



Machines 260, 262, 360 and 362

Service Manual

(Supplementing the Service Manual

for Pfaff Machines 260 and 360)

G · M · PFAFF AG · KARLSRUHE-DURLACH BRANCH

Foreword

This Service Manual has been compiled as a supplement to the Pfaff 260 and 360 Service Manual published previously. Its publication has been prompted by the introduction of Pfaff machines 262 and 362. It is recommended that you follow the revised procedures discussed in this booklet in adjusting Pfaff machines 260 and 360.

Since the mechanical setup of Pfaff machines 260, 360, 262 and 362 is identical except for a few minor details, the instructions given in this manual normally apply to all four machine classes. Where the procedures to be applied vary according to the machine class, they will be discussed separately in this manual.

When checking up or adjusting a machine, it is best to proceed in the sequence indicated in this manual. In reassembling machines which have been stripped completely, set all parts in close proximity to their previous positions in order to facilitate subsequent adjustment.

Adjustment of a machine is greatly facilitated by the following gauges:

Needle rise gauge	Z 70.67-1
Clamp for above gauge	Z 70.68-1
Machine feed gauge	106614-100-1.0 6.8
Feed stroke gauge	7.501.00 251
Bobbin case position slot gauge	8951-100

In addition, the following tools will prove useful in carrying out certain repair jobs:

Special wrench for zigzag regulator stud	10 6300-306
Special wrench for zigzag regulator mechanism	10 6300-303
Special wrench for stitch length control barrel	10 6300-304
Special box wrench 7 & 5.5 mm	129 496

G.M. PFAFF AG
Karlsruhe-Durlach Branch

C o n t e n t s

<u>Feeding Mechanism</u>	Page
1. Setting the Feed Dog at the Correct Height	4
2. Zeroing the Stitch Length Control	4
3. Adjusting the Feed Dog in the Feed Slot	5
a. Lateral Setting	5
b. Lengthwise Setting	6
4. Adjusting the Drop Feed Mechanism on Pfaff Machines 360 and 362	7
5. Adjusting the Feed Eccentric	7
6. Positioning the Upper Driving Belt Sprocket	8
7. Adjusting the Presser Bar	9
a. Setting the Presser Bar at the Correct Height	9
b. Regulating the Pressure on the Material	10
8. Adjusting the Vibrator	10
<u>Stopmatic Mechanism</u>	11
9. Adjusting the Stopping Lever	11
10. Positioning the Clamp Crank	12
11. Adjusting the Micro Switch and the Bowden Cable	13
12. Adjusting the Knee Control of Stopmatic Machines	15
<u>Zigzag Mechanism</u>	15
13. Adjusting the Zigzag Regulator	15
14. Timing the Needle Vibration	16
15. Basic Setting of Eccentric Studs	18
a. on the Zigzag Regulator Stud Slide Block	18
b. on the Needle Bar Frame	18
16. Zeroing the Needle for Straight Stitching	18
a. Using Finger-Tip Control F	18
b. Using Stitch Width Dial A	19
17. Adjusting the Needle Position	20
18. Adjusting the Needle Throw in Relation to the Central Needle Puncture	21
19. Centering the Needle Throw in the Needle Plate Slot	22
<u>Automatic Embroidery Mechanism</u>	23
20. Adjusting the Driving Eccentric	23
21. Installing the Automatic Embroidery Mechanism	24
22. Adjusting the Two-Part Connection	25
23. Adjusting the Engaging Levers	27
a. Adjusting the Front Engaging Lever	27
b. Adjusting the Central Engaging Lever	28
c. Adjusting the Rear Engaging Lever	28
24. Mounting and Adjusting the Pressure Spring Bracket	29
25. Adjusting the Pattern Length Lever	29
26. Testing the Performance of the Automatic Embroidery Mechanism	31

<u>Sewing Mechanism</u>	Page
27. Timing the Sewing Hook	31
a. Adjusting the Needle Bar Rise	31
b. Setting the Needle Bar at the Correct Height	31
c. Setting the Hook to the Needle	31
28. Timing the Sewing Hook and Setting it to the Needle on Pfaff Machines 260 and 262	32
29. Timing the Sewing Hook on Pfaff Machines 360 und 362	33
30. Setting the Needle Bar at the Correct Height on Pfaff Machines 260, 262, 360 and 362	35
31. Setting the Hook to the Needle on Pfaff Machines 360 and 362	36
32. Adjusting the Bobbin Case Position Finger Bracket	37
a. on Pfaff Machines 260 and 262	37
b. on Pfaff Machines 360 and 362	38
33. Setting the Needle Threader	38
a. Adjusting the Stop on the Needle Bar	39
b. Adjusting the Needle Threader Head	40
 <u>Stitching Off the Machine</u>	 41
34. Adjusting the Bobbin Winder	41
35. Adjusting the Thread Tensions	41
a. Adjusting the Bobbin Thread Tension	41
b. Adjusting the Needle Thread Tension	42
(1) on Pfaff Machines 260 and 360	42
(2) on Pfaff Machines 262 and 362	43
36. Adjusting the Thread Check Spring	44
a. Tensioning the Theead Check Spring	44
b. (1) on Pfaff Machines 260 and 360	45
(2) on Pfaff Machines 262 and 362	45
b. Timing the Thread Check Spring	45
37. Stitching Off an Automatic Machine	46
a. Checking Stitch Length and Thread Tension	46
b. Checking Automatic Sewing	46
c. Making a Sample Swatch	46
 <u>Various Repair Jobs</u>	 47
38. Changing the Thread Check Spring	47
a. on Pfaff Machines 260 and 360	47
b. on Pfaff Machines 262 and 362	48
39. Changing the Cord Belt	50
40. Changing Zigzag Finger-Tip Control F and Needle Position Lever B	52
a. Removing the Zigzag Regulator Mechnism	52
b. Removing Zigzag Finger-Tip Control F	52
c. Removing Needle Position Lever B	52
d. Replacing Needle Position Lever B	53
e. Replacing Zigzag Finger-Tip Control F	53
f. Replacing the Zigzag Regulator Mechanism	54
41. Changing the Zigzag Regulator Arm	54
42. Changing Reverse Feed Control H	54
43. Changing the Bowden Cable	55
44. Installing a PE 260 or 261 Motor in Pfaff 260 Machines	56
45. Changing a PE 262 Motor on Pfaff 262 Machines	57
46. Changing a PE 360, 370 or 371 Motor on Pfaff 360 Machines	58
47. Changing a PE 372 Motor on Pfaff 362 Machines	59
48. Installing a Stopmatic Knee Control	60
49. Changing the Cam Assembly	61
50. Dismantling the Pfaff Hook	61
51. Reassembling The Pfaff Hook	62
 <u>Trouble Shooting</u>	 63

Feeding Mechanism

1. Setting the Feed Dog at the Correct Height

When the feed dog is at its highest position, the points of its teeth should be $1/32"$, or 1.0 mm, above the needle plate.

To check this setting, place gauge No. 106614-100 1.0 6.8 on the needle plate so that its $1/32"$ (or 1.0 mm)-deep recess is over the feed dog, and turn the balance wheel until the feed dog is at its highest position (Fig. 1).

If adjustment is required on Pfaff machines 260 and 262, tilt the machine back, loosen the binding screw on the feed lifting shaft front crank, and turn the crank slightly up or down on its shaft, as appropriate.

To adjust the height of the feed dog on Pfaff machines 360 and 362, remove the needle plate. Then proceed as instructed above.

To double-check this setting, again bring the feed dog to its highest position and check to see that its teeth just contact the underside of the recessed portion of the gauge.

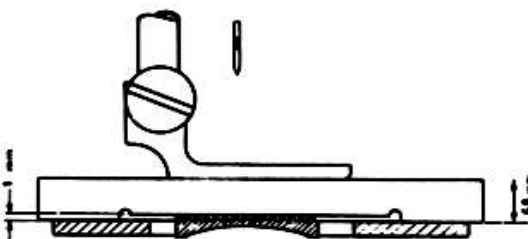


Fig. 1

2. Zeroing the Stitch Length Control

When stitch length dial G is set on "0", the feed dog must move up and down only. The machine should make stitches of exactly the same length in sewing forward and backward when the stitch length dial is set on 0.2 and on the first mark to the right of "0", respectively.

To check this setting, place a piece of paper or fabric under the presser foot and let the machine make a few stitches. When you set the stitch length dial on "0", the machine must move the paper or fabric neither forward nor backward.

To adjust, tilt the machine back and loosen set screw (1325) on the stitch length regulator mechanism (106198).

(On Pfaff machines 360 and 362, dismantle the motor and its base plate first.)

Now turn the stitch length regulator mechanism to the right or left, as appropriate.

Adjustment of the stitch length regulator mechanism is greatly facilitated by wrench No. 106 300.304 which can be obtained from Pfaff at extra cost.

After the adjustment, do not forget to tighten set screw (1325) securely.

To double-check this setting, again place a piece of paper or fabric under the presser foot and proceed as instructed above.

3. Adjusting the Feed Dog in the Feed Slot

a. Lateral Setting

The feed dog should be centered correctly in the feed slots, i.e. there should be the same amount of clearance between the feed rows and the walls of the feed slots on either side.

If the feed dog is wedged in the feed slots, as shown in Fig. 2a, loosen both feed dog set screws and adjust.

If on Pfaff machines 260 and 262 the feed dog is not centered correctly and chafes against one side of the feed slots, as illustrated in Fig. 2b, loosen the set screws on the feed rock shaft centers and tap the shaft into the correct position.

If the feed rock shaft has been moved endwise too much in the process, move its rear crank back by the same distance so that the feed forked connection will bear against the feed regulator only lightly.

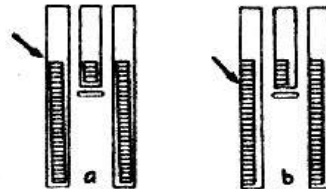


Fig. 2

To remedy the above-mentioned condition on Pfaff machines 360 and 362, loosen the three set screws in the cylinder arm top cover and adjust the position of the latter, as appropriate. As you make this adjustment, however, note the points discussed in Chapter 32.

If this condition cannot be remedied by merely adjusting the position of the cylinder arm top cover, adjust the feed bar (Fig. 3) rather than the entire feed rock shaft.

To do this, remove the cylinder arm top cover and loosen the jam nuts on both center screws (Fig. 3). Turn both center screws, thus adjusting the position of the feed bar laterally until the feed

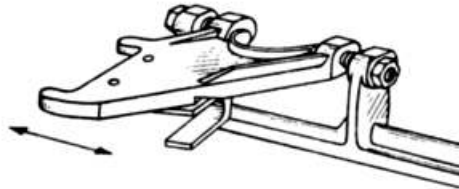


Fig. 3

rows are correctly centered in the feed slots of the needle plate. When you retighten the jam nuts after the adjustment, hold the center screws in the correct position with a screwdriver so that they will not turn together with the nuts and jam the feed bar.

Check to see whether the feed bar swings up and down easily without having any lateral play.

After the adjustment, screw down the cylinder arm top cover as instructed in Chapter 32.

b. Lengthwise Setting

When the stitch length dial is set on "4", the central feed row should rise as close to the near end of the feed slot as possible. Also, when the machine is set for the longest forward or backward stitch, or any other stitch length, the feed dog must strike neither the near nor the far end of the feed slots.

If adjustment is required, set the stitch length dial on "4" and turn the balance wheel until the feed dog emerges close to the near end of the feed slots. Loosen the binding screw on the feed rock shaft crank and turn the crank on its shaft until there is a clearance of about $1/32$ ", or 1.0 mm, between the first tooth in the central feed row and the end of the respective feed slot (Fig. 4).

To make this adjustment on Pfaff machines 360 and 362, begin by stripping the motor and its base plate.

After the adjustment, tighten the binding screw securely.



Fig. 4

As you double-check this setting, make sure the feed forked connection bears against the feed regulator only lightly.

4. Adjusting the Drop Feed Mechanism on Pfaff Machines 360 and 362

When the feed dog is engaged, the roller on the drop feed connecting rod stud must be positioned in the feed bar fork. The stud itself, however, must not enter the fork, but should be positioned 0.02", or 0.5 mm, away from it. Furthermore, the drop feed knob should be positioned perpendicularly and should bear against the stop pin which is not visible on the outside.

To adjust, unscrew the cylinder arm top cover, loosen the binding screw and move the feed lifting shaft crank to the right or left until there is a clearance of 0.02", or 0.5 mm, between the drop feed connecting rod stud and the feed bar fork. As you make this adjustment, take care that the vertical setting of the feed dog is not disturbed. Tighten the binding screw securely.

To adjust the position of the drop feed knob, loosen the set screw on its crank.

Double-check this setting and the proper working of the parts involved and replace the cylinder arm top cover, as instructed in Chapter 32.

5. Adjusting the Feed Eccentric

When the stitch length dial is set on "4" and the take-up lever is at its highest point, the feed dog should continue to advance the work by $\frac{3}{64}$ ", or 1.2 mm.

This additional feed stroke is important to ensure tightly set stitches.

To check this setting, see that the timing marks on the feed eccentric and on the arm shaft are in line (Fig. 5).

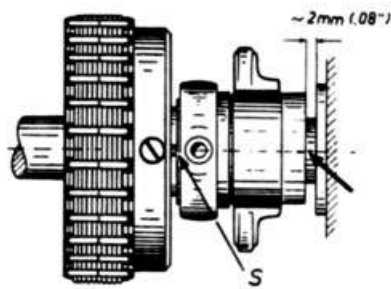


Fig. 5

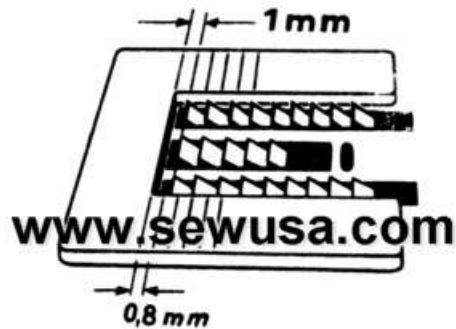


Fig. 6

If there should be no timing mark on a new arm shaft, check to see that the feed dog continues to advance the work by about $3/64$ ", or 1.2 mm, after the take-up lever has reached its highest position.

If adjustment is required, unscrew the presser foot and turn the balance wheel until the feed dog emerges from the feed slot in the needle plate. Apply feed stroke gauge No. 7 501 00251 so that it engages the back side of the feed dog. Turn the balance wheel again until the feed dog has dropped below the needle plate completely. Hold the feed stroke gauge steady and make sure it is not moved by hand. Turn the balance wheel until the take-up lever is again at the top of its stroke. The feed stroke gauge now indicates the distance between the gauge and the back side of the feed dog (Fig. 6).

To adjust, remove the top cover and the bobbin winder, loosen the two set screws in the upper driving belt sprocket and push the latter to the left somewhat. If a check reveals that the feed stroke indicated by the gauge exceeds $3/64$ ", or 1.2 mm, loosen the feed eccentric set screw, and turn the feed eccentric slightly in the direction of arm shaft rotation. If the amount of feed stroke measured is less than $3/64$ ", or 1.2 mm, rotate the feed eccentric in the opposite direction, as appropriate. After the adjustment, tighten the feed eccentric set screw securely. Make sure there is a clearance of about $5/64$ ", or 2.0 mm, between the feed eccentric and the arm shaft rear bearing.

To double-check this setting, again apply the feed stroke gauge and, if necessary, readjust.

6. Positioning the Upper Driving Belt Sprocket

The driving belt sprocket on the arm shaft doubles as a balancing collar. Hence, its position on the arm shaft is of eminent importance to the proper balancing of this shaft.

The upper driving belt sprocket and the feed eccentric are connected by a position pin which fixes the position of the sprocket on the arm shaft. The sprocket must therefore be pushed against the feed eccentric only after the latter has been set with utmost care.

To fix the position of the driving belt sprocket on the shaft, push it against the feed eccentric so that its position pin enters the appropriate borehole in the feed eccentric (Fig. 7). Then tighten both set screws in the driving belt sprocket securely.

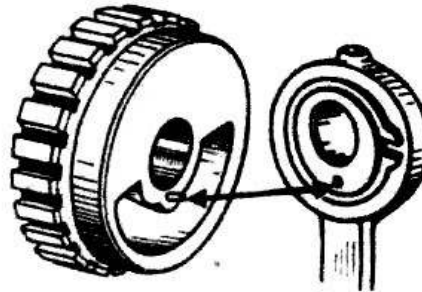


Fig. 7

7. Adjusting the Presser Bar

a. Setting the Presser Bar at the Correct Height

The presser bar is set at the correct height if there is a clearance of $17/64"$, or 6.8 mm, between the needle plate and the presser foot sole when the presser bar lifter is raised.

To check this setting, use machine feed gauge No. 106614-100 1.0 6.8 (Fig. 8). In addition, use gauge foot No. 44088-103 to orient the presser bar correctly in relation to the needle. This foot ensures that all sewing feet and attachments will be oriented properly in relation to the centered needle.

To adjust, remove the face cover and proceed as follows: In case you use the gauge foot for this adjustment, turn stitch width dial **A** to "0" and put needle position lever **B** in the central notch. Raise the presser bar lifter and loosen the set screw in the presser bar guide collar. Place the machine feed gauge under the presser or gauge foot. Lower the presser bar until the presser or gauge foot rests on the machine feed gauge firmly (Fig. 8). Tighten the set screw on the presser bar guide collar lightly. Remove the gauge and cautiously lower the presser bar lifter until the presser or gauge foot rests on the needle plate.

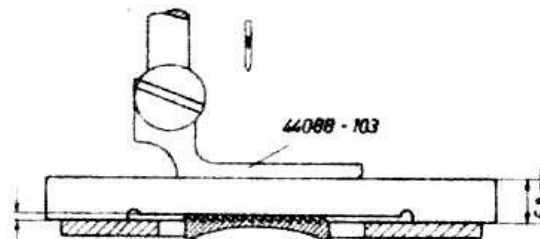


Fig. 8

Orient the presser bar so that the needle hole in the presser foot lines with the needle and the slot

in the needle plate, and the edges of the presser foot run parallel to the edges of the feed slot.

Again check the height of the presser bar and tighten the set screw in the presser bar guide collar securely.

Note

After the needle has been centered in the needle plate slot, as instructed in Chapter 19, again check the lateral position of the gauge foot in relation to the centered needle and, if necessary, adjust.

b. Regulating the Pressure on the Material

The presser bar has been set at the factory to exert a medium amount of pressure which normally need not be changed.

If the sliding properties and the thickness of the material should require lighter or stronger pressure, turn regulating screw Y (Fig. 9) in or out as may be required.

Ordinary materials require a medium amount of pressure. To obtain this pressure, the regulating screw should be turned in or out until it is flush with the top of the casting.

