DÜRKOPP ADLER AG

550-16-26

Engineered sewing station for setting sleeves

Operating Instructions   **1**

Installation Instructions   **2**

Service Instructions   **3**

Instructions for programming   **4**

Foreword

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

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

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

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

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

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

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

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

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

Never remove or disable any safety devices.

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

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

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

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

General safety instructions

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

1. The machine must only be commissioned in full knowledge of the instruction book and operated by persons with appropriate training.

2. Before putting into service also read the safety rules and instructions of the motor supplier.

3. The machine must be used only for the purpose intended. Use of the machine without the safety devices is not permitted. Observe all the relevant safety regulations.

4. When gauge parts are exchanged (e.g. needle, presser foot, needle plate, feed dog and bobbin) when threading, when the workplace is left, and during service work, the machine must be disconnected from the mains by switching off the master switch or disconnecting the mains plug.

5. Daily servicing work must be carried out only by appropriately trained persons.

6. Repairs, conversion and special maintenance work must only be carried out by technicians or persons with appropriate training.

7. For service or repair work on pneumatic systems, disconnect the machine from the compressed air supply system (max. 7-10 bar). Before disconnecting, reduce the pressure of the maintenance unit. Exceptions to this are only adjustments and functions checks made by appropriately trained technicians.

8. Work on the electrical equipment must be carried out only by electricians or appropriately trained persons.

9. Work on parts and systems under electric current is not permitted, except as specified in regulations DIN VDE 0105.

10. Conversion or changes to the machine must be authorized by us and made only in adherence to all safety regulations.

11. For repairs, only replacement parts approved by us must be used.

12. Commissioning of the sewing head is prohibited until such time as the entire sewing unit is found to comply with EC directives.

13. The line cord should be equipped with a country-specific mains plug. This work must be carried out by appropriately trained technicians (see paragraph 8).

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

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Part 4: Programming Instructions Class 550-16-26

Program version: 3.0

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1. General

1.1 Hardware Components

The configured 550-16-26 work place is executed with the following components:

● DAC II B controls with the SAB C167-CR

● With integrated feed motor controls for a max. of 4 step motors

● With CAN interface

● With RS232 and RS422 interfaces

● 2 step motor output stages

● 2 step motors for the upper and lower belt drive

● AB285 sewing drive controls from Efka

● DC1500 sewing drive from Efka

● Sewing drive pedal for direct speed setting

● Additional pedal for direct bunching value alteration, as desired continuous over the whole value range (0-15) or as a correction value +/- 0.5 .

● Knee switch for the sequence advance

1.2 Operation

● BF1CE control panel and key panel

● With 15 keys for the adjustment of the bunching value (½ values possible through the simultaneous pressing of 2 neighbouring keys)

● With assignment of keys for machine functions

● Additional pedal for a continuous adjustment of the bunching value

● Programs can be generated with the "Teach-In" procedure

● Mirroring and gradation in all sizes

● Graphical display of the sewing parameters

● Precise program transfer from one work place to another via RAM card or USB flash drive.

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2. Operating Elements of the Cl. 550-16-26

2.1   Right Pedal - "Sewing Drive"

The pedal has 16 different positions. It controls the speed of the sewing drive on the one hand and the thread trimming procedure on the other.

- Forward   Step   1-12   Speed setting

- Base position   Step   0   Positioning in pos.1 or pos.2 Lower the sewing foot

- Back 1   Step   -1   Lift the sewing foot

- Back 2   Step   -2   Trim the thread

2.2   Additional Left Pedal - "Correction Value"

With this pedal the bunching value can be corrected within a step. As soon as the next step is called up via the knee switch, the correction value is invalidated. (Automatic operation)

2.3   Knee switch

With the knee switch one can advance from one step cycle to the next.

2.4 The Key Panel

OH	F	Y	🔢.🔢.🔢. 🔢.🔢. 🔢.🔢.🔢.	P	E

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
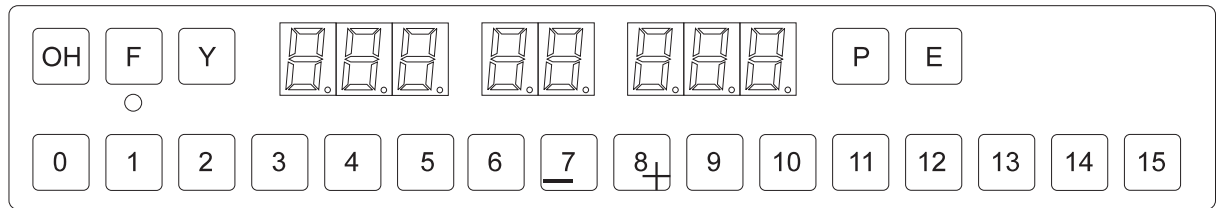
2.4.1 The Display

3.5	01	01
Bunching value	Step	Program number

2.4.2 The Function Keys

F
Supplementary thread tension on / off
(The active function is indicated by the green LED)

0H
Manual bartack (Key pressed, feed runs in reverse until the key is released again)

0
No bunching (straight seam)

0 to **15**
Setting bunching values.
(½ values possible through the simultaneous pressing of 2 keys)

Y
Bartack suppression (function is inverted)

P
Currently no function

E
Currently no function

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2.4.3 Examples of Types of Operation

Tapping	Press the key and release (2.0s operated)
Pressing	Hold the key pressed
Long	Key operated 2.0s

1 to **15**   Tap one of the mentioned keys

F + **0**   Press the **F** key and hold down and then additionally **0**
tap the key.
The keys must now be released.

0   Tap

0 and **1**   Setting intermediate bunching values (here e.g. 0.5)

2.5 The BF1CE Operator Terminal

For input and output, an operator terminal with a LCD screen and a comprehensive keypad is used.
In order to assure quick operation during the sewing process, the supplementary key panel (Illus. 2.5.-1) is used for fullness adjustment during bunching.

In the design of the user interface only symbols are used. The changing of parameters occurs via the numeric keypad or the cursor keys.
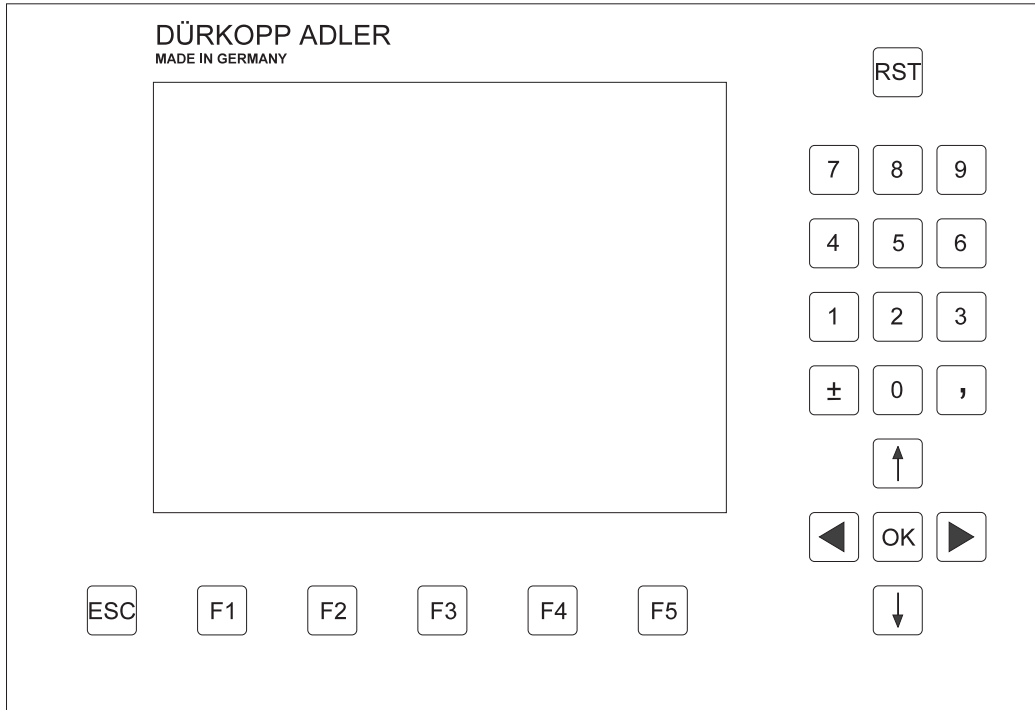
Illus. 2.5-1 BF1CE Color control panel

7 8 9 / 4 5 6 / 1 2 3 / ± 0 ,	Numeric keypad, entry block
↑ ◄ OK ► ↓	Cursor block, UP/ DOWN/ LEFT/ RIGHT/ OK key
RST	Reset key
ESC	Escape key
F1 to F5	Function keys

9
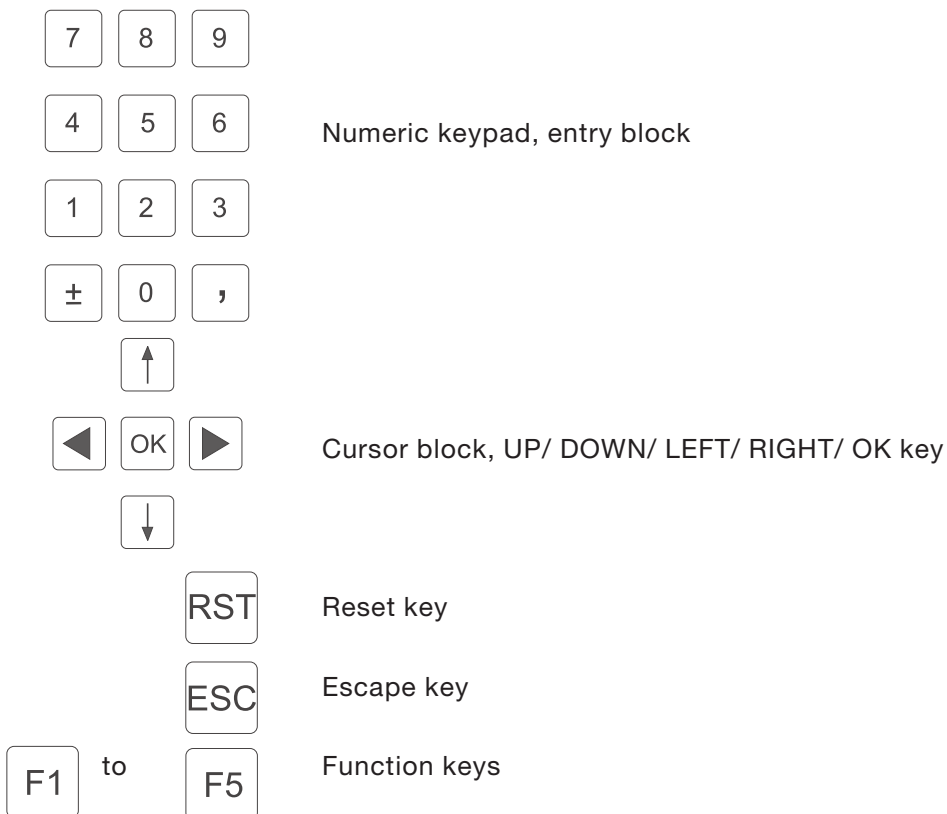
2.5.1 The Screen

After the initialization of all control panel components the configuration is shown on the screen.

The function changes are stored in the internal EEPROM and are valid until the next change.

2.5.2 The Function Keys
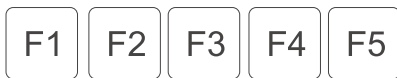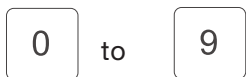
ESC	Escape
RST	Restart
F1 F2 F3 F4 F5	Soft keys F1 ... F5
0 to 9	Number entry / Selection
±	Sign
,	Comma / Decimal point
↑ / ↓	Cursor Up / Cursor Down
◄ / ►	Cursor Left / Cursor Right
OK	Confirmation or Return
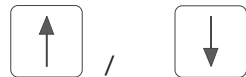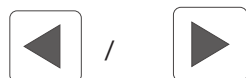
2.5.3 Examples of Parameter Selection and Change

All symbols and the corresponding parameters are listed in Chapter 9. Depending on the application, a parameter is selected either via the cursor keys or directly via a number at the upper right next to the symbol. The symbol of the selected parameter is then highlighted with a black shadow bar.

The selection of the desired parameter occurs via the following keys:

↑ / ↓   Cursor Up / Cursor Down

◀ / ▶   Cursor Left / Cursor Right

OK   Confirmation or Return

1 to 9   Direct selection of the parameter or function

For changes to the parameter values the parameters are divided into different groups:

1. Functions, which are turned on/off or alternated

Entry: LEFT / RIGHT

The function is alternated via the 4 key of the numeric keypad.

Entry: ON / OFF

The function is turned on or off via the OK key.

2. Parameters, whose values can only be changed in steps

Entry: 500, 600, 700, 800, etc..... [1/min]

With the aid of the Cursor Up and Cursor Down keys the next or previous step can be selected. The value is saved by pressing the OK key. If the new setting is not to be stored, then press the ESC key.

3. Parameters, whose values are entered via the numeric keypad

Entry: 0...120 [mm]

The value of the parameter can be changed within the prescribed limits via the numeric keypad. If a value which is too large or too small is entered, the upper or lower limit is displayed. The value is saved by pressing the OK key. If the value is not to be saved, then press the ESC key. If a sign is displayed with this parameter, the sign can be reversed with the aid of the (+/-) key.

4. Functions, which allow a selection to be made

Entry: Without beginning bartack

Entry: Beginning bartack, single

Entry: Beginning bartack, double

With the aid of the Cursor Left and Cursor Right keys, the next or previous function can be selected. The selection is saved by pressing the OK key.

3. Key Panel Operation Modes

3.1   Screen of the Key Panel

3.1.1   Machine Class Display

After the machine is turned on the machine class is briefly displayed

$$550 \quad 16 \quad -26$$

3.1.2   Automatic Display (AUTO)

In automatic operation the bunching value is shown in the left display field (3 digits), the current step in the center display field (2 digits) and the program number in the right display field.

$$3.5 \quad 01 \quad 01$$

Bunching value   Step   Program number

3.1.3   Manual Display (MAN)

In manual operation the step and program number displays are turned off.

$$0.5 \qquad \qquad$$
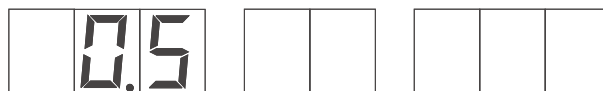
Bunching value   Step   Program number

3.1.4   Base Setting Display (MENU)

In base setting operation, as in automatic operation, the bunching value is shown in the left display field (3 digits), the current step in the center display field (2 digits) and the program number in the right display field.

$$3.5 \quad 01 \quad 01$$

Bunching value   Step   Program number

3.1.5   Global Parameters Display (GP)

With the global parameters, the bunching value is shown in the left display field (3 digits), the current step in the center display field (2 digits) and the program number in the right display field.

```
3.5      01         01
```

Bunching value   Step   Program number

3.1.6   Programming Mode Display (TEACH)

In Teach-In operation the bunching value is shown in the left display field (3 digits), the current step in the center display field (2 digits) and the program number in the right display field.

```
3.5      01         01
```

Bunching value   Step   Program number

3.1.7   Program Sequence Display (PS)

With the program sequence setting the bunching value and step displays are turned off. In the right display field only the program number is shown.

```
                    01
```

Bunching value   Step   Program number

14
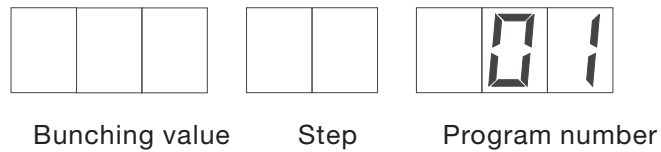
3.2   Functions of the Key Panel

3.2.1   Manual Bartack

0H   Manual bartack (Key pressed, feed runs in reverse until the key is released again)

3.2.2   Setting Bunching Values

The bunching value is entered as desired with the "**0**" to "**15**" keys. An intermediate value (½) is set by simultaneously pressing neighbouring bunching value keys. e.g: "**0**" and "**1**" results in the bunching value 0.5 and is shown in the display.

Bunching value   Step   Program number

4
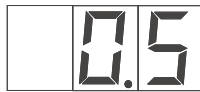
With an adjustable base stitch length from 1.5 mm to 5.5 mm (Adjustable in 0.1 mm steps), a max. sewing length of 5.5 mm and a max. allowable fullness difference of 3 mm (30 TICs, resolution 1/10 mm), via the 16 keys, selectable fullness distribution results as follows :

Setting the fullness distribution via the key panel :

Key(s)	Bunching Value Display	Fullness [1/10 mm]
0	0.0	0
0 + 1	0.5	1
1	1.0	2
1 + 2	1.5	3
2	2.0	4
2 + 3	2.5	5
3	3.0	6
3 + 4	3.5	7
4	4.0	8
4 + 5	4.5	9
5	5.0	10
5 + 6	5.5	11
6	6.0	12
6 + 7	6.5	13
7	7.0	14
7+ 8	7.5	15
8	8.0	16
8 + 9	8.5	17
9	9.0	18
9 + 10	9.5	19
10	10.0	20
10 + 11	10.5	21
11	11.0	22
11 + 12	11.5	23
12	12.0	24
12 + 13	12.5	25
13	13.0	26
13 + 14	13.5	27
14	14.0	28
14 + 15	14.5	29
15	15.0	30

Base stitch length 1.5 mm + max. fullness difference 3 mm (30/10)
−   Max. stitch length upper belt drive 4.5 mm

−   (**0** and **15** keys are operative)

Base stitch length 3.5 mm + max. fullness difference 3 mm
−   Limitation to max. sewing length upper belt drive 5.5 mm
−   (only the **0** and **10** keys are operative)

3.2.3 Supplementary Thread Tension

F	Supplementary thread tension on/off (The active function is indicated by the green LED)

This function can be programmed in "Teach in" modus of the automatic operation.

