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INSTRUCTIONS FOR INSTALLATION OF

36681 WRAP SPRING CLUTCH AND BELT GUARD KIT FOR 115 VOLT SERVICE

AND

36684 WRAP SPRING CLUTCH AND BELT GUARD KIT FOR 230 VOLT SERVICE

FOR S13 SERIES METAL STITCHERS

(Except S13E Machines)

Listed below are the parts and quantities required for installation:

1-840H2	Clutch Sleeve Key	1-850601	Power Pak
1-36670	Belt Guard Mounting Plate	1'-2"-850602	Extra Flex Conduit
1-36671	Belt Guard	6-850603	Wire Terminal
1-36672	Mounting Plate Bracket	1-850604	Foot Switch Cord Assembly
1-36674	Belt Guard Mounting Plate Spacer Block	1-850631	Micro Switch
1-36676A	Clutch Anchor Bracket	2-850714	#8-32 Clip Nut
1-36677	Drive Pulley	4-HN1420.5	1/4-20 Hex Nut
1-36678	Spacer	2-LW14	1/4 Lockwasher
1-36679	Pulley Washer	1-LW516.2	5/16 Hi Collar Lock Washer
6-36680	5/16-18 x 1 3/16 Hex Soc. Hd. Cap Screw	2-PW516	5/16 Plain Washer
1-85098	Duplex Connector	4-PW516.4	1/4 Washer
8"-85417	#14 Plasticon Wire-Black	2-UA2316.1	8-32 x 1" Rd. Hd Mach. Screw
2'-2"-85418	#14 Plasticon Wire - Blue	4-UA4814.1	1/4-20 x 7/8 Hex Soc. Hd Cap Screw
2'-10"-85419	#14 Plasticon Wire - White	2-UA5128.1	5/16-18 x 1 3/4 Hex Hd Cap Screw
8-85777	Anti-Short Bushing	1-UA5812.11	5/16-18 x 3/4 Hex Soc. Low Hd Cap Screw
1-85935	Cable Insulet	2-UA6110.1	3/8-16 x 5/8 Hex Hd. Cap Screw
1-86198	Cable Connector	1-BSA360D	Maintenance Manual
1-86749	Female Reducer	1-BSA1235	Maintenance Manual
1-850600 or 1-850710	Clutch Assembly for 115 Volt Service Clutch Assembly for 230 Volt Service		

**NOTE: THIS INSTRUCTION BOOK IS TO BE USED IN CONJUNCTION
WITH BSA360D OR BSA1235 MAINTENANCE MANUALS**

CAUTION: Read these instructions before attempting to install equipment.

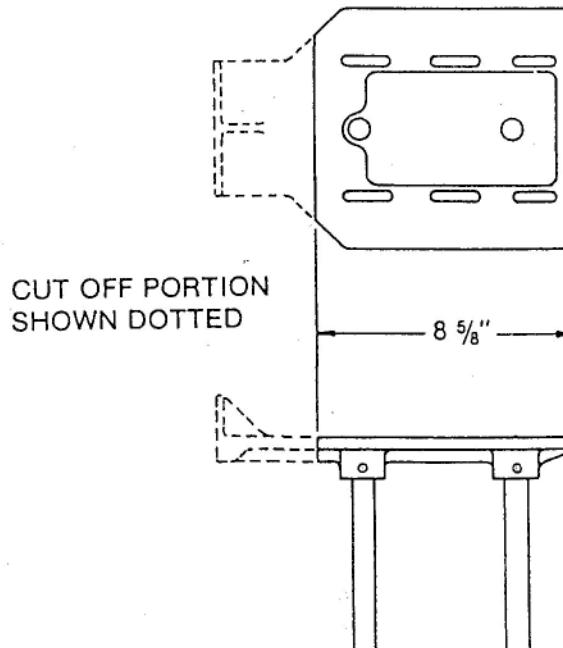
FIRST - DISCONNECT POWER SUPPLY

Preparation of S13 Series (Except S13E) Machines for Conversion (Refer to BSA360D and Details in this Manual)

1. Remove and discard: (2) Belt Guard Bolts and Washers, Belt Guard (809H), Drive Pulley Washer Screw and Pulley Washer (18281DA).
2. Lower Motor Mount (36507B). Remove and save: V-Belt (109-17A) and Motor Pulley (192-38).
3. Remove and discard as a unit: Drive Pulley (174H18), Clutch Sleeve (36534A) and clutch and brake components. Also, discard both shaft keys (840H).
4. Remove and save: Circuit Breaker Switch from right side of machine. Disconnect all wiring from switch and ground screws.
5. Disconnect motor cable from cable connector at top of machine. Remove motor, with cable attached, from Motor Mount. Remove and discard cable connector.
6. Remove Motor Mount from machine and alter per Detail 1, on this page.
7. Remove and save: Solenoid Cover Plate (36506) and Clincher Arm (187H2) or Arm Hole Cover Plate (186H2) on Post Model.
8. Disconnect or cut wiring from solenoid. Remove and discard wire from circuit breaker to solenoid and wire from solenoid to Foot Switch.
9. Remove and discard: Connecting Link Pivot (36556) using a drift pin to drive out of Body.

