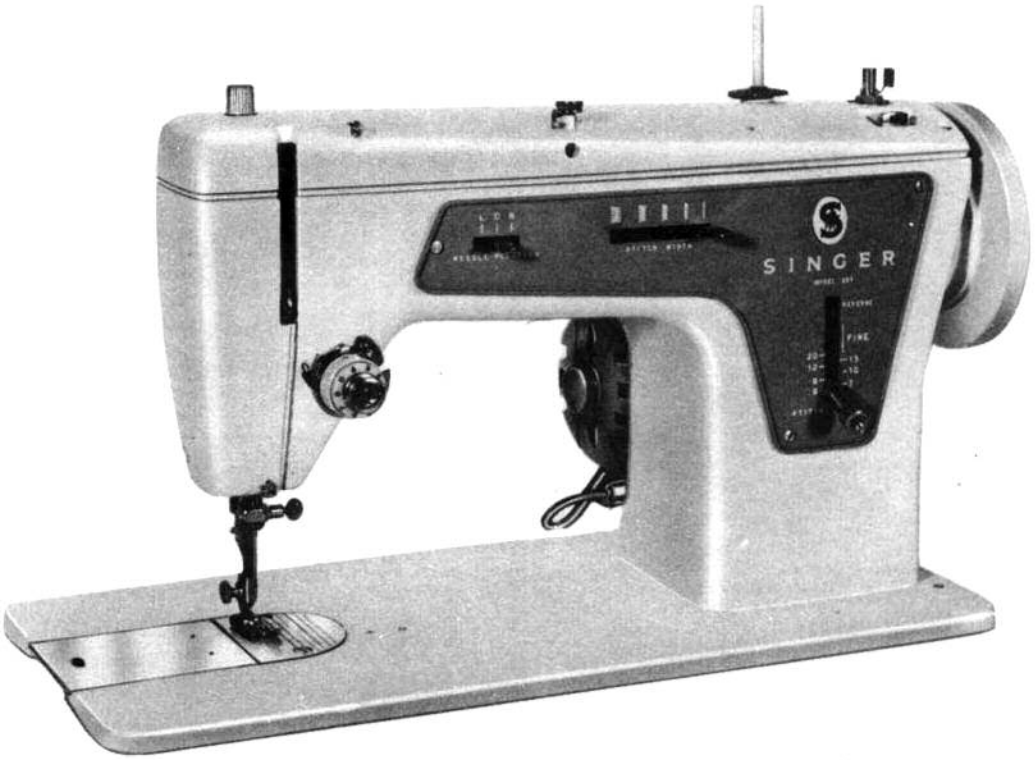
Form 631 (666)

SERVICE MANUAL
FOR
SINGER* SEWING MACHINES
OF
CLASSES 237



For detailed information concerning operation threading, choice of needles, etc.. see instruction, book:

Machine 237 - Form 608. (For USA And Canada) and 609 (other than USA and Canada).

COMPANY

printed in Italy

DESCRIPTION OF MACHINES 237

For straight stitch and zig zag manual stitching.

Foot Power (Machine 237/1)

Electric power (Machine 237/3)

Lock stitch.

Drop Feed .

Adjustable reverse feed.

Needle Catalogue 2020 (15 x 1) - Threaded from left to right.

Central bobbin oscillating transverse shuttle.

Shuttle race latch which permits quick opening of the shuttle race for easy removal of shuttle.

Semi-automatic bobbin winder attached to arm and protruding through the plastic top cover.

Needle bar and presser bar do not project above the top of the machine.

Control panel. This panel contains the Trade Mark, machine class number, stitch graduations (in stitches per inch and length of stitch in millimeters) indications for needle position lever and indications for bight control lever, which controls the width of the zig zag or ornamental stitch up to a maximum of 4 mm.

Numerically graduated thread tension device.

Maximum stitch length - 6 per inch.

Needle bar stroke - 1.228 inches.

Presser bar lift - .290 to .300 inches.

Bed - 14.5/8 inches long - 7 inches wide.

Working space at right of needle - 6.7/8 inches.

Speed - up to 1100 R.P.M.

Weight of machine: 28 lbs.

PREPARATION OF MACHINE FOR INSPECTION

Before any extensive inspection is undertaken to find causes of faulty operation machine should be thoroughly cleaned. and oiled.

Remove all lint, dust or foreign particles from machine.

Wipe machine clean and dry.
Oil the machine as instructed below and on page 5.

NOTE: UNDER EXTREME CONDITIONS - IF GREASE OR DIRT HAS BECOME TACKY, APPLY VARSOL TO ALL OIL HOLES AND RUN MACHINE. CONTINUE APPLYING VARSOL UNTIL MACHINE RUNS FREELY: WIPE DRY AND APPLY OIL. AFTER COMPLETE OILING, WIPE MACHINE DRY.

LUBRICATION

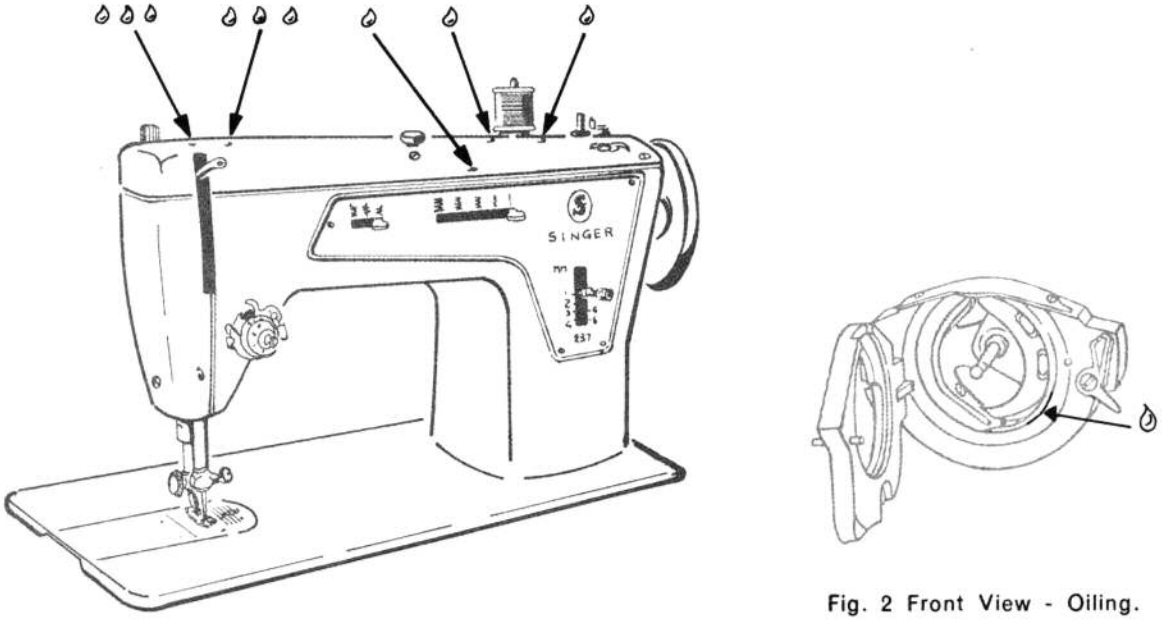


Fig. 2 Front View - Oiling.

LUBRICATION (continued)

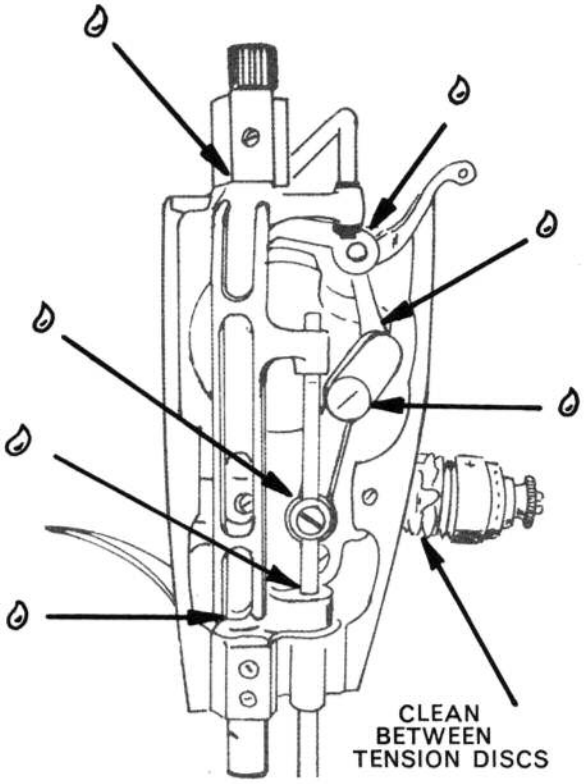


Fig. 3 End View Oiling.

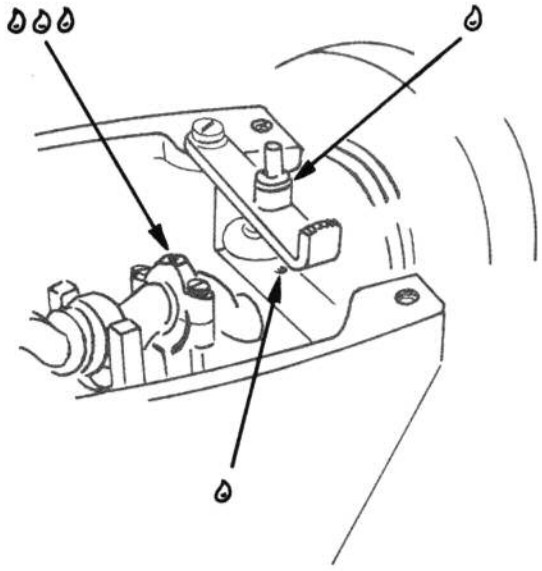


Fig. 4 Top View Oiling.

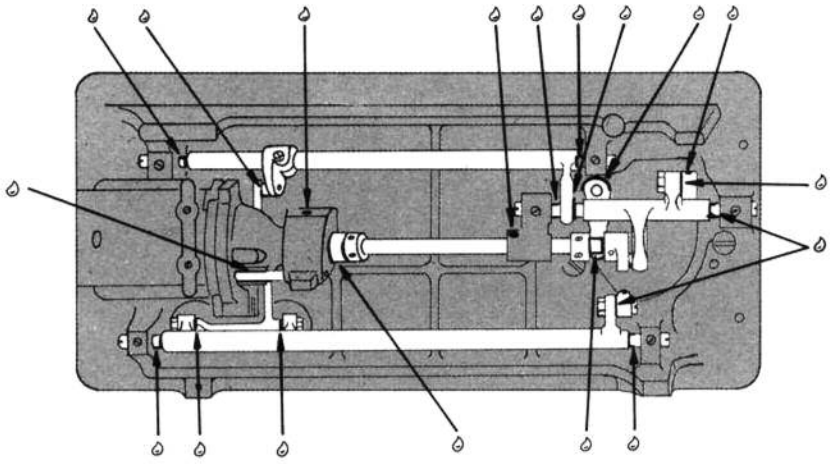


Fig. 5 Bottom View Oiling.

TO SET PRESSER FOOT AT CORRECT HEIGHT

IMPORTANT: Unless presser foot is set at correct height, attachments for these machines may not function properly on presser bar.

CAUTION: Throat plate must be flush with bed slide while setting presser foot height.

CHECK:

"Raise presser bar lifter to bring presser foot to highest position. Needle clamp must clear presser foot. Lower presser bar if interference occurs".

Test alignment of presser foot to feed slots in throat plate and to feed. Fig. 7 shows presser foot in correct alignment. Height and alignment of presser foot must be set at the same time.

"When presser bar is lowered, presser foot must rest squarely on throat plate".

SETTING:

1. Loosen set screw A, Fig. 6.
2. Raise or lower presser bar, as required.
3. Align presser foot and securely tighten set screw A.

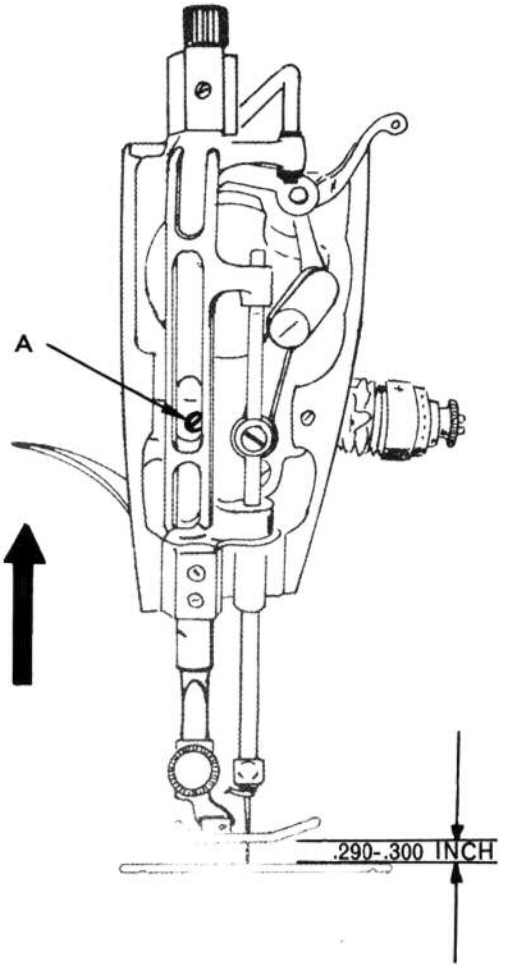


Fig. 6 Setting Presser Foot at Correct Height.

