Adler class 268
Instructions for Mechanics

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1. Technical data

Class 268- with subclasses

Subclass :	VG-2-S	VG-202-S	FA-202-S	3-S	VG-3-S
- Needle system :	134 Lr	134 Lr	134 Lr	134 Lr	134 Lr
- Needle size Nm:	80-110	80-110	80-110	110-140	110-140
- Needle clearance mm:	-	0,8-2,0	0,8-2,0	-	-
- Synth. sewing thread Nm:	60/3	60/3	70/3	20/3	30/3
- Braided thread Nm:	-	-	-	-	-
- Foot stroke, max.					
· pneumatical mm:	7	7	7	7	7
· by hand mm:	7	7	7	7	7
- Stitch length, max.					
· Bottom feed mm:	4,5	4,5	4,5	6	6
· Upper feed mm:	4,5	4,5	4,5	6	6
- Bottom feed stroke (above throat plate) mm:	1,2	1,2	1,2	1,3	1,3
- Final feed mm:	1,3	1,3	1,3	1,8	1,8
- Alternating top feed stroke mm:	-	-	-	-	-
- Stitches/min., performed:	2200	2200	2200	1700	1900
- Motor pulley Ø mm:	125	125	125	118	125
- Handwheel belt pully Ø mm:	80	80	80	95	95
- Motor speed 50 Hz 1/min.:	1400	1400	1400	1400	1400

Subclass :	203-S	FA-3-S	FA-203-S	4-S	204-S
- Needle system :	134 Lr	134 Lr	134 Lr	134 Lr	134 Lr
- Needle size Nm:	110-140	110-140	110-140	140-180	140-180
- Needle clearance mm:	1,2-2,4	-	1,2-2,4	-	2,4-3,6
- Synth. sewing thread Nm:	20/3	20/3	20/3	10/3	10/3
- Braided thread Nm:	-	-	-	-	-
- Foot stroke, max.					
· pneumatical mm:	7	7	7	7	7
· by hand mm:	7	7	7	7	7
- Stitch length, max.					
· Bottom feed mm:	4,5	6	4,5	6	4,5
· Upper feed mm:	4,5	6	4,5	6	4,5
- Bottom feed stroke (above throat plate) mm:	1,3	1,3	1,3	1,4	1,4
- Final feed mm:	1,8	1,8	1,8	1,8	1,8
- Alternating top feed stroke mm:	-	-	-	-	-
- Stitches/min., performed:	1700	1700	1700	1250	1250
- Motor pulley Ø mm:	112	118	112	85	85
- Handwheel belt pully Ø mm:	95	95	95	95	95
- Motor speed 50 Hz 1/min.:	1400	1400	1400	1400	1400

Subclass :	FAP-4-S	FAP-204-S	FA-63-S	363-S	73
- Needle system :	134 Lr	134 Lr	134 Lr	134-35 Lr	134
- Needle size Nm:	140-180	140-180	110-140	110-140	110-140
- Needle clearance mm:	-	2,4-3,6	-	-	-
- Synth. sewing thread Nm:	10/3	10/3	20/3	20/3	30/3
- Braided thread Nm:	-	-	-	-	-
- Foot stroke, max.					
· pneumatical mm:	7	7	7	7	12
· by hand mm:	7	7	7	7	12
- Stitch length, max.					
· Bottom feed mm:	6	4,5	6	6	6
· Upper feed mm:	6	4,5	6	6	6
- Bottom feed stroke (above throat plate) mm:	1,4	1,4	1,3	1,3	0,5
- Final feed mm:	1,8	1,8	-	-	-
- Alternating top feed stroke mm:	-	-	-	-	8
- Stitches/min., performed:	1250	1250	1700	1700	1700
- Motor pulley Ø mm:	85	85	118	118	112
- Handwheel belt pully Ø mm:	95	95	95	95	95
- Motor speed 50 Hz 1/min.:	1400	1400	1400	1400	1400

Subclass :	FA-73	273	273-NH1	FA-273	FA-273-NH1
- Needle system :	134-35	134	134-35	134-35	134-35
- Needle size Nm:	110-140	110-140	110-140	110-140	110-140
- Needle clearance mm:	-	3-20	3-14	3-20	3-8
- Synth. sewing thread Nm:	30/3	30/3	30/3	30/3	30/3
- Braided thread Nm:	-	-	-	-	-
- Foot stroke, max.					
· pneumatical mm:	7	7	7	7	7
· by hand mm:	7	7	7	7	7
- Stitch length, max.					
· Bottom feed mm:	6	6	6	6	6
· Upper feed mm:	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:	8	8	8	8	8
- Stitches/min., performed:	1700	1700	1700	1700	1700
- Motor pulley Ø mm:	112	112	95	112	112
- Handwheel belt pully Ø mm:	95	95	95	95	95
- Motor speed 50 Hz 1/min.:	1400	1400	1400	1400	1400

Subclass :	NT-82-S	NT-82-SUX	NF-82-S	NF-82-SUX	VGN-82-S
- Needle system :	134 Lr	134 Lr	134 Lr	134 Lr	134 KKLr
- Needle size Nm:	80-110	80-110	80-110	80-110	75-90
- Needle clearance mm:	-	-	-	-	-
- Synth. sewing thread Nm:	60/3	60/3	60/3	60/3	60/3
- Braided thread Nm:	-	-	-	-	-
- Foot stroke, max.					
· pneumatical mm:	7	7	7	7	7
· by hand mm:	7	7	7	7	7
- Stitch length, max.					
· Bottom feed mm:	4,5	4,5	4,5	4,5	4,5
· Upper feed mm:	4,5	4,5	4,5	4,5	4,5
- Bottom feed stroke (above throat plate) mm:	1,2	1,2	1,2	1,2	1,2
- Final feed mm:	-	-	-	-	-
- Alternating top feed stroke mm:	-	-	-	-	-
- Stitches/min., performed:	2200	2200	2200	2200	2200
- Motor pulley Ø mm:	125	125	125	125	125
- Handwheel belt pully Ø mm:	80	80	80	80	80
- Motor speed 50 Hz 1/min.:	1400	1400	1400	1400	1400

Subclass :	VGNF-82-S	NT-83-S	NT-83-SUX	NF-83-S	NF-83-SUX
- Needle system :	134 KKLr	134 Lr	134 Lr	134 Lr	134 Lr
- Needle size Nm:	75-90	110-140	110-140	110-140	110-140
- Needle clearance mm:	-	-	-	-	-
- Synth. sewing thread Nm:	60/3	30/3	30/3	30/3	30/3
- Braided thread Nm:	-	-	-	-	-
- Foot stroke, max.					
· pneumatical mm:	7	7	7	7	7
· by hand mm:	7	7	7	7	7
- Stitch length, max.					
· Bottom feed mm:	4,5	8	8	8	8
· Upper feed mm:	4,5	8	8	8	8
- Bottom feed stroke (above throat plate) mm:	1,2	1,2	1,2	1,2	1,2
- Final feed mm:	-	-	-	-	-
- Alternating top feed stroke mm:	-	-	-	-	-
- Stitches/min., performed:	2200	1900	1900	1900	1900
- Motor pulley Ø mm:	125	125	125	125	125
- Handwheel belt pully Ø mm:	80	95	95	95	95
- Motor speed 50 Hz 1/min.:	1400	1400	1400	1400	1400

Subclass	:	**FAP-73-1**	**FAP-73-2**	**FAP-273-1**	**FAP-273-NH1**	**274-1**
- Needle system	:	134-35	134	134-35	134-35	134-35 Lr
- Needle size	Nm:	110-140	110-140	140-160	120	180
- Needle clearance	mm:	-	-	-	3-8	8-12
- Synth. sewing thread	Nm:	30/3	30/3	30/3	30/3	10/3
- Braided thread	Nm:	-	-	-	-	
- Foot stroke, max.						
· pneumatical	mm:	12	12	12	7	12
· by hand	mm:	7	7	7	7	7
- Stitch length, max.						
· Bottom feed	mm:	8/R6	6	8/R6	6	8/R6
· Upper feed	mm:	8/R6	6	8/R6	6	8/R6
- Bottom feed stroke (above throat plate)	mm:	0,5	0,5	0,5	0,5	0,5
- Final feed	mm:	1,8	-	1,8	-	1,8
- Alternating top feed stroke	mm:	10	8	10	8	10
- Stitches/min., performed:		1250	1700	1250	1700	1250
- Motor pulley Ø	mm:	85	112	85	112	85
- Handwheel belt pully Ø	mm:	95	95	95	95	95
- Motor speed 50 Hz	1/min.:	1400	1400	1400	1400	1400

2. Adjusting the sewing machine

2.1 Bottom feed

2.1.1 Skipping feed

General

The feed dog moves on an elliptican line, resulting from a simultaneous lifting and pushing movement. The lifting and pushing movements should be synchronized so that the movement of the feed dog in the throat plate is as vertical as possible.

Height of the throat plate with respect to the feed dog

Rule:
When the feed dog is in its topmost position it should stand about one tooth height above the throat plate.
The maximum feed dog lift above the throat plate is specified for all sub-classes under chapter 1 - Technical data.

Control:
- Set 0 stitch length
- By means of the handwheel move the feed dog to its topmost point and control the height.

Correction:
Loosen the screw a/1 and adjust the height of the feed dog bar A/1.

Position of the feed dog with respect to the throat plate

Lateral position

Rule:
In the lateral direction the feed dog should stand in the middle of the throat plate cutout.

Correction:
- Set 0 stitch length
- Loosen the screw c/1
- Adjust the feed shaft B/1, tighten by the centering bolt C/1, and tighten the screws c/1.

Position in the feeding direction

Rule:
With the maximum stitch length, the feed dog should be equidistant in the throat plate cutout, at the front and at the rear.

Correction:
- Set maximum stitch length
- Loosen the screw b/1
- Turn the feed shaft B/1 accordingly.

Lifting moment of the feed dog

For machines without needle feed

Rule:
The needle bar and the feed dog should reach their upper dead point at the samte time.

Correction:
- Set 0 stitch length and move the needle bar to its upper dead point
- Loosen the screws k/1 and turn the eccentric K/1 accordingly.

For machines with needle feed, with and without alternating feed

Rule:
When the needle bar is at its lower dead point the feed dog should be at its upper dead point.

Explanation:
In case of a correct adjustment, the descending needle and the ascending feed dog reach the throat plate top at the same time.

Correction:
- Set 0 stitch length and conduct the needle bar to its lower dead point
- Loosen the screws k/1 and turn the eccentric K/1 accordingly.

Pushing moment of the feed dog

Indication:
For removing the arm cover in machines with pneumatic backtacking device, RAP, screw off the rotary button E/6
- Turn out the screw e/6
- Screw off the rotary button E/6
- Turn back the screw f/6.

For machines without needle feed

Rule:
When the machine is set for the maximum stitch length and when it is turned by the handwheel out of the upper position of the thread take-up lever, the feed dog should still transport acout 1/2 tooth pitch. The exact value for each sub-class is specified under chapter 1 - Technical data.
This "addtional feed" ensures a better tightening of stitches.

Correction:
- Set the maximum stitch length
- Move the thread take-up lever to its topmost point
- Loosen the screws b/2 and adjust the eccentric B/2 accordingly.

For machines with needle feed, with and without alternating feed

Rule:

In the lower position of the needle bar the feed dog and the needle bar should not move when the stitch regulator lever is operated.

In machines with alternating feed this also determines the advance movement of the feeding foot, because the advance movement of the feed dog, of the needle rocker and of the feeding foot is controlled by the same eccentric.

Correction:

- Set the maximum stitch length
- Conduct the needle bar to its lower dead point
- Loosen the screws b/2 and adjust the eccentric B/2 accordingly.

Indication:

In case of this adjustment the elliptical way of the feed dog is displaced. Therefore, the moment of the pushing movement must be readjusted. See "Lifting moment of the feed dog".

2.1.2 Wheel feed

General

The machines with wheel feed have bottom feed, with double intermittence, and top feed (Needle feed, NT, at request also with driven roller foot, AR). Bottom feed and top feed have separate stitch regulators.

Formation of the stitch length:
- With the needle plunged, the first half of the stitch length is transported by the bottom and top feed together
- The second half of the stitch length is transported by the bottom feed alone. The needle is out of the fabric.

Sequence of movements in case of bottom feed (wheel feed), fig. 9

Shaft A - eccentric B - traction rod C - crank D - shaft E - crank F - traction rods G - free runnings H - feed shaft J - feed wheel K.

The reversing stop of the free runnings avoids the reverse turning of the feed shaft, so that only the feed movement is transmitted to the feed wheel.

Sequence of movements in case of top feed
(Needle feet NT with driven roller foot AR), fig. 10

Arm shaft A - eccentric B - fork C - shaft D - crank E - rocker F - traction rod H - roller foot J.

Adjusting the maximum stitch length

The stitch regulator eccentrics can be adjusted stepwise from 0 up to the maximum stitch length. The maximum stitch length for each sub-class is specified under chapter 1 - Technical data.
The adjusted stitch length is shown by ltters A (minimum stitch length) up to H (maximum stitch length) (Stitch length 0 = -)

Adjustment:
- With the pin M/9/10 being depressed, turn the handwheel until the pin snaps
- Hold the snapped pin and turn the handwheel counter clockwise up to the stop.

Position of the crank F

Rule:
The crank F/9 should be centered between the traction rods G/9 and the movement of the shaft E/9 shoud be transmitted regularly to the traction rods G/9.

Correction:
Loosen the nut f/9 and adjust the crank F/9.

Adjusting the sttich length scales

Rule:
With the maximum stitch length the letter H should be visible in the window.

Correction:
Loosen the screws r/9/10 and turn the scale wheel R/9/10 accordingly.

Height of the feed wheel

Rule:
The feed wheel should protrude about one tooth height out of the throat plate. The exact value for each sub-class is specified under item 1 - Technical data.

Correction:
- Loosen the screws v and w/9 and adjust the height by the eccentric W/9
- When tightening the screws tighten the bolts Z/9.

Feeding moment of the bottom feed (wheel feed)

Rule:
The feeding should begin when the needle plunges into the throat plate.

Correction:
- Set the maximum stitch length
- Loosen the screws b/9 and adjust the eccentric accordingly.

Feeding moment of the top feed (needle feed)

Rule:
The top feed should act at the same time as the bottom feed (wheel feed).

Correction:
Loosen the screws b/10 and turn the eccentric B/10 accordingly.

2.2 Hook and needle bar height

For controlling or correcting the adjustment of the hook the safety clutch must be engaged. See chapter 2.6 - Safety clutch.

2.2.1 Adjusting the needle bar with respect to the stitch hole

Rule:
The needle should stitch in the middle of its hole when the stitch length is 0.

Correction in the sewing direction:
- Set 0 stitch length and remove the arm cover
- Loosen the screw w/2 and adjust the needle bar rocker accordingly.

Indication:
For removing the arm cover in machines with automatic, pneumatic backtacking device, RAP, screw off the rotary button E/6:
- Turn out the screw e/6
- Screw off the rotary button E/6
- Turn back the screw f/6

Correction in the lateral direction:
Loosen the screws p/1 and adjust the feed dog column.

2.2.2 Moment of picking-up the loop (loop stroke)

The loop stroke is the way of the needle from its lower dead point up to the formation of the thread loop and its seizure by the hook.

Rule:
When the needle has travelled 1,8 mm (2 mm in the sub-classes -FA-4-S, -FAP-4-S, -FA-204-S and -FAP-204-S) out of its lower dead point, the hook point should stand against the middle of the needle (loop stroke position).

Preparation:
Screw off the throat plate and the feed dog.

Control:
- Set 0 stitch length and conduct the needle to its lower dead point
- Slip 1,8 mm loop stroke gauge(part no. 981 15 000 1) ot 2,0 mm loop stroke gauge (part no. 981 15 000 3) with thr block P/5 (part no. 981 15 000 2) onto the needle bar against the bush and fasten the block by screw (the needle bar can be damaged if the screw is tightened excessively)
- Remove the gauge and turn the handwheel in the **direction of rotation** until the block rests against the bush (loop stroke position)
- Control the position of the hook point with respect to the needle.

Correction:
- Screw off the grease chamber F/1/3
- Loosen the screws k/3 of the large bevel wheel
- In the loop stroke position adjust the hook point against the middle of the needle
- Tighten the large bevel wheel so that the hook has a slight radial play.

2.2.3 Needle bar height

Rule:
In the loop stroke position the hook point should stand against the middle of the groove of the needle, fig. 7.

Correction:
- Screw off the head cover
- Loosen the screws o/8 and displace the needle bar vertically accordingly.

2.2.4 Distance of the hook with respect to the needle

Rule:
In loop-seizing position and with correctly adjusted needle bar the hook point should be positioned in a distance of 0.1 mm with respect to the needle.

Correction:
- Screw off the grease chamber G/1/3
- Loosen the screws s/1 of the hook column and adjust the hook point accordingly (the needle should not be deviated by the hook guard. Loosen the screws of the large bevel wheel, if required
- Tighten the screws of the hook column
- Tighten the toothed wheels so that the hook has still a slight radial play
- Screw-on the grease chamber

Indication:
When changing the needle size, check the distance of the hook with respect to the needle and readjust, if required.

2.2.5 Hook guard

Explanation:
The purpose of the hook guard is to avoid the contact of the hook point with the needle.

Rule:
In the loop stroke position, the needle, without being deflected, should slightly touch the hook guard V/7.

Control:
Press the needle slightly against the hook guard. The hook point should not touch the needle.

Correction:
Bend carefully the hook guard.

Indication:
When changing the needle size, check the hook guard and readjust, if necessary.

2.3 Bobbin case lifter

Rule:
The G/11 finger should lift the middle part K/11 so that the thread can freely pass between the lug of the middle part and the middle part holder of the throat plate.

Explanation:
If the lifting way is too short, the thread will not pass freely, and if the lifting way is too long, the machine may become very noisy.

Correction:
Loosen the screws h/11, adjust the G/11 finger accordingly and tighten the shaft in the axial direction.

Rule:
The distance between the top of the lug of the middle part and the middle part holder of the throat plate should amount to about 0,8 mm.

Correction:
- Screw off the front and the rear throat plate carriers S/4
- Loosen the screws s/4 and adjust the throat plate height by the eccentric E/4
- Tighten the screws s/4 and screw-on the throat plate carriers.

2.4 Maximum cloth presser foot stroke

2.4.1 Machines without alternating feed

Stroke control by lever

Rule:
It should be possible to lift the cloth presser foot by lever 7 mm. The exact value for each sub-class is specified under chapter 1 -Technical data.

Control:
- Lift the cloth presser foot by the lever G/12
- Move the feed dog onto the throat plate
- Slip under the cloth presser foot a distance piece of 7 mm.

Correction:
- Discharge the spring P/8 and release the clamping v/8
- Place a distance piece under the cloth presser foot corresponding to the sub-class and tighten the clamping.

Stroke control by knee-lever or by pneumatic presser foot lift FLP

Rule:
The stroke of the cloth presser foot controlled by the knee lever lever or by FLP should be slightly greater than that controlled by the lover so that the cloth presser foot lifted by the lever can be lowered by the knee lever or by FLP

Control:
- Lift the cloth presser foot by the hand lever G/12
- Push the knee lever quite to the right and release the FLP.
  The hand lever should drop automatically.

Correction of the knee lever position:
Turn out the screw f/13 and adjust the lever E/12/13 by the nut F/13 accordingly. Ensure that with the cloth presser foot being lowered, the distance between the lever E/12 and the plate L/12 amounts to about 1 mm.

Indication:
For limiting the play of the lever V/14/15, lower the cloth presser foot and turn the screw v/15 against the casting.

Rule:
When the knee lever is in its neutral position, it should stand vertically.

Correction:
Loosen the screw t/14 and adjust the knee lever.

Correction of the FLP stroke:
Loosen the nut w/21 and turn the piston rod of the FLP cylinder 3.2/21.

Rule:
When the cloth presser foot is lowered, the play between the lever E/12 and the plate L/12 should amount to about 1 mm.

Correction:
Turn out the screw f/13 and adjust the lever E/12/13 by the nut F/13.

2.4.2 Machines with alternating top feed

Stroke control by hand lever

Rule:
It should be possible to lift the cloth presser foot by hand lever 7 mm.
The exact value for each sub-class is specified under chapter 1 - Technical data.

Correction:
- Lift the cloth presser foot by the lever G/12
- Discharge the spring P/12 and loosen the screws w/12
- Place the distance piece under the cloth presser foot, press the feeding foot onto the distance piece and tighten the clamping.

Stroke control by the knee lever or by pneumatic presser foot lift, FLP

It should be possible to lift the cloth presser foot by knee lever or by FLP 6 to 12 mm, depending on the sub-class. The exact value is specified under chapter 1 - Technical data.

Control:
- Set 0 stitch length and move the needle bar into its upper position
- Lift the cloth presser by knee lever or by FLP
- It should be possible to introduce under the cloth presser a distance piece corresponding to the sub-class.

Stroke control by knee lever

Rule:
When the knee lever is operated, the lever V/14/15 should not yet be in contact with the casting.

Correction:
Correct the position of the lever by the screw v/15

Rule:
Turn out the screw f/13 and adjust the lever E/12/13 by the nut F/13 accordingly.

Correction:
Loosen the screw t/14 and adjust the knee lever.

Stroke control by the FLP

Rule:
When the piston rod of the FLP cylinder 3.2/21/22 is moved out, the play between the lever W/21 and the bearing plate Q/21 should amount to about 1 mm.

Control:
Pull out the piston rod of the FLP cylinder by hand and check the play.

Correction:
Loosen the nut and turn the piston rod.

Rule:
When the cloth presser is lowered, the play between the lever E/12 and the plate L/12 should amount to about 1 mm.

Correction:
Turn out the screw f/13 and adjust the lever E/12/13 by the nut F/13 accordingly.

2.4.3 Foot pressure

Regulate the foot pressure by the spring P/8/12 so that the material is safely transported.

2.5 Top feed

2.5.1 Needle feed

Indication:
The pushing moment of the needle feed is adjusted together with the pushing moment of the bottom feed, because the movement is caused by the same eccentric. See chapter 2.1.5 - Pushing moment of the feed dog.

2.5.2 Alternating feed

Pushing moment of the feeding foot

Indication:
The pushing moment of the feeding foot is adjusted together with the pushing moment of the bottom feed, because the movement is caused by the same eccentric. See chapter 2.1.5 - Pushing moment of the feed dog.

Uniform lifting of the sewing feet

Rule:
The feeding foot and the presser foot should be lifted off the throat plate equally high.

Correction:
- Set 0 stitch length
- Set the maximum stroke. See "Stroke of the sewing feet".
- Lift slightly the sewing foot with the higher sewing foot onto the throat plate
- Repeat the process until the strokes of the two sewing feet are equal.

Lifting moment of the feeding foot

The condition for this adjustment is a regular movement of the feeding and presser foot and the properly adjusted lifting moment of the feed dog.

Control:
With the maximum stroke and 0 stitch length turn the handwheel in the direction of rotation.

Correction:
- Loosen the screws of the eccentric T/17 on the arm shaft (through the opening in the backwall)
- Conductthe point of the descending needle to the level of the feed dog
- Turn the eccentric T/17 so that the feeding foot rests on the feed dog
- Tighten the screws of the eccentric.

Stroke of the sewing foot

Rule:
In case of different material thickness (cross seams) within a seam line the stroke of the feet should be set for the maximum material thickness.

Correction:
Loosen the nut h/16 and shift the traction rod in the coulisse H/16:
Traction rod up - maximum stroke
Traction rod down - minimum stroke

Indication:
In case of maximum stroke reduce the speed for reducing the noise.

2.6 Safety clutch

2.6.1 General

For avoiding damage to the hook the safety clutch should act when the hook is jammed (e.g. by thread in the hook race.)

2.6.2 Returning the clutch into position after its action

- Eliminate the disturbance
- Hold the shaft G/21 and turn the handwheel until the clutch is in position

2.6.3 Adjusting the torque

Adjust the torque when the clutch is operated.

Adjustment:
- Operate the clutch
- Tighten the screw d/19 completely and loosen by 1/4 revolution (max. torque)
- Loosen the screws d/19 so that a medium torque is transmitted
- Return the clutch into position.

Indication:
If in case of heavy material the clutch acts frequently, increase slightly the torque.

2.7 Thread pulling spring

2.7.1 Function

The purpose of the thread pulling spring is to keep the needle thread tightened from the moment when the thread take-up lever is at its topmost point until the moment when the needle stitches in to material.

2.7.2 Spring tension

Regel:
Regulate the spring tension according to the fabric and thread involved so that the spring G/20 operates regularly and returns again up to the stop.

Correction:
Loosen the screw f/20 and turn the bolt F/20 so that the entire unit can be pushed up to the stop.

2.7.3 Spring way

Rule:
The spring resting against the stop should be slack when the eye of the needle dips into the fabric.

Correction:
Loosen the screw g/20 and turn the stop accordingly.

3. Thread cutter, FA, and pneumatic thread cutter, FAP

3.1 Flow of functions

The thread cutter action is started at the seam end by heeling down the pedal out of the 1st position of the synchronizer;
- The motor runs at cutting speed
- The magnet S2/17 (in case of FAP the cylinder 1.2/22) releases the needle thread main tension during the entire thread cutting process
- The FAP cylinder, operated bx compressed air, 1.3/21/22 (in case of FA the FA magnet S1/22/24) swings out the thread pulling knife D/25 so that the bobbin thread and the needle thread drop behind the knife
- The turning control cam S/21 returns the thread pulling knife D/25 against the counter knife U/25 by means of the roller R/21 and the traction rod Z/23/24/25; the bobbin and the needle threads are seized by the thread pulling knife, they are advanced and cut off between the upper position of the thread take-up lever and the 2nd position of the synchronizer.
- The clamping spring 0/25 holds the cut bobbin thread
- The motor stops in the 2nd position of the synchronizer
- The FAP cylinder 1.3/21/22 (in case of FA the FA-magnet S1/22/24) and the magnet S2/17 (in case of FAP the cylinder 1.2/22), serving to release the needle thread main tension, are switched off.

3.2 Position of the traction rod

Rule:
In the neutral position of the thread pulling knife the traction rod Z/23/24 should not stand laterally under the base plate.

Correction:
Loosen the nuts und turn the traction rod Z/24 completely into the reception K/24.

3.3 Axial position of the control cam

Rule:
The control cam S/21 should be set lightly against the sleeve T/21

Correction:
Loosen the screws s/21 and push the cam against the sleeve T/21.

3.4 Position of the thread cutter magnet

Rule:
When the magnet S1/24 is engaged, the armature should not knock against the magnet pole.

Correction:
- Loosen 3 screws u/24
- Turn the control cam by handwheel so that its basic surface (lowest surface) stands opposite the roller R/18
- Push the magnet armature P/24 quite to the right until the roller rests against the basic surface of the control cam
- In this position, push the magnet body quite to the left up to the stop, against the armature and adjust then a play of about 1 mm between the anchor and the magnet plate
- Retighten the 3 screws u/24.

3.5 Radial position of the control cam

The position of the control cam determines the moment of the knife movement.

Rule:
When the thread take-up lever is in its lower position, the roller R/18, seen in the direction of rotation, should rest about 2 mm behind the beginning of the basic surface of the control cam S/18.

Correction:
- Move the thread take-up lever into its lower position
- Loosen the screws s/18 and adjust the control cam accordingly, without modifying the axial position of the control cam.

3.6 Adjusting the roller with respect to the control cam

Rule:
During the sewing process the roller R/21 should not touch the control cam S/21.

Correction:
- Turn the control cam by handwheel so that its topmost surface stands opposite the roller
- Adjust the setting ring J/23 so that the roller can be easily turned.

3.7 Swinging range of the thread pulling knife

Rule:
The fork L/23/25 should transmit the stroke of the control cam to the middle of the driving shaft B/25 of thread pulling knife.

Correction:
- Turn the control cam by handwheel so that its sic surface (lowest surface) stands opposite the rolle
- Slip the gauge (part No. 981 35 000 1) onto the roller
- Push the traction rod Z/23 to the right so that the gauge rests against the basic surface of the control cam
- In this position, the driving shaft B/25 of the thread pulling knife, the crank E/25 and the fork L/25 should be in alignment
- Loosen the screw 1/23/25 and align the fork L/23/25

Rule:
In the neutral position, the rear edge of the thread pulling knife D/25 should be flush with the front edge of the counter knife U/25.

Correction:
- By means of the handwheel set the topmost surface of the control cam opposite the roller
- Loosen the screw e/25, align the knife carrier F/25 and tighten the driving shaft of the thread pulling knife
- Loosen the screw e/25.

3.8 Lateral position of the thread pulling knife

Rule:
The thread pulling knife D/25 should stand up to the stop on the knife carrier F/25.

Correction:
Loosen the screw d/25 and push the thread pulling knife up to the stop against the knife carrier.

3.9 Adjusting counter knife with respect to the thread pulling knife

Rule:
The counter knife U/25 should rest against the thread pulling knife D/25 on the entire width.

Correction:
Loosen the screw u/25 and adjust ther counter knife by the screws v/25.

3.10 Cutting pressure of the counter knife

Rule:
The swinging-in thread pulling knife D/25 should rest against the counter knife U/25 after about 1/3 of its width.

Correction:
Loosen the screw u/25 and adjust the counter knife carrier accordingly.

Indication:
The threads should be cut with the lowest pressure possible, so as to reduce the wear.

3.11 Adjusting the clamping spring

Rule:
The clamping spring O/25 should clamp the cut bobbin thread so as to avoid skipped stitches at the seam beginning.

Adjustment:
- Loosen the screws u/25
- Adjust the clamping spring so that on the inside it slightly touches the thread pulling knife
- Make cutting test by hand and check the clamping of the thread.

3.12 Releasing the thread tension

During the thread cutting process the main tension of the needle thread is released by the magnet S2/17 or by the cylinder 1.2/22 so that the needle thread can be advanced by the thread pulling knife. the releasing moment is determined by the motor control. During this time only the needle thread depends on the pretension.

Rule:
The disks of the main tension of the needle thread should be pressed apart so far that the thread is no longer clamped.

Correction:
Turn the screw k/16.

4. Positioner

4.1 1st position

Rule:
The hook point should stand 4-8 mm behind the loop stroke position.

Indication:
The hook has safely seized the thread loop and in case of 1 needle machines the material can be turned around the needle without causing the loop to slip off the hook.
For being able to turn the material in 2 needle machines, the switch S/1726 on the Efka control box b5/27 on the Quick control bos should stand, while sewing on "Nadel hoch" (needle up), so that the machine stops in the 2nd position.
For controlling or correcting the positioner for the 1st position, reset for "Nadel tief" (needle down).

Control:
- Lower the pedal forwards and discharge it
- Check the positioning and, in case of deviation, correct the position of the screen.

Correction:
Move the machine by hand into 1st position.

Quick positioner, type B/0
- Loosen slightly the screw c/29
- Adjust the switching edge s of the grooved screen B/29 under the notch of the screen slide A/29.

Efka positioner, type P4-1
- Loosen slightly the screw d/30
- Adjust the inner switching disk A/30 so that the half of the two white points are covered by the screens.

Efka positioner, type P4-4
- Loosen slightly the screw e/28
- Adjust the disk 1/28 so that its edge a liberates the light barrier L/28. Ensure that the disk 2/28 ist not turned, because otherwise the opening moment of the thread pulling-in device would be modified
- Check the adjustment and correct, if required.

4.2 2nd position

Rule:
In the 2nd position the thread take-up lever has just exceeded the topmost position.

If the adjustment of the thread cutter unit is correct, the roller R/21 touches the control cam S/21at the beginning of its highest surface and the threads are cut off.

Control:
- Lower the pedal slightly forwards and completely backwards
- Control the positioner and, in case of deviation, correct the position of the screen.

Correction:
Conduct the machine by hand in the 2nd position.

Quick-positioner, type B/O
Adjust the switching edge s of the nose screen C/29 under the notch of the screen slide A/29.

Efka positioner, type P4-1
Adjust the outer switching disk B/30 so that the halves of the two white marks are covered by the screens.

Efka positioner, type P4-4
Adjust the disk 3/28 so that its edge 1 liberates the light barrier L/28. Ensure that the disk 4/28 is not covered, because otherwise the closing moment of the thread pulling-in device will be modified.

5. Additional equipment

5.1 Pneumatic presser foot lift, FLP

For the adjustment of the FLP see the chapter 2.4 - Feeding foot and presser foot.

5.2 Automatic, pneumatic backtacking device, RAP

5.2.1 General

The RAP cylinder 2.4/22 requires a constant service pressure of 6 bar.
The adjustment of the number of backtacking stitches is described in the instructions of the motor manufacturer.

5.2.2 Function

Sewing forwards:
The RAP cylinder is without pressure. The piston rod has been moved out by the spring power.

Backtacking:
When producing reverse stitches the cylinder is under pressure, the piston rod moves in and switches the stitch regulator.

5.2.3 Damping

Rule:
By means of the throttles 2.2/22 and 2.3/22 set the speed of the piston rod so that the latter moves gently into its final positions.
The throttle2.3/22 serves for adjusting the IN-movement of the piston rod for backtacking (reverse stitches) and the throttle 2.2/22 serves for adjusting the OUT-movement of the piston rod for sewing forwards.

5.2.4 Length of backtacking stitches

The length of the backtacking stitches can be modified by the rotary button E/6 without modifying the length of the forward stitches.

When modifying the length of the forward stitches, the length of the backtacking stitches should be adapted.

5.3 Disconnectable needle bar, NH

5.3.1 General

In case of 2 needle machines with disconnectable needle bars, theright and the left needle bar can be disconnected.
The connected needle bars are positively linked with the cross head L/33 by three upper balls. The disconnected needle bar is arrested in its upper position by the three lower balls and by the split safety rings.

5.3.2 Removing the needle bar rocker

- For removing the rocker it is necessary to disconnect both needle bars
- Turn out the screw d/31 and remove the switch latch F/31
- Screw off the angular guide Z/8
- Turn out the screws f/31 and remove the bearing plate with the complete needle rocker.

5.3.3 Removing the needle bar

- Screw off the guide rail U/32
- Disconnect the needle bar to be removed. For doing this push the switching block S/32 over the respective needle bar and push the cross head L/33 upwards, until it can be heard that the three lower balls snap
- Lower the cross head about 1/2 of the needle bar stroke
- Turn out the screw c/33, loosen the lower screw and take out the pressure piece D/33
- Lower the clamping ring C/33 and take out the split safety ring e/33
- Connect the needle bar by shifting the switching block S/32 in the middle position
- Lift carefully the cross head L/33 until the three upper balls get out
  Attention: The balls are under spring pressure!
- Pull out the needle bar carefully.
  Attention: The three lower balls will fall out!

5.3.4 Dismount the needle bar

- Screw off the needle holder
- Turn out the screw s/34
- Take out the bolt n/34 and the inside parts.

5.3.5 Mounting the needle bar

- When the screw plug v/34 has been loosened, retighten the screw
- Assemble the parts of the lower coupling bar:
  1. Slip the conical sleeve h/34, with the cone down, onto the spring bar i/34
  2. Slip 18.5 mm long pressure spring d/34 onto the spring bar
  3. Screw-on the counter nut l/34 and the cap nut k/34 and set the value of 30.5 mm
- Slip 12 mm long pressure spring G/34 and the sleeve H/34 onto the thinner end of the coupling bar T/34
- Introduce the coupling bar with the thicker end into the needle bar
- Slip the conical bolt b/34 into the needle bar according to the illustration
- Introduce the sub-assembled lower coupling bar with the cap nut end into the needle bar
- Introduce 22 mm long pressure spring f/34
- Introduce the bolt n/34 with the threaded hole and fasten by screw
- Check the free movement of the coupling rods by lowering the upper coupling bar

5.3.6 Fitting the needle bar into the rocker

- Introduce the needle bar into the lower part of the rocker
- Slip the cross head L/33 and the clamping ring C/33 onto the needle bar The thinner wall of the clamping ring should face the other needle bar
- Push the needle bar further until the boreholes for the lower balls are immediately under the lower needle bar bearing
- Place three balls into the lower boreholes and push the needlebar further until the balls are no longer visible
- Place three balls into the upper boreholes, hold the needle bar, press the upper coupling bar T/32 into the needle bar and slip the cross head L/33 over the upper balls.

  Attention: Do not displace the needle bar anymore, because the balls, being under pressure, might jump out!

- Push the clamping ring C/33 under the groove in the needle bar
- Place the split clamping ring e/33 in the groove and push the clamping ring over it up to the stop
- Press the cross head L/33 against the clamping ring C/33 up to the stop, for coupling the needle bar with the cross head
- Insert the needle holder and fasten by screw
- Turn the needle bar so that the front surfaces of the needle holders are in alignment
- Place the pressure piece D/33 into the clamping ring C/33 so that it positively rests against the needle bar
- Fasten the pressure piece D/33 by screw and secure by a second screw c/33
- Introduce both clamping rings with round lugs into the guiding fork Z/33
- Fasten guide rail U/32 ba screw.

5.3.7 fitting the needle rocker

For fitting the needle rocker proceed in the inverted order applied for removing.

5.4 Driven roller foot, AR

5.4.1 General

The roller foot AR 1 for machines with wheel feed transports only forwards. the roller foot AR 2 for machines with mpneumatic automatic backtacking equipment, RAP, transports forwards and it is idle when backtacking.

5.4.2 Position of the roller foot

Rule:
The roller foot should be parallel to the feed dog.

Correction:
Loosen the screw r/35 and adjust the roller foot carrier.

Rule:
The roller foot, seen in the sewing direction, should rest about 1 mm behind the needle.

Correction:
- Turn out the screw e/36 and hang out the traction bar E/36
- Loosen the screw s/39 and shift the roller foot carrier on the rail.

Rule:
The roller foot sole should be parallel to the feed dog.

Correction:
Loosen the nut t/39 and adjust the roller foot by the screw u/39.

Indication:
If it is impossible to adjust the roller foot or if it rocks (play between the ratchet W/38 and the lever U/38) loosen the screw s/38 and readjust the lever U/38.

5.4.3 Distance between the roller foot and the needle

Rule:
The roller foot should stand about 0,5 mm beside the needle.

Correction:
Loosen the screw r/35 and turn the eccentric bush R/35.

5.4.4 Unlocking the driving gears for the roller foot AR 2

When switching the stitch regulator from forward to reverse sewing (in machines with RAP) the gears of the roller foot drive are unlocked. Therefore the roller foot is idle when backtacking.

Rule:
The lever M/35 should press-in the bolt N/38 so that the roller foot can be easily turned forwards and backwards by hand.

Unlocking the bowden cable

Correction:
With the maximum stitch length, adjust the lever D/41 by the screw d/41 so that the play between the lever M/35 and the roller foot amounts to about 0,5 mm.

Unlocking via pneumatic cylinder

Correction:
- Turn the screw P/37 accordingly
- With the adjustment being correct, turn the screw r/40 for absorbing the cylinder pressure against the lever M/40.

5.4.6 Moment of unlocking

Rule:
In 0-position of the stitch regulator lever the gears of the roller foot should be unlocked so that the roller foot can be easily turned forwards and backwards by hand.

Unlocking via bowden cable

Correction:
Displace the sleeve of the bowden cable vertically after loosening the clamp e/41

Unlocking via pneumatic cylinder

Correction:
Loosen the screws f/42 and displace the pneumatic switch F/42 in the oblong hole.

5.5 Instant stroke adjustment, HP

5.5.1 General

In machines with alternating top feed and HP, for passing over cross seams, the sewing feet stroke can be increased while sewing - in machines with HP 11-1 by the pneumatic knee switch 5.1/22 an in machines with HP 11-2 by the left pedal.

5.5.2 Stroke height

Minimum stroke height - Piston rod of the HP cylinder moved out, traction rod P/44 in the lower position of the coulisse

Maximum stroke height - Piston rod of the HP cylinder moved in, traction rod P/44 in the upper position of the coulisse.

Rule:
The travel of the traction rod P/44 in the coulisse should be limited by the piston rod stroke, so that the traction rod P does not knock against the coulisse in the end positions.

Correction:
- Loosen the screw n/44 and displace the cylinder in the oblong hole
- Adjust the nuts t/44 so that the traction rod travels easily in the coulisse.

Indication:
If nevertheless the bolt knocks in an end position, loosen the nut s/44 and turn the piston rod.

5.5.3 Reducing the speed during the HP action

When the sewing feet have been set for their maximum stroke, a too high speed can cause a greater wear and a higher noise leve.
In machines with HP 11-2 adjust the screw z/45 under the left pedal so that at the maximum stroke the maximum speed is reduced by about 1/3.

5.6 Needle positioning, NP

5.6.1 General

The machines with thread cutter stop after thread cutting with the thread take-up lever in its upper position. With the maximum stroke of the presser foot, the needle point can project under the presser foot.
For being able to utilize the maximum feet stroke without damaging the material, the needle bar is returned by the needle positioner so far that the needle point no longer projects under the presser foot.

5.6.2 Adjusting the positioner

Rule:
The position of the clamping disk M/43 on the arm shaft and the speed at which the piston rod is moved out determine the needle position.
By turning the clamping disk M in the direction of rotation of the handwheel the needle is positioned higher.

Correction:
- Screw off the belt guard and turn the clamping disk M/43 accordingly
- By means of the throttle 4.2/22 adjust the pressure so that the cylinder positions always regularly.

5.7 Thread pulling-in device, FE

5.7.1 General

In machines with thread pulling-in device, FE, after the thread cutting process, the loose end of the thread is used on the backside of the fabric.

5.7.2 Flow of functions

1st phase:
- When the needle point plunges into the throat plate, the b edge of the 4/28 disk causes the closing of the thread pulling-in device 6.2, 6.3/22/61, the thread is clamped
- The descending needle pulls the loose thread end into the fabric up to the lowest position of the needle bar.

2nd phase:
- The hook seizes the loop and pulls the loose end under the throat plate
- When the thread take-up lever is in its lower position, the b edge of the 2/28 disk causes the opening of the thread pulling-in device.

5.7.3 Closing and opening moment

Rule:
The thread pulling-in device 6.3, 6.3/22/61 should close when the needle point plunges into the throat plate.
The thread pulling-in device should open when the thread take-up lever is in its lower position.

Control:
- With the motor being switches off, remove the belt from the motor belt pulley
- Move the thread take-up lever to its topmost position (2nd position)
- Switch on the motor and lower the pedal forwards
- Turn the handwheel in the direction of rotation and watch how the thread pulling-in device is closed and opened.

Correction of the closing moment:
- Conduct the needle point to the surface of the throat plate
- Adjust the disk 4/28 so that the edge b covers the light barrier L/28

Correction of the opening moment:
- Move the thread take-up lever into its lower position
- Adjust the disk 2/28 so that the edge b covers the light barrier L/28.

5.8 Puller feed, SP

5.8.1 General

The puller facilitates the feed of heavy material.
Long panels can be sewn without intershifting of plies and without ruffling.

5.8.2 Position of the traction rod

Rule:
During the sewing process and with the puller being lifted the traction rod head S/48 should not touch the puller carrier R/48.

Control:
With the maximum travel of the puller and the maximum stitch length turn the machine by hand.

Correction:
Loosen the screw p/46/47 (through the borehole in the belt guard) and, by turning the handwheel, adjust the feeding moment of the eccentric P/47.

Travel:

The travel of the puller can be adapted to the stitch length by shifting the traction rod T/47 in the coulisse U/4:
Traction rod in the upper end position of the coulisse - maximum travel
Traction rod in the lower end position of the coulisse - minimum travel

Pressure

The pressure of the puller can be adapted to the material by the screw F/48.

5.9 Undertrimmer

5.9.1 General

The undertrimmer UX has a separate direct current motor, operating independently from the sewing speed.
When swinging the knife in and out, the motor is switches on and off automatically.

5.9.2 Sequence of controls and actions when swinging the knife in and out

For swinging the knife in the cutting position move the lever K/50 to the right up to the stop:
- The bolt W/52 presses the upper coupling half O/52 with the knife carrier S/51 over the lower coupling half R/52 into the cutting position
- The locking block A/52 swings at the same time over the fork E/52 and avoids the prematurate engagement of the motor
- In the cutting position, a spring presses half of the coupling bolt B/50 into the upper half of the coupling O/52
- When returning the lever K/52, the locking block A/58 liberates the fork E/58 and a spring presses the fork upwards
- The coupling bolt O/58 is pushed by a spring completely into the upper half of the coupling O/58, establishing thus a connection between the knife carrier S/51and the driving lever Z/57
- At the same time, by the discharge of the cam on the microswitch H/59, the trimming motor m2/56 is engaged.

For swinging the knife out into neutral position, lower the cap T/49:
- The pin in the cap presses the fork E/50 with the tripping bar C/50 downwards
- The springy bolt with the plate D/59 on the block G/59at the lower end of the tripping bar C/59 presses on the cam of the microswitch H/59 and disconnects the trimming motor m2/56
- At the same time the fork E/58 pulls the coupling bolt B/58 out of the upper half of the coupling O/58 and the spring L/58 swings the upper half of the coupling and the knife carrier into neutral position
- The upper half of the coupling O/50 presses the knife guard Y/50 under the knife which is to be returned.

5.9.3 Adjustments

Preparation

For controlling or correcting the adjustment of the functional elements remove the hood F/49:
- Screw off the cap T/49:
- Loosen the screw k/49 and press out the pin 2/49
- Swing the spring P/50 sideways:
- Turn out the screws f/49/51 (3 pieces) and remove the hood F/49, return the knife guard Y/49.

Maximum knife stroke

For adjusting the UX, set the maximum knife stroke.

Rule:
With the maximum (3,5 mm) and the minimum (1,5 mm) knife stroke the slit of the eccentric shaft X/56 stands on the marks "+" and "-".

Control:
Turn the wheel a/56 by hand and watch the knife movement.

Correction with the minimum knife stroke:
Loosen the nut p/56, hold the wheel a/56 and turn the eccentric shaft X/56 by 180 degrees.

Indication:
The knife stroke has been adjusted in the factory for the maximum value.

Adjusting the stroke position of the coupling

Rule:
At the front inversion point of the knife stroke, the play between the upper coupling half O/50 and the block N/50 should range between 0,5 and 1 mm.

Control:
- Move the knife in the cutting position
- Turn the wheel a/56 by hand until the knife stands at the front inversion point and measure the play.

Correction:
Loosen the screw z/57 and adjust the upper half of the coupling O/50.

Adjusting the knife

1. Lateral position with respect to the throat plate

Rule:
The knife should cut as close as possible beside the thorat plate, without touching the throat plate, fig. 53.

Control:
Control the adjustment in the cutting position of the knife.

Correction:
Loosen the screw u/51 and adjust the knife.

2. Height of the throat plate

Rule:
The bottom of the knife shank should stand above the throat plate according to the thickness of the lower material play, fig. 54

Rule:
Correct the knife height by the screw t/49.

Position of the knife stroke with respect to the needle

Basic adjustment:

Rule:
Seen in the sewing direction, the knife stroke should be equal before and behind the needle, fig. 55

Control:
Turn the wheel a/56 by hand and check the position of the knife stroke with respect to the needle.

Correction:
Loosen the screw s/51 and adjust the knife carrier S/51.

Indication:
When handling certain materials the cutting quality can be improved by deviation from the basic adjustment and by shifting the knife stroke before or behind the needle farther away from the neddle.

Knife position in neutral position

Rule:
In the neutral position, the cutting edge of the knife should be centered above the knife guard Y/51.

Correction:
Loosen the nut t/58 and set the stop screw q/58 accordingly.

Knife guard

1st position of the knife guard in neutral position of the knife

Rule:
In neutral position of the knife its guard should be centered above 1 mm below the knife, fig. 51

Correction:
Loosen the screw n/50 and adjust the knife guard.

Rule:
The knife guard, moved out, should be limited so that it cannot be returned by hand by more than about 1 mm.

Correction:
Turn the screw r/50 accordingly.

Indication:
If the screw r/50 is turned in excessively it will be impossible to move the knife in the neutral position.

2. Position of the knife guard in the cutting position of the knife

When the knife is in the cutting position its guard is pressed by a spring against a column and it is limited by a stop screw C/50.

Rule:
The knife guard Y/51 should stand behind the column as close as possible, but neither the knife carrier S/51 nor the upper half of the coupling O/50 should touch the knife guard.

Control:
Turn the wheel a/56

Correction:
Turn the screw c/50

Adjusting the tripping bar and the microswitch

Rule:
The upper side of the fork E/50 should be flush with the front face of the tripping bar C/50.

Correction:
Loosen the screw e/50 and displace the fork on the tripping bar.

Rule:
When the knife is in the cutting position, the coupling bolt B/58 must be fully engaged, so that the fork E/58 stands in the middle between the disk h/58 and the upper safety ring b/58.

Correction:
- Move the knife in the cutting position and press up the coupling bolt B/58 completely
- Loosen the screw g/59
- Adjust the fork E/58
- Adjust the plate D/59 above the cam of the micro-switch H/59 so that the plate stands also above the plate V/59 (this ensures that the micro-switch is not overpressed.)

Rule:
In the cutting position of the knife the cam of the micro-switch H/59 should stand about 0,2 mm below the plate D/59.

Correction:
Loosen the screws of the plate V/59 and adjust the plate with the micro-switch.

Rule:
When the lever K/52 is pressed to the right up to the stop, the locking block A/52 should slide easily over the fork E/52 and, when returning, it should liberate both cams simultaneously.

Correction:
Loosen the screw a/52 and adjust the locking block accordingly.

Direction of rotation of the sewing and trimming motor

The direction of rotation of the trimming motor (three-phase a.c.) is without importance for the function. But when installing a new trimming or sewing motor it is, however, necessary to pay attention to the initial direction of rotation of the trimming motor, because the other direction of rotation would increase the noise of the gearing.

Trimming motor

Rule:
When looking at the wheel a/56 the initial direction of rotation is clockwise.

In case of a wrong direction of rotation of the wheel a/56 change the cable terminals in the additional control box Z/60.

Sewing motor

When installing a new sewing motor control the direction of rotation of the handwheel.

Rule:
When looking at the handwheel the direction of rotation is counter clockwise, fig. 62.

In case of a wrong direction of rotation invert the poles of the mains plug.

If the handwheel rotates in the proper direction but the wheel in the wrong direction change the terminals of the cables in the additional control box.

Indication:
All electrical work should be carried out exclusively by specialists!

6. Maintenance

6.1 Cleaning

After intensive daily use, the throatplate, hook, needle thread tension and feed-dog should be cleaned and oil applied to the lubricating points. Lubricating points see Operating Instructions cl. 268 (fig. 18, 19).

6.2 Lubricating oil

Use only branded oils e.g. ESSO MILLCOT K 68 or similar products with the following specifications:

Viscosity at 40° C : 65 mm^2/s
Flashpoint : 212° C

ESSO MILLCOT K 68 can be ordered from Dürkopp Adler AG:

1 ltr.: Part-No. 990 47 012 8
5 ltr.: Part-No. 990 47 012 9

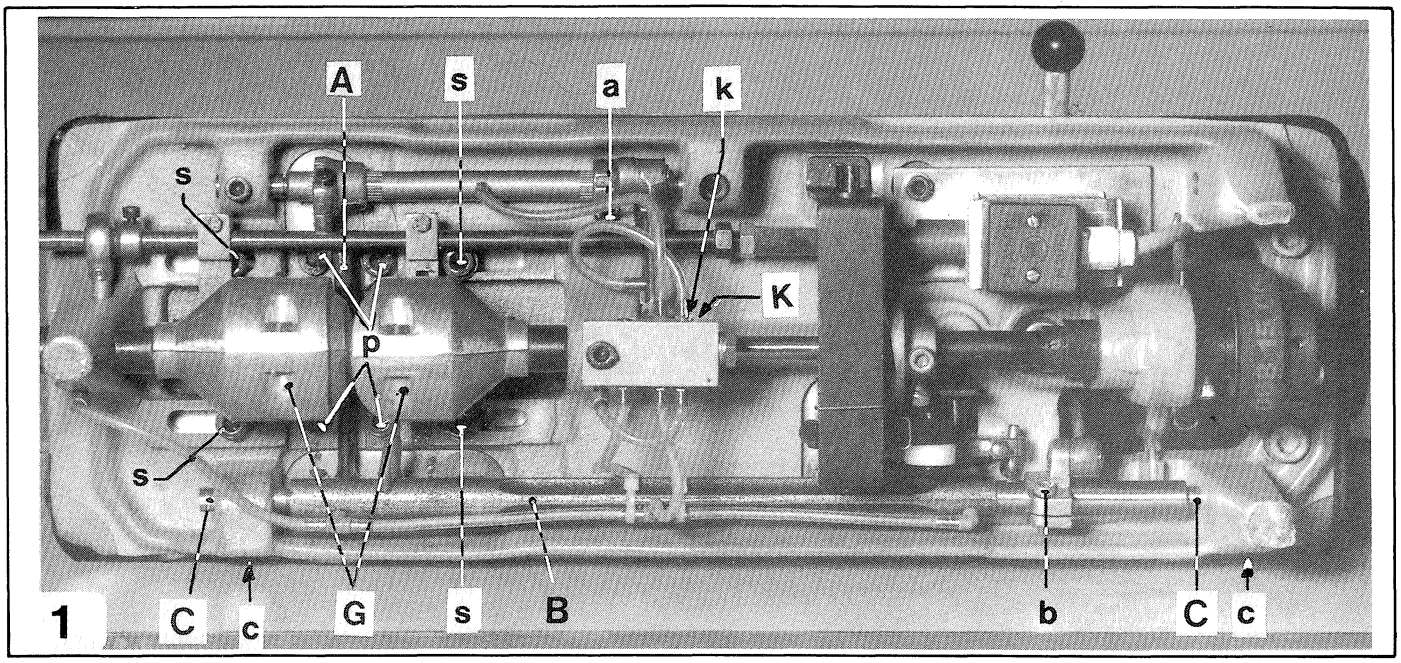
6.3 Pneumatic oil

Use only branded oils, e.g. ESSO NUTO H 68 or similar products with the following specifications:

Viscosity at 40° C : 66 mm^2/s
Flashpoint : 236° C

ESSO NUTO H 68 can be ordered from Dürkopp Adler AG:

250 cm^3: Part-No. 990 81 006 7
1 ltr.: Part-No. 990 47 010 5



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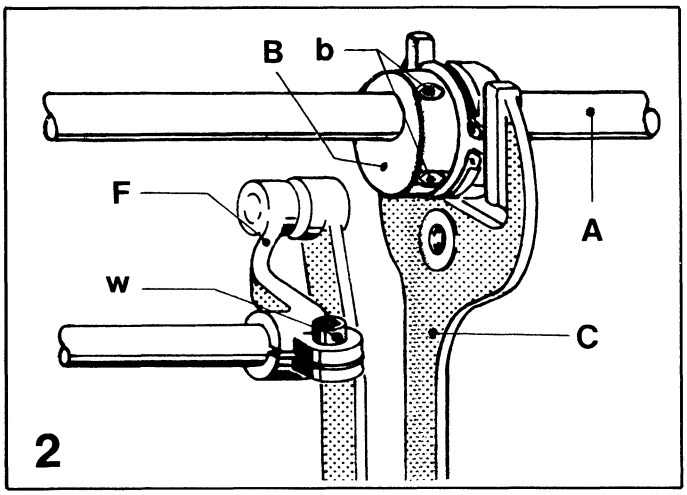

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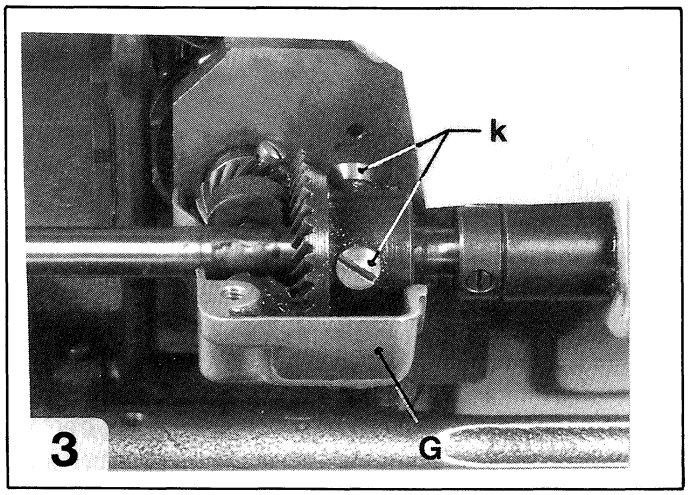

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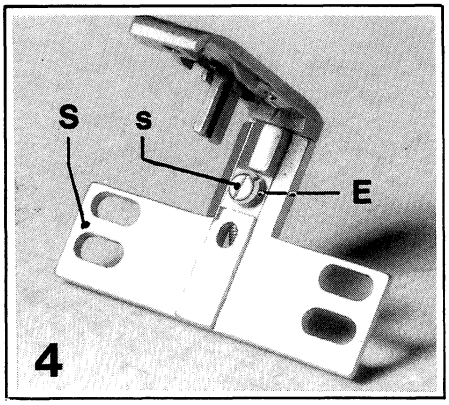

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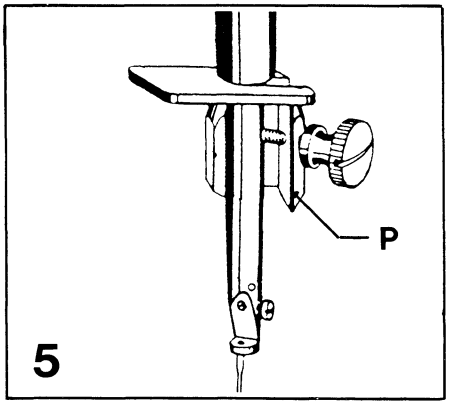

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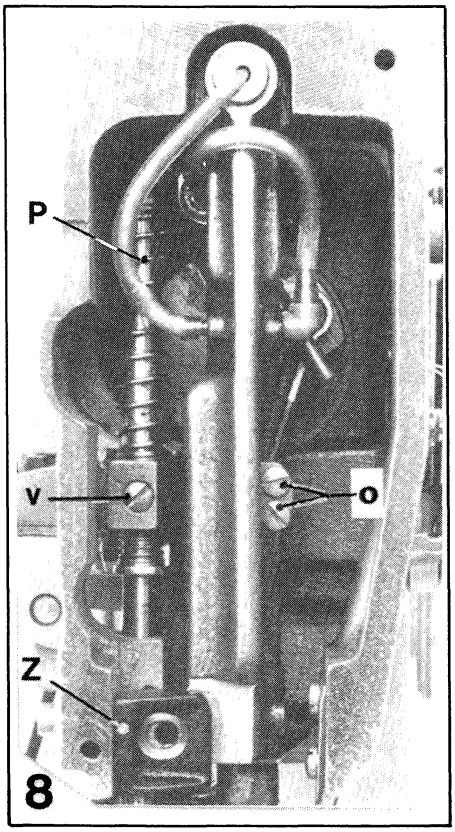

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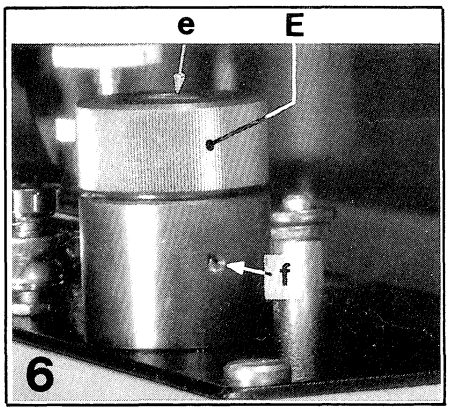

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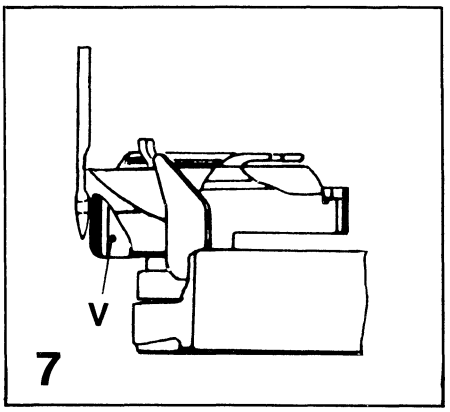

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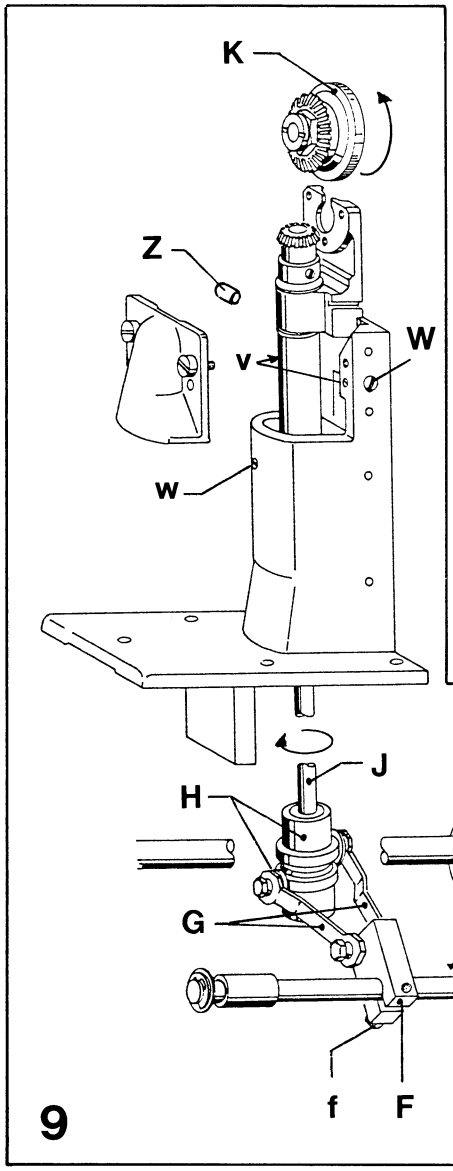

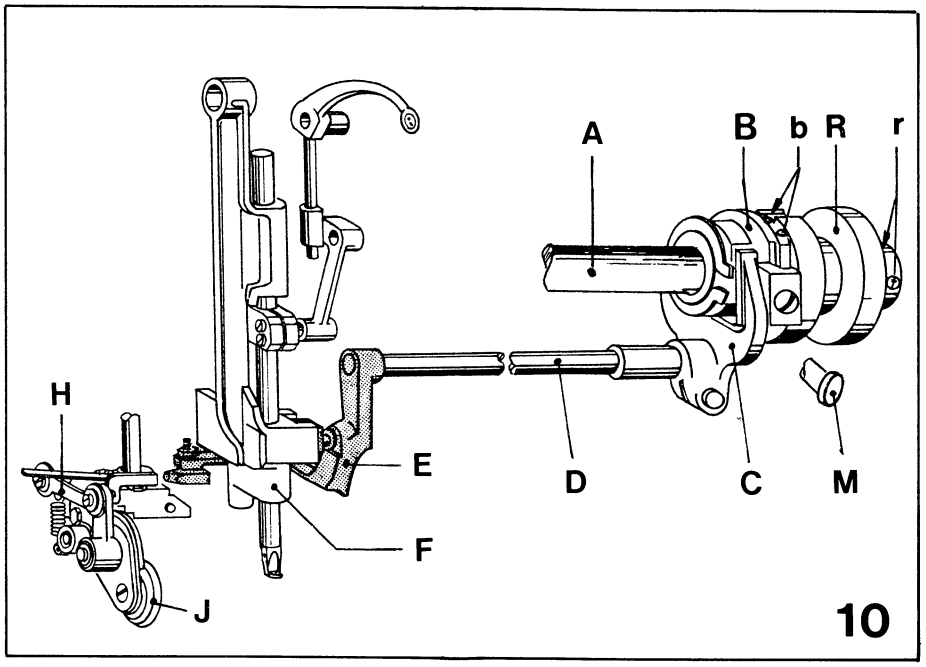

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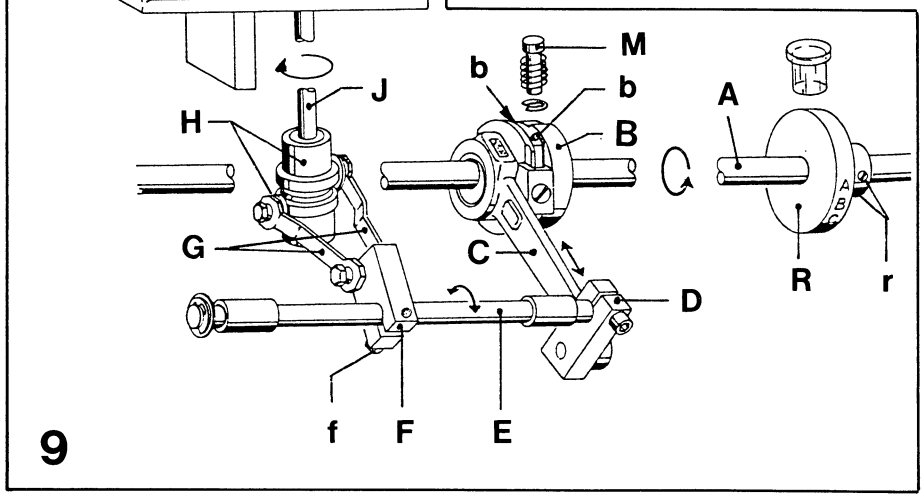

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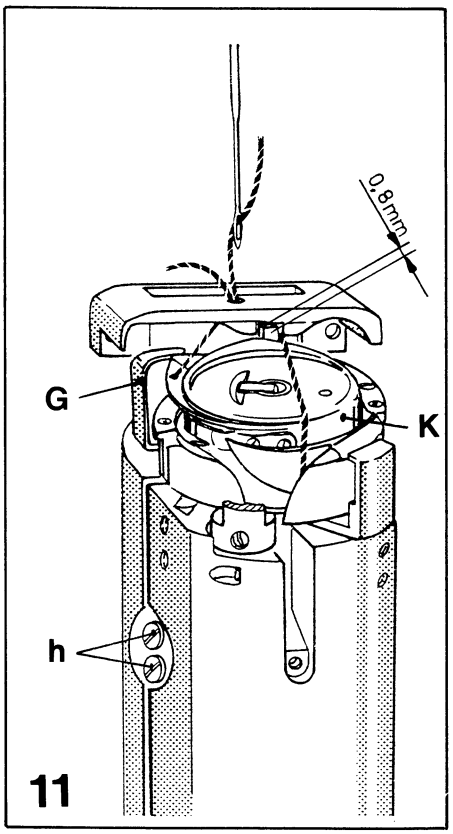

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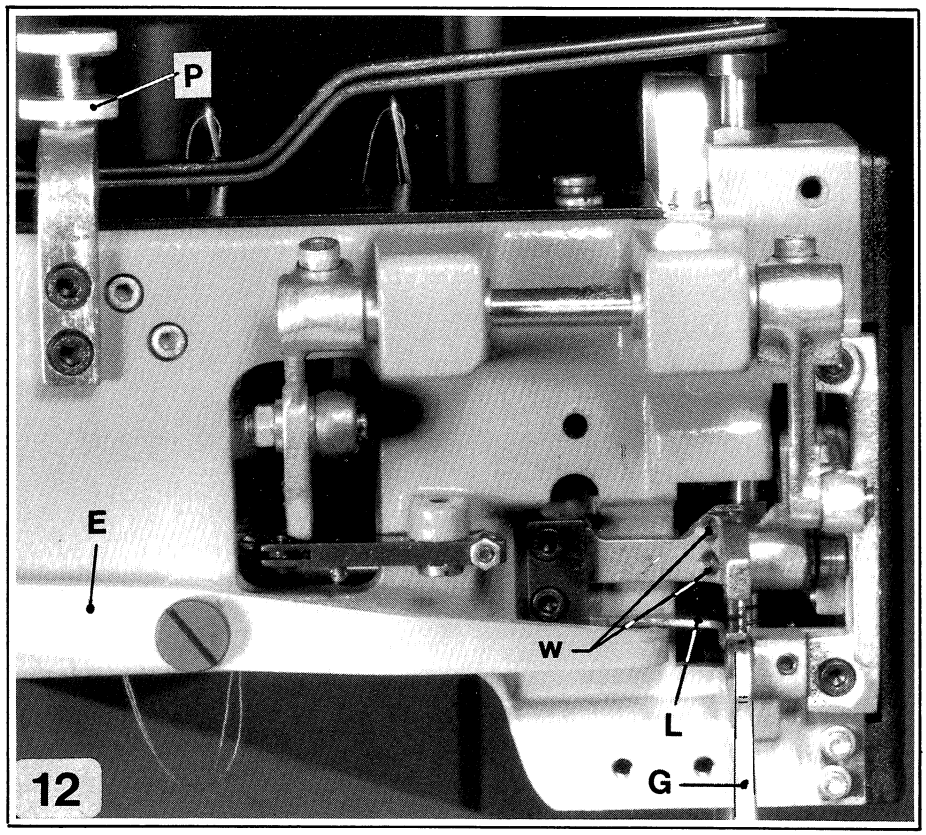

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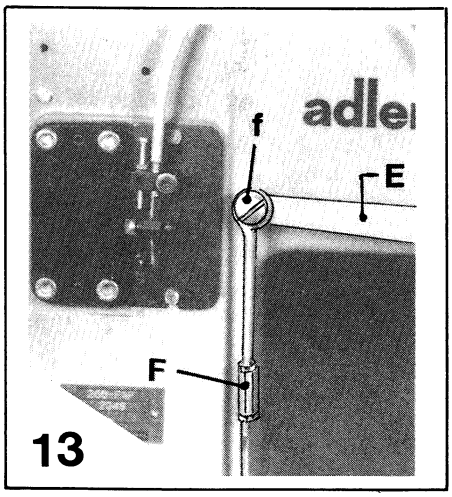

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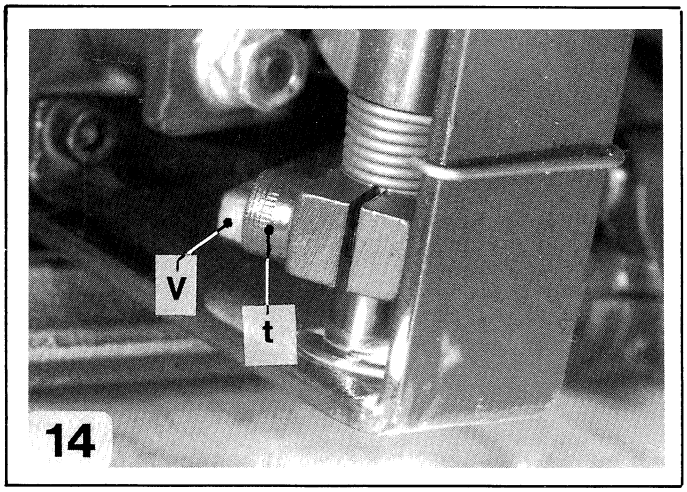
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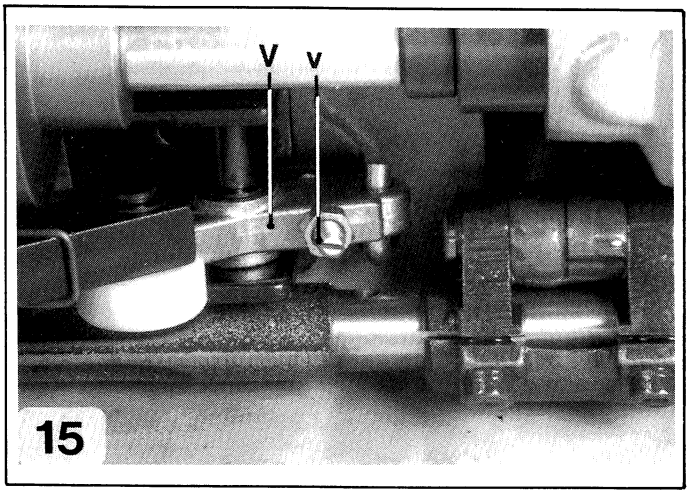
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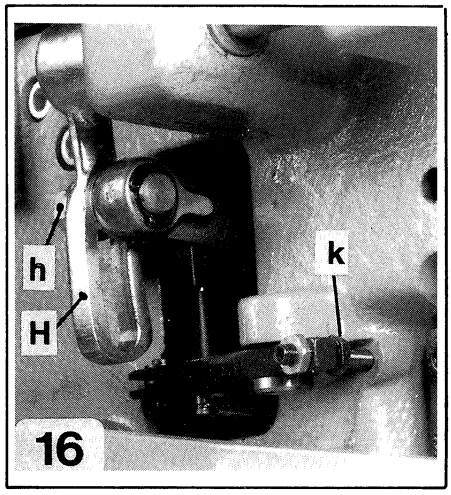
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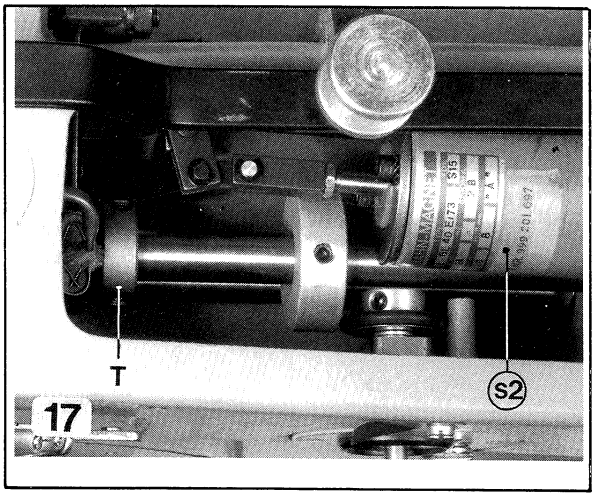
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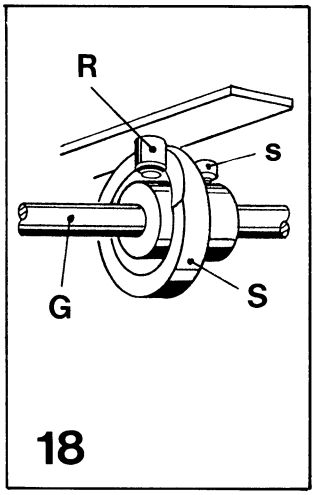
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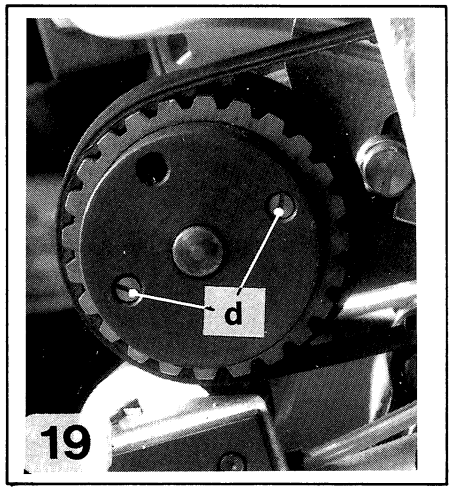
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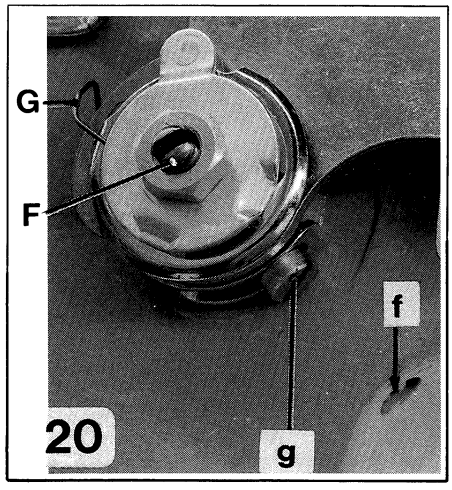
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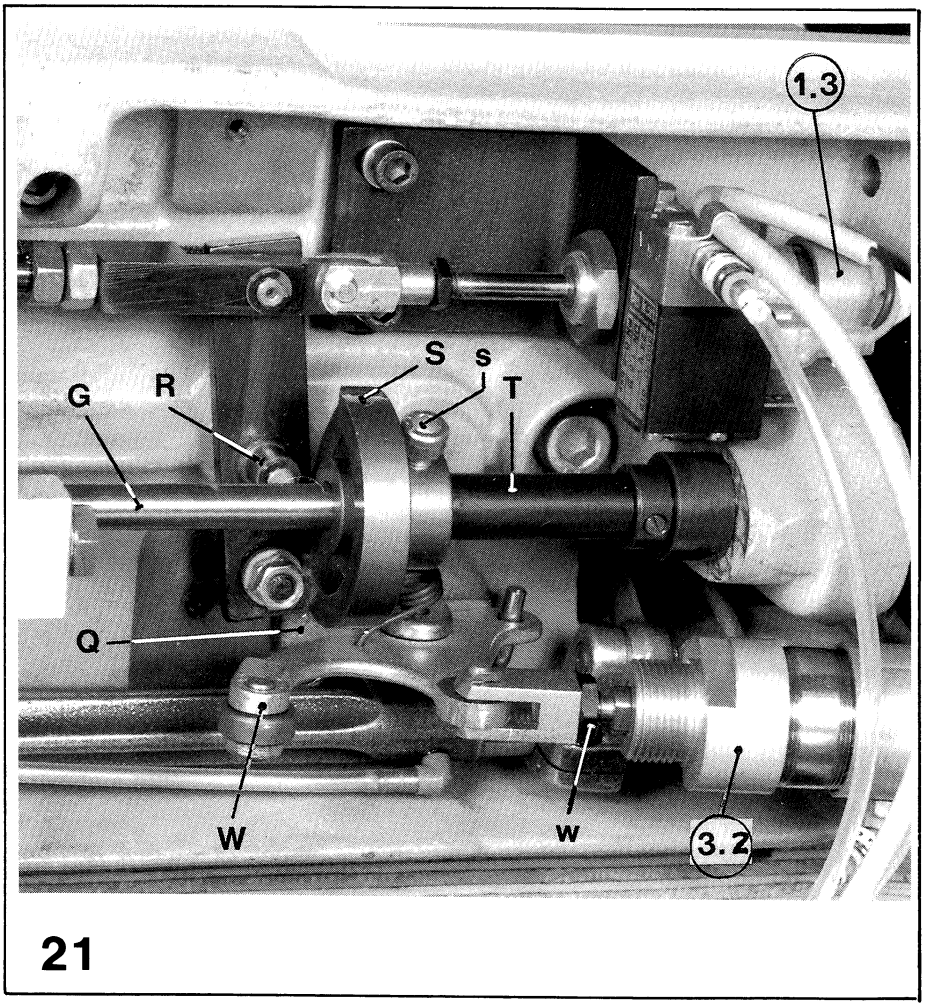
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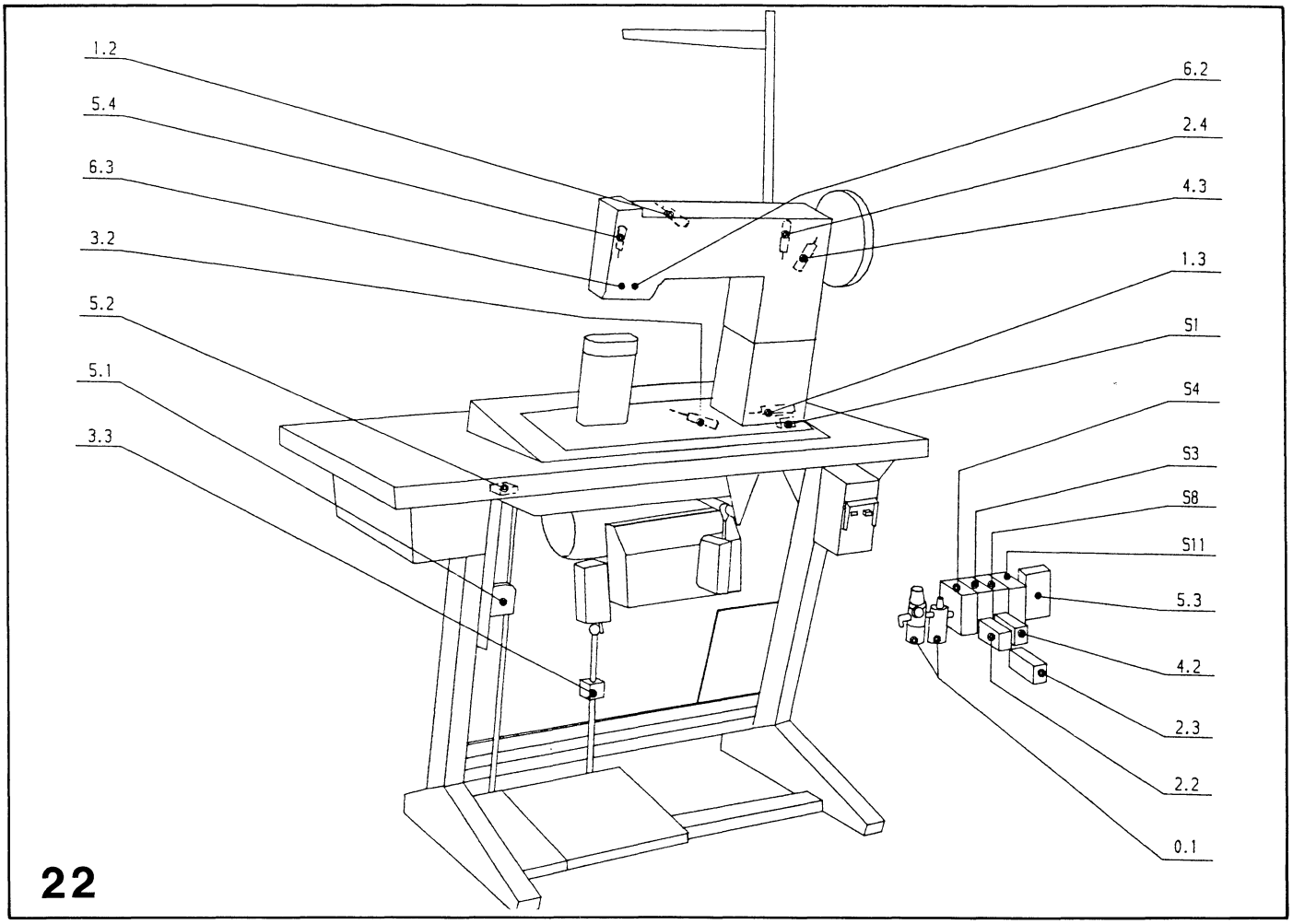
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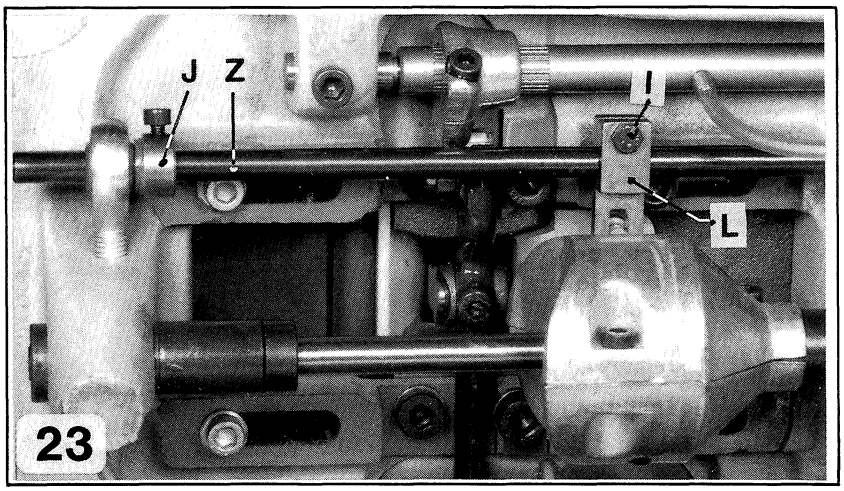
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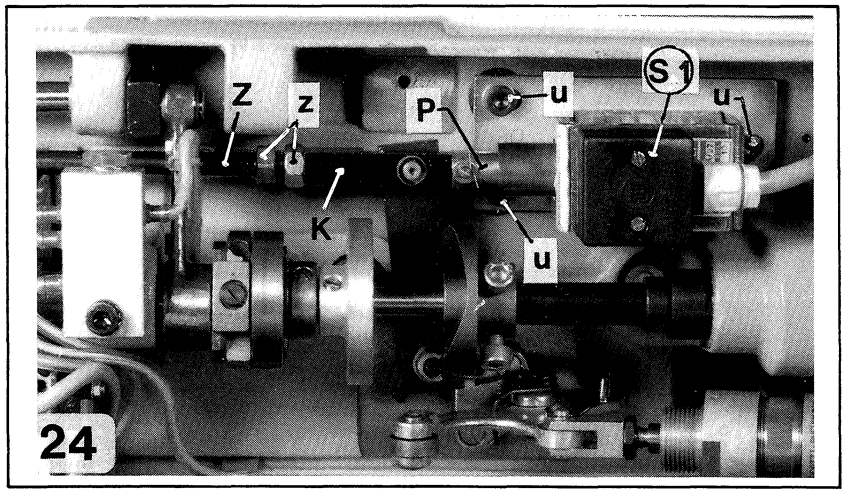
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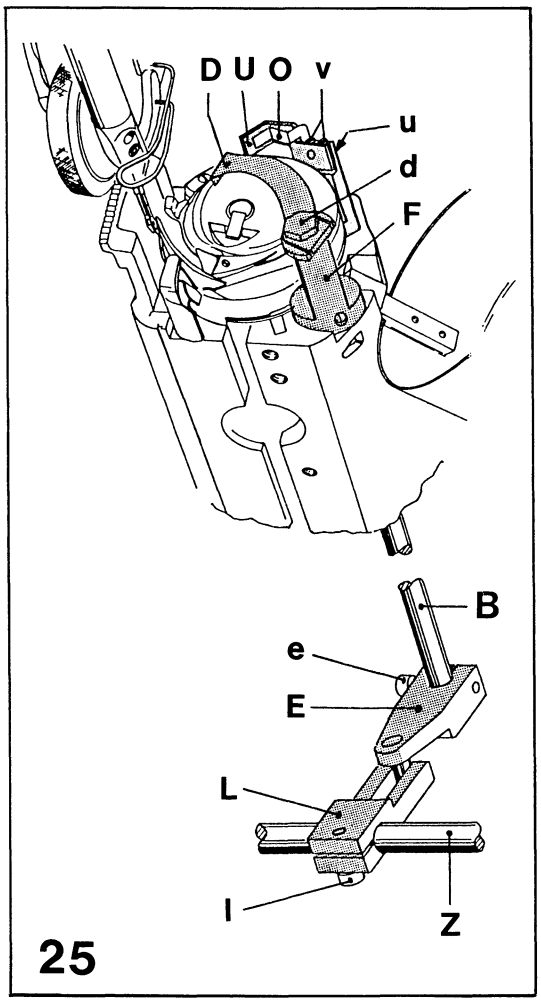
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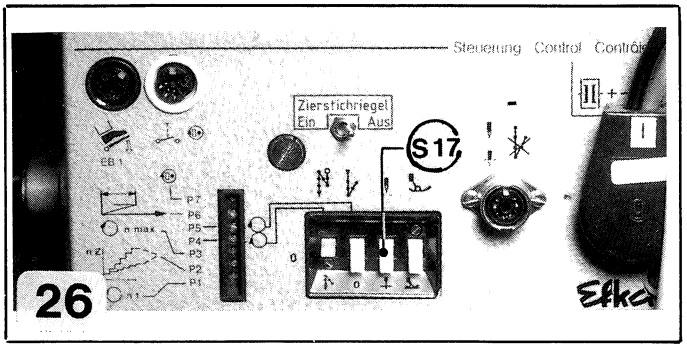

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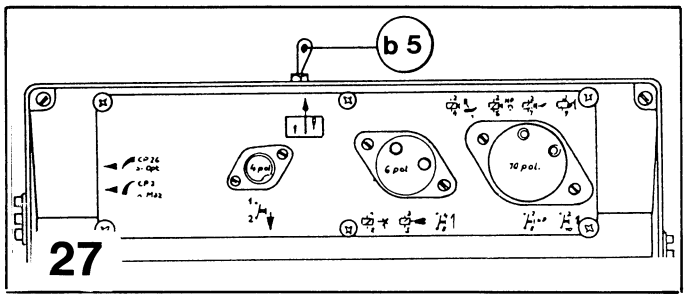

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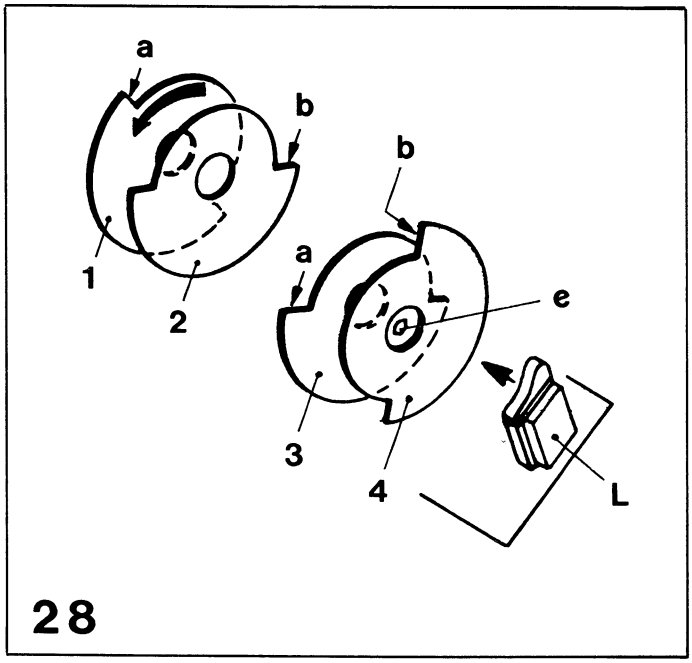

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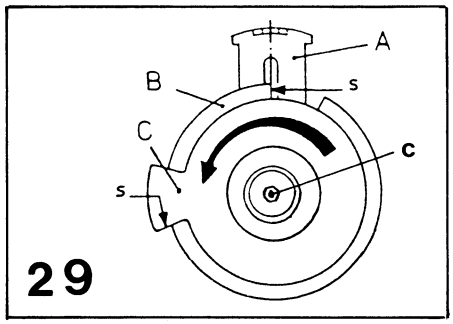

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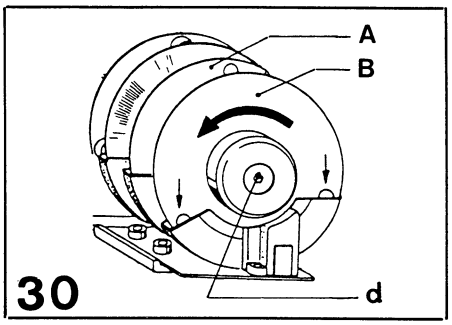

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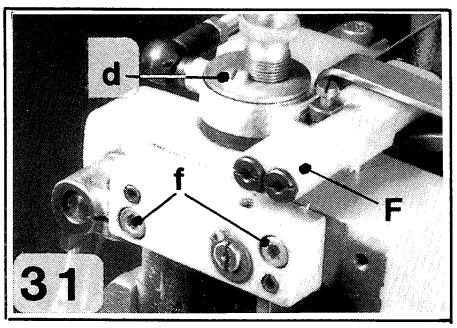

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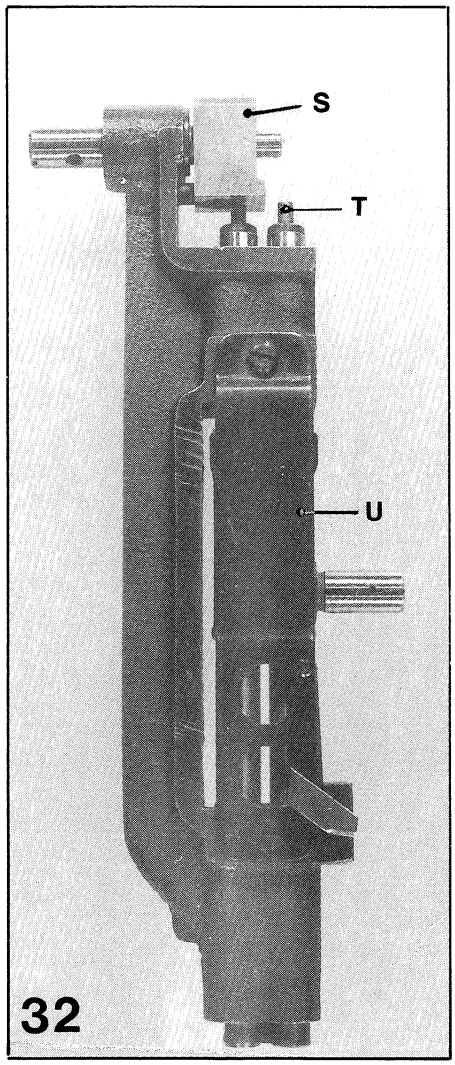

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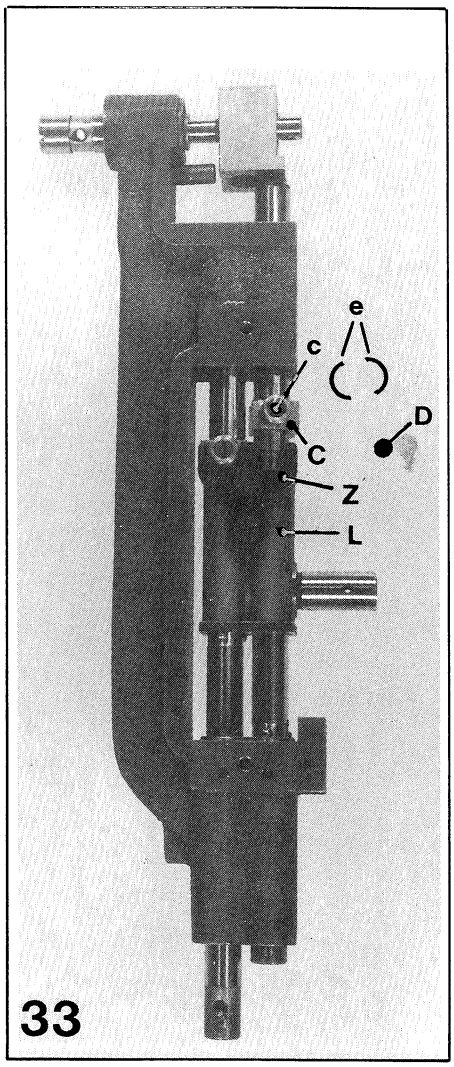

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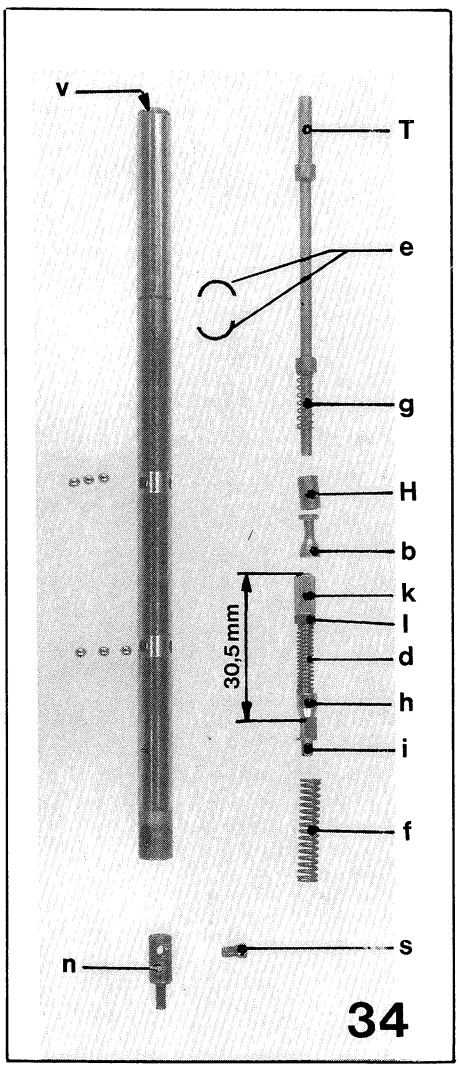

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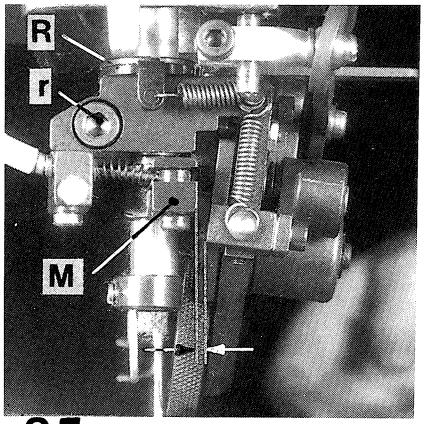

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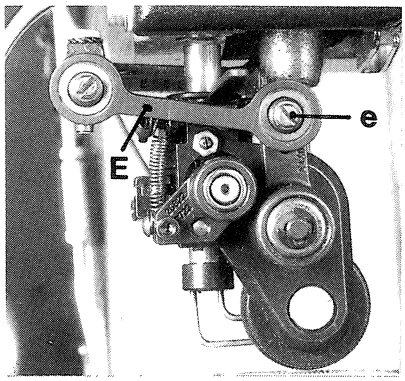

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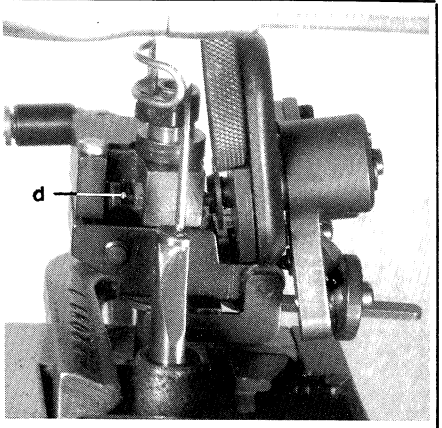

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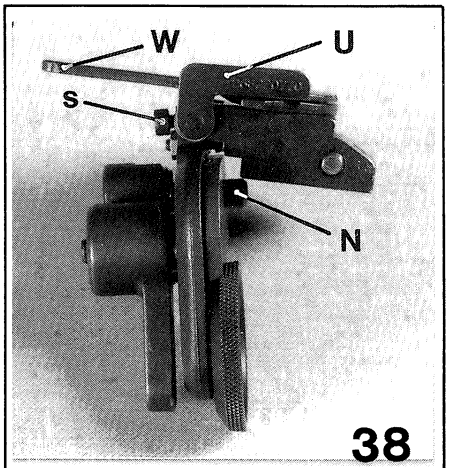

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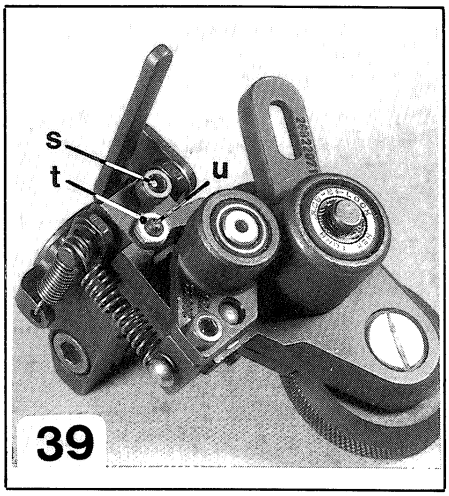

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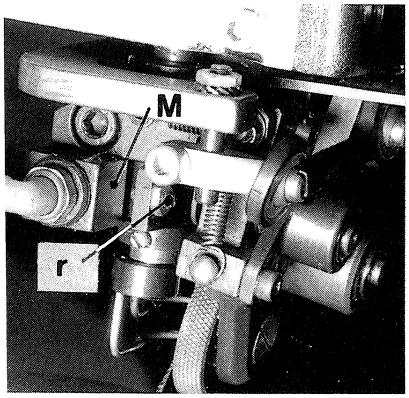

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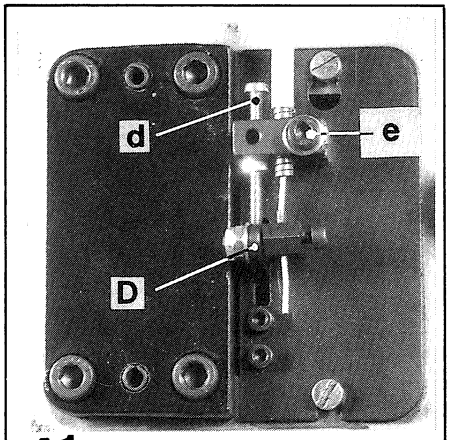

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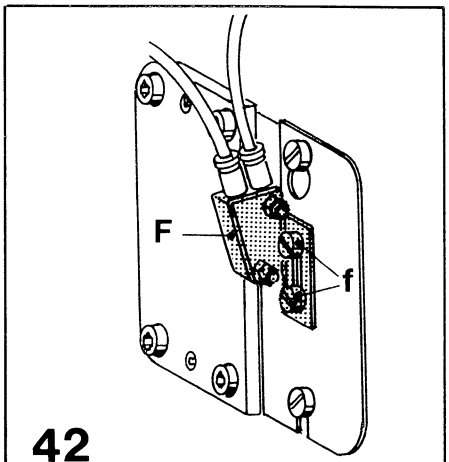

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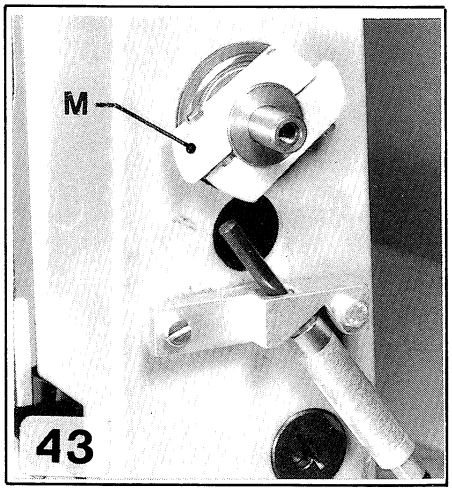

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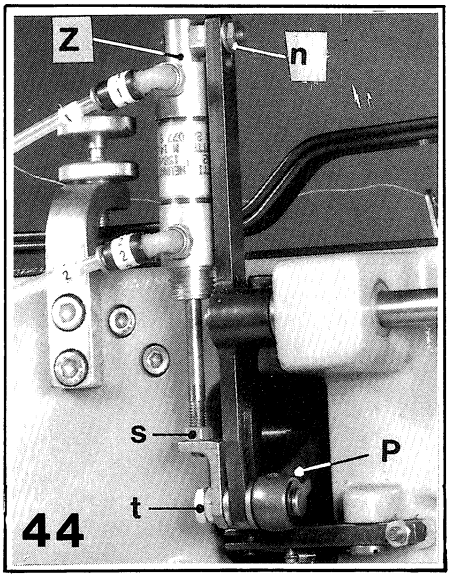

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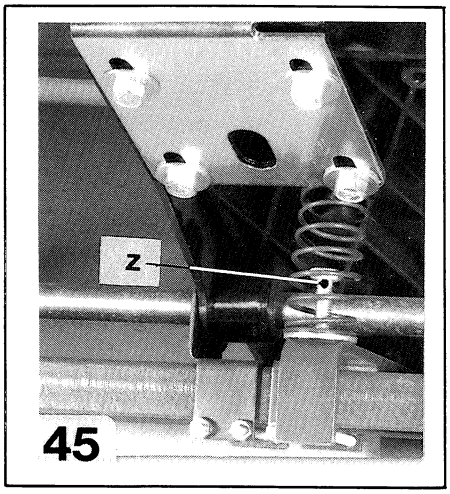

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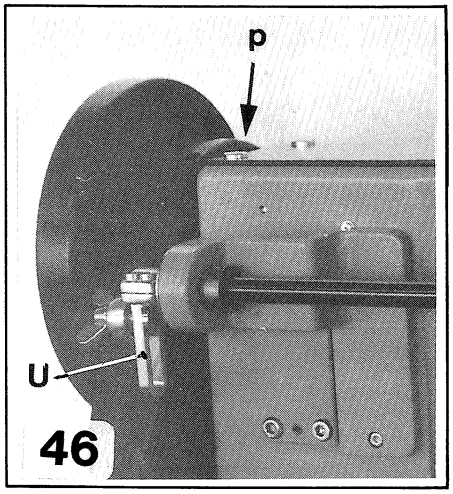

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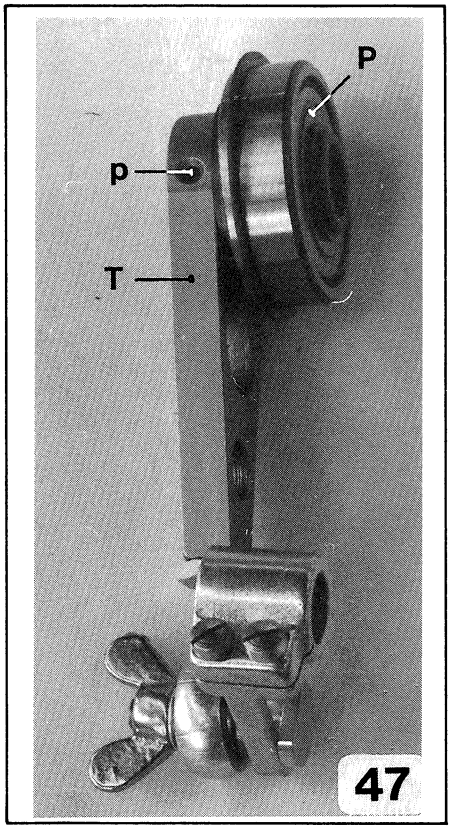
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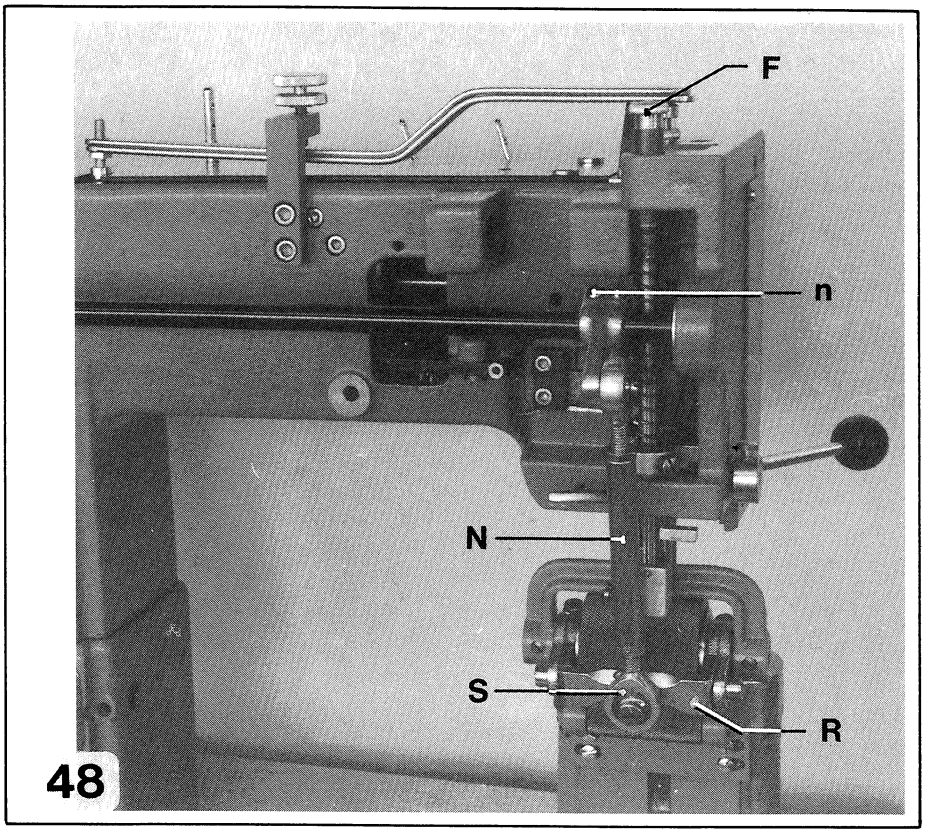
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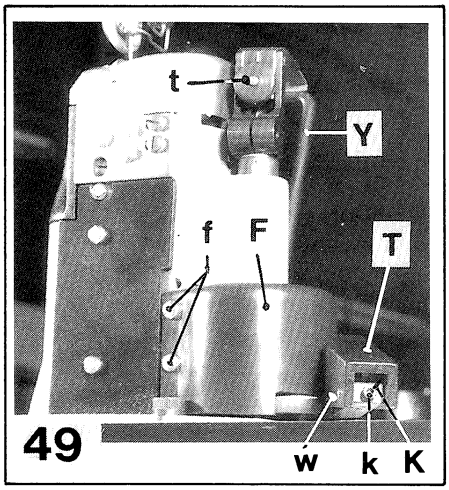
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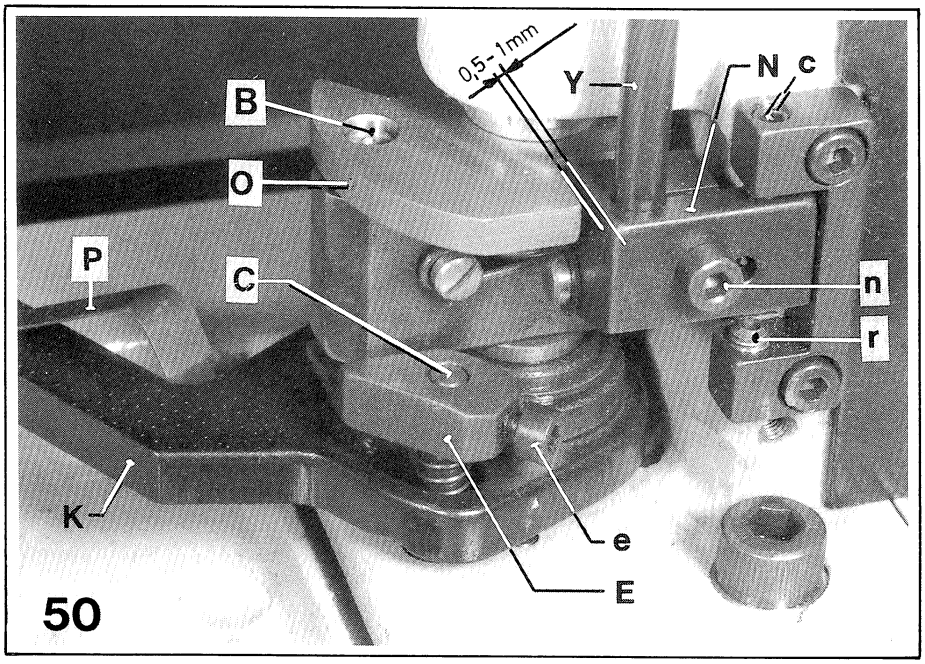
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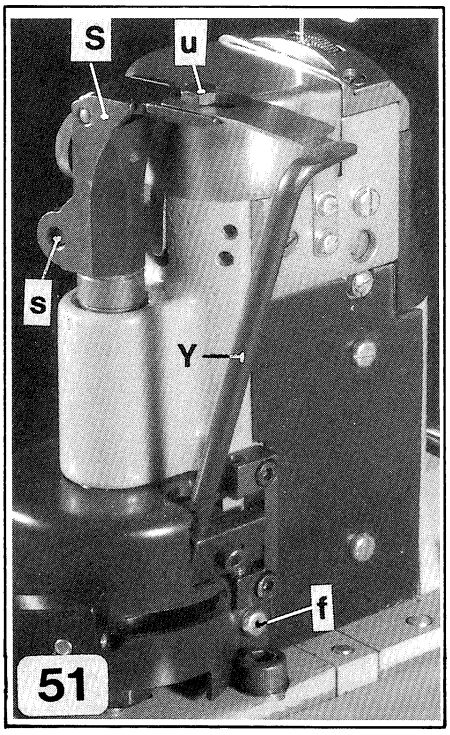
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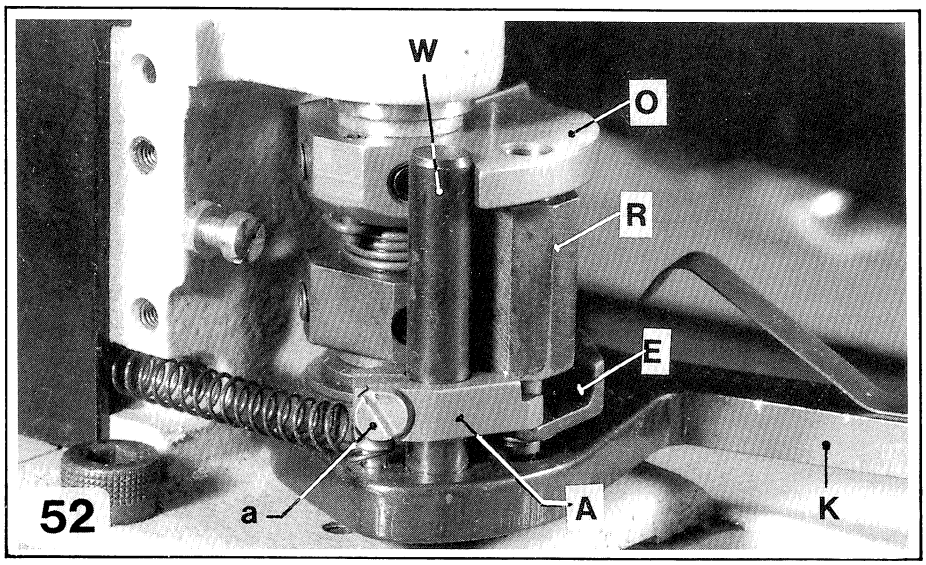
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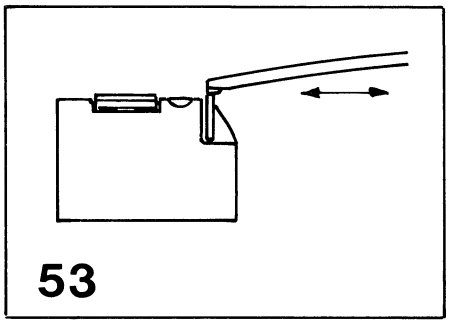

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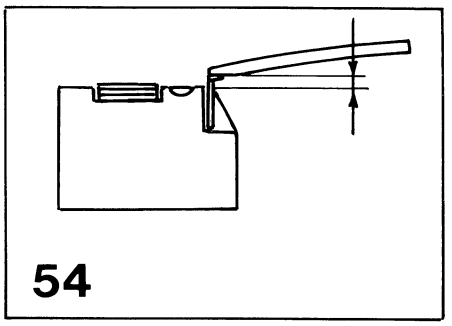

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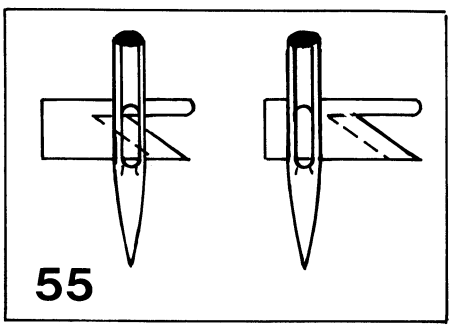

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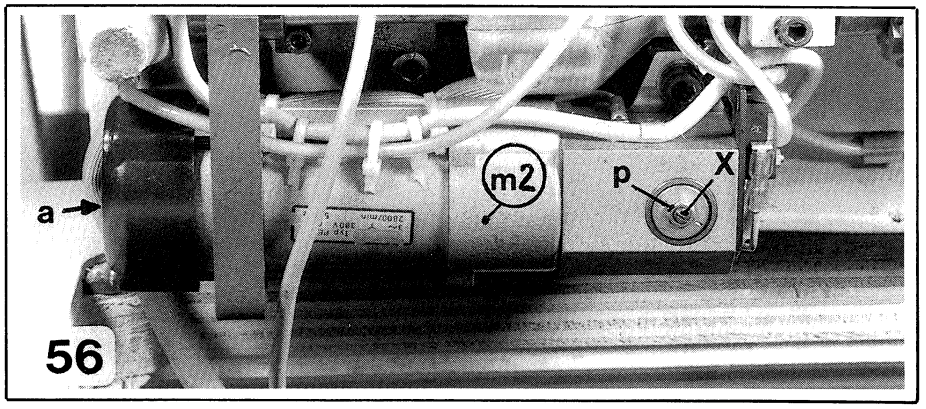

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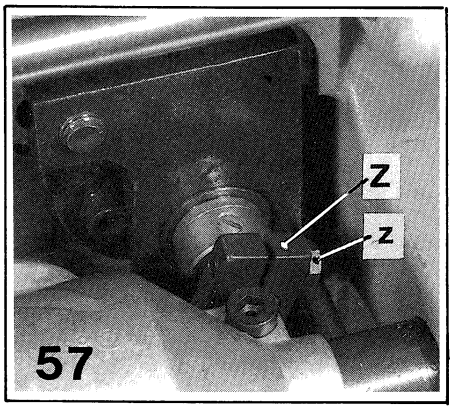

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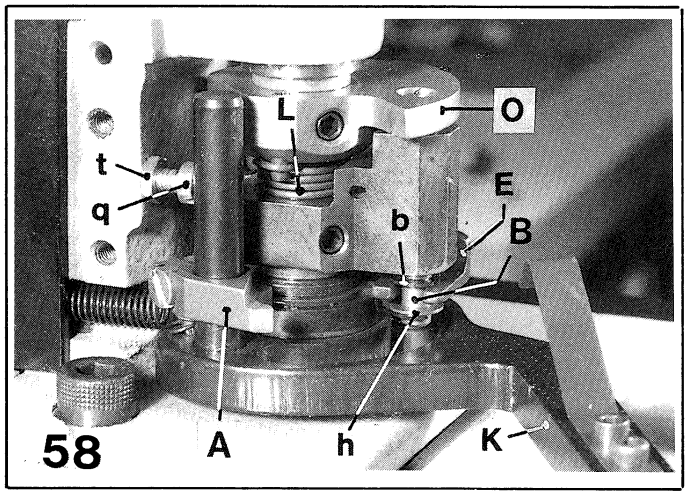

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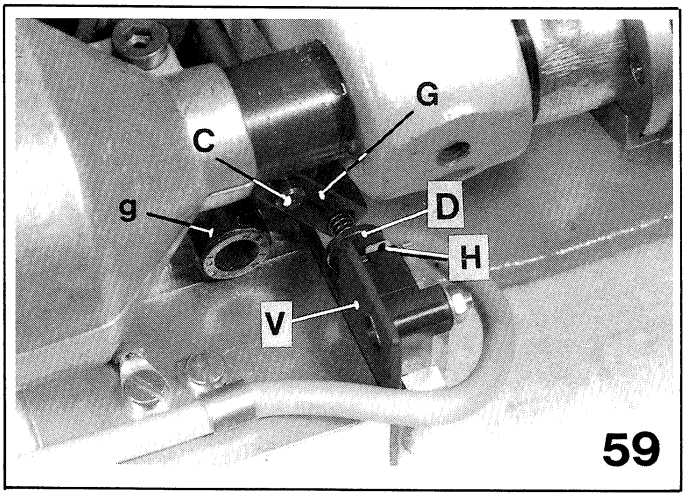

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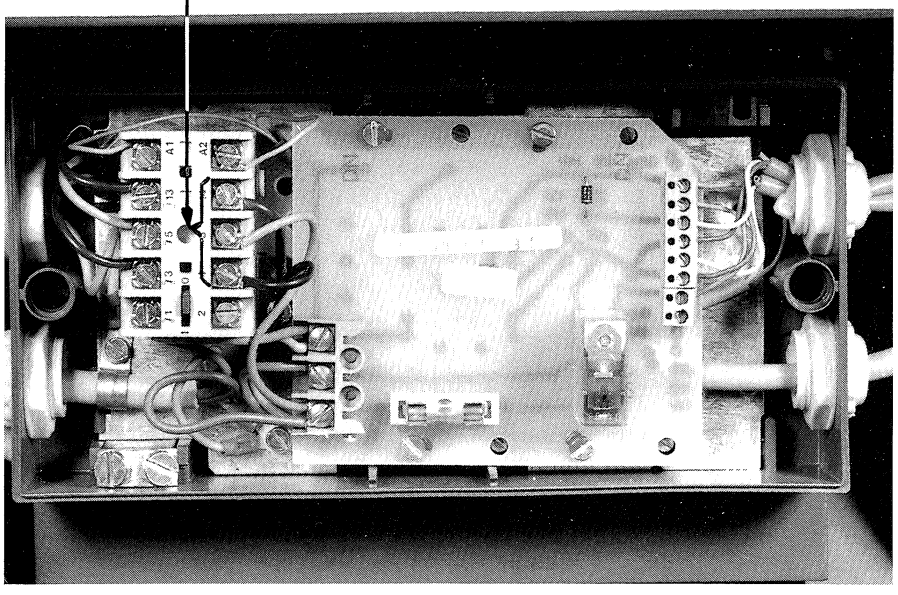
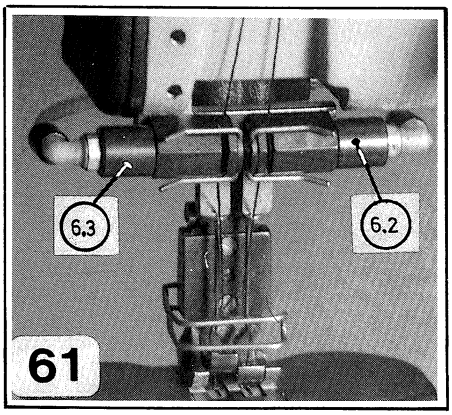
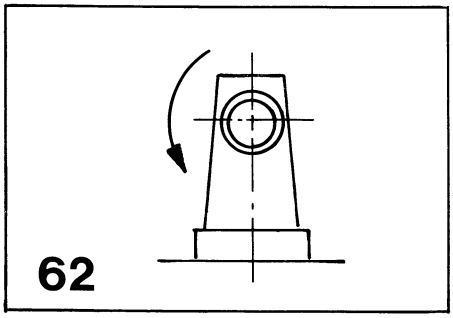
60





61



62

1	2	3	4	5	6	7	8	9	10

9800 139001 B

M 1~ M

b2

V720

b776

P6-1

b1

EB301

b80

Efka DA820V

B4
"G" +24V A1
FA 5,1A A2 bn
FSPL 2,5A A3 bl
FF 0,5A A4
RFW B3
LS-X B4
FK 0,5A B5
R-N-EXT C3
R-N-EXT C4
C5
0V D1
LSP D2
HVR D3 100R
R-select D5
frei A5
frei D4

B11
RM 1
+24V 2
FF 3
NHT 4
FF 5
RU/RAB 6
+24V 7

B3
"E"
+24V A1 bn
FDP 0,5A A2
FSPL 2,5A A3
FL 0,5A A4 gn
VR 0,5A A5 ge
FF 0,5A B3 bl
HP 0,5A B4
FK 0,5A B5
Pos.2 C3
Impulse C4
NK 0,5A C5
0V D1 ws
LSP D2 rs
HVR D3 gr
HP D4
G-0 D5

B5
HP 1
+24V 2
HPG 3

K268 480104

A
bn 3 FA
bl 5 FS
bn 2 +24-40V
7 FA370/FW
gn 4 FLP
gr 8 RSP IN
rs 9 LS
ws 1 0V
ge 6 RSP
bl 10 NP

So geliefert von ca. 03/97
bis ca. 12/98

So geliefert ab ca.10/99

~~So geliefert ab ca.01/99~~

A
AS 1
U-ref. 2
n-red. 3 680R
0V Logik 4
RM 5 rt
NHT/NH 6
HP 7
STL 8
DB 2000 9
DB 3000 10
LSP 11 sw
FWGR 12
LS 13
RU/RAB 14
TWA 0,5A 15 vio
MWO 0,5A 16
MWU 0,5A 17
FKL 0,5A 18 ws
0V Last 19 ws
FSPR 0,5A 20
NFD 0,5A 21
SK 0,5A 22
FWGR LED links 30mA 23
RU/RAB LED 30mA 24
FWGR LED rechts 30mA 25
Motor läuft 3A 26
FW 3A 27 bl
NK 3A 28
STL EIN LED 30mA 29
STL 0,5A 30
HP EIN LED 30mA 31
HP 3A 32
bn
+24V= 33 bn
RA 6,5A 34 rs
FL 6,5A 35 ge
FS 3A 36 gr
FA 3A 37 gn

9870 268004

B
ws 1 FK
bn 2 +24-40V

A
gn 3 FA
gr 5 FS
bn 2 +24-40V
vio 7 FA370/FW
ge 4 FLP
rt 8 RSP IN
sw 9 LS
ws 1 0V
rs 6 RSP
bl 10 NP

A
FA 3 bl
FS 5 bn
+ 24-40V 2 ws bn
FA370/FW 7
FLP 4 ge
RSP IN 8
LS 9
0V 1
RSP 6 gn
NP 10

B
FK 1 bl
+24-40V 2 bn
3

s1 bl bn
s4 bn ge
s3 ws gn
bl bn

FE12-1, FE12-2

268-FAP-73-1
268-FAP-273-1

FAP
FLP
RAP
FE

Efka DC1600/
DA82GA

9800 139001 B

A B C D

Steuerung-Control-DA82GA

M

V820/V810

c				Datum	15.12.98
b				Bearb.	
a	01.1	13.10.99	Pm	Gepr.	
	Änderung	Datum	Name	Norm	

DÜRKOPP ADLER AG Bielefeld

Teilefamilie

Freigabe 0729 / 99

Kl.268 FAP/RAP
Mit DC1600/DA820V-V720
und DC1600/DA82GA-V810

Bauschaltplan
9890 268001 B

Blatt 1/1