Sheer and delicate fabrics require a light presser foot pressure. To ease the pressure, turn the regulating screw out until its top end is $5/32$ ", or 4.0 mm, above the top of the casting.

For thick, dense and slippery materials, the presser foot pressure must be increased. To do this, turn the regulating screw in until its top end is about $5/32$ ", or 4.0 mm, below the top of the casting.

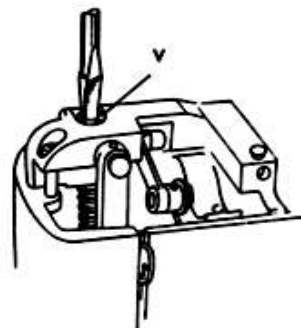


Fig. 9

8. Adjusting the Vibrator

When at its lowest position, the darning foot should be about $.004$ ", or 0.1 mm, above the needle plate. In other words, while darning, the darning foot must not press onto the needle plate, but should just touch a ply of fabric that has been placed under it.

This setting results automatically if there is a clearance of exactly $17/64"$, or 6.8 mm, between the sole of the zigzag foot and the needle plate when the presser bar lifter is raised.

If adjustment is required, screw on darning foot No. 53670 and turn the balance wheel until the foot is at its lowest position. Loosen nut A of regulating screw B which is located on top of the presser bar guide collar (Fig. 11). Turn the regulating screw in or out until the correct amount of presser foot clearance has been obtained. Tighten nut A securely.

To double-check this setting, place a single ply of fabric under the darning foot and check to see that the darning foot just touches the material when the machine is in operation. When you replace the darning foot by the ordinary zigzag foot again, the eccentric located back of the needle bar crank should clear the feeler finger without touching it.

Stopmatic Mechanism

9. Adjusting the Stopping Lever

When the presser bar lifter is either lowered or raised to its normal position, the stop on the needle bar crank should clear the end of the feeler finger at a distance of $.012"$, or 0.3 mm (Fig. 10). As you push the presser bar lifter up as far as it will go, the stop on the needle bar crank should strike against the elbowed end of the stopping lever. The clearance between the stopping lever and the stop on the needle bar crank is determined by the vertical position of the screw in guide G and regulating eccentric D (Fig. 11).

To adjust, loosen set screw C, and move eccentric D up on the screw in guide G as far as it will go (basic setting). Then tighten screw C securely.

If the needle bar crank stop strikes against the stopping lever, turn the screw in guide G out by one complete turn.

If, on the other hand, the clearance gap exceeds $1/32"$, or 1.0 mm, the screw in guide G must be turned in by one complete turn.

Having established the correct position of the screw in guide G, tighten lock nut E securely.

Now set eccentric D on guide G so that there is a maximum clearance of $.012"$, or 0.3 mm, between stopping lever and needle bar crank stop.

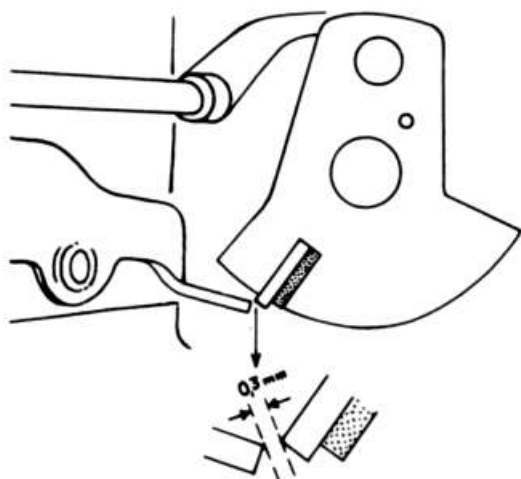


Fig. 10

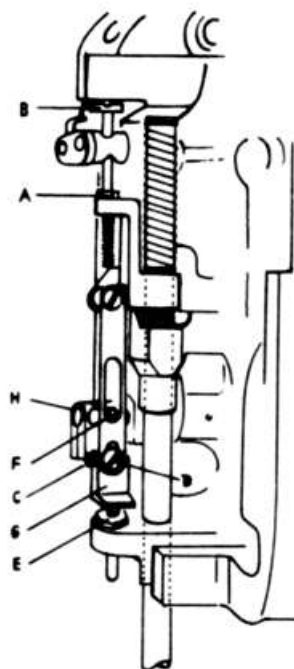


Fig. 11

10. Positioning the Clamp Crank

When the presser bar lifter is at its top position, stud F of clamp crank H (Fig. 11), which is mounted on the hinge pin of the presser bar lifter, should just contact the bottom of the slot in the connection.

If adjustment is required, flick the presser bar lifter to its top position and loosen the set screw in clamp crank H. Rotate the clamp crank until it is positioned correctly and tighten the set screw securely again.

To double-check this setting, push the presser bar lifter beyond its top position as far as it will go. When the presser bar lifter is at this position, the stop on the needle bar crank should contact the stopping lever when the arm shaft is rotated.

When the presser bar lifter is returned to its normal upper position, the stop on the needle bar crank should clear the stopping lever at a distance of .012", or 0.3 mm.

11. Adjusting the Micro Switch and the Bowden Cable

The lower end of the Bowden cable is connected to starting lever F which is made of plastic (Fig. 12). This lever should move to the end of the cutout in the switch box when the presser bar lifter is raised to its top position. When it is at its initial position, it should be positioned extremely close to the left edge of the cutout. The starting lever should operate the micro switch after it has completed about 2/3 of its travel.

To adjust, loosen set screw A on bracket B on top of the machine arm (Fig. 13). Turn hexagon nut C all the way to the left and turn regulating screw E into bracket B until there is a clearance of 1/32", or 1.0 mm, between its tip and joint D. Check the position of starting lever F and, if necessary, adjust by loosening jam nut G (Fig. 12) and turning the lever by one complete turn. After the adjustment, tighten jam nut G securely.

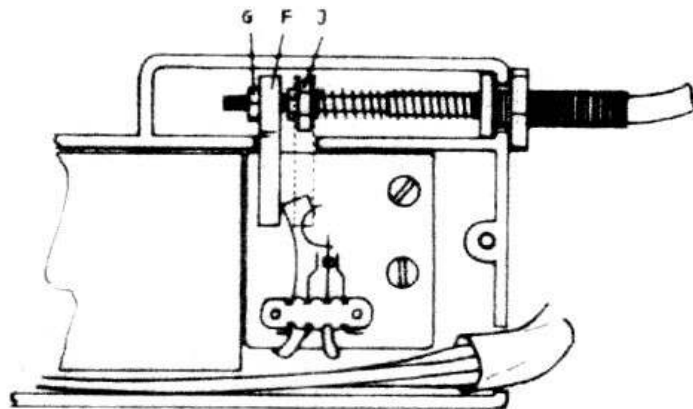


Fig. 12

Before you make this adjustment on Pfaff 362 machines, check to see that the switch box is positioned close to the right wall of the arm standard so that it will not come loose and disturb the subsequent settings. When the presser bar lifter is pushed up beyond its normal top position, starting lever F should move almost to the end of the cutout in the switch box. It should actuate the micro switch after it has completed about 2/3 of its travel. Before the micro switch closes the circuit, the

stopping lever should have been raised far enough to enable it to retain the top on the needle bar crank. This fine adjustment can be made only by turning regulating screw E at the top end of the Bowden cable in or out, as appropriate. If all previous settings are correct, however, fine adjustment will hardly become necessary.

After the adjustment, tighten hexagon nut C securely again.

Also tighten set screw A in the Bowden cable bracket.

Adjust pressure regulating nut J (Fig. 12) so that it will not strike against the screw bushing of the Bowden cable when the presser bar lifter is raised to its top position. Tension the spring so that it will retract the Bowden cable securely when the presser bar lifter is lowered to its bottom position.

To check the proper functioning of the Stopmatic mechanism, proceed as follows:

Slowly raise the presser bar lifter until starting lever F has pushed the spring of the micro switch sideways somewhat, without actually operating the switch. Hold the presser bar lifter in this position. As you turn the balance wheel in its normal direction of rotation, the stop on the needle bar crank should strike the stopping lever and it should be impossible to turn the balance wheel any further. When you raise the presser bar lifter further, starting lever F should cause the micro switch spring to snap over, thus closing the circuit. To ensure that the micro switch is operated securely, starting lever F should continue to move almost to the end of the cutout when the presser bar lifter is pushed up as far as it will go. Plug in the machine and try out the Stopmatic mechanism several times. If it should be found while trying out the Stopmatic mechanism that the voltage of the power supply line at the customer's place of residence is regularly above or below the rated voltage, set the switch under the motor on "-" in case of an overvoltage, or on "+" in case of an undervoltage (Fig. 53).

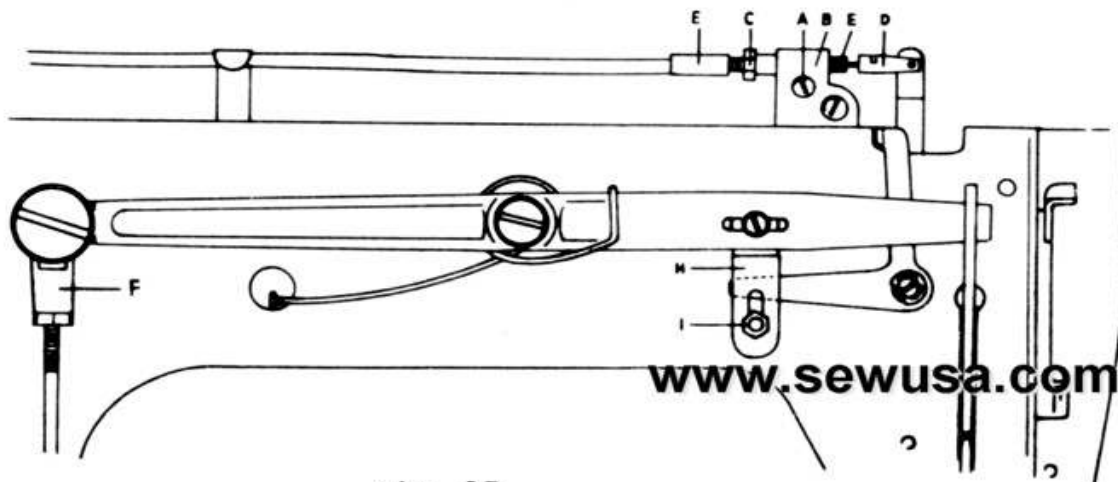


Fig. 13

12. Adjusting the Knee Control of Stopmatic Machines

On machines fitted with knee control, the Stopmatic mechanism can be operated by the presser bar lifter or the knee lever, as desired. If the Stopmatic mechanism is operated by knee action, starting lever F should operate the micro switch after the sewing foot has reached a position about 1/4", or 6.0 mm, above the needle plate.

Before you adjust the knee control, check all settings of the Stopmatic mechanism and make sure it works properly when the presser bar lifter is actuated.

If adjustment is required, loosen the set screw on connection H (Fig. 13) and adjust the position of the connection until its set screw is centered in the slot of the lifting lever. Adjust the position of regulating pin I vertically so that the micro switch is actuated when the sewing foot has reached a position about 1/4", or 6 mm, above the needle plate as you raise the latter by knee action. When the lifting lever is raised further, starting lever F should almost have reached the end of its cutout in the switch box. To adjust, loosen the set screw on connection H and push the latter slightly to the right or left, as may be required.

Regulating pin I must then be readjusted.

To double-check this setting, operate the Stopmatic mechanism by both the presser foot lifter and the knee lever.

Zigzag Mechanism

13. Adjusting the Zigzag Regulator

When needle position lever B is put in the central notch, it should point downward perpendicularly (Fig. 15). Needle position cam finger D (Fig. 14) should contact needle position cam G in the middle of its central dent. As you move needle position lever B to the right and left slightly, thus rotating needle position cam G, the point of contact of the cam finger should remain within the central dent on the needle position cam and must not move down on the left or up on the right immediately (Figs. 14 & 15).

To check this setting, turn stitch width dial A on "0" and put needle position lever B in the central notch. Turn the balance wheel until the needle point is flush with the surface of the needle plate. As you move needle position lever B to the right or left slightly, as indicated in Fig. 15, the needle must not vibrate.

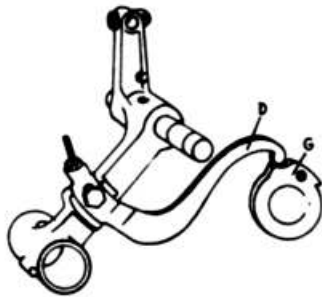


Fig. 14

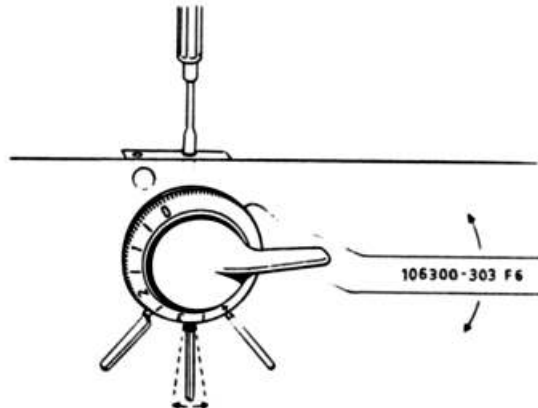


Fig. 15

If the needle should vibrate instantly, loosen the set screw on the zigzag regulator barrel and rotate the latter to the right or left, as appropriate. To do this, use tool No. 106300-303. After the adjustment, tighten the set screw securely (Fig. 15)

On earlier machines, push the zigzag regulator barrel into the machine arm until needle position cam finger D rests on needle position cam G exactly.

After the adjustment has been completed, check to see that the zigzag regulator barrel has been pushed into the machine arm as far as it will go and that stitch width dial A turns easily. Tighten the set screw securely. Double-check this setting.

14. Timing the Needle Vibration

In zigzag sewing, the needle should start to swing sideways after it has risen clear of the thickest material which is normally sewn on this machine. The sideways motion may commence when the needle has just left the fabric, and must be completed before the needle enters the material again. In other words, the ascending needle should begin to swing sideways when its point has reached a position about $3/16$ ", or 5 mm, above the needle plate. The sideways motion of the needle should be completed when the point of the needle has reached a position about $9/32$ ", or 7 mm, above the needle plate.

To check this setting, turn the arm shaft until the feed eccentric timing mark is at the top. With the arm shaft in this position, the timing marks on the flanged bushing and the needle vibrating bevel gear should be exactly in line (Fig. 16). If the timing mark on the needle vibrating eccentric should not be visible, rotate the arm shaft by 360 degrees until the feed eccentric timing mark points up again, and check to see that the timing marks on the flanged bushing and the needle vibrating bevel gear are properly aligned.

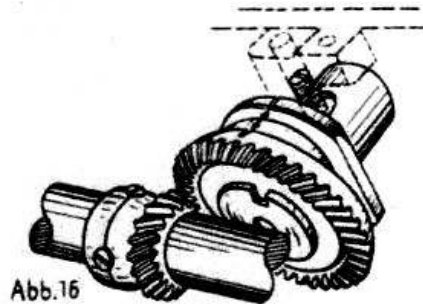


Fig. 16

If they are not, loosen the two set screws on the arm shaft bevel gear and, while keeping it in mesh with the needle vibrating bevel gear, turn it until both timing marks are in line. Then tighten both set screws securely.

In case there is no timing mark on the needle vibrating bevel gear, turn the arm shaft until the feed eccentric timing mark is at the top. Hold the arm shaft in this position and turn the arm shaft bevel gear until the lobe of the needle vibrating eccentric is at the top.

On recent machines which have no marked flange on the bushing, set the timing mark on the needle vibrating bevel gear so that it is exactly opposite the center of the bushing set screw. Then tighten both set screws on the arm shaft bevel gear securely. Now check to see that the descending needle has completed its sideways motion when it has reached a position about $9/32"$, or 7.0 mm, above the needle plate and that it enters the needle plate slot perpendicularly. If required, adjust the position of the large or small bevel gear to ensure that both gears are set at right angles to each other and that the tips of their teeth meet in one point.

At the same time, make sure that the amount of play is minimized and that smooth running of the gears is ensured.

If the needle bar frame pitman has no lateral guidance, adjust the position of the flanged bushing, as may be required. After this adjustment, tighten all screws firmly.

Double-check this setting to see that the needle starts vibrating after it has risen clear of the thickest fabric which is normally stitched on this machine. The needle vibration should begin when the needle has left the fabric and should be completed when the point of the descending needle has reached a position about $9/32"$,

or 7.0 mm, above the needle plate.

15. Basic Setting of Eccentric Studs

a. On Zigzag Regulator Stud Slide Block

The lobe of eccentric stud E which adjusts the position of the slide block in the zigzag regulator stud (Fig. 21) normally should be in a horizontal position, pointing toward the balance wheel.

To adjust, turn stitch width dial A to "0" and put needle position lever B in the central notch. Turn the balance wheel until the needle just enters the needle plate slot. Loosen set screw F and rotate eccentric stud E until the needle is at the extreme right of its throw, i.e. at the balance-wheel end of the needle plate slot. This adjustment should be made very carefully. Tighten set screw F securely.

b. On the Needle Bar Frame

The lobe of eccentric stud D (Fig. 22) which connects needle bar frame and needle bar frame pitman normally should point upward. In special instances, however, it should point downward. If adjustment is required, turn stitch width dial A on "4" and put needle position lever B in the central notch.

Insert a screwdriver through the opening in the bend of the machine arm and loosen set screw C on the eccentric stud (Fig. 22). Reaching through the opening on the back of the machine arm, turn eccentric stud D until its lobe points up and the needle clears both ends of the needle plate slot at the same distance. Tighten the set screw securely.

