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

# 6 001 000
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/de/service/download/index.php.

As an alternative to the internet download the adjustment manual can also be ordered in book form under part no. 296-12-18 617/002.

The reprinting, copying or translation of PFAFF Instruction Manuals, whether in whole or in part, is only permitted with our previous authorization and with written reference to the source.

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1 Safety

1.01 Directives

This machine is constructed in accordance with the European regulations contained in the conformity and manufacturer’s declarations.

In addition to this Instruction Manual, also observe all generally accepted, statutory and other regulations and legal requirements 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 jewelry 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

A working area of 1 meter is to be kept free both in front of and behind the machine while it is in operation so that it is always easily accessible.

Never reach into the sewing area while sewing!
Danger of injury by the needle!

Never leave objects on the table while adjusting the machine settings! Objects can become trapped or be slung away! Danger of injury!

Only operate the machine with cover 1 closed!
Danger of injury from the rotating take-up lever!

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

Do not operate the machine without start inhibitor 3!
Danger of injury if the machine is started accidentally!

Do not operate the machine without cover 4!
Danger of injury from moving parts!
Proper use

2 Proper use

The PFAFF 1114 is a high-speed, zigzag sewing machine with bottom feed and a large hook.

The machine is used for producing zigzag lockstitch seams in the clothing and linen industry.

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!
Specifications

3 Specifications

3.01 General specifications ▲

Stitch type: ................................................................. 301 / 304 (zigzag lockstitch)
Needle system: .............................................................. DP x 5

Needle size in 1/100 mm
Version A: ................................................................. 60 - 70
Version B: ................................................................. 80 - 100

Presser foot clearance
with hand lever: ......................................................... 5.5 mm
with automatic presser foot lift: ...................................... 6.0 mm
with knee lever: .......................................................... 10.0 mm

Clearance width: ......................................................... 300 mm
Clearance height: ........................................................ 125 mm

Bedplate dimensions: ............................................... 517 x 178 mm

Sewing head dimensions:
Length: ................................................................. ca. 595 mm
Width: ................................................................. ca. 230 mm
Height (above table): .................................................. ca. 335 mm

Max. stitch length: ...................................................... 5.0 mm
Max. speed: .............................................................. 5000 spm◆

Max. zigzag stitch width: .............................................. 8.0 mm

Connection data:
Operating voltage: ..................................................... 230 V, ± 10%, 50/60 Hz
Max. power consumption: ............................................ 1.3 kVA
Fuse protection: .......................................................... 1 x 16 A, inert

Noise data:
Noise emission level at workplace with a sewing speed of 4000 spm: ....... $L_{PA} < 81.0$ 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. 53 kg
Gross weight of sewing head: ......................................... ca. 62 kg

▲ Subject to alterations
◆ Depending on the zigzag stitch, the maximum speed is reduced automatically within the pre-set maximum range.
◆ $k_{PA} = 2.5$ dB
## Specifications

### 3.02 Versions and subclasses

**Versions**

A: ............................................................................................................. for sewing fine materials

B: .............................................................................................................. for sewing medium-weight materials

**Subclasses**

- 900/93: ............................................................................................................. Thread trimmer
- 909/93: ............................................................................................................. Thread wiper
- 910/93: ............................................................................................................. Automatic presser foot lift
- 911/93: ............................................................................................................. Backtacking device
Disposal of Machine

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.
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:

- ![Symbol](image1.png) Note, information
- ![Symbol](image2.png) Cleaning, care
- ![Symbol](image3.png) Lubrication
- ![Symbol](image4.png) Maintenance, repairs, adjustment, service work (only to be carried out by technical staff)
7 Controls

7.01 On/off switch

- Switch the machine on or off by turning main switch 1.

7.02 Key on the machine head

- As long as key 1 is pressed during the sewing operation, the machine sews in reverse.
- When sewing shell stitches or programmed patterns, by pressing key 1 after a machine stop, the pattern is sewn in reverse, see Chapter 10.04 Mirror imaging shell stitches and programmed seam patterns.
7.03 Pedal

+1 = Sew
0 = Machine stop
-1 = Raise presser foot (for machines with -910/93)
-2 = Trim thread
   (for machines with -900/24)

Fig. 7 - 03

7.04 Lever for lifting the presser foot

- The presser foot is raised by turning lever 1.

Fig. 7 - 04
7.05 Knee lever

- By pressing the knee lever 1 in the direction of the arrow, the presser foot is raised.

Fig. 7 - 05

7.06 Reverse feed key

- As long as key 1 is pressed during the sewing operation, the machine sews in reverse.

Fig. 7 - 06
**Controls**

### 7.07 Stitch length adjustment wheel

- Set the required stitch length by turning adjustment wheel 1.

The stitch length setting can be read on the scale.

![Fig. 7 - 07](image)

### 7.08 Adjustment key for limiting the reverse stitch length

- By turning adjustment wheel 1, the stitch length for reverse sewing is limited.

