

8304-082

INSTRUCTION MANUAL

This instruction manual applies to machines from the following serial numbers onwards:

11382 →

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**PFAFF Industriesysteme
und Maschinen AG**

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	Contents	Chapter - Page
1	Safety	1 - 1
1.01	Regulations	1 - 1
1.02	General notes on safety	1 - 1
1.03	Safety symbols	1 - 2
1.04	Items of special importance to the user	1 - 2
1.05	Operating and technical personnel	1 - 3
1.05.01	Operating personnel	1 - 3
1.05.02	Technical personnel	1 - 3
1.06	Danger warning	1 - 4
2	Proper use	2 - 1
3	Specifications	3 - 1
4	Disposal of the machine	4 - 1
5	Transport, packing and storage	5 - 1
5.01	Transport to the customer's premises	5 - 1
5.02	Transport within the customer's premises	5 - 1
5.03	Disposal of packing	5 - 1
5.04	Storage	5 - 1
6	Explanation of the symbols	6 - 1
7	Controls	7 - 1
7.01	Main switch	7 - 1
7.02	Power switch for generator / overload indicator	7 - 1
7.03	Heat-sealing function ON/OFF	7 - 2
7.04	Automatic reversing ON/OFF	7 - 3
7.05	Heat-sealing speed	7 - 3
7.06	Drive start delay	7 - 3
7.07	Regulator for heat-sealing power and button for testing the generator tuning	7 - 4
7.08	Regulator for feed roller pressure	7 - 4
7.09	Foot switch for raising/lowering feed roller	7 - 5
7.10	Foot switch for starting feed roller	7 - 5

Contents

	Contents	Chapter - Page
8	Installing and commissioning the machine	8 - 1
8.01	Installation	8 - 1
8.01.01	Adjusting the table height	8 - 1
8.01.02	Connecting the foot switch	8 - 2
8.01.03	Connecting the compressed air	8 - 2
8.02	Commissioning	8 - 3
8.03	Switching the machine on/off	8 - 3
9	Setting up	9 - 1
9.01	Adjusting the roller clearance	9 - 1
9.02	Setting the feed roller pressure	9 - 2
9.03	Setting the heat-sealing power (amplitude)	9 - 2
9.04	Heat-sealing speed / drive start delay	9 - 3
9.05	Heat-sealing function ON/OFF	9 - 3
9.06	Automatic reversing ON/OFF	9 - 4
9.07	Checking the generator tuning	9 - 4
10	Heat-sealing	10 - 1
10.01	Heat-sealing principle	10 - 1
10.02	Loading the workpiece	10 - 2
11	Care and maintenance	11 - 1
11.01	Servicing table	11 - 1
11.02	Cleaning the sonotrode	11 - 1
11.03	Cleaning the sonotrode area	11 - 2
11.04	Checking/adjusting the air pressure	11 - 3
11.05	Draining/cleaning the water bowl of the air filter/regulator	11 - 3
11.06	Drive chains	11 - 4
11.06.01	Tensioning the drive chains	11 - 4
11.06.02	Lubricating the drive chains	11 - 4

	Contents	Chapter - Page
12	Adjustments	12 - 1
12.01	Tools, gauges and other equipment	12 - 1
12.02	Explanation of symbols	12 - 1
12.03	Tuning the generator	12 - 2
12.04	Potentiometer for automatic reverse	12 - 3
12.05	Potentiometer for reduced speed	12 - 4

1 Safety

1.01 Guidelines

This machine was built in accordance with the European regulations listed in the conformity and manufacturer's declarations.

In addition to this instruction manual, also observe all generally accepted statutory and other regulations and legal requirements - including those of the country in which the machine will be operated and all valid environmental-protection regulations. Regionally applicable regulations of the social insurance society for occupational accidents or other supervisory organisations are to be strictly adhered to!

1.02 General notes on safety

- This machine may only be operated by adequately trained operators and only after having completely read and understood the instruction manual!
- The danger and safety instructions on the machine itself are to be followed!
- The machine may only be used for the purpose for which it was intended and must not be operated without its safety devices. Observe all relevant safety regulations!
- When replacing the feed rollers or the hot wedge, when leaving the workplace unattended and during servicing or repairs, the machine must be switched off at the mains switch and the plug pulled!
- Daily servicing work may be carried out only by appropriately trained personnel!
- Repairs and special maintenance work may be carried out only by technicians or persons with appropriate training!
- Work on the electrical equipment may be carried out only by qualified electricians!
- Work is not permitted on live parts and equipment! Exceptions to this are contained in the regulations EN 50110.
- Modifications and alterations to the machine may only be carried out under observance of all the relevant safety regulations!
- Only spare parts which have been approved by us are to be used for repairs! We expressly point out that any replacement parts or accessories not supplied by us have not been tested and approved by us. The installation and/or use of any such products can lead to negative changes in the structural characteristics of the machine. We shall not be liable for any damage which may be caused by non-original parts.

1.03 Safety symbols



Danger!
Points to be given special attention.



Risk of injury to operating and specialist personnel!



Caution

Do not operate without finger guard and safety devices.
Before threading, changing bobbin and needle, cleaning etc. switch off main switch.

1.04 Important points for the user

- This instruction manual is a component part of the machine and must be available to operating personnel at all times.
The instruction manual must be read before commissioning the machine.
- The operating and technical personnel are to be instructed as to the machine's safety mechanisms and with regard to safe working methods.
- It is the duty of the owner to operate the machine only when it is in perfect running order.
- The owner is obliged to ensure that none of the safety mechanisms are removed from the machine or deactivated.
- When processing PVC, PTFE and similar materials, the user must ensure that the maximum permissible level of toxic fumes is not exceeded.
- 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 the sales agency responsible.

1.05 Operating and technical personnel

1.05.01 Operating personnel

Operating personnel are persons responsible for setting up, operating and cleaning the machine as well as eliminating any faults which may occur.

Operating personnel must observe the following:

- Always comply with the notes on safety in the instruction manual!
- Never adopt a working method which could have an adverse effect on the level of safety in using the machine!
- Never wear loosely fitting clothing or jewelry such as chains or rings!
- Ensure that only authorized persons have access to the danger zone around the machine.
- Always immediately report to the owner any changes in the machine which may limit its safety!

1.05.02 Technical personnel

Technical personnel are persons with special training in the fields of electrical/electronics engineering and mechanics. They are responsible for the lubrication, maintenance and repair of the machine.

Technical personnel must observe the following:

- always comply with the notes on safety in the instruction manual!
- switch the machine off at the main switch before carrying out servicing or repair work!
- never work on live parts and equipment! Exceptions are contained in the regulations EN 50110.
- replace the protective coverings after all repairs or maintenance work.

