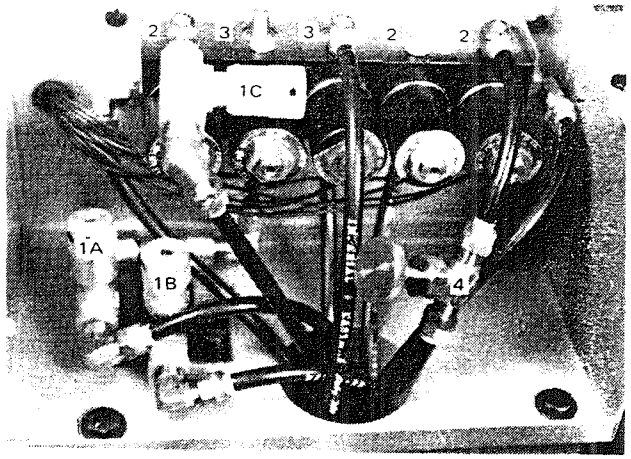
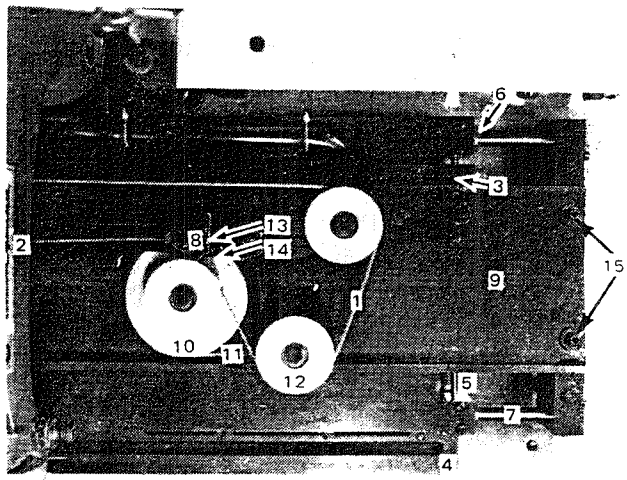
REF NO	PART NO	DESCRIPTION	AMT REQ
1	RM-2852B	Flow Control Valve	3
	A. Clamp Lift		1
	B. Presser Foot		1
	C. Vision Flap		1
2	RM-3634-1	3 Way Valve	3
3	RM-3634-2	4 Way Valve	2
4	RM-3319-1	Throttle Valve Thread Wiper	1

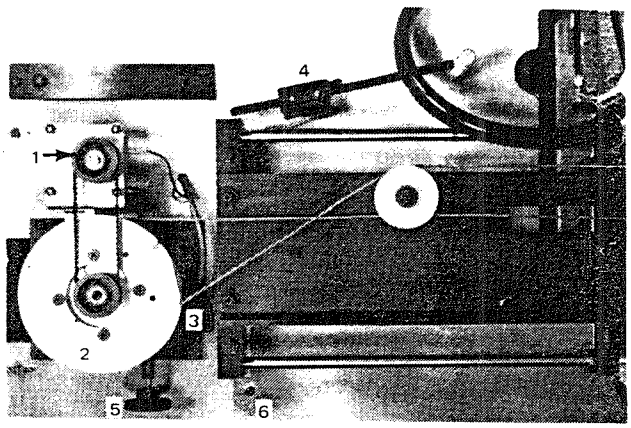
RM4184 SOLENOID VALVE REPAIR KIT
RM4186 PILOT FOR 4 WAY VALVE

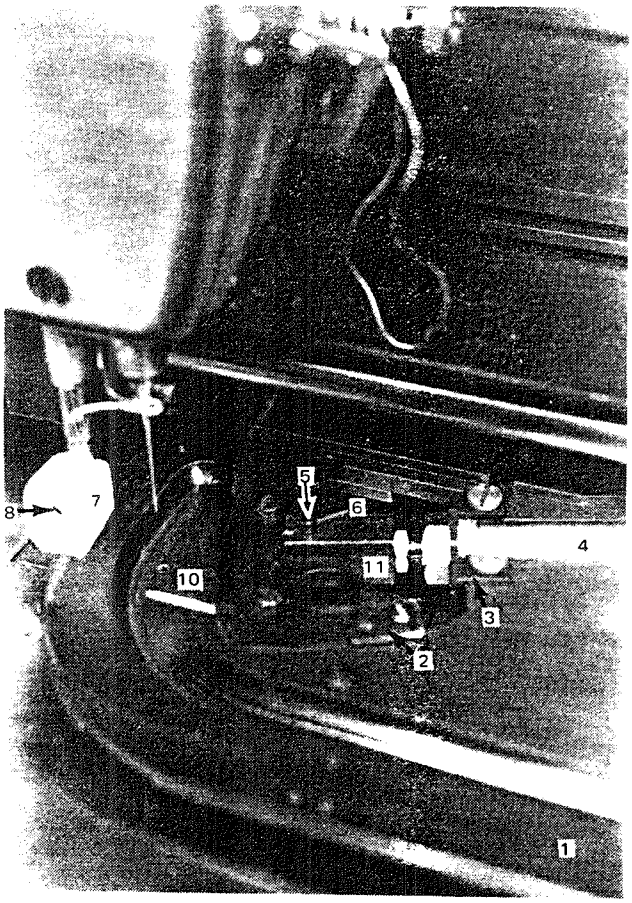


REF NO	PART NO	DESCRIPTION	AMT REQ
1	~~RM-3608~~ RM 3857	Return Wire Rope Assembly	1
2	~~RM-2596D~~ RM 3856	Lefthand Wire Rope	1
3	RM-3124D	1/4" Ball Bushing	4
	~~RM-2798-1~~ RM 3128D	1/4" Ball Bushing Retaining Ring	8
4	RM-2606D	Clamp Plate	1
5	RM-3122D	1/4" Dia. Shaft	2
6	RM-3126D	1/2" Ball Bushing	4
	RM-3129D	1/2" Ball Bushing Retaining Ring	8
7	RM-3123D	1/2 Dia. Shaft	2
8	RM-2539D	Cable Pivot Stud	1
9	RM-3561	Cam Plate	1
10	RM-2514D	Cam Pulley	1
11	RM-2693D	Cam Pulley Return Spring	1
12	RM-2518D	Tracking Pulley	3
13	RM-2541D	Cam Roller	1
14	~~RM-2540D~~ RM3359	Cable Pivot	2
15	22652D-12	1/4-20 x 3/4 S.H.S.	4
	RM-3068D	Washer	4

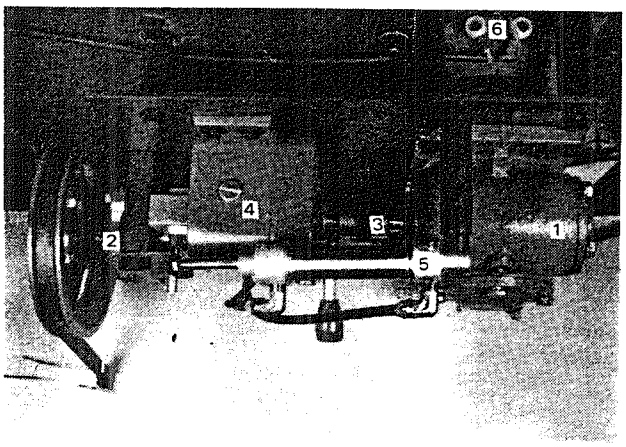


REF NO	PART NO	DESCRIPTION	AMT REQ
1	RM-3542-1	Pulley	2
2	RM-3562	Drive Pulley	1
3	RM-3127D	Leaf Switch	1
	RM-2855D	Switch Cover	1
4	RM-3127D	Leaf Switch	2
	RM-2855D	Switch Cover	2
5	RM-2846D	Stop Adjusting Knob	1
6	RM-3402	Stainless Steel Table	1





REF NO	PART NO	DESCRIPTION	AMT REQ
1	RM-2606D	Clamp Plate	1
2	RM-2615D	Vision Flap Guide	2
3	RM-2612D	Cylinder Mounting Plate	1
4	RM-2974B	Cylinder	1
5	RM-3054B	Clevis Pin	1
6	660-142	Cotter Pin	1
7	RM-3350	Clamp Block	1
8		Screw	1
9	RM-2608	Vision Flap	1
10	RM-2385D	Throat Plate	1
11	RM-2531D	Clevis	1
12	RM-3494	Screws for RM-2385D	2



REF NO	PART NO	DESCRIPTION	AMT REQ
1	RM-3520	Speed Reducer	1
2	RM-3407-1	Flange Bearing	1
3	RM-3536-1	Flexible Coupling	1
4	RM-3522	Transmission	1
5	RM-3535	Cylinder	1
6	RM-2847D	Electric Clutch	1

REF NO	PART NO	DESCRIPTION	AMT REQ
1	RM-3127D	Leaf Switch	1
2	RM-2855D	Switch Enclosure	1
3	660-245	Retaining Ring	1
4	660-397	Cylinder	1
5	RM-3347	Cylinder Clevis	1
6	RM-3484	Plastic Tube	1
7	RM-3238D	Bed Positioning Spring (Mod.)	1
	RM-3121D	Machine Positioner	1
8	RM-2813-3	8-32 x 3/8 B.H.S.	1
9	RM-3357	Switch Spacer	2
	RM-2805-1	Switch Mounting Screws 4/32 - 1/4"	2

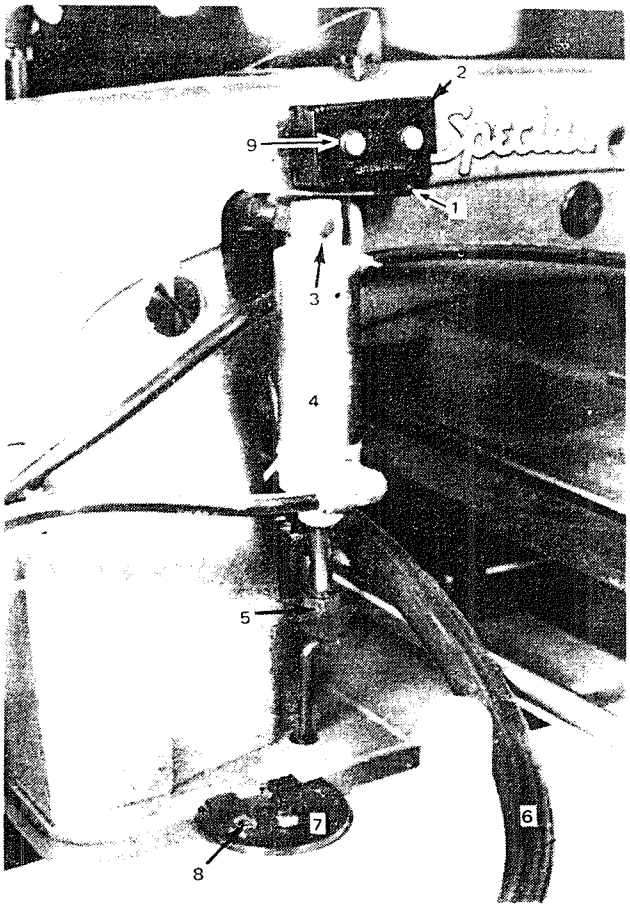


TABLE ASSEMBLY

PART NO	DESCRIPTION	AMT REQ
21371UR	Top Leg Assembly (8 RM-2827-7, RM-3211-3 and 16 652-L-24)	2
21371WE	Left Hand Side Plate	2
21371WF	Right Hand Side Plate	2
51-214 BLK	Spacer	2
RM-2827-7	3/8-16 x 2-1/4 H.H.S.	14
652-L-24	Washer	38
RM-3211-3	3/8-16 H.J.N.	18
21371UK	Feet (4 RM-2827-7, 4 RM-3211-3, & 8 652-L-24)	4
21371UL	Treadle Pipe (2 RM-2827-7 and 2 652-L-24)	1
21371UM	Back Brace (2 RM-2827-5, 2 RM-3211-3 & 4 652-L-24)	1
RM-3342	Angle Brace (4 RM-2827-5, 4 RM-3211-3 & 8 652-L-24)	2
RM-2827-5	3/8-16 x 3/4 H.H.S.	14
RM-3643	Rear Angle (6 RM-2827-5 and 6 RM-3293-3)	1
RM-3336	Front Angle (4 RM-2827-8, 2 3293-4 & 4 RM-3293-3)	1
RM-3293-3	3/8 F.W.	12
RM-3293-4	1/2 F.W.	2
RM-3338	Front Angle Spacer	4
RM-2827-8	3/8-16 x 3-1/2 H.H.S.	4
RM-3559	Left Hand Table Board (1 RM-2827-5 & 1 RM-3293-3)	1
RM-3564	Right Hand Table Board (1 RM-2827-5 & 1 RM-3293-3)	1
RM-3493	Neoprene Bumper	1
NA-13	4-D Nail	2

DRIVE ASSEMBLY

PART NO	DESCRIPTION	AMT REQ
RM-3410	Main Motor Modification (3 22605 from 29480 GU)	1
652-L-24	Washer	3
RM-2836	Double Groove Pulley	1
22650CD-6	1/4-20 x 3/8 S.S.S.	1
RM-3406	Cylinder Bracket	1
22652A-6	No. 8-32 x 3/8 S.H.S.	2
RM-3293-5	No. 8 F.W.	1
671A-1	Single Acting Cylinder	1
RM-3211-2	5/16-24 H.J.N.	1
RM-3316	Cylinder Rod End Clutch	1
660-401	Male Elbow	1
RM-2997D	Polyflo Tubing 42" Long	1
RM-3489	Light Fixture Extension Cable Assembly	1
29480 GU	Installation Kit (Return to stock 2-660-204, 2-660-356, 3-660-352, 3-95304 & 6 SC333A)	1

DRIVE ASSEMBLY (continued)

PART NO	DESCRIPTION	AMT REQ
~~998-251~~ RM4246	Auxiliary Control	1
RM-2791-1	No. 10 x 1 P.H.S.M.S. 1-660-356 Cable Clamp & 1 SC333A from 29480 GU	2

RM4259 MOTOR CONTROL PANEL

IDLER PULLEY ASSEMBLY

PART NO	DESCRIPTION	AMT REQ
RM-3598	Idler Mounting Stud	1
RM-3293-4	1/2 F.W.	1
21818B	1/2-13 H.N.	1
RM-3599	Single Adjusting Tightener	1
RM-3600	"V" Belt Sheave Idler	1

ELECTRIC CLUTCH & TRANSMISSION ASSEMBLY

PART NO	DESCRIPTION	AMT REQ
RM-2521	Drive Mechanism Mounting Plate	1
RM-3520	Speed Reducer (4 RM-3162-1 & 4 RM-3293-1)	1
RM-3162-1	1/4-20 x 5/8 H.H.S.	14
RM-3293-1	1/4 F.W.	31
RM-2568	Bearing Support (2 RM-3162-1 & 2 RM-3293-1)	1
RM-3407-1	Flange Bearing (2 RM-3162-2 & 2 RM-3293-1)	1
RM-3162-2	1/4-20 x 3/4 H.H.S.	5
RM-3536-1	Flexible Coupling 1/2 x 3/8	1
RM-3413	Shaft Key	1
RM-3522	Transmission (Zero-Max Drive) (4 RM-3162-6 & 4 RM-3293-1)	1
RM-3162-6	1/4-20 x 1/2 H.H.S.	4
RM-2520	Input Shaft	1
22650CD-4	1/4-20 x 1/4 S.S.S.	1
RM-2838D	6" Dia. Pulley	1
RM-2565	Reversing Cylinder Mounting Pivot (1 RM-3293-1 & 1 RM-3162-1)	1
RM-3535	Double Acting Cylinder	1
660-401	Male Elbow	2
RM-2997D	Polyflo Tube 56" Long (N.O. Forward)	1
RM-2997D	Polyflo Tube 54" Long (N.C. Reversed)	1
RM-3144-1	"E" Ring 1/4	1
RM-3211-1	1/4-28 H.J.N.	1
RM-2558	Reversing Clevis	1
RM-2559	Reversing Lever	1
RM-2815-1	No. 6-32 x 1/2 S.H.S.	1
RM-2994C	1/4 x 3/4 Clevis Pin	1
660-142	1/16 x 1/2 Cotter Pin	1

ELECTRIC CLUTCH & TRANSMISSION ASSEMBLY (continued)

PART NO	DESCRIPTION	AMT REQ
RM-3330	Gear Box Support Spacer (7 RM-3162-1, 3 RM-3162-2 & 10 RM-3193-1)	5
RM-2847D	Electric Clutch	1
RM-3259D	Shaft Key	1
RM-2507	Drive Shaft	1
RM-3329	Pulley Support (4 RM-3162-5, 4 RM-3293-1, 4 RM-2791-3 & 4 652C-16)	1
RM-3601	Clutch Cable Assembly	1
RM-3414-1	No. 8-32 x 1 R.H.S.	1
RM-2747-6	No. 8 L.W.	1
RM-2791-1	No. 8-32 H.N.	1
RM-2553D	Stop Support Spacer	1
RM-2554D	Adjustable Stop Support Rear	1
RM-2555D	Adjustable Stop Support Front (2 RM-3162-4 & 2 652C-16)	1
RM-3162-4	1/4-20 x 3-1/2 H.H.S.	2
652C-16	1/4 F.W.	8
RM-3545	Adjustable Stop & Switch Block	1
RM-3544	Switch Mounting Bracket (2 RM-3289-5 & 2 RM-3293-6)	1
RM-3293-6	No. 10 F.W.	6
RM-3127D	Leaf Switch (2 RM-2805-2 & 2 53678N)	1
RM-3602	Return Motor & Switch Cable Assembly	1
RM-3855D	Switch Enclosure	1
RM-2805-2	No. 6-32 x 1 B.H.S.	2
53678N	No. 6 F.W.	2
RM-2557D	Stop Adjustment Rod	1
RM-2954B	Snap Ring	1
RM-3846D	Threaded Shaft Knob	1
RM-3211-1	1/4-28 H.J.N.	1
RM-3289-5	No. 10-32 x 3/8 B.H.S.	2
RM-2522	Return Motor Mounting Bracket (2 22652D-8 & 2 RM-3293-1)	1
22652D-8	1/4-20 x 1/2 S.H.S.	2
RM-3521	Carriage Return Motor (4 RM-3293-6 & 4 651H)	1
651H	No. 10-32 H.N.	4
RM-3542-1	Timing Belt Pulley	2
RM-3557-1	Timing Belt 3/8 x 15	1
RM-2998-1	Thrust Bearing 5/8	1
RM-3239-2	Thrust Washer 5/8	2
RM-3562	Drive Pulley	1
22650CD-6	1/4-20 x 3/8 S.S.S.	2
RM-3257D	Screw Pin Bumper	1
RM-3162-5	1/4-20 x 2-1/4 H.H.S.	6
RM-2791-3	1/4-20 H.N.	6
RM-2473	Support Spacer Plate (2 RM-3162-5, 2 RM-2791-3, 2 652C-16 & 2 RM-3293-1)	1
21262H-450	"V" Belt 1/2 x 45	1

BOBBIN MOTOR ASSEMBLY

PART NO	DESCRIPTION	AMT REQ
RM-3404	Bobbin Motor Mounting Studs	2
RM-3417	Bobbin Motor Assembly	1
RM-3603	Bobbin Motor Cable Assembly	1
RM-2813-3	No. 8-32 x 3/8 B.H.S.	3
RM-3293-5	No. 8 F.W.	3
RM-2747-6	No. 8 L.W.	2
99578B	Bracket (from 29480 GU)	1
SC 472	Screw (from 29480 GU)	2
998-264	Pushbutton Switch	1
RM-3604	Bobbin Switch Cable Assembly	1
61377J	Pulley Shaft	1
RM-3419-1	Shaft Coupling 1/4	1
RM-3285-3	Snap Bushing	1
61477C	Tension Bracket (1 RM-2813-3 & 1 RM-3293-3)	1
109	Tension Disc	2
61392F-14	Tension Spring	1
61292C	Tension Nut	1
RM-3416	Tension Assembly Bracket	1
RM-2787-1	No. 12 x 1 D.H.S.M.S.	1
RM-3293-1	1/4 F.W. 1-660-356 Cable Clamp & 1 SC 333A from 29480 GU	1

SEWING HEAD ASSEMBLY

PART NO	DESCRIPTION	AMT REQ
RM-3091D	Oil Drip Pan Modification (1 SC 331 & 1 22846Q-16)	1
63476	Isolator Pad, Left	2
63476A	Isolator Clip, Left	2
63476B	Isolator Pad, Right	2
63476C	Isolator Clip, Right	2
RM-3238D	Bed Positioning Spring Mod.	1
RM-3121D	Machine Positioner	1
RM-2813-3	No. 8-32 x 3/8 B.H.S.	1
SC331	Wood Screw, Round Head	1
22846Q-16	Wood Screw, Countersunk Head	1
RM-3097D	Retaining Plate Modification	1
21393S	Bolt	2
651-16	Nut	2
666-166	Oil Drain Jar, Glass	1
21393L	Oil Drain Jar Clamp Spring	1
4-63400 KBZ	Basic Sewing Machine Bi-Directional Seamer	1
RM-3356	Sewing Machine Modification	1

SEWING HEAD ASSEMBLY (continued)