![Fig. 7 - 08](image)
7.09 Thread wiper switch

(only on machines with thread wiper -909/93)

The thread wiper function is switched on or off by pressing switch 1.
7.10 Control panel

The control panel is used to call up machine functions for setting up the machine and for sewing operation, for entering parameter values and for reading error messages and service settings.

The control panel consists of the display 1 and the function keys described below. The display 1 consists of a two-line alphanumerical LCD display with 16 symbols per line. In addition special symbols are displayed which show the respective status of the function keys and the operating status of the machine. Each time a function key is operated, a signal tone is given to confirm the input. If the desired input is invalid, e.g. because the maximum parameter input value has been reached, a double signal tone is given.

7.10.01 Screen displays

- Activated functions are displayed with a triangular marking 2 below or next to the respective function key.
- In the sewing mode all relevant sewing data is displayed and can be changed directly, depending on the status of the machine, see also Chapter 10 Sewing.
- During the parameter input the selected parameter number with the corresponding value is displayed, see Chapter “10.07 Parameter settings”.

7.10.02 Function keys

The function keys described below are used basically to switch machine functions on and off.

If a corresponding value has to be set for the activated function, this is carried out with the corresponding +/- key.

By pressing and holding the corresponding +/- key, first the numerical value shown above the key is changed slowly to begin with. If the +/- key is held down longer, the value changes more quickly.
Start backtacks
- If this key is pressed, the backtack function at the beginning of the seam (start backtacks) is switched on or off. The number of forward stitches (A) or reverse stitches (B) for the start backtacks can be changed respectively by pressing the +/- key underneath. To convert from double backtack to single backtack, reset the number of stitches for the corresponding seam section. It is also possible to select 4 different special backtacks.

End backtacks
- If this key is pressed, the backtack function at the end of the seam (end backtacks) is switched on or off. The number of reverse stitches (C) or forward stitches (D) can be changed respectively by pressing the +/- key underneath. To convert from double backtack to single backtack, reset the number of stitches for the corresponding seam section. It is also possible to select 4 different special backtacks.

Needle position
- If this key is pressed the “needle raised after sewing stop” function is switched on or off. When the function is switched on, the needle positions at t.d.c. after sewing stops.

Foot position after stop
- If this key is pressed the “foot raised after sewing stop” function is switched on or off. When the function is switched on, the presser foot is raised after sewing stops.

Foot position after trimming
- If this key is pressed the “foot raised after thread trimming” function is switched on or off. When the function is switched on, the presser foot is raised after thread trimming.

Thread trimmer
- If this key is pressed the thread trimming function is switched on or off.

Stop at the left needle penetration point
- If this key is pressed, the corresponding function is switched on or off. When the function is switched on, the machine always positions at the left needle penetration point of the zigzag seam. The function is only carried out when the blind stitch function is switched off.

Stop at the right needle penetration point
- If this key is pressed, the corresponding function is switched on or off. When the function is switched on, the machine always positions at the right needle penetration point of the zigzag seam. The function is only carried out when the blind stitch function is switched off.

Straight stitch
- If this key is pressed, the corresponding function is switched on or off. When the function is switched on, the standard “straight stitch” pattern is sewn, see Chapter 10.02.01 Straight stitch.
Controls

Single zigzag
- If this key is pressed, the corresponding function is switched on or off. When the function is switched on, the standard “single zigzag” pattern is sewn, see Chapter 10.02.02 Zigzag stitches.

Two-stitch zigzag
- If this key is pressed, the corresponding function is switched on or off. When the function is switched on, the standard “two-stitch zigzag” pattern is sewn, see Chapter 10.02.02 Zigzag stitches.

Three-stitch zigzag
- If this key is pressed, the corresponding function is switched on or off. When the function is switched on, the standard “three-stitch zigzag” pattern is sewn, see Chapter 10.02.02 Zigzag stitches.

Right/left shell stitches
- If this key is pressed, the corresponding function is switched on or off. When the function is switched on, it is possible to choose and sew one of 4 patterns, see Chapter 10.02.03 Shell stitches.

Right/left blind stitches
- If this key is pressed, the corresponding function is switched on or off. When the function is switched on, the standard “right blind stitch” or “left blind stitch” pattern is sewn, see Chapter 10.02.04 Blind stitches.

PM
- If this key is pressed, the function for sewing programmed seam patterns is switched on or off. The parameters for the specific program are shown in the alphanumerical section of the display.

Menü
- Press this key to scroll through the input menus.

TE/Speed
- Press this key once in the sewing mode to call up the input menu for the maximum speed. If there is no input within 5 seconds, the sewing mode is called up again.

- Press this key twice (within 5 seconds) in the sewing mode to change to the parameter input function.

- By pressing this key when in the parameter input function, the altered values are stored and the sewing mode is called up.
Installation and commissioning

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

If the machine is delivered without a table, be sure to use a stand and table top that can hold the weight of the machine with its motor.
It is very important to ensure that the stand of the machine is firm and steady, also during sewing.

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.

