

Manual, complete

745 - 34

**Sewing unit for runstitching of piped flap
and welt pocket openings and pocket corners**

Working methods: A, B, D, F

Operating Instructions

Installation Instructions

Service Instructions

[Instructions for Programming DAC](#)

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745 - 34

Manual, complete

Summary

Operating Instructions
Installation Instructions
Service Instructions
Instructions for Programming DAC

Interconnection-diagram

9870 745100 B
9870 745115 B
9870 745116 B
9870 001018 B

Pneumatic circuit plan

9770 745003

Part 4: Instructions for Programming DAC, class 745-34

Program version A 03

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1. General

This manual contains important information on the safe and correct use of the “**DAC**” (Dürkopp Adler Control) new-generation controller.

Screen images in this brief description

The symbol display on the various screens depends on the sewing machine's equipment and settings. The screen images illustrated in this brief description may therefore not always correspond exactly with the screens appearing in the controller display.

Operating terminal with graphic user guide

The operating terminal is fitted with an LCD display and a keyboard. The user guide employs only internationally intelligible symbols, supplemented with textual information in the selected language. The various symbols are arranged in groups in the menu structure of the sewing and test programs. Simplicity of operation ensures rapid familiarisation.

Ease of programming

99 freely programmable pocket programs are available to the user, which can be combined with any number of seam patterns. 20 pocket sequences.

Each pocket sequence can be composed of a maximum of 8 pocket programs in any order.

On the “slanting-pocket version” of the class 745-34 all practical angles can be programmed by the operator, who can thus dispense with the need to spend time and effort readjusting the corner blades and programming seam displacements.

Setting and test programs

The **MULTITEST** comprehensive testing and monitoring system is integral to the **DAC** controller.

A microcomputer carries out the control functions, monitors the sewing process and displays incorrect operations and faults.

Errors and test results are shown in the LCD display.

If the machine is operating normally the display shows information relating to operation and sewing.

In the event of an operating error or fault the function sequence is interrupted. The display indicates the cause by means of the appropriate error symbol.

In most cases the error symbol disappears once the error has been rectified.

In some cases the main switch must be switched off for safety reasons when the error is rectified.

Special programs facilitate mechanical settings and enable receiver and transmitter elements to be rapidly tested without additional measuring devices.

RAM memory card

The RAM memory card is a long-term storage medium for all programmed data and for the transfer of the software version and the operating language.

It enables data to be transferred to other sewing machines.

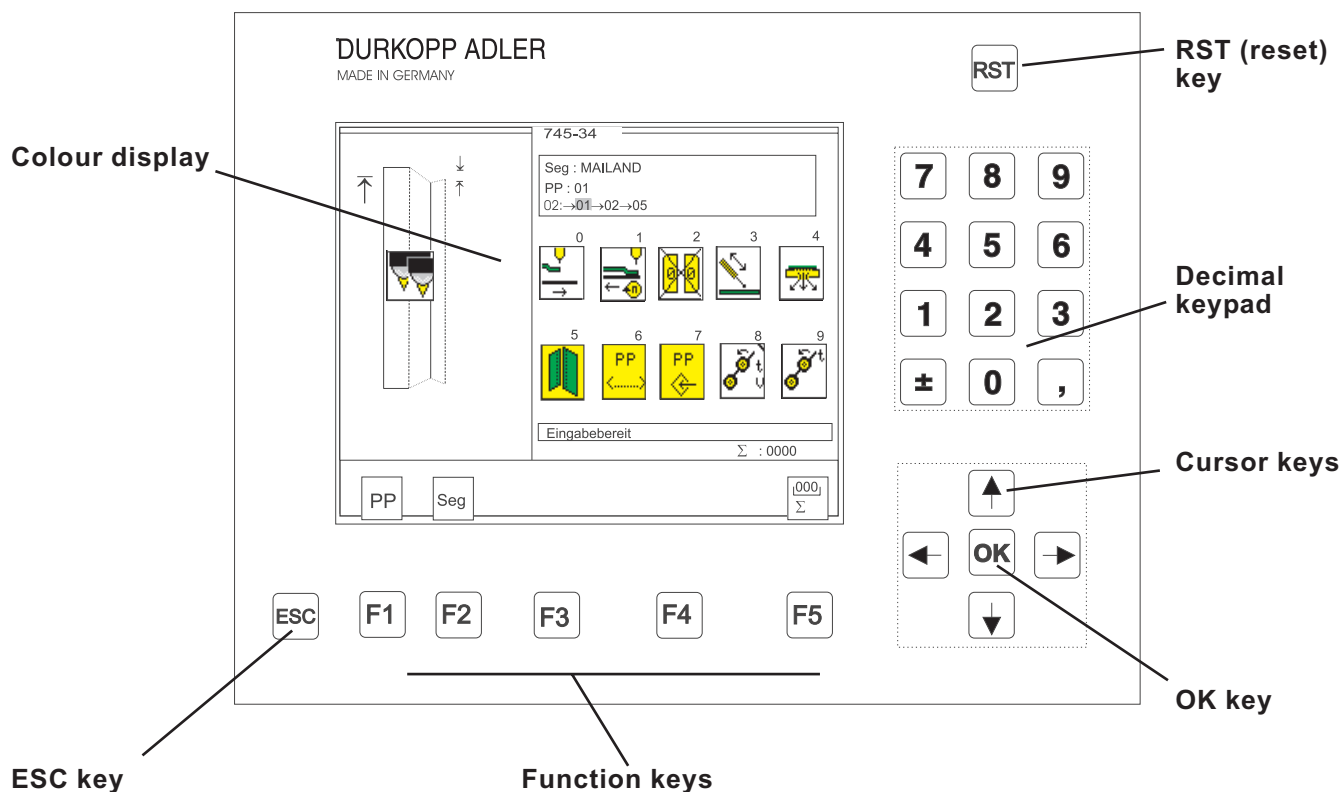
The controller transfers the data onto the memory card.

Stored data can be loaded from the memory card into a DAC controller.

This procedure can be repeated an unlimited number of times within the memory card's lifetime (approximately 4 years).

2. Operating terminal

Data input and output is done via an operating terminal with a colour LCD display and a multipurpose keyboard.

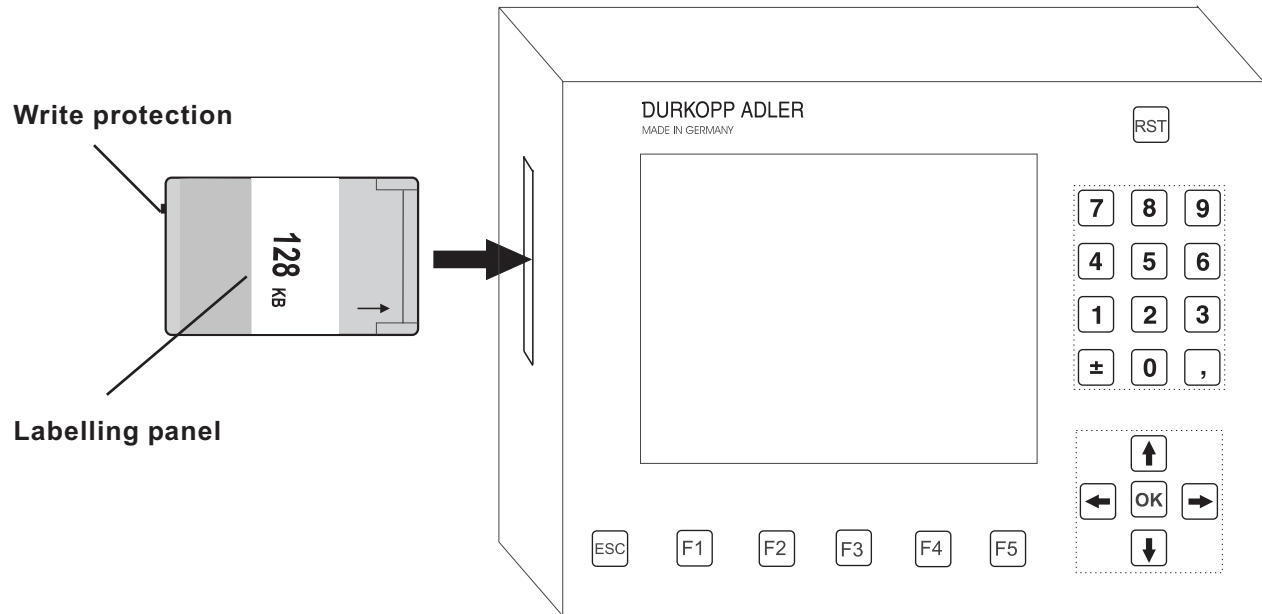


Key/key group	Function
Function keys	Call sewing-program parameter screens (from the main screen). Call test programs (after pressing the RST key) Switch functions on and off. Leave test programs and parameter screens.
Cursor keys	change parameter values. change parameter values. ⇐, ⇒ : select the symbol of the required parameter ↑, ↓ : switch the parameter function on and off, select the previous/next parameter-value stage, activate the test program
Decimal keypad	enter parameter values. ± : change the parameter-value sign
Escape key	display the old parameter value again.
OK key	open window to set the selected parameter. accept the set parameter value.
RST key	leave machine program. Halt current program.

3. Memory card

3.1 Saving and loading program data

The memory card (RAM card) is a long-term storage medium for storing sewing programs and transferring sewing-machine software. It enables sewing programs, seam patterns and machine parameters to be transferred to other sewing units.



3.1.1 Transferring program data from the memory card to the controller

Machine parameters, program sequences and pocket programs can be transferred to the memory card individually.

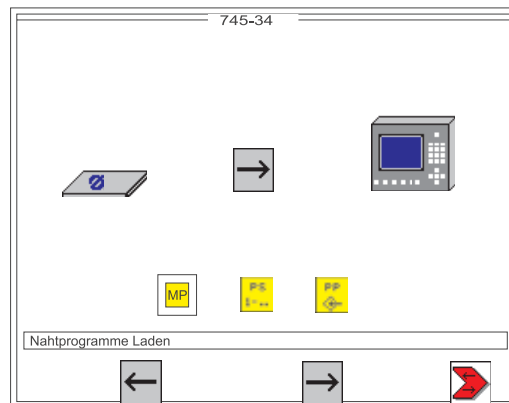


CAUTION:

The machine must not be switched off during the transfer of data to the controller.

When programs are transferred from one machine to another only the program sequences and pocket programs are transferred.

- While the main screen is displayed insert the memory card in the side of the controller in the direction of the arrow.
The panel with lettering must be towards the operator.



- Select the transfer direction with the “F4” key.
- Select the required parameter with cursor keys “←” or “→”.
A black background appears behind the symbol of the selected parameter.



CAUTION: danger of breakage

The working mode is important.

Only transfer data for the correct working mode.



Machine parameters



Program sequences



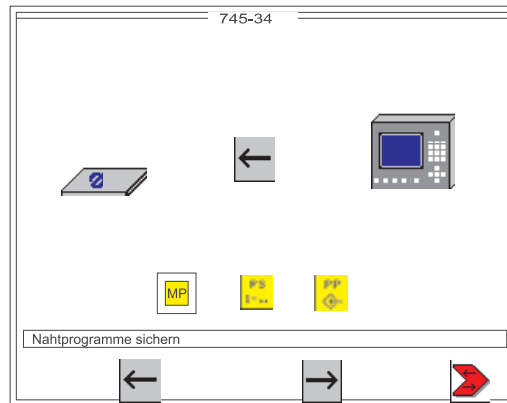
Pocket programs

- Press function key **F5**.
The data transfer begins.

3.1.2 Transferring program data from the controller to the memory card

When saving to the RAM card all parameters are transferred.

- While the main screen is displayed insert the memory card in the side of the controller in the direction of the arrow.
The panel with lettering must be towards the operator.
- The controller switches to save mode.
- Select the transfer direction with the “**F2**” key.



- Press function key **F5** .
The data transfer begins.
Transfer arrows appear above the arrow in the centre of the display.
They go out when data transfer is complete.
- Remove the memory card.
The display switches back to the main screen.

3.2 Saving and loading the language version

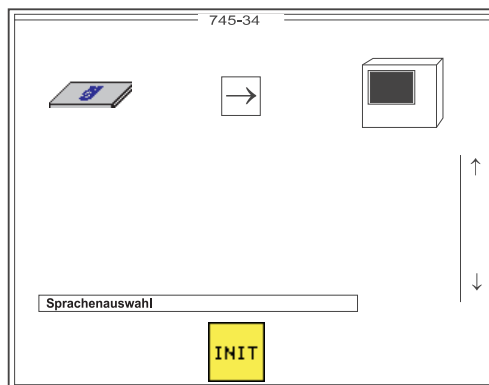
3.2.1 Transferring the language version from the memory card to the controller



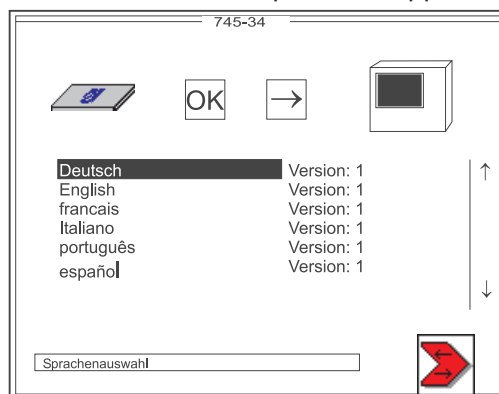
CAUTION:

The machine must not be switched off during the transfer of data to the controller.

- Turn on the main switch, press and hold down the “↑” key or press the “RST” and “↑” keys.
- The “language-selection” screen appears.



- Insert the memory card sideways into the controller in the direction of the arrow.
- Use the “↑” or “↓” cursor keys to select the required language version.
- Press the “F5” key.
The language transfer begins.
When transfer is complete OK appears on the screen.



- Remove the memory card.
- Turn the main switch on and off or press the “RST” key.
The unit starts with the new language version.

NB:

In the course of a program update the default language, **English**, can be restored with the  key.

3.3 Transferring the machine software to the controller

The machine software is transferred to the controller by means of a “bootbox” or a notebook and loader cable.

The connection and operation of the bootbox are described in the

“Bootbox for manual and automatic sewing machines with DAC2A/B controllers”

operating instructions, part no. 0791 100621.

The connection and operation of the notebook and loader cable are described in the

“Loader cable for DAC2A/B controller”

operating instructions, part no. 0791 100622.

3.4 Changing the memory-card battery

Memory-card retention period with no change of battery: approx. 4 years.



CAUTION:

Programs stored on the memory card will be erased when the battery is changed.

Load programs into a controller before changing the battery.

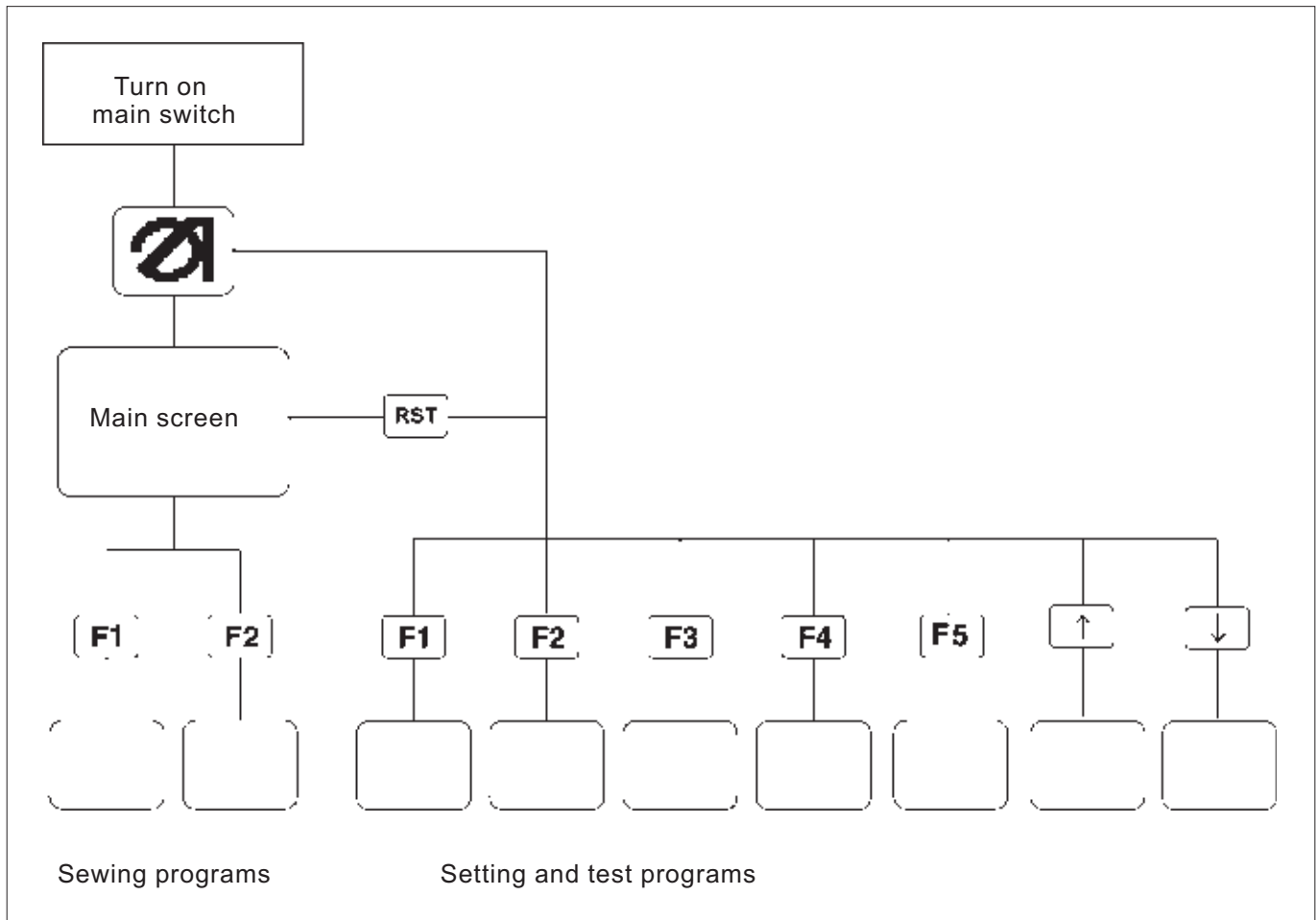
4. Main operating screen

4.1 Sewing and test programs: menu structure

The user interface exclusively employs internationally intelligible symbols.

In addition each function is briefly explained in an information line.

The individual parameters and setting and test programs are arranged in various groups.



Calling sewing programs

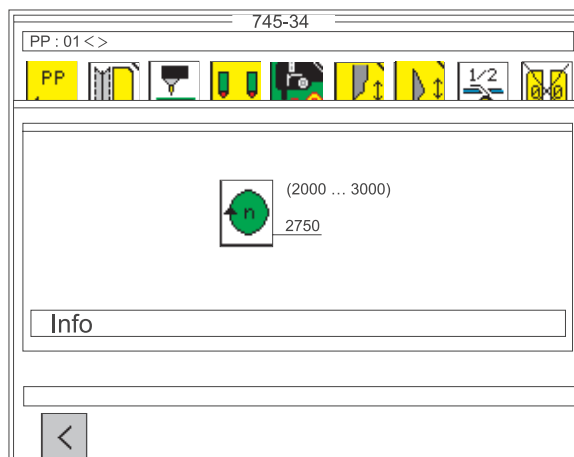
- Turn on the main switch.
The controller is initialised.
The DÜRKOPP-ADLER logo briefly appears in the display.
- The display switches to the main screen.
Sewing-program parameter menus are called by pressing one of the function keys **F1** and **F2**.

