

Part 4: Instructions for programming DA-Microcontrol CI. 506

Program version: 506 B03

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1. General

The **MICROCONTROL controls** of the **DÜRKOPP ADLER 506** have as an integral part the comprehensive **MULTITEST** testing and monitoring system.

A microcomputer assumes the control tasks, monitors the sewing process and displays operator errors and malfunctions.

Special programs simplify mechanical settings and make possible the quick inspection of input and output elements without additional measuring devices.

Errors and test results are shown in a 2 x 16 digit display.

During fault-free functioning the display shows information to the operation and the sewing process.

With an operator error or a malfunction the function sequence is interrupted. The cause is shown in the display by the appropriate error symbol.

In most cases the error symbol disappears after the cause of the error has been remedied.

In some cases the main switch must be turned off for safety reasons while the error is being corrected.

A part of the error messages is meant only for the maintenance staff.

All functions can be called up and changed by pressing the appropriate key. For this the unit must be in the base position.

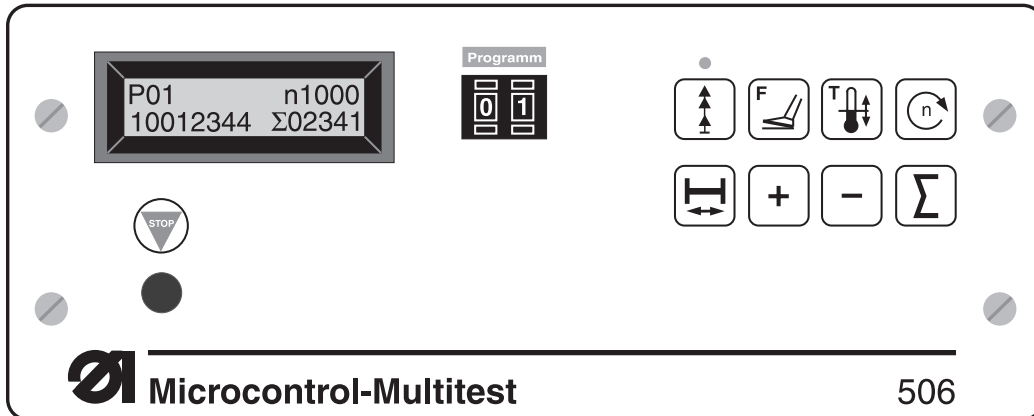
When the unit is turned on the controls conduct a number of comprehensive self-tests. Thereby the program and data memories and the display, among other things, are checked as to flawless functioning.












After the machine is turned off the set values of the individual functions are stored in the program and data memories (battery buffered) and automatically activated when next turned on.



2. Description of the Controls

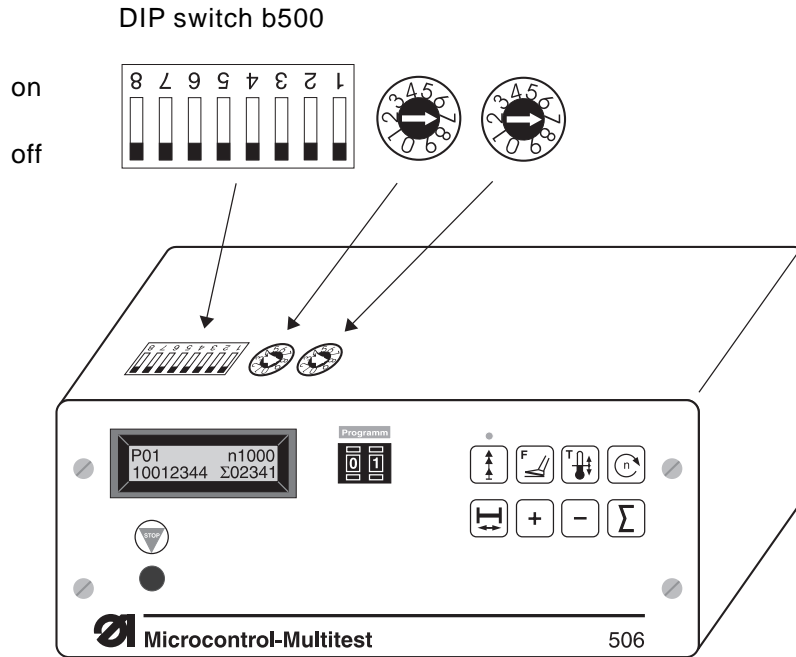
2.1 Keys on the Front Panel



Key	Function		
  	Calling up sewing and testing programs Stopping the current program Activating the selected program		
Key	Function	Key	Function
	Switching the softstart on / off		Bobbin change
	Setting the foot switch mode		Increasing the parameter value
	Setting the burner		Decreasing the parameter value
	Setting the rpm		Setting the counter



2.2 Internal Switches



Caution Electrical Current !

Set the switch only with the main switch turned off.

DIP switch b500:

With the aid of the internal DIP switch b500 the number of stitches per curve disk revolution is set.

The allowable settings are to be found in the following table.