For packing reasons the table top is in the lowered position. The table height is adjusted as described below.

8.01.01 Adjusting the table height

- Loosen screws 1 and 2 and set the table height as required.
- Firmly tighten screw 1.
- Set the required pedal position and tighten screws 2.
Installation and commissioning

8.01.02 Assembling the oil pan

- Insert rubber support 1.
- Insert bearing bushes 2 and fasten with nails.
- Place oil pan 3 in the table-top opening.
- Insert rubber pad 4 and fasten with nails.

Fig. 8 - 02
8.01.03 Mounting the sewing head

- Place both hinges 1 in the appropriate holes in the bedplate of the sewing head.
- Place the sewing head with hinges 1 into the back rubber pads.

8.01.04 Mounting the spool holder

- Mount the spool holder as shown in Fig. 8-05.
- Insert the spool holder into the hole in the table top and fasten it with the nuts enclosed.
Installation and commissioning

8.01.05 Table top cutout

Fig. 8 - 05
Installation and commissioning

8.01.06 Mounting the table top

Fig. 8 - 06

Mounting the table top

Table-top 906-7001-415 with cut-out

View: Underside table top

Speedcontrol unit

Control box P 320

Stand 906-3550-005/895

Cable duct 30x25x300 (2x)

Cable duct 906-3550-05895

(305 x 40)

(180 x 40)

(180 x 40)

(180 x 40)

(180 x 40)

(180 x 40)

(180 x 40)
8.01.07 Connecting the plug-in connections and earth cables

- Connect all plugs as labelled to the control box 1.
- Screw the earth cable from the sewing head and the main switch to earth point A.
- Connect earth point A to earth point B with earth cable 2.
- Screw the earth cable 3 from the motor to earth point B.
8.02 Commissioning

- Check the machine, especially the electrical leads, for any damage.
- Clean the machine thoroughly (see chapter 11 Care and maintenance).
- Have specialists ensure that the machine’s motor can be operated with the available electricity supply and that it is connected properly. If not, the machine must not be operated.
- When the machine is running, the balance wheel must turn towards the operator. See Chapter 8.04 Basic position of the machine drive unit.

Before commissioning the machine, remove cap 1 and plug 2 and fill in oil up to marking 3, see Chapter 11.03 Oiling the machine.

Close the hole again with plug 2.

Cap 1 is used as a transport lock and must not be fitted during operation!

8.03 Switching the machine on/off

- Switch the machine on (see Chapter 7.01 On/Off switch).
- Carry out a test run.
8.04 Basic position of the machine drive unit

- 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 (value ‘11’).

- By pressing the corresponding +/- key, select parameter ‘800’ (rotation direction of the motor).

- By pressing the corresponding +/- key, select “ON” (reverse direction).
By pressing the corresponding +/- key, select parameter "700”.

- Turn the balance wheel in the sewing direction until the descending needle is level with the top edge of the needle plate.

- By pressing the corresponding ± key, set the top value at “0”.

- Conclude the adjustment of the sewing motor by pressing the TE/Speed key.

### 8.05 Checking the function of the start inhibitor

- Switch the machine on at the main switch and tilt back the sewing head. The error message "E 009" must appear on the control panel.

- If the message does not appear, check the setting of start inhibitor 1.

- Set the sewing head in an upright position again and acknowledge the error signal by pressing the TE/Speed key. The machine is ready for operation again.
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.

- Raise needle bar.
- Loosen screw 1 and insert needle 2 until you feel it stop.
- Insert needle 2 as far as possible.
The long needle groove must be facing forwards.
- Tighten screw 1.
9.02 Winding the bobbin thread / adjusting the preliminary thread tension

- Place empty bobbin 1 on bobbin winder spindle 2.
- Thread the thread as shown in Fig. 9.02 and wind it around bobbin 1 a few times in a clockwise direction.
- Set the preliminary thread tension by turning milled screw 3.
- Press lever 4 in the direction of the arrow until it clicks into place.

**Bobbin 1 is filled during sewing.**

Setting the amount of thread wound on the bobbin:
- Loosen screw 5.
- Adjust stop 6 so that the bobbin winder switches off automatically when the thread is still approx. 1 mm from the edge of the bobbin.
- Tighten screw 5.
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:
1. Raise latch 1 and remove bobbin case 2.

Inserting the bobbin case:
1. Press bobbin case 2 until you feel it snap into the bobbin case base.

---

9.04 Threading the bobbin case / adjusting the bobbin thread tension

1. Insert bobbin 1 in bobbin case 2.
2. First pass the thread through the slit 3 under spring 4.
3. Then guide the thread through the slit 5 into opening A or B.

Depending on the workpiece, when threading it is possible to choose between opening A or B:

- A: for fine materials
- B: for normal materials

4. Adjust the thread tension by turning screw 6.
5. Use the tools provided.

---

Fig. 9 - 03
Fig. 9 - 04
Switch off the machine!
Danger of injury due to unintentional starting of the machine!

