PFAFF® Industrial

8301

INSTRUCTION MANUAL

The parts list for the machines can be downloaded free of charge from the internet address www.pfaff-industrial.com/pfaff/de/service/downloads. As an alternative to the internet download the adjustment manual can also be ordered in book form under part no.**296-12-18 995.**

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1 Safety

1.01 Directives

This machine is constructed in accordance with the European regulations indicated in the conformity and manufacturer's declarations.
In addition to this instruction manual, please also observe all generally accepted, statutory and other legal requirements, including those of the user's country, and the applicable pollution control regulations! The valid regulations of the regional social insurance society for occupational accidents or other supervisory authorities are to be strictly adhered to!

1.02 General notes on safety

- The machine may only be operated by adequately trained operators and only after these have read the appropriate Instruction Manual!

- The danger and safety instructions attached to the machine must be followed!

- The machine may only be used for the purpose intended and may not be operated without its safety devices. All relevant safety regulations must be adhered to.

- When changing the feed rollers or the hot air nozzle, when leaving the machine unattended or during maintenance work, the machine must be disconnected from the power supply by pulling out the plug!

- The daily maintenance work may only be carried out by appropriately trained personnel!

- During repair and maintenance work on pneumatic devices the machine must be disconnected from the pneumatic supply system! The only exceptions permitted are during adjustment work and function tests carried out by appropriately trained personnel!

- Repairs and special maintenance work may only be carried out by qualified service staff or appropriately trained personnel!

- Work on electrical equipment may only be carried out by appropriately trained personnel!

- Work is not permitted on parts and equipment which are connected to the power supply! Exceptions to this rule are found in the regulations EN **50110.**

- Modifications and alterations to the machine may only be carried out under observance of all the relevant safety operations!

- Only spare parts which have been approved by us are to be used for repairs! We draw special attention to the fact that spare parts and accessories not supplied by us have not been subjected to testing nor approval by us. Fitting and/or use of any such parts may cause negative changes to the design characteristics of the machine. We shall not accept any liability for damage caused by the use of non-original parts.

| 1.03 | Safety symbols |

Danger!
Special points to observe.

Danger of hands being crushed!

Danger of burns from hot surface!

Danger from electric voltage!
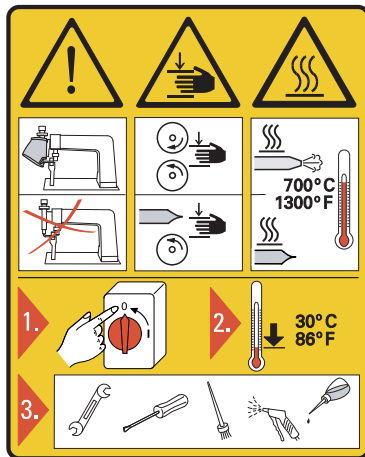
Caution

Do not operate without finger guard and safety devices.

Turn off the main switch and let the **machine cool down** before any setting up, maintenance or cleaning work!

| 1.04 | Important notes for the user |

- This instruction manual belongs to the equipment of the machine and must be available to the operating staff at all times.

- This instruction manual must be read before the machine is operated for the first time.

- Both operating and technical staff must be instructed on the safety devices of the machine and on safe working methods.

- It is the duty of the user to operate the machine in perfect running order only.

- The user must ensure that none of the safety devices are removed nor put out of working order.

- The user must ensure that only authorized persons operate and work on the machine.

- The user must make sure there is no high-frequency welding equipment being operated in direct proximity to the machine that exceeds the EMC limit values according to EN 60204-31 for the machine.

For further information please refer to your PFAFF agency.

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1.05   Operating and technical staff

1.05.01   Operating staff

Operating staff are the persons responsible for setting up, operating and cleaning the machine and for removing any disturbances in the sewing area.

The operating staff is obliged to observe the following points, and must:

● always observe the notes on safety in this instruction manual!

● avoid using any working methods which adversely affect the safety of the machine!

● avoid wearing loose-fitting clothing or jewelry such as necklaces or rings!

● also ensure that only authorized persons are allowed near the danger area of the machine!

● immediately report to the user any changes to the machine that may affect its safety!

1.05.02   Technical staff

Technical staff are persons who have been trained in electrical engineering, electronics and mechanical engineering. They are responsible for lubricating, servicing and repairing the machine.

The technical staff is obliged to observe the following points, and must:

● always observe the notes on safety in this instruction manual!

● switch off the on/off switch before carrying out any maintenance and repair work on the machine!

● never work on parts or equipment still connected to the power supply! Exceptions to this are only permissible according to regulations **EN 50110.**

● replace all safety covers after maintenance and repair work!

1.06 Danger

⚠ When the machine is in operation, a work area of **1** m must be kept free in front of and behind the machine, so that access to the machine is possible at all times without difficulty.
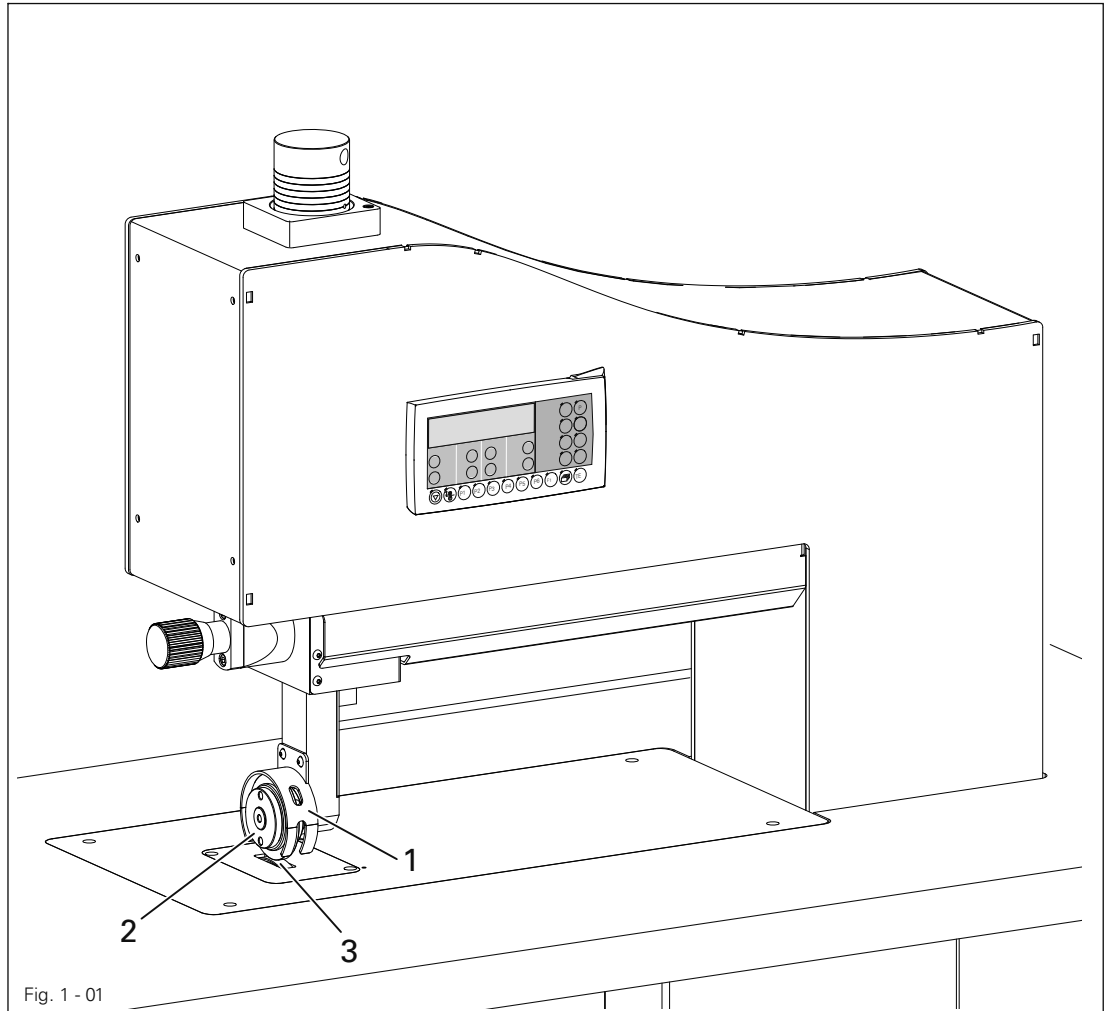
Fig. 1 - 01

Do not operate the machine without finger guard **1**!
Danger of crushing if the fingers are drawn in!

During operation do not place your hands in the area of feed roller **2** and sonotrode **3**! Danger of fingers being drawn in and crushed!

During operation do not touch sonotrode **3**!
Danger of burns from the heat-generating surface!

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2 Proper use

The PFAFF **8301** is an ultrasonic welding machine for the continuous welding of thin thermoplastic materials, e.g. fleeces, felts, meshed or woven fabrics.

Any and all uses of this machine which have not been approved of by the manufacturer are considered to be inappropriate! The manufacturer cannot be held liable for any damage caused by the inappropriate use of the machine! The appropriate use of the machine includes the observance of all operational, adjustment, maintenance and repair measures required by the manufacturer!

3 Specifications▲

Dimensions:
Width: .... approx. 1200 mm
Depth: ....approx.. 800 mm
Height: .... approx. 1310 mm
Passage width:.. approx. 410 mm
Max. through-passage under transport rollers:.. 20 mm

Connectivity data
Operating voltage: ....230 V ± 10%, 50/60 Hz, 1-phase
Max. input power:... 1000 VA
Mains protection:.. 16 A
Leakage current: .... $\leq$ 5 mA◆

Performance data:
Sealing pressure: ....100 - 500 N
Sealing power: ....max. 400 W
Sealing speed: .... 0,1 - 10 m/min*

Noise data
Emission sound level at the workplace:...L_{pA} < 70 dB(A)■
(Noise measurement in acc. with DIN 45 635-48-A-1, ISO 11204, ISO 3744, ISO 4871)

Net weight: ....approx. 120 kg

▲ Subject to alterations

* Depending on transport roller diameter; stated max. value for 80 mm roller diameter

■ K_{pA} = 2,5 dB

◆ Due to the use of network filters there is a nominal leakage current of $\leq$ 5 mA.