Switch	1	2	3	4	5	6	7	8	No. of Stit.
	off	off	off	off	off	X	Y	Z	42
	on	off	off	off	off	X	Y	Z	58
	off	on	off	off	off	X	Y	Z	72
	on	on	off	off	off	X	Y	Z	84
	off	off	on	off	off	X	Y	Z	116
	on	off	on	off	off	X	Y	Z	144
	off	on	on	off	off	X	Y	Z	21
	on	on	on	off	off	X	Y	Z	29
	off	off	off	on	off	X	Y	Z	36
	on	off	off	on	off	X	Y	Z	14
	off	on	off	on	off	X	Y	Z	24
	off	on	off	on	off	X	Y	Z	168

6: X = on: needle cooling normal

6: X = off: needle cooling continuous operation

7: Y = on: without burner

7: Y = off: with burner

8: Z = on: with transport lever

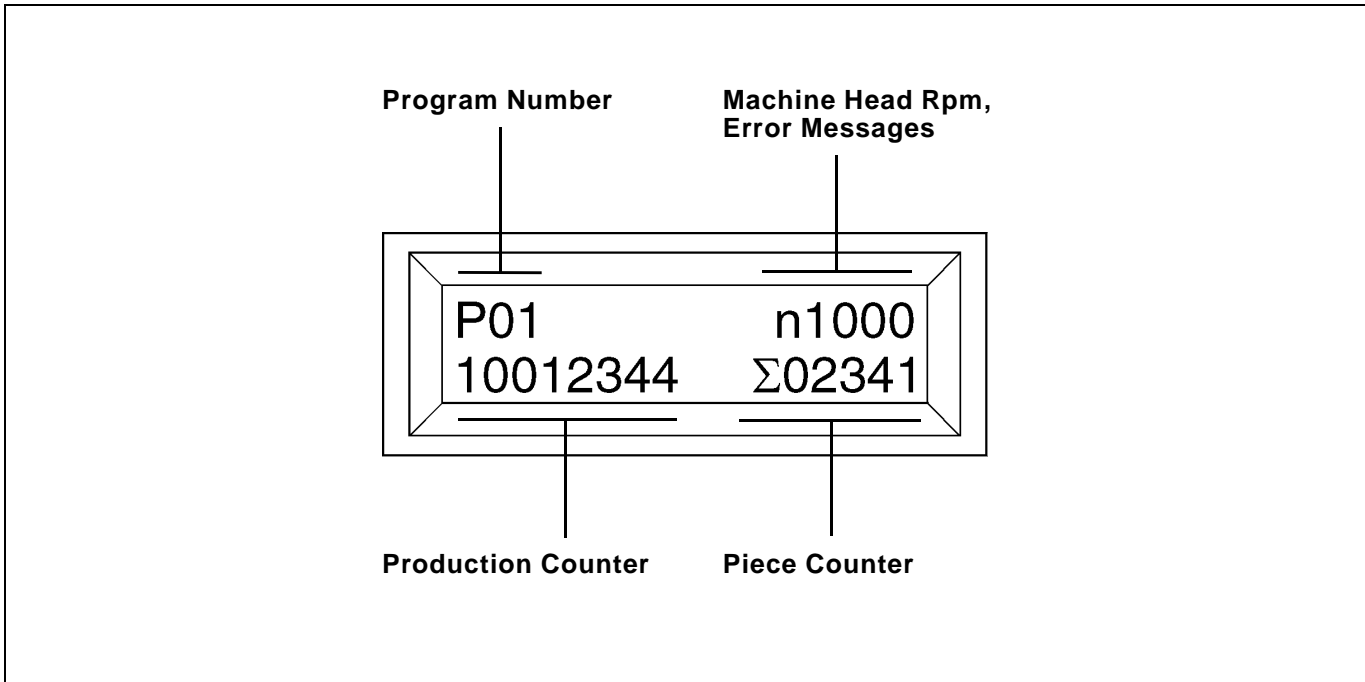
8: Z = off: without transport lever



2.3 Display

The Microcontrol controls are equipped with a 2 x 16 digit display. It shows the program number, machine head rpm and piece count. With operator errors or malfunctions the function sequence is interrupted and the cause shown by the appropriate error symbol.

The display of the piece count in the right half of the second half of the display signals the operational readiness of the unit.



Program number

The left half of the first line of the display shows the number of the just selected program.

Machine head rpm / error messages

The right half of the first line of the display shows the currently set rpm of the machine head.

By the occurrence of an operator error or malfunctions the appropriate error symbol is shown.

Production counter

The production counter shows the sum of the pieces sewn up to that moment. It cannot be reset.

Piece counter

The piece counter shows the number of pieces sewn since the last resetting of the counter. It can be reset to zero by pressing the "Σ" key. When the main switch is turned off the current count of the piece counter is stored.

If the display remains blank after the main switch is turned on then the 1.6 A fuse (on the underside of the mains unit) is to be replaced.

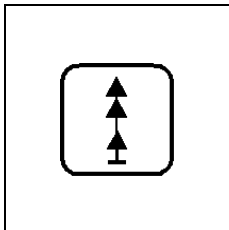


3. Description of the Function Keys

The values for the various functions can be set as follows:

- Call up the desired function by pressing the appropriate function key.
The selected function is shown in the display with a blinking cursor.
- Change the set value with the "+ / -" - keys.
- Press the same function key again.
The change is completed.
The unit is ready for operation again.

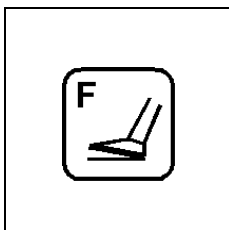
3.1 Softstart



With the softstart switched on the first stitches on the seam beginning are sewn at reduced rpm.

The softstart is turned on and off by operating the key.
The softstart is active when the LED above the key is lit.