Only operate the machine with cover 1 closed!
Danger of injury from the rotating take-up lever!

- Thread the machine as shown in Fig. 9-05.
- Wind the needle thread once round the needle thread tension unit 2.
- Adjust the needle thread tension by turning milled screw 3 and 4.

Milled screw 4 is used to adjust the thread tension during trimming.
Setting the stitch length

- Turn the stitch length adjustment wheel 1 according to the stitch length required.

The stitch length setting can be read on the scale.

Fig. 9 - 06
9.07 Adjusting the width of the zigzag stitch

- Switch on the machine.

● Press the single zigzag key.

- Alter the value for the zigzag stitch width by pressing the corresponding +/- key.

The zigzag stitch is the distance between the left and right penetration points of the zigzag pattern.

In the standard "straight stitch" pattern (no zigzag) the symbol for the zigzag stitch width does not appear on the display.
Adjusting the stitch position

- Switch on the machine.

- Change the value for the stitch position by pressing the corresponding +/- key.

The zero position of the stitch position is in the centre of the zigzag stitch. The stitch position can be moved to the left (negative value) or to the right (positive value), in relation to the stitch position reference point, see Chapter 9.09 Changing the stitch position reference point.

If, after the stitch position has been entered, the seam pattern is outside the valid seam area, the stitch position will be ignored during sewing.

Fig. 9-08

Figures:
- x: max. zigzag stitch width
- s: stitch position
9.09 Changing the stitch position reference point

It is only possible to change the stitch position reference point in service level "C", see Chapter "10.07.01 Selecting the user level".

- Press the TE/Speed key twice to call up the input mode. The status text “TE” appears on the display and the pedal functions are locked to prevent the machine starting up accidentally.

- Select the desired parameter "004" by pressing the corresponding +/- keys and change the value accordingly.

- By pressing the corresponding TE/Speed key the value is taken over and the sewing mode is called up.

Parameter "004" (stitch position reference point)

Value = 1

Value = 2

Value = 3

Fig. 9 - 09
9.10 Entering the start and end backtacks

- Switch on the machine.

- By pressing the corresponding +/- key select the desired value for the number of forward stitches (A) of the start backtacks.

- By pressing the corresponding +/- key select the desired value for the number of reverse stitches (B) of the start backtacks, or the programmed special backtacks "A", "B", "C" or "D" for the seam start.

- By pressing the corresponding +/- key select the desired value for the number of reverse stitches (C) of the end backtacks.

- By pressing the corresponding +/- key select the desired value for the number of forward stitches (D) of the end backtacks, or the programmed special backtacks "E", "F", "G" or "H" for the seam end.

- By pressing the Menu key the standard pattern input menu is called up again.
10 Sewing

In the sewing mode all the relevant settings for the sewing operation are shown on the display. Functions can be switched on and off by pressing a key. Values for the most important parameters can be changed directly.

The PM key is used to switch between manual sewing of standard patterns and individually programmed patterns.

The program numbers 1 – 99 can each be allocated to a pattern. In addition the special backtacks A – D for the seam start and E - H for the seam end are also available.

10.01 Manual sewing

After the machine has been switched on and the manual sewing mode has been selected with the PM key, the desired standard pattern can be selected with the corresponding function keys, see Chapter 10.02 Standard patterns. The parameters of the selected standard pattern appear on the display and can be changed directly with the corresponding +/- key.

When the menu key is pressed, the display for entering the backtack values appears, see Chapter 9.10 Entering start and end backtacks.

To change from one input menu to another, press the Menu key.

Further functions in the manual sewing mode, also see Chapter 7.10.02 Function keys:

- Start backtacks on/off
- "Foot raised after trimming" on/off
- End backtacks on/off
- Thread trimming on/off
- "Needle raised after sewing stop" on/off
- Stop in left penetration point
- "Foot raised after sewing stop" on/off
- Stop in right penetration point
- TE/Speed

Sewing is carried out with the pedal functions, see Chapter 7.03 Pedals.
10.02 Standard patterns

After the manual sewing mode has been called up, the standard patterns listed below are available. Press the corresponding function key to select the desired standard pattern. The standard pattern selected is marked with a triangular marking opposite the respective function key. The values of the most important parameters are shown on the display and can be changed directly with the +/- keys.

The following standard patterns are available:

- Straight stitch
- Single zigzag
- Two-stitch zigzag
- Three-stitch zigzag
- Right shell stitches
- Left shell stitches
- Right blind stitch
- Left blind stitch

10.02.01 Straight stitch

- Switch on the machine.
- Call up the standard pattern for "straight stitch".

- Change the stitch position value by pressing the corresponding +/- key.
10.02.02 Zigzag stitches

- Switch on the machine.

- Call up the standard pattern for "single zigzag", two-stitch zigzag" or "three-stitch zigzag.

- Change the value for the zigzag stitch width by pressing the corresponding +/- key.

- Change the stitch position value by pressing the corresponding +/- key.

10.02.03 Shell stitches

- Switch on the machine.