1.06 Danger warning

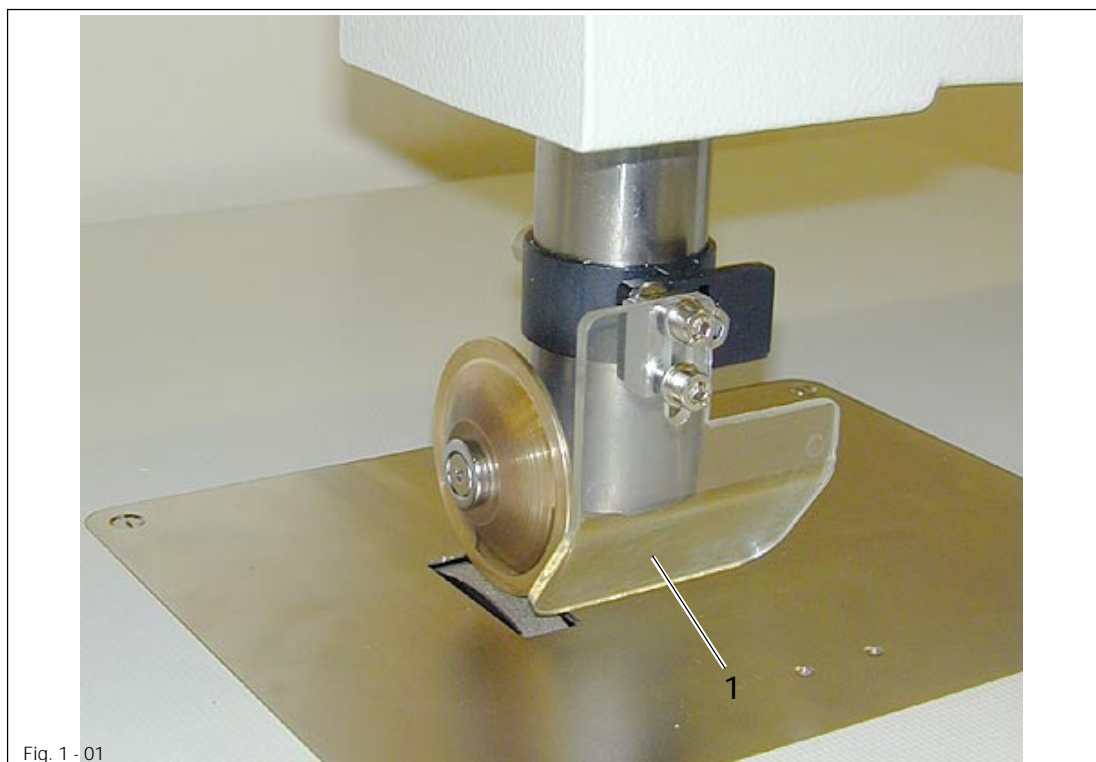


Fig. 1 - 01



Do not work without finger guard 1.
Danger of injury to fingers by crushing!

2

Proper use

The PFAFF 8304-082 is an ultrasonic heat-sealing machine.

The purpose of the machine is to heat-seal thin, thermo-plastic materials (such as fusible fabrics, felts, woven or knitted fabrics) by ultrasonic fusion.



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 inappropriate use of the machine!

Appropriate use of the machine presupposes the observance of all operational, adjustment, maintenance and repair measures required by the manufacturer!

3 Specifications

Dimensions and weight:

Length: 1330 mm

Breadth: 700 mm

Height: 1340 mm

Clear working width: 415 mm

Clear working height: 115 mm

Drive roller clearance: 7 mm

Weight: 142 kg

Mains voltage: 230 V \pm 10%, 50/60 Hz, single-phase

Power input: 1050 W

Operating air pressure: 1 to 6 bar

Heat-sealing pressure: 360 N

Heat-sealing power 500 W

Max. heat-sealing speed 7.0 m/min.

Max. seam width: 12 mm

4 Disposal of the machine

- The proper disposal of the machine is the responsibility of the customer.
- The materials used on the machine are steel, aluminium, brass and various plastics. The electrical equipment consists of plastics and copper.
- The machine is to be disposed of in accordance with the locally valid environmental protection regulations.



Special care is to be taken that parts soiled with lubricants separately disposed of in accordance with the locally valid environmental protection regulations.

5 Transport, packing and storage

5.01 Transport to the customer's premises

Within Germany the machine is delivered without packing. Machines with foreign destinations are packed.

5.02 Transport within the customer's premises

The manufacturer bears no liability for transport within the customer's premises.

5.03 Disposal of packing

The packing of this machine consists of paper, cardboard, fusible fabric and wood. Proper disposal of the packing is the responsibility of the customer.

5.04 Storage

If not in use, the machine can be stored for up to six months as it is. During this time it should be protected against dust and dampness.

If the machine is stored for longer periods, its parts, especially moving parts, must be protected against corrosion, e.g. by a film of oil.

Explanation of the symbols

6 Explanation of the symbols

In this Instruction Manual, tasks to be carried out and important information are drawn to your attention by symbols. The symbols have the following meanings:



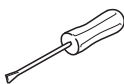
Note, information



Cleaning, care



Lubrication



Servicing, repairing, adjustment, maintenance
(only to be carried out by specialist personnel)

7 Controls

7.01 Main switch

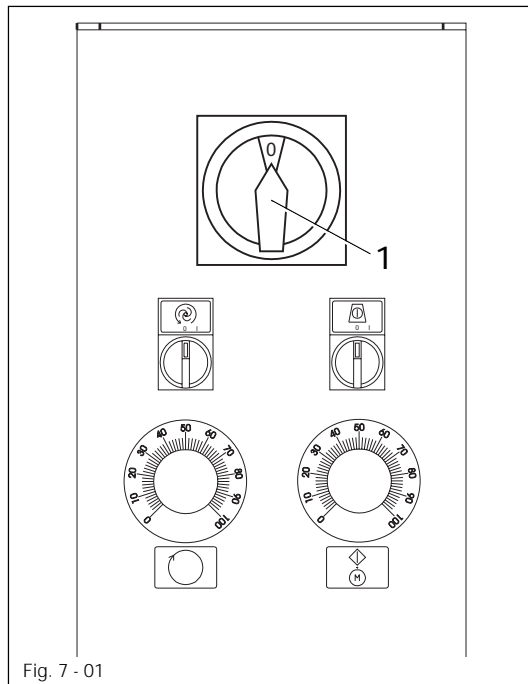


Fig. 7 - 01

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

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

7.02 Power switch for generator / overload indicator

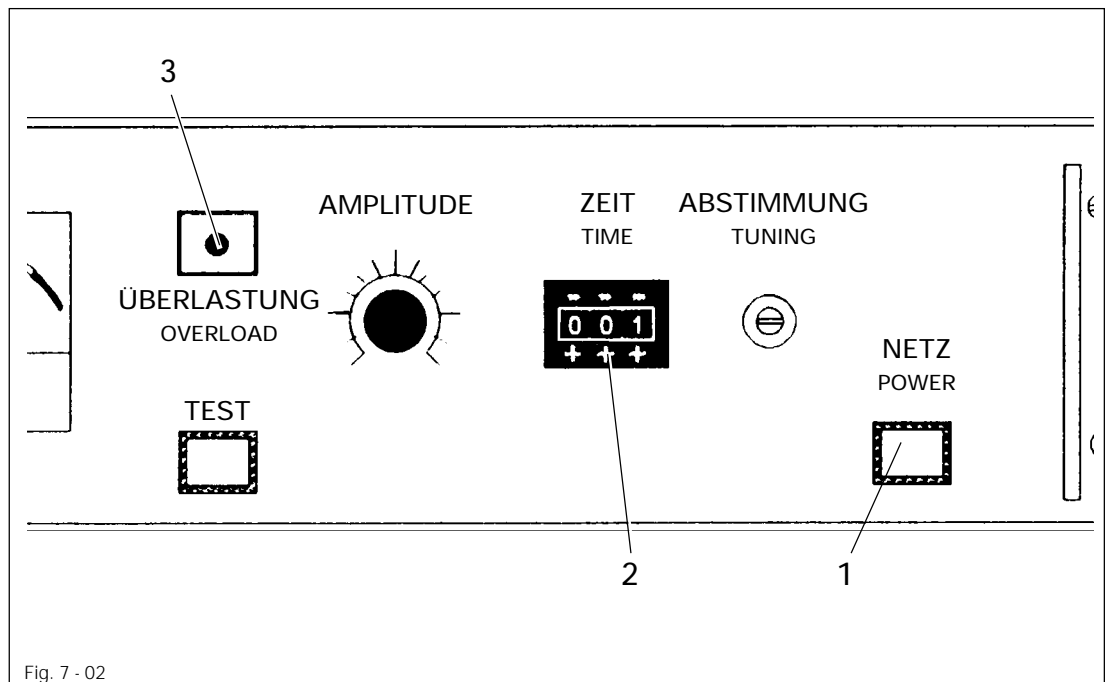
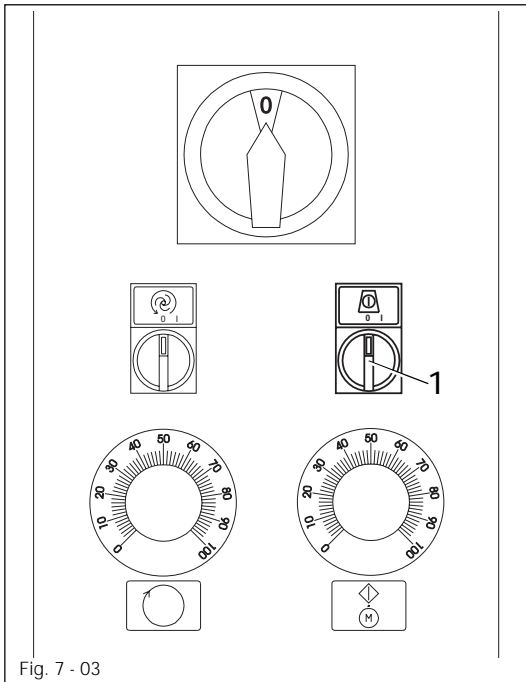


Fig. 7 - 02

- The generator is switched on by pressing power switch 1.
- Counter 2 has no function.
- If the overload indicator 3 lights up during heat-sealing operation, when the generator is tuned correctly, the feed roller pressure or the amplitude must be reduced.

