DÜRKOPP ADLER

580

Operating Instructions

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 immediatly 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 permanend 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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Preface and general safety instructions

Part 1: Operating Instructions Class 580 – Original Instructions
(Edition 02/2012)

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1 Product description

1.1 Designated Use

The **DÜRKOPP ADLER 580** is a sewing automat designed for the sewing of buttonholes in light to medium-weight material.

Such material, which is generally made of textile or synthetic fibres, is used in the clothing industry. Furthermore, this sewing automat can possibly also sew so-called technical seams. However, in this case the user has to evaluate the possible risks (preferably in cooperation with DÜRKOPP ADLER) since such applications are rather rare and the variety of possibilities is vast. According to the result of this evaluation suitable safety measures are to be taken. Generally only dry fabrics must be processed with this machine. The material must not be thicker than **8 mm** when compressed by the lowered upper fabric clamps.

The material may not contain any hard objects. The person operating the automat has to wear **finger and eye protection**. The sewing automat must be installed and operated in dry and well-kept rooms only. If it is operated in other rooms, that are not dry and well-kept further measures which have to be agreed upon (see EN 60204-31:1999) can become necessary. We as manufacturers of industrial sewing automats take it for granted that at least semi-skilled operators are working with our products so that we can assume that all usual operations and their risks are known to them.

1.2 Brief description

The **DÜRKOPP ADLER 580** is a double-chainstitch buttonhole automat or a single-chainstitch automat for stitched eyelets with CNC step motor technology for the material feed and the rotation of the sewing mechanism.

The buttonhole automat works with two chainstitch loopers, the left one being thread-guiding. For the sewing of buttonholes with or without eye, with taper tack, round tack, cross tack or without bartacks.

As eyelet automat it works with two chain stitch-blind-loopers for the sewing of single stitched eyelets.

The automat is equipped with a needle thread trimmer and an electronically regulated needle thread tension.

Depending on the subclass, the 580 comes with different types of thread trimmer systems.

Technical features

The automat is driven by a positioning drive integrated in the machine arm.

The drive for the motion of the axis X, Y and Z is effected by one step motor for each axis. These drives are controlled via an electronic control in conjunction with various pneumatic machine functions.

This drive and control system offers the following advantages:

– Variable sewing speed according to the sewing parameters (e.g. needle thread, looper thread, material, seam width) up to a maximum of 2500 stitches/min.

– Quiet running (no mechanical switching on and off). Additional noise reduction by optimized needle bar and looper drive.

– The use of step motors allows a very variable field of application. No use of control cams.

- The control panel with membrane keyboard that is able to display graphics is fitted on the right side of the sewing head within easy reach of the operator.
- The following functions are operated via manual switches:
  - Closing and opening the clamp
  - Activating the sewing operation
  - Quick stop with needle position “up”
- Pneumatic cutting of the buttonhole.
- Automatic adaptation of the cutting power for the buttonhole knife dependent on the programmed buttonhole length.
- Due to the vertically working cutting system support no follow-up work required in case of different cutting block heights.
- Vacuum extraction of the eyelet cut wastes
- Central oil wick lubrication from two oil reservoirs.
- Switch at the head cover for moving to the ideal position for threading in.
- Electronically controlled needle thread tension.
- In case of needle thread breakage the needle thread monitor interrupts the sewing cycle, the fabric clamps remain closed and hold the workpiece which can be removed at the touch of a button.
- Covered, smooth design. The swivelling up of the automat is supported by a gas-pressurized spring which also helps that the machine head is swivelled back slowly.
- The special design of the machine arm allows for a vertical positioning of the fabric by using a different cloth detention device (additional equipment).

Control

- Counter indicating the number of buttonholes sewn on the display.
- You can define up to 50 different buttonholes. Up to 25 buttonhole sequences with up to 5 programmed buttonholes can be memorized. One sequence may contain up to 9 different buttonholes, every buttonhole can be 9 times repeated consecutively within the sequence.
- Integrated test and monitoring system ”Multitest”. This system allows not only for a monitoring of the sewing process but also for a quick testing of the input and output elements as well as of the motor functions without additional measuring instruments.
- By means of a setting provision on the display it is made possible that the fabric support plate moves to the initial position of the next buttonhole after releasing the workpiece. This allows for a better view when positioning the fabric.
- According to the buttonhole type the following parameters can be set at the control:
  - with or without eye
  - tack type
    (with taper tack, round tack, cross tack or no tack)
  - max. speed: 2500 min^{-1}
  - buttonhole length
  - cutting before or after sewing
  - no cutting
  - stitch distance
  - form of eye
  - electronic setting of the stitch row gauge (-1,0 mm to +0,5 mm)
  - number of stitches in the eye

1.4 Structure of product

Equipment	Material number	Subclasses 580-112000	580-312000	580-121000	580-321000	580-141000	580-341000	580-151000
Sewing automat	0580 990001	X						
	0580 990002			X				
	0580 990025					X		
	0580 990005							X
	0580 990021		X					
	0580 990022				X			
	0580 990026						X	
Accessories	0791 580501	X	X	X	X	X	X	X
Optional equipment:								
Pneumatic connection set	0797 003031	O	O	O	O	O	O	O
Integral sewing lamp (LED)	0580 100344	X	X	X	X	X	X	X
Foot switch	9880 580002	O	O	O	O	O	O	O
Upper gimp guide	0580 590804						O	
Needle thread catcher	0580 590154	X	X	X	X			
Needle thread catcher	0580 590144					O	O	O
Fabric deflector for back trousers	0580 590574	O	O			O	O	O
Support table for operating while standing	0580 590504	O	O	O	O	O	O	O
Tandem configuration	0580 591234	O	O	O	O	O	O	O
Positioning aids								
Spacer for distance buttonhole to buttonhole (R+L)	0580 590294	O	O	O	O	O	O	O
Spacer (R+L) for distance buttonhole to fabric edge	0580 590404	X	X	X	X	X	X	X
Centering device	0580 591224	Δ				∇	∇	
Laser marking lamp	0580 590564	O	O	O	O	O	O	O
Slide-on table for vertical positioning	0580 590604	O	O	O	O			O
Kit for vertical positioning (left and right clamping plate)	0580 590554							O
Kit for vertical positioning (left and right clamping plate)	0580 590384	O	O					
Kit for vertical positioning (left and right clamping plate)	0580 590374			O	O			
Kit light barrier for automatic buttonhole sequence	0580 591524	O	O	O	O	O	O	O
Gimp monitoring	0580 591684					O	O	

X = Standard equipment

O = Optional equipment

Δ = Can only be ordered in connection with the sewing equipment E1151

∇ = Can only be ordered in connection with the length package L1 or L2

Equipment	Material number	Subclasses 580-112000	580-312000	580-121000	580-321000	580-141000	580-341000	580-151000
Stands								
MG58-13 (regular installation) Stand with fastening parts and table top 1060 x 750 incl. maintenance unit and rollers	MG58 400104	O	O	O	O	O	O	O
MG58-13 (regular installation of a narrow stand) Stand with fastening parts and table top 620 x 750 incl. maintenance unit and rollers	MG58 400124	O	O	O	O	O	O	O
MG58-13 (vertical positioning, narrow stand) Stand with fastening parts and table top 1060 x 600 incl. maintenance unit and rollers	MG58 400114	O	O	O	O		O	

X = Standard equipment

O = Optional equipment

2 Technical data

Machine head:	Class 580
Type of sewing stitch:	Double-chain stitch
Number of needles:	1
Needle system:	558 / 579

Attention!

When changing over from one needle system to the other the distance between looper and needle and the adjustment of the needle protection have to be checked imperatively (see service instructions).

Max. needle size:	Nm 80-120 (558) / Nm 90-125 (579)
Upper thread size:	max. Nm 50
Looper thread size:	max. Nm 30
Max. speed:	2500 min $^{-1}$
Stitch length:	0.5 - 2 mm
Max. sewing length: (depend. on sewing equip.)	38 mm (subclass 580-11200) 38 mm (subclass 580-12100) 36 mm (subclass 580-14100) 68 mm (subclass 580-15100) 38 mm (subclass 580-31200) 38 mm (subclass 580-32100) 36 mm (subclass 580-34100)
Max. cutting length: (depend. on sewing equip.)	38 mm (subclass 580-11200) 38 mm (subclass 580-12100) 36 mm (subclass 580-14100) 50 mm (subclass 580-15100) 36 mm (subclass 580-31200) 36 mm (subclass 580-32100) 36 mm (subclass 580-34100)
Operating pressure:	6 bar ± 0,5 bar
Air consumption:	approx. 3 NL per working cycle
Rated load:	320 VA
Rated voltage:	1 x 190-240 V, 50/60 Hz
Dimensions	Machine head: 550 x 370 x 580 (L x W x H) Table top (regular installation): 1060 x 750 x 1150 mm (L x W x H) Table top (narrow stand): 620 x 850 x 1150 mm (L x W x H)
Working height:	730-900 mm (upper edge of the table top) upper edge of the machine table: 830-1000 mm
Weight with stand:	approx. 160 kg
Weight of head:	approx. 100 kg
Weight of control:	approx. 12 kg

3 Operation

3.1 Needles, threads and gimps

Needles

Needle system: 558 / 579

Needle sizes: Nm 80-120 (558) / Nm 90-125 (579)
according to the type of sewing thread, fabric and sewing equipment (E-No.).

Attention!

When changing over from one needle system to the other the distance between looper and needle and the adjustment of the needle protection have to be checked imperatively (see service instructions).

Threads

The look of the buttonhole is essentially influenced by the sewing thread used.

Threads of synthetic fibre or silk threads can be used as needle and looper threads.

The look of the buttonhole is essentially influenced by

– the thread used.
– the use of different upper and looper thread sizes.

Gimps

The gimp is meant to stabilize the buttonhole and to give it a relief-type appearance at the same time.

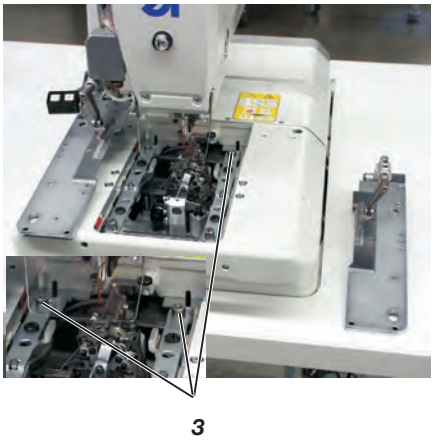
It should have the following features:

– not too thick, but supple and tight
– even thickness

The threads mentioned in the following table are recommendations only. Depending on the sewing equipment (E-No.) and the material also other threads and thread sizes may be required.

Subclass	Type and size of upper thread	Type and size of looper thread	Type and size of lower gimp
580-112000	Polyester fibre thread, schappe-silk spun	Polyester fibre thread, schappe-silk spun	not necessary
580-312000	70/3 80/3	70/3 70/3	
580-141000	Poly-Poly 80/2	Poly-Poly 80/2	Poly-Schappe 15/3
580-151000			
580-321000			
580-341000			

3.2 Removing and inserting the clamping plates



Caution: Danger of injury !

The removing and inserting of the clamping plates 1 has to be done with the sewing automat switched off or in the position “Threading mode” (see chapter “Threading mode”).

Removing the clamping plate

– Lift the right clamping plate 1 slightly at the rear and pull it to the back. Then remove the clamping plate to the right side.
– Lift the left clamping plate 1 slightly at the rear and pull it to the back. Then remove the clamping plate to the left side.

Inserting the clamping plates

– Push the clamping plate into its front seat.
– Then snap it at the rear into the pin 3.

Important note!