Calling setting and test programs

- Turn on the main switch.
The controller is initialised.
The DÜRKOPP-ADLER logo briefly appears in the display.
 - **While the logo is displayed** press one of the function keys **F1** to **F5** or **cursor up**, **cursor down**.
- or with the machine switched on:
- press the **RST** key, then hold down one of the function keys **F1** to **F5** or **cursor up**, **cursor down**.
The display switches to the corresponding group of setting or test programs.

4.2 Changing parameter values

Parameter values are changed in the individual parameter screens.

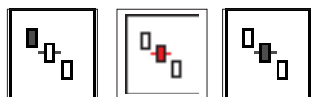


- Select the required parameter with the “←” or “→” cursor keys. A black background appears behind the symbol of the selected parameter.
- Press the **OK** key. The settings window appears with the current values or to enable values to be entered.
- Change the parameters as described under 1 to 4 below.
- Press the **OK** key. The new parameter settings are saved.

When changing parameter values we must distinguish among four groups of parameters:



(on) (off)

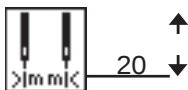


1. Functions that are switched on and off

- Switch the parameter function on and off with the “→” or “←” cursor keys.

2. Parameters with various functions

- Set the required parameter function with the “→” or “←” cursor keys.

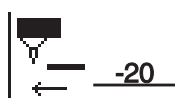


3. Parameters whose values are changed in stages

- Select the previous or next parameter-value stage with the “↑” or “↓” cursor keys.

Entry:

10, 12, 14, 16, 18, 20, 22 24



[-20 ...+20]

4. Parameters whose values are entered with the decimal keypad

- Enter the required parameter value on the decimal keypad.

CAUTION:

The value must be within the set limits.

If the value entered is too large or too small, the upper or lower limit is displayed when the Enter key is pressed.

- If a plus or minus sign appears in front of the parameter value, it can be changed with the “±” key.

5. Sewing programs

With Class 745-34 you can program up to 99 different sewing programs.

The individual sewing programs (pocket programs) are freely programmable.

20 independent pocket sequences are available. Each pocket sequence can be composed of a maximum of 8 pocket programs in any order.

5.1 Calling sewing-program parameter screens

You can switch from the main screen to the various sewing-program parameter screens with function keys **F1** and **F2**. Function key **F5** resets the piece counter to "0". Press **F4** for the tape feed (if present).



Parameters and sewing-program parameter screens

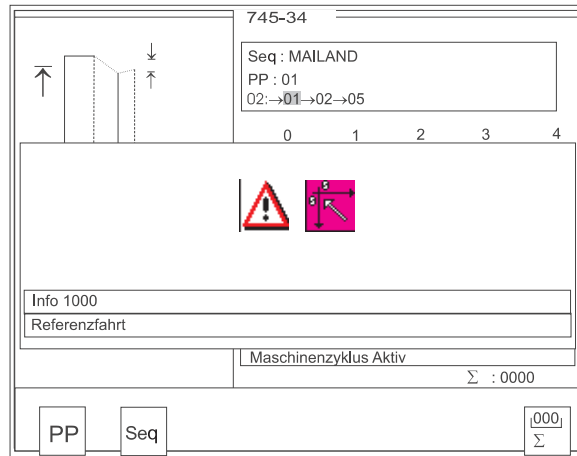
Pocket Program (PP) : parameters for programming the seam and the associated additional functions.

Sequence (Seq) : programming pocket sequences

Piece counter : daily piece counter

5.2 Running a machine program

- Turn on the main switch.
The controller is initialised.
- The Dürkopp Adler Logo briefly appears in the display.
- The controller checks the position of the transport carriage.
The following display appears:



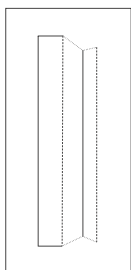
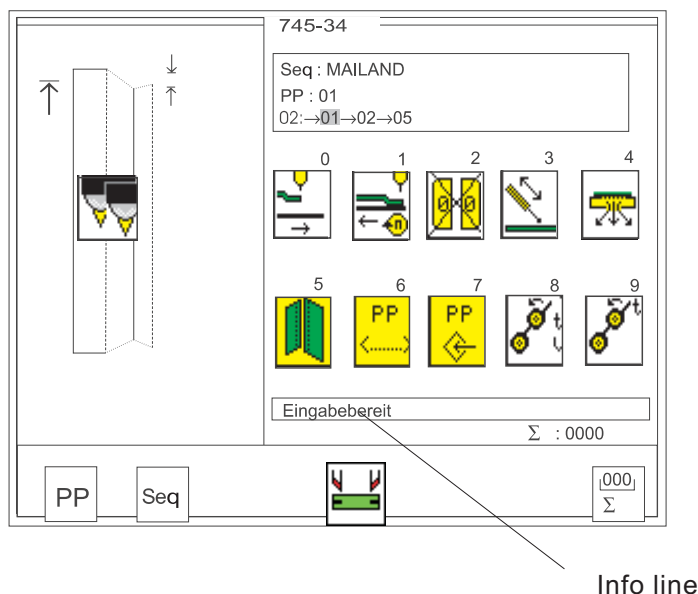
Info line:

Reference run

- Start the reference run by pushing the left pedal back.
- The display switches to the main screen of the sewing unit.
You can switch from the main screen to the various parameter screens with function keys **F1** or **F2**.
- Press the **RST** key to leave the machine program.
The controller is re-initialised.

5.3 Main screen

The main screen displays the seam pattern, sewing program, selected pocket sequence and important parameters. Parameters can be individually selected by the user.



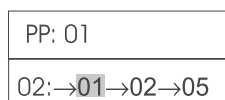
Seam pattern

The left half of the display shows the seam pattern of the selected pocket program.



Sequence

A box indicating the sequence appears in the top right-hand corner.



Selecting program number and pocket sequence

The selected pocket sequence is displayed in the top right-hand corner.

If automatic pocket-program switching is on, arrows are displayed between the individual pocket programs of the sequence.

– Select a pocket sequence with cursor keys “↑” or “↓”.

“↓” : select next pocket sequence

“↑” : select previous pocket sequence.

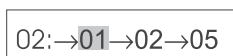
Selecting a pocket program in the current pocket sequence

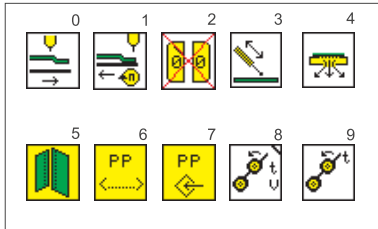
In the pocket sequence the selected pocket program is shown in reverse video.

– Select a pocket program with cursor keys “→” or “←”.

“→” : select next pocket program

“←” : select previous pocket program.





Parameters

The symbols in the centre of the right half of the display give rapid access to important parameters. Up to ten parameters can be selected by the operator for display on the main screen (see also section 6.7).

Parameters can be changed directly on the decimal keypad. The number of the key to be pressed is displayed to the right of the parameter symbol.

Example:



0: carriage-return to stand-by position



1: slide-in velocity



2: flap sequence



3: holder



4: vacuum



5: breast welt



6: pocket-program name



7: save pocket program



8: smoother



9: smoother time

The functions and settings of individual parameters are described in more detail in section 5.4: Pocket programs.

The selection of the parameter symbols is described in section 6.7.

Eingabebereit

Σ:0100

Info line

Text explaining the selected function is displayed in the information line.

Piece counter

The current piece count is displayed at bottom right (e.g. Σ:0100).

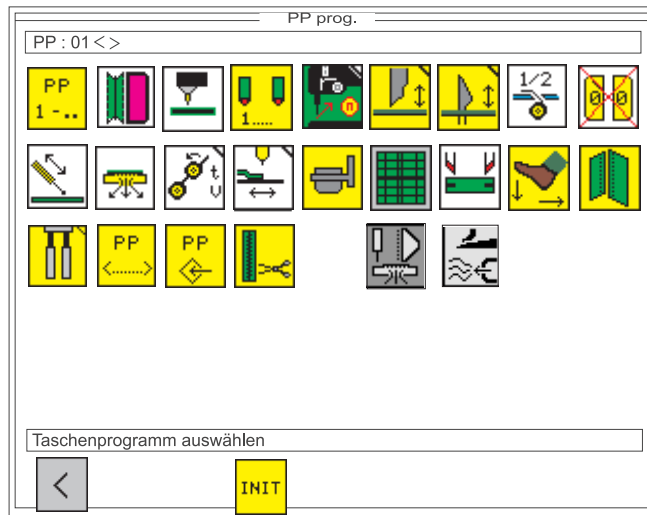
The piece counter shows the number of pieces completed since the counter was last reset.

The piece counter can be reset to "0" by pressing function key **F5**.

5.4 Pocket programs (**F1**)

This menu item contains the parameters for programming the various pocket programs.

They are used to program the seam and its associated additional functions.



Info line:

Select pocket program

- While the main screen is displayed press function key **F1**. The display switches to the pocket-program screen.
- The pocket program currently selected is shown in the upper part of the display (e.g. “**PP : 01**”). The program name, if any, appears behind it (e.g. “<**SAKKO**>”).
- Select the required parameter with cursor keys “←” or “→”. A black box appears under the symbol of the selected parameter.
- Change the selected parameter as described in section 4.2.
- Press function key **F1** to switch back to the main screen.

Pocket-program number



This parameter selects the pocket program that is to be changed.

On completion of the entry the new pocket program and its program name appear in the top left-hand corner of the display.

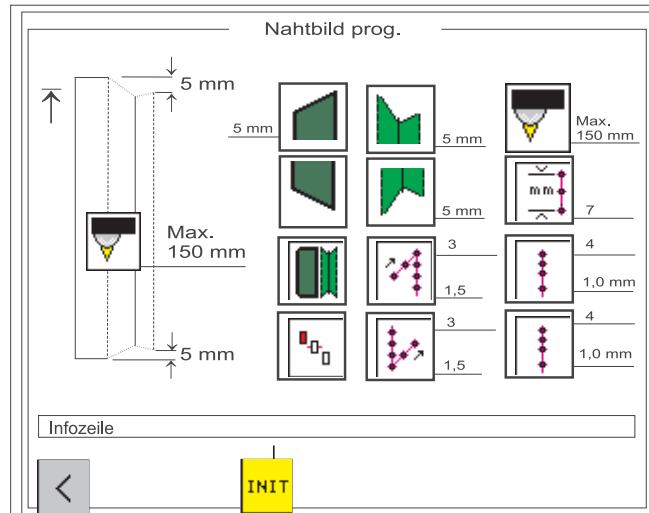
Entry: 1 .. 99



Programming the seam pattern

The actual pocket form is programmed under this menu item. The programmed pocket is shown with the corresponding information in the left half of the display.

The corresponding parameter symbols appear in the right half.



- Select the required parameter with cursor keys “←”, “→”, “↑” or “↓”.
The symbol of the parameter selected appears in reverse video.
- Press the OK key.
The corresponding submenu is called.

Seam-start flap shape



This parameter is used to select the shape of the flap at the seam start. Three variants are available:



Straight flap



Slanting flap (left)



Slanting flap (right)

- Select the required flap shape with cursor keys “←” or “→”.
- Press the “OK” key.
The flap-angle entry window appears.



Flap angle

Entry: 01 ... 13 [mm]



Seam-start pattern

This parameter selects the form of the seam pattern at the seam start.



Straight seam pattern



Slanting seam pattern (left)



Slanting seam pattern (right)

- Select the required seam form with cursor keys “←” or “→”.
- Press the “**OK**” key.
The seam-angle entry window appears:



Seam angle

Entry: 01 ... 13 [mm]

Seam-end flap shape



This parameter selects the form of the flap at the seam end. Three variants are available:



Straight flap



Slanting flap (left)



Slanting flap (right)

- Select the required flap shape with cursor keys “←” or “→”.
- Press the “**OK**” key.
The flap-angle entry window appears:



Flap angle

Entry: 01 ... 13 [mm]



Seam-end pattern

This parameter selects the form of the seam pattern at the seam end.



Straight seam pattern



Slanting seam pattern (left)



Slanting seam pattern (right)

- Select the required seam form with cursor keys “←” or “→”.
- Press the “OK” key.
The seam-angle entry window appears:



Seam angle

Entry: 01 ... 13 [mm]

NB:

The seam-angle entry is checked.
If the fixed sewing length and the values entered cannot be sewn on the machine, an automatic adjustment of the seam angle is carried out for the seam end.

Sewing-length measurement

Three different possibilities can be selected.
Distance measurement, automatic recognition by light barrier and automatic recognition of the flap angle.
An interlock system prevents more than one possibility from being selected. The other are blocked.



Distance measurement

In distance measurement the sewing length is displayed on the main screen.



Automatic recognition of flap beginning and flap end

In this setting the reflecting light barrier for the recognition of the flap beginning and flap end is switched on for sewing with flaps.

Maximum flap length

Entry: 020 ... 180 [mm] optional 220 mm



Automatic flap-angle recognition

Sewing with two light barriers for automatic flap-angle recognition.

Maximum flap length

Entry: 020 ... 180 [mm] optional 220 mm



Stitch length

Entry: 2.0 ... 3.0 [mm]



Select flap side

The sewing length is equipped with a reflecting light barrier for the recognition of the seam start and end when sewing with flaps. The parameter indicates which side the flap is attached. When the parameter is changed the flap side of the seam pattern automatically switches in the display.



Flap left



Flap right



Sseam-start mode left/right needle

Four different seam locks are available for the seam start. They can be set separately for the right and left needles.



Single bartack



Stitch compaction



Number of bartack stitches

Entry: 01 ... 05 [stitches]



Number of stitch-compaction stitches

Entry: 01 ... 10 [stitches]



Stitch-compaction stitch length / or bartack

Entry: 0.5 ... 3.0 [mm]



Seam-end mode left/ right needle

Four different seam locks are available for the seam end. They can be set separately for the right and left needles.



Single bartack



Stitch compaction



Number of bartack stitches

Entry: 01 ... 05 [stitches]

NB:

In zip-fastener mode the bartack length at the seam end is limited to a maximum of 3 mm.



Number of stitch-compaction stitches

Entry: 01 ... 10 [stitches]



Stitch-compaction stitch length/ bartack

Entry: 0.5 ... 3.0 [mm]

NB:

In a straight seam pattern only the left seam lock needs to be changed.



Selecting the positioning point

Depending on the type of piece being sewn, positioning takes place at the rear, centre or front positioning point.



Rear positioning point (with respect to the operator)



Centre positioning point



Front positioning point (with respect to the machine)



Distance from the centre positioning point to the rear positioning point

Entry: 10 ... 170 [mm]

NB:

The entry is checked.

If the fixed sewing length and the value entered cannot be sewn on the machine, suitable values are automatically used.



Initialising program memory

The program function is to load standardised factory setting for the seam-pattern parameters.

- Press function key **F3**.
“**Initialise sewing program?**” appears in the display.
- Press function key **F5**.
The parameters are reset to the factory-set values.



Light-barrier adjustment

This parameter is used to adjust the light barrier for the seam start and seam end.



Sseam-start adjustment



Seam-end adjustment

Entry: -20.0 ... + 20.0 mm



Selecting laser markings

A maximum of 8 lasers can be assigned to each pocket program. Each laser can be switched on (with asterisk) and off (no asterisk).



- 1 = *
- 2 = *
- 3 =
- 4 =
- 5 =
- 6 = *
- 7 =
- 8 =



Sewing head

This parameter is used to change values affecting the sewing head.



Sewing speed

Entry: 2000 ... 3000 [rpm]



Soft start

Entry: on/off



Soft-start speed

Entry: 0500 ... 900 [rpm]



Number of soft-start stitches

Entry: 01 ... 20 [stitches]

Reselect icon



Thread-clamp release stitches

Entry: 01 - 99



Sewing mode



Intermittent sewing



Continuous sewing



Centre blade



Centre blade

Entry: on/off



CAUTION:

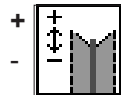
Switching off the centre blade automatically switches off the corner blades too. However, switching the centre blade back on does not automatically switch the corner blades back on again. They must be switched on separately.



Centre-blade rpm

Entry: 1700...3000 [rpm]

Select with the “↑” or “↓” keys.



Adjusting the centre-blade incision at the seam start

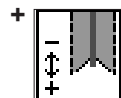
Changing this value carries out the fine adjustment of the centre-blade incision at the seam start.

Entry: - 9.9 ... + 9.9

0 = no adjustment

+ = switch on centre blade sooner

- = switch on centre blade later



Adjusting the centre-blade incision at the seam end

Entry: - 9.9 ... + 9.9

0 = no adjustment

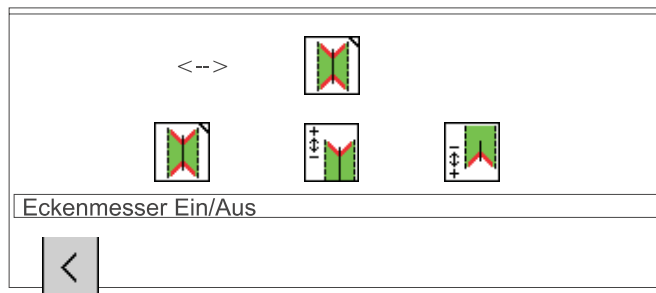
+ = switch off centre blade sooner

- = switch off centre blade later



Corner blades

Manual corner-blade station



Switching corner blades on/off

Entry: on/off

Info line:

Corner blades on/off



All four corner blades on/off



Left corner-blade incision at seam start on/off



Right corner-blade incision at seam start on/off



Left corner-blade incision at seam end on/off



Right corner-blade incision at seam start on/off



Adjusting the corner-blade incision at the seam start

Changing this value carries out the fine adjustment of the corner-blade incision at the seam start.

Entry: -20,0 ... +20,0 0 = no adjustment
 + = corner-blade position sooner
 - = corner-blade position later

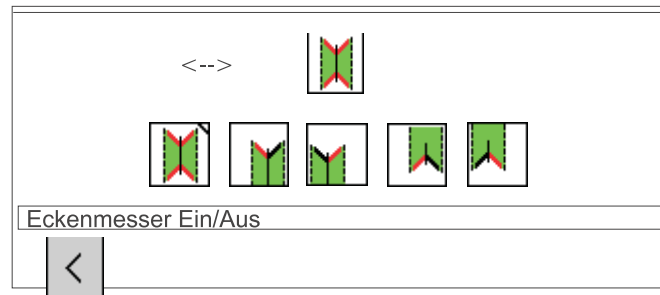


Adjusting the corner-blade incision at the seam end

Changing this value carries out the fine adjustment of the corner-blade incision at the seam end.

Entry: -20,0 ... +20,0 0 = no adjustment
 + = corner-blade position sooner
 - = corner-blade position later

Automatic corner-blade station



Switching corner blades on/off

Entry: on/off

Info line:

Corner blades on/off



All four corner-blades on/off



Left corner-blade incision at seam start on/off



Right corner-blade incision at seam start on/off



Left corner-blade incision at seam end on/off



Right corner-blade incision at seam end on/off

+



Adjusting the left-corner-blade incision at the seam start

Changing this value carries out the fine adjustment of the left-corner-blade incision at the seam start.

