DÜRKOPP ADLER AG

530

CNC Knopfannähautomat
CNC Automat for Button Sewing

Bedienanleitung / Operating Instructions

Aufstellanleitung / Installation Instructions

Serviceanleitung / Service Instructions

1

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DÜRKOPP ADLER AG

Anleitung, komplett
Manual, complete

530

Übersicht		Summary
Bedienanleitung Aufstellanleitung Serviceanleitung		Operating Instructions Installation Instructions Service Instructions
Bauschaltplan 9890 510001 B		Interconnection-diagram 9890 510001 B

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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 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!

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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 hints

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(Edition 06/2008)

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1. Description of product

The **Dürkopp Adler 530** is a CNC double lockstitch automat for button sewing. The available button patterns are adjustable in length, width and speed and can be memorized in their modified form. It is also possible to create “free” sewing patterns (by programming).

The button sewing automat is equipped with automatic sewing foot lifts, thread trimmer, thread retractor and integrated DC direct drive.

Technical features

- The control is executed by the DAC III, that is operated by the user with the control panel BF2B.
- The fabric drive or the clamp drive is effectuated by two step motors.
- The oil wick lubrication is central for head and hook, but there exist two separated oil reservoirs that are both supplied through one upper reservoir. So there is only one reservoir to be refilled.
- A maximum of 50 standard button patterns is available. These standard patterns can temporarily be modified (as regards length, width and speed). When switching off the automat the modified data of the last sewing pattern are maintained.
- 40 modified sewing patterns can additionally be memorized.
- Additionally there are a maximum of 9 free seam contours with a total of 5000 dynamically controlled stitches at the users disposition. Thus it is possible to sew f. e. free button patterns. The coordinates of free sewing patterns are entered at the control panel. There is no need for further devices.
- 25 sewing pattern sequence programs each with up to 20 sewing patterns per sewing pattern sequence program can be created and memorized.
- The exactitude of the entered coordinates comes to 0.1 mm.
- It is possible to lock certain button programs or button sequence programs and/or the modification so that an unauthorized use or modification can be prohibited by the technicians.
- An in between cut without releasing the button clamp is possible, so as to avoid a continued thread.
- It comes with a bobbin thread counter and a daily production counter.
- The arm shaft of the button sewing automat is directly powered by a brushless direct current motor.
- Fabric drive by two step motors.
- The speed can be altered between 0 rpm (manual operation with full operability of the x-y drive) and 2700 rpm in 100 rpm steps.
- Service and maintenance work is backed up by comprehensive test programs, that allow a separate testing of single functions.

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2. Description of proper use

Class **530** is an button sewing automat determined for processing light to medium-weight material, i.e. fabrics made of textile fibres or leather. Such sewing materials are used in the clothing industry and for the production of home and car upholstery.

Furthermore, this button sewing automat can also sew so-called technical seams. However, in this case the user has to estimate the possible risks (preferably in cooperation with **DÜRKOPP ADLER AG**) because on the one hand such fields of application are comparatively rare and on the other hand there is an immense variety of possibilities. According to the result of this estimation suitable safety measures may have to be taken.

Generally only dry fabrics must be processed on this button sewing automat. The material must not be thicker than 10 mm when compressed by the lowered sewing feet. It must not include any hard objects. The eye protection must be mounted when working with the automat.

In general the seam is produced with sewing threads made of textile fibres (cotton threads, synthetic threads or core threads) with the following dimensions:
Class 530-211 threads of the dimension 50/3 - 120/3
If other threads are to be used, it is indispensable also in this case to consider the possible risks and to take corresponding safety measures, if necessary.

This button sewing automat must only be installed and operated in dry and well-kept rooms. In case it is operated in other rooms which are not dry and well-kept further measures can become necessary which have to be agreed upon (see EN 60204-31: 1999).

We as manufacturers of industrial sewing machines 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.

3. Subclasses

Cl. 530-211	Single needle double lockstitch button sewing automat with thread trimmer and thread wiper. Equipped with a special button clamp for general button attaching operations in outer garments and linen. The standard equipment of the button clamp consists of a clamp insert that can sew buttons of a diameter from 10 to 20 mm and standard thickness.

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4. Optional equipment

The following optional equipment is available for the button sewing automat 530:

Order No.	Optional equipment
9822 51 002 6	Sewing light
9822 51 002 7	Table clamp
9870 00 102 1	Cable assembly (add-on kit socket for sewing light)
0510 59 004 4	Laser marking lights (3 lights)
0510 59 003 4	Supplementary laser light
0510 59 005 4	Push button
0531 36 074 4	Shank button clamp

Further optional equipments are available. Please contact our application centre (APC).
E-mail: *marketing@duerkopp-adler.com*

5. Stands

The following stand is available for the button sewing automat 530:

MG55 40 029 4

Stand package
Table top size 600 x 1060 mm
Stand height 1160 to 1305 mm

6. Technical data

Noise: Lc = 78 dB (A)
Emission value per work place according to DIN 45635-48-A-1-KL-2
Speed: 2.700 min^{-1}
Fabric: G1 DIN 23328 two-ply

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6.1 Technical data of the subclasses

Subclass:	**211**
Stitch type:	301
Hook type:	oscillating hook
Needle system:	DPx17 (135x17)
Needle size: [Nm]	80 - 110
Needle size standard: [Nm]	90
Thread size:	50/3 - 120/3
Stitch length: [mm]	dependent on seam pattern
Max. speed [min^{-1}]	2700
Clamp stroke [mm] Delivery maximum	9 13
Sewing field size [mm] max. in X-direction: max. in Y-direction:	dependent on clamp
Number of standard sewing patterns	50
Number of storable modifiable sewing patterns	40
Number of sewing pattern sequence programs	25
Number of sewing patterns per sewing pattern sequence program	20
Soft start:	on / off option
Sewing drive:	DC-Motor
Rated voltage: [V]	1 ~ 230V/ 50/60 Hz
Rated load: [kW]	0,45

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7. Operating

7.1 Threading needle thread



Caution: Danger of injury !

Switch off main switch !

Thread the needle thread only when the button sewing automat is switched off.

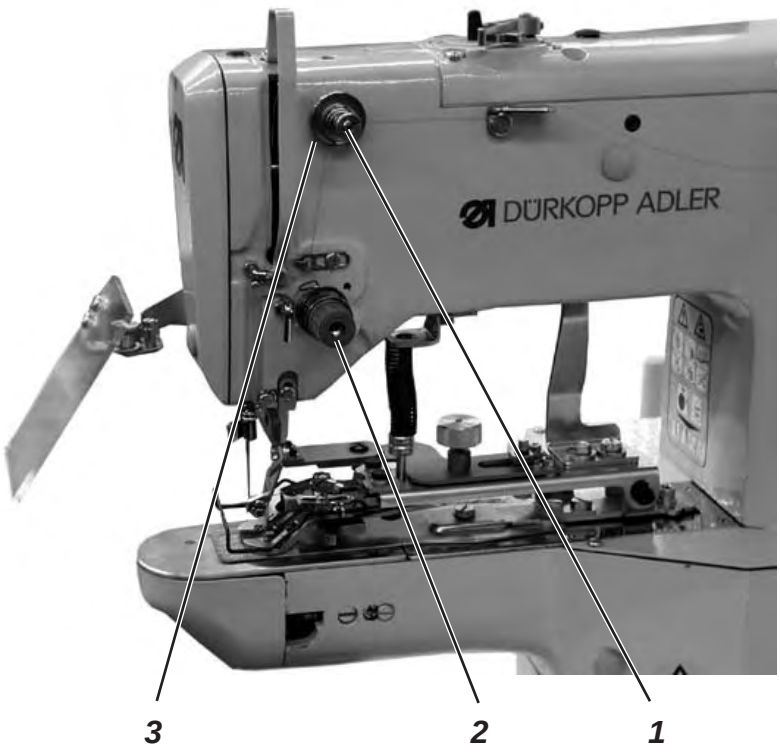
– Put thread reels on the thread reel holder and conduct needle thread and bobbin thread through the unwinding arm.
The unwinding arm must be positioned vertically above the thread reels.

– Thread the needle thread as shown on the following illustration.



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7.2 Adjust needle thread tension



Pretension 3

With open main tension 2 a minor residual stress of the needle thread is required. The residual stress is produced by the pretension 3.

At the same time the pretension 3 influences the length of the cut needle thread end (initial thread for the next seam).

– Short initial thread:
  Turn knurled nut 1 in clockwise direction.
– Long initial thread:
  Turn knurled nut 1 counter-clockwise.

Main tension 2

The main tension 2 has to be adjusted as low as possible.

The interlacing of threads should lie in the middle of the fabric.
In case of thin fabrics too high thread tensions can lead to undesirable ruffling and thread breakage.

– Adjust main tension 2 in such a way that an even stitch pattern is achieved.
  Increase tension = Turn knurled nut in clockwise direction
  Reduce tension = Turn knurled nut counter-clockwise

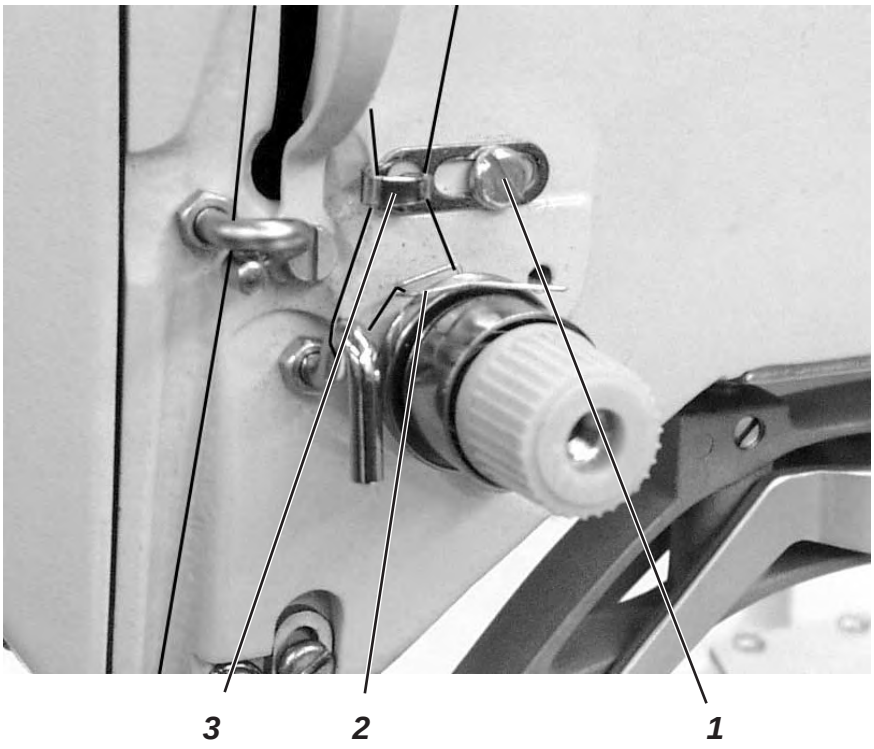
7.3 Open needle thread tension

Automatic

The needle thread tension is automatically opened when trimming the thread and when lifting the fabric clamping feet.

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7.4 Adjust thread regulator



Caution: Danger of injury !

Switch off main switch !

Adjust thread regulator only when the button sewing automat is switched off.

The thread regulator 3 controls the needle thread quantity required for the stitch formation.
Only a precisely adjusted thread regulator guarantees an optimum sewing result.

When the thread regulator is adjusted correctly, the needle thread loop must slide over the thickest spot of the hook with low tension.

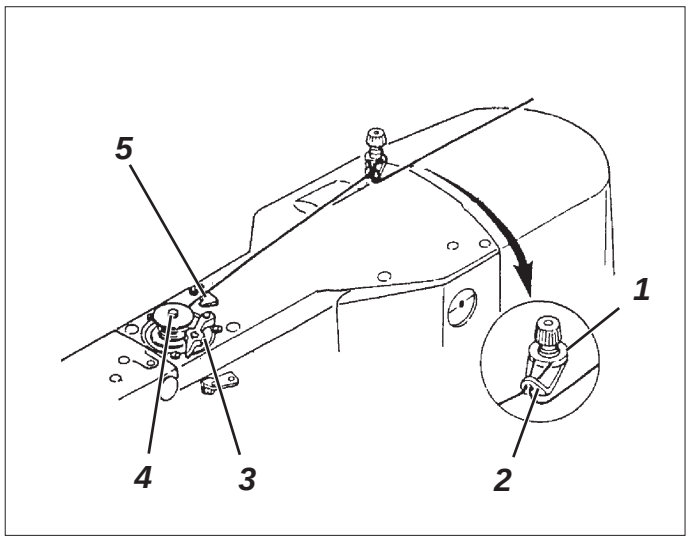
- Loosen screw 1.
- Change position of the thread regulator 3.
  Thread regulator to the left = larger needle thread quantity
  Thread regulator to the right = minor needle thread quantity
- Tighten screw 1.

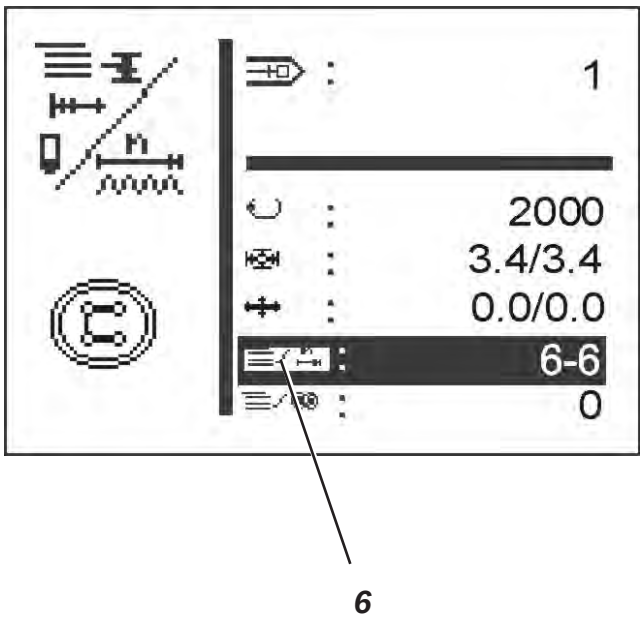
Adjustment hint:

If the largest thread quantity is required, the thread controller spring 2 must be pulled down by approx. 0.5 mm from its upper end position. This is the case when the needle thread loop passes the maximum hook diameter.

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7.5 Wind on bobbin thread

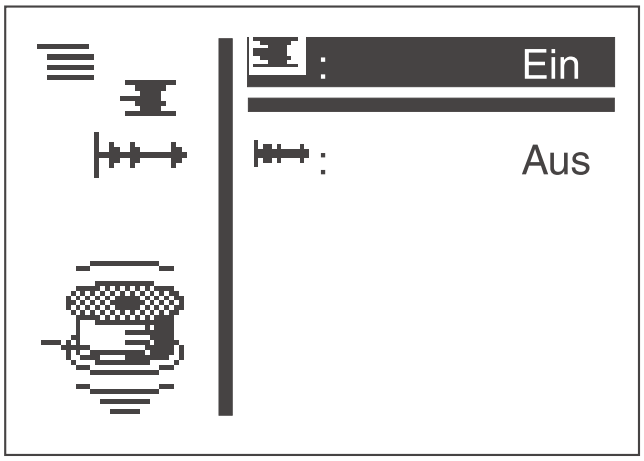




- Put bobbin on bobbin winder 4.
- Pull thread through guide 2 and around tension 1.
- Wind thread counter-clockwise around the core of the bobbin (approx. 5 times).
- Press winder lever 3 into the bobbin.
- Sewing
  The winder lever stops as soon as the bobbin is full.
- Tear off thread at thread clamp 5 after winding on is finished.

Note !

If the thread is to be wound on without sewing,
the thread winding mode can be altered in submenu 6 “Special functions”.



On

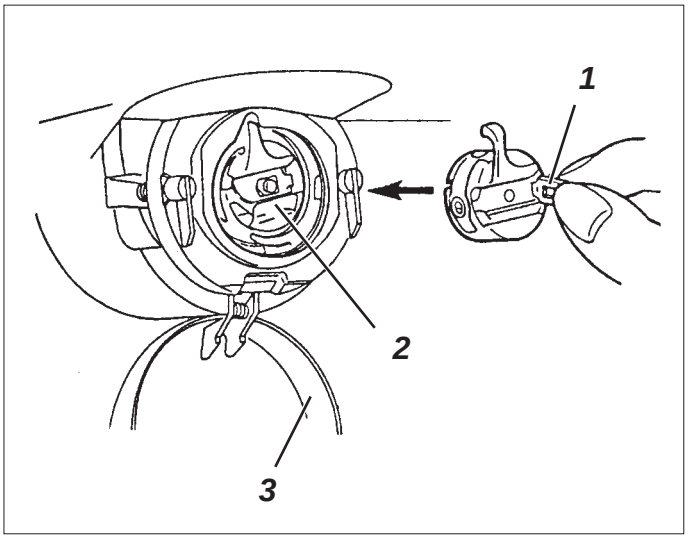
Off

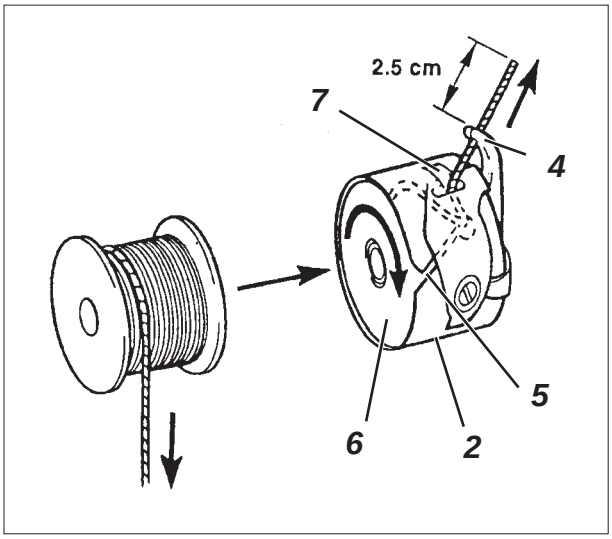
If the thread winding mode is active, the sewing motor can be started via pedal or push button independent of the sewing field drive (here unthread at the thread lever).

For adjustment see chapter 8.5.1 “Thread winding mode”.

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7.6 Change hook thread bobbin





1

Caution: Danger of injury !

Switch off main switch !

Change hook thread bobbin only when button sewing automat is switched off.

Remove empty bobbin

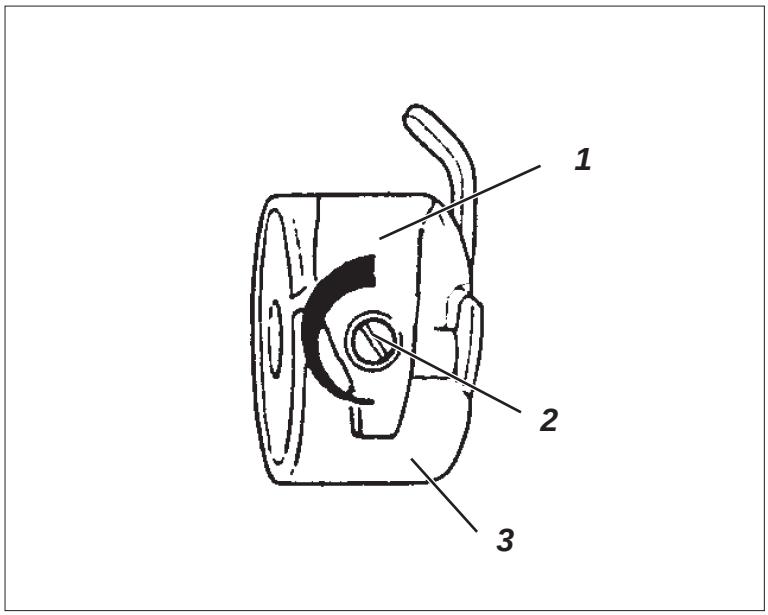
- Pull down hook cover 3.
- Lift bobbin case cover 1.
- Remove top of bobbin case 2 with bobbin 6.
- Remove empty bobbin from the top of the bobbin case 2.