Wrongly inserted clamping plates can lead to damage or injuries

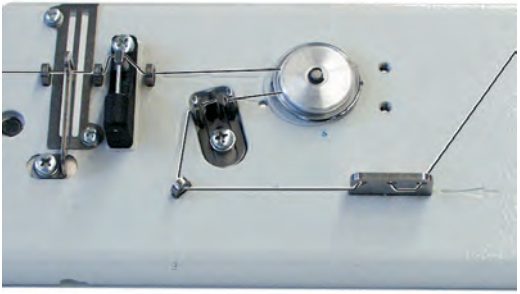
3.3 Changing the needle

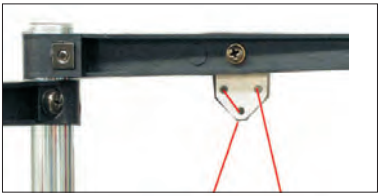
Caution: Danger of injury !

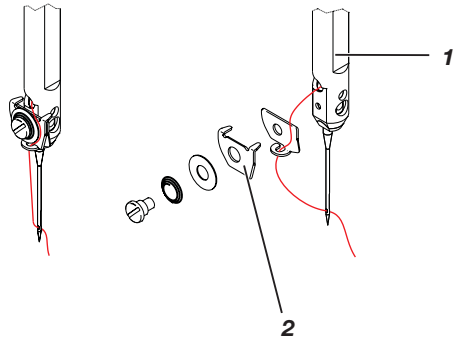
The needle has to be changed with the sewing automat switched off or in the position “Threading mode” (see chapter “Threading mode”).

- Loosen the screw 1 (Allen key in the accessories).
- Pull the needle 2 out of the needle bar.
- Push the new needle as far as it will go into the hole of the needle bar.
- Align the needle 2 so that the hollow groove points to the front and the flat side 3 at the needle butt to the left (towards the fastening screw 1). Only the needle system 579 has this flat side 3 !
  When using needle system 558 align the needle 2 so that the hollow groove points to the front.
- Tighten screw 1.

3.4 Threading the upper thread





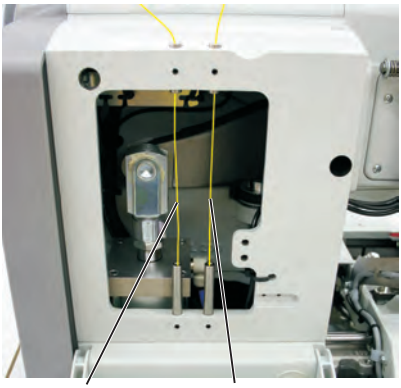


Caution: Danger of injury !

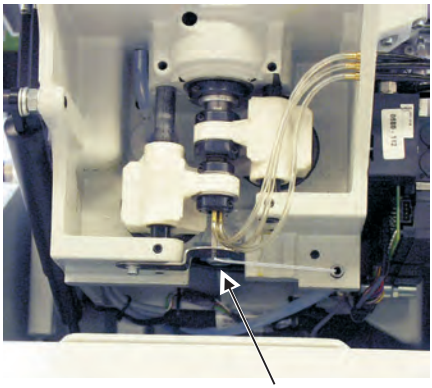
The needle thread must only be threaded in when the machine is switched off or in the “Threading mode” (see chapter “Threading mode”).

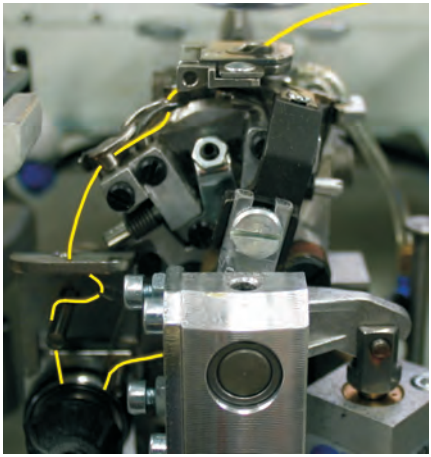
- Thread in the needle thread as shown in the illustrations.
- In order to thread in the needle thread push the threading wire (part of the accessories) through the hollow needle bar 1 from the bottom to the top.
- Bring the needle thread behind the looper.
- Pull the wire with the needle thread down.
- Bring the needle thread to the left behind the tension disc 2 and thread it into the needle from rear to front.

3.5 Threading the looper thread



looper thread gimp thread





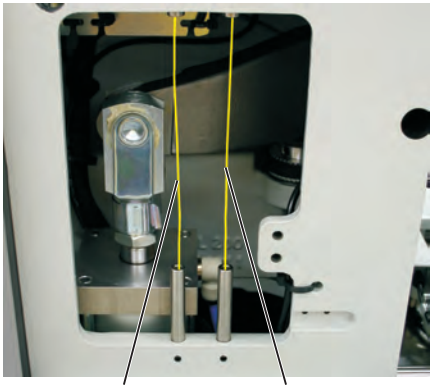
Caution: Danger of injury !

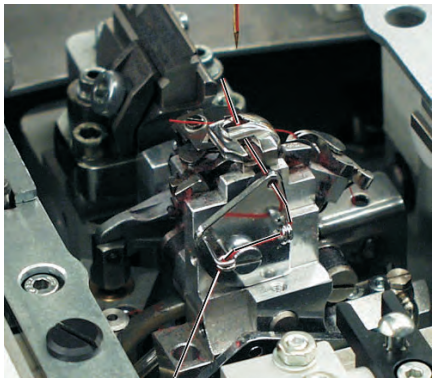
The looper thread must only be threaded in when the machine is switched off or in the “Threading mode” (see chapter “Threading mode”).

The automat must be in its final position, i.e. the looper turret with the loopers has to point to the front.

- Remove the clamping plates (see chapter 3.2).
- Swivel the automat upwards.
- Thread in the looper thread according to the illustrations with the help of the long threading wire included in the accessories.
- Leave an approx. 25 mm long looper thread end hang out of the stitch hole of the throat plate.
- Insert the clamping plates (see chapter 3.2).

3.6 Threading the gimp thread

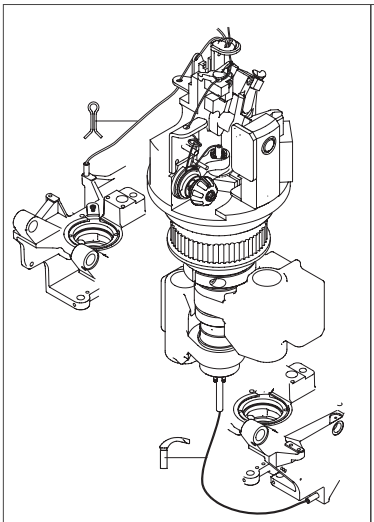


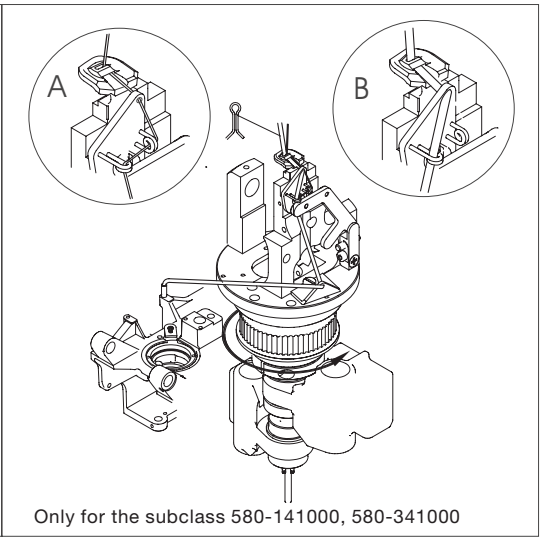


Caution: Danger of injury !

The gimp thread must only be threaded in when the sewing machine is switched off or in the “Threading mode” (see chapter “Threading mode”).

- Thread in the gimp thread as shown in the illustrations, depending on the subclass.
  With the Subclass -141000, -341000: thread in the gimp as shown in illustration A.
- Leave a gimp end approx. 25 mm long hang out of the gimp hole of the stitch plate.
- Sew a buttonhole and check whether the gimp is pulled back sufficiently.
  With the Subclass -141000, -341000: thread in the gimp as shown in illustration B.





Only for the subclass 580-141000, 580-341000

4 Swivelling the automat up and down

Caution: Danger of injury !

The automat must only be swivelled up when the machine is switched off or in the “Threading mode” (see chapter “Threading mode”).

1

For various operations (e.g. for threading the looper thread or the gimp thread) the automat has to be swivelled up.

Swivelling up:

– Pull the locking bolt 1 and lift the automat at the front.
– Let the locking bolt 1 go again and let it click into one of the drill-holes (maybe you have to move the automat up and down a little).
– You should not let the automat go before the locking bolt 1 has snapped in.

Swivelling down:

– Keep hold of the automat and pull the locking bolt 1.
– Swivel the automat down slowly.

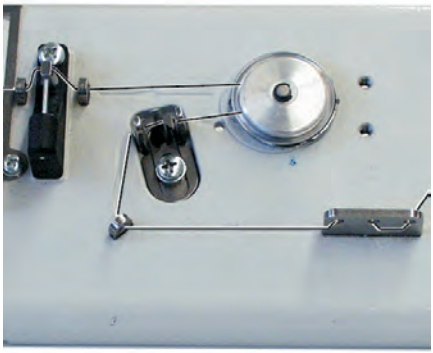
Important !

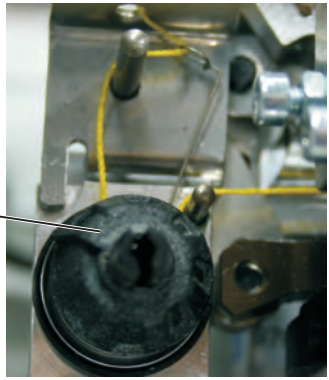
When the automat is swivelled up very high, the effect of the gas-pressurized spring that is to slow down the downward movement is rather low at first. Therefore keep hold of the automat when you swivel it down.

Operating the automat when it is swivelled up can lead to injuries and damage.

5 Thread tension

5.1 Needle thread and looper thread tension





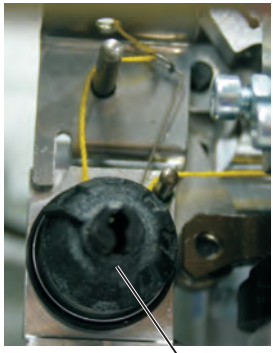
The thread tensions are dependent on the type and quality of the threads and fabrics. The buttonhole looks best if it is sewn with the lowest possible thread tension.
Too tight thread tensions can lead to undesired ruffling and thread breakage, particularly when processing thin materials.

Needle thread tension

In general the needle thread tension has to be tighter than the looper thread tension. The needle thread tension is designed as an electronic tension. It consists of the main tension for the sewing process and a remaining tension (cutting tension) for tightening the needle thread during the cutting operation under the throat plate.

Depending on the elasticity of the needle thread used, the remaining tension (cutting tension) has to be adjusted in such a way that the needle thread end hanging out of the needle is long enough to ensure a safe sewing start.

– Adjust the main tension for the sewing operation via the control panel (see chapter 9.3.2 Adjusting the thread tension in the main level).
– Adjust the remaining tension (cutting tension) via the control panel (menu item **130**).



Looper thread tension

– Swivel the machine head up.
– Adjust the looper thread tension by means of tensioner 1.
  Turn the tensioner in clockwise direction in order to increase the looper thread tension.
  Turn the tensioner counter-clockwise in order to reduce the looper thread tension.
– Swivel the machine head down.

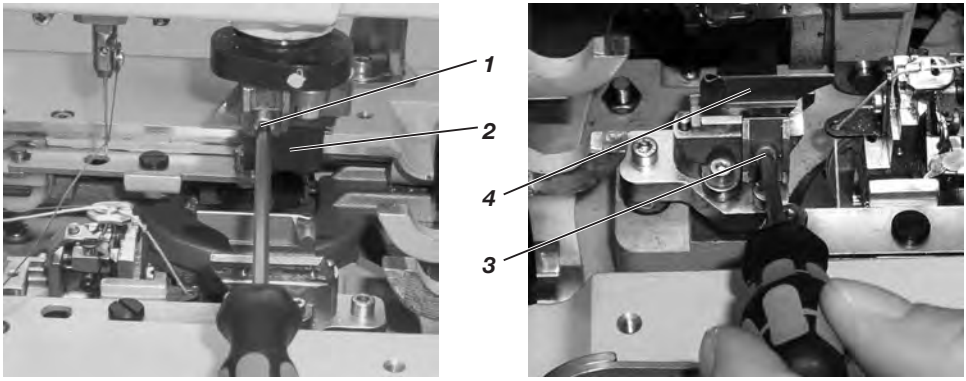
Caution: Danger of injury !

