

PFAFF

-900/97
-900/99

Service Manual

for the series
480, 560 and 950

At the time of printing, all information and illustrations contained in this document were up to date.

Subject to alteration!

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1 Safety

1.01 General notes on safety

- This machine must 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!
- The machine must be used only for the purpose for which it is intended and must not be operated without its safety devices. Observe all relevant safety regulations!
- When exchanging sewing tools (e.g. needle, presser foot, needle plate, feed dog and bobbin), when threading, when the workplace is left unattended and during servicing, the machine must be disconnected from the mains by switching off the on/off switch or by removing the plug from the mains!
- Daily servicing work must be carried out only by appropriately trained persons!
- Repairs and special maintenance work must only be carried out by technicians or persons with appropriate training!
- For service or repair work on pneumatic systems the machine must be disconnected from the compressed air supply. The only exceptions to this are adjustments and function checks made by appropriately trained personnel!
- Work on the electrical equipment must be carried out only by electricians or appropriately trained personnel!
- Work is not permitted on parts and equipment which are connected to the power supply! Exceptions to this are contained in the regulations EN 50110!
- Modifications and alterations to the machine must 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 shall not be liable for any damage which may be caused by non-original parts!

1.02 Safety symbols



Danger!
Points to be observed.



Danger of injury to operating and specialist personnel!

1.03 Danger



Do not reach into the sewing area while sewing!
Danger of injury caused by needle!



Do not leave any objects on the table or near the needle plate while carrying out adjusting work. Objects can become jammed or be slung away! Danger of injury!



In order to adjust this device, the machine must be tilted to the back.
Use **both** hands when returning the machine to an upright position!
Danger of crushing between sewing head and table top!



Please observe the safety instructions of this service manual and the notes on safety in the instruction manual when carrying out any maintenance or adjustment work.



On the 480 series no c-clamps may be attached to the needle bar as this would damage the special coating on the needle bar.



Refer to the motor manufacturer's instruction manual for the setting of the cutting torque (180 min⁻¹).
Depending on the machine model, the air pressure ranges between 4 and 6 bar.

2.01

Notes on the service manual

All adjustments in this service manual apply to a fully assembled machine. Machine covers which have to be removed and replaced for checking and adjusting are not mentioned in the text.

Screws and nuts mentioned in brackets () are to be loosened before making an adjustment and tightened again afterwards.

2.02

Tools, gauges and other accessories

- Screw drivers with blade widths from 2 to 10 mm
- Wrenches with jaw widths from 7 to 14 mm
- Allan keys from 1.5 to 6 mm
- Metal rule, part no. 08-880 218-00
- Sewing thread and testing material

2.03

Abbreviations

TDC = top dead centre

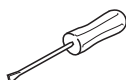
BDC = bottom dead centre

2.04

Work symbols



Note, information



Servicing, repair, adjustment, maintenance

2.05

Lateral adjustment of the thread catcher

Requirement

1. The tip of the thread catcher 3 must point exactly to the centre of the needle.
2. The thread catcher 3 should not touch anywhere when in motion.

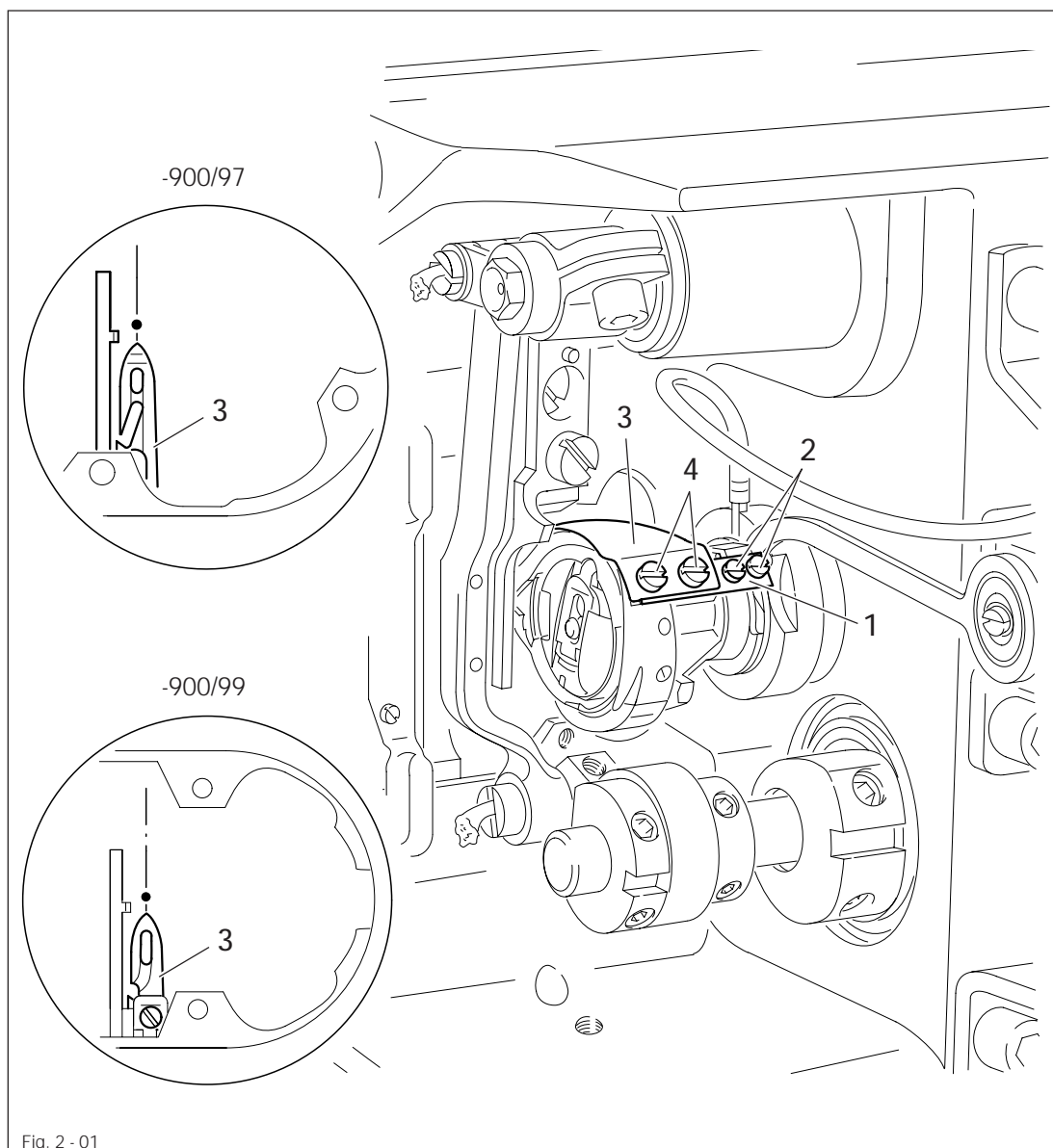
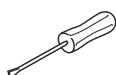


