

**CNC-Nähanlage für freie Nahtkonturen
CNC sewing unit for free seam contours**

Bedienanleitung / Operating Instructions

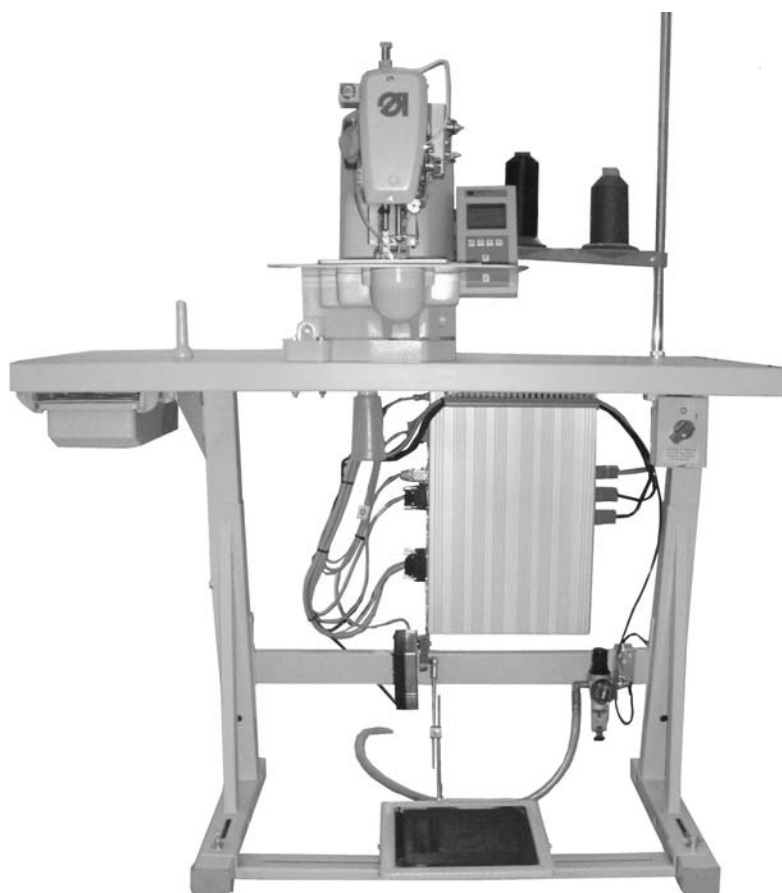
Aufstellanleitung / [Installation Instructions](#)

Serviceanleitung / Service Instructions

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Foreword

This instruction manual is intended to help the user to become familiar with the machine and take advantage of its application possibilities in accordance with the recommendations.

The instruction manual contains important information on how to operate the machine securely, properly and economically. Observation of the instructions eliminates danger, reduces costs for repair and down-times, and increases the reliability and life of the machine.

The instruction manual is intended to complement existing national accident prevention and environment protection regulations.

The instruction manual must always be available at the machine/sewing unit.

The instruction manual must be read and applied by any person that is authorized to work on the machine/sewing unit. This means:

- Operation, including equipping, troubleshooting during the work cycle, removing of fabric waste,
- Service (maintenance, inspection, repair) and/or
- Transport.

The user also has to assure that only authorized personnel work on the machine.

The user is obliged to check the machine at least once per shift for apparent damages and to immediately report any changes (including the performance in service), which impair the safety.

The user company must ensure that the machine is only operated in perfect working order.

Never remove or disable any safety devices.

If safety devices need to be removed for equipping, repairing or maintaining, the safety devices must be remounted directly after completion of the maintenance and repair work.

Unauthorized modification of the machine rules out liability of the manufacturer for damage resulting from this.

Observe all safety and danger recommendations on the machine/unit! The yellow-and-black striped surfaces designate permanent danger areas, eg danger of squashing, cutting, shearing or collision.

Besides the recommendations in this instruction manual also observe the general safety and accident prevention regulations!

General safety instructions

The non-observance of the following safety instructions can cause bodily injuries or damages to the machine.

1. The machine must only be commissioned in full knowledge of the instruction book and operated by persons with appropriate training.
2. Before putting into service also read the safety rules and instructions of the motor supplier.
3. The machine must be used only for the purpose intended. Use of the machine without the safety devices is not permitted. Observe all the relevant safety regulations.
4. When gauge parts are exchanged (e.g. needle, presser foot, needle plate, feed dog and bobbin) when threading, when the workplace is left, and during service work, the machine must be disconnected from the mains by switching off the master switch or disconnecting the mains plug.
5. Daily servicing work must be carried out only by appropriately trained persons.
6. Repairs, conversion and special maintenance work must only be carried out by technicians or persons with appropriate training.
7. For service or repair work on pneumatic systems, disconnect the machine from the compressed air supply system (max. 7-10 bar). Before disconnecting, reduce the pressure of the maintenance unit. Exceptions to this are only adjustments and functions checks made by appropriately trained technicians.
8. Work on the electrical equipment must be carried out only by electricians or appropriately trained persons.
9. Work on parts and systems under electric current is not permitted, except as specified in regulations DIN VDE 0105.
10. Conversion or changes to the machine must be authorized by us and made only in adherence to all safety regulations.
11. For repairs, only replacement parts approved by us must be used.
12. Commissioning of the sewing head is prohibited until such time as the entire sewing unit is found to comply with EC directives.
13. The line cord should be equipped with a country-specific mains plug. This work must be carried out by appropriately trained technicians (see paragraph 8).



It is absolutely necessary to respect the safety instructions marked by these signs.

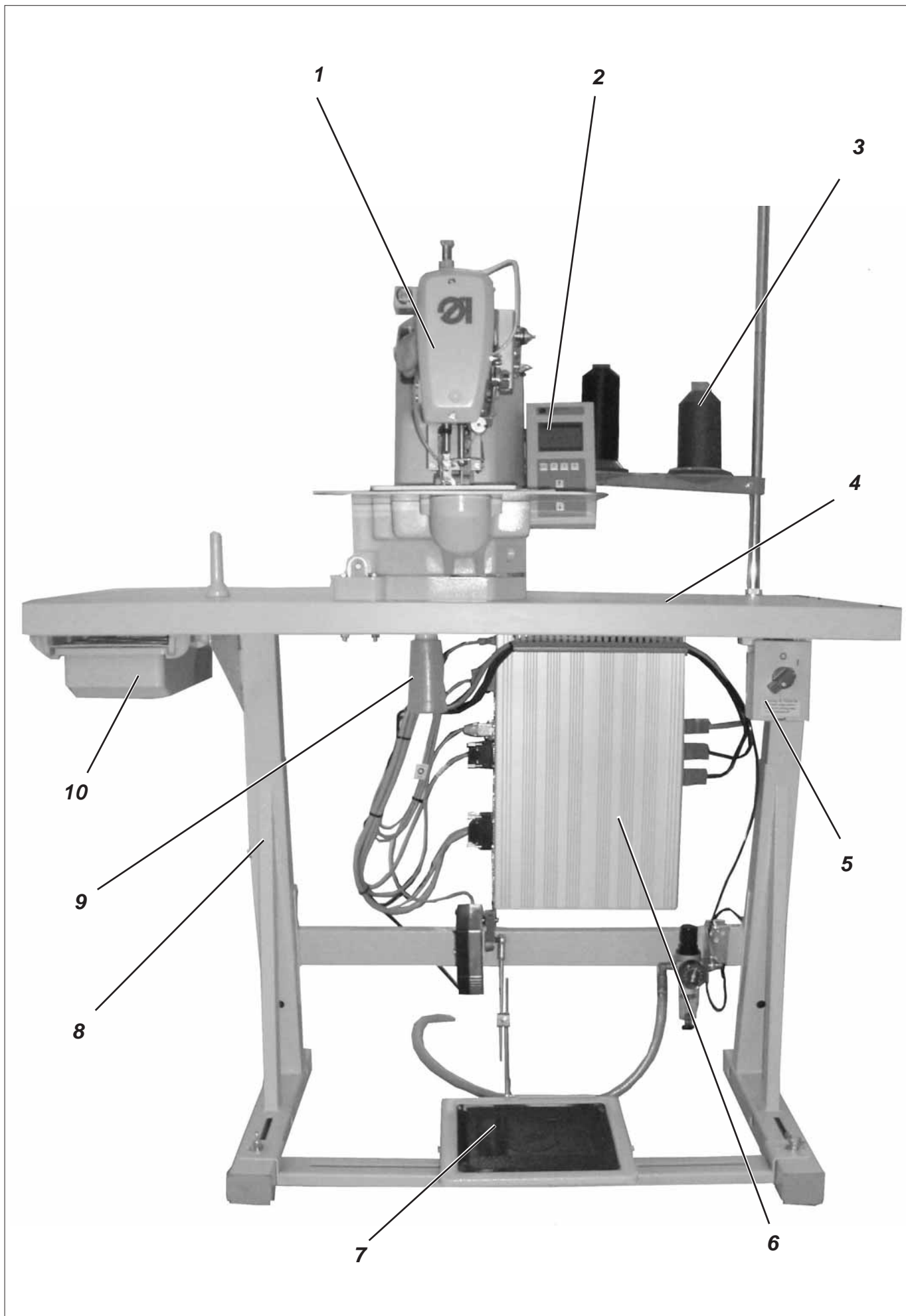
Danger of bodily injuries !

