unpacking and setting up.

8.1 Checking the scope of delivery

The scope of delivery depends on your specific order.

1. Check the scope of delivery for completeness.

The following description applies to a sewing machine whose components are entirely supplied by Dürkopp Adler.

- Upper section

Accessory pack containing:

- Thread stands
- Protective cover
- Fastening material

Controller parts set:

- Main switch
- Control panel
- Controller

Additional equipment:

- Frame with table plate, drawer and rods
- Pedal

8.2 Removing the transport securing devices

1. Remove the following transport securing devices:
   - Lashing straps and wooden blocks from the upper machine section
   - Lashing straps and wooden blocks from the table plate
   - Lashing straps and wooden blocks from the frame.

8.3 Assembly

8.3.1 Checking the table plate

CAUTION

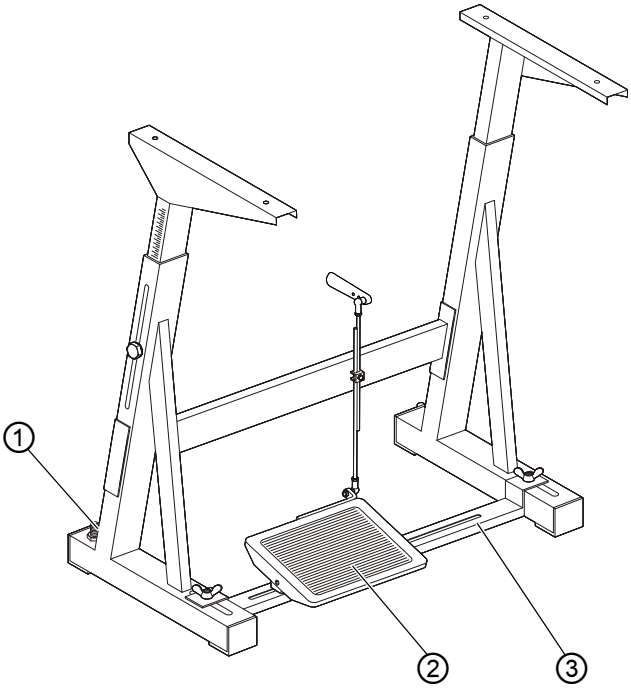
Risk of injury from a self-manufactured table plate of insufficient load-bearing capacity!

Crushing is possible.

Ensure that the table plate has sufficient load-bearing capacity and strength.
The cutouts in self-manufactured table plates must conform to the dimensions specified in the drawing (see Appendix).

8.3.2 Assembling the frame

Fig. 23: Assembling the frame



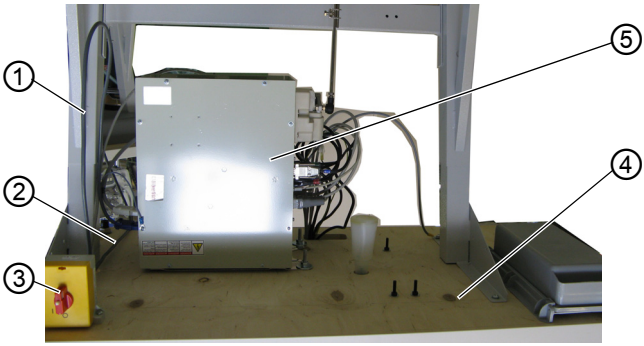
(1) - Adjusting screw
(2) - Pedal
(3) - Frame brace

Assemble the individual parts of the frame:

1. Turn the adjusting screw (1) to ensure that the frame stands securely. The frame must stand with all 4 feet on the floor.
2. Screw the pedal (2) to the frame brace (3).
3. Slide the pedal (2) so that it sits in the middle of the frame brace (3). The frame brace (3) has elongated holes to allow alignment.

