

1591

1593

INSTRUCTION MANUAL

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



This instruction manual applies to all models and subclasses listed in **chapter 3 Technical Data**.



The adjustment manual for the machine can be downloaded at no charge under www.pfaff-industrial.de/de/service-support/downloads/technical. As an alternative to the Internet download, the adjustment manual can also be ordered as a hard copy under order no. **296-12-19 931/002**.

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**PFAFF Industriesysteme
und Maschinen GmbH**

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1 Safety

1.01 Directives

The machine was built in compliance with the European regulations specified in the declaration of conformity and declaration of incorporation.

As a supplement to this instruction manual, please also observe the generally applicable, legal and other regulations and legislation – also in the country of use – and the valid environmental protection regulations! Always comply with the locally applicable regulations of the professional associations and other supervisory authorities!

1.02 General safety instructions

- The machine may only be operated after you have become acquainted with the associated instruction manual and only by operating personnel who have received appropriate training!
- Always read the safety instructions and the instruction manual of the motor manufacturer before starting up the machine!
- Always follow the hazard and safety instructions attached to the machine!
- The machine may only be operated for its intended purpose and only with the associated safety covers, while adhering to all the relevant safety requirements.
- The machine must always be disconnected from the power supply by pressing the main switch or pulling out the mains plug when sewing tools are replaced (such as the needle, presser foot, needle plate and bobbin) and when threading, leaving the workstation, or performing maintenance!
- The daily maintenance work may only be carried out by suitably qualified personnel!
- Repairs and special maintenance work may only be carried out by technical staff or people with appropriate training!
- Work on electrical equipment may only be carried out by qualified technical staff!
- Work on parts and equipment under voltage is not permitted!
- Exceptions are regulated by the EN 50110 standards.
- Modifications and changes to the machine may only be made in compliance with all of the relevant safety requirements!
- Only the replacement parts approved by us for usage may be used for repairs! We warn you expressly that spare parts and accessories that are not supplied by us are also not tested and approved by us. Fitting or using these products may therefore have negative effects on features which depend on the machine design. We are not liable for any damage caused by the use of non-Pfaff parts.

1.03 Safety symbols

-  Hazard point!
Special points of attention.
-  Risk of injury to operating personnel or technical staff!
-  Electric voltage!
Danger to operating personnel or technical staff
-  Danger of hands being crushed!
Danger to operating personnel or technical staff



Attention!

Do not operate without the finger guard and safety covers! Turn off the main switch before threading, changing the bobbin or needle, cleaning etc.!

1.04 Special points of attention for the owner-operator

- This instruction manual is a part of the machine and must be made available to the operating personnel at all times. The instruction manual must have been read before the initial start-up.
- The operating personnel and technical staff must be instructed about the machine's safety covers and about safe working methods.
- The owner-operator may only operate the machine in a flawless condition.
- The owner-operator must ensure that no safety covers are removed or disabled.
- The owner-operator must ensure that only authorised persons work on the machine.

Additional information can be requested from the responsible sales centre.

1.05 Operating personnel and technical staff

1.05.01 Operating personnel

Operating personnel are persons responsible for equipping, operating and cleaning the machine and for fault clearance in the sewing area.

The operating personnel are obligated to comply with the following points:

- The safety instructions provided in the instruction manual must be followed for all work!
- Any work method jeopardising machine safety must be refrained from!
- Tight-fitting clothing must be worn. The wearing of jewellery such as chains and rings is prohibited!
- Care must be taken to ensure that no unauthorised persons are located in the machine's hazard zone!
- Any changes occurring on the machine which impair its safety must be reported to the owner-operator immediately!

1.05.02 Technical staff

Technical staff are persons with technical training in electricity/electronics and mechanics. They are responsible for lubricating, servicing, repairing and adjusting the machine.

The technical staff are obligated to comply with the following points:

- The safety instructions provided in the instruction manual must be followed for all work!
- Turn off the main switch and secure it against reactivation before starting any adjustment and repair work!
- Never work on live parts and equipment! Exceptions are regulated by the EN 50110 standards.
- Reattach the safety covers following repair and maintenance work!

1.06 Danger warnings



A work area of 1 m must be kept free in front of and behind the machine to ensure unobstructed access at all times.



Do not reach into the needle range during the sewing operation! Risk of injury from the needle!



Do not allow any objects to be placed on the table during the adjustment work! The objects could become jammed or be slung away! Risk of injury from parts flying around!

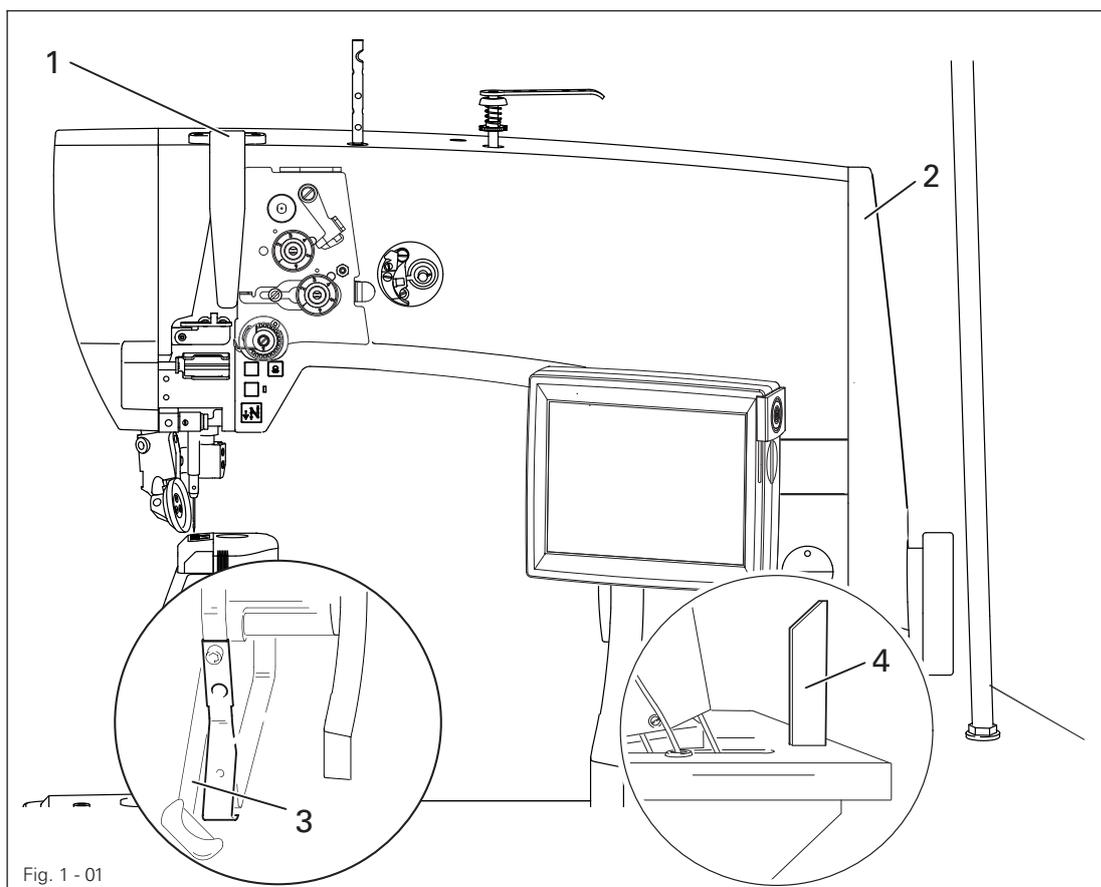


Fig. 1 - 01



Do not operate the machine without the take-up lever guard 1!
Risk of injury due to the motion of the take-up lever!



Do not operate the machine without the belt guard 2!
Risk of injury due to the rotating driving belt!



Do not operate the machine without the anti-tipping device 3!
Risk of injury from crushing between the sewing head and the table top!



Do not operate the machine without the support 4!
Risk of damage due to the top-heavy sewing head!
Machine can tip over backwards when moving it!

Proper Use

The **PFAFF 1591** is a single needle post-bed high-speed seamer (post is positioned to the right of the needle) with forwards- and backwards-moving feed wheel and roller presser plus feed-synchronised needle.

The **PFAFF 1593** is a single needle post-bed high-speed seamer (post is positioned to the right of the needle) with forwards- and backwards-moving feed wheel and roller presser.

The machines are used to create double lockstitch seams in the leather and upholstery industries.



Any usage not approved by the manufacturer is deemed misuse! The manufacturer shall assume no liability for damage caused by misuse! Proper use also includes compliance with the operating, maintenance, adjustment and repair measures specified by the manufacturer!

3 Technical Data

3.01 PFAFF 1591

Stitch type:.....301 (lockstitch)

Needle system:..... 134

Model BN7:..... for the machining of medium-weight materials

Model CN7:..... for the machining of medium-heavy materials

Needle size in 1/100 mm:

Model BN7:.....90 -110

Model CN7:..... 120 - 150

Stitch length max 7.0 mm

Speed max.:

Model BN7..... 3500 stitches/min ♦

Model CN7..... 2000 stitches/min ♦

Trimming margin (for -725/..).....0.8 - 2.5 mm

Cutting speed (for -725/..) 2800 cuts/min.

Clearance beneath the roller presser for a diameter of 30 mm:7 mm

Clearance beneath the roller presser for a diameter of 25 mm and 35 mm:12 mm

Passage width:245 mm

Clearance height: 115 mm

Post height..... 180 mm

Bed plate dimensions:518 x 177

Sewing head dimensions

Length:..... approx. 562 mm

Width: approx. 250 mm

Height (above table): approx. 505 mm

Motor data:see motor specification plate

Noise data

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

Model B:

Emissions sound pressure level in the workplace at $n = 2800 \text{ min}^{-1}$:..... $L_{pA} = 80 \text{ dB(A)}$ ■

Model C:

Emissions sound pressure level in the workplace at $n = 1600 \text{ min}^{-1}$: $L_{pA} = 74 \text{ dB(A)}$ ■

Net weight of sewing head:.....approx. 64 kg

Gross weight of sewing head: approx. 74 kg

▲ Subject to alterations.

♦ Depending on the material, workstep and stitch length.

■ $K_{pA} = 2,5 \text{ dB}$

3.02 PFAFF 1593

Stitch type:	.....301 (lockstitch)
Needle system:	..... 134
Model BN5:	..... for the machining of medium-weight materials
Needle size in 1/100 mm:	
Model BN5:	.....90 -110
Stitch length max	.....5.0 mm
Speed max.:	
Model BN5:	..... 3500 stitches/min ♦
Clearance beneath the roller presser for a diameter of 30 mm:	.....7 mm
Clearance beneath the roller presser for a diameter of 25 mm and 35 mm:	..... 12 mm
Passage width:	.....245 mm
Clearance height:	..... 115 mm
Post height:	..... 180 mm
Bed plate dimensions:	.....518 x 177
Sewing head dimensions	
Length:	..... approx. 562 mm
Width:	..... approx. 250 mm
Height (above table):	..... approx. 505 mm
Motor data:	..... see motor specification plate
Noise data	
(Noise measurement in accordance with DIN 45 635-48-A-1, ISO 11204, ISO 3744, ISO 4871)	
Emissions sound pressure level in the workplace at $n = 2800 \text{ min}^{-1}$:	..... $L_{pA} = 80 \text{ dB(A)}$ ■
Net weight of sewing head:	.....approx. 64 kg
Gross weight of sewing head:	..... approx. 74 kg

▲ Subject to alterations.

♦ Depending on the material, workstep and stitch length.

■ $K_{pA} = 2,5 \text{ dB}$

4

Disposal of the Machine

- It is up to the customer to dispose of the machine properly.
- The materials used for the machine include steel, aluminium, brass and various plastics. The electrical equipment consists of plastics and copper.
- The machine must be disposed of in accordance with the locally valid environmental protection regulations, with a specialised company being contracted if necessary.



Please ensure that parts coated with lubricants are disposed of separately in accordance with the locally valid environmental protection regulations!

Transportation, Packaging and Storage

5 **Transportation, Packaging and Storage**

5.01 **Transport to the customer's premises**

All machines are completely packed for delivery.

5.02 **Transport within the customer's premises**

The manufacturer assumes no liability for transport within the customer's premises or to the individual usage sites. Please ensure that the machines are only transported in a vertical position.

5.03 **Disposal of the packaging materials**

The packaging materials of these machines consists of paper, cardboard and VCI fleece. It is up to the customer to dispose of the packaging properly.

5.04 **Storage**

The machine can be stored for up to **6** months when not in use. It must then be protected from dirt and moisture. For longer storage periods, the machine's single components, especially its sliding surfaces, must be protected against corrosion, e.g. by an oil film.

6 Work Symbols

Activities to be performed or important information in this instruction manual are emphasised by symbols. The symbols used have the following meaning:



Note, information



Cleaning, care



Lubrication



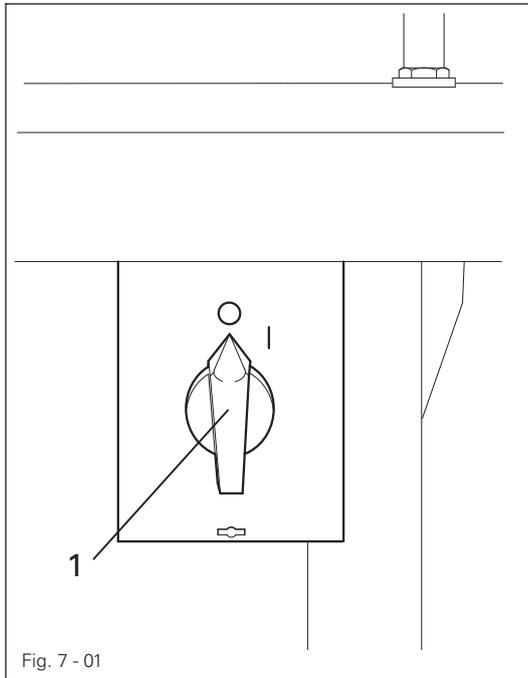
Maintenance, repairs, adjustment, service work (only to be carried out by technical staff)

7 Operating Controls

7.01 Main switch

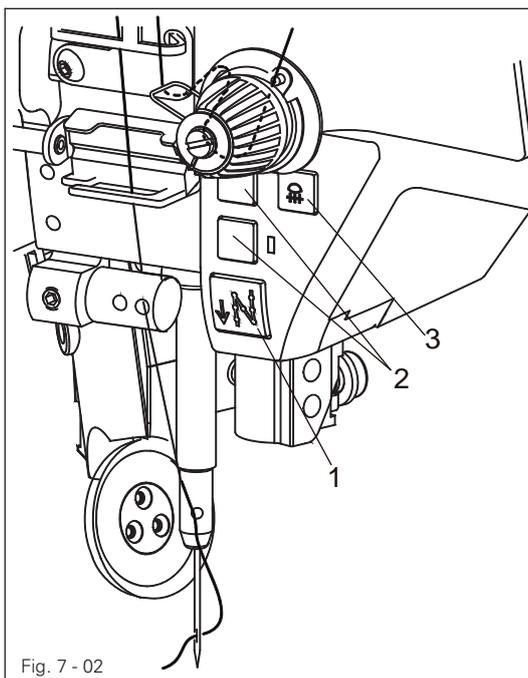


Before switching on the machine, raise the take-up lever as far as possible.



- Turning the main switch 1 switches the machine on and off.

7.02 Keys on the machine head



- The machine sews backwards as long as the key 1 is pressed during the sewing operation.
- The keys 2 can be assigned functions using parameters "203" and "204". (See chapter 11.04 Parameter settings).
- The sewing lamp integrated onto the machine head is switched on and off with the key 3.

7.03 Bobbin thread monitoring using stitch counting

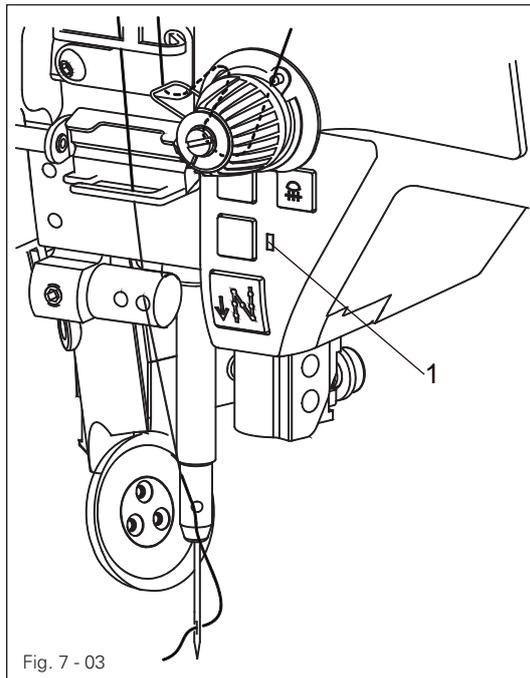


Fig. 7 - 03

- The diode 1 flashes on reaching the pre-defined stitch count.
- The stitch counting re-starts after trimming the thread and changing the bobbin.