3.2.4 Bartack Suppression / Bartack Activation

Y	Bartack suppression / bartack activation (Current bartack function is inverted)

The next bartack cycle can be individually suppressed or activated.

a) Before the seam start, this function only influences the beginning bartack:

- Beginning bartack **on**   [Y]   ⇨   No beginning bartack
- Beginning bartack **off** [Y]   ⇨   Beginning bartack

b) In the seam, this function only influences the end bartack:

- End bartack **on**   + [Y]   ⇨   No end bartack
- End bartack **off** + [Y]   ⇨   End bartack

It is always conducted in the set bartack type (single / double).

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3.2.5 Needle Up / Down

F + 0	Needle position up / down

Through operation of the keys, the needle conducts a position change from position 1 (needle down) to position 2 (needle up) or from position 2 (needle up) to position 1 (needle down).

This function is only available when the sewing drive is idle.

This function can not be programmed in automatic operation.

3.2.6 P key (Currently no function)

P	(currently no function)

3.2.7 E key (Currently no function)

E	(currently no function)

4. Calling Up the Test and Check Programs

After the machine is turned on the controls are initialized and the machine program is automatically called up. If, during the display of the DA logo, one of the 5 soft keys is pressed, then further programs can be activated.

```
                        ┌──────────────┐
                        │ Main switch  │
                        │     ON       │
                        └──────┬───────┘
        ┌──────────┬──────────┼──────────┬──────────┐
     ┌─────┐    ┌─────┐    ┌─────┐    ┌─────┐    ┌─────┐
     │ F1  │    │ F2  │    │ F3  │    │ F4  │    │ F5  │
     └──┬──┘    └──┬──┘    └──┬──┘    └──┬──┘    └──┬──┘
Currently not in use
     ┌──────────┐
     │Code entry│
     └────┬─────┘
  ┌───────────┐ ┌───────────┐ ┌───────────┐ ┌───────────┐ ┌───────────┐
  │ Machine   │ │ Machine-  │ │ Multitest │ │Terminal   │ │ Contrast  │
  │ settings  │ │ specific  │ │           │ │test       │ │adjustment │
  └────┬──────┘ │ check     │ └───────────┘ │adjustment │ └───────────┘
       │        │ programs  │               └───────────┘
  ┌───────────┐ └───────────┘
  │ Optional  │
  │ equipment │
  └───────────┘
                   ┌───────────┐
                   │ Machine   │
                   │ program   │
                   └───────────┘
```
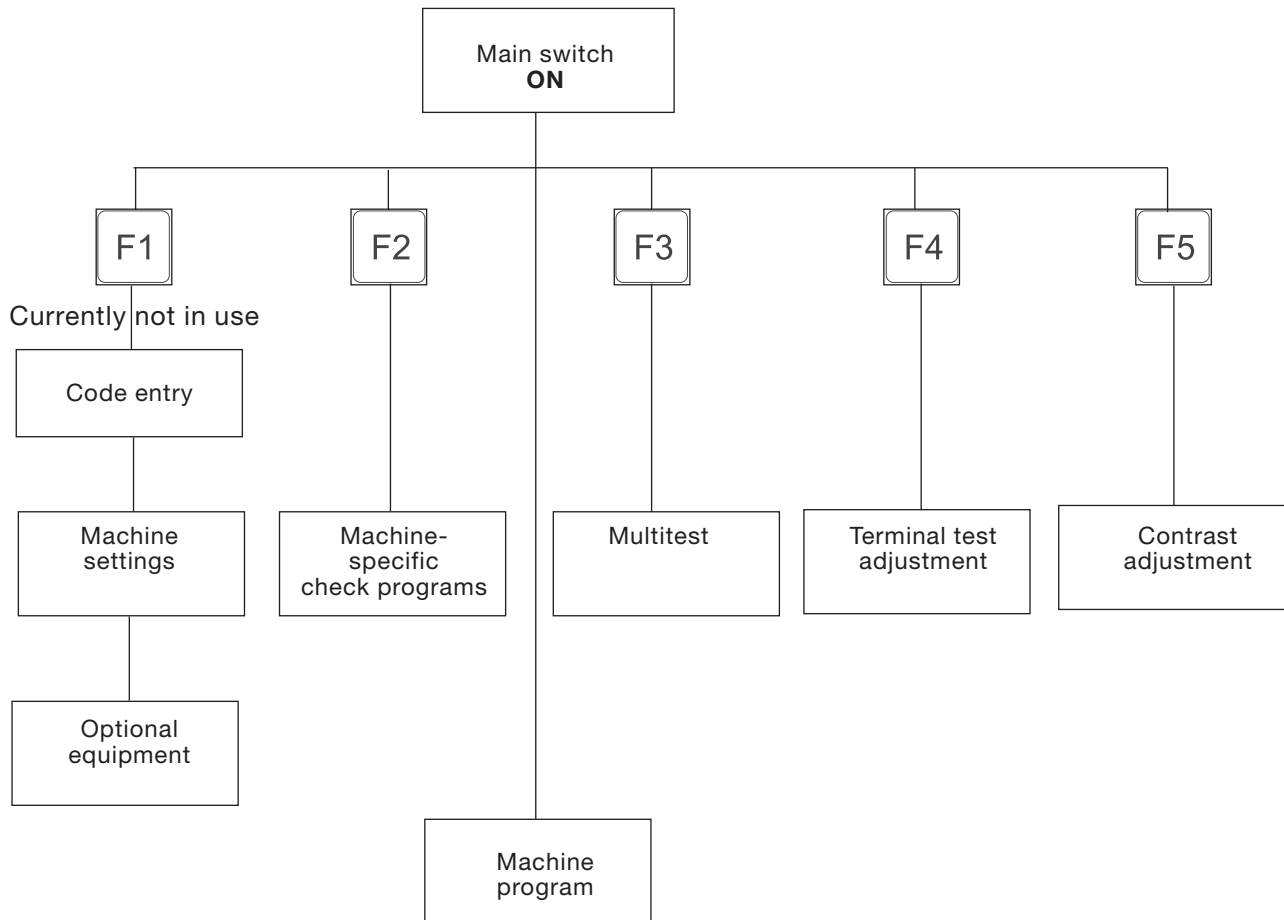
With the F1 soft key, a program section with which the machine configuration can be altered is called up. As a rule, changes in the machine configuration lead to mechanical conversions. For safety reasons, this program section is thus only accessible via the entry of a special code number.

Via the F2 soft key, the machine-specific check programs are activated. These check programs are necessary for the setting and inspection of individual machine components.

The Multitest system, which is integrated in all controls, is called up via the F3 soft key.

A self-test of the terminal can be selected via the F4 soft key.

The selection of the contrast setting of the screen is conducted via the F5 soft key.

4.1 Machine Settings / Optional Equipment - Soft Key F1

(Currently no function)

4

4.2 Machine-specific Check Programs - Soft key F2

If, when the machine is turned on, the **F2** soft key is held pressed, the machine-specific check programs are activated. These check programs are necessary for the setting and inspection of individual machine components.
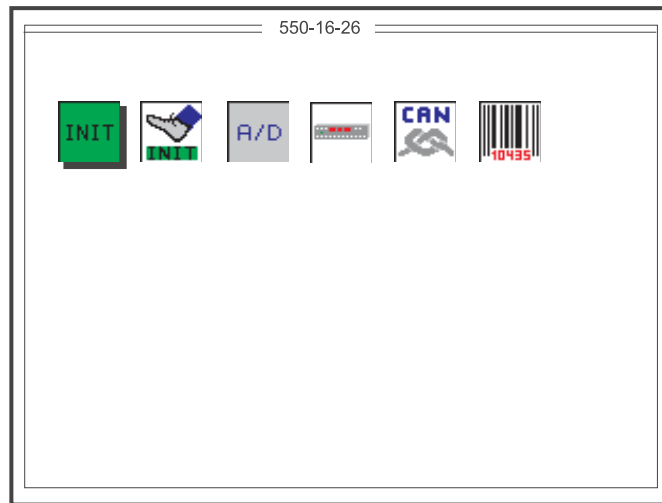
Illus. 4.2-1 Start screen - Machine-specific check programs

INIT	Base initialization of the machine. Only accessible via entry of special code number.
INIT (pedal)	Setting program for the additional pedal-bunching value change
A/D	Check program for the analog/digital converter
(key panel)	Check program for the key panel
(barcode)	Currently without function
CAN	Currently without function

The selection of the desired function occurs via the following keys:

↑ / ↓	Cursor Up / Cursor Down
◄ / ►	Cursor Left / Cursor Right
OK	Confirmation or Return

NOTE:

The exiting of this function screen occurs only by turning the machine off.

Changes in the parameters or the reset to factory settings remain saved in memory after the machine is turned off.

4.2.1   Basic Initialization of the Machine (Code Entry)

The base initialization of the machine is achieved only via the entry of a special 5-digit code number.

⇨   Entry of the
     code number

After successful entry, the screen shows the following picture:

Illus. 4.2.1-1   Start screen - Base Initialization

 Machine parameters are reset to the works settings.
Display under the symbol: OK !

 The sewing program base parameters for base size and country-specific size system can be reinitialized.

 Program sequences are reset to the works settings.
Display under the symbol: OK !

 Global parameters are reset to the works settings.
Display under the symbol: OK !

 Event / Error memory is deleted.
Display under the symbol: OK !

 Currently no function

4

The selection of the desired function occurs via the following keys:

↑ / ↓ Cursor Up / Cursor Down

◀ / ▶ Cursor Left / Cursor Right

OK Confirmation or Return

NOTE:

The exiting of this function screen occurs only by turning the machine off.

Changes in the parameters or the reset to works settings remain saved in memory after the machine is turned off.

4.2.1.1 Initialization of the Sewing Program Base Parameters

Dependent on the country of application for the machine, a specific base setting must be conducted. This base setting serves as the basis for an empty sewing program.

The selection of the base parameters

Application area   (DOB = women and Haka = men)

and

Size group   (Base size is Country-specific - see chapter 5.4.3.1 and 5.4.3.2)

occurs with the Cursor Left and Cursor Right keys
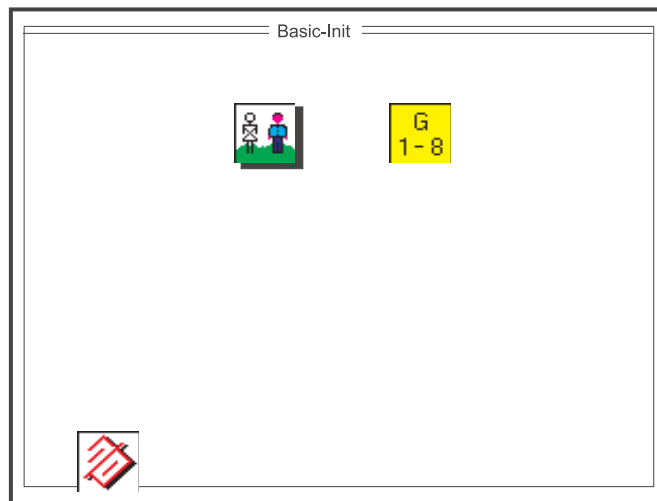
Illus. 4.2.1.1-1 Selection screen for the initialization of the base settings for sewing programs

The selection of the desired parameter occurs via the following keys:

◄ / ►   Cursor Left / Cursor Right

OK   Confirmation or Return

Country-specific size system :

G
1-8

Entry : 1 ... 6   [Size group]

GTAB - DOB

G 1-8				
1.	D	032	038	060
2.	D	104	122	188
3.	F	034	040	062
4.	I	036	042	064
5.	GB / USA	006	012	034
6.	J	003	009	031

GTAB - HAKA

G 1-8				
1.	D	044	050	072
2.	A, B, CH, NL	044	050	072
3.	F	044	050	072
4.	I	034	040	062
5.	GB / USA	034	040	062
6.	J	002	005	016

G
1-8   1   [n]

0...9

min	- / +	max
1	1	6

| 0 | to | 9 | Numeric entry |

| OK | Confirmation of the numeric entry |

| ESC | Retain old numeric value unchanged |

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Application area DOB / HAKA :

HAKA - Men

DOB - Women

OK   Alternation DOB / HAKA

After the parameter setting is completed all 15 sewing programs are deleted with the soft key **F1** and preset with the base settings.

Entry : Delete

F1   All 15 sewing programs are deleted and initialized with plausible values from the base setting.

The deletion and reinitialization of the 15 sewing programs requires a bit of time.

This status is indicated during this period by the hourglass wait symbol in the screen.
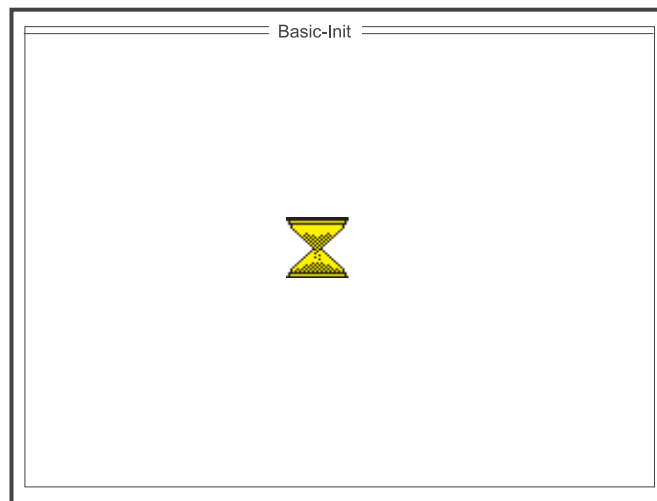
Illus. 4.2.1.1-2:   Indicator screen during the reinitialization of the sewing programs

4.2.2 Setting Program for the Additional Pedal - Bunching Value Change

The left additional pedal for the bunching value change is set with this program.
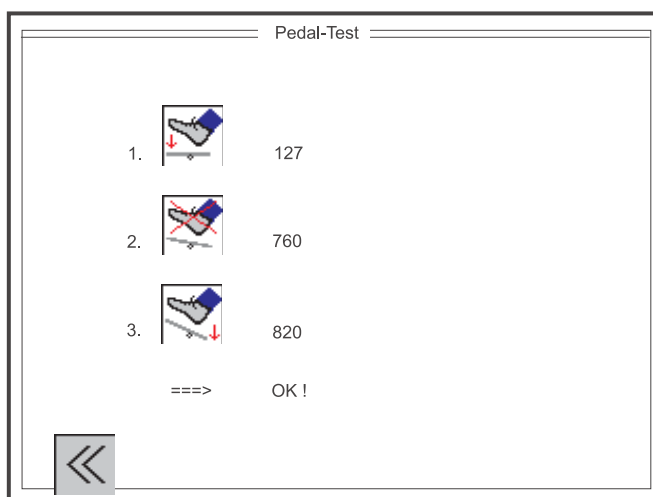
Illus. 4.2.2-1: Indicator screen for the pedal test

Order of operations:

Display:
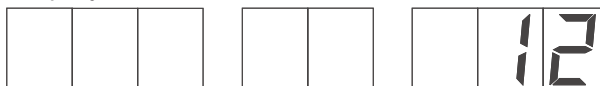
- Step the foot pedal completely forward.
- Operate the knee switch.
- The first measured value is established and displayed in the screen (e.g. 127).

Display:

- Step the foot pedal back to the neutral position.
- Operate the knee switch.
- The second measured value is established and displayed in the screen (e.g. 760).

Display:

- Step completely back on the foot pedal.
- Operate the knee switch.
- The third measured value is established and displayed in the screen
  (e.g. 820).
- The measured values are checked for plausibility.

If the values are ok, then the correction value is automatically calculated.

Display : "===   OK !"   and

```
┌──┬──┬──┐   ┌──┬──┐   ┌──┬──┬──┐
│  │  │  │   │  │  │   │ 0│ 0│ 0│
└──┴──┴──┘   └──┴──┘   └──┴──┴──┘
```
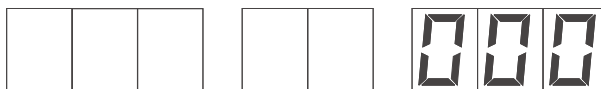
If the values are not plausible.

Display : "===   ERR !"   and

```
┌──┬──┬──┐   ┌──┬──┐   ┌──┬──┬──┐
│  │  │  │   │  │  │   │ E│ r│ r│
└──┴──┴──┘   └──┴──┘   └──┴──┴──┘
```
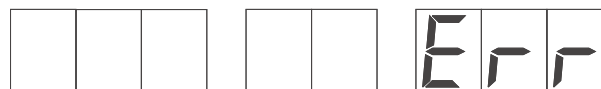
With an error message, proceed as follows:

− Press the "E" key.