PART NO	DESCRIPTION	AMT REQ
RM-2783D	Oil Pan Shim (Quantity as Required) Glue RM-2783D w/3M No. 826	
63468B	Lifter Lever Extension Stud	1
652B-20	Lock Washer	1
660-397	Cylinder	1
660-401	Male Elbow	1
RM-2997D	Polyflo Tube 34" Long	1
660-245	Retaining Ring	1
RM-3211-2	5/16-24 H.J.N.	1
RM-3347	Cylinder Clevis	1
63468C	Link	1
53634C	Flat Washer	2
660-142	Cotter Pin	2
RM-2997D	Polyflo Tube 42" Long	1
RM-3350	Clamp Block	1
22585A	Screw	1
RM-2385D	Throat Plate	1
RM-3494	Screw	2
61378	Rest Pin	1
RM-3127D	Leaf Switch (2 RM-2805-1, 2 53678N & 2 RM-2747-2)	1
RM-3607	Clamp Interlock Switch Cable Assembly	1
RM-2855D	Switch Enclosure	1
RM-3357	Switch Spacer	2
RM-2805-1	No. 6-32 x 1-1/4 B.H.S.	2
RM-2747-2	No. 6 L.W.	2
53678N	No. 6 F.W.	2
21261M-410	3/8 x 41 "V" Belt	1

PHOTOCELL ASSEMBLY

PART NO	DESCRIPTION	AMT REQ
RM-3432	Fly Seamer Photocell	1
RM-3605	Photocell Cable Assembly	1
RM-3403	Photocell Bracket	1
RM-3289-3	No. 10-32 x 1-1/2 B.H.S.	1
RM-3293-6	No. 10 F.W.	1
RM-3461	Photocell Clamp	1
RM-3462-1	No. 5-40 x 3/16 F.H.S.	1

RM-3433-2 PHOTOCELL ONLY 1

CARRIAGE ASSEMBLY

PART NO	DESCRIPTION	AMT REQ
RM-2547D	Lower Cam Plate Block	2
RM-2548D	Washer Plate	2
RM-3162-5	1/4-20 x 2-1/4 H.H.S.	6
RM-3293-1	1/4 F.W.	6

CARRIAGE ASSEMBLY (continued)

PART NO	DESCRIPTION	AMT REQ
652C-16	1/4 L.W.	6
RM-3425	Carriage Bottom Plate (4 RM-2798-1, 5 RM-2879-2 & 5 RM-3523-1)	1
RM-2873D	Mounting Bracket	1
94	0.182-40 x 1/4 Fil.H.S.	2
RM-2747-4	No. 10 L.W.	2
RM-2874D	Single Acting Cylinder	1
660-401	Male Elbow	1
RM-3674	Lift Wedge Clevis	1
RM-3675	Lift Wedge Pivot Screw	1
RM-3676	Lift Wedge	1
RM-3211-1	1/4-28 H.J.N.	1
RM-2950B	PVC Tubing 53" Long	1
RM-3423	Clamp Plate Support (5 RM-2879-2 & 5 RM-3523-1)	1
RM-3437-1	Dowel Pin .251 x 1-1/4	1
478-12	Bearing	2
RM-3424	Lift Rod Support	2
22596D	0.182-40 x 3/8 Fil.H.S.	4
RM-2607D	Clamp Plate Support Hinge PIANO HINGE	1
RM-2879-2	Pop Rivet	10
RM-3523-1	Burr Washer No. 10	10
RM-2524D	Right Carriage Block (6 RM-2798-1)	2
RM-2534D	Left Carriage Block (6 RM-2798-1)	2
RM-3124D	1/4 Ball Bushing	4
RM-3128D	1/4 Ball Bushing Retaining Ring	8
RM-2798-1	No. 8-32 x 1/2 F.H.S.S.	4
RM-3122D	1/4 Dia. Shaft	2
RM-2528D	Front Linear Carriage Block (4 RM-2813-2 & 4 RM-2747-6)	2
RM-2529D	Rear Linear Carriage Block (4 RM-2813-2 & 4 RM-2747-6)	2
RM-3126D	1/2 Ball Bushing	4
RM-3129D	1/2 Ball Bushing Retaining Ring	8
RM-2626D	Main Carriage Plate	1
RM-2813-2	No. 8-32 x 5/16 B.H.S.	8
RM-2747-6	No. 8 L.W.	8
RM-2512D	Carriage Top Plate (8 RM-2798-1)	1
RM-2539D	Cable Pivot Stud	1
RM-2747-3	3/8 L.W.	1
80576	3/8-16 H.N.	1
RM-2798-1	No. 8-32 x 1/2 F.H.S.S.	8
RM-3123D	1/2 Dia. Shaft	2
RM-2508D	Right Hand Cam Plate Block (2 RM-3162-9 & 2 RM-3293-1)	1
RM-2784D	Left Hand Cam Plate Block (2 RM-3162-9 & 2 RM-3293-1)	1
RM-3162-9	1/4-20 x 2-1/2 H.H.S.	4
RM-3293-1	1/4 F.W.	4

CLAMP PLATE ASSEMBLY

PART NO	DESCRIPTION	AMT REQ
RM-2606D	Clamp Plate (6 RM-3046D & 4 RM-2808-1)	1
RM-3015D	Spring Clip	4
RM-3034D	Clip Mounting Spacer	4
87U	0.124-50 x 3/16 Fil.H.S.	8
RM-2808-1	No. 6-32 x 1/4 S.S.S.	4
RM-2618D	Vision Flap Pivot	1
RM-3492-1	No. 6-32 x 1/4 F.H.S.	2
RM-2608D	Vision Flap	1
RM-2615D	Vision Flap Guide	2
22561	0.124-50 x 9/64 Fil.H.S.	4
RM-2974B	Cylinder 01-1/2 (1-651-H)	1
RM-2965	Hose Fitting w/Gasket	1
RM-2950B	PVC Tubing 58-1/2" Long	1
RM-2612D	Cylinder Mounting Plate (2 22585A)	1
651-H	No. 10-32 H.N.	1
RM-2531D	Vision Plate Clevis	1
RM-3054B	3/16 x 19/32 Clevis Pin	1
660-142	1/16 x 1/2 Cotter Pin	1
22585A	0.146-40 x 5/16 Fil.H.S.	2
RM-2980B	1/8 Tubing 71" Long	1
RM-3305-2	1/8 Cable Clamp (1 RM-2736A)	1
RM-2736A	No. 6-32 x 1/4 B.H.S.	6
RM-3377	Outer Curved Rubber Strip Assembly (2 RM-3187-1)	1
RM-3187-1	No. 6-32 x 3/16 R.H.S.	5
RM-3333	Outer Rubber Strip Assembly (3 RM-3187-1)	1
RM-3436	Vision Flap Rubber Strip Assembly (2 RM-2736A)	1
RM-3446	Inner Rubber Strip Assembly (3 RM-2736A)	1
RM-3080D	Garment Stop	1
2277A	Shoulder Screw	1
RM-3081D	Garment Stop Bracket	1
RM-3289-5	No. 10-32 x 3/8 B.H.S.	1
RM-3293-6	No. 10 F.W.	1
RM-3046D	No. 10-32 x 5/16 H.H. Sems	6
RM-2871B	Cable Tie	2

CAM PLATE ASSEMBLY

PART NO	DESCRIPTION	AMT REQ
RM-3561	Cam Plate (4 RM-3068D, 4 22652D-12 & 4 652C-16)	1
RM-2650D	Top Cover Support (1 RM-3068D & 1 22652D-8)	1
RM-3068D	Washer	5
22652D-8	1/4-20 x 1/2 S.H.S.	1
22799T	Screw Pin	1
RM-2514D	Cam Pulley (1 RM-3438-1, 5 RM-3293-2 & 1 22617J-24)	1

CAM PLATE ASSEMBLY (continued)

PART NO	DESCRIPTION	AMT REQ
RM-3650	Cam Pulley Screw Pin	1
RM-3258D	Bumper for Screw Pin	1
RM-3438-1	5/16-18 x 1-1/2 H.H.S.	3
RM-3293-2	5/16 F.W.	6
RM-2693D	Cam Pulley Return Spring	1
22617J-24	No. 6-32 x 3/8 Fil.H.S.	1
RM-2518D	Tracking Pulley	4
RM-2682D	Idler Pulley Stud (1 RM-3438-1)	1
RM-2519	Tension Pulley Bracket	1
RM-3162-1	1/4-20 x 5/8 H.H.S.	2
RM-3293-1	1/4 F.W.	2
RM-2474-1	Pulley Mounting Spacer	1
RM-3483-4	5/16-18 x 1-1/4 H.H.S.	1
RM-2474-2	Pulley Mounting Spacer (1 RM-3438-1 & 1 RM-3293-2)	1
RM-3608	Return Wire Rope Assembly	1
RM-2596D	Left Hand Wire Rope Assembly	1
RM-2541D	Cam Roller	1
RM-2540D	Cable Pivot (1 22651CB-4)	2
22651CB-4	No. 10-32 x 1/4 S.S.S.	2
RM-3289-5	No. 10-32 x 3/8 B.H.S.	1
RM-3293-6	No. 10 F.W.	1
22652D-2	1/4-20 x 3/4 S.H.S.	4
652C16	1/4 L.W.	4

SAFETY SWITCH ASSEMBLY

PART NO	DESCRIPTION	AMT REQ
RM-3127D	Leaf Switch (2 RM-3611-1, 4 RM-3293-1 & 2 53678N)	2
RM-2855D	Switch Enclosure	2
RM-3681-1	No. 6 x 2-1/2 R.H.W.S.	2
RM-3293-1	1/4 F.W.	4
53678N	No. 6 F.W.	2
RM-3609	Safety Switch Cable Assembly, 3 Conductor	1
RM-3610	Safety Switch Cable Assembly, 2 Conductor	1
RM-3711	Carriage Tube Guide	1

CONTROL BOX ASSEMBLY

PART NO	DESCRIPTION	AMT REQ
RM-3612	Step Down Transformer	1
RM-3289-1	No. 10-32 x 2 B.H.S.	2
RM-3293-6	No. 10 F.W.	4
RM-2747-4	No. 10 L.W.	1
651-H	No. 10-32 H.N.	2

CONTROL BOX ASSEMBLY (continued)

PART NO	DESCRIPTION	AMT REQ
RM-3613	Terminal Block	1
RM-3154D	No. 6 x 1-1/2 R.H.W.S.	2
RM-3614	Switch Box to Control Box Cable Assembly	1
RM-3573	Control Box Mounting Post (4 RM-3162-7 & 4 RM-3293-1)	4
RM-3162-7	1/4-20 x 2 H.H.S.	4
RM-3293-1	1/4 F.W.	8
RM-3577	Control Box Base (4 RM-3162-6 & 4 RM-3293-1)	1
RM-3162-6	1/4-20 x 1/2 H.H.S.	4
RM-3623-1	Spacer (5 RM-2736A & 5 53678N)	5
RM-2736A	No. 6-32 x 1/4 B.H.S.	10
53678N	No. 6 F.W.	5
RM-2737A	Fuse Holder	3
RM-3048-3	Fuse .3 Amp (Upper & Middle)	2
RM-3048-4	Fuse 3.0 Amp (Lower)	1
RM-3635	Control Panel	1
RM-3627	Switch 2PDT (Backtack)	1
RM-2748A	Switch SPST (Clamp)	1
RM-3376	Switch DPST (Main)	1
RM-3088-8	Pot 500 K (Backtack)	1
RM-3088-7	Pot 50 K (Stop Position)	1
RM-3653	Potentiometer Bracket	1
RM-3088-3	Pot 100 K (Stop Position Piggy Back)	1
RM-3088-4	Pot 350 K (Bobbin Winder)	1
RM-3435	Nut	4
RM-2749A	Pilot Lite	1
RM-3443	Knob	3
RM-3146D	Rubber Grommet	2
RM-3624	Backtack Cable Harness	1
RM-3618	Backtack Motor Board (5 RM-2736A)	1
RM-3281-1	Strain Relief Bushing	2
RM-2740A	Strain Relief Bushing	3
RM-3281-2	Strain Relief Bushing	5
RM-2813-4	No. 8-32 x 1/2 B.H.S.	1
RM-2747-6	No. 8 L.W.	8
RM-2791-1	No. 8-32 H.N.	7
RM-3628	Pneumatic Component Assembly (6 RM-2813-1, 6 RM-2747-6 & 6 RM-2791-1)	1
RM-2813-1	No. 8-32 x 1/4 B.H.S.	6
RM-3625-1	Terminal Strip	1
RM-3626-1	Terminal Strip Jumper	1
RM-2733A	No. 6-32 x 1/2 B.H.S.	2
RM-2747-2	No. 6 L.W.	2
RM-2791-2	No. 6-32 H.N.	2
RM-2997D	Polyflo Tube 41" Long (Wiper)	1
RM-2997D	Polyflo Tube 38" Long (Supply)	1

CONTROL BOX ASSEMBLY (continued)

PART NO	DESCRIPTION	AMT REQ
RM-3574	Control Box Rear Ground (2 RM-3289-7)	1
RM-3289-7	No. 10-32 x 1/4 B.H.S.	4
RM-3575	Control Box Side Shroud (1 RM-3289-7)	2
RM-3619	Backtack Control Board	1
RM-3620	Backtack Power Board	1
RM-3579	Control Box Cover	1
RM-3289-5	No. 10-32 x 3/8 B.H.S.	4
RM-2871B	Cable Tie	19

TREADLE ASSEMBLY

PART NO	DESCRIPTION	AMT REQ
RM-3611	Start Switch Assembly (2 RM-2813-3, 2 RM-2813-7 or 2 RM-3306-2)	1
RM-2813-3	No. 8-32 x 3/8 B.H.S.	2
RM-2813-7	No. 8-32 x 3/16 B.H.S.	2
RM-3450	Switch Plate (2 RM-2813-3)	1
RM-3460	1-3/8 "U" Bolt w/Nuts	1
RM-3525	Start Switch Treadle Plate (2 RM-2813-7)	1

ACCESSORIES

PART NO	DESCRIPTION	AMT REQ
RM-3451	Actuator Rod	1
RM-3452	Rod Sleeve	1
RM-3453	Rod Support (3 RM-3306-2)	1
RM-3306-2	No. 10-32 x 5/8 S.H.S.	3
RM-3449	Switch Plate Leg Extension (2 RM-3162-6, 2 RM-3293-1, RM-2827-9, 652L-24 & RM-3211-3)	1
RM-3162-6	1/4-20 x 1/2 H.H.S.	2
RM-3293-1	1/4 F.W.	2
RM-3454	Leg Extension (RM-2827-9, 652L-24 & RM-3211-3)	7
51-214 BLK	Spacer	8
RM-2827-9	3/8-16 x 3 H.H.S.	16
652L-24	Washer	16
RM-3211-3	3/8-16 H.N.	8
RM-3647	Kit	1

CLAMP PLATE AIR TUBE ASSEMBLY

PART NO	DESCRIPTION	AMT REQ
RM-2715D	Air Tube Guide (1 RM-3162-5 & 1 RM-3293-1)	1
RM-3263D	Bulk Head Union	2
RM-2997D	Polyflo Tube 16" Long (Vision)	1
RM-2997D	Polyflo Tube 14-1/2" Long (Clamp)	1
RM-3464	1/16 Hose Fitting	1
RM-3465-1	Pipe to Female 10-32 Adapt.	1
RM-3266-1	Female Connector	1
RM-2997D	Polyflo Tube 15" Long (Wiper)	1
RM-3484	Tygon Tubing 42" Long	1
RM-3305-3	Cable Clamp	1
RM-2719-1	No. 10 x 1 S.M.S.	1
RM-3293-6	No. 10 F.W.	1

REGULATOR ASSEMBLY

PART NO	DESCRIPTION	AMT REQ
660-398	Regulator (Mounting Bracket Not Required)	1
RM-3160A	Run Tee 1/4	1
RM-3287-1	Hex Nipple 1/4	1
660-401	Male Elbow	1
RM-3312-1	Filter	1
RM-3362-1	Male Elbow	1
RM-3315	Regulator Mounting Stud	1
RM-3293-3	3/8 F.W.	1
RM-2827-4	3/8-16 x 1/2 H.H.S.	1

SWITCH BOX ASSEMBLY

PART NO	DESCRIPTION	AMT REQ
CO44H	1-D776493-02, 1 CO44H & 2 SC333A from 29480 GU Box Connector (Include 1 CO44H in Accessory Box BO-172)	2
RM-2813-5	No. 8-32 x 5/8 B.H.S.	1
RM-2747-6	No. 8 L.W.	3
RM-2791-1	No. 8-32 H.N.	1
TA 85	Tag	1

TABLE TOP ASSEMBLY

PART NO	DESCRIPTION	AMT REQ
RM-3402	Stainless Table	1
RM-3289-1	No. 10-32 x 2 B.H.S.	2
RM-3621-1	Tee Nuts 10-32	2

Note: Drill 15/64 Dia. 2 Holes for RM-3621-1 after RM-3402 is Positioned.

COVERS

PART NO	DESCRIPTION	AMT REQ
RM-3616	Left Cover	1
RM-3343	Right Cover	1
660-112	Cabinet Catch	4
RM-2813-1	No. 8-32 x 1/4 B.H.S.	8
RM-2791-1	No. 8-32 H.N.	8
RM-3444-1	Wing Screw	1
RM-2747-6	No. 8 L.N.	8

THREAD STAND ASSEMBLY

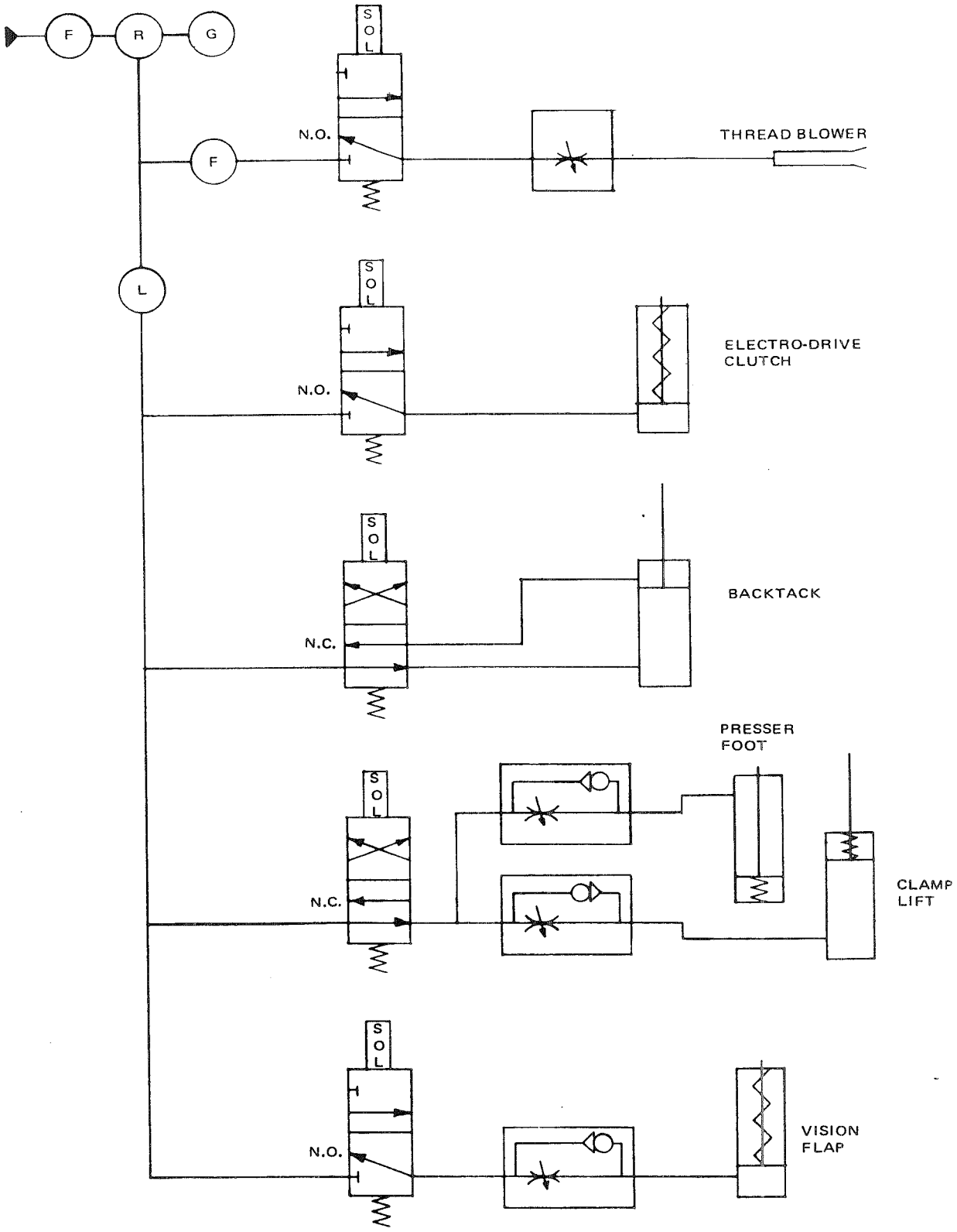
PART NO	DESCRIPTION	AMT REQ
RM-3617	Single Spool Thread Stand	2
SC-305	Wood Screw	4

BELT GUARD

PART NO	DESCRIPTION	AMT REQ
RM-3645	Backtack Belt Guard	1
RM-3289-2	No. 10-32 x 5/8 B.H.S.	4

