

FINEST QUALITY

Union Special[®]
LEWIS[®] • COLUMBIA[®]

INDUSTRIAL
SEWING
MACHINES



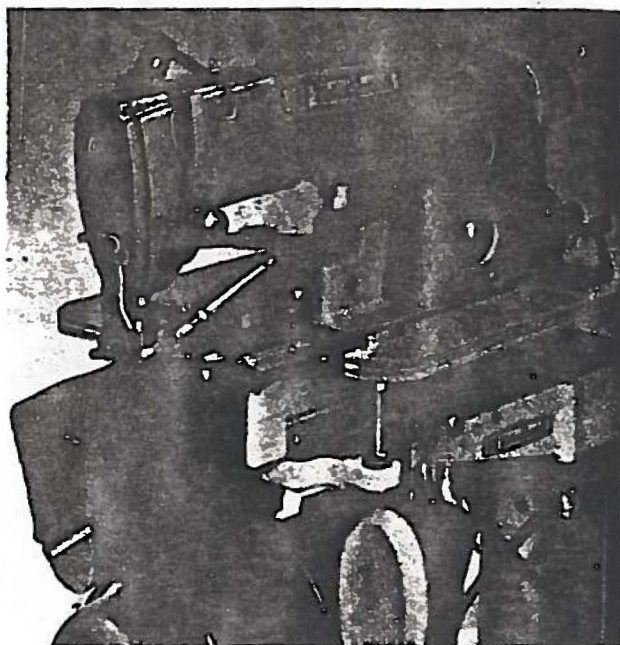
63900 AMZ-900/
WS42800 LAH-1

A D J U S T I N G I N S T R U C T I O N S

PL 1096

A N D

L I S T O F P A R T S



Trimmer Adjustment

Loosen knife screw (A) and slide upper knife left or right until a dimension of $3 \frac{13}{64}$ " is obtained from right edge of throatplate to point of upper knife as shown in fig. 1. Tighten knife screw.

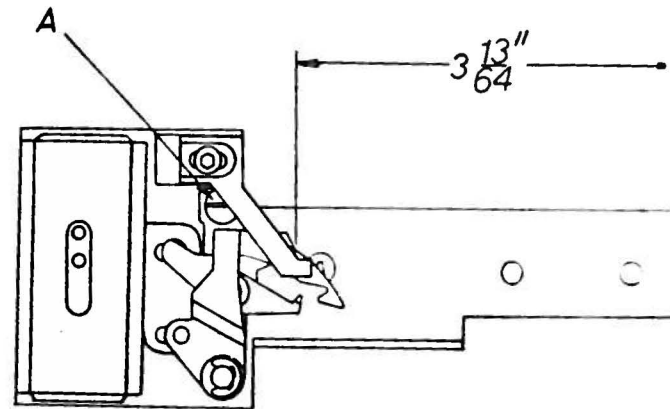


FIG. 1

Install knife assembly on machine centering needle in throatplate hole and tighten the two throatplate screws. Make sure the positioning finger (C) fits into the positioning notch in the hook basket. Now loosen screw (B) and slide positioning finger forward or backward until a dimension of $\frac{1}{32}$ " is obtained between positioning finger and basket. Tighten screw.

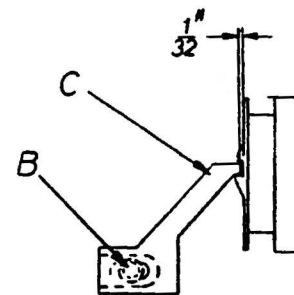


FIG. 2

Synchronizer Adjustment

1. Rotate handwheel in counterclockwise direction until needle bar is at the bottom of its stroke. Remove synchronizer protective cover (A) and loosen set screw (B) by approximately one half turn. Rotate notch disc (C) until the opening of the notch is centered over the shutter opening (Fig. 4). Tighten set screw.

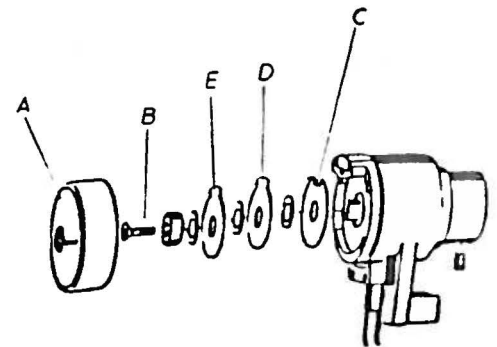


FIG. 3

2. Now rotate handwheel until take-up is on its up stroke and is approximately 1/8 inch from the top of its stroke. Loosen set screw (B) and turn tab disc (D) until the tab is centered over the shutter opening (Fig. 4) while using caution not to change the setting of notch disc. Tighten set screw.

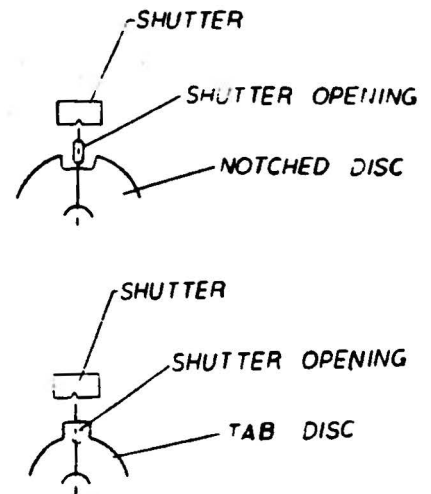


FIG. 4

Synchronizer Adjustments

3. Turn handwheel in operating direction until take-up lever is nearly at the bottom of its stroke (Fig. 5) and the screw A (Fig. 6) in hook retainer is at top. Loosen set screw and turn tab disc E (Fig. 3) until tab is centered over shutter opening. Tighten set screw.

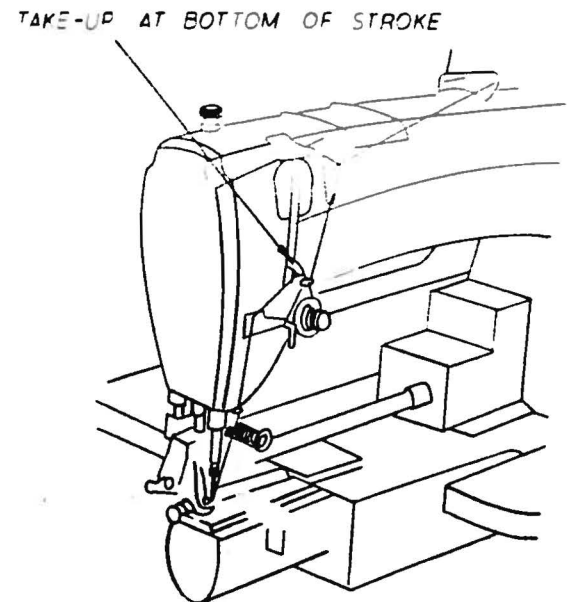


FIG. 5

4. Turn on machine power. To check needle down position, toe treadle and release. Needle should stop at bottom of stroke. Now heel back on treadle. Trimmer should fire and take-up lever should stop 1/8 inch from the top of its stroke. If either of these settings are not correct go back to step 1 and re-check synchronizer adjustments.

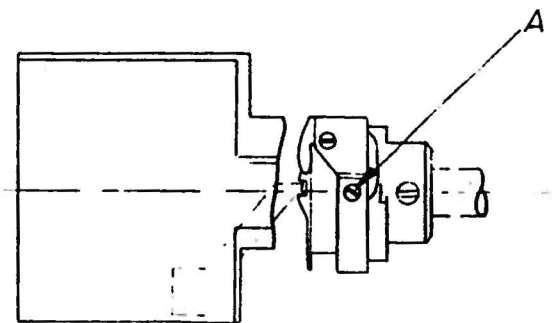
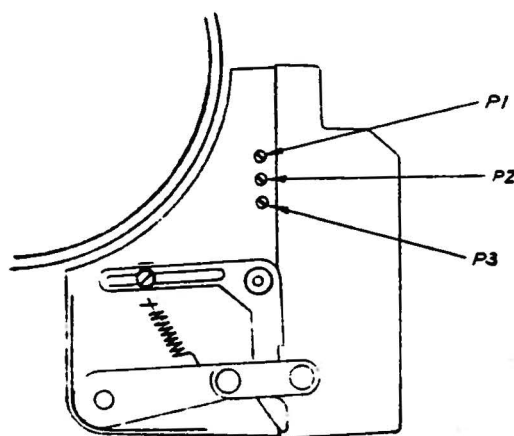


FIG. 6

800 M Quick Speed Setting

1. Adjusting medium speeds or 'ramping'.
 - a. Turn potentiometer P3 on Quick motor control box all the way counterclockwise (10 turn pot) to obtain the maximum acceleration.
2. Adjusting high speed.
 - a. Turn on machine power and connect air.
 - b. Press treadle all the way down (forward).
 - c. Turn potentiometer P2 until a handwheel speed of 5200 rpm is obtained.
3. Adjusting slow (positioning) speed.
 - a. Remove synchronizer protective cover and block photocell (see diagram) by inserting a small strip of paper into slot at top of synchronizer.
 - b. Press treadle forward and release. Motor should continue cycling at positioning speed.
 - c. Turn potentiometer P1 until a handwheel speed of 195 rpm is obtained.
 - d. Remove strip of paper to stop machine and replace protective cover.