For presetting the stitch count please refer to chapter 9.09 **Switching on / setting the bobbin thread monitoring using stitch counting.**

7.04 Pedal

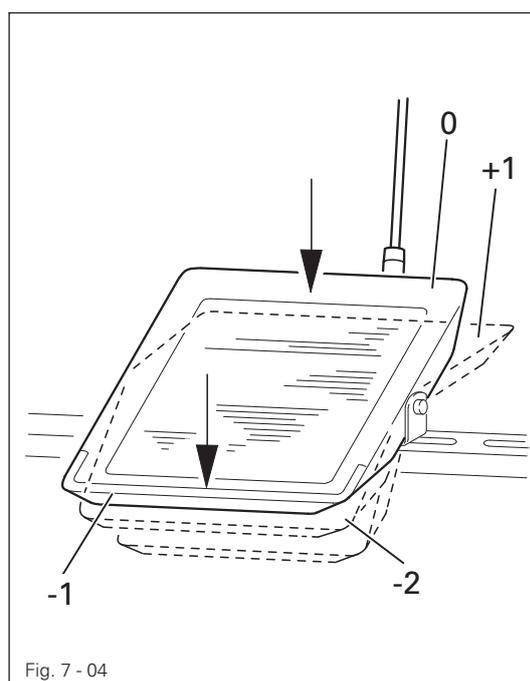


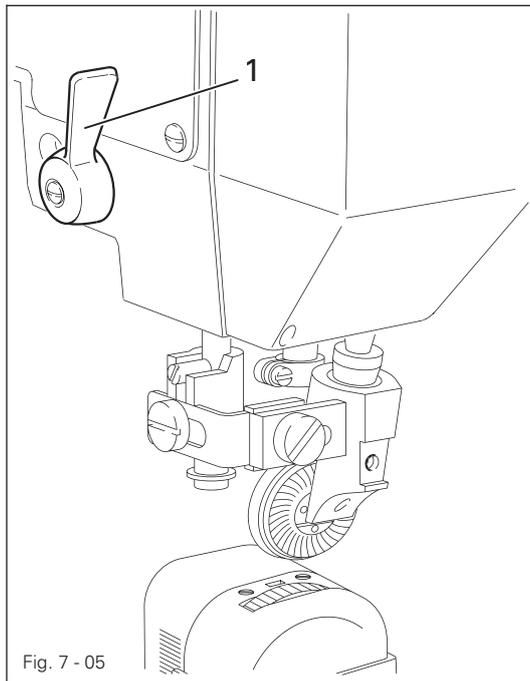
Fig. 7 - 04

- With the main switch turned on
 - 0 = Neutral position
 - +1 = Sewing
 - 1 = Raise roller presser
 - 2 = Trim thread



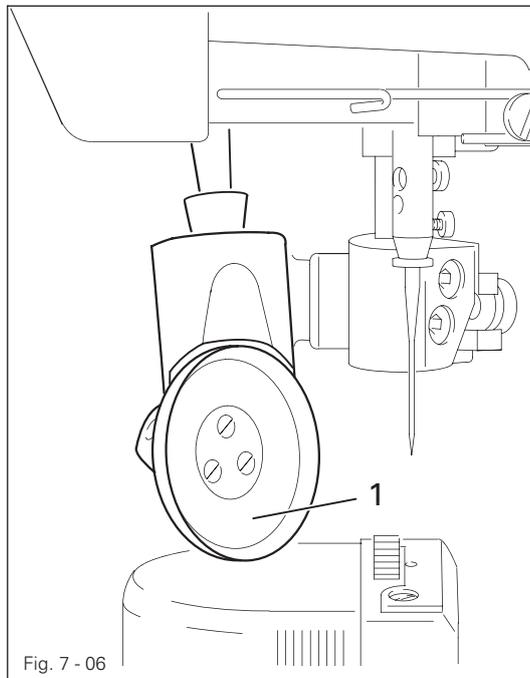
Other pedal functions can be set through the programming, see chapter 10 **Sewing.**

7.05 Hand lever to raise the roller presser



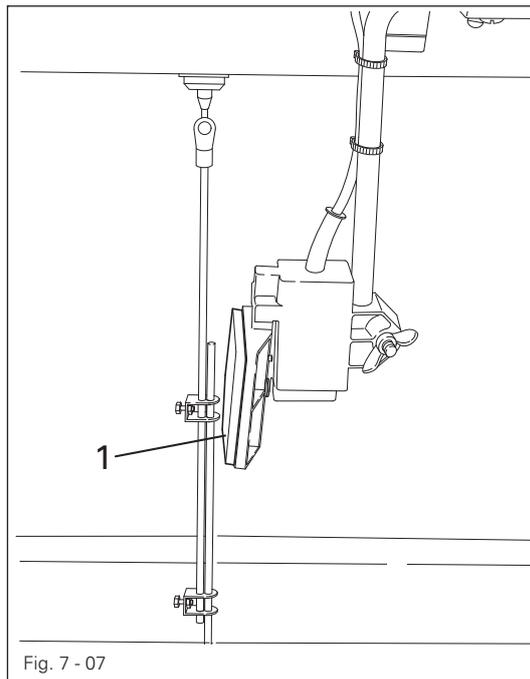
- Turning the hand lever 1 raises the roller presser.

7.06 Swivelling out the roller presser



- The roller presser 1 can be swivelled out by gently pulling downwards when the roller presser is in the raised position.

7.07 Knee switch

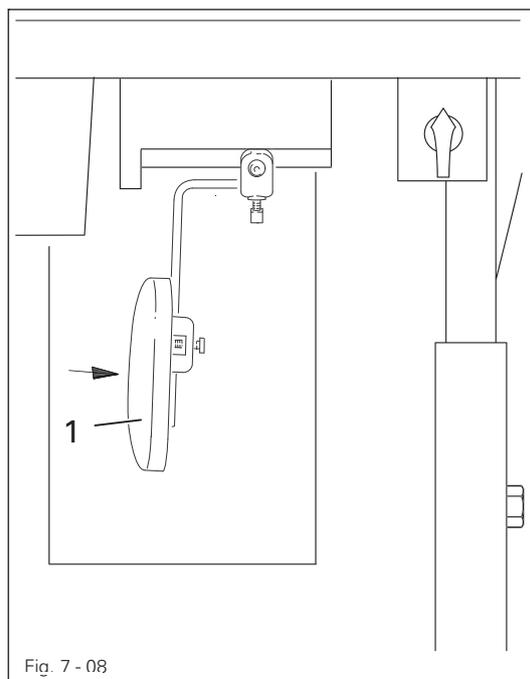


- It is possible to choose between 2 pre-defined fullnesses or 2 stitch lengths in manual sewing by pressing the knee switch 1.
- It is possible to move to the next seam zones in programmed sewing by using the knee switch 1.



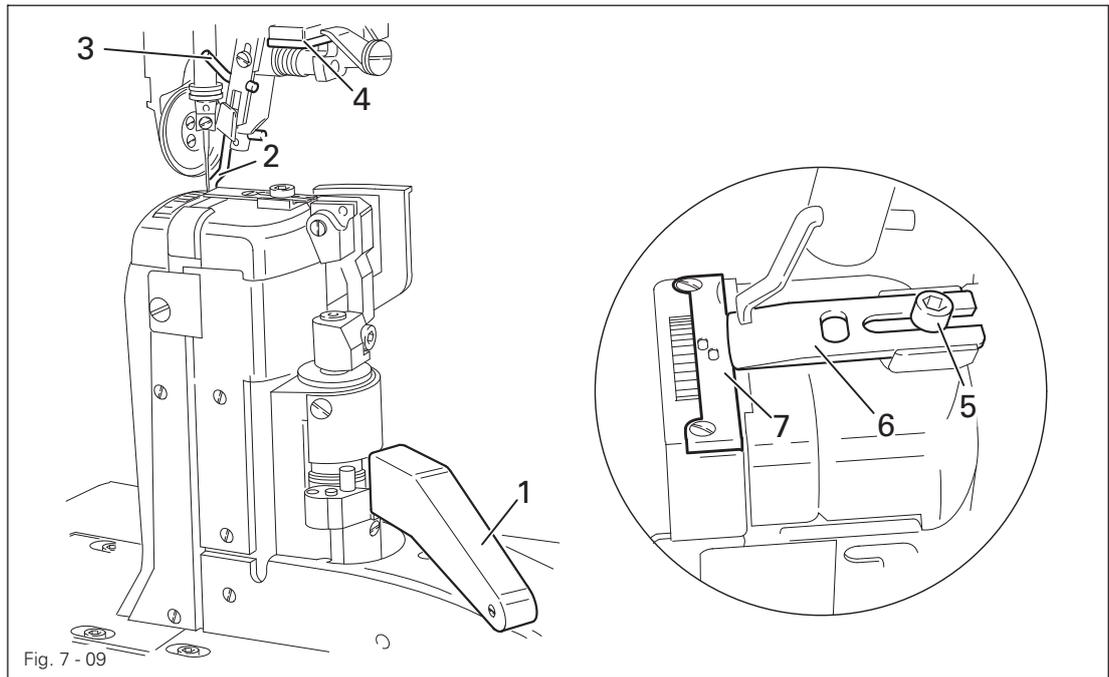
The function of the knee switch 1 must be activated on the control panel, see chapter 10 Sewing.

7.08 Knee lever



- Pressing the knee lever 1 in the direction shown by the arrow raises the roller presser.

7.09 Edge trimmer -725/04 for PFAFF 1591



Do not reach into the knife during operation! Risk of injury!

Switching on the knife drive:

- Swivel the lever 1 backwards; the knife moves to the operating position.

Switching off the knife drive:

- Press the lever 1; the knife swivels away backwards.

Switching on the edge guide:

- Swing in the edge guide 2 by hand and press the lever 3; the edge guide 2 moves to the operating position.

Switching off the edge guide:

- Raise the edge guide 2 and allow it to engage; the edge guide 2 is out of operation.
- Raise the lever 4; the edge guide swivels away backwards.

Replacing knives:



The work described below may only be carried out by technical staff or people with appropriate training!

- Switch off the machine.
- Release the screw 5 and remove the knife 6.
- Insert a new knife and slide it fully towards the needle plate insert 7.
- Gently tighten the screw 5.
- Adjust the knife as described in chapter 15.05.07 Knife position of the adjustment manual and tighten the screw 5.

7.10 Control panel

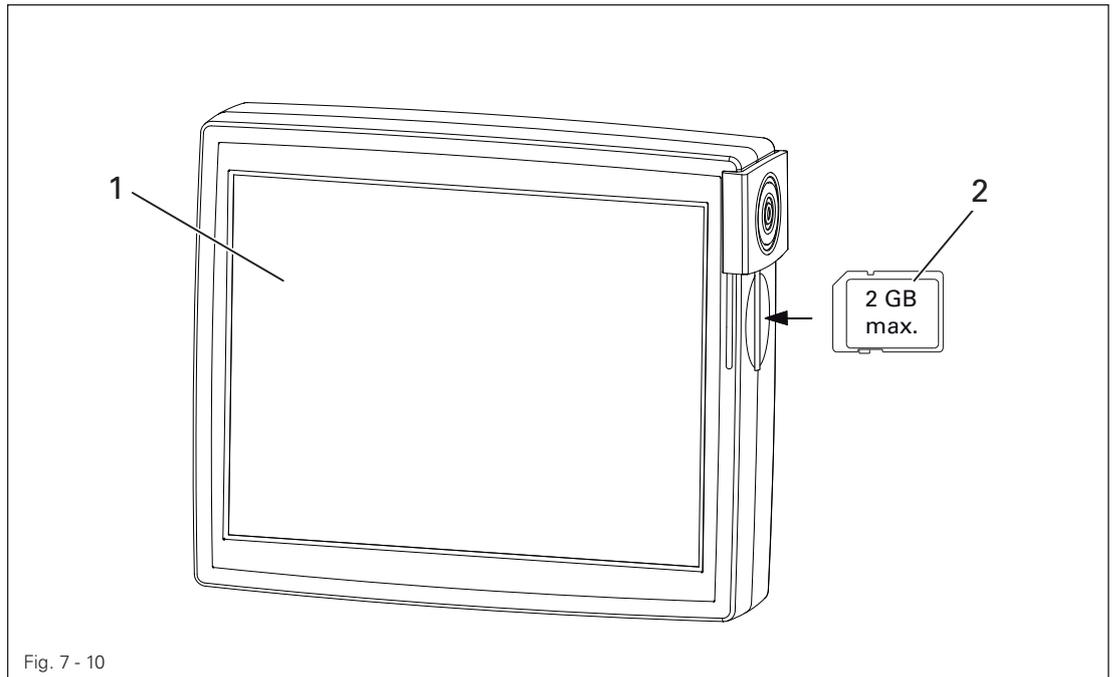


Fig. 7 - 10

The current operating statuses are indicated on the control panel 1. The machine is operated with constant dialogue between the control and the operator; different pictograms and / or texts are displayed for this purpose according to the operating status of the machine. Pictograms or texts with a border represent functions that can be called up by pressing on the respective point on the monitor. Pressing the respective function causes its immediate actuation or activation/deactivation or another menu will appear, e.g. for entering a value. Activated functions are indicated by pictograms shown inversely. Apart from the bobbin change function, the pictograms and texts without border are only for display purposes and cannot be called up by pressing them. The SD card 2 in the control panel can be used to import seam programs.

Presentation of functions

- 
Normal pictogram = Function deactivated (inactive)
- 
Inverse pictogram = Function activated (active)

8 Set-up and Initial Start-up



The machine may only be set up and started up by qualified personnel! All of the relevant safety regulations must always be complied with in this process! If the machine was delivered without a table, then the stand and the table top provided must safely support the weight of the machine and its motor. Adequate stability of the stand must be guaranteed, even during the sewing operations.

8.01 Set-up

Suitable electrical supply connections must be provided at the erection site, see **chapter 3 Technical Data**. The erection site must also have a firm and level subsurface and adequate lighting.



The table top is lowered for packaging purposes. The adjustment of the table height is described below.

8.01.01 Setting the table height

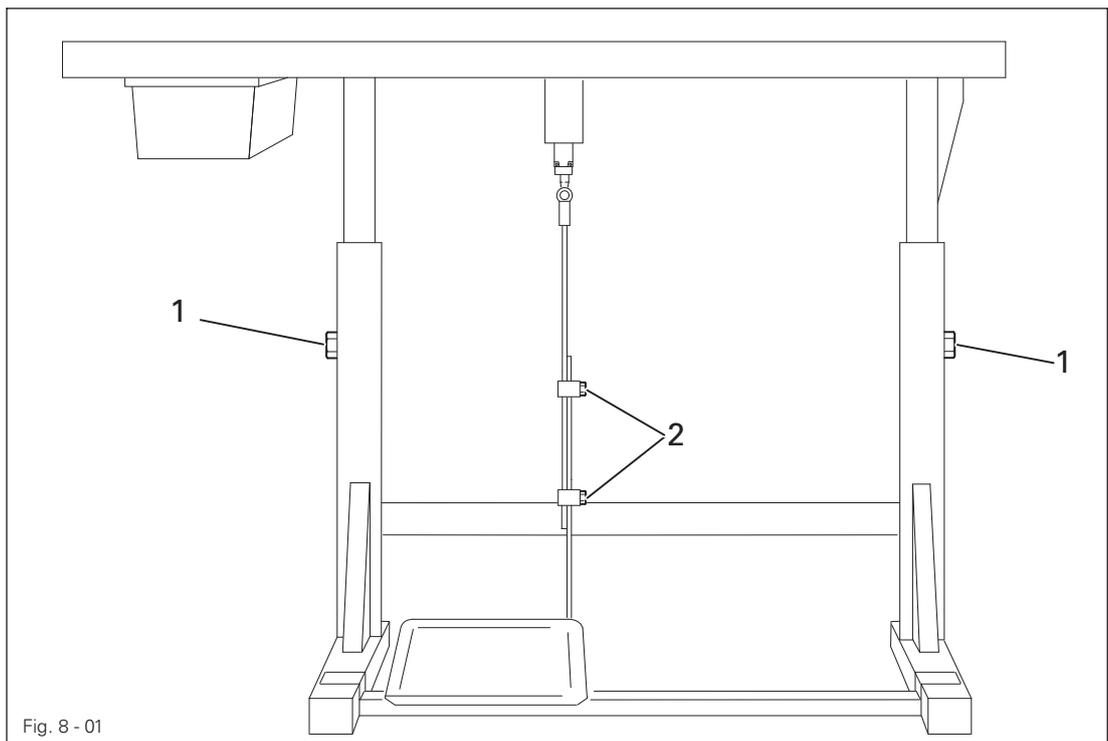


Fig. 8 - 01

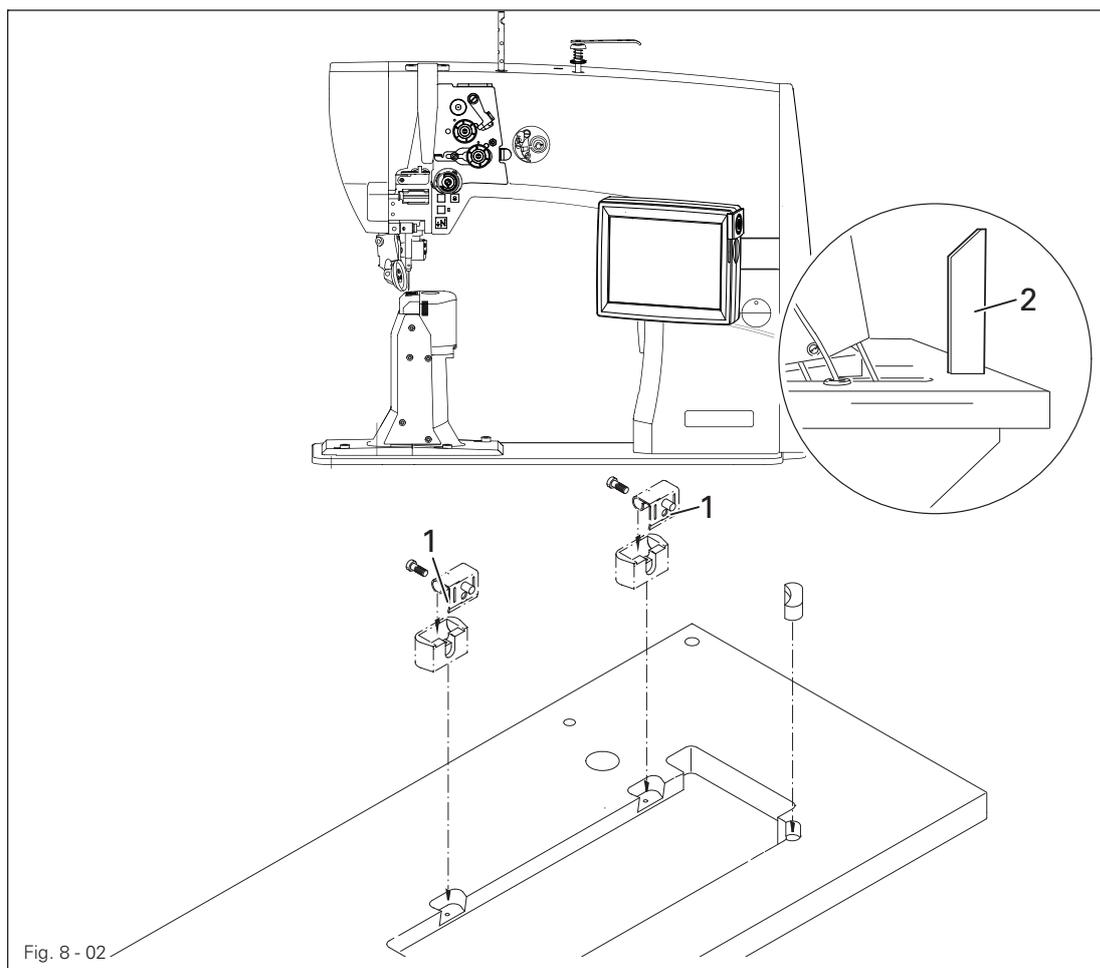
- The stand must have all four feet firmly on the ground to make sure it is positioned securely.
- Loosen the screws 1 and 2.
- Move the table top to the desired working height by pulling it out and pushing it in and align the table top horizontally.



Adjust the stand on both sides evenly to prevent it tilting.

- Firmly tighten the screws 1.
- Adjust and tighten the desired pedal position on the screws 2.

8.01.02 Inserting the sewing machine into the stand

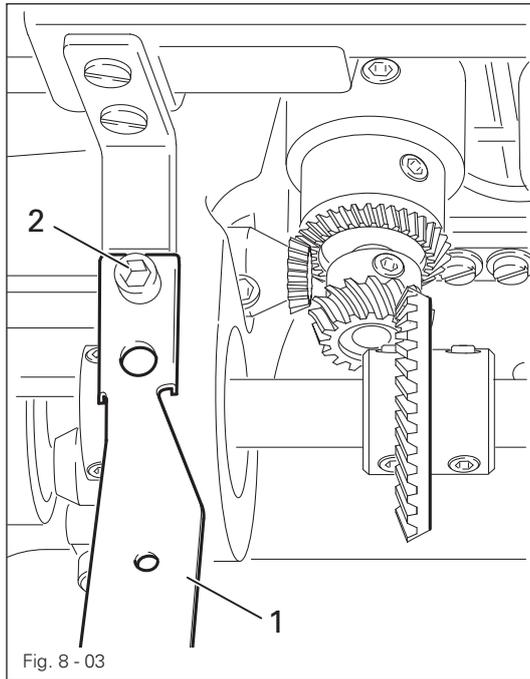


- The hinges 1 are screwed to the sewing head base plate.
- Insert the sewing machine into the table top.
- Insert the sewing head support 2 into the table top hole.