− Enter the positions of the foot pedal again (see above).
  If necessary, conduct a test of the analog/digital converter
  (Chapter 6.2.3).

The "Pedal Test" function screen is exited again via the soft key '"**F1**".

⟪   Entry : Close window

F1   Close the "Pedal Test" function screen

4

4.2.3 Check Program for the Analog/Digital Converter

The general functioning of the analog/digital converter is checked with the check program. It must be possible to change the value shown in the screen and in the segment display with the left additional pedal for the bunching value change.
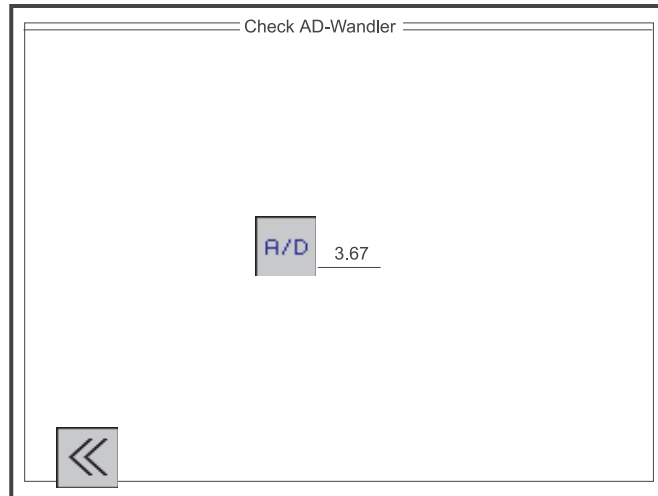
Illus. 4.2.3-1 Indicator screen for the analog/digital converter check program

Indicator screen-Analog/digital converter check program
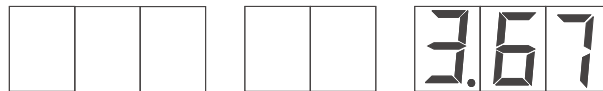
Segment display-Analog/digital converter-Test

The
"Analog/Digital Converter Test" function screen is exited again via the soft key "**F1**".

  Entry : Close window

F1 Close the "Analog/Digital Converter Test " function screen
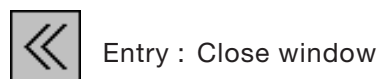
4.2.4 Check Program for the Key Panel

The keys of the key panel can be checked as to function and the intensity of the segment display (default value = 08) can be changed with the "Cursor Up" and "Cursor Down" keys in the check program. When a key is pressed (e.g. key "12"), the corresponding key is marked with an "ü" in the screen (Key 12:) and the key designation is shown in the segment display.

```
┌─────────────────────────────────────────────────────┐
│                    Keypanel-Test                      │
│                                                       │
│     Key 0H :  J       Key  0 :  J       Key  8 :  J   │
│     Key  F :  J       Key  1 :  J       Key  9 :  J   │
│     Key  Y :  J       Key  2 :  J       Key 10 :  J   │
│     Key  P :  J       Key  3 :  J       Key 11 :  J   │
│     Key  E :  J       Key  4 :  J       Key 12 :  J   │
│                       Key  5 :  J       Key 13 :      │
│                       Key  6 :  J       Key 14 :      │
│                       Key  7 :  J       Key 15 :      │
│                                                       │
│                                                       │
│                ┌──────────────────┐  ┌─┐              │
│                │ Intensity :   08 │  │ │              │
│                └──────────────────┘  └─┘              │
│                                                       │
│  ┌──┐                                                 │
│  │≪ │                                                 │
│  └──┘                                                 │
└─────────────────────────────────────────────────────┘
```
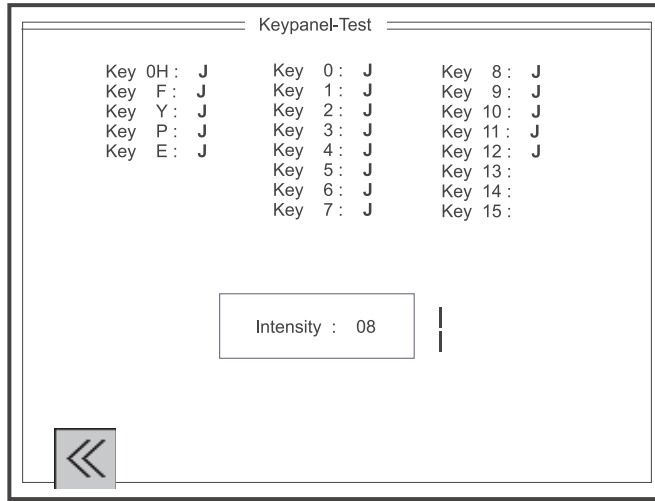
Illus. 4.2.4-1   Indicator screen for the key panel test

Function test of the keys:

0 to **15**   Pressed key is checked and displayed. e.g. key "12"
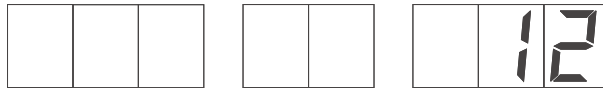
0H   Pressed key "OH" is checked and displayed.

Setting the intensity:

↑ / ↓   Changing the intensity. Display becomes brighter or darker. (Default value = 08)

The "Key Panel Test" function screen is exited again via the 'F1' soft key.

≪   Entry : Close window

F1   Close the "Key Panel Test" function screen

4.3   Multitest - Soft Key F3

If, when the machine is turned on, the soft key F3 is held pressed, then the Multitest is activated.
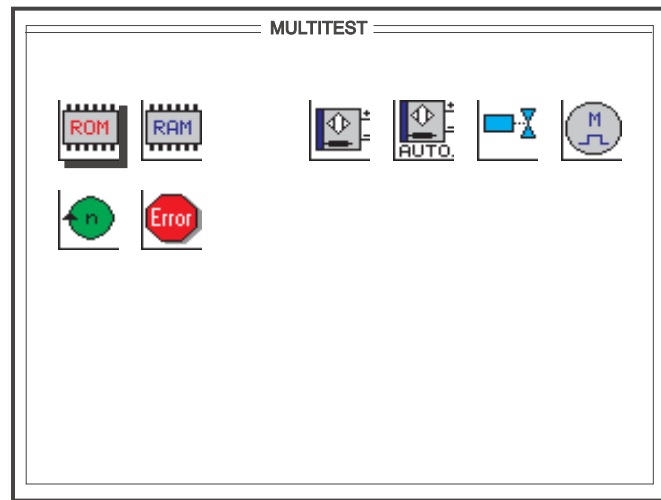
Illus. 4.3-1   Opening screen for the Multitest

	Memory check - EPROM
	Memory check - RAM
	Manual check of the inputs
	Automatic check of the inputs
	Check of the outputs
	Function check - Step motor
	Function check - Sewing drive
	Event / Error memory display

The selection of the desired function occurs via the following keys:

↑ / ↓	Cursor Up / Cursor Down
◀ / ▶	Cursor Left / Cursor Right
OK	Confirmation or Return

4.3.1   Memory Check - EPROM

The FLASH-EPROM memory is checked with this test.

The screen shows the data for the memory size used, the machine class, the software version, the software date and the checksum.


```
============================ MULTITEST ============================
                       ========== EPROM -Test ==========


           ROM-Size  :  215 k

           Class     :  550-16-26

           Version   :  A01

           Date      :  31. 01. 2000

           Checksum  :  0x6D  OK




         ≪
```
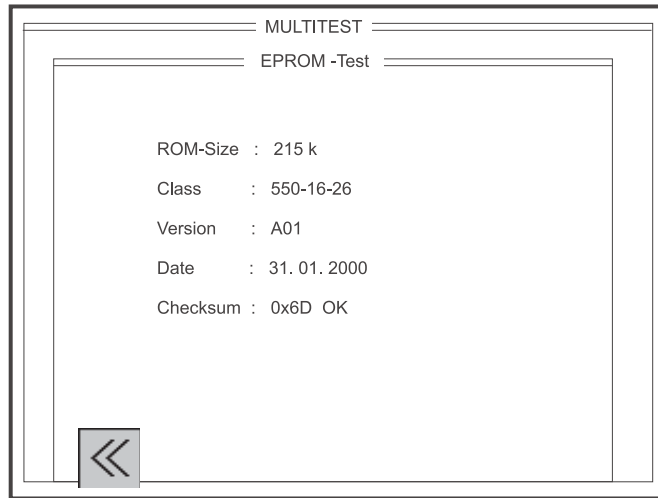
Illus. 4.3.1-1 Indicator screen for the EPROM test

The "EPROM-Test" function screen is exited again via the soft key "'**F1**"

≪   Entry : Close window

F1   Close the "EPROM-Test" function screen

4.3.2 Memory Check - RAM

The RAM memory is checked with this test.

With a successful test the screen shows the message

    SRAM   : OK
    nvSRAM : OK

With a faulty test the screen shows the message

    SRAM   : ERR
    nvSRAM : ERR
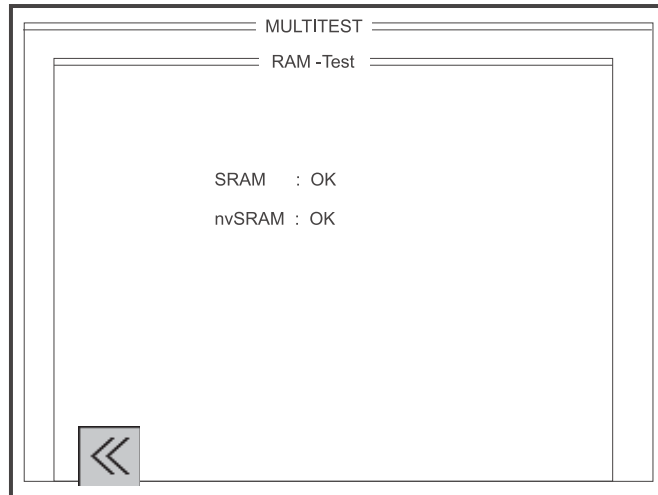
Illus. 4.3.2-1   Indicator screen - RAM test

The "RAM Test" function screen is exited again via the soft key "'**F1**"

 Entry : Close window

 Close the "RAM Test" function screen

4.3.3 Manual Check of the Inputs

The individual inputs, after being selected, are checked as to function in this test program. When changed, the corresponding switching status is shown (ON = "+" and OFF = "(").

The selection of the desired input number occurs via the keys of the numeric keypad.

Example:
−   Enter input number 07 (Knee switch)
−   Press the "**OK**" key
−   Operate knee switch (input no. 7) ⇨Status "+"
−   Release knee switch (input no. 7) ⇨Status "-"
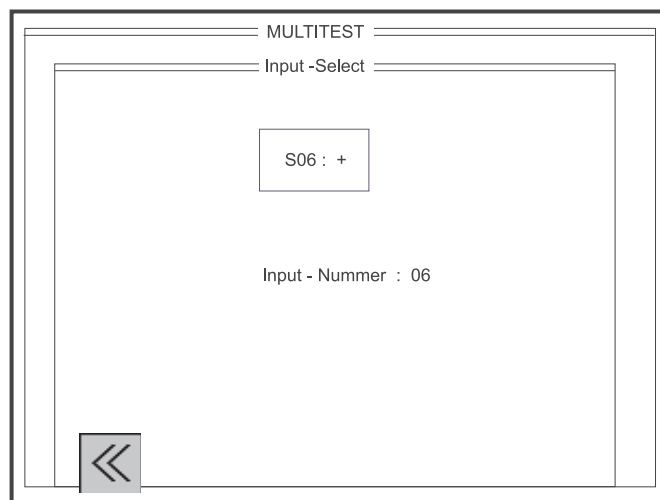
Illus. 4.3.3-1   Indicator screen - Input select

Input assignment by Cl. 550-16-26:

Input	Designation
7	Knee switch

The "Input Test" function screen is exited again via the soft key "**F1**".

   Entry : Close window

   Close the "Input Test" function screen

4.3.4   Automatic Check of the Inputs

In this test program, the complete input picture is monitored for changes. With a change, the input number and the switching status are displayed.

Example:

Operate knee switch (input no.7)   ⇨   Status "+"

Release knee switch (input no. 7)   ⇨   Status "-"

```
╔══════════════ MULTITEST ══════════════╗
║   ┌─────────── Input -Test ───────────┐ ║
║   │                                    │ ║
║   │        S06  :  +                   │ ║
║   │                                    │ ║
║   │        S03  :  -                   │ ║
║   │                                    │ ║
║   │        S12  :  +                   │ ║
║   │                                    │ ║
║   │        S01  :  +                   │ ║
║   │                                    │ ║
║   │        S04  :  +                   │ ║
║   │                                    │ ║
║   │  ┌────┐                            │ ║
║   │  │ ≪  │                            │ ║
║   │  └────┘                            │ ║
╚════════════════════════════════════════╝
```
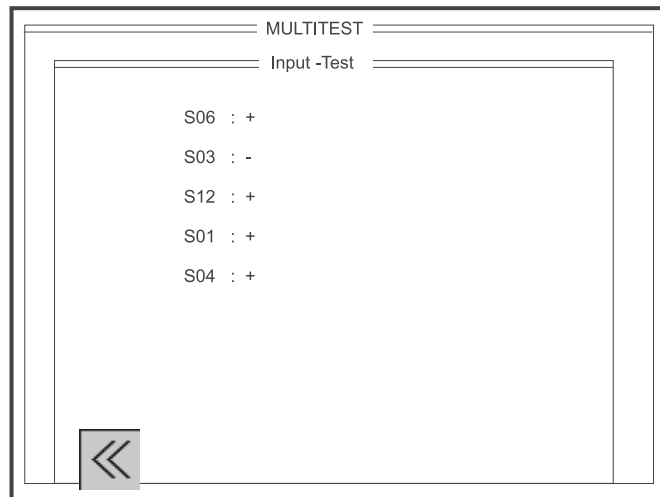
Illus. 4.3.4-1   Indicator screen - Input test

Input assignment with Cl. 550-16-26:

Input	Designation
7	Knee switch

The "Input Test" function screen is exited again via the soft key "F1".

≪   Entry : Close window

F1   Close the "Input Test" function screen

4.3.5   Check of the Outputs

In this test program, all outputs can be switched either individually in the SINGLE mode (Illus. 6.3.5-1) or combined in the MULTI mode. The change of status is displayed in the screen (Status EIN = ON and Status AUS = OFF).
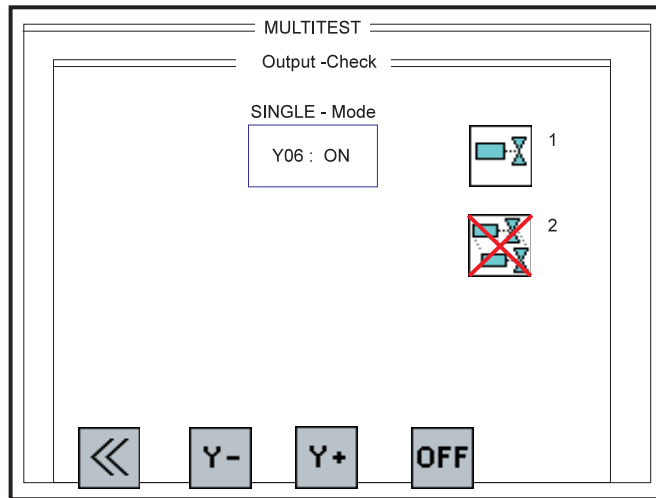
Indicator screen - Output check - Single mode

SINGLE mode selection:

| 1 | Direct selection of the SINGLE mode setting |

SINGLE mode turned on / MULTI mode turned off

MULTI mode selection:

| 2 | Direct selection of the MULTI mode setting |

MULTI mode turned on / SINGLE mode turned off
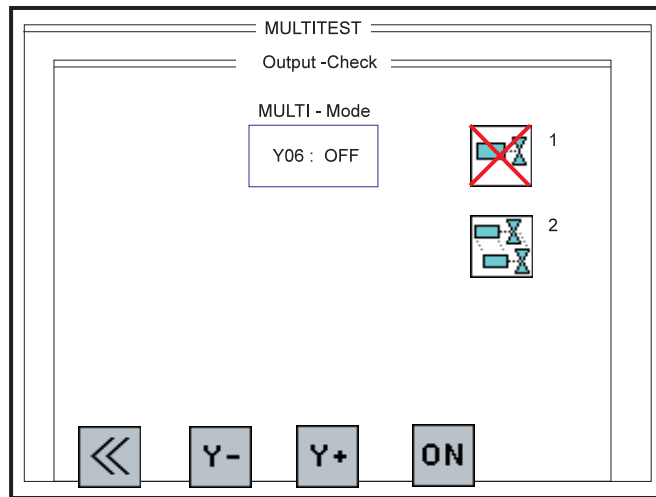
Illus. 4.3.5-1   Indicator screen - Output check - Multi mode

Output assignment with Cl. 550-16-26:

Output	Designation
1	Reserve
2	Supplementary thread tension
3	Main thread tension
4	Sewing foot lift
5	Thread trimmer

The "Output Check" function screen is exited again via the soft key "**F1**".