- Call up the standard pattern for "right shell stitches" or "left shell stitches".

- Call up the desired seam pattern by pressing the corresponding +/- key:
  - Value "1": 24-stitch standard shell stitch
  - Value "2": 24-stitch crescent-shaped shell stitch
  - Value "3": 24-stitch constant width shell stitch
  - Value "4": 12-stitch constant width shell stitch

  If there is an "A" after the value, the selected seam pattern being sewn is then sewn in reverse, see Chapter 10.04 Mirror imaging shell stitches and programmed seam patterns.

- Change the value for the zigzag stitch width by pressing the corresponding +/- key.

- Change the value for the stitch position by pressing the corresponding +/- key.
10.02.04  Blind stitches

- Switch on the machine.
- Call up the standard pattern for "right blind stitch" or "left blind stitch".

- Change the number of straight stitches required by pressing the corresponding +/- key.
- Change the value for the zigzag stitch width by pressing the corresponding +/- key.
- Change the value for the stitch position by pressing the corresponding +/- key.
10.03 Sewing programmed seam patterns

After the machine has been switched on and the sewing of programmed seam patterns has been selected with the PM key, the display for the selection of the program number is shown. The program number of the selected seam pattern (zigzag pattern or special back-tacks) appears on the display together with the number of the programmed penetration points. The desired seam pattern is selected with the corresponding +/- key.

Further functions in the programmed seam pattern sewing mode, also see Chapter 7.10.02

Function keys:

- Start backtacks on/off
- End backtacks on/off
- "Needle raised after sewing stop" on/off
- "Foot raised after sewing stop" on/off
- Thread trimming on/off
- TE/Speed
- "Foot raised after thread trimming" on/off

Sewing is carried out with the pedal functions, see Chapter 7.03 Pedals..

After the Menu key is pressed, the machine switches to the seam pattern input mode. The selected seam pattern is adapted or a new seam pattern is created, see Chapter 10.03.01

Altering/creating seam patterns.
Altering/creating seam patterns

- Switch on the machine and call up the sewing mode for programmed patterns.
- Select the desired program number by pressing the corresponding +/- key.
- Call up the seam pattern input function by pressing the Menu key.

![Image of machine interface]

**Caution!**
Raise the needle to its top position before beginning with the seam pattern input.

- Select the number of desired penetration points by pressing the corresponding +/- key.
- Select the sewing direction for the selected penetration point by pressing the corresponding +/- key.
- Enter the value for the needle penetration position (zigzag stitch) by pressing the corresponding +/- key.

![Image of machine interface with values inputted]

When entering the seam pattern, the last stitch is defined with the thread trimming key.
On the display the letters "END" appear instead of the value for the penetration position. The last penetration point of the seam pattern is the one before the penetration point defined with "END". If the seam pattern end has been defined, it is not possible to enter any further penetration points.
In empty programs, the first penetration point is always defined with "END". In order to create the seam pattern, this definition must first be switched off with the Thread trimming key.
- The seam pattern must not have more reverse stitches than forward stitches.
- At least 2 stitches in one direction must be entered.
- Seam patterns with reverse stitches only are not permitted.

If one of the above conditions is not fulfilled, the error message "ERROR 41" appears on the display, and one straight stitch is sewn.

10.04  Mirror imaging shell stitches and programmed seam patterns

When the machine stops during sewing shell stitches and programmed seam patterns, the mirror imaging function is called up by pressing key 1. In this function the seam pattern is sewn in reverse (mirrored). If key 1 is pressed again, the mirror imaging function is switched off again.

Depending in which direction the workpiece is turned, the position of the needle must be altered accordingly, see Chapter 7.10.02 Function keys.
10.05 Error messages

In case of a malfunction, the text "ERROR" appears on the display together with an error code and short instructions. An error message may be caused by incorrect settings, defective elements or seam patterns, as well as by overload conditions. For the explanation of the error code, see Chapter "10.06 Explanation of error messages".

- Eliminate the error.
- Acknowledge the elimination of the error by pressing the TE/Speed key.