3.2 Foot Switch Mode



Two different foot switch modes are available.

- Set the desired foot switch mode with the "+/-" keys.

Mode 1 (Display: **F=01**)

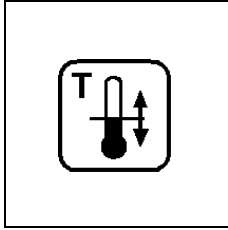
- After the first operation of the right foot switch both clamps are lowered together.
- With the clamps lowered the sewing sequence is started by operating the left foot switch.
- With the second operation of the right foot switch both clamps are raised again.

Mode 2 (Display: **F=02**)

- Through operation of the left foot switch the left clamp is lowered.
- Through operation of the right foot switch the lowering of the right clamp occurs.
- As long as only one clamp is lowered this can be raised again by a second operation of the appropriate foot switch.
- If both clamps are already lowered the sewing sequence is started by operating the left foot switch.



3.3 Burner Settings



Two different types of burner operation are available:

- with preheating
- without preheating

If the sewing time necessary for the seam formation is shorter than the heating time required by the burner the controls automatically switch over to "with preheating".

With aid of the preheating the burner is preheated to a specific base temperature. This reduces the time required for heating to the operating temperature.

The sewing time required is dependent on the number of stitches per curve disk revolution and the selected rpm.

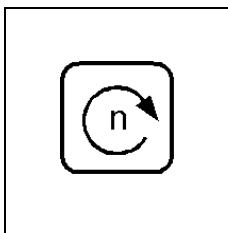
With preheating

- In the first line of the display the symbol "*" appears in front of the machine head rpm.
- Press the key.
"G" blinks in the display.
- Set the period for the preheating with the "+ / -" keys (1 = shortest period, 10 = longest period).

Without preheating

- Press the key.
"B" blinks in the display.
- Set the time for turning on the thread burner with the "+ / -" - keys (1 = earliest switch-on time, 10 = latest switch-on time).
Note:
The earliest switch-on time means a longer glowing period.
- Press the key again.
"E" blinks in the display.
- Set the switch-off time of the thread burner with the "+ / -" - keys (1 = shortest period switched on, 10 = longest period switched on).

3.4 Machine Head Rpm



With the aid of this key the machine head rpm can be set. The rpms which can be set can be found in the table below.

- Set the desired rpm with the "+ / -" - keys.

Rpm	[1/min]
1	400
2	500
3	600
4	700
5	800
6	900
7	1000
8	1100



Attention!

At plans with a middle to large zig-zag-stitch the machine head rpm must be lowered to an adequate level.

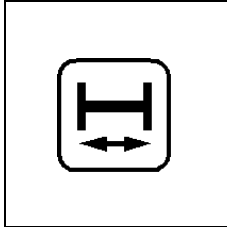


3.5 Bobbin Change



Caution Risk of Injury !

Turn the main switch off.
Change the bobbin only with the main switch turned off.

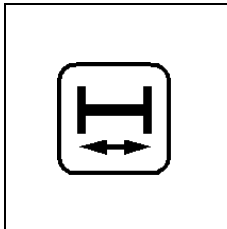


- Press the "H" key.
The machine head positions in position 3.
The bobbin can be changed.

Note:

For better accessibility by the seamstress there is a second alternative key on the left side of the head cover of the unit.

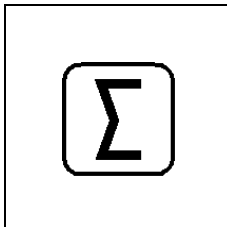
3.6 Resetting the Counter for the Bobbin Winder



If the winding procedure is interrupted prematurely manually the counter must be reset as follows:

- Turn the main switch off.
- Turn the main switch on and at the same time press the "H" key.
The counter is reset to the beginning value set in program P41.
- As long as the key is operated "**SP-RESET**" appears in the display.

3.7 Resetting the Piece Counter



The piece counter is reset to zero with this key.

The piece counter shows the number of pieces sewn since the last resetting of the counter.

The production counter cannot be reset !



4. Calling Up the Sewing, Service and Testing Programs

The sewing, service and testing programs listed below are selected with the "**Program**" selector switch.

Switch Setting	Program	Function
00	P00	Displays the program version
01	P01	Sewing program
02	P02	Sewing program with intermediate stop after 50% of the stitches and opening of the right half of the clamp
03	P03	Sewing program with intermediate stop after 50% of the stitches and opening of the left half of the clamp
11	P11	Sewing program with the rpm ranges programmed in P41
40	P40	Setting the number of bartacks per bobbin
41	P41	Program used to set the programmable rpm ranges used in P11
42	P42	Burner test: glowing
43	P43	Burner test: lowering and glowing
44	P44	Burner test: lowering in stages
45	P45	Burner test: slow sewing, lowering in stages
58	P58	Checking the serial interface
59	P59	Timer test and memory test
60	P60	Continuity test
61	P61	Checking the front panel elements
62	P62	Checking the input elements
63	P63	Selecting input elements
64	P64	Selecting output elements
66	P66	Sewing drive: rpm test, position 2
67	P67	Sewing drive: rpm test, position 1
68	P68	Sewing drive: rpm test, position 1, position 2

- Set the "**Program**" switch to the desired program.
- Turn the main switch on or press the "**STOP**" key. The selected program is activated.
- If the symbol "**P?**" appears in the right half of the first line of the display an invalid program number was set. A sewing sequence running at the time the "**STOP**" key was pressed will be interrupted.
- Correct the setting and press the "**STOP**" key.