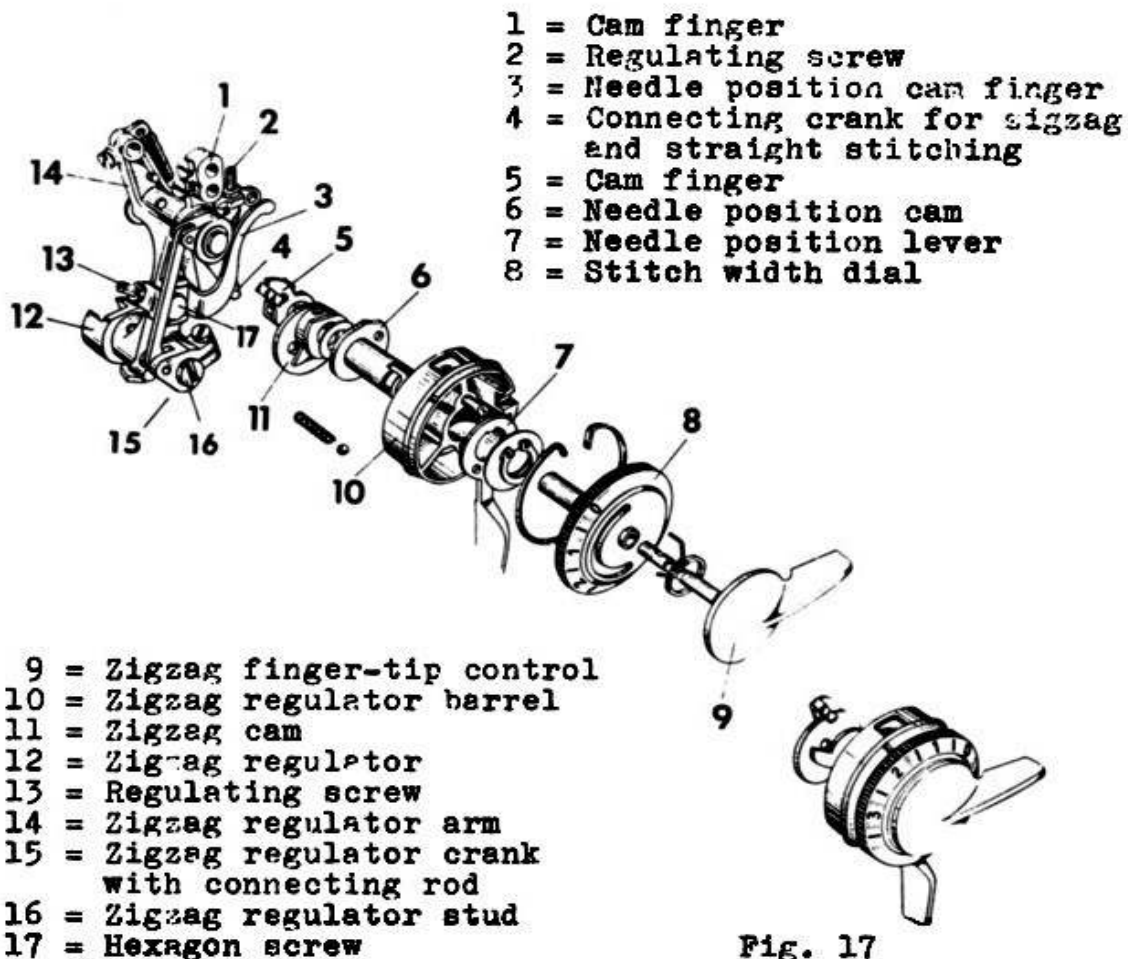
16. Zeroing the Needle for Straight Stitching

a. Using Finger-Tip Control F

The machine should sew a perfectly straight seam when stitch width dial A is set for zigzag stitching and finger-tip control F is pushed up as far as it will go.

To check this setting, drop the machine feed and insert a new No. 80 needle, System 130. Place a piece of thin cardboard under the sewing foot.

Turn stitch width dial A to "4" and put needle position lever B in the central notch. Push finger-tip control F up as far as it will go. Turn the balance wheel forward and backward cautiously and let the needle stitch into the cardboard lightly.



If the needle should not stitch into the same hole twice, loosen the binding screw on zigzag regulator crank 15 (Fig. 17) just sufficiently to permit zigzag regulator stud 16 to be turned with a screwdriver or tool No. 106 300-306. As you turn the zigzag regulator stud to eliminate any needle vibration, let the machine run and push up finger-tip control F.

After the adjustment, tighten the binding screw on zigzag regulator crank 15 securely.

To double-check this setting, repeat the above-mentioned cardboard test.

b. Using Stitch Width Dial A

The machine should sew a perfectly straight seam when stitch width dial A is set on "0".

To check this setting, drop the machine feed and insert a new No. 80 needle, System 130. Place a piece of thin cardboard under the sewing foot.

Turn the balance wheel forward and backward cautiously and let the needle stitch into the cardboard lightly. If the needle should not stitch into the same hole twice, loosen the jam nut on regulating screw 2 (Fig. 17) with a wrench. Run the machine and touch the needle bar frame with your fingers to determine whether it swings sideways or not. To adjust, turn regulating screw 2 in or out, as may be required to eliminate any needle vibration.

After the adjustment, tighten the jam nut firmly and double-check this setting by repeating the above-mentioned cardboard test.

17. Adjusting the Needle Position

When the machine is set for straight stitching and needle position lever B is put in the right and left notches, respectively, the needle should stitch into the same spot it would penetrate when the machine is set for the widest zigzag stitch.

To check this setting, turn stitch width dial A to "4" and put needle position lever B in the left notch. Turn the balance wheel until the needle descends on the left of its throw. Check to see that it makes no perceptible sideways motion when you push up finger-tip control F.

Lever B changes the position of the needle in the needle plate slot, as indicated.

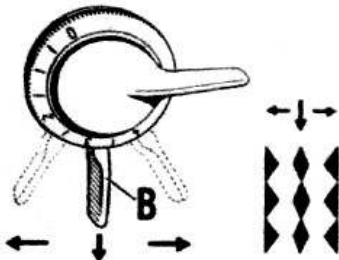


Fig. 18

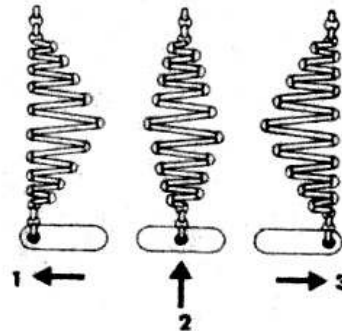


Fig. 19

If the needle swings sideways, the position of zigzag regulator arm E (Fig. 20) must be adjusted.

To do this, take a suitable wrench or box wrench No. 129496 and loosen hexagon screw C on needle position cam finger D just a little. Loosen jam nut B on regulating screw A and turn regulating screw A out a few turns.

Then push zigzag regulator arm E firmly against regulating screw A.

As you move finger-tip control F up and down repeatedly, turn in regulating screw A until the needle ceases to swing sideways.

Use great care as you make this adjustment with the needle at its left position because this position is used for sewing buttonholes.

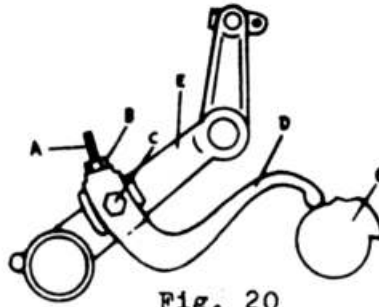


Fig. 20

Securely tighten both hexagon screw C and jam nut A on needle position cam finger D.

To double-check this setting, flick needle position lever B to its right and left position, respectively, and check to see that the needle makes no sideways motion.

18. Adjusting the Needle Throw in Relation to the Central Needle Puncture

When needle position lever B is put in the central notch, the right and left needle punctures made with the machine set for the widest zigzag stitch should be equidistant from the central puncture made with the machine set for straight stitching.

To check this setting, set stitch width dial A on "0" and put needle position lever B in the central notch. Drop the machine feed and place a piece of cardboard under the sewing foot. Turn the balance wheel until the needle stitches into it lightly. Turn stitch width dial A to "4" and turn the balance wheel forward, then backward, until the needle, on the right and left of its throw, stitches into the cardboard again.

To adjust, loosen set screw F (Fig. 21) and rotate eccentric stud E until the central puncture is located exactly midway between both outer punctures.

To double-check this setting, repeat the above-mentioned cardboard test.

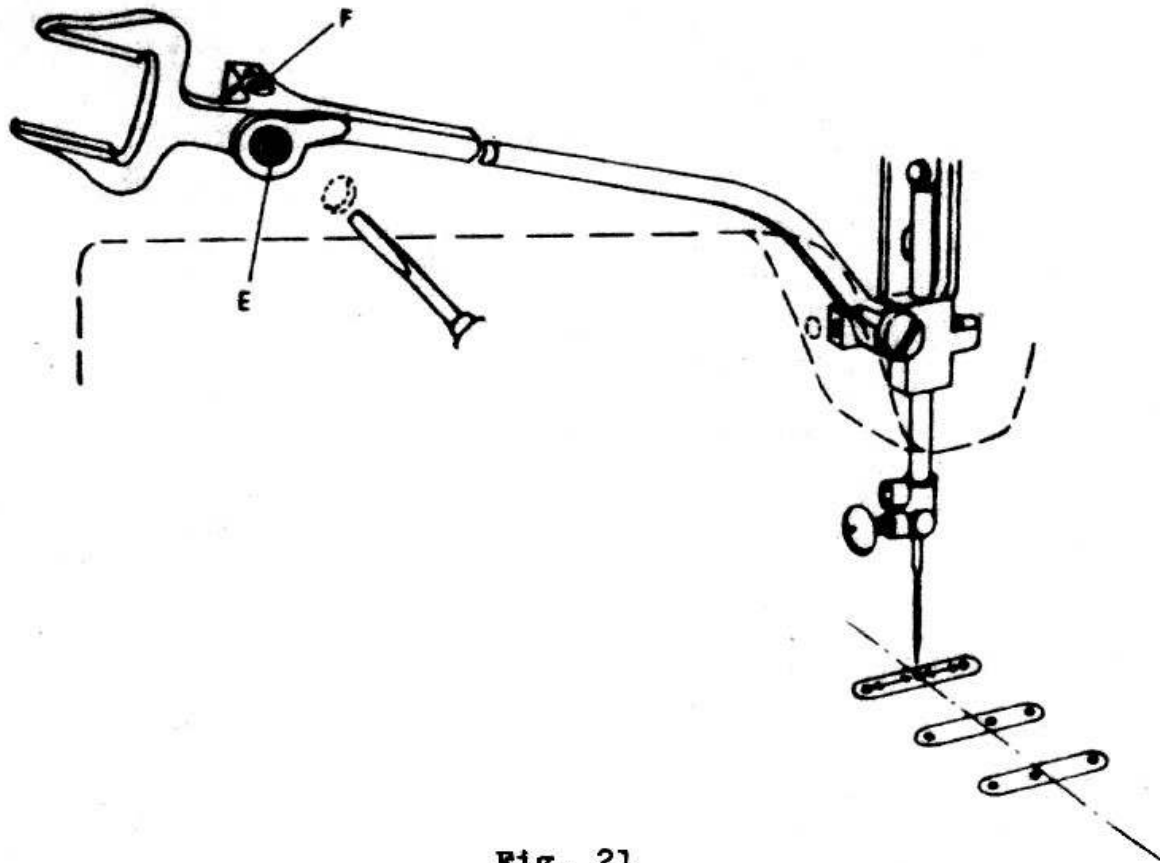


Fig. 21

19. Centering the Needle Throw in the Needle Plate Slot

When needle position lever B is put in the central notch, the needle should be centered correctly in the needle plate slot and, descending on the right and left of its throw, should clear both ends of the slot at the same distance. (Fig. 22).

If adjustment is required after a visual inspection, loosen set screw C on eccentric stud D in the needle bar frame which can be reached through an opening in the bend of the machine arm (Fig. 22).

Insert a wide-blade screwdriver through the opening on the back of the machine arm and turn eccentric stud D to the right or left until the central puncture is centered in the needle plate slot correctly and the needle, descending on the right and left of its throw, clears both ends of the slot at the same distance.

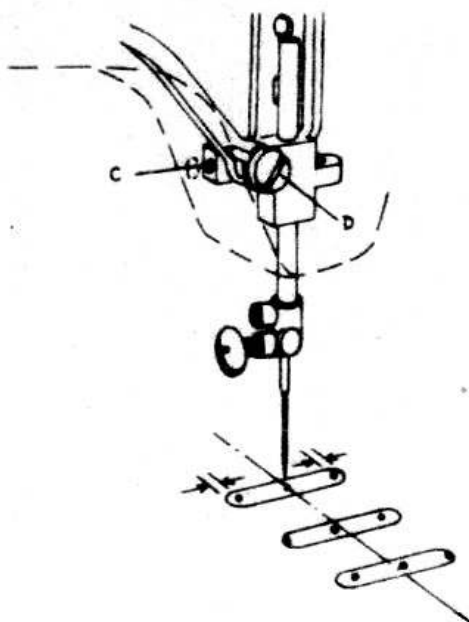


Fig. 22

After a thorough visual inspection, tighten set screw C securely.

Since the adjustment of the needle position is correlated with the centering of the needle throw in the needle plate slot and in relation to the central needle puncture, each setting must be checked again (Figs. 16 & 17). If necessary, repeat the adjustments in the sequence given above until all settings are correct.

Automatic Embroidery Mechanism

20. Adjusting the Driving Eccentric

The cams controlling the stitch width and the needle position must rotate when the needle is out of the material.

To check this setting, set pattern length lever E on "1". As you turn the balance wheel check to see that the cams start rotating when the point of the ascending needle has reached a point about $1/32"$, or 1.0 mm, above the needle plate.

Both the arm shaft and the eccentric driving the automatic embroidery mechanism are provided with a timing mark. To ensure that the driving eccentric is set correctly, bring both timing marks in alignment (Fig. 23 a) and tighten both set screws securely. As you make this adjustment, set the driving eccentric and the needle bar crank close to the arm shaft bushing in order to eliminate any end play of the arm shaft. Provided both arm shaft bushings are positioned correctly and any end play of the arm shaft has been eliminated, there should be a clearance

of .006" to .008", or 0.15 to 0.2 mm, between the balance wheel bushing and the arm shaft rear bushing.

In case there is no timing mark on the driving eccentric or the arm shaft, turn the balance wheel in sewing direction until the take-up lever has passed the highest point of its stroke and descended about $5/32"$, or 4.0 mm. When the take-up lever is at this position, the lobe of the driving eccentric should be at the top (Fig. 23 b). If it is not, loosen the two set screws on the driving eccentric and turn the latter, as appropriate. Then tighten both set screws securely. Make sure both the driving eccentric and the needle bar crank are set close to the arm shaft bushing.

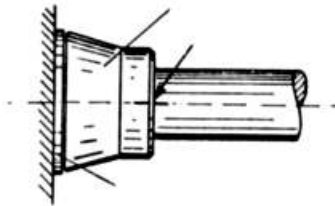


Fig. 23 a

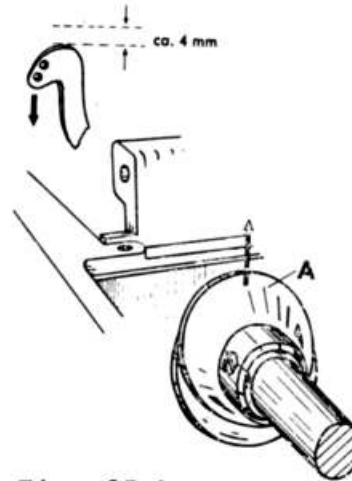


Fig. 23 b

Mount the automatic embroidery mechanism and check to see that the cams start rotating when the point of the ascending needle has risen about $1/32"$, or 1.0 mm, above the needle plate and that their rotation is completed before the needle enters the fabric again.

21. Installing the Automatic Embroidery Mechanism

Remove the top cover and turn stitch width dial A on "0". Take the automatic embroidery mechanism in your left hand and, with the index finger of this hand, push against the roller-equipped driving lever which protrudes from the edge of the base plate.

Push the regulating slide to the left until the nose of the connecting lever is positioned slightly behind the stop pin on the regulating slide. If the regulating slide is pushed too far to the left, it will strike against the needle bar frame pitman.

Now place the automatic embroidery mechanism in the machine and secure it in position by three screws.

Check whether the disengaging lever (41 in Fig. 24) which operates the two forward engaging levers moves up and down freely.

When dial D (9 in Fig. 24) is set on "1", the top finger of the contact finger assembly should be positioned exactly below the red mark. If it is not, loosen the set screws and adjust as appropriate. Then tighten both set screws securely.

When dial C is set on "0", its knob should be positioned horizontally. In addition, the two set screws on the back of this dial should be arranged in a horizontal line.

If this setting needs adjustment, either correct the position of the numbered dial or loosen the two set screws and adjust the position of the cam (50506) on the stud.

22. Adjusting the Two-Part Connection

The two-part connection (25 & 27 in Fig. 24) normally should not require any adjustment. The only time readjustment may become necessary is when the contact fingers jam as they pass the highest point of the lobe of the cam opposite or when the engaging levers cannot be adjusted properly.

To adjust, set stitch width dial A, dial C and dial D all on "4" and put needle position lever in the central notch. Turn thumb nut 11 (Fig. 24), thus rotating cam assembly 10, until the contact finger is opposite the lobe of the respective cam. Loosen the set screw and turn eccentric stud 4 of front engaging lever 3 until its lobe is at the top. Tighten the set screw securely. Now loosen both set screws 26 in rear section 25 and front section 27 of the two-part connection and lengthen or shorten the latter until the engaging lever fits over the pin in the front clutch stud. Tighten both set screws 26 securely.

When stitch width dial A is set on "0" again, the contact fingers should negotiate the lobe of the cams smoothly and without excessive friction.