Fig. 2 - 01



- Disconnect the thread trimmer from the pneumatic network and dismantle the needle plate and feed dog.
- Position the needle bar at BDC.
- Push aside catcher stop 1 (screws 2).
- Position the tip of thread catcher 1 in front of the needle by shifting the thread catcher carrier.
- Adjust thread catcher 3 (screws 4) laterally in accordance with **requirement 1**, ensuring that the back of the thread catcher is horizontal.



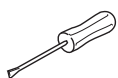
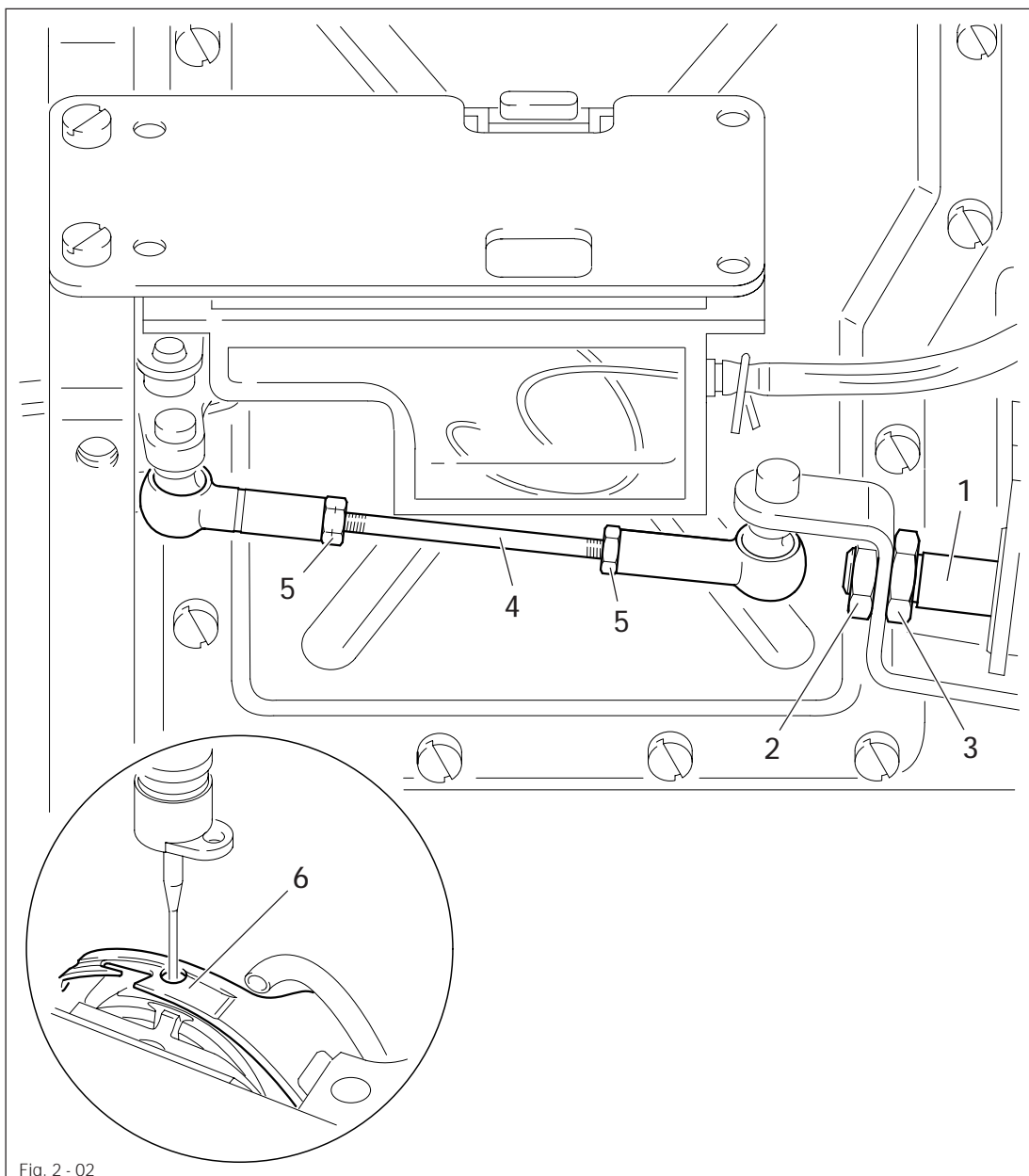
Needle plate, feed dog and catcher stop 1 stay dismantled for the following adjustments. (Fig.2 -01 shows the hook race of -900/99)

2.06 Front reversal point of the thread catcher

2.06.01 Setting for -900/97

Requirement

At the front reversal point of the thread catcher **6**, the needle should move through the middle of the hole of thread catcher **6** when the handwheel is turned.