10.06 Explanation of the error messages

<table>
<thead>
<tr>
<th>Display</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Error 1</td>
<td>Pedal operated when machine turned on</td>
</tr>
<tr>
<td>Error 4</td>
<td>Reference point of zigzag drive not found</td>
</tr>
<tr>
<td>Error 5</td>
<td>Control panel</td>
</tr>
<tr>
<td>Error 6</td>
<td>Sewing head recognition system</td>
</tr>
<tr>
<td>Error 9</td>
<td>Start inhibitor at standstill (sewing head tilted)</td>
</tr>
<tr>
<td>Error 34</td>
<td>Brake path too short</td>
</tr>
<tr>
<td>Error 35</td>
<td>Communication with sewing drive unit (parameter limit)</td>
</tr>
<tr>
<td>Error 36</td>
<td>Init not ready</td>
</tr>
<tr>
<td>Error 41</td>
<td>Incorrect number of reverse stitches in program</td>
</tr>
<tr>
<td>Error 60</td>
<td>Power supply 24V too low</td>
</tr>
<tr>
<td>Error 61</td>
<td>Power supply 24V too high</td>
</tr>
<tr>
<td>Error 63</td>
<td>Power supply unit overload (24V)</td>
</tr>
<tr>
<td>Error 64</td>
<td>Mains voltage</td>
</tr>
<tr>
<td>Error 69</td>
<td>No stepping motor start signal</td>
</tr>
<tr>
<td>Error 70</td>
<td>Motor blocked</td>
</tr>
<tr>
<td>Error 71</td>
<td>Incremental transmitter plug</td>
</tr>
<tr>
<td>Error 92</td>
<td>Start inhibitor when motor running (sewing head tilted)</td>
</tr>
<tr>
<td>Error 151</td>
<td>System</td>
</tr>
<tr>
<td>Error 155</td>
<td>Sewing motor</td>
</tr>
<tr>
<td>Error 156</td>
<td>Timeout sewing motor</td>
</tr>
<tr>
<td>Error 157</td>
<td>Ramp end</td>
</tr>
<tr>
<td>Error 158</td>
<td>Stepping frequency of stepping motor too high</td>
</tr>
<tr>
<td>Error 170</td>
<td>Incorrect transmission</td>
</tr>
<tr>
<td>Error 171</td>
<td>Invalid zero mark</td>
</tr>
<tr>
<td>Error 175</td>
<td>Interior starting error</td>
</tr>
<tr>
<td>Error 222</td>
<td>Dead man's control (communication with sewing drive unit)</td>
</tr>
</tbody>
</table>
10.07 Parameter settings

10.07.01 Selecting the user level

- Switch on the machine

Press the TE/Speed key twice to call up the input mode.

Select parameter "798" by pressing the corresponding +/- keys.

Select the desired user level by pressing the corresponding +/- keys:
- "0" = operator level A
- "1" = mechanic level B
- "11" = service level C

The selected user level is shown on the display (see circle).

By pressing the TE/Speed key, the value is taken over and the sewing mode is called up.

After the main switch has been switched off, the machine changes automatically to user level A.
10.07.02  Example of a parameter input

- Switch on the machine.

Press the TE/Speed key twice to call up the input mode.

The status text “TE” appears on the display and the pedal functions are locked to avoid the machine starting up accidentally.

- Select the desired parameter, e.g. parameter “116” (soft start stitches) by pressing the corresponding +/- keys.

- Select the desired parameter value, e.g. “8” (number of soft start stitches) by pressing the corresponding +/- keys.

- By pressing the TE/Speed key, the value is taken over and the sewing mode is called up.
### List of parameters

Only appropriately trained staff may change the set values in the parameters of user levels "B" and "C".

<table>
<thead>
<tr>
<th>Group</th>
<th>Parameter</th>
<th>Description</th>
<th>User level</th>
<th>Setting range</th>
<th>Set value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>003</td>
<td>Pattern-No</td>
<td>C</td>
<td>0 - 199</td>
<td>1</td>
</tr>
<tr>
<td>0</td>
<td>004</td>
<td>Stitch position reference point</td>
<td>C</td>
<td>1 - 3</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(1 = left; 2 = centre; 3 = right)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>005</td>
<td>Start position</td>
<td>C</td>
<td>1 - 2</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(1 = left; 2 = right)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>006</td>
<td>Stop position</td>
<td>C</td>
<td>0 - 2</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0 = optional; 1 = left; 2 = right)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>007</td>
<td>Shell pattern right</td>
<td>C</td>
<td>1 - 4</td>
<td>1</td>
</tr>
<tr>
<td>0</td>
<td>008</td>
<td>Shell pattern left</td>
<td>C</td>
<td>1 - 4</td>
<td>1</td>
</tr>
<tr>
<td>0</td>
<td>020</td>
<td>Max.value left needle position [1/10 mm]</td>
<td>C</td>
<td>-50 - 50</td>
<td>-40</td>
</tr>
<tr>
<td>0</td>
<td>021</td>
<td>Max.value right needle position [1/10 mm]</td>
<td>C</td>
<td>-50 - 50</td>
<td>40</td>
</tr>
<tr>
<td>1</td>
<td>101</td>
<td>Control panel key signal</td>
<td>A</td>
<td>OFF - ON</td>
<td>ON</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(OFF = tone off; ON = tone on)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>102</td>
<td>Start backtacks forwards</td>
<td>C</td>
<td>0 - 9</td>
<td>3</td>
</tr>
<tr>
<td>1</td>
<td>103</td>
<td>Start backtacks backwards</td>
<td>C</td>
<td>1 - 13</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(10 – 13 refer to special backtacks A – D)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>105</td>
<td>Speed start backtacks</td>
<td>B</td>
<td>200 - 1500</td>
<td>900</td>
</tr>
<tr>
<td>1</td>
<td>106</td>
<td>Speed start backtacks</td>
<td>C</td>
<td>OFF - ON</td>
<td>OFF</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(ON = using pedal; OFF = constant)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>108</td>
<td>End backtacks backwards</td>
<td>C</td>
<td>1 - 13</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(10 – 13 refer to special backtacks E – H)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>109</td>
<td>End backtacks forwards</td>
<td>C</td>
<td>0 - 9</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>220</td>
<td>Speed limit level 12 [min⁻¹]</td>
<td>A</td>
<td>300 - 5000</td>
<td>4600</td>
</tr>
<tr>
<td>2</td>
<td>221</td>
<td>Speed limit for seam program [min⁻¹]</td>
<td>B</td>
<td>300 - 5000</td>
<td>4600</td>
</tr>
<tr>
<td>2</td>
<td>222</td>
<td>Constant speed for seam program [min⁻¹]</td>
<td>B</td>
<td>300 - 5000</td>
<td>3000</td>
</tr>
<tr>
<td>6</td>
<td>601</td>
<td>Trimming</td>
<td>B</td>
<td>OFF - ON</td>
<td>ON</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(ON = yes; OFF = no)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Sewing

