DÜRKOPP ADLER AG

467

Spezialnähmaschine

Serviceanleitung

Service instructions

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Teile-Nr./Part-No.: 0791 467651

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.

Adler class 467
Instructions for Mechanics

Edition March, 1983

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1. Technical data

1.1 Class 467- with subclasses

Subclass :	4-S	63	63-S	64-S	73	LG-73
Needle system :	134Lr	134	134Lr	134Lr	134	134-35
Needle No. :	160	130	130	160	120	130
Synth. sewing thread Nm:	10/3	-	20/3	10/3	40/3	-
Braided thread Nm:	-	20/3	-	-	-	30/3
Foot stroke, max. mm:	8	8	8	8	8	8
Stitch length, max. mm:	6	6	6	6	6	6
Bottom feed stroke (above throat plate) mm:	1,4	1,3	1,3	1,4	-	-
Final feed mm:	-	-	-	-	-	-
Alternating top feed stroke mm:	-	-	-	-	9	9
Stitches/min., max.:	1900	3500	3500	3200	3000	3000
Motor pulley Ø mm:	63	100	100	106	85	85
Handwheel belt pully Ø mm:	95	80	80	95	80	80
Motor speed 50 Hz 1/min:	2800	2800	2800	2800	2800	2800

Subclass :	LG-74	373	374	203-S	204-S	262
Needle system :	134-35	134-35	134-35	134Lr	134Lr	134
Needle No. :	150	120	150	130	160	90
Synth. sewing thread Nm:	-	40/3	-	20/3	10/3	70/3
Braided thread Nm:	15/3	-	15/3	-	-	-
Foot stroke, max. mm:	12	12	12	8	8	8
Stitch length, max. mm:	6	6	6	6	6	4,5
Bottom feed stroke (above throat plate) mm:	-	0,5	0,5	1,3	1,4	1,2
Final feed mm:	-	-	-	1,4	1,5	-
Alternating top feed stroke mm:	12	9	9	-	-	-
Stitches/min., max.:	2500	3000	2700	2200	1900	4200
Motor pulley Ø mm:	85	85	90	75	63	95
Handwheel belt pully Ø mm:	95	80	95	95	95	63
Motor speed 50 Hz 1/min:	2800	2800	2800	2800	2800	2800

Subclass :	272	273	BN-273	FA-4-S	FA-63	FA-63-S
Needle system :	134	134	134	134Lr	134	134Lr
Needle No. :	90	120	120	160	120	120
Synth. sewing thread Nm:	50/3	40/3	40/3	10/3	-	20/3
Braided thread Nm:	-	-	-	-	20/3	-
Foot stroke, max. mm:	8	8	8	7	7	7
Stitch length, max. mm:	4,5	6	6	6	6	6
Bottom feed stroke (above throat plate) mm:	0,5	0,5	0,5	1,4	1,3	1,3
Final feed mm:	-	-	-	1,5	-	-
Alternating top feed stroke mm:	5	9	9	-	-	-
Stitches/min., max.:	3500	3000	2600	1900	3500	3000
Motor pulley Ø mm:	80	85	75	63	100	85
Handwheel belt pully Ø mm:	63	80	80	95	80	80
Motor speed 50 Hz 1/min:	2800	2800	2800	2800	2800	2800

Subclass :	FA-64	FA-64-S	FA-73	LGF-73	FA-373	FA-374
Needle system :	134	134Lr	134-35	134-35	134-35	134-35
Needle No. :	150	150	120	120	120	150
Synth. sewing thread Nm:	-	10/3	40/3	-	40/3	-
Braided thread Nm:	15/3	-	-	30/3	-	15/3
Foot stroke, max. mm:	7	7	7	8	7	7
Stitch length, max. mm:	6	6	6	6	6	6
Bottom feed stroke (above throat plate) mm:	1,4	1,4	-	-	0,5	0,5
Final feed mm:	-	-	-	-	-	-
Alternating top feed stroke mm:	-	-	9	9	9	9
Stitches/min., max.:	3200	2900	3000	3000	3000	2700
Motor pulley Ø mm:	106	100	85	85	85	90
Handwheel belt pully Ø mm:	95	95	80	80	80	95
Motor speed 50 Hz 1/min:	2800	2800	2800	2800	2800	2800

Subclass :	FA-373-G	FA-203-S	FA-204-S	FA-262	FA-263	FA-272
Needle system :	134-35	134Lr	134Lr	134	134	134-35
Needle No. :	120	130	160	90	120	90
Synth. sewing thread Nm:	40/3	20/3	10/3	70/3	-	50/3
Braided thread Nm:	-	-	-	-	20/3	-
Foot stroke, max. mm:	7	7	7	7	7	7
Stitch length, max. mm:	6	6	6	4,5	6	4,5
Bottom feed stroke (above throat plate) mm:	0,5	1,3	1,4	1,2	1,3	0,5
Final feed mm:	-	1,4	1,5	-	-	-
Alternating top feed stroke mm:	9	-	-	-	-	5
Stitches/min., max.:	3000	2200	1900	4200	3500	3500
Motor pulley Ø mm:	85	75	63	95	100	80
Handwheel belt pully Ø mm:	80	95	95	63	80	63
Motor speed 50 Hz 1/min:	2800	2800	2800	2800	2800	2800

Subclass :	FA-273	VA-73	VA-373	VK-72	AE-73-E36	VF-73
Needle system :	134-35	134	134	134	134-35	134-35
Needle No. :	120	120	120	90	120	120
Synth. sewing thread Nm:	40/3	-	-	60/3	70/3	-
Braided thread Nm:	-	30/3	30/3	-	-	30/3
Foot stroke, max. mm:	7	8	8	8	7	7
Stitch length, max. mm:	6	6	6	4,5	6	6
Bottom feed stroke (above throat plate) mm:	0,5	-	0,5	-	-	-
Final feed mm:	-	-	-	-	-	-
Alternating top feed stroke mm:	9	9	9	5	9	9
Stitches/min., max.:	3000	2800	2800	3000	2700	2800
Motor pulley Ø mm:	85	80	80	85	75	80
Handwheel belt pully Ø mm:	80	80	80	80	80	80
Motor speed 50 Hz 1/min:	2800	2800	2800	2800	2800	2800

Subclass	:	**VKF-72**	**VSF-2-62**	**65-73**	**65-373**	**65-273**	**65-BN1-273**
Needle system	:	134	134	134	134-35	134	134
Needle No.	:	90	90	120	130	120	120
Synth. sewing thread	Nm:	60/3	70/3	40/3	40/3	40/3	40/3
Braided thread	Nm:	-	-	-	-	-	-
Foot stroke, max.	mm:	7	8	8	12	8	8
Stitch length, max.	mm:	4,5	4,5	6	6	6	6
Bottom feed stroke (above throat plate)	mm:	1,2	1,2	-	0,5	0,5	0,5
Final feed	mm:	-	-	-	-	-	-
Alternating top feed stroke	mm:	-	-	9	9	9	9
Stitches/min.,	max.:	3500	3500	2500	2500	2400	2400
Motor pulley Ø	mm:	100	100	85	85	80	80
Handwheel belt pully Ø	mm:	80	80	95	95	95	95
Motor speed 50 Hz	1/min:	2800	2800	2800	2800	2800	2800

Subclass	:	**65-BN2-273**	**65-BN3-273**	**65-FA-73**	**65-FA-373**	**65-FA-273**	**65-BNF1-273**
Needle system	:	134	134	134-35	134-35	134-35	134-35
Needle No.	:	120	120	120	130	120	120
Synth. sewing thread	Nm:	40/3	40/3	40/3	40/3	40/3	40/3
Braided thread	Nm:	-	-	-	-	-	-
Foot stroke, max.	mm:	8	8	7	7	7	8
Stitch length, max.	mm:	6	6	6	6	6	6
Bottom feed stroke (above throat plate)	mm:	0,5	0,5	-	0,5	0,5	0,5
Final feed	mm:	-	-	-	-	-	-
Alternating top feed stroke	mm:	9	9	9	9	9	9
Stitches/min.,	max.:	2400	2400	2500	2500	2400	2400
Motor pulley Ø	mm:	80	80	85	85	80	80
Handwheel belt pully Ø	mm:	95	95	95	95	95	95
Motor speed 50 Hz	1/min:	2800	2800	2800	2800	2800	2800

Subclass	:	**65-BNF2-273**	**65-BNF3-273**	**65-FA-373H12**
Needle system	:	134-35	134-35	134-35
Needle No.	:	120	120	130
Synth. sewing thread	Nm:	40/3	40/3	40/3
Braided thread	Nm:	-	-	-
Foot stroke, max.	mm:	8	8	7
Stitch length, max.	mm:	6	6	6
Bottom feed stroke (above throat plate)	mm:	0,5	0,5	-
Final feed	mm:	-	-	-
Alternating top feed stroke	mm:	9	9	12
Stitches/min.,	max.:	2400	2400	2200
Motor pulley Ø	mm:	80	80	75
Handwheel belt pully Ø	mm:	95	95	95
Motor speed 50 Hz	1/min:	2800	2800	2800

The listed values refer to stitch off and adjustment data.

2. Completion

Please note the following points:

- Fit the upper belt guard as shown in figs. 1 and 2.
- After inserting the machine head in the table top adjust the vertical position of the oil compensating vessel (fig. 12/9)
- Before replenishing the oil sump, fill about 15-20 cm3 (corresponding to the quantity of a 0,2 l glass) of oil in the container (fig. 3/9)
- Check the oil wick for its proper position in the arm head (see the item 3.10.1)
- Operate the machine first only at intervals at moderate speed.

3. Sewing machine

3.1 Stitch regulator

- With the stitch length = 0 the feed dog should not perform any feeding motion.
- For correcting, loosen the clamping screw on the block and turn the shaft with the coulisse (fig. G, H/12)
- For checking:
  Introduce tommy spanner in the screw and turn the handwheel (fig. A/8)
  The adjustment is correct if the spanner performs the minimum motion
- In case of a wrong adjustment the stitch lengths will be different for forwards and reverse feed.
- The screw on the oil sump should never be turned down to the bottom (fig. E/8)
  With the spring being compressed, the arresting pin would impede the rotation of the stitch regulator coulisse.
- Lever position in case of needle feed and alternating feed (fig. h/13):
  it should be vertical when the stitch length has been set for 0 (so that during the feeding the needle does not move in the stitch hole. In certain sub-classes the needle travel is a little longer than the feed does travel).
- For correcting:
  Loosen the screw and turn the lever on the shaft.

3.2 Feed dog

3.2.1 Feed dog height

- Position
  1. in alternating machines without feed dog stroke:
     The feed dog should be on the level of the throat plate
  2. in alternating machines with feed dog and the sub-class designation 272, 273, 274, 372, 373, 374:
     The feed dog, in its topmost position, should stand 0,5 mm above the throat plate

3. in all other machines:
   In its topmost position, the feed dog projection above the throat plate should amount to a tooth height

- For correcting:
  Set the stitch regulator for 0 stitch length
  In machines with feed dog stroke:
  Turn the stroke shaft accordingly after loosening the screw (fig B/C/8).
  When adjusting, ensure that the traction rod, leading to the lifting eccentric, is distanced about 2 mm from the pump ring.
  In machines without feed dog stroke:
  Turn the shaft accordingly after loosening the screw (fig. S/5).

3.2.2 Position of the feed dog with respect to the throat plate

- With the maximum stitch length, the distance of the feed dog to the throat plate cutout should be equal at the front and an the rear
- In the lateral direction the feed dog should be centered with respect to the throat plate cutout
- For correcting:
  Loosen 2 screws and set the feeding bar accordingly (fig. n/5).

3.2.3 Lifting motion of the feed dog

- Set the stitch length for 0
- In case of bottom feed:
  The feed dog must have reached its topmost point when the needle is at its upper dead point
- In case of needle feed and alternating feed:
  The rising feed dog and the descending needle should reach the throat plate level at the same time
  (if the adjustment is correct, the feed dog will be at its topmost point when the needle is in its lowest position)
- For correcting:
  Turn the eccentric on the driving shaft accordingly after having loosened the two screws, fig. 2/8
  (For fixing the driving shaft in the axial direction:
  Push the loosened eccentric to the left against the pump and press the driving shaft to the right. Then set the counter-weight of the feed eccentric against the lifting eccentric. After this adjustment the axial adjustment will be maintained also after loosening the lifting eccentric).

3.2.4 Feed dog advance

- in case of bottom feed:
  If the sewing machine, set for the maximum stitch length, is turned further out of the position where the thread take-up lever is at its topmost point, the feed dog will advance in the sewing direction by 1/2 - 1 tooth
  (Reason for the additional advance: better interlocking)
- In case of needle feed and alternating feed:
  The needle, being in its lower position, should not move when the stitch regulator is operated.
  (In case of an alternating feed this also determines the moment of the feeding motion of the feeding foot).
  In order to abtain a constant loop stroke for each stitch length when sewing forwards and backwards, the needle bar should no longer move when the loop stroke of 2 mm is attained.
  Otherwise the needle would continue oscillating when stitching into the fabric while the presser foot still holds the material. This can result in needle breakage.
  Slight deviations from the basic adjustment are advisible in following cases:

No needle movement when operating the stitch regulator up to 1 mm from the needle bottom position:
in case of very thick fabrics,
up to 1 mm behind the needle bottom position:
in case of very thin fabrics.

- For correcting:
  Turn the feed eccentric on the driving shaft.
  For this purpose, loosen 2 screws on the eccentric and 1 screw on the counter-weight, fig. D, H, G/8 (link the counter-weight with the eccentric by a pin).
  1. When adjusting, set the counter-weight quite to the left against the lifting eccentric, fig. G, U/8
     (in this position the counter-weight is sufficiently distanced from the lever).
  2. Adjust the feed eccentric in the axial direction so that the lever is situated on the entire surface

3.2.5 Maximum stitch length

- Limit the maximum stitch length, applicable to the machine, by the block (fig. K/10)
- For checking: sew on a piece of paper

3.3 Adjusting the needle bar with respect to the stitch hole

in the X-direction

- The needle should stitch in the middle of the stitch hole when the stitch length has been set for = 0.
- For correcting:
  1. In bottom feed machines: release the block clamp (fig. R/4)
  2. Loosen 2 setting blocks (pay attention to the horizontal position, fig. e/4)
  3. Loosen the thread take-up lever crank with 2 fastening screws and 1 positioning screw and the bearing with 2 screws, fig. A, B/4
     (the positioning screw must be located on the flat surface of the crank pin)
  4. In case of needle feed and alternating feed:
     Loosen the clamping screw for the driving lever, fig. A/13
     (pay attention to the alignment of the lever)
  5. In case of an alternating feed:
     Shift the sewing foot drive, if necessary (shift the lifting shaft in the axial direction after loosening the setting rings, fig. A/28)
  6. Shift the rocker in the axial direction
- Following this adjustment check the distance of the needle with respect to the hook

in the Y-direction

- The needle should stitch in the middle of the stitch hole
  (with correct adjustment and with 0 stitch length the distance between the needle and the front edge of the base plate will then amount to 89 mm, fig. 6).
- For correcting:
  1. In bottom feed machines: release the block clamp (fig. R/4)
  2. In case of needle feed or alternating feed:
     Loosen the lever screw and turn the rocker accordingly, fig. A/13.

3.4 Hook and needle bar height

3.4.1 Loop stroke

- Check first whether the clutch catches
- In case of needle feed and alternating feed:
  1. Check the needle rocker for proper adjustment
  2. Set 0 stitch length
- Check by a gauge the loop stroke of 2 mm
  (Do not tighten the screw of the loop stroke block excessively in order not to damage the needle bar)
- For correcting, loosen the clamping ring (fig. V/19) and turn the hollow shaft with respect to the driving shaft
  (the hook is fixed on the hook shaft - 1st screw in the direction of rotation on the flat surface)
- For ensuring better clamping, set the clamping ring in alignment with the outer edge of the hollow shaft and ensure the lateral play of about 0,5 mm in the claw clutch (fig. b/19)
- When modifying the loop stroke, check the moment for the bobbin case lifting function and the position of the hook guard.

3.4.2 Needle bar height

- In the loop stroke position, the hook point should stand in the middle of the groove
- For correcting, loosen 2 screws (fig. Y/18)
- When modifying the needle bar height, check the position of the hook guard
- In case of wrong height: the hook point may be damaged, the thread may be jammed between the needle and the hook guard, the thread may brake
  skipped stitches and thread breakage can occur

3.4.3 Distance between the hook and the needle

- The hook point should be as close to the needle as poosible, but without touching it
- Put the hook guard out of function
  For correcting, displace the hook case after loosening 2 screws (fig. M/19; S/17). By means of the eccentric press the case against the guide (fig. L/19).
- Ensure the play of about 0,5 mm in the claw clutch, fig. 19
  (Reason for the play: the hook case can be slightly shifted sideways without correcting once again the loop stroke).
- In case of a needle size change between the ranges of 80-110, 120-140 and 150-170 check the distance.

3.4.4 Hook guard (fig. S/21)

- It avoids the contact between the hook point and the needle
- In the loop stroke position the needle point should touch the hook guard without being deviated (deviation only below the loop stroke position)
- Adjust the hook guard accordingly by the screw
- Checking: When the needle is pressed against the hook guard it should not touch the hook point
- Check the hook guard position when correcting the needle bar height or the loop stroke and when changing the needle size above 0,2 mm.

3.4.5 Needle size change

- Check following adjustments:
  a) When changing the needle size above 0,2 mm check the hook guard adjustment
  b) When changing between the needle size ranges of 80-110, 120-140 and 150-170 check also the distance between the hook and the needle.

3.5 Bobbin case lifter

3.5.1 General information

- At the moment of the thread passage the middle part is lifted by the finger.
  This permits to reduce the thread tension level.
- A wrong adjustment can lead to the formation of eyelets on the seam underside.
- The thread should not be slack when it passes between the middle part and the holder of the throat plate.
  Proceed to a respective lateral adjustment of the thread pulling sheet on the tension plate

3.5.2 Finger travel (fig. 22)

- The finger travel should be sufficient to ensure a free thread passage between the middle part and the finger.
- Remove the counter knifeholder in machines with thread cutter and, by means of a special spanner, adjust the following eccentricity

Sub-class end number	Eccentricity
1, 2	about 2 mm
3	about 3 mm
4	about 4 mm

3.5.3 Lifting travel (fig. 22)

- This should correspond to the thread thickness,
- Rectify by the finger, fig. 1/22
  Lifting travel too short: no bobbin lifting function
  Lifting travel too long: excessive noise
  the middle part is projected against the other side of the nose, jumps back and clamps the thread.

3.5.4 Lifting moment

- Preadjustment:
  The finger should reach its front inversion point when the hook point, after seizing the loop, is in the "3 o'clock" position.
- For correcting, loosen 2 screws and turn the shaft by screwdriver (fig. G, H/19)
- Final adjustment:
  While sewing by hand watch the thread passage and rectify the moment accordingly

3.6 Feeding foot and presser foot

3.6.1 Feeding foot stroke and presser foot stroke in alternating machines

- both feet must have the same stroke
- medium sewing foot pressure
  maximum foot stroke
  and adjust 0 stitch length
- Turn the machine and compare the strokes
- For correcting:
- 1. Lift slightly from the throat plate the foot having a longer stroke
  2. Loosen the block on the shaft by the screw (fig. R/14): the lifted foot will be lowered by the presser footspring down to the throat plate
  3. Repeat the adjustment until both strokes are equal
  4. Following the adjustment ensure that the traction bar, leading to the lifting eccentric, stands in the middle of the eccentric travelling surface.

3.6.2 Advance movement of the feeding foot in alternating machines

- This is determined by the adjustment of the feed dog advance (the movement is caused by the same eccentric)

3.6.3 Lifting movement of the feeding foot in alternating machines

- Condition for the adjustment:
  1. The same stroke of the sewing foot and of the cloth presser foot
  2. Correct feed dog lifting movement
- The ascending feed dog and the descending feeding foot as well as the descending needle should reach the throat plate level at the same time.
- For checking:
  Turn the machine with the foot stroke being set for its maximum value and with the stitch length = 0
- Loosen 2 slit screws and 2 screws on the scale ring and turn the eccentric on the shaft accordingly (fig. 14).
  Adjust the eccentric sideways so that the setting button can snap
  Adjust the plate spring pressure by the 2 screws on the scale ring so that the eccentric does not get out of adjustment when the sewing machine ist operated.
  In case of the G-version: loosen 2 screws and turn the eccentric on the shaft (fig. E/44).

3.6.4 Lifting the sewing foot

- Lifting by the hand lever
- The stroke should amount to 7 mm
- For correcting:
  1. Lift the foot or the feet by the lever (fig. O/15)
  2. Lift the alternating feet to the same level
     and place underneath a distance piece of 7,5 mm, fig. N/18
     (the play in the transmission elements will ensure the stroke of 7 mm)
  3. Loosen the block on the lever (fig. P/15)
  4. Push the pin (fig. S/18) upwards up to the stop and turn the block on the shaft
     (the surfaces of the block and of the lever should be reciprocally parallel)

Lift limitation
- The distance between the stop screw of the lever and the cast iron wall should amount to 2 mm when lifting by the lever, fig. E/14 (in versions with higher knee lever lift the distance is accordingly greater)
- Adjust the stop screw respectively or adjust the lever on the shaft (the lever actuates at the same time the thread tension release, therefore it should not be shifted laterally)

Lifting by the knee lever
- With the foot being lowered, the lever should be horizontal and it should stand 1 mm from the front cast iron edge (fig. G1/12
- Set the lever accordingly after loosening its screw.

Pneumatic lifting
- The foot clearance should amount to 7-13 mm, depending on the version.
  For correcting, set the screw on the lever (fig. G1/12) accordingly.
  (Following the adjustment check whether the distance between the stop screw of the lever and the cast iron wall amounts to about 2 mm when the foot is lifted).
- When the foot is not lifted, the setting screw on the lever should be in contact with the plastic sleeve of the piston rod.
  Adjust the clamping block on the piston rod accordingly (in case of the version with 13 mm cloth passage there is no clamping block).

3.7 Thread tension release
- When releasing the tension, the plate is pulled towards the arm.
- With the tension being released, the distance between the plate and the upper arm should amount to 0,5 mm (fig. a/28).
  For releasing, press-in the armature completely and adjust the upper traction rod accordingly (fig. A/14).
- For releasing, operate the knee lever and displace the lever (fig. E/14) in the axial direction accordingly.
  (When adjusting, do not turn the lever on the shaft).

3.8 Check-spring
- Adjusting the spring way:
  The check-spring should be released when the eye of the needle dips in the material.
  For correcting:
  Loosen the rotary button and the screw and turn the bolt (fig. b/41)
- Adjusting the spring tension:
  Adjust according to the material involved.
  For correcting:
  Loosen the rotary button and the screw and turn the bolt (fig. a, b/42)

3.9 Safety clutch (fig. 12)

3.9.1 General information

- Should act when the hook is blocked
- If the hook is blocked:
  turn the handwheel until a 5 mm pin can be introduced in the hole of both clutch parts.
  Move the handwheel to and fro until the hook is free, remove the pin and engage the clutch.

3.9.2 Torque adjustment

- The torque is adjusted in the factory by turning the screws with a special torque spanner.
  For preadjusting, tighten the screws until their heads are flush with the counter nut.
- If in case of heavy material the clutch responds frequently, tighten slightly the screws.

3.10 Oil lubrication

3.10.1 General information

- During the running-in period, the bolts for the foot lifting mechanism should be intensively lubricated by the wicks.
  Thereafter even worn wicks will not cause any wear of parts.
- The 5 supplying wicks in the sewing head should not touch the return wick.
- When the machine is out of operation, the oil returning from the sewing head would rise in the hook case if there were no compensating container. In case of a fast machine acceleration the oil would then get out of the hook case.
- The wick end of the return hose (fig. 9/9) should lie with its entire length (about 10-15 mm) in the sump. This will ensure the optimum oil return.
- Only a part of the oil, proceeding from the brass tube, should drop in the hole (fig. 3/9).
  Bend the tube accordingly.
- Check the function of the return pump and of the return valve if the compensating container is not emptied
- A too intense hook lubrication can lead to an excessive oil accumulation in the collector sheet.
  For checking, place a piece of paper between the hook case and the oil sump and let operate the machine.
  If there is an oil trace at the level of the setting screw, the oil tube is not properly attached.
  In case of an oil trace at the level of the hook fastening screws, the gasket under the cover is damaged.

3.10.2 Function of the sewing head lubrication (fig. 9)

- the hook shaft conveys the oil via the spiral grooves from the sump to the cavity in the machine head.
  The return valve avoids the oil reflux when the machine is out of operation, fig. 6/9).
- Further oil flow:
  1. A part of the oil lubricates via 5 wicks the mechanical parts in the sewing head and the resetting eccentric of the alternating feet (fig. 4/9).
     One wick returns the excessive oil from the sewing head to the hook case (fig 9/9).
  2. The major part of the oil flows directly into the hook case (fig. 10/9).

3.10.3 Function of the hook lubrication (fig. 34)

- The oil returned from the sewing head fills the hook case up to the level of the oberflow pipe. The suction pipe conveys the oil from the compensating container to the sump.
- The hollow hook shaft conveys the oil via the spiral grooves of the stationary shaft to the hook cavity. From there the oil passes through a hole to the lower cavity.
- A part of the oil is passed by the centrifugal action through an oil pipe (fig. 14/34) to the hook race. The major part of the oil returns to the hook case.

3.10.4 Visual control

- With the machine being out of operation, check the oil level at the oil sight glass (fig. L/9).
- With the machine in operation, check the oil supply (recognizable by oil bubbles in the oil) to the sewing head at the oil sight glass (fig. K/9)

3.10.5 Regulating the hook lubrication

- By means of the regulating screw move the oil pipe out of its vertical position (max. oil quantity) nearer to the rotary axle (lower oil quantity) (fig. 13, 14/34).
  The regulation between the maximum and minimum oil quantity is limited to about a quarter (1/4) of revolution of the regulating screw.
- For preadjusting, loosen the screw and tighten it again until the oil pipe moves. (Remove for this purpose the middle part and the covering sheet). Out of this position turn the screw again by about 1/8 of a revolution.
- Let the machine operate like for sewing and check then by a piece of paper whether enough oil is projected at the hook.
- Correct according to the test results
  Turn clockwise for less oil
  Turn counter clockwise for more oil
  The oil pipe will be crushed if the screw is tightened excessively.
- The oil quantity set in the factory is intended for abundant lubrication. Therefore, check the lubrication after the running-in period.

3.10.6 Oil change

- Proceed to the oil change after the first 500 hours of operation (subsequently it will be enough to replenish the oil)
- Loosen the drain screw and drain the oil.
- Clean the oil sump and the breather tube.
- Turn-in the drain screw with a new gasket.
- Fill-in fresh oil.

3.10.7 Oil replenishing

- Replenish before the oil sight glass shows "leer" (empty) (fig. L/9).
- Fill-in "Spinesso 10" oil of ESSO until the oil level reaches the mark "voll" (full). (This oil can be obtained under the ref. no. 990 81 010 1).
  It is also possible to use other oil brands with following features:

Viscosity	at 20°C	at 50°C
cST	24,0	8,5
cP	21,5	7,7
E	3,5	1,7

Flash point 150°C

4. Thread cutter

4.1 Sequence of functions

- After sewing, lower the pedal backwards completely
- Machine passes the 1st position:
  The connected thread cutter magnet swings the thread pulling knife fully backward
  Rotation of the machine at the cutting speed
- Mechanical swinging of the thread pulling knife towards the counter knife
  (seizing the upper and the lower thread)
- Thread tension releasing magnet On
- In the 2nd position:
  Cutting both threads and clamping the lower thread
  Drive stop, thread tension releasing magnet Off

4.2 Lateral adjustment of the thread pulling knife

- With respect to the middle nose and freecut in the middle part
- The thread pulling knife should pass along the nose at a safe distance
- For correcting, loosen the screws (fig. y/23)

4.3 Thread pulling knife height

- Set the knife quite close to the bobbin, but without contact (ensuring seizing of the threads)
- Rectify by 2 setting rings on the carrier (fig. x/26)
  (The shaft should have no axial play and the thread pulling knife should move freely).

4.4 Control cam position (fig. 25)
- Determines the moment of engagement of the thread pulling knife.
- When the thread take-up lever is at its topmost point, the hole of the control cam should situate itself on the linking line between the shaft and the roller.
- For correcting, loosen 3 screws (fig. S/25)
- In case of wrong control cam position, the threads will probably not be seized or cut.

4.5 Counter knife position with respect to the thread pulling knife
- The distance between the cutting edge of the counter knife and the slide guide should amount to 26 mm (fig. 23).
- At the moment of the half-overlapping the cutting edge of the counter knife should touch the thread pulling knife.
  With the increasing overlapping the pressure will grow
  (If the thread pulling knife cannot be sufficiently moved-in by hand: modify the stroke position by turning the armature).
- For correcting, shift the carrier.

4.6 Swinging range of the thread pulling knife
- With the armature being fully moved out, the back of the thread pulling knife should be flush with the edge of the counter knife
  (The position of the thread pulling knife, moved out, will be determined by the lowest point of the control cam).
- For correcting, turn the armature (fig. V/26).
- In case of wrong adjustment:
  the knife cannot be returned sufficiently.

4.7 Roller lever (fig. D/26)
- When sewing, the rotating control cam should not touch the roller lever.
- With the thread take-up lever being at its topmost point and with the armature being moved out, the roller lever should stand 0,1 mm from the control cam.
  For adjusting, hold a gauge (or paper strip) between the roller lever and the control cam.
  Loosen the screw and twist the lever accordingly.

4.8 Lower thread clamp (fig. h/23)
- Ensures at the seam beginning that the lower thread ist better seized by the upper thread for pulling it up.
- Set the spring parallel and under slight pressure against the thread pulling knife after loosening the screws.
- For checking, cut the threads manually by the thread pulling knife and pull the lower thread out of the clamp.
- For correcting, displace the clamp.
- In case of a wrong adjustment starting sewing-problems of the seambeginning may arise.

4.9 1st position

- In this position the bottom of the eye of the descending needle should be flush with the hook covering ring (fig. 27).
  This corresponds to the lowest point of the control cam.
  (in versions with a higher foot stroke the needle eye should situate itself at the height of the stitch hole.
  Otherwise, at the intermediate foot lifting, the feet will knock against the needle bar).
- Adjust by the synchronizer in the 1st position:
  In case of Quick NDK 880 T: Set the red magnet on the arrow mark
  In case of Quick NDK 880 M: Adjust the inner groove screen with respect to the light barrier
  In case of Efka: Adjust the 1st tripping edge of the inner groove screen couple accordingly
- For checking the position, lower the pedal briefly forwards and release it again. Move first the function selector in the position "1 needle".
  In case of deviations, turn the magnet or the screens accordingly.

4.10 2nd position

- Corresponds to the upper position of the thread take-up lever (control cam at topmost point)
- Adjust by the synchronizer in the 2nd position:
  In case of Quick NDK 880 T: Set the 2nd yellow magnet in the direction of operation on the arrow mark
  In case of Quick NDK 880 M: Adjust the outer nose screen with respect to the light barrier
  In case of Efka: Adjust the outer groove screen by means of the white orientation points accordingly
- For checking the position, lower the pedal briefly forwards, then backwards and then release it again.
  In case of deviations, turn the magnet or the screens accordingly.
- In case of wrong adjustment: no cutting, needle too deep.

4.11 Timing the thread tension release

- The thread tension should be released at the beginning of the 2nd movement phase of the thread pulling knife to the counter knife, when the thread pulling knife passes the holding nose of the middle part.
  Adjust by the synchronizer in this position:
  In case of Quick NDK 880 T: Set the 1st yellow magnet in the direction of operation accordingly
  In case of Quick NDK 880 M: Adjust the middle nose screen with respect to the light barrier accordingly
  In case of Efka: Adjust the 2nd tripping edge of the inner groove screen couple accordingly. Do not modify the position of the 1st tripping edge.

5. G-version, additional equipment, and AE-version

5.1 G-version in alternating machines (467 FA-373 G)

5.1.1 General information

- The G-version, compared to the previous version, includes following differences:
  1. Large setting wheel on the arm cover for quick adaptation of the foot stroke to the material (fig. 43)
  2. The linkage-mechanism is replacing the resetting eccentric for the alternating foot stroke adjustment.
- Feature of the SR 13-1 version:
  Above a certain foot stroke the setting wheel operates a switch that reduces the maximum possible speed to the adjustable HP speed (see point 5.3).
- In case of H12 the speed is reduced when the foot stroke is approximately above 9 mm.

5.1.2 Lever position

- The lever (fig. A/44) must be adjusted laterally with respect to the slot of the arm cover.
- Adjust the lever accordingly.

5.1.3 Adjusting the clamping block on the shaft

- With the minimum foot stroke and with the highest eccentric position the joints should be stretched
- Turn the clamping block on the shaft accordingly after having loosened the screws (fig. B, C/44).
  Proceed as follows:
  1. Loosen the screw so that the clamping block can just be turned on the shaft.
  2. Replace the head cover and set the wheel for the minimum stroke
  3. Turn the clamping block accordingly
  4. Remove the cover and tighten the screw.

5.1.4 Safety stop (fig. D/44)

- When operating the sewing machine without cover, the safety stop should avoid that the linkage-mechanism, no longer arrested, is torn out of its bearing.
- With the maximum foot stroke and in the lowest eccentric position the safety stop should be distanced about 1 mm from the block.
- Adjust the stop accordingly.

5.1.5 Bolt position (fig. 29)

- For a perfect lubrication of the joint the bolt must be in a certain position,
- Loosen the screw and adjust the bolt so that its face groove shows in the indicated axle direction.

5.2 Needle positioning (NP)

5.2.1 General information

- In machines with higher foot stroke, without NP, after cutting, the needle projects under the lifted foot. For being able to utilize the pressure foot clearance also for extremely thick material, the needle is again lifted when the 2nd position has been attained. (A cylinder turns the handwheel backwards).

5.2.2 NP position

- When the thread take-up lever is in its highest position the distance between the catch pin and the cast iron edge should amount to about 20 mm (fig. A/32).
  Adjust the clamping ring on the belt pulley accordingly.
- After positioning, the needle should stand at its upper dead point. Adjust the throttle accordingly.

5.3 Automatic instant foot stroke adjustment (HP-13-2)

5.3.1 General information

- Since October 1083 the HP-13-2 is used only in the long arm version.
- The foot stroke can be set for its maximum value by operating the knee switch while sewing. This is required for instance when crossing thick seams.
- If the knee switch has not been operated the smaller foot stroke, adjusted previously, will be effective.
- During the "HP" function the machine operates at 1800 rpm, as set by the factory in the control box.

5.3.2 Minimum stroke

- Adjust the regulating screw (fig. A/30).
  (The moved-in piston rod should not have reached its end position).

5.3.3 Maximum stroke

- This is determined by the mechanical limitation within the mechanical system when the piston rod is extended.

5.4 Automatic instant foot stroke adjustment (HP-13-3)

5.4.1 General information

- The HP-13-3 can only be used in the G-version.
- By operating the knee switch while sewing, the foot stroke can be increased to a previously adjusted value.
- When the knee switch has not been operated, the previously adjusted lower value will be effective.
- During the "HP" function the machine operates at 1800 rpm, as set by the factory in the control box.

5.4.2 Maximum foot stroke
- Adjust the rear setting wheel accordingly (fig. A/46).

5.4.3 Minimum foot stroke
- Adjust the front setting wheel accordingly (fig. B/46)

5.5 Automatic seam bartacking (RAP)
- For controlling the pneumatically operated stitch regulator it is necessary to have a constant pressure of 6 bar.
  Therefore it is advisible to have a pressure regulator.
- The adjustment of the bartacking lengths (number of stitches) is described in the instructions of the motor manufacturers.
- The bartacking speed is set in our factory for 1200 rpm, but it can be modified according to the requirements.
  Remember that the modification of the bartacking speed results in the respective bartacking lengths.
- The stitch regulator should not be operated before the needle is in the stitch hole (otherwiese there is a danger of needle breakage).
  Adjust the throttle accordingly.

5.6 Edge trimming device with mobile binder (AE)

5.6.1 General information
- This machine (AE) is used for simultaneous trimming, joining and binding.
- When operating the machine both protective sheets must be fitted.

5.6.2 Position of the binder
- Adapt the binder to the sewing components.
- Turn the clamping piece on the feed shaft accordingly (fig. A/44)

5.6.3 Binder way
- The binder should follow the same way as the feed dog.
- For correcting, loosen 2 screws and modify the lever length accordingly (fig. B/45).

5.6.4 Knife stroke
- Adjust according to the thickness of the material involved (adjusted in the factory for 8 mm).
- For correcting, loosen 3 screws and regulate the eccentric, fig. A/49
  (the maximum stroke amount to 10 mm, in special versions to 12 mm).
- When modifying the knife stroke, the knife oberlapping also changes.

5.6.5 Lever position
- In the lowest position of the knife the lever should be horizontal (fig. A/50).
- Turn the fastening block on the knife driving shaft accordingly (fig. A/47).

5.6.6 Knife movement
- Basic adjustment:
- When the feed dog advance is terminated, the knife should stand in the lowest position.
- Final adjustment:
  Adjust according to the material involveld.
- For correcting, loosen 2 screws and turn the eccentric on the shaft (fig. B/49).

5.6.7 Knife overlapping
- In the lowest position of the knife it should amount to 0,5 mm.
- Loosen the screw and adjust the knife height accordingly (fig. B/50).

5.6.8 Vertical position of the knife
- Loosen the screw and swing the knife accordingly (fig. C/50).

5.6.9 Determining the position of the knife to the binder and counter knife
- With the maximum stitch length the upper knife should stand at a safe distance from the binder.
- Loosen 2 screws and displace the carrier with the knife accordingly (fig. D/50)

5.6.10 Knife pressure
- Adjust according to the thickness and hardness of the material involved.
- For correcting, turn the setting screw (fig. E/50).

6. Speed regulation

6.1 Speed regulation of the Quick Motor NDK 880 with control box Nr. AQ: 5.607, 5.807

6.1.1 General Informations
- It will not be necessary to adjust the speed if you specify the machine class 467 when ordering the spare controll box. The controll box is then adjusted in the factory.
- Effect of not correct speed:
  "Continuous operation" of the machine
  Incorrect operation of the thread cutter
- Measure the speed directly on the synchronizer by using a mechanical speedometer.
- When adjusting, respect the specified sequence.

6.1.2 Preparations on the machine

- Lift the sewing foot
- Set the function selector in the "Nadel tief" (needle bottom) position
- In case of automatic seam bartacking: switch off initial and final bartacking (0 position)
- Release the plug connections on the cover of the control box
- Remove the cover of the control box (loosen 4 screws and separate the inner plug connection)

6.1.3 Basic adjustment of the 1st speed step

- Operate the main switch
- Operate the 1st step by pedal
- By means of P10 set for 100 rpm
- Release the pedal: the machine will stop with the needle in bottom position

6.1.4 Adjusting the speed control curve

- For adjusting a linear curve, set CP3 in middle position (slit standing vertically)

6.1.5 Adjusting the maximum speed

- Lower the pedal fully forwards
- Turn CP2 clockwise until it can be felt that the speed decrease
- Turn CP2 counter clockwise until it cannot be felt that the speed increases
- Release the pedal

6.1.6 Adjusting the optimization speed

- Remove the screen slide from the synchronizer
- Lower the pedal fully and release it quickly (otherwise the machine will operate at cutting speed)
- By means of CP 26 set for 800 rpm
- Introduce the screen slide: the machine will stop with the needle in bottom position (if, when positioning, the machine does not stop or if it performs several revolutions before stopping, modify the adjustment of CP26 accordingly)

6.1.7 Adjusting the cutting and positioning speed

- Pull out the screen slide
- Lower the pedal briefly forwards and release it
- By means of CP6 adjust the speed of 150 rpm
- Introduce the screen slide: the machine will stop with the neddle in bottom position
- Pull out the screen slide
- Lower the pedal fully backwards and release it again
- Introduce the screen slide: the machine will stop with the needle in top position

6.1.8 Adjusting the speed of initial bartacking

- Switch on initial and final bartacking (single or double)
- Pull out the screen slide
- Lower the pedal briefly forwards
- By means of CP8 (n_{Ar}) adjust the respective speed of the initial bartacking
- Push-in the screen slide: the machine will stop with the needle in bottom position

6.1.9 Adjusting the speed of final bartacking

- Pull out the screen slide
- Lower the pedal fully backwards and release it again
- By means of CP9 (n_{Er}) adjust the respective speed of the final bartacking
- Push-in the screen slide: the maschine will stop with the needle in top position

6.1.10 With instant stroke adjustment (HP): adjusting the HP-speed

- Lower the pedal fully forwards
- Operate the HP switch
- By means of CP21 adjust the speed of 1800 rpm
- Release the pedal: the machine will stop with the needle in bottom position

6.1.11 Moving the machine in the initial position

- Switch off the machine
- Connect the plug connections
- Screw-on the cover
- Lower the sewing foot

6.2 Speed adjustment of the Efka Motors with control box No. 4 P 34 and 4 P 35

6.2.1 General Informations

- Proceed to the adjustment when exchanging the Efka control
- Effects of incorrect speed:
  "Continuous operation" of the machine
  Incorrect operation of the thread cutter
- When using a mechanical speedometer measure the speed directly on the synchronizer
- When adjusting, respect the specified sequence

6.2.2 Preparations on the machine

- Set the function selector in the "Nadel tief" (needle bottom) position
- In case of automatic seam bartacking:
  switch off initial and final bartacking

6.2.3 Adjusting cutting and positioning speed

- Operate the main switch
- Operate the 1st step by pedal
- By means of P1 adjust the respective speed 150 rpm
- Release the pedal: the machine will stop with the needle in bottom position
- Lower the pedal fully backwards and release it again:
  the machine will stop with the needle in top position

6.2.4 Adjusting the bartacking speed when using the control box 4 P 35

Speed of initial bartacking

- Switch off the main switch
- Switch the initial bartacking for the double bartack and switch on the final bartacking
- Switch on the main switch
- Switch off briefly the initial bartacking and switch on again the double bartack
- Lower the pedal briefly forwards and release it again
- By means of P4 adjust the speed of 1200 rpm
- Switch off the initial bartacking: the machine will stop with the needle in bottom position

Speed of final bartacking

- Lower the pedal fully backwards and release it again
- By P5 adjust the speed of 1200 rpm
- Switch off final bartacking: the machine will stop with the needle in top position

6.2.5 With instant stroke adjustment (HP): adjusting the HP-speed

- Lower the pedal fully forward
- Operate the HP-switch
- By means of r313 adjust the speed of 1800 rpm (r313 is on the inner side of the cover)
- Release the pedal: the machine stops needle bottom position

6.2.6 Programming the bartacking (fig. 48)

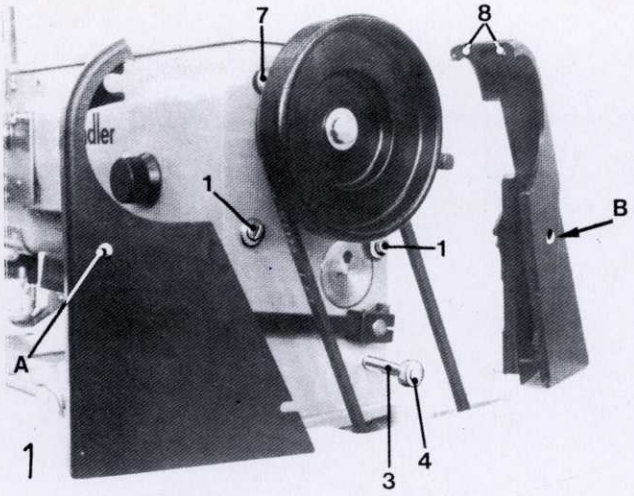
By means of the switch groups b70, b71, b72, b73, each including 4 individual switches, it is possible to determine the number of stitches (1-15) for the following bartacking seams:

b70: AR_2
b71: AR_1
b72: ER_1
b73: ER_2

Each connected switch has a certain stitch number value of 1, 2, 4 or 8. In disconnected condition the stitch number value is = 0

Example: Bartacking seam AR_2 should include 7 stitches.

Switch	On	Off	Stitch number value
1	x		1
2	x		2
3	x		4
4		x	0
			7



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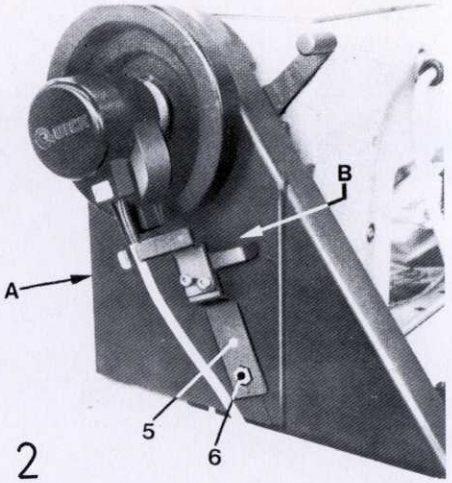

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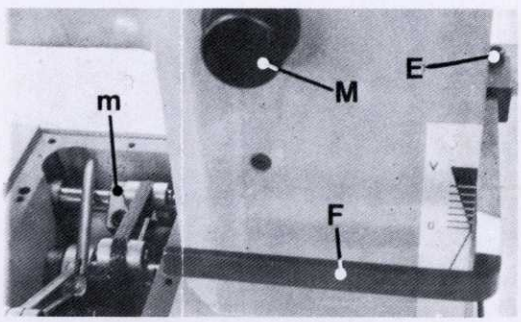

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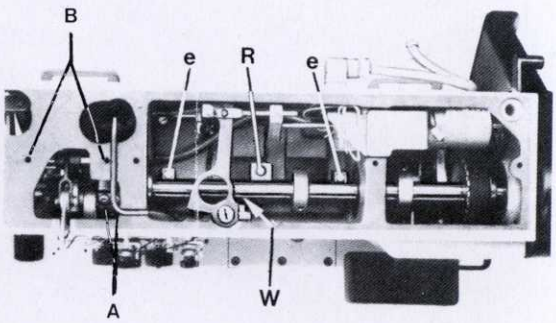

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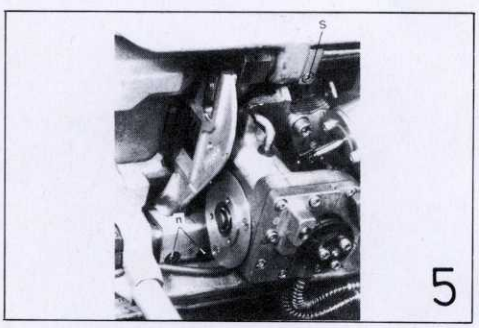

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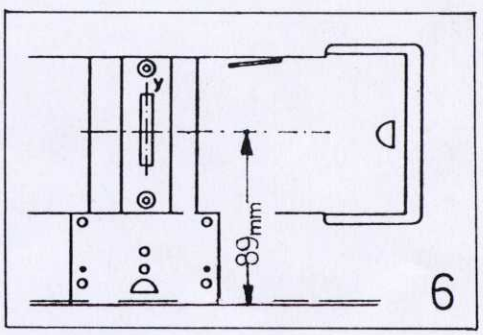

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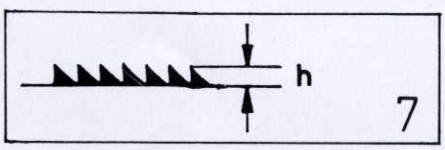

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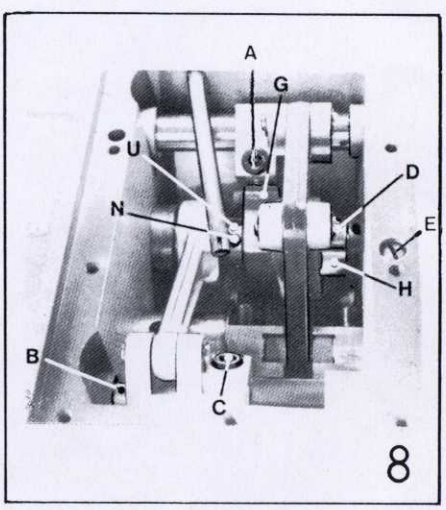

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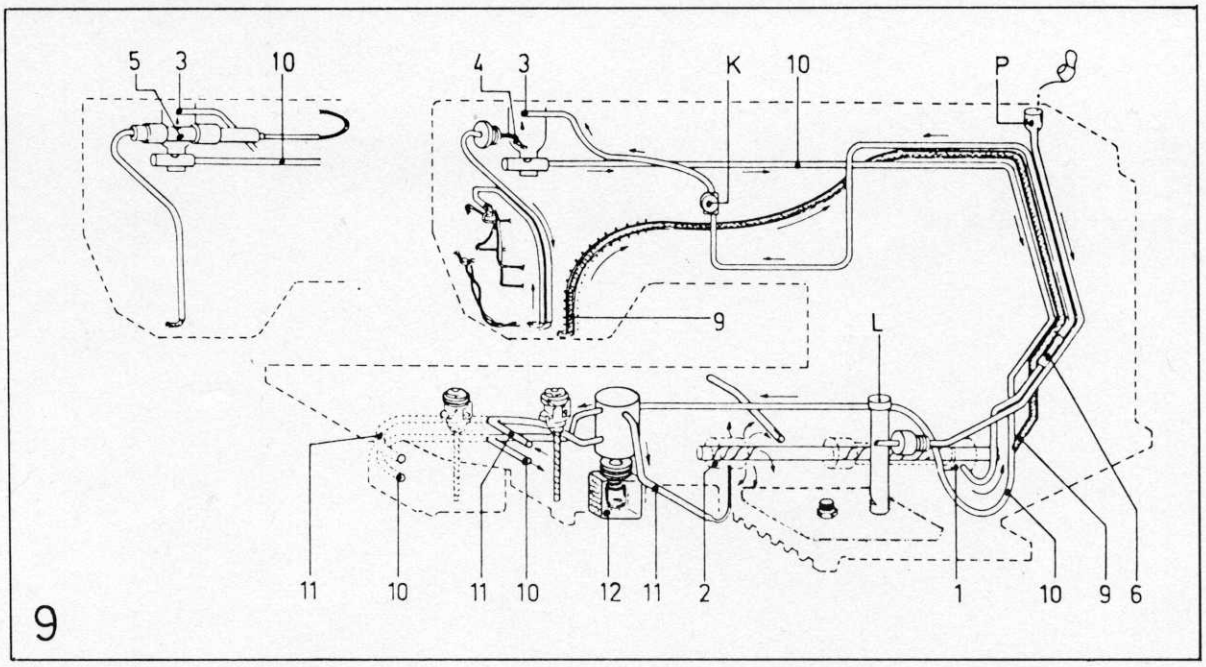

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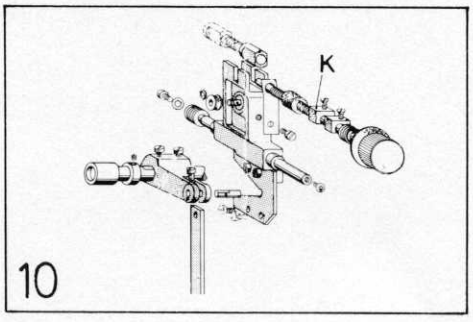

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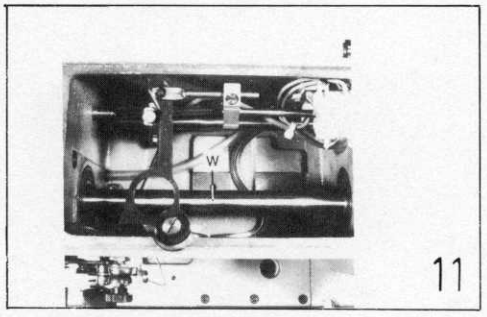

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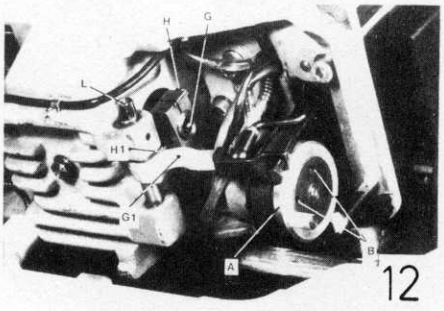

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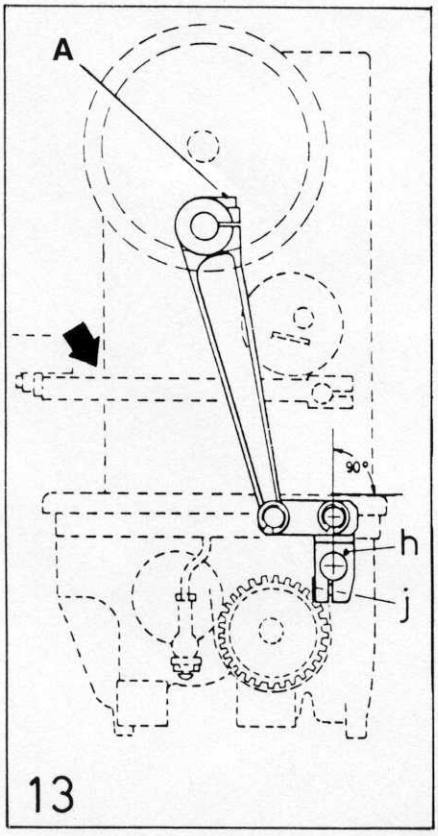

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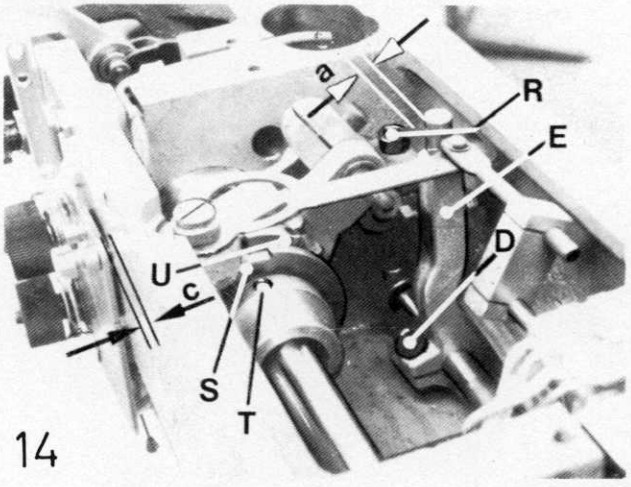

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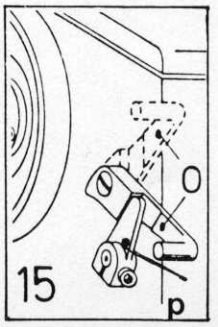

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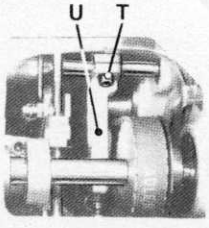

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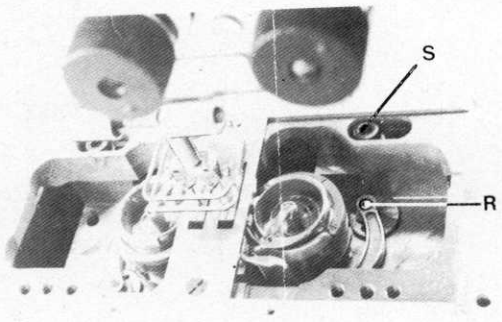

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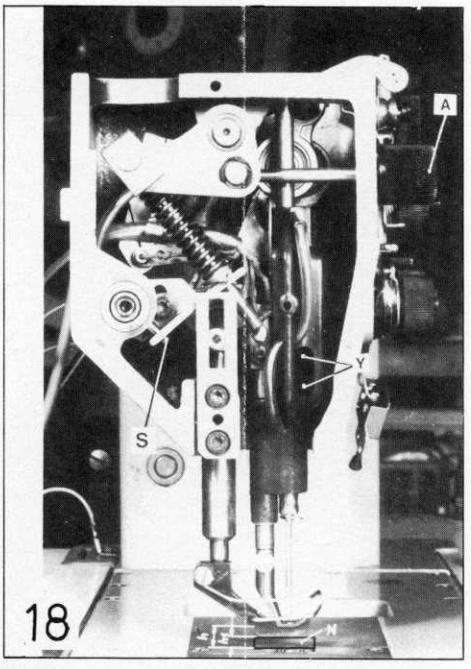

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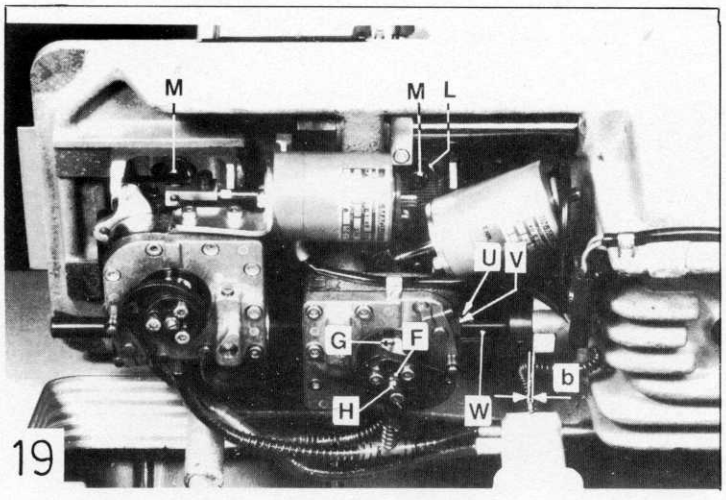

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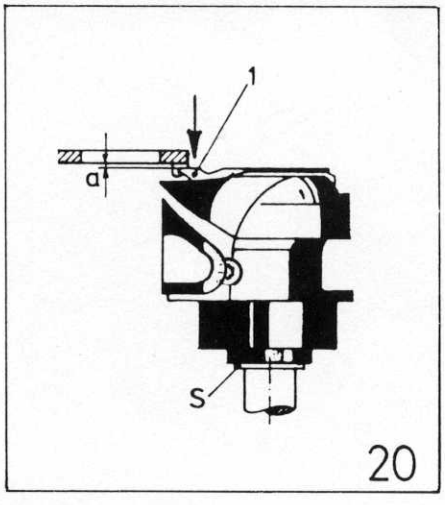

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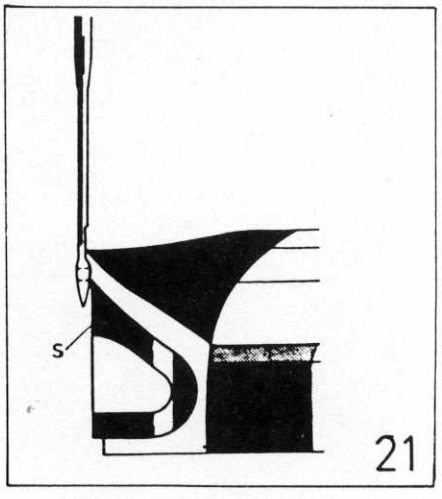

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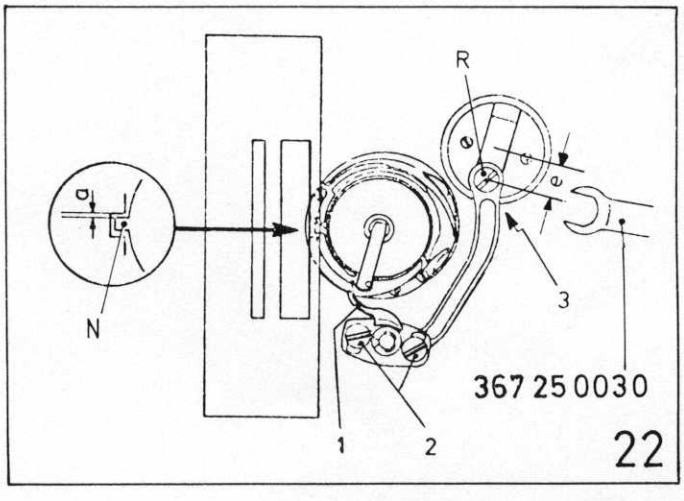

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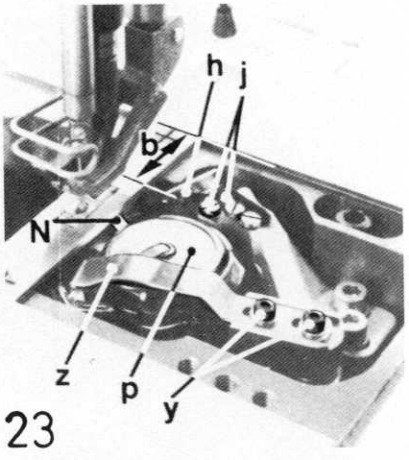

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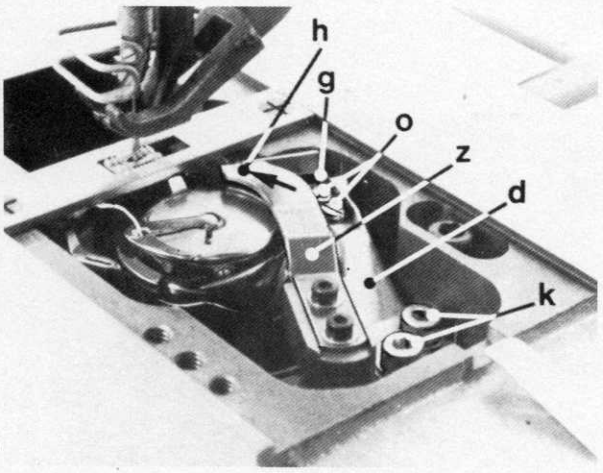

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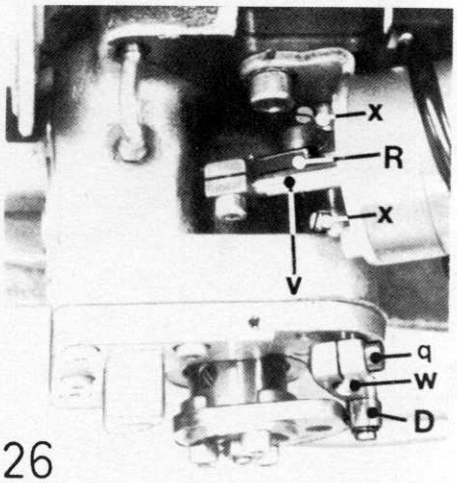

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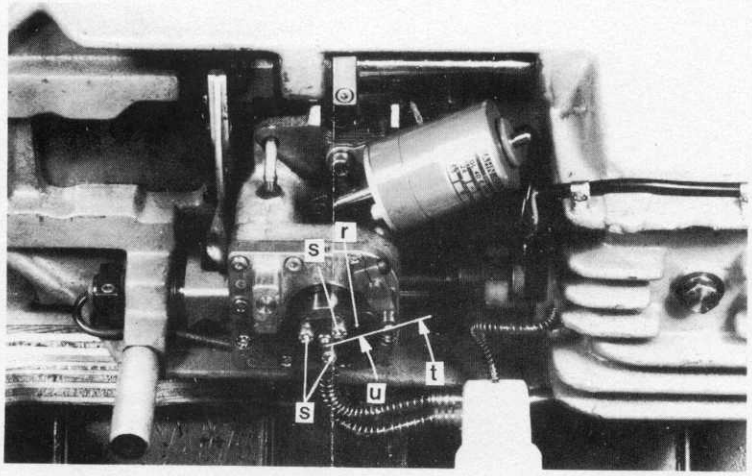

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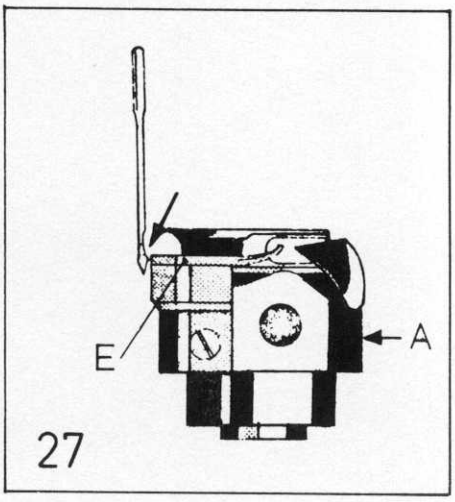

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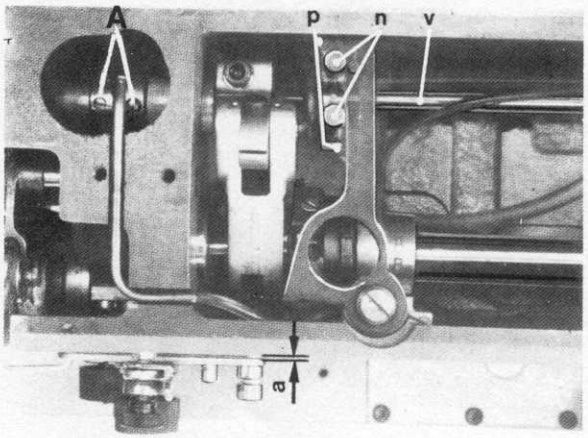

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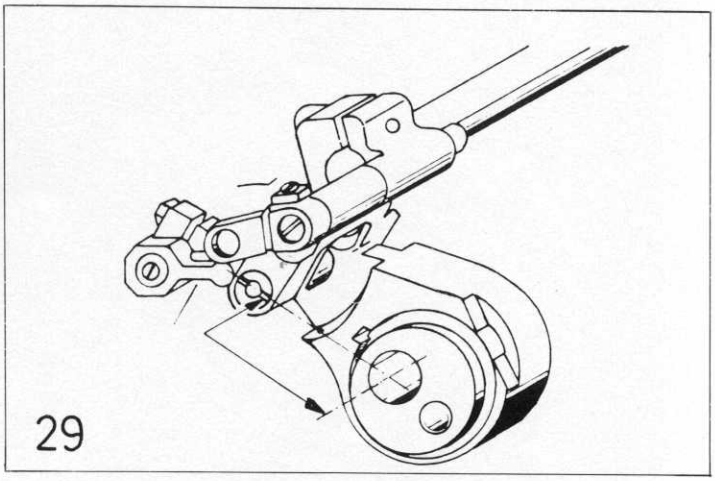

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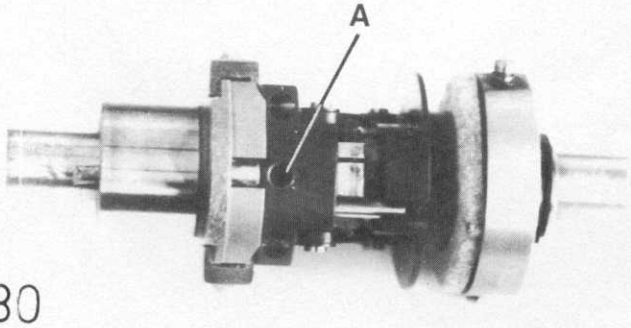

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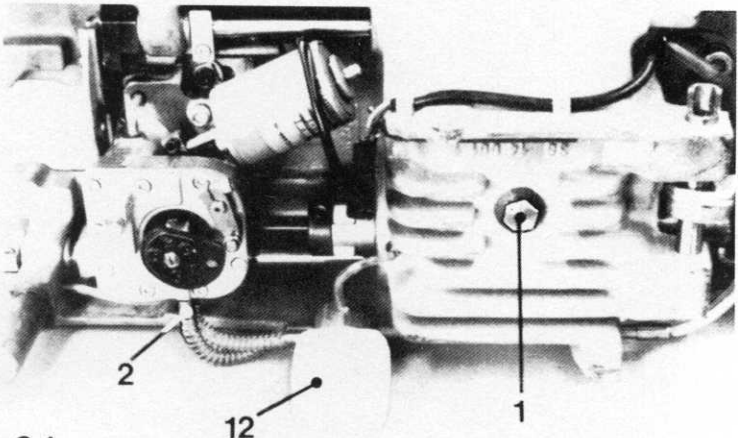

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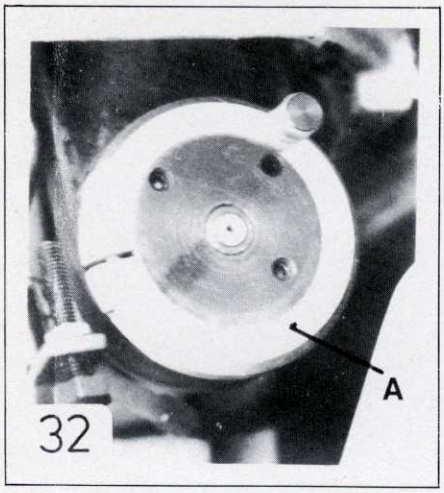

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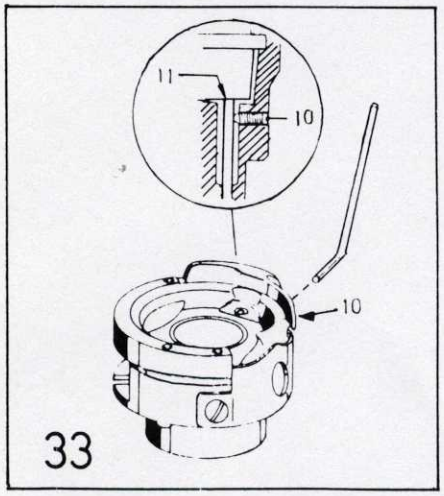

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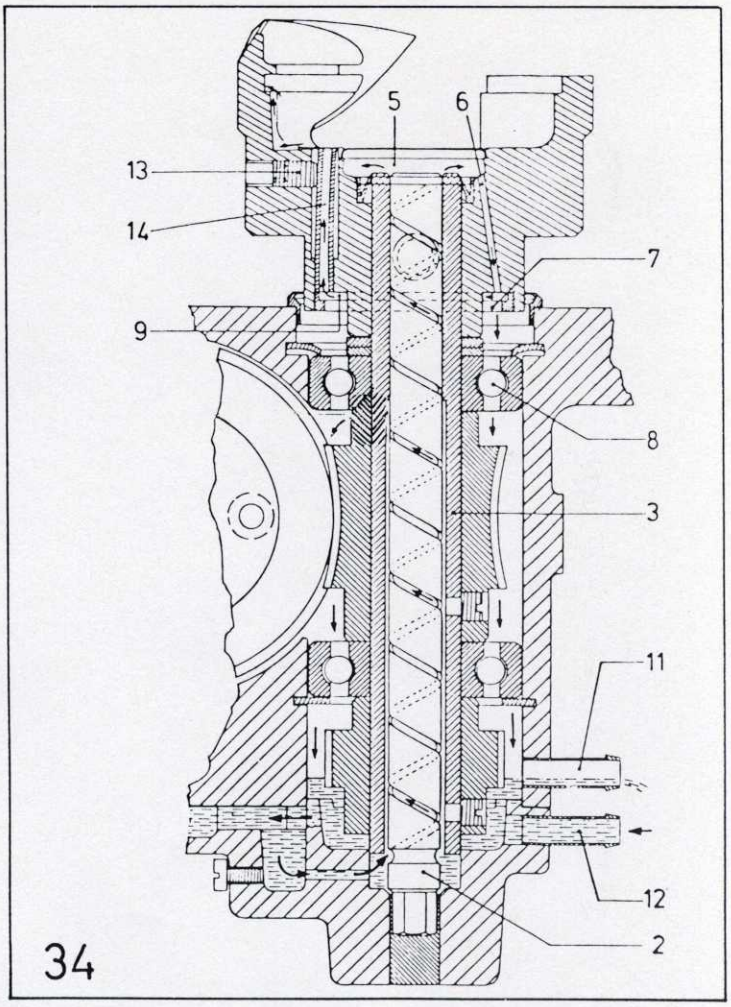

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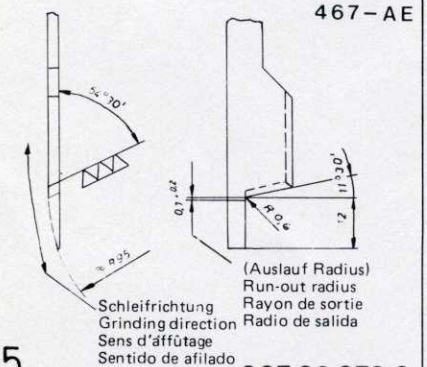
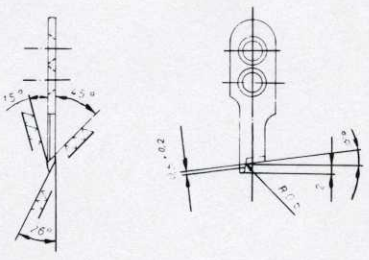
467-AE



35 **367 33 078 0**

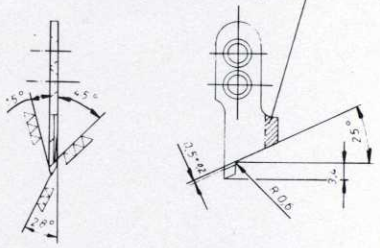
467-VS/-VSF



36 **367 33 131 0**

467-VS/-VSF

Bei bestimmten Anwendungen gekürzt
Shortened for certain uses
Raccourci pour certaines utilisations
Acortado para ciertos empleos



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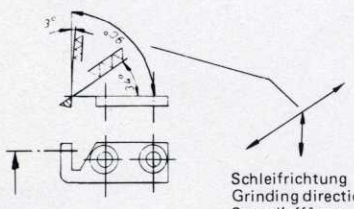

38 **367 33 130 0**

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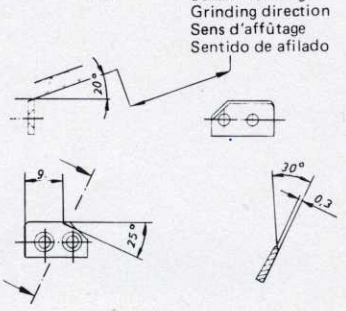

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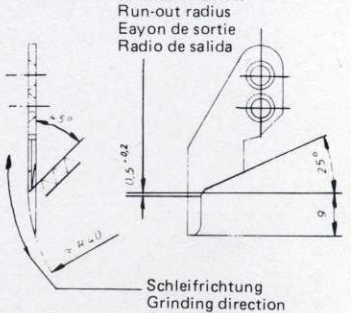

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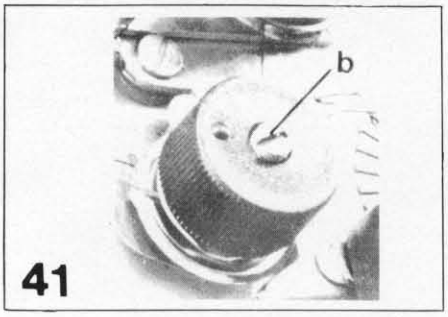

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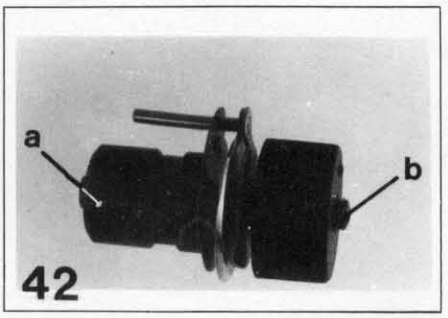

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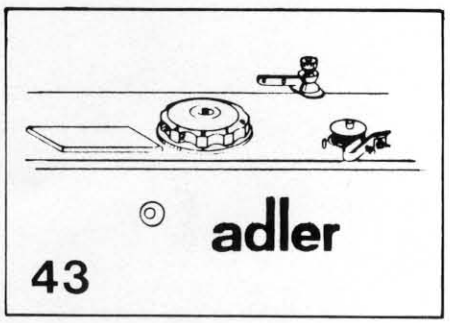

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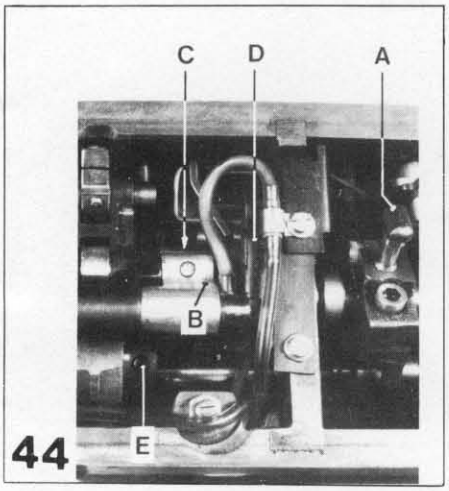

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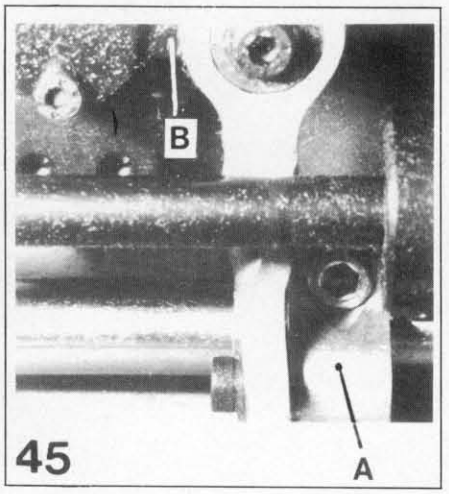

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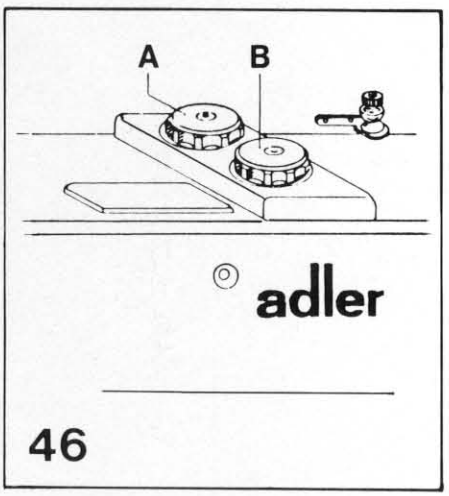

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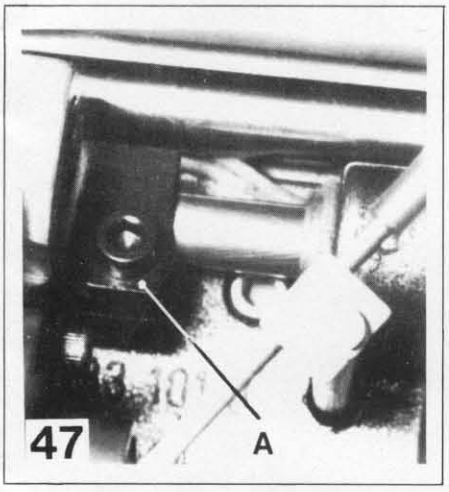

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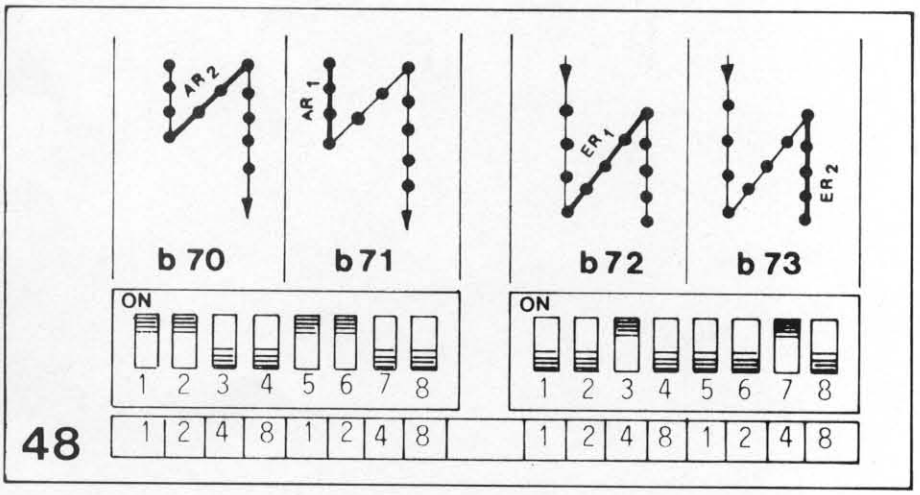

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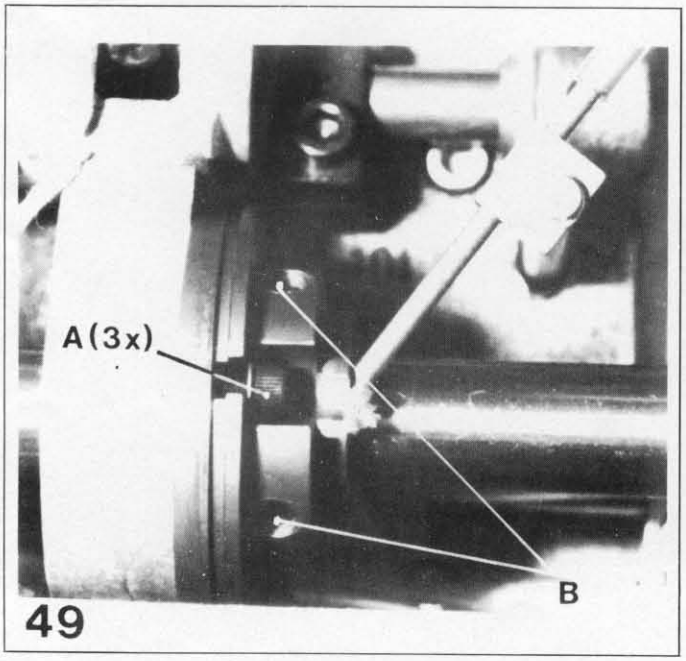

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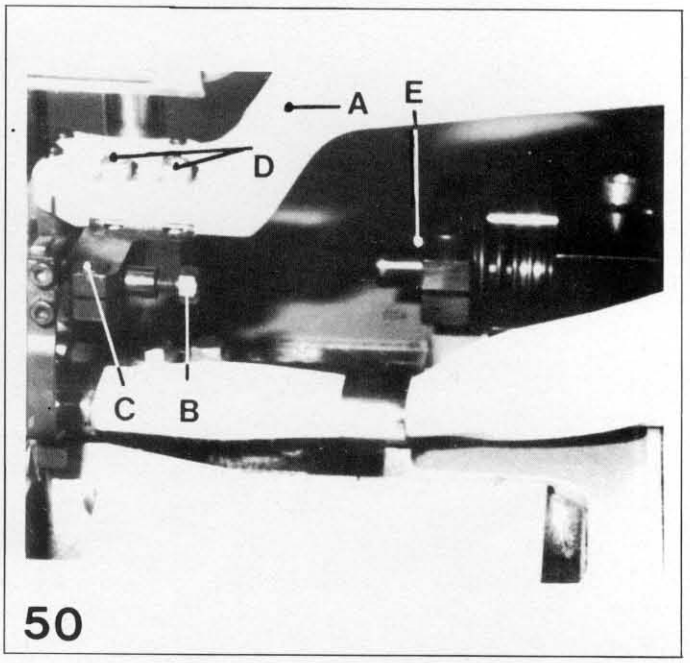

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