

## MACHINE MOUNTING FRAME INSTALLATION

On a suitable tableboard, place machine mounting frame (21393 N) in the machine cut-out with the hinge lugs to the rear (Fig. 1). Insert the countersunk wood screw through left hinge pad and tighten securely. Assemble bed positioning spring (63474 A) over right hinge pad; insert round head wood screw and tighten securely. Assemble the retaining plate (21393 R) to outside front of pan section, as shown, and snug up nuts lightly.

Place sewing head in the frame mounting, and after being sure there is about 1/16 inch (1.59 mm) clearance between the cloth plate edge and the frame sides, rap the retaining plate smartly upward with a hammer to insure a good grip on the underside of the board and tighten locking nuts securely.

Tip the machine back against the rest pin, and assemble the knee press assembly as shown. All end play of the cross shaft should be taken up by the cone bearings, but must not bind.

Before the machine is put into production, the bell crank (21665 J) of the knee lifter rod should be adjusted. The left stop screw (22597 F) should be set so that the maximum lift of the presser bar and its parts do not interfere with moving parts within the head. This may be done by setting the stop screw so that the presser bar rises approximately 5/16 inch (7.94 mm).

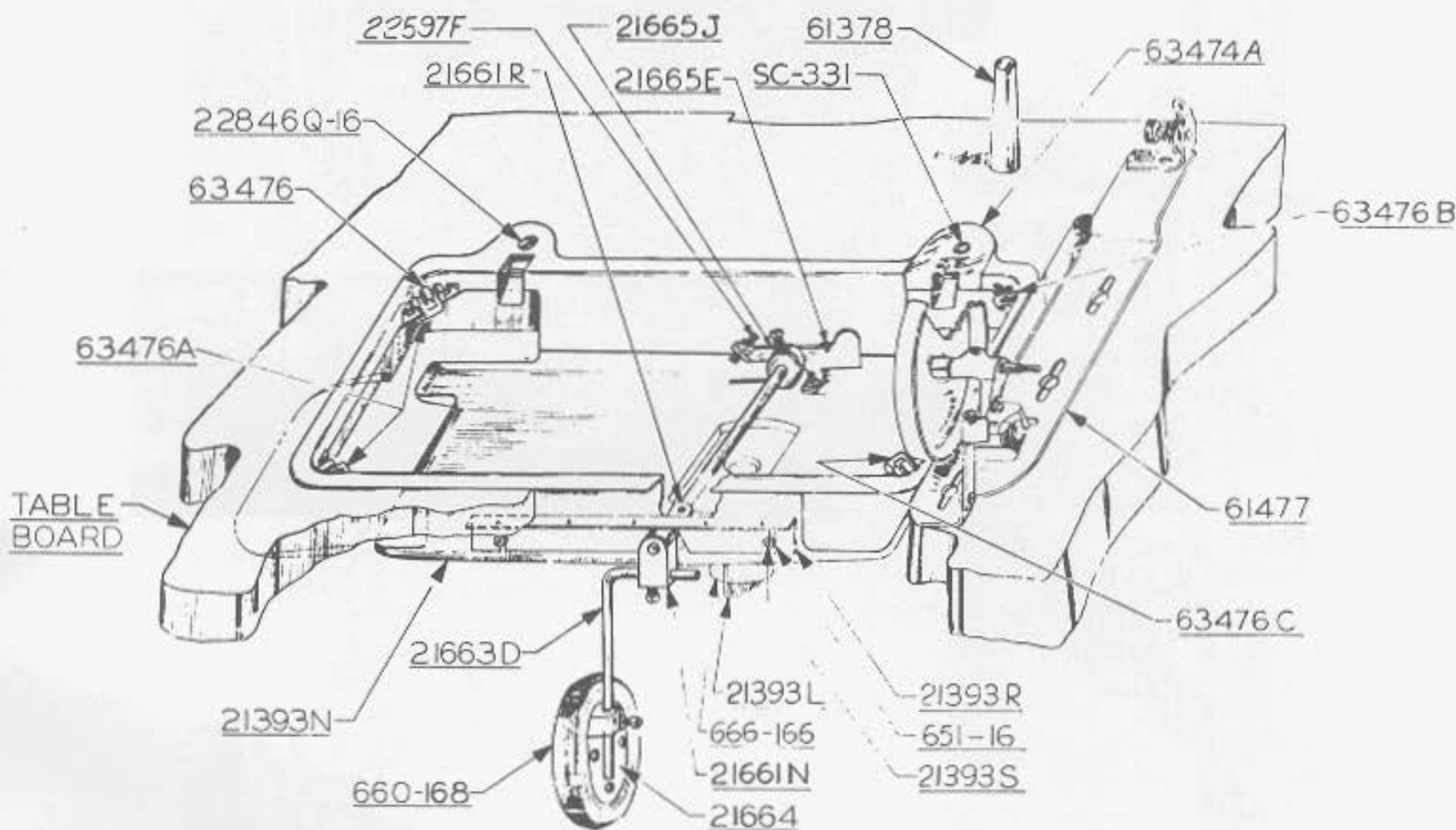


Fig. 1

Additional instructions for preparation of table frame for installation of Style 63400 KC will be found in the applicable section covering "Electro-Drive and Needle Positioner".



## PREPARATION OF TABLE FRAME FOR INSTALLATION

Using Fig. 1A as a guide, proceed as follows:

1. Attach the synchronizer bracket (63495 D) to the back of machine, using two (376 A) screws. The upper screw also to hold clamp (660-352) in position.
2. Attach synchronizer to adaptor of handwheel assembly using the two set screws.
3. Slide clamp (660-356) over synchronizer lead wire.
4. Attach clamp to synchronizer bracket using (J87 J) screw.
5. Wire leads with striped ends to switch box and attach switch box to right front leg of table frame.
6. Attach power pack to left rear leg of table frame using nuts and bolts provided. Drill holes in table leg if required.
7. Attach electro drive to underside of table board.
8. Secure electrical cable and leads to underside of tableboard and to table frame using clamps and screws provided. Connect cable to power pack, auxiliary drive, clutch arm switch and treadline or knee switch.
9. Connect leads from power pack to cutting solenoid (white leads) and tension release solenoid (green leads). Be sure to connect white to white and green to green.
10. Assemble relays as shown in Fig. 38.

## SYNCHRONIZER ADJUSTMENT

- (a) Rotate handwheel in operating direction until the needle clearance cut in the deflector plate (C, Fig. 12A) on the rotating hook assembly is in line with the needle on the up stroke of the needle bar.

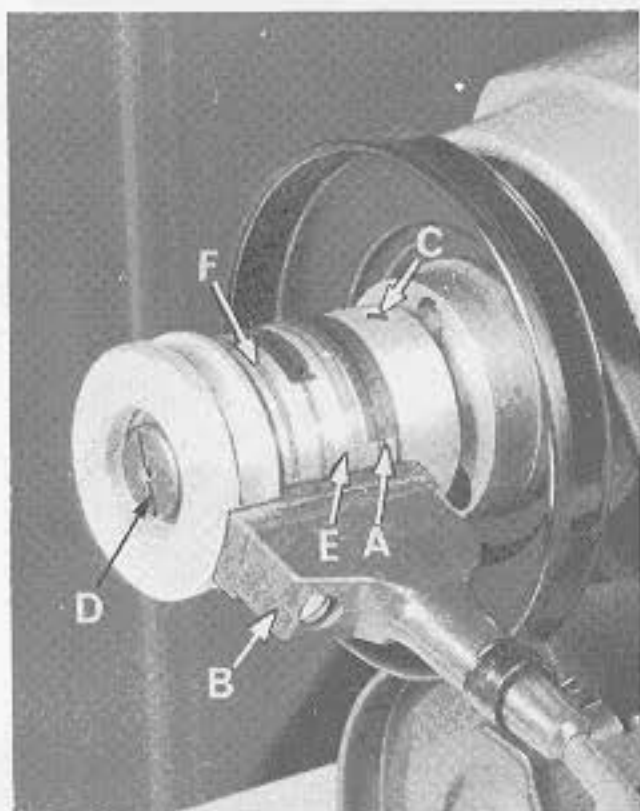


Fig. 33

- (b) At this time the brass contact of the left band (A, Fig. 33) should be flush with the front edge of the brush holder (B). To make this adjustment position needle bar and deflector plate as described in step (a), then loosen set screws (C) in synchronizer and move as required.
- (c) Down position should be a point at which the hook point has passed the center line of the needle by  $\frac{5}{64}$  of an inch (1.98 mm) "loop taking time". If not, with power off, rotate handwheel to this point. Then loosen screw (D) at end of synchronizer and rotate third band from left (E) in operating direction until its brush is in the middle of the black plastic band.
- (d) The needle positioner should position needle thread take-up at top of its stroke or  $\frac{1}{8}$  inch (3.18 mm) from the top of its up stroke. If not, with power off rotate handwheel in operating direction until it is at the top of its stroke.

Then loosen screw at end of synchronizer and rotate fourth band from left (F) until its brush is in the middle of the black plastic band. Turn on power and check the up and down positions of the needle bar.



## CLUTCH ARM SWITCH ADJUSTMENT

- (a) Set needle in work.
- (b) Adjust clutch arm spring (A, Fig. 34) so that treadle will return to stop (wing nut washer (B) is to be approximately 1/2 inch (12.70 mm) from end of stud).
- (c) Close treadline switch and loosen clutch lever switch adjusting screw (C), until there is no contact between it and the microswitch. Then tighten screw until needle positions up. Tighten nut (D) to maintain setting.

## ADJUSTING CLUTCH

- (a) Depress treadle unit until one click is heard, which indicates switch is open.
- (b) Adjust clutch so that clutch arm has approximately 1/16 to 1/8 inch (1.59 to 3.18 mm) travel before clutch is engaged. Loosen lock screw (E, Fig. 34) (where it says "Lock Motor") just enough to unlock it, which is approximately one full turn. Adjust screw located near the top on right end of motor, until clutch is engaged as described above. Tighten lock screw (E).

CAUTION! Clutch must not engage when clutch lever switch is closed or auxiliary motor running; one click must be heard before clutch is engaged.

## INSTALLATION OF INCHING SWITCH

When installing inching switch, (Amco No. M6665) be sure to remove jumper wire (A, Fig. 35) located between pin #2 and pin #3 on socket (B) before connecting the inching switch plug or it will not function properly.

Should the inching switch be removed at a later date, the jumper wire (A, Fig. 35) must be replaced or the needle positioning unit will not position up.

## PUSHBUTTON FUNCTION

If the pushbutton, which is mounted on the front edge of the table board, is depressed, the cutter band of the synchronizer is interrupted. Therefore, when the treadle is heeled while the pushbutton is depressed, the needle will position up without trimming. This enables the operator to readjust or realign the garment with the needle out of the work, but without having trimmed the threads.

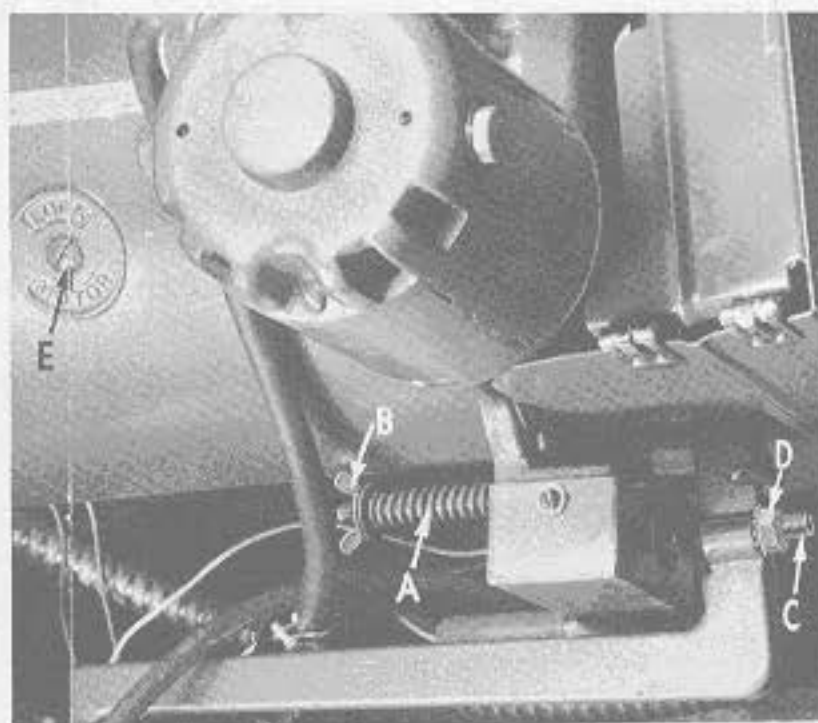


Fig. 34

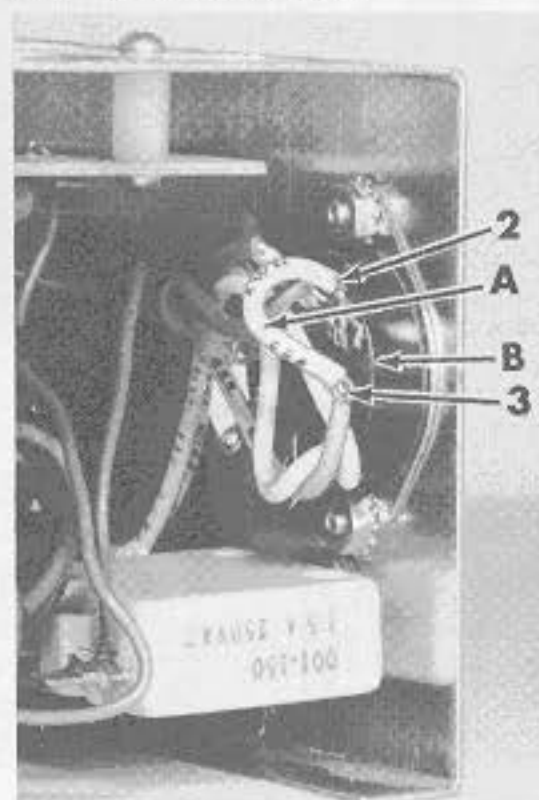


Fig. 35



## TREADLINE SWITCH ADJUSTMENT

To adjust the length of the pitman rod (A, Fig. 36) loosen the two Allen set screws in the back panel. Adjust rods as required and retighten screws. If more adjustment is necessary the cover must be removed and the three bushings inside the switch relocated to obtain the desired length.

If more or less pressure is required when heeling the treadle, the spring (B) can be compressed more or less accordingly by moving the pitman rod spring tension bushing (C) up or down.

If more travel is required in the treadle for actuating the trim cycle, the two bushings, micro-switch actuator (D) and stop bushing (E), must be lowered. Care should be taken so that only enough travel is provided to actuate the micro-switch. The roller on the switch should not be allowed to ride over the bevel on the micro-switch actuator bushing (D). This is accomplished by adjustment of the stop bushing (E).

## FUSING THE POWER PACK

The power pack incorporates a safety feature consisting of two (2) fuses and a circuit breaker. The 1 1/2 AMP circuit breaker (A, Fig. 37) located in the front panel fuses the auxiliary motor as well as the positioner circuit components. The 1 1/4 AMP slow blow fuse (A, Fig. 38) located on top of the chassis fuses the AC input for the primary winding of the transformer. The 5 AMP straight blow fuse (B, Fig. 37) located under the chassis, for the thread wiper solenoid (30 VDC), cutter solenoid and relay coil control circuit (24 VDC).