7.03 Heat-sealing function ON/OFF



- The heat-sealing function is switched on or off by turning switch 1.

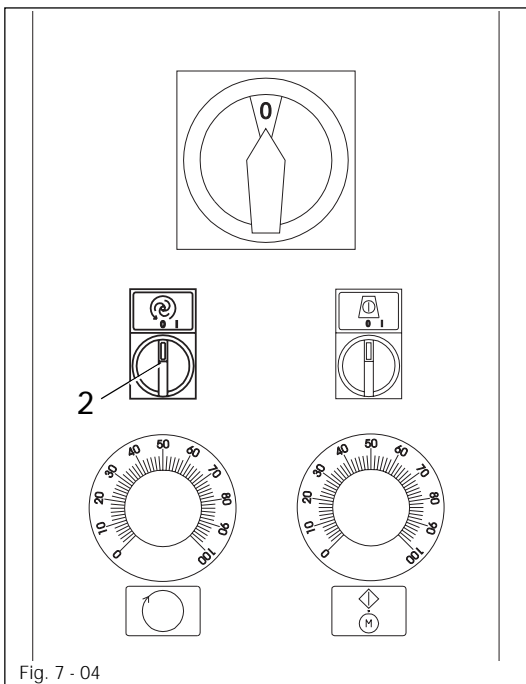
Position "1": Function switched on

Position "0": Function switched off



The machine can be run without the heat-sealing function to try out a new cutting.

7.04 Automatic reversing ON/OFF

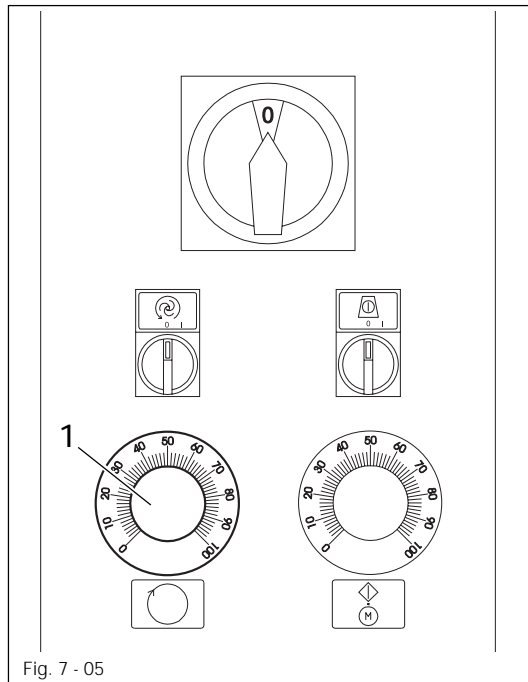


- The function is switched on or off by turning switch 2.

Position "1": Function switched on

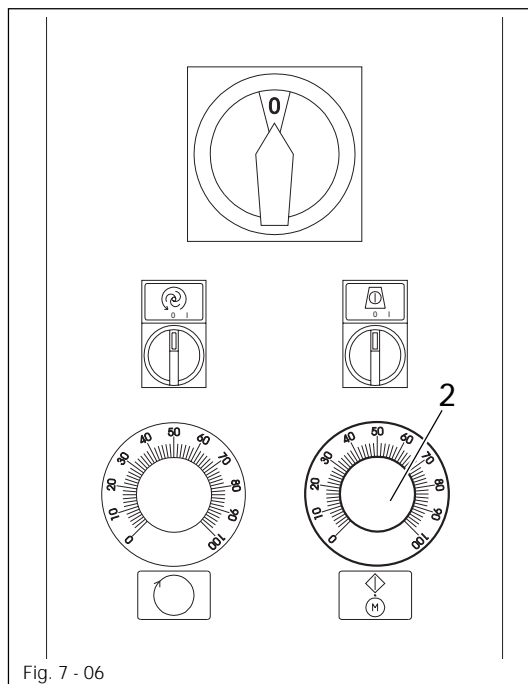
Position "0": Function switched off

7.05 Heat-sealing speed



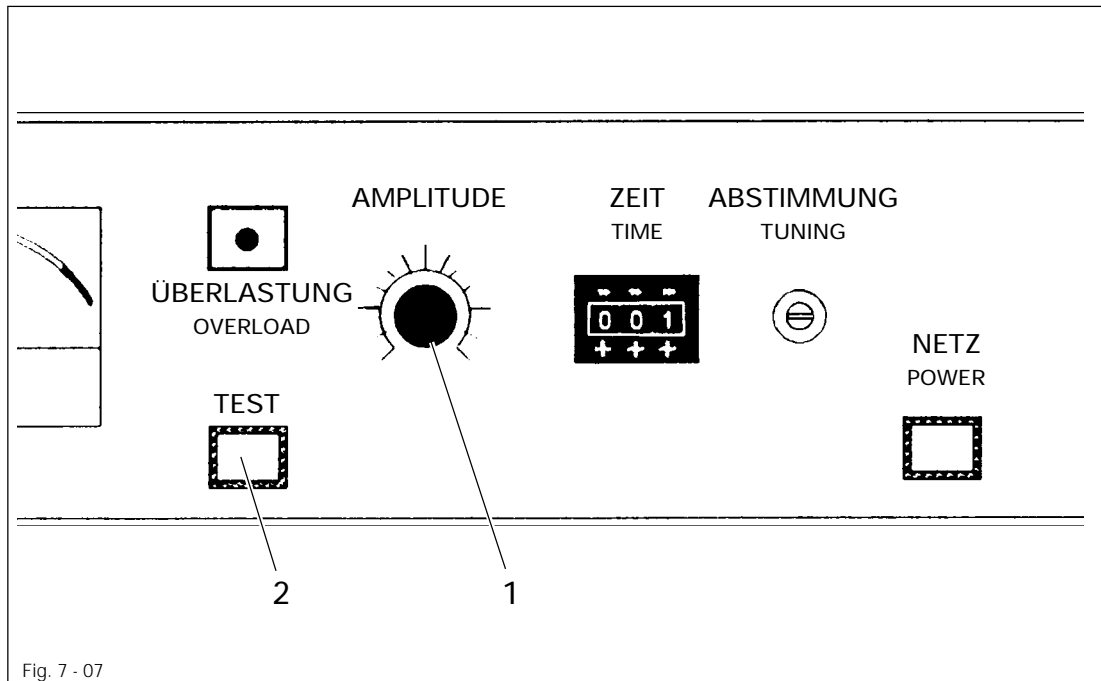
- The heat-sealing speed is selected on regulator 1.

7.06 Drive start delay



- The drive start delay is adjusted on regulator 2.