5. Base Position and Operational Readiness

Base position

- Turn the main switch on.
- The microcomputer checks the base position of the unit.
- When finding an error this is shown by the appropriate symbol in the display.
The unit can not be started.
- Correct the error.
If the display shows "**POS2**" the unit must be turned into the 2nd position manually with the handwheel.
- Turn the main switch off and on again or press the "**STOP**" key.
The base position of the unit is checked again.
- After the unit is turned on the note "**REFERENZ->Σ**" appears in the right half of the first line of the display:
- Press the "Σ" key.
The machine head runs into the unit's base position.

Operational readiness

The sewing sequence can only be started when the unit is in operational readiness.

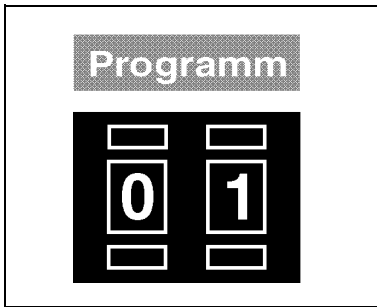
Operational readiness is signaled by the display of the piece count in the right half of the first line of the display.

Before the start of a sewing sequence the microcomputer permanently checks the momentary positions of the devices.
Errors found are shown in the display.



6. Sewing Programs

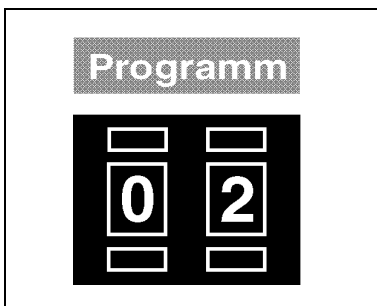
6.1 Sewing Program P01



The exact work sequence of the sewing program P01 is described in the Operating Instructions.

- Set the "**Program**" switch to "**01**".
- Press the "**STOP**" key.
The program is activated.
- With the preheating of the burner switched on the symbol "*" appears in the right half of the first line of the display in front of the value for the machine head rpm.
With low machine head rpms the preheating is automatically turned off. The "*" symbol disappears.

6.2 Sewing Program P02

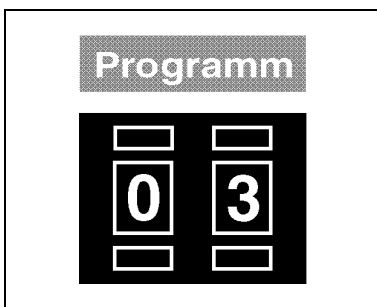


- Set the "**Program**" switch to "**02**".
- Press the "**STOP**" key.
The program is activated.

Difference to P01:

- After completing 50% of the number of stitches the sewing drive stops in position 2.
The right half of the clamp is raised.
In this position, for example, labels to be sewn into the material can be aligned.
- Operate the right foot switch.
The right half of the clamp is lowered.
Through renewed operation of the right foot switch the right half of the clamp can be raised again.
- With the right half of the clamp lowered operate the left foot switch.
The sewing sequence is started again.

6.3 Sewing Program P03



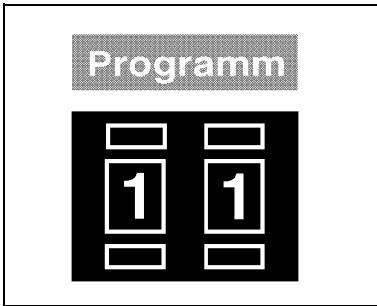
- Set the "**Program**" switch to "**03**".
- Press the "**STOP**" key.
The program is activated.

Difference to P02:

- At the intermediate stop in position 2 the left half of the clamp is raised.



6.4 Sewing Program P11



- Set the "**Program**" switch to "**11**".
- Press the "**STOP**" key.
The program is activated.

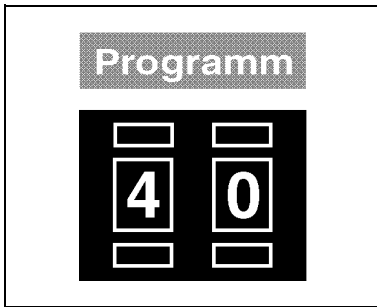
Difference to P01:

- The constant machine head rpm selected for the entire seam before starting work is replaced by rpm ranges which are programmed in the **P41** setting program.
This makes it possible to adjust the speed profile individually to the seam pattern. The current machine head rpm is shown in the display, and is also tagged with a preceding \uparrow symbol for the variable machine head rpm.
- Pressing the "**n**" key to set the machine head rpm has no effect in this program.
- Altering the number of stitches per cam-disc revolution automatically erases the programmed rpm ranges for the old number of stitches.
The number of stitches of the cam-disc is displayed with a preceding "?".
- Press the " Σ " key to leave this display.
- The " \Rightarrow P41 !" prompt appears.
This is to remind the user that the **P41** program must be used to program new rpm ranges.
- Turn the "**Program**" switch to "**41**".
- Press the "**STOP**" key.
Program 41 is activated (see section 7.2)



7. Service Programs

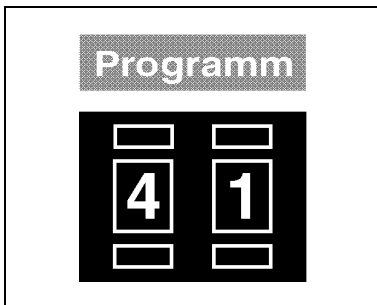
7.1 Setting the Underthread Counter



Program P40 sets the number of pieces which can be sewn per bobbin.