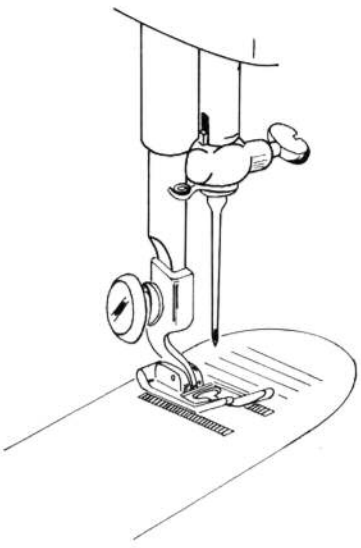


Fig. 7. Presser Foot in Alignment with Slots in Throat Plate and with Feed Dog.

TO SET FEED DOG AT CORRECT HEIGHT

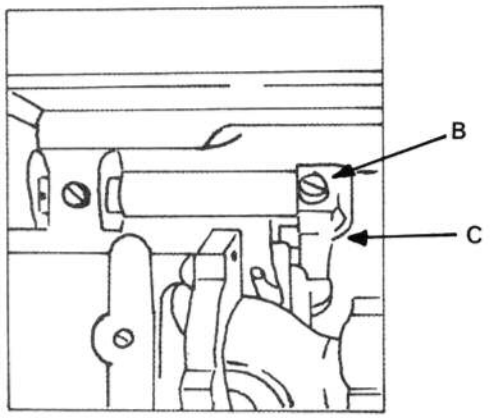


Fig. 8. Feed Adjustments.

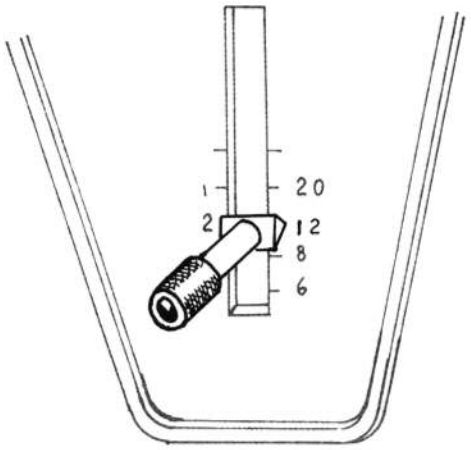


Fig. 9. Stitch Length Regulator Set for 12 Stitches.

PREPARATION:

1. Set stitch length regulator for 12 stitches per inch, as shown in Fig. 9.
2. Turn hand wheel over toward you until feed dog is at its highest position.

CHECK:

With feed dog at its highest position, slightly less than a full depth of teeth should project above top surface of throat plate, as shown in Fig. 10.

SETTING:

1. Turn hand wheel over toward you to bring feed dog to its highest position.
2. Loosen clamping screw B, Fig. 8.
3. Move crank C up or down as required to bring feed dog to correct height.
4. While maintaining this setting, securely tighten clamping screw B.

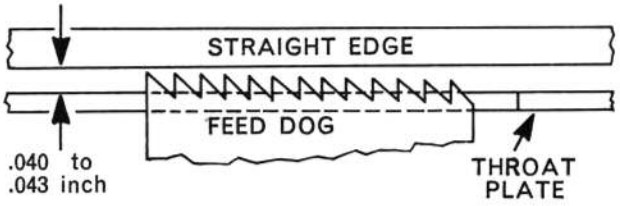


Fig. 10. Feed Dog at Correct Height.

TO SET FEED DOG LENGTHWISE IN THROAT PLATE SLOTS

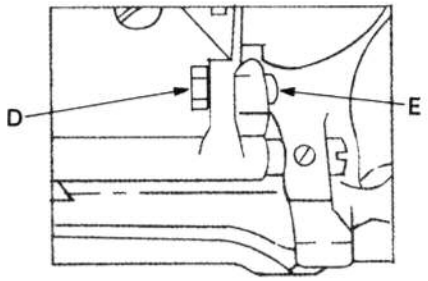


Fig. 11.

PREPARATION:

1. Set feed dog at correct height, as instructed above.
2. Set stitch length regulator for 12 stitches per inch, as shown in Fig. 9.

CHECK:

While turning hand wheel over toward you, feed dog should come as close as possible to front of throat plate slots without striking throat plate.

SETTING:

1. Loosen nut D, Fig. 11.
2. Turn eccentric stud E, moving feed dog toward front or rear, as required.
3. While correct setting is maintained, securely tighten nut D.

TO SET FEED DOG SIDEWISE IN THROAT PLATE SLOTS AND TO ELIMINATE END PLAY OR BINDING OF FEED ROCK SHAFT AND FEED LIFTING ROCK SHAFT

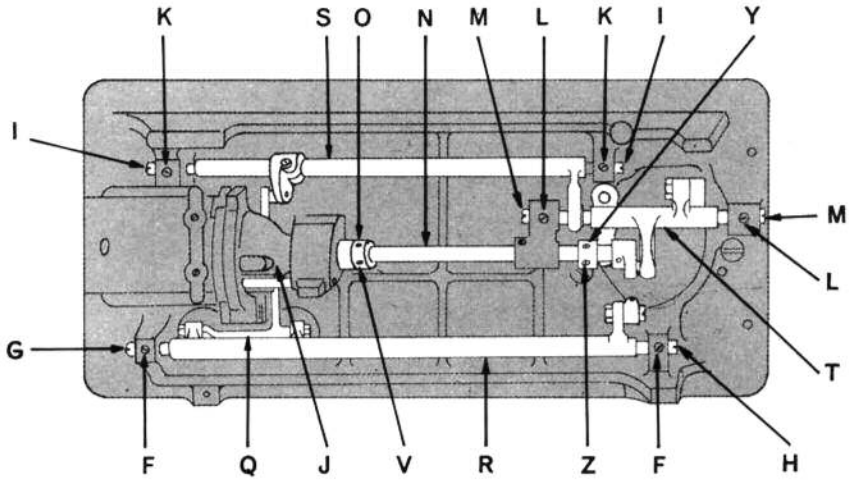


Fig. 12. Setting Feed Dog Sidewise and Adjusting for End Play or Binding.

PREPARATION:

Set feed dog at correct height, as instructed on page 6.

CHECK:

Feed dog should be located centrally (along the bed) in feed slots of throat plate.

SETTING: (See fig. 12)

1. Loosen set screws F which hold cylindrical centers G and H for feed rock shaft R in position.
2. To position feed dog toward either left or right loose screws F making the side shift of the feed rock shaft using a metal hammer or drift.
3. When feed dog is centralized in throat plate make certain the cylindrical centers G and H hold feed rock shaft R freely without end play or binding.
4. Then securely tighten screws F.

CHECK FOR BINDING OR END PLAY OF FEED LIFTING ROCK SHAFT.

SETTING:

1. Loosen set screws K which hold cylindrical centers I and feed lifting rock shaft S in position.
2. Lightly tap cylindrical centers I equally upon Feed Lifting Rock Shaft S so that it rides freely without end play or binding.
3. Then securely tighten set screws K.

TO CHECK FOR BINDING OR END PLAY OF OSCILLATING ROCK SHAFT.

SETTING: (See Fig. 12 page 7)

1. Loosen set screws L which hold centers M and oscillating rock shaft T in position.
2. Move centers M equally so that shaft T rides freely without end play or binding.
3. Securely tighten set screws L.

TO CHECK FOR BINDING OR END PLAY OF OSCILLATING SHAFT.

SETTING: (See Fig. 12 page 7)

1. Open shuttle race gate and remove shuttle.
2. Turn hand wheel over toward you until set screws V appear.
3. Loosen set screws V in collar O and adjust collar O until oscillating shaft N turns freely without end play or binding.
4. Securely tighten set screws V.

NOTE: CHECK EACH SETTING AFTER TIGHTENING SET SCREWS OR LOCK NUTS, AND RE-ADJUST IF NECESSARY.

Should shafts L and M still bind, check feed bar Q for end play or binding.

SETTING:

Remove feed rock shaft assembly as instructed on page 17 and adjust feed bar screw centres as instructed on page 18.

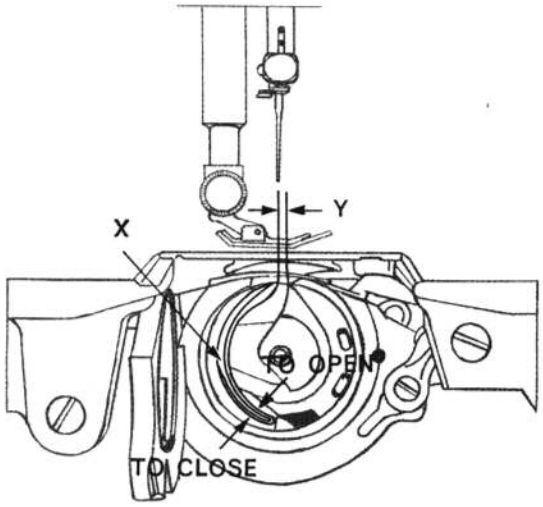


Fig. 13. To adjust Thread Clearance.

TO CHECK THE POSITION OF THE NEEDLE IN RELATION TO THE SHUTTLE AND SHUTTLE RACE CAP.

PREPARATION:

Set m/c for straight stitching and centre needle position. Fit needle, Cat. 2020, size 18, remove throat plate and arm top cover.

CHECK:

The shuttle point should come as close as possible to the small groove side of the needle without touching the needle. Clearance betwee needle and front edge of shuttle race cap should be approximately .010 inches, see fig. 13A.

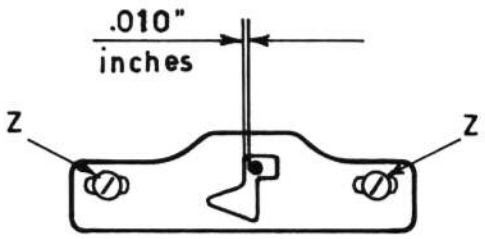


Fig. 13A. Position of shuttle Race CAP in relation to the needle.

SETTING: (see fig. 12 pag. 7, fig. 30 pag. 20 and fig. 13A.)

1. Loosen exagon head screw T6, fig. 30 pag. 20.
2. Adjust shuttle race frame J until correct position in relation to the needle is obtained.
3. Securely tighten screw T6.
4. Loosen screw Z, fig. 13A
5. Adjust position of shuttle race cap and tighten screws Z.
6. Replace throat plate and arm top cover.

TO CHECK THREAD CLEARANCE BETWEEN SHUTTLE CUSHION SPRING AND SHUTTLE.

PREPARATION:

1. Remove bobbin case.
2. Turn hand wheel over toward you until needle bar is at its highest position.

CHECK:

With needle bar at its highest position, clearance between shuttle and shuttle cushion spring (spring not compressed) should be equal to the thickness of a paper match folder or a business card.

SETTING:

1. To close gap, lightly tap outside of shuttle driver X, Fig. 13, with a brass drift.
2. To open gap, lightly tap inside of shuttle driver X, Fig. 13 with brass drift.

TO CHECK FOR BINDING OR END PLAY OF SHUTTLE RACE FRAME ASSEMBLY

PREPARATION:

1. Set machine for straight stitching.

2. Set needle lever position in center lever position.

SETTING: (See Fig. 12 pag. 7)

1. Open shuttle race gate and remove shuttle.
2. Turn hand wheel over toward you until two set screws Z appear.
3. Loosen set screws Z in collar Y and adjust collar until oscillating shaft turns freely without binding or end play.
4. Securely tighten screws Z.
5. Check position of needle in relation to the shuttle and if necessary readjust as instructed above.

TO SET THE TAKE-UP SPRING

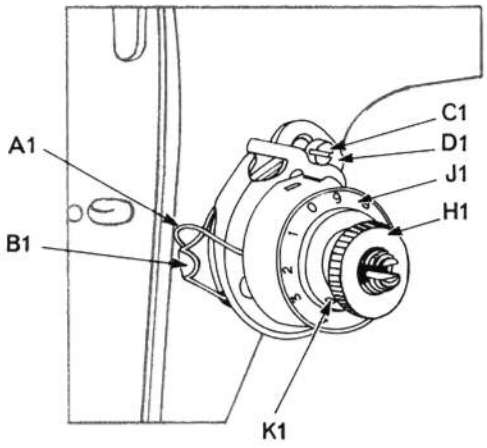


Fig. 14. Setting the Stroke.

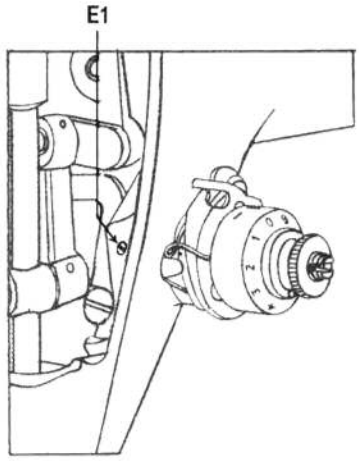


Fig. 15.
Stud Set Screw.

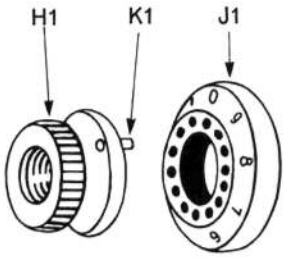


Fig. 16.
"O" Setting.

TIMING THE STROKE: (See Fig. 14)

The take-up spring should complete its action and be at rest against stop B1 as eye of needle enters fabric.

Loosen screw C1 and move slack regulator D1 down (to the right) to complete take-up spring action earlier (shorter stroke); move regulator D1 up the left) to complete take-up spring action later (longer stroke).

Then tighten screw C1.

SETTING THE TENSION:

Tension on take-up spring should be just sufficient to take-up slack of needle thread until point of needle reaches fabric.