The looper thread tension must only be adjusted when the machine is switched off or in the “Threading mode” (see chapter “Threading mode”).

Hint

The length of the starting thread can be adjusted by changing the thread tension at the start.

6 Changing of cutting blocks and knives



The cutting length can be altered by changing the cutting blocks.

Caution: Danger of injury !

Change the cutting block or the knife only when the buttonhole automat is switched off!

Change the cutting block

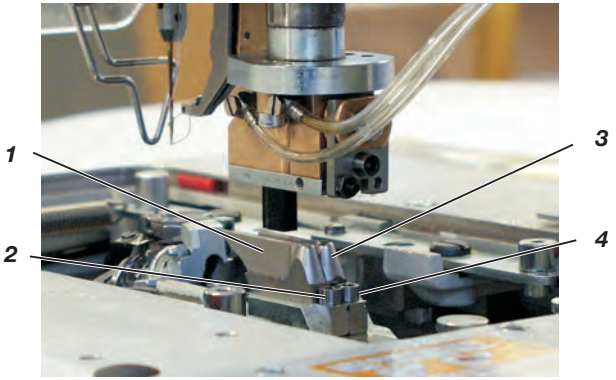
- Loosen the Allen screw 1 (Allen key is part of the accessories).
- Pull the cutting block 2 to the front and remove it.
- Insert new cutting block and push it as far as it will go.
- Tighten the Allen screw 1 again.

Change the knife

- Loosen the Allen screw 3 (Allen key is part of the accessories).
- Pull the knife 4 to the front and remove it.
- Insert new knife and push it as far as it will go.
- Tighten the Allen screw 3 again.

6.1 Changing the cutting blocks and knives (580-312000 / 580-321000 / 580-341000) “Multiflex”

6.1.1 Changing the knives



Caution: danger of injury

Knives may only be changed with the machine switched off .

- Loosen the Allen screw 2 or 4.
  (The Allen key is in the accessories).
- Remove the knife 1 or 3.
- Insert the new knife and fix it by tightening the screw 2 or 4.

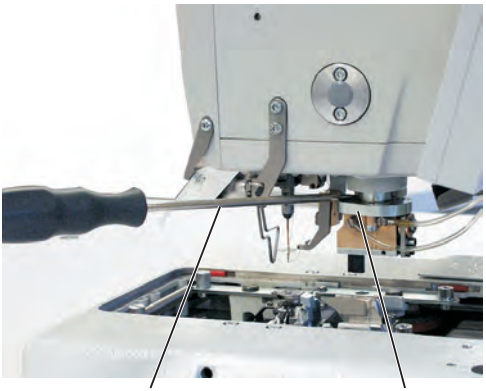
Hint

If the knife cannot be removed, the screw of the second knife must be slightly unfastened.

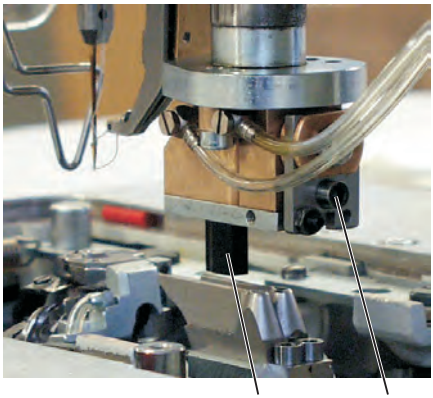
Hint

If a knife with a different shape has to be inserted, the control panel has to be set accordingly.
(See service instructions chapter 29.4.8)

6.1.2 Changing the cutting blocks



2 *1*



4 *3*

Caution: danger of injury

The cutting-block may only be changed with the machine switched off.

Removing the cutting-block

- Disconnect the compressed-air supply
- Use a screwdriver 2 to push gently the cutting-block holder 1 downward.
- Loosen the screw 3.
- Pull out the cutting-block 4 to the left.

Fitting the cutting-block

- Insert the cutting-block 4 in the guide and tighten the screw 3.
- Connect the compressed-air supply again.

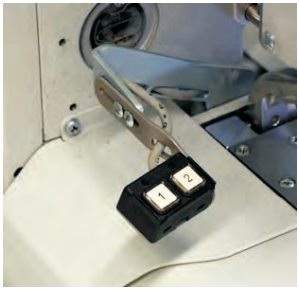
Hint

The cutting-block 1 will then move automatically upward, after the compressed-air hose is connected.

Hint

If a cutting block with a different length has to be inserted, the control panel has to be set accordingly.
(See service instructions chapter 29.4.8)

7 Push buttons



By means of the push buttons it is possible to control the clamps and to start the sewing operation. According to the setting in the service menu (see service instructions) the function is different.

1. Setting

– Key 1: The clamps are opened or closed respectively.
– Key 2: The sewing operation starts when the clamps are closed.

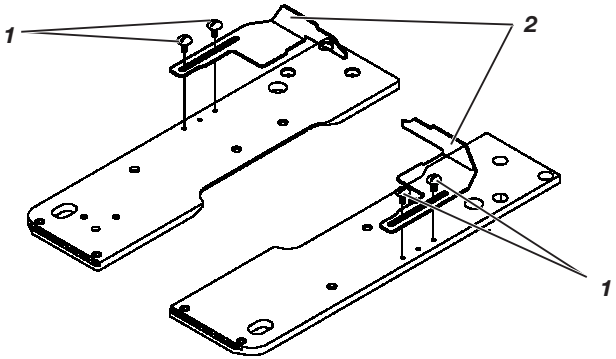
2. Setting

– Key 1: The clamps are opened or closed respectively.
– Key 2: If the clamps are not lowered, they will be lowered now. The sewing operation starts.

8 Setting the fabric stops

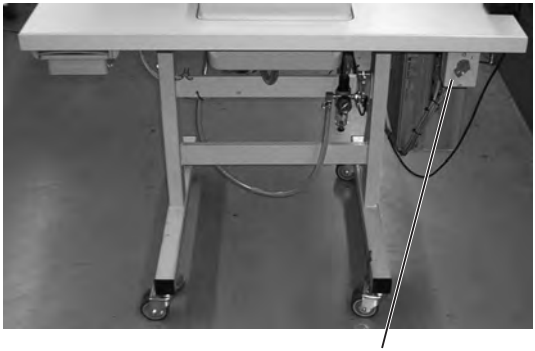
Caution: Danger of injury !

Adjust the fabric stops only when the buttonhole automat is switched off!



– Place the sewing material until it touches the fabric stops 2 on both sides (right and left).
– Loosen the screws 1 on the right and left.
– Adjust the sewing position by moving the fabric stops 2.
– Tighten the screws 1 again.

9 Switching on - Switching off - Threading mode



1

9.1 Switching on

– Switch on the main switch 1.
The machine moves to the loading position and is ready for sewing.

9.2 Switching off

– Switch off the main switch 1.
All drives and the control are immediately cut off the electric supply lines.

Attention!

The main switch is also the emergency stop button! When the main switch is turned off, the machine is separated from the power supply!

9.3 Threading mode

Attention!

The “Threading mode” must only be used for the operations necessary for threading the needle thread, the looper thread and the gimp thread! For all further operations (e.g. change of knife or cutting block) the machine has to be switched off with the main switch!

2

Switching on the “Threading mode”

– Press key 2 in the front plate. The key must engage!
The sewing automat is in the "Threading mode".
In the “Threading mode” the key is illuminated.
The cloth carrier plate moves to the position best for threading.
The cloth clamps remain in the same position as they were when switching on the “Threading mode”.
The sewing drive is separated from the power supply.
The knife for cutting open is switched off.

Switching off the “Threading mode”

– Press key 2 again. The key must be released.
After a short stop the sewing automat is ready for sewing again. The sewing operation is continued where the "Threading mode" had been activated.

10 Control panel and control

10.1 General notes

The buttonhole automat of the class 580 is equipped with a programmable control.

Up to 50 different buttonholes can be defined.

The buttonholes can be memorized in up to 25 sequences.

One sequence can consist of up to 9 different buttonhole, each single buttonhole can be repeated within one sequence up to 9 times successively.

When sewing the operator has the option to change automatically or manually between the programmed buttonholes.

Among the following buttonhole types can be chosen:

- Buttonholes with taper tack
- Buttonholes with round tack
- Buttonholes with cross tack
- Buttonholes without tack
- Stitched eyelets

For all types of buttonholes the relevant characteristics of the buttonhole e. g. buttonhole length and eye shape can be programmed (see the chapter “Buttonhole programming”).

Attention!

Not all the different buttonhole types can be accomplished with each subclass and sewing equipment.

10.2 Control panel

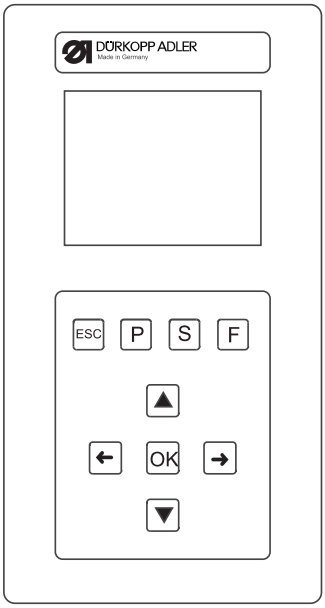
You can programme the control using the control panel and also set the fucntion of each buttonhole.
This can be done through actuating directly the corresponding key or by altering some parameters.

Entering the parameters should be done in the programming mode “P”. The parameters and the allocated values will be shown at the display.

To avoid an accidental altering of the pre-set values, the operating of the control panel is splitted in different levels (Operator, Technician, Manufacturer).

The operator (seamstress) can directly access his/her level.

Accessing the other levels are possible through entering a code number.



10.3 Index of the control panel keys

Key on control panel	Designation of key in this manual
	“**ESC**”- key
	“**P**”- key
	“**F**”- key
	“**S**”- key
	“**OK**”- key
	key ⇦
	key ⇨
	key ⇧
	key ⇩

10.4 Main level of the menu system

After switching on the automat and during sewing the display shows the main level of the menu system.

In the main level the following values are displayed:

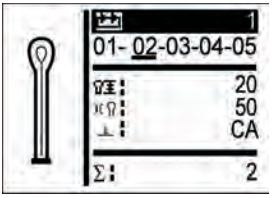
- Sequence number
- Buttonhole sequence

} Sequence mode

or

- Buttonhole number
- Empty line

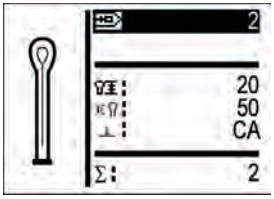
} Single buttonhole mode



Sequence mode

and

- Needle thread tension
- Cut length
- Cut mode
  (Depending on the sewing equipment the buttonhole can be cut open before or after sewing or not cut open at all).
- Daily pieces counter



Single buttonhole mode

The following options are available in the main level:

- Direct editing of values in the main level
- Programming of buttonholes (”**P**”-key)
- Programming of buttonhole sequences (”**S**”-key)
- Service menu (”**F**”-key)

10.4.1 Altering the values of the main level directly

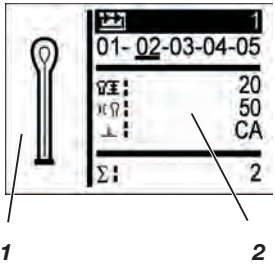
The values of the main level can directly be altered as follows:

keys ⇧⇩	Select the line that you want to alter with the ⇧⇩ keys.
“**OK**”-key	Press the “**OK**”-key. The cursor will blink in the selected line.
keys ⇦⇨	Select the digit that is to be altered with the ⇦⇨ keys.
keys ⇧⇩	Alter the selected value with the keys ⇧⇩. With the key ⇧ you increase the value, with the key ⇩ you reduce it.
“**OK**”-key	Confirm the set value with the “**OK**”-key. If you do not want to confirm the set value, press the “**ESC**” key. The previous value will be reestablished.