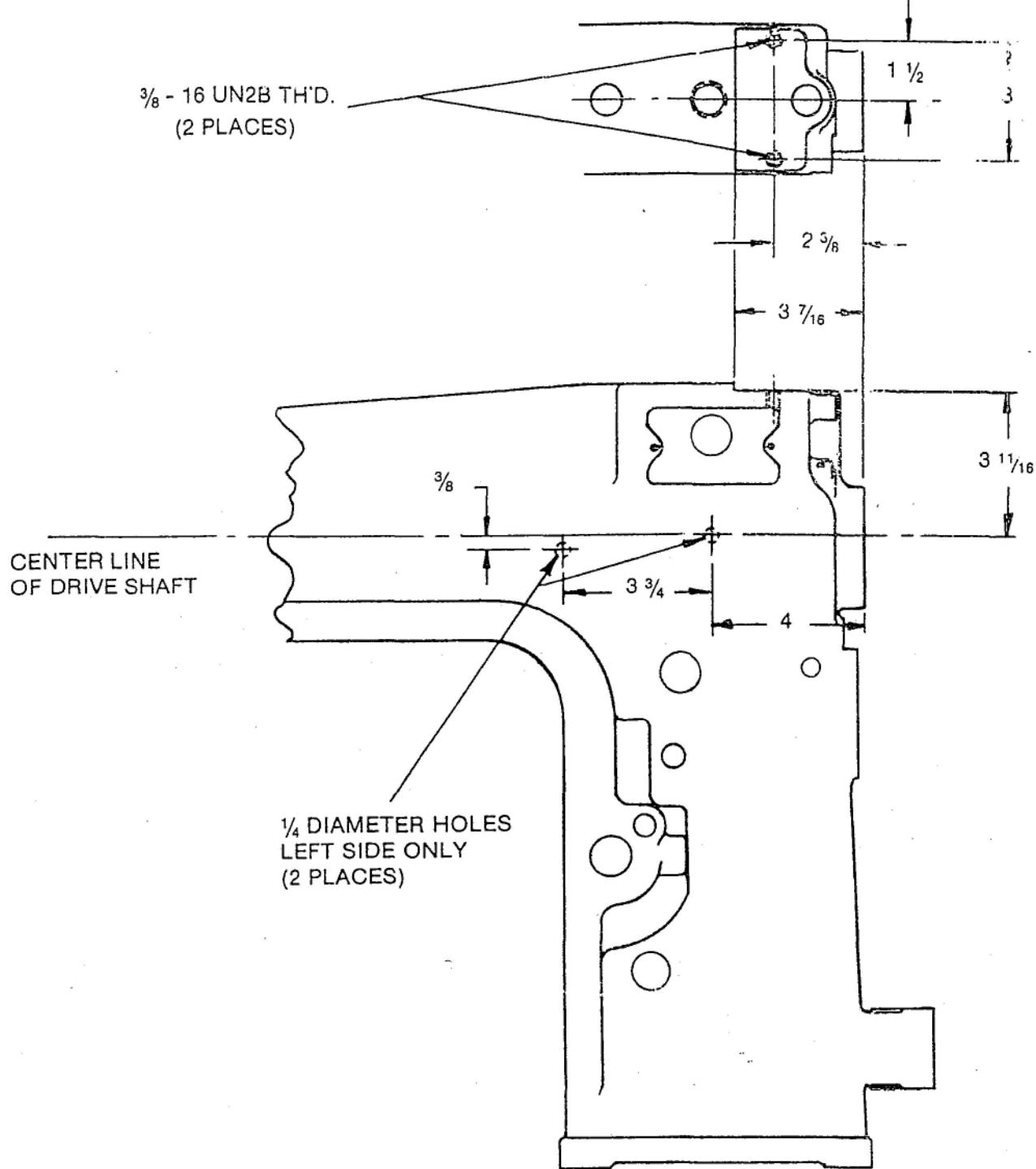
WARNING: Hold Stop Plunger (25941) in to prevent it from flying out when internal Stop Plunger Lever (866H5) disengages from the Plunger. When free, remove and discard Stop Plunger, Stop Plunger Spring (19238) and Single Trip Pivot Block Assembly (36541A) and screws.

