



650-16 Operating Manual

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1	General Information	3
1.1	Scope of this guide	3
1.2	Declaration of conformity	3
1.3	Applicable documents	3
1.4	Transport damage	3
1.5	Limited liability	4
2	Safety instructions	5
2.1	General safety instructions	5
2.2	Marking of safety instructions	7
3	Environmental protection notes	9
3.1	General environmental protection notes	9
3.2	Highlighting of environmental protection notes	9
4	Legend	10
5	Product description	11
6	Intended use	13
7	Technical data	14
8	Operation	15
8.1	Threading the needle thread	15
8.2	Adjusting the needle-thread tension	16
8.3	Adjusting the thread regulator	17
8.4	Winding on the hook thread	18
8.5	Changing the hook thread bobbin	19
8.6	Adjusting the hook thread tension	20
8.7	Changing needles	22
8.8	Lifting the sewing feet	23
8.9	Function of the optional additional pedal	24
8.10	Knee switch	24
8.11	Sewing	25
9	Operating and programming the control unit	26
9.1	Control panel OP3000	26
9.2	Switching on the sewing machine	27
9.3	Operating modes of the control unit	28
9.4	Manual mode	29
9.4.1	Quick access function (softkey menu)	31
9.4.2	Menu for additional settings	32
9.4.3	Sewing process	33
9.5	Automatic mode	33
9.5.1	Before sewing	34
9.5.2	Sewing process	36
9.5.3	Terminating a program	37
9.6	Quick programming	38

9.6.1	Programming via keypad input.....	40
9.6.2	Programming by sewing.....	41
9.7	Editing mode	42
9.7.1	Changing other parameters for the current step	43
9.7.2	Changing other parameters for the selected program	44
9.8	Programming mode.....	45
9.8.1	Creating a program	45
9.8.2	Copying a program.....	47
9.8.3	Deleting a program.....	48
9.8.4	Mirroring a program.....	48
10	Maintenance	49
11	Installation	50
11.1	Scope of delivery.....	50
11.2	Removing the security devices	51
11.3	Assembling the stand.....	52
11.4	Pre-assembling the table top	53
11.5	Attaching the table top and the pedals to the frame.....	54
11.6	Completing the table top	55
11.7	Adjusting the working height	56
11.8	Inserting the machine head.....	57
11.9	Electrical connections	58
11.9.1	Check the mains voltage.....	58
11.9.2	Mains voltage distribution.....	59
11.9.3	Connecting the lines for the machine head.....	60
11.9.4	Connecting auxiliary control unit cables.....	61
11.9.5	Connecting the encoder to the control unit	62
11.9.6	Establishing equipotential bonding for the machine head.....	63
11.9.7	Establishing equipotential bonding for the control unit.....	64
11.9.8	Establishing equipotential bonding for the auxiliary control unit.....	65
11.9.9	Establishing equipotential bonding for the sewing drive	66
11.9.10	Establishing equipotential bonding for the knee switch.....	67
11.9.11	Establishing equipotential bonding for encoders.....	68
11.9.12	Connecting the knee switch	69
11.9.13	Connecting the control panel	70
11.9.14	Connecting the LED sewing lamp	71
11.9.15	Connecting the auxiliary sewing lamp (Waldmann - optional)	71
11.10	Sewing test.....	72
12	Appendix.....	73

1 General Information

1.1 Scope of this guide

This guide describes the intended use and assembly of the special purpose sewing machine 650-16 for sewing sleeves.

1.2 Declaration of conformity

The machine conforms with the European regulations stated in the declaration of conformity or incorporation.

1.3 Applicable documents

The appliance contains components by other manufacturers, e.g., drive motors. The respective manufacturers have performed a risk analysis for these supply parts and declared the conformity of their design to be compliant with valid European and national requirements. The intended use of the incorporated components is described in the respective third-party manufacturer's guides.

1.4 Transport damage

Dürkopp Adler is not liable for breakage and transport damage. Please check the deliver carefully immediately on receipt. Claim against the forwarder for damage. This also applies if the packaging is undamaged.

Leave the machine device and packaging material in the state it was in when you ascertained the damage. This will help you assert your claim against the forwarder.

Report all other complaints without delay after receipt of delivery to Dürkopp Adler.

1.5 Limited liability

All information and instructions for use in this guide were compiled taking account the latest state of the art, and applicable standards and regulations.

The manufacturer accepts no liability in case of damage due to:

- failure to observe this guide
- unintended use
- unauthorized modifications to the machine
- use of untrained staff
- breakage and transport damage
- use of non-approved spare parts

2 Safety instructions

This chapter contains basic instructions for your safety. Read these instructions carefully before you install, program, maintain or operate the machine.

Always follow the provisions in the safety instructions. Failure to observe can lead to severe injury and damage to property.



2.1 General safety instructions

Unauthorized persons must not work on or with the machine. Every person working on or with the machine must read the Operating Guide before doing so.

The machine must only be used as described in this guide.

The Operating Guide must be kept at the machine's place of use.

Please observe all general safety and accident prevention regulations and the legal requirements on occupational safety and environmental protection.

Observe the safety instructions and the operating manual provided by the motor manufacturer for the drive.

All warning signs on the machine must always be kept in legible state and must not be removed. Missing or damaged signs must be replaced immediately.

In the following situations, always de-energize the machine at the main switch or by unplugging the mains plug:

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

During use, check the machine for signs of visible damage. Stop working if you notice any changes to the machine's behavior. Report all changes to the appropriate supervisor. You must not continue using a damaged machine.

Machines or machine parts that have reached the end of their service life must not be operated. Dispose of these machines in line with environmental legislation.

Only qualified and trained staff are allowed to install the machine.

Only qualified and trained staff are allowed to perform servicing, maintenance and repairs.

Safety devices must not be removed or disabled. If this is unavoidable for repairs, the safety devices must be refitted and re-enabled immediately after completing the repairs.

Work on the machine's electrical equipment must be performed by a qualified electrician.

The power cable must have a country-specific, approved plug. Only a qualified electrician is permitted to connect the plug to the power cable.

Work on live parts and assemblies is prohibited.
Exceptions are governed by the regulations in DIN VDE 0105.

Only use original spare parts by the manufacturer. Incorrect or faulty spare parts can impair safety and damage the machine.

2.2 Marking of safety instructions

Colored bars highlight the safety instructions in the text.

Signal words indicate the severity of the risk:

- **Danger:**
Certainty of serious or fatal injury.
- **Warning:**
Risk of serious or fatal injury.
- **Caution:**
Risk of moderate or minor injury.
- **Attention:**
Risk of damage.

In case of dangers for persons, these symbols indicate the type of danger:



General danger



Danger due to electric shock



Danger due to pointed objects



Danger due to crushing

Examples for marking of safety instructions in the text:**DANGER****Type and source of danger****Consequences in case of failure to observe**

Measures for preventing the danger

*Danger notice where failure to observe will lead to fatal or serious injury.***WARNING****Type and source of danger****Consequences in case of failure to observe**

Measures for preventing the danger

*Danger notice where failure to observe can lead to fatal or serious injury.***CAUTION****Type and source of danger****Consequences in case of failure to observe**

Measures for preventing the danger

*Danger notice where failure to observe can lead to moderate or minor injury.***CAUTION****Type and source of danger****Consequences in case of failure to observe**

Measures for preventing the danger

Danger notice where failure to observe can lead to damage to property.

3 Environmental protection notes

3.1 General environmental protection notes

Dispose of machines or machine parts that have reached the end of their service life responsibly, observing the legal requirements on environmental protection.

Use consumables conservatively and dispose of them responsibly, observing the legal requirements on environmental protection.

3.2 Highlighting of environmental protection notes

Green bars mark environmental protection notes in the text.

The following symbols state the type of environmental measure:



Note on responsible disposal

Example of layout for environmental protection instructions:

ENVIRONMENTAL



Type and source of danger

Consequences in case of failure to observe

Measures for preventing the danger

This is what environmental protection instructions for compliant disposal look like.

Failure to observe can lead to environmental damage.

4 Legend



Correct setting

Indicates the correct setting.



Malfunctions

Indicates malfunctions that can occur in case of incorrect settings.



Steps for operation (sewing and set up)



Steps for servicing, maintenance and installation



Steps via the software control panel

The individual steps are numbered:

1. 1. First operating step
2. 2. Second operating step

... Always follow the order of the steps as stated.



Results of an action

Change to the machine or the display.



Important

Pay particular attention to this step.



Information

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



Order

States which work you must perform before or after the setting.

References



This is followed by a reference to another part of the text.

5 Product description

The Dürkopp Adler 650-16 is a special purpose sewing machine for programmed or manual sewing in of sleeves in ladies and gents clothing.

The sewing machine is equipped with an integrated sewing drive, a step-motor driven upper and lower belt transport for gentle feeding of the material, step-motor driven curve support and an sloping pedestal for improved material handling.

The step motor-driven sewing foot pressure and the electromagnetically controlled needle thread tension support programming of these parameters.

The OP3000 with graphic display supports easy programming and an improved overview of the configured parameters and the programmed seam.

The option, ergonomically shaped table top also simplifies the working process.

Other features include:

- Single needle, integrated column machine
- Sewing drive integrated in housing
- Max. stitches 4000 rpm
- Lubrication-free machine
- Integrated LED sewing lamp
- Oil-free horizontal hook
- Stitch length adjustable and programmable in steps of 0.1 mm from 1.0 to 5.5 mm
- Electronically controlled and programmable sewing foot pressure
- Alternating top belt transport (programmable), thus allowing for easy rotating of the material about the needle. Maximum alternating height 2.5 mm (depending on speed)
- Electronically control threading (programmable), for different materials and excessive gathering
- Patented curve support for easy material handling (programmable)
- Electromagnetic thread-cutter
- Automatic backtacking
- Sewing foot lifting: 12 mm

- Integrated adjusting disc with position marks on the hand-wheel for fast checking of the machine settings.
- Edge stop stitch width as of 7.5 mm
- OP3000 key bar with graphical display
 - In the operator's reach
 - Gathering values between - 6 and 16, that is, a maximum of 23 gathering values.
 - Easy creating of programs through teach-in, easy processing, copying and deletion of programs via the graphical display
 - Direct entry of the gathering value in automatic mode, during correction, or in manual mode.
- Second foot pedal optional

The current fullness is increased by one gathering value by pushing the pedal forwards, and decreased by pushing the pedal back.

On retrieving the next step, the gathering value stored in the program again applies. Alternatively, depending on the presetting at technician level, the curve radius can be changed in the same way.