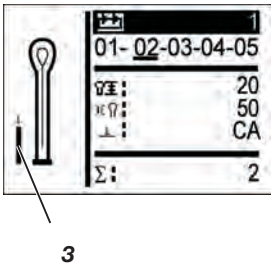
10.4.1.1 Selecting a buttonhole in the main level

Sequence mode

In the main level it is possible to change any time between the memorized buttonholes of the sequence.



Keys ⇦⇨ With the ⇦⇨ keys it is possible to select any buttonhole of the displayed sequence.
The selected buttonhole will be highlighted with a bar.
To help you, the present buttonhole contour will be displayed in the field 1 and in the field 2 the corresponding values.

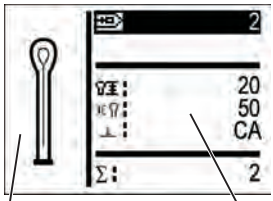


Monoflex mode (simple cut)

Two knife positions are possible with the subclasses 580-312000, 580-321000 and 580-341000 that is why the field 3 shows a bar in addition.
The bar position shows which knife position is allocated to the buttonhole.

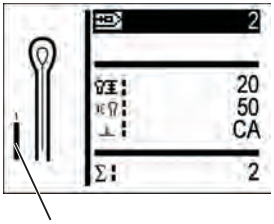
Single buttonhole mode

In the main level you can select a previously memorized buttonhole.



1 *2*

Keys ⇧⇩	Select the first line with the ⇧⇩ keys. The selection of buttonholes is only possible in line 1.
"**OK**"-key	Press the "**OK**"-key. The cursor will blink.
keys ⇧⇩	Select the desired buttonhole number with the ⇧⇩ keys. To help you, the present buttonhole contour will be displayed in the field 1 and in the field 2 the corresponding values.
"**OK**"-key	Confirm by pressing the "**OK**"-key.



3

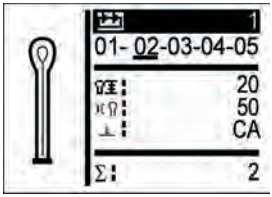
Monoflex mode (simple cut)

Two knife positions are possible with the subclasses 580-312000, 580-321000 and 580-341000 that is why the field 3 shows a bar in addition.
The bar position shows which knife position is allocated to the buttonhole.

10.4.2 Selecting a sequence or a single buttonhole

Depending on the setting in the sequence menu either the sequence mode or the single buttonhole mode is available
(see “Sequence programming”)

10.4.2.1 Selection of a sequence (Sequence mode)



After switching on the top line of the display appears white on black.
The sequence last sewn is displayed.

keys ⇧⇩	Skip with the ⇧⇩ keys to the field “sequence number”.
“**OK**”-key	Press the “**OK**”-key. The cursor blinks in the selected line.
keys ⇧⇩	Set the desired sequence with the ⇧⇩ keys.
“**OK**”-key	Confirm the desired sequence by pressing the “**OK**”-key.

10.4.2.2 Selection of a buttonhole (single buttonhole mode)

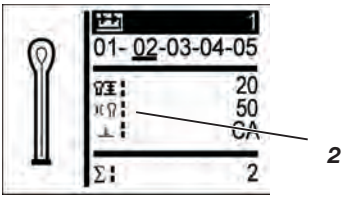
If the sequence number appears in the top line after switching on (e.g. “3”), the single buttonhole mode is activated in the sequence menu.

In this mode no sequences can be activated anymore.

The last sewn buttonhole is displayed.

10.4.3 Adjusting the thread tension in the main level

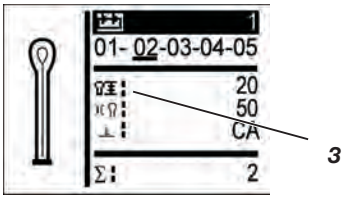
The display indicates in field 2 the needle thread tension during the sewing process. The tension can be adjusted in the main level.



Keys ⇧⇩	Skip with the ⇧⇩ keys to field 2 “needle thread tension”.
“**OK**”-key	Press the “**OK**”-key. The cursor blinks.
Keys ⇧⇩	Set the desired value with the ⇩⇧ keys.
“**OK**”-key	Confirm by pressing the “**OK**”-key.

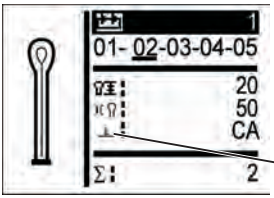
10.4.4 Adjusting the cut length in the main level

The display indicates in field 3 the cut length. The cut length can be adjusted in the main levels.



Keys ⇧⇩	Skip with the ⇧⇩ keys to field 3 “cut length”.
“**OK**”-key	Press the “**OK**”-key. The cursor blinks.
Keys ⇧⇩	Set the desired value with the ⇩⇧ keys.
“**OK**”-key	Confirm by pressing the “**OK**”-key.

10.4.5 The cutting mode



In the cutting mode, it is possible to switch between the following parameters:

0 = no cut

CA = cut after sewing

CB = cut before sewing

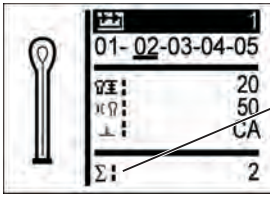
Keys ⇧⇩	Skip with the ⇧⇩ keys to field 1 “cutting mode”.
“**OK**”-key	Press the “**OK**”-key. The cursor blinks.
Keys ⇧⇩	Set the desired value with the ⇩⇧ keys.
“**OK**”-key	Confirm by pressing the “**OK**”-key.

10.4.6 The piece counter

The buttonhole automat 580 is equipped with a piece counter that counts the number of buttonholes sewn.

After the “∑“ sign the current figure is indicated.
The value of the piece counter is memorized also when the automat is switched off.

The piece counter can count up to 9999 buttonholes. When this figure is reached the counter restarts at 0.



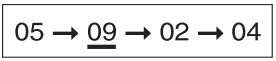
Resetting the piece counter:

keys ⇧⇩	Skip with the ⇧⇩ keys to field 2 “piece counter”.
“**OK**”-key	Press the “**OK**”-key. The piece counter blinks.
“**OK**”-key	Press the “**OK**”-key for **approx. 1.5 second**. The piece counter is set to 0 and the display changes back to the main level.

10.4.7 Automatic or manual operation (only adjustable in the sequence mode)

The buttonhole automat functions in manual or automatic operation mode depending on the setting.

Automatic operation



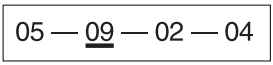
In the sequence indicated on the display, arrows are indicated between the types of buttonhole programs.

After sewing one buttonhole the control automatically switches to the next type of buttonhole. After sewing the last buttonhole, the control switches to the first buttonhole within the sequence.

The current buttonhole is highlighted with a bar.

The type of the buttonhole being currently sewn is indicated in the left half of the display.

Manual operation



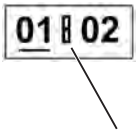
In the sequence indicated on the display, instead of arrows, there are hyphens between the types of buttonholes.

The control does not switch automatically from one type of buttonhole to the other.

The current buttonhole is highlighted with a bar.

The type of the buttonhole being currently sewn is indicated in the left half of the display.

Light barrier mode



If the kit “light barrier 0580 591524” is mounted, it is possible to operate the machine in light barrier mode.
Two light barriers recognize automatically whether it is a lapel or a jacket front edge and will call automatically the appropriate program. Two programs must be listed in the sequence. The light barrier mode is indicated by the symbol 1.

Switching between automatic, manual and light barrier operation

keys ⇧⇩	Select with the ⇧ and ⇩ arrow keys the line that indicated the current sequence.
“**OK**”-key	Press the “**OK**”-key.
keys ⇧⇩	Switch with the ⇧ and ⇩ arrow keys between the two operation modes. The arrows between the buttonhole types appear or disappear respectively.
“**OK**”-key	Press the “**OK**”-key to confirm the selection
or	
“**ESC**”-key	Press the “**ESC**”-key to abort or cancel the selection.

Selecting the buttonhole to be sewn next in a sequence

When the sewing menu is visible on the display it is at any time possible to switch from one memorized buttonhole to another.

Press the ⇦⇨ keys or one of the arrow keys ⇦ or ⇨.
Within the displayed sequence the next or respectively the precedent buttonhole type will be selected.

10.5 Buttonhole programming

The menu system 580 is divided into several levels.
In the main level the most important information for the sewing operation are indicated.

From this main level it is possible to switch to the programming level in order to program buttonholes.
A menu item can include further submenu items.

10.5.1 Selection of the programming level

"**P**"-key	Press the "**P**"-key in order to switch from the main level to the menu for programming buttonholes. A menu item will be displayed. If the menu item has *no submenus* you will see a value on the display that you can alter. If the menu item does include *submenus* you will see four dots on the display. The values to this menu item are to be set in the submenus.
Key ⇧⇩	Skip with the ⇧⇩ keys to the desired menu item.
"**OK**"-key	Press the "**OK**"-key in order to alter the value of the selected menu item. If the selected menu item includes *submenus,* after pressing the "**OK**"-key a menu item of the selected submenu will be displayed. Skip in the same way with the ⇧⇩ keys to the desired submenu item and confirm your selection by pressing the "**OK**"-key. Now you can alter the value.
"🡐"-key	By pressing the "🡐"-key you will get back to the previous level.
"**ESC**"-key	By pressing the "**ESC**"-key you will always get directly back to the main level.

10.5.2 Altering a value

Keys ⇦⇨	With the keys ⇦⇨ you select the digit of the value you want to alter. The values can only be altered in certain steps. The sewing speed for example can only be altered in steps of 1000 or 100, i.e. the digits 10 and 1 cannot be selected.
Keys ⇧⇩	With the key ⇧ the value of the selected digit is increased. With the key ⇩ the value of the selected digit is reduced. All values have a defined minimum and maximum that cannot be exceeded.
"**OK**"-key	With the "**OK**"-key you confirm the altered values. You return to the menu selection.
"**ESC**"-key	With the "**ESC**"-key you abort the value alteration. The previous value is reestablished. You return to the menu selection.

10.5.3 Programming of a buttonhole

“**P**”-key	Press the “**P**”-key in order to switch from the main level to the menu for programming buttonholes.
Keys ⇧⇩	Select with the ⇧⇩ keys the menu item “buttonhole number.”
“**OK**”-key	Press the “**OK**”-key to activate the menu item.
Keys ⇧⇩	Select with the ⇧⇩ keys the buttonhole that you want to alter.
“**OK**”-key	Press the “**OK**”-key.
Keys ⇧⇩	Select with the ⇧⇩ keys the menu item “tack type”.
“**OK**”-key	Press the “**OK**”-key to activate the menu item.
Keys ⇧⇩	Select with the ⇧⇩ keys the tack type of the selected buttonhole.
“**OK**”-key	Press the “**OK**”-key.

Important note!

When altering the tack type of a buttonhole program, all other values of the buttonhole are reset to the standard value!.
Thus always select the tack type first, before you set all the other values of a buttonhole!

– Now adjust all the other parameters according to your needs.

