PFAFF®

Instruction Manual

Pfaff 3518

PFAFF INDUSTRIEMASCHINEN GMBH KAISERSLAUTERN

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Foreword

Pfaff automatic pocket setters are often manufactured according to a customer's special wishes which involve some deviations from the standard version. These are mainly to be found in the electro-pneumatic control system.

For this reason the circuit diagrams are included in the electrical control box of each machine. They apply to the machine they are supplied with only.

To meet certain requirements there are also mechanical variants, but these are on a somewhat smaller scale.

We have therefore concentrated our efforts on compiling a standard service manual which covers as many types of pocket setter as possible. For the sewing machine itself the instruction book for the 463 and the service manual for subclass -900 of the 460 series may be used. These publications only apply to a certain extent, however, because the sewing machine fitted to the Pfaff 3518 differs slightly from the normal Pfaff 463.

Should you have any difficulties which cannot be remedied with the help of the service manual please refer to,the Pfaff agency responsible for your area.

Pfaff Industriemaschinen GmbH

Kaiserslautern

1. Introduction

The automatic pocket setter (Fig. 1) is equipped with a lockstitch sewing machine, and is used for folding and sewing on pockets. The size and function of the machine are designed to accommodate most of the pocket styles and fabrics coming into use. This type of sewing operation can only be carried out to satisfaction when a double-twist thread is used. The beginning and end of the seam are secured both by a tack and by condensed stitches. Various types of tack are possible.

This section of the manual contains the operating instructions and those for the maintenance items normally included in the operator's work.

The best means of becoming fully conversant with the machine is to actually carry out the instructions of each paragraph in the given sequence.

2. Inserting the needle (Fig. 2)

The needles to be used in the sewing machine are system 134 needles (e.g. 134 R, 134 kK) sizes 80 and 90. For each material sewn, the stipulated needle must, be used.

Bring the needle bar to the top of its stroke, loosen screw 783 and remove the needle.

Push in the new needle as far as it will go, and turn it so that the long groove faces template 758.

Re-tighten screw 783.

3. Threading the needle thread (Fig. 3)

3.1 Threading for the first time

Take the thread from reel 664, pass it through one of the holes in the top thread guide bracket (665 in Fig. 1) and through pin 666 to the three holes of guide 667, Pull the thread between tension discs 668 from below, over thread check spring 669, under guide 670 and though eye 671, then through the eye of the take-up lever from the right. From here, lead the thread through eye 671 so that it is held by wire 629 of the thread monitor. Finally, pass the thread through guide 672, and through the eye of the needle from the left.

Pull about 3 inches of thread through the eye of the needle so that it does not unthread when the machine begins sewing.

3.2 Thread changing

Pull the old thread out of the needle eye and cut it close to the reel on the stand. Tie this end of the old thread to the end of the new thread, place the new reel on the stand, and pull the old thread until the new one has passed through the machine to the sewing area. Cut the end of the new thread and thread the needle.

4. Threading the bobbin thread (Figs. 4, 5,6, 7 and 8)

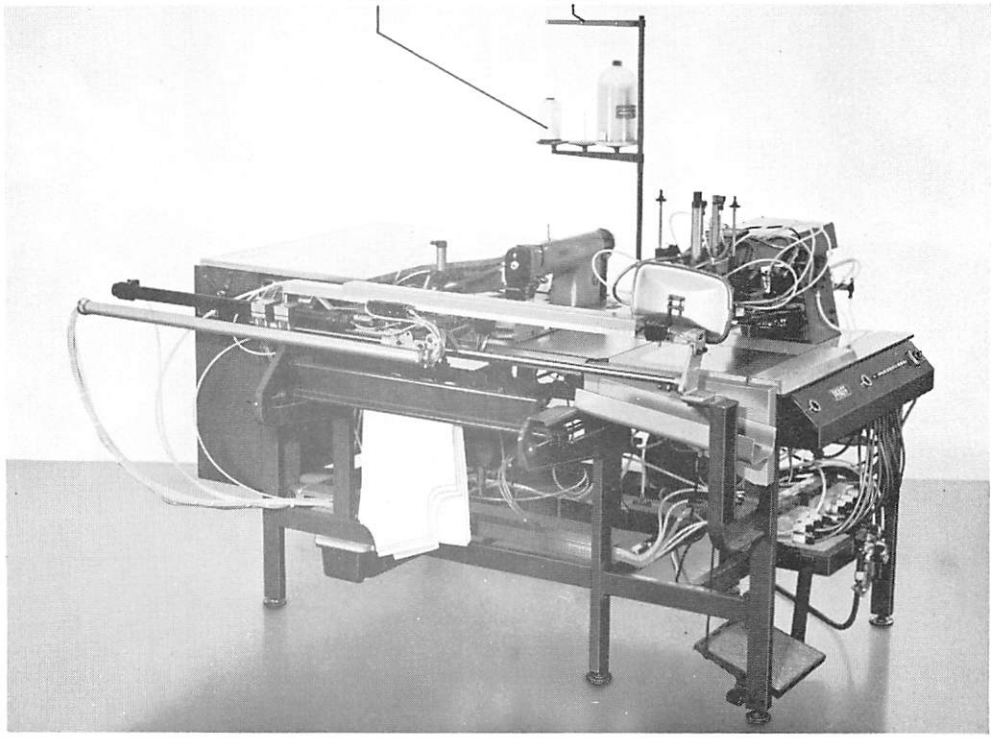
Insert the bobbin in its case so that it turns clockwise when the thread is pulled (Fig. 4).

Pull the thread through the slot and under the tension spring (Figs. 5 and 6)

Adjust the tension by turning screw "X" (Fig. 7) so that the bobbin case slowly drops when held by the thread (Fig. 8).

Table of contents

INSTRUCTIONS FOR OPERATORS



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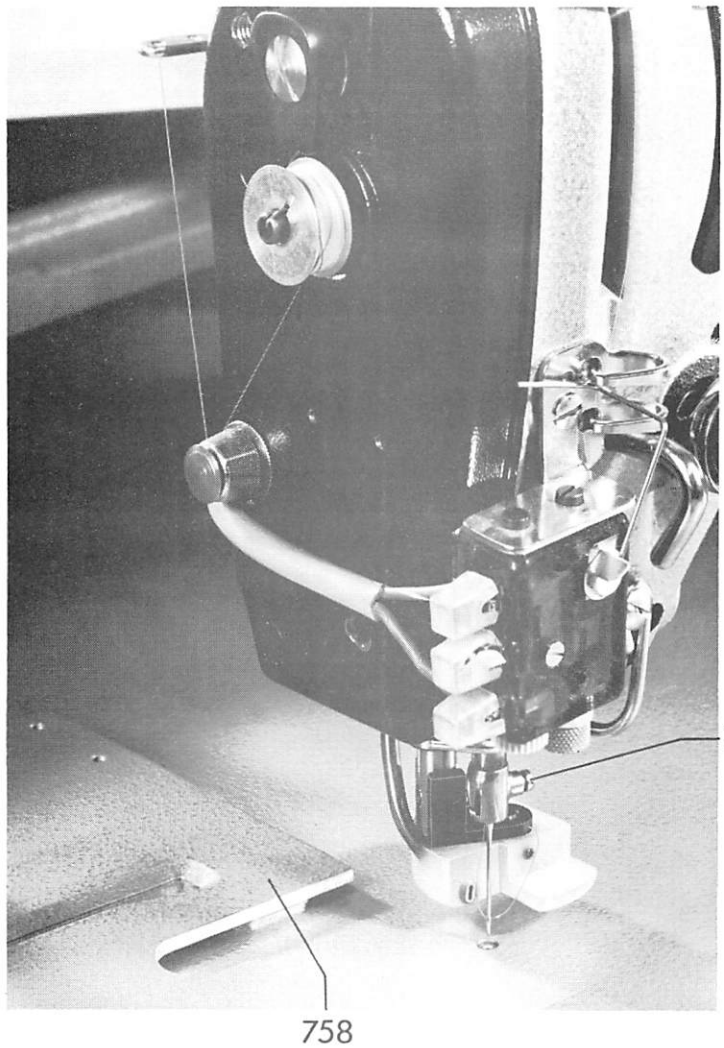

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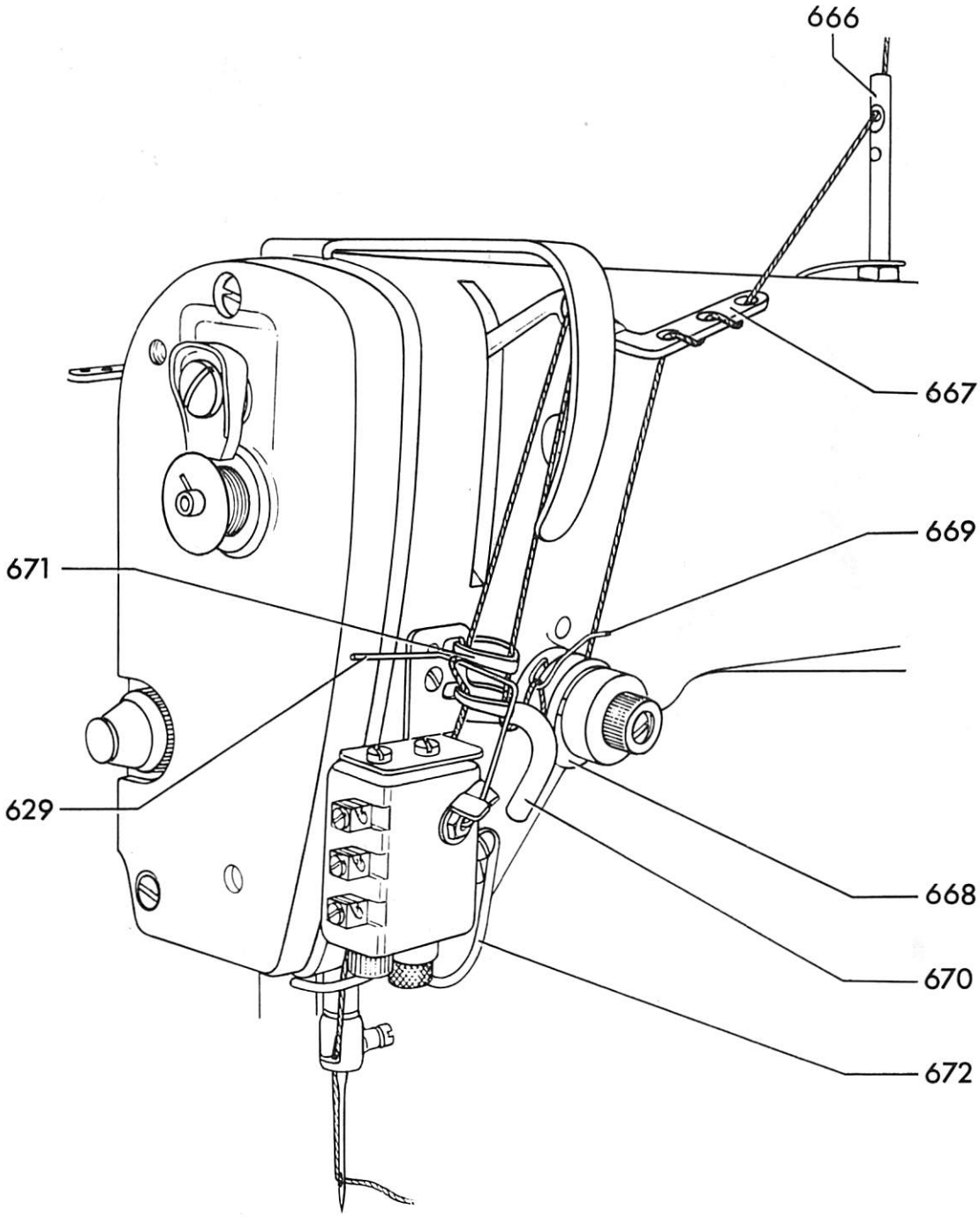
INSTRUCTIONS FOR THE OPERATOR

INSTRUCTIONS FOR THE MECHANIC



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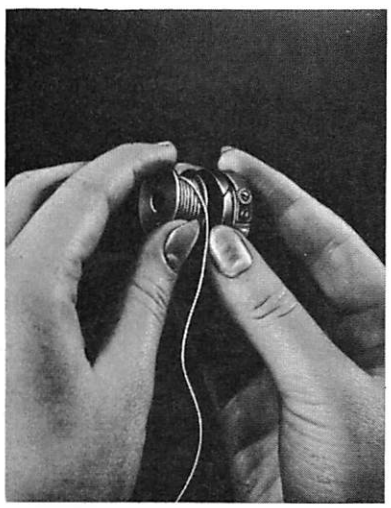

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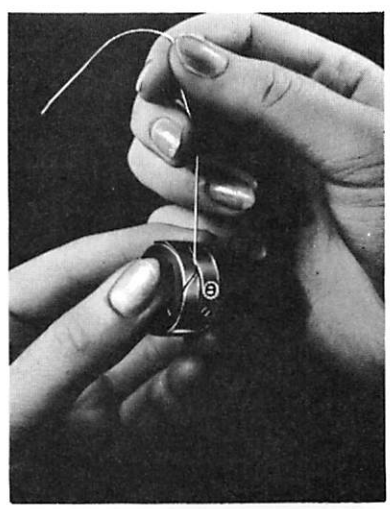

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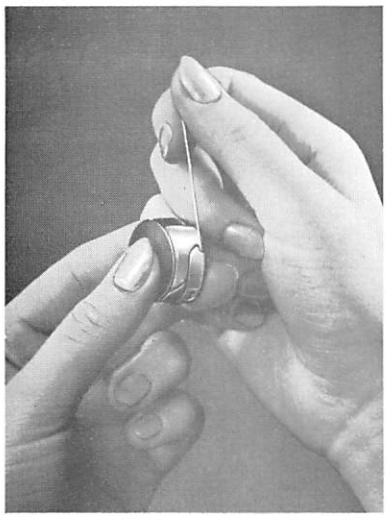

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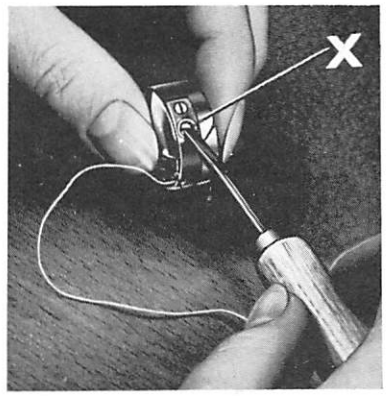

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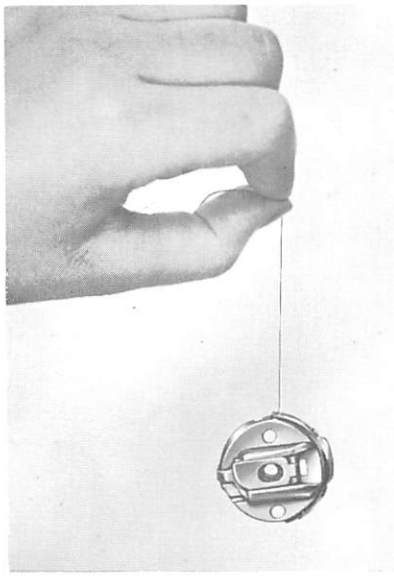

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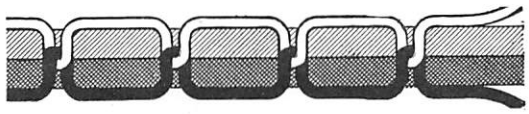

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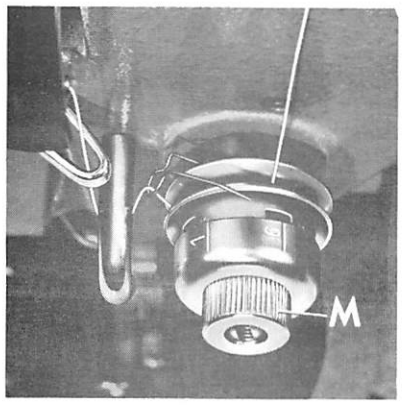

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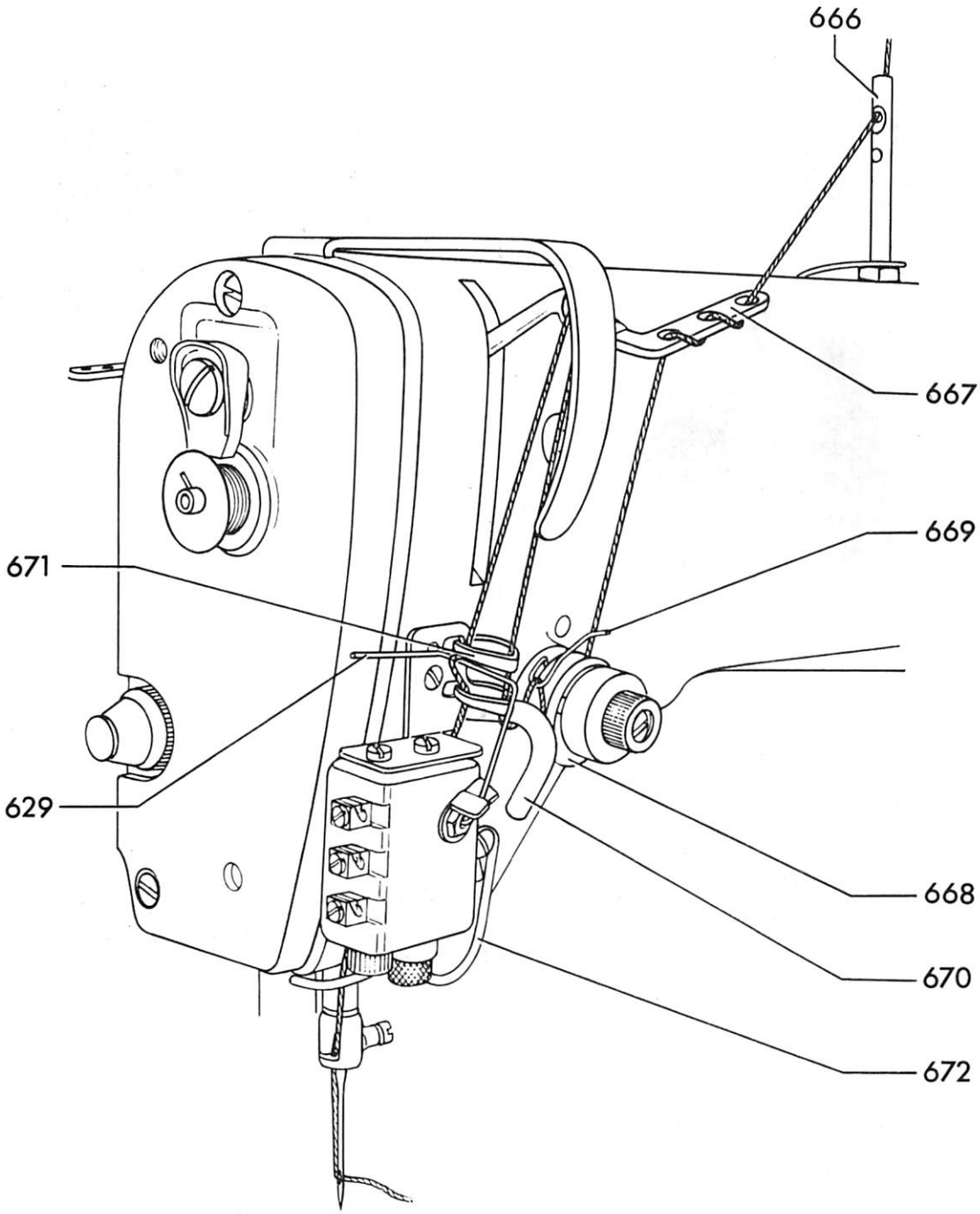

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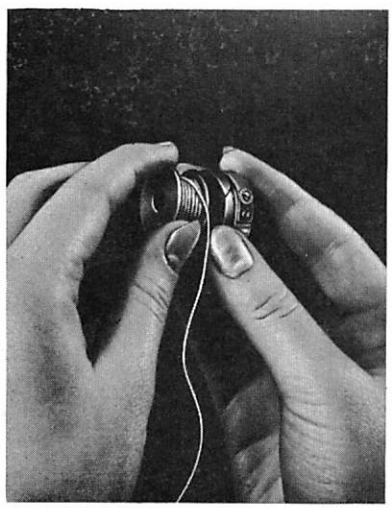

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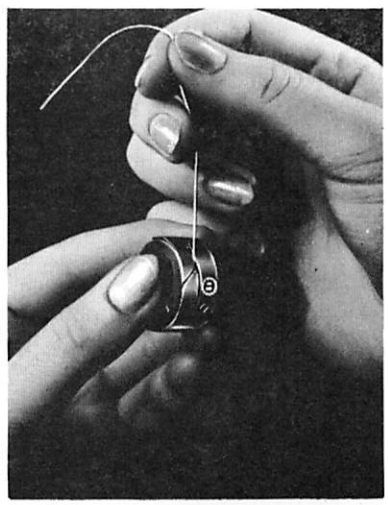

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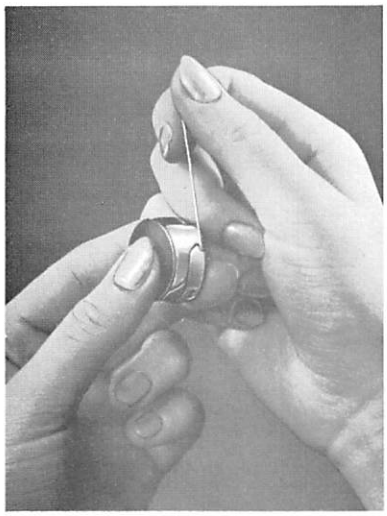

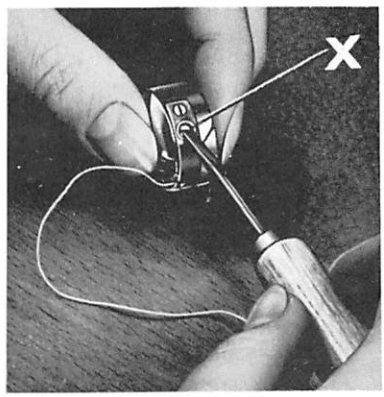

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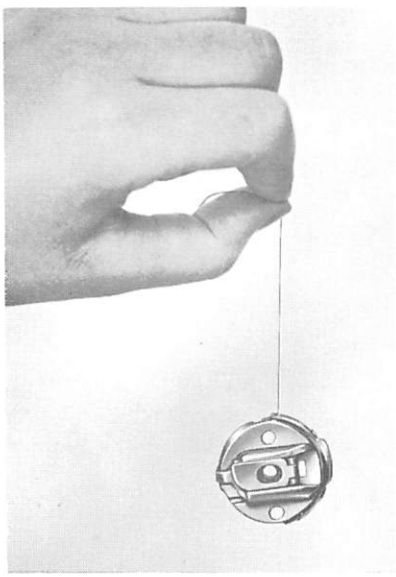

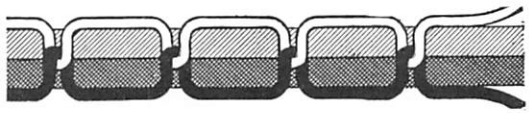

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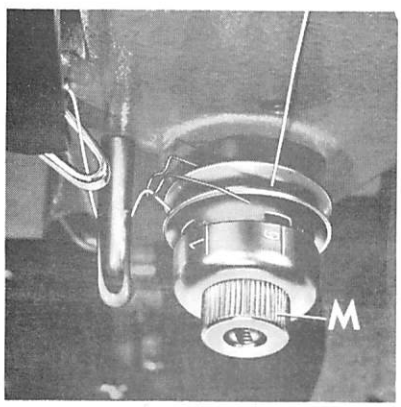


Open the latch of the bobbin case; this stops the bobbin from falling out. Hold the latch open, insert the bobbin case in its base, then release the latch. Press the bobbin case lightly until you hear it snap in place.

5. Adjusting the thread tensions

5.1 Bobbin thread tension

Adjust the bobbin thread tension by turning screw "X" (Fig. 7) so that the bobbin case slowly drops when held by the thread (Fig. 8).

Final adjustment of the tension is made according to the appearance of the seam. The tensions of the top and bottom threads are adjusted together so that the threads are interlocked in the middle of the material as shown in Fig. 9.

5.2 Needle thread tension (Fig. 10)

The needle thread tension is adjusted on nut "M". The amount of tension is indicated by graduations.

For final adjustment of this tension see par. 5.1.

6. Preparing and starting the machine (Fig. 11)

6.1 Compressed air

Before starting the machine always open the valve at the supply connection and check the pressure of 6 kg/cm^2 at conditioning unit 0.2. The pressure is adjusted by turning valve 601.

It is better to turn the air supply on and off at the supply connection instead of at the conditioning unit.

The oil and water levels of conditioning unit 0.2 are to be checked at regular intervals when the machine is switched on. The oil level must not drop below the mark (see arrow in fig. 11), and the water level must not exceed its mark (see arrow). For more details see par. 12 "maintenance".

6.2 Current (Fig. 12)

Turn master switch 602 to "1" and press button 603, "ON".

The machine is now ready to start, and is set for manual operation.

For operation in automatic sequence, press button 616, "AUTO".

In the following paragraphs the manual operation method is first described.

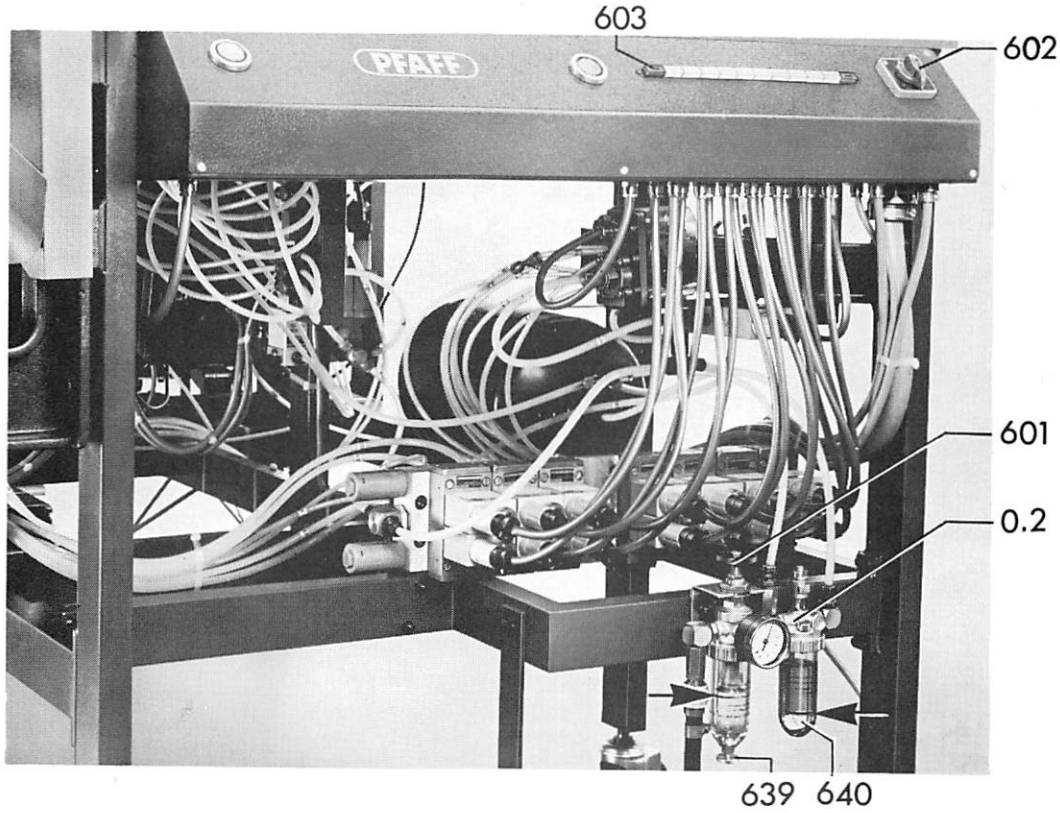
7. Loading the workpiece (Fig. 13)

7.1 Marked cuttings (Fig. 13)

The cuttings, on which the location of the pocket is marked, are positioned according to marking lights 604. Adjustment of the marking lights is to be carried out by the mechanic (see par. 84).

After loading the cutting, press foot switch 7 (Fig. 12). The pocket plate then moves forward and down. It is held immediately above the cutting in order to facilitate re-positioning.

Lay the pocket blank on the pocket plate, push it under spring clips 449 and against stops 450, then position it so that it is in the middle of the pocket plate.



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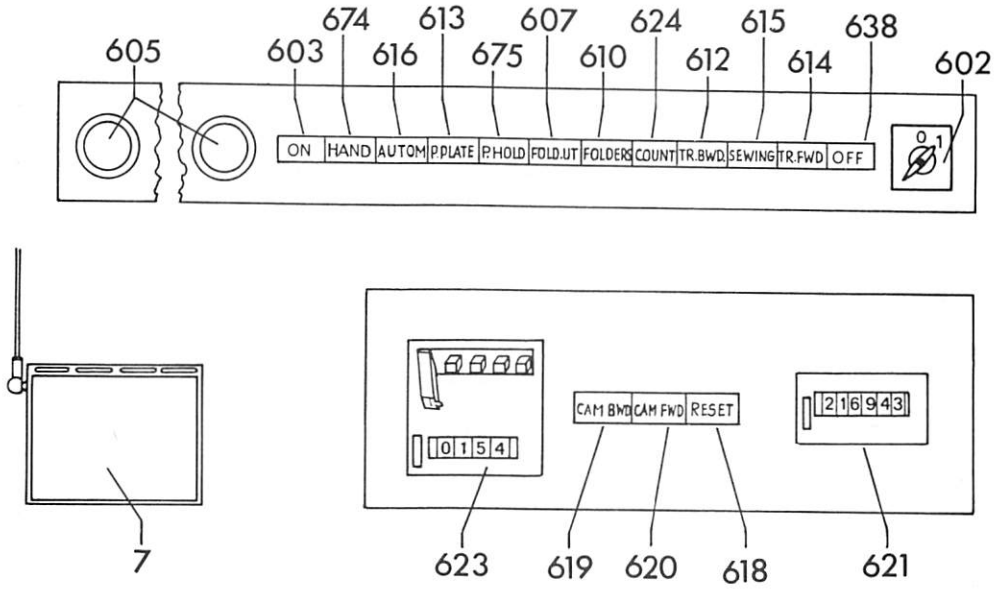

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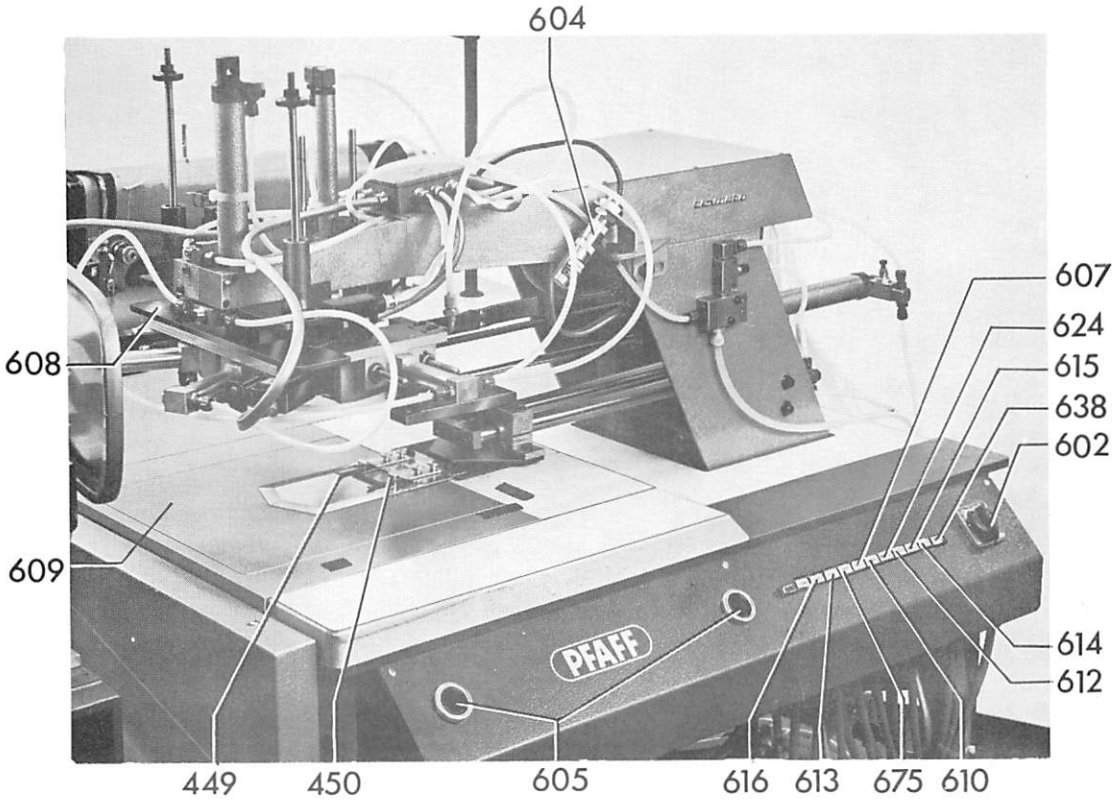

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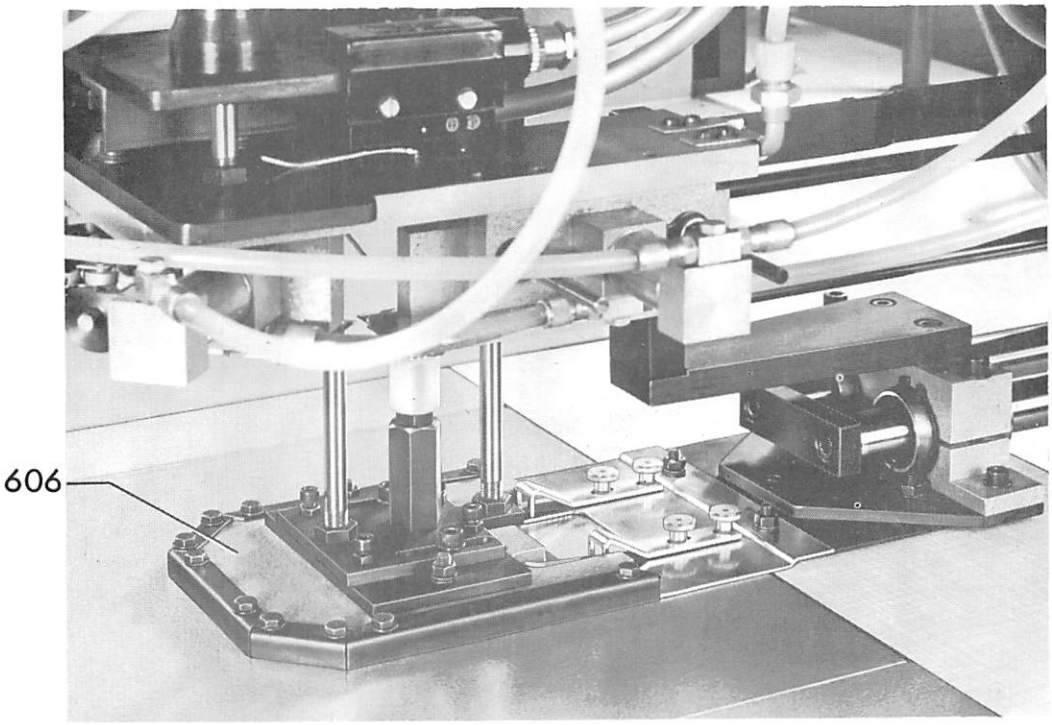


14

On striped or check materials make sure that the patterns on cutting and pocket blank agree. This can be checked by means of the window in the pocket plate. The operator can determine whether the position of the cutting or of the pocket blank is to be corrected.

7.2 Unmarked cuttings (Fig. 13)

For unmarked cuttings the positions can be marked on the surface of the table with black adhesive tape (see arrow). The workpiece cuttings are then positioned according to these markings.

The pocket blank is loaded as described in par. 7.1.

8. Sewing

8.1 Sewing in manual sequence (Fig. 13)

When the workpiece cuttings have been loaded and positioned, the switches and buttons are operated in the following sequence:

Press buttons 605 together. This causes pocket holder 606 (Fig. 14) to drop onto the workpiece. If correction is necessary, press button 675, "P.HOLD." (pocket holder).

Press button 607 "FOLD. UT." (folding unit), Folding unit 608 and table insert 609 then descend.

Press button 610 "FOLDERS": edge folders 611 move in and positioning pins 612 move out.

Press button 61/ "FOLDERS" a second time: edge folders 611 move out again.

Press button 607 "FOLD. UT" a second time: the edge folders, table insert and pocket holder are raised and the positioning pins retracted. The folded pocket is now in position on the workpiece and is held in place by the sewing template.

Press button 612 "TR. BWD." (transfer backwards): the sewing template is transferred to the folding station. The stacker action is set off at the same time.

Press button 613 "P.PLATE": the pocket plate moves back to its original position.

Press button 614 "TR. FWD". (transfer, forwards): the sewing template is transferred to the sewing station.

Press button 615 "SEWING": the sewing action is set off and the trimming action follows.

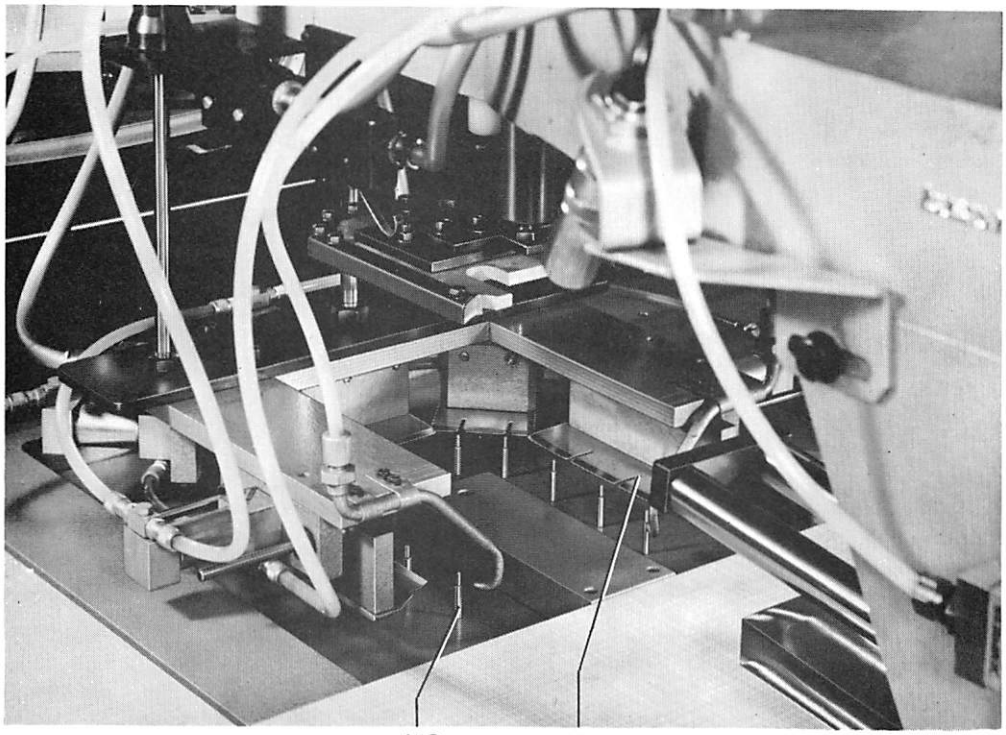
After sewing, the machine is again in its starting position.

8.2 Sewing in automatic sequence (Fig. 13)

For working the machine in automatic sequence first press button 616 "AUTOM".

After loading and positioning the workpiece, press buttons 605 together. The operation cycle described in par. 8.1 then proceeds automatically.

Immediately after buttons 605 have been pressed, the next cutting can be picked up. As soon as template 758 (Fig. 18) has picked up the workpiece, the next part can be loaded.