6 Intended use

The 650-16 is a special purpose sewing machine that is intended for sewing light to medium-weight material. Such material is usually composed of textile fibers. This material is used in the clothing industry.

This special purpose sewing machine can also be used to produce so-called technical seams.

However, the operator must perform a risk assessment to cover the potential hazards (Dürkopp Adler AG is pleased to cooperate with you in this), as this kind of use case is quite rare on the one hand, and the range of options is difficult to keep track of. Depending on the results of this assessment, it may be necessary to introduce appropriate safety measures.

As a general rule, only dry material may be processed on this machine. The material must not be thicker than 4 mm when compressed by the lowered foot. The material must not contain any hard objects as the eye protection is required when operating the machine otherwise. This eye protection cannot be supplied at the current time.

The seam is generally created using yarns of textile fiber of dimensions up to 50/3 Nm. If you intend to use a different yarn, you must also assess the risks this entails and introduce safety measures where appropriate.

This special purpose sewing machine must only be installed and operated in dry and clean rooms. If the sewing machine is used on premises that are not dry and clean, additional measures may be needed; please consult us to agree on these measures (see EN 60204-31: 1999).

As manufacturers of industrial sewing machines, we proceed on the assumption that personnel who work with our products will have received training that is at least sufficient to acquaint them with all of the normal operations and with any hazards that these may involve.

7 Technical data

Noise

Workplace-related emission value as per DIN EN ISO 10821:

$L_C = 79 \text{ dB (A)} \pm 0.83 \text{ dB (A)}$ at

- Stitch length: 3.0 mm
- Stitch speed 2900 rpm
- Material: 2-ply material G1 DIN 23328

Type of stitch	Double backstitch 301
Hook type	Horizontal hook, oil-free
Number of needles	1
Needle system	134-35
Needle thickness [Nm]	70 – 120
Thread thickness [Nm]	max. 50 / 3
Stitch length (programmable) [mm]	1.0 – 5.5
Number of stitches (programmable) [min ⁻¹]	max. 4000
Tack (programmable)	Start tack, end tack
Clearance under lifted sewing foot [mm]	max. 12
Material thickness [mm]	max. 4
Table top height (infinitely adjustable) [mm]	780 – 900
Width, depth, height [mm] (machine resting on frame)	1320 / 750 / 1300
Weight [kg] (machine resting on frame)	112
Rated voltage[V/Hz]	190 – 240V 50/60Hz
Rated voltage at factory setting[V/Hz]	1 x 230V 50Hz
Power rating[kVA]	1.0

8 Operation

8.1 Threading the needle thread

WARNING



Risk of injury due to the needle tip and moving parts

Switch off the sewing machine before threading.

Steps



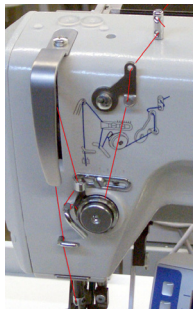
1. Put the thread reel on the thread stand and guide the needle thread and the hook thread through the unwinder arm.



Important: The unwinder arm must be horizontally above the thread bobbin.

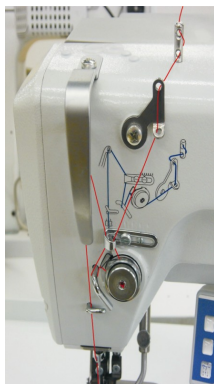
2. Thread as shown in the following figure.

Fig. 1: Threading the needle thread



Stretching threads

Fig. 2: Threading with stretching threads



8.2 Adjusting the needle-thread tension

Correct setting



Set the main tensioner (1) as low as possible.

The cross-over point of the thread should be in the center of the material.

When using thin material, excessive thread tension can cause unwanted gathering and thread breakage.

Fig. 3: Interlacing

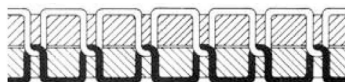


Fig. a: Correct thread interlacing in the center of the material

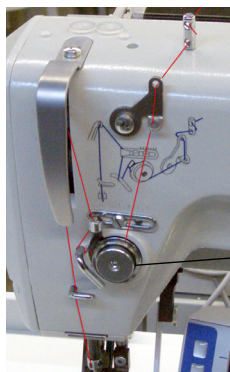


Needle-thread tension too strong or hook thread tension too weak



Needle-thread tension too strong or hook thread tension too weak

Fig. 4: Main tensioner



(1) - Main tensioner



Steps

1. Use the OP 3000 to set the main tensioner (1) so that a uniform stitch pattern is produced (📖 Chap. 9.4, p. 29).

Automatic opening

The main tensioner (1) is opened automatically when trimming the thread.

8.3 Adjusting the thread regulator

WARNING



Crushing hazard due to moving parts

Switch off the sewing machine before you adjust the thread regulator.

The thread regulator controls the quantity of needle thread required for stitch formation. The thread regulator must be precisely adjusted for an optimum result.

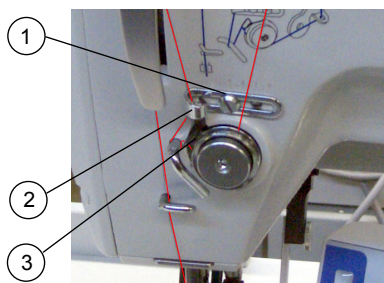


Correct setting

With correct setting the needle-thread loop must slide with low tension over the thickest point of the hook.

If the maximum amount of thread is required, the thread tension spring (3) must be pulled downwards approximately 0.5 mm from its upper end position. This is the case if the needle thread loop passes the maximum hook diameter.

Fig. 5: Adjusting the thread regulator



(1) - Screw

(2) Thread regulator

(3) - Thread tensioning spring



Steps

1. Release the screw (1).
2. Adjust the position of the thread regulator (2).
3. Tighten the screw (1).

8.4 Winding on the hook thread

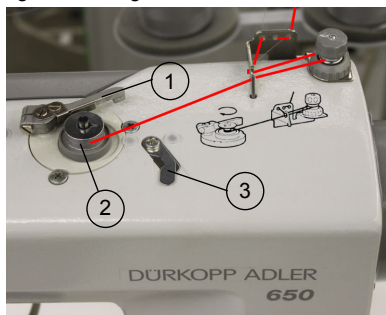
CAUTION!

Damage to machine possible due to winding without sewing.

Winding on without sewing can cause damage to the sewing feet and bobbin case in the hook.

Enable winding on mode (📖 Chap. 9.4, p. 29) if you need to

Fig. 6: Winding on the hook thread



(1) - Bobbin case flap

(2) - Bobbin

(3) - Blade



Steps

1. Place the bobbin (2) on the winder shaft.
2. Thread the hook thread as illustrated.
3. Wind the hook thread clockwise onto the bobbin.
4. Swivel the bobbin case flap (1) against the bobbin.
5. Switch on the main switch.
6. Start sewing.
7. After reaching the set bobbin fill quantity, the bobbin winder switches off automatically (📖 *Service Manual Chap. 16.1*).
8. Remove the full bobbin, clamp the thread under blade (3) and cut.

8.5 Changing the hook thread bobbin

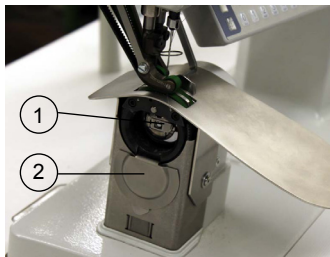
WARNING



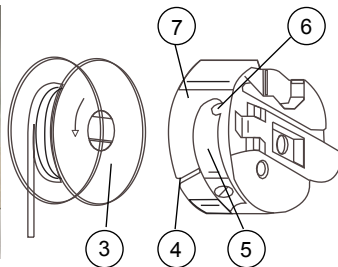
Risk of injury due to moving parts

Switch off the sewing machine before you replace the hook thread bobbin.

Fig. 7: Changing the hook thread bobbin



- (1) Bobbin case flap
- (2) Hook cover
- (3) Bobbin
- (4) Slot



- (5) Tension spring
- (6) Hole
- (7) Upper part of bobbin case.



Steps

Removing an empty bobbin

1. Slide the hook cover (2) downwards.
2. Set the needle to the upper position.
3. Lift the bobbin case flap (1).
4. Remove the bobbin case (7) with bobbin (3).
5. Remove the empty bobbin (3) from the upper part of the bobbin case (7).

Inserting a full bobbin

1. Insert a full bobbin (3) into the upper part of the bobbin case (7).
2. Pull the hook thread through the slot (4) below the tension spring (5) and into the hole (6).
3. Pull approx. 5 cm of hook thread out of the bobbin case (7).
4. When pulling the thread, the bobbin should move in the direction indicated by the arrow.
5. Reinsert the bobbin case (7).
6. Slide the hook cover (2) upwards.

8.6 Adjusting the hook thread tension

WARNING



Risk of injury due to moving parts

Switch off the sewing machine before you replace the hook thread bobbin.



Correct setting

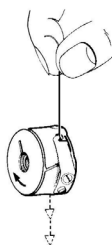
The hook thread tension must be set so as to achieve a sewing pattern as shown in Fig. 2 top in Chapter *Adjusting the needle thread tension* (Chap. 8.2, p. 16).

With a recommended hook thread tension of 25 g, for example (measured with a full bobbin), set 12.5 g at the brake spring, and 12.5 g at the tension spring.

The basic setting for the tension spring is as follows:

The bobbin casing must slowly drop due to its own mass with a full bobbin.

Fig. 8: Bobbin casing dropping

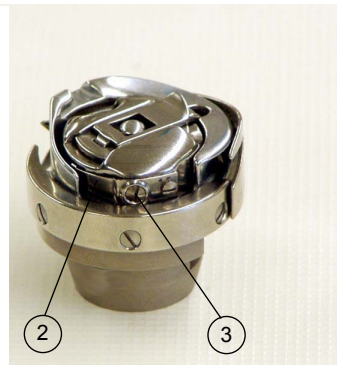


The brake spring prevents the bobbin running on when trimming the thread.

Fig. 9: Adjusting the hook thread tension



(1) - Brake spring



(2) - Tension spring

(3) - Adjusting screw



Steps

1. Turn the adjusting screw (3) back so that the tension of the tension spring (2) is completely relieved.
2. Bend the brake spring (1) so that half the recommended value of the hook thread tension is applied by the brake spring.
3. Insert a bobbin into the upper bobbin casing and thread in the hook thread ( Chap. 8.4 *Winding on the hook thread*, p. 18).
4. Insert the bobbin casing with bobbin into the hook.
5. Grasp the free end of the thread tightly in one hand.
6. Turn the handwheel until the sewing machine has performed a single stitch.
7. Pull the hook thread to the top of the stitch hole using the needle thread.
8. Pull the hook thread in the direction of sewing at an angle of 45°. You should feel about half the tension value.
9. Then tighten the adjusting screw (3) until the recommended tension value is produced.