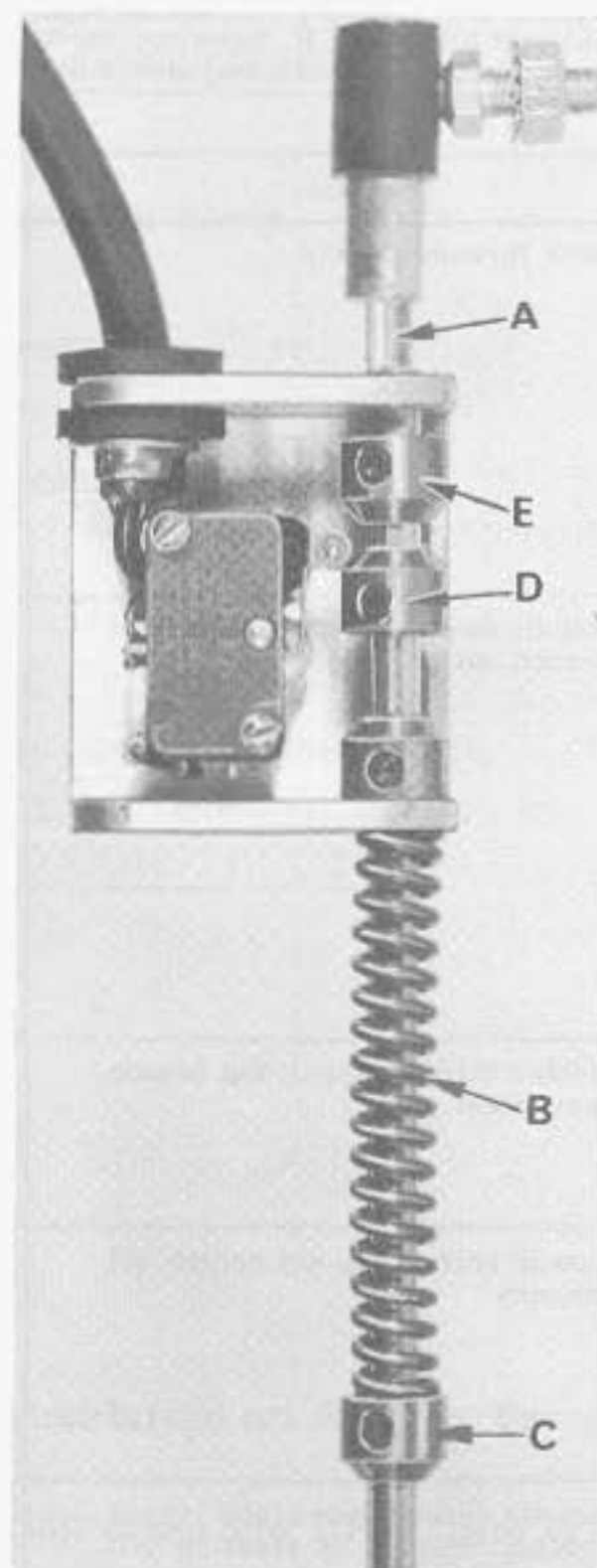


Fig. 36

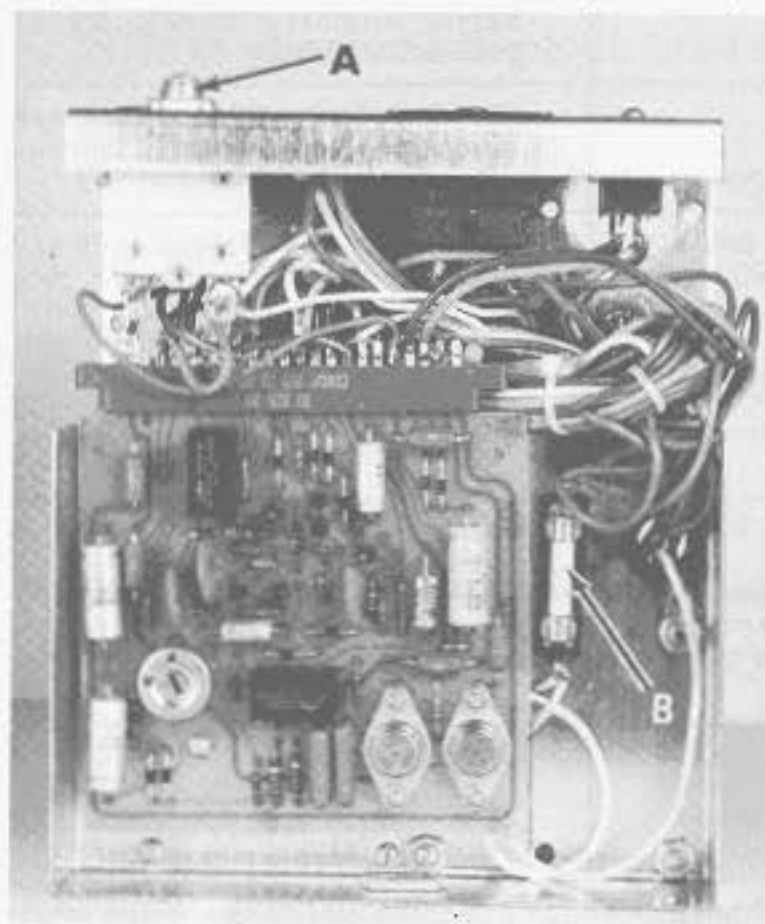


Fig. 37

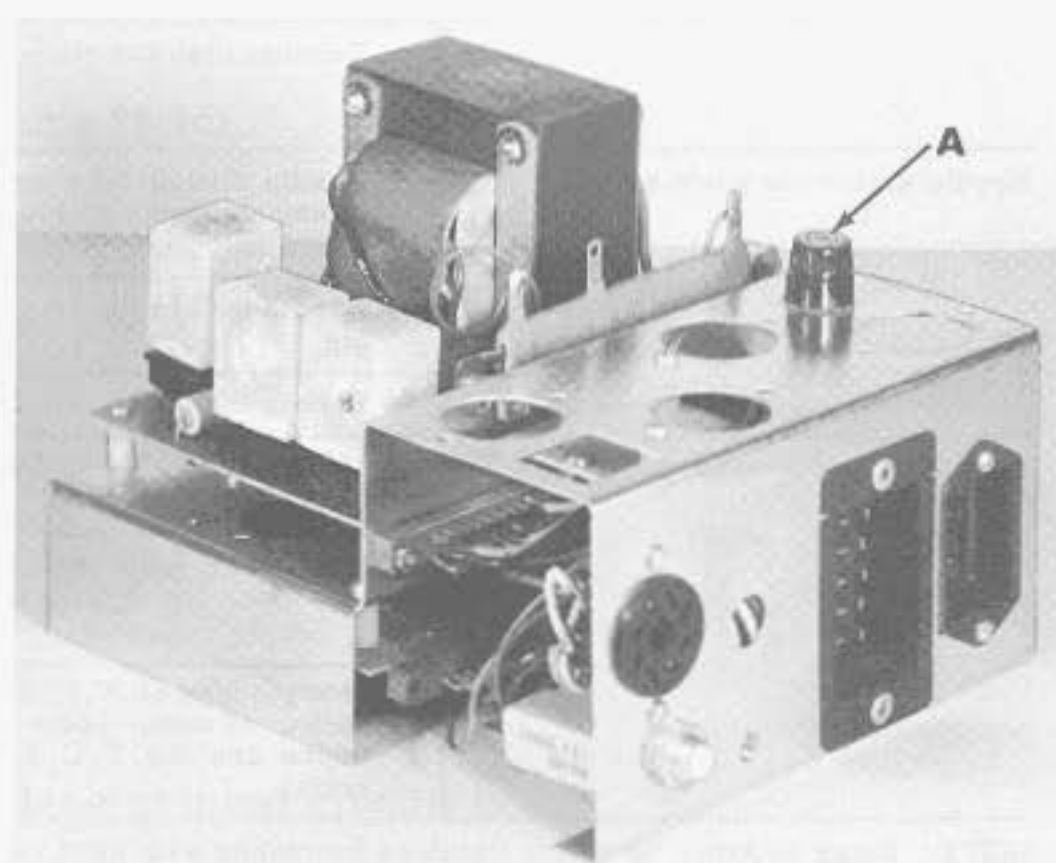


Fig. 38



Before this machine left the factory, it was adjusted and inspected so as to give the utmost satisfaction and durability at all times. If, however, the trimmer has been readjusted and is not trimming properly, see the chart below for suggestions which may prove beneficial to you.

#### TRIMMER TROUBLESHOOTING

Condition	Causes	Cures
Both threads not cut	Solenoid not working	Check lead connections Make continuity check
	Lower knife not moving far enough to the right	Reset stop screw
	Lower knife too far forward, wipes threads behind knife	Relocate knife. Check for nicks on radius
	Lower knife too far back, threads slip off when knife returns	Relocate knife
Needle thread not cut, but bobbin thread cut	Spring retainer wire not contacting bobbin case holder when in catching position	Bend spring retainer wire to suit.
	Lower knife does not move far enough to right	Adjust stop screw to standard setting. Check position of solenoid. Operate machine with belt off, to determine if solenoid pivot lever is contacting stop screw and then reposition solenoid if necessary
	Hook No. 29474 R or S used	Use only No. 29474 T hook
Bobbin thread not cut, but needle thread cut	Bobbin thread not threaded thru in bobbin case	Thread properly
	Needle hole in throat plate is too big or has been altered	Use throat plate with smaller needle hole, if available
Lower knife does not return all the way	Not enough tension on lower knife return spring. Dense material and rough thread will require more tension on knife return spring	Increase tension on lower knife return spring by moving bracket to the right
	Lower knife rubbing hook point	Raise lower knife
Needle thread tears and leaves random lengths of starting tail	Too much knife return spring tension and excessive friction in needle thread eyelets and in thread pull-off at cone	Unthread some of the eyelets to the right of the tension post. Decrease tension on knife return spring slightly. Check thread pull-off at cones
	Tension disc not open	Check setting of tension release solenoid and electrical operation of this solenoid
Needle unthreads when starting	Needle thread take-up not positioned properly at top of stroke	Check position of needle thread take-up. Must be within 1/8 inch of the top of its upstroke
	Needle hole in throat plate is too big	Use throat plate with smaller needle hole, if available
	Bobbin thread too short	See bobbin thread breaks
Bobbin thread breaks	Overspin on bobbin thread	Check wind of bobbin and fit of bobbin in bobbin case holder
	Too much knife return spring tension	Decrease tension on knife return spring slightly, by moving bracket to the left
	Sharp edges on T.C.S. of lower knife. (Front, point and back edges are the T.C.S. of lower knife)	Stone sharp edges of T.C.S. of lower knife. (Front, point and back edges are the T.C.S. of lower knife)

NOTE: Refer to Amco or Quick Catalogs furnished with each needle positioner for guardian maintenance and other information regarding the needle positioner and electrical circuitry.



TYPICAL NEEDLE POSITIONER PROBLEMS  
FOR UNITS WITH PRINTED CIRCUIT BOARD CONSTRUCTION

1. Unit does not position.
2. Unit positions up in second position, but does not position down.
3. Unit trips circuit breaker.
4. Unit trips the circuit breaker every few hours or every few days.
5. Unit keeps on stitching at an inching speed.
6. Auxiliary motor runs while clutch is engaged with main motor.
7. Unit positions slowly.
8. Auxiliary motor runs very hot.
9. Unit trips circuit breaker after positioning one time.
10. Auxiliary motor will not turn over although you know power is feeding it.

TYPICAL NEEDLE POSITIONER SOLUTIONS  
FOR UNITS WITH PRINTED CIRCUIT BOARD CONSTRUCTION

1. Check the following:
  - Circuit breaker
  - Synchronizer jack and brushes
  - Treadle jack
  - Input power
  - Auxiliary motor brushes and armature
  - Loose connection (check soldered connections)
  - Printed Circuit Board (Check for loose connection or oxidation on Plug in Terminal End).
2. The treadle switch is not opening. The unit will position down the first time after the power is turned off and then back on again.
3. SCR is shorted. Replace board.
4. Check the following:
  - Grounded armature (tie bolt touching field).
  - Oil saturated armature.
  - Field deteriorated. Replace.
  - Operator fluttering treadle excessively.
5. Check the following:
  - Synchronizer male and female jacks. Clean synchronizer.
  - Brush location on synchronizer.
  - Damaged field coil in auxiliary motor.
  - Synchronizer loose on handwheel.
  - Very loose V-belt.
  - Defective brake SCR circuit. Replace printed circuit board.

6. Treadle switch is not opening, or is defective.
7. Armature has poor commutation or is partially shorted and dirty. (Use armature dressing stone).
8. Check the following:
  - Setting of treadle switch.
  - Operator fluttering the treadle.
  - Grounded field coil (tie bolt), or defective field coil. Replace field.
  - Brake gear seized on hub. Replace with new gear and brake assembly, Part No. 9855.

Check operation. Sometimes it is possible to remove the down position brush on two position units, thereby using the positioner to only raise the Needle at the end of the operation. This will greatly prolong life and minimize maintenance.

9. Check the following:
  - Lead rubbing in armature.
  - Brush holder jammed against armature.
10. Check the following:
  - Armature brushes and brush holder.

#### Voltage Adjustment

The Chassis is Equipped With A Dual Value Power Resistor (See Figure (39)).

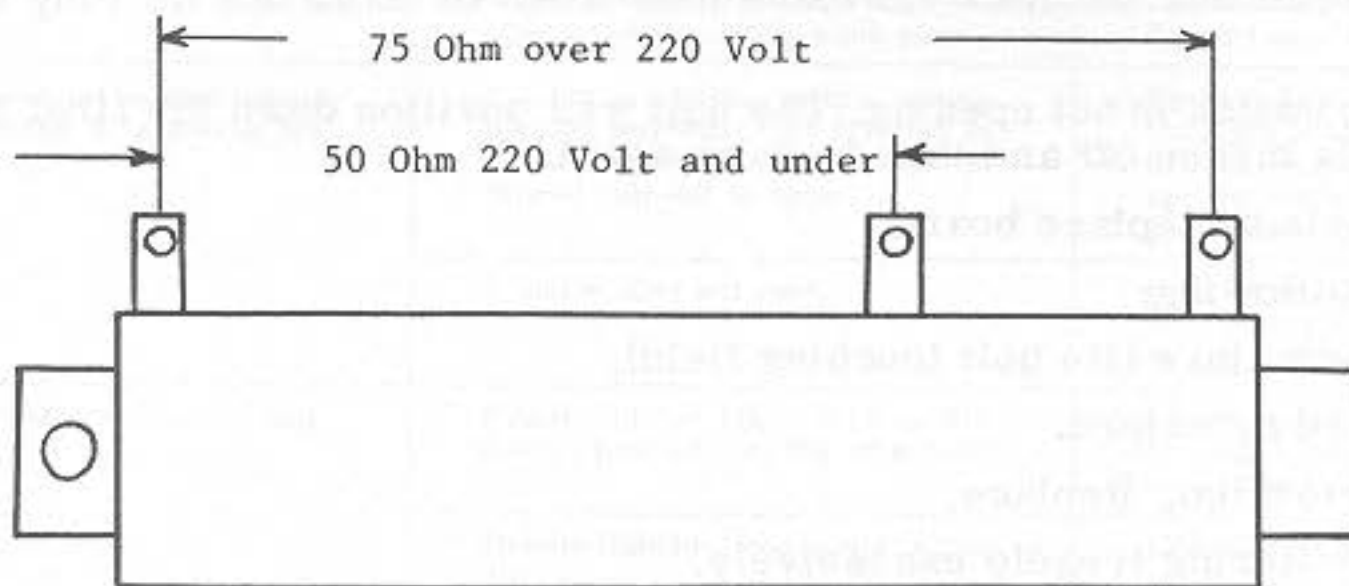
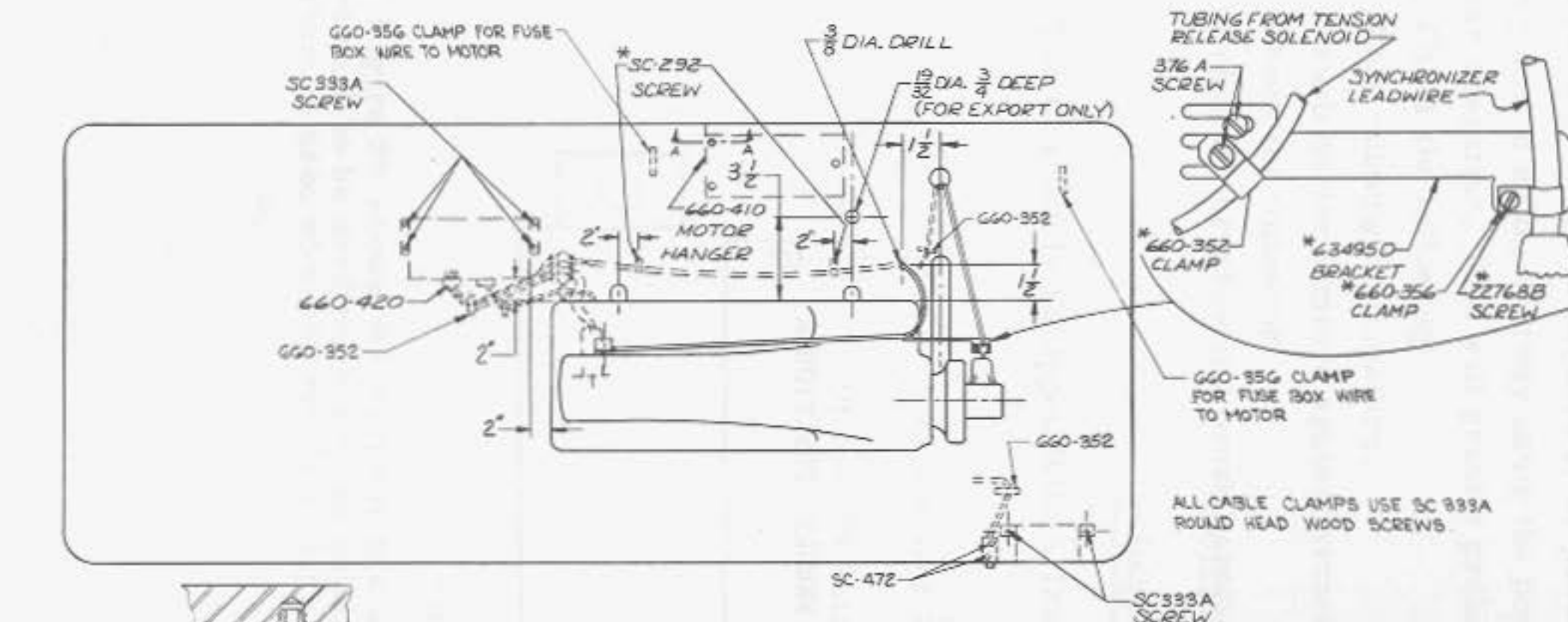


Fig. 39

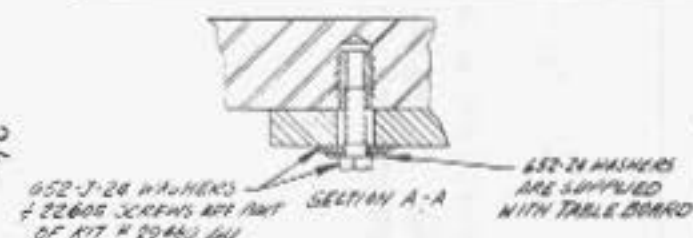
As Figure 39 shows the resistor has a value of 50 ohm and 75 ohm. The 50 ohm portion is to be used when the line voltage is 220 volts or lower, second the 75 ohm portion is used when the supply voltage is above 220 volts.