- Position needle bar at TDC.
- Position end faces of piston rod **1** and nut **2** (nut **3**) so that they are flush.
- Pull out piston rod **1** manually as far as possible.
- Turn connecting rod **4** (nuts **5**, right-hand and left-hand thread) in accordance with the requirement.

2.06.02 Setting for -900/99

Requirement

At the front reversal point of the thread catcher 6, the rear edge of the thread catcher cutout should be positioned 1 to 1.5 mm in front of the front edge of the bobbin case position finger 7.

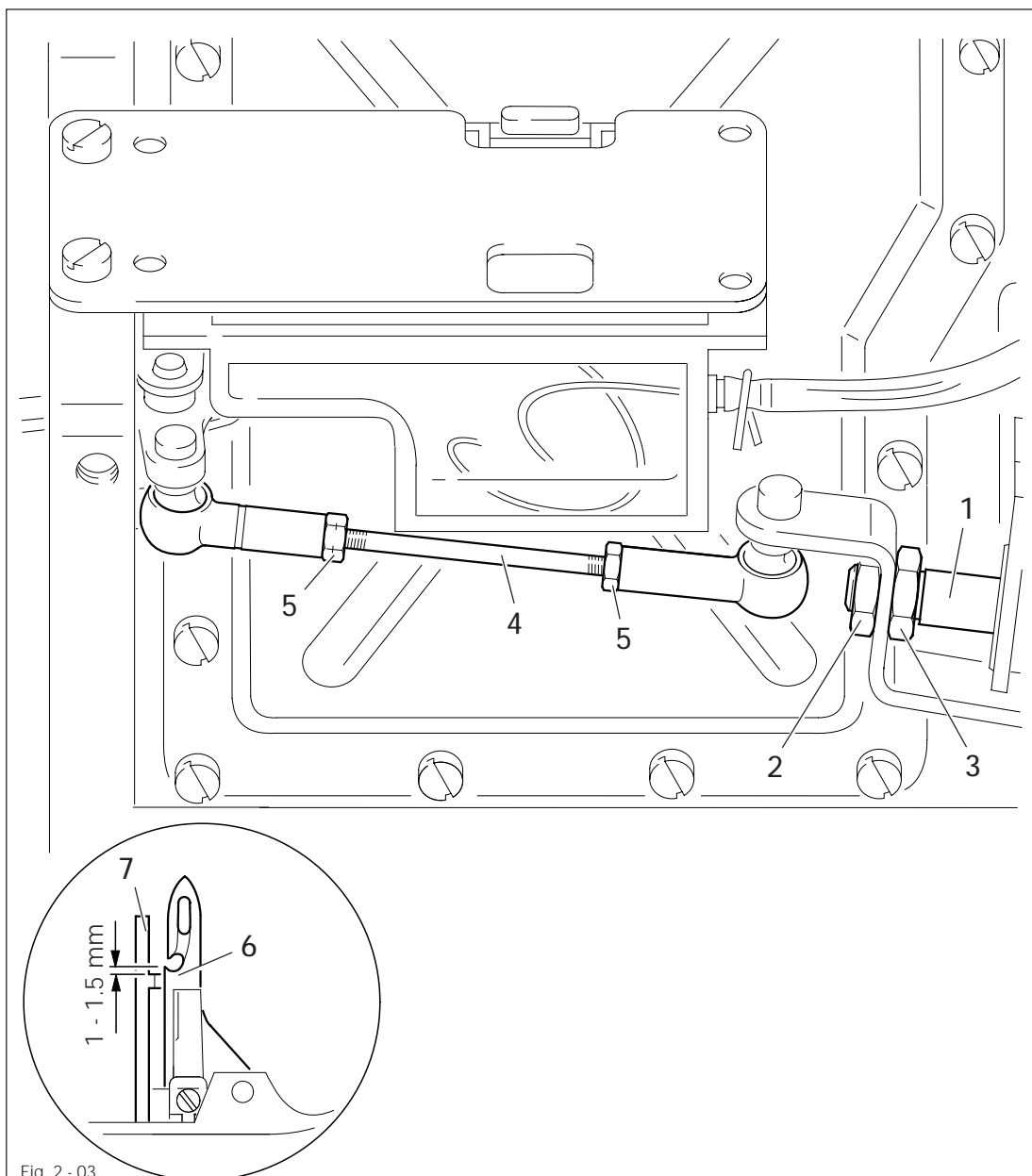
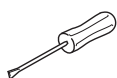


Fig. 2 - 03



- Position needle bar at TDC.
- Position end faces of piston rod 1 and nut 2 (nut 3) so that they are flush.
- Pull out piston rod 1 manually as far as possible.
- Turn connecting rod 4 (nuts 5, right-hand and left-hand thread) in accordance with the requirement.

2.07 Knife to needle clearance (for -900/99)

Requirement

The distance between the front edge of the knife 1 and the needle should be 4 mm.