Insert full bobbin

- Place full bobbin in the top of bobbin case 2.
- Thread bobbin thread through slot 5 below tension spring 7 in the drill-hole 4.
- Pull bobbin thread out of bobbin case 2 for a length of approx. 2.5 cm. When winding off the thread the bobbin must turn in the direction of arrow.
- Reinsert bobbin case 2.
- Shut bobbin case cover 3.

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7.7 Adjust bobbin thread tension





Caution: Danger of injury !

Switch off main switch !

Adjust bobbin thread tension only when the button sewing automat is switched off.

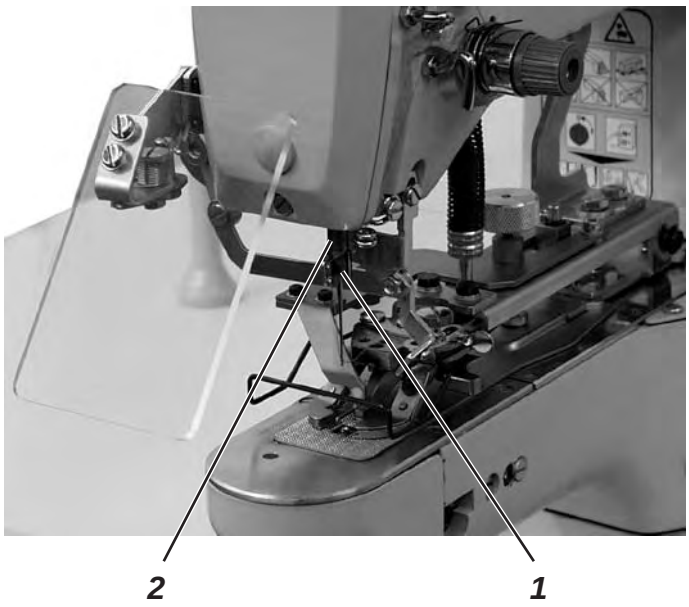
The required bobbin thread tension is to be produced by tension spring 1. The top of bobbin case 3 should drop slowly due to its own weight when being held at the threaded-in bobbin thread.

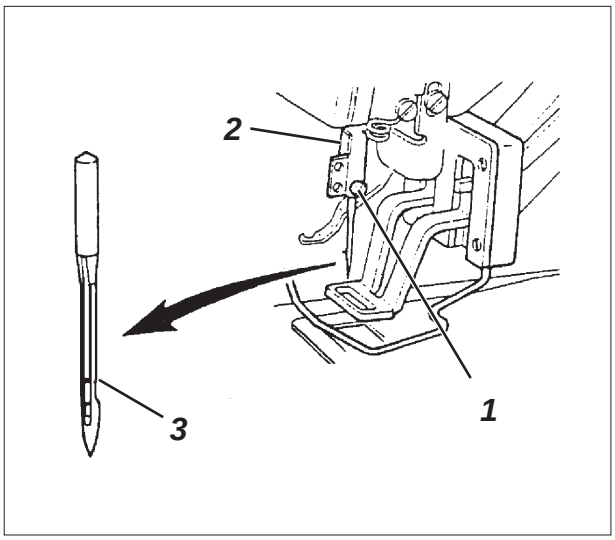
Adjust tension spring

- Remove top of bobbin case 3 with the bobbin.
- Adjust tension spring 1 at the regulating screw 2 until the required tension value is reached.
- Reinsert top of bobbin case.

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7.8 Change needle





Caution: Danger of injury !

Switch off main switch !
Change needle only when the button sewing automat is switched off.

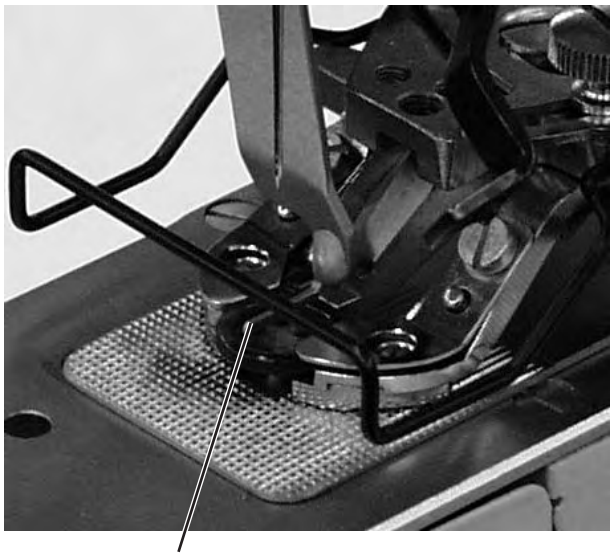
- Loosen screw 1.
- Push new needle into the drill-hole of needle bar 2 as far as it will go.
  ATTENTION !
  The hollow groove 3 of the needle must point to the hook.
- Tighten screw 1.

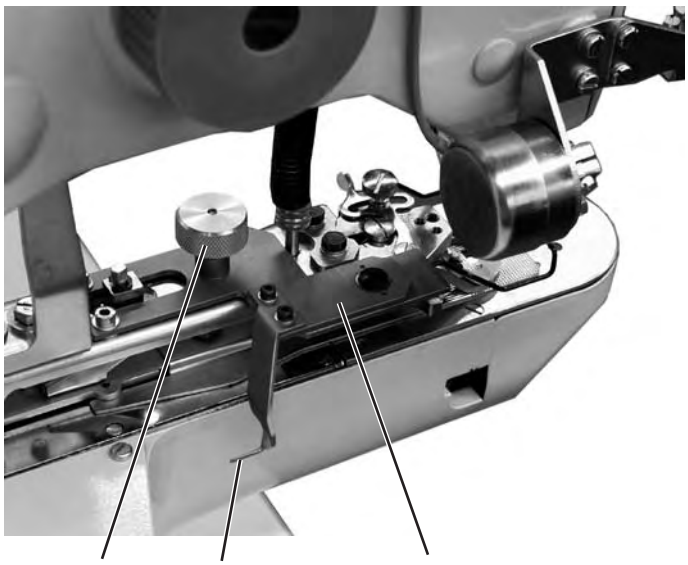
ATTENTION !

After the changeover to another needle size the distance between hook and needle has to be corrected (see service instructions).

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7.9 Button shank shaper





The button clamp of the button sewing automat is equipped with a button shank shaper 1.

Swinging in/out of button shank shaper

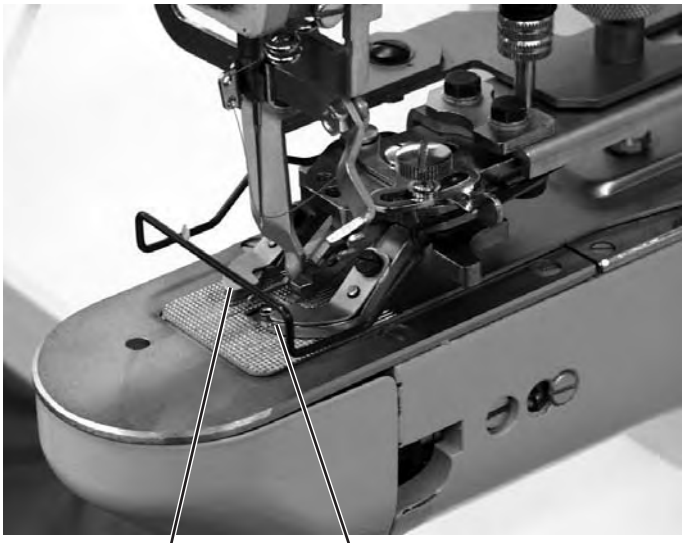
– Swing manually in or out the swivelling lever 2 with button shank shaper while button clamp is lifted.

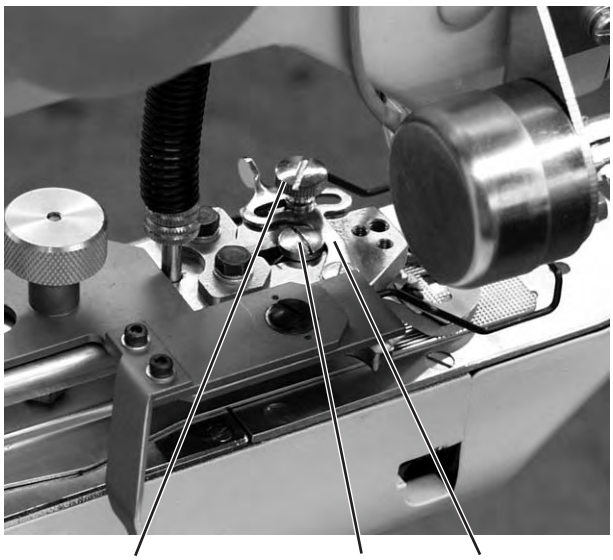
Adjust button shank length

– Turn setting button 3 accordingly.
  Turn to the right = shorter shank
  Turn to the left = longer shank

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7.10 Setting the hook feet of button clamp





Caution: Danger of injury !

Set the button clamp while the button sewing automat is switched on with utmost caution only.

The button should be easily pushed and aligned between the hook feet of the button clamp.

It is also important that the button is properly jammed, so that it cannot contort when the material is inserted.

The stop 3 regulates the opening width of the hook feet.

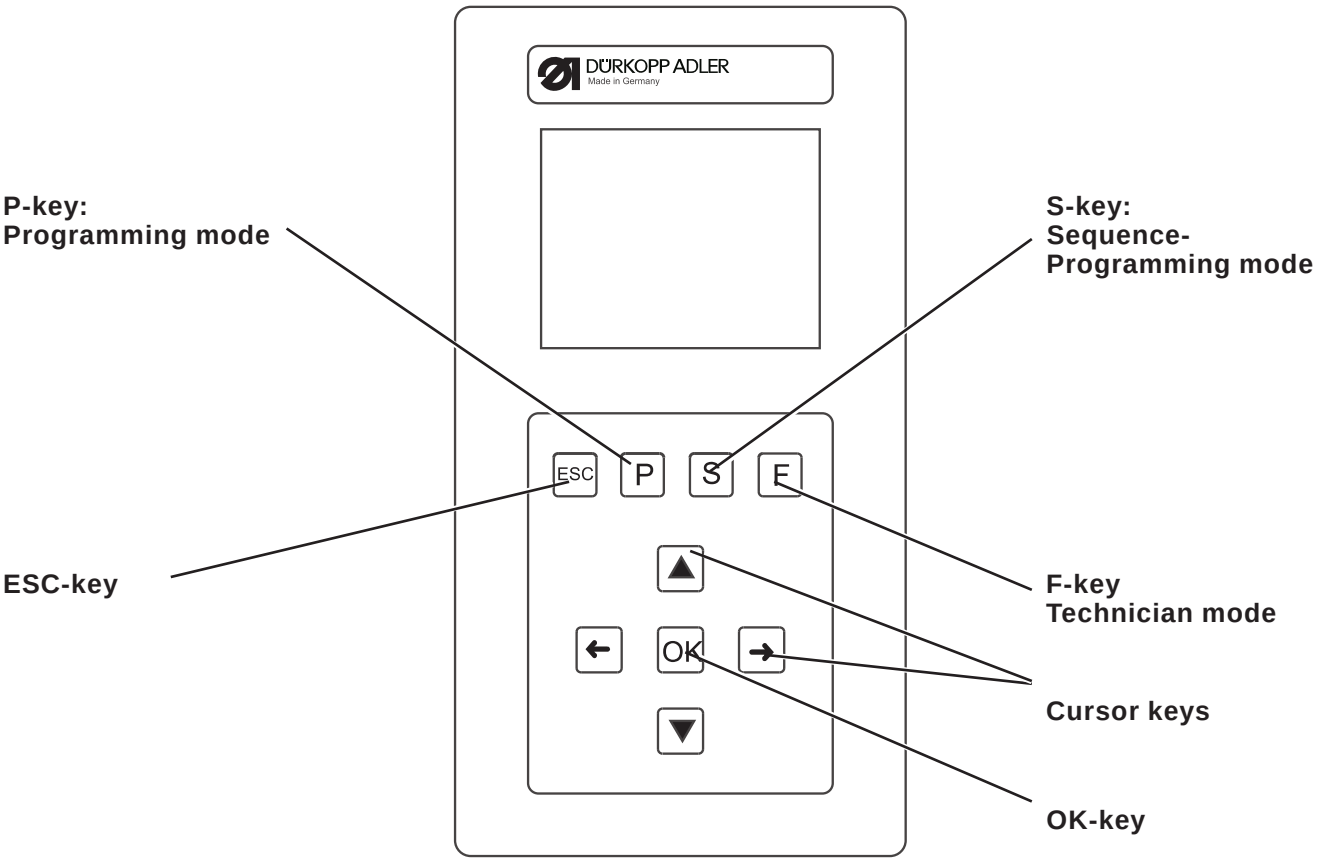
- Switch on the button sewing automat.
  The clamp button rises.
- Put the button that is to be attached between the hook feet 1 and 2.
- Loosen the knurled nut 5.
- Set the stop 3 so that it approaches the screw 4.
- Fasten the knurled nut 5 again.
- Check whether the button can easily be inserted and aligned.

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8. Operating the control of class 530

8.1 The control panel

For the input and output of data a control panel with an LCD display and function keys is used.



8.1.1 The keys

Function key	Function
Cursor keys 	**If no text field is activated:** Press key "⇦" to return from a submenu to the parent menu. **If a text field is activated:** Change between the points (not when selecting sewing patterns or sequences). **In the sewing mode in case of sequence operation**: Change to the next or to the preceding sewing pattern.

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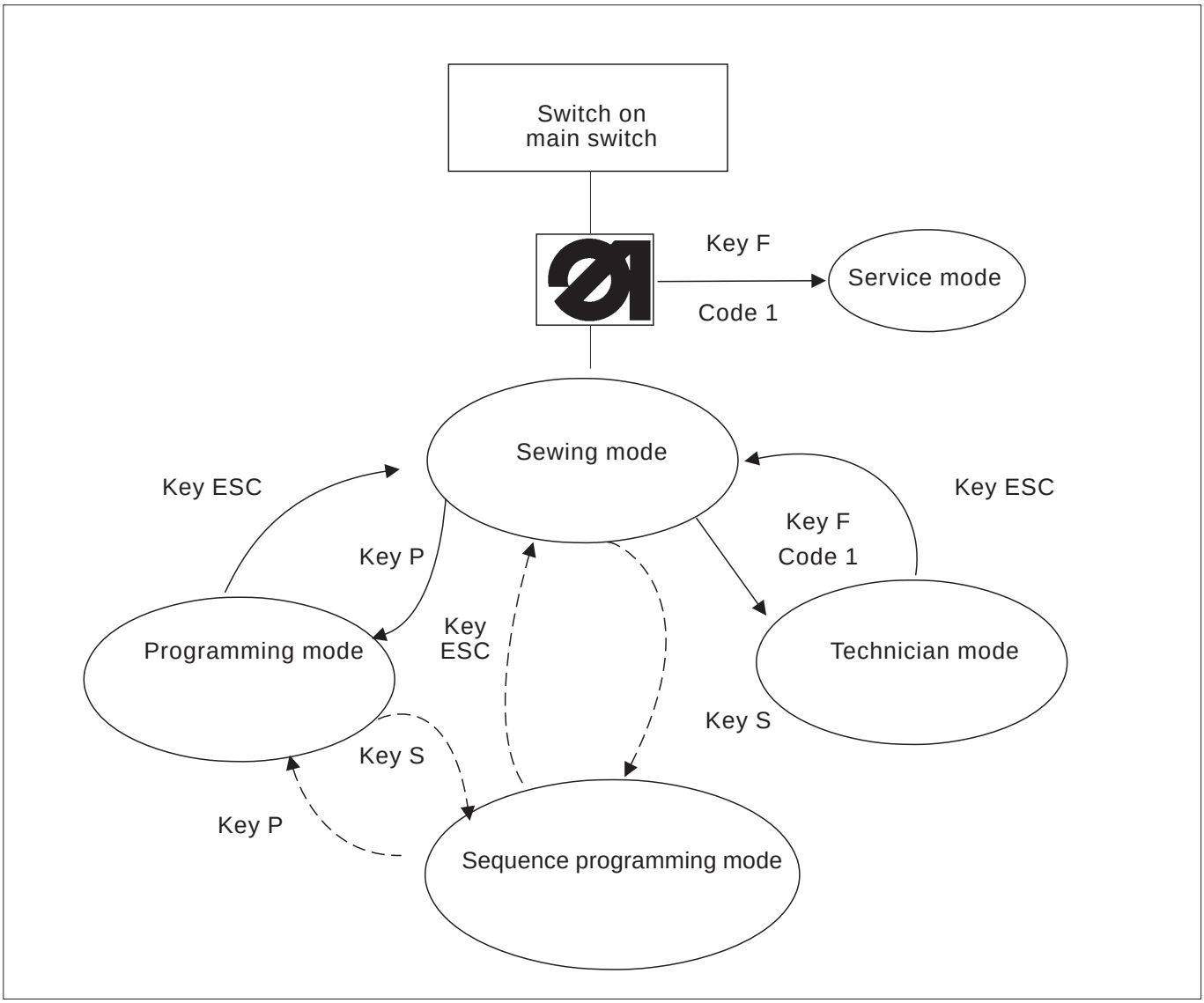
Function key	Function
▲ ▼	**If no text field is activated:** Change between the lines of the menus. The selected line is displayed white on black. **If a text field is activated:** Increase or reduce the value of the respective point by one or change between the parameters in case of functions with several choices.
OK-key OK	**If no text field is activated:** Activate the text field. The value can be altered with the keys "⇧" and "⇩". **If a text field is activated:** The set value is taken over. **If the clamping foot has been lowered using the keys OK + F:** The test procedure will be started.
ESC-key ESC	**If test functions are activated (Multitest / 180° disc):** You return to the selection menu. **If a text field is activated:** An input is aborted. The preceding value is maintained. **In the technician and programming level** The control changes over to the sewing mode. **In the sewing mode** Lift clamping foot and stop sewing operation.
P-key P	The control changes over from the sewing mode to the programming mode. In this mode altered stitch patterns can be memorized under a new program number.
S-key S	The control changes over from the sewing mode or sewing pattern programming mode to the sequence programming mode. In this mode it is possible to create new sequences or to alter existing ones.
F-key F	The control changes over from the sewing mode to the technician mode. This mode can only be activated after a code has been entered. In this operating status it is possible to set basic machine parameters and to retrieve diagnosis and adjustment programs.
OK-key + F-key OK F	Starts the testing mode* for the sewing process. The clamping foot is lowered.

*Testing mode = a slow following of the seam contour without effectuating a seam.

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8.2 User interface

8.2.1 Structure of menu



Call up the service mode

- Press the function key “F” and keep it pressed.
- Switch on main switch.
  The control unit will be initialized.
  After a short while the window for entering the code number will appear.
- Enter the code number (code 1, compare chapter 8.5.4).
  The display changes to the service menu (see also chapter 8.5.4.3).

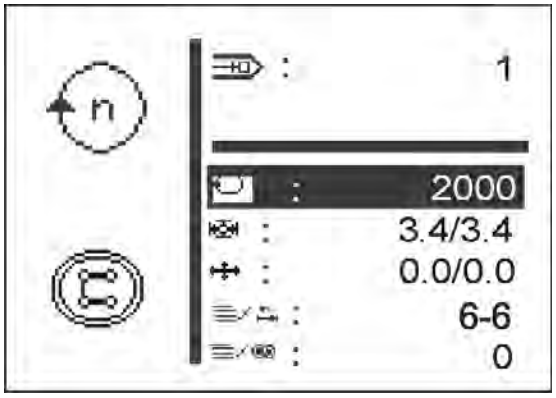
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Call up the technician mode

– Switch on main switch.
  The control is initialized.
  The sewing mode menu appears on the display.
– Press key “ **F** ”.
– Enter **Code 1** (see Chapter 8.5.4).
– Press key “**OK**” .
  The display changes over to the technician mode.