Loosen stud set screw E1, Fig. 15 and remove entire tension assembly. Turn numbered dial to "O" releasing tension. Hold tension assembly so that component parts are in position shown by dotted line in Fig. 17. Place spring end F1 in groove of sprocket G1 so that take-up spring A1 hangs down in a vertical position. This is the normal setting.

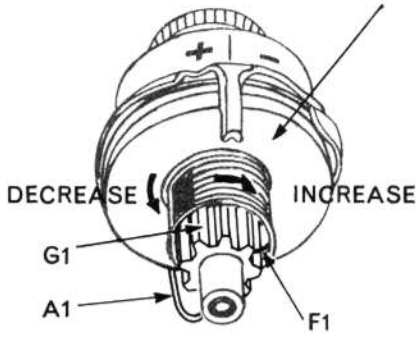


Fig. 17. Setting the tension.

To increase tension on take-up spring, move spring end F1 right to next groove of sprocket to G1; to decrease tension, move spring end left to next groove.

Replace assembly, draw take-up spring so that it rests on regulator stop B1, Fig. 14, and recheck tension. Tighten stud set screw E1, Fig. 5.

TO ADJUST NEEDLE THREAD TENSION

This machine is equipped with a one-cycle dial tension which, when set correctly, offers a barely perceptible tension at "O" to a maximum at the end of one complete turn of thumb nut.

At "O" there should be a barely perceptible amount of tension, as otherwise, difficulty may be experienced when sewing satin stitching and other forms of closed ornamental stitching.

ADJUSTMENT:

Pull thread through tension discs to test amount of tension on thread at "O" position. At this point there should be a slight pull on the thread to indicate there is minimum tension which gradually increases with the turning of thumb nut H1 to the right, providing a full range of tension with one revolution of the thumb nut. If the pull is too strong for a minimum tension, press in dial J1 to disengage pin K1 on nut from dial, and reset pin in next hole to left of previous setting. Repeat this adjustment until a point of no tension is reached. Then advance one hole to right to give minimum tension at zero position.

TO SET NEEDLE BAR AT CORRECT HEIGHT

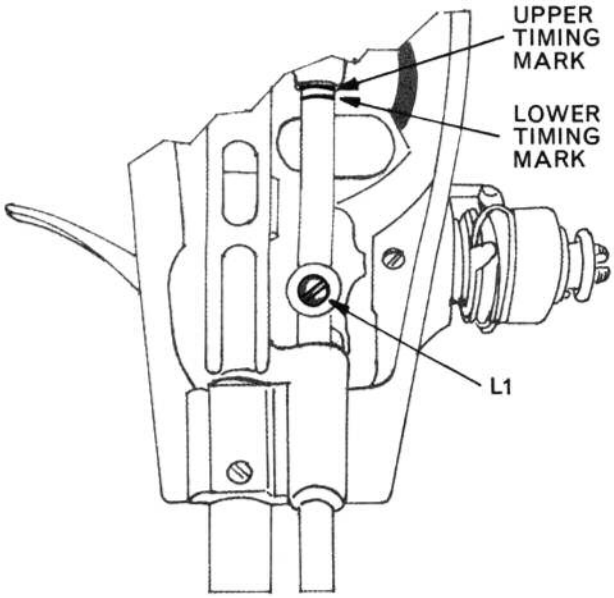


Fig. 18. Setting Needle Bar at Correct Height.

PREPARATION:

1. Remove throat plate.
2. Remove face plate.

CHECK:

1. Turn handwheel over toward you until needle bar is at its lowest point. The upper timing mark on needle bar should now be in line with the bottom of the needle bar frame (upper needle bar bearing).
2. Continue turning handwheel over toward you until lower timing mark on needle bar is in line with bottom of needle bar frame (upper needle bar bearing).

   The shuttle point should now be directly in line with the needle and a short 1/8" above the top of the needle eye.

SETTING:

1. With needle bar at its lowest point, loosen set screw L1, Fig. 18 and raise or lower needle bar, as required.
2. Wile maintaining correct needle bar height, make certain needle bar stays correctly turned, i.e., needle clamp and thumb screw be parallel with the front edge of the bed, and securely tighten set screw L1.
3. Replace throat plate.
4. Replace face plate.

CHECK FOR BINDING OR END PLAY OF UPRIGHT SHAFT

PREPARATION:

1. Remove arm top cover.

SETTING: (See Fig. 30 pag. 20):

1. Loosen exagon head screw T6 one quarter (1/4) turn.
2. Press down upon the crank H6 against casting while pressing the upright shaft lower crank (from underside of machine) up against casting.
3. Securely tighten exagon head screw T6.
4. Check position of needle in relation to shuttle as instructed at page 8 and if necessary re-adjust.

TO ELIMINATE END PLAY OR BINDING IN THREAD TAKE-UP MECANISM

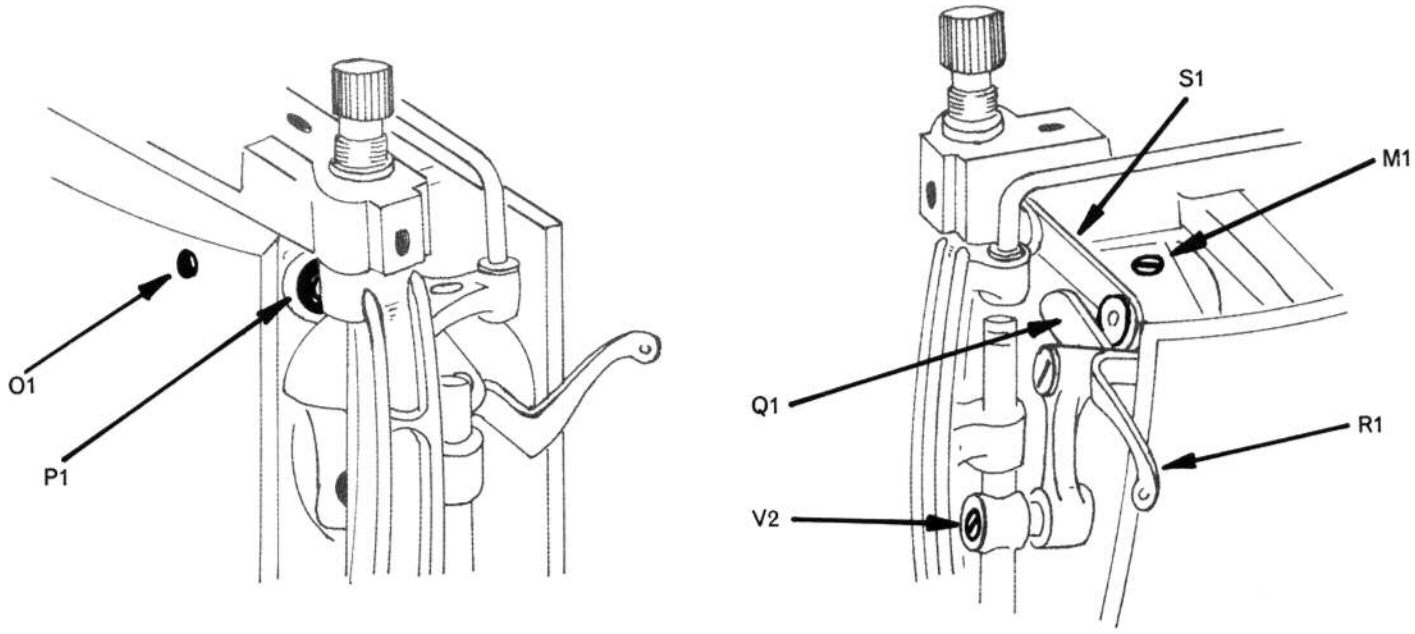


Fig. 19. Thread Take-up Mechanism to Eliminate End Play or Binding in Thread Take-up Mechanism.

PREPARATION:

Remove Face Plate and Top Cover.

SETTING: (See Fig. 19).

1. Turn hand wheel toward you until take-up crank set screw M1 is accessible from top of machine.
2. Loosen Hinge pin set screw O1.
3. Loosen set screw M1 and adjust take-up crank Q1 until there is a minimum of end play in take-up lever R1 without binding.
4. Firmly secure set screw M1, making certain that it is Tightened against flat on take-up crank Q1.
5. Check that take-up lever R1 moves freely without binding.
6. Turn hand wheel over toward you. Loosen clamping screw in hole O1, adjust hinge pin P1 until take-up lever link S1 moves freely and securely tighten clamping screw O1.
   tighten clamping screw O1.
7. Check that take-up mechanism moves freely without binding.
8. Replace face plate and arm top cover.

REMOVALS AND REPLACEMENTS
NEEDLE THREAD TENSION

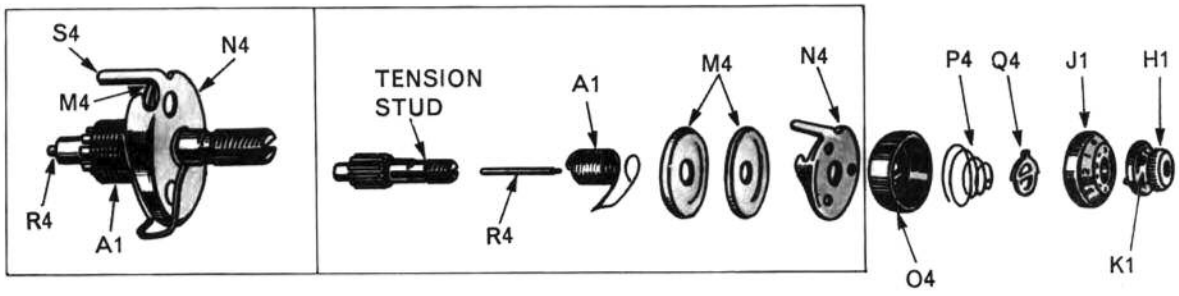


Fig. 20. Needle Thread Tension Assembly.

REMOVAL: (See Fig. 20).

1. Turn thumb H1 to left (anticlockwise) until "O" on numbered dial J1 stops at center line on indicator 04, Fig. 20.
2. Press in dial J1, separating pin K1 in thumb nut H1 from hole in dial J1, unscrew thumb nut H1 and remove it from tension stud.
3. Remove stop washer Q4 spring P4 and tension indicator O4 from tension stud.
4. Then, as a unit, remove tension disc assembly (thread guard N4, tension discs M4, and take-up spring A1).
5. Remove tension releasing pin R4.

NOTE: IT IS NOT NECESSARY TO REMOVE TENSION STUD FROM MACHINE. IT IS SHOWN REMOVED IN FIG. 20. TO ILLUSTRATE COMPLETE ASSEMBLY. SEE PAGE 9 FOR INSTRUCTIONS ON REMOVAL OF TENSION ASSEMBLY AS A UNIT.

REPLACEMENT:

1. Make certain that tension releasing pin R4 is in place as shown in insert, Fig. 20.
2. Place tension discs M4 on thread guard N4 as shown in Fig. 21.
3. Pass take-up spring eyelet T1 under thread guard with coils of spring above tension discs as shown in Fig. 21.
4. Align coils of spring with holes in discs and place this assembly on tension stud as shown in insert Fig. 20 Extension S4 of thread guard N4 enters hole provided in machine head.

NOTE: TAIL F1, FIG. 21, ENTERS ONE OF THE GROOVES IN REAR OF TENSION STUD (SEE INSTRUCTIONS "SETTING THE TENSION" ON PAGE 9).

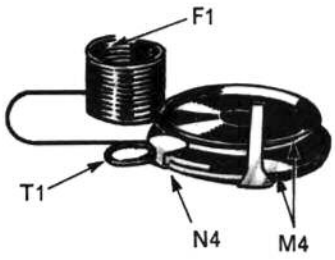


Fig. 21.
Tension Disc
Assembly.

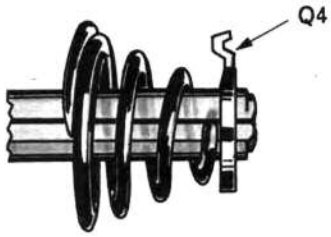


Fig. 22.
Stop Washer and
Tension Spring.

5. Replace indicator 04, Fig. 20 with open side facing out and with plus (+) and minus (—) signs at top.
6. Hold these assembled parts against shoulder of stud and place tension spring P4, Fig. 20, so that the half coil at front is in the lower position, on tension stud.
7. Place stop washer Q4 on stud so that its extension points upward away from machine on tension stud as shown in Fig. 22.
8. Replace numbered dial J1 so that stop on inside of dial is to right of stop washer Q4 extension.
9. Push dial J1 to compress spring to facilitate replacement of thumb nut H1.
10. Replace thumb nut H1 carefully guiding pin K1 into one of the holes in dial J1.
11. Adjust assembly as instructed on page 9.