Do not operate the machine without the support 2!
Risk of damage due to the top-heavy sewing head!
Machine can tip over backwards when moving it!

8.01.03 Assembling the anti-tipping device



Switch off the machine!

Risk of injury due to accidental machine start-up!



● Screw on the anti-tipping device 1 included in the accessories with the screw 2.



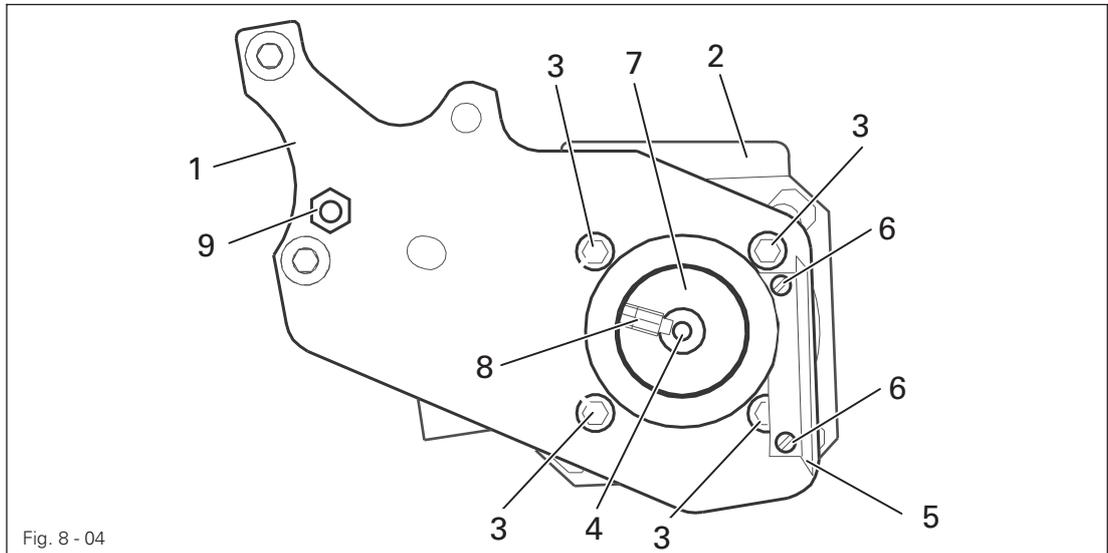
● Do not operate the machine without the anti-tipping device 1!



Risk of injury from crushing between the sewing head and the table top!

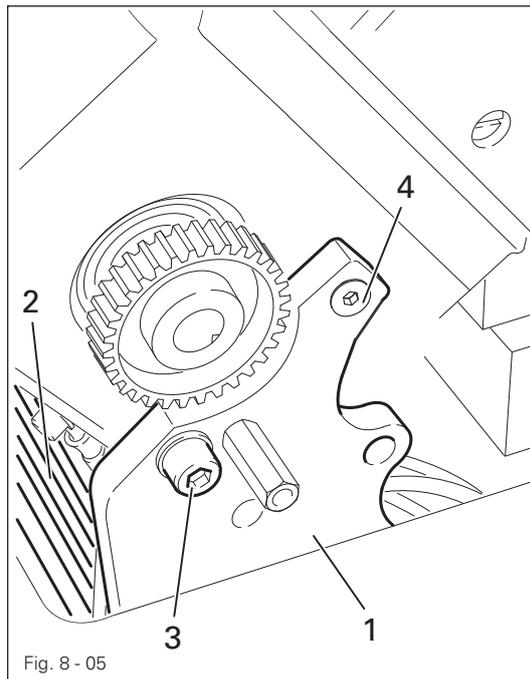
8.02 Mounting the flange motor

8.02.01 Mounting the flange motor on the bearing plate



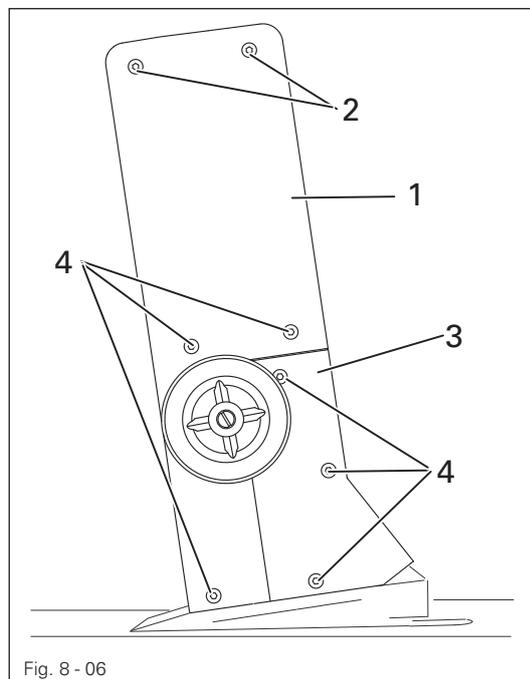
- Fix the bearing plate 1 onto the motor 2 using the screws 3, as shown in fig. 8-04.
- Remove the wedge from the motor shaft 4.
- Attach the angle bracket 5 with the screws 6.
- Mount the toothed belt wheel 7 onto the motor shaft 4 so that the screw 8 is positioned with the lug in the motor shaft slot 4.
- Screw the threaded pins 9 into the bearing plate 1.

8.02.02 Mounting the flange motor on the machine



- Use the screws 3 and 4 to fix the bearing plate 1 of the motor 2 to the machine housing (tighten the screws 3 and 4 slightly).

8.02.03 Mounting the machine cover



- Use the screws 2 (2x) and the screws 4 (3x) to fasten the cover 1 to the housing.
- Place the cover 3 on the cover 1 and fasten with the screws 4 (3x).

8.02.04 Connecting the plug-in connections and ground cable

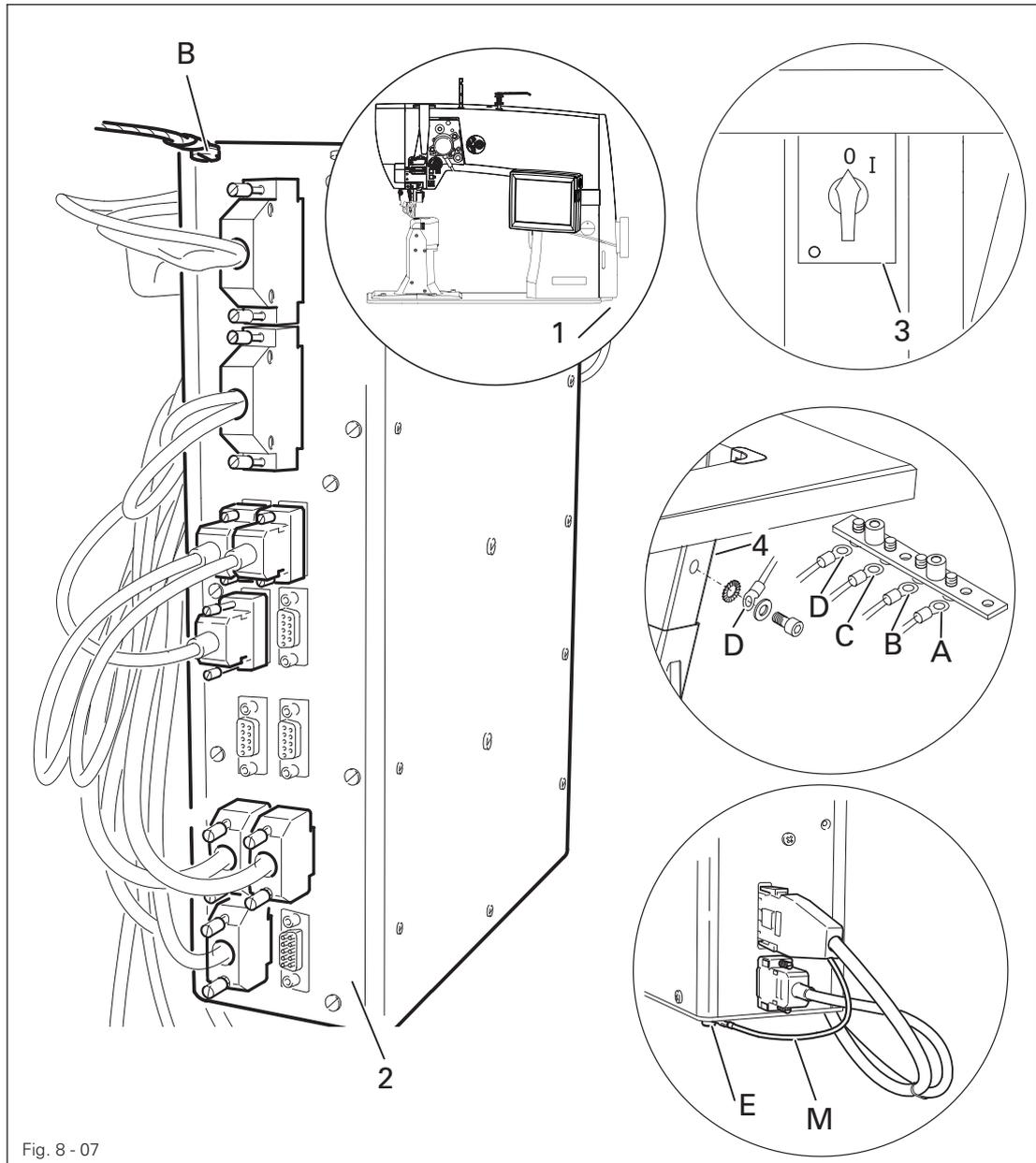
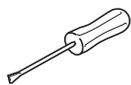


Fig. 8 - 07



- Insert all plugs on the control 2 in accordance with their designation.



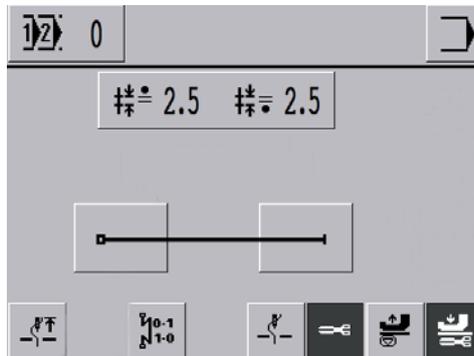
Attention

Plugging in connectors incorrectly can damage the control!

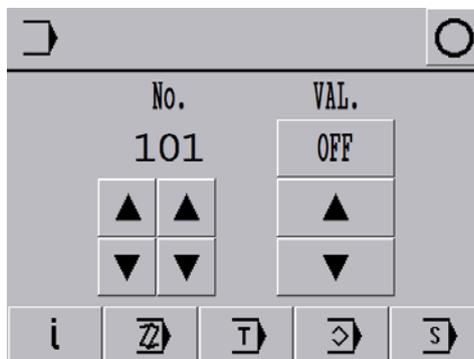
- Attach the following ground cables in order to discharge static electricity
- Securely attach the ground cable from the sewing head 1 to ground point A.
- Securely attach the ground cable from the control point B to ground point B.
- Securely attach the ground cable from the main switch 3 to ground point C.
- Securely attach the ground cable from the stand 4 to ground point D.
- Securely attach the ground cable from the motor cable M to ground point E.

8.02.05 Machine drive home position / fitting the toothed belt

- Switch the machine on.

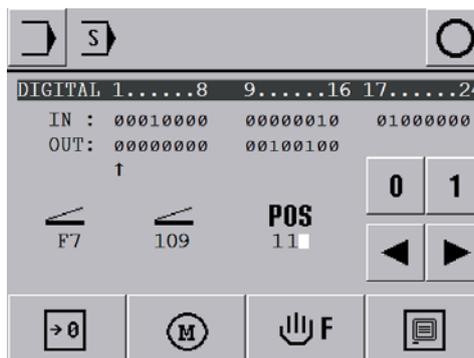


-  ● Call up input mode.



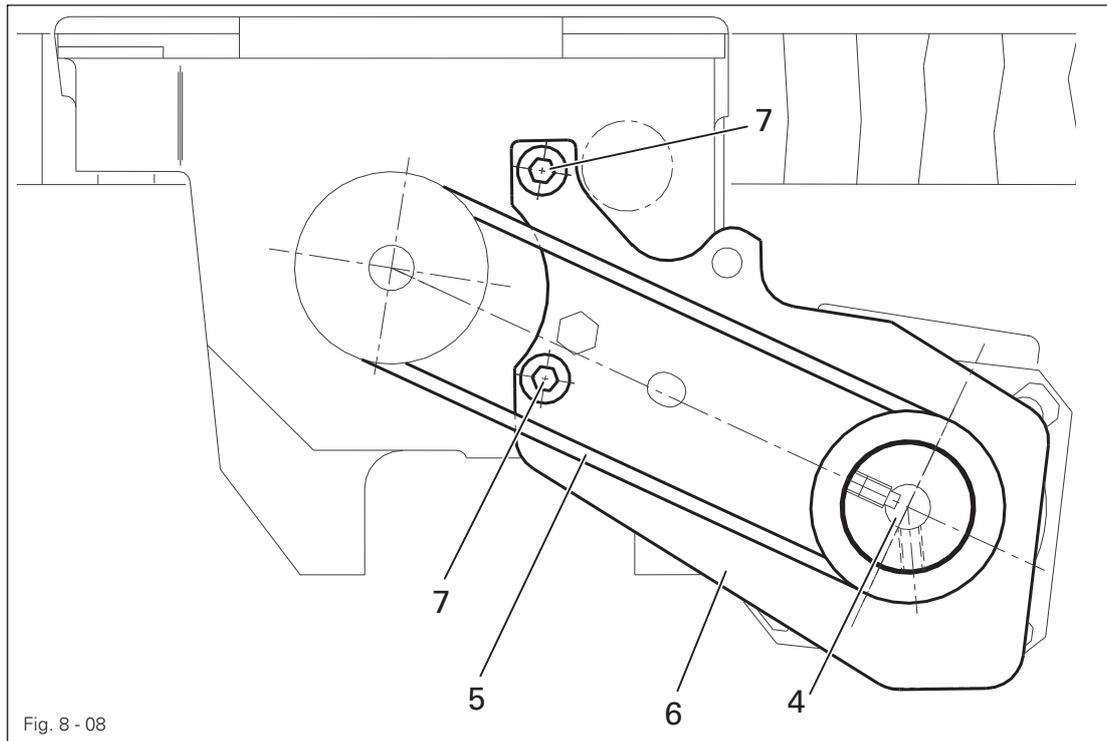
-  ● Call up the service menu.

- Enter the code number, see chapter 9.10 Entering / changing the code number.



POS
11

- Turn the motor shaft by hand until the display shows the value "11" under "POS"
- Turn the handwheel in the direction of rotation until the needle point (approaching from above) is on the upper edge of the needle plate.
- Fit the toothed belt 5 while making sure that both the motor shaft 4 (Fig. 8 - 08) and the machine are not twisted.

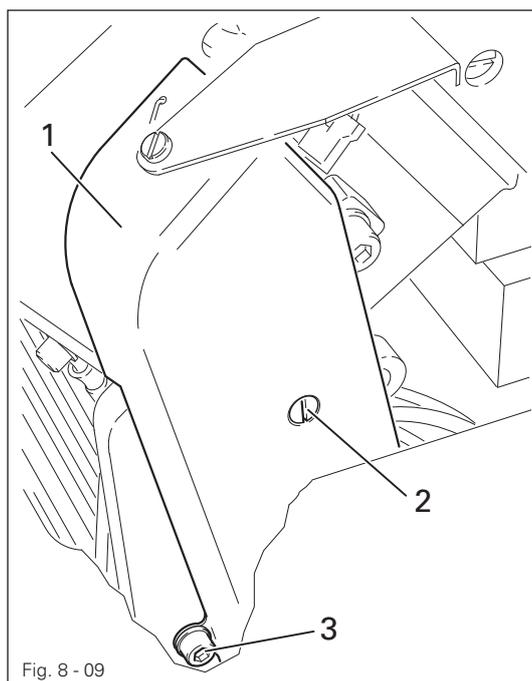


- Pivot the motor bearing plate 6 so that the toothed belt 5 is taut.
- Tighten the screws 7 in this position.
- Turn the handwheel in the direction of rotation until the needle point (approaching from above) is on the upper edge of the needle plate and check the value again. ± 2 increments are permitted as a tolerance.



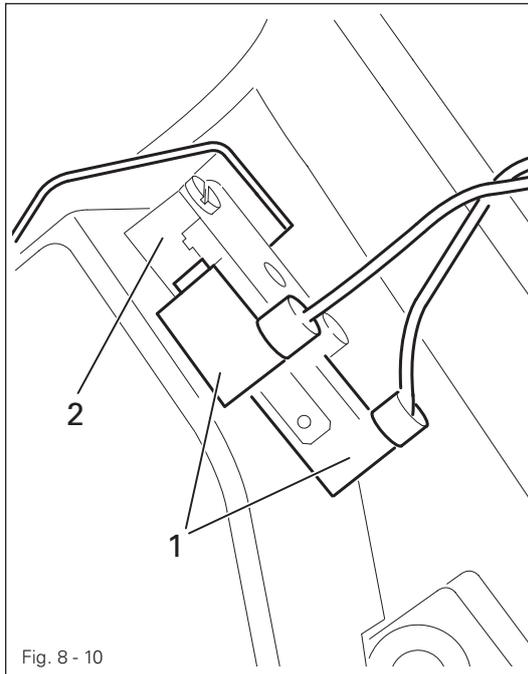
- Conclude the entry.

8.02.06 Mounting the flange motor belt guard



- Attach the belt guard 1 with the screws 2 and 3.

8.02.07 Connecting the safety switch

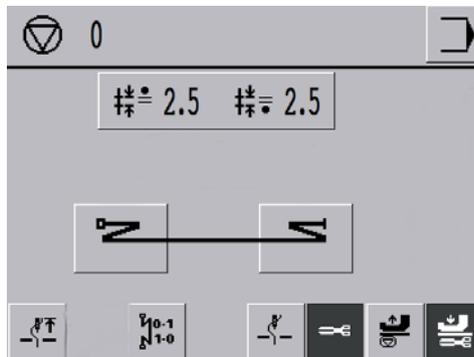


- Connect the plug 1 of the safety switch 2 as shown in Fig. 8 - 10.



If the sewing head is tilted back, the safety switch activates the start inhibitor, preventing the machine starting up if the main switch is turned on.

8.02.08 Checking the start inhibitor function



- Switch on the machine at the main switch and let the sewing head rest on the sewing head support.



- The "STOP" symbol must appear on the control panel.
- If the symbol is not displayed, check the safety switch setting.
- Return the sewing head to its upright position.
- The machine is ready for operation again.

8.03 Assembling the reel stand



Fig. 8 - 11

- Assemble the reel stand as shown in the adjacent figure.