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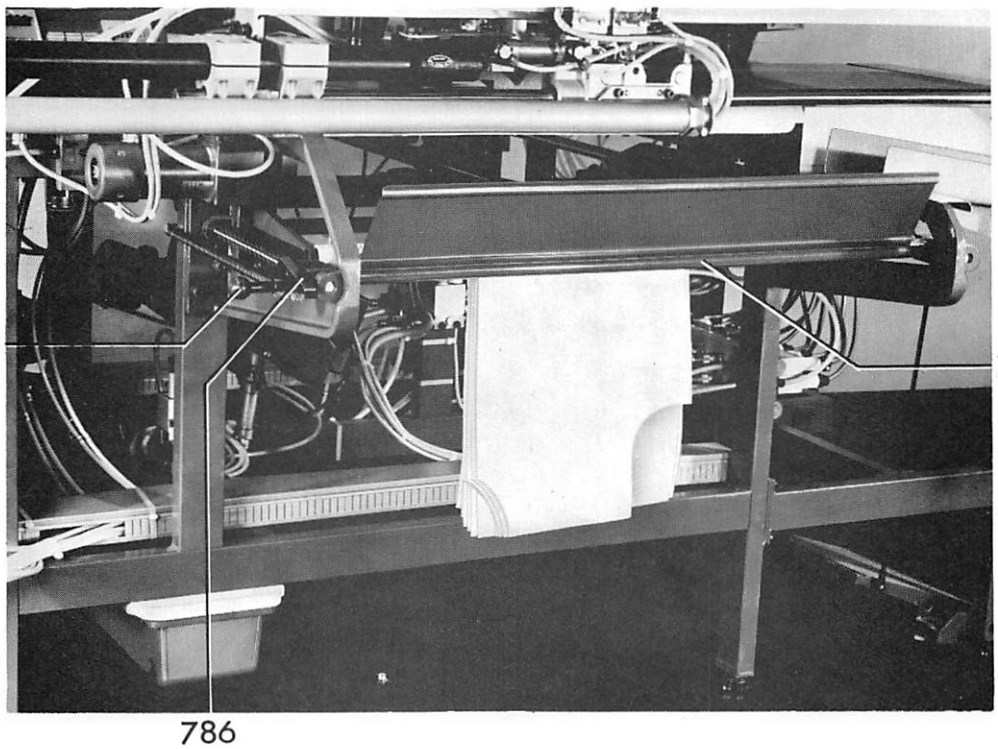

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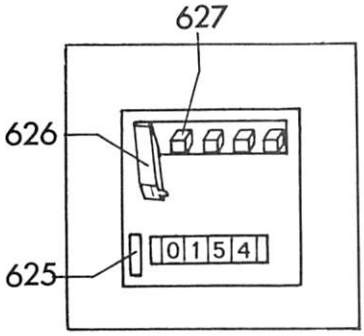

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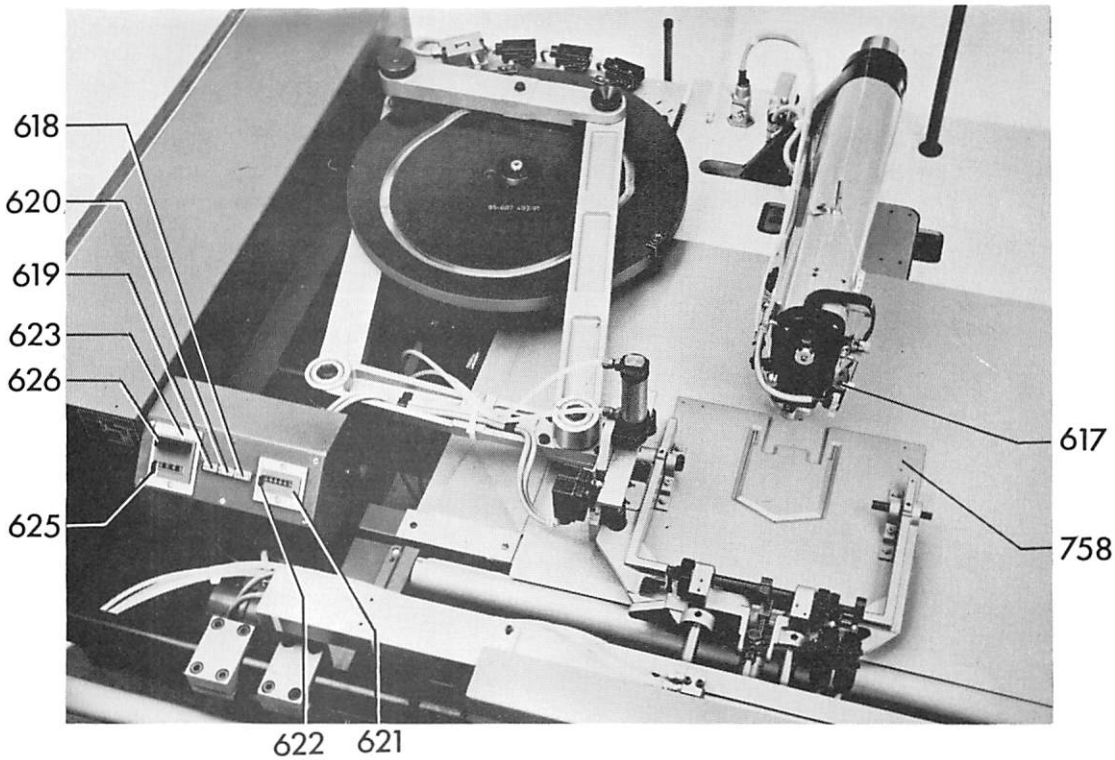


8.3 Unloading the stacker (Fig. 16)

Allow the sewing action to finish, then pull bar 784 by its knob 785 towards you until latch 786 engages.

Remove the bundle of finished workpieces.

Finally, pull knob 785 forward, disengage latch 786 and let bar 784 move slowly back to its stop.

8.4 Even stacking (Fig. 17)

If the length of the workpieces or the location of the pocket is changed during operation it may be necessary to alter the running time of the stacker roller.

This adjustment should only be carried out by qulified personnel (see par. 81).

8.5 Disturbances (Fig. 18)

In cases of disturbance (e.g. thread or needle breakage) the sewing action is interrupted. The sewing motor and cam drive motor are switched off immediately, the threads are trimmed and the needle bar positioned at the top of its stroke.

At the same moment, thread monitor 617 and push-button 618 "RESET" light up to indicate the disturbance.

After removing the disturbance, check the thread monitor (cf. par. 3) and press button 619 "CAM BWD." until the needle is positioned shortly before the end of the properly formed stitches. Now it is possible to finish the interrupted pocket seam.

If, during positioning, the sewing template moves too far back, briefly press button 620 "CAM FWD". until the template is properly positioned.

When the sewing template is in the correct position press button 618 "RESET". The sewing action is now continued to the end of the cycle.

8.6 Counter (Fig. 18)

Counter 621 counts each sewn pocket consecutively. This is a means of ascertaining the production quantities within a certain period (e.g. per day or week).

To zero the counter, press trip 622.

8.7 Stitch length

The desired stitch length is set on the drive motor of the control cam. This adjustment should be carried out by the mechanic (see par. 83).

9. Setting the number of pockets per bobbin thread (Fig. 18)

The number of pockets sewn with one full bobbin can be set on counter 623. When the counter expires, the machine switches off after folding and the bulb in button 624 "COUNT." (Fig. 12) lights up.

We find that up to 200 pockets can be sewn with one bobbin, depending on the material and the pocket size. The exact number has to be ascertained by trial and error.

To set counter 623, open cover 626, press zeroing trip 625 (leave it pressed in) and set the number of pockets by repeatedly pressing buttons 627. Make sure that the set number is at the right-hand side and all other number wheels to the left are at "0".

For each pocket sewn, the counter subtracts "1". When the counter reaches "0" and the machine is switched off the bobbin has to be changed.

When the bobbin has been changed (see par. 4) and trip 625 pressed, the machine continues its cycle.

10. Winding the bobbin thread (Fig. 19)

In order to avoid unterruptions in the work-flow it is advisable to always have a full bobbin available.

10.1 Threading for bobbin winding (Fig. 19)

Pass the thread from reel 664 through one hole of the top thread guide bracket (665 in Fig. 1), into guide 631, through the two holes of guide 632, clockwise around tension 633, then wind the thread a number of times clockwise around bobbin 634.

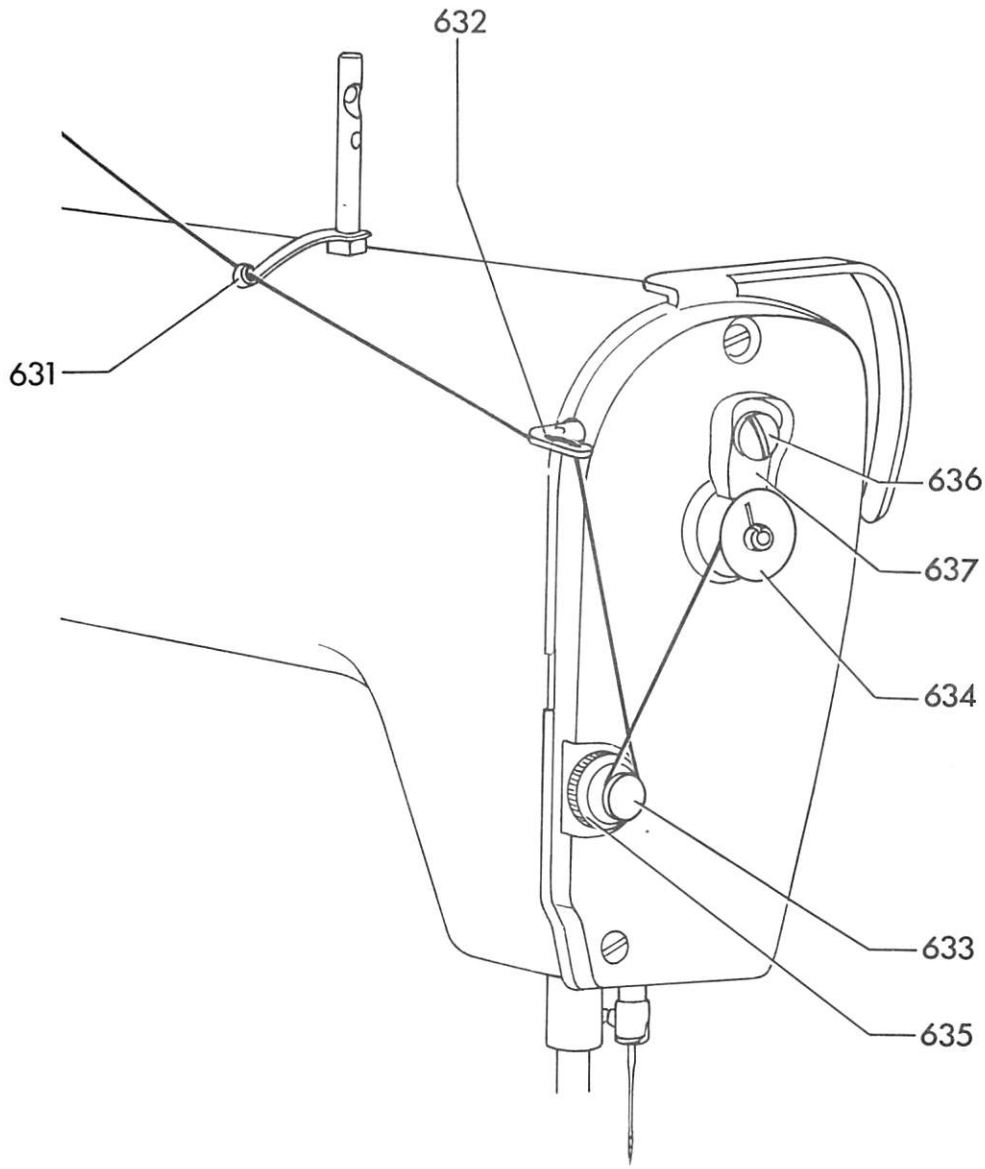
10.2 Adjusting the winding tension (Fig. 19)

The winding thread tension is adjusted on milled nut 635. The tension is increased by turning this nut anti-clockwise.

When monofil or transparent threads are used, the least possible tension should be set.

10.3 Adjusting and engaging the bobbin winder (Fig. 19)

Tension 633 should be adjusted so that the thread runs onto the middle of the bobbin. This ensures even winding of the bobbin. Adjustment should be made by the mechanic.



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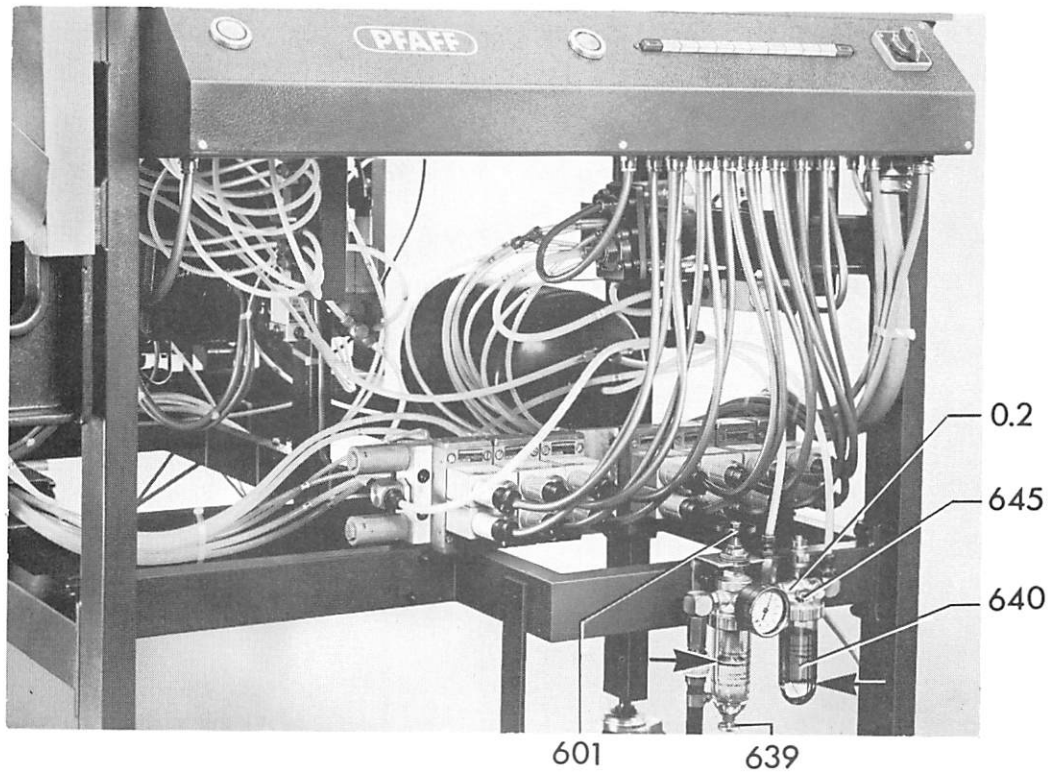


20

To adjust the quantity of thread wound, loosen screw 636 and adjust the height of the trip lug.

For more thread set this lug higher, for less thread set it lower. After adjustment fully tighten screw 636.

To engage the bobbin winder press trip lug 637 downwards. If you feel a resistance, turn the bobbin a little. The bobbin will now turn until the set thread quantity is reached, then it is disengaged automatically.

11. Switching off the machine (Fig. 13)

When button 638 "OFF" is pressed, the machine and all indicator bulbs are switched off.

Whenever a disturbance occurs, with exception of thread breakage (see par. 8.5), button 638 must be pressed immediately.

To completely switch off the machine turn master switch 602 to "0".

12. Care and maintenance

12.1 Work on the conditioning unit

If the machine is constantly in use check the conditioning unit daily. The oil level must not drop below its mark, nor must the water level exceed its mark (see arrows in Fig. 20).

To drain off the water, undo drain tap 639 a few turns (fig. 20).

Screw in and tighten tap 639 securely. If necessary, have the mechanic top up the oil in container 640.

12.2 Oiling (Fig. 21)

Regularly oil the following points on the machine with Pfaff sewing machine oil:

the top and bottom oilpads of the needle bar,
the felt ring on the presser bar (see arrow)

The quantity of oil for lubrication of the sewing hook must be such that the level is between the two markings on glass 641. If necessary, top up the oil through hole 642.

13. Switches and buttons and their functions

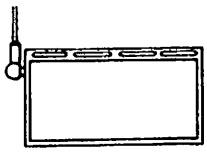
13.1 Manual operation

1. 

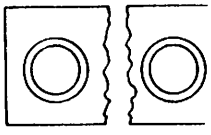
Master switch for mains current. The following switches only function when this switch is set at "1".

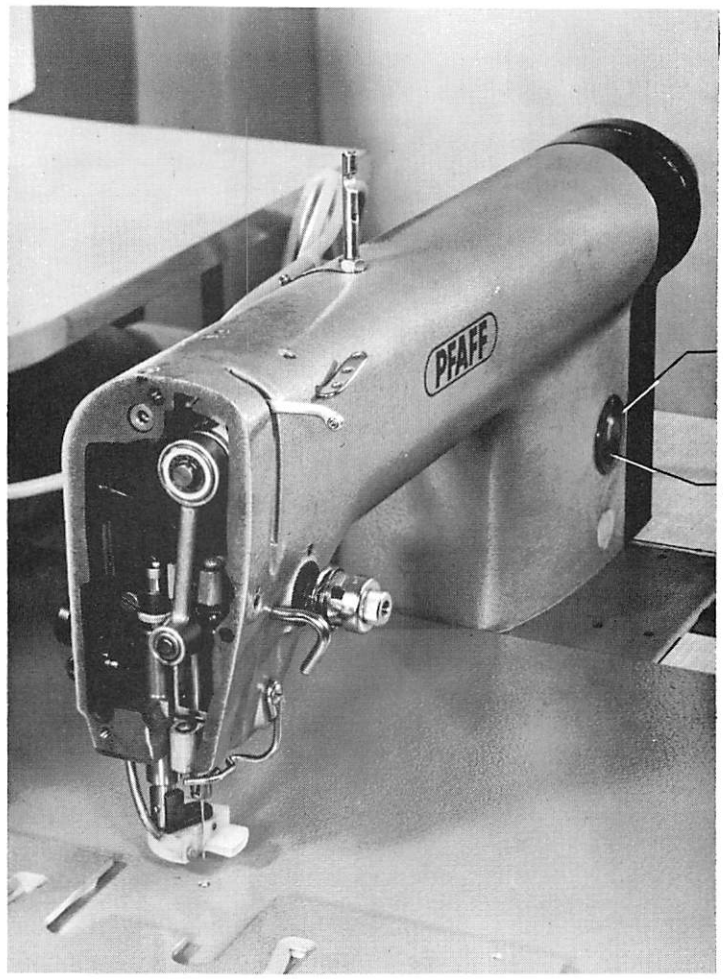
2. ON When this button is pressed the machine is ready for operation. The button has a green light.

3. HAND This button is pressed for manual operation of the machine (only required when the machine was previously set for automatic operation).



4. Operated to extend the pocket plate.

5.  When these buttons are pressed together the pocket holder drops onto the table.



21

6. FOLD.UT. This button is pressed to lower the folding unit and table insert.

After folding it is pressed a second time to raise folding unit and table insert to their top positions again.

7. FOLDERS When this button is pressed the edge folders move in and the positioning pins move out. Afterwards the button is pressed a second time to retract the edge folders again.

8. TR.BWD, When this button is pressed the sewing template is transferred to the folding station and the stacking action set off.

9. P.PLATE — Pressed to retract the pocket plate.

10. TR.FWD. — Pressed to transfer the sewing template to the sewing station.

11. SEWING — This button sets off the sewing and thread trimming actions.

12. P.HOLD. — Press, if required, after pushing in buttons 605, when correction of the workpiece is necessary. The pocket holder moves to its top position.

13. COUNT. — Lights up when the bobbin thread counter expires. The bobbin then has to be changed.

14. OFF — For switching off the machine.

15. CAM BWD. — This button is pressed after a disturbance has been removed, in order to move the template back to where sewing was left off.

16. CAM FWD. — If the button marked "CAM BWD." has been held in too long, correction is made by pressing this button.

17. RESET — When a disturbance has been removed and the template position changed by means of the two previous buttons, this button is to be pressed. The sewing action then continues to the end of the cycle.

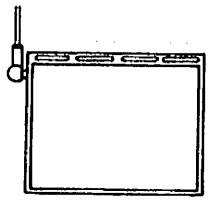
13.2 Automatic operation

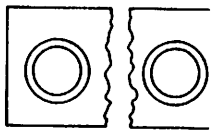
1. 

Master switch for mains current. The following switches only function when this switch is set at "1".

2. ON — When this button is pressed the machine is ready for operation. The button has a green light.

3. AUTOM. — This button sets the machine for automatic operation.

4.  Operated to extend the pocket plate.

5.  When these buttons are pressed together the automatic operation sequence is initiated.

6. COUNT. — Lights up when the bobbin thread counter expires. The bobbin then has to be changed.

7. OFF — For switching off the machine.

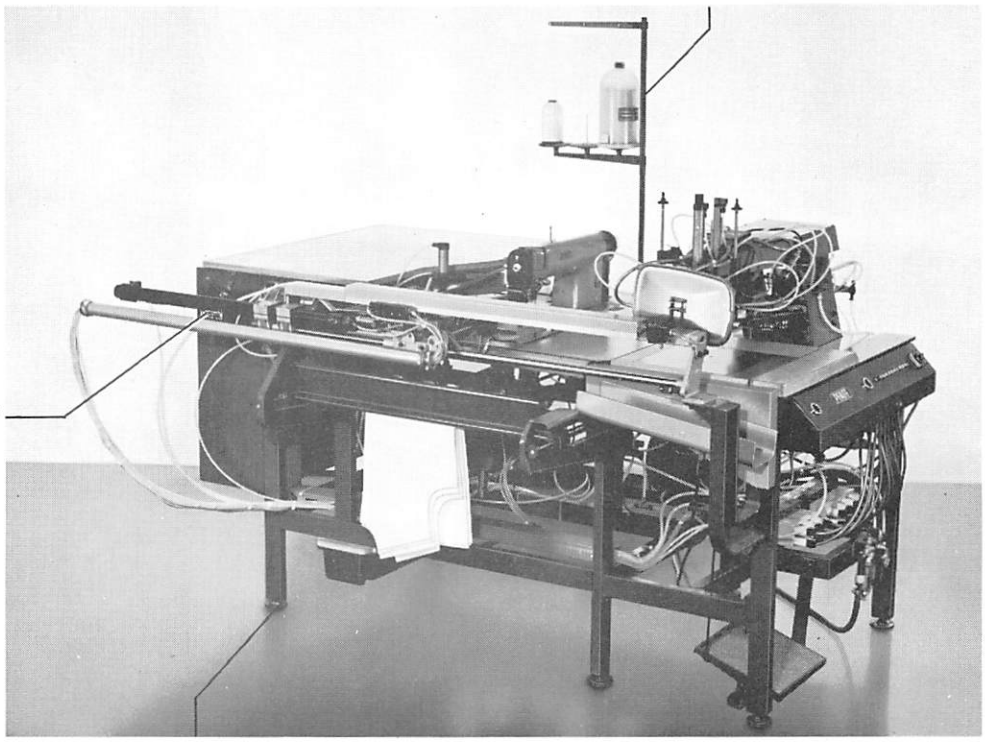
8. CAM BWD. — After removing a disturbance press this button until the sewing template reaches the point where sewing was left off.

9. CAM FWD. — If the button marked "CAM BWD." has been held in too long, correction is made by pressing this button.

10. RESET — When a disturbance has been removed and the template position changed by means of the two previous buttons, this button is to be pressed. The sewing action then continues to the end of the cycle.

INSTRUCTIONS FOR MECHANICS

Installing the Machine



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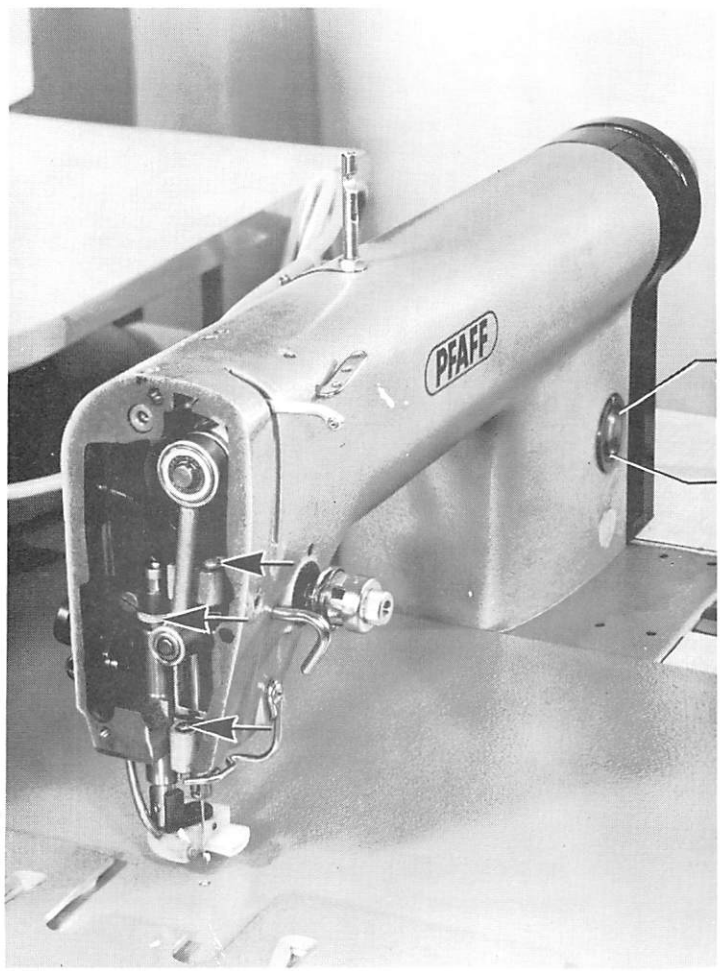

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21. Installing the machine

21.1 Before installing the machine check it for transit damage, and report any complaints to the carrier and to the Pfaff agency responsible.

21.2 Lift the machine off its transit support, if possible with a fork lift truck, and carry it to its location.

21.3 It may be necessary to remove the folding unit and the sewing machine and carry them separately.

22. Levelling the machine (Fig. 25)

22.1 After installing the machine adjust its threaded feet until its frame and table are horizontal. To check this use a precision spirit level.

22.2 When the machine has been levelled out, all six feet must stand firmly on the ground.

23. Fitting the reel stand (Fig. 25)

23.1 Fit the supplied reel stand 644 at its location to the right of the sewing machine.

23.2 In certain cases the reel stand may be fitted at other locations.

24. Oiling (Fig. 26)

24.1 Before starting the machine, the following points must be oiled with Pfaff sewing machine oil:

The top and bottom oilpads of the needle bar, and

the felt ring on the presser bar (see arrow).

24.2 The level of oil for lubrication of the sewing hook must remain between the two markings on window 641. The oil is topped up through hole 642.

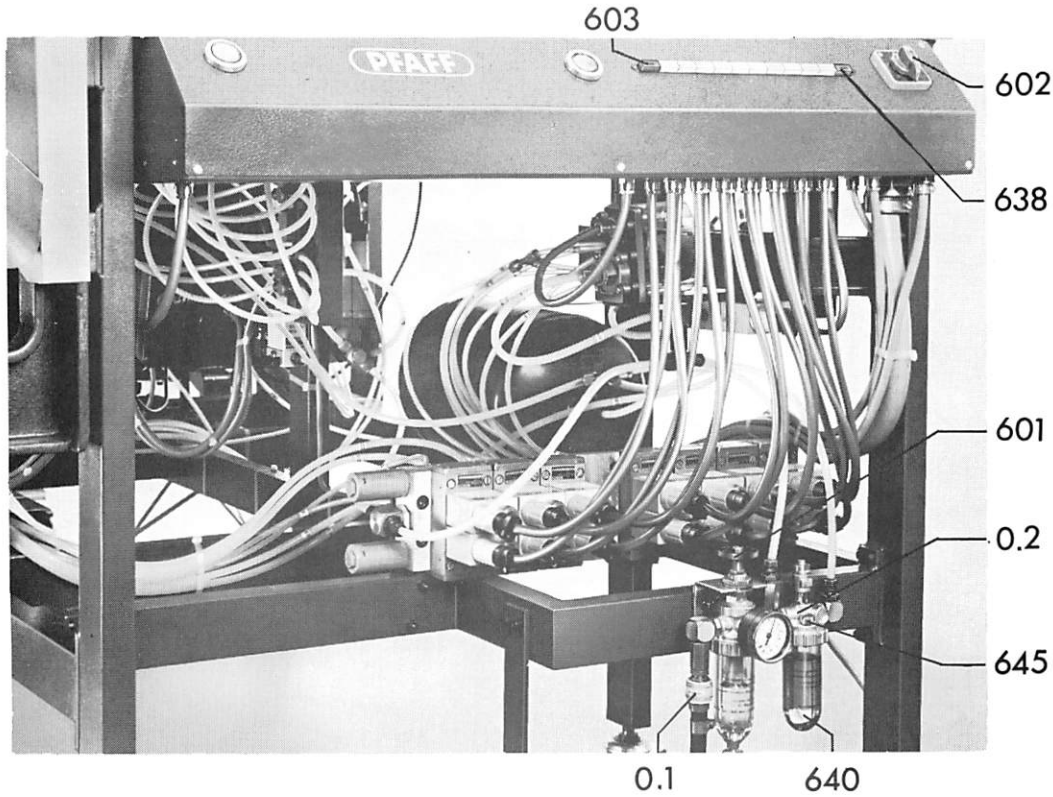
24.3 Check the oil level in the conditioning unit. If required, top up container 640 by removing plug 645 and filling the container up to the marking "höchster Ölstand" (max. oil level) with Ursulin II (4.5°E, 50°C) part number 280-1-120 144. Replace plug 645 and screw it in tight (Fig. 27).

25. Compressed air and electrical connections (Fig. 27)

25.1 Take a hose of appropriate length and size (6 mm int. dia.) which will withstand the pressure of the compressor, and connect it to coupling 0.1 of conditioning unit 0.2 and the compressed air supply. The supply line should have a pressure of at least 7 kg/cm^2.

25.2 Set the working pressure of 6 kg/cm^2 on regulator 601 of the conditioning unit.

25.3 Check to make sure that the mains voltage coincides with that indicated on specification plate 647 (Fig. 25)



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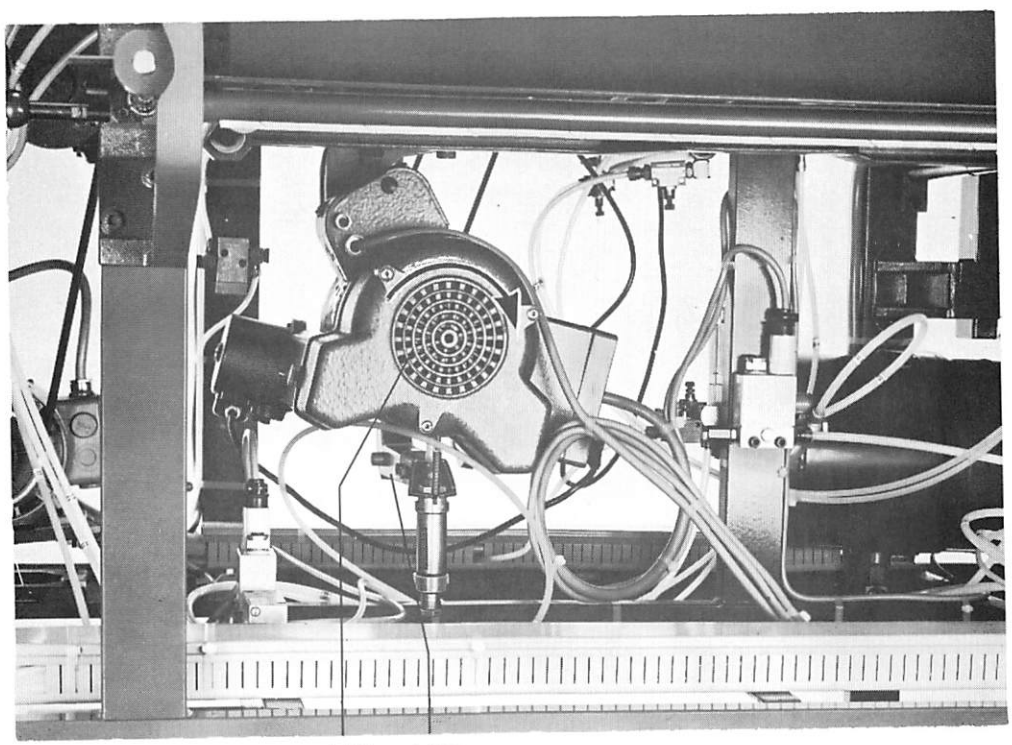

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25.4 If the voltage is correct insert the machine plug in an earthed socket. (The fluctuations in the mains current should not be too great, otherwise electrical failures may occur.)

26. Checking the rotating direction (Fig. 28)

26.1. Turn master switch 602 to "1" and press button 603 "ON". The button then lights up green and the sewing machine motor runs (Fig. 27).

26.2 After pressing button 638 (Fig. 27) "OFF" look at fan 648 in the motor housing. The rotating direction is correct when the fan turns as shown by the arrow in Fig. 28. If it is incorrect reverse the poles at the mains plug.

26.3 Turn master switch 602 to "0" again.

Adjusting Instructions

30. Tools, gauges and other equipment

30.1 General tool kit

Set of screwdrivers with blades from 2 to 10 mm

Set of open-ended spanners from 6 to 22 mm

Set of allen keys, 1.5 to 6 mm

Universal screwdriver with exchangable blades (watchmaker's screwdriver)

Adjustable spanner

Hammer, 250-gramme

Brass drift, 8 mm dia. x 250 mm

Circlip pliers, original Seeger

Metal rule, 0.3 mm thick

Tweezers, elbowed

Bottle of loctite

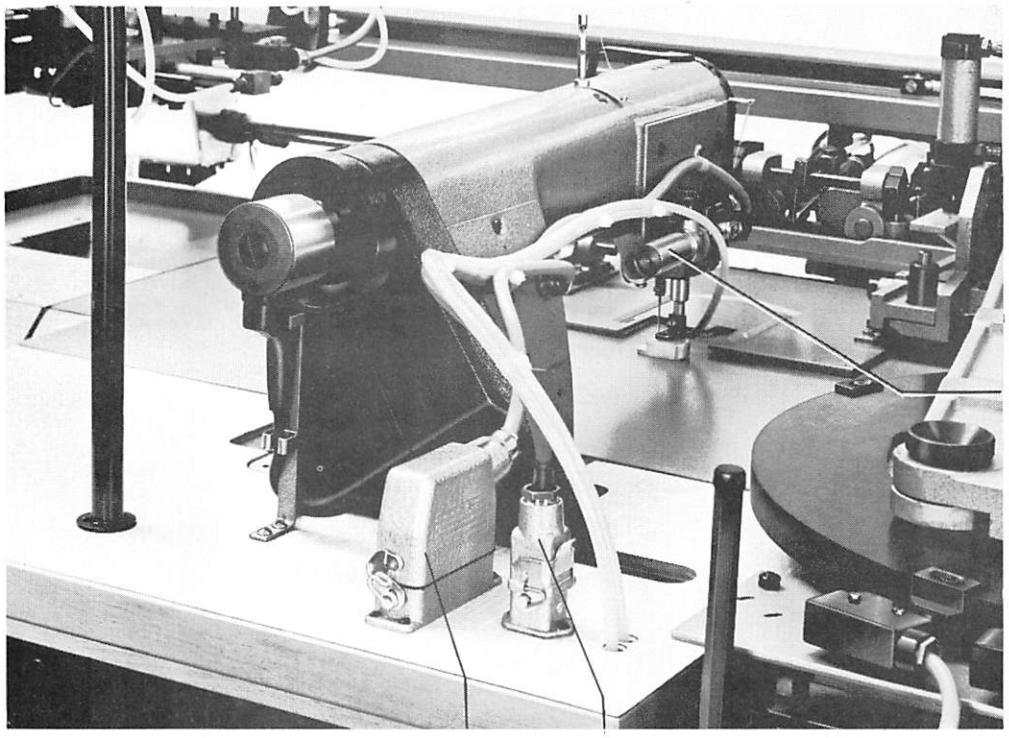
30.2 Special tools

Open-ended spanner, 19 mm

Allen key, 8 mm

Universal gauge, part No. 91-129 604-91

C-clamp, part No. 880 137/00



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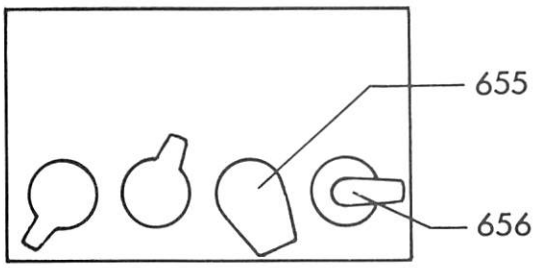

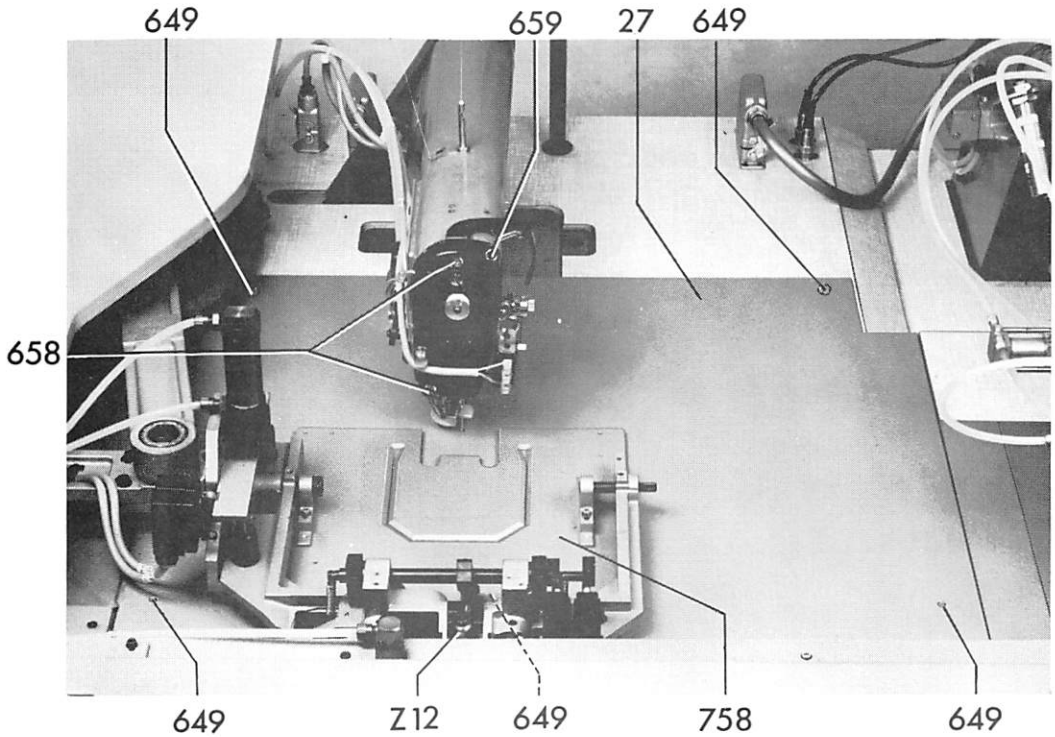

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31. Removing the sewing machine (Fig. 35)

31.1 Press button 638 "OFF", turn master switch 602 to "0" and disconnect airline coupling 0.1 (Fig. 27).

31.2 Move in the piston rod of cylinder Z 12 and remove template 758 together with its frame (Fig. 36).

31.3 Take out the five screws 649, push cover panel 27 to the right and remove it (Fig. 36).

31.4 To remove the drive belt, press clutch lever 650 (Fig. 28) downwards and take off the belt while turning the motor pulley.

31.5 Disconnect the following:

plug 654 for the thread monitor,
plug 655 for the synchronizer,
plug 657 for the trimming mechanism,
plug 656 for the carbon brush holder.

31.6 Disconnect the air tubes for needle cooling, workpiece presser (Z 20) and trimming mechanism at their couplings.

31.7 Cut the thread between the reel stand and the guide pin, and lift the sewing machine off its mounting.

32. Adjusting the needle in relation to its hole Fig. 37)

32.1 Before adjusting, insert a new needle System 134, size 80 or 90.

32.2 Remove screws 658 and take off faceplate 659 Fig. 36.

32.3. Bring the needle bar to the bottom of its stroke, take out screw 660 and loosen grub screws 661 and 662 (Fig. 37).

32.4 Turn eccentric stud 663 with a screwdriver so that the needle is in the middle of the needle hole in arm lengthwise direction.

32.5 Now re-position the needle bar frame so that the needle is in the middle of its hole in the cross-wise direction, too.

32.6 After proper adjustment fully tighten grub screw 662. Screw in, but do not fully tighten screw 660. Finally, tighten grub screw 661 and screw 660 securely .

