

939 U

3704^{-2/02}
^{-2/03}

INSTRUCTION MANUAL

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

2 660 862 →



This Instruction Manual is valid for all models and subclasses listed in the chapter "Specifications".



The adjustment manual 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. **296-12-18 595/002**.

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**PFAFF Industriesysteme
und Maschinen AG**

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1 Safety

1.01 Directives

The machine has been constructed in accordance with the requirements listed in the EC Declaration of Conformity and the Declaration of Incorporation

In addition to this Instruction Manual, also observe all generally accepted, statutory and other regulations and legal requirements and all valid environmental protection regulations! The regionally valid regulations of the social insurance society for occupational accidents or other supervisory organizations 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!
- All Notes on Safety and Instruction Manuals of the motor manufacturer are to be read before operating the machine!
- The danger and safety instructions on the machine itself are to be followed!
- This machine may only be used for the purpose for which it is intended and may not be operated without its safety devices. All safety regulations relevant to its operation are to be adhered to.
- When exchanging sewing tools (e.g. needle, roller presser, needle plate and bobbin), when threading the machine, when leaving the machine unattended and during maintenance work, the machine is to be separated from the power supply by switching off the On/Off switch or by removing the plug from the mains!
- Everyday maintenance work is only to be 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! The only 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 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 which are 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 are not liable for any damage which may be caused by non-original parts.

1.03 Safety symbols



Danger!
Points to be observed.



Danger of injury for 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 an integral part of the machine and must be available to the operating personnel at all times.
- The Instruction Manual must be read before operating the machine for the first time.
- The operating and specialist personnel is to be instructed as to the safety equipment of the machine and regarding safe work methods.
- It is the duty of the user to only operate the machine in perfect running order.
- It is the obligation of the user to ensure that none of the safety mechanisms are removed or deactivated.
- It is the obligation of the user to ensure that only authorized persons operate and work on the machine.

Further information can be obtained from your PFAFF agent.

1.05 Operating and specialist personnel

1.05.01 Operating personnel

Operating personnel are persons responsible for the equipping, operating and cleaning of the machine as well as for taking care of problems arising in the sewing area.

The operating personnel is required to observe the following points and must:

- always observe the Notes on Safety in the Instruction Manual!
- never use any working methods which could adversely affect the safety of the machine!
- not wear loose-fitting clothing or jewelery such as chains or rings!
- also ensure that only authorized persons have access to the potentially dangerous area around the machine!
- always immediately report to the person responsible any changes in the machine which may limit its safety!

1.05.02 Specialist personnel

Specialist personnel are persons with a specialist education in the fields of electrics, electronics and mechanics. They are responsible for the lubrication, maintenance, repair and adjustment of the machine.

The specialist personnel is obliged to observe the following points and must:

- always observe the Notes on Safety in the Instruction Manual!
- switch off the On/Off switch before carrying out adjustments or repairs, and ensure that it cannot be switched on again unintentionally!
- wait until the luminous diode on the control box is no longer blinking or on before beginning adjustment or repair work.
- never work on parts which are still connected to the power supply! Exceptions are explained in the regulations EN 50110.
- replace the protective coverings and close the electrical control box after all repairs or maintenance work!

1.06

Danger warnings



A working area of 1 m must be kept free both in front of and behind the machine, so that easy access is possible at all times.



Never put your hands or fingers in the sewing area during sewing!
Danger of injury by the needle!



While setting or adjusting the machine do not leave any objects on the table nor in the needle plate area! Objects may be trapped or flung out of the machine!

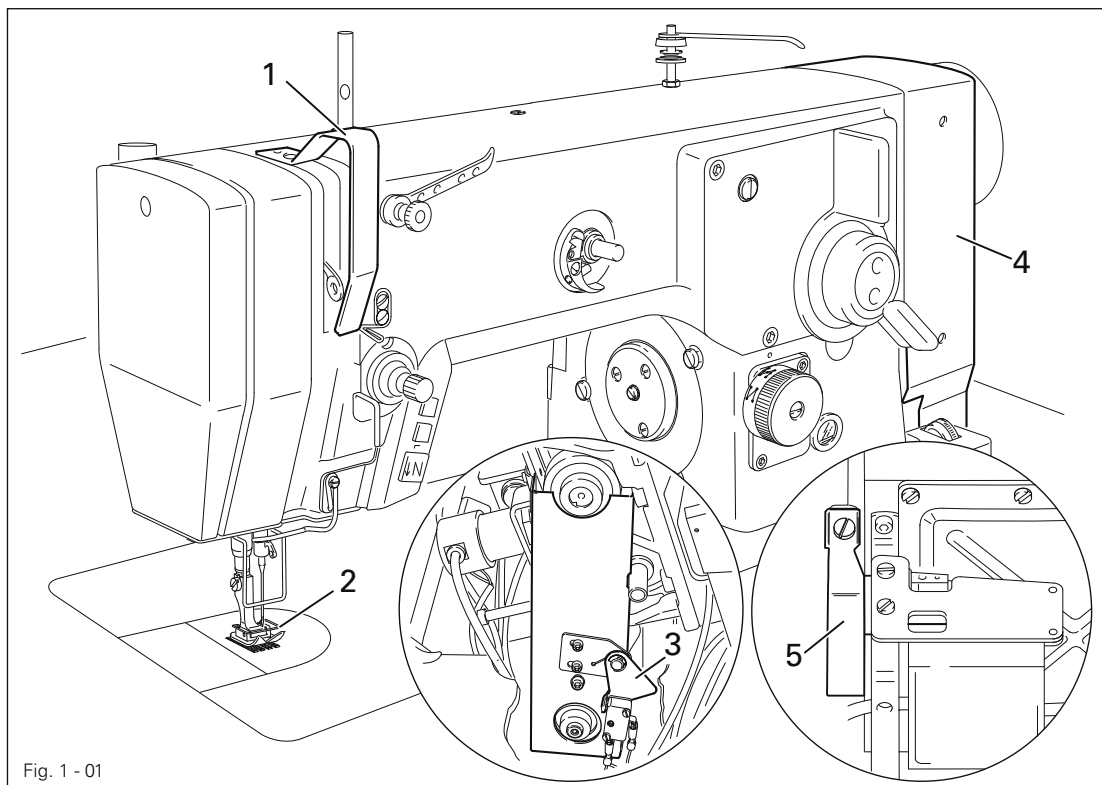


Fig. 1 - 01



Do not operate the machine without the take-up lever guard **1!**
Danger of injury through the movement of the take-up lever.



Do not operate the machine without finger guard **2!**
Danger of injury from the needle!



Do not operate machines with flange motor without start inhibitor **3!**
Danger of injury if the machine is started accidentally!



When using an external motor do not operate the machine without belt guard **4!**
Danger of injury from the drive belts!



Do not operate the machine without tilt lock **5!**
Danger of crushing between sewing head and table top!

2 Proper use

The PFAFF 939 U is a high-speed zigzag sewing machine with differential bottom feed and mechanical shift from zigzag to 3-stitch zigzag.

The machines are used for producing zigzag lockstitch seams in the clothing and linen industry.

The PFAFF 3704-2/02 is an engineered workplace with high-speed zigzag sewing machine.

The machine is used to sew collars in the outerwear clothing industry.

Planned operation: Sew undercollar to top collar, with imitation hand stitch and fullness application

The PFAFF 3704-2/03 is an engineered workplace with high-speed zigzag sewing machine.

The machine is used to sew collars in the outerwear clothing industry.

Planned operation: Sew undercollar to top collar, with zigzag seam and fullness application



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 [▲]

3.01 PFAFF 939 U; 3704-2/..

Stitch type:..... 304 (zigzag lockstitch)

Needle system:

PFAFF 939 U / PFAFF 3704-2/03:..... 438

PFAFF 3704-2/02:..... 134 EL

Needle size in 1/100 mm:

Model B: 80 - 100

Presser foot clearance:7 mm

Clearance width:260 mm

Clearance height: 130 mm

Sewing head dimensions:

Length:..... ca. 550 mm

Width: ca. 180 mm

Height (above table): ca. 300 mm

Bedplate dimensions: 476 x 177 mm

Max. stitch length:

PFAFF 939 U-6/01:4,5 mm

PFAFF 939 U-32/23 N24 und 3704-2/..: **❶**

Max. stitch with:6,0 mm

Max. speed/min⁻¹:

PFAFF 939 U 4500 ♦

PFAFF 3704..... 5500 ♦

Connection data:

Operating voltage: 230 V ± 10 %, 50/60 Hz

Motor data: See instruction manual for the motor

Working air pressure: 6 bar

Air consumption : ~0.8 l / work cycle

Noise data:

Noise emission level at workplace with a sewing speed of 3600 min⁻¹:..... L_{pA} < 80 dB(A) ■

(Noise measurement in accordance with DIN 45 635-48-A-1, ISO 11204, ISO 3744, ISO 4871)

Net weight of sewing head:ca. 48 kg

Gross weight of sewing head:ca. 56 kg

▲ Subject to alterations

♦ Dependent on material and work operation

■ K_{pA} = 2,5 dB

❶ 2.5 mm feed stroke of the rear and 4.5 mm of the front feed dog

3.02 Versions and subclasses

Version B:..... for sewing medium materials

Work aids:

Subclass -900/24..... thread trimmer

Subclass -908/02..... thread puller

Subclass -910/04..... automatic foot lift

Subclass -911/35..... automatic back-tacking mechanism

Subclass -917/15..... automatic stitch condensation

Subclass -918/14..... switch unit with visual feed indicator

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 is 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:



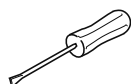
Note, information



Cleaning, care



Lubrication



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

7 Controls

7.01 Main switch

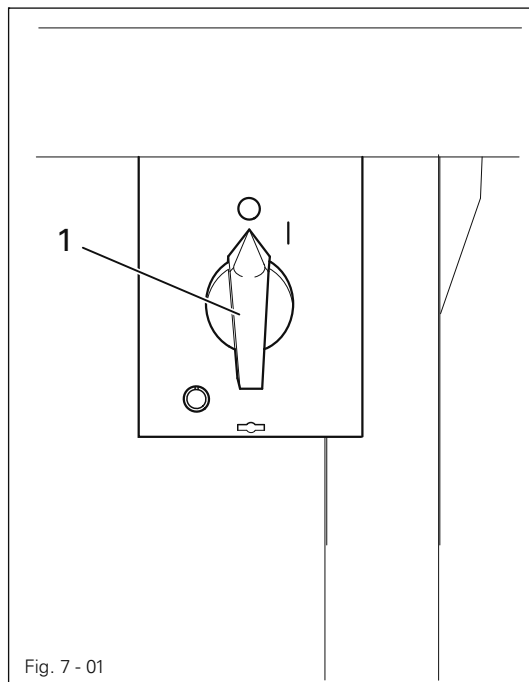


Fig. 7 - 01

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

7.02 Keys on the machine head (only on machines with flange motor)

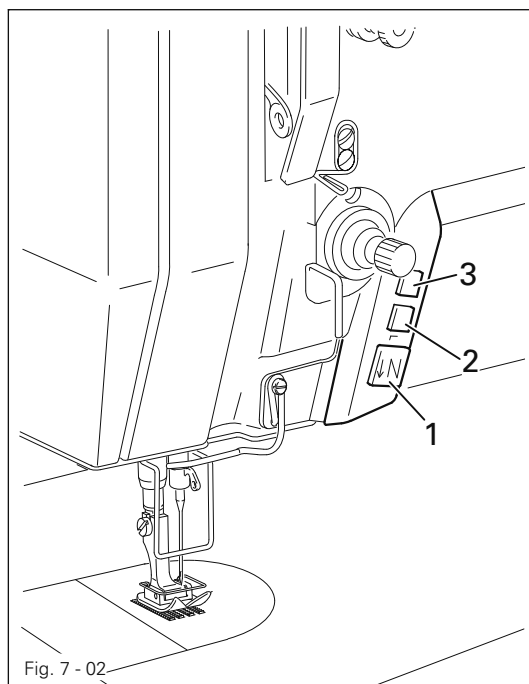
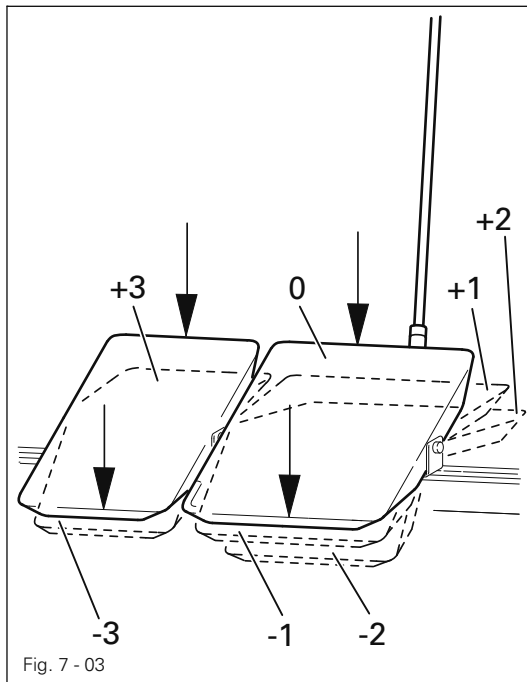


Fig. 7 - 02

- As long as key 1 is pressed during sewing, the machine sews in reverse.
- Bring the machine into a switching position (for switching from zig-zag to multi-stitch or from multi-stitch to zig-zag) by operating key 2.
- Key 3 can be assigned with the appropriate parameter settings, see **Motor Instruction Manual**.