8.04 Initial start-up

- Inspect the machine, particularly the electric cable, for any damage.
- Clean the machine thoroughly and then oil it, see also **chapter 12 Maintenance and Care**.
- Arrange for technical staff to check whether the machine's motor may be operated at the existing mains voltage and whether it is connected properly.



Never operate the machine if there are any differences.



The machine must only be connected to a grounded socket!



Arrange for the home position of the machine drive to be verified by certified technicians before the initial start-up! Have these settings carried out where required.

8.05 Switching the machine on / off

- Switch the machine on (see **chapter 7.01 Main switch**).

9

Set-up



Observe and comply with all regulations and information in this instruction manual.

Pay particular attention to all safety regulations!



All set-up work may only be carried out by appropriately instructed personnel. Disconnect the machine from the electricity mains for all set-up work by operating the main switch or by removing the mains plug!

9.01

Inserting the needle

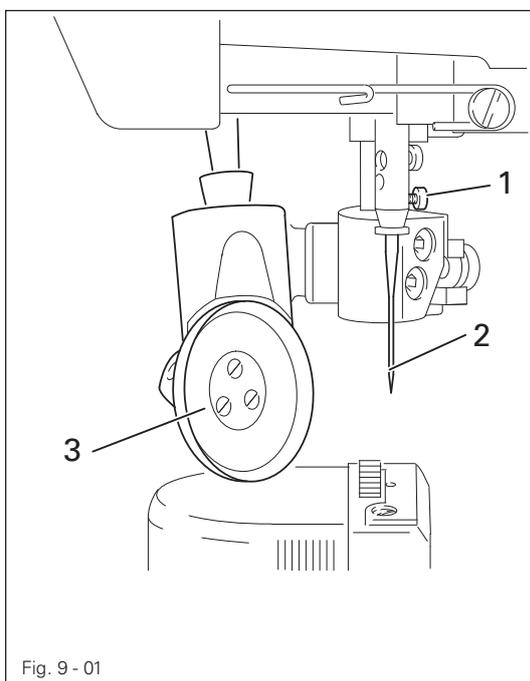


Fig. 9 - 01



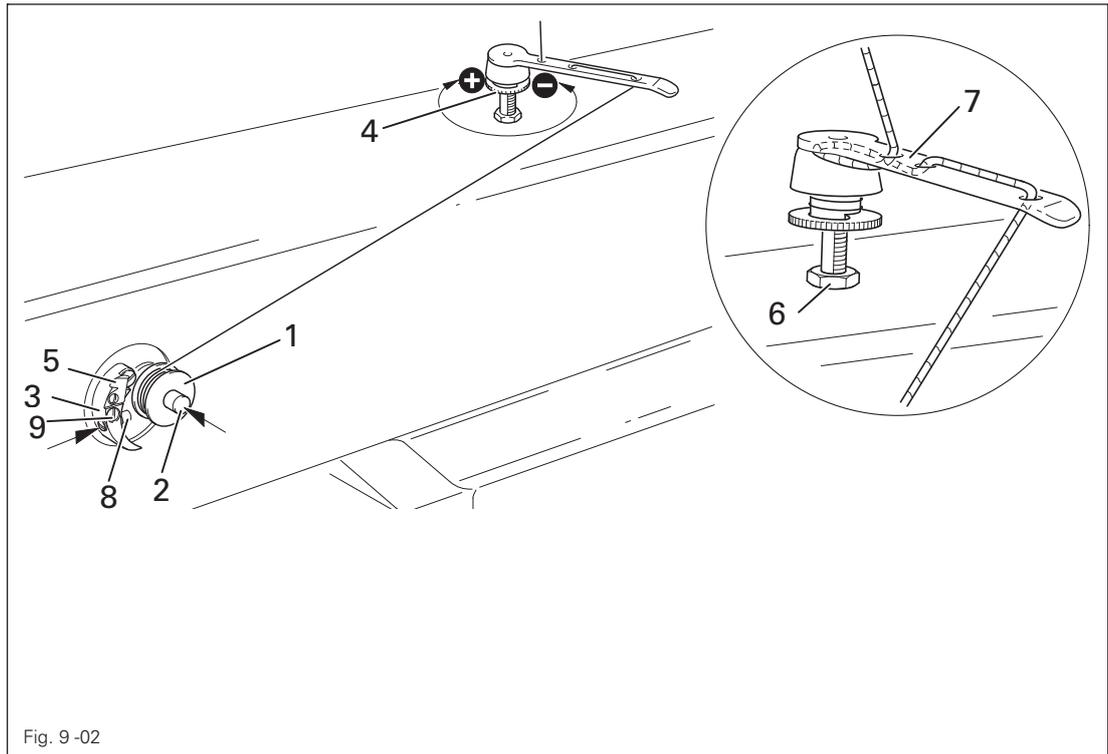
Switch off the machine!

Risk of injury due to accidental machine start-up!



Only use needles of the system intended for the machine, see **chapter 3 Technical Data!**

- Raise and fold out the roller presser **3**.
- Move the needle bar to the top position.
- Loosen the screw **1** and insert the needle **2** until you feel it stop. The long groove must point to the **left**.
- Tighten the screw **1**.



9.02

Winding the bobbin thread, adjusting the thread tension

- Fit the empty bobbin 1 onto the bobbin winder spindle 2 with the rest thread chamber on the outside.
- Thread in the thread as shown in Fig. 9 - 02 and wind it round the bobbin 1 a few times in an anti-clockwise direction.
- Switch on the bobbin winder by pressing the bobbin winder spindle 2 and the lever 3 simultaneously.



The bobbin fills up during sewing.



If the machine is only run for bobbin winding (without sewing), a bobbin case must be fitted in the hook!

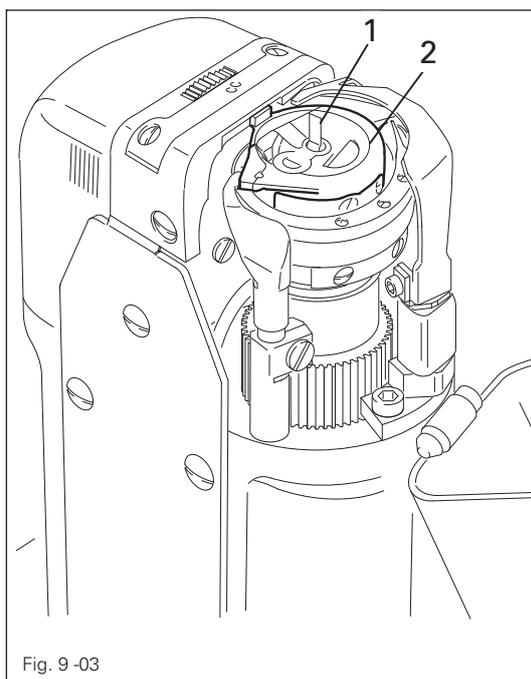
Otherwise a jammed thread may damage the hook!

- The tension of the thread on the bobbin 1 can be adjusted with the knurled thumb screw 4.
- The bobbin winder stops automatically when the bobbin 1 is sufficiently full.
- Remove the filled bobbin 1 and cut the thread with the knife 5.
- The fill amount of the bobbin 1 can be adjusted with the pin 8 (loosen the screw 9 and tighten it again)

If the thread is wound unevenly:

- Loosen the nut 6.
- Turn the thread guide 7 accordingly.
- Tighten the nut 6.

9.03 Removing / inserting the bobbin case



Switch off the machine!
Risk of injury due to accidental machine start-up!

Removing the bobbin case:

- Move the take-up lever to its top position
- Open the post cover, raise the lever 1 and remove the bobbin case 2.

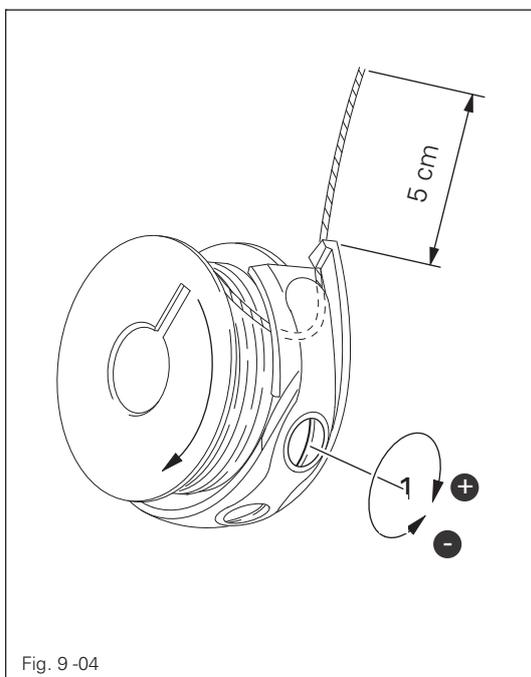
Inserting the bobbin case:

- Press the bobbin case 2 until you feel it snap into the bobbin case base.
- Move the lever 1 and close the post cover.



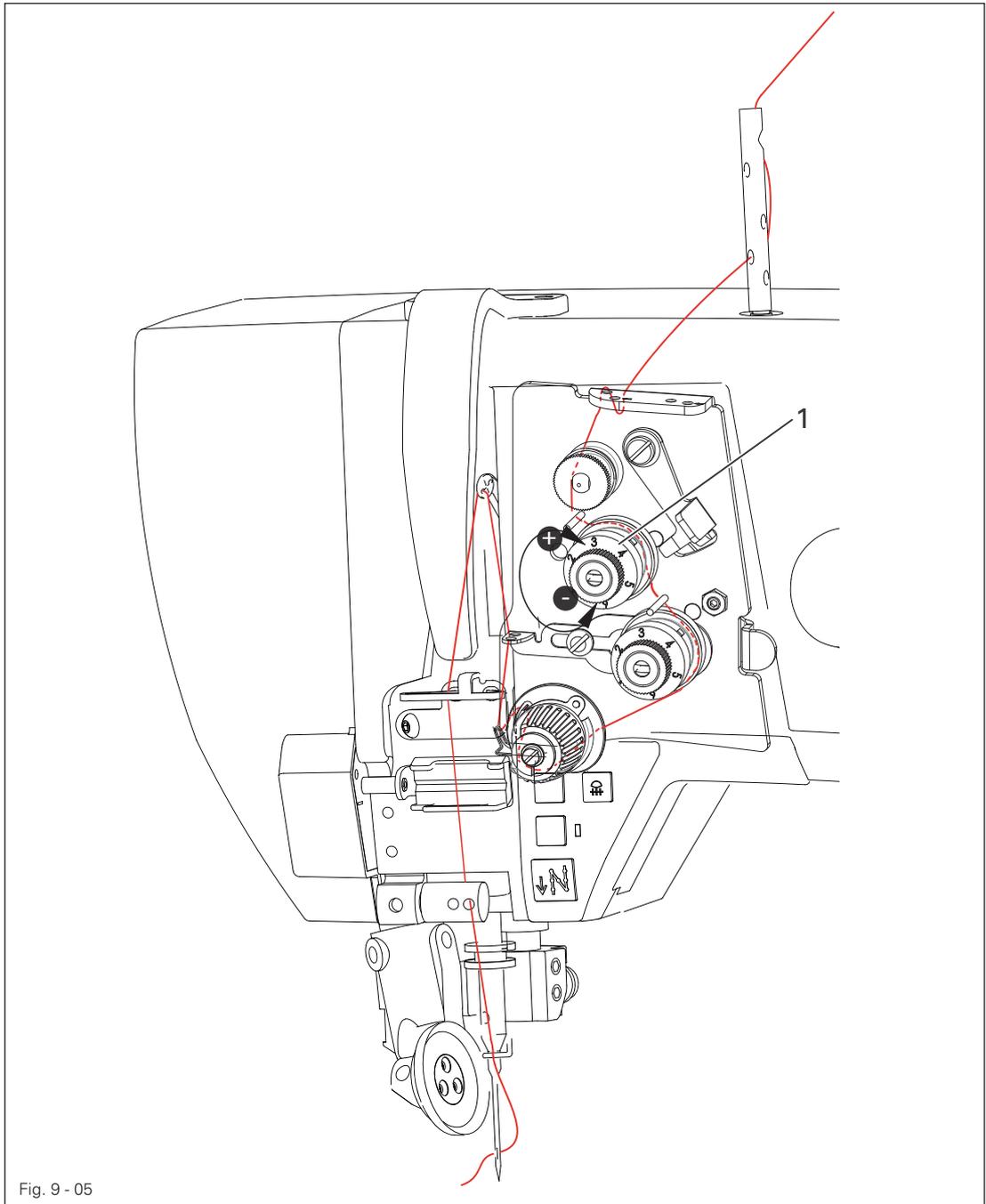
Do not operate the machine with an open post cover!
Risk of injury due to moving parts!

9.04 Inserting the bobbin case, adjusting the bobbin thread tension



Switch off the machine!
Risk of injury due to accidental machine start-up!

- Insert the bobbin as shown in Fig. 9 - 05
- When the thread is drawn off, the bobbin must turn in the direction shown by the arrows.
- Adjust the thread tension by turning the screw 1.



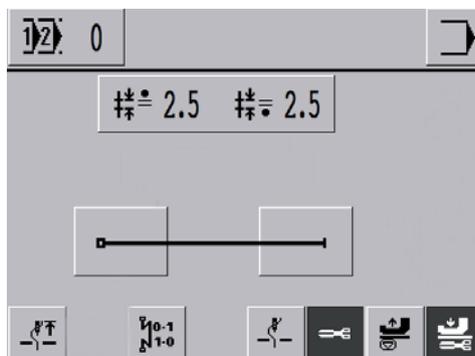
Switch off the machine!

Risk of injury due to accidental machine start-up!

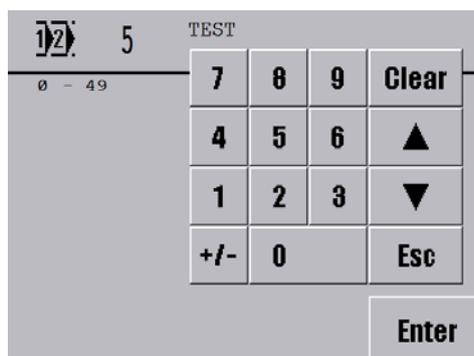
- Thread the needle thread as shown in Fig. 9 - 05. Please ensure that the needle is threaded from **left to right**.
- Adjust the needle thread tension by turning the knurled thumb screw **1**.

9.06 Selecting a program number

- Switch the machine on.



- Call up the menu to input the program number.



- Select the desired program number or enter it via the keypad

Enter

- Confirm the selection and leave the selection menu.



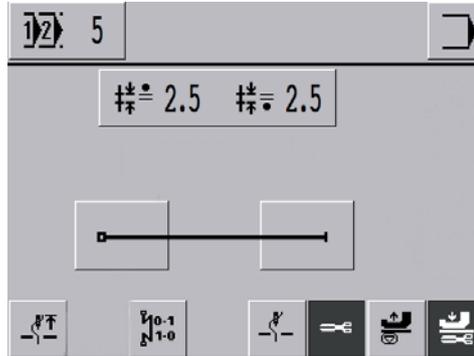
The selection of the program number determines the type of sewing, see **chapter 10 Sewing**.

Program number 0: Manual sewing
 Program numbers 1 and 2: Sewing with fixed programs
 Program numbers 3 to 49: Programmed sewing

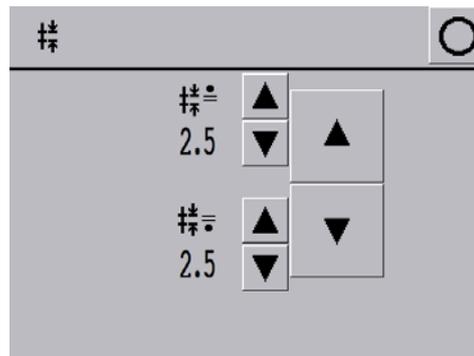
9.07 Setting stitch lengths

The feed motion of the roller presser and feed wheel can be changed directly in manual sewing and in the fixed programs 1 and 2.

- Switch the machine on.



-  2.5  2.5 ● Call up the stitch length input menu.



-  ● Change the feed motion for the roller presser and feed wheel individually.
-  or

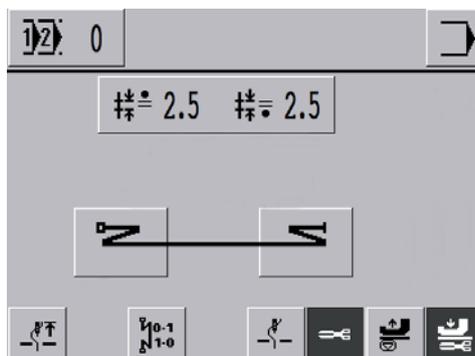
-  ● Change the feed motion for the roller presser and feed wheel at the same time.
- 

-  ● Conclude the input.

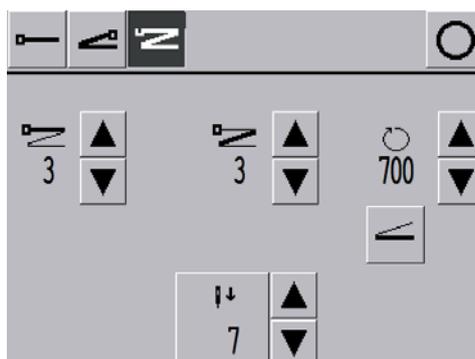
9.08 Entering start and end backtacks

The selection of the start and end backtacks and the input of the associated values are made directly in manual sewing and in the fixed programs 1 and 2. A placed stitch can also be defined for the seam start in addition to the backtacks.

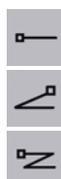
- Switch the machine on.



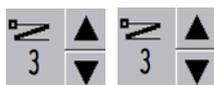
- Call up the menu for inputting the start backtick.



- Select the desired type of start backtick, the selected (active) function is displayed inversely:



- No start backtick
- Simple start backtick
- Double start backtick



- Enter the number of stitches for forward and reverse stitches.

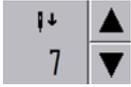


- Enter the backtick speed.



- If necessary, switch on the pedal-controlled speed. When the function is active (inverse symbol), the backtick speed can be controlled by the pedal position up to the maximum value.

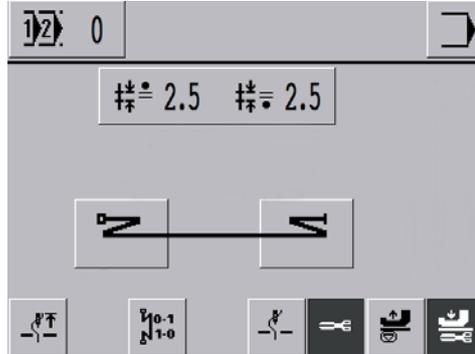
Set-up



- If necessary, activate the placed stitch and enter the value for the placed stitch position.



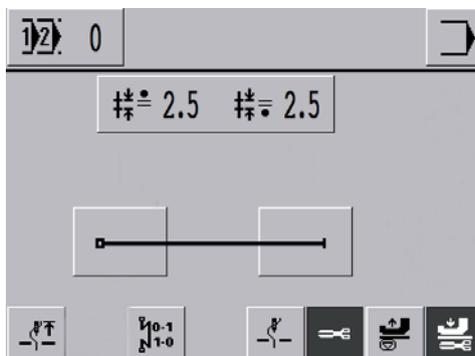
- Conclude the start backtack input.