    Entry : Close window

F1   Close the "Output Check" function screen

The previous output is selected via the soft key "**F2**".

    Entry : Select previous output

F2

The next output is selected via the soft key "**F3**".

Y+	Entry : Select next output

F3

The current switching status is changed via the soft key "**F4**".

ON	Entry : Status change of the output from OFF to ON Symbol change from ON to OFF.

OFF	Entry : Status change of the output from ON to OFF Symbol change from OFF to ON.

F4   Status OFF ⇨ Status ON   or
          Status ON ⇨ Status OFF

4

4.3.6 Step Motor Function Check

The step motors used can be checked with this test. The symbol for the step motor is shown repeatedly in the screen with the corresponding axis designations (W,X,Y,Z). Only the axes used in this machine class can be selected.

(With Cl. 550-16-26 only the X and the Y axes are operational)
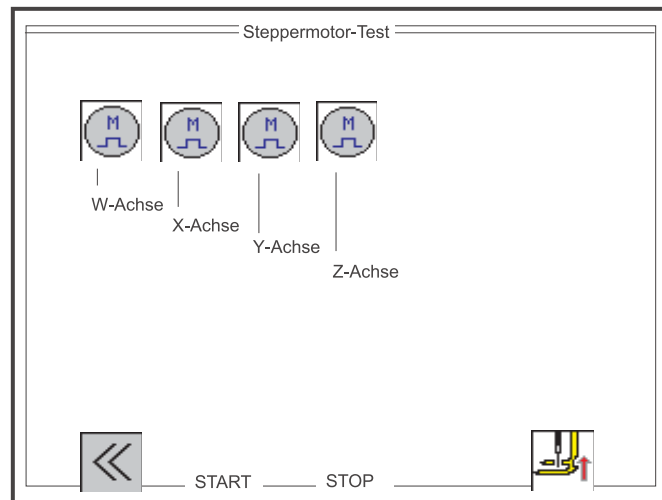
Illus. 4.3.6-1   Function screen - Step motor test

The selection of the desired step motor axis occurs via the following keys:

◀ / ▶   Cursor Left / Cursor Right

OK   Confirmation or Return

The "Step Motor Test" function screen is exited again via the soft key "**F1**".

≪   Entry : Close window
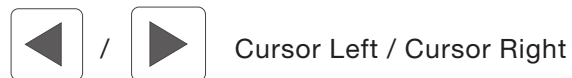
F1   Close the "Step Motor Test" function screen
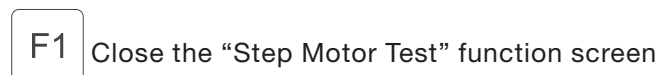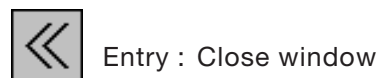
Setting the step motor cycles per stitch:

Entry : 10 ... 50   [1/10 mm]

	X-Achse	
	20	[1/10mm]

0 ... 9

min	+ / -	max
10	1	50

| 0 | to | 9 | | Numeric entry |

OK   Confirmation of the numeric entry

ESC   Retain old numeric value unchanged

The step motors are started via the soft key "**F2**".

START   Entry : Start step motors

F2

The step motors are stopped via the soft key "**F3**".

STOP   Entry : Stop step motors.

F3

The lift / lower sewing foot function is selected via the soft key "**F5**".

Entry :   Lift sewing foot

Entry :   Lower sewing foot

F5

4.3.7 Sewing Drive Function Check

The sewing drive can be checked with this test. After being called-up, the sewing drive is first initialized and run into the initial position (needle up). Then the current software status and the software date code of the sewing drive controls are shown in the screen.

The function check can begin.
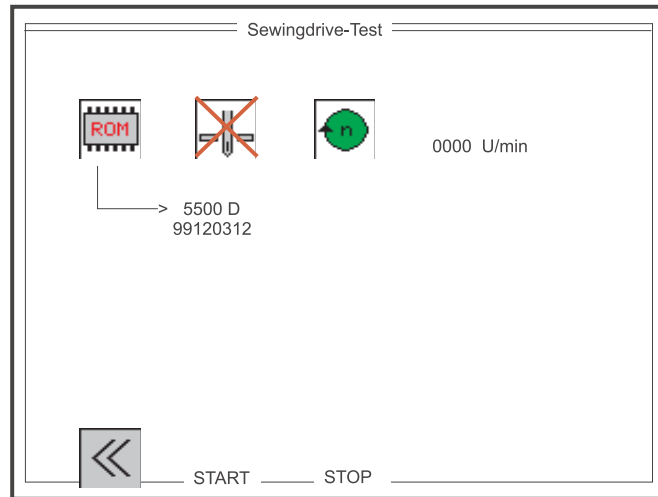
Illus. 4.3.7-1   Function screen - Sewing drive test

The selection of the needle positioning and sewing drive speed functions occurs via the following keys:

 /   Cursor Left / Cursor Right

OK   Confirmation or Return

Software status display:

   e.g.   Version: 5500 D Date code: 99120312

Setting the needle positioning at a stop:

Needle down

Needle up

Needle not positioned
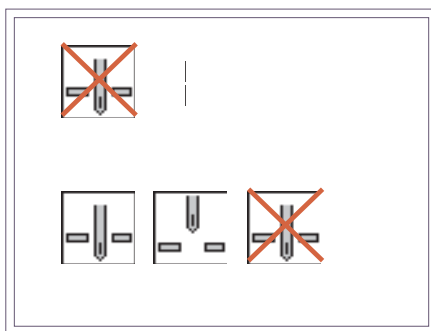
↑ / ↓   Parameter selection

OK   Confirmation of the parameter selection

Setting the sewing drive speed :

Entry : 70 ... 4000   [1/min]
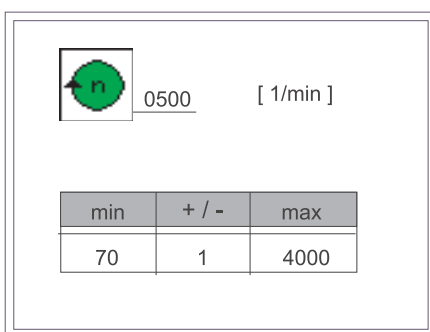
min	+ / -	max
70	1	4000

0 to 9   Numeric entry

OK   Confirmation of the numeric entry

ESC   Retain old numeric value unchanged

The "Sewing Drive Test" function screen is exited again via the soft key "**F1**".

⟪   Entry : Close window

F1   Close the "Sewing Drive Test" function screen

The sewing drive is started at the set speed via the soft key "**F2**".

START   Entry :   Start the sewing drive

F2

The sewing drive is stopped in the selected position via the soft key "**F3**".

STOP   Entry :   Stop the sewing drive.

F3

The current sewing drive speed is shown in the screen online during running operation.

4.3.8   Event/Error Memory Display

On the one hand, the list of the last 20 events/errors occurring can be read out here. On the other hand, the frequency of all occurring events/errors can be seen in another list (Illus. 4.3.8-2).

```
══════════ last error messages ══════════
        1 .   175     T =   049005
        2 .    0      T =        0
        3 .    0      T =        0
        4 .    0      T =        0
        5 .    0      T =        0
        6 .    0      T =        0
        7 .    0      T =        0
        8 .    0      T =        0
        9 .    0      T =        0
       10 .    0      T =        0
       11 .    0      T =        0
       12 .    0      T =        0
       13 .    0      T =        0
       14 .    0      T =        0
       15 .    0      T =        0
       16 .    0      T =        0
       17 .    0      T =        0
       18 .    0      T =        0
       19 .    0      T =        0
       20 .    0      T =        0

    《                              》
```

Illus. 4.3.8-1   Function screen of the last 20 events/errors

Display on the screen: e.g.

Entry no.	Error code	System time
1.	175	T = 049005

The "Last Error Messages"
 function screen is exited again via the soft key "**F1**".

《   Entry : Close window

F1   Close the "Last Error Messages" function screen

The "Error Messages" function screen is called up via the soft key "**F5**".

》   Entry : Open the next window.

F5   Open the "Error Messages" function screen.
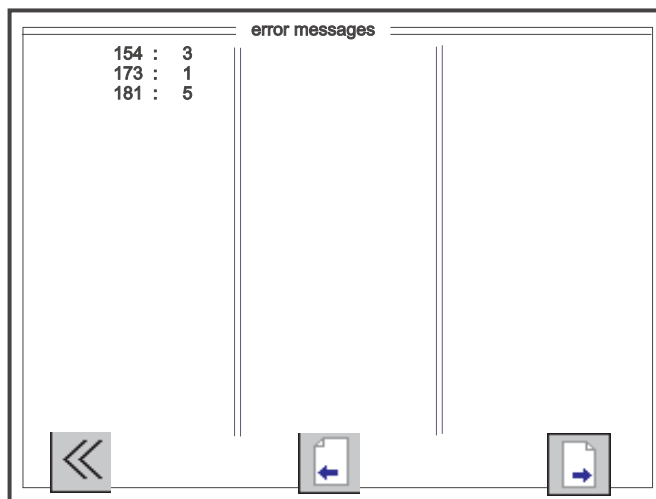
Illus. 4.3.8-2 Function screen of the event/error memory

Display in the screen: e.g.

Error code	Error frequency
181 :	3

The "Error Messages" function screen is exited again via the soft key "**F1**".

  Entry : Close window

 Close the "Error Messages" function screen

The previous page, "Event/Error Message", is called up via the soft key "**F3**".

  Entry : Open the previous window.

  Open the previous page, "Event/Error Messages".

The next "Event/Error Message" page is called up via the soft key "**F5**". If no further page exists, the symbol is not displayed.

  Entry : Open the next window.

  Open the next page, "Event/Error Messages".

4.4   Terminal Test - Soft Key F4

If, when the machine is turned on, the soft key F4 is held pressed, the terminal test is activated. The terminal test is an internal component test for the control panel. The following components are thereby checked sequentially:

- RAM

- EPROM

- Storage Medium (USB flash drive or RAM card)

- MF2 keypad

- Keyboard

- Interface - 0

- Screen (text and graphics)

- Interface - 1

NOTE:
The exiting of the terminal test is only possible by turning off the machine.

4.5   Contrast Setting - Soft Key F5

If, when the machine is turned on, the soft key F4 is held pressed, the contrast setting for the control panel is activated. A test screen with all colour gradations is displayed. With the Cursor Up and Cursor Down keys, the contrast can now be set as desired optically. For checking, the current setting value is shown in the screen. When a desired setting is found, this must be saved with the ESC key. The control panel then goes over to normal operation. To check the saved setting the machine is now to be turned off and on again.

Contrast setting:

↑ / ↓   Contrast can be altered in the range from 0 - 255 (Works setting 128)

ESC   Set numeric value is saved.
Exiting the contrast setting and transfer to normal operation.

NOTE:
The machine is to be turned off and on again after a contrast adjustment.

5. Description of the Function Screens

With the Class 550-16-26 15 different programs with 15 sizes in different size systems (country-specific) and with the corresponding intermediate groups (see Size Tables DOB/HAKA chapter 5.4.3.1 and 5.4.3.2) can be stored. Generated sewing programs can be transferred in automatic operation to the RAM card or be loaded into the controls again as often as desired. The base size can be selected for each program. The memory contains 45 additional sizes, also all normal intermediate sizes.

The sewing program is generated in the Teach-in process for a sleeve in the base size. The program for the second sleeve is gained by mirroring. The gradation of the generated program in the complete size set occurs automatically as per gradation values entered.

All steps necessary for the generation of a program are entered via symbols. A graphic shows the individual programmed sewing steps. All important parameters and information are listed on the screen next to the graphic. Programs can be given names or comments via the text entry.

After the machine is turned on, the "AUTOMATIC" main screen is displayed. From the main screen one can change to the various functions and parameter screens. A summary of the complete screen hierarchy shows.

```
┌──────────┐
│ Mains on │
└────┬─────┘
     │
┌────┴──────┐      F1 >      ┌──────────────┐
│Main screen├───────────────┤Function screen│
│  "Auto"   │      <F1       │    "MAN"      │
└────┬──────┘                └──────────────┘
     │ 5>
     │ <F1
┌────┴──────┐
│  Display  │
│Special function│
└───────────┘

              F2>     ┌────────────────┐    <F1     ┌────────────────┐
          ────────────┤Selection screen├────────────┤Function screen │
              <F2      │                │            │                │
                       │    "MENU"      │            │    "BASIC"     │
                       └────────────────┘            └────────────────┘

              RC>     ┌────────────────┐    F3>     ┌────────────┐
          ────────────┤Function screen ├────────────┤ Text entry │
              <RC      │                │    <OK     └────────────┘
              <F1      │    "CARD"      │
                       └────────────────┘

              F3>     ┌────────────────┐
          ────────────┤Function screen │
              <F1      │     "GP"       │
                       └────────────────┘
                                                F4>     ┌────────────────┐
                                            ────────────┤Function screen │
                                                <F1      │   "MODELL"     │
                                                         └────────────────┘
              F4>     ┌────────────────┐    F3>     ┌────────────┐
          ────────────┤Function screen ├────────────┤ Text entry │
              <F1      │   "TEACH-IN"   │    <OK     └────────────┘
                       └────────────────┘
                                                F2>     ┌────────────────┐
                                            ────────────┤Function screen │
                                                <F1      │    "TEACH"     │
                                                         └───────┬────────┘
                                                                 │ 5>
                                                                 │ <F1
                                                         ┌───────┴────────┐
                                                         │   Selection    │
              F5>     ┌────────────────┐                 │Special function│
          ────────────┤Function screen │                 └────────────────┘
              <F1      │     "PS"       │
                       └────────────────┘
```

4

5.1 Automatic Sewing (AUTO)

In automatic operation, the screen display contains all values that are important for the sewing of a complete piece (right / left). The programmed steps are shown in the graphic. The current piece is marked in the center of the sewing graphic with a R (RIGHT) or L (LEFT).
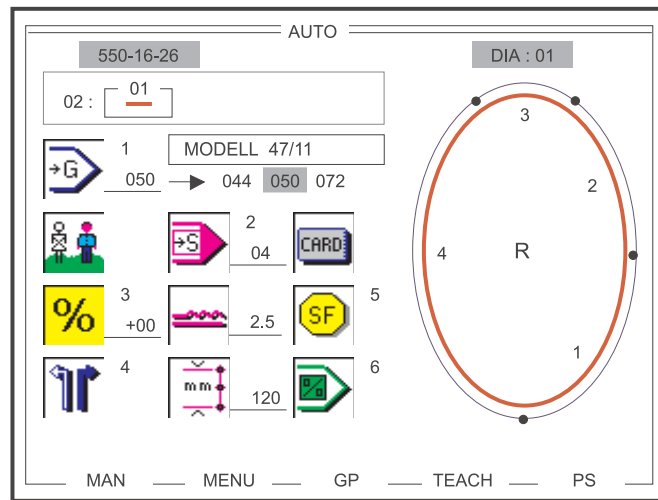
Illus. 5.1-1   Automatic Sewing Main Screen

In the "AUTOMATIC" main screen, all important parameters, the sewing graphic and the program sequence with the program no. are displayed. The machine class, the name of the current window and the number of the depicted sewing graphic are given in the heading of the screen. Next to the symbol for the size, the program name (here: MODELL 47/11), if present, is displayed and, if one is dealing with a base size, the corresponding size range is also shown.

The next program number in the program sequence can be selected with the Cursor Right and Cursor Left keys. In order to quickly change the program sequence, the next or previous program sequence can be selected via the Cursor Up and Cursor Down keys.

One moves to one of five further function screens via the F1-F5 soft keys.

F1	MAN	Manual Sewing
F2	MENU	Base settings
F3	GP	Global parameters
F4	TEACH	Programming mode
F5	PS	Program sequence

5.1.1 Selection of the Program Sequence and Program Number

- Program sequence 01 -

The program sequence 01 contains all 15 programs, but only shows a single program. The program number can be continuously changed in the range from 01 to 15.

01: < 10 >

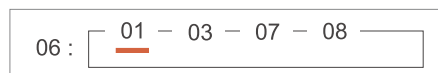The selection of the desired program number occurs through the following keys:
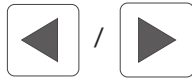
◀ / ▶   Cursor Left / Cursor Right
...-15-01-02-03-04-...-12-13-14-15-01-...

The next program number in the program cycle can be selected with the Cursor Right and Cursor Left keys. In order to quickly change the program cycle, the next or previous program sequence can be selected with the Cursor Up and Cursor Down keys.

Example:

- Program sequence 06 -

06 :   01 — 03 — 07 — 08

The selection of the desired program sequence occurs through the following keys:
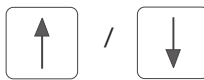
↑ / ↓   Cursor Up / Cursor Down
...-07-01-02-03-04-05-06-07-01-...

The selection of the desired program number occurs through the following keys:

◀ / ▶   Cursor Left / Cursor Right
...-09-01-03-07-09-01-...