10.5.4 List of menu and submenu items

Menu item	Description
	**Buttonhole number:** up to 50 different buttonholes can be programmed.
	**Taper tack selection:** buttonholes with taper tack (1), cross tack (2), round tack (3), and without tack (0) as well as eyelet (4) can be programmed.
	**Length adjustments**
	**Sewing length:** the sewing length can be set from 6 to 42 mm, depending on the equipment.
	Eyelet diameter*: *the internal diameter of the eyelet can be set from 2 to 7 mm, depending on the equipment.*
	**Stitch length in the lip:** the distance from stitch to stitch within the lip (from 0,5 to 2 mm).
	***Number of stitches in the eyelet*:*** *the number of the stitches that are evenly distributed over the entire eyelet.*
	***Eyelet overlap*:*** *the overlapping of the seam beginning and the seam end.*
	**Thread trimming length:** with the Subclass 580-112000 / 0580-312000, it is possible to alter the length of the needle thread on the underside of the buttonhole .
	Condensed stitches increase the sewing security at the seam beginning and seam end.
	**Length of the condensed stitches at the seam beginning:** the distance from stitch to stitch within the stitch condensation at the seam beginning.
	Length of the condensed stitches at the seam end: the distance from stitch to stitch within the stitch condensation at the seam end.
	**Number of condensed stitches at the seam beginning:** the number of stitches within the stitch condensation at the seam beginning.
	**Number of condensed stitches at the seam end:** the number of stitches within the stitch condensation at the seam end.
	**Needle thread tension**
	**Sewing tension:** the sewing tension regulated electronically during the sewing cycle.
	Trimming tension: remaining needle thread tension for the needle thread trimmer .
	**Tension at the sewing start:** needle thread tension at the seam beginning.

Menu item	Description
	**Eye settings**
	**Eye type:** up to seven different eye types can be programmed.

No.	Knife Shape (X x Y)	Buttonhole shape for cutting after sewing/ no cutting (X x Y)	Buttonhole shape for cutting before sewing (X x Y)
0	0.0x0.0	0.0x0.0	0.0x0.0
1	1.3x3.0	1.6x3.5	1.1x2.6
2	2.1x3.2	2.4x3.9	1.7x2.8
3	2.8x4.3	3.3x4.6	2.4x3.9
4	3.0x4.6	3.6x4.8	2.6x4.1
5	3.2x5.4	3.6x6.1	2.8x4.7
6	free eyelet type		

	**Number of stitches in the eye:** the number of stitches to be set for the circle of the buttonhole eye is min 4 to max 25 stitches.
	**Eye inclination:** the buttonhole eye can be slightly inclined to the left or to the right.
	**Throw width:** the mechanically regulated throw width (stitch width) can be enlarged or reduced up to 1.0 mm.
	**Cut settings**
	**Cutting mode:** depending on the sewing equipment, the buttonhole can be cut after sewing (1), before (2), or not cut at all. *0 = no cutting* *CA = cutting after sewing* *CB = cutting before sewing*
	**Cutting area:** the inner distance between the lips of the buttonhole is called cutting area.
	**Modus Multiflex 580-312000 / 580-321000 / 580-341000** **Cutting area**: 1 = complete cut, 2 = medium cut, 3 = eye cut or edge cut.
	**Cutting length with complete cut :** it is only possible to reduce the cutting length about 2 mm.
	**Cutting position with medium cut:** the position is changeable and can be given as percentage, it rises from the eye (0%) to the rearmost (100%) position.
	Cut correction in x-direction: the knife's position can be moved to the right or to the left within the buttonhole.
	**Cut correction in y-direction:** the knife's position can be moved to the front or to the rear within the buttonhole.
	**Correction of cutting pressure:** automatic adjustment (4 steps) of the cutting force of the buttonhole knife depending on the buttonhole length. -buttonhole length (eyelets) up to 14 mm 2 steps -buttonhole length from 15 mm to 30 mm 3 steps -buttonhole length from 31 mm 4 steps In this menu item the preset cutting force can be increased or decreased, depending on the buttonhole length.

Menu item	Description
	**Flexible cutting**: Monoflex mode 580-312000 / 580-321000 / 580-341000
	**Taper tack settings**
	**Taper tack length:** the taper tack length can be set from 2 mm to 36 mm, depending on the sewing equipment and the buttonhole length.
	**Throw width in the taper tack:** the throw width (stitch width) for the whole buttonhole (see menu item throw width) can be reduced in the taper tack.
	**Overlapping in the taper tack:** overlapping of the buttonhole seams in the taper tack.
	**Height of the taper slant:** the length of the taper in the tack can be set.
	**Cross tack settings**
	**Cross tack length:** the overall length of the cross tack.
	**Stitch length in the cross tack:** distance from stitch to stitch within the cross tack (from 0,5 mm to 2 mm).
	**Throw width in the cross tack:** the mechanically regulated throw width (stitch width) can be enlarged or reduced.
	**x-position of the cross tack:** the whole cross tack can be shifted to the right/left.
	**Seam extension in the cross tack:** the overlapping of the buttonhole seams with the cross tack is called seam extension in the cross tack.
	**Round tack settings**
	**Number of stitches in the round tack:** the number of stitches to be set for the round tack is min 6 to max 12 stitches.
	**Throw width in the round tack:** the throw width (stitch width) for the whole buttonhole (see menu item throw width) can be reduced in the round tack.
	**Seam beginning position**: the seam beginning can be in the round tack (1) or within the lip (2).
	**Overlapping in the lip:** overlapping of the seam beginning and the seam end in the lip.
	**Seam beginning within the lip:** the seam beginning can be altered to be at the beginning of the lip (Value 100) or to the eye (Value 0).
	**Overlapping in the round tack:** overlapping of the seam beginning and the seam end in the round tack.
Gimp	**Gimp monitoring:** Monitoring whether gimp thread is inserted or not on/off.
	**Following buttonhole:** Number of buttonhole that will be sewn directly after this buttonhole without opening of the clamps. This way double recirculations can be generated.
	**Speed:** Sewing speed (number of stitches per minute).

10.6 Sequences

10.6.1 General notes

Sequence mode

The operator (seamstress) will be able to sew several buttonholes with different parameters successively without having to touch a key on the control panel.

- Each sequence can contain up to 9 different buttonholes. Each different buttonhole within a sequence can be sewn repeatedly up to 9 times.
- 25 different sequences can be created and memorized.
- In general all buttonholes can be selected in a sequence.

Single buttonhole mode

You can select a buttonhole out of 50 preset buttonhole programs.

This buttonhole will be sewn until another buttonhole is selected.

10.6.2 Switching the sequence mode on or off

"**S**"-key	Press the "**S**"-key to switch from the main menu to the menu for programming the buttonhole sequences.
keys ⇧⇩	Select the menu item "sequence number" with the ⇧⇩ keys.
"**OK**"-key	Press the "**OK**"-key to activate the menu item.
keys ⇧⇩	Select the sequence number "0" with the ⇧⇩ keys. The sequence mode is switched off.
"**ESC**"-key	Press the "**ESC**"-key. You will get back to the main level.
or	
"🡐"-key	Press the "🡐"-key. You will get one level back.

Important note!

With any other sequence number the sequence mode is switched on.

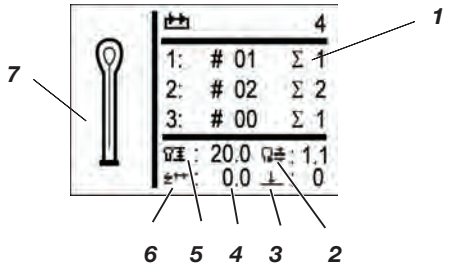
10.6.3 Programming of a sequence

"**S**"-key	Press the "**S**"-key to switch from the main level to the menu for programming a buttonhole sequence.

Selection of the sequence number

keys ⇧⇩	Select the menu item "sequence number" with the ⇧⇩ keys.
"**OK**"-key	Press the "**OK**"-key to activate the menu item.
keys ⇧⇩	Select the sequence number that is to be programmed with the ⇧⇩ keys.
"**OK**"-key	Press the "**OK**"-key to activate the menu item.

Programming a buttonhole sequence



Keys ⇧⇩	Select the field 1 with the ⇧⇩ keys.
"**OK**"-key	Press the "**OK**"-key.

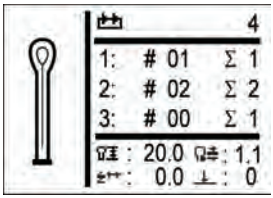
The first column indicates the buttonhole's place within the sequence. In the second column the desired buttonhole can be programmed for the selected place. As an aid for programming you find indicated in field 7 the shape and in field 4 the most important parameters. (5 = cutting length, 2 = stitch length, 6 = throw width, 3 = cutting mode)

If the respective buttonhole is to be sewn several times successively you can set the desired number of repetitions in the third column.

Keys ⇧⇩	Select the desired buttonhole sequence with the ⇧⇩ keys.
"**OK**"-key	Press the "**OK**"-key. The buttonhole program will be selected.
Keys ⇧⇩	Select the desired number of repetitions with the ⇧⇩ keys.
"**OK**"-key	Press the "**OK**"-key. The desired number will be selected.

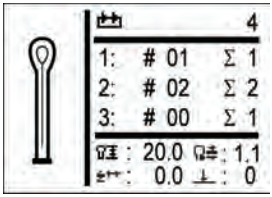
Should it be necessary to insert more buttonhole programs, please begin from the 1st step on. It is not possible to resume the sewing process using the foot switch (pedal)! Resuming the sewing process is only possible using the "**OK**"-key on the control panel or use the manual switch.

10.6.4 Adding a buttonhole at the end of a sequence



keys ⇧⇩	Select the last line in the programmed buttonhole sequence with the ⇧⇩ keys.
“**OK**”-key	Press the “**OK**”-key.
keys ⇧⇩	Select the desired buttonhole program with the ⇧⇩ keys.
“**OK**”-key	Press the “**OK**”-key.
“**ESC**”-key	Press the “**ESC**”-key. You will get back to the main level.

10.6.5 Cancelling a buttonhole within a sequence



Keys ⇧⇩	Select the line of the programmed buttonhole sequence that is to be cancelled with the ⇧⇩ keys.
“**OK**”-key	Press the “**OK**”-key.
Keys ⇧⇩	Select the buttonhole program “0” with the ⇧⇩ keys.
“**OK**”-key	Press the “**OK**”-key. By confirming the selected buttonhole is cancelled. Any following buttonholes will move up.
“**ESC**”-key	Press the “**ESC**”-key. You will get back to the main level.

10.6.6 Adding a buttonhole within a sequence

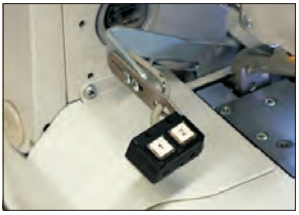
Important note

A single adding of a buttonhole program into a buttonhole sequence is not possible.

	Note down the programmed buttonholes that are following.
Keys ⇧⇩	Select the desired line of the programmed buttonhole sequence with the ⇧⇩ keys.
“**OK**”-key	Press the “**OK**”-key.
Keys ⇧⇩	Select the desired buttonhole program with the ⇧⇩ keys.
	Then alter the following buttonholes according to your notes.
“**ESC**”-key	Press the “**ESC**”-key. You will get back to the main level.

10.7 Sewing

The sewing operation can be controlled either with the manual switches or with the pedal.



Sewing with the manual switches

With the manual switch the clamps can be controlled and the sewing operation started. According to the setting in the service menu (see service instructions) the function is different.

1. Setting (standard)

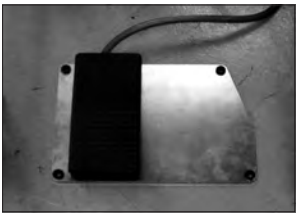
– Key 1: The clamps are opened or closed respectively.
– Key 2: The sewing operation starts when the clamps are closed.

2. Setting

– Key 1: The clamps are opened or closed respectively.
– Key 2: If the clamps are not lowered, they will be lowered now. The sewing operations starts.

Quick stop while sewing

- Press key 1 or 2. The sewing operation stops.
- Press key 1 for aborting the sewing operation.
- Press key 2 for continuing the sewing operation.