8.3.3 Completing the table plate

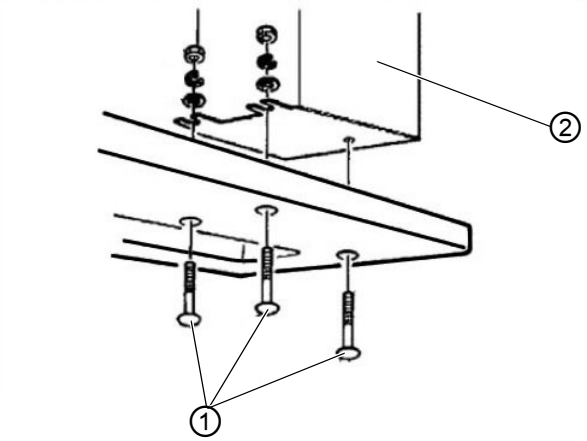
Fig. 24: Completing the table plate (1)



(1) - Connection cable
(2) - Connection cable
(3) - Main switch
(4) - Table plate
(5) - Control cabinet

1. Place the table plate (4) inverted on a working surface.
2. Screw the main power switch (3) to the left of the underside of the table plate.
3. Fasten the cables (1) and (2) to the control cabinet (5) on the table plate, using cable fastening nails and strain-relief clamps.

Fig. 25: Completing the table plate (2)

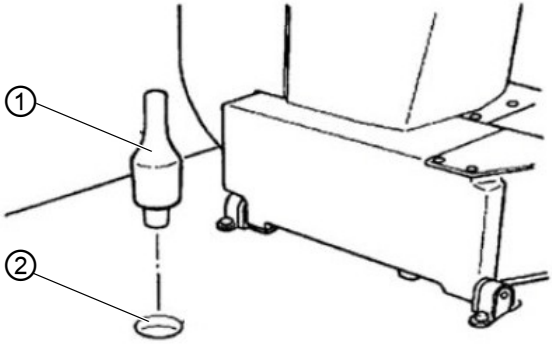


(1) - Screws *(2) - Control cabinet*

1. Place the control cabinet (2) on the underside of the table plate.
2. Screw the control cabinet (2) to the underside of the table plate using 3 screws (1), washers, retaining rings and nuts.