REMOVALS AND REPLACEMENTS
HAND WHEEL AND CLAMP STOP MOTION FLANGED BUSHING

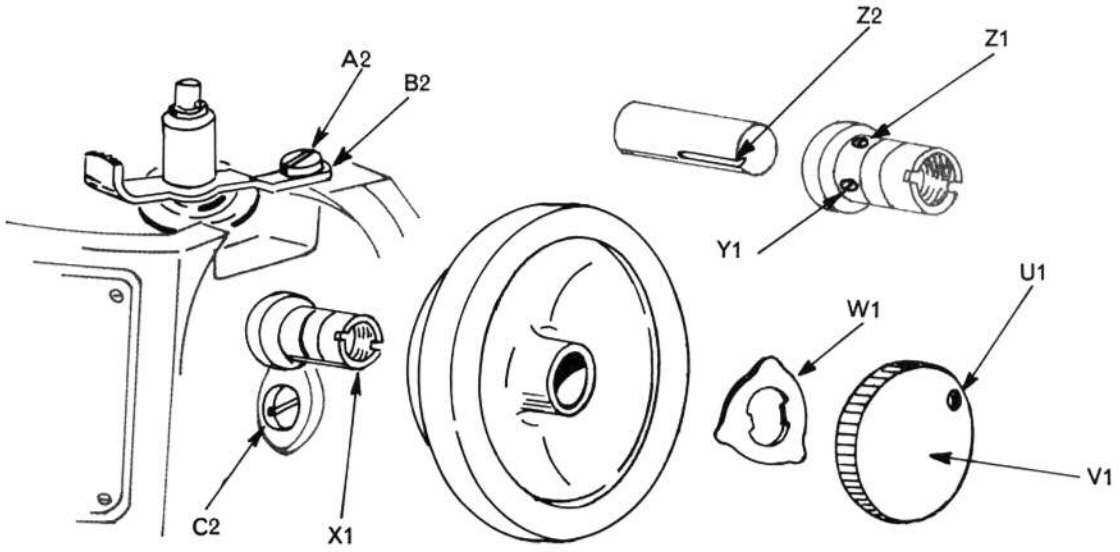


Fig. 23. Hand Weel and Bobbin Winder Assembly.

REMOVAL: (See Fig. 23)

1. Disengage belt from hadwheel or remove hand attachment.
2. Remove stop screw U1 from clamp stop motion screw V1.
3. Remove clamp stop motion screw V1, washer W1 and hand wheel from arm shaft.

IF IT IS FOUND NECESSARY TO RENEW CLAMP STOP MOTION FLANGED BUSHING X1, CONTINUE AS FOLLOWS:

4. Loosen set screw Y1 (cone point) and set screw Z1 (flat point).
5. Remove clamp stop motion flanged bushing X1 from arm shaft (if necessary using an extractor).

REPLACEMENT:

ITEMS 1 TO 3 APPLY ONLY IF CLAMP STOP MOTION FLANGED BUSHING HAS BEEN RENEWED.

1. Replace the new clamp stop motion flanged bushing X1 on the arm shaft, ensuring that the cone point on screw Y1 fits into the Vee groove Z2 on the arm shaft.
2. While holding the arm shaft against the front bearing face adjust flanged bushing X1 against ist bearing face, until the arm shaft rotates freely with minimum end play.
3. Securely tighten set screws Y1 and Z1.
4. Replace hand wheel.
5. Replace washer W1.
6. Replace clamp stop motion screw V1 and tighten.
7. Replace stop screw U1 in clamp stop motion screw V1 and tighten.

NOTE: IF STITCHING MECHANISM DOES NOT RELEASE OR DRIVE WHEN CLAMP STOP MOTION SCREW V1 IS ADJUSTED, REMOVE SCREWS U1 AND V1. REMOVE WASHER X1, ROTATE IT 180° AND REPLACE. REPLACE SCREWS V1 AND U1.

BOBBIN WINDER

REMOVAL:

1. Remove arm top cover.
2. Remove screw A2 and washer B2.

REPLACEMENT:

1. Replace bobbin winder.
2. Replace screw A2 and washer B2.
3. Replace arm top cover.

REMOVALS AND REPLACEMENTS
STITCH LENGTH REGULATOR

REMOVAL: (See Fig. 25) ,

1. Remove hand wheel as instructed on page 13. (It is not necessary to remove the clamp stop motion flanged bushing).
2. Remove top cover, remove screws which fasten front panel to machine arm, remove front panel retaining rings (inside of arm) see fig. 24.
3. Move regulator lever to lowest position.
4. Remove large hinge screw C2, Fog. 23, page 13, with its washer from arm casting.
5. Pull entire regulator, with front panel out of machine arm.

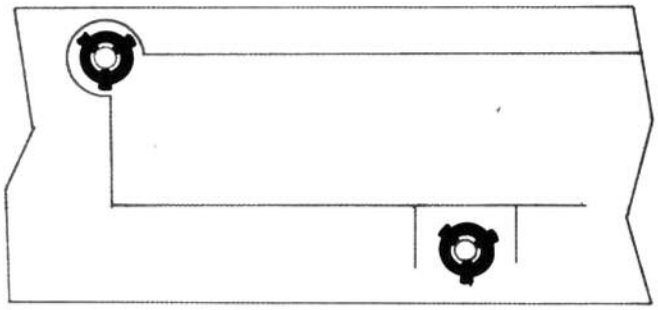


Fig. 24. Inside arm front panel retaining rings.

REPLACEMENT:

1. Install regulator in arm, making certain that regulator fits on slide block of feed forked connection, as shown in Fig. 25.
2. Replace large hinge screw C2, Fig. 23, page 13 with its washer through arm casting and into regulator.
3. Position indicator plate and fasten to arm with screws, and retaining rings (inside of arm) Fig. 24.
4. Replace hand wheel as instructed on page 12.

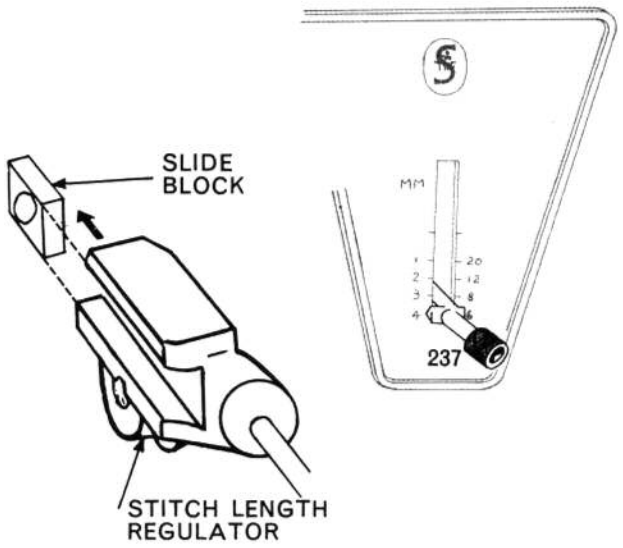


Fig. 25. Stitch Length Regulator.

FEED LIFTING ROCK SHAFT

REMOVAL: (See Fig. 12 page 7).

1. Loosen set screws K and withdraw cylinder centres 1.
2. Remove feed lifting rock shaft S, by sliding roller out of feed bar fork, and rock shaft fork over lifting cam on oscillating rock shaft fork over lifting cam on oscillating rock shaft T.

REPLACEMENT:

1. Install feed lifting rock shaft in reverse order of removal.
2. Adjust as instructed on page 7 ensuring that feed bar bears fully on roller, and rock shaft fork on lifting cam.
3. Check feed dog height as instructed on page 6.

REMOVALS AND REPLACEMENTS

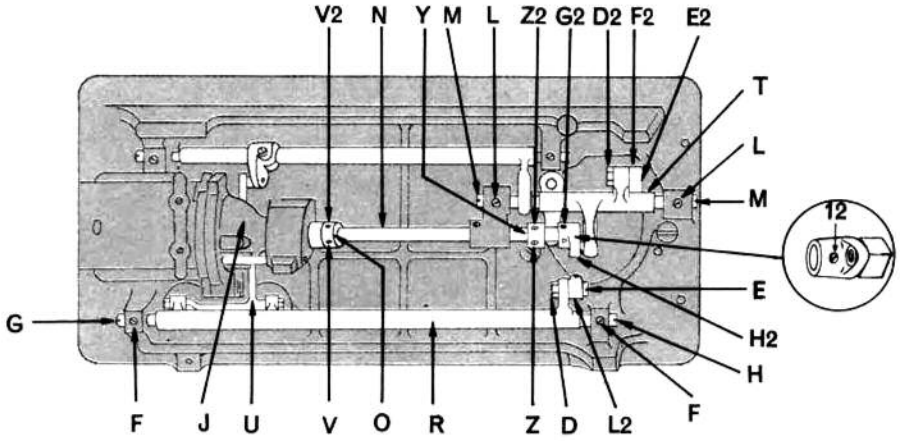


Fig. 26.

OSCILLATING ROCK SHAFT

REMOVAL: (See Fig. 26)

1. Turn hand wheel over toward you until oscillating rock shaft fork is inside arm casting.
2. Loosen nut D2 and remove stud E2 from connecting rod F2.
3. Loosen set screws L and withdraw centers M.
4. Remove oscillating rock shaft T.

REPLACEMENT:

1. Install in reverse order of removal, ensuring that connecting rod F2 is in its correct position i.e., it is not displaced too far towards either end of machine, causing binding on armshaft or oscillating rock shaft bearing.
2. Check as instructed on page 8.

OSCILLATING SHAFT

REMOVAL: (See Fig. 26)

1. Remove shuttle and leave gate open.
2. Turn hand wheel over toward you until oscillating shaft crank, drive pin G2 is in a convenient position for removal.
3. Drive out pin G2.
4. Turn hand wheel over toward you until oscillating shaft crank set screw 12 appears (see inset, Fig. 26).
5. Loosen set screw 12.
6. Loosen oscillating shaft collar set screws V and V2.
7. Loosen rear oscillating shaft collar set screws Z and Z2.
8. With brass drift tap oscillating shaft N away from oscillating shaft crank H2.
9. Once clear of crank H2, shaft N should withdraw easily through shuttle race frame and bed bearing. At same time remove collar O. and Y.

REPLACEMENT:

1. Insert oscillating shaft N (with shuttle driver) in shuttle race frame.
2. Slide through shuttle race and replace collar O.
3. Continue sliding shaft on through bed bearing.
4. Replace collar Y.
5. Slide through upright shaft crank slide block.
6. Assemble new oscillating crank H2 (see inset) ensuring that slide block fits into oscillating rock shaft fork.
7. Check as instructed on page 8.
8. Replace shuttle and close gate.

TO TIME OSCILLATING SHAFT.

1. Remove throat plate and face plate.
2. Turn hand wheel over toward you until lower timing mark on needle bar is in line with bottom of needle bar frame upper needle bar bearing.
3. Turn oscillating shaft until point of shuttle is directly in line with needle.
4. Securely tighten set screws 12 on crank H2, ensuring that crank slide block is fitted evenly into oscillating rock shaft fork.
5. Check timing and readjust if necessary.

REMOVALS AND REPLACEMENTS

SHUTTLE RACE FRAME

REMOVAL: (See Fig. 26)

1. Remove oscillating shaft as instructed on page 15.
2. Remove shuttle race frame J.

REPLACEMENT:

1. Install shuttle race frame in reverse order of removal.
2. Adjust approximately only at this point and complete adjustment after step 3.
3. Replace oscillating shaft in reverse order of removal.
4. Control needle position in relation to the shuttle race cap and readjust as instructed on page 8.

FEED ROCK SHAFT ASSEMBLY

PREMOVAL: (See Fig. 26)

1. Remove oscillating shaft as instructed on page 16.
2. Remove shuttle race frame as instructed above.
3. Loosen nut D and remove eccentric stud E from feed fork L2.
4. Loosen set screws F and withdraw centers H and G.
5. Remove feed rock shaft R with feed bar assembly U.

REPLACEMENT:

1. Install feed rock shaft R with feed assembly U in reverse order of removal, ensuring that feed bar fits on roller.
2. Check as instructed on page 7 for end play, binding and feed dog position.

NOTE: IF REQUIRED, TO MAINTAIN CORRECT POSITION OF FEED FORKED CONNECTION L2, I.E., IT DOES NOT BIND ON FEED CAM OR FEED REGULATOR, ADJUST FEED BAR U ON FEED ROCK SHAFT R AS INSTRUCTED ON PAGE 17.

3. Check feed bar settings as instructed on page 7.
4. Replace shuttle race frame as instructed above.
5. Replace oscillating shaft as instructed on page 15.

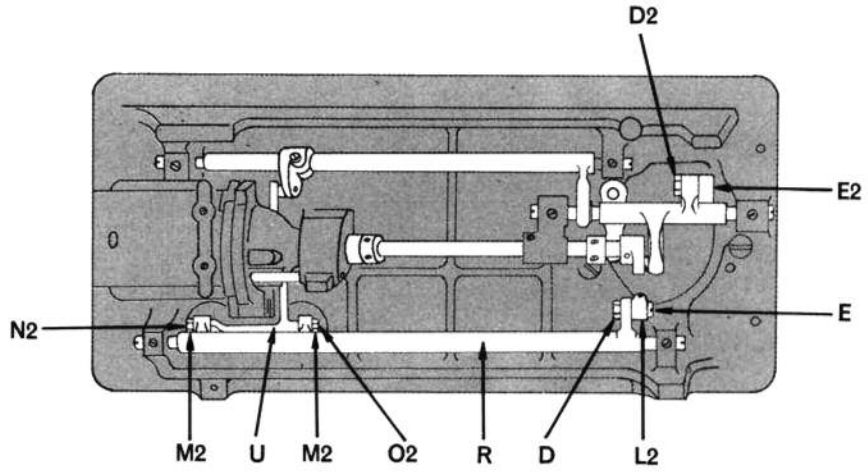


Fig. 27.

FEED BAR ASSEMBLY

REMOVAL: (See Fig. 27)

1. Remove feed rock shaft assembly as instructed on page 16.
2. Loosen lock nuts M2, withdraw screw centres N2 and 02 and remove feed bar assembly U from feed rock shaft R.