8.3 Alter numerical values, parameter values, selection of alternatives

8.3.1 Alter numerical values



– Select the desired line with the keys “⇧” or “⇩”.
– Press key “**OK**”.
  The chosen numerical value is marked by a blinking cursor.
– Change between the points with the keys “⇦” or “⇨”.
  Increase or reduce the value of the selected point by one with the keys “⇧” or “⇩”.
– Press key “**OK**”.
  The currently set value is taken over.

or

– Press key “**ESC**”.
  The original value is maintained.

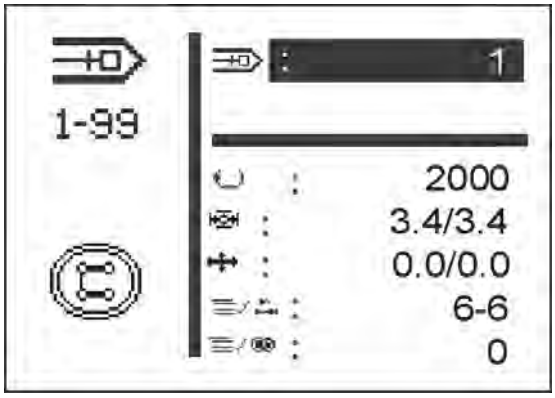
Note

All values can only be altered within the minimum and maximum values.

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8.3.2 Selection of a parameter

Some parameters offer a selection of non-modifiable adjustments.



- Select the desired line with the parameter to be altered with the keys “⇧” or “⇩”.
- Press “**OK**” key .
- Change between the given possibilities with the keys “⇧” or “⇩”
  Example:
  Sewing pattern number

- Press “**OK**” key.
  The currently set parameter is taken over.

or

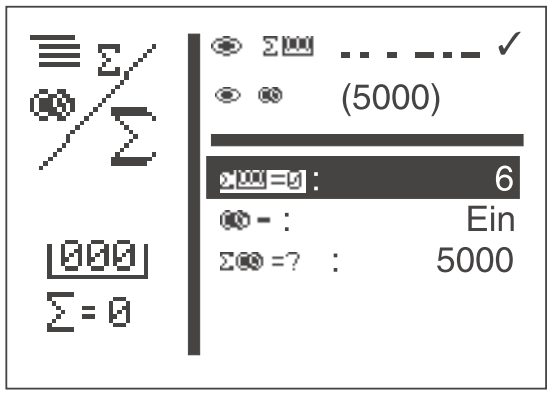
- Press “**ESC**“ key.
  The original parameter is maintained.

8.3.3 Selection of alternatives

Some menu items can be selected alternatively.
The current selection is marked with a checkmark (...✓).

If another alternative is selected, the marking of the current choice is removed and the new menu item is marked.

Alternatively selectable items are optically set off against other menu items by a separating line.



On

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8.4 Sewing patterns

Three different sewing pattern types are available for the button sewing automat 530:

- Specified standard sewing patterns (Type 1) (see chapter 11)

  The sewing parameters length, width and sewing speed can be altered in the sewing mode; the laser marking lamps can be switched on and off. The alterations are memorized.
  However, after selection of another sewing pattern the alterations will get lost.
  For these sewing patterns the sewing pattern numbers 1 to 50 are available which cannot be deleted or overwritten.

- Programmable sewing patterns (Type 2)

  Specified standard sewing patterns can be altered in the programming level (length, width, sewing speed, laser light 1 to 8) and memorized under a new program number.
  For these sewing patterns the sewing pattern numbers 51 to 90 are available which can be deleted or overwritten.

- Free seam contours (Type 3)

  For these seam contours the sewing patterns numbers 91 to 99 are available. The creation of free seam contours is described in chapter 8.5.4.4.
  The sewing parameters length, width and sewing speed can be altered in the sewing mode; the laser marking lamps can be switched on and off. The alterations are memorized.
  However, after selection of another sewing pattern the alterations will get lost.

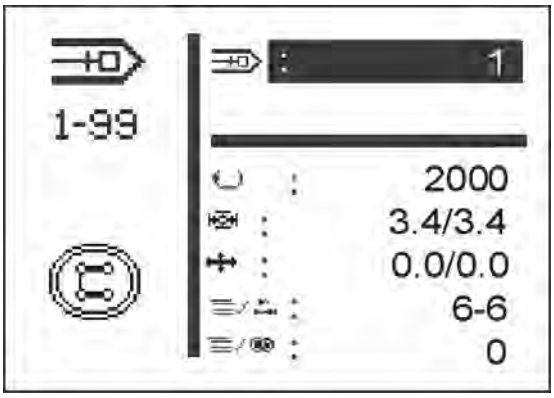
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8.5 Main menu

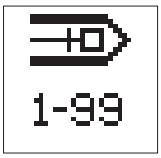
8.5.1 Sewing pattern operation

The parameters for the individual sewing patterns are arranged in the main menu.

The sewing patterns can be altered via these parameters.

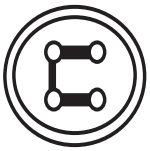


– Switch on main switch.
  The control is initialized.
  The main menu appears.
– Select desired parameter with the keys “⇧” or “⇩”.
  The symbol of the selected parameter is displayed white on black.
– Alter selected parameter as described in chapter 8.3.



Menu item

The symbol in the top left corner of the display describes the currently selected menu item.



Button pattern

The symbol down on the left of the display shows the current button pattern.



Sewing pattern

Via this parameter the sewing pattern to be sewn is selected.

Selection: 1 .. 51 (52 to 99 if availabe)



Speed

Via this parameter the desired speed is set.

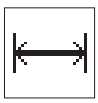
Input: 0 to 2700 rpm



Submenu buttonhole distances

Select the present menu to set the buttonhole distance in X-/Y-direction.

Display:present distance in X-/Y-direction



Submenu sewing pattern offset

Select the present menu to shift the sewing pattern in X-/Y-direction.

Display:present X-/Y- offset value

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Submenu

Behind this symbol there is a submenu.



Number of stitches

By this menu line, the needle throw distribution for standard sewing patterns will be indicated and the complete number of stitches for free contours (cannot be modified).

When selecting the line with key “**OK**” the submenu “Special functions” opens.

Counter reading

Via this menu line the following counters can be read:



Counter of daily number of pieces

or

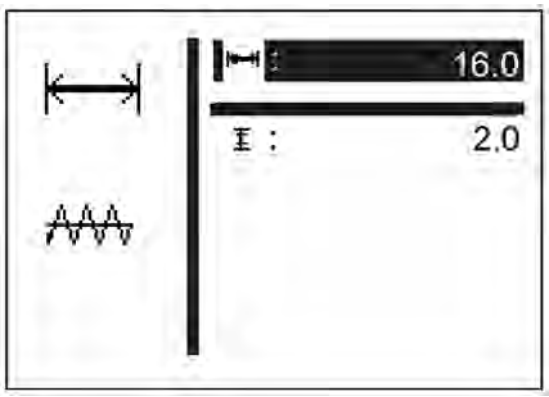


Counter of capacity

When selecting the line with key “**OK**” the submenu “Counter of daily number of pieces/Counter of capacity” is opened.

1

Submenu buttonhole distances





Buttonhole distance in X-direction

Setting the buttonhole distance in X-direction

Input: 0,1 ... 40,0 [mm]



Buttonhole distance in Y-direction

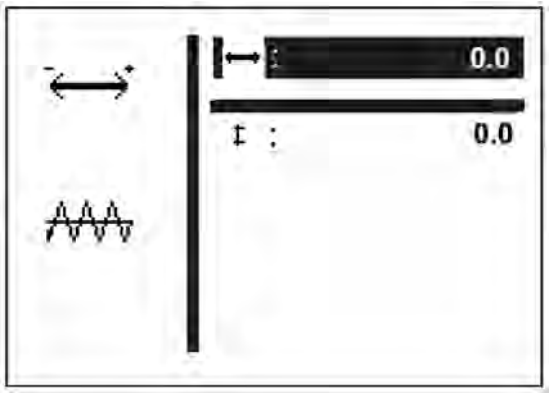
Setting the buttonhole distance in Y-direction

Input: 0,1 ... 20,0 [mm]

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Submenu sewing pattern offset



In this menu to it is possible to change the sewing pattern position in X-/Y-direction.
When switching to this menu, the clamping foot will be lowered. If the value for the X- and Y-Offset is changed, the stepping motors will move the material accordingly. When exiting the submenu, the clamping foot will then be raised again.



Caution: Danger of Injury!

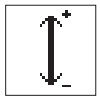
Do not reach into the working area of the clamping foot when entering, exiting the above submenu and performing changes within the sewing pattern offset.



X-Offset

Setting the sewing pattern offset in X-direction.

Input: -20,0 ... +20,0

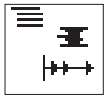


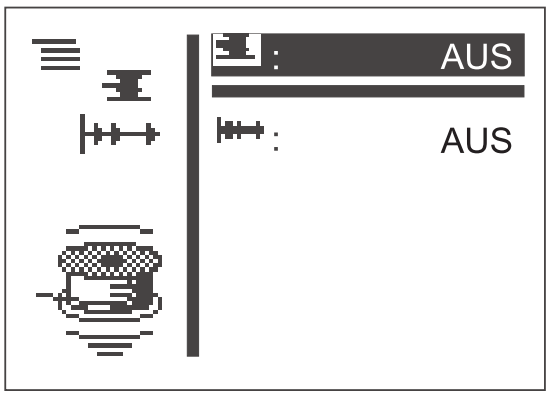
Y-Offset

Setting the sewing pattern offset in Y-direction.

Input: -10,0 ... +10,0

Submenu “Special function and soft start status”





OFF

OFF

Thread winding mode



The bobbin thread winder can be operated separately.
At the setting “ON” the sewing motor can be started independent of the step motors via pedal or key.

Input: ON / OFF

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Winding thread on to a bobbin:

With pedal

- Step pedal forwards (step 2).
  The sewing motor starts.
- Step pedal backwards.
  The sewing motor stops.

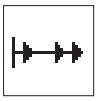
Via control panel BF3

- Press “**F**” key .
  The sewing motor starts.
- Press “**ESC**” key.
  The sewing motor stops.

With push button (optional)

- Press key 2.
  The sewing motor starts.
- Press key 1.
  The sewing motor stops.





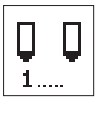
Soft start

Via this parameter the soft start can be switched on or off.

Input : ON/ OFF

Laser marking light (optional)

The menu item is only available if the laser light is activated in the configuration menu (compare chapter).



Laser light 1 ... 3

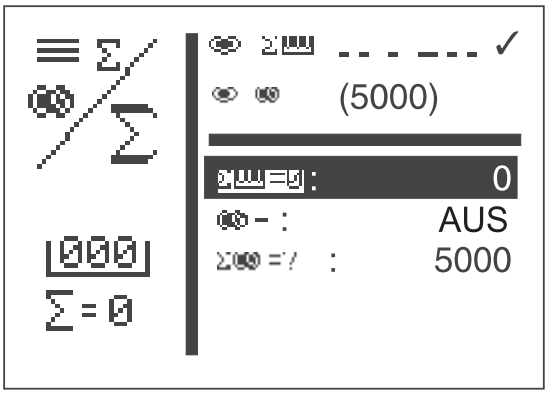
Switching on/off of the laser marking lights 1 to 3.

Input : ON/ OFF

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Submenu counter of daily number of pieces or counter of capacity





OFF

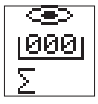
Alternative display of counter of daily number of pieces or counter of capacity.

Both counters work in parallel operation.
It can be selected which counter is displayed in the main menu.

- The counter of the daily number of pieces counts the number of the sewn sewing patterns
  Display: 0 ... 65000
- The bobbin thread counter works backwards.
  When the value “0" is reached and a sewing operation is started, a note is indicated.
  Display: 9999 ... 0

– Press key"**ESC** “.
  Back to the main menu.

If the counter of daily number of pieces is set, the following display appears:



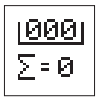
Display: counter of daily number of pieces in the sewing mode

Input:Select with key “**OK**”.



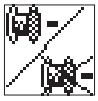
Display: counter of capacity in the sewing mode

Input:Select with key “**OK**”.



Reset counter of daily number of pieces

– Press key “**OK** ” twice.
  The piece counter is reset to “0".



Counter of capacity on/off

Input:ON/OFF



Initial value counter of capacity

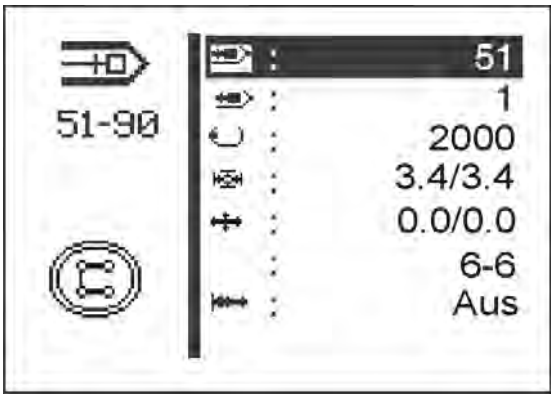
Input: 0 ... 9999

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8.5.2 Programming mode

Under this menu item the parameters for programming of sewing patterns are arranged.

With the help of the parameters shape, length, width, speed etc. of the sewing pattern are entered.



Off

– Switch on main switch.
  The control is initialized.
  The main menu appears.
– Press function key “**P**” on the main menu.
  The display changes over to the menu of the programming mode.
– Select desired parameter with the keys “⇧” or “⇩”.
  The symbol of the selected parameter is displayed white on black.
– Alter selected parameter as described in chapter 8.3.



Number of sewing pattern

Via this parameter the number of the sewing pattern to be created or altered is selected.

When preparing a new programme an asterisk (*) is indicated before the number.

Input: 51 ... 90

– Select desired sewing pattern programme with the keys “⇧” or “⇩”.
– Press key “**OK** ”.
  The program is activated.



Basic sewing pattern

Via this parameter a standard sewing pattern can be selected on the basis of which the new sewing pattern is to be created.

Input: 1 ... 50 or
  91 ... 99 if available



Sewing speed

Via this parameter the desired sewing speed can be adjusted.

Input: 0 ... 2700 [rpm]



Submenu buttonhole distances

Switch to this menu to change the sewing pattern distances in X-/Y-direction. (see page 25).

Display: present buttonhole distance in X-/Y-direction

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Submenu sewing pattern offset

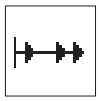
Select the present menu to shift the sewing pattern in X-/Y-direction.

Display:present X-/Y- offset value



Number of stitches and stitch distribution

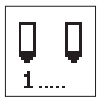
Only indication of needle throw distribution (for standard patterns) or of the complete number of stitches (for free contours).



Softstart

Via this parameter the soft start can be switched on or off.

Input : ON/ OFF



Laser light 1 ... 3 (optional)

The menu item is only available if the laser light is activated in the configuration menu.
Switching on/off of the laser marking lights 1 to 3.

Input: ON/ OFF

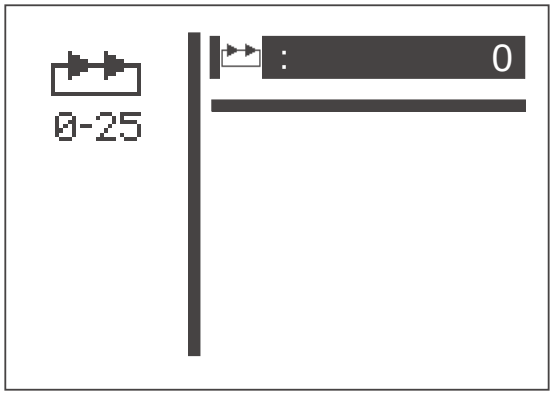
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8.5.3 Sewing pattern sequence

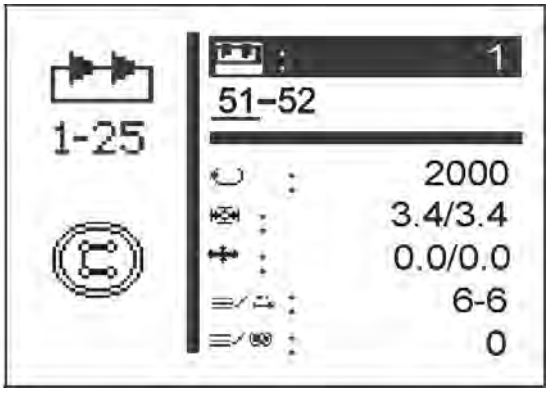
8.5.3.1 Switching the sequence programming mode on/off

Changeover from the sewing pattern operation to the sewing pattern sequence operation

– Actuate the function key “**S**” while the main menu is being displayed in order to skip to the sequence programming mode.



– Start the editing by actuating the “**OK**” key
– Select any sequence by using the “⇧“ key (1-25)
– Confirm the selection by actuating the “**OK**” key.
The sewing pattern sequence operation is switched on.
– Actuate the key “**ESC**” or the “⇦“ key.
The main menu for the sewing pattern sequence operation will be displayed.

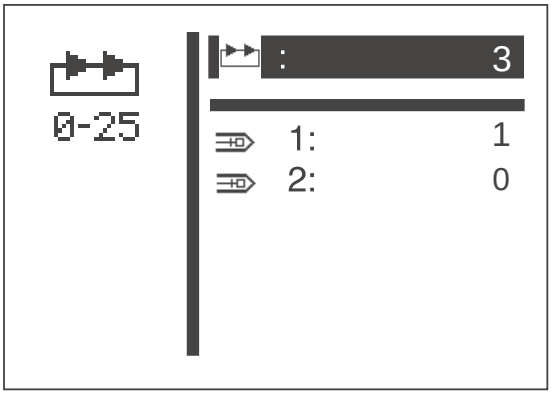


The menu items sequence number and sequence in the main menu will be described at the end of this section.

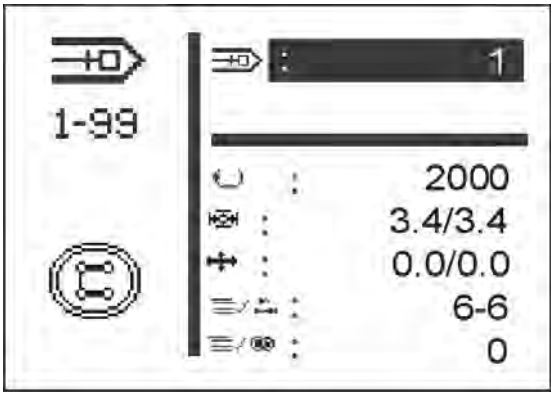
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Skipping from sewing pattern sequence operation to sewing pattern operation

– Actuate the function key “**S**” while the main menu is being displayed in order to skip to the sequence programming mode.

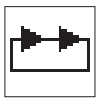


– Start the editing by actuating the “**OK**” key.
– Select the sequence number 0 by using the “⇩“ key.
– Confirm the selection with the “**OK**” key.
The sewing pattern sequence operation is switched off.
– Actuate the “**ESC**” key or the “⇦” key.
The main menu for the sewing pattern operation will be displayed.



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Menu items in the main menu of the sewing pattern sequence



Sequence

Selection of the sewing pattern sequence.

Input: 1 (2 ... 25, if available)

51 52

Sequence succession

Display of the sequence succession.

The current sewing pattern number is marked with a bar (underlined).
In case of more than five numbers the display is scrolled.

– Further sewing patterns right: 2 15 12 9 18 ..

Further sewing patterns left: .. 34 2 5 12 24

Further sewing patterns left and right: .. 52 25 12 39 ..

1

.. 34 2 5 12 24

Automatic operation

After the completion of a sewing pattern the control changes over to the next sewing pattern shape automatically.
After sewing of the last sewing pattern the control changes over to the first sewing pattern within the sequence again.
The current sewing pattern is marked by a bar below the number.
The shape of the selected sewing pattern is indicated on the left half of the display.

Manual operation

The control does not change between the sewing patterns automatically.

– Select the next sewing pattern with the keys “⇦” or “⇨”.
The shape of the selected sewing pattern is indicated on the left half of the display.