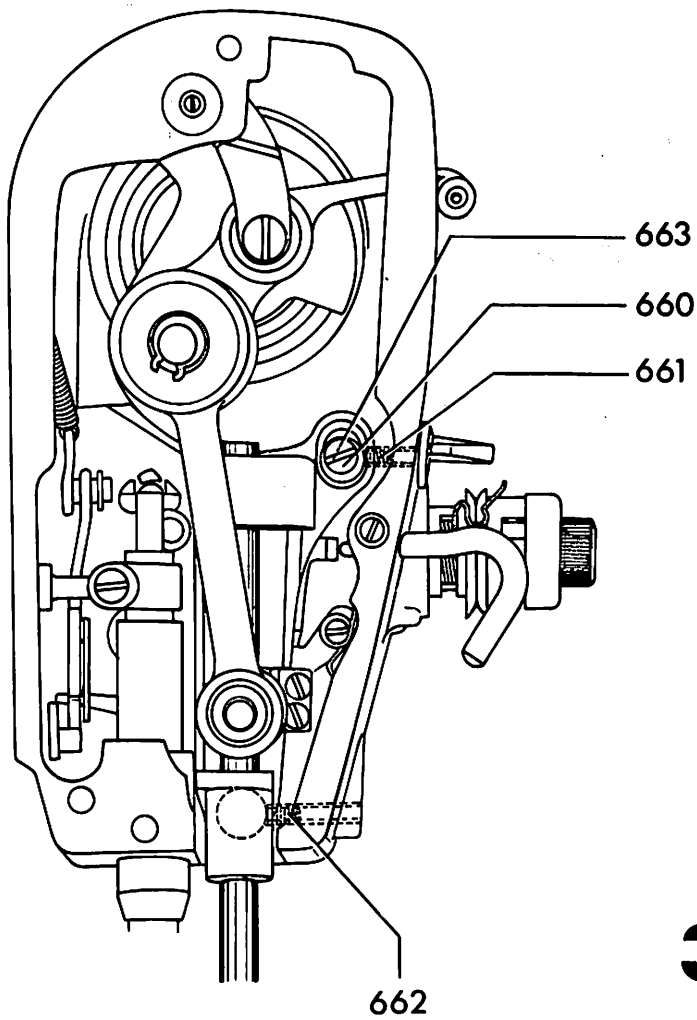
33. Removing the trimming mechanism and gearcase cover (Fig. 38)

33.1 Loosen nut 630, remove the three screws 673 and take off circlip 676 with the special circlip pliers.

33.2 Push the trimming mechanism carefully towards the synchronizer, pulling stud 677 out of its hole at the same time.

33.3 Pull the electrical lead through a little, and lay the trimming mechanism aside.

33.4 Take out the twelve screws 678 and remove cover 698 together with the foam plastic inserts.



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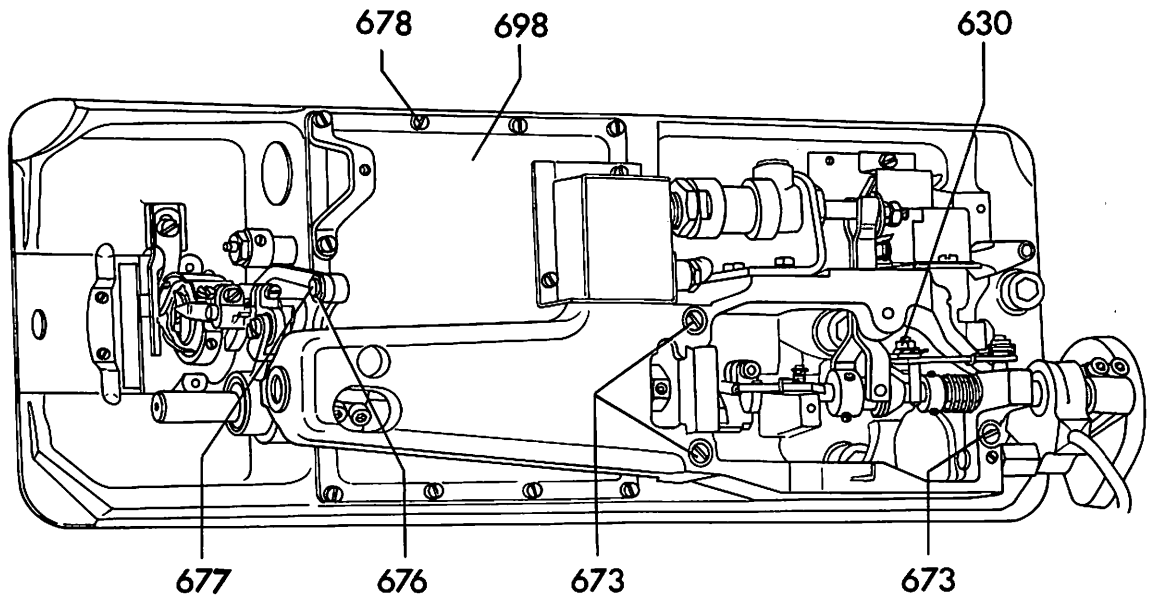

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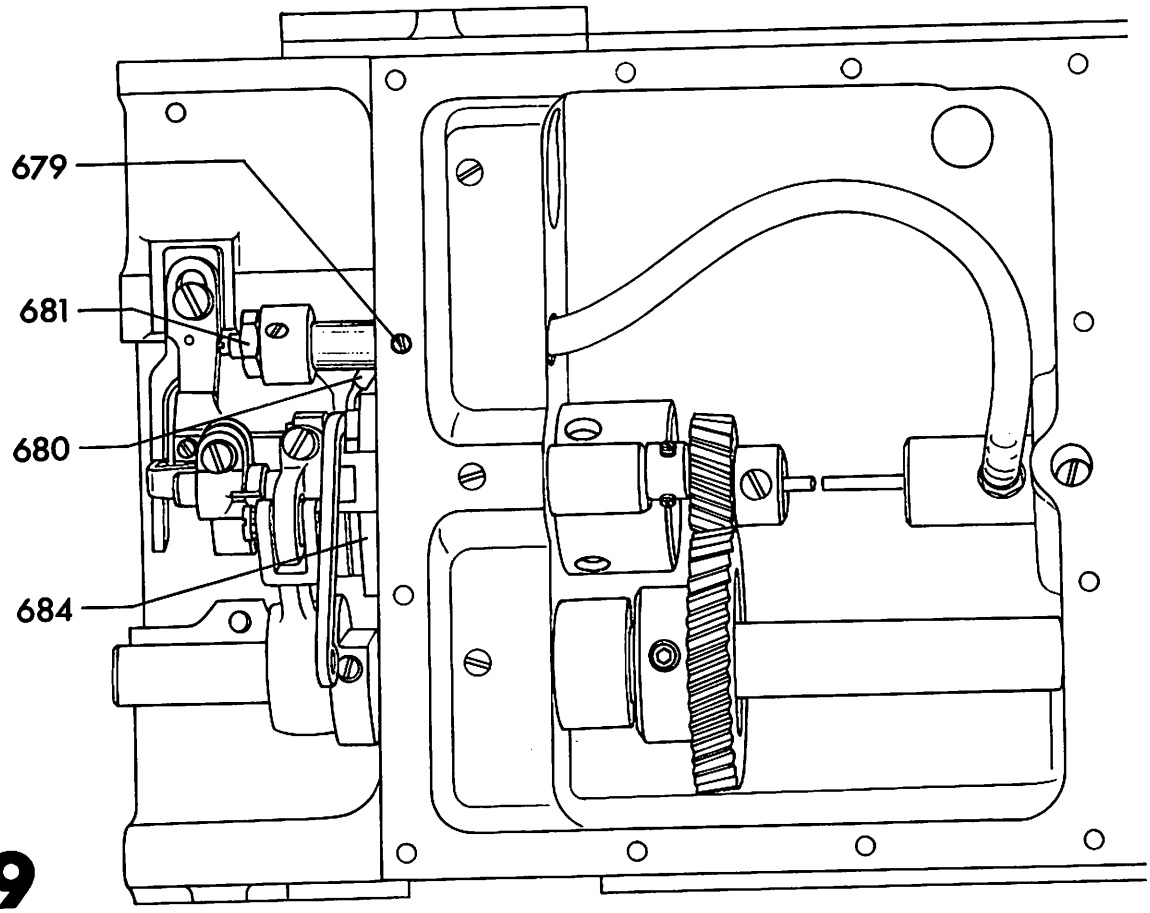

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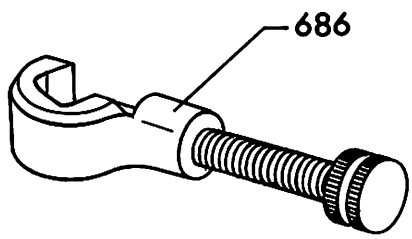

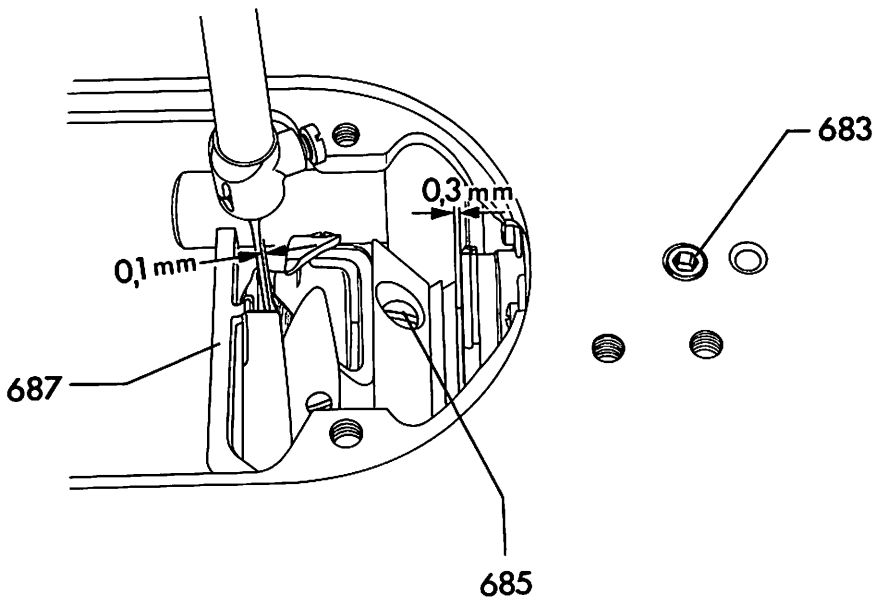

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34. Adjusting the gear play in the hook drive (Fig. 39)

34.1 Loosen screw 679 and pull oil tube 680 out of the oil distributor ring by turning regulating valve 681.

34.2 Loosen screw 683 (Fig. 40) and turn eccentric hook shaft bearing 684 (Fig. 39) until both gears are meshed with a very slight play.

34.3 Loosen screws 685 (one shown in Fig. 40) just enough to allow the hook to be moved on its shaft.

34.4 Push the hook up against hook shaft bearing 684 and bring the needle bar to the bottom of its stroke.

34.5 Move hook shaft bearing 684 lengthwise until there is a clearance of 0.4 mm between hook tip and needle.

34.6 In this position fully tighten screw 683.

35. Adjusting the needle rise and hook-to-needle clearance (Fig. 40)

35.1 Bring the needle bar to the bottom of its stroke and hold the 2.2-mm thick blade of the universal gauge (part No. 91-129 604-91) against the bottom needle bar bearing.

35.2 Place c-clamp 686 (part No. 880 137/00)on the needle bar, push it up against the feeler gauge, and tighten its screw.

35.3 Pull out the feeler gauge and turn the balance wheel carefully in sewing direction until the c-clamp is in contact with the needle bar bearing. The machine is now in its needle rise position.

35.4 In this position adjust the sewing hook by pushing it and turning it so that its tip is beside the needle, and there is a clearance of 0.1 mm between tip and needle.

35.5 When the setting is correct make sure that position finger 687 is in place in the slot of the bobbin case base, then tighten the two screws 685.

36. Adjusting the needle bar height (Fig. 41)

36.1 Loosen screws 688 so that the needle bar can just be moved.

36.2 Turn the balance wheel until the hook tip is centred behind the needle (see encircled view).

36.3 Alter the height of the needle bar until there is a clearance of 0.8 mm between needle eye and hook tip (see encircled view).

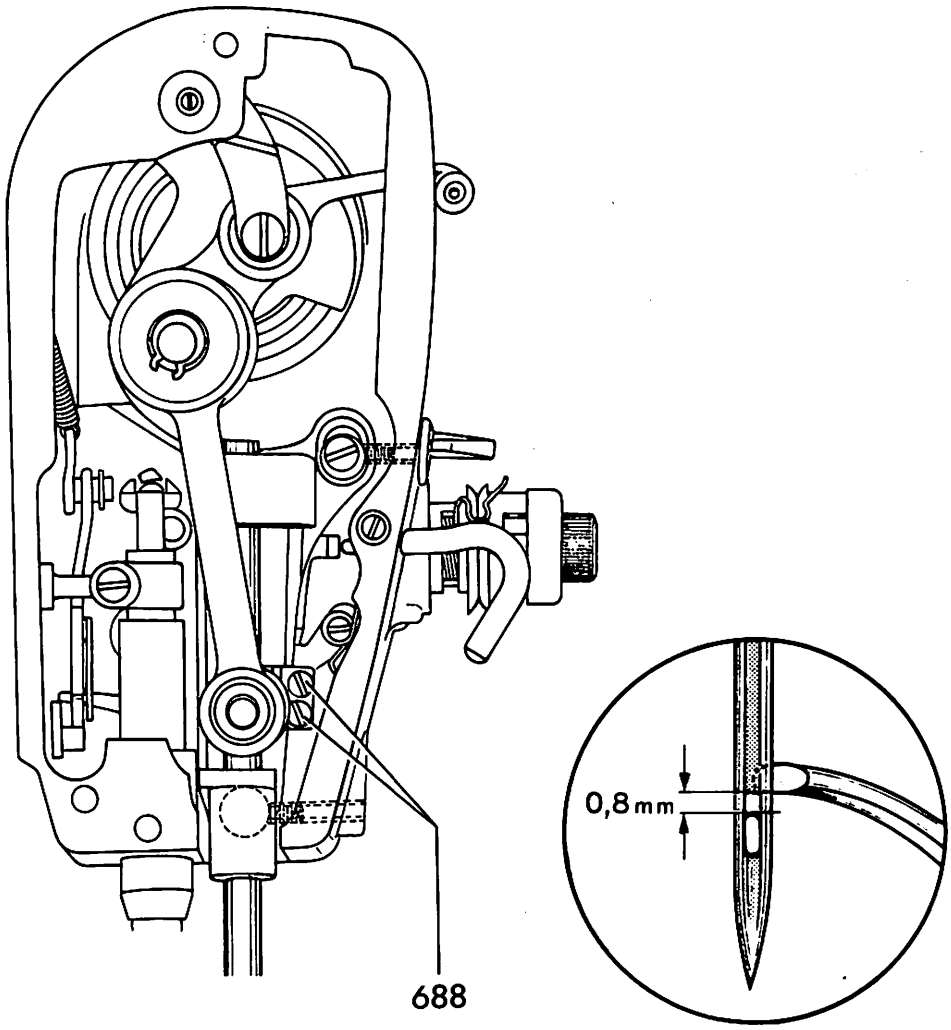
36.4 After proper adjustment tighten the two screws 688 securely.

37. Adjusting the bobbin case opener (Fig. 42)

37.1 Insert a screwdriver in the slot of bobbin case opener 689 in order to see its motion more clearly.

37.2 Loosen screws 690 and adjust eccentric 691 so that the bobbin case opener reaches its far right position when the machine is in needle rise position.

37.3 After correct adjustment fully tighten screws 690 and remove the screwdriver.



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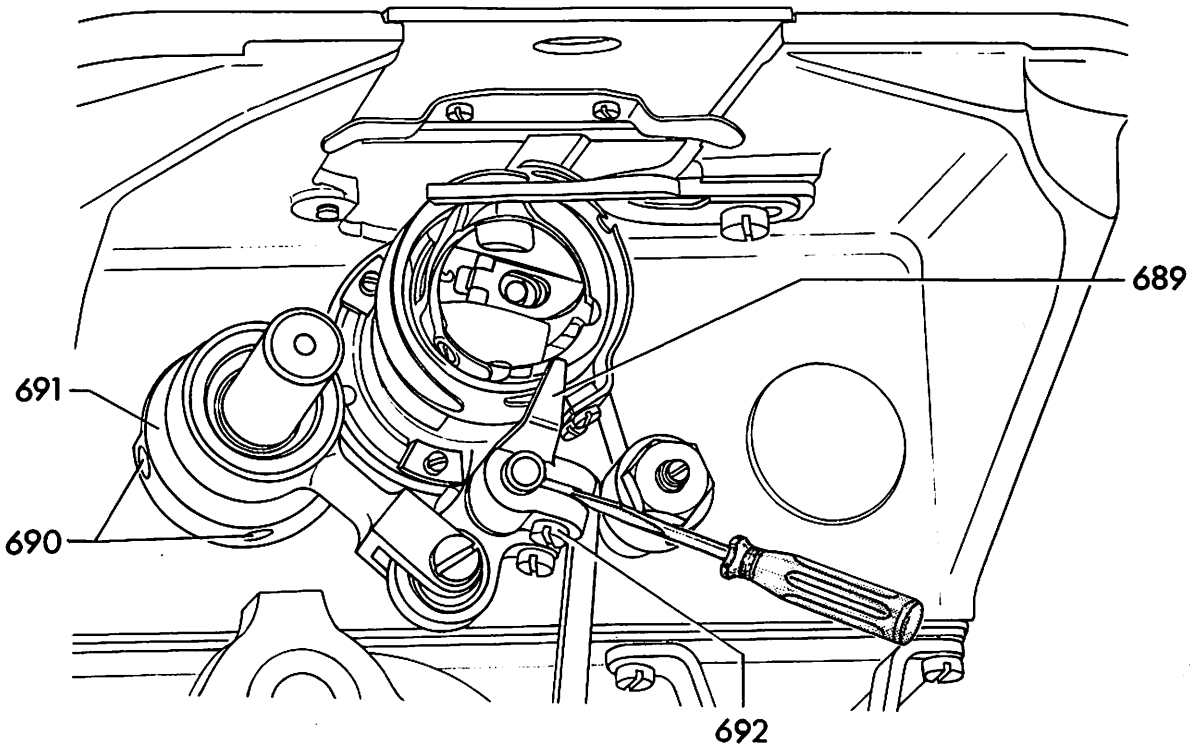

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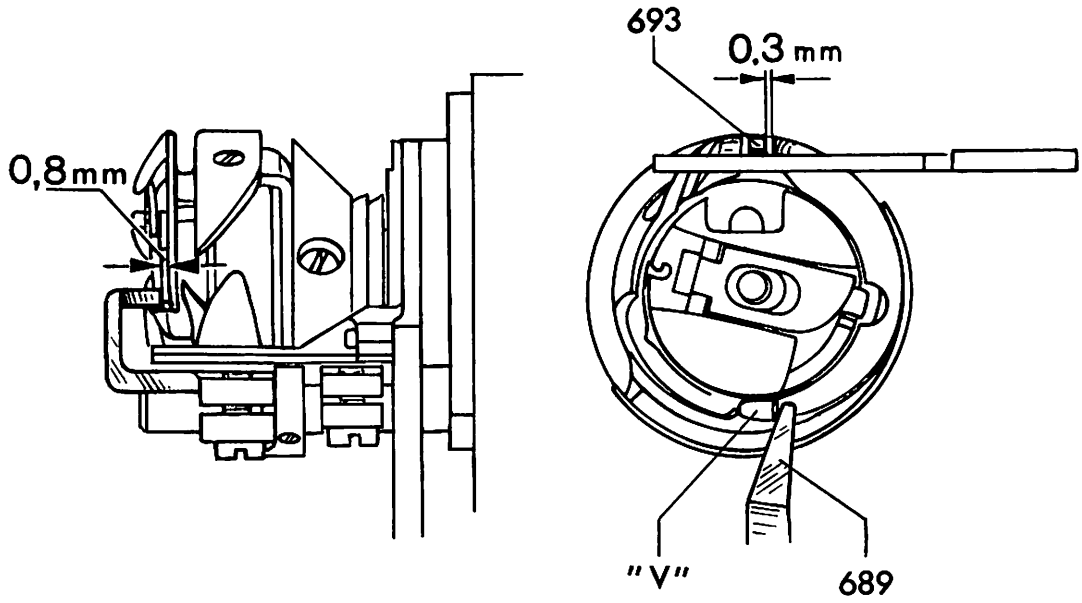

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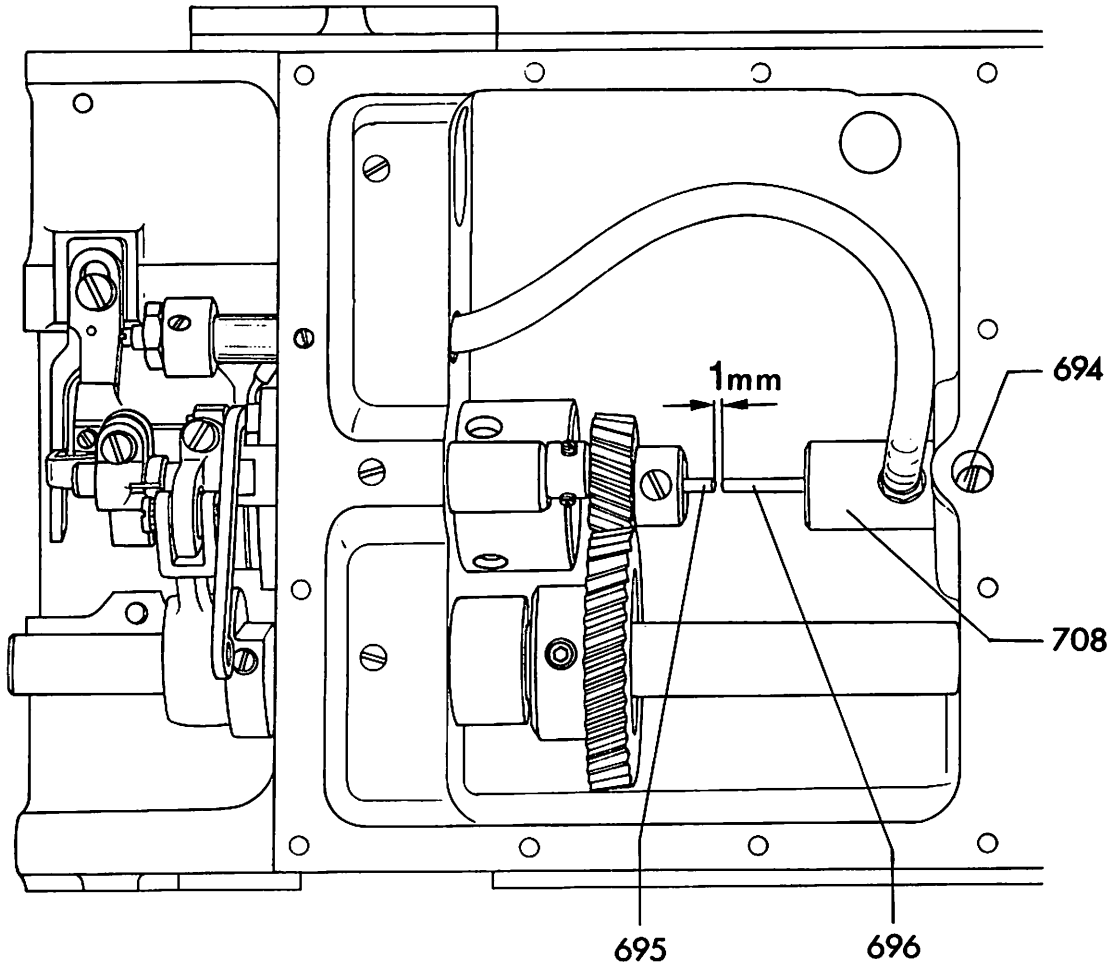


37.4 Loosen screw 692 just enough to allow the bobbin case opener to be turned on its shaft.

37.5 Re-position the bobbin case opener so that there is a clearance of 0.8 mm between its tip and the bobbin case base (Fig. 43).

37.6 Bring the bobbin case opener to its far left position by turning the balance wheel then move the bobbin case base until lug "V" contacts the opener finger.

37.7 Turn the bobbin case opener with the lug still in contact with it until there is a clearance of 0.3 mm between the slot in the bobbin case and position finger 693 (Fig. 43).

37.8 After proper adjustment fully tighten screw 692.

38. Adjusting the oil check valve (Fig. 44)

38.1 Loosen screw 694 of the check valve and push rod 695 of the centrifugal switch to the far left.

38.2 Move check valve 708 so that there is a clearance of 1 mm between push rod 695 and actuating rod 696,

38.3 In this position tighten screw 694.

39. Refitting the gearcase cover and the trimming mechanism (Fig. 45)

39.1 Replace cover 698 on the gearcase (change gasket if necessary), turn in the screws finger tight, then tighten them down crosswise. Also screw on machine support 697.

39.2 Insert stud 677 in its hole and replace circlip 676 with the special pliers.

39.3 Refit the trimming mechanism on the bedplate with the three screws 673, making sure that the two brushes are correctly positioned in holder 812.

39.4 Fully tighten screws 673.

40. Regulating the hook lubrication (Fig. 46)

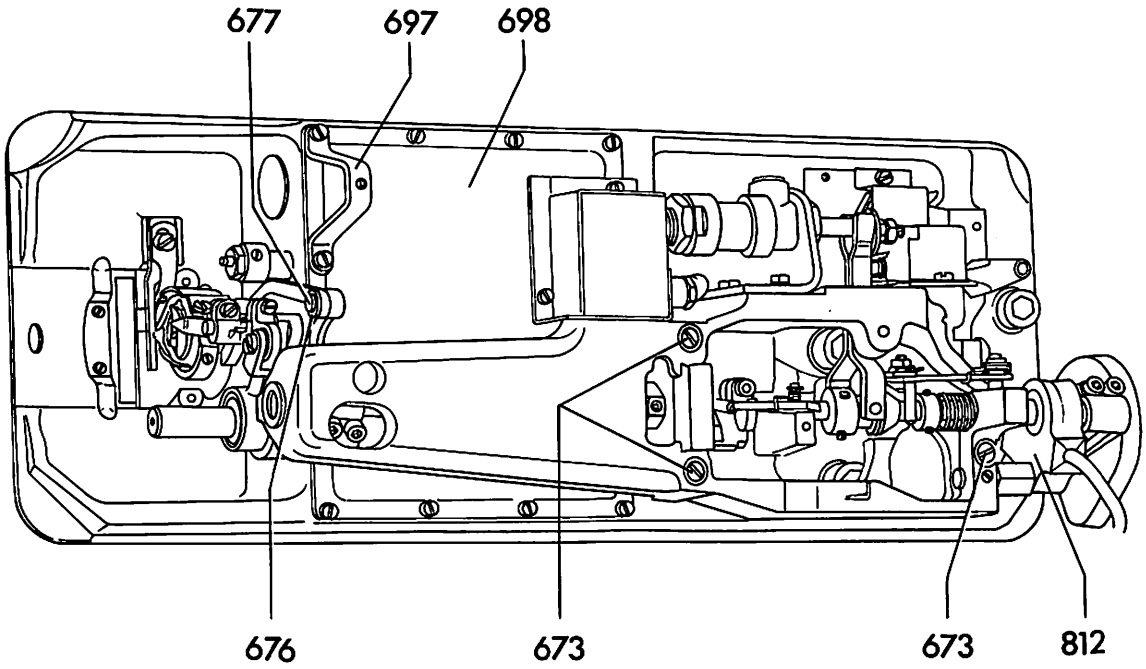
40.1 Mount the sewing machine on a stand with motor and fit a drive belt.

40.2 First turn regulating screw 699 in as far as it will go, then out again by half a turn.

40.3 Turn on the master switch, press the foot switch and allow the machine to run until oil is emitted from the hook.

40.4 Lay a piece of white paper over the needle plate cutout (stick in place if necessary) and allow the machine to run at top speed for about 10 seconds. A thin trace of oil should appear on the piece of paper above the hook.

40.5 If the amount of oil is too small turn screw 699 out a little, if it is too large, turn this screw in.



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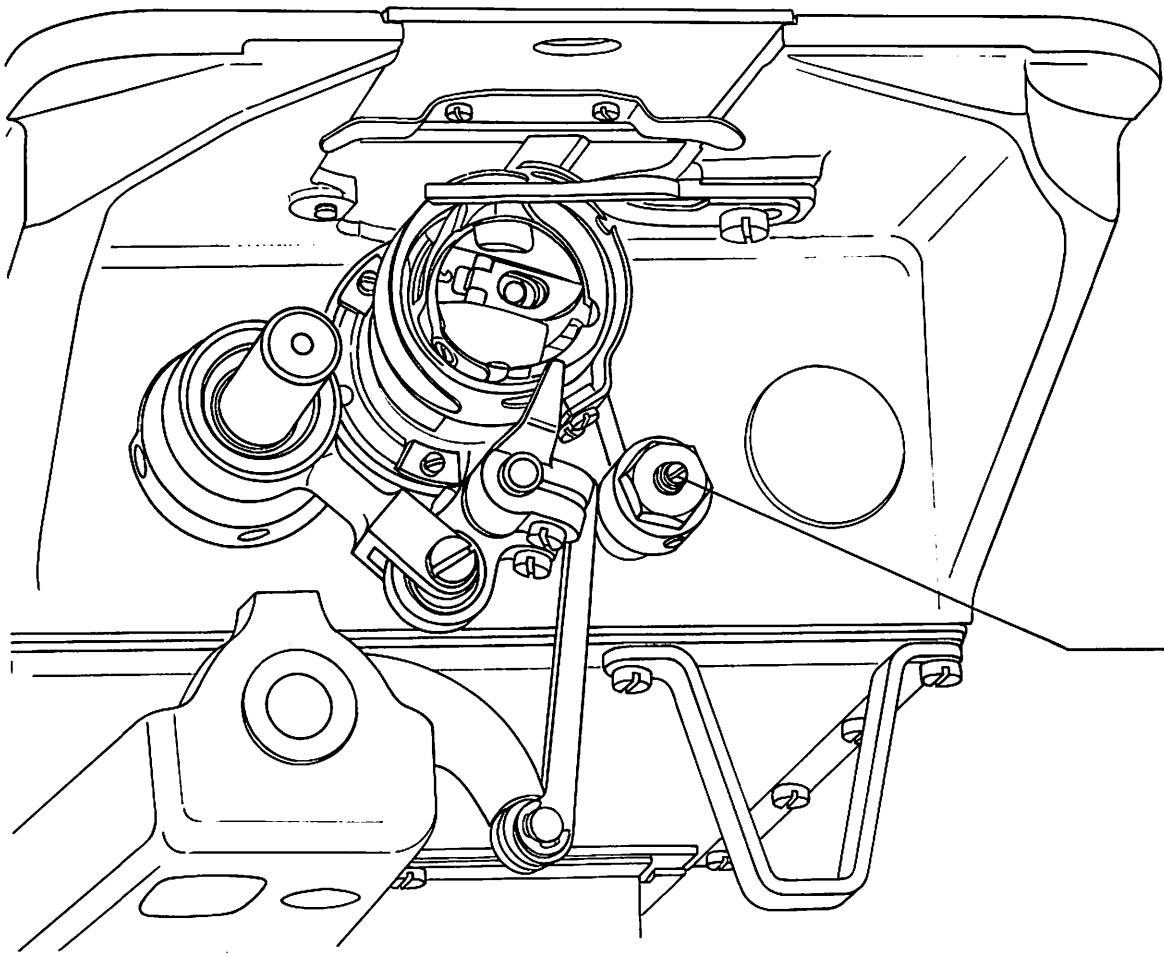

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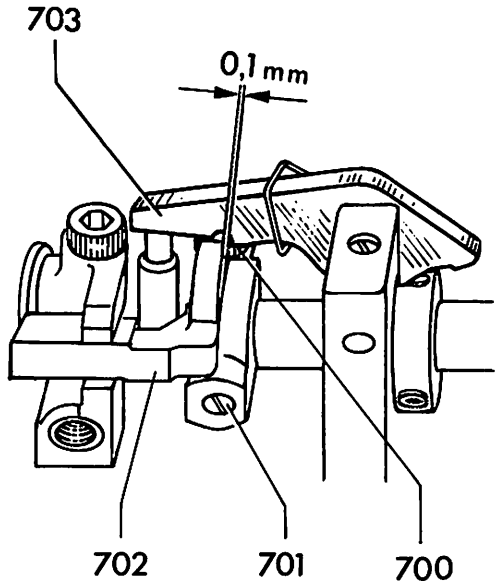

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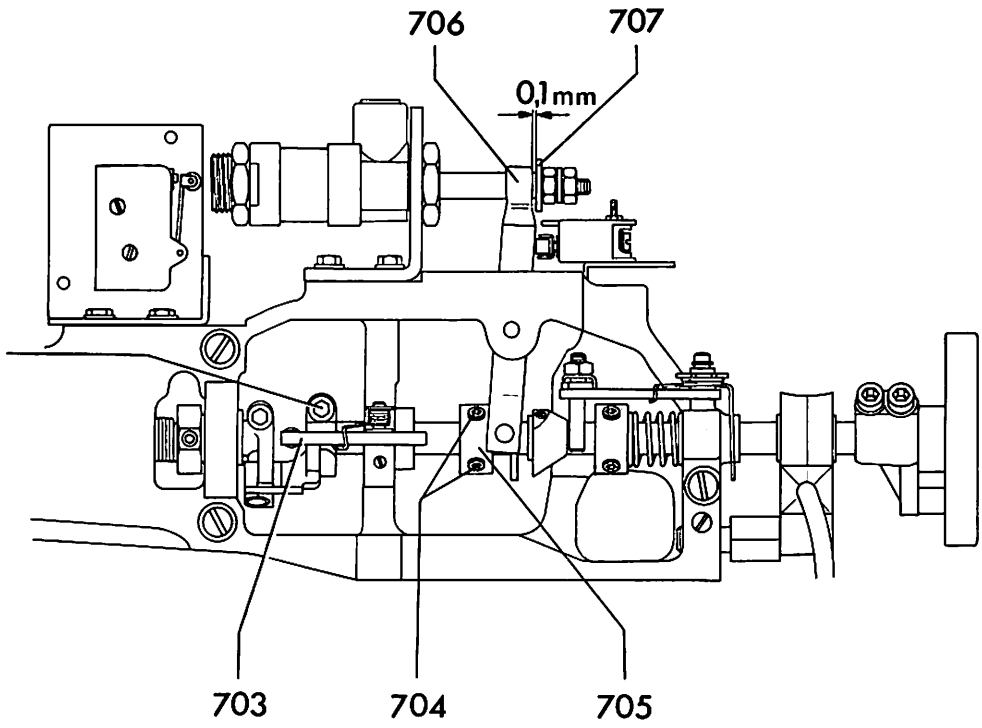


45. Adjusting the locking latch (Fig. 47)

45.1 Bring the needle bar to the top of its stroke, disengage the trimming mechanism and loosen screws 700 and 701.

45.2 Re-position crank 702 on its shaft so that there is a clearance of 0.1 mm between locking lever 703 and the crank.

45.3 In this position tighten screws 700 and 701 securely.

45.4 When the trimming mechanism is engaged, locking lever 703 should drop freely. The adjustment described above may have to repeated.

46. Adjusting the guide bushing and engaging fork (Fig. 48)

46.1 With the trimming mechanism disengaged, loosen screws 704 just enough to allow guide bushing 705 to be turned on its shaft.

46.2 Move guide bushing 705 towards locking latch 703 until there is a clearance of 0.1 mm between engaging fork 706 and washer 707.

46.3 After proper adjustment tighten screw 704 securely.

47. Preliminary adjustment of the synchronizer track ring (Fig. 49)

47.1 With the trimming mechanism disengaged, turn the balance wheel in sewing direction until the ascending needle is 4 mm past the bottom of its stroke.

47.2 Loosen screws 709 just enough to allow synchronizer track ring 710 to be moved on its shaft.

47.3 Move the track ring so that the left carbon brush is roughly 1 mm from the inside edge of the insulated surface.

47.4 Hold the balance wheel and turn track ring 710 so that the carbon brush is roughly 17 mm away from the end of the insulated surface.

47.5 After correct adjustment fully tighten screw 709.

48. Preliminary adjustment of the control cam (Fig. 50)

48.1 Loosen screws 711 just enough to allow control cam 712 to be moved on its shaft.

48.2 Move the cam laterally so that the clearance between the cam and the bedplate is 2.5 mm. Then move stop ring 713 to the right and up against the boss of the control cam.

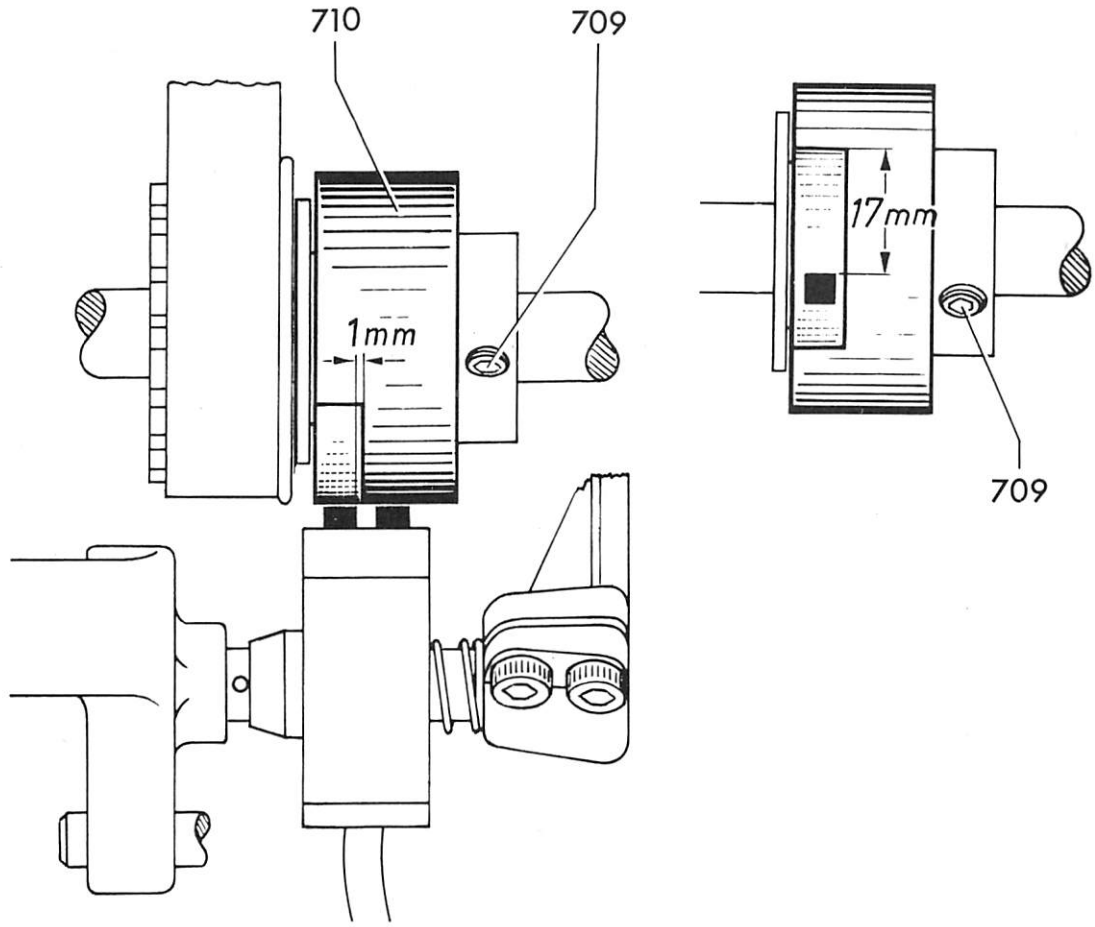
48.3 Bring the needle bar to the bottom of its stroke and hold the balance wheel.

48.4 Turn control cam 712 so that the tip of its lobe points roughly towards the front edge of the bedplate. Make sure that the boss of the control cam is up against the stop ring.

48.5 Tighten screws 711 securely.

49. Adjusting the roller lever (Fig. 51)

49.1 With the trimming mechanism disengaged bring the needle bar to the top of its stroke.



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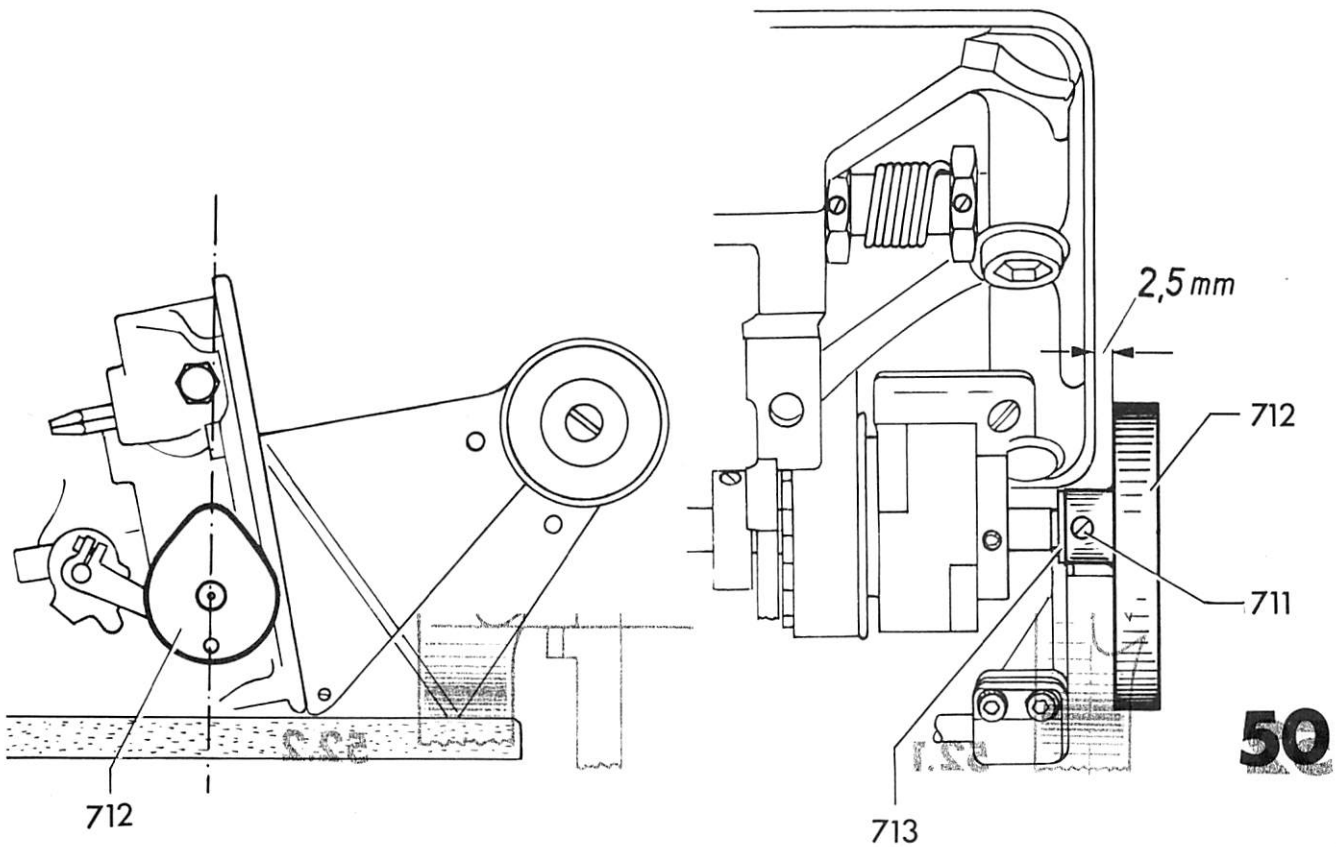

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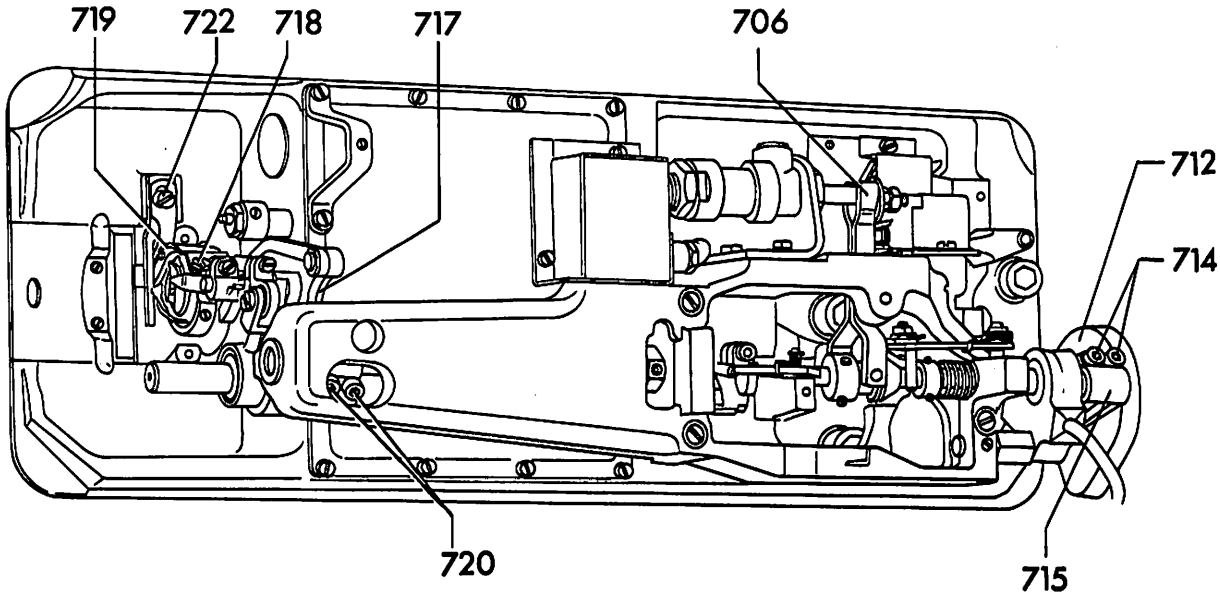

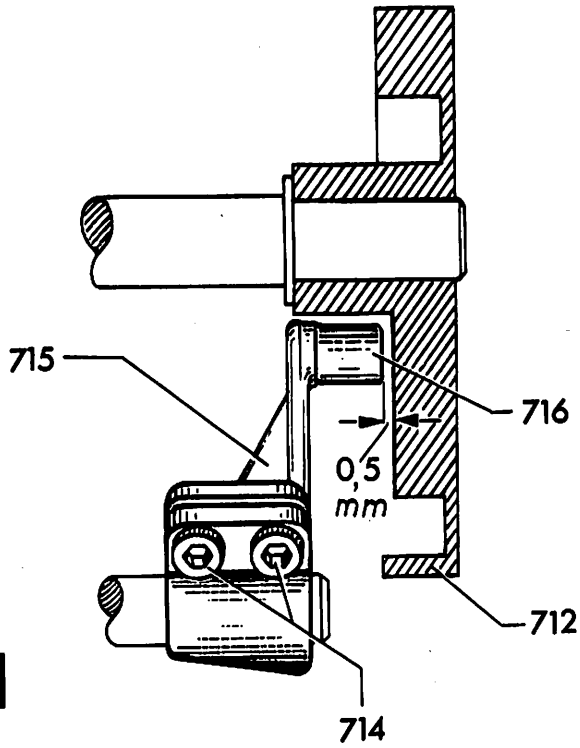

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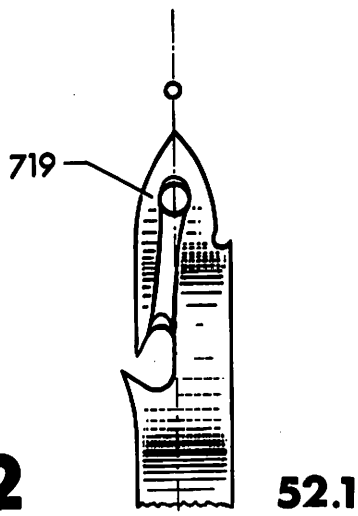

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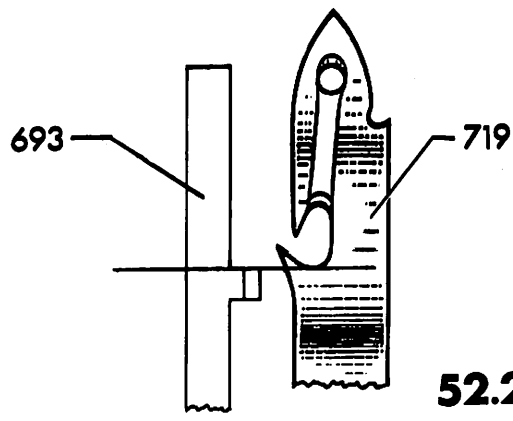
52.1



52.2

49.2 Loosen screws 714 and re-position roller lever 715 so that there is a clearance of 0.5 mm between the inner surface of control cam 712 and roller 716.