REPLACEMENT:

1. Replace feed bar assembly on feed rock shaft, and initially tighten screw centres N2 and 02 equally upon feed bar.
2. Install feed rock shaft assembly only, and check as instructed on page 7.
3. It is necessary to position feed dog to left, loosen screw centre N2 and tighten screw centre O2. To position feed dog to right, loosen screw centre O2 and tighten screw centre N2. Adjust screw centres O2 and N2 until feed bar moves freely without end play or binding, and tighten lock nuts M2.
4. Check feed bar for end play or binding.
5. Install feed rock shaft assembly only, and check as instructed on page 7.
6. Replace shuttle race frame as instructed on page 16.
7. Replace oscillating shaft as instructed on page 15.

REMOVALS AND REPLACEMENTS
CRANK CONNECTING ROD

PREPARATION:

Remove arm top cover and turn hand wheel toward front of machine, until crank connecting rod is at its lowest position.

REMOVAL:

1. Loosen nut D2, Fig. 27, page 17, and remove screw stud E2, Fig. 27, page 17.
2. Remove cap screws P2 and remove cap Q2. (Note position by shape of boss X, Fig. 28, for replacement).
3. Remove connecting rod through bottom of machine.

REPLACEMENT:

1. Insert connecting rod into arm, with stud oil hole facing front, from bottom of machine, between oscillating rock shaft and front side of arm casting, so that it fits around bottom of arm shaft bearing.
2. Replace cap Q2 over top of arm shaft bearing, facing direction as on removal, and fasten with screws P2.

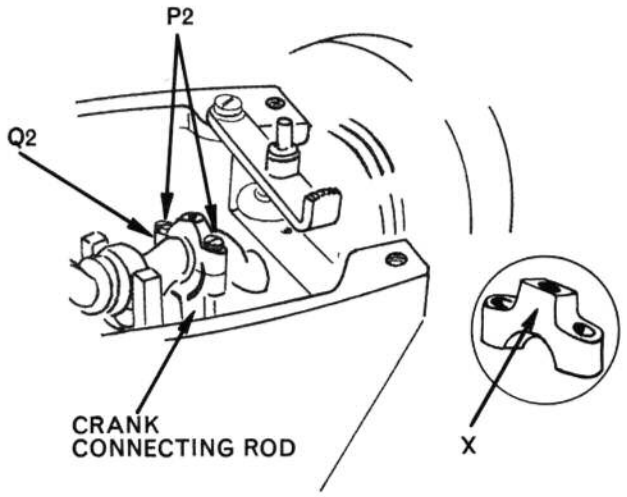


Fig. 28. Crank Connecting Rod.

3. Replace screw stud E2, Fig. 27, page 17, engaging connecting rod with oscillating rock shaft.
4. Replace nut D2 and tighten securely.

FEED FORKED CONNECTION

REMOVAL: (See Fig. 27, page 16)

1. Remove arm top cover.
2. Loosen arm shaft counterbalance and feed cam set screws.
3. Slide arm shaft counterbalance and feed cam towards face plate to free forked connection.
4. Loosen nut D, and remove eccentric stud E, disengaging feed forked connection L2 from feed rock shaft R.
5. Remove feed forked connection L2 from arm, through bottom of machine.

REPLACEMENT:

1. Insert feed forked connection L2 into arm, from bottom of machine so that the slide block fits in the stitch length regulator.
2. Replace eccentric stud E, engaging feed forked connection with feed rock shaft.
3. Replace feed cam on arm shaft and tighten set screw into the proper slot.
4. Replace arm shaft counterbalance and tighten set screw in the proper hole on feed cam.
5. Set feed dog lengthwise as instructed on page 6.

REMOVALS AND REPLACEMENTS

NEEDLE BAR

REMOVAL: (See Fig. 29)

1. Remove arm top cover.
2. Remove face plate.
3. Remove needle bar thread guard.
4. Remove needle clamp.
5. Loosen screw L1 and push needle bar from bottom removing it from top of arm.

REPLACEMENT:

1. Insert needle bar from top sliding it through needle bar bracket upper hole, bearing hole, needle bar connecting stud and needle bar bracket lower hole.
2. Replace needle clamp.
3. Replace needle bar thread guard positioning it in needle bar slot then, using a screwdriver, fit it in proper seat.
4. Adjust needle bar height as instructed on page 10.
5. Securely tighten screw L1.
6. Replace face plate and arm top cover.

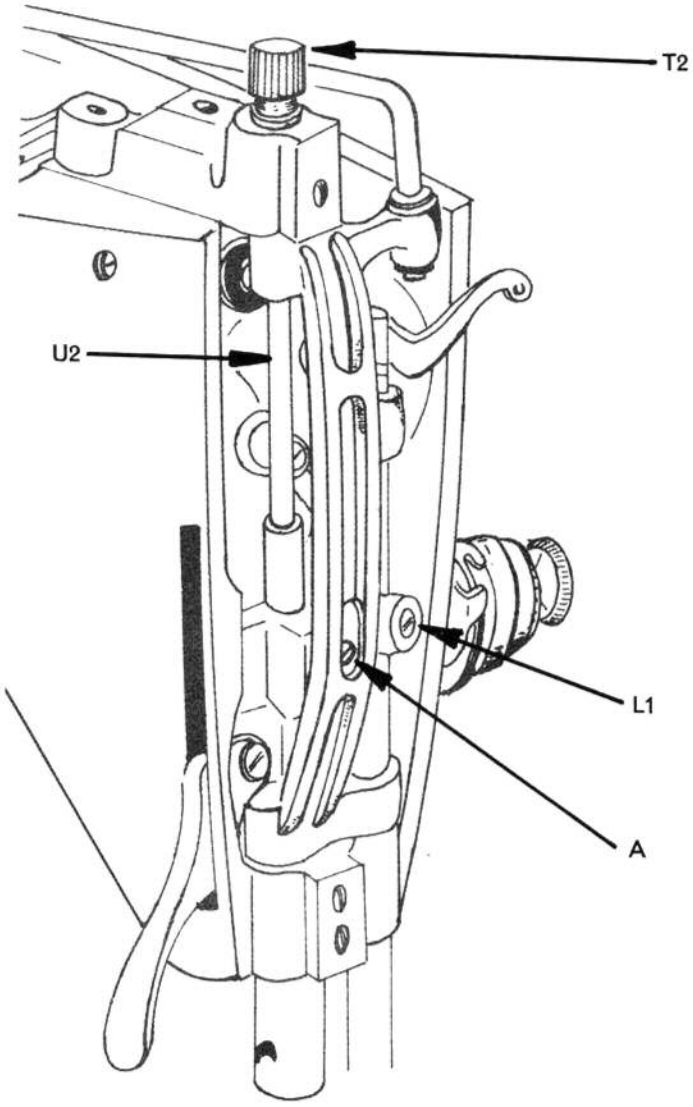


Fig. 29.

PRESSER BAR

REMOVAL: (See Fig. 29)

1. Remove face plate, presser foot, thumb screw and top cover.
2. Remove pressure regulating thumb screw T2.
3. Remove extension pin U2 with spring from top of machine.
4. Loosen screw A and remove presser bar from machine.

REPLACEMENT:

1. Install presser bar assembly in reverse order of its removal.
2. Replace presser foot on presser bar.
3. Adjust presser foot at correct height and align foot with feed dog slots in throat plate, as instructed on page 5.
4. Securely tighten screw A.
5. Replace face plate and arm top cover.

REMOVALS AND REPLACEMENTS
NEEDLE BAR VIBRATING BRACKET

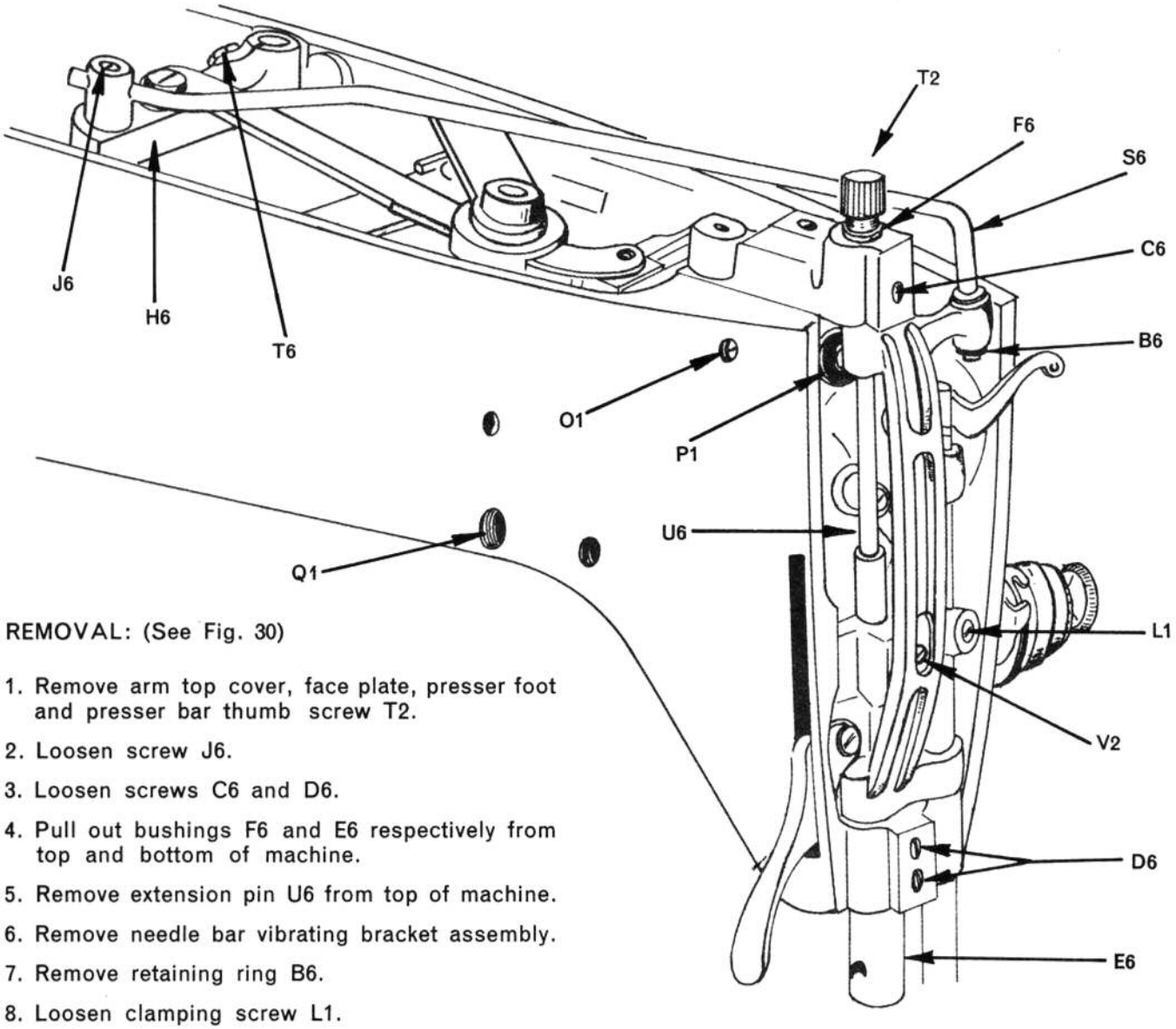


Fig. 30. Needle Bar Vibrating Bracket.

REMOVAL: (See Fig. 30)

1. Remove arm top cover, face plate, presser foot and presser bar thumb screw T2.
2. Loosen screw J6.
3. Loosen screws C6 and D6.
4. Pull out bushings F6 and E6 respectively from top and bottom of machine.
5. Remove extension pin U6 from top of machine.
6. Remove needle bar vibrating bracket assembly.
7. Remove retaining ring B6.
8. Loosen clamping screw L1.
9. Remove needle driving arm S6.
10. Remove needle bar.
11. Remove presser bar with guide bracket without loosening clamping screw V2.

REPLACEMENT:

1. Assemble needle bar, presser bar and needle bar driving arm on needle bar vibrating bracket.
2. Assemble needle bar vibrating bracket.
3. Set needle bar at correct height as instructed on page 10.
4. Adjust needle on throat plate as instructed on page 22.
5. Adjust needle position in relation to the shuttle and shuttle race cap as instructed on page 8.

NOTE: PRESSER BAR LOWER BUSHING MUST BE PUSHED UP UNTIL ELIMINATION OF END PLAY, WITHOUT BINDING OF NEEDLE BAR VIBRATING BRACKET.

REMOVAL AND REPLACEMENT
THREAD TAKE UP MECHANISM

PREPARATION:

1. Remove arm top cover and face plate.

REMOVAL (See Fig. 19 page 11)

1. Remove needle bar vibrating bracket as instructed on page 20.
2. Loosen set screw O1.
3. Loosen set screw MI in needle bar crank.
4. Withdraw needle thread take-up assembly.
5. Remove needle bar connecting link.

REPLACEMENT:

1. Replace needle thread take-up in reverse order of its removals.
2. Firmly secure set screw M1 making certaint that it is tightened against flat on take-up crank Q1.
3. Tighten set screw O1 while turning hand wheel over toward you.
4. Check for end play as instructed on page 11.
5. Replace needle bar frame assembly as instructed on page 20.
6. Replace arm top cover and face plate.

UPRIGHT ARM SHAFT

PREPARATION:

1. Remove arm top cover

REMOVAL: (See Fig. 30 page 20)

1. Remove oscillating shaft as instructed on page 15.
2. Remove oscillating rock shaft as instructed on page 15.
3. Loosen exagon head screw T6.
4. Remove upright arm shaft assembly from bottom of machine.

REPLACEMENT:

1. Replace upright arm shaft in reverse order of its removal.
2. Replace oscillating shaft as instructed on page 15.
3. Check position of the needle in relation to the shuttle and shuttle race cup as instructed on page 8.