4   Disposal of Machine

● Proper disposal of the machine is the responsibility of the customer.

● The materials used for the machine are steel, aluminium, brass and various plastic materials. The electrical equipment comprises plastic materials and copper.

● The machine is to be disposed of according to the locally valid pollution control regulations; if necessary, a specialist ist to be commissioned.

⚠ Care must be taken that parts soiled with lubricants are disposed of separately according to the locally valid pollution control regulations!

5	Transportation, packing and storage

5.01 Transportation to customer's premises

The machines are delivered completely packed.

5.02 Transportation inside the customer's premises

The manufacturer cannot be made liable for transportation inside the customer's premises nor to other operating locations. It must be ensured that the machines are only transported in an upright position.

5.03 Disposal of packing materials

The packing materials of this machine comprise paper, cardboard and VCE fibre. Proper disposal of the packing material is the responsibility of the customer.

5.04 Storage

If the machine is not in use, it can be stored as it is for a period of up to six months, but It should be protected against dust and moisture.
If the machine is stored for longer periods, the individual parts, especially the surfaces of moving parts, must be protected against corrosion, e.g. by a film of oil.

6   Explanation of symbols

In this instruction manual, work to be carried out or important information is accentuated by symbols. These symbols have the following meanings:
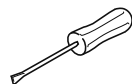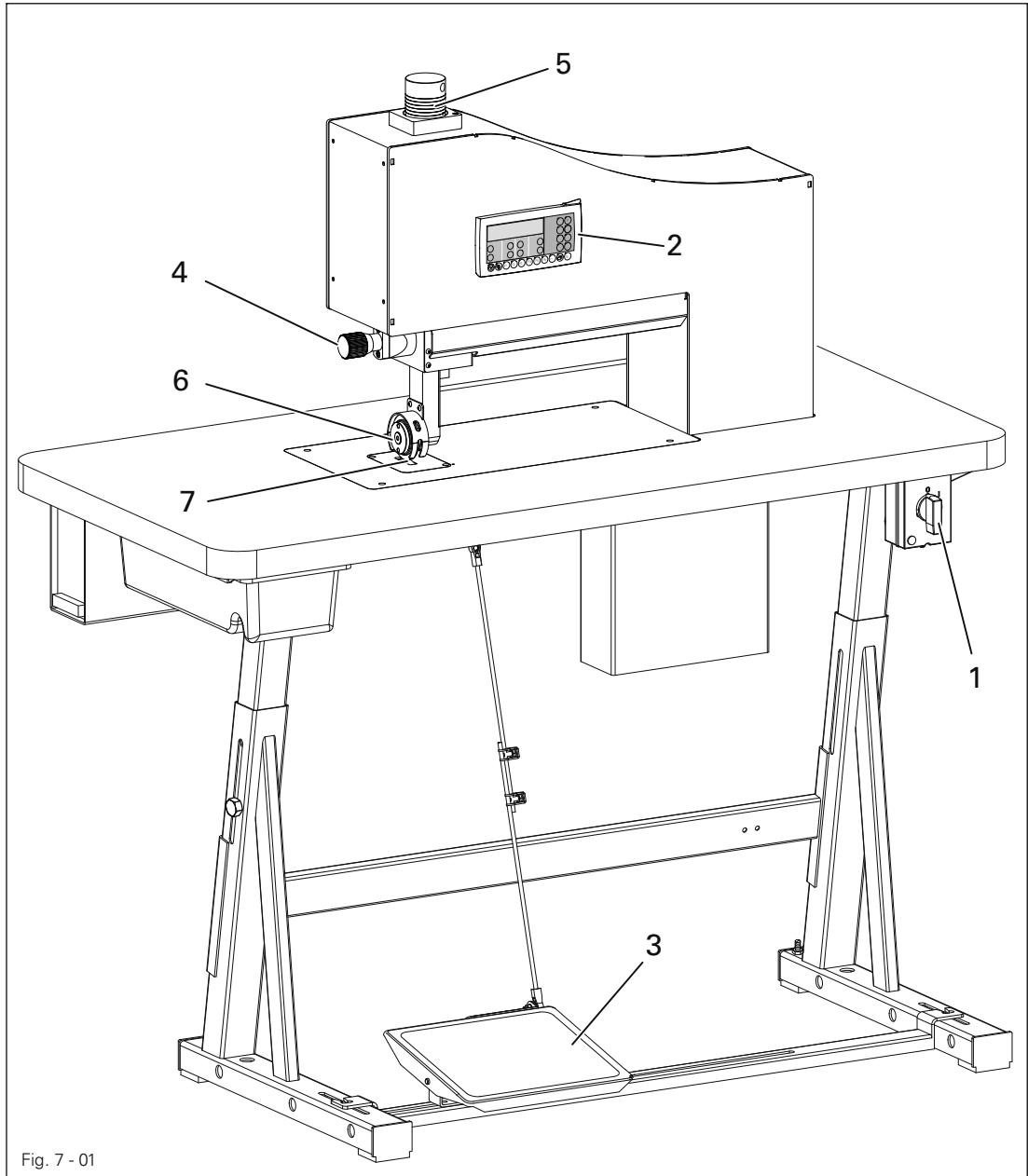
Note, information

Cleaning, care

Lubrication

Maintenance, repairs, adjustment, service work
(only to be carried out by technical staff)

7   Controls

7.01   Summary of control elements

Fig. 7 - 01

- ● Main switch **1**, see **Chapter** 7.02
- ● Control panel **2**, see **Chapter** 7.06
- ● Pedal **3**, see **Chapter** 7.03
- ● Setting wheel **4** for roller distance, see **Chapter** 7.04
- ● Setting wheel **5** for roller pressure
- ● Upper transport roller **6**
- ● Sonotrode **7**

PFAFF®Industrial
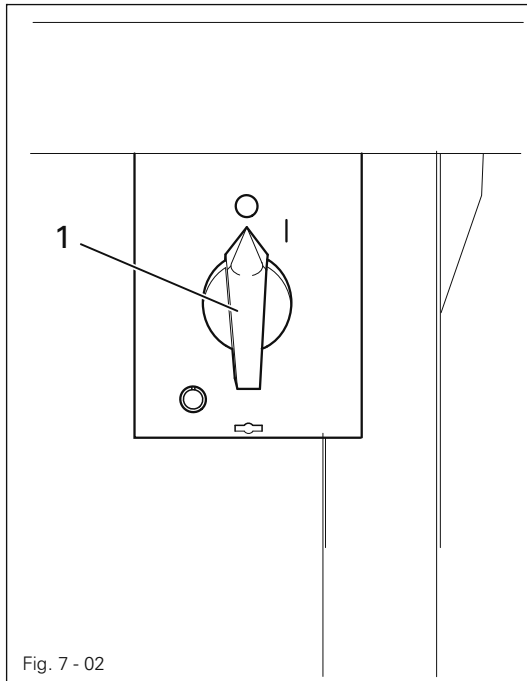
7.02   Main switch

Fig. 7 - 02

● The machine is switched on or off by turning main switch **1**.

Position "**0**":   Machine is switched off
Position "**I**":   Machine is switched on

About **30** seconds after the machine is switched on, the last basic menu called up before the machine was switched off will be displayed.
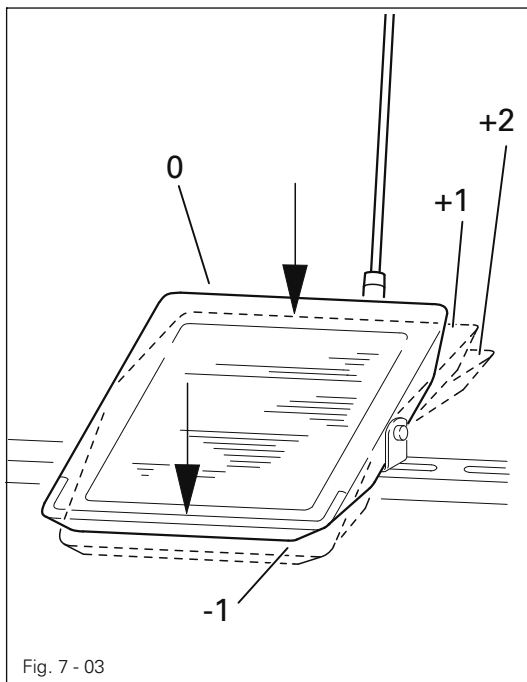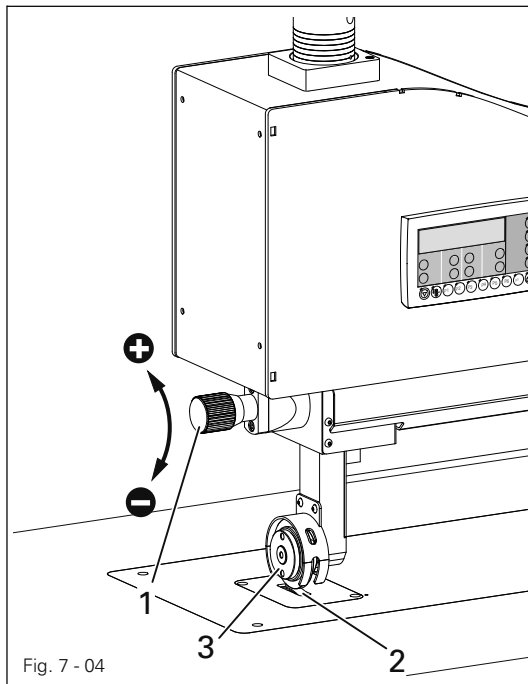
7.03   Pedal