Entry: - 20.0 ... + 20.0

0 = no adjustment
 + = corner-blade position sooner
 - = corner-blade position later

+



Adjusting the right-corner-blade incision at the seam start

Changing this value carries out the fine adjustment of the right-corner-blade incision at the seam start.

Entry: - 20.0 ... + 20.0

0 = no adjustment
 + = corner-blade position sooner
 - = corner-blade position later

+



Adjusting the left-corner-blade incision at the seam end

Changing this value carries out the fine adjustment of the left-corner-blade incision at the seam end.

Entry: - 20.0 ... + 20.0

0 = no adjustment
 + = corner-blade position sooner
 - = corner-blade position later

+



Adjusting the right-corner-blade incision at the seam end

Changing this value carries out the fine adjustment of the right-corner-blade incision at the seam end.

Entry: - 20.0 ... + 20.0

0 = no adjustment
 + = corner-blade position sooner
 - = corner-blade position later



Tape feed



Switching the tape feed on/off

Entry: on/off



Seam-start tape-length

Entry: 00.0 ... 99.9 mm



Seam-end tape-length

Entry: 00.0 ... 99.9 mm



Flap sequence



No flap clamps



Close left flap clamp first, then right



Close right flap clamp first, then left



Close both flap clamps simultaneously



Only right flap clamp present



Only left flap clamp present



Switching the holder on/off

Entry: on/off



Switching the vacuum on/off

Entry: on/off



Smoother



Switching the smoother on/off

Entry: on/off



Smoother time

Entry: 010 ... 1000 [strokes]
1 stroke = 0.001 s



Smoother velocity

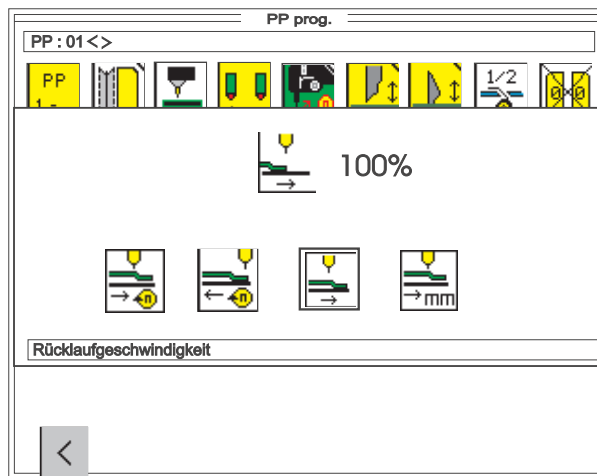
Entry: 1 ... 15

1 = minimum

15 = maximum



Transport-carriage settings



Info line:

Return velocity



Return velocity (after sewing)

The return velocity from the needles to the insertion station can be reduced.

Entry: 010 ... 100 %]

NB:

Even if work is interrupted the carriage moves backwards at the same velocity.



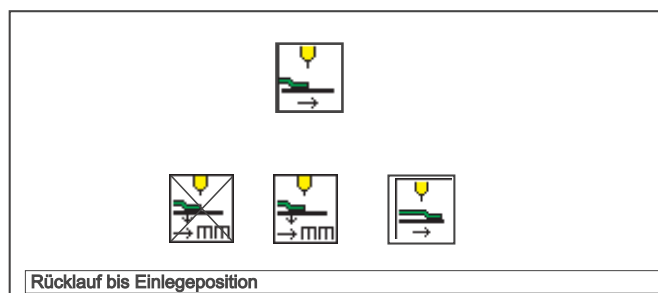
Slide-in velocity

The slide-in velocity from the insertion station to the needle and corner station can be reduced.

Entry: 010 ... 100 %]



Carriage return with material feed



Info line:

Carriage return to insertion position



No material feed after corner incision



Material feed/ Stacker position

After the corner incision the feed clamps transport the material to the set position.

Entry: 001 - 100 [mm]

Hint:

The smaller the entry, the further the carriage moves to the rear.

1 = rear position

100 = cutting position

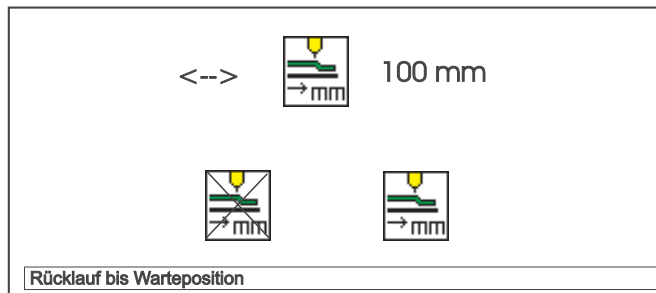


Carriage return with material feed

After the corner incision the feed clamps automatically transport the material back to the positioning area.

Hint:

The icon is only active when the stacker/smoother is switched off.



Info line:

Return to insertion position



Carriage return to stand-by position

measured from the rear reference switch

Entry: 001 - 515 [mm]



No carriage return



Switching the flap feed on/off (versions B and F only)

Entry: on/off



Mode 1

Flap feeders swivel out.



Mode 2

Flap feeders remain swivelled in.



Sewing patterned or plain material (versions "D" and "F" only)



Patterned material



Plain material



Switching the piping blade on/off (versions B and F only)



Entry:

on/off



Cutting depth at the seam beginning



Cutting depth at the seam end



Selecting pedal mode

Two different variants of the insertion process with vacuum and / or holder can be selected.



Pedal mode 1

In this mode the insertion process is carried out by pressing and holding down the left pedal while operating the right pedal.



Pedal mode 2

For insertion, the pedal must be brought to its initial position, between the steps.



Pedal mode 3

The clamp goes in sewing position after actuating the pedal.

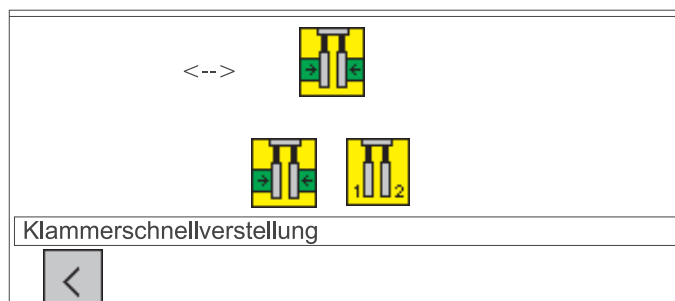


Breast-welt mode

Entry: on/off



Rapid clamp adjustment

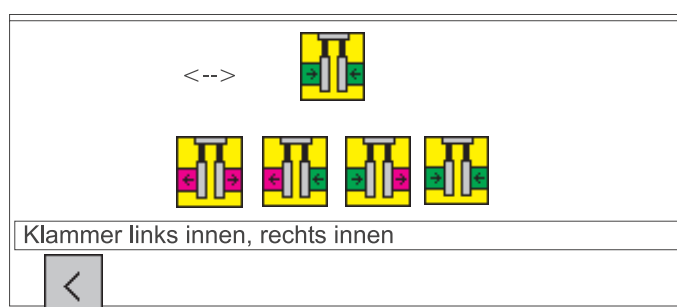


Info line:

Rapid clamp adjustment



Rapid clamp adjustment



Clamp left outer, right outer



Clamp left outer, right inner



Clamp left inner, right outer



Clamp left inner, right inner



CAUTION: danger of breakage

If the single-piping folder is fitted **do not** select a double-piping program, i.e. do **not** select clamp left inner and right inner.



Feed-clamp sequence right/left



Both clamps descend simultaneously



Lower left clamp first



Lower right clamp first



Entering the program name

This parameter assigns a name to any pocket program. The program name is limited to 18 letters.

- Select the parameter with cursor keys “⇒” or “⇐”.
- Function keys **F2** and **F3** browse the alphabet.
F2: forwards
F3: backwards
0 .. 9: digit entry
- Pressing cursor keys “⇐” or “⇒” moves the cursor one place to the left or right.
- Press the “**OK**” key to terminate entry.
The program name entered is assigned.
Press the “**ESC**” key to use the old program name again.
Press **F5** to delete the name.



Copying pocket programs

This parameter is used to copy the selected pocket program into another program.

The number that must be entered is that of the sewing program into which the selected pocket program is to be copied.

On completion of the entry the number and name of the pocket program appear in the display.

Entry: 1 ... 99



Switching the zip-fastener scissors on/off

Entry: on/off



Initialising program memory

The program loads a standardised factory setting, including seam pattern, for the sewing-program parameters.

- Press function key **F3**.
“**Initialise sewing program?**” appears in the display.
- Press function key **F5**.
The parameters are restored to the factory settings.



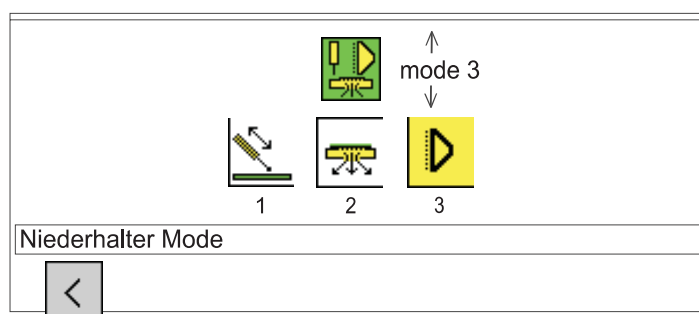
Switching the waistband clamp on/off

Entry: on/off



Fabric holder mode (versions A and B only)

The choice of fabric holder, vacuum and waistband clamp sequence is selected when loading the fabric holder mode.



Mode	Fabric Holder	Vacuum	Waistband clamp
1	1	2	1
2	1	1	2
3	1	2	3
4	1	1	0
5	1	3	2
6	2	3	1
7	2	1	2
8	2	2	1

5.5 Blower mode



Entry:

0, 1, 2, 3, 4. 5. 6, 7

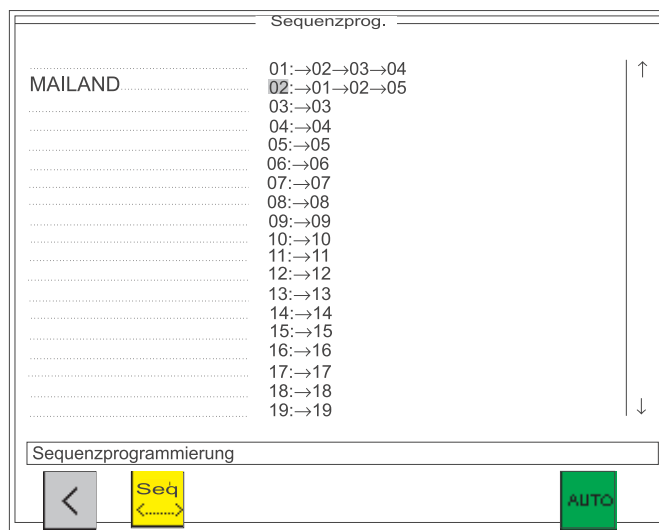
	Position	Valve YC101 blowing on	blowing off	Position	Valve YC105 blowing on	blowing off	application
<i>Mode 0</i>		-	active		-	active	function off
<i>Mode 1</i>	blower pipe in flap clamps	flap clamps closed	needles on	blower pipe in the folding sheet	folding sheet closed	needles on	Blow pocket bag and/or piping to the seam beginning simultaneously
<i>Mode 2</i>	blower pipe in flap clamps	flap clamps closed	needles on	blower pipe in the folding sheet	folding sheet closed	flap clamp closed	Blow pocket bag and piping to the seam beginning alternately
<i>Mode 3</i>	blower pipe in flap clamps	flap clamps closed	10 mm after the loading position	blower pipe in the folding sheet	Stemp sink up	10 mm nach Einlege- position	Shortly blow pocket bag and/or piping simultaneously. Blow piping during the lowering of the stamp already
<i>Mode 4</i>	blower pipe in flap clamps	flap clamps closed	needles on	blower pipe in the folding sheet	Stamp sink up	flap clamp closed	Blow pocket bag and piping to the seam beginning alternately. Blow piping during the lowering of the stamp already
<i>Mode 5</i>	Short blower pipe in left flap clamp	5 mm after the loading position	needles on	blower pipe in right flap clamp	flap clamp closed	needles on	Blow pocket bag on flap
<i>Mode 6</i>	blower pipe in flap clamps	flap clamps closed	needles on	blower pipe in the folding sheet	folding sheet closed	180 mm nach Ein- legeposition	Blow pocket bag and/or piping simultaneously. Blow piping after path.
<i>Mode 7</i>	blower pipe in flap clamps	10 mm after the loading position	180 mm after the loading position	blower pipe in the folding sheet	20 mm after the loading position	180 mm nach Ein- legeposition	Blow pocket bag and/or piping after paths.

Notes:

5.6 Pocket sequence (**F2**)

This menu item is used to assemble individual pocket programs into callable sequences.

A total of 20 independent pocket sequences are available.
Each pocket sequence can consist of up to 8 pocket programs in any order.



Info line:

Sequence programming

Programming a pocket sequence

- When the main screen is displayed press function key **F2**.
The display switches to the pocket-sequence screen.
- Move the cursor to the required pocket sequence with the “↑” or “↓” keys.
The number of the selected pocket sequence appears in reverse video.
- Programming a pocket sequence.
Enter the numbers (01 ...99) of the required pocket programs one after another using the decimal keypad.
Single-digit pocket-program numbers must be preceded by a zero.
Once the eighth pocket program has been entered the programmed pocket sequence is automatically stored.
- Press the “OK” key
to store the pocket sequence.
Pressing the “ESC” key during programming restores the old pocket sequence.
- Press function key **F1**.
The display switches back to the main screen.



Switching automatic pocket-program sequencing on/off

If this function is switched on, when one pocket program has been completed the controller automatically moves to the next pocket program in the sequence.

- Automatic pocket-program sequencing is switched on and off by pressing function key **F5**.
Automatic sequencing is indicated in the display by arrows between the individual pocket programs of the sequence.



Entering a sequence name

- While the sequence screen is displayed press function key “F2”. The display switches to the sequence-name screen.

```

Sequenzprog
^
MAILAND      01: >02 >03 >04
              02: >01 >02 >05
              03: >03
              04: >04
              05: >05
              06: >06
              07: >07
              08: >08
              09: >09
              10: >10
              11: >11
              12: >12
              13: >13
              14: >14
              15: >15
              16: >16

M

Sequenzname Eingeben
  0 1 2 3 4 5 6 7 8 9
A...Z      Z . A      del
  
```

Info line:

Entering sequence name

- Press function key “F2” or “F3” to enter the first letter.
- Press the “⇐” key to move to the next position.
- Press function key “F2” or “F3” to enter the next letter.
- Press “OK” to store the name.

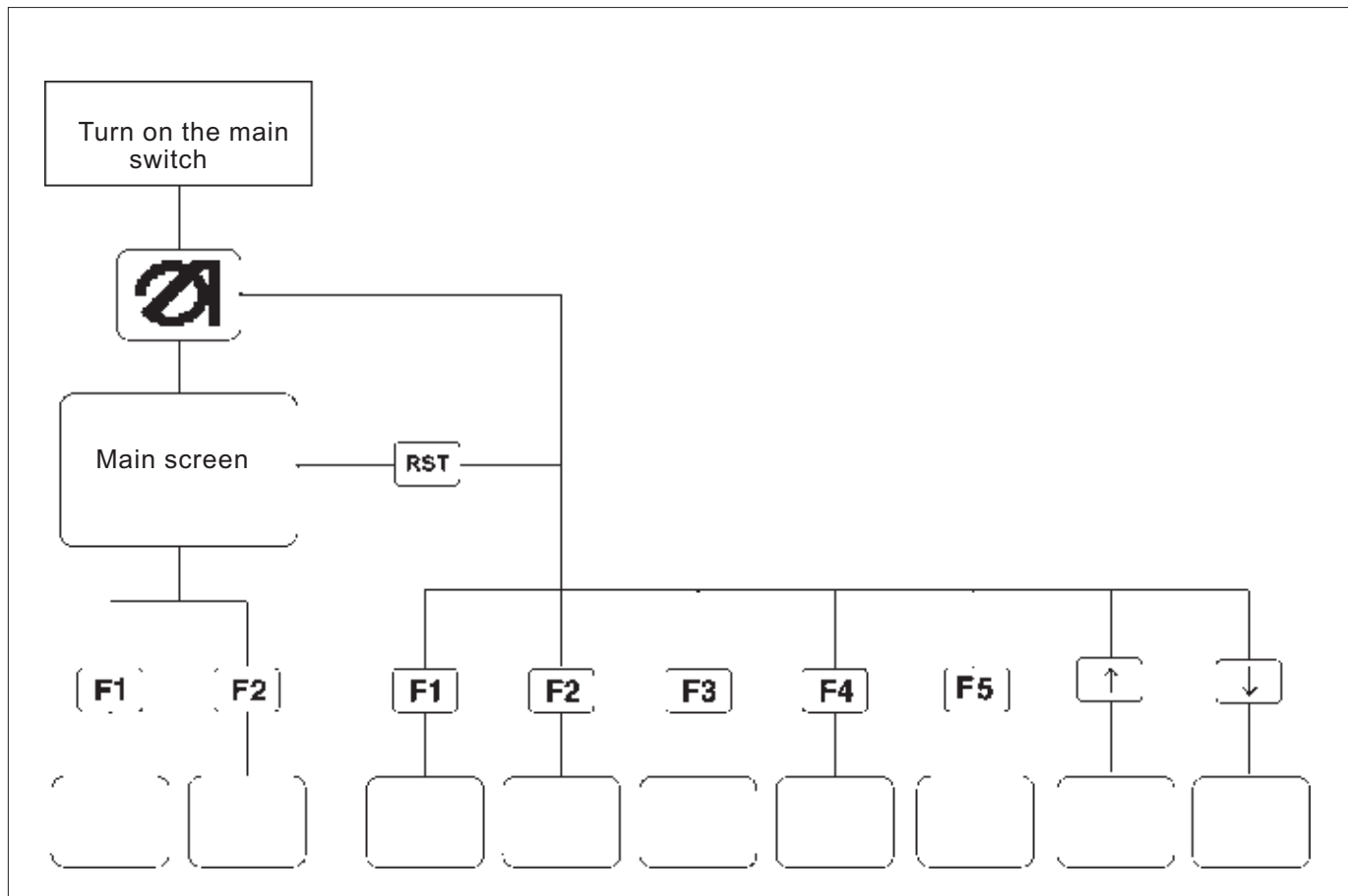
Pressing function key “F5” erases the whole name.

6. Setting and test programs

The machine software includes various machine-specific setting and test programs, together with the well-known MULTITEST system. A terminal self-test checks the individual components of the operating terminal.

6.1 Calling setting and test programs

Once the machine has been switched on, pressing certain keys opens the various groups of setting and test programs.



Functions when keys are pressed and held down:

"F1"	Machine parameters
"F2"	Machine test and setting programs
"F3"	MULTITEST
"F4"	Terminal self-test
"F5"	Contrast value of the display
"Cursor-up"	Language selection
"Cursor-down"	Edit menu

- The key for the required setting or test program should be pressed and held down.
- Turn on the main switch.
The controller is initialised.
The DÜRKOPP-ADLER logo briefly appears in the display.
The display switches to the corresponding group of setting and test programs.

or

- Press the “**RST**” key.
- Press and hold down the key for the required setting or test program.