<table>
<thead>
<tr>
<th>Group</th>
<th>Parameter</th>
<th>Description</th>
<th>User level</th>
<th>Setting range</th>
<th>Set value</th>
</tr>
</thead>
</table>
| 6     | 602       | ON = trimming with pedal position -1  
         OFF = trimming with pedal position -2 | C          | OFF - ON    | OFF       |
| 603   | ON = pedal rest after trimming  
         OFF = immed. start after seam end | C          | OFF - ON    | ON         |
| 604   | ON = forwards after half end backtack  
         OFF = backwards too | C          | OFF - ON    | ON         |
| 605   | Speed display  
         (ON = yes; OFF = no) | B          | OFF - ON    | OFF         |
| 606   | Speed level 1 (min.) | B          | 30 - 550    | 180         |
| 607   | Speed level 12 (max.) | B          | 300 - 5000  | 4700        |
| 609   | Trimming speed\[min⁻¹\] | B          | 60 - 500    | 180         |
| 624   | Start inhibitor  
         (ON = on; OFF = off) | C          | OFF - ON    | ON         |
| 642   | Presser foot switch-on time (tacting) [ms] | C          | 10 - 200    | 120         |
| 643   | Feed conversion switch-on time (tacting) [ms] | C          | 10 - 200    | 100         |
| 651   | Automatic lowering of the presser foot  
         (ON = yes; OFF = no) | C          | OFF - ON    | ON         |
| 660   | Bobbin thread count-down counter on  
         (ON = switched on OFF = switched off) | A          | OFF - ON    | OFF         |
| 665   | Start inhibitor  
         ON = when contact closed  
         OFF = when contact open | C          | OFF - ON    | ON         |
| 668   | Thread wiper  
         (ON = on; OFF = off) | B          | OFF - ON    | ON         |
| 7     | 700       | Logical zero mark [increments] | B          | 0 - 127    | 45         |
| 702   | Needle position [increments]  
         (needle lowered) | B          | 0 - 63      | 45         |
| 703   | Needle position [increments]  
         (take-up lever raised) | B          | 100 - 127   | 117        |
| 705   | Needle position [increments]  
         (end of trimming signal) | B          | 80 - 127    | 117        |
| 706   | Needle position [increments]  
         (start of trimming signal) | B          | 0 - 80      | 45         |
<table>
<thead>
<tr>
<th>Group</th>
<th>Parameter</th>
<th>Description</th>
<th>User level</th>
<th>Setting range</th>
<th>Set value</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>707</td>
<td>Needle position [increments] (start thread tension release)</td>
<td>B</td>
<td>0 - 80</td>
<td>66</td>
</tr>
<tr>
<td></td>
<td>710</td>
<td>Needle position [increments] (needle raised without trimming)</td>
<td>B</td>
<td>80 - 127</td>
<td>115</td>
</tr>
<tr>
<td></td>
<td>715</td>
<td>On period thread wiper [ms]</td>
<td>B</td>
<td>0 - 2550</td>
<td>120</td>
</tr>
<tr>
<td></td>
<td>718</td>
<td>Standstill brake moment</td>
<td>B</td>
<td>0 - 100</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>719</td>
<td>Presser foot holding current</td>
<td>B</td>
<td>0 - 100</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>720</td>
<td>Trimming holding current</td>
<td>B</td>
<td>0 - 100</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>721</td>
<td>Feed converter holding current</td>
<td>C</td>
<td>0 - 100</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>722</td>
<td>Acceleration ramp (1 = flat; 20 = steep)</td>
<td>C</td>
<td>1 - 20</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>723</td>
<td>Brake ramp (1 = flat; 30 = steep)</td>
<td>C</td>
<td>4 - 30</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>729</td>
<td>Start delay after lowering the presser foot [ms]</td>
<td>B</td>
<td>0 - 2550</td>
<td>120</td>
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<tr>
<td></td>
<td>730</td>
<td>Lifting delay for presser foot after seam end [ms]</td>
<td>B</td>
<td>0 - 2550</td>
<td>0</td>
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<tr>
<td></td>
<td>760</td>
<td>No. of stitches to bobbin thread monitor (machine stop at b.d.c. needle bar)</td>
<td>A</td>
<td>0 - 50000</td>
<td>50000</td>
</tr>
<tr>
<td></td>
<td>761</td>
<td>Extension thread tension release/ thread pulling [ms]</td>
<td>B</td>
<td>0 - 2550</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>797</td>
<td>Hardware test (ON = yes; OFF = no)</td>
<td>B</td>
<td>OFF - ON</td>
<td>OFF</td>
</tr>
<tr>
<td></td>
<td>798</td>
<td>Access level (0 = Level A; 1 = level B; 11 = level C)</td>
<td>A</td>
<td>0 - 255</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>799</td>
<td>Machine class (1 = 1114)</td>
<td>C</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>800</td>