10. Remove and discard Solenoid Bracket (36562), Solenoid, Solenoid Connecting Link (36566EA) and Connecting Link Arm (36554BA) as a unit, by taking out and discarding the two bracket bolts and washers from left side of Base. Carefully tip machine on one side and withdraw assembly from bottom of Base.
11. Machine flat surface at top of Body, provide drilled and threaded holes per machining instructions of Detail 2, page 3.
12. Tap 1" Dia. hole at foot of Base with $\frac{3}{4}$ " pipe thread. See Detail 4, page 7.



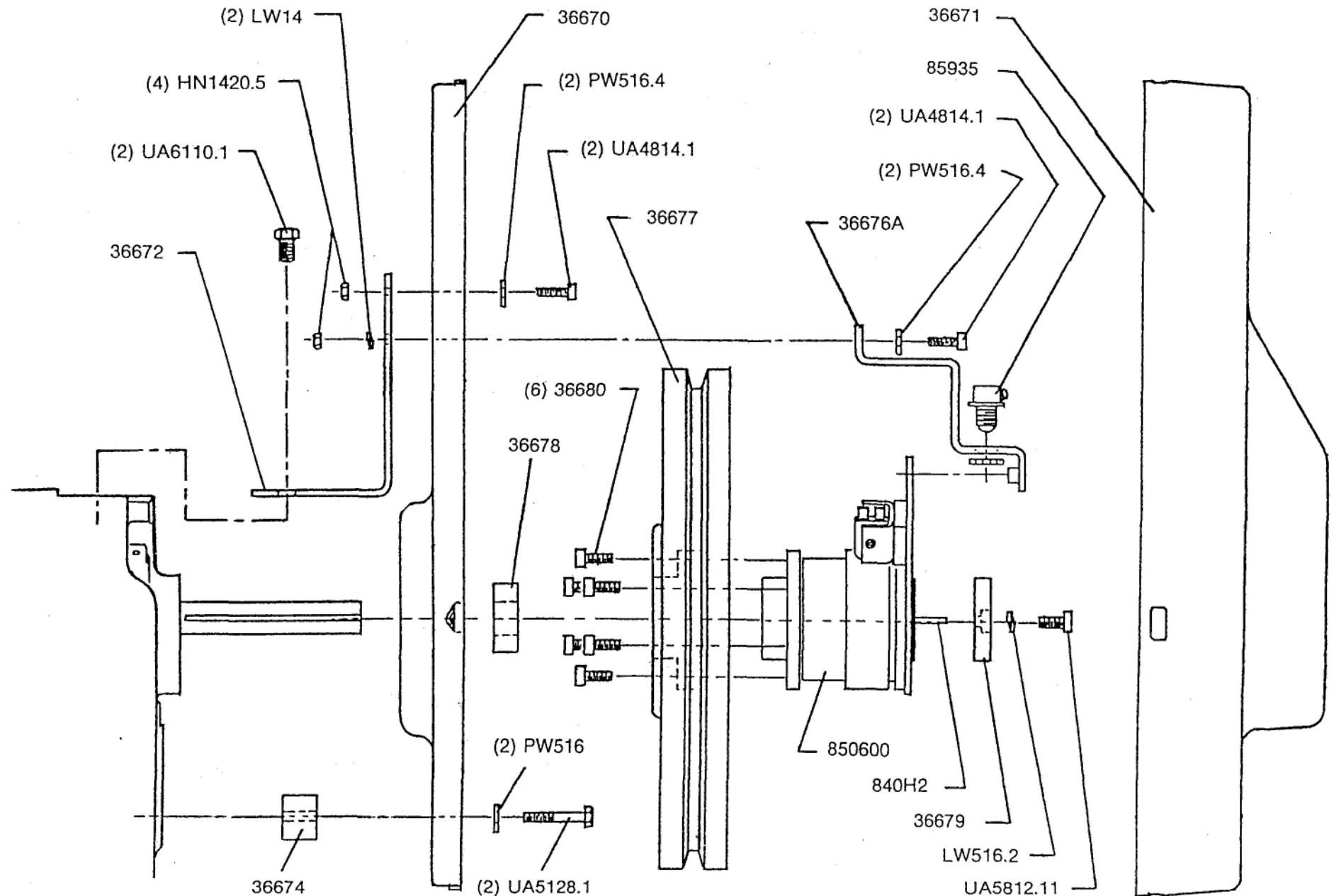
**ALTERATION TO MOTOR MOUNT
36507B**

DETAIL - 1



MACHINING ALTERATIONS TO BODY 150H10

DETAIL - 2



ASSEMBLY OF CONVERSION PARTS

DETAIL - 3

Re-assembly and Installation of Kit Parts (Refer to Details 3 and 4 this Manual, and BSA1160)