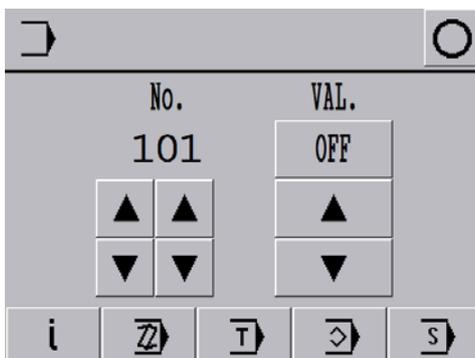
- Call up the menu for inputting the end backtack.
The values for the end backtack are entered in the same way as for entering the values for the start backtack. The pedal-controlled backtack speed and the placed stitch position cannot be called up at the seam end.

9.09 Switching on / setting the bobbin thread monitoring using stitch counting

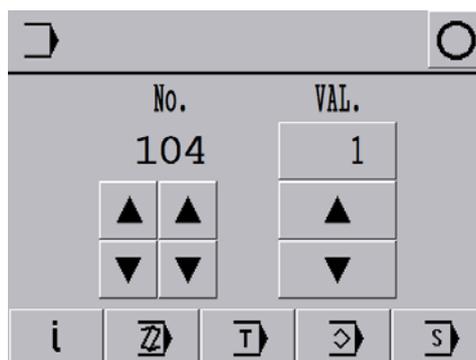
- Switch the machine on.

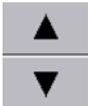


-  ● Call up input mode.

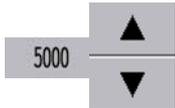
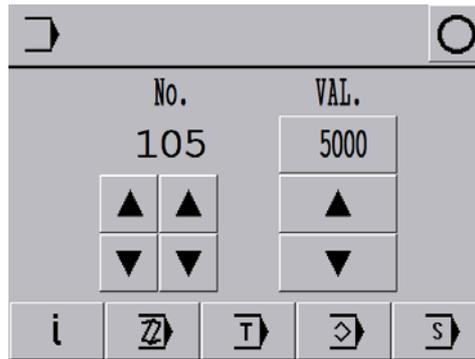


-  ● Call up parameter '104'.



-  ● Switch on bobbin thread monitoring via stitch counting (value "1").

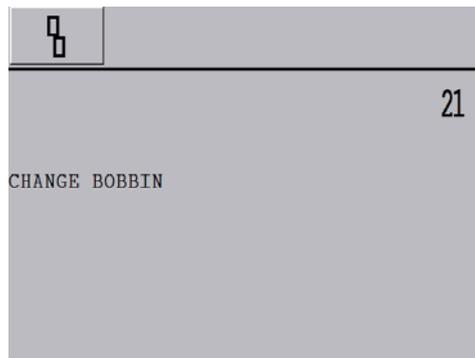
-  ● Call up parameter "105".



- Enter the number of stitches that can be sewn with a bobbin.



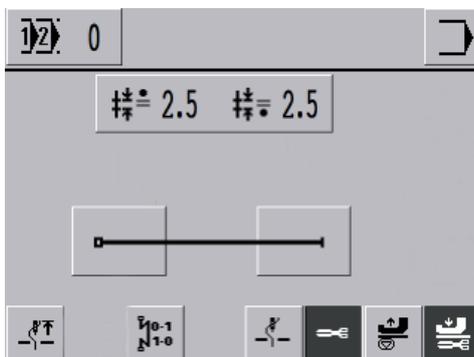
- Conclude the input.
- The diode flashes on the keypad on the machine head on reaching the stitch count entered. The "CHANGE BOBBIN" message appears on the display after thread trimming, see also chapter 11.05 Error messages and description.



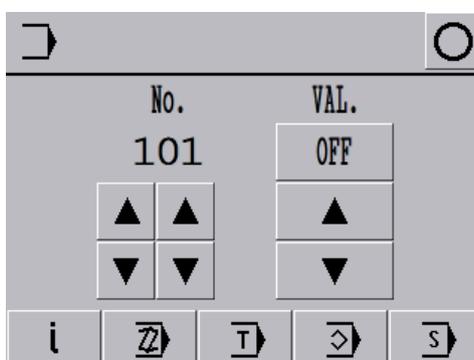
- Confirm the error correction after changing the bobbin.

9.10 Entering / changing the code number

- Switch the machine on.



-  ● Call up input mode.

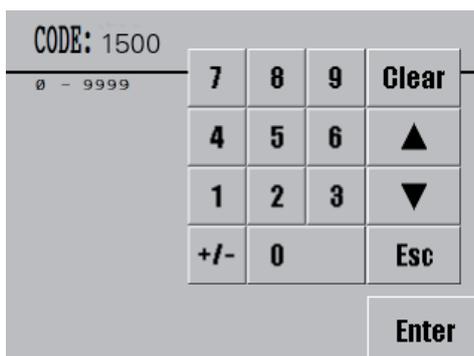


-  ● Call up parameter '810'.



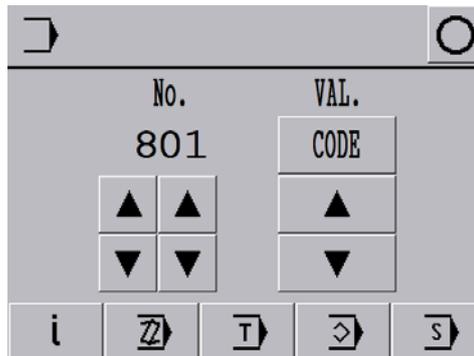
- CODE

 ● Call up the code number input menu.
- Enter the code number using the numeric keypad (code set at the factory is "1500").



Enter

- Adopt the code number entered.



The code entered remains saved until the machine is switched off by the main switch. Provided that the machine is not turned off, all parameters can be accessed without re-entering the code number.

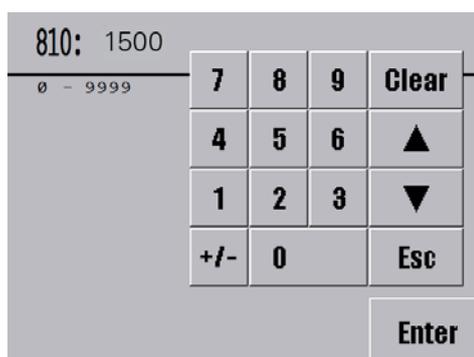


- Call up parameter '810'.



1500

- Call up the code number input menu and enter the desired code number.



Enter

- Adopt the new code number.



- Conclude the input.



Remember the code!

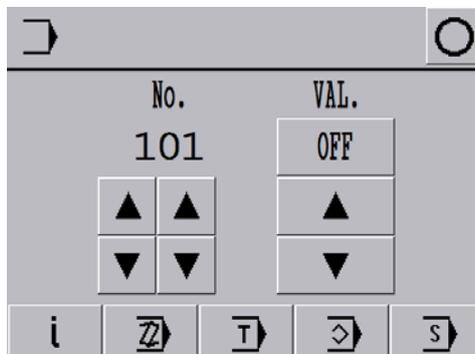
Protected functions cannot be called up without the corresponding code! In this case, request support from the PFAFF service centre.

9.11 Setting the control panel

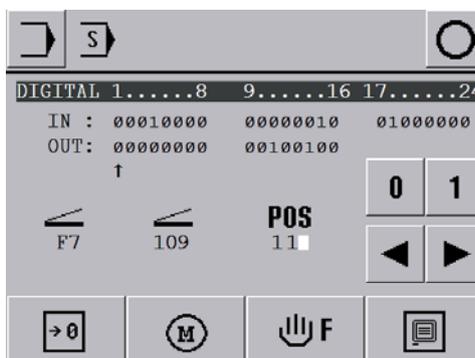
- Switch the machine on.



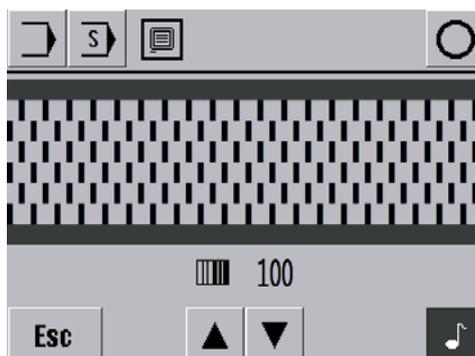
- Call up input mode.



- Call up the service menu.



- Call up the control panel functions.



- It is not possible to change the display contrast on the BDF P1.



- Switch the key tone off or on.

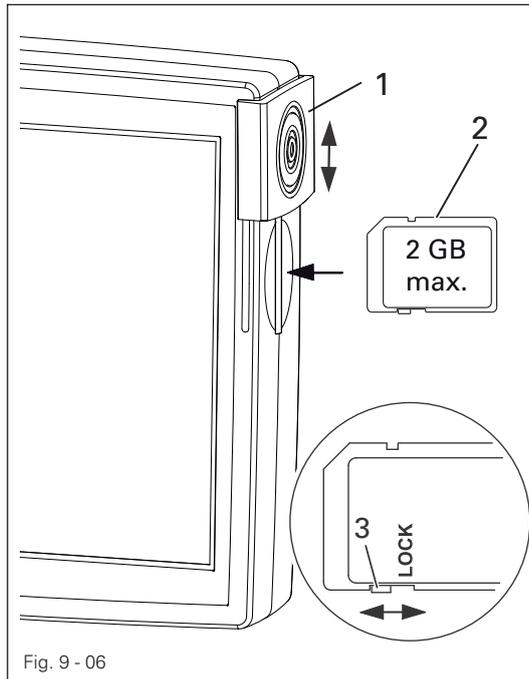


- Conclude the input.



Never reduce the display contrast to such an extent that the display can no longer be read!

9.12 Inserting and removing the SD memory card



Insert the SD card

- Open the cover **1**.
- Insert the SD card **2** into the card slot with the label facing forwards.
- Close the cover **1** again.



Only use FAT 16 format memory cards.

Remove the SD card

- Open the cover **1**.
- Press gently on the corner of the SD memory card **2** - the SD card will be ejected.
- Close the cover **1** again.



Adjusting the slide **3** makes it possible to activate ("LOCK" position) or deactivate the write protection function on the SD memory card. The write protection function must be deactivated to store, edit or delete data on the SD memory card.

- The SD card must be kept for future boot processes.
- The SD card is not a default configuration.

10 Sewing

In sewing mode, all settings relevant to the sewing operation are shown on the display and can be altered there directly using the corresponding function. In the sewing mode a difference must be made between manual sewing, sewing with fixed programs and programmed sewing.

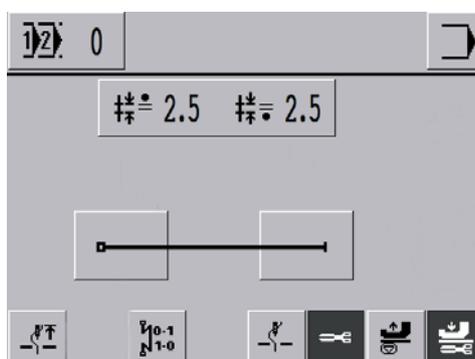
The selection is made by selecting the corresponding program number:

- 0: Manual sewing
- 1 and 2: Sewing with fixed programs
- 3 to 49: Programmed sewing
(with up to 15 seam zones for left and right seams)

10.01 Manual sewing

The values for the feed motion (stitch lengths) of the bottom feed (feed wheel) and top feed (roller presser), start and end backtacks, placed stitch position when sewing, thread tension and the needle and foot positions are displayed on the control panel in manual sewing and can be changed directly. Fullness can be controlled via the stitch length input on the control panel or using the left pedal. If the fullness is called up via the left pedal, the current value of the fullness appears as a bar graph display below the stitch length indicator on the display.

- Switch on the machine and select program number "0," see [chapter 9.06 Selecting a program number](#).



Description of the functions



Program selection

Opens the menu for inputting the program number, see [chapter 9.06 Selecting a program number](#).



Input mode

Quit the sewing mode and call up input mode.



Stitch lengths

Opens the menu for entering the feed motion for the roller presser and feed wheel, see [chapter 9.07 Adjusting stitch lengths](#).



Start backtack

Opens the menu for entering the seam start, see **chapter 9.08 Entering start and end backtacks**.



End backtack

Opens the menu for entering the seam end, see **chapter 9.08 Entering start and end backtacks**.



Needle raised

Positions the needle in the top position (thread lever t.d.c.)



Backtack suppression

When pressed once, the next backtack is suppressed.

When pressed twice, the next two backtacks are suppressed.



Needle position raised

If this function is on, the needle moves to the top position when sewing stops (thread lever t.d.c.)



Thread trimming

When the function is activated, thread trimming with the pedal function is possible.



Roller presser up

When this function is activated, the roller presser is raised after sewing stops.



Roller presser down after thread trimming

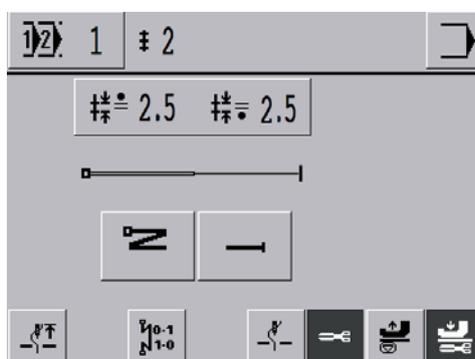
When this function is activated, the roller presser is not raised after thread trimming.

- Sewing is carried out using the pedal functions, see **chapter 7.04 Pedal**.

10.02 Sewing with fixed programs

Fixed programs are set under program numbers 1 and 2. The fixed programs are used for the quick and easy sewing of seams with a different number of stitches or fullness. When sewing with fixed programs, 2 or 3 seam zones are processed one after the other. Pressing the knee switch moves the machine to the next seam zone. The fixed programs are designed as concentric programs, meaning after the end of the last seam zone, the first seam zone is started again. The values for the feed motion of the bottom feed (feed wheel) and the top feed (roller presser) can be changed for each individual sewing area. The values for the start and end locking, placed stitch position when sewing, needle and foot positions and the thread tension apply across the entire area and can be changed at any time.

- Switch on the machine and select program number "1" or "2", see chapter 9.06 Selecting a program number.



Explanation of the displays and functions



Program selection

Opens the menu for inputting the program number, see chapter 9.06 Selecting a program number.



Seam zone

Displays the number of seam zones in the sewing program.



Input mode

Quit the sewing mode and call up input mode.



Stitch lengths

Opens the menu for entering the feed motion of the roller presser and feed wheel, see chapter 9.07 Adjusting stitch lengths.



Start backtack

Opens the menu for entering the seam start, see chapter 9.08 Entering start and end backtacks.



End backtack

Opens the menu for entering the seam end, see chapter 9.08 Entering start and end backtacks.



Needle raised

Positions the needle in the top position (thread lever t.d.c.)



Backtack suppression

When pressed once, the next bartack is suppressed.

When pressed twice, the next two bartacks are suppressed.



Needle position raised

If this function is on, the needle moves to the top position when sewing stops (thread lever t.d.c.)



Thread trimming

When the function is activated, thread trimming with the pedal function is possible.



Roller presser up

When this function is activated, the roller presser is raised after sewing stops.



Roller presser down after thread trimming

When this function is activated, the roller presser is not raised after thread trimming.

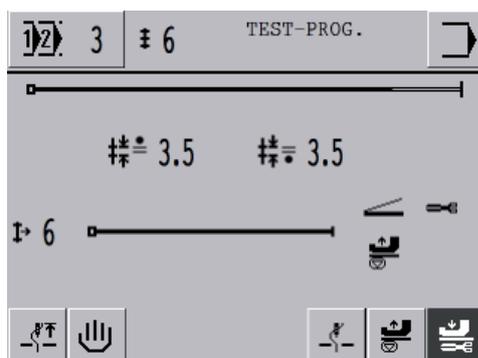
- Sewing is performed using the pedal and knee switch functions, see **chapter 7.04 Pedal** or **7.07 Knee switch**.

10.03 Programmed sewing

Pre-programmed seams can be called up via program numbers **3 - 49**. All seam zones for sewing in a sleeve are set in a seam program in programmed sewing mode. The information on the seam program, such as the program number, the number of programmed seam zones, the programmed comment and the ready-made size are displayed.

For easier orientation, a seam sketch of the armhole with the programmed seam zones is shown. The seam start, seam end, the already processed seam zones, the current seam zone and the seam zones still to be sewn are indicated by symbols and different line types and line thicknesses. The respective seam zone number parameter, feed motion of the top feed (roller presser) with fullness correction, feed motion of the bottom feed (feed wheel), seam zone length are displayed for the current seam zone. The feed motion of the top feed (roller presser) or the fullness correction can be changed directly.

- Switch on the machine, select the desired program number from “3” to “49”, see chapter 9.06 Selecting a program number.



Explanation of the displays and functions



Program selection

Opens the menu for inputting the program number, see chapter 9.06 Selecting a program number.



Input mode

Quit the sewing mode and call up input mode.



Current seam zone

Displays the current seam zone.



Feed wheel stitch length

Displays the current value for the feed motion of the feed wheel



Seam zone length

Displays the current value for the seam zone length.



Program interrupt

Interrupts the seam program sequence, see **chapter 10.03.03 Program interruption**.



Roller presser up

When this function is activated, the roller presser is raised after sewing stops.



Roller presser down after thread trimming

When this function is activated, the roller presser is not raised after thread trimming.

- Sewing is carried out using the pedal and knee switch functions, see **chapter 7.04 Pedal**.



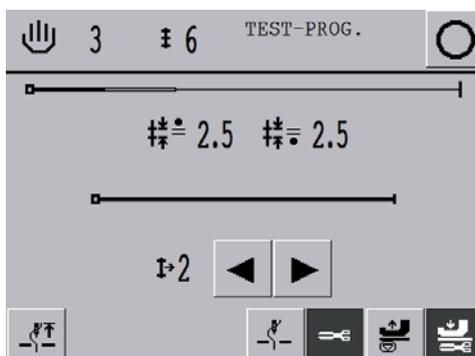
If the knee switch should be used to switch between the seam zones, parameter "201" must be set to "ON". The switch-over between the seam zones can only be made using the knee switch with this parameter setting.

10.03.01 Program interruption

The “program interruption” function is used to interrupt the programmed seam sequence (e.g., in the case of a thread break).



- Interrupt the program sequence



- Or sequence the program forwards and backwards.
- Or change the seam locking and thread tension and perform the other functions as in manual sewing, see **chapter 10.01 Manual sewing**.

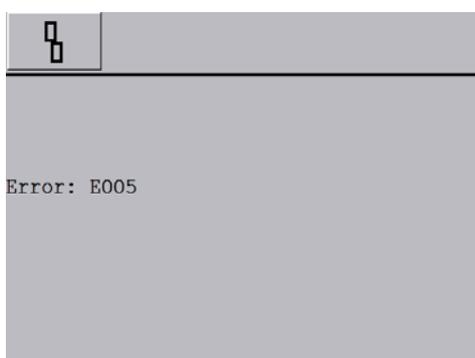


- Or call up manual sewing.