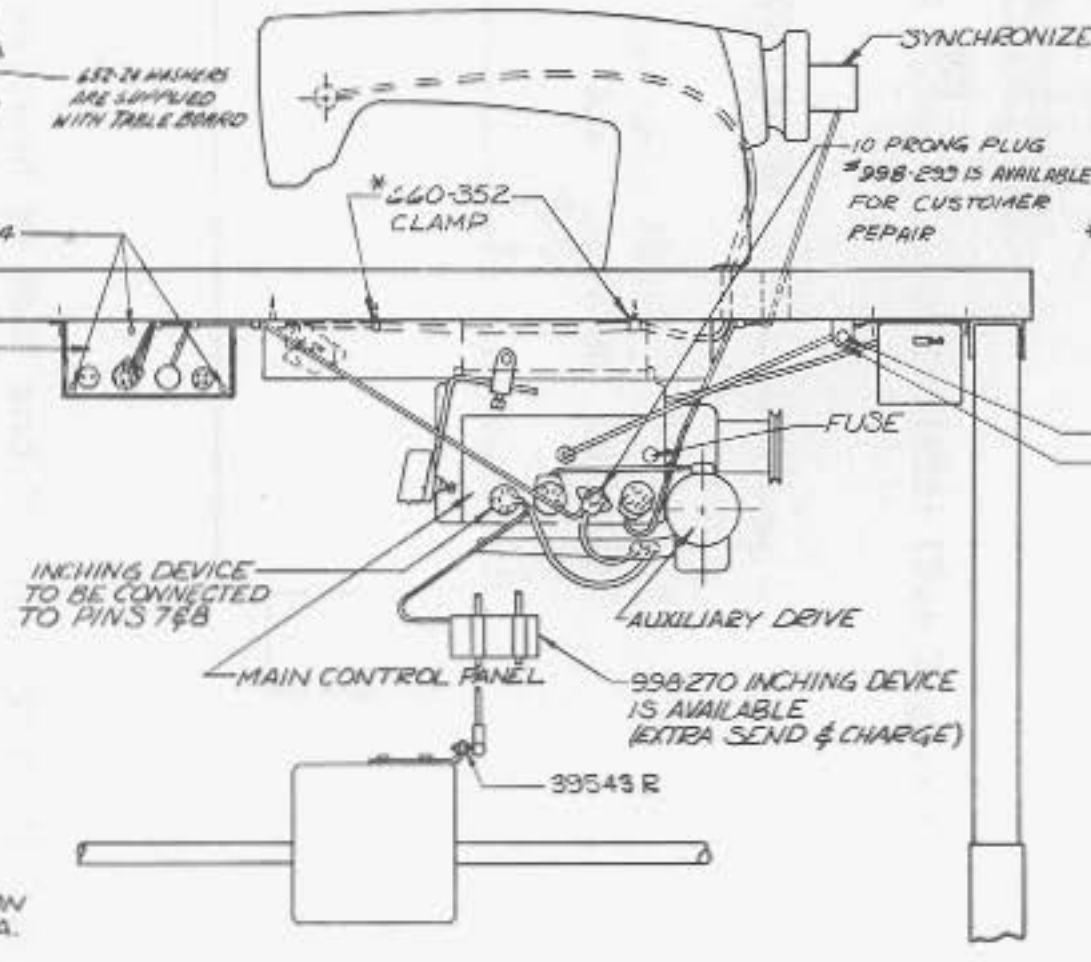
- INSTALLATION PROCEDURE**
1. INSTALL THE QUICK-STOP MOTOR AND AUXILIARY CONTROL BOX AS INDICATED.
  2. PLACE MACHINE IN THE TABLEBOARD AFTER INSTALLING THE ACCESSORIES ACCORDING TO THE INSTRUCTIONS FURNISHED WITH THE MACHINE.
  3. AFTER SECURING THE SYNCHRONIZER TO THE HAND WHEEL AND TIMING IT ACCORDING TO THE ADJUSTING INSTRUCTIONS, MAKE THE FOLLOWING TWO ELECTRICAL CONNECTIONS.
    - a) TAKE THE FOUR PRONG PLUG ATTACHED TO THE END OF THE SYNCHRONIZER WIRE AND PLUG IT INTO THE FOUR HOLE RECEPTACLE IN THE MOTOR PANEL.
    - b) RUN THE TENSION RELEASE SOLENOID WIRES TO THE UNDERSIDE OF THE BOARD THROUGH THE 3/8 DIA. HOLE, ATTACH THE TWO GREEN AND THE TWO WHITE (CLEAR) SLEEVED WIRES FROM THE TWO SOLENOIDS TO THE 660-420 HARNESS AS INDICATED (GREEN TO GREEN & WHITE TO WHITE) AND PLACE THE PLUG INTO THE SIX HOLE RECEPTACLE IN THE AUXILIARY CONTROL BOX.

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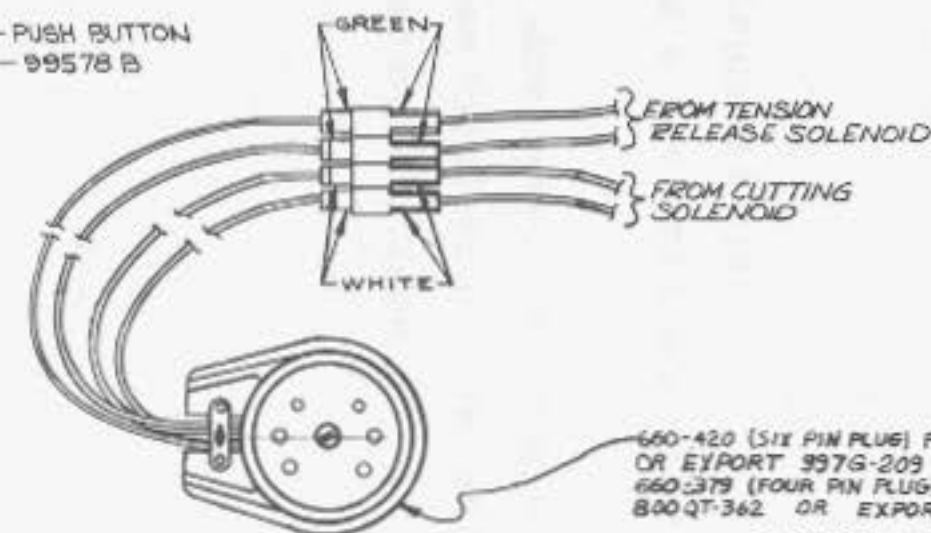
958-251  
NOTE: AUXILIARY CONTROL PANEL, WITHOUT MOUNTING BOX, \* 998-298 IS AVAILABLE FOR CUSTOMER REPAIR.

UNION SPECIAL CORPORATION  
CHICAGO, ILLINOIS, 60610, U.S.A.



THIS PLANOGRAPH SHOWS DIMENSIONS FOR DRILLED HOLES AND INSTALLATIONS OF COMPONENT PARTS ON QUICK-STOP NEEDLE POSITIONER, 4 KLIPP-IT THREAD TRIMMER CIRCUITRY - N# 800ST-362 FOR A 63400 OR 63900 MACHINE. \* INDICATES PARTS INCLUDED IN PACKING BOX.

CAUTION NOTE: CHECK SETTING OF SYNCHRONIZER SLIPRINGS AS PER ADJUSTING INSTRUCTIONS.



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## SYNCHRONIZER ADJUSTMENTS

The synchronizer is composed of three slip rings and four carbon brushes. The hub, band (A, Fig. 40) is fixed on the synchronizer and controls the "cutting mechanism". Band (B) is adjustable by means of screw (C) and controls the "needle-up" position. Band (D) is also adjustable by means of screw (C) and controls the "needle-down" position.

### SETTING THE SYNCHRONIZER

Assemble the brush holder and bracket to the machine as shown in Fig. 1B and the synchronizer to the handwheel adapter. Do not tighten screws (E, Fig. 40) in the synchronizer hub, band (A) at this time. Loosen screw (C) so that bands (B and D) may be moved freely.

NOTE: The following settings should be made with the motor switch turned off, needle on the downstroke, with the hook point at 9:00 o'clock.

Figure 41 is provided to show dimensional relationships for setting the bands of the synchronizer. A plastic rule may be used for making these settings as compared to the sketch in Fig. 41. Visualize from the operator's position while seated at the machine, placing the top edge of sketch (Fig. 41) over the top of the bands until contact is made FLUSH with the edge of the brushes (NOT THE BRUSH HOLDER) and proceed as follows;

Rotate hub, band (A, Fig. 40) of the synchronizer in the operating direction until the LEADING EDGE of its CONDUCTING segment aligns with ("A-1", Fig. 41) 1 7/8 inches (47.62 mm). Secure the synchronizer to the handwheel adapter in this position by screws (E).

Rotate band (B, Fig. 40) in the operating direction until the LEADING EDGE of its NON-CONDUCTING segment aligns with ("B-1", Fig. 41) 7/16 inch (11.11 mm). WHILE HOLDING BAND (B) IN THIS POSITION, rotate band (D) in the operating direction until the TRAILING EDGE of its NON-CONDUCTING segment aligns with ("C-1", Fig. 41) 3 5/16 inches (84.14 mm).

WHILE HOLDING BANDS (B and D) IN THIS POSITION, tighten screw (C) securely.

With bands (A, B and D) set to their respective positions, the relationship between the "cutting mechanism", "needle-up" position and the "needle-down" position has now been acquired.

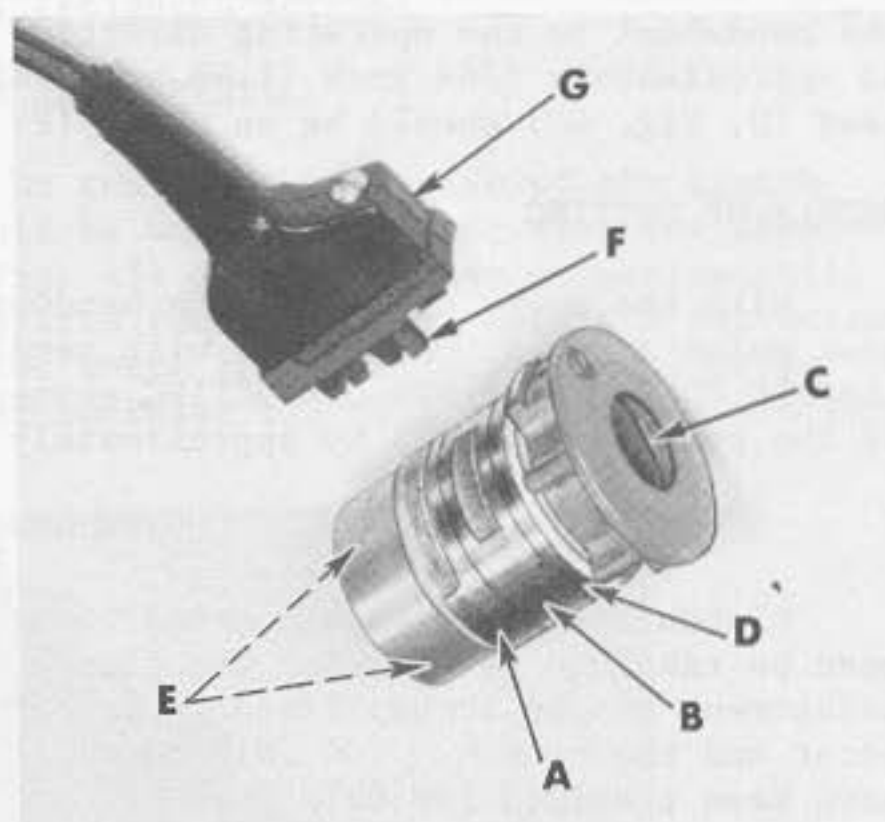


Fig. 40

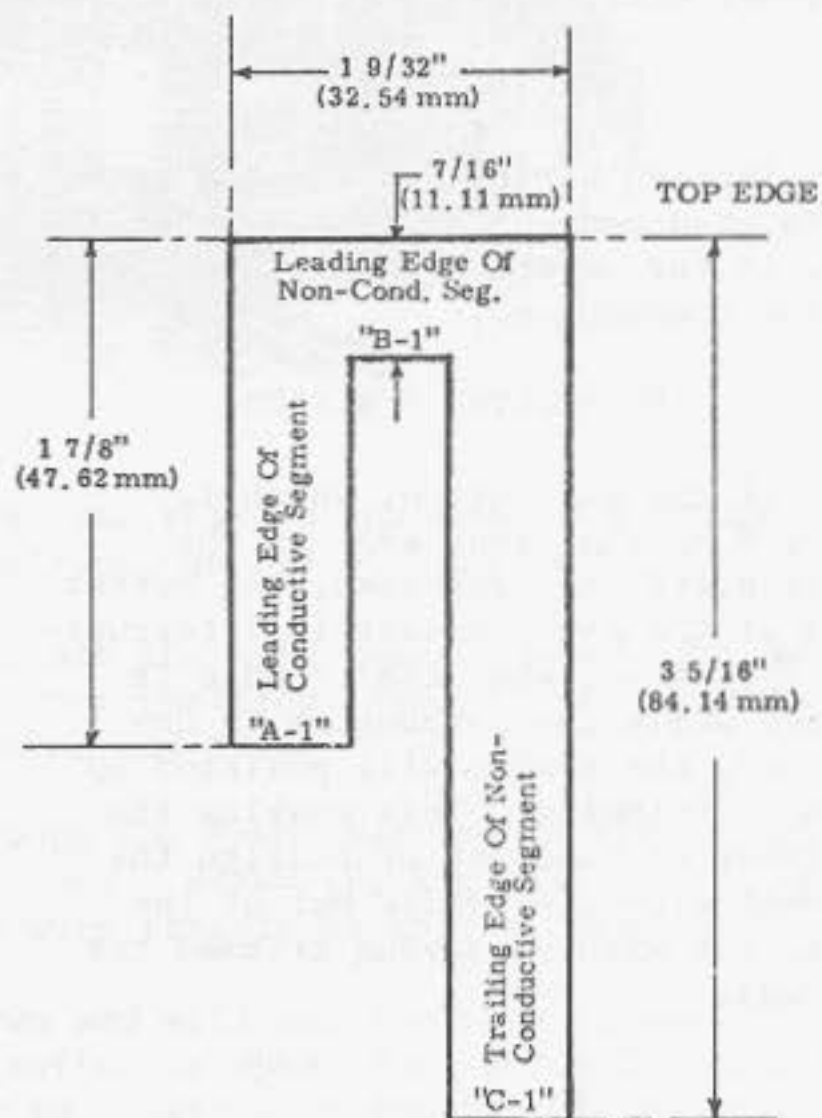


Fig. 41



## SETTING THE SYNCHRONIZER (Continued)

Each of the settings can be checked as follows:

### NEEDLE-DOWN SETTING

With the power off, remove the throat plate and turn the handwheel in the operating direction until the needle has reached its lowest position; continue to turn the handwheel in the operating direction until the hook point has passed the needle by approximately  $5/64$  inch (1.98 mm). At this point, the NON-CONDUCTING segment of band (D, Fig. 40) should be on brush (F).

### NEEDLE-UP SETTING

With the power off, turn the handwheel in the operating direction until the hook point is at 9:00 o'clock, with needle on its downstroke. At this point, the LEADING EDGE of the NON-CONDUCTING segment of band (B) should have passed the top of the brush holder (G) by approximately  $1/4$  inch (6.35 mm).

### CLUTCH ADJUSTMENTS

Clutch free play should normally be .020 - .028 inch (.508 - .711 mm), but care must be taken to assure that the clutch is never engaged at any time with the brake. Adjustment can be accomplished by removing spacers as required, located between the motor and the clutch. Two .012 inch (.305 mm) and one .020 inch (.508 mm) spacers have been provided for this purpose.

If the clutch arm is in braking position, the "V" belt pulley must be braked firmly. When lifting the clutch arm, a position at which the "V" belt pulley can be rotated freely without the clutch or brake engaging must be obtained. If the clutch arm is lifted in excess of .010 inch (.254 mm), the clutch disc should engage the flywheel disc, which is clearly recognizable when turning the "V" belt pulley.

### INCHING SWITCH

Inching Device No. 998-270 is an extra send and charge item. Refer to Fig. 1B for location and Fig. 42 for wiring connections.

### PUSHBUTTON FUNCTION

If the pushbutton, which is mounted on the front edge of the table board, is depressed, the cutter band of the synchronizer is interrupted. Therefore, when the treadle is heeled while the pushbutton is depressed, the needle will position up without trimming. This enables the operator to readjust or realign the garment with the needle out of the work, but without having trimmed the threads.

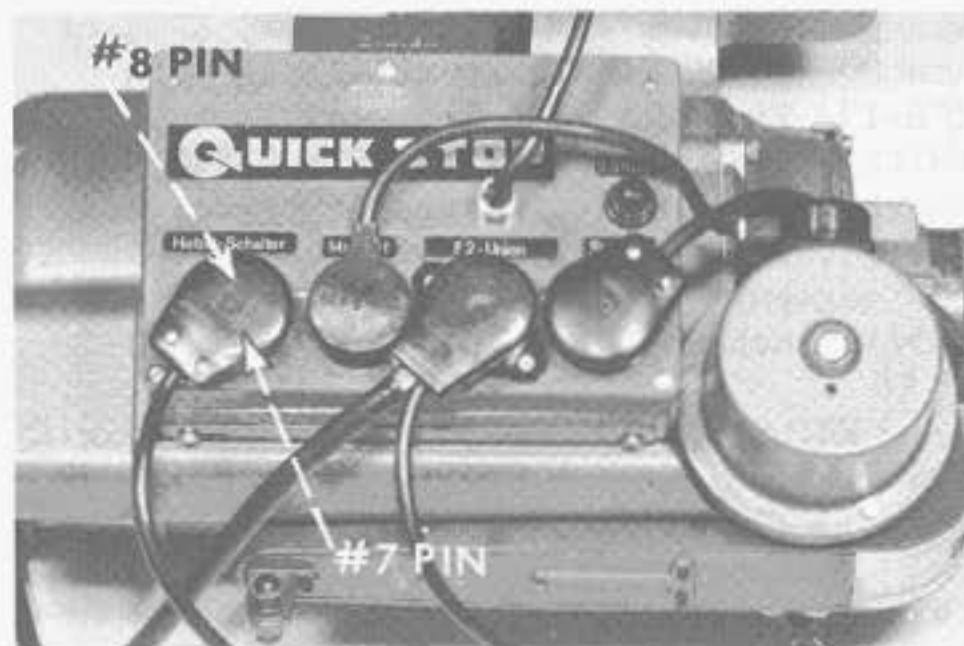


Fig. 42



## MOTOR AND CLUTCH ARM ADJUSTMENTS

Before starting to operate, check the main supply voltage with the motor wiring. The terminal strip of the motor is designed to accommodate connection for 220 volts, three phase A.C. See Quick Stop catalog.

The clutch arm should point in the direction of the pitman rod, when possible. This can be accomplished by loosening the three socket head screws on the motor plate, reposition the clutch arm as required, retighten screws.

## CLUTCH AND MICRO SWITCH ADJUSTMENTS

Adjustment of the micro switch, located on the right hand side of the clutch arm, which actuates the magnetic clutch, should be made as follows; with the treadle in "rest position". Turn the set screw (A, Fig. 43) in a clockwise direction until the switch closes and the auxiliary control starts running. Now, turn the set screw in a counterclockwise direction to the position where the auxiliary control stops running. Continue to turn the set screw counterclockwise 1/2 to 1 complete revolution to obtain the correct setting of the switch.

