Instruction Manual

BASS 4100

Automated Sewing Systems

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10/05 Se

Contents

D.1 Control element

1.1Control element

Fig. 1: The control element is the display and input medium of the machine control unit.

Interface RS 232 1

The interface RS 232 is used to connect the machine control unit to a storage chip. Program data is transferred via this interface.

Display 2

Information about the machine control unit and the seam parameters is shown on the display. If a seam function is switched on or off, the seam symbol for the seam function and the appropriate parameter value are faded in or out.

Program stop key 3

The program stop key is used to stop the machine cycle. If a program stop is triggered, a RESET must be carried out by pressing the key again to make the program control unit ready for operation.

Number block 4

Fig. 2: The seam program memory is called up with the M/C key. The number keys 4, 5 and 6 have a double function: In the operator menu they are used as arrow keys “left” (4) or “right” (6) to select the seam of a seam program. The selection is confirmed with the number key 5 (confirm input). If input boxes are activated with the function keys, the number keys are used to enter numerical values. The input is then confirmed with the P key. In the programming/service menu the number keys 2 and 8 have the function of the arrow keys “up (2)” and “down (8)” to navigate up or down line by line in the selected menu. In the selected menu the arrow key “left (4)” or “right (6)” is used to scroll backwards or forwards if the parameter list consists of several pages. With number key 5 (confirm input) open the input box of the selected parameter line. The two- or three-figure value can now be entered with the number keys. The input box closes after the input of the last value figure.

Function keys 5

The menus of the program control unit are called up with the function keys.

Symbol bar 6

The symbol bar indicates menus, which can be called up directly from the start level with the function keys.

Additional menus for setting machine or program functions are called up from the different program levels.

D.2 Program control unit

2.1 Program control unit set-up

The program control unit is controlled by three different types of menus:
1. Operator menus with direct access
2. Programming menus
3. Service menus

Operator menus
In the operator menu functions are called up directly, which
- allow corrections to the sewing operation,
- support additional operations, which arise while the machine is working, e.g. winding thread,
- make it possible to switch machine functions, e.g. the stacker, on or off.

Programming menus
The programming menus enable the programming of seam programs and the appropriate seams:
- Altering existing seams
- Copying and renaming seam programs
- Creating new seams
- Deleting seams

Service menus
The service menus are used for the data management of the seam programs and have functions available, which support the set-up and testing of the machine
- Data transfer and storage
- Input / output tests of the initiators for the compressed air system
- Diagnostic tests for motors
- Additional programs

Access to a part of the service menus and programming menus is only possible with a right of access. The right of access protects against unauthorized data manipulation. In order to carry out inputs or alterations in the service menu, first of all the service code must be entered. If necessary, the service code can be requested from the manufacturer.

Structure of the menu levels
The operator menus consist of direct access 1 and direct access 2.
The programming menus consist of level 1 and level 2.
The service menus extend from level 2 to level 5.

CAUTION – Damage to the machine!

Some of the menu inputs start individual machine units or a machine cycle. If components are completely are partially dismantled, or not ready for function, this many cause damage to parts of the machine.
Only carry out inputs when the machine is ready for operation!

Seam program

A seam program controls the complete machine cycle during production:

- the transporting of the work piece to the sewing head,
- the sewing of the seam and
- the ejection of the work piece.

A seam program is defined by three different types of values and functions:

- Basic parameters,
- Seam parameters
- Seam functions

Seam programs can be extended, renamed or copied.
In a seam program at least one seam must be activated. If a seam program consists of several seams, it is possible to deactivate a part of the seams.
On principle it is possible to program a completely new seam program.
It is easier :

- To copy a seam program programmed by the manufacturer into a free memory space in the memory store and alter it,
- To copy a seam program, which has already been modified or adapted, to a free memory space in the memory store and adapt it further.

Seam number

On the other hand each seam program can run with up to eight seams. The seams are allocated to the seam program with seam numbers (e.g.. 4, 5, 6, or 7).

NOTE – Adapting seams!

All data modifications, which are carried out in the program control unit,
•adjusting parameters
•changing the seam name
•copying a seam
•deleting a seam
always apply to the marked seam of the seam program shown on the display.

Memory store

All seam programs are filed in the memory store (**M**).
Up to 20 seam programs (**M 01** - **M 20**) can be programmed in the memory store of the program control unit.
For the purpose of a data backup, all the seam programs filed in the memory store can be transferred to a PC via the interface RS 232 and stored on a storage medium.

Seam parameters

The seam parameters of a seam program can be by three settings:

1. Rapid alteration of the parameters of a seam function using the input box.
2. Access to the entire parameter list of a seam function.
3. Switching a seam or machine function on or off.

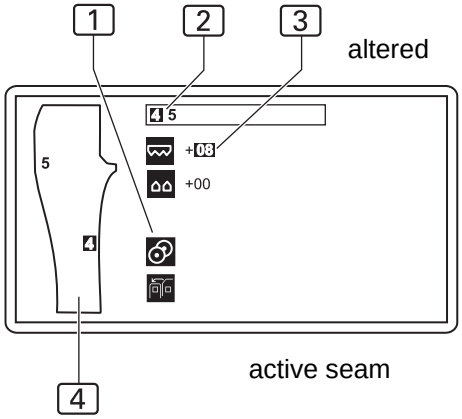


Fig. 3: The seam numbers 2 of a seam program can be called up directly. The currently number appears on a black background.

Calling up the seam number:

- Press key  or 

The activated functions 1 are portrayed as an invert symbol.
The parameter value, which is allocated to a function, is shown in the respective input box 3 to the right of the function symbol.
A seam construction is allocated to the seam program and this shows which seams of the seam program are activated.

Factory setting
The program control unit of the machine is pre-programmed by the manufacturer with four standard programs.
These seam programs are so efficient that practically all common closing seams can be sewn. In addition they are also suitable for training operating staff and as a model for programming customized seam programs.

Seam programs pre-programmed by the manufacturer:

M 01 with the seams 4, 5, 6 and 7
Semi-automatic seam program: Difficult seam segments (e.g. in the pocket area) can be sewn manually first, before switching to automatic sewing.

Seam 4	Crotch seam, back trouser part on top
Seam 5	Side seam, back trouser part on top
Seam 6	Crotch seam, knee lining on top
Seam 7	Side seam, knee lining on top

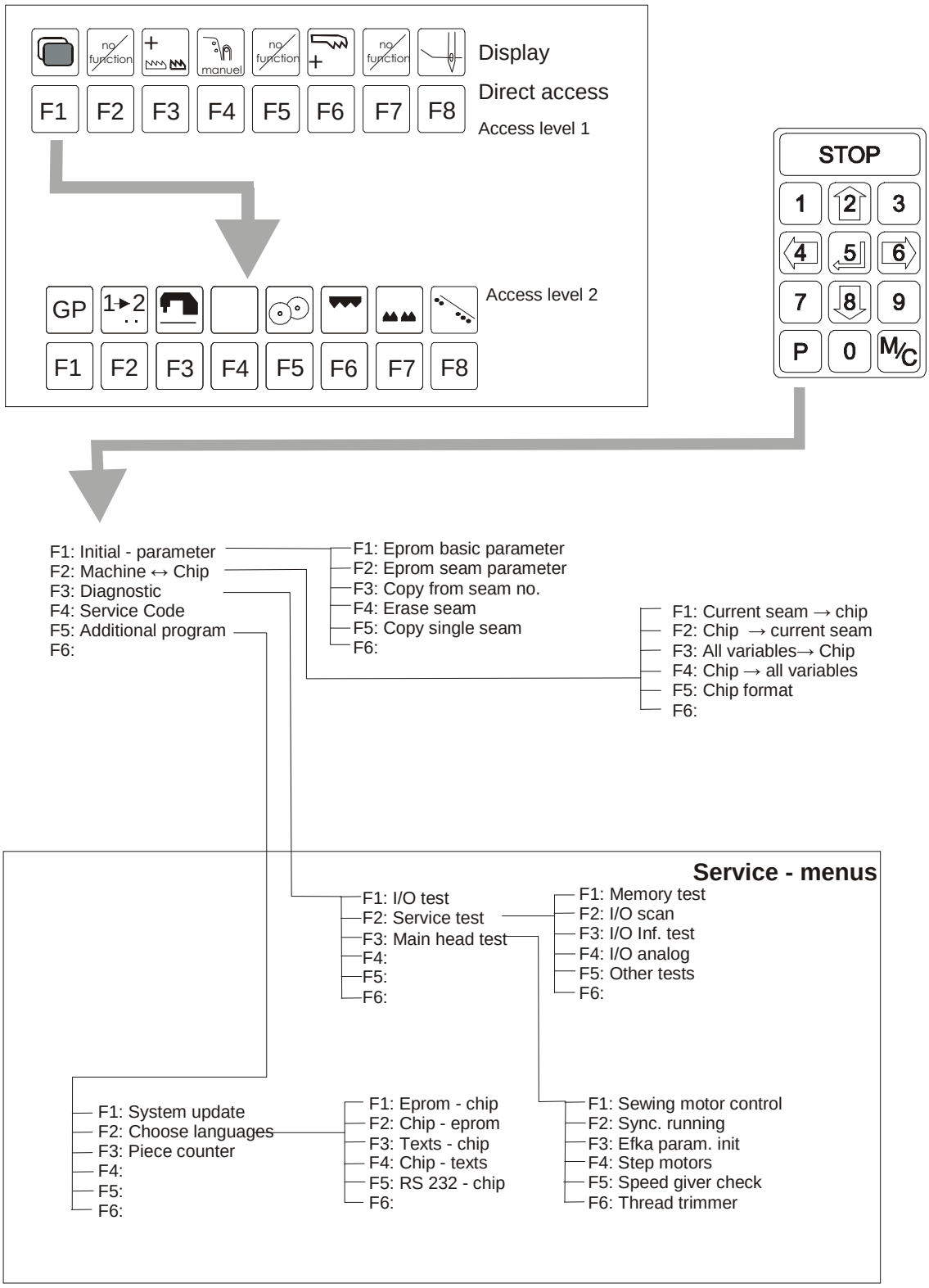
M 02 with the seams 4, 5, 6 and 7
Manual seam program: The work pieces are usually sewn by hand.

M 03
Semi-automatic seam program:

Seam 4	Crotch seam, back trouser part on top
Seam 5	Side seam, back trouser part on top

M 04
Semi-automatic seam program:

Seam 6	Crotch seam, knee lining on top
Seam 7	Side seam, knee lining on top


no function
manuel
no function
no function
F1 F2 F3 F4 F5 F6 F7 F8
Display
Direct access
Access level 1
GP
1▶2
F1 F2 F3 F4 F5 F6 F7 F8
Access level 2
STOP
1 2 3
4 5 6
7 8 9
P 0 M/C
F1: Initial - parameter
F2: Machine ↔ Chip
F3: Diagnostic
F4: Service Code
F5: Additional program
F6:
F1: Eprom basic parameter
F2: Eprom seam parameter
F3: Copy from seam no.
F4: Erase seam
F5: Copy single seam
F6:
F1: Current seam → chip
F2: Chip → current seam
F3: All variables→ Chip
F4: Chip → all variables
F5: Chip format
F6:
Service - menus
F1: I/O test
F2: Service test
F3: Main head test
F4:
F5:
F6:
F1: Memory test
F2: I/O scan
F3: I/O Inf. test
F4: I/O analog
F5: Other tests
F6:
F1: System update
F2: Choose languages
F3: Piece counter
F4:
F5:
F6:
F1: Eprom - chip
F2: Chip - eprom
F3: Texts - chip
F4: Chip - texts
F5: RS 232 - chip
F6:
F1: Sewing motor control
F2: Sync. running
F3: Efka param. init
F4: Step motors
F5: Speed giver check
F6: Thread trimmer

D.3 Programming

3.1 Operator menus

The operator menu functions are distributed over two access levels and can be called up after the program control unit has been initialized, or in direct access after each RESET.

Description of the access level 1 functions

The function keys of access level 1 are allocated to the symbols located above them. These symbols cannot be altered and always remain visible.

F1 Call up access level 2 of the operator menu
F2 No function
F3 Fullness for differential feed – quick change
F4 Manual stacking
F5 No function
F6 Fullness for top feed – quick change
F7 Reset daily piece counter
F8 Prepare sewing unit for threading

Call up access level 2

- Press the F1 key

Fullness for differential feed / top feed button F3 and F6

To achieve a correct distribution of the fullness, the transport features of the differential and top feed must be adjusted to the material. This adjustment is necessary, when the lining does not remain smooth during sewing.
For this purpose the position of the differential feed dog, or the top feed dog, in relation to the main feed dog of the device can be adjusted in a range of -19 to +19 using the quick adjustment unit.

NOTE – Quick adjustment!

The quick adjustment function for applying fullness (in the range -19 to +19) only works for an activated seam. If no values are entered, the machine sews with the basic settings.

F3 Setting the differential feed

1. Activate function:

   • Press the F3 key

   The cursor is on the screen

2. Set the value with the number keys 4 and 6 confirm it:

   • Press the P key

F4 Manual stacking

This function starts a separate stacking operation (e.g. when a workpiece was checked and has to be put back into place again).

1. Start the stacking operation:

   • Press the F4 key

F6 Setting the top feed

1. Activate function:

   • Press the F6 key

   The cursor is on the screen

   2.Set the value with the number keys 4 and 6 confirm it:

   • Press the P key

F8 Threading

This function makes it possible to thread the thread on the sewing head without any problems or difficulties. The photocells are switched off, so that the sewing unit is locked. The sewing foot is lowered, the feed unit raised.

1. Prepare the sewing unit for threading:

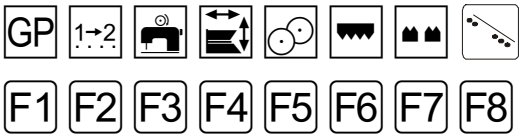
- Press the  key

2. Place the thread in the needle.

3. Make the sewing unit ready for operation again:
   - Press the  key

Description of the access level 2 functions

The function keys of access level 2 are allocated to the symbols which are shown on the display. These symbols are only visible, when access level 2 has been called up. They are shown as invert symbols, when the machine function, which they indicate, is switched off in the marked seam of the seam program.



F1 Call up the list of global parameters
F2 Activate/deactivate seams in a memory program
F3 Call up the list of special parameters for the seam
F3 Call up the list of special parameters for the contour guide
F5 Call up the list of special parameters for the roller/stamp
F6 Call up the list of special parameters for the top feed
F7 Call up the list of parameters for the differential feed
F8 Call up the list of special parameters for seam interruption

Call up access level 2

- Press the  key

Return to access level 1 of the operator menu

- Press the  key

Call up the list of global parameters

Basic parameters are values, which control the basic machine functions. If basic parameters are altered, the alteration affects all stored seam programs.

NOTE – Alteration of the global parameters

The basic parameters are optimally set and coordinated with each other by the manufacturer. If the values are changed incorrectly, the processing quality can be impaired, and in the worst case machine components can be damaged.

1. Call up the list of GLOBAL PARAMETERS:

   GP

   • Press the F1 key

2. Navigate up or down in the parameter list:

   • Press the 2 or 8 key

3. Activate the parameter input box:

   • Press the 5 key

4. Alter the value:

   • Press the 4 or 6 key

   or enter the two- or three-figure value on the number block. The order of the input is: the hundred figure, the ten figure, the unit figure.

5. Confirm the input:

   • Press the P key

6. Quit the menu and return to access level 2:

   • Press the P key

01 PHOTOCELL REACTION TIME
Time delay between loading operation (photocell reads dark) and sewing begin

02 PHOTOCELL -> PRESSER FOOT DOWN
Time until the presser foot is lowered and the chain cutter function is activated (this setting depends on the sewing material)

03 PRESSER FOOT -> SEWING
Delay of sewing start for the machine, so that the presser foot sits properly on the work piece

04 CHAIN CUT. SUCTION (BEG)
Duration of the chain cutter function at the beginning of the seam. On three-thread machines longer suction time is necessary. Can be switched off to save energy

05 CHAIN OFF STITCHES
Section, where re-sewing stitches are set, when the workpiece was manually removed from the sewing unit during the sewing operation

06 CHAIN CUT. SUCTION (END)
Duration of the chain cutter function at the end of the seam. Can be switched off to save energy

07 SEWING STOP -> FOOT UP
Time till the presser foot rises after the end of the sewing operation

08 PHOTOCELL BLOCKED (END)
Time delay for loading a new part (off period after photocell light)

10 STACKER START
Reaction delay of stacker valve

11 STACKER IMPULSE DURATION
Duration for which the stacker valve is activated

12 STACKER -> ROLLER UP
Duration for which the roller/stamp holds the work piece during the stacking operation

13 THREAD MONITOR SENSITIVITY
Reaction sensitivity for thread monitor (optional)

14 STITCH LENGTH
Stitch length adjustment reference value of all sections

15 NEEDLE TOP POSITION
Needle position at end of seam (closed seam end)

18 EFKA POSITION /THREAD TRIMM.
Needle position stop for thread cutting (open seam end)

19 TOP FEED POSITION STITCH CONDENS STITCH
Top feed position during at the stitch condens

Deactivate / activate seam in a memory program SEAM SEQUENCE

Individual seams can be deactivated in a memory program. A deactivated seam is not deleted, but it can be selected and activated again at any time. This function only has an effect in the currently selected seam program. It is recommendable to record this operation, because in a modified memory program it is not possible to recognize which seams have been deactivated.
Example:
As only seams 4, 5, 6 and 7 are pre-programmed by the manufacturer, only these seams can be deactivated / activated. The program control unit does not accept any other figures entered.

1. Call up the SEAM SEQUENCES function:

   • Press the F2 key

2. Deactivate all seams:

   • Press the key 0 (as often as necessary)

3. Activate seam:

   • Press the number key(s) of the desired seam/seams in the appropriate order on the number block

4. Confirm execution:

   • Press the P key

   The seam number of the seam sequence is faded in or out. In addition the seam construction corresponding to the seam is switched on or off.

Example:
As seam numbers 5 and 6 were activated, the seam constructions crotch and side seam, top back trouser part (4/5) and crotch and side seam trouser part (6/7) are displayed.

Call up the list of special parameters for the seam

The settings define the sewing properties of the sewing head for the special seam.

1. Call up the SPECIAL PARAMETER SEAM function:

   • Press the key F3

2. Navigate up or down in the parameter list:

   • Press the 2 or 8 key

3. Activate the parameter input box:

   • Press the 5 key

4. Alter the value:

   • Press the 4 or 6 key

   or enter the two- or three-figure value on the number block. The order of the input is: the hundred figure, the ten figure, the unit figure.

5. Confirm the input:

   • Press the P key

6. Quit the menu and return to access level 2:

   • Press the P key

Parameter list:

01 SLOW SEWING SPEED
Reduced speed at beginning of seam (see also Parameter 03)

02 FAST SEWING SPEED
Sewing speed

03 SLOW SEWING STITCHES
Distance sewn at reduced speed at seam start.

04 MODUS CONTOUR GUIDE
See separate list

05 CONTOUR GUIDE MOVING
Distance till contour guide closes

06 TILL TABLE AIR BLOWING ON
Seam distance covered at the sewing start, before the work table air jets are supplied with compressed air

07 DURATION TABLE BLOWING
Distance along which a work piece is carried by compressed air

08 CONTOUR IN SEWING DIRECTION
Distance which the contour guide moves in sewing direction

09 FOOT GUIDE TO FRONT POSITION (option)
Distance at when the contour guide, at the presser foot moves across to the sewing line.

10 START MODE
To start the sewing operation it is possible to choose between two different modes:

00 automatic start with dark photocell
01 manual sewing with **pedal**
02 automatic start with dark photocell
03 start with pedal and after contour guide closed (**hand key**), automatic sewing
04 after dark photocell and contour guide closed, start **with knee switch**

05 after dark photocell and contour guide closed with knee switch and **material clamp** on the contour guide unit **closed**, start with knee switch

06 after dark photocell and contour guide closed, start **with flex. start switch**

Call up list of special parameters for the contour guide

The settings define the properties of the contour guide unit in the special seam.

1. Call up the SPECIAL PARAMETERS CONTOUR GUIDE function:

   • Press the F4 key

2. Navigate up or down in the parameter list:

   • Press the 2 or 8 key

3. Activate the parameter input box:

   • Press the 5 key

4. Alter the value:

   • Press the 4 or 6 key

   or enter the two- or three-figure value on the number block. The order of the input is: the hundred figure, the ten figure, the unit figure.

5. Confirm the input:

   • Press the P key

6. Quit the menu and return to access level 2:

   • Press the P key

Parameter list:

11 TILL GUIDE ROLLER DOWN
Auxiliary feed system lowered (optional)

12 DURATION GUIDE ROLLER
Distance, over which the auxiliary feed system is in use (optional)

13 CONTOUR SIDE AUTOMATIC
Distance after which the contour guide moves crosswise to the sewing direction

Call up the list of the special parameters for the roller

The parameters define the functions carried out by the roller/stamp while the work piece is being sewn, or while it is being moved from the work table to the stacker.

1. Call up the SPECIAL PARAMETERS UNCURLER function:

   • Press the F5 key

2. Navigate up or down in the parameter list:

   • Press the 2 or 8 key

3. Activate the parameter input box:

   • Press the 5 key

4. Alter the value:

   • Press the 4 or 6 key

   or enter the two- or three-figure value on the number block. The order of the input is: the hundred figure, the ten figure, the unit figure.

5. Confirm the input:

   • Press the P key

6. Quit the menu and return to access level 2:

   • Press the P key

Parameter list:

14 ROLLER SPEED
Rotating speed of the roller

15 TILL ROLLER DOWN
Sewing section after sewing begin until the roller is lowered; only required when sewing heavy materials

16 SEWING WITH ROLLER DOWN
Distance, which the roller travels
00 machine is equipped with stamp
01 - 99 roller operating time

17 TILL ROLLER STOP/CUTTER
Distance, until the roller stops for cutting the chain

18 ROLLER STOP DURATION
Length of time for which the roller stops for cutting the chain

19 ROLLING DISTANCE
Distance travelled by the roller to deliver the workpiece to the stacker

20 STACKER MODE

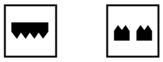
For the stacker function it is possible to choose between different modes:

00 stacker off
01 automatic stacker operation (photocell-controlled)
02 ----------
03 side movement of stacker with following autom. stacking (optional)
04 man. stacking with pedal in reverse
05 stacking automatically or with pedal in reverse

List of the special parameters for the top/differential feed

To achieve a correct distribution of the fullness, the feed features of the differential and top feed system must be adjusted to the material.
In addition to these adjustments, the position of the differential feed dog or the top feed dog in relation to the main feed dog of the sewing unit can be adjusted with the quick adjustment function in a range from -19 to +19.

1. Call up the TOP/DIFFERENTIAL FEED function:



   • Press the F6 or F7 key

2. Navigate up or down in parameter list:

   • Press the 2 or 8 key

3. Activate the parameter input box:

   • Press the 5 key

4. Alter the value:

   • Press the 4 or 6 key

   or enter the two- or three-figure value on the number block. The order of the input is: the hundred figure, the ten figure, the unit figure.

5. Confirm the input:

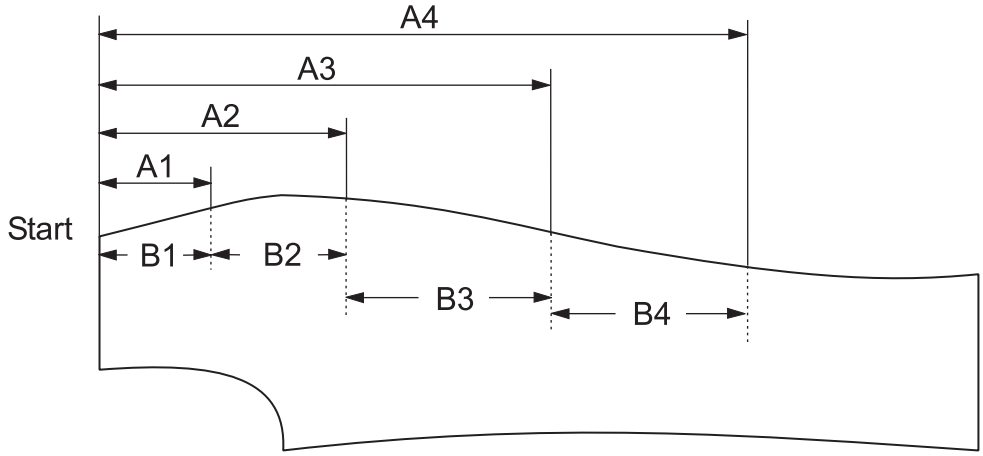
   • Press the P key

6. Quit the menu and return to access level 2:

   • Press the P key

Abb. 6: Dividing the seam into sections:

In the sewing area the trouser part is divided into sections.
For each of these sections the length of section **A** can be varied and the corresponding fullness (amount) **B** can be pre-set with the program control unit for the top/differential feed.



Parameter list for the top feed:

21 TOP FEEDING MODE/F6

00 off (top feed position corresponds to the value for the home position)
01 quick adjustment function is **only** active in section A1
02 quick adjustment function is **only** active in section A2
03 quick adjustment function is **only** active in section A3
04 quick adjustment function is **only** active in section A4
05 quick adjustment function is active **in all sections**

22 TOP FEEDING BASIC POSITION

Basic position of the top feed unit before sewing stats or during manual sewing

23 TOP FEEDING SECTION 1 (A1)

Section 1 from sewing start to end of section A1

24 TOP FEEDING AMOUNT 1 (B1)

Top feed position during the section entered (amount B1)

25 TOP FEEDING SECTION 2 (A2)

Section 2 from sewing start to end of section A2

26 TOP FEEDING AMOUNT 2 (B2)

Top feed position during the section entered (amount B2)

27 TOP FEEDING SECTION 3 (A3)

Section 3 from sewing start to end of section A3

28 TOP FEEDING AMOUNT 3 (B3)

Top feed position during the section entered (amount B3)

29 TOP FEEDING SECTION 4 (A4)

Section 4 from sewing start to end of section A4

30 TOP FEEDING AMOUNT 4 (B4)

Top feed position during the section entered (amount B4)

Parameter list for the differential feed:

31 DIFFERENTIAL MODE/F3

00 off (top feed position corresponds to the value for the home position)
01 quick adjustment function is **only** active in section A1
02 quick adjustment function is **only** active in section A2
03 quick adjustment function is **only** active in section A3
04 quick adjustment function is **only** active in section A4
05 quick adjustment function is active **in all sections**

32 DIFFERENTIAL BASIC POSITION

Basic position of the top feed unit before sewing stats or during manual sewing

33 DIFFERENTIAL SECTION A1

Section 1 from sewing start to end of section A1

34 DIFFERENTIAL AMOUNT B1

Top feed position during the section entered (amount B1)

35 DIFFERENTIAL SECTION A2

Section 2 from sewing start to end of section A2

36 DIFFERENTIAL AMOUNT B2

Top feed position during the section entered (amount B2)

37 DIFFERENTIAL SECTION A3

Section 3 from sewing start to end of section A3

38 DIFFERENTIAL AMOUNT B3

Top feed position during the section entered (amount B3)

39 DIFFERENTIAL SECTION A4

Section 4 from sewing start to end of section A4

40 DIFFERENTIAL AMOUNT 4

Top feed position during the section entered (amount B4)

Call up list of special parameters for thread cutting at the seam (option only for stitch typ 401)

1. Call up the function for the seam end

- Press the F8 key

2. Navigate up or down in parameter list:
   - Press the 2 or 8 key
3. Activate the parameter input box:
   - Press the 5 key

4. Alter the value:

   • Press the  or  key

   or enter the two- or three-figure value on the number block. The order of the input is: the hundred figure, the ten figure, the unit figure.

5. Confirm the input:

   • Press the  key

Parameter list for the thread cutting at the seam end:

41 MODUS SEWING END **Thread cutting optional**

Stipulates at which photocell the seam interruption begins

42 TO BREAKE / OPEN END **Thread cutting optional**

Distance of photocell to needle minus the desired seam opening

43 BREAKE LENGTH **Thread cutting optional**

Length of section with condensed stitches

Select the inputs/outputs of the machine control unit

With the Input/Output function it is possible to select the inputs and outputs of the machine control unit in order to search for errors and to check individual machine steps. The outputs (OUT) are called up and tested separately. The appropriate inputs (INP) are displayed when the output is active.
In addition the selected output can be switched to the interval function.
Active inputs/outputs are marked by underlying identification numbers.

INP:

01	02	03	04	05	06	07	08	09	10
11	12	13	14		16	17	18	19	20

OUT:

01	02	03	04	05	06	07	08	09	10
11	12	13	14		16	17	18	19	20

1. Call up the I/O TEST function:

   • Press the P key

2. Select the diagnostics (F3) level:

   • Press the  or  key and confirm with the  key

3. I/O test level (F1)

   • Press the  or  key and confirm with the  key

Mark the number of the output to be checked. To do so move the cursor in front of the appropriate identification number. The cursor appears as an arrow.

- Press the 4 or 6 key

4. Activate the output:

   - Press the 5 key

   The identification number has a black background. The output is activated.

5. Deactivate the output:

   - Press the 5 key

Switch the output to the interval function:

1. Mark the identification number of the output with the cursor.
   - Hold the 5 key pressed down for ca. 3 seconds

   The identification number flashes on a black background. The output switches to the interval function.

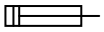
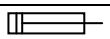
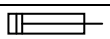
2. Switch off the interval function:
   - Press the 5 key

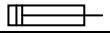
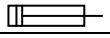
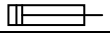
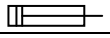
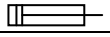
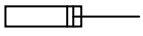
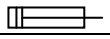
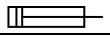
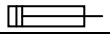
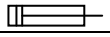
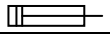
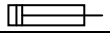
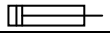
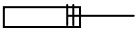
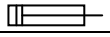
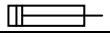
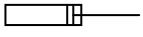
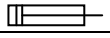
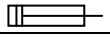
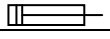
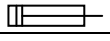
   The identification number is now static again on a black background. The output is still activated.

3. Deactivate the output:
   - Press the 5 key

Overview of the inputs and outputs

Outputlist BASS 4100

Y-nr. ASS	Outputnr.- ASS		Zylinderzustand	Anschluss 4100
Y 01	01	lift pressure foot		X1.10a / 01
Y02	02	stop conture guide streight		X1.10a / 02
Y 03	03	guide up (at pressure foot)		X1.10a / 03
Y04	04	kett up aspiration		X1.10a / 04
Y05	05	dirt aspiration		X1.10a / 05
Y06	06	table blowing		X1.10a / 06

Y07	07	fabric moving device on		X1.10a / 07
Y08	08	roller unit		X1.10a / 08
Y10	10	stop conture guide curve		X2.6a / 01
Y11	11	stacker puls		X1.10a / 11
Y12	12	conture guide move vorward		X1.10a / 12
Y13	13	coture guide left / right		X1.10a / 13
Y14	14	conture guide close		X1.10a / 14
Y15	15	stop at pressure foot move		X1.10a / 15
Y16	16	tension releise		X1.10a / 16
Y17	17	tow clamp impulse		X1.10a / 10
Y09	09	stitch condens		X2.6a / 02
Y18	18	seam interrupt clamp		X2.6a / 03
Y19	19	seam interrupt move		X2.6a / 04
Y20	20	tow clamp close		X2.6a / 05
Y21	21	loading stadion move		X2.6a / 06
Y22	22	loading stadion close		X2.6a / 07
Y23	23	stacker level adjust		X2.6a / 08
Y24	24	looper thread pulling		X2.6a / 09
Y25	25	tension releise (thread cutting)		X2.6a / 10
Y26	26	thread cutter		X2.6a / 11
Y27	27	fabric clamp		X2.6a / 12
Y28	28	blow out seam end		X2.6a / 13
Y29	29	Tack seam end seam start		X2.6a / 14

Inputlist BASS 4100

S-nr. ASS	Inputnr.- ASS		Schaltertyp	Anschluss 4100
S02	02	thread monitor A		X1.5a / 02
S03	03	fotocell seamstart	Fotozelle	X1.5a / 03
S04	04	knee switch	Druckschalter	X1.5a / 04
S05	05	thread monitor B		X1.5a / 02
S06	06	fotocell open seam	Fotozelle	X1.5a / 06
S07	07	thread cutter home	Initiator	X1.5a / 07
S08	08	start switch	Taster	X1.5a / 08
S09	09	fotocell loading stadion	Fotozelle	X1.6a / 01
S10	10	tow clamp home	Initiator	X1.6a / 02
S11	11	tow clamp back	Initiator	X1.6a / 03
S12	12	reset loading stadion	Taster	X1.6a / 04
S13	13	fabric clamp close	Taster	X1.6a / 05
S14	14	fabbric clamp relaise	Initiator	X1.6a / 06

Stepper motor

M 01				X2.5a 1,2,3,4
M 02				X2.5a 5,6,7,8
M 03				X2.5a 9,10,11,12

3.2 Programming menus

The programming menus enable the programming of seam programs and the appropriate seams.
On principle it is possible to program a completely new seam program.
It is easier:

- To copy a seam program delivered by the manufacturer into a free memory space in the memory store and adapt it to the production conditions,
- To copy a seam program, which has already been modified, to a free memory space in the memory store and adapt it further.

Following work steps are necessary to create a new seam program:

1. Allocate a free memory space.
2. Add seams or copy existing seams into a seam program.
3. Configure seams (adapt them to the production).

NOTE – Scrolling in programming levels!

If the programming menus are called up, always the last menu, which was worked on, is displayed. The number (1) in front of the functions makes it possible to recognize, which programming level was called up. In order to be able to call up certain functions, it is necessary to scroll through the programming and service menus.
The automatic reset will be also if you press key –STOP-

- **Call up the programming menus:**
  - **Press the** [P] **key**
- **Scroll through the programming menus:**
  - **Press the** [↳] **key**

Allocate a free memory space

Seam programs are filed in the memory store (**M**).
In the memory store of the program control unit up to 20 seam programs (**M 01** - **M 20**) can be entered. The machine manufacturer has stored seam programs in the memory spaces **M 01** - **M 04**.

1. Select a free memory space:
   - Press the [M/C] key
2. Enter a two-figure number.
   A seam program without seam pattern and seam numbers is shown on the display.

Add seams

Up to eight seams can be allocated to the seam program. These are then reconfigured with the appropriate seam functions and seam parameters.

1. Change to access level 2:
   - Press the  key
2. Call up the SEAM SEQUENCES function:

   - Press the F2 key
3. Activate the seam:
   - Press the number key(s) of the desired seam/seams in the appropriate order on the number block.
4. Confirm the input:
   - Press the P key

Copy seams

Existing seams can be copied in to the seam program and then adapted. This method is usually easier and saves more time, since in the seam, which is to be copied, seam functions and parameters are already included, which are also required for the new seam. With this function it is possible both to overwrite an existing seam and to fill a new, unconfigured seam with sewing data.

1. Place the cursor on the seam number of the seam, in to which the existing seam is to be copied:
   - Press the  or  key
2. Call up the programming menu:
   - Press the P key
3. Call up the INIT-PARAMETER function:
   - Press the F1 key

   Programming level 2 is displayed.
4. Call up the COPY FROM SEAM NO function:
   - Press the F3 key

5. Enter the number of the seam to be copied in the input box.
   * OK PLEASE WAIT!* is shown on the display, an indication that the copying operation has been successfully completed.

Delete the contents of a seam program

A seam program (e.g. M 01) consists of several seams (e.g. 4, 5, 6, 7). The complete contents of these seams, the seam parameters, can be deleted.

1. Call up the programming menu:
   - Press the P key
2. Call up the INIT-PARAMETER function:
   - Press the F1 key

   Programming level 2 is displayed.
3. Call up the DELETE SEAM function:
   - Press the F4 key
4. Enter the two-figure seam number in the input box.

   The prompt for confirmation * ARE YOU SURE ?* is displayed.
5. Confirm deletion operation:
   - Press the 5 key

   * OK PLEASE WAIT!* is shown on the display, an indication that the deletion operation has been successfully completed.

CAUTION – Deletion operation!

This deletion operation affects all seam programs. If a seam is used in several seam programs, the contents of this seam in all seam programs will be deleted, if this deletion function is carried out. If this seam is selected again, the message *NO SEAM PROGRAM ALLOCATED!* is given.

Configure seams

For configuring seams, seam functions, as well as seam parameters and basic parameters are available.

- **Seam functions**
  Seam functions are machine components, which can be switched on or off, and which carry out a part function of a sewing operation (e.g. the stacker).
- **Seam parameters**

Seam parameters are adjustments, which are only related to a certain seam of the seam program. If they are changed, this only affects the selected seam of the seam program, in which the adjustment was made.
If, however, a seam number was copied into several seam programs, the alteration of a seam parameter is carried out in all those seams with an identical seam number.

- **Basic parameters**
  Basic parameters are values, which control the basic machine functions. If basic parameters are altered, the alteration affects all stored seam programs.

Memory functions

The program control unit has several functions for storing seam programs or seams on the memory chip. Stored seam programs or seams can also be transferred to the storage medium of the control element.

NOTE – Data backup!

If there is a defect in the EPROM or the micro processor of the machine control unit, there is a risk of losing data. All seam programs or the individual seams should therefore be stored regularly on the memory chip.
The memory chip with the standard seam programs delivered by the manufacturer should not be used for the data backup!

Formatting the memory chip

If additional memory chips (available as accessories) are used for the data backup, the storage medium should be formatted before being used for the first time.

1. Insert the memory chip in the interface RS 232 of the control element.
2. Call up programming menus:
   - Press the P key
3. Call up the MACHINE < – > CHIP function:
   - Press the F2 key
4. Call up the FORMAT CHIP function:
   - Press the F5 key

   The display shows the prompt for confirmation * ARE YOU SURE ?*.
5. Confirm the prompt:
   - Press the 5 key

6. * OK PLEASE WAIT!* is shown on the display during the formatting operation, until formatting is completed.

Data backup on memory chip

The memory function enables the backup of only one selected seam or of all seam programs, as desired.

1. Insert the memory chip in the interface RS 232 of the control element.

2. Call up programming menus:
   - Press the P key

3. Call up the MACHINE < – > CHIP function:
   - Press the F2 key

4. Save the selected seam, call up the CURRENT SEAM – > CHIP function:
   - Press the F1 key

or

5. Save all seam programs, call up the ALL VARIABLES – > CHIP function:
   - Press the F3 key

6. Confirm prompt:
   - Press the 5 key

7. During the backup * OK PLEASE WAIT!* will be shown on the display until the data transfer has been completed.

Data transfer to the storage medium of the control element

From the data stored on the memory chip either the data of a selected individual seam or the complete data of all seam programs can be transferred to the control element, as desired.

NOTE – Overwriting data!

If the complete data of all seam programs is transferred to the control element, all the data (e.g. also seams changed in the meantime) will be overwritten.
Alterations to seams should therefore always be saved on the memory chip immediately as a separate backup.

1. Insert the memory chip in the interface RS 232 of the control element.

2. Call up programming menus:
   - Press the P key

3. Call up the MACHINE < – > CHIP function:
   - Press the F2 key

4. Overwrite the selected seam shown on the display, call up the CHIP– > CURRENT SEAM function:
   - Press the F2 key

or

5. Transfer complete data of all seam programs, call up the CHIP– > ALL VARIABLES function:
   - Press the F4 key

6. Confirm prompt:
   - Press the 5 key

7. During the data transfer * OK PLEASE WAIT!* will be shown on the display until the data transfer has been completed.

3.3 Service Menus

The service menus contain functions, which support the setting up and testing of the machine. These functions are called up from three menus:

- **Key F3** **Diagnostics, with the appropriate test programs: Service test and sewing head test**
- **Key F4** **Service code**
- **Key F5** **Additional programs**

NOTE – Scrolling in programming levels!

If the service menus are called up, always the last menu, which was worked on, is displayed. The number (1) in front of the functions makes it possible to recognize, which programming level was called up. In order to be able to call up certain functions, it is necessary to scroll through the programming and service menus.

- **Scroll through the programming menus:**
  - **Press the key**

Service code / 2nd service code

The functions in the service menus are protected by a two-stage access authorization:

- First of all the service code **(99160**) is entered, in order to copy seam parameters, basic parameters and seam programs, and to call up a part of the diagnostics programs.
- The menu is then called up again, in order to enter the 2nd service code to carry out the diagnostics functions. This code must be applied for in writing, naming the machine number, from the service department of ASS GmbH.

Service code:

1. Call up the programming menus:
   - Press the P key
2. Call up the SERVICE CODE function:
   - Press the F4 key
3. Enter the code number on the number block by moving the cursor to the desired number position:
   - Press the F7 or F8 key
4. Confirm the input:
   - Press the P key

2nd Service code:

1. Call up the programming menus:
   - Press the P key
2. Call up the SERVICE CODE function:
   - Press the F4 key
3. Enter the code number on the number block by moving the cursor to the desired number position:
   - Press the F7 or F8 key
4. Confirm the input:
   - Press the P key

Diagnostics

In the diagnostics menu service functions are combined, which are used to test machine units and initiators, which control these units.

- **Service test (F1): Input/Output functions**
  Service tests (F2):
- **Main head test (F3): Motor functions**

Service Test

NOTE – Performing the test!

Tests and scans of the memory and the input/output functions may only be carried out by service personnel specifically trained for this purpose by the manufacturer.

Sewing head test

NOTE – Preparing the sewing unit for the test!

Before performing the test, remove all threads and bobbins from the sewing unit. ASS sewing units may only be driven with max. 2500 rpm.

1. Call up the programming menu:
   - Press the P key
2. Call up the DIAGNOSTICS function:
   - Press the F3 key
3. Call up the SEWING HEAD TEST function:
   - Press the F3 key

   The menu contains five test functions, which are called up from four separate submenus:

F1	**SEWING MOTOR CONTROL**	**(F1)**
F2	**SYNCHRO. RUNNING**	**(F2)**
F3	**EFKA PARAMETER INIT**	**(F3)**
F4	**STEP MOTORS**	**(F4)**
F5	**SPEED GIVER CHECK**	**(F5)**
F6	**THREAD TRIMMER**	**(F6)**

F1 SEWING MOTOR CONTROL :
The actual and the nominal speed of the sewing motor are compared.

1. Call up the **SEWING MOTOR CONTROL** function:
   - Press the F1 key

2. Enter the desired speed on the number block and confirm the input:
   - Press the 5 key

   The sewing drive starts, the actual speed is measured and displayed.

3. End test:
   - Press the P key

F2 SYNCHRO. RUNNING :

1. Call up the SYNCHRO. RUNNING function:
   - Press the F2 key

2. Start the function:
   - Press the 5 key

3. End test:
   - Press the P key

F3 EFKA PARAMETER INIT:

1. Call up the EFKA PARAMETER INIT function:
   - Press the F3 key

2. Start the function:
   - Press the 5 key

3. End test:
   - Press the P key

F4 STEP MOTORS:

1. Call up the STEP MOTORS function:
   - Press the F4 key

2. Start the function:
   - Press the [5] key
3. End test:
   - Press the [P] key

F5 SPEED GIVER CHECK:

1. Call up the SPEED GIVER CHECK function:
   - Press the [F5] key

The values are shown on the display

2. End test:
   - Press the [P] key

F6 Thread trimmer:

Service code / 2nd service code

The functions in the service menus are protected by a two-stage access authorization:

- First of all the service code **(99160**) is entered, in order to copy seam parameters, basic parameters and seam programs, and to call up a part of the diagnostics programs.
- The menu is then called up again, in order to enter the 2nd service code to carry out the diagnostics functions. This code must be applied for in writing, naming the machine number, from the service department of ASS GmbH.

Service code:

1. Call up the programming menus:
   - Press the [P] key
2. Call up the SERVICE CODE function:
   - Press the [F4] key
3. Enter the code number on the number block by moving the cursor to the desired number position:
   - Press the [F7] or [F8] key

4. Confirm the input:
   - Press the P key

2nd Service code:

1. Call up the programming menus:
   - Press the P key
2. Call up the SERVICE CODE function:
   - Press the F4 key
3. Enter the code number on the number block by moving the cursor to the desired number position:
   - Press the F7 or F8 key
4. Confirm the input:
   - Press the P key

3.4 Error codes

Error message	Cause	Elimination
Photocell 01 not light	The “sewing start” photocell does not connect or does not recognize reflection	1. Adjust photocell sensitivity 2. Renew reflection foil 3. Change the photocell 4. Change the I/O-module
I/O communication error	Error transfer between control unit and I/O-module	1. Check connection cable 2. Change the I/O=-module 3. Change the display