4

5.1.2   Selection of the Size

The size selection is immediately active after pressing the '1' key of the numeric keypad and is highlighted with a black shadow bar. The desired size is entered one to three-digit via the numeric keypad. The value is saved by pressing the OK key. By selection of a base size, the size range is also shown and marked accordingly (Illus. 5.1-1). Sewing is not possible during the size selection.

Size

| 1 | Direct selection of the parameter-size |

→G⟩   Entry :   see Size Tables DOB / HAKA

| 0 | to | 9 | Numeric entry for desired size |

OK   Confirmation of the numeric entry

ESC   Retain the old numeric value unchanged

→   044 050 072   Marking of the base size through display of the size range (MIN-BAS-MAX)

NOTE:

If a size is entered which is not a part of the size table of the current size group, the set value is corrected with the following procedure :

● The value is smaller than the valid value range of the size table
  ➔ Correction to the min. size value.

● The value is within the value range but not a valid value of the size table
  ➔ Correction to base size

● The value is larger than the valid value range of the size table
  ➔ Correction to the max. size value

5.1.3   Display of the Application Area DOB / HAKA

The alternation between the DOB / HAKA application areas cannot be conducted in automatic operation, the preselected area (in the TEACH function screen) is shown by the highlighted figure in the display symbol (Illus.5.1-1).

Application area:

Application area HAKA - Men's and Boy's Wear

Application area DOB - Women's Wear

5.1.4 Percentile Change of the Bunching Value

Adaptation of the bunching values of an existing program to differing materials (e.g. frieze, supe 100, silk). Via the program adaptation, the bunching values in all steps of the program are increased or decreased by a certain percentage (max. (30%).

The value of the percentage can be changed with the 3 key of the numeric keypad. The sign is changed with the aid of the '±' key.

Percentile change of the bunching value:

| 3 | Direct selection of the parameter - percentile change of the bunching value |

% Entry : 0 ... 30   [%]

| ± | Sign change |

| 0 | to | 9 | Numeric entry |

| OK | Confirmation of the numeric entry |

| ESC | Retain old numeric value unchanged |

4

5.1.5 Changeover - Current Piece Right/Left

One alternates between the current piece RIGHT or LEFT with the 4 key of the numeric keypad. The selected piece is highlighted accordingly in the symbol and also shown in the current graphic by the letter 'R' or 'L'.

Current piece right/left:

| 4 | Direct selection of the current piece change over function |

Right piece

Left piece

5.1.6 Selecting the Current Step

One advances to the next step with the 2 key of the numeric keypad or with the knee switch. The current step number is shown next to the symbol and in the display of the key panel, all other step-dependent parameter changes are updated in the screen. The progress of the seam run is marked accordingly in the graphic (Illus. 5.1-1).

During sewing, there is an automatic advance to the next piece step when the partial seam run is finished. In the last piece section the seam run measurement is switched off. A change to the right or left piece occurs after the sewing of the prescribed run and the thread trimming procedure.

Current step :

| 2 | | Direct selection of the step advance function |

 Display: Current step
max. 26 steps in the sewing program.
max. 13 in the current piece (left or right)

Note:

If a beginning piece consists of more than 13 piece steps, then mirroring is no longer possible!

5.1.7 Change of the Bunching Value / Fullness

A change of the bunching value / fullness can always be made immediately and directly via the key panel (Illus. 2.4).
The current value is shown next to the symbol and in the display in the key panel.

Bunching value / fullness:

0 to **15**   Direct selection of the fullness

 Entry:0, 0.5, 1, 1.5 ... , 13.5, 14, 14.5, 15

The changed bunching value is only valid for the current piece segment. When the piece segment is called up again the bunching value stored in the sewing program is used. A permanent change of the bunching value is only possible via the TEACH-IN function.

5.1.8 Display of the Current Partial Seam Length in mm

The current seam length (mm) is continuously shown in the screen and immediately updated after a step change. The partial seam length can only be changed via the TEACH programming mode (Chapter 5.6).

Partial seam length:

Display: Seam length of the piece segment in mm (max. 255 mm)

5.1.9 Display of the Special Functions

A supplementary window showing the active or inactive special functions as symbols is opened with the 5 key of the numeric keypad.

The special functions are step-dependent, that is, e.g. in the current step 3 the supplementary thread tension can be turned on while in the steps 1, 2 and 4 the supplementary thread tension is turned off. An activation or deactivation of individual functions, as is possible in the TEACH-IN programming mode, can not be conducted. The supplementary window is exited again via the F1 soft key.

Special functions:

Direct selection of the "SF" supplementary window

Status display: Thread tension ON/OFF
                 Supplementary thread tension ON/OFF
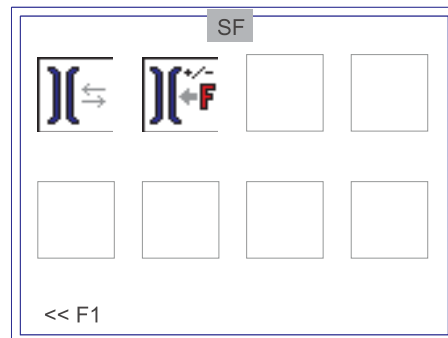
Close the "SF" supplementary window

5.1.10 Return to the Program Beginning

One returns quickly and easily to the first step of the current sewing program (program beginning) with the 6 key of the numeric keypad.

Program beginning:

| 6 | Direct jump to the program beginning at the first step |

5.1.11 Use of the Storage Medium (USB flash drive)

In automatic operation, it is possible to store sewing programs on a USB flash drive or load them from a USB flash drive. An appropriate symbol is shown on the screen. When the USB key is inserted there is an automatic change to the "Storage Medium" function screen. This function is comprehensively described in Chapter 5.2.

Storage Medium card:

  Storage Medium function

Note:

The symbol used for "Storage Medium function" remains the same for the USB key and the former RAM Card.

CAUTION!

Use only original Dürkopp Adler USB key.

5.2   Loading and Saving of Sewing Programs (USB flash drive)

The programs generated in the programming mode are transferred to the storage medium in automatic operation. They are secured and can be loaded into the controls as often as desired.

The call-up of the "Storage Medium" function screen occurs only in the "AUTOMATIC" main screen through insertion of the USB flash drive.
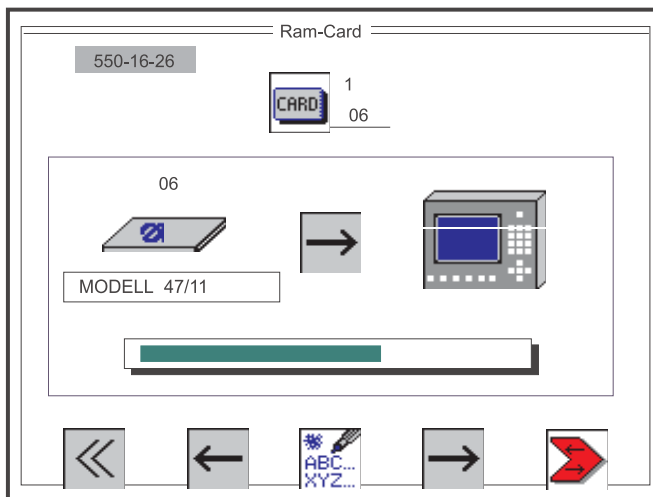
Illus. 5.2-1   Selection screen for the loading and saving of sewing programs.

In the "Storage Medium" function screen the USB key and the control panel are shown as graphics. The selected transfer direction for the sewing programs is shown between the symbolic representations. The machine class and the name of the current windows are given in the heading of the screen. The USB key number is shown above the symbol for the storage medium and under the symbol, if existing, the storage medium designation (here: MODELL 47/11). During a loading or saving procedure the progress of the transfer is shown in a bar diagram.

The transfer direction (loading or storing of sewing programs) can be selected via the **F2** and **F4** soft keys and the transfer procedure is started with the F5 soft key.

The "storage medium" function screen is exited again via the soft key **F1** or by removing the storage medium .

Entry : Close the window

F1   Close the "storage medium" function screen

5.2.1   Entering a Storage Medium Designation

To differentiate between nearly identical sewing programs on different USB keys or RAM Cards, a storage medium designation (name, no.) can be applied.

Storage Medium designation:

| F3 | Open the editing window for text entry |

ABC… XYZ…   Text entry

↑ / ↓   Selection of a character in the character set
Save the selected character and advance

◀ / ▶   to next position in the text.

OK   Save text entry and close editing window

```
                MODELL  47/11

        ABCDEFGHIJKLMNOPQRSTUVWXYZ_

        A...Z ——— CLEAR ——— 0...9
```

| F2 | Character set selection - Letters |

```
            <                    >

        ABCDEFGHIJKLMNOPQRSTUVWXYZ_

        A...Z ——— CLEAR ——— 0...9
```

| F3 | Delete text field |

```
                MODELL  47/11

    °^!"§$%&/()=?`´*':;,.-#+\}][{>> 0123456789_

        A...Z ——— CLEAR ——— 0...9
```

| F4 | Character set selection - Numbers & signs |

5.2.2 Entering a Storage Medium Number

For identification or cataloguing, a two-digit storage medium number can be entered via the numeric keypad.

Storage Medium number

| 1 | Direct selection of the storage medium number parameter

[CARD] Entry : 1 ... 99

| 0 | to | 9 | Numeric entry

| OK | Confirmation of the numeric entry

| ESC | Retain old numeric value unchanged

5.2.3 Setting the Transfer Direction (Loading / Saving)

The changing of the transfer direction occurs via the F2 and F4 soft keys. The respective current setting is shown on the screen by an appropriate arrow symbol.

Transfer direction:

| F2 | Prepare the loading procedure

→ Transfer direction from the USB key to the controls.

| F4 | Prepare the storage procedure

← Transfer direction from the controls to the USB key.

4

5.2.4 Starting the Data Transfer

After completed entry of the storage medium number and the desired transfer direction, the data transfer is started with the soft key F5. The initiated transfer procedure is shown through a run bar display.

Data transfer:

| F5 | Start the data transfer |

Run bar display during the whole transfer.

5.2.5   Check of the Storage Medium Header

For the identification of a storage medium, a so-called storage medium header is defined. From this header information is read in order to see if it contains valid data for this machine class.

The following parameters are checked when the card is inserted:

- Format-ID   Fixed identification for a
                        formatted storage medium.

- Card type   Current application area of the storage
                        medium e.g. machine program /
                        machine data / languages

- Card designation   Description of the data available on
                        the storage medium
                        (fixed for specific machine class)
                        e.g. "550-16-26   Data"

If one of these parameters is recognized as invalid, then the following warning or note window appears on the screen:
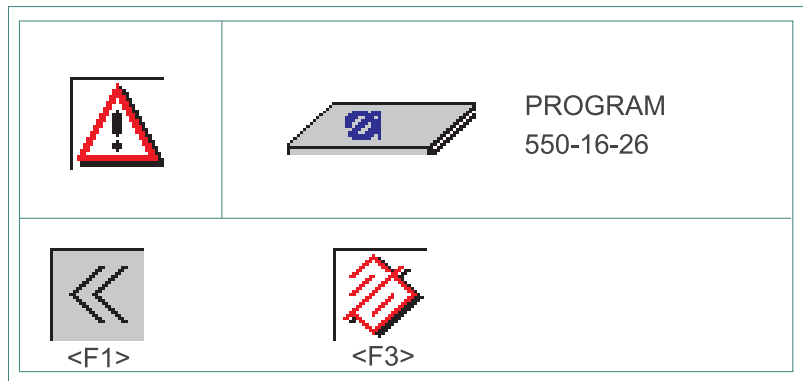
Warning:

 The inserted storage medium has an invalid format or is an unformatted new storage medium.

Storage medium:

 Type: PROGRAM   Machine program
DATA Machine data
LANGUAGE   Language
_____   Unknown
Designation: 550-16-26 machine class

Now there exists a choice:

Not to format the storage medium:

⟨⟨   Close window

F1   Storage medium is not formatted

Format the storage medium:

⟩   Format the storage medium

F3   The storage medium is formatted with a new header and empty sewing programs.

5.3   Manual Sewing (MAN)

With manual operation, the seamstress preselects the bunching value.

The seam length [mm] (mm) is automatically displayed on the screen during sewing.

The selection of the "MANUAL" function screen occurs by pressing the F1 soft key in the "AUTOMATIC" main screen.

5.3.1   Changing the Bunching Value
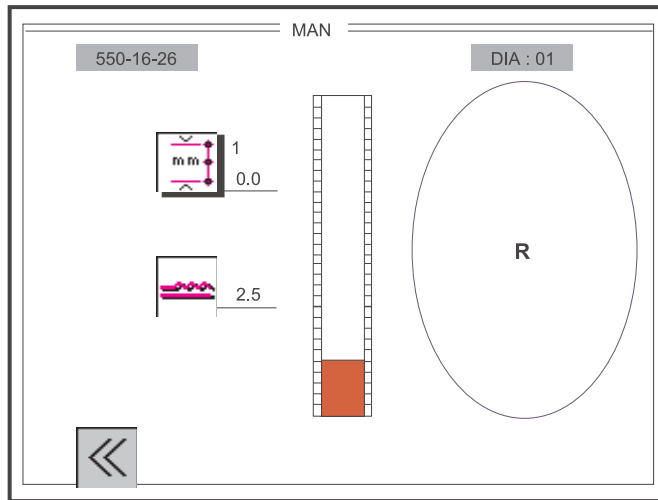
Illus. 5.3-1   Selection screen for manual sewing with seam length measurement

Bunching value   Step   Program number

The change of the bunching value can occur in two different manners:

a) The bunching value is entered as desired with the

0 to **15** keys of the key panel (Chapter 5.3.2). A step-wise correction of +/- 0.5 can occur with the additional foot pedal.

b) The bunching value is changed continuously only with the additional foot pedal. A corresponding display bar is shown in the screen.

The keys **0** to **15** of the key panel are **not** operative.

The presetting of the fullness adjustment pedal mode for manual sewing can be conducted in the global parameters selection screen (Chapter 5.5):

	Correction value	+/- 0.5	⇒ Variant a)
	Continuous	0 ... 15	⇒ Variant b)
	Continuous	0 ... 7	⇒Variant b)
	Continuous	7.5 ... 15	⇒ Variant b)

5.3.2 Activation of the Seam Length Measurement

The sewing length (mm) is shown online during sewing. The seam length measurement can be turned on or off with the '1' key of the numeric keypad.
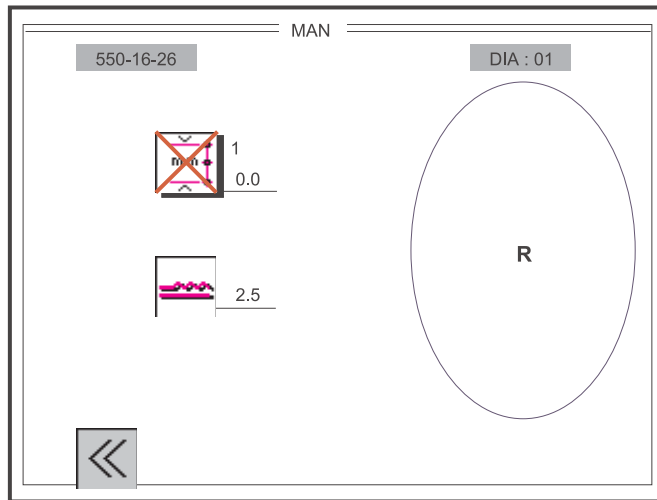
Illus. 5.3-2   Selection screen for manual sewing without seam length measurement

Turning the seam length measurement on/off :

 Entry : on / off

 1   Changeover ON / OFF

The "MANUAL" function screen is exited again via the **F1** soft key.

 Entry : Close window

F1   Close the "MANUAL" function screen

5.4 Base Settings (BASIC)

The selection of the "BASIC" function screen occurs by pressing the F2 soft key in the "AUTOMATIC" main screen.

Dependent on the type of application of the machine, a certain base setting must be conducted.
The selection of the functions

Sewing graphic

Application area

Size group and

Start position for the ellipse

occurs with the Cursor Left and Cursor Right keys.
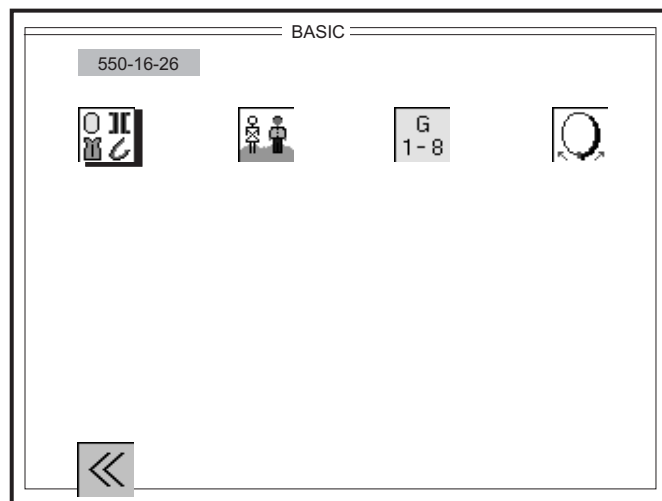
Illus. 5.4-1   Selection screen for base settings for sewing programs

The selection of the desired parameter occurs with the following keys:
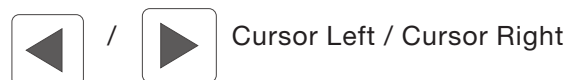
◄ / ▶   Cursor Left / Cursor Right

OK   Confirmation or Return

The "BASIC" function screen is exited again via the **F1** soft key.