Fig. 7 - 03

Foot switch functions

  0 = Rest position (welding stops)
+1 = Transport roller is lowered to welding position.
+2 = Press and hold treadle:
Welding process begins and runs as long as the treadle is pressed.
-1 = Lift transport roller

Controls

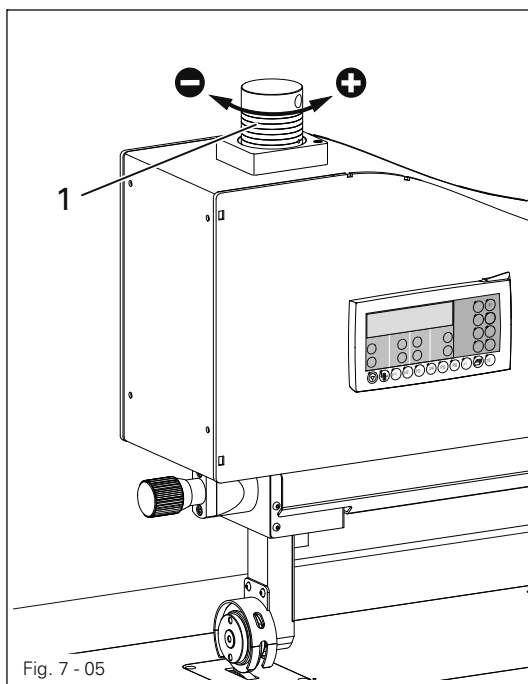### 7.04   Setting wheel for roller distance

Fig. 7 - 04

● The distance between the upper transport roller and the sonotrode is adjusted by turning the setting wheel **1**.

⚠️ Sonotrode **2** and transport roller **3** must never be in direct contact!
Danger of machine damage!
Exempted are steel sonotrodes.

7.05   Setting wheel for roller pressure

Fig. 7 - 05

● Roller pressure is adjusted by turning the setting wheel **1**.

● The roller pressure is shown on the scale of the setting wheel.

● This roller pressure value can be input in the display for each programme, but only serves for memory purposes.

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7.06 Control panel

The control panel is used to display and access machine functions for set-up and welding, to enter parameter values and to read error messages and service settings.

Fig. 7 - 05
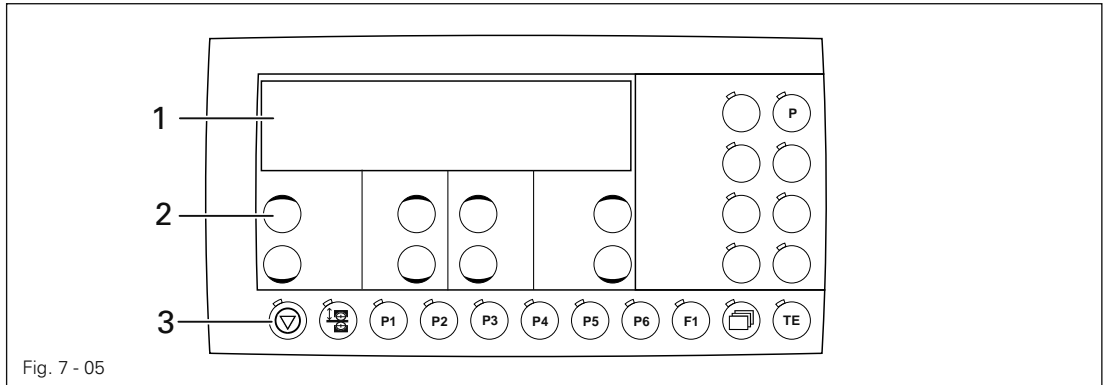
The control panel has the following control and display elements:

● The display screen **1** consists of a two-line, alphanumerical LCD display with **16** symbols per line and is used to show relevant information and selection parameters.

● The plus-minus keys **2** are used to select or alter the functions and parameters shown on the display.

● The function keys **3** are used to switch the relevant function on or off. Activated functions are shown in each case by an illuminated LED.

7.06.01 Symbols on the display

In addition to texts and set values, the following symbols are shown on the display

⊐▸	Current program number
͡	Maximum speed in current seam sector

Controls

Function keys

The function keys described in the following are used primarily for the activation/ deactivation of machine functions. If the function is turned on, the corresponding key LED lights up.
Where a value is to be set for the activated function, this can be done via the +/- **keys 2**.
Pressing and holding the +/- **keys** will initially change the number value shown above the key slowly. Holding the +/- **key** longer will speed up the speed at which the number value changes.
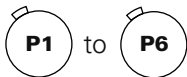The following description contains the relevant +/- **keys** as shown here.

Stop
The machine is stopped during the welding process.

Low/lift the transport roller
When activated, the transport rollers are lifted or lowered.

Programming keys
Programmes **1** - **6** are called up with these keys.
Alternatively, the programmes **0** - **19** can be called up via the left +/- **keys**.

F1
Transport rollers are blocked (e.g. when replacing the transport rollers).

Scroll
Pressing and holding this key will scroll through the following sub-menus:
Amplitude, Speed, Welding Pressure (only advance registration function), Differential, Parameters, SD Card.

TE
This key allows toggling between Production mode (**LED** off) and Input mode (**LED** on.

P
Here, a test programme can be created.

8   Installation and commissioning

After the machine has been unpacked, check it for any damages caused during transportation. If there are any damages, please notify the transport company and your local PFAFF agency.

⚠️ The machine must only be installed and commissioned by qualified personnel. All relevant safety regulations must be strictly adhered to!

8.01   Installation

The site where the machine is installed must be provided with suitable connections for the electric current, see Chapter 3 Specifi cations.
It must also be ensured that the standing surface of the machine site is fi rm and horizontal, and that suffi cient lighting is provided.

8.01   Adjusting the table-top height
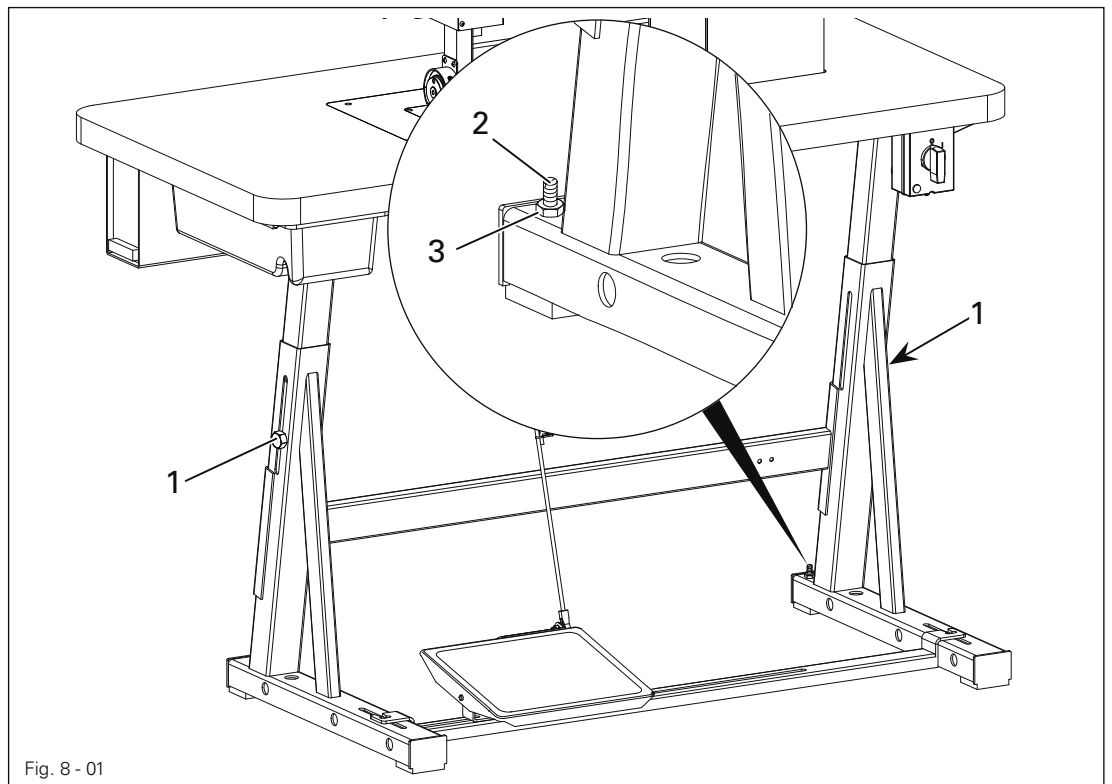
Fig. 8 - 01

● Slide the machine off the pallet.

● Loosen screw 1.

● Adjust the table tap to the required working height by increasing or reducing the height of the stand and then level the table-top horizontally.

ℹ️ To avoid the stand tilting, adjust it evenly on both sides.

● To guarantee that the stand is standing securely, it must be positioned securely on the ground with all four legs.

● The height can be adjusted with screw 2 (nut 3).

8.02   Commissioning

● Thoroughly clean machine as needed.

● Check the machine, particularly the electrical wiring, for any damage.

● Have skilled personnel check if the machine can be operated with the available mains voltage.

⚠   Do not operate the machine if there is any discrepancy.

⚠   The machine may only be connected to an earthed socket!

● Connect the machine to the compressed air system. The manometer should display a pressure of **6** bar. Set this value, if needed (see Section **12.03** "**Checking the air pressure of the maintenance unit**").

8.03   Switching the machine on/off

● Turn the main switch in position "I" (see Section **7.02** "**Main switch**") to turn the machine on.

PFAFF®Industrial
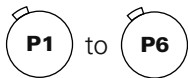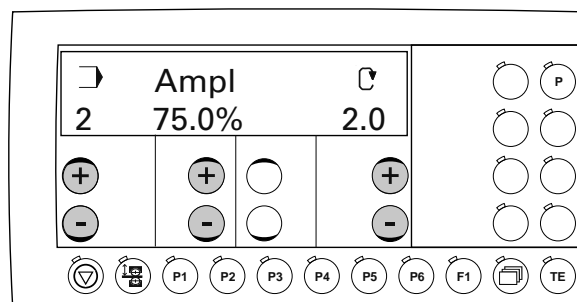
9   Preparation

⚠️ All regulations and notes in this Service Manual must be observed!