8.7 Changing needles

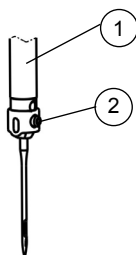
WARNING



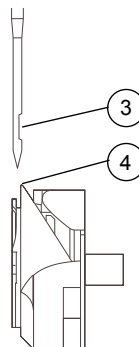
Risk of injury due to the needle tip and moving parts

Switch off the sewing machine before you replace the needle.

Fig. 10: Changing needles



- (1) - Needle bar
(2) - Screw
(3) - Hollow groove
(4) - Hook tip



Steps



1. Release screw (2) and remove the needle.
2. Push the new needle into the hole in the needle bar (1) up to the stop.



Important: The hollow groove (3) must be facing the hook tip (4).

3. Tighten the screw (1).

Order



After changing to a different needle thickness the clearance between the hook and the needle must be adjusted (Service Manual Chap. 6.1).

Malfunctions



An incorrect hook clearance can cause the following problems:

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

8.8 Lifting the sewing feet

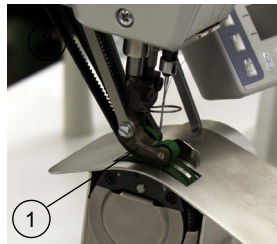
WARNING



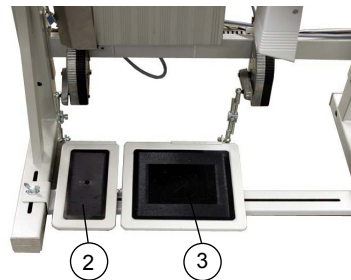
Risk of crushing by the sewing feet
Do not reach under lifted sewing feet.

The sewing feet (1) can be lifted by an electric motor by actuating the foot pedal (3).

Fig. 11: Lifting the sewing feet



- (1) - Sewing feet
(2) - Additional pedal (optional)
(3) - Foot pedal



Steps

1. Depress the pedal backwards half-way.
 2. The sewing feet lift.
- or
1. Fully depress the pedal backwards.
 2. Activates the thread trim and lifts sewing feet.

8.9 Function of the optional additional pedal

The left pedal (2) has dual functionality. Depending on the setting at technician level, this either changes the fullness or curve support ( *Service Manual Chap. 17.3.3*).

- In automatic mode:
The value for fullness or curve support is corrected for the current step.
- In manual mode:
The value for fullness or curve support is selected.

Steps

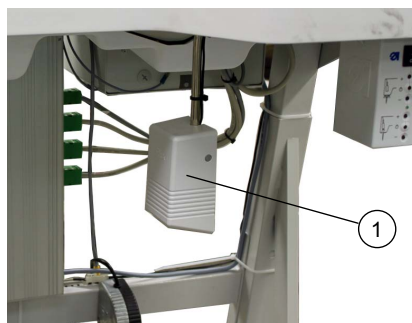


1. Depress the additional pedal:
 - Push the pedal forward: increases the value
 - Push the pedal back: reduces the value

8.10 Knee switch

The knee switch (1) switches from one step to the next in the sewing programs both in automatic mode and programming mode.

Fig. 12: Knee switch



(1) - Knee switch

Steps



1. Press the knee switch.
 The next program step is called up.

8.11 Sewing

Prior to sewing

Starting position

- Pedal in rest position.
 - ↳ The sewing machine is at a stop.
 - ↳ Needle up. Sewing foot down.

Position material at seam start.

- Depress the pedal halfway backward.
 - ↳ The sewing foot is lifted.
- Position the material.
- Release the pedal.
 - ↳ The sewing foot lowers onto the material.

At the start of a seam

Start tack and continuing sewing

- Press and hold the pedal in a forward position.
 - ↳ The start tack is sewn (if preselected).
The machine then continues to sew with the speed determined by the pedal.

In mid-seam

Interrupt sewing procedure

- Release pedal (position 0).
 - ↳ The machine stops at the 1st position (needle down) or in the needle up position (depending on the preselection).
The sewing foot is down or lifted (depending on the preselection)

Continuing sewing (after releasing the pedal)

- Push the pedal forward.
 - ↳ The machine then continues to sew with the speed determined by the pedal.

Intermediate sewing feet lift

- Push the pedal half way back.
 - ↳ The sewing feet lift.
- Correct the fabric.
- Release the pedal.
 - ↳ The sewing feet are lowered.

Changing the fullness

- Actuate the fullness button or the left pedal.
 - ↳ The selected fullness value is activated.

At the seam end

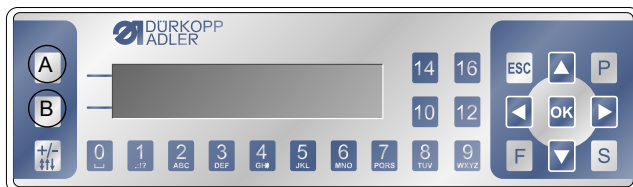
Remove the material

- Fully depress and hold the pedal.
 - ↳ The final backtack is sewn (if activated).
 - ↳ The threads are cut (if activated).
 - ↳ The machine stops in the 2nd position.
 - ↳ The needle is up. The sewing feet lifted.
- Remove the material.
- Release the pedal.
 - ↳ The sewing feet are lowered.

9 Operating and programming the control unit

9.1 Control panel OP3000

Fig. 13: Control panel on control unit



All settings for the control unit on the 650-16 are made at OP3000 control panel.

Button	Function
0 to 16	Set the fullness Enter the parameter value (while the field for the parameter is active) Select a parameter that appears in the display. • Press the button below the desired symbol. ↳ This selects the function.
ESC	Cancel function Quit the menu
OK	Confirm settings Activate input
P	Different function depending on the menu
S	Different function depending on the menu
F	Different function depending on the menu
▶	Selection to the right
◀	Selection to the left Go back one menu level
▲	Increase value Scroll through list (up)
▼	Reduce value Scroll through list (down)
A	Upper softkey 1 Different function depending on the menu
B	Upper softkey button 2 - different function depending on the menu
+/-	Change between fullness top and fullness bottom

9.2 Switching on the sewing machine

Fig. 14: Firmware and software version display

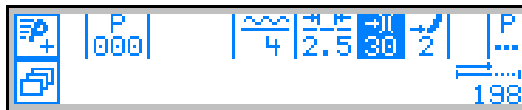


1. Switch on the main switch.
- ↗ The software version is shown in the display:
 - on the left of the screen is the control panel firmware
 - On the right of the screen is the control unit software version
 - ↗ The machine references.
The display shows the last program to be use (📖 Fig. 15) or manual mode (📖 Fig. 16).

Fig. 15: Displaying the last program to be used



Fig. 16: Display in manual mode



9.3 Operating modes of the control unit

The 650-16 control unit features 4 different operating modes:

- **Manual mode (Program 000)**

Manual mode is the simplest operating mode.

There are no sewing programs and no entries for individual sewing steps.

Changes to the fullness, stitch length, thread tension, curve support and actuation of other functions are always immediately implemented.

This means that you can change all the important sewing parameters manually during sewing.

- **Automatic mode (Programs 001 - 999).**

Sewing programs are executed in the automatic mode.

The seams in the stitching programs are divided into individual segments (steps), to which individual sewing parameters such as fullness, curve support, etc. are assigned.

- **Quick programming**

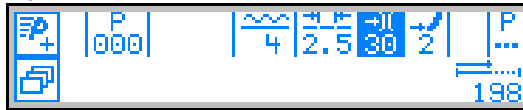
Quick programming mode allows new sewing programs to be created very quickly and easily.

- **Programming mode**

In programming mode new sewing programs can be created, modified, deleted, copied and mirrored (left/right arm).

9.4 Manual mode

Fig. 17: Parameters in manual mode



The following table explains the individual symbols (parameters) in the display and the functions of the buttons on the control panel.

The selected parameter is color highlighted in the display. If a parameter is modified, the new value is transferred immediately.

Symbol	Meaning
	(Depending on assignment) Quick programming • Press the upper softkey button
	Quick access function (softkey menu) • Press the lower softkey button (📖 Chap. 9.4.1, p. 31)
	Program number Value range: 000 to 999 - Program 000 indicates that the "manual mode" is selected. • Select the "Program" parameter using the "◀" and "▶" buttons. • Change the program number using the "▲" and "▼" buttons. Or: • Enter the program number directly by pressing buttons "0" to "9" and press "OK" to confirm, if needed. 👉 This takes you to "Automatic mode".
	Working in fullness Value range: fullness top: 0 to 16 fullness bottom: 0 to -6 • Select the desired fullness value using buttons "0" to "16". • Press the "+/-" button to select fullness top or fullness bottom. Or: • Select the fullness value by using the second pedal, if set.

Symbol	Meaning
	Stitch length Value range: 1.0 to 5.5 mm • Select the "Stitch length" parameter using buttons "◀" and "▶". • Change the stitch length using buttons "▲" and "▼".
	Thread tension Value range: 1 to 99 • Select the "Thread tension" parameter using buttons "◀" and "▶". • Change the thread tension using buttons "▲" and "▼".
	Curve support Value range: 0 to 6 • Select the "Curve support" parameter using buttons "◀" and "▶". • Change the curve support using buttons "▲" and "▼".
	Additional parameters (📖 Chap. 9.4.2, p. 32)
	Seam length in mm After trimming the thread, the display is kept. When you tack on again, a new measurement is performed
P	Creating a program (📖 Chap. 9.8.1, p. 45)
+/-	Changing between fullness top and fullness bottom
ESC, F and S	No function
0 – 16	Fullness values
OK	No function

9.4.1 Quick access function (softkey menu)

This gives you quick access to functions during sewing and you can assign a function to the top softkey.



1. Press the bottom softkey .

↳ The following appears in the display.

Fig. 18: Softkey menu



2. Call function:

- Press the numeric button below the desired function.

or

Assign a function to the top softkey:

- Press the numeric button below the desired function and press the top softkey at the same time.

↳ The function is then assigned to the top softkey and can be called by pressing it.

3. Press "ESC" to quit the menu.

Symbol	Meaning
	Manual tacking • Press and hold button "1" for manual tacking.
	Tacking suppression On/Off • Press button "2". ↳ Tacking is switched on or off.
	Needle position up / down • Press button "3". ↳ When stopping in the seam the needle is up or down.
	Automatic step change On / Off (Only available in the automatic mode) • Press button "4". ↳ Automatic step change is switched on or off when sewing a seam.