7.03

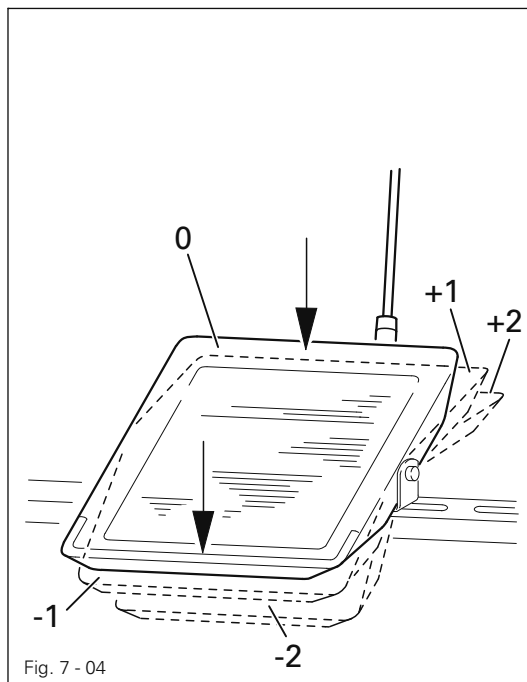
Pedal (on the 939 U)



- 0 Resting position
- +1 Lower presser foot
(on machines with automatic
presser-foot lifter)
- +2 Sew
- 1 Lift presser-foot
(on machines with automatic
presser-foot lifter)
- 2 Trim thread
- +3 and +2 Requesting the second feed
(on machines with -918/14)
- 3 and +2 Reverse sewing

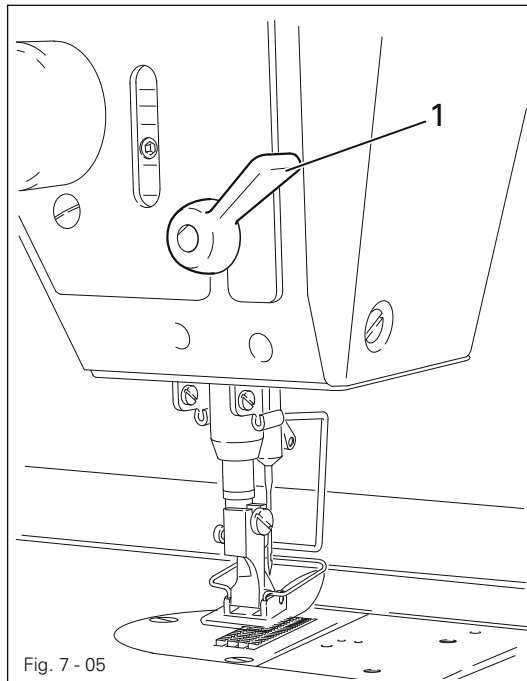
7.04

Pedal (on the 3704-2/..)



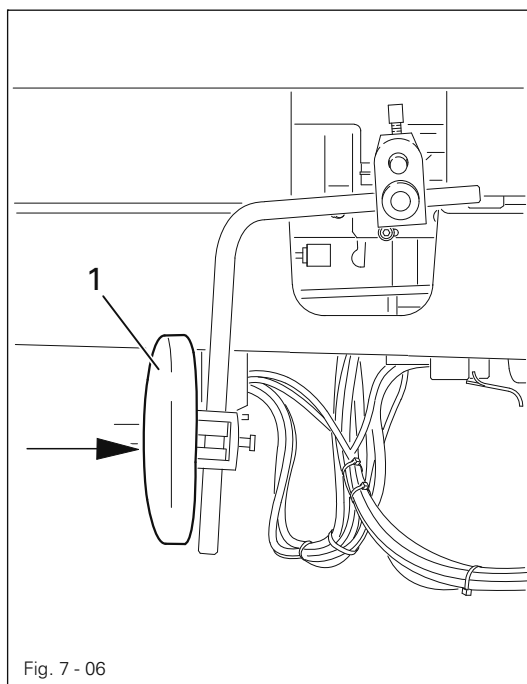
- 0 = Resting position
- +1 = Lower presser foot
- +2 = Sew
- 1 = Lift presser-foot
- 2 = Trim thread

7.05 Lever for raising presser foot



- The presser foot is raised by turning lever 1.

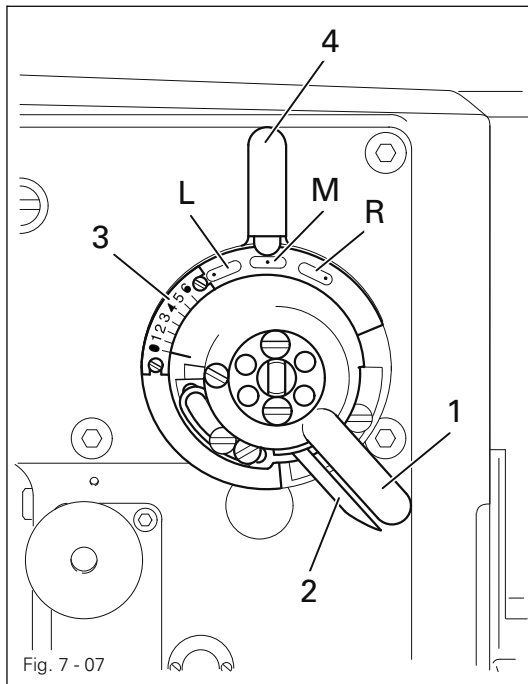
7.06 Knee lever (only on the PFAFF 939 U)



- On machines without an automatic presser foot lift, the knee lever 1 is used to raise the presser foot.

7.07

Adjustment lever for zigzag stitch and needle position



- The zigzag stitch adjustment lever 1 is used for adjusting the width of the zigzag stitch.
- To change the position of the adjustment lever, the locking lever 2 must be pressed against the adjustment lever 1.



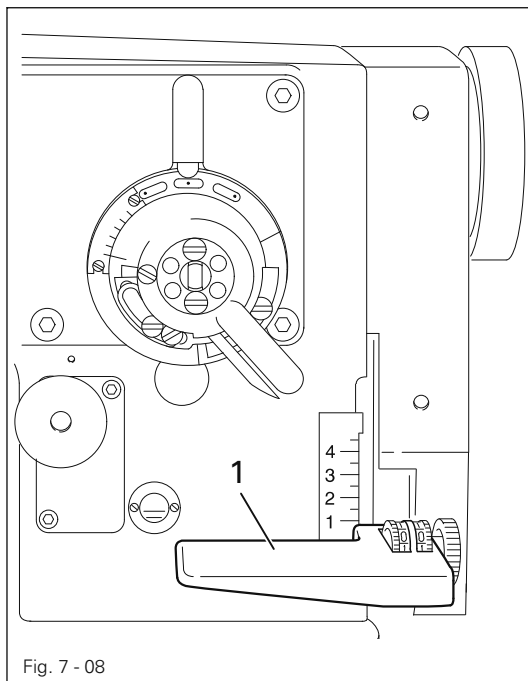
The current zigzag-stitch width can be seen on scale 3.

- By turning the needle-position adjustment lever 4 the required needle position can be set.
 L = needle-position left
 M = needle-position center
 R = needle-position right

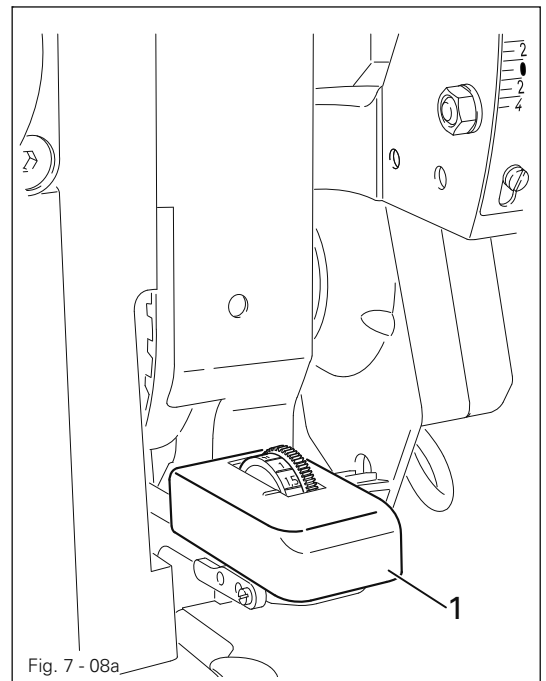
7.08

Reverse-feed key

PFAFF 939 U



PFAFF 3704



- The machine sews in reverse as long as the reverse-feed key 1 is pressed.

7.09 Stitch length adjustment wheel

PFAFF 939 U

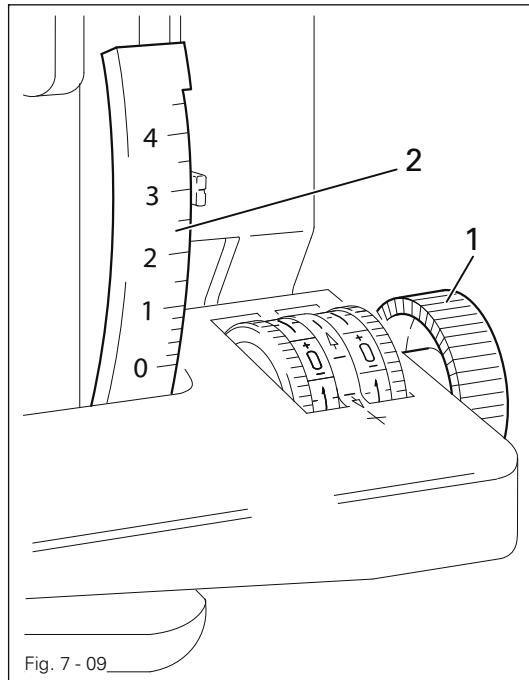


Fig. 7 - 09

PFAFF 3704

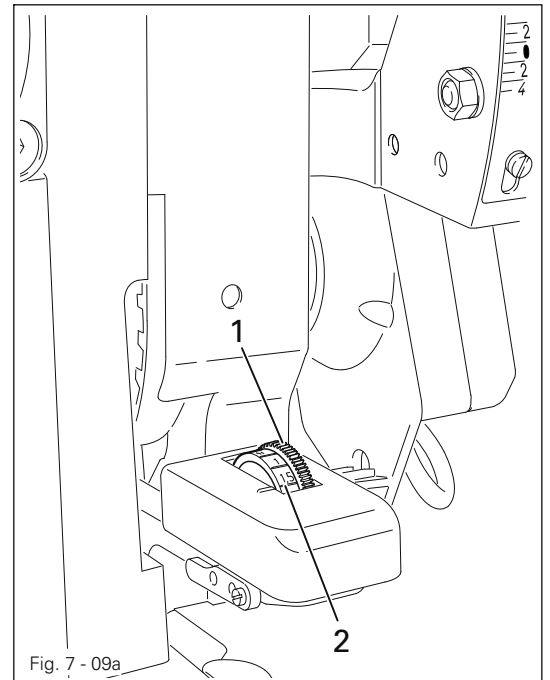


Fig. 7 - 09a

- Set the stitch length by turning the stitch length adjustment wheel 1.
- The stitch length setting can be read on scale 2.

7.10 Adjustment wheels for the differential feed (only on the PFAFF 939 U)

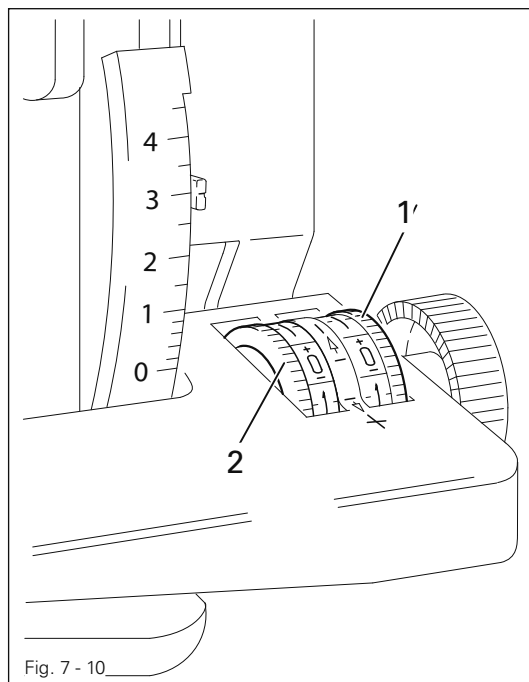
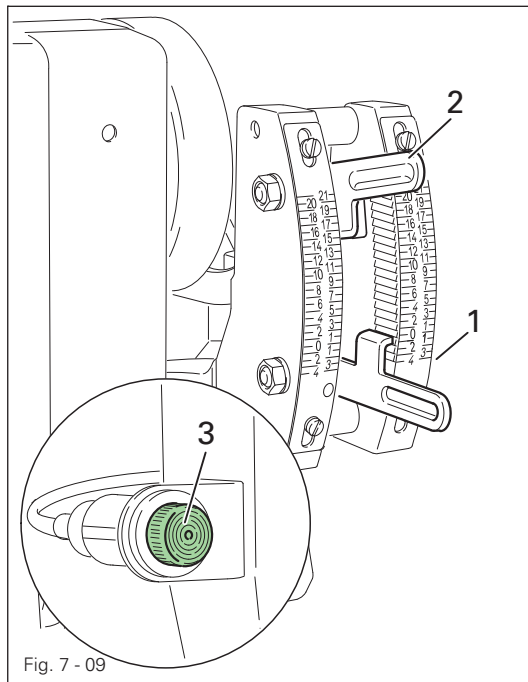


Fig. 7 - 10

- Adjustment wheel 1 (1st setting)
This adjustment wheel is for adjusting the setting with which the machine is to do most of its work.
Green area = Apply fullness
Red area = Stretch
Zero = Normal sewing
(The main and differential feed dogs work with the same feed stroke).
- Adjustment wheel 2 (2nd setting)
Adjustment wheel 2 is used for setting a value, which deviates from the first setting. This value can be selected with the second pedal (see Chapter 7.03 Pedal).