8.3.4 Mounting the upper section support

Fig. 26: Mounting the upper section support

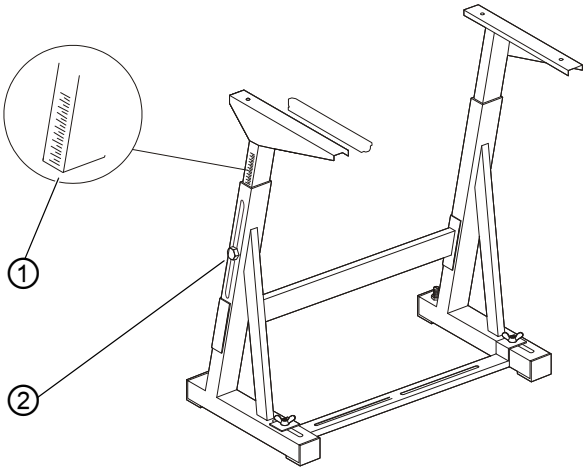


(1) - Upper section support *(2) - Hole*

1. Insert the upper section support (1) into the hole (2) in the table plate.

8.3.5 Setting the working height

Fig. 27: Setting the working height



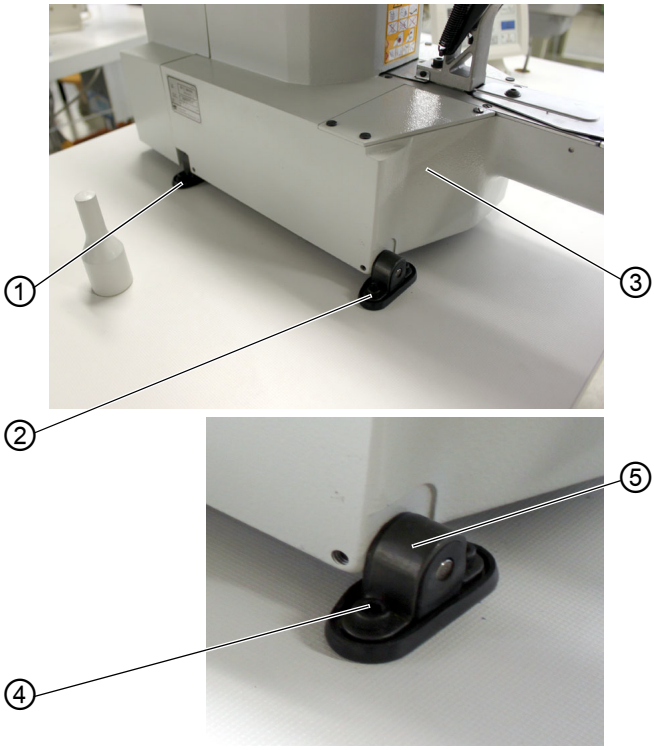
(1) - Scale *(2) - Screws*

The working height can be adjusted between 750 mm and 950 mm (measured to the upper edge of the table plate). The frame height should correspond to the physical characteristics of the operating personnel.

1. Loosen the screws (2) on both of the frame bars.
2. To avoid jamming, slide the table plate in or out evenly at both sides.
   The scales (1) on the outer sides of the bars serve as an adjustment aid.
3. Tighten both screws (2).

8.3.6 Mounting upper machine section

Fig. 28: Mounting upper machine section

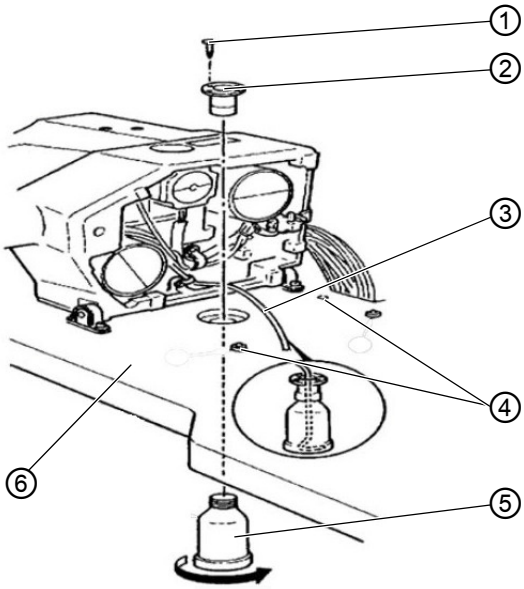


(1) - Retainer
(2) - Retainer
(3) - Sewing machine
(4) - Screw
(5) - Hanger

1. Place the sewing machine (3) on the table plate.
2. Fasten the sewing machine (3) at the left and right using the retainers (1) and (2). Screw the retainers in place using the screws (4), hanger (5) and nuts.

8.3.7 Fitting the oil collection reservoir

Fig. 29: Fitting the oil collection reservoir



(1) - Screw
(2) - Retainer
(3) - Oil line
(4) - Rubber mount (in the oil collection tray)
(5) - Oil collection reservoir
(6) - Table plate

1. Insert the retainer (2) into the hole in the table plate (6) and screw in place using 3 screws (1).
2. Screw the oil collection reservoir (5) into the retainer (2).
3. Pug the oil line (3) into the oil collection reservoir (5).
4. Plug the rubber mounts (4) into the table plate (6).

8.3.8 Electrical connection

DANGER

Risk of injury from electricity!

Unprotected contact with electricity can result in serious injuries or death.

Work on the electrical system must ONLY be performed by qualified electricians or appropriately trained and authorized personnel. ALWAYS unplug the power plug before working on the electrical equipment.

8.3.9 Checking the mains voltage

The voltage specified on the controller type plate must agree with the mains voltage used.