Special attention must be paid to the safety regulations!

⚠️ All setting-up work must only be carried out by personnel with the appropriate training!

9.01   Programme call-up and modification

● Switch machine on.

```
  ⌐    Ampl       ↻           ○  P
  2    75.0%     2.0          ○  ○
  ⊕     ⊕    ○     ⊕          ○  ○
  ⊖     ⊖    ○     ⊖          ○  ○
  ⊘  ⊡  P1  P2  P3  P4  P5  P6  F1  ⊡  TE
```

P1 to **P6**

● Call up the programme with the desired welding parameters (**0 - 19**) via the keys **P1** to **P6** or via the **+/- keys** on the left.

● The values displayed for Amplitude and Speed can be modified directly via the corresponding **+/- keys** as needed.

● Once modified, these values will be saved.
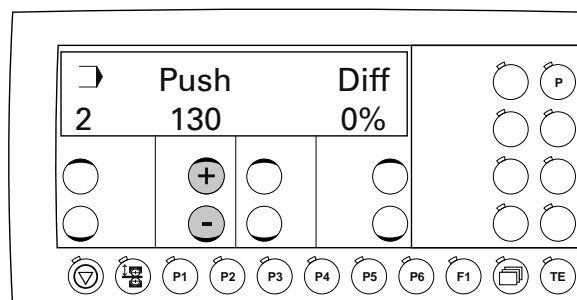
9.02   Setting roller distance and roller pressure

● Switch machine on.

● Call up the menu for inputting the roller pressure.

● Lower the transport rollers and set the roller distance as described in Section **7.04**.

● Set the roller pressure (see Section **7.05**).
The roller pressure show on the scale can be entered on the display via the relevant **+/- keys** for each programme, but only serve as a memory aid.

```
  ⌐    Push      Diff         ○  P
  2    130       0%           ○  ○
  ○     ⊕    ○     ○          ○  ○
  ○     ⊖    ○     ○          ○  ○
  ⊘  ⊡  P1  P2  P3  P4  P5  P6  F1  ⊡  TE
```

9.03 Setting the differential transport

● Switch machine on.

● Call up the menu for inputting the differential transport.

● A differential transport value can be entered via the corresponding +/- keys for each programme.
  1.0 % means that the upper transport roller will run **1%** faster than the sonotrode.
  -**1.0** % means that the upper transport roller will run **1%** slower than the sonotrode.
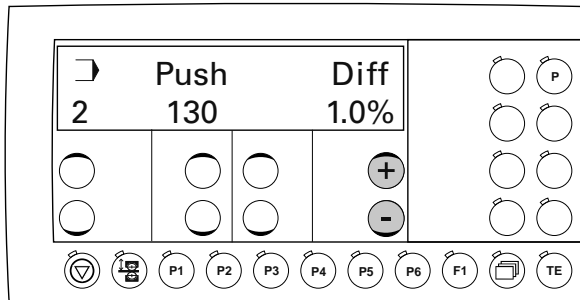
9.04 Additional transport rollers (optional)
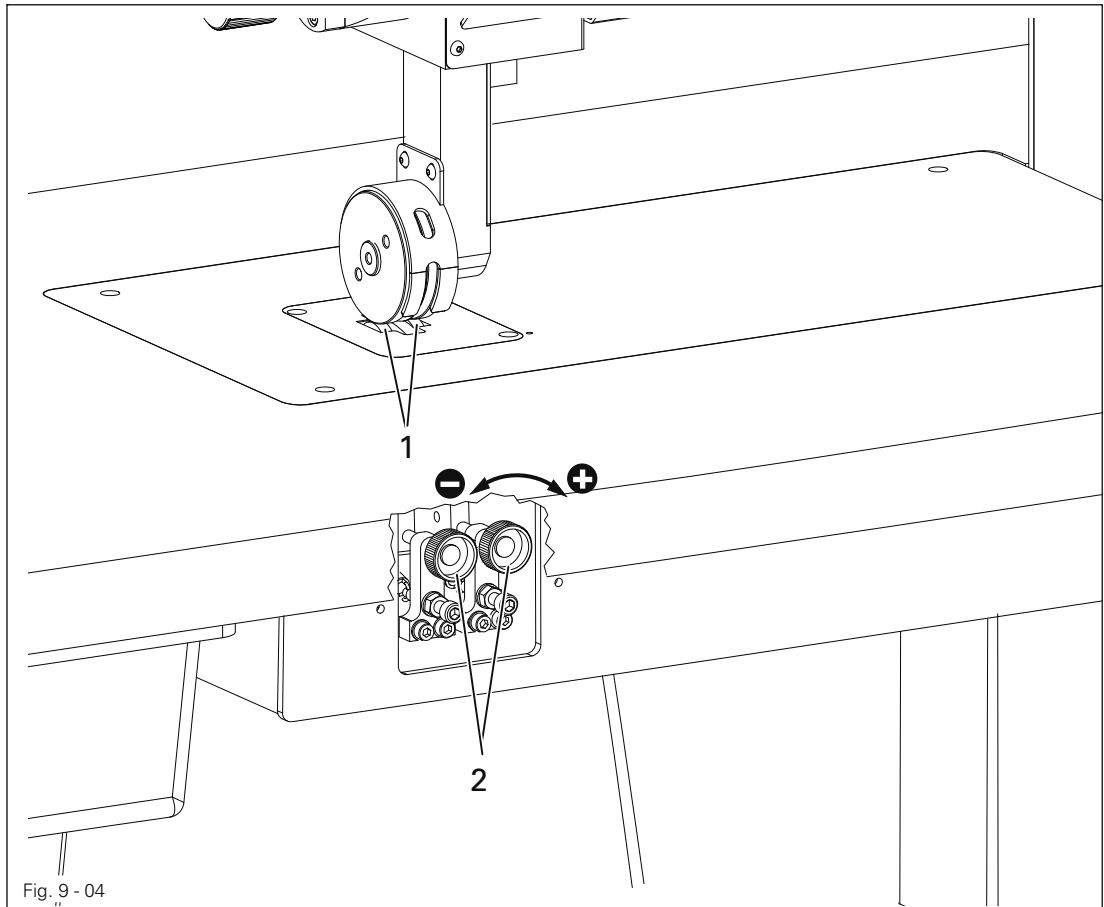
Fig. 9 - 04

● The two additional transport rollers **1** can be lifted or lowered as needed via the setting screws **2**.
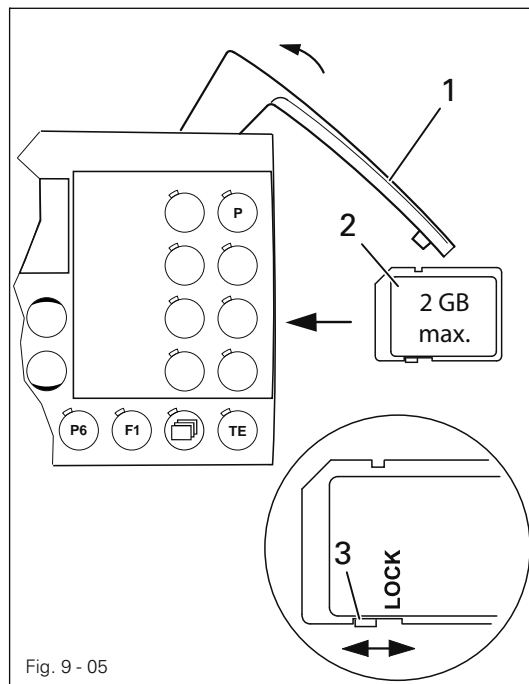
9.05   Inserting and removing the SD-memory card

Fig. 9 - 05

Inserting the SD-memory card

● Open cover **1.**
● Insert SD-memory card **2** into the card slot with the label at the front.
● Close cover **1** again.

Removing the SD-memory card

● Open cover **1.**
● Press the edge of the SD-memory card **2** lightly – the SD-card is ejected.
● Close cover **1** again.

By moving slide **3** it is possible to activate (position "LOCK") or deactivate the write protection function of the SD-memory card. To store, process or delete data on the SD-memory card, the write protection function must be deactivated.

10 Sealing

⚠ The machine may only be operated by properly instructed personnel. The operating personnel must make sure that only authorised persons are in the danger zone of the machine.

10.01 Sealing principle

Due to the vibrations of the sonotrode, the plies of the workpiece are mechanically "hammered" in the seam area. Through the hammering motions of the sonotrode the workpiece is heated until it becomes viscous and at the same time it is pressed and fed to form the seam.

In order to achieve optimum sealing results, certain conditions concerning the workpiece and the machine settings have to be fulfilled.

The workpiece must be:
- sealable (thermoplast),
-- suitable for processing with the PFAFF **8301** with regard to thickness and properties and
- clean in the seam area.

The basic requirements on the machine are:
- selection of the correct feed roller and setting
- roller pressure
- sealing power
- sealing speed and
- roller gap (distance of the anvil roller to the sonotrode during sealing).

ℹ All settings of the sealing machine are always dependent on the type being sealed and the ambient temperature. As a result of the influence of the individual parameters on each other, optimum settings can only be determined by means of test sealing operations.
All settings required for the welding process are entered or displayed in the control panel.