7.07 Regulator for heat-sealing power and button for testing the generator tuning



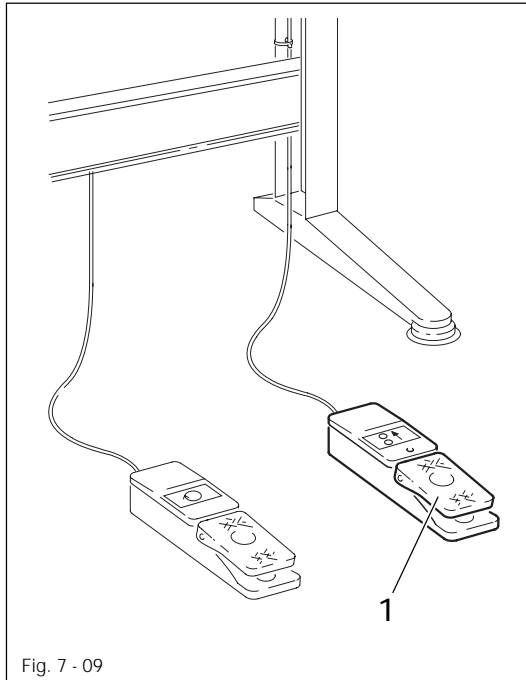
- The heat-sealing power is set by turning regulator 1.
- The generator tuning is controlled by pressing test button 2.
- If the generator tuning is correct, test button 2 lights up when operated.

7.08 Regulator for feed roller pressure



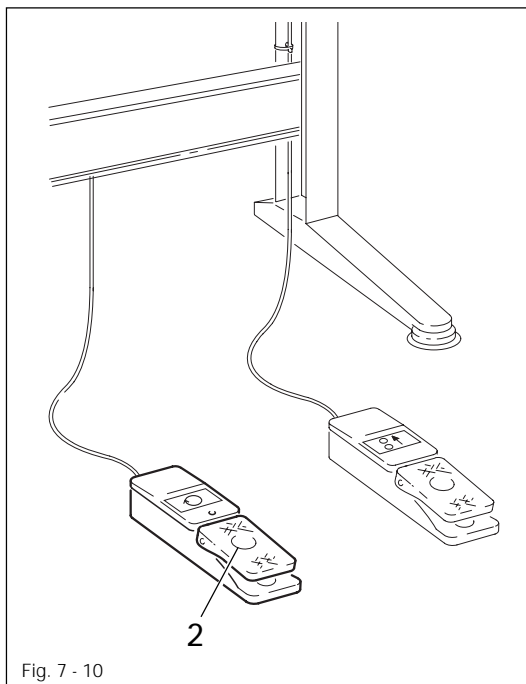
- The feed roller pressure is set by turning regulator 1.
- Pressure gauge 2 shows the feed roller pressure.

7.09 Foot switch for raising/lowering feed roller



- The feed roller is raised by pressing foot switch 1 and lowered by pressing this switch again.

7.10 Foot switch for starting feed roller



- The feed roller is started by pressing two-position switch 2.

- Position 1: Normal heat-sealing speed
- Position 2: Reduced heat-sealing speed (e.g. for crossing seam intersections)

8 Installation and commissioning



The machine must only be installed and commissioned by qualified personnel!
All relevant safety regulations must be observed!

8.01 Installation

Suitable connections for power and compressed air, an even and firm floor surface and sufficient lighting must be provided for at the installation site.

8.01.01 Adjusting the table height



Fig. 8 - 01

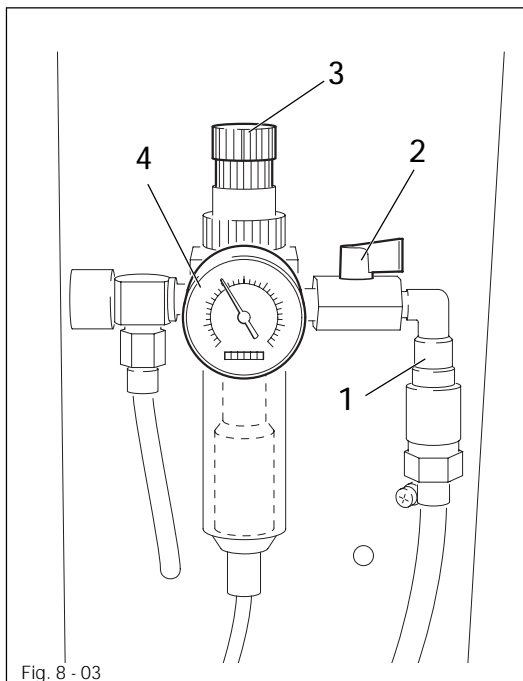
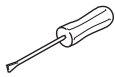
- Loosen screws 1 and set the table at the required height.
- Tighten screws 1 firmly again.

8.01.02 Connecting the foot switch



- Connect the foot switches to the corresponding sockets 1 and 2 and secure them with the retaining clips.

8.01.03 Connecting the compressed air



- Connect the compressed air hose to coupling 1.
- Open tap 2.
- Pull regulator knob 3 up and turn it until gauge 4 shows an air pressure of 6 bar.

8.02 Commissioning



The machine must only be commissioned by qualified personnel. All relevant safety regulations must be observed!

- Check the machine, especially its electrical leads, for any damage.
- Clean the machine thoroughly (see also **Chapter 11, Maintenance**)
- Have qualified personnel check that the machine can be operated with the local mains voltage and that it is correctly connected. If anything is not correct, **do not start the machine!**

8.03 Switching the machine on/off

- Switch the machine on and off (see **Chapter 7.01, Main switch**).
- Carry out a trial run.

9

Setting up



All setting-up work must only be carried out by appropriately trained personnel!
Unless otherwise described, the machine must be switched off at the main switch for all setting-up work.

9.01

Adjusting the roller clearance

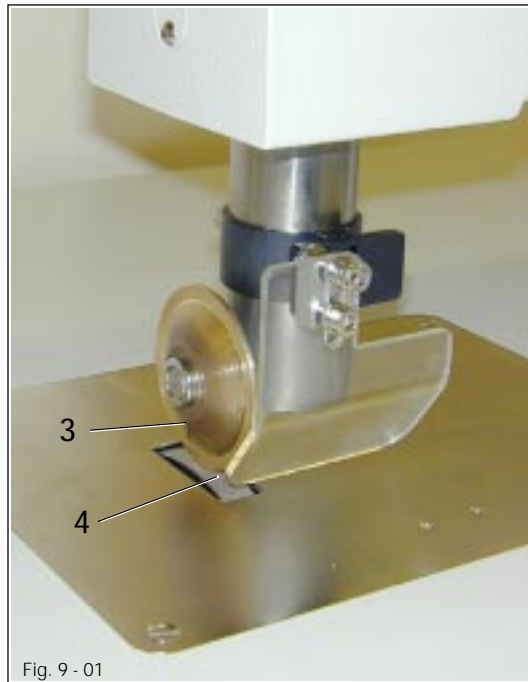


Fig. 9 - 01

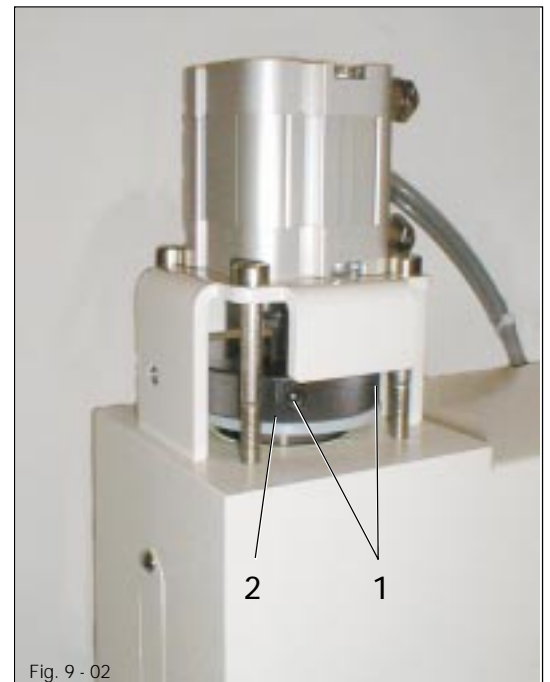


Fig. 9 - 02

- Loosen allen screws 1.
- Turn knurled nut 2 so that there is a minimum clearance between upper feed roller 3 and lower sonotrode 4.
- Tighten allen screws 1 firmly.