Change between automatic and manual operation

– Select the second menu line with the keys “⇧” or “⇩” (sequences) .
– Press key “**OK**”.
– Select the kind of operation with the keys “⇧” or “⇩”.
In case of automatic operation arrows are indicated between the sewing patterns.

2→15→6→7→ Automatic operation

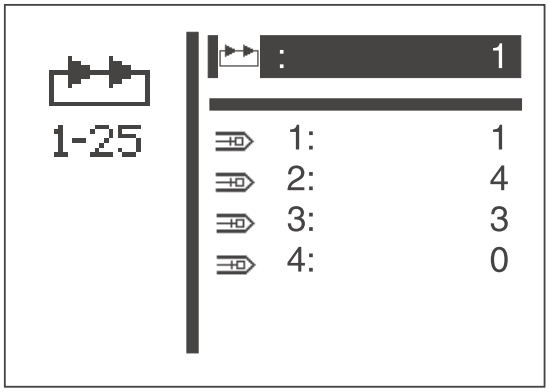
2 - 15 - 6 - 7 - Manual operation

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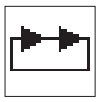
8.5.3.2 Sequence programming mode

In this menu item individual sewing patterns are combined to retrievable sewing pattern sequences.
Totally 25 independent sewing pattern sequences are available. Every sewing pattern sequence can be combined out of 20 sewing patterns in any order whatever.

In this menu, it is also possible to switch on the sewing pattern sequence operation.



– Switch on main switch..
  The control is initialized.
  The main menu appears.
– Press function key “**S**” in the main menu.
  The display changes over to the menu of the sequence programming mode.
– Select desired menu item with the keys “⇧” or “⇩”.
  The menu line is displayed white on black.
– Press key “**ESC**” or key “⇩”.
  Back to the main menu.



Sequence number

Selection of the sequence to be created or to be altered.
When preparing a new programme, an asterisk (*) is indicated before the number.

Input: 1 ... 25

– Select desired sequence number with the keys “⇧” or “⇩”.
  The sequence number is displayed white on black.
– Press key “**OK**”.
  The program is activated.



Sewing pattern number (1 .. 20)

Via this menu item the sewing pattern number to be taken up in the current sequence is selected.

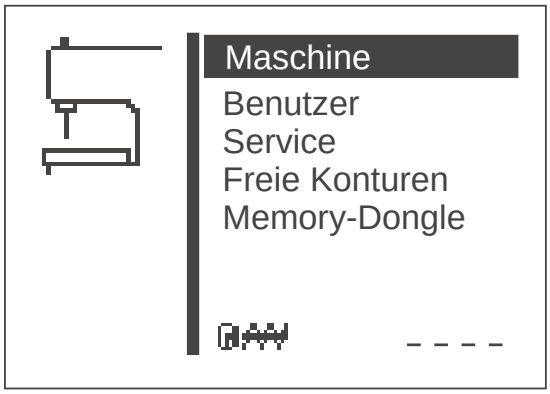
Input: 1 ... 51 (52 - 99 if available)

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8.5.4 Technician mode

In the technician mode the following menus are included:

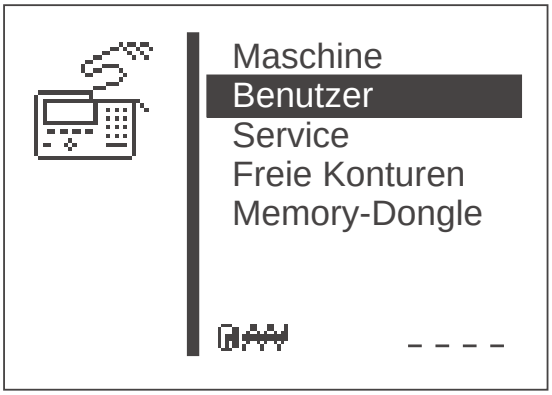
Machine configurations



machine config
user config.
service functions
free contours
memory dongle

In this menu machine-specific adjustments are made.

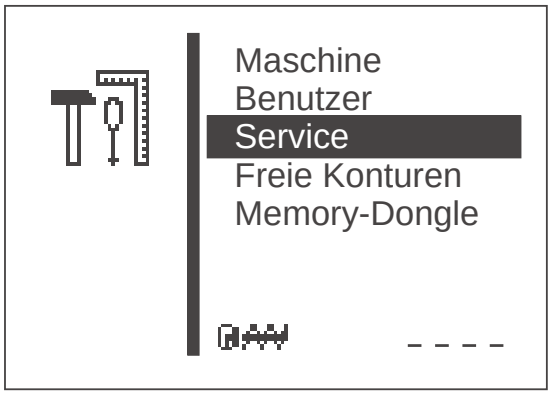
User configurations



machine config
operat.config.
service functions
free contours
memory dongle

In this menu operation-specific adjustments are made.

Service functions

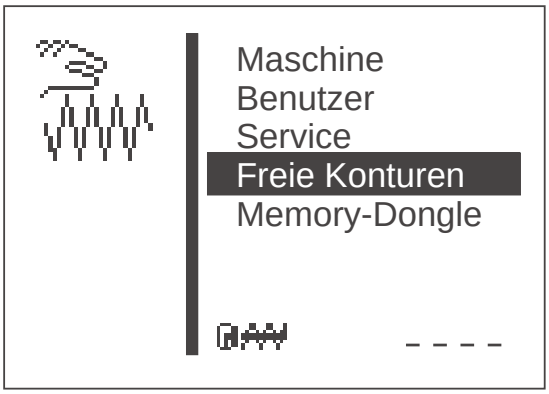


machine config
operat.config.
service functions
free contours
memory dongle

The service functions allow a quick verification of all hardware components.

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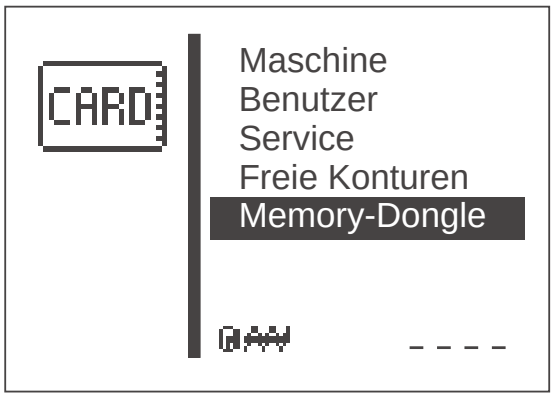
Free contours



machine config
user config.
service functions
free contours
memory dongle

With the automat for button sewing 530 up to nine freely defined seam contours can be created and sewn. The coordinates are entered directly at the control panel.

Memory dongle



machine config
user config
service functions
free contours
memory dongle

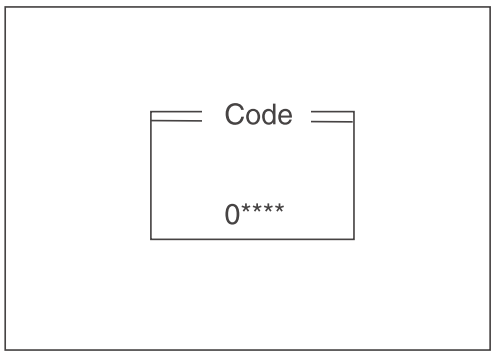
With the help of the memory dongle, data can be transferred from the machine to the dongle or vice versa.

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Recall technician mode

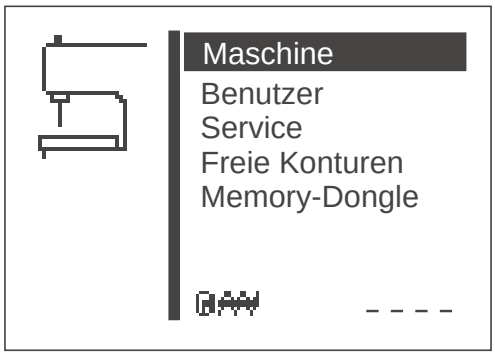
– Switch on main switch.
The control is initialized.
The main menu appears.

– Press function key “**F**” in the main menu.
The screen for the code entry appears.



– Enter code number “25483".
After input of the correct code number the display changes over to the menu ”Technician mode”.

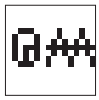
– Confirm with key “**OK**”.
The following menu appears:



machine config
user config
service
free contours
memory dongle

– Select desired submenu with the keys “⇧” or “⇩”.

– Switch into the selected submenu with the key “**OK**”.

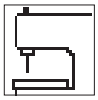


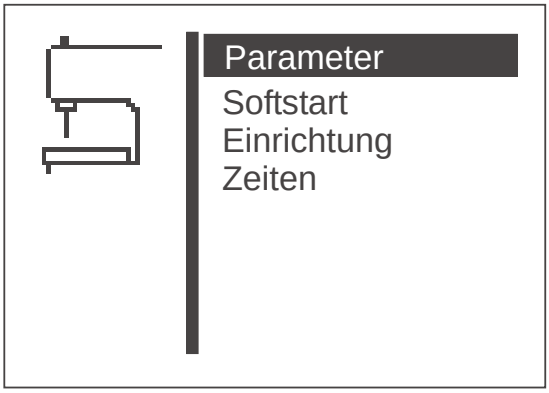
Cycle time

Indication of the cycle time of the sewing pattern sewn last.
(time from sewing start to sewing end)

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8.5.4.1 Machine configuration





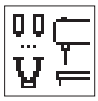
parameter
soft start
sewing equipment
times



Parameter
In this submenu different machine parameters can be set.



Soft start
In this submenu the driving speeds for the soft start slope can be set.



Equipment
In this submenu the settings for the sewing equipment and optional units can be actuated.



Times
In this submenu different timings can be set.

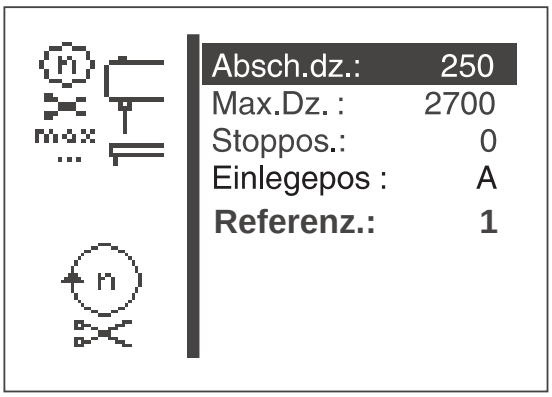


Machine cycles
The total number of the sewn cycles is displayed.

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Submenu machine parameters



cut.rpm
max.rpm
stop pos.
feeding position

– Select desired parameter with the keys “⇧” or “⇩”.
The symbol of the selected parameter / submenu is displayed white on black.
– Start selected parameter with the key “**OK**” or change into the submenu.



Cutting speed

Input of the sewing motor speed in the last three stitches.

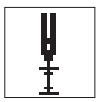
Input: 200 ... 300 [rpm]



Maximum sewing speed

Input of the maximum adjustable sewing speed

Input: 200 ... 2700 [rpm]

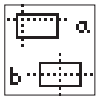


Stop position

With the stop position the positioning of the sewing motor / needle bar can be altered.

Input: 0 = thread lever stands in upper dead center (needle bar is lower)

-15 = thread lever stands 15° before upper dead center (needle bar is higher)



Feeding position

Selection of the material feeding position.

Input:

A = Seam beginning point

B = Machine neutral point

2 – 8 = Shifting forward the feeding position (in mm), in order to open the button thrust lever for the shank button clamp.

Note

According to the feeding position the following advantages / disadvantages arise:

Feeding point A = shorter cycle time

Feeding point B = easier feeding of large sewing patterns, longer cycle time

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Referencing

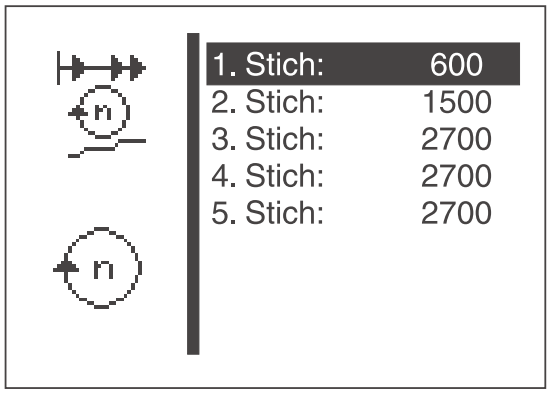
In this menu point the referencing mode of the step motor after the sewing process can be configurated.

Input: 0 = no referencing
1 = referencing each time
2 – 10 = referencing after each 2nd to 10th sewing process



Soft start

In this submenu speed adjustments for the soft start can be made.



Speed first stitch

Input of the speed in the first stitch.

Input: 400 ... 900 [rpm]

Speed second stitch

Input of the speed in the second stitch.

Input: 400 ... 2700 [rpm]

Speed third stitch

Input of the speed in the third stitch.

Input: 400 ... 2700 [rpm]

Speed fourth stitch

Input of the speed in the fourth stitch.

Input: 400 ... 2700 [rpm]

Speed fifth stitch

Input of the speed in the fifth stitch.

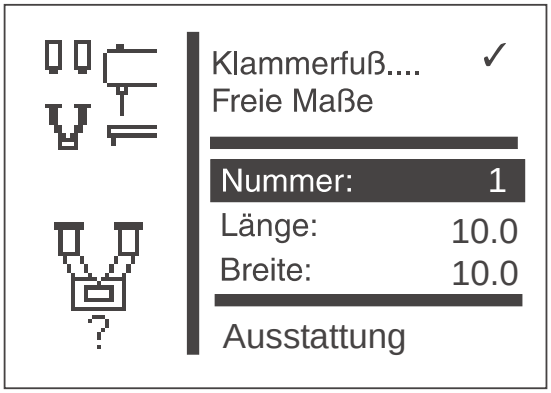
Input: 400 ... 2700 [rpm]

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Sewing equipment

In this submenu adjustments for the sewing equipment can be made.



Note

The entry of the clamping foot number serves for the automatic verification, whether the sewing pattern to be currently sewn is positioned within the inner frame of the clamp.

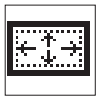
If no clamping feet values are predefined, free dimensions can be defined.



Clamping foot

Selection of a specified clamping foot as equipment.

Input: Alternative



Free dimensions

Selection of a clamping foot with free sewing field.

Input: Alternative



Number

Selection of a DA clamping foot number.

Input: 1

Clamping foot number	Inner frame of clamp Dimensions X x Y (mm)	Description
1	10 x 10	Button clamp



Due to the technical circumstances and a safety margin, the sewing field is smaller than the inner frame of the clamp.

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Length

Input of a freely selectable sewing field.
Input only possible in case “free clamp dimension” had been selected. Otherwise the length / width of the selected clamp is indicated (cannot be modified).

Input: 0.5 ... 20.0



Width

Input of a freely selectable sewing field.
Input only possible in case “free clamp dimension” had been selected. Otherwise the length / width of the selected clamp is indicated (cannot be modified).

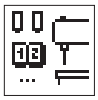
Input: 0.5 ... 40.0



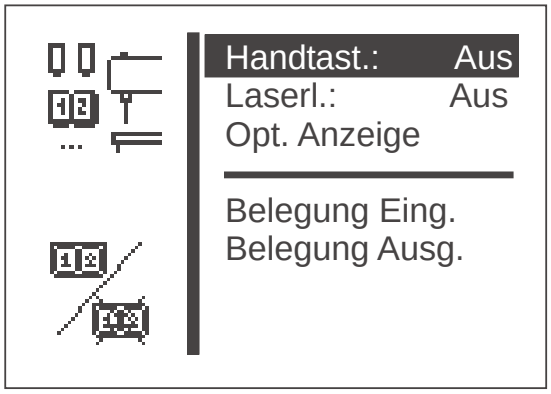
Configuration

Via this submenu the optional units can be activated.

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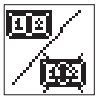
Submenu Configuration



hand switch:off
laser light: off
opt. sign.

assignment input
assignment output

Hand switch



Activating of optional hand switches. When the option is switched on, a menu item in order to select the operation mode will appear in the menu “User configuration”.

Input:ON/OFF

Laser lights



Activating the 3 optional laser lights.

Input:ON/OFF

Optical signalling



Via this submenu an indication of error and event messages and of the message “hook thread is zero” can be configurated and activated via two 24V-outputs.

Optical signalling



Activating of the indication. Beforehand outputs 1 and 2 must be configurated, otherwise this menu item cannot be selected.

Input: ON/OFF

Output 1



Selection of the output for error and event messages.

Input: 1 ...8 (if 24V-outputs are vacant)

Output 2



Selection of the output for the message “hook thread is zero”

Input: 1 ...8 (if 24V-outputs are vacant)

Assignment of the inputs



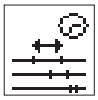
This menu item gives on overall view of the assignment of the inputs with (optional) units.

Assignment of the 24V-outputs

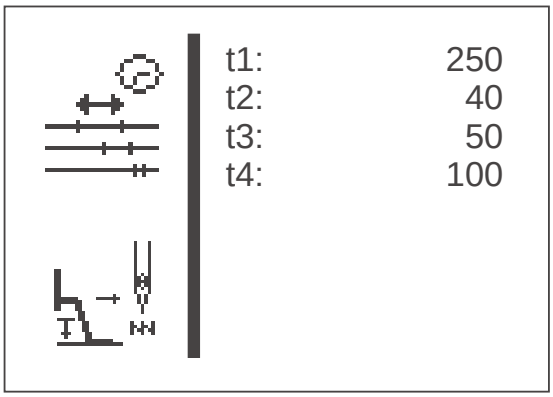


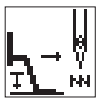
This menu item gives an overall view of the assignment of the 24V-outputs with optional units.

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Submenu Times





Delay between pedal level 1 (lowering the clamping foot) and sewing start (t1)

Time only relevant with quick start via pedal or hand switch (optional).

Input: 50 ...300 ms
Preset value: 150 ms

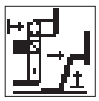


Turn-on delay for the thread wiper magnet (t2)

This menu item will only be displayed if the option “electric thread wiper” is activated in the menu “equipment”.

Input: 30 ...100 ms

Preset value: 40 ms



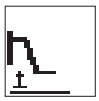
Delay thread wiper magnet off — clamping foot magnet on (t3)

The delay between the switching off of the thread wiper magnet and the switching on of the clamping foot magnet.

This menu item will only be displayed if the option “electric thread wiper” is activated in the menu “equipment”.

Input: 0 ...300 ms

Preset value: 50 ms



Delay between clamping foot magnet on — reference run (t4)

The delay between the switching on of the clamping foot magnet and the referencing of the step motors.

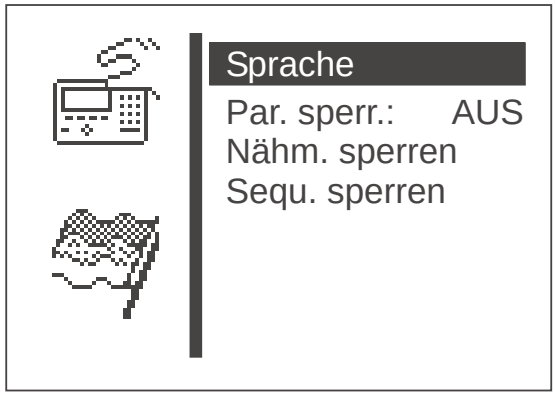
Input: 0 ...300 ms

Preset value: 70 ms

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8.5.4.2 User configuration

In this menu operation-specific adjustments are made.



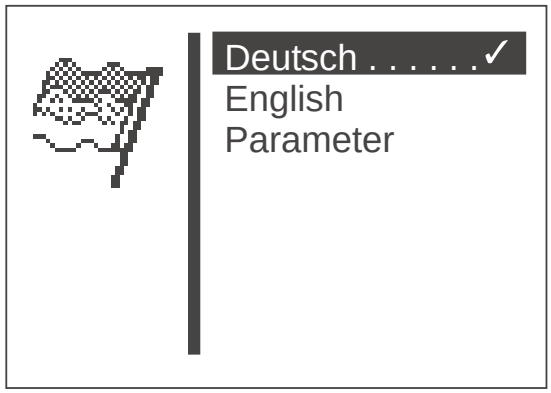
language
sewing mode
manual keys
param.mod
forced st
pattern locking
sequence locking

– Select desired parameter/ submenu with the keys “⇧” or “⇩”. The selected parameter/ submenu is displayed white on black.
– Start selected parameter with the key “**OK**” or change into the submenu.