49.3 Now tighten the two screws 714 so that the roller lever can still be turned on its shaft. Turn the balance wheel until the ascending needle bar is 4 mm past the bottom of its stroke.

49.4 Pull crank 717 downwards as far as it will go and push roller 716 against the outer edge of the cam track.

49.5 In this position tighten screws 714 securely.

49.6 To check this, operate engaging fork 706. It must be possible to easily push the roller into the cam track.

49.7 If necessary, repeat the adjustment in paras. 49.4 and 49.5.

50. Adjusting the thread catcher (Fig. 51)

50.1 With the needle plate removed, loosen screws 718 and adjust thread catcher 719 laterally so that its tip points to the middle of the needle. (Fig. 52.1).

50.2 Fully tighten screws 718.

50.3 Position the needle 4 mm past the bottom of its stroke.

50.4 Operate enging fork 706 and turn the balance wheel until thread catcher 719 reaches its front position.

50.5 Loosen screws 720 and turn crank 717 so that catcher 719 is positioned in relation to position finger 693 as shown in Fig. 52.2.

50.6 Finally, tighten screws 720 securely.

51. Final adjustment of the control cam (Fig. 53)

51.1 Position the needle 4 mm past the bottom of its stroke and operate engaging fork 706.

51.2 Turn the balance wheel in sewing direction until there is a clearance of 2 mm between the back edge of thread pull-off 721 and the middle of position finger 693.

51.3 Loosen screws 711 and turn control cam 712 until the distance between the back edge of thread pull-off 721 and the catcher tip is 4 mm.

51.4 Check roller lever 715 for correct adjustment according to par. 49.6.

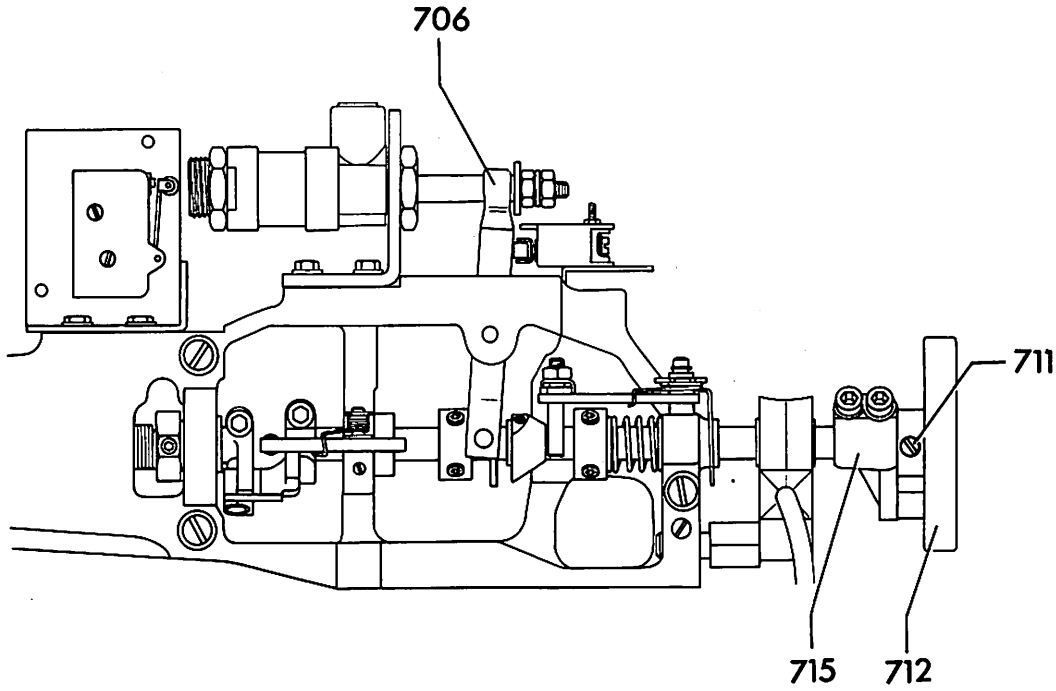
51.5 After adjustment tighten screws 711 securely.

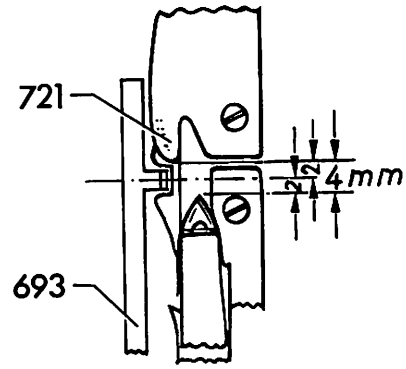
52. Adjusting the trimmer knife (Fig. 54)

52.1 Take out screw 722 (Fig. 51) and remove the knife. If necessary re-grind the knife, remove the burr and polish the cutting edge. Then bend the blade so that its cutting edge is at a distance of 6.5 to 7 mm from the centre line of its supporting surface as shown in Fig. 54.1.

52.2 Bring the needle bar to the bottom of its stroke and re-fit the knife.

52.3 Adjust the knife so that the clearance between its cutting edge and the needle is 3.5 mm (Fig. 54.2) and that the knife is centred over the thread catcher.





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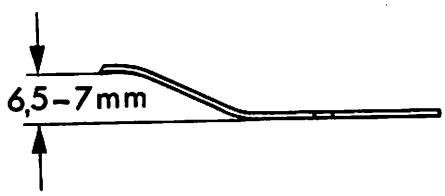
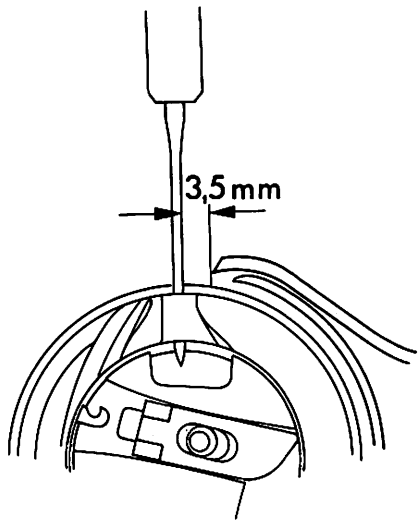


54.1



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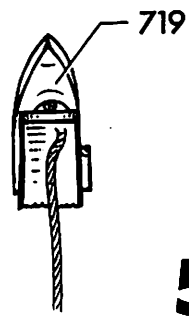

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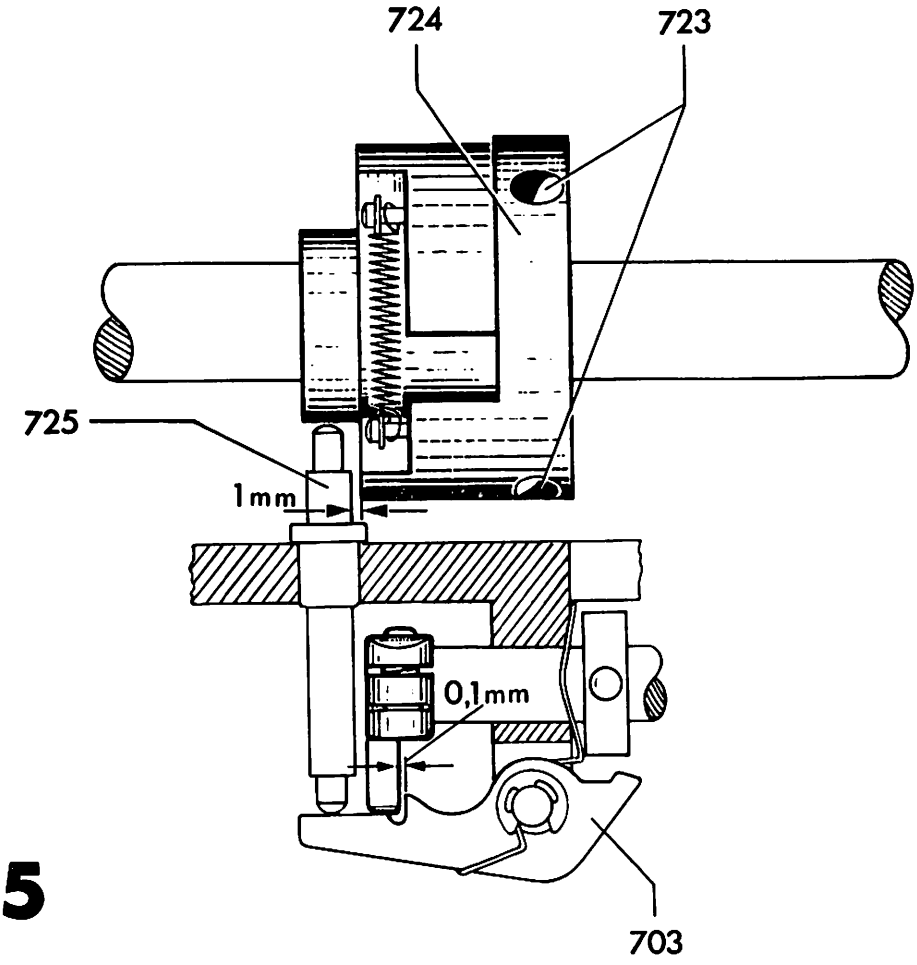

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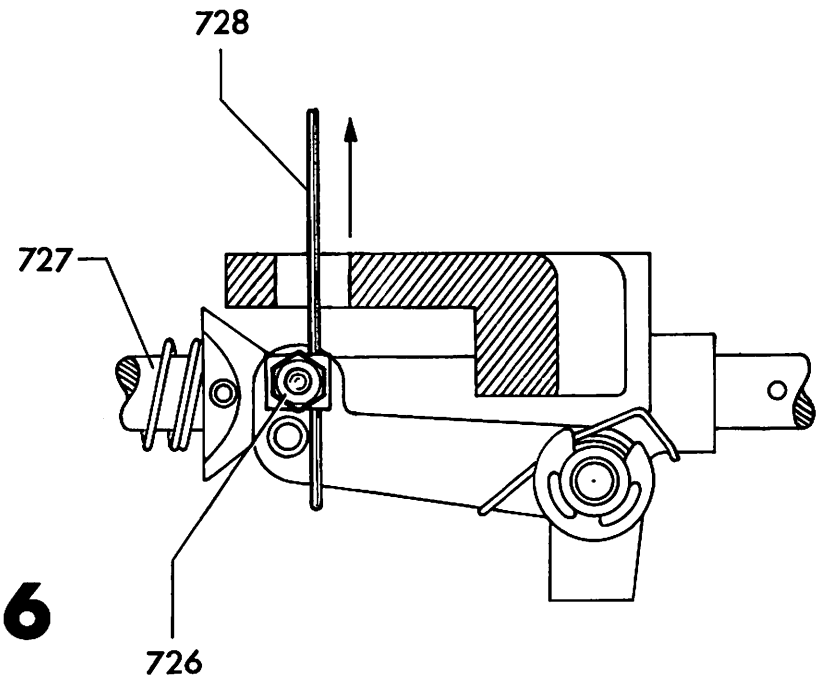

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The right-hand edge of the knife must not protrude from the recessed edge of the thread catcher (Fig. 54.3).

52.4 After adjustment tighten screw 722 securely.

52.5 The knife must be absolutely parallel to catcher 719 and be in light contact with it, so that the thread is properly cut at any place over the width of the cutting edge. If necessary, re-adjust catcher 719 according to paras. 50.1. and 50.2.

53. Adjusting the centrifugal switch (Fig. 55)

53.1 Loosen screws 723 and adjust the lateral position of centrifugal switch 724 so that there is a clearance of 1 mm between the switch and bushing 725.

53.2 Re-tighten screws 723, but only enough to allow centrifugal switch 724 to be turned on its shaft by hand.

53.3 Adjust the centrifugal switch by turning it so that locking lever 703 is released while the left-hand insulated surface of track ring 710 is passing the carbon brush (Fig. 49).

53.4 After adjustment tighten screws 723 securely.

54. Adjusting the needle thread tension release (Fig. 56)

54.1 Loosen nut 726 and re-tighten it slightly.

54.2 Turn the balance wheel in sewing direction until the ascending needle is 4 mm past the bottom of its stroke.

54.3 Operate engaging fork 706 (Fig. 53) and look at the thread tension. When engaging shaft 727 is in its far left position the tension should be fully released. The releasing action should begin when the engaging shaft has covered roughly half of its stroke.

54.4 To adjust, re-position pull rod 728. When this rod is moved towards the bedplate (see arrow) the tension release action is advanced. When it is moved in the opposite direction the tension release action is retarded.

54.5 After correct adjustment securely tighten nut 726.

55. Adjusting the thread monitor (Fig. 57)

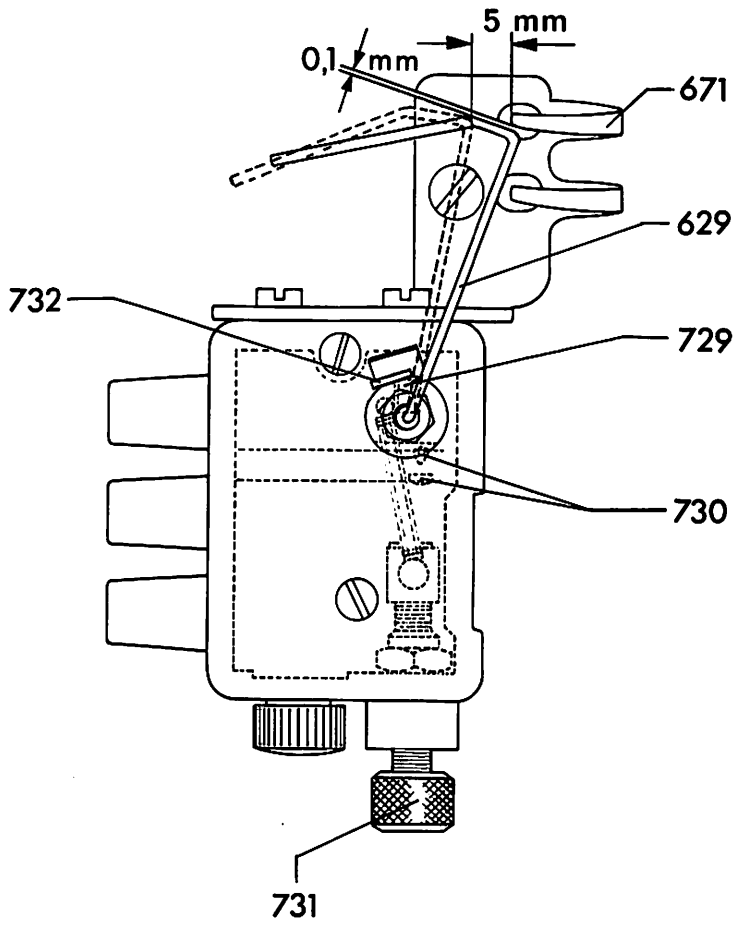
55.1 If the setting of the thread monitor is too sensative, the sewing action will be interrupted too frequently. Thus, the monitor must be adjusted so that it only breaks off the sewing action when thread breakage or other sewing disturbances occur.

55.2 Adjust stop 732 so that the thread wire is held roughly 5 mm from eye 671 when in its far left position.

55.3 Loosen screw 729 and turn the disc so that contacts 730 are closed when wire 629 is resting on the stop. Make sure that wire 629 has no lateral play, and tighten screw 729.

55.4 Turn knurled screw 731 in so that wire 629 strikes stop 732 only lightly.

55.5 Bend wire 629 upwards so that it is 0.1 mm away from eye 671. Whe the machine is threaded, wire 629 must, when in its resting position, be held against eye 671.



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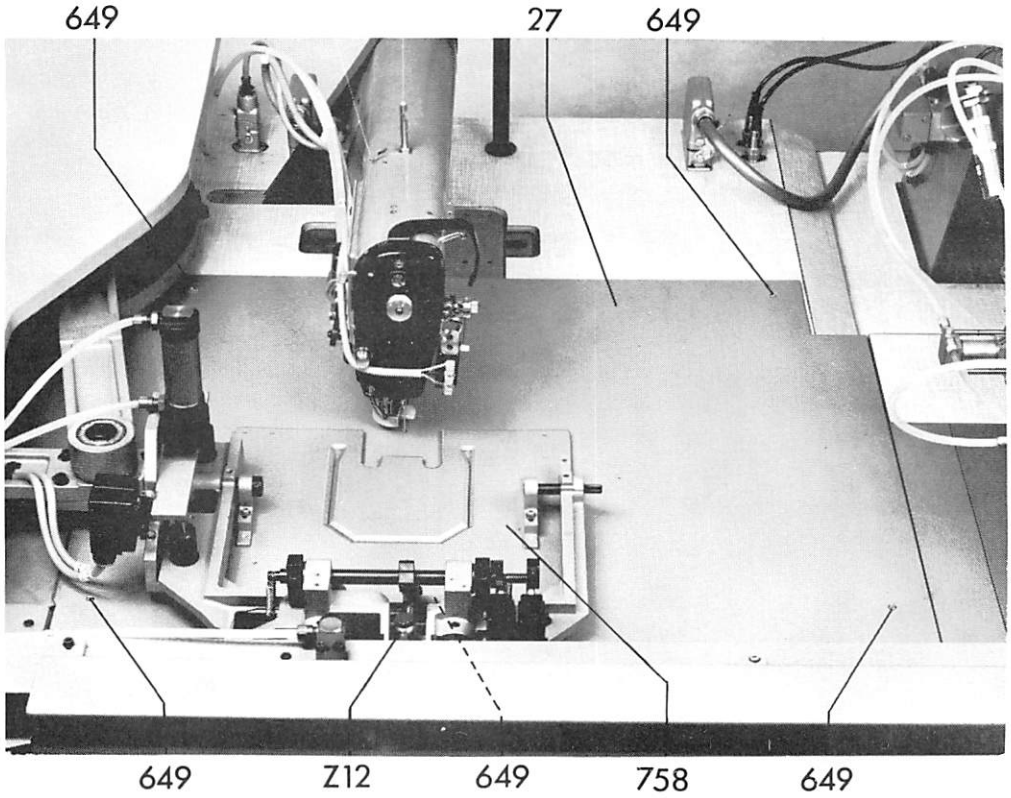
55.7 The delayed action of the thread monitor is set on resistance r23 in the control box. This action is set between 1/2 and 1 second.

56. Replacing the sewing machine (Fig. 58)

56.1 Lower the sewing machine with its four hinge studs onto the rubber mountings.

56.2 Replace cover panel 27 on the table and secure it with its five screws 649.

56.3 Retract the piston rod of cylinder Z12 and insert sewing template 758 with its frame in the template fixture.



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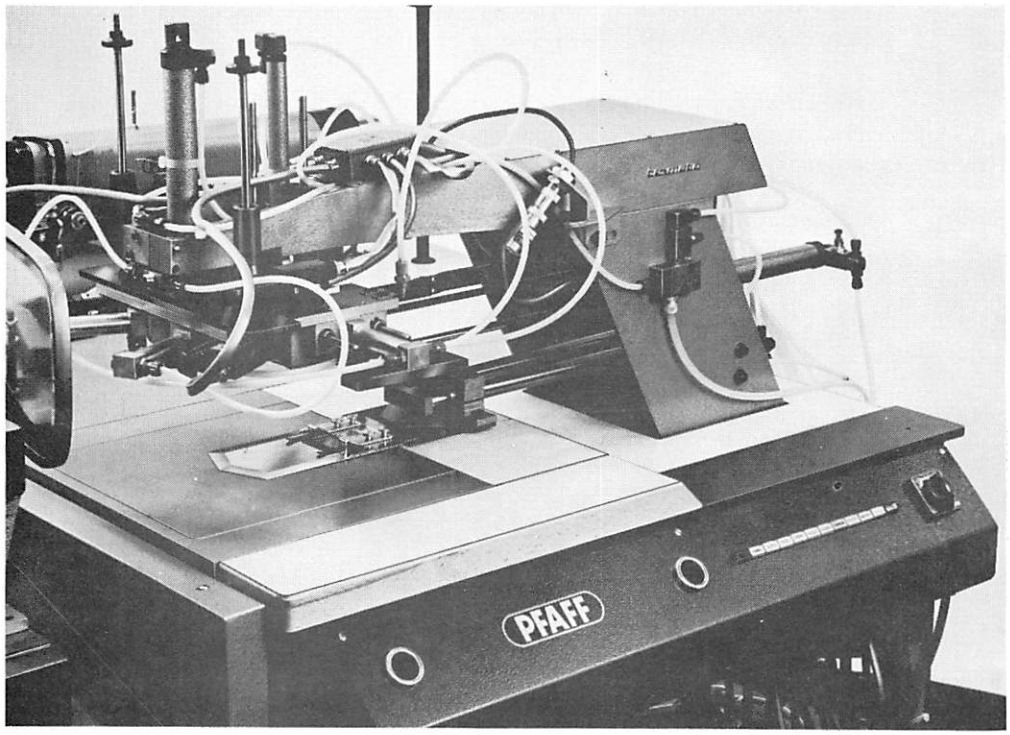
56.4 Insert the connectors for the thread monitor, the synchronizer, the trimming mechanism and the carbon brush holder.

56.5 Re-connect the air tubes for the trimming mechanism, the workpiece presser and that for needle cooling.

56.6 Re-fit the drive belt.



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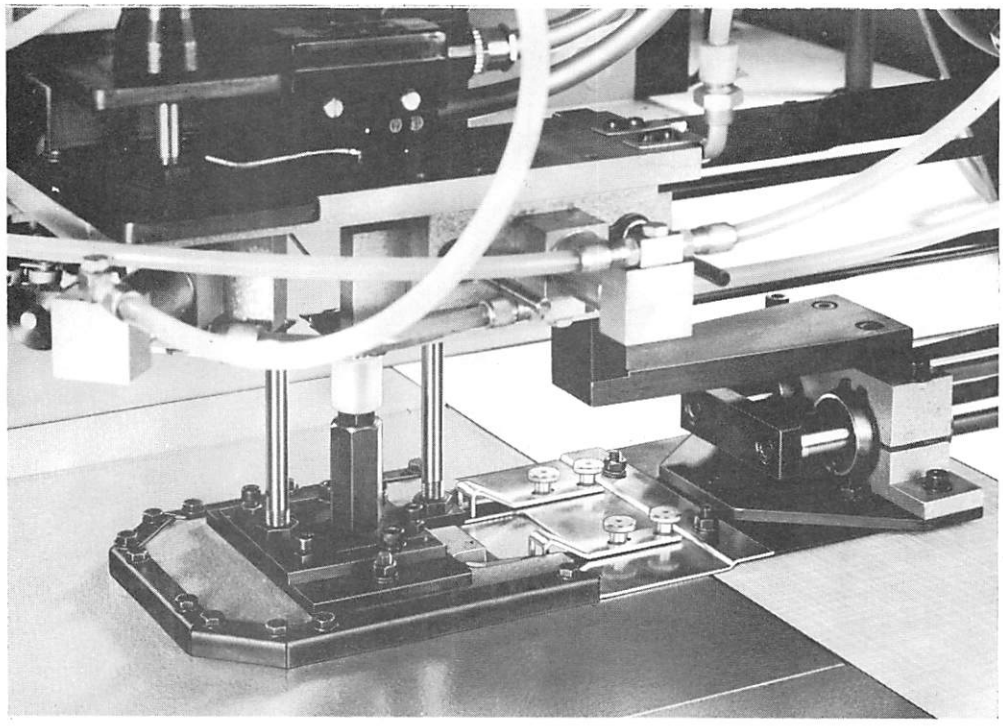

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60. Condensed instructions for adjustments on folding station and sewing template mechanism (Fig. 60 to 63)

Adjustments on the folding and sewing template mechanisms consist of many individual items which have to be carried out in a certain sequence. The sequence given here is the best means of obtaining proper adjustment. The condensed instructions below are followed by a detailed description of each adjustment.

60.1 Adjust the table insert so that it is exactly level with the tabletop.

60.2 Position the pocket plate so that it rests flat on the table insert.

60.3 Position the pocket plate arm parallel with the positioning pin holes. This is checked by means of guiding lines drawn on the table insert.

60.4 Adjust the pocket plate parallel to the outer edge of the table insert.

60.5 Position the pocket plate arm laterally so that the pocket plate edges are at equal distances from the positioning pin holes.

60.6 With the folding unit down, adjust the edge folders parallel to the underside of the pocket plate. Their clearance is set according to the fabric thickness.

60.7 Position the edge folders so that the positioning pins do not strike the edges of the slots. This adjustment is checked with the folding station in the following position:

folding unit down

pocket holder up

edge folders forward

positioning pins up

60.8 Adjust the pocket holder so that it is parallel to table insert and pocket plate. The distance between the angle strips and pocket plate depends on the material thickness.

60.9 To check the mechanism, fold one pocket blank. The pocket blank must hug the edge of the pocket plate all the way round.

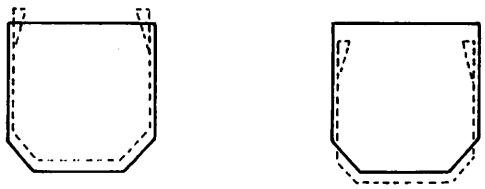
60.10 Position the sewing template so that the needle remains in the middle of its slot throughout all movements of the template.

60.11 Now make a sewing test. If the seam pattern is still incorrect, the three following types of fault may be involved.

60.12 The seam pattern is parallel, but not centred on the pocket.

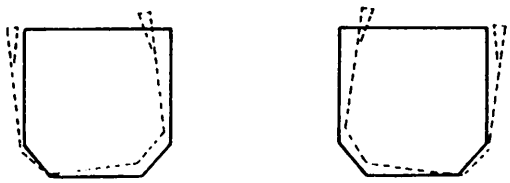
Remedy: adjust stop at end of transfer cylinder accordingly.

60.13 The seam pattern is parallel, but too high or too low.



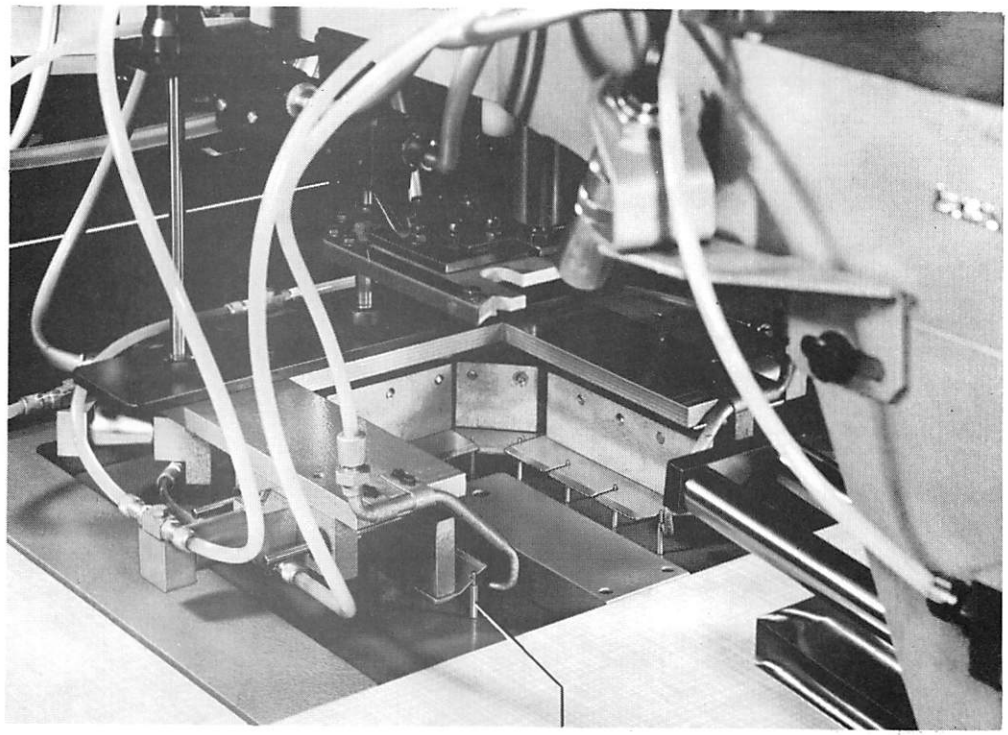
Remedy: set the entire folding station farther forward or back.

60.14 The seam pattern is not parallel with the pocket.



Remedy: turn the entire folding station accordingly.

60.15 It may happen that a combination of two or three of the above faults occurs. If so, they must be removed step by step. Parallel adjustment of seam to pocket must always be made first.



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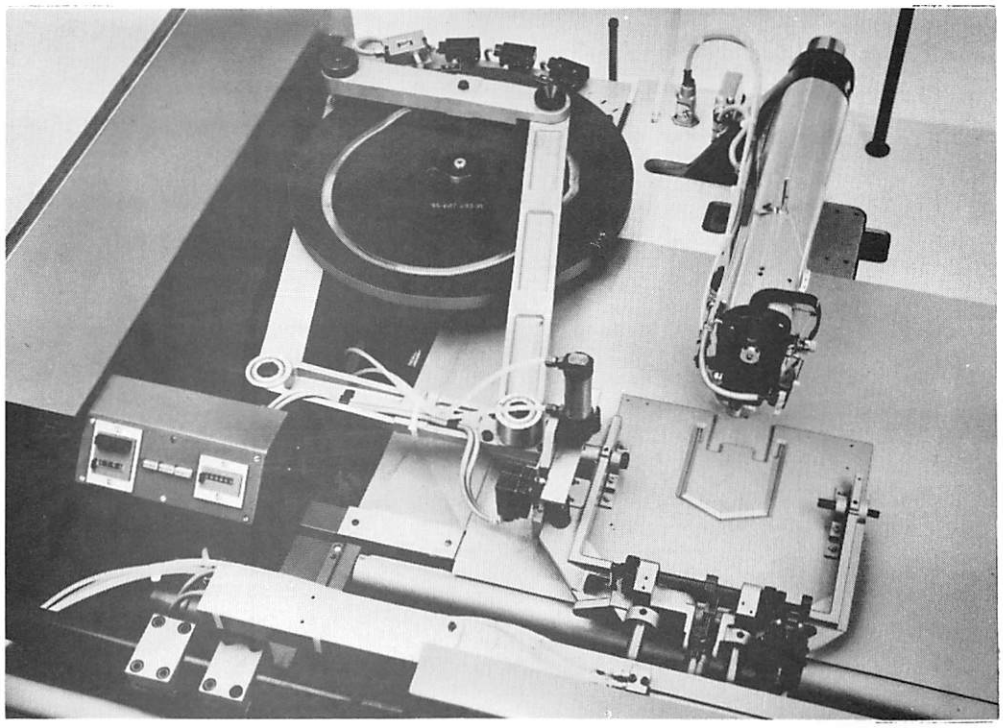

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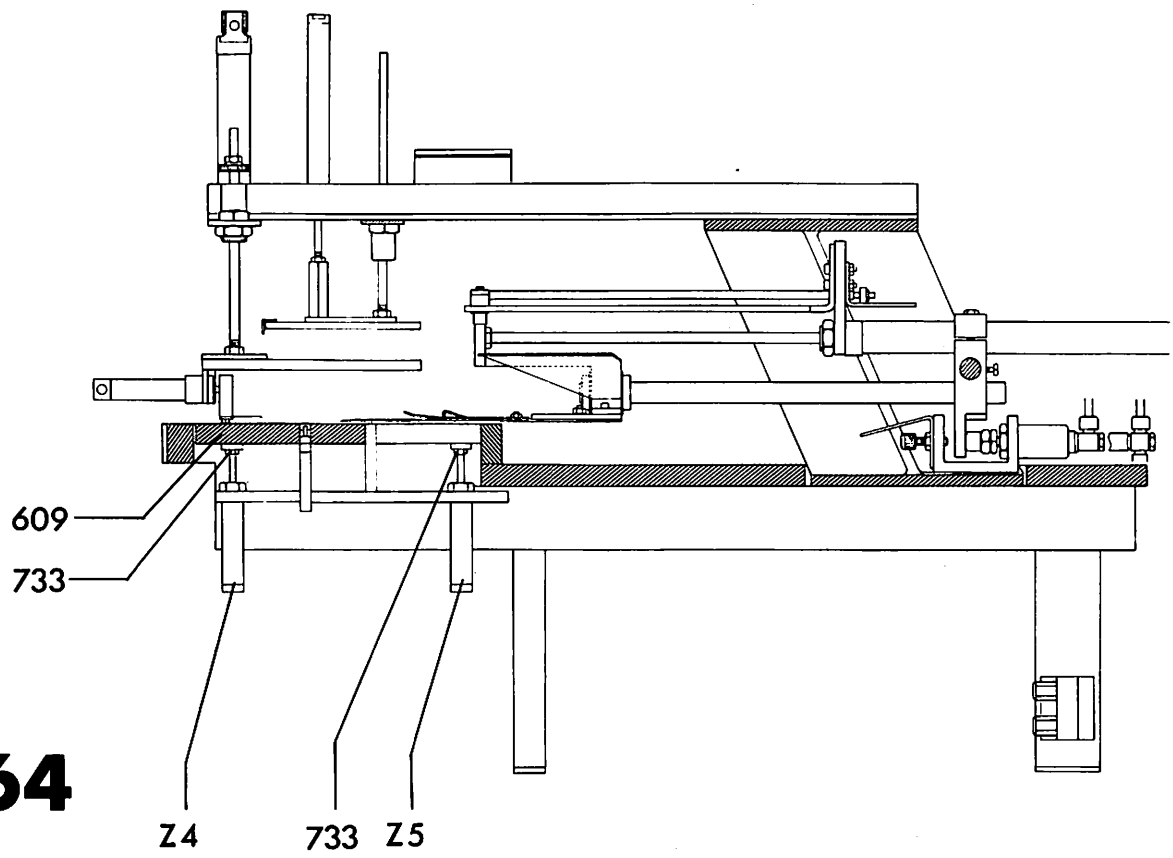

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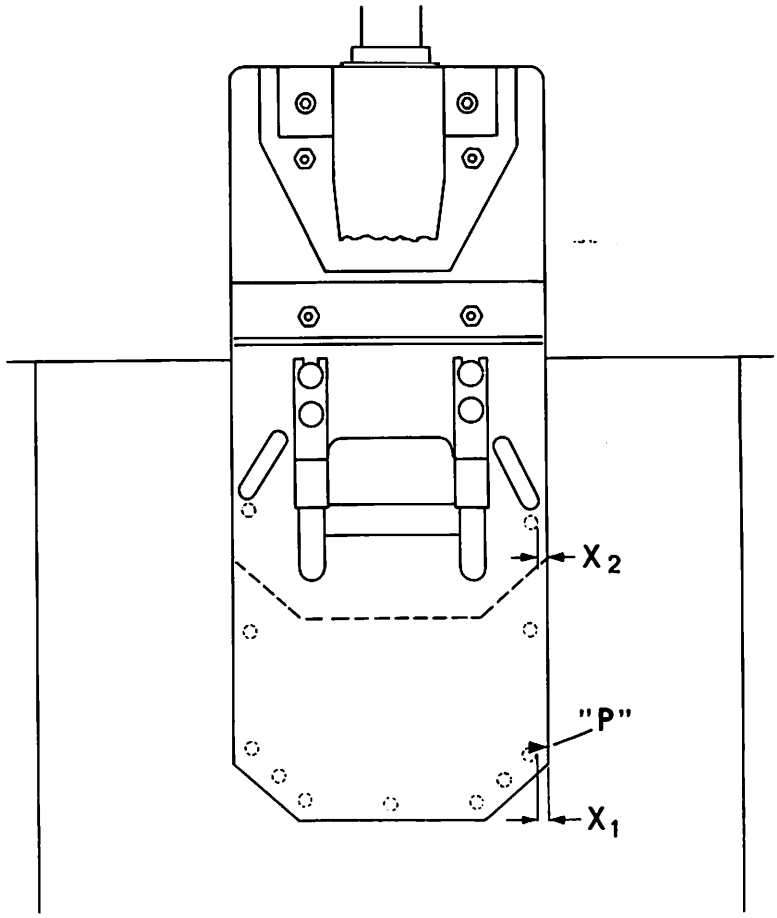

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61. Adjusting the height of the table insert (Fig. 64)

61.1 Loosen locknuts 733 (cylinders Z 4 and Z 5).

61.2 Turn the piston rods of the cylinders until table insert 609 is flush with tabletop at both ends.

61.3 To check this setting, move the table insert to its top position and place a ruler on it.

61.4 After adjustment, tighten screws 733 securely.

61.5 Move the table insert to its top position again and allow it drop by its own weight. It must drop quickly and freely.

61.6 If necessary, repeat adjustment 61.2.

62. Adjusting the pocket plate and pocket plate arm (Fig. 66)

62.1 Loosen screws 734 so that the two bearing blocks 366 can just be moved.

62.2 Alter the height of the two bearing blocks so that the pocket plate lies parallel on the table insert in lengthwise and crosswise direction.

62.3 Move the pocket plate to its front position and make a line at point "P" in Fig. 65 on the table insert.

62.4 Push the pocket plate back until its front edge is in line with the two rear positioning pin holes (Fig. 65).

62.5 Draw another line at point "P". The distance x_1 and x_2 (between the lines and the positioning pin holes) must be exactly the same (Fig. 65).

62.6 If the distances vary, re-position bearing blocks 366 so that pocket plate arm 387 is parallel to the row of positioning pins. To check this, repeat items 62.3 to 62.5.

62.7 After adjustment of the pocket plate arm, tighten screws 734 securely.

62.8 Loosen screws 735 and position the pocket plate parallel to the outer edge of the table insert. Fully tighten screws 735 again.

62.9 Loosen screws 736 (Fig.67) and screw 814 (Fig. 69) and position clamp block 340 of the pocket plate arm laterally so that the edges of the pocket plate are at the same distance from the rows of positioning pin holes.

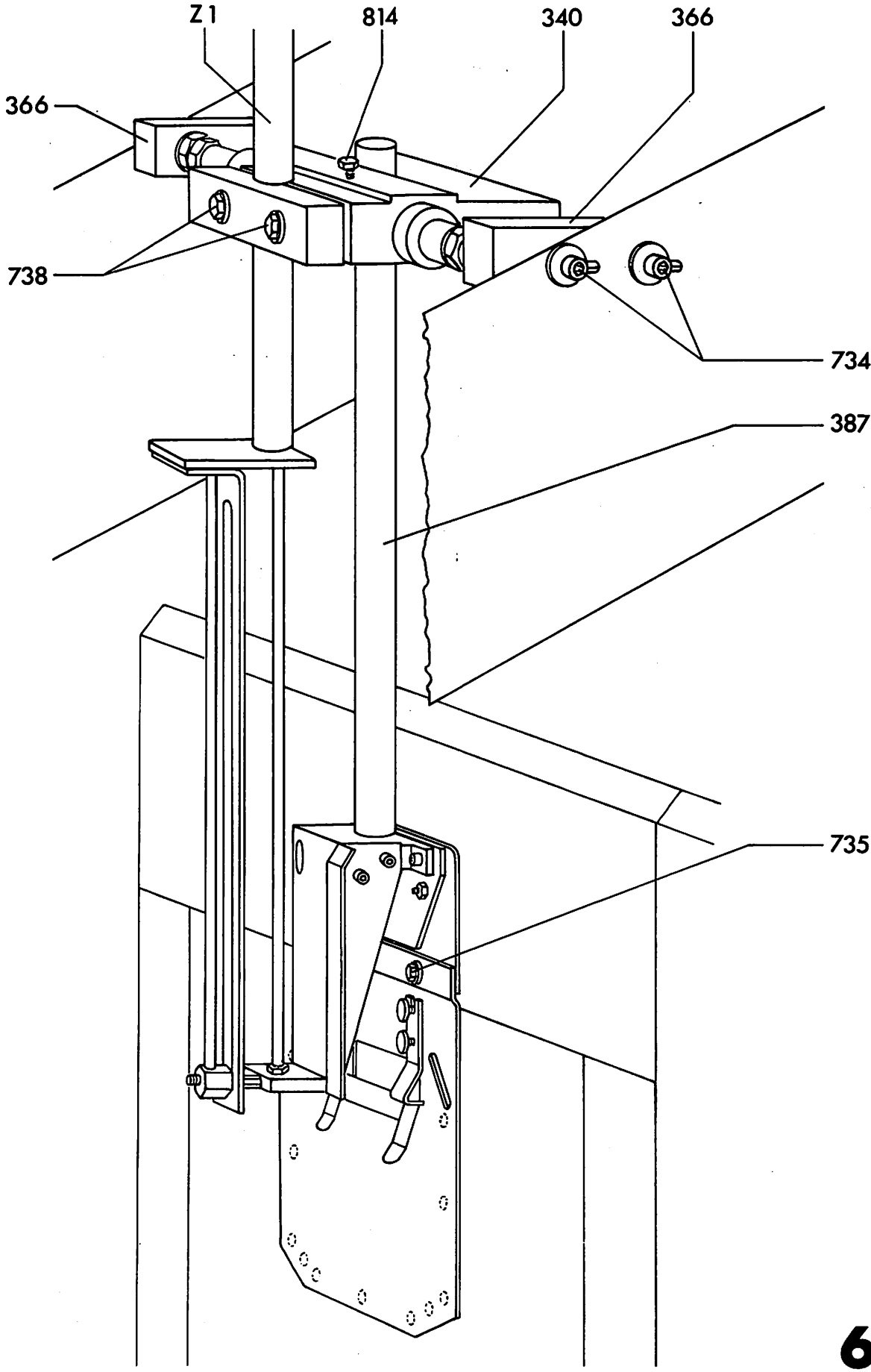
62.10 In this position tighten screw 814 securely, push fixing rings 737 up against clamp 340 and fully tighten screws 736 (Fig. 67).