Symbol	Meaning
	Quick programming ↳ Press button "5". Quick programming is started.
	Bobbin winder mode • Press button "6". • Depress the pedal half-way back. ↳ Ends bobbin winder mode

9.4.2 Menu for additional settings



1. Press ◀ / ▶ to select "Other parameters".
2. Press "OK".
3. Press "▲" and "▼" to select the appropriate parameters.
4. Select the parameter by pressing "OK".
5. Change the value using buttons "▲" and "▼".
6. Confirm by pressing "OK".
7. Press ◀ or "ESC" to quit the menu.

Symbol	Meaning
	Alternate (foot alternation) Value range: 0.0 to 2.5 mm
	Foot Press. (sewing foot pressure) Value range: 1 - 15
	Start tack (tack at start of seam) Value range: on/off
	End tack (tack at end of seam) Value range: on/off
	Thread trim Value range: on/off

9.4.3 Sewing process

Sewing without the fullness function



1. Enter values for stitch length, thread tension, curve support and foot alternation.
2. Depress the foot pedal to the front and sew.

Sewing with the fullness function



1. Change the fullness value with the left pedal (optional) (if preset at technician level).

Or:

1. Alter the fullness value by using buttons "0" to "16" and "+/-".

Changing parameters while sewing



1. Set the foot pedal to position "0".
 2. Change the desired parameters on the control panel.
 3. Depress the foot pedal to the front again and sew.
- ↳ The altered parameter value is processed.

9.5 Automatic mode

Program numbers 001 to 999.



1. Select the "Program" parameter using the "◀" and "▶" buttons.
 2. Select program number "1" or a different program (if available) by pressing buttons ▲/▼.
- ↳ The control unit switches to automatic mode and the following appears in the display.

Fig. 19: Display in automatic mode



The following table explains the individual symbols in the display and the functions of the buttons on the control panel.

9.5.1 Before sewing

Symbol	Meaning
	Quick programming (depending on allocation) Press the upper softkey button
	Quick access function (softkey menu) Press the lower softkey button
	Program number Value range: 000 to 999 - Select the "Program" parameter using the "◀" and "▶" buttons. - Change the program number using the "▲" and "▼" buttons. Or: - Enter the program number directly by pressing buttons "0" to "9" and press "OK" to confirm, if needed. Selecting program 000 activates manual mode.
	Right / left sleeve Sleeves can only be sewn with the following options: right only, left only or left and right in alternation Use buttons "▲" and "▼" to alternate between the left and right sleeve (if both sides have been programmed).
	Steps Number of steps that exist for the current program.
	Stitch length Value range: 1.0 to 5.5 mm The stitch length can be changed before tacking on. The change applies to the entire sewing program. - Select the "Stitch length" parameter using buttons "◀" and "▶". - Press ▲ / ▼ to adjust the stitch length.
	Thread tension Value range: 1 to 99 The thread tension can be changed before tacking on. The change applies to the entire sewing program. Press ◀ / ▶ to select the "Thread tension" parameter. Change the thread tension using buttons "▲" and "▼".

Symbol	Meaning
	Additional parameters Foot Press. (sewing foot pressure) Fulln. Corr. • Press ◀ / ▶ to select "Other parameters". • Press "OK". • Press "▲" and "▼" to select fullness correction or sewing foot pressure. • Select the parameter by pressing "OK". • Press "▲" and "▼" to change the value. • Confirm by pressing "OK". • Press ◀ or "ESC" to quit the menu.
Program bar Length pre stitch in mm, or dash (-) if there is no auto- matic step change	
P	Programming mode Switches to the programming mode
ESC, F, S	No function



1. Sew, actuate the knee switch or press "OK".

↪ The machine switches to the 1st step.

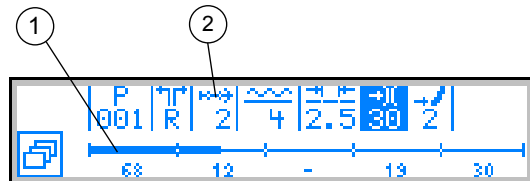
9.5.2 Sewing process



1. Depress the foot pedal forward and sew.

↳ The following appears in the display.

Fig. 20: Display when sewing in automatic mode



(1) Program bar

(2) Current step

The parameter values for the current step are indicated in the display.

The program bar (1) shows the seam progress.

The number below the current step indicates the length still to be sewn for the step.

Half of the current step is bolded in the program bar.

Fig. 21: Step in processing



Processed steps are indicated by a bolded bar.

Fig. 22: Fully processed step



The following table explains the functions that can be performed while sewing.

Button / pedal	Function
+/- and 0 - 16	Temporary correction of the fullness value (only applicable for the current step)
2nd foot pedal (optional)	Temporary correction of the fullness and/or curve support value (depending on the setting at technician level) (only applicable for the current step)
Knee switch	Next program step
◀ / ▶ ◀	Step forwards / backwards or to the beginning of the step Change sleeve side (if programmed) in the 1st step at the beginning of the step
▲ / ▼	Correcting the thread tension Value is saved
ESC, P, F, S, OK	No function
Pedal depressed half-way	Lifting the sewing foot
Pedal fully depressed	Trim, clip, cut off The program remains at the trimming point.
Lower softkey	Softkey menu ( Chap. 9.4 <i>Manual Mode</i> , p. 29)

9.5.3 Terminating a program



1. Trim (pedal fully depressed).
2. Tap "ESC".
Or:
Push the pedal fully back
↩ The program is canceled.

9.6 Quick programming

If the upper softkey is mapped to :



1. Press the upper softkey .

↳ The following is displayed.

Fig. 23: Quick programming



2. Continue with step 3.

If the upper softkey is not mapped to :



1. Press the  button.

↳ The softkey menu appears.

Fig. 24: Softkey menu



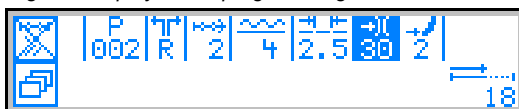
2. Press button "5".

3. Press ▲ / ▼ or numeric key 0 – 9 to select the program number.
4. Press "OK".

↳ The following appears in the display.

The "P" in the field for the program number flashes.

Fig. 25: Display Quick programming



The following table explains the individual symbols in the display and the functions of the buttons on the control panel.

Symbol	Meaning
	Automatic step advance on / off Press the upper softkey button This enables/disables the automatic step advance function for the current step
	Current program to be created
	Current sleeve side to be created (preset at technician level)
	Current step - Press ◀ / ▶ to select the "Step" parameter. - Press ▲ / ▼ to go to the next/previous step. - Press "OK" to edit more parameters for the step (📖 Chap. 9.7 <i>Editing mode</i>, p. 42).
	Working in fullness Value range: -6 to 16 - Select the desired fullness value using buttons "0" to "16". Or: - Select the fullness value by using the second pedal, if set. - Press the "+/-" button to select fullness top (+) or fullness bottom (-).
	Stitch length current step Value range: 1.0 to 5.5 mm - Select the "Stitch length" parameter using buttons "◀" and "▶". - Change the stitch length using buttons "▲" and "▼".
	Thread tension Value range: 0 to 99 - Press ◀ / ▶ to select the "Thread tension" parameter. - Press "▲" and "▼" to change the thread tension.
	Curve support Value range: 0 to 6 - Press "◀" and "▶" to select the "Curve support" parameter. - Press "▲" to change the curve support.
	Length of the current step in mm

9.6.1 Programming via keypad input



1. Set all parameters for the step.
2. Use knee switch to continue to the next step.

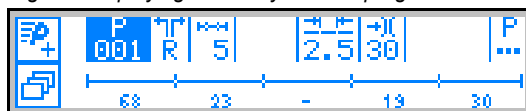
Canceling with ESC

Before pressing the "S" button, you can cancel the programming function at any time by pressing "ESC".

After completing all steps:

3. Press "S".
 - ↳ The program is saved.
 - Depending on the preset at technician level,
 - the created sleeve side is mirrored
 - the created sleeve side is not mirrored
 - the teach-in for the 2nd sleeve side is opened
 - the selection screen for the action for creating the 2nd sleeve side is opened
 - ↳ The machine changes to automatic mode.
The newly created program is selected.

Fig. 26: Displaying the newly created program



9.6.2 Programming by sewing



1. Insert the material.
2. Enter parameters for the 1st step (fullness value, stitch length, thread tension and curve support)
3. Sew the first step.
4. Actuate the knee switch
 ↳ The machine switches to the next step.

Canceling with ESC

Before pressing the "S" button, you can cancel the programming function at any time by pressing "ESC".

If a seam has already been sewn, the program is saved; you may need to delete this as described in chapter (📖 Chap. 9.8.3 *Deleting a program*, p. 48).

After completion of all steps:



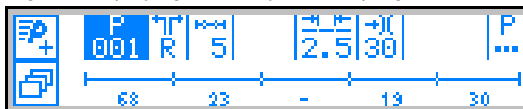
5. Press "S".
 ↳ The program is saved.
 The following is displayed.

Fig. 27: Display after programming by sewing



6. Sewing an overlap.
7. Push the pedal fully back.
 ↳ Depending on the setting at technician level, the created sleeve side is mirrored.
 The machine switches to automatic mode.
 The newly created program is selected.

Fig. 28: Displaying the newly created program



9.7 Editing mode

In Editing mode existing programs are modified or deleted. New programs are created in programming mode. (📖 Chap. 9.8 *Programming mode*, p. 45)



1. Press "P" in the automatic mode.

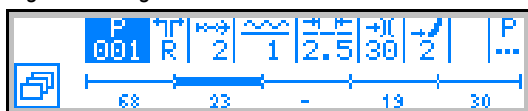
👉 The machine switches to Editing mode.

You can now edit the previously selected program.

The following appears in the display.

The "P" in the field for the program number flashes.

Fig. 29: Editing mode



1. Press ◀ / ▶ to choose the program to be changed, the sleeve side and then press ▲ / ▼ to select.

You can also use the knee switch to select the step to be edited.



👉 The selected step is shown bolded in the program bar.

2. Press ◀ / ▶ to select the parameters to be changed for the selected step, and then press ▲ / ▼ to change them.

9.7.1 Changing other parameters for the current step



1. Press ◀ / ▶ to select the  field.
2. Press "OK".
 ↳ This opens the submenu.
3. Press ▲ / ▼ to select the desired parameters.
4. Press "OK" to enable or disable the parameters,
 or press ▲ / ▼ to change the value, and "OK" to confirm.

Symbol	Meaning
	Step. Len.
	Auto Forward
	Alternate
	Foot Press

5. Press "ESC" or ◀ to quit the submenu.

9.7.2 Changing other parameters for the selected program

You can edit other parameters for the current sewing program in this menu.