<td>Rotation direction of motor, as seen on motor shaft (ON = anti-clockwise / OFF = clockwise)</td>
<td>C</td>
<td>OFF - ON</td>
<td>ON</td>
</tr>
<tr>
<td></td>
<td>805</td>
<td>Rotation direction of stepping motor 2</td>
<td>C</td>
<td>OFF - ON</td>
<td>OFF</td>
</tr>
<tr>
<td>Group</td>
<td>Parameter</td>
<td>Description</td>
<td>User level</td>
<td>Setting range</td>
<td>Set value</td>
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<td>8</td>
<td>832</td>
<td>Needle position NIS [increments] (needle in material)</td>
<td>C</td>
<td>0 - 127</td>
<td>0</td>
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<td>833</td>
<td>Needle position NAS [increments] (needle out of material)</td>
<td>C</td>
<td>0 - 127</td>
<td>50</td>
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<td></td>
<td>834</td>
<td>Reference point zigzag drive [1/10mm]</td>
<td>C</td>
<td>-50 - 50</td>
<td>0</td>
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<td>880</td>
<td>Starting current main drive</td>
<td>C</td>
<td>1 - 10</td>
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<td>Filter parameter for positioning control unit</td>
<td>C</td>
<td>0 - 12</td>
<td>5</td>
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<td>884</td>
<td>Proportional amplification of speed control unit (general)</td>
<td>C</td>
<td>1 - 50</td>
<td>35</td>
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<td>Integral amplification of speed control unit</td>
<td>C</td>
<td>0 - 50</td>
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<td>Proportional amplification of positioning control unit</td>
<td>C</td>
<td>1 - 50</td>
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<td>Differential amplification of positioning control unit</td>
<td>C</td>
<td>1 - 50</td>
<td>30</td>
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<tr>
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<td>889</td>
<td>Time for positioning control (0 = always)</td>
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<td>0 - 2550</td>
<td>200</td>
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<td>Proportional amplification of superordinate speed control unit for the standstill brake</td>
<td>C</td>
<td>1 - 50</td>
<td>25</td>
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<td>Proportional amplification of the subordinate speed control unit for the standstill brake</td>
<td>C</td>
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<td>20</td>
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<td>9</td>
<td>901</td>
<td>Trimming release speed</td>
<td>C</td>
<td>30 - 500</td>
<td>300</td>
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<td>Current of stepping motor axis 2</td>
<td>C</td>
<td>31 - 63</td>
<td>48</td>
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<td>Current for current reduction of stepping motor axis 2</td>
<td>C</td>
<td>15 - 31</td>
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<td>Current reduction time stepping motor axis 2</td>
<td>C</td>
<td>0 - 1000</td>
<td>500</td>
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<tr>
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<td>978</td>
<td>Stepping motor 2: Current relief time</td>
<td>C</td>
<td>0 - 990</td>
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</tbody>
</table>
11 Care and maintenance

11.01 Maintenance intervals

Cleaning ............................................................... daily, several times if in continuous use
Checking the oil level .......................................................... daily, before operation

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

11.02 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.

To avoid breakdowns, the following cleaning work is recommended for single shift operation:
● Clean hook compartment and needle area of sewing head several times daily.
● Clean the entire machine at least once a week.
Switch off the machine!
Danger of injury if the machine is started accidentally!

Only use oil with a mean viscosity of 10.0 mm²/s at 40°C and a density of 0.847 g/cm³ at 15°C.

- Tilt the machine back.
- Remove plug 1 and pour oil into the hole until it reaches marking 2.
- Before commissioning the machine and after long down periods, pour a few extra drops of oil into the hook race, see arrow in enlarged illustration.

Use both hands to set the sewing head upright!
Danger of crushing between the sewing head and the table top!

We recommend PFAFF sewing machine oil, part no. 280-1-120 105.
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/de/service/download/index.php3. As an alternative to the internet download the parts lists can also be ordered in book form under part no. 296-12-18 816.