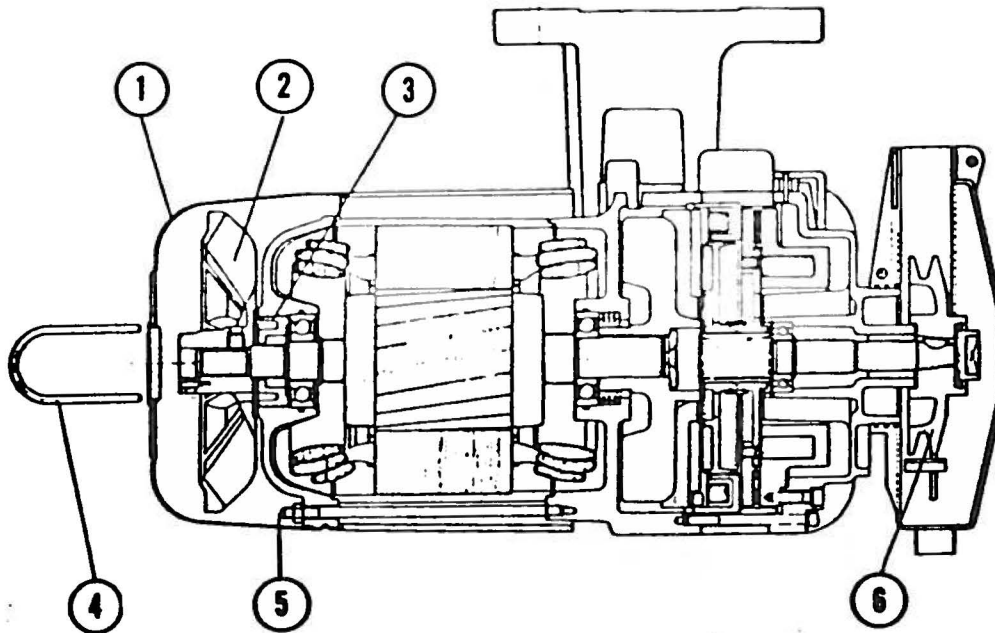


SERVICING INSTRUCTIONS 880M

Assembly/Disassembly for Inspection or Replacement:

1. Remove V belt and guard.
2. Disconnect cables which attach clutch housing to control box.
3. Remove the three screws located approximately 120° apart. When removing last screw, place hand under clutch/brake housing so that unit will not fall.
4. Keep clutch/brake housing tilted slightly downward (pulley side down) to keep the clutch/brake disc in place.
5. Place the clutch/brake housing, pulley side facing upward, on a clean flat surface. Separate the clutch solenoid from the end bell. Note: Use caution during disassembly and reassembly to ensure alignment and inserting of the solenoid electrical connection pins into the mating socket of the end bell. Slide the clutch and brake discs of the splined shaft of the end bell. Put the end bell aside and inspect the clutch/brake discs for wear. If cork surfaces are smooth and if cork on clutch disc projects beyond the outer metal rim, discs are okay.
6. Clean the surfaces of the face plates with an oiled rag. These surfaces should be smooth. If you find nicks and gouges on them, replace the plates.
7. Thoroughly clean the cork faces of the clutch/brake discs using a clean, dry rag. Apply grease (Quick No. 051.011) in 3-one inch segments every 120°. Spread the grease evenly over the entire cork surfaces.
8. Apply a small amount of grease to the brass splines on which the clutch/brake discs move. This will assure proper action.
9. Reassemble the clutch/brake discs making sure the rubber "O" rings (part No. 408.009) and the stop washer (part No. 250.008) are in good condition. To assure proper operation of the cooling system, make certain that the vent holes are lined up.
10. Reinstall the clutch/brake discs and housing by reversing the procedures outlined in sections 3., 2., and 1.
11. Once reinstallation is completed, check the clutch/brake clearance as outlined

ADJUSTING THE CLUTCH/BRAKE CLEARANCE

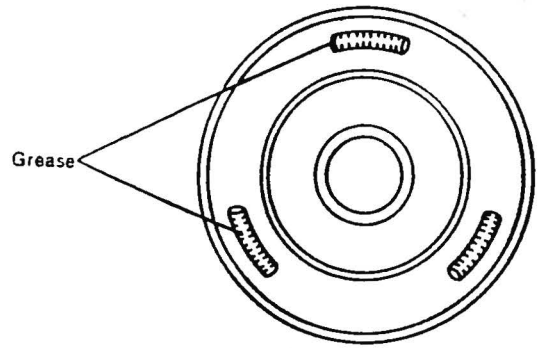


1. Remove fan cover (1) by turning counterclockwise.
2. Insert adjusting tool (4) into the bores on fan (2). Exert pressure on adjusting tool and turn fan until the tool locks into the bores of adjusting screw (3).
3. With tool locked in place, turn fan (2) clockwise until pulley (6) has a moderate drag when rotated with the other hand.
4. Rotate adjusting tool (4) and fan (2) 120° counterclockwise (120° is the distance between cap nuts [5] on the end bell. Required clutch clearance .5 mm).

Lubrication

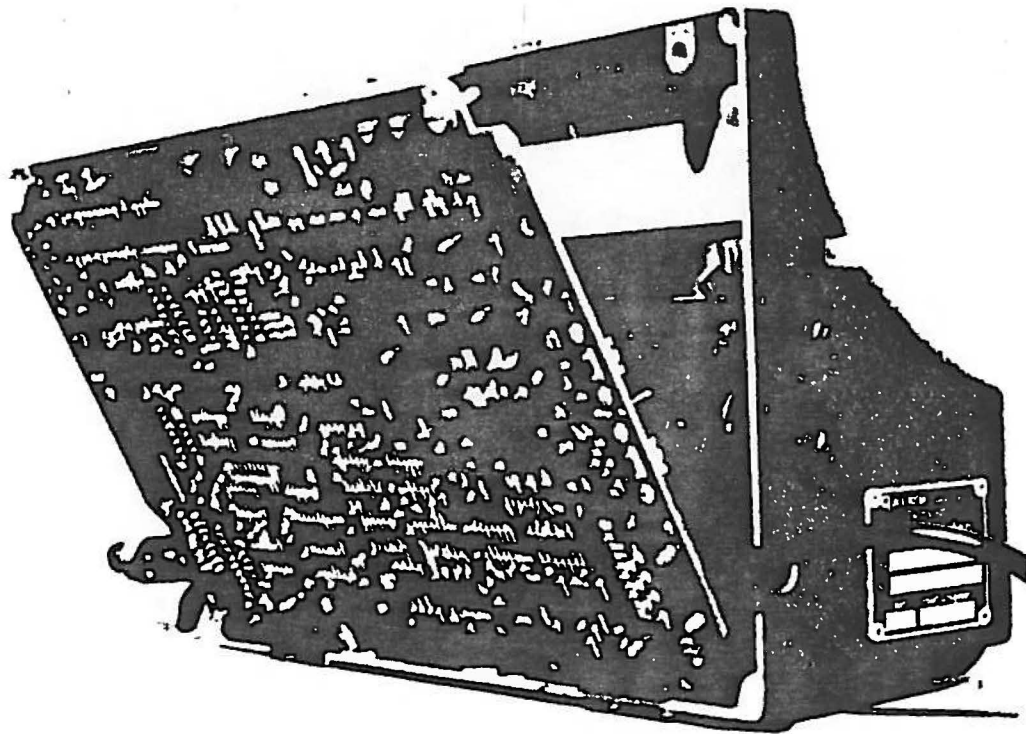
To prolong cork facing life and increase smoothness of operation, the following lubrication should be performed annually:

1. Disassemble clutch/brake assembly as described on the reverse side.
2. Remove clutch and brake discs.
3. Clean cork surfaces of the discs and the metal facings of the flywheel and brake surfaces with a clean, lint-free cloth. Note: Mineral spirits solvent or carbon tetrachloride can be used on METAL SURFACES ONLY to speed up cleaning.
4. Apply 3 segments of Quick grease (Part No. 051.011) about one inch long, as shown in the illustration, to the cork surfaces.
5. Spread grease evenly on both cork surfaces.
6. Install on splined shaft AFTER lightly coating the splines with the special grease.
7. Reassemble to motor and check for clearance (see above).



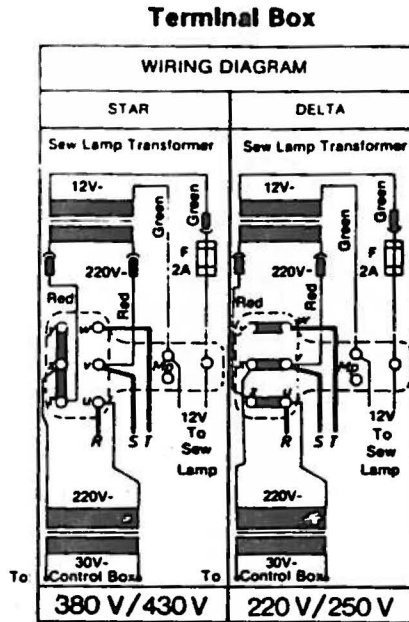
REMOVAL OF PRINTED CIRCUIT BOARD (PCB)

1. Turn machine main power off.
2. Unscrew the 4 screws in the corners of the motor control box cover.
3. Unplug flat ribbon cable from PCB.
4. Unscrew the 2 screws on the PCB and remove board as shown.
5. Reinsert PCB and tighten with the 2 screws.
6. Connect flat ribbon cable.
7. Install cover using the 4 screws.
8. Turn power on and check the functions. Adjust speeds if necessary.