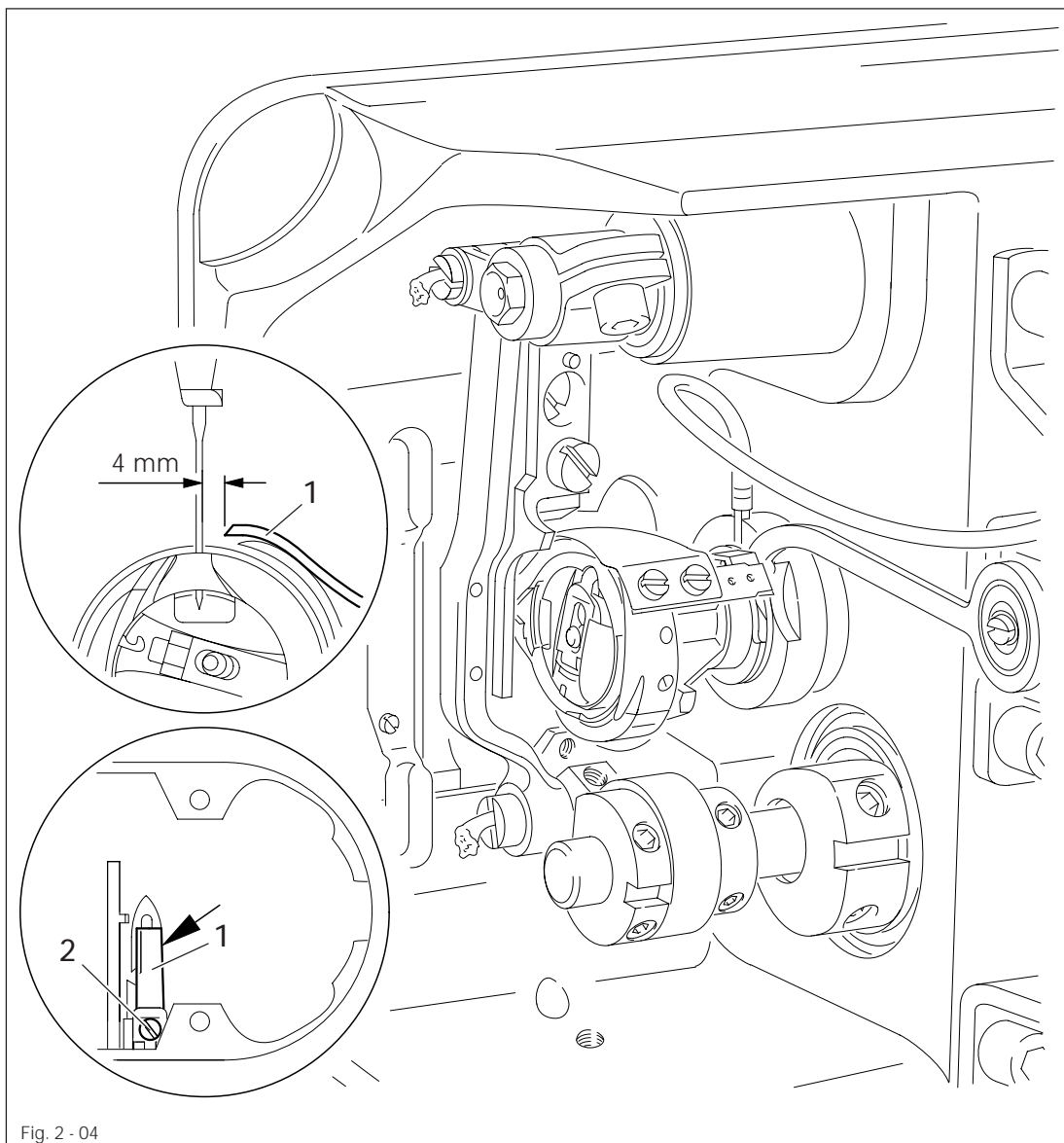
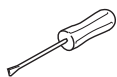


Fig. 2 - 04



- On needle-feed machines set the stitch length to „0“.
- Position the needle bar at BDC.
- Align knife 1 (screw 2) in accordance with the **requirement** making sure that the right edge of the knife does not protrude over the right edge of the thread catcher.

2.08 Manual trimming control

2.08.01 Control for -900/97

Requirement

Both threads must be cut perfectly in the thread-catcher cutout on both the right and left-hand sides.

