



939U, 3704

Operating Instructions



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

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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, sewing 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-original 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



Caution!

Do not operate without 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



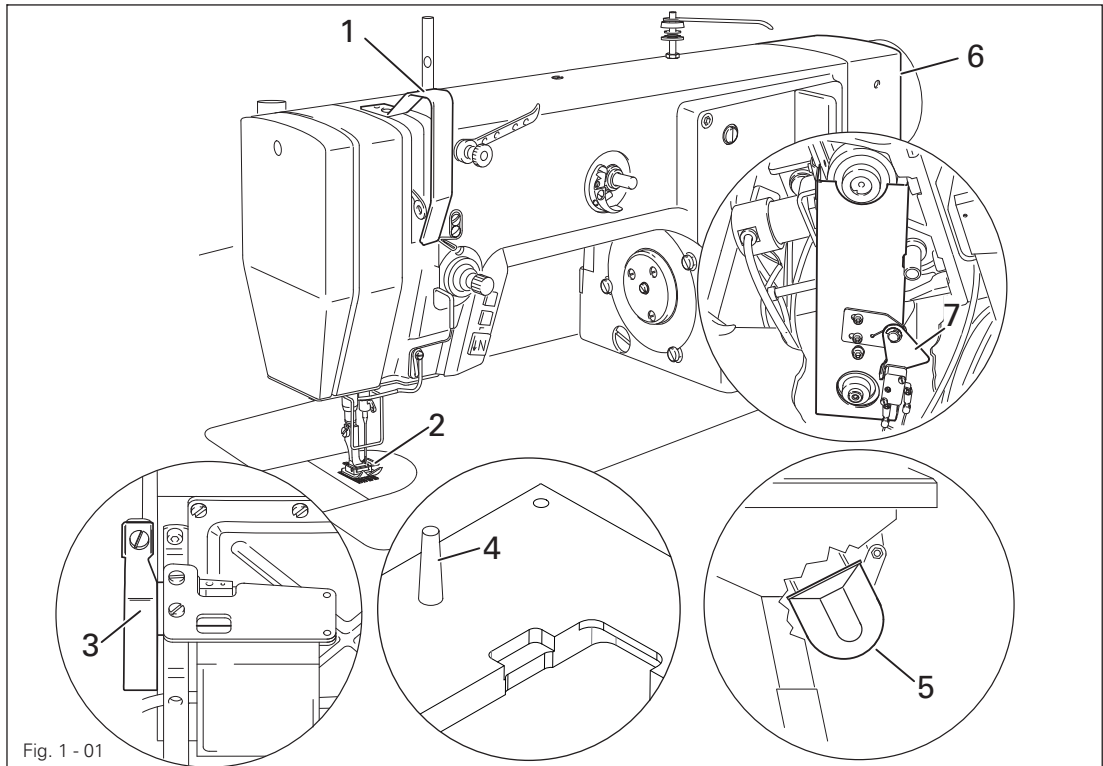
A work area of **1 m** must be kept free in front of and behind the machine to ensure unobstructed access at all times.



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!



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 finger guard **2!**
Risk of injury from the needle!



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!



Do not operate machines with an underfloor motor without the belt guard **5 and 6!**
Risk of injury from the driving belt!



Do not operate machines with a flange motor without the start inhibitor **7!**
Risk of injury due to accidental machine start-up!

2 **Proper Use**

The **939 U** is a high-speed zigzag seamer with a differential bottom feed and mechanical change-over from zigzag to **3-stitch zigzag**.

The machine is used for sewing lockstitch zigzag seams in the clothing and underwear industries.

The **3704-2/02** is an engineered workplace with a high-speed zigzag seamer. The machine is used for collar operations in the outerwear industry.

Intended operation: Sewing undercollars onto top collars, with a simulated hand switch and incorporating fullness

The **3704-2/03** is an engineered workplace with a high-speed zigzag seamer. The machine is used for collar operations in the outerwear industry.

Intended operation: Sewing undercollars onto top collars, with a zigzag seam and incorporating fullness



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 ▲

3.01 939 U; 3704-2/..

Stitch type:.....	304 (zigzag lockstitch)
Needle system:	
939 U / 3704-2/03:	438
3704-2/02:.....	134 EL
Needle size in 1/100 mm:	
Model B:	80 - 100
Clearance beneath the sewing foot:.....	7 mm
Passage width:	260 mm
Clearance height:	130 mm
Sewing head dimensions:	
Length:.....	approx. 550 mm
Width:	approx. 180 mm
Height (above table):.....	approx. 300 mm
Bed plate dimensions:	476 x 177 mm
Max. stitch length	
939 U-6/01:	4.5 mm
939 U-32/23 N24 and 3704-2/..:	❶
Max. zigzag stitch width	6.0 mm
Max. speed/min ⁻¹ :	
939 U	4500 ♦
3704	5500 ♦
Connection data:	
Operating voltage:	230 V ± 10 %, 50/60 Hz
Motor data:	see motor instruction manual
Working air pressure:.....	6 bar
Air consumption:.....	approx. 0.8 l / working cycle
Noise data:	
Noise emission level at workplace with a sewing speed of 3600 min ⁻¹ :	L _{pA} < 80 dB(A) ■
(Noise measurement in accordance with DIN 45 635-48-A-1, ISO 11204, ISO 3744, ISO 4871)	
Net weight of sewing head:	approx. 48 kg
Gross weight of sewing head:.....	approx. 56 kg

▲ Subject to alterations

♦ Depending on the material, workstep and stitch length

■ K_{pA} = 2.5 dB

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

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!

Transport, Packaging and Storage

5 **Transport, 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 consist 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:



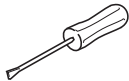
Note, information



Cleaning, care



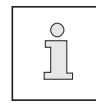
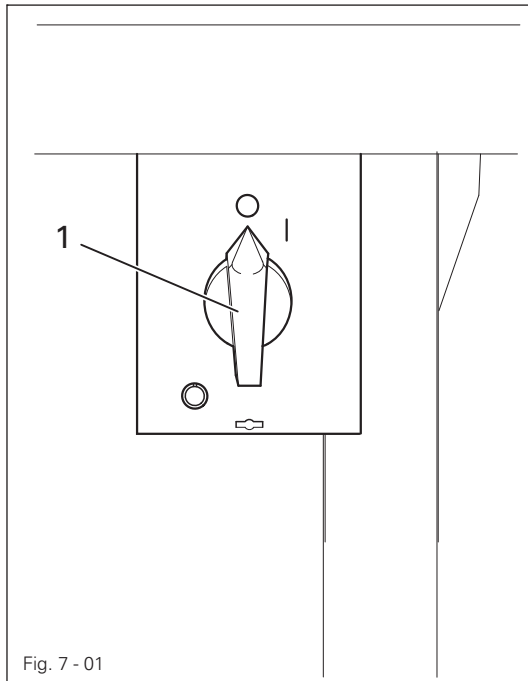
Lubrication



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

7 Operating Controls

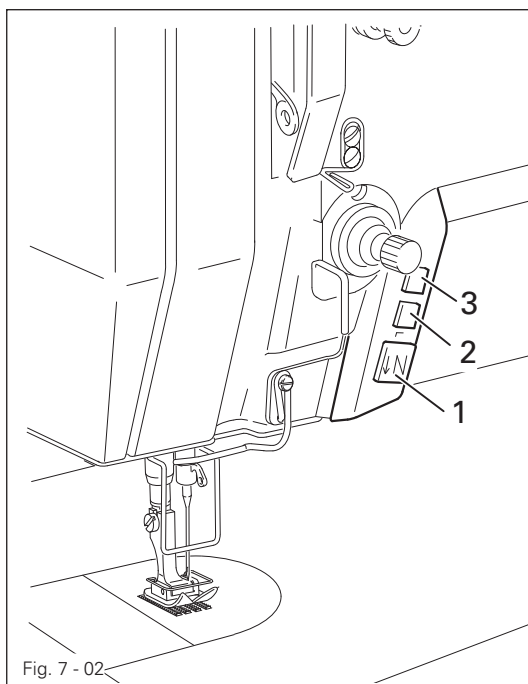
7.01 Main switch



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 (only in machines with a flange motor)



- The machine sews backwards if the key 1 is pressed during the sewing operation.
- Pressing the key 2 moves the machine into the change-over position (for changing over from zigzag to multi-stitch or multi-stitch to zigzag stitch) .
- The key 3 can be assigned through the corresponding parameter settings (see separate parameter list).

7.03 Adjusting levers for zigzag stitch and needle position

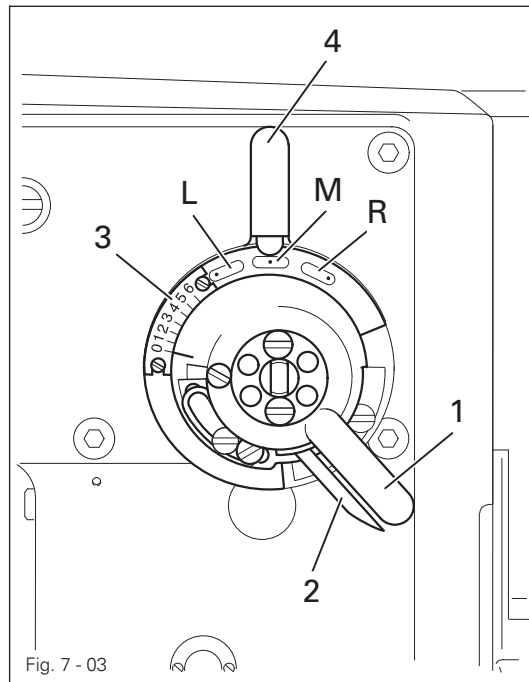


Fig. 7 - 03

- The adjusting lever 1 is used to adjust the zigzag stitch width.
- The locking lever 2 must be pressed against the adjusting lever 1 to adjust the adjusting lever.



The set zigzag stitch width is shown on the scale 3.

- The required needle position can be set by turning the needle position adjusting lever 4.

L = Needle position on the left
M = Needle position in the centre
R = Needle position on the right

7.04 Reverse-feed key

939 U

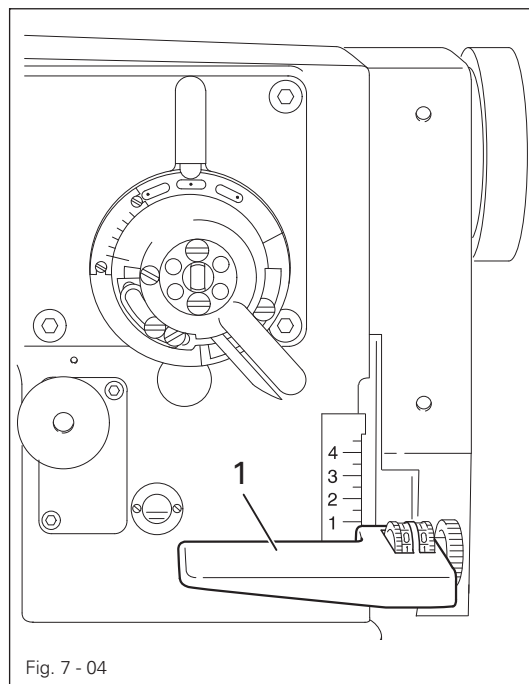


Fig. 7 - 04

3704

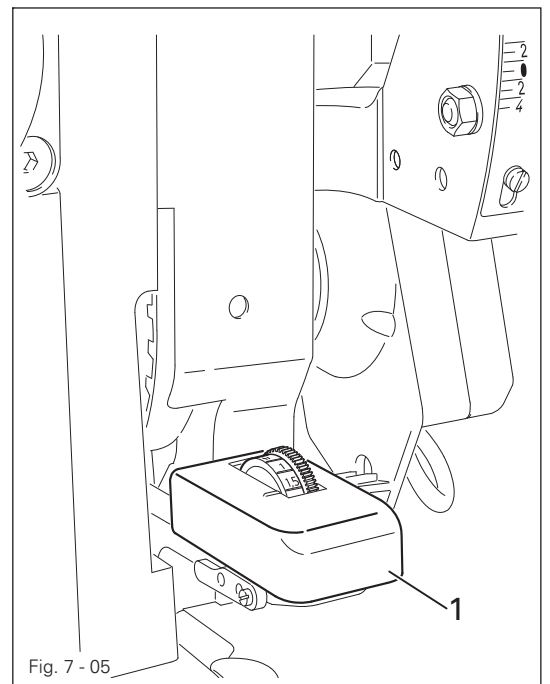


Fig. 7 - 05

- The machine sews backwards if the reverse-feed key 1 is pressed while sewing.