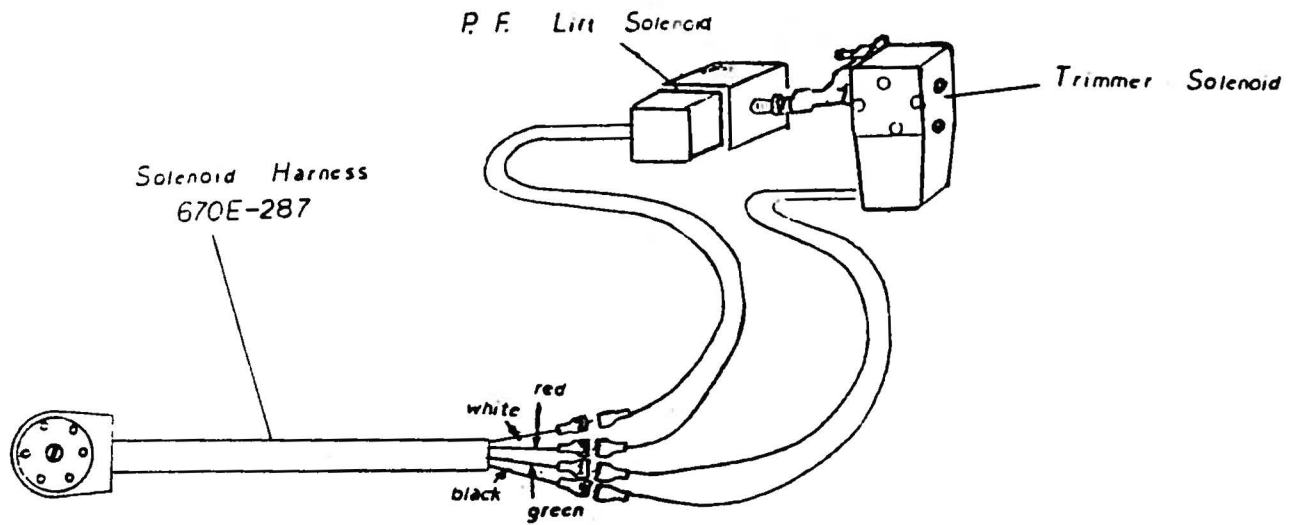


ELECTRICAL

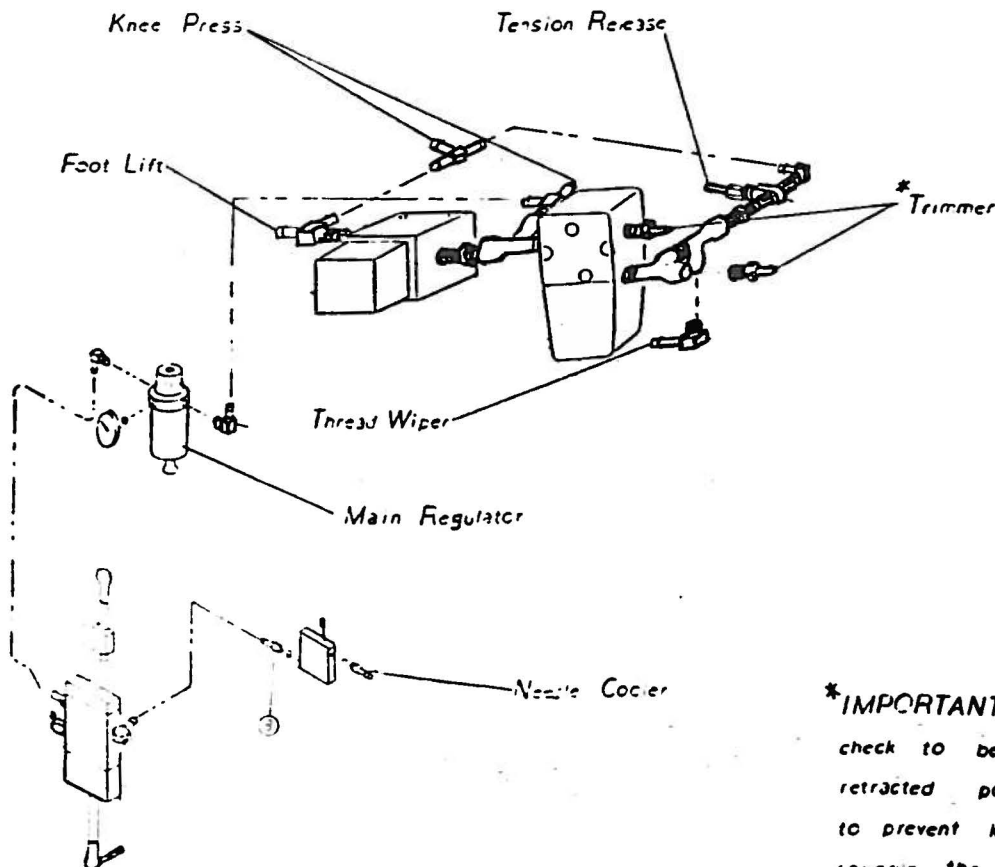
The terminal strip of the motor is designed to accommodate either the star connection for 380 volts A.C. or Delta connection for 220 volts A.C., three-phase. Details of both connections are illustrated in the wiring diagram below.



SOLENOID CONNECTIONS

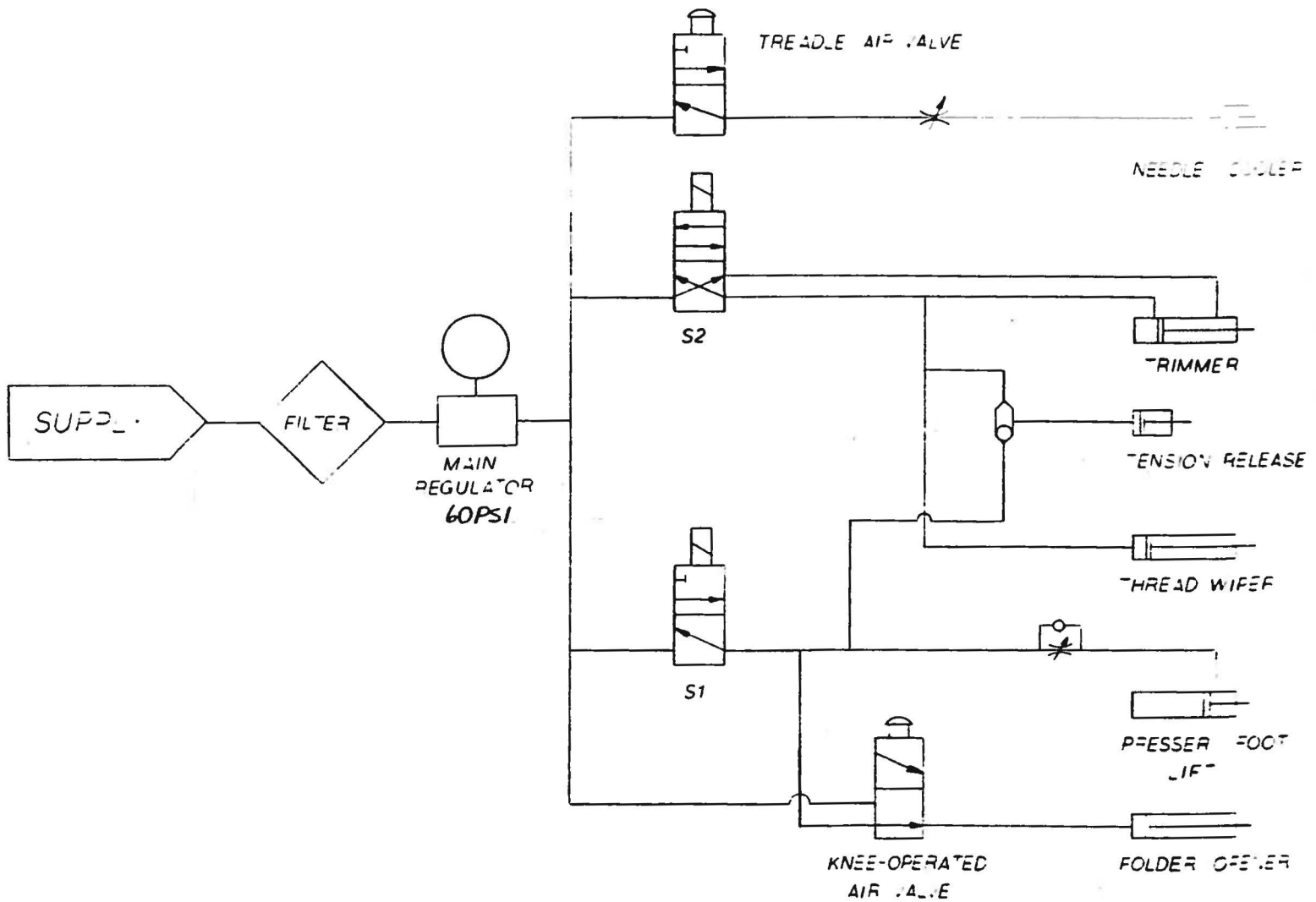


PNEUMATIC CONNECTIONS



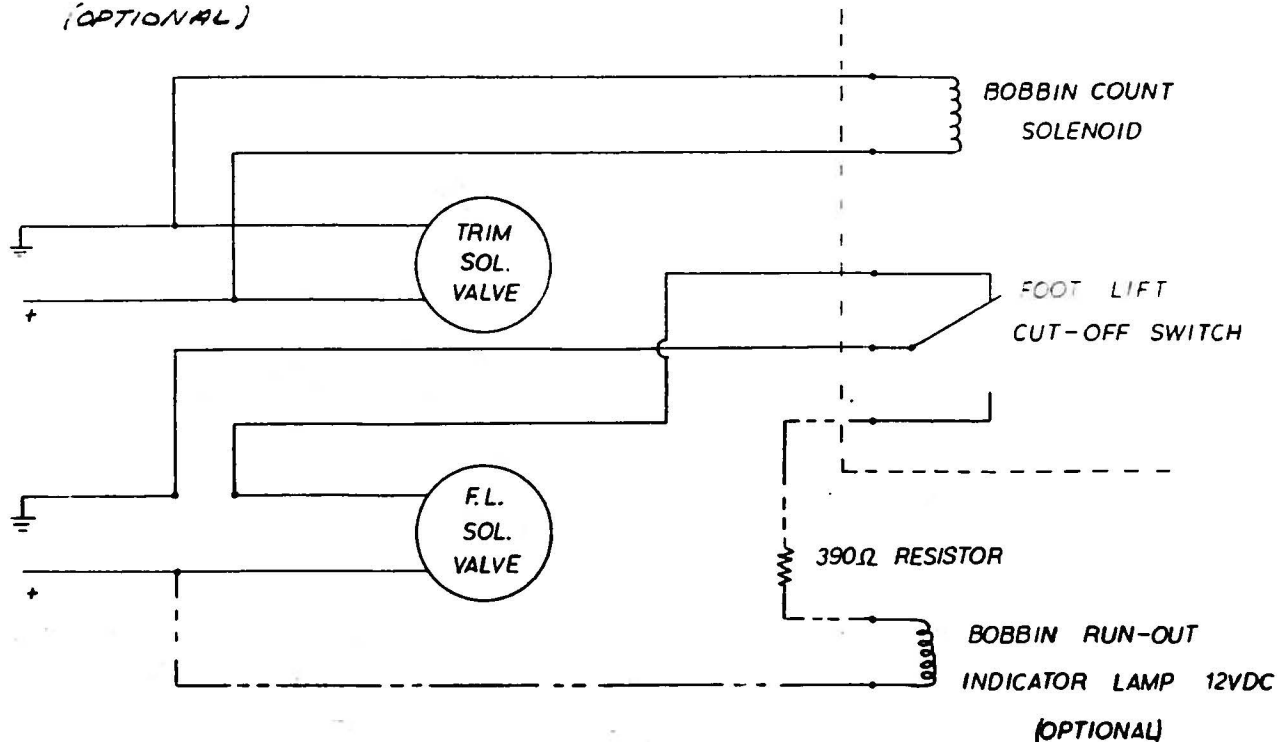
***IMPORTANT:** After connecting trimmer, always check to be sure thread catcher is in retracted position before operating machine to prevent knife mechanism damage. If not, reverse the two air lines.