1. Press ◀ / ▶ to select the  field.
2. Press "OK".
 This opens the submenu.
3. Press ▲ / ▼ to select the desired parameters.
4. Press "OK" to enable or disable the parameters, or press ▲ / ▼ to change the value, and "OK" to confirm.

Symbol	Meaning
	Thr. Tens
	Stitchlen. Stitch length
	Foot Press. (sewing foot pressure)
	Fulln. Corr.
	Start Tack
	End Tack
	Thread trim

5. Press "ESC" or ◀ to quit the submenu.

9.8 Programming mode

9.8.1 Creating a program



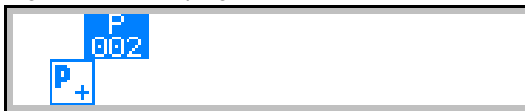
1. Press the  button in editing mode.
- ↳ The softkey menu appears.

Fig. 30: Softkey menu



2. Press the  button.
- ↳ The following is displayed.

Fig. 31: Select the program number



The control unit displays the next available program number.

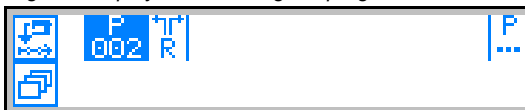
3. Press "OK" to use the program number.

Or:

Press  /  to select another program number or use the numeric keys "0 - 9" to enter the number and then press "OK".

- ↳ The program number is applied.
The following is displayed; "P" flashes.

Fig. 32: Display after defining the program number

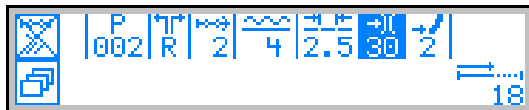


4. Change the sleeve side or other parameters if necessary ( Chap. 9.7 *Editing mode*, p. 42).

5. Press the  button.

↳ The following is displayed; "P" flashes:

Fig. 33: Current program to be created



Continue as described in Chapter *Quick programming* ( Chap. 9.6, p. 38).

6. Choose whether the individual steps to be programmed will be enabled automatically or via the knee switch.

7. Press .

After finishing creating the program and pressing the "S" key, or after trimming the thread, the following prompt appears:

Fig. 34: Prompt after creating a program



8. Select whether

- to mirror the sleeve side you created
- not to mirror the sleeve side you created
- to open the teach-in for the 2nd sleeve side

9.8.2 Copying a program

The selected program is copied to a new program number.

1. Press the  button.



↳ The softkey menu appears.

Fig. 35: Softkey menu



2. Press the  button.



↳ The following is displayed.

Fig. 36: Copying a program



↳ The control unit displays the next available program number.

3. Press "OK" to use the program number.

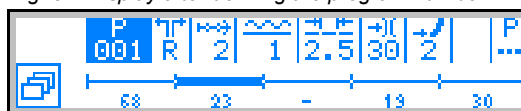
Or:

Press  /  to select another program number or use the numeric keys "0 - 9" to enter the number and then press "OK".

↳ The program number is applied.

The following appears in the display; the program number flashes.

Fig. 37: Display after defining the program number



4. Make any required changes to the new program.
5. Press "ESC".

↳ The programming mode is ended and the machine switches to the automatic mode.

9.8.3 Deleting a program

The selected program is deleted.



1. Press the  button.
- ↳ The softkey menu appears.

Fig. 38: Softkey menu



2. Press the  button.
3. Press "ESC".
- ↳ The programming mode is ended and the machine switches to the automatic mode.

9.8.4 Mirroring a program

The sleeve side that has already been programmed is mirrored for the other sleeve side.



1. Press the  button.
- ↳ The softkey menu appears.

Fig. 39: Softkey menu



2. Press the  button.
3. Press "ESC".
- ↳ The programming mode is ended and the machine switches to the automatic mode.

10 Maintenance

WARNING



Risk of injury due to sharp and moving parts

Switch off the sewing machine before you perform cleaning or maintenance work.

Maintenance work must be carried out at the specified intervals as a minimum (see "operating hours" column). You may need shorter maintenance intervals when processing lint shedding materials.

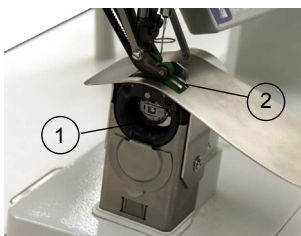
CAUTION!

Malfunctions are possible due to soiling of the machine.

Sewing dust, and thread waste can damage the machine

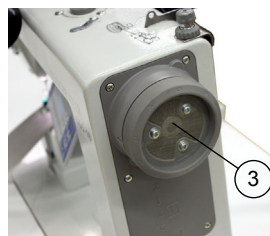
Clean the machine regularly, as described in this section.

Fig. 40: Areas that particularly require cleaning:



(1) - Area around the hook

(2) - Area underneath the needle



plate

(3) - Motor fan screen on the hand-

Maintenance work	Explanation	Operating hours
Machine head Remove sewing dust and thread waste.	Clean (for example with compressed air gun): - Area underneath the needle plate (2) - Area around the hook (1) - Bobbin casing and interior - Thread trimmer - Area around the needle	8
Direct drive Clean the motor fan screen (3)	Clean the motor fan filter of sewing dust (e.g. with a compressed air gun)	8

11 Installation

WARNING



Risk of injury

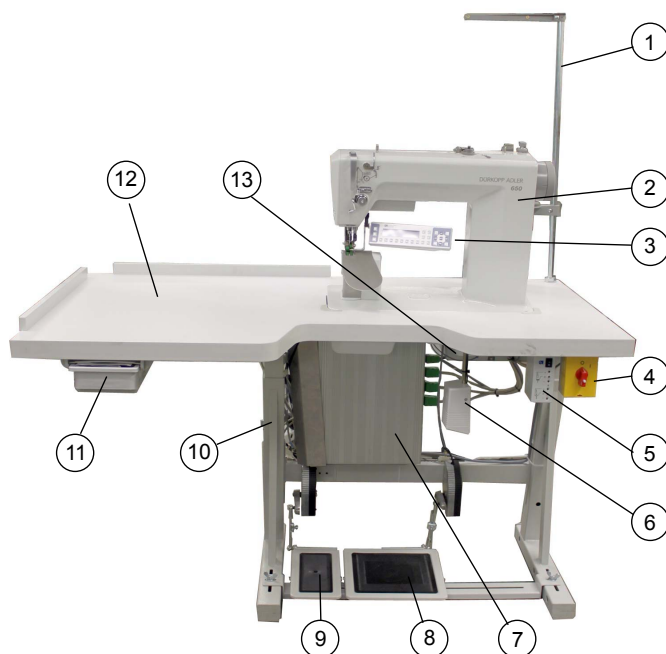
The special sewing machine must be set up by trained specialist personnel.
Always wear protective gloves and safety shoes when unpacking and installing.

11.1 Scope of delivery

The items supplied depend on your order.

Before setting up the machine please check to make sure all of the required parts are present.

Fig. 41: Scope of delivery



This description refers to the special sewing machine whose individual components are delivered directly and completely by Dürkopp Adler.

- Machine head incl. LED sewing lamp (2)
- Control panel (selectable) (3)

Dürkopp Adler accessory set with:

- Reel stand (1)
- Main switch (4)
- Transformer for LED sewing lamp (5)
- Protective cover (not shown)
- Fastening material
- Knee switch (6)

Control unit parts set, complete:

- Control unit DAC 3 (7)
- Auxiliary control unit (13)

Optional equipment

- Frame (10) with table top (12), drawer (11), linkage and pedal (8)
- Additional pedal and pedal linkage (9)

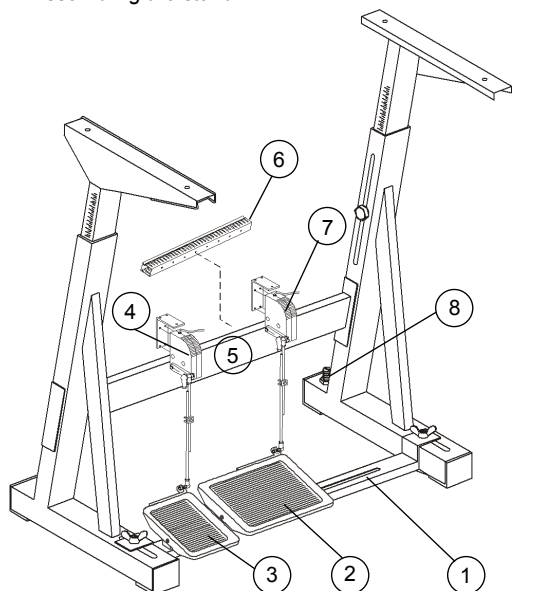
11.2 Removing the security devices

If the special purpose sewing machine you have bought is already set up, the following transport packing must be removed:

- Safety straps and battens on the machine head, table top and frame.
- Safety block and straps on the sewing drive.

11.3 Assembling the stand

Fig. 42: Assembling the stand



- | | |
|------------------------------------|----------------------------|
| (1) - Cross member | (5) - Frame strut |
| (2) - Main pedal | (6) Cable duct |
| (3) - Additional pedal | (7) Encoder for main pedal |
| (4) - Encoder for additional pedal | (8) - Adjusting screw |

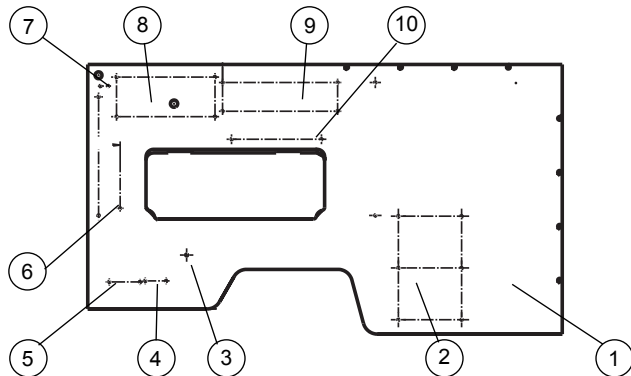


Steps

1. Fasten pedal (2) to the cross-member (1).
2. Secure the additional pedal (3 - optional) to the cross-member brace (1).
3. Attach the cross-member (1) to the frame.
4. After fully assembling the machine, align the pedals. (📖 Chap. 11.5 Attaching the table top and the pedals to the frame, p. 54)
5. Bolt the encoders (4) and (7) onto the frame strut (5). Distance between the floor and the top edge of the frame strut (5): 290 mm.
6. Screw the cable duct (6) (30 x 30 x 250 mm) for the encoder onto the frame strut (5).
7. Turn adjusting screw (8) to ensure the stability of the frame. The frame must rest with all four feet flush on the floor.