Operating Controls

7.05 Stitch length adjusting wheel

939 U

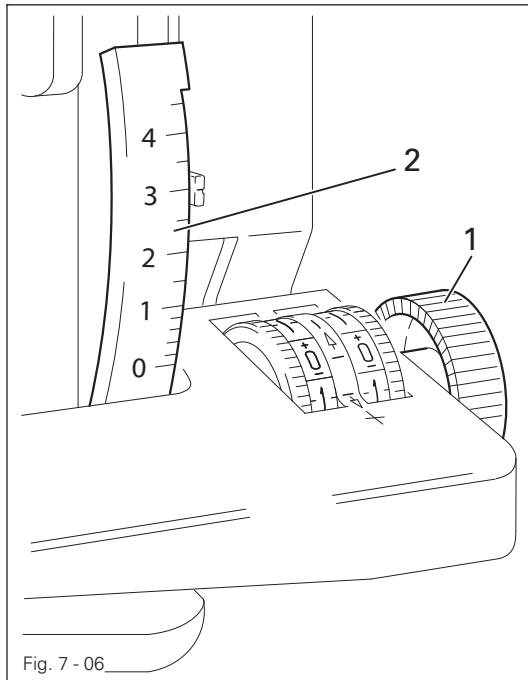


Fig. 7 - 06

3704

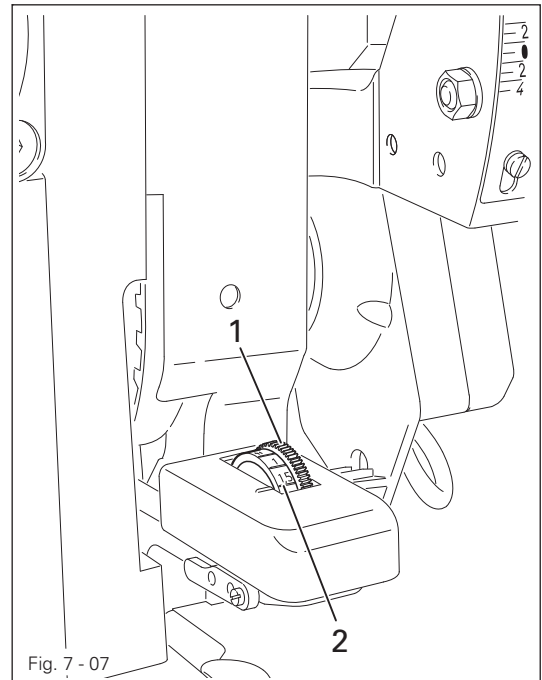


Fig. 7 - 07

- The stitch length is set by turning the stitch length adjusting wheel 1.
- The stitch length setting is shown on the scale 2.

7.06 Thumb wheels for the differential feed (with the 939 U)

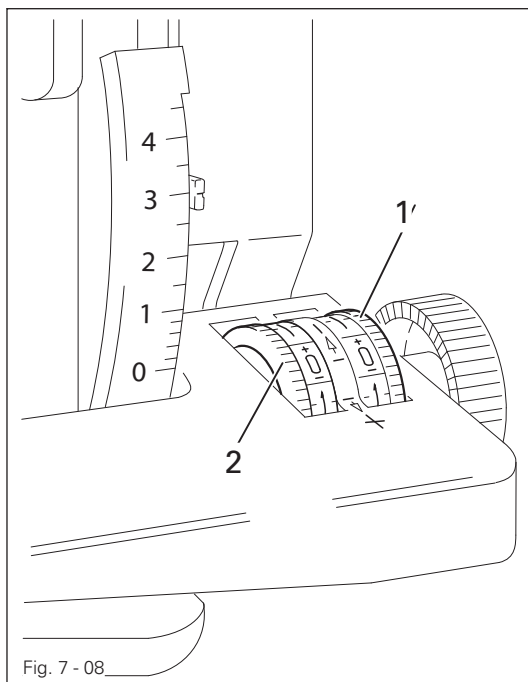
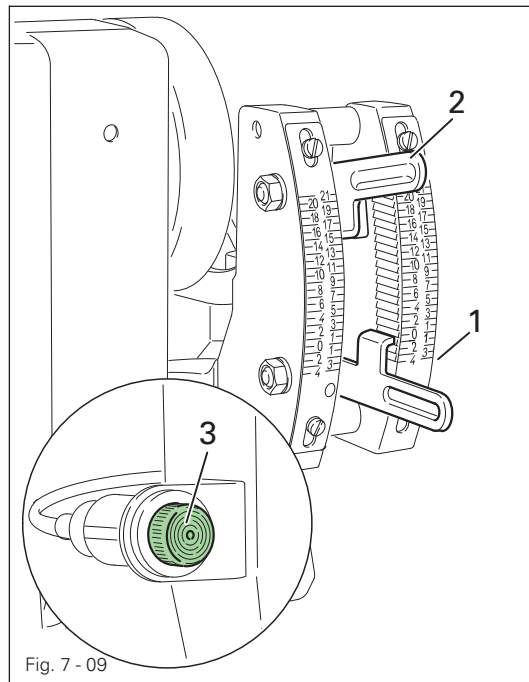


Fig. 7 - 08

- Thumb wheel 1 (1st setting)
Use the thumb wheel 1 to set the value at which the machine should mainly work.
Green section = Incorporate fullness
Red section = Stretch
Zero position = Normal sewing
(Main and differential feed work with the same feed motion)
- Thumb wheel 2 (2nd setting)
A value that differs from the first setting can be set on the thumb wheel 2 and can be accessed via the second pedal (see **chapter 7.13 Pedal**).

7.07 Adjusting lever for the differential feed (with the 3704)

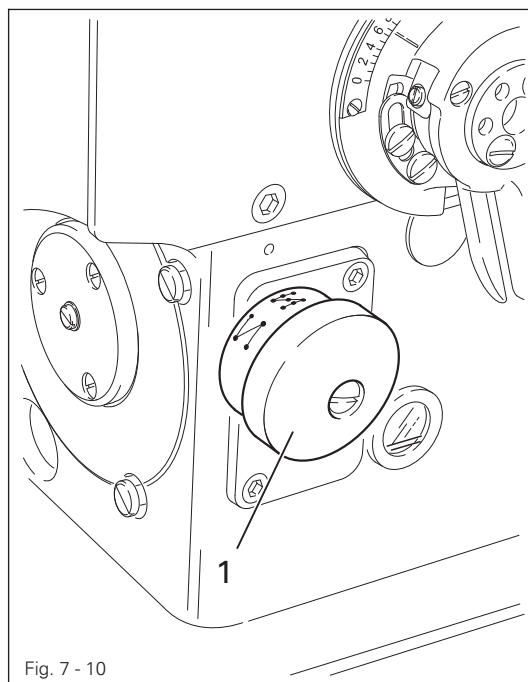


- **Lever 1 (standard value)**
Use the lever 1 to set the value at which the machine should mainly work.
- **Lever 2 (fullness)**
A value that differs from the first setting can be set on the lever 2. This value can be accessed via the knee switch, see **chapter 7.12 Knee switch**.



The display unit 3 on the machine head is green if the machine is in the standard setting.

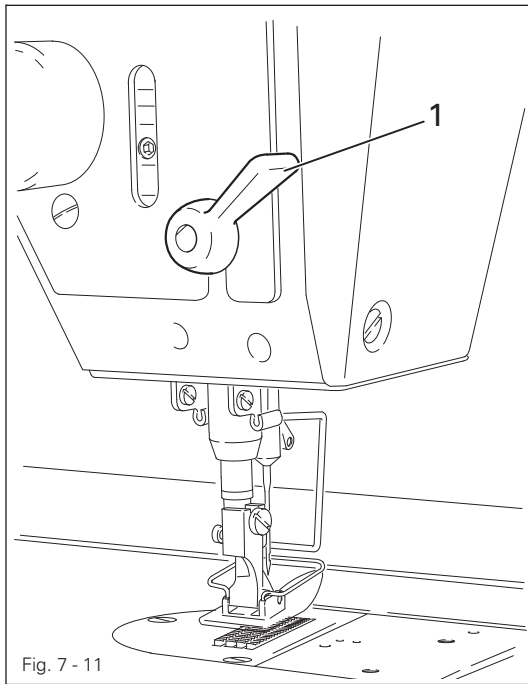
7.08 Adjusting wheel for multi-stitches and zigzag stitches (only on the 939 U)



Before starting to sew, make sure that the adjusting wheel 1 is engaged! Only make the change-over when the machine is at a standstill! Danger of machine damage!

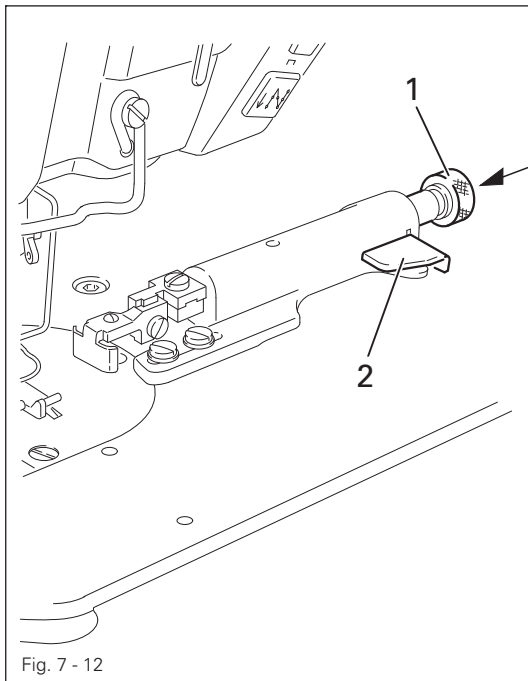
- Turning the adjusting wheel 1 switches between multi-stitches and zigzag stitches, see **chapter 9.10 Setting multi-stitches and zigzag stitches**.

7.09 Lever to raise the sewing foot



- Turning the hand lever 1 raises the sewing foot.

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



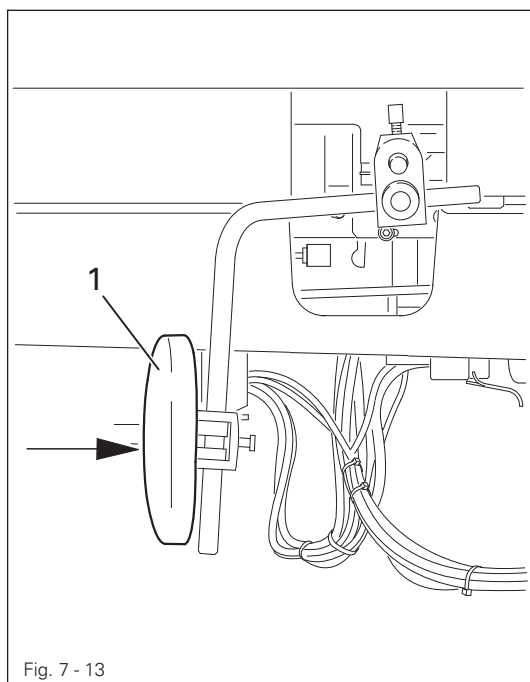
Switching on the edge guide:

- Press the button 1 in the direction of the arrow until it engages.

Switching off the edge guide:

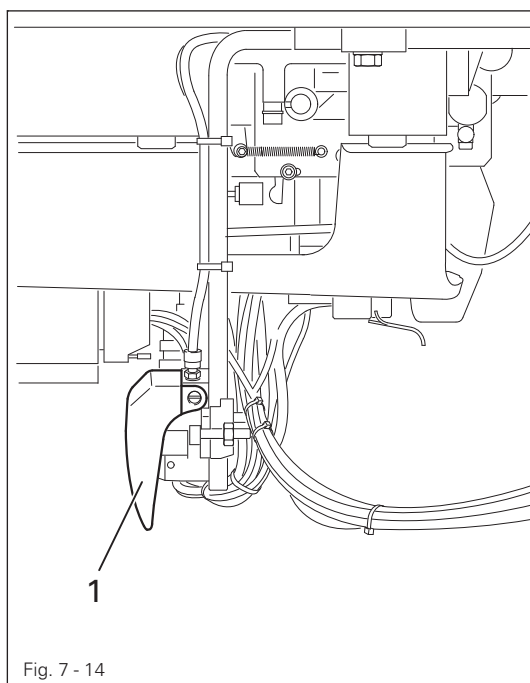
- Press the key 2.

7.11 Knee lever (only on the 939 U)



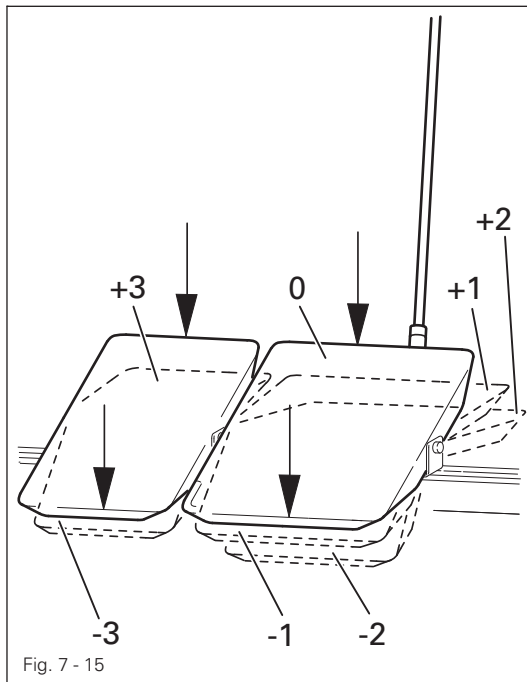
- The knee lever 1 is used to raise the sewing foot in machines without automatic presser foot lift.

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



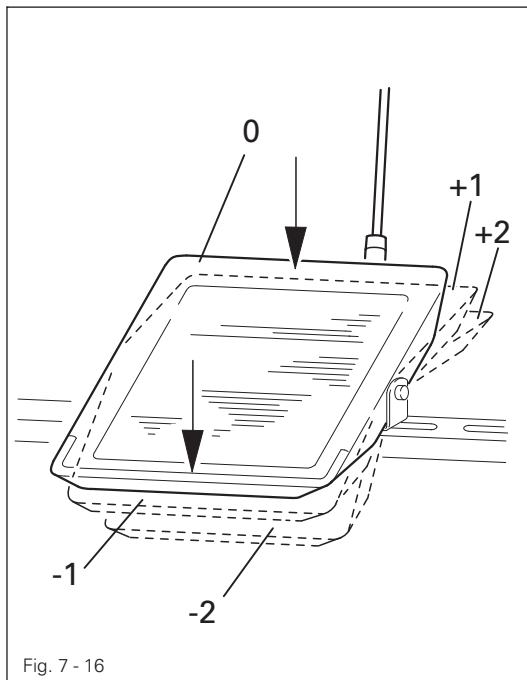
- Pressing the knee switch 1 switches between the two differential feed settings.