Please note also the general safety instructions.



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1. Scope of delivery

The scope of delivery **is dependent on your order**.

Please check before the assembly whether all required parts are available.

This description is valid for a sewing unit the individual components of which are completely delivered by **Dürkopp Adler AG**.

- **1** Machine head incl. oil pan

Set of parts (electric) with:

- **2** Control panel
- **5** Mains switch
- **6** DAC control

Dürkopp-Adler accessories with:

- **3** Thread reel holder
- Protectice cover (without illustration)
- **8** Stand (optional)
- **7** Pedal and rods (optional)
- **4** Table top (optional)
- **9** Oil collector sump
- **10** Drawer (optional)

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2. General notes and securing devices



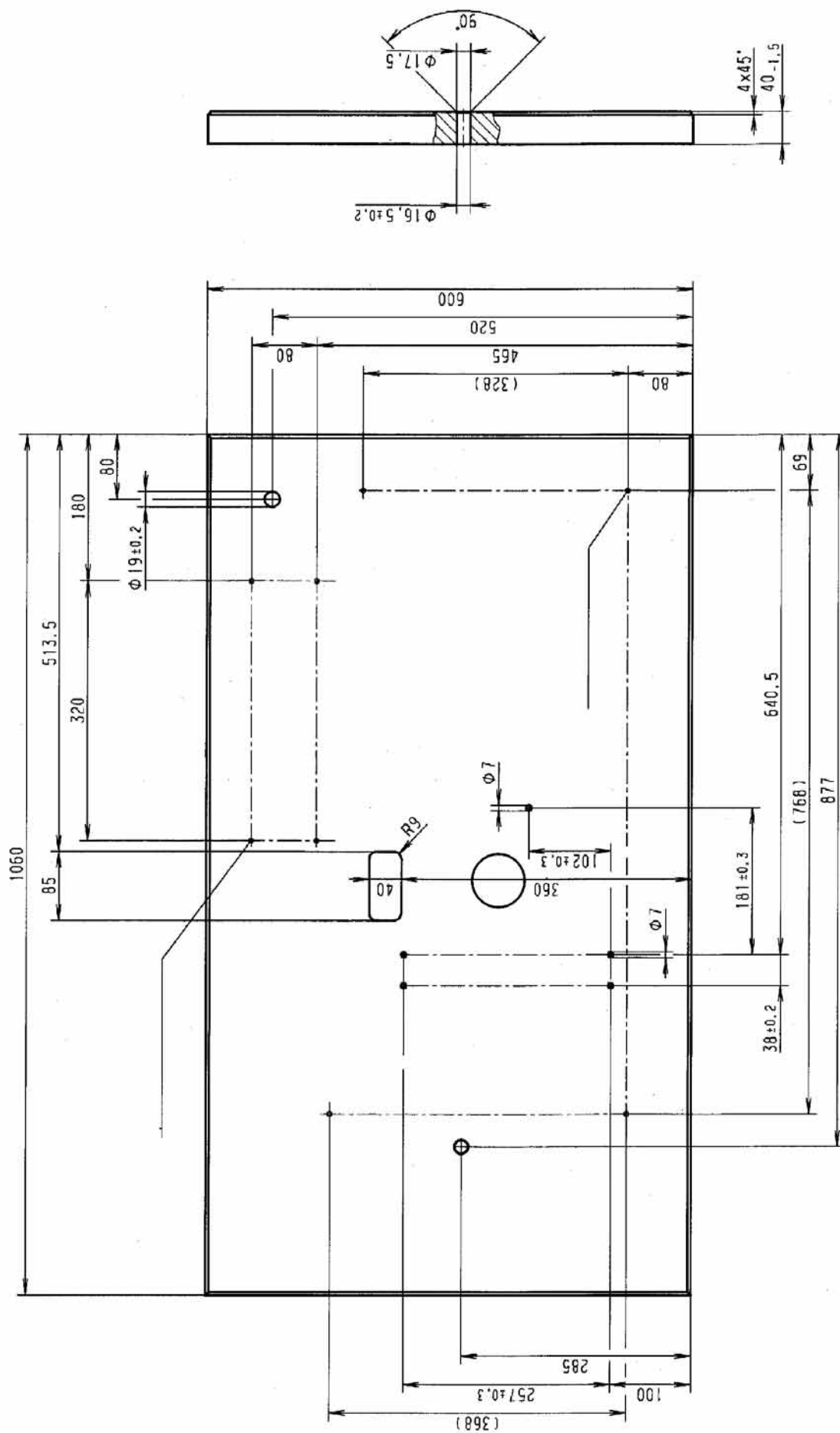
ATTENTION !

The sewing unit must only be assembled by trained specialist staff.

Securing devices

If you have bought an assembled sewing unit, the following securing devices have to be removed:

- Tapes and battens at machine head, table and stand.



3. Mounting the stand and the control cabinet

3.1 Table tops

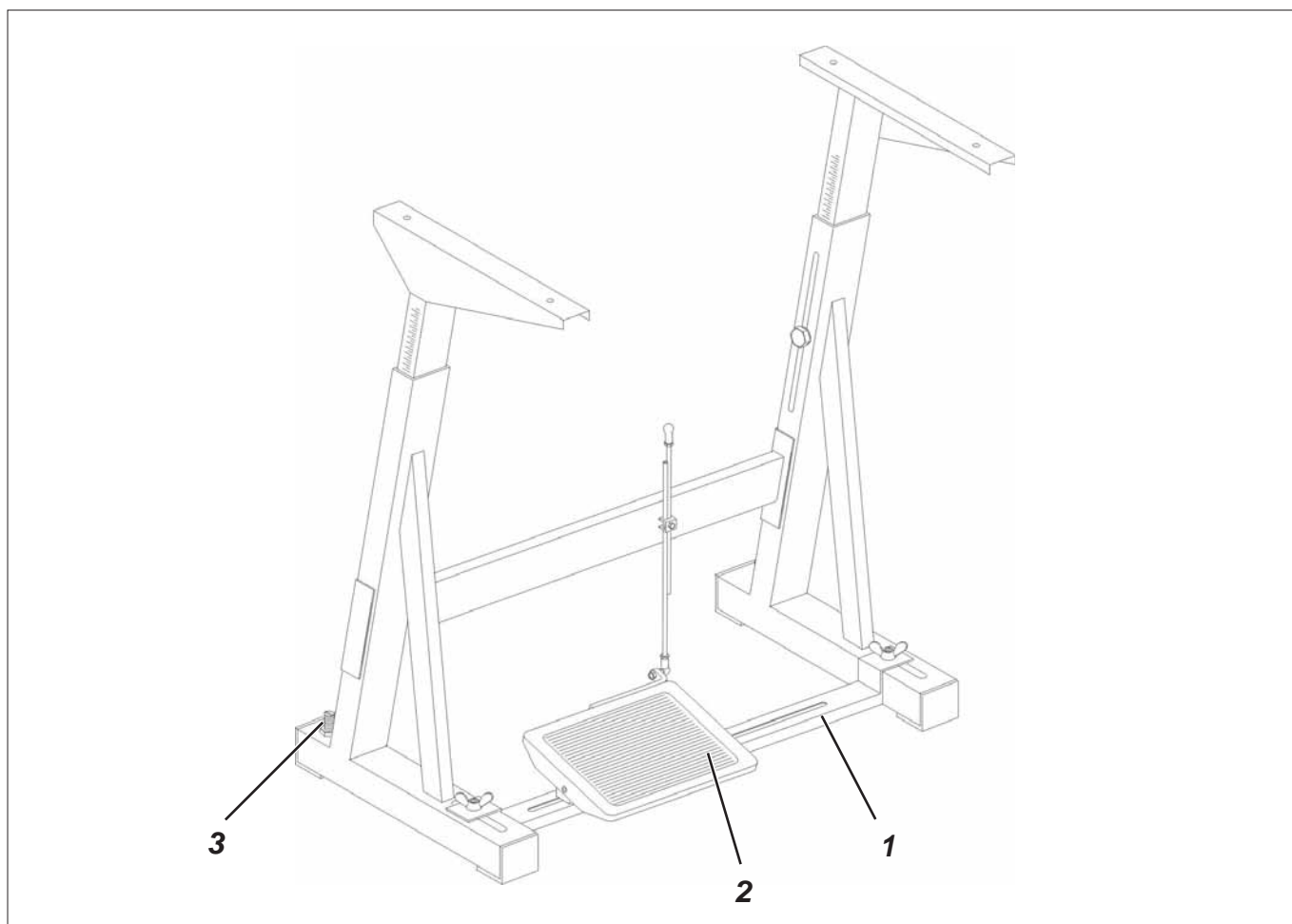
The cutouts of self-manufactured table tops must have the dimensions indicated in the sketch.