7.11 Adjustment lever for the differential feed (only on the PFAFF 3704-2/..)

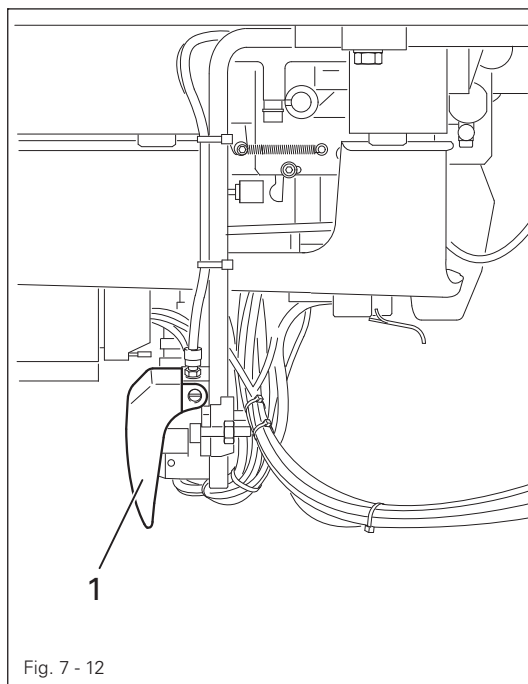


- **Lever 1 (standard value)**
Lever 1 is set at the value, with which the machine usually operates.
- **Lever 2 (fullness)**
Lever 2 can be set at a value, which deviates from the first setting. This value can be called up with the knee switch, see Chapter 7.14 Knee switch...



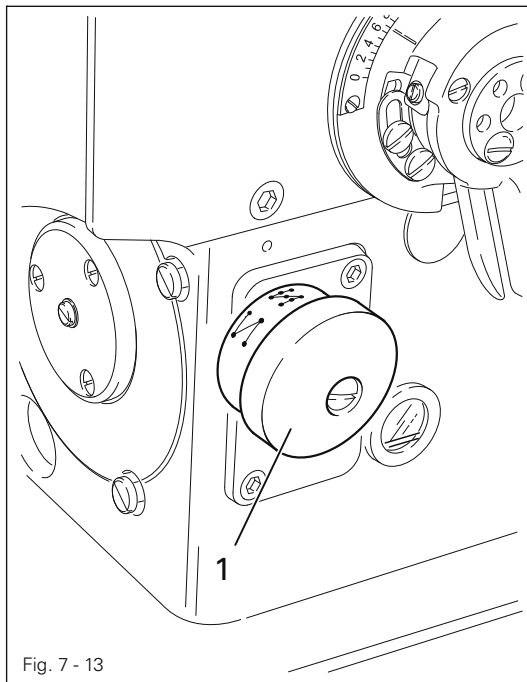
If the machine is set at the standard setting, display unit 3 on the machine head is green.

7.12 Knee switch (only on the PFAFF 3704-2/..)



- By pressing knee switch 1 it is possible to switch between the two settings of the differential feed.

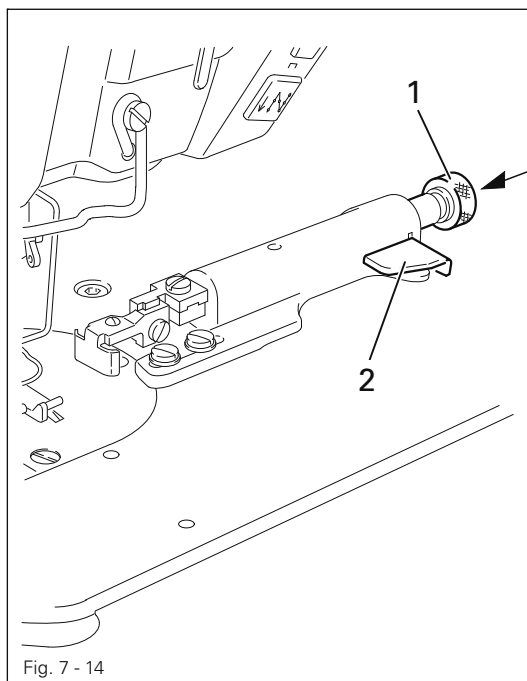
7.13 Adjustment wheel for multi-stitch and zigzag stitch (only on the PFAFF 939 U)



Before sewing begins, make sure that adjustment wheel 1 is locked in position! Only switch over when the machine is at a standstill! Danger of machine damage!

- It is possible to switch between multi stitch and zigzag stitch with adjustment wheel 1, see Chapter 9.08 Adjusting the multi- or zigzag stitch.

7.14 Mechanical edge guide (only on the PFAFF 3704-2/02)



Switching on the edge guide:

- Press knob 1 in the direction of the arrow until it locks into place.

Switching off the edge guide:

- Press down key 2.

7.15 Control panel

The description can be found in the separate instruction manual for the motor.

8 Installation and commissioning



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

If the machine is delivered without a table, it must be ensured that the frame and the table top which you intend to use can hold the weight of the machine and the motor. It must be ensured that the supporting structure is sufficiently sturdy, including during all sewing operations.

8.01 Installation

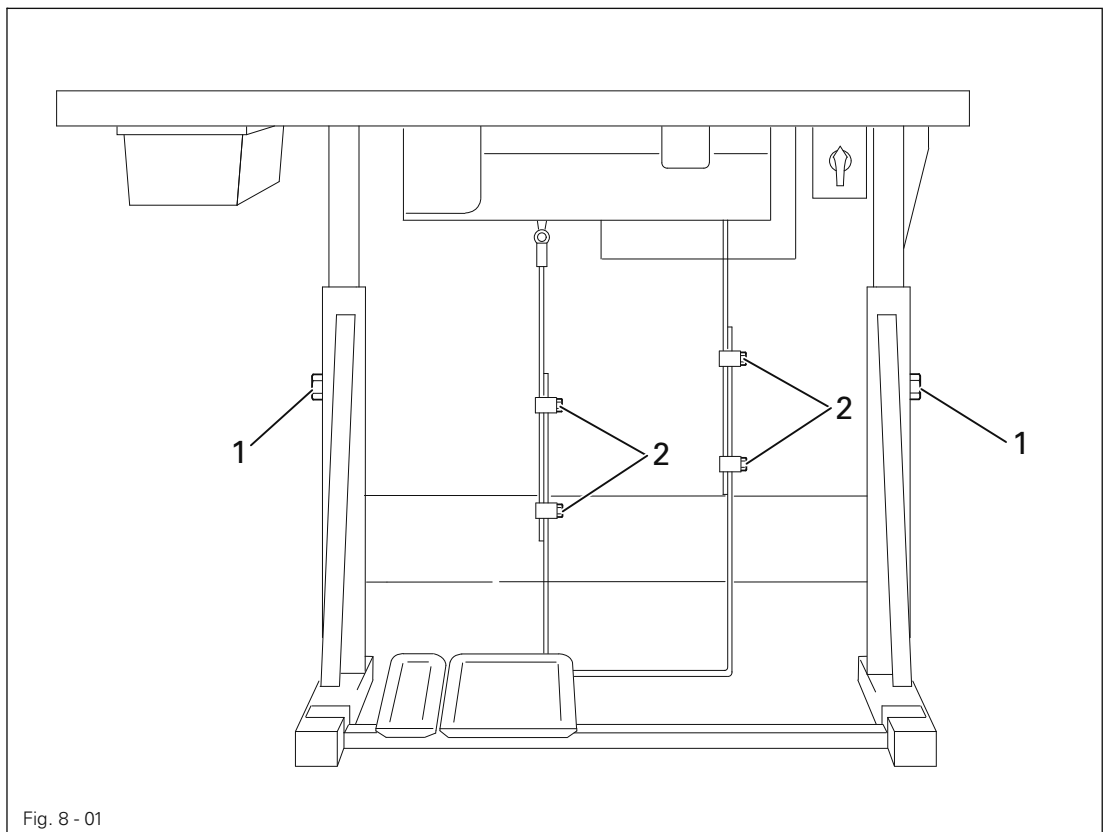
The site where the machine is installed must be provided with suitable connections for the electric current, see Chapter 3 Specifications.

It must also be ensured that the standing surface of the machine site is firm and horizontal, and that sufficient lighting is provided.



The method of packaging used requires that the table top be lowered for transport. The following is a description of how to adjust the height of the table top.

8.01.01 Adjusting the table-top height



- Loosen screws 1 and 2 and set the desired table-top height
- Tighten screws 1 well.
- Adjust the position of the pedal so that you can operate it comfortably and tighten screw 2.

8.01.02 Mounting the upper V-belt guard / Fitting the machine cover

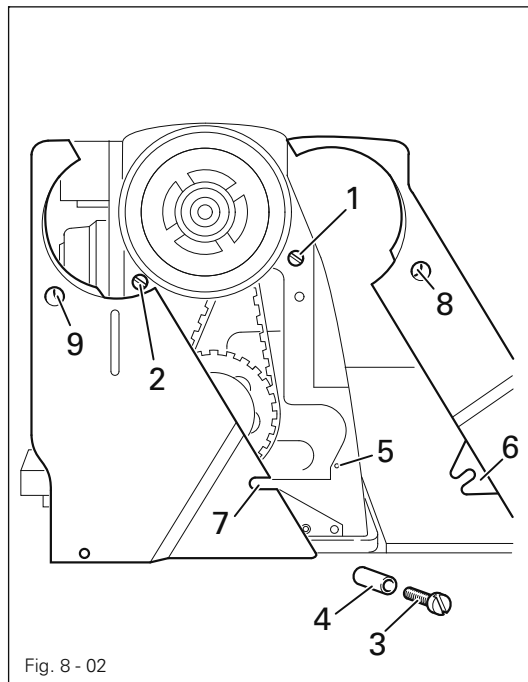


Fig. 8 - 02

- Slide the left and right halves of the V-belt guard into place with the slots behind the heads of screws 1 and 2.
- Screw screw 3 with distance bush 4 into threaded hole 5.
- Align the V-belt guard, taking care that clip 6 is behind slot 7 and in front of distance bush 4.
- Tighten screws 1 and 2 (through holes 8 and 9) and screw 3.

8.01.03 Fitting the reel stand

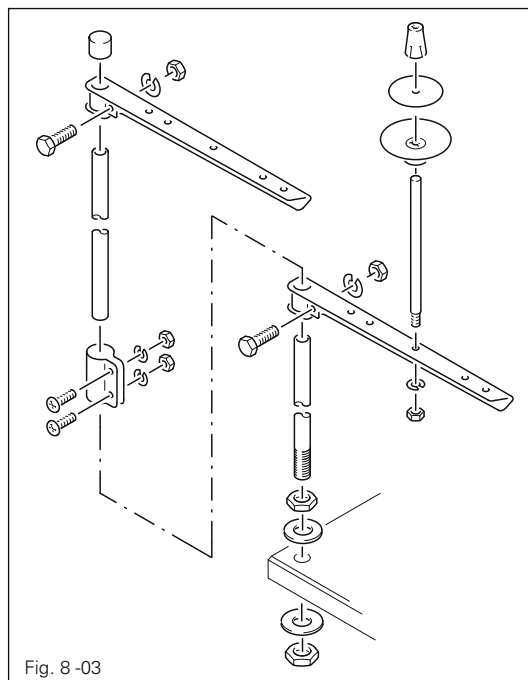


Fig. 8 - 03

- Fit the reel stand as shown in Fig. 8 - 03.
- Afterwards insert the stand in the hole in the table top and secure it with the nuts provided.

Installation and commissioning

8.01.04 Fitting the flange motor

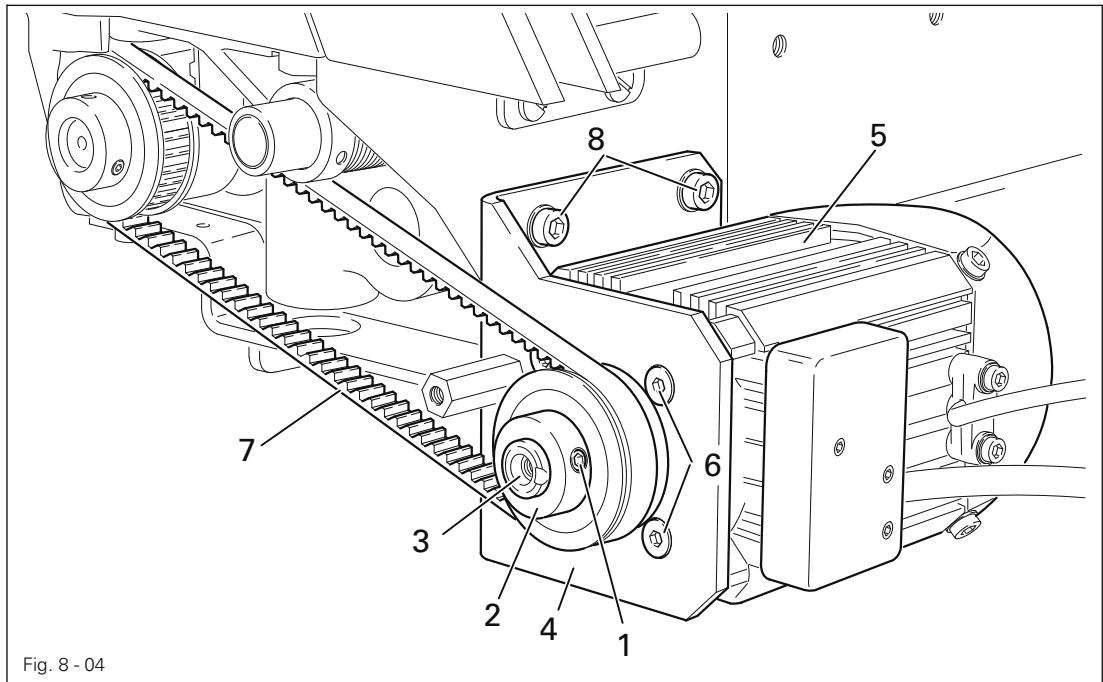


Fig. 8 - 04

- Loosen screws 1 and remove toothed belt wheel 2 from the motor shaft 3.
- Attach bearing plate 4 to the motor 5 with screws 6 as shown in Fig. 8-04.
- Slide toothed belt wheel 2 onto the motor shaft 3 and fasten with screws 1.
- Slightly tilt bearing plate 4 with motor 5 to the side and place the toothed belt 7 on the toothed belt wheels.
- Align bearing plate 4 of motor 5 on the machine case and attach it with screws 8.