7.13 Pedal (on the 939 U)



- With the main switch turned on
 - 0 = Neutral position
 - +1 = Lower sewing foot
(in machines with automatic presser foot lift -910/..)
 - +2 = Sewing
 - 1 = Raise sewing foot
(in machines with automatic presser foot lift -910/..)
 - 2 = Trim thread
(in machines with thread trimmer -900/..)
 - +3 and +2 = Access the second feed motion value in machines without -918/14
 - 3 and +2 = Reverse sewing

7.14 Pedal (on the 3704-2/..)



- With the main switch turned on
 - 0 = Neutral position
 - +1 = Lower sewing foot
 - +2 = Sewing
 - 2 = Trim thread

7.15 Control panel (only in machines with P40 CD)

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

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.

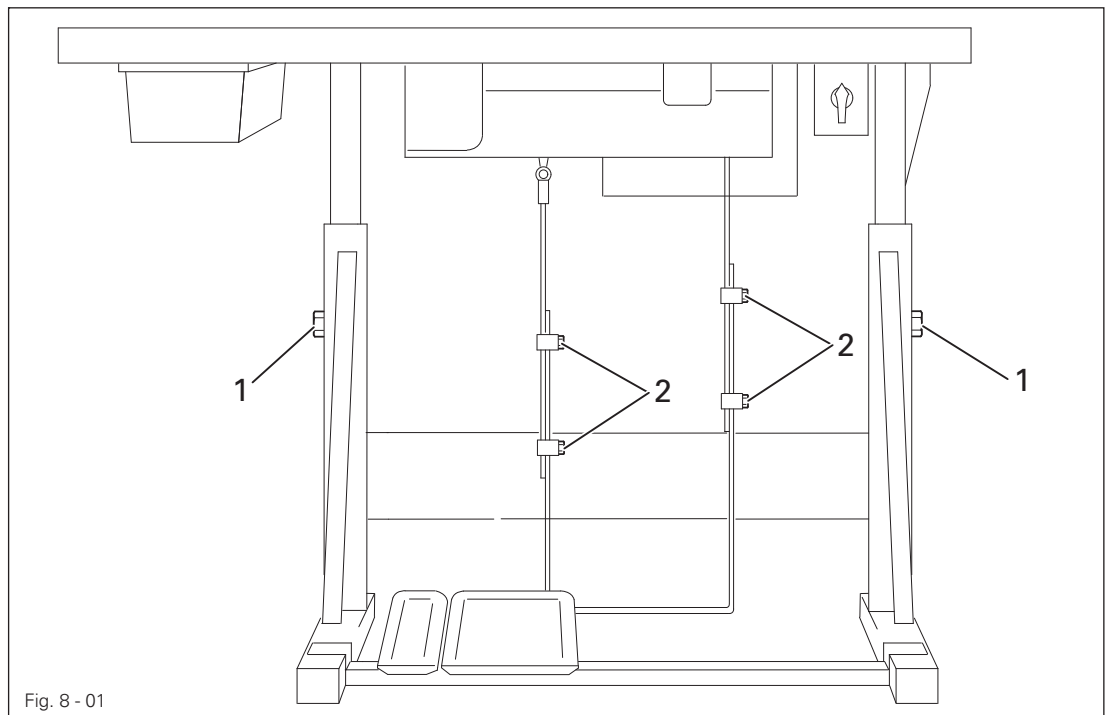
8.01 Set-up

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



- 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.

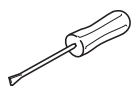
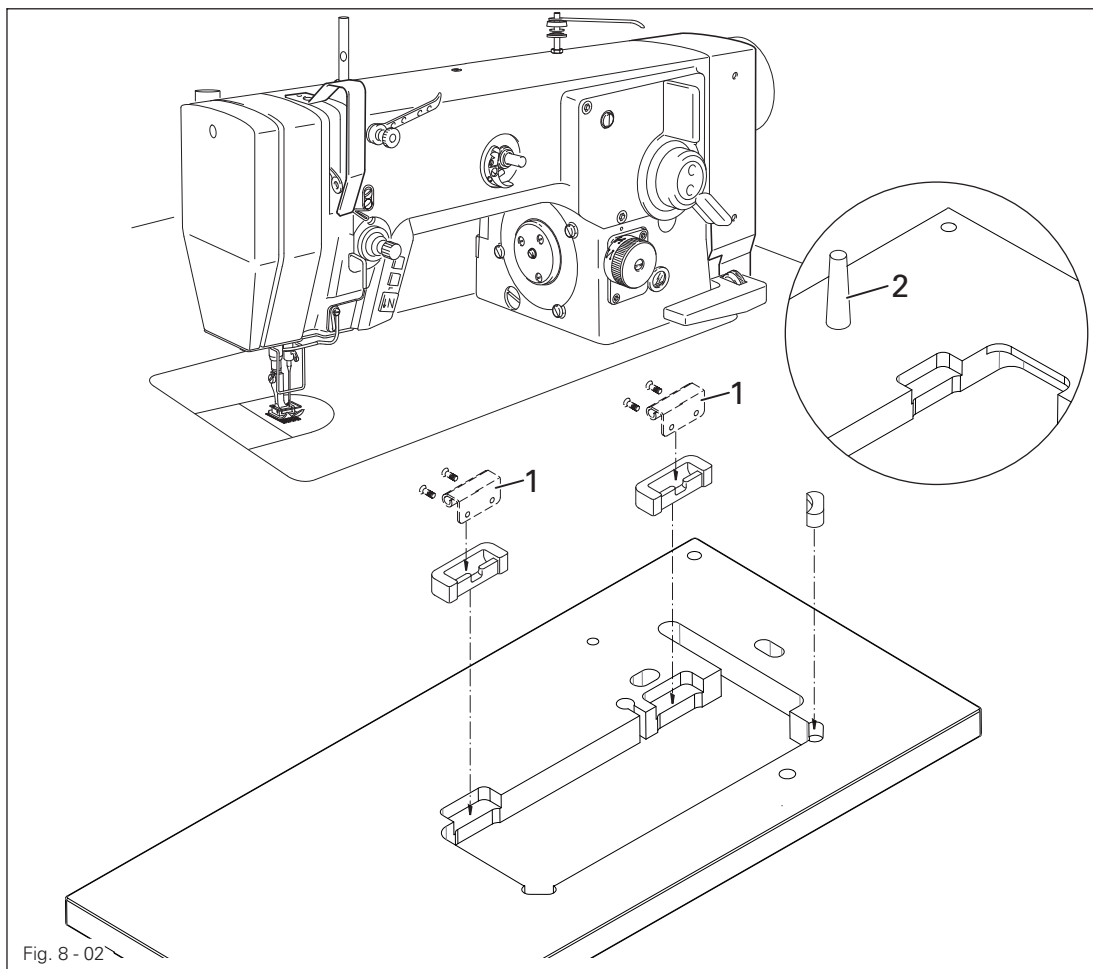


Adjust the stand on both sides evenly to prevent it tilting.

- The stand must have all four feet firmly on the ground to make sure it is positioned securely.
- Firmly tighten the screws **1**.
- Adjust and tighten the desired pedal position on the screws **2**.

Set-up and Initial Start-up

8.01.02 Inserting the sewing machine into the stand



- The hinge 1 is 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 flange motor

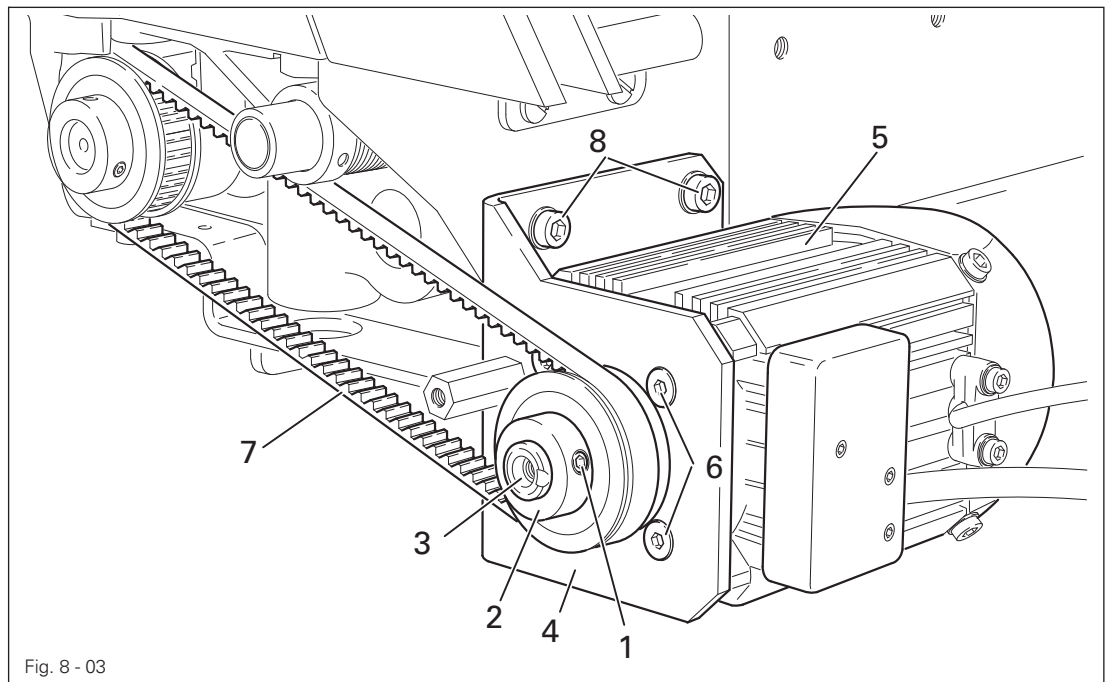


Fig. 8 - 03

- Loosen the screws 1 and pull the toothed belt wheel 2 off the motor shaft 3.
- Screw the bearing plate 4 onto the motor 5 with the screws 6, as shown in Fig. 8-04.
- Slide the toothed belt wheel 2 onto the motor shaft 3 and tighten with the screws 1.
- Tilt the bearing plate 4 with the motor 5 slightly to the side and lay the toothed belt 7 onto the toothed belt wheels.
- Align the bearing plate 4 of the motor 5 with the machine housing and attach with the screws 8.

8.01.04 Mounting the flange motor belt guard

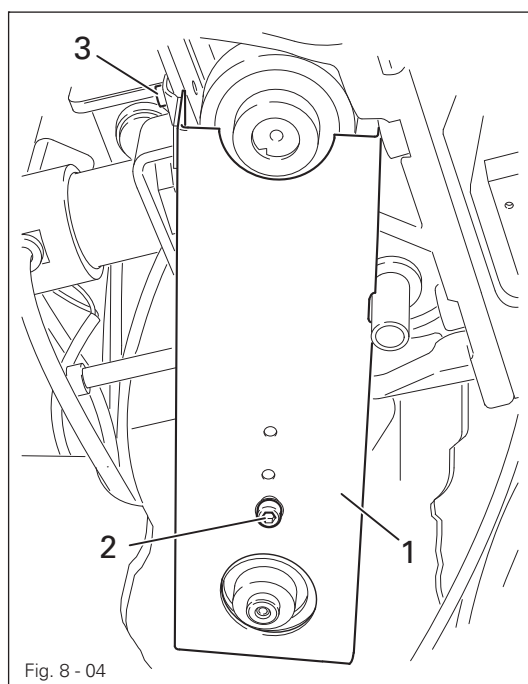
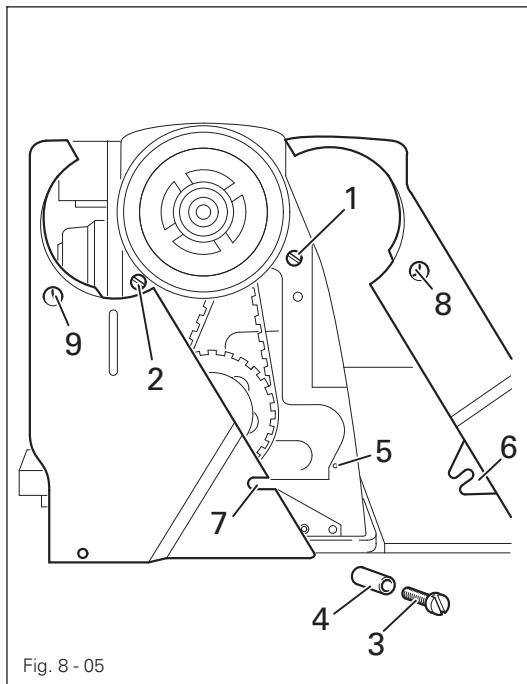


Fig. 8 - 04

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

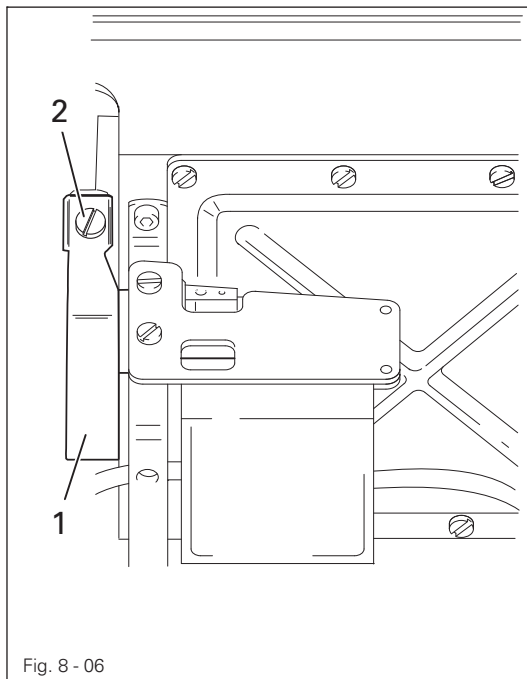
Set-up and Initial Start-up

8.01.05 Mounting the machine cover



- Slide the left and right belt guard halves with their slots behind the heads of the screws 1 and 2.
- Screw the screw 3 with the spacing bush 4 into the threaded hole 5.
- Align the belt guard making sure that the lug 6 is behind the slot 7 and in front of the spacing bush 4.
- Tighten the screws 1 and 2 (can be accessed through the holes 8 and 9) as well as the screw 3.
- In addition, the motor cover should be mounted in accordance with the motor manufacturer's instructions when using an external motor.