1. Attach Mounting Plate Bracket (36672) to Body, using (2) $\frac{3}{8}$ -16 x $\frac{5}{8}$ " Hex Head Bolts (UA6110.1).
2. Attach top of plastic Belt Guard Mounting Plate (36670) to bracket with (2 each) $\frac{1}{4}$ " Washer (PW516.4), $\frac{1}{4}$ -20 x $\frac{7}{8}$ " Hex Socket Head Cap Screw (UA4814.1) and $\frac{1}{4}$ -20 Hex Nut (HN1420.5).
3. Fasten bottom of Mounting Plate to Body by inserting Spacer Block (36674) between Body and Mounting Plate, and securing with (2 each) $\frac{5}{16}$ " Washer (PW516) and $\frac{5}{16}$ -18 x $1\frac{3}{4}$ " Hex Head Bolt (UA5128.1).
4. Clear screw holes and counterbores of Drive Pulley (36677), free of paint and attach Clutch Assembly (850600) as shown in Detail 3, using (6) $\frac{5}{16}$ -18 x $1\frac{3}{16}$ " Hex Socket Head Cap Screws (36680). DO NOT over-torque these screws—130 to 150 in./lbs. is sufficient.
5. Assemble 2" Dia. Spacer (36678) to Drive Shaft. Facing rear of machine, turn shaft counter-clockwise until Former Slide is on the upstroke and keyway to rightside of shaft reaches the 2 o'clock position. Now slide Clutch and Driving Pulley assembly onto shaft with clutch solenoid positioned at top (see Detail 3). Hold Clutch Plate and turn Drive Pulley counter-clockwise until stop in Clutch Control Collar contacts Actuator Pawl. This should position keyway in clutch sleeve approximately in line with keyway in 2 o'clock position on shaft. Any correction can be made by turning complete assembly on shaft. When aligned, insert new, longer Key (840H2), leaving about $\frac{1}{4}$ " protruding.
6. Position Pulley Washer (36679) at end of shaft, aligning offset hole in Washer with protruding Key. Secure with (1) $\frac{5}{16}$ -18 x $\frac{3}{4}$ " Hex Socket Low Head Cap Screw (UA5812.11) and (1) Hi-Collar Lock Washer (LW516.2).
7. Install Clutch Anchor Bracket (36676A) after

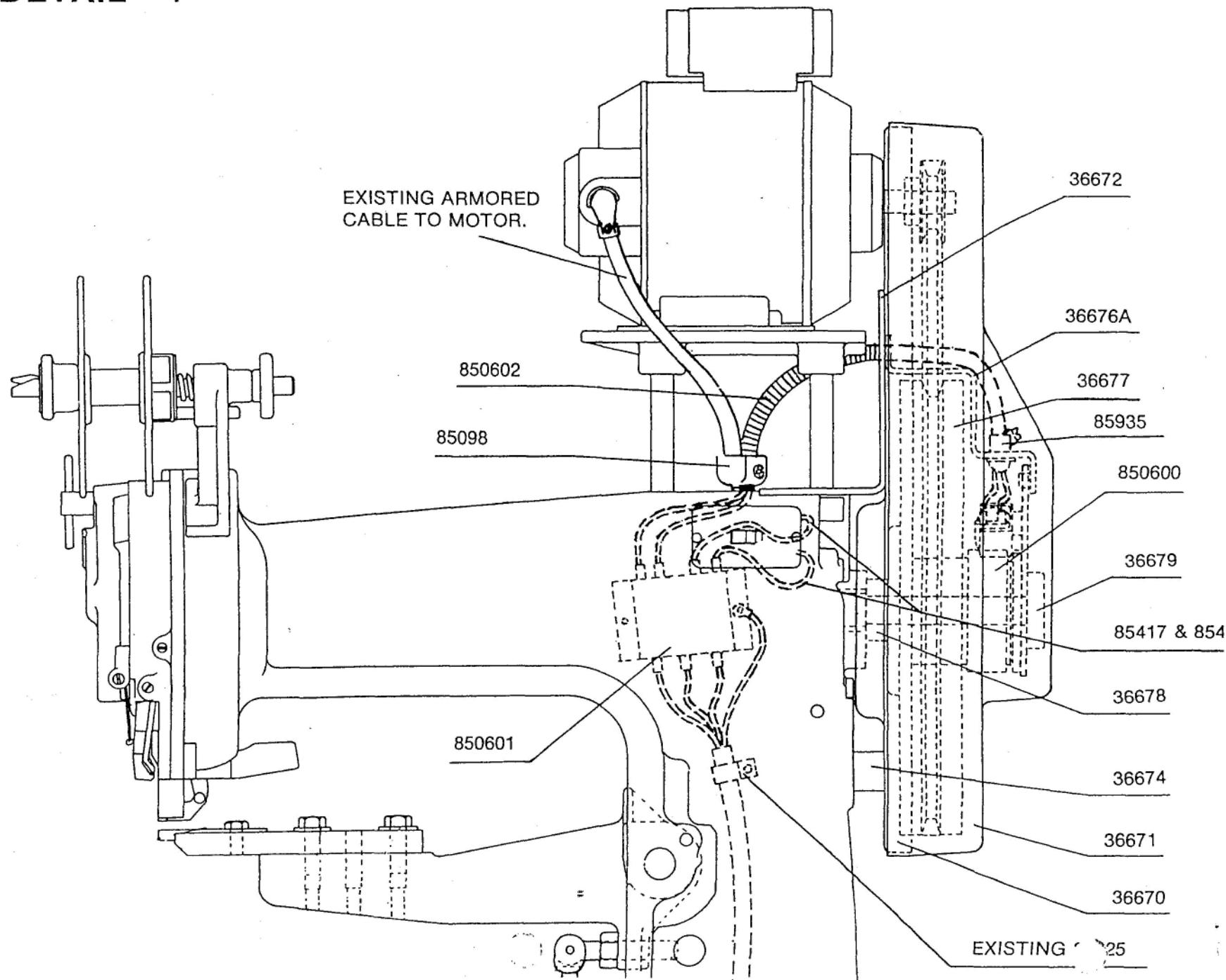
attaching Cable Insulet (85935) to Bracket. With Clutch Plate in vertical position, insert pins of Bracket into holes in Plate. Fasten Bracket to Mounting Plate Bracket, using (2 each) $\frac{1}{4}$ " Washer (PW516.4), $\frac{1}{4}$ -20 x $\frac{7}{8}$ " Hex Socket Head Cap Screw (UA4814.1), $\frac{1}{4}$ " Lock Washer (LW14) and $\frac{1}{4}$ -20 Hex Nut (HN1420.5)