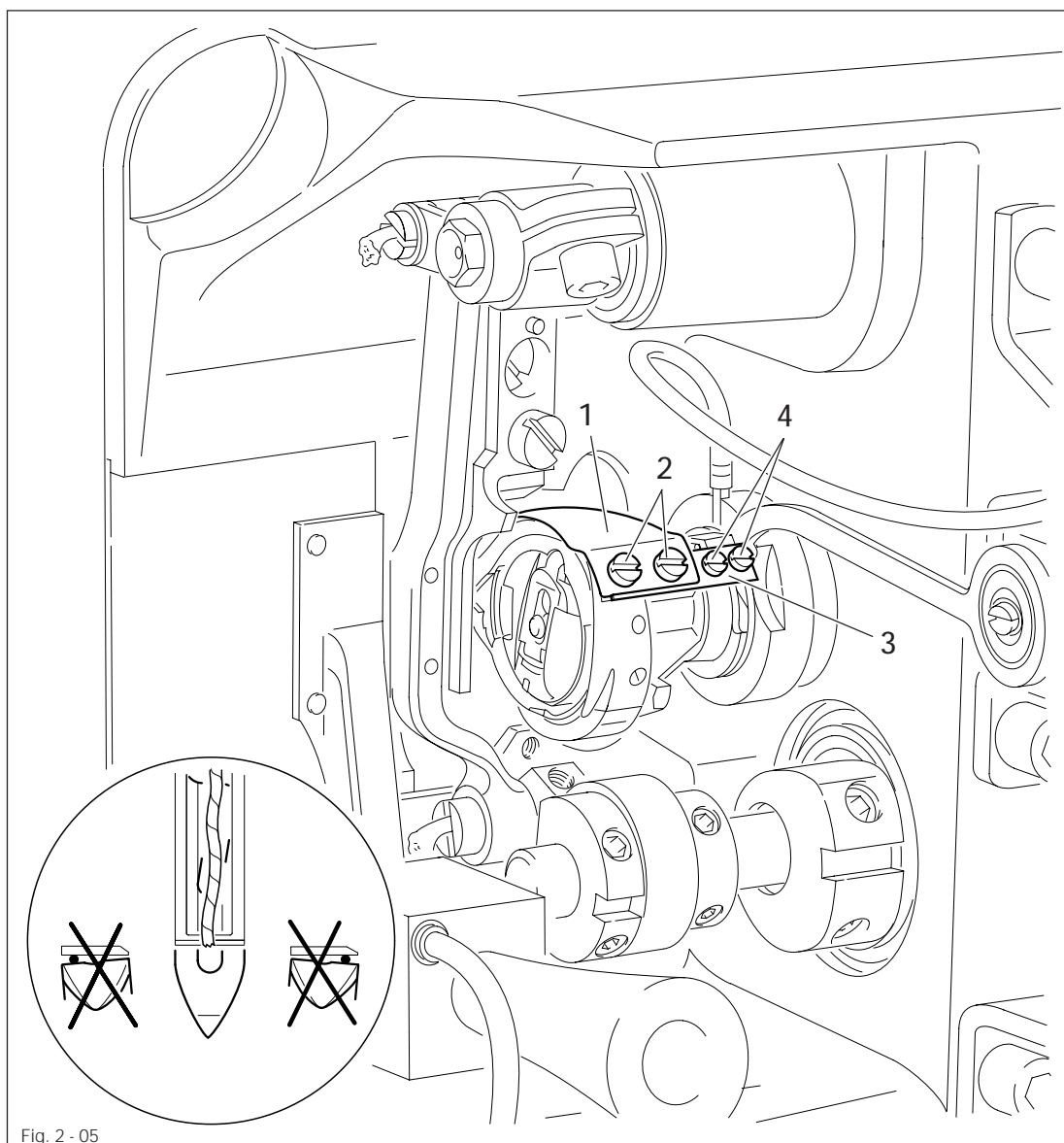
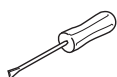


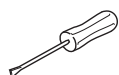
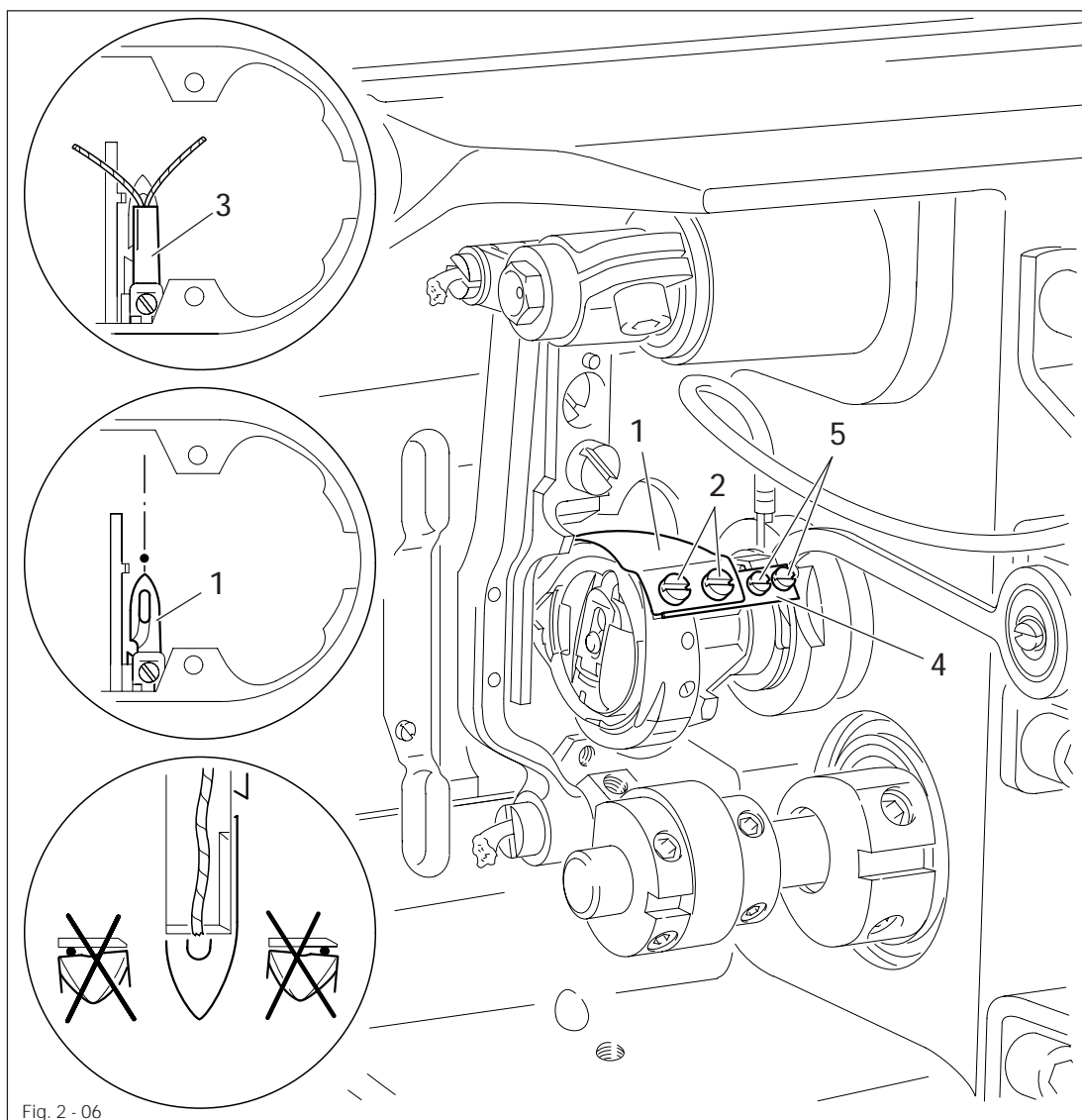
Fig. 2 - 05



- Mount the feed dog and needle plate, making sure that the movement of the feed dog in the needle plate cutout is not restricted.
- Position the needle bar at TDC and thread catcher 1 at its front reversal point.
- Double a thread and insert it into the cutout of thread catcher 1.
- Carry out the trimming process manually.
- If both threads are not trimmed in accordance with the **requirement**, adjust thread catcher 1 (screws 2) in the needle plate with respect to the knife.
- Move catcher stop 3 onto thread catcher 1 and tighten screws 4 firmly.