LITE ASSEMBLY

PART NO	DESCRIPTION	AMT REQ
RM-3490	Light Fixture	1



AIR DIAGRAM SHOWING WHEN MACHINE IS AT REST, AIR LINE CONNECTED AND MAIN ELECTRICAL SWITCH IS ON

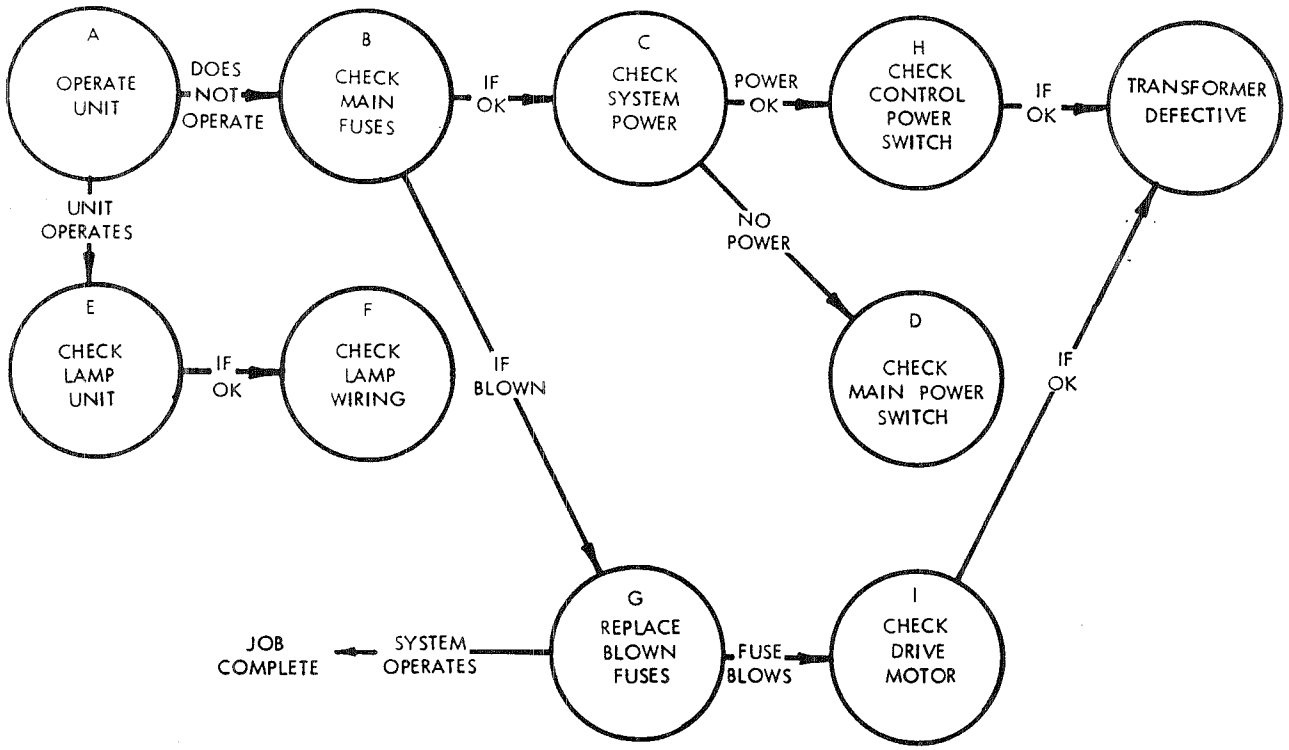
SECTION VIII
TROUBLESHOOTING

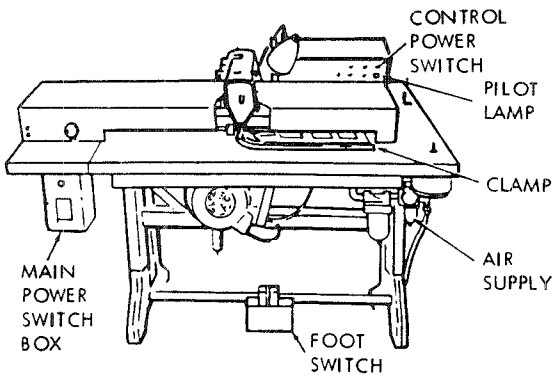
CONTENTS

ELECTRICAL CIRCUIT TROUBLESHOOTING

1. PILOT LAMP DOES NOT LIGHT WHEN MAIN POWER AND CONTROL POWER SWITCHES ARE ON.

ITEM NO. 1





A. OPERATE UNIT:

(1) Set MAIN POWER switch to ON position.

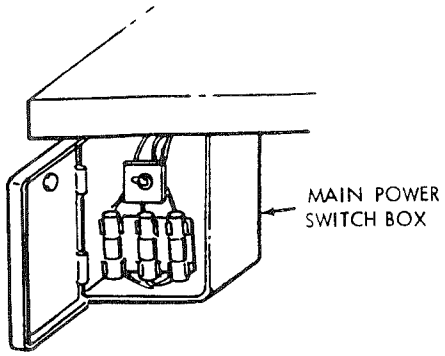
(2) Set CONTROL POWER switch to ON position.

(3) Place a piece of material under clamp and press foot pedal all the way down to second position. Machine should sew. If machine operates, go to paragraph E.

B. CHECK MAIN FUSES:

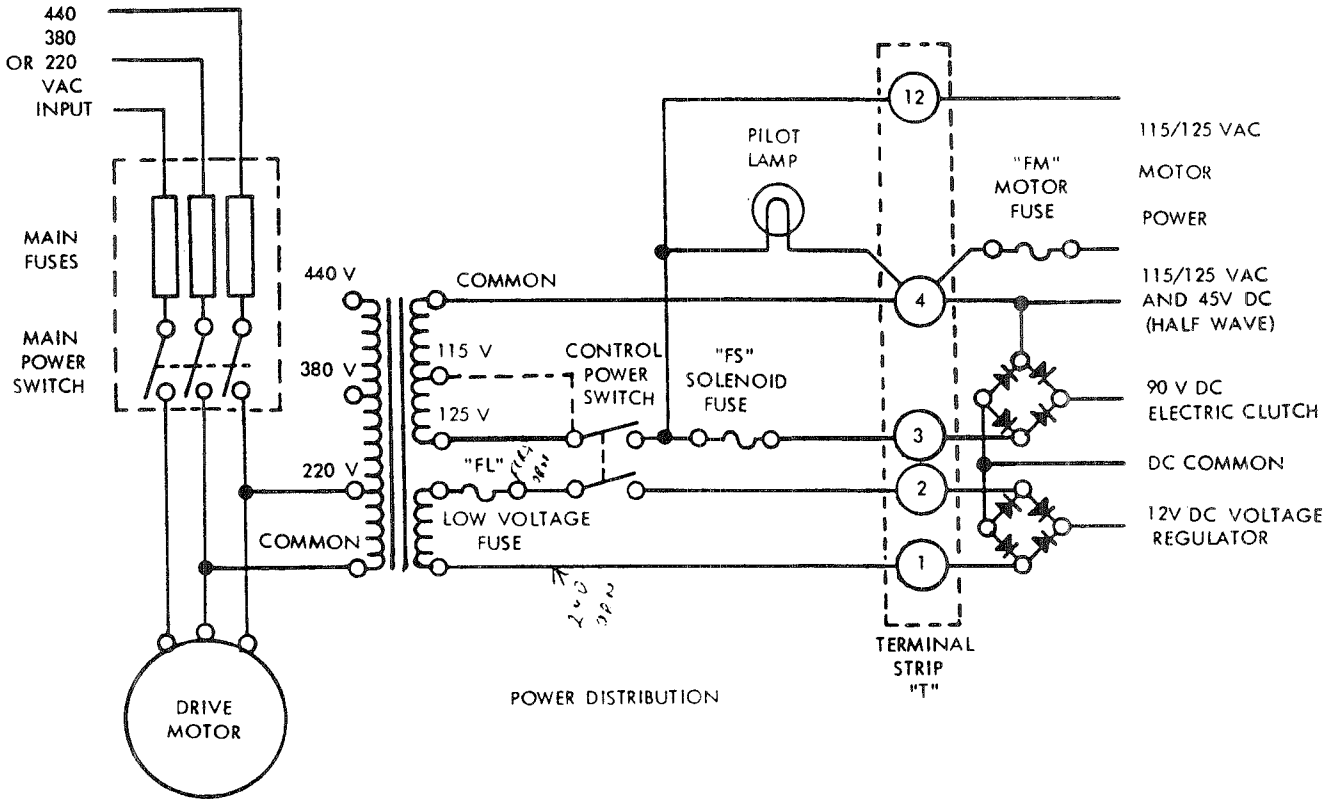
NOTE

The following procedure is for U.S. units only. Units manufactured for export are equipped with circuit breakers for main power circuit protection.

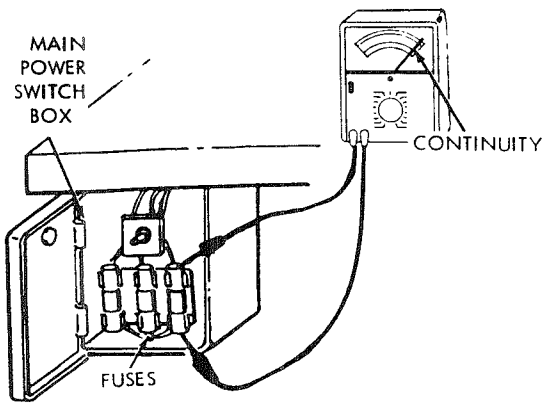


(1) If unit does not operate, turn power off, and open main power switch box.

(2) Disconnect power cable from input power source, and get an ohmmeter.

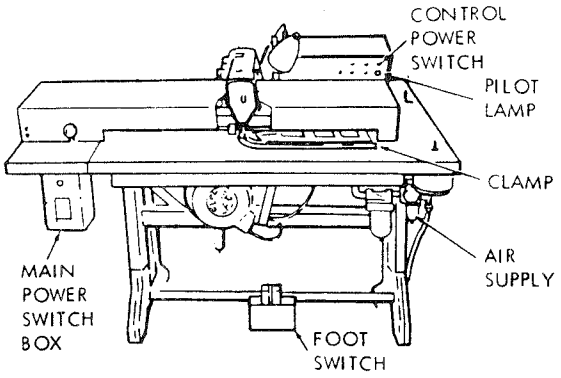


POWER DISTRIBUTION



(3) With MAIN POWER switch in OFF position, and main power plug disconnected from power source, check across each fuse with ohmmeter. Fuses should read continuity.

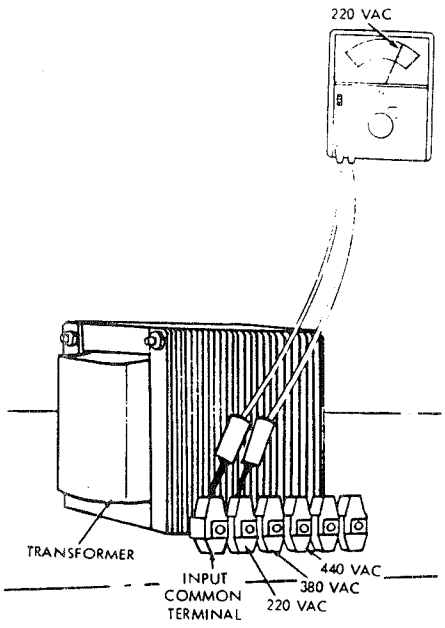
(4) If any fuse reads open, go to paragraph G.



C. CHECK SYSTEM INPUT POWER:

(1) If main fuses check good, remove rear cover from lower section of control box. Get an AC voltmeter capable of reading at least 440 volts.

(2) Connect power to system, and set main power and CONTROL POWER switches to ON position.



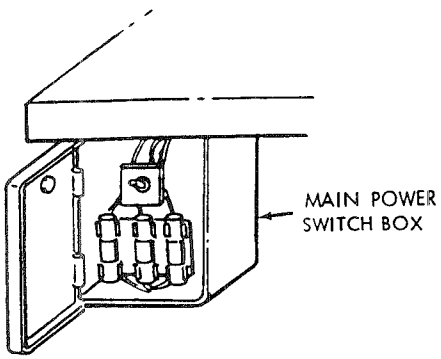
(3) Use AC voltmeter to measure input power:

a. If input leads are connected between first and second terminals of transformer, input voltage should be 220 volts.

b. If input leads are connected between first and third terminals, input voltage should be 380 volts.

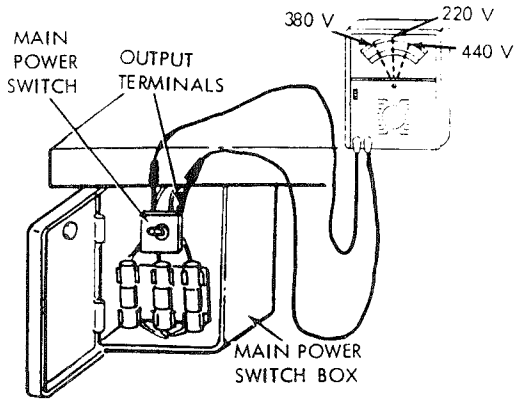
c. If input leads are connected between first and fourth terminals of transformer, input voltage should be 440 volts.

(4) If system power checks good, go to paragraph H.



D. CHECK MAIN POWER SWITCH:

(1) If no power is present at control power transformer input, open MAIN POWER switch box.

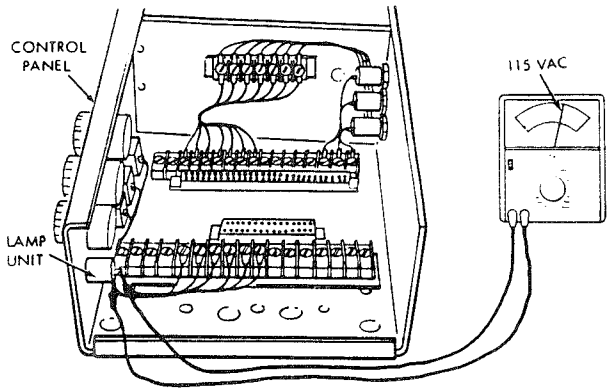


(2) Connect voltmeter leads across switch output leads. Voltmeter should read voltage of input power source. If voltage is correct, go to paragraph H.

(3) If no power is present at MAIN POWER switch output terminals, check for power at input side of switch.

(4) If power is present on input side of MAIN POWER switch, replace switch.

(5) If no power is present at input side of MAIN POWER switch, check service power supply.

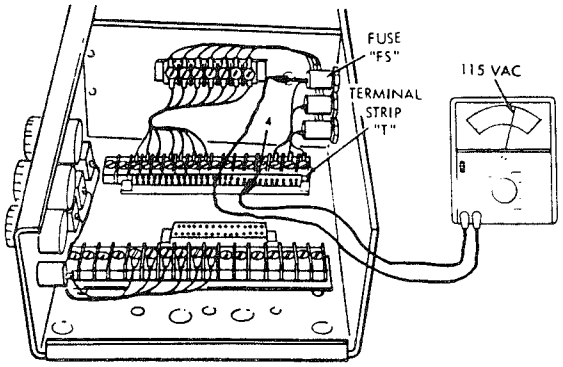


E. CHECK LAMP UNIT:

(1) If unit operates properly (paragraph A) set voltmeter to read in 115 volt AC range. Remove top cover from control box.

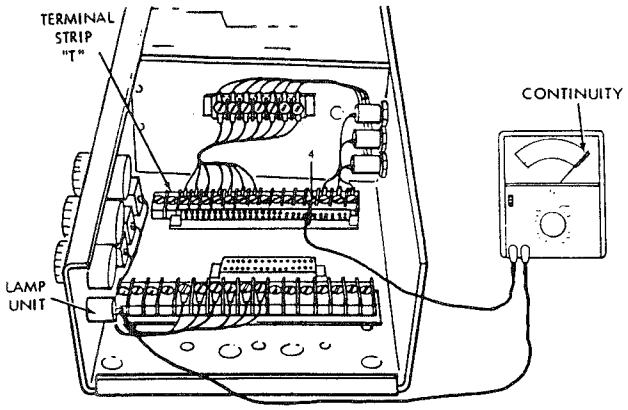
(2) Connect voltmeter leads across lamp unit terminals with MAIN POWER and CONTROL POWER switches on. Voltmeter should read 115 volts AC.

(3) If voltmeter reads 115 volts AC, replace lamp unit.



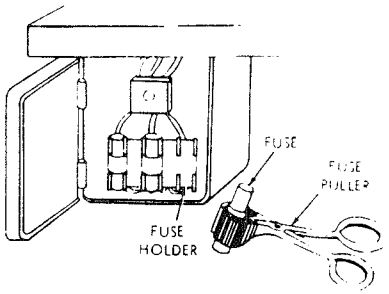
F. CHECK LAMP WIRING:

(1) If 115 volts AC is not present at lamp unit terminals, connect voltmeter leads between terminal 4 of terminal strip "T" and input side of fuse "FS". Voltmeter should read 115 volts AC.



(2) If voltmeter reads 115 volts AC, set CONTROL POWER switch to OFF position, and remove fuses "FS" and "FM". Get ohmmeter.

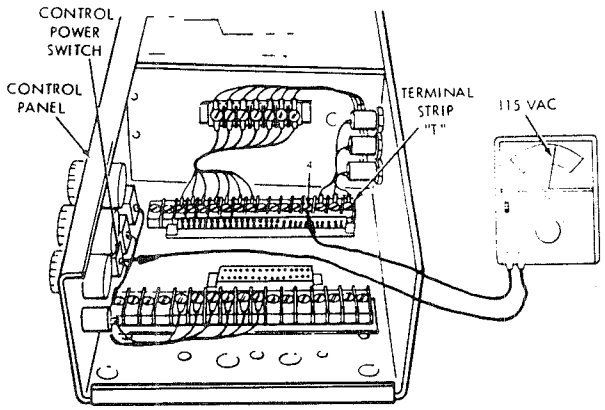
(3) Check continuity of lamp unit leads from terminal 4 of terminal strip "T" to return side of lamp unit, and from input terminal of fuseholder "FS" to lamp unit input terminal.



G. REPLACE BLOWN FUSES:

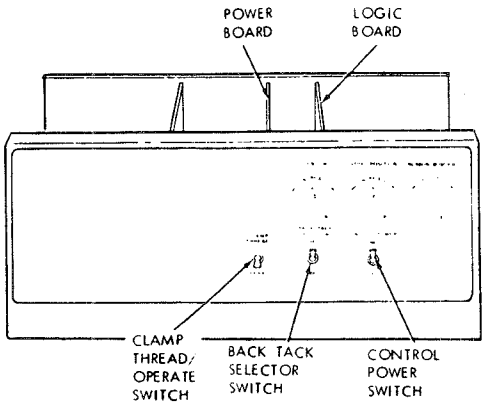
(1) If either fuse did not read continuity (paragraph B) use a fuse puller to remove bad fuse and replace with new fuse of proper type and value. Refer to REPAIR PARTS LIST for fuse part numbers.

(2) After replacing bad fuse, recheck system. (Refer to paragraph A). If system operates properly, operate unit through several cycles to ensure that fuse does not blow again.



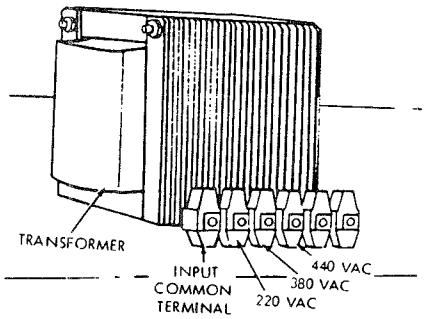
H. CHECK CONTROL POWER SWITCH:

(1) If system power checks good, (paragraph C) connect one lead of voltmeter to terminal 4 of terminal strip "T" and connect other lead to output side of CONTROL POWER switch on high voltage circuit.



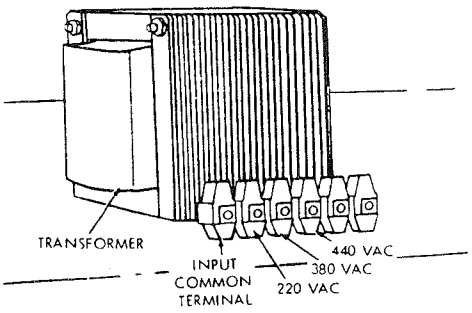
(2) Operate CONTROL POWER switch while observing voltmeter indication. Voltmeter should read 115 volts AC when switch is in ON position, and zero when switch is in OFF position.

(3) If power is not present at output side of CONTROL POWER switch, connect one lead of voltmeter to terminal 4 of terminal strip "T" and connect other lead to input side of CONTROL POWER switch. Voltmeter should read 115 volts AC.



(4) If power is present at input side of CONTROL POWER switch, replace switch. Refer to REPAIR PARTS LIST, for replacement part number.

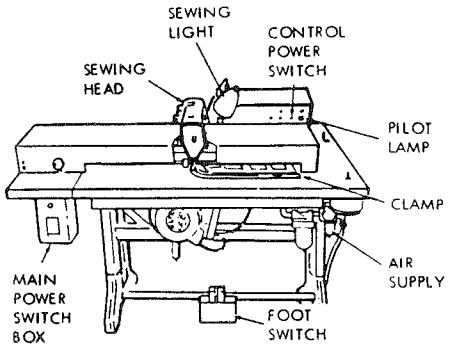
(5) If power is not present at input side of CONTROL POWER switch, transformer is defective.



I. CHECK DRIVE MOTOR:

(1) If fuse blows after replacement, set MAIN POWER switch to OFF position and remove rear cover from bottom of control box.