8.01.06 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!

8.01.07 Mounting the start inhibitor

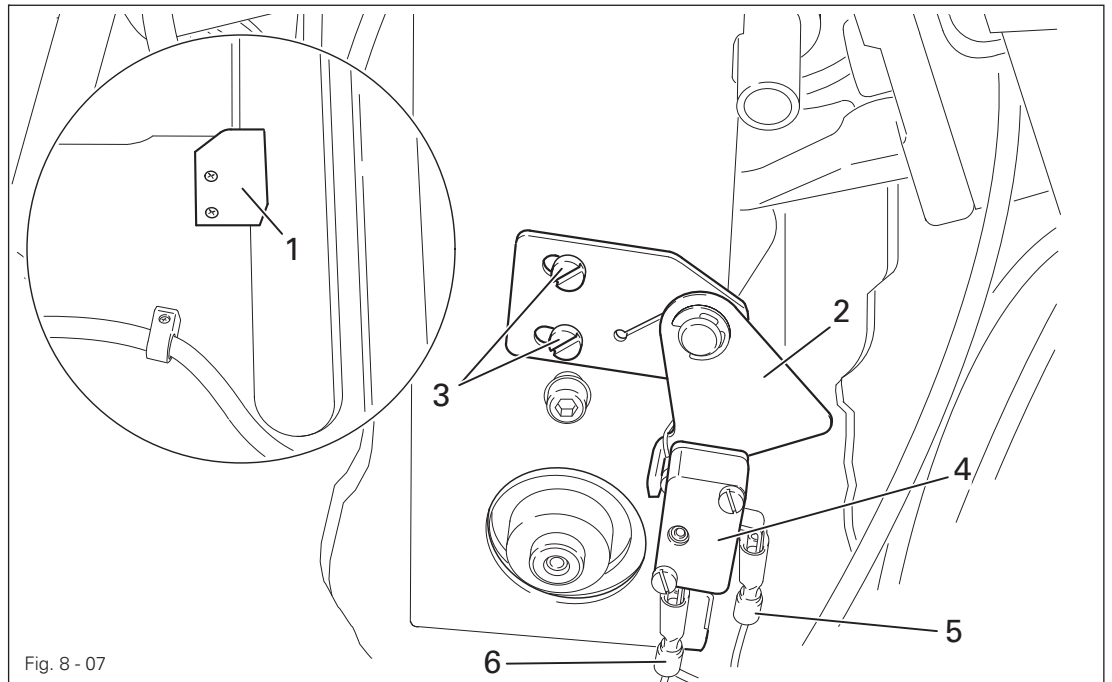


Fig. 8 - 07

- For machines delivered without a table, the plate 1 included in the accessories must be mounted underneath the table top in such a way that the switching plate 2 lays on the plate 1 when the sewing head is tilted upright.
- Loosen the screws 3 and align the switch 4 in such a way that the switching plate 2 is free when the sewing head is on its side, and pressed when the sewing head is upright.
- Plug the connectors 5 and 6 into the switch 4.

Perform a functional test on the start inhibitor

- Switch on the machine at the main switch and move the sewing head backwards. The error message "Error 9" must appear on the control panel.
- The alignment of the switch 4 must be checked if no error message appears.
- The machine is ready for operation again after righting the sewing head.

8.02 Connecting the plug-in connections and ground cable

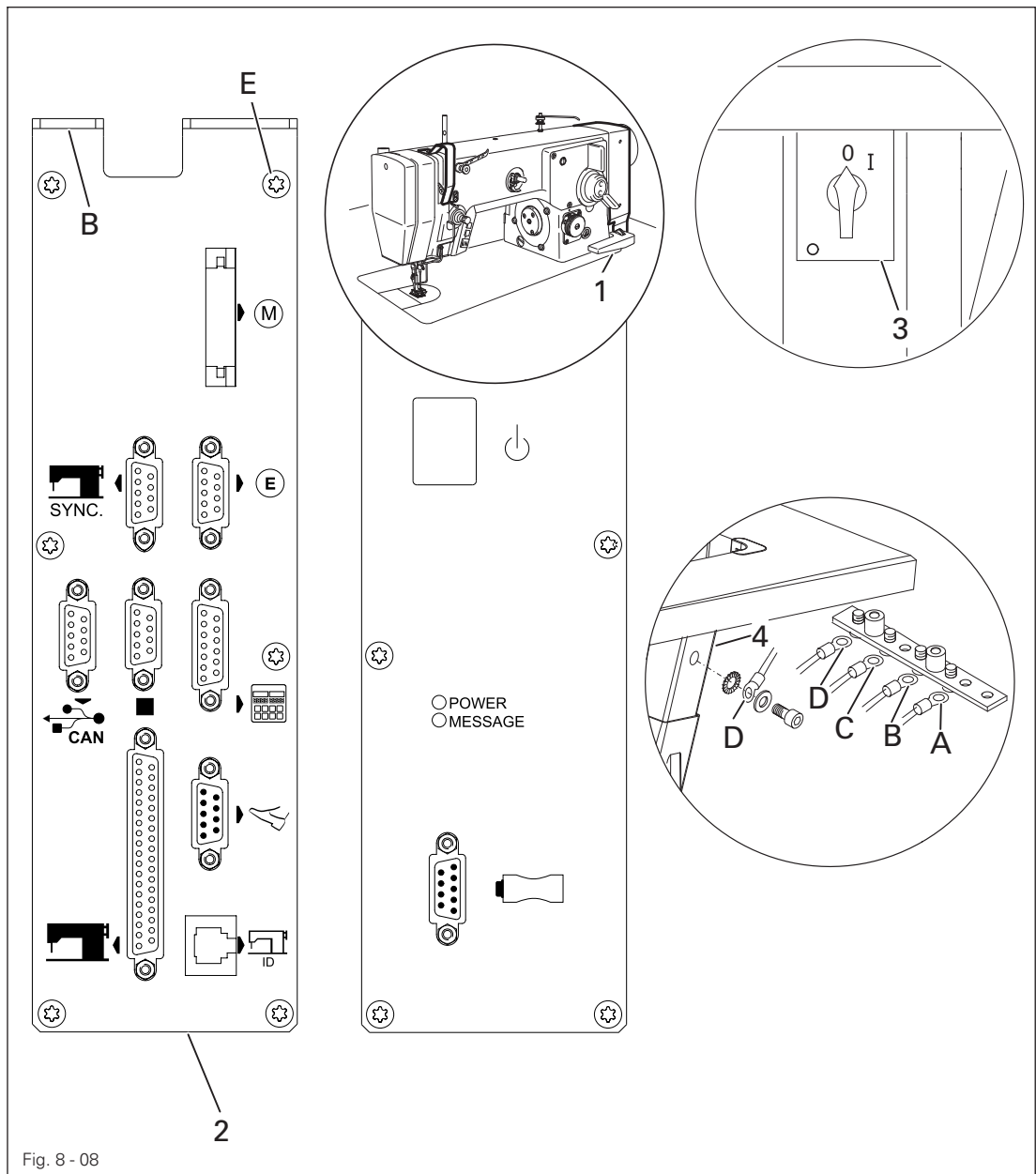
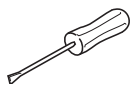


Fig. 8 - 08



- Insert all plugs on the control box 2 in accordance with their designation.
- Insert the "motor" into the bushing E and the bushing M.

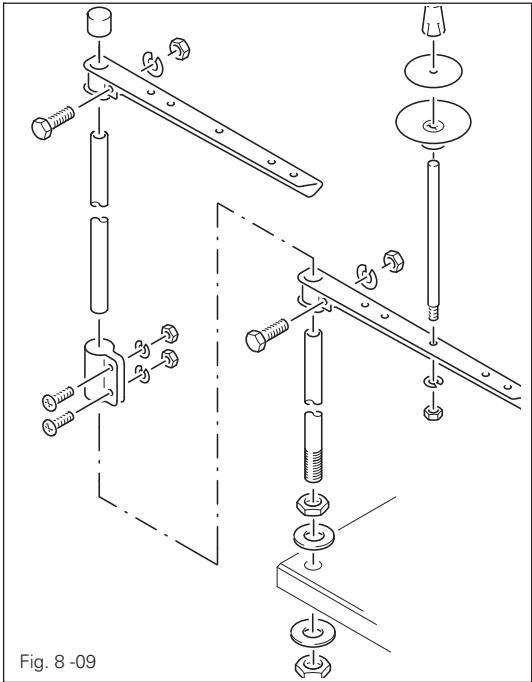


Caution

Inserting the plug incorrectly can damage the control unit!

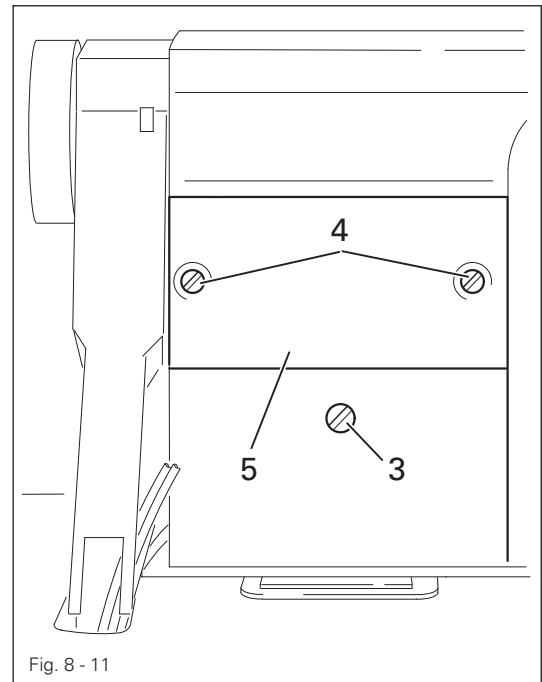
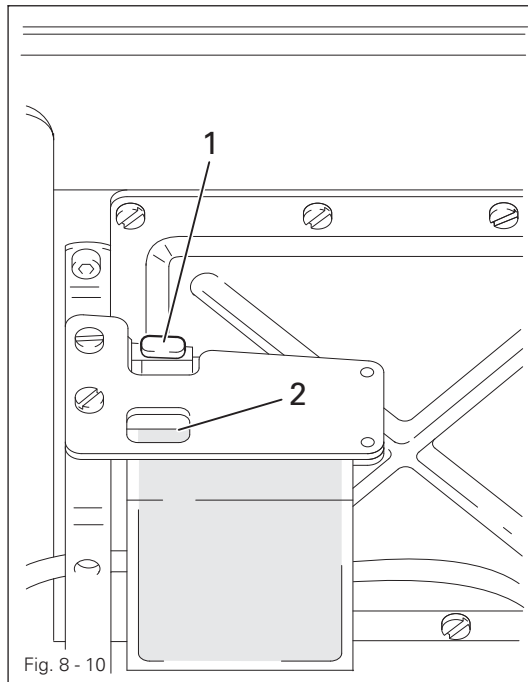
- Attach the following ground cables in order to discharge static electricity
- Securely attach the ground cable from the sewing head 1 to ground point A.
- Securely attach the ground cable from the control point B to ground point B.
- Securely attach the ground cable from the main switch 3 to ground 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

8.03 Assembling the reel stand



- Assemble the reel stand as shown in the adjacent illustration.
- Then insert the stand into the hole in the table top and secure it with the enclosed nuts.

8.04 Initial start-up



- Remove the plug 1 of the oil reservoir 2 before the initial start-up.
- Remove the screw 3 (Fig. 8 -11) before the initial start-up and fill up the oil to the mark (sight glass on the front of the machine), see chapter 10.04 Oiling the zigzag drive.



Danger of machine damage!

The plug 1 serves solely for transit support and may not be used during the sewing operations.

- Inspect the machine, particularly the electric cables, for any damage.
- Clean the machine thoroughly and then oil or fill the oil, see chapter 10 Maintenance and Care.
- Connect the machine to the compressed air system. The manometer must show a pressure of 6 bar. Set this value if required, see chapter 10.05 Checking / setting the air pressure.
- 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 (see the drive service manual in chapter 4.4).