Caution: Risk of injury !

The table tops must have the necessary load-bearing capacity and stability.

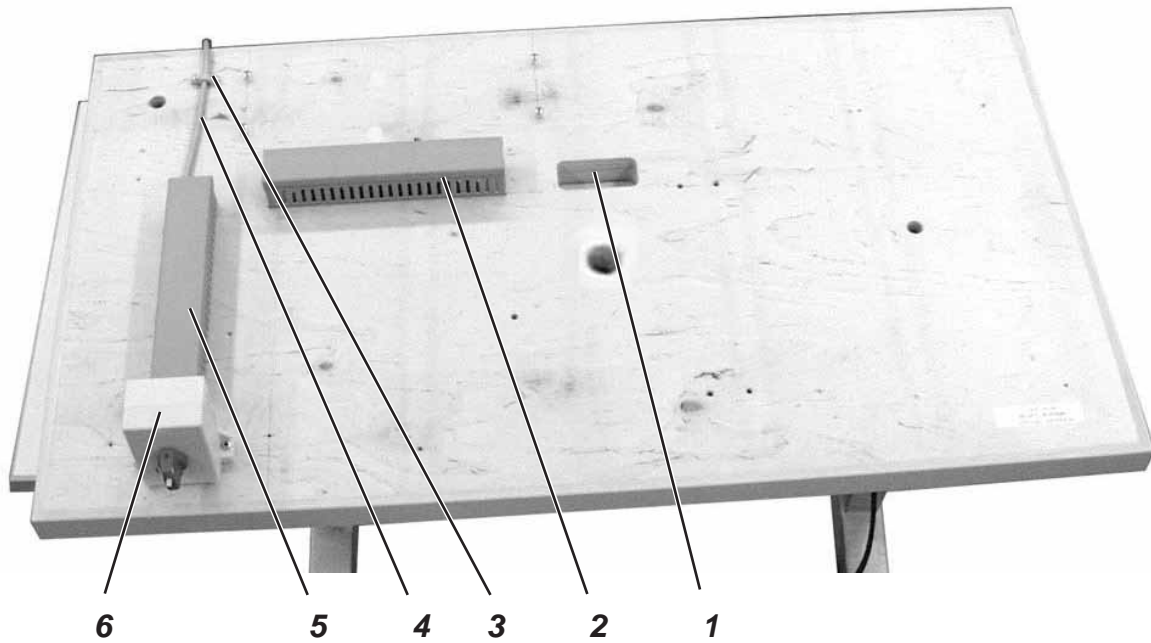
3.2 Mounting the parts of the stand



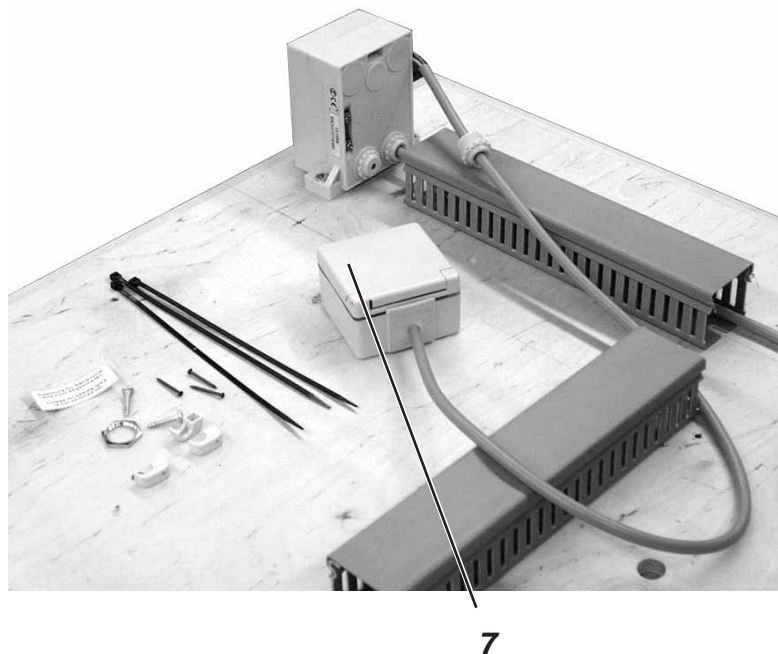
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- Mount the individual parts of the stand as shown in the illustration.
- Turn the adjusting screw 3 to ensure the stability of the stand. The stand must rest on the floor with all four feet.
- Screw pedal 2 on stand strut 1.
- Align pedal laterally. Shift the pedal sideways so that it is positioned centrally to the oil pan. The stand strut is provided with slotted holes for aligning the pedal.

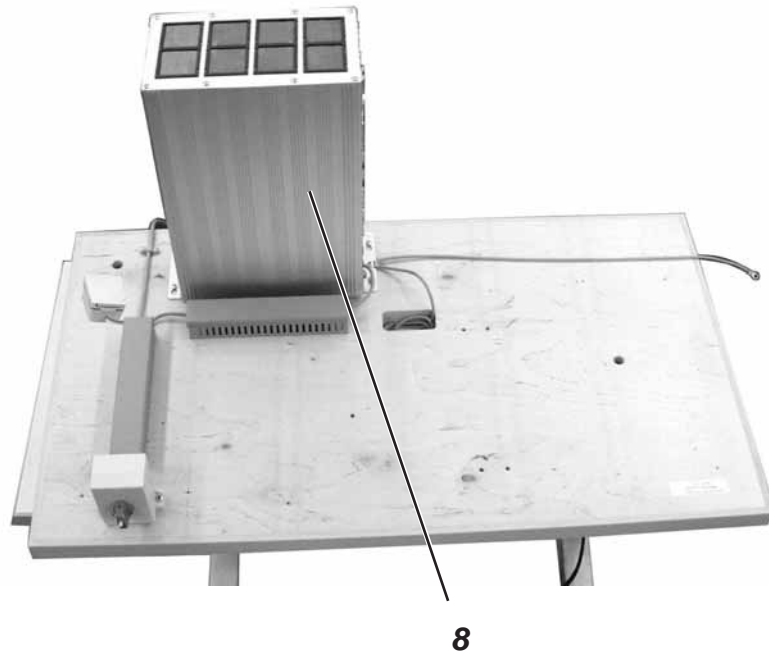
3.3 Completing the table top



- Place the table top on a worktop upside down.
- Screw the main switch 6 on the underside of the table top on the left.
- Screw the cable duct 5 tight behind the main switch 6.
- Screw the cable duct 2 tight to the left of the lead-through 1.
- Put the connecting lead 4 in the cable duct.
- Fasten the connecting lead 4 by means of strain relief 3.