11.4 Pre-assembling the table top

Fig. 43: Pre-assembling the table top



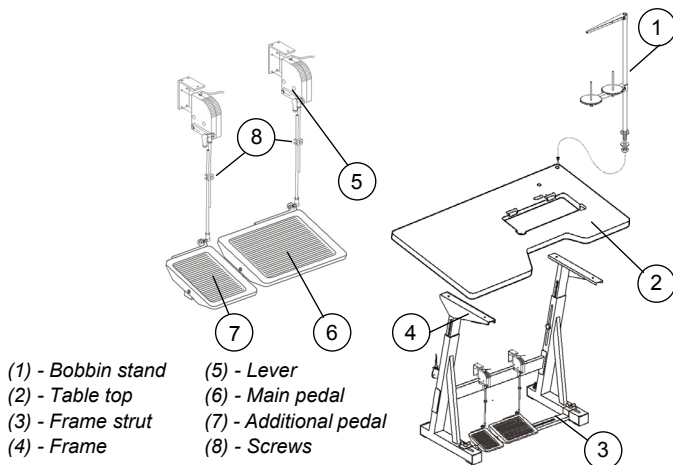
Steps

1. Turn over the table top (1).
2. Screw on the drawer (2) with its brackets (chipboard screws 3.5 x 17).
3. Screw on the knee switch (3).
4. Screw on sewing lamp transformer (4).
5. Screw on main switch (5)
(chipboard screws 5 x 30).
6. Screw on the cable duct (6) (40 x 40 x 200 mm length)
(chipboard screws 3.5 x 17).
7. Screw on strain relief (7)
(chipboard screws 3.5 x 17).
8. Screw on the auxiliary control unit (8)
(chipboard screws 5 x 30).
9. Screw on the DAC motor controller (9) incl. protective plate
(chipboard screws 5 x 30).
10. Screw on the cable duct (40 x 40 x 250 mm length) (10) (chipboard screws 3.5 x 17).
11. Fit the electrical cables (📖 Chap. 11.9 *Electrical connections*, p. 58)

A larger scale illustration is available at the end of the manual (📖 Chap. 12 *Appendix*, p. 73).

11.5 Attaching the table top and the pedals to the frame

Fig. 44: Attaching the table top and aligning the pedals



Steps



1. Attach the frame (4) to the table top (2) using wood screws (6 x 30). Pre-drill the holes for the screws.
2. Observe the center mark for the stand.
3. Turn the frame (4) to its normal position.
4. Align the pedals.
5. For ergonomic reasons align the pedals so that the center of the main pedal (6) is located below the needle.



The frame strut (3) has slots that let you adjust the pedal.

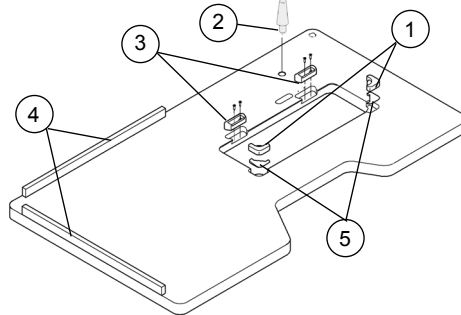
6. Loosen the bolts (8)
7. Adjust the height of the pedal link so that the inclination of the released pedals is approximately 10°. The lever (5) on the encoder can be altered if required.
8. Tighten the screws (8).
9. Insert the reel stand (1) into the drilled hole in the table top and secure in place with a nut and washer.
10. Mount and align the reel holder and unwinder arm.



Important: The reel holder and unwinder arm must be vertically aligned.

11.6 Completing the table top

Fig. 45: Completing the table top



(1) - Rubber corners

(4) - Rails

(2) - Machine head support

(5) - Angled supports

(3) - Bracket supports



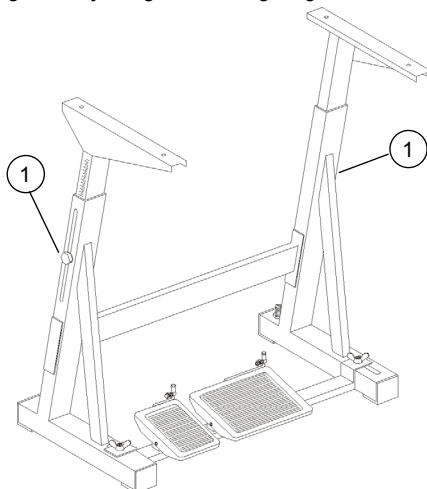
Steps

1. Insert the angled supports (5).
2. Insert the rubber corners (1) into the table top.
3. Fasten the bracket supports (3) with screws 4.5 x 15 (4x).
4. Fasten the rails (4) to the table top using screws 4.5 x 55 (8x).
5. Insert the machine head support (2).

11.7 Adjusting the working height

The working height is adjustable between 780 and 900 mm (measured to the upper edge of the table top).

Fig. 46: Adjusting the working height



(1) - Screws

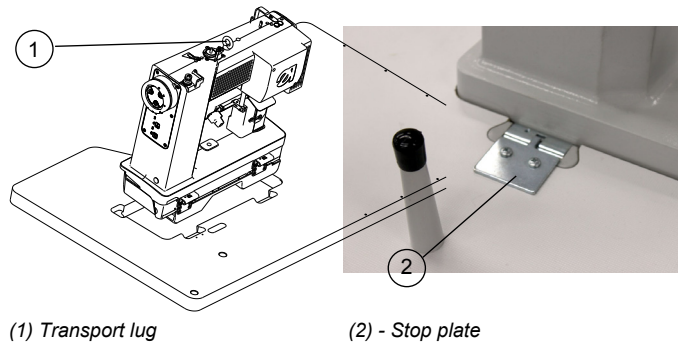


Steps

1. Undo the screws (1) on the frame braces.
2. Adjust the table top horizontally to the required working height.
3. To avoid tilting, pull out, or push in, the table top evenly on both sides.
4. Tighten the screws (1).

11.8 Inserting the machine head

Fig. 47: Inserting the machine head



Steps

1. Fit the machine head into the cut-out in the table top using the transport lug (1).
2. After depositing the machine head immediately bolt on the stop plate (2), which prevents the head from falling when the machine is tilted.

The stop plate is part of the accessory pack accompanying the machine head.

For machines delivered pre-assembled, the transport lug is in the accessory pack.

WARNING



Risk of injury due to the machine head tipping

Secure the machine head against tipping when transporting the assembled machine.

11.9 Electrical connections

DANGER



Danger of fatal injury due to electric shock

The machine must be set up by a trained electrician.

Unplug from the mains before performing any work on the electrical equipment.

Secure the machine against inadvertent reactivating.

11.9.1 Check the mains voltage

The voltage stated on the sewing drive type plate must match the mains voltage.

DANGER



Danger of fatal injury due to electric shock

Make sure that the voltage stated on the sewing drive type plate matches the mains voltage.

11.9.2 Mains voltage distribution

DANGER

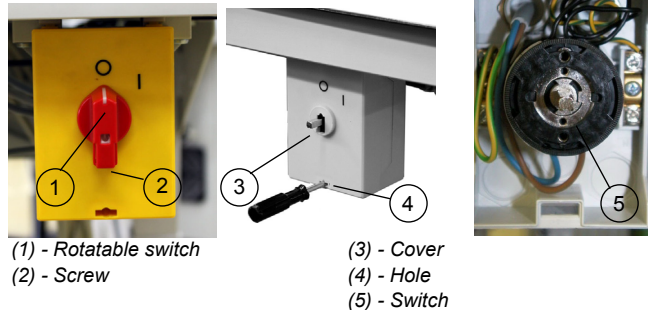


Danger of fatal injury due to electric shock

Unplug the power plug before setting up the power distributor at the main switch.

Secure the machine against inadvertent reactivating.

Fig. 48: Connecting the control box, auxiliary control unit and LED transformer



Steps

1. Loosen screw (2) from the knob and remove the rotatable switch (1).
2. Remove the cover (3) from the main switch. To do so, use a screwdriver to release the catch in hole (4).
3. Route the cable from the control box, the auxiliary controller and the LED transformer into the cable duct.
4. Route the cable into the main switch.
5. Connect the wires from the control box to the screws "T1" and "T2" on the switch (5).
6. Also connect the auxiliary control unit to the screws "T1" and "T2".
7. Connect the LED transformer to "L1" and "L2" (in addition to the power line).
8. Connect the protective earth conductor on the control box and the auxiliary control unit to the main switch.
9. Refit the cover (3) on the main switch.
10. Refit and fasten the rotatable switch (1).
11. Fit the cable duct cover to the cable duct.

11.9.3 Connecting the lines for the machine head

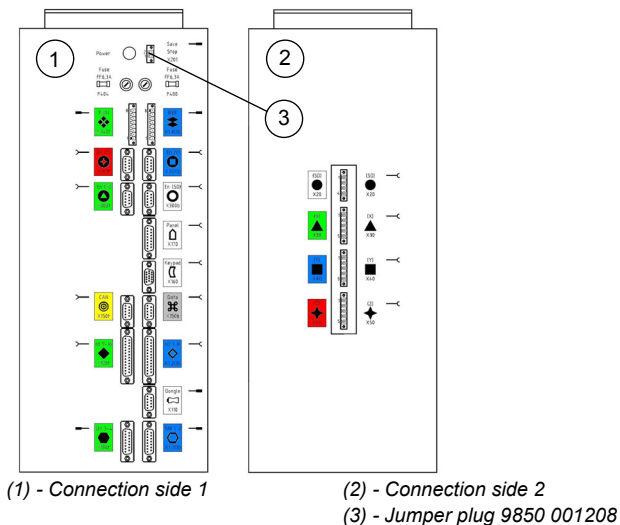
DANGER



Danger of fatal injury due to electric shock
Unplug the power plug before connecting the lines for the machine head.

Secure the machine against inadvertent reactivating.

Fig. 49: Connecting the lines for the machine head



All cables are designated with colored markings.

Important: Make sure the jumper plug 9850 001208 (3) is plugged into the controller, otherwise the controller will not work.