Language

In this submenu the language can be chosen.



German

Selection of the German language for the technician level.

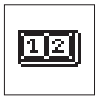
English

Selection of the English language for the technician level.

Parameter

Selection of the numbering of menu items for the technicial level (see chapter 13).

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Operating mode push button (optional)

Selection of the push button mode.
This menu item is only available if the “hand switch” option in the menu configuration is switched on.

Input: A = Normal
B = Quick start

In the push button mode “NORMAL” the keys have the following functions:

Key 1:Lifting and lowering of the clamping foot.
Interruption of the sewing operation.
Sewing operation stopped after interruption.

Key 2:Sewing start when clamping foot is lowered.
Interruption of the sewing operation.
Sewing operation continued after interruption.

In the push button mode “QUICK START” the keys have the following functions:

Key 1:Lifting and lowering of the clamping foot.
Interruption of the sewing operation.
Sewing operations stopped after interruption.

Key 2:Sewing start.
If clamping foot is ***not*** lowered, it will be lowered.
Interruption of the sewing operation.
Sewing operation continued after interruption.



Parameter locking

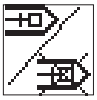
Switching on / off of the parameter alteration in the sewing and programming mode.

Input: ON / OFF

Note

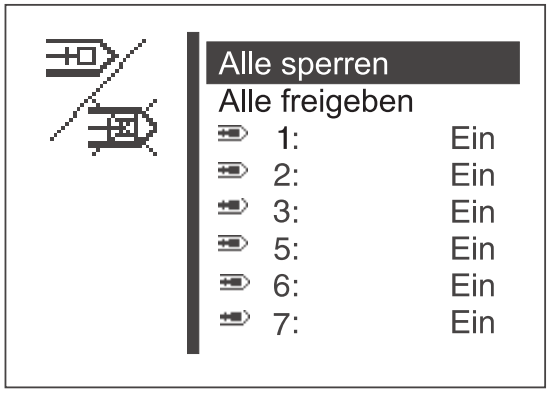
If the parameter locking is switched on, any alteration of parameters in the sewing and programming mode is no longer possible.

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Lock sewing pattern

In this submenu individual sewing patterns can be released or locked for selection in the sewing mode.



lock all
unlock all
on
on
on
on
on
on

In general the following restrictions apply:

1. Sewing pattern operation

- The sewing pattern currently selected in the sewing mode cannot be locked.
- In the sewing mode, locked sewing patterns cannot be chosen from the selection list.
  Locked sewing patterns are marked with “#”.

2. Sewing pattern sequence operation

- A locked sewing pattern can be selected in a sequence. However, when starting the sewing process (lowering of the clamping foot) an error message appears. The sewing process cannot be started.
- The last sewing pattern selected in the sewing pattern operation cannot be locked.

Lock all

All sewing patterns with the restrictions specified above will be locked.
The status of the displayed sewing pattern number switches to “OFF”.

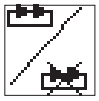
Unlock all

All sewing patterns will be released.
The status of the displayed sewing pattern number switches to “ON”.

Lock/unlock individual sewing pattern

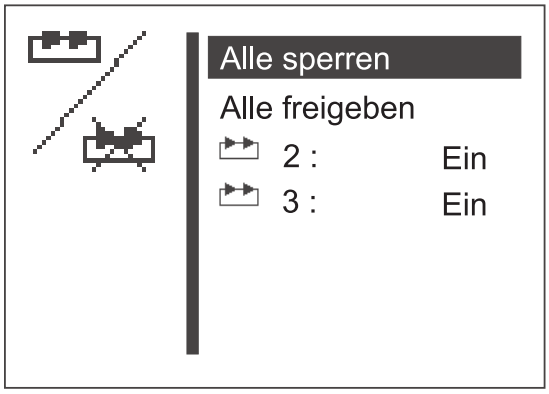
Input: ON / OFF

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Lock sequences

In this submenu individual sequences can be released or locked for selection in the sewing mode.



lock all
unlock all

on
on

In general the following restrictions apply:

1. Sewing pattern operation

- The last sequence selected in the sequence operation cannot be locked.

2. Sewing pattern sequence operation

- The sequence currently selected in the sewing mode cannot be locked.
- In the sewing mode locked sequences cannot be chosen from the selection list.
  Locked sequences are marked with “#”.

Lock all

All sewing sequences with the restrictions specified above will be locked.

The status of the displayed sewing sequence number switches to “OFF”.

Unlock all

All sewing sequences will be released.
The status of the displayed sewing sequence number switches to “ON”.

Lock/unlock individual sewing sequence

Input: ON / OFF

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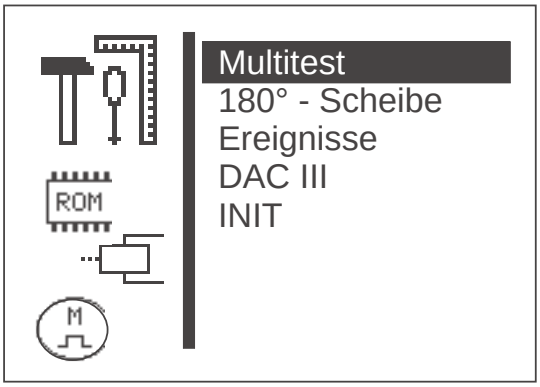
8.5.4.3 Service functions

The service functions allow the quick verification of all hardware components.

Note

The service menu can also be reached directly when switching on the machine (see chapter 8.2.1).

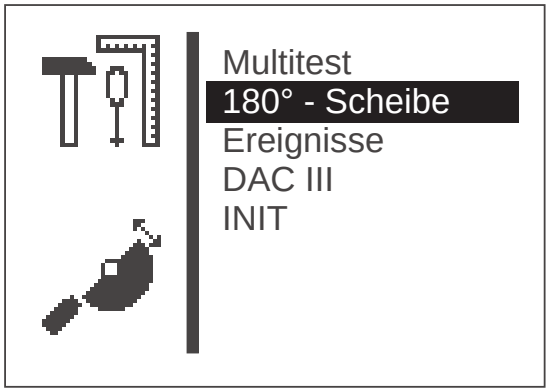
Multitest



multitest
180°-disc
events

In the menu “Multitest” all hardware components can be checked.

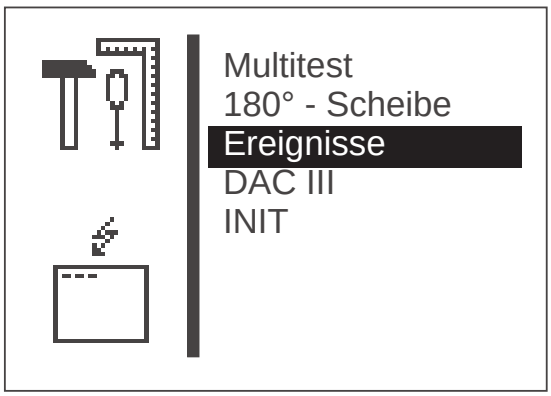
180° disc



multitest
180°-disc
events

This menu item offers a function for the correct adjustment of the reference position of the sewing motor (180° disc) - see service instructions.

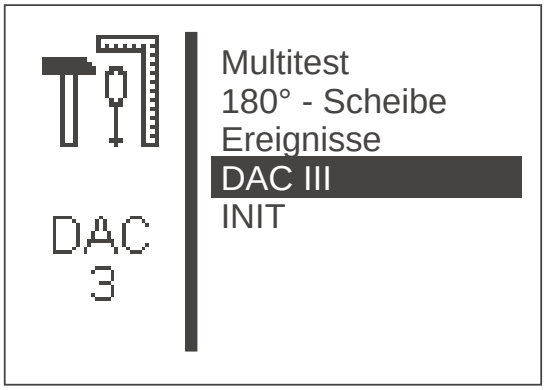
Events



multitest
180°-disc
events

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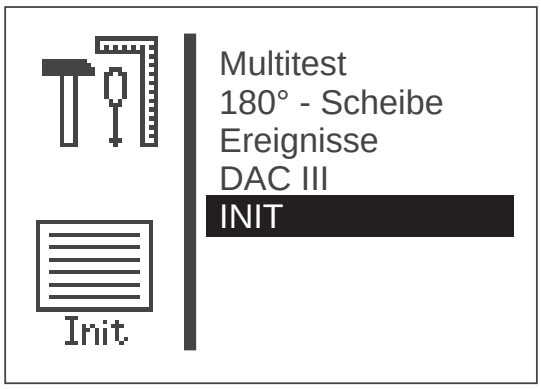
DAC III



multitest
180°-disc
events
DAC III
INIT

In this menu are indicated the different parameters of the control unit.

Initialization



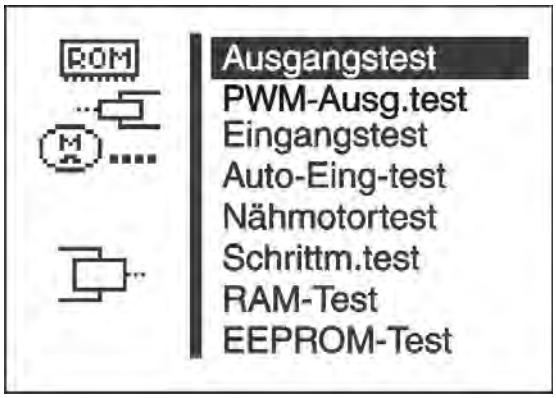
multitest
180°-disc
events
DAC III
INIT

Via this menu the event memory buffer and the permanent data can be reset to the factory setting.

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Multitest

Selection of the submenu of Multitest



output test
PWM-output test
input test
auto input tst
motor test
step.motor tst
RAM test
EEPROM test

Caution: Danger of injury !

Do not reach into the running machine during the function test of the output elements.

Danger of Breakage!

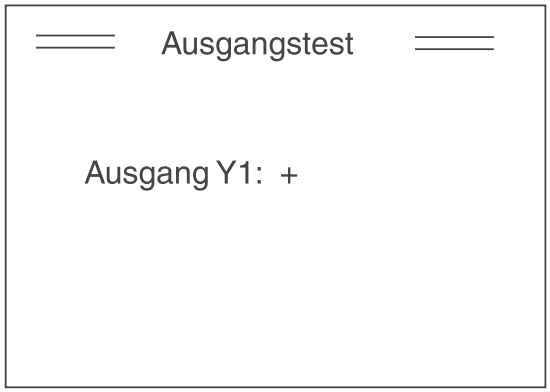
Check before the testing of single output elements, whether the machine mouvements can cause collisions.

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Output test

With this test function the function of the output elements is checked.

- Start the test function with the “**OK**” key.
- Select desired output element with the keys “⇧” or “⇩”.
- Switch desired output element on and off with the key “**OK**”.



output test

output

- Press function key “**ESC**” for leaving the test function.

Caution: Danger of injury !

Do not reach into the running machine during the function test of the output elements.

Output element	Function
Y 1	Laser marking lamp 1, if the option is activated
Y 2	Laser marking lamp 2, if the option is activated
Y 3	Laser marking lamp 3, if the option is activated
Y 4	Depending on the activated option and the output configuration
Y 5	Depending on the activated option and the output configuration
Y 6	Depending on the activated option and the output configuration
Y 7	Depending on the activated option and the output configuration
Y 8	Depending on the activated option and the output configuration

The recent configuration of the outputs is indicated in the submenu “Output configuration” of the menu Configuration.

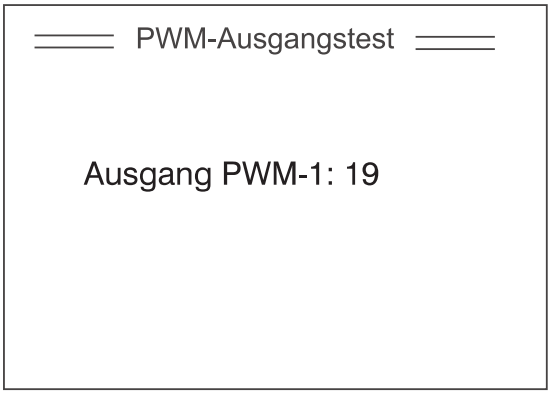
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PWM Output test

This test function checks the function of the magnets.

- Start the test function by pressing the “**OK**” key.
- Select the desired output element by pressing the keys “⇧” or “⇩”.
- Switch the selected output element on and off by pressing the “**OK**” key.



PWM output test

output

- The issued value for the selected output element is displayed. The value specifies the impulse rate for the controlling of the output element.
- Press function key “**ESC**” to quit the test function.



Caution: Danger of injury !

Do not reach into the running machine during the function test of the output elements.

Output element	Function
PWM 1	Clamp foot magnet
PWM 2	Trimmer magnet
PWM 3	Thread wiper magnet

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Input test

With this test function the input element to be tested is selected.

ATTENTION !

The input elements have been carefully adjusted in the factory.
Adjusting and correcting must only be done by trained service staff.

– Start the test function with the “**OK**” key .
– Select desired input element with the keys “⇧” or “⇩”.
The The switching status of the input element is indicated.



input test

input

– Press function key “**ESC**” for leaving the test function.
The menu Multitest is indicated.

Input element	Function
S 1	Pedal 1
S 2	Pedal 2
S 3	Pedal 3
S 4	Pedal 4
S 5	Hand switch key 1, if the option is activated
S 6	Hand switch key 2, if the option is activated
S 7	Depending on the activated option and the input configuration
S 8	Query clamping foot
N-Ref.	Sewing motor reference switch
X-Ref.	X-reference switch
Y-Ref.	Y-reference switch

The recent configuration of the inputs is indicated in the submenu “Input configuration” of the menu Configuration.

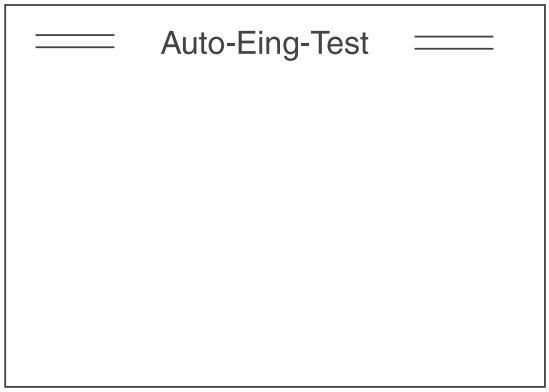
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Auto-Input test

With this test function the function of the input elements is checked.

– Start test function with the “**OK**” key.
– Actuate desired input element.
The switch status and the number of the actuated input element are indicated.



auto-input test

– Press the function key “**ESC**” for leaving the test function.
The menu Multitest is indicated.

Input element	Function
S 1	Pedal 1
S 2	Pedal 2
S 3	Pedal 3
S 4	Pedal 4
S 5	Hand switch key 1, if the option is activated
S 6	Hand switch key 2, if the option is activated
S 7	Depending on the activated option and the input configuration
S 8	Query clamping foot
N-Ref.	Sewing motor reference switch
X-Ref.	X-reference switch
Y-Ref.	Y-reference switch

The recent configuration of the inputs is indicated in the submenu “Input configuration” of the menu Configuration.

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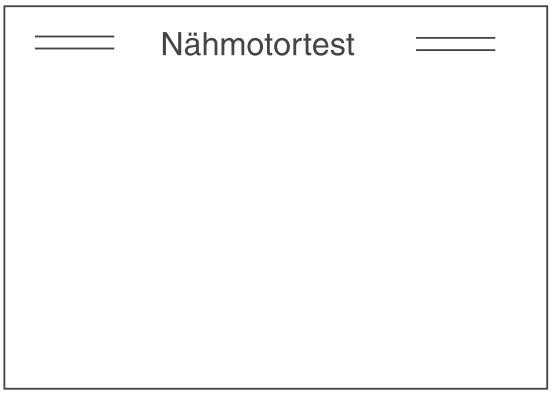


Sewing motor test

With this test function the sewing motor can be checked.

– Start test function with the “**OK**” key.

– Start motor with the key “⇧”.
– Alter speed with the keys “⇧” or “⇩”.
The speed is indicated.



– Press function key “**ESC**”.
The test is finished, the motor stops.
The sewing motor control makes a reference run and the clamping foot is lifted.
The menu Multitest appears on the display.

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Step motor test

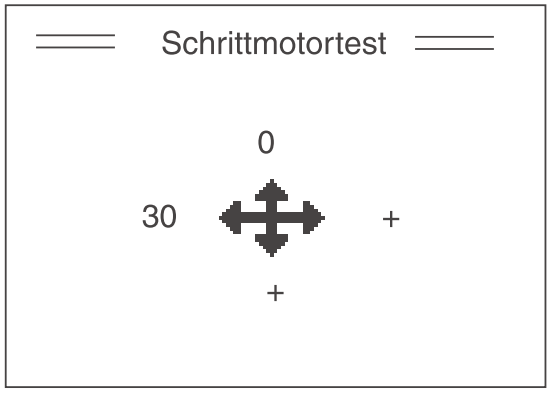
With this test function the step motors and the pertaining reference switches can be checked.



ATTENTION ! Risk of breakage !

Before the test: Move needle in position “up” by handwheel.

– Start test function with the key “**OK**”.
– Check transverse motion of the step motor (X-axis).
  Move step motor with the keys “⇦” or “⇨”.
  The number of steps done is indicated on the left of the arrow.
  The status of the reference switch changes around the reference position.
– Check longitudinal motion of the step motor (Y-axis).
  Move step motor with the keys “⇧” or “⇩”.
  The number of steps done is indicated above the arrow.
  The status of the reference switch changes around the reference position.

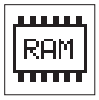


step.motor tst

– Press function key “**ESC**”.
  The test is finished.
  The menu Multitest appears on the display.

1

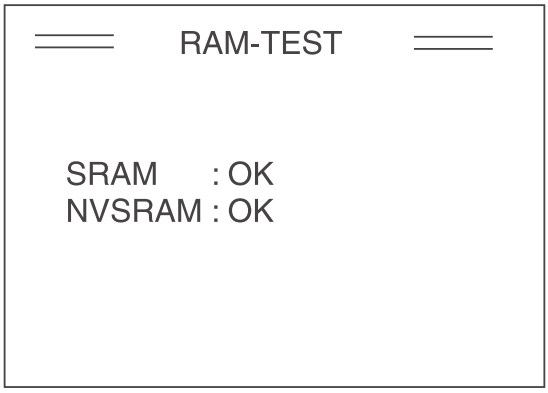
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RAM test

With this test function the main memory (SRAM and program data memory) is checked.

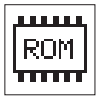
– Start test function with the “**OK**” key .
The display shows the test result.



Display	Explanation
SRAM OK	Main memory works perfectly
SRAM ERROR	Error in the main memory
NV-RAM OK	Program data memory is in order
NV-RAM ERROR	Error in the program data memory

– Press function key “**ESC**”.
The test is finished.
The menu Multitest appears on the display.

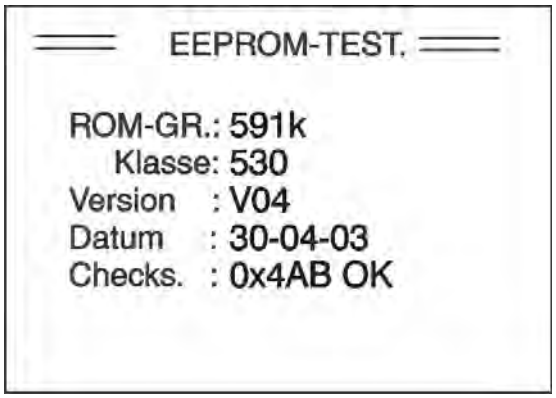
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EEPROM test

This test function checks the read memory (ROM) of the micro-processor.