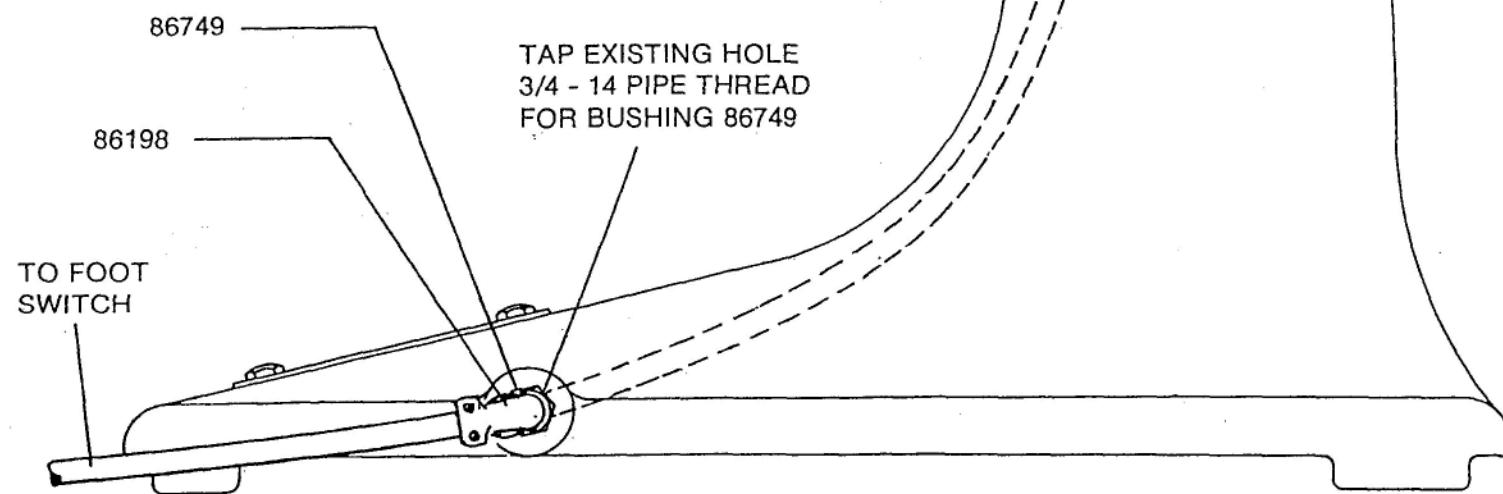
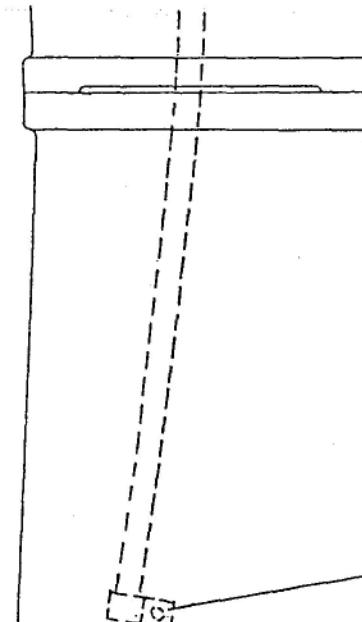
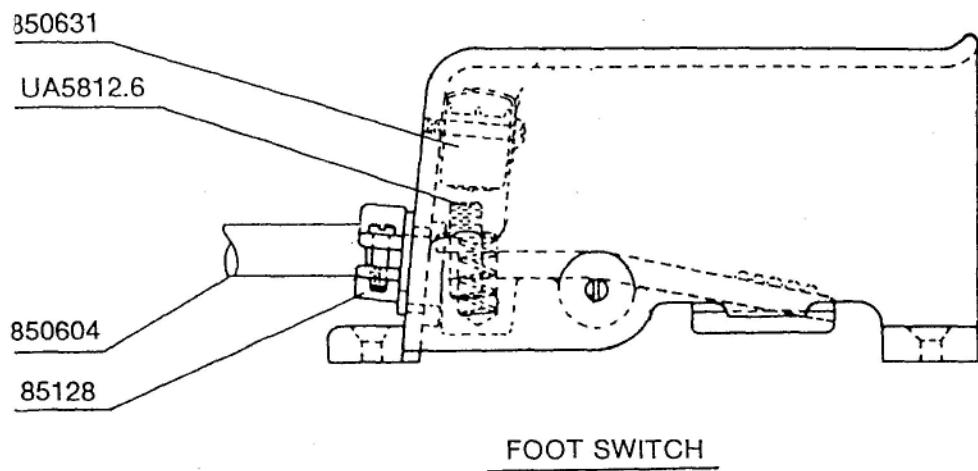
IMPORTANT: After Anchor Bracket is secure, there should be no binding between pins of Anchor Bracket and holes of Clutch Plate. Plate must be free to float on pins to prevent any binding or thrust load on rear Clutch Bearing. If this occurs, loosen Anchor-Bracket screws and adjust Bracket until pins are free in holes. Pins are only to prevent Plate rotation.