8.01.05 Fit the belt guard of the flange-motor

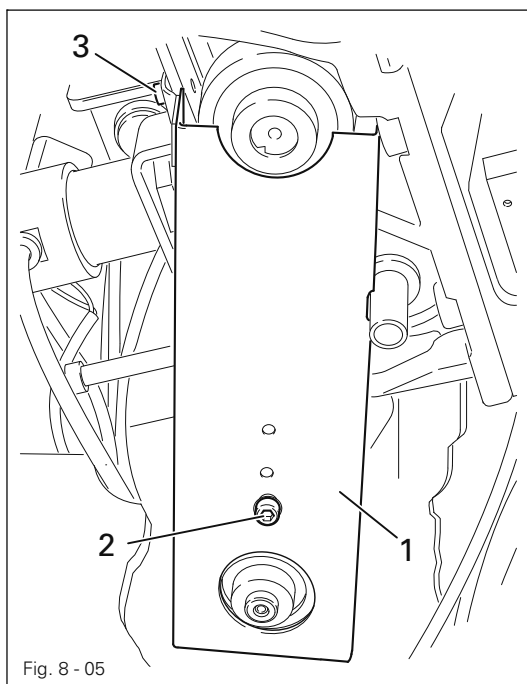
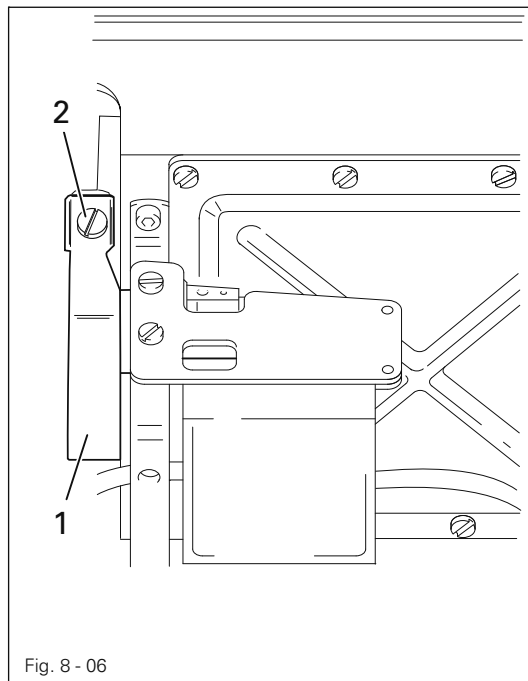


Fig. 8 - 05

- Attach belt guard 1 with screws 2 and 3.

8.01.06 Fitting the tilt lock

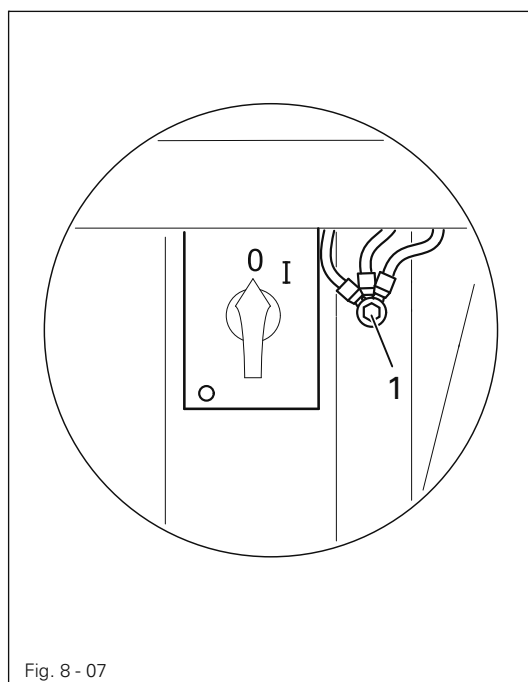


- Screw on tilt lock 1, provided in the accessories, using screw 2.



Do not operate the machine without tilt lock 1!
Danger of crushing between sewing head and table top!

8.01.07 Connecting the plug-in connections and earth cables



- Connect all plug connections as described in the operations manual of the drive
- The following ground cables must be attached in order to discharge static electricity.
- Attach ground cables for machine, main switch, control unit and motor to ground point 1.

Installation and commissioning

8.02 Commissioning

- Examine the machine, in particular the electric cables and pneumatic connection tubes for any damage.
- Clean the machine thoroughly and then oil it., see Chapter 10 Care and Maintenance!
- Before commissioning the machine remove plug 1 (Fig. 8 - 08) from its hole and fill in oil up to marking 2, see Chapter 10.03 Oiling the hook.



Plug 1 serves as a safety device for transportation and should not be used during sewing operations.

- Before commissioning the machine remove screw 3 (Fig. 8 - 08a) and fill in oil up to the marking (inspection glass on the front side of the machine), see Chapter 10.04 Oiling the zigzag drive.

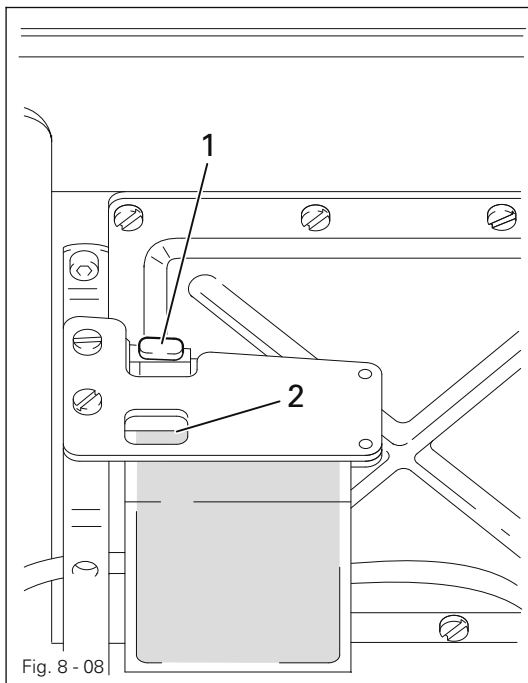


Fig. 8 - 08

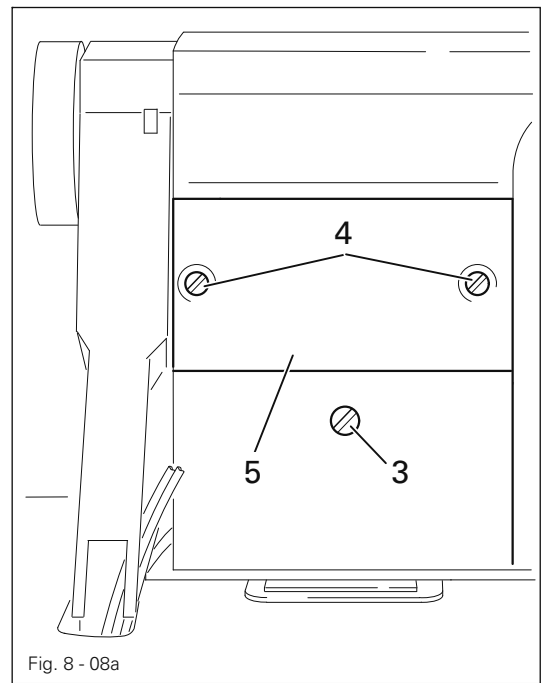


Fig. 8 - 08a

- 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!



Have home position of the machine drive verified by certified technicians before first commissioning! Have settings carried out by technicians where required (see chapter 8.04)

- Connect machine to the compressed air system. The manometer on the air filter/lubricator unit must display a pressure of **6 bar**. If necessary, set to the correct value (see chapter 10.05 Checking / regulating air compression).

8.03 Switching the machine on/off

- Switch the machine on, see Chapter 7.01 Main switch.

8.04 Basic position of the machine drive unit

8.04.01 On machines with EcoDrive and control unit P40 ED

- Switch on the machine.
- Press the **TE/speed key** twice to select the input mode.
- Select parameter "798" by pressing the corresponding +/- key, and select service level C, see Chapter **Selecting the user level** in the instruction manual for the control panel.
- By pressing the corresponding +/- key select the parameter "799" (Selecting the machine class).
- Check whether value "1" is set, and correct it if necessary.



If the parameter has to be altered, operate the **TE/Speed** key and then switch off the machine and switch it on again. Then select service level C again as described above.

- By pressing the corresponding +/- key, select parameter "800" (selecting the sewing direction).
- By pressing the corresponding +/- key, select the value for the parameter at "1".
- By pressing the corresponding +/- key, select parameter "700".
- Sew a stitch by operating the pedal.
- Turn the balance wheel in the sewing direction until the descending needle is level with the top edge of the needle plate.
- Conclude the adjustment of the sewing motor by pressing the **TE/Speed key**.