HORIZONTAL ARM SHAFT

CAUTION: Do not remove the horizontal arm shaft from this machine. If this becomes necessary the machine should be returned to the Factory.

The Worm Gear and the Cam Gear have been lapped together at the Factory and should be kept in mesh throughout all other removals and replacements.

TO CHECK THE POSITION OF THE NEEDLE IN RELATION TO ALL PURPOSE THROAT PLATE

PREPARATION:

1. Remove arm top cover.
2. Remove presser foot.
3. Insert needle N. 18.

CHECK (see Fig. 31)

1. Needle n. 18 should be centered in throat plate needle slot.
2. Set machine for maximum zig zag amplitude.
3. Slowly turn handwheel; observe the needle. It must not rubb either at right or left of throat plate slot.

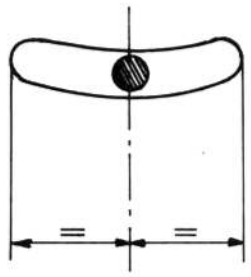


Fig. 31. Position of needle in throat plate slot.

ADJUSTMENT: (see Fig. 30 pag. 20)

1. Loosen needle bar driving arm set screw J6.
2. Move needle bar diving arm as required to bring needle at the correct position.
3. Securely tighten screw J6.
4. Check distance between needle and shuttle point and adjust ad instructed on page 8.

TO TIME THE PENDULUM MOVEMENT OF THE NEEDLE BAR

PREPARATION:

1. Remove arm top cover and face plate.
2. Set needle position lever at center position C.
3. Set big amplitude lever at maximum zig-zag amplitude, position 5.

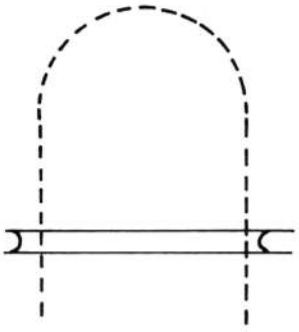


Fig. 32. Correct Pendulum movement

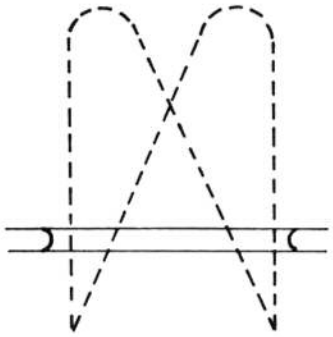


Fig. 33. Incorrect Pendulum movement.

CHECK:

While slowly turning handwheel over toward you, observe movement of needle bar.

Needle should begin its pendulum movement at about same height above throat plate as showed in fig. 32. Needle should reach its peak of ascent midway between two extreme positions of needle.

There should be no pendulum movement while the needle is moving through the material.

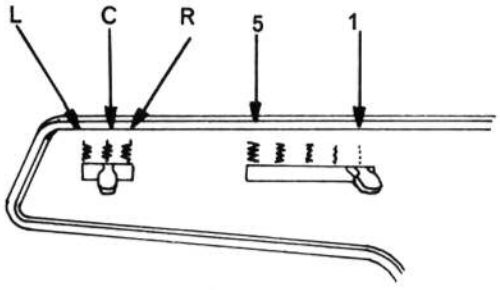
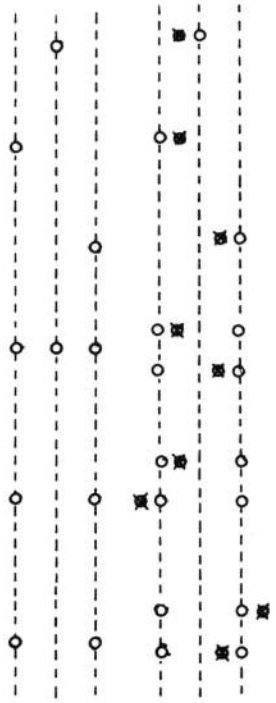


Fig. 34.

To time pendulum movement of needle bar (continued)
Check correctness of zig-zag as per followings

Set Bight Controls In Order Listed	Correct Perforations	Incorrect Perforations	Conclusion
Test # 1-Straight stitch at central position.			Puncture must not be at X but coincide at central needle position.
Test # 2-Straight stitch at left position.			Puncture must not be at X but coincide at left needle position.
Test # 3-Straight stitch at right position.			Puncture must not be at X but coincide at right needle position.
Test # 4-Maximum zig-zag stitch at central, coordinated with Test # 1.			Puncture must not be at X but at central position.
Test # 5-Maximum zig-zag stitch at left position, coordinated with Test # 2.			Puncture must not be at X but coincide at left needle position.
Test # 6-Maximum zig-zag stitch at right position, coordinated with Test # 3.			Puncture must be at X but coincide at right needle position.

Figs. 35 and 36 illustrate correct preforations by lines of stitching for Test # 4. Figs. 37 and 38 show incorrect lines of stitching for Test # 4.

Fig. 35.
Needle Perforation Test.

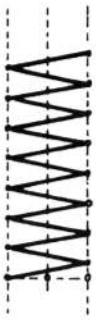


Fig. 36.

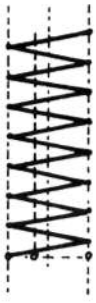


Fig. 37.

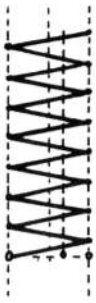


Fig. 38.

To time pendulum movement of needle bar (continued)

Zig-zag stitch, various widths, central needle position

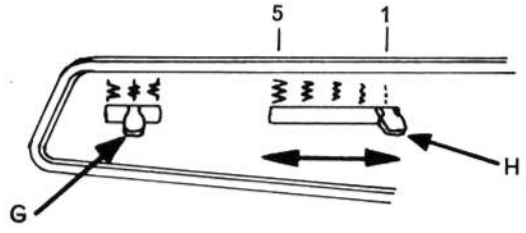


Fig. 39. Central Needle Position (Various Widths of Bight).

SETTING lever H at any desired setting between 1 and # 5 positions and position lever G in central position, as shown in Fig. 39.

STITCHING: Zig-zag stitching produced at width desired up to maximum bight, the needle swinging equally to the right and to the left of the central position. Variations of this stitching are shown in Fig. 40.

Fig. 40.

Zig-zag stitch, various widths, left needle position

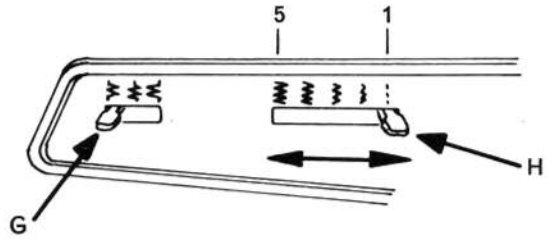


Fig. 41. Left Needle Position (Various Widths of Bight).

SETTING: Bight lever H at any desired setting between "1" and # 5 positions and position lever G over to extreme left, as shown in Fig. 41.

STITCHING: Zig-zag stitching produced at width desired up to maximum bight-the needle swinging from the extreme left toward the right.

Variations of this stitching are shown in Fig. 42.

Fig. 42.

Zig-zag stitch, various widths, right needle position

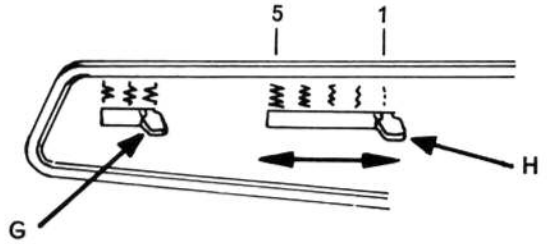


Fig. 43. Right Needle Position (Various Widths of Bight).

SETTING: Bight lever H at any desired position between "1" and # 5 positions and position lever G over to extreme right as shown in Fig. 43.

STITCHING: Zig-zag stitching produced at width desired up to maximum bight-the needle swinging from extreme right toward the left. Variations of this stitching are shown in Fig. 44.

Fig. 44.

To time pendulum movement of the needle bar (continued)

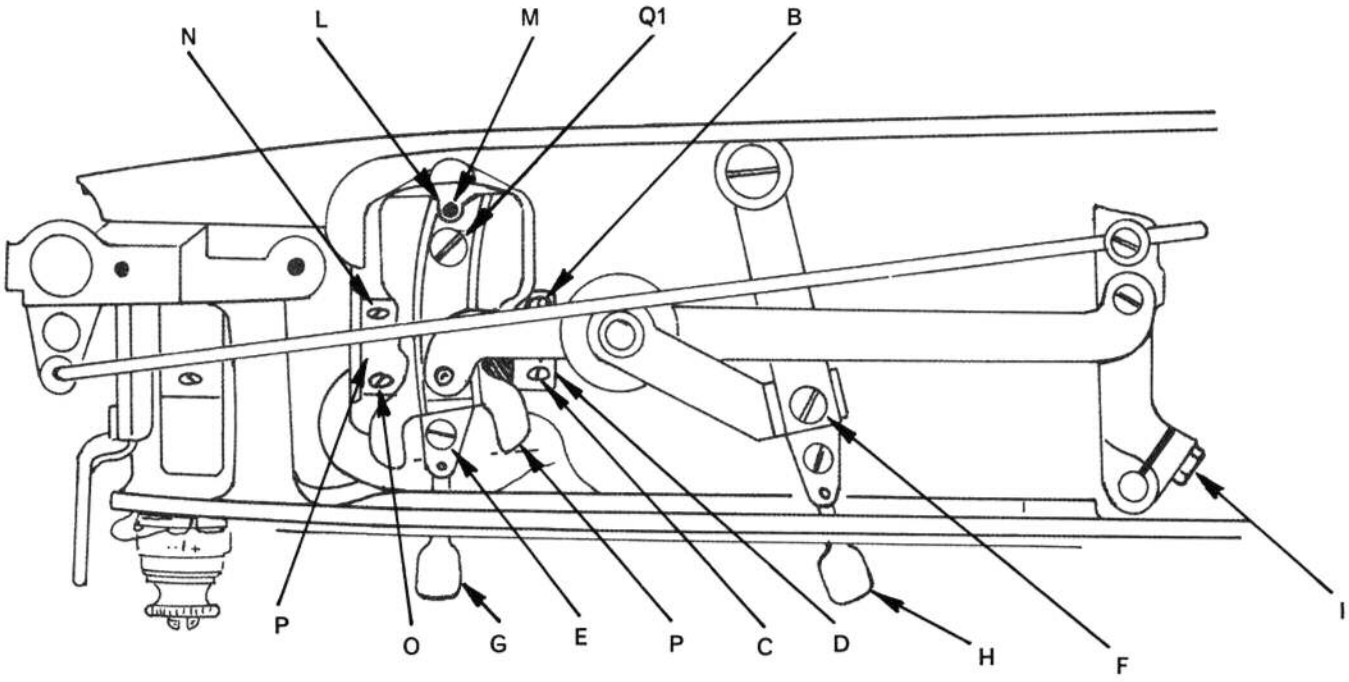


Fig. 45. Time Pendulum movement.

SETTING (See Fig. 45)

1. Set needle position lever at center and bight amplitude lever at straight stitching position (see C and 1 fig. 34 pag. 22).
2. Turn hand wheel toward you until worm set screw B and C are accessible from top of machine
3. Loosen worm gear set screw B and C.
4. Align hole on cam, M, with slot on cam follower, L.
5. Turn hand wheel slowly over toward you while preventing worm gear D from rotating by means of screw driver, until needle bar reaches its highest point.
6. Tighten set screw C.
7. Check for correct pendulum movement and if necessary re-adjust.
8. Securely tighten worm gear set screw B.
9. Replace arm top cover.

TO ELIMINATE END PLAY ON HORIZONTAL ARM SHAFT

PREPARATION:

Remove arm top cover and face plate.

ADJUSTMENT: (See fig. 35)

1. Loosen set screw N and O in collar P.
2. Push needle bar crank toward hand wheel end of machine while firmly pressing collar P against bushing in machine head. Then tighten set screws N and O.
3. Replace arm top cover and face plate.

To time pendulum movement of the needle bar (continued)

CHECK POSITION OF NEEDLE POSITION LEVER (See Fig. 45)

1. Set needle position lever G at center.
2. Turn hand wheel toward you until needle bar reaches its highest point and the hole on cam L, is perfectly aligned with slot on follower, M.
3. With machine set as at point I and 2 and moving the bight amplitude lever H back and forward through all length of its stroke, the needle should not move.

SETTING:

1. Loosen screw E.
2. While moving lever H as indicated above move cam follower P to the right or left until needle bar movement is eliminated.
3. Securely tighten screw E.

CHECK FOR STRAIGHT STITCH (See Fig. 45)

CHECK:

1. Set lever G to the center position.
2. Set lever H to the straight stitch position.
3. Turning hand wheel towards you the needle bar should not move.

SETTING:

1. Loosen screw F.
2. Move lever H to the maximum left without moving zig-zag mechanism.
3. Tighten screw F.
4. Move lever H to the maximum zig zag amplitude.
5. While turning hand wheel move lever H from left to right until needle bar completely stops.
6. Loosen screw F and without moving zig-zag mechanism bring lever H in straight stitch position seat.
7. Securely tighten screw F.
8. Check for no movement of needle bar frame straight stitch and if necessary, readjust.
9. Replace arm top cover, face plate and presser foot.

TO ELIMINATE PLAY BETWEEN NEEDLE BAR VIBRATING CAM AND GEAR, AND WORM GEAR

PREPARATION:

Remove arm top cover

ADJUSTMENT (see fig. 30 and 45 on page 20 and 25)

1. Loosen needle bar vibrating cam and gear eccentric stud set screw Q (fig. 30).
2. Turn needle bar vibrating cam and gear eccentric stud Q1 (Fig. 45) lightly to eliminate play, without binding.
3. Firmly tighten set screw Q.
4. Replace arm top cover.