10.02   Error messages

When an error occurs, the text "ERROR" appears on the display together with an error code and short instructions. In addition the diode in the memory card slot lights up red (see arrow). An explanation of the error codes can be found in the Chapter **11.04 Error message explanations**.
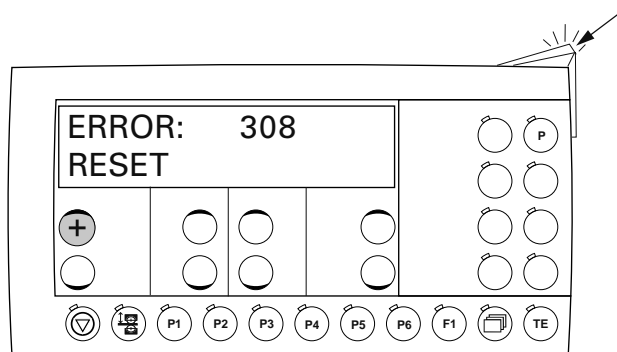
- ● Correct the error.
- ● Acknowledge the correction of the error by pressing the corresponding **plus - key** or by switching the machine off and on.
- ● The diode in the memory card slot (see arrow) turns yellow again

11   Input

11.01   Access codes

The call-up of each individual parameter level can be blocked by inputting a four digit access code. The access code can be modified at any time. The access code is set to "**8301**" ex works.

11.01.01   Inputting the access code

An input prompt for the access code is displayed for functions called up in Input mode that have an access code assigned.
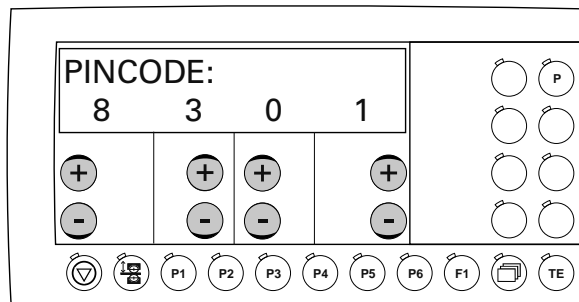
● ZuEnter the access code via the corresponding **+/-** **keys**.

● Finish your input by pressing the key "**TE**" (the machine will switch to "Production" mode).
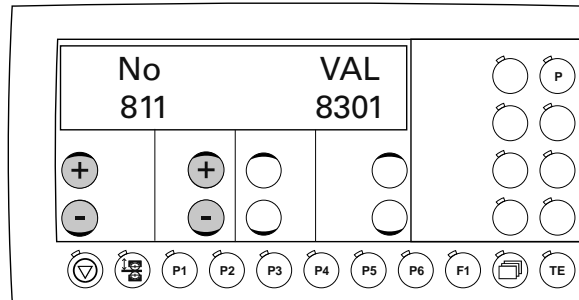
Once the access code has been entered, all protected functions are freely accessible until the machine is switched off.

11.01.02   Modifying the access code

● Call up the menu Parameters in Input mode.

● Call up parameter "**811**".

● Enter the access code if needed (see Section **11.01.01** "**Inputting the access code**").

● Modify the access code via the corresponding **+/- keys**.

● Finish your input by pressing the key "**TE**" (the machine will switch to "Production" mode).

Remember the code!

Protected functions cannot be called up without the corresponding code!
In this case request support from the PFAFF service centre.

11.01.03   Assigning access rights

● Call up the menu Parameters in Input mode.

● Call up parameters "**801**" to "**809**" (see Section **11.03** "**List of parameters**").

● Enter the access code if needed (see Section **11.01.01** "**Inputting the access code**").

● Allow (ON) or disallow (OFF) access via the corresponding **+/- key**.

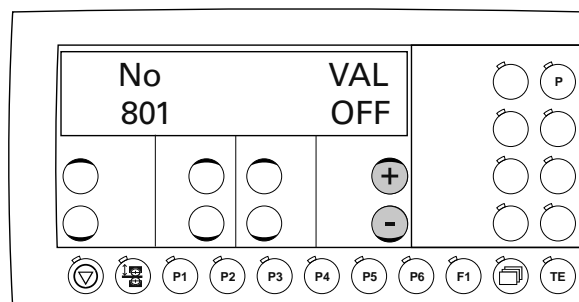● Finish your input by pressing the key "**TE**" (the machine will switch to "Production" mode).

11.02   Example of a parameter input

(TE)   ● Call up the menu Parameters in Input mode.

● Enter the access code if needed (see Section **11.01.01** "**Inputting the access code**").
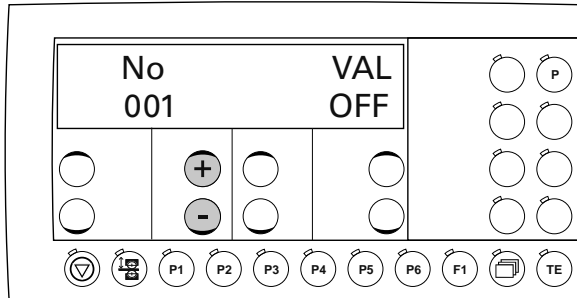
● Select the desired parameter via the corresponding **+/- keys**, e.g. **004** key tone ON/OFF.
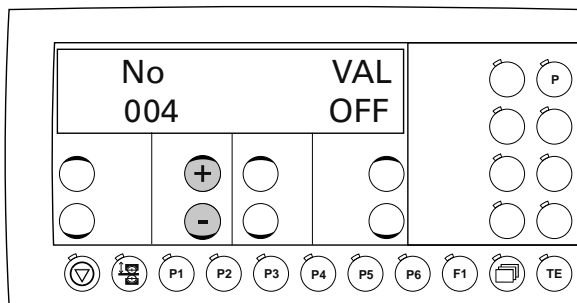
● Switch the key tone to ON via the corresponding **+/- key**.
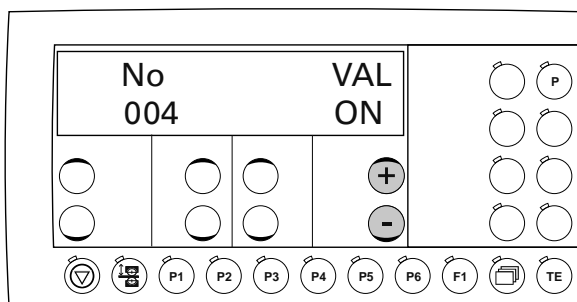
(TE)   ● Finish the input by pressing **TE**. (Machine switches to Production mode).

> An overview with explanations for all the parameters can be found in Section **11.03** "List of parameters".

11.03   List of parameters

⚠ Parameter values must only be modified by relevantly trained personnel!

Group	Parameter	Description	Setting range	Set value
000	001	Start delay [ms] ON/OFF	ON - OFF 10 - 800	ON 300
	002	Reverse after stop [mm]	ON - OFF 1 - 15	ON 2
	003	Treadle mode	**0**	**0**
	004	Key tome	ON - OFF	ON
100	101	Display main processer software version	-	-
	103	Display control panel software version	-	-
200	201	Speed max. [1/10 m/min]	1 - 200	200
	202	**Sonotrode drive** 1 = Motor to gear factor. 2 = Number of teeth - motor side 3 = Number of teeth - sonotrode side 4 = Sonotrodes ø [1/10 mm] 5 = Acceleration factor [1/10 1/s^2]		8 18 30 1040 2000
	203	**Anvil wheel drive** 1 = Motor to gear factor. 2 = Number of teeth - motor side 3 = Number of teeth - sonotrode side 4 = Sonotrodes ø [1/10 mm] 5 = Acceleration factor [1/10 1/s^2]		8 1 1 650
	204	**Torque** (motor current) 1 = Reduced current 2 = Normal current 3 = Max. current (only for a short time)	1 - 3	2

Group	Parameter	Description	Setting range	Set value

600	601	**Display inputs**
		This function allows the checking of the digital inputs. "IN" denotes the input numbers (1 - 16). The associated switch state is displayed under "VAL".
		
		IN VAL
		1 (X5 D-SUB Pin 1) IN1, roller down
		      (ON = Roller down)
		2
		3 X5 D-SUB Pin 3) Ultrasonic generator
		      error (ON = Error)
		4
		5
		6
		7
		8
		9
		10
		11
		12
		13
		14
		15
		16		

	602	**Display special inputs** This function allows the display of the special inputs for "Treadle"; "IN" denotes the inputs (PED). The associated switch state is displayed under "VAL". IN VAL PED Treadle (Speed control unit -1; 0; +1; +2)		

Group	Parameter	Description	Setting range	Set value
600	603	**Switch outputs** This function allows the switching of the digital outputs. "OUT" denotes the selected output (1 - 16). The selected output (S) is set under "VAL" via the +/- key (+), and also reset (R) via the +/- key (-). Locks are checked. Unassigned outputs are not switched. OUT VAL 1 S/R 2 S/R 3 S/R X13 D-SUB Pin 5) roller up/down 4 S/R 5 S/R 6 S/R X13 D-SUB Pin 8) blower ON 7 S/R X13 D-SUB Pin 9) sonotrode fan 8 S/R 9 S/R 10 S/R 11 S/R 12 S/R 13 S/R 14 S/R 15 S/R 16 S/R		
	604	**Move step motors** The step motors SM**1** (X-axis) and SM**2** (Y-axis) are moved individually via their respective +/- keys. Locks are not checked.		
	605	**Cold start (RESET)** The controls carry out a cold start (RESET) via this function; data is re-initialised. Once this function is selected, the machine must be switched OFF and ON again.		

Group	Parameter	Description	Setting range	Set value
800		Function groups can be released (ON) or locked (OFF) for manipulation. The parameters of a locked function group can only be modified after a valid access code has been entered. Once a valid access code has been entered, the lock will remain deactivated until the machine is switched off.		
	801	Access authorisation group **000**	ON - OFF	ON
	802	Access authorisation group **100**	ON - OFF	ON
	803	Access authorisation group **200**	ON - OFF	OFF
	807	Access authorisation group **600**	ON - OFF	OFF
	808	Access authorisation group **700**	ON - OFF	OFF
	809	Access authorisation group **800**	ON - OFF	OFF
	811	**Access code** The access code can be modified via this parameter. Upon initial delivery of the machine ex works, the access code is set to "**8301**".		8301

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11.04   Error messages in the display

The following error messages are shown in the display of the control panel.