8.05 Mounting/connecting the start inhibitor

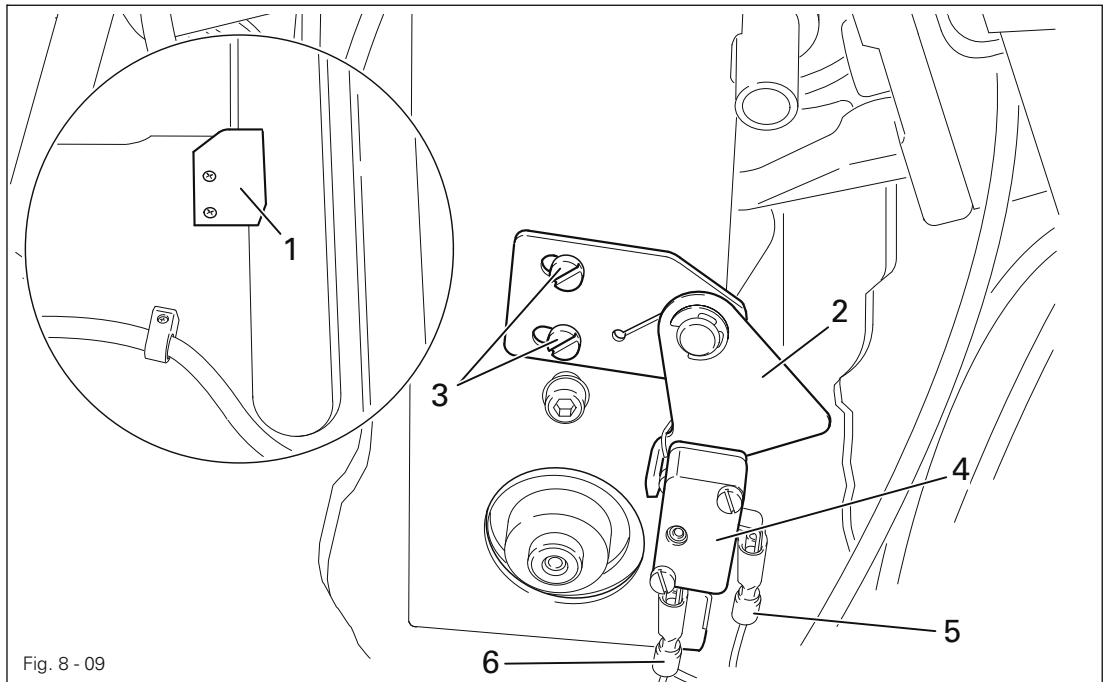


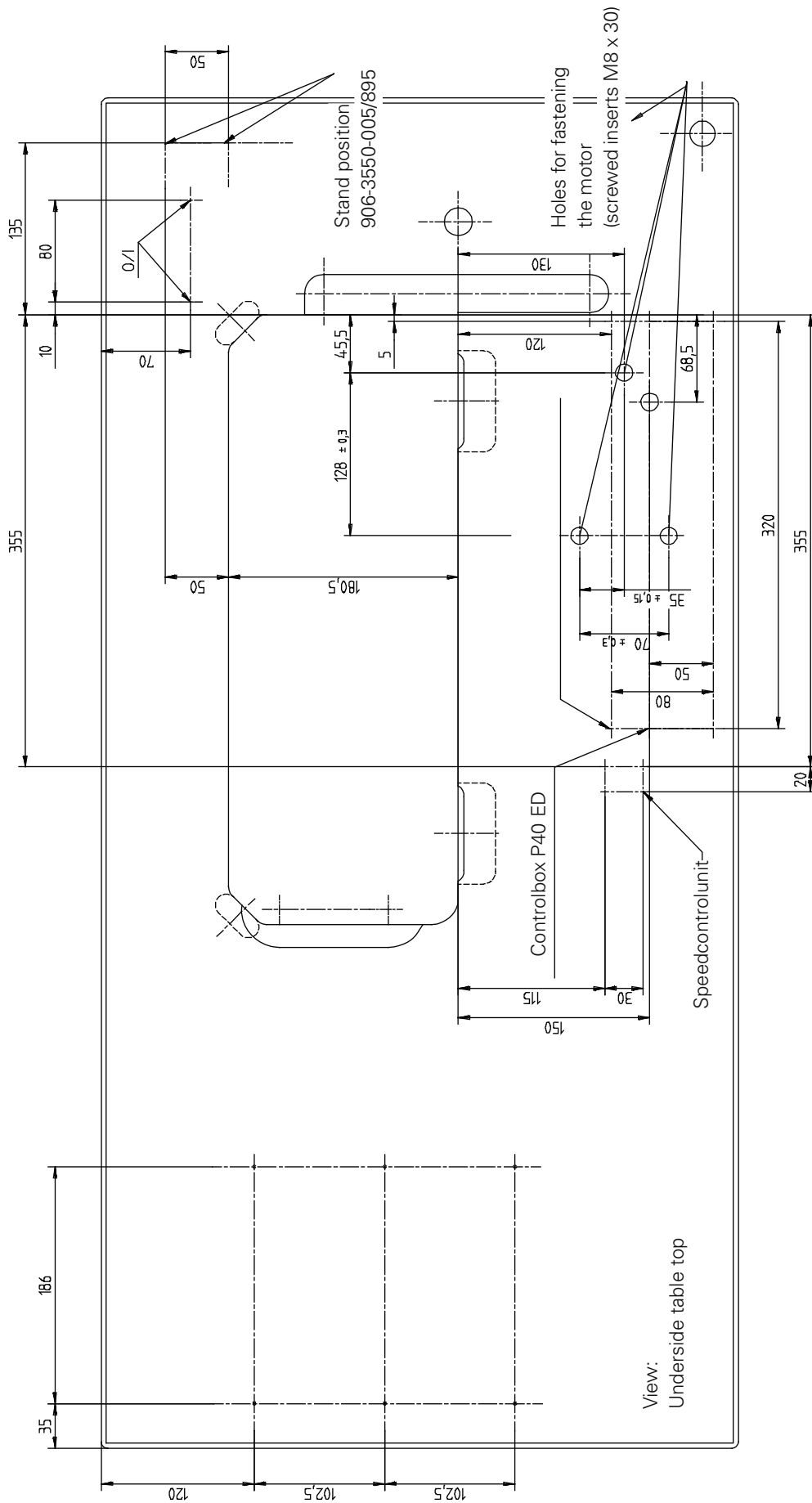
Fig. 8 - 09

- For machines delivered without a table, the plate 1 from the accessories should be mounted under the table top, so that the switch lug 2 is resting on plate 1 when the sewing head is in an upright position.
- Loosen screws 3 and adjust switch 4 so that the switch lug 2 is free when the sewing head is tilted back and pressed when the sewing head is upright.
- Connect plugs 5 and 6 to the switch 4.

Function check of the start inhibitor

- Switch the machine on at the main switch and tilt back the sewing head.
- The error message "**Error 9**" must appear on the control panel.
- If the message does not appear, check the setting of safety switch 4.
- After the sewing head has been returned to the upright position, the machine is ready for operation again.

8.07 Table top assembly



9

Preparation



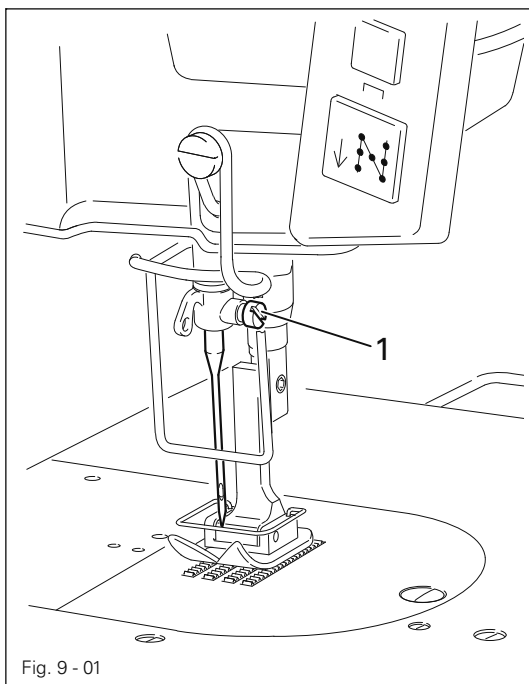
All regulations and instructions in this Instruction Manual are to be observed!
Special attention is to be paid to the safety regulations!



All preparation work is only to be carried out by appropriately trained personnel.
Before all preparation work, the machine is to be separated from the electricity supply by removing the plug from the mains or switching off the On/Off switch!

9.01

Inserting the needle



Switch off the machine!
Danger of injury due to unintentional starting of the machine!



Only use needles from the system intended for the machine, see Chapter 3 Specifications.

- Bring the needle bar into its highest position.
- Loosen screw 1.
- Insert the needle as far as possible.
The long needle groove must be facing forwards.
- Tighten screw 1.

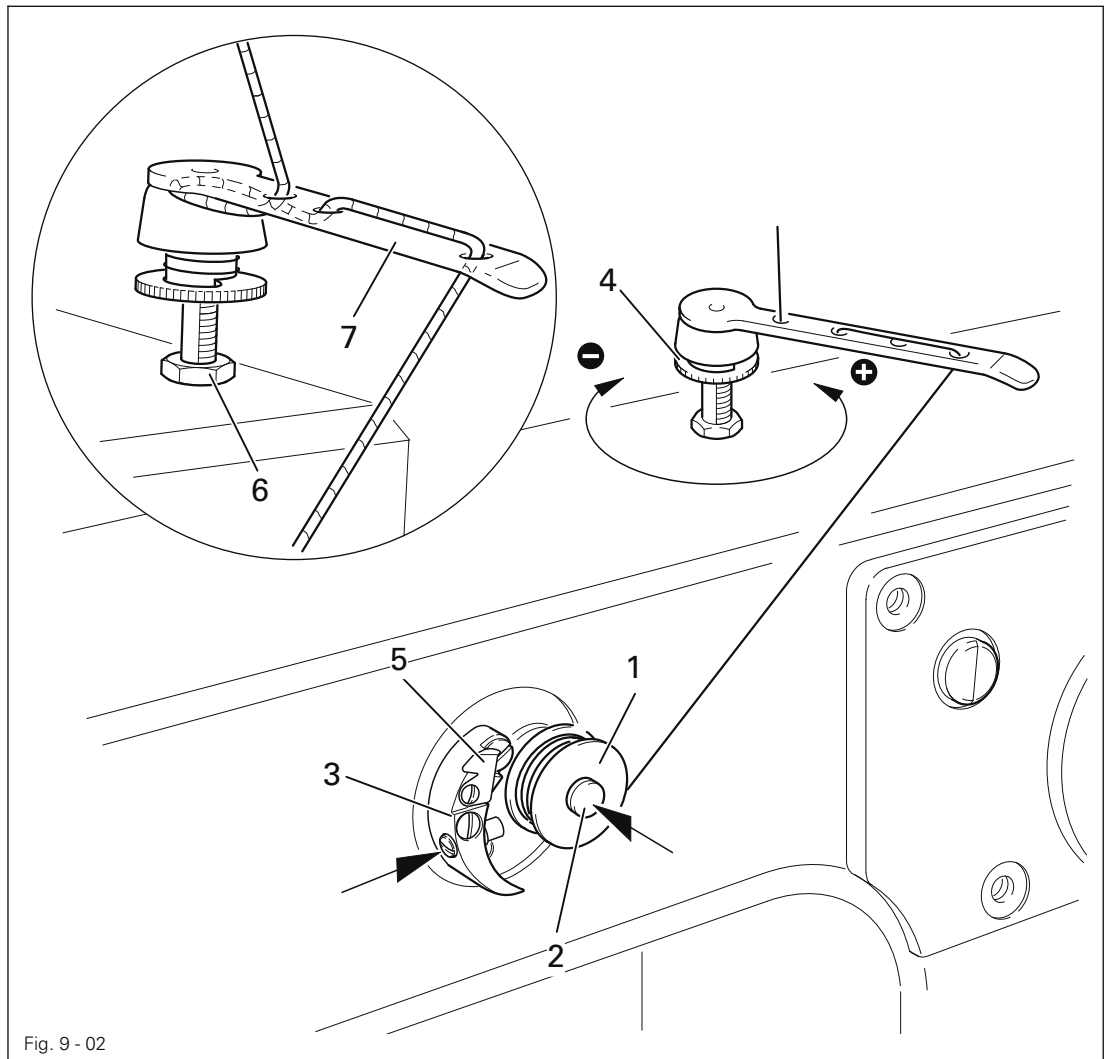


Fig. 9-02

- Place an empty bobbin 1 onto bobbin shaft 2.
- Thread the bobbin in accordance with Fig. 9-02 and wind it anti-clockwise around bobbin 1 a few times.
- Switch on the bobbin winder while at the same time pressing bobbin winder spindle 2 and lever 3.



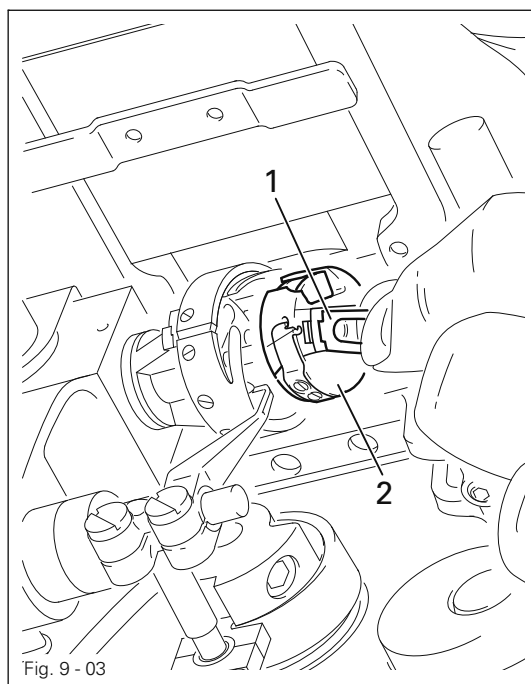
The bobbin fills up during sewing.

- The tension of the thread on bobbin 1 can be adjusted with knurled screw 4.
- The bobbin winder stops automatically when bobbin 1 is full.
- Remove the filled bobbin 1 and cut the thread on knife 5.



If the thread is wound unevenly, loosen nut 6 and turn thread guide 7 accordingly. Retighten nut 6 after the adjustment.

9.03 Removing / Inserting the bobbin case



Switch off the machine!
 Danger of injury due to unintentional starting of the machine!

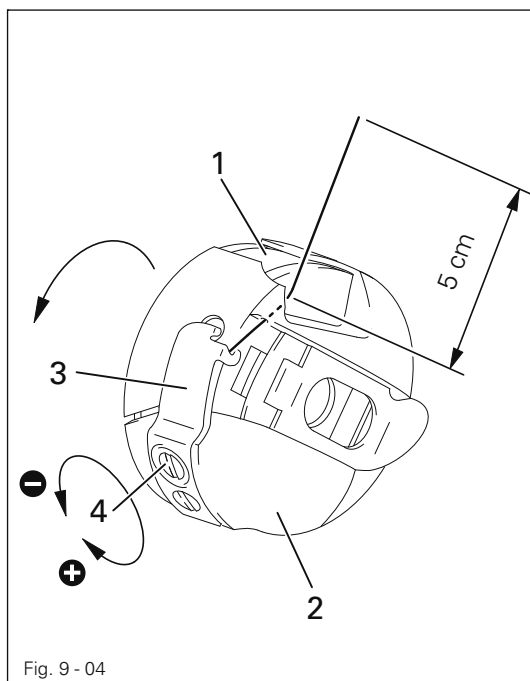
Removing the bobbin case:

- Lift clip 1 and remove bobbin case 2.

Inserting the bobbin case:

- Insert bobbin case 1 until you feel it click into place.

9.04 Threading the bobbin case, adjusting the thread tension



- Insert bobbin 1 into bobbin case 2.
- Guide the thread through the slot under spring 3.
- Adjust the thread tension by turning screw 4.

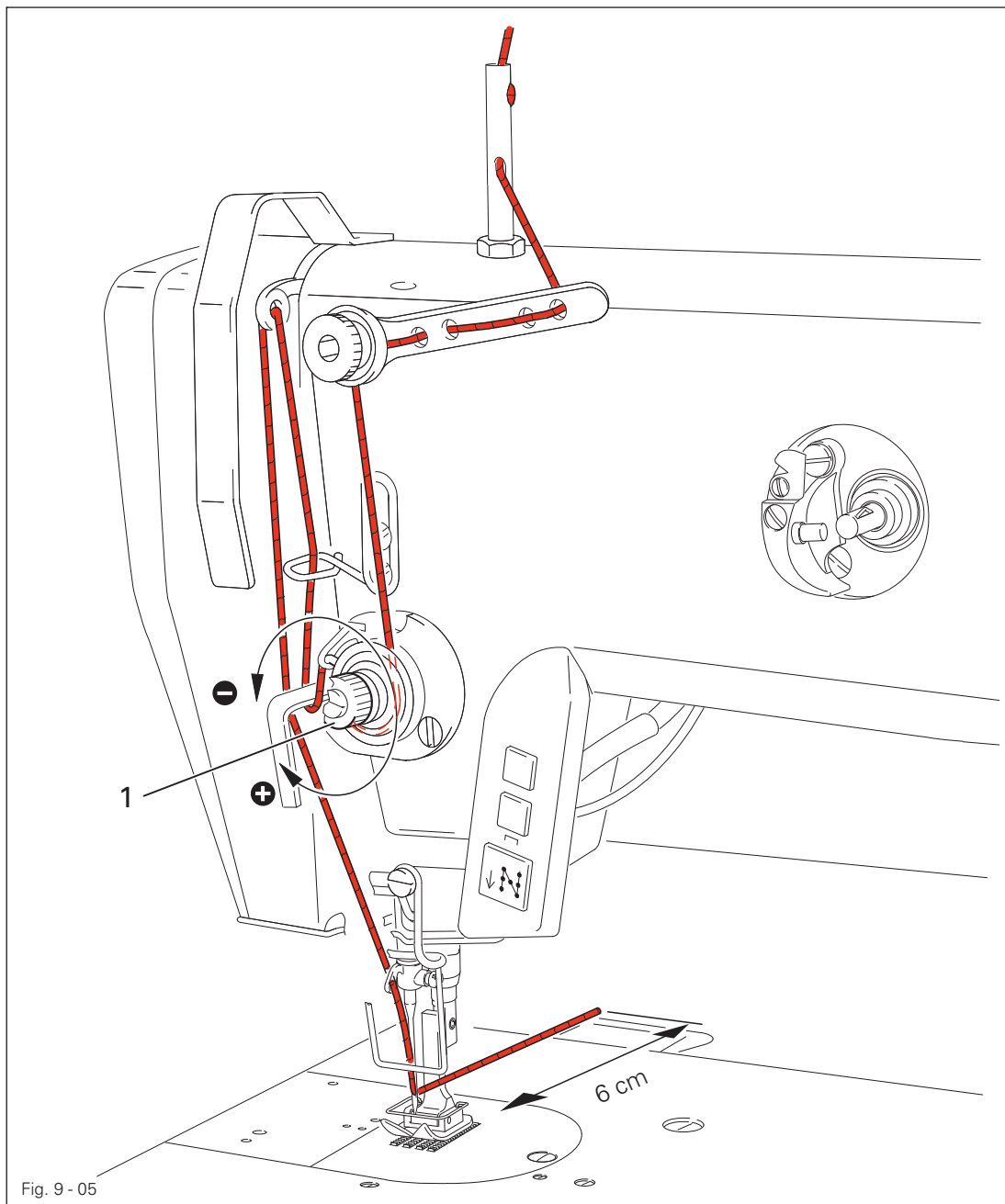


When the thread is pulled the bobbin 1 must rotate in the direction of the arrow.