- Mount the socket kit 7.
- Connect the cable wires at the mains switch to the clamps L1 and L2 (see page (8)).
- Connect the protective switch in the mains switch.



- Place the control box 8 on the underside of the table top and position it in such a way that the side with the four sockets points to the left (towards the thread reel holder).
- Screw the control box with four screws on the punch-marked spot at the underside of the table top.

3.4 Connecting the control box to the main switch



ATTENTION !

Work of every kind on the electric equipment of the sewing unit must only be carried out by electricians or correspondingly trained personnel.

The mains plug has to be pulled out!



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1



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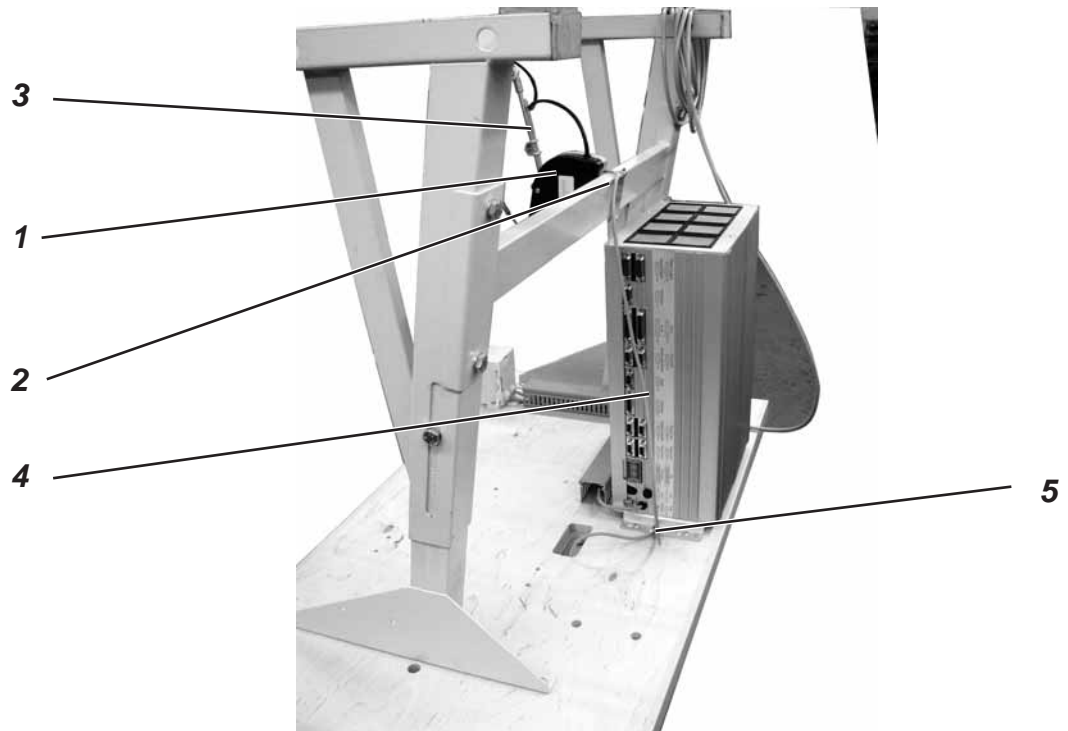
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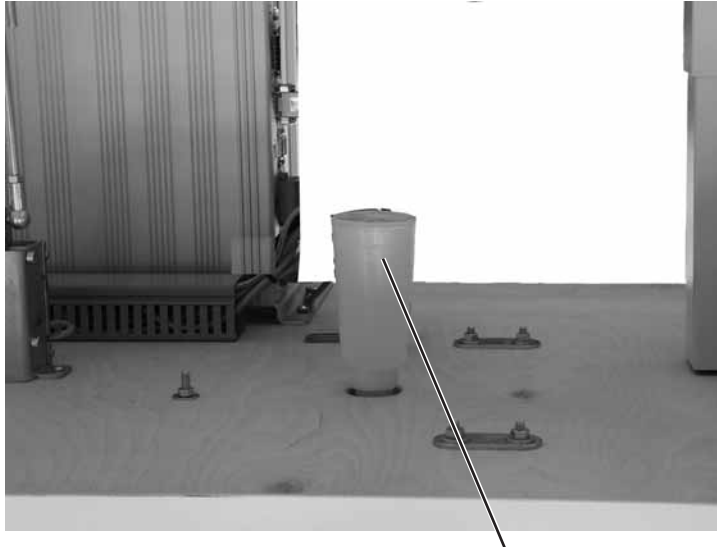
- Take off the switching knob 1.
For this purpose loosen the screw 2 in the knob.
- Remove the cover 3 from the main switch.
For this purpose unlock the locking bar in drill-hole 4 with a screwdriver.
- Run the cable from the control box into the cable duct.
- Insert the cable in the main switch.
- Connect the cable wires of the control box to the screws "T1" and "T2".
- Connect the protective conductor of the control box in the main switch.
- Put the cover on the mains switch again.
- Put on the switching knob 1 and screw it tight.
- Put the cover on the cable duct.

3.5 Mounting the stand and the reference value transmitter



- Put the stand on the table top and screw it tight.
- Screw the set value initiator 1 with the mounting strap 2 to the stand brace.
- Hook in the ball cups of the pedal bars 3 at the pedal and the set value initiator 1.
- Screw the potential compensation cable 4 onto the mounting strap 2.
- Screw the potential compensation cable 4 of the set value initiator onto the control unit using the screw 5.

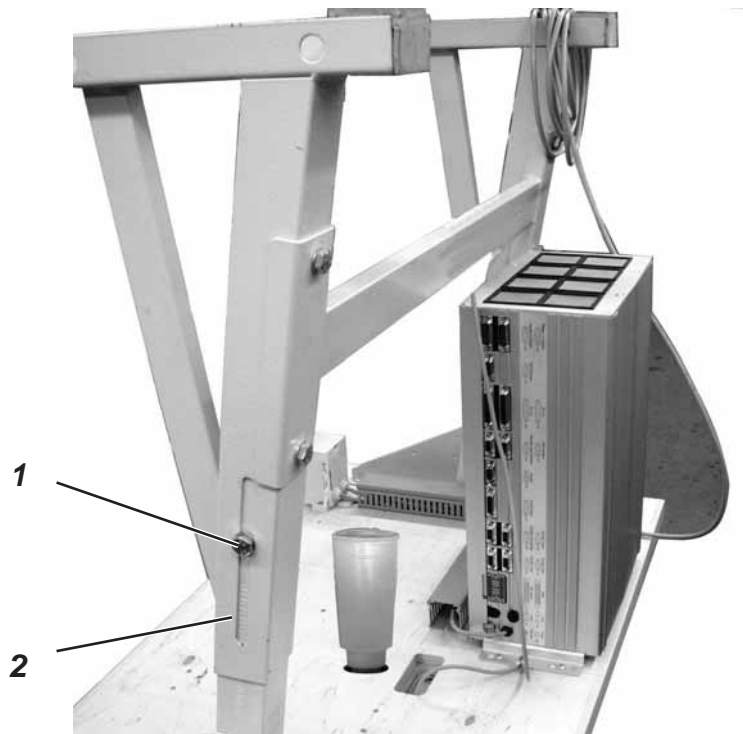
3.6 Mounting the oil collector sump



1

- Insert the holder for the oil collector sump in the drill-hole of the table top.
- Screw the oil collector sump 1 in.