Steps

1. Route the cables to the control box and bundle with cable ties.
2. Attach the motor cables to the correspondingly labeled connectors on connection side (2).
3. Attach the remaining cables to the correspondingly labeled connectors on connection side (1).
4. Connect the LED lamp to the transformer. (Chap. 11.9.14 *Connecting the LED sewing lamp*, p. 71)

11.9.4 Connecting auxiliary control unit cables

DANGER

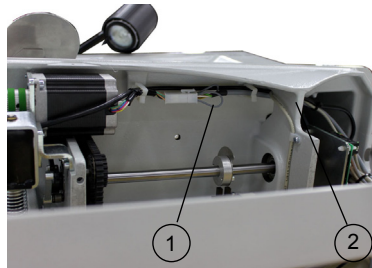


Danger of fatal injury due to electric shock

Unplug the power plug before connecting the auxiliary control lines.

Secure the machine against inadvertent reactivating.

Fig. 50: Connecting auxiliary control unit cables



(1) - Cable

(2) - Underside of housing



Steps

1. Connect the 15-pin plug to the correspondingly labeled connector on control box side 2 ( *Fig. 49: Connecting the lines for the machine head*, p. 60).
2. Route the cable (1) for the stepper motor into the underside of the housing (2) and plug it into the connecting plug.

11.9.5 Connecting the encoder to the control unit

DANGER

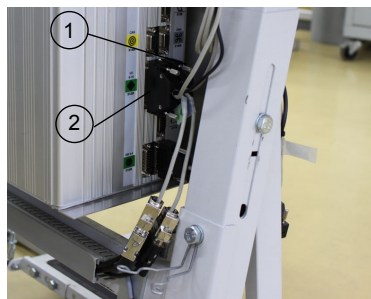


Danger of fatal injury due to electric shock

Unplug the power plug before connecting the encoder to the control unit.

Secure the machine against inadvertent reactivating.

Fig. 51: Connecting the encoder to the control unit



Steps

1. Connect the encoder for the main pedal to the "Speed" connector (1) (X120b).
2. Connect the encoder for the additional pedal to the "Fullness" connector (2) (X120t).

11.9.6 Establishing equipotential bonding for the machine head

DANGER



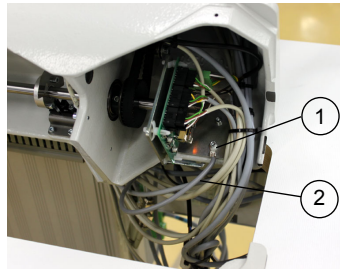
Danger of fatal injury due to electric shock

Unplug the power plug before establishing equipotential bonding.

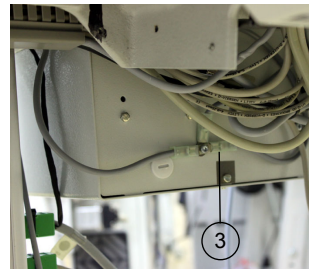
Secure the machine against inadvertent reactivating.

The earthing cable (2) (350 mm) can be found in the machine's accessory pack. The earthing cable (2) dissipates static charges from the machine head to ground via the auxiliary control box.

Fig. 52: Establishing equipotential bonding



(1) - Machine head fastener
(2) - Earthing cable



(3) - Blade connector



Steps

1. Screw the earthing cable (2) to the machine head (1); route it to the auxiliary control box and connect it to the blade connector (3).

11.9.7 Establishing equipotential bonding for the control unit

DANGER

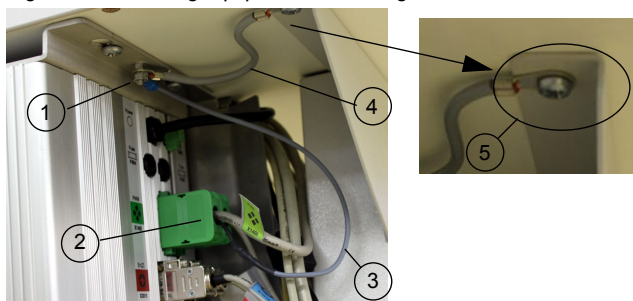


Danger of fatal injury due to electric shock

Unplug the power plug before establishing equipotential bonding for the controls.

Secure the machine against inadvertent reactivating.

Fig. 53: Establishing equipotential bonding for the controls.



(1) - Control box fastener

(2) - Plug

(3) - Earthing cable

(4) - Earthing cable

(5) - Fastener on frame



Steps

1. Fasten the earthing cable (3) from the connector (2) onto the control box (1).
2. Screw the earthing cable (4) (150 mm) with toothed washer onto the frame (5).

11.9.8 Establishing equipotential bonding for the auxiliary control unit

DANGER

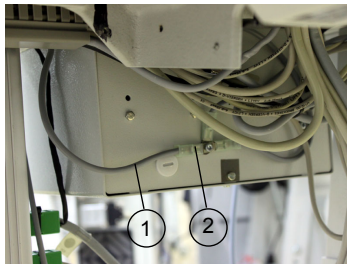


Danger of fatal injury due to electric shock

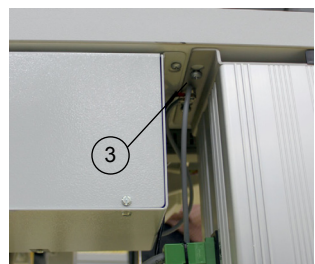
Unplug the power plug before establishing equipotential bonding for the auxiliary control unit.

Secure the machine against inadvertent reactivating.

Fig. 54: Establishing equipotential bonding for the auxiliary control unit.



(1) - Earthing cable
(2) - Blade connector



(3) - Control box fastener



Steps

1. Attach the earthing cable (1) to the flat plug (2) on the auxiliary control box.
2. Route cable (2) (300 mm) to control box (3) and screw in place.

11.9.9 Establishing equipotential bonding for the sewing drive

DANGER

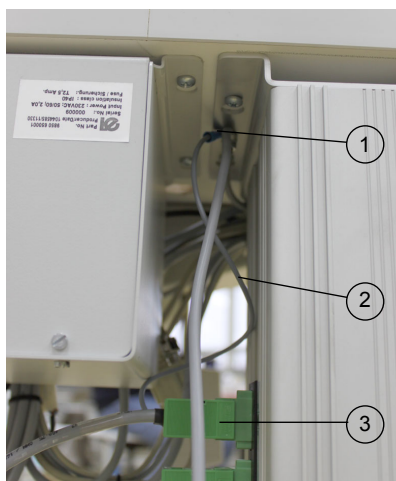


Danger of fatal injury due to electric shock

Unplug the power plug before establishing equipotential bonding for the sewing drive.

Secure the machine against inadvertent reactivating.

Fig. 55: Establishing equipotential bonding for the sewing drive



- (1) - Earthing point on the control box (3) - Connector for sewing drive
(2) - Earthing cable

The earthing cable (2) for the sewing motor is connected to connector (3) for the sewing drive.

Steps



1. Attach the earthing cable (2) to the earthing point on the control box (1).

11.9.10 Establishing equipotential bonding for the knee switch

DANGER

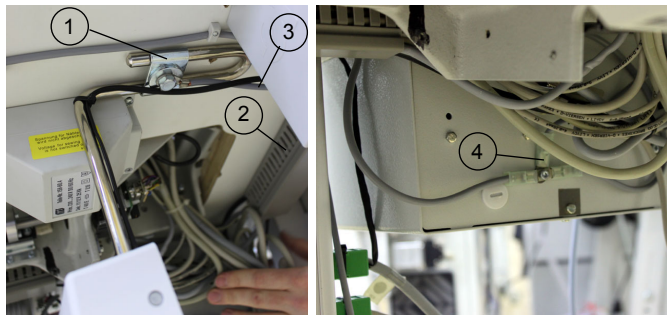


Danger of fatal injury due to electric shock

Unplug the power plug before establishing equipotential bonding for the knee switch.

Secure the machine against inadvertent reactivating.

Fig. 56: Establishing equipotential bonding for the knee switch



(1) - Cable clip
(2) - Cable duct

(3) - Earthing cable
(4) - Blade connector



Steps

1. Attach the earthing cable (3) (650 mm) to the fastening clip (1) on the knee switch.
2. Route the cable through cable duct (2) and then connect it to the blade connector (4) on the auxiliary control unit.

11.9.11 Establishing equipotential bonding for encoders

DANGER

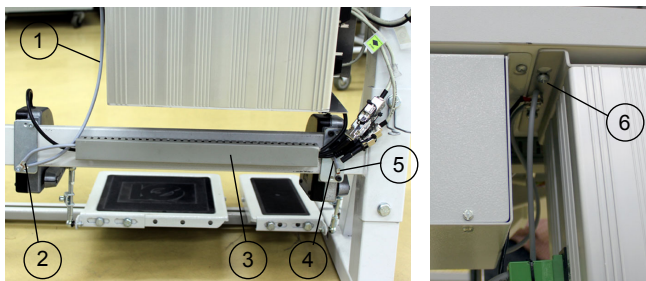


Danger of fatal injury due to electric shock

Unplug the power plug before establishing equipotential bonding for the encoder.

Secure the machine against inadvertent reactivating.

Fig. 57: Establishing equipotential bonding for encoders



(1) - Earthing cable

(2) - Encoder connection
(main pedal)

(3) - Cable duct

(4) - Earthing cable

(5) - Encoder connection
(additional pedal)

(6) - Control box fastener



Steps

1. Attach the earthing cable (4) (500 mm) to the encoder (5) (optional).
2. Route the cable (4) through the cable duct (3) to the encoder (2) and screw in place (optional).
3. Attach the earthing cable (1, 650 mm) to the encoder (2) and the control box (6).

11.9.12 Connecting the knee switch

DANGER

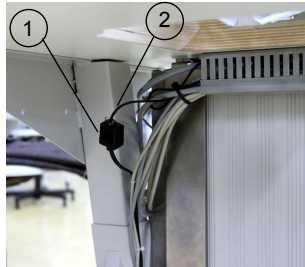


Danger of fatal injury due to electric shock

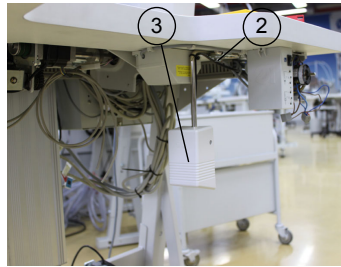
Unplug the power plug before connecting the knee switch.

Secure the machine against inadvertent reactivating.

Fig. 58: Connecting the knee switch



(1) - Plug
(2) - Cable



(3) - Knee switch



Steps

1. Route the cable (2) from the knee switch (3) through the cable duct to the control unit and connect it to the connector (1).