– Start test function with the key “**OK**”.
  The display shows the following test results:
  - ROM-size
  - Machine class
  - Software version
  - Software date
  - Check sum and status



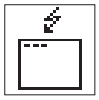
ROM size
class
version
date
check sum

Hint:

The data will vary depending on the software version.

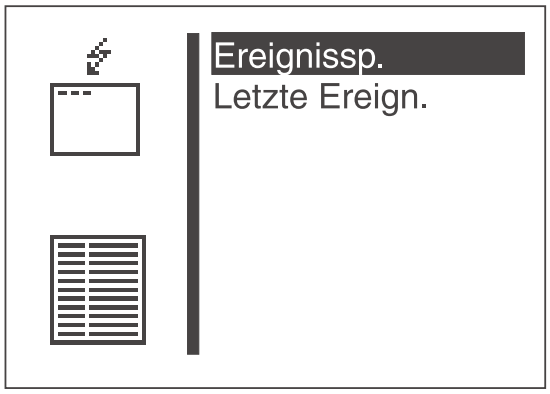
– Press function key “**ESC**”.
  The test is finished.
  The menu Multitest appears on the display.

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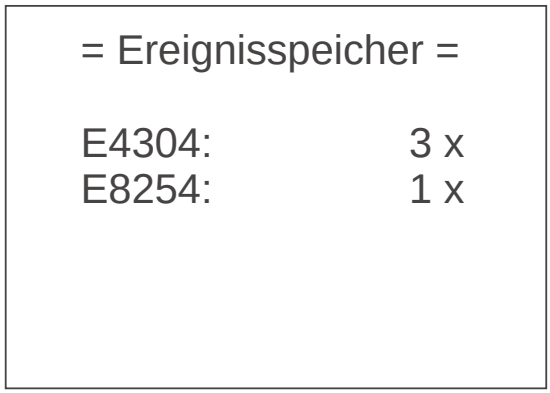
Events

In case of failure the menu can give important hints regarding the cause of the malfunction.



event memory
latest events

Event memory

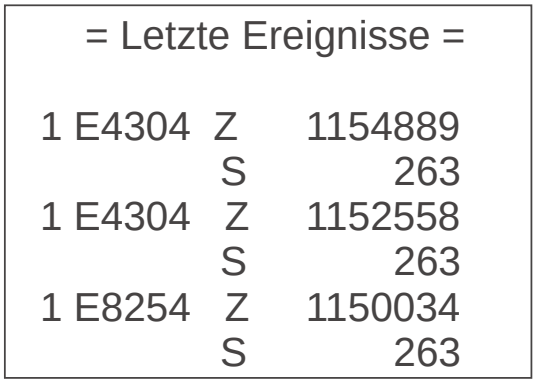


(example)

In this menu item all events that occurred are indicated.

– Exit the menu item by actuating the “ESC” key.
– Continued display by actuating the “⇩” key.

Latest events



(example)

In this menu item the events that occurred last are indicated:

Z = milli-seconds after the switching on of the machine

S = machine piece counter

E = Event/Error number

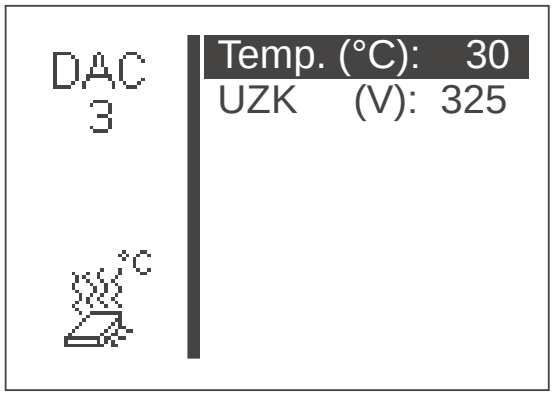
– Exit the menu item by actuating the “ESC” key.
– Continued display by actuating the “⇩” key.

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DAC III

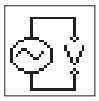
Selection of the submenu for the display of the DAC III parameters.





Temperature

Here the current inside temperature of the control unit is indicated in °C. It should be below 80 ° C.
When the temperature of 80°C is exceeded, the error message 3107 will appear.



Intermediate circuit voltage sewing motor (UZK)

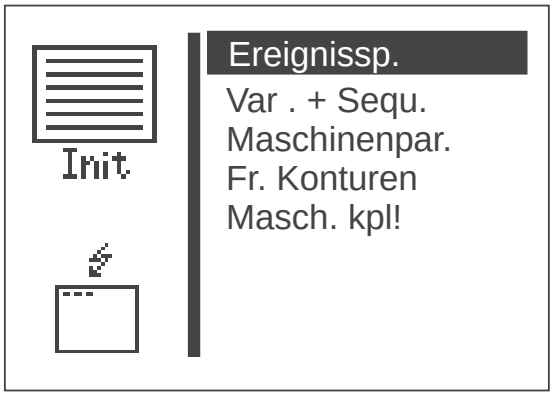
Here the current intermediate circuit voltage for the sewing motor one-level is indicated.

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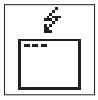


Initialization (Init)

The selection of the submenu for the initialization of the event memory and the permanent data.

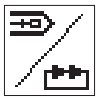


event memory
variants + sequences
machine parameters
free contours
machine complete



Event memory

Via this menu item the event memory can be reset to zero.



Sewing pattern programs (variants) and sequences

Via this menu item sewing pattern programs and sequences can be deleted.



Machine parameters

Via this menu item machine parameters, soft start driving speeds, timings, user configuration, hook thread counter data and options to factory settings can be reset.



Free seam contours

Via this menu item all free seam contours can be reset (deleted).

Note

Through resetting it may occur that sewing pattern programs and sequences are eventually deleted and numbers of subsequent programs and sequences may be altered.



Machine complete

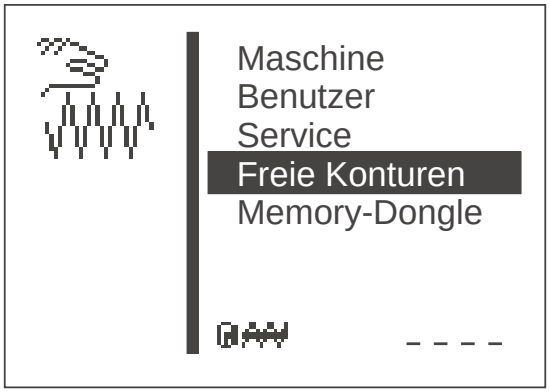
Via this menu item all permanent data can be reset. After resetting the machine will automatically be restarted.

Note

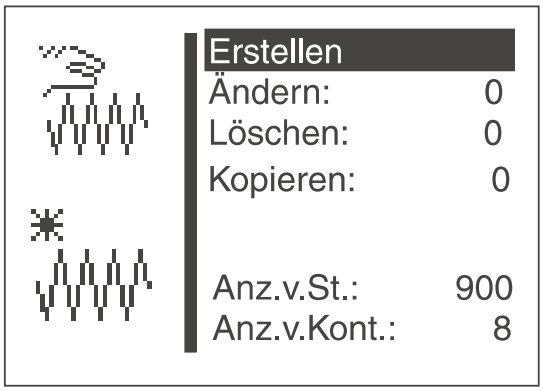
After the restart of the machine, a new selection of the clamp numbers and the equipment must be carried out (compare installation instruction, chapter 9).

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8.5.4.4 Free contours



With the button sewing automat 530 up to nine freely defined seam contours can be created and sewn. The entry of the coordinates is done at the control panel.



design
edit
clear
copy

no.st.av.
no.pat.av.



Creating

Via this menu item a new seam contour can be created.

Note

The number of the seam contour is issued automatically.



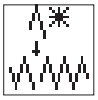
Altering

After selection of the seam contour to be altered you get into the submenu for altering the seam contour.



Deleting

Via this menu item a selected seam contour can be deleted.



Copying

Any basic sewing pattern number or free seam contour whatever can be copied and altered. After selection of the sewing pattern number you get into the submenu “Alter seam contour”.

– Select desired sewing pattern with the keys “⇧” or “⇩”.
– Choose selected sewing pattern with the key “**OK**”.

Number of available stitches:

The number of the stitches still available is indicated (max. 5000)

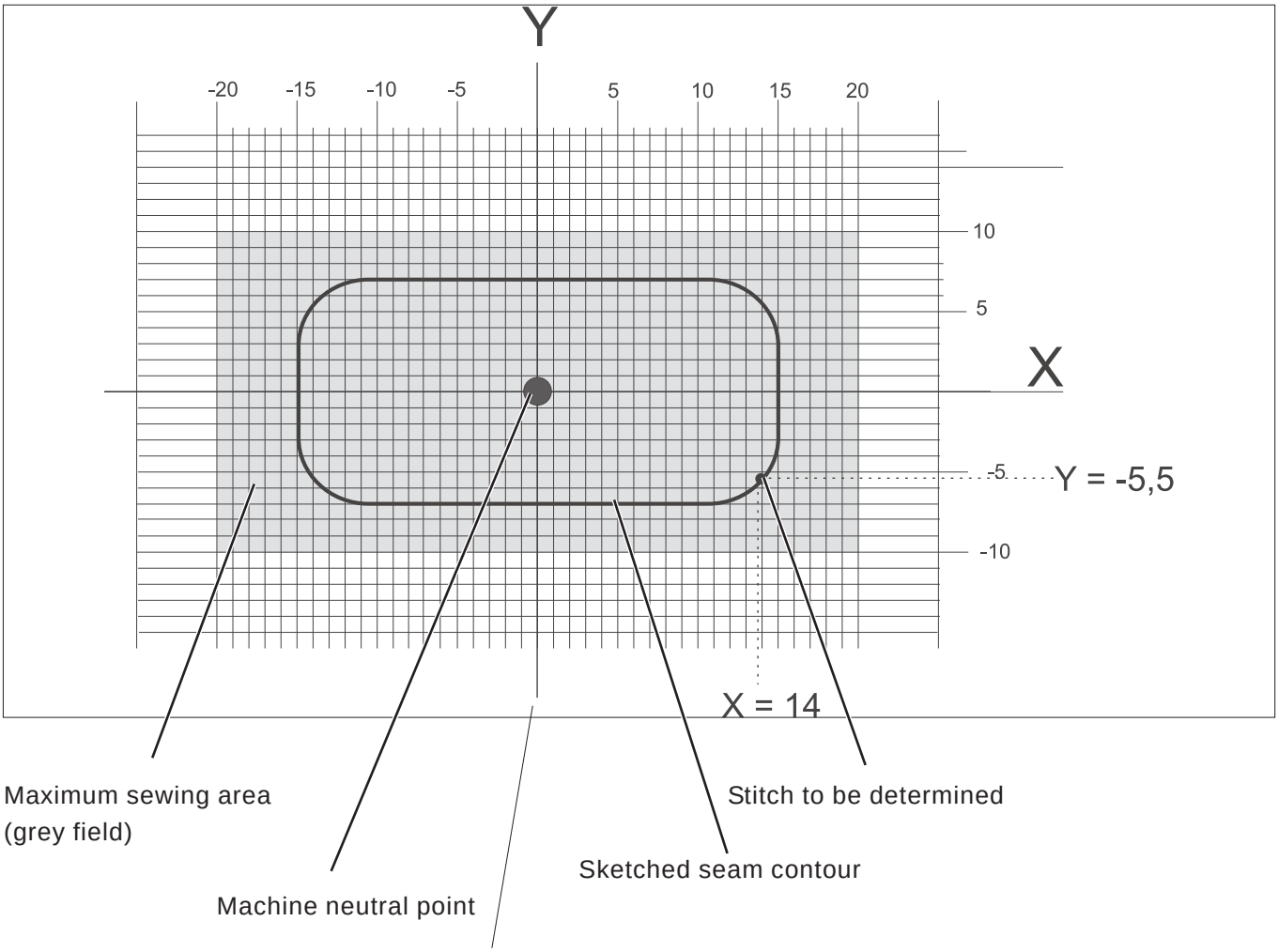
Number of available contours:

The number of the contours still available is indicated (max. 9)

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Determining the contour coordinates

When creating a seam contour every individual stitch has to be entered in the control indicating its position in the coordinate system (X- and Y-axis). Therefore the individual coordinate points have to be determined before. This can be done with the help of millimeter graph paper.



Note

The seam contour should be laid out in such a way that the machine neutral point is in the middle of the contour, if possible.

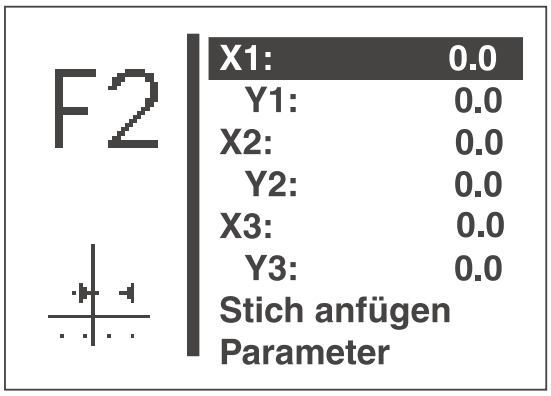
- Sketch the maximum sewing field size on the millimeter graph paper (X = max. 40 mm, Y = max. 20 mm).
- Draw coordinate system in the centre of the sewing field.
- Draw in seam contour.
- Determine the X- and Y-coordinates for every desired stitch.
- Enter X- and Y-coordinates in the control (see next page).

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Create contour

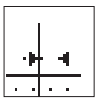
In this menu the X- and Y-coordinates are entered for every individual stitch.



append stitch
parameter/end

Note:

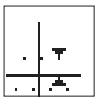
In order to enter stitch operations (f. e. intermediate trimming), first finish the contour creating (entering of coordinates) and then insert the stitch operation in the menu change contour by editing.



X1:

Input of the X-coordinate for stitch 1

Input: -20.0 ... +20.0



Y1:

Input of the Y-coordinate for stitch 1

Input: -10.0 ...+10.0

Note:

The value X1 can be altered according to chapter 8.3.1.
Select the menu item Y1 with key "⇩" after confirmation of the value for X1 with key "**OK**".
The values for Y1, X2, Y2, X3 and Y3 can be altered as described for the value X1.
Select menu item "**Add stitch**" with key "⇩" after confirmation of the input of Y3 with key "**OK**".
After selection of this line with key "**OK**" the next coordinates Xn+1 and Yn+1 (here: X4 and Y4) are given in the two upper menu lines. The selection bar changes to the line Xn+1 (here: X4) automatically. The values Xn+1 and Yn+1 can be altered as described above when required. This procedure can be repeated until the stitch coordinates are completely entered.
When the input of coordinates is finished, the line "**Exit**" has to be selected in the submenu "**Parameter/End**". Then the menu "**Free contours**" appears again.



Append stitch

Function for appending a stitch.

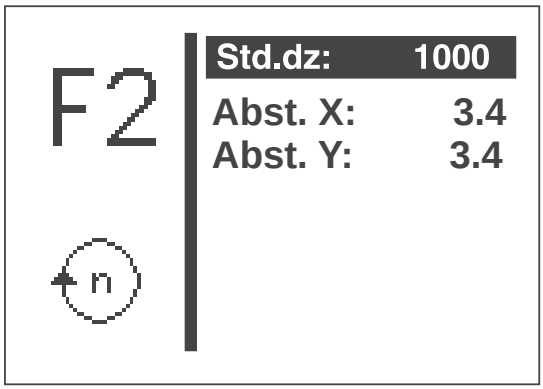
The coordinates for the first three stitches (here: X1/Y1, X2/Y2 and X3/Y3) are shifted upwards and the display shows Xn+1/Yn+1 (here: X4/Y4).

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Submenu parameter

Selection of the submenu for entering the contour parameters



std. rpm
dist. x
dist. y



Standard rpm:

Standard speed

Input: 100 ... 2700 rpm



Distance X:

Hole distance in X-direction

Input: 0 ... 40.0 mm



Distance Y:

Hole distance in Y-direction

Input: 0 ... 20.0 mm



Preset value = outer stitches in X- and Y- direction

The value must be changed to match the hole distance of the button (as regard to the correct scaling in the main menu).



If the free seam contour from the main screen is selected and one of the distance X/Y or both is changed, the value of the length or the width must be changed correspondingly in the main menu.

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Change contour



stitch coordin
rem.st.
ins.st.
append stitch
parameters

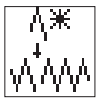
no.stitch
no.st.av.



Stitch coordinates
Selection of the submenu for altering the stitch coordinates.



Delete stitch:
Delete stitch.
Input: Stitch number to be deleted



Add stitch:
Add stitch.
Input: Stitch number before which a stitch is to be added.
The submenu for altering the stitch coordinate appears.



Add stitch (at the end)
The submenu for altering the stitch coordinate appears.

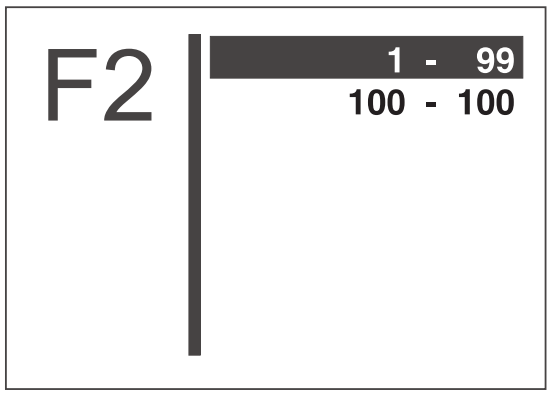


Parameter
Selection of the submenu for altering the contour parameters.



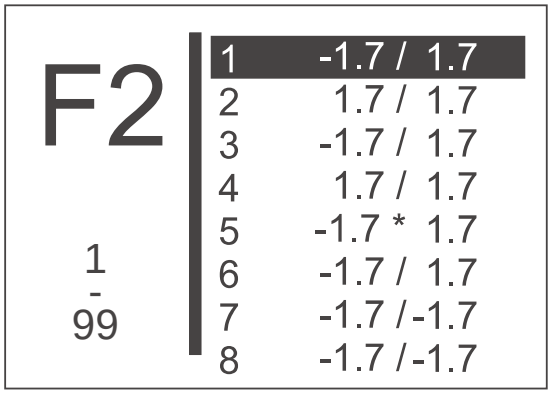
Submenu stitch coordinates

If the contour to be altered has less than 99 stitches, the submenu appears immediately.
If the contour to be altered has more than 99 stitches, the following menu appears first:



– Select desired range of stitches with the keys “⇧” or “⇩”.
– Select range of stitches with the key “**OK**”.
The submenu “**Stitch coordinates**” appears.

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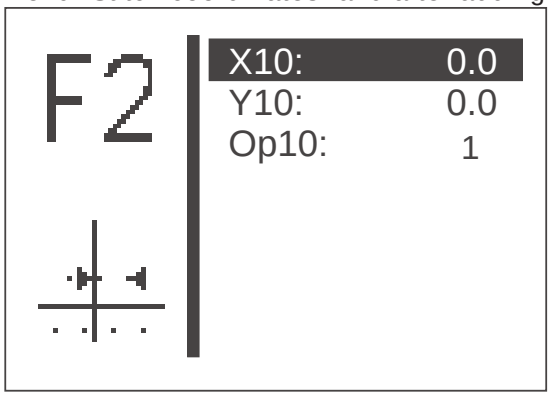


– Select desired stitch with the keys “⇧” or “⇩”.
– Select stitch with the key “**OK**”.
  The submenu for altering a stitch coordinate appears.

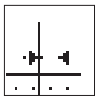
If a stitch operation is classed with a stitch, this will be marked with an asterisk (*) instead of a diagonal stroke (/) on the display.

Submenu “Alter stitch coordinate”

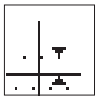
This submenu appears when selecting a stitch coordinate from the menu “Stitch coordinates” and after adding or altering a stitch.