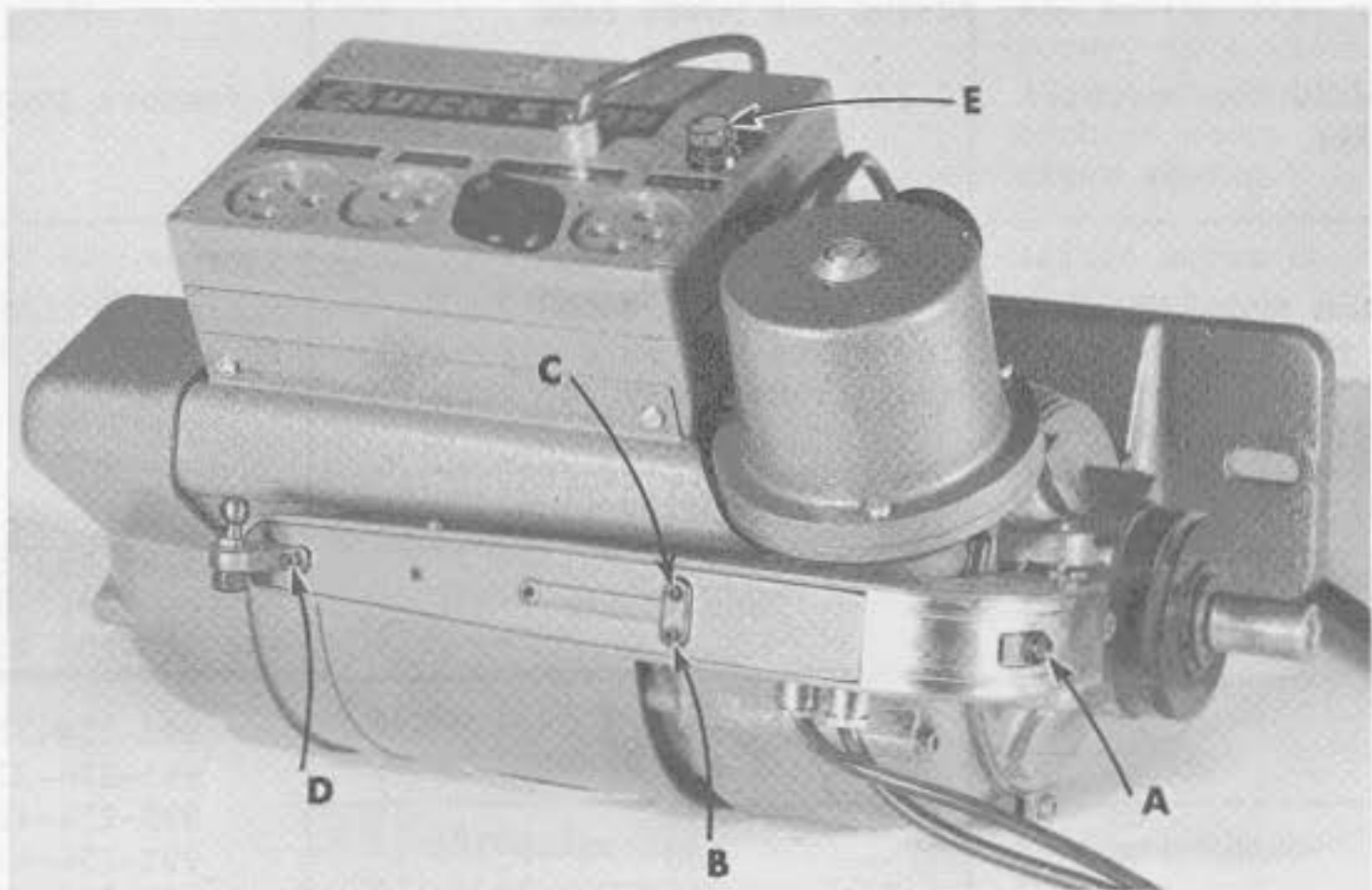


Fig. 43

Adjustment of the micro switch, located to the rear on the underside of the clutch arm, which actuates the up and trim position, should be made as follows:

Be sure that all connections are plugged into the main control panel. Run machine a short distance and stop with treadle in rest position. Needle should position down. Heel treadle and needle should position up and trim.

However, if the needle travels right through the down position to the up and trim position, this indicates micro switch is open. Screw (B, Fig. 43) should be turned clockwise until micro switch is closed when treadle is in rest position.

However, if the needle only positions down and will not position up and trim when treadle is heeled, this indicates micro switch is open. Turn screw (B) counterclockwise to the point where the micro switch is closed when the treadle is in the rest position, and open when the treadle is heeled.



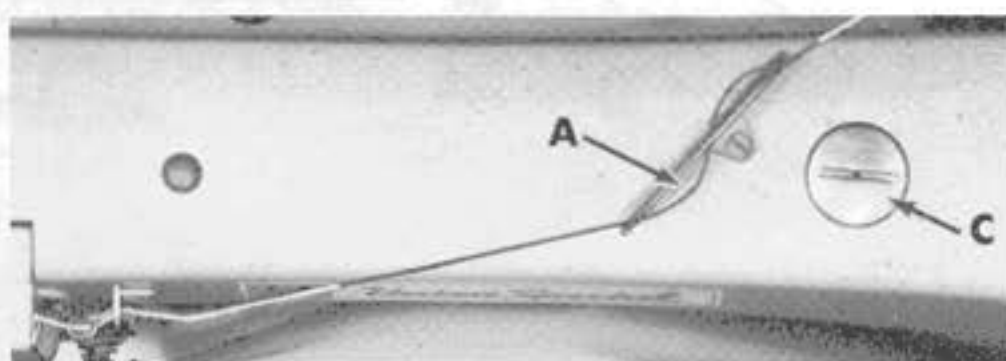
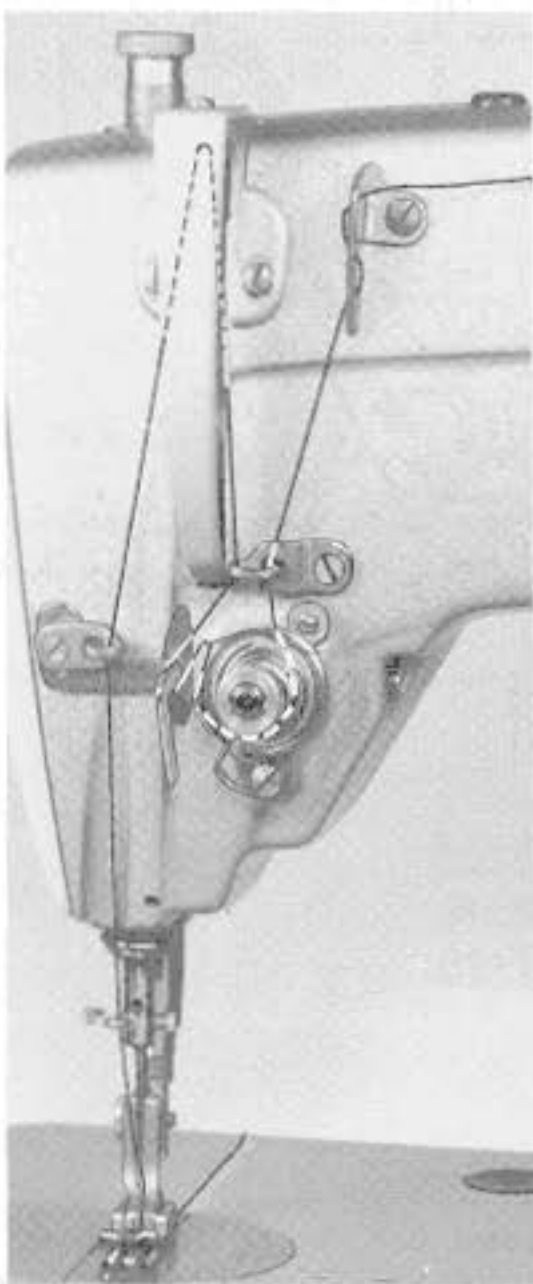
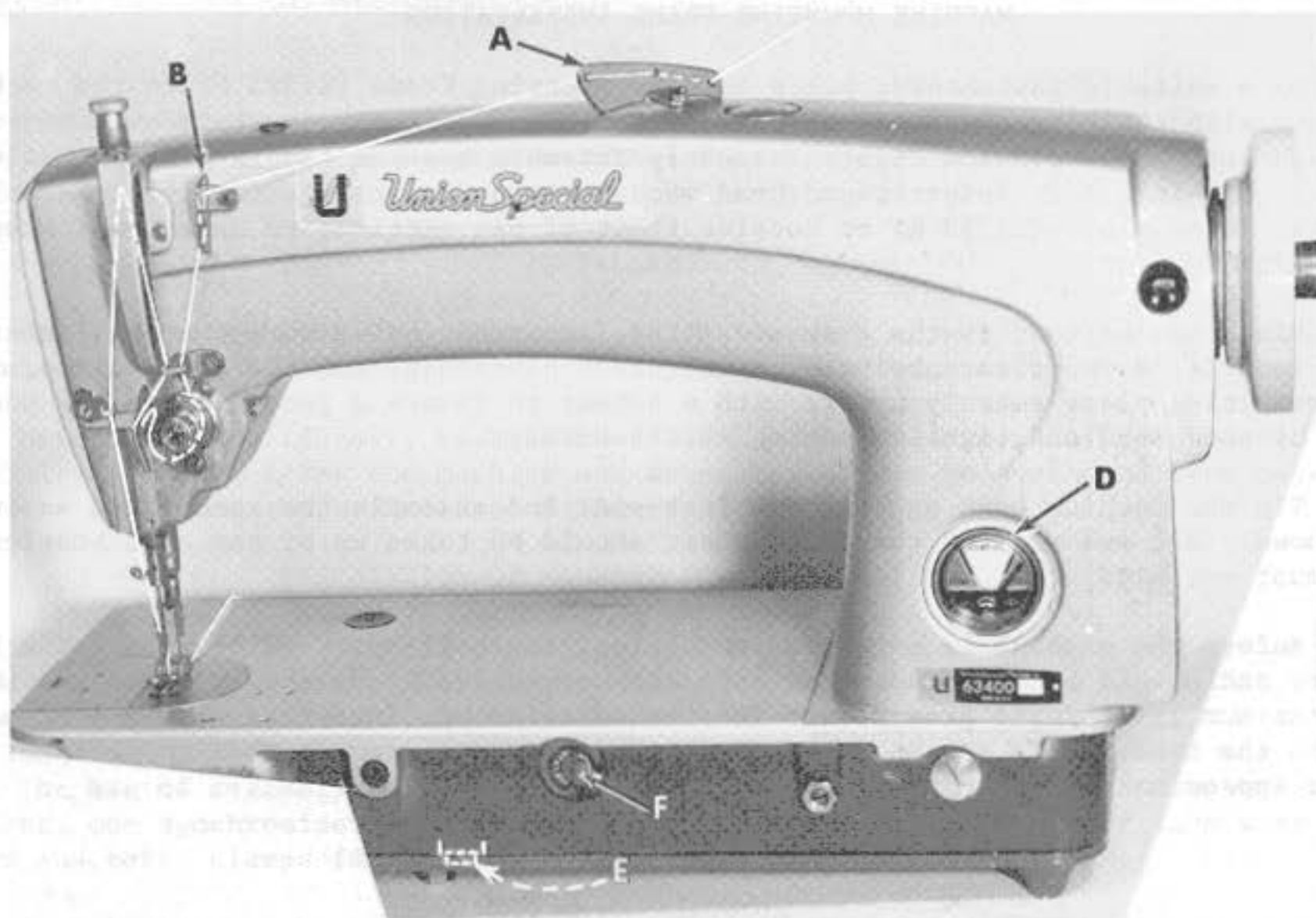


Fig. 2A



## CLUTCH AND MICRO SWITCH ADJUSTMENTS (Continued)

A method for making this unit a one position, positioner (either up or down) is as follows:

If the down only position is desired, turn screw (B, Fig. 43) clockwise until micro switch is closed when treadle is in the rest position.

If the up only position is desired, turn screw (B) counterclockwise until micro switch remains open.

Screw (C, Fig. 43) is for adjustment of the micro switch which activates an automatic presser foot lifting mechanism. This assist is not available at the present time. It should be remembered not to turn this screw all the way in as it will affect the function of screw (B).

Screw (D, Fig. 43) should have only enough tension on the spring to return the treadle to the rest position after it has been heeled.

### FUSING THE POWER PACK

This unit incorporates a 2 1/2 AMP, 250 V fuse as a safety feature located at (E, Fig. 43).

### SYNCHRONIZER ADJUSTMENT

Position speed should be kept between 180-200 R.P.M. The following chart is set up to give you the correct pulley sizes for 50 and 60 cycle. If 180-200 R.P.M. positioning speed is not maintained, trimmer may not work correctly.

Machine Speed	Cycle	SPEED VS CYCLES	
		Amco Motor Pulley Part Number	Quick Stop Positioning Pulley Part Number for 180-200 R.P.M.
5500	60	634	995-254-37
	50	643	995-254-37
5000	60	632	995-254-42
	50	640	995-254-42
4500	60	630	995-254-46
	50	635	995-254-46
4000	60	626	995-254-50
	50	632	995-254-50
3500	60	623	995-254-61
	50	626	995-254-61
3000	60	620	995-254-71
	50	623	995-254-71

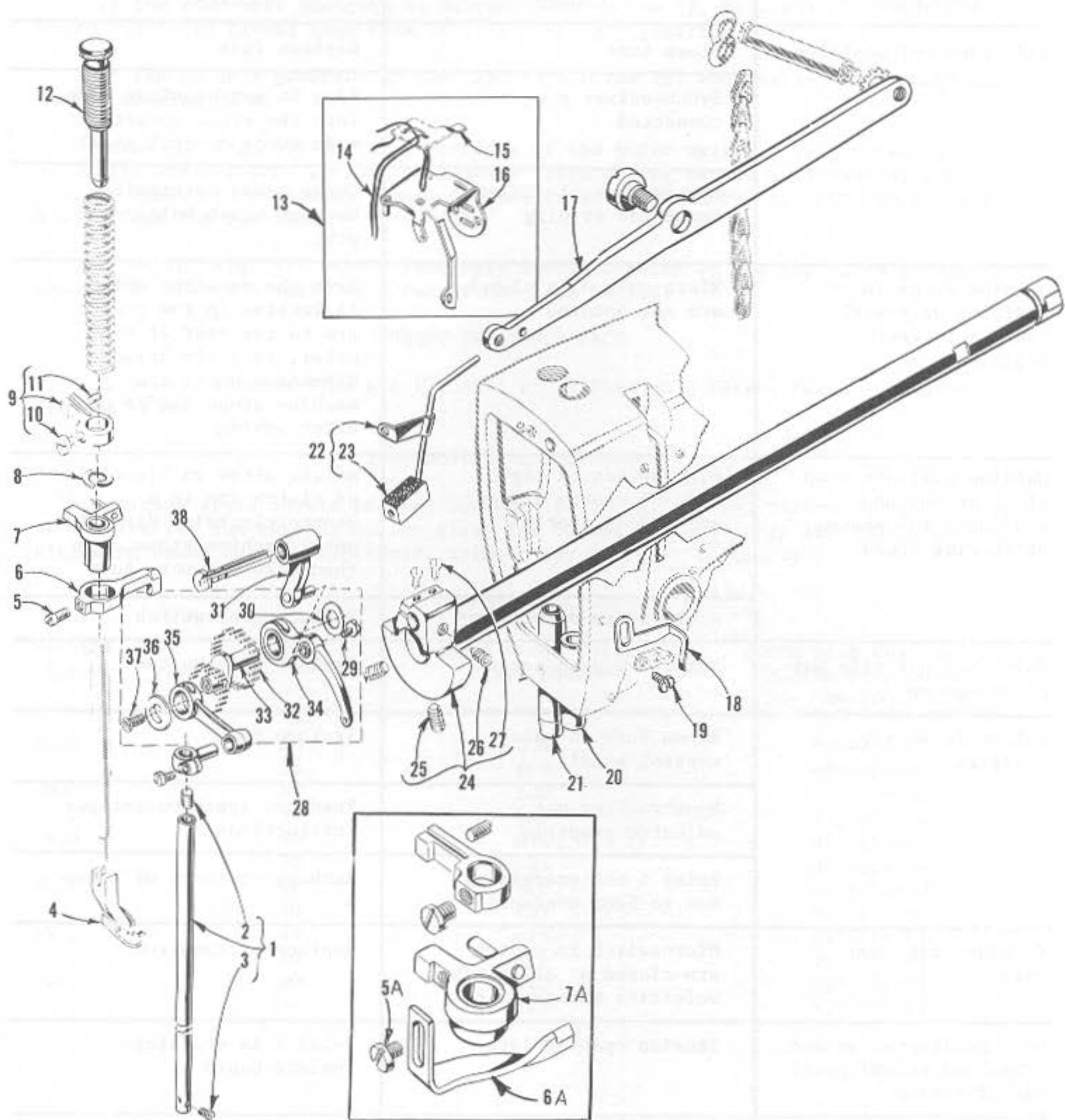


# QUICK-STOP TROUBLESHOOTING

NOTE: If difficulties in needle positioning are encountered, check circuitry for the positioner on the motor control panel only.

Condition	Causes	Cures
Unit does not position	Blown fuse	Replace fuse
	Synchronizer plug not connected	Plug in synchronizer plug into the right socket of main motor control panel
	Synchronizer leads not connected to plug	Check leads continuity between brush holder and plug
Machine stops in up position only with treadle in rest position	Micro switch in clutch arm not opening	Turn the setscrew which is located in the clutch arm to the rear of the motor, in a clockwise direction until the machine stops needle down after sewing.
Machine will not stop after sewing and continues to rotate at inching speed	Microswitch on right side of clutch arm not adjusted properly	Adjust screw on right side of clutch arm in a counterclockwise direction until machine stops, and then make one more turn
	Microswitch defective	Replace microswitch
Unit does not trip but positions up	Defective push button	Replace push button
Solenoids do not energize	Blown fuse in main control panel	Replace fuse
	Synchronizer not adjusted properly	Readjust synchronizer per instructions
	Relay 4 not energizing due to bent contacts	Reshape contacts of Relay 3
Machine stop down only	Microswitch in clutch arm closed at all times. Defective microswitch	Replace microswitch
Unit positioner up and trims and thread pulls out of needle	Tension opening late	Relay 4 is sticking. Replace board
Too much pull lever clearance.	Ball head screw of the pull lever worn out, or bore of the sliding sleeve sluggish.	Renew ball head screw or turn sliding sleeve around 120 degrees for new bore. Sliding sleeve has 3 bores.