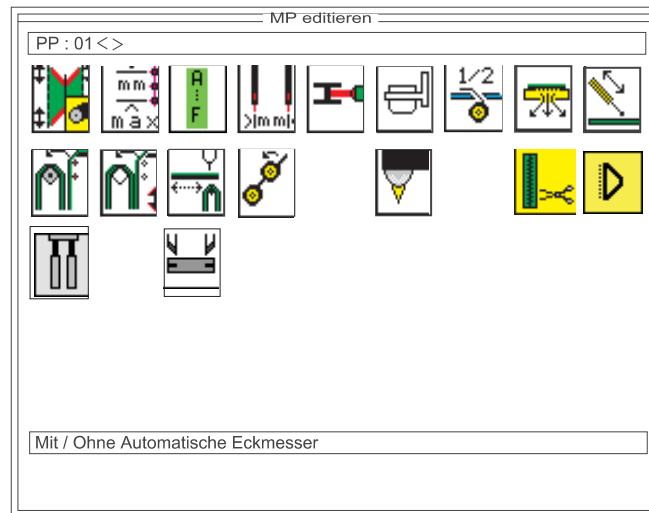
6.2 Machine parameters (**RST** + **F1** or main switch on + **F1**)

The machine parameters describe the machine's technical configuration as well as its settings and their adjustment values.



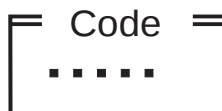
CAUTION:

Changes to machine settings usually entail mechanical conversion. For this reason this program section is only accessible after the entry of code number "**25483**".



Info line:

with/without automatic corner blade



- Press the "**RST**" key or turn the main switch on and press function key "**F1**".
The code-number entry box appears in the display.
- Enter code number "**25483**" on the decimal keypad.
Once the correct code number has been entered the display switches to the machine-parameter screen.
If an incorrect code number is entered the display switches to the main screen.
- Select the required parameter with cursor keys "→", "←", "↓" or "↑".
A black background appears behind the symbol.
- Activate the selected parameter with the "**OK**" key.
- Change the selected parameter as described in section 4.2.
- To leave machine parameters press the "**RST**" key or turn off the main switch.



Corner-blade settings for angles

This parameter tells the controller whether the corner blades are to be set manually or automatically.



Manual corner-blade positioning



Automatic corner-blade positioning



Maximum sewing length

Entry: 180, 200, 200*, 220 [mm]

Select with the “↓” or “↑” keys.



Folder unit

Entry: A, B, D, F

A: piped pockets,
manual positioning of piping strip,
flaps and other items

B: piped pockets,
automatic piping-strip feed
with incision of the ends



0745 517644

For new folding station with switch.



0745 517524

For old folding station without switch.

D: breast-welt pockets,
automatic breast-welt feed and alignment

F: piped pockets,
automatic piping-strip feed,
automatic flap feed and alignment,
incision of piping ends



0745 517654

For new folding station with switch.



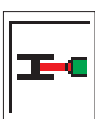
0745 517544

For old folding station without switch.



Needle distance

Entry: 10, 12, 14, 16, 18, 20, 22, 24 [mm]

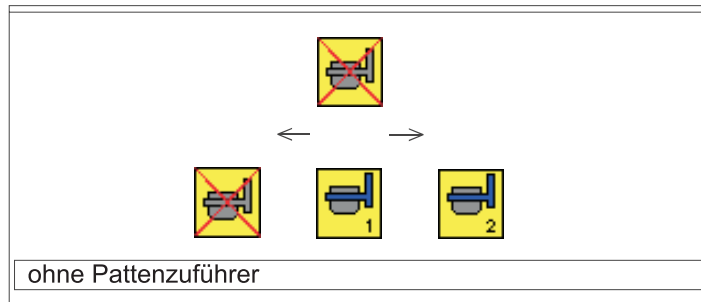


Switching the thread monitor on/off

This parameter switches the needle-thread and looper-thread monitor on and off.

Entry: on/off

Selecting the flap feed mode (versions B and F only)



Info line:

without flap feed



without Flap Feed

Flap Feed switched off



Flap Feed Mode 1

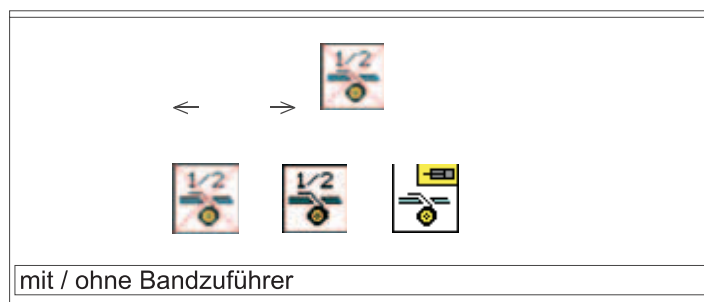
Step forward on the right pedal,
left flap feed opens.
Step back on the right pedal,
right flap feed opens.



Flap Feed Mode 2

Step forward on the right pedal,
flap feed on both sides open.
Step back on the right pedal,
right flap feed opens.

Tape Feed



Info line:

with/without tape feed



without Tape Feed

Tape feeding switched off



Tape Feed with Step Motor

Equipment: electromotor driven tape feeder



Electro-pneumatic Tape Feeding

Equipment: electro-pneumatic driven tape feeder



Switching the vacuum system on/off

This parameter tells the controller whether the machine is fitted with a vacuum system.

The vacuum system is switched on and off in the pocket-program menu item **(F1)** on the main screen.

Entry: on/off



Switching the holder on/off

This parameter tells the controller whether the machine is fitted with a holder.

The holder is switched on and off in the pocket-program menu item **(F1)** on the main screen.

Entry: on/off



Switching the stacker/blower pipe on/off

This parameter tells the controller whether the machine is fitted with a stacker/ blower pipe.

The stacker/ blower pipe is switched on and off in the pocket-program menu item **(F1)** on the main screen.

Entry: on/off



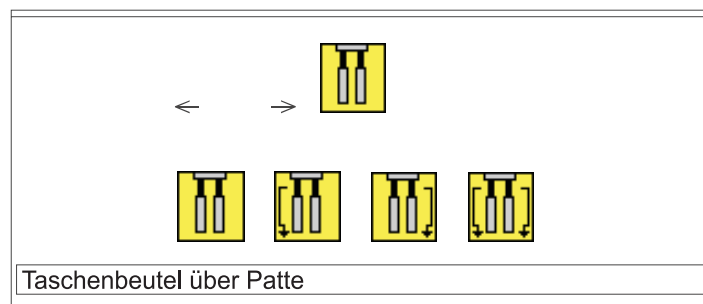
Switch waistband clamp on/off

This parameter signalizes the control whether the sewing unit is equipped with a waistband clamp or not.



Pocket bag over flap mode

Any change concerning the pocket bag over flap mode should be done here i.e. in which position the raised feed clamp goes for the inserting position.



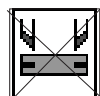
Info line:

Pocket bag over flap



Switch piping cutter on/off

This parameter signals the control whether the sewing unit is equipped with a piping incision device.



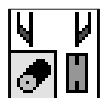
on/off



pneumatic piping knife



left piping cutter, with motor



right piping cutter, with motor



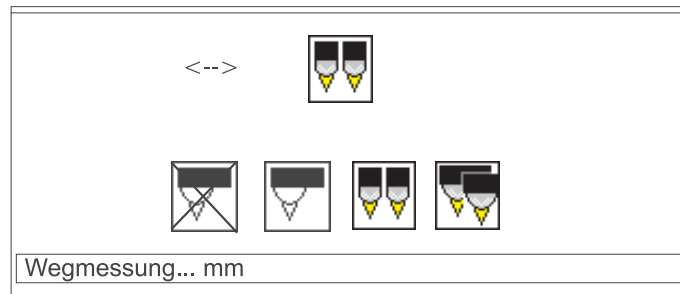
Activating the smoother

This parameter tells the controller whether the machine is fitted with a smoother.
The smoother is switched on and off in the pocket-program menu item **(F1)** on the main screen.

Entry: on/off



Selecting light barriers for flap scanning



Info line:

distance measurement... mm



No light barrier present



Flap scanning with one light barrier



Two light barriers for flap side left/right

NB:

Flap side left/right is determined by the seam program.



Automatic angle recognition



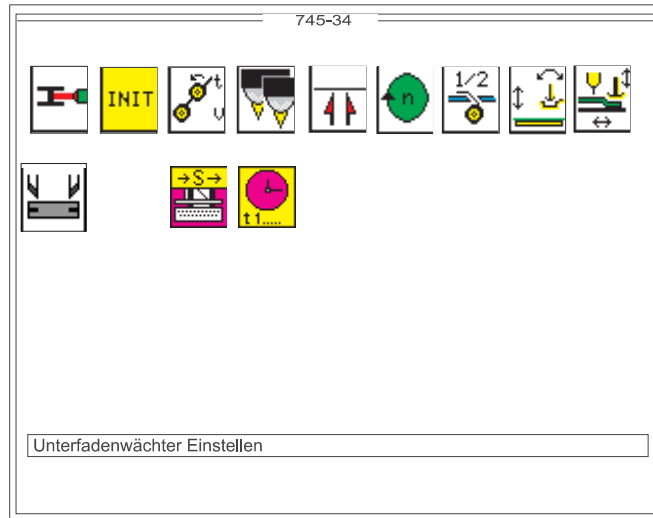
Tape cutter present

Entry: on/off

6.3 Machine-specific setting and test programs

(**RST** + **F2** or main switch on + **F2**)

The machine-specific test programs test and adjust individual machine components.



Info line:

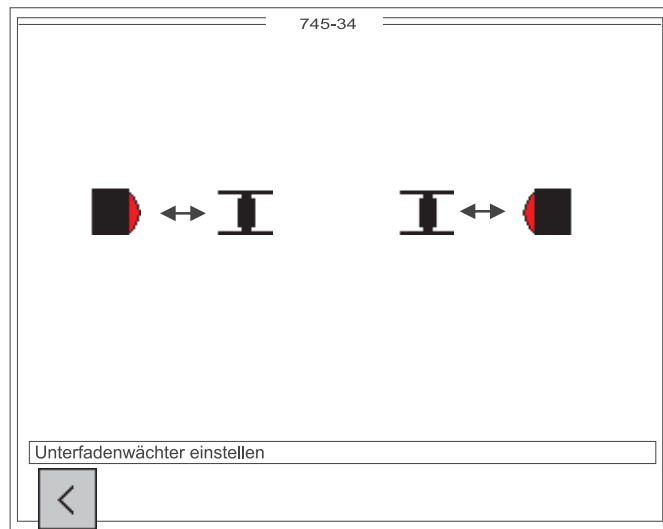
Adjusting the looper-thread monitor

- Press the “**RST**” key or turn the main switch on and press function key “**F2**”.
The display switches to the machine-specific test-program screen.
- Select the required test program with cursor keys “**⇒**”, “**⇐**”, “**⇓**” or “**⇑**”.
A black background appears behind the symbol.
- Press “**OK**” to run the selected test program.
- Change the selected parameter as described in section 4.2.
- To leave machine parameters press the “**RST**” key or turn off the main switch.

6.3.1 Adjusting the looper-thread monitor



This program aligns the reflecting light barriers of the looper-thread monitor.



Info line:

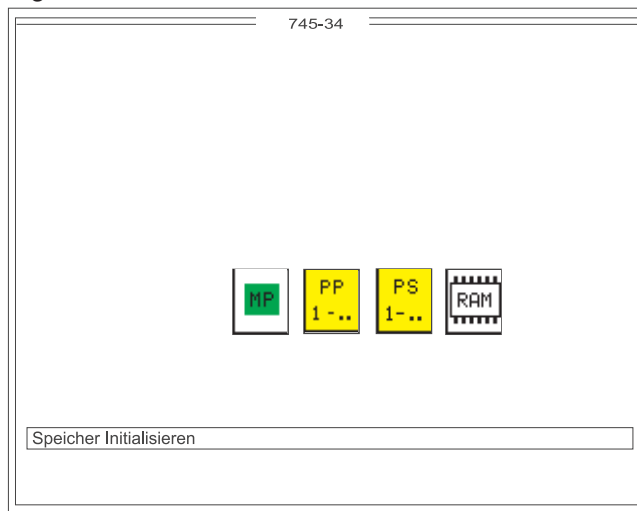
Adjusting the looper-thread monitor

- Press OK to run the test program.
Two looper-thread bobbins and the light-barrier reflecting heads appear in the display.
- When the light barriers are correctly aligned a reflection occurs when an empty bobbin is rotated.
This reflection is displayed by an arrow between the reflecting head and the looper-thread bobbin, and an audio signal is also emitted.
- To leave test programs press function key **F1**.

6.3.2 Initialising memory



The program loads a standardised factory setting for the sewing-program parameters, e.g. for a new controller:



Info line:

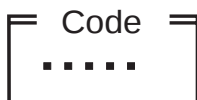
Initialising memory



CAUTION:

Once one of these three programs has been run the parameters set are overwritten with a standardised factory setting.

For this reason this program section can only be run after the entry of code number **"25483"**.



- Press OK to run the test program.
The code-number entry box appears in the display.
- Enter code number **"25483"** on the decimal keypad.
Once the correct code number has been entered the display switches to the four parameters listed below.
If an incorrect code number is entered the display switches to the machine-specific parameter screen.



Initialising the machine parameters



Initialising pocket programs



Initialising pocket sequences



Initialising **all** programs and parameters

Hint:

After initialisation the machine parameters (**RST + F1**) must be rechecked.

- Select the required test program with cursor keys “←” or “→”. A black background appears behind the symbol.
- Press OK to run the selected program.
- To leave machine parameters press the “RST” key or turn off the main switch.

6.3.3 Checking the smoother function



This program tests the function of the smoother.



Info line:

testing smoother

- Press OK to run the test program. The symbol appears with the entry fields.



smoother time (t)



smoother velocity (v)

- Enter the required values for “t” and “v”.

Entry:

Active period: $t = 10 \dots 1000$
 Increment: 1 stroke = 0.001 s
 Velocity stage: $v = 1 \dots 15$

- Press the “F5” key. The smoother runs for the selected period at the set velocity.
- To leave the test program press function key F1.

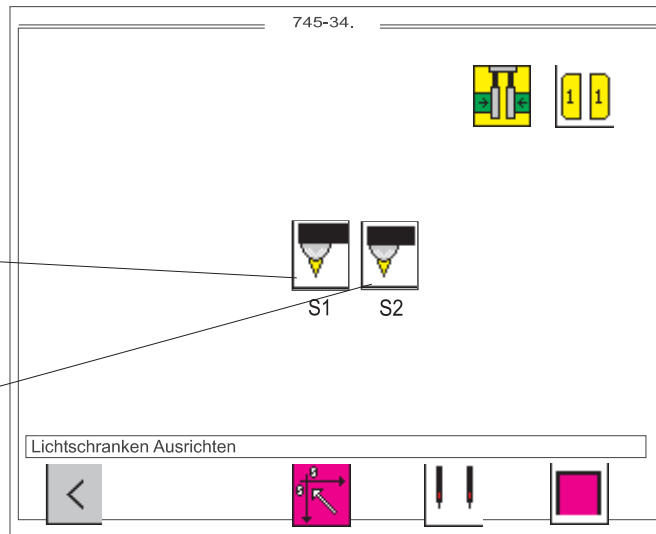
6.3.4 Aligning the light barriers



This program aligns the reflecting light barriers for recognition of the seam start and end.

First light barrier

Second light barrier for flap scanning



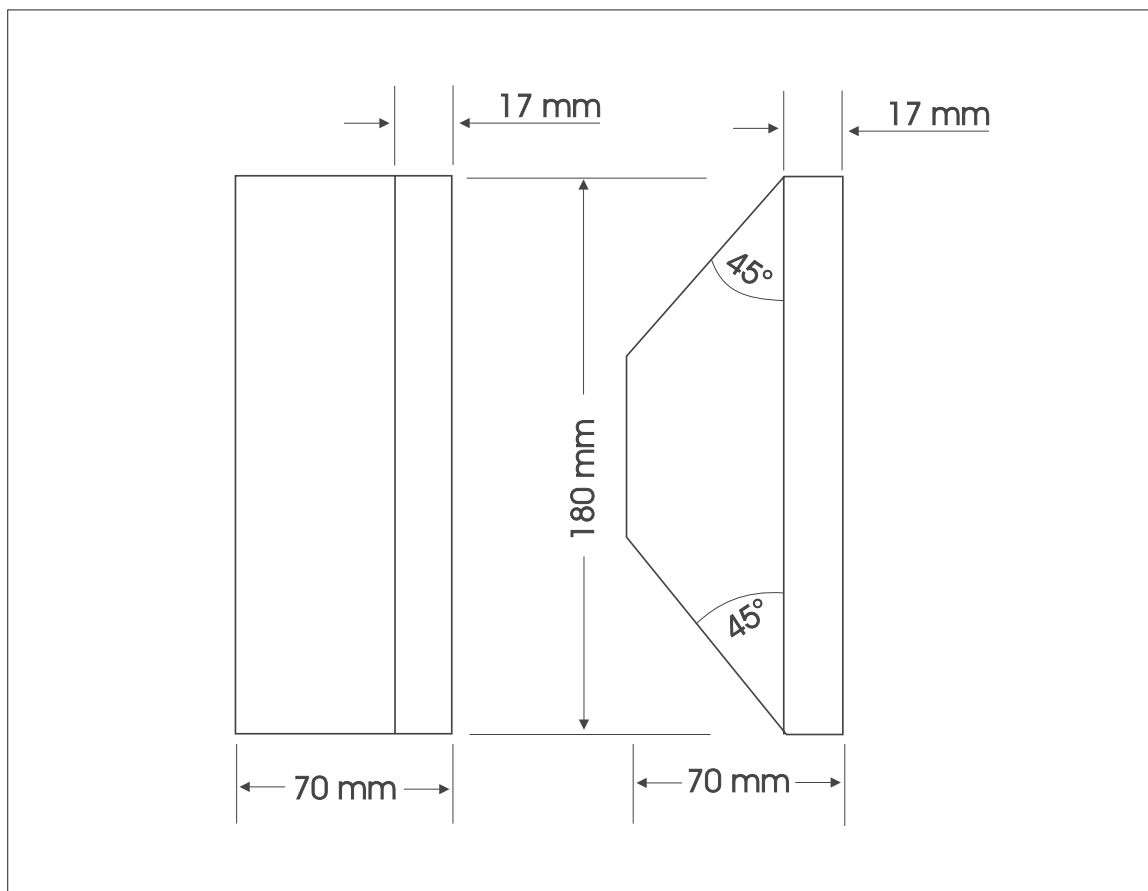
Info line:

Aligning the light barriers

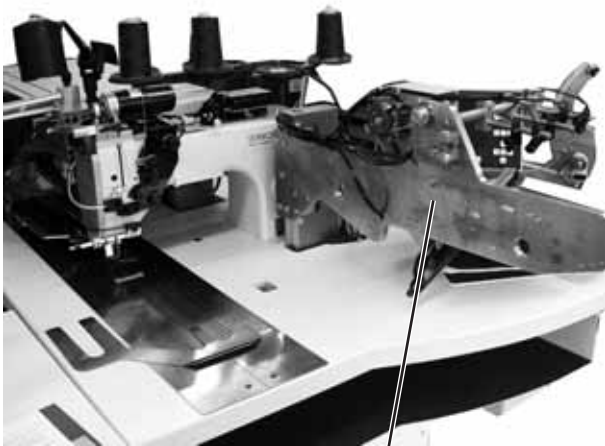
The light barriers are adjusted with two templates.

Left template = for straight pockets.