ERROR: **1**	Processor error STACK_OVERFLOW
ERROR: **2**	Processor error STACK_UNDERFLOW
ERROR: **3**	Processor error UNDEF_OPCODE
ERROR: **4**	Processor error PROTECTION_FAULT
ERROR: **5**	Processor error ILLEGAL_WORD_OPERAND
ERROR: **6**	Processor error ILLEGAL_INSTRUCTION
ERROR: **7**	Processor error ILLEGAL_BUS_ACCESS
ERROR: **8**	Processor error NMI
ERROR: **50**	Wrong control panel
ERROR: **51**	Incorrect machine class in OTE
ERROR: **52**	Wrong software for main drive
ERROR: **101**	Mains voltage
ERROR: **102**	Power supply overload
ERROR: **103**	**24 V** to low
ERROR: **230**	Error ultrasonic generator
ERROR: **308**	The lower safety limit switch was not reached when roller was lowered (unauthorised object in the way or lower limit switch not mounted correctly)
ERROR: **309**	The lower safety limit switch did not open when the roller was lifted
ERROR: **416**	SD card reader error

> **1:** No SD card inserted
>
> **2:** Incorrect SD card (does not match machine)
>
> **3:** SD card incorrectly inserted
>
> **4:** SD card is write-protected
>
> **5:** Data error on SD card
>
> **6:** Formatting has failed
>
> **7:** File does not match machine
>
> **8:** Incorrect file size
>
> **9:** Transfer error
>
> **10:** File could not be deleted

11.05   Programme Management

In Programme Management, configuration and machine data, and programmes stored in the machine memory or on the inserted SD card can be deleted or copied.
You can insert commercially available standard SD cards with max. 2 GB capacity into the control panel. The data is stored in machine-relevant sub-directories. The insertion and removal of SD cards is described in **Section 9.05.**

The following data types are stored:
● Configuration data in file **KD**.
● The programmes **0 - 19** and the machine data in file **MD**.

If the SD card is to be formatted via PC, select the format "FAT16". Alternatively, the SD memory card can also be formatted using the formatting function on the corresponding machine, see Section **11.05.05** "**Formatting the SD card**".

11.05.01   Calling up Programme Management
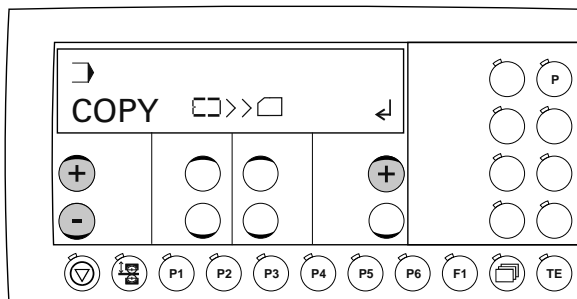
● Switch machine on.

TE   ● Call up mode "Entry"

● Call up "Programme Management"

The first menu item is displayed when "Programme Management" is called up.

The menu item selection is confirmed via the "**Enter**" function; press the right **+** key to confirm. In the context of this example, the machine memory will now be displayed. Browse through the other menu items by pressing the left **+/- key** (see also following sections).

The following menu items are available in program management:

● Copying machine data to the SD card
● Copying data from the SD card to the machine memory
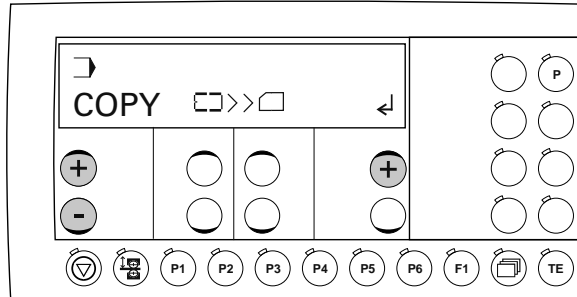● Formatting the SD memory card

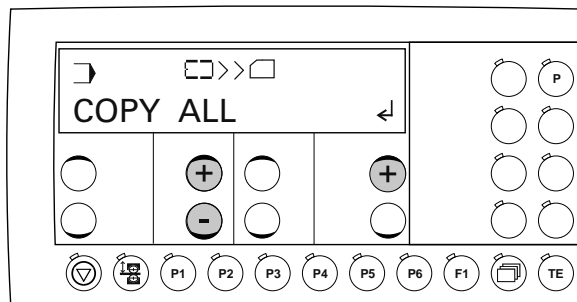11.05.02   Copying machine data to the SD card

TE   ● Call up mode "Entry"

● Call up "Programme Management"

● Press and hold the **+/- keys** until the corresponding menu item is displayed.

● Select the menu item via the "**Enter**" function, press the right **+ key** to confirm.

● Select the data to be copied from the machine memory to the SD card by pressing the corresponding +/- keys:

KD	=	Configuration files
MD	=	Machine parameters and programmes **0** - **19**
ALL	=	all files

● Start the copy process via the "**Enter**" function, press the right **+ key** to confirm.

> ℹ️ If the data to be copied already exists, a security prompt will be displayed before overwriting. The copy process is confirmed by pressing the right **+ key**. The copy process can be cancelled by pressing the right **- key**.

● Other menu items in "Programme Management" are called up by pressing the left **+/- keys**.
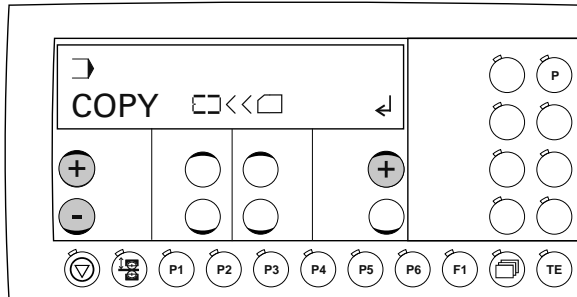
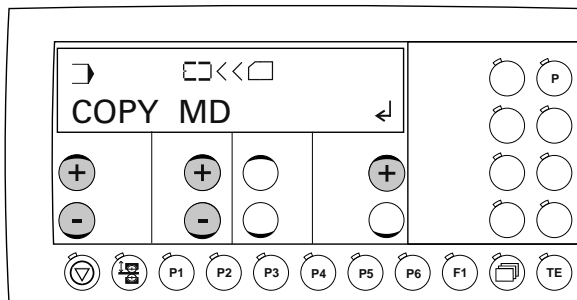11.05.03   Copying data from the SD card to the machine memory

TE ● Call up mode "Entry"

● Call up "Programme Management"

```
┐
COPY   ⊏⊐<<⊏⊐      ↵
+
-
⊘ ⧉ P1 P2 P3 P4 P5 P6 F1 ⬚ TE
```

● Press and hold the **+/- keys** until the corresponding menu item is displayed.

● Select the menu item via the "**Enter**" function, press the right **+ key** to confirm.

```
┐      ⊏⊐<<⊏⊐
COPY  MD          ↵
+      +        +
-      -
⊘ ⧉ P1 P2 P3 P4 P5 P6 F1 ⬚ TE
```

● Select the data to be copied from the SD card to the machine memory by pressing the corresponding +/- keys:

KD	=	Configuration files
MD	=	Machine parameters and programmes **0 - 19**
ALL	=	all files

● Start the copy process via the "**Enter**" function, press the right **+ key** to confirm.

> ℹ️ If the data to be copied already exists, a security prompt will be displayed before overwriting. The copy process is confirmed by pressing the right **+ key**. The copy process can be cancelled by pressing the right **- key**.

● Other menu items in "Programme Management" are called up by pressing the left **+/- keys**.
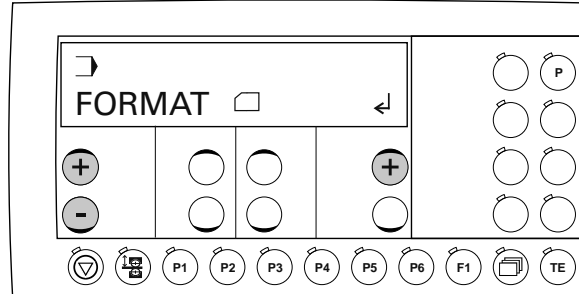
11.05.04   Formatting the SD memory card

TE ● Call up mode "Entry"

● Call up "Programme Management"

● Press and hold the left **+/- keys** until the corresponding menu item is displayed.
● Start the formatting process via the "**Enter**" function, press the right **+ key** to confirm.

> Before the start of formatting, a prompt for confirmation will be displayed. The formatting process is confirmed by pressing the right **+ key**. The formatting process can be cancelled by pressing the right **- key**.

● Other menu items in "Programme Management" are called up by pressing the left **+/- keys**.

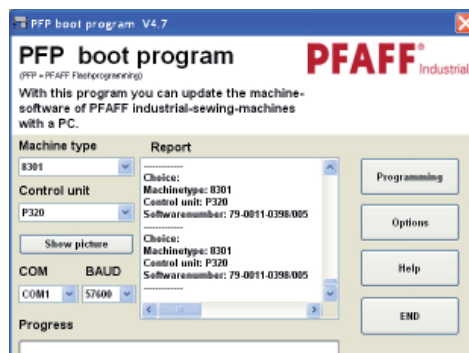## 11.06   Internet update of the machine software

The machine software can be updated with PFAFF flash programming. For this purpose the PFP boot program (from **version 3.25** on) and the appropriate control software for the machine type must be installed on a PC. The transfer of the data to the machine can be carried out with a null modem cable (part no. **91-291 998-91)** or with an SD-card. The SD-card must be formatted in the **FAT16** format and must not exceed a capacity of **2 GBytes**.

> ℹ️ The PFP boot program and the control software of the machine type can be downloaded from the PFAFF-homepage using the following path:
> **www.pfaff-industrial.com/pfaff/de/service/downloads**

11.06.01   Update with null modem cable

● After downloading the PFP tool and the control software, open the PFP program.

