beisler
SEWING

1281/5-1

Manual, complete

Foreword

This instruction manual is intended to help the user to become familiar with the machine and take advantage of its application possibilities in accordance with the recommendations.

The instruction manual contains important information on how to operate the machine securely, properly and economically. Observation of the instructions eliminates danger, reduces costs for repair and down-times, and increases the reliability and life of the machine.

The instruction manual is intended to complement existing national accident prevention and environment protection regulations.

The instruction manual must always be available at the machine/sewing unit.

The instruction manual must be read and applied by any person that is authorized to work on the machine/sewing unit. This means:

– Operation, including equipping, troubleshooting during the work cycle, removing of fabric waste,
– Service (maintenance, inspection, repair) and/or
– Transport.

The user also has to assure that only authorized personnel work on the machine.

The user is obliged to check the machine at least once per shift for apparent damages and to immediatly report any changes (including the performance in service), which impair the safety.

The user company must ensure that the machine is only operated in perfect working order.

Never remove or disable any safety devices.

If safety devices need to be removed for equipping, repairing or maintaining, the safety devices must be remounted directly after completion of the maintenance and repair work.

Unauthorized modification of the machine rules out liability of the manufacturer for damage resulting from this.

Observe all safety and danger recommendations on the machine/unit! The yellow-and-black striped surfaces designate permanend danger areas, eg danger of squashing, cutting, shearing or collision.

Besides the recommendations in this instruction manual also observe the general safety and accident prevention regulations!

General safety instructions

The non-observance of the following safety instructions can cause bodily injuries or damages to the machine.

1. The machine must only be commissioned in full knowledge of the instruction book and operated by persons with appropriate training.

2. Before putting into service also read the safety rules and instructions of the motor supplier.

3. The machine must be used only for the purpose intended. Use of the machine without the safety devices is not permitted. Observe all the relevant safety regulations.

4. When gauge parts are exchanged (e.g. needle, presser foot, needle plate, feed dog and bobbin) when threading, when the workplace is left, and during service work, the machine must be disconnected from the mains by switching off the master switch or disconnecting the mains plug.

5. Daily servicing work must be carried out only by appropriately trained persons.

6. Repairs, conversion and special maintenance work must only be carried out by technicians or persons with appropriate training.

7. For service or repair work on pneumatic systems, disconnect the machine from the compressed air supply system (max. 7-10 bar). Before disconnecting, reduce the pressure of the maintenance unit. Exceptions to this are only adjustments and functions checks made by appropriately trained technicians.

8. Work on the electrical equipment must be carried out only by electricians or appropriately trained persons.

9. Work on parts and systems under electric current is not permitted, except as specified in regulations DIN VDE 0105.

10. Conversion or changes to the machine must be authorized by us and made only in adherence to all safety regulations.

11. For repairs, only replacement parts approved by us must be used.

12. Commissioning of the sewing head is prohibited until such time as the entire sewing unit is found to comply with EC directives.

13. The line cord should be equipped with a country-specific mains plug. This work must be carried out by appropriately trained technicians (see paragraph 8).

It is absolutely necessary to respect the safety instructions marked by these signs.

Danger of bodily injuries !

Please note also the general safety instructions.

Content **Page:**

Preface and General Safety Notes

Part 1: Operating Instructions Cl. 1281/5-1 – Original Instructions

(Edition: 01/2011)

Content **Page:**

1 Product Description

1.1 Description of use for the intended purpose

The **1281/5-1** is a sewing unit which can be used according to the intended purpose of sewing of light to medium-heavy workpieces. Such workpieces are as a rule materials made of textile fibers. These sewing materials are used in the apparel industry.

In general, only dry sewing fabrics may be processed with this sewing unit. The material must not contain any hard objects.

In general, the seam is prepared from core thread, polyester fibre or cotton yarn.
The dimensions for needle thread and looper thread may be derived from the tables in Chapter 4.2.

If you wish to use other threads, you must first estimate the inherent risks and take safety measures, where required.

This sewing unit may be set up and operated only in dry and well-kept rooms. If the sewing unit is used in other rooms that are not dry and well-kept, further measures may become necessary that must be agreed to by the manufacturer (see EN 60204-31: 1999).

As manufacturers of industrial sewing machines, we assume that our products are operated by at least trained personnel, so that all the usual operations, and possibly dangers, can be presumed to be known.

1.2 Brief Description

The **Beisler 1281/5-1** is a sewing unit for closing of long seams such as e.g.

- trouser side seams and inside seams,
- Side seams without vent in outer fabric and lining in skirt parts

Depending upon the machine head used,

- Double chain stitch seams (401),
- Safety seams 4-thread (515) or 5-thread (516)

can be generated.

All the workplace components are arranged on a rack welded from square-cut steel tubes and are controlled by a micro-processor system.

The sewing workplace is operated by means of the operating panel. Various control programs can be called up, new programs can be defined and all the inputs and outputs can be checked here for maintenance and repair jobs.

Machine head

- Pegasus Serging Machine EXT 3216-03
- Direct-Drive Efka Type DC 1500 /AB 425S
- Microprocessor control, freely programmable
- Light barrier for detecting seam start and seam end for automatic seam start and stop.
- Programmable edge guide for different material strengths, moving crosswise from feeding direction.
- External Operating Panel Efka V900 with:
  - Menu Guide

- Freely programmable parameters for
  “Differential lower feed (optional)”, “Upper feed (optional)”, “Roll-out Device”, “Puller”, “Machine Parameters”,
  “Global Parameters”, “Program Sequences”
- Input and Output Tests
- Test routine for stepper motors
- 20 Program Memory Capacity
- up to 7 seam programs per program storage space

– Vertical cutter with suction device for overseaming and serging in a work step.
– Programmable chain cutting device with suctioning.
– Adjustable blow nozzles in the table top for supporting the sewing material feed, mechanical regulation of the blow strength by means of adjusting knob, duration of table blowing is programmable.
– Positioning table with mouse and retraction device for the workpiece;
for uniform workpiece guidance and higher productivity.
– Special sewing equipment for trouser side seams with side seam pockets and slant pockets.
– Narrow gauge parts including narrow sewing foot for problem-free feed/ sewing of the pocket openings.
– Automatic contour control through programmable puller.
– Height-adjustable rack, infinitely variable from 850 mm up to 1200 mm.
– Automatic fullness distribution through stepper motor controlled upper and lower feed (optional).
Within a seam program, the fullness of the upper and lower feed can be programmed at the operating panel by means of 3 freely selectable segments.
User-friendly adjustment option for fullness in a segment by means of one control each.
– Integrated destacking device.
– Manual destacking by means of the shortcut key.

1.3 Technical Data

Machine Head:	Pegasus EXT 3216-03/233-K 5x5-KH-021A
Type of stitch:	401, 515, 516
Number of needles:	1 or 2
Needle system:	B27
Needle thickness:	Nm 80 to Nm 110
Type of hook:	Looper crosswise to feeding direction Serging looper
Yarn:	see table in Chapter 4.2
Speed: Speed at delivery:	6,500 min $^{-1}$ 6,500 min $^{-1}$
Stitch length: min. max.	 0.5 mm 3.5 mm
Seam width: Optional	10 mm 8 - 12 mm
Workpiece:	Light weight to medium weight
Operating pressure:	6 bar
Air consumption:	20 NL per working cycle

Rated voltage:	1 x 230 V 50/60 Hz
Rated power:	1.00 KVA
Dimensions:	2300 x 1300 x 1500 mm (L x B x H)
Work height:	850 ... 1200 mm (upper edge of table top)
Weight:	125 kg

Rated noise level:	**LC = 81 dB (A)**

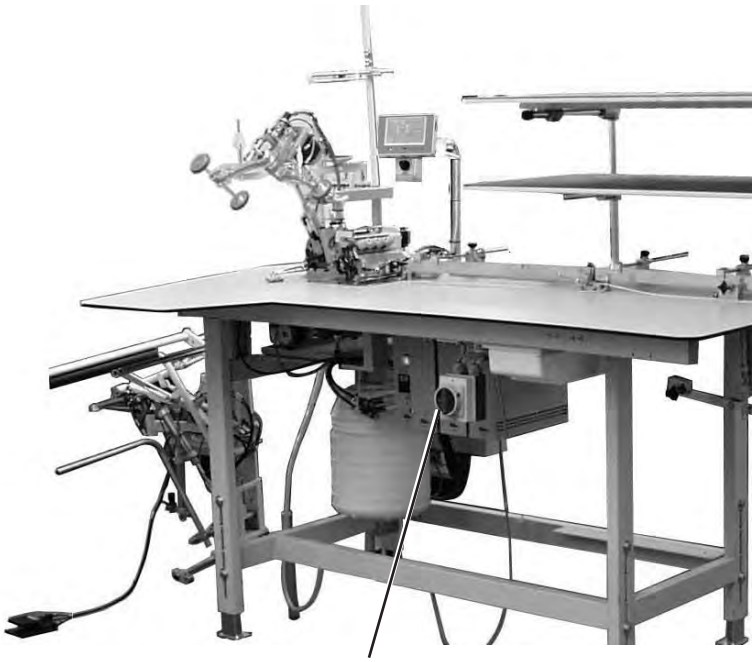
Workplace-related emission value according to DIN 45635-48-B-1

Stitch length:	2.6 mm
Seam length:	1,000 mm
Number of stitches:	6,500 min $^{-1}$
Workpiece G1 DIN 23328:	2-ply
Measuring point according to DIN 4895 Part 1	X = 550 mm Y = 350 mm Z = 600 mm X - axis = crosswise to direction of feed Y - axis = main feed direction Z - axis = height

2 Optional Equipment

See Appendix.

3 Switching On - Switching Off - Program Stop



1

3.1 Switching On

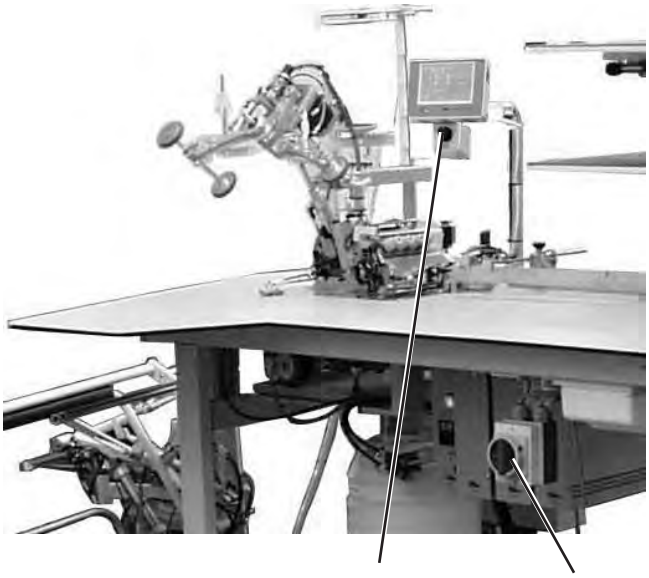
– Switch on the main switch 1 (turn in clockwise direction).
The control unit loads the machine program.
The starting screen is displayed on the display screen of the operating panel.

3.2 Switching Off

– Switch off the main switch 1 (turn in anti-clockwise direction).

3.3 Program Stop

2



The safety system of 1281/5-1 foresees the following options for immediate stoppage in case of faulty operation, needle breakage etc.:

– Press the program stop switch 2 at the operating panel.
  Ongoing work steps at the sewing unit are immediately aborted.
– Turn main switch 1 in anti-clockwise direction.
  The sewing unit is powered off immediately;
  all the movements at the sewing unit stop immediately.

3.4 Renewed setting in motion after program stop

Caution: Risk of Injury!

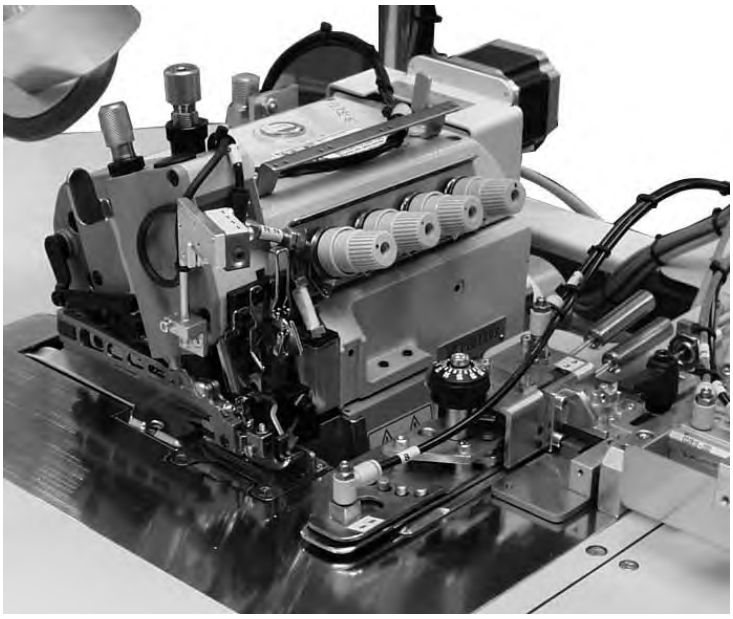
Switch off the main switch.
Repair the fault only when the sewing unit is switched off.

Renewed setting in motion of the machine is allowed only after the fault has been repaired.

– Switch on the main switch 1 (turn in clockwise direction).
– Unlock the program stop switch.
  The control unit loads the machine program.
  The start screen appears on the display screen of the operating panel.
  The sewing unit is once again ready for operation.

4 Operation of the sewing machine head

4.1 General Information



The operation of the sewing machine head (inserting the needle, threading the needle thread and looper thread etc.) is described in the separately enclosed Pegasus operating instructions.

The operating instructions are in the accessories pack of the sewing unit.

Caution: Risk of Injury!

Kindly read the operating instructions of the sewing machine head carefully and follow all the safety instructions.

4.2 Recommended yarn

Needle system: B27

Recommended needle thickness: Nm 80 for very thin sewing material
Nm 90 for thin sewing material
Nm 100 for medium weight sewing material

High sewing safety and good sewability are achieved with the following covering threads:

- Double polyester continuous polyester core spun (e.g. Epic Poly-Poly, Rasant x, Saba C, ...)
- Double polyester continuous cotton core spun (e.g. Frikka, Koban, Rasant, ...)

In case these yarns cannot be procured, even polyester fibers or cotton yarn specified in the table can be sewed up.

Double core threads are often offered by yarn producers under the same designation as triple polyester fibre yarn (3-cyl. spun). This results in doubts in respect of twist and yarn thickness.

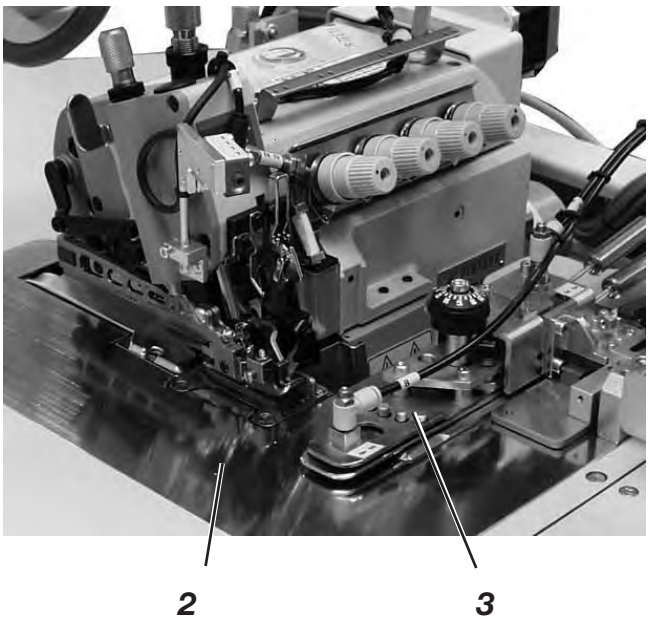
In case of doubt, untwist the yarn and check as to whether it is double or triple twisted.
The Label No. 120 on the yarn roll of a core thread e.g. corresponds to the yarn thickness Nm 80/2 (see table values in brackets).

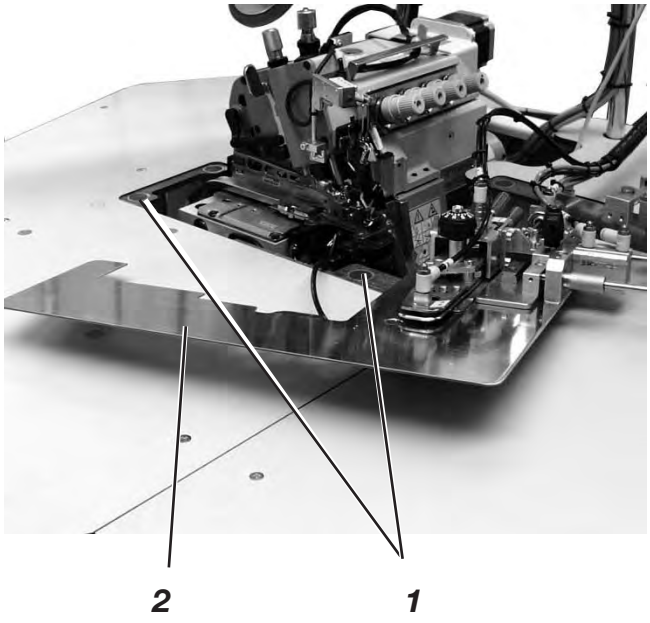
In case of monofil threads, needle threads and looper threads of the same thickness can be used. In doing so, the best results are achieved with soft and elastic threads (software) with thread thickness of 130 Denier.

Recommended yarn thicknesses:

Needle Thickn. Nm	**Core thread**		**Core thread**	
	Needle thread Polyester-continuous Label No.	Looper thread Polyester-core spun Label No.	Needle thread Polyester-continuous Label No.	Looper thread Cotton core spun Label No.
80				
90	120 (Nm 80/2)	120 (Nm 80/2)	120 (Nm 80/2)	120 (Nm 80/2)
100	100 (Nm 65/2)	100 (Nm 65/2)	100 (Nm 65/2)	100 (Nm 65/2)
Needle Thickn. Nm	**Polyester fibre yarn (3cyl.-spun)**		**Cotton yarn**	
	Needle thread	Looper thread	Needle thread	Looper thread
80	Nm 120/3	Nm 120/3	Ne 60/3-80/3	Ne 60/3-80/3
90	Nm 80/3-120/3	Nm 80/3-120/3	Ne 50/3-70/3	Ne 50/3-70/3
100	Nm 70/3-100/3	Nm 70/3-100/3	Ne 40/3-60/3	Ne 40/3-60/3

4.3 Detaching/ Attaching the fabric sliding plate





The fabric sliding plate 2 is held in the recess of the table top with the help of the magnet 1.
The edge guide 3 is fastened to the fabric sliding plate.

Detaching the fabric sliding plate

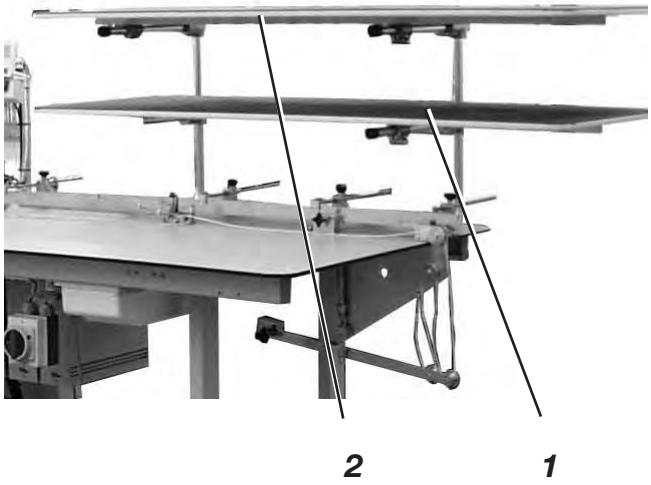
– Detach the edge guide 3 carefully upwards from the magnet.
– Swivel the fabric sliding plate to the side.
  The lower area of the sewing machine head is now accessible.