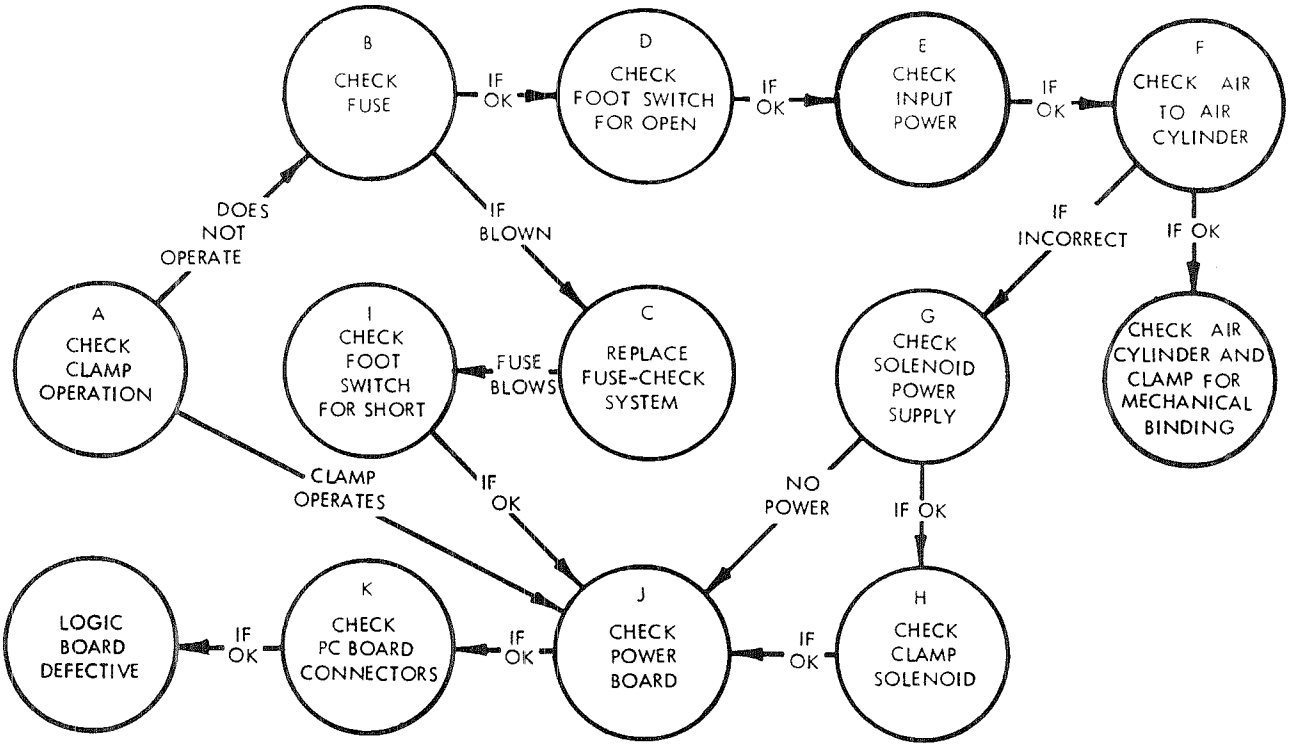
(2) Disconnect one power input lead from control power transformer. Tape end of lead to ensure that it does not cause damage to equipment or injury to personnel.

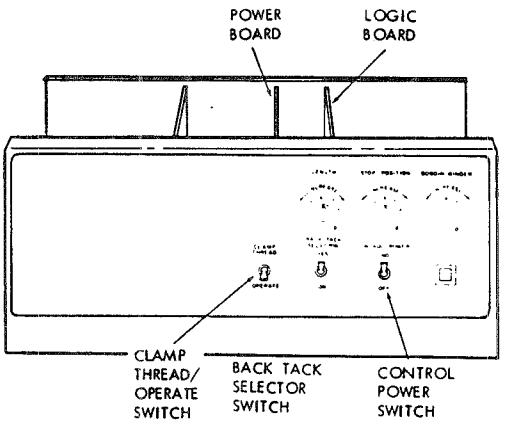


(3) Replace fuse and set MAIN POWER switch to ON position. If fuse does not blow with transformer disconnected, transformer is defective.

(4) If fuse blows with control power transformer disconnected, drive motor is defective. Refer to REPAIR PARTS LIST for replacement part number.

2. CLAMP DOES NOT GO DOWN WHEN FOOT SWITCH IS ACTUATED TO FIRST STEP. ITEM NO. 2

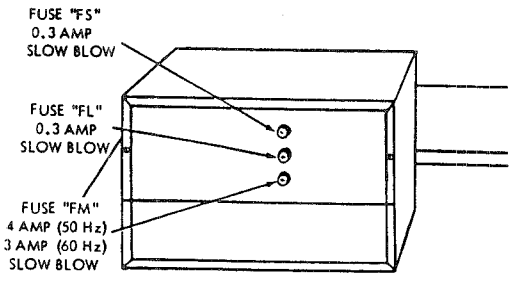




A. CHECK CLAMP OPERATION:

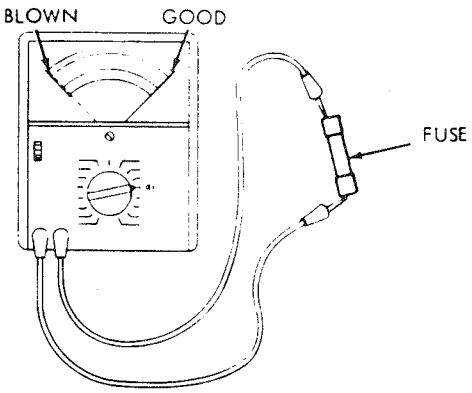
(1) With MAIN POWER and CONTROL POWER switches in ON position, set CLAMP switch to THREAD position.

(2) If clamp goes down when CLAMP switch is set to THREAD position, go to paragraph J.



B. CHECK FUSE:

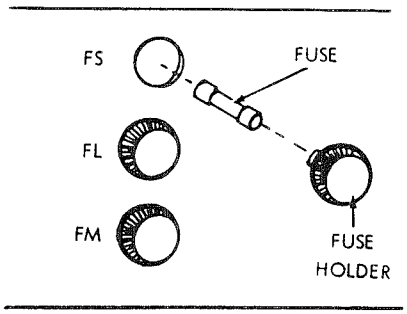
(1) If clamp does not go down when CLAMP switch is set to THREAD position, remove fuse holder "FS" on rear of control box and check fuse.

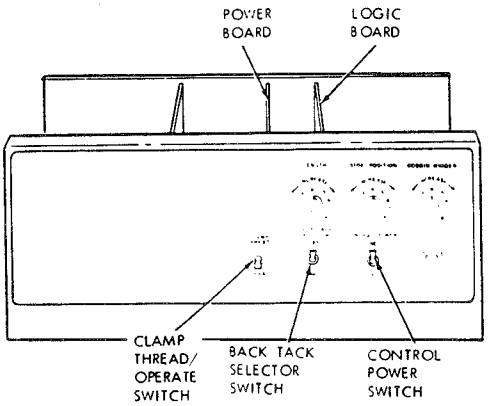


(2) If fuse does not appear to be blown, verify fuse condition by checking fuse with ohmmeter. If fuse is good, go to paragraph D.

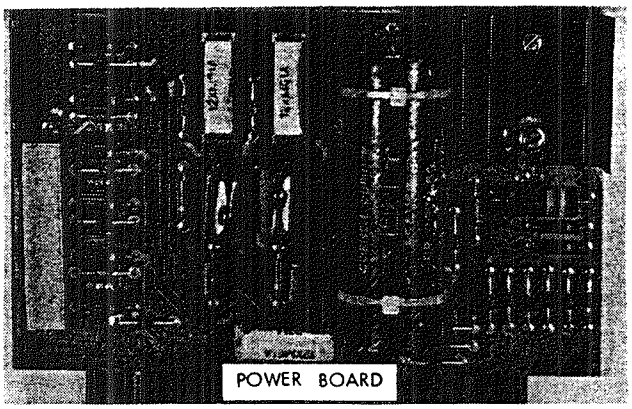
C. REPLACE FUSE – CHECK SYSTEM:

(1) If fuse is blown, remove cover from control box. Pull out power board, then replace fuse with new fuse of proper value, as indicated in REPAIR PARTS LIST.



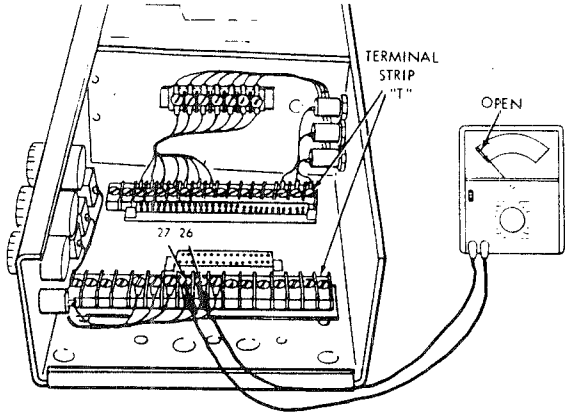


(2) Recheck system with power board removed. If fuse does not blow with power board removed, install power board and check system again. If fuse blows when power board is installed, replace power board with new item. Refer to REPAIR PARTS LIST for replacement part number.



(3) If fuse blows with power board removed, or if fuse still blows after new power board is installed, go to paragraph I.

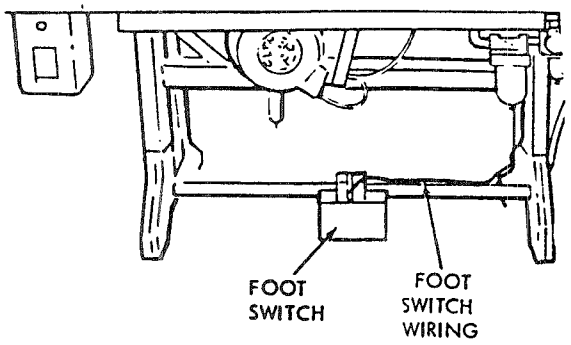
(4) If fuse does not blow after replacement, and system operates normally, operate equipment through a few cycles to ensure that fuse does not blow, then return unit to service.



D. CHECK FOOT SWITCH FOR OPEN:

(1) If fuse is not blown, set MAIN POWER and CONTROL POWER switches to OFF position. Remove cover from control box and pull out both printed circuit boards. Get ohmmeter.

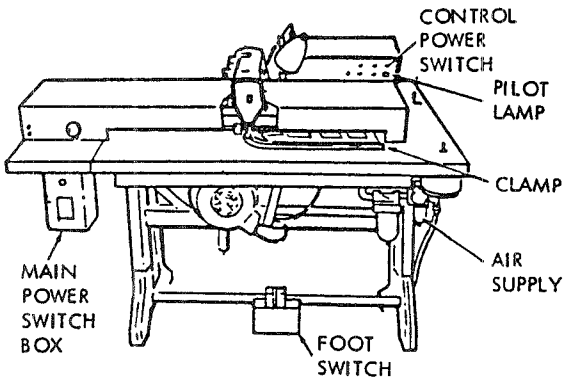
(2) Connect ohmmeter leads to terminals 26 and 27 on terminal strip "T" inside control box. Ohmmeter should read open.



(3) Actuate foot switch to first stop. Ohmmeter should read continuity.

(4) If ohmmeter does not read continuity when foot switch is actuated, disassemble foot switch and check for continuity between terminal 26 and normally open contact of switch No. 1, and between terminal 27 and common of switch No. 1. If either lead reads open, physically trace wire to locate break.

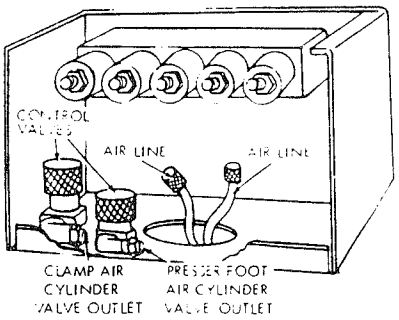
(5) If both leads check good, switch No. 1 is defective. Refer to REPAIR PARTS LIST for replacement part number.



E. CHECK INPUT POWER:

(1) If fuse is not blown, check pilot light. If pilot light is not lit, go to Item 1.

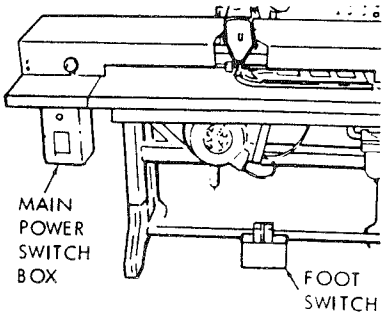
(2) If pilot light is lit, input power source is OK.



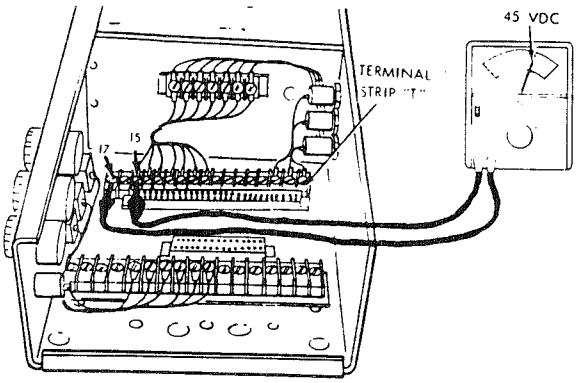
F. CHECK AIR SUPPLY TO AIR CYLINDERS:

(1) If input power is OK, remove air hoses from clamp and presser foot air control valves.

(2) Turn power on. Air should come from both air control valves at fittings from which hoses were removed.



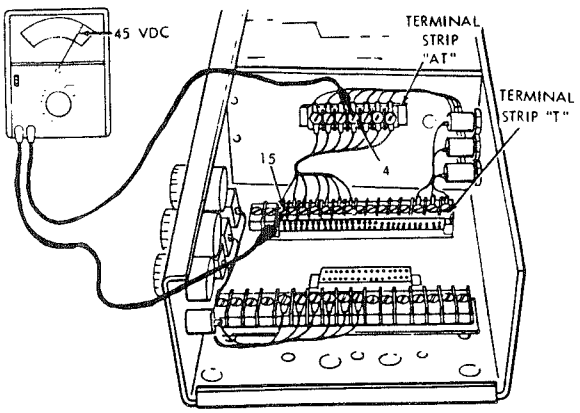
(3) Press foot switch to first step. Air should turn off at both air control valves. If air supply checks good, go to paragraph L.



G. CHECK SOLENOID POWER SUPPLY:

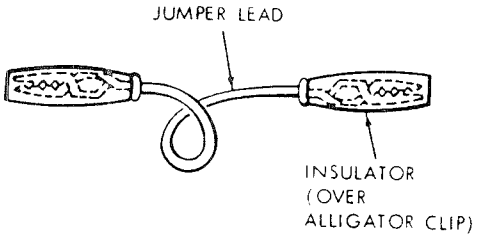
(1) If air continues to come from control valves when foot switch is actuated to first step, get a voltmeter capable of reading in 45 volt DC range.

(2) Connect positive (+) probe of voltmeter to terminal 15 and connect negative (-) probe to terminal 17 of terminal strip "T". Voltmeter should read approximately 45 volts DC.

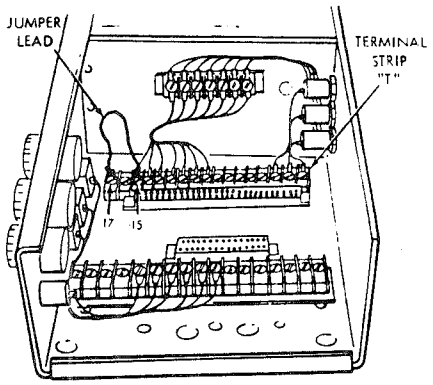


(3) If voltmeter does not read 45 volts DC, get ohmmeter and check for continuity between terminal 15 on terminal strip "T" and terminal 4 on terminal strip "AT". If continuity checks good, go to paragraph J.

H. CHECK CLAMP SOLENOID:



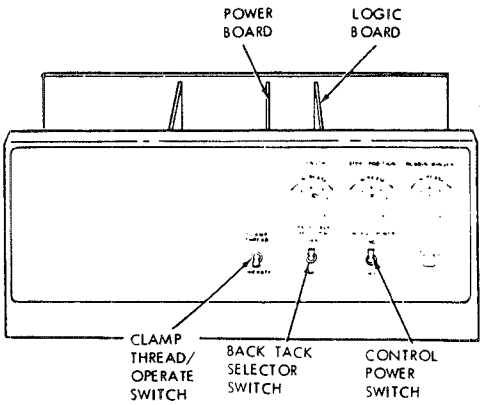
(1) If solenoid power supply checks good, get a jumper lead with insulated alligator clips on both ends.



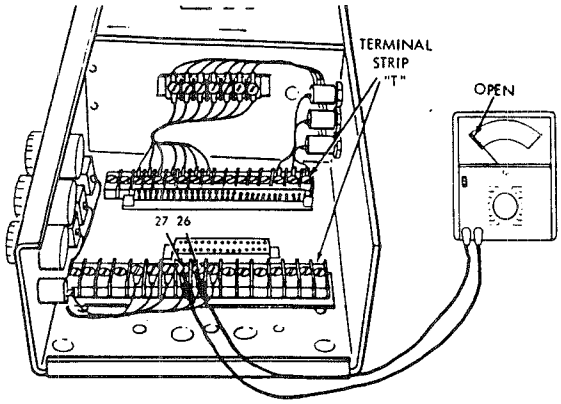
(2) With air hoses still disconnected from clamp and presser foot air control valves, connect jumper lead between terminals 15 and 17 on terminal strip "T". If air does not stop when jumper lead is installed, replace solenoid "C".

(3) If air stops when jumper lead is connected, go to paragraph J.

I. CHECK FOOT SWITCH FOR SHORT:

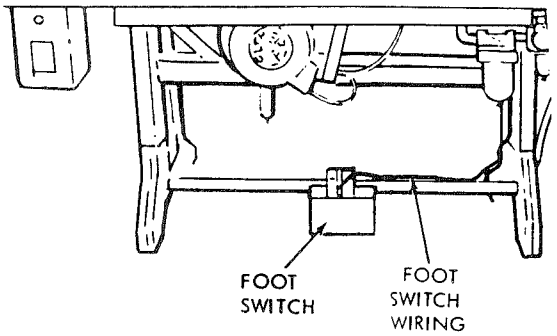


(1) If fuse blows when replaced, set MAIN POWER and CONTROL POWER switches to OFF position. Remove cover from control box and pull out power and logic boards. Get ohmmeter.



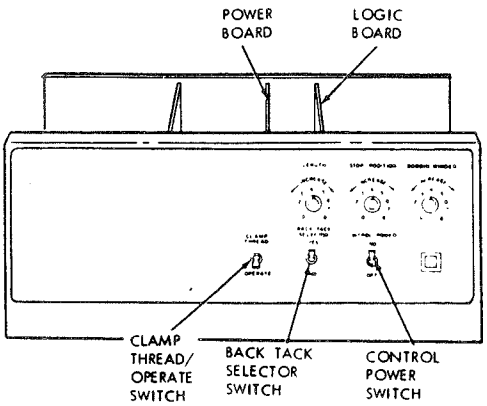
(2) Connect ohmmeter leads to terminals 26 and 27 on terminal strip "T" inside control box. Ohmmeter should read open.

(3) If ohmmeter reads continuity between terminals 26 and 27 with foot switch in unactuated position, disconnect one lead from terminal strip and check from end of lead to other terminal. If meter still reads continuity, disassemble foot switch housing.



(4) Disconnect leads from switch No. 1 and check for continuity between leads. If ohmmeter reads open, switch is defective.

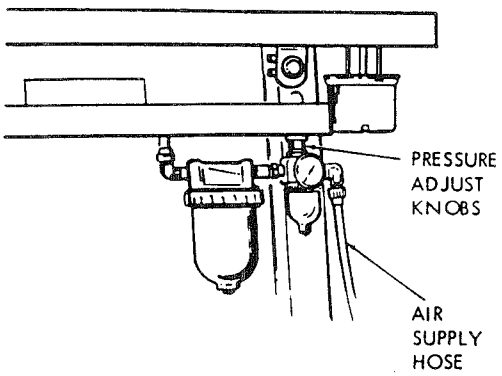
(5) If ohmmeter still reads continuity, switch wiring is defective.



J. CHECK POWER BOARD:

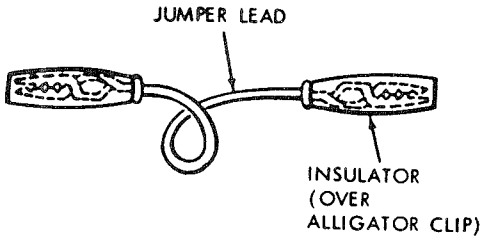
(1) If clamp operates (paragraph A), or if there is no power to clamp solenoid (paragraph G), if clamp solenoid checks good (paragraph H), or if foot switch checks good (paragraph I), remove top cover from control box.

(2) Set CONTROL POWER switch to OFF position, and remove logic board.



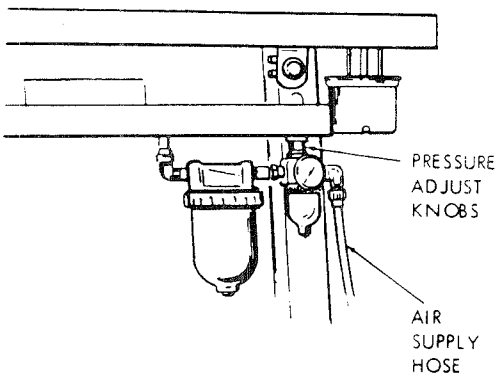
(3) Check air supply pressure gauge to ensure that air pressure is set within specified range.

(4) With clamp in home position, set BACK TACK SELECTOR switch to YES position, and CLAMP THREAD/OPERATE switch to OPERATE position.



(5) Get voltmeter capable of reading 12 volts DC, 45 volts DC, 90 volts DC, 24 volts AC, and 115 volts AC.

(6) Get two 18-inch jumper leads with insulated alligator clips on both ends.