Essential Parts of the Pfaff (-261) Automatic

- 1 = Needle position engaging lever
- 2 = Needle vibration engaging lever,
controlling half the stitch width
- 3 = Needle vibration engaging lever,
controlling the entire stitch width
- 4 = { Eccentric stud, rear
Eccentric stud, center
Eccentric stud, front
- 5 = Pressure spring, rear
- 6 = { Pressure spring, center
Pressure spring, front
- 7 = Regulating screws
- 8 = Pressure spring assembly bracket
- 9 = Cam selector dial (D)

- 10 = Cam assembly
- 11 = Thumb nut
- 12 = Oil pad holder
- 13 = Clutch stud, rear
- 14 = Clutch stud, center
- 15 = Clutch stud, front
- 16 = Base (incorporated until Apr. 30, 1960)
- 17 = Engaging lever dial (C)
- 18 = Engaging lever driver
- 19 = Connection, front section (incorporated until Apr. 30, 1960)
- 20 = Tension spring (incorporated until Apr. 30, 1960)
- 21 = Connection, rear section (incorporated until Apr. 30, 1960)
- 22 = Driving roller
- 23 = Driving lever
- 24 = Contact finger assembly
- 25 = Connection, rear section (incorporated as from May 1, 1960)
- 26 = Set screws
- 27 = Connection, front section (incorporated as from May 1, 1960)
- 28 = Driving eccentric for automatic embroidery mechanism
- 29 = Needle bar frame pitman
- 30 = Needle vibrating eccentric bevel gear
- 31 = Transverse shaft set screw
- 32 = Zigzag regulator arm
- 33 = Driving belt sprocket, upper
- 34 = Connecting crank
- 35 = Eccentric stud boreholes
- 36 = Arm shaft bevel gear
- 37 = Stitch width dial (A)
- 38 = Needle position lever (B)
- 39 = Zigzag finger-tip control (F)
- 40 = Base (incorporated as from May 1, 1960)
- 41 = Disengaging lever

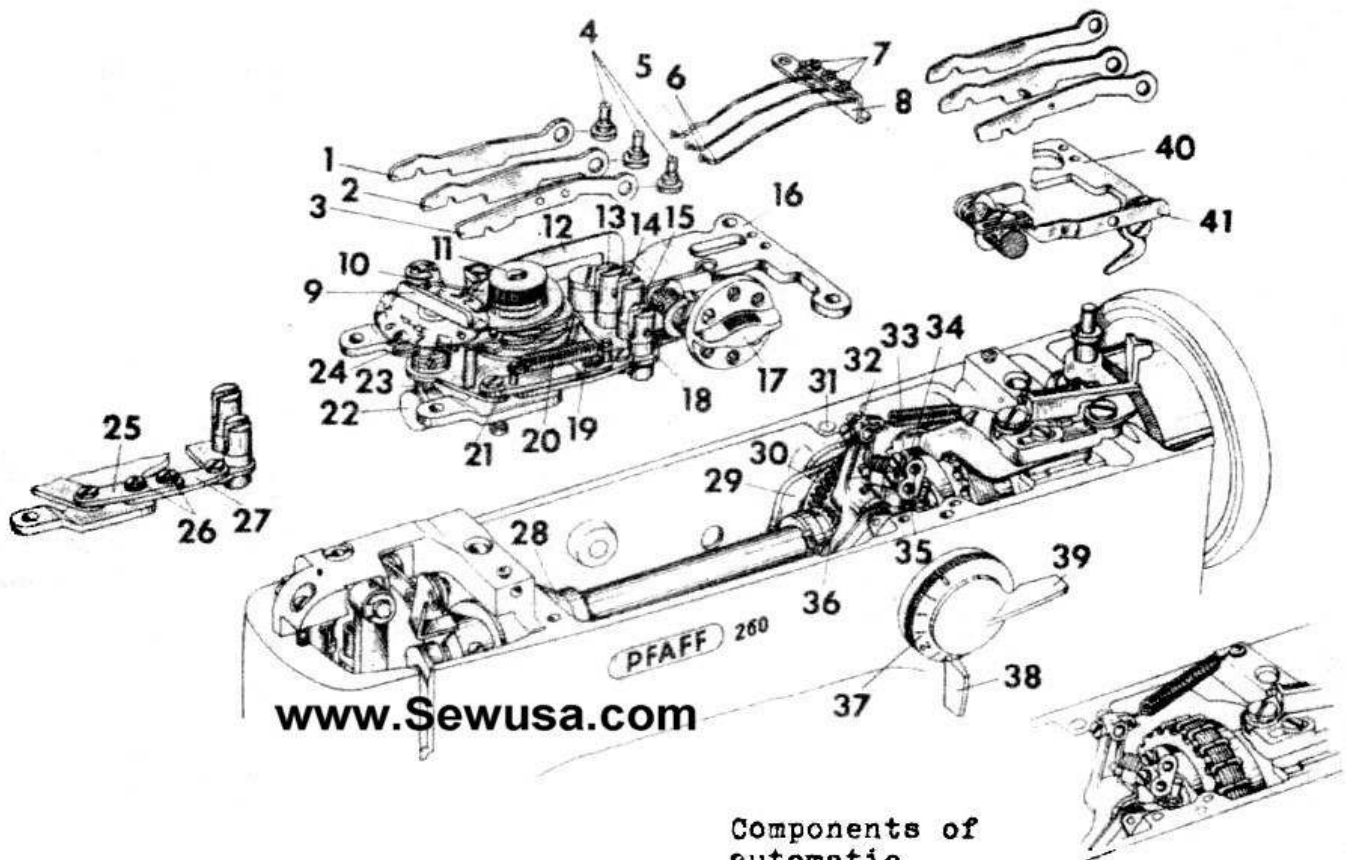


Fig. 24

Components of
automatic
embroidery
mechanism

23. Adjusting the Engaging Levers

To adjust all engaging levers, turn dial D to "4" and turn the cam assembly clockwise, seizing it by the thumb screw, until the fourth contact finger from the bottom is opposite the dent, or lowest point, on the rim of the cam opposite.

a. Adjusting the Front Engaging Lever Controlling the Entire Stitch Width.

To check this setting, set stitch width dial A on "0", dial C on "4", and needle position lever B at its central position. Check whether the square notch in front engaging lever 3 (Fig. 24) fits readily over the pin in clutch stud 15.

If it does not, loosen the set screw on eccentric stud 4 and turn the stud until its lobe is at the top. Then turn the eccentric stud to the right or left, as appropriate, until the engaging lever fits over the pin in the clutch stud. Tighten the set screw securely.

To check the light working of the whole mechanism, turn the cam assembly by hand, while engaging lever 3 is engaged, until the contact finger is opposite the lobe of the cam. Check whether the contact finger negotiates the lobe of the cam smoothly, without binding, and whether the engaging lever can be lifted easily out of the front clutch stud.

If there is a bind, turn the eccentric stud until the contact finger negotiates the lobe and the dent of the cam with equal facility. If no such intermediary position can be found, readjust the position of two-part connection 25 and 27 (Fig. 24).

To double-check this setting, turn the cam assembly so that the contact finger is alternately positioned opposite the highest and lowest points on the rim of the cam opposite. When the finger is opposite the dent in the rim of the cam, the engaging lever should fit over the pin in the clutch stud easily. In addition, the contact finger should negotiate the lobe of the cam with facility.

b. Adjusting the Central Engaging Lever Controlling Half the Stitch Width

To check this setting, set stitch width dial A on "0", needle position lever B at its central position, and dial C on "1". Check whether the square notch in central engaging lever 2 (Fig. 24) fits readily over the pin in clutch stud 14.

If it does not, loosen the set screw on eccentric stud 4 and turn the stud until its lobe is at the top. Then turn the eccentric stud to the right or left, as appropriate, until engaging lever 2 fits over the pin in clutch stud 14. Tighten the set screw securely.

c. Adjusting the Rear Engaging Lever Controlling the Needle Position

To check this setting, set stitch width dial A on "0", needle position lever B at its left position, and dial C on "3". Check whether the square notch in rear engaging lever 1 (Fig. 24) fits readily over the pin in clutch stud 13.

If it does not, loosen the set screw on eccentric stud 4 and turn the stud until its lobe is at the top. Then turn the eccentric stud to the right or left, as appropriate, until engaging lever 1 fits over the pin in the clutch stud. Make sure that the left edge of the cutout in the engaging lever just touches the pin in clutch stud 13. Tighten the set screw securely.

To double-check this setting, turn the cam assembly by hand, while engaging lever 1 is engaged, until the contact finger is opposite the lobe of the cam. The descending needle now should be in the same position as if it descends on the right of its throw when

the machine is set for its widest stitch. Make sure, however, that it does not strike the right edge of the needle plate slot. If the needle should be positioned too far to the right, rotate the engaging lever eccentric stud until it is at the correct position. As you turn the cam assembly further until the contact finger is opposite the dent on the rim of the cam, engaging lever 1 should fit readily over the pin in clutch stud 13. If necessary, turn the engaging lever eccentric stud until all requirements are met. Then tighten the set screw securely.

24. Mounting and Adjusting the Pressure Spring Bracket

Screw the three springs onto the pressure spring bracket. The spring pressing on the rear engaging lever has a slight dent and must be mounted above this lever. Mount the pressure spring assembly bracket on the base of the automatic embroidery mechanism and secure it in position with two screws.

When the engaging levers are in the correct position to fit over the pins in the clutch studs opposite, spring pressure must be strong enough to ensure that the engaging levers will drop over these pins securely.

If adjustment is required, loosen the nuts and turn the regulating screws in or out, as appropriate. After the adjustment, tighten all nuts securely.

Now check the operation of the springs in the position in which the engaging levers will drop into the clutch studs.

25. Adjusting the Pattern Length Lever

The length of the embroidery patterns can be varied by operating pattern length lever E by hand. When lever E is set on "0", the automatic embroidery mechanism is disengaged. When it is set on "7", each pattern is sewn with about 120 stitches, whereas at position "1", the machine makes 36 stitches per pattern (Figs. 25, 26 & 27).

There is normally no need to readjust pattern length lever E.

To adjust, set lever E on "7", remove the top cover and turn it upside down. Then loosen the set screw on the small crank on its underside and rotate the crank until its fork points toward the balance wheel. Then tighten the set screw securely.

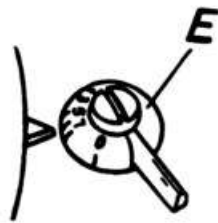


Fig. 25

Lever E at:

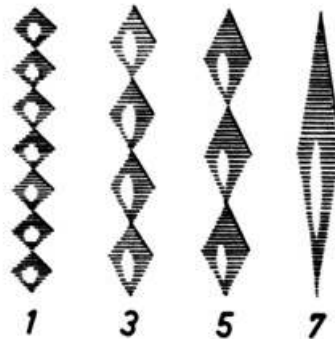
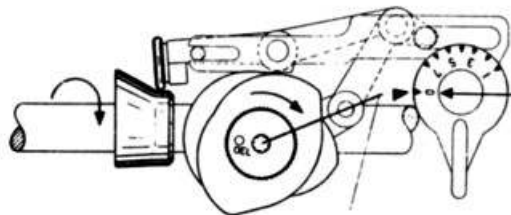


Fig. 26

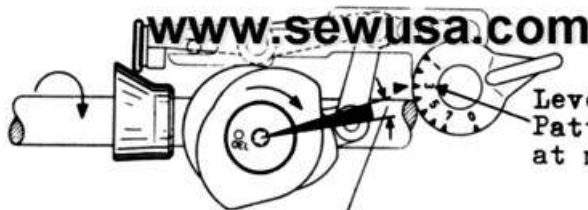
To double-check this setting, set dial D on "8" and lever E on "0" to disengage the automatic embroidery mechanism.

When pattern length lever E is set on "7", the machine should make about 120 stitches per pattern, and when set on "1", about 36.



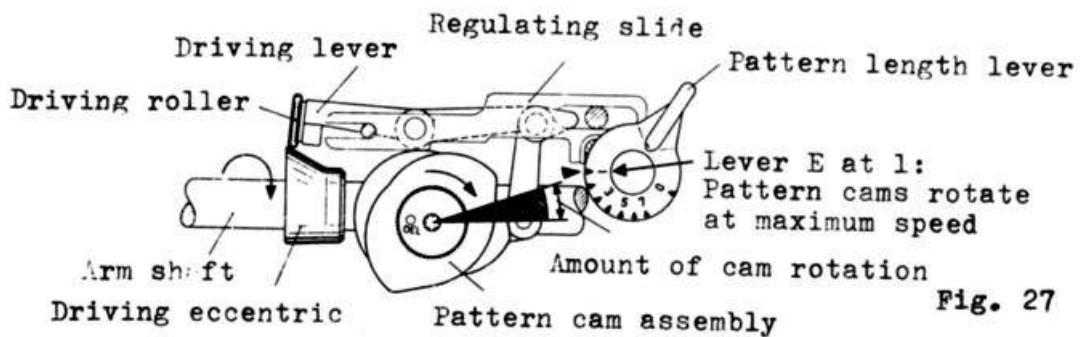
Lever E at "0":
Automatic embroidery mechanism is disengaged: the pattern cams do not rotate.

Amount of cam rotation = 0



Lever E at 3:
Pattern cams rotate at medium speed.

Amount of cam rotation



Lever E at 1:
Pattern cams rotate at maximum speed

Amount of cam rotation

Fig. 27

If in exceptional cases several machines are to turn out patterns of the same length when their pattern length levers are set at a certain position, slightly adjust the position of the small crank underneath the top cover until each machine makes about 36 stitches per pattern when lever E is set on "1".

26. Testing the Performance of the Automatic Embroidery Mechanism

In order to test the working of the automatic embroidery mechanism, turn dial D on "4", stitch width dial A on "0" and put needle position lever B in the left notch. Run the machine slowly and switch dial C to each of its five positions in succession.

Sewing Mechanism

27. Timing the Sewing Hook

Timing the sewing hook involves adjusting the amount of needle bar rise required to form the loop, setting the needle bar at the correct height, and setting the hook the correct distance from the needle.

a. Adjusting the Needle Bar Rise

As the needle rises from the lowest point of its stroke, the needle thread forms a loop on its short-groove side. The distance between the lowest point of the needle stroke and the point at which this loop has reached its proper size is termed "needle (bar) rise" (Fig. 28). When the needle has risen the required distance from the bottom of its stroke, the hook point should be opposite its center line. As the needle rises further, the hook point should enter and enlarge this loop and pass it around the bobbin.

b. Setting the Needle Bar at the Correct Height

The needle bar should be set at the correct height so that the hook point can readily enter the needle thread loop above the needle eye, regardless whether the machine sews straight or zigzag.

c. Setting the Hook to the Needle

The hook should be set as close to the needle as possible so that its point will not miss the needle thread loop.

To time the sewing hook on Pfaff 260 and 262 machines, proceed as follows:

- (1) Adjust needle bar rise and set hook to needle.
- (2) Set needle bar at correct height.

On Pfaff 360 and 362 machines, adopt the following procedure:

- (1) Adjust needle bar rise.
- (2) Set needle bar at correct height.
- (3) Set hook to needle.

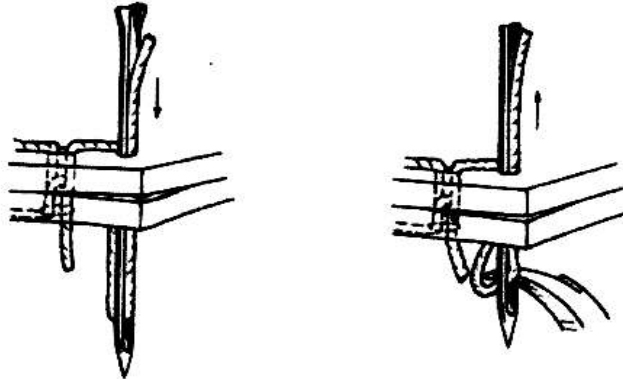


Fig. 28

28. Timing the Sewing Hook and Setting It to the Needle on Pfaff Machines 260 and 262

Turn stitch width dial A to "0" and put needle position lever B in the central notch. On automatics, also set dial C on "0".

Remove the sewing foot and the needle plate.

To obtain an accurate setting, it is advisable to remove bobbin case cap and base. Insert a new No. 80 needle, System 130.

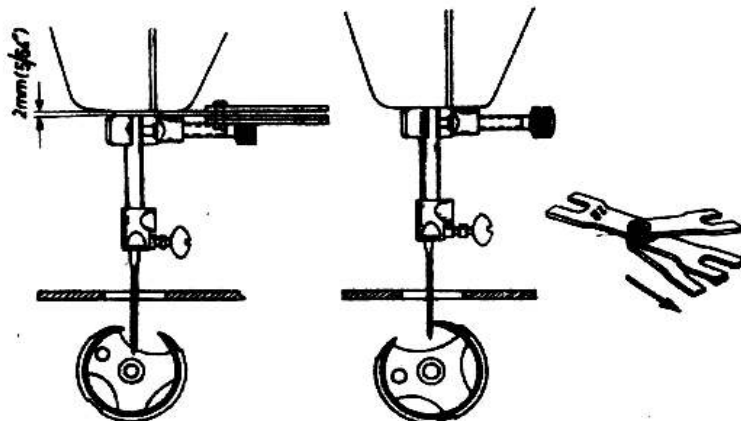


Fig. 29

Turn the balance wheel until the needle has reached the lowest point of its stroke (Fig. 29). Slip clamp No.

Z 70.68-1 onto the needle bar and tighten its screw lightly. Then slip needle rise gauge No. Z 70.67-1, which is $5/64$ ", or 2.0 mm, thick, onto the needle bar above the clamp, and push both the gauge and the clamp up against the bottom surface of the machine arm. Tighten the clamp screw securely (Fig. 29).

To make sure the needle bar is really at the bottom of its stroke, try to rock the balance wheel back and forth cautiously. The position of the needle bar is correct if there is no play between the clamp and the needle rise gauge.

This done, pull out the gauge and turn the balance wheel in sewing direction until the clamp contacts the bottom surface of the machine arm. When the needle bar is at this position, it has risen $5/64$ ", or 2.0 mm, from the lowest point of its stroke (Fig. 29). Loosen the two hook set screws and rotate the sewing hook until its point is opposite the center line of the needle.

At the same time, set the hook as close to the needle as possible, the proper clearance between both parts being .004", or 0.1 mm. (Fig. 33).

Tighten the hook set screws lightly and double-check the amount of needle bar rise and the distance between the sewing hook and the needle.

29. Timing the Sewing Hook on Pfaff Machines 360 and 362.

Turn stitch width dial A to "0" and put needle position lever B in the central notch. On automatics, also set dial C on "0".

Remove the sewing foot and the cylinder arm top cover. To obtain an accurate setting, it is advisable to remove both the bobbin case cap and the base. Insert a new No. 80 needle, System 130.

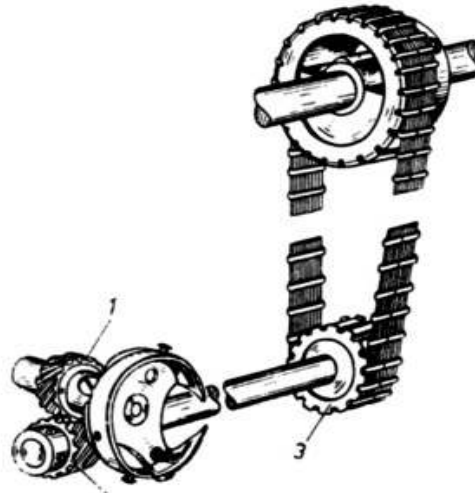


Fig. 30

On Pfaff machines 360 and 362, the hook can be timed only by adjusting the position of lower driving belt sprocket 3 (Fig. 30) on its shaft.

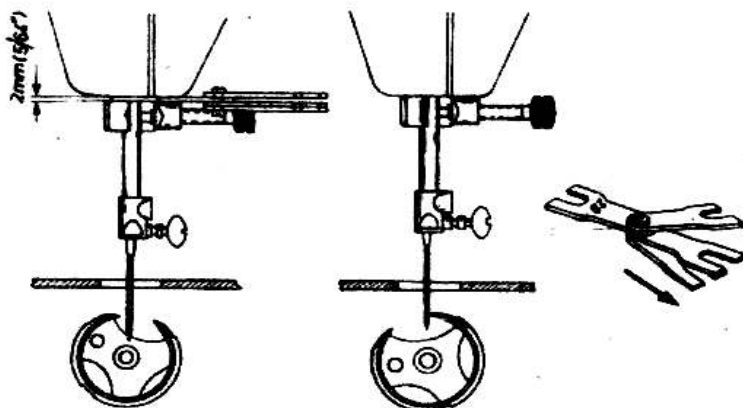
It is not possible to time the sewing hook by adjusting the position of the helical gears on the short hook shaft or the long hook driving shaft. Nor must the upper driving belt sprocket be adjusted on its shaft as this would disturb the balancing of the shaft (Fig. 30).