10.04 Error messages

If an error occurs, the text “ERROR” appears on the display, together with an error code. An error message is generated by incorrect settings, faulty elements or seam programs, as well as overloading.

For an explanation of the error codes, see **chapter 11.05 Error codes and description**.



- Correct the error.



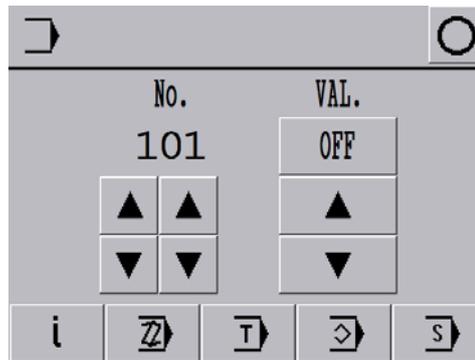
- Acknowledge the elimination of the error.

11 Input

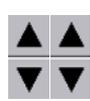
The Parameter input, Info, Create/correct sewing program, Teach-in, Program management and Service functions are available in input mode.

- Switch the machine on.

-  ● Call up input mode.



Description of the functions

-  **Sewing mode**
Quit input mode and call up sewing mode.
-  **Parameter selection**
Select the hundred and unit figures of the desired parameter, see **chapter 11.04.02**
Example of a parameter input.
-  **Altering the parameter value**
Change the value of the selected parameter, see **chapter 11.04.02** Example of a parameter input.
-  **Software information**
Calls up information about the current machine software.
-  **Create/correct program**
Opens the menu for entering or changing seam programs, see **chapter 11.01.02** Seam program input via the "Create/correct program" function.
-  **Teach-in**
Opens the menu for entering seam programs by stitching a sewing sample, see **chapter 11.01.03** Seam program input via the "Teach-in" function.
-  **Program management**
Opens the menu for managing seam programs, see **chapter 11.03** Managing seam programs.
-  **Service**
Opens the service menu, see **the service menu chapter** in the adjustment manual.

11.01 Entering seam programs

Seam programs can be created by inputting parameters in the “Create / correct seam programs” function or by stitching a seam sample with the “Teach-in” function. Irrespective of which function is changed, the program number and basic settings of the sewing program to be processed must first be selected.

11.01.01 Basic seam program input settings

The basic settings are the same in the “Create/correct program” and “Teach-in” functions and consist of the basic size, the feed motion of the bottom feed (feed wheel) and the seam type.

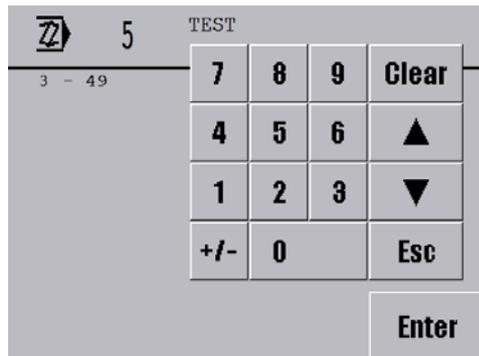
- Switch the machine on.
- Select a program number from 3 - 49, see chapter 9.06 Selecting a program number.



- Call up input mode.



- Call up the “Create/correct seam program” or “Teach-in” function.



- Select the desired program number or enter it via the keypad.

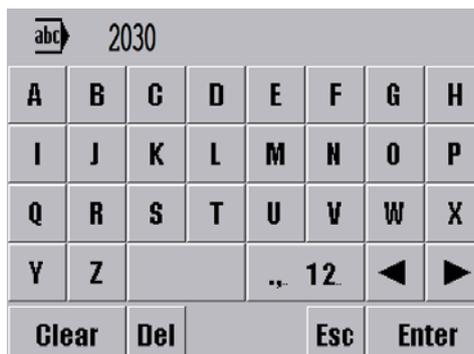


- Make the basic settings and conclude the input with the “Enter” function, see chapter 11.01.01 Basic seam program input setting.

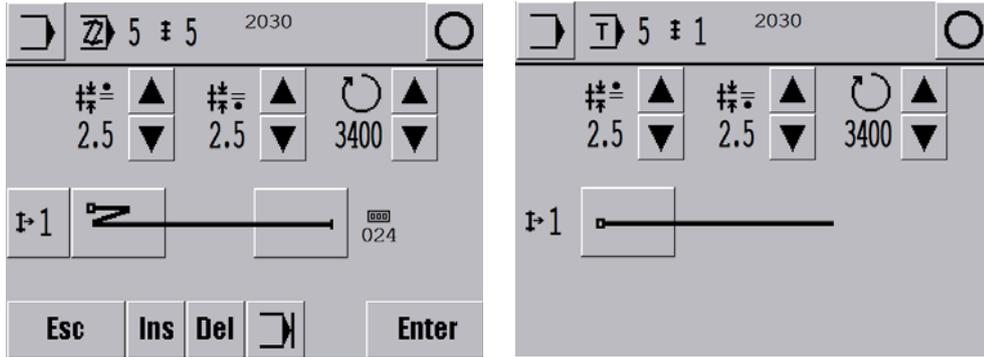


- Call up the comment input menu.

- Enter a comment via the keypad and numeric keypad.



- Conclude the comment input.



- Define the feed motion for the feed wheel as a basic stitch length.



- Or input or change a comment.



- Pressing the symbol opens a menu to save the program under a new program number.



- End the input of the basic settings and change to the input of the seam zones, see chapter 11.01.02 Seam zone input via the “Create/correct program” function or chapter 11.01.03 Seam program input via the “Teach-in” function.



The input can also be concluded by calling up the sewing mode. This function is used to conclude the seam program input and the machine switches to the programmed sewing mode.

11.01.02 Seam program input via the “Create/correct program” function

This function is used to enter the seam program by entering or changing the corresponding values on the control panel. This type of seam program input is particularly suitable for correcting already existing seam programs.

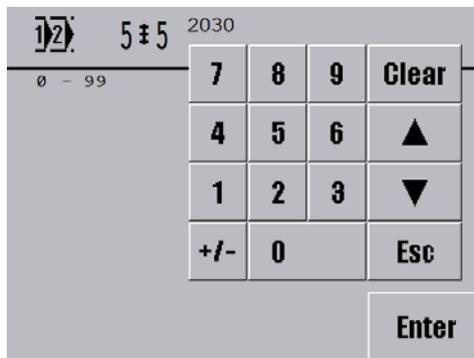
- Switch the machine on.
- Select a program number from 3 - 49, see chapter 9.06 Selecting a program number.



- Call up input mode.



- Call up the “Create/correct seam program” function.



- Select the desired program number or enter it via the keypad.



- Make the basic settings and conclude the input with the “Enter” function, see chapter 11.01.01 Basic seam program input setting.

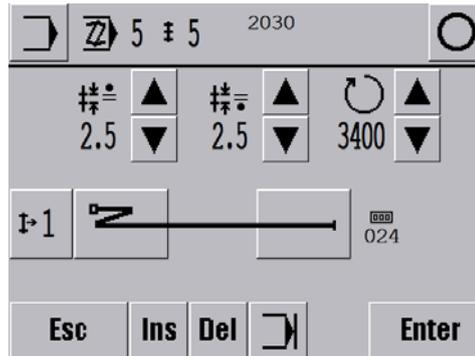


- Call up the comment input menu.

- Enter a comment via the keypad and numeric keypad.



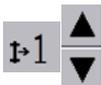
- Conclude the comment input.



- Define the feed motion for the feed wheel
This is used to display and change the current values for the feed motion of the feed wheel.



- Define the feed motion for the roller presser
The difference with respect to the feed motion of the feed wheel (basic stitch length) determines the fullness.



- The current seam program can be rolled through via the functions.
The current seam zone is displayed accordingly alongside all other current values.



- Opens the menu for entering the seam start, see [chapter 9.08 Entering start and end backtacks](#).



- Or insert the seam zone.
The current seam zone is copied and all subsequent seam zones are set backwards.



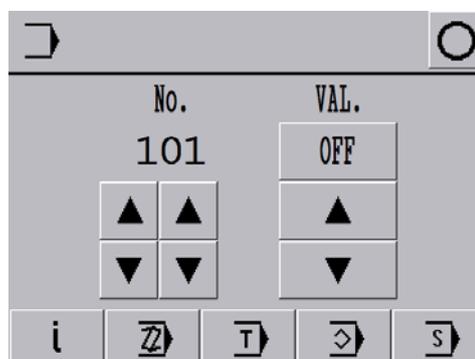
- Or delete the current seam zone.



- Define seam or programming end.



- Complete the first seam zone and change to the next seam zone.



- End the input and change to programmed sewing.

11.01.03 Seam program input via the "Teach-in" function

This function is used to create the seam program by stitching a sewing pattern. A new creation is always made, meaning that when selecting an already existing program it is overwritten.

- Switch the machine on.
- Select a program number from 3 - 49, see chapter 9.06 Selecting a program number.



- Call up input mode.



- Call up the "Teach-in" function.



- Select the desired program number or enter it via the keypad.

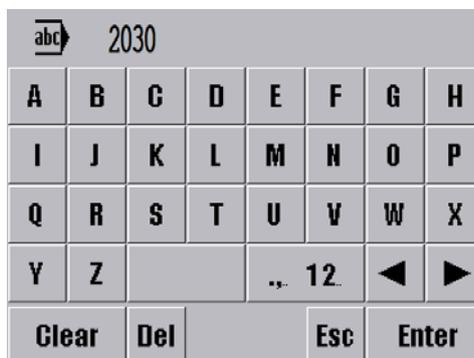


- Conclude with the "Enter" function.



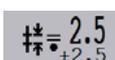
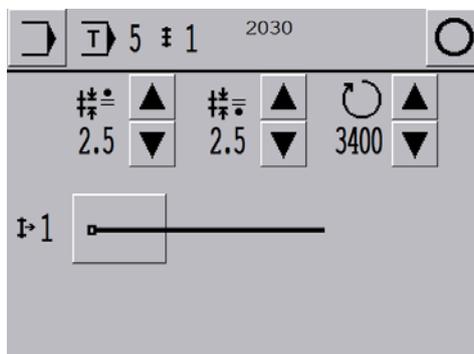
- Call up the comment input menu.

- Enter a comment via the keypad and numeric keypad.



- Conclude the comment input.

The following displays and functions appear on the display before sewing:



- Define the feed motion for the feed wheel

This is used to display and change the current values for the feed motion of the feed wheel.

Input



- Define the feed motion for the top feed (roller presser).

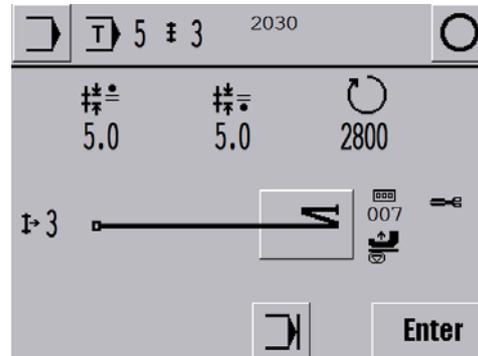
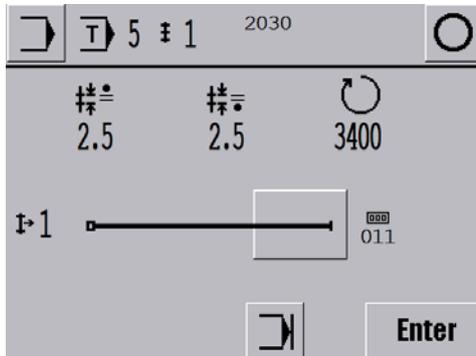
The difference with respect to the feed motion of the feed wheel (basic stitch length) determines the fullness.



- Enter the front backtack (functions at seam start), see **chapter 9.08 Entering start and end backtacks**.

The seam area is determined in stitches and shown on the display.

After sewing, the following information and functions appear on the display:



- Define seam or programming end.



- End the input and change to programmed sewing.

11.02 Examples for setting seam programs

11.02.01 Examples of seam program input using the "Create/correct program" function

The seam program to be created should

- contain 2 seam zones,
- have a basic stitch length of 2.5 mm and
- be saved under program number "10" With the comment "Seam 1"

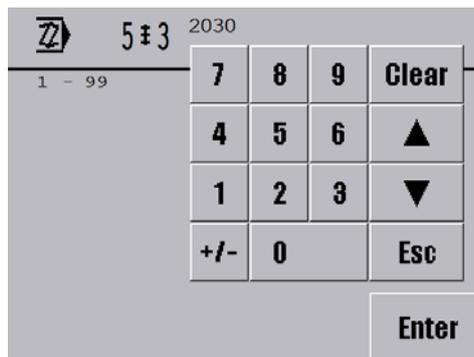
- Switch the machine on.
- Select program number "10"; see chapter 9.06 Selecting a program number.



- Call up input mode.



- Call up the "Create/correct seam program" function.



- Select the desired program number or enter it via the keypad.



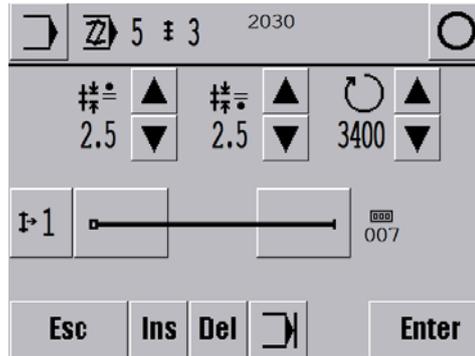
- Conclude with the "Enter" function.



- Call up the comment input menu.
- Enter a comment via the keypad and numeric keypad.



- Conclude the comment input.



In the first seam zone

- the number of stitches should be **10** stitches
- the roller presser should work with a feed motion (stitch length) of **2.6** mm.



- Select the value **2.6** for the feed motion (stitch length) of the roller presser.

Enter

- Switch to the input of the second seam zone.

In the second seam zone

- the number of stitches should be **25** stitches
- the roller presser should work with a feed motion (stitch length) of **2.6** mm.



- Select the value **2.6** for the feed motion (stitch length) of the roller presser.

Enter

- Switch over to enter the second seam (left seam).

- Enter the seam zones of the left seam in the same way as the above-mentioned seam zones.



- Activate the "End program" function.



- Conclude the input of the seam program and change to programmed sewing.

11.02.02 Example for seam program input via the “Teach-in” function

The seam program to be created should

- contain 2 seam zones,
- have a basic stitch length of 2.4 mm and
- saved under program number 5 with the comment “LEARN”

- Switch the machine on.
- Select program number “5”, see chapter 9.06 Selecting a program number.



- Call up input mode.



- Call up the “Teach-in” function.



- Select the desired program number or enter it via the keypad.



- Conclude with the “Enter” function.



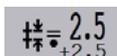
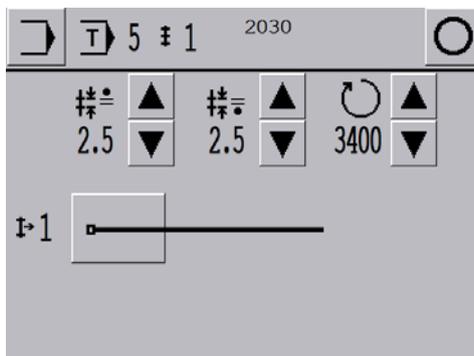
- Call up the comment input menu.

- Enter a comment via the keypad and numeric keypad.



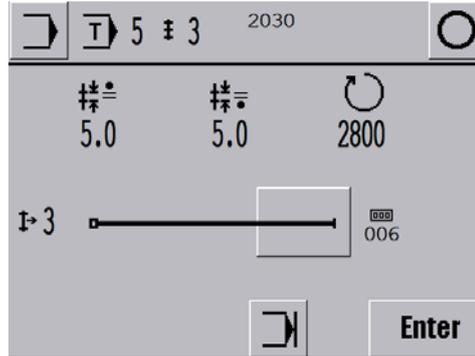
- Conclude the comment input.

The following displays and functions appear on the display before sewing:

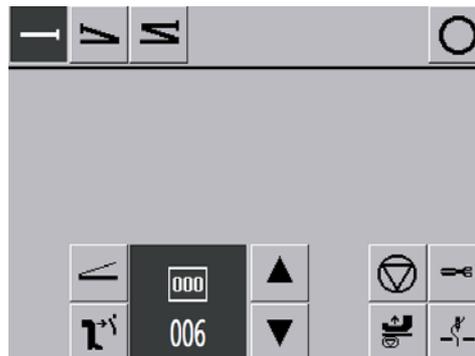


- Define the feed motion for the feed wheel

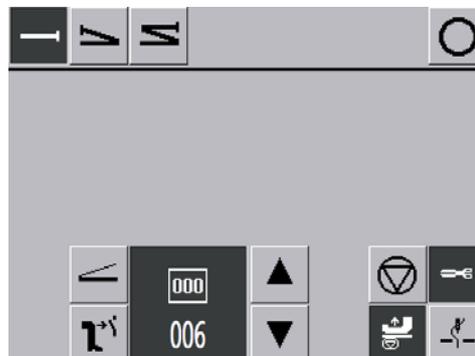
This is used to display and change the current values for the feed motion of the feed wheel.



- Select the desired type of end backtack, the selected (active) function is displayed inversely:



-  ● No end backtack
-  ● Simple end backtack
-  ● Double end backtack



-  **Thread trimming**
When the function is activated, thread trimming with the pedal function is possible.
-  **Roller presser up**
When this function is activated, the roller presser is raised after sewing stops.
-  ● Conclude the input of the seam program and change to programmed sewing.
-  ● Activate the “End program” function.
 - Perform the thread trimming function by pressing the pedal, see **chapter 7.02 Pedal**.
-  ● Conclude the input of the seam program and change to programmed sewing.

11.03 Managing seam programs

The program management displays the contents of the machine memory in the left-hand half of the screen and the SD card in the right-hand half of the screen, and is used to erase and copy programs. The selected programs are displayed in red. The machine data can be saved on the SD card or loaded from the SD card if the MDAT function is activated. The Format function is used to format the SD card. The individual operations are displayed in English in a dialogue box. After inserting the SD card, it will take up to 20 s until the SD card is recognised as inserted.

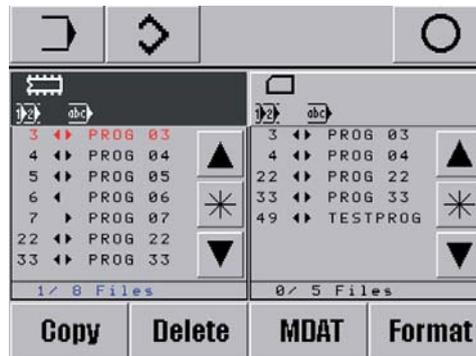
- Switch the machine on.



- Call up input mode.



- Call up program management.
SD card and machine memory are re-read.



Description of the functions



Input mode
Calls up the basic screen of input mode.



Sewing mode
Quit input mode and call up sewing mode.



Program selection
At least one seam program is always marked after calling up the program management. Use the arrow functions to select the desired sewing program. A block of sewing programs can be marked with the * function and the arrow functions. Pressing the *-function again turns off the block function.



Copy
Press the Copy key to copy the selected program to or from the SD card.



Delete
Press the Delete key to delete the selected programs.

Dialogue box

The dialogue box is used to communicate the current operation. If necessary, additional keys are shown for answering questions.