Requirement

Both threads must be cut perfectly in the catcher cutout on both the right and left-hand sides.



- Position needle bar at TDC and thread catcher 1 at its front reversal point.
- Double a thread and insert it into the cutout of thread catcher 1.
- Carry out the trimming process manually.
- If both threads are not trimmed in accordance with the **requirement**, loosen screws 2 and adjust thread catcher 1 (screws 2) with respect to the knife.
- Tighten screws 2 firmly, making sure that the thread catcher tip is pointing to the middle of the needle.
- Move catcher stop 4 onto thread catcher 1 and tighten screws 5 firmly.
- Mount feed dog and needle plate, making sure that the movement of the feed dog in the needle plate cutout is not restricted.

2.09 Needle thread tension release

Requirements

1. At the rear reversal point of the thread catcher, trip **4** must be engaged and at a distance of **0.5 mm** from control cam **5**.
2. When the tip of trip **4** is at the highest point of the control cam **5**, the tension disks must be a minimum of **0.5 mm** from each other.

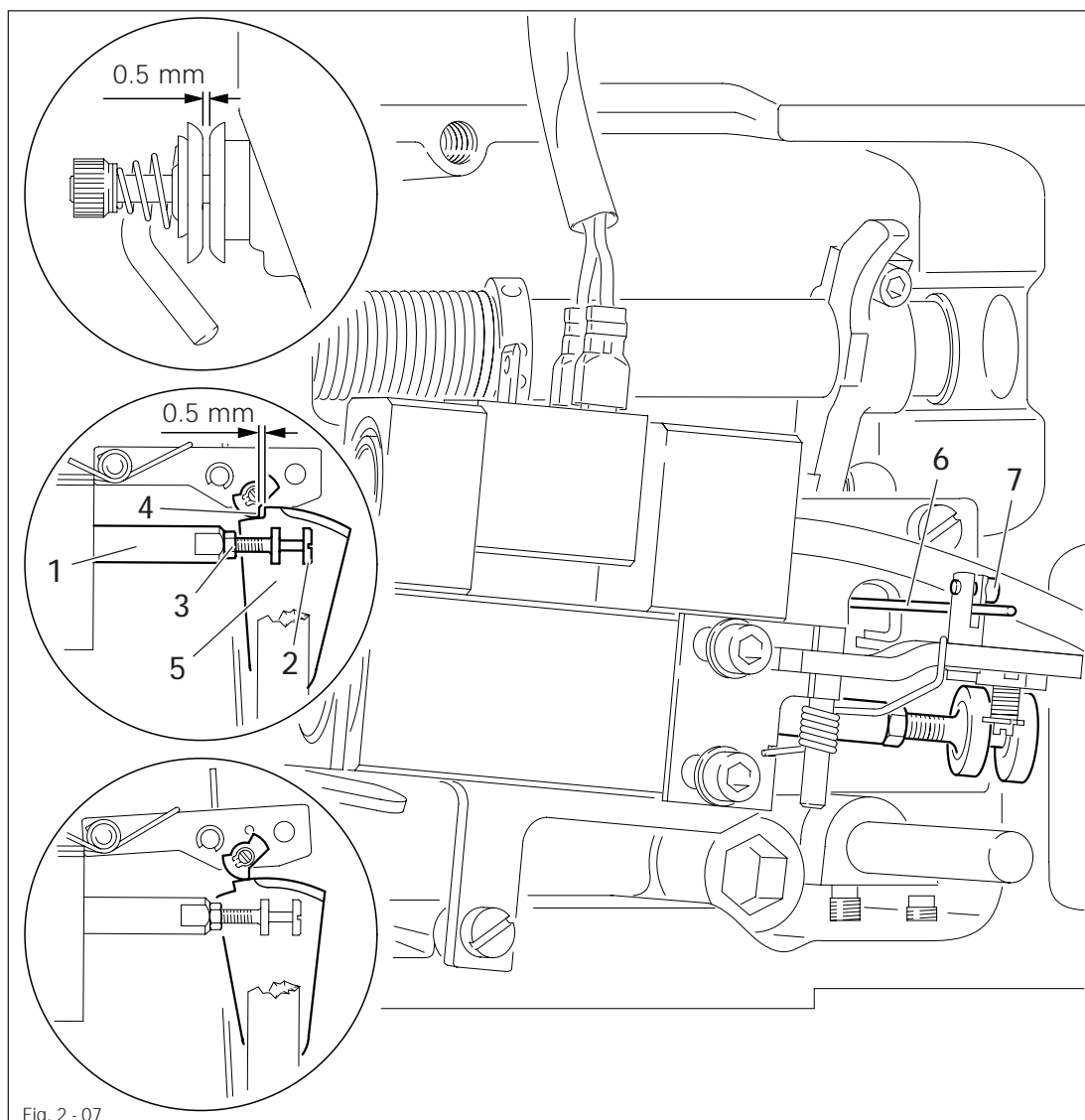
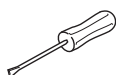