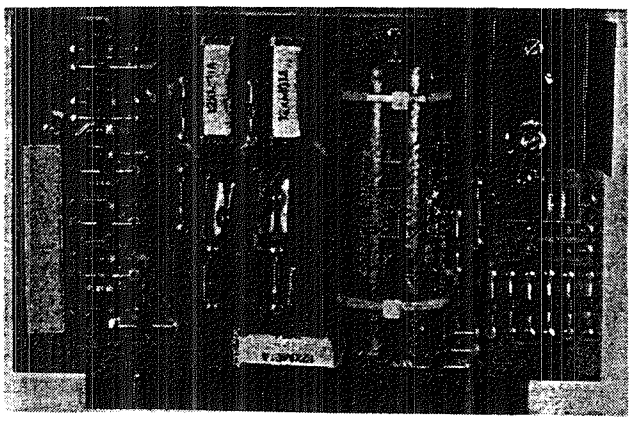


(7) Disconnect air supply hose. Clamp and presser foot should go down. If clamp and presser foot do not go down, check clamp mechanism for mechanical bind.

(8) Set CONTROL POWER switch to ON position. Machine should not run. If machine runs, replace power board.

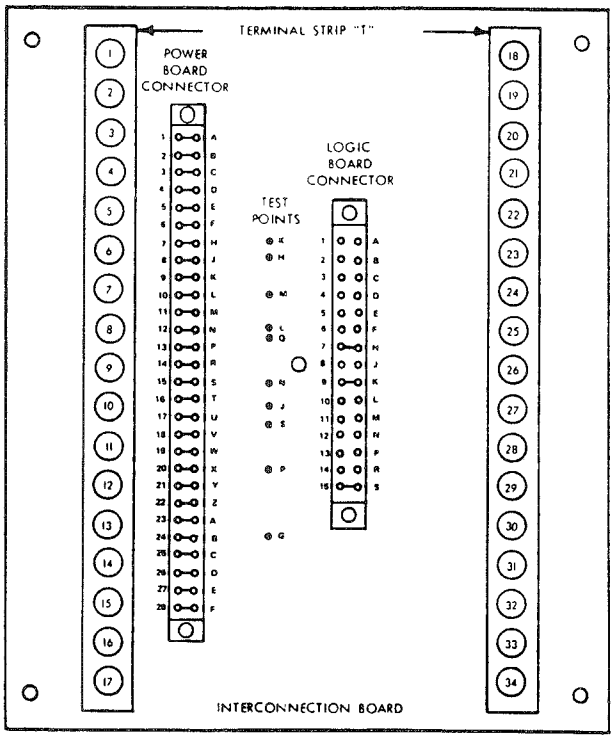
(9) Perform voltage checks as follows:

VOLTMETER CONNECTIONS		Voltage Reading
Positive Probe	Negative Probe	
Terminal Strip "T" 1	Terminal Strip "T" 2	24 VAC
Terminal Strip "T" 3	Terminal Strip "T" 4	115 VAC
Terminal Strip "T" 4	Terminal Strip "T" 17	45 VDC (or 115 VAC half wave)
Terminal Strip "T" 8	Terminal Strip "T" 17	90 VDC (or 115 VAC full wave)
Test Terminal "H"	Test Terminal "G"	12 VDC
Clutch Terminal Blue Lead	Clutch Terminal Black Lead	5-10 VDC



(10) If first two voltages are incorrect, remove power board and recheck. If voltages are correct with power board out, install new power board. If any other voltages are incorrect, replace power board. Refer to REPAIR PARTS LIST for replacement part number.

(11) If all voltage readings are correct, connect air pressure source to system. Clamp and presser bar should lift.

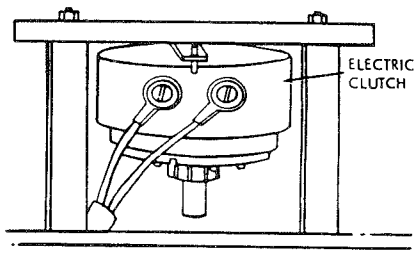


CAUTION

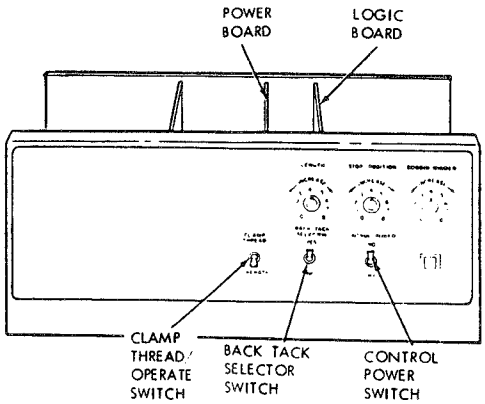
Turn power off when making all jumper connections.

(12) Connect a jumper lead (see step (6) between test terminals H and J. Air wiper should begin operating. If air wiper does not operate, replace power board.

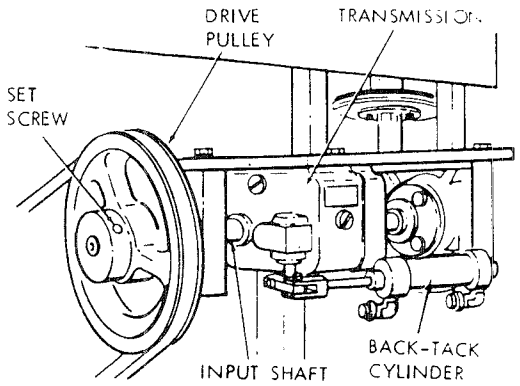
(13) If air wiper begins operating when jumper is connected between test terminals H and J, remove jumper lead and connect it between test terminals P and H, and connect voltmeter leads across terminals of electric clutch. Air wiper operation should stop, clamp should go down, and presser bar should be lowered. Voltmeter should read 90 volts DC. If any of these events do not occur, replace power board.



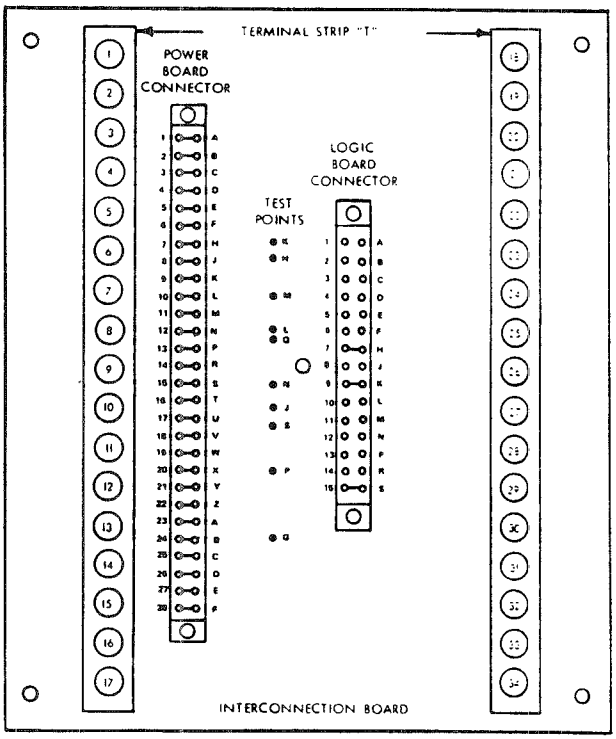
(14) If proper results are achieved with jumper between test terminals H and P, remove jumper and connect it between test terminals H and S, leaving voltmeter connected between electric clutch terminals. Clamp and presser bar should rise, and voltmeter indication should go to 5 - 10 volts dc. Back tack cylinder should operate. If any of these events fail to occur, replace power board.



(15) If proper results are achieved with jumper lead connected between test terminals H and S, set CLAMP switch to THREAD position. Clamp and presser bar should go down. If clamp and presser bar do not go down, replace power board.



(16) If clamp and presser bar go down when CLAMP switch is set to THREAD position, remove jumper lead and connect it between test terminals H and N. Back tack cylinder should return to its home position, and machine should run at high speed. If either of these events fails to occur, replace power board.

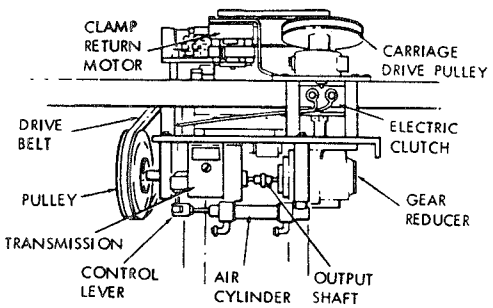


(17) If proper results are achieved with jumper connected between terminals H and N, remove jumper lead and connect it between test terminals H and K. Machine should go from high speed to low speed. If machine does not go to low speed, replace power board.

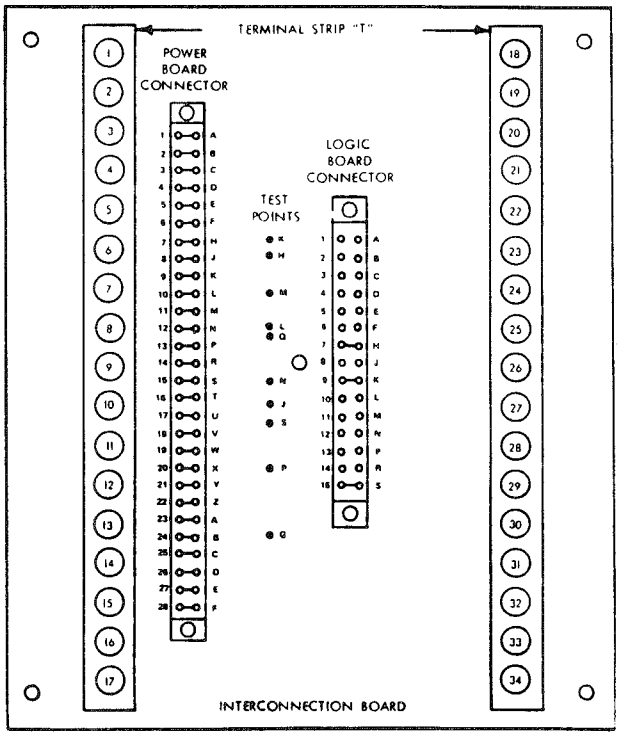
(18) If machine goes into low speed, remove jumper lead. Machine should stop, position, and trim. If machine does not stop, position, and trim when jumper is removed, replace power board.

(19) If machine stops, positions, and trims when jumper lead is removed, set CLAMP switch to OPERATE position, clamp and presser bar should lift. If clamp and presser bar do not lift, replace power board.

(20) If clamp and presser bar lift, manually move clamp out of home position.



(21) Connect one jumper lead between test terminals H and Q, and connect another jumper lead between test terminals G and L. Clamp return motor should drive clamp toward home position, and motor should stop when home position is reached. If clamp return motor does not operate properly, replace power board.



(22) If clamp motor drives clamp toward home position, remove jumpers and connect a jumper lead between test terminals G and M. Bobbin motor should run. If bobbin motor does not run, replace power board.

(23) If bobbin motor runs, remove jumper lead. Bobbin motor should stop running. If bobbin motor does not stop, replace power board.

K. CHECK P.C. BOARD CONNECTORS:

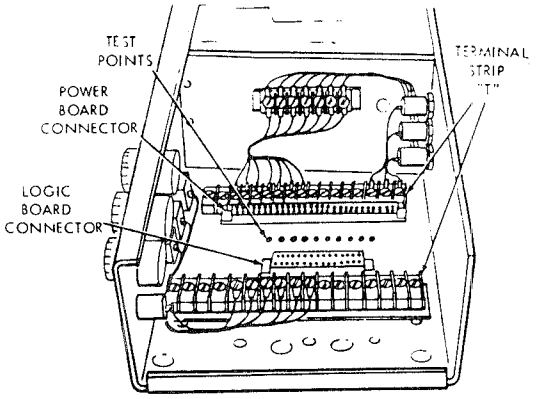
(1) If power board checks good, turn off power and remove power board from control box. Get an ohmmeter.

(2) Perform continuity check of logic board connector as follows:

FROM TERMINAL STRIP "T" TERMINAL	TO LOGIC BOARD CONNECTOR PIN
20	A
21	C and H
22	D
23	B
24	E
25	F
26	D
27	K
28	M
29	L
30	J
31	N
32	P
33	R
34	S

FROM TEST POINT	TO LOGIC BOARD CONNECTOR PIN
K	1
H	2
M	4
L	6
Q	7 and H
N	8
J	9 and K
S	10
P	14
G	15 and S

(3) If any of the above circuits do not read continuity, replace interconnection board. Refer to REPAIR PARTS LIST for replacement part number.



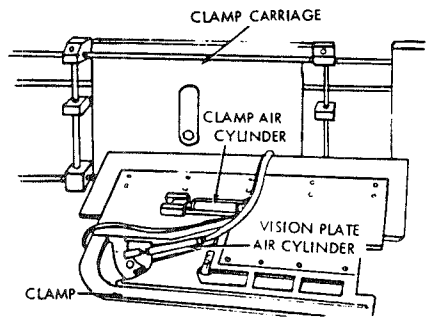
FROM TERMINAL STRIP "T" TERMINAL	TO POWER BOARD CONNECTOR PIN
1	1 and A
2	2 and B
3	3 and C
4	4 and D
5	5 and E
6	7 and H
7	6 and F
8	8 and J
9	20 and X
10	21 and Y
11	22 and Z
12	23 and A
13	26 and D
14	24 and B
15	25 and C
16	27 and E
17	28 and F
18	9 and K
19	10 and L

(4) Perform continuity check of power board connector as follows:

FROM LOGIC BOARD CONNECTOR PIN	TO POWER BOARD CONNECTOR PIN
1	11 and M
2	12 and N
4	13 and P
6	14 and R
7 and H	15 and S
8	16 and T
9 and K	17 and U
10	18 and V
14	19 and W
15 and S	28 and F

(5) If any of the above circuits do not read continuity, replace interconnection board. Refer to REPAIR PARTS LIST for replacement part number.

(6) If power board and P.C. board connectors check good, replace logic board. Refer to REPAIR PARTS LIST for replacement part number.

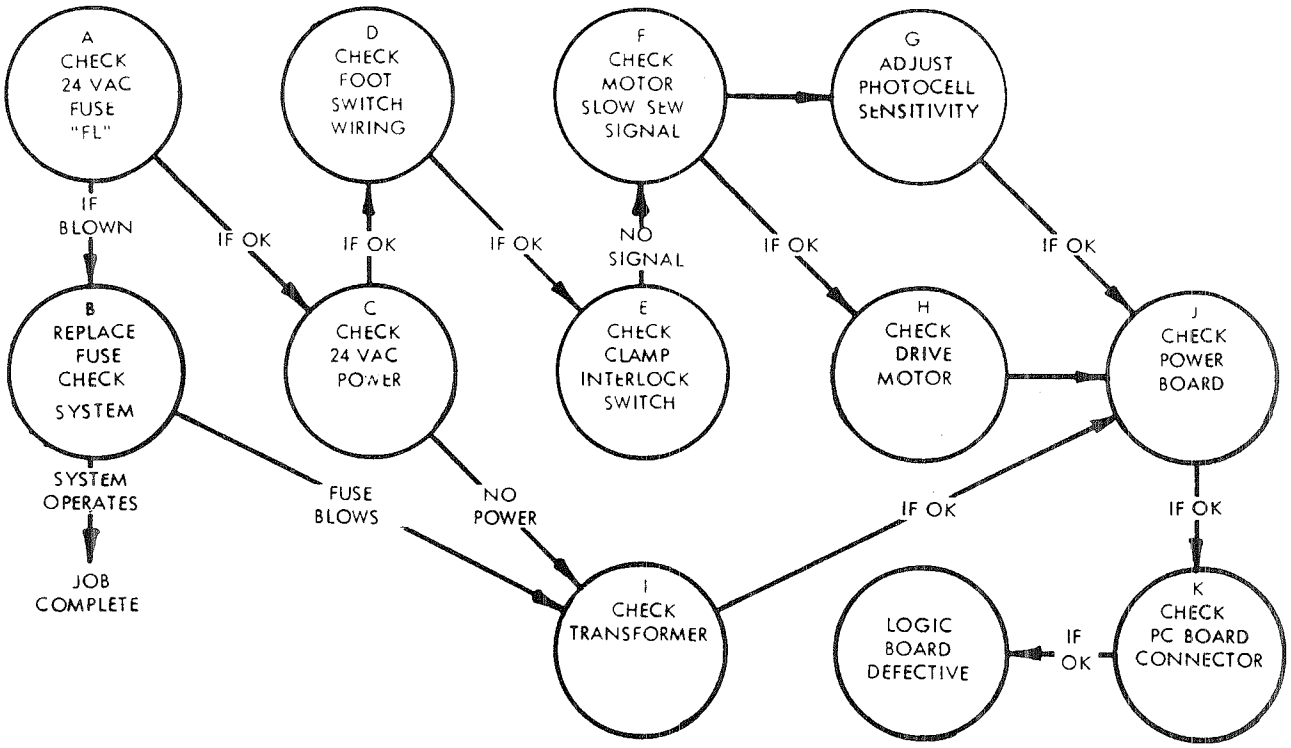


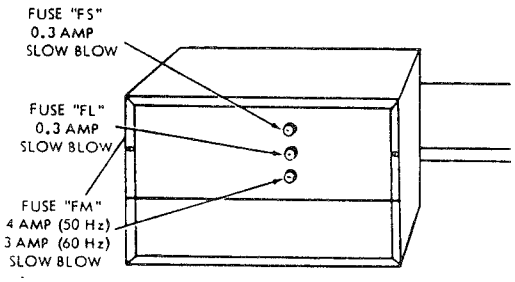
L. CHECK AIR CYLINDERS AND CLAMP FOR MECHANICAL BINDING:

(1) If air pressure turns off at air control valves when foot switch is operated, remove cover from clamp carriage assembly.

(2) Remove carriage assembly, and check clamp raise-lower mechanism for mechanical binding. With air line disconnected from air cylinder, clamp should move freely in both directions.

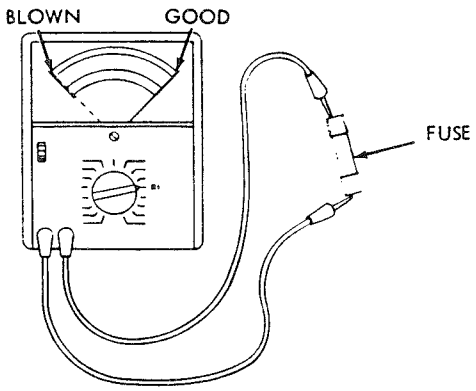
3. MACHINE DOES NOT START WHEN FOOT SWITCH IS ACTUATED TO SECOND STEP.



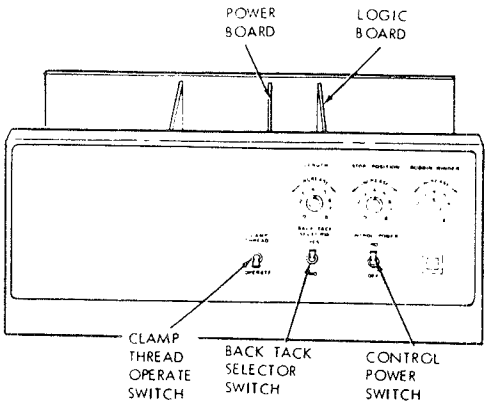


A. CHECK 24 VAC FUSE "FL":

(1) Remove fuseholder "FL" on rear of control box and check fuse.



(2) If fuse does not appear to be blown, verify good fuse by checking with ohmmeter. If fuse is good, go to paragraph C.



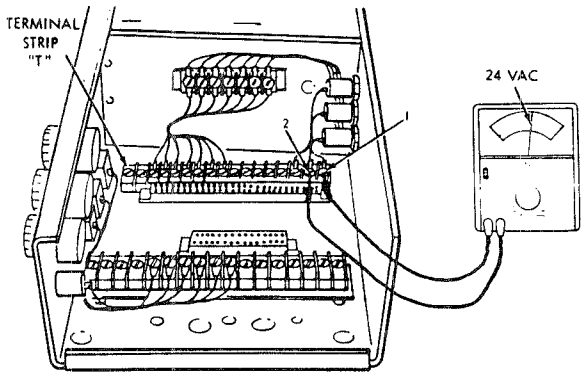
B. REPLACE FUSE, CHECK SYSTEM:

(1) If fuse is blown, remove control box cover and pull out power board, then replace fuse with new 0.3 amp fuse as specified in REPAIR PARTS LIST.

(2) Apply power to system with power board removed. If fuse blows, go to paragraph I.

(3) If fuse does not blow with power board removed, install power board and recheck system. If fuse blows when power board is installed, replace power board. Refer to REPAIR PARTS LIST for replacement part number.

(4) If fuse does not blow when power board is installed, operate unit through several cycles to ensure that fuse does not blow, then return unit to service.



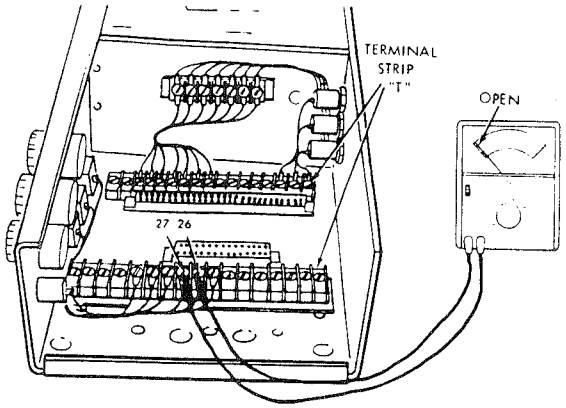
C. CHECK 24 VOLT AC POWER:

(1) If fuse checks good, remove control box cover. Get AC voltmeter capable of reading in 24 volt range.

(2) Connect voltmeter leads between terminals 1 and 2 on terminal strip "T". Voltmeter should read 24 volts AC. If voltmeter does not read 24 volts AC, go to paragraph I.

D. CHECK FOOT SWITCH WIRING:

(1) If 24 VAC power checks good, turn MAIN POWER switch off. Remove control box cover and remove power board and logic board. Get ohmmeter.

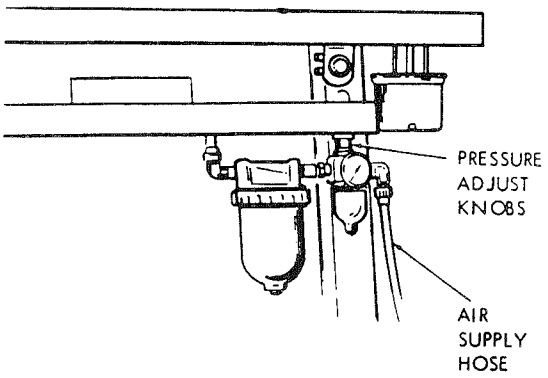


(2) Connect ohmmeter leads to terminals 26 and 27 on terminal strip "T". Ohmmeter should read open.

(3) Operate foot switch to first step. Ohmmeter should read continuity.

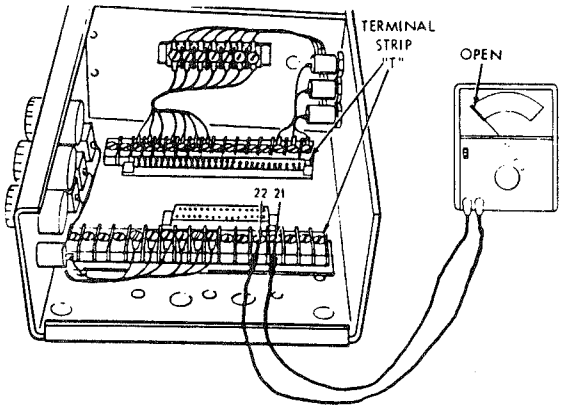
(4) Connect ohmmeter leads between terminals 24 and 26. Ohmmeter should read open.

(5) Actuate foot switch to second step. Ohmmeter should read continuity.



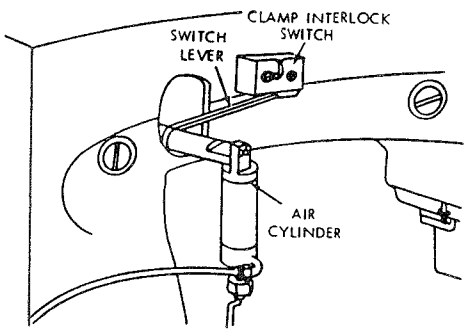
E. CHECK CLAMP INTERLOCK SWITCH:

(1) If foot switch checks good, turn unit off and disconnect air supply. Clamp should go down. If clamp does not go down, refer to Item 2 and check clamp operation.

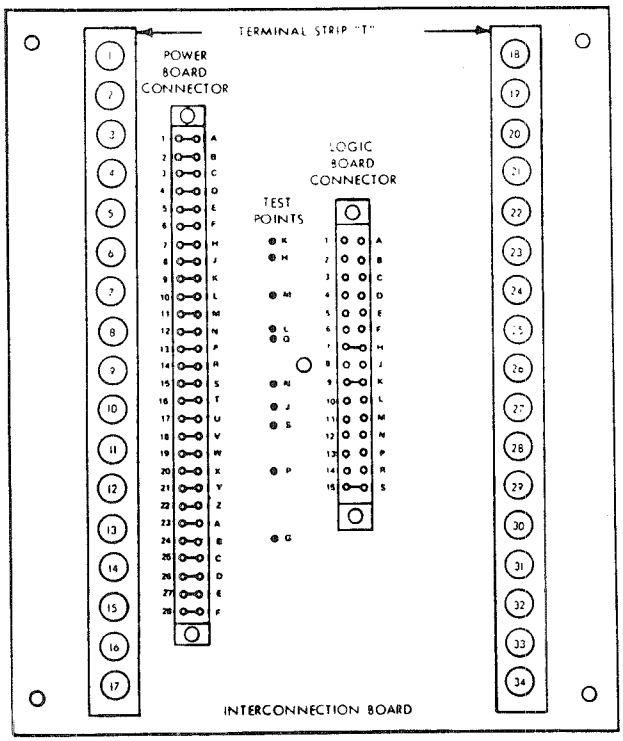


(2) Remove cover from control box and remove power board and logic board. Get ohmmeter.

(3) Connect ohmmeter leads between terminals 21 and 22 of terminal strip "T". With clamp down, ohmmeter should read open circuit.



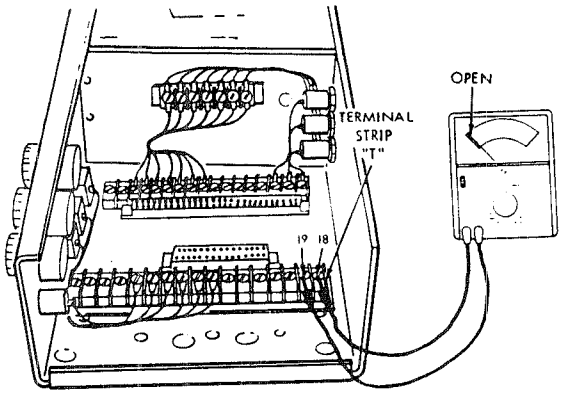
(4) With ohmmeter still connected, depress presser foot air cylinder by hand to cause clamp interlock switch lever to move slightly. Ohmmeter should read continuity as soon as switch lever moves. Switch adjustment should be such that switch opens just as clamp reaches full down position.



(5) If clamp interlock switch checks good, check for continuity between terminal 21 and pin C on power board receptacle in control box. Check for continuity between terminal 22 and pin D of power board receptacle. If either lead reads open, and wires do not appear to be broken, replace interconnection board. Refer to REPAIR PARTS LIST for replacement part number.

F. CHECK MOTOR SLOW SEW SIGNAL:

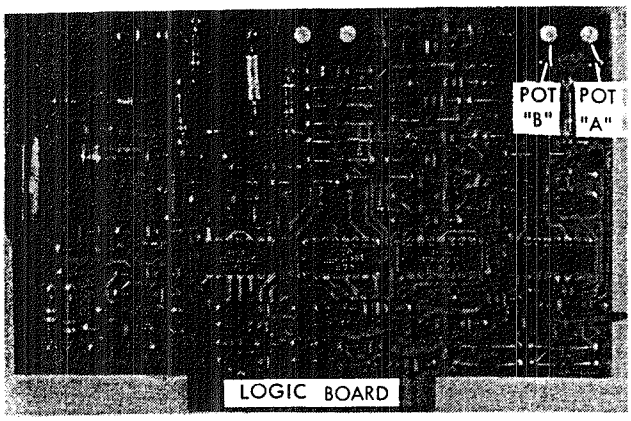
(1) Remove wire that goes to motor control from terminal 18 on terminal strip "T". Leave other leads connected to terminal 18.



(2) Connect ohmmeter leads to terminals 18 and 19 of terminal strip "T". Ohmmeter should read open.

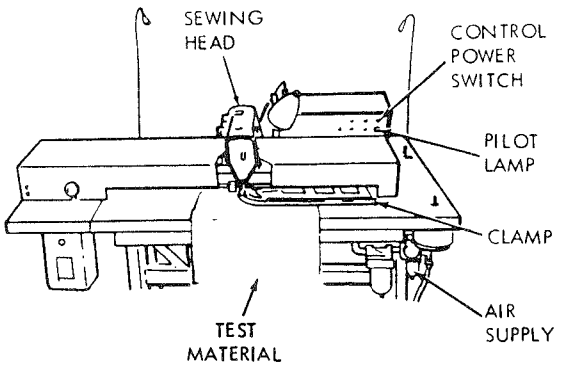
(3) Set MAIN POWER switch and CONTROL power switch to ON position, and actuate foot switch to second step. Ohmmeter reading should briefly read continuity when foot switch is actuated.

(4) If slow sew signal is OK, go to paragraph H.



G. ADJUST PHOTOCELL SENSITIVITY:

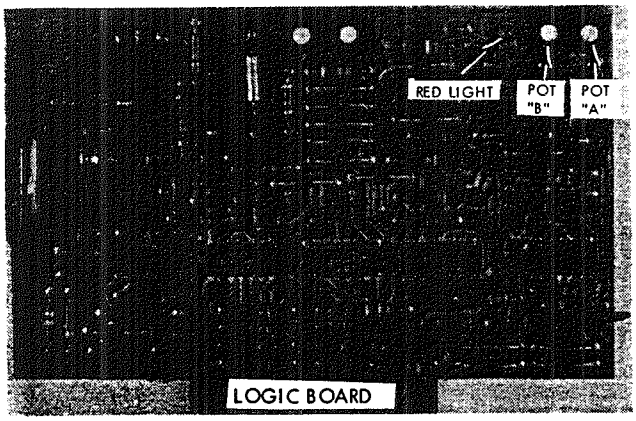
(1) If slow sew signal is absent, turn potentiometer "B" on logic board fully clockwise. Turn CONTROL POWER switch OFF, leave MAIN POWER switch ON.



(2) Place a piece of cloth under clamp so that cloth extends 6 to 8 inches to right of sewing machine needle area.

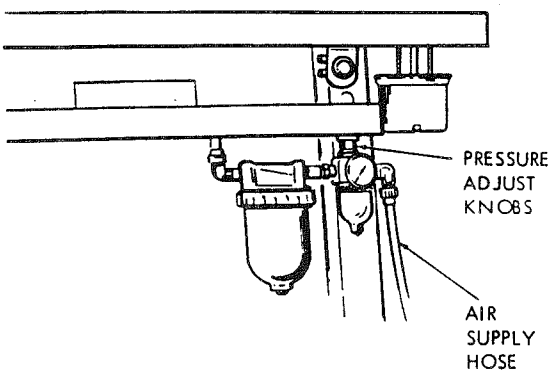
(3) Disconnect main air supply hose. Clamp and presser bar should go down.

(4) Adjust position of sewing lamp so that light is directed toward needle area, and 8 to 9 inches above table top. Turn potentiometer "A" fully clockwise.



(5) Set CONTROL POWER switch to ON position. Machine should run at slow speed and red light on logic board should be lit.

(6) Allow machine to run until photocell is fully exposed through opening in clamp. Slowly adjust potentiometer "A" on logic board counter-clockwise until red light goes off.



(7) When red light on logic board goes off, machine should stop, position and trim. Turn CONTROL POWER switch OFF.

(8) Connect main air supply hose to air regulator inlet, and turn CONTROL POWER switch ON. Clamp should return to its home position.

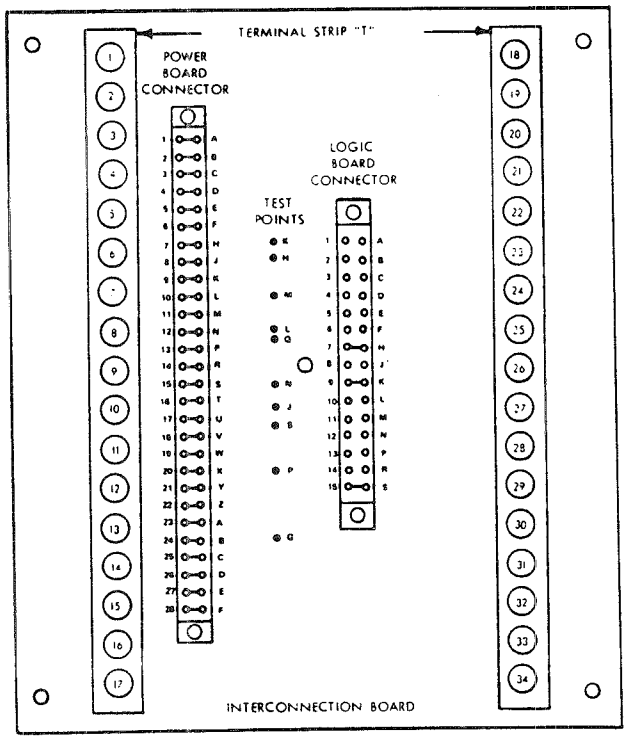
(9) Using a single layer of pants material, test machine operation. Machine should sew properly. If machine does not sew properly, rotate potentiometer "B" on logic board approximately 15 degrees counter-clockwise, then repeat steps (2) through (9). If proper operation cannot be achieved, continue to next paragraph.

H. CHECK DRIVE MOTOR:

(1) If photocell calibration does not correct system operation, check drive motor, clutch and control panel.

(2) Refer to motor manufacturer's instruction manual for drive motor and clutch troubleshooting procedures.

(3) If motor checks good, go to paragraph J.

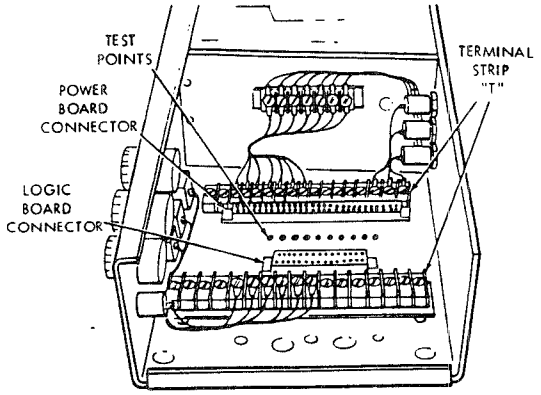


I. CHECK TRANSFORMER:

(1) If fuse blows again after replacement (paragraph B) get AC voltmeter capable of reading in 24 volt AC range. Remove cover from control box.

(2) Connect voltmeter leads between terminals 1 and 2 of terminal strip "T" Voltmeter should read 24 volts AC. If voltmeter reading is more than 29 volts AC, or less than 19 volts AC, refer to Item 1, paragraph C, and check system input power.

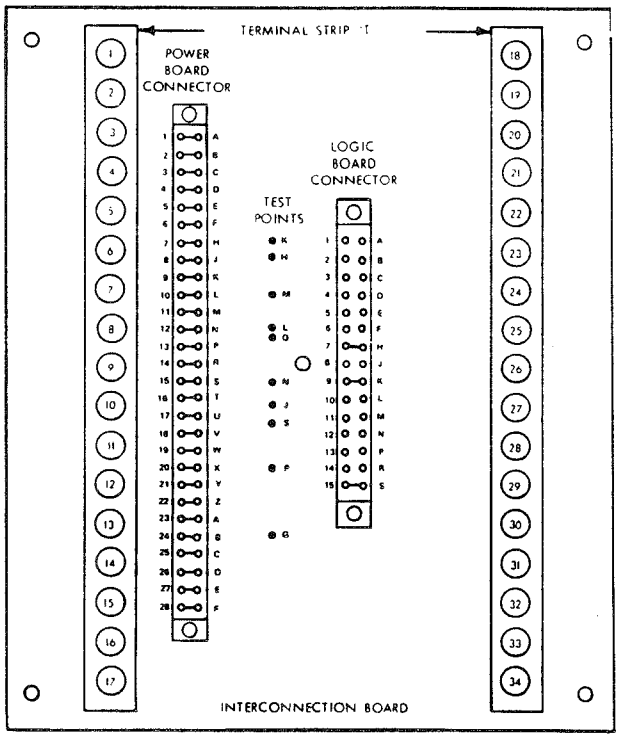
(3) If input power is correct, transformer is defective. Refer to REPAIR PARTS LIST for replacement part number.



J. CHECK POWER BOARD:

(1) If 24 VAC power is absent, and transformer checks good; if slow sew signal is absent, and photocell sensitivity adjustment does not correct the problem; or if slow sew signal is present and drive motor checks good, check power board. Remove cover from control box.

(2) Check power board using procedure given in Item 2, paragraph J, steps (2) through (23).

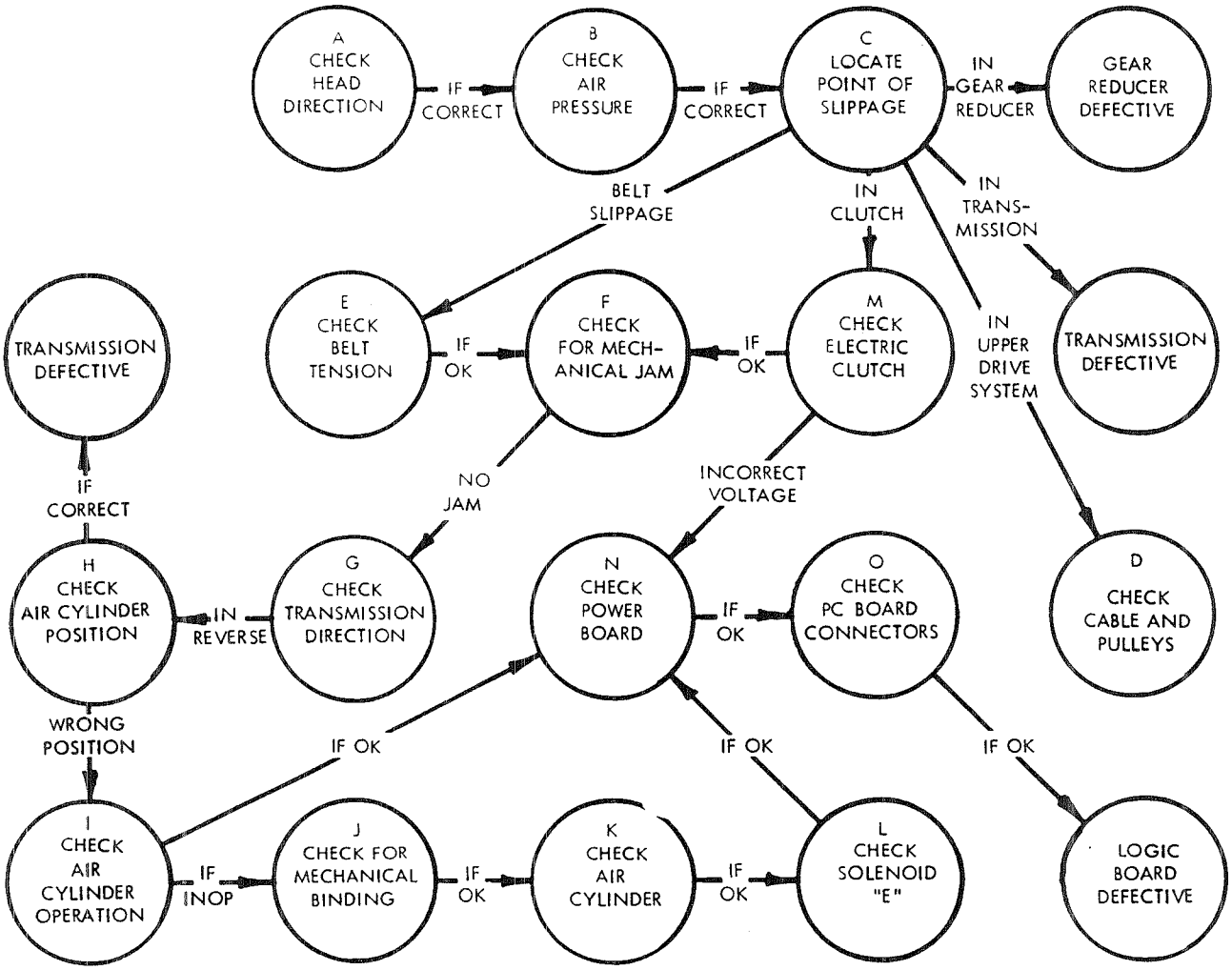


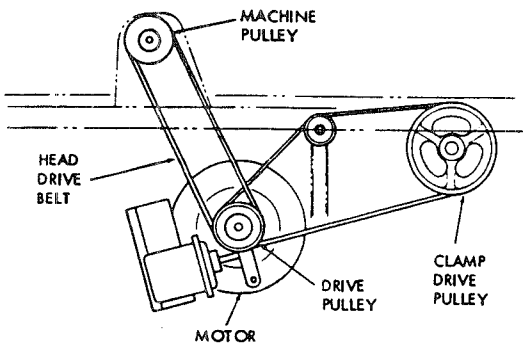
K. CHECK P.C. BOARD CONNECTORS:

(1) If power board checks good, disconnect electrical power from equipment.

(2) Check P.C. board connectors using procedure given in Item 2, paragraph K.

(3) If P.C. board connectors check good, replace logic board. Refer to REPAIR PARTS LIST for replacement part number.

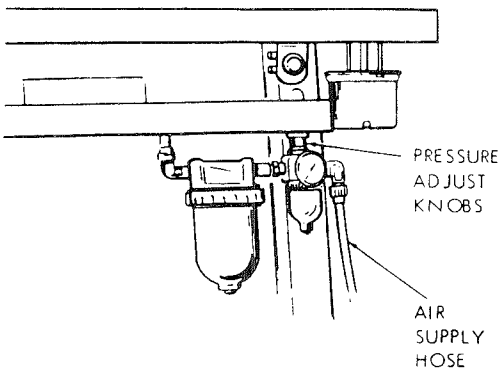




A. CHECK HEAD DIRECTION:

(1) Operate unit and observe direction of sewing machine head drive pulley. Drive pulley rotation should be clockwise when viewed from front of machine.

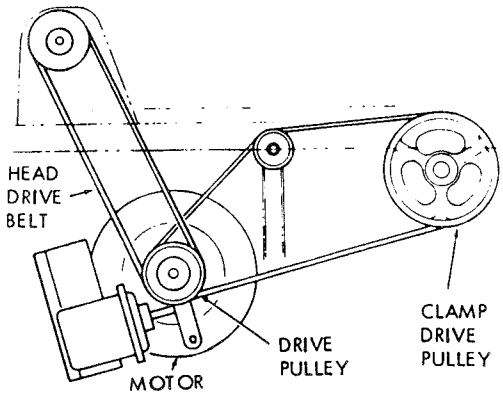
(2) If direction of drive pulley rotation is incorrect, refer to drive motor instructions and check motor.



B. CHECK AIR PRESSURE:

(1) If direction of drive pulley rotation is correct, check setting of air supply pressure regulator.

(2) Air pressure setting should be between 40 and 45 psi. If air pressure setting is incorrect, reset pressure and check unit.

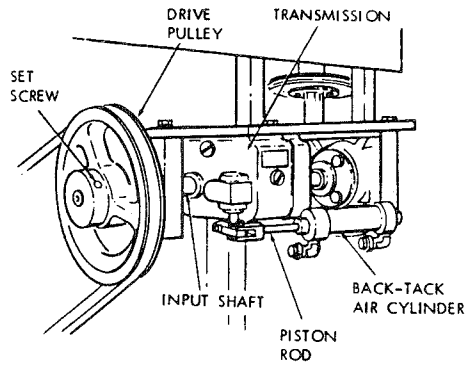


C. LOCATE POINT OF SLIPPAGE:

(1) Check drive belt from drive motor pulley to large pulley at rear of unit. Large pulley should be driven when motor operates.

(2) If pulley at rear of unit is turning, check belt and pulley that drives transmission. If pulley is turning, check transmission output shaft.

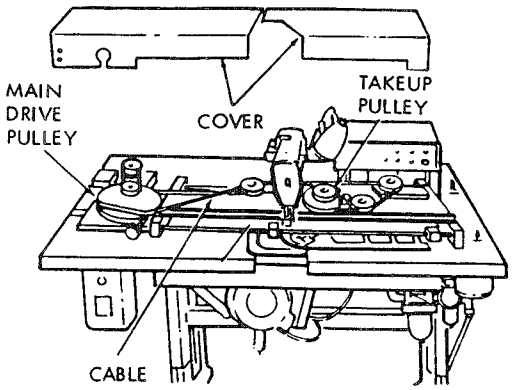
(3) If output shaft is not turning, transmission is defective.



(4) If transmission is OK, check output shaft of gear reducer. If shaft is not rotating, gear reducer is defective.

(5) If gear reducer output shaft is turning, and carriage drive pulley is not moving, go to paragraph M.

(6) If one or both of the drive belts slips when motor operates, go to paragraph E.



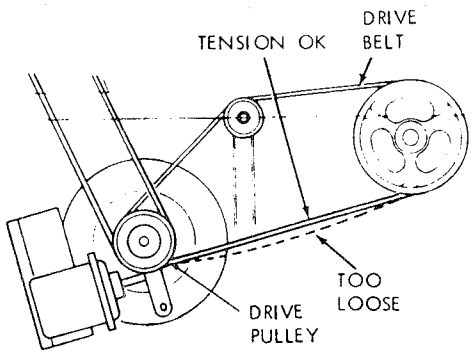
D. CHECK CABLE AND PULLEYS:

(1) If output side of electric clutch is turning, remove cover from clamp drive carriage.

(2) Check cable and five pulleys to ensure that cable is not damaged or improperly routed around pulleys.

(3) Check each pulley for binding.

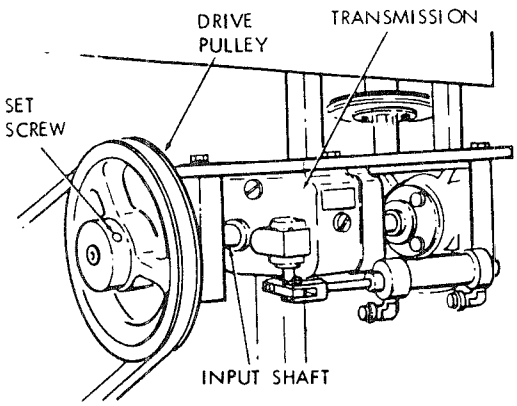
E. CHECK BELT TENSION:



(1) If point of slippage was found to be a belt, stop unit and check belt for looseness.

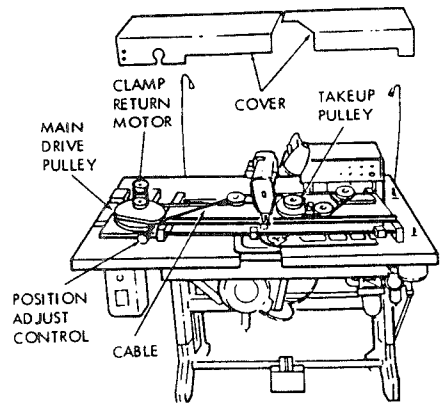
(2) If horizontal span of belt runs in straight line from pulley to pulley, belt is not loose. A loose belt sags between pulleys.

F. CHECK FOR MECHANICAL JAM:



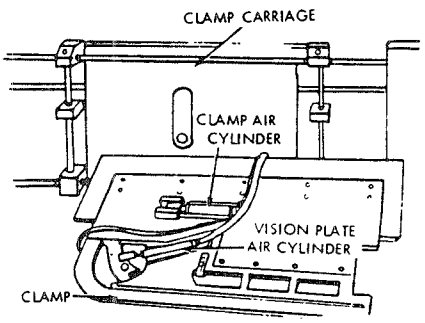
(1) If a belt is slipping, and belt tension checks OK, loosen set screw on pulley that drives transmission and allow pulley to slip on its shaft.

(2) Operate unit and check transmission drive pulley operation.

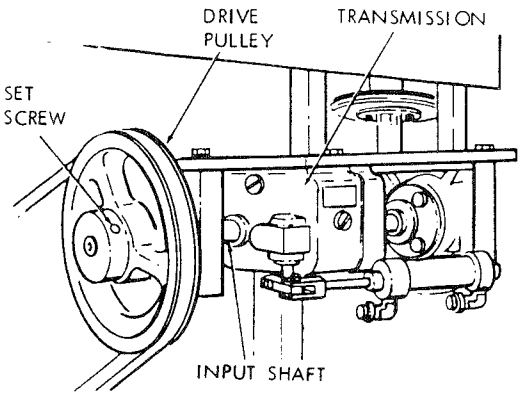


(3) If transmission drive pulley turns when allowed to slip on its shaft, remove left cover from clamp carriage mechanism, and disconnect carriage drive cable.

(4) With drive cable disconnected, manually move clamp carriage out of its home position. Carriage should move freely.



(5) If carriage does not move freely, check for binding pulleys, damaged cable, and for jams in moving parts of carriage mechanism. If pulleys and cable check good, disassemble carriage and check for damaged or corroded parts.



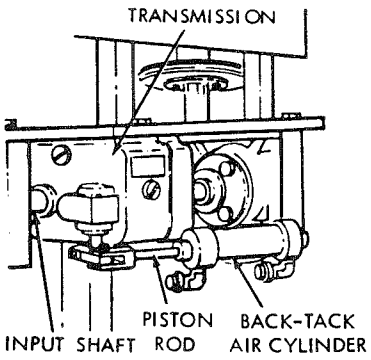
G. CHECK TRANSMISSION DIRECTION:

(1) If clamp carriage is not mechanically jammed, manually move carriage to home position.

(2) With transmission drive pulley free to turn on its shaft, operate unit and note direction of pulley rotation.

(3) Remove drive belt from pulley and install set screws securing pulley to its shaft. Manually turn pulley in opposite direction from that noted in step (2).

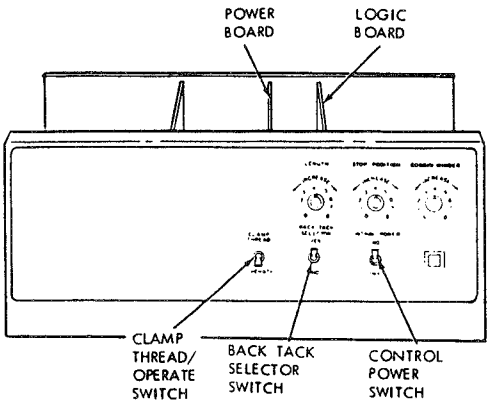
(4) If carriage moves out of home position when pulley is rotated, transmission is reversed.



H. CHECK AIR CYLINDER POSITION:

(1) If transmission was found to be reversed, check position of air cylinder piston rod that operates transmission control arm. Air cylinder piston rod should be in its extended position.

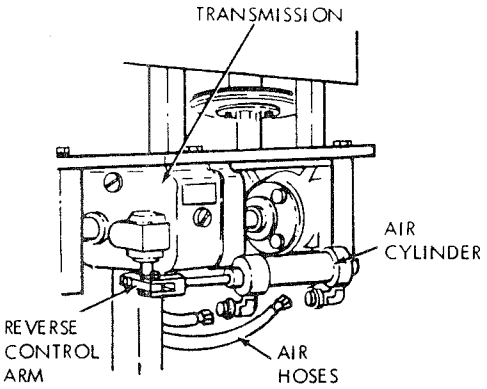
(2) If piston rod is in its extended position, transmission is defective. Refer to REPAIR PARTS LIST for replacement part number.



I. CHECK AIR CYLINDER OPERATION:

(1) If air cylinder piston rod was found to be in its retracted position, set CONTROL POWER switch to OFF position, while observing piston rod.

(2) If piston rod extends when CONTROL POWER switch is set to OFF position, go to paragraph N.

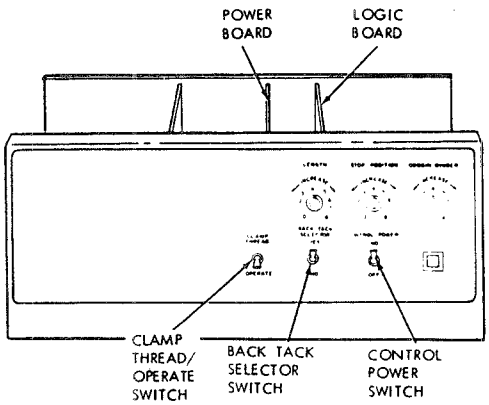


J. CHECK FOR MECHANICAL BINDING:

(1) If piston rod does not extend, remove both air hoses from air cylinder.

(2) Manually move transmission reverse control arm and air cylinder piston rod in and out. Arm and piston rod should move freely.

(3) If arm and piston rod cannot be moved, or if excessive resistance is felt, disconnect piston rod from transmission control arm and check each separately. If transmission control arm is stuck, and piston rod moves freely, transmission is defective. If piston rod is stuck, and transmission arm moves freely, air cylinder is defective. Refer to REPAIR PARTS LIST for replacement part numbers.



K. CHECK AIR CYLINDER:

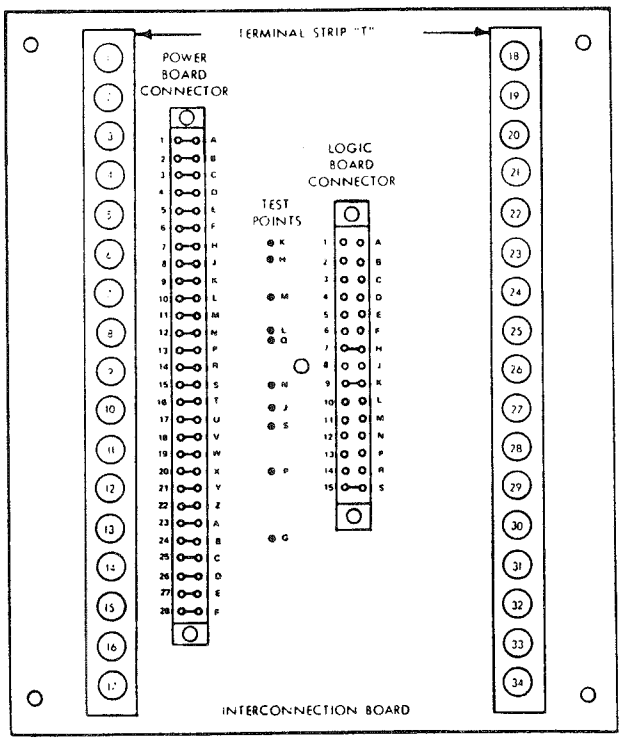
(1) If transmission reverse control arm and air cylinder piston rod both move freely, set rod to its extended position.

(2) Set CONTROL POWER switch to ON position, and BACK-TACK switch to YES.

(3) Actuate foot switch to 2nd step and allow machine to operate through complete cycle, while observing reverse control air cylinder hoses.

(4) Initially, hose on piston end of air cylinder should have no air pressure, and air should flow from other hose. During back-tack cycle, air should flow from hose on piston rod end and other hose should have no pressure.

(5) If air flow from air cylinder hoses is correct, air cylinder is defective. Refer to REPAIR PARTS LIST for replacement part numbers.



L. CHECK BACK-TACK SOLENOID:

(1) If air flow at air cylinder is not correct, get voltmeter capable of reading in 45 volt DC range, and an 18-inch jumper with insulated alligator clips on each end.

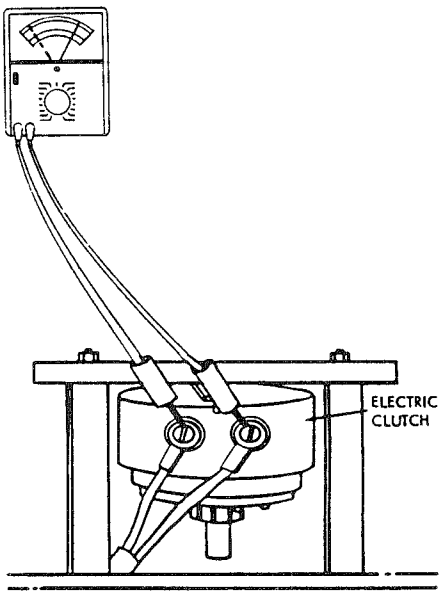
(2) Connect voltmeter positive (+) probe to terminal 4 of terminal strip "T" and connect negative (-) probe to terminal 14.

(3) Set MAIN POWER and CONTROL POWER switches to ON position. Voltmeter should read zero; there should be no pressure at air hose on piston rod end of back-tack air cylinder, and air should flow from other hose.

(4) Connect a jumper lead between terminals 14 and 17 on terminal strip "T". Voltmeter reading should go to 45 volts DC, and air should flow from hose on piston rod end of cylinder, with no pressure on other hose.

(5) If voltmeter reading is correct, and air flow is incorrect, back-tack solenoid is defective. Refer to REPAIR PARTS LIST for replacement part number.

(6) If voltmeter reading is incorrect, check solenoid wiring.



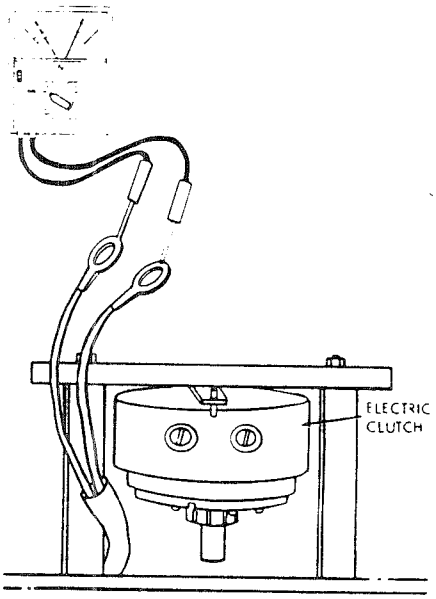
M. CHECK ELECTRIC CLUTCH:

(1) If point of slippage was found to be electric clutch, get DC voltmeter capable of reading 90 volts DC.

(2) Connect voltmeter probes to electric clutch terminals and start unit. While unit runs voltmeter should read 90 volts DC; when unit stops voltmeter should read approximately 5 volts DC.

(3) If clutch voltage is correct, check gear reducer shaft. If shaft is turning, electric clutch is defective or out of adjustment.

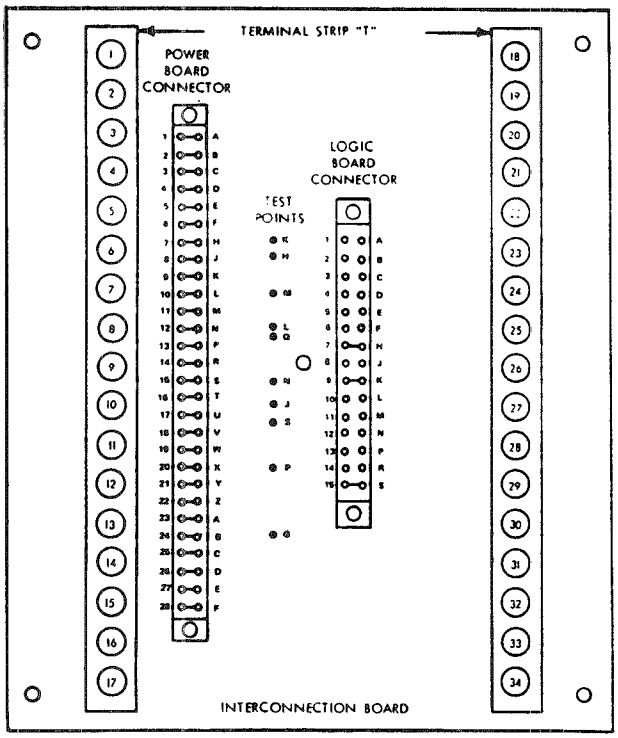
(4) If gear reducer shaft is turning and clutch voltage is not correct, remove leads from electric clutch and check voltage on leads. If voltage is correct with clutch disconnected, clutch is defective. Refer to REPAIR PARTS LIST for replacement part number.



N. CHECK POWER BOARD:

(1) If solenoid checks good, or if electric clutch voltage is incorrect, remove top cover from control box.

(2) Check power board using procedure given in Item 2, paragraph J, steps (2) through (23).



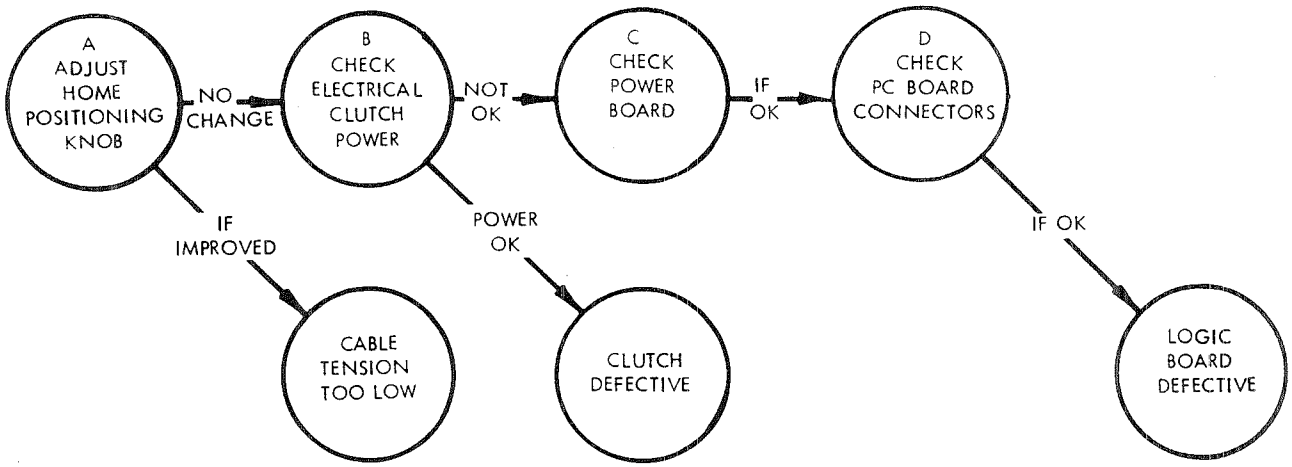
O. CHECK P.C. BOARD CONNECTORS:

(1) If power board checks good, disconnect electrical power from equipment.

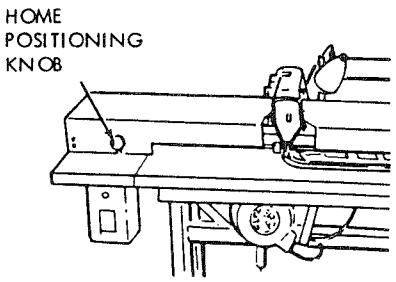
(2) Check P.C. board connectors using procedure given in Item 2, paragraph k.

(3) If P.C. board connectors check good, replace logic board. Refer to REPAIR PARTS LIST for replacement part number.

5. CLAMP DOES NOT FEED IMMEDIATELY AT BEGINNING OF CYCLE



A. ADJUST HOME POSITIONING KNOB:

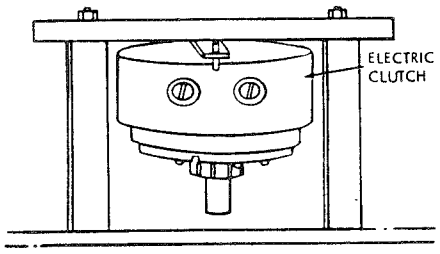


(1) Set home positioning knob counterclockwise to limit.

(2) Place a piece of material under clamp and operate unit. Machine should sew three to five stitches at a low speed, then sew fast until preselected length of seam is reached. If set for back-tacking, machine should sew preselected number of back-tack stitches at low speed. Clamp movement should vary in proportion to machine speed, keeping stitch length uniform.

(3) If home positioning knob can be adjusted to cause machine to operate properly, no further repair is required.

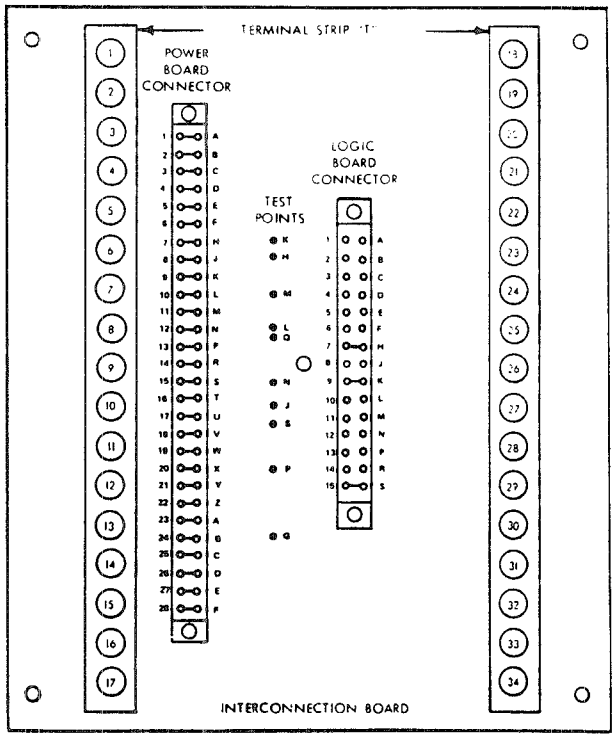
B. CHECK ELECTRIC CLUTCH POWER:



(1) If resetting home positioning knob does not improve feeding, get DC voltmeter capable of reading in 90 volt DC range.

(2) Check electric clutch power using procedure given in Item 4, paragraph B, steps (2) through (5).

(3) If clutch power is correct, electric clutch is defective.



C. CHECK POWER BOARD:

(1) If clutch power is correct, remove cover from control box.

(2) Check power board using procedure given in Item 2, paragraph J, steps (2) through (23).

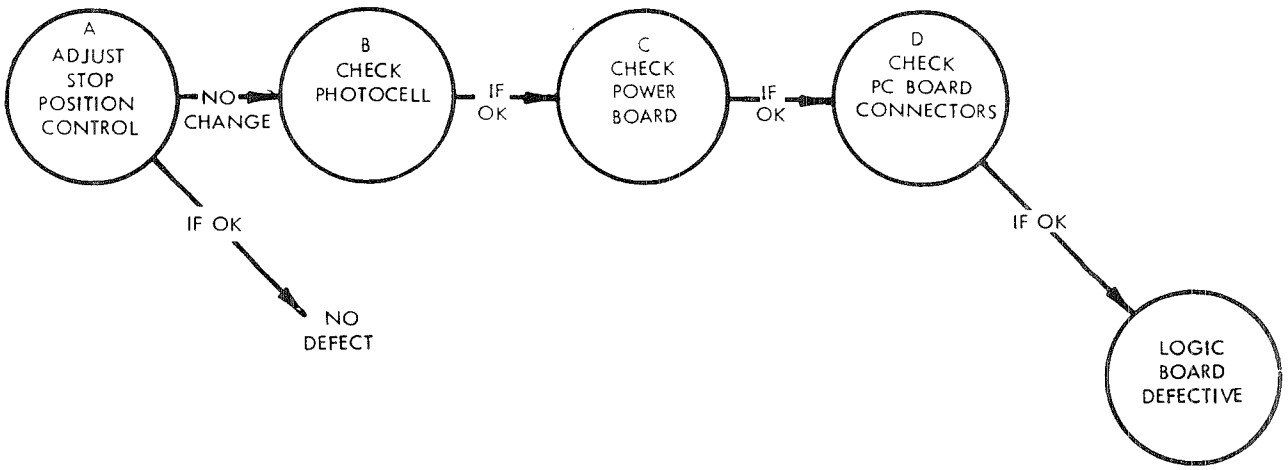
D. CHECK P.C. BOARD CONNECTORS:

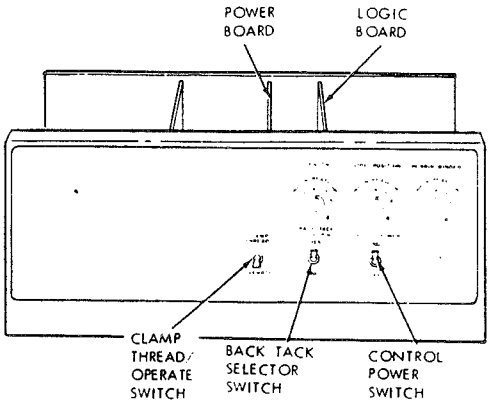
(1) If power board checks good, remove electrical power from equipment.

(2) Check P.C. board connectors using procedure given in Item 2, paragraph K.

(3) If P.C. board connectors check good, replace logic board. Refer to REPAIR PARTS LIST for replacement part number.

6. MACHINE STOPS BEFORE REACHING PRESELECTED POSITION ON GARMENT

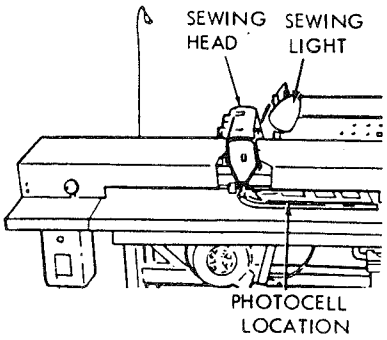




A. ADJUST STOP POSITION CONTROL:

(1) Adjust STOP POSITION control on control panel in INCREASE direction and check unit.

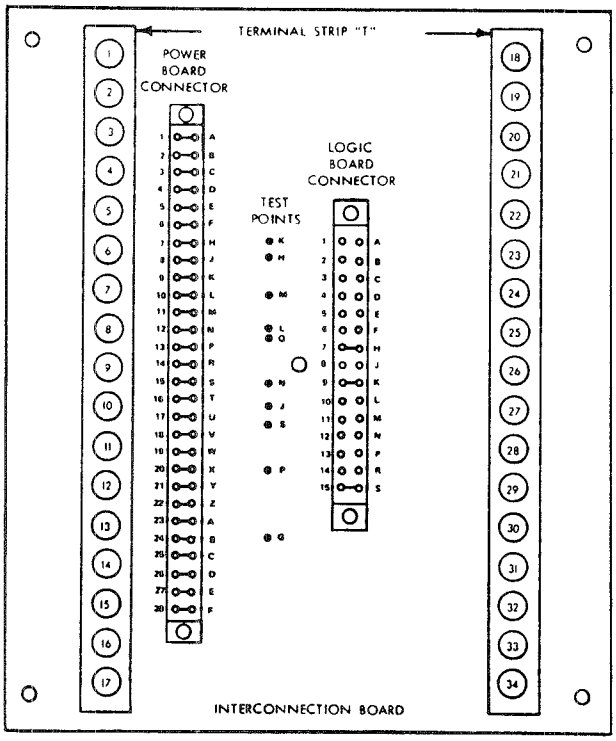
(2) If machine sews further after adjusting STOP POSITION control, continue adjusting until proper operation is achieved. If adjustment of STOP POSITION control can make machine sew to proper position on panel, machine has no defect.



B. CHECK PHOTOCELL SENSITIVITY:

(1) If adjusting STOP POSITION control does not improve machine operation, check position of sewing light. Sewing light should be aimed at sewing area and 8 to 9 inches above table top.

(2) If sewing light is properly positioned, check photocell sensitivity. Refer to Item 3, paragraph J, for photocell sensitivity test procedure.



C. CHECK POWER BOARD:

(1) If photocell sensitivity is correct, remove cover from control box.

(2) Check power board using procedure given in Item 2, paragraph J, Steps (2) through (23).

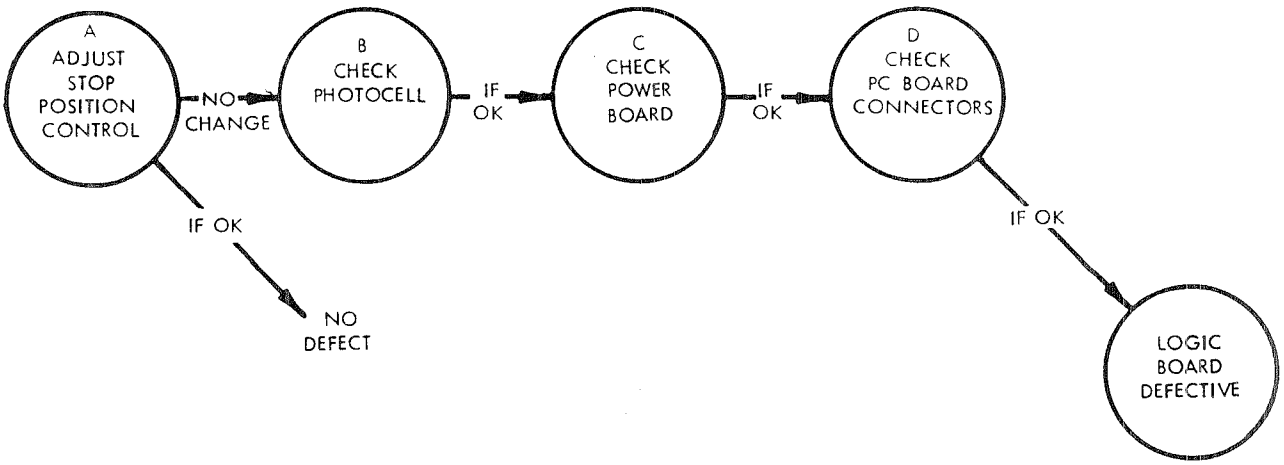
D. CHECK P.C. BOARD CONNECTORS:

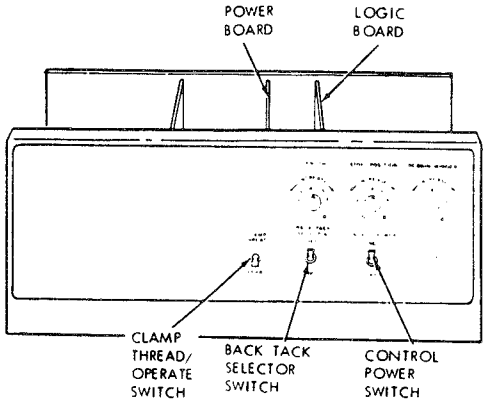
(1) If power board checks good, remove electrical power from equipment.

(2) Check P.C. board connectors using procedure given in Item 2, paragraph K.

(3) If P.C. board connectors check good, replace logic board. Refer to REPAIR PARTS LIST for replacement part number.

7. MACHINE SEWS BEYOND PRESELECTED POSITION ON GARMENT.

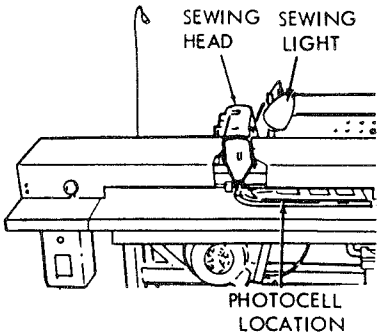




A. ADJUST STOP POSITION CONTROL:

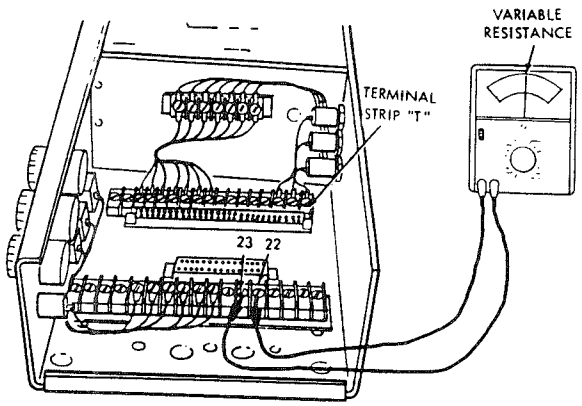
(1) Adjust STOP POSITION control on control panel in direction opposite to arrow and check unit.

(2) If seam length is decreased after adjusting STOP POSITION control, repeat adjustment until proper seam length is achieved. If adjustment of STOP POSITION control make machine stop sewing at proper place, machine has no defect.

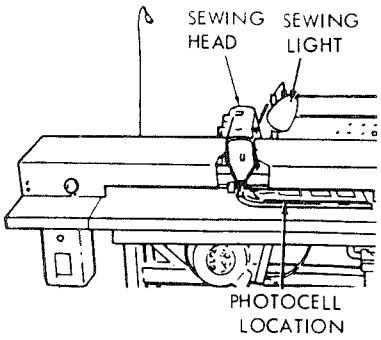


B. CHECK PHOTOCELL:

(1) If adjusting STOP POSITION control does not correct seam length, check position of sewing light. Sewing light should be aimed at needle area and 8 to 9 inches above table top. Turn off CONTROL POWER switch and open control box. Remove logic board from control box. Get ohmmeter.



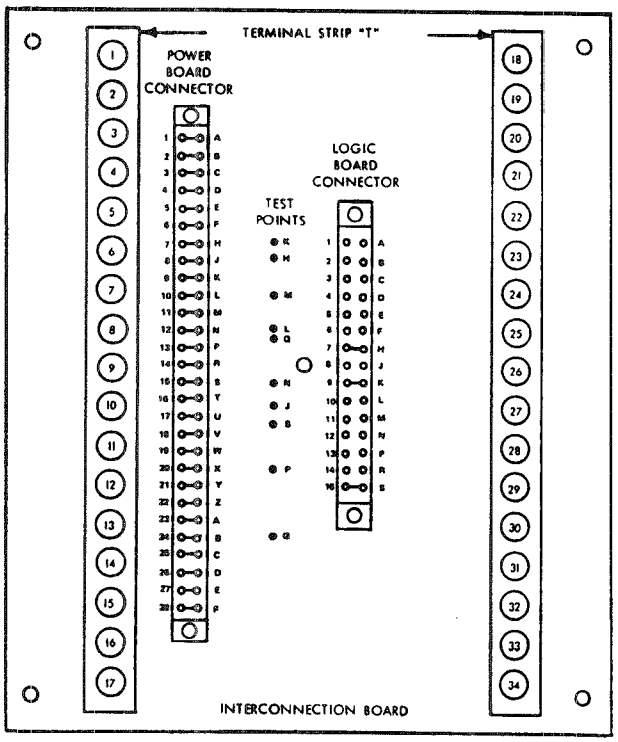
(2) Connect an ohmmeter between terminals 22 and 23 on terminal strip "T" in control box.



(3) Move clamp to expose photocell, then cover and uncover photocell while observing ohmmeter reading. Ohmmeter should show a higher resistance reading when photocell is covered than when it is uncovered.

(4) If ohmmeter reads infinity (open) photocell or harness is defective; if a resistance is read, but does not change photocell is defective.

(5) If photocell and harness check good check photocell sensitivity. Refer to Item 3, paragraph G, for photocell sensitivity adjustment.



C. CHECK POWER BOARD:

(1) If photocell sensitivity adjustment is correct, remove cover from control box.

(2) Check power board using procedure given in Item 2, paragraph J, steps (2) through (23).

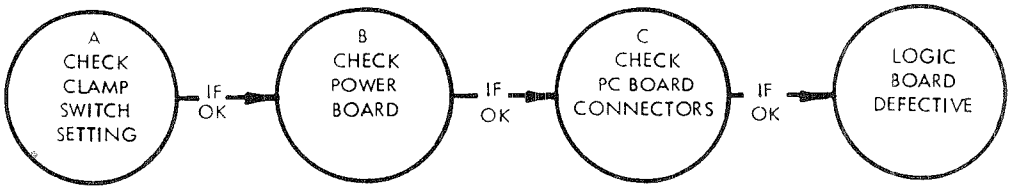
D. CHECK P.C. BOARD CONNECTORS:

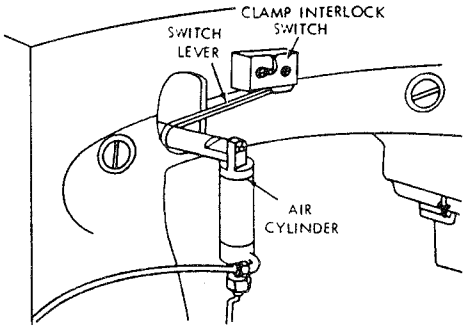
(1) If power board checks good, remove electrical power from equipment.

(2) Check P.C. board connectors using procedure given in Item 2, paragraph K.

(3) If P.C. board connectors check good, replace logic board. Refer to REPAIR PARTS LIST for replacement part number.

8. MACHINE STARTS BEFORE CLAMP IS COMPLETELY DOWN.

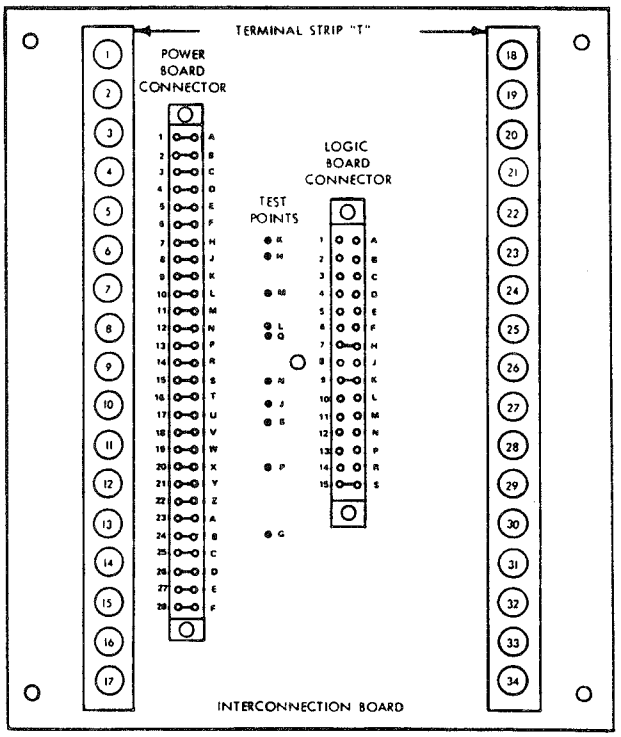




A. CHECK CLAMP SWITCH SETTING:

(1) Check clamp switch setting using procedure given in Item 3, paragraph E.

(2) Clamp switch should not open until clamp is in full down position. Adjust clamp if necessary.



B. CHECK POWER BOARD:

(1) If clamp switch setting is correct, remove cover from control box.

(2) Check power board using procedure given in Item 2, paragraph J, steps (2) through (23).

C. CHECK P.C. BOARD CONNECTORS:

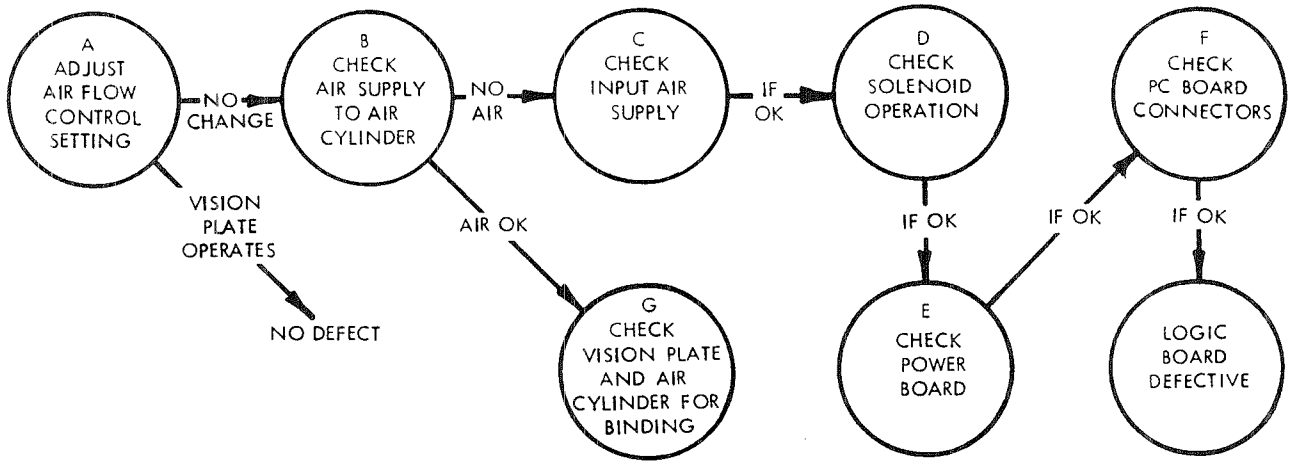
(1) If power board checks good, disconnect power from equipment.

(2) Check P.C. board connectors using procedure given in Item 2, paragraph H.

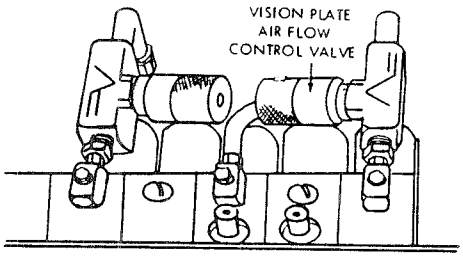
(3) If P.C. board connectors check good, replace logic board. Refer to REPAIR PARTS LIST, for replacement part number.

9. VISION PLATE WILL NOT OPERATE.

ITEM NO. 9



A. ADJUST AIR FLOW CONTROL SETTING:

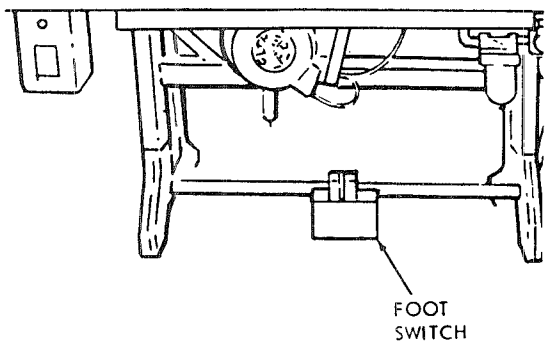


(1) Remove top cover from control box and turn vision plate air flow control valve counter-clockwise.

(2) If vision plate now operates, adjust air flow control valve so that vision plate closes just before clamp reaches full down position. If adjustment of air flow