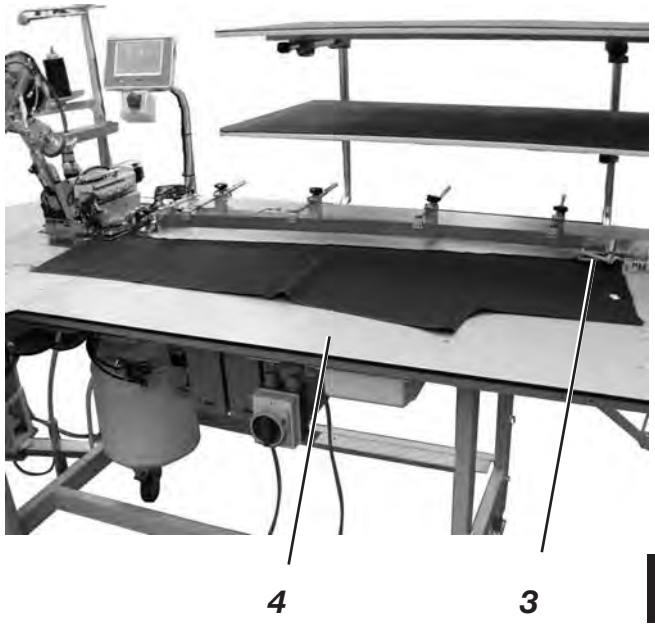
Attaching the fabric sliding plate

– Push the fabric sliding plate into the recess of the table top and insert downwards.

5 Operating the sewing unit

5.1 Positioning table and work table

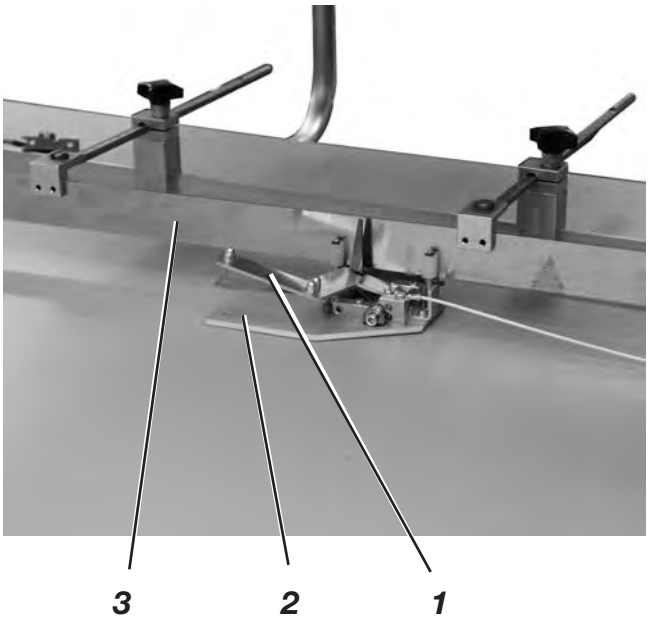


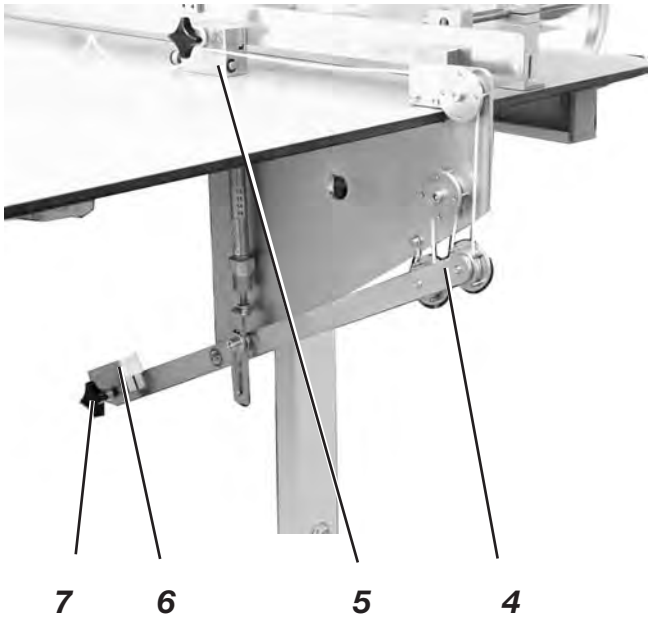


The sewing unit is equipped with two positioning tables 1 and 2. The skirt parts or trouser parts are prepared on them respectively.

On work table 4, the trouser parts or skirt parts are positioned and clamped with the mouse 3.

5.2 Mouse with guide rail and retraction mechanism





The mouse is used for clamping of the trouser parts or skirt parts, in order to prevent them from sliding.

The guide rail 3 is flexible and must be adjusted to the contour of the sewing part.

Caution: Risk of Injury !

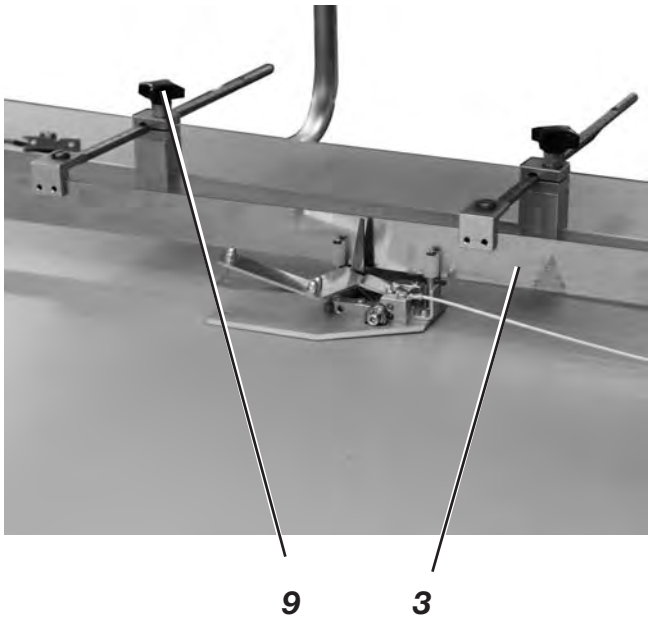
Do not reach into the mouse when it is open.

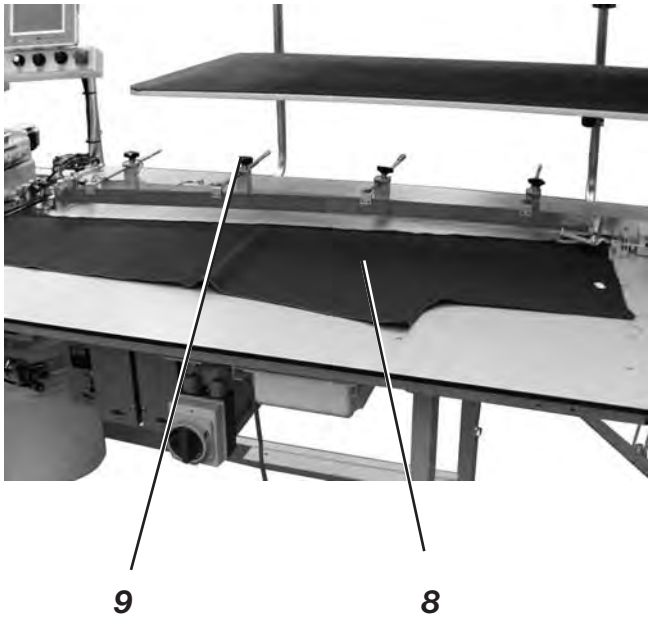
Insert sewing part

– Place the sewing part between the mouse plate 2 and the clamping arm 1.
– Press shut the mouse.

During the sewing operation, the mouse is drawn along the guide rail 3 until the opening of the clamping arm 1 is actuated by a limit switch.

Then, the mouse is drawn back by the retraction mechanism 4 until the adjustable limit stop 5 is contacted.

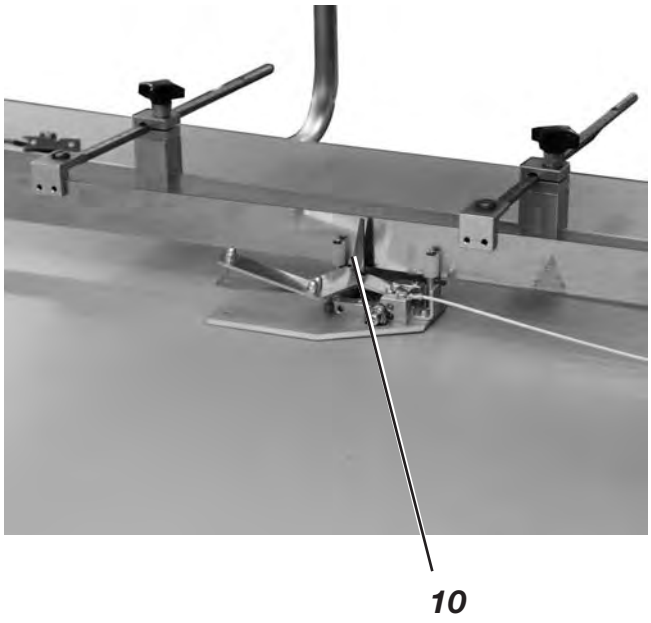




Adjusting the guide rail 3

– Place the sewing part 8 on the work table in opposite direction to the feed direction.
– Loosen the toggle screw 9.
– Advance the guide rail 3 towards the contour of the sewing part.
– Retighten the toggle screw 9.

Opening the mouse manually



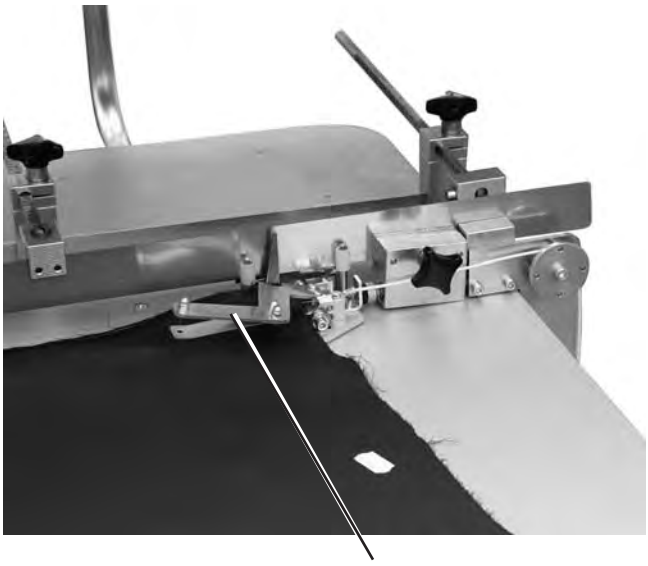
– Actuate lever 10.
The mouse opens.

5.3 Inserting the sewing parts and starting the sewing operation

The closing seam sewing unit 1281/5-1 works semi-automatically at high production speed.
In the process, the operator of the sewing unit must perform the following tasks:

- Call up the desired seam program;
- Insert the workpiece neatly;
- Actuate the sewing operation with the foot switch;
- Monitor the sewing operation of the sewing unit;
- Remove the finished parts from the stacker.

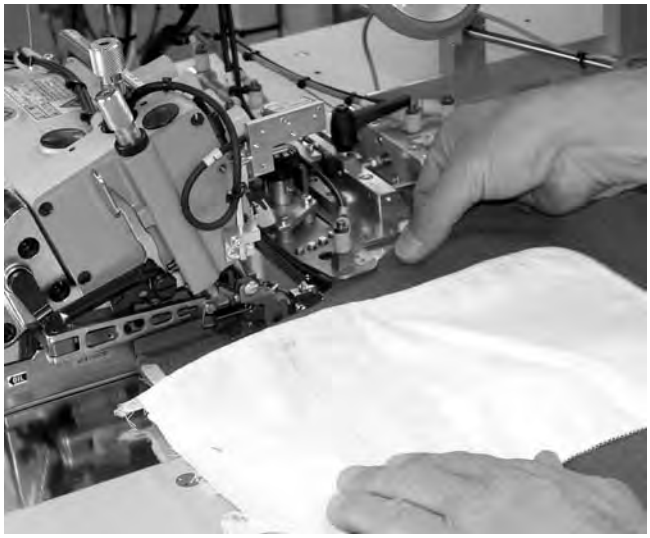
Side Seam M02 5_7

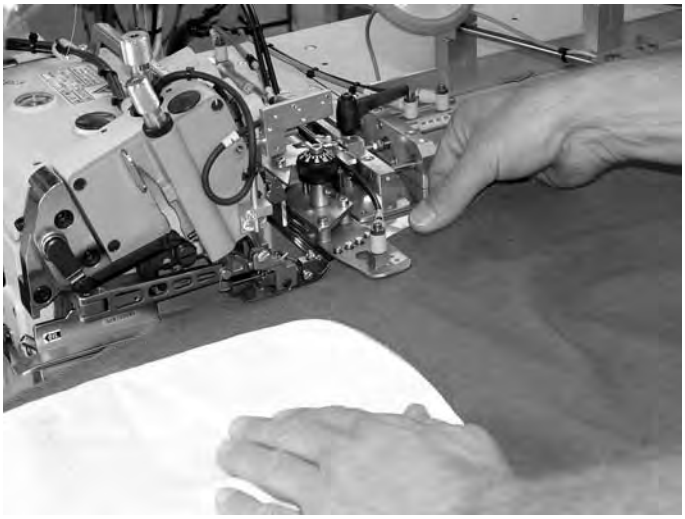


1

1) Select the seam program at the operating panel.
2) Lay out and adjust the trouser parts on the positioning table.
3) Insert the sewing parts in the mouse 1.
4) Close the mouse.

5) Insert the trouser parts under the sewing foot up to the point that the feed dogs securely grasp the trouser parts.
6) Hold the trouser parts to be sewed up with the left hand.
7) Sew the hip curve manually with the “forward” pedal.





8) With the right hand, grasp the trouser parts to be sewed such that the middle finger is below the lower trouser part, the index finger is between the two and the thumb is on the upper trouser part.

9) With pedal “-1” “backwards”, the contour guide moves forward.

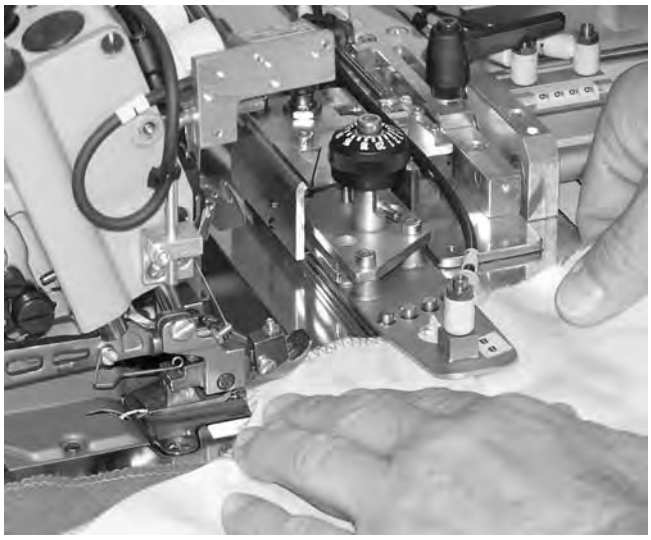
10) Should a correction be needed, the contour guide can be moved back with the reset button.
Once the trouser parts have been corrected, the contour guide can once again be moved forward with the “backwards” pedal.

11) Step on forward pedal.
The automatic sewing operation starts.

12) The transport puller is lowered and transports the workpiece.
- At the seam end, the roll-out device is lowered in order to secure chain separation and prevent the trouser parts from sliding.
- The completely sewed trouser parts are destacked.

Inside seam M 01 4_6

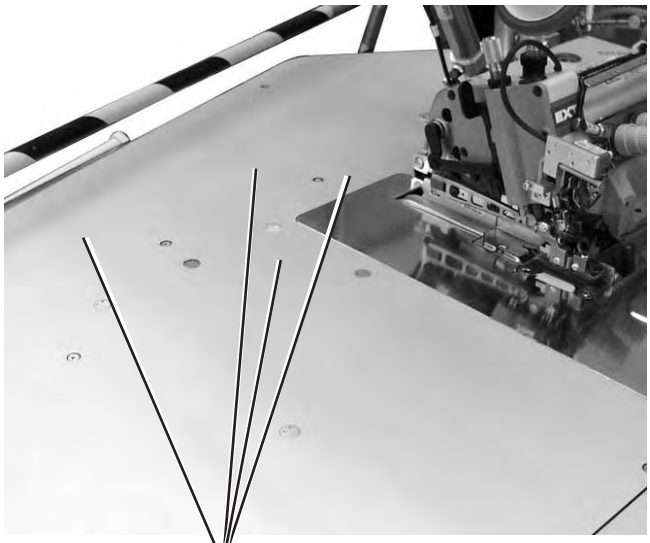
1) Select the seam program at the operating panel (see Chapter 6.3).
2) Lay out and adjust the trouser parts on the positioning table.
3) Insert the trouser parts in the mouse.
4) Close the mouse.



5) Insert the trouser parts under the sewing foot up to the point that the feed dogs securely grasp the trouser parts.
6) With the left hand, hold the trouser parts to be sewed.
7) With the right hand, grasp the trouser parts to be sewed such that the middle finger is below the lower trouser part, the index finger is between the two and the thumb is on the upper trouser part.
8) Step on the forward pedal.
   The sewing operation is performed automatically.
9) The transport puller is lowered and transports the workpiece.
   - At the seam end, the roll-out device is lowered in order to secure chain separation and prevent the trouser parts from sliding.

   The completely sewed trouser parts are destacked.

5.4 Adjusting the blow air for the nozzles in the table top



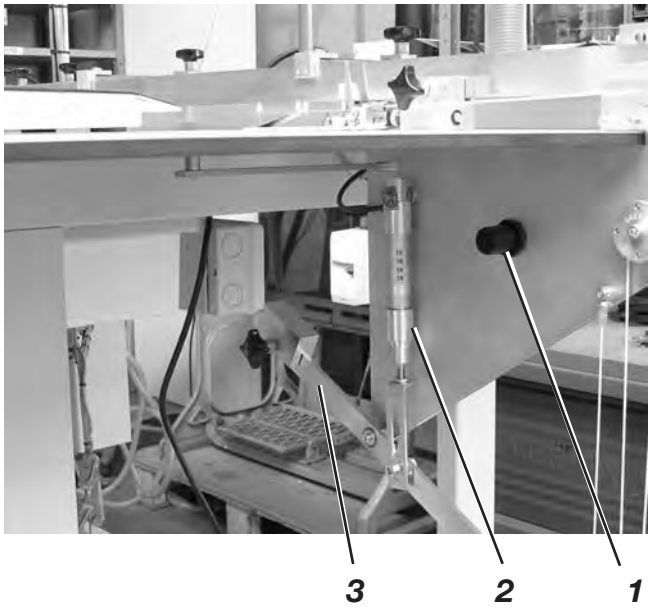
1

2

The blow nozzles 1 in the table top support the neat destacking of the workpiece.

– Adjust the blow air strength with the hand wheel 2 under the table top.
  Turning the hand wheel to the right
  = blow air is stronger
  Turning the hand wheel to the left
  = blow air is weaker

5.5 Adjusting the reverse motion speed of the mouse.

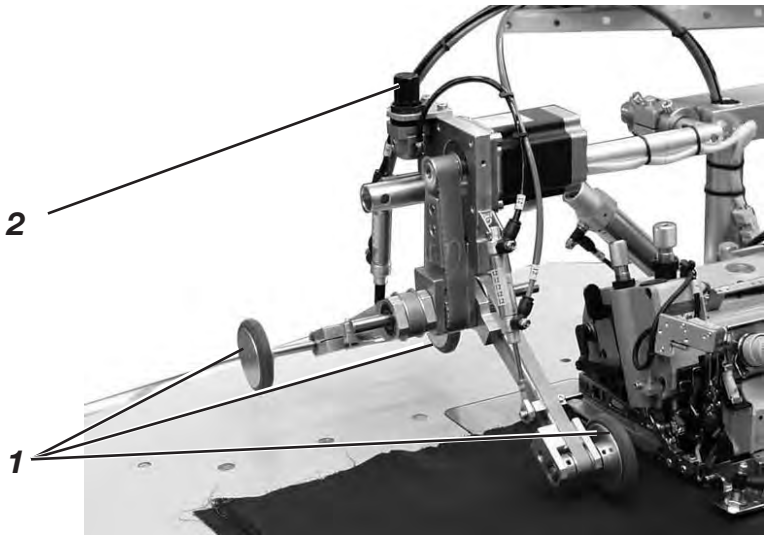


The cylinder 2 presses the mouse mechanism 3 downwards and thus draws the mouse back into insertion position.

The return speed can be adjusted.