≪   Entry : Close window

F1   Close the "BASIC" function screen

5.4.1 Presetting of the Sewing Graphic

Sewing graphic selection:

entry :   1 = Sleeve ellipse
              2 = Taping
              3 = Straight seams
              (Currently only selection of the ellipse graphic possible)
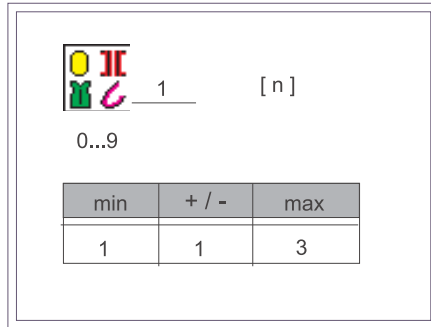
1   [n]

0...9

min	+ / -	max
1	1	3

0 to 9   Numeric entry

OK   Confirmation of the numeric entry

ESC   Retain old numeric value unchanged

4

5.4.2 Presetting of the Application Area (DOB / HAKA)

Application area DOB / HAKA :

HAKA - Men

DOB - Women

OK   Changeover DOB / HAKA

5.4.3 Presetting the Size Table

G 1-8

Size group :

Entry : 1 ... 6   [Size group]

GTAB - DOB				
G 1-8				
1.	D	032	038	060
2.	D	104	122	188
3.	F	034	040	062
4.	I	036	042	064
5.	GB / USA	006	012	034
6.	J	003	009	031

GTAB - HAKA				
G 1-8				
1.	D	044	050	072
2.	A, B, CH, NL	044	050	072
3.	F	044	050	072
4.	I	034	040	062
5.	GB / USA	034	040	062
6.	J	002	005	016

G 1-8 1   [n]

0...9

min	- / +	max
1	1	6

0 to **9**   Numeric entry

OK   Confirmation of the numeric entry

ESC   Retain old numeric value unchanged

Note!

Dependent on the country specification of the machine, the basis size (BAS) can be changed in the program.

Example: German
          HAKA BAS 50
          DOB   BAS 38

5.4.3.1 Size Table - Women's Wear DOB

Size group 1	Size group 2	Size group 3	Size group 4	Size group 5	Size group 6
Germany	Germany	France	Italy	GB / USA	Japan
BAS 38	BAS 122	BAS 40	BAS 42	BAS 12	BAS 09
Women	Girls	Women	Women	Women	Women
32 - 16 / 64	104	34	36	06	03
34- 17/ 68	110	36	38	08	05
36- 18 / 72	116	38	40	10	07
38- 19 / 76	122	40	42	12	09
40- 20 / 84	128	42	44	14	11
42- 21 / 88	134	44	46	16	13
44- 22 / 92	140	46	48	18	15
46- 23 / 96	146	48	50	20	17
48- 24 / 100	152	50	52	22	19
50- 25 / 104	158	52	54	24	21
52- 26 / 108	164	54	56	26	23
54- 27 / 112	170	56	58	28	25
56- 28 / 116	176	58	60	30	27
58- 29 / 120	182	60	62	32	29
60- 30 / 124	188	62	64	34	31

4

5.4.3.2 Size Table - Men's Wear HAKA

Size group 1	Size group 2	Size group 3	Size group 4	Size group 5	Size group 6
Germany	A, B, CH, D, F, NL	France	Italy	GB / USA	Japan
BAS 50	BAS 50	BAS 50	BAS 44	BAS 40	BAS 05
Men	Men	Men	Men	Men	Men
44 - 86 / 45 / 22	44 86 / 45 / 22	44 86 / 45 / 22	34	34 35	02
46- 90 / 47 / 23	46 90 / 47 / 23	46 90 / 47 / 23	36	36 37	03
48- 94 / 49 / 24	48 94 / 49 / 24	48 94 / 49 / 24	38	38 39	04
50- 98 / 51 / 25	50 98 / 51 / 25	50 98 / 51 / 25	40	40 41	05
52- 102 / 53 / 26	52 102 / 53 / 26	52 102 / 53 / 26	42	42 43	06
54- 106 / 55 / 27	54 106 / 55 / 27	54 106 / 55 / 27	44	44 45	07
56- 110 / 57 / 28	56 110 / 57 / 28	56 110 / 57 / 28	46	46 47	08
58- 114 / 59 / 29	58 114 / 59 / 29	58 114 / 59 / 29	48	48 49	09
60- 118 / 61 / 30	60 118 / 61 / 30	60 118 / 61 / 30	50	50 51	10
62- 122 / 63 / 31	62 122 / 63 / 31	62 122 / 63 / 31	52	52 53	11
64- 126 / 65 / 32	64 126 / 65 / 32	-64 126 / 65 / 32	54	54 55	12
66- 130 / 67 / 33	66 130 / 67 / 33	66 130 / 67 / 33	56	56 57	13
68- 134 / 69 / 34	68 134 / 69 / 34	68 134 / 69 / 34	58	58 59	14
70- 138 / 71 / 35	70 138 / 71 / 35	70 138 / 71 / 35	60	60 61	15
72- 142 / 73 / 36	72 142 / 73 / 36	72 142 / 73 / 36	62	62 63	16

5.4.4 Setting the Start Position of the Ellipse

Start position of the ellipse :

Entry : 0 ... 100 [%]

		000	[%]

0...9

min	+/-	max
0	1	100

| 0 | to | 9 | | Numeric entry |

OK — Confirmation of the numeric entry

ESC — Retain old numeric value unchanged

4

5.5 Global Parameters (GP)

The selection of the "Global Parameters" function screen occurs by pressing the F3 soft key in the "AUTOMATIC" main screen (Illus. 5.1-1).
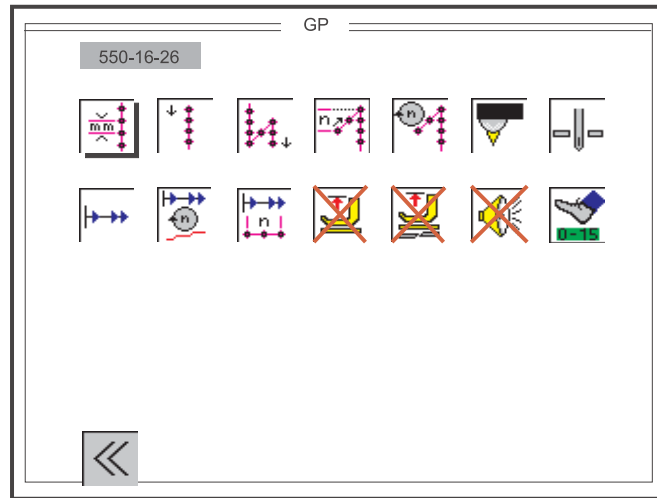
Illus.5.5-1: Selection screen for the global parameters

The selection of the desired parameter occurs with the following keys:
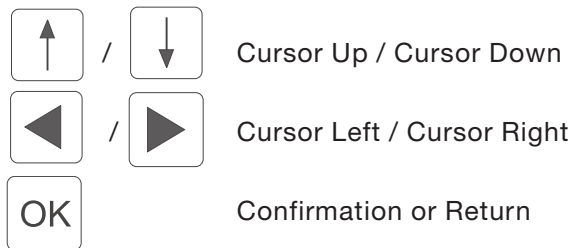
↑ / ↓	Cursor Up / Cursor Down
◄ / ►	Cursor Left / Cursor Right
OK	Confirmation or Return

The "Global Parameters" function screen is exited again via the 'F1' soft key.

《 Entry : Close window

F1 Close the "Global Parameters" function screen
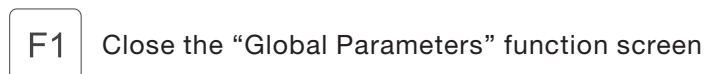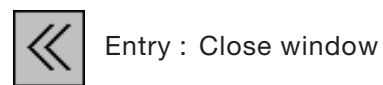
5.5.1 Setting the Base Stitch Length

Stitch length :

Entry : 1.5, 1.6, 1.7, ..., 5.3, 5.4, 5.5 [mm]
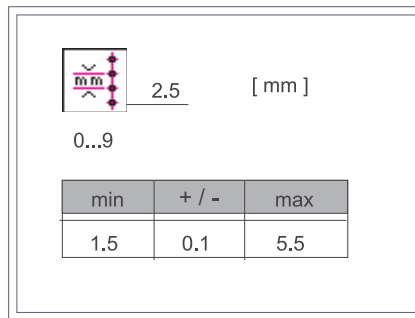
		2.5	[mm]

0...9

min	+ / –	max
1.5	0.1	5.5

0 to **9**   Numeric entry

OK   Confirmation of the numeric entry

ESC

Retain old numeric value unchanged

4

5.5.2 Selection of the Type of Beginning Bartack

Beginning bartack :

Without beginning bartack

Single beginning bartack

Double beginning bartack
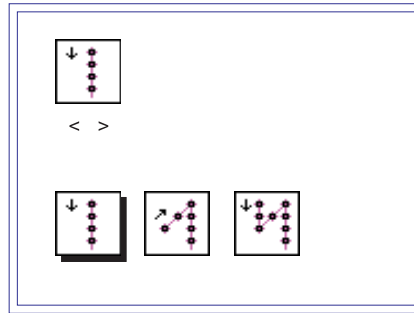
◀ / ▶   Parameter selection

OK   Confirmation of the parameter selection

5.5.3 Selection of the Type of End Bartack

End bartack :

 Without end bartack

 Single end bartack

 Double end bartack

◄ / ►   Parameter selection

OK   Confirmation of the parameter selection

4
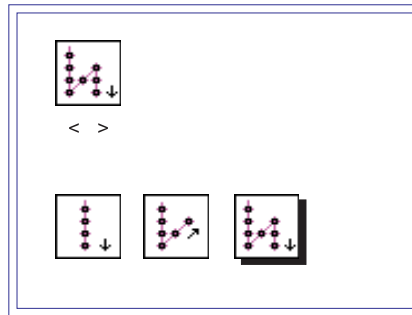
5.5.4   Setting the Number of Bartack Stitches

The number of bartack stitches can only be selected and changed when a beginning or end bartack (single / double) was previously selected.
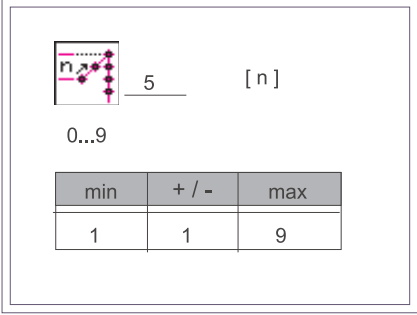
If the "Without Beginning Bartack" ⊞ and "Without

End Bartack" ⊞ settings were selected, then a parameter call-up via the 'Cursor Left' and 'Cursor Right' or 'Cursor Up' and 'Cursor Down' soft keys is not possible. The corresponding symbol is skipped.

Number of stitches in the bartack :

⊞   Entry : 1 ... 9   [stitches]

⊞	5 [n]		
0...9			

min	+ / -	max
1	1	9

0	to	9	Numeric entry

OK	Confirmation of the numeric entry

ESC	Retain old numeric value unchanged

5.5.5 Selection of the Speed in the Bartack

The speed in the bartack can only be selected and changed when a beginning or end bartack (single / double) was previously selected.

If the "Without Beginning Bartack" and

"Without End Bartack" settings were selected, then a parameter call-up via the 'Cursor Left' and 'Cursor Right' or 'Cursor Up' and 'Cursor Down' soft keys is not possible. The corresponding symbol is skipped.

Bartack speed:

Entry : 500, 600, 700, ..., 1800, 1900, 2000 [rpm]

1000 | [1/min]

min	+ / -	max
500	100	2000

↑ / ↓   Selection of the numeric value

OK   Confirmation of the numeric entry

4
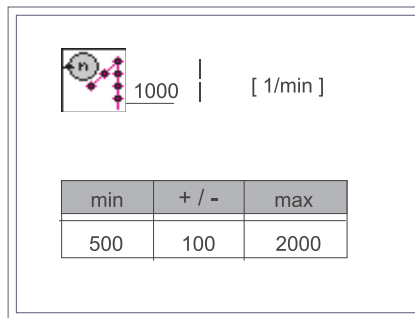
5.5.6 Seam Length Measurement through Light Barrier

Sewing length measurement :

Light barrier (Currently without function)

5.5.7 Selection of the Needle Position at a Stop in the Seam

Needle position at stop in the seam :

Needle down

Needle up
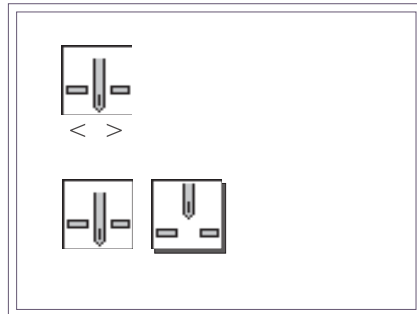
◀ / ▶   Parameter selection

OK   Confirmation of the parameter selection

5.5.8   Softstart On / Off

Turning the softstart on/off :

OK   Entry : on / off

Changeover ON / OFF

5.5.9 Selection of the Speed with the Softstart

The speed of the softstart can only be selected and changed

when the softstart |→→| is activated. With the softstart function turned off a parameter call-up via the 'Cursor Left' and 'Cursor Right' or 'Cursor Up' and 'Cursor Down' soft keys is not possible. The corresponding symbol is skipped.

Softstart speed :

Entry : 200, 300, ..., 1700, 1800   [rpm]

500		[1/min]

min	+ / -	max
200	100	1800

↑ / ↓   Selection of the numeric value

OK   Confirmation of the numeric entry

4
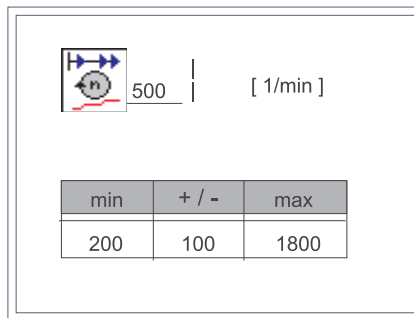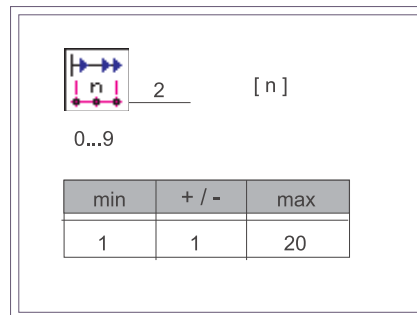
5.5.10 Setting the Number of Softstart Stitches

The number of softstart stitches can only be selected and changed when the softstart ⊢⇥ is activated. With the softstart function turned off a parameter call-up via the 'Cursor Left' and 'Cursor Right' or 'Cursor Up' and 'Cursor Down' soft keys is not possible. The corresponding symbol is skipped.

Number of softstart stitches :

Entry : 1, 2, ..., 19, 20   [stitches]

[n]

0...9

min	+ / −	max
1	1	20

0 to 9   Numeric entry

OK   Confirmation of the numeric entry

ESC   Retain old numeric value unchanged

5.5.11 Automatic Foot Lift at Stop in the Seam

Automatic foot lift at stop in the seam :

Entry : on / off

OK Changeover ON / OFF

5.5.12 Automatic Foot Lift after the Trimming Procedure

Automatic foot lift after the trimming procedure

Entry : on / off

OK Changeover ON / OFF

5.5.13 Acoustic Signal for Step Advance

Turning the acoustic signal for step advance on/off :

Entry : on / off

OK Changeover ON / OFF

4

5.5.14 Selection of the Pedal Mode for the Fullness Adjustment

This setting is only effective in the "Manual" function screen (Chapter 5.2).
In all other operation modes only a

fullness correction

in steps of +/- 0.5 can be conducted with the pedal.

Fullness adjustment pedal mode for manual sewing :

   Correction value   +/- 0.5

   Continuous   0 ... 15

   Continuous   0 ... 7

   Continuous   7.5 ... 15
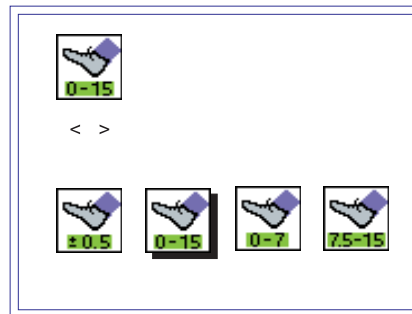
 /   Parameter selection

OK   Confirmation of the parameter selection

5.6   TEACH Programming Mode

A sewing program is generated for the base size with the Teach-In procedure and automatically mirrored and graduated, if desired. The controls measure the partial runs during sewing of the individual steps and automatically enter them in the program.

The selection of the "TEACH" programming mode occurs by pressing the 'F4' soft key in the "AUTO" main screen.

The "TEACH" programming mode consists of a total of three setting levels and is divided as follows:

● Level 1:
  Presetting - "TEACH"
  Opportunity of selection of the current sewing program number (01-15)
  Opportunity of deletion of the current sewing program.

● Level 2:
  Preselection - "TEACH-SELECT"
  Opportunity of changing the base parameters size, application area
  DOB / HAKA, sewing graphic and current piece LEFT / RIGHT.
  Opportunity of entering a sewing program name.
  Opportunity of selecting between the two programming modes "TEACH-IN" (while sewing) and "MODEL" (not sewing).

● Level 3:
  Entry mode - "TEACH-IN" or "MODEL"
  Entry of the program parameters - current step, fullness / bunching value, partial seam length, gradation, special functions.
  Opportunity for mirroring the current application piece.
  Opportunity for copying to all sizes of the current size table.

4

5.6.1 Presetting - "TEACH"

All important base parameters, the sewing graphic and the program number are shown in the "TEACH" selection screen (Illus.5.6.1-1). In the heading of the screen, the machine class, the name of the current window and the number of the displayed sewing graphic are shown. Next to the display of the program number the program name (here: MODELL 47/11) is, if present, shown.

The selection of the base parameters,

Sewing graphic

Application area

Size and

Starting piece,

is not possible at this time, only the settings are shown.
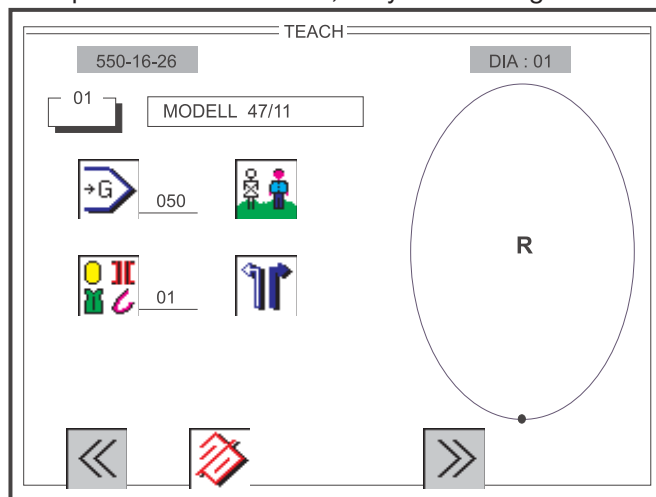
Illus. 5.6.1-1: Selection screen for the "TEACH" presetting

Before the generation of a new sewing program, the 'F2' soft key should always be pressed first in order to delete an old program. A deleted sewing program is reinitialized with the DOB/HAKA base settings (Chapter 5.4) and the country-specific size system and edited with the base size.

After the "TEACH" selection screen is called up the program number is highlighted with a shadow bar (Illus. 5.6.1-1). It is active and can, if desired, be changed directly with a two-digit entry via the numeric keypad. The new program number is saved by pressing the OK key and the data for the new sewing program are updated in the screen.

01

Changing the program number:

Entry : 01 ... 15

0 to **9**   Numeric entry

OK   Confirmation of the numeric entry

The "TEACH" selection screen is exited again via the F1 soft key.

⟪   Entry : Close window

F1 Close the "TEACH" selection screen.

The current sewing program is deleted via the F2 soft key.

    Entry : Delete

F2 The current sewing program is deleted and initialized with plausible values from the base setting.

4

One moves to the "TEACH-SEL" selection screen via the F4 soft key.

⟪   Entry : Close window

F4 Open the "TEACH-SEL" selection screen.

ATTENTION !!!

All changes made up to this point in the current sewing program are voided by the exiting of the window with the 'F1' soft key and not saved.

NOTE :

If the current sewing program is deleted via the F2 soft key and then the OK key pressed, then the sewing program is permanently deleted !!!

5.6.2 Preselection - "TEACH-SELECT"

The selection of the base parameters,

Sewing graphic

Application area   ,

Size and

Starting piece,

is now possible and occurs with the respective key numbers next to the function symbols.
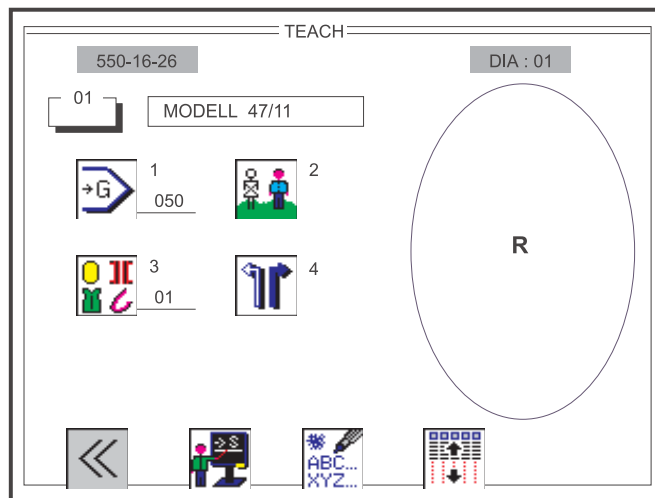
Illus. 5.6.2-1: Selection screen for the "TEACH-SELECT" preselection

The "TEACH-SELECT" selection screen is exited again via the F1 soft key.

Entry : Close window

F1   Close the "TEACH-SELECT" selection screen.

ATTENTION !!!

All changes made up to this point in the current sewing program are voided by the exiting of the window with the 'F1' soft key.

5.6.2.1 Changing the Size Setting

The size selection is immediately active after the pressing of the '1' key of the numeric keypad and is highlighted with a black shadow bar. The desired size can be entered as one to three digits via the numeric keypad. The value is accepted through the pressing of the OK key. After the deletion of a sewing program the base size is always still set.

Size

| 1 | Direct selection of the size parameter |

| →G | Entry :   see DOB / HAKA Size Tables |

| 0 | to | 9 | Numeric entry |

| OK | Confirmation of the numeric entry |

| ESC | Retain old numeric value unchanged |

NOTE:

If a size is entered which is not a part of the size table of the current size group, the set value is corrected to the following procedure :

● The value is smaller than the valid value range of the size table
  ⇒ Correction to the min. size value.

● The value is within the value range but not a valid value of the size table
  ⇒ Correction to base size

● The value is larger than the valid value range of the size table
  ⇒ Correction to the max. size value

4

5.6.2.2 Change of the DOB/HAKA Application Area

The changeover between the DOB or HAKA application areas occurs with the 2 key of the numeric keypad. The selected area is accordingly marked in the symbol.

Application area:

| 2 | Direct selection of the change of application area function. |

 HAKA application area

 DOB application area

The base size is adapted appropriate to the setting of the application area.

5.6.2.3 Changing the Sewing Graphic

The selection of the sewing graphic is immediately active after the pressing of the '3' key of the numeric keypad and is highlighted with a black shadow bar. The desired graphic can be entered as one to two digits via the numeric keypad. The value is accepted through the pressing of the OK key.

Sewing graphic

| 3 | Direct selection of the sewing graphic parameter |

 Entry :   Currently only 01 = Ellipse

| 0 | To | 9 | Numeric entry |

| OK | Confirmation of the numeric entry |

| ESC | Retain old numeric value unchanged |

5.6.2.4 Changing the Starting Piece LEFT/RIGHT

The changeover between the starting piece RIGHT or LEFT occurs with the 4 key of the numeric keypad. The selected piece is accordingly marked in the symbol and also marked with an 'R' or 'L' in the current graphic.

Starting piece Right/Left:

| 4 | Direct selection of the change of starting piece function |

 Right piece

 Left piece

5.6.2.5 Entry of a Sewing Program Designation

To differentiate between nearly identical sewing programs, each program can be given a name or no..

Name of the sewing program:

F3   Open the editing window for text entry

Text entry

↑ / ↓   Selection of a character in the character set

◀ / ▶   Save the edited character and move to the next position in the text.

OK   Save the text entry and close the editing window

```
MODELL  47/11

ABCDEFGHIJKLMNOPQRSTUVWXYZ_

A...Z  ——  CLEAR  ——  0...9
```

F2   Character set selection - Letters

```
<                    >

ABCDEFGHIJKLMNOPQRSTUVWXYZ_

A...Z  ——  CLEAR  ——  0...9
```

F3   Delete text field

```
MODELL  47/11

°^!"§$%&/()=?`´*':;,.-#+\}][{>> 0123456789_

A...Z  ——  CLEAR  ——  0...9
```

F4   Character set selection - Numbers & signs

5.6.3 "TEACH-IN" Entry Mode

The selection of the base parameters,

Sewing graphic

Application area

Size

Starting piece and

Program number,

is no longer possible at this point, the previously made settings are now established for this sewing program and enclosed with a border.

In the Teach-In operation the screen display contains further parameters which are important for the generation of a complete sewing program (Illus. 5.6.3.1).
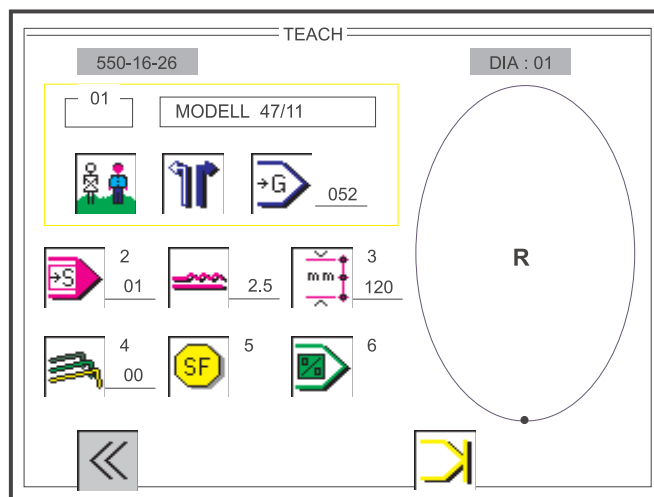
Illus. 5.6.3-1: Function screen for the "TEACH-IN" entry mode

The "TEACH-IN" selection screen is exited again via the F1 soft key.

Entry : Close window

F1   Close the "TEACH-IN" selection screen.

ATTENTION !!!

All changes made up to this point in the current sewing program are voided by the exiting of the window with the 'F1' soft key.

5.6.3.1 Selection of the Current Step

One advances to the next program step with the 2 key of the numeric keypad or with the knee switch. The current step number is shown next to the symbol and in the display of the key panel, all other step-dependent parameter changes are updated in the screen.

During sewing, the partial seam run is automatically counted in mm and continuously shown in the screen. When the desired partial seam run is finished, then the partial seam run, bunching value, gradation and special functions parameters are automatically saved with the advance to the next program step.

Current step :

| 2 |

Direct selection of the step advance function

Display: Current step
max. 26 steps in the sewing program.
max. 13 in the current piece (left or right)

Note:

If a starting piece consists of more than 13 piece steps, mirroring is no longer possible!

5.6.3.2 Changing of the Bunching Value / Fullness

A change of the bunching value / fullness can always be conducted immediately and directly via the key panel (Illus. 2.4).
The current value is shown next to the symbol and in the display in the key panel.

Bunching value / fullness:

| 0 | | 15 |

to

Direct selection of the fullness

Entry:0, 0.5, 1, 1.5 ... , 13.5, 14, 14.5, 15

5.6.3.3   Determination of the Current Partial Seam Length in mm

The partial seam run length can be programmed in mm in two different manners.

- Variant 1
  The partial seam run length   is immediately active after the pressing of the '3' key of the numeric keypad and is highlighted with a black shadow bar.
   The seam run length (mm) can be directly programmed without having to sew through entry of a three-digit numeric value via the numeric keypad. The set value is saved by pressing the OK key.

Partial seam run length:

| 3 | Direct selection of the partial seam run length parameter |

Entry :   1 ... 255   [mm]

| 0 | to | 9 | Numeric entry |

| OK | Confirmation of the numeric entry |

| ESC | Retain old numeric value unchanged |

- Variant 2
  When sewing, the desired partial seam run length in mm is determined.
  During sewing, the partial seam run is automatically counted in mm and continuously displayed in the screen. When the desired partial seam run is finished, it is saved through a simple advance to the next program step (see Chapter 5.6.3.1)

Foot pedal Automatic seam run measurement in mm

Value range : 1 ... 255   [mm]

| 2 | Value storage through step advance |

ATTENTION !!!

If the thread trimmer is triggered at the end of a partial seam run, the parameter value returns to zero.

5.6.3.4 Entry of the Gradation

The gradation is immediately active after the pressing of the '4' key of the numeric keypad and is highlighted with a black shadow bar. The value shows by how many mm the partial seam length of the program step changes with each size change. Enter gradation in mm, as necessary. The desired gradation can be entered as one to two digits via the numeric keypad. The value is taken on through the pressing of the OK key. Sewing is not possible during entry of the gradation.

Gradation:

| 4 | Direct selection of the gradation parameter |

 Entry :

| 0 | to | 9 | Numeric entry |

| OK | Confirmation of the numeric entry |

| ESC | Retain old numeric value unchanged |

5.6.3.5 Turning On the Special Functions

A supplementary window showing the active or inactive special functions as symbols is opened with the 5 key of the numeric keypad.

The special functions are step-dependent, that is, e.g. in the current step 3 the supplementary thread tension can be turned on while in the steps 1, 2 and 4 the supplementary thread tension is turned off.

The selection of the two currently available special functions

Thread tension and Supplementary thread tension occurs via the Cursor Left and Cursor Right keys.

The activation or deactivation of individual functions is conducted by pressing the OK key. The supplementary window is exited again via the F1 soft key.

Special functions:

| 5 | Direct selection of the "SF" supplementary window |

SF   Status display: Thread tension   ON/OFF
                                 Supplementary thread tension
ON/OFF

```
┌─────────────────────────────────┐
│                    SF            │
│  ][⇄   ][+/-F   ┌──┐  ┌──┐       │
│                 └──┘  └──┘       │
│  ┌──┐  ┌──┐  ┌──┐  ┌──┐          │
│  └──┘  └──┘  └──┘  └──┘          │
│  << F1                           │
└─────────────────────────────────┘
```
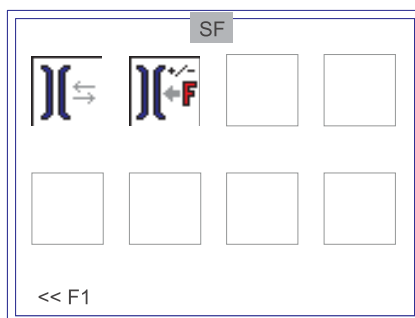
◀ / ▶	Parameter selection
OK	Changeover ON / OFF
F1	Close the "SF" supplementary window

5.6.3.6 Quick Return to the Program Beginning

4

One can return at any time to the beginning of the program generation, the 1st step of the sewing program, by pressing the '6' key. Incorrect entries or retroactive changes to individual program steps can be corrected immediately.

Program beginning:

| 6 | Direct return to the program beginning at the first step |

5.6.3.7 Setting the Piece or Program End

After the last program step, the piece or program end is activated by pressing the 'F4' soft key and there is an advance to the follow-up functions MIRROR - END - CONTINUE (Chapter 5.6.3.8).

Display of the soft key functions by generation of a new (empty) sewing program:

SOFTKEY F1   SOFTKEY F4

Display of the soft key functions in case of changes to an existing sewing program:

SOFTKEY F1   SOFTKEY F3 SOFTKEY F4

The "TEACH-IN" function screen can be exited at any time via the F1 soft key.

Entry : Close window

F1   Close the "TEACH-IN" function screen.

ATTENTION !!!

All changes made up to this point in the current sewing program are voided by the exiting of the window with the 'F1' soft key.

Only parameter changes in the current sewing program are saved via the F3 soft key, the programming mode is exited and one returns to the "AUTOMATIC" main screen.

Entry : Return to automatic sewing

F3   The currently altered sewing program is saved. The programming mode is exited and one returns to automatic sewing

The piece or program end is marked via the F4 soft key.

Entry : Piece or program end

F4   The piece or program end is marked.
The follow-up functions MIRROR - END - CONTINUE are displayed

5.6.3.8   Mirror - End - Continue

The symbols for MIRROR, END and CONTINUE appear in the display field for the soft key functions.

Display of the soft key functions when the opportunity for MIRRORING exists:

SOFTKEY F2   SOFTKEY F4   SOFTKEY F5

Display of the soft key functions when the opportunity for MIRRORING does **not** exist:

SOFTKEY F4   SOFTKEY F5

MIRROR :

The program for the right / left piece is generated as a mirror image and saved. New soft key functions are displayed.

END :

Only the just generated piece is saved. Mirroring is no longer possible. New soft key functions are displayed

CONTINUE :

The selection functions are exited again. The entry of more program steps is possible.

The current piece is mirrored via the F2 soft key.

Entry : Mirror

| F2 | The current piece is mirrored. The programming mode is exited and one returns to automatic sewing. The follow-up functions COPY - AUTOMATIC are displayed. |

The program end is marked via the F4 soft key.

Entry : Program end

| F4 | The program end is marked. The follow-up functions COPY - AUTOMATIC are displayed. |

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The selection functions are exited again via the F5 soft key. The entry of more program steps in the programming mode is possible.