3.7 Adjusting the working height



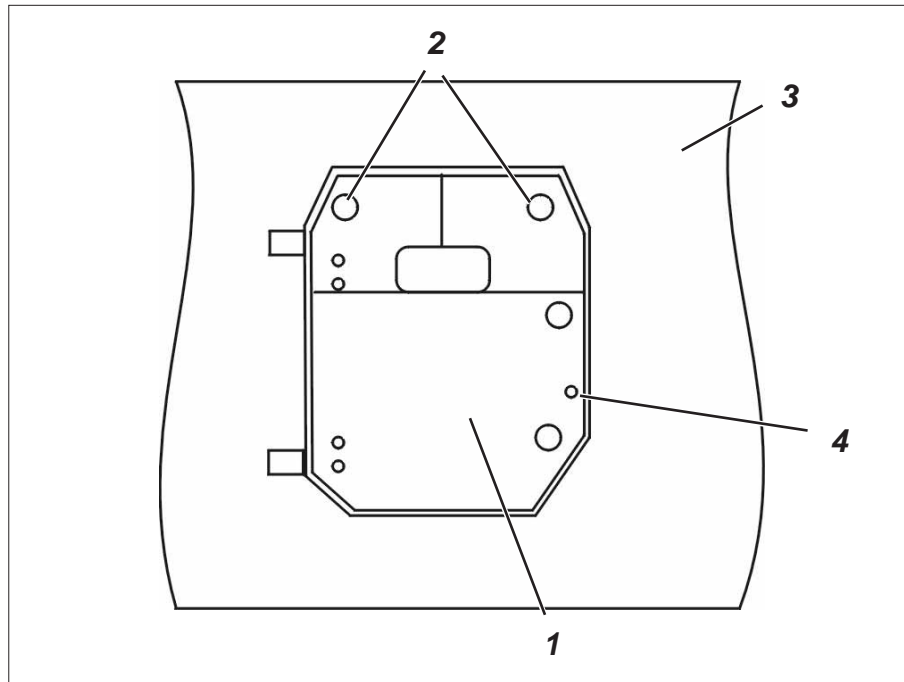
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The working height is adjustable between 750 and 950 mm (measured up to the top edge of the table top).

- Loosen the screws 1 at both spars of the stand.
In order to avoid jamming pull out or push in both sides of the table top equally.
The scales 2 at the outside of the spars serve as adjusting aid.
- Tighten both screws 1.

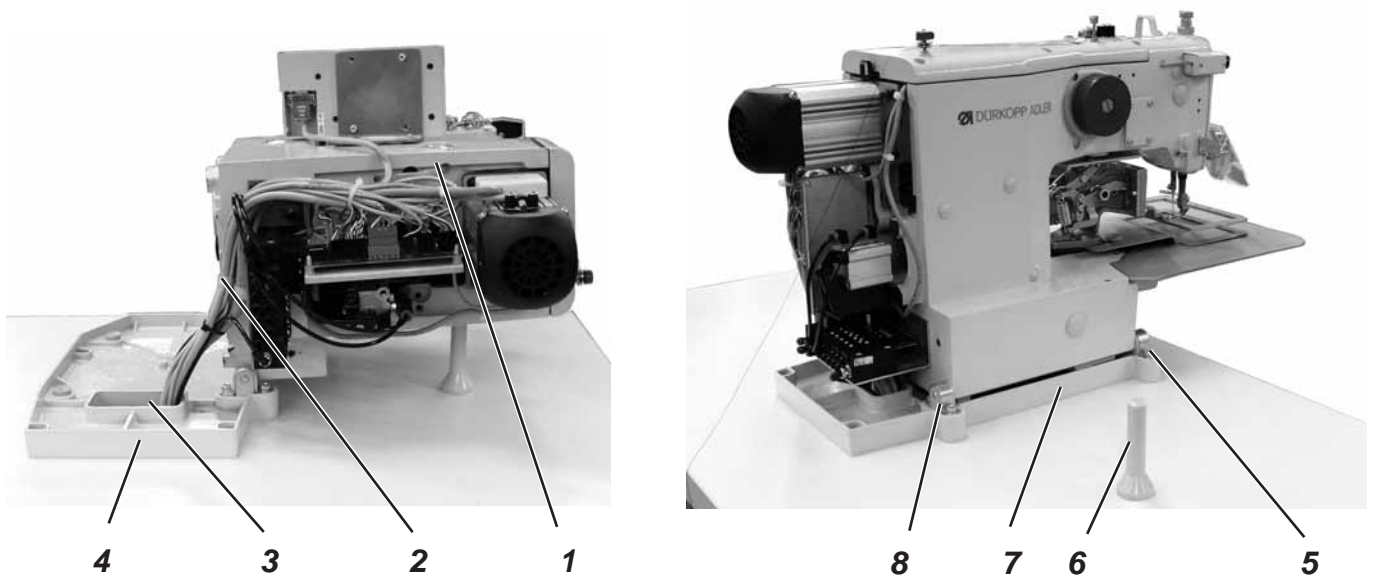
4. Mounting the sewing unit

4.1 Mounting the oil pan



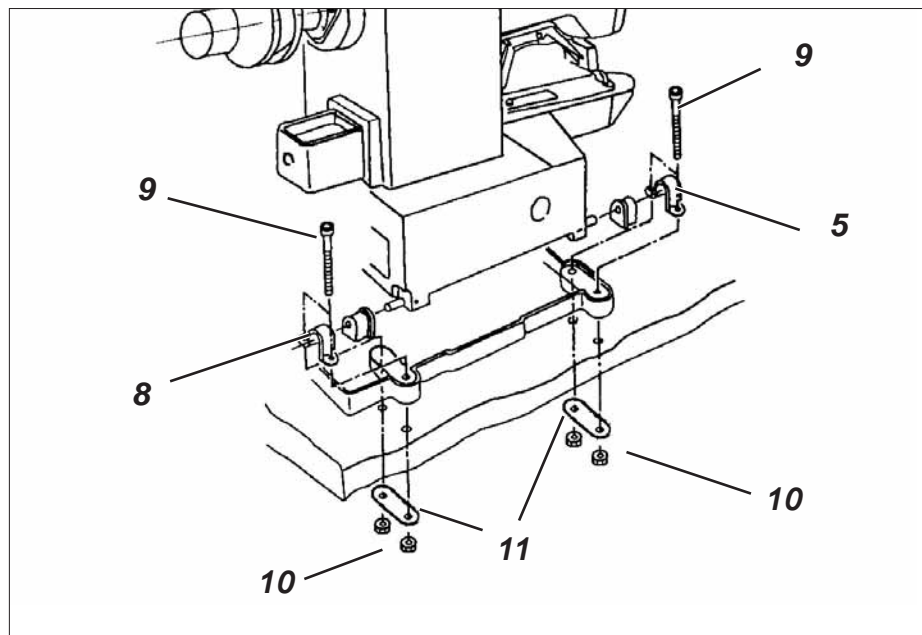
- Lay the oil pan 1 on the table top 3, align it and screw it tight through the two through-bores 2 with two wood screws.
- Push the screw (in the accessories) through the drill-hole 4 and tighten it with washer and nut.

4.2 Assembly of the sewing unit

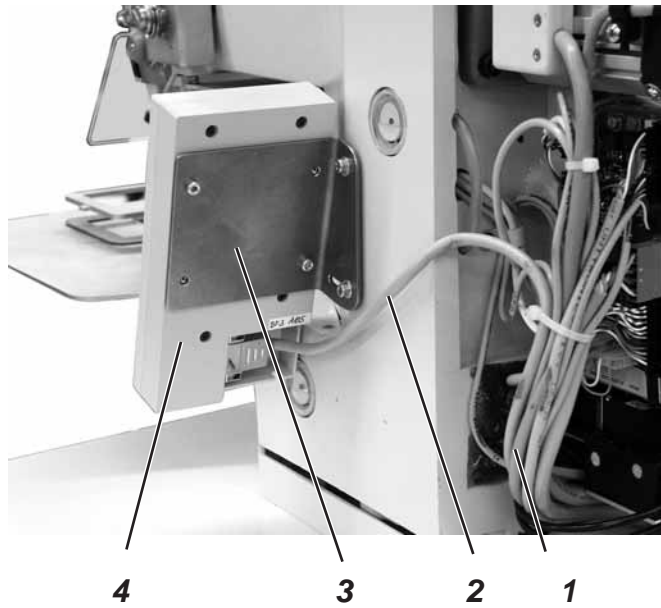


The small parts for setting up the sewing unit are included in the accessories.

- Place the sewing unit 1 on the oil pan 4.
- Fasten the sewing unit on the left and on the right with the fixtures 5 and 8.
For this purpose screw the fixtures 5 and 8 tight with the screws 9, the sheets 11 and the counternuts 10.
- Insert the machine head support 6 in the drill-hole of the table top.
- Tilt the sewing unit sideways.
- Run the connecting cables 2 under the table top through the opening 3.
- Tilt the sewing unit back.