8.3.10 Connecting the cables to the controller

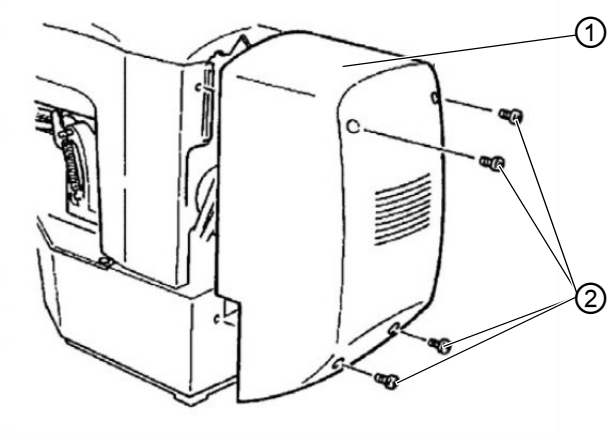
Fig. 30: Connecting the cables to the controller

1. Connect the cables.
   All cables are labelled appropriately.
2. Lay the cables to the control cabinet and bundle together with cable ties.

3. Connect the cable plugs.
4. Screw the equipotential bonding cables on the control cabinet to the positions marked with earthing symbols.

8.3.11 Mount the hood

Fig. 31: Mount the hood

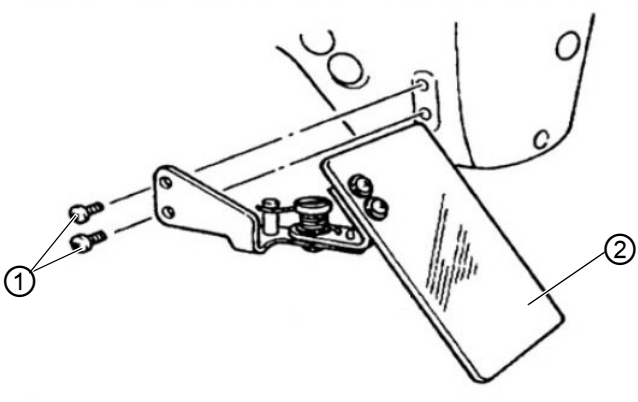


(1) - Hood *(2) - Screws*

1. Screw the hood (1) to the upper section using 4 screws (2).

8.3.12 Fit the eye protection

Fig. 32: Fit the eye protection

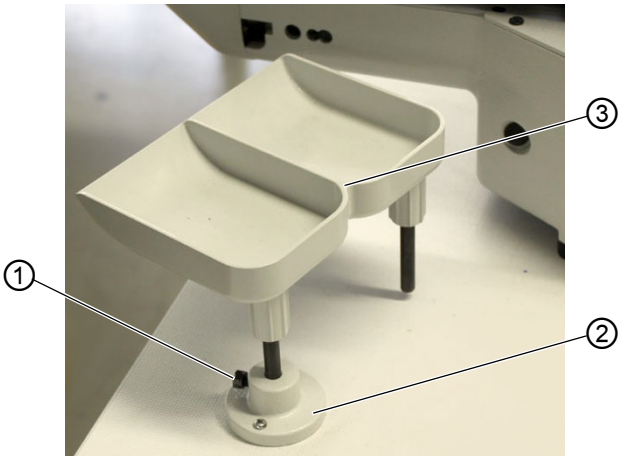


(1) - Screws *(2) - Eye protection*

1. Screw the eye protection (2) to the upper section using 2 screws (1).

8.4 Fit the button container (class 532)

Fig. 33: Fit the button container (class 532)



(1) - Screw
(2) - Retainer
(3) - Button container

1. Screw the retainer (2) to the table plate.
2. Plug the button container (3) into the retainer (2) and secure with a screw (1).

8.5 Sewing test

Perform a sewing test after completing the installation work.

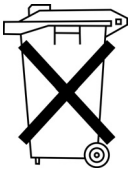
CAUTION

Risk of injury due to sharp and moving parts!
Cutting or crushing are possible.

Only thread the needle and hook threads with the sewing machine switched off.