The set screws on the lower driving belt sprocket can be reached through the second opening on the back of the machine base, as viewed from the balance wheel end. To obtain a better view of the set screws on the lower driving belt sprocket, remove grille 8 (Fig. 54). Take out the screws in the Stopmatic switch box and turn the latter so that you can see the lower driving belt sprocket. Now loosen the two set screws on the lower driving belt sprocket.

If for one reason or another it should be impossible to get at the screws, take out the motor. Turn the balance wheel until the needle bar has reached the lowest point of its stroke. Slip clamp No. Z 70.68-1 onto the needle bar and tighten its screw lightly. Then slip needle bar gauge No. Z 70.67-1, which is $5/64$ " or 2.0 mm, thick, onto the needle bar above the clamp, and push both the gauge and the clamp up against the bottom surface of the machine arm. Tighten the clamp screw securely (Fig. 31).

To make sure the needle bar is really at the bottom of its stroke, try to rock the balance wheel back and forth cautiously. The position of the needle bar is correct if there is no play between the clamp and the needle rise gauge.

This done, pull out the gauge and turn the balance wheel in sewing direction until the clamp contacts the bottom surface of the machine arm. When the needle bar is at this position, it has risen $5/64$ " or 2.0 mm, from the lowest point of its stroke. Rotate the sewing hook until its point is opposite the center line of the needle (Fig. 31). Tighten the set screw on the lower driving belt sprocket which can be reached through the opening in the machine base.



Timing the sewing hook

Fig. 31

Double-check this setting and tighten the two set screws on the lower driving belt sprocket securely.

30. Setting the Needle Bar at the Correct Height on Pfaff Machines 260, 262, 360 and 362

Pfaff machines 260, 262, 360 and 362 are fitted with a double-revolution transverse rotary sewing hook. When the needle descends on the right of its throw, the hook point reaches the needle a little earlier than the centered needle in straight sewing. And, conversely, when the needle descends on the left of its throw, the hook point reaches the needle a little later than the centered needle in straight stitching.

As a result, the hook point is positioned higher above the needle eye when the needle descends on the right than when it descends on the left of its throw. For this reason, great care must be applied in setting the needle bar at the correct height.

Turn stitch width dial A on "4" and put needle position lever B in the central notch. On Automatics, also turn dial C to "0". Remove face cover, sewing foot and needle plate. Insert a new No. 80 needle, System 130. Turn the balance wheel until the needle descends on the left of its throw. Continue turning the balance wheel until the hook point is opposite the center line of the ascending needle.

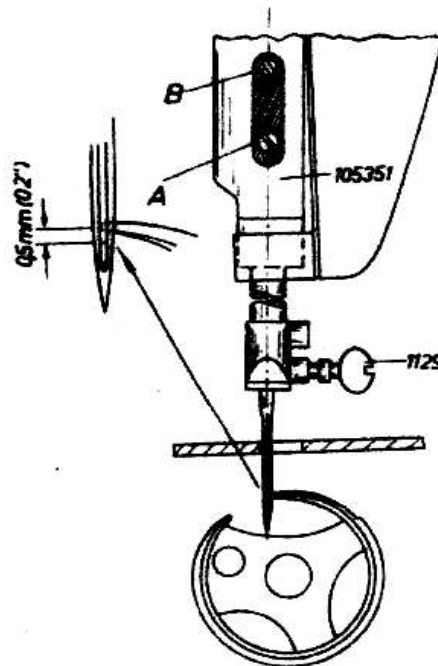


Fig. 32

The needle bar is set at the correct height, if the hook point is about .02", or 0.5 mm, above the top of the needle eye (Fig. 32). If adjustment is required, loosen

needle bar set screw A (Fig. 32) and set the needle bar higher or lower, as appropriate, without rotating it. Tighten needle set screw A securely.

If you want to use System 130 R twin needles or a double-needle holder with System 130 B needles, make sure you set the needle bar so that the hook point passes both needles at the same distance laterally.

On Pfaff machines 260 and 262, double-check the clearance between the sewing hook and the needle since this distance may have been changed by setting the needle bar higher or lower.

31. Setting the Hook to the Needle
on Pfaff Machines 360 and 362

On Pfaff machines 360 and 362, the sewing hook should be set as close to the needle as possible, the proper clearance between both parts being .004", or 0.1 mm, when the machine is set for straight stitching (Fig. 33).

When the machine is set for the widest zigzag stitch, the hook point should almost touch the needle as it descends on the right and left of its throw.

To check this setting, remove sewing foot, needle plate and cylinder arm top cover. Also remove the bobbin case cap and the bobbin case base to afford a better view of the parts to be adjusted. Insert a new No. 80 needle, System 130, and check the clearance between needle and sewing hook with the machine set for straight stitching as well as for the widest zigzag stitch.

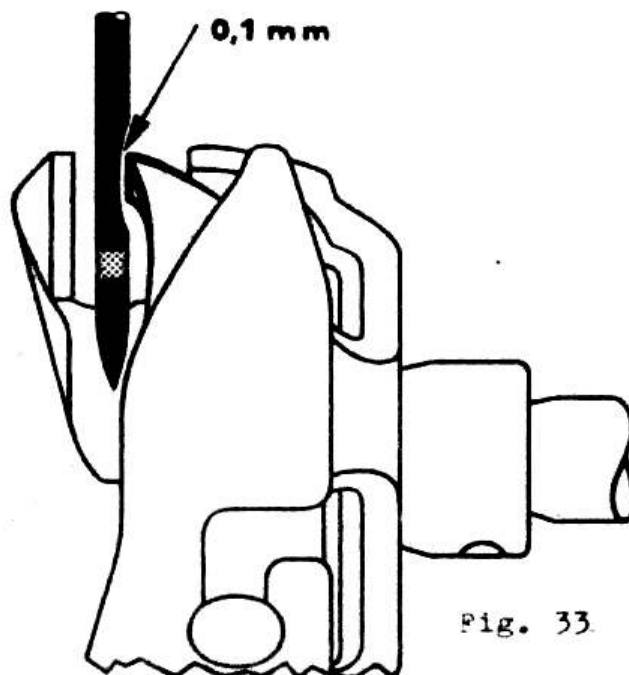


Fig. 33

- a = Set screw
- b = Hook shaft bushing
- c = Hook shaft helical gear
- d = Spacing washer
- e = Hook thread guard
- f = Sewing hook
- g = Guide bushing

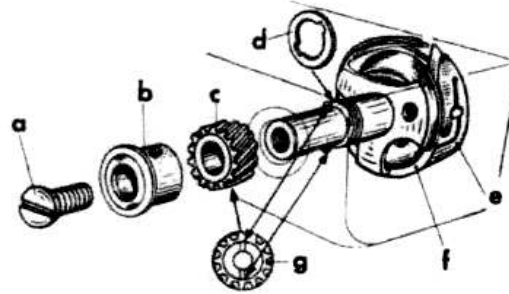


Fig. 34

If it should become necessary to readjust the amount of clearance between the sewing hook and the needle, turn out set screw a which has left-hand thread (Fig. 34). Pull out the sewing hook with its short shaft, but make sure you remember its position because it must be replaced in the same position later.

Depending on the desired clearance between the hook point and the needle, replace spacing washers d on the short hook shaft by thinner or thicker washers, as may be required.

Such spacing washers are available as follows:

No. 106 014	=	.048", or 1.20 mm
No. 60 232	=	.015", or 0.40 mm
No. 60 231	=	.013", or 0.35 mm
No. 60 230	=	.012", or 0.30 mm
No. 60 229	=	.010", or 0.25 mm
No. 60 156	=	.008", or 0.20 mm

Replace the sewing hook in exactly the same position it has occupied in the machine previously and tighten hook set screw a securely.

32. Adjusting the Bobbin Case Position Finger Bracket

a. On Pfaff Machines 260 and 262

The clearance between the tip of the position finger and the bottom of the position slot in the bobbin case base should be large enough to permit the thickest thread used on the respective machine to pass between both parts freely. This thread normally is a No. 30 thread.

The clearance between these parts normally should be about $1/32$ ", or 0.7 mm (Fig. 35). If the position finger is set too close to the bottom of the position slot, the needle thread will catch on it, and is likely to kink or break. And, conversely, if the position finger does not project into the slot far enough, the bobbin case will not be held in place securely.

To adjust the position finger correctly, use gauge

No. 8951-100 (Fig. 35). The gauge must neither jam nor have excessive play in the position slot, when it is placed between the tip of the position finger and the bottom of the position slot.

To adjust, loosen the set screw in the position finger bracket. Insert the gauge between the position finger and the bottom of the position slot. Push the position finger bracket forward until it touches the gauge just lightly. Then tighten the set screw securely.

To double-check this setting, insert the gauge between both parts and see that it does neither jam nor have excessive play.

b. On Pfaff Machines 360 and 362

Before you make this adjustment on Pfaff machines 360 and 362, make sure the needle is centered correctly in the needle plate slot when the machine is set for straight stitching. Also make sure that the feed dog is set correctly in the feed slots of the needle plate. If it is not, loosen the three set screws in the cylinder arm top cover and reposition the top cover, as appropriate. Tighten all three screws securely.

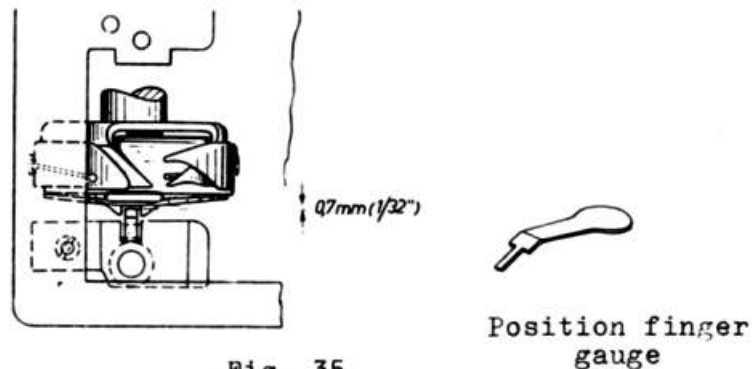


Fig. 35

Only if the above conditions are met, can you proceed to adjust the clearance between the bobbin case position finger and the bottom of the position slot. Follow the same adjustment procedure given for Pfaff machines 260 and 262 above (Fig. 35).

To get at the position finger bracket set screw, insert a screwdriver through the opening in the base plate of the machine.

To check the setting on Pfaff machines 360 and 362, use a 1/32" (0.7 mm) gauge.

33. Setting the Needle Threader

On Pfaff machines 262 and 362, the needle threader control

is operated after the needle has been raised by Stopmatic action, and on Pfaff machines 260 and 360 when the needle bar is at its highest point.

The needle threader is set correctly if threader prong W passes freely through the eye of a No. 70 needle. Also, it should protrude sufficiently from the front of the needle eye to allow the thread to be placed behind it securely.

Prong W should pass through the eye of a No. 70 needle near its bottom end. This is the correct vertical setting of prong W for all needle sizes because the thicker the needle, the lower the bottom edge of its eye. Once the vertical position of prong W has been adjusted with the aid of a No. 70 needle, it will fit all other needle sizes also.

a. Adjusting the Stop on the Needle Bar

Begin by establishing the correct position of the stop on the needle bar which is located about $1/32$ " or 1.0 mm, below the upper needle bar bearing. To adjust, remove the face and top covers. Operate the Stopmatic control or bring the needle bar to its highest position. Then move the needle threader lever all the way down and check to see that the guide pin rides in the oblique slot in the threader bar frame from one end to the other and that there is a clearance of about .02", or 0.5 mm, between the lower end of the threader bar frame and the lower bearing of the threader bar (Fig. 36). If adjustment is required, set the needle bar at a position slightly above the lowest point of its stroke, loosen set screw B (Fig. 32) and set the stop higher or lower on the needle bar, as may be required. Set screw B can be reached through the elongated hole in the needle bar frame.

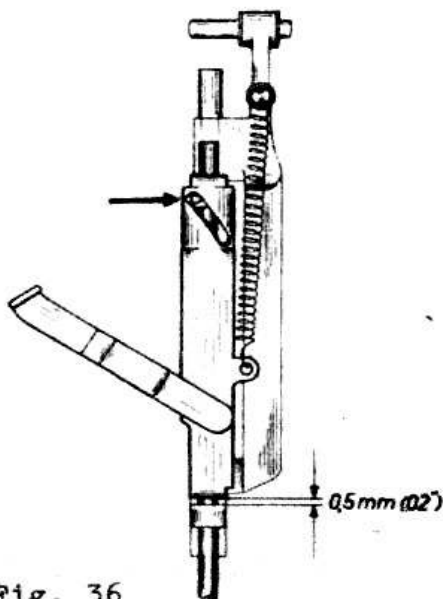


Fig. 36

b. Adjusting the Needle Threader Head

Once the vertical position of the stop on the needle bar has been adjusted, proceed to adjust the needle threader head as follows:

Again remove the face cover. On Pfaff machines 260 and 360 bring the needle bar to its highest position, and on Pfaff machines 262 and 362 operate the Stop-automatic control. Insert a new No. 70 needle, System 130. Push the needle threader lever down as far as it will go and hold it in this position.

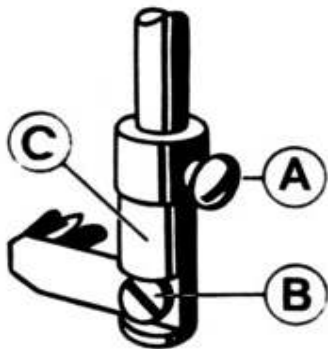


Fig. 37

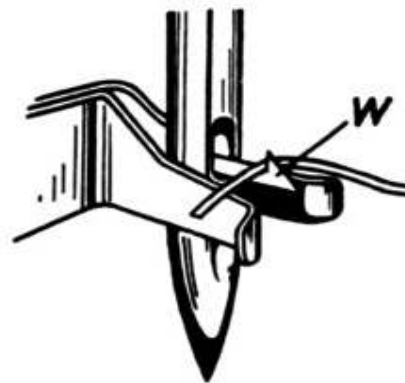


Fig. 38

Loosen set screw A (Fig. 37) and rotate needle threader head C until threader prong W passes through the needle eye freely and protrudes from the needle eye sufficiently to allow the thread to be placed in the prong easily.

As you make this adjustment, also check to see that the threader head is set at the correct height.

Prong W should pass through the needle eye extremely close to its bottom edge, without chafing against its sides.

If prong W chafes against the sides of the needle eye, loosen set screw B on the threader head and turn the prong to the right or left until it passes through the needle eye freely, without striking the needle. Tighten set screw B securely.

Check whether the needle threader works properly. If it does, tighten all screws securely.

Stitching Off the Machine

34. Adjusting the Bobbin Winder

When the bobbin winder is engaged, its pulley should be driven by the balance wheel reliably. If the pulley does not press against the balance wheel sufficiently, the bobbin winder will stop. Excessive pressure exerted on the balance wheel by the bobbin winder pulley will result in premature wear of the rubber ring.

Loosen the set screw on the bobbin winder frame base, engage the bobbin winder and push it to the right toward the balance wheel until there is a clearance of about $5/64$ " , or 2.0 mm, between the stop pin on the bobbin winder engaging lever and the bobbin winder throw-out lever.

To double-check this setting, wind a bobbin. If thread should pile up at one end of the bobbin or the bobbin winder should stop too early, the bobbin winder frame or the bobbin winder thumb lever may have been bent out of shape and must be straightened.

If thread should pile up at the top of the bobbin, the spindle has been bent to the left and the bobbin winder frame must be bent down slightly. And, conversely, if thread should pile up at the bottom, the spindle has been bent to the right and the bobbin winder frame must be bent up somewhat.

If the throw-out lever stops the bobbin winder too early, it must be bent away from the bobbin slightly. If it stops the bobbin winder too late, bend it toward the bobbin somewhat.

After this adjustment, double-check this setting by winding a bobbin.

35. Adjusting the Thread Tensions

The needle and bobbin threads should be locked in the center of the material (Fig. 39). To meet this condition, the needle thread is retained and tensioned by an adjustable disc tension mechanism on the machine arm, and the bobbin thread, by an adjustable leaf spring on the bobbin case.

a. Adjusting the Bobbin Thread Tension

Make sure there are no loose thread ends under the tension spring. Check to see that the tension spring engages the bobbin case evenly from the delivery eye to its tip and that it parallels the edges of the bobbin case.

To adjust the bobbin thread tension, turn the regulating screw out completely, and then in again until a noticeable resistance has to be overcome when pulling the thread.

Determine the correct bobbin thread tension by holding the thread end between your fingers and letting the bobbin case hang freely. The tension should be strong enough to keep the bobbin case from being pulled down by its own weight. Even when you jerk your hand up, no, or hardly any, thread should be pulled out of the bobbin case. (Fig. 40).

Once the bobbin thread tension has been set correctly, any tension regulation should be made by adjusting the needle thread tension.

Varieties of machine-made lockstitches



Fig. 39

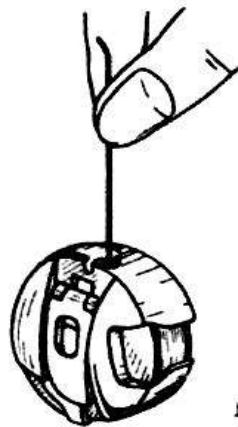


Fig. 40

b. Adjusting the Needle Thread Tension

With a No. 50 thread in the needle, the tension should be completely open when the tension dial is set on "0". With the dial set on "1", there should be a very slight tension on the thread. At "2", the thread tension should be noticeably stronger than at "1". When the tension dial is set on "5", the needle and bobbin threads should be locked in the center of the material, regardless whether the machine is set for straight or zigzag stitching. With the tension dial set on "0", loops about 1/4" long should appear on the underside of the fabric.

(1) on Pfaff Machines 260 and 360

Loosen the set screw on the tension barrel and

take out the complete tension mechanism. Turn the tension dial to "1" and place a No. 50 thread between the tension discs.

Loosen the set screw on the tension stud and turn the latter to the right or left slightly until the amount of tension which is exerted when the dial is set on "1" and "2" is correct. Tighten the tension stud set screw securely. Lower the presser bar lifter and insert the complete tension mechanism in the machine arm, pushing it in as far as it will go. Make sure the red mark is at the top.