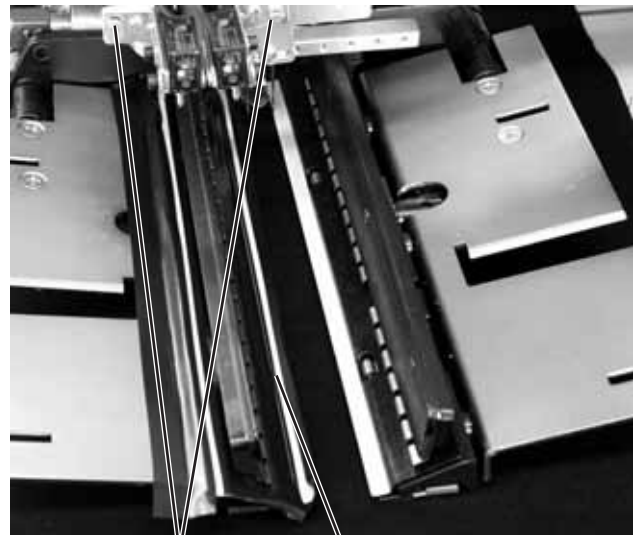
Right template = for slanting pockets.



6.3.4.1 Preparing the sewing unit and feed clamps



1



3

2



Caution: danger of injury

The light barriers are adjusted with the machine switched on.

The utmost care must be taken when carrying out adjustments and function-testing.

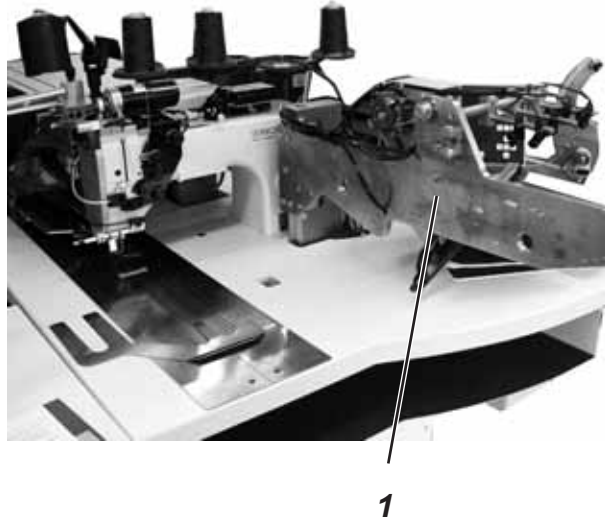


CAUTION: danger of breakage

It is essential for the folder station to be swivelled out for the light barriers to be adjusted.



- Swivel out the folder station 1.
 - **Lay material under the feed clamps.**
 - Run the test program.
Close the flap clamp and folding plates, the feed clamps descend.
 - Pull the feed clamps forwards.
 - Align the light barriers to the centre of the reflecting foils 2.
The area from seam start to seam end must be checked on the clamp.
Orange LED: on = reflection available
 off = no reflection
Green LED: on = stable switching signal
If the green LED does not shine, the light-barrier should be cleaned, readjusted, replaced or a new reflecting foil should be fitted.
- Proceed as follows:
- Attach a reflecting strip 2 on the left and on the right over the whole length so that a strip of approx. 2 mm remains uncovered in the middle.
 - Push the feeding clamps to the back until they are centrally underneath the light barriers.
 - Loosen screws 3 and align the light barriers to the strip of the reflecting foils 2. Tighten screws 3.
 - Push the feeding clamps in the rear and front position and check the alignment of the light barriers.



1

Check of the light barrier position with swung-in folder



- When the feeding clamps are in the rear position, swing the folding station 1 in.
- Press key “7”.
- Folder (A) or pick-up folder (B/F) are made pressureless.
- Press the folder on the sliding sheet manually and pull the feeding clamps to the front.
- Make sure that the folder sole is guided under the folding sheets.
- Check switching of the light barriers with swung-in folder.
- Swing the folding station out again.

Hint:

If the light barriers do not switch at the seam beginning and seam end, the parallel position of the feeding clamps has to be checked (see Service Instructions).

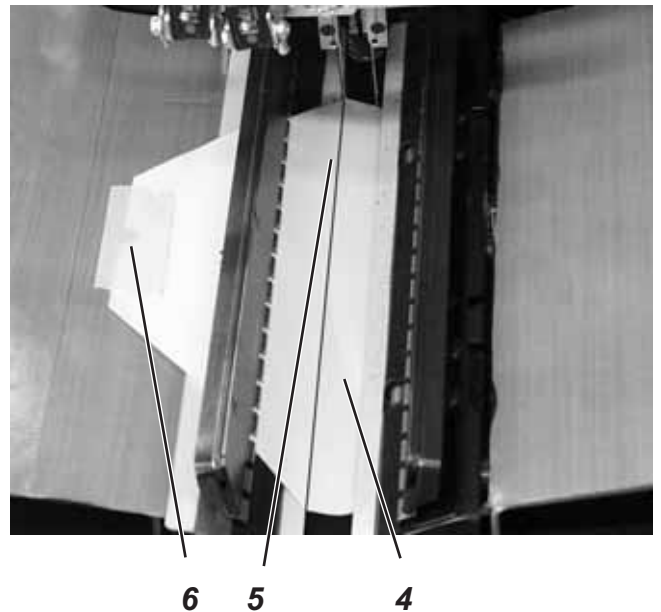
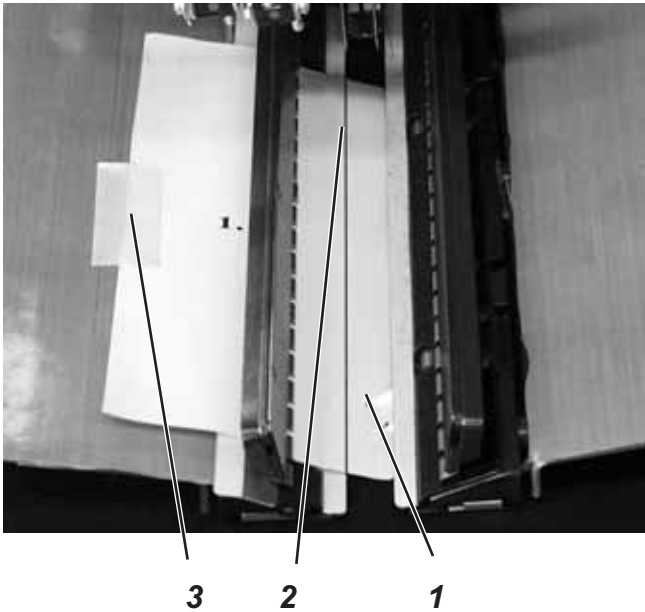
- Remove adhesive tapes from the reflecting strips.



Danger of breakage !

When the light barrier adjustment has been finished, the folding station has to be swung out again in any case.

6.3.4.2 Sewing unit with two light barriers for automatic angle recognition



Caution: danger of injury

During the reference run the feed clamps move forwards or back and forth several times.

Do not reach into the path of the feed clamps.

Folding station must be swung out



- Press function key “F3”.
The reference run is carried out.



- Press “8” and select clamp position (see page 33).
Hint:
The light barriers must be aligned to the clamp position.



- Press “9”.
The flap clamp opens.



- Press function key “F4”.
The needles are switched on.

- Turn the hand-wheel in the direction of rotation to lower the needles to about 2 mm above the material.
- Insert the straight-pocket template 1 so that line 2 points to the left needle and is parallel to the right feed clamp.
- Press “9” to close the flap clamp.
- Stick the left, proud side of the template to the clamp with a strip of adhesive tape 3.
- Press function key “F4”.
The needles are switched off.



- Turn the handwheel in the **opposite** direction to the direction of rotation to bring the needle back to top dead centre.



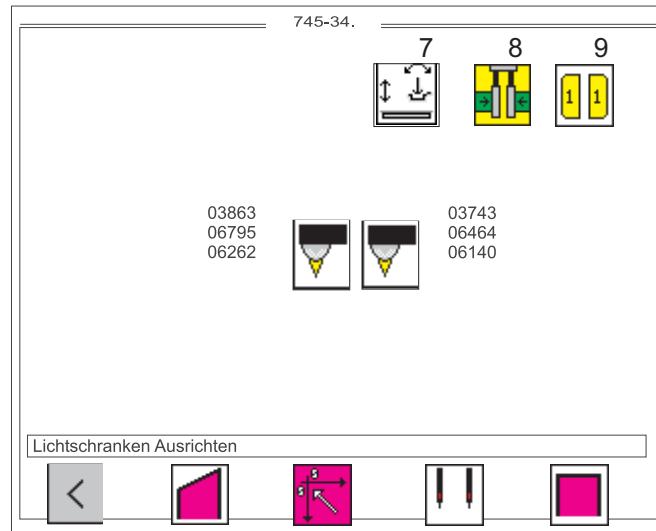
Caution: danger of injury

During template scanning the feed clamps move back and forth several times.

Do not reach into the path of the feed clamps.



- Press function key “F5”.
The straight-pocket template is scanned.
The scanned parameters appear in the display. They are automatically passed to the controller.



Info line:

aligning light barriers

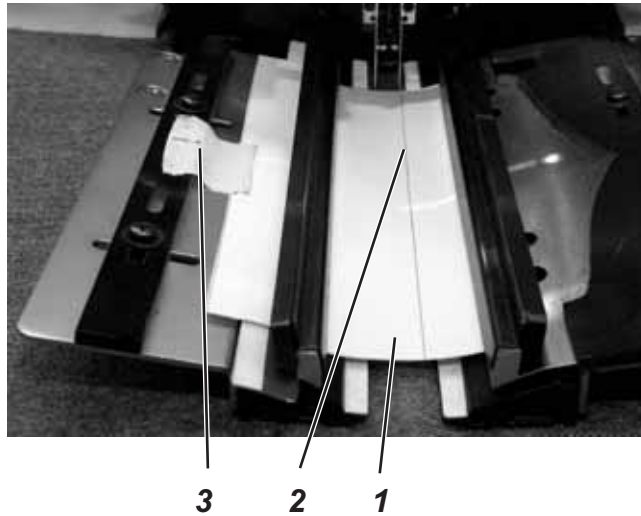


- Press “9”.
The flap clamp opens.
- Remove the straight-pocket template.
Insert the slanting-pocket template 4 so that line 5 points to the left needle and is parallel to the right feed clamp.



- Press “9”.
The flap clamp closes.
- Stick the left, proud side of the template to the clamp with a strip of adhesive tape 3.
- Press function key “F2”.
The slanting-pocket template is scanned.
The scanned parameters appear in the display. They are automatically passed to the controller.
- Press “9”.
The flap clamp opens.
- Remove the slanting-pocket template.
- Press function key “F1” to terminate the test program.
- Push feed clamps backwards by hand.
- Swivel folding station back and lock in place.
- Press the “RST” key or switch the machine off and on again.

6.3.4.3 Sewing unit with two light barriers, left or right flap positioning



Caution: danger of injury

During the reference run the feed clamps move forwards or back and forth several times.

Do not reach into the path of the feed clamps.

Folding station must be swung out



- Press function key “**F3**”.
The reference run is carried out.



- Press “**8**” and select the clamp position (see page 33).
Hint:
The light barriers must be aligned to the clamp position



- Press “**9**”.
The flap clamp opens.



- Press function key “**F4**”.
The needles are switched on.

- Turn the hand-wheel in the direction of rotation to lower the needles to about 2 mm above the material.
- Insert the straight-pocket template 1 so that line 2 points to the left needle and is parallel to the right feed clamp. Both reflecting foils must be covered.

- Press “**9**” to close the flap clamp.

- Stick the left, proud side of the template to the clamp with a strip of adhesive tape 3.

- Press function key “**F4**”.
The needles are switched off.



- Turn the hand-wheel in the **opposite** direction to the direction of rotation to bring the needle back to upper dead center.



Caution: danger of injury

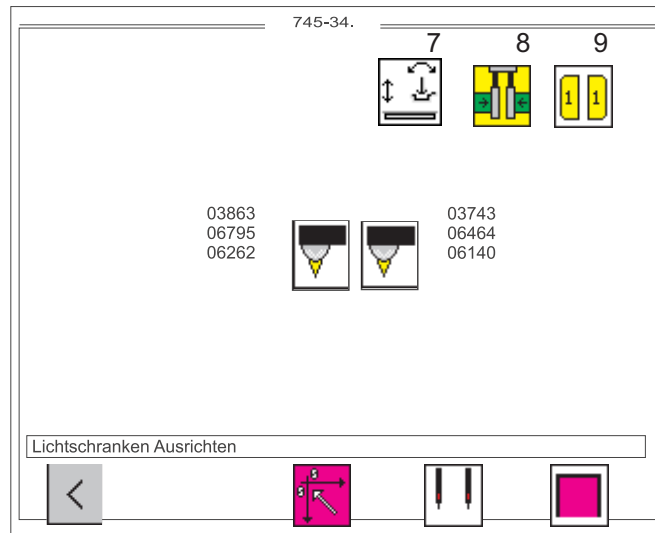
During template scanning the feed clamps move back and forth several times.

Do not reach into the path of the feed clamps.

Folding station must be swung out



- Press function key “**F5**”.
The template is scanned.
The scanned parameters appear in the display. They are automatically passed to the controller.



Info line:

aligning light barriers



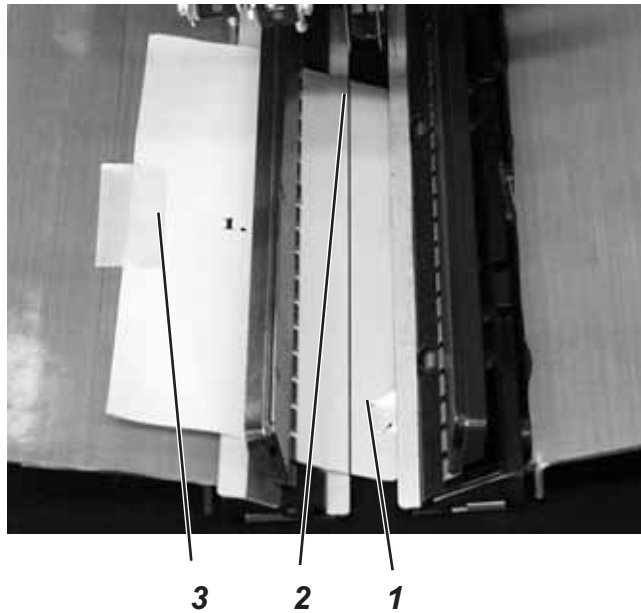
- Press “**9**”.
The flap clamp opens.
- Remove the template.
- Press function key “**F1**” to terminate the test program.
- Push feed clamps backwards by hand.
- Swivel folding station back.
- Press the “**RST**” key or switch the machine off and on again.

Hint:

Light barrier S1 for left clamp

Light barrier S2 for right clamp

6.3.4.5 Sewing unit with one light barrier



Caution: danger of injury

During the reference run the feed clamps move forwards or back and forth several times.

Do not reach into the path of the feed clamps.

Folding station must be swung out



- Press function key “F3”.
The reference run is carried out.



- Press “8” and select the clamp position (see page 33).
Hint:
The light barriers must be aligned to the clamp position



- Press “9”.
The flap clamp opens.



- Press function key “F4”.
The needles are switched on.

- Turn the hand-wheel in the direction of rotation to lower the needles to about 2 mm above the material.
- Insert the straight-pocket template 1 so that line 2 points to the left needle and is parallel to the right feed clamp. Both reflecting foils must be covered.

Hint:

Place the template under the clamp on which the light barrier is mounted, left or right.

- Press “9” to close the flap clamp.
- Stick the left, proud side of the template to the clamp with a strip of adhesive tape 3.
- Press function key “F4”.
The needles are switched off.
- Turn the hand-wheel in the **opposite** direction to the direction of rotation to bring the needle back to upper dead center.





Caution: danger of injury

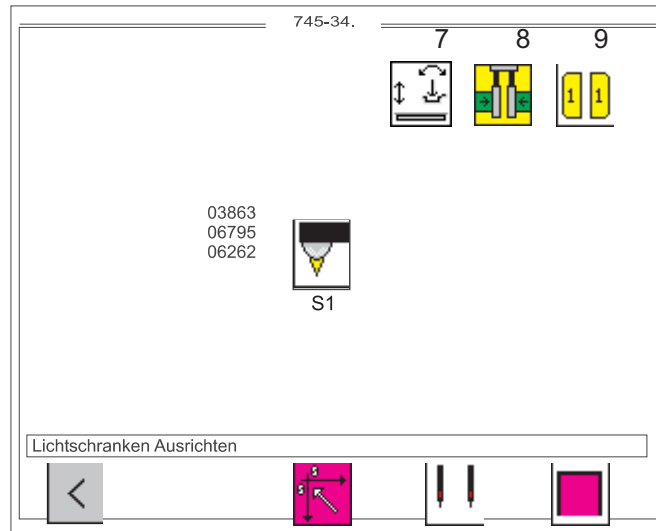
During template scanning the feed clamps move back and forth several times.

Do not reach into the path of the feed clamps.

Folding station must be swung out



- Press function key “**F5**”.
The template is scanned.
The scanned parameters appear in the display. They are automatically passed to the controller.



Info line:

aligning light barriers



- Press “**9**”.
The flap clamp opens.
- Remove the template.
- Press function key “**F1**” to terminate the test program.
- Push feed clamps backwards by hand.
- Swivel folding station back.
- Press the “**RST**” key or switch the machine off and on again.

6.3.4.5 Error Display

Error 1:

- Incorrect alignment of the light barrier.
- Incorrect sensitivity setting.
- Template inserted in a wrong way.

Error 2:

- Wrong / Damaged template for “straight pockets”.

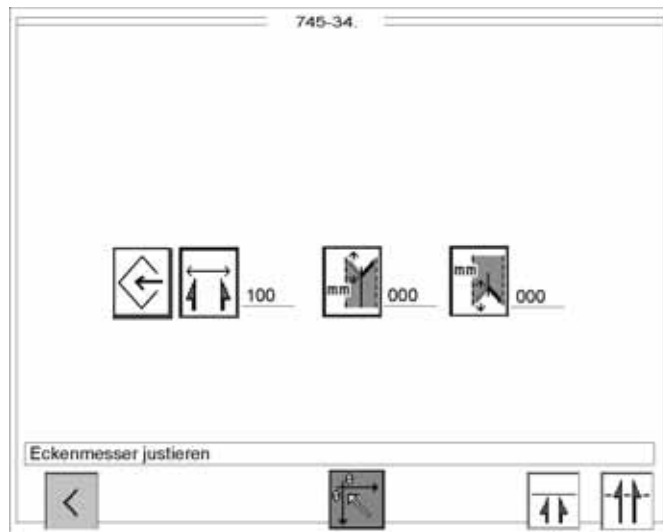
Error 3:

- Wrong / Damaged template for “slanting pockets”.

6.3.5 Checking the corner-blade settings



This program checks the corner-blade distances.



Info line:

adjusting corner blades

- Select the required parameter with cursor keys “←” or “→” . A black background appears behind the symbol.
- Press OK to run the selected program.