62.11 Move the pocket plate to its front position, loosen screws 738 and re-position cylinder Z1 so that the front edge of the pocket plate is the same distance from the positioning pin holes as the side edges.

62.12 Make sure that the cylinder is not turned, and tighten screws 738 securely.

62.13 Loosen locknut 739 and move the pocket plate to its front position (Fig. 69).

62.14 Turn stop screw 380 in or out until there is a clearance of 3 mm between screw 371 and the folding station housing when the pocket plate is at its top position.



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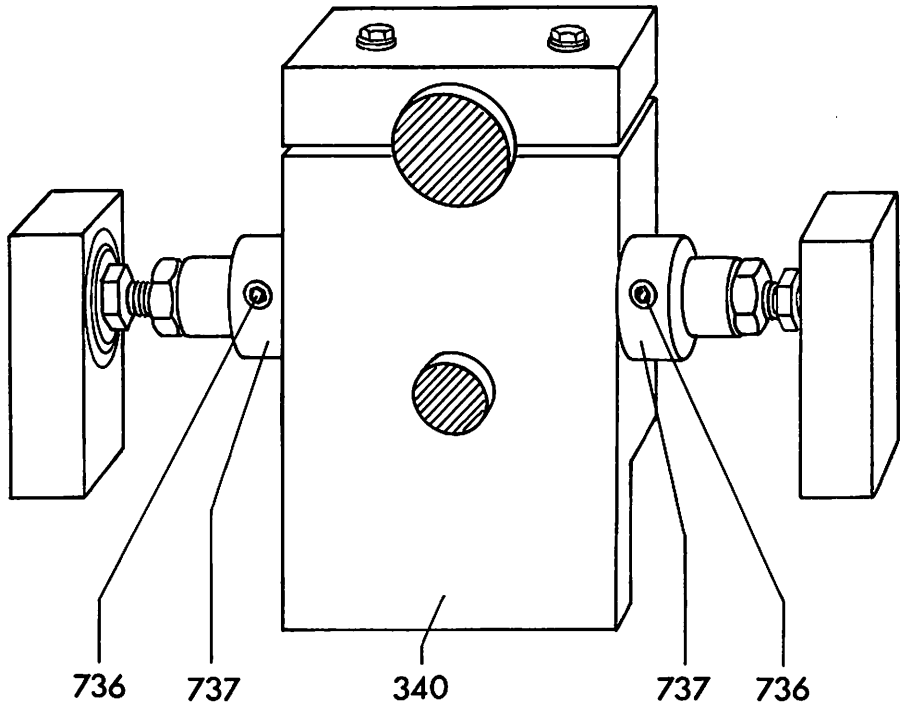

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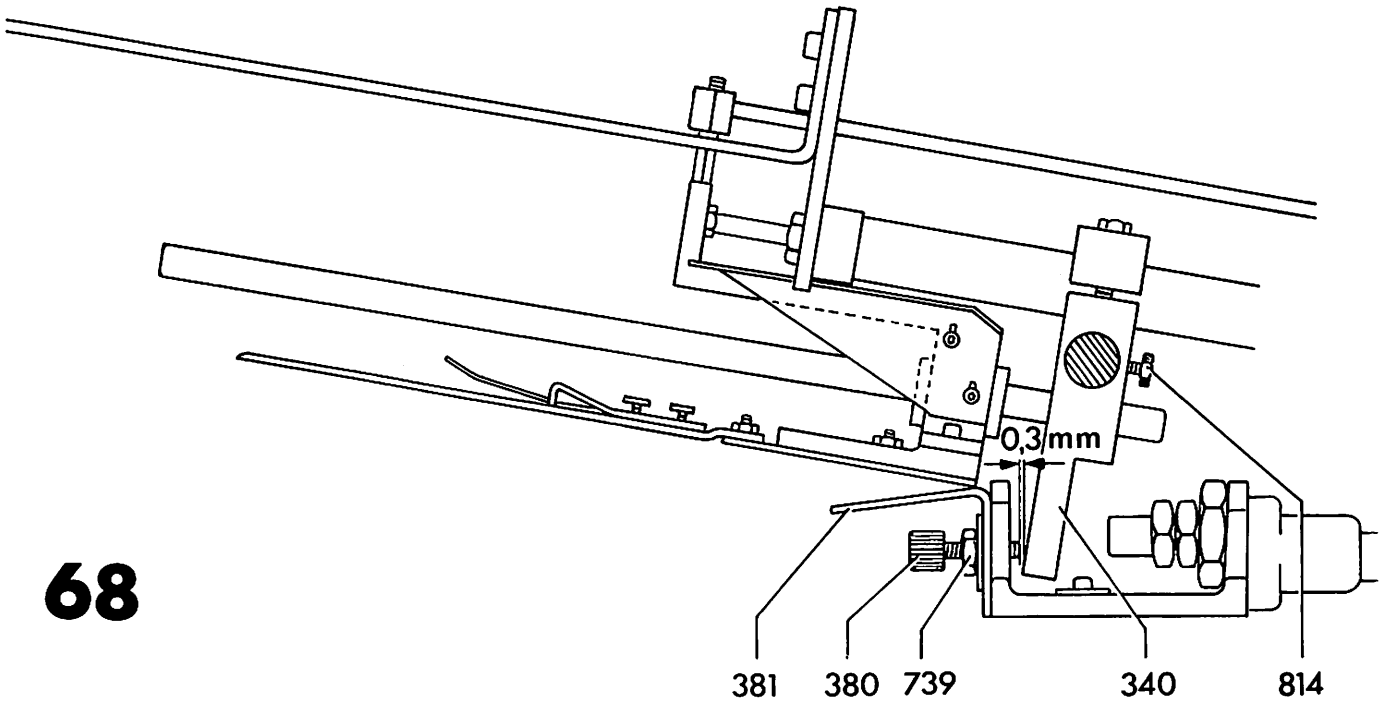

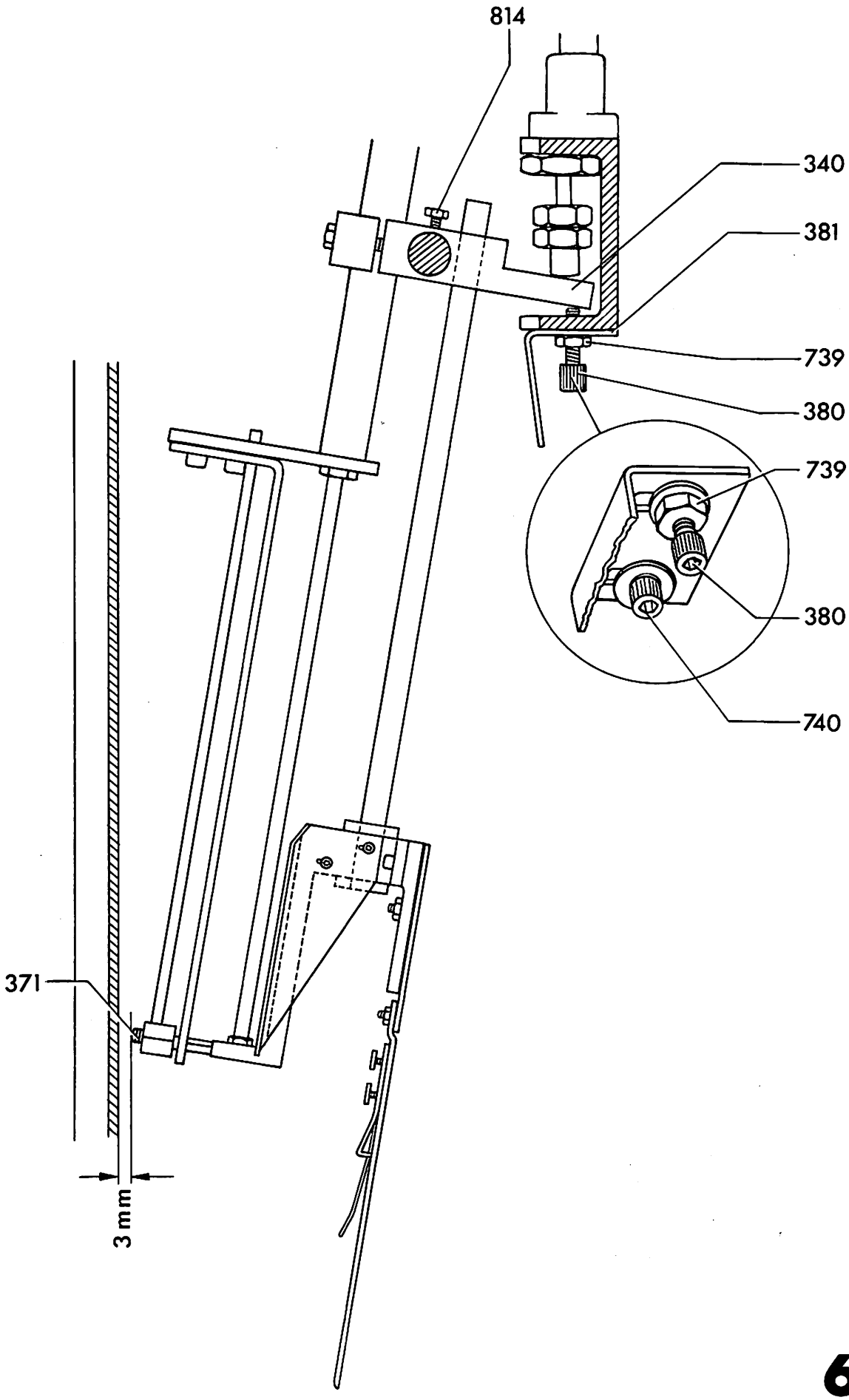

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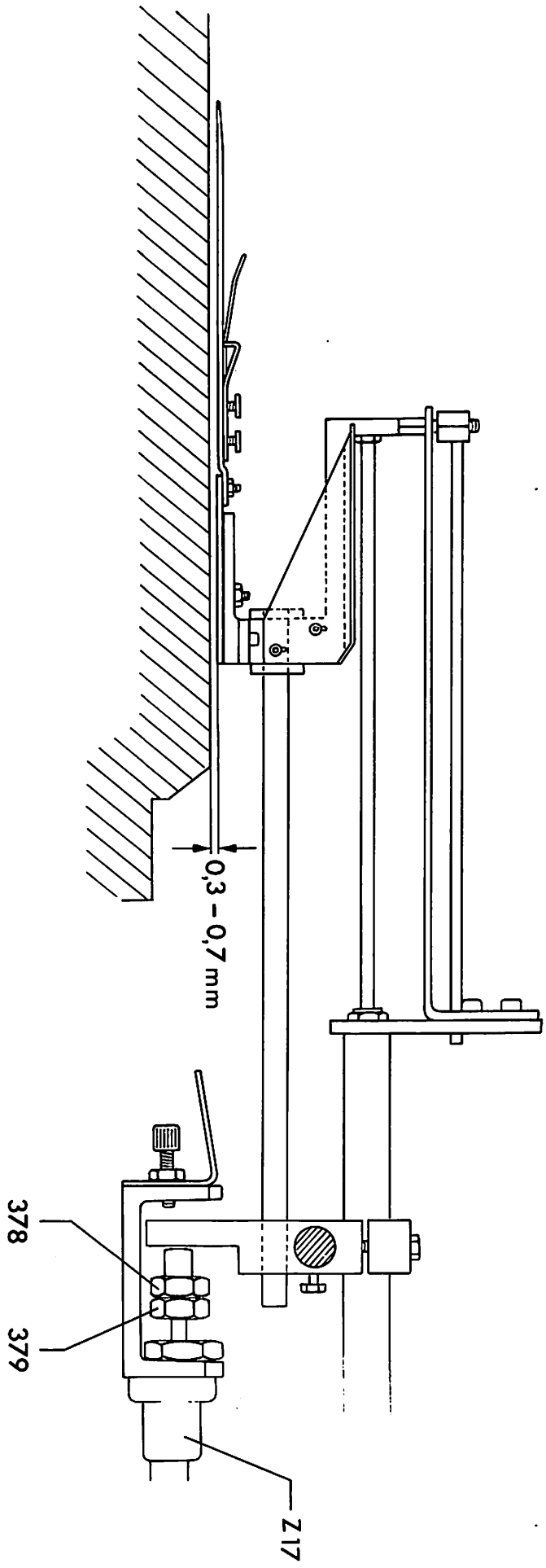

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62.15 Tighten locknut 739 a little and move the pocket plate to its rear position.

62.16 Loosen screw 740 and push stop bracket 381 upwards so that there is a clearance of 0.3 mm between the end of screw 380 and clamp block 340 (Figs. 68 and 69).

62.17 In this position tighten screw 740 and locknut 739 securely.

62.18 Move the pocket plate to its front position and loosen locknut 379 (of cylinder Z17) in Fig. 70.

62.19 With the piston rod extended, turn stop nut 378 in or out so that the distance between the pocket plate and the table is equal to the material thickness. It must still be possible to move the workpiece with ease.

62.20 In this position securely tighten locknut 379.

63. Adjusting the edge folders (Fig. 71)

63.1 Move the side edge folders back and loosen the four screws 741.

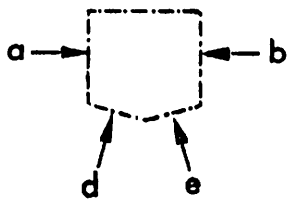
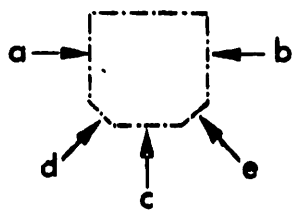
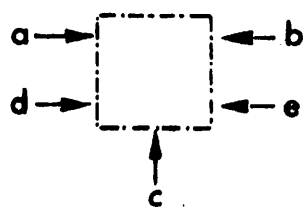
63.2 Re-position mounting plate 742 so that the side edge folders are parallel with the pocket plate at the same distance from it at both sides. Tighten the four screws 741 securely.

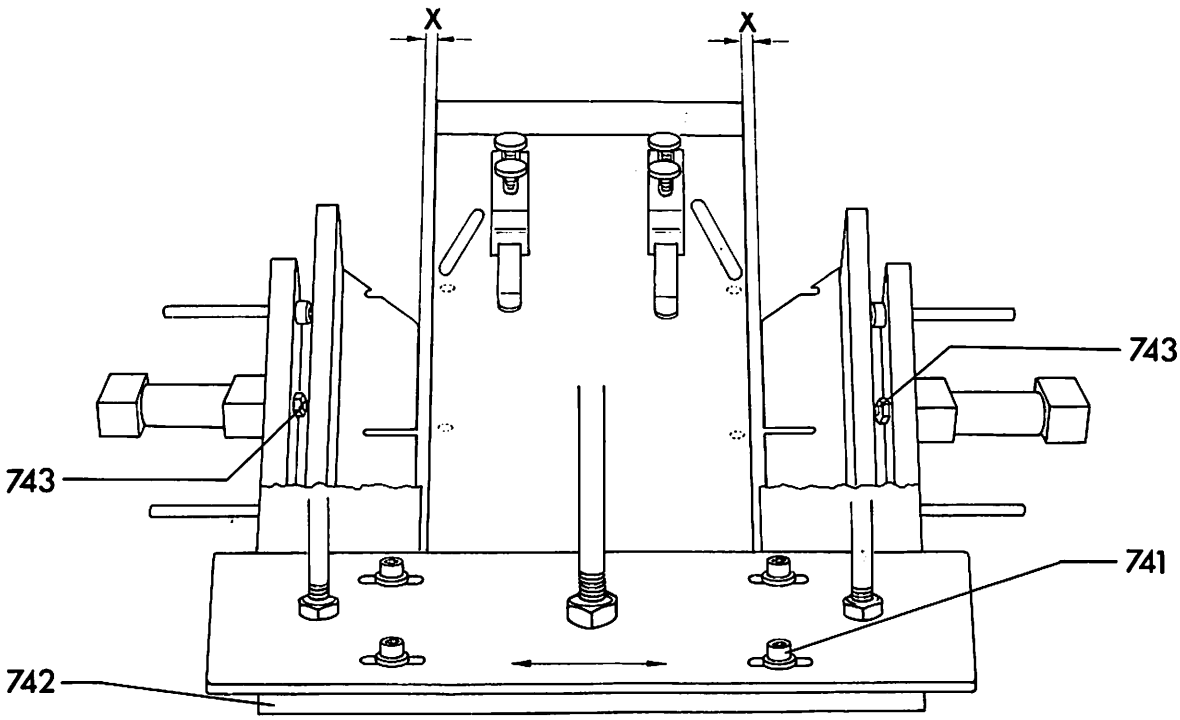
63.3 Loosen locknuts 743 and turn the piston rod so that the folder blades in their retracted position are at equal distances from the pocket plate (see dimension "x"). Extend the piston rod again and re-tighten locknuts 743.

63.4 Loosen locknuts 744 and adjust the height of stops 745 (Fig. 72) so that the folder blades in their bottom position are parallel to the pocket plate. Their distance from the pocket plate depends on the thickness of the material (up to 0.3 mm). After adjustment tighten the locknuts securely.

63.5 Loosen screws 746 (Fig. 72) and re-position the folder blades so that pins 747 are free in their slots and are not struck by the pocket plate when it is inserted.

63.6 Also make sure that the sides of the folder blades are in line with the corners of the pocket plate (see dotted lines in Fig. 73). This adjustment is very important for the edge folder blades extended in the first stage or, in three-stage sequences, in the first and second stage of the folding sequence (see below: operating sequences). After proper adjustment tighten screws 746 securely.

Operating sequence of the edge folders		
1 a+b	1 a+b+c	1 a+b
2 d	2 d+e	2 c
3 e	3	3 d+e
		



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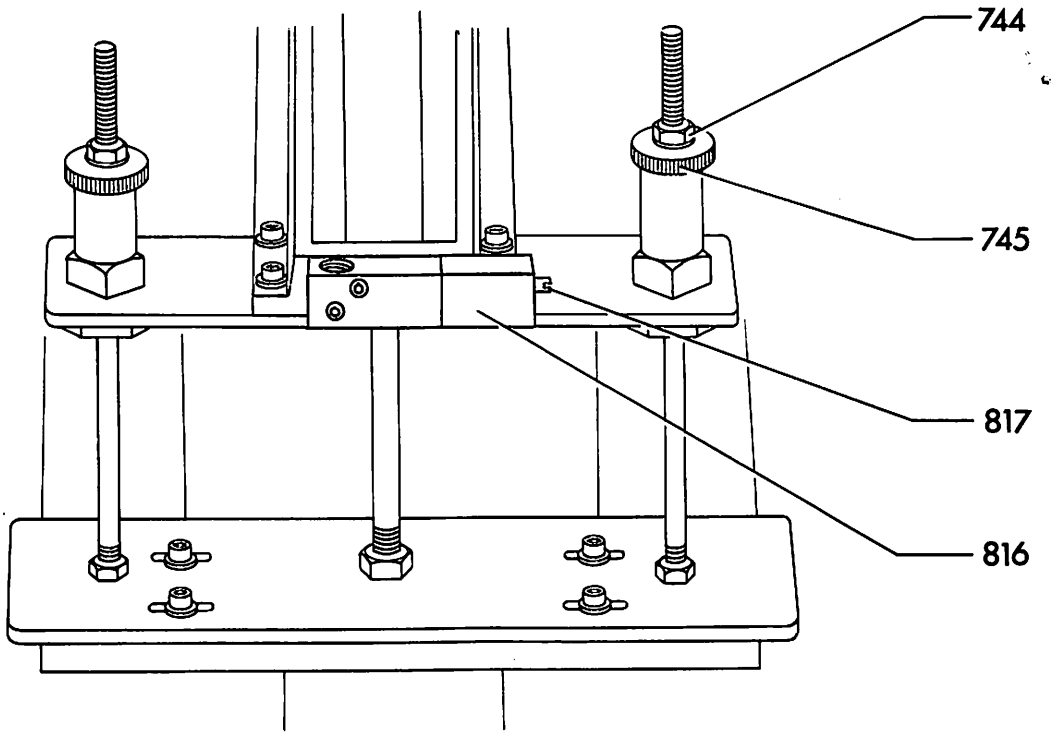

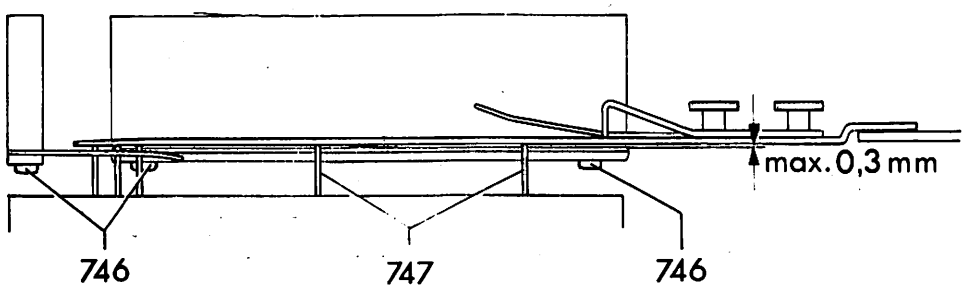

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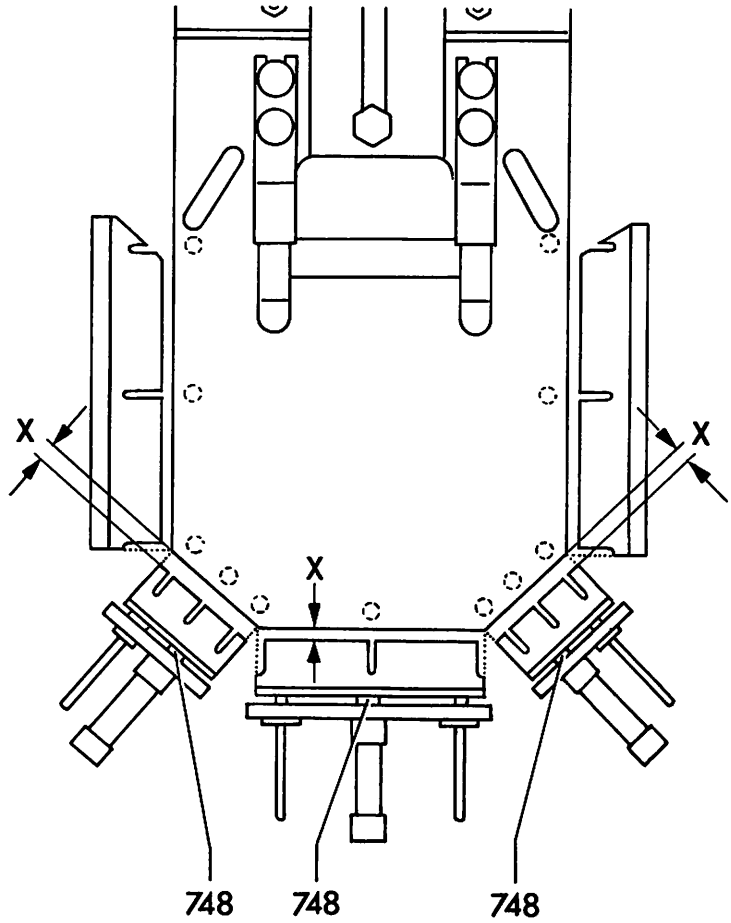

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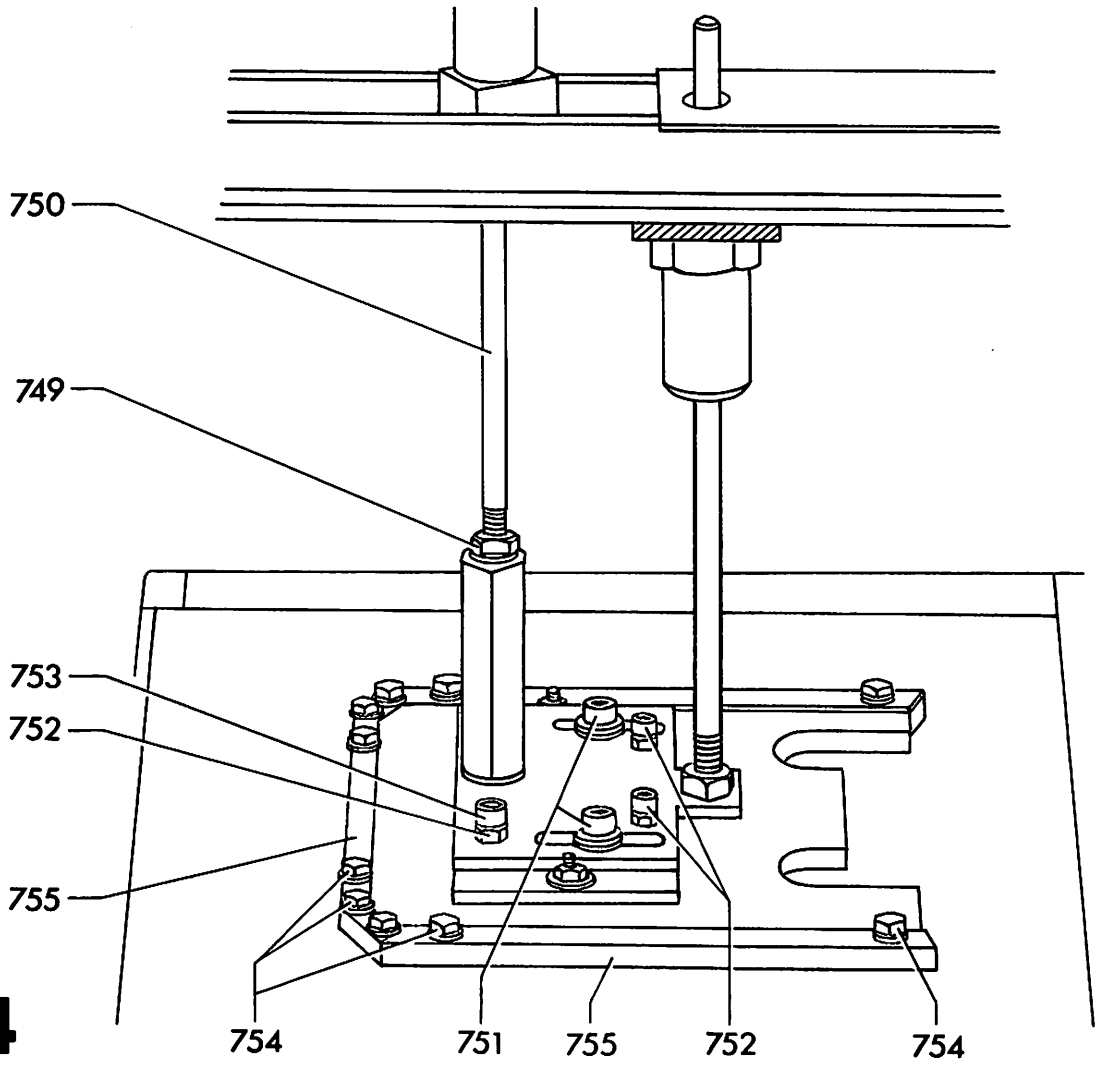


74

63.7 Move the front edge folders to their extended position and loosen locknuts 748 of the piston rods (Fig. 73).

63.8 Turn the piston rods so that the edge folders are at distance "x" from the front edge of the pocket plate (cf. item 63.3). In this poisiton tighten the locknuts 748 securely.

63.9 To adjust the timing of the operating sequence, turn screw 817 on penumatic delay valve 816 so that the timing of the sequence correponds to the pocket style, see table on page 72 which shows the posssible operating sequences.

64. Adjusting the pocket holder (Fig. 74)

64.1 Move the pocket holder to its bottom position and loosen locknut 749.

64.2 Turn piston rod 750 until the pocket holder is raised, then turn the piston rod in the opposite direction until the foam plastic covering rests on the pocket plate. To check this, insert a pocket cutting. When the holder is in its bottom position the pocket cutting must be held in place.

64.3 In this position tighten locknut 749 securely.

64.4 With the pocket holder down, loosen the two screws 751 and the four locknuts 752.

64.5 Adjust the pocket holder by turning screws 753 so that it lies perfectly flat on the table.

64.6 After proper adjustment tighten screws 751 and locknuts 752 securely. Check the adjustment again and correct if necessary.

64.7 Move the pocket plate to its front position and the pocket holder to its bottom position. Take out screws 754 and remove angle strips 755.

64.8 Loosen the two screws 751 and turn the pocket holder so that its edges are flush with those of the pocket plate.

64.9 In this position tighten screws 751 securely.

64.10 Replace angle strips 755, insert screws 754 and screw them in finger-tight.

64.11 Lift the pocket holder, insert a pocket cutting and lower the holder again.

64.12 Push the angle strips lightly and evenly against the fabric and securely tighten screws 754.

64.13 In order to check all adjustments from 61 to 64, fold one pocket cutting. The folded pocket must hug the pocket plate all the way round. If necessary, repeat the above-mentioned adjustments.

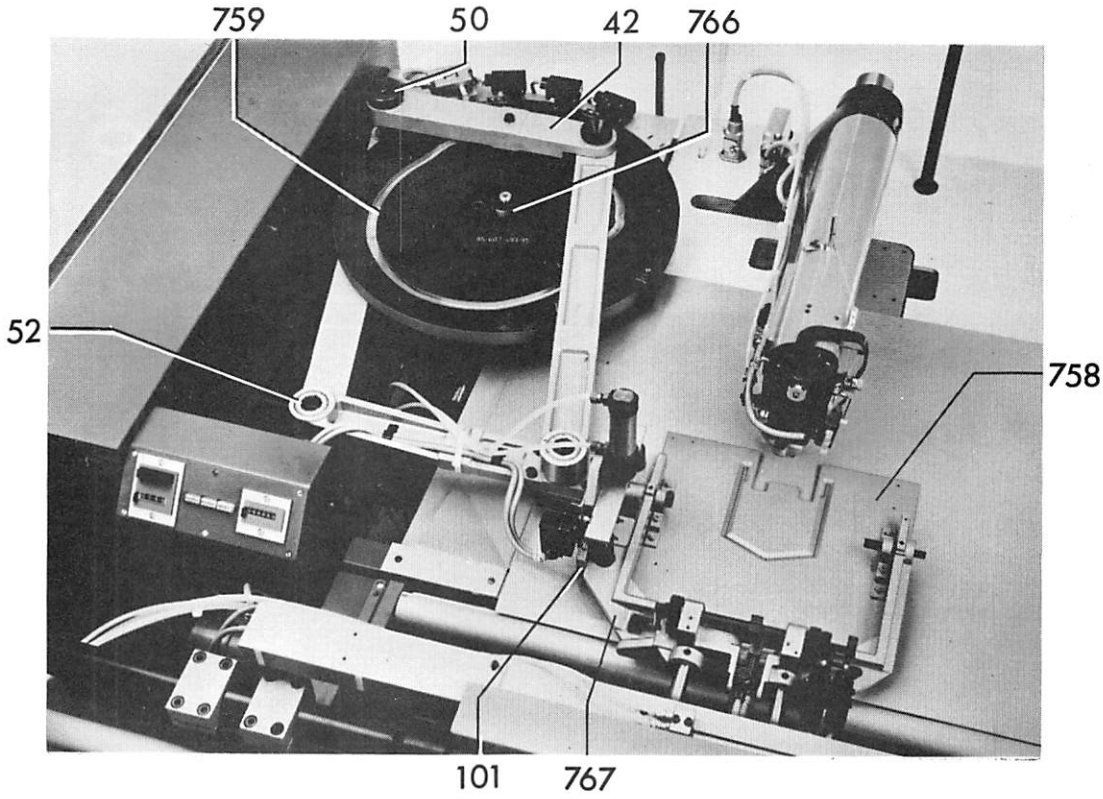
65. Adjusting the sewing template (Fig. 76)

65.1 Loosen screws 756 and grub screw 757, and re-tighten them so that template 758 can be moved with difficulty.

65.2 Turn control cam 759 (Fig. 75) by hand until the needle is at the starting point of the seam.

65.3 Turn the balance wheel until the tip of the needle is in the slot of the template.

65.4 Turn the control cam by hand again and watch the tip of the needle. It must remain in the middle of the slot from the beginning to the end of the seam.



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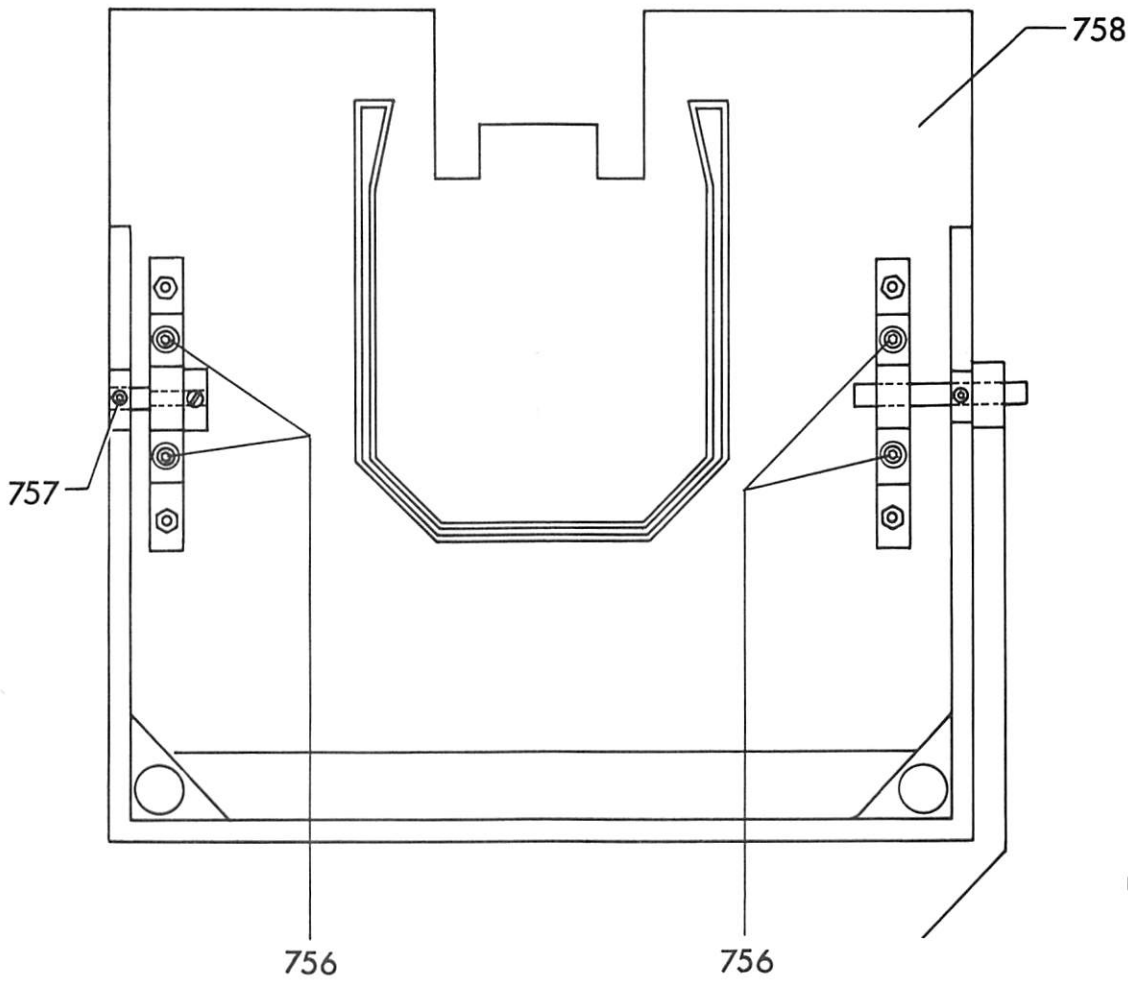


76

65.5 Lengthwise or crosswise deviations are corrected by re-positioning the sewing template. To check this, turn the control cam by hand and watch the needle tip. After each check always move the needle to the top of its stroke.

65.6 After correct adjustment tighten screws 756 and grub screw 757 securely.

66. Making a sewing test

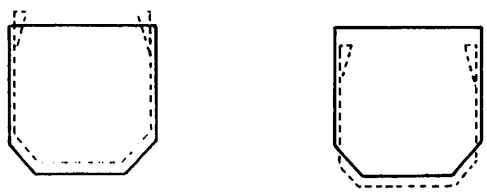
66.1 Place a workpiece and a pocket blank in the machine and make a sewing test.

66.2 If the previous adjustments have been made correctly there are only three faults which may now occur:

66.3 The seam pattern is parallel, but not centred on the pocket.

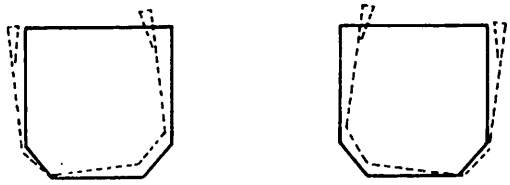
Remedy: adjust stop at end of transfer cylinder accordingly (see item 67).

66.4 The seam pattern is parallel, but too high or too low.



Remedy: set the entire folding station farther forward or back (see item 68).

66.5 The seam pattern is not parallel with the pocket.



Remedy: turn the entire folding station accordingly (see item 68)

66.6 It may happen that a combination of two or three of the above faults occurs. If so, they must be removed step by step. The parallel adjustment of seam to pocket must always be made first.

67. Centering the seam pattern on the pocket (Fig. 77)

67.1 Loosen the two locknuts 148 and 760 and turn the stop in or out as required. The axis of its roller 150 must be aligned with the centre line of rod 131.

67.2 Make a sewing test and adjust the stop again if required.

67.3 After adjustment, securely tighten locknuts 148 and 760.

68. Adjusting the seam pattern parallel to the pocket edge (Fig. 78)

68.1 Loosen the four screws 761 of side stops 762 and disconnect air coupling 0.1 (Fig. 28).

68.2 Loosen the two knobs 278 and re-position the folding station so that the seam is parallel on the sewn pocket.

68.3 After re-positioning, push the side stops up against the frame one after the other and fully tighten screws 761.

68.4 Re-tighten knobs 278, re-connect air coupling 0.1 and make a sewing test.

68.5 If necessary, re-position the folding station again according to items 68.1 to 68.4.

69. Adjusting the distance between front seam and front edge of pocket (Fig. 79)

69.1 Loosen screws 763 and re-position the folding station lengthwise so that the front seam is the same distance from the pocket edge as the side seams.

69.2 Check this adjustment by means of a sewing test.

69.3 After correct adjustment fully tighten screws 763.

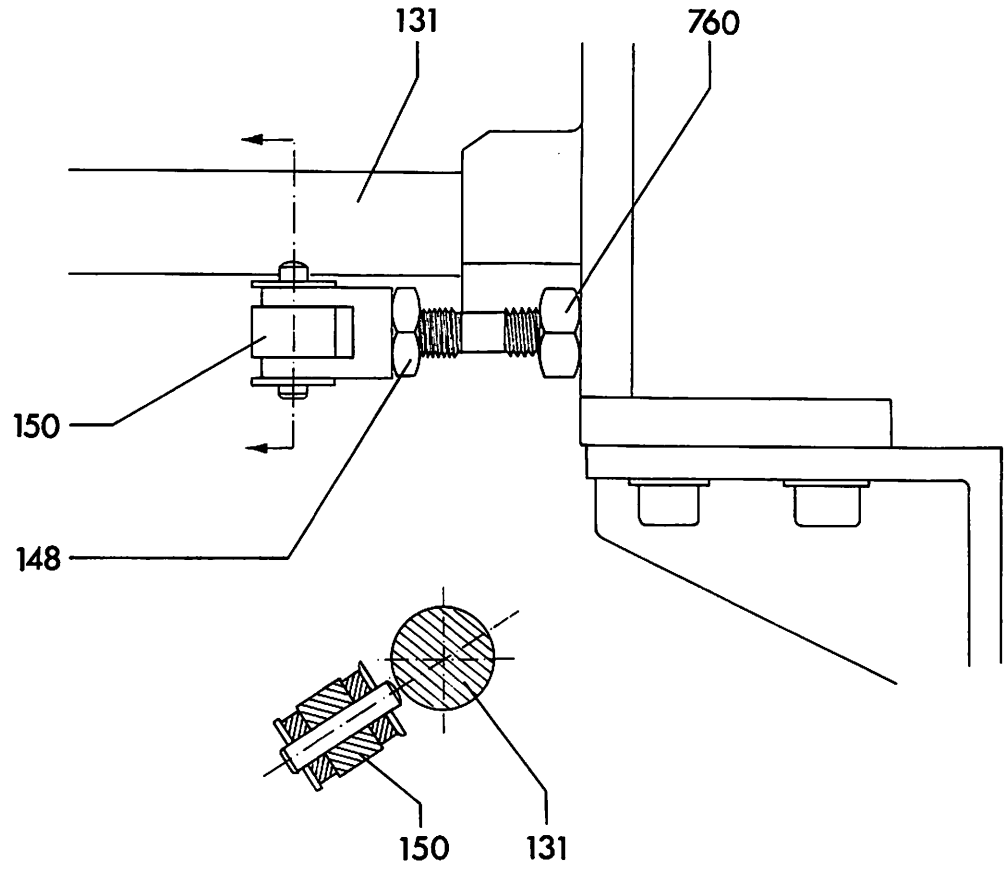
70. Adjusting the height of the sewing machine in relation to the table (Fig. 80)

70.1 Move template 758 to the folding station.

70.2 Remove screws 649 and cover panel 27.

70.3 Using a ruler, check whether the bedplate of the sewing machine is level with the table.

70.4 If necessary, disconnect all connections as described in item 31, remove the sewing machine, and adjust its height by adding or removing spacers as required.