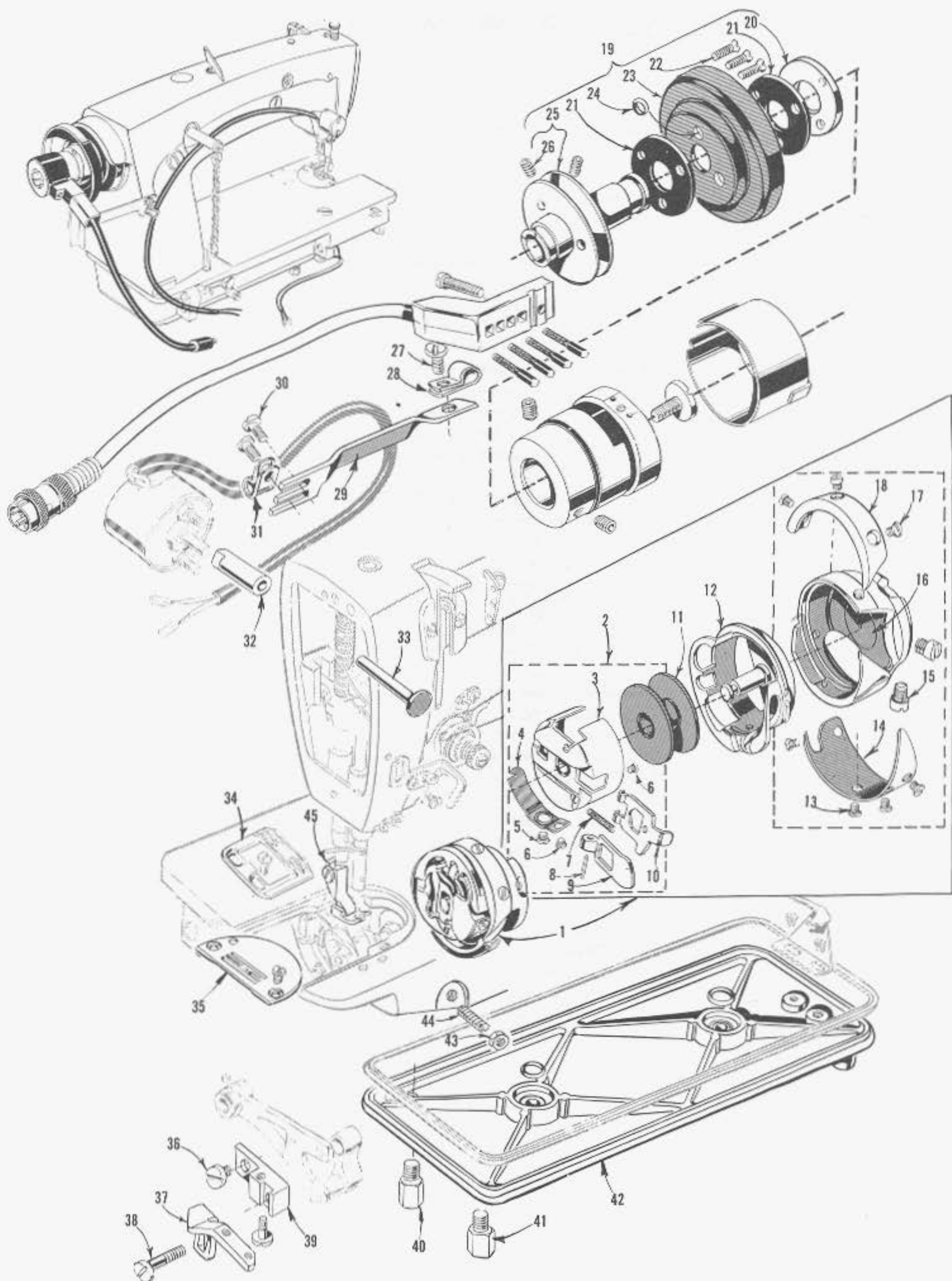




UPPER SHAFT, PRESSER BAR, NEEDLE BAR, HEAD OILER AND FOOT LIFTER LEVER

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Amt. Req.</u>
1	63417 A	Needle Bar, marked "EW"-----	1
2	C067 D	Cork-----	1
3	22768 A	Screw-----	1
4		Presser Foot (See Page 41)-----	1
5	230	Screw, for No. 61458 GA-----	1
5A	22513	Screw, for No. 63458 DA-----	1
6	61458 GA	Tension Release Cam, for Style 63400 C-----	1
6A	63458 DA	Tension Release Cam, for Style 63400 KC-----	1
7	63458 K	Tension Release Bushing and Guide, for Style 63400 C--	1
7A	63458 L	Tension Release Bushing and Guide, for Style 63400 KC-	1
8	63457 R	Presser Bar Spring Washer-----	1
9	63459 A	Presser Bar Guide-----	1
10	22570	Screw-----	1
11	73 C	Set Screw-----	1
12	63457 N	Presser Spring Regulator-----	1
13	63493 HA	Head Oiler Assembly-----	1
14	WI-30	Oil Wick-----	1
15	666-191	Oil Distributing Felt-----	1
16	27-876 Blk.	Bracket-----	1
17	63466 A	Lifter Lever-----	1
18	63970 A	Needle Thread Pull-up Bracket-----	1
19	22766	Screw-----	1
20	63454	Needle Bar Bushing, lower-----	1
21	63457 P	Presser Bar Bushing-----	1
22	63494 S	Oil Siphon Head Tube-----	1
23	666-214	Oil Felt-----	1
24	29475 BH	Mainshaft and Counterweight Assembly-----	1
25	22894 V	Set Screw-----	2
26	22894 U	Spot Screw-----	1
27	22839	Set Screw-----	2
28	29486 U	Take-up Lever and Needle Bar Link Assembly-----	1
29	22784 E	Screw-----	1
30	61351 C	Thrust Washer-----	1
31	63451 A	Take-up Lever Link-----	1
32	61451 D-625	Needle Bearing, .0625 inch (1.588 mm) diameter---	38
	61451 D-626	Needle Bearing, .0626 inch (1.590 mm) diameter---	38
	61451 D-627	Needle Bearing, .0627 inch (1.593 mm) diameter---	38
33	63452 B	Take-up Lever Crank Pin, marked "K"-----	1
34	61451	Take-up Lever-----	1
35	63455 A	Needle Bar Link-----	1
36	63455	Thrust Washer-----	1
37	22757 D	Screw-----	1
38	63451 B	Take-up Lever Pin-----	1







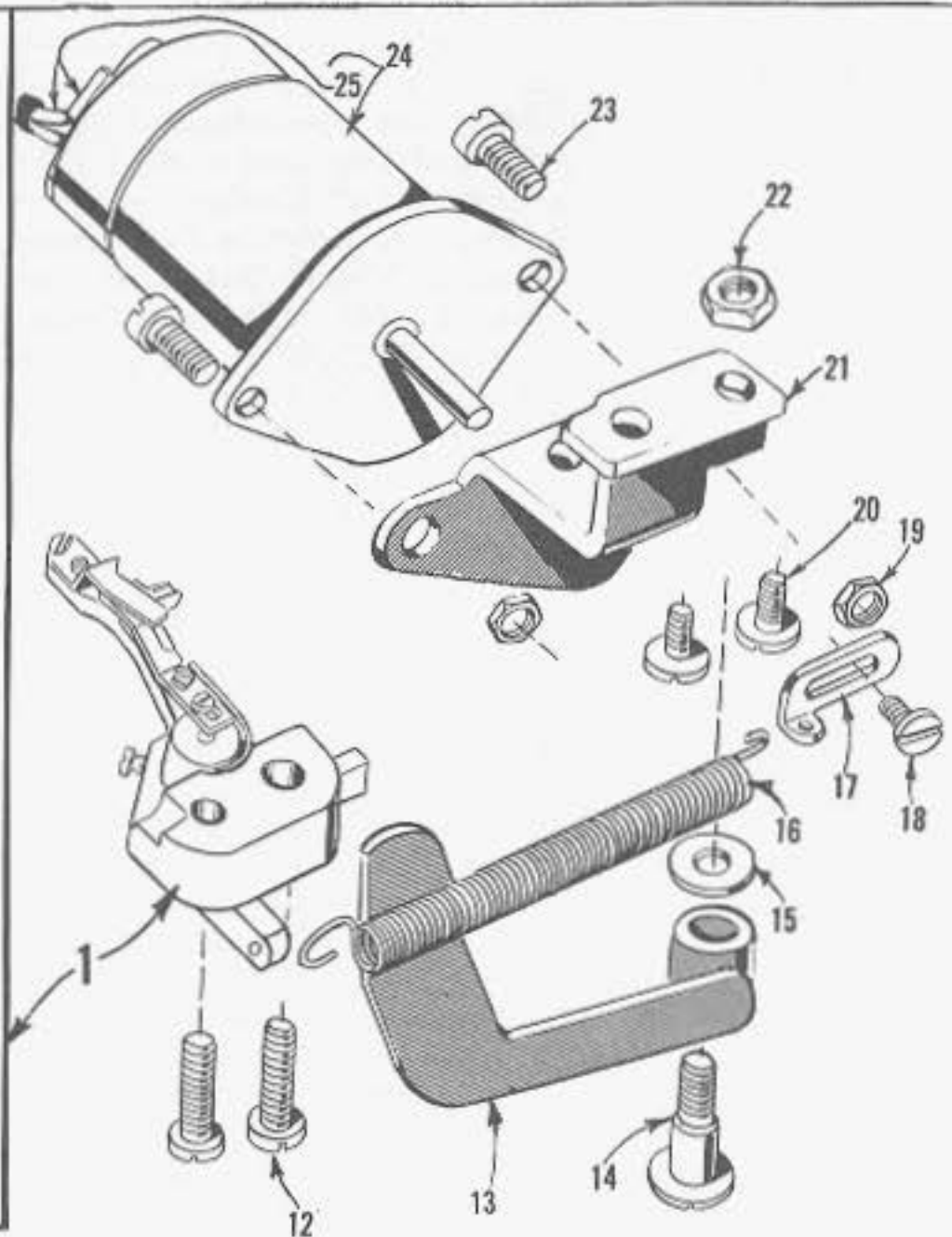
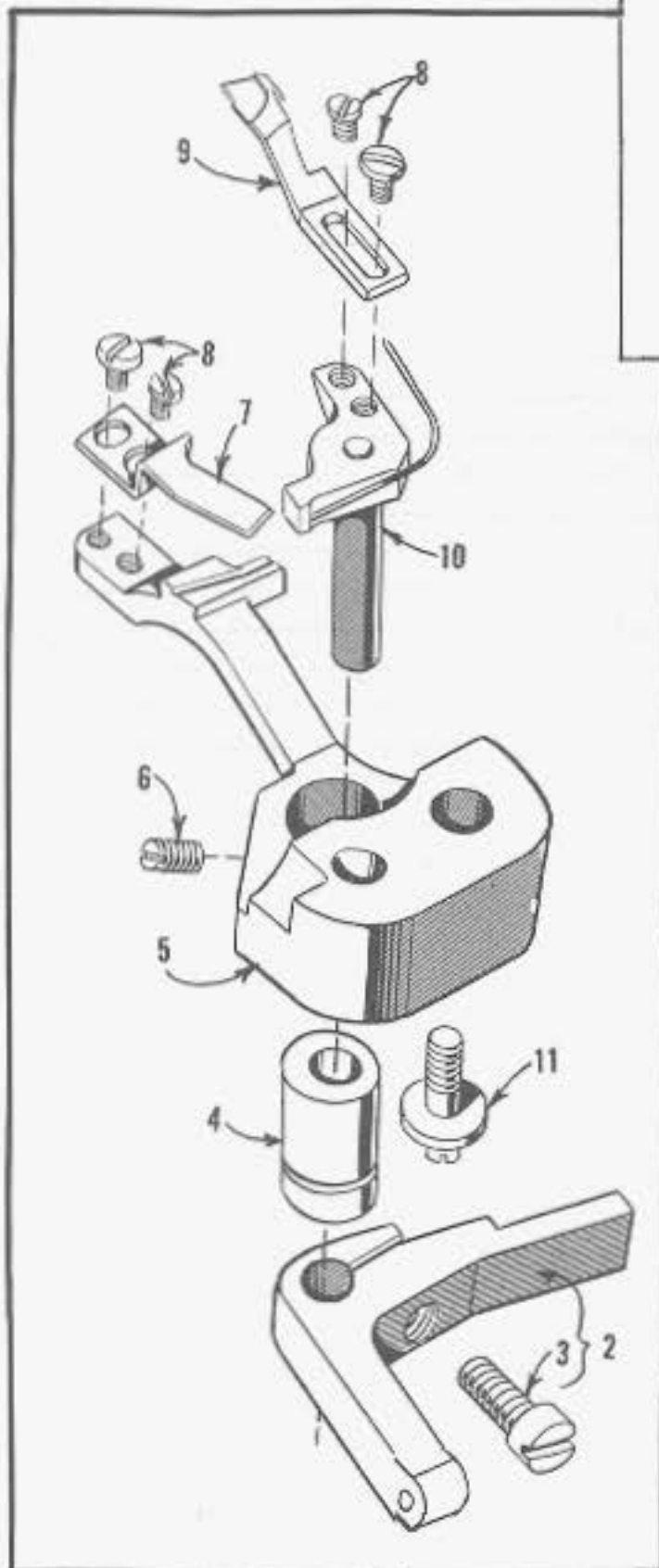
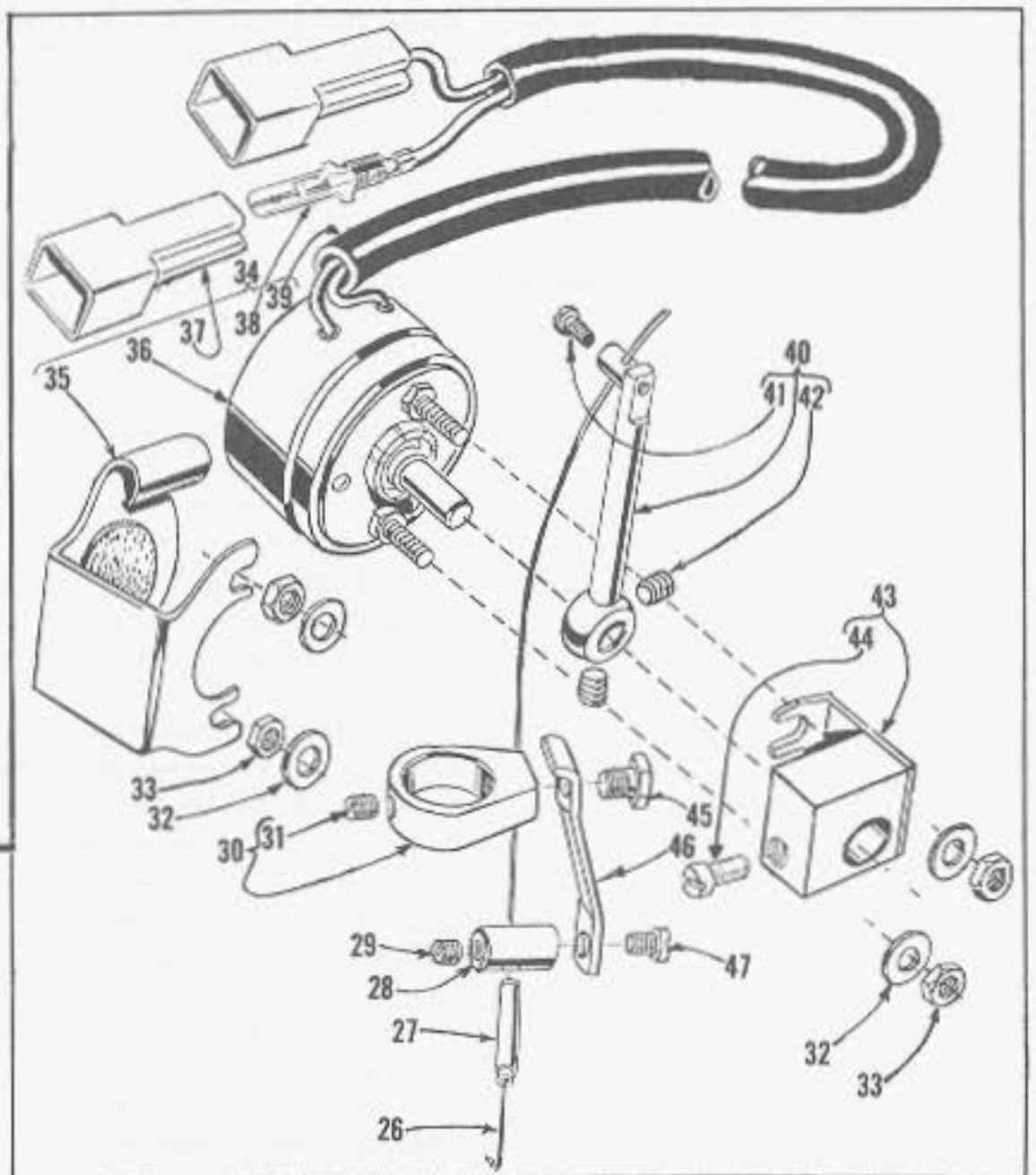
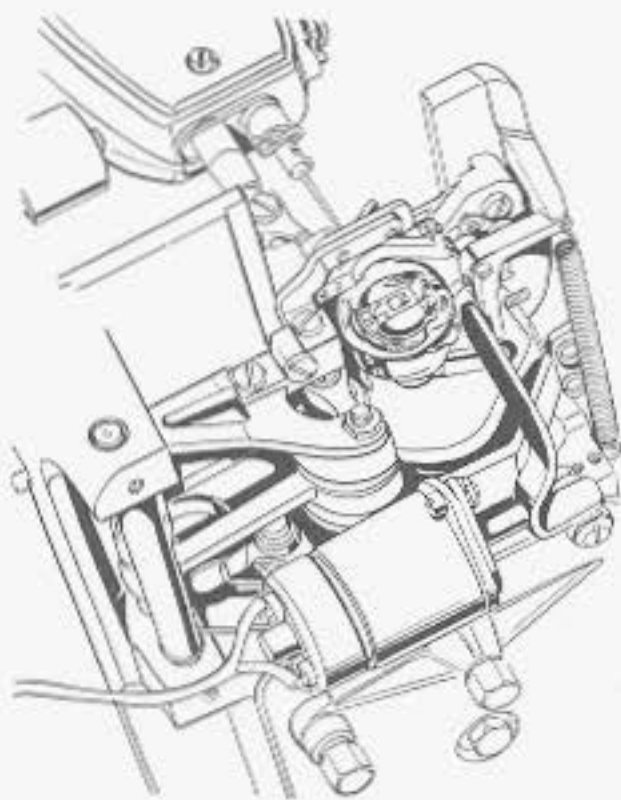
ROTATING HOOK ASSEMBLY, NEEDLE POSITIONER ASSEMBLY,  
HANDWHEEL ASSEMBLY AND MISCELLANEOUS PARTS  
FOR STYLE 63400 KC