Enter

Enter key

Approval for a program.

All

All key

Approval for one or all marked programs.

Esc

Esc key

Reject for one or all marked programs.

Next

Next key

Reject a program.

MDAT

Select machine data

After pressing MDAT, the machine data can be copied or deleted on the SD card.

Format

Format the SD card

The SD card is formatted after pressing FORMAT. A prompt for confirmation is displayed before the SD card is formatted.

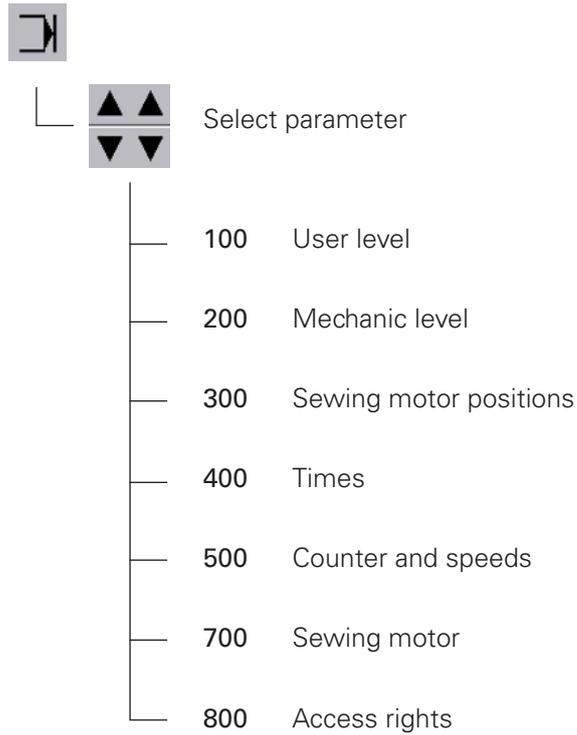
The card is completely formatted if it cannot be read. All programs and machine data in this directory are deleted if they can be read and the directory \P1591 for the 1591 exists.

If the directory \P1591 for the 1591 does not exist, only the directory is created. This is to ensure that programs from other machines and other files are not lost.

11.04 Parameter settings

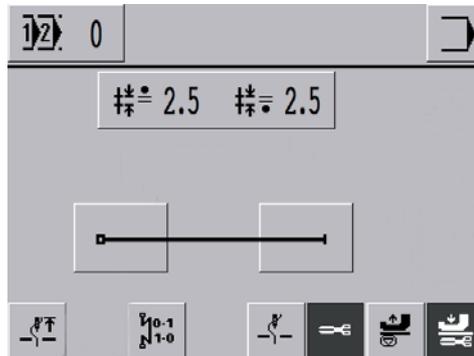
11.04.01 Overview of parameter functions

After switching the machine on, the input mode is called, in which the individual parameters can be directly called by pressing the desired function. All parameter groups or also individual ones can be protected by a code against unauthorised access.

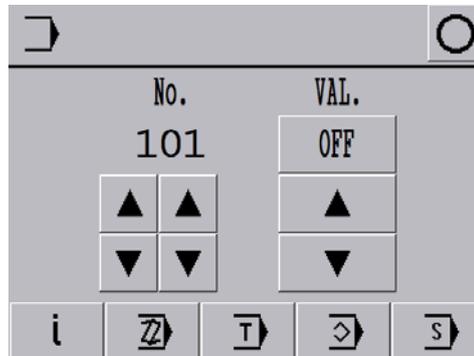


11.04.02 Example of a parameter entry

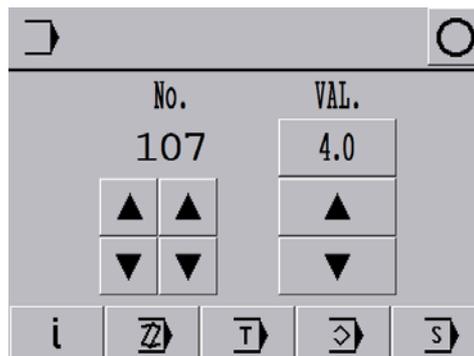
- Switch the machine on.

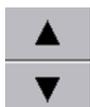


-  ● Call up input mode.



-  ● For example, call up parameter "107" (maximum feed motion of the roller presser via the fullness pedal)



-  ● For example, set value 4.0.

-  ● Conclude the input.

11.04.03 List of parameters for control P320 and 321



The parameter “100” is accessible to the operator.

Changing of the parameters “200” - “800” can only be carried out after entering the code number and may only be performed by authorised and qualified personnel.

Group	Parameter	Description	Setting range	Set value
1	101	Pedal controlled start backtack	ON - OFF	OFF
	102	Reverse rotation	ON - OFF	OFF
	103	Placed stitch	ON - OFF	OFF
	104	Bobbin thread monitor 0 = off, 1 = counter, 2 = thread monitor	0 - 2	0
	105	Bobbin thread counter	0 - 99999	12000
	106	Remaining bobbin thread counter	0 - 999	100
	107	Stitch length at the touch of a button (parameter stitch)	0.8 - 7.0	4.0
	108	Display main processor software version	0329/xxx	-
	110	Display control panel software version	VxxHxx	-
	111	Display sewing drive component software version	Vxx	-
	112	Control panel key tone	ON - OFF	ON
	113	Key tone when switching over between zones	ON - OFF	OFF
	116	Show serial number of the machine		
	2	201	Machine configuration (15xx) 1 = 15x1, 15x3; 2 = 15x1, 15x3 with photocell	1 - 7	1
202		Roller presser lowering speed OFF = slow, ON = fast	ON - OFF	OFF
203		Single stitch key assignment, 1 = single stitch, 2 = double stitch, 3 = parameter stitch, 4 = needle up, 5 = knee switch, 6 = Unlock stop using the scroll key	1 - 6	1
204		Half stitch key assignment, 1 = half stitch, 2 = double stitch, 3 = parameter stitch, 4 = needle up, 5 = knee switch, 6 = Unlock stop using the scroll key	1 - 6	1

Group	Parameter	Description	Setting range	Set value
2	206	Open thread tension on stop and roller presser lift	ON - OFF	OFF
	207	Open thread tension after trimming	ON - OFF	OFF
3	301	Take-up lever at t.d.c. position		
		1591	0 - 127	125
		1593	0 - 127	2
	302	Position of needle at bottom position		
		1591	0 - 127	17
		1593	0 - 127	20
	303	Thread trimmer magnet position on		
		1591	0 - 127	17
		1593	0 - 127	20
	304	Thread trimmer magnet position timing		
		1591	0 - 127	100
		1593	0 - 127	103
	305	Thread trimmer magnet position off		
		1591	0 - 127	120
		1593	0 - 127	123
	306	Reverse rotation position		
		1591	0 - 127	100
		1593	0 - 127	103
	307	Placed stitch position	0 - 127	7
	308	Thread tension ventilation position		
		1591	0 - 127	98
1593		0 - 127	101	
4	401	Holdoff time roller presser lift [s]	0.01 - 1.5	0.02
	402	Start delay after lower roller presser [s]	0.01 - 1.5	0.15
	403	Set roller presser lift [s]	0.01 - 0.2	0.03
	404	Thread trimmer magnet timing [%]	10 - 50	35
	405	Time to clean the thread monitor [s]	0.01 - 1.5	0.25
5	501	Maximum speed	100 - 3500	3500
	502	Start backtack speed	100 - 1500	700

Group	Parameter	Description	Setting range	Set value	
5	503	End backtack speed	100 - 1500	700	
	504	Soft start speed	100 - 3500	1500	
	505	Soft starting stitches	0 - 15	0	
6	601	Move roller presser and feed wheel stepping motor			
	602	Inputs: 0123456789ABCDEF			
		0= needle mid-point (E16)			
		1= needle end position (E15)			
		2= intermittent coding (E14)			
		3= free (E13)			
		4= free (E12)			
		5= free (E11)			
		6= free (E10)			
		7= free (E9)			
		8= emergency key (E8)			
		9= free (E7)			
		A= knee switch (E6)			
		B= photo cell (E5)			
		C= start inhibitor (E4)			
		D= single stitch key on the machine head (E3)			
		E= half stitch key on the machine head (E2)			
	E= reversing key on the machine head (E1)				
	603	Machine drive home position			
		1591		8 ± 2	
	1593		11 ± 2		
604	Run cold start				
605	Stitch formation with stepping motors by handwheel (only with BDF S3)				
606	Display nominal value transmitter values				
7	701	P-section speed regulator	1 - 50	30	
	702	I-section speed regulator	0 - 100	50	
	703	P-section position controller	1 - 50	20	
	704	D-section position controller	1 - 100	30	
	705	Time for position controller	0 - 100	25	

Group	Parameter	Description	Setting range	Set value	
7	706	P-section position controller for remainder brake	1 - 50	25	
	707	D-section position controller for remainder brake	1 - 50	15	
	708	Maximum torque for remainder brake	0 - 100	0	
	709	Minimum machine speed	3 - 64	6	
	710	Maximum machine speed	1 - 35	35	
	711	Maximum motor speed	1 - 35	35	
	712	Positioning speed	3 - 25	18	
	713	Acceleration ramp	1 - 50	35	
	714	Braking ramp	1 - 50	30	
	715	Reference position			
		1591		0 - 127	17
		1593		0 - 127	20
	716	Dead man time	0 - 255	40	
	717	Motor starting current	3 - 10	8	
	718	Anti-vibration filter	1 - 10	6	
	719	Rotation direction assignment	0 - 1	0	
	720	Reference position correction	0 - 2	2	
8	801	Access rights for function group 100	0 - 1	0	
	802	Access rights for function group 200	0 - 1	1	
	803	Access rights for function group 300	0 - 1	1	
	804	Access rights for function group 400	0 - 1	1	
	805	Access rights for function group 500	0 - 1	1	
	806	Access rights for service	0 - 1	1	
	807	Access rights for function group 700	0 - 1	1	
	808	Access rights for function group 800	0 - 1	1	
	809	Programming access rights	0 - 1	1	
	810	Input access code	0 - 9999	1500	

11.05 Error messages and description

Error	Description
E 001	System error
E 002	Sewing motor E002/BB/xxx BB = 20: Dead man 02: Position forwards 03: Position in reverse 05: Position by shortest route 09: Write parameters 10: Speed 0A: Reset stitch counter 0B: Stop after xxx stitches 30: Timeout for increasing speed 31: Timeout from uncertain positioning 32: Timeout from dead man command 33: Timeout for deleting errors 34: Timeout for emergency stop 35: Timeout for writing parameters 36: Timeout for resetting stitch counter 37: Timeout for stop command after x stitches 38: Timeout for initialisation xxx = sewing motor control unit error byte (see motor errors)
E 003	Section
E 004	End of section
E 005	Pedal activated when machine turned on
E 006	Communication error with the stepping motor processor
E 007	End of ramp
E 008	Needle drive end position not found
E 009	Needle drive mid-point not found
E 010	Stepping motor processor error
E 011	Stepping motor step frequency too high
E 012	Sewing displacement error
E 013	Docu-seam system error
E 014	Incorrect program number (larger than 99)
E 015	Incorrect section number
E 016	Memory full
E 017	Incorrect stitch length
E 018	Unused
E 019	External control interface
E 020	Unused
E 021	Power supply unit overloaded (24V)
E 022	Mains voltage
E 023	Power supply 24V too low
E 024	CAN interface error
E 025	Unused
E 026	Unused
E 027	SD card error E27/xx

11.06 Sewing motor errors

Error	Description
33	Invalid parameter value
34	Brake path too short
35	Communication error
36	Init. not ready
37	Command overrun
64	Mains off during initialisation
65	Excess current directly after mains on
66	Short circuit
68	Excess current during operation
69	No increments
70	Motor blocked
71	No incremental plug
73	Faulty motor operation
74	Incremental encoder missing for transmission/reduction
75	Control locked
170	Transmission invalid
171	Zero mark invalid
173	Motor blocked in 1st stitch
175	Internal starting error
222	Dead man monitoring

12 Maintenance and Care

12.01 Maintenance intervals

Cleaning	daily, several times if in continuous operation
Clean the hook area	daily, several times if in continuous operation
General oiling	daily, before start-up
Oil the hook	daily, before start-up
Oil level (thread lubrication / hook lubrication)	twice a week
Lubricate the bevel gears	once as year
Clean the blower air filter	as required



These maintenance intervals are based on an average running time of a single shift production shop. Shorter maintenance intervals are recommended for increased running times.

12.02 Cleaning the machine

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

- Single or multi-shift operation
- Dust formation caused by the workpieces

Optimal cleaning instructions can therefore only be defined on a case-by-case basis.

Clean the hook, hook area and gear wheel 4 daily or more often during continuous operation.



Disconnect the machine from the electricity mains for all cleaning work by shutting off the main switch or removing the mains plug! Risk of injury due to accidental machine start-up!

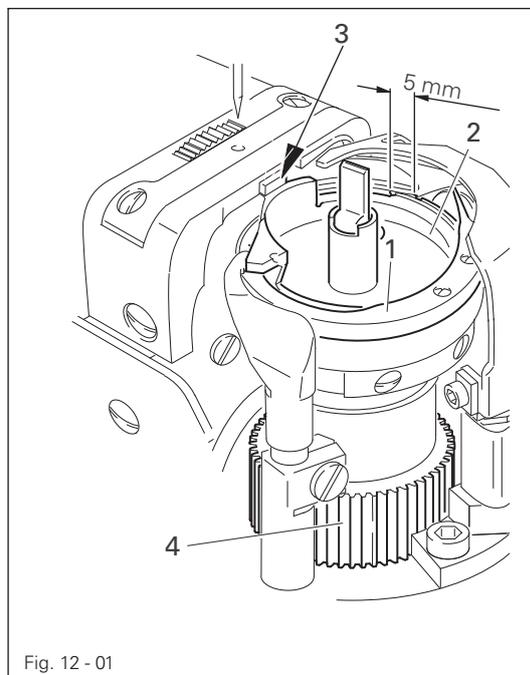


Fig. 12 - 01

The following tasks are recommended during a single shift operation to avoid operational errors:

Clean the hook area

- Clean the hook area with a brush

Clean the hook

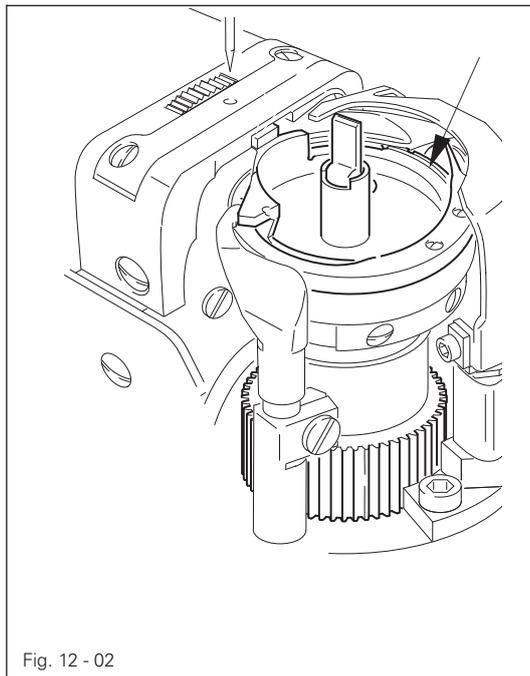
- Move the needle bar to the top position.
- Open the post cover.
- Remove the bobbin case sewing head with bobbin.
- Unscrew the hook gib 1.
- Turn the handwheel until the tip of the lower bobbin 2 has penetrated approx. 5 mm into the groove of the hook race.
- Remove the lower bobbin 2.
- Clean the hook race with kerosene.

- Make sure that the horn 3 of the lower bobbin 2 engages in the groove of the needle plate when inserting the lower bobbin 2.
- Screw on the hook gib 1.
- Insert the bobbin case with the bobbin and close the post cap.



Do not operate the machine with an open post cap!
Risk of injury from the rotating hook!

12.03 Oiling the hook



Switch off the machine!
Risk of injury due to accidental machine start-up!

- In addition, add a few drops of oil onto the hook race at the initial start-up or if the machine has been standing still for a prolonged period of time (see arrow).

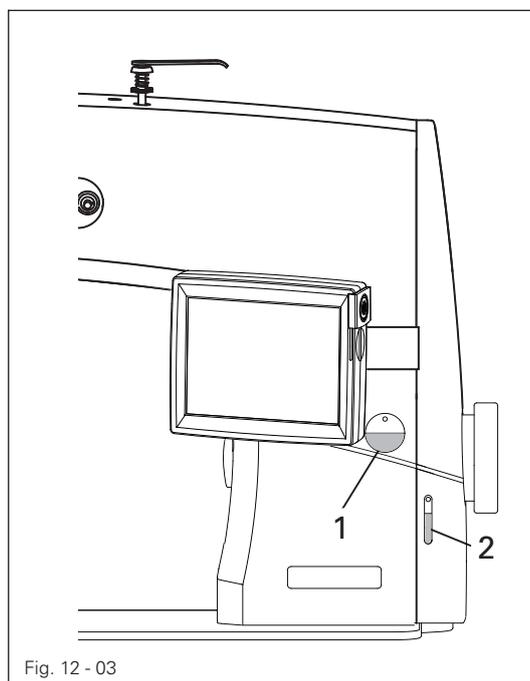


Only use oil with a centre viscosity of $22.0 \text{ mm}^2/\text{s}$ at $40 \text{ }^\circ\text{C}$ and a density of 0.865 g/cm^3 at $15 \text{ }^\circ\text{C}$!



We recommend
PFAFF sewing machine oil
Order no. 280-1-120 144.

12.04 Checking the oil level of the hook and front parts



Check the oil level before every start-up.
Oil must always be visible in the sight glasses 1 and 2

- Add oil through the respective hole above the sight glasses as needed.



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

We recommend PFAFF sewing machine oil, order no. 280-1-120 144.



12.05 Lubricating the bevel gears

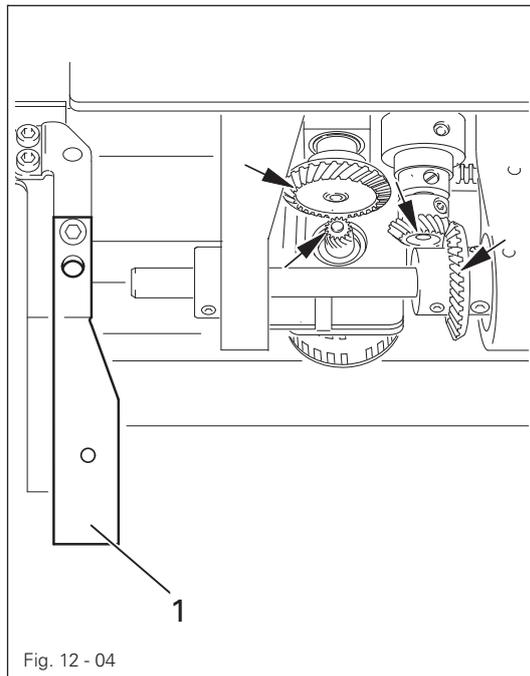


Fig. 12 - 04



Switch off the machine!

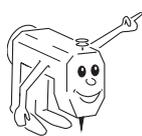
Risk of injury due to accidental machine start-up!