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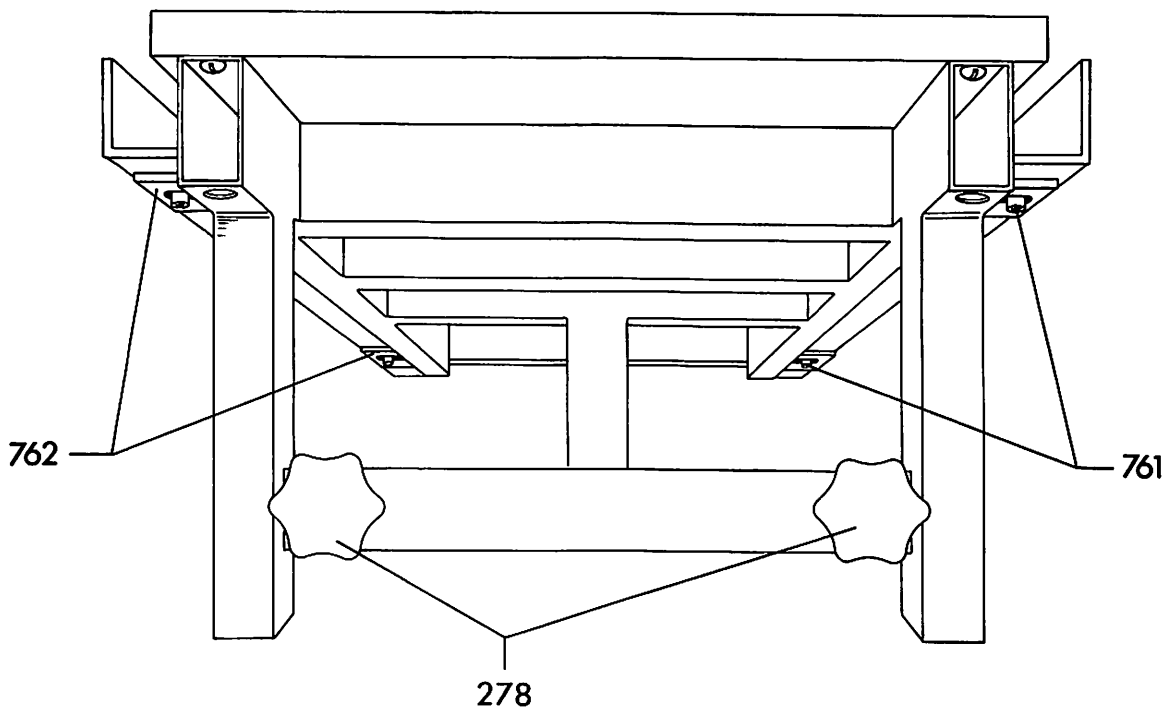

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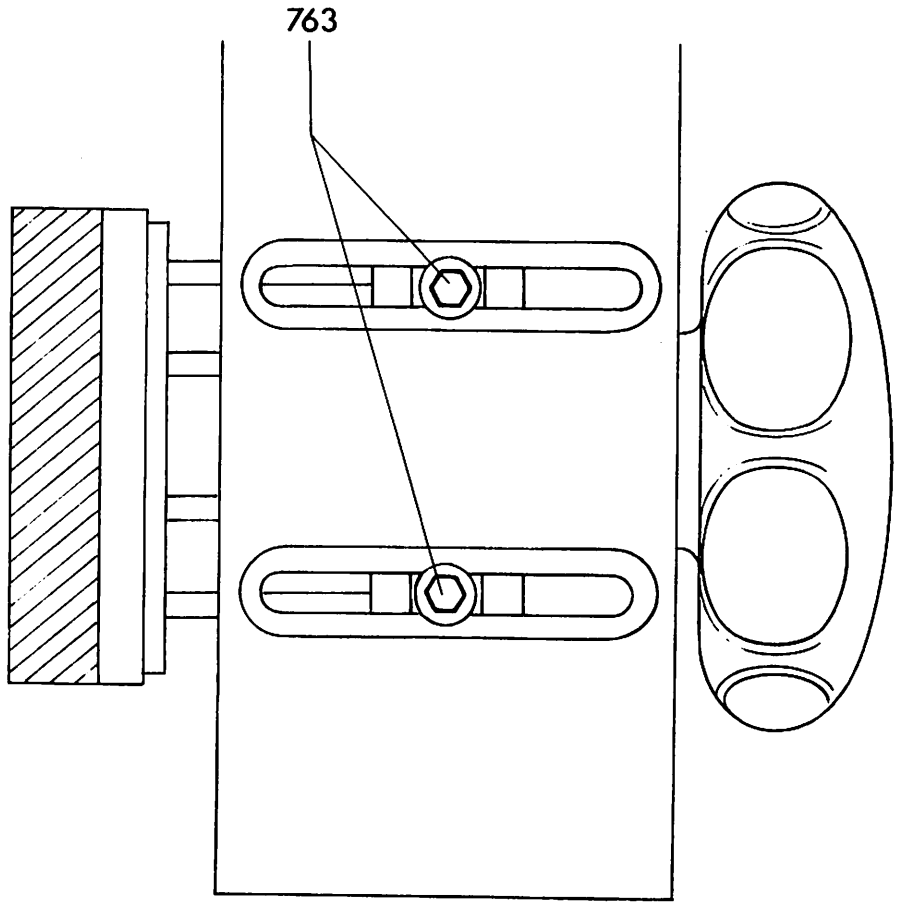

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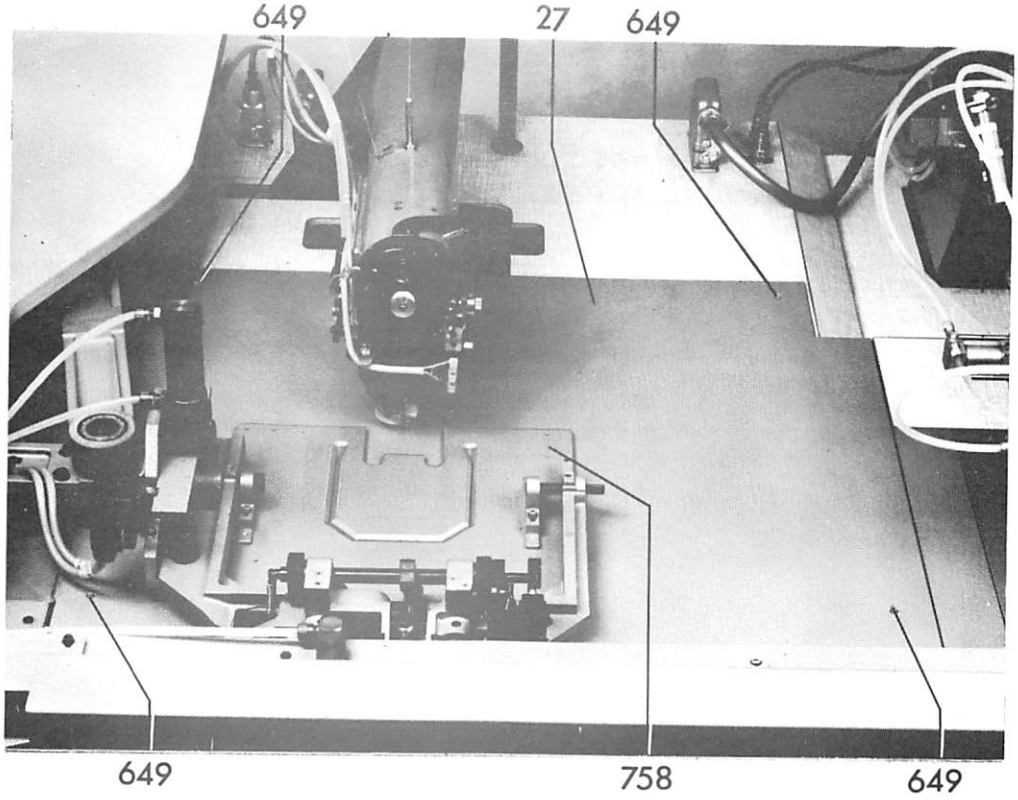
71. Adjusting the control cam bearing (Fig. 81)

71.1 During assembly the control cam bearing is exactly adjusted by means of a gauge. It may happen, however, that the position of the cam is disturbed owing to damage in transit, or to some other external influence. The following adjustment also has to be made when the gear motor has been replaced.

71.2 Position the control cam so that the centre lines of arm pivot bearing 40, drive shaft 764 and the sewing machine needle are all aligned.

In this position the distances between arm pivot bearing, drive shaft and needle must be 268.7 mm and 537.4 mm respectively.



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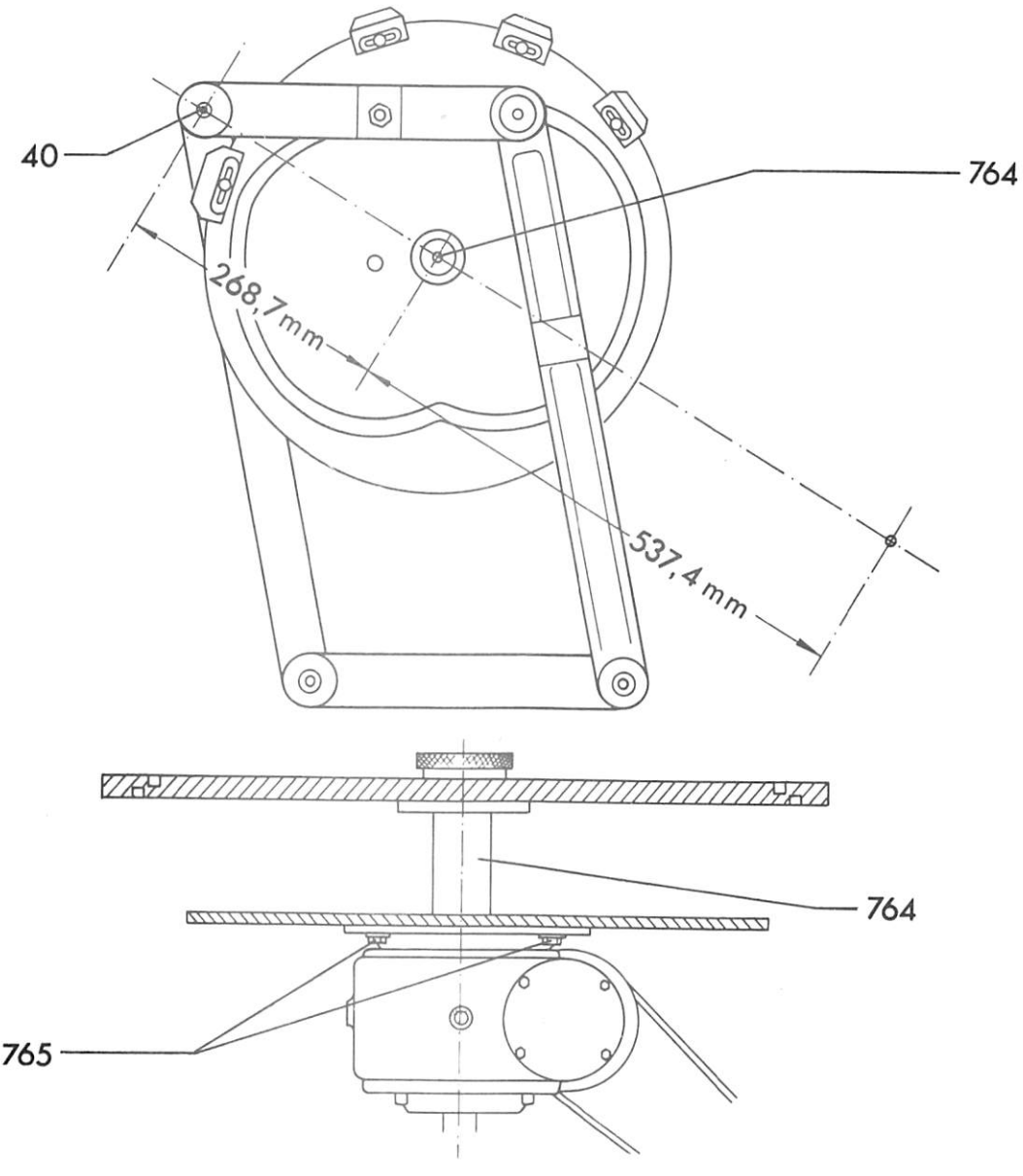

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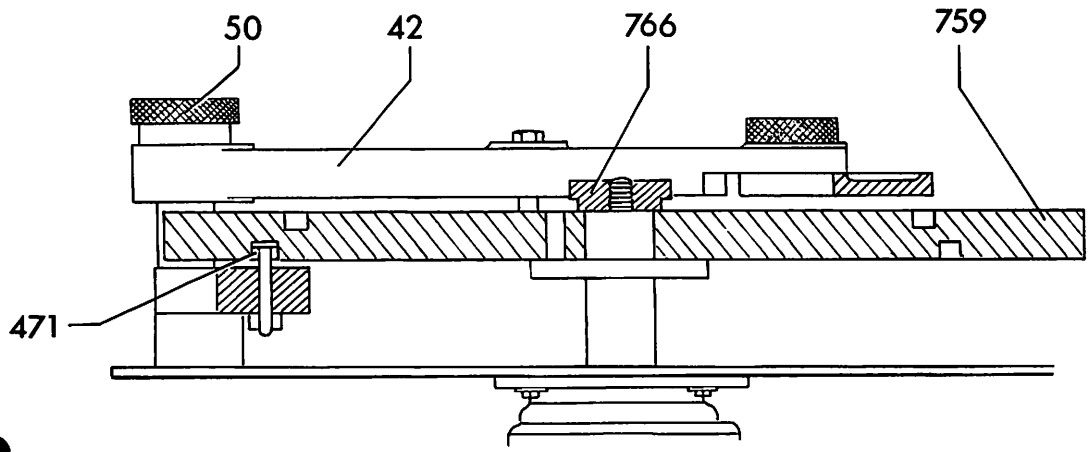

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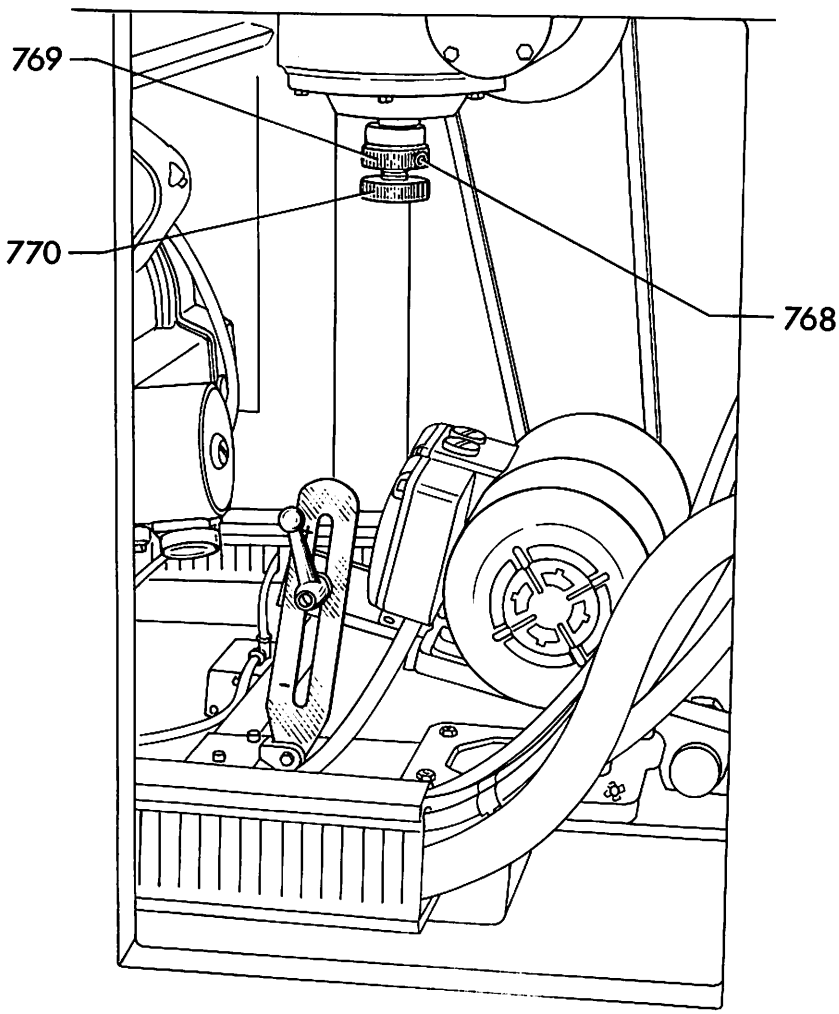

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71.3 If these distances are incorrect, loosen screws 765, re-tighten them a little, then turn the gear motor until the position described in item 71.2 is obtained.

71.4 This adjustment is best carried out with the help of a special gauge. The gauge can be obtained from PI, Kaiserslautern, under part No. 95-612 533-45.

71.5 After proper adjustment tighten screws 765 securely.

72. Adjusting the height of the control cam (Fig. 75)

72.1 Using a 32-mm open-ended spanner, adjust the height of threaded bushing 52 so that the upper and lower control arms clear control cam 759 by roughly the same amount and that there is a clearance of roughly 1 mm between template frame carrier 101 and template frame 767 when the change-action from "sewing" to "transfer" has taken place. The pivots and bearings of the control arms must move without binding.

72.2 If this adjustment cannot be made by altering the height of threaded bushing 52 the setting is obtained by adding distance washers.

72.3 This is done by removing knurled nuts 50 and 766, and placing a distance washer either under the control cam or under control lever 42 (Fig. 82).

72.4 When the correct setting has been found, replace and fully tighten knurled nuts 50 and 766.

73. Adjusting the safety clutch of the control cam (Fig. 83)

73.1 Loosen screw 768 in knurled nut 769.

73.2 Set the torque of the control cam by turning screw 770 so that it is still possible to overcome the torque by hand. Under no circumstances must screw 770 be fully unscrewed. To increase the torque, turn this screw in, to decrease the torque, turn it out.

73.3 After adjustment, re-tigten locknut 769 and screw 768 securely.

74. Adjusting the limit switch mounting plate (Fig. 84)

74.1 Loosen locknuts 771 and adjust the support screws and studs so that limit switches b33 to b37 are properly actuated by trips 772 (Fig. 80).

74.2 After adjustment re-tighten locknuts 771 and check the adjustment by turning the cam by hand. When doing so, make sure that the needle is at the top of its stroke.

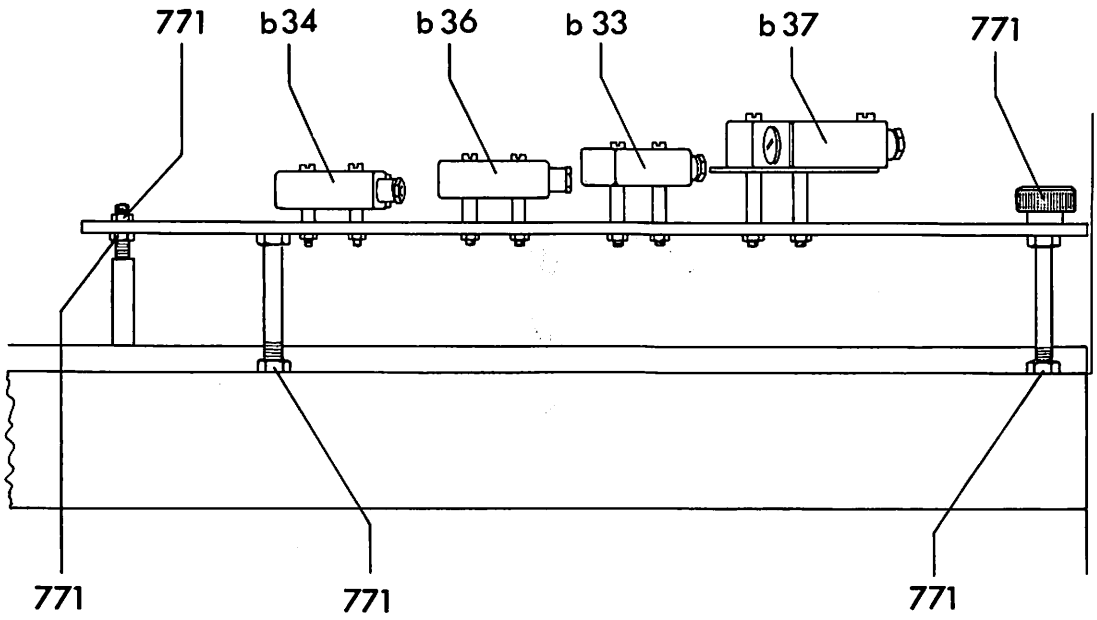
75. Adjusting the template lift (Fig. 85)

75.1 Loosen screw 773 and push the piston rod of cylinder Z10 in as far as it will go.

75.2 Turn eccentric stud 124 until the template has reached its highest position.

75.3 Turn the eccentric clockwise until the slot in the end of the stud is at roughly 45° to the transfer direction (see Fig. 85, top). In this position the template must now rest on the table again.

75.4 Re-tighten screws 773, loosen the two screws 774 on both ends of runner 142 and re-tighten them a little.



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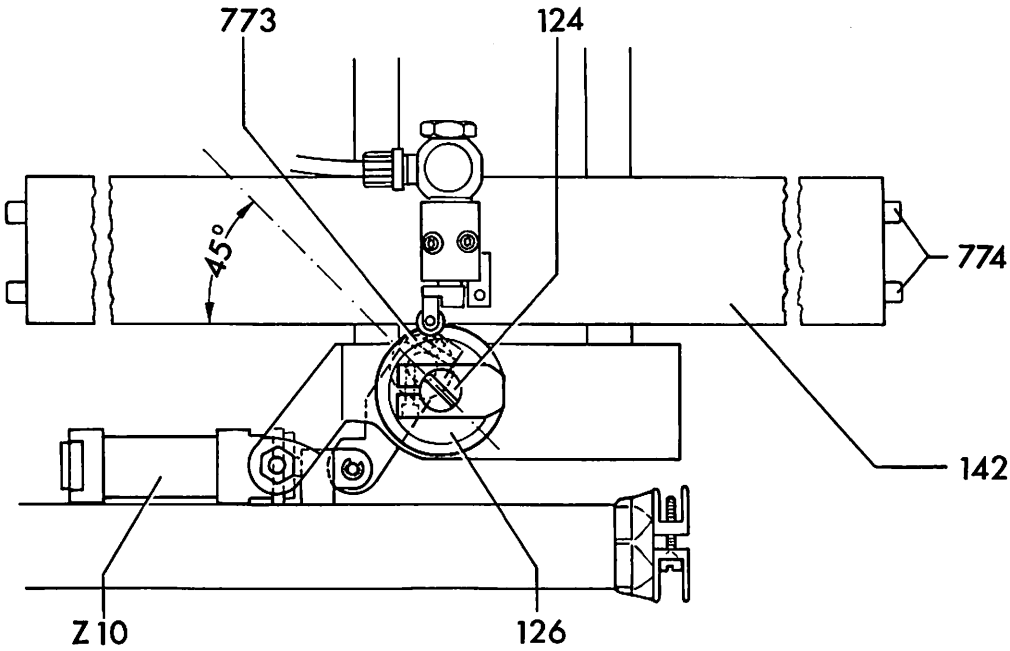

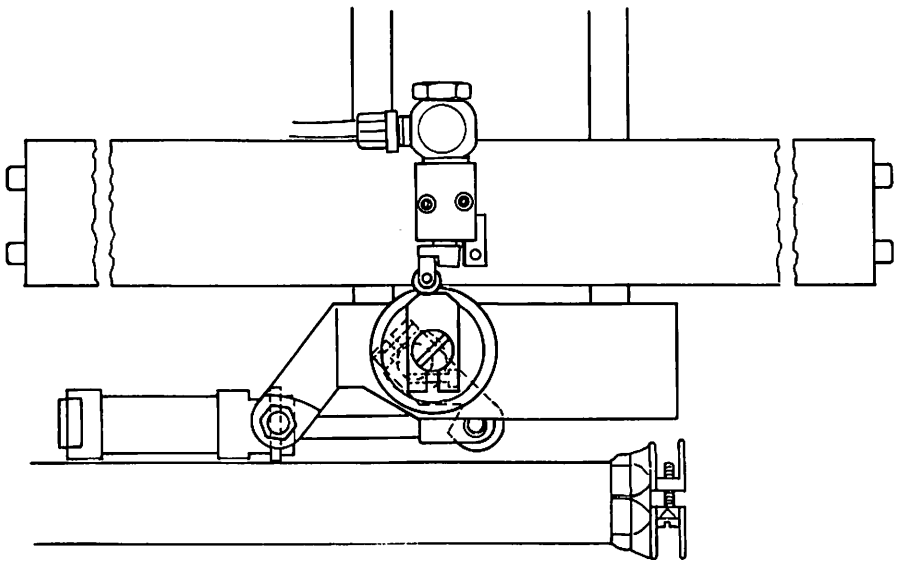

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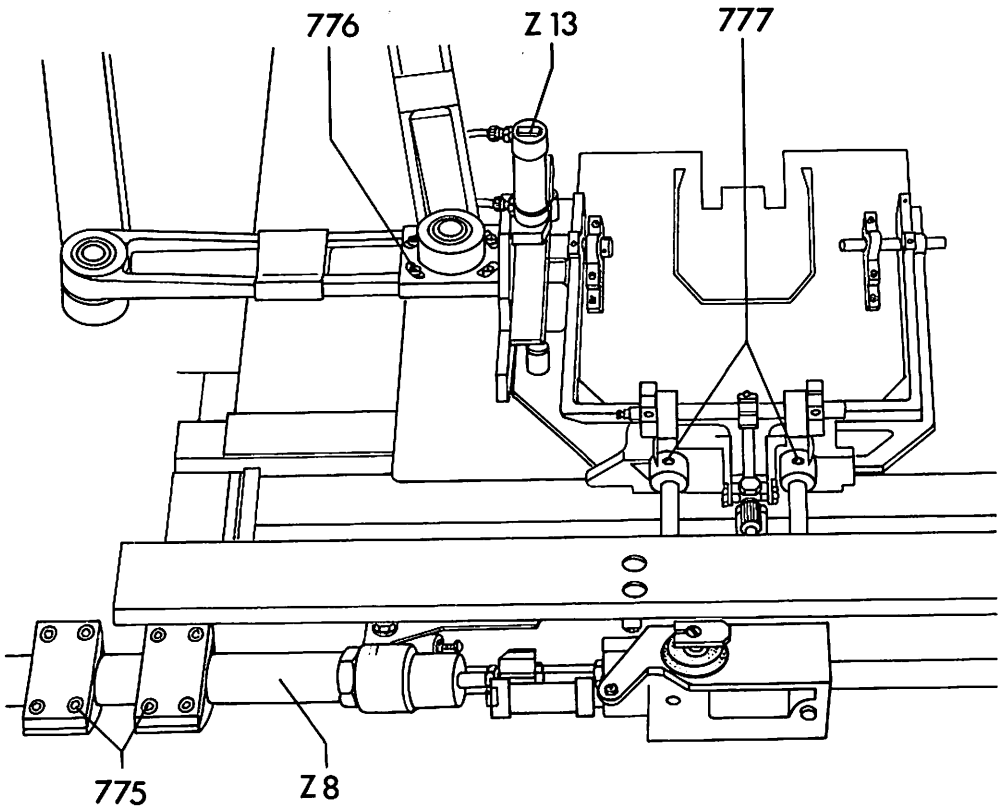

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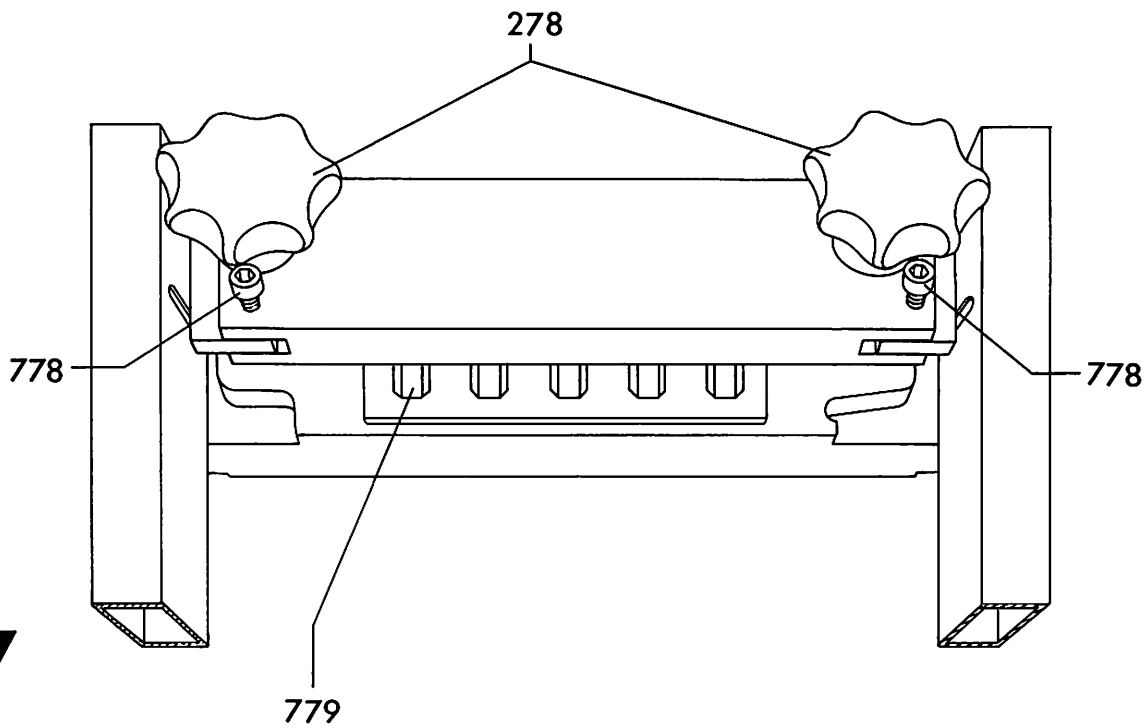

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75.5 Re-position runner 142 so that roller 126 is 0.5 mm from it both at the folding station end and at the sewing station end of the transfer stroke. Check to see if the sewing template strikes against the folding station when in its raised position. If necessary, adjust eccentric 124 as described in paras. 75.1 to 75.3 so that the template is not lifted too high.

75.6 After adjustment, tighten screws 774 again securely.

76. Adjusting the change-action from transfer to sewing motions (Fig. 86)

76.1 Bring the machine to the position "template transfer forwards". The piston rod of cylinder Z8 is fully retracted and the change-action pins on the transfer carrier are engaged.

76.2 Set master switch 602 (Fig. 60) at "0"; loosen the eight screws 775, the four screws 776 and two screws 777.

76.3 Interchange the two air tubes of cylinder Z13 so that the change-action pins on the control arm are also engaged.

76.4 In this position, first tighten screws 776, then screws 775, and the two screws 777.

76.5 Interchange the two air tubes of cylinder Z13 again.

77. Final adjustment of the sewing template

77.1 After the adjustment described in par. 76 check the position of the template in relation to the needle.

77.2 If necessary, re-adjust the template according to paras. 65 and 67.

78. Adjusting the pneumatic connection plate (Fig. 87)

78.1 Loosen knobs 278 and screws 778.

78.2 Align hexagonal tubes 779 exactly with the holes in the connection plate opposite.

78.3 Tighten knobs 278 evenly and tighten screws 778 securely.

79. Adjusting the limit switches.

79.1 Limit switches b6, b7, b8, b9, b12, b13, b17, b18, b20, b22, b23.1, b23.2, b25, b26, b27, b31.1, b31.2, b32, b33, b34, b36, b37, b38 b41, b42, b43, b44, b45 are mechanically-operated switches. The switches, or their operating parts, are to be adjusted so as to ensure perfect functioning of the machine. Their locationsare to be found in the list of electrical parts. The electrical and pneumatic diagrams will assist you in understanding the information given in the lists.

79.2 Adjust limit switch b6 (pressure switch) so that the machine is automatically switched off when the air pressure drops below 4.5 kg/cm^2.

79.3 Adjust limit switch b7 (folding unit up) so that it is operated when the folding unit is in its uppermost position (Z3 retracted).

79.4 Adjust limit switch b8 (pocket holder up) so that it is operated when the pocket holder is at its top position (Z2 retracted).

79.5 Adjust limit switch b9 (transfer forward)so that it is operated when the template carrier is positioned at the sewing station (Z8 retracted).

79.6 Adjust limit switch b12 (template down) so that it is operated when the template is in its bottom position (Z 10 retracted).

79.7 Adjust limit switch b13 (pocket plate forward) so that it is operated when the pocket plate is in its front position (Z1 extended).

79.8 Adjust limit switch b17 (pocket holder down) so that it is operated when the pocket holder is in its bottom position (Z2 extended).

79.9 Adjust limit switch 18 (edge folder back) so that it is operated when the edge folders are fully retracted (Z6 retracted).

79.10 Adjust limit switch b20 (folding unit down) so that it is operated when the folding unit is in its bottom position (Z3 extended).

79.11 Adjust limit switch b22 (edge folders forward) so that it is operated when the edge folders are fully extended (Z6 extended).

79.12 Adjust limit switch b23.1 (change-action, transfer, 1) so that it is operated when the change-action pins on the control arm are disengaged (Z13 retracted).

79.13 Adjust limit switch b23.2 (change-action, transfer, 2) so that it is operated when the change-action pins on the transfer carrier are engaged (Z 12 extended).

79.14 Adjust limit switch b25 (transfer back) so that it is operated when the template transfer mechanism is at the folding station (Z8 extended).

79.15 Adjust limit switch b26 (template up) so that it is operated when the template is in its raised position (Z10 extended).

79.16 Adjust limit switch b27 (pocket plate back) so that it is operated when the pocket plate is at its rear position (Z1 extended).

79.17 Adjust limit switch 31.1 (change-action, sewing 1), so that it is operated when the change-action pins on the control arm are engaged (Z13 extended).

79.18 Adjust limit switch 31.2 (change-action, sewing 2) so that it is operated when the change-action pins on the transfer carrier are disengaged (Z12 retracted).

79.19 Adjust limit switch b32 (trimming off) so that it is operated when the trimming mechanism is in its resting position (Z19 retracted).

79.20 Adjust limit switch b33 (end of cam) so that it is operated when the sewing template changes over from sewing action to transfer action after sewing.

79.21 Adjust limit switch b34 (sewing, fast) so that it is operated after the machine has sewn the first three stitches.

79.22 Adjust limit switch b36 (sewing, slow) so that it is operated when the template has reached the starting point for sewing. In this position, the needle is roughly 3 mm before the tip of the triangular tack.

79.23 Adjust limit switch b37 (end of sewing) so that it is operated when the sewing machine has sewn two tacking stitches after the triangular tack at the end of the seam. These two stitches are made on the straight seam below the tip of the tack.

79.24 Adjust limit switch b38 (trimming on) so that it is operated when the trimming mechanism is in its working position (Z19 extended).

79.25 Adjust limit switch b41 (puller up) so that it is operated when the puller is in its top position (only on versions with puller).

79.26 Adjust limit switch b42 (puller down) so that it is operated when the puller is in its bottom position (only on versions with puller).

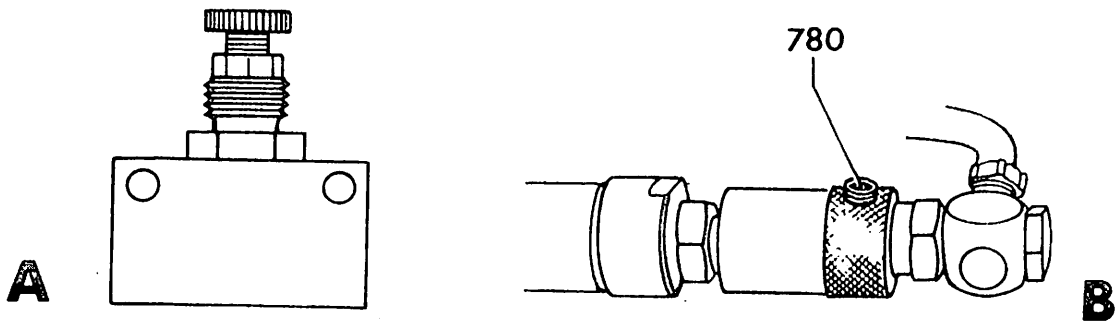
79.27 Adjust limit switch b43 (stacker to starting posn,) so that it is operated when the stacker is at its rear position, i.e. inside the frame.

79.28 Adjust limit switch b44 (stacker forward) so that it is operated when the stacker is in its forward position.

79.29 Adjust limit switch b45 (transfer motion, middle) so that it is operated when the sewing template is transferred from the sewing station to the folding station.

80. Adjusting the pneumatic restrictors

80.1 The machine is equipped with two types of restrictors. Type A is adjusted by turning a regulator screw. To adjust type B, first loosen allen screw 780, then adjust the restrictor by turning its outer sleeve. After adjustment tighten screw 780 securely. The location of the restrictors is to be found in the list of pneumatic parts.



80.2 When adjusting the restrictors always use the pneumatics diagram.

80.3 Adjust restrictor 15 so that the piston rod of cylinder Z16 retracts quickly and freely. The pocket plate should not strike the table too hard.

80.4 Adjust restrictor 16 so that the piston of cylinder Z1 moves out quickly and freely without striking too hard.

80.5 Adjust restrictor 16a so that the piston of cylinder Z1 moves in quickly and freely without striking too hard.

80.6 Adjust restrictor 17 so that the piston of cylinder Z 2 moves out quickly and freely without striking too hard.

80.7 Adjust restrictor 17 a so that the piston of cylinder Z 2 moves in quickly and freely without striking too hard.

80.8 Adjust restrictor 18 so that the piston of cylinder Z 3 moves out quickly and freely without striking too hard.

80.9 Adjust restrictor 18 a so that the piston of cylinder Z 3 moves in quickly and freely without striking too hard.

80.10 Adjust restrictor 18 b so that the piston of cylinders Z4 and Z 5 are extended slowly. This ensures that the folding unit is lifted out of the folding area.

80.11 Adjust restrictor 19 so that the pistonsof cylinders Z 6 a - 6 d move in quickly and freely without striking too hard.

80.12 Adjust restrictors 19 a,19 b so that the cylinders of pistons Z 6 a to 6 d are moved out in the sequence corresponding to the seam pattern. The sequence is indicated by a sketch in the pneumatics diagram.

80.13 Adjust restrictor 20 so that the pistons of cylinder Z 7 a - 7 f move in quickly and freely without striking too hard.

80.14 Adjust restrictor 21 so that the piston rod of cylinder Z 8 moves out quickly and freely. The cylinder has a damping action at both ends in order to prevent the piston rod from striking too hard.

80.15 Adjust restrictor 21 a so that the piston of cylinder Z 8 moves in quickly and freely.

80.16 Adjust restrictor 22 so that the pistons of cylinders Z 10 and Z 11 move out quickly and freely without striking too hard.

80.17 Adjust restrictor 22 a so that the pistons of cylinders Z 10 and Z 11 move in quickly and freely without striking too hard.

80.18 Adjust restrictor 23 so that the pistons of cylinders Z 12 and Z 13 move in and out quickly and freely without striking too hard.

80.19 Adjust restrictor 23 a so that the pistons of cylinders Z 12 and Z 13 move in and out quickly and freely without striking too hard.

80.20 Adjust restrictor 24 so that the piston of cylinder Z 14 moves out quickly and freely.

80.21 Adjust restrictor 25 so that the piston of cylinder Z 15 moves out quickly and freely without striking too hard.

80.22 Adjust restrictor 25 a so that the piston of cylinder Z 15 moves out quickly and freely without striking too hard.

80.23 Adjust restrictor 26 so that the piston of cylinder Z 19 moves out quickly and freely.

81. Adjusting the time relays (Fig. 88)

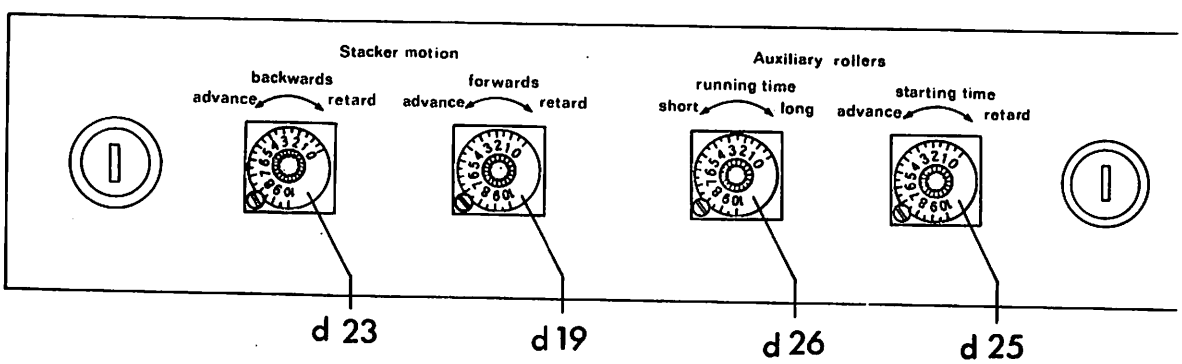
81.1 The time relays are situated in the control box of the machine. The number of relays depends on the machine version.

The delay time of the relays is set by turning a knob which is either situated on the relay itself or (e.g. on versions with stacker puller) at some other location on the machine.

81.2 Time relay d15 delays the action of the edge folders during folding. The edge folders must not be extended until the material is held properly by the positioning pins.

This is usually done by setting the button of the relay to "1" .