Fig. 2 - 07

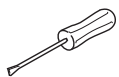
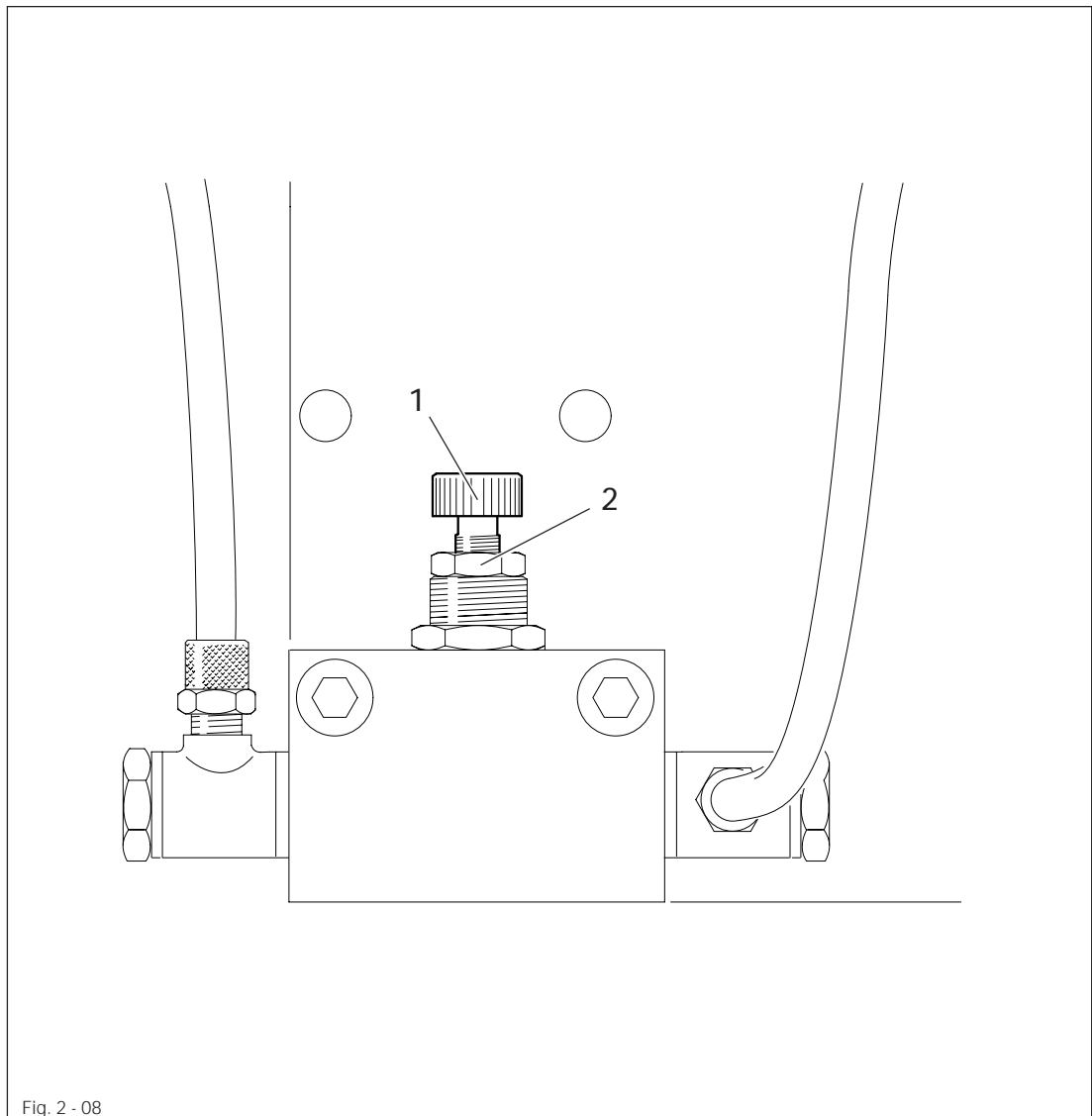


- Push in piston rod **1** manually as far as possible.
- Adjust the distance between trip **4** and control cam **5** in accordance with **requirement 1** by turning screw **2** (nut **3**).
- Lower the sewing foot onto the needle plate.
- Pull down linkage **6** (screw **7**) until you feel it stop (**requirement 2**).
- Connect the thread trimmer to the pneumatic network.

2.10 Air blast dosage (only -900/97)

Requirement

When the thread catcher is in reverse motion, the cut-off end of the starting thread should be blown out of the catcher area.



- Adjust the air blast in accordance with the **requirement** by means of throttle 1 (screw 2).