Feed roller 3 and sonotrode 4 must not be in contact with each other! If they contact each other while the machine is operating, sonotrode 4 will be destroyed!

9.02 Setting the feed roller pressure



Fig. 9 - 03

- Set the required feed roller pressure on regulator 1 (between 1 and 6 bar depending on the material).
- Pressure gauge 2 shows the feed roller pressure..
- The feed roller pressure should be selected to ensure the perfect feed movement of the workpiece.



The generator tuning must be checked after any change in the feed roller pressure (see Chapter 9.07).

9.03 Setting the heat-sealing power (amplitude)

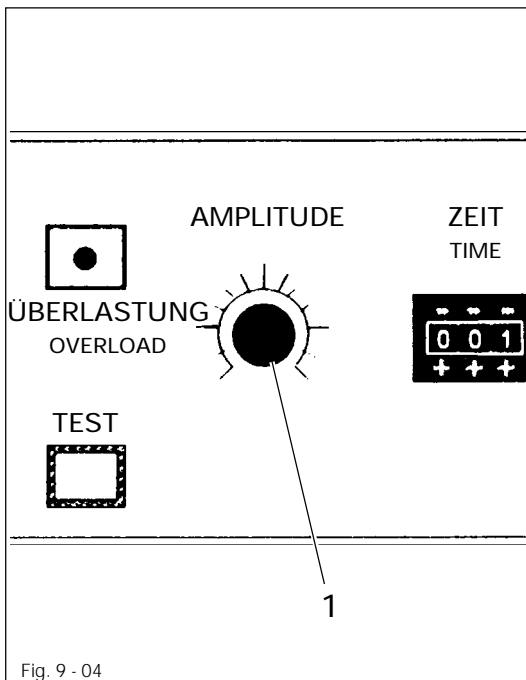


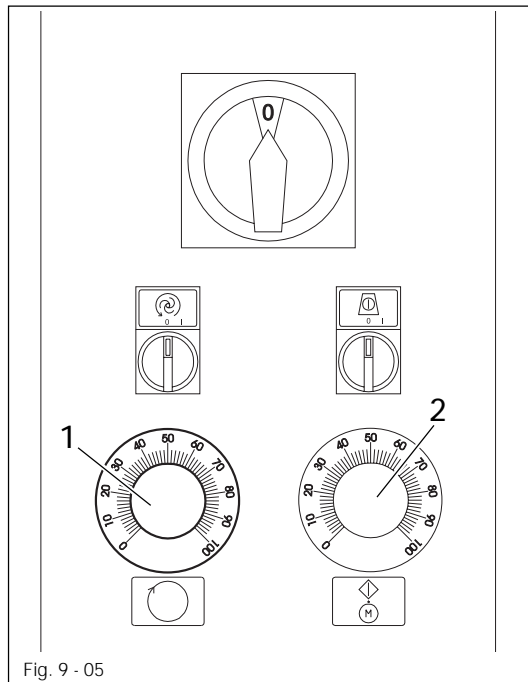
Fig. 9 - 04

- Set the required heat-sealing power on regulator 1 (between 50 and 100% depending on the material).
- The heat-sealing power should be selected to achieve optimum sealing of the workpiece.



The generator tuning must be checked after any change of the heat-sealing power (see Chapter 9.07).

9.04 Heat-sealing speed / drive start delay



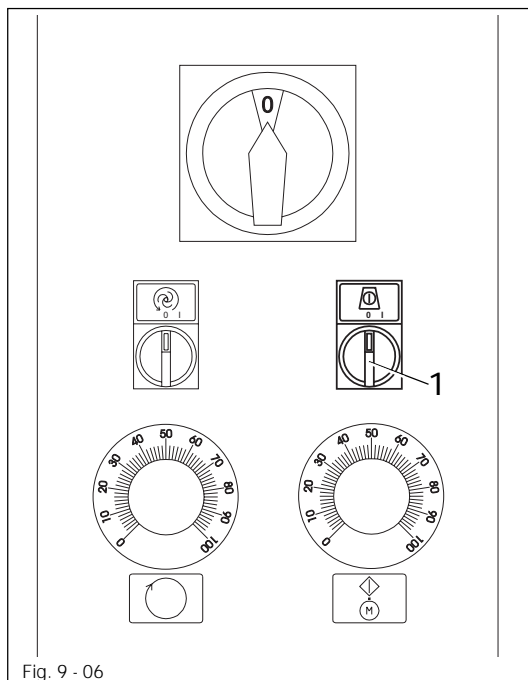
- Set heat-sealing speed on regulator knob 1.



The heat-sealing speed is dependent on the type and shape of material.

- Turn regulator 2 so that the heat-sealing and feed operations begin simultaneously.

9.05 Heat-sealing function ON/OFF



- To switch on the heat-sealing function, turn switch " 1 " to position " I " .

9.06 Automatic reversing ON/OFF

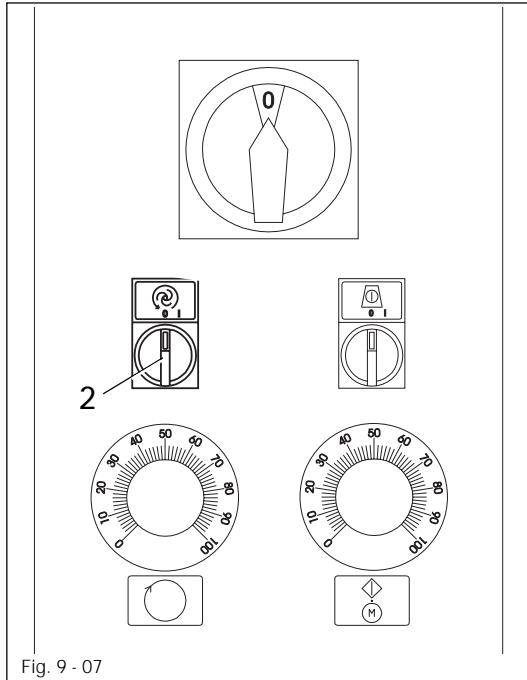


Fig. 9 - 07

- To switch this function on or off, turn switch 2.

Position " 1 " : Function switched on
 Position " 0 " : Function switched off.



When this function is switched on, the feed roller turns backwards a short amount when a seam interruption is made. The purpose of this is to ensure that no unsealed section is caused in the seam.

9.07 Checking the generator tuning

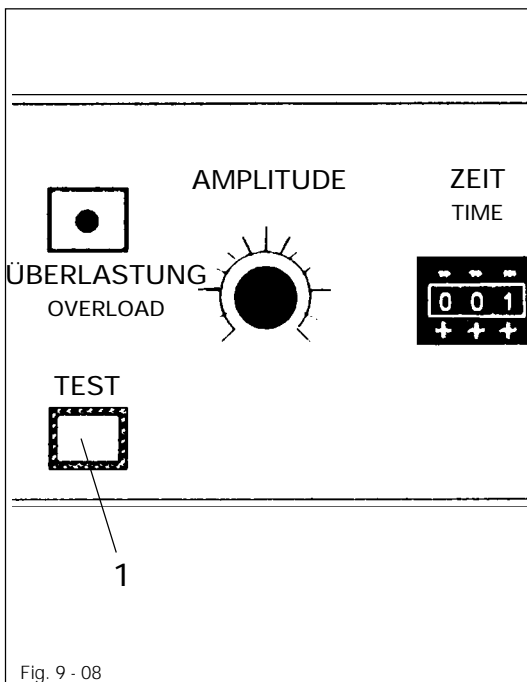


Fig. 9 - 08

- If the generator is tuned correctly, button 1 lights up when operated.
- If button 1 does not light up, tuning should be carried out according to Chapter 12.03.