- Set the "**Program**" switch to "**40**".
- Press the "**STOP**" key.
The program is activated.
In the display, next to the bobbin symbol, the set value appears.
- Set the desired value with the "+ / -" - keys.
(input = e.g. 0020)
- The cursor can be moved to different positions with the "Σ" key.

7.2 Programming variable rpm ranges

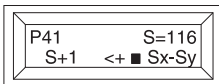
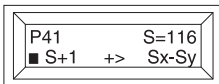


Up to 6 different rpm ranges can be programmed in Program P41. The programmed rpm ranges are only executed in sewing program P11.

- Set the "**Program**" switch to "**41**".
- Press the "**STOP**" key.
The program is activated.

Programming rpm ranges can be carried out in two different ways:

- Programming in single-stitch mode.
The display is as follows: ■ S+1 +> Sx-Sy
This process should be used if no rpm ranges have yet been assigned to the seam pattern.
- Programming in range-specifying mode.
The display is as follows: S+1 <+ ■ Sx-Sy
This process should be used if rpm ranges have already been assigned to the seam pattern.



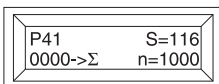
Press the "+" key to toggle between the two modes.

- Press the "Σ" key to invoke the selected programming mode.

Programming in single-stitch mode

Setting the first rpm range

- The machine head rpm "n" flashes in the display.
Set the required initial value for the machine head rpm with the "+/-" keys.



Caution Risk of Injury !

Do not reach into the machine while it is in operation.

- Press the "Σ" key and hold it down until the number of completed stitches after which a new machine head rpm is to take effect appears in the display. As long as the "Σ" key is held down the stitches are executed and the number of completed stitches is increased.
As soon as the "Σ" key is released the machine head rpm set is saved for the range in question.



Setting the second rpm range, at maximum up to the sixth one

- The machine head rpm "n" flashes in the display.
Set the required initial value for the machine head rpm with the "+/-" keys.
- Press the "Σ" key and hold it down until the number of completed stitches after which a new machine head rpm is to take effect appears in the display. As long as the "Σ" key is held down the stitches are executed and the number of completed stitches is increased.
As soon as the "Σ" key is released the machine head rpm set is saved for the range in question.
- When the indicated stitch number (S) is reached, the previously-programmed rpm ranges are saved.
There is then an automatic return to the start of program **P41**.

Attention:

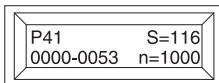
If the value of the currently conducted individual stitches is less than "4" or greater than/equal to the result of "number of stitches-2", then **no** new machine head speed "n" can be set with the aid of the "+/-" keys. These values are indicated in that they are shown blinking in the display and the machine head speed does **not** blink.

Programming in range-specifying mode



ATTENTION!

In order to ensure trouble-free operation in sewing program P11, programming must always encompass the entire stitch-number range.



Setting the first rpm range:

- The cursor flashes in the terminal value of the stitch-number range. The cursor can be moved with the "Σ" key.
The value at the cursor position can be changed with the "+/-" keys.
- Once the required terminal value of the stitch-number range has been set, switch to rpm setting by pressing the "n" key.
The machine head rpm "n" flashes in the display.
Set the machine head rpm with the "+/-" keys.
- Confirm the rpm range set by pressing the "Σ" key.
- The terminal value of the rpm range is increased by one to form the starting value of the next rpm range.

Setting the second to sixth rpm ranges:

- These are programmed in the same way as the first rpm range.
- Care must be taken that the terminal value of each stitch-number range is between the starting value and the highest stitch number.
- Input is terminated when the highest stitch number is entered as a terminal value.
There is then an automatic return to the start of program **P41**.

Attention:

If the final value of the stitch number range is less than "4" or greater than/equal to the result of "number of stitches-2", then **no** new machine head speed "n" can be set with the aid of the "+/-" keys. In the first case no change over to the speed setting occurs after the "n" key is operated. Instead, the value "0004" is shown in the display as the final value of the stitch number range. In the second case there is also **no** change over to the speed setting after the "n" key is operated. Instead, the "number of stitches" is shown in the display as the final value of the stitch number range.

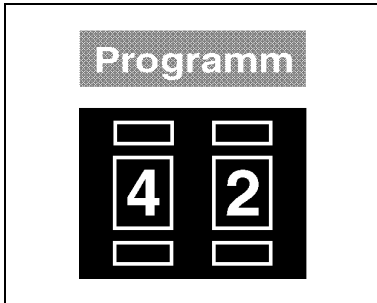


7.3 Burner Test: Glowing



Caution Risk of Injury !

Danger of Burns !
During the burner test keep hands clear of the area of the glowing burner.



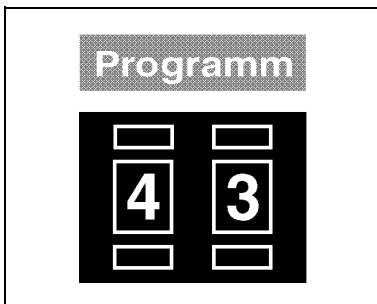
- Set the "**Program**" switch to "**42**".
- Press the "**STOP**" key.
The program is activated.
- "**B-TEST->Σ**" appears in the right half of the second line of the display.
The set number of stitches per curve disk revolution (e.g. S = 72) appears in the right half of the first line of the display .
- Press the "Σ" key.
The burner is turned on for a short period.