8.05 Switching the machine on / off

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

8.06 Machine drive home position

- See chapter 4.4 of the drive service manual

9

Set-up



Observe and comply with all regulations and instructions 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

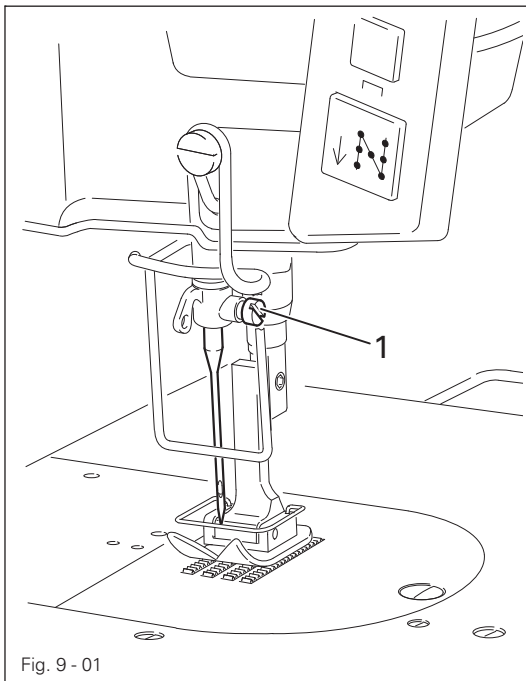


Fig. 9 - 01



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!**

- Bring the needle bar to the top position.
- Loosen the screw **1** and insert the needle until you feel it stop.
The long groove must point forwards.
- Tighten the screw **1**.

9.02 Winding the bobbin thread / adjusting the bobbin thread tension

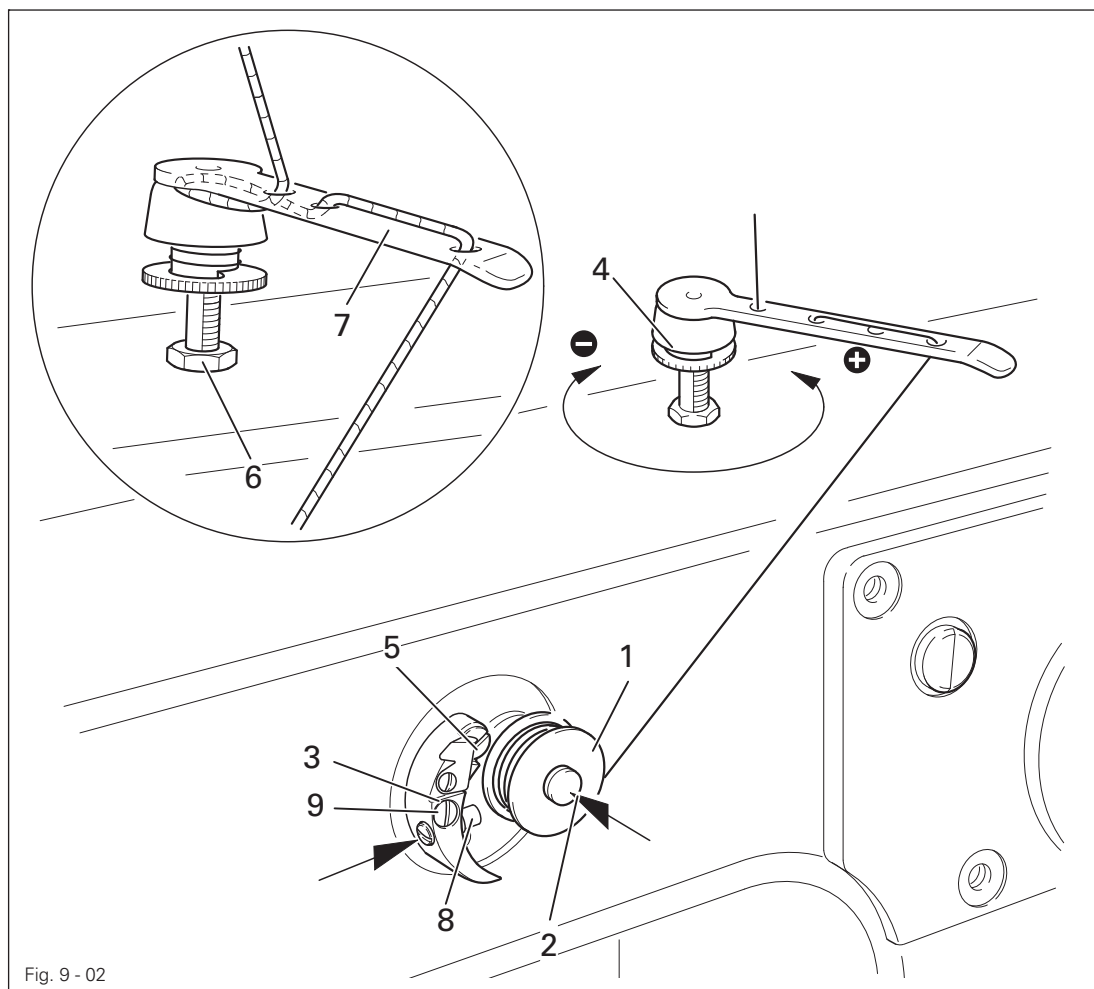


Fig. 9 - 02

- 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.



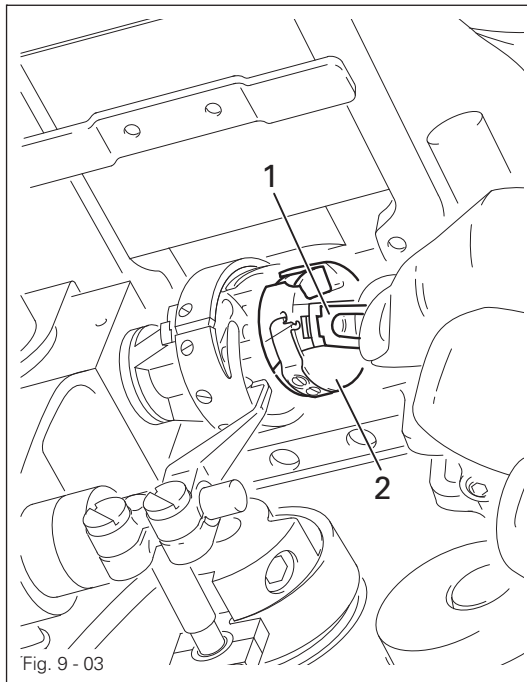
If the machine is only run for bobbin winding (without sewing), a bobbin case must be fitted in the hook! Otherwise a jammed thread may damage the hook!

- The tension of the thread on the bobbin 1 can be adjusted with the knurled thumb screw 4.
- The winder will stop 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:

- Tilt the machine backwards.
- Raise the lever 1 and remove the bobbin case 2.

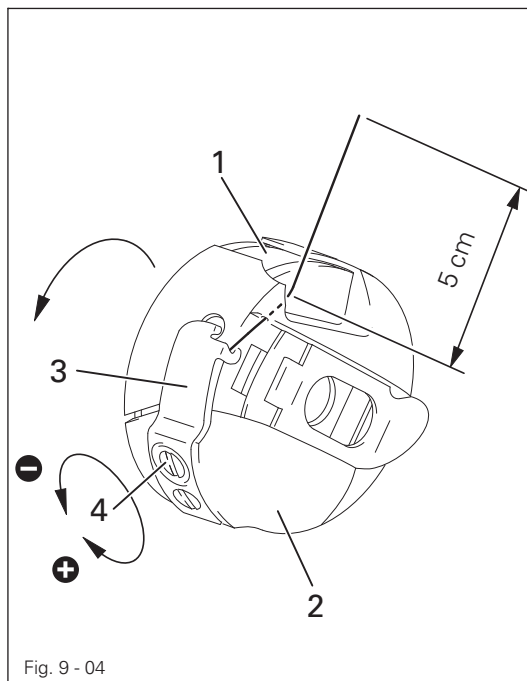
Inserting the bobbin case:

- Press the bobbin case 2 until you feel it snap into the bobbin case base.



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

9.04 Inserting the bobbin case / adjusting the bobbin thread tension



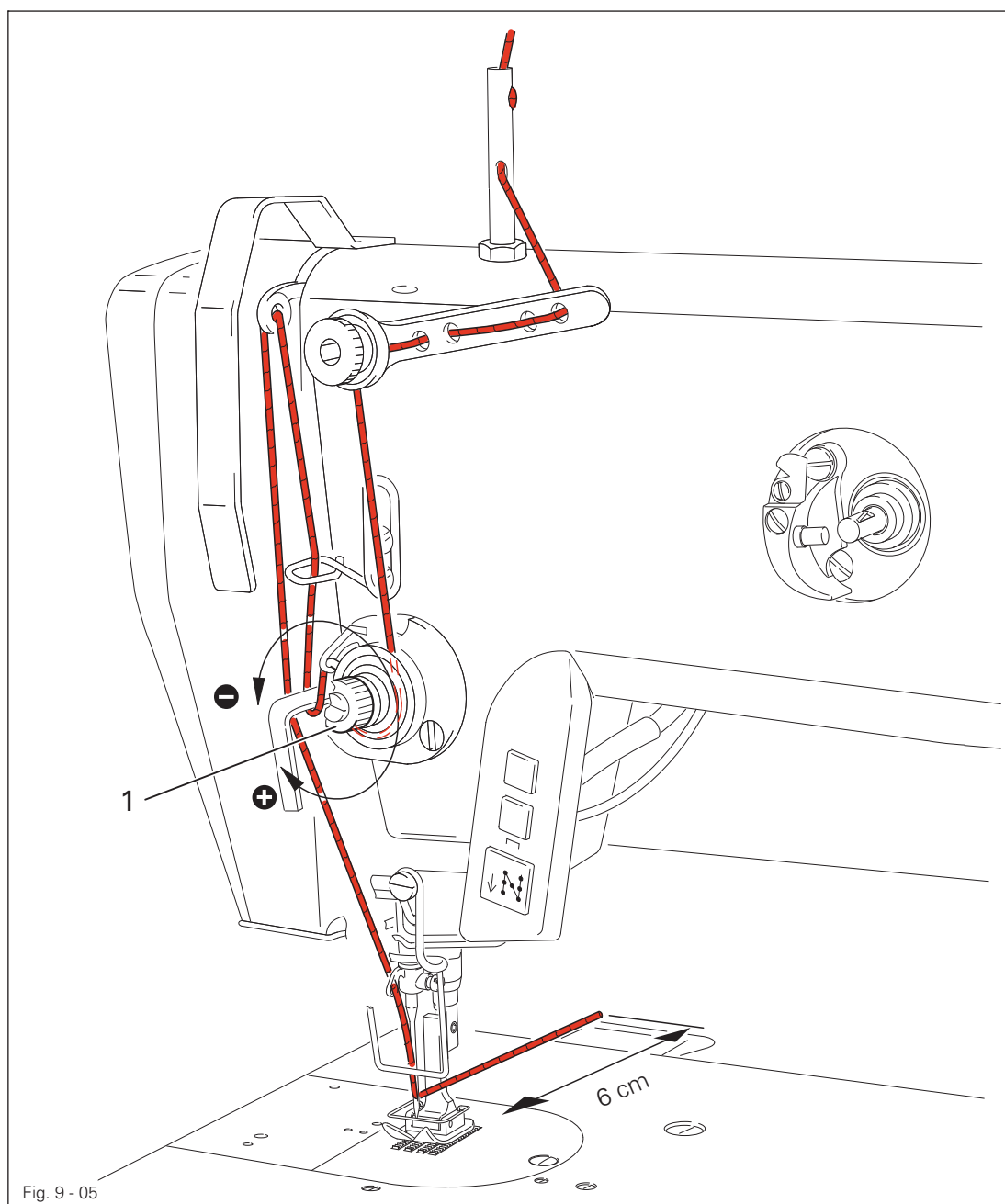
- Insert the bobbin 1 in the bobbin case 2.
- Pass the thread through the slot under the spring 3 and through the hole in the bobbin case 2.
- Adjust the thread tension by turning the screw 4.



When the thread is drawn off, the bobbin 1 must turn in the direction shown by the arrow.

9.05 Threading the needle thread / adjusting the needle thread

(with the 939 U and 3704-2/03)



Switch off the machine!

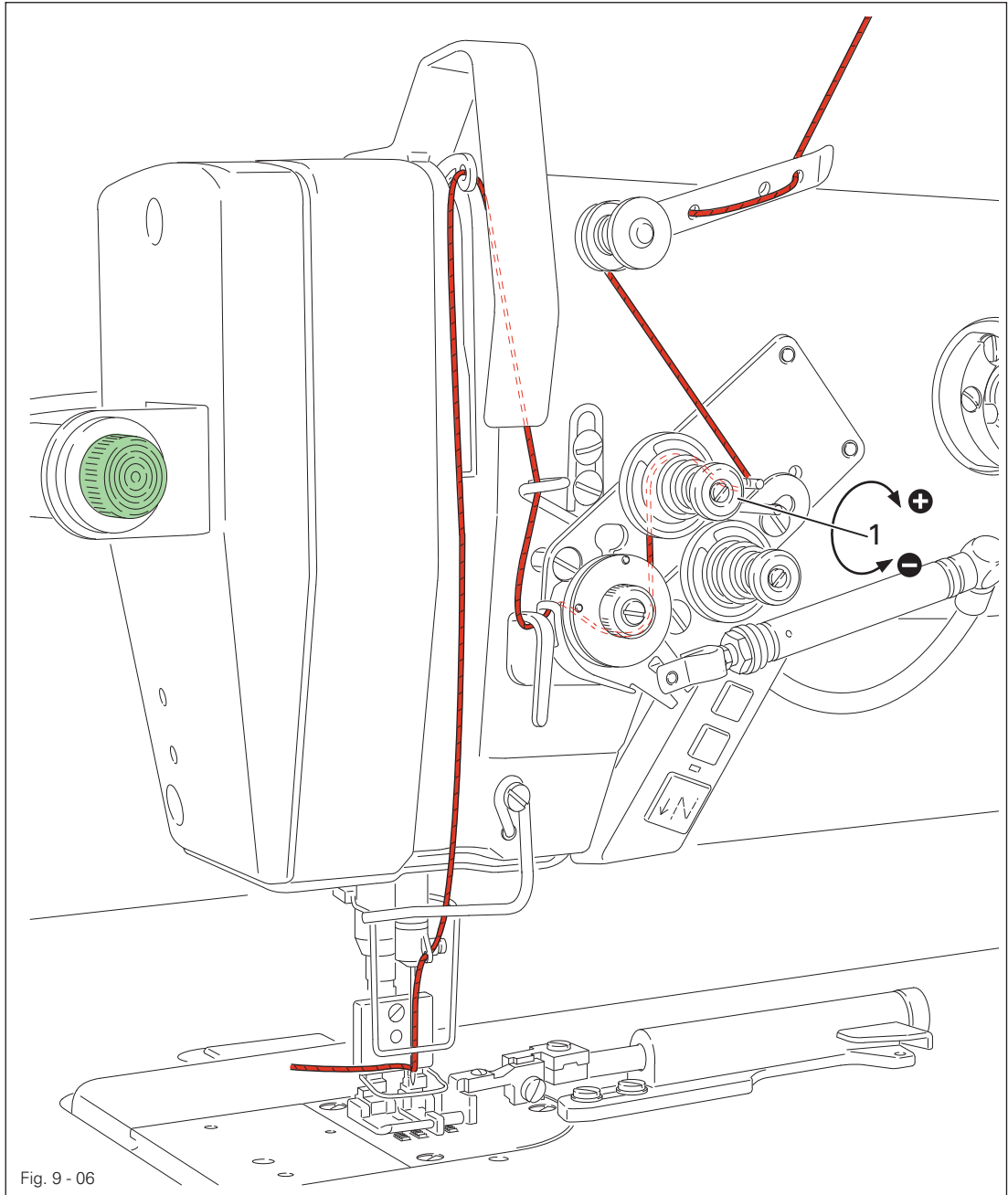
Risk of injury due to accidental machine start-up!