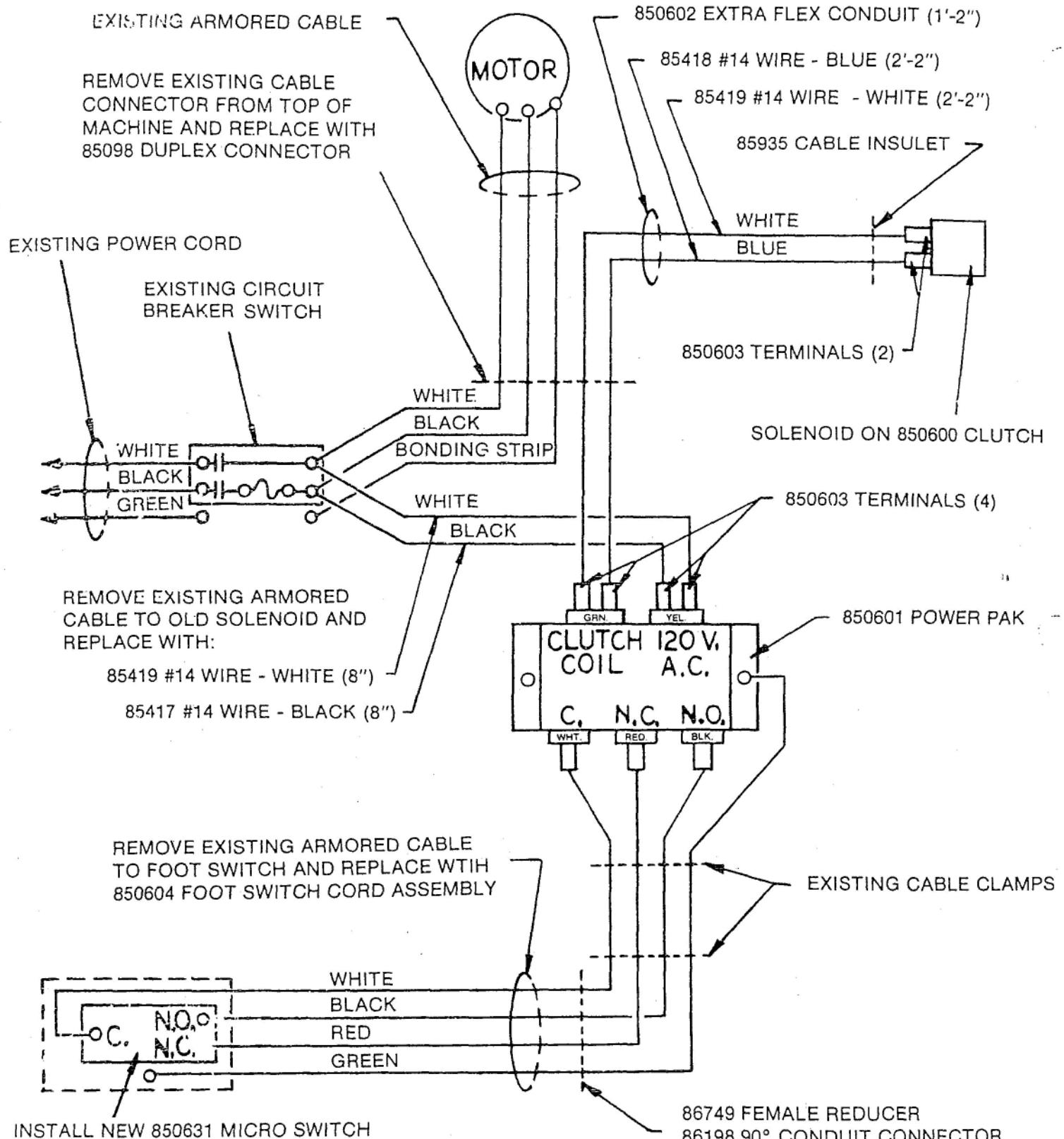
Installation of Electrical Parts and Wiring (Refer to Wiring Diagram and Detail 4 in this Manual)