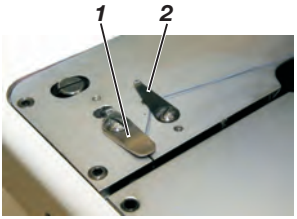
Sewing with pedal (optional equipment)

The pedal is a two-step pedal without backpedal function.

– When actuating the pedal to the first step, the clamps are closed. The clamps open again when the first step is released.
– When actuating the pedal to the second step, the sewing operation starts. The pedal can be released as soon as the sewing operation has started.

Quick stop while sewing

– Step on the pedal. The sewing operation stops.
Step on the pedal once again in order to abort the sewing operation.
It is not possible to continue the sewing operation using the pedal!
In order to continue the sewing operation you have to press the "**OK**"-key on the control panel or use the manual switch.



Removing the finished workpiece with the subclass 580-151000

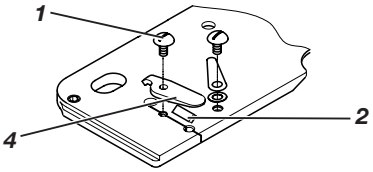
– In order to remove the finished workpiece pull the looper thread and the gimp under the thread clamp 2. Pull both threads from the right to the left along the blade 1.
The threads are cut.

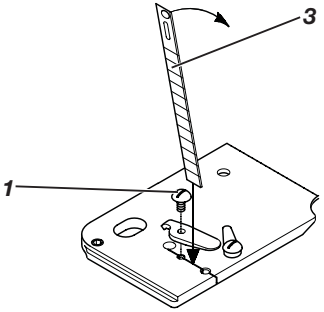
Replacing the knife

– Loosen screw 1 and remove the fabric holder 4.
– Take out the old blade 2.
– Push the new blade 3 as far as it will go into the groove and snap it off in the direction indicated by the arrow.
– Tighten the screw 1.
– Fix the holder by using the screw 4.

Hint!

The blade must not protrude the holder.





11 Information messages

11.1 Needle not in basic position

If the needle is not in its basic upper position at the sewing start, this information code will appear.

Error Correction

– Turn the handwheel until the information disappears.

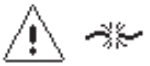
11.2 Threading mode

As long as the sewing automat is in the “Threading mode”, the information code in the margin appears.

Error Correction

– Press the button at the head cover.

11.3 Thread breakage



Should the thread breaks during the sewing operation, the information code in the margin appears in the display.

Correction

– Press the button at the head cover to get into the “threading mode”.

– Thread in the sewing automat.

– Press the button at the head cover again to exit the “threading mode”.

11.4 Gimp not inserted

Hint:
Appears only with the subclasses 141 or 341 and with the gimp monitoring mounted and activated.

The sewing process can be continued by pressing the OK-key or the push button 2 or interrupted by pressing the ESC-key or the push button 1.

11.5 Pressure monitor

The pressure monitor monitors the air pressure of the air supply. When there is no compressed air or the pressure is too little this information code will appear on the display.

Error correction

– Switch off the sewing automat.

– Supply sufficient compressed air.

– Switch the sewing automat on again.

11.6 Invalid cutting configuration

Hint

Appears only with the “Multiflex” setting

In case an invalid cutting configuration is chosen, the opposite hint appears.

Error correction

– Check and set the control unit and the data of the knives and cutting blocks in use.
– Check that suitable knives and cutting blocks are being used and redo the setting.

11.7 Abnormal threading mode

If the needle is in the “Threading mode” position at the sewing begin, the information code in the margin appears.

Error Correction

– Press the button at the head cover → switch on the “Threading mode”.
– Switch off/on the sewing automat.

12 Error messages

see Error messages in the service instructions

13 Maintenance

Caution: Danger of injury !

Carry out maintenance work only when the machine is switched off.

Whenever maintenance work has to be done with the machine running practice utmost caution.

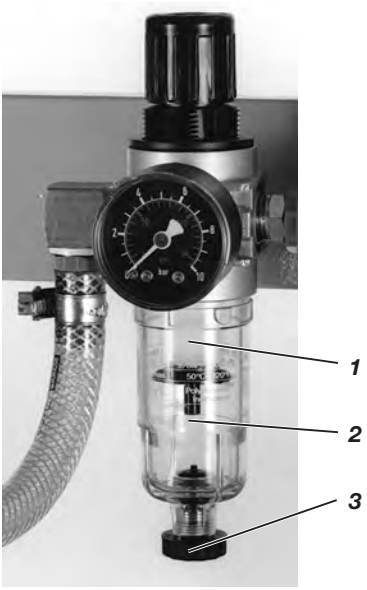
13.1 Cleaning

A clean sewing automat helps to avoid disturbances !

Daily cleaning:

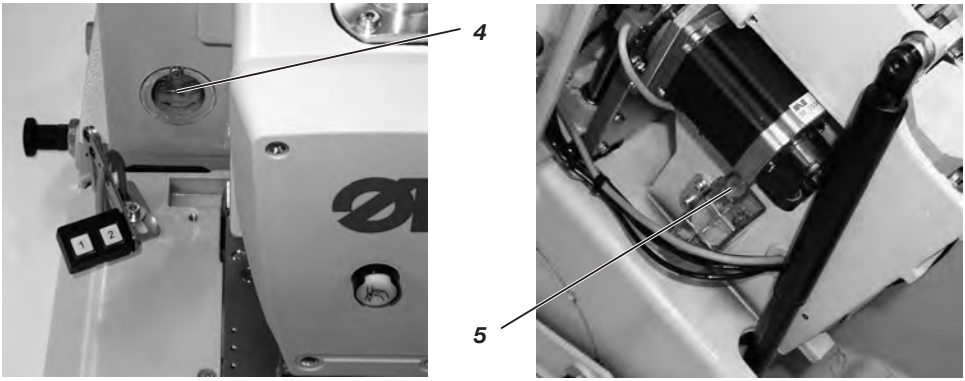
– Clean the zone around looper, thread trimmer and throat plate as well as the sewing head daily from sewing dust, thread tails and cutting waste.
If a vacuum unit is available, it is best to evacuate the waste by using it.

– Empty the vacuum waste container, if neccessary.



– Check the water level in the pressure regulator daily.
The water level must not rise up to the filter insert 2.
Screw in the drain screw 3 and the let the water run under pressure out of the water separator 1.

13.2 Lubricating



Check the oil level in the oil reservoirs 4 and 5 weekly !

Caution: Danger 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. Take care 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

The oil can be bought at the sales points of **DÜRKOPP ADLER AG** under the following parts numbers:

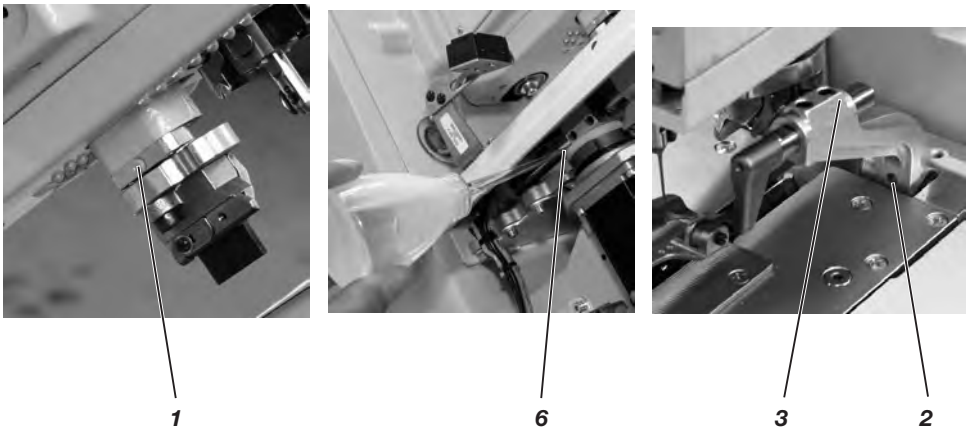
- 250 ml container: 9047 000011
- 1 l container: 9047 000012
- 2 l container: 9047 000013
- 5 l container: 9047 000014

General notes

All the machine's moving parts are lubricated by two oil reservoirs via an oil-wick system.

Thus the lubricating actually consists of checking and filling up the oil reservoirs, but from time to time it is necessary to oil the felts 2 of the clamp arms 3, of the punch 1 and of the cam disc 6 .

13.3 Control



Caution: Danger of Injury !

Turn the main switch off.
The maintenance of the buttonhole automat must only be carried out with the machine switched off!

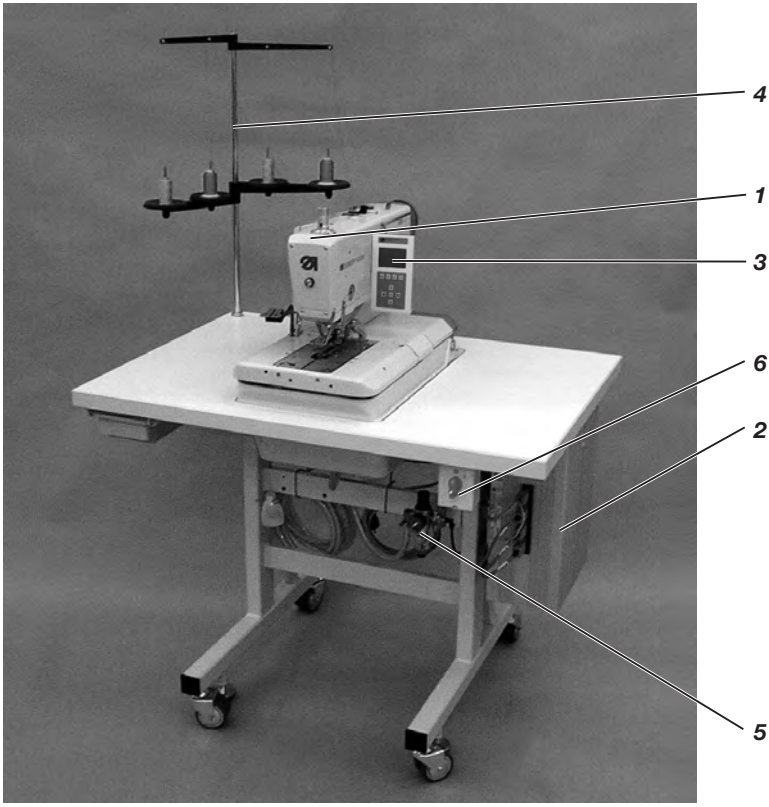
ATTENTION !

After assembling and if the buttonhole automat has not been used for a longer time, oil the wicks, felts, looper and needle bar components (see installation instructions chapter 11).

Maintenance work to be done	Operating hours			
	8	40	160	500
Buttonhole automat				
Clean the area under the throat plate of sewing dust	X			
Check the oil level	X			
Check and clean the toothed belts			X	
Oil the cutting punch 1			X	
Oil the clamp arms 3 and the felts 2			X	
Oil the felt 6 on the cam disc			X	
Pneumatic system				
Check the water level in the pressure regulator	X			
Clean the filter insert in the maintenance unit	X			
Check the system for leakage			X	

Index **Page:**

Part 2: Installation Instructions class 580


4
1
3
6
2
5

1 Scope of delivery

The scope of delivery is dependent on your order. Please check before the assembly whether all required parts are available.

- **1** Machine head
- **2** Control
- **3** Control panel
- **4** Thread stand
- **5** Maintenance unit
- **6** Main switch
- Integral sewing lamp
- Spacer (right + left) for the distance between buttonhole and fabric edge
- Tools and small parts in the accessories
- Optional equipment (depending on the order) e.g.:
  - Stand
  - Pneumatic connection package
  - Foot switch

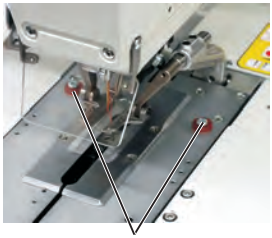
2 General notes and securing devices

ATTENTION !