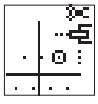
Example



X10
Altering of the X-coordinate for stitch 10
Input: -20.0 ... +20.0



Y10
Altering of the Y-coordinate for stitch 10
Input: -10.0 ... +10.0



OP10
Altering of the stitch operation for stitch 10
Input: 0 ... 1 (compare to the opposite table)

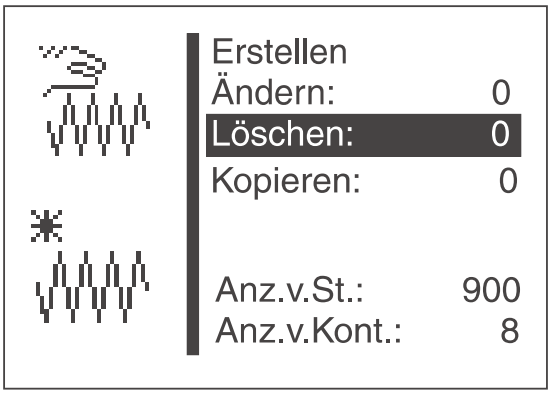
Hint:
The stitch operation entered will be executed **after** the stitch.

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Operation Number	Description	Note
0	No stitch operation	
1	Intermediate trimming	The intermediate trimming can be programmed up to 10 times within a contour. Between 2 intermediate trimmings at least 3 stitches must be sewn.



Delete contour



design
edit
clear
copy

no.st.av.
no.pat.av.

1

– Select function “**Delete**” with the keys “⇧” or “⇩”.
– Select desired contour number with the keys “⇧” or “⇩”.
– Press key “**OK**”.
  The contour is deleted.

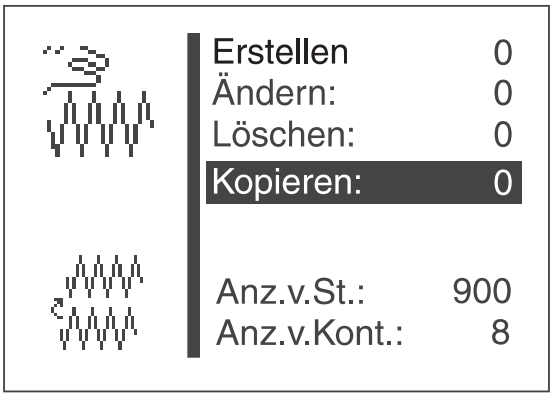
ATTENTION!

By deleting a free seam contour the numbering of sewing pattern programs and/or sequences can be altered because it is possible that these are deleted, too.

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Copy contour



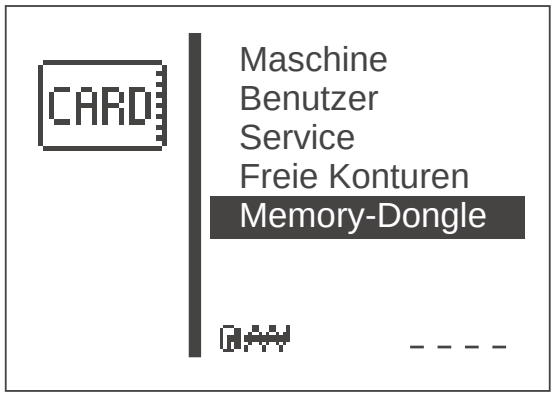
- Select the menu item “copy“ with the “⇧“ or “⇩“ keys.
- Actuate the “**OK**” key.
- Select the desired sewing pattern number (1-50,91-99) with the “⇧“ or “⇩“ keys.
- Confirm the selection by actuating the “**OK**” key.
  The contour will be copied and the menu “Change contour” will be displayed.



In order to change the contour, please follow the instructions of the paragraph “Change contour” on page number 67.

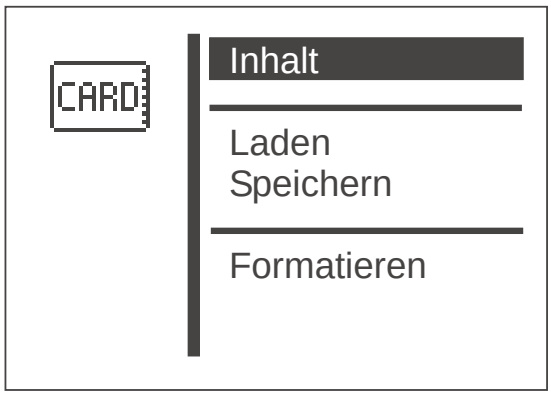
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8.5.4.5 Memory dongle



machine
user
service
free contours
memory dongle

By using the functions of this submenu, data can be transferred from the machine to the dongle or vice versa.



contents

load
save

formatting



Dongle contents

Via this menu item the contents of a dongle connected to the control unit can be displayed.



Load

Via this menu item program data (sewing pattern programs and sequences) and machine parameters as well as free seam contours can be transferred from the dongle to the machine.



Save

Via this menu item program data (sewing pattern programs and sequences) and machine parameters as well as free seam contours can be memorized on a data dongle.



Formatting

In order to save data on a dongle, the dongle must be formatted as a data dongle.

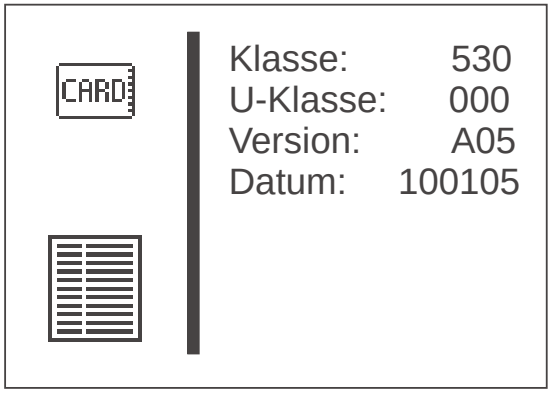
The dongle is to be inserted on the control unit into the plug connection labelled “Dongle” (X110).

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Displaying the dongle contents

Boot dongle

If a boot dongle is inserted, information concerning the machine program will be displayed.



class
subclass
version
date

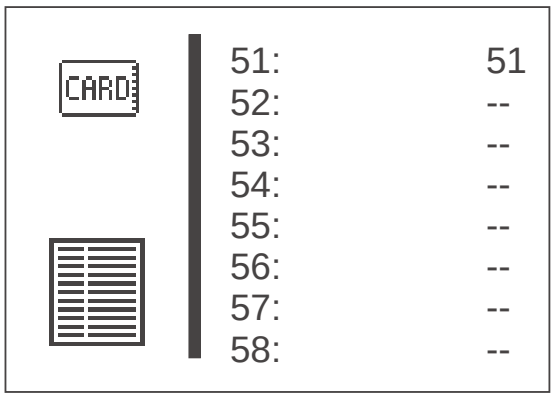
(example)

A boot dongle with a machine program for any machine class can be inserted in order to display the dongle information.

Data dongle

If a data dongle, that has been formatted for the machine class 530 is inserted, the memorized sewing pattern programs or free seam contours will be displayed.

Display of the memorized sewing pattern programs

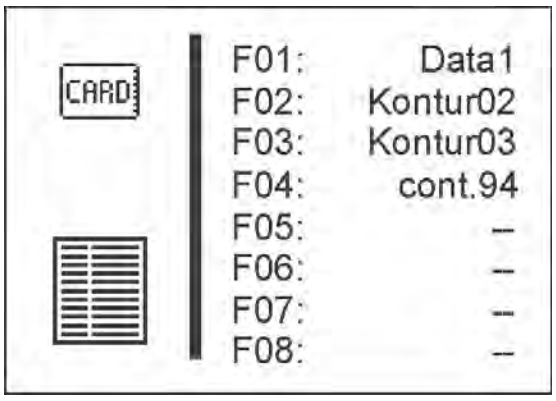


(example)

It is possible to switch between the display of the memorized sewing pattern programs and the free seam contours by actuating the “⇨“ key.

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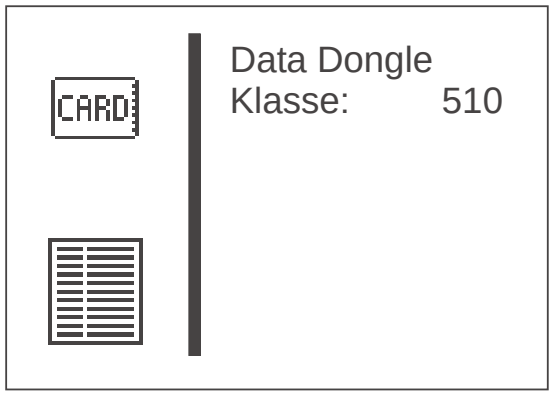
Display of the memorized free seam contours



(example)

If no sewing pattern program or free seam contour is memorized, „—“ will appear, otherwise the corresponding contour name will be indicated.

If a dongle of another machine class is inserted, the following information will be displayed.

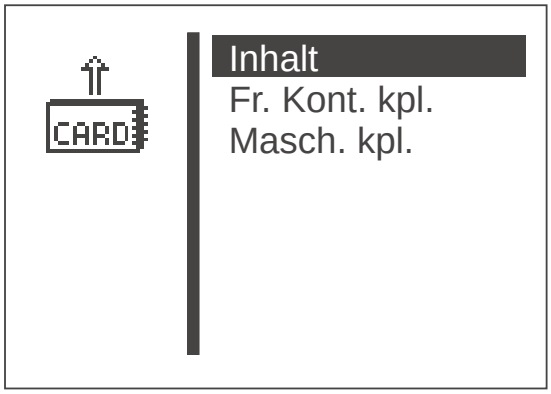


(example)



Transferring data from the dongle to the machine

The memorized program data (sewing pattern programs and sequences) and machine parameter or all free seam contours can be can be transferred from the dongle to the machine.



contents
free cont. compl.
mach. compl.

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Contents

Via this menu item the contents of a memory dongle connected to the control unit can be displayed.

Free seam contours completely

Via this menu item the loading of all free seam contours will be started. A window to confirm the selection will appear.

– Actuate the
“⇦“ key (no), in order to cancel the transaction or the
“⇨“ key (yes), in order to start the transaction.



All free seam contours saved on the machine will be deleted when loading the dongle!

Note

The time needed in order to load the data depends on the number of free seam contours saved on the dongle.

Machine completely

Via this menu item the loading of the program data (sewing pattern programs and sequences) and the machine parameters will be started. They consist of:

- all sewing pattern programs
- all sequences
- machine parameters
- recent sewing pattern numbers, if the sewing equipment corresponds
- recent standard sewing pattern data, if the sewing equipment corresponds

A window to confirm the selection will appear.

– Actuate the
“⇦“ key (no), in order to cancel the transaction or the
“⇨“ key (yes), in order to start the transaction.



The data saved on the machine will be deleted when loading the dongle!

Note

The time needed in order to load the data depends on the number of sewing pattern programs saved on the dongle.

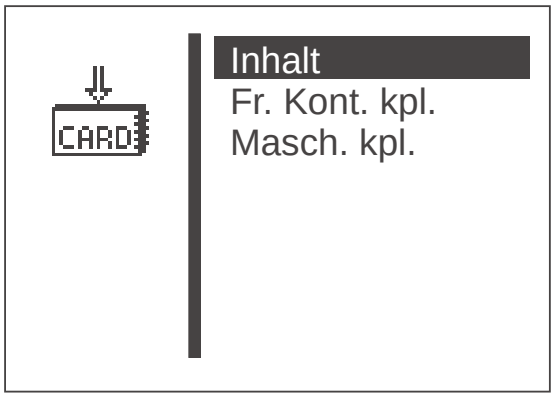


If free seam contours in sewing pattern programs (variants) and sequences are to be transferred, first the free seam contours have to be loaded on the machine and then “machine completely”!

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Memorizing data on the dongle

Here program data (sewing pattern programs and sequences) and machine parameters or all free seam contours can be saved from the machine to the dongle.



contents

free cont. compl.

mach. compl.

Contents

Via this menu item the contents of a memory dongle connected to the control unit can be displayed.

Free seam contours completely

Via this menu item the saving of all free seam contours will be started. A window to confirm the selection will appear.

– Actuate the
“⇦“ key (no), in order to cancel the transaction or the
“⇨“ key (yes), in order to start the transaction.

All free seam contours memorized on the dongle will be deleted when the saving is started!

Note

The time needed in order to save the data depends on the number of free seam contours memorized on the machine.

Machine completely

Via this menu item the saving of the program data (sewing pattern programs and sequences) and the machine parameters will be started. They consist of:

- all sewing pattern programs
- all sequences
- machine parameters
- recent sewing pattern numbers, if the sewing equipment corresponds
- recent standard sewing pattern data, if the sewing equipment corresponds

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A window to confirm the selection will appear.

– Actuate the
"⇦" key (no), in order to cancel the transaction or the
"⇨" key (yes), in order to start the transaction.

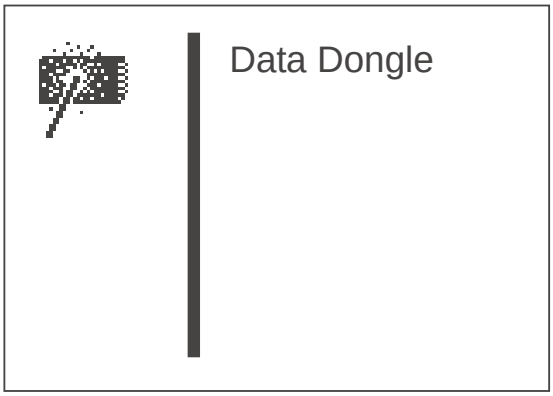
The program data and the machine parameters memorized on the dongle will be deleted when the saving is started!

Note

The time needed in order to save the data depends on the number of sewing pattern programs memorized on the machine.

Dongle formatting

In order to save data on a dongle, the dongle must first be formatted as a data dongle.



data dongle

Data dongle

Via this menu item the formatting of the dongle can be started.

– In order to start, actuate the "**P**" key .
A window to confirm the selection will appear.

– Actuate the
"⇦" key (no), in order to cancel the transaction or the
"⇨" key (yes), in order to start the transaction.

When formatting a dongle all data memorized on it will be deleted!

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Error messages

Number	Name	Possible cause	Elimination
4301	Dongle missing	No dongle inserted	Insert dongle into control unit
4302	Dongle empty	• No data saved on dongle	• Save data on the dongle
4304	Wrong dongle type	Dongle has the wrong format for the selected function	• Use a different dongle • Format the dongle
4307	Wrong machine class	Data dongle is not formatted for class 510	• Use another dongle • Format the dongle
4311	Error format-ID	• Dongle not formatted correctly • Dongle defect	• Format the dongle again • Use a new dongle
4312	Unknown dongle type	• Dongle not formatted correctly • Dongle defect	• Format the dongle again • Use a new dongle

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8.6 Error messages

In case of an error in the control system or in the sewing pattern program the display shows a corresponding symbol and an error number.

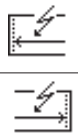
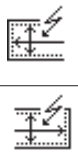
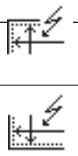
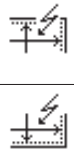
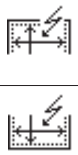
With the help of the following tables the cause of the error can be determined and remedial action can be taken.

8.6.1 Error categories

No.	Pictogram	Name	Description
1		Fatal error	An emergency stop follows. The button sewing automat must be switched off and on again.
2		Error	Working can only be carried on after confirmation of the error by the user.
3		Warning	Working can only be carried on after confirmation of the warning by the user

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8.6.2 Application messages

Picto-gram	Description	Category	Reaction/ Problem elimination
	Capacity counter is “zero”	Hint	· Clamping foot can only be lowered after confirmation via key “OK”. · With the confirmation the hint disappears · With the confirmation the capacity counter is reset to its initial value again.
	Hand wheel turned manually	Warning	After interruption of the sewing process: · Impossible to continue sewing · Stop the sewing process by stepping the pedal backwards, confirmation by hand key 1 (clamps) or pressing the key “ESC” at the control panel
	Contour exceeds the inner frame of the clamping foot either -X or +X direction	Warning	· No sewing start possible · Select another clamping foot · Choose another sewing pattern · Reduce size of sewing pattern in X-direction
	Contour exceeds the inner frame of the clamping foot in -X or +X direction and Y-direction	Warning	· No sewing start possible · Select another clamping foot · Choose another sewing pattern · Reduce size of sewing pattern in X-direction · Reduce size of sewing pattern in Y-direction
	Contour exceeds the inner frame of the clamping foot in -X and -Y direction or +Y-direction	Warning	· No sewing start possible · Select another clamping foot · Choose another sewing pattern · Reduce size of sewing pattern in Y-direction
	Contour exceeds the inner frame of the clamping foot in +X and -Y direction or +Y-direction	Warning	· No sewing start possible. · Select another clamping foot · Choose another sewing pattern · Reduce size of sewing pattern in both X- and Y-direction
	Contour exceeds the inner frame of the clamping foot in X and -Y direction or +Y-direction	Warning	· No sewing start possible. · Select another clamping foot · Choose another sewing pattern · Reduce size of sewing pattern X-direction Reduce Y-Offset in the corresponding direction
	Contour exceeds the inner frame of the clamping foot in -Y or +Y direction	Warning	· No sewing start possible. · Select another clamping foot · Choose another sewing pattern · Reduce Y-Offset in the corresponding direction

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Picto-gram	Description	Category	Reaction/ Problem elimination
	Contour exceeds the work surface opening of the clamping foot in X-direction	Warning	· No sewing start possible · Select another clamping foot · Choose another sewing pattern · Reduce size of sewing pattern in X-direction
	Contour exceeds the work surface opening of the clamping foot in Y-direction	Warning	· No sewing start possible · Select another clamping foot · Choose another sewing pattern · Reduce size of sewing pattern in Y-direction
	Contour exceeds the work surface opening of the clamping foot in X/Y-direction	Warning	· No sewing start possible · Select another clamping foot · Choose another sewing pattern · Reduce size of sewing pattern in X/Y-direction
	Sewing pattern blocked	Hint	· No sewing start possible. · Choose another sewing pattern Unlock sewing pattern

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8.6.3 Machine errors

Error code	Description	Possible causes	Troubleshooting
1051	Sewing motor timeout	· Cable to motor faulty · Reference switch faulty . Sewing motor faulty . Mechanics rough-running	· Check cable · Check reference switch . Check sewing motor . Check mechanics
1052	Sewing motor overcurrent	· Cable to motor faulty · Sewing motor faulty · Control faulty . Software not compatible to the control unit version (A/Bxx.x)	· Check cable · Check sewing motor · Check control . Check the serial number of the DAC III control unit[1], if necessary load the correct software version.
1053	Sewing motor overvoltage	- Mains voltage too high	- Check mains voltage
1055	Sewing motor overload	· Sewing motor is blocked / rough running · Sewing motor faulty · Control faulty	· Remove cause of block / rough running · Check sewing motor · Check control
1056	Sewing motor overheated	· Sewing motor rough running · Sewing motor faulty · Control faulty	· Remove cause of rough running · Check sewing motor · Check control
1058 1059	Motor speed (inverted)	Sewing motor faulty	Check sewing motor
1062	Sewing motor IDMA autoincrement	Breakdown	Switch machine off and on again
1302	Sewing motor power source error	-Plug for sewing motor not plugged in -Plug for incremental sensor not plugged in	- Connect the plug for the sewing motor - Connect the plug for the incremental sensor
1342 - 1344	Sewing motor error	Internal error	· Switch machine off and on again · Software update · Contact the DA-Service staff
2101	Step motor X-axis timeout referencing	· Cable to reference switch faulty · Reference switch faulty . Step motor faulty . Mechanics rough-running	· Check cable · Check reference switch . Check step motor . Check mechanics
2152	Step motor X-axis overcurrent	· Step motor X-axis faulty · Control faulty	· Check step motor X -axis · Check control
2153	Step motor X-axis overcurrent	Mains voltage too high	Check mains voltage
2156	Step motor X-axis overheated	· Step motor X-axis rough running · Step motor X-axis faulty · Control faulty	· Remove cause of rough running · Check step motor X -axis · Check control
2162	Step motor Y-axis IDMA autoincrement	Breakdown	Switch machine off and on again

[1] Serial numbers 0302-00101 ... 0307-00643: the control unit should be used with an Axx.x-Version
Serial numbers 0307-00644 and higher: the control unit should be used with an Bxx.x-Version

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Error code	Description	Possible causes	Troubleshooting
2201	Step motor Y-axis timeout referencing	· Cable to reference switch faulty · Reference switch faulty . Step motor faulty . Mechanics rough-running	· Check cable · Check reference switch . Check step motor . Check mechanics
2252	Step motor Y-axis overcurrent	· Step motor Y-axis faulty · Control faulty	· Check step motor Y-axis · Check control
2253	Step motor Y-axis overcurrent	Too high mains voltage	Check mains voltage
2256	Step motor Y-axis overheated	· Step motor Y-axis rough running · Step motor Y-axis faulty · Control faulty	· Remove cause of rough running · Check step motor Y-axis· · Check control
2262	Step motor Y-Axis IDMA Autoincrement	Breakdown	Switch the sewing machine off and on again
2911 - 2914	Step motor error	Internal error	· Switch machine off and on again · Software update · Contact the DA-Service staff
3100	Machine voltage control	Temporary mains voltage drop Fuse F403 faulty	Check mains voltage Replace fuse F403
3101	Machine power voltage	Temporary mains voltage drop Fuse F402 faulty	Check mains voltage Replace fuse F402
3102	Machine voltage error intermediate circuit sewing motor	Temporary mains voltage drop Fuses F400/F404 faulty (ext.)*	Check mains voltage Replace fuses F400/F404 (ext.)
3103	Machine intermediate circuit step motor	Temporary mains voltage drop Fuse F401 faulty	Check mains voltage Replace fuse F401
3107	Machine temperature	· Vent holes blocked · Ventilation grid soiled	· Check the vent holes · Clean the ventilation grid
3215	Machine hook thread counter zero	The counter for the hook thread counter is zero : the bobbin is empty	Confirm the message and replace the bobbin.

* Those fuses could also be faulty when the control unit does not react and/or powering up does nothing!

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Error code	Description	Possible causes	Troubleshooting
3301 3320 - 3322 3330 - 3332 3340 3341 3350 - 3351 3353 3360 3361 3400 3401 3403	Error control procedure / Test procedure /Step motor test procedure / Starting procedure / Sewing procedure / Winding procedure / Adjusting aids	Internal error	- Switch the sewing machine off and on again - Software update - Contact the DA-Service staff
3358	Sewing procedure: Handwheel turned during interruption	Handwheel turned manually during sewing interruption	Cancel the sewing procedure: Step the pedal backwards
3500 - 3506 3520 - 3530 3540 3545 3721 3722	Error command interpreter/ motor synchronization	Internal error	· Switch machine off and on again · Software update · Contact the DA-Service staff
4301	Dongle missing	No dongle plugged in	Connect the dongle to the control
4302	Dongle empty	No data saved on the dongle	Save the data on the dongle
4304	Wrong dongle type	The dongle has not the proper format for the wished function	- Use other dongle type - Format dongle
4307	Wrong machine class	The dongle data is not formatted for the cl. 530	- Use other dongle type - Format dongle
4311	Error Format-ID	Dongle not formatted properly Dongle faulty	- Format the dongle anew - Use a new dongle
4312	Unknown dongle type	Dongle not formatted properly Dongle faulty	- Format the dongle anew - Use a new dongle
4530 - 4537 4900	Error menu system / User log-in	Internal error	· Switch machine off and on again · Software update · Contact the DA-Service staff
5101	NV-RAM empty	Control is brand new, no data found Control is for another class, incompatible data	Data will be reset to factory setting.
5104	NV-RAM Error check sum	· NV-SRAM faulty · Breakdown	· Check through Multitest, if necessary replace control · Switch machine off and on again Data will be set back to factory setting

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Error code	Description	Possible causes	Troubleshooting
5804	Free Contours: Wrong checksum	- NV-SRAM faulty - Failure	- Check via Multitest, check the control - Switch the sewing machine off and on again Data will be reset to factory setting.
5808	Error free seam contour Cannot determine the stitch number	Internal error	- Switch the sewing machine off and on again - Software update - Contact the DA-Service staff
5809	Free contours: Max. number of contour parts	Max. number of contour parts (intermediate cut) exceeded	Delete some intermediate cut in the free contours
5810	Free contours: Min. number of stitches per contour part	Cannot keep the min. number of stitches per contour part	Move some intermediate cut in the free contours
5900	Error sequences - Invalid sequence number	Internal error	· Switch machine off and on again · Software update · Contact the DA-Service staff
6151 - 6154	Error input / output	Internal error	· Switch machine off and on again
6351 - 6354	Error I²C	Control faulty	Replace control Software update Contact the DA-Service staff
6551 - 6554 6651 - 6653 6751 - 6761 6952	Error Machine head position / AD-Converter / Processor error / Error step motor driver	Internal error	· Switch machine off and on again · Software update · Contact the DA-Service staff
7451 7453 7454	Communication Test interface	Internal error	Switch machine off and on again
7452 7455	Communication test interface	· Transmission failure · Cable of test interface faulty · Internal error	- Switch off the source of interference - Replace cable - Switch machine off and on again
7551 - 7555 7558 7559	Communication control panel interface	Internal error	- Switch off the source of interference - Replace cable - Switch machine off and on again
7556 7557	Communication control panel interface	· Transmission failure · Cable of control panel interface faulty	- Switch off the source of interference - Replace cable - Switch machine off and on again
7700	Protocol: Max number of repetition	· Transmission failure · Cable of test interface faulty	- Switch off the source of interference - Replace cable

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Error code	Description	Possible causes	Troubleshooting
7701	Protocol error	Internal error	· Switch machine off and on again · Software update · Contact the DA-Service staff
8151 8156 - 8159	Error IDMA	· Failure · Control faulty	Switch machine off and on again Check control
8152 - 8154 8251 8255	Error IDMA / Booting ADSP / Booting	Internal error	· Switch machine off and on again · Software update · Contact the DA-Service staff
8252 8257 8258 / 8253 8254 8256	Booting ADSP / Booting XILINX / Booting	Failure	. Switch machine off and on again
8351 8700 8702 8800 - 8806 8890 8891	Error Testpins / Key simulation / Signals / Event processing / Memory-Wrapper / List of functions	Internal error	· Switch machine off and on again · Software update · Contact the DA-Service staff
9100 - 9105 9200 9201 9900 9902 9903 9905	Error Sewing pattern administration / Sewing pattern program / Sewing pattern release / Equipment / Key processing / Memory Output Message	Internal error	· Switch machine off and on again · Software update · Contact the DA-Service staff

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9. Sewing

Operating and function sequence when sewing:

Sewing operation	Operation/ Explanation
Before the sewing start	
Starting position	- Pedal in resting position Button sewing automat stands idle Needle and fabric clamps in position “up”.
Feed material	
Sewing	**- Step pedal forwards up to step 1. The clamps are lowered.**
-	Relieve pedal. The clamps are lifted again. The material can be positioned anew.
-	Step pedal completely to the front. The button sewing automat sews with the adjusted speed.
During the sewing cycle	
Interrupt sewing Operation	- Step pedal backwards. The button sewing automat stops. The clamps stay down.
Continue sewing operation	- Step pedal completely to the front.

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10. Maintenance

10.1 Cleaning and checking

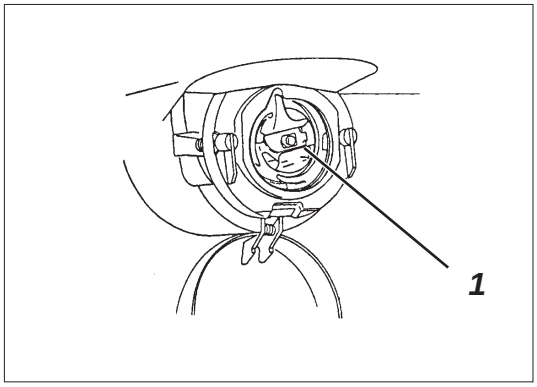
Caution: Danger of injury !

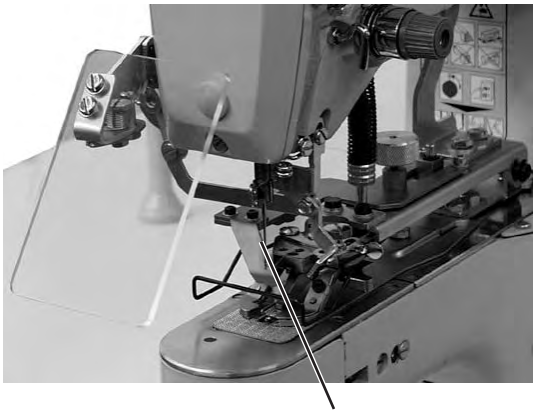
Switch off main switch.
The maintenance of the button sewing automat must only be carried out if the machine is switched off.

Maintenance work has to be done after the intervals indicated in the tables at the latest (see column “Operating hours”).

The processing of fluffy material may require shorter maintenance intervals.

A clean button sewing automat protects from disturbances.

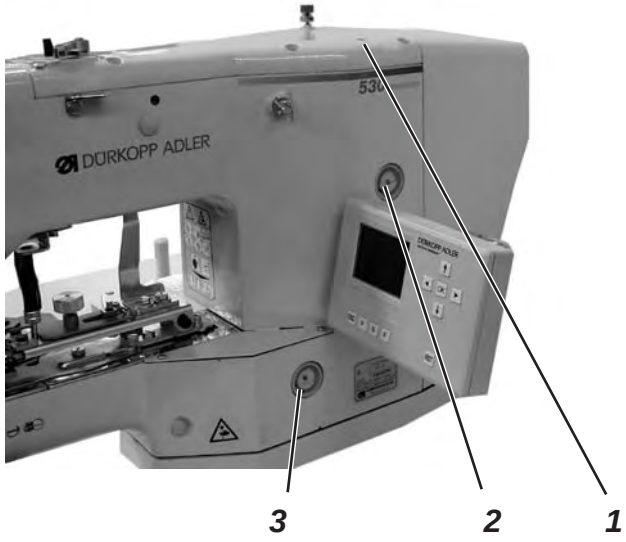




Maintenance work to be done	Explanation	Operating hours
Machine head		
- Remove sewing dust and thread remainders. (e.g. with compressed air pistol)	Spots to be cleaned especially carefully: - Underside of the throat plate - Zone around hook 1 - Bobbin case - Thread trimmer - Zone around needle 2	8
Control box	Keep free the ventilation grid.	8

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10.2 Oil 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.

Oil the button sewing automat exclusively with lubricating oil **DA-10** or an equivalent oil with the following specification:

- Viscosity at 40° C: 10 mm^2/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

Maintenance work to be done	Explanation	Operating hours
Lubrication of the button sewing automat	The button sewing automat is equipped with a central oil wick lubrication. The oil is provided by the oil reservoirs 2 and 3. - The oil level must not drop below the red marking of the two oil reservoirs. - Fill up oil up to the red marking through drill-hole 1.	8

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11. Standard sewing patterns

No.	Stitch pattern	Stitch repartition	Number of connecting threads	Standard size X-axis (mm)	Standard size Y-axis (mm)
1		6 - 6	1	3,4	3,4
2		8 - 8	1	3,4	3,4
3		8 - 8	3	3,4	3,4
4		10 - 10	1	3,4	3,4
5		12 - 12	1	3,4	3,4
6		6 - 6	0	3,4	3,4
7		8 - 8	0	3,4	3,4
8		10 - 10	0	3,4	3,4
9		12 - 12	0	3,4	3,4
10		6 - 6	1	3,4	3,4
11		8 - 8	1	3,4	3,4
12		10 - 10	1	3,4	3,4
13		6 - 6	1	3,4	3,4
14		8 - 8	1	3,4	3,4
15		10 - 10	1	3,4	3,4
16		12 - 12	1	3,4	3,4
17		6 - 6	0	3,4	3,4
18		8 - 8	0	3,4	3,4
19		10 - 10	0	3,4	3,4
20		6 - 6	1	3,4	3,4
21		8 - 8	1	3,4	3,4

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No.	Stitch pattern	Stitch repartition	Number of connecting threads	Standard size X-axis (mm)	Standard size Y-axis (mm)
22		10 - 10	1	3,4	3,4
23		12 - 12	1	3,4	3,4
24		6	-	3,4	-
25		8	-	3,4	-
26		10	-	3,4	-
27		12	-	3,4	-
28		16	-	3,4	-
29		20	-	3,4	-
30		6	-	-	3,4
31		10	-	-	3,4
32		12	-	-	3,4
33		6 - 6	1	3,4	3,4
34		10 - 10	1	3,4	3,4
35		6 - 6	0	3,4	3,4
36		10 - 10	0	3,4	3,4
37		5 - 5 - 5	-	2,9	2,5
38		8 - 8 - 8	-	2,9	2,5
39		5 - 5 - 5	-	2,9	2,5
40		8 - 8 - 8	-	2,9	2,5
41		4 - 4 - 4	-	3,4	3,4
42		4 - 4 - 4	-	3,4	3,4
43		4 - 4 - 4	-	3,4	3,4

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No.	Stitch pattern	Stitch repartition	Number of connecting threads	Standard size X-axis (mm)	Standard size Y-axis (mm)
44		4 - 4 - 4	-	3,4	3,4
45		4 - 4 - 4	-	3,4	3,4
46		4 - 4 - 4	-	3,4	3,4
47		4 - 4 - 4	-	3,4	3,4
48		4 - 4 - 4	-	3,4	3,4
49		6 - 6 - 6 - 6	-	3,4	3,4
50		8 - 8 - 8 - 8	-	3,4	3,4

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12. Clamping feet

Clamping foot number	Dimensions X x Y [mm] inner frame of clamping foot	Inner frame, rectangular	Specified standard sewing pattern number	Allowed standard sewing patterns	Description	
1	10 x 10	yes	1	all	button clamp	



Due to the technical circumstances and a safety margin, the sewing field is smaller than the inner frame of the clamp.

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13. Numbering of menu items

Parameter	English (displayed on the screen)	English (meaning)
0	off/a	off/a
1	on/b	on/b
D01	yes	yes
D02	no	no
D03	canc	cancel
D04	ok	OK
Q01?	Initialize variants and sequencesquestion	Initialize variants and sequencesquestion
Q02?	Initialize machine	Initialize machine
Q03?	Initialize free contoursquestion	Initialize free contoursquestion
Q04?	Initialize machine complete?	Initialize machine complete?
Q05?	continue?	continue?
T1	machine	machine
T1.1	parameter	parameter
T1.1	PWM output test	PWM output test
T1.1.1	cut.rpm	cutting speed
T1.1.2	max.rpm	maximum sewing speed
T1.1.3	stop pos.	stop position
T1.1.4	sew.st.pt.	sewing start position
T1.1.5	ref.freq.	referencing frequency
T1.2	soft start	soft start
T1.2.1	1.stitch	1.stitch
T1.2.2	2.stitch	2.stitch
T1.2.3	3.stitch	3.stitch
T1.2.4	4.stitch	4.stitch
T1.2.5	5.stitch	5.stitch
T1.3	equipment	equipment
T1.3.1	w.clamp f.	working clamp foot
T1.3.2	open dimens.	open dimensions
T1.3.3	number	number
T1.3.4	length	length
T1.3.5	width	width
T1.3.6	configuration	configuration
T1.3.6.1	hand sw.	hand switch
T1.3.6.2	el.wiper	electrical wiper
T1.3.6.3	_/-clamp	separated clamp foot
T1.3.6.4	laserl.	laserlights
T1.3.6.4.1	no.laser	number of laserlights
T1.3.6.5	opt.signalling	optical signalling
T1.3.6.5.1	opt.sign.	optical signalling
T1.3.6.6	input alloc.	input allocation

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Parameter	English (displayed on the screen)	English (meaning)
T1.3.6.7	output alloc.	output allocation
T1.3.6.8	l.ta cfs	long ta clamp foot solenoid
T1.4	times	times
T2	user settings	user settings
T2.1	language	language
T2.2	sewing mode	sewing mode
T2.2	hand switch	hand switch
T2.3	par.lock.	parameter locking
T2.4	pattern lock.	pattern locking
T2.5	sequence lock.	sequence locking
T2.6.1	lock all	lock all
T2.6.2	unlock all	unlock all
T2.7.1	lock all	lock all
T2.7.2	unlock all	unlock all
T3	service	service
T3.1	multitest	multitest
T3.1.1	output test	output test
T3.1.2	PWM output tst	PWM output test
T3.1.3	input test	input test
T3.1.4	auto input test	auto input test
T3.1.5	motor test	motor test
T3.1.6	step.motor tst	stepping motor test
T3.1.6	step.motor tst	stepping motor test
T3.1.7	RAM test	RAM test
T3.1.8	EEPROM test	EEPROM test
T3.2	180 °-disc	180 °-disc
T3.3	events	events
T3.3.1	event memory	event memory
T3.3.1	event memory	event memory
T3.3.2	latest events	latest events
T3.3.2	latest events	latest events
T3.4	DACIII	DACIII
T3.4.1	temp.(°C)	temperature (°C)
T3.4.2	UZK (V)	UZK (V)
T3.5	Init	Init
T3.5.1	event memory	event memory
T3.5.2	var.+sequ.	variants + sequences
T3.5.3	mach.+usr+opt	machine + user + options
T3.5.4	free contours	free contours
T3.5.5	machine cpl.	machine complete
T4	free contours	free contours
T4.1	design	design

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Parameter	English (displayed on the screen)	English (meaning)
T4.1.7	append stitch	append stitch
T4.1.8	parameter	parameter
T4.1.8.1	std.rpm	standard speed
T4.1.8.2	orig. X	origin X
T4.1.8.2	dist. X	distance X
T4.1.8.3	orig. Y	origin Y
T4.1.8.3	dist. Y	distance Y
T4.1.8.4	end	end
T4.2	edit	edit
T4.2.1	stitch coordin	stitch coordinates
T4.2.2	del.st	delete stitch
T4.2.3	ins.st.	insert stitch
T4.2.4	append stitch	append stitch
T4.2.5	parameter	parameter
T4.2.5.1	std.rpm	standard speed
T4.2.5.2	orig. X	origin X
T4.2.5.2	dist. X	distance X
T4.2.5.3	dist. Y	distance Y
T4.2.5.3	orig. Y	origin Y
T4.2.6	no.stitch	number of stitches
T4.2.7	no.st.av.	number stitches available
T4.3	delete	delete
T4.4	copy	copy
T4.5	no.st.av.	number stitches available
T4.6	no.pat.av.	number patterns available
T5	memory dongle	memory dongle
T5.1	dongle index	dongle index
T5.2	load	load
T5.2.1	dongle index	dongle index
T5.2.2	machine cpl.	machine complete
T5.2.3	free contour	free contour
T5.3	save	save
T5.3.1	dongle index	dongle index
T5.3.2	machine cpl.	machine complete
T5.3.3	free contour	free contour
T5.4	format	format
T5.4.1	data dongle	data dongle
T5.4.2	boot dongle	boot dongle
W01	code	code
W02	WARNING	WARNING
W03	ERROR	ERROR
W04	INFORMATION	INFORMATION

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Parameter	English (displayed on the screen)	English (meaning)
W05	EMERGENCY-OFF	EMERGENCY-OFF
W06	SERIOUS ERROR	SERIOUS ERROR
W07	NOTE	NOTE
W08	INTERNAL ERROR	INTERNAL ERROR
W09	CONFIRMATION	CONFIRMATION
W10	read data	read data
W11	save data	save data
W12	format	format
Z01	output	output
Z02	input	input
Z03	rpm	rpm
Z04	stop pos.	stop position
Z05	software	software
Z06	date	date
Z07	e	e
Z08	please wait	please wait
Z09	ROM size	ROM size
Z10	class	class
Z11	version	version
Z12	check sum	check sum
Z13	error code	error code
Z14	pedal	pedal
Z15	hand sw.	hand switch
Z16	laserl.	laserlights
Z17	_/-Klamm	separated clamp foot
Z18	opt.sign.	optical signalling
Z19	not alloc.	not allocated
Z20	Subclass	subclass

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