7.4 Burner Test: Lowering and Glowing



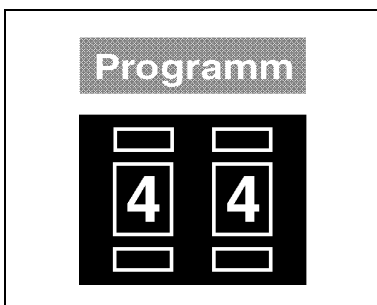
Caution Risk of Injury !

Danger of Burns !
During the burner test keep hands clear of the area of the glowing burner.



- Set the "**Program**" switch to "**43**".
- Press the "**STOP**" key.
The program is activated.
- "**B-TEST->Σ**" appears in the right half of the second line of the display.
In the right half of the first line of the display the set number of stitches per curve disk revolution (e.g. S = 72) appears.
- Press the "Σ" key.
The burner is turned on.
A sequence as at the seam end is run through.

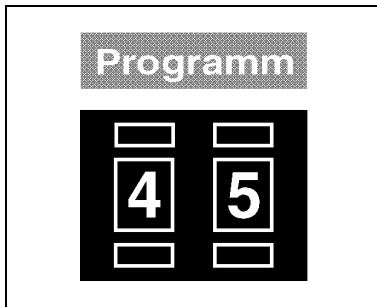
7.5 Burner Test: Lowering in Stages



- Set the "**Program**" switch to "**44**".
- Press the "**STOP**" key.
The program is activated.
- "**B-TEST->Σ**" appears in the right half of the second line of the display.
In the right half of the first line of the display the set number of stitches per curve disk revolution (e.g. S = 72) appears.
- Press the "Σ" key repeatedly.
With each operation of the key the sequence as at the seam end is run through in stages.
The burner remains shut off hereby.



7.6 Burner Test: Slow Sewing, Lowering in Stages

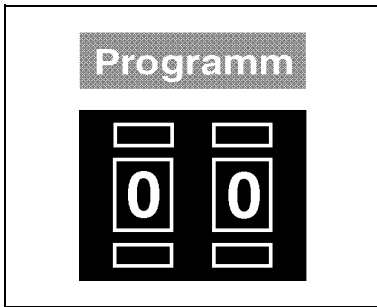


- Set the "Program" switch to "45".
- Press the "STOP" key.
The program is activated.
- "B-TEST-> Σ " appears in the right half of the second line of the display.
In the right half of the first line of the display the set number of stitches per curve disk revolution (e.g. S = 72) appears.
- Press the " Σ " key.
The unit sews slowly to the seam end.
- Press the " Σ " repeatedly.
With each operation of the key the sequence as at the seam end is run through in stages (see program P44).
The burner remains shut off hereby.



8. Testing Programs

8.1 Displaying the Program Version and Check Sum



The display shows in succession the program version and a check sum.

e.g.: **Dürkopp Adler AG**
506A01 5CA9

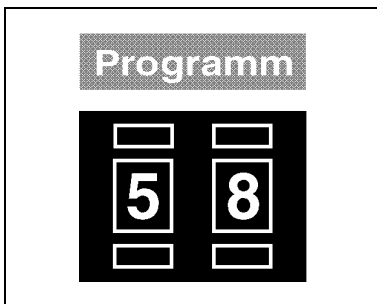
506 = Class designation of the unit
A01 = Identification letter and serial number
5CA9 = Check sum

By program versions with the same class designation and the same identification letter the higher version replaces all lower versions (Example: 506V03 replaces 506V01 and 506V02).

The check sum is meant only for the factory service staff. It allows experts to see if the program memory (EPROM) of the unit controls flawlessly contains the complete program.

- Set the "**Program**" switch to "**00**".
- Press the "**STOP**" key.
The program is activated.

8.2 Checking the Serial Interface



Program P58 checks the SIO component of the controls.

- Plug the SIO testing plug into the socket b109 on the main board. The testing plug connects the transmitter with the receiver. In this manner a test of the loop is possible.
- Set the "**Program**" switch to "**58**".
- Press the "**STOP**" key.
The program is activated.

Display	Explanation
OK	SIO component is okay
Err	SIO component is defective, SIO testing plug is not in place
no SIO	Controls are being run without SIO

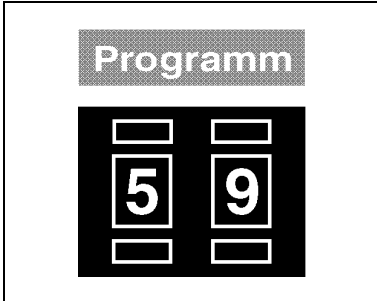


8.3 Memory Test and Timer Test



ATTENTION !

Program P59 erases all values in the memory!
All values must be reset.

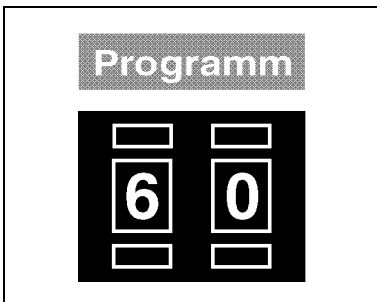


Program P59 checks the working memory (RAM) and all timer switchings of the controls.

- Set the "**Program**" switch to "**59**".
- Press the "**STOP**" key.
The program is activated.