Corner-blade machine parameters



Corner-blade distance



**Seam-start corner-blade adjustment
(automatic corner-blade station only)**

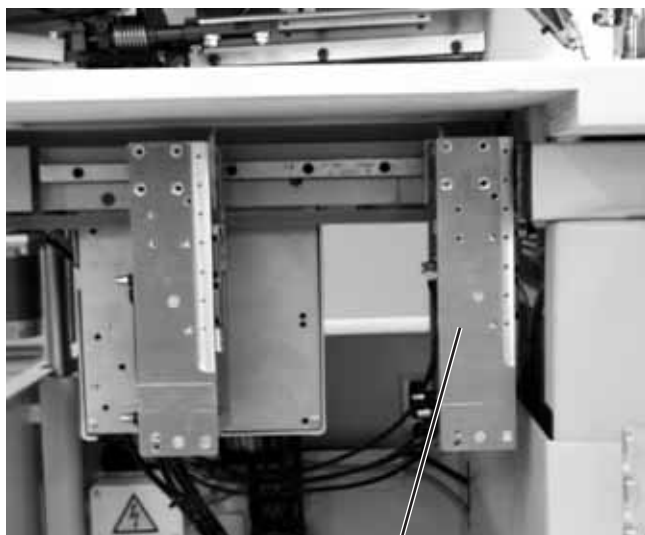


**Seam-end corner-blade adjustment
(automatic corner-blade station only)**



Corner-blade frames reference run

6.3.5.1 Checking the corner-blade station



1



5

4

3

2



Caution: danger of injury

Serious cuts may result from reaching into the vicinity of the corner blades.

The utmost care must be taken when carrying out tests on the machine when it is running.



- Press function key “F3”.
The corner-blade frames carry out a reference run.
- Select the “**corner-blade distance**” symbol with cursor keys “←” or “→”.
- Enter a corner-blade distance and press the “OK” key to move the corner blade.
Example:
corner-blade distance entry = 100 mm.
- Check the distance between the corner-blade frames 1 and 6.

6.3.5.2 Checking the front left corner blade (automatic corner-blade station only)



- Select the “**seam-start corner-blade correction**” symbol with cursor keys “←” or “→”.
- Enter a correction value (+ or -) and press the “OK” key to move the corner blades.
- Check the distance between corner blades 2 and 3.

6.3.5.3 Checking the rear left corner blade (automatic corner-blade station only)



- Select the “**seam-end corner-blade correction**” symbol with cursor keys “←” or “→”.
- Enter a correction value (+ or -) and press the “OK” key to move the corner blades.
- Check the distance between corner blades 4 and 5.

6.3.5.4 Checking corner-blade movement



Caution: danger of injury

Do not reach into the vicinity of the corner blades.
When rising they can inflict serious cuts.

The utmost care must be taken when testing the corner blades when the machine is in operation.



The individual corner blades are tested in sequence.

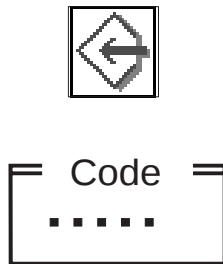
The test sequence is commenced by pressing function key “**F5**” and then continued by pressing it again.

Pressing function key “**F4**” moves back one step in the test sequence.

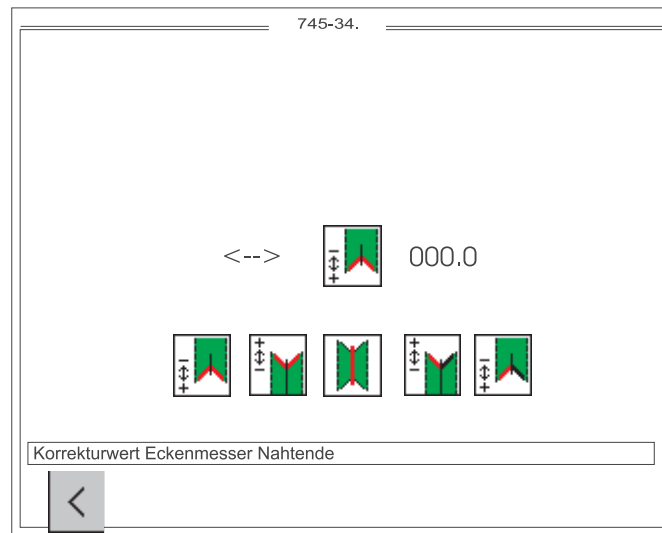
- Press function key “**F5**”.
The following steps are carried out:
 - step 1 = front corner blades rise and stay up
 - step 2 = rear corner blades rise and stay up
 - step 3 = only front left corner blade rises and stays up
 - step 4 = front right corner blade rises and stays up
 - step 5 = rear left corner blade rises and stays up
 - step 6 = rear right corner blade rises and stays up
 - step 7 = complete cut with all four blades

6.3.5.5 Corner-blade machine parameters

Basic positioning of the corner blades to the seam is carried out in the machine-parameter program.



- Select “**corner-blade machine parameters**” with cursor keys “←” or “→” .
A black background appears behind the symbol.
- Press OK to start the program.
The code-number entry box appears in the display.
- Enter code number “**25483**” on the decimal keypad.
The corner-blade correction screen appears.

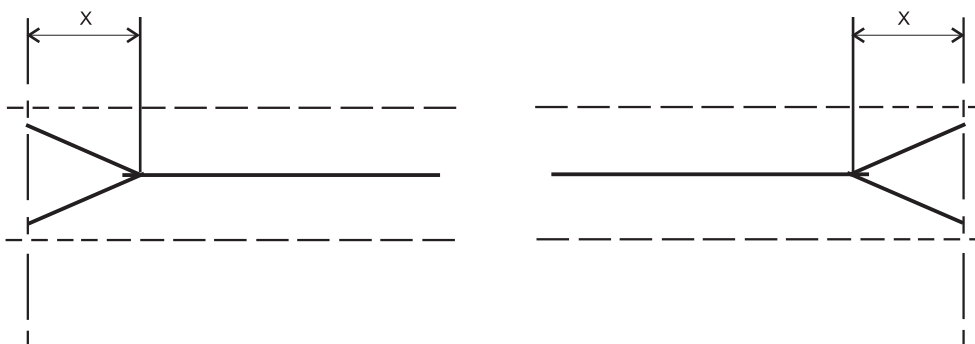


Info line:

seam-end corner-blade correction value

To correct the corner incisions and the centre-blade cut a sewing piece should first be prepared and sewn. The procedure is as follows:

- Set up a test program on the controller and set all corner- and centre-blade corrections to “0”.
- Iron a piece of Vlieseline(r) onto the sewing piece.
This shows up the corner incisions better.
- Sew a test seam.
- Check the seam and cut pattern.
- To leave the test program press function key **F1**.





Seam-end corner-blade correction value

Entry: -99.9 ... 99.9



Seam-start corner-blade correction value

Entry: -99.9 ... 99.9

Hint:

The value entered is valid for all pocket programs.

If the seam-end value is changed, the seam-start value is automatically corrected.



Distance from the centre-blade incision to the seam ends (x)

(see the illustration at the foot of page 60)

Entry: - 99.9 ... 99.9

Hint:

This value depends on the needle distance and the relevant corner blade.



Left-corner-blade seam-start zero-point correction (automatic corner-blade station only)

Entry: -13 ... 13

Hint:

The blade brackets 1 and 2 must be parallel.

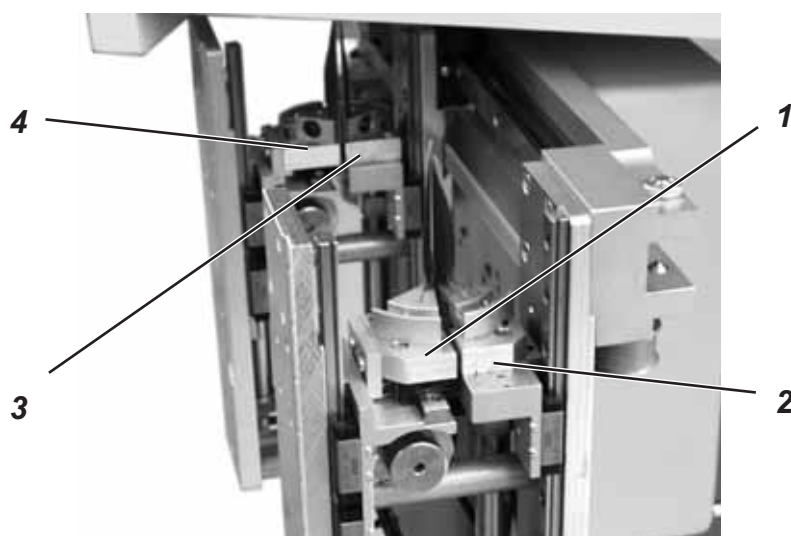


Left corner blade seam-end zero-point correction (automatic corner-blade station only)

Entry: - 13 ... 13

Hint:

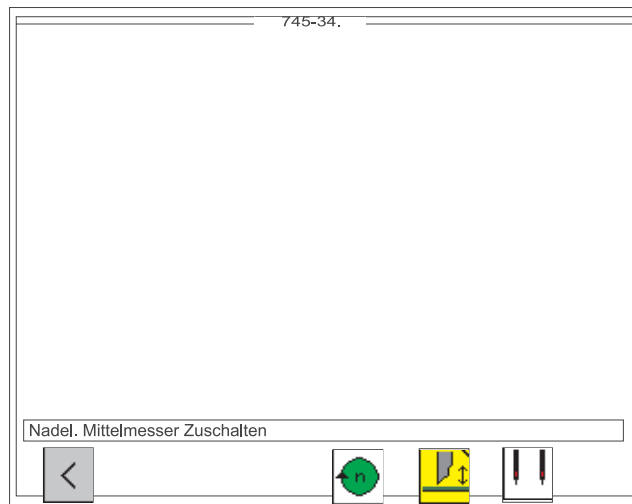
The blade brackets 3 and 4 must be parallel.



6.3.6 Testing needle and centre-blade activation



This program tests the activation of the needles and the centre blade with the machine running.



Info line:

activating needle, centre blade

- Press OK to start the program.
- Press function key **F3**:
once to start the sewing drive at 1000 rpm,
a second time to increase the sewing-drive speed to 3000 rpm
and a third time to stop in position 2 (thread lever up)
- The centre blade is switched on and off with function key **F4**.
- The needles are switched on and off with function key **F5**.
- Press function key **F1** to leave the test program.



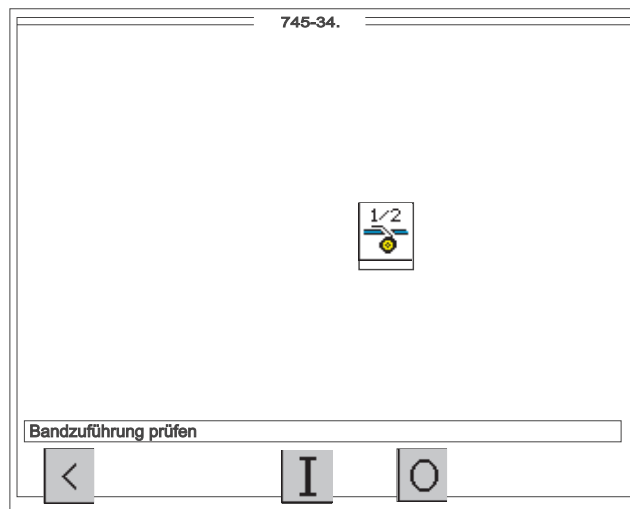
CAUTION:

Before leaving the program the machine head must be run for a short time with the needles and centre blade switched off otherwise the next seam will not be properly executed.

6.3.7 Checking the tape feed



This program tests the feed and trimming function of the tape feed



Info line:

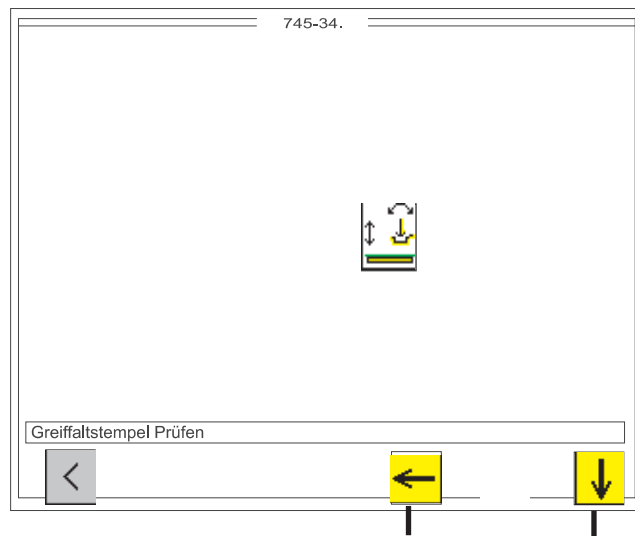
checking tape feed

- Press **OK** to run the test program.
- Press function key **F4**.
The tape feed starts.
The tape is fed and the brake released.
The  key is blocked.
- Press function key **F5**.
The tape is automatically cut, advanced and clamped.
- Press function key **F1** to leave the test program.

6.3.8 Checking the gripper folder without feed clamp (versions B and F only)



This program tests the function of the gripper folder. The feed clamps remain in their rear end position.



Info line:

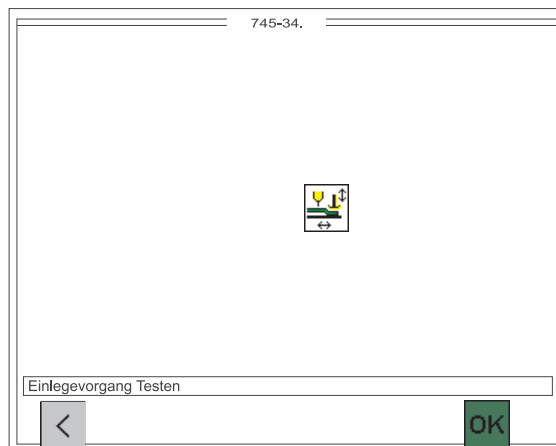
testing gripper folder

- Press **OK** to run the test program.
- Press function key **F3**.
The gripper folder swivels to the vertical position.
- Press function key **F5**.
The gripper folder swivels to the vertical position and descends onto the material slide plate.
- For setting purposes, the gripper folder can be swayed to the vertical position, pivoted and unpressurized above the piping support table, through the key **9**.
- Press function key **F1** to leave the test program.

6.3.9 Checking the insertion process with feed clamp



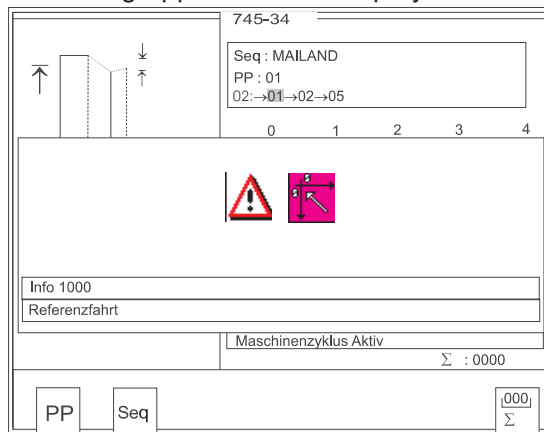
This program tests the insertion process.



Info line:

testing insertion process

- Press **OK** to run the test program.
A reference run must be executed.
The following appears in the display:



- Push the left pedal down.
The feed carriage moves to the insertion station.
The insertion process is executed as in a sewing program.
After the last pedal stage has been completed an arrow appears in the display.

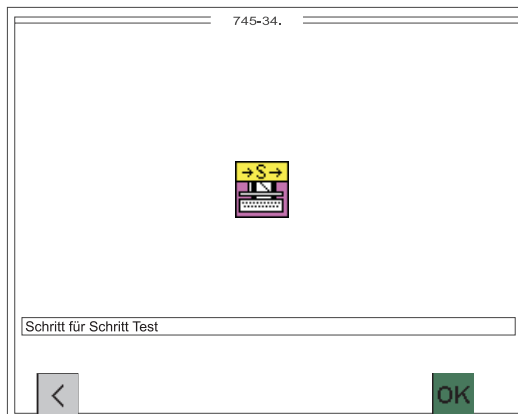


- Push down the right pedal in inching mode.
The feed carriage moves to its rear position.
The feed carriage waits in this position until the pedal is in its rest position.
The feed clamps rise, the flap clamps open.
- Push the left pedal down.
The program restarts.
- To leave the test program press the **RST** key or switch the machine off.

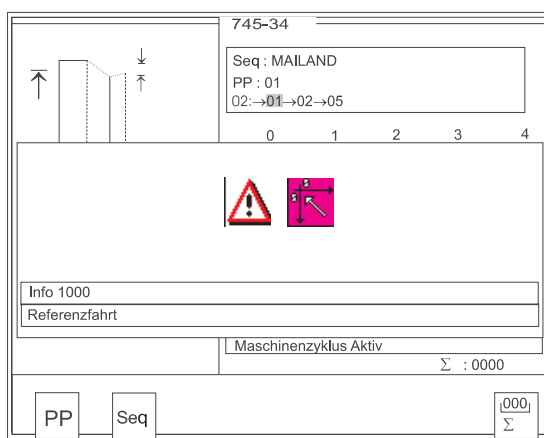
6.3.10 Step-by-step mode



In the step-by-step mode the sewing cycle is halted at important positions so that individual processes can be checked.



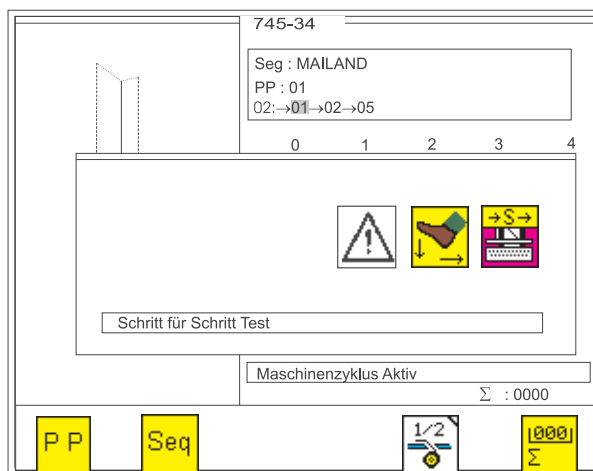
- Press **OK** to run the test program.
The main screen appears with a reminder to execute a reference run.



Info line:

Reference run

- Push the left pedal down.
The feed carriage moves to the insertion position.
- The insertion process is completed as in the set program. After the final stage of the insertion process the following screen appears.

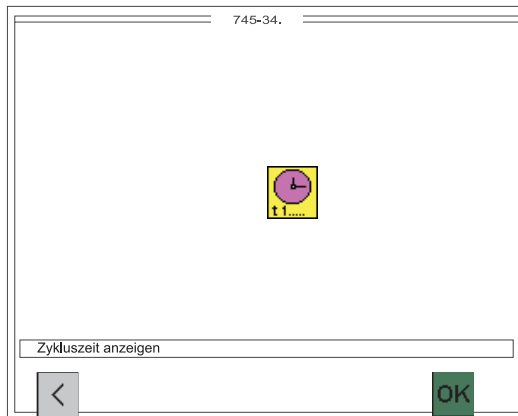


- Press the right pedal to call the next step. After the final step in inching mode the program can be restarted with the left pedal.
- To leave the test program press the **RST** key or switch the machine off.

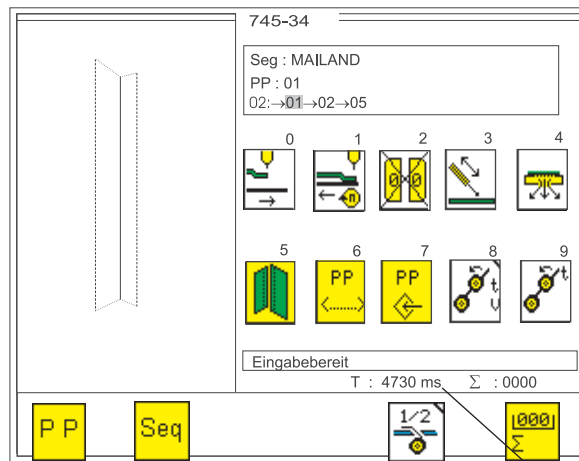
6.3.11 Determining the cycle time



This program determines the machine's cycle time.