– Adjust the speed with the hand wheel 1.
  Turning the hand wheel to the right
  = speed is higher
  Turning the hand wheel to the left
  = speed is lower

5.6 Adjusting the pressure of the puller



The pressure of the puller rollers 1 can be influenced using the turning knob 2.

– Turning the knob 2 to the right.
  Pressure is increased.
– Turning the knob 2 to the left.
  Pressure is reduced.

5.7 Stacker

2 *1* *3*

The finished sewing parts are destacked on the flip stacker 2.

The destacked and clamped sewing parts can be removed by actuating the foot switch 1.

The triggering of the stacker is done by means of a control impulse. The pneumatic functions are shown in the pneumatic circuit diagram.

Caution: Risk of Injury !

Do not reach into the operating range of the flip stacker while the stacking operation is on.

Manual destacking

– Press button 3 on the operating panel.
  A destacking operation is performed.

Removal of destacked parts

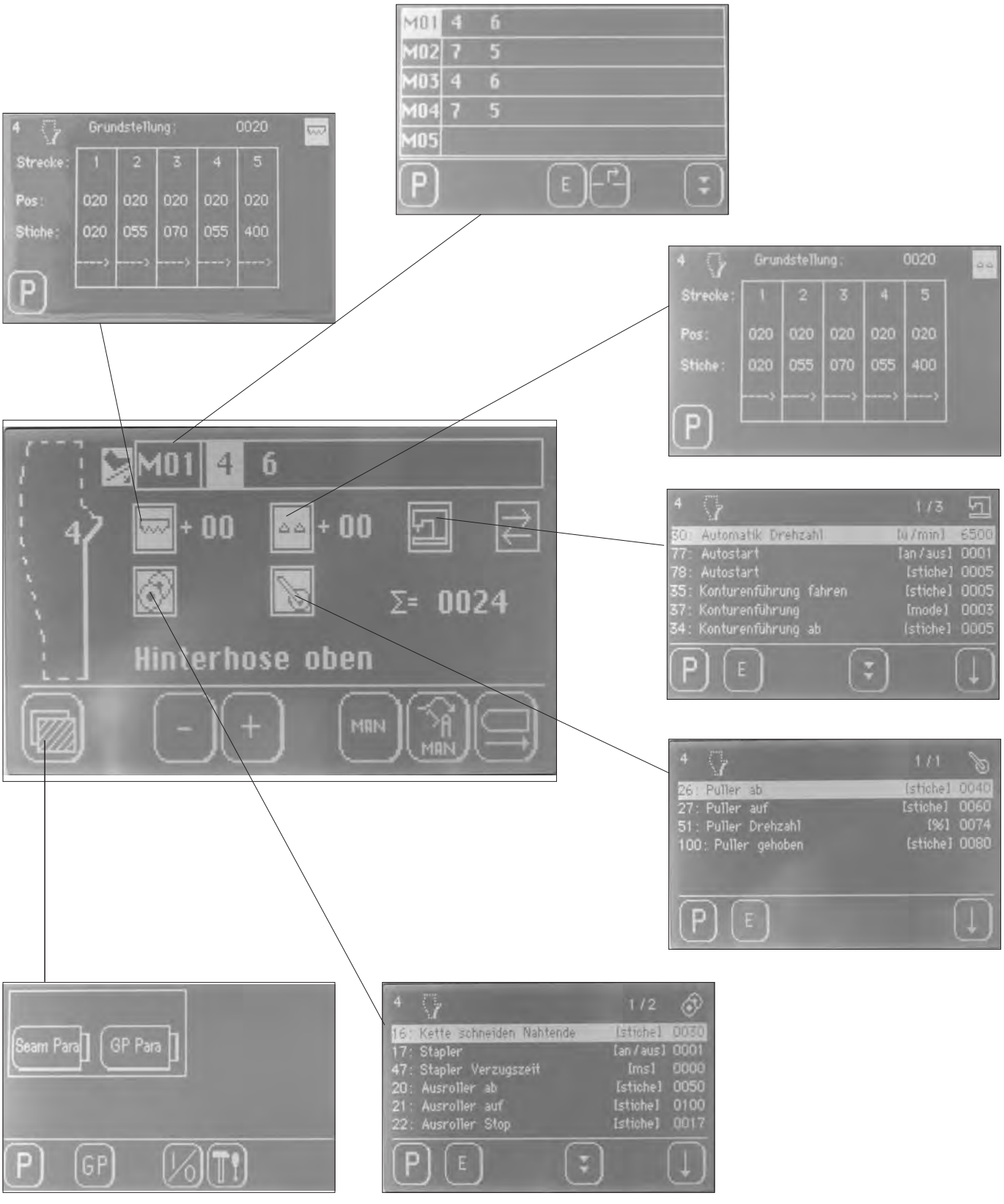
– Actuate foot switch 1 and hold it in that position.
– Remove the destacked parts.

6 Operating the control unit

6.1 Operating the touch-screen monitor

To start a function, the display screen is touched with the finger-tip at the point where the respective icon is shown.

Tap directly on the desired function symbol with the finger-tip.
The symbol will appear against a yellow background.



6.3 Main screen

– Switch on the main switch 1 (turn in clockwise direction).
The control unit loads the machine program.
The start screen is displayed on the display screen of the operating panel.

= Seam pattern is active seam in program

= Pedal Start

= Designation of the program (M01)
A program can comprise several seams (4, 6)

= Seam number of the active program

= Adjusting the upper feed (only stepper motor version)
Increasing or decreasing the value using the plus/minus symbols

= Adjusting the lower feed (only stepper motor version)
Increasing or decreasing the value using the plus/minus symbols

= Calling up the machine parameters

= Automatic seam change

= Adjusting the puller

= Adjusting the puller transport

= Daily pieces counter

= Display of the current seam

= Calling up the main menu

= Increasing (+) or
decreasing (-) values for the upper and differential feed
(only stepper motor version)

= Activating manual sewing

= Manual stacking

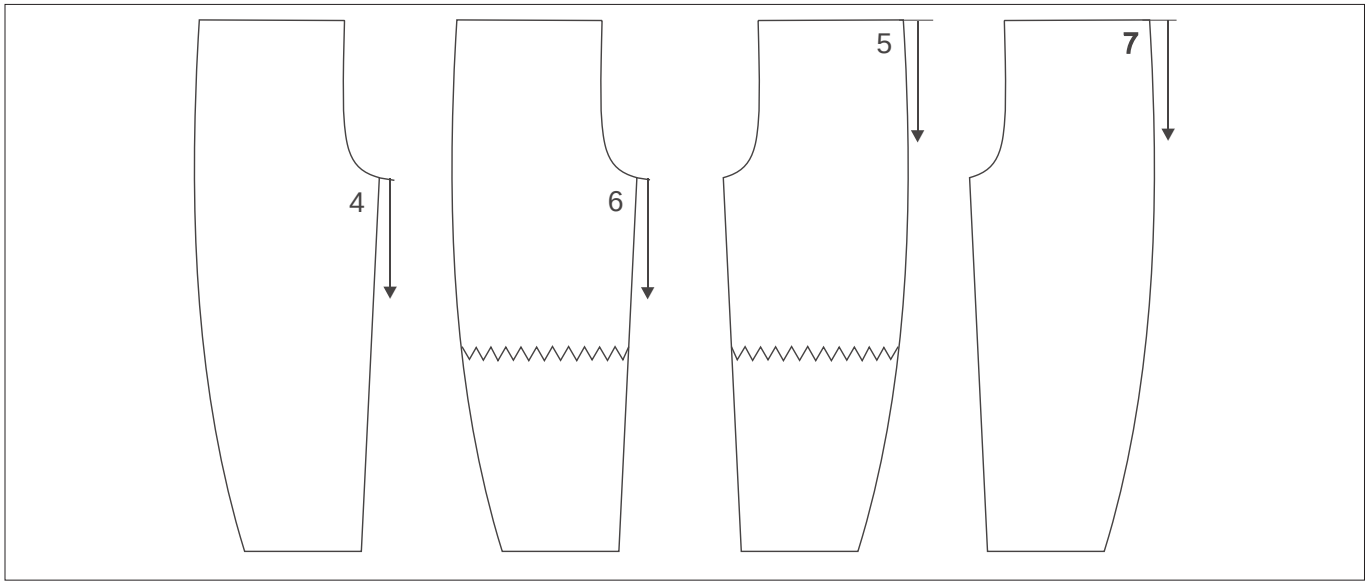
= Contour guide back to home position

Note:

When the symbols are tapped, the highlighting of the symbols in white background signifies that the function is activated.

6.4 Sewing programs

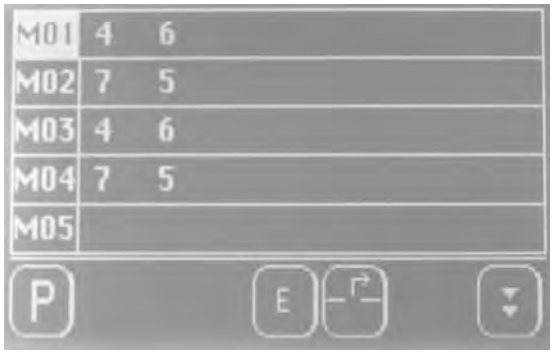
The sewing unit is pre-programmed with four programs ex-works.



Program No.	Seam-No.	Operation	Trouser position	Remarks
1	4	Closing the inside seam	Hind trouser top	Automatic sewing with contour guide
	6	Closing the inside seam	Hind trouser bottom	
2	7	Closing the inside seam	Hind trouser top	Manually guiding and sewing over the hip curve, then automatic sewing
	5	Closing the inside seam	Hind trouser bottom	
3	4	Closing the inside seam	Hind trouser top	Automatic sewing with contour guide
	6	Closing the inside seam	Hind trouser bottom	
4	7	Closing the inside seam with fullness	Hind trouser top	Manually guiding and sewing over the hip curve, then automatic sewing
	5	Closing the inside seam with fullness	Hind trouser bottom	

6.4.1 Selecting the program and seam number

– Press the symbol when the main screen is displayed.
The display changes to the screen programs.

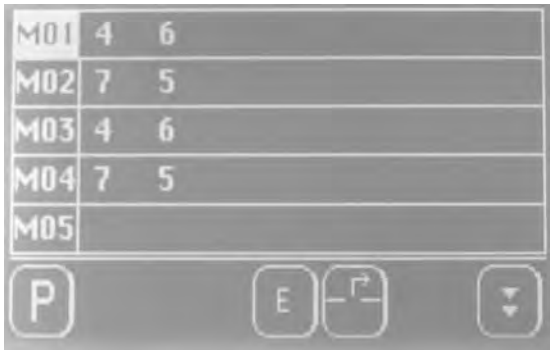


– Tap the symbol for the desired program, e.g. “M04”.
The symbol appears in inverted image.

– Tap the symbol “**P**” in order to adopt the selection and in order to return to the main screen.

6.4.2 Creating a new seam program with seam number

– Press the symbol on the displayed main screen.
The display changes to the screen programs.



– Tap the symbol for the new seam program (e.g. “M05”).
The program number appears in inverted image.

– Tap the symbol in order to adopt the selection.
The display changes to the seam program “M05”.

– Tap the symbol.
The display is inverted.

– Select a seam (e.g. “4”).
The display changes to confirmation prompt.
Selection: Yes/ No

– Confirm with “Yes” in order to adopt the selection and in order to return to the seam program “M05".

– Tap the symbol.
The display is inverted.

– Select a seam (e.g. “6”).
The display changes to confirmation prompt.
Selection: Yes/ No

– Confirm with “Yes” in order to adopt the selection and in order to return to the seam program “M05".

– Tap the symbol “**P**” in order to adopt the selection and in order to return to the display screen program.

– Tap the symbol “**P**” in order to return to the main screen.

6.4.2.1 Number of seam programs and seams

Seam programs max: M01 – M20
Seams per seam program: 1 - 7

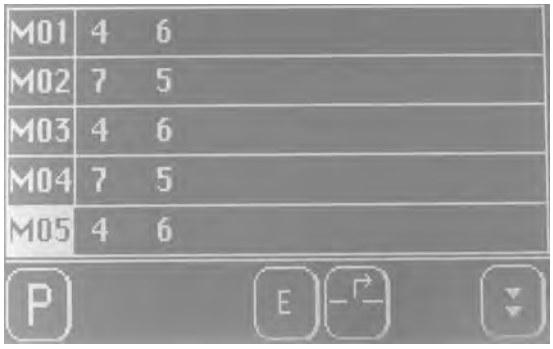
6.4.3 Editing, deleting the seam program or seams

Symbol	Meaning
	Save
	Delete
	Enter
	Insert
	Scroll pages
	Exchanging

Delete seam

Example: Seam “6”

– Press the symbol when the main screen is displayed.
The display changes to the screen programs.



– Tap the symbol for the new seam program (e.g. “M05”).
The program number appears in inverted image.

– Tap the symbol “**E**” in order to adopt the selection.
The display changes to the seam program “M05”.

– Tap the seam “6”.

The display  is inverted.

– Tap the symbol “Delete”.
The display changes to the confirmation prompt Yes / No.

– Confirm with “Yes” in order to delete the seam 6.

Inserting a seam

Example: No. “1”

The seam to be inserted is always inserted in front of an existent seam.

– Tap the seam “**6**”.

The display appears inverted. 

– Tap the symbol ”Insert”.
The seam or several seams are shifted one place to the right and the free storage space flashes in negative image. 

– Select one seam, e.g. Number “**1**”.
The display changes to confirmation prompt Yes/ No.

– Confirm with “Yes” in order to insert the seam “**1**”.

– Tap the symbol “**P**” in order to adopt the selection and in order to return to the display screen program.

Exchanging the seam

Example: No. “6” with No. “4”

– Tap the seam “**6**”.

The seam “**6**” flashes.

– Tap the symbol ”Exchange”.
The other seams are marked for selection.

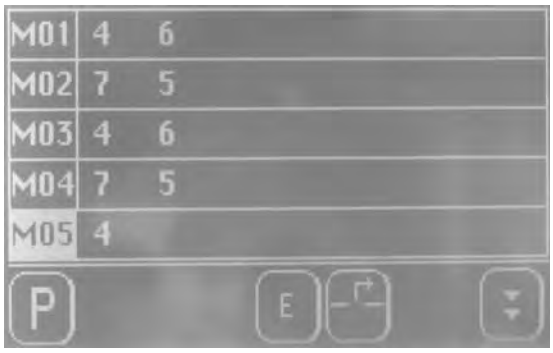
– Tap one seam “**4**”.
The seams “**4**” and “**6**” flash in inverted image.

– Confirm with “Yes” in order to exchange the seams “**4**” and “**6**”.

– Tap the symbol “**P**” in order to adopt the selection and in order to return to the display screen program.

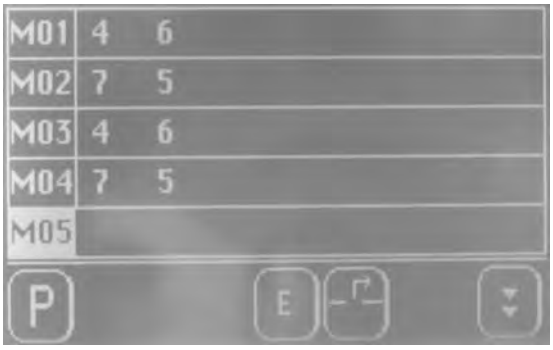
Deleting the seam program

Example: M05

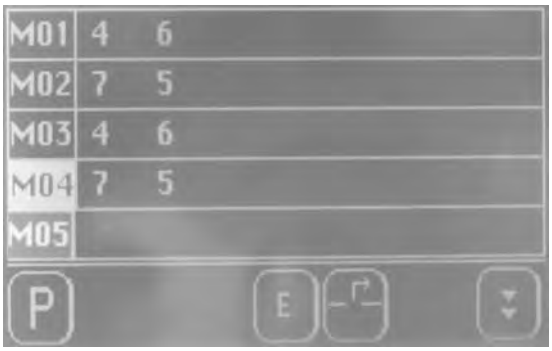


– Tap the symbol “Delete”.
The display changes to the confirmation prompt Yes/ No.

– Confirm with Yes in order to delete the seam program M05.
The display changes to the program screen.



– Select the desired seam program, e.g. 04.
The seam program is displayed in inverted im



– Tap the symbol “**P**” in order to adopt the selection and in order to return to the display screen program.

6.4.2 Manual sewing, driven by the pedal

Switching on the function

– Tap the symbol “**MAN**”.
The display changes to the “manual mode”.

Switching off the function

– Tap the symbol “**P**” in order to return to the main screen.

Note

The maximal speed in “Manual Mode” can be changed in the global parameters with the help of Parameter No. “103”.

6.4.5 Changing the seam programs

- Seam parameters are parameters that can be changed for individual seams (e.g. “4” or “6”).

- Global parameters are parameters that are identical for all the seam programs and seams.

Seam parameters

Global parameters

Automatic seam change

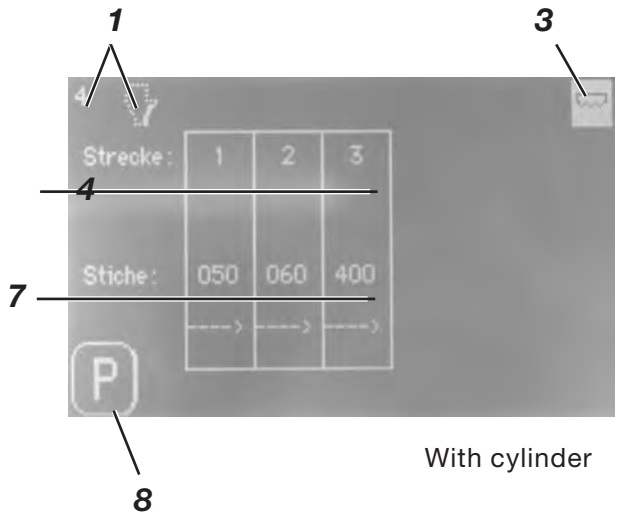
Note

The quick access keys function only for the option “Fullness regulation by means of stepper motors”.

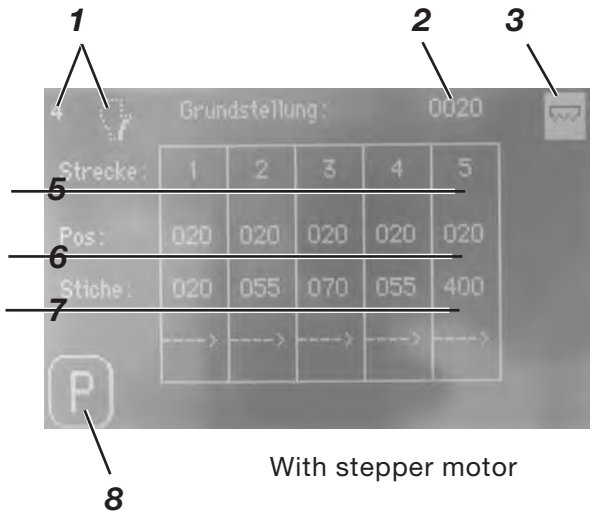
6.4.5.1 Seam Parameters

6.4.5.1.1 Editing the fullness regulation

– Tap the symbol for upper or lower feed.
The following display screen appears.