WIRING DIAGRAM
FOR MACHINES FITTED WITH B.A. 60 MOTOR, CONTROLLER AND S-7 LIGHT

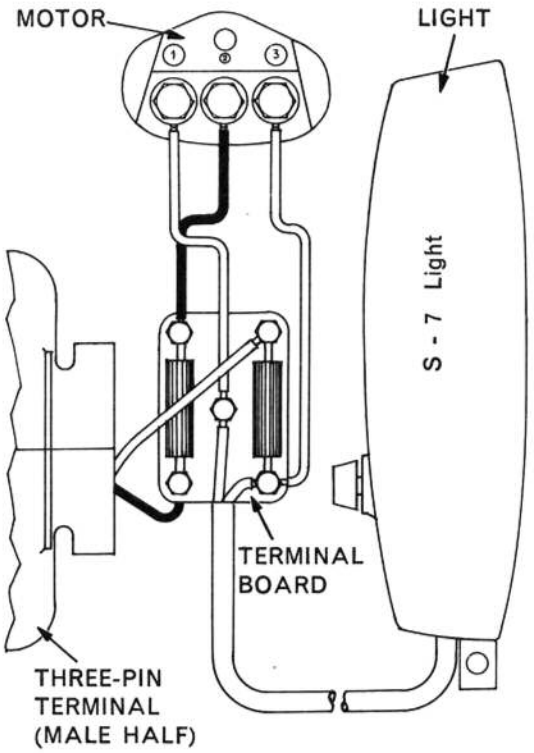


Fig. 46 B.A. 60 Motor Terminal Board Connection Guide.

WIRING DIAGRAM
FOR MACHINES FITTED WITH B.Z. 60 MOTOR, CONTROLLER AND S-7 LIGHT

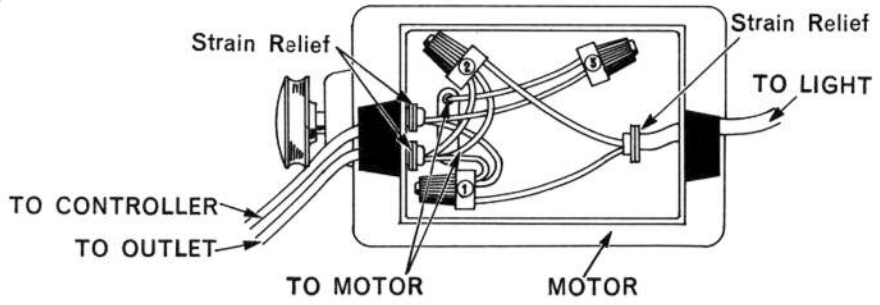


Fig. 47 B.Z. 60 Motor Terminal Connection Guide.

TO FIT COMPLETE MOTOR SET ON MACHINE

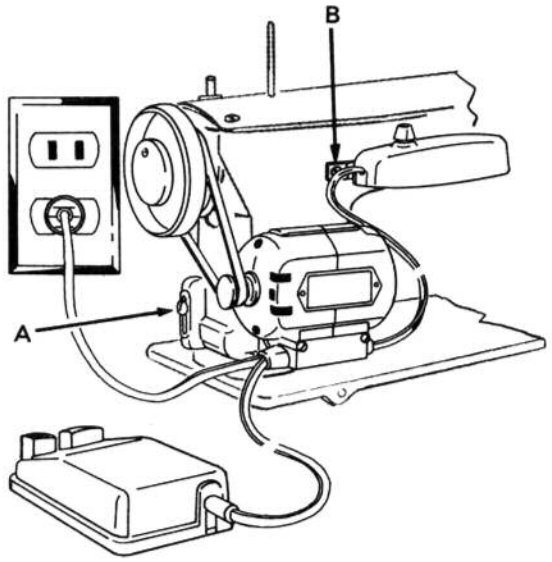


Fig. 48.

1. Place motor on machine arm motor bracket seat.
2. Assemble motor bracket screw A.
3. Assemble the belt and lower motor until belt reaches a reasonable tension (not too tight or too slack). Then tighten screw A.
4. Assemble light by inserting bracket in the proper seat on arm and clamp with screw B.
5. Place foot controller on floor under table, with foot pedal and foot rest in front the operator.

HINTS FOR ADJUSTERS AND MECHANICS

CHECK THESE POINTS WHEN A MACHINE BINDS

1. Sprung or cracked bed or arm incurred during transit.
2. Bent arm shaft.
3. Bent needle bar.
4. Bent take-up lever.
5. Thread take-up crank set too tightly.
6. Misalignment of thread take-up lever link hinge stud.
7. Insufficient thread clearance between heel of shuttle and shuttle driver.
8. Shuttle jammed with thread or fluff.
9. Binding or end play in oscillating shaft.
10. Feed dog striking end or rubbing on side of throat plate slot.
11. Feed lifting rock shaft, feed rock shaft and oscillating rock shaft centers too tight.
12. Feed bar centers too tight.
13. Bent feed fork.
14. Insufficient clearance between arm and clamp stop motion flanged bushing.
15. Burrs or damage to bearing surfaces.

TO "RUN-IN" THE MACHINE

When a machine is completely assembled and adjusted, it should be checked for binding. Lubricate the machine, as instructed on pages 3 and 4. Then "run-in" tho machine with an electric motor for from 5 to 10 minutes at a medium speed or until all moving parts run smoothly when machine is turned over by hand.

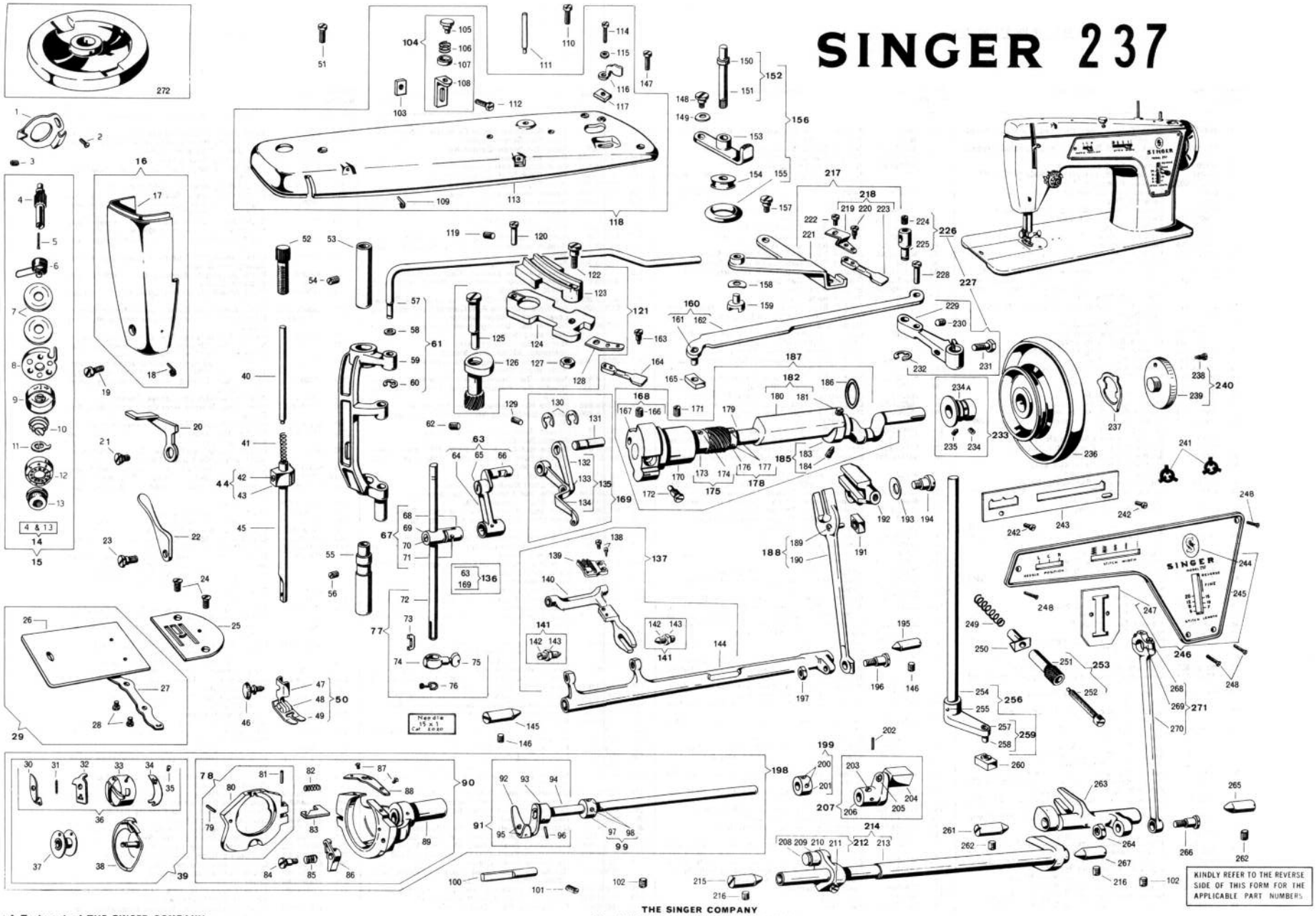
"Running-in" a machine should be done after every installation of an oscillating shaft, and after every general repair.