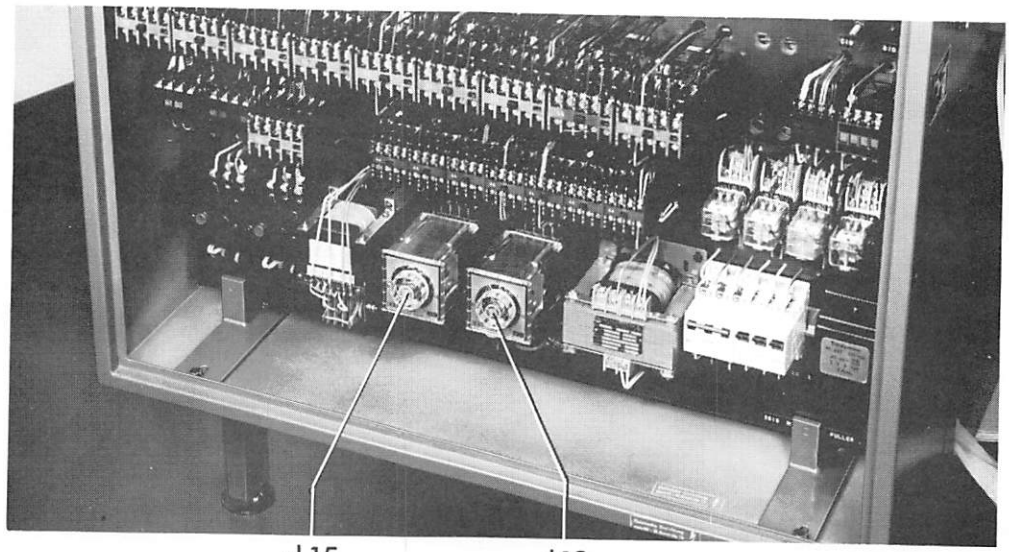
81.3 The adjustment of time relays d19, d25, d26 and d 23 depends on the length of the workpiece and the location of the pocket on the workpiece. At any rate, the workpiece must rest with its middle on the stacker bar after stacking. The adjustments are as follows:

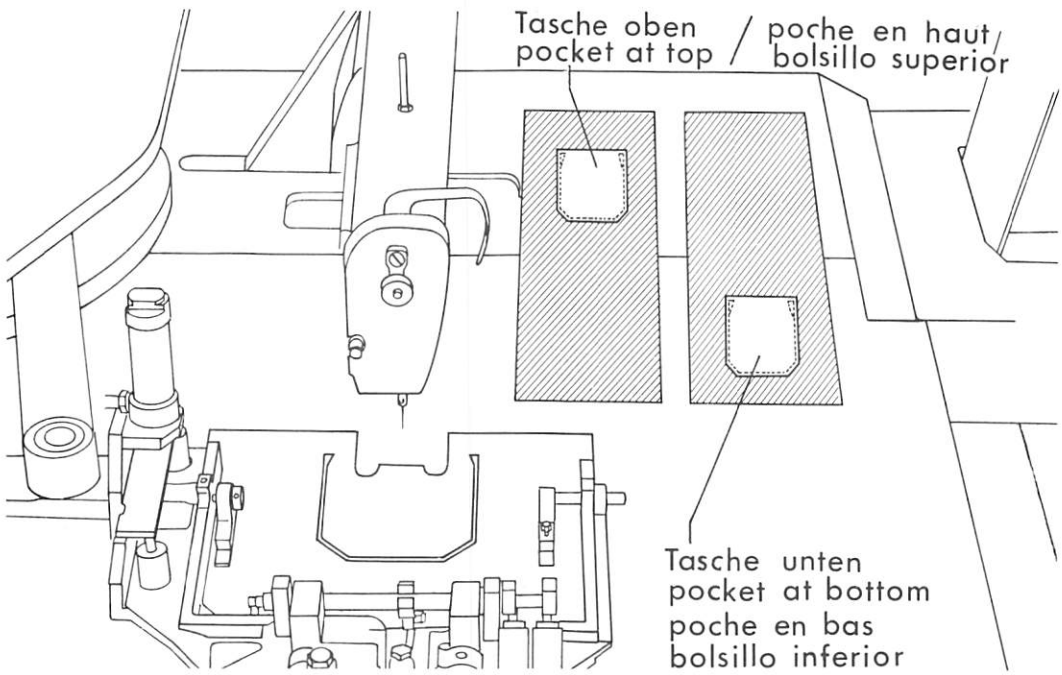


81.4 Time relay d19 (stacker forward) determines the timing of the stacker forward motion (to the inside of the machine). If the pocket is at the top of a workpiece the stacker must move forward earlier; if the pocket is at the bottom the stacker must move in later.

81.5 Time relay d25 (puller motor on) determines the timing for starting the puller motor.

Adjust time relay d25 so that the puller motor begins to run when the roller puller descends onto the material.





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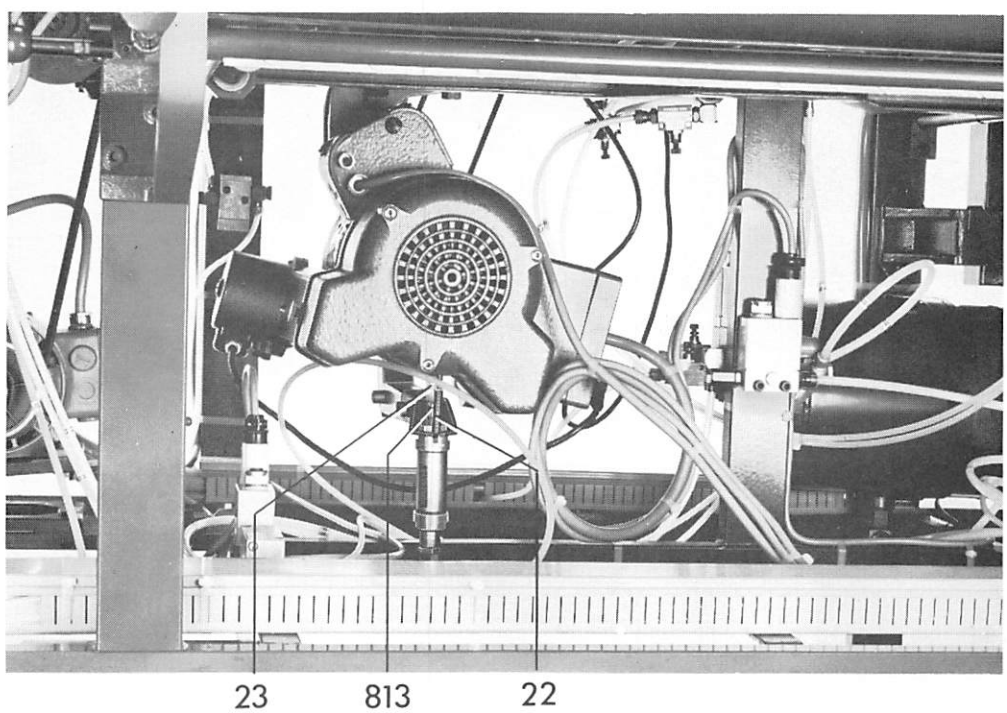

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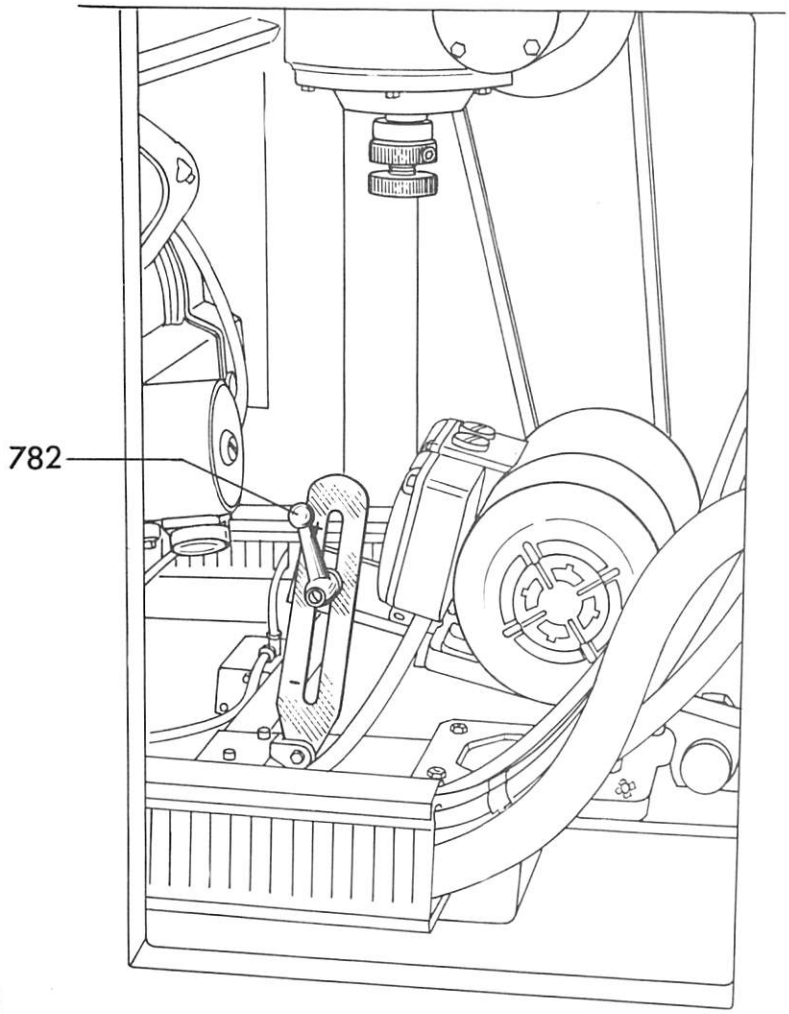

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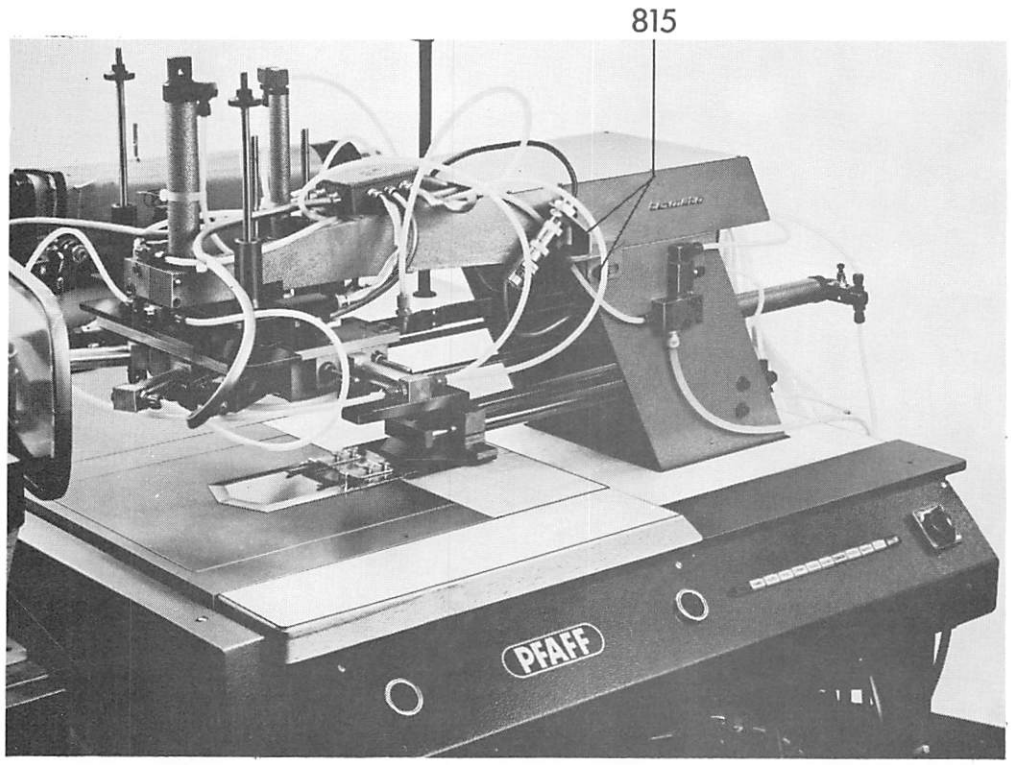

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81.6 Time relay d26 (puller motor off) determines the time when the motor is switched off. This governs the running time of the roller puller.

The timing of this relay depends both on the length of the workpiece and on the location of the pocket.

For short workpieces and/or "pocket at bottom" the running time must be longer; for long parts and/or "pocket at top" it must be shorter.

81.7 Time relay d23 (stacker back) determines the length of time that the stacker remains in its forward position (within the machine).

The greater the length of part, the longer the stacker must remain forward. This ensures that the top half of the workpiece drops through. If the delay time is too short, the end of the workpiece is caught by the stacker on its backward stroke.

82. Adjusting the motor switch lever (Fig. 89)

82.1 With the machine switched off, loosen locknut 813 and turn it a number of times towards the cylinder.

82.2 With tension spring 22 connected, turn stop sleeve23 so that it is 0.5 mm from the motor housing.

82.3 In this position tighten locknut 813 securely.

83. Adjusting the stitch length (Fig. 90)

83.1 Loosen toggle 782 and adjust the height of the motor.

83.2 To increase the stitch length, push the motor mounting bracket towards "+".

83.3 To decrease the stitch length, push the motor bracket towards "-".

83.4 After obtaining the required setting, tighten toggle 782 securely.

84. Adjusting the marking lights (Fig. 91)

84.1 The marking lights are used for positioning workpieces which are marked accordingly. These lights are adjusted according to the cutting and to the type of pocket.

84.2 Loosen the four screws 815 and re-tighten them a little.

84.3 Move the pocket plate to its forward position and place a pocket blank on it.

84.4 Adjust the marking lights by turning and moving them so that the lights are positioned on the pocket blank markings.

84.5 After adjustment tighten screws 815 securely.

Pocket style conversions

85. Changing the control cam (Fig. 92)

85.1 Remove knurled screw 49 and knurled nut 50.

85.2 Lift off lever 42 and move lever 57 away from the cam.

85.3 Remove knurled nut 766 and lift the control cam out of the machine.

85.4 Fit the new cam so that roller 47 in Fig. 82 is positioned in the groove on the underside.

85.5 Swing lever 57 back into place and fit lever 42 so that roller 47.2 is positioned in the cam track. Align the holes of levers 42 and 57, insert knurled screw 49 and tighten it.

85.6 Replace and tighten knurled nuts 50 and 766.

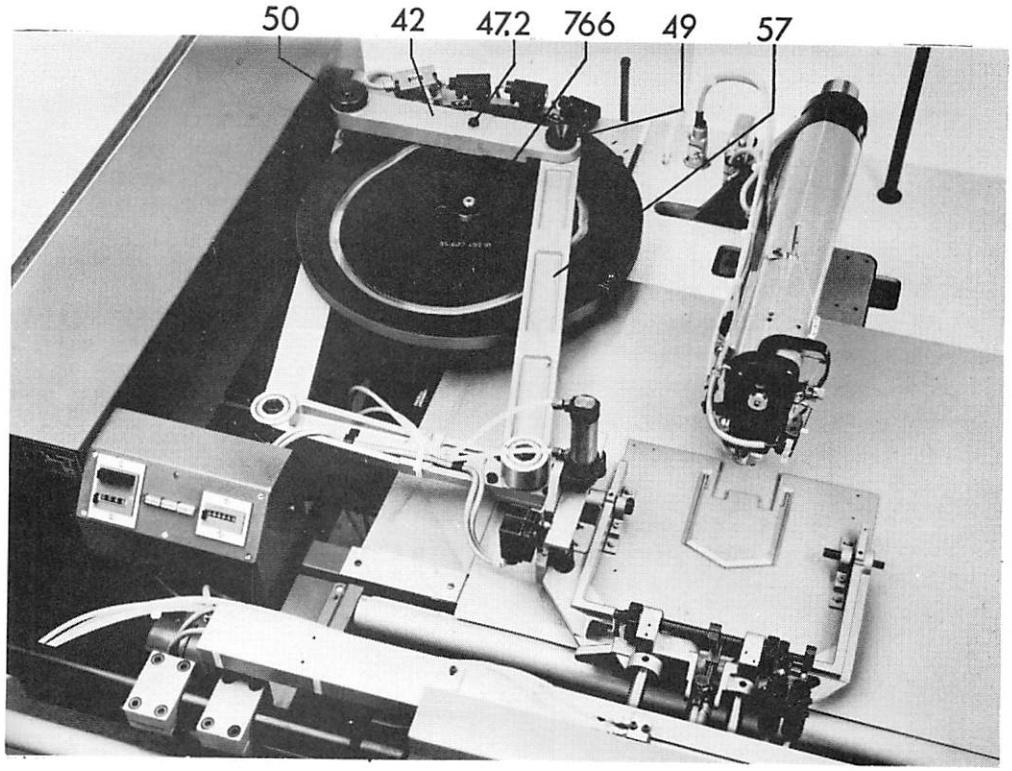
86. Changing the sewing template (Fig. 93)

86.1 Loosen screws 785 and 786.

86.2 Remove fixing ring 787 and push pin 788 to the right until it is flush with bearing 789. Push the sewing template to the right and pull it out of the machine.

86.3 Insert the new template and push its left bearing support as far as it will go to the left on its pin. Insert pin 788 in the right-hand bearing.

86.4 Tighten screw 785, fit ring 787, push it to the far left and tighten screw 786.



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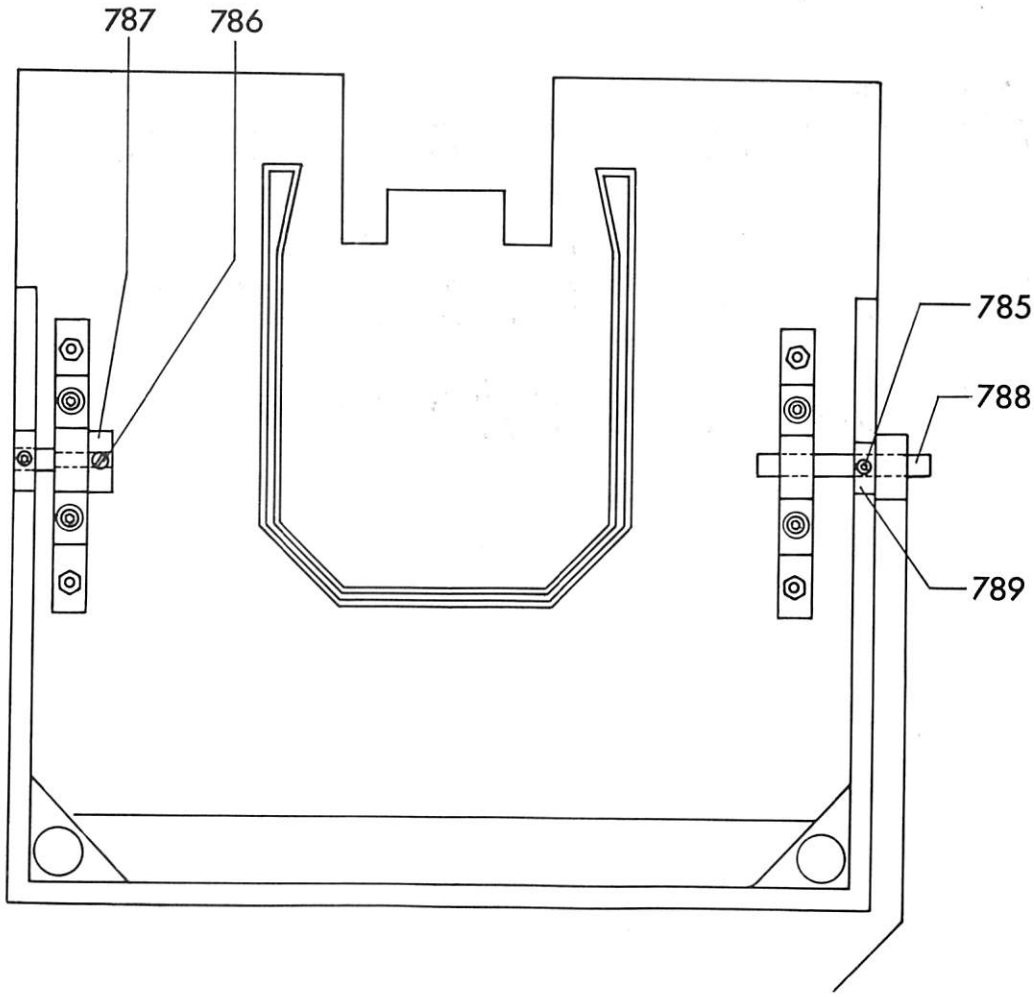

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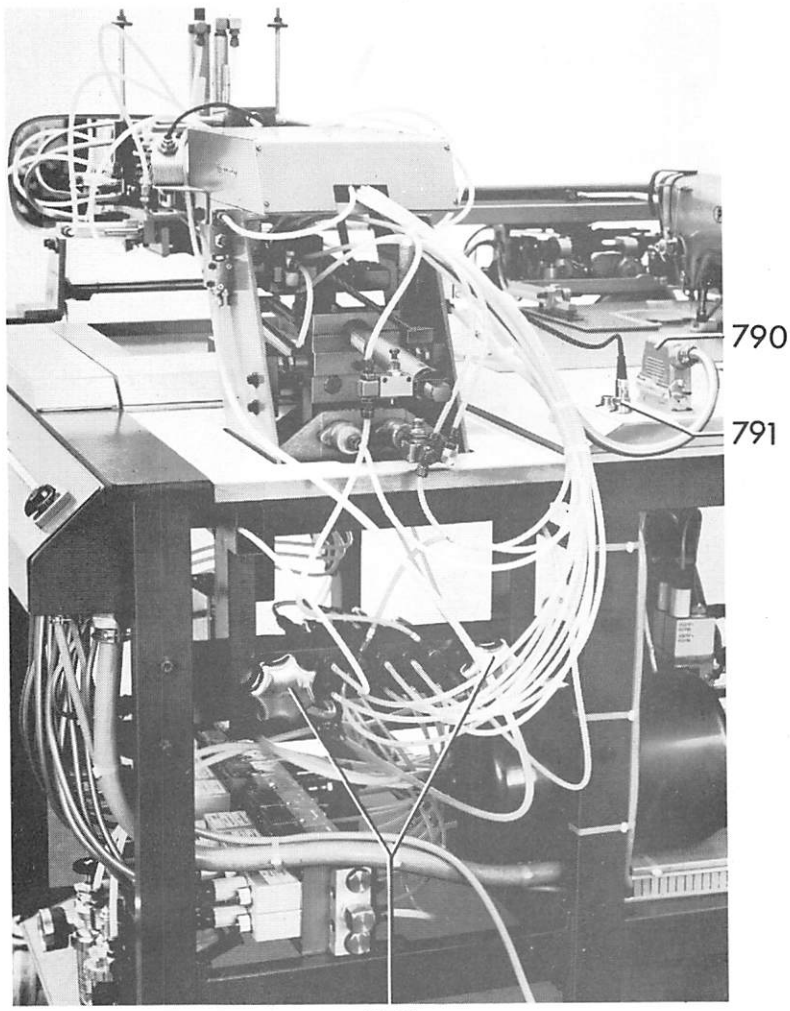
87. Changing the folding station (Fig. 94)

87.1 Disconnect plugs 790 and 791 and remove knobs 278.

87.2 Pull the entire folding station out towards the rear and install the new one.

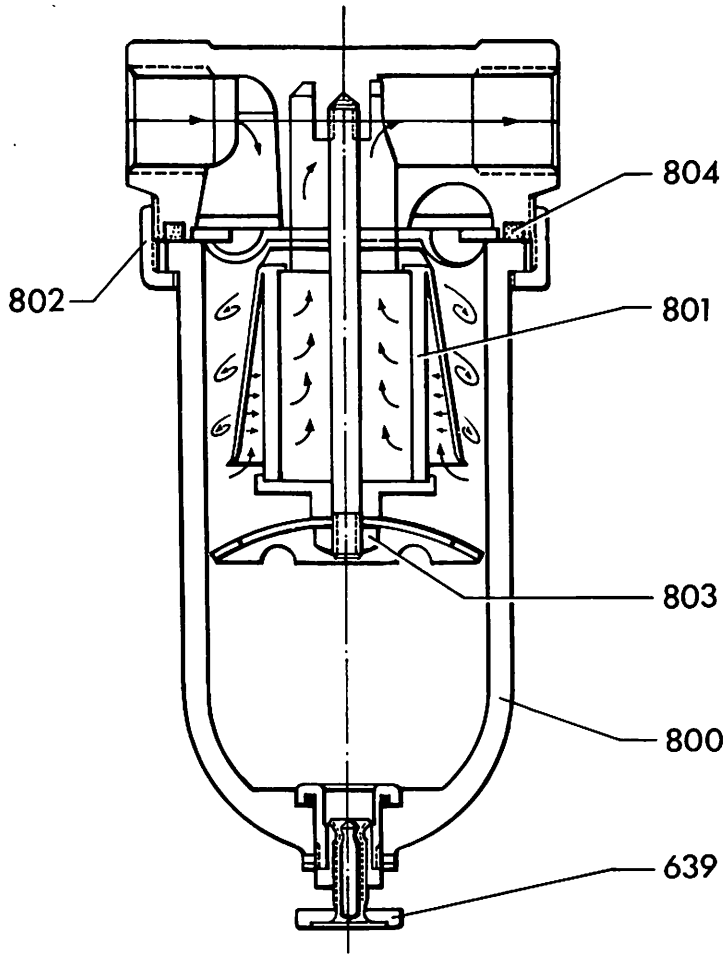
87.3 Replace and tighten knobs 278 and insert plugs 790 and 791 again.

87.4 Carry out folding and sewing test and adjust as described in paras. 60 to 69 if required.



94

Maintenance Instructions



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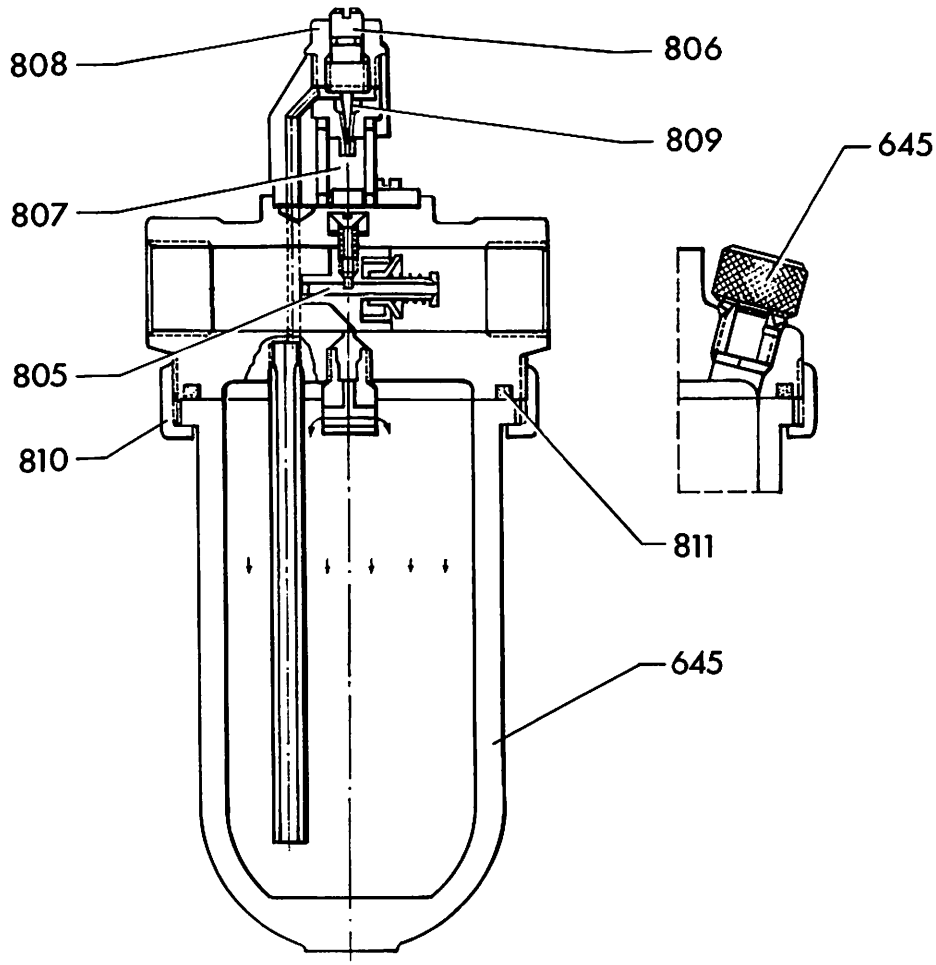


101

90. Work on the conditioning unit

The conditioning unit is to be regularly checked according to the following items in order to ensure trouble-free operation.

90.1 Emptying the water trap (Fig. 100)

The water level in container 800 must not rise above the marking "Höchster Wasserstand" (maximum water level). The water is to be drained off from time to time as follows: turn off the compressed air and unscrew drain tap 639 and allow the water to drain off. Afterwards, re-tighten drain tap 639 immediately so that no pressure is lost.

90.2 Cleaning the air filter (Fig. 87)

If the working pressure drops below 6 kg/cm^2 (roughly 85 p.s.i.) filter 801 has to be cleaned. To do this, unscrew ring 802 and remove water container 800. Remove hexagon nut 803 and take out filter 801 together with the catcher plate.

Rinse the filter with petrol or carbon tetrachloride and blow it out from the inside with compressed air.

If necessary, also clean container 800 with petrol, paraffin or water.

During refitting, make sure that sealing ring 804 is properly seated in the groove of the housing.

90.3 Topping up the oil (Fig. 101)

With the compressed air turned off, remove plug 645 of the vapourizer and top up the marking "Höchster Ölstand" (maximum oil level) with Pfaff oil (Ursulin II 4.5°E, 50°C), No. 280-1-120 120. Afterwards, insert and tighten plug 645.

90.4 Regulating the drip speed of the vapourizer (Fig. 101)

One drop of oil should pass into the vapourizer for every 30 operating cycles of the machine.

For more oil, turn regulating screw 806 clockwise, for less oil, turn this screw anti-clockwise. The drip speed can be checked at window 807.

90.5 Cleaning the oil jet and container (Fig. 101)

After turning off the compressed air remove cap 808, take out jet 809 and blow through it with compressed air. If necessary, also clean container 640 with petrol, paraffin or water. To do this, unscrew ring 810 and take off container 640. During refitting, make sure that sealing ring 811 is properly seated in the groove of the housing .

91. Lubricating the machine (Fig. 102)

91.1 The following points of the sewing machine are to be regularly oiled with Pfaff sewing machine oil:

the top and bottom oilpads on the needle bar,

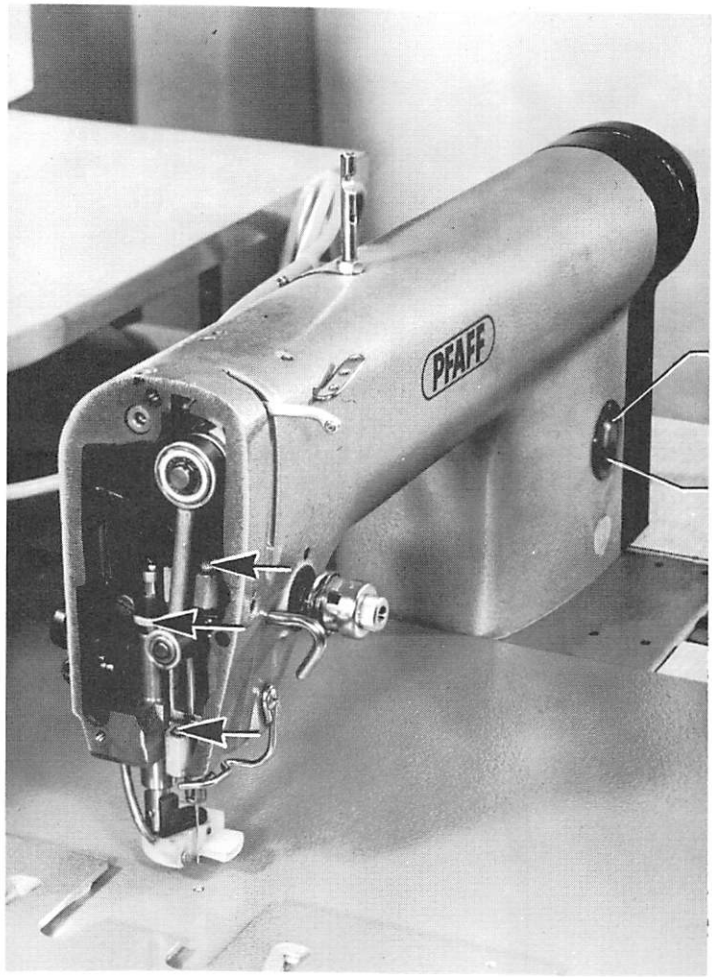
and the felt ring on the workpiece presser bar (see arrow).

91.2 The level of oil for lubrication of the sewing hook must be between the two markings on oil sight glass 641. Top up through hole 642.

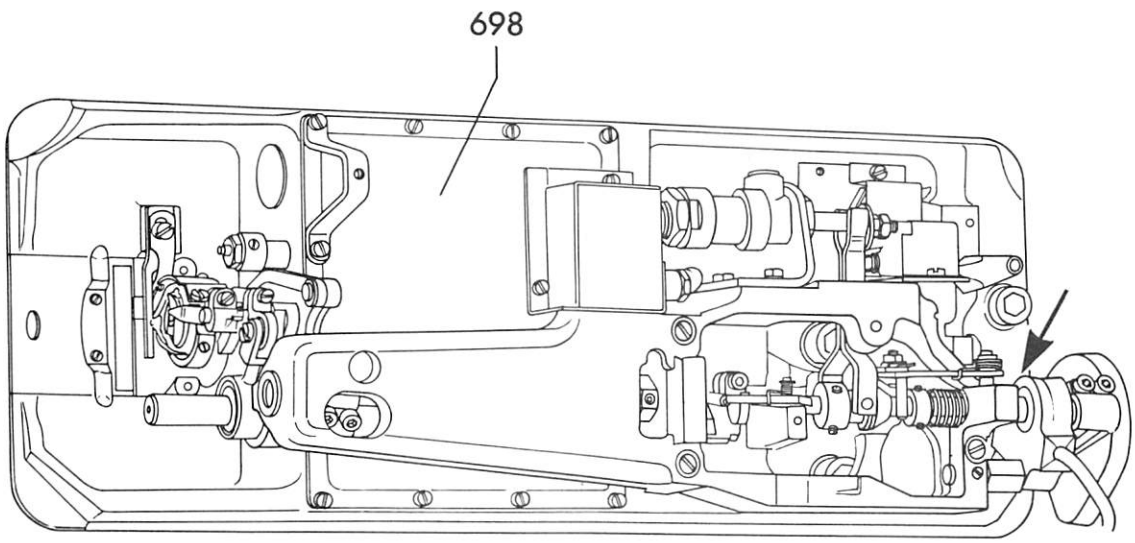
91.3 The guide rods of the template transfer mechanism must be cleaned daily and lightly greased once a week with "Shell Alvania 3" bearing grease.

91.4 Clean the synchronizer once a week and clean the contact tracks with a dry cloth (see arrow in Fig. 103).

91.5 Oil the holes at both ends of the stacker roller with Ursulin II.



102



103

91.6 Oil or grease the moving parts of the folding station regularly.

91.7 The foam plastic pads (part Nos. 91-069 299-05 and 91-069 302-05) in the gearcase of the sewing machine are to be renewed once a year and soaked with roughly 130 cc of Pfaff oil (No. 280-1-120 120).

91.8 To do this, remove the sewing machine as described in par. 31, and take off the trimming mechanism and gearcase cover 698 (Fig. 103 as described in par. 33.

After replacing the oilpads, refit the cover and the trimming mechanism as described in par. 39.

91.9 After every two years of operation the ball bearings of the sewing machine motor must be cleaned and the housing filled by two thirds with "Shell Alvania 3" bearing grease. Also clean and regrease the worm gear of the auxiliary drive in the sewing machine motor.

Ordering control cams and sewing templates

95. Information for ordering control cams and sewing templates

95.1 Standard parts sets can be supplied for a great number of different pocket styles and sizes. The pocket styles and the corresponding dimensions are compiled in a list available at all agencies. When ordering a parts set for a certain pocket it is merely necessary to quote the number given in this list.

If the required pocket style is not included in the list, please send the following items to Pfaff Industriemaschinen, Kaiserslautern.

95.2 An actual-size cardboard template on which the main dimensions are marked out.

95.3 Ten pocket cuttings. A margin of 12 to 15 mm is needed for folding.

95.4 Enough material to sew on the ten pockets. One original workpiece cutting is required showing the location of the pocket.

95.5 Thread of the type intended for sewing on the pockets.

95.6 For the sewing tests it is absolutely imperative that those materials and threads are sent in for which the parts set is required.

Lists and Diagrams

100. Specifications

Sewing machine:	463-650/01-900/30
Stitch type:	lockstitch
Sewing speed:	3,450 s.p.m.
Stitch length:	1.8 to 2.5 mm
Needles:	system 134 ERcf 134 kKERcf 134 RCrcf
Needle size:	80; 90
Working pressure:	6 kg/cm^2 (roughly 85.4 p.s.i.)
Air consumption:	roughly 7 litres/cycle
Electrical specs.:	see spec. plate on control box
Max pocket size:	200 x 200 mm
Min. " " :	70 x 70 mm

	Version N	Version L
Dimensions		
L x B x H:	2,250 x 1,450 x 1,300 mm	2,400 x 1,450 x 1,300 mm
Distance from needle to middle of folder:	650 mm	800 mm
Work area from needle to outer edge of workpiece, left:	385 mm	560 mm
right:	385 mm	535 mm
Weight:	530 kg	550 kg

101. List of electrical equipment for the Pfaff 3518

All contactors listed in the following operate at 50 and 60 c/s. For voltages other than 220/380 V, 3-phase A.C., a transformer (part No. 71-5500-0085) is to be used.