⟫   Entry : Continue in the programming mode

F5   The selection functions are exited.
The entry of more program steps in the programming mode is possible.

5.6.3.9 Copy - Automatic

The symbols for COPY and AUTOMATIC appear in the display field for the soft key functions.

Display of the soft key functions when the opportunity for COPY exists:

SOFTKEY F2   SOFTKEY F3

Display of the soft key functions when the opportunity for COPY does not exist:

SOFTKEY F3

COPY :

The generated program is copied to every size of the application area (DOB/HAKA) taking into account the gradation values entered. The "TEACH_IN" function screen is exited. The machine is ready for sewing and the "AUTOMATIC" main screen with the assigned steps in the sewing graphic is shown.

AUTOMATIC :

The generated program is only saved in the base size. The "TEACH_IN" function screen is exited. The machine is ready for sewing and the "AUTOMATIC" main screen with the assigned steps in the sewing graphic is shown.

4

The generated program is copied to every size of the application area (DOB/HAKA) via the F2 soft key.

Entry : Copy

F2 | The generated program is copied to every size of the application area (DOB/HAKA) taking into account the gradation values entered. The programming mode is exited and one returns to automatic sewing.

Only parameter changes in the current sewing program are saved via the F3 soft key, the programming mode is exited and one returns to the "AUTOMATIC" main screen.

Entry : Return to automatic sewing

F3 | The generated program is only saved in the base size. The programming mode is exited and one returns to automatic sewing

5.6.4 "MODEL" Entry Mode

(Currently no function)

5.7 Program Sequence (PS)

Up to 6 individual programs can be linked in a program sequence. After activation of a program sequence, the controls work through the individual programs in proper order. A total of 6 independent program sequences (No.2-7) can be stored (Illus. 5.7-1). The program sequence 1 is an exception here. All 15 programs are stored, but only the currently selected program is displayed.

The selection of the "Program Sequence" function screen occurs by pressing the 'F5' soft key in the "AUTOMATIC" main screen (Illus. 5.1-1).

5.7.1   Selecting a Program Sequence

The selection of a program cycle 1-7 occurs with the Cursor Up and Cursor Down keys. The selected number of the program cycle is displayed in colour. When the window is exited the currently marked program sequence is accepted and displayed in the "AUTO" main screen.
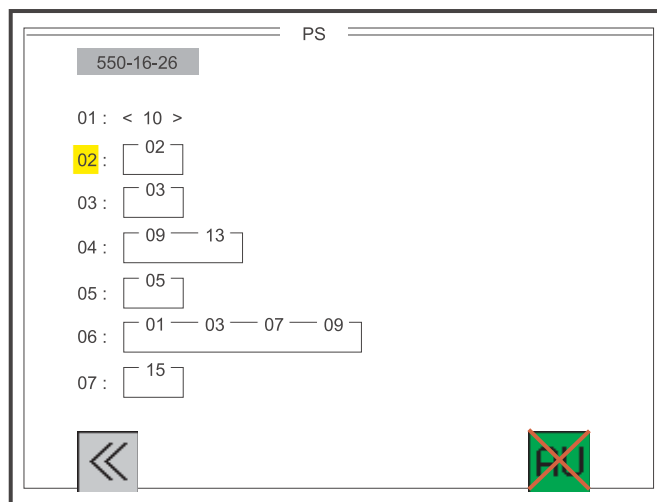
Illus. 5.7-1: Selection screen for the program sequence

The selection of the desired program cycle occurs with the keys:

↑ / ↓   Cursor Up / Cursor Down
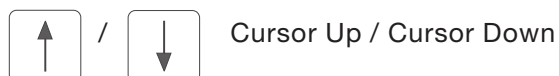
5.7.2 Changing a Program Sequence

The programming or changing of a program sequence is conducted as follows. Select the program sequence to be changed with the procedure already described (see Chapter 5.7.1). Enter a two-digit program no. via the numeric keypad. (Attention: The old program sequence is completely overwritten with a single entry). After the entry of a 6th program no. or by pressing the OK key, the entry is ended and the newly generated program sequence is saved.

The selection of the desired program series occurs with the keys:

| ↑ | / | ↓ | Cursor Up / Cursor Down
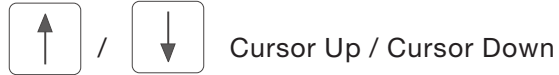
The entry of the desired program no. occurs with the keys:

| 0 | to | 9 | Numeric entry

| OK | Confirmation or Return

5.7.3 Automatic Execution of a Program Sequence

The possibility of turning an automatic working-through of the program sequence on or off exists with the aid of the 'F5' soft key (Illus. 5.7-2).

AU Entry : on / off

F5 Automatic sequence advance ON / OFF

The designation of this function occurs through an appropriate arrow symbol between the program numbers of a program sequence.
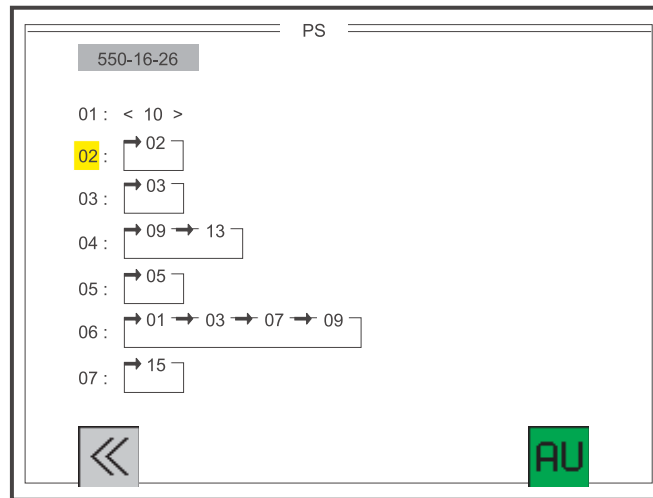
Illus. 5.7-2: Selection screen for the program sequence with designation of the automatic execution.

The "Program Sequence" function screen is exited again via the 'F1' soft key.

≪ Entry : Close window

F1 Close the "Program Sequence" function screen

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6. Error, Warning and Information Windows

7. List of All Symbols

	AERMEL_SYMBOL	sewing length of the sleeve
	ARMLOCH_SYMBOL	sewing length of the armhole
	BF_A_SYMBOL BF_B_SYMBOL BF_C_SYMBOL BF_D_SYMBOL	symbol for the terminal
	RAMCARD_A_SYMBOL RAMCARD_B_SYMBOL	symbol for the storage medium
	GRAFIKAUSWAHL_SYMBOL	select the desired graphics
	HAKA_DOB_SYMBOL	changing the application - HAKA
	DOB_HAKA_SYMBOL	changing the application - DOB
	RIGHT_TEIL_SYMBOL	select the starting piece - RIGHT
	LEFT_TEIL_SYMBOL	select the starting piece - LEFT
	SCHRITTE_SYMBOL	calling up the next step
	GRADIERUNG_SYMBOL	grading
	MEHRWEITE_SYMBOL	gathering value / fullness
	NAHTLAENGE_MM_SYMBOL	sewing length (mm)
	SONDERFUNKTION_SYMBOL	additional or special functions
	END_SYMBOL	entering the piece or program end
	AUTOMATIC_SYMBOL	switching back to the automatic-mode
	ANFANG_SYMBOL	back to the first step of the program
	SPEICHER_LOESCHEN1	Erasing the program
	GROESSE_SYMBOL	size
	RAM_CARD_SYMBOL	storage medium - IN / OUT
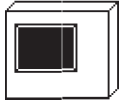
4

PROZENT_SYMBOL	correction value for the fullness
CLOSE_MENU_SYMBOL	close the current menu
NEXT_MENU_SYMBOL	call up the next following menu
DATENUEBERTRAGUNG	data transfer to memory card
PFEIL_RIGHT_SYMBOL	changing the direction of transfer (memory card to the control)
PFEIL_LEFT_SYMBOL	changing the direction of transfer (control to the memory card)
MIRROR_SYMBOL	mirror the current piece
COPY_SYMBOL	copy the set of sizes
AUTO_SYMBOL	program sequences "automatic mode" - ON / OFF
GROESSEN_TAB_SYMBOL	select the group of sizes (for different countries)
ANFANGSPOSITION_ELLIPSE	setting the starting position of the ellipse
INFO_SYMBOL	information
OHNE_ANFANGSRIEGEL	start backtack - OFF
ANFANGSRIEGEL_EINFACH	start backtack - SINGLE
ANFANGSRIEGEL_DOUBLE	start backtack - DOUBLE
STICHLAENGEN_MM_SYMBOL	stitch length (mm)
STICHANZAHL_RIEGEL_SYMBOL	number of stitches for the backtack
NADEL_UNTEN_SYMBOL	basic position of the needle - POS 1
NADEL_OBEN_SYMBOL	basic position of the needle - POS 2
OHNE_ENDRIEGEL_SYMBOL	end backtack - OFF
ENDRIEGEL_EINFACH_SYMBOL	end backtack - SINGLE
ENDRIEGEL_DOUBLE_SYMBOL	end backtack - DOUBLE
LICHTSCHRANKE_EINFACH	light barrier function - OFF
SOFTSTART_DREHZAHL	speed for the softstart

	SOFTSTART_SYMBOL	softstart (limited speed) - ON / OFF
	STICHANZAHL_SOFTSTART	number of stiches for the softstart
	FUSSLUEFTUNG_NAHT	automatic foot lifting at stop in the seam (ON / OFF)
	FUSSLUEFTUNG_FA_SYMBOL	automatic foot lifting after thread trimming (ON / OFF)
	RIEGELDREHZAL_SYMBOL	speed for backtack
	TEACH_SYMBOL	call up the programming mode - " SEWING "
	MODELL_SYMBOL	call up the programming mode - " MODEL-MAKING "
	MESSAGE_SYMBOL	message symbol
	ERROR_SYMBOL	error symbol
	FADENSPANNUNG_SYMBOL	thread tension - ON / OFF
	ZUSATZFADENSPANNUNG	additional thread tension - ON / OFF
	SIGNALTON_SYMBOL	sound ON / OFF by calling up the next step
	PEDALMODE_CONTINUOUS	pedalmode - without steps - changing fullness from 0 until 15
	PEDALMODE_KORREKTUR	pedalmode - corrections steps - changing fullness in steps of +/- 0.5
	ROM_SYMBOL	rom symbol
	RAM_SYMBOL	ram symbol
	NAEHMOTOR_SYMBOL	sewing driving unit
	EINGANGS_SYMBOL	input symbol
	EINGANGS_AUTOMATIC_SYMBOL	automatic input symbol
	AUSGANGS_SYMBOL	output symbol
	AUSGANGS_AUTOMATIC_SYMBOL	automatic output symbol
	SCHRITTMOTOR_SYMBOL	
	PEDALMODE_CONTINUOUS_UNTEN	pedalmode - without steps - changing fullness from 0 until 7
	PEDALMODE_CONTINUOUS_OBEN	pedalmode - without steps - changing fullness from 7.5 until 15

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STRICHCODE_SYMBOL	bar code symbol
TEXTEINGABE_SYMBOL	text editing
PROGRAMM_COPY_SYMBOL	copy program
CAN_SYMBOL	control area network symbol
MULTI_AUSGANG_SYMBOL	multi setting output
ON_SYMBOL	switch on
OFF_SYMBOL	switch off
NEXT_AUSGANG_SYMBOL	next output
PREV_AUSGANG_SYMBOL	previous output
NEXT_PAGE_SYMBOL	next page
PREV_PAGE_SYMBOL	previous page
TASTENLEISTE_SYMBOL	key panel symbol
INITIALISIERUNGS_SYMBOL	initialization symbol
PEDAL_JUSTIERUNG_SYMBOL	pedal adjustment
AD_WANDLER_SYMBOL	analog/digital converter
PEDAL_NACH_VORNE_SYMBOL	step on the pedal - forward position
PEDAL_GRUNDSTELLUNG	home position of the pedal
PEDAL_NACH_HINTEN_SYMBOL	step on the pedal - backward position
GLOBALE_PARAMETER_SYMBOL	global parameter
MASCHINEN_PARAMETER	machine parameters
SYSTEMCODE_SYMBOL	system code
ZUSATZAUSSTATTUNG_SYMBOL	additional equipment
SANDUHR_SYMBOL	hourglas (wait for a time)
PROGRAMMSEQUENZ_SYMBOL	sequential program processing

BASIC	BASIC_NAEHPROGRAMM_	basis adjustment
	NAHTLAENGE_MAX_SYMBOL	max. sewing length
	FUSSLUEFTUNG_ANHEBEN	Lift sewing foot
	FUSSLUEFTUNG_ABSENKEN	Lower sewing foot

4

8. Error Messages

Error No.	Description	Possible cause	Remedy
	only the logo appears in the display	incorrect interface setting (baud rate 125 KBaud and COM 1)	Turn on the main switch and hold down the ESC key
	keys do not effect fullness-control adjustment during manual sewing	pedal mode global parameter not equal to 0	pedal mode global parameter = 0

Error No.	Description	Possible cause	Remedy

Error

		SK interpreter	

Error	Description	Possible cause	Remedy
110	calculation of residual stitch count	internal error	switch machine off and on again
111	unknown synchronous command	internal error	switch machine off and on again
112	step-motor error greater than 1	internal error	switch machine off and on again
113	step-motor error greater than 2	internal error	switch machine off and on again
114	unknown stitch-preparation condition	internal error	switch machine off and on again
115	unknown feed-start condition	internal error - sewing-motor pedal operated before or during machine initialisation	switch machine off and on again
116	first command unit without feed	internal error	switch machine off and on again
117	unknown condition on interruption	internal error	switch machine off and on again
118	cycle on interruption by user	internal error	switch machine off and on again
		Sewing-motor control	
135	poor connection	cable connections to the EFKA control out of order / EFKA control defective	check cable connections to the sewing-motor control / replace EFKA control
136	communication interrupted	cable connections to the EFKA control out of order / EFKA control defective	check cable connections to the sewing-motor control / replace EFKA control
137	inadmissible command	software error / old EFKA AB285A EPROM status	replace EFKA control or renew EPROM status
138	command buffer full	internal error	program change / DA Service
139	log error	internal error	program change / DA Service
140	time out	internal error	program change / DA Service
141	RS 422 transmission register	internal error	program change / DA Service
142	no clearance signal	internal error	program change / DA Service
143	drive not ready	cable connections to the EFKA control out of order / EFKA control defective	check cable connections to the sewing-motor control / replace EFKA control
144	UART not ready	CPU defective	replace CPU / DA Service
145	hardware error	EFKA control hardware error EFKA control software error synchronizer not connected / defective commutating-sender lead or converter faulty mains voltage too low blockage, motor mechanically overloaded	replace EFKA control update software version check synchronizer / connection check commutating-sender lead check mechanism

		one revolution after zero-point run zero pulse not recognised / initiator defective	check initiator distance to disc / replace initiator
		parameter not present / machine-software error	program change / DA Service
		transmission temporarily interrupted	check cable connections to the EFKA control
146	pedal not in basic position	the sewing-motor pedal was operated during initialisation	when the machine is switched on the sewing-motor pedal must be in its basic position (not moved)

RS 232 serial interface

165	unknown baud rate	internal error	program change / DA Service
166	parity error	error on data transmission with the operating panel	switch machine off and on again
167	framing error	error on data transmission with the operating panel	switch machine off and on again
168	overrun error	error on data transmission with the operating panel	switch machine off and on again
169	reception buffer full	rapid change in screen structure due to change of program number or program sequence	switch machine off and on again

Storage Medium

170	check sum wrong	error on reading data from storage medium	repeat read from storage medium
171	medium not inserted	storage medium is not properly inserted	check storage medium
172	medium is write-protected	storage medium is write-protected	remove write protection
173	access to protected header data	internal error	program change / DA Service
174	format ID is wrong	the tag for a formatted storage medium is wrong	reformat storage medium if necessary
175	length > free operating-panel memory	internal error	program change / DA Service
176	selected parameter type is wrong	internal error	program change / DA Service
177	selected block size is wrong	internal error	program change / DA Service
178	selected block number is wrong	internal error	program change / DA Service
179	selected formatting byte is wrong	internal error	program change / DA Service
180	selected card type is wrong	internal error	program change / DA Service
181	selected length is wrong	internal error	program change / DA Service
182	selected start address is wrong	internal error	program change / DA Service

Operation / miscellaneous

187	data check sum in data memory is wrong		switch machine off and on again
188	data check sum in NV RAM is wrong		switch machine off and on again
197	NV RAM is defective	CPU component defective	switch machine off and on again
201	data not present		
208	step losses on X axis: > 100 steps	upper belt drive (X axis) not moving freely	check mechanism
209	step losses on X axis: > 50 steps	upper belt drive (X axis) not moving freely	check mechanism
210	step losses on Y axis: > 100 steps	lower belt drive (Y axis) not moving freely	check mechanism
211	step losses on Y axis: > 50 steps	lower belt drive (Y axis) not moving freely	check mechanism

NB: When switching on for the first time after replacing the EPROM in the EFKA control, wait for the EFKA control audio tone, then switch the machine off and on again.