9.05

Threading the needle thread / Adjusting the needle thread tension

(on the PFAFF 939 U and PFAFF 3704-2/03)



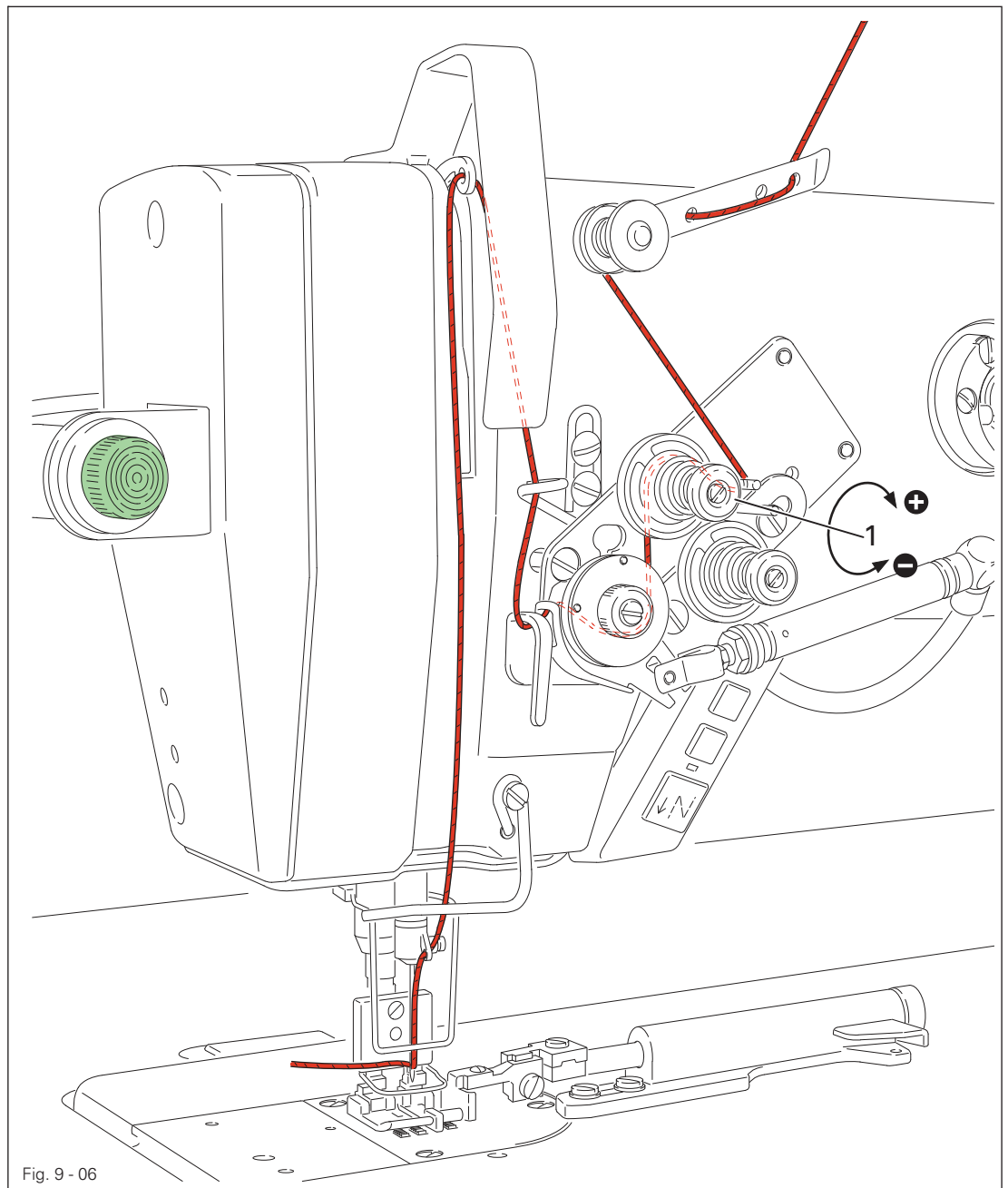
Switch off the machine!

Danger of injury due to unintentional starting of the machine!

- Thread the needle thread as show in the above illustration.
- Adjust the needle thread tension by turning milled screw 1.

9.06 Threading the needle thread / Adjusting the needle thread tension

(on the PFAFF 3704-2/02)

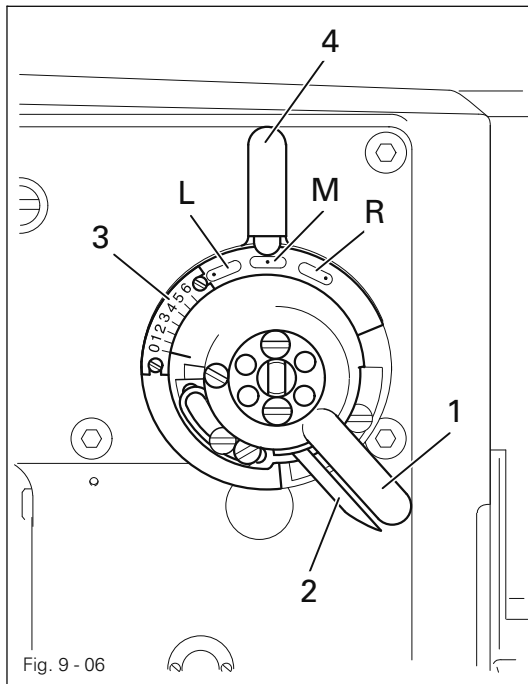


Switch off the machine!

Danger of injury due to unintentional starting of the machine!

- Thread the needle thread as show in the above illustration.
- Adjust the needle thread tension by turning milled screw 1.

9.06 Setting the zigzag stitch and the stitch position

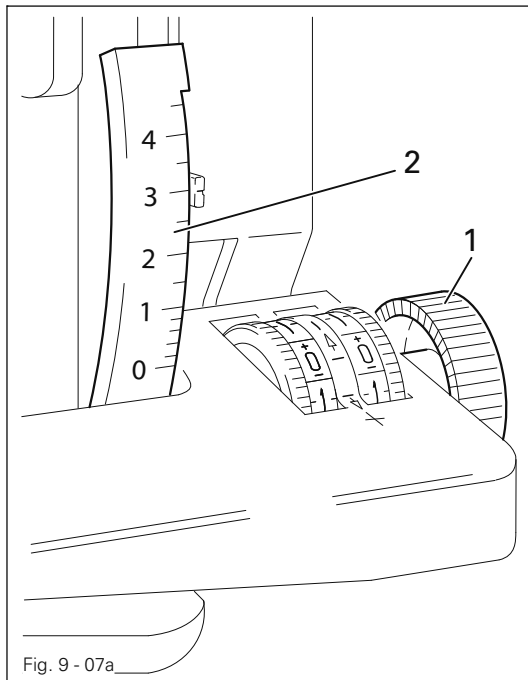


- Set the zigzag stitch width by turning the zigzag lever 1.
- To vary the adjustment press catch 2 against zigzag lever 1.
- The setting can be read from scale 3.
- Set the stitch position by turning stitch position lever 4.

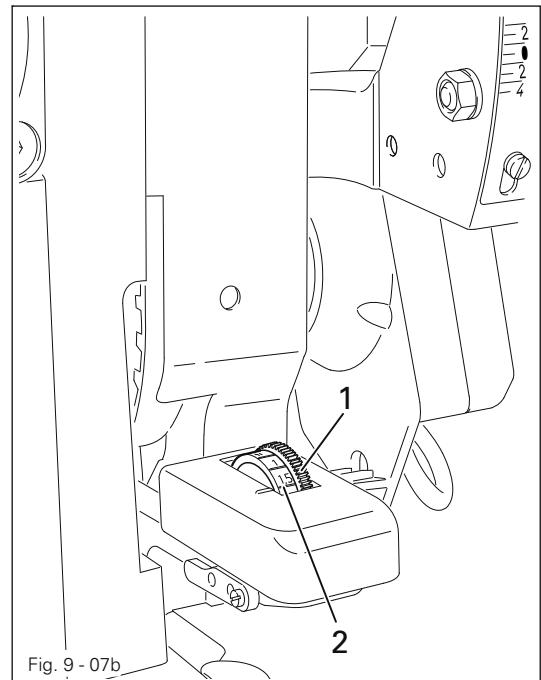
L = stitch position on left
 M = stitch position in the middle
 R = stitch position on the right

9.07 Adjusting the stitch length

PFAFF 939 U

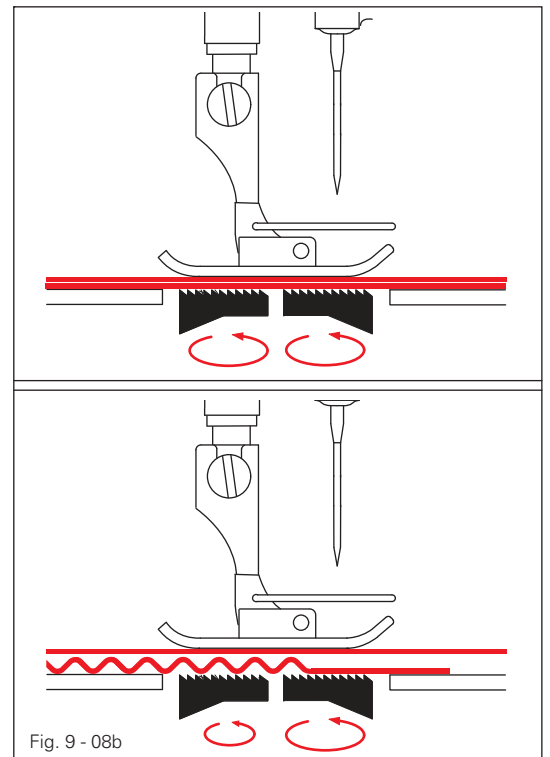
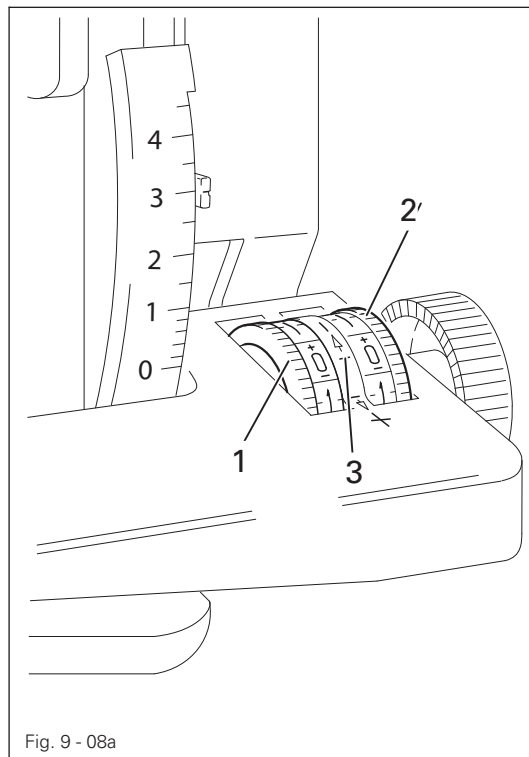


PFAFF 3704-2/..



- Adjust the stitch length by turning the feed regulator wheel 1.
- The setting can be read on scale 2.

9.08 Adjusting the differential feed (on the PFAFF 939 U)



9.08.01 Sewing without fullness

- Turn adjustment wheel 1 as far as possible in the "+" direction.
- Turn adjustment wheel 2 until " 0 " is at marking 3.
- Turn adjustment wheel 1 back until " 0 " is at marking 3.



When sewing without fullness the feed stroke of the main and the differential feed dogs is the same.

9.08.02 Applying fullness constantly

- Turn adjustment wheel 1 as far as possible in the "+" direction.
- Turn adjustment wheel 2 until the desired level of fullness (green numbers) is at marking 3.
- Turn adjustment wheel 1 back until the same green number is at marking 3.



The sum of the selected fullness level and the stitch length must not exceed 4.5 because more than this lessens the stitch length.