1. Install Duplex Connector (85098) to top of machine in hole from which single connector was removed.
2. Make cable assembly from Power Pak (850601) to Clutch Solenoid by threading one 2'-2" length each of Blue wire and White wire through the 1'-2" length of Extra-Flex Conduit (850602). Strip $\frac{5}{16}$ " of insulation from ends of wires and attach (1) Wire Terminal (850603) to each end.
3. Thread cable assembly through the $\frac{5}{16}$ " Dia. hole in plastic Mounting Plate and Mounting Plate Bracket, feed wires through Cable Insulet attached to Clutch Anchor Bracket and secure metal Conduit to Connector. Use (1) Anti-Short Bushing (85777) between conduit and wires. Attach wire terminals to terminals of solenoid. Pull excess wire back through the Duplex Cable Connector and position metal Conduit in Connector. Use (1) Anti-Short Bushing (85777) between wires and metal jacket.
4. Thread Foot Switch Cord Assembly (850604), ring-type terminal end first, through arm hole at front of Body and down through Base. Attach Foot Switch Cord wires securely to the corresponding color terminals of the Power Pak (850601). Attach Blue and White Clutch Coil Wires securely to Green terminals.

DETAIL - 4







NOTE - USE 85777 ANTI-SHORT BUSHINGS AT ALL CONDUIT CONNECTORS TO PROTECT WIRES FROM SHARP EDGES.

WIRING DIAGRAM TO CONVERT S13 SERIES METAL STITCHERS TO P.S.I. WRAP SPRING CLUTCH OPERATION

5. Strip $5/16$ " of insulation from both ends of 8" piece of Black wire and White wire. Firmly attach (1) Wire Terminal (850603) to one end of each wire. Attach these two power wires securely to the Yellow terminals of the Power Pak. Refer to wiring diagram to be sure all wires are correctly positioned.
6. When all wires are correctly placed and firmly attached, fasten Power Pak to inside of left side of Body with (2 each) #8-32 x 1" Machine Screws, and #8-32 Hex Nut. Attach Green ground wire of Foot Switch Cord to rear mounting screw of Power Pak.
7. Secure wires to inside of machine with cable clamps as shown in Detail 4 with all wires clear of Drive Shaft.
8. Install Female Reducer Bushing (86749) into tapped hole in Base. Screw 90 degree Conduit Connector (86198) into Bushing. Carefully tip machine back and thread lower end of Foot Switch Cord through bushing and connector. Take up slack wire and secure cord to connector. Use (2) Anti-Short bushings between cord and connector.
9. Take Foot Switch apart. Remove and discard old two-terminal Microswitch and armored cable. Thread new Foot Switch Cord end through cable connector and attach wires to new three-terminal Microswitch according to wiring diagram. Fasten ground wire and Microswitch in place. Secure cord to connector. Use (2) Anti-Short bushings between cord and connector. Reassemble Foot Switch.
10. Re-install altered Motor Mount and Motor. Replace Motor Pulley. Install V-belt to proper tension. Replace Clincher Arm (or Arm Hole Cover on Post Model). Replace rear cover on Base.
11. Thread motor wires through Duplex Connector

and secure both motor wire conduit and clutch solenoid conduit to connector. Reconnect wires to Circuit Breaker Switch and grounds according to wiring diagram and reinstall switch in machine.

Test and Adjust Machine

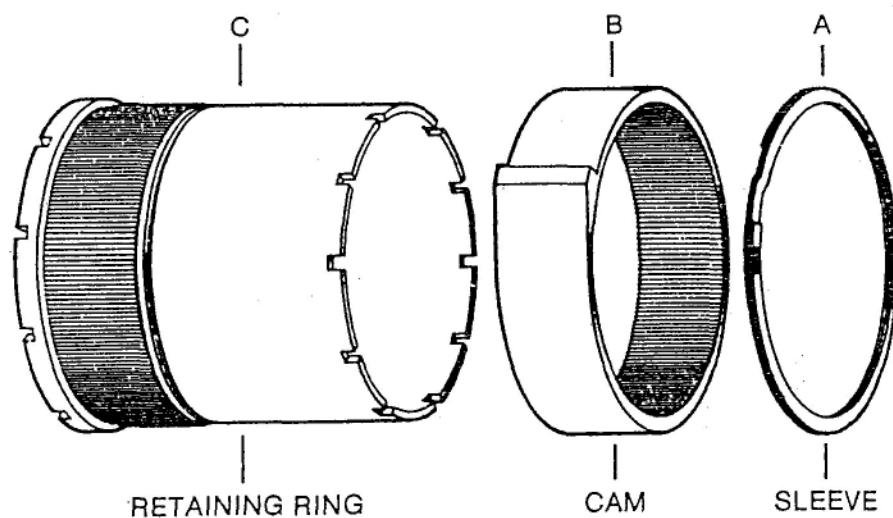
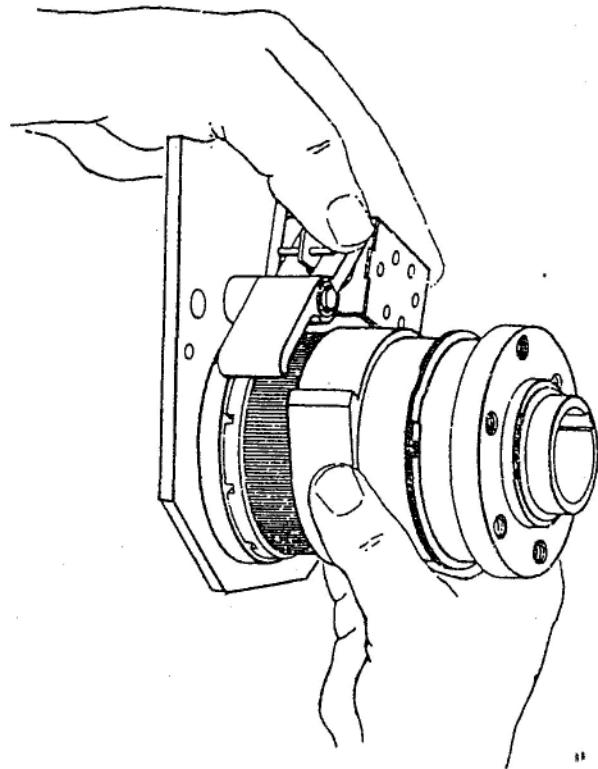
(Refer to Details in this Manual and BSA1160 or BSA1235.)

1. Connect power supply. Turn switch ON. Depress Foot Switch and hold down. Machine should cycle only once and stop. Release Foot Switch and press down and release several times. Machine should cycle once for each pedal depression.
2. If Switch is too sensitive, turn the Microswitch Adjusting Screw (UA5812.6) on underside of Treadle counterclockwise to reduce sensitivity.
3. If machine does not cycle, determine first if Microswitch is clicking on and off when treadle is depressed. If not, turn Adjusting Screw clockwise until it does.
4. If switch is working properly, trip Clutch Actuator Pawl once by hand to be sure it is free to move and re-check wiring connections. Refer to Maintenance Manual, BSA1235, for additional Clutch information.
5. Check stopping position of Head. Position can be adjusted by following the instructions in Detail 5.
6. Finally, when everything is working properly, attach plastic Belt Guard (36671) to plastic Mounting Plate by following the directions on page 3 of BSA 1235 Maintenance Manual.

GUIDE FOR READJUSTING STANDARD (1.6° ADJUSTABLE) STOP COLLAR

1. Work retaining ring "A" out of groove and slide forward on sleeve "C".
2. Slide cam "B" off splines, rotate to desired relationship of stop to shaft keyway, and slide back on splines. The actuator pawl will have to be held clear during this operation.
3. Slide retaining ring back into groove.

NOTE: Make sure brake is locked up before proceeding to insure getting proper stop point.



DETAIL - 5