Ref. No.	Part No.	Description	Amt. Req.
1	29474 T	Rotating Hook Assembly-----	1
2	63913 A	Bobbin Case Assembly-----	1
+ -	63913 B	Bobbin Case Assembly-----	1
3	63913	Bobbin Case-----	1
4	61414 C	Bobbin Case Tension Spring-----	1
5	22716 B	Tension Regulating Screw-----	1
6	22564 E	Screw-----	2
7	61216 N	Bobbin Case Latch Spring-----	1
8	61216	Bobbin Case Latch Hinge Pin-----	1
9	61415 A	Bobbin Case Latch Lever-----	1
10	61415	Bobbin Case Latch-----	1
11	61212	Bobbin-----	1
12	63414	Bobbin Case Holder-----	1
13	22716 A	Screw-----	4
14	63410	Hook Thread Deflector-----	1
15	22569 H	Screw-----	2
16	63408	Hook-----	1
17	22716 H	Screw-----	3
18	61411 A	Hook Thread Retainer-----	1
19	63421 A	Handwheel Assembly-----	1
20	61321 L	Retainer Plate-----	1
21	61421 E	Handwheel Isolator-----	2
22	22574 C	Screw-----	3
23	61421 C	Handwheel-----	1
24	660-254 D	Isolator Washer-----	3
25	63421 C	Pulley-----	1
26	22894 V	Set Screw-----	2
27	J87 J	Screw, for synchronizer lead wire clamp-----	1
28	660-356	Synchronizer Lead Wire Clamp-----	1
29	63495 D	Synchronizer Bracket-----	1
30	376 A	Screw, for synchronizer bracket-----	2
31	660-352	Tension Release Solenoid Lead Clamp-----	3
32	63492 E	Bushing, for tension release plunger pin-----	1
33	63492 D	Tension Release Plunger Pin-----	1
34		Feed Dog (See Pages 37 and 39)-----	1
35		Throat Plate (See Pages 37 and 39)-----	1
36	88 D	Screw, for feed dog holder support-----	1
37	63439 A	Feed Dog Holder-----	1
38	22874 J	Screw, for feed dog holder and feed dog holder support-----	1
39	63439 B	Feed Dog Holder Support-----	1
40	22571 G	Plug Screw-----	1
41	22841 K	Stud Screw-----	1
42	63982 C	Oil Reservoir Cover-----	1
43	41071 G	Nut-----	1
44	HS82	Screw-----	1
45		Presser Foot (See Page 41)-----	1
*	800 XT-362	Needle Positioner Assembly, complete, although only the synchronizer is shown-----	1
*	800 ST-362	Needle Positioner Assembly, complete, (not shown)-----	1

\* Refer to insert sheet with needle positioner for repair parts and order under the Union Special number, if available. Also refer to insert sheet for guardian maintenance and other information regarding the needle positioner and electrical circuitry.

+ Available as an extra send and charge item, component parts are the same as 63913 A except for one each Nos. G22564 F, G22716 B, G61414 C and two No. G22564 E.



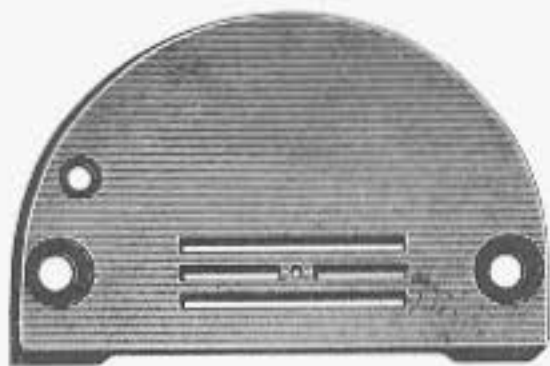




THREAD WIPER, CUTTING SOLENOID, TENSION RELEASE  
SOLENOID, MOUNTING BRACKET, BOBBIN CASE HOLDER  
POSITIONING FINGER AND KNIFE ASSEMBLY  
FOR STYLE 63400 KC ONLY

Ref. No.	Part No.	Description	Amt. Req.
1	29475 BG	Bobbin Case Holder Positioning Finger and Knife Assembly-----	1
2	63495 C	Pivot Release Lever-----	1
3	22585 R	Screw-----	1
4	G61441 KX	Eccentric Bushing-----	1
5	G61414 KX	Positioning Finger, marked "A"-----	1
6	77	Screw-----	1
7	G61470 KX	Upper Knife, marked "GB"-----	1
8	73 A	Screw, for knives-----	4
9	G61449 KX	Lower Knife and Thread Holder, marked "GA"-----	1
10	63450	Lower Knife Carrier, marked "D"-----	1
11	22863 B	Screw, for adjusting eccentric bushing-----	1
12	22874	Screw, for positioning finger and knife assembly-----	2
13	63495 G	Cutting Solenoid Lever-----	1
14	22777 C	Screw, for cutting solenoid lever-----	1
15	61434 G	Washer-----	1
16	63495 B	Knife Return Spring-----	1
17	63495 E	Return Spring Positioner-----	1
18	22585 A	Screw, for return spring positioner-----	1
19	12982	Nut-----	2
20	22585 B	Screw, for cutting solenoid mounting bracket-----	2
21	63495 H	Mounting Bracket, for cutting solenoid-----	1
22	18	Nut, for cutting solenoid lever screw-----	1
23	22517	Screw, for cutting solenoid-----	2
24	660-354	Cutting Solenoid-----	1
25	670 E-8	Hook-up Wire, for cutting solenoid-----	2
26	63470 F	Thread Wiper Wire-----	1
27	63470 P	Needle Thread Wiper Guide-----	1
28	63470 N	Needle Thread Wiper Guide Holder-----	1
29	22743	Set Screw-----	1
30	63470 H	Thread Wiper Mounting Collar-----	1
31	22743	Set Screw-----	1
32	660-113	Washer, brass-----	4
33	651 J-12	Nut-----	4
34	29480 FM	Rotary Tension Release Solenoid Assembly-----	1
35	63458 H	Rotary Solenoid Cover-----	1
36	660-360	Rotary Solenoid-----	1
37	670 G-18	Female Connector Sleeve, green-----	2
38	670 G-23	Male Wire Terminal-----	2
39	660-347	Solenoid Lead Cover-----	1
40	63470 E	Thread Wiper Lever-----	1
41	22738	Screw-----	1
42	22894 Y	Set Screw-----	2
43	63470 T	Thread Wiper Solenoid Mounting Bracket-----	1
44	22596 D	Set Screw-----	1
45	79048	Screw-----	1
46	63470 G	Needle Thread Wiper Bracket-----	1
47	22513	Screw-----	1





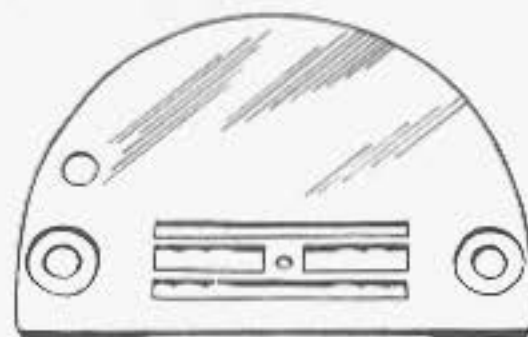
61224 C  
Specify Diameter  
of Needle Hole



63405 K



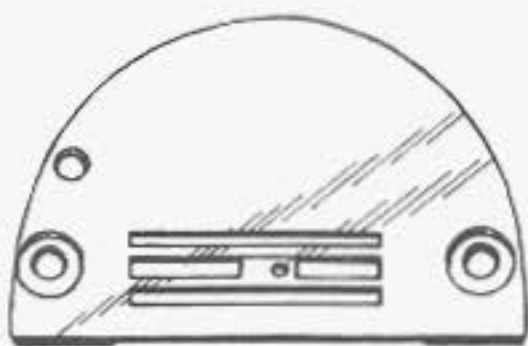
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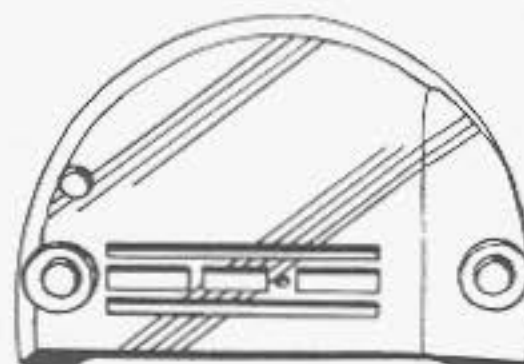
63405 E



61424 Y  
Specify Diameter  
of Needle Hole



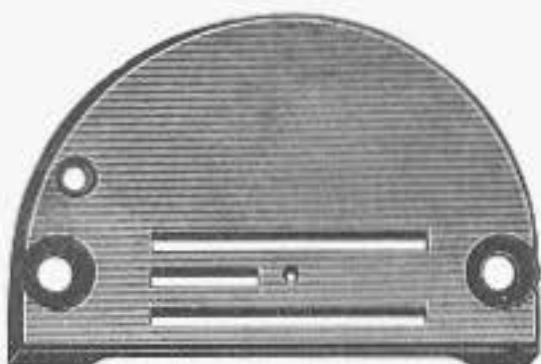
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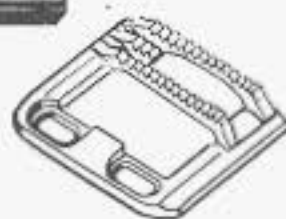
61424 AB  
Specify Diameter  
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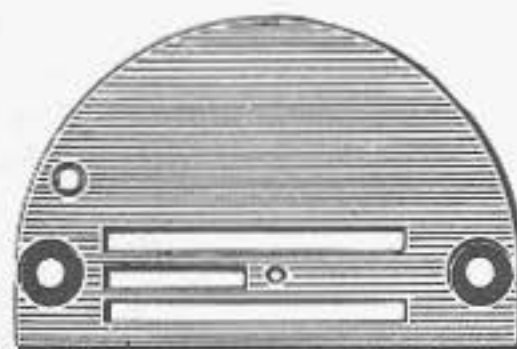
63405 F



61324 A  
Specify Diameter  
of Needle Hole



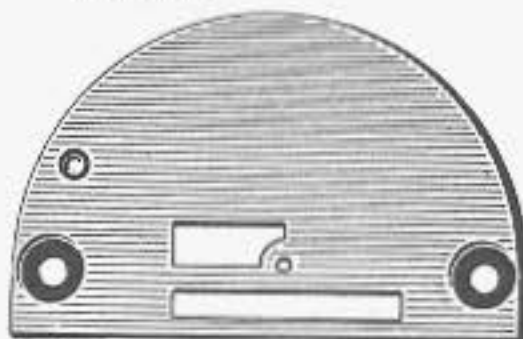
63405 M



61324 C  
Specify Diameter  
of Needle Hole



63405 N



61324 B  
Specify Diameter  
of Needle Hole



63405 J



# THROAT PLATE AND FEED DOG COMBINATIONS

Part No.	Description
61224 C-043	With .043 inch (1.09 mm) needle hole, for seaming and hemming silk and rayon; .063 inch (1.59 mm) needle hole, for seaming dresses; also in sizes .073 and .083 inch (1.85 and 2.11 mm) needle holes, for seaming work shirts and dress pants; feed dog Nos. 63405 G, 63405 K; presser feet Nos. 61220 C, 61220 J, 61320 AB, .085 inch (2.11 mm) thick. Stitch Range 6 to 18 S.P.I.
61224 F-063	With .063 inch (1.59 mm) needle hole, for setting pockets of dress shirts, also in sizes .083 and .093 inch (2.11 and 2.36 mm) needle holes, for work shirts; feed dog No. 63405 E, presser feet Nos. 61320 AH, 61320 AJ, .085 inch (2.16 mm) thick. Stitch Range 6 to 18 S.P.I.
61324 A-063	With .063 inch (1.59 mm) needle hole, for miscellaneous operations on pants, dungarees and overalls; also in size .093 inch (2.36 mm) needle hole; feed dog No. 63405 M; presser foot No. 61220 P, .125 inch (3.18 mm) thick. Stitch Range 6 to 18 S.P.I.
61324 B-063	With .063 inch (1.59 mm) needle hole, for edge stitching on suit coats and vests; also in sizes .073, .083 and .093 inch (1.85, 2.11 and 2.36 mm) needle holes; feed dog No. 63405 J; presser foot No. 61320, .085 inch (2.16 mm) thick. Stitch Range 6 to 18 S.P.I.
61324 C-083	With .083 inch (2.11 mm) needle hole, for hemming work pants; also in size .093 inch (2.36 mm) needle hole, for hemming high back overall suspenders; feed dog No. 63405 N; presser foot No. 61320 C, .125 inch (3.18 mm) thick. Stitch Range 6 to 18 S.P.I.
61424 Y-053	With .053 inch (1.37 mm) needle hole, for seaming and hemming shirts; also in sizes .063 and .073 inch (1.59 and 1.85 mm) needle holes; feed dog No. 63405 D; presser foot No. 61220 J, .085 inch (2.16 mm) thick. Stitch Range 7 1/2 to 18 S.P.I.
61424 AB-053	With .053 inch (1.37 mm) needle hole, for miscellaneous seaming operations on medium weight wash and wear materials; also in size .063 inch (1.59 mm) needle hole; feed dog No. 63405 F; presser foot No. 61420 BV, .125 inch (3.18 mm) thick. Stitch Range 7 1/2 to 18 S.P.I.
63405 D	Marked "JB", teeth cut 22 per inch (1.15 mm per tooth), for seaming and hemming shirts; throat plate No. 61424 Y-053; presser foot No. 61220 J.
63405 E	Marked "HX", teeth cut 16 per inch (1.59 mm per tooth), for setting pockets on shirts; throat plate No. 61224 F-063; presser feet Nos. 61320 AH, 61320 AJ.
63405 F	Marked "CU", teeth cut 22 per inch (1.15 mm per tooth), for miscellaneous seaming operations on medium weight wash and wear materials; throat plate No. 61424 AB-053; presser foot No. 61420 BV.
63405 G	Marked "HW", teeth cut 22 per inch (1.15 mm per tooth), for plain seaming and hemming on dress shirts, blouses, dresses and other light material; throat plate No. 61224 C-043; presser feet Nos. 61220 C, 61220 J, 61320 AB.
63405 J	Marked "CW", teeth cut 16 per inch (1.59 mm per tooth), for edge stitching on suit coats and vests; throat plate No. 61324 B-063; presser foot No. 61320.
63405 K	Marked "HU", teeth cut 16 per inch (1.59 mm per tooth), for plain seaming on work shirts, dress and semi-dress pants; throat plate No. 61224 C-073, presser feet Nos. 61220 C, 61220 J, 61320 AB.
63405 M	Marked "HY", teeth cut 14 per inch (1.81 mm per tooth), for miscellaneous operations on work pants, dungarees and overalls, throat plate No. 61324 A-063; presser foot No. 61220 P.
63405 N	Marked "HZ", teeth cut 14 per inch (1.81 mm per tooth), for hemming high back overall suspenders; throat plate No. 61324 C-083; presser foot No. 61320 C.