4.3 Mounting the control panel

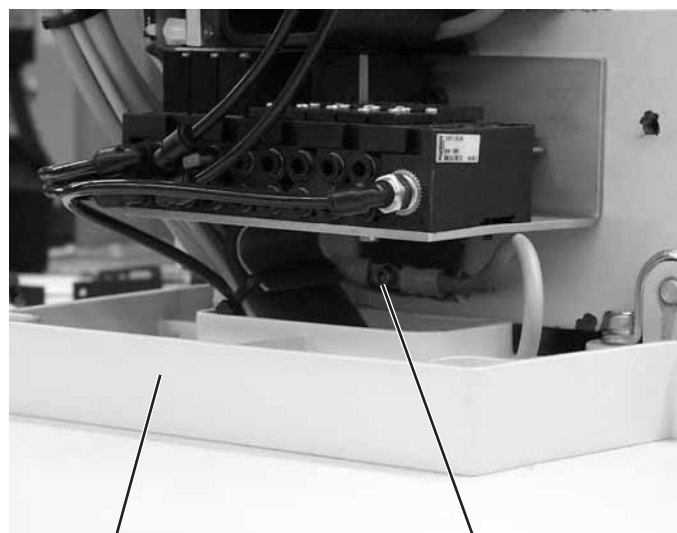


- Screw the control panel 4 on the sewing unit with angle 3. Lay rubber washers between the mounting angle of the control panel and the cast housing.
- Connect the connecting cable 2 to the control panel.

4.4 Potential compensation



1



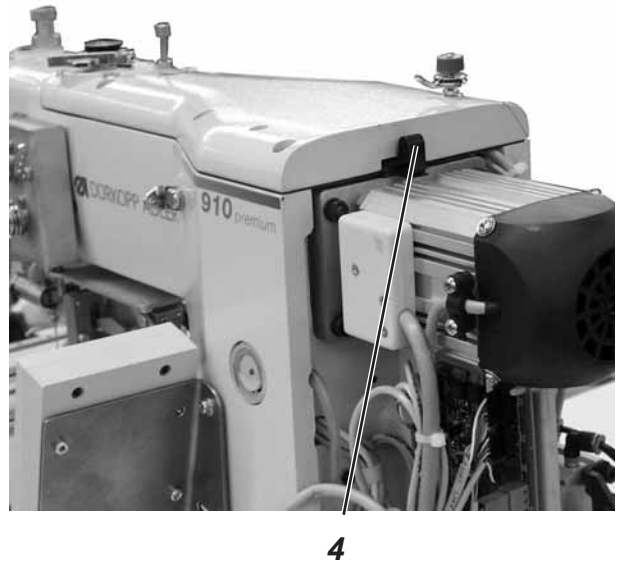
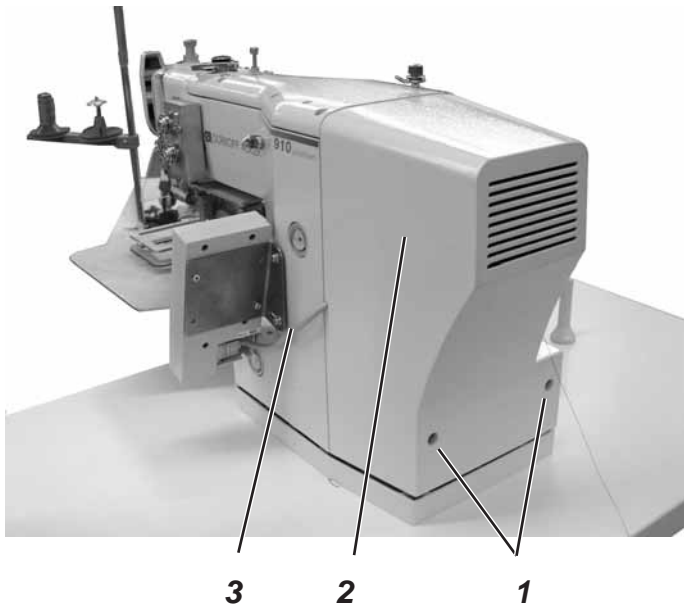
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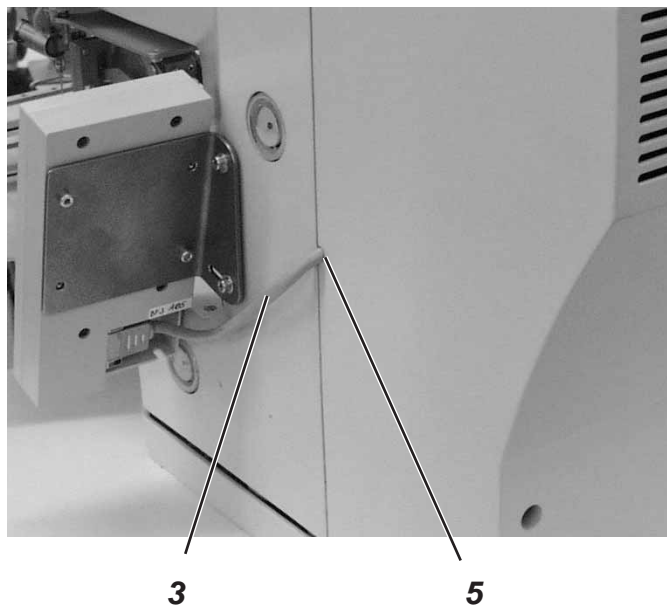
- From the control 1 to the machine head 2
- From the machine head 2 to the oil pan 3

2

4.5 Mounting the cover hood

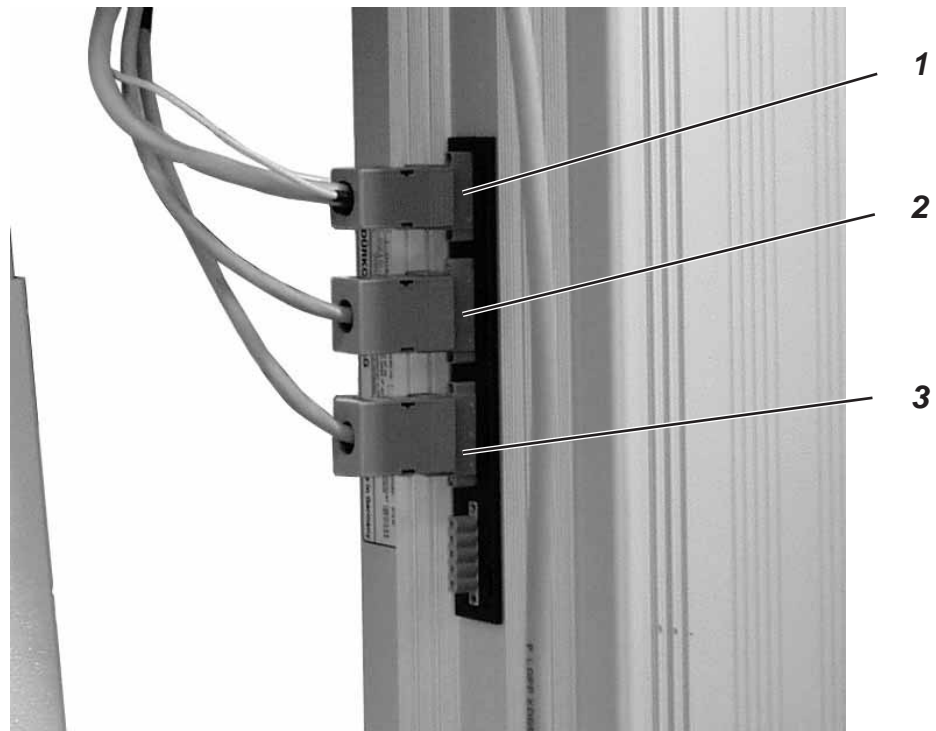


- Place the cover hood 2 on the fitting spring 4 from above.
- Lay the cable 3 of the control panel in the gap 5 of the cover hood before.
- Screw the cover hood on the sewing unit with two screws through the drill-holes 1.