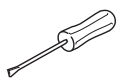
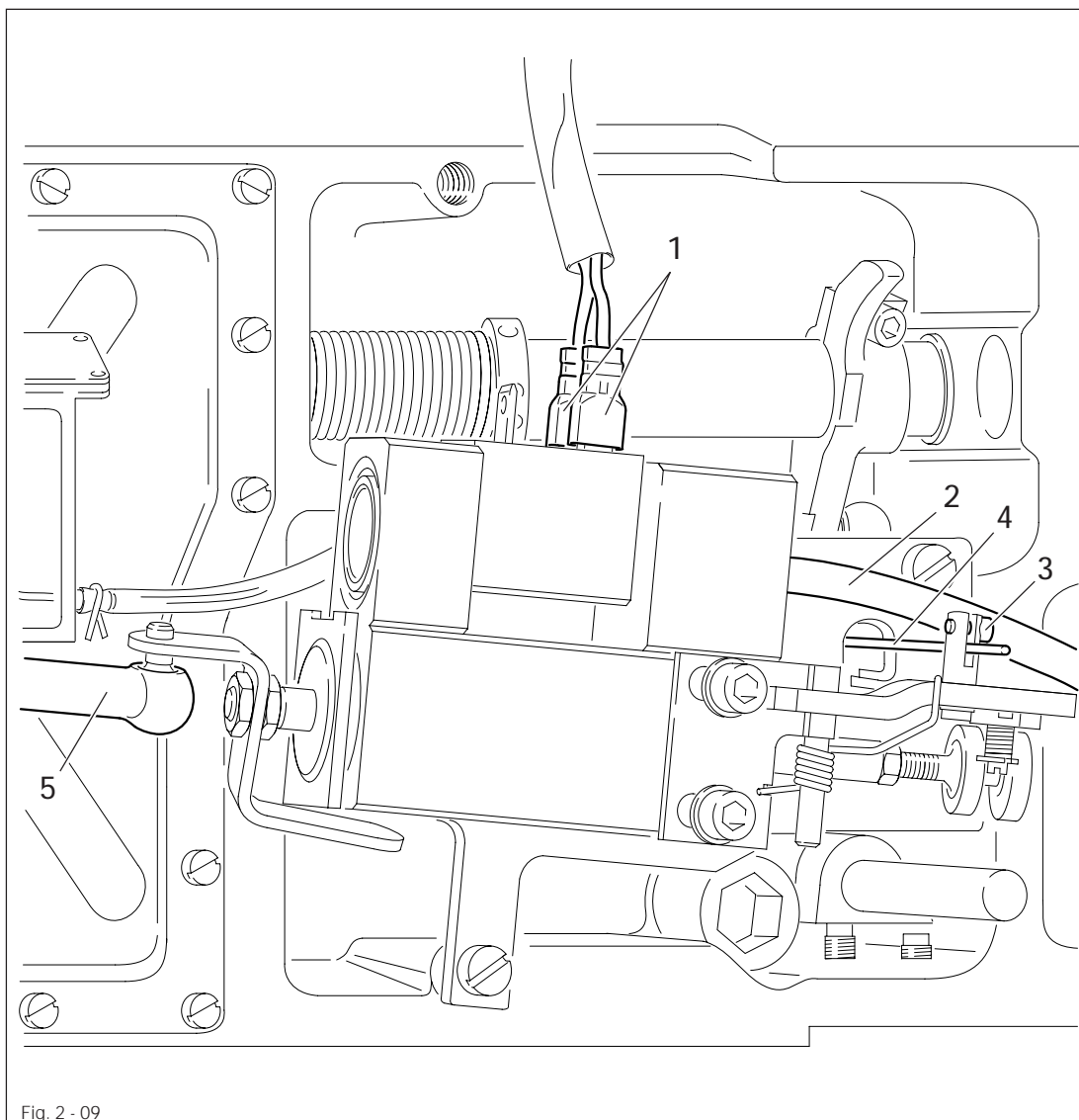
If the air blast is too strong, the needle thread may be blown out of the catcher area. Hence the needle thread cannot be caught or cut when sewing is started.

2.11 Positioner

Requirements

1. When sewing is interrupted, the machine should position itself 4 to **5 mm** after the BDC of the needle bar.
2. After trimming, the machine should position itself at the TDC of the take-up lever.
3. When pressing the pedal backwards, the plunger of the cylinder should extend when the needle bar is **20 - 22 mm** after the BDC.

- For adjusting the stop positions, please see the instruction manual of the motor and chapter **2.13 Parameter settings**.



- In order to dismount the control unit, pull out plugs 1.
- Push in the mounting of the pneumatic connection and pull off hose 2.
- Loosen screw 3 and remove linkage 4 from the slot.
- Pull the ball heads of connecting rod 5 off the ball pins on the trimming and control units and remove connecting rod 5.
- Unscrew the three retaining screws of the control unit and lift off the complete unit.
- To remount, put the control back on and tighten the retaining screws firmly.
- Push the ball heads of the connecting rod 5 onto the ball pins on the trimming and control units.
- Return linkage 4 to its slot and tighten screw 3 firmly.
- Connect plugs 1.
- Check adjustment and carry out function check.

2.13 Parameter settings

With a Quick control-panel the following parameter settings can be effected via the display.

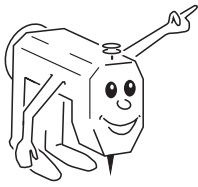
2.13.01 Parameter list (only -900/97)

Group	Parameter	Meaning	Adjustment range	Standard value
1	116	Softstart for 1-9 starting stitches	0 - 9	0
6	626	I = Neat seam due to short threads at beginning and end of seam II = Conventional thread-trimming		I
	628	Stitch condensation at beginning of seam I = ON II = OFF		II
	671	Stitch condensation at end of seam I = ON II = OFF		II
	673	I = Neat seam due to short threads at beginning and end of seam or Conventional trimming To be selected by pressing the thread wiper key (on the control panel) II = Thread wiper ON/OFF To be selected by pressing the thread wiper key (on the control panel)		I

Group	Parameter	Meaning	Adjustment range	Standard value
7	701	I = Positioner adjustment with hand wheel II = Positioner adjustment with buttons „+“ and „-“		II
	706	Trimming signal for shifting the catcher forward at end of seam	0 - 239	119
	752	Stopping time at TDC (ms) of take-up lever for reverse movement of catcher at start of seam	0 - 640	0
	786	Trimming signal to move catcher backwards at start of seam (when changing the standard value, make sure that parameter 701 is set to II)	140 - 160	150
	787	Signal for stitch condensation at start of seam	0 - 239	217
	788	Signal for stitch condensation at end of seam	0 - 239	224



For further information please refer to the motor manufacturer's instruction manual.



Notes

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