PNEUMATIC DIAGRAM



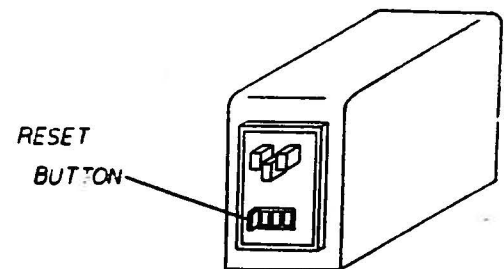
BOBBIN COUNTER WIRING DIAGRAM

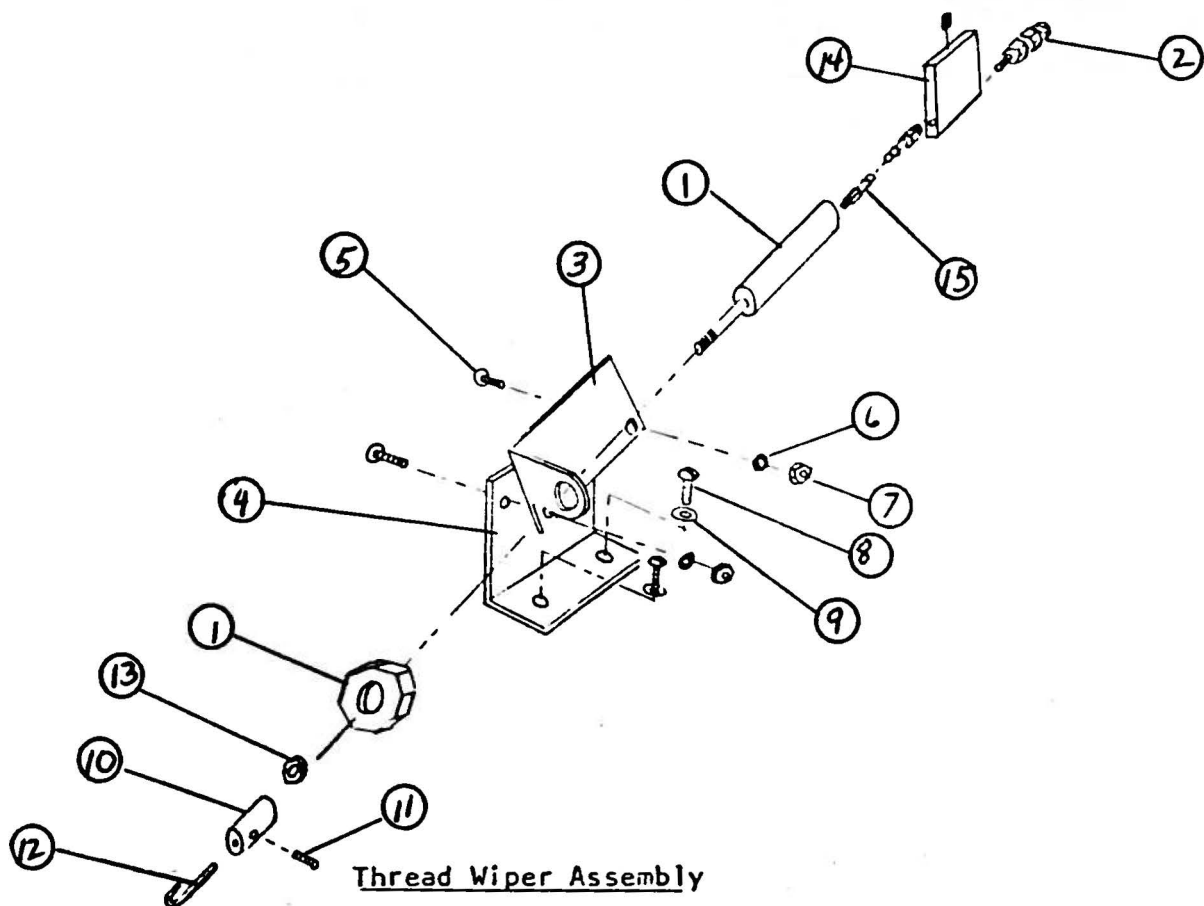
(OPTIONAL)



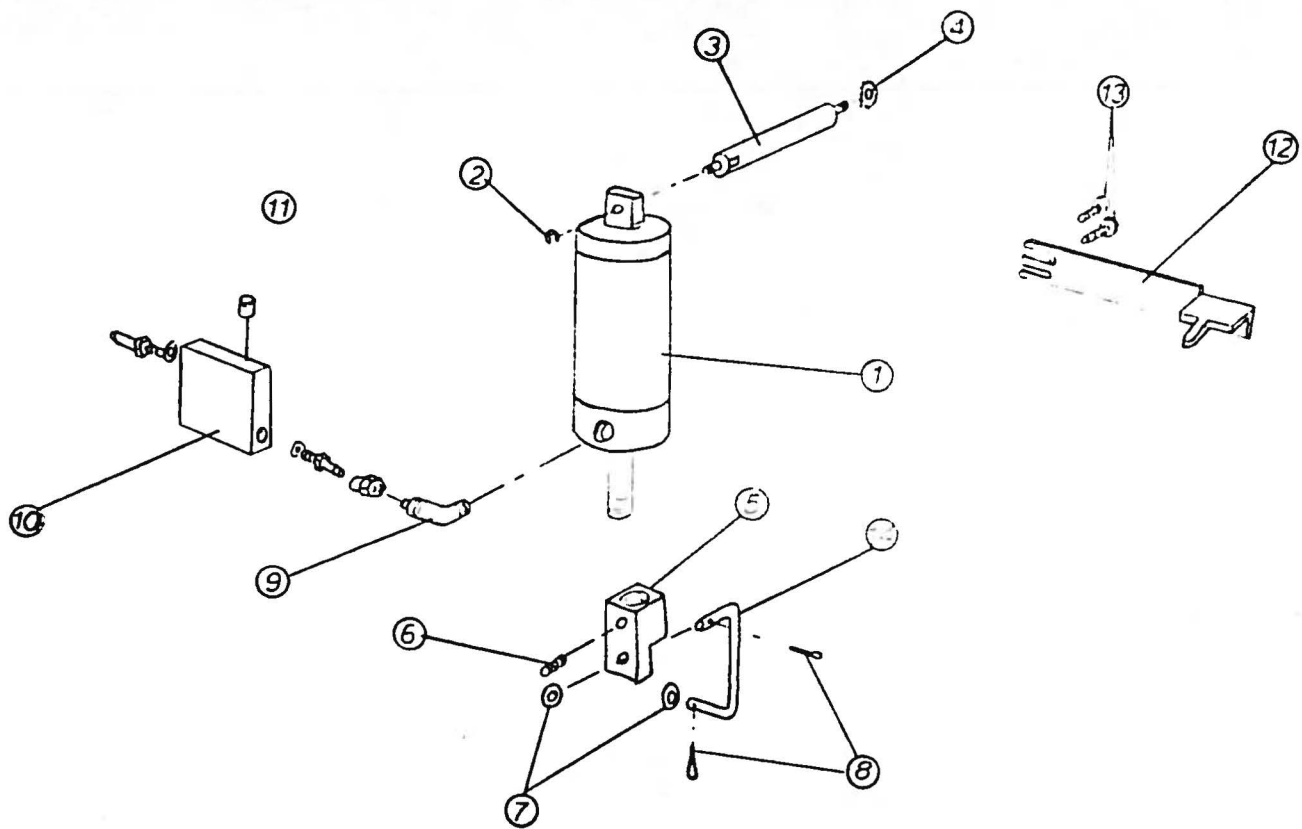
Operating Instructions

1. Install a fully wound bobbin in machine. Set counter to a value of 900 by holding the reset button in while indexing the appropriate digit by pressing the other three black buttons.
2. Sew the complete bobbin keeping watch for when the bobbin thread runs out. The counter will count down one number each time a garment is completed (counts trimmer pulses).
3. Subtract the resulting count from 900 - this figure represents the number of garments that can be sewn from a full bobbin. Also subtract a few cycles from this number to account for any variance that might occur.
4. Reset the counter digits to the final count obtained.
5. When the counter reaches zero the bobbin run-out warning light will come on and the presser foot will not lift when the operator heels back on the treadle. When this happens, press the reset button and install new bobbin.



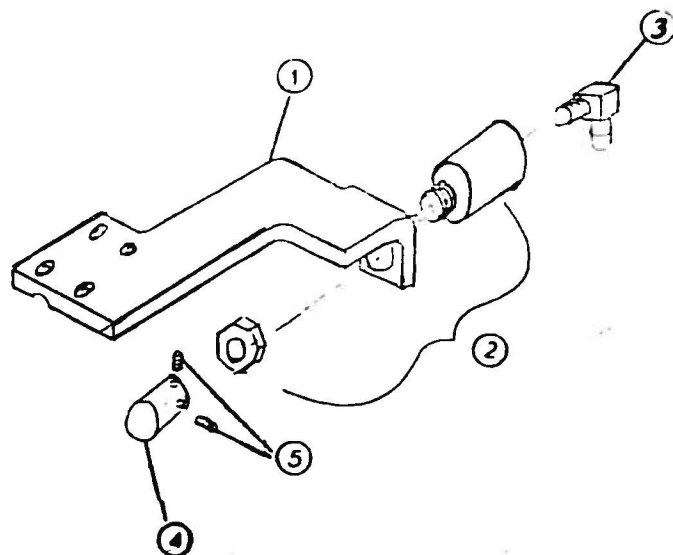


<u>No.</u>	<u>Qty.</u>	<u>Description</u>	<u>Part #</u>
1	1	Thread Wiper Air Cylinder & Nut (Non-Rotating)	671-A-15
2	1	10-32 Male Connector - Poly	671-F-17
3	1	Air Cylinder Bracket	AS-9-3
4	1	Thread Wiper Bracket	AS-9-4
5	2	B.H. Screw 8-32 x 3/8	RM-2813-3
6	2	#8 Lock Washer	RM-2747-6
7	2	Nut 8-32	RM-2791-1
8	2	Screw .183-32	22569-J
9	2	Washer	RM-3293-5
10	1	Thread Wiper Clamp	AS-9-5
11	1	Set Screw 6-32	RM-2808-1
12	1	Thread Wiper Wire	AS-9-6
13	1	Nut 10-32	651-H
14	1	Flow Control	671-37
15	2	Male 10-32 Connector - Barbed	671-F-4



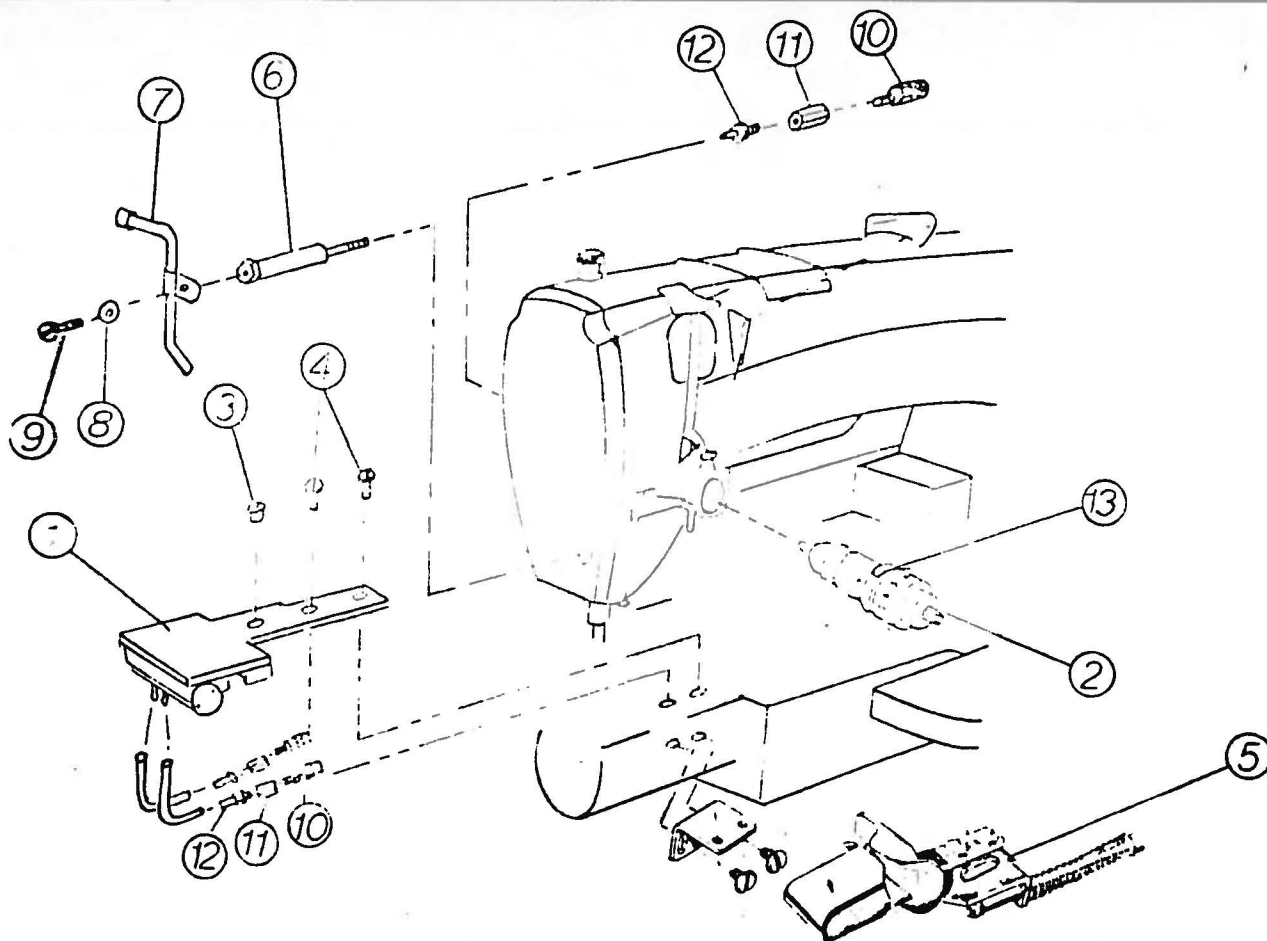
Presser Foot Lifter & Synchronizer Positioning Finger

<u>No.</u>	<u>Qty.</u>	<u>Description</u>	<u>Part #</u>
1	1	Foot Lifter Air Cylinder	660-397
2	1	Retaining Ring	660-245
3	1	Extension Stud	63468-B
4	1	Lock Washer	652-B-20
5	1	Clevis	63468-A
6	1	Set Screw	22894-W
7	2	Washer	53634-C
8	2	Cotter Pin	660-142
9	1	Male Elbow - Poly	660-401
10	1	Flow Control	671-37
11	2	Male Connector - Barbed	671-F-4
12	1	Synchronizer Positioning Finger	63495-R
13	2	Screw for Synchronizer Bracket	376-A
14	1	Air Cylinder Link	63468-C



Folder Opener

<u>No.</u>	<u>Qty.</u>	<u>Description</u>	<u>Part #</u>
1	1	Folder Opener Cyl. Bracket	AS-9-1
2	1	Folder Opener Air Cylinder	671-A-56
3	1	Male Elbow - Barbed	RM-3728-1
4	1	Plunger	AS-9-2
5	2	Set Screw 6/32 x 1/4	RM-2808-1

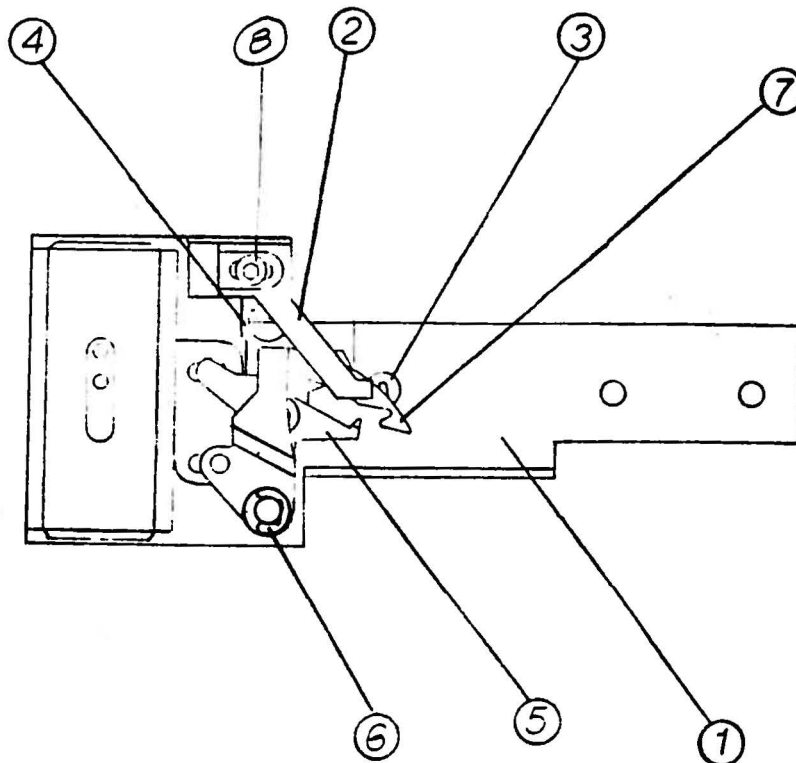


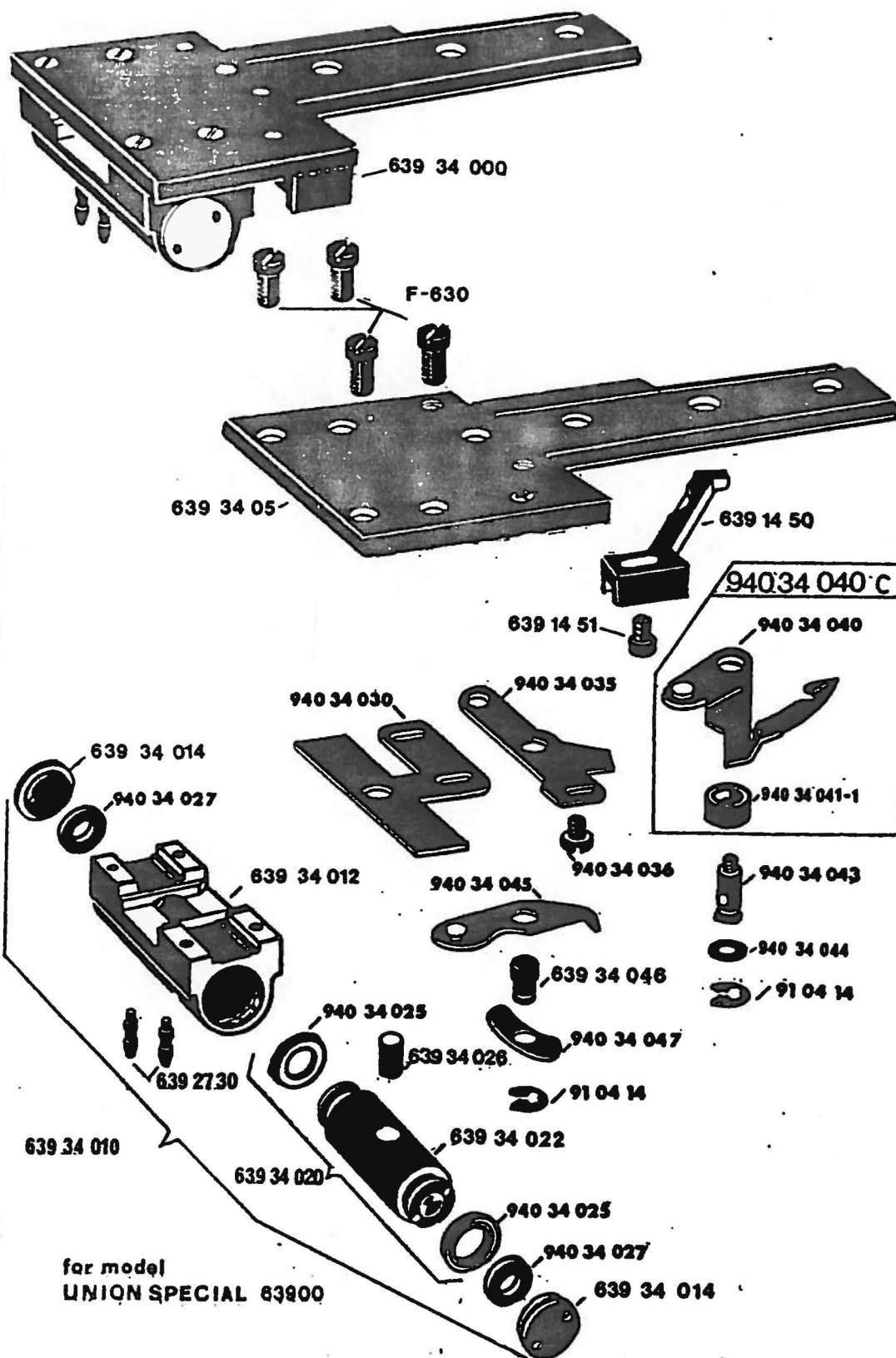
Trimmer, Tension Release, Hemmer

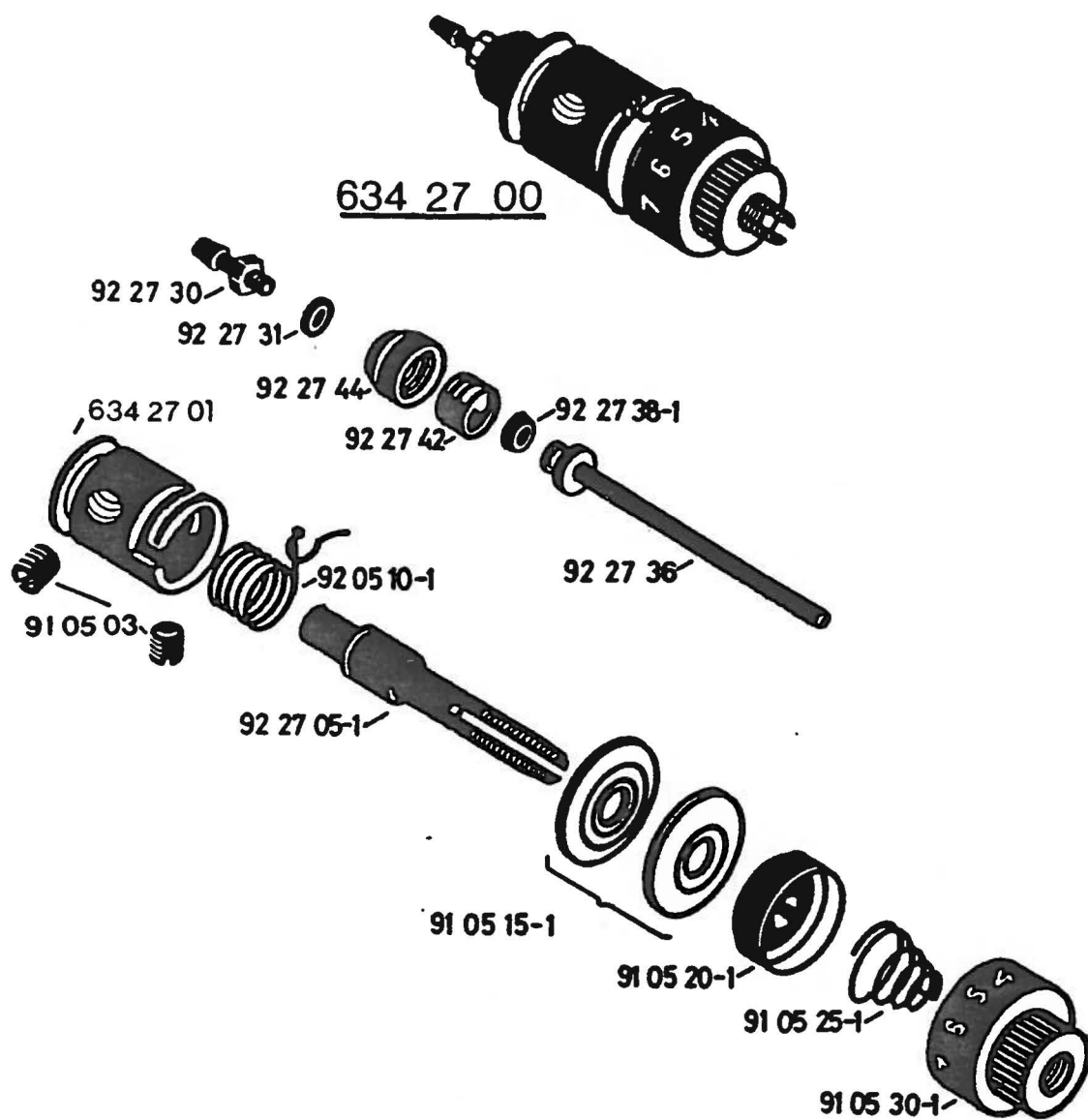
<u>No.</u>	<u>Qty.</u>	<u>Description</u>	<u>Part #</u>
1	1	Trimmer Assembly	639-34-000
2	1	Tension Release Assembly	634-27-00
3	1	Throatplate Needle Hole Insert	63928-A
4	2	Throatplate Screws	22569-C
5	1	Hemmer Assembly	23564
6	1	Adapter Stud	21237-CK
7	1	Air Tube	AS-9-7
7a	1	TENSION ASSY AIR HOSE	671-B-28
8	1	#6 Lock Washer	RM-2747-2
9	1	Screw	22585-A
10	3	Male Connector Poly	671-F-17
11	3	Female Coupling 10-32	671-F-29
12	3	Male Elbow Barbed 10-32 (1/8 TUBING)	671-F-54
13	1	Check Spring	92-5-10-1
N/S	1	Control Tension Spring	92-5-25-1

TRIMMER ASSEMBLY

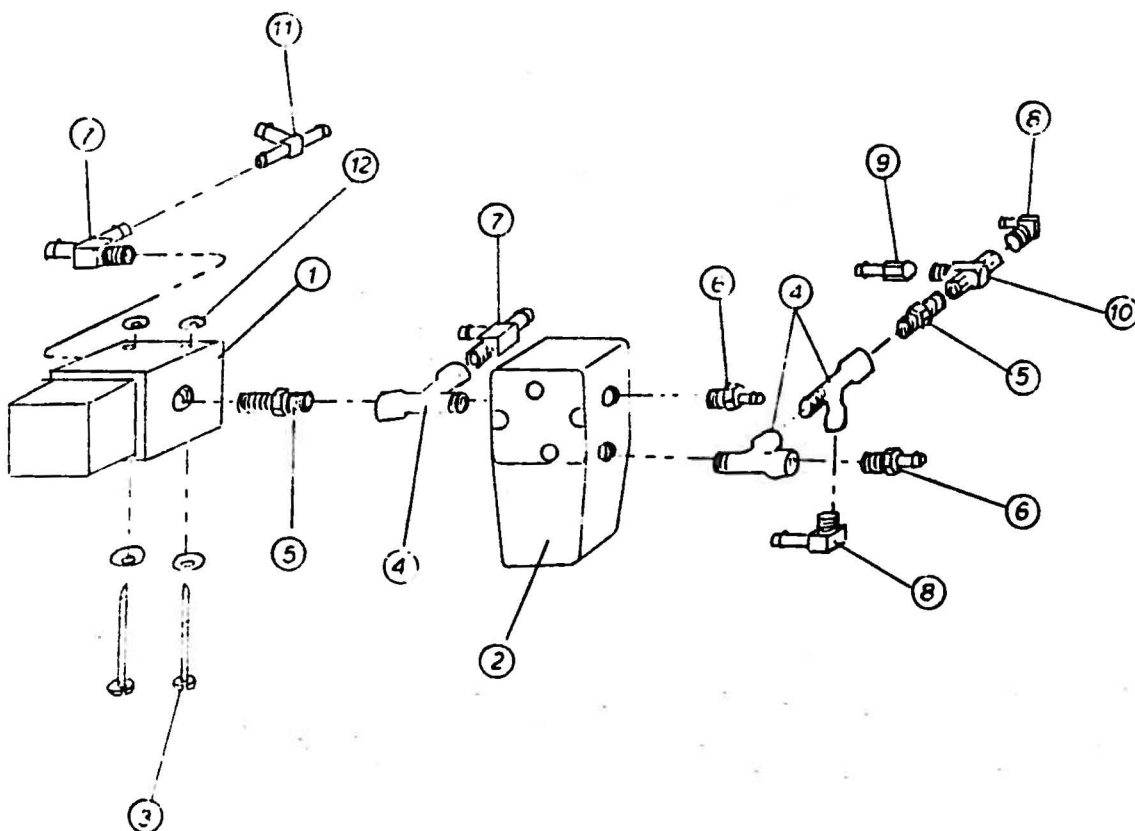
<u>No.</u>	<u>Qty.</u>	<u>Description</u>	<u>Part Number</u>
1	1	Throat Plate	639-34-5
2	1	Positioning Finger	639-14-50
3	1	Throat Plate Needle Hole Insert	63928-A
4	1	Stationary Upper Knife	940-34-035
5	1	Lower Knife	940-34-045
6	1	Retaining Ring	RM 3144-3
7	1	Thread Catcher	940-34-040
8	1	SCREW	639-14-51





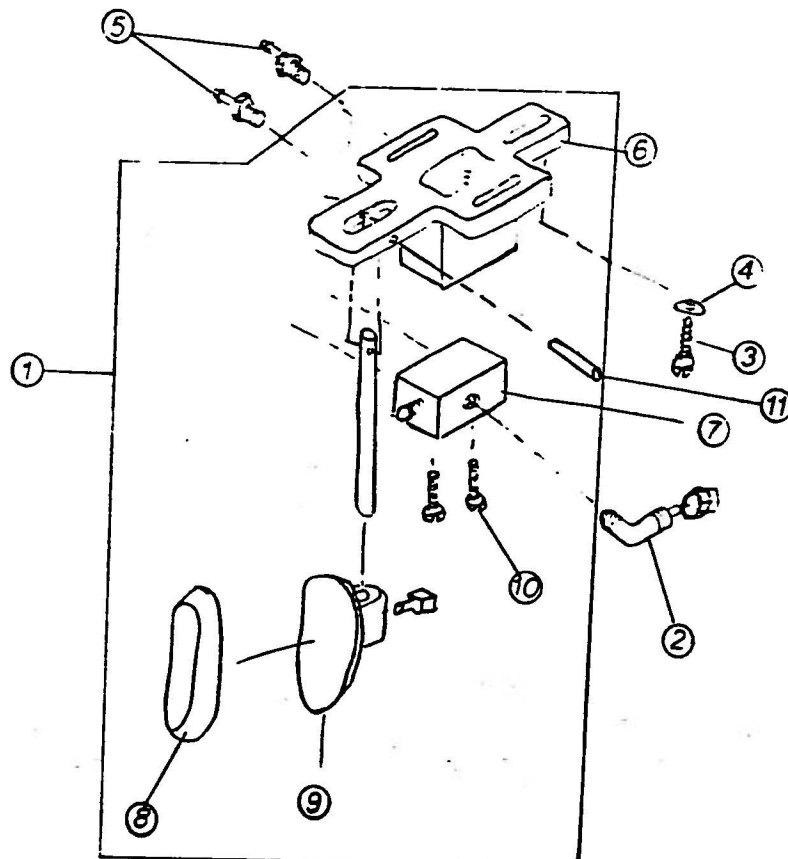


<u>No.</u>	<u>Qty.</u>	<u>Description</u>	<u>Part #</u>
1	1	Foot Lift Solenoid - 3-Way	671-44
2	1	Timmer Solenoid - 4-Way	671-87
3	2	Wood Screw #6 x 1 1/2"	RM-3154-D
4	3	Run Tee	RM-2850-D
5	2	Hex Nipple	RM-3287-2
6	2	Male Connector - Barbed	671-C-4
7	2	1/8 NPT Runn Tee - Barbed	671-F-37
8	2	Male Elbow - Barbed	RM-3728-1
9	1	Female Connector - Barbed	671-F-49
10	1	1/8 NPT Shuttle Valve	671-20
11	1	Union Tee - Barbed	671-F-41
12	4	Washer	RM-3293-5



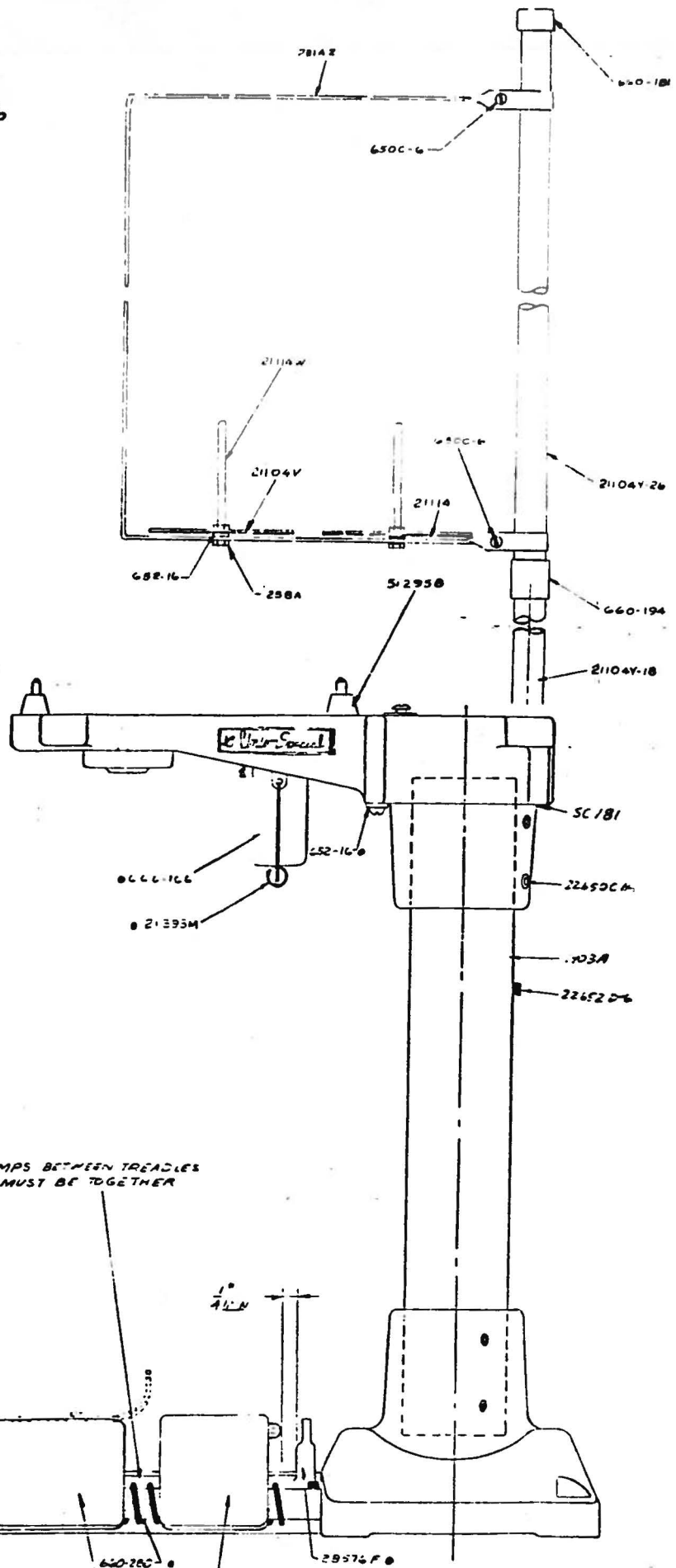
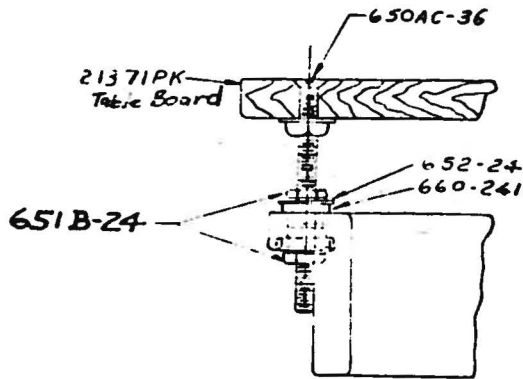
Knee Press

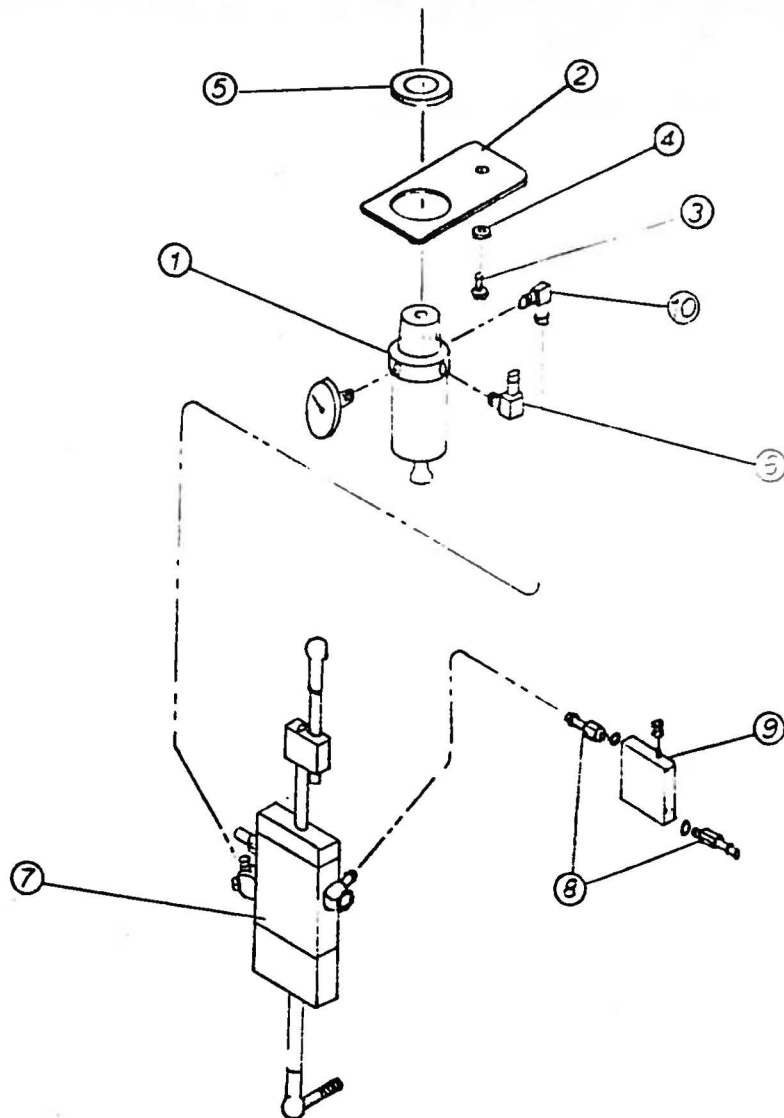
<u>No.</u>	<u>Qty.</u>	<u>Description</u>	<u>Part #</u>
1	1	Knee Press Assembly	2899 KP-1
2	1	Male Elbow - Poly	660-401
3	3	Sheet Metal Screw	RM-2864-1
4	3	#8 Washer	RM-3293-5
5	2	Male Connector - Barbed	671-C-4
6	1	Knee Press Base	AS-7-2
7	1	3-Way Manual Valve	671-85
8	1	Knee Press Pad	660-168
9	1	Knee Press Rod	AS-7-1
10	2	Screw	RM-2805-1
11	1	Doewl Pin	667-C-16



Switch Box Kit 29480RY

Spare Fuses 2 1/2 A 670F-48
2 1/2 A 670F-46

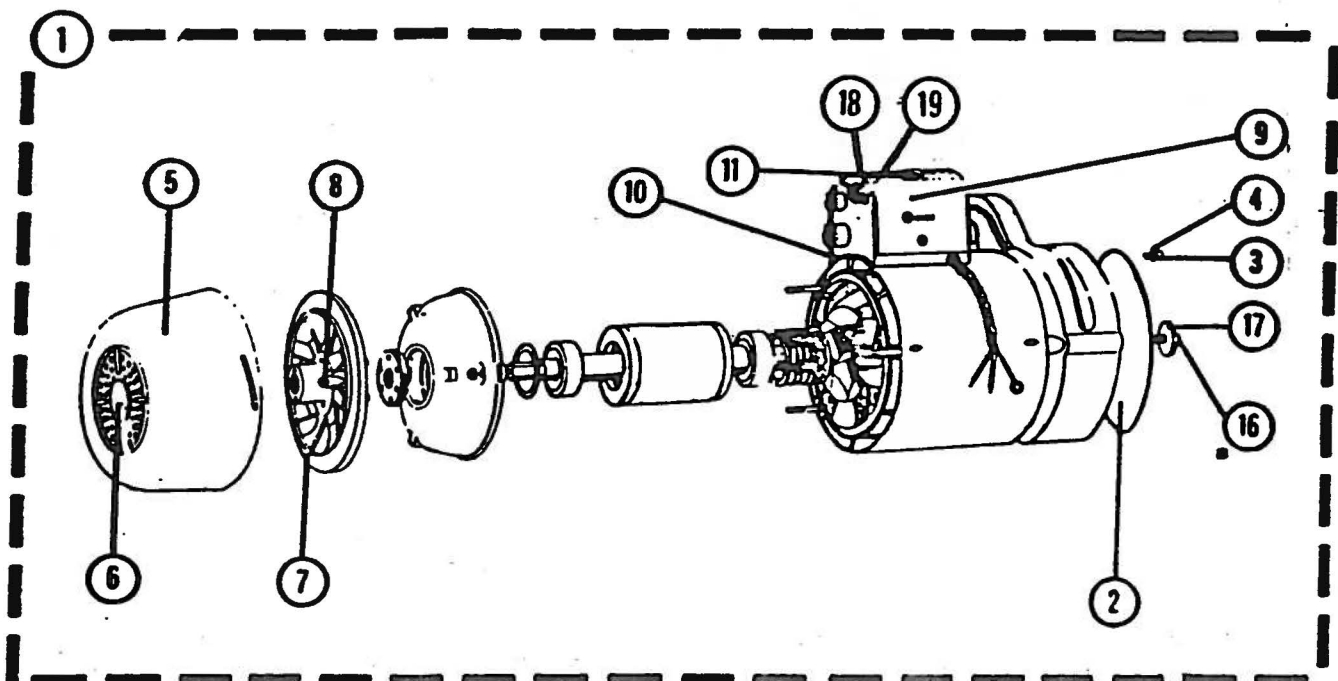
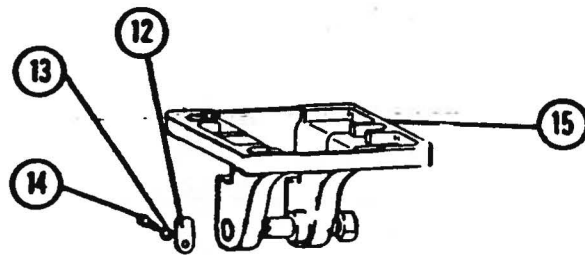




<u>No.</u>	<u>Qty.</u>	<u>Description</u>	<u>Part #</u>
1	1	Filter Regulator	29480-WZ
2	1	Bracket	AS-9-8
3	1	Screw	22642-K-54
4	1	Washer	RM 3293-2
5	1	Nut	21104-H
6	1	Male Elbow, Barbed	671-F-47
7	1	Treadle Valve	99683-HC-155
8	2	Male Connector, Barbed	671-F-4
9	1	In-Line Flow Control	671-37
10	1	Male Elbow, Barbed	RM 3728-1

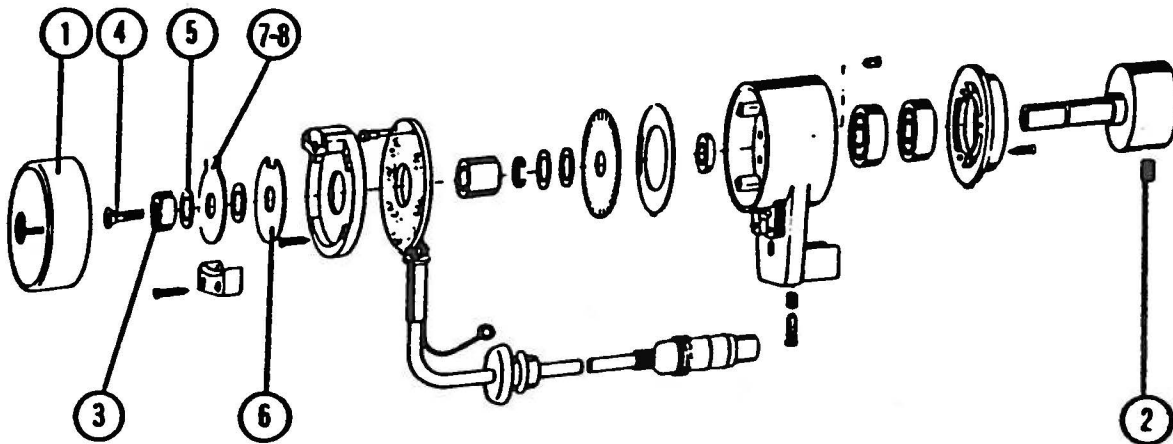
MOTOR, RAW

REF. NO.	PART NUMBER	DESCRIPTION	AMT. REQ.
1	60.000.032	Motor, Raw Complete	1
2	220.014	Face Plate	1
3	800.727	Screw, Socket Head	3
4	402.405	Lock Washer	3
5	240.001	Fan Cover	1
6	250.002	Fan Cover Plug	1
7	75.000.103	Fan	1
8	802.260	Set Screw	1
9	60.040.003	Terminal Box	1
10	250.001	Terminal Box Cover	1
11	800.527	Screw	1
12	230.001	Locking Clip	1
13	402.405	Lock Washer	1
14	800.539	Screw Cheesehead	1
15	60.070.003	Base	1
16	801.654	Hexagon Screw	1
17	220.012	Washer	1
18	550.005	Micro Fuse (6V) 4 Amp	1
19	550.003	Micro Fuse (12V) 2 Amp	1



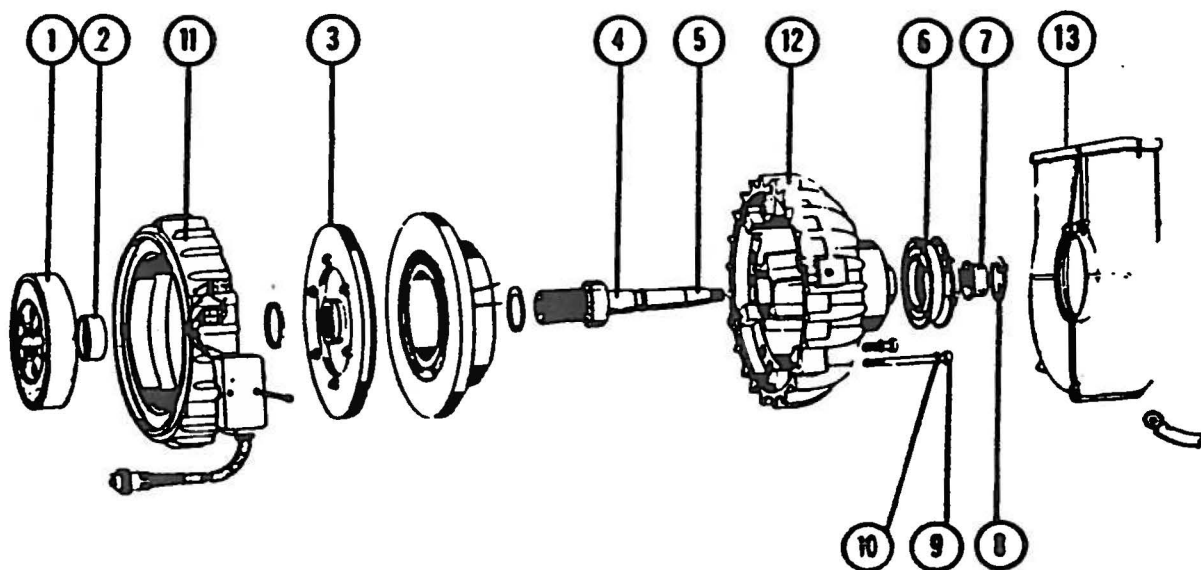
SYNCHRONIZER - 670 M-7

<u>REF.</u> <u>NO.</u>	<u>PART NUMBER</u>	<u>DESCRIPTION</u>	<u>AMT.</u> <u>REQ.</u>
1	250.058	Back Cover for Synchronizer	1
2	802.250	Set Screw	2
3	220.085	Spacer	1
4	801.641	Hexagon Screw	1
5	230.177	Tab Washer	1
6	230.179	Notched Disk	1
7	230.180	Tab Disk	1

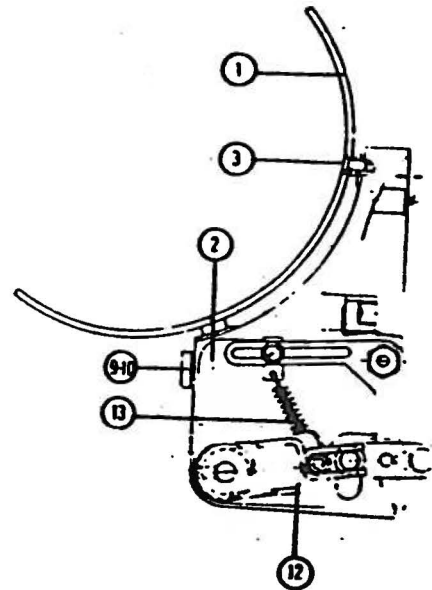
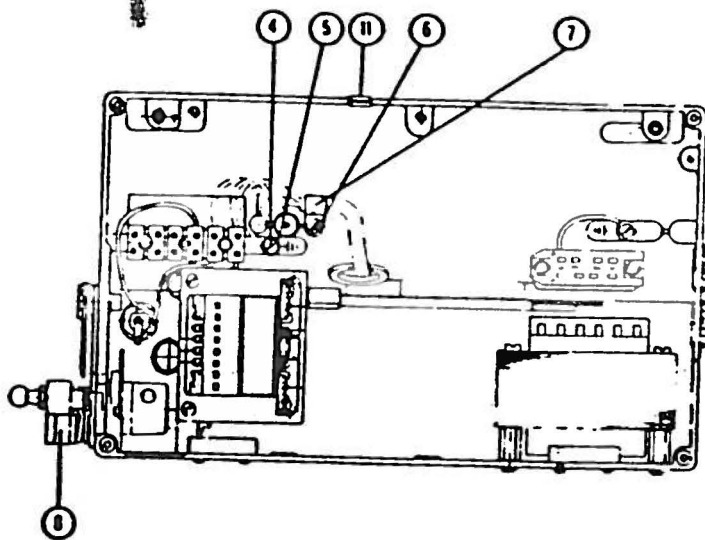


CLUTCH ASSEMBLY (60.050.018)

REF. NO.	PART NUMBER	DESCRIPTION	AMT. REQ.
1	75.000.237	Clutch Disk	1
2	250.008	Washer, Clutch/Brake	1
3	75.000.117	Brake Disk	1
4	75.000.208	Clutch Shaft Complete	1
5	840.715	Key, Woodruff	1
6	210.021	Pulley, V-Belt	1
7	220.001	Lock Nut	1
8	841.332	Retaining Ring, Int.	1
9	800.537	Screw	3
10	402.405	Lock Washer	3
11	75.000.452	Clutch Solenoid	1
12	75.000.165	Brake Solenoid	1
13	60.110.024	Belt Guard	1



Control Box 995-268H



1)	230.219	Control Box Hanger	
2)	220.114	Spacer for Control Box Hanger	
3)	801.528	Screw, Slot Flat	
4)	800.525	Screw, Cheesehead	
5)	830.315	Washer, Serrated	
6)	800.532	Screw, Cheesehead	
7)	546.002	Cable Clamp	
8)	75.000.179	Treadle Arm Complete	
9)	550.107	Fuse Holder Assembly	
10a)	550.007	Micro Fuse	1.0 Amp
b)	550.008	Micro Fuse	.4 Amp
c)	550.009	Micro Fuse	.6 Amp
11)	408.002	Grommet	
12)	241.024	Spring	
13)	241.023	Spring	

RECOMMENDED SPARE PARTS LIST

Throat Plate	639-34-5
Positioning Finger	639-14-50
Throat Plate Needle Hole Insert	63928 A
Throat Plate Screws	22569 C
Thread Catcher	940-34-040
Stationary Upper Knife	940-34-35
Lower Knife	940-34-45
Thread Wiper Wire	AS 9-6
Needle Thread Guide	63970 B
Check Spring	92-5-10-1
Conical Tension Spring	92-5-25-1
Rotary Hook Assembly	29474 VA
Bobbins	61212
Quick Motor Control Box	995-268 H
Needles	180 GYS - 100/040 110/044 125/049 140/054