INDEX

MACHINE 237 Page

Adjustments

SINGER 237



List of Parts for 237 Machine

Illustn. Ref. No.	Part no.	Description
1	45863	Slack Thread Regulator and Tension Thread Guide
2	335/855	Slack Thread Regulator and Tension Thread Guide Screw
3	50150/832	Tension Stud Set Screw
4	109852	Tension Stud, complete, 109852 with 81480
5	173556/002	Tension Releasing Pin
6	66774	Thread Take-up spring
7	2102	Tension Disc
8	45343/852	Thread Take-up Spring Thread Guard
9	173669/616	Tension Indicator Flange
10	125314	Tension spring
11	45865/807	Tension Indicator Flange stop washer
12	173670/616	Tension Indicator
13	51682/852	Tension Regulating Thumb Nut, complete, 20316 with 45339
14	45352	Tension Stud, complete, 109852 with 51682
15	173671/616	Tension Graduated, complete, 109852 with 45343, 45865, 51682, 66774, 125314, 173669, 173670, 173556 and two 2102
16	352017/616	Face Plate, complete, 352016 with 352015
17	352015/616	Face Plate
18	352016/823	Face Plate Thread Guard
19	352104/852	Face Plate Clamping Screw
20	352032/833	Tension Releasing Lever
21	352113/809	Tension Releasing Lever Hinge screw
22	173796/851	Presser Bar Lifter
23	141055/809	Presser Bar Lifter Hinge Screw Stud
24	109864/851	Throat Plate Screw
25	352105/851	Throat Plate
26	125336/852	Shuttle Race Slide
27	2824/832	Shuttle Race Slide Spring
28	109843/809	Shuttle Race Slide Spring Screw
29	125338/852	Shuttle Race Slide, complete, 125336 with 2824 and two 109843
30	81419	Shuttle Bobbin Case Latch Lever
31	2975	Shuttle Bobbin Case Latch Spring
32	81418	Shuttle Bobbin Case Latch
33	81417/901	Shuttle Bobbin Case with 2136
34	15278	Shuttle Tension Spring
35	591/806	Shuttle Tension Regulating Screw
36	81417	Shuttle Bobbin Case, complete, 81417/901 with 591, 15278, 81418 and 2975
37	81348	Shuttle Bobbin (Plastic)
38	2515	Shuttle Body
39	352181	Shuttle complete, 2515 with 81417 and 81348
40	29691/819	Pressure Regulating Thumb Screw Extension Pin
41	170067	Presser Bar Spring
42	454/832	Presser Bar Guide Bracket Set Screw
43	3467/997	Presser Bar Guide Bracket
44	170065/650	Presser Bar Guide Bracket, complete, 3467 with 454
45	170063/832	Presser Bar
46	109850/832	Presser Foot Thumb Screw
47	32774/852	Presser Foot Shank
48	20308/997	Presser Foot Hinge Pin
49	352030/851	Presser Foot Plate
50	352031	Presser Foot Hinged complete, 352030 with 20308 and 32774
51	352180/851	Arm Top Cover Screw
52	352066/852	Pressure Regulating Thumb Screw
53	352033/853	Needle Bar vibrating Bracket Upper Hinge Stud (Bushing)
54	50150/832	Needle Bar vibrating Bracket Upper Hinge Stud Set Screw
55	352040/853	Needle Bar vibrating Bracket Lower Hinge Stud (Bushing)
56	50150/832	Needle Bar vibrating Bracket Lower Hinge Stud Set Screw
57	352035/819	Needle Bar Driving Arm
58	352036/833	Needle Bar Driving Arm washer
59	352038/809	Needle Bar vibrating Bracket
60	352037/833	Needle Bar Driving Arm Retaining Ring
61	352039	Needle Bar vibrating Bracket, complete, 352038 with 352035, 352036 and 352037
62	51045/832	Needle Bar vibrating cam and Gear Stud Set Screw
63	352209	Thread Take-up Crank, complete, 352206 with 352041 and 1130
64	352042	Needle Bar Connecting Link
65	1130/819	Thread Take-up Lever Link Cap Screw
66	352206/833	Thread Take-up Crank
67	352045	Needle Bar Connecting Stud, complete, 352044 with 454, 352046 and 352047
68	352046/803	Needle Bar Connecting Stud Shank
69	352044/833	Needle Bar Connecting Stud
70	454/832	Needle Bar Connecting Stud Set Screw
71	352047/830	Needle Bar Connecting Stud Hinge Pin
72	86820	Needle Bar with needle stop Pin 4625
73	86822/803	Needle Clamp Gib
74	86821/900	Needle Clamp Body, finish code 807
75	140575/851	Needle Clamp Thumb Screw
76	352130/810	Needle Bar Thread Guard
77	352131	Needle Bar complete, 86820 with 86821, 86822, 140545 and 352130
78	352075	Shuttle Race Gate, complete, 352074 with two 173794
79	173794	Shuttle Race Gate Position Pin (Rollod)
80	352074/701	Shuttle Race Gate
81	173794	Shuttle Race Gate Hinge Pin (Rolled)
82	501589	Shuttle Race Gate Hinge Spring
83	173881/832	Shuttle Race Gate Hinge
84	500075/002	Shuttle Race Gate Latch Hinge Screw
85	501591	Shuttle Race Gate Latch Hinge Screw Spring
86	352147/852	Shuttle Race Gate Latch (sintered metal)
87	662/833	Shuttle Race Cap Screw
88	352080/830	Shuttle Race Cap
89	352081/809	Shuttle Race Frame
90	352170	Shuttle Race Frame complete, 352075 with 501589, 173881, 50075, 501591, 352147, 352080, 352081 and two 662.
91	352079	Oscillating Shaft complete, 23486 with 352078, 125065, 173794 and two 51229
92	125065	Shuttle Driver Cushion Spring
93	23486/997	Shuttle Driver Complete, 23484 with 23485
94	352078	Oscillating Shaft
95	51229/803	Shuttle Driver Cushion Spring Set Screw
96	173794	Shuttle Driver Pin (Rolled)
97	352203	Oscillating Shaft Collar (face Plate End)
98	352204/832	Oscillating Shaft Collar Set Screw
99	352205	Oscillating Shaft Collar complete, 352110 with two 352177
100	352083/833	Shuttle Race Frame Guide Pin
101	51045/832	Shuttle Race Frame Guide Pin Clamping Screw
102	51045/832	Machine Hinge Connection Screw
103	507549/809	Bobbin winder Thread Tension Bracket Screw Nut
104	352021	Bobbin winder Thread Tension Bracked, complete, 352020 with 45915, 45847 and 22238
105	22238/856	Bobbin winder Thread Tension Rivet
106	45847	Bobbin winder Thread Tension Disc Spring
107	45915/852	Bobbin winder Thread Tension Disc
108	352020/852	Bobbin winder Thread Tension Bracket
109	352016/829	Arm Top Cover Thread Guard
110	352180/851	Arm Top Cover Set Screw
111	173571	Arm Spool Pin
112	185/851	Tension Bracket Screw
113	352118/616	Arm Top Cover
114	185/851	Bobbin winder Stop Latch Screw
115	35216/832	Bobbin winder Stop Latch Screw washer
116	352094/852	Bobbin winder Stop Latch
117	507549/809	Bobbin winder Stop Latch Screw Nut
118	352119	Arm Top Cover Complete, 352118 with 352016, 352021, 352164, 352094, two 507549 and two 185
119	50150/832	Needle Bar vibrating and Cam Gear position Plate Hinge Stud Set Screw
120	352050/803	Needle Var vibrating and cam Gear Position Plate Hinge Stud
121	352055	Needle Bar Driving Arm Slide Complete, 352191 with 352192, 352051, 352052, 352053, 352054 and 1520
122	352052/833	Needle Bar Driving Armslide Hinge Screw Stud
123	352051	Needle Bar Driving Arm Slide
124	352053	Needle Bar vibrating and cam Gear Position Plate
125	352192/803	Needle Bar vibrating cam and Gear Eccentric Stud
126	352191/803	Needle Bar vibrating cam and Gear
127	1520/809	Needle Bar Driving Arm Slide Stud Nut
128	352054/833	Needle Bar Position Lever Finger Grip Holder Spring
129	440/833	Thread Take-up Lever Link Hinge Stud Set Screw
130	90018/819	Thread Take-up Lever Link Hinge Stud Retaining Rings
131	113298/832	Thread Take-up Lever Link Hinge Stud
132	90017/833	Thread Take-up Lever Link
133	173553/819	Thread Take-up Lever Hinge Stud
134	23183/851	Thread Take-up Lever
135	90032	Thread Take-up Lever complete, 23183 with 90017 and 173553
136	352197	Thread Take-up complete, 90033 with 352043
137	352073	Feed Rock Shfat complete, 352071 with 352072, 125270, two 208 and two 15445
138	208/809	Feed Dog Screws
139	352072	Feed Dog
140	352071/809	Feed Bar
141	15445	Feed Bar Screw center Complete, 315 with 1519
142	315/832	Feed Bar Screw Center
143	1519/809	Feed Bar Screw Center Nut
144	125270/809	Feed Rock Shaft
145	125048/832	Feed Rock Shaft Center (Left)
146	51045/832	Feed Rock Shaft Center Set Screw
147	352180/851	Arm Top Cover Set Screw
148	352095/809	Bobbin winder Lever Hinge Screw
149	352026/830	Bobbin winder Lever Hinge Screw Friction washer
150	15072	Bobbin winder Position Pin
151	1920/994	Bobbin winder Spindle
152	1920/650	Bobbin winder Spindle with Position Pin 15072
153	352024/852	Bobbin winder Lever complete, 352022 with 352023
154	173770/701	Bobbin winder Pulley
155	15287/701	Bobbin winder Friction Ring (Rubber)
156	352025/852	Bobbin winder complete, 352024 with 1920, 173770 and 15287
157	352069/803	Bight Amplitude Control Lever Hinge Screw
158	21202/809	Needle Bar Driving Arm Connecting Regulating Lever slide Friction washer
159	352070/830	Needle Bar Driving Arm Connecting Lever Regulating Slide
160	352061	Needle Bar Driving Arm Connecting Lever complete, 352058 with 352059
161	352059/819	Needle Bar Driving Arm Connecting Lever Slide Block Stud
162	352058/819	Needle Bar Driving Arm Connecting Lever
163	140805/833	Needle Bar Position Lever Finger Grip Set Screw
164	352056/852	Needle Bar Position Lever Finger Grip
165	352060/806	Needle Bar Driving Arm Connecting Lever Slide Block
166	1036/833	Thread Take-up Cranck Set Screw
167	4889/914	Needle Bar Crank
168	173600/003	Needle Bar Crank complete, 4885 with 1036
169	90033	Thrzad Take-up complete, 90032 with 113298 and two 90018
170	352187	Arm Shaft Bushing
171	435/833	Arm Shaft Bushing Set Screw
172	140836/830	Needle Bar Crank Position Screw
173	507218/900	Arm Shaft Thrust Collar
174	453/830	Arm Shaft Trust Collar Clamping Screw
175	507218	Arm Shaft Trust Collar complete, 507218 with 453
176	507513/803	Arm Shaft Horizontal Driving vorm Gear
177	50150/832	Arm Shaft (Horizontal) Driving worm Gear Clamping Screw
178	507579	Arm Shaft Horizontal Driving worm Gear complete, 507513 with two 50150
179	352207	Arm Shaft (Horizontal)
180	4940/997	Arm Shaft Counter balance
181	1285/833	Arm Shaft Counter balance and Feed cam Position Screw
182	171509	Arm Shaft Counter balance Complete, 1285 with 4940
183	352194	Feed Cam
184	1285/833	Feed Cam position Screw
185	352195	Feed cam with 1285 and 352184
186	352184	Feed cam Elastic Ring
187	352208	Arm Shaft (Horizontal) complete, 173600 with 352207, 352187, 507579, 171509, 507218 and 352195
188	173756/002	Feed Forked Connection with 81459
189	81459/900	Feed Forked Connection Slide Block Stud
190	173756/903	Feed Forked Connection (finish code 809)
191	170046/806	Feed Forked Connection Slide Block
192	173890/809	Feed Regulator
193	125399	Feed Regulator Hinge Screw Friction washer
194	50353/809	Feed Regulator Hinge Screw
195	125049/832	Feed Rock Shaft Center (Right)
196	1381/832	Feed Forked Connection Hinge Screw
197	1520/809	Feed Forked Connection Hinge Screw Nut
198	352171	Shuttle Driver Complete, 352170 with 352111 and 352079
199	352205	Oscillating Shaft Collar (Hand wheel End) Complete, 352111 with two 352177
200	352204/832	Oscillating Shaft Collar Set Screw
201	352203	Oscillating Shaft Collar
202	173794	Oscillating Shaft Crank Pin (Rolled)
203	50150/832	Oscillating Shaft Crank Clamping Screw
204	352085/803	Oscillating Shaft Crank Slide Black
205	352086/819	Oscillating Shaft Crank Slide Block Stud
206	352087	Oscillating Shaft Crank
207	352088	Oscillating Shaft Crank complete, 352085 with 352086, 352087 and 50150
208	113292/819	Feed Lifting Rock Shaft Crank Roller Stud
209	113290/833	Feed Lifting Rock Shaft Crank Roller
210	1912/994	Feed Lifting Rock Shaft Crank
211	896/809	Feed Lifting Rock Shaft Crank Clamping Screw
212	173824/809	Feed Lifting Rock Shaft Crank complete, 1912 with 896 113292 and 113290
213	173821/809	Feed Lifting Rock Shaft
214	173822	Feed Lifting Rock Shaft complete, 173821 with 173824
215	125048/832	Feed Lifting Rock Shaft Center (Left)
216	51045/832	Feed Lifting Rock Shaft Centers Set Screws
217	352068	Bight Amplitude Control Leder Complete, 352064 with 352067 and 183130
218	352067	Bight Amplitude Control Lever Finger Grip complete, 352065 with 352056 and 140805
219	352065/833	Bight Amplitude Control Lever Finger Grip Holder Spring
220	183130/819	Bight Amplitude Control Finger Grip Aolder Spring sed Screw
221	352064	Bight Amplitude Control Lever 352062 with Bushing 352063
222	140805/833	Bight Amplitude Control Lever Finger Grip Set Screw
223	352056/852	Bight Amplitude Control Lever Finger Grip
224	50150/832	Needle Bar Driving Arm Connecting Stud Set Screw
225	352097	Needle Bar Driving Arm Connecting Stud
226	352098	Needle Bar Driving Arm Connecting Stud complete, 352097 with 50150
227	352102	Arm Shaft (Upright) Upper Bracked complete, 352098 with 352099, 352100, 352101 and 50150
228	352050	Needle Bar Driving Arm Connecting Lever Hinge Stud
229	352101	Arm Shaft (Upright) Upper Crank
230	50150/832	Needle Bar Driving Arm Connecting Stud Set Screw
231	352100	Arm Shaft Upper Crank Clamping Screw
232	352099/833	Needle Bar Driving Arm Connecting Stud Retaining Ring
233	90186	Clamp Stop Motion Flanged Bushing complete, 50311 with 140558 and 173817
234	50311/833	Clamp stop Motion Flanged Bushing Set Screw
234A	173817/001	Clamp stop Motion Flanged Bushing
235	140558/833	Clamp Stop Motion Flanged Bushing Set Screw
236	352029/616	Hand wheel
237	2020/832	Clamp stop Motion Clamp washer
238	248/851	Clamp stop Motion Clamp stop Screw
239	256/853	Clam stop Motion Clamp Screw
240	256/851	Clamp stop Motion Clamp Screw with 248/851
241	352182/830	Front Panel Retaining Rings
242	208/809	Bight Amplitude and Needle position control levers position Indicator Plate Screws
243	352057	Bight Amplitude and Needle Position Control Lever Position Indicator Plate
244	252174	Singer medallion
245	352125/632	Front Panel
246	352116/632	Front Panel (for U.S.A. - C.P.D.) complete, 352125 with 352179 and 352174
246	352117/632	Front Panel (for other countries) complete, 352125 with 352179 and 352174
247	352179/819	Stitch Indicator Seat Reinforcing Plate
248	352175/871	Front Panel Clamping Screws
249	352112/802	Feed Regulator Stitch Indicator Spring
250	352193	Feed Regulator Stitch Indicator
251	113144/855	Feed Regulator Thumb Nut
252	352027/819	Feed Regulator Thumb Nut Screw Stud
253	352088	Feed Regulator Thumb Nut Screw Stud complete 352027 with 113144
254	352091	Arm Shaft (Upright)
255	173794	Arm Shaft (Upright) Lower Cranke pin (Rolled)
256	352092	Arm Shaft (Upright) complete, 352090 with 352091 and 173794
257	352089	Arm Shaft (Upright) Lower Crank
258	81459/819	Arm Shaft (Upright) Lower Crank Slide Block Stud
259	352090	Arm Shaft (Upright) Lower Crank complete, 352089 with 81459
260	170046/806	Arm Shaft (Upright) Lower Crank Slide Block
261	125048/832	Oscillating Rock Shaft Center (Left)
262	51045/832	Oscillating Rock Shaft Centers Set Screws
263	352084/809	Oscillating Rock Shaft
264	1520/809	Crank Connecting Rod Hinge Screw Nut
265	125049/832	Feed Rock Shaft Center (Right)
266	141254/832	Crank Connecting Rod Hinge Screw
267	125049/832	Oscillating Rock Shaft Center (Right)
268	896/832	Crank Connecting Rod cap Screw
269	173894/901	Crank Connecting Rod cap
270	173894/900	Crank Connecting Rod
271	173894/651	Crank Connecting Rod complete, 173894/900 with 173894/901 and two 896
272	352167/616	Hand wheel (Universal) Hand Attachment, can also be used for Motor or Treadle