- Thread the needle thread as shown in Fig. 9-05.
- Adjust the needle thread tension by turning the knurled thumb screw 1.

9.06

Threading the needle thread / adjusting the needle thread tension

(with the 3704-2/02)

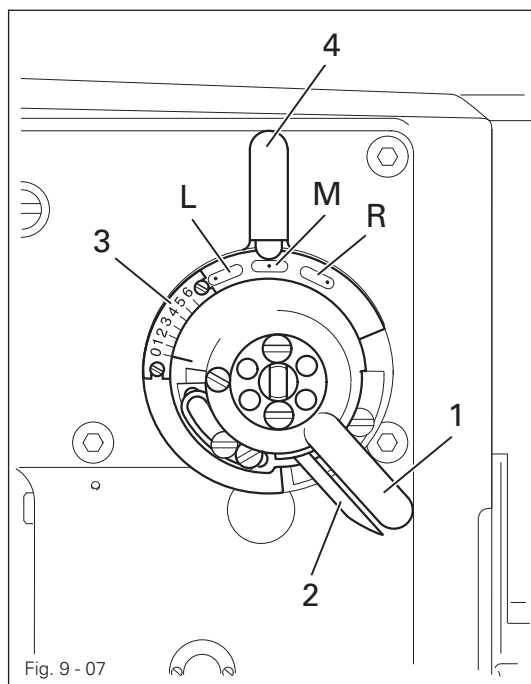


Switch off the machine!

Risk of injury due to accidental machine start-up!

- Thread the needle thread as shown in Fig. 9-06.
- Adjust the needle thread tension by turning the knurled thumb screw 1.

9.07 Setting the zigzag stitch and needle position

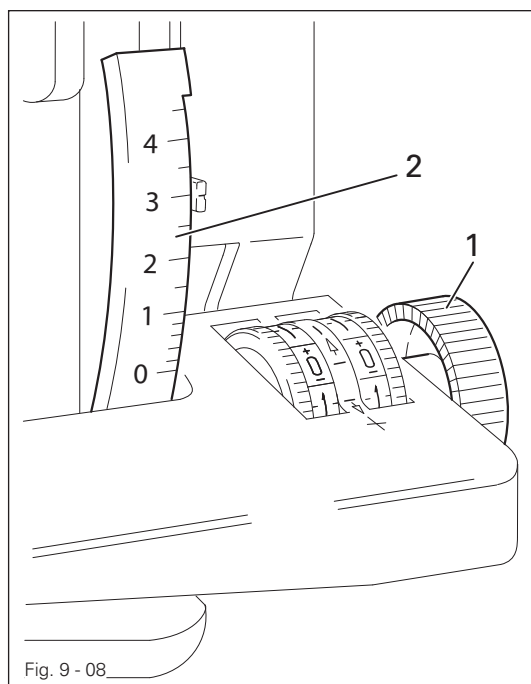


- Set the zigzag stitch width by turning the zigzag stitch adjusting lever 1.
- Press against the zigzag stitch adjusting lever 1 to adjust the locking lever 2.
- The setting is shown on the scale 3.
- Set the needle position by turning the needle position adjusting lever 4

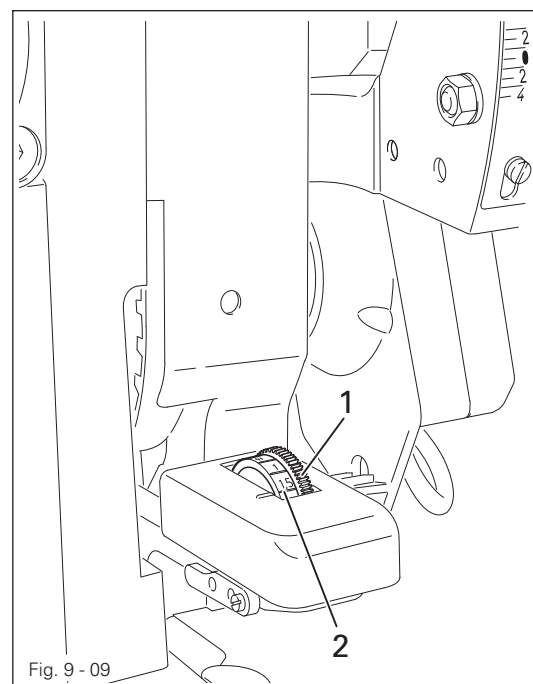
L = Needle position on the left
 M = Needle position in the centre
 R = Needle position on the right

9.08 Setting stitch lengths

939 U

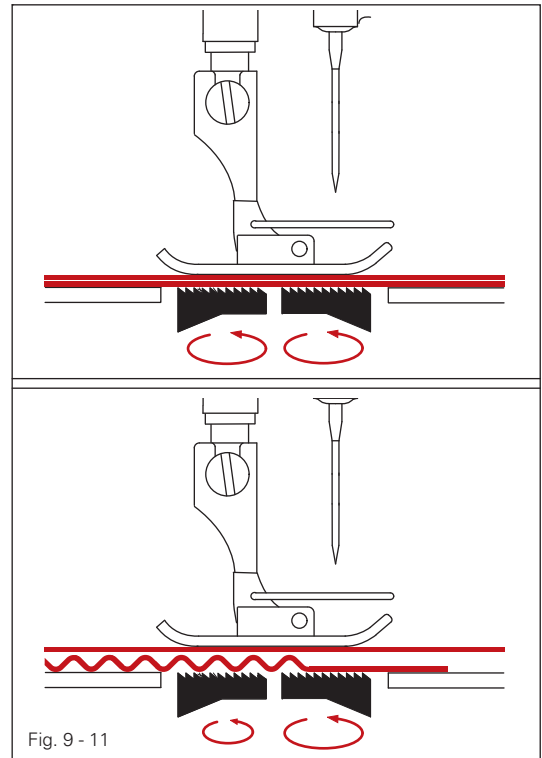
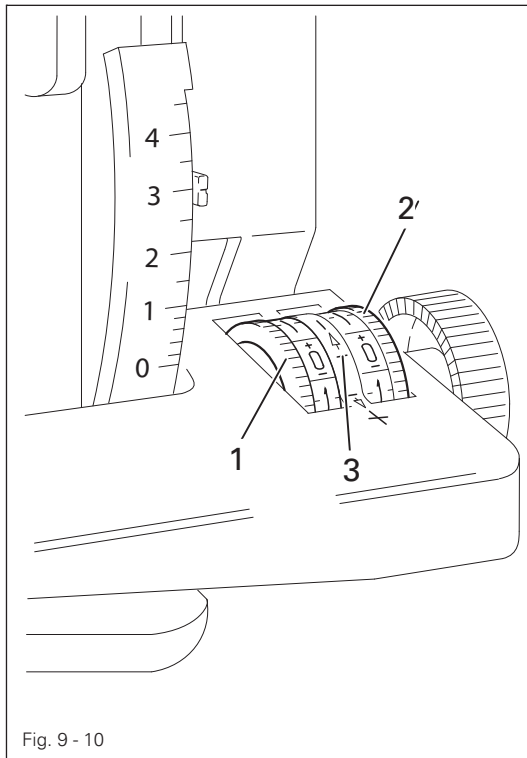


3704-2/..



- Set the stitch length by turning the stitch length adjusting wheel 1.
- The setting is shown on the scale 2.

9.09 Setting the differential feed (with the 939 U)



9.09.01 Sewing without fullness

- Turn the thumb wheel 1 in the "+" direction until it stops.
- Turn the thumb wheel 2 until the number "0" is opposite the marking 3.
- Turn the thumb wheel 1 backwards until the number "0" is opposite the marking 3.



The feed motion of the main and differential feed is the same when sewing without fullness.

9.09.02 Continually incorporating fullness

- Turn the thumb wheel 1 in the "+" direction until it stops.
- Turn the thumb wheel 2 until the desired fullness (green numbers) are opposite the marking 3.
- Turn the thumb wheel 1 backwards until the same green number is opposite the marking 3.



The sum of the set fullness and the stitch length should not exceed 4.5 as an excess value inevitably decreases the stitch length.

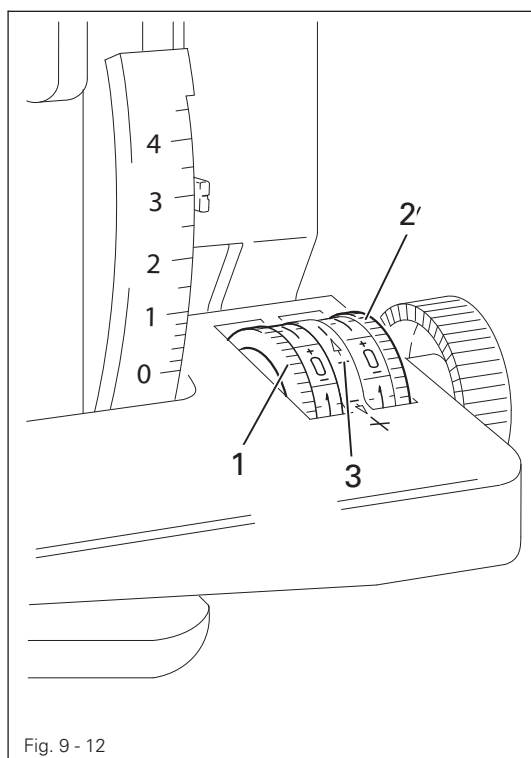


Fig. 9 - 12

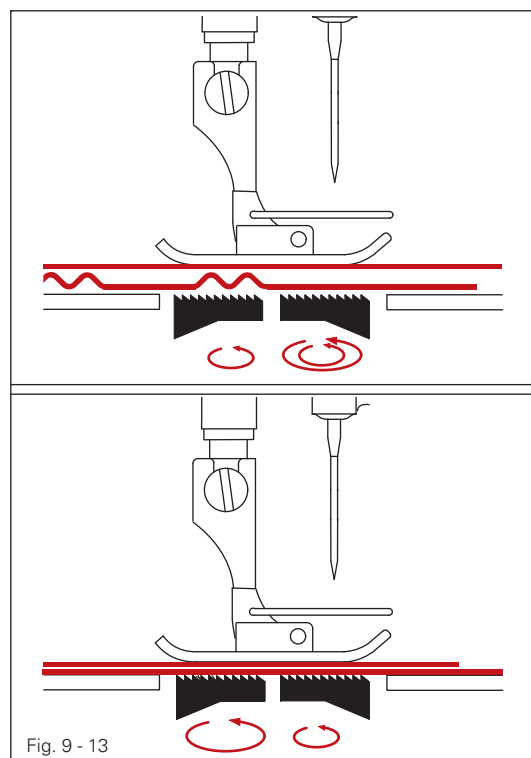


Fig. 9 - 13

9.09.03 Occasionally incorporating fullness

- Turn the thumb wheel 1 in the "+" direction until it stops.
- Turn the thumb wheel 2 until the number "0" is opposite the marking 3.
- Turn the thumb wheel 1 backwards until the desired fullness (green numbers) is opposite the marking 3.



The sum of the set fullness and the stitch length should not exceed 4.5 as an excess value inevitably decreases the stitch length.