Tighten the tension barrel set screw securely.

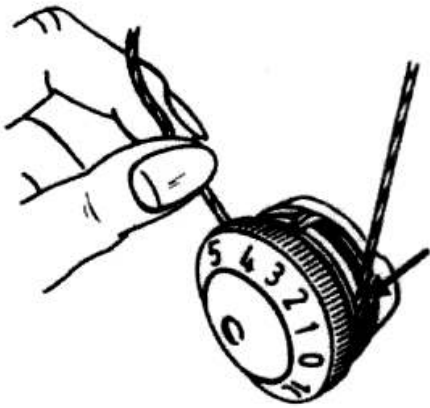


Fig. 41

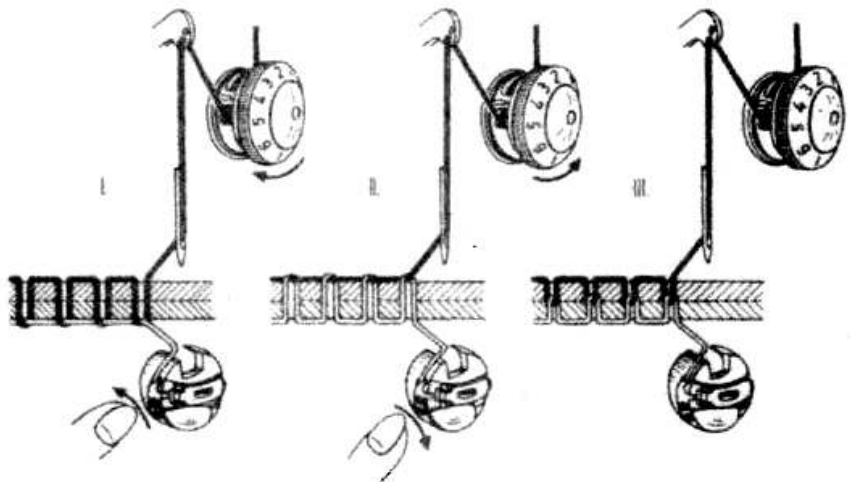


Fig. 42

(2) On Pfaff Machines 262 and 362

To make this adjustment on Pfaff machines 262 and 362, turn the small screw in the tension dial to the left a few turns. Place a No. 50 thread between the tension discs and turn the tension nut so that a slight, barely noticeable tension is obtained. Hold the tension nut in this position, turn the tension dial to "1" and tighten the screw securely.

Turn the tension dial to "5" and thread the needle. Sew a seam and check to see that both threads are locked in the center of the material. If this condition is met after the dial has been turned to some other number, loosen the small screw and turn the tension dial to "5", without disturbing the tension setting. Tighten the screw securely.



Fig. 43

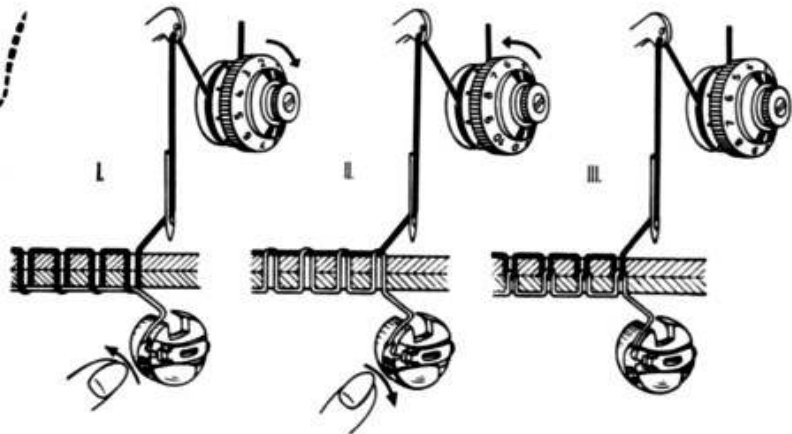


Fig. 44

For automatic embroidery work, the needle thread tension is decreased somewhat so that the fancy stitches will look neat on the surface of the material, the material will not pucker and the bobbin thread will not be pulled to the surface of the material.

When using synthetic threads which often are more flexible than natural-fiber threads, the needle and bobbin thread tensions must be eased as much as possible. Set the bobbin thread tension so that the bobbin case with the bobbin will gradually slide down as you hold the end of the bobbin thread in your hand.

The needle thread tension should be set so light that the thread will pass through it smoothly as you pull it toward the take-up lever.

36. Adjusting the Thread Check Spring

The needle thread slackens as the take-up lever descends. To prevent the thread from being pierced by the descending needle, it is held taut by the thread check spring until the needle enters the material. At this precise moment, the thread check spring should hit its stop.

After the thread check spring has released the needle thread, it slackens all the way down to the needle eye.

The thread check spring should release the needle thread when the bottom end of the needle eye enters the goods.

a. Tensioning the Thread Check Spring

Set the thread check spring so that it will pull a No. 30 thread taut all the way to its stop. In special cases, the thread check spring tension

may be adapted to the thread size being used.

(1) on Pfaff Machines 260 and 360

The thread check spring is tensioned by adjusting the thread check spring regulator back of the tension discs. This regulator is secured in position by a screw which can be reached through a slot. To increase the tension, loosen this screw and turn the regulator counter-clockwise; to decrease the tension, turn it clockwise. Tighten the set screw after the adjustment has been made.

(2) on Pfaff Machines 262 and 362

Remove the top cover and loosen the set screw on the tension barrel. Take out the tension barrel and loosen the set screw on the tension stud. Turn the tension stud counter-clockwise to increase the tension, or clockwise to decrease it.

After the adjustment, tighten the tension stud set screw securely and replace the tension barrel in the machine.

On Pfaff Machines 262 and 362 insert the tension barrel into the machine arm just far enough so that the tension discs will open just sufficiently to release the thread when the presser bar lifter is raised. Tighten the set screw on the tension barrel securely.

b. Timing the Thread Check Spring

Set the machine for its longest stitch and sew a seam. Turn the balance wheel slowly and check the setting of the thread check spring stop. The thread check spring is timed correctly if it hits the end of the slot in the tension barrel when the needle point reaches the goods. If adjustment is required, proceed as follows:

Remove the top cover and loosen the set screw on the tension barrel. On Pfaff Machines 260 and 360, rotate the tension barrel to the right or left until the thread check spring is set correctly. On Pfaff machines 262 and 362, take a screwdriver and adjust the position of the tension barrel by turning the tension stud, as may be required.

After the adjustment, tighten the set screw securely.

On Pfaff machines 262 and 362, make sure the tension barrel has been inserted into the machine arm just far enough to meet the above conditions.

Again set the machine for its longest stitch and sew a seam to check whether the thread check spring

is set correctly

37. Stitching Off an Automatic Machine

a. Checking Stitch Length and Thread Tension

Turn stitch length dial G to 0.2 and stitch width dial A to "4". Put the needle position lever B in the central notch and set dial C on "0". Thread the needle with a No. 50 thread and, if necessary, loosen the needle thread tension slightly, setting the tension dial at about "3". The machine should now make a perfect satin-stitch seam. If the stitches are too far apart or too close together, check whether the feed regulator has been zeroed correctly.

b. Checking Automatic Sewing

Set stitch width dial A on "0", needle position lever B at its left position, pattern length lever E on "3", and stitch length dial G on "0.2". Switch cam selector dial D to each of its eight positions in succession and sew the eight basic designs that can be produced this way, varying each design by turning dial C to its five positions in succession.

Check each design to see whether it has the correct shape.

In particular, check the following settings:

A = 0	A = 0	A = 0	A = 1,5
B = left	B = left	B = left	B = left
C = 2	C = 3	C = 5	C = 3
D = 3	D = 7	D = 4	D = 5
A = 0	A = 1,5	A = 0	A = 0
B = left	B = left	B = middle	B = middle
C = 5	C = 3	C = 4	C = 4
D = 6	D = 3	D = 1	D = 3
A = 0	A = 1,5	A = 0	A = 0
B = left	B = left	B = right	B = left
C = 4	C = 3	C = 4	C = 5
D = 3	D = 1	D = 2	D = 7

If it is found that the automatic needle cycle is not controlled correctly or that the shape of the patterns is imperfect, check the setting of the automatic embroidery mechanism. If the embroidery designs are not symmetric, check the zigzag mechanism.

c. Making a Sample Swatch

After you have completed checking all settings,

sew a sample swatch, combining the most important sewing operations that can be made with this machine:

- (1) Straight stitching, varying the stitch length and the sewing direction.
- (2) Zigzag stitching, varying the stitch length. In particular, try out the machine with a stitch length of 0.2 and a stitch width of 4.
- (3) Making a buttonhole about 25/32", or 20 mm, long.
- (4) On Automatics, sew about ten embroidery designs in the sequence indicated above.

If the customer is interested in a specific sewing operation, do not forget to include it in the sample swatch.

Various Repair Jobs

38. Changing the Thread Check Spring

a. on Pfaff Machines 260 and 360

Remove the top cover, loosen set screw a (Fig. 45) just a few turns so that tension barrel A can be removed, and pull the latter out of the machine. Loosen set screw H in tension barrel A and screw tension stud F out of tension dial M.

Strip tension discs C and D, thread check spring B, and spring assembly E. Remove the broken thread check spring, as well as tension discs C and D from spring assembly E.

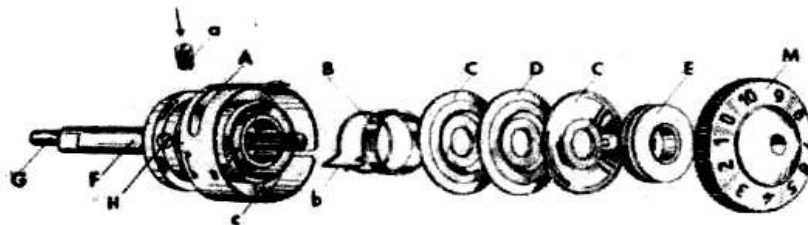


Fig. 45

- a = Set screw
- b = Thread check spring loop
- c = Thread check spring regulator
- A = Tension barrel
- B = Thread check spring
- C = Tension discs
- D = Central tension disc

E = Tension spring, w/ spring assembly
F = Tension stud
G = Tension release plunger
H = Set screw
M = Tension dial

Push the bent end of thread check spring B onto the flange of spring assembly E and place it in the slot. Push tension discs C and D onto the flange of spring assembly E. Place the complete assembly, including spring assembly E, thread check spring B and tension discs C and D, on tension stud F, making sure that spring assembly E faces outside toward tension dial M. Also check to see that the bent end of thread check spring B enters slot c in the tension barrel. Cautiously lift loop b over the small finger in the tension barrel (see arrow in Fig. 45) so that the bent end of the spring does not snap out of its slot. Screw tension dial M onto tension stud F just a few turns. Turn tension dial M so that the red tip of the tension barrel is positioned opposite "1". Place a No. 50 thread between the tension discs and push tension stud F into the tension barrel until the slip washer bears against the barrel properly.

Turn tension stud F into tension dial M until a very light, just noticeable tension is produced on the thread.

Tighten tension stud set screw H securely. Adjust the upper tension as instructed in Chapters 35 & 36. After the needle thread tension has been adjusted, insert tension release plunger G and replace the tension mechanism in the machine, as instructed previously.

on Pfaff Machines 262 and 362

Remove the top cover and loosen set screw T (Fig. 46) just a few turns so that the tension can be removed. Barrel L, together with the position pin, remains in the machine arm. Loosen the small set screw B in tension dial C and take out tension nut A. Remove tension dial C and thrust washer D. Lift the loop of thread check spring J and pull it out through the opening in tension bushing M. Remove spring assembly E, thread check spring J, tension release washer F, thread guide G, and tension discs H and I from tension stud K. Remove the broken thread check spring J from spring assembly E.

On earlier machines, remove cap S and loosen set screw R. Then take tension stud K, together with all attached parts, out of the tension barrel.

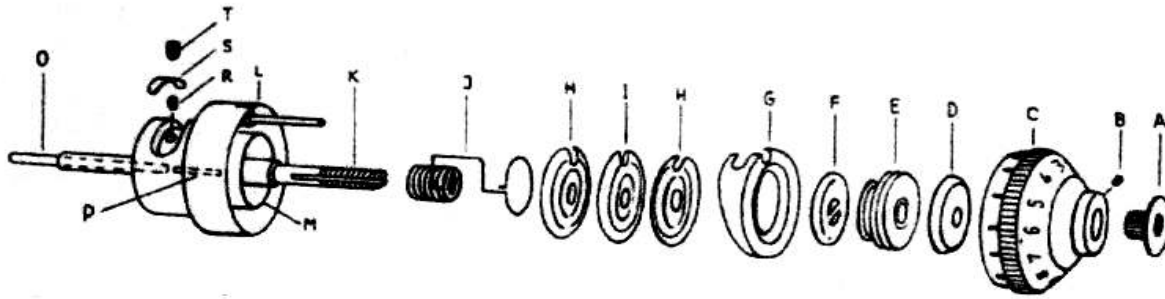


Fig. 46

- | | |
|----------------------------|-----------------------------|
| A = Tension nut | K = Tension stud |
| B = Set screw | L = Tension barrel |
| C = Tension dial | M = Tension bushing |
| D = Thrust washer | O = Tension release plunger |
| E = Spring assembly | P = Tension release pin |
| F = Tension release washer | R = Set screw |
| G = Thread guide | S = Cap |
| H = Tension disc | T = Set screw |
| I = Central tension disc | |
| J = Thread check spring | |

To assemble the tension mechanism, place the loop of thread check spring J into the groove on spring assembly E. Push thread check spring J onto tension stud K as far as the end of the threaded portion. Push tension discs H and I, thread guide G and tension release washer F onto tension stud K. Then push spring assembly E onto the tension stud. Turn thread check spring J until its bent end enters the appropriate slot in tension stud K as you move all components lengthwise of the stud.

Lift the loop of thread check spring J and insert it through the opening into tension bushing M. Replace thrust washer D and tension dial C on tension stud K. Screw the tension nut onto the tension stud until the tension discs just contact each other. Rotate the tension discs and thread guide G until the notches in their rims are on the right, as seen from above. In this supposition they will be entered by the position pin in tension barrel L as the tension is replaced in the machine arm. Tighten set screw T on the tension barrel securely.

On earlier machines, begin by replacing the thread check spring, together with all remaining parts, on tension stud K. Then replace tension stud K, together with all other parts, in tension bushing M.

Adjust the upper tension as instructed in Chapters 35 & 36.

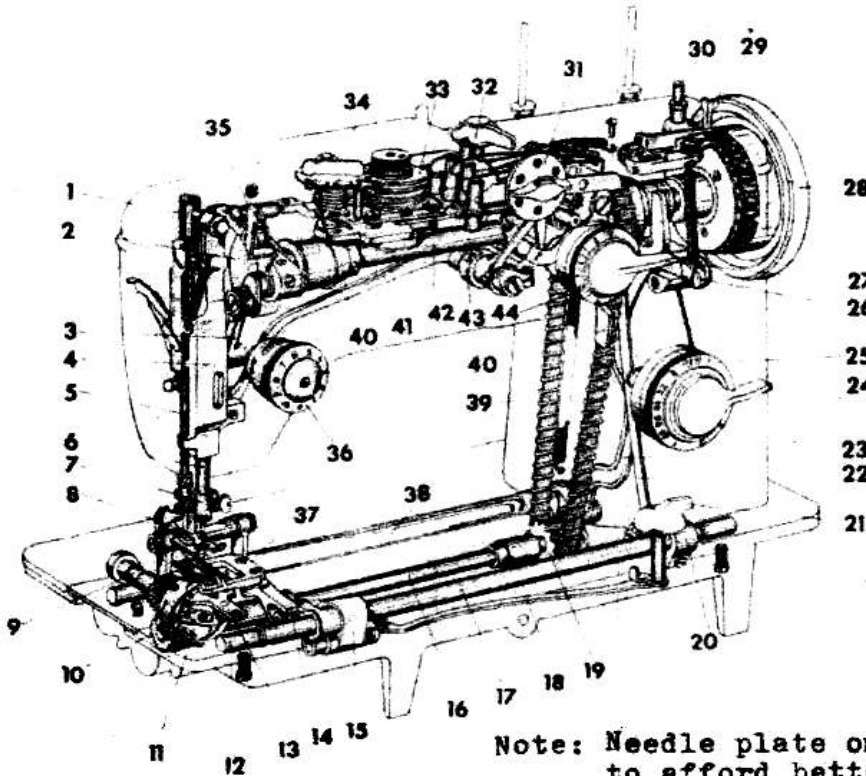
39. Changing the Cord Belt

Remove the face and top covers (Fig. 47). If your machine is fitted with an automatic embroidery mechanism, take it out. Loosen the set screw on the eccentric stud in needle bar frame 4 (Fig. 47) and pull the stud out at the back. Lower the presser bar lifter and move needle bar 6 halfway down. Swing up the needle bar frame. Remove the slip washer from the needle bar frame hinge stud and pull the needle bar frame, together with all its component parts, forward out of the machine. Strip the complete presser bar and vibrator mechanisms and, if applicable, the Stopmatic mechanism. Loosen the two set screws on the take-up crank and pull the latter out of needle bar crank 2 cautiously. Now loosen the set screw on the take-up lever hinge stud and knock it out of its hole, without damaging take-up lever 35. Loosen the set screws on driving eccentric 40, arm shaft bevel gear, upper driving belt sprocket and the feed eccentric. Push the arm shaft bevel gear to the left somewhat so you can remove the pin in needle bar crank 2. On power-driven machines, remove the motor belt. Mark the position of the arm shaft and tap it out of the needle bar crank toward the balance wheel cautiously. Pull it out until its end is in line with the upper driving belt sprocket, remove driving belt 39 from lower driving belt sprocket 19 and pull it out of the machine. To remove the driving belt from Pfaff machines 360 and 362, also strip the cylinder arm top cover, the motor and the feed rock shaft.

Replace driving belt 39 in the machine with the openings of its clips facing out, mounting it first on the lower, then on the upper, driving belt sprocket. Replace the arm shaft in the machine and simultaneously mount the arm shaft bevel gear and driving eccentric 40. Push needle bar crank 2 on the arm shaft and bring it in line with the timing marks made on the shaft beforehand. Replace the position pin in the holes of the needle bar crank and the arm shaft. Adjust the position of the driving eccentric until the arm shaft has no end play. Adjust the position of the arm shaft bevel gear, the feed eccentric and the upper driving belt sprocket on the arm shaft. Insert take-up lever 35, together with its hinge stud. Replace the take-up crank so that the second screw, as seen in the direction of shaft rotation, engages the flat spot of the crank. Insert the complete presser bar, vibrator and Stopmatic mechanisms. Replace needle bar frame 4 and connect it with needle bar frame pitman 41 by the eccentric stud.