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

All work on the electric equipment of the automat must only be carried out by electricians or correspondingly instructed persons. The mains plug has to be pulled out.

1



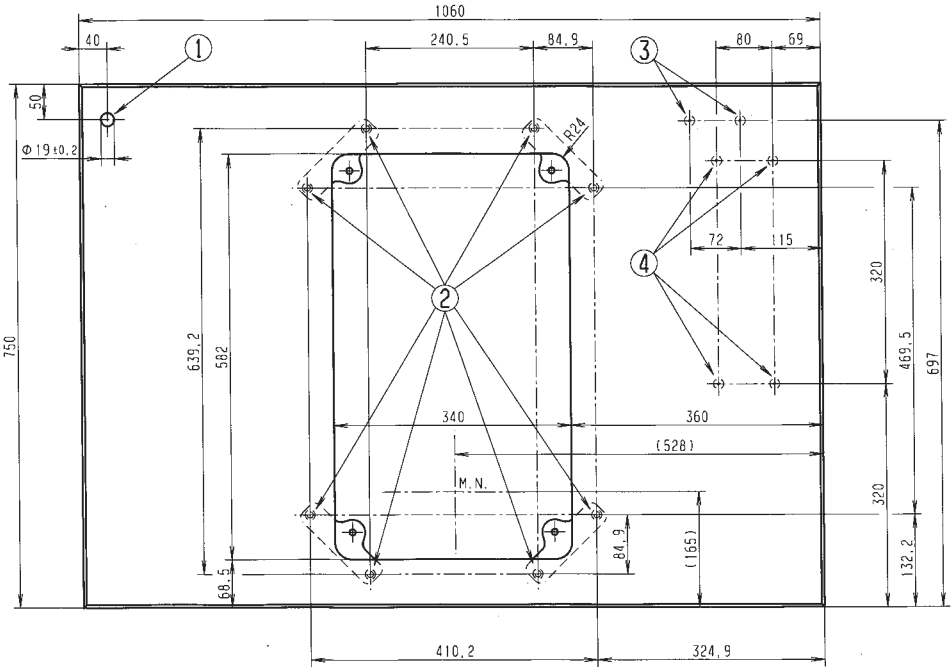
2

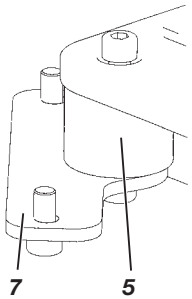
Securing devices

Before the installation of the sewing automat all securing devices have to be removed.

- Remove tapes and battens from the machine head, the machine table and the stand.
- Remove screw 1. This screw avoids that the machine head swivels up during transportation.
- Remove screws 2.
  They will prevent the clamping plates from falling.

3 Table top with dimensioning





If you manufacture the table top yourself, take the above sketch as an example for the dimensioning. The table top should be approx. 40 mm thick.

① Hole for the thread stand

② Positions for screwing on the fish plate.
To fix the machine properly, the screws for the fish plate should only be screwed into the screwed inserts M8 x 25 DIN 7965 (the screwed inserts are not included in the accessories).

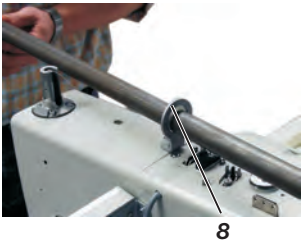
③ Positions for screwing on the protective bracket of the control.

④ Positions for screwing on the control

The rubber-bonded metal buffers 5 have to be screwed between the connectors and the machine pedestal, because otherwise vibrations are transmitted from the automat to the stand.

(all required parts are included in the accessories)

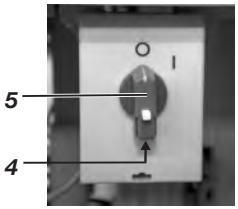
4 Ring bolt

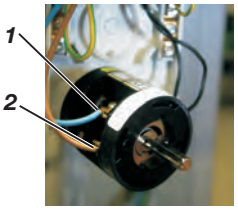


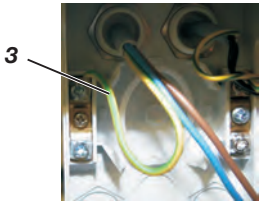
The ring bolt helps you to lift the automat into the stand. For example you can hoist the automat by a ceiling crane or you put a rigid bar (e.g. the bar of the thread stand) through the ring bolt and lift the automat with 2 persons. The ring bolt is included in the accessories.

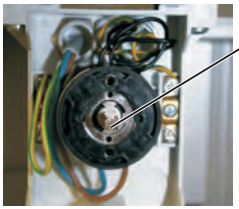
- Screw the ring bolt 8 on the automat.
- Lift the automat into the stand.
- Screw off the ring bolt 8 when the automat is mounted.

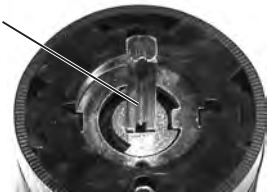
5 Assembly of the main switch











- Loosen the screw 4 and remove the switching knob 5.
- Remove the main switch cover.
  For this purpose, unlock the tab in the hole 6.
- Insert the cable from the control box in the main switch.
- Connect the cable cores of the control box to the terminals L1 (1→ brown) and L2 (2 → blue).
  Connect the protective earth (3 → yellow-green) of the control box to the main switch too.
- Make sure that the notch 7 of the main switch faces down.
- Put the main switch cover again. Put on the switching knob 5 and screw it tight.

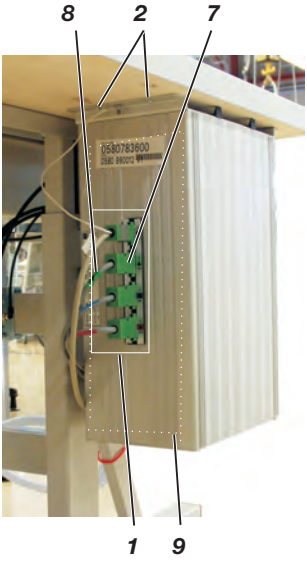
Hint

If you manufacture the table top yourself, fit the main switch at an easily accessible place because the main switch is also the emergency stop switch.

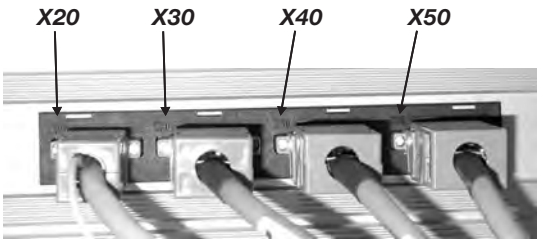
6 Assembly of the control

Attention!

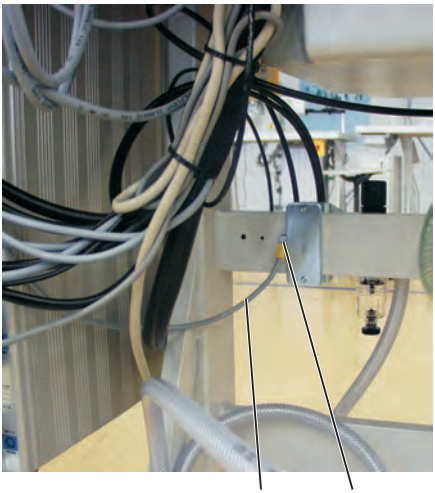
The control must not stand on the floor because otherwise the ventilation grid are covered. This can lead to the overheating of the control.

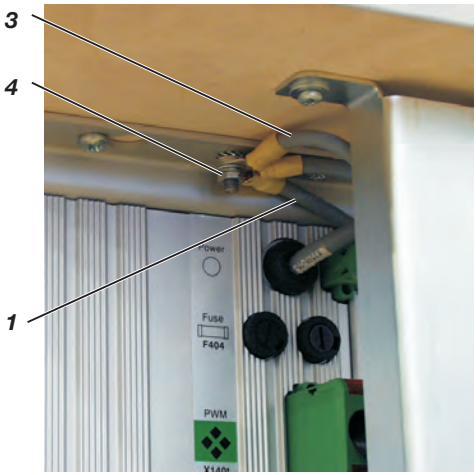


- Screw the control on the underside of the table top with the screws 2 and 3. The side carrying the data plate 9 points to the front.
- Connect all plugs in field 1 and 4 with the respective bushes. The plugs are clearly marked with an imprint on cable 8 and the bushes at the casing 7! Cable and bush have the same designation and symbol. Check whether every plug is in the correct bush !
- Screw plugs and bushes together.
- Finally screw the protective bracket 5 under the table top so that the cables cannot be ripped out or damaged inadvertently. In addition secure the protective bracket by screwing it together with the control using the screws 10.



7 Potential equalization



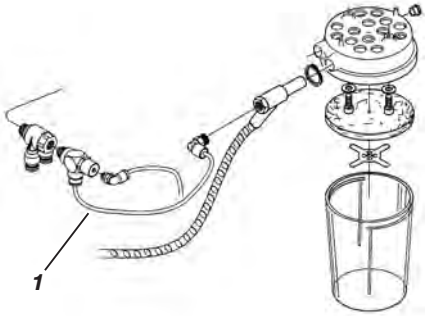


– Connect the potential compensation cable 1 to the stand using the screw and toothed washer 2 (included in the accessories).
– Screw on the potential compensation cable 1 from the stand together with the potential compensation cable 3 from the automat, on the control box through the screw 4.
– Screw on the potential compensation cable 5 from the sewing motor to the control box through screw 6.

Attention !

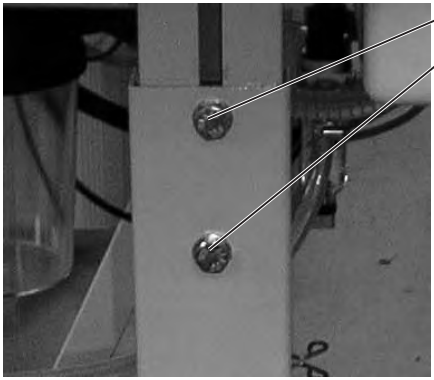
When screwing on the potential compensation cable, make sure to lay the toothed washers on the stand or on the control box.

8 Assembly of the waste container



– Screw the waste container under the pedestal of the automat as shown in the illustration.
– Connect the hose 3 with the waste container and the hose nozzle 2. The hose 3 sucks cutting waste into the container.
– Connect the waste container and the pressure supply (in the accessories) with the compressed-air hose 1.

9 Installation of the automatic buttonholer

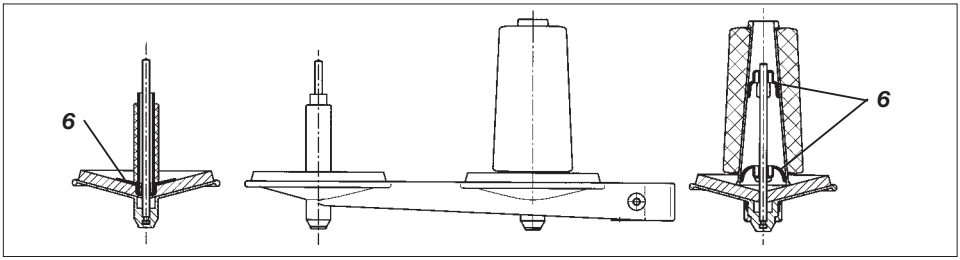


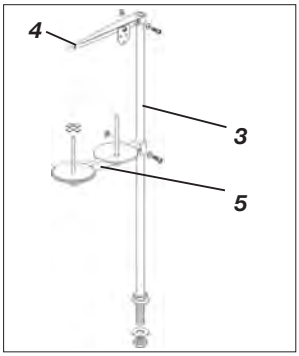
9.1 Adjusting the working height

The working height is infinitely variable between 73 cm and 90 cm (measured up to the upper edge of the table top).

- Loosen the locking screws 1 and 2 on both sides of the stand.
- Set the working table of the automatic buttonholer to the desired working height.
- Tighten the locking screws 1 and 2.