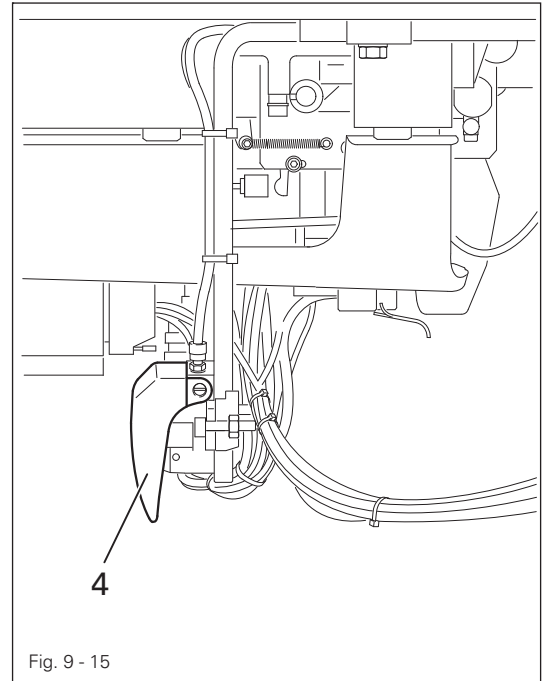
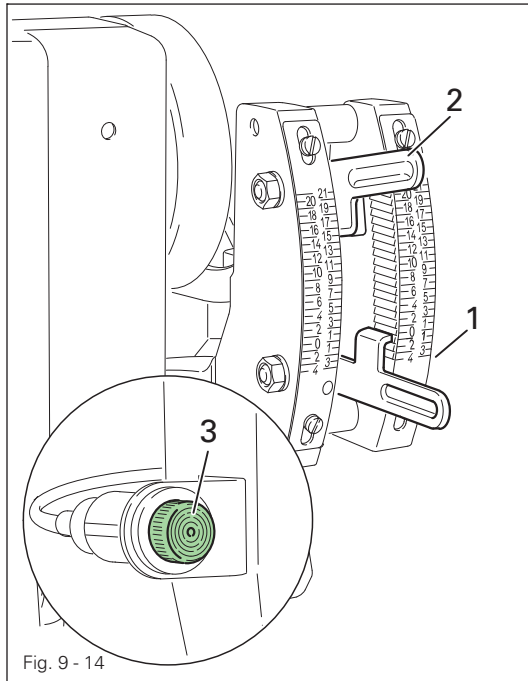


The machine works at the same main and differential feed motion when the left pedal is in the neutral position. Pressing the left pedal incorporates the fullness set on the thumb wheel 1 into the bottom material layer, see [chapter 7.13 Pedal](#)

9.09.04 Continually stretching the top ply

- Turn the thumb wheel 1 in the "+" direction until it stops.
- Turn the thumb wheel 2 until the desired stretch value (red numbers) is opposite the marking 3.
- Turn the thumb wheel 1 backwards until the same red number is opposite the marking 3.

9.10 Setting the differential feed (with the 3704-2/..)



Standard value:

- Set the value at which the machine should mainly work on the lever 1.

Fullness:

- Set the desired off-size value (e.g. for the fullness) on the lever 2.

Pressing the knee switch 4 switches between the standard value and the fullness.



Displaying the setting on the display unit 3:

Display is **white** = fullness

Display is **green** = standard value

9.08 **Setting multi-stitches and zigzag stitches** (on the 939 U with a flange motor)

9.11.01 **Change-over from zigzag stitch to multi-stitch**

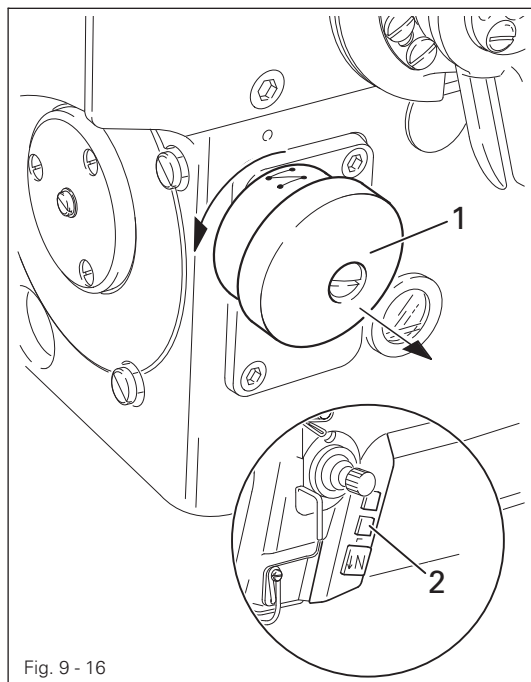


Fig. 9 - 16



Before starting to sew, make sure that the adjusting wheel 1 is engaged! Only make the change-over when the machine is at a standstill! Danger of machine damage!

- Move the machine to the change-over position by pressing the key 2.
- Pull the adjusting wheel 1 and turn in the direction of the arrow until the adjusting wheel engages.

9.11.02 **Change-over from multi-stitch to zigzag stitch**

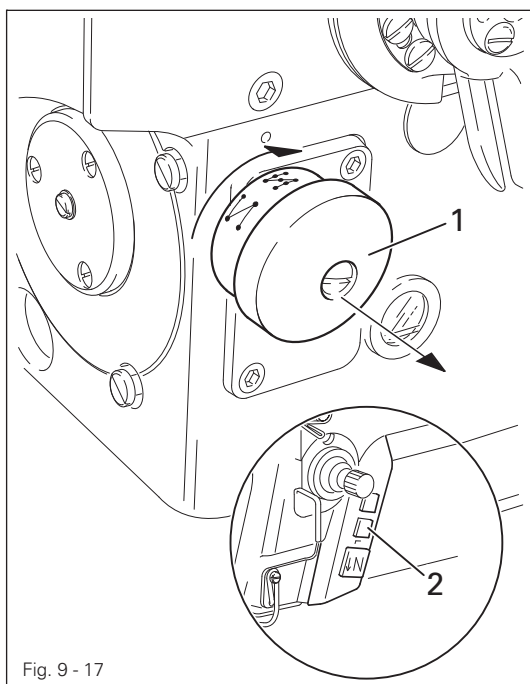


Fig. 9 - 17



Before starting to sew, make sure that the adjusting wheel 1 is engaged! Only make the change-over when the machine is at a standstill! Danger of machine damage!

- Move the machine to the change-over position by pressing the key 2.
- Pull the adjusting wheel 1 and turn in the direction of the arrow until the adjusting wheel engages.

10 Maintenance and Care

10.01 Maintenance intervals

Cleaning	daily, several times if in continuous operation
Check the oil level (hook oil reservoir)	annually
Check the oil level (zigzag eccentric lubrication)	daily, before start-up
Check/set the air pressure	daily, before start-up
Cleaning the maintenance unit air filter	as needed



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.

10.02 Cleaning the machine

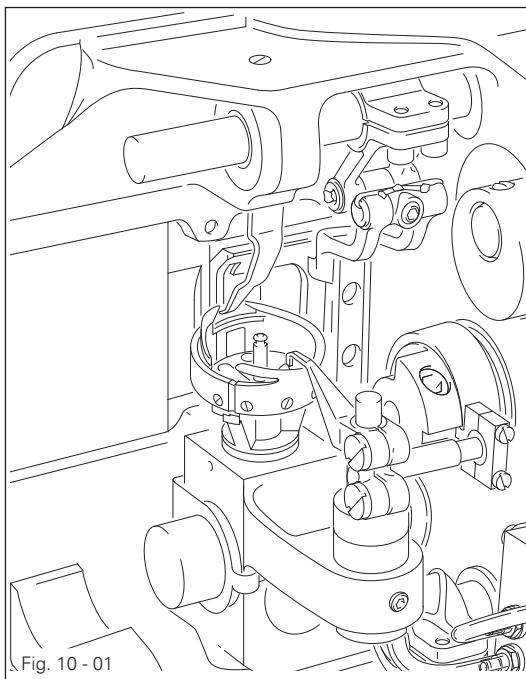
The required cleaning cycle for the machine depends on the following factors:

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

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



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!



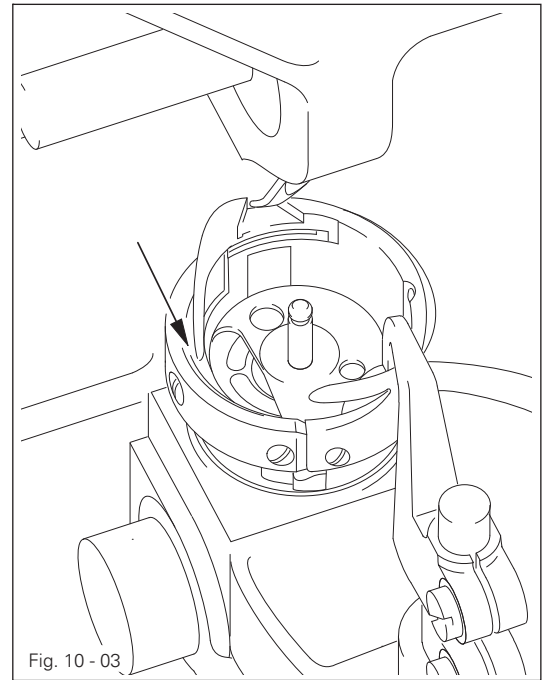
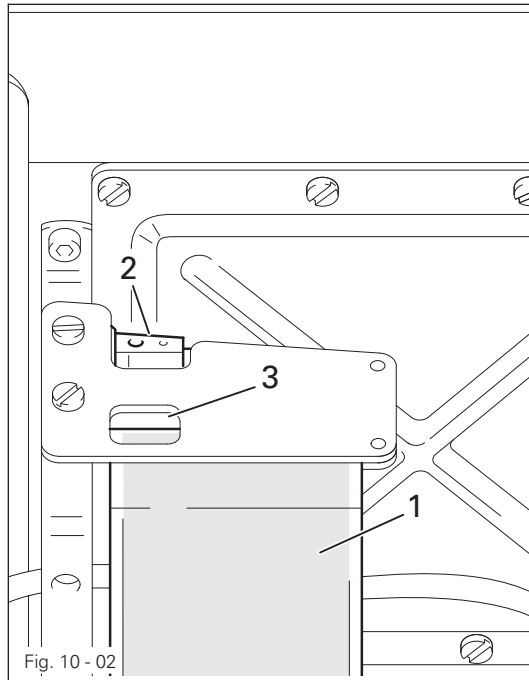
The following tasks are recommended during single shift operation to avoid operational errors:

- Tilt the sewing head backwards.
- Clean the hook and hook area daily or several times during continuous operation.



Return the sewing head to its upright position using both hands! Risk of injury from crushing between the sewing head and the table top!

10.03 Oiling the hook



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

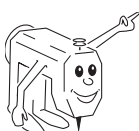


Only use oil with a centre viscosity of **22.0 mm²/s** at **40 °C** and a density of **0.865 g/cm³** at **15 °C**!

- Tilt the sewing head backwards.
- Fill up the oil tank **1** through the hole **2** up to the top marker **3**.
- Also 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 in Fig. **10-03**.



Return the sewing head to its upright position using both hands!
Risk of injury from crushing between the sewing head and the table top!



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

10.04 Oiling the zigzag drive

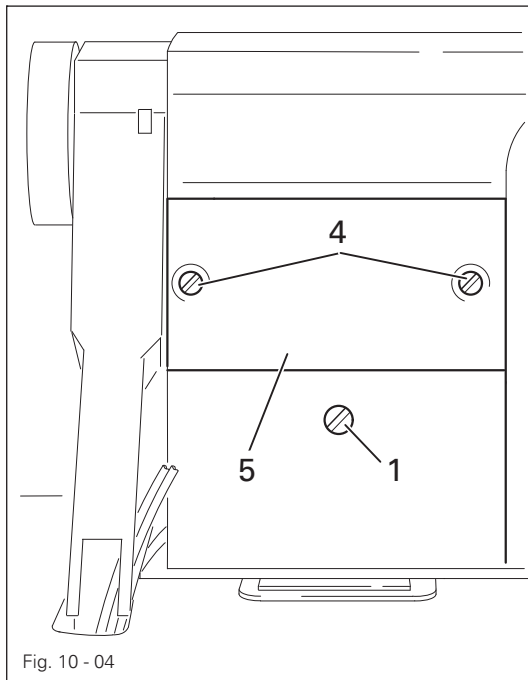
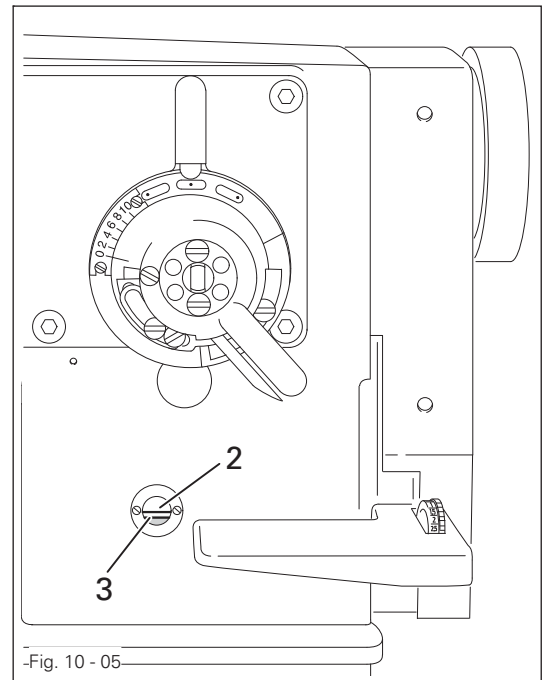


Fig. 10 - 04



-Fig. 10 - 05



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



Only use oil with a centre viscosity of **68.0 mm²/s** at 40 °C and a density of **0.881 g/cm³** at 15 °C!

- Check the oil level before every start-up.
- If necessary, unscrew the screw 1 and fill up the oil up to the top marker 2.
- Tighten the screw 1.

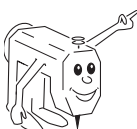


Never allow the oil level to drop below the lowest marker 3!
Danger of machine damage!



It is advantageous to remove the cover 5 to fill larger quantities of oil, e.g. when filling the reservoir before the initial start-up.

- Unscrew the screws 4 and remove the cover 5.
- Make sure that no dirt gets into the housing.
- Fill up the oil to the top marker 2.
- Clean the supporting surface of the cover 5, the housing and the gasket.
- Replace the cover 5 and tighten the screws 4.