On Pfaff machines 360 and 362, also replace the feed rock shaft, the motor and the cylinder arm top cover. Check the entire machine and retime it in accordance with the adjustment procedures outlined above.

- | | |
|------------------------------------------------------------------|--------------------------------------|
| 1 = Pressure regulating screw | 9 = Hook shaft with helical gear |
| 2 = Needle bar crank (driving needle bar and take-up mechanisms) | 10 = Hook drive shaft helical gear |
| 3 = Needle bar connecting link | 11 = Hook with bobbin case |
| 4 = Needle bar frame | 12 = Center for shafts 17 and 38 |
| 5 = Threader bar | 13 = Bobbin case position finger |
| 6 = Needle bar | 14 = Feed bar |
| 7 = Needle holder | 15 = Feed lifting shaft crank, front |
| 8 = Presser foot | 16 = Hook drive shaft |
| | 17 = Feed lifting shaft |



Note: Needle plate omitted to afford better view

- | | |
|-------------------------------------|-----------------------------------------------------------|
| 18 = Drop feed connecting rod | 33 = Cam assembly |
| 19 = Driving belt sprocker, lower | 34 = Cam selector dial D |
| 20 = Feed lifting shaft crank, rear | 35 = Take-up lever |
| 21 = Drop feed knob | 36 = Tension dial M |
| 22 = Feed lifting connection | 37 = Feed dog |
| 23 = Feed forked connection | 38 = Feed rock shaft |
| 24 = Reverse feed control H | 39 = Driving belt (cord) |
| 25 = Stitch length dial G | 40 = Driving eccentric for automatic embroidery mechanism |
| 26 = Feed regulator | 41 = Needle bar frame pitman |
| 27 = Zigzag finger-tip control F | 42 = Arm shaft |
| 28 = Balance wheel | 43 = Zigzag regulator stud |
| 29 = Bobbin winder thumb lever | 44 = Stitch width dial A |
| 30 = Bobbin winder spindle | 45 = Needle position lever B |
| 31 = Engaging lever dial C | |
| 32 = Pattern length lever E | |

Fig. 47

40. Changing Zigzag Finger-Tip Control F and Needle Position Lever B

a. Removing the Zigzag Regulator Mechanism

Remove the top cover and disconnect the tension spring on the zigzag regulator arm. Take out the automatic embroidery mechanism. Flick needle position lever B to the left notch and set stitch width dial A on "4". Loosen the set screw on the zigzag regulator barrel. Push zigzag regulator arm 14 (Fig. 48) slightly toward the balance wheel and cam finger 1 toward the needle. Rotate the zigzag regulator barrel to the right somewhat and pull it out of the machine arm cautiously. The removal of the barrel is greatly facilitated by special wrench No. 106 300-303.

b. Removing Zigzag Finger-Tip Control F

Loosen the set screws on cam finger 5 (Fig. 48) and on the set collar. On earlier machines, also remove the pin. Pull finger-tip control 9, together with its torsion spring, forward out of the machine.

c. Removing Needle Position Lever B

After finger-tip control F has been dismantled, loosen the set screw on zigzag cam 11 (Fig. 48) and pull stitch width dial A forward out of the machine. Remove the circlip, the spring washer and the old needle position lever 7.

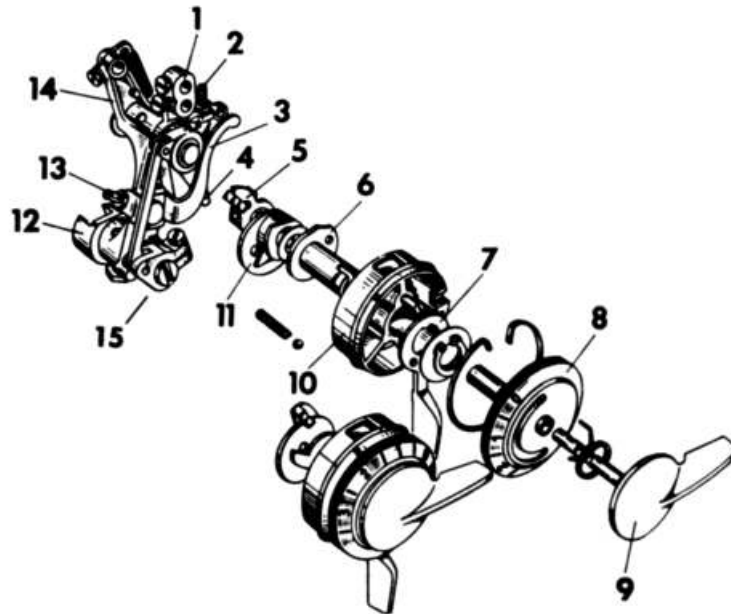


Fig. 48

- 1 = Cam finger
 - 2 = Regulating screw
 - 3 = Needle position cam finger
 - 4 = Connecting crank for zigzag and straight stitching
 - 5 = Cam finger
 - 6 = Needle position cam
 - 7 = Needle position lever
 - 8 = Stitch width dial
-
- 9 = Zigzag finger-tip control
 - 10 = Zigzag regulator barrel
 - 11 = Zigzag cam
 - 12 = Zigzag regulator
 - 13 = Regulating screw
 - 14 = Zigzag regulator arm
 - 15 = Zigzag regulator crank with connecting rod

d. Replacing Needle Position Lever B

Insert the new needle position lever, the circlip and the spring washer. Replace the retaining ring in stitch width dial A. Place zigzag dial 8 in the barrel so that the barrel position pin enters the opening in the retaining ring. Push zigzag cam 11 onto the stud of the zigzag dial and rotate it so that, as you tighten the set screw, it engages the flat spot.

When installing a new automatic embroidery mechanism in the earliest model of the Pfaff 260 or 360, exchange zigzag cam No. 106 152 for the new cam No. 106 148 so that disengaging lever 41 (Fig. 24) can be actuated.

e. Replacing Zigzag Finger-Tip Control F

Begin by inserting the torsion spring into zigzag finger-tip control 9 (Fig. 48) under tension. Turn stitch width dial A to "1" and insert the stud of finger-tip control 9 into the hole in stitch width dial A, making sure that the bent end of the torsion spring enters the same borehole as the barrel position pin. Replace cam finger 5 and the set collar so that the finger points toward the cutout which receives the barrel set screw. When both screws are set at an angle of about 80 degrees, tighten them securely.

On earlier zigzag regulator mechanisms having a pinned cam finger 5, exchange finger-tip control 9, cam finger 5 (with screw) and the set collar (with screw) for new parts.

f. Replacing the Zigzag Regulator Mechanism

Before you replace this mechanism, turn stitch width dial A on "4" and put needle position lever B in the left notch. Push zigzag regulator arm 14 slightly toward the balance wheel, and cam finger 1 toward the needle. Put a few drops of oil on the zigzag regulator barrel, hold it slightly downward and turn it so that number "4" points toward the set screw.

Insert the barrel halfway into the large opening in the machine arm and turn it to the left until the red mark on its rim lines up with the right edge of the hinge stud. Slightly move cam finger 1 and zigzag regulator arm 14 back and forth as you push the zigzag regulator barrel cautiously into the machine arm as far as it will go. Attach the tension spring to the zigzag regulator arm and tighten the set screw securely.

Adjust the stitch width control as instructed above.

41. Changing the Zigzag Regulator Arm

To dismantle the zigzag regulator arm, remove the top cover and disconnect the tension spring from the zigzag regulator arm. Dismantle the automatic embroidery mechanism. Remove the stitch width control (Fig. 48) and disconnect the upper end of the vertical tension spring. Remove the circlip from the hinge stud of zigzag regulator arm 14, loosen the set screw on the hinge stud and push the latter forward out of its bearing. Strip zigzag regulator arm 14, together with needle position cam finger 3, cam finger 1 and all attached parts, and remove the individual component parts from the zigzag regulator arm.

Clean zigzag regulator stud 12 (Fig. 48) carefully and insert it in the new zigzag regulator arm which features a bronze bushing. Attach needle position cam finger 3 so that there is a clearance of about $5/32$ " , or 4.0 mm, between its elbowed end, which carries regulating screw 13, and zigzag regulator arm 14. Replace the zigzag regulator arm together with needle position cam finger 3, cam finger 1 and all attached parts. Make sure, the torsion spring does not snap between cam fingers 1 and 3, which would cause heavy working of the zigzag and automatic embroidery mechanisms. Insert the hinge stud and replace the circlip. Adjust the hinge stud so that all parts move easily, without having any end play. Connect both tension springs and replace the stitch width control.

Adjust the zigzag mechanism, as instructed above. This done, replace and adjust the automatic embroidery mechanism.

42. Changing Reverse Feed Control H

To strip reverse feed control H (Fig. 47), turn stitch

length dial G on "4". Unscrew the bobbin winder and disconnect the upper end of the feed regulator tension spring, using a hook for this purpose. Leave the spring attached to the hook and do not disconnect its lower end from feed regulator 26. Tilt the sewing head back and loosen the set screw on the stitch length regulator mechanism. To get at this screw on Pfaff machines 360 and 362, strip the motor together with its base plate. Depress reverse feed control H and take out the stitch width regulator barrel with the aid of wrench No. 106 300-304.

There is no need to disconnect the stitch length regulator mechanism from the feed regulator connection (106 618). Loosen the set screw on the feed reversing crank (106197) and pull out the reverse feed control.

Insert the new reverse feed control H so that the set screw on the feed reversing crank enters the groove in the stud of the reverse feed control. Tighten the set screw securely. Depress reverse feed control H and insert the stitch length regulator mechanism in the arm standard. Connect the feed regulator tension spring. Adjust the stitch length control so that the feed dog does not advance the material when dial G is set on "0", as instructed previously. After the adjustment, tighten the set screw securely. Attach and adjust the bobbin winder.

43. Changing the Bowden Cable

The Bowden cable normally is exchanged only as a unit.

To do this, remove the cover from the Stopmatic switch box. To get at this part on Pfaff 362 machines, remove the grille on the machine base. Loosen nut A (Fig. 55). Take the Bowden cable out of the Stopmatic switch box. On Pfaff 262 machines, unscrew the nut on the Bowden cable guide and remove the guide from the motor bracket. Then remove the Bowden cable from the clip which is secured either to the automatic embroidery mechanism or the back wall of the machine. At the end of the Bowden cable there is a small screw which must be taken out next. Unscrew Bowden cable bracket B (Fig. 13) and take the Bowden cable out of the machine.

Insert the new Bowden cable into the machine. Attach Bowden cable bracket B (Fig. 13) and connect the Bowden cable with the stopping lever by means of the small screw. Place the Bowden cable into the clip and close the latter up somewhat with the aid of a pair of pliers. On Pfaff 262 machines, attach the Bowden cable guide to the motor bracket and secure it in place by the nut. Make sure you replace the Bowden cable in the same position it has occupied previously and check to see that it does not contact the lower driving belt sprocket. Insert the Bowden cable into the Stopmatic switch box and secure it in place by nut A (Fig. 55). Make sure, though, that you do not tighten this nut too much.

Adjust the Bowden cable, as instructed previously.

44. Installing a PE 260 or 261 Motor in Pfaff 260 Machines

The motor is mounted on the underside of the bedplate. Place the machine in a universally adjustable mounting stand, if available, and turn it upside down. If no such stand is available, tilt the machine back.

Remove cover 4 of the terminal box next to the sewing hook (Fig. 49). Turn the motor so that its pulley faces toward the balance-wheel end of the machine and place it on the underside of the bed-plate so that the two boreholes in the motor bracket line up with the corresponding boreholes in the bed plate (Fig. 50).

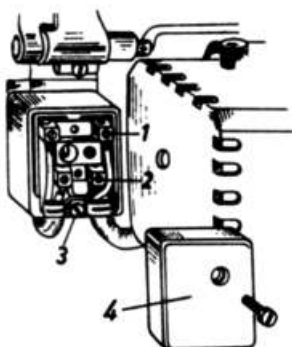


Abb. 49

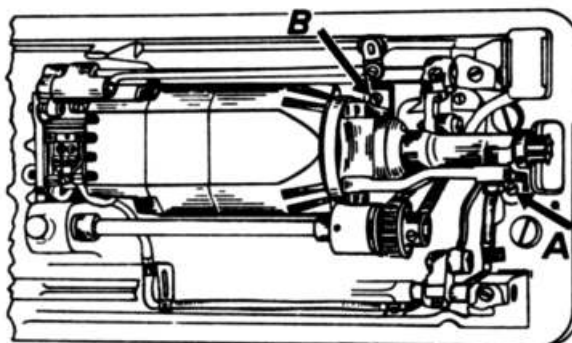


Abb. 50

Turn screw A in partway (Fig. 50), then insert and tighten screw B. Now tighten screw A for good. Connect the short end of the motor cord to terminal 2 and the long end to terminal 1 (Fig. 49). Secure the cable sheath in position by the cord clip and screw 3. Replace the terminal box cover. Loosen hexagon screw h (Fig. 51) and return the machine to its normal position in the mounting stand. Remove the balance wheel which is used on foot-driven machines (Fig. 52). To do this, take out stop screw a, stop motion screw b and friction washer c, and remove balance wheel d from the arm shaft bushing. Turn motor belt e (Fig. 51) so that the clip openings face out, push it over the arm shaft bushing and through the aperture into the arm standard. Push powerdrive balance wheel f on the arm shaft bushing and mount the motor belt on the balance wheel sprocket. Replace the balance wheel as well as parts a-c in reversed order (Fig. 52). Since hexagon screw h (Fig. 51) is still loose, the motor shaft can be tilted toward the bedplate so that the lower end of the cord belt can be slipped onto sprocket g.

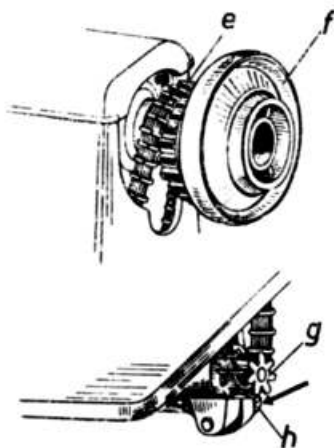


Fig. 51

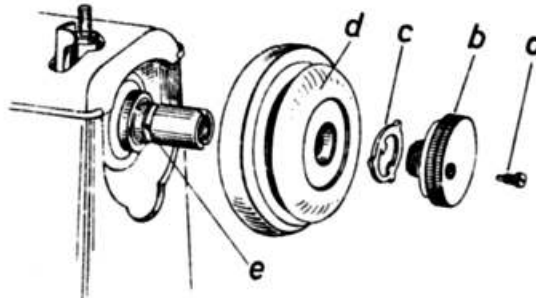


Fig. 52

Swing the sprocket-end of the motor shaft away from the bedplate until the cord belt is tensioned slightly. Hold the motor shaft in this position and tighten hexagon screw h. Make sure the cord belt is not tensioned too much as this would cause binding. Turn the balance wheel to see if all parts work properly. If the machine is equipped with a balance wheel with free-wheeling device, which can be used for both foot and power drive, set the balance wheel for foot drive and check whether the driving belt sprocket remains stationary when you turn the balance wheel. If the free-wheeling device should not have disengaged the motor belt sprocket, hold the cord belt briefly when you start treading. Check to see that the machine conforms to German VDE standards (of the German Electrical Engineers Association). In addition, make sure the PE 261 motor is set for the correct voltage.

45. Changing a PE 262 Motor on Pfaff 262 Machines

Turn out the three screws in the Stopmatic switch box and remove the cover. Loosen the three screws A (Fig. 53) and pull the three cords emerging from the motor out of the switch box.

Loosen hexagon screw h (Fig. 51) and tilt the motor back. Pull the motor belt from the motor sprocket. Unscrew the nut on the Bowden cable guide and remove the guide from the motor bracket. Take out screws A and B (Fig. 50) and remove the motor.

To replace the motor, secure it in place by screws A and B (Fig. 50), mount the motor belt on the sprocket. Tilt the motor until the driving belt is tensioned lightly. When the motor is set at the correct position, tighten hexagon screw h (Fig. 51) securely. Replace the Bowden cable so that it assumes its previous position and make particularly sure that the Bowden cable does not contact the lower driving belt sprocket.

Place the three cords emerging from the motor so under the hook drive shaft that they do not contact it.

Connect the three cords as indicated on the Wiring Diagram in the cover of the Stopmatic switch box. Replace the cover and screw it down. Check to see that the motor conforms to German VDE standards. Test the operation of the Stopmatic control several times.

- 1 = Motor
- 2 = Motorplatte
- 3 = Kettenscheibe
- 4 = Befestigungsschraube
- 5 = Kondensator
- 6 = Kabelklemmschrauben
- 7 = Schnurkette
- 8 = Abschlußplatte

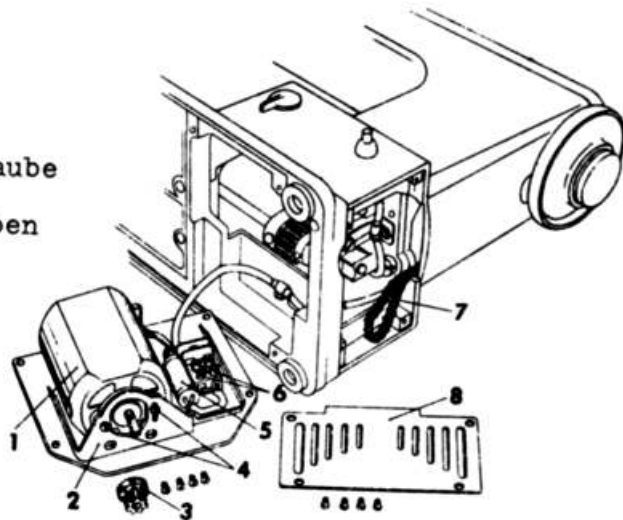


Abb. 53

46. Changing a PE 360, 370 or 371 Motor on Pfaff 360 Machines

Remove the grille on the machine base. On earlier Pfaff 360 machines which are equipped with a PE 360 motor remove the belt tensioning device. On recent machines equipped with a PE 370 motor, loosen the set screw on motor regulating bracket D (Fig. 55) and swing the motor up somewhat. Take a slender screwdriver, insert it through the opening in the motor base plate and loosen the two set screws in the motor belt sprocket (Fig. 54). Pull the sprocket off its shaft, tilt the machine back and unscrew the motor base plate. Take the motor and the motor base plate out of the machine at the bottom. Loosen the two power cords and the cord clip to disconnect the motor assembly from the machine (Fig. 54). Now the motor can be repaired or exchanged.

- 1 = Motor
- 2 = Motor base plate
- 3 = Motor belt sprocket
- 4 = Set screws
- 5 = Capacitor
- 6 = Terminal screws
- 7 = Cord belt
- 8 = Grille

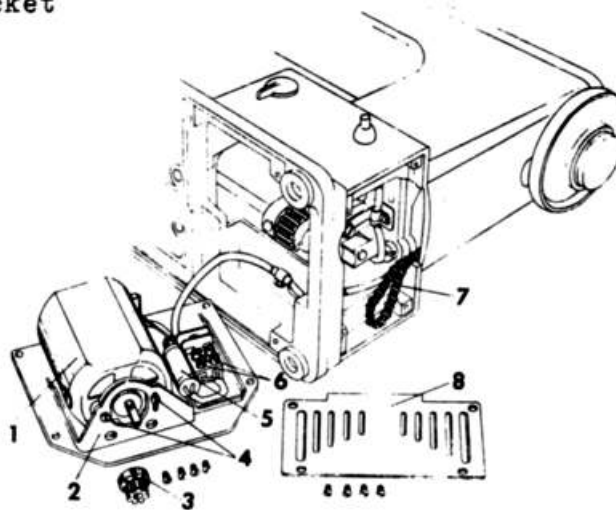


Fig. 54

To replace the motor in the machine, connect the two cords and secure them in position with the cord clip. Replace the motor with the base plate and screw it down by four screws. Push motor belt sprocket 3 on the motor shaft and mount cord belt 7 on it. Secure the sprocket in place. On earlier machines equipped with a PE 360 motor, replace the belt tensioning device and adjust it so that the idler pulley is in constant engagement with the clips of the driving belts. On recent machines equipped with a PE 370 motor, swing the motor sideways until the driving belt is tensioned lightly. When the motor is at the correct position, tighten the set screws on motor regulating bracket D securely (Fig. 55). Replace grille 8 and screw it down. Check to make sure the motor conforms to German VDE standards. Set the PE 371 motor for the correct voltage.

47. Changing a PE 372 Motor on Pfaff 362 Machines

Remove the grille and take off the cover of the Stopmatic switch box. Disconnect the three lower cords C (Fig. 55). Loosen nut A and take the Bowden cable out of the Stopmatic switch box. Take out screw B on the Stopmatic switch box. Insert a slender screwdriver through the opening in the motor base plate and loosen the two set screws in the motor belt sprocket. Loosen motor set screw D on the motor regulating bracket and swing the motor up slightly. Pull the motor belt sprocket off the motor shaft. Tilt the machine back and take out the four screws in the motor base plate. Take the motor base plate, together with the motor and the Stopmatic switch box, out at the bottom. The motor can now be repaired or replaced.

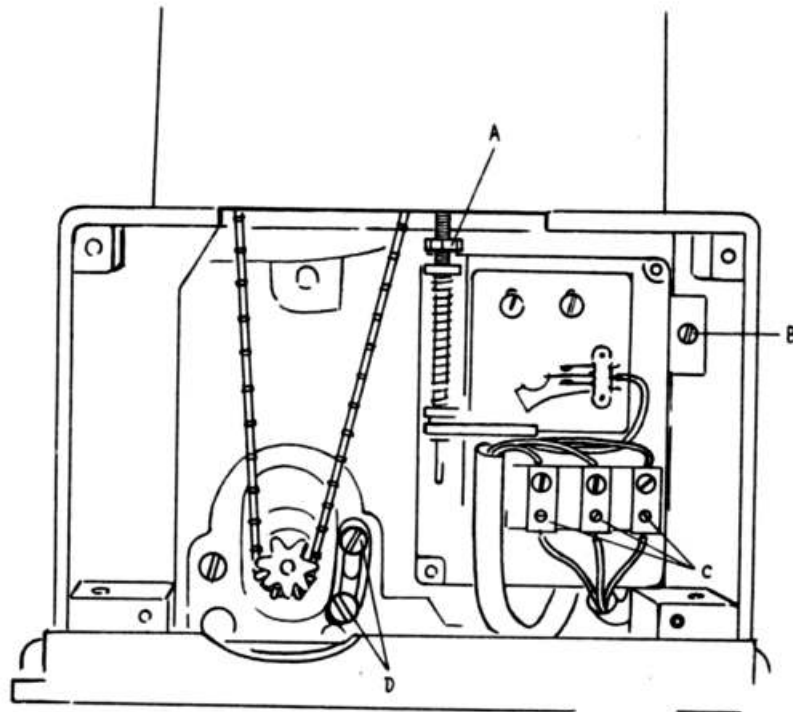


Fig. 55

To replace the motor, begin by inserting the motor base plate together with the motor and the Stopmatic switch box. Push the motor belt sprocket onto the motor shaft, mount the driving belt and secure the sprocket in position on the shaft. Turn the motor so that the driving belt is tensioned lightly. When the motor is at the correct position, tighten set screw D on the motor regulating bracket. Push the Stopmatic switch box to the right so that it contacts the wall of the machine base and cannot turn. Secure it in this position by tightening screw B. Connect the three cords C, as indicated in the Wiring Diagram on the switch box cover. Replace the Bowden cable and tighten nut A (make sure you do not tighten it too much, though). Screw the cover onto the switch box. Check to see that the motor conforms to German VDE standards, and operate the Stopmatic control repeatedly to make sure this mechanism works properly.

48. Installing a Stopmatic Knee Control

Remove the top and face covers. Take out the presser bar with pressure regulating screw, presser bar spring, presser bar guide collar, small pressure spring, presser bar lifting bracket, presser bar lifter with hinge stud and clamp crank.

Replace the following old parts: presser bar with pressure regulating screw, presser bar spring, and small pressure spring. And insert the following new parts: Presser

bar guide collar, and presser bar lifting bracket. If necessary, install a new presser bar lifter with the old hinge stud and clamp crank.

Insert the lifting lever connection into the hole in the bedplate from above and connect its lower end to the lower bellcrank (25190). Place the bellcrank between both lugs on the underside of the bedplate and secure it in place by its hinge pin. Make sure you do not injure the motor cord when you drive home the hinge pin. Attach the upper bellcrank (106446) and connection H (Fig. 13). Mount the lifting lever, together with the torsion spring and the washer. Connect the lifting lever with the connection by the hinge screw.

To check whether the lifting lever works correctly, see that it can be moved easily by hand, without binding. If, as you do this, the presser bar moves up with a jerk, remedy this condition by using a thicker washer on the lifting lever. When you push the lifting lever up as far as it will go while the presser bar lifter is at its top position, the presser bar lifter should drop to its lowest position automatically. If it does not, loosen the jam nut and take out the hinge screw. Turn connecting rod joint F (Fig. 13) so that the presser bar lifter drops to its lowest position when the lifting lever is raised.

Adjust the Stopmatic mechanism and the Stopmatic lifting lever as instructed previously.

49. Changing the Cam Assembly

Remove the top cover and turn dial C to "0". Turn the cam assembly so that it can be pulled up out of the machine after removing the thumb nut. As you do this, push dial D all the way to the left, i.e. toward the needle.

To install the cam assembly, push dial D all the way to the left. Insert the new cam assembly, turning it so that the driving pin enters the hole in the bottom-most cam. Insert the beehive spring and screw down the thumb nut. If required, the number of stitches per cam revolution can be adjusted with pattern length lever E set on "1". The procedure to be followed is discussed in Chapter 25.

50. Dismantling the Pfaff Hook

To clean and dismantle the sewing hook, proceed as follows:

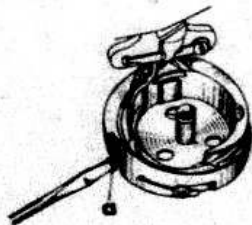


Fig. 56

Fig. 56

1. Remove bobbin case and bobbin
2. Take out locking screw a.

Fig. 57

3. Hold the balance wheel steady and turn thread guard b on the sewing hook clockwise until it is stopped by guide pins c₁ and c₂.

4. Turn the balance wheel until the point of thread guard b is in the position marked by A in Fig. 57.

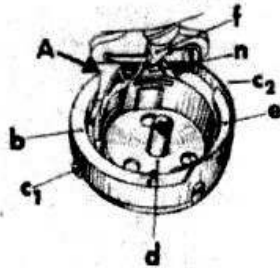


Fig. 57

Fig. 58

5. Lift thread guard b and take it out, turning it slightly around position finger f.
6. Push your thumb nail under the rim of bobbin case base d at C, lift the bobbin case base and tip it out.

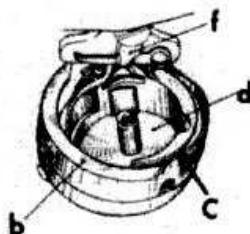


Fig. 58

Note:

If remnants of thread should jam in the hook raceway, unscrew the position finger.

51. Reassembling the Pfaff Hook

Fig. 59

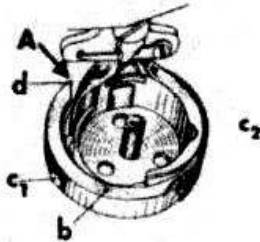


Fig. 59

1. Replace bobbin case base d in the hook in the position shown in Fig. 58.
2. Turn the balance wheel cautiously until the hook point is in the position marked by A in Fig. 59. Hold thread guard b so that its opening faces the position finger and its two slots are opposite guide pins c1 and c2. Replace thread guard b on the sewing hook and press it down until its crown at the right lies on bobbin case base d.



Fig. 60

Fig. 60.

3. Turn the balance wheel cautiously until the hook is in the position marked by B in Fig. 60. In this phase, guide pins c1 and c2 will enter the slots in thread guard b. Turn thread guard b clockwise as far as it will go.
4. Replace and tighten locking screw a securely, as shown in Fig. 56.

Trouble Shooting

Every Instruction Book contains a chapter on Trouble Shooting. The instructions given there should be adhered to in the first place.

In addition, however, mechanics should observe the following hints:

Feeding Mechanism

Trouble: Machine feeds improperly

Cause:

Remedy:

Feed dog is dirty and does not rise sufficiently above needle plate level.

Remove needle plate and clean feed dog.

Feed dog set too low.

Adjust as instructed in Chapter 1.

Feed teeth blunt.

Replace worn feed dog by new one.

Incorrect presser foot pressure.

Adjust as instructed in Chapter 7 b.

Feed rock shaft has too much end play.

Adjust position of centers to eliminate play.

Trouble: Material slips sideways as it is being advanced through the machine.

Cause:

Remedy:

Right edge of feed dog set higher than left, or vice versa.

Exchange feed dog. If the new feed dog should be positioned incorrectly also, straighten the feed bar.

Sewing foot fails to contact the needle plate on the right or left.

Exchange the sewing foot.

Trouble: Needle breaks when sewing heavier materials.

Cause:

Remedy:

Machine has not ceased feeding when the needle enters the fabric.

Adjust as instructed in Chapter 5.

Trouble: Material puckers.

Cause:

Remedy:

Sewing foot exerts too much pressure on flimsy materials.

Adjust presser foot pressure as instructed in Chapter 7 b.

Upper and/or lower tension set too tight.

Ease tension and adjust.

Both tensions set too tight when sewing with synthetic thread.

Adjust tensions as instructed in Chapter 35.

Trouble: Buttonhole seams are not parallel.

Cause:

Remedy:

Buttonhole foot does not engage feed surface fully.

Adjust buttonhole foot.

Feed dog emerges from feet slot obliquely.

Exchange the feed dog or straighten the feed bar.

Zigzag Mechanism

Trouble: Machine makes a narrow zigzag stitch although stitch width dial A is set on "0".

Cause:

Remedy:

Zero position of needle and stitch width dial not correlated properly.

Readjust the zero position of the needle in relation to the "0" mark on the stitch width dial, as instructed in Chapter 16.

Trouble: The bartack at the end of the buttonhole is either too short or too long. Also, the machine makes a narrow zigzag stitch when finger-tip control F is pushed up.

Cause:

Remedy:

The needle is not zeroed correctly for straight stitching.

Adjust as instructed in Chapter 16 a.

Trouble: The machine does not change from straight to zigzag stitching, and vice versa, when you turn stitch width dial A. Also, it does not make any automatic embroidery stitches.

Cause:

Remedy:

The zigzag regulator has been inserted crookedly.

Adjust as instructed in Chapter 13.

The zigzag regulator stud jams in the bearing of the zigzag regulator arm.

Rework the zigzag regulator arm until it works smoothly or exchange it for a more recent one fitted with bronze bushing.

Trouble: The stitch width dial turns heavily or not at all.

Cause:

The zigzag regulator has been inserted crookedly.

Remedy:

Loosen the zigzag regulator set screw and adjust the position of the zigzag regulator as instructed in Chapter 13.

Trouble: The bartack is offset in relation to the center line of the buttonhole.

Cause:

The needle position setting is disturbed.

Remedy:

Adjust as instructed in Chapter 17.

The needle throw is not set correctly in relation to the central needle puncture.

Adjust as instructed in Chapter 18.

The buttonhole foot is set crookedly.

Adjust as instructed in Chapter 7.

Trouble: The needle position lever or the finger-tip control is broken.

Cause:

Force was applied in operating either control

Remedy:

Dismantle the zigzag regulator and replace the broken lever, as instructed in Chapter 40. Then check and, if necessary, adjust all settings, as instructed in Chapters 13 through 19.

Trouble: The needle is not centered correctly in the needle plate slot.

Cause:

The setting of the needle in relation to the needle plate slot has been disturbed.

Remedy:

Adjust as instructed in Chapter 19.

Automatic Embroidery Mechanism

Trouble: The automatic embroidery patterns produced are unsymmetrical.

Cause:

The setting of the needle throw in relation

Remedy:

Adjust as instructed in Chapter 18.

to the central needle
puncture has been
disturbed.

The setting of the front
or central engaging
lever eccentric has
been disturbed.

Adjust as instructed in Chapter
23.

Trouble: The patterns made with the needle position lever
in the left notch are incomplete or too narrow.

Cause:

The setting of the rear
engaging lever eccentric
has been disturbed.

Remedy:

Adjust as instructed in Chapter
23.

Trouble: The machine does not sew any embroidery patterns
although the automatic embroidery mechanism is
engaged.

Cause:

The setting of the en-
gaging lever eccentrics has
been disturbed.

Remedy:

Adjust as instructed in Chapter
23.

The springs do not exert
enough pressure on the
engaging levers.

Adjust as instructed in Chapter
24.

The zigzag regulator stud
jams in the bearing of the
zigzag regulator arm.

Rework the zigzag regulator arm
until it works smoothly or ex-
change it for a more recent one
fitted with bronze bushing.

The disengaging lever is
jammed by the needle po-
sition cam in the zigzag
regulator mechanism.

Loosen the three set screws
holding the automatic embroide-
ry mechanism in place and move
this mechanism farther back
slightly.

Sewing Mechanism

Trouble: The machine skips stitches.

Cause:

Needle bent or damaged.

Needle too thin.

Needle incorrectly insert-
ed.

Remedy:

Insert new needle.

Select correct needle from the
Needle and Thread Chart in the
Instruction Book.

Push needle up as far as it
will go and be sure that the
long groove faces toward you.

Wrong needle.

The correct needle system is 130 R. When the machine is fitted with an adjustable double-needle holder, use System 130 B needles.

Sewing hook out of time.

Adjust as instructed in Chapters 28 & 31.

Needle bar not set at proper height.

Adjust as instructed in Chapter 30.

The thread check spring is late in contacting its stop.

Adjust as instructed in Chapter 36.

Trouble: The thread breaks.

Cause:

Remedy:

Any of the causes responsible for skipped stitches may cause thread breaking.

See remedies listed in preceding paragraph.

Burrs or sharp edges on needle plate slot or thread guides.

Polish all parts which may come in contact with the thread, such as thread guides, tension discs, tension stud, take-up lever, needle plate and sewing hook, with fine emery cloth or twine.

Thread tensions too tight.

Adjust as instructed in Chapter 35.

Trouble: Both threads are locked on the underside rather than in the center of the fabric.

Cause:

Remedy:

Upper tension too weak.

Adjust as instructed in Chapter 35.

Lower tension too tight.

Adjust as instructed in Chapter 35.

Thread check spring does not function properly.

Adjust as instructed in Chapter 36.

Sewing hook out of time.

Adjust as instructed in Chapters 27 through 31.

Thread jams in bobbin case position finger slot.

Adjust as instructed in Chapter 32.

Feed dog advances material too early or too late.

Adjust as instructed in Chapter 5.

Stopmatic Mechanism

Trouble: When you raise the presser bar lifter in order to operate the Stopmatic mechanism, the machine keeps running and strikes the stopping lever at every revolution of the arm shaft.

Cause:

The stopping lever is not adjusted correctly.

The micro switch is actuated too early.

Remedy:

Adjust as instructed in Chapter 9

Adjust as instructed in Chapter 11.

Trouble: When you actuate the Stopmatic control, the motor does not start running.

Cause:

The micro switch is not actuated.

The clamp crank is actuated too late.

Although the micro switch is switched on, the motor does not start running.

Remedy:

Adjust as instructed in Chapter 11.

Adjust as instructed in Chapter 10.

Ship the motor to the factory for repair.

Trouble: When the Stopmatic mechanism is actuated by knee action, it starts operating too early or not at all.

Cause:

The regulating pin on the connection is out of adjustment.

Remedy:

Adjust as instructed in Chapter 12.

Trouble: When the Stopmatic control is actuated, the stop in the needle bar crank hits the stopping lever too hard.

Cause:

The line voltage exceeds 220 volts.

Remedy:

If the line voltage is higher than the rated voltage, permanently, set the motor switch on "—" (Fig. 53), as instructed in Chapter 11.

Various Troubles

Trouble: The machine works heavily or does not run at all.

Cause:

Remedy:

Lack of oil.

Oil mechanism with Pfaff sewing machine oil and run the machine some time.

Mechanism clogged by inferior oil.

Strip machine and clean all bearings, oil ducts and moving parts.

The motor belt is too tight.

Adjust as instructed in Chapters 44 through 47.

Hook raceway is obstructed by pieces of thread.

Put a few drops of cleaning fluid, or kerosene, in the hook raceway. Turn the balance wheel backwards with your right hand while turning the sewing hook simultaneously clockwise with your left hand. Then turn both the balance wheel and the sewing hook back and forth in rhythm several times. If this action should not free the jammed thread, take out the bobbin case base.

The motor does not run.

Exchange the carbon brushes. If this does not help, return the motor to the factory for repair.

Motor belt is broken.

Replace motor belt.

MF

Karlsruhe-Durlach,
July, 1964

WD/ABW-WK/ÜBS-Ar/Mo