This check must be carried out after the following operations:

- Each time the machine is switched on.
- Each time the amplitude regulator or the feed roller pressure is altered.
- After the overload indicator lights up.
- After the top feed roller has been changed.

10 Heat-sealing



The machine must only be operated by appropriately trained personnel! The operating staff must also ensure that only authorized persons are allowed in the danger area of the machine!

10.01 Heat-sealing principle

The two plies of the workpiece are heated in the area of the seam so that they are plastified. This is done by mechanical hammering of the workpiece. The plastified edges of the workpiece are pressed together and thus sealed. In order to produce the seam, the feed rollers press the workpiece plies together and feed the material.

In order to achieve optimum heat-sealing, certain conditions concerning the workpiece and the machine settings have to be fulfilled:

The material to be heat-sealed must:

- be heat-sealable (thermo-plast)
- be suitable for use on the **PFAFF 8304-082** with regard to thickness and properties
- be clean in the area of the seam.

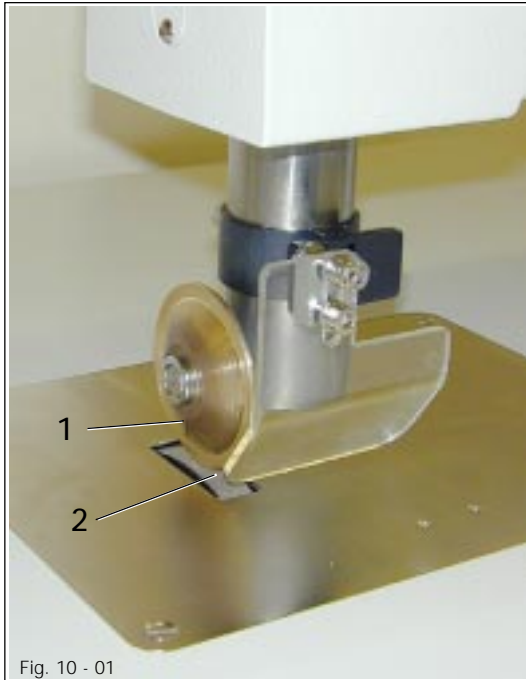
The basic requirements on the machine are:

- the correct type of top feed roller
- the correct roller pressure, correct sealing power, correct speed.



All settings of this heat-sealing machine always depend on the type of material being heat-sealed. The optimum settings have to be ascertained by means of trial seals.

10.02 Loading the workpiece



- Switch the machine on and raise feed roller 1 with the foot switch.
- Place the workpiece between feed roller 1 and sonotrode 2.
- Lower feed roller 1 by pressing the foot switch.
- Press the foot switch for "start feed rollers."
- The heat-sealing action begins.

11 Care and maintenance

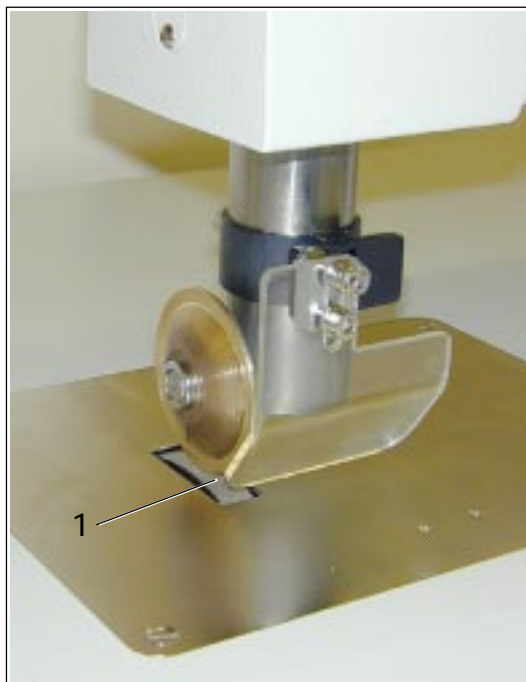
11.01 Servicing table

Sonotrode	as required
Clean sonotrode area	as required
Check air pressure	daily, each time before operation
Clean water bowl of air filter/regulator	as required
Tension drive chains	as required
Lubricate drive chains	as required



These servicing intervals refer to the average machine running time in single-shift operation. If the running time is increased, it is advisable to shorten these intervals.

11.02 Cleaning the sonotrode



- As required, remove any burnt residues on sonotrode 1 using a soft brass wire brush

11.03 Cleaning the sonotrode area

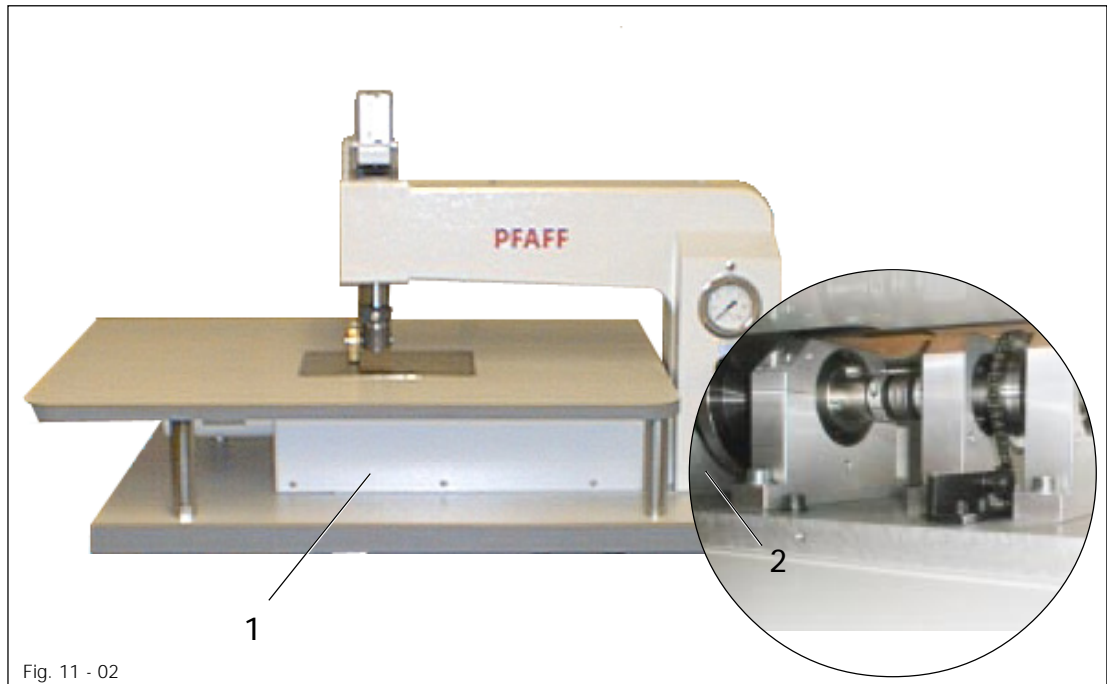


Fig. 11 - 02

- Switch off the machine at the main switch.
- Unscrew and remove cover **1** of sonotrode area **2** and clean sonotrode area.
- Replace and screw on cover **1** again.

11.04 Checking/adjusting the air pressure

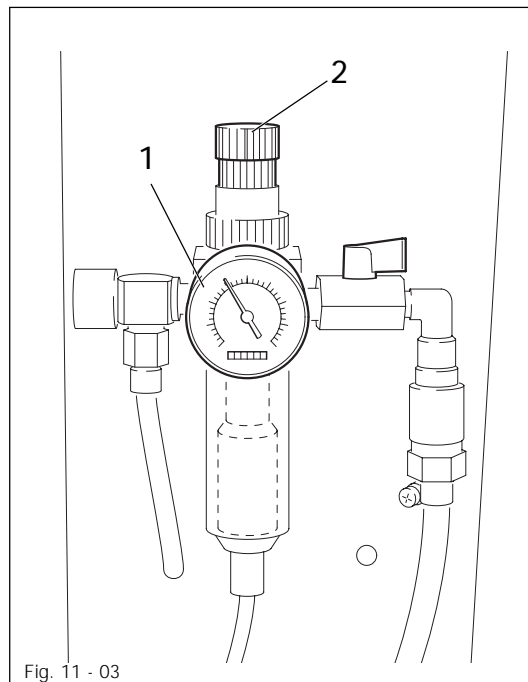


Fig. 11 - 03

- Check the air pressure on gauge 1 each time before operating.
- Gauge 1 must show a pressure of 6 bar.
- Adjust this setting if necessary. To do so, pull knob 2 up and turn it accordingly.