● Select the **machine type** and under control unit **P320.**

● The software version is displayed under **report**.

● Switch off the machine.

● Connect the PC (serial interface or appropriate USB-adapter) and the machine control unit **(RS232).** To do so disconnect the plug of the control panel.

> ⚠️ While the machine software is being updated, no setting up, maintenance or adjustment work may be carried out on the machine!

● Switch on the machine, keeping the boot key **1** pressed.

● Press the "OK" button.
 The software update is carried out, the update progress is shown on the bar display of the PFP boot program.

● During the updating process the machine must not be switched off.

● When the update has been completed, switch off the machine and end the PFP boot program.

● End the connection between the PC and the machine control unit and reconnect the control panel to the machine control unit.
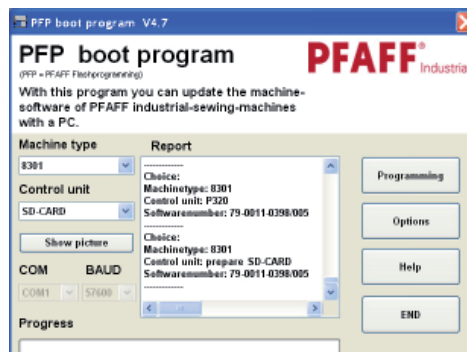
● Switch on the machine
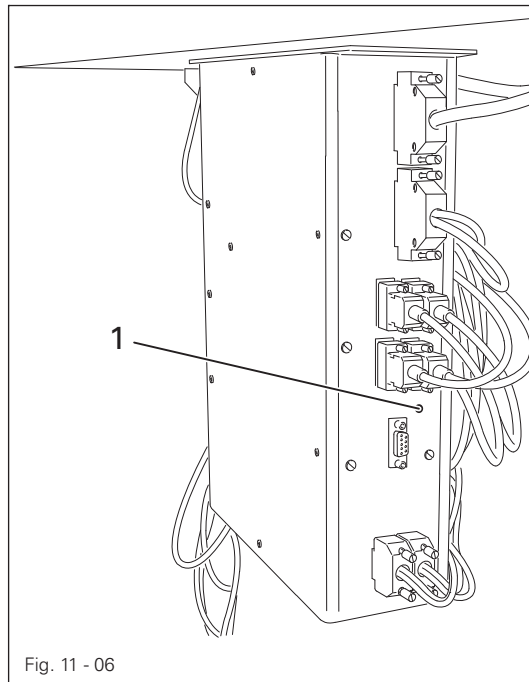
● A plausibility control is carried out and, if necessary, a cold start.

Fig. 11 - 06

More information and assistance is at your disposal in the file "PFPHILFE.TXT", which can be called up from the PFP boot program by pressing the "help" button.
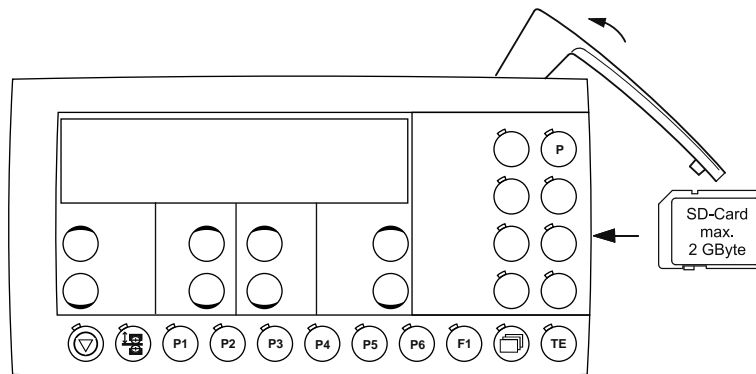
11.06.02   Update with SD-card

● After downloading the PFP tool and the control software, open the PFP program.

● Select the machine type and under control unit SD-CARD.

● The software version is displayed under report.

● Under **programming** copy the software to the drive with the SD-card.

● With the machine switched off insert the SD-card into the control panel.

SD-Card
max.
2 GByte

To update the machine software carry out the following steps:

⚠ While the machine software is being updated, no setting up, maintenance or adjustment work may be carried out on the machine!
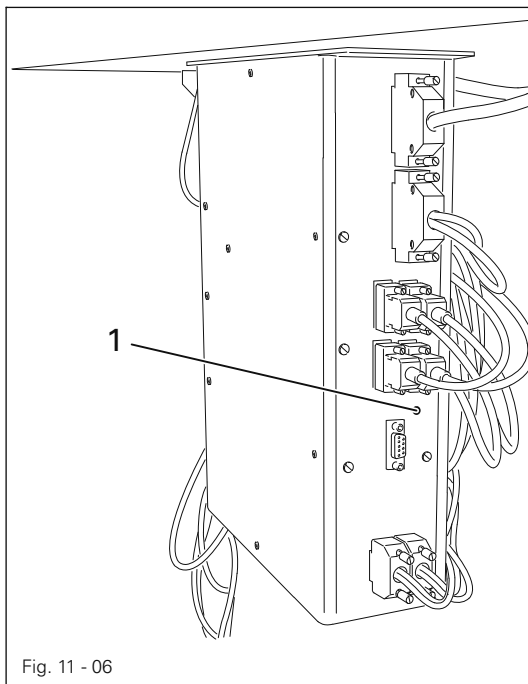

Fig. 11 - 06

● Switch on the machine, keeping the boot key **1** pressed.

● Press the "TE" key.
The software update is carried out. During the updating process the diode in the memory card slot flashes.

● During the updating process the machine must not be switched off.

● When the update has been completed, switch off the machine and remove the SD-card.

● Switch on the machine

● A plausibility control is carried out and, if necessary, a cold start.

ⓘ More information and assistance is at your disposal in the file "PFPHILFE.TXT", which can be called up from the PFP boot program by pressing the "help" button.

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12 Care and Maintenance

12.01 Maintenance intervals

Check the air pressure ....daily, before start-up

Clean the air filter of the maintenance unit ....as required

Clean the feed rollers ....as required

⚠️ During all cleaning work the machine must be disconnected from the power supply by switching off the main switch or pulling out the plug!
Danger of injury if the machine is started accidentally!

12.02 Cleaning the feed rollers

Fig. 12 - 02
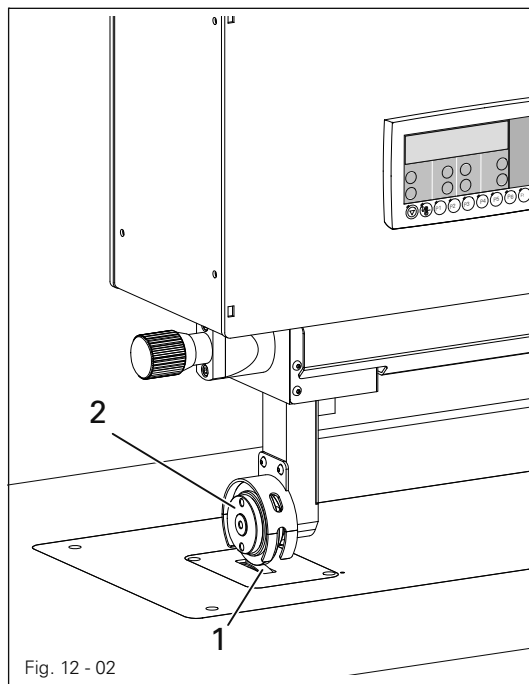
● When necessary, remove any sealing residues left on the top and bottom feed rollers **1** and **2.**

Care and Maintenance

12.03 Checking/adjusting the air pressure

Fig. 12 - 03
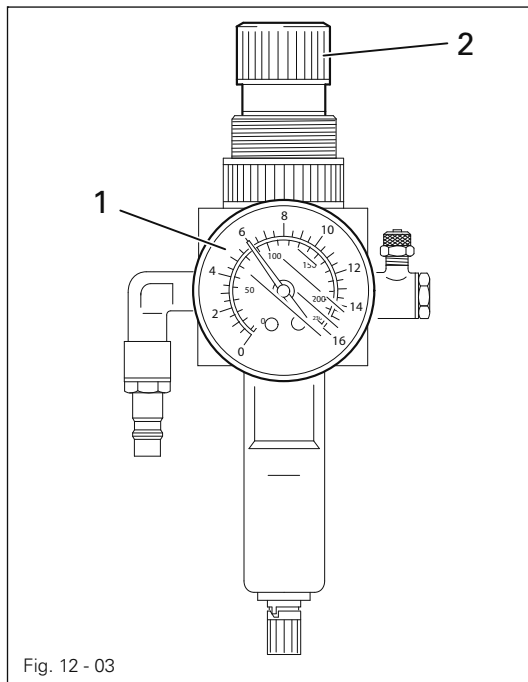
- ● Before operating the machine, always check the air pressure on gauge **1.**
- ● Gauge **1** must show a pressure of **6** bar.
- ● If necessary adjust to this reading.
- ● To do so, pull knob **2** upwards and turn it so that the gauge shows a pressure of **6 bar**

12.04 Cleaning the air filter of the air-filter/lubricator

Fig. 12 - 04
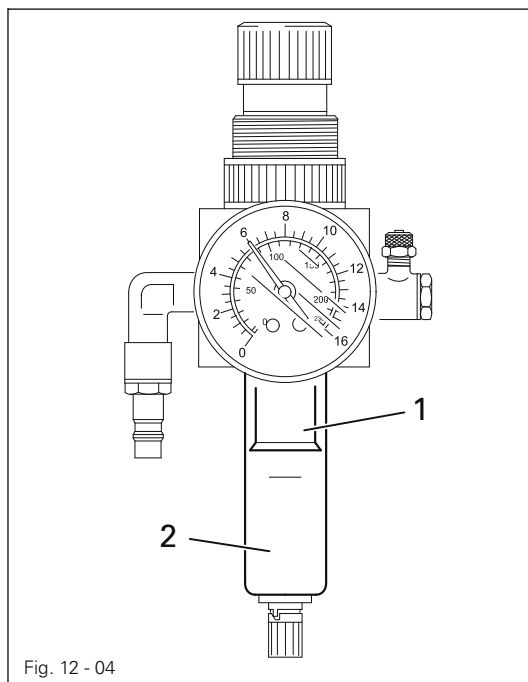
⚠ Switch the machine off! Disconnect the air hose at the air-filter/lubricator.

To drain water bowl:
- ● Water bowl **1** drains itself automatically whe the compressed-air hose is disconnected from the air-filter/lubricator.

Cleaning filter:
- ● Unscrew water bowl **1** and take out filter **2.**
- ● Clean filter **2** with compressed air or isopropyl alcohol (part No. **95-665 735-91).**
- ● Screw in filter **2** and screw on water bowl **1.**

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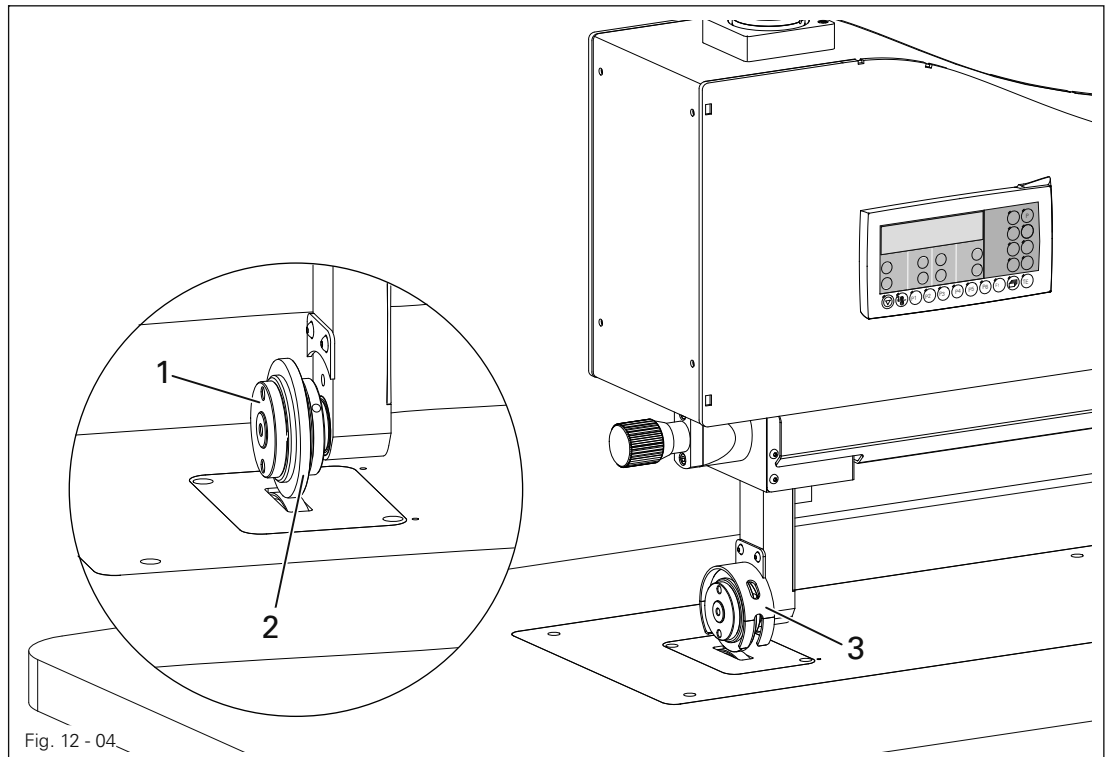### 12.05   Exchanging the transport rollers

Fig. 12 - 04

F1

- Press F1 to lock the transport rollers.

- Loosen nut **1** and remove with the transport wheel **2**.

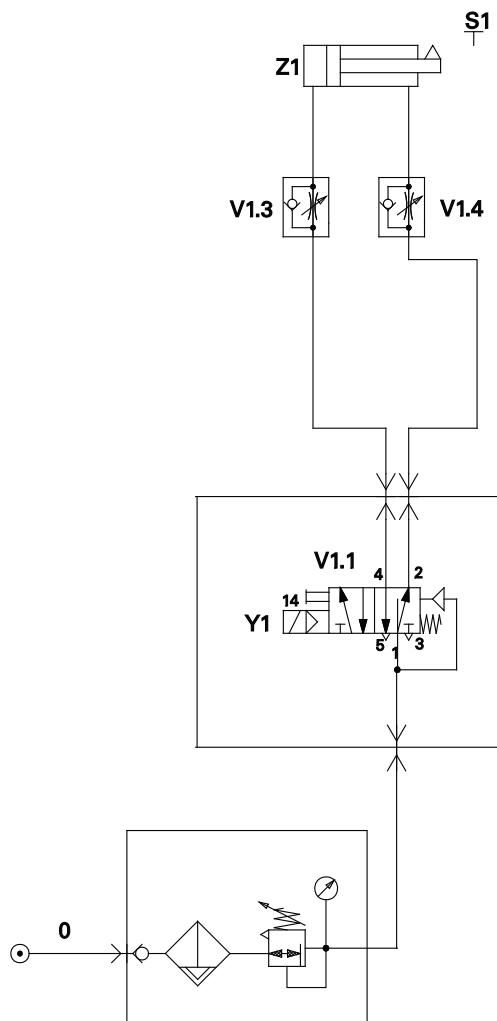- Mount the desired transport wheel **2** in reverse sequence.

Do not operate the machine without finger guard **1**!
Danger of crushing if the fingers are drawn in!

Connection diagram

13   Connection diagram
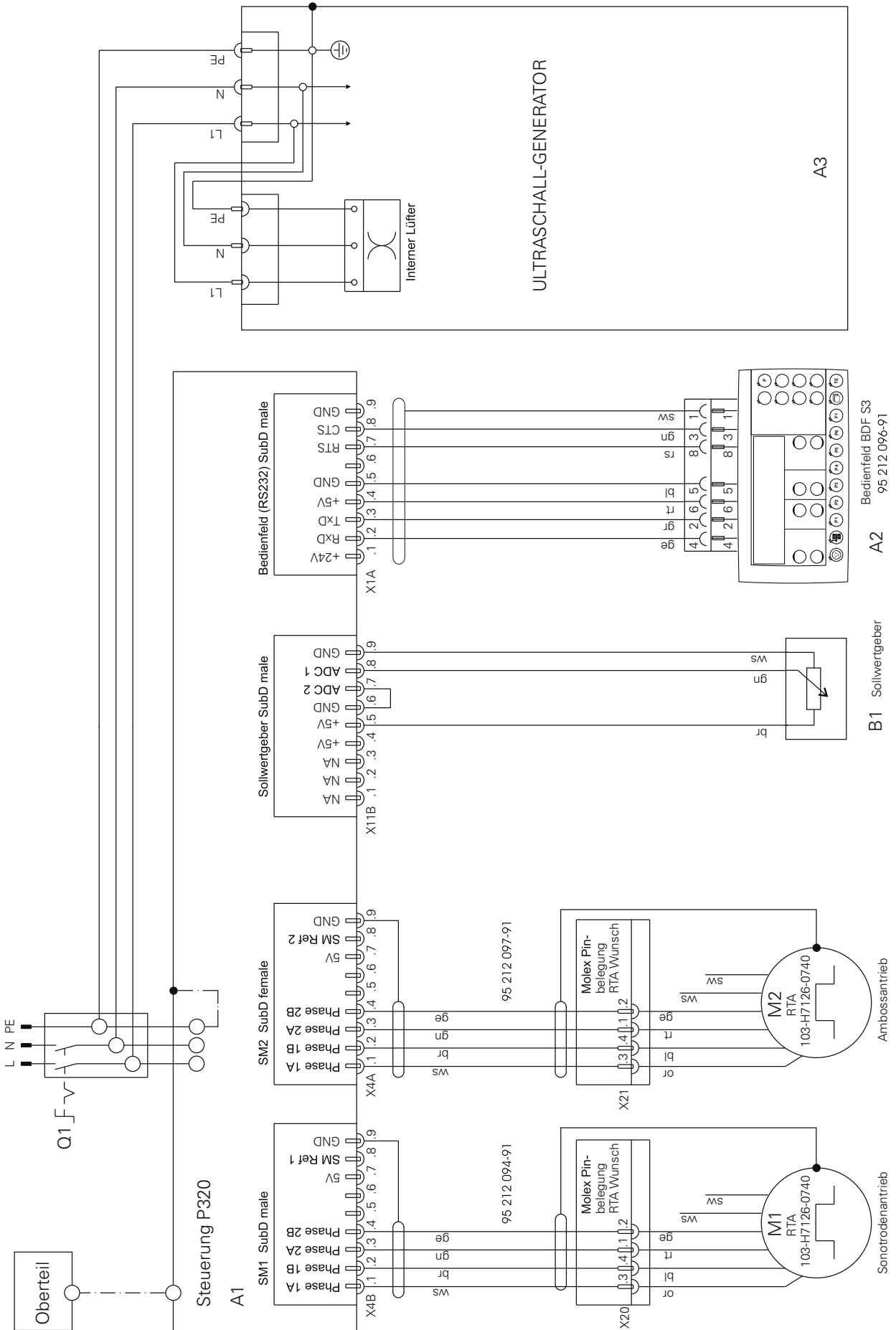
13.01   Pneumatics-switch diagram

Transport roller up - down (controlled)

PFAFF

13.02 Circuit diagrams

Reference list for circuit diagrams 95-212 092-95

Q1	Main switch
A1	Control P320
A2	Operating panel BDF S3
A3	Ultrasonic generator
B1	Treadle
M1	Sonotrode drive
M2	Anvil drive
M11	Sonotrode fan
Y1	Roller down
Y2	Seam blower
S1	Limit switch roller down

PFAFF® Industrial

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