With cylinder



With stepper motor

1 = Display of the current seam

2 = Display of the fullness in the home position (stepper motor)

3 = Fullness regulation is enabled

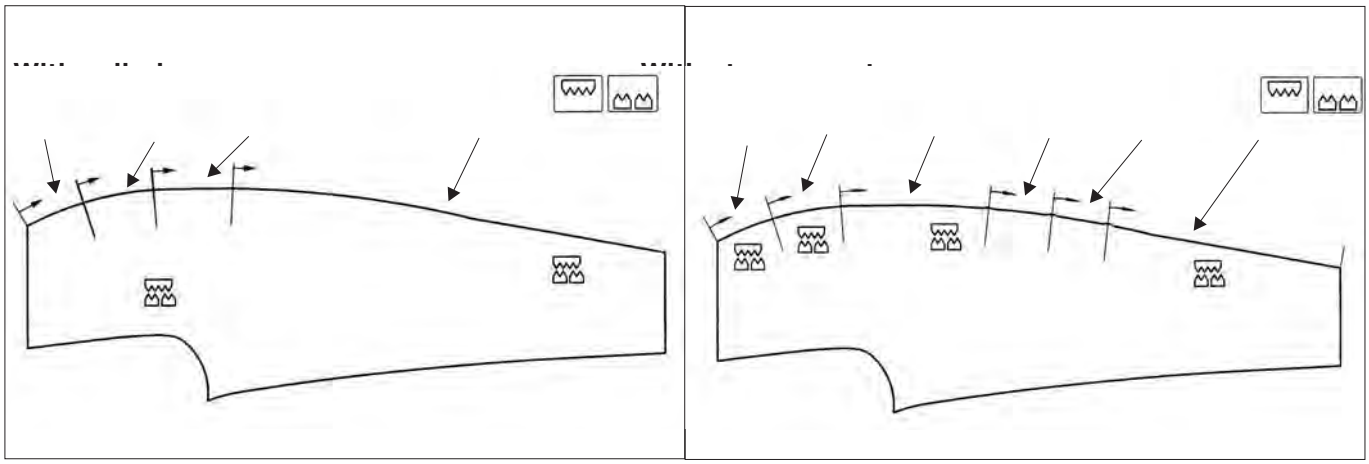
4 = Switching on the segments

5 = Switching on the segments for quick adjustment on the main display screen (stepper motor)

6 = Fullness in the 5 segments towards which the sewing motor moves

7 = Number of stitches in the segments 1 - 5

8 = Saving



Note

The parameters of the home positions 2 are located in the “Global Parameters” with the numbers “40” and “42”.

Switching on the fullness regulation

– Tap the symbol 3.
The display is inverted.

– The fullness regulation is therewith enabled and is also displayed in inverted image on the main screen on exiting the fullness regulation.

Programming the stitches and quantities

– Tap on the symbols for the stitches “6” or Item “5”.
The display changes to input mode.

– Enter the desired values.

– Save the values with the key “**P**”.
The display changes back to fullness regulation.

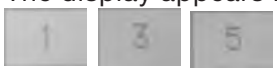
Machine with fullness regulation by means of cylinder

– Tap on the symbol for the segment **2**.
The display appears inverted.

In segment **2**, fullness is switched on by the number of programmed stitches
.

Machine with fullness regulation by means of stepper motor

– Tap on the symbols 1, 3, 5
.
The display appears inverted.



– The segments 1, 3, 5 are switched on for quick adjustment in the main view
.

ATTENTION !

The following must be borne in mind while working with fullness by means of stepper motor:
The enabling of the fullness always applies to all 5 segments

Quick adjustment of fullness regulation

– Tap on the symbol for the desired quick adjustment.
The display appears inverted.

– Enable the fullness with the keys “**+**” and
Change segments 1, 3 and 5.

– Tap on the symbol “**+17**”.
The value is saved.

Parameters of fullness regulation by means of cylinder

Upper feed

Parameter 01:	Segment 1 Number of stitches before the upper feed is switched on
Parameter 02:	Quantity of fullness 1 OFF/ ON
Parameter 03:	Segment 2 Number of stitches, the length of time during which the upper feed is switched on
Parameter 04:	Quantity of fullness 2 OFF/ ON
Parameter 05:	Segment 3 Number of stitches, the length of time during which the upper feed is switched on
Parameter 06:	Quantity of fullness in segment 3 OFF/ ON

Differential lower feed

Parameter 07:	Segment 1 Number of stitches before differential feed is switched on
Parameter 08:	Quantity of fullness 1 OFF/ ON
Parameter 09:	Segment 2 Number of stitches, the length of time during which differential transport is switched on
Parameter 10:	Quantity of fullness 2 OFF/ ON
Parameter 11:	Segment 3 Number of stitches, the length of time during which differential transport is switched on
Parameter 12:	Quantity of fullness in segment 3 OFF/ ON

Parameters of fullness regulation by means of stepper motor

Upper feed

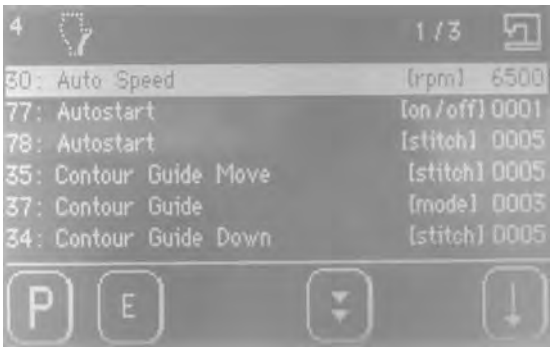
Parameter 01:	Segment 1 Number of stitches
Parameter 02:	Quantity of fullness in segment 1
Parameter 03:	Segment 2 Number of stitches
Parameter 04:	Quantity of fullness in segment 2
Parameter 05:	Segment 3 Number of stitches
Parameter 06:	Quantity of fullness in segment 3
Parameter 107:	Segment 4 Number of stitches
Parameter 108:	Quantity of fullness in segment 4
Parameter 109:	Segment 5 Number of stitches
Parameter 110:	Quantity of fullness in segment 5

Differential upper feed

Parameter 07:	Segment 1 Number of stitches
Parameter 08:	Quantity of fullness in segment 1
Parameter 09:	Segment 2 Number of stitches
Parameter 10:	Quantity of fullness in segment 2
Parameter 11:	Segment 3 Number of stitches
Parameter 12:	Quantity of fullness in segment 3
Parameter 113:	Segment 4 Number of stitches
Parameter 114:	Quantity of fullness in segment 4
Parameter 115:	Segment 5 Number of stitches
Parameter 116:	Quantity of fullness in segment 5

6.4.5.2 Machine parameters

– Tap the symbol.
The display changes to the machine parameters.



– Select the desired parameter with the arrow keys.

– Tap the symbol “**E**” in order to adopt the selection.

– Changing the value.

– Tap the symbol “**P**” in order to save the selection.

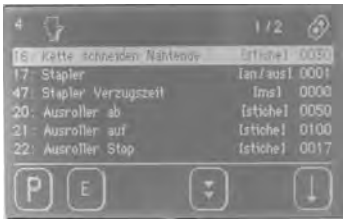
Parameter 30: Adjusting the main speed
Parameter 31: Manual sewing on/ off
Parameter 32: Length of time during which table blowing remains switched on
Parameter 33: Number of stitches before start of sewing is followed by automatic start
Parameter 34: Number of stitches until the contour guide is lowered

Parameter 35: Number of stitches until the contour guide moves in sideways
Parameter 36: Number of stitches until the transport unit is lowered
Parameter 37: Start mode for contour control
0 = front right
1 = front left
2 = rear right
3 = rear left

Parameter 60: Soft-start speed
Parameter 61: Switching on or switching off the soft-start
Parameter 77: Switching on or switching off the auto-start
Parameter 78: Number of stitches before the auto-start begins
Parameter 120: Sewing foot lift in the seam
Parameter 121: Sewing foot lift at seam start

6.4.5.3 Roll-out Device

– Tap the symbol.
The display changes to the parameters.



– Select the desired parameter with the arrow keys.

– Tap the symbol “**E**” in order to adopt the selection.

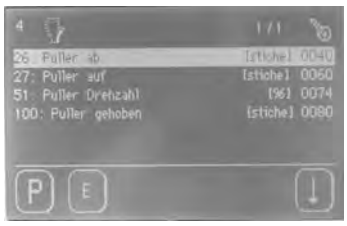
– Changing the value.

– Tap the symbol “**P**” in order to save the selection.

Parameter 16: chain	Number of stitches for the length of which the thread is suctioned (seam start)
Parameter 17:	Switching on or switching off the stacker
Parameter 20: lowered	Number of stitches before the roll-out device is
Parameter 21: roll-out device	Number of stitches, for the length of which the is switched on.
Parameter 22: before the	Number of stitches after unblocked light barrier roll-out device stops.
Parameter 23: place.	Period of time during which the smoothening takes
Parameter 47:	Point of time of stacker movement
Parameter 53:	Point of time when the roll-out device is lifted.

6.4.5.4 Puller

– Tap the symbol.
The display changes to the parameters.



For programming, see
Chapter 6.5.6.2 Roll-out Device

Parameter 26:	Number of stitches before the puller is lowered
Parameter 27: puller	Number of stitches, for the length of which the is lowered.
Parameter 51:	Puller speed Value lower = Puller is quicker Value higher = Puller is slower
Parameter 100: puller is opened.	Number of stitches, for the length of which the

6.4.5.5 Global Parameters

– Tap the symbol for “Main Menu”.
The display changes to main menu.

– Tap the symbol for global parameters.
The display changes to the
global parameters.

– Select the desired
parameter with the arrow keys.

– Tap the symbol “**E**” in order to adopt the
.

– Changing the value.

– Tap the symbol “**P**” in order to save the selection.

Parameter 29:	Upper feed maximum track (option of stepper motor)
Parameter 38:	Delayed start of light barrier
Parameter 39:	Differential feed (option of stepper motor) Maximum track
Parameter 40:	Base value for upper feed (option of stepper motor)
Parameter 42:	Base value for differential lower feed (option of stepper motor)
Parameter 45:	Number of stitches before table blowing is switched on.
Parameter 46:	Duration of the stacker impulse
Parameter 48:	Max. speed
Parameter 49:	Speed during warp thread separation
Parameter 50:	Number of stitches before thread tensioning is opened (seam end).
Parameter 52:	Speed of roll-out device
Parameter 54:	Impulse duration of retracted mouse
Parameter 55:	Time until after the roll-out device is lifted on the transport unit.
Parameter 58:	Display of the software version
Parameter 59:	Number of stitches, for the length of which the roll-out device suctions the thread chain (seam start)
Parameter 65:	Thread tension lift

Parameter 79:	Soft-start after “Stop in the seam”
Parameter 80:	Resetting the daily pieces counter.
Parameter 102:	Language
Parameter 103:	Manual speed
Parameter 126:	Chaining-off speed

6.4.5.6 Input - Output Test

– Tap the symbol for “Main Menu”.
The display changes to main menu.

– Tap the symbol for Input-Output.
The display changes to Input.

Checking the inputs

e.g. Start light barrier **In1**

– Switching the light barrier to dark.
The display In1 appe
inverted.

In 1 = Start light barrier

In 5 = Program Stop

In 8 = Upper Feed Switch (Option)

In 9 = Differential Lower Feed Switch (Option)

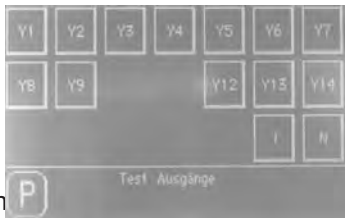
Checking the pedal

– Actuate the pedal.
The display 2 to 12 appears in stepped mode.

0 to 2 = backwards

0 to 12 = forwards

Checking the outputs



– Tap the symbol for the outputs.
The display changes to Outputs.

– Tap the symbol “Y 1”.
The display appears inverted
and the output is switched on at the sam

– Tap the symbol “Y 1” once again.
The output is returned to its original position.

– Tap the symbol.
The subsequently selected output is automatically switched on/off.

Output element

Switch	**Designation**
Y01	Sewing foot up/ down
Y02	Thread tension lift
Y03	Contour guide up/ down
Y04	Stacker off / on
Y05	Roll-out device up/ down
Y06	Transport unit up/ down
Y07	Contour guide forward / backward
Y08	Contour guide blowing on
Y09	Move contour guide sideways
Y10	Differential lower feed on / off
Y11	Upper feed on / off
Y12	Warp thread separator off / on
Y13	Table blowing off / on
Y14	Dirt suctioning off / on
Y15	Puller up/ down
Y16	Mouse retracted

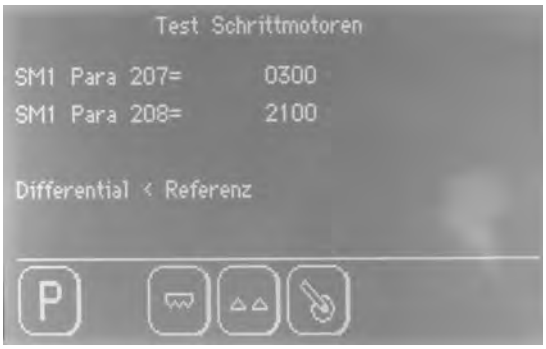
6.4.5.7 Stepper Motor Test

– Tap the symbol “**Stepper Motor Test**”.
The display changes to the inputs.

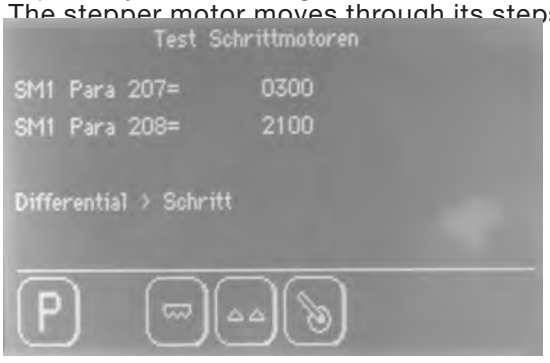
– Tap the symbol.
The display screen for the stepper motor test appears.

– Tap the symbol “**Differential Feed**” .
The display screen for the differential transport test appears.

– Tap on the symbol once again.
The stepper motor for differential transport moves to reference position.



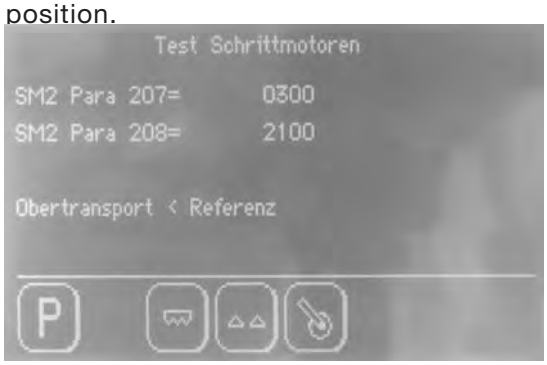
– Tap the symbol once again.
The stepper motor moves through its steps.



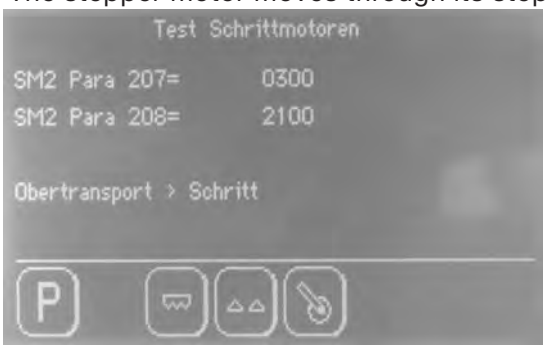
1

Tap the symbol “**Upper Feed**” .
The display screen for the upper feed test appears.

– Tap on the symbol once again.
The stepper motor for differential feed moves to reference position.



– Tap the symbol once again.
The stepper motor moves through its steps.



6.4.8 Version Data

– Tap the symbol **Global Parameters** in the main menu.
The following display screen appears.

– Tap the symbol **Version** .
The version data appears.

1

7. Data protection using the USB stick

7.1 General Information

The USB stick 1 serves the purpose of preserving and transferring the sewing unit software.

With its help, program and parameter data can be transferred even to other sewing units and workplaces.

Even customary USB sticks can be used.

7.2 Formatting the USB stick

Before a new USB stick is used, it must be formatted accordingly.

The file format is the **“FAT 16”** system.

Format the USB stick using a PC with the FAT 16 system.

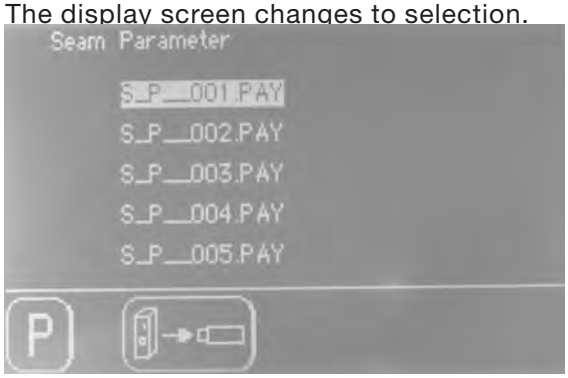
7.3 Saving the seam programs and seam parameters on the USB stick

– Switch off the main switch.
– Insert the USB stick in the slot of the operating panel.
– Switch off the control element.

– Tap the symbol.
The display changes to the main menu.

– Tap the symbol.
The display changes to the display screen “**Saving the seam parameters**”.

– Tap the symbol “**Control on USB stick**”.
The display screen changes to selection.



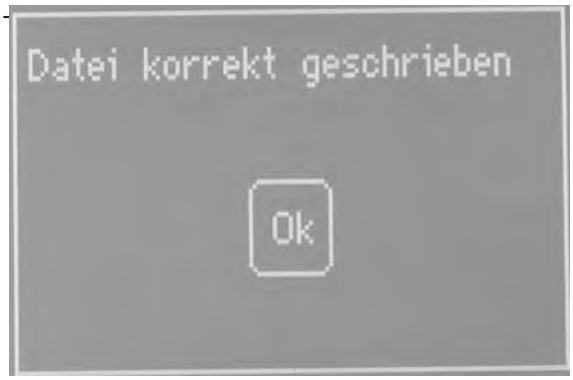
– Tap one file out of the **five** file options.

– Tap the symbol “**Control on USB stick**”.
The display changes to the screen “**Save**”.

– Tap the symbol.
The display changes to the main menu **without** saving.

Or

– Tap the symbol.
The seam program and all the parameters are saved.



– Confirm with “**OK**”.
The display changes to the main menu.

– Tap the button “**P**” in order to return to the main screen.

Note

Five variously programmed files can be saved.
The files can be renamed using the PC.
ATTENTION: In the process, make sure that the file name does not exceed **8 characters**.

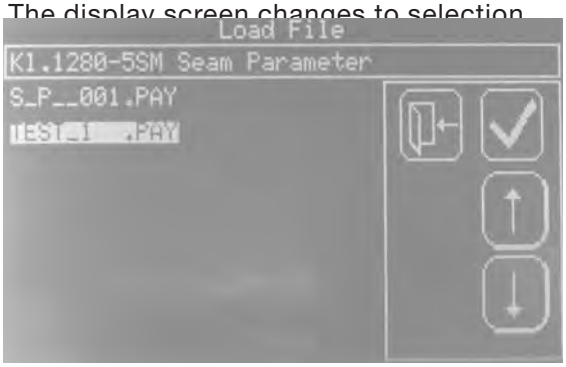
7.4 Loading the seam programs and seam parameters from the USB stick

– Switch off the main switch.
– Insert the USB stick in the slot of the control element.
– Switch on the main switch.

– Tap the symbol.
The display changes to the main menu.

– Tap the symbol.
The display changes to the display screen “**Saving the seam parameters**”.

– Tap the symbol “**USB stick in the control unit**”.
The display screen changes to selection.



– Select the desired file with the arrow keys.

– Tap the symbol.
The display changes to the main menu **without** saving.

Or

– Tap the symbol.
The seam program and all the parameters are loaded.

This is followed by the message:

– Confirm with “**OK**”.
The display changes to the main menu.

– Tap the button “**P**” in order to return to the main screen.

7.5 Saving global parameters on USB stick

Procedure:
See Chapter 7.3

7.6 Loading global parameters from the USB stick

Procedure:
See Chapter 7.4

7.8 Removing the USB stick

– Switch off the main switch.
Pull out the USB stick from the slot of the Efka control unit

8. Maintenance

8.1 Cleaning and Testing

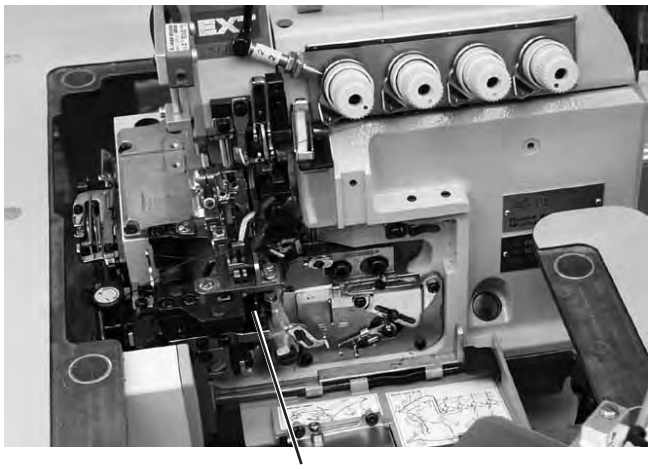
Caution: Risk of Injury !

Switch off the main switch.
The sewing unit may be serviced only when it is switched off.

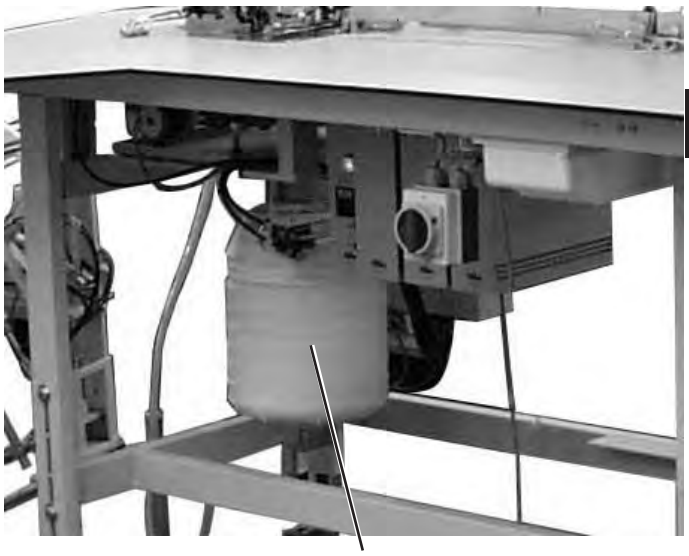
The maintenance jobs must be performed latest after the maintenance intervals specified in the tables (see column “Operating Hours”).

Shorter maintenance intervals can ensue for the processing of lint collecting materials.

A clean sewing unit protects against faults.



1

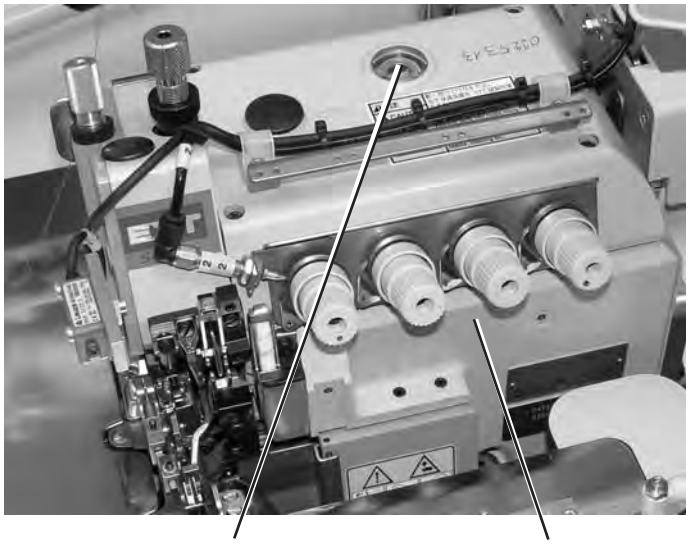


2

6 *5* *4* *3*

Operating hours Maintenance Job	Explanation	Operating Job to be performed
Remove **machine head** - Lint and thread waste . (e.g. with air blow gun)	Clean the entire area 1 of the thread guides under the thread sliding plate	8
Suctioning Device	Empty the container 2 of the suctioning device - Turn the lower part of the container to the left and remove the lower part - Empty the container - Screw back the lower part by turning it to the right.	8
Pneumatic System - Check the water level in the pressure regulator 3	Make sure that the water level does not rise up to the filter insert 4. - After pressing the drain screw 5, blow out the water under pressure from the water separator.	40
- Clean the filter insert 4	Dirt and condensate are discharged by means of filter insert 4. - Separate the sewing unit from the compressed air supply. - Press in the drain screw 5. The pneumatic system of the sewing unit must be pressureless. - Unscrew the water separator 6 - Extract the filter insert 4. Wash and blow out the contaminated filter cup and filter insert with petroleum ether (no solvent!). - Reassemble the water separator and connect the maintenance unit.	500
- Check the leak tightness of the system		500

8.2 Lubrication



1

Caution: Risk of Injury !

Oil can induce skin rashes.
Avoid long-term skin contact.
Wash yourself thoroughly after contact.

ATTENTION !

The handling and disposal of mineral oils is subject to legal regulation.
Deliver used oil to an authorised collection point.
Protect your environment.
Take care not to spill oil.

For lubrication the sewing unit head, use exclusively the lubricant **DA 10** or an equivalent oil with the following specification:

– Viscosity at 40° C: 10 mm²/s
– Flash point 150° C

DA 10 can be ordered from the sales outlets of **DÜRKOPP ADLER AG** while referring to the following part numbers:

250-ml container: 9047 000011
1-litre container: 9047 000012
2-litre container: 9047 000013
5-litre container: 9047 000014

Maintenance work to be carried out	Explanation	Operating hours
Lubrication	Check the oil level in the sewing unit head regularly (inspection glass 1 and 2). For more detailed information, kindly refer to the enclosed operating instructions for the sewing machine head.	8

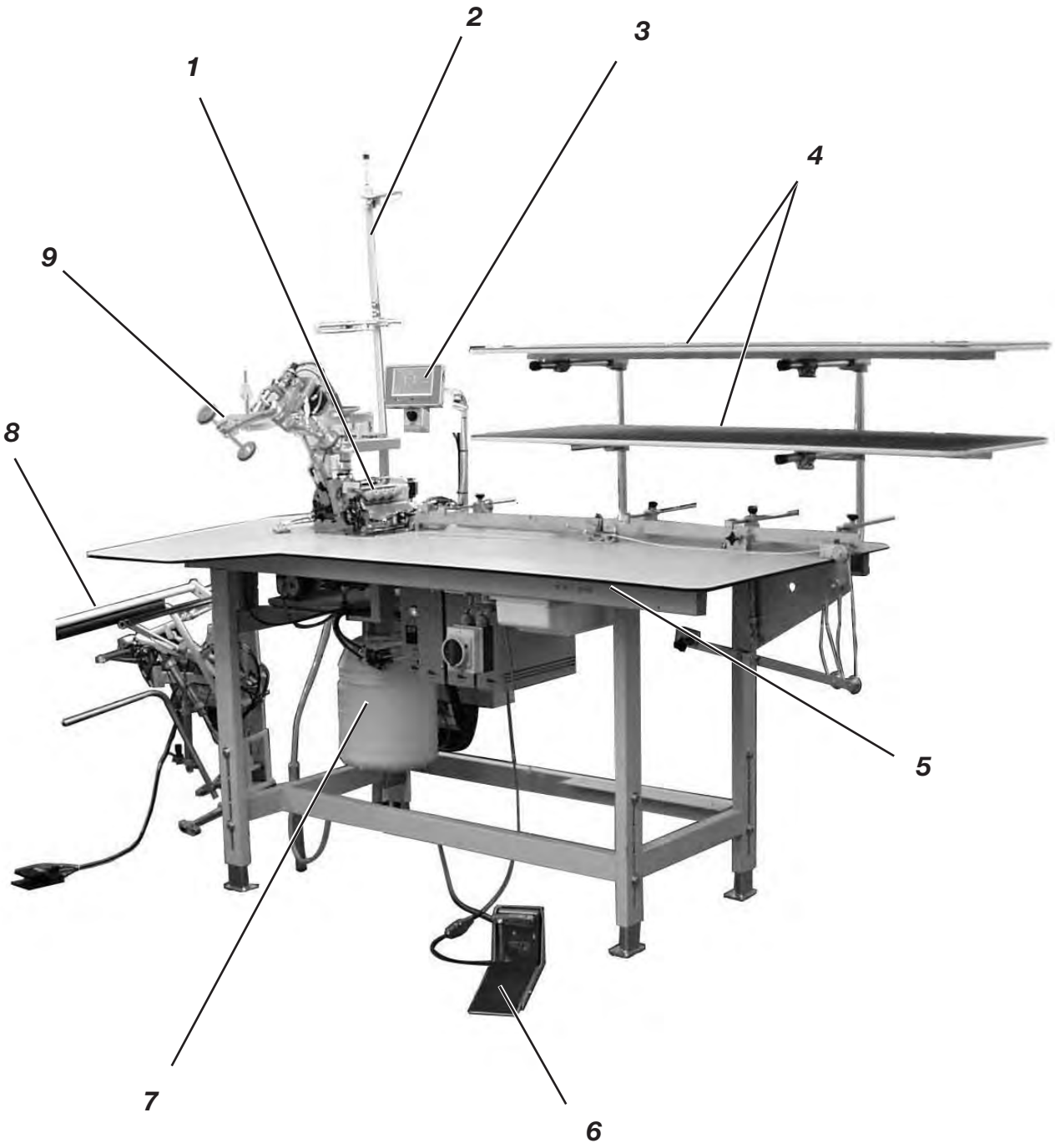
8.3 Repair

When the machine is damaged or parts are worn please contact:

Dürkopp Adler AG
Potsdamer Str. 190
33719 Bielefeld
Tel.: +49 (0) 180 5 383 756
Fax: +49 (0) 521 925 2594
E-mail: service@duerkopp-adler.com
Internet: www.duerkopp-adler.com

Content **Page:**

Part 2: Installation Instructions Cl. 1281/5-1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1 Scope of delivery

The scope of delivery **depends upon your order**.
Sewing unit comprising:

- **1** Sewing machine head (depending upon order)
- **2** Yarn stand
- **2** Control system with operating panel
- **4** Workpiece storage members
- **5** Stand with table top
- **6** Pedal
- **7** Suction unit with suction container
- **8** Stacker
- **9** Transport unit with puller
- Compressed air monitoring unit with air blow gun

2 General Information

ATTENTION !

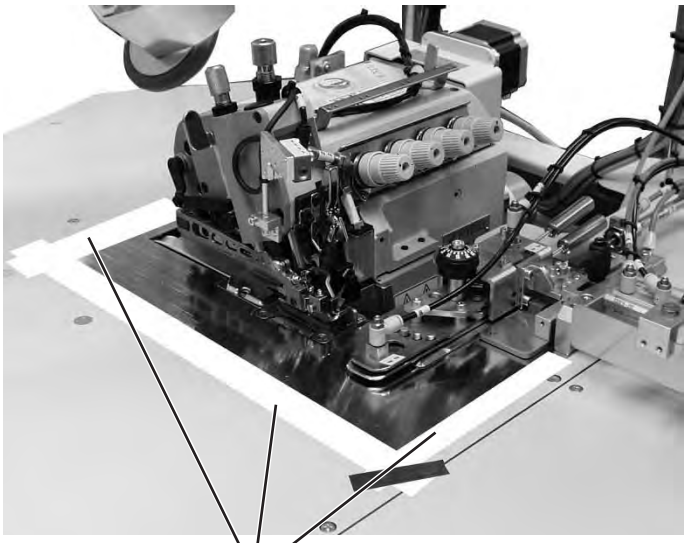
The sewing unit may be set up only by trained and qualified personnel.

All jobs on the electrical equipment of the sewing unit may be performed only by qualified electricians or appropriately trained personnel.
In the process, make sure that the mains plug is pulled out.

Kindly follow the enclosed operating instructions by the manufacturer of the drive motor.

3 Setting up the sewing unit

3.1 Shipping braces

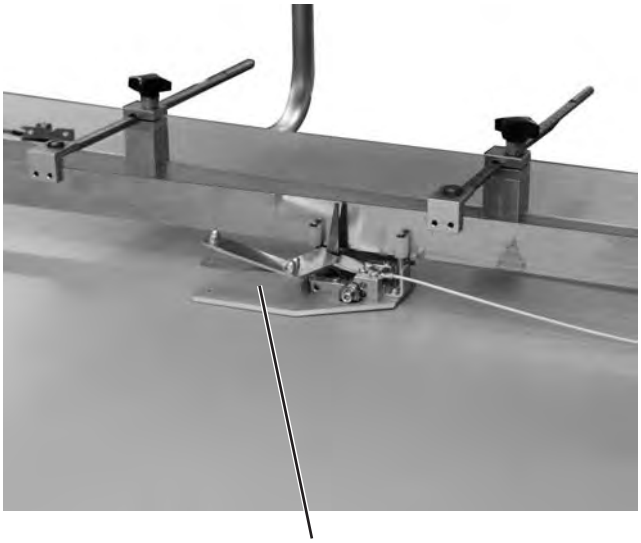


1

2

All the shipping braces are to be removed prior to setting up the sewing unit.

– Remove safety bands on the yarn stand, machine table etc.
– Remove protective films 1.
– Remove safety bands 2 on the stacker.

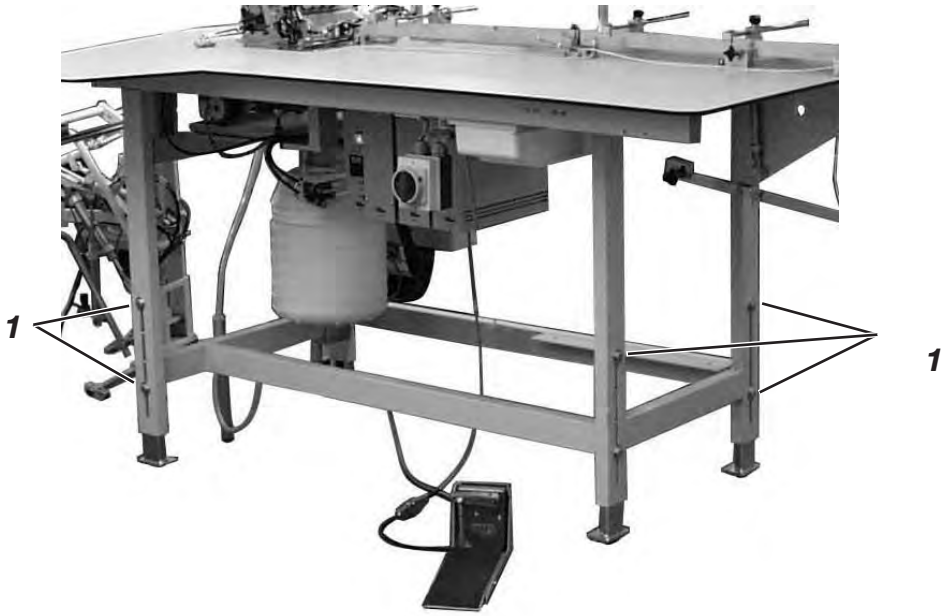


4

3

– Remove the safety braces on the mouse 4 and the return device 3.

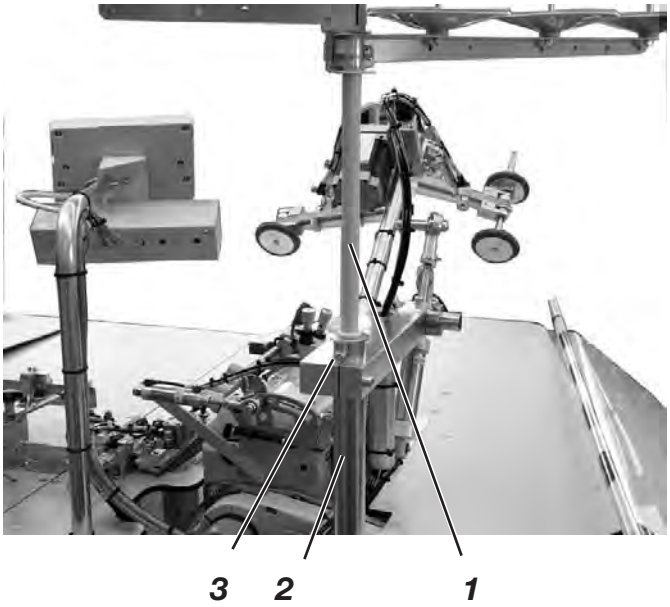
3.2 Adjusting the working height



The working height can be adjusted between 850...1200 mm (measured up to the upper edge of the table top).

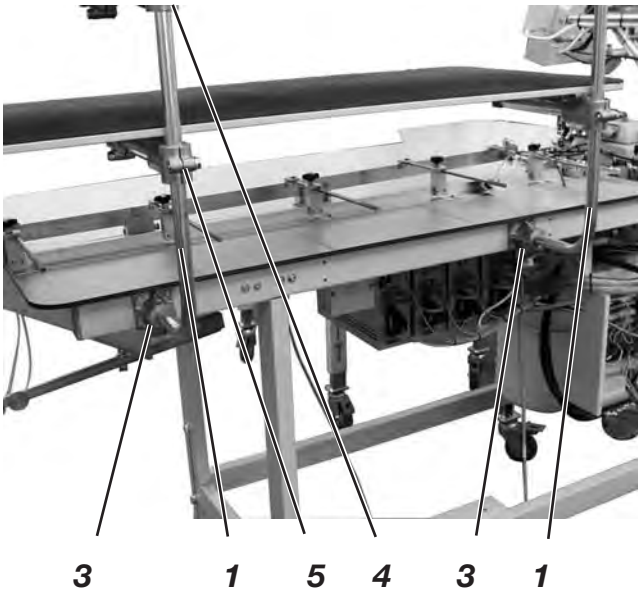
– Loosen the screws 1 at the spars.
– Adjust the sewing unit to the desired working height with the appropriate auxiliary means.
  Lift the work table uniformly on both sides in order to prevent twisting.
– Retighten the screws 1 at the spars.

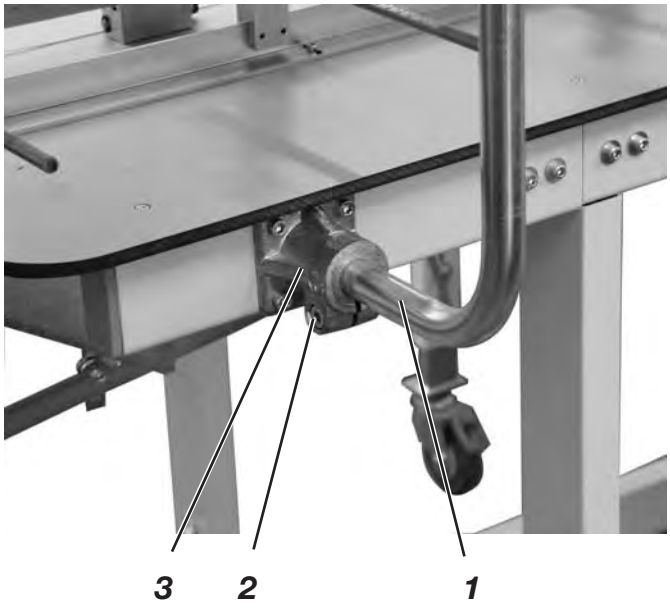
3.3 Assembling the yarn stand



– Insert yarn support tube 1 in the holder 2.
– Tighten the yarn support tube with both the screws 3.

3.4 Assembling the workpiece storage members





The workpiece storage members have been dismantled for the purpose of transportation.

– Loosen the screws 2 at the holders 3.
– Insert holding rods 1 in the holders 3.
– Retighten the screws 2 at the holders 3.
– Loosen the screws on the holders 4 and 5 and adjust the height of the workpiece storage members.
– Retighten the screws on the holders 4 and 5.

4 Electrical Connection

ATTENTION !

All jobs on the electrical equipment of the sewing unit may be performed only by qualified electricians or appropriately trained personnel.
In the process, make sure that the mains plug is pulled out.

4.1 Checking the nominal voltage

ATTENTION !

The nominal voltage specified on the rating plate of the sewing unit control system must correspond to the mains voltage.

Nominal voltage = 190 - 240 V, 50/60 Hz

4.2 Establishing the mains connection

– Connect the mains plug.

5 Pneumatic Connection

For the operation of the pneumatic components, the sewing unit must be supplied with anhydrous compressed air.

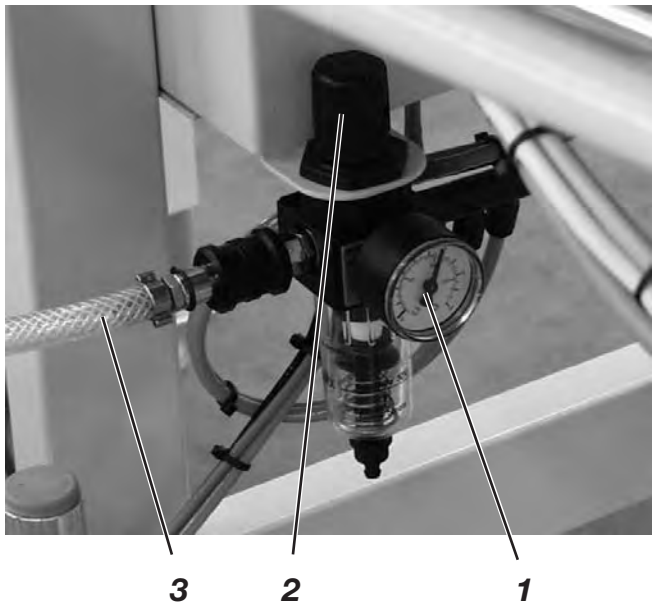
ATTENTION !

For faultless functioning of the pneumatic control operations, the compressed air network must be designed as follows:

Make sure that a minimum operating pressure of **6 bar** is not exceeded even when air consumption is at its highest.

In the event of excessive compressed air drop:

– Increase the compressor performance.
– Increase the diameter of the compressed air supply line.



Connect the compressed air maintenance unit

– Connect the connecting hose 3 to the compressed air network.

Adjust the operating pressure

– The operating pressure is 6 bar.
  It can be read out on the manometer 1.
– Lift up and turn the turning handle 2 for adjusting the operating pressure.
  - Turning in clockwise direction = Increase pressure
  - Turning in anti-clockwise direction = Reduce pressure

ATTENTION!

The compressed air network may not be used to supply oiled compressed air.

Behind the filter, purified compressed air is extracted as blow air for the cleaning of machine parts and for blowing out the sewing parts. Oil particles that are entrained with the blow air lead to functional faults and contamination of the sewing parts.

6 Putting into operation

6.1 Sewing test

A sewing test should be performed once the setting up job has ended.

– Connect the mains plug.

Caution: Risk of Injury!

Switch off the main switch.

Thread the needle and looper thread only when the sewing unit is switched off.

– Thread the needle and looper thread
(see operating instructions of the sewing machine head).
– Switch on the main switch.
The control unit is initialised.
– Select the sewing programme.
– Positioning and operating are described in Part 1: Operating Instructions 1281/5-1.

Notes:

Content **Page:**

Part 3: Service Instructions Class 1281/5-1

(Edition: 01/2011)

1 General Information

The service instructions at hand describe the adjustment of the seam closing unit 1281/5-1.

It comprises:

- Quick start guide for the sewing head
- Service instructions for the sewing unit

ATTENTION!

The quick start guide represents an extract from the detailed operating instruction for the sewing head. These operating instructions must, in any case, be read completely and all the instructions must be followed. The company Beisler does not assume any warranty for the correctness of the following explanations.

ATTENTION!

The activities described in these service instructions may be performed only by qualified personnel or appropriately trained personnel!

Caution: Risk of Injury !

Switch off the main switch when performing repair, rebuild or maintenance jobs.

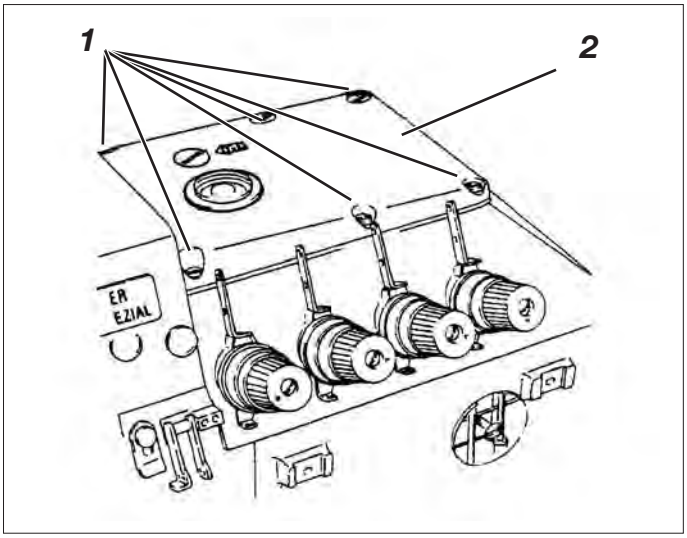
Alignment jobs and functional tests may be performed on a running machine only if all the safety measures are observed and extreme care is taken.

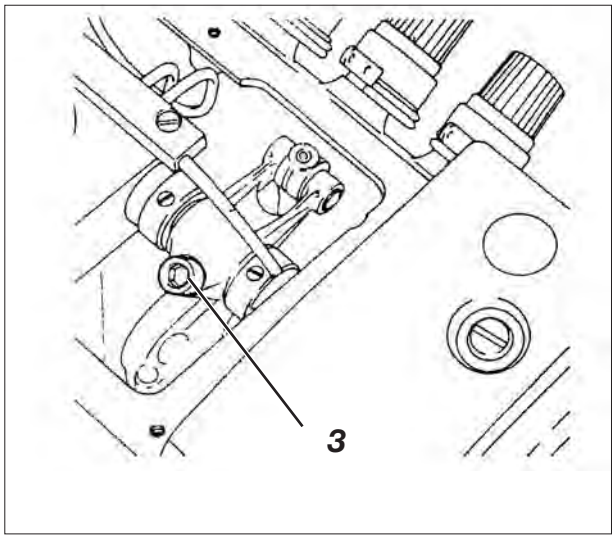
The service instructions at hand describe the adjustment of the sewing unit in purposeful sequence.
At this juncture, it must be borne in mind that the various setting positions are dependent on each other.
Therefore, make absolutely sure that you perform the adjustment in the described sequence.

A new, faultless needle must be used for all adjustment jobs on stitch-forming parts.

2. Quick start guide for the sewing head

2.1 Adjusting the needle bar height

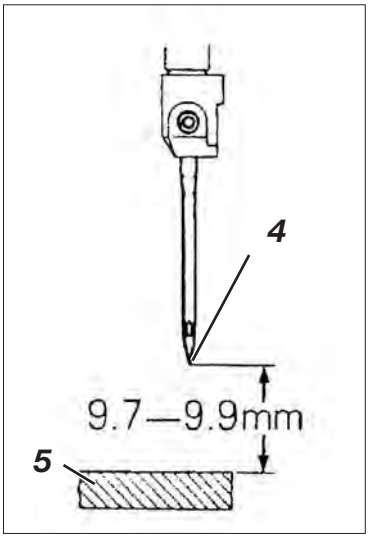




Caution: Risk of Injury !

Switch off the main switch.

Check and adjust the needle bar height only when the sewing unit is switched off.



Regulation and Control

At the upper dead center of the needle bar, the distance between needle point 4 and throat plate must be 9.7 - 9.9 mm.

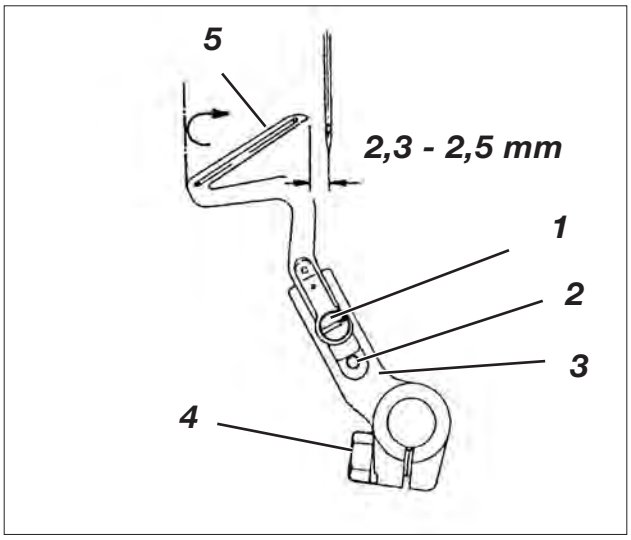
- Turn the needle bar in its upper dead center.
- Check as to whether the distance between needle point 4 and throat plate 5 is 9.7 to 9.9 mm.

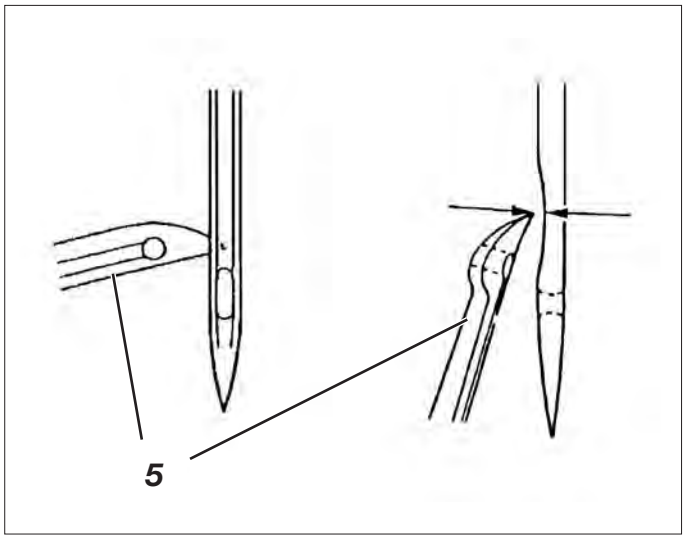
Correction

- Unscrew the lid screw 1 and remove lid 2.
- Turn the needle bar in its upper dead center.
- Swivel out the sewing foot.
- Loosen the screw 3 up to the point that the needle bar just about allows itself to be pushed.
- Move the needle bar up to the point that the distance between needle point 4 and throat plate 5 is 9.7 to 9.9 mm.
- Tighten the screw 3.
- Screw on the lid 2 once again.

2.2 Adjusting the hook

2.2.1 Distance of the left hook from the needle





Caution: Risk of Injury !

Switch off the main switch.

Check and adjust the hook only when the sewing unit is switched off.

3

Adjustment crosswise from sewing direction

Regulation and Control

In the left reversal point of the hook 5, the distance between needle center and hook point should be 2.3 to 2.5 mm.

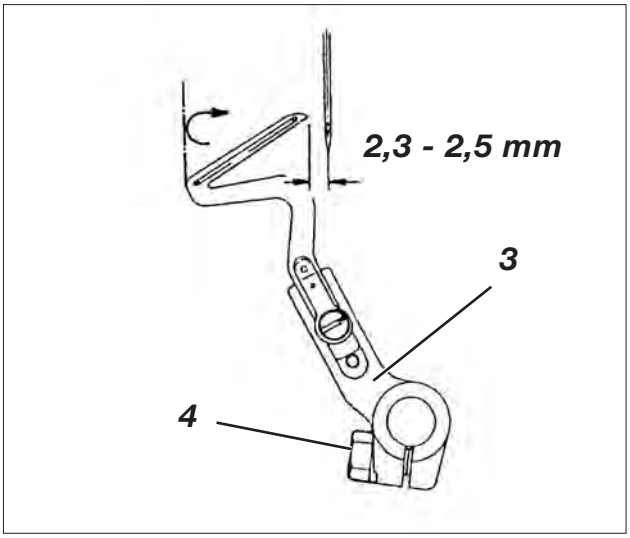
- With the hand wheel, turn the **left** hook to its **left** reversal point.
- Check as to whether the distance between needle center and hook point is 2.3 to 2.5 mm.

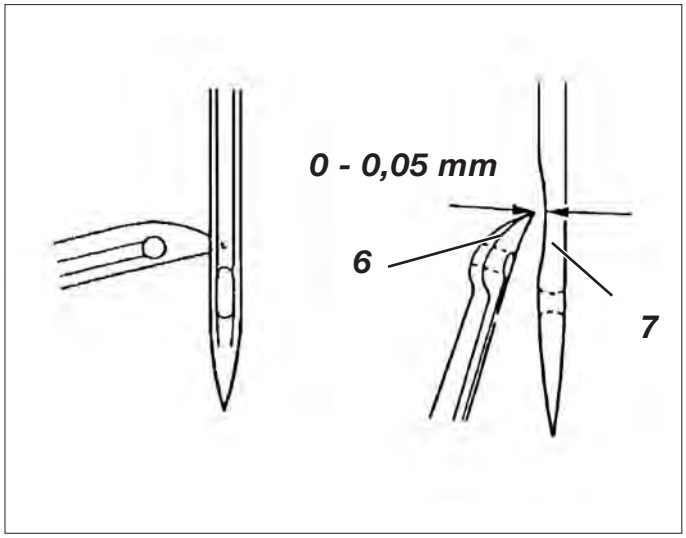
Correction

- Unscrew throat plate, front feed dog, as well as front and rear needle guard.
- With the hand wheel, turn the hook to its left reversal point.
- Loosen screw 1 and bring the hook to bear against the limit stop 2.
- Retighten the screw 1.
- Loosen the screw 4 up to the point that the hook carrier 3 just about allows itself to be turned.
- Turn the hook carrier up to the point that the distance between needle center and hook point is 2.3 to 2.5 mm.

Note

Do not yet tighten the screw 4.





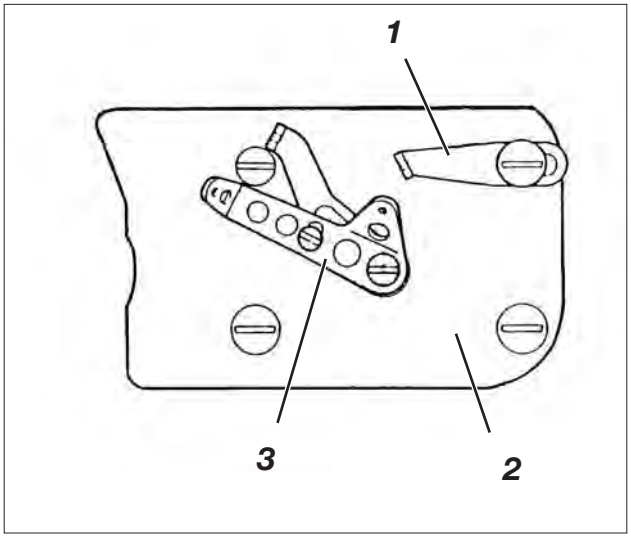
Adjustment in sewing direction

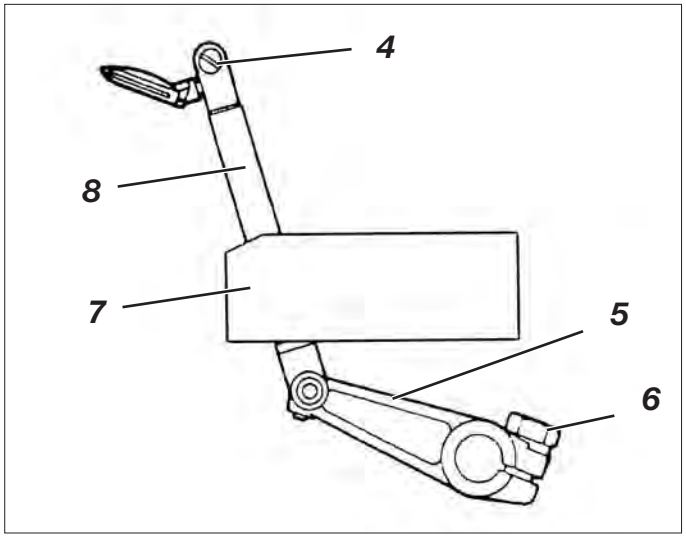
Regulation and Control

The distance between hook point 6 and needle 7 should be 0.0 to 0.05 mm.

- Turn the hand wheel in the direction of rotation until the hook point is exactly at the needle center.
- Move the hook carrier 3 up to the point that the distance between hook carrier and needle is 0.0 to 0.05 mm.
- Check the adjustment crosswise from sewing direction once again and realign it, if need be.
- Tighten the screw 4.

2.2.2 Distance of the right hook from the needle





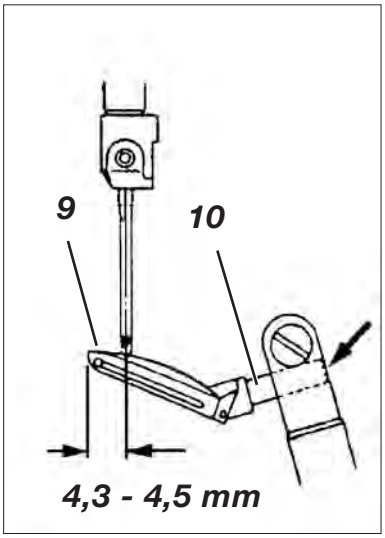
Caution: Risk of Injury !

Switch off the main switch.

Check and adjust the hook only when the sewing unit is switched off.

3

Adjustment crosswise from sewing direction



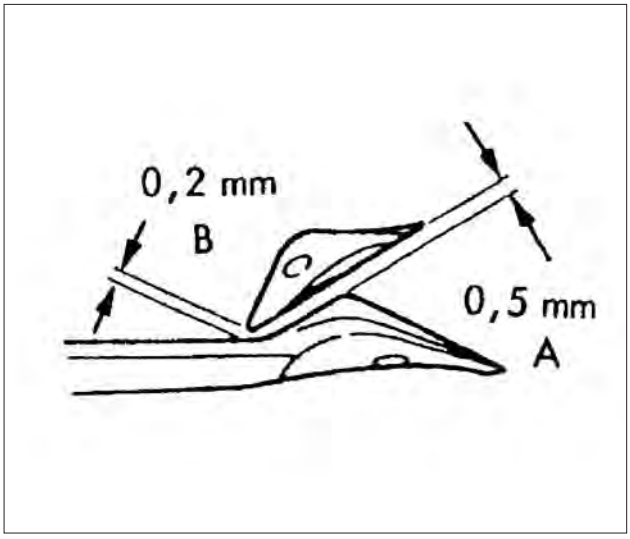
Regulation and Control

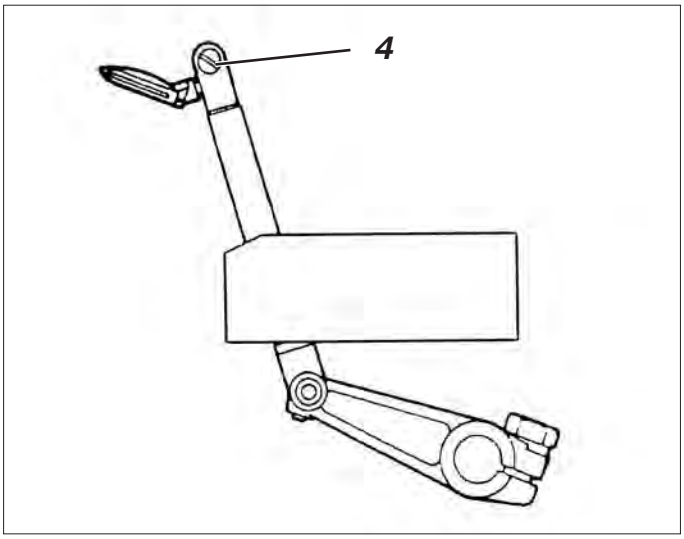
When the **right** hook is at its upper reversal point, the distance between hook point 9 and needle center should be 4.3 to 4.5 mm.

- Unscrew the thread guides 1, 3 and lid 2.
- With the hand wheel, turn the hook to its upper dead center.
- Loosen the screw 4 up to the point that the hook just about allows itself to be pushed.
- Move the hook such that the hook shaft (1) is flush with the right side of the hook carrier.
- Loosen the screw 6 slightly.
- Twist the lever 5 such that a distance of 4.3 to 4.5 mm is present between the hook point and needle center.
  Take care that the bar 8 in bearing 7 does not exhibit any stiffness.
- Tighten the screw 6.

Note

Do not yet tighten the screw 4.





Adjustment in sewing direction

Regulation and Control

When the right hook crosses the left hook, the distance “A” should be 0.5 mm and the distance “B” should be 0.2 mm.

Correction

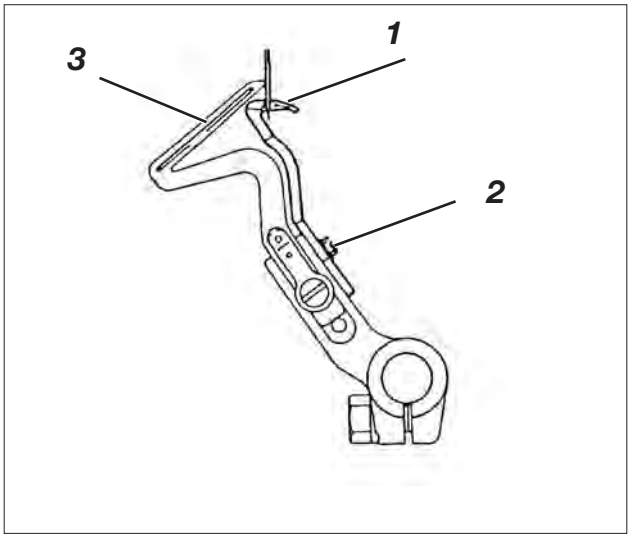
- Turn the hand wheel in the direction of rotation until the right hook crosses the left hook.
- Twist and shift the right hook such that the distance “A” is 0.5 mm and the distance “B” is 0.2 mm.
- Tighten the screw 4 in this position.
- Once again check all the settings and readjust, if need be.
- Remount the thread guides 1, 2 and lid 3.
- Adjust the thread guides according to Chapter “Thread regulation of the serging looper”.

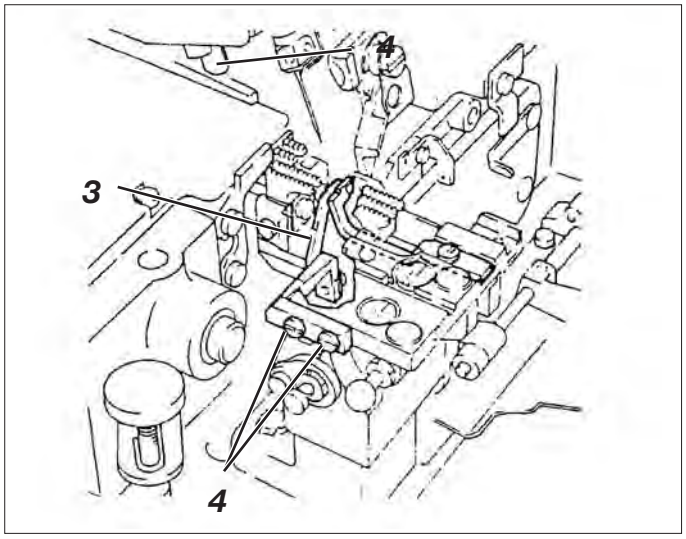
Note

The right serging looper is dependent on the thickness of the needle. For needles with Nm 60 - 80, use the hook with the characteristic number 28, and for needles with Nm 80 - 100, use the hook with the characteristic number 22.

2.3 Adjusting the needle guard

2.3.1 Rear needle guard





Caution: Risk of Injury !

Switch off the main switch.

Check and adjust the needle guard only when the sewing unit is switched off.

3

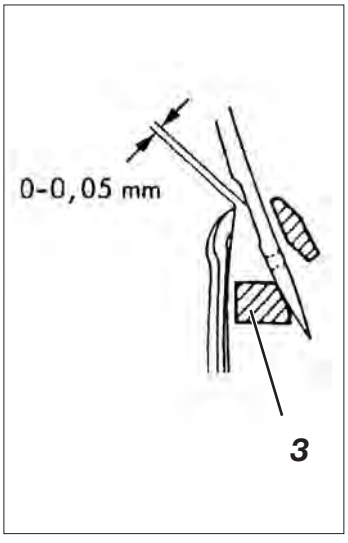
Regulation and Control

When the point of the left hook 3 is at needle center, the needle guard 1 should bear against the needle and a distance of 0.0 to 0.05 mm should be present between hook point and needle.

- Turn the hand wheel in the direction of rotation until the hook point is positioned in the direction of the needle.
- Check the distance between hook point and needle.

Correction of mobile version

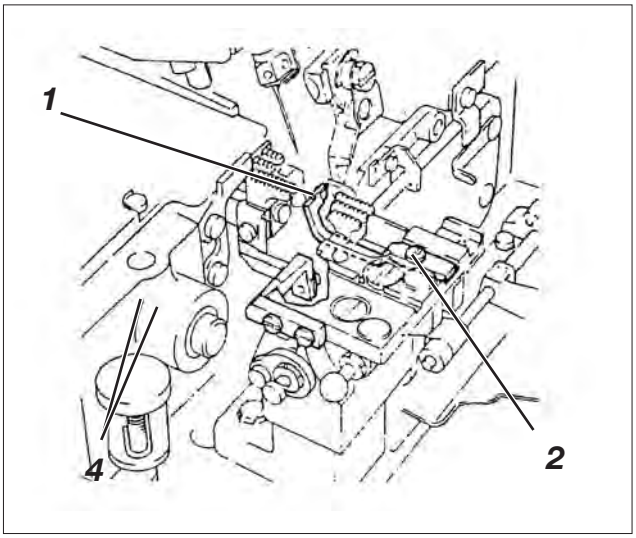
- Turn the hand wheel in the direction of rotation until the hook point is positioned in the direction of the needle.
- Loosen the screw 2.
- Shift the needle guard 1 such that the needle guard bears against the needle and a distance of 0.0 to 0.05 mm is present between the hook point and the needle center.
- Tighten the screw 2.

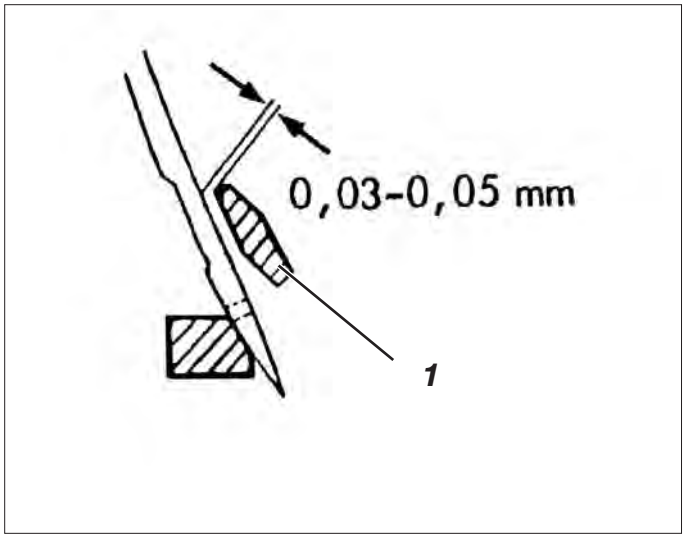


Correction of rigid version

- Turn the hand wheel in the direction of rotation until the hook point is positioned in the direction of the needle.
- Loosen the screw 4.
- Shift the needle guard 3 such that the needle guard bears against the needle and a distance of 0.0 to 0.05 mm is present between the hook point and the needle center.
- Tighten the screw 4.

2.3.2 Front needle guard





Caution: Risk of Injury !

Switch off the main switch.

Check and adjust the needle guard only when the sewing unit is switched off.

Regulation and Control

At the bottom dead center of the needle, the distance between needle guard 1 and needle should be 0.03 to 0.05 mm.

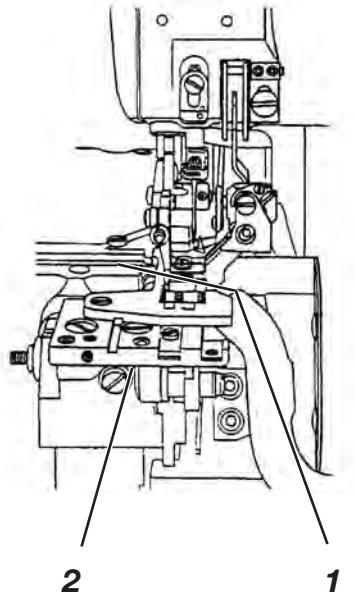
- Turn the hand wheel in the direction of rotation until the needle is exactly at its dead center.
- Check the position of the front needle guard.

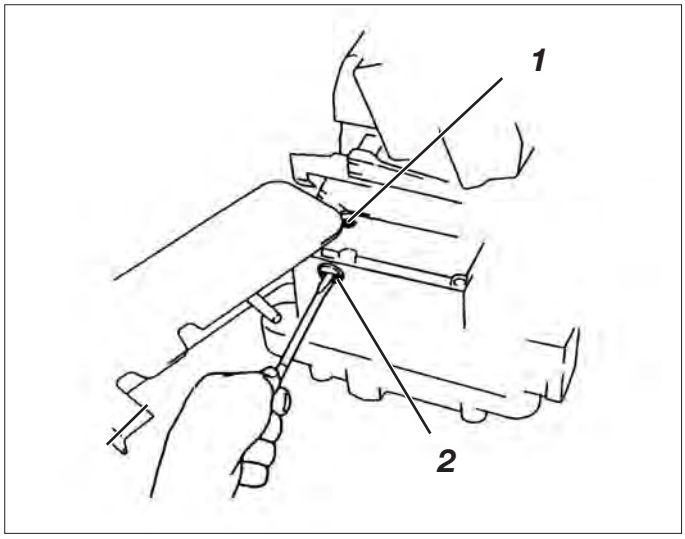
Correction

- Turn the hand wheel in the direction of rotation until the needle is exactly at its dead center.
- Loosen the screw 2.
- Move the needle guard 1 such that the distance between needle guard and needle is 0.03 to 0.05 mm.
- Tighten the screw 2.

2.4 Adjusting the feed dog

2.4.1 Feed dog position





Caution: Risk of Injury !

Switch off the main switch.

Check and adjust the feed dog position only when the sewing unit is switched off.

3

Regulation and Control

In their highest position, the feed dogs should be horizontal.

– Turn the hand wheel in the direction of rotation until the feed dogs are in their highest position.
– Check the position of the feed dogs.

Correction

– Turn the hand wheel in the direction of rotation until the feed dogs are in their highest position.
– Loosen the screw 1.
– Twist the screw 2.

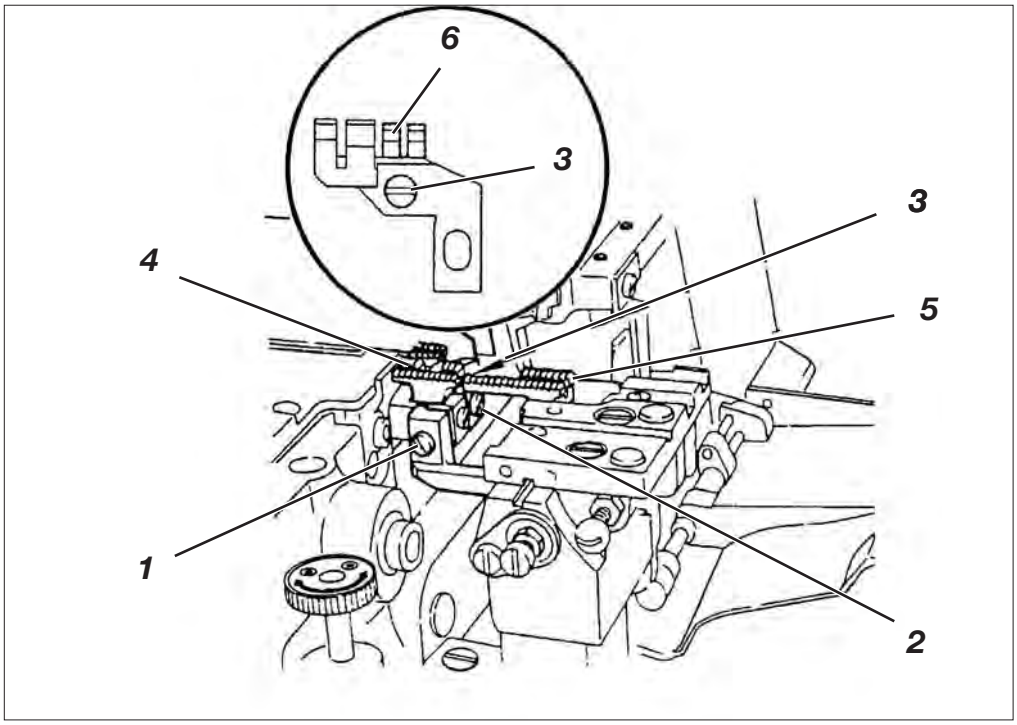
 Feed dogs are in horizontal position

 Feed dogs are inclined backwards

 Feed dogs are inclined forwards

– Tighten the screw 1.

2.4.2 Feed dog height



Caution: Risk of Injury !

Switch off the main switch.

Check and adjust the feed dog height only when the sewing unit is switched off.

Regulation and Control

When the feed dogs are in their highest position, the teeth of the main feed dog 4 should be 0.8 mm, the teeth of the differential feed dog 5 should be 0.9 to 1.0 mm and the teeth of the auxiliary feed dog 6 should be 0.6 to 0.7 mm above the upper edge of the throat plate.

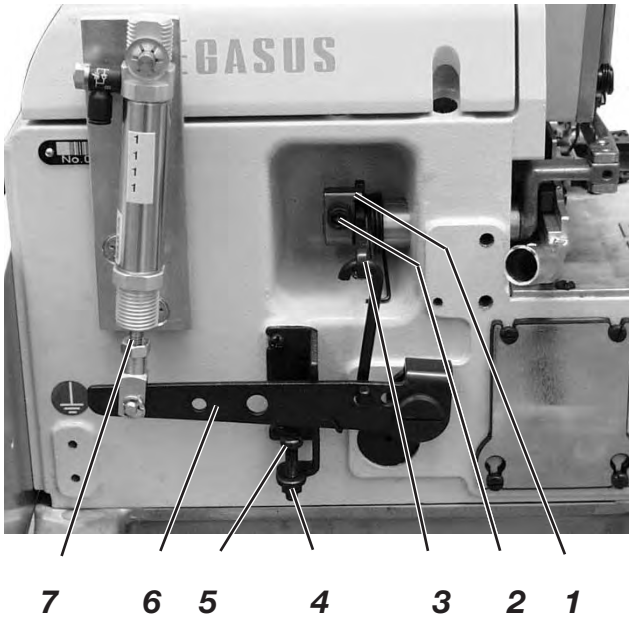
- Turn the hand wheel in the direction of rotation until the feed dogs are in their highest position.
- Check the position of the feed dogs with respect to the throat plate.

Correction

- Unscrew the throat plate.
- Loosen the screws 1, 2 and 3 slightly.
- Attach the throat plate once again.
- Adjusting the height of the feed dogs.
- Remove the throat plate.
- Tighten the screws 1, 2 and 3.
- Attach the throat plate and tighten the screws.

2.5 Presser foot

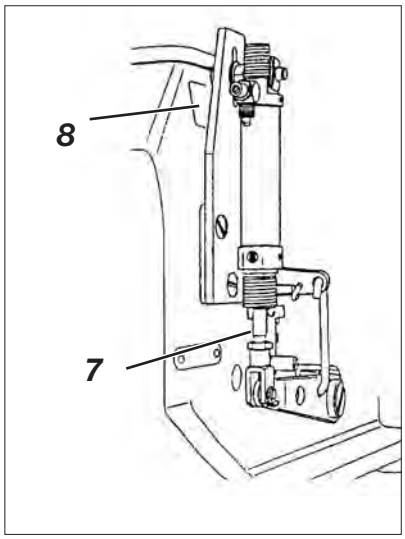
2.5.2 Presser foot upper part EXT 3216



Caution: Risk of Injury !

Switch off the main switch.

Check and adjust the presser foot only when the sewing unit is switched off.



Control

When the piston rod 7 is extended, the lever 6 should bear against the screw 5 and the clearance under the sewing foot should be 4 mm.

Correction

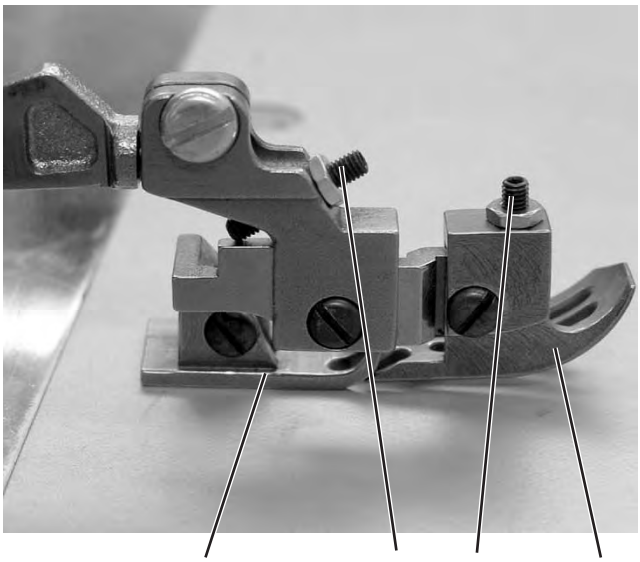
- Loosen counter nut 4 and turn screw 5 all the way down.
- Swivel in the sewing foot.
- Turn the hand wheel in the direction of rotation until the teeth of the feed dog are below the throat plate upper edge.
- Loosen screw 2 and press ring 1 all the way back up to limit stop.
- Tighten screw 2 in this position.
  Take care that ring 1 and lever 3 do not have any axial play.
- Press lever 6 down until there is a distance of approx. 4 mm between sewing foot and throat plate.
- In this position, bring screw 5 to bear against lever 6 and secure with counter nut.

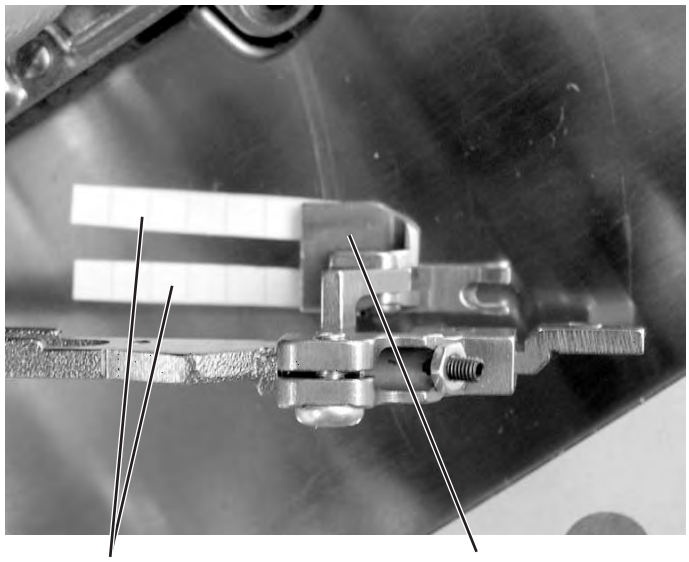
Note

In case lever 6 does not bear against screw 5 when the piston rod 7 of the cylinder is extended, proceed as follows:

- Loosen the nut 8.
- Shift the cylinder 1 accordingly.
- Tighten the nut 8.

2.5.2 Presser foot





Caution: Risk of Injury !

Switch off the main switch.

Check and adjust the presser foot only when the sewing unit is switched off.

Control

The articulated sewing foot must be free of play and free-moving in its joints.

The front sewing foot sole 1 and rear sewing foot sole 4 must parallel to each other.

Correction of sideways inclination

- Remove front sewing foot sole 1.
- Turn upper part to position “Needle low”.
- Place two approx. 5 mm wide paper strips 5 side by side under the rear sewing foot sole 4.
- Adjust the sideways inclination such that inner paper strip is clamped somewhat lesser and can be more easily pulled out from the clamp of the sewing foot than the outer paper strip.

Balancing of front and rear sewing foot sole

- Remount the front sewing foot sole 1.
- Turn upper part to position “Needle low”.
- Twist adjusting screw 3 such that the front sewing foot sole just about bears against it.

Inclination of the front sewing foot sole

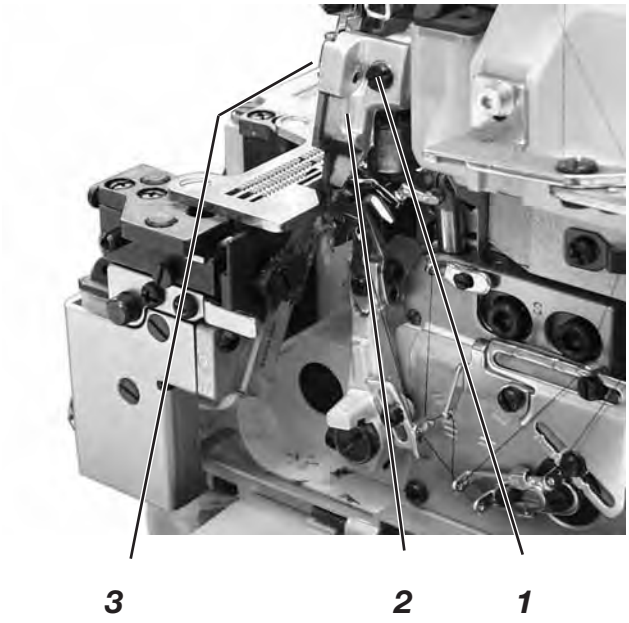
The front sewing foot sole should now bear with its entire length against the throat plate in position “Needle low”.

- Adjust sewing foot sole with screw 2.

2.6 Upper and lower knife

2.6.1 Changing and adjusting the upper knife

Upper part EXT 3216-03/233K



Caution: Risk of Injury !

Switch off the main switch.

Check and adjust the upper knife only when the sewing unit is switched off.

Control

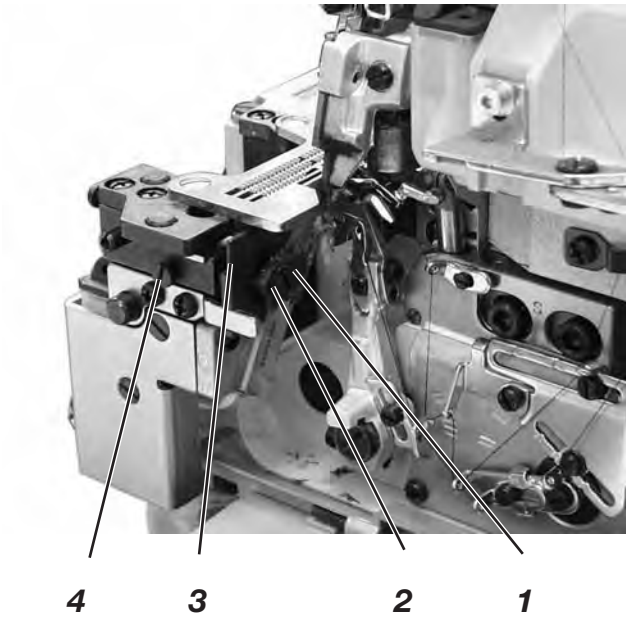
When the upper knife is in its lowest position, the front edge of the blade should be 0.5 to 1.0 mm below the throat plate upper edge.

Correction

- Turn the hand wheel until the needles are at their upper reversal point and swivel out the sewing foot.
- Unscrew the screw 1.
- Remove the knife holder 2 with the knife.
- Loosen the screw 3 and remove the knife.
- Insert a new, sharp knife and fasten with screw 3.
- Insert knife holder 2 and screw on lightly with screw 1.
- Turn the hand wheel until the knife is in its lowest position.
- Shift the knife such that it lightly bears against the lower knife and the front edge of the blade is approx. 0.5 to 1.0 mm below the throat plate upper edge.

2.6.2 Changing and adjusting the lower knife

Upper part EXT 3216-03/233K



Caution: Risk of Injury !

Switch off the main switch.

Check and adjust the upper knife only when the sewing unit is switched off.

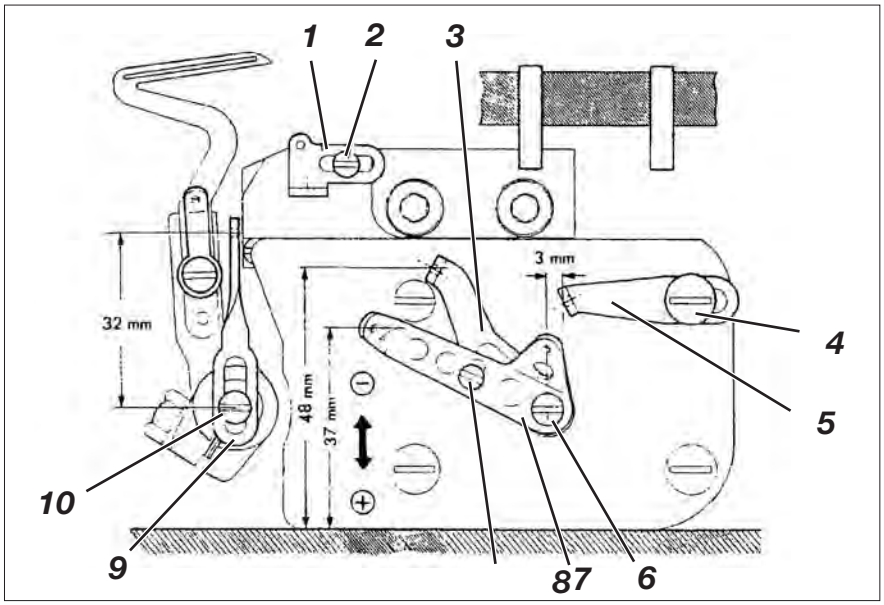
Control

The blade of the lower knife should be flush against the upper edge of the throat plate.

Correction

- Remove the fabric sliding plate.
- Swivel out the sewing foot.
- Loosen the screw 4.
- Pull the lower knife holder 3 to the left up to limit stop and retighten screw 4 lightly.
- Loosen the screw 2 and remove the old knife.
- Insert a new, sharp knife in the guide 1 such that the blade is flush against the upper edge of the throat plate.
- Tighten the screw 2.
- Turn the hand wheel until the upper knife is in its highest position.
- Loosen screw 4 and allow the lower knife holder to spring against the upper knife.
- Tighten the screw 4.

2.7 Thread regulation of serging looper



Caution: Risk of Injury !

Switch off the main switch.

Check and adjust the thread regulation only when the sewing unit is switched off.

3

Control

The positions of the individual thread guides and/or thread pullers is dependent upon the material used, the sewing yarn and the stitch type.
The following adjustment values may therefore be regarded merely as reference values.

Correction

- Turn the hand wheel until the right hook is at its upper reversal point.
- Loosen screw 10 and shift the thread puller 9 such that there is a distance of approx. 32 mm between screw center and loop center.
- Tighten screw 10.
  Make sure that the thread puller 9 is in vertical position.
- Loosen the screws 6 and 8 slightly.
- Bring the thread pullers 3 and 7 to the position shown in the figure.
- Tighten the screws 6 and 8.
- Loosen the screw 4 slightly.
- Bring the thread guide 5 to the position shown in the figure.
- Tighten the screw 4.
- Loosen the screw 2 slightly.
- Shift the thread guide 1 such that the screw 2 is at the center of the elongated hole.
- Tighten the screw 2.

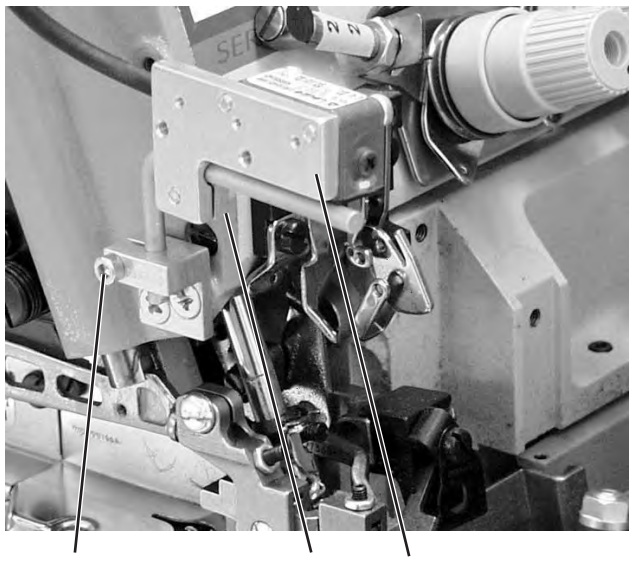
Note

If more or less thread is required in the seam, shift thread pullers 3 and 7 in the direction “+” or “-” respectively.

3. Adjusting the sewing unit

3.1 Adjusting the light barrier

2 *1*

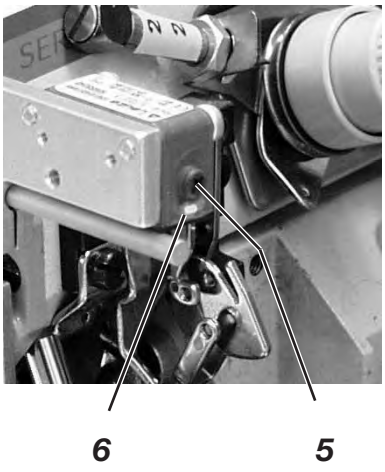


5 *4* *3*

Caution: Risk of Injury !

The light barrier is adjusted when the sewing unit is switched on.

Perform the adjustment and functional test only with the greatest care.



6 *5*

Align the light barrier

The light barrier 2 should be leveled at the area 1 on the upper part.

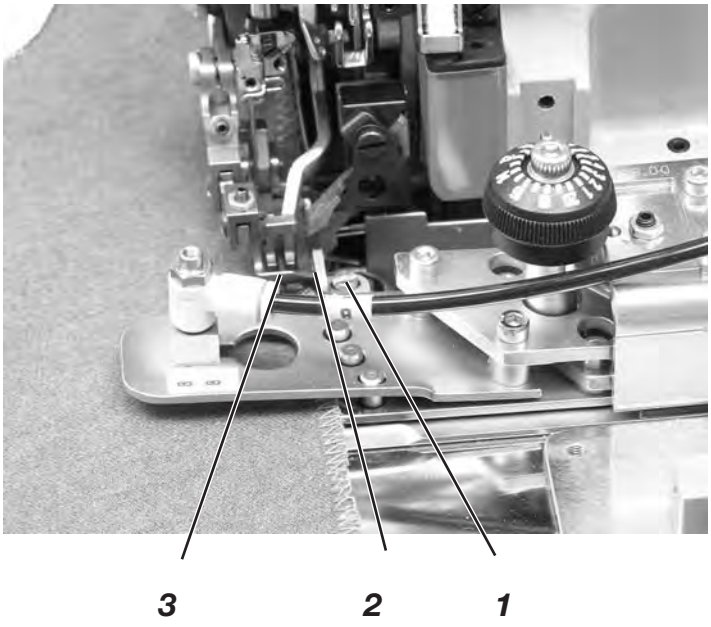
- Loosen the screws 4 and 5.
- Align the light barrier 3 accordingly.
- Tighten the screws 4 and 5.

Adjusting the light barrier intensity

- Adjust the sensitivity potentiometer 5 on the front face above the light emitting diode 6 up to its left limit stop (least sensitivity).
- Turn the potentiometer in clockwise direction until the light emitting diode 6 switches on.
- For safe light barrier operation, turn the potentiometer further by another revolution in clockwise direction.

If the light emitting diode does not light up, then the light barrier should be cleaned, readjusted or exchanged.

3.2 Adjusting the workpiece limit stop



Caution: Risk of Injury !

Switch off the main switch.

Adjust the workpiece limit stop only when the sewing unit is switched off.

Control

The workpiece limit stop 2 must bear against the sewing foot 3 completely, in order that the fabric is not pulled up between the sewing foot 3 and the limit stop 2 while sewing.

Correction

- Loosen the screw 1.
- Push the workpiece limit stop 2 all the way against the sewing foot 3.
- Tighten the screw 1.

3.3 Adjusting the contour guide

Caution: Risk of Injury !

Switch off the main switch.

Adjust the contour guide only when the sewing unit is switched off.

Control

The contour guide 1 should advance until both the lays 2 are always guided securely while stitching down the contours.

Correction of swivel-out width

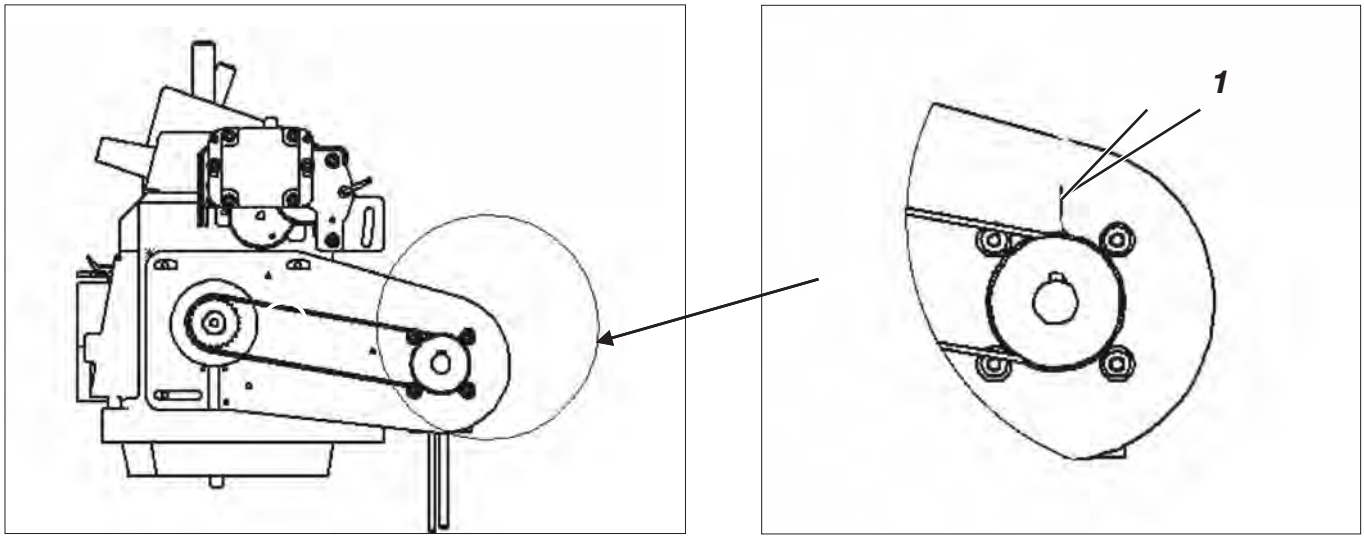
- Loosen the clamping lever 4.
- Shift the contour guide 1 accordingly.
- Tighten the clamping lever 4.

Correction of punching position

- Loosen the nut 6.
- Twist the punch 1 accordingly.
- Tighten the nut 6.

3.4 Direct Drive Sewing Mode

2.4.2 Adjusting the reference



Caution: Risk of Injury !

Switch off the main switch.

Check and adjust the hook setting only when the sewing unit is switched off.

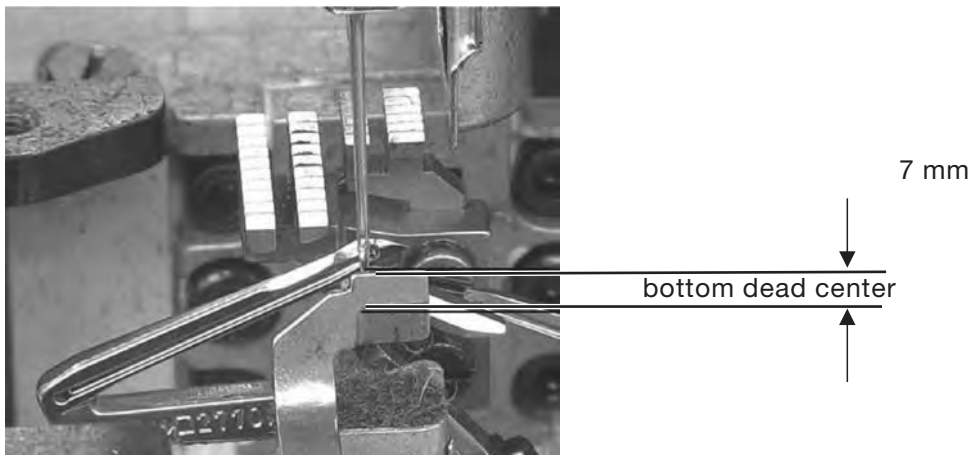
3

Control

If the needle is in the position "**7 mm after the bottom dead center**", the drive belt should be applied such that the feather key 2 in the motor shaft points to the marking 1 in the motor housing.

Correction

- Remove the toothed belt.
- With the hand wheel, turn the needle bar to the position "**7 mm after the bottom dead center**".
- Twist the motor shaft such that the feather key 2 in the motor shaft points to the marking 1 in the motor housing.
- Apply the toothed belt once again.



4 Lubrication

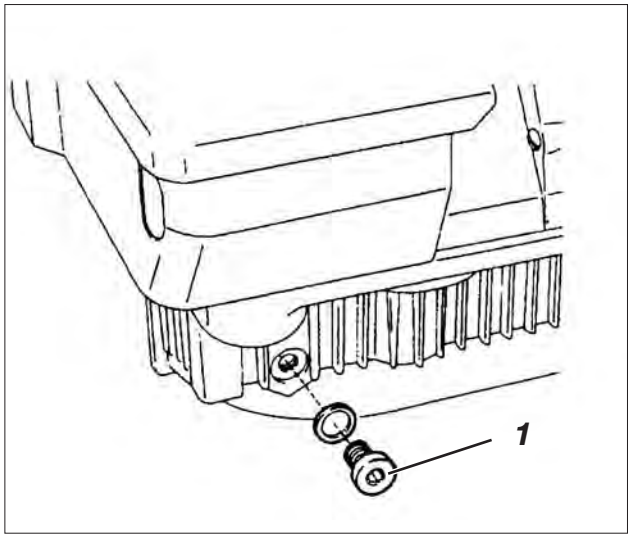
Caution: Risk of Injury !

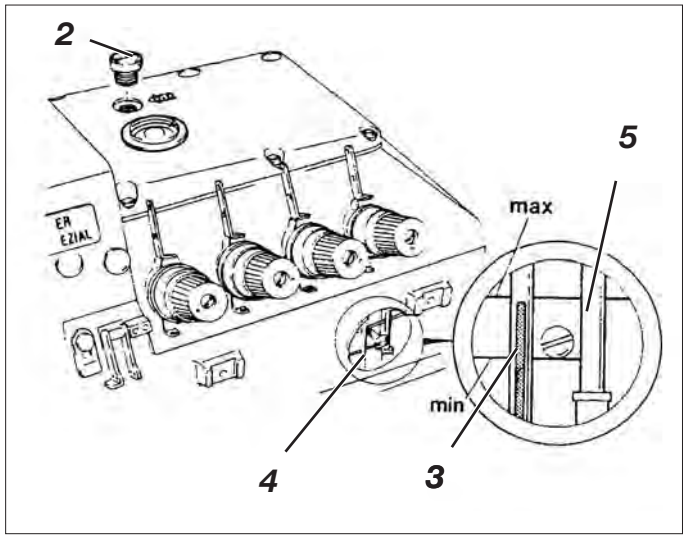
Oil can induce skin rashes.
Avoid long-term skin contact.
Wash yourself thoroughly after contact.

ATTENTION!

The handling and disposal of mineral oils is subject to legal regulation.
Deliver used oil to an authorised collection point.
Protect your environment.
Take care not to spill oil.

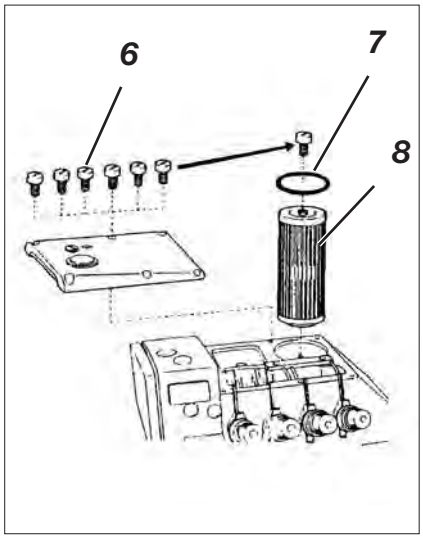
4.1 Oil change and oil filter change





An oil exchange with dismantled machine head must be performed 4 weeks from the initial start-up, and subsequently every 2 years.

The oil filter should be cleaned or exchanged every 2 years.



Note

If the oil pressure indicator 5 does not move downwards when the machine head is operational, or if the oil is dirty, then the oil filter must be cleaned or exchanged.

- Unscrew the drain screw 1 and intercept the used oil in a vessel.
- Retighten the drain screw 1.
- Unscrew the screw 6 of the lid.
- Screw in one of the screws 6 into filter 8 and therewith unscrew and remove the filter.
- Clean or exchange the filter 8.
- Insert new seal 7, place back the lid and tighten the screws.
- Loosen screw 2 and fill oil until the top of the oil level indicator 3 has reached the upper marking in the oil inspection glass 4.
  We recommend oil with a density of 0.865 g/cm³ at 15 ° C.
- Reinsert the screw 2.

5 Maintenance

Caution: Risk of Injury !

Switch off the main switch.

The sewing unit may be serviced only when it is switched off.

The maintenance jobs to be performed on a daily or weekly basis by the operating personnel at the workplace (cleaning and lubrication) are described in the operating instructions (Chapter 8). They are given in the following table only for the purpose of completeness.

Jobs to be performed	Operating hours			
	8	40	160	500
Machine head				
- Remove lint and thread waste	X			
- Monitor oil level		X		
- First oil exchange			X	
- Subsequent oil exchange	every 2 years			
Control Box				
- Remove lint and thread waste	X			
- Keep filter free	X			
-				
Suctioning device				
- Empty the container	X			
- Rid the space under the fabric sliding plate of lint and thread waste		X		
Pneumatic system				
- Check the water level in the pressure regulator.	X			
- Clean the filter insert in the maintenance unit				X
- Check the leak tightness of the system				X

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