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

10.05 Checking / setting the air pressure

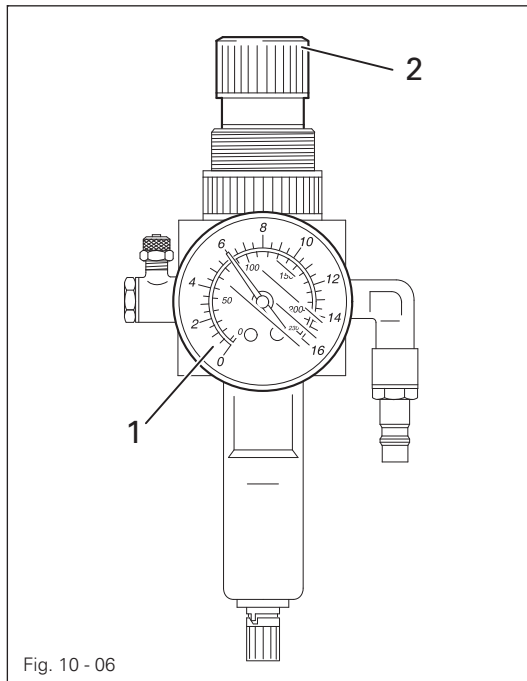


Fig. 10 - 06

- Check the air pressure on the manometer 1 before every start-up.
- The manometer 1 must show a pressure of 6 bar.
- Adjust this value if needed.
- To do this, pull up the button 2 and turn it so that the manometer 1 shows a pressure of 6 bar.

10.06 Emptying / cleaning the maintenance unit's water tank

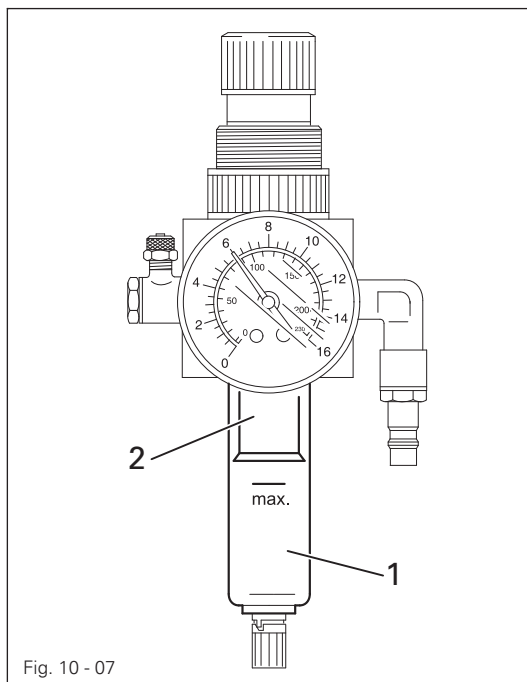


Fig. 10 - 07



Switch the machine off.
Detach the compressed air tube on the maintenance unit.

Empty the water tank

- The water tank 1 empties itself automatically after the compressed air tube for the maintenance unit has been removed.

Clean the filter

- Unscrew the water tank 1 and take out the filter 2.
- Clean the filter 2 with compressed air or isopropyl alcohol (order no. 95-665 735-91).
- Screw in the filter 2 and screw on the water tank 1.

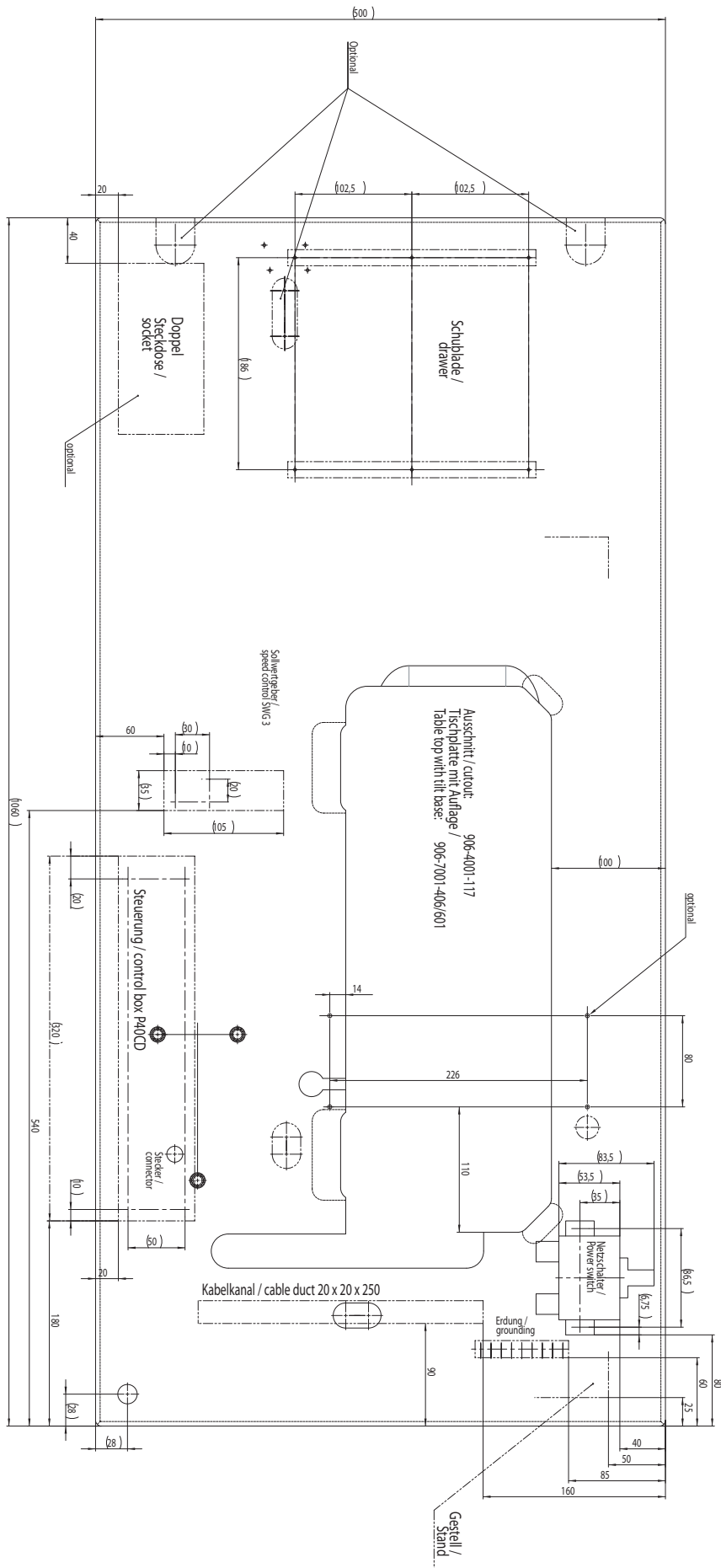
10.07

Parameter settings



Parameter settings are described in the separate **parameter list** for the drive and may only be changed by qualified technicians.

11.02 Table top assembly

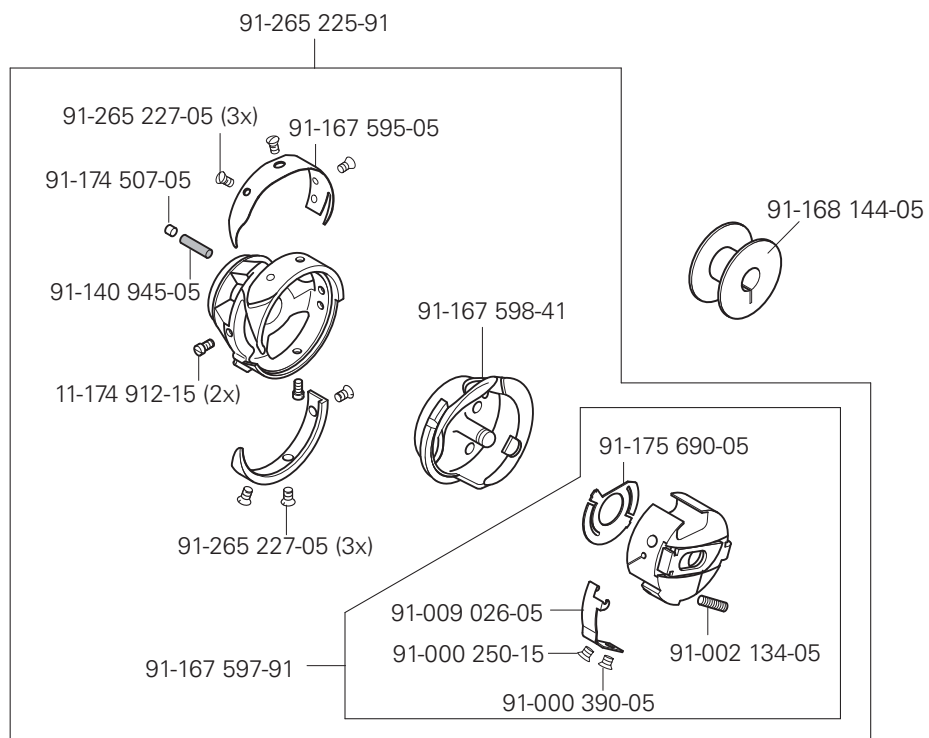
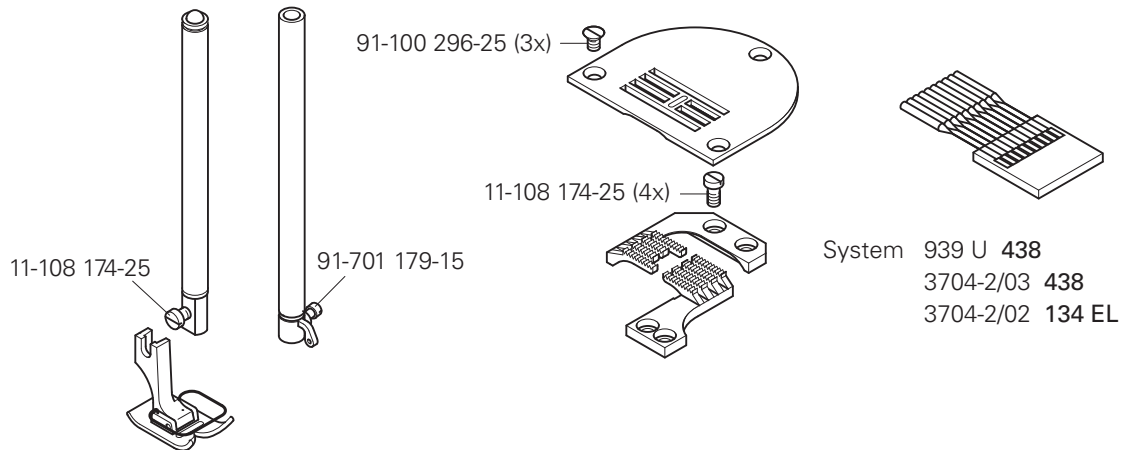


12

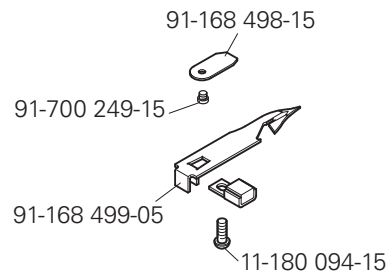
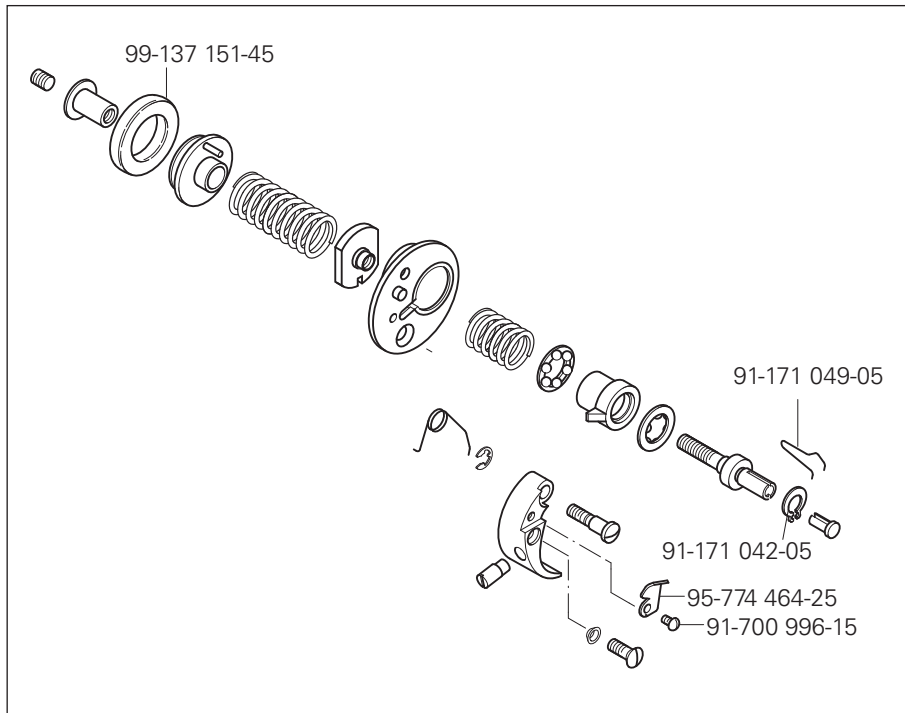
Wearing Parts



This list shows the most important wearing parts.



Wearing Parts





DÜRKOPP ADLER GMBH
Potsdamer Str. 190
33719 Bielefeld
Germany
Phone: +49 (0) 521 / 925 00
E-mail: service@duerkopp-adler.com
www.duerkopp-adler.com