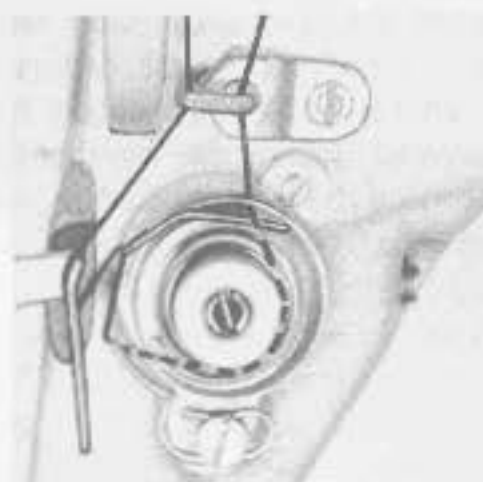
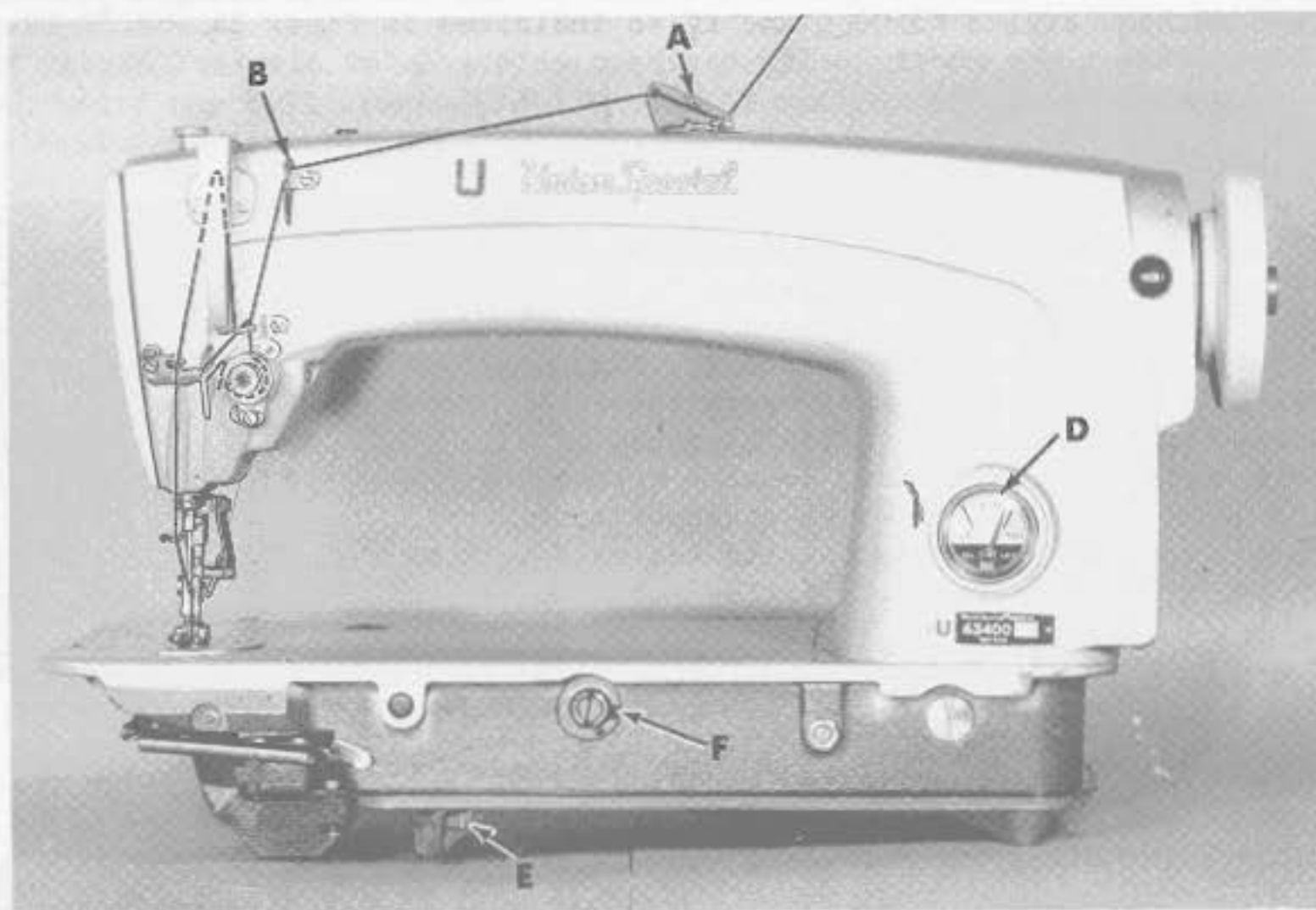
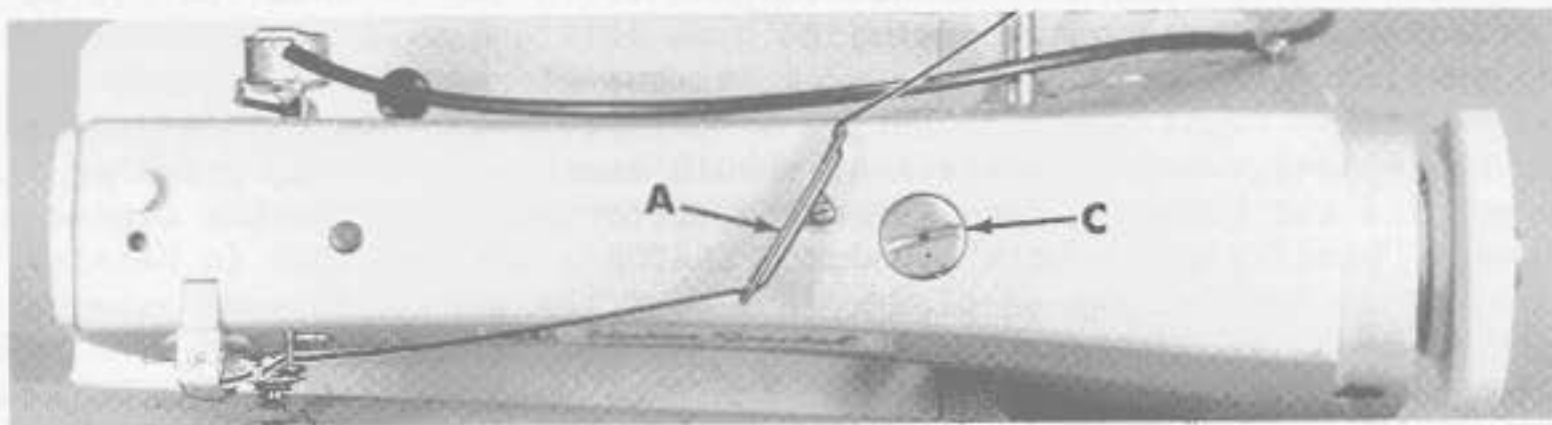
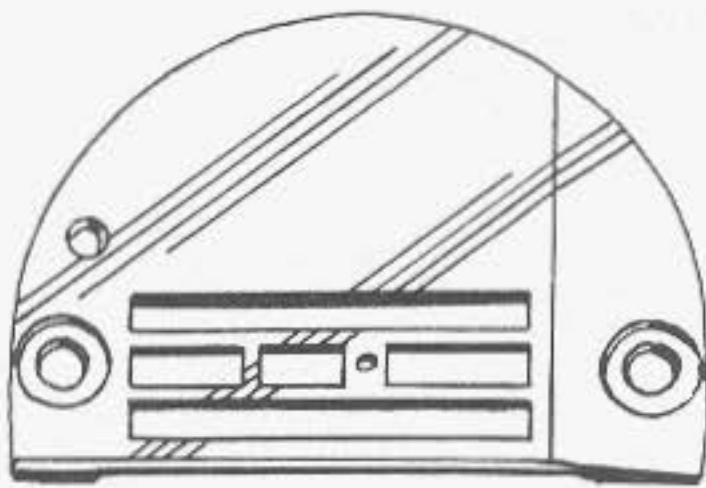
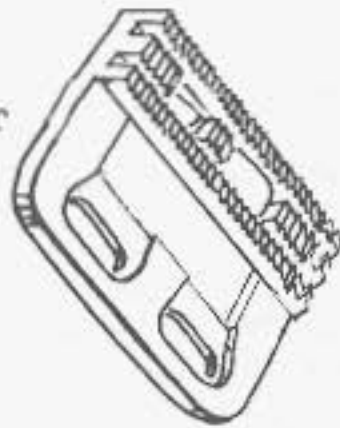


Fig. 2B

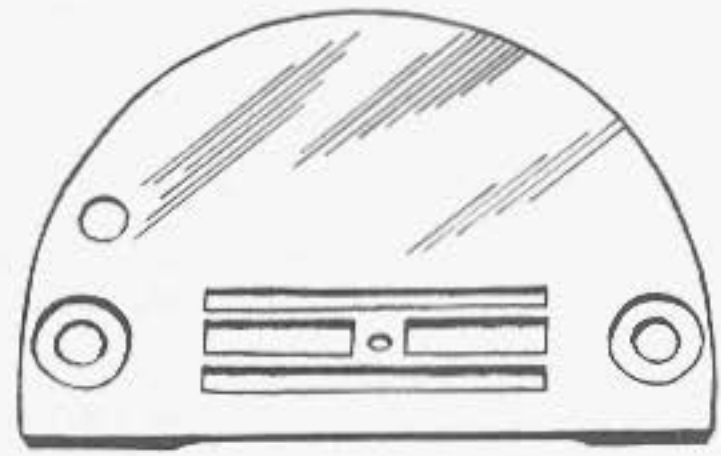




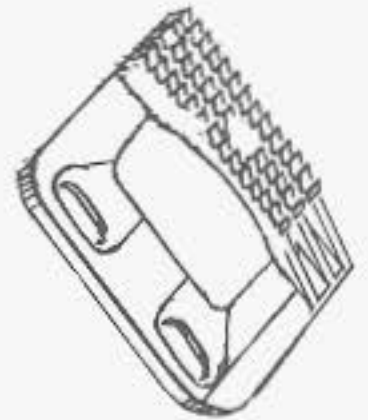
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Specify Diameter  
of Needle Hole



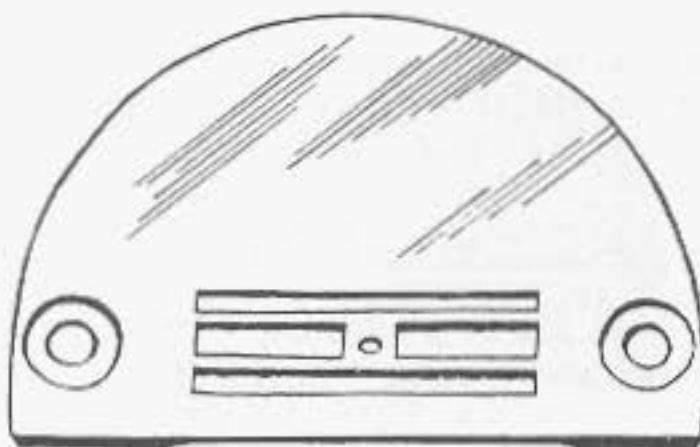
63405 AA



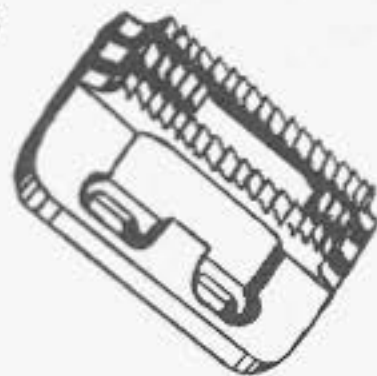
61424 AT-053



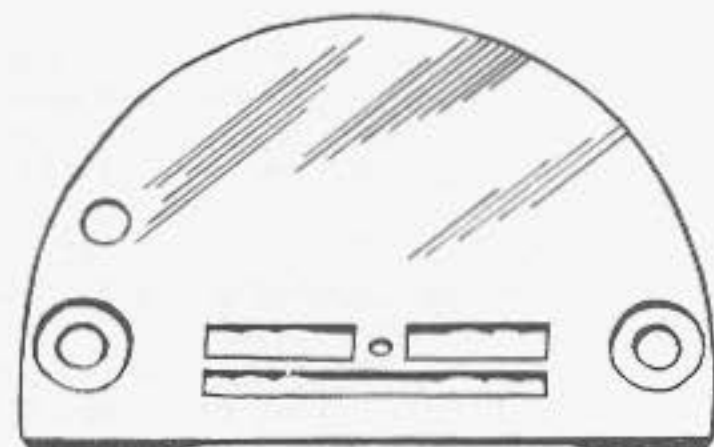
63405 V



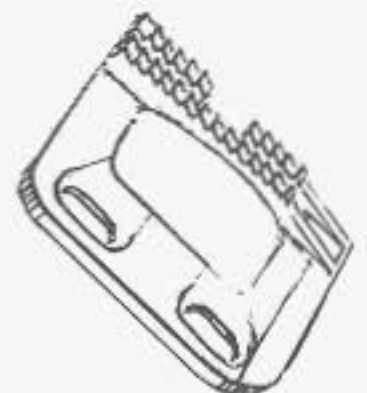
61324 L-093



63405 AC



61424 AU-053



63405 W



## **ARTS Import Error:**

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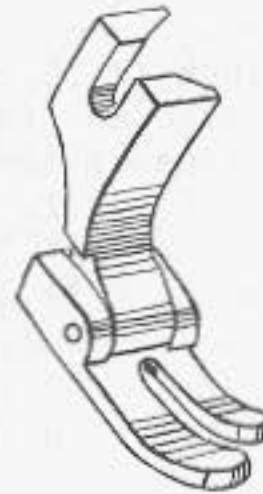




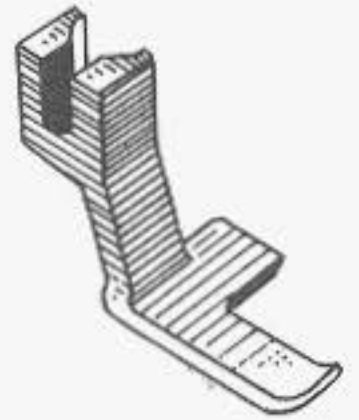
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Specify Width



61220 J



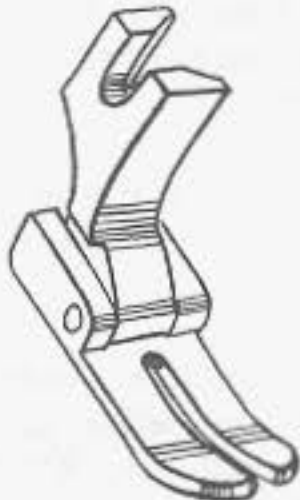
61220 P



61320



61320 C



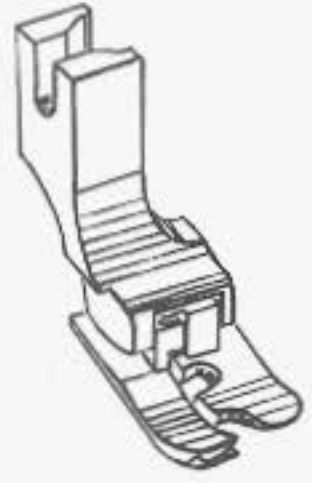
61320 S



61320 AB



61320 AH



61320 AJ



61420 BU



61420 BV



61420 CN



61420 CP



PRESSER FEET

<u>Part No.</u>	<u>Description</u>
61220 C-1/8	For hemming shirts, 1/8 inch (3.18 mm) hem; feed dog Nos. 63405 G, 63405 K; throat plate No. 61224 C-043 (scroll No. 61230-5/32)
61220 C-5/32	For hemming shirts, 5/32 inch (3.97 mm) hem; feed dog Nos. 63405 G, 63405 K; throat plate No. 61224 C-043 (scroll No. 61230-5/32)
61220 C-3/16	For hemming shirts, 3/16 inch (4.76 mm) hem; feed dog Nos. 63405 G, 63405 K; throat plate No. 61224 C-043 (scroll No. 61230-5/32)
61220 C-1/4	For hemming shirts, 1/4 inch (6.35 mm) hem; feed dog Nos. 63405 G, 63405 K; throat plate No. 61224 C-043 (scroll No. 61230-5/32)
61220 J	For seaming light and medium weight woven materials; has spring for raising toe; feed dog Nos. 63405 D, 63405 G, 63405 K; throat plate Nos. 61224 C-043, 61424 Y-053 (spring No. 61230 AK, shank No. 61330, hinge pin No. 61330 B-31, bottom No. 61330 Z)
61220 P	For miscellaneous operations on medium weight materials; has spring for raising toe, feed dog No. 63405 M; throat plate No. 61324 A-063 (spring No. 51930, shank No. 61330, hinge pin No. 61330 B-35, bottom No. 61330 AG)
61320	For edge stitching on suit coats and vests; feed dog No. 63405 J; throat plate No. 61324 B-063
61320 C	For hemming high back overall suspenders; feed dog No. 63405 N; throat plate No. 61324 C-083 (shank No. 61330, bottom No. 61330 C, hinge pin No. 61330 B-39)
61320 S	For seaming heavy coats and trousers; feed dog No. 63405 AC, throat plate No. 61324 L-093 (shank No. 61330, bottom No. 61330 T, hinge pin No. 61330 B-39)
61320 AB	For edge stitching on pants flies, guide 1/16 inch (1.59 mm) to right of needle; feed dog Nos. 63405 G, 63405 K; throat plate No. 61224 C-073
61320 AH	For edge stitching shirt pockets, left side yielding; feed dog No. 63405 E; throat plate No. 61224 F-063 (spring No. 51930, hinge pin No. 61330 B-31, bottom No. 61330 AM, yielding section, left No. 61330 AN, shank No. 61330 AP)
61320 AJ	For edge stitching shirt pockets, left side yielding; feed dog No. 63405 E, throat plate No. 61224 F-063 (spring No. 51930, shank No. 61230 X, hinge pin No. 61330 B-35, bottom No. 61330 AR, yielding section, right No. 61330 AS)
61420 BU	For miscellaneous seaming operations on medium weight wash and wear materials; feed dog No. 63405 AA, throat plate No. 61424 AA-063 (screw No. 226, hinge adjusting screw No. 22565 E, nut No. 51430 F, shank No. 61430 AA, bottom No. 61430 AB, spring No. 61430 BB)
61420 BV	For miscellaneous seaming operations on wash and wear shirts and pants; feed dog No. 63405 F; throat plate No. 61424 AB-053 (screw No. 226, hinge adjusting screw No. 22565 E, nut No. 51430 F, shank No. 61430 AA, bottom No. 61430 AC, spring No. 61430 BB)
61420 CN	For top stitching collars made of wash and wear materials; feed dog No. 63405 V, throat plate No. 61424 AT-053 (screw No. 226, hinge adjusting screw No. 22565 D, nut No. 51430 F, shank No. 61430 CM, bottom No. 61430 CN, spring No. 61430 BB)
61420 CP	For top stitching collars made of wash and wear materials; feed dog No. 63405 W, throat plate No. 61424 AU-053 (screw No. 226, hinge adjusting screw No. 22565 D, nut No. 51430 F, shank No. 61430 CM, bottom No. 61430 CP, spring No. 61430 BB)



## BOBBIN WINDER

The bobbin winder should be secured to the table top so that its pulley will be located directly in front of the sewing machine belt and will bear against the belt when in operation. The base of the winder has two elongated attaching holes, which allow the mechanism to be moved closer to or farther away from belt as needed. The pulley of the winder, when in operation, should exert only enough pressure against the belt to wind the bobbin. Regulation and operation of the bobbin winder is described under "Winding the Bobbin", under OPERATOR'S INSTRUCTIONS in Catalog No. 121 M.

## BELTS

These machines are equipped to use either #1 "Vee" or round belts.

## THREADING

Thread machine Styles 63400 C and KC as indicated in Figs. 2A and 2B respectively. Threading at the check spring has been enlarged for clarity. Needle is threaded from left to right.

## OILING

CAUTION! Oil has been drained from the main reservoir before shipment and the reservoir must be filled before starting to operate.

Fill main reservoir at plug screw (C, Fig. 2A or 2B) and check oil level at gauge (D). Oil is at maximum safe operating level when the needle is to the black line, located to the right of "OPERATE" zone, marked "FULL". Oil should be added when needle is to the black line, located to the left of "OPERATE" zone, marked "LOW". Use a stainless water-white straight mineral oil of a Saybolt viscosity of 90 to 125 seconds at 100° Fahrenheit in the main reservoir. This is equivalent to Union Special specification No. 175.

Oil may be drained from main reservoir by removing plug screw (E, Fig. 2A or 2B).

The quantity of oil supplied to the hook is controlled by dial (F). Turning the dial in the direction of the arrow (counterclockwise) increases the oil flow and in a clockwise direction decreases the oil flow.

It is recommended that a new machine, or one that has been out of service for a long period, be lubricated by removing the head cover and oiling all the moving parts. After oiling, replace head cover as no further hand oiling will be required. Run machine slowly for several minutes to distribute oil to the various parts. Full speed operation can then be expected without damage.