Display	Explanation
OK	Working memory and all timer switchings are okay
ERROR 0	RAM error
ERROR 6	Timer 1 defective
ERROR 7	Timer 2 defective

8.4 Continuity Test



Program P60 checks if the 24V power supply delivers current with the output drivers switched off.

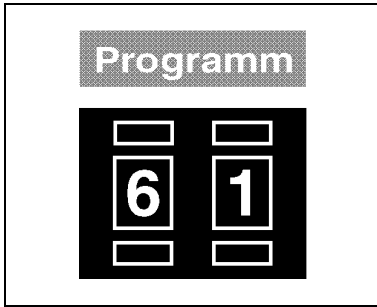
Program P60 checks all output elements (including output drivers and installation) for continuity.

- Set the "**Program**" switch to "**60**".
- Press the "**STOP**" key.
The program is activated.

Display	Explanation
V?	Short circuit in the installation or one of the output drivers is defective
OK	All circuits have continuity
s17 (Example)	Interruption in the output element s17, in its installation or driver Output element s17 does not exist because it is part of the special optional equipment Continue the testing at the next element by pressing the " Σ " key.



8.5 Checking the Front Panel Elements

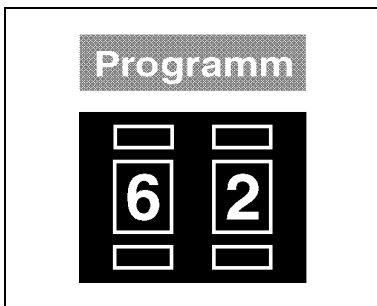


Program P61 checks the front panel elements.

- Set the "**Program**" switch to "**61**".
- Press the "**STOP**" key.
The program is activated.
- Press the key to be checked.
The display shows the value assigned to this switch.

Key	Function
b513/512	Program switch
b829	Softstart on/off
b828	Foot switch mode, lower clamps (together or individually)
b825	Bobbin change
b826	Machine head rpm
b827	Burning period correction
b500	Number of stitches per curve disk revolution

8.6 Checking the Input Elements



Program P62 checks the switching status of the input elements.

- Set the "**Program**" switch to "**62**".
- Press the "**STOP**" key.
The program is activated.
- Press the input element to be checked.
The display shows the wiring diagram designation and the switching status of the input elements (e.g. "+b25").
- The display changes when the switching status of any other input element is changed.

The switching status "+" means:

- By contact switch = Contact open
- By proximity switches = Metal in front of the switch

The following switches cannot be checked with program P62:

- b101 Head cover monitor (Stop)

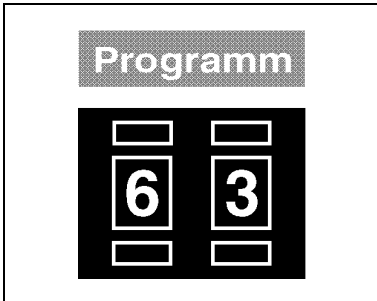


8.7 Selecting Input Elements



ATTENTION !

All input elements were carefully set at the factory.
Adjustments and corrections may only be made by trained service staff.



Program P63 serves for the setting of the input elements.

- Set the "**Program**" switch to "**63**".
- Press the "**STOP**" key.
The program is activated.
The display shows "**B?**".
- Set the "**Program**" switch to the code number of the desired input element.
The short designations of the circuit diagram serve as code numbers (see table). This does not apply for the keys on the front panel (see Chapter 7.5).
The display shows the wiring diagram designation and the switching status of the input element (e.g. "**+B25**").
- Adjust the input element (e.g. proximity switch) until the desired switching status is shown in the display (see program P 62).

Input Element	Function
b09	Rear transport lever in the base position
b10	Base position Stop
b12	Right clamp up
b16	Forward transport lever in the base position
b17	Left clamp up
b18	Foot switch right
b20	Foot switch left
b23	Bobbin change
b35	Synchronizer position 1 (needle down)
b37	Synchronizer position 2 (needle up)
b38	Synchronizer position 3 (needle moving from down to up)

The following switches cannot be checked with program P63:

- b101 Head cover monitor (Stop)

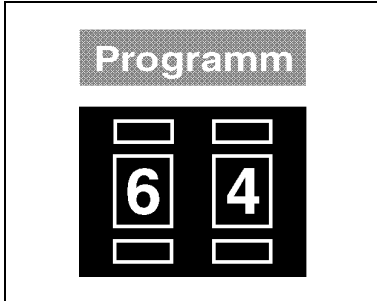


8.8 Selecting Output Elements



Caution Risk of Injury !

During the function testing of the output elements do not reach into the running machine, especially not under the clamps.



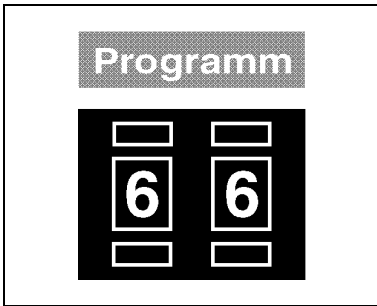
Program P64 checks the function of the output elements.

- Set the "**Program**" switch to "**64**".
- Press the "**STOP**" key.
The program is activated.
The display shows "**S?**".
- Set the "**Program**" switch to the code number of the desired input element.
The short designations of the circuit diagram serve as code numbers (see table).
- Turn the selected output element on and off by pressing the " Σ " key in tapping operation.

Output Element	Function
s01	Lower left clamp
s02	Lower right clamp
s03	Open thread tension
s04	Pull thread
s18	Needle cooling
s19	Transport lever forward
s20	Thread wiper forward
s22	Lower burner
s26	Burner forward
s28	Hook lubrication



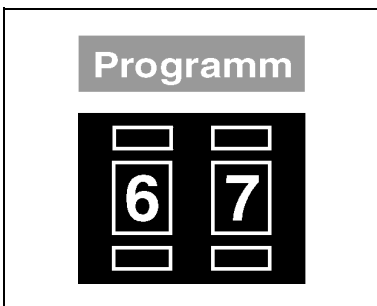
8.9 Sewing Drive: Rpm Test, Position 2



Program P66 serves for testing the different rpms of the sewing drive. Different rpms can be selected with the "Program" switch.

- Set the "Program" switch to "66".
- Press the "STOP" key.
The program is activated.
The display shows "N-TEST->Σ".
- Press the "Σ" key.
- Select the rpm of the sewing drive with the "Program" switch.
A total of 13 rpm levels are available.
Switch setting "13": Maximum rpm
Switch setting "01": Minimum rpm
- With an allowable value "0000" appears in the right half of the first line of the display, with an unallowable value "SW?" appears.
- Press the "Σ" key and hold.
The sewing drive runs at the selected rpm.
After a few seconds the current rpm (actual rpm of the machine head) is shown in the right half of the first line of the display.
- Release the "Σ" key.
The sewing unit positions in position 2 (thread lever high position).

8.10 Sewing Drive: Rpm Test, Position 1

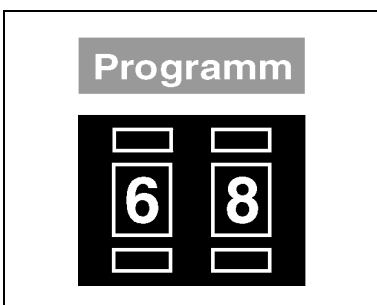


- Set the "Program" switch to "67".
- Press the "STOP" key.
The program is activated.
The display shows "N-TEST->Σ".

Difference to program P66:

- After releasing the "Σ" key the sewing unit positions in position 1 (thread lever low position).

8.11 Sewing Drive: Rpm Test, Position 1, Position 2



- Set the "Program" switch to "68".
- Press the "STOP" key.
The program is activated.
The display shows "N-TEST->Σ".

Difference to program P66:

- After release of the "Σ" key the sewing unit stops for a brief period in position 1 (thread lever low position).
- Then the sewing unit positions in position 2 (thread lever high position).



9. Function Displays and Error Messages

9.1 Displays of Operating Aids

Display	Explanation	Remedy
P? 506B01 REFERENZ-> Σ STZ-ERR H-> B-TEST-> Σ N-TEST-> Σ UNTFVZ-RESET S+1 <+> Sx-Sy	Invalid program selected Display of the program version Machine head must conduct a reference run The "number of stitches" (b500) switch in an invalid switch setting Underthread bobbin empty Activate the test program for the burner Activate the testing program for rpm Underthread counter reset Selection between single-stitch operation (S+1) or range setting (Sx-Sy) for the required rpm section	Reset the "Program" switch Press the " Σ " key Reset the "number of stitches" (b500) switch Change the bobbin Press the " Σ " key Press the " Σ " key

9.2 Displays of Malfunctions

Display	Explanation	Remedy
E2 V? STOP --<>-- POS2 POS2-> Σ STRT-ERR KL-ERR TIME GRUNDST TR-ERR STICHZAHL-ERR. TAB.-OV => P 41 !	Fuse e2 in the transformer (24V) defective Error message in program P60 STOP key defective, Termination of the sewing sequence Synchronizer not plugged in Needle not in the upper position Needle not in the upper position Short in the switch lead at the foot switch, Foot switch was already operated when the main switch was turned on Incorrect clamp lowering Sewing drive does not stop quickly enough Machine not in the base position Incorrect transport lever operation Stitch-number range set is too small Table for a maximum of 6 rpm ranges exceeded. No rpm ranges programmed	Replace fuse e2 See Chapter 5.6 ("Continuity Test") Replace STOP key Plug in the synchronizer Turn the needle into the upper position with the handwheel Press the " Σ " key Check the lead Release the foot switch, press the STOP key Check switches b12, b17 and movement of the clamps In program P66 check if motor and controls function correctly Reset switch b10 Carry out programming in P41



9.3 Error Messages

Display	Explanation	Remedy
PROM-ERR	Faulty EPROM check sum when turning on	Program not correctly stored in memory
RAM-ERR	Faulty RAM test when turning on	Call factory service
DISP-ERR	Display error when turning on	
ERROR 0	RAM error	Call factory service
ERROR 1	Error in the input elements	Check the input elements
ERROR 2	Error in the front panel elements	Check the front panel elements
ERROR 3	Program switch defective	Replace the program switch
ERROR 4	Regulator card for the sewing drive defective	Replace the regulator card
ERROR 5	Short voltage drops in the mains	Stabilize the voltage supply
ERROR 6	Timer 1 defective	Call factory service
ERROR 7	Timer 2 defective	Call factory service
ERR Bxx	Error in reading input element bxx	Replace defective switch bxx, reset switch bxx
no SIO ERR	Controls have no SIO component Interruption in the SIO send / receive loop	Press the STOP key Press the STOP key