- Press **OK** to run the test program.
The cycle time appears on the main screen.



Info line:

reference run

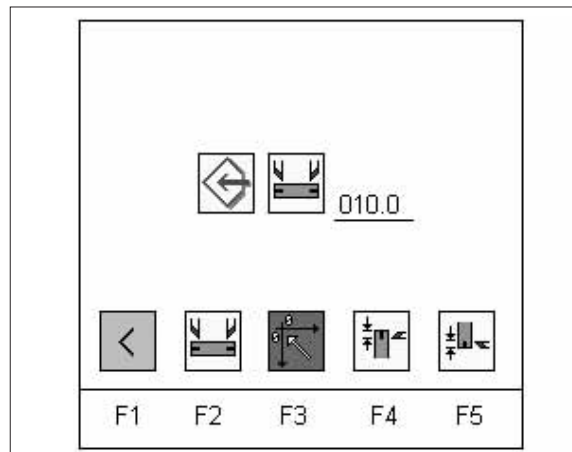
Cycle time

- Execute a reference run.
- When the set sewing program has been completed the cycle time appears in the display.
- To leave the test program press the **RST** key or switch the machine off.

6.3.12. Paspelmesser prüfen und einstellen - Checking and adjusting the piping knives



In the test program “Checking and adjusting the piping knives” you can check the knife and step motor motion and adjust the reference position of the piping knives.



- Press key “**F3**” :
Make reference run.
The reference run has to be made before the further functions are accessible.
- Press key “**F1**” :
Quit the test program for piping knives.

6.3.12.1 Checking the piping knife motion



Caution: Danger of injury !

Danger of cuts !

Do not reach in the piping knife zone.

Exercise utmost caution when making tests with the machine running.

Check the knife motion

- Press key “**F2**” :
Switch both piping knives on and off again.
- Press key “**F4**”:
Switch the piping knife for the seam beginning on and off again.
- Press key “**F5**”:
Switch the piping knife for the seam end on and off again

Check the step motor

- Press key “**F3**”:
The reference run is carried out.



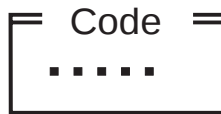
Select the symbol with the cursor keys “←” and “→”

Enter the path (max. 120 mm) via the numeric keyboard and confirm with the OK-key.

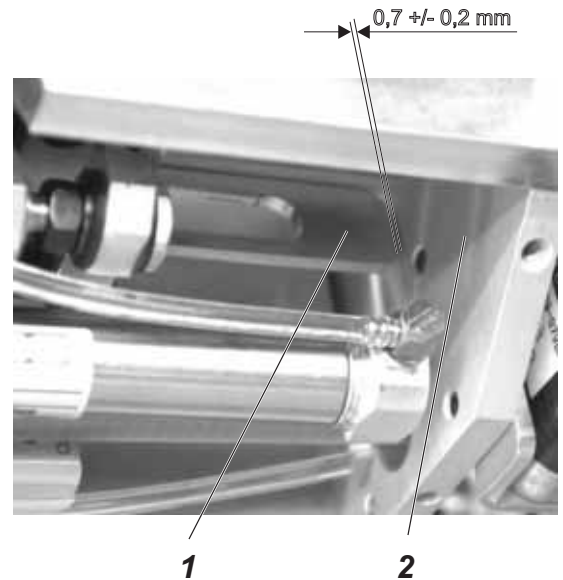
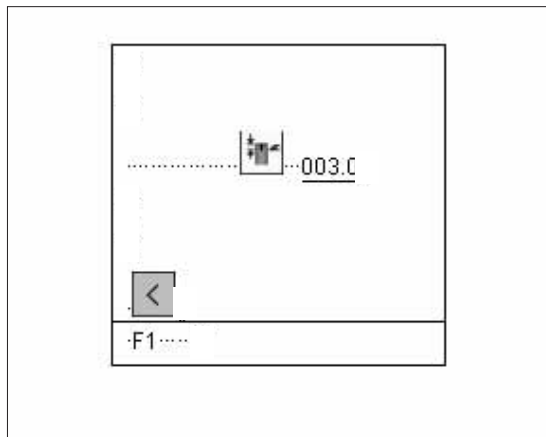
The cutting unit moves to the entered position.

6.3.12.2 Setting the piping knife reference position

- Select the symbol  with the cursor keys “←” and “→”
- Start the program with the **OK**-key.
The display shows the input prompt for the code number.



Enter the code number “25483” via the numeric keyboard.
The screen menu for the piping knife reference position appears.



- Loosen 4 screws and remove the lower cover at the piping cutter.

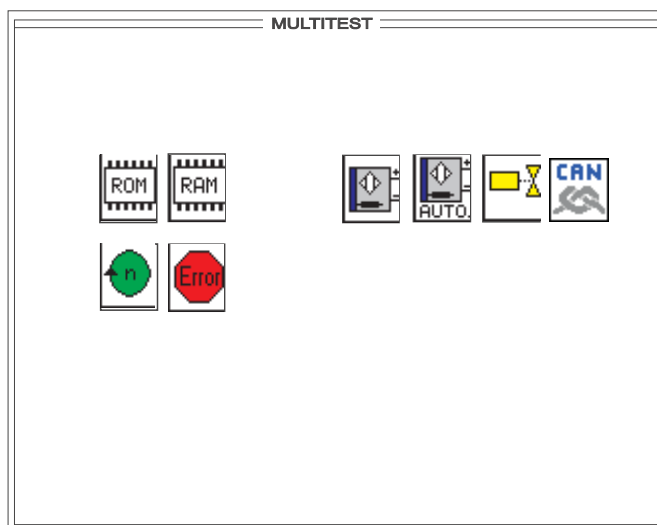
Select icon  enter the correction value “Piping knife reference” via the numeric keyboard and confirm with the OK-key. The cutting unit moves to the entered reference position.

Set the reference position in such a way that the distance between roller guide 1 and plate 2 is **0.7 +/- 0.2 mm** (measure with feeler gauge).

- Quit the menu (key F1), move the cutting unit by 120 mm (see chapter 6.3.12.1 “Checking the step motor”) and check the distance between the roller guide and the plate at the opposite.
- Fasten the lower cover at the piping cutter again.

6.4 MULTITEST system (**RST** + **F3** or main switch on + **F3**)

The MULTITEST system programs enable input and output elements to be tested quickly.
No additional instruments are required.

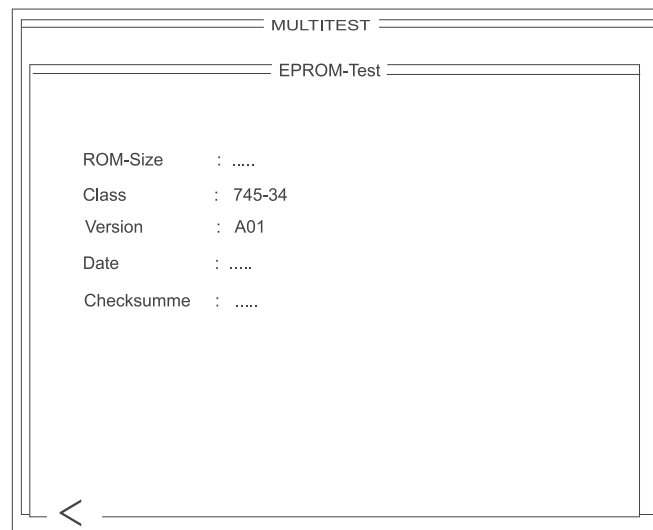


- Press and hold down key "**F3**".
- Press the "**RST**" key.
The controller is re-initialised and the MULTITEST system screen loaded.
- Select the required test program with cursor keys "**←**" or "**→**".
A black background appears behind the symbol.
- Press "**OK**" to run the selected test program.

6.4.1 Displaying the program version and checksum



This program tests the microcomputer's read-only memory (ROM).



Program version

Where program versions are of the same class and have the same code letter the higher version replaces all lower versions.

Checksum

The checksum is only intended for factory servicing. It enables our specialists to establish whether the controller's program memory (EPROM) contains the whole program with no errors.

- To leave the test program press function key **F1**.

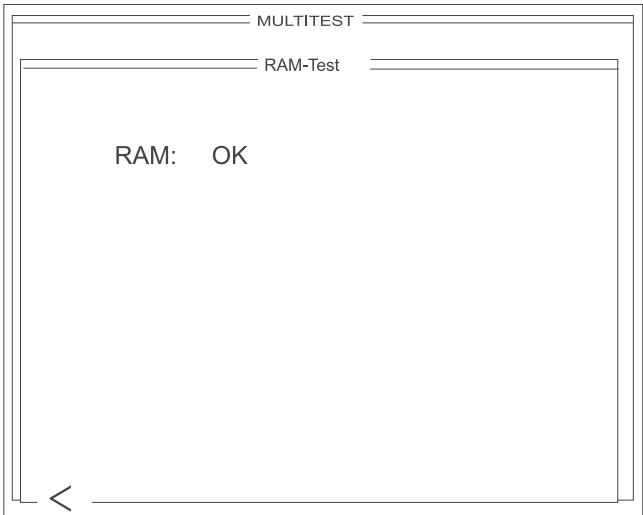
Hint:

Verifying the checksum takes some considerable time.

6.4.2 Testing RAM (working memory)



This program tests the microcomputer's working memory (RAM).



- Press OK to run the test program.
The test result appears in the display.

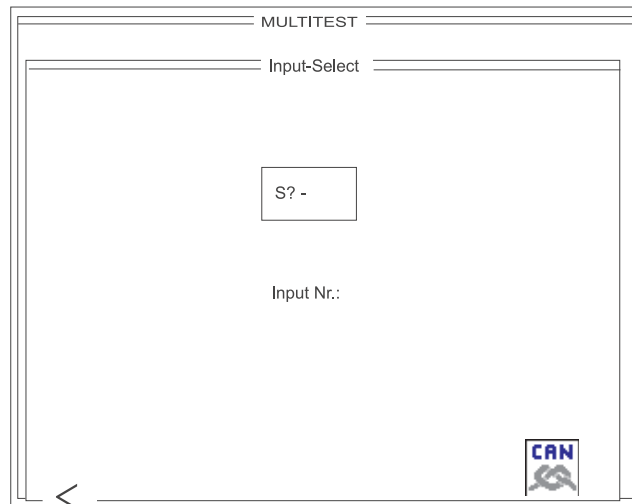
Display	Explanation
RAM OK	working memory is operating perfectly
RAM ERROR	error in working memory

Hint:
If the message RAM ERROR occurs during the working-memory test, the controller must be replaced.

6.4.3 Selecting input elements



This program adjusts the input elements.



CAUTION:

The input elements are factory-set with great care. Adjustment and correction may only be undertaken by trained service personnel.

- Press OK to run the test program.
- Use the key  to select between the basic module and the CAN node.
- Enter the code number of the required input element on the decimal keypad.
The code numbers are the abbreviations used in the circuit diagram (see table below).
- The display shows the circuit-diagram designation and the switching status of the input element selected (e.g. "+S17").
The display changes if the switching status of the input element is altered.

A switching status of "+" means:

contact switch	=	contact open
proximity switch	=	metal in front of the switch
reflecting light barrier	=	no reflection

Exception:

S25 and S20

Both input elements respond in the opposite manner, i.e. "-" means = metal in front of the switch

- Move the input element until the display shows the required switching status.
- To leave the test program press function key **F1**.

Input element	Function	Insertion method			
		A	B	D	F
S01	Flap scanning 1	X	X	X	X
S02	Flap scanning 2	X	X		X
S03*	Residual-thread monitor right	X	X	X	X
S04*	Residual-thread monitor left	X	X	X	X
S05	Needle-thread monitor right	X	X	X	X
S06	needle-thread monitor left	X	X	X	X
S10	Right pedal forward	X	X	X	X
S11	Right pedal back	X	X	X	X
S13	Left pedal forward	X	X	X	X
S15	Left pedal back	X	X	X	X
S16	Blade-bracket monitoring	X	X	X	X
S17	Folder down	X	X	X	X
S18	Folding station swung in	X	X	X	X
S20	Remove material / cover monitoring	X	X	X	X
S22	Simple piping right	X	X		X
S23	Simple piping left	X	X		X
S24	Pressure monitor	X	X	X	X
S25	Feed-device reference	X	X	X	X
S26	Seam-start corner-blade reference	X	X	X	X

*) Input elements can only be tested by means of the test program 6.3.1 "Adjusting the looper-thread monitor"

Input elements CAN node 0

Input element	Function	Insertion method			
		A	B	D	F
SC001	Folder on top		X		X
SC002	Folder on piping table		X		X
SC003	Folder vertical		X		X
SC004	Folder inclined		X		X

Input elements CAN node 2

Input element	Function	Insertion method			
		A	B	D	F
SC201	seam-start blade-adjustment reference	X	X	X	X
SC203	seam-end blade-adjustment reference	X	X	X	X

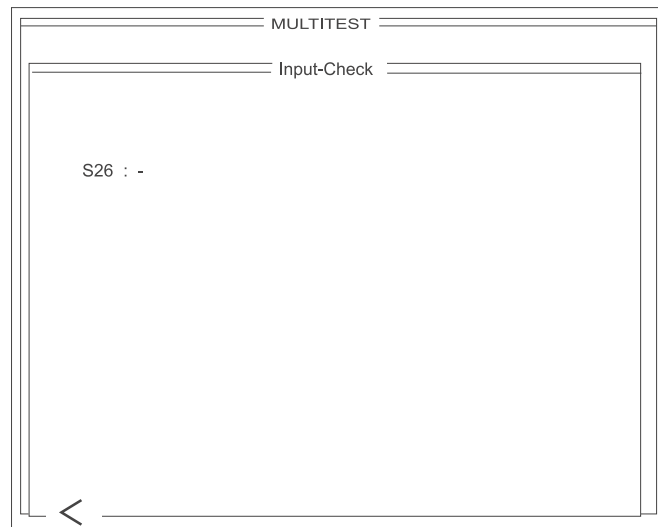
Input elements CAN node 3

Input element	Function	Insertion method			
		A	B	D	F
SC301	Ref. Piping knife adjustment		X		X

6.4.4 Checking input elements



This program automatically tests the input elements.

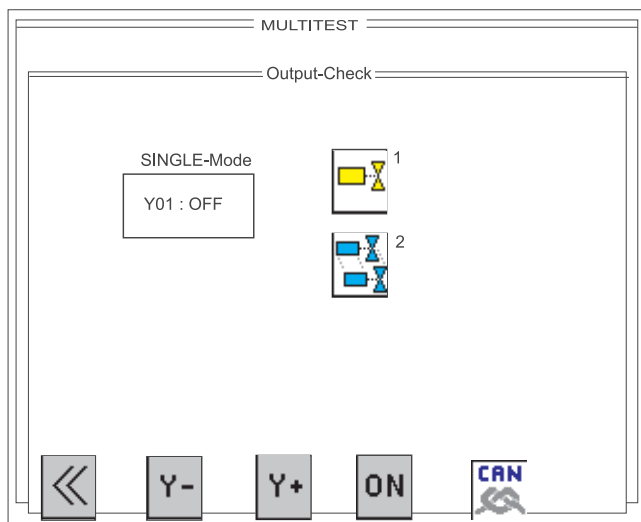


- Press OK to run the test program.
- Operate the input element to be tested.
- The display shows the circuit-diagram designation and the switching status of the input element selected (e.g. “**+s17**”). The display changes if the switching status is altered or another input element is changed. A change in the switching status is indicated by an audio signal.
- To leave the test program press function key **F1**.

6.4.5 Selecting output elements



This program checks the function of the output elements.
One (single mode) or **several** (multi-mode) output elements can be tested simultaneously.



Caution: danger of injury !

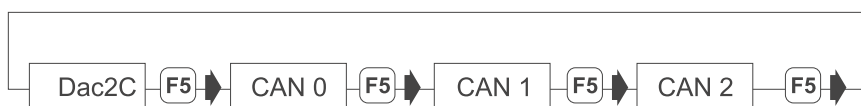
Do not reach into the machine while it is running and the function of the output elements is under test.

- Press Enter to run the test program.
- Use the decimal keypad to select between single mode and multi-mode .

1 = single mode: only one output element is tested.
 2 = multi-mode: a group of output elements is tested.



- Press the “F5” key to switch from DAC2C controller to the output elements of the CAN node.



CAN 0 = maximum of 32 outputs from YC001 to YC032
 CAN 1 = maximum of 32 outputs from YC101 to YC132
 CAN 2 = maximum of 32 outputs from YC201 to YC232

- Enter the code number of the required output element with “F3” (forwards) or “F2” (backwards).
 The code numbers are the abbreviations used in the circuit diagram (see tables below).
- The display shows the switching status (**ON/OFF**) of the output element selected.
- Switch the selected output element on (**ON**) and off (**OFF**) by pressing function key “F4”.
- To leave the test program press function key F1.

Output elements head unit (DAC2C)

Output element	Function	Insertion method			
		A	B	D	F
Y22	release thread tensioner	X	X	X	X
Y26	lower thread cutter on	X	X	X	X
Y27	needle left on	X	X	X	X
Y28	needle right on	X	X	X	X
Y29	open thread clamp	X	X	X	X
Y30	blow away fluff/adavance thread	X	X	X	X
Y31	centre blade on	X	X	X	X
Y32	upper thread cutter on/ close thread clamp	X	X	X	X

output elements CAN node 0

Output element	Function	Insertion method			
		A	B	D	F
YC001	lower holder	X	X		
YC002	drive out waistband-clamp needles	X	X		
YC003	open waistband-clamp	X	X		
YC004	close waistband-clamp	X	X		
YC005	close tape cutter	X	X	X	X
YC006	feed tape	X	X	X	X
YC007	tape brake on	X	X	X	X
YC008	1st piping knife forward		X		X
YC009	swivel positioning device lift left/right flap feed lift left flap feed		X	X	X
YC010	lift pocket bag blow		X	X	
YC011	open right flap feed feed pocket bag		X	X	X
YC012	close right flap feed rotate positioning device		X	X	X
YC013	spread needles		X	X	X
YC014	open left flap feed clamp breast welt		X	X	X
YC015	close left flap feed lateral shift on		X	X	X
YC016	raise folder		X	X	X
YC017	swivel flap feed		X		X
YC018	swivel gripper folder		X		X
YC019	2nd piping knife forward		X		X
YC020	single-pipe table stop		X		X
YC021	swivel flap-turning device				X
YC022	close flap-turning device				X
YC023	close flap-turning clamp				X
YC024	lift right flap feed				X

Output elements CAN node 1

Output element	Function	Insertion method			
		A	B	D	F
YC101	blow on (flap clamp)	X	X		X
YC102	stacker on	X	X	X	X
YC103	zip-fastener scissors forward/back	X			
YC104	open/close zip-fastener scissors	X			
YC105	blow on (folding plate)	X	X		X
YC106	lower smoother	X	X	X	X

Output elements feed unit

Output element	Function	Insertion method			
		A	B	D	F
Y03	close left folding plate	X	X		X
Y04	open left flap clamp	X	X	X	X
Y05	close right folding plate	X	X		X
Y06	open right flap clamp	X	X	X	X
Y09	lower left feed clamp	X	X	X	X
Y10	left slide outwards	X	X	X	X
Y11	lower right feed clamp	X	X	X	X
Y12	right slide outwards	X	X	X	X
Y13	vacuum on	X	X	X	X
Y15	lower folder	X	X	X	X
Y16	lift out folder	X	X	X	X

Output elements blade-bracket unit

Output element	Function	Insertion method			
		A	B	D	F
Y17	seam-start blade-bracket left	X	X	X	X
Y19	seam-end blade-bracket left	X	X	X	X
Y21	seam-start blade-bracket right	X	X	X	X
Y23	seam-end blade-bracket right	X	X	X	X

6.4.6 CAN test

Press OK to run the test program.