11.9.13 Connecting the control panel

DANGER

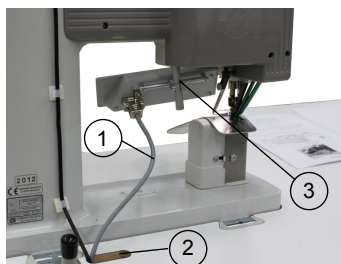


Danger of fatal injury due to electric shock

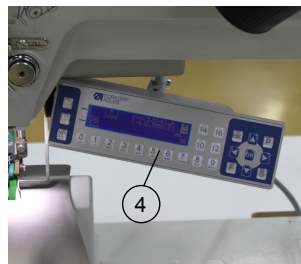
Unplug the power plug before connecting the control panel.

Secure the machine against inadvertent reactivating.

Fig. 59: Connecting the control panel



(1) - Cable
(2) - Table top cut-out



(3) - Bracket
(4) - Control panel



Steps

1. Screw the control panel (4) onto the bracket (3) and align.
2. Attach the connector on the cable (1) to the control panel; route the cable through the table top opening (2) to the control box and connect it to the socket (X170 panel).

11.9.14 Connecting the LED sewing lamp

DANGER



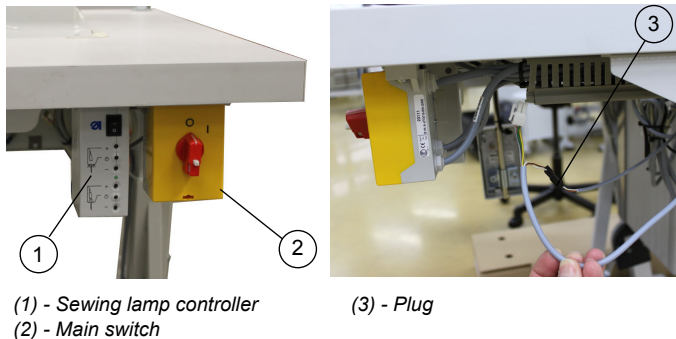
Danger of fatal injury due to electric shock

The sewing lamp controller is directly connected to the mains supply. It is thus live even if the main switch is switched off.

Be sure to unplug the power plug before connecting the lines for the LED sewing lamp.

Secure the power plug against inadvertently plugging back in.

Fig. 60: Connecting the LED sewing lamp



(1) - Sewing lamp controller
(2) - Main switch

(3) - Plug



Steps

1. Assemble the sewing lamp controller (1) next to the main switch (2) ( Chap. 11.4 *Pre-assembling the table top*, p. 53).
2. Connect the supply line for the sewing lamp controller to the main switch. ( Chap. 11.9.2 *Mains voltage distribution*, p. 59)
3. Connect the plug (3) on the LED lamp to the black connector on the sewing lamp controller.

11.9.15 Connecting the auxiliary sewing lamp (Waldmann - optional)

See installation instructions 0791 100702.

These instructions are supplied with the sewing lamp.

11.10 Sewing test

Carry out a sewing test after completing the installation work.

WARNING



Risk of injury due to sharp and moving parts

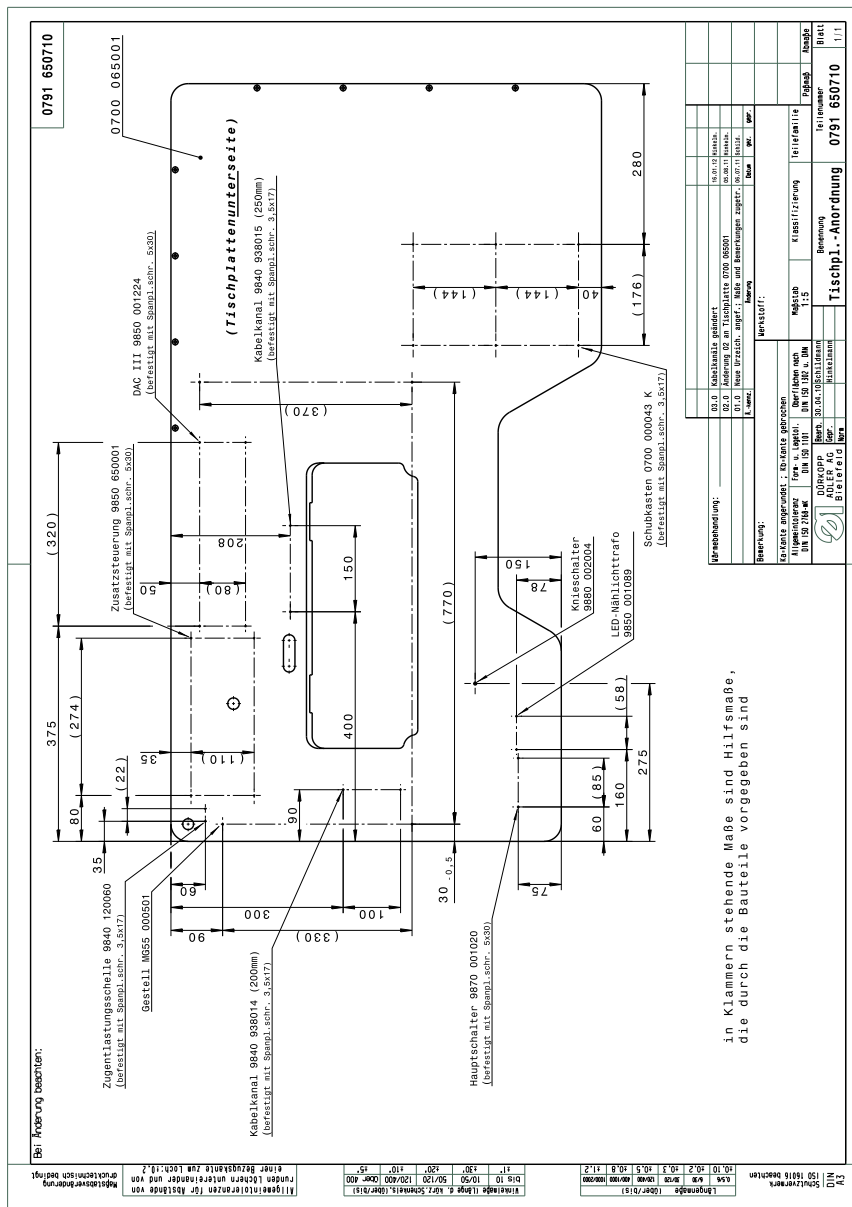
Switch off the sewing machine before threading the needle or hook thread.

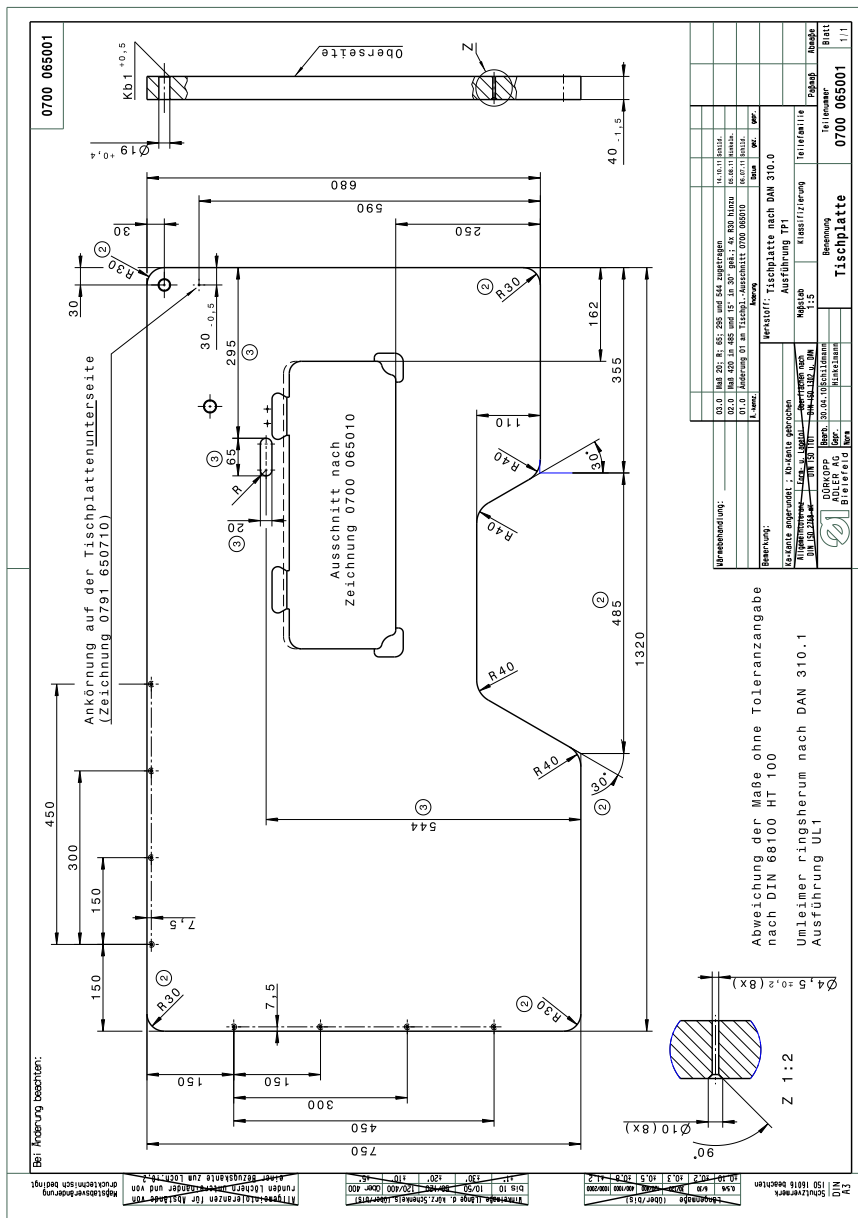


Steps

1. Plug the mains cable into the socket.
 2. (📖 Chap. 8.4, p. 18) Wind on the hook thread
 3. Switch on the main switch.
 4. Activate bobbin winder mode (📖 Chap. 9.4, p. 29).
 5. Fill the bobbin at medium speed.
 6. Switch off the main switch.
 7. Thread in needle and hook threads (📖 Chap. 8.1, p. 15) and (📖 Chap. 8.5, p. 19).
 8. Switch on the main switch.
 9. Select the material to be processed.
 10. Carry out the sewing test, first at low speed and then gradually increasing it.
 11. Check to make sure the seams are of the required quality.
 12. If requirements are not met, change the thread tensions (📖 Chap. 8.2, p. 16) and (📖 Chap. 8.6, p. 20).
- If necessary, also check the settings specified in the service manual and correct where applicable.

Dimensions for making a table top







Bei Änderung beachten:

Abweichung der Maße ohne Toleranzangabe nach DIN 68100 HT 100
Kanten gerundet R1**

450
300
150
75
15
7,5
600
30
Ø 20 ± 0,2 (4x)



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