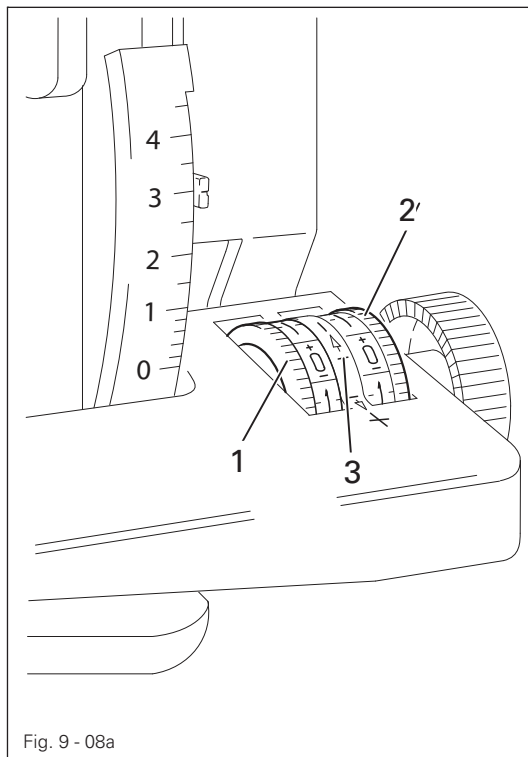


Fig. 9 - 08a

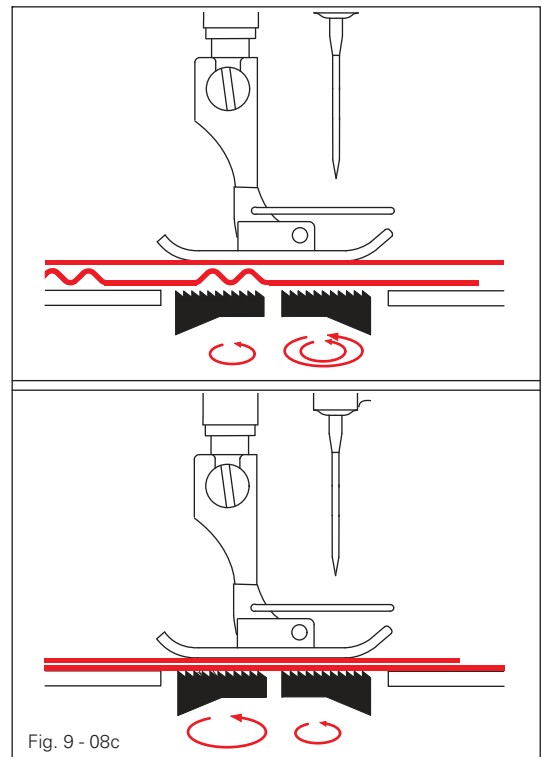


Fig. 9 - 08c

9.08.03 Applying fullness intermittently

- Turn adjustment wheel 1 as far as possible in the "+" direction.
- Turn adjustment wheel 2 until "0" is at marking 3.
- Turn adjustment wheel 1 back until the desired level of fullness (green numbers) is at marking 3.



The sum of the selected fullness level and the stitch length must not exceed 4.5 because more than this lessens the stitch length.



When the left pedal is in its neutral position, the machine works with the same feed stroke for the main and differential feed dogs. When the left pedal is operated, the fullness set on adjustment wheel 1 is worked into the bottom material ply (see Chapter 7.03 Pedal on the PFAFF 939 U).

9.08.04 Constantly stretch the top material ply

- Turn adjustment wheel 1 as far as possible in the "+" direction.
- Turn adjustment wheel 2 until the desired level of stretch (red numbers) is at marking 3.
- Turn adjustment wheel 1 back until the same red number is at marking 3.

9.09 Adjusting the differential feed (on the PFAFF 3704-2/..)

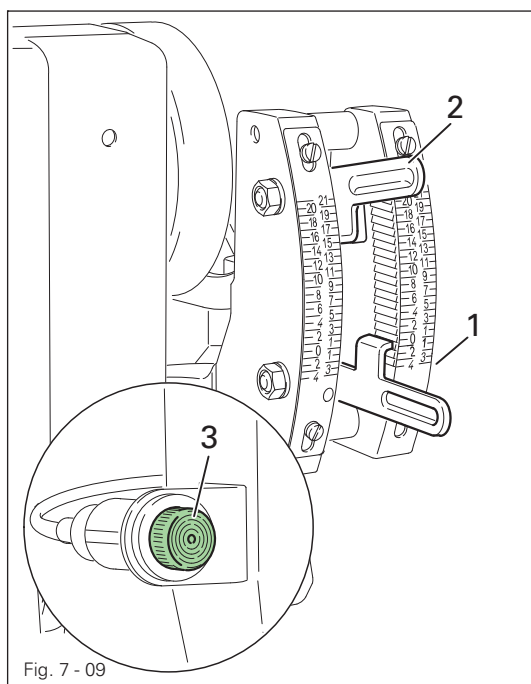


Fig. 7-09

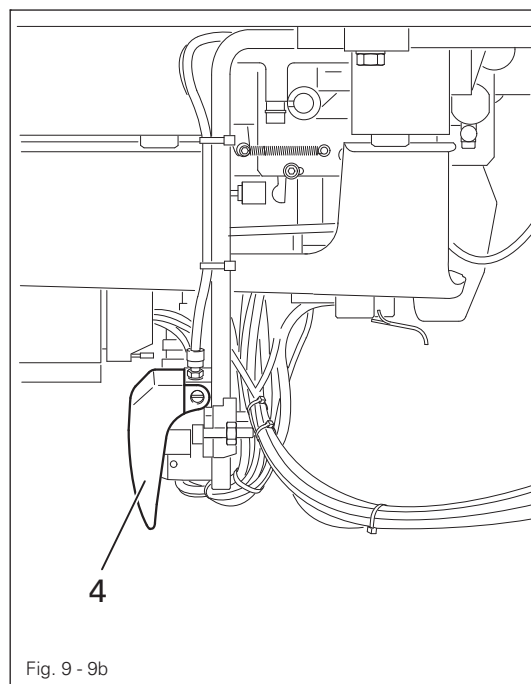


Fig. 9-9b

Standard value:

- Set the value with which the machine will usually operate on lever 1.

- Set the required deviating value (e.g. for fullness) on lever 2.

By pressing the knee switch, it is possible to switch between the standard value and fullness, see Chapter 7.14 **Knee switch**.



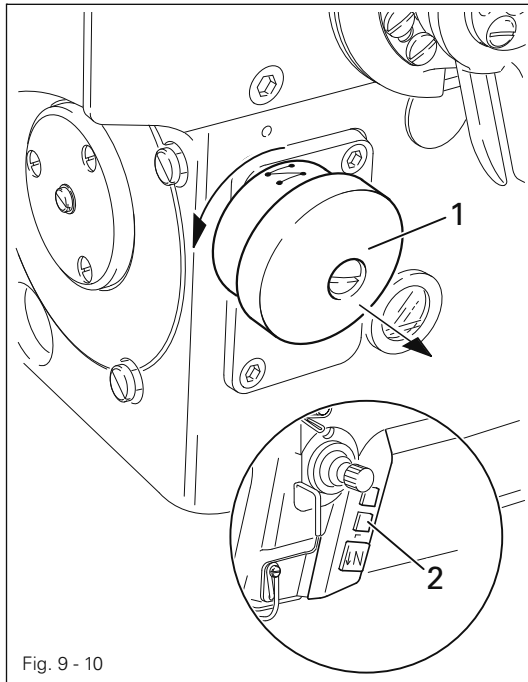
Setting displayed on display unit 3:

Display **white** = fullness

Display **green** = standard value

9.10 Adjusting the multi-stitch or the zigzag stitch

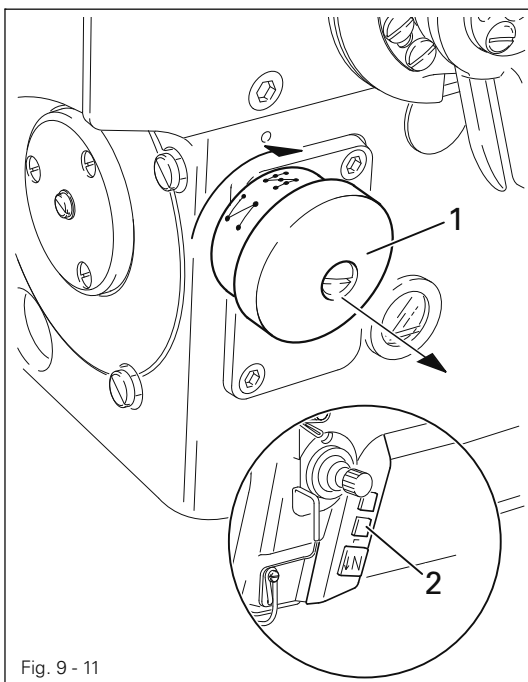
9.10.01 Changing from zigzag stitch to multi-stitch



Before sewing begins, make sure that adjustment wheel 1 is locked in position! Only switch over when the machine is at a standstill! Danger of machine damage!

- Bring the machine into a switching position by operating key 2.
- Pull adjustment wheel 1 and turn it in the direction of the arrow until it clicks into position.

9.10.02 Changing from multi-stitch to zigzag stitch



Before sewing begins, make sure that adjustment wheel 1 is locked in position! Only switch over when the machine is at a standstill! Danger of machine damage!

- Bring the machine into a switching position by operating key 2.
- Pull adjustment wheel 1 and turn it in the direction of the arrow until it clicks into position.

10 Care and maintenance

10.01 Servicing and maintenance intervals

Cleaning	daily, several times by continuous operation
Checking the oil level (hook oil tank)	once a years
Checking the oil tank(zigzag eccentric lubrication)	daily, before operation
Checking/adjusting the air pressure	daily, before each operation
Cleaning the air filter/lubricator	Cleaning the air filter/lubricator



These maintenance intervals are calculated for the average running time of a single shift operation. If the machine is operated more than this, shorter intervals are recommended.

10.02 Cleaning the machine

The cleaning cycle required for the machine depends on following factors:

- Single or several shift operation
- Amount of dust resulting from the workpiece

It is therefore only possible to stipulate the best possible cleaning instructions for each individual case.



For all cleaning work the machine must be disconnected from the mains by switching off the on/off switch or by removing the mains plug!
Danger of injury if the machine suddenly starts up .

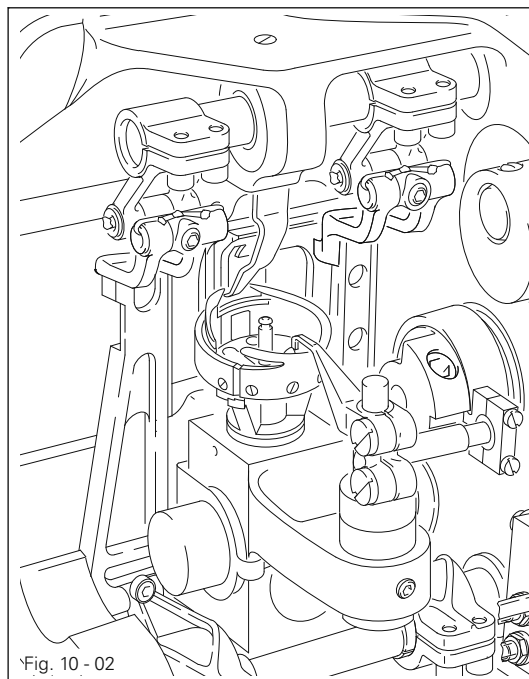


Fig. 10 - 02

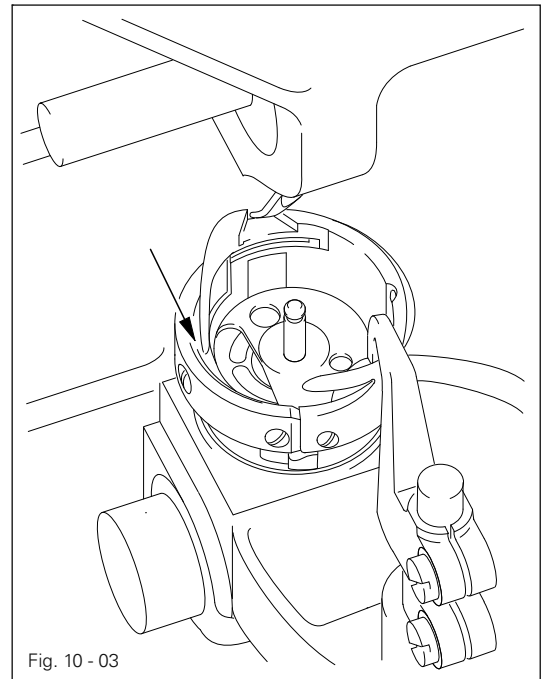
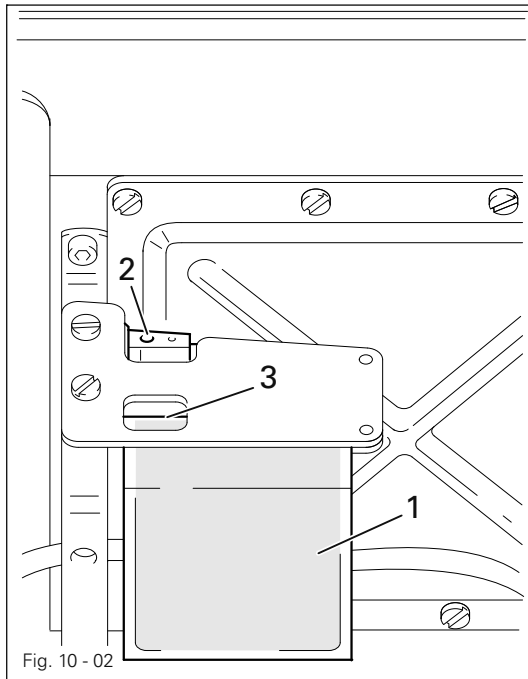
To avoid breakdowns, the following cleaning work is recommended for single shift operation:

- Swing out the cover plate and tilt back the sewing head.
- Clean the hook and hook compartment daily, more often if in continuous operation.