1. Insert the mains plug.
2. Main power switch OFF.
3. Thread the bobbin thread.
4. Main power switch ON.
5. Fill the bobbin at medium speed.
6. Main power switch OFF.
7. Thread the needle and hook threads.
8. Select the material to be sewn.
9. Start the sewing test at low speed and then continuously increase the speed.
10. Check that the seams conform to the desired requirements. If not, see chapter setting the needle thread tension (📖 *S. 22*).

9 Disposal



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

The machine must be disposed of in an appropriate and proper manner according to national regulations.

ATTENTION

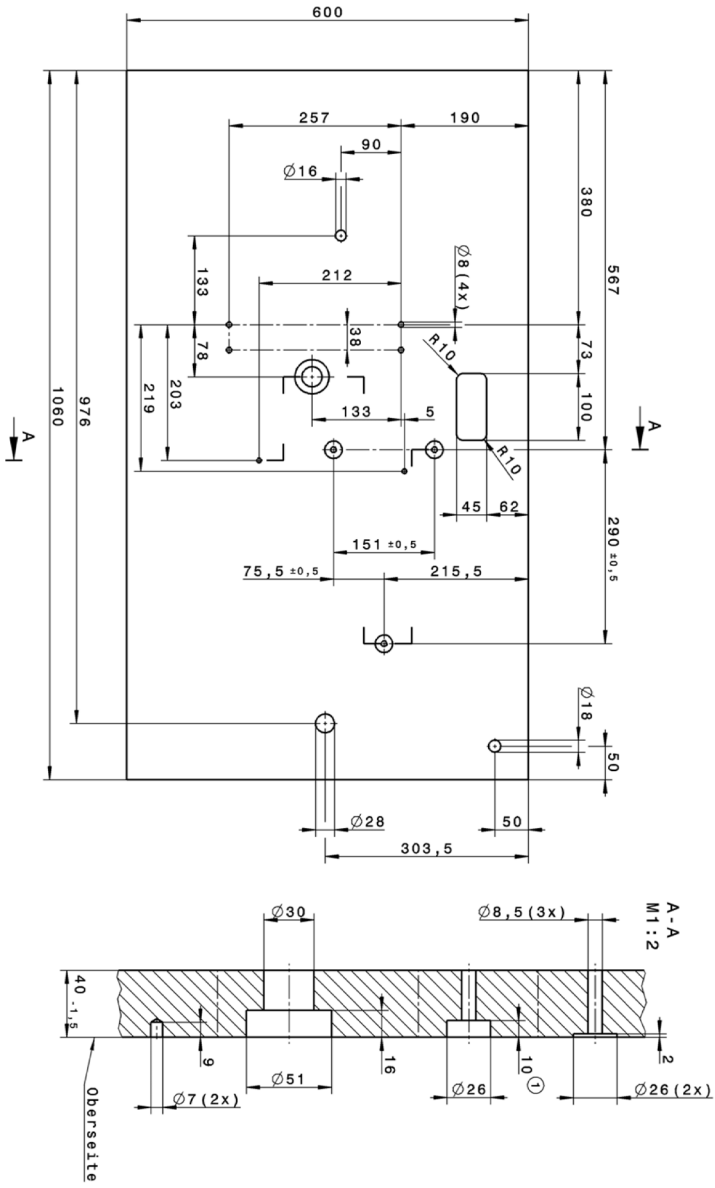
Risk of environmental damage due to incorrect oil disposal.

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

ALWAYS observe the legally prescribed regulations for disposal of oil.

When disposing of the machine, be aware that it consists of a range of different materials (steel, plastic, electronic components, etc.). Observe the applicable national regulations for disposal.

10 Appendix


600
257
190
90
Ø16
380
567
133
212
Ø8 (4x)
38
78
R10
73
100
219
203
1060
976
133
5
A
A
45
62
290 ±0,5
151 ±0,5
75,5 ±0,5
215,5
Ø18
50
Ø28
50
303,5
Ø30
Ø8,5 (3x)
A-A
M1:2
40 -1,5
9
Ø51
16
10
2
Ø7 (2x)
Ø26
Ø26 (2x)
Oberseite

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