- Fresh grease should be applied to all bevel gears once a year.
- Tilt back the machine sewing head and let it rest on the sewing head support.
- To return the machine sewing head to its upright position, press the anti-tipping device 1 backwards and return the machine sewing head to its upright position using both hands!

Return the machine sewing head to its upright position using both hands!



Risk of injury from crushing between the machine sewing head and the table top!



We recommend

PFAFF sodium soap grease with a dripping point of approx. 150°C.

Order no.: 280-1-120 243.

12.06 Topping up the thread lubrication oil reservoir

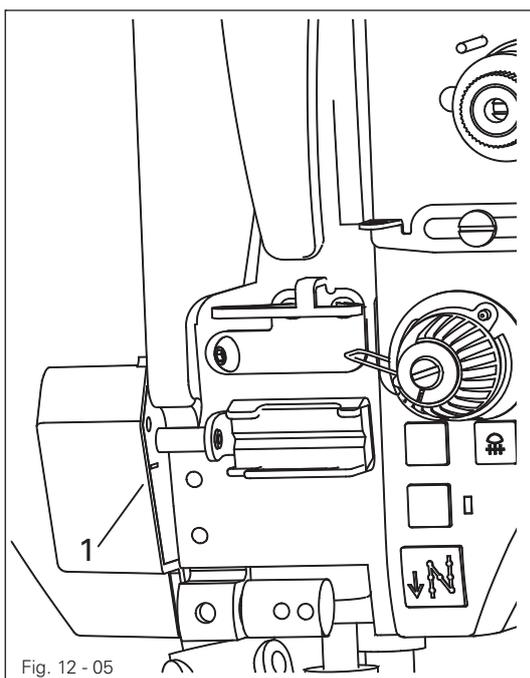


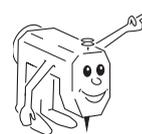
Fig. 12 - 05



Check the oil level before every start-up.

The oil reservoir 1 must always have oil in it.

- Add oil through hole as needed

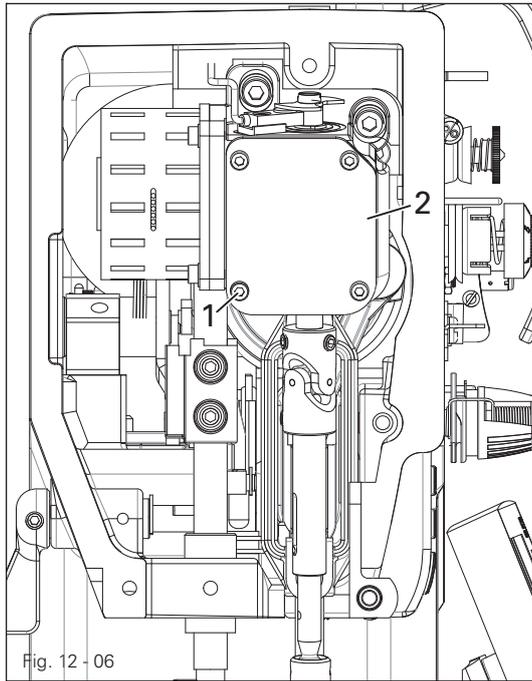


We recommend

PFAFF thread lubricating oil

Order no. 280-1-120 217.

12.07 Lubricating the roller presser drive gear mechanism (only for a diameter of 25 mm and 35 mm)



Switch off the machine!
Risk of injury due to accidental machine start-up!

- Loosen the screws 1.
- Remove the cover 2.
- Lubricate the gear mechanism.
- Fit the cover 2 again.
- Tighten the screws 1.



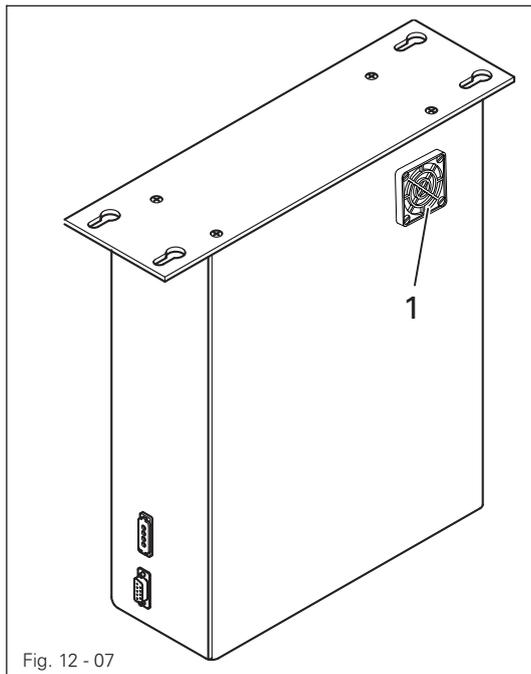
Only use grease with a dripping point of approx. 150 °C!



We recommend PFAFF sodium soap grease with a dripping point of approx. 150 °C.

Order no. 280-1-120 243.

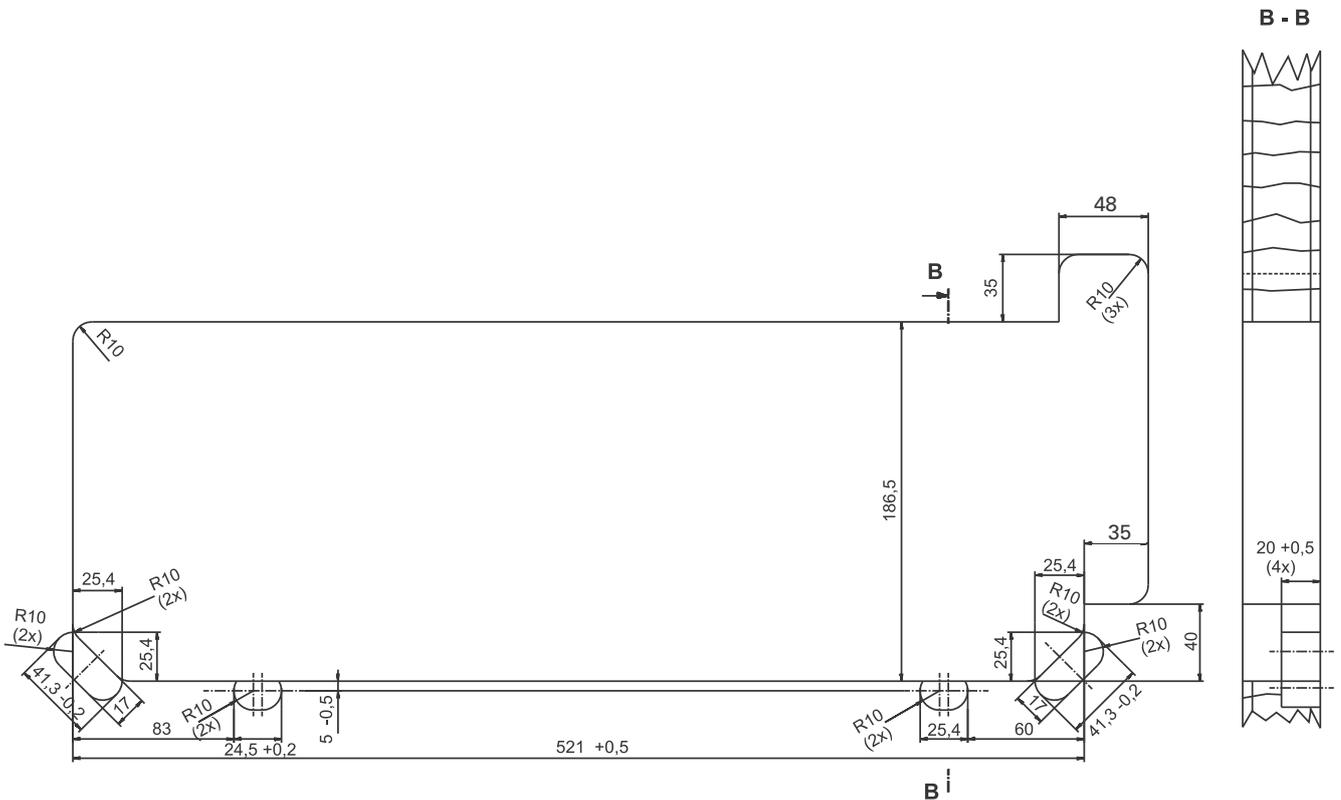
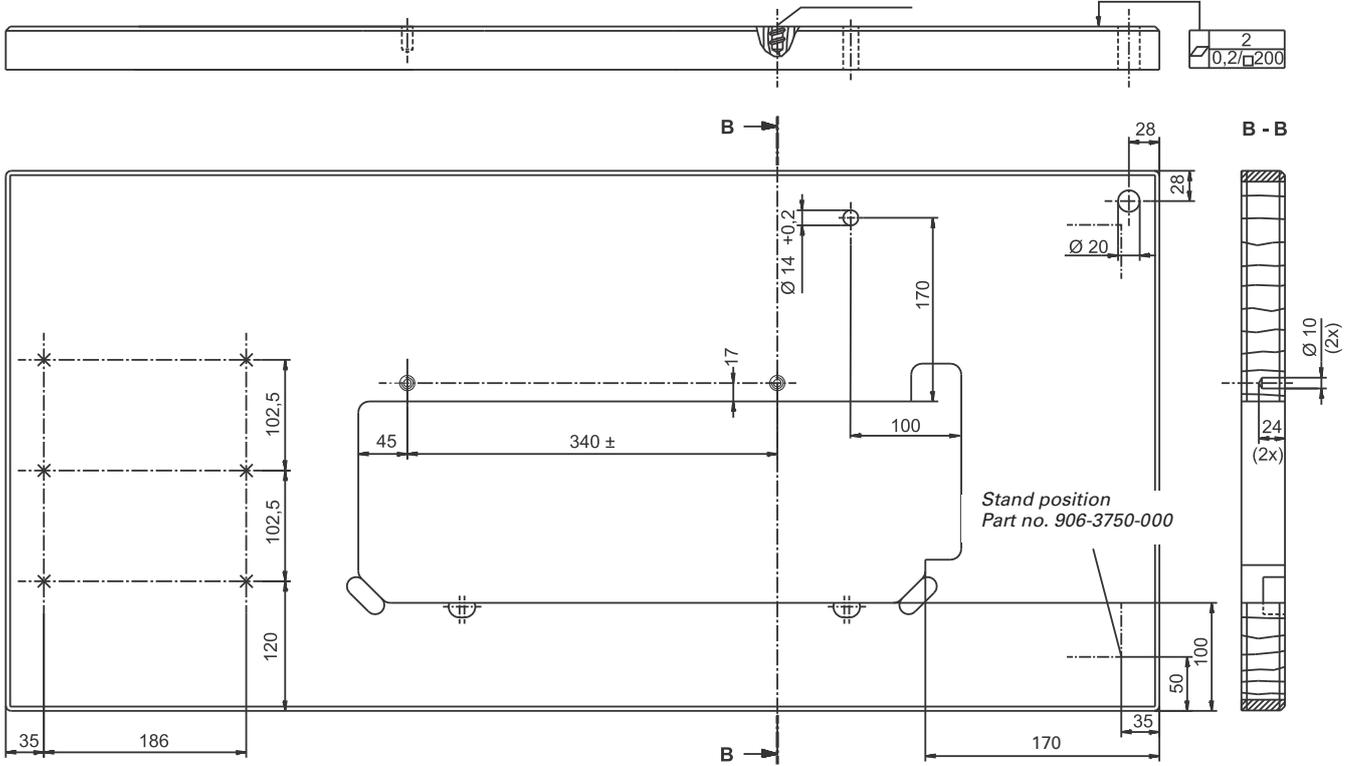
12.08 Cleaning the blower air filter



- Remove the cover 1.
- Remove the filter element and blow it out with compressed air.
- Insert the cleaned filter element and fit the cover 1.

13.02 Table top cutout

Anchor nut DIN 7965 (2x)
Order no. 12-177 106-05



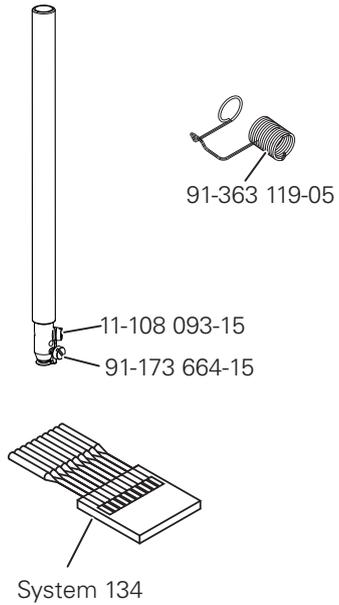
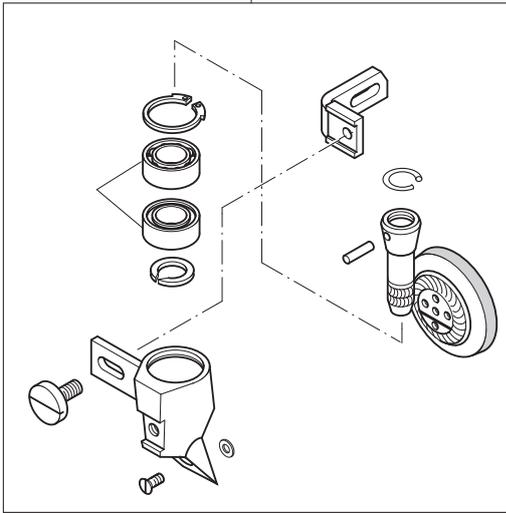
14 Wear and Tear Parts

This list shows the most important wear and tear parts.



A detailed parts list for the complete machine can be downloaded at www.pfaff-industrial.de/de/service-support/downloads/technical. As an alternative to the Internet download, the parts list can also be requested as a hard copy under order no. 296-12-19 390.

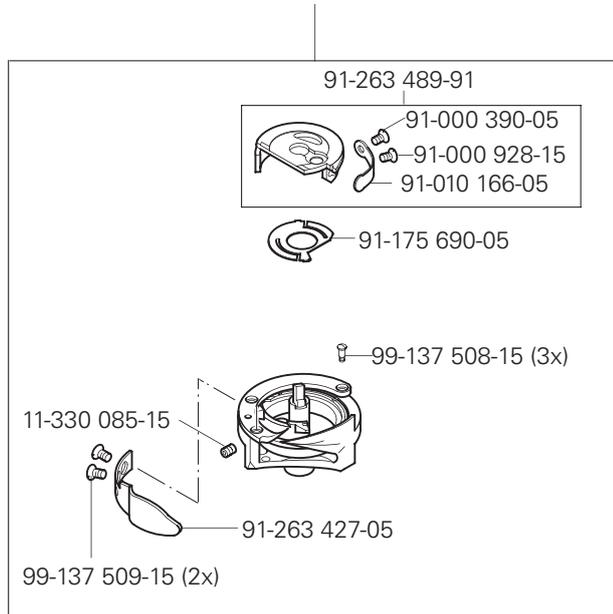
- 91-363 048-93/001 Roller presser with 25 mm diameter, 4.0 mm wide, toothed
- 91-363 050-93/001 Roller presser with 30 mm diameter, 4.0 mm wide, toothed
- 91-363 052-93/001 Roller presser with 35 mm diameter, 4.0 mm wide, toothed



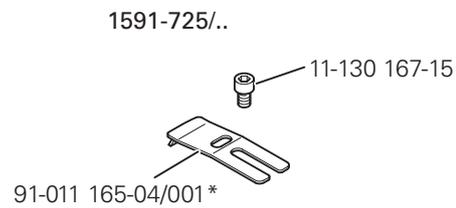
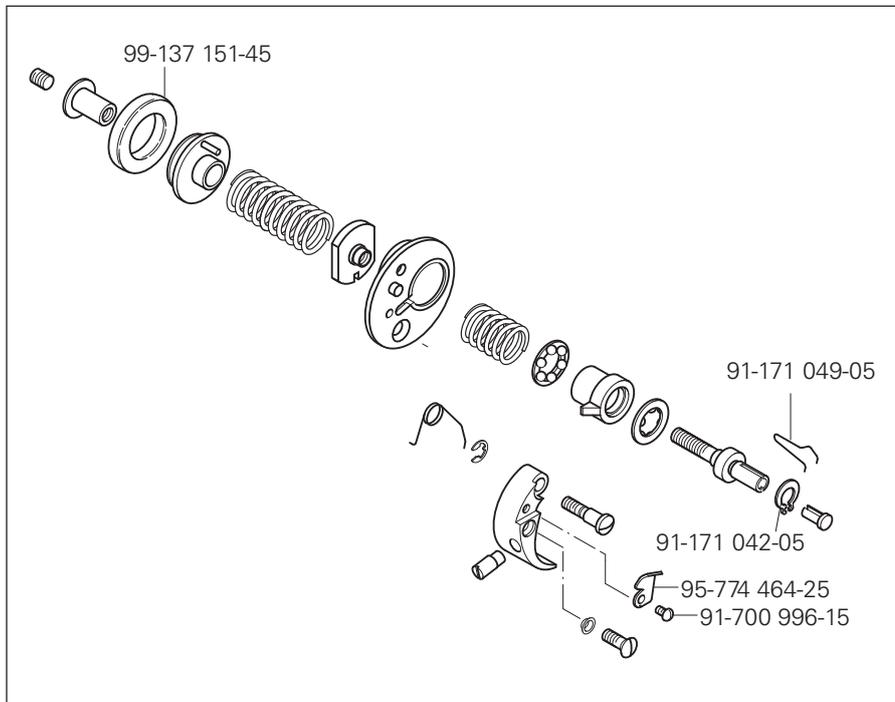
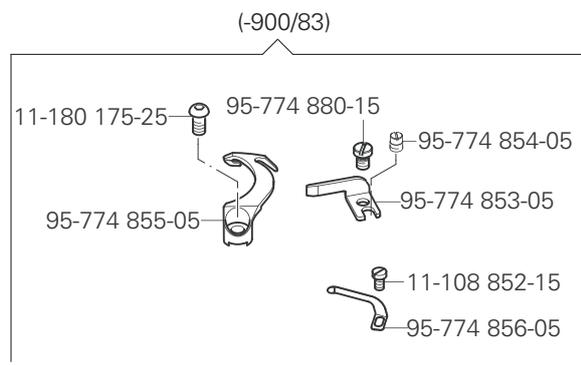
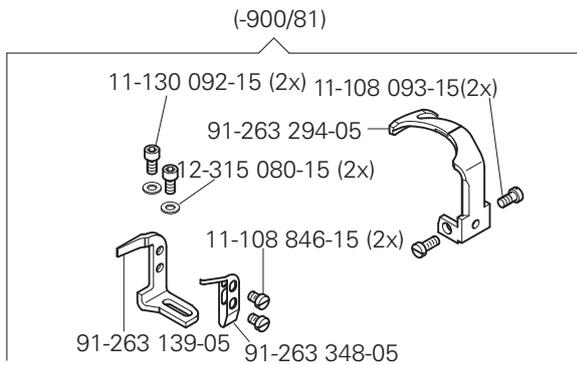
95-774 789-05



- 91-263 490-91 B
- 91-263 495-91 C



Wear and Tear Parts



* See parts list for other knives



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