Return the machine to its upright position using **both** hands!
Danger of injury by crushing between the edge of the machine and the table top!

10.03 Lubricating the hook



Switch off the machine!
Danger of injury due to unintentional starting of the machine!

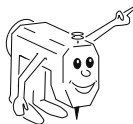


Only use oil with a mean viscosity of $22.0 \text{ mm}^2/\text{s}$ at 40°C and a density of 0.865 g/cm^3 at 15°C .

- Lay the machine head on its back.
- Fill the oil reservoir 1 up to the upper marking 3 through hole 2.
- Before operating the machine for the first time or after longer stationary periods, add a few additional drops of oil into the hook race (see arrow in Fig. 10-03).

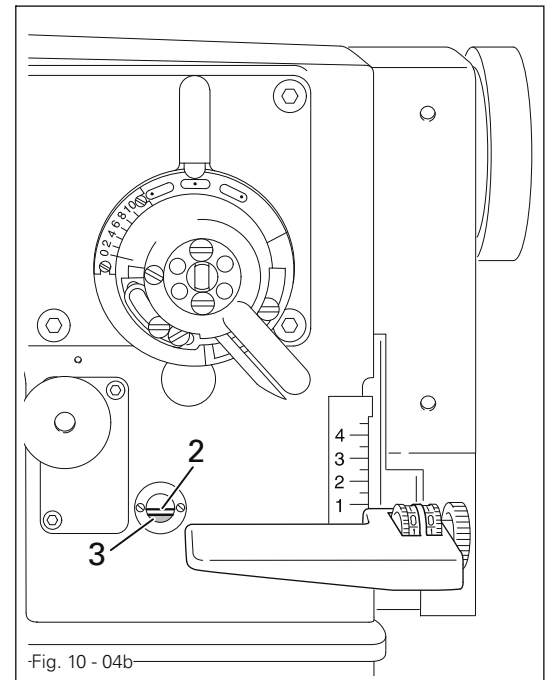
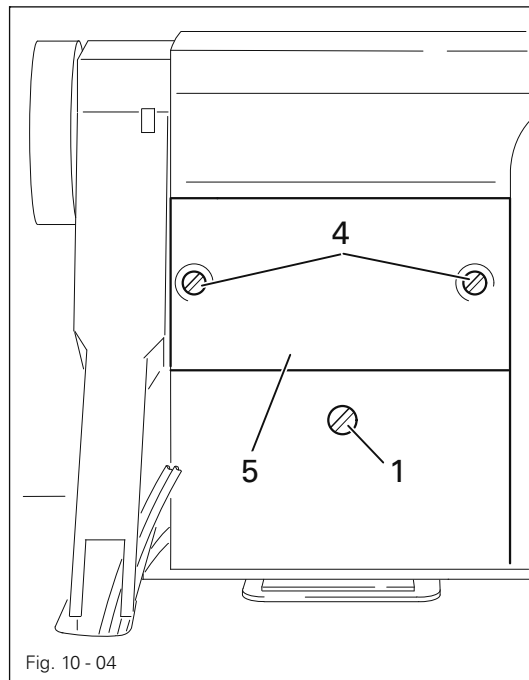


Return the machine to its upright position with both hands. Danger of crushing between machine head and table top!



We recommend PFAFF sewing machine oil. 280-1-120 144.

10.04 Oiling the zigzag drive



Switch off the machine!
Danger of injury due to unintentional starting of the machine!

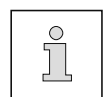


Only use oil with a mean viscosity of $68.00 \text{ m}^2/\text{s}$ at 40° C and a density of $0.881 \text{ g}/\text{cm}^3$ at 15° C .

- Check the oil level before each operation.
- If necessary, remove screw 1 and fill in oil up to top marking 2.
- Tighten screw 1.

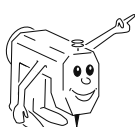


Never allow the oil level to sink below the minimum mark 3!
Danger of damage to the machine!



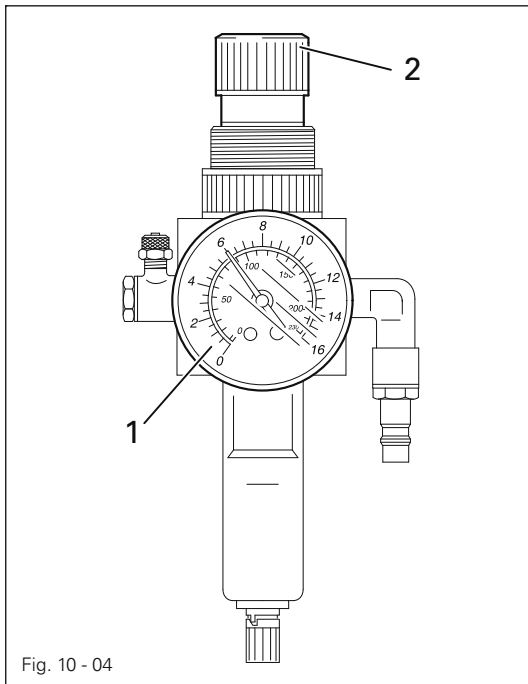
To fill in larger quantities of oil, e.g. when filling for the first time before commissioning, it is better to remove cover 5.

- Loosen screws 4 and remove cover 5.
- Take care that no dirt gets into the case.
- Fill in oil up to the top marking 2.
- Clean the surface of cover 5, the case and the seal.
- Replace cover 5 and tighten screws 4.



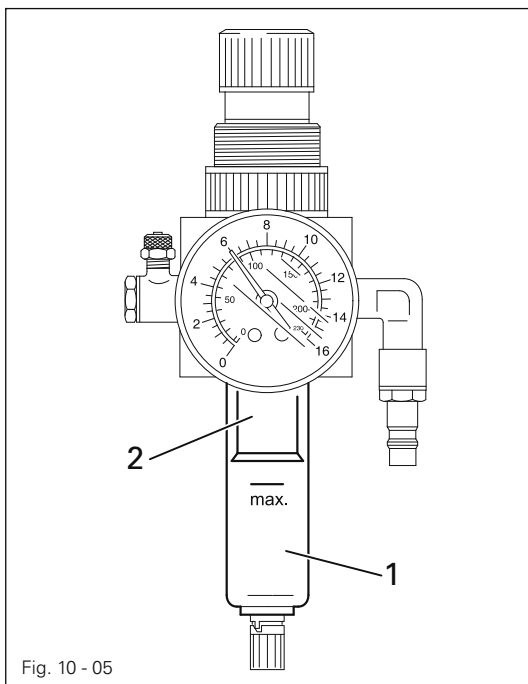
We recommend PFAFF sewing machine oil, part no. 280-1-120 146.

10.05 Checking/adjusting the air pressure



- 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.

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



Switch the machine off!
Disconnect the air hose at the
air-filter / lubricator.

To drain water bowl

- Water bowl 1 drains itself automatically when 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.

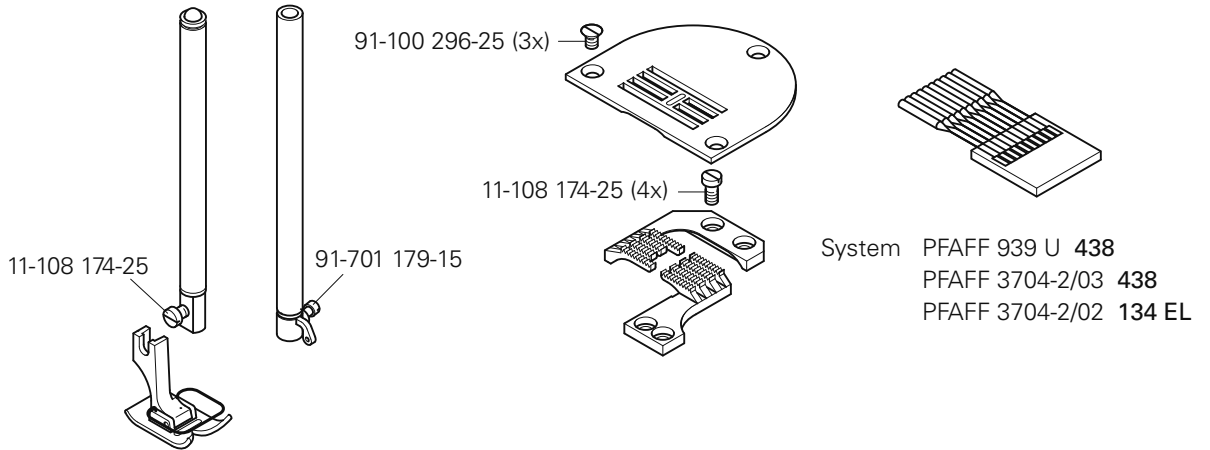
11

Wearing parts

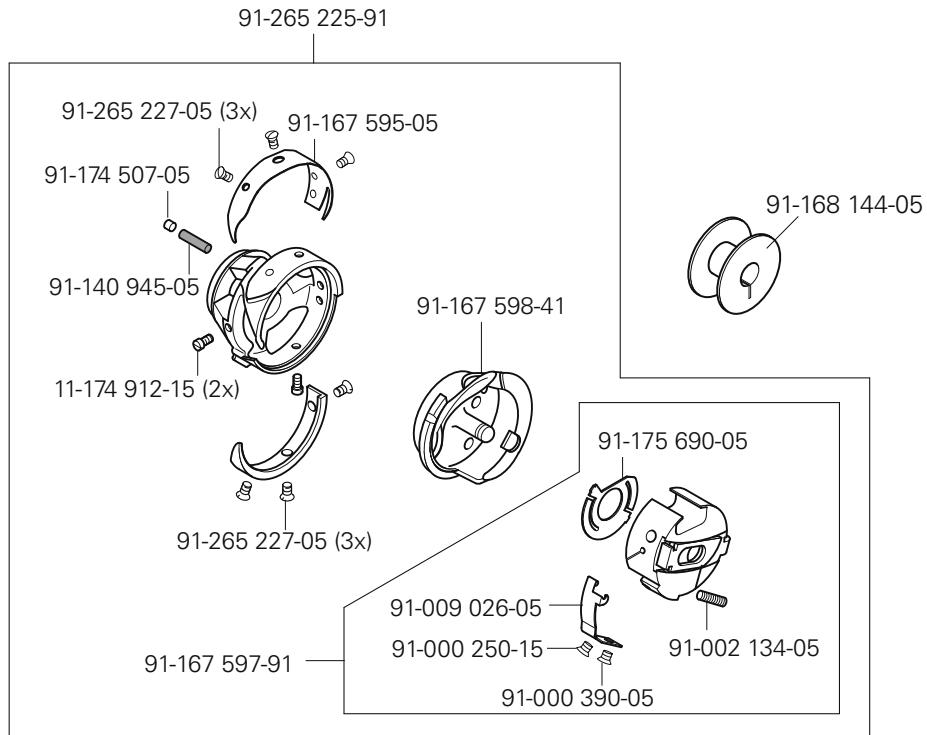


This is a list of the most important wearing parts.

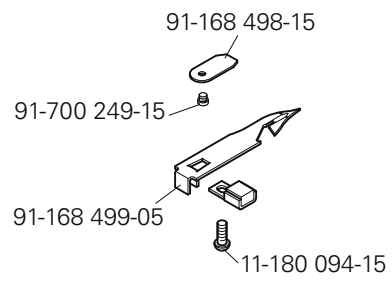
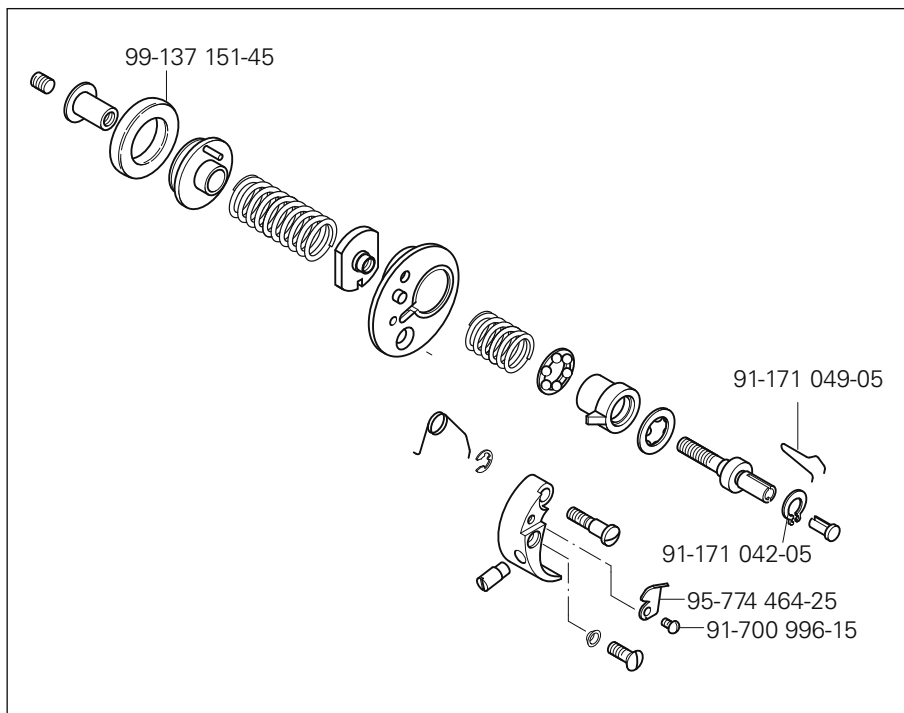
A detailed parts list for the complete machine is included with the accessories. In case of loss, the parts list can be downloaded from the internet address www.pfaff-industrial.com/pfaff/de/service/downloads As an alternative to the internet download the parts lists can also be ordered in book form under part no. 296-12-18 603.



PFAFF 939



Wearing parts





Europäische Union
Wachstum durch Innovation – EFRE



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