5. Connecting the plug connections to the control box

5.1 Plug connections at the multiple pin strip (4-fold)



Connect the plug connections of the sewing unit as follows:

- Plug connection 1 → sewing motor plug (4-pole)
- Plug connection 2 → step motor for the X-drive (5-pole)
- Plug connection 3 → step motor for the Y-drive (5-pole)

5.2 Plug connections at the multiple pin strip (15-fold)



Connect the plug connections of the sewing unit, the control panel and the reference value transmitter as follows:

- Plug of light barrier /sensor to plug connection 1 (REF-signals)
Note: The 8-pole plug is encoded.
- Plug of magnets to plug connection 6 (PWM)
Note: The 8-pole plug is encoded.
- Plug of encoder signal sewing motor to plug connection 2 (encoder sewing motor)
- Plug of control panel to plug connection 3 (control panel)
- Plug of control elements (pedal switch) via adapter 5 to plug connection 4 (I/O 1-8)
- Plug 7 for safe connection to the socket (SaveStop)

5.3 Wiring



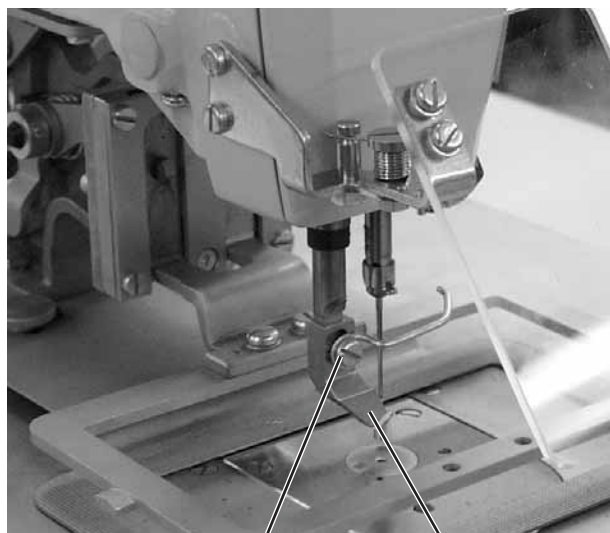
In order to make it possible to tilt the machine head back the cables leading from the head through the opening in the table top either to the multiple pin strip (15-fold) at the control box or to the cable duct must be long enough. For this purpose the cables must be laid to form a great bend 2 with the help of some cable clips.

2

6. Mounting the thread reel holder

- Insert the thread reel holder in the drill-hole of the table top and screw it tight with nuts and washers.
Mount and align the thread reel arms and the thread guides.
The thread reel arms and the thread guides have to be positioned vertically one upon the other.

7. Changing the sewing foot and the fabric clamps



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1



6

5

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The sewing unit 910 is delivered with two sewing feet.



Caution: Risk of injury !

Switch the main switch off.

Change the sewing equipment only with the main switch switched off.

Changing the sewing foot

- Unscrew screw 2.
- Change sewing foot 1.
- Insert screw 2 and tighten.

Disassembling the upper fabric clamp

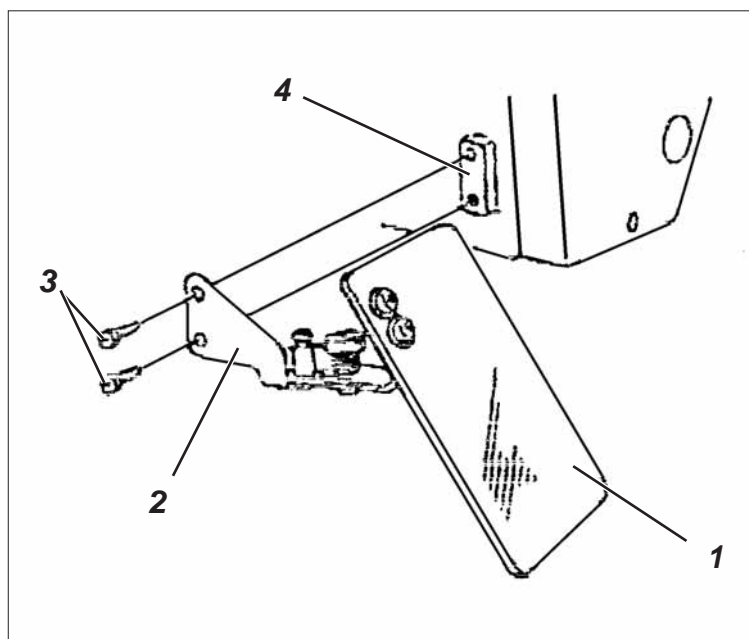
- Unscrew screws 4.
- Remove fabric clamp 3.

Disassembling the lower fabric clamp

- Unscrew screws 6.
- Remove clamping plate 5.

The assembly is done in reverse order.

8. Mounting the eye protection



Caution: Risk of injury !

The sewing unit must not be operated without eye protection.

2

- Tighten the eye protection 1 at the sewing unit 4 with the fastening angle 2 and the two screws 3.

9. Oil lubrication



Caution: Risk of injury !

Oil can cause skin eruption.
Avoid a longer contact with the skin.
Wash yourself thoroughly after a contact.



ATTENTION !

The handling and disposal of mineral oils is subject to legal regulations.
Deliver used oil to an authorized collecting station.
Protect your environment.
Be careful not to spill any oil.

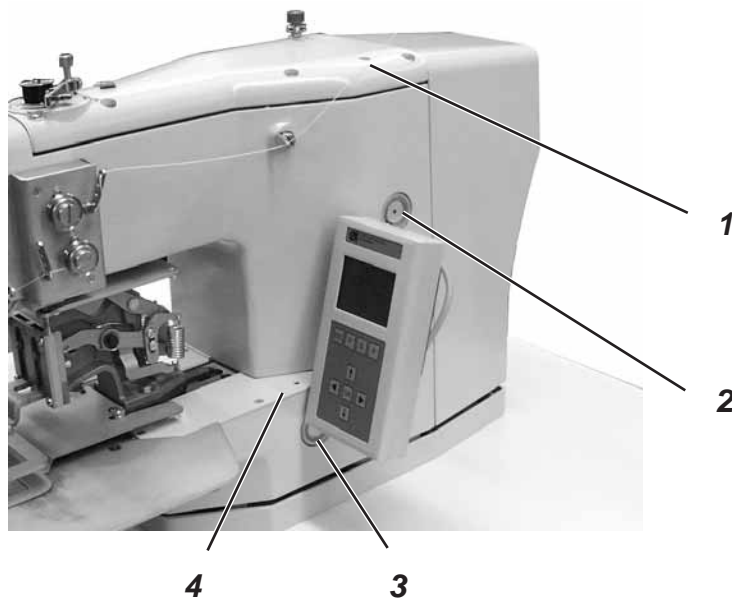
Fill up the oil reservoirs exclusively with lubricating oil **DA-10** or an equivalent oil with the following specification:

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

DA-10 can be bought at the sales points of **DÜRKOPP-ADLER AG** under the following parts numbers:

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

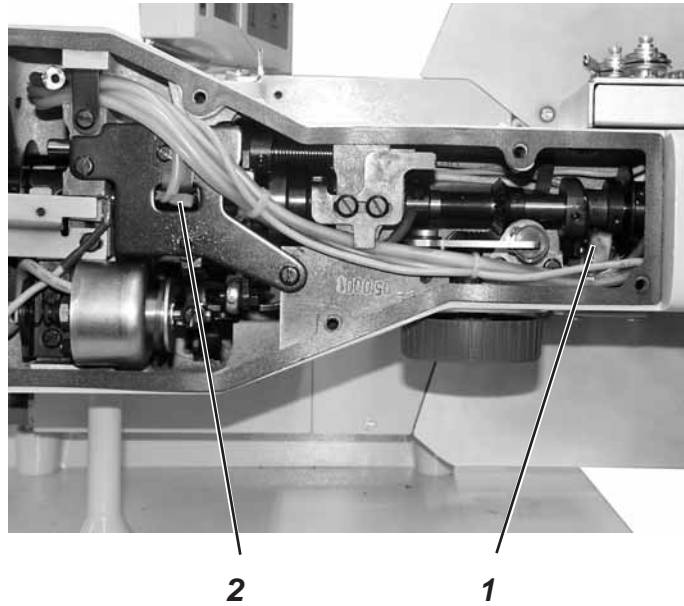
9.1 Filling up oil



Oil reservoir for lubricating the sewing unit

- Fill up oil through the drill-holes 1 and 4.
- Check the oil level at the inspection glasses 2 and 3. The oil level must be above the red mark of both inspection glasses.