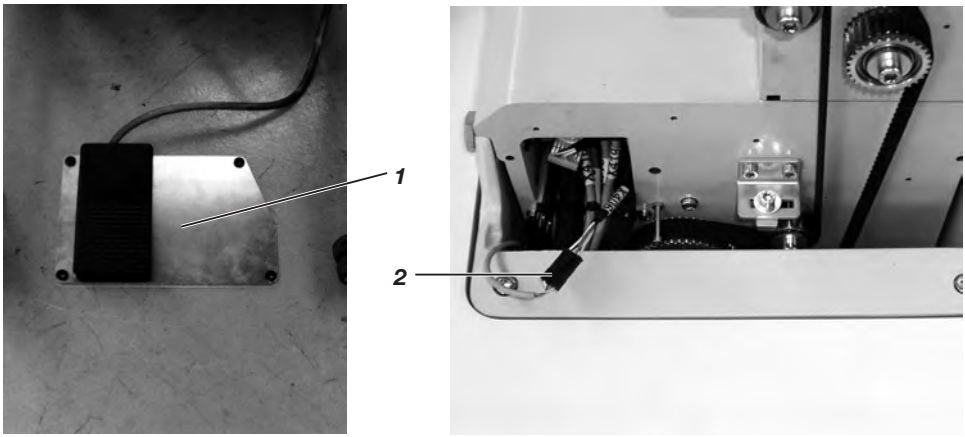
9.2 Attaching the thread stand





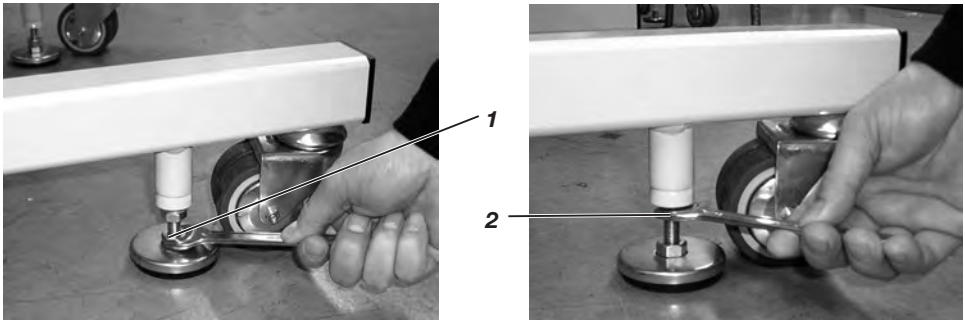
- Insert the thread reel stand 3 in the hole of the table top and fasten it with nuts and washers.
- Mount and align the thread reel bracket 5 and the unwinding arm 3 as shown in the illustration.
  Important: thread stand and unwinding arm must be positioned exactly one above the other.
- Depending on the type of thread reel the centering piece 6 must be set as shown in the above illustration. Incorrect settings can lead to sewing disturbances.

9.3 Connecting the pedal



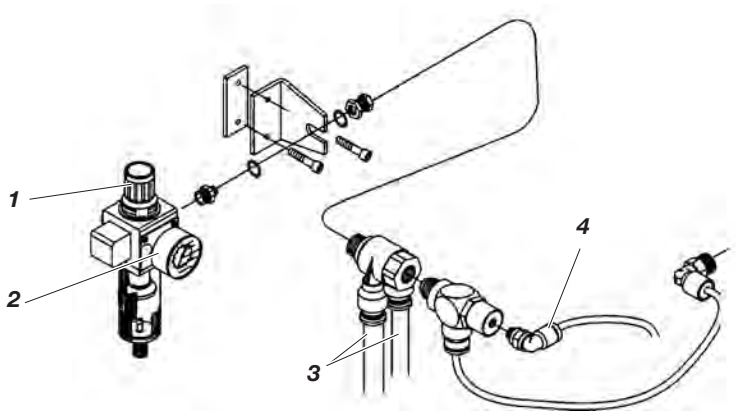
– Place the pedal 1 under the stand.
– Remove the handwheel and the belt protection of the automat.
– Guide the cable of pedal 1 through the cable duct of the automat to the top. Fix the cable to the underside of the table top using the provided cable clip.
– Connect the cable of pedal 1 with bush 2 (**X406**).
– Put the belt protection and the handwheel back again.

9.4 Securing the stand



– Screw the two support plates down with nut 1 until the automat stands firmly and safely.
– Screw the counternut 2 upwards and tighten it.

9.5 Connecting the maintenance unit



The pneumatic system of the machine and its optional equipment must be supplied with compressed air containing absolutely no water or oil.

- Screw the maintenance unit on the stand.
- Connect the maintenance unit with the thicker one 3 of the three compressed-air hoses coming out of the cable chute of the automat.
- Connect the thinner hose to the connection 4.
- Connect the maintenance unit with your pressure supply.

ATTENTION !

For a faultless function of the pneumatic control processes the compressed-air net must guarantee an operating pressure of 6 ± 0,5 bar.

The compressed air must be clean (oil-free).

Pneumatic connection package

A pneumatic connection package for stands with maintenance unit and pneumatic optional equipment is available under **order number 0797 003031**:

- Connection hose, 5 m long, Ø = 9 mm
- Hose nozzles and hose clamps
- Coupler socket and coupler plug R ¼"

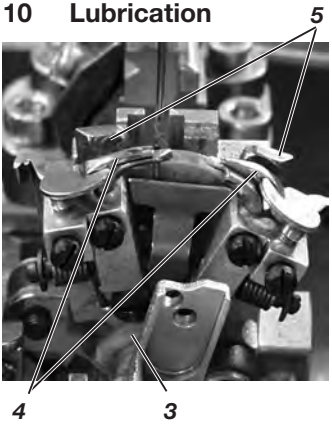
9.6 Adjusting the operating pressure

The operating pressure of the automatic buttonholer amounts to **6 bar**. It can be read off at the manometer 2.

For adjusting the operating pressure lift the twist handle 1 and twist it correspondingly.

Turn in clockwise direction	=	increase the air pressure
Turn counter-clockwise	=	reduce the air pressure

10 Lubrication



Caution: Danger 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

The oil can be bought at the sales points of **DÜRKOPP ADLER AG** under the following parts numbers:

250 ml Container:	9047 000011
1 l Container:	9047 000012
2 l Container:	9047 000013
5 l Container:	9047 000014

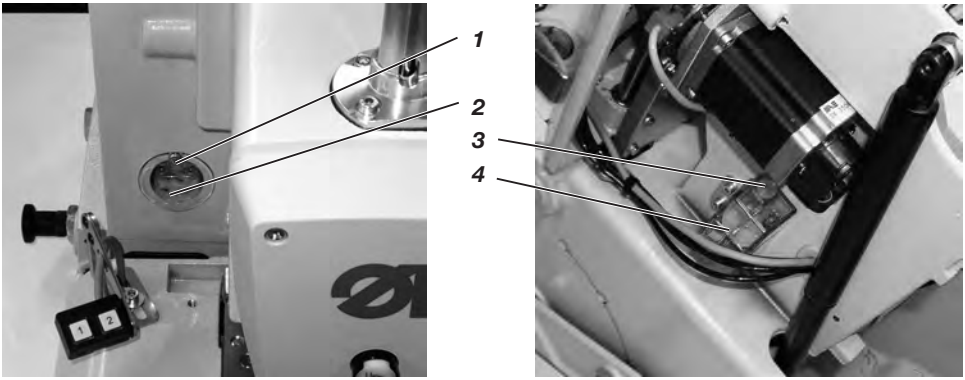
ATTENTION !

If the automatic buttonholer has not been used for a long time or after assembling the machine, oil the wicks, felts, looper and needle bar components.

- Loosen screws and remove the face and front plate
- Oil the felts and the wicks 1.
- Apply one or two drops of oil to the needle bar and needle bar bushing.
- Screw on the face and front plate.
- Remove the clamping plates.
- Oil the wick 3.
- Apply one or two drops of oil to the spreader 4 and the spreader plate 5.

10.1 Fill the oil reservoirs

– Fill up the reservoirs 2 and 4 through the feed openings 1 and 3 up to the marking “max”.



11 Installing the sewing software

11.1 General

Loading a specific sewing software in the DACIII control unit is possible with the help of the “Programmed Dongle”. The “Programmed Dongle” has a label indicating the class and software version.

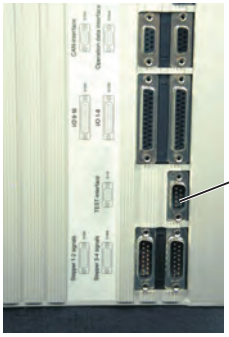
Such a loading (booting) may be used in order to provide several DACIII control unit with a sewing
software (first installation) or to install a newer machine software (update).

With the delivery of the machine only the test software (allowing the loading of sewing software) is
installed in the control unit. The test software offers no further functions. If the test software gets
damaged during the loading process, it is no longer possible to load a software using a dongle.
In such a case use a PC with a loader cable.
The detailed procedure for this is described at the homepage of Dürkopp Adler AG “*www.duerkopp-adler.com*” among the section of “*Download Area*” and “*Software*”.

CAUTION !

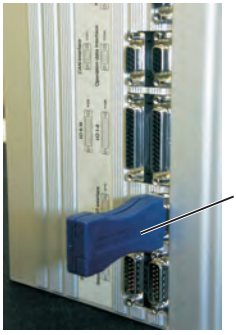
Turn off the main switch before connecting the dongle.

11.2 Loading the program



– Insert the mains plug.
– Switch on the main switch.
– If the main menu does not appear on the display after a relatively long waiting time, the sewing software is missing.
In this case, the sewing software must be loaded.

– Turn the machine off at the main switch.
– Insert the dongle **2** into the socket X110 (TEST-Interface) **1** of the control unit (see pictures).
– Switch on the main switch. The Software will be loaded. The loading process takes less than 60 seconds.
– During the loading process do not remove the dongle and do not switch off the machine.
– The machine proceeds with a warm start after the software is loaded.
– Remove the dongle **2**.
– If necessary confirm the software version (caution: the machine software must match the machine class).



11.3 Setting the sewing equipment

After the loading of the program, the control panel will display a screen for a password query.

⇦⇨⇧⇩ Keys “**OK**” Key	Enter the code “2548” using the arrow keys. Press the “**OK**” key. The menu item equipment will be activated.
⇧⇩ Keys	Select the equipment matching to the machine and subclass using the arrow keys (with the 580-141000 select also the length package) and confirm it through the “**OK**” key.
⇦⇨ Keys	Select yes ⇦⇨ (yes/no) using the arrow keys and confirm it through the “**OK**” key. The main menu will then be displayed on the control panel. The machine is now ready for use.

CAUTION !

A wrong setting of the subclass, sewing equipment or length package can damage the sewing machine.

11.4 Dongle-Update via Internet

Dongles can be updated with programs available from the Dürkopp Adler homepage. Please visit our Internet site *“www.duerkopp-adler.com”* where you will find the relevant programs in the “Download” area. Prerequisite is our auxiliary download software “Dongle Copy” which is available in the same section together with instructions for easy use.

12 Sewing test

After finishing the assembly work a sewing test has to be made:

– Insert the mains plug.

Caution: Danger of injury !

Needle thread, looper thread and gimp thread must only be threaded when the machine is switched off or in the threading in mode!

– Insert needle
– Thread in looper thread (see operating instructions).
– Thread in needle thread (see operating instructions).
– If desired, thread in gimp thread (see operating instructions).
– Switch on main switch.
– Load workpiece to be processed.
– Select a buttonhole type and adjust a low speed at first (see operating instructions).
– Gradually increase the speed.
– Check that the buttonhole meets the desired requirements.

If not:

Alter the thread tension (see operating instructions).

Attention!

The control unit is empty, if after a relative long waiting time the main menu does not appear on the control panel.

In this case, the program must first be loaded (see chapter “Installing the sewing software”).

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