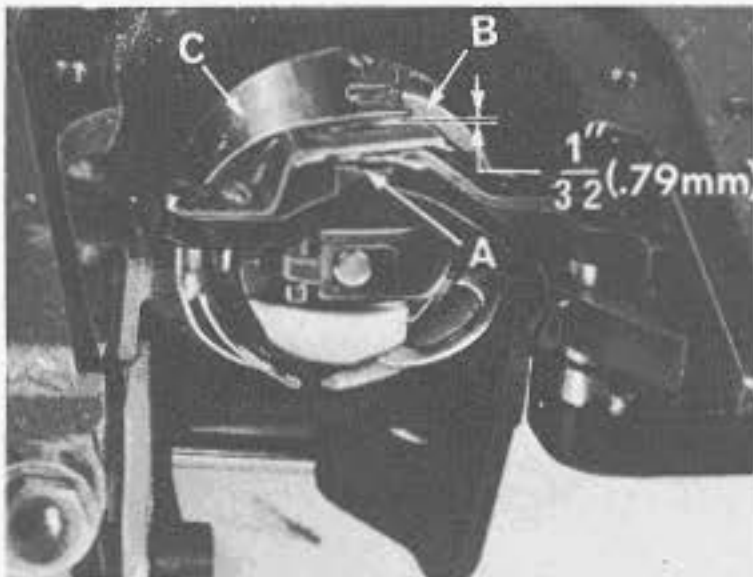


Fig. 12A



## INSTRUCTIONS FOR MECHANICS

The adjusting instructions for Styles 63400 C and KC are the same as for Style 63400 B covered in Catalog No. 121 M, with following exceptions and additions. The instructions that are different from the ones covered in Catalog No. 121 M, the headings will indicate the page it can be found in that catalog.

### PRESSER BAR CONNECTION (Page 15)

The presser bar connection (A, Fig. 16A) should be set so that it is  $\frac{7}{16}$  inch (11.11 mm) above the presser bar bushing (B) on Style 63400 KC, as shown in Fig. 16A. This dimension should be  $\frac{1}{32}$  inch (.79 mm) on Style 63400 C. This is accomplished by tipping the machine back against the rest pin, loosening lock nut (A, Fig. 15) and relocating the stop screw (B) on the lifter lever bell crank (C). By turning the stop screw to the right or left, proper setting of the presser bar connection should be obtainable. Tighten lock nut (A) to secure the stop screw in place.

NOTE: If the  $\frac{1}{32}$  inch (.79 mm) dimension on Style 63400 C cannot be obtained by this adjustment, the bell crank should be set as near to the underside of the base as possible without striking it.



Fig. 15

### PRESSER BAR GUIDE (Page 16)

When locating the presser bar guide (C, Fig. 16A) the presser foot must rest directly against the throat plate with the feed dog in its lowest position. The guide is set properly when there is a  $\frac{1}{16}$  inch (1.59 mm) space between the bottom of the presser bar guide (C) and the top of presser bar connection (A).

To obtain this setting, remove the pressure from the presser spring (D, Fig. 16A) and loosen set screw (E). Tap on the presser foot to insure its being down on the throat plate. Set the guide to the  $\frac{1}{16}$  inch (1.59 mm) dimension, center the foot by turning it so that the needle enters the middle of the needle slot. Retighten screw (E) in guide and apply pressure to the presser foot by turning the presser spring regulator (F) clockwise.

Set the needle thread pull-up bracket (G, Fig. 16A) so that the underside of the bracket is  $4 \frac{3}{4}$  inches (120.65 mm) above the throat plate (Fig. 16A).

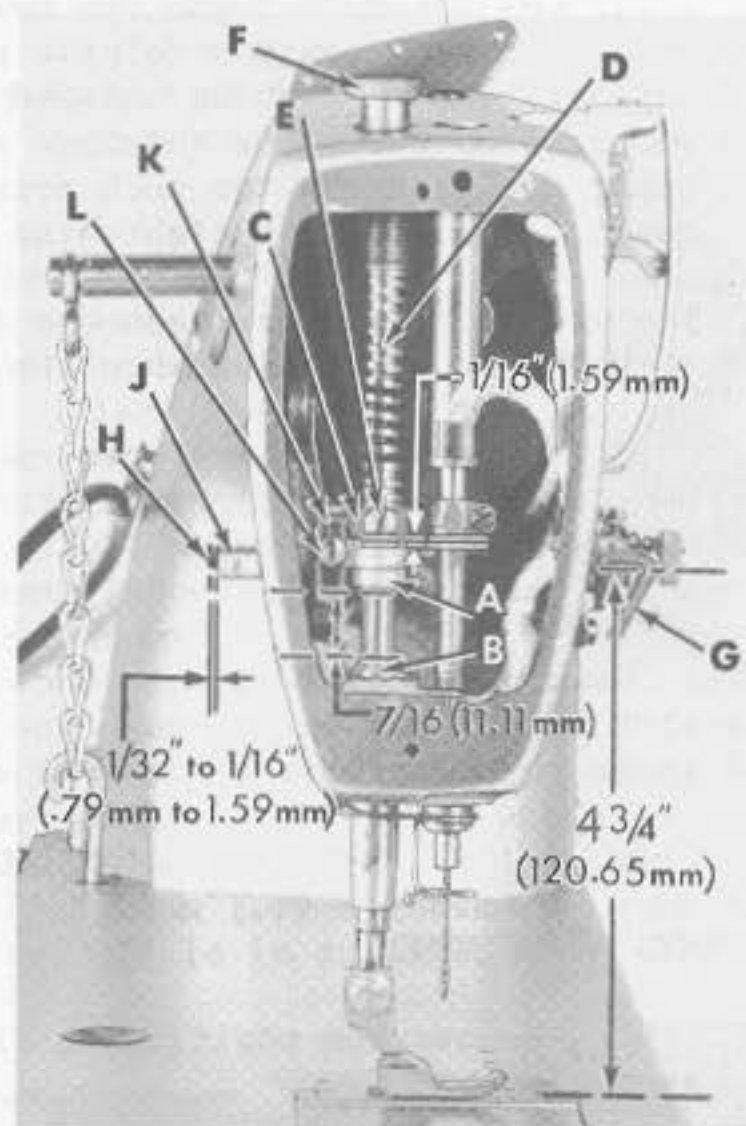


Fig. 16A



TENSION RELEASE (Page 17)  
(FOR STYLE 63400 KC)

1. Set the tension assembly so that the tension discs are centered on the check spring eyelet (A, Fig. 18A).
2. Solenoid plunger pin (H, Fig. 16A) must touch tension release pin and the end of plunger pin must protrude a minimum of 1/32 inch (.79 mm) to a maximum of 1/16 inch (1.59 mm). If adjustment is required move tension post assembly in or out by loosening set screw located under machine arm and moving stop screw (B, Fig. 18A) as required.
3. Tension release solenoid is secured to flat of bushing (J, Fig. 16A) with a set screw in bracket. Solenoid plunger pin (H) is to have approximately .005 inch (.127 mm) clearance between it and the tension release pin without thread in the tension disc.

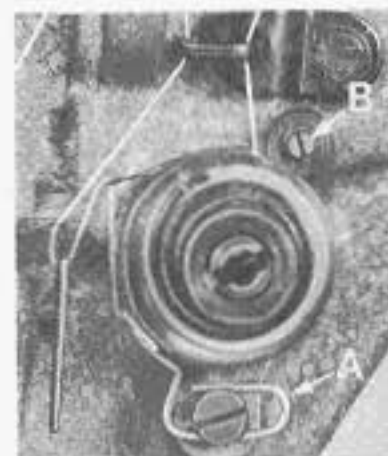


Fig. 18A

This can be accomplished by placing a .005 inch (.127 mm) spacer between the head of solenoid plunger pin and the end of tension release pin. The tension release solenoid should then be slipped onto bushing and moved in until it contacts the solenoid plunger pin. Care should be taken not to exert too much pressure thereby opening the tension disc. After tightening set screw remove spacer.

4. The manual tension release cam (K, Fig. 16A) should be set so that it will not release thread tension when the presser foot is raised for back tacking.

The tension release cam can be positioned by loosening screw (L, Fig. 16A) and then raising or lowering to suit the sewing conditions. The average tension release point is between 1/4 to 5/16 inch (6.35 to 7.94 mm) of presser foot lift above the throat plate. Tighten screw securely.

NOTE: Head oiler bracket must locate the needle bar link oil wick in the center of the slot in the connecting rod. The wick must contact the needle bearings. Check the oil gauge to be sure it reads full and operates freely.

ADDITIONAL INSTRUCTIONS FOR STYLE 63400 KC

TRIMMER ADJUSTMENTS

Remove the positioning finger and knife assembly from machine and proceed as follows:

1. There should be no bind or shake in lower knife pivot carrier (A, Fig. 28). This adjustment can be made by loosening screw (B) on the pivot release lever (C) and taking up the excessive end play or relieving the bind as the case may be.

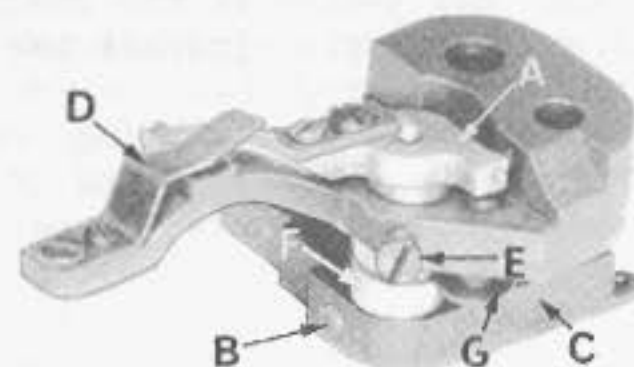


Fig. 28



2. Position upper knife (D) parallel with the left side of the arm of the positioning finger. Check to see that the lower knife is parallel with the upper knife.

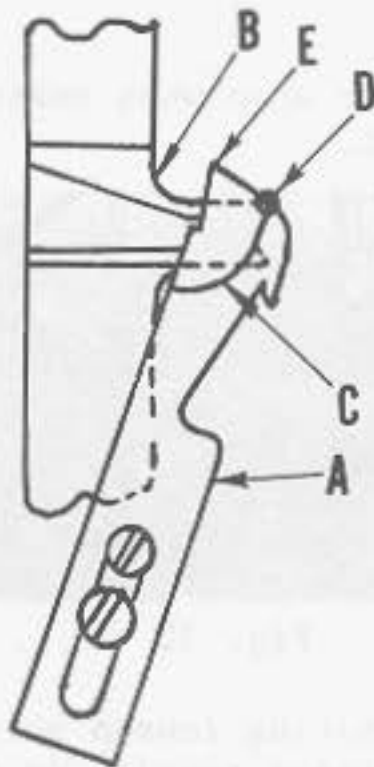


Fig. 29

If this is not so, loosen the finger set screw (E) and turn the eccentric bushing (F) until the knives are parallel. A good starting point would be to have the pin hole in the eccentric bushing (F) located approx.  $90^{\circ}$  to the right side of the arm of the positioning finger (Fig. 30).

Adjust lower knife until it just contacts the upper knife. To adjust the lower knife turn flange screw (G) clockwise to lower knife and counterclockwise to raise it.

**CAUTION:** Be sure bushing is not turned while making this adjustment or parallel adjustment will have to be checked.

The lower knife (A, Fig. 29) in its extreme left position should not extend beyond the left side of the arm of the positioning finger (B). As the lower knife moves to the right, the run out of the cutting edge (C) must coincide at a point of the positioning finger as indicated at point (D). To make these adjustments loosen screws (A, Fig. 30) and position knife.

3. Assemble positioning finger and knife assembly into machine. Adjust the bobbin case holder positioning finger and knife assembly by turning the bobbin case holder until the finger recess is at the top. Place the projection (A, Fig. 12A) on the positioning finger into the bobbin case holder recess (B) and tighten the finger and knife assembly attaching screws securely, allowing  $1/32$  inch (.79 mm) clearance between the outside edge of projection and the inside edge of bobbin case recess (Fig. 12A).

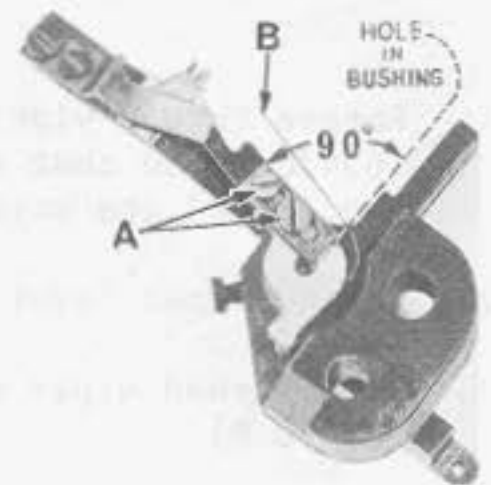


Fig. 30

4. Locate the cutting solenoid bracket (A, Fig. 31) as far forward as possible and parallel with the line of feed. With the cutting solenoid lever (B) contacting the cutting solenoid plunger (C), adjust the pivot release lever (D), so that there is a  $1/32$  inch (.79 mm) clearance to be maintained when knife return spring (A, Fig. 32) is in position.

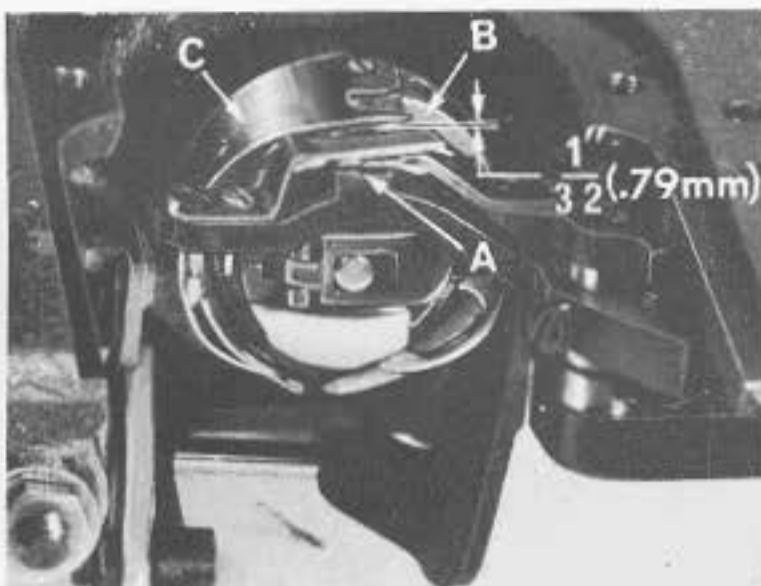


Fig. 12A

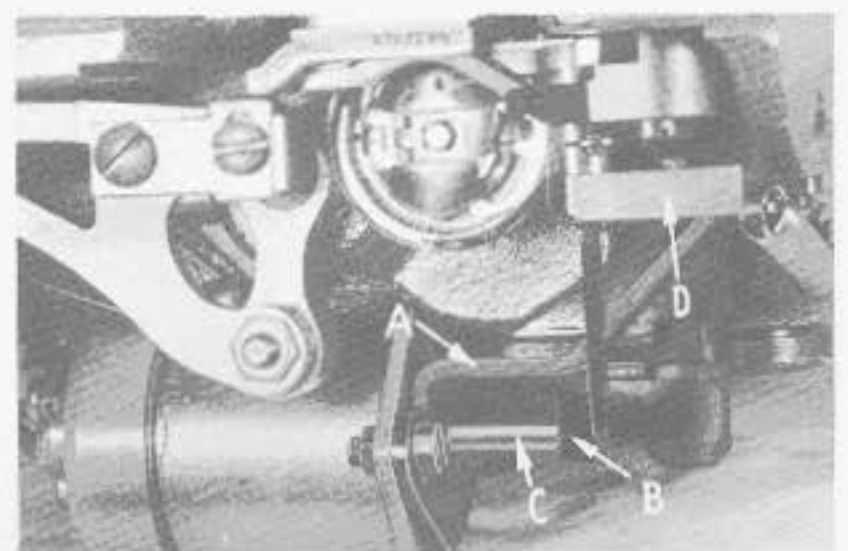


Fig. 31



## TRIMMER ADJUSTMENTS (Continued)

5. Adjust the lower knife stop screw (B, Fig. 32) so when the lower knife in its extreme right hand position, the left corner (E, Fig. 29) is in line with the left side of the needle slot in the bobbin case holder.

CAUTION: Be sure cutting solenoid lever contacts the lower knife stop when making this adjustment. Also be sure knife does not hit the hook point.

6. Be sure the spring retainer wire (B, Fig. 30) contacts the bobbin case holder when the lower knife is in its extreme right hand position. If the spring wire does not make contact, bend retainer wire to suit.

NOTE: If positioning finger assembly or cutting solenoid bracket are removed from machine or position changed, check step 5.

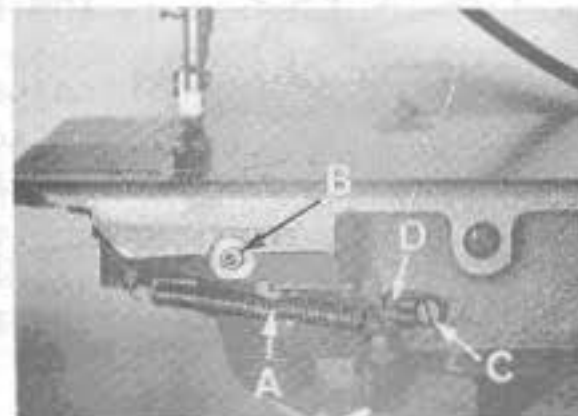


Fig. 32

7. Knife return spring (A, Fig. 32) to have proper tension to cut threads. To adjust tension of knife return spring loosen screw (C) and move tension spring bracket (D) to the right to increase tension or to the left to decrease the tension.

## THREAD WIPER ADJUSTMENTS

1. Rotate thread wiper mounting collar (63470 H) and adjust thread wiper guide (63470 P) so that the hook catches the needle thread when the take-up is at the top of its stroke.
2. Thread wiper lever (63470 E) must return with a snap when released.
3. Form thread wiper wire (63470 F) for free movement in thread wiper guide (63470 P).

CAUTION: Thread wiper hook must not prevent solenoid from returning to its stop. Move thread wiper guide (63470 P) so that hook does not stop against plastic tube. Be sure to loosen set screws when adjusting thread wiper lever. Premature failure of solenoid will result if it is not allowed to return completely.