9.2 Oiling wicks and felt part (connecting rod)

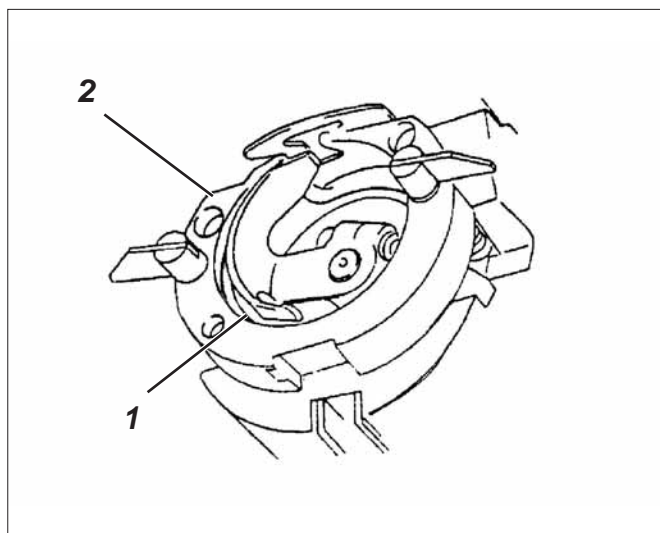


ATTENTION !

When assembling the machine and after longer idle times the wicks and the felt part 1 have to be soaked with some oil.

- Screw off the bobbin plate.
- Soak felt 1 and 2 with oil.
- Put on the bobbin plate and tighten.

9.3 Oiling the hook path



Oiling the hook path

- Flap down the hook cover.
- Give a drop of oil between driver 2 and path 1.
- Close the hook cover.



ATTENTION !

When assembling the machine and after longer idle times the hook path and the connecting rod have to be lubricated.



Caution: Risk of injury !

Switch the main switch off.
Lubricate the sewing unit only when it is switched off.

10. Putting into operation

10.1 Installation of the machine software

10.1.1 General notes

With the help of the “dongle with program” a specific sewing software can be loaded on a DACIII control. The “dongle with program” is marked by a label indicating the machine class and the software version.

Such a loading process (booting) can e.g. be used to provide an individual DACIII control with a sewing software (first installation) or to load a new sewing software (update).

When delivering an individual control this is provided with a check software only enabling the loading of a sewing software. The check software does not allow further functions. If this check software is destroyed by an incorrect loading process, it will not be possible any more to load a software by means of a dongle. In this case a PC with a loader cable has to be used.

Please find a detailed description of the procedure on the homepage of Dürkopp Adler AG “www.duerkopp-adler.com” under the category “Download Area” and “Software”.



ATTENTION !

Switch off the main switch before connecting the dongle!

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10.1.2 Loading the program

- Switch the main switch off.
- Plug the dongle **2** in the bushing X110 (dongle) **1** of the control (see illustrations on page 26).
- Switch the main switch on. The software is loaded. The loading process will last less than 60 seconds.



Note !

Do not pull out the dongle or switch the machine off during the loading process (otherwise the software will be destroyed)!

- After loading the software the machine will make a warm start.
- The basic screen appears.

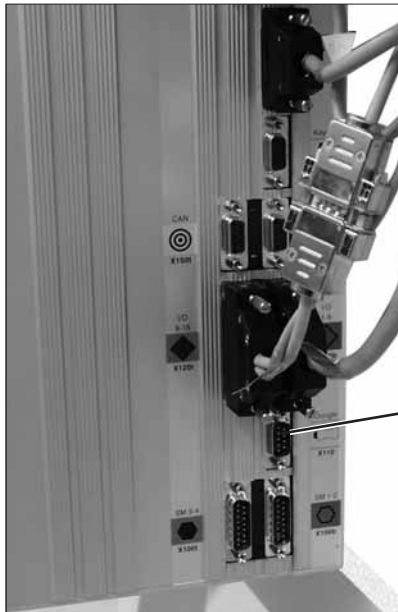
- Pull the dongle **2** out now.



ATTENTION !

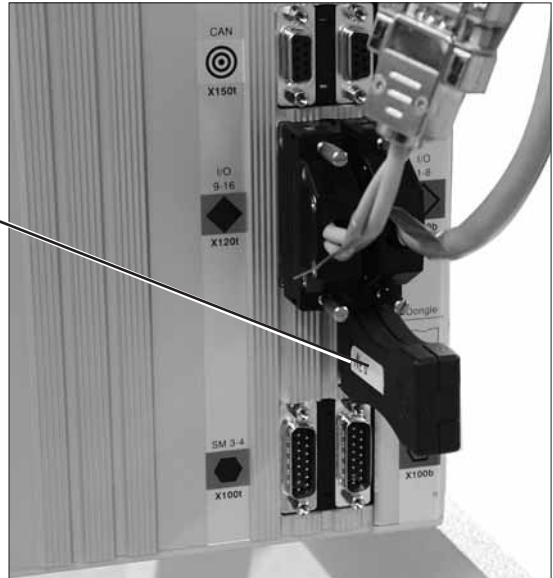
The software must be compatible with the machine class.
If the software version does not correspond to the machine class, do not confirm.

Switch the machine off and repeat the loading process with the correct software version.



2

1



10.1.3 Dongle update via Internet

The dongle can be updated via the Internet. For this purpose call up the homepage of Dürkopp Adler AG "www.duerkopp-adler.com". Under the category "*Download Area*" and "*Software*" you will find the download service programs and the corresponding machine software. The instructions available on this page describe the exact procedure for updating the dongle.

10.2 Seam program

If no seam program is stored in the control, the following message will be indicated when the sewing unit is switched on for the first time:



- Press the “ESC” key.
The main menu appears.
- Create a new seam program by teach-in or load a seam program from the dongle (see operating instructions).

10.3 Sewing test

After finishing the assembly work a sewing test should be made.

- Plug the mains plug in.
- Wind up the bobbin thread (see operating instructions chapter 7.5)



Caution: Risk of injury!

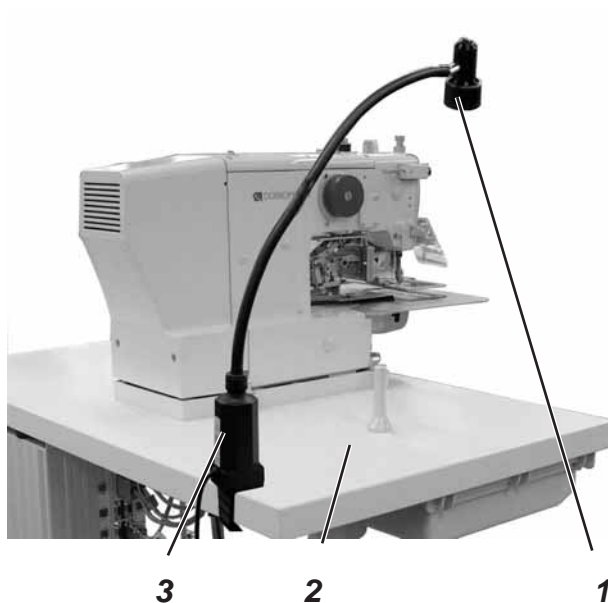
Switch the main switch off.

Thread in the needle thread and the bobbin thread only with the sewing machine switched off.

- Thread in the needle thread (see operating instructions chapter 7.1).
- Insert the bobbin thread winder (see operating instructions chapter 7.6).
- Switch the main switch on.
The control is initialised.
- Select the material to be processed.
- Make the sewing test first at low speed and then at continuously increasing speed.
- Check whether the seam pattern corresponds to the desired requirements.
If the requirements are not met, alter the thread tensions (see operating instructions chapters 7.2 and 7.7).
If necessary, also check the adjustments indicated in the service instructions and correct them, if required.
- Check the oil level at both inspection glasses during the operation of the sewing unit.

11. Optional equipment

11.1 Sewing lamp



For the sewing unit 910 the sewing lamp 1 (order no. 9822 510026) and the table clamp 3 (order no. 9822 510027) are available.

- Clamp the sewing lamp on the table top 2.
- Push the plug in the socket under the table top.

Note: