

**CNC automat for bartacking seams
and short seams**

Operating Instructions

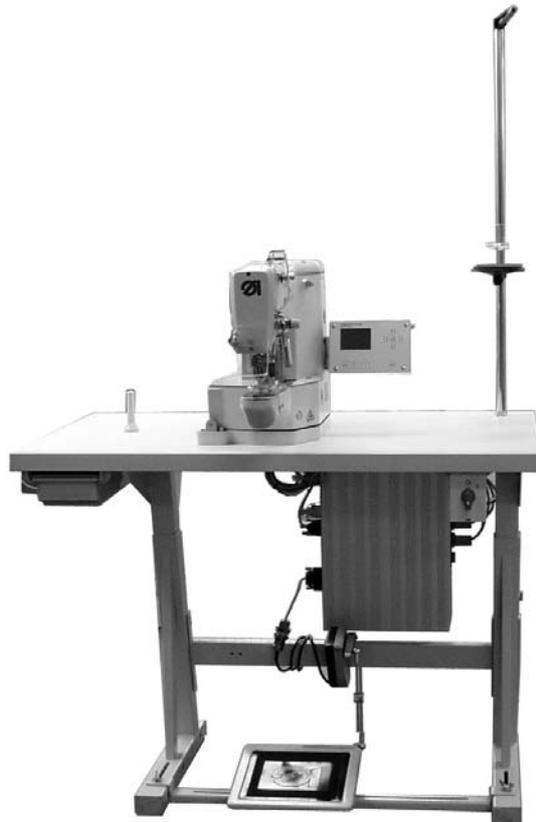
Installation Instructions

Service Instructions

1

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Summary

Operating Instructions
Installation Instructions
Service Instructions

Interconnection-diagram

9890 510001 B

Foreword

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

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

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

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

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

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

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

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

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

Never remove or disable any safety devices.

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

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

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

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

General safety instructions

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

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



It is absolutely necessary to respect
the safety instructions marked by these signs.
Danger of bodily injuries !
Please note also the general safety instructions.



Preface and general safety hints

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1. Description of product

The **Dürkopp Adler 510** is a CNC automate for bartacking seams and short seams. The available standard bartacks are size-adjustable and can additionally be memorized in this modified shape.

Free seam contours can be programmed directly at the control panel without any further devices.

Technical features

- DAC control with control panel.
The following functions are available:
 - 50 standard bartacks.
These bartacks can temporarily be modified as regards length, width and speed. When switching off the automate the modified values of the bartack sewn last are maintained.
 - 40 modified bartacks can be memorized in addition.
 - 9 free seam contours with a total of 5000 available stitches can additionally be memorized.
So it is possible to attach e.g. small appliqués.
The coordinates are entered at the control panel. **No** further devices are required.
 - 25 seam pattern sequence programs with up to 20 seam patterns per seam pattern sequence program can be created and memorized.
 - The coordinates are entered with a precision of 0.1 mm.
 - In case of a rectangular contour of the fabric clamping feet the modification of bartacks is automatically checked in order to avoid a collision of needle and fabric clamping feet.
 - Counter of capacity and daily number of pieces.
 - Bartacks and/or seam pattern sequence programs and/or the modification of special bartacks can be blocked.
 - The speed can be changed from 0 rpm (manual operation with full operability of the x-y drive) up to 2700 rpm in steps of 100 rpm.
- Fabric drive via two step motors.
- Drive of the automatic bartacker directly at the arm shaft via brushless direct current motor.
- Maximum sewing field size 40 x 20 mm.
- Oil wick lubrication of arm shaft and driving shaft with two oil reservoirs.
- Service and maintenance work is supported by comprehensive test programs.

2. Description of proper use

Class **510** is an automatic bartacker 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 automatic bartacker 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 automatic bartacker. The material must not be thicker than 10 mm when compressed by the lowered sewing feet. It must not include any hard objects as otherwise the operator would have to wear an eye protection when working with the automate. Such an eye protection cannot be delivered at present.

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 510-211/212 threads of the dimension 50/3 - 120/3

Class 510-213 threads of the dimension 30/3 - 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 automatic bartacker 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. 510-211 | Automatic single needle lockstitch bartacker with thread trimmer and thread wiper.
Equipped with a special sewing equipment for general bartacking operations in outer garments. |
| Cl. 510-212 | Automatic single needle lockstitch bartacker with thread trimmer and thread wiper.
Equipped with a contraction clamp especially for bartacking of double-chainstitch buttonholes. |
| Cl. 510-213 | Automatic single needle lockstitch bartacker with thread trimmer and thread wiper.
Equipped with a special sewing equipment for particularly thick fabrics.
Field of application:
General bartacking operations, e.g. bartacking of loops, pockets or fly pieces in jeans or working clothes. |

6.1 Technical data of the subclasses

Subclass:	-211	-212	-213
Stitch type:	301	301	301
Hook type:	oscillating hook		
Needle system:	DPx5 (134)		DPx17 (135x17)
Needle size: [Nm]	80 - 110	80 - 110	100 - 120
Needle size standard: [Nm]	90	90	120
Thread size:	50/3 - 120/3	50/3 - 120/3	30/3 - 120/3
Stitch length: [mm]	dependent on seam pattern		
Max. speed [min ⁻¹]	2700		
Clamp stroke Delivery maximum [mm]	13 17		13 17
Sewing field size max. in X-direction: [mm]	40	dependent on clamp	40
max. in Y-direction:	20		20
Number of standard bartacks	50		
Number of storable modifiable bartacks	40		
Number of seam pattern sequence programs	25		
Number of seam patterns per seam pattern sequence program	20		
Soft start:	connectable / disconnectable		
Sewing drive:	DC-Motor		
Rated voltage: [V]	1 ~ 230V/ 50/60 Hz		
Rated load: [kW]	0,45		

7. Operating

7.1 Threading needle thread



Caution: Danger of injury !

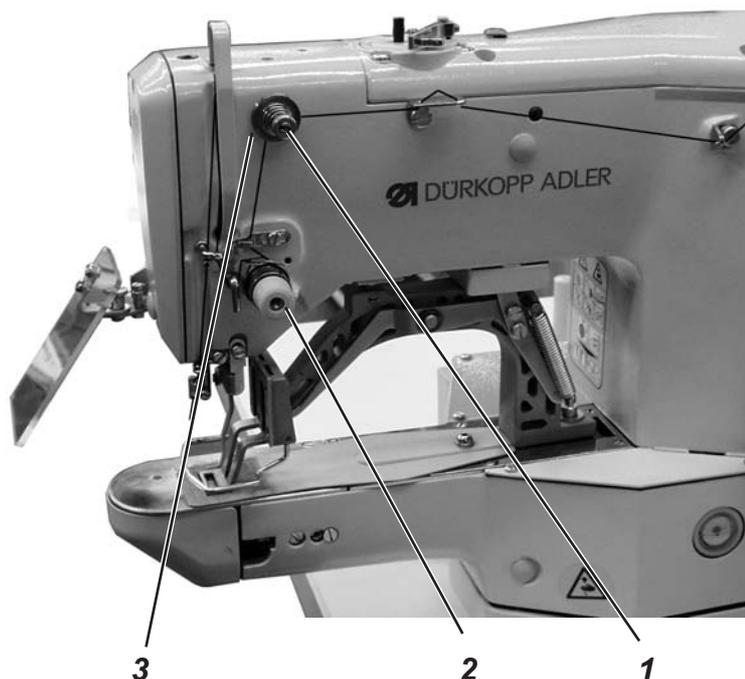
Switch off main switch !

Thread the needle thread only when the automatic bartacker 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.



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.

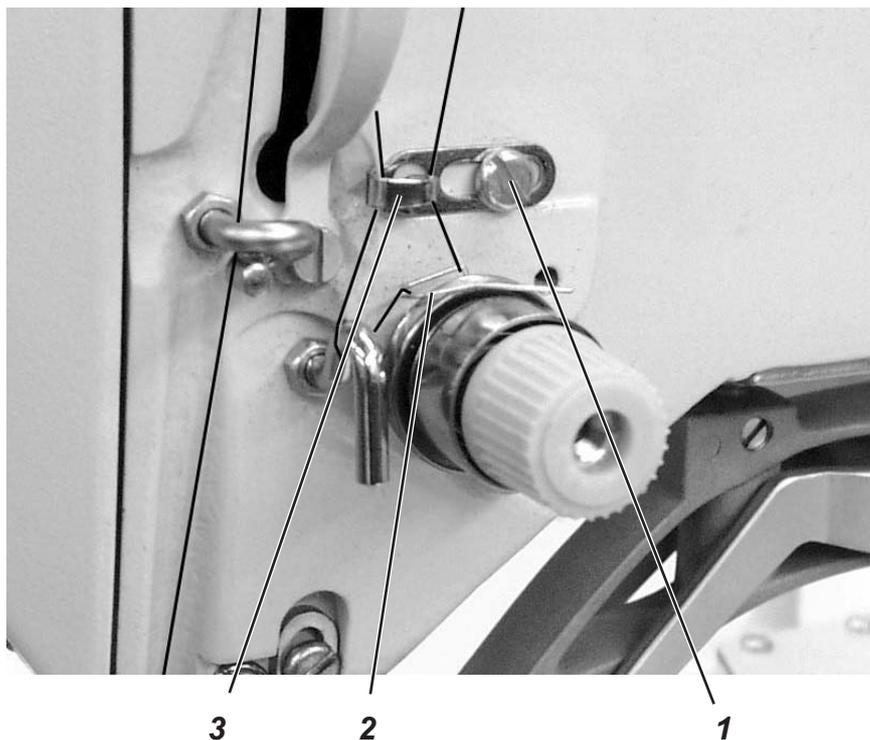
Increase tension	=	Turn knurled nut in clockwise direction
Reduce tension	=	Turn knurled nut counter-clockwise

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.

7.4 Adjust thread regulator



Caution: Danger of injury !

Switch off main switch !

Adjust thread regulator only when the automatic bartacker 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.

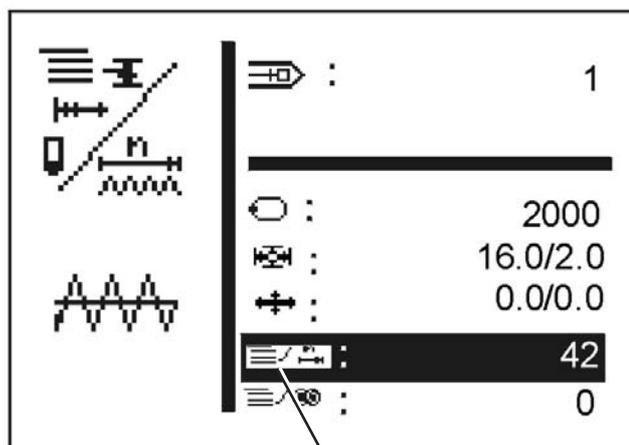
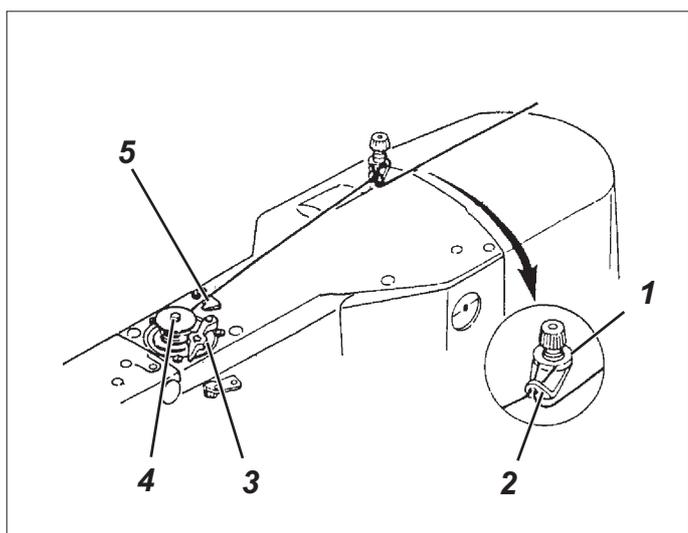
When the thread regulator is adjusted correctly, the needle thread loop must slide over the thickest spot of the hook with low tension.

- 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.

7.5 Wind on bobbin thread

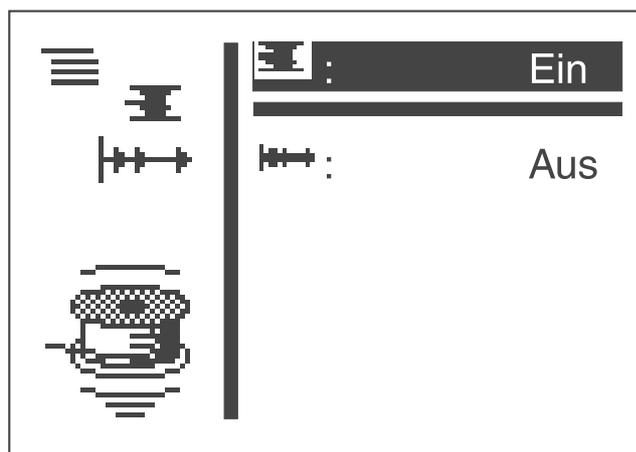


6

- 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".



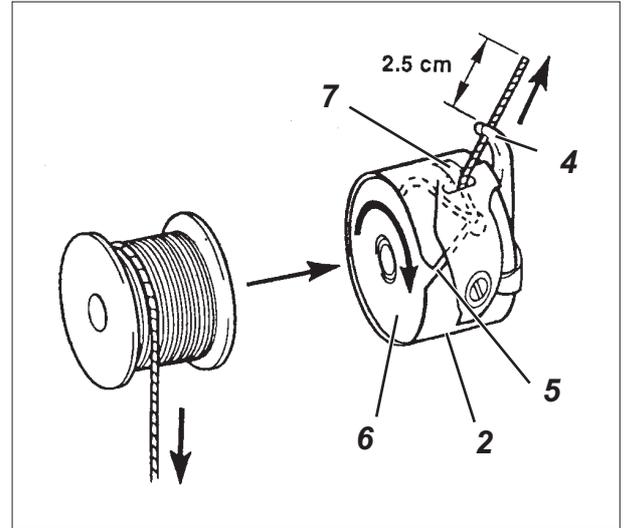
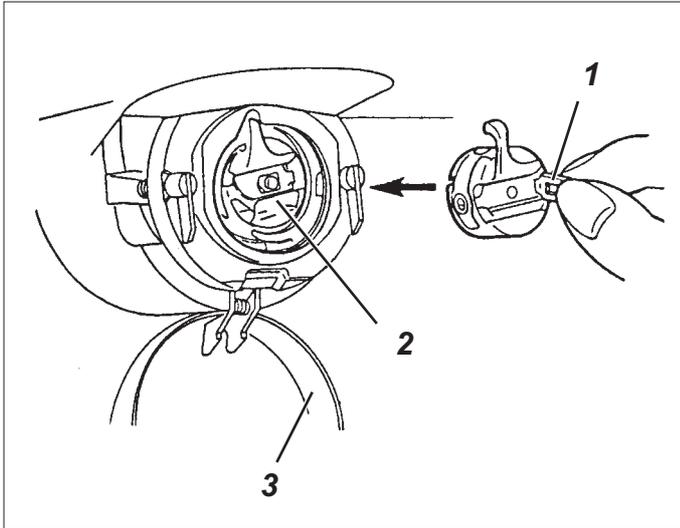
On

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".

7.6 Change hook thread bobbin



Caution: Danger of injury !

Switch off main switch !

Change hook thread bobbin only when automatic bartacker is switched off.

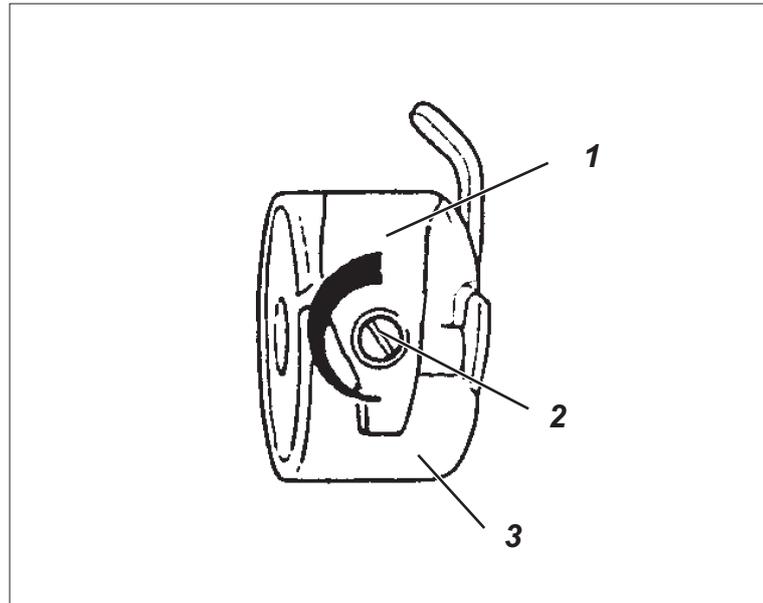
Take off empty bobbin

- Pull down hook cover 3.
- Lift bobbin case cover 1.
- Take off 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.

7.7 Adjust bobbin thread tension



Caution: Danger of injury !

Switch off main switch !

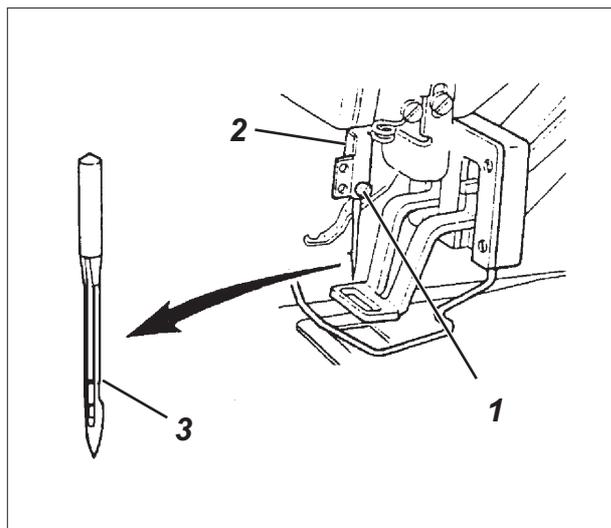
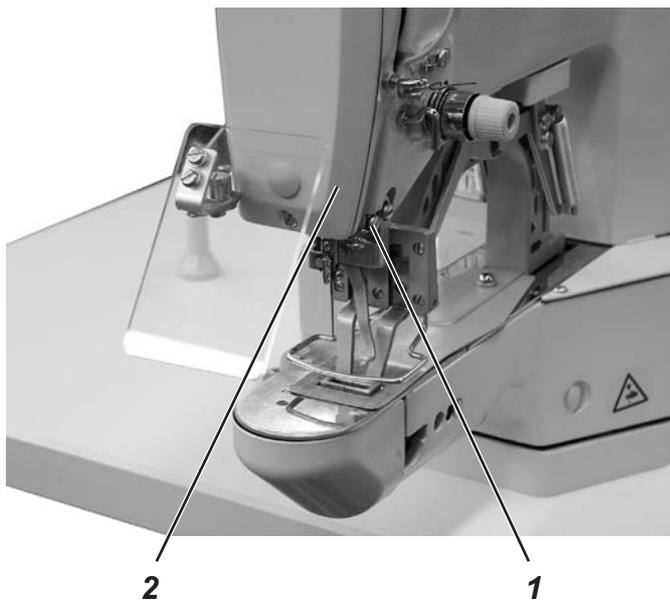
Adjust bobbin thread tension only when the automatic bartacker is switched off.

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

- Take off 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.

7.8 Change needle



Caution: Danger of injury !

Switch off main switch !
Change needle only when the automatic bartacker 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.

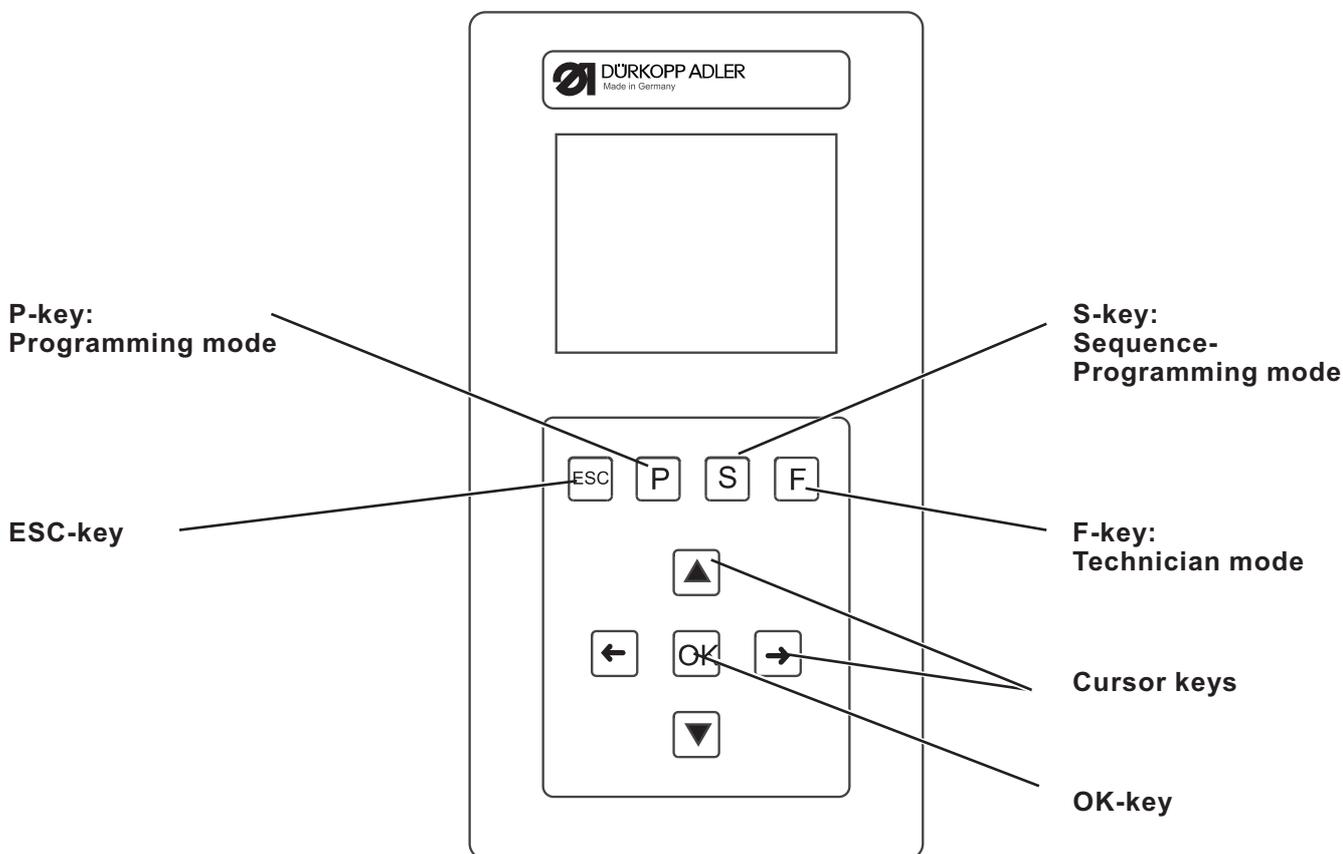
ATTENTION !

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

8. Operating the control of cl. 510

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

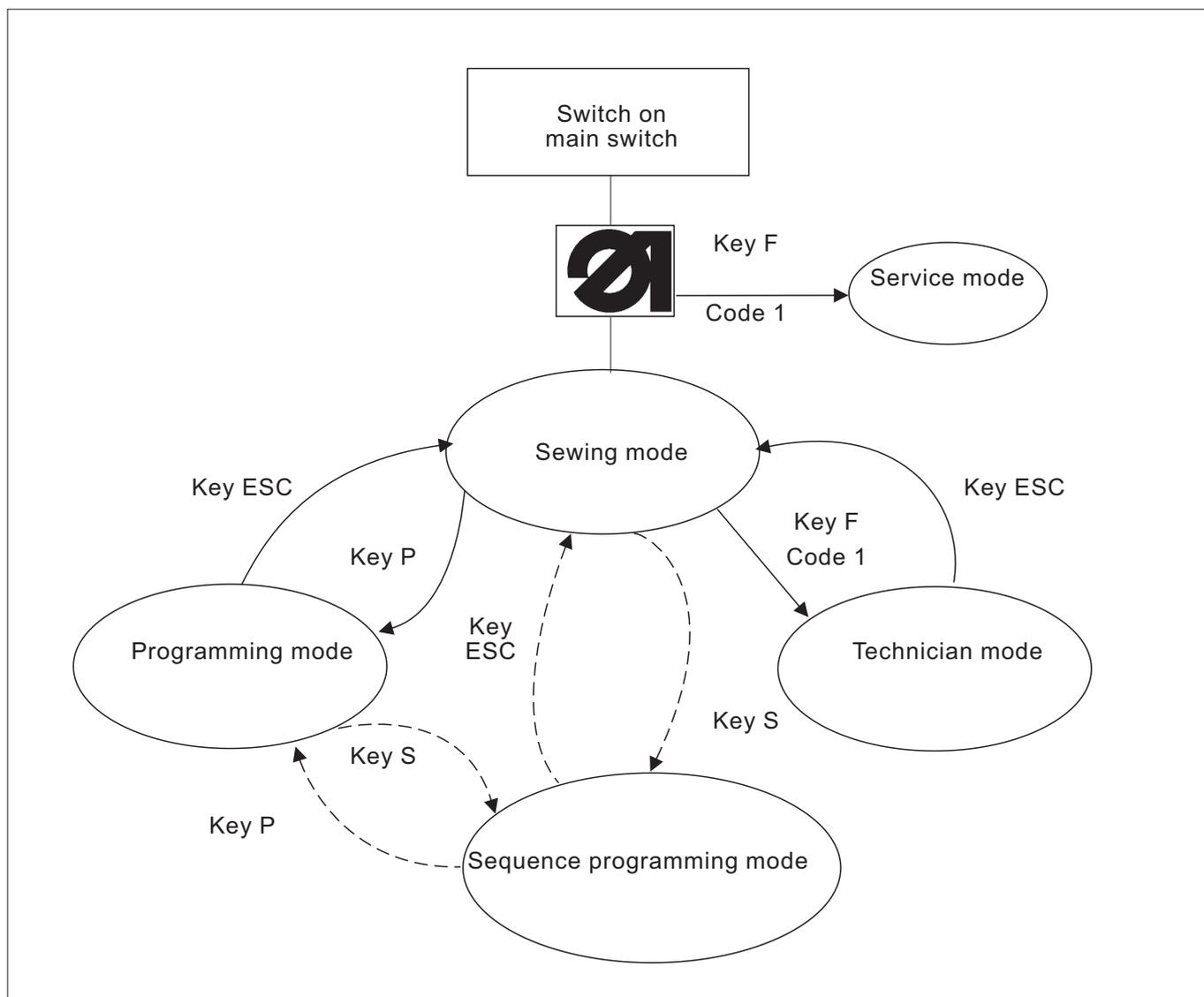
Function key	Function
Cursor keys  	<p>If no text field is activated: Press key “↵” to return from a submenu to the parent menu.</p> <p>If a text field is activated: Change between the points (this does not refer to the selection of seam patterns or sequences).</p> <p>In the sewing mode in case of sequence operation: Change to the next or to the preceding seam pattern.</p>

Function key	Function
 	<p>If no text field is activated: Change between the lines of the menus. The selected line is displayed white on black.</p> <p>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.</p>
<p>OK-key</p> 	<p>If no text field is activated: Activate the text field. The value can be altered with the keys “↑” and “↓”.</p> <p>If a text field is activated: The set value is taken over.</p> <p>If the clamping foot has been lowered using the keys OK + F: The test procedure will be started.</p>
<p>ESC-key</p> 	<p>If test functions are activated (Multitest / 180° disc): You return to the selection menu.</p> <p>If a text field is activated: An input is aborted. The preceding value is maintained.</p> <p>In the technician and programming level The control changes over to the sewing mode.</p> <p>In the sewing mode Lift clamping foot and stop sewing operation.</p>
<p>P-key</p> 	<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.</p>
<p>S-key</p> 	<p>The control changes over from the sewing mode or seam pattern programming mode to the sequence programming mode. In this mode it is possible to create new sequences or to alter existing ones.</p>
<p>F-key</p> 	<p>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.</p>
<p>OK-key + F-Taste</p>  	<p>Starts the testing mode* for the sewing procedure. The clamping foot is lowered.</p>

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

8.2 User interface

8.2.1 Structure of menu



Call up the service mode

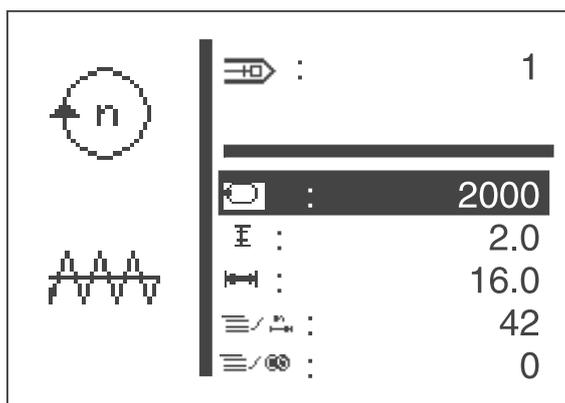
- Press the function key "F" and keep it pressed.
- Switch on main switch.
The control unit will be initialized.
After a short while the window for entering the code number will appear.
- Enter the code number (code 1, compare chapter 8.5.4).
The display changes to the service menu.

Recall 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

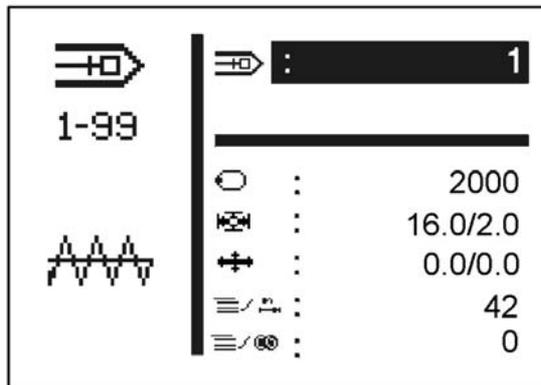
- Press key “**ESC**” .
The original value is maintained.

Note

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

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 key "OK".
- Change between the given possibilities with the keys "↑" or "↓"

Example:
Seam pattern number

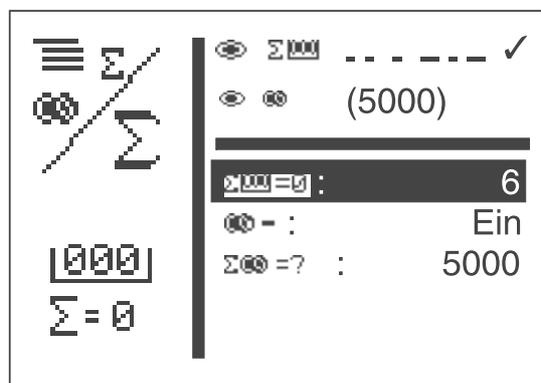
- Press key "OK".
The currently set parameter is taken over.
- or
- Press key "ESC".
The original parameter is maintained.

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

8.4 Seam patterns

Three different seam pattern types are available for the automatic bartacker 510:

- Specified standard seam 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 seam pattern the alterations will get lost.

For these seam patterns the seam pattern numbers 1 to 50 are available which cannot be deleted or overwritten.

- Programmable seam patterns (Type 2)

Specified standard seam 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 seam patterns the seam pattern numbers 51 to 90 are available which can be deleted or overwritten.

- Free seam contours (Type 3)

For these seam contours the seam 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.

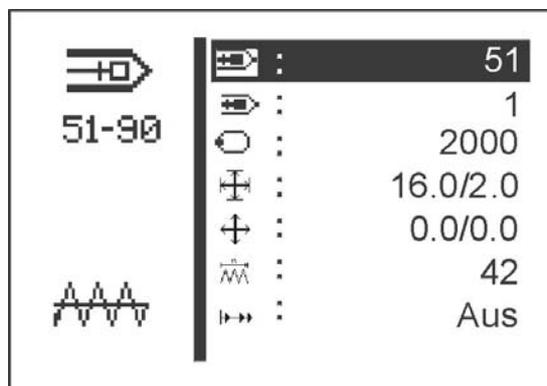
However, after selection of another seam pattern the alterations will get lost.

8.5 Main menu

8.5.1 Seam pattern operation

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

The seam patterns can be altered via these parameters.

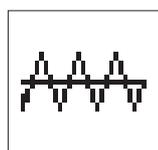


- Switch on main switch.
The control is initialized.
The main menu appears.
- Select desired parameter with the keys “↑” or “↓”.
The symbol of the selected parameter is displayed white on black.
- Alter selected parameter as described in chapter 8.3.



Menu item

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



Bartack pattern

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



Seam pattern

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

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



Speed

Via this parameter the desired speed is set.

Input: 0 to 2700 rpm



Submenu seam pattern dimension

Select the present menu to set the seam pattern length and width.

Display: present length/width



Submenu seam pattern offset

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

Display: present X-/Y- offset value



Submenu

Behind this symbol there is a submenu.



Number of stitches

Via this menu line the number of stitches is indicated (cannot be modified).

When selecting the line with key "OK" the submenu "Special functions" is opened.



Counter reading

Via this menu line the following counters can be read:

Counter of daily number of pieces

or

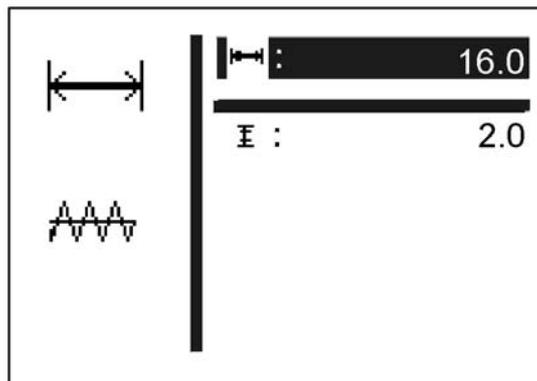


Counter of capacity

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



Submenu seam pattern dimension



Width

Setting the seam pattern width
Input: 0,1 ... 40,0 [mm]

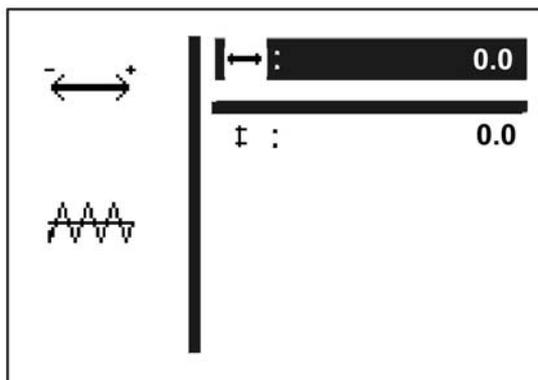


Length

Setting the seam pattern length
Input: 0,1 ... 20,0 [mm]



Submenu seam pattern offset



In this menu it is possible to change the seam 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 seam pattern offset.



X-Offset

Setting the seam pattern offset in X-direction.

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

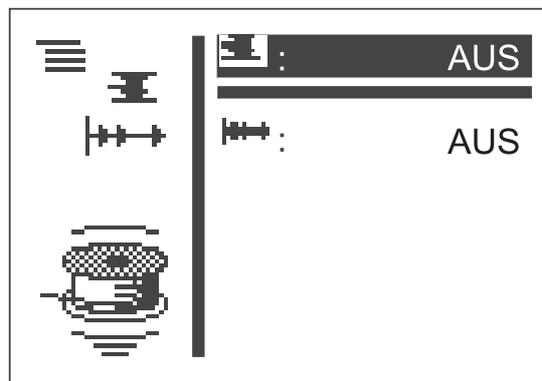
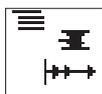


Y-Offset

Setting the seam 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

Winding thread on to a bobbin:

With pedal

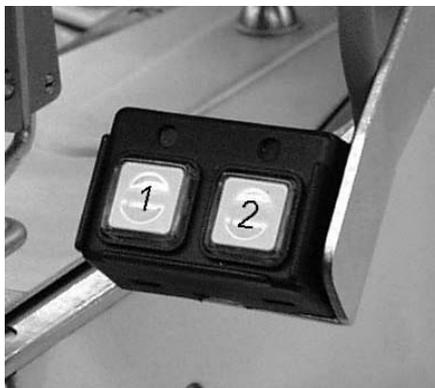
- Step pedal forwards (step 2).
The sewing motor starts.
- Step pedal backwards.
The sewing motor stops.

Via control panel

- 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

Submenu laser marking light (optional)

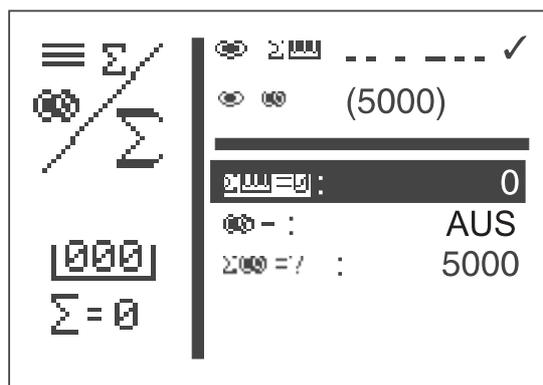
The menu item is only available if the laser light in the technician level stands at "ON".



Laser light 1 ... 3

Switching on/off of the laser marking lights 1 to 3.
Input : ON/ OFF

Submenu counter of daily number of pieces or counter of capacity

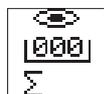


Alternative display of counter of daily number of pieces or counter of capacity.

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 seam 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:



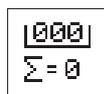
Display: counter of daily number of pieces in the sewing mode

Input: Select with key "OK".



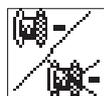
Display: counter of capacity in the sewing mode

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



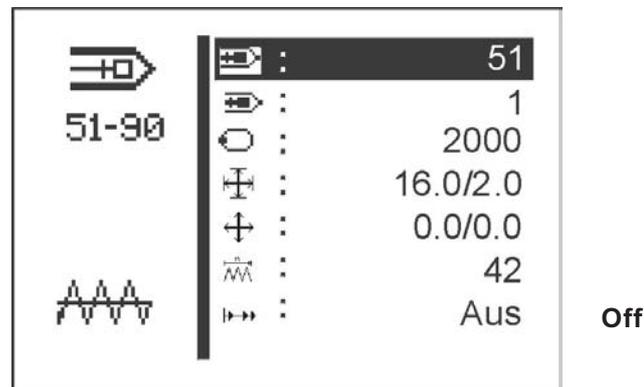
Initial value counter of capacity

Input: 0 ... 9999

8.5.2 Programming mode

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

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



- 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 seam pattern

Via this parameter the number of the seam 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 seam pattern programme with the keys “↑” or “↓”.
- Press key “OK”.
The program is activated.



Basic seam pattern

Via this parameter a standard seam pattern can be selected on the basis of which the new seam 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 seam pattern dimension

Select the present menu to set the seam pattern length and width.

Display: present length/width



Submenu seam pattern offset

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

Display: present X-/Y- offset value



Number of stitches

Only indicates the number of stitches.



Soft start

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

Input : ON/ OFF



First clamp (optional)

With this menu item you can set which part of the clamping foot (left or right) will be lowered first. The menu item will only be displayed, if in the menu equipment the option lowering clamping foot separately is activated.

Input: 1/2 (left/right)



Submenu laser marking light (optional)

This menu item will only be displayed if the option Laser light is activated in the menu equipment.

Laser light 1 ...3

Switching on/off the laser marking light 1 to 3.

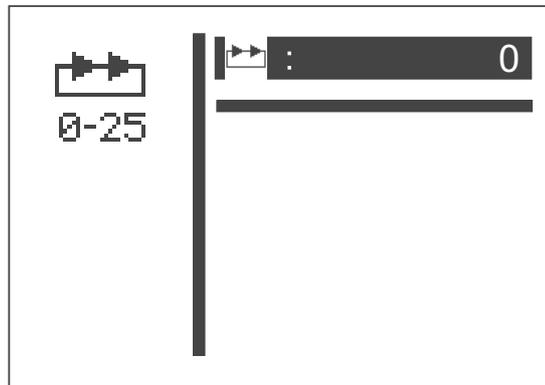
Input: ON/ OFF

8.5.3 Seam pattern sequences

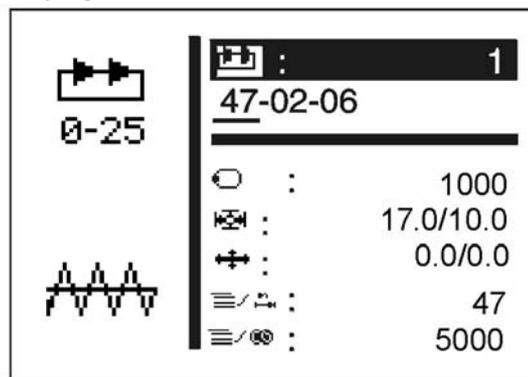
8.5.3.1 Switching the sequence programming mode on or off

Changeover from the seam pattern operation to the seam pattern sequence operation

- Actuate the function key "S" while the main menu is being displayed in order to skip to the sequence programming mode.



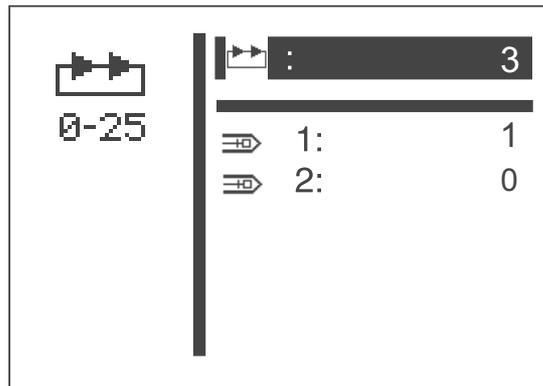
- Start the editing by actuating the „OK “ key
- Select any sequence by using the “↑ “ key (1-25)
- Confirm the selection by actuating the „OK“ key. The seam pattern sequence operation is switched on.
- Actuate the key „ESC “ or the “↵ “ key. The main menu for the seam pattern sequence operation will be displayed



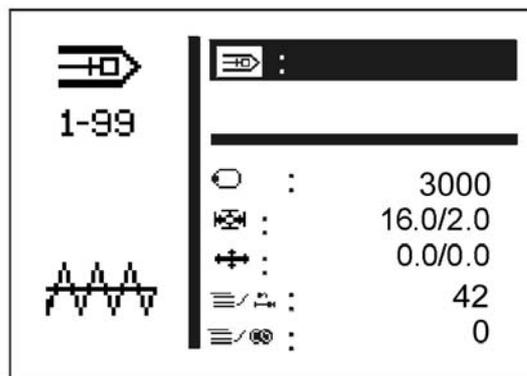
- The menu items sequence number and sequence in the main menu will be described at the end of this section.

Skipping from seam pattern sequence operation to seam 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 seam pattern sequence operation is switched off.
- Actuate the „ESC “ key or the “← “ key.
The main menu for the seam pattern operation will be displayed.



Menu items in the main menu of the seam pattern sequence



Sequence

Selection of the seam pattern sequence.

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

47 - 02 - 06

Sequence succession

Display of the sequence succession.

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

– Further seam patterns right:

2 15 12 9 18 ..

Further seam patterns left:

.. 34 2 5 12 24

Further seam patterns left and right:

.. 52 25 12 39 ..

.. 34 2 5 12 24

Automatic operation

After the completion of a seam pattern the control changes over to the next seam pattern shape automatically.

After sewing of the last seam pattern the control changes over to the first seam pattern within the sequence again.

The current seam pattern is marked by a bar below the number.

The shape of the selected seam pattern is indicated on the left half of the display.

Manual operation

The control does not change between the seam patterns automatically.

– Select the next seam pattern with the keys “←” or “→”.

The shape of the selected seam 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 seam patterns.

2 → 15 → 6 → 7 →

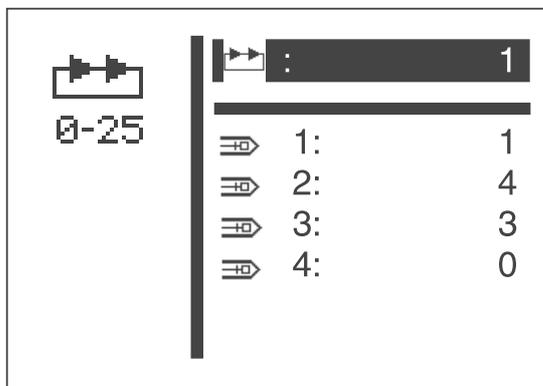
Automatic operation

2 - 15 - 6 - 7 -

Manual operation

8.5.3.2 Sequence programming mode

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



- Switch on the 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/ seam pattern sequence operation

Selection of the sequence to be created or to be altered.

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

Input: 0 ... 25

- Select desired sequence number with the keys “↑” or “↓”.
If the seam pattern sequence operation is to be switched off, select the sequence number 0.
The sequence number is displayed white on black.
- Press key “OK ”.
The program is activated.



Seam pattern number (1 .. 20)

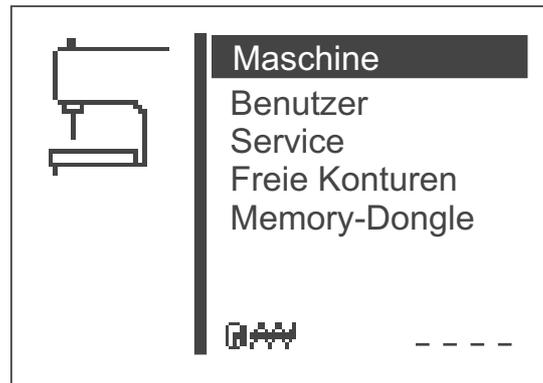
With this menu item you select the seam pattern number to be taken up in the current sequence.

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

8.5.4 Technician mode

In the technician mode the following menus are included:

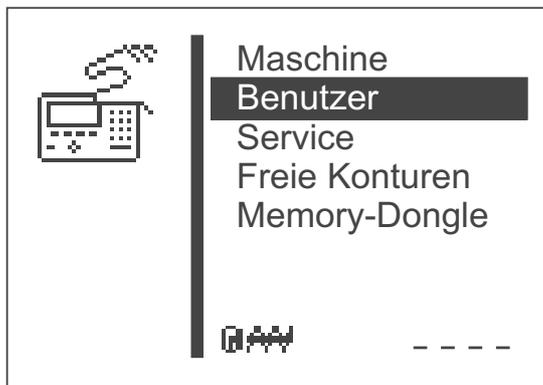
Machine configurations



machine config
user config.
service functions
free contours
memory dongle

In this menu machine-specific adjustments are made.

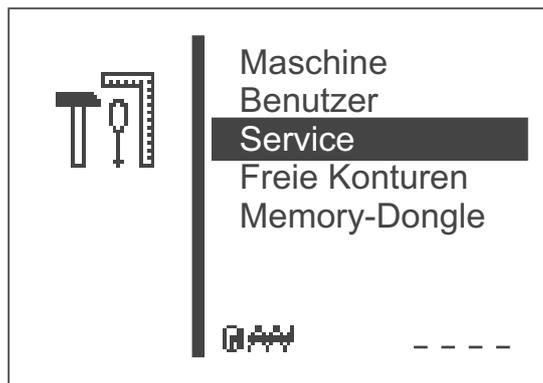
User configurations



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

In this menu operation-specific adjustments are made.

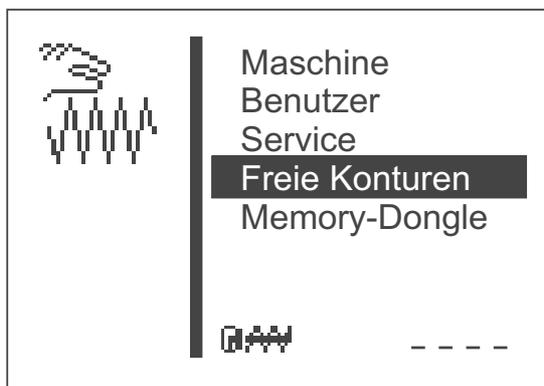
Service functions



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

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

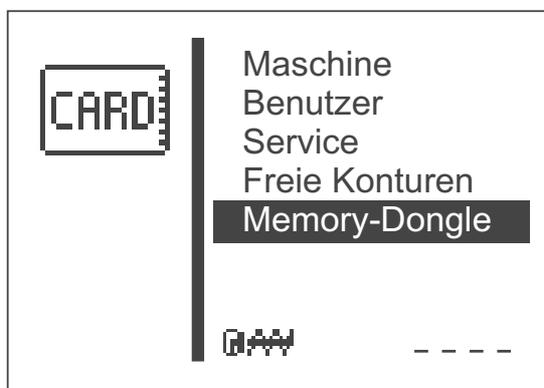
Free contours



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

With the automatic bartacker 510 up to nine freely defined seam contours can be created and sewn. The coordinates are entered directly at the control panel.

Memory dongle

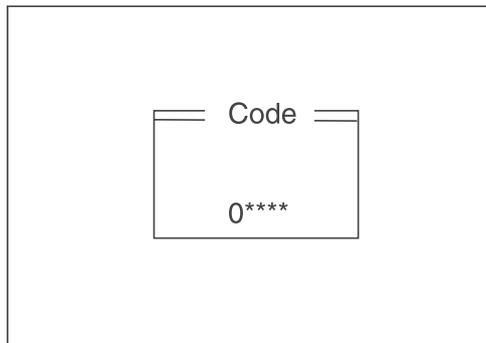


machine config
operat.config.
test functions
free contours
memory dongle

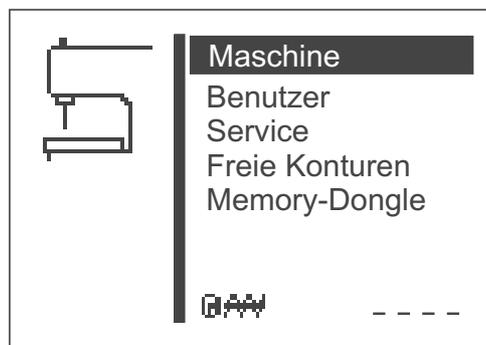
With the help of the memory dongle, data can be transferred from the machine to the dongle or vice versa.

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 functions
free contours
memory dongle

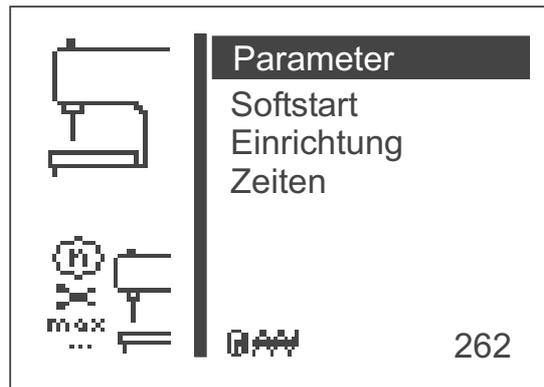
- Select desired submenu with the keys "↑" or "↓".
- Switch into the selected submenu with the key "OK".



Cycle time

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

8.5.4.1 Machine configuration



parameter
soft start
sew. 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.

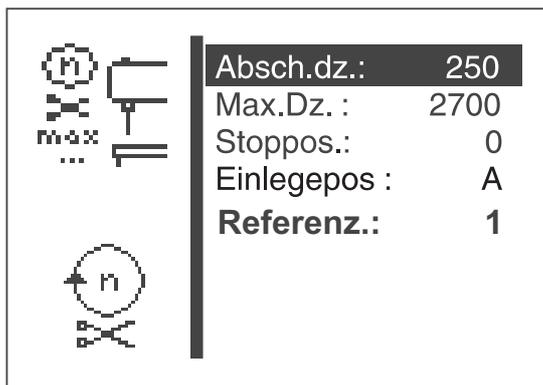


Machine cycles

The total number of the sewn cycles is displayed.



Submenu machine parameters



cut.rpm
max.rpm
stop pos.
sew.st.pt.
softstart
sew. equipment

- 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.

1



Cutting speed

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

Input: 100 ... 600 [rpm]



Maximum sewing speed

Input of the maximum adjustable sewing speed

Input: 2000 ... 2700 [rpm]



Stop position

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

Input: 0 = thin fabrics
-15 = thicker fabrics

Note

The stop position is required for adjusting the corresponding material thickness.

Feeding position

Selection of the material feeding position.

Input: A = Seam beginning point
B = Machine neutral point



Note

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

Feeding point A = shorter cycle time
Feeding point B = easier feeding of large seam patterns, longer cycle time



Referencing

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

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



Submenu Soft start

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

1. Stich:	600
2. Stich:	1500
3. Stich:	2700
4. Stich:	2700
5. Stich:	2700

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]



Submenu sewing equipment

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

	Klammerfuß.... ✓
	Freie Maße
	Nummer: 7
	Länge: 24.0
	Breite: 44.0
	Ausstattung

w.clamp f.
open dimens

number
length
width

laserl.

Note

The entry of the clamping foot number (cf. chapter 12) serves for the automatic verification whether the seam pattern to be currently sewn is positioned within the inner frame of the clamping foot.

If the clamp numbers 9 to 13 are selected, only certain seam pattern numbers and sequence numbers are allowed.

If no clamping feet are specified, also free dimensions can be defined.

1



Clamping foot

Selection of a specified clamping foot as equipment.

Input: Alternative



Open dimensions

Selection of a clamping foot with free sewing field.

Input: Alternative



Number

Selection of a DA clamping foot number.

Input: 1 .. 13

Clamping foot number	Max. tack size (X x Y) [mm]	Dim. X x Y [mm] Inner frame	Inner frame rectangular	Description
1	19.0 x 3.5	20.0 x 4.5	yes	Straight bartack
2	20.0 x 4.1	21.0 x 5.1	yes	Straight bartack
3	27.0 x 5.0	27,0 x 5,0	yes	Straight bartack, large
4	10.0 x 4.5	10,0 x 4,5	yes	Straight bartack, small
5	5.6 x 23.0	5,6 x 23,0	yes	Longitudinal bartack
6	19.0 x 12.0	19,0 x 12,0	yes	Small field clamping foot
7	44.0 x 24.0	44,0 x 24,0	yes	Large field clamping foot
8	9.5 x 4.5	9,5 x 4,5	yes	Contraction clamp
9	16.0 x 16.0	16,0 x 16,0	no	Circle
10	12.0 x 14.0	12,0 x 14,0	no	D-clamping foot, simple
11	24.6 x 12.6	24,6 x 12,6	no	Double D-clamping foot, lateral
12	12.6 x 21.0	12,6 x 21,0	no	Double D-clamping foot, longitud.
13	34.8 x 12.2	34,8 x 12,2	no	Double Tri-clamping foot, lateral
14	16.0 x 2.6	17,0 x 3,6	yes	"Belt loop"
16	8,6 x 13,6	24,0 x 14,6	no	Double D-clamping foot, lateral



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.

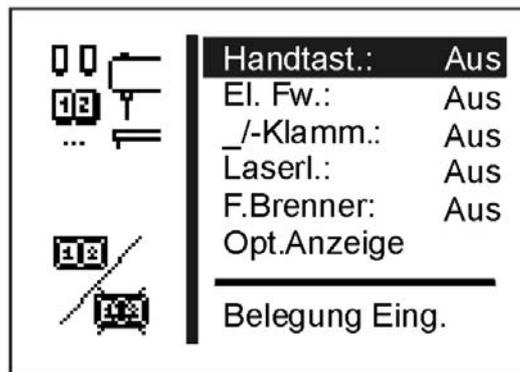


Danger of Breakage!

When making the clamps for open dimensions a safety margin must be considered.



Submenu Configuration



hand switch:off
 el. thr. wiper:off
 _/-clamp: off
 laser light: off
 thr. burner off
 opt. sign.

assignment input

Further optional equipments are available. Please contact our application centre (APC).



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



Electric thread wiper

Activating of optional electric thread wipers (instead of the mechanic thread wiper).

Input: ON/OFF



Separate lowering of the clamping foot

Activating the operating of the optional separate clamping feet.

Input: ON/OFF

Operating the separate lowering of the clamping foot

NOTE!

The function is only available with seam pattern programs (variants).

Sewing procedure with pedal

- Push the pedal to the front to level 1: clamp 1 will be lowered
- Move the pedal into resting position
- Push the pedal again to the front to level 1: clamp 2 will be lowered
- Push the pedal to level 2: the sewing process will be started
- Push the pedal back to level:
the clamp closed last will be lifted again
- Push the pedal back to level and keep it pushed (0,8 sec.): clamp 1 and clamp 2 will be lifted one after the other

Testing mode with the control panel BF3

- Actuate the keys "OK" + "F": clamp 1 will be lowered
- Actuate the "OK" key: clamp 2 will be lowered
- Actuate the "OK" key again: the testing process will be started
- Actuate the "ESC" key: the clamp closed last will be lifted again

Sewing process with the hand switch (optional)

- Actuate key 1: clamp 1 will be lowered
- Actuate key 2: clamp 2 will be lowered
- Actuate key 2 again: the sewing process will be started
- Actuate key 1: the clamp closed last will be lifted again
- Actuate key 1 and keep it pressed (1,5 sec.): clamp 1 and clamp 2 will be lifted



Laser lights

Activating the 3 optional laser lights.

Input: ON/OFF



Thread burner

Activating the optional thread burner device. If the option thread burner is switched on, the menu items t5 - t9 are listed under machine/ timings allowing the setting of various times.

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 configured and activated via two 24V-outputs.



Optical signalling

Activating of the indication. Beforehand outputs 1 and 2 must be configured, 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.



Submenu Times

	t1:	250
	t2:	40
	t3:	50
	t4:	100
	t5:	5000
	t6:	100
	t7:	100

The submenu times is only displayed, when the corresponding options are activated or the seam patterntoring switch of the clamping foot is not connected.



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).

The above menu item will only be displayed, if the monitoring switch of the clamping foot is not connected.

Input: 50 ...300 ms
Preset value: 250 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: 100 ms

The menu items t5 - t9 will appear, only if the option “thread burner” is activated under menu machine/equipment/configuration.

T5

Time to preheat the burner

Time allocated for the preheating of the burner points before the seam end.

Input: 0 ... 5000ms

Preset value: 2000ms



Select only the necessary time needed for the burning of the threads, otherwise the burner points can be damaged.

T6

Delay before thread puller

Delay after advancing the lower thread burner puller, after the thread puller (thread wiper) is activated.

Input: 0 ... 500ms

Preset value: 100ms

T7

Delay before upper burner

Delay after the activation of the thread puller (thread wiper), after the upper thread burner is advanced.

Input: 0 ... 500ms

Preset value: 100ms

T8

Time thread puller (thread wiper) on

The duration of the thread puller (thread wiper) is switched on.

Input: 0 ... 3000ms

Preset value: 2000ms

T9

Delay heating burner off

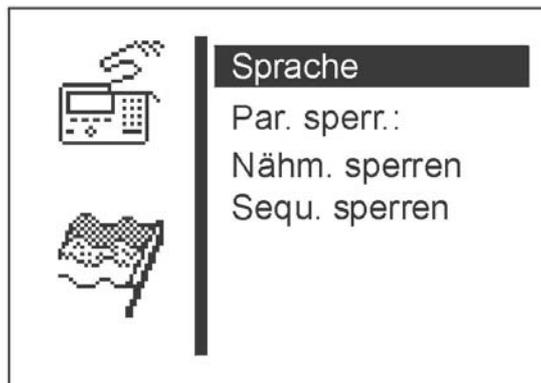
Delay after the thread puller (thread wiper) is turned off, after the heater of the burner is turned off.

Input: 0 ... 500ms

Preset value: 100ms

8.5.4.2 User configurations

In this menu operation-specific adjustments are made.



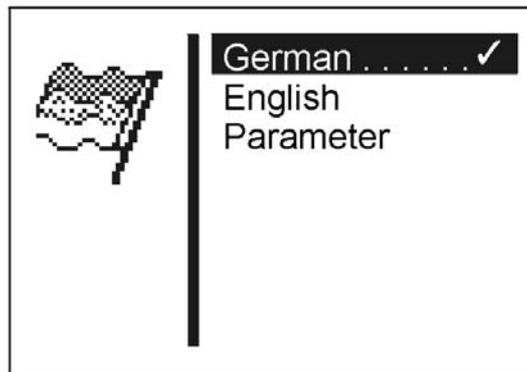
language
sewing mode
manual keys
param.mod
forced st
pattern locking
sequence locking

- 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.

1

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 technical level (see chapter 13).



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

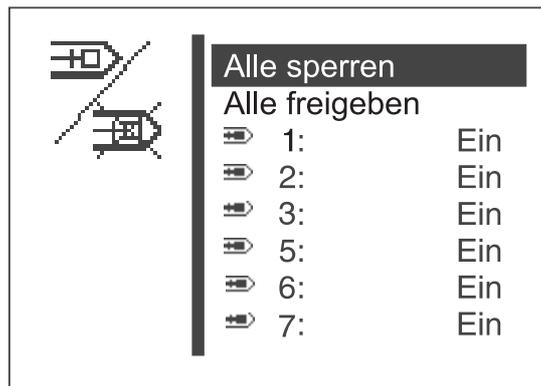
Note

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



Lock seam pattern

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



lock all
 unlock all
 on
 on
 on
 on
 on
 on

Note

If a clamp with non-rectangular shape (Number 9 to 13) is selected in the menu "Machine configuration/ Equipment", a manual locking is not possible. The menu item cannot be selected because for these clamping feet only specified seam patterns are defined (see table of seam patterns chapter 11).

In general the following restrictions apply:

1. Seam pattern operation

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

2. Seam pattern sequence operation

- A locked seam 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 seam pattern selected in the seam pattern operation cannot be locked.

Lock all

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

Unlock all

All seam patterns will be released.

The status of the displayed seam pattern number switches to "ON".

Lock/unlock individual seam pattern

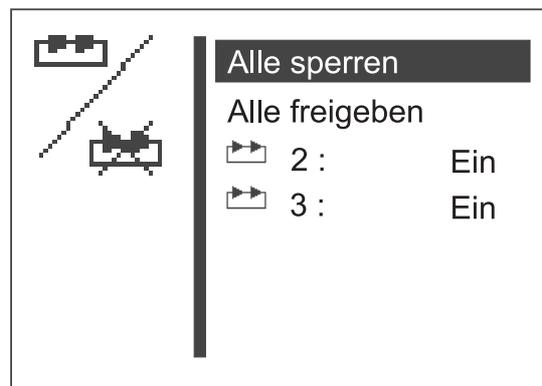
Input: ON / OFF



Lock sequences

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

The menu item is only displayed, if more than one seam pattern sequence is programmed (compare with chapter 8.5.3)



lock all
unlock all
on
on

In general the following restrictions apply:

1. Seam pattern operation

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

2. Seam 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

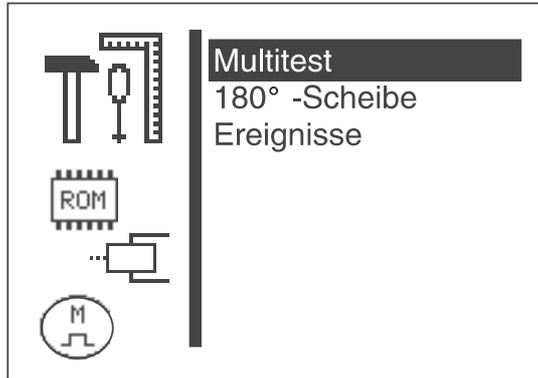
8.5.4.3 Service functions

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.

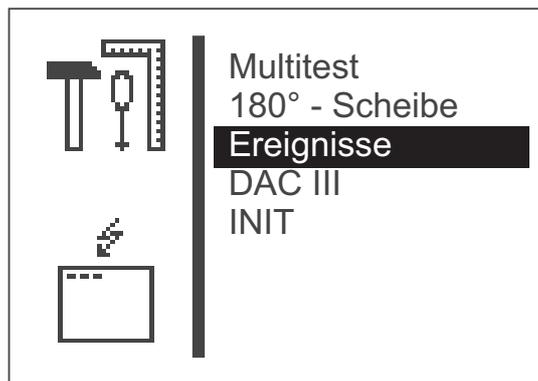
180° disc



multitest
180°-disc
events

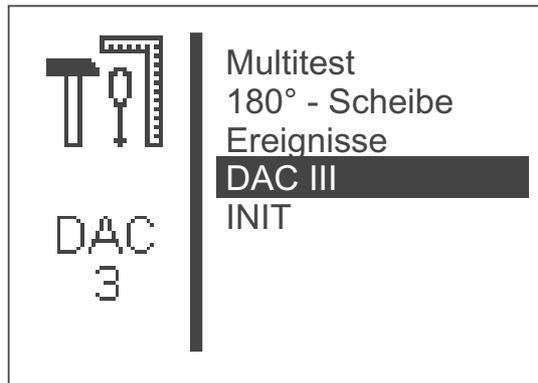
This menu item offers a function for the correct adjustment of the reference position of the sewing motor (180° disc) - see service instructions.

Events



multitest
180°-disc
events

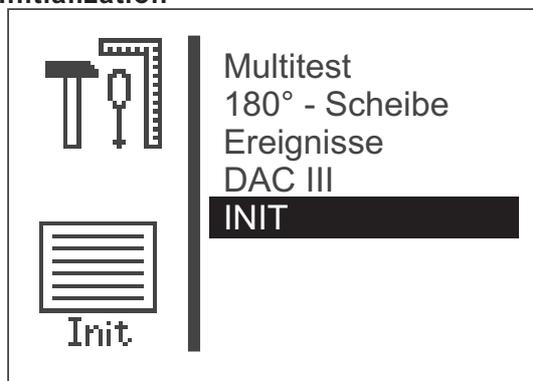
DAC III



multitest
180°-disc
events
DAC III
INIT

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

Initialization



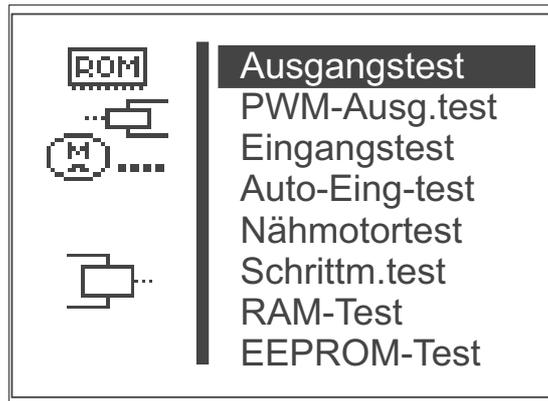
multitest
180°-disc
events
DAC III
INIT

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



Multitest

Selection of the submenu of Multitest



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

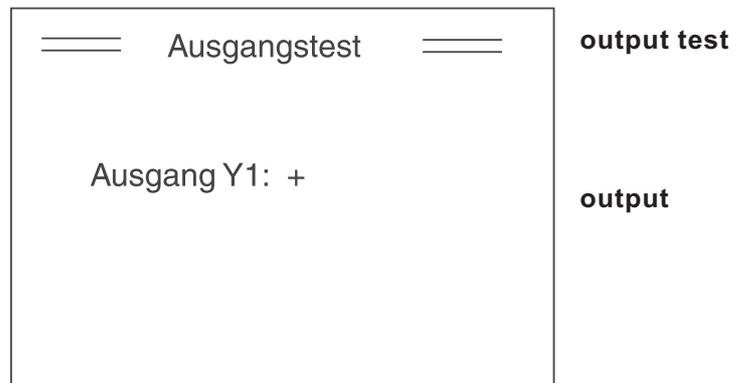
- Select desired test function with the keys “↑” or “↓”. The selected test function is indicated white on black.
- Choose selected test function using the “OK” key.



Output test

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

- Start the test function with the key "OK".
- Select desired output element with the keys "↑" or "↓".
- Switch desired output element on and off with the key "OK".



- 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 light 1, if the option is activated
Y 2	Laser marking light 2, if the option is activated
Y 3	Laser marking light 3, if the option is activated
Y 4	Separated clamping foot 1, if the option is activated
Y 5	Separated clamping foot 2, if the option is activated
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

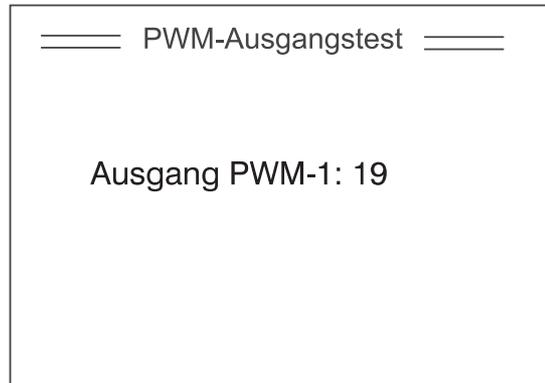
The recent configuration of the outputs is indicated in the submenu "Output configuration" of the menu equipment.



PWM Output test

This test function checks the function of the magnets.

- Start the test function by actuating the “OK” key.
- Select the desired output element by actuating the “←” or “→” keys.
- Switch the selected output element on and off by pressing the “↑” or “↓” keys.



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.
- If the machine is equipped with a monitoring switch of the clamping foot, the Output PWM-1 will have the value + or - will be displayed, according to the switching status of the output element.
- Actuate the function key “ESC” in order to leave the test function

1



Caution: Danger of injury !

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

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



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.



Caution: Danger of injury !

Do not reach into the working area of the clamping foot when starting and ending the input elements.

- Start the test function with the key “OK”.
- Select desired input element with the keys “↑” or “↓”. The switching status of the input element is indicated.



- Actuate the function key “ESC” in order to leave 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 1, if the option is activated
S 6	Hand switch 2, if the option is activated
S 7	Depending on the option activated and the input configuration
S 8	Check clamping foot
Ref. N	Referencing switch for the sewing motor
Ref. X	Y-reference switch
Ref. Y	X-reference switch

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



Auto-Input test

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



ATTENTION !

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



Caution: Danger of injury !

Do not reach into the working area of the clamping foot when starting and ending the input elements.

- Start test function with the key "OK".
- Actuate desired input element.
The switch status and the number of the actuated input element are indicated.



auto input tst

1

- Actuate the function key "ESC" in order to leave 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 1, if the option is activated
S 6	Hand switch 2, if the option is activated
S 7	Depending on the option activated and the input configuration
S 8	Check clamping foot
Ref. N	Referencing switch for the sewing motor
Ref. X	Y-reference switch
Ref. Y	X-reference switch

The recent configuration of the inputs is indicated in the submenu "Input configuration" of the menu Equipment.



Sewing motor test

With this test function the sewing motor can be checked.

- Start test function with the key “**OK**”.
- Start motor with the key “**↑**”.
- Alter speed with the keys “**↑**” or “**↓**”.
The speed is indicated.



motor test

- Actuate the 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.



Step motor test

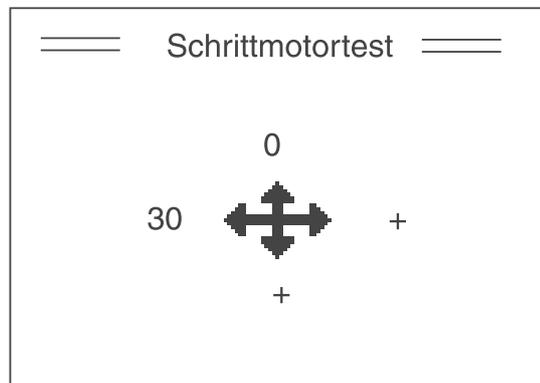
With this test function the step motors and the pertaining reference switches can be checked.



ATTENTION risk of breakage !

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

- Start the 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

1

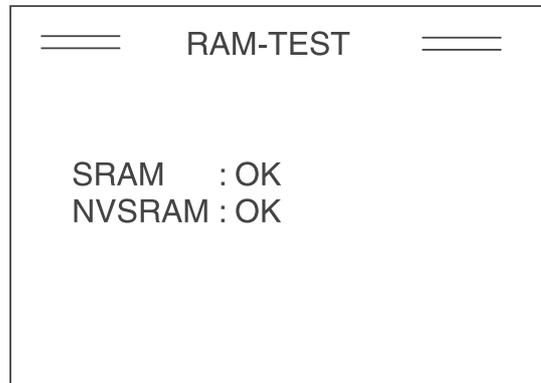
- Actuate the function key “ESC”.
The test is finished.
The menu Multitest appears on the display.



RAM test

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

- Start test function with the key "**OK**".
The display shows the test result.



Display

Explanation

SRAM OK	Static Random Access Memory works perfectly
SRAM ERROR	Error in the static memory
NV-RAM OK	Program data memory is in order
NV-RAM ERROR	Error in the program data memory

- Actuate the function key "**ESC**".
The test is finished.
The menu Multitest appears on the display.



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

```
==== EEPROM-TEST. ====  
  
ROM-GR.: 302k  
  Klasse: 510  
Version  : V07  
Datum    : 25-02-02  
Checks.  : 0xA15 OK
```

ROM size
class
version
date
check sum

Hint:

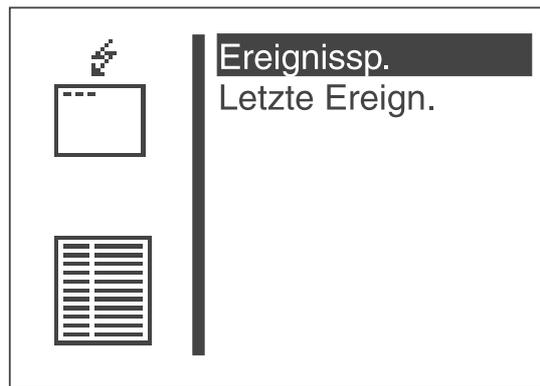
The data will vary depending on the software version.

- Actuate the function key "ESC".
The test is finished.
The menu Multitest appears on the display.



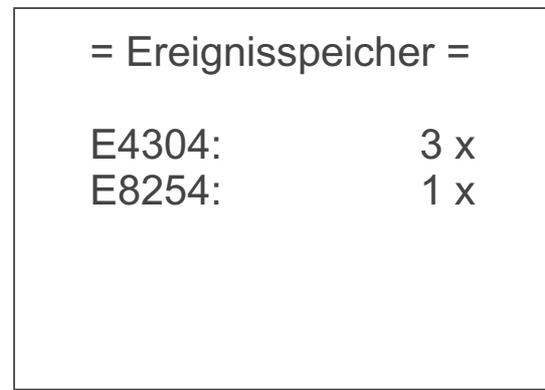
Events

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



event memory
latest events

Event memory

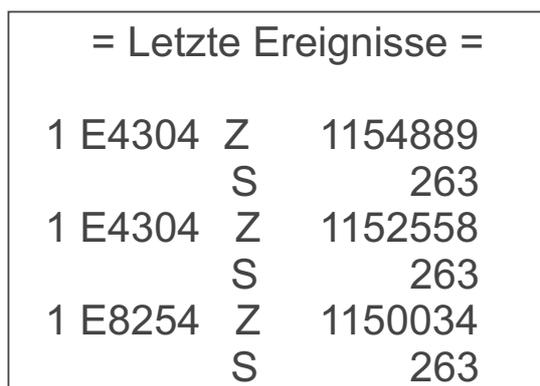


(example)

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

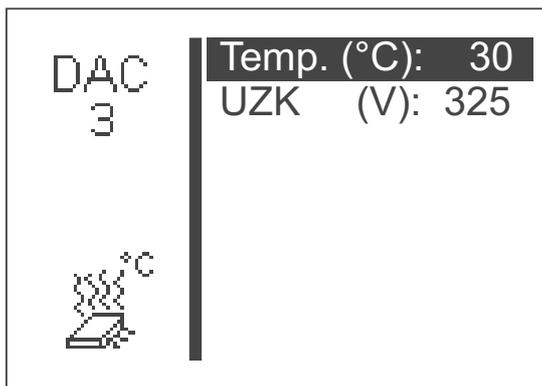
E = Event/Error number

- Exit the menu item by actuating the "ESC" key.
- Continued display by actuating the "↓" key..

DAC
3

DAC III

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



(example)



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.



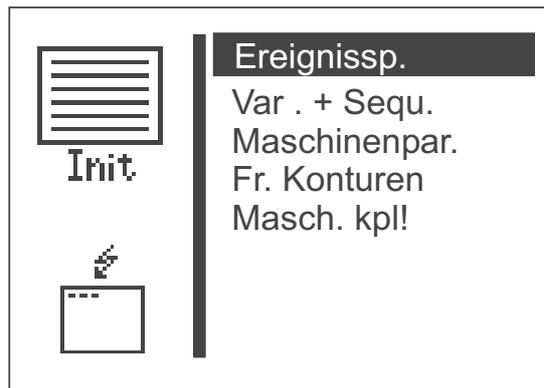
Intermediate circuit voltage sewing motor (UZK)

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



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 seam contours
machine complete



Event memory

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



Seam pattern programs (variants) and sequences

Via this menu item seam 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 and the existence of a monitoring switch for clamping foot 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 seam pattern programs and sequences are eventually deleted and numbers of subsequent programs and sequences may be altered.



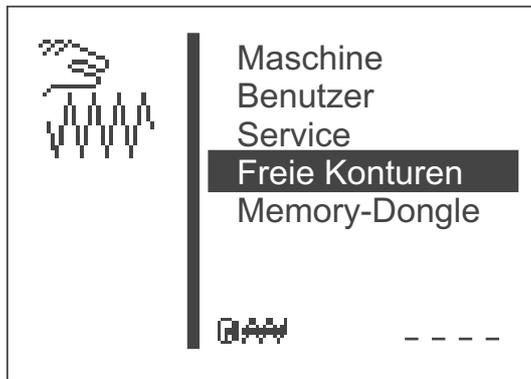
Machine complete

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

Note

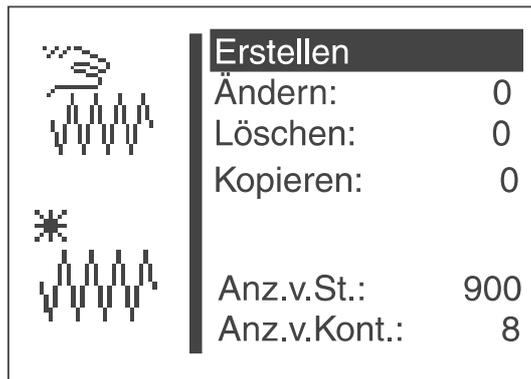
After the restart of the machine, a new selection of the clamp numbers and the equipment must be carried out (compare installation instruction, chapter 9).

8.5.4.4 Free contours



machine
user
service
free contours
memory dongle

With the automatic bartacker 510 up to nine freely defined seam contours can be created and sewn. The entry of the coordinates is done at the control panel.



create
alter
delete
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 seam pattern number or free seam contour whatever can be copied and altered. After selection of the seam pattern number you get into the submenu "Alter seam contour".

- Select desired function with the keys "↑" or "↓".
- Choose selected function with the key "OK".

Note

Number of stitches:

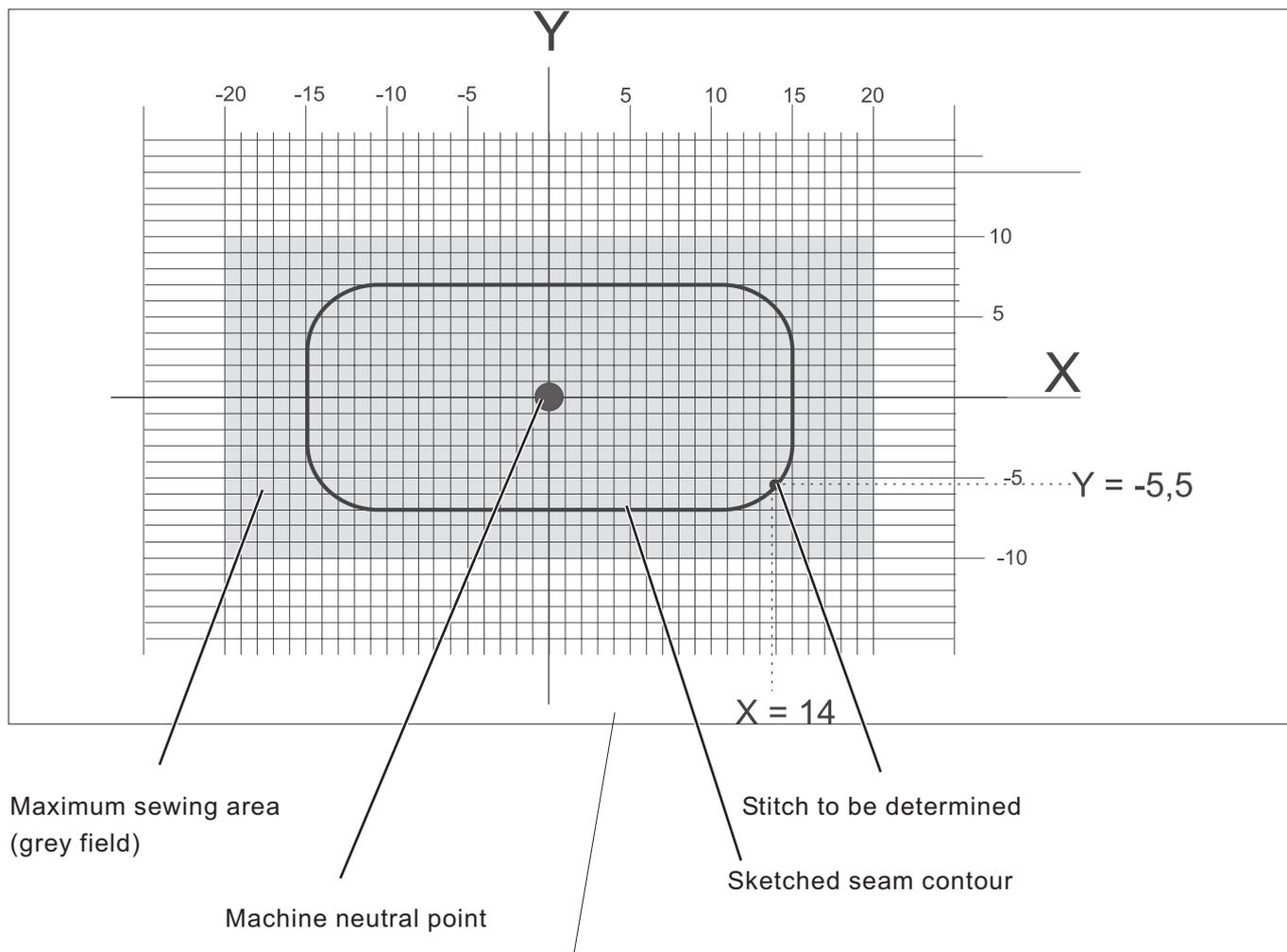
The number of the stitches still available is indicated (max. 1000)

Number of seam patterns:

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

Determining the seam pattern 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 millimetre graph paper.



Coordinate system with X- and Y-axis

Note

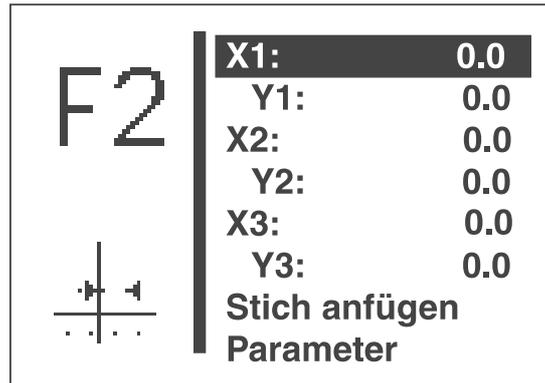
The seam contour should be laid out in such a way that the machine neutral point is in the middle of the seam pattern, if possible.

- Sketch the maximum sewing field size on the millimetre graph paper ($X = \text{max. } 40 \text{ mm}$, $Y = \text{max. } 20 \text{ mm}$).
- 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).



Create seam pattern

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



add stitch
parameter/end

Note

In order to enter stitch operations (f.e. intermediate cutting), first complete the seam pattern (entering of the coordinates) and then insert the stitch operation through editing in the menu "Changing seam pattern".



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 X_{n+1} and Y_{n+1} (here: X₄ and Y₄) are given in the two upper menu lines. The selection bar changes to the line X_{n+1} (here: X₄) automatically. The values X_{n+1} and Y_{n+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 seam patterns" appears again.



Add stitch

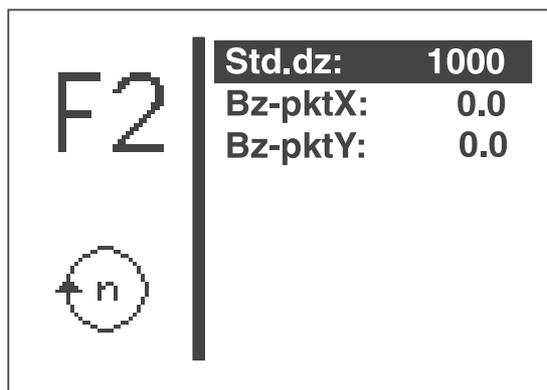
Function for adding a stitch.

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



Submenu parameter

Selection of the submenu for entering the seam pattern parameters



std. rpm
orig. x
orig. y
end



Std. rpm:

Standard speed

Input: 100 ... 2700 rpm



orig. X:

Reference point X for change of size

Input: -10.0 ... +10.0



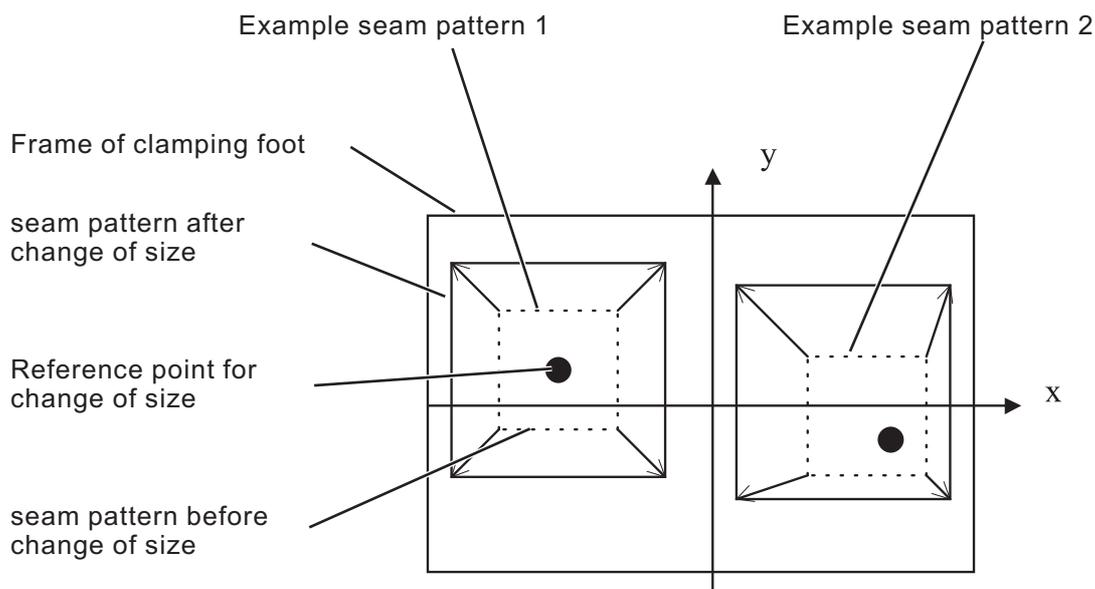
orig. Y:

Reference point Y for change of size

Input: -20.0 ... +20.0

The reference point for the change of the seam pattern size is individually and internally fixed for every seam pattern. Normally it is the machine neutral point.

The following illustration shows the principle of size change under consideration of the reference point:





Change seam pattern



stitch coordin
del.st.
add 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: Number of the stitch to be deleted



Add stitch:

Add stitch.

Input: Number of the stitch in front of which a new 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

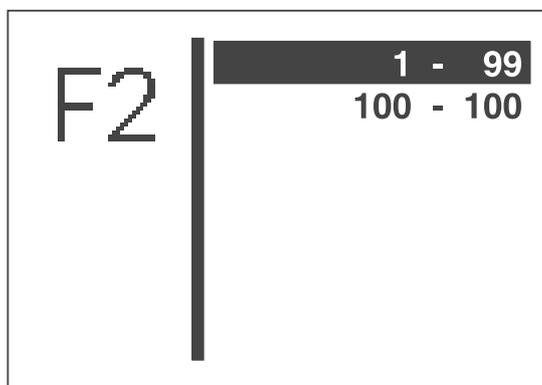
Selection of the submenu for altering the seam pattern parameters.



Submenu stitch coordinates

If the seam pattern to be altered has less than 99 stitches, the submenu appears immediately.

If the seam pattern to be altered has more than 99 stitches, the following menu appears first:



- Select desired range of stitches with the “↑” or “↓” keys.
- Select range of stitches with the key “OK”.
The submenu “**Stitch coordinates**” appears

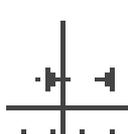
F2 1 - 99	1	-1.7 / 1.7
	2	1.7 / 1.7
	3	-1.7 / 1.7
	4	1.7 / 1.7
	5	-1.7 * 1.7
	6	-1.7 / 1.7
	7	-1.7 / -1.7
	8	-1.7 / -1.7

- Select desired stitch with the “↑” or “↓” keys.
- Select stitch with the key “OK”.
The submenu for altering a stitch coordinate appears.

If a stitch has a stitch operation attributed to it, it will be marked with an asterisk (*) instead of a slash (/).

Submenu “Alter stitch coordinate”

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

F2 	X10:	0.0
	Y10:	0.0
	Op10:	1

(example)



X10

Altering the X coordinate for stitch number 10.

Input: -20,00 ... +20,00



Y10

Altering the Y coordinate for stitch number 10.

Input: -10,00 ... +10,00



OP10

Altering the stitch operation for stitch number 10.

Input: 0 ... 1 (compare the chart below)

Note:

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

Number of operation	Description	Comment
0	No stitch operation	
1	Intermediate thread cutting	The intermediate cutting can be programmed up to 10 times within a seam pattern. Between 2 intermediate cuttings at least 3 stitches must be sewn.

**Delete seam pattern**

	Erstellen	
	Ändern:	0
	Löschen:	0
	Kopieren:	0
	Anz.v.St.:	900
	Anz.v.Kont.:	8

design**edit****delete****copy****no.st.av.****no.pat.av.**

- Select the function "**Delete**" with the "↑" or "↓" keys.
- Select desired seam pattern number with the "↑" or "↓" keys.
- Press the "**OK**" key.
The seam pattern is deleted.

ATTENTION!

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



Copy seam pattern

	Erstellen	0
	Ändern:	0
	Löschen:	0
	Kopieren:	0
	Anz.v.St.:	900
	Anz.v.Kont.:	8

design
change
delete
copy

no.stitch
no.st.av.

- Select the menu item "copy " with the "↑ " or "↓ " keys.
- Actuate the „OK “ key.
- Select the desired seam pattern number (1-50,91-99) with the "↑ " or "↓ " keys.
- Confirm the selection by actuating the „OK “ key.
The seam pattern will be copied and the menu "Change seam pattern" will be displayed.

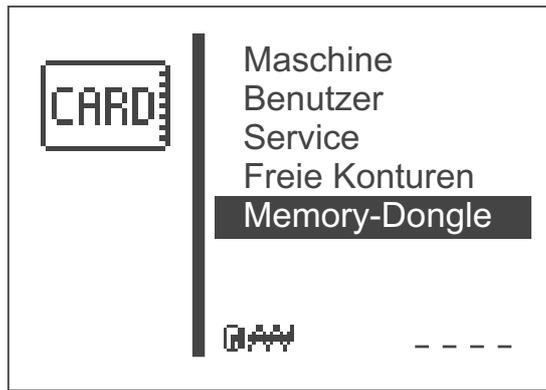
F2	Stichkoord.	
	St.entf.:	0
	St.einf.:	0
	Stich anfügen Parameter	
	Anz.St.:	3
	Anz.v.St.:	897

stitch coordin.
delete stitch
insert stitch
append stitch
parameters

no.stitch
no.st.av.

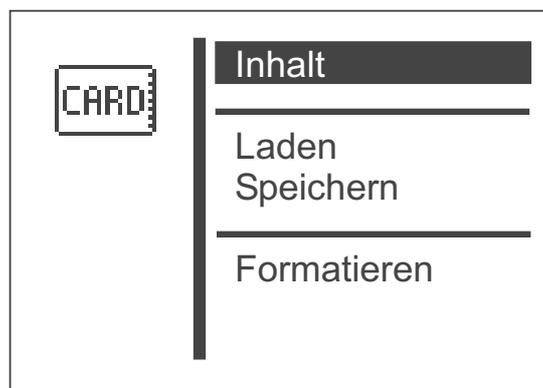
In order to change the seam pattern, please follow the instructions of the paragraph "Change seam pattern" on page number 64.

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

1



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 (seam 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 (seam 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.

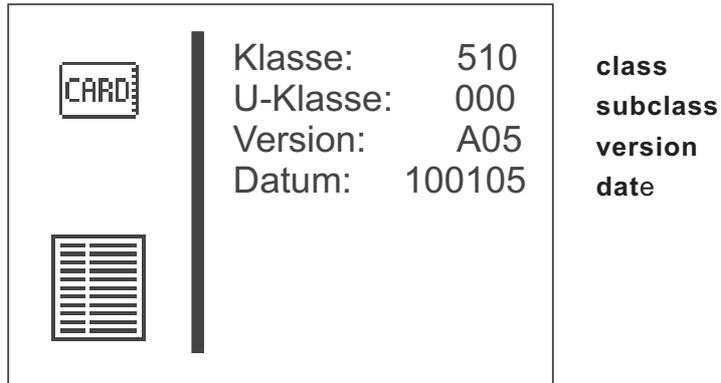
The dongle is to be inserted on the control unit into the plug connection labelled „Dongle “ (X110).



Displaying the dongle contents

Boot dongle

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



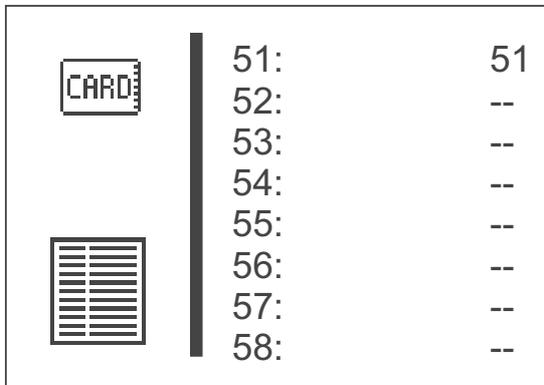
(example)

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 510 is inserted, the memorized seam pattern programs or free seam contours will be displayed.

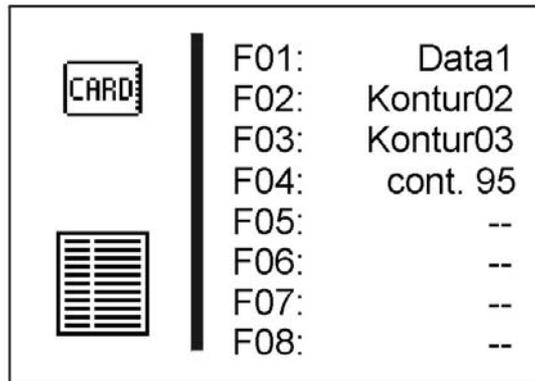
Display of the memorized seam pattern programs



(example)

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

Display of the memorized free seam contours

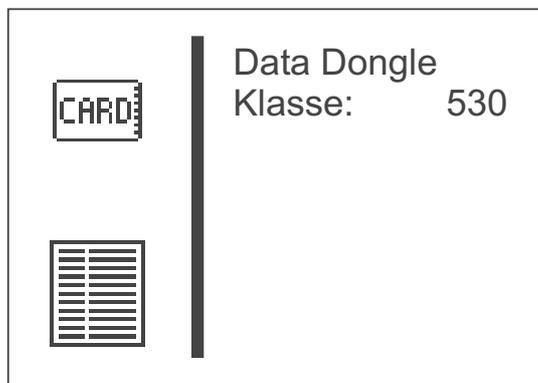


F01:	Data1
F02:	Kontur02
F03:	Kontur03
F04:	cont. 95
F05:	--
F06:	--
F07:	--
F08:	--

(example)

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

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

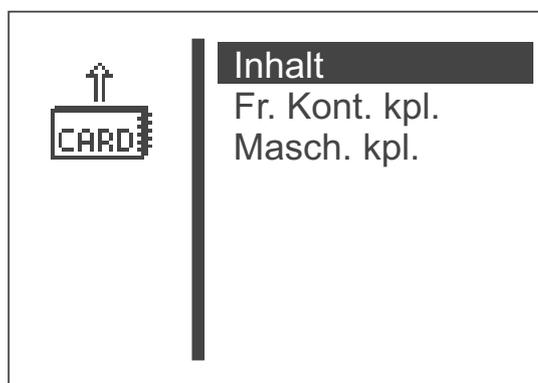


Data Dongle
Klasse: 530

(example)

Transferring data from the dongle to the machine

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



Inhalt
Fr. Kont. kpl.
Masch. kpl.

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 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 memorized 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 memorized on the dongle.

Machine completely

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

- all seam pattern programs
- all sequences
- machine parameters
- recent seam pattern numbers, if the sewing equipment corresponds
- recent standard seam 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 memorized 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 seam pattern programs memorized on the dongle.

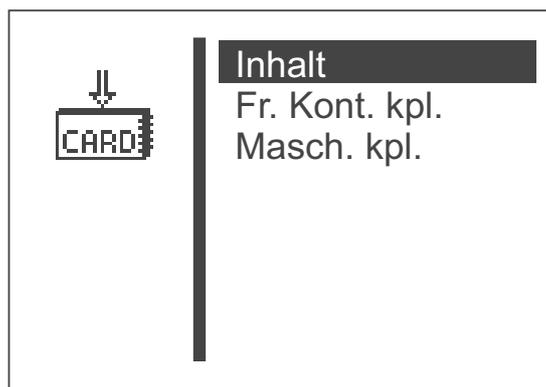


If free seam contours in seam pattern programs (variants) and sequences are to be transferred, first the free seam contours have to be loaded on the machine and then “machine completely”!



Memorizing data on the dongle

Here program data (seam 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.

1

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 (seam pattern programs and sequences) and the machine parameters will be started. They consist of:

- all seam pattern programs
- all sequences
- machine parameters
- recent seam pattern numbers, if the sewing equipment corresponds
- recent standard seam 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 program data and the machine parameters memorized on the dongle will be deleted when the saving is started!

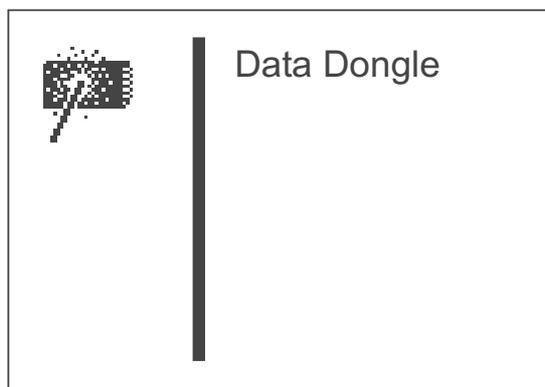
Note

The time needed in order to save the data depends on the number of seam 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!

Error messages

Number	Name	Possible cause	Elimination
4301	Dongle missing	No dongle inserted	Insert dongle into control unit
4302	Dongle empty	No data memorized on dongle	Save data on the dongle
4304	Wrong dongle type	Dongle has the wrong format for the selected function	<ul style="list-style-type: none"> • Use a different dongle • Format the dongle
4307	Wrong machine class	Data dongle is not formatted for class 510	<ul style="list-style-type: none"> • Use another dongle • Format the dongle
4311	Error format-ID	<ul style="list-style-type: none"> • Dongle not formatted correctly • Dongle defect 	<ul style="list-style-type: none"> • Format the dongle again • Use a new dongle
4312	Unknown dongle type	<ul style="list-style-type: none"> • Dongle not formatted correctly • Dongle defect 	<ul style="list-style-type: none"> • Format the dongle again • Use a new dongle

8.6 Error messages

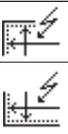
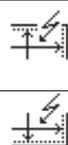
In case of a fault in the control system or in the seam pattern program the display shows a corresponding symbol and a fault number.

With the help of the following tables the cause of the fault can be ascertained and remedial action can be taken.

8.6.1 Error categories

No.	Pictogram	Name	Description
1		Fatal Error	An emergency stop follows. The automatic bartacker 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

8.6.2 Application messages

Picto-gram	Description	Category	Reaction / Troubleshooting
	Capacity counter is "zero"	Hint	<ul style="list-style-type: none"> Clamping foot can only be lowered after confirmation via the "OK" key. After the confirmation, the hint disappears. With the confirmation, the capacity counter is reset to its initial value again.
	Handwheel turned manually	Warning	<p>After interruption of the sewing procedure:</p> <ul style="list-style-type: none"> Impossible to continue sewing Stop the sewing process by stepping the pedal backwards, confirmation with push button key 1 (clamps) or pressing the "ESC" key at the control panel
	seam pattern exceeds the inner frame of the clamping foot either -X or +X direction	Warning	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> No sewing start possible. Select another clamping foot Choose another sewing pattern Reduce Y-Offset in the corresponding direction

Picto-gram	Description	Category	Reaction / Troubleshooting
	seam pattern exceeds the work surface opening of the clamping foot in X-direction	Warning	<ul style="list-style-type: none"> · No sewing start possible · Select another clamping foot · Choose another seam pattern · Reduce size of seam pattern in X-direction
	seam pattern exceeds the work surface opening of the clamping foot in Y-direction	Warning	<ul style="list-style-type: none"> · No sewing start possible · Select another clamping foot · Choose another seam pattern · Reduce size of seam pattern in Y-direction
	seam pattern exceeds the work surface opening of the clamping foot in X/Y-direction	Warning	<ul style="list-style-type: none"> · No sewing start possible · Select another clamping foot · Choose another seam pattern · Reduce size of seam pattern in X/Y-direction
	Seam pattern locked	Hint	<ul style="list-style-type: none"> · No sewing start possible. · Choose another seam pattern Unlock seam pattern

8.6.3 Machine faults (DAC III)

Error-code	Description	Possible cause	Troubleshooting
1051	Sewing motor timeout	- Cable to sewing motor-reference switch faulty - Reference switch faulty - Sewing motor faulty - Mechanical parts rough-running	- Check cable - Check reference switch Check sewing motor - Check the mechanical parts
1052	Sewing motor overcurrent	- Sewing motor cable faulty - Sewing motor faulty - Control faulty - Software not compatible to the control unit version (A/Bxx.x)	- Check sewing motor 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 the mains voltage
1055	Sewing motor overload	- Sewing motor blocked /rough-running - Sewing motor faulty - Control faulty	- Eliminate blocking/rough-running - Check sewing motor - Check control
1056	Sewing motor overheat	- Sewing motor rough-running - Sewing motor faulty - Control faulty	- Eliminate rough-running - Check sewing motor - Check control
1058 1059	Sewing motor speed (inverted)	Sewing motor faulty	Check sewing motor
1062	Sewing motor IDMA Autoincrement	Failure	Switch the sewing 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 failure	Internal error	- Switch the sewing 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 Mechanical part rough-running	- Check cable - Check reference switch - Check step motor - Check the mechanical parts
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 overvoltage	Mains voltage too high	Check the mains voltage
2156	Step motor X-Axis overheat	- Step motor X-Axis rough-running - Step motor X-Axis faulty - Control faulty	- Eliminate rough-running - Check step motor X-Axis - Check control
2162	Step motor X-Axis IDMA Autoincrement	Failure	Switch the sewing machine off and on again

1

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

Error-code	Description	Possible cause	Troubleshooting
2201	Step motor Y-Axis Timeout Referencing	- Cable to reference switch faulty - Reference switch faulty - Step motor faulty - Mechanical part rough-running	- Check cable - Check reference switch - Check step motor - Check the mechanical part
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 overvoltage	Mains voltage too high	Check the mains voltage
2256	Step motor Y-Axis overheat	- Step motor Y-Axis rough-running - Step motor Y-Axis faulty - Control faulty	- Eliminate rough-running - Check Step motor Y-Axis - Check control
2262	Step motor Y-Axis IDMA Autoincrement	Failure	Switch the sewing machine off and on again
2911 2914	Step motor error	Internal error	- Switch the sewing machine off and on again - Software update - Contact the DA-Service staff
3100	Machine control voltage	Temporary mains voltage drop Fuse F403 faulty	Check the mains voltage Replace fuse F403
3101	Machine power voltage	Temporary mains voltage drop Fuse F402 faulty	Check the mains voltage Replace fuse F402
3102	Machine voltage intermediate circuit sewing motor	Temporary mains voltage drop Fuses F400/F404 faulty (ext.)*	Check the mains voltage Replace fuses F400/F404 (ext.)
3103	Machine voltage intermediate circuit step motors	Temporary mains voltage drop Fuse F401 faulty	Check the mains voltage Replace fuse F401
3107	Machine temperature	- Vent holes closed - Ventilation grid dirty	- 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!

Error-code	Description	Possible cause	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
3410	Clamping foot not at the top		- Check the monitoring switch of the clamping foot (Auto-Input test) - Check the cable of the switch (Auto-Input test) - Check the mechanics - Check the clearance - Check the mains voltage
3411	Clamping foot not at the bottom	- Monitoring switch of the clamping foot faulty - Cable of the switch faulty - Mechanics rough-running - Distance switch-lug too big	- Switch the sewing machine off and on again - Software update - Contact the DA-Service staff
3412	Clamping foot is already at the bottom	- Monitoring switch of the clamping foot faulty - Cable of the switch faulty - Mechanics rough-running - Distance switch-lug too big	- Check the monitoring switch of the clamping foot (Auto-Input test) - Check the cable of the switch (Auto-Input test) - Check the mechanics - Check the clearance - Check the mains voltage
3420	Upper thread burner not advanced	- Switch of the upper thread burner faulty - Cable of the switch faulty - Upper thread burner mechanics jammed	- Check the switch (Auto-Input test) - Check the cable of the switch (Auto-Input test) - Check the mechanics
3421	Lower thread burner not advanced	- Switch of the lower thread burner faulty - Cable of the switch faulty - Lower thread burner mechanics jammed	- Check the switch (Auto-Input test) - Check the cable of the switch (Auto-Input test) - Check the mechanics
3422	Too long preheating time for the thread burner	The time t5 is greater than the sewing time	- Shorten the time t5 - Reduce the sewing speed

Error-code	Description	Possible cause	Troubleshooting
3423	Timeout burner heater	The sewing procedure is due to error interrupted	The burner heater will be switched off. Switch the sewing machine off and on again
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 3721 3722	Error Command Interpreter / Motor synchronization	Internal error	- Switch the sewing 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. 510	- 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 the sewing 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	Error NV-RAM checksum	NV-SRAM faulty Failure	- Check via Multitest, if necessary replace the control Switch the sewing machine off and on again Data will be reset to factory setting.

Error-code	Description	Possible cause	Troubleshooting
5804	Free seam patterns: 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 seam patterns: Max. number of seam pattern parts	Max. number of seam pattern parts (intermediate cut) exceeded	Delete some intermediate cut in the free seam patterns
5810	Free seam patterns: Min. number of stitches per seam pattern part	Cannot keep the min. number of stitches per seam pattern part	Move some intermediate cut in the free seam patterns
5900	Error sequences – Invalid sequence number	Internal error	- Switch the sewing machine off and on again - Software update - Contact the DA-Service staff
6151 - 6154	Error input/output	Internal error	Switch the sewing machine off and on again
6351 - 6354	Error I ² C	Control faulty	- Check control - Software update - Contact the DA-Service staff
6551 - 6554 6651 - 6653 6751 - 6761 6952	Error Machine head position / AD-Converter / Processor error / Step motor driver	Internal error	- Switch the sewing machine off and on again - Software update - Contact the DA-Service staff
7451 7453 7454	Communication Test Interface	Internal error	Switch the sewing machine off and on again
7452 7455	Communication Test Interface	- Transmission failure - Cable Test interface faulty - Internal error	- Switch off the source of interference - Check cable - Switch the sewing machine off and on again
7551 - 7555 7558 7559	Communication Terminal interface	Internal error	- Switch the sewing machine off and on again - Software update - Contact the DA-Service staff
7556 7557	Communication Terminal interface	- Transmission failure - Cable Terminal interface faulty	- Switch off the source of interference - Check cable
7700	Protocol: Max number of repetition	- Transmission failure - Cable Test interface faulty	- Switch off the source of interference - Check cable

Error-code	Description	Possible cause	Troubleshooting
7701	Error Protocol	Internal error	<ul style="list-style-type: none"> - Switch the sewing machine off and on again - Software update - Contact the DA-Service staff
8151 8156 - 8159	Error IDMA	<ul style="list-style-type: none"> - Failure - Control faulty 	<ul style="list-style-type: none"> - Switch the sewing machine off and on again - Replace control
8152 - 8154 8251 8255	Error IDMA / Booting ADSP / Booting	Internal error	<ul style="list-style-type: none"> - Switch the sewing machine off and on again - Software update - Contact the DA-Service staff
8252 8257 8258 / 8253 8256 8254	Booting ADSP / Booting XILINX / Booting	Failure	<ul style="list-style-type: none"> - Switch the sewing 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	<ul style="list-style-type: none"> - Switch the sewing machine off and on again - Software update - Contact the DA-Service staff
9100 - 9105 9200 9201 9900 9902 9903 9905	Error seam pattern administration / seam pattern program / seam pattern release / Equipment / Key processing / Memory Output Message	Internal error	<ul style="list-style-type: none"> - Switch the sewing machine off and on again - Software update - Contact the DA-Service staff <p>If the error 9100 appears repeatedly, go through the initialization menu and reset the seam pattern programs and sequences (compare to page 62).</p>
9906	Error monitoring switch clamping foot	<ul style="list-style-type: none"> - Switch faulty - Cable faulty - Distance switch-lug too big 	<ul style="list-style-type: none"> - Check the switch - Check the cable - Check the clearance <p>After troubleshooting set the machine parameters to the factory settings, so that the switch can be recognized again (compare to page 62).</p>

Should an error occurs, the corresponding component can be checked over the menu service/multi-test for its correct function (compare to page 49). The service menu can be reached by switching to the "Technician mode" or by pressing the key F when switching on the machine (enter the code number "25483").

9. Sewing

Operating and function sequence when sewing:

Sewing operation	Operation/ Explanation
<p>Before the sewing start</p> <p>Starting position</p> <p>Feed material</p>	<ul style="list-style-type: none"> - Pedal in resting position Automatic bartacker stands idle Needle and clamping foot in position “up”.
<p>Sewing</p>	<ul style="list-style-type: none"> - Step pedal forwards up to step 1. The clamping foot is lowered. - Relieve pedal. The clamping foot is lifted again. The material can be positioned anew. - Step pedal completely to the front. The automatic bartacker sews with the adjusted speed.
<p>During the sewing cycle</p> <p>Interrupt sewing operation</p> <p>Continue sewing operation</p>	<ul style="list-style-type: none"> - Step pedal backwards. The automatic bartacker stops. The clamping foot stays down. - Step pedal completely to the front.

10. Maintenance

10.1 Cleaning and checking



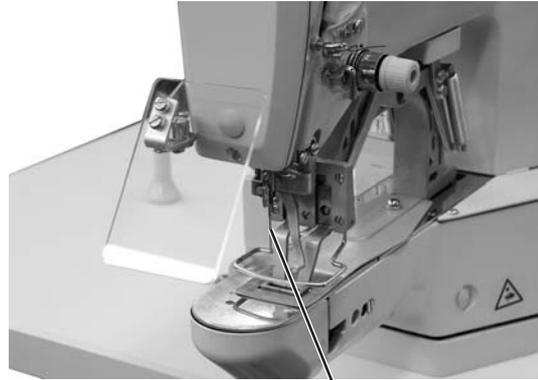
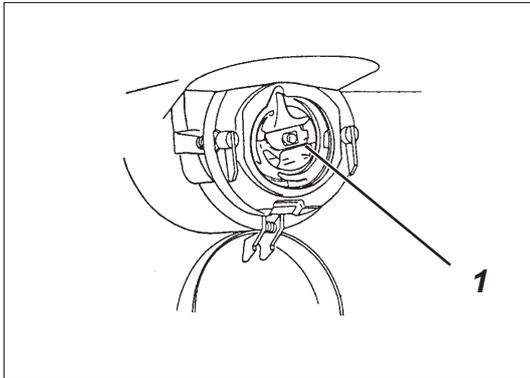
Caution: Danger of injury !

Switch off main switch.
The maintenance of the automatic bartacker 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.

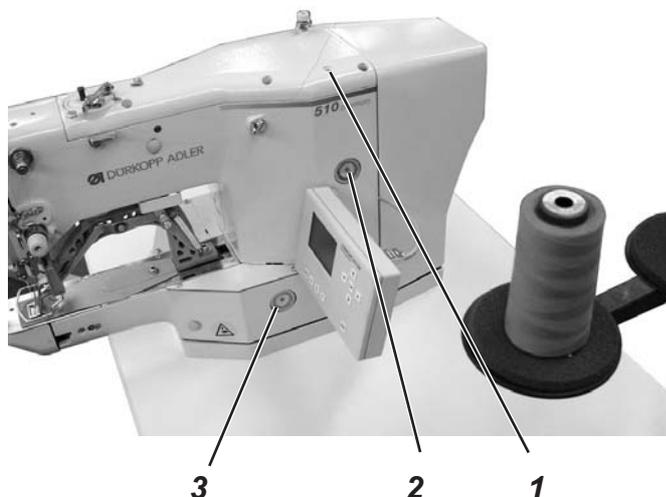
A clean automatic bartacker protects from disturbances.



2

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 grilles.	8

10.2 Oil lubrication



1





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 automatic bartacker exclusively with lubricating oil **DA-10** or an equivalent oil with the following specification:

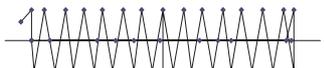
- Viscosity at 40° C: 10 mm²/s
- Ignition point: 150° C

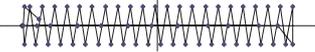
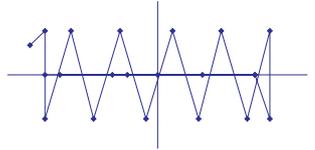
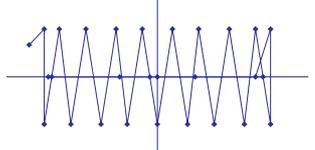
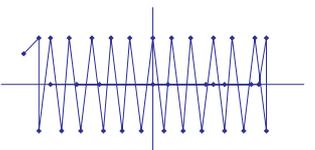
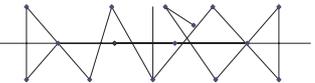
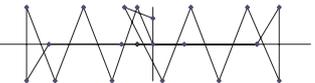
DA-10 can be bought at the sales points of **DÜRKOPP-ADLER AG** under the following parts numbers:

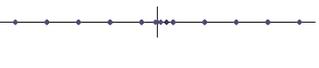
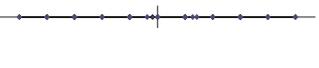
- 250-ml-Container: 9047 000011
- 1-Litre-Container: 9047 000012
- 2-Litre-Container: 9047 000013
- 5-Litre-Container: 9047 000014

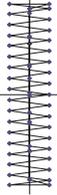
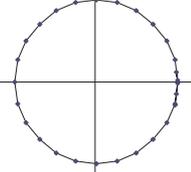
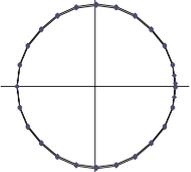
Maintenance work to be done	Explanation	Operating hours
Lubrication of the automatic bartacker	The automatic bartacker is equipped with a central oil wick lubrication. The bearings are provided by the oil reservoirs 2 and 3. - The oil level must not drop below the red marking of the two oil reservoirs.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

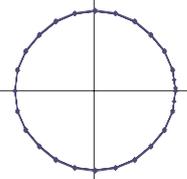
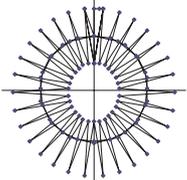
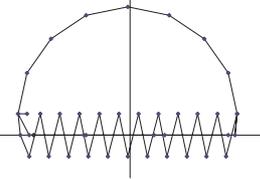
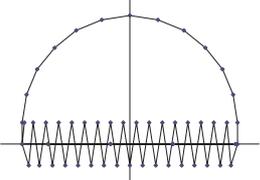
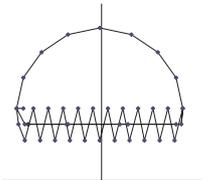
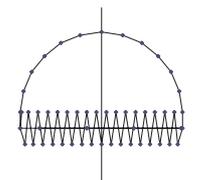
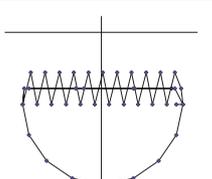
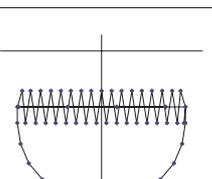
11. Standard seam patterns

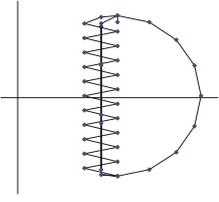
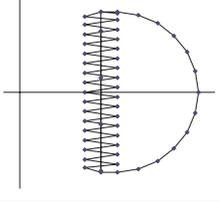
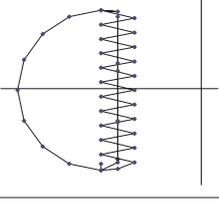
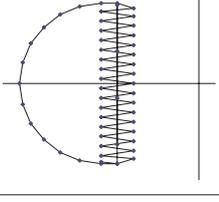
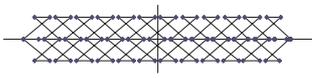
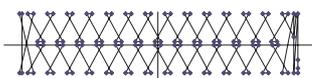
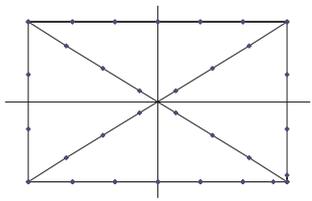
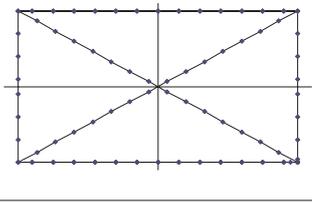
Bartack type	No.	Stitch diagram	Number of stitches	Sewing dimensions (mm)		Clamping foot No.
				X	Y	
large straight bartack	1		42	16	2,0	1, 2
	2		42	10	2,0	1, 2
	3		42	16	2,5	1, 2
	4		42	24	2,5	3
	5		28	10	2	1, 2
	6		28	16	2,5	1, 2
	7		36	10	2	1, 2
	8		36	16	2,5	1, 2

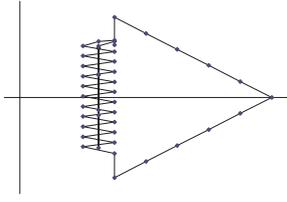
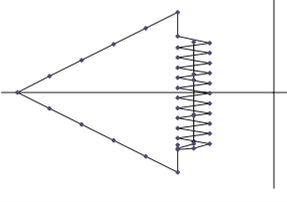
Bartack type	No.	Stitch diagram	Number of stitches	Sewing dimensions (mm)		Clamping foot No.
				X	Y	
large straight bartack	9		56	24	3	3
	10		64	24	3	3
small straight bartack	11		21	6	2,5	4, 8
	12		28	6	2,5	4, 8
	13		36	6	2,5	4, 8
	14		15	8	3	4
	15		21	8	2	4
	16		28	8	2	4

Bartack type	No.	Stitch diagram	Number of stitches	Sewing dimensions (mm)		Clamping foot No.
				X	Y	
rectilinear straight bartack	17		21	10	0	1, 2
	18		25	10	0	1, 2
	19		27	25	0	3
	20		36	25	0	3
	21		41	25	0	3
	22		43	35	0	7
Longitudinal bartack	23		29	4	20	5
	24		41	4	20	5

Bartack type	No.	Stitch diagram	Number of stitches	Sewing dimensions (mm)		Clamping foot No.
				X	Y	
Longitudinal bartack	25		48	4	20	5
	26		56	4	20	5
recti-linear longitudinal bartack	27		18	0	20	5
	28		21	0	10	5
	29		21	0	20	5
	30		27	0	10	5
circular bartack	31		29	12	12	9
	32		52	12	12	9

Bartack type	No.	Stitch diagram	Number of stitches	Sewing dimensions (mm)		Clamping foot No.
				X	Y	
circular bartack	33		76	12	12	9
stitched eyelet	34		101	outer Ø 9 inner Ø 3		9
D-bartack	35		42	10	7	10
	36		57	10	7	10
	37		42	10	7	12
	38		57	10	7	12
	39		42	10	7	12
	40		57	10	7	12

Bartack type	No.	Stitch diagram	Number of stitches	Sewing dimensions (mm)		Clamping foot No.
				X	Y	
D-bartack	41		42	7	10	11
	42		57	7	10	11
	43		42	7	10	11
	44		57	7	10	11
imitated button-hole bartack	45		102	19	2,6	3
	46		120	20	3,8	3
cross bartack	47		47	17	10	6
	48		103	40	20	7

Bartack type	No.	Stitch diagram	Number of stitches	Sewing dimensions (mm)		Clamping foot No.
				X	Y	
Tri-bartack	49		44	12	10	13
	50		44	12	10	13

12. Clamping feet

Clamping foot number	Dimensions X x Y [mm]	Inner frame, rectangular	Specified standard seam pattern number	Allowed standard seam patterns	Description	Comment
1	20,0 x 4,5	yes	1	all	Straight bartack	Standard equipment Cl. 510-211
2	21,0 x 5,1	yes	1	all	Straight bartack	Standard equipment Cl. 510-213
3	27,0 x 5,0	yes	4	all	Straight bartack, large	Optional
4	10,0 x 4,5	yes	2	all	Straight bartack, small	Optional
5	5,6 x 23,0	yes	23	all	Longitudinal bartack	Optional
6	19,0 x 12,0	yes	47	all	Small field clamping foot	Optional
7	44,0 x 24,0	yes	48	all	Large field clamping foot	Optional
8	9,5 x 4,5	yes	11	all	Contraction clamp	Standard equipment Cl. 510-212
9	16,0 x 16,0	no	31	31, 32, 33, 34	Circular	Optional
10	12,0 x 14,0	no	35	35, 36	D-clamping foot, simple	Optional
11	24,6 x 12,6	no	41	14, 42, 43, 44	Double D-clamping foot lateral	Optional
12	12,6 x 21,0	no	37	37, 38, 39, 40	Double D-clamping foot, longitudinal	Optional
13	34,8 x 12,2	no	49	49, 50	Double Tri-clamping foot lateral	Optional
14	16,0 x 2,6	yes	1	all	Straight bartack	Optional
15	-	yes	-	-	Blank clamping foot	Optional*
16	8,6 x 13,6	no	41	41, 42, 43, 44	Double-D-clamping foot lateral large	Optional

*Clamping foot number not selectable. Please define the size in free seam patterns.



Important:

When using clamp feet with bridge (for example Double D-clamping foot lateral, self made clamping feet) the clamp lifting stroke must be reduced, so that the needle does not collide against the bridge when checking the reference positions (see Service Instructions Chap. 6.4)

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 seam patternsquestion	Initialize free seam patternsquestion
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
T1.3.6.5	th.burner	thread burner
T1.3.6.6	opt.signalling	optical signalling
T1.3.6.6.1	opt.sign.	optical signalling
T1.3.6.7	input alloc.	input allocation

Parameter	English (displayed on the screen)	English (meaning)
T1.3.6.8	output alloc.	output allocation
T1.3.6.9	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 seam patterns	free seam patterns
T3.5.5	machine cpl.	machine complete
T4	free seam patterns	free seam patterns
T4.1	design	design

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 seam pattern	free seam pattern
T5.3	save	save
T5.3.1	dongle index	dongle index
T5.3.2	machine cpl.	machine complete
T5.3.3	free seam pattern	free seam pattern
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

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