Multitest			
Can-Device-List			
	SM-Slave	I/O-Slave	I/O-Slave
Adress :	001	002	003
DeviceName :	SM-III-	V132000	V100000
SW-Version :	SV02.00	CANVA02	CANVA02
HW-Version :	HV01.00	CANVA02	CANVA02
State :	o.k.	o.k.	o.k.
SM-Slave			
Adress :	004		
DeviceName :	SM-III-		
SW-Version :	SV02.00		
HW-Version :	HV01.00		
State :	o.k.		

Hint:

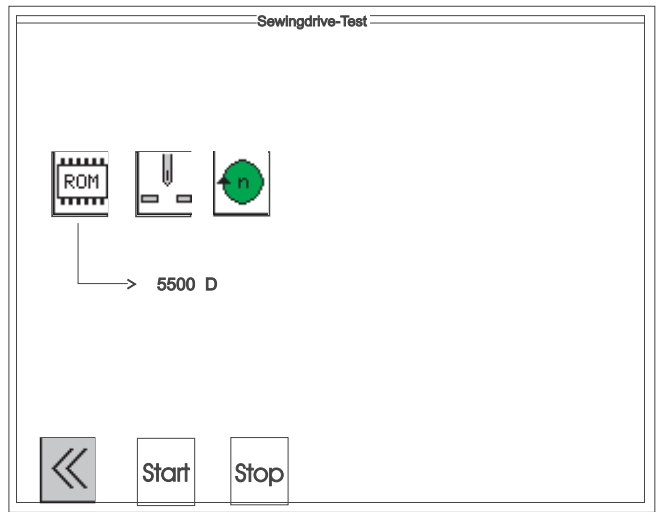
CAN modules work with no errors.

Displaying the OK message takes some considerable time.

6.4.7 Checking the sewing drive



This program tests the needle position and the various speed stages of the sewing drive.



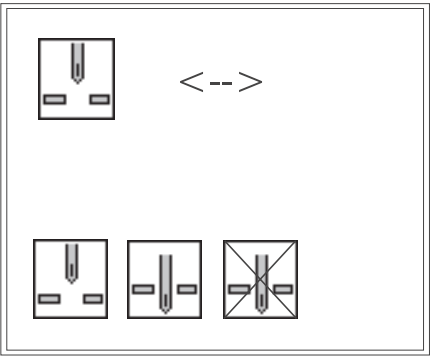
- Press OK to run the test program.
- Select the required parameter with cursor keys “←” or “→” . A black background appears behind the symbol.
- Set the parameter with cursor keys “↑” or “↓”.



Show sewing-drive program version.



Select needle position



Needle in down position



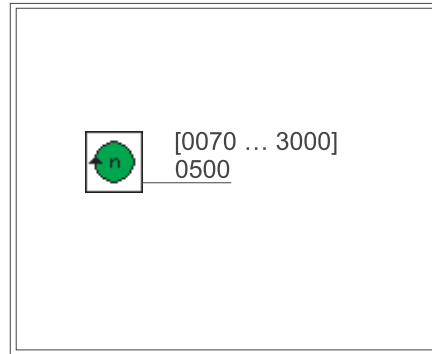
Needle in up position



Needle in any position



Set sewing-drive speed



minimum = 70 rpm
maximum = 3000 rpm

Checking the sewing drive

key F2 = start

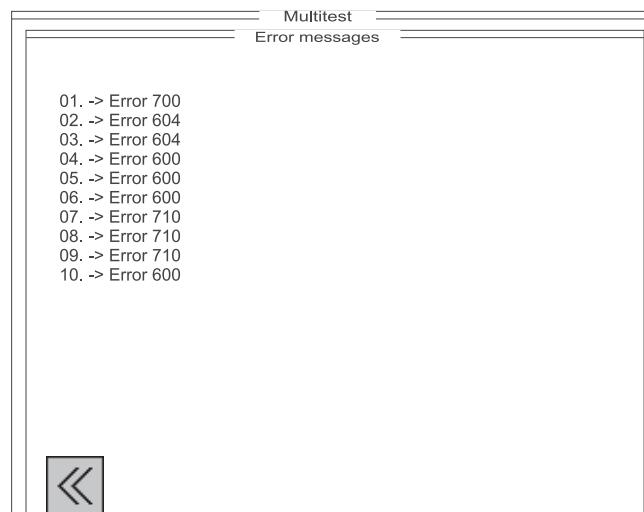
key F3 = stop

- To leave the test program press function key **F1**.

6.4.8 Error list



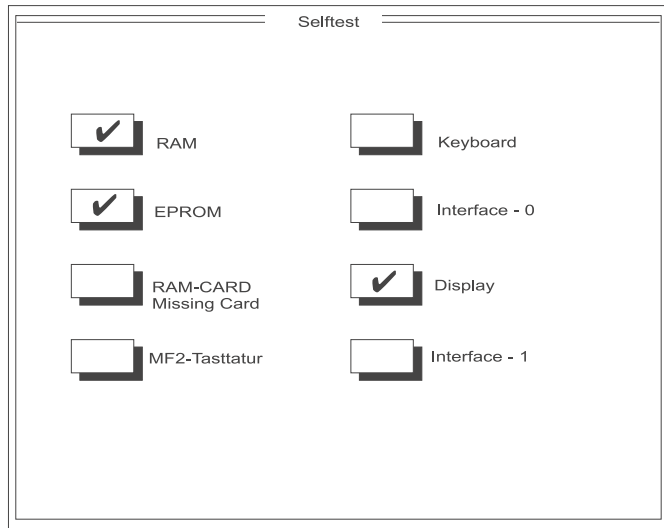
The program shows the 10 last error messages.



- Press OK to run the test program.
- To leave the test program press function key **F1**.

6.5 Terminal self-test (**RST** + **F4** or turn on main switch + **F4**)

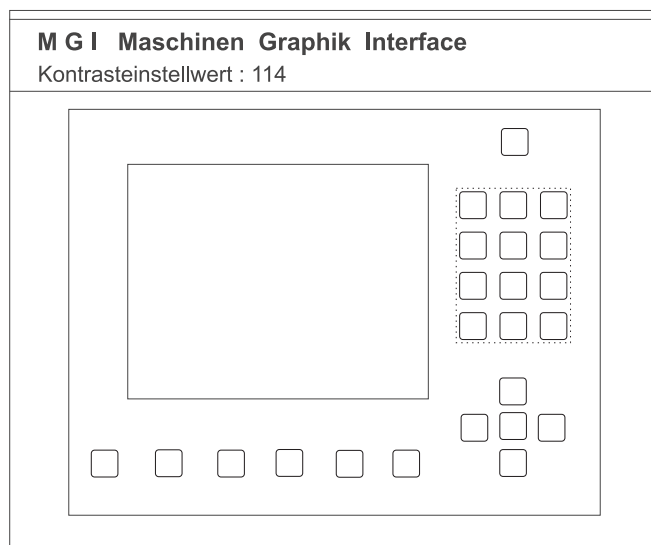
Service personnel use the terminal self-test to check the individual components of the operating terminal.



- **RAM test**
The RAM test checks the operating terminal's working memory ("video RAM").
On completion of the RAM test the self-test automatically switches to the EPROM test.
- **EPROM test**
The EPROM test checks the controller's program memory.
- **RAM-card test**
The RAM-card test checks the memory card.
On completion of the RAM-Card test the terminal self-test automatically switches to the keyboard test.
- **Keyboard test**
The keyboard test checks the operating terminal's keyboard.
Press any key, and if it is working properly a tick appears beside it in the display.
Pressing the "ESC" key terminates the keyboard test.
The display switches to the interface test.
- **Interface test**
The interface test checks the operating terminal's interface (a special cable is required!)
On completion of this test the self-test automatically switches to the display test.
- **Display test**
The display test shows the available character set and graphics.
Pressing function key **F2** switches the display to the main screen of the terminal self-test (see illustration above).
- **Main screen**
When the main screen is displayed pressing function key **F2** generates a full test report.
To leave the terminal self-test press the "**RST**" key.

6.6 Display contrast value (**RST** + **F5** or turn on main switch + **F5**)

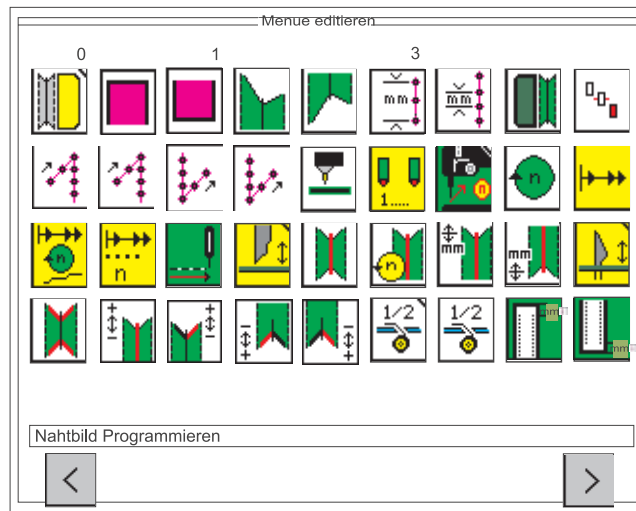
This program sets the contrast value of the display.



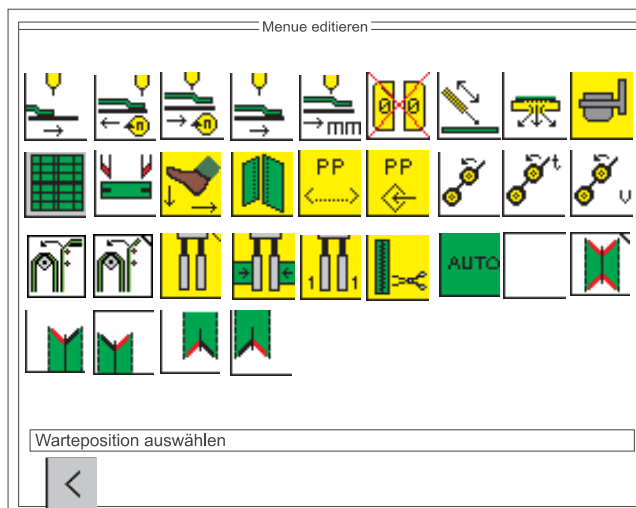
- Set the contrast value with cursor keys “↑” or “↓”.
- Press the “**ESC**” key to store the value and leave the program.

6.7 Editing menus (**RST** + or turn on main switch +)

This determines which parameters can be directly edited on the main screen with keys 0 to 9.



- Pressing function key **F5** switches to the next screen with other parameters.



- Select the required parameter with cursor keys “←”, “→”, “↑” or “↓”.
A black background appears behind the symbol.
- Select the required position by pressing keys **0** to **9**.
- Select the next parameter.
- To leave the menus press function key **F1**.

Hint:

Do not define a symbol twice with the numeric keys.

6.8 Adjusting the serial interface (**RST** + **ESC**)

This test program sets the correct transfer speed (baud rate) for the serial interface.

```
BF1C V2.21 <Datum  Zeit>
VRAM      = 8Seiten
SRAM-Clear = 256KByte
SW-Ioons  = 25 Color-Ioons = 200
Vt100-----> COM0
COM0      = n,8,WA,1 - 125K Baud
COM1      = n,8,1   - 19,2K Baud
ext Keyboard= no
I2C-EEPROM = detected -> 80 00 00 00
PCM_CARD   = not detected
```



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R U N . . .

The correct baud rate for the serial interface is:

Com 0 = n, 8, WA, 1 - 125 K Baud



CAUTION:

If the machine is switched on with one of the following keys pressed, baud rates incompatible with the operating panel of the controller will be set:

key "0"
key "1"
key "2"
key "3"
key "4"
key "5"
key "6"
key "7"
key "8"
key "9".

7. Error messages

In the event of an error in the control system or the machine program the error number appears in the display.

The following tables will enable the cause of the error to be identified and remedied.

7.1 Machine-programs error messages

Error number Display	Meaning	Remedy
Errors 1-249   	Internal errors, CPU DAC //C	Switch machine off and on again *
Error 250   	Undervoltage, CPU DAC //C	Stabilise mains voltage
Error 251   	Undervoltage, valve mains supply	Stabilise mains voltage

7.2 Sewing-motor controller error messages

Error number	Meaning	Remedy
Error 300   	Defective cable connections to the EFKA controller / EFKA controller defective (sewing-motor controller: communication interrupted)	Check cable connections to the EFKA controller / replace EFKA controller *
Error 301   	Defective cable connections to the EFKA controller / EFKA controller defective	Check cable connections to the sewing-motor controller / replace EFKA controller *
Error 302   	· Hardware error, EFKA controller · Software error, EFKA controller · Synchroniser not connected / defective · Faulty commutation-switch lead or converter · Mains voltage too low · Block: motor mechanically overloaded · One rotation after zero-point approach Zero pulse not detected / initiator defective · Transfer temporarily interrupted	· Replace EFKA controller · Update software version · Check synchroniser connection · Check commutation-switch lead · Check mechanics · Check initiator → check distance to disc / replace initiator · Check cable connections to the EFKA controller *
Error 304   	CPU DAC //C defective	Switch machine off and then on again *
Error 305   	EFKA controller pedal not in starting position	· EFKA controller pedal bush dirty · replace EFKA controller

* If this error display occurs frequently, please contact our service staff

7.3 Step-motor error messages

Error number		Meaning	Remedy
Error 400	  	Error in M4 step-motor amplifier for the feed clamp	Check motor, step-motor amplifier and cable; check step-motor amplifier power supply
Error 401	  	Error in M3 step-motor amplifier for the corner-blade block	Check motor, step-motor amplifier and cable; check step-motor amplifier power supply
Error 402	  	Error in step-motor amplifier for the corner-blade slant at the seam-start	Check motor, step-motor amplifier and cable; check step-motor amplifier power supply; check reference switch
Error 403	  	Error in step-motor amplifier for the corner-blade slant at the seam-end	Check motor, step-motor amplifier and cable; check step-motor amplifier power supply; check reference switch
Error 404	  	Error in step-motor amplifier for the tape feeder	Check motor, step-motor amplifier and cable; check step-motor amplifier power supply
Error 405	  	Error in step-motor amplifier for the incision of slitting pipe	Check motor, step-motor amplifier and cable; check step-motor amplifier power supply

* If this error display occurs frequently, please contact our service staff

7.4 CAN-Module error messages

Error number		Meaning	Remedy
Error 500	  	Error in the CAN-Modules	Check cable
Error 510	  	Knife block unit (AC201)	Check cable and jumper setting
Error 511	  	Knife block unit (AC201)	Check power supply
Error 512	  	Knife block unit (AC201)	Check DIP-switches
Error 520	  	Transport unit (AC101)	Check cable and jumper setting
Error 521	  	Transport unit (AC101)	Check power supply
Error 522	  	Transport unit (AC101)	Check DIP-switches
Error 530	  	Transfer device (AC001)	Check cable and jumper setting
Error 531	  	Transfer device (AC001)	Check power supply
Error 532	  	Transfer device (AC001)	Check DIP-switches
Error 540	  	Tape feeder with step-motor (AC 301)	Check cable and jumper setting
Error 541	  	Tape feeder with step-motor (AC 301)	Check power supply
Error 542	  	Tape feeder with step-motor (AC 301)	Check DIP-switches

7.5 System error messages

Error number		Meaning	Remedy
Error 600	  	Air pressure inadequate or non-existent	Turn up and stabilise compressed air
Error 601	  	Left pedal pushed back during sewing	To clear this error the left pedal must be operated again; the feed clamp then moves to its rear position
Error 602	  	Empty bobbin	Insert full bobbin
Error 603	  	Thread breakage	Re-thread thread
Error 604	  	Light barrier (s20) for material removal not active	Adjust light barrier (s20) for material removal
Error 700	  	Folder not up	Correct the folder setting (mechanical impact; check switch S17)
Error 701	  	Folder not down	Correct the folder setting (mechanical impact; check switch S17)
Error 702	  	Folder not vertical	Correct the folder setting (mechanical impact; check switch SC003)
Error 703	  	Folder not slanting	Correct the folder setting (mechanical impact; check switch SC004)
Error 704	  	Folder not on the piped table	Correct the folder setting (mechanical impact; check switch SC002)
Error 710	  	Feed-clamp limit switch active	Check material feed and limit switch S25
Error 711	  	Corner-blade block limit switch active	Check corner-blade drive and limit switch S26
Error 720	 	Light-barrier flap-scanning error	Inspect reflecting foil; check light-barrier alignment
Error 721	 	Flap placed in front of front positioning point	Position flap correctly
Error 722	 	Part of flap outside maximum sewing area (behind rear positioning point)	Inspect flap size; insert flap correctly
Error 723	 	Fluff on flap edge	Insert flaps with smooth edges; inspect reflecting foil
Error 725	 	Flap angle is too great	Inspect flap angle; check light-barrier alignment
Error 726	 	Flap too large or reflecting foil dirty or defective	Inspect flap size and reflecting foil
Error 727	 	Stop section insufficient for the flap angle	Reduce slide-in speed

Error number		Meaning	Remedy
Error 900	  	Defective machine parameters (check-sum error)	Re-initialise machine parameters (test program); adjust machine parameters or read them in from the RAM card
Error 901	  	Defective pocket sequences (check-sum error)	Re-initialise pocket sequences (test program); adjust pocket sequences or read them in from the RAM card
Error 902	  	Defective pocket programs (check-sum error)	Initialise defective pocket programs (test program); adjust pocket programs or read them in from the RAM card
Error 910	  	RAM card not correctly plugged in	Plug RAM card in correctly
Error 911	  	RAM card is write-protected	Remove RAM-card write-protection
Error 912	  	RAM-card read or write error	Replace RAM-card battery; data must then be saved to the RAM card again
Error 913	  	No language RAM card for class 745-34 plugged in; RAM-card type is wrong.	Plug in language RAM card for class 745-34
Info 1000	 	Reminder to execute the reference run after switching on	Push left pedal backwards
Info 1001	 	Corner-blade station is swivelled out	Swivel corner-blade station in
Error 1001	  	Corner-blade station swivelled out during sewing.	Check/adjust corner-blade station attachment
	   	Push left pedal backwards: the feed carriage moves backwards and a reference run is executed.	
Info 1002	 	Folder station swivelled out	Swivel folder station in
Error 1002	  	Folder station swivelled out during sewing.	Check/adjust folder station attachment
	   	Push left pedal backwards: the feed carriage moves backwards and a reference run is executed.	
Info 1003	 	Tape is missing	Insert tape
Info 1004	  	The adjusted position for the feed clamp does not fit the built-in stamp.	Adjust the position of the feed clamp to match the one displayed in the pocket parameters.
	  		
Info 1005	  	Incorrect setting of the flap scanning.	Correct the pocket program.
	  		

Notes: