PFAFF

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Service manual for control

2/21

296-12-17 849
Servicehandbuch für die Steuerung engl. 09.95

Notes on safety

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

- Before putting into service also read the safety notes and the instruction manual of the motor supplier.

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

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

- On mechanically operated clutch motors without start inhibitor it is necessary to wait until the motor has stopped.

- General servicing work must be carried out only by appropriately trained persons.

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

- For service or repair work on pneumatic systems the machine must be disconnected from the compressed air supply system.
  Exceptions to this are only adjustments and function checks made by appropriately trained technicians.

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

- Work on parts and systems under electric current is not permitted, except as specified in regulations EN 50110.

- Conversions or changes to the machine must be made only in adherence to all safety regulations.

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

- Comissioning of the sewing head is prohibited until such time as the entire sewing unit is found to comply with EC regulations.

Meanings of the symbols:

Danger spot!

Items requiring special attention.

Danger of injury to operative

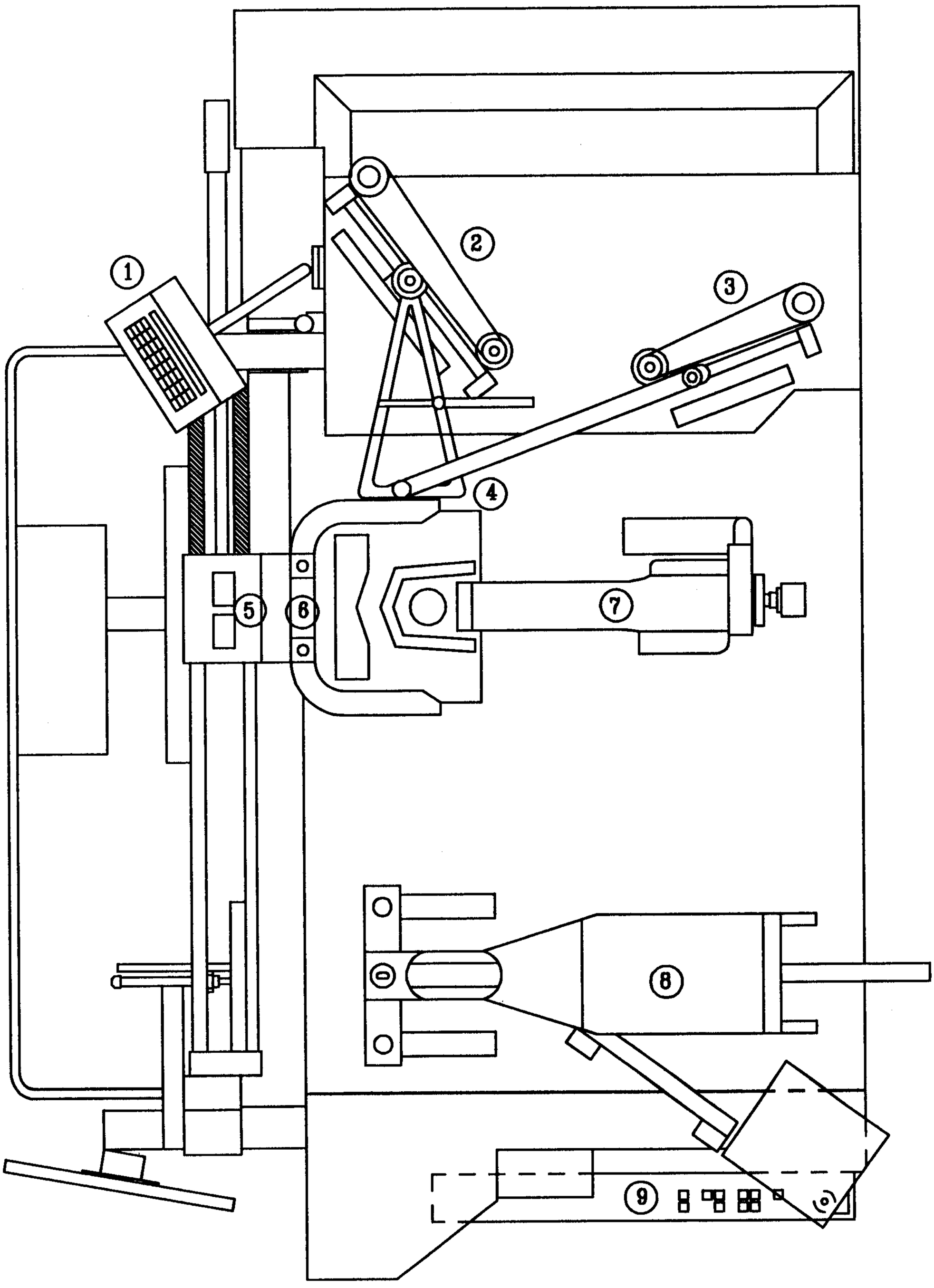
service staff.

Be sure to observe and adhere to these notes!

Contents:

1 General information

1.1 The machine



Number	Name
1	input control-panel
2	carriage drive X-axis
3	carriage drive Y-axis
4	switch to sewing
5	jig feed
6	switch to feed
7	sewing station
8	folding station
9	folder control-panel

(see diagram previous page)

1.2 The operating modes Automatic, Manual and Input

When operating the machine a distinction must be made between the operating modes Automatic, Manual and Input . You can change from operating mode to operating mode by pressing the relevant keys on the control panels (The Input operating mode is only possible on the input control-panel).
When working within an operating mode, only certain functions are permissable. You may have to change to another operating mode in order to carry out other functions.

1.2.1 Automatic operating mode:

- start
- stop
- home position X/Y carriages
- home position folder
- changing bobbins, stacker forward/back
- presser foot up/down
- cycling (seam construction)
- Error reset
- label feeder
- Program stations A and B

1.2.2 Manual operating mode:

In addition to the automatic operating mode

- step by step (folder)
is also possible.

The start keys start only the sewing operation

1.2.3 Input operating mode:

See Input - brief description

2 Control panels / Pictograms

2.1 Pictogram of the input control-panel

To optimize its operation, the machine is equipped with two different control panels. One control panel (folder control-panel) is situated at the folding station and contains all of the keys which are necessary for the normal sewing operations. A second control panel (input control-panel) is situated on the front of the machine and is mainly used for setting up the machine.

A second, separate control panel is necessary (program control-panel) for programming. The description of this control panel can be found in a separate booklet for programming.

Following is a list of pictograms of the individual control panels and their uses.

2.2 Input control-panel

1 Statusline

042 Program number

176 Maximum speed

248 Template code

076 Actual speed

086 Stitch length

290 000 Unit counter

2 Buttons

175 stop

320 321 without function

002 alter stitch

203 start

082 automatic mode

293 000 reset bobbin-thread stitch-counter

023 presser foot up/down

069 manual mode

153 Enter confirm input

271 cycle forwards

042 input mode

200 Clear erase input

278 cycle back

148 A program-station A

199 Esc quit input

136 home position carriages an sewing

148 B program-station B

070 forward roll function

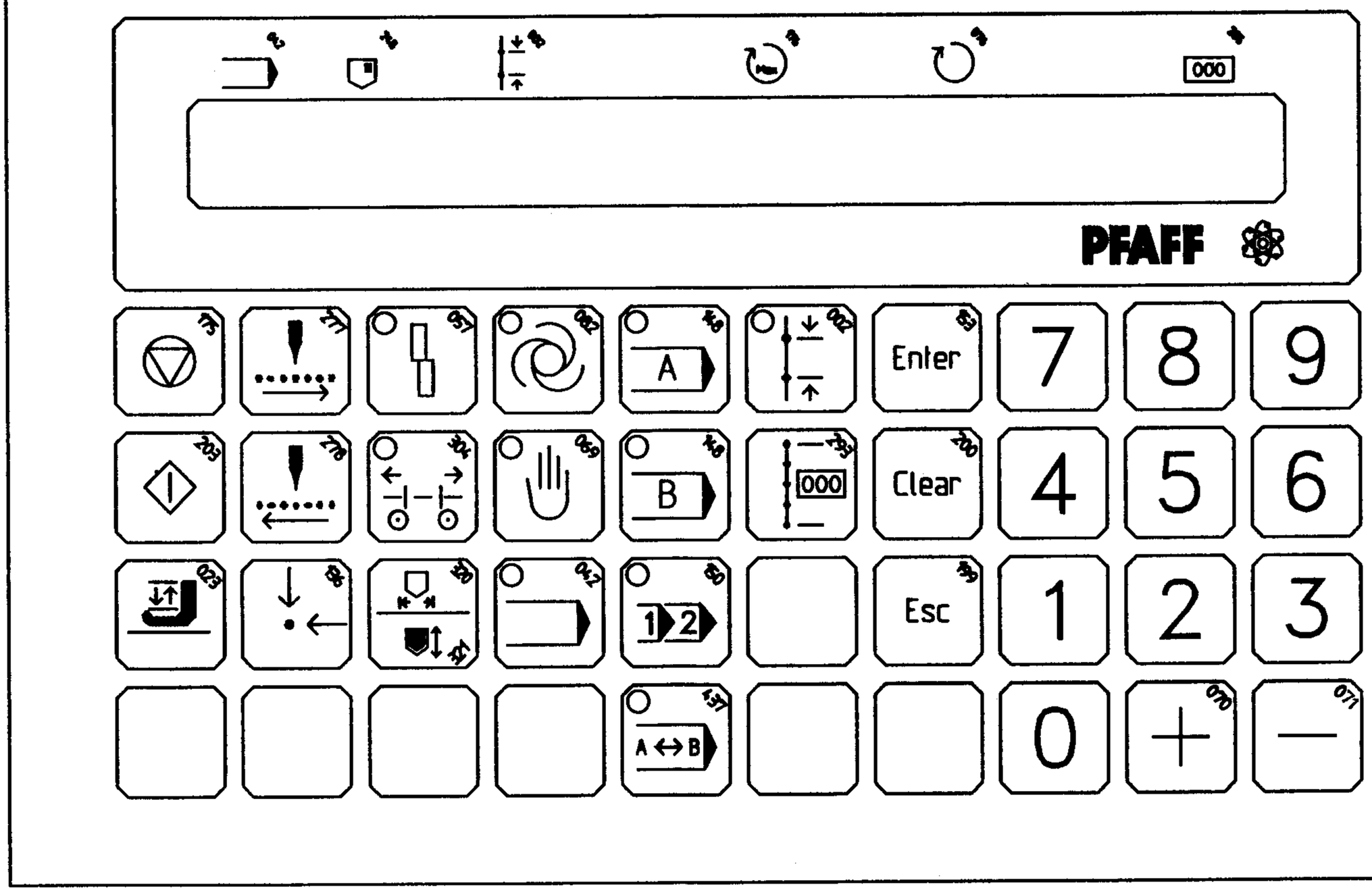
057 error reset

150 1 2 select program numbers

071 backward roll function

304 change bobbin from above or stacker forwards/back

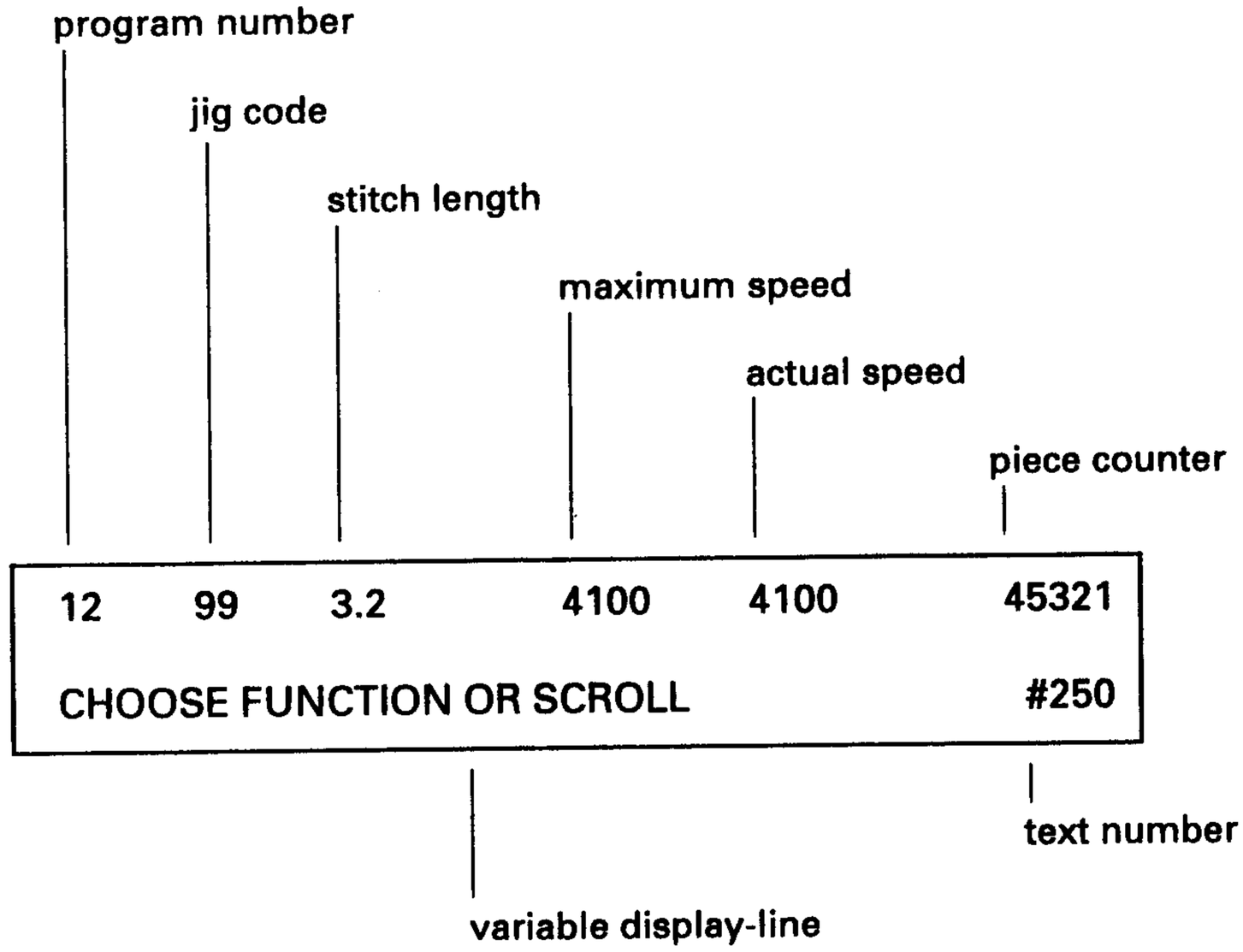
431 A ↔ B automatic program change A - B


000
PFAFF
Enter
7
8
9
A
Clear
4
5
6
B
000
Esc
1
2
3
1 2
A ↔ B
0
+
—

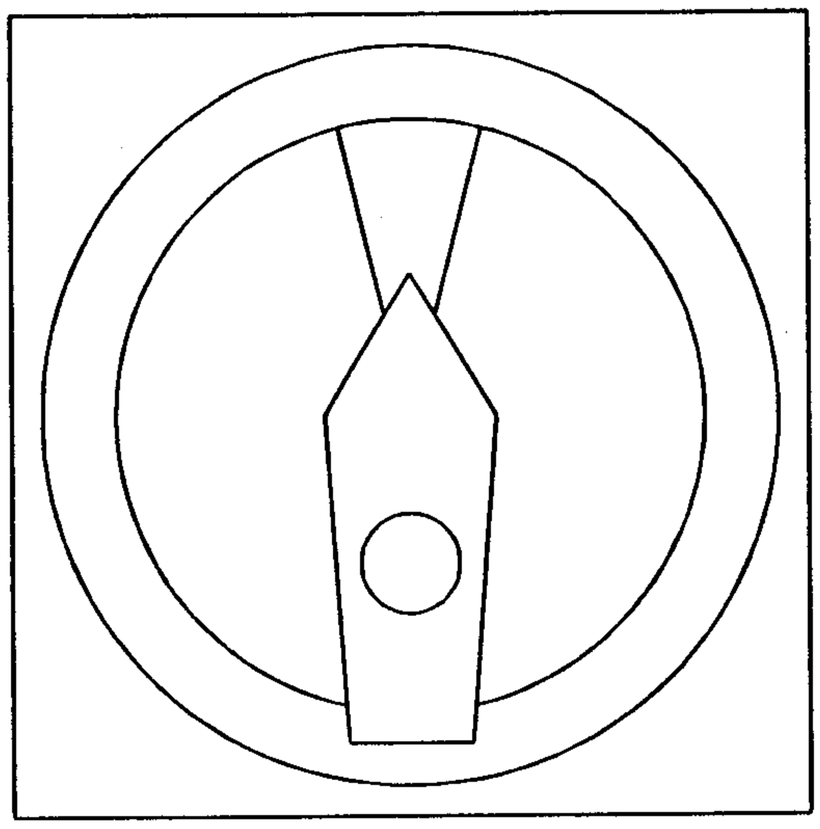
2.3 The display

The display consists of a two line LCD (Liquid Crystal Display). In the first line the various data-status indicators are displayed, such as: program number, jig code, stitch length, maximum speed, actual speed and unit counter. This status line remains displayed.
In the second line the various texts are displayed, such as for example error messages and the input cursor etc. This line has a text number which allows the clear classification of the display texts in the various languages.

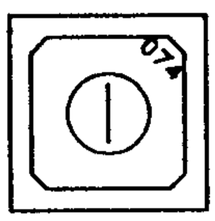
display diagram



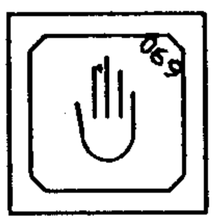
2.4 Folder control-panel



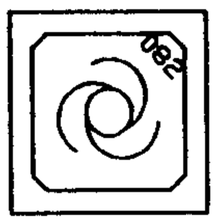
on/off switch



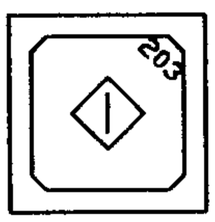
control on



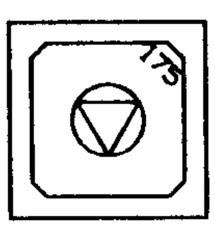
manual mode



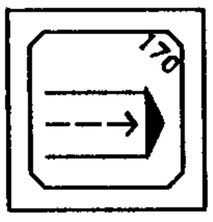
automatic mode



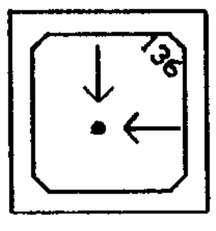
start



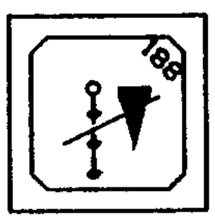
stop



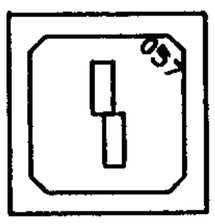
step-by-step folder



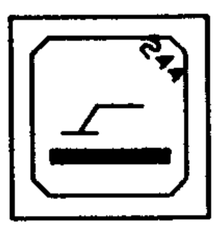
home position folder



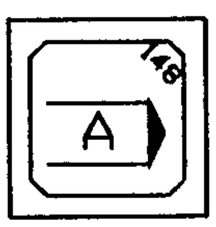
don't sew



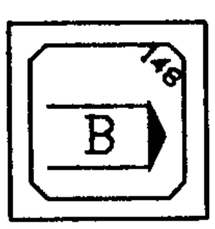
error reset



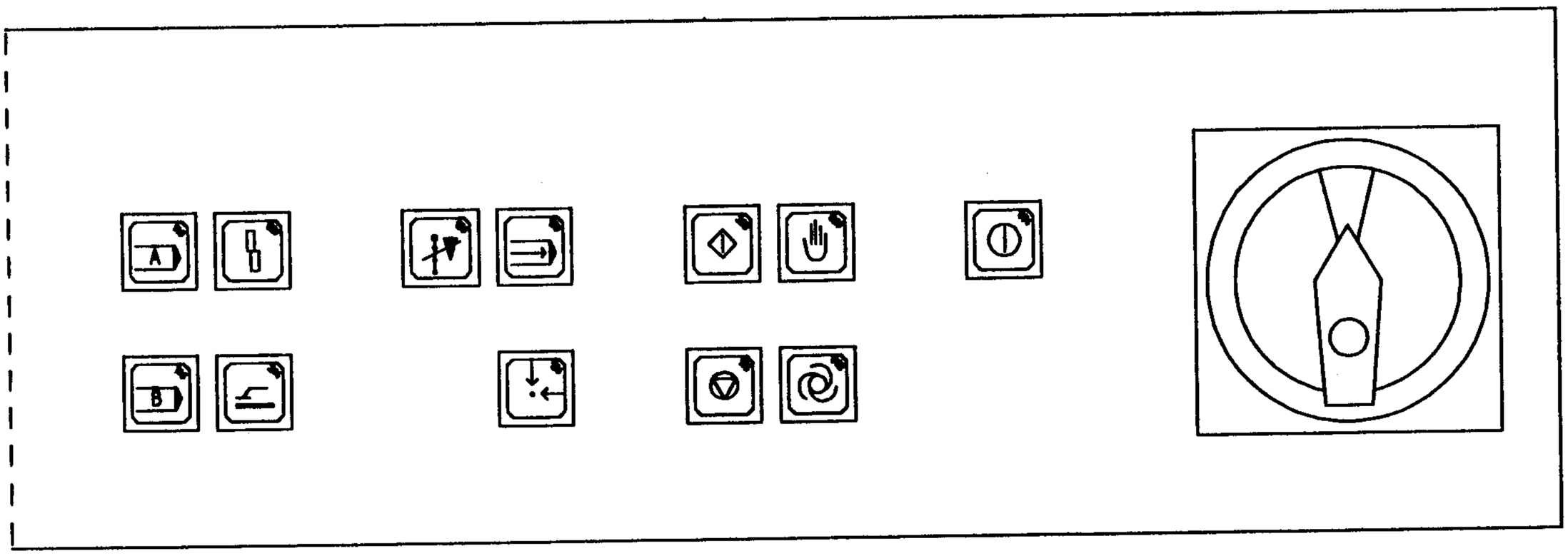
label



program station A



program station B



3 Input - brief description

In the input mode a distinction must be made between directly selectable functions and functions which can only be selected via the menu. Directly selectable functions have their own keys and can be selected by pressing these keys.

The directly selectable functions are:
- program station A
- program station B
- select program numbers (station programming)
- automatic program change
- alter stitch length
- reset bobbin-thread stitch-counter

Other functions can be selected via the menus (see overview of the menu functions). There are two menu levels.

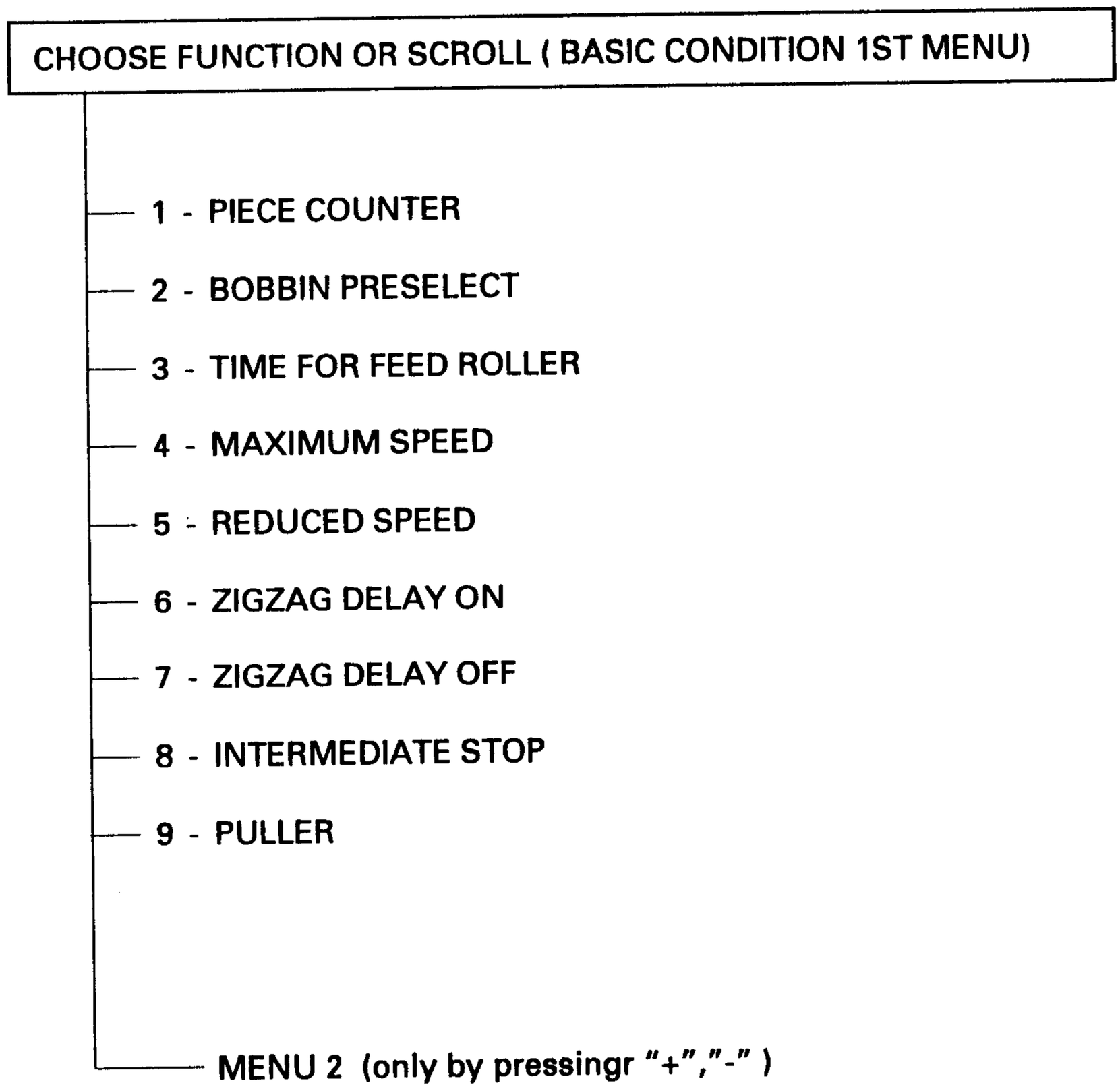
1. Menu level 1 (1st menu)

The frequently required functions are stored in this menu level. Sub functions cannot be selected from here (except entry into the 2nd menu level).

2. Menu level 2 (2nd menu)

The less frequently required functions are stored in this menu level. These functions are subdivided into main functions and sub functions.
Select function or scroll (Basic condition 1st menu)

3.1 Overview of the functions - Menu 1



3.2 Overview of the functions - Menus 1+2

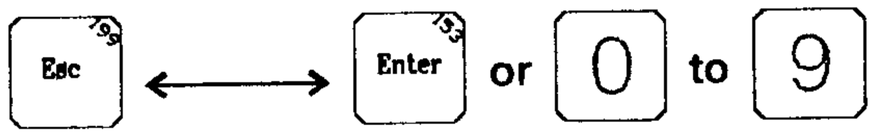
- CHOOSE FUNCTION OR SCROLL (BASIC CONDITION 1ST MENU)
  - 1 - PIECE COUNTER
  - 2 - BOBBIN PRESELECT
  - 3 - TIME FOR FEED ROLLER
  - 4 - MAXIMUM SPEED
  - 5 - REDUCED SPEED
  - 6 - ZIGZAG DELAY ON
  - 7 - ZIGZAG DELAY OFF
  - 8 - INTERMEDIATE STOP
  - 9 - PULLER
  - 2. MENU (ONLY BY PRESSING "+","-")

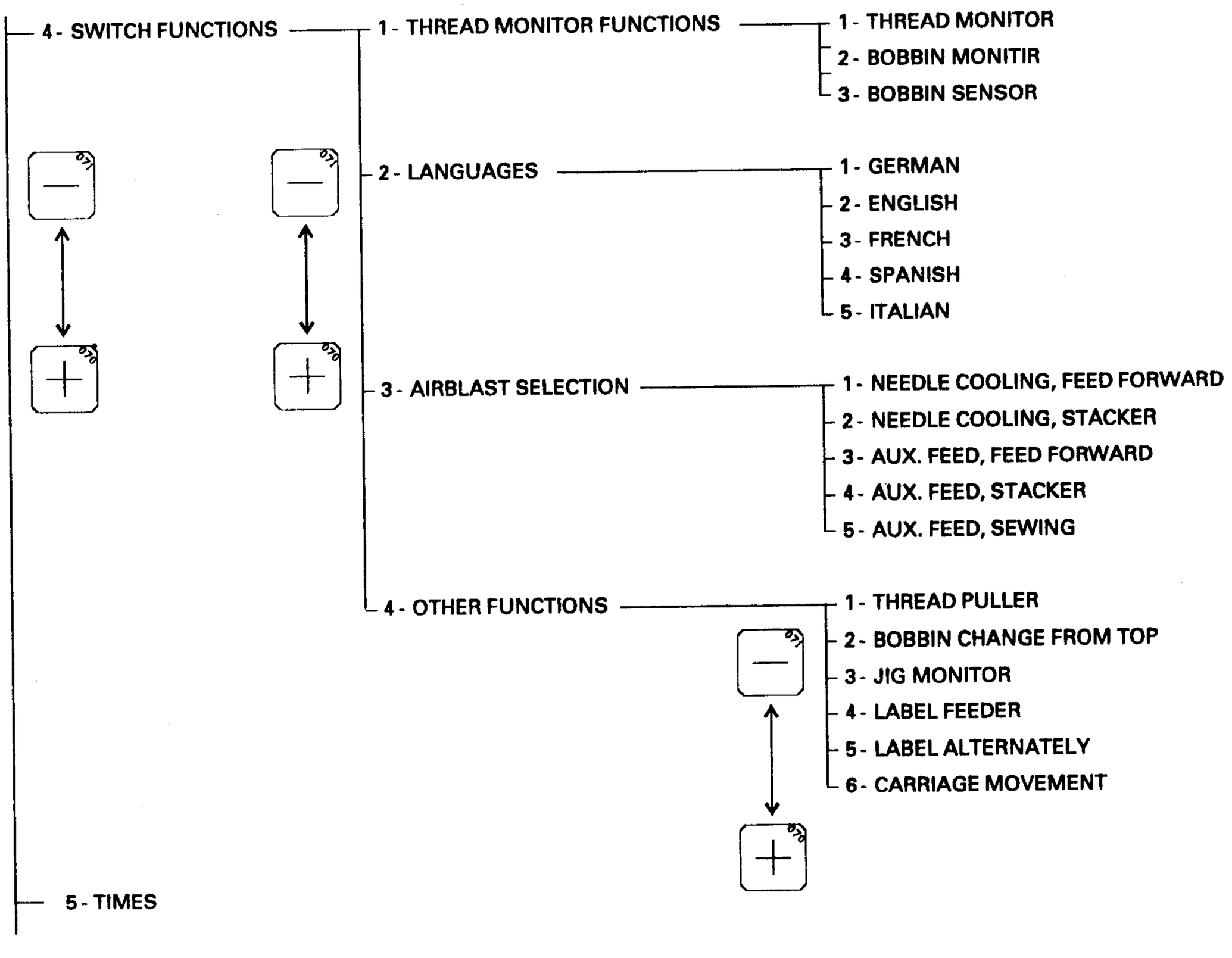
- 2. MENU
  - 1 - PROGRAM MANAGEMENT
    - 1 - PROGRAM DIRECTORY
      - 1 - MEMORY DIRECTORY
      - 2 - DISK DIRECTORY
    - 2 - READ PROGRAM FROM DISK
      - 1 - READ ONE PROGRAM FROM DISK
      - 2 - READ ALL PROGRAMS FROM DISK
    - 3 - DELETE PROGRAM
      - 1 - DELETE ONE PROGRAM (MEMORY)
      - 2 - DELETE ALL PROGRAMS (MEMORY)
      - 3 - DELETE ONE PROGRAM (DISK)
      - 4 - DELETE ALL PROGRAMS (DISK)
    - 4 - WRITE PROGRAM ON DISK
      - 1 - WRITE ONE PROGRAM ON DISK
      - 2 - WRITE ALL PROGRAMS ON DISK
    - 5 - STATISTICAL PROGRAM DATA
    - 6 - FORMATTING DISK (DELETE)
    - 7 - DATA TRANSFER WITH PC
  - 2 - SEAM PATTERN PROGR. / CORRECTION
  - 3 - COUNTERS
    - 1 - REM. STITCH COUNT, NDL.THR. MON.
    - 2 - REM. STITCH COUNT, BOBBIN THR.MON
    - 3 - MONITORING STICHES, NDL.THR.MON.
    - 4 - AUTOMATIC STITCH REVERSE
    - 5 - SLOW STARTING STITCHES
    - 6 - CARRIAGE START (NIF)
  - 4 - SWITCH FUNCTIONS
    - 1 - THREAD MONITOR FUNCTIONS
      - 1 - THREAD MONITOR
      - 2 - BOBBIN MONITIR
      - 3 - BOBBIN SENSOR
    - 2 - LANGUAGES
      - 1 - GERMAN
      - 2 - ENGLISH
      - 3 - FRENCH
      - 4 - SPANISH
      - 5 - ITALIAN
    - 3 - AIRBLAST SELECTION
      - 1 - NEEDLE COOLING, FEED FORWARD
      - 2 - NEEDLE COOLING, STACKER
      - 3 - AUX. FEED, FEED FORWARD
      - 4 - AUX. FEED, STACKER
      - 5 - AUX. FEED, SEWING
    - 4 - OTHER FUNCTIONS
      - 1 - THREAD PULLER
      - 2 - BOBBIN CHANGE FROM TOP
      - 3 - JIG MONITOR
      - 4 - LABEL FEEDER
      - 5 - LABEL ALTERNATELY
      - 6 - CARRIAGE MOVEMENT
  - 5 - TIMES
    - 1 - TIME FOR STACKER AIRBLAST
    - 2 - TIME FOR FEED CYLINDER COVER
    - 3 - TIME FOR PULLER DOWN
    - 4 - TIME AFTER TABLE UP
    - 5 - TIME FOR EDGE FOLDERS BACK
    - 6 - TIME FOR FEED FORWARD
    - 7 - TIME FOR THREAD PULLER
  - 6 - SERVICE
    - 1 - SEWING MOTOR FUNCTIONS
      - 1 - SEWING MOTOR RUNNING
      - 2 - TRIMMER SPEED SELECTION
      - 3 - THREAD TRIMMING SEQUENCE
    - 2 - STEPPING MOTORS
      - 1 - STEPPING MOTOR X-AXIS
      - 2 - STEPPING MOTOR Y-AXIS
    - 3 - DISPLAY INPUTS
    - 4 - SET / RESET OUTPUTS
    - 5 - SET ZERO POINT
    - 6 - SOFTWARE DATE
    - 7 - COLD START

3.3 Moving within the menus

With the help of the keys "+" and "-" you can display all of the main functions and their function numbers. If a valid function number is selected, the input function for this function number can begin. Similarly, the currently displayed function can be selected with the "Enter" key. Main functions can be divided into several sub functions and these into still more sub functions. All sub functions can be displayed and selected in the same way as main functions. A main function or sub function that has already been selected can be stopped with the "ESC" key. Thus the superordinate program is returned to.

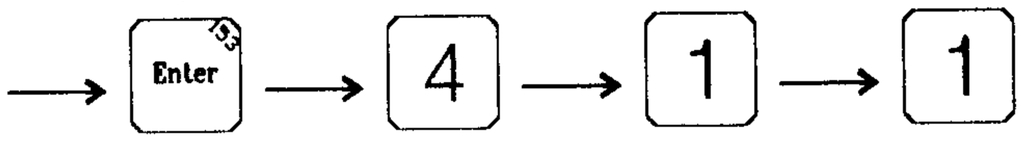
Diagram





E.G. Bobbin-thread-monitor selection from the home position

Press keys:



3.4 Menu 1

3.4.1 Piece counter

The piece counter informs as to the current daily production. The highest number which can be displayed is 65565. When this amount is surpassed, the counter recommences at 0. The current amount in the display can be zeroed by pressing the "CLEAR" key.

3.4.2 Bobbin preselect

The bobbin preselect allows the operator to stop the machine at the end of a seam pattern to change bobbins if the machines exceeds a given amount of stitches. When this function is selected, the current setting is displayed as a number of stitches. A new setting can then be selected.

3.4.3 Time for feed roller

This function selects the duration of the feed pull operation

3.4.4 Maximum speed

This function sets the maximum speed level.

3.4.5 Reduced speed

This function sets the reduced speed level.

3.4.6 Zigzag delay on

This function allows the operator to delay the zigzag-on function. The input is made as a number of stitches for which the switching on of the valve is to be delayed.

3.4.7 Zigzag delay off

As for 3.4.6 but for zigzag-off.

3.4.8 Intermediate stop

This function allows the operator to interrupt the folding operation manually in order to carry out any corrections or applications etc. which may arise. This function can be switched on and off.

3.4.9 Puller

The Puller serves as a stacking aid for short pieces. If a puller is installed, it can be switched on and off with this function.

3.4.10 Menu 2

This function opens the 2nd menu level.

3.5 Menu 2

3.5.1 Program management

All of the sub functions which have to do with the organisation of sewing programs are listed under the main function "program management".

3.5.1.1 Program directory

This sub function calls up further sub functions in order to list the contents of the machine's memory or a disk.

3.5.1.1.1 Memory directory

This sub function lists the contents of the machine's memory.

3.5.1.1.2 Disk directory

This sub function lists the contents of a disk.

3.5.1.2 Read program from disk

This sub function allows further sub functions to be called up in order to load sewing programs from a disk into the machine's memory.

3.5.1.2.1 Read one program from disk

A selected program is copied into the machine's memory. Existing programs can be deleted if desired.

3.5.1.2.2 Read all programs from disk

All programs are copied from a disk into the machine's memory. Existing programs can be deleted if desired.

3.5.1.3 Delete program

This sub function, calls up further sub functions in order to delete programs.

3.5.1.3.1 Delete one program (memory)

This sub function deletes one selected program in the machine's memory.

3.5.1.3.2 Delete all programs (memory)

This sub function deletes all of the functions in the memory.

3.5.1.3.3 Delete one program (disk)

This sub function erases one program on disk.

3.5.1.3.4 Delete all programs (disk)

This sub function erases all of the programs on the disk (the disk is reformatted)

3.5.1.4 Write program on disk

This sub function calls up further sub functions in order to copy sewing programs from the machine memory onto disk.

3.5.1.4.1 Write one program on disk

A selected program is copied from the machine memory onto disk. Existing programs can be erased if desired.

3.5.1.4.2 Write all programs on disk

All programs are copied from the machine memory onto disk. Existing programs can be erased if desired.

3.5.1.5 Statistical program-data

The following statistical program-data are displayed:
- Number of stitches and program size in bytes
- Stitch length and obstacles
- Template code

3.5.1.6 Formatting disk (delete)

This sub function formats disks. All the data on the disk are thus erased.

3.5.1.7 Data transfer with PC

This sub function prepares the machine to communicate directly with a PC (personal computer) and the software SYS3000. For detailed information see the description System 3000.

3.5.2 Seam pattern progr./correction

This main function allows programs to be written or modified on the machine itself. A separate control panel is necessary. The programming is described in more detail in a separate booklet.

3.5.3 Counters

The main function "counters" allows the operator to program various function counters to suit his requirements. The various function counters are divided into sub functions.

3.5.3.1 Rem. stitch count, ndl.thr. mon.

The number of stitches can be entered for which the thread monitor is not considered when sewing on.

3.5.3.2 Rem. stitch count, bobbin thr. mon

The number of stitches can be entered for which the bobbin monitor is not considered when sewing on.

3.5.3.3 Monitoring stitches, ndl.thr.mon.

The number of stitches which must be completed before a needle-thread disturbance is recognized can be entered. A smaller number of stitches means a higher sensitivity level of the thread monitor and a larger number of stitches means a less sensitive needle-thread monitor.

3.5.3.4 Automatic stitch-reverse

The number of stitches which are to be reversed automatically in case of a needle-thread disturbance can be entered.

3.5.3.5 Slow starting stitches

The number of stitches which are to be carried out at a lower speed speed can be entered.

3.5.3.6 Carriage start (NIF)

The exact point in time of the carriage start (stepping motors) can be entered. This input is made in degrees after the needle t.d.c.

3.5.4 Switch functions

The main function "switch functions" switches a selection of machine functions on and off. The machine must of course be equipped with the required options.

3.5.4.1 Thread-monitor functions

Further sub functions are listed under this sub function in order to select the thread monitors.

3.5.4.1.1 Thread monitor

The thread monitor can be turned on and off.

3.5.4.1.2 Bobbin monitor

The bobbin monitor can be turned on and off. Here it is immaterial if the bobbin-thread monitor is reached via the stitch counting or the sensor.

3.5.4.1.3 Bobbin sensor

There are two types of bobbin monitor to choose from:
1. The bobbin monitor with stitch counter (Bobbin sensor off).
2. The bobbin monitor with sensor (Bobbin sensor on).

3.5.4.2 Languages

There are various languages which can be selected at any time by the operator. The languages available can be seen in the overview of the menu functions.

3.5.4.3 Airblastselection

There are a number of compressed air options to choose from which can be switched on and off.

3.5.4.3.1 Needle cooling, feed forward

3.5.4.3.2 Needle cooling, stacker

3.5.4.3.3 Aux. feed, feed forward

3.5.4.3.4 Aux. feed, stacker

3.5.4.3.5 Aux. feed, sewing

3.5.4.4 Other functions

This sub function contains a list of all of the sub functions which cannot be attributed to any of the above mentioned functions.

3.5.4.4.1 Thread puller

The thread puller option can be switched on or off.

3.5.4.4.2 Bobbin change from top

The bobbin change from top option can be switched on or off.

3.5.4.4.3 Jig monitor

The jig-monitor option can be switched on and off.

3.5.4.4.4 Label feeder

The label feeder option can be switched on and off.

3.5.4.4.5 Label alternately

When working within the label feeder mode, the process can be altered so that only every second pocket receives a label. This requires that the alternating label feeder mode be switched on.

3.5.4.4.6 Carriage movement

The type of carriage movement (stepping motors) can be set.
1. Carriage movement intermittent (continuous off)
2. Carriage movement continuous (continuous on)

3.5.5 Times

The sub functions of the times which the operator can alter are listed under the main function "times".

3.5.5.1 Time for stacker airblast

The blast duration for the blast nozzles can be entered at the stacker.

3.5.5.2 Time for feed cylinder cover

The delay period between feed cylinder in and feed cylinder cover out can be entered.

3.5.5.3 Time for puller down

The delay time between feed reverse (feed no longer forward) and puller off can be entered.

3.5.5.4 Time after table up

The duration of the delay of the folding process after switching to table on and the signal table at top being displayed.

3.5.5.5 Time for edge folders back

The duration of the delay between withdrawal of the slide and folder on can be entered.

3.5.5.6 Time for feed forward

The delay time between the pocket plate no longer being at the front and feed forward can be entered.

3.5.5.7 Time for thread puller

The switching time of the thread puller can be entered.

3.5.6 Service

Further sub functions are available under the main function service for testing the control and the machine. The service functions can be selected at any time.

3.5.6.1 Sewing motor functions

Further sub functions for testing the sewing motor are available under this sub function.

Attention:
Care must be taken to ensure that the needle can enter freely into the needle hole while this function is being carried out.
No locks are considered!

3.5.6.1.1 Sewing motor running

This function starts the sewing motor and stops it again. The speed can be preset and also altered while the motor is turning over.

3.5.6.1.2 Trimmer speed selection

This function presets the trimmer speed

3.5.6.1.3 Thread trimming sequence

The thread-trimmer cycle is triggered off by this function.

3.5.6.2 Stepping motors

Further sub functions for testing the stepping motors are available under this sub function.
The stepping motors are driven with a slow, constant frequency.

Attention:
Care must be taken to ensure that the movement of the carriage is not obstructed while this function is being carried out.
No locks are considered!

3.5.6.2.1 Stepping motor X-axis

The step-by-step motor of the X-axis can be driven. The motor rotates clockwise when the "+" key is pressed (seen on the motor flange).

3.5.6.2.2 Stepping motor Y-axis

The step-by-step motor of the Y-axis can be driven. The motor rotates clockwise when the "+" key is pressed (seen on the motor flange).

3.5.6.3 Display inputs

The states of the inputs of the individual circuit boards are displayed from left to right.
The order corresponds to the LED layout on the terminal strips of the back panels.

The displays mean:

1 = LED bright (low-signal)
0 = LED dark (high-signal)

Terminal	Input card	Input	Input signal
1	A26	E1	presser foot at top
2		IN1	programmable input 1
3		E28.5	switch feed off (right)
4		E20.2	pocket plate at front
5		E20.1	pocket plate at back
6		E109	key Klemmleiste öffnen
7		E23.2	folder at bottom
8		E23.1	folder at top
9		KIPP	tiltable head installed
10		OPTINP	options entr. card entered
11		E26.2	jig at top
12		E26.1	jig at bottom
13		E27.2	feed at back (foldst.)
14		E27.1	feed at front (sewst.)
15		E28.1	switch sew on
16		E28.4	switch feed on
17		E28.2	switch sew off
18		E37	table at top
19		E38	pocket plate swung in
20		E39	folder with fixed pocket plate
21		E107	foot switch pocket plate vor
22		E108A	double key folder-start
23		E108B	double key folder-start
24		E28.3	switch feed off (left)

see next page for further inputs.

Terminal	Input card	Input	Input signal
1	A27	E41.2	puller at bottom
2		E41.1	puller at top
3		E42	stacker at front
4		E50.1	head at bottom
5		E51.1	home position SM X
6		E50.2	head at top
7		E51.3	end position SM X
8		E52.1	home position SM Y
9		E104	key automatic
10		E106	key error reset
11		E111	key step-by-step
12		E112	key home folder
13		E98	safety finger at back
14		E99	carriage cover closed
15		-	free
16		SPGTST	voltage vers. +12V Ext.
17		E101	key start
18		E113	key don't sew
19		E102	key stop
20		E9	thread monitor
21		E103	key manual
22		SMOKPR	SM-end level & compr. ok
23		E114	key program A
24		E115	key program B

Terminal	Input card	Input	Input signal
1	A28 (option)	JIGCODE	JIGCODE BIT 0 jig-monitor
2			JIGCODE BIT 1
3			JIGCODE BIT 2
4			JIGCODE BIT 3
5			JIGCODE BIT 4
6			JIGCODE BIT 5
7			JIGCODE BIT 6
8			JIGCODE BIT 7
9		-	free
10		-	free
11		-	free
12		-	free
13		-	free
14		-	free
15		-	free
16		-	free
17		BOBERR	bobbin-thread disturbance
18		ET	label feeder installed
19		E120	key bring label
20		ETRDY	key label feeder finished
21		ETINKL	label feeder in brackets
22		ETERR	label feeder error
23		JIGCTR	jig monitor installed
24		-	free

3.5.6.4 Set / reset outputs

After selecting the code number, the appropriate output can be set with the digit "1" or reset with the digit "0".
If an output cannot be set, there will be an error message. If there is an "S" next to the code number in the table, the output can only/also be actuated via a special function (see end of table).

Terminal	Output card	Output	Function	Code no.	
1	A22	Y1	presser foot off, thread trapper on	8	
2		K2	thread trimmer on	9	
3		Y3	compressed-air needle-cooler on	10	
4		Y20.2	pocket plate forward	11	
5		Y20.1	pocket plate back	12	
6		Y70	positioning clamp pressure on	13	
7		ETSTART	start label feeder	14	
8		K22	positioning-magnet folder on	15	
9		Y23.2	folder and table off	16	
10		Y23.1	folder and table on	17	
11		Y24.2	folder feed forward	18	
12		Y24.1	folder feed back	19	
13		-	free	20	
14		Y26.2	jig on	21	
15		Y26.1	jig on	22	
16		Y27.2	feed back (folding position)	23	
17		Y27.2	feed forward (sewing position)	0	
18		Y28.1	switch sew	1	
19		Y28.2	switch feed	2	
20		REF	reference output for NIF	3	
21		Y5	thread puller on	4	(S)
22		Y30	close terminal strip	5	
23		Y45	compressed-air material aid on	6	
24		BOBRES	reset for bobbin monitor	7	

See next page for further outputs

Terminal	Output card	Output	Function	Code no.
1	A23	Y40	vacuum feed-cylinder cover open	32
2		Y41	puller off	33
3		Y42	stacker forward	34
4		Y43	compressed-air stacker on	35
5		K44	stacker roller on	36
6		Y50.1	head off	37
7		Y50.2	head on	38
8		SPWOUT	bobbin change	39
9		OUT1	programmable output 1	40
10		OUT2	programmable output 2	41
11		Y10	zigzag on (prog.off.3)	42
12		Y11	extra thread-tension	43
13		-	free	44
14		-	free	45
15		-	free	46
16		-	free	47
17		H103	manual-lamp on	24
18		H104	automatic-lamp on	25
19		Y6	lubrication on	26
20		H106	clear-disturbance lamp on	27
21		-	free	28
22		H114	lamp program A	29
23		H115	lamp program B	30
24		H120	lamp labelling on	31
			Special orders	
21	A22	Y5	thread-puller function	48

3.5.6.5 Set zero points

Before using the machine for the first time, the X-,Y carriage must be set with the help of the zero-point jig. The setting is not effected by moving the proximity switches, but rather by saving a correction value to the machine's zero point (proximity switches).

The adjustment is controlled by the menu and is carried out as follows:

1. call up the menu-point adjust zero-point.

2. press home-position key.

3. Insert zero-point jig by manually opening the sewing index an acknowledging the prompt with the "Enter" key.

4. find the zero point by moving the X-,Y carriage in the various directions with keys "4","6","2","8". Press "ENTER".

The correction values are in the machine's memory under CPU and will not be erased by a cold start.

Attention:
The zero point must be set again if the CPU or a zeroing proximity switch of the X-,Y carriage is changed.

3.5.6.6 Software data

The date on which the control software is written (CPU) can be displayed.

3.5.6.7 Cold start

A cold start can be initiated by calling up this function. A cold start sets all of the settings back to their initial values. All programs are erased.

4 Error numbers - brief description

In the machine, modules with their own controls are used. Some of these controls have their own error messages which are displayed on the machine's control panel.

4.1 Sewing motor

If there is an error in the sewing motor during an operation, the operation is stopped and an error message appears. The error message is produced by the motor's automatic control system M-MR-3. The message "error sew motor ()" appears in the display. The number/letter in brackets is an aid to correcting the error.

Number:	Comment
1	timeout command sequence
2	communication error
3	overheat motor
4	wrong command
5	overheat final stage (LD 17)
6	overcurrent
7	volt surge intermediate circuit
8	error 15V
9	motor won't turnover - no synchronizer pulse - no electricity LD 17 - no armature-status pulse
A	synchronizer pulses confused

4.2 Disk error

If there is an error at the disk station during an operation, the operation is stopped and an error message appears. The error message is produced by the disk station.
Some errors will be displayed as text and others as numbers. In the latter case the message "disk error (No.)" will appear in the control-panel display. The number in brackets is an aid to correcting the error.

Number:	Comment
1	transmission error serial interface
2	wrong command
3	syntax error
4	invalid character in data field
5	
6	disk unnamed
7	sector not found
8	error in file-link table
9	sector has wrong audit total
10	file not found
11	type error
12	disk/file write protected
13	disk full
14	disk directory full
15	write over existing file (warning)
16	drive not ready/no drive selected
17	read-error disk
18	wrong disk format
19	format error

5 Lock list

The lock list helps localize disturbances in the machine which are caused by wrongly adjusted or defective transmitters or servo components. There are two basic types of error:

- feedback errors
- locking errors

Feedback errors occur when a function is actuated by the control and the expected feedback from the transmitter is not received.

Locking errors occur when a function should be actuated but may not be actuated due to the current machine status. (destruction danger)

Due to the error message in the display, the signals in the lock list by the corresponding functions and in the corresponding columns must be controlled.
In order to simplify the allocation of functions and columns, the text numbers in the lock list are repeated in columns lock or feedback.

The LED states mentioned are target values.

Examples:

Display: **"Y23.1-FOLDER/TABLE ON NOT READY #107"**

In this case, first check if the function was carried out.

if yes —> check feedback
if no —> check output

Function	Lock	Card/terminal no.	LED	Output	LED	Feedback	LED
Y23.1 on folder and table on	**" ...#108"** other switch direction	Y23.2	A22/9	off	A22/10	on	**" ...#107"** E23.1 A26/8 on E23.2 A26/7 off E37 A26/18 on

Display: **"Y23.1-FOLDER/TABLE-ON LOCKED #108"**

In this case, check the lock.

Function	Lock	Card/terminal no.	LED	Output	LED	Feedback	LED
Y23.1 on folder and table-on	**" ...#108"** other switch direction	Y23.2	A22/9	Aus	A22/10	on	**" ...#107"** E23.1 A26/8 on E23.2 A26/7 off E37 A26/18 on

Function	Lock	Card/terminal no.	LED	Output	LED	Feedback	LED
Feed	**" ...#057"**						
	needle t.d.c.	....					
	change sew on E28.1	A26/15	on				
	change feed off (left) E28.3	A26/24	off				
	change feed off (right) E28.5	A26/3	off				
	jig at bottom E26.1	A26/12	off				
	puller at top E41.1	A27/2	on				
	head at bottom E50.1	A27/4	on				
	presser foot at top E1	A26/1	on				
Sew	**" ...#058"**						
	change sew on E28.1	A26/15	on				
	change feed off (left) E28.3	A26/24	off				
	change feed off (right) E28.5	A26/3	off				
	jig at bottom E26.1	A26/12	off				
	puller at top E41.1	A27/2	on				
	head at bottom E50.1	A27/4	on				
	presser foot at bottom E1	A26/1	off				
Go to machine zero point	**" ...#060"**						
	if						
	change feed on E28.4	A26/16	off				
	and						
	change sew off E28.2	A26/17	on				
	then						
	no lock	....					
	otherwise						
	needle t.d.c.	....					
	change sew on E28.1	A26/15	on				
	change feed off (left) E28.3	A26/24	off				
	change feed off (right) E28.5	A26/3	off				
	jig at bottom E26.1	A26/12	off				
	puller at top E41.1	A27/2	on				
	head at bottom E50.1	A27/4	on				
	presser foot at top E1	A26/1	on				
Cycling	**" ...#064"**						
	needle out of material	....					
	change sew on E28.1	A26/15	on				
	change feed off (left) E28.3	A26/24	off				
	change feed off (right) E28.5	A26/3	off				
	jig at bottom E26.1	A26/12	off				
	puller at top E41.1	A27/2	on				
	head at bottom E50.1	A27/4	on				
	presser foot at top E1	A26/1	off				

LOCK LIST

Function	Lock	Card/terminal no.	LED	Output	LED	Feedback	LED
Y1 on presser foot off thread clamp open				A22/1	on	**" ...#100"** E1 A26/1	off
Y1 off presser foot on thread clamp closed	**" ...#102"** during seam pattern prog./-correction needle out of material			A22/1	off	**" ...#101"** E1 A26/1	on
K2 on thread trimmer on				A22/2	on		
K2 off thread trimmer off				A22/2	off		
Y3 on compressed-air needle-cooler on				A22/3	on		
Y3 off compressed-air needle-cooler off				A22/3	off		
Y5 on thread puller on				A22/21	on		
Y5 off thread puller off				A22/21	off		
Y6 on Lubrication on				A23/19	on		
Y6 off Lubrication off				A23/19	off		
Y10 on zigzag on				A23/11	on		
Y10 off zigzag off				A23/11	off		
Y11 on extra thread-tension on				A23/12	on		
Y11 off extra thread-tension off				A23/12	off		

LOCK LIST

Function	Lock	Card/terminal no.	LED	Output	LED	Feedback		LED
Y20.1 on pocket plate back	**" ...#104"**					**" ...#103"**		
	folder at top E23.1	A26/8	on	A22/5	on	E20.1	A26/5	on
	other switch direction Y20.2	A22/4	off			E20.2	A26/4	off
						bei		
						E39	A26/20	off
						E38	A26/19	off
Y20.2 on pocket plate forward	**" ...#106"**					**" ...#105"**		
	folder at top E23.1	A26/8	on	A22/4	on	E20.1	A26/5	off
	carriage at front E27.1	A26/14	off			E20.2	A26/4	on
	other switch direction Y20.1	A22/5	off			bei		
						E39	A26/20	off
						E38	A26/19	off
K22 on positioning magnet folder on				A22/8	on			
K22 off positioning magnet folder off				A22/8	off			
Y23.1 on folder and table up	**" ...#108"**					**" ...#107"**		
	other switch direction Y23.2	A22/9	off	A22/10	on	E23.1	A26/8	on
						E23.2	A26/7	off
						E37	A26/18	on
Y23.2 on folder and table down	**" ...#110"**					**" ...#109"**		
	feed at front E27.1	A26/14	off	A22/9	on	E23.1	A26/8	off
	other switch direction Y23.1	A22/10	off			E23.2	A26/7	on
						E37	A26/18	off
	if with labelling ET	A28/18	on					
	labelling ready ETRDY	A28/20	on					
Y24.1 on folder-feed back	**" ...#111"**							
	other switch direction Y24.2	A22/11	off	A22/12	on			
Y24.2 on folder-feed forward	**" ...#113"**					**" ...#112"**		
	other switch direction Y24.1	A22/12	off	A22/11	on	E37	A26/18	on

LOCK LIST

Function	Lock	Card/terminal no.	LED	Output	LED	Feedback	LED
Y26.1 on template down	**" ...#115"** feed at front E27.1	A26/14	on	A22/15	on	**" ...#114"** E26.1 A26/12	off
	or feed at back E27.2	A26/13	on			E26.2 A26/11	on
	other switch direction Y26.2	A22/14	off				
	if feed at front E27.1 head at bottom E50.1	A26/14 A27/4	on on				
Y26.2 on template up	**" ...#117"** change on feed: E28.1	A26/15	off	A22/14	on	**" ...#116"** E26.1 A26/12	on
	E28.2	A26/17	on			E26.2 A26/11	on
	E28.3	A26/24	on				
	E28.4	A26/16	off				
	E28.5	A26/3	on				
	puller at top E41.1	A27/2	on				
	other switch direction Y26.1	A22/15	off				
	carriage at home position	....					
Y27.1 on feed forward	**" ...#119"** puller at top E41.1	A27/2	on	A22/17	on	**" ...#118"** E27.1 A26/14	on
	folder at top E23.1	A26/8	on			E27.2 A26/13	off
	Head at bottom E50.1	A27/4	on				
	change on feed E28.1	A26/15	off				
	E28.2	A26/17	on				
	E28.3	A26/24	off				
	E28.4	A26/16	off				
	E28.5	A26/3	off				
	other switch direction Y27.2	A22/16	off				
	carriage in home position	....					
	if jig not at top E26.2	A26/11	on				
	pocket plate not at front E20.2	A26/4	off				
	presser foot at top E1	A26/1	on				
	stacker not at front E42	A27/3	off				
	needle t.d.c.	....					
Y27.2 on feed back	**" ...#121"** jig up E26.2	A26/11	off	A22/16	on	**" ...#120"** E27.1 A26/14	off
	folder at top E23.1	A26/8	on	motor		E27.1 A26/14	off
	Puller oben E41.1	A27/2	on				
	not other switch direction Y27.1	A22/17	off				
	if labelling installed ET	A28/18	on				
	labelling ready ETRDY	A28/20	on				

LOCK LIST

Function	Lock	Card/terminal no.	LED	Output	LED	Feedback	LED
Y28.1 on change sew	**" ...#123"** feed at front E27.1 jig at bottom E26.1 other switch direction Y28.2 carriage at home position	 A26/14 A26/12 A22/19	 on off off	A22/18	on	**" ...#122"** E28.1 A26/15 E28.2 A26/17 E28.3 A26/24 E28.4 A26/16 E28.5 A26/3	 on off off on off
Y28.2 on change feed	**" ...#125"** feed at front E27.1 jig at bottom E26.1 other switch direction Y28.1 carriage at home position	 A26/14 A26/12 A22/18	 off off off	A22/19	on	**" ...#124"** E28.1 A26/15 E28.2 A26/17 E28.3 A26/24 E28.4 A26/16 E28.5 A26/3	 off on on off on
Y30 on close terminal strip				A22/22	on		
Y30 off open terminal strip				A22/22	off		
Y40 on material feed-cylinder cover open				A23/1	on		
Y40 off material feed-cylinder cover closed				A23/1	off		
Y41 on puller off	**" ...#127"** feed not at front E27.1	A26/14	on	A23/2	on	**" ...#126"** E41.1 A27/2 E41.2 A27/1	off on
Y41 off puller on				A23/2	off	**" ...#128"** E41.1 A27/2 E41.2 A27/1	on off
Y42 on stacker forward				A23/3	on	**" ...#129"** E42 A27/3	on
Y42 Aus stacker back				A23/3	off	**" ...#130"** E42 A27/3	off
Y43 on compressed-air stacker on				A23/4	on		
Y43 off compressed-air stacker off				A23/4	off		

LOCK LIST

Function	Lock	Card/terminal no.	LED	Output	LED	Feedback	LED
K44 on stacker roller on				A23/5	on		
K44 off stacker roller off				A23/5	off		
Y45 on compressed-air material feed aid on				A22/23	on		
Y45 off compressed-air material feed aid off				A22/23	off		
Y50.1 on head off	**" ...#132"** carriage in home position other switch direction Y50.2	.... A23/7	off	A23/6	on	**" ...#131"** E50.1 A27/4 E50.2 A27/6	on off
Y50.2 on head on	**" ...#134"** sew in home position.... feed back E27.2 change on transport: E28.1 E28.2 E28.3 E28.4 E28.5 other switch direction Y50.1	 A26/13 A26/15 A26/17 A26/24 A26/16 A26/3 A23/6	 on off on on off on off	A23/7	on	**" ...#133"** E50.1 A27/4 E50.2 A27/6	off on
Y70 on ET-positioning clamp pressure on				A22/6	on		
Y70 off ET-positioning clamp pressure off				A22/6	off		

LOCK LIST

Function	Lock	Card/terminal no.	LED	Output	LED	Feedback	LED
H103 on manual lamp on				A23/17	on		
H103 off manual lamp off				A23/17	off		
H104 on automatic lamp on				A23/18	on		
H104 off automatic lamp off				A23/18	off		
H106 on fix error lamp on				A23/20	on		
H106 off fix error lamp off				A23/20	off		
H114 on lamp program A on				A23/22	on		
H114 off lamp program A off				A23/22	off		
H115 on lamp program B on				A23/23	on		
H115 off lamp program B off				A23/23	off		
H120 on lamp labelling on				A23/24	on		
H120 off lamp labelling off				A23/24	off		
REF on reference output for NIF on				A22/20	on		
REF off reference output for NIF on				A22/20	off		

LOCK LIST

Function	Lock	Card/terminal no.	LED	Output	LED	Feedback	LED
BOBRES on reset for bobbin-thread monitor on				A22/24	on		
BOBRES off reset for bobbin-thread monitor off				A22/24	off		
ETSTART on labelling start on	**" ...#135"** folder at top E23.1 feed at front E27.1	A26/8 A26/14	on off	A22/7	on		
ETSTART off labelling start off				A22/7	off		
SPWOUT on bobbin change on				A23/8	on		
SPWOUT off bobbin change off				A23/8	off		
OUT1 on prog. output 1 on				A23/9	on		
OUT1 off prog. output 1 off				A23/9	off		
OUT2 on prog. output 2 on				A23/10	on		
OUT2 off prog. output 2 off				A23/10	off		

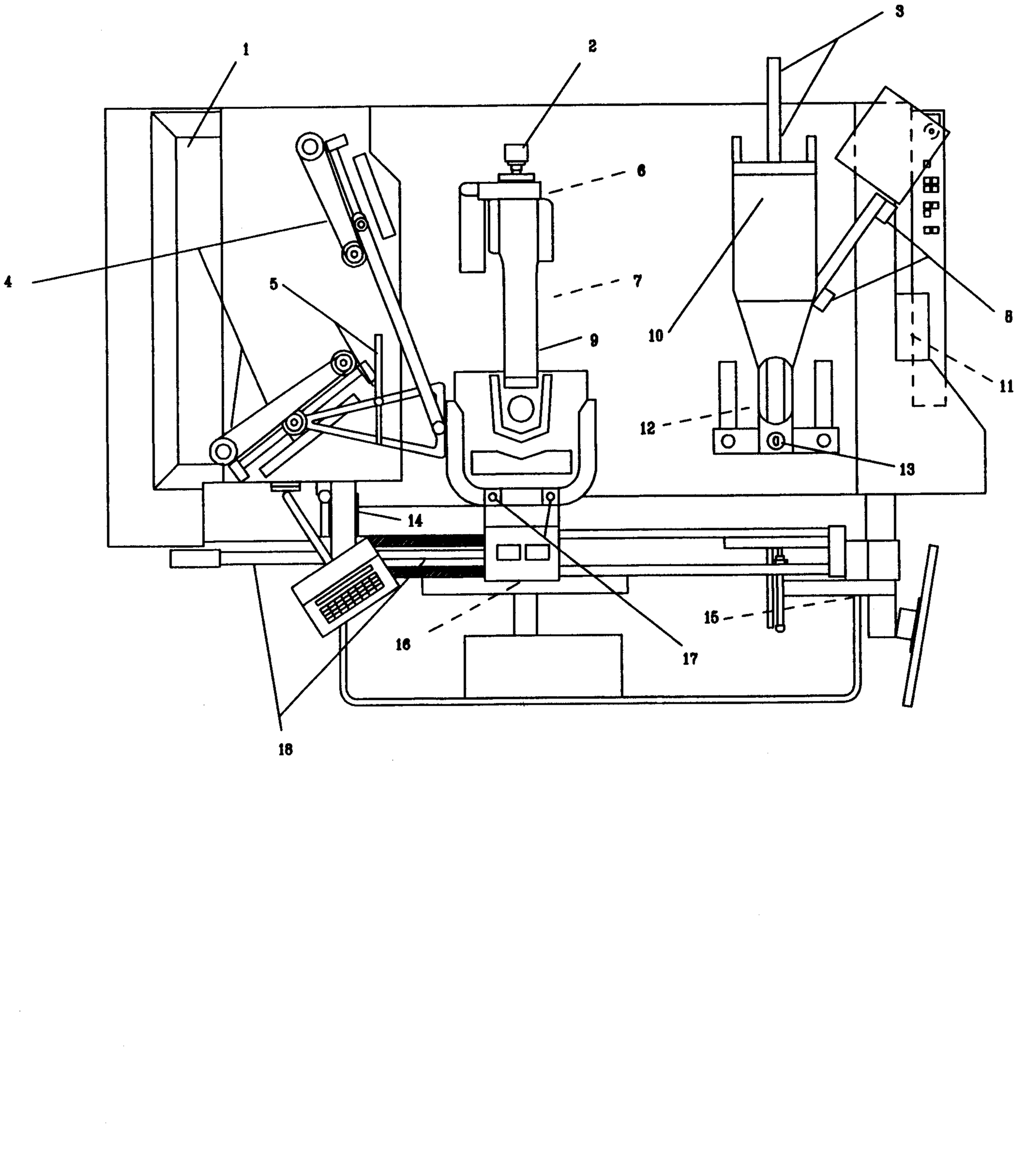
6 Overview of the switches / proximity switches

To simplify the search for the individual transmitters (switches etc.) the layout can be seen in the following diagram.
Solid lines -> mean that the transmitter is above the table top and broken lines —> mean that the transmitter is under the table top.

Transmitter	Number in the diagram	Transmitter	Number in the diagram
B26.1 B26.2	14	S1	6
		S9	9
B28.3 B28.4 B28.5	17	S20.1 S20.2	3
		S23.1 S23.2	13
Position transmitter	2		
B51.1 B51.3 B52.1	4	S27.1 S27.2	18
		S28.1 S28.2	5
		S37	12
		S38 S39	10
		S42	16
		S50.1 S50.2	7
		S98	15
		S99	1
		S108A S108B	8
		S109	11

Switches / proximity switches

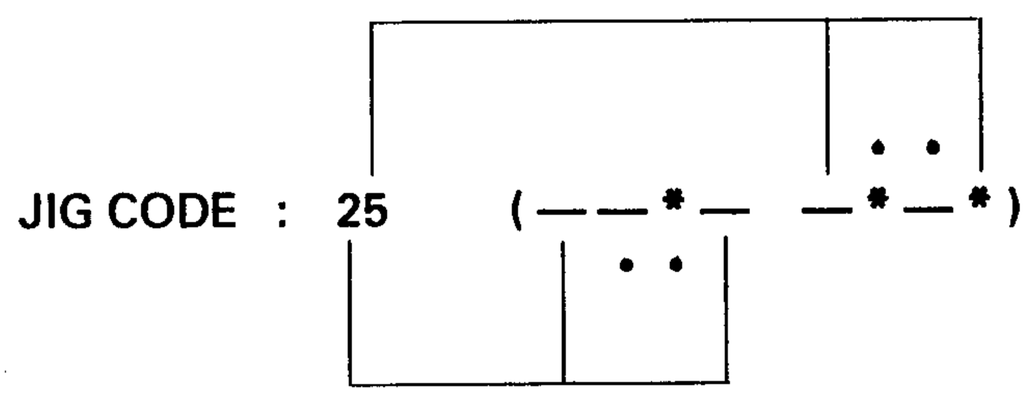
——— Giver above the table top
— — — Giver below the table top



7 Monitoring the jigs / - code

The machine carries with it the option of installing a jig monitor. Here the sewing jig is marked with a magnetic code number which can be read by an additional device. The jig code must be programmed in the sewing program if it is required. If the jig monitor is on (c.f. switch functions) and the jig code does not coincide with that of the sewing program, the sewing operation will be stopped and the corresponding error message will be displayed.

The jig code has a value from 0 - 99. The order of the magnets appears in brackets in binary code behind the corresponding value. The last four figures represent the unit's place and the front four figures represent the tens.



compound table:

Value (unit's place)	Bit3 (Bit7)	Bit2 (Bit6)	Bit1 (Bit5)	Bit0 (Bit4)
0	-	-	-	-
1	-	-	-	*
2	-	-	*	-
3	-	-	*	*
4	-	*	-	-
5	-	*	-	*
6	-	*	*	-
7	-	*	*	*
8	*	-	-	-
9	*	-	-	*

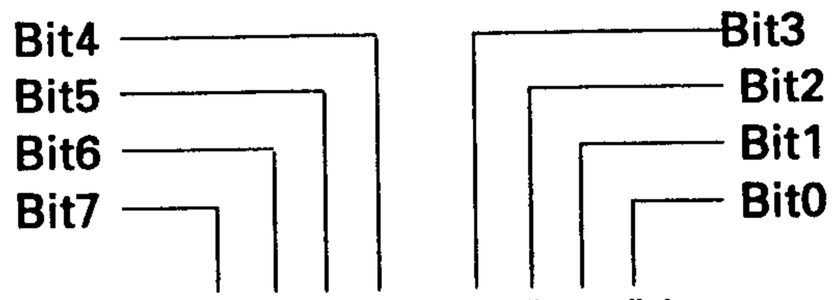
(The same table also applies for the tens with Bits 4 -

Example of a templade code

jig code = 25.

Display of the magnet position at the input of the jig code:

— = no magnet in the jig
* = magnet in the jig

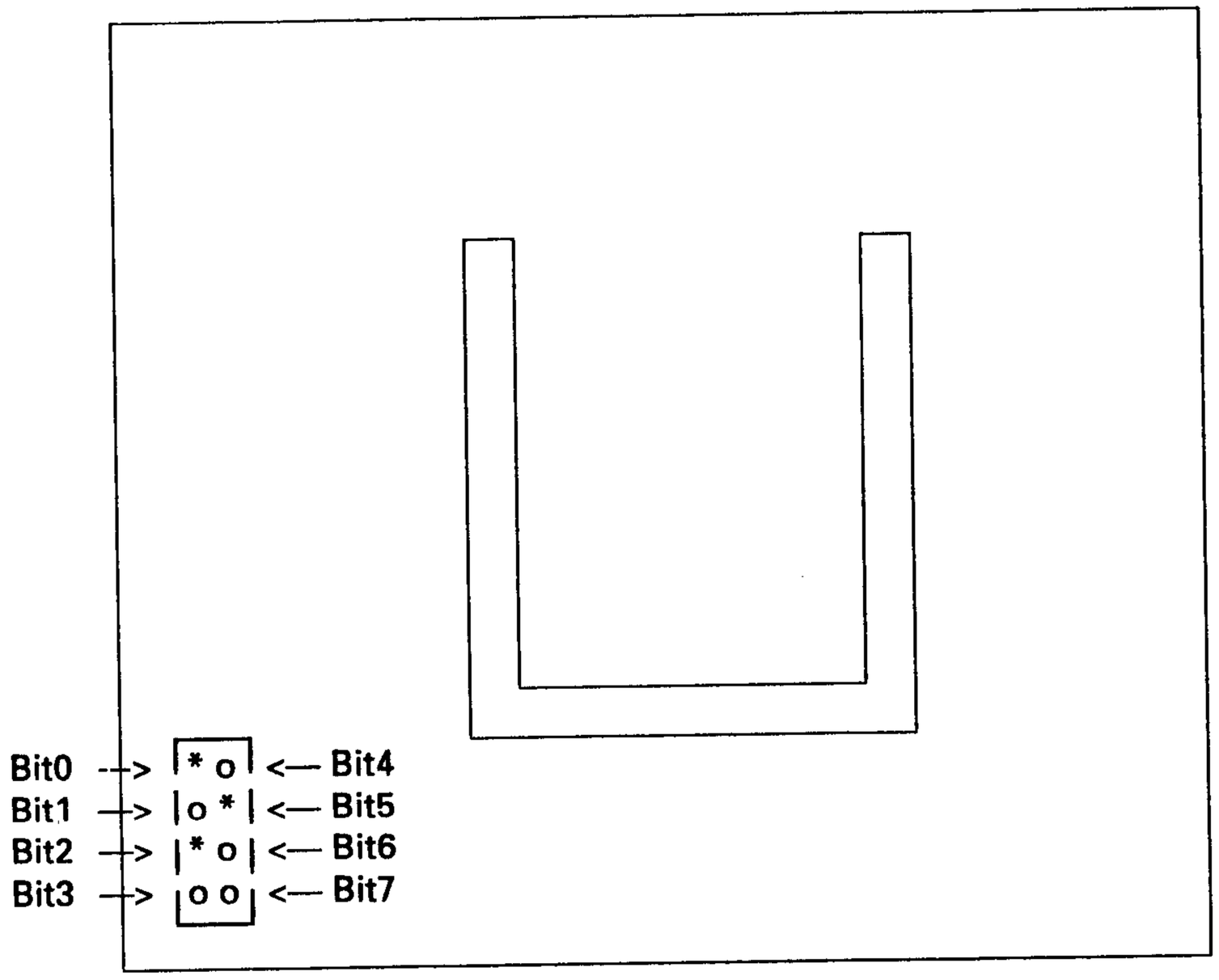


JIG CODE : 25 (— — * — — * — *)

Order of the magnets on the sewing jig:

o = do not adhere magnet
* = adhere magnet

(the diagram shows the magnets as seen through the sewing jig. i.e. the magnets are on the underside of the jig).



8 Important settings

8.1 Initial loading values after cold start:

piece counter	0
bobbin preselect	10000 stitches
time for feed roller	200 ms
maximum speed	4100 RPM
reduced speed	4100 RPM
zigzag delay on	0 stitches
delay zigzag-off	0 stitches
pause off	off
puller	off
end stitches for thread monitor	5 stitches
end stitches for bobbin monitor	5 stitches
monitoring stitches for thread monitor	10 stitches
automatic stitch	2 stitches
slow start stitches	90°
carriage start (NIF)	
thread monitor	on
bobbin monitor	on
bobbin sensor	off
language	German
compressed air needle cooling feed forward	off
compressed air needle cooling stacker	off
material-feed aid feed-forward	off
material-feed aid stacker	off
material-feed aid sewing	off
thread puller	on
if tip-head installed	
- bobbin change from top	on
- otherwise	
- bobbin change from top	off
if jig monitor installed	
- jig monitor	on
- otherwise	
- jig monitor	off
labelling	off
alternate labelling	off
carriage movement(cont)	off
time for stacker airblast	300 ms
time for Stofftransportwalzen-Abdeckung	100 ms
time for puller	400 ms
time after table up	250 ms
time for edge folders back	250 ms
time for feed forward	200 ms
time for thread puller	500 ms

8.2 Synchronizer home setting

If the synchronizer is replaced, the home value must be reset. To do this perform or check as necessary the following points in the order given.

1. **Important!**
   the needle must be able to rotate freely when the machine is switched on. Check and adjust if necessary.
   The synchronizer screws must be tight to avoid an uncontrolled racing of the motor.

2. Turn machine on (the needle positions itself automatically).

3. Now check if the needle has in fact positioned itself in t.d.c.
   if so - ready.
   if not - turn the synchronizer on the handwheel the same amount as the distance the needle is from its desired position.

4. Now a new positioning can be carried out by turning the machine off and then on again or by selecting the service function sewing-motor and completing one rotation. Then repeat points 3 and 4 until the needle reaches the desired position.

Circuit diagrams

91-191 313-95	STP 3568-2/21 terminal connections
91-291 239-95	Adhesive foil - placements
91-191 320-95	modular mimic display 3568-2/21
91-191 308-95	STP 3568-2/21 (A22)
91-191 309-95	STP 3568-2/21 (A23)
91-191 310-95	STP 3568-2/21 (A26)
91-191 311-95	STP 3568-2/21 (A27)
91-191 312-95	STP 3568-2/21 (A28)
91-191 303-95 Bl.1	STP power supply 220V/24V
91-191 303-95 Bl.2	STP power supply 220V/24V
91-191 340-95	STP sewing drive
91-191 344-95	STP stepping motor
91-191 319-95	STP connection serial interface

Teile auf Montageplatte

L1 N PE

Q1

Z1 LINE LOAD Entstörfilter

F1 16A

A1 A20 M4 X2 A80 A40 T2 T3 A70

K60 A2 A1 33 34

24 26

S 105 EIN

S 62 NOT-AUS

T2 T3 5,5V 0V

H2 H3 H4

Hauptschütz K60 4

A70 N PE L

A1 F1 0,8T M-NG-5A +5V +12V +15V

A20 F1/F3 1,6T F2 6,3T M-NG-2 +12V +24V

M 1~ M4 N PE L

A40 1 2

A80 LD17 X1 8 4 6

X2

Spannungsversorgung 24V (BLATT 2)

+24V 0V 22 21

Trafo für Lichtmarkier-sender (Option)

Etiketten-zuführung (Option)

Netzteil +5V +12V +15V

Netzteil 24V

Lüfter

SM-Endstufen 2 Achsen

Nähmotor Endstufe

Service-steckdose

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

Nr.	Art der Änderung	Änderung Nr.	Datum	Bearb.
4				
3				
2				
1				
0	Eingeführt lt.			

CAD

	Datum	Name	
19 93			
Gezeichnet	22.06.		Ersatz für:
Gepr./Genehm.	22.06.		Ersetzt durch:
Normgepr.			Ausf. lt. Änd.-Nr.

Benennung

STP NETZVERSORGUNG 220V / 24V

Typ 3568-2/21

PFAFF

Zeichnungs-Nr. 91-191 303-95

Blattzahl: 2 Blatt: 1

X 1

26	GND	24	PA7	23	PA6	21	PA5	18	PA4	19	PA3	20	PA2	22	PA1	25	PA0	10	PC7	11	PC6	12	PC5	13	PC4	16	PC3	17	PC2	15	PC1	14	PC0	9	PB7	8	PB6	6	PB5	4	PB4	2	PB3	3	PB2	5	PB1	7	PB0	1	+5V

+24Vext.
0Vext
+12Vext.
28/30

+5V +12Vext +24Vext LED X2 X5 X1 0Vext

+5V +12Vext +24Vext LED X2 X5 X1 0Vext

+5V +12Vext +24Vext LED X2 X5 X1 0Vext

A 22
M - DA - 1
+24Vext.

f14/16/18 f24/26/ f2/4/6 f 8 f 10 d 4 d 2 b 2 d 6 b 4 b 6 z 4 z 2 d 8 z 6 z 8 b 8 z 10 d 10 z 12 b 10 d 16 b 12 z 16 z 14 b 18 b 16 b 20 z 18 d 20 z 20 b 22 z 22 b 24 d 22 b 26 z 24 d 26 z 26 b 30 z 28 b 32 z 30 d 30 z 32 d 32 b 28 f 22 d 24 f 32 f 20 d 12/14

X 2

M - RV - 2

27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

+24Vext ge
0Vext bl
+12Vext rt

X16

Bobres 33 Y45 27 Y30 21 Y5 REF 13 Y28.2 51 Y28.1 25 Y27.1 3 Y27.2 11 Y26.1 49 Y26.2 5 Y24.1 43 Y24.2 7 Y23.1 45 Y23.2 ws(sw) Etstart 41 Y70 9 Y20.1 47 Y20.2 37 Y3 39 Y1

34 28 22 14 52 26 4 12 50 6 44 8 46 42 10 48 38 40

X15
(+24Vext)

X17.31
K22
X17.22
(+24Vext)

X17.27
K2
X17.22
(+24Vext)

Nr.	Art der Änderung	Änderung Nr.	Datum	Bearb.
4				
3				
2				
1				
0	Eingeführt lt.			
Für diese Zeichnung behalten wir uns alle Rechte vor (Ges. DIN 34).				CAD

1993	Datum	Name	
Gezeichnet	16.09.		Ersatz für:
Gepr./Genehm.	16.09.		Ersetzt durch:
Normgepr.			Ausf. lt. Änd.-Nr.

Benennung
STP 3568-2/21 (A22)

Typ 3568-2/21

PFAFF

Zeichnungs-Nr.
91-191 308-95

Blattzahl: Blatt:

X 1

26	24	23	21	18	19	20	22	25	10	11	12	13	16	17	15	14	9	8	6	4	2	3	5	7	1
GND	PA7	PA6	PA5	PA4	PA3	PA2	PA1	PA0	PC7	PC6	PC5	PC4	PC3	PC2	PC1	PC0	PB7	PB6	PB5	PB4	PB3	PB2	PB1	PB0	+5V

+24Vext.
0Vext
+12Vext
28/30

+5V +12Vext +24Vext LED X2 X2 X1 0Vext

+5V +12Vext +24Vext LED X2 X2 X1 0Vext

+5V +12Vext +24Vext LED X2 X2 X1 0Vext

+24Vext.

A 23
M - DA - 1
X 2
M - RV - 2

f14/16/18 F24/26/ F2/4/6 f 8 f 10 d 4 d 2 b 2 d 6 b 4 b 6 z 4 z 2 d 8 z 6 z 8 b 8 z 10 d 10 z 12 b 10 d 16 b 12 z 16 z 14 b 18 b 16 b 20 z 18 d 20 z 20 b 22 z 22 b 24 d 22 b 26 z 24 d 26 z 26 b 30 z 28 b 32 z 30 d 30 z 32 d 32 b 28 f 22 d 24 f 32 f 20 d 12/14

27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

+24Vext ge
0Vext bl
+12Vext rt

X16

H120 H115 H114 bg(rtws) H106 rs(rs) H104 rt(gn) H103

35 Y11 36
23 Y10 24
OUT2
OUT1
SPVOUT
53 Y50.2 54
15 Y50.1 16
bl Y43 sw
17 Y42 18
29 Y41 30
19 Y40 20

X15 (+24Vext)
X15 (+24Vext)
X15 (+24Vext)

X17.28
K44
X17.22 (+24Vext)

Nr.	Art der Änderung	Änderung Nr.	Datum	Bearb.
4				
3				
2				
1				
0	Eingeführt lt.			

CAD

	Datum	Name	
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Gezeichnet	20.09.		Ersatz für:
Gepr./Genehm.	20.09.		Ersetzt durch:
Normgepr.			Ausf. lt. Änd.-Nr.

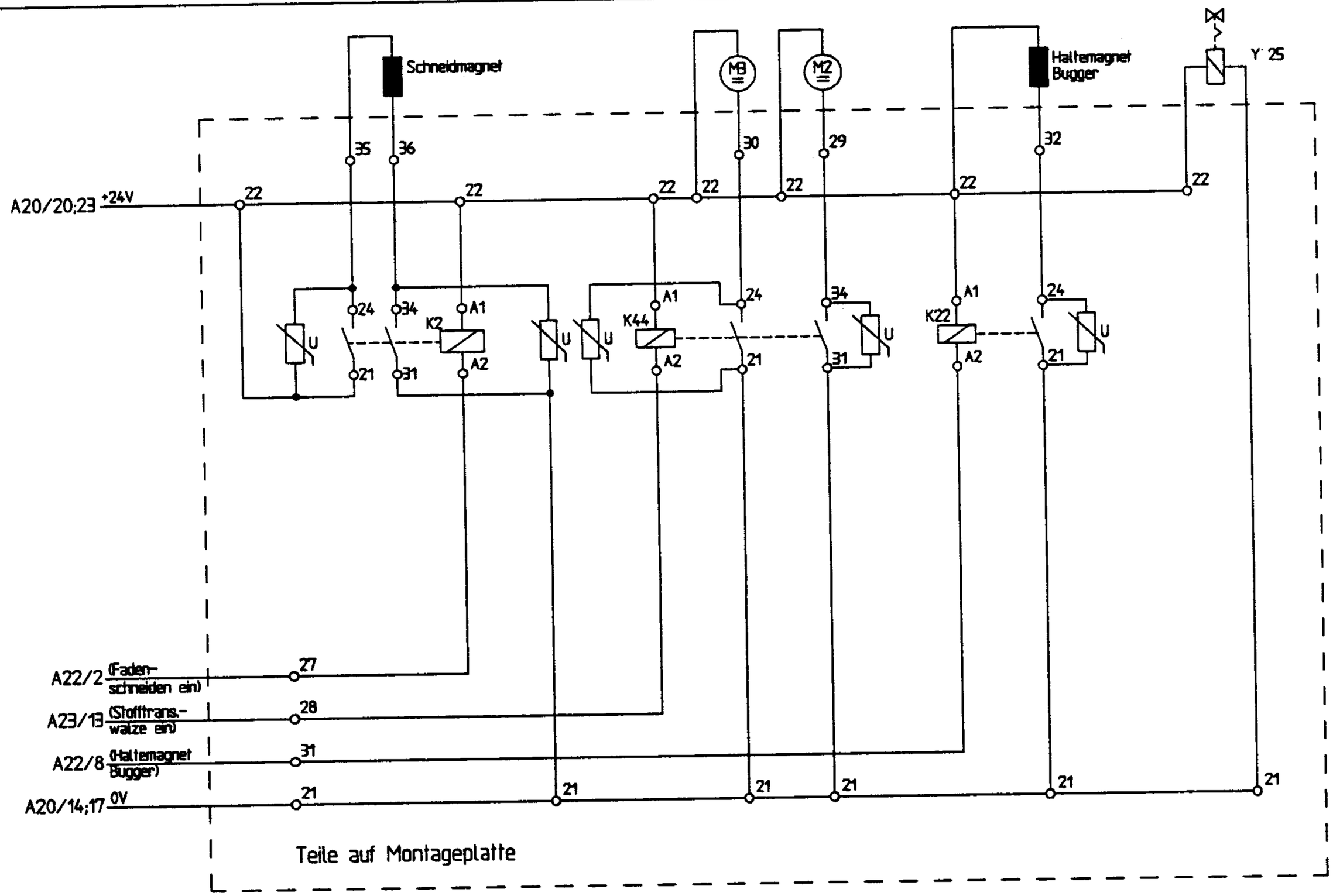
Benennung: STP 3568-2/21 (A23)

Typ 3568-2/21

PFAFF

Zeichnungs-Nr. 91-191 309-95

Blattzahl: Blatt:



18 19 20 21 22 23 24 25 26 27 28 29 30

Nr.	Art der Änderung	Änderung Nr.	Datum	Bearb.
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3				
2				
1				
0	Eingeführt lt.			

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	Datum	Name	
1995			
Gezeichnet	02.05.	Louis	Ersatz für: Zeichnung vom 13.09.93
Gepr./Genehm.	02.05.		Ersetzt durch:
Normgepr.			Ausf. lt. Änd.-Nr.

Benennung

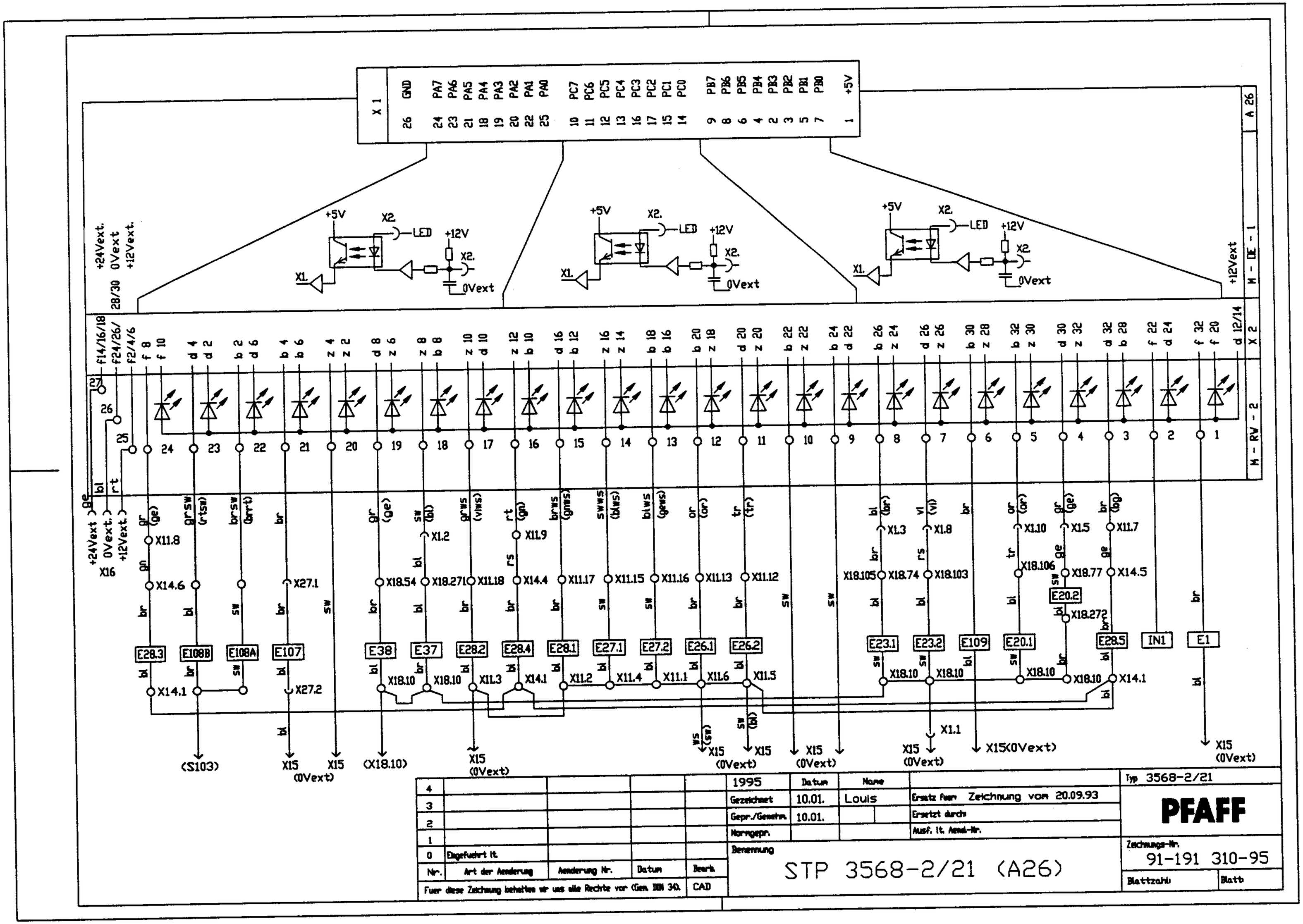
STP 24V Versorgung

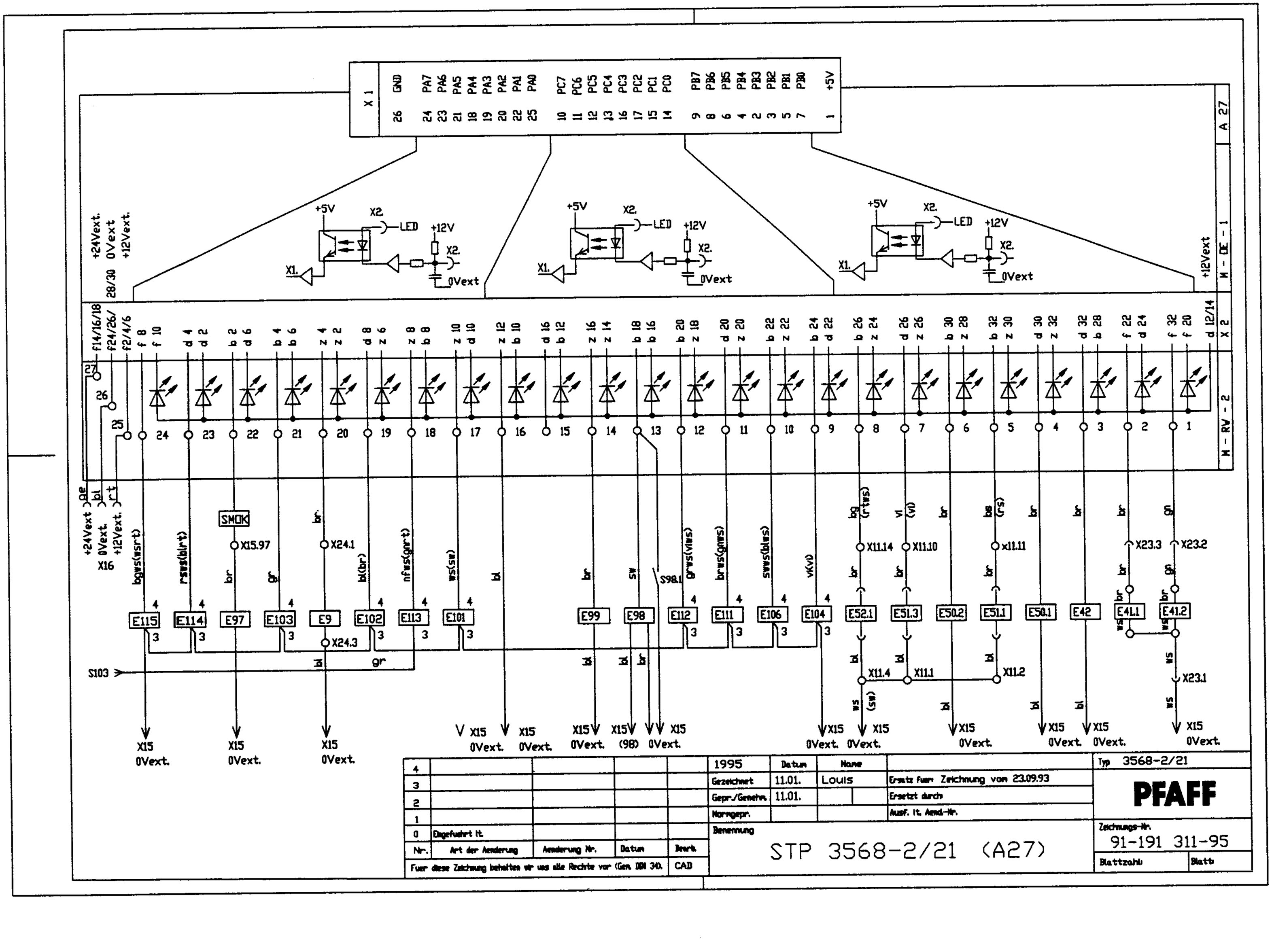
Typ 3568-2/21

PFAFF

Zeichnungs-Nr.
91-191 303-95

Blattzahl: 2 Blatt: 2


X 1
GND PA7 PA6 PA5 PA4 PA3 PA2 PA1 PA0 PC7 PC6 PC5 PC4 PC3 PC2 PC1 PC0 PB7 PB6 PB5 PB4 PB3 PB2 PB1 PB0 +5V
26 24 23 21 18 19 20 22 25 10 11 12 13 16 17 15 14 9 8 6 4 2 3 5 7 1
+5V X2. LED +12V X2. X1. 0Vext
+24Vext. 0Vext +12Vext. 28/30
+12Vext
A 26
M - DE - 1
M - RV - 2
X 2
f14/16/18 f24/26/ f2/4/6 f 8 f 10 d 4 d 2 b 2 d 6 b 4 b 6 z 4 z 2 d 8 z 6 z 8 b 8 z 10 d 10 z 12 b 10 d 16 b 12 z 16 z 14 b 18 b 16 b 20 z 18 d 20 z 20 b 22 z 22 b 24 d 22 b 26 z 24 d 26 z 26 b 30 z 28 b 32 z 30 d 30 z 32 d 32 b 28 f 22 d 24 f 32 f 20 d 12/14
24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
+24Vext 0Vext. +12Vext. X16
X11.8 X14.6 X27.1 X1.2 X11.9 X1.3 X1.8 X1.10 X1.5 X11.7
X18.54 X18.271 X11.18 X14.4 X11.17 X11.15 X11.16 X11.13 X11.12
X18.105 X18.74 X18.103 X18.106 X18.77 X14.5
E20.2 X18.272
E28.3 E108B E108A E107 E38 E37 E28.2 E28.4 E28.1 E27.1 E27.2 E26.1 E26.2 E23.1 E23.2 E109 E20.1 E28.5 IN1 E1
X14.1 X27.2 X18.10 X11.3 X14.1 X11.2 X11.4 X11.1 X11.6 X11.5 X14.1
(S103) X15 (0Vext) X15 (X18.10) X15 (0Vext) X15 (0Vext) X15 (0Vext) X15 (0Vext) X1.1 X15 (0Vext) X15 (0Vext)
1995 Datum 10.01. Name Louis
Gezeichnet 10.01.
Gepr./Genehm.
Normgepr.
Ersatz fuer Zeichnung vom 20.09.93
Ersetzt durch
Ausf. lt. Aend.-Nr.
Typ 3568-2/21
PFAFF
Benennung STP 3568-2/21 (A26)
Zeichnungs-Nr. 91-191 310-95
Blattzahl Blatt
4 3 2 1 0 Nr. Art der Aenderung Aenderung Nr. Datum Bearb.
Eingefuehrt lt.
CAD
Fuer diese Zeichnung behalten wir uns alle Rechte vor (Gem. DIN 34).



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1995	Datum	Name	
Gezeichnet	11.01.	Louis	Ersatz fuer Zeichnung von 23.09.93
Gepr./Genehm.	11.01.		Ersetzt durch
Normgepr.			Ausf. it. Aend.-Nr.

Benennung

STP 3568-2/21 (A27)

Typ 3568-2/21

PFAFF

Zeichnungs-Nr.
91-191 311-95

Blattzahl | Blatt

X 1

26	24	23	21	18	19	20	22	25	10	11	12	13	16	17	15	14	9	8	6	4	2	3	5	7	1
GND	PA7	PA6	PA5	PA4	PA3	PA2	PA1	PA0	PC7	PC6	PC5	PC4	PC3	PC2	PC1	PC0	PB7	PB6	PB5	PB4	PB3	PB2	PB1	PB0	+5V

+24Vext.
0Vext.
+12Vext.
28/30

+5V X2 LED +12V X3 X1 0Vext

+5V X2 LED +12V X3 X1 0Vext

+5V X2 LED +12V X3 X1 0Vext

+12Vext

M - DE - 1

A 28

f14/16/18 f24/26/ f2/4/6 f 8 f 10 d 4 d 2 b 2 d 6 b 4 b 6 z 4 z 2 d 8 z 6 z 8 b 8 z 10 d 10 z 12 b 10 d 16 b 12 z 16 z 14 b 18 b 16 b 20 z 18 d 20 z 20 b 22 z 22 b 24 d 22 b 26 z 24 d 26 z 26 b 30 z 28 b 32 z 30 d 30 z 32 d 32 b 28 f 22 d 24 f 32 f 20 d 12/14

X 2

M - RV - 2

27 26 25

24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

ge +24Vext X16

bl 0Vext.

rt +12Vext.

ETERR ETINKL ETRDY E 120 ET

Etikettenzufuehrung

vi br rs ws ge gn bl or

Bit7 Bit6 Bit5 Bit4 Bit3 Bit2 Bit1 Bit0

JIGCTR + 12V 0V

Schablonenerkennung

gnge rt sw

Nr.	Art der Änderung	Änderung Nr.	Datum	Bearb.
4				
3				
2				
1				
0	Eingeführt lt.			

CAD

	1994	Datum	Name	
Gezeichnet		10.10	Conrad	Ersatz für: Zeichnung vom 5.11.93
Gepr./Genehm.		10.10		Ersetzt durch:
Normgepr.				Ausf. lt. Änd.-Nr.

Benennung

STP 3568-2/21 (A28)

Typ 3568-2/21

PFAFF

Zeichnungs-Nr. 91-191 312-95

Blattzahl: Blatt:

INPUT BOARD STECKPL. A28 PIN BOARD		INPUT BOARD STECKPL. A27 PIN BOARD		INPUT BOARD STECKPL. A26 PIN BOARD		INTERFACE STECKPL. A25 PIN BOARD		OUTPUT BOARD STECKPL. A24 PIN BOARD		OUTPUT BOARD STECKPL. A23 PIN BOARD		OUTPUT BOARD STECKPL. A22 PIN BOARD		INPUT BOARD STECKPL. A21 PIN BOARD	
24		24	E115	24	E28.3	24		24		24	H120	24	BOBRES	24	
23	JIGCTR	23	E114	23	E108B	23		23		23	H115	23	Y45	23	
22	ETERR	22	SMOKPR	22	E108A	22		22		22	H114	22	Y30	22	
21	ETINKL	21	E103	21	E107	21		21		21		21	Y5	21	
20	ETRDY	20	E9	20	E39	20		20		20	H106	20	REF	20	
19	E120	19	E102	19	E38	19		19		19		19	Y28.2	19	
18	ET	18	E113	18	E37	18		18		18	H104	18	Y28.1	18	
17	BOBERR	17	E101	17	E28.2	17		17		17	H103	17	Y27.1	17	
16		16	SPGTST	16	E28.4	16		16		16		16	Y27.2	16	
15		15		15	E28.1	15		15		15		15	Y26.1	15	
14		14	E99	14	E27.1	14		14		14		14	Y26.2	14	
13		13	E98	13	E27.2	13		13		13		13		13	
12		12	E112	12	E26.1	12		12		12	Y11	12	Y24.1	12	
11		11	E111	11	E26.2	11		11		11	Y10	11	Y24.2	11	
10		10	E106	10	OPTINP	10		10		10	OUT2	10	Y23.1	10	
9		9	E104	9	KIPP	9		9		9	OUT1	9	Y23.2	9	
8	JIGCODE BIT7	8	E52.1	8	E23.1	8		8		8	SPWOUT	8	K22	8	
7	JIGCODE BIT6	7	E51.3	7	E23.2	7		7		7	Y50.2	7	ETSTART	7	
6	JIGCODE BIT5	6	E50.2	6	E109	6		6		6	Y50.1	6	Y70	6	
5	JIGCODE BIT4	5	E51.1	5	E20.1	5		5		5	K44	5	Y20.1	5	
4	JIGCODE BIT3	4	E50.1	4	E20.2	4		4		4	Y43	4	Y20.2	4	
3	JIGCODE BIT2	3	E42	3	E28.5	3		3		3	Y42	3	Y3	3	
2	JIGCODE BIT1	2	E41.1	2	IN	2		2		2	Y41	2	K2	2	
1	JIGCODE BIT0	1	E41.2	1	E1	1		1		1	Y40	1	Y1	1	

Nr.	Art der Aenderung	Aenderung Nr.	Datum	Bearb.
4				
3				
2				
1				
0	Eingeführt lt.			

CAD

19 93	Datum	Name	
Gezeichnet	27.09.		Ersatz fuer:
Gepr./Genehm.	27.09.		Ersetzt durch:
Normgepr.			Ausf. lt. Aend.-Nr.

Benennung: STP 3568-2/21

Typ 3568-2/21

PFAFF

Zeichnungs-Nr. 91-191 313-95

Blattzahl | Blatt

(Leitung 91-291 215-91)

Steuergerät

A27/17	ws (sw)	Start	S101	H105
A27/19	bl (br)	Stop	S102	
A27/21	gr (ge)	Man	S103	H103
A23/17	rt (gn)			
A27/9	vi (vi)	Auto	S104	H104
A23/18	rs (rs)			
A27/10	sw/ws (bl/ws)	Fehler rücks.	S106	H106
A23/20	bg (rt/ws)			
A28/19	bl/ws (ge/ws)	Etikett	S120	H120
A23/24	or			
A27/11	br/ws (gn/ws)	Einzelschritt	S111	
A27/12	gr/ws (vi/ws)	Bugger Grundst.	S112	
0V	rt/ws (or/ws)			
A27/23	rs/ws (bl/rt)	A	S114	H114
A23/22	or/ws (ge/rt)			
A27/24	bg/ws (ws/rt)	B	S115	H115
A23/23	bl/sw (or/rt)			
+ 24V	vi/ws (br/ws)			
A27/18	nf/ws (gn/rt)	Nähen aus	S113	H113

Bedienpult

(Leitung 91-291 201-91)

X17/26	br	Ein	S105
X17/24	bl		

Nr.	Art der Änderung	Änderung Nr.	Datum	Bearb.
4				
3				
2				
1				
0	Eingeführt lt.			

CAD

19 93	Datum	Name	
Gezeichnet	28.10.		Ersatz für:
Gepr./Genehm.	28.10.		Ersetzt durch:
Normgepr.			Ausf. lt. Änd.-Nr.

Benennung

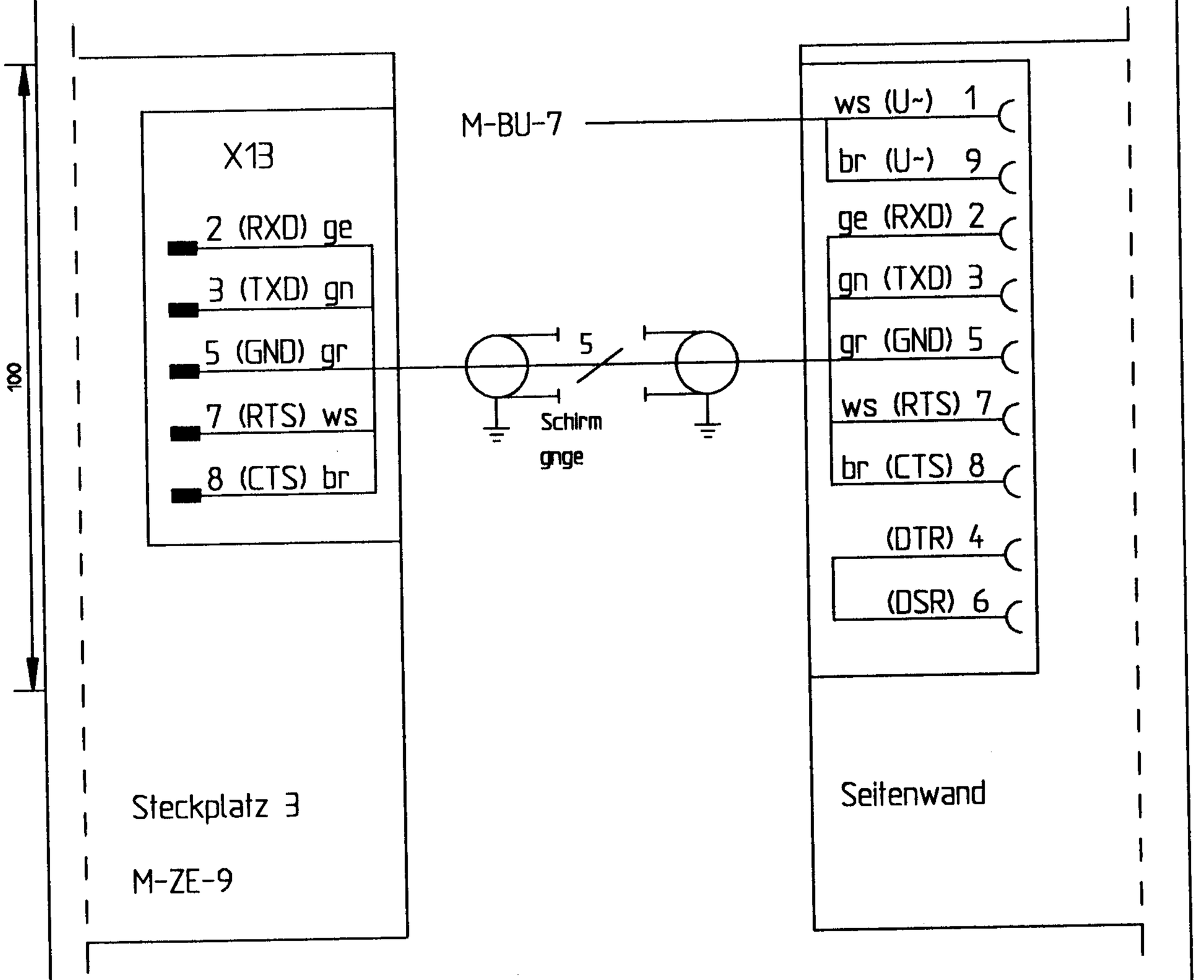
Anschlußplan Bedienfeld - Steuergerät

Typ 3568-2/21

PFAFF

Zeichnungs-Nr. 91-191 316-95

Blattzahl: Blatt:



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		2						
		1						
		0	Eingef. lt.					
Paßmaß	Abmaße	Nr.	Zahl kommt vor	Änderung Nr.	Datum	Bearb.	Oberflächenzustand	Schl.-zahl x

ähnlich ——

Allgemeintoleranzen: ——

Tolerierung DIN ISO 8015

Typ: 3568

19 93	Datum	Name
Gezeichnet	05.11.	
Geprüft	05.11.	
Fkt. gepr.		
Normgepr.		
Genehmigt	05.11.	

Oberflächen DIN ISO 1302

Werkstückkanten: DIN 6784

Werkstoff:

Hergestellt aus:

PFAFF

Ersatz für:

Ersetzt durch:

Ausf. lt. Änd.-Nr.

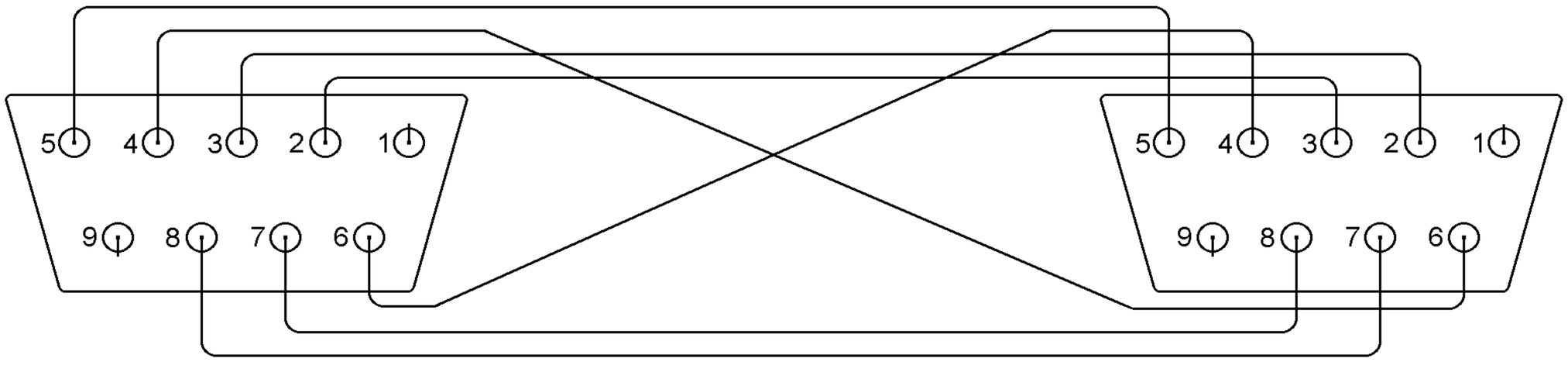
Maßstab ——

Benennung: STP Anschluß ser. Schnittstelle 3568-2/21

Zeichnungs-Nr. 91-191 319-95

CAD

Blattzahl: Blatt:



Wireing connections for the interface cable
used on the Pfaff System 3000 program unit

Bedienfeld M-TA-5/001

X1/X2

OPTION

A1 M-NG-5A
+ 5V
+ 12V
+ 15V
PF
BAT.L

M-BU-7/003

A3 M-ZE-9/008

A4 M-MR-3/001

A5 M-SM-3/018

A6 M-EA-2/004

A7 M-EA-2/006

A8 M-EA-2/005

A20 M-NG-2
+ 24V
+ 12V
0V

24V
12V
0V

A80 Motorendstufe 10A

A22 M-OA-1

A23 M-OA-1

A26 M-OE-1

A27 M-OE-1

A28 M-OE-1

M-RW-2

M-RW-2

M-RW-2

Lüfter

H1,H2,H3

A/B/0

SM - ENDSTUFEN
BERGER DOPPELENDSTUFE
MD 5-9

Ventile, Lampen

Ventile, Lampen

Schalter, Endschalter
Initiatoren, Fadenwächter

3 RLG n f

NM

SM 5

SM 5

Filter

Programmierfeld
Floppy
PC (SYS 3000)

Nr.	Art der Änderung	Änderung Nr.	Datum	Bearb.
4				
3				
2				
1				
0	Eingeführt lt.			

CAD

	Datum	Name	
1995			
Gezeichnet	16.01.	Louis	Ersatz für: Zeichnung v. 22.02.94
Gepr./Genehm.	16.01.		Ersetzt durch:
Normgepr.			Ausf. lt. Änd.-Nr.

Benennung

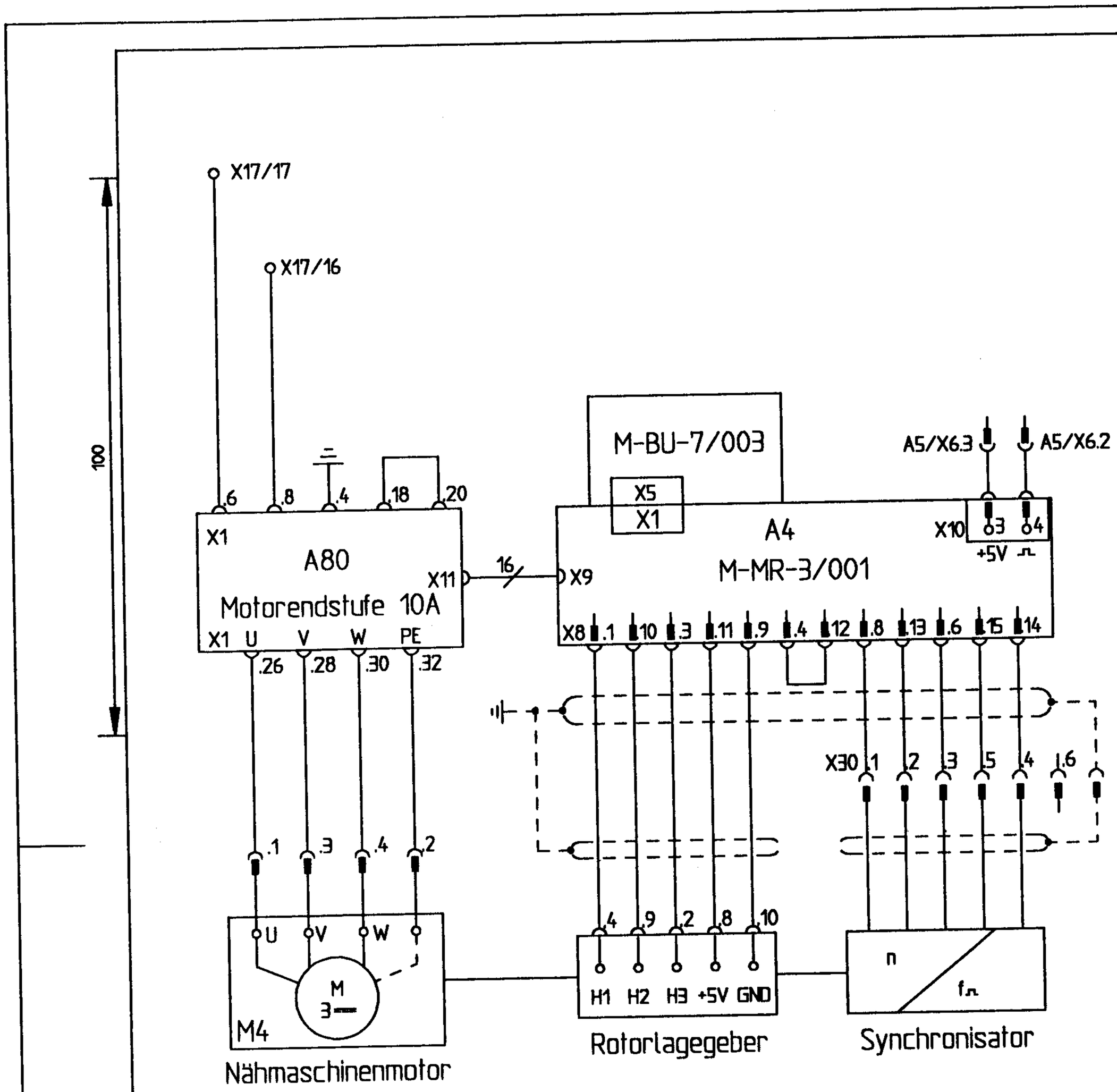
Blockschaltbild 3568-2/21

Typ 3568-2/21

PFAFF

Zeichnungs-Nr.
91-191 320-95

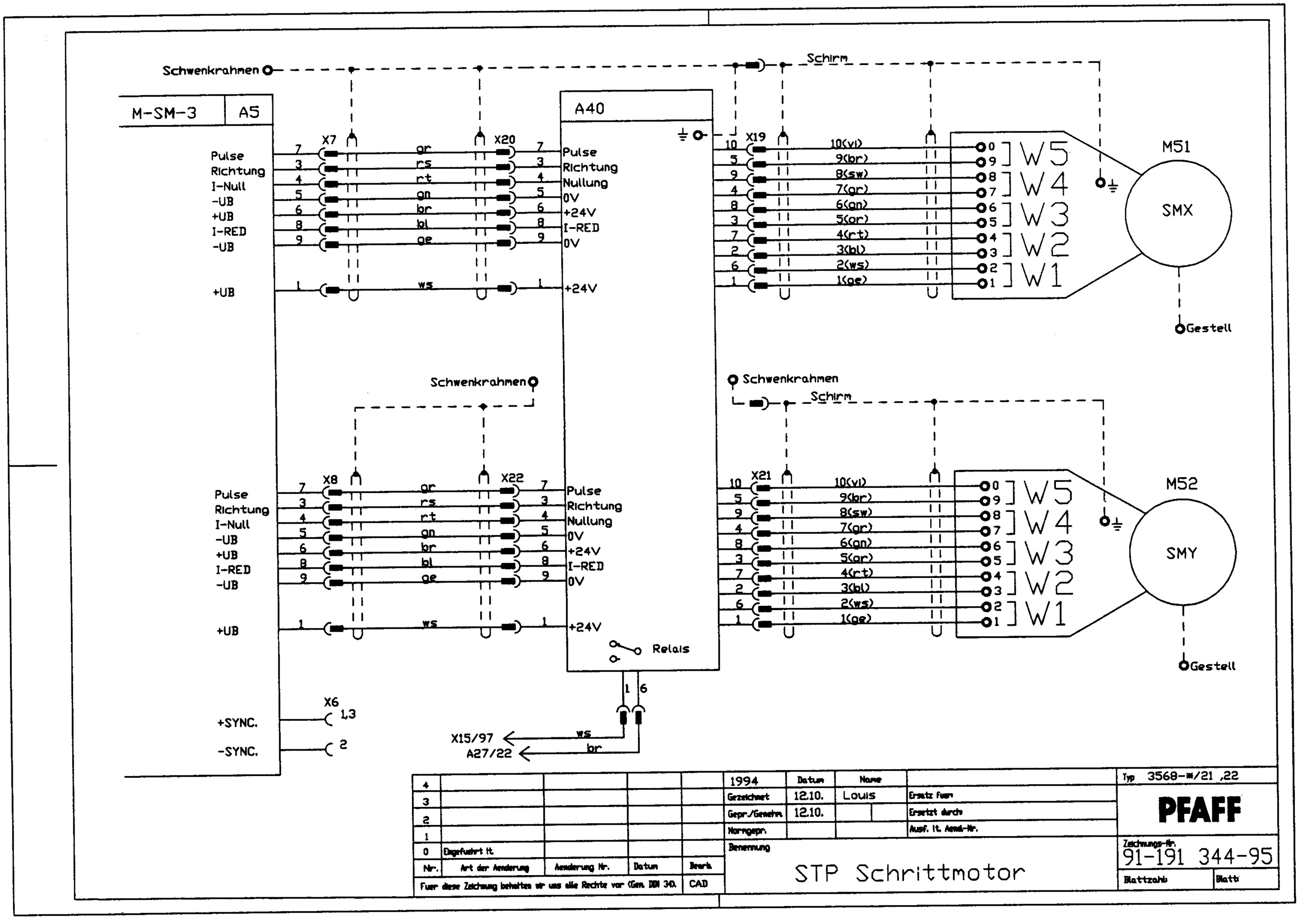
Blattzahl: Blatt:



		4						
		3						
		2						
		1					Farbkomb.	
		0	Eingef. lt.					
Paßmaß	Abmaße	Nr.	Zahl kommt vor	Änderung Nr.	Datum	Bearb.	Oberflächenzustand	Schl.-zahl x

ähnlich ——

Allgemeintoleranzen:				Tolerierung DIN ISO 8015	Typ: 3568-12/21, /22
1994	Datum	Name	Oberflächen DIN ISO 1302	Werkstoff:	PFAFF
Gezeichnet	22.04	Louis			
Geprüft	22.04		Werkstückkanten:	Hergestellt aus:	Ersatz für:
Fkt. gepr.					Ersetzt durch:
Normgepr.					Ausf. lt. Änd.-Nr.
Genehmigt	22.04		DIN 6784		Zeichnungs-Nr. 91-191 340-95
Maßstab 1:1			Benennung: STP Nähmotor		
			Schutzvermerke nach DIN 34 beachten. Copyright reserved.	CAD	Blattzahl: / Blatt:



4					1994	Datum	Name
3					Gezeichnet	12.10.	Louis
2					Gepr./Genehm.	12.10.	
1					Normgepr.		
0	Dagefuehrt it.				Benennung		
Nr.	Art der Aenderung	Aenderung Nr.	Datum	Bearb.			

Fuer diese Zeichnung behalten wir uns alle Rechte vor (Gem. DIN 34).

CAD

Ersatz fuer

Ersetzt durch

Ausf. lt. Aend.-Nr.

Typ 3568-*/21 ,22

PFAFF

STP Schrittmotor

Zeichnungs-Nr. 91-191 344-95

Blattzahl

Blatt

71-2500-0267 (3x)
71-1300-0377 (3x)
71-1300-0380 (3x)
71-1300-0374 (3x)

71-1300-0375
71-1300-0380
71-1300-0377
71-2500-0267

71-1300-0374
71-1300-0380
71-1300-0377

71-1300-0374
71-1300-0380
71-1300-0377

71-1300-0374
71-1300-0380
71-1300-0377
71-2500-0267

71-1300-0374
71-1300-0380
71-1300-0377
71-2500-0267

95-730 103-71

S114
H114

S106
H106

S113
H113

S111

S101

S103
H103

S105
H105

S115
H115

S120
H120

S112

S102

S104
H104

71-1100-0307

71-1300-0374
71-1300-0380
71-1300-0377
71-2500-0267

71-1300-0374
71-1300-0380
71-1300-0377

71-1300-0374
71-1300-0380
71-1300-0377

71-1300-0374
71-1300-0380
71-1300-0377
71-2500-0267

ähnliche Teile-Nr. 91-093 903-71

dazu: Anschlußplan Bedienfeld Steuergerät
91-190 904-95
dazu: 0,1 Blatt Schild (Bedienpult)
71-0100-0091

100

		4							
		3							
		2							
		1						Farbkomb.	7
		0	Eingef. lt.						
Paßmaß	Abmaße	Nr.	Zahl kommt vor	Änderung Nr.		Datum	Bearb.	Oberflächenzustand	Schl.-zahl x

Allgemeintoleranzen:					Typ: 3568-2/21
19 93	Datum	Name	Oberflächen DIN ISO 1302	Werkstoff: s. Einzelteile	PFAFF
Gezeichnet	27.10.				
Geprüft	27.10.		Werkstückkanten: DIN 6784	Hergestellt aus:	Ersatz für:
Fkt. gepr.					Ersetzt durch:
Normgepr.					Ausf. lt. Änd.-Nr.
Genehmigt	27.10.				Zeichnungs-Nr.
Maßstab 1:1			Benennung: Bedienfeld Buggerstation		91-291 216-X1
			Schutzvermerke nach DIN 34 beachten. Copyright reserved.	CAD	Blattzahl: 2 / Blatt: 1

71-3700-0159
71-3700-0175

71-3700-0175
70-3715-0003

Netz-Zultg. 91-093 901-91

71-3700-0158
71-3700-0175
71-3700-0210

91-291 201-91

71-3700-0178
71-3700-0238

Steuerleitung 91-093 902-91

11-173 177-25 (3x)
12-024 151-25 (3x)
12-305 114-25 (3x)

91-290 143-91
91-290 116-91 (2x)
91-191 203-95
71-4800-0012

95-625 838-75 (2x)
11-130 284-15 (4x)
12-305 174-15 (4x)
12-500 190-45 (4x)
12-024 191-25 (4x)

Netz-Zultg.

91-290 327-91

71-3700-0159
71-3700-0175

71-3700-0159
71-3700-0175

Innenansicht

ähnlich

100

		4							
		3							
		2							
		1						Farbkomb.	7
		0	Eingef. lt.						
Paßmaß	Abmaße	Nr.	Zahl kommt vor	Änderung Nr.		Datum	Bearb.	Oberflächenzustand	Schl.-zahl x

Allgemeintoleranzen: DIN 7168-m				Tolerierung DIN ISO 8015	Typ: 3568-2/21
19 93	Datum	Name	Oberflächen DIN ISO 1302	Werkstoff: s. Einzelteile	PFAFF
Gezeichnet	27.10.				
Geprüft	27.10.		Werkstückkanten: DIN 6784	Hergestellt aus:	Ersatz für:
Fkt. gepr.					Ersetzt durch:
Normgepr.					Ausf. lt. Änd.-Nr.
Genehmigt	27.10.				Zeichnungs-Nr.
Maßstab 1:1			Benennung: Bedienfeld Buggerstation		91-291 216-X1
			Schutzvermerke nach DIN 34 beachten. Copyright reserved.	CAD	Blattzahl: 2 / Blatt: 2

A1	Netzgerät	M-NG-5A	91-290 435-91
A3	Best.Ltp.	M-ZE-9/008	91-290 587-93/008
A4	Best.Ltp.	M-MR-3/001	91-290 060-93/001
A5	Best.Ltp.	M-SM-3/018	91-093 459-93/018
A6	Best.Ltp.	M-EA-2/004	91-092 767-93/004
A7	Best.Ltp.	M-EA-2/006	91-092 767-93/006
A8	Best.Ltp.	M-EA-2/005	91-092 767-93/005
A20	Best.Ltp.	M-NG-2	91-093 329-91
A22	Best.Ltp.	M-OA-1	91-092 323-91
A23	Best.Ltp.	M-OA-1	91-092 323-91
A26	Best.Ltp.	M-OE-1	91-092 321-91
A27	Best.Ltp.	M-OE-1	91-092 321-91
A28	Best.Ltp.	M-OE-1	91-092 321-91
A80	Motorendstufe 10A		91-290 343-91

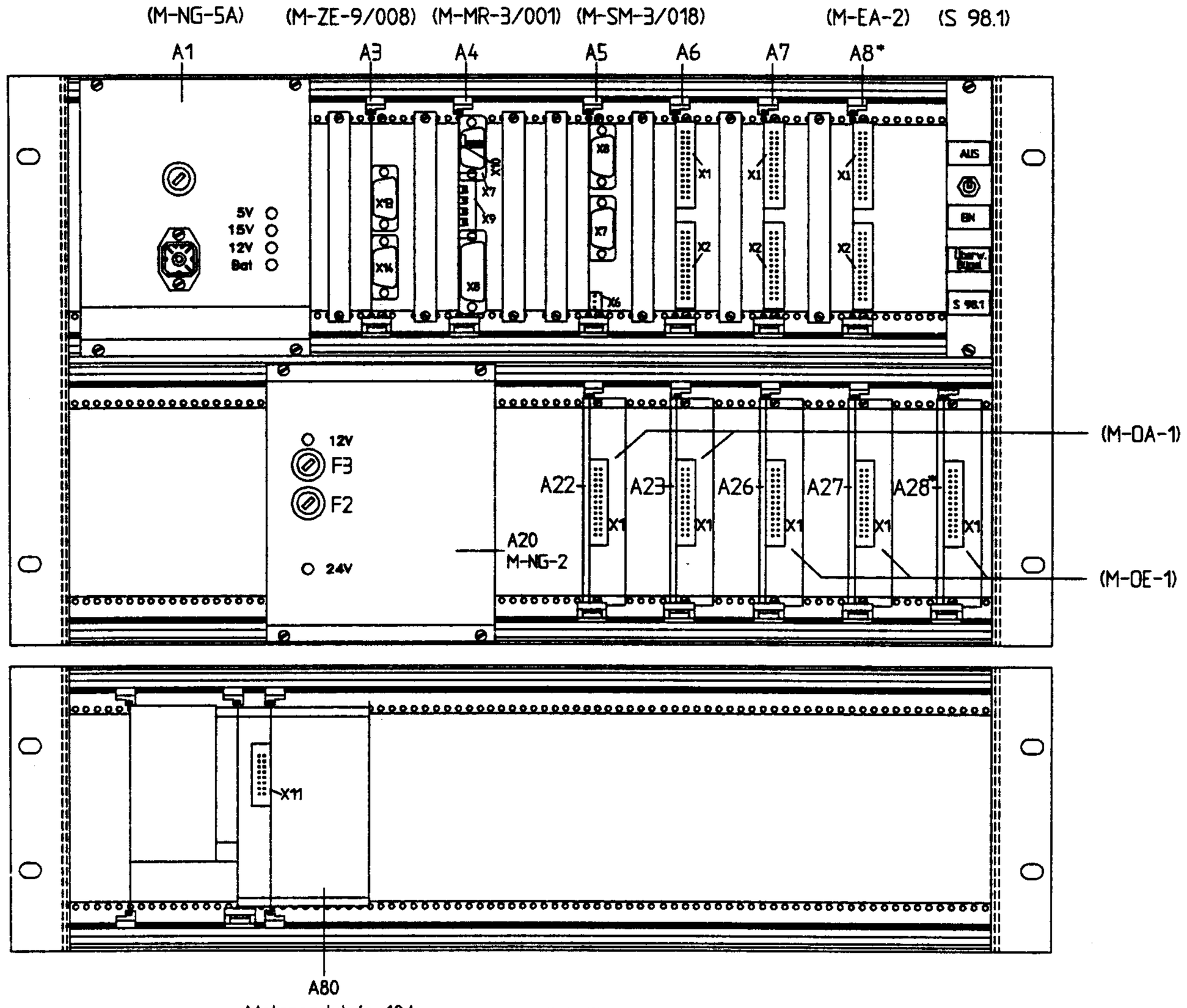
100

ähnlich 91 093 854-95

Schrift schwarz,Hintergrund transparent.

		4						
		3						
		2						
		1						9
		0	Eingef. lt.					
Paßmaß	Abmaße	Nr.	Zahl kommt vor	Änderung Nr.	Datum	Bearb.	Oberflächenzustand	Schl.-zahl x

Allgemeintoleranzen:				Tolerierung DIN ISO 8015	Typ: 3568-2/21
1994	Datum	Name	Oberflächen DIN ISO 1302	Werkstoff: Klebefolie (transparent)	PFAFF
Gezeichnet	22.02.	Conrad			
Geprüft	22.02.		Werkstückkanten: DIN 6784	Hergestellt aus:	Ersatz für: Zeichnung v. 26.10.93
Fkt. gepr.					Ersetzt durch:
Normgepr.					Ausf. lt. Änd.-Nr.
Genehmigt					Zeichnungs-Nr. 91-291 238-X5
Maßstab 1:1			Benennung: Klebefolie (Nummerierung)		
Schutzvermerke nach DIN 34 beachten. Copyright reserved.			CAD	Blattzahl:	Blatt:



Verkabelung
wireing

von: from:	nach: to:
A3/X13	Programmierfeld
A3/X14	Bedienfeld
A4/X8 A/B	Rotorlagegeber
	Synchronisator
A4/X9	A80/X11
A4/X10	A5/X6
A5/X7	SM Endstufe X
A5/X8	SM Endstufe Y
A6/X1	A23/X1
A6/X2	A22/X1
A7/X1	A27/X1
A7/X2	A26/X1
A8/X1	A28/X1

* A8 M-EA-2 und
A28 M-OA-1 optional
bei Schablonenerkennung

ähnlich 91-094 054-95

Schrift schwarz , Hintergrund transparent

Nr.	Art der Änderung	Änderung Nr.	Datum	Bearb.
4				
3				
2				
1				
0	Eingeführt lt.			

1994	Datum	Name	
Gezeichnet	15.12.		Ersatz für: Zeichnung v. 22.02.94
Gepr./Genehm.	15.12.		Ersetzt durch:
Normgepr.			Ausf. lt. Änd.-Nr.

Benennung

Klebefolie - Bestückung

Typ 3568-12/21

PFAFF

Zeichnungs-Nr.
91-291 239-95

Blattzahl: Blatt:

PFAFF

G. M. PFAFF
Aktiengesellschaft

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