11.05 Draining/cleaning the water bowl of the air filter/regulator

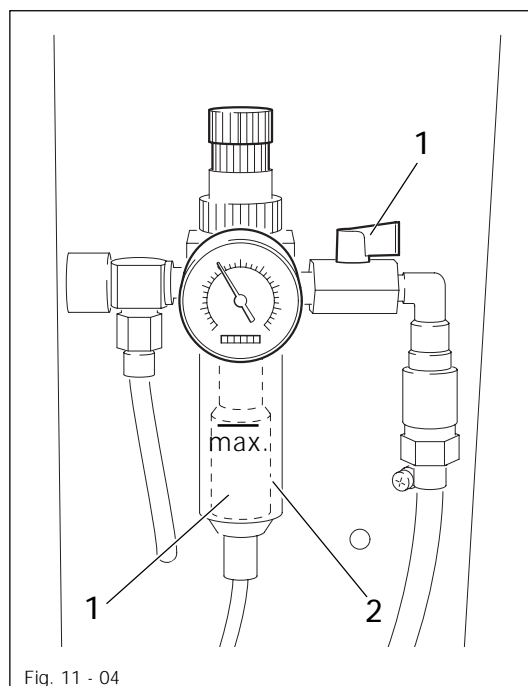


Fig. 11 - 04



Switch off machine.
Turn off tap 1.

Draining the water bowl

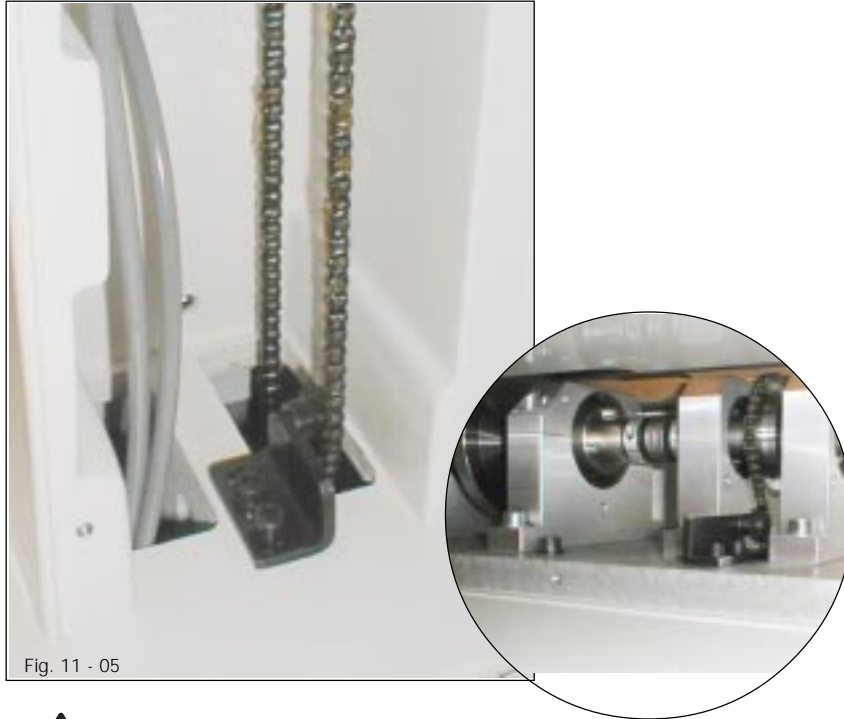
- Close air tap 1.
Water bowl 2 empties itself.

Draining the water bowl

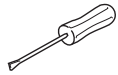
- Unscrew water bowl 2 and screw out filter 3.
- Clean the filter with compressed air.
- Screw in filter 3 and screw on water bowl 2.

11.06 Drive chains

11.06.01 Tensioning the drive chains



Switch off the machine!



- Unscrew and remove the chain cover at the rear of the machine and the cover of the sonotrode area.
- If required, re-tighten the tension at the corresponding tensioning mechanisms.



The drive chains of the feed rollers should be re-tensioned when there is too much backlash in the feed rollers.

11.06.02 Lubricating the drive chains



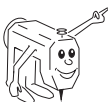
- Lubricate the drive chains as required.



The intervals for lubrication depend on working conditions (dampness, soiling, etc.).



Only use sodium bi-carbonate grease with a dripping point of 150°C and a fulling penetration of 375 to 405 mm/10 at 25°C.



We recommend PFAFF chain lubricant, part No. 280-1-120243.

12 Adjustment



Before making any adjustments, be sure to observe the safety notes in this instruction manual.

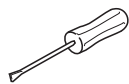
12.01 Tools, gauges and other equipment

- Set of screwdrivers with blade widths from 2 to 10 mm
- Spanners/wrenches from 7 to 14 mm across flats
- Allen keys from 1.5 to 6 mm

12.02 Explanation of symbols



Note, information



Servicing, repairing, adjustment, maintenance
(only to be carried out by technical personnel)

12.03 Tuning the generator

Requirement

When the sonotrode has cooled down, test button 2 should light up when operated.

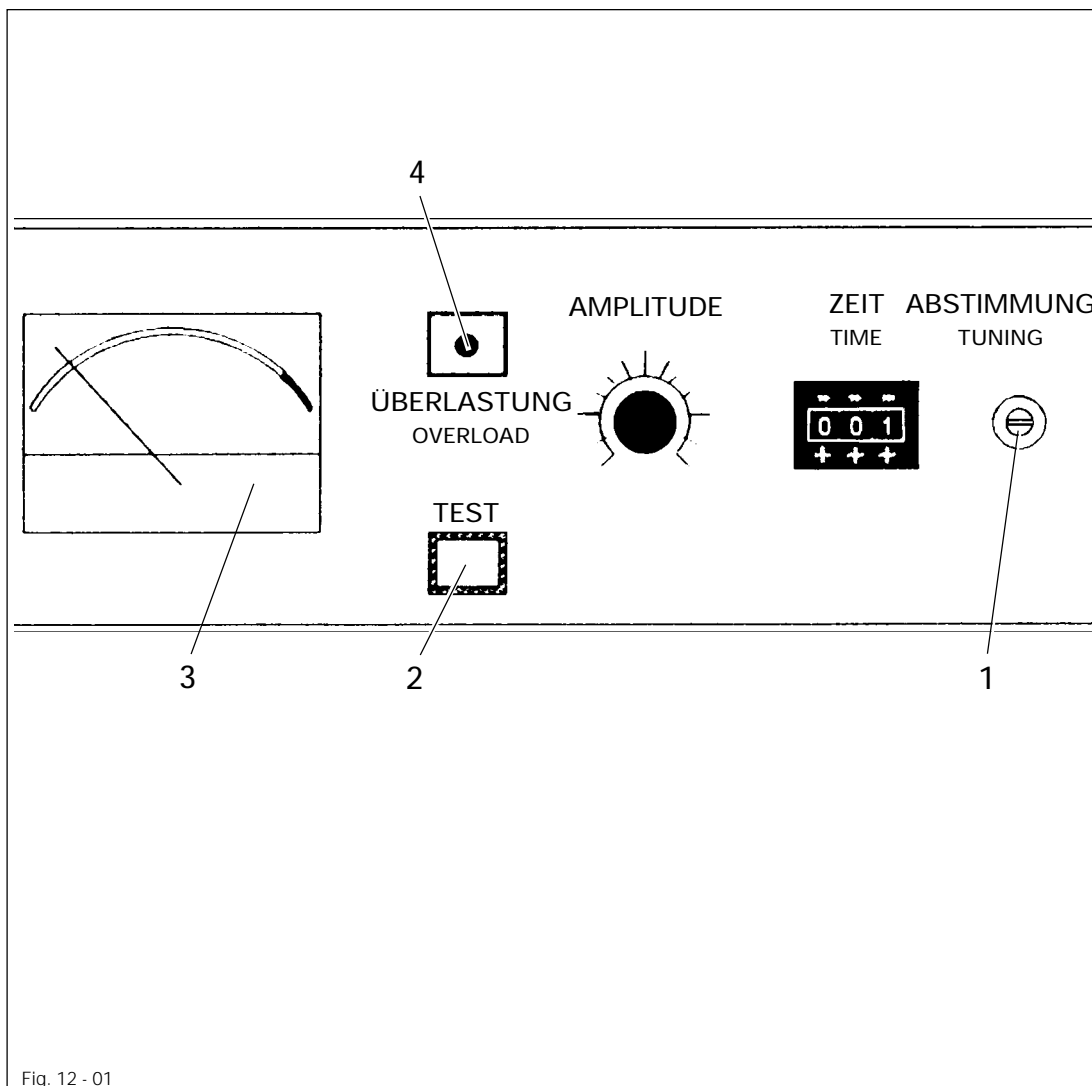
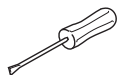


Fig. 12 - 01



- Switch on the machine and let it cool down by fan for about two minutes.
- Pre-select feed roller pressure and heat-sealing power.
- Turn regulator 1 as far as possible to the left.
- Operate test button 2, turning regulator 1 to the right until the needle of power gauge 3 drops to the left.
- While still operating test button 2, turn regulator 1 further towards the right until the test button just begins to light up - during this operation power gauge 3 must not move to the right again.
- Carry out another check.

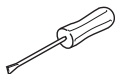
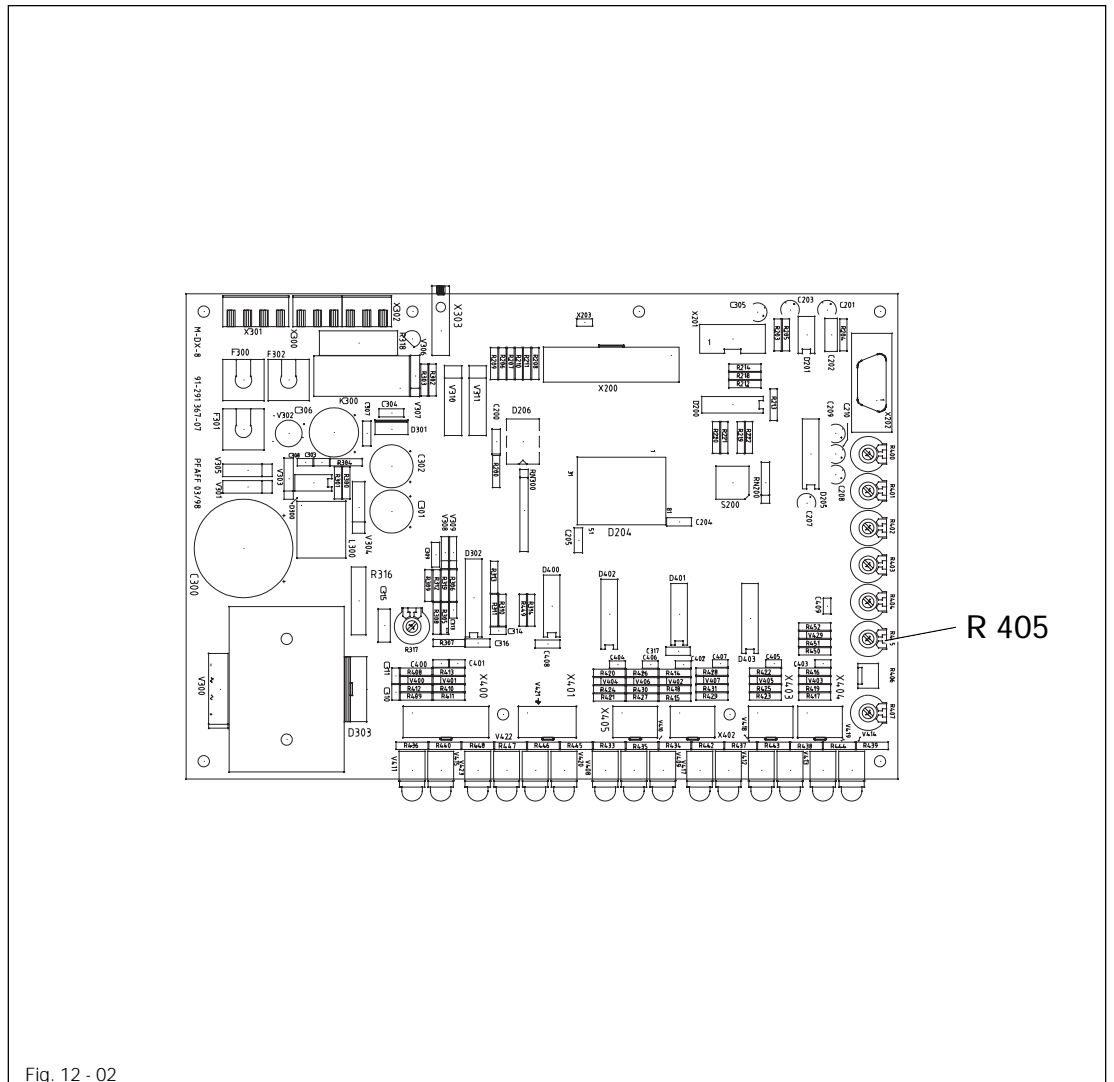


If control lamp 4 lights up during heat sealing, the heat-sealing power or the feed roller pressure must be reduced

12.04 Potentiometer for automatic reverse

Requirement:

The automatic reverse must be adjusted so that neither a gap is made in the sealed seam, nor the material is burned.



- Open the control box and turn potentiometer R 405 according to Requirement.
- Close the control box again.

12.05 Potentiometer for reduced speed

Requirement:

The reduced speed must be set so that a perfect seam is made, also over crosswise seams.

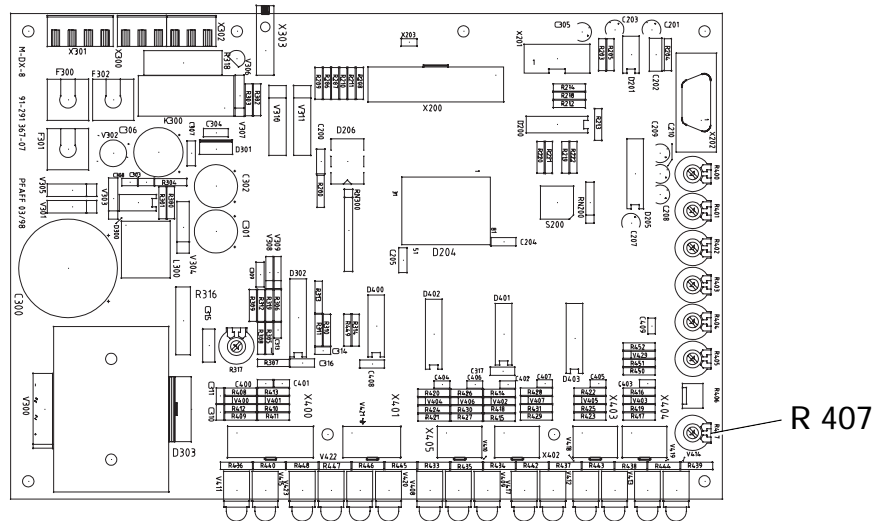
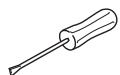


Fig. 12 - 03



- Open the control box and turn potentiometer R 407 according to Requirement.
- Close the control box again.



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