Circuit diagrams:

for 380 V, 3-phase A.C.: 95-614 940-95

for 220 V, 3-phase A.C.: 95-614 941-95

Circuit diagrams for versions with puller:

for 380 V, 3-phase A.C.: 95-614 942-95

for 220 V, 3-phase A.C.: 95-614 941-95

Element	Description	Location	Part number
a1	Master switch Type: C6E; A202 Deutsche Solenoid	control panel at folding station	71-1100-0155
a2	Overload switch for cam motor, for 380 V, 3-phase A.C. Type: 3 VA1 310-1J; (1-1.5 A) for 220 V, 3-phase A.C. Type: 3 VA 1 310-1J (1-1.5 A) Siemens	mounting bracket, control box	71-1100-0196 71-1100-0196
a3	Overload switch for sewing machine motor for 380 V, 3-phase A.C. Type: 3 VA 1 310-1J (1-1.5A) for 220 V, 3-phase A.C. Type: 3 VA1 310-1L (2-3 A) Siemens	mounting bracket, control box	71-1100-0196 71-1100-0198
A	Universal relay for needle positioning Type: UF 3-24 V = Kuhnke	mounting bracket, control box	
B	Universal relay for thread trimming Type: UF 3-24 V = Kuhnke	mounting bracket, control box	71-1900-0060

Element	Description	Location	Part Number
b1	Push-button "ON" Type: 1.15101.001 Rafi	control panel at folding station	71-1300-0097
b2	Push-button "OFF" Type: 1.15101.001 Rafi	control panel at folding station	71-1300-0097
b3	Push-button "RESET" Type: 1.15101.001 Rafi	control panel at sewing station	71-1300-0097
b4	Push-button "Autom". Type: 1.15101.001 Rafi	control panel at folding station	71-1300-0097
b5	Push-button "HAND" Type: 15101.001 Rafi	control panel at folding station	71-1300-0097
b6	Pressure switch Type: MCS 11 Klöckner-Moeller	mounting bracket, pneumatic element	71-7100-0005
b7	Limit switch "folding unit up" Type: BZ 2 RW 82 Honeywell	folding station	71-1200-0509
b8	Limit switch "pocket holder up" Type: BZ 2 RW 80 Honeywell	folding station	71-1200-0393
b9	Limit switch "transfer forward" Type: ESC 200-3E Kissling	transit guide	71-1200-0413
b10	Pull-switch "pocket plate forward" Type: D-U 1/955 Bernstein	table, near to control panel	71-1300-0122

Element	Description	Location	Part number
b11	Push-button "P.PLATE" Type: No. 1.15101.001 Rafi	control panel at folding station	71-1300-0097
b12	Limit switch "template down" Type: ESC 200-3E Kissling	template guide	71-1200-0413
b13	Limit switch "pocket plate forward" Type: BZ 2 RW 822 Honeywell	folding station	71-1200-0420
b14	Push-button "pocket holder down" consisting of:	control panel at folding station	
	contact body Type: X/AK 32 A		71-1300-0162
	button Type: Dt - x		71-1300-0115
	nameplate Type: No. 3 Klöckner Moeller		71-1300-0139
b15	Push-button "pocket holder down" consisting of:	control panel at folding station	
	contact body Type: X/AK 32a		71-1300-0162
	button Type: Dt - x		71-1300-0115
	nameplate Type: No. 3 Klöckner Moeller		71-1300-0139
b16	Push-button "pocket holder up" Type: 1.15101.001 Rafi	control panel at folding station	71-1300-0097
b17	Limit switch "pocket holder at top" Type: BZ 2 RW 80 Honeywell	folding station	71-1200-0393

Element	Description	Location	Part number
b18	Limit switch "folders out" Type: BZ 2 RW 822 Honeywell	Folding station	71-1200-0420
b19	Push-button "fold U/T down - up" Type: 1.15101.101 Rafi	control panel at folding station	71-1300-0098
b20	Limit switch "fold U/T down" Type: BZ 2 RW 80 Honeywell	folding station	71-1200-0393
b21	Push-button "folders in-out" Type: 1.15101.101 Rafi	control panel at folding station	71-1300-0098
b22	Limit switch "folders in" Type: BZ 2 RW 822 Honeywell	folding station	71-1200-0420
b23.1	Limit switch "change-action 1-transfer" Type: ESC 200-3E Kissling	on control lever	71-1200-0413
b23.2	Limit switch "change action 2-transfer" Type: ESC 200-3E Kissling	template guide	71-1200-0413
b24	Push-button "transfer back" Type: 1.15101.001 Rafi	control panel at folding station	71-1300-0097
b25	Limit switch "transfer back" Type: ESC 200-3E Kissling	template guide	71-1200-0413

Element	Description	Location	Part number
b26	Limit switch "template up" Type: ESC 200-3E Kissling	template guide	71-1200-0413
b27	Limit switch "pocket plate back" Type: BZ 2 RW 822 Honeywell	folding station	71-1200-0420
b28	Push-button "transfer forwards" Type: 1.15101.101 Rafi	control panel at folding station	71-1300-0097
b29	Push-button "sewing" Type: 1.15101.001 Rafi	control panel at folding station	71-1300-0097
b31.1	Limit switch "change action 1 - sewing" Type: ESC 200-3E Kissling	on control lever	71-1200-0413
b31.2	Limit switch "change action 2 - sewing" Type: ESC 200 -3E Kissling	template guide	71-1200-0413
b32	Limit switch "trimmer off" Type: V 13 L R Burgess	sewing machine, base	71-1200-0431
b33	Limit switch "cam motion ends" Type: ESC 200-3E Kissling	control cam	71-1200-0413
b34	Limit switch "sewing, fast" Type: ESC 200-3E Kissling	control cam	71-1200-0413

Element	Description	Location	Part number
b35	Push-button "cam backwards" Type: 1.15101.001 Rafi	control panel at sewing station	71-1300-0097
b36	Limit switch "sewing, slow" Type: ESC 200-3E Kissling	control cam	71-1200-0413
b37	Limit switch "end of sewing" Type: ESC 200-3E Kissling	control cam	71-1200-0413
b38	Limit switch "trimmer on" Type: V 13 L R Burgess	sewing machine base	71-1200-0431
b40	Push-button "cam forwards" Type: 1.15101.001 Rafi	control panel at sewing station	71-1300-0097
b41	Limit switch "puller up" Type: ESC 200-3E Kissling (on versions with puller only)	mounting bracket of puller motor	71-1200-0413
b42	Limit switch "puller down" Type: ESC 200-3E Kissling (on versions with puller only)	mounting bracket of puller motor	71-1200-0413
b43	Limit switch "stacker in start posn. Type: ESC 200-3E Kissling	stacker	71-1200-0413

Element	Description	Location	Part number
b44	Limit switch "stacker forward" Type: ESC 200-3E Kissling	stacker	71-1200-0413
b45	Limit switch "middle of transfer motion" (for setting of stacker action) Type: ESC 200-3E Kissling (on version with puller only)	template guide	71-1200-0413
c0	Contactor "main contactor " Type: 3 TA21 11-11-0AM 220 V/50 c/s Type:3 TA 21 11-0AN 220/60 c/s Siemens	mounting bracket control box	71-1900-0054 71-1900-0058
c	Universal relay "for cam reversing" Type: UF 3-24 V = Kuhnke	mounting bracket control box	71-1900-0060
c19	Contactor "puller" Type: 3 TA 2010-0AM Siemens	mounting bracket control box	71-1900-0069
d01	Aux. contactor Type: 3 TA 6310-0AM Siemens	counting bracket, control box	71-1900-0068
d02	Aux. contactor Type: 3 TA 6310-0AM Siemens	mounting bracket, control box	71-1900-0068
D	Universal relay "for thread monitoring" Type: UF 3-24 V= Kuhnke	mounting bracket control box	71-1900-0060

Element	Description	Location	Part number
d1	Aux. contactor Type: 3 TA 6310-0AM Siemens	mounting bracket, control box	71-1900-0068
d2	Remanence contactor Type: 3 TA 6612-0SM Siemens	mounting bracket, control box	71-1900-0056
d3	Remanence contactor Type: 3 TA 6612-0SM Siemens	mounting bracket, control box	71-1900-0056
d4	Remanence contactor Type: 3 TA 6612-0SM Siemens	mounting bracket, control box	71-1900-0056
d5	Remanence contactor Type: 3 TA 6612-0SM Siemens	mounting bracket, control box	71-1900-0056
d6	Aux. contactor Type: 3TA 6612-0AM 220 V/ 50 c/s Type: 3 TA 6612-0AN 220 V/ 60 c/s Siemens	mounting bracket, control box	71-1900-0056 71-1900-0059
d7	Aux. contactor Type: 3 TA 2111-0AM 220 V/ 50 c/s Type: 3 TA 2111-0AN Siemens	mounting bracket control box	71-1900-0054 71-1900-0058
d8	Remanence contactor Type: 3 TA 6612-0SM Siemens	mounting bracket control box	71-1900-0056
d9	Remanence contactor Type: 3 TA 6612-0SM Siemens	mounting bracket, control box	71-1900-0056
d10	Remanence contactor Type: 3 TA 2011-0AM Siemens	mounting bracket, control box	71-1900-0070

Element	Description	Location	Part number
d11	Aux. contactor Type: 3 TA 6310-0AM Siemens	mounting bracket, control box	71-1900-0068
d12	Remanence contactor Type: 3 TA 6612-0SM Siemens	mounting bracket, control box	71-1900-0056
d13	Aux. contactor Type: 3TA 6310-0AM Siemens	mounting bracket, control box	71-1900-0068
d15	Time relay Type: DZ A 11 0.15-35 Schleicher	mounting bracket, control box	71-1900-0016
d16	Aux. contactor Type: 3 TA 6310-0AM Siemens	mounting bracket, control box	71-1900-0068
d17	Aux. contactor Type: 3TA 6310-0AM Siemens	mounting bracket, control box	71-1900-0068
d18	Remanence contactor Type: 3 TA 6612-0SM Siemens	mounting bracket, control box	71-1900-0056
d19	Time relay Type: SUP/10/220 V Pilz	mounting bracket	71-1900-0010
d20	Remanence contactor Type: 3 TA 6612-0SM Siemens	mounting bracket, control box	71-1900-0056
d21	Aux. contactor Type: 3TA 6612-0AM 220 V/ 50 c/s Type: 3TA 6612-0AN 220 V / 60 c/s	mounting bracket, control box	71-1900-0055 71-1900-0059

Element	Description	Location	Part number
d23	Time relay Type: SUP/10/220 V Pilz	mounting bracket, control box	71-1900-0010
d24	Remanence contactor Type: 3TA 6612-0SM Siemens	mounting bracket, control box	71-1900-0056
d25	Time relay Type: SUP/10/220 V Pilz	mounting bracket, control box	71-1900-0010
d26	Time relay Type: SUP/10/220V Pilz	mounting bracket, control box	71-1900-0010
e1	Automatic fuse Type: 5 SK 3 310 Version G, 10A Siemens	mounting bracket, control box	71-1500-0081
e2	Automatic fuse Type: 5 SP 3 141 Version: G, 2 A Siemens	mounting bracket control box	71-1500-0063
e3	Automatic fuse, A.C. Type: 5 SP 3 141 Version 6, 1-pole, 1.6 A only on versions operating on 220-V mains Siemens	mounting bracket, control box	71-1500-0063
e4	Automatic fuse Type: 5 SP3 131 Version G, 2A Siemens	mounting bracket, control box	71-1500-0063

Element	Description	Location	Part number
e5	Automatic fuse Type: 5 SP 3 141 Version G, 2A Siemens	mounting bracket control box	71-1500-0062
h1	Pulse counter "bobbin thread" Type: FE 043.2C Hengstler	control panel at sewing station	71-7200-0037
h2	Bulb in push-button "HAND" Type: T4, 6/24 V Rafi	control box, folding station	71-2500-0130
h3.1	Bulb in push-button "COUNTER" Type: T4.6/24 V Rafi	control panel at folding station	71-2500-0130
h3.2	Bulb in push-button "RESET" Type: T4.6/24 V Rafi	control panel at folding station	71-2500-0130
h4	Bulb in push-button "AUTOM" Type: T4.6/24V Rafi	control panel at folding station	71-2500-0130
h5	Bulb "Disturbance" Type: 26 V/1W Soffitte	thread monitor	71-2500-0140
h6	Pulse counter "No. of parts" Type: F 043.C No. 040 440 Hengstler	control panel at sewing station	71-7200-0042
h7	Bulb for marking lamps Type: 6V/4W BA 9S No. 708 Weitman & Konrad	marking lamps	71-2500-0146

Element	Description	Location	Part number
h8	Bulb for marking lamps Type: 6V/4W BA 9S Weimann & Konrad	marking lamps	71-2500-0146
k1	Electrolytic capacitor Type: 500 F/35 V DIN 41314-i	mounting bracket control box	70-4219-0512
k21	Electrolytic capacitor Type: 500 F/ 35 V DIN 41310-i	mounting bracket control box	70-4219-0512
m1 n1 e7	Transformer with rectifier Type: 220 V/24 V = J 2.5 A (e7: fuse Type: T2.5 D DIN 41571/3) Pfaff	mounting bracket, control box	71-5700-0001 70-1521-5403
m2	Transformer Type: ET 200 220 V/ 220V; 200 VA Rathgeber	mounting bracket, control box	71-5500-0063
m3	3-phase A.C. brake motor "cam drive" Type: KOD 568-B ma 220/380 V; 50/60 c/s Georgii-Kobold	frame	71-5200-2539
m4	Quick Duo-Stop motor "sewing machine drive" Type: NDK 707/22, 220/380V; 50/60 c/s Quick	frame	71-5230-3757
m5	Gear motor "stacker roller drive" Type: DR 62x45-2 ZG70-4; 30:1; 220/380 V; 50/60 c/s Dunker	frame	71-5200-0013

Element	Description	Location	Part number
m6	Transformer "marking lights" 220/5.5 V Pfaff	Mounting bracket, control box	71-5500-0101
n1	Rectifier fitted to transformer m1 Type: selenium, B 50/40-3 Pt plate size 42 x 42	mounting bracket, control box	71-5400-0052
r3	Varistor, spark-damping Type: 250 0V 100/4 Conradty	mounting bracket, control box	71-6300-0058
r4	Varistor, spark-damping Type: 250 0V 100/4 Conradty	mounting bracket, control box	71-6300-0058
r5	Varistor, spark-damping Type: 250 0V 100/4 Conradty	mounting bracket, control box	71-6300-0058
r21	Rotary wire resistor for relay delaying action Type: A 300 Ohm 0.5 DIN 44 102	mounting bracket, control box	71-4610-0821
r22	Wire resistor discharge resistor for K21 Type: 6.5 x 18/82 Ohm DIN 41431	mounting bracket, control box	71-4414-0211
r23	Rotary wire resistor for relay delaying action Type: A 300 Ohm 0.5 DIN 44102	mounting bracket, control box	71-4610-0821

Element	Description	Location	Part number
s1	Clutch solenoid for auxiliary drive, forwards	Quick-Stop motor	
s2	Brake solenoid for auxiliary drive, forwards	Quick-Stop motor	
s3	Solenoid coil "pocket plate forward" Type: 1824 210 084 220 V; 50/60 c/s Bosch	valve battery, control panel-end	99-134 084-91
s4	Solenoid coil "pocket plate back" Type: 1824 210 084 220 V; 50/60 c/s Bosch	valve battery, control panel-end	99-134 084-91
s5	Solenoid coil "pocket holder down" Type: 1824 210 084 220 V; 50/60 c/s Bosch	valve battery, control panel-end	99-134 084-91
s6	Solenoid coil "pocket holder up" Type: 1824 210 084 220 V; 50/60 c/s Bosch	valve battery, control panel-end	99-134 084-91
s7	Solenoid coil "folding unit and table insert down" Type: 1824 210 084 220 V; 50/60 c/s Bosch	valve battery, control panel-end	99-134 084-91
s8	Solenoid coil "folding unit and table insert up" Type: 1824 210 084 220 V; 50/60 c/s Bosch	valve battery, control panel-end	99-134 084-91

Element	Description	Location	Part number
s9	Solenoid coil "edge folders forwards" Type: 1824 210 084 220 V; 50/60 c/s Bosch	valve battery, control panel-end	99-134 084-91
s10	Solenoid coil "edge folders backwards" Type: 1824 210 084 220 V; 50/60 c/s Bosch	valve battery, control panel-end	99-134 084-91
s11	Solenoid coil "positioning pins up-down" Type: 1824 210 084 220 V; 50/60 c/s Bosch	on bracket at right, control panel-end	99-134 084-91
s12	Solenoid coil "template up, stacker roller cover open" Type: 1824 210 084 220 V; 50/60 c/s Bosch	valve battery at control panel-end	99-134 084-91
s13	Solenoid coil "template down, stacker roller cover closed" Type: 1824 210 084 220 V; 50/60 c/s Bosch	valve battery at control panel-end	99-134 084-91
s14	Solenoid coil "transfer backwards" Type: 1824 210 084 220 V; 50/60 c/s Bosch	valve battery at control panel-end	99-134 084-91
s15	Solenoid coil "transfer forwards" Type: 1824 210 084 220 V; 50/60 c/s Bosch	valve battery at control panel-end	99-134 084-91
s16	Solenoid coil "change action-sewing" Type: 1824 210 084 220 V; 50/60 c/s Bosch	valve battery at control panel-end	99-134 084-91

Element	Description	Location	Part number
s17	Solenoid coil "change action - transfer" Type: 1824 210 084 220 V; 50/60 c/s Bosch	valve battery at control panel-end	99-134 084-91
s18	Solenoid coil "clutch, sewing machine motor" Type: 1824 210 084 220 V; 50/60 c/s Bosch	back, vertical member at middle of frame	99-134 084-91
s21	Clutch solenoid for aux. drive, backwards	Quick-Stop motor	
s22	Brake solenoid for aux. drive, backwards	Quick-Stop motor	
s25	Solenoid coil "trim threads" Type: 1824 210 084 220 V; 50/60 c/s Bosch		99-134 084-91

Element	Description	Location	Part number
s26	Solenoid coil "stacker forwards" Type: 1824 210 084 220 V; 50/60 c/s Bosch	valve battery, control panel- end	99-134 084-91
s27	Solenoid coil "stacker backwards" Type: 1824 210 084 220 V; 50/60 c/s Bosch	valve battery, control panel- end	99-134 084-91
s28	Solenoid coil "puller down" Type: 1824 210 084 220 V; 50/60 c/s Bosch On versionswith puller only	valve battery, control panel- end	99-134 084-91
s29	Solenoid coil "puller up" Type: 1824 210 084 220 V; 50/60 c/s Bosch On versionswith puller only	valve battery, control panel- end	99-134 084-91
s30	Solenoid coil "cover open" Type: 1824 210 084 220 V; 50/60 c/s Bosch On versionswith puller only	front side, horizontal member at left of frame	99-134 084-91
s31	Solenoid coil "Workpiece presser" Type: 1824 210 084 220 V; 50/60 c/s Bosch	front side, horizontal member at left of frame	99-134 084-91
s32	Solenoid coil "air blast" Type: 1824 210 084 220 V; 50/60 c/s Bosch	front side, vertical member at centre of frame	99-134 084-91

Element	Description	Location	Part number
Ofw	Monitor for needle thread Type: illuminating monitor, UFW 961 with bulb 24 V Frei	sewing machine	71-7100-0006

102. List of pneumatic equipment for the Pfaff 3518/21 (pneumatics diagram No. 95-616 290-95)

Element	Description	Location	Part number
V1	5/2-way solenoid impulse valve "pocket plate forwards - backwards" 220/230 V, 50/60 c/s No. 0820 002 016 Bosch	valve battery at control panel end	99-133 263-91
V2	5/2-way solenoid impulse valve "pocket holder up - down" 220/230 V, 50/60 c/s No. 0820 002 016 Bosch	valve battery at control panel end	99-133 263-91
V3	5/2-way solenoid impulse valve "folding unit and table insert up - down" 220/230 V, 50/60 c/s No. 0820 002 016 Bosch	valve battery at control panel end	99-133 263-91
V4	5/2-way solenoid impulse "edge folders forwards -backwards" 220/230 V, 50/60 c/s No. 0820 002 016 Bosch	valve battery at control panel end	99-133 263-91
V5	3/2-way solenoid valve "positioning pins up-down" 220/230 V, 50/60 c/s 0820 003 017 Bosch	control panel-end, on mounting bracket at right-hand side	99-133 272-91
V6	5/2-way solenoid impulse valve "template transfer forwards - backwards" 220/230 V, 50/60 c/s No. 0820 002 006 Bosch	valve battery at control panel end	99-133 263-91
V7	3/2-way solenoid valve -900thread trimmer 220/230 V, 50/60 c/s No. 0820 003 017 Bosch	vertical, middle member at back of frame	99-133 272-91

Element	Description	Location	Part number
V8	5/2-way solenoid impulse valve "stacker roller on - off, template up - down" No. 0820 002 016 Bosch	valve battery at control panel-end	99-133 263-91
V9	5/2-way solenoid impulse valve "change action, sewing on - off" "change action, transfer, off - on" 220/230 V, 50/60 c/s No. 0820 002 016 Bosch	valve battery at control panel-end	99-133 272-91
V10	3/2-way solenoid valve "sewing on - off" 220/230 V, 50/60 c/s No. 0820 003 017 Bosch	vertical middle member at back of frame	99-133 272-91
V11	3-way air valve (delayed action) "edge folders forward" DB-139 Sempress	folding unit, front side	99-133 091-91
V12	5/2-way air impulse valve, "stacker forwards - backwards" No. 0820 205 005 Bosch	on left horizontal member of frame	99-133 519-91
V13	3/2-way roller lever valve "stacker forwards" No. R - 3 - M5 Festo	front side, transfer guide, top	99-133 968-91
V14	3/2-way roller lever valve "stacker backwards" No. R - 3 - M 5 Festo	back left, on middle vertical member of frame	99-133 968-91

Element	Description	Location	Part number
V15	One-way restrictor valve No. 0821 200 001 Bosch	folding unit, back, on cyl. Z 16	99-115 505-91
V16 to V23	One-way restrictors valve No. SVB 1 Sempress	control panel-end, inside valve battery and inside pneum. connection plate	99-133 037-91
V24 to V26	One-way restrictors valve No. 0821 200 001 Bosch	V24 on Z14 V25 on Z15 V26 on V7	99-115 505-91
V27	Shuttle valve T-type, No. TB1 Sempress	folding unit	99-133 127-91
V28	3/2-way valve "air blast on - off" during stacking No. DSA 110 Sempress	front, inside of middle, vertical member of frame	99-133 124-91
V28a	3/2-way valve "air blast on - off" (for tucking in pocket corners) No. DSA 110 Sempress	folding unit, control panel-side	99-133 124-91
V29	5/2-way turn-button valve "stacker forward" (hand-operated) No. VA 124 P Sempress	front, right-hand vertical member of frame	99-133 209-91
V30	3/2-way roller lever valve "pocket plate up - down" (when moved forward)" No. 0820 402 002 Bosch	folding unit, back	99-115 410-91
V30a	3/2-way roller lever valve "pocket plate up (when at rear posn.)" No. 0820 402 002 Bosch	folding unit, back	99-115 410-91

Element	Description	Location	Part number
V31	5/2-way air-impulse valve, positive controlled, 1/8" "lift pocket plate" No. 0820 205 005 Bosch	folding unit, left cover panel	99-133 519-91
V32	3/2-way air valve, delayed action "delay for workpiece presser" No. DB 129 Sempress	back, left vertical member of frame	99-133 125-91
V36	Restrictors "air jets and needle cooling No. 0821 201 004 Bosch	on V47	99-133 645-91
V37	3/2-way valve "workpiece presser up - down" No. DSA 110 Sempress	inside or r.h. vertical member at back of frame	99-133 124-91
V46	3/2-way valve "workpiece presser up - down" No. 0820 005 992 Bosch	l.h. horizontal member at front of frame	99-134 150-91
V47	3/2-way valve "needle cooling" No. 0820 005 001 Bosch	middle vertical member at front of frame	99-133 655-91
Z1	Air cylinder "pocket plate forwards - backwards" No. DGS-25-300 Festo	top of folding station	99-133 447-91
Z2	Air cylinder "pocket holder up - down" No. DG-16-125 Festo	top of folding station	99-134 166-91
Z3	Air cylinder "folding unit up - down" No. DG S-25-125 Festo	top of folding station	99-134 167-91

Element	Description	Location	Part number
Z4 and Z5	Air cylinder "table insert up - down" 20 mm dia. 25 mm stroke No. 35.150 Kuhnke	bottom of folding station	99-134 165-91
Z6a to Z6e	Air cylinder "edge folders forwards - backwards" 16 mm dia 25 mm stroke No. SP 7 360 008 Kuhnke	folding unit	99-133 503-91
Z7a to Z7f	Air cylinder "positioning pins up - down" No. EG - 6 - 25 Festo	bottom of folding station	99-133 880-91
Z8	Air cylinder "template for-wards - back-wards" No. 0482 103 003 Bosch	front of machine frame	99-133 505-91
Z10	Air cylinder "template up - down" 19 mm dia. 50 mm stroke No. SRM 771/50 Martonair	template guide at front	99-133 506-91
Z11	Air cylinder "stacker roller cover open - closed" 19 mm dia. 100 mm stroke No. SRM 771/100 Martonair	at left of machine frame, under cover panel	99-133 276-91
Z12	Air cylinder "change-action, transfer, off-on" 19 mm dia. 50 mm stroke No. SRM 771/50 Martonair	template frame attachment, transfer guide	99-133 506-91
Z13	Air cylinder "change-action, sewing, on - off" 20 mm dia. 30 mm stroke No. SD-20/30 Knorr	template frame attachment, control arm	99-133 897-91

Element	Description	Location	Part number
Z14	Air cylinder "sewing on - off" 25 mm dia. 15 mm stroke No. MB 25/15 EWVS Sempress	on sewing motor	99-133 348-91
Z15	Air cylinder "stacker forwards - backwards" 25 mm dia. 350 mm stroke No. DGS - 25 - 350 Festo	machine frame, inside middle	99-133 346-91
Z16	Air cylinder "pocket plate up - down" No. AG - 25 - 20 Festo	back of folding station	99-133 448-91
Z17	Air cylinder "lift pocket plate" No. AG - 25 - 20 Festo	back of folding station	99-134 125-91
Z 19	Air cylinder for thread trimmer -900 19 mm dia. 10 mm stroke No. SRM 772 - J - 10 Martonair	sewing machine bedplate	99-133 570-91
Z20	Air cylinder "work-piece presser up - down" 19 mm dia. 20 mm stroke No. SRM 771/20spez. Martonair	sewing machine head	99-133 995-91
Z21a and Z 21b	Air cylinder "edge folders forwards - backwards" 11 mm dia. 15 mm stroke No. Sp 370 009 Kuhnke	folding unit	99-134 007-91
Z 22a and Z22b	Air cylinder "work-piece holder up - down" (for rounded pockets) 16 mm dia. 20 mm stroke No. 36.100 Kuhnke	bottom of folding unit	99-133 501-91

Element	Description	Location	Part number
0.1	Air line coupling No. LW 6	conditioning unit at control panel-end	99-115 300-91
0.2	Conditioning unit with second connection for filtered air No. 95-608 804491	control panel-end	99-871 004-91
0.3	10-litre pressure tank No. 1-102 Klensberg	left vertical member at inside back	99-133 349-91
0.4	Silencer No. A 1/2" Bosch	valve battery at control panel-end	99-133 349-91

103. Illustrated parts list for the Pfaff 3518

In the illustrated section of this parts list the parts included each have their own item number. The item numbers are listed consecutively in the text together with the part number, illustration number and part description.

As a part may appear more than once in the illustrated section, this is indicated by extra numbers in the column "Fig. No.". In cases of uncertainty, each of the given illustrations should be referred to, because the part may be easier to recognize in a different illustration.

Electrical and pneumatic parts have no item numbers. They are marked with the element numbers given in the lists and diagrams for electrical and pneumatic parts.

Item No.	Part number	Fig. No.	Description and remarks
1	95-608 501-91	1	Frame
2	95-608 543-11	1	Foot screw
3	95-608 545-41	1	Pedal bar
4	91-106 628-45	1	Rubber foot
5	91-032 369-15	1	Sleeve
6	91-032 417-15	1	Bushing
7	95-608 549-91	1	Pedal
8	91-032 823-45	1	Bearing bracket
9	95-608 550-15	1	Linkage rod
10	91-031 888-15	1	Linkage stud
11	16-049 040-11	1	Linkage ball
12	91-096 479-91	2	Pull switch
13	95-608 551-45	2	Mounting plate
14	95-608 552-45	2; 4	Hinge mounting bracket
15	91-029 934-91	2; 4	Hinge mounting
16	71-5230-3757	2	Quick-Duo-Stop Motor NDK 707/22 220/380 V; 50/60 c/s; 2,800/3,400 r.p.m

Item No.	Part number	Fig. No.	Description and remarks
17	16-437 010-05	2	V-belt pulley, 63 mm dia.; 60 c/s = 3,250 r.p.m.
18	16-437 020-05	2	V-belt pulley, 67 mm dia.; 60 c/s = 3,450 r.p.m.
19	16-414 141-55	2	V-belt, 10 x 1,250 mm
20	95-600 587-11	3	Bracket
21	11-347 301-15	3	Threaded rod
22	91-169 479-05	3	Pull spring
23	91-120 082-05	3	Stop sleeve
24	95-608 553-45	3	Distance piece
25	95-608 554-91	2	Tabletop
26	12-177 002-05	2	Threaded insert M 3 x 8
27	95-608 558-45	2	Cover panel
28	95-608 559-45	4	Switch mounting plate
29	95-608 560-15	4	Stud
30	95-608 561-15	4	Stud
31	95-608 562-15	4	Plate
32	95-608 563-15	4	Stud
33	95-608 564-15	4	Bushing
34	95-608 565-41	4	Cover plate
35	95-608 566-15	4	Plate
36	99-133 744-91	3	Worm gear, Noma, SKS u - 2.5
37	95-608 567-45	3	V-belt pulley, 100 mm dia. for cam speed of 5.2 to 12.8 r.p.m. at 60 c/s
38	95-608 568-45	3	V-belt pulley, 120 mmm dia. for cam speed of 4.3 to 10.7 r.p.m. at 60 c,
39	95-608 706-11	4	Flange boss
40	95-608 577-15	4	Pin
41	95-608 578-15	4	Distance bushing
42	95-608 579-45	4	Lever
43	14-016 150-01	4	Grooved ball bearing
44	95-608 580-05	4	Ring

Item No.	Part number	Fig. No.	Description and remarks
45	95-608 581-05	4	Ring
46	95-608 582-05	4	Roller stud
47	91-021 065-04	4	Roller
48	95-608 620-04	4	Roller (optional)
49	95-608 584-15	4	Knurled screw
50	95-608 576-15	4	Knurled nut
51	95-608 585-45	4	Lever
52	95-608 587-15	4	Threaded bushing
53	99-133 727-91	4	Ball roller KU 15 - B
54	95-608 588-15	4	Bearing pin
55	12-628 330-15	4	Circlip 20 x 1.5
56	95-608 589-45	4	Lever
57	95-608 590-45	4	Lever
58	95-608 583-15	4	Centering flange
59	91-123 129-91	3	Motor mounting bracket
60	95-608 592-45	3	Angle bracket
61	17-018 081-91	3	Toggle
62	71-5200-2539	3	3-phase A.C. motor KOD 568 ma 220/380 V, 50/60 c/s, 920/1,100 r.p.m.
63	99-133 743-91	3	Variable-speed pulley, Simplabelt VPS 20
64	16-414 169-05	3	V-belt 13 x 900
65	95-608 594-41	3	Bearing
66	95-608 597-15	3	Pin
67	95-608 598-45	3	Tensioning bracket
68	95-608 599-45	1	Support arm,left
69	95-608 600-45	1	Support arm, middle
70	95-608 601-45	1	Support arm, right
71	95-608 602-45	1	Partition
72	96-608 607-45	1	Cover

Item No.	Part number	Fig. No.	Description and remarks
73	95-608 609-45	1	Trough
74	95-609 263-01	1	Flat hinge
75	95-608 626-15	1	Swivel bearing
76	96-600 649-05	1; 6	Pin
77	99-133 277-05	1; 6	Yoke
78	12-610 190-45	1	Circlip 6 x 07
79	95-608 628-45	1; 8	Angle bracket
80	95-609 257-15	1; 8	Swivel bearing
81	11-340 286-15	1; 8	Grubscrew
82	95-609 258-15	8	Rod
83	95-608 614-41	1	Drawer carrier
84	91-032 329-45	1	Runner for drawer
85	91-032 332-91	1	Drawer
86	95-608 621-01	2	Cable channel
87	95-608 622-01	1	Cable channel
88	95-608 603-91	1	Top cover, complete (consisting of Nos. 89 - 91)
89	95-608 604-91	1	Top cover
90	95-609 262-01	1	Flat hinge
91	99-133 742-20	1	Cover support, left and right
92	95-608 606-45	4	Rod
93	91-024 554-05	4	Stop
94	95-608 605-91	2	Cover
95			
96			
97			
98			
99			
100	95-609 882-91	4	Template carrier, complete (consisting of Nos. 101 - 105)
101	95-608 637-45	4	Template carrier
102	95-608 634-05	4	Carrier pin bushing

Item No.	Part number	Fig. No.	Description and remarks
103	95-608 710-05	4	Base for Z13
104	95-608 709-45	4	Plate
105	95-608 644-45	4	Bracket for limit switch
106	95-609 883-91	5	Template carrier, complete (consisting of Nos. 77, and 107 - 119)
107	95-608 645-45	5	Template carrier
108	99-133 295-01	5	Bushing, 12/18 mm dia. x 20 mm
109	99-133 262-01	5	Bushing, 10/16 mm dia. x 10 mm
110	95-608 646-05	5	Change-action pin
111	95-608 647-05	5	Change-action pin
112	13-064 259-05	5	Grooved stud 4 x 20
113	95-608 653-05	5	Pull-spring
114	95-608 648-15	5	Shaft
115	95-608 649-15	5	Cam
116	95-608 650-92	5	Lever
117	95-608 652-15	5	Pivot collar
118	95-608 654-15	5	Cam
119			
120	95-608 655-15	3; 5	Switch bracket
121	95-609 884-91	3; 5	Transfer carriage, complete (consisting of Nos. 108, 109 and 122-130)
122	95-608 656-45	3; 5	Transfer carriage
123	99-133 740-01	3; 5	Ball guide KB 20 ND
124	95- 608 657-15	3; 5	Eccentric stud
125	14-016 080-01	3; 5	Grooved ball bearing, 6000 - 2Z
126	95-608 659-05	3; 5	Roller
127	95-608 660-15	3; 5	Cam
128	95-608 661-91	3; 5	Yoke
129	95-608 663-45	3; 5	Switch bracket
130	95-608 666-15	3; 5	Ring

Item No.	Part number	Fig. No.	Description and remarks
131	95-608 665-05	5	Guide shaft
132	95-608 667-45	6	Cylinder support clamp
133	14-218 220-01	6	INA Needle bearing HK 2020
134	99-133 354-01	6	Swivel union
135	95-608 669-15	6	Bolt
136	95-608 670-45	6	Switch bracket
137	95-608 671-15	5	Threaded stud
138	96-608 672-15	5	Sleeve
139	95-608 673-15	5	Trip
140	95-608 674-45	6	Bearing block
141	95-608 675-45	6	Bearing block
142	95-608 676-41	6	Guide runner
143	95-608 679-45	6	Switch mounting plate
144	95-608 681-45	6	Slide
145	95-608 682-15	6	Slide plate
146	95-608 680-15		Switch piece
147	95-608 685-15	8	Threaded stud
148	12-010 240-15	8	Hex. nut, M10 x 1
149	95-608 686-15	8	Yoke
150	95-608 627-91	8	Roller, complete
151	12-650 009-55	8	Quick-action retainer
152	13-033 394-05	8	Pin
153	95-608 689-41	6	Tube carrier
154	99-133 731-05	5	Steel shaft, 16 mm dia. x 240 mm
155	99-133 732-05	5	Steel shaft 16 mm dia. x 265 mm
156	95-608 693-41	10	Guide rail cover
157			
158			
159			

Item No.	Part number	Fig. No.	Description and remarks
160	95-608 715-91	1	Control desk, long, complete.
161	95-608 719-91	1	Control desk, short, complete
162	95-608 421-91	2	Control box for 380 V
163	95-611 165-91	2	Control box for 220 V
164			
165	95-609 885-91	6	Stacker roller, complete (consisting of Nos. 166-174)
166	95-609 175-91	6	Roller, complete
167	95-609 170-05	6	Bearing stud, r.h.
168	95-609 171-05	6	Bearing stud, l.h.
169	14-755 062-01	6	Spherical bearing SS10
170	95-609 166-45	6	Flap
171	95-609 167-15	6	Swivel bearing, r.h.
172	95-609 168-15	6; 7	Swivel bearing, l.h.
173	99-133 262-01	6; 7	Cylindr. bearing 10/16 mm dia. x 10
174	95-609 169-15	6; 7	Lever
175	99-133 278-91	6	Pivot assy.
176	95-609 172-15	7	Belt pulley
177			
178	71-5200-0013	7	Gear motor, DR 62 x 45 -2 220/380 V; 50/60 c/s
179	95-609 178-45	7	Mounting bracket
180	95-609 173-15	7; 4	Belt pulley, 46 mm dia. for 50 c/s
181	95-609 174-15	7	Belt pulley, 38 mm dia. for 60 c/s
182	16-414 051-05	7	V-belt, 6 x 300
183	95-609 179-45		Belt guard
184			
185	95-609 183-91	6; 4	Roller puller, complete (consisting of Nos. 186 - 218)
186	95-614 537-91	7	Spur gear assy.
187	95-609 188-15	7	Belt pulley, 32 mm dia.
188	95-614 543-15	7	Double belt pulley 52/65 dia.
189	16-414 058-05	7	V-belt, 6 x 450
190	16-414 053-05	7	V-belt, 6 x 335

Item No.	Part number	Fig. No.	Description and remarks
191	95-609 193-05	7	Spline shaft
192	99-133 716-01	7	Simpla Miniflex clutch
193	95-609 194-11	6	Bushing assy., complete
194	14-018 620-01	6	Ball bearing 6203-2 Z
195	95-609 201-15	6	Belt pulley, 32 mm dia.
196	95-609 195-45	4	Carrier arm
197	95-609 209-15	4	Plate
198	95-614 539-91	3; 4	Suspension bracket, complete (consisting of Nos. 169 and 199 to 202)
199	95-609 202-45	3; 4	Suspension bracket
200	95-608 752-15	3; 4	Latch
201	50-1401-3074	3; 4	Spring
202	11-186 292-15	3; 4	Raised-head screw
203	95-614 540-91	4	Puller fork assy, complete consisting of Nos. 180 and 204 to 208)
204	95-609 205-45	4	Fork
205	14-016 120-01	4	Ball bearing, 6002-2 Z
206	95-609 208-15	4	Shaft
207	95-614 541-91	4	Roller, complete
208	00-130 310-00	4	Leather drive belt, 5 mm dia. x 630 mm
209	95-609 293-45	4	Bearing bracket, l.h.
210	99-133 360-05	4	Steel shaft, 8 mm dia x 290
211	95-609 295-41	4	Bearing bracket, r.h.
212	95-614 542-91	4	Guide assy., complete
213	95-609 298-15	4	Guide
214	99-133 359-01	4	Ball guide KB 8 N 2 D
215	95-609 299-15	4	Angle bracket
216	95-609 204-05	4	Stop bush
217	95-609 292-15	4	Switch trip
218	95-608 690-11	6	Trip

Item No.	Part number	Fig. No.	Description and remarks
219			
220	95-608 731-45	7	Flange, l.h.
221	99-133 737-05	7	Steel shaft, 20 mm dia. x 450 mm
222	95-608 734-45	7	Bearing bracket
223	95-608 732-45	8	Flange, r.h.
224	99-133 736-05	8	Steel shaft, 20 dia. x 800 mm
225	95-608 733-45	8	Flange, rear
226	95-608 737-45	8	Side arm r.h.
227	95-608 736-45	3	Side arm, l.h.
228	95-608 738-45	3	Bracket, l.h.
229	95-608 725-45	3	Housing
230	99-133 539-01	3	Ball guide, KB 20. N2D
231	95-608 739-45	8	Support member
232	95-608 740-41	8	Bridge piece
233	95-608 741-45	8	Bearing support
234	95-608 742-45	8	Bearing support
235	99-133 738-01	8	Ball guide, KB 15 N 2 D
236	95-608 746-91	8	Shaft with bearing hole, r.h.
237	95-608 743-91	8	Shaft with bearing hole, l.h.
238	95-608 749-05	8	Compression spring
239	95-608 751-45	8	Tube
240	95-608 750-05	8	Stud
241	95-608 748-91	8	Tube, complete
242	95-608 754-05	8	Plug
243	95-608 763-45	8	Tube
244	95-608 759-45	8	Stud, r.h.
245	95-608 757-45	7	Stud, l.h.
246	95-608 761-25	7	Eyelet screw for spring
247	99-133 739-01	7	Ball guide, KB 12 N 2 D

Item No.	Part number	Fig. No.	Description and remarks
248	95-608 760-15	7	Plate
249	95-608 764-05	7	Pull-spring
250	95-608 758-15	7	Stud
251	17-035-272-45	7	Pull-knob
252	95-608 752-15	7	Latch
253	11-186 292-15	7	Raised-head screw
254	99-133 735-05	7	Steel shaft, 12 mm dia. x 260
255	95-608 755-45	7	Stop
256	95-608 766-45	8	Valve actuating bracket
257	95-608 765-05	8	Stop
258	95-608 767-45	2	Angle bracket for cylinder
259	95-608 756-45	3	Bearing support for front guide shaft
260			
261			
263			
264			
265	95-608 807-45	9	Angle bracket
266	71-7100-0005	9	Pressure switch, MCS 11, 1-pole, 1/4"
267	99-133 353-05	9	Tube adaptor, M22 x 1.5 - R 3/8"
268	99-133 266-05	9	Connection base, r.h.
269	99-133 267-05	9	Connection base, l.h.
270	99-133 269-05	9	Connection base, middle
271	99-133 270-00	9	Parts set for middle bases
272	95-608 805-45	9	Plate
273	95-608 806-45	9	Angle bracket
274	95-608 610-45	9	Connection cross member
275	95-608 611-15	9	Threaded stud
276	13-060 208-05	9	Taper pin, 3 x 24

Item No.	Part number	Fig. No.	Description and remarks
277	95-608 612-05	9	Seal
278	17-030 901-05	9	Knob
279	95-608 727-90		Nameplate, English
280	95-608 728-90		Nameplate, French
281	95-608 729-90		Nameplate, German
282			
283			
284			
285	901-0978-898	10; 11	High-speed seamer, Cl. 463-650/00-900/30 with special parts, Nos. 286 - 302
286	95-616 285-91	11	Workpiece presser lifting mechanism (consisting of Nos. 287 - 292)
287	95-602 871-45	11	Cover
288	91-022 512-91	11	Link
289	95-603 878-15	11	Stud
290	95-608 879-15	11	Lever
291	95-611 981-11	11	Presser foot, complete
292	95-611 983-05	11	Nylon presser
293	95-610 832-01	11	Crank for lifting lever
294	95-611 985-11	11	Lifting lever
295	95-608 189-91	11	Synchronizer, made up from 71-1400-0003
296	95-606 354-91	11	Support
297	95-608 774-01	12	Needle plate, complete
298			
299			
300			
301			
302	91-129 640-90	10	Reel stand
303			
304			
305			
306			
307			

Item No.	Part number	Fig. No.	Description and remarks
308			
309			
310			
311			
312			
313			
314			
315			
316			
317	95-609 881-91	12	Template frame, complete (consisting of Nos. 318 to 329)
318	95-608 632-45	12	Template frame
319	95-608 633-15	12	Guide bushing
320	95-608 635-05	12	Change-action pin
321	91-122 823-05	12	Compression spring
322	95-608 636-05	12	Bush
323	12-640 200-55	12	Detent washer, 7 mm dia.
324	95-608 631-45	12	Bracket
325	95-608 639-15	12	Pin
326	91-069 222-12	12	Fixing collar
327	95-608 638-15	12	Pin
328	95-608 642-05	12	Bearing
329	95-608 641-45	12	Strip
330			
331			
332	95-608 572-15	12	Trip for control cam "sewing off"
333	95-608 573-15	12	Trip for control cam "cam contr. off"
334	95-608 574-15	12	Trip for control cam "begin sewing"
335	95-608 575-15	12	Trip for control cam "sewing, fast"
336			
337			

Item No.	Part number	Fig. No.	Description and remarks
338			
339			
340	95-608 780-91	10	Mirror, complete (consisting of Nos. 341 to 344)
341	99-133 556-31	10	Mirror, head
342	95-608 781-15	10	Stud
343	95-608 782-11	10	Bracket
344	12-380 170-05	10	Ball washer, C 6.4

Item No.	Part number	Fig. No.	Description and remarks
399	99-133 577-91	10	Folding station, complete
400	95-620 750-91	16	Frame, l.h.
401	95-620 751-91	16	Frame, r.h.
402	95-620 752-41	17	Cross member, rear
403	95-620 753-41	17	Cross member, front
404	95-609 648-15	16	Plate
405	95-620 754-45	16	Connection plate, insert
406	95-620 755-15	15	Fixing bracket
407	95-620 702-15	18	Eccentric stud
408	95-620 703-15	18	Nut
409	95-620 756-45	16	Side support, r.h.
410	95-620 757-45	16	Side support,l.h.
411	95-620 758-45	17	Bridge piece
412	95-620 759-45	17	Clamp block
413	95-620 760-45	15	Arm
414	95-620 762-45	15	Bearing support
415	95-620 650-45	15	Table frame
416	95-620 762-91	15	Table section
417	95-620 763-15	16	Bearing housing
418	95-610 319-15	17	Stud
419	95-620 764-15	17	Pin
420	95-609 649-15	16	Angle bracket
421	95-620 765-15	16	Plate
422	95-620 766-15	15	Rod
423	95-620 767-15	15	Trip
424	95-620 768-15	17	Bracket
425	95-620 769-15	17	Plate
426	95-620 770-15	15	Shackle
427	95-620 771-05	15	Shaft
428	95-620 772-15	18	Support arm
429	95-620 773-15	18	Plate

Item No.	Part number	Fig. No.	Description and remarks
430	95-620 774-15	18	Actuating strip
431	95-620 775-41	16	Fixing plate
432	95-620 776-15	16	Plate
433	95-620 777-15	16	Distance bolt
434	95-620 778-15	18	Extension
435	95-620 779-15	18	Pocket holder support plate, top
436	95-620 737-15	18	Pocket holder support plate, bottom
437	95-620 780-15	18	Guide housing
438	95-620 781-15	18	Ring
439	95-620 782-05	18	Shaft
440	95-617 520-05	18	Shaft
441	95-620 783-15	18	Plate
442	95-620 784-15	18	Folding unit support plate
443	95-620 749-15	18,17	Angle bracket
444	95-620 710-15	18,17	Plate
445	95-620 711-15	18	Pocket plate fixture
446	95-620 748-15	16	Plate
447	95-620 747-45	16	Cover plate
448	95-620 746-45	15	Cover plate
449	95-608 810-15	18	Spring
450	95-608 809-15	18	Stop
451	95-609 100-15	18	Stop, for 175 mm pocket length
452	95-620 745-15	17	Ring
453	95-620 744-15	17	Plate
454	95-620 743-15	17	Washer
455	95-620 742-05	15	Sleeve
456	14-755 050-01	19	Pivot bearing, K 8 DIN 648
457	99-133 989-01	18	Ball guide, KB 8 ND
458	14-010 570-01	18	Ball bearing, 6000 DIN 625
459	95-608 613-15	16	Nipple

Item No.	Part number	Fig. No.	Description and remarks
460	95-608 797-91	19	Marking lamp assy. (consisting of Nos. 461 to 465)
461	95-608 791-45	19	Fixing bracket
462	95-608 792-45	19	Angle bracket, r.h.
463	95-608 793-45	19	Angle bracket, l.h.
464	71-8500-0030	19	Marking lamp Li 18/9 with lead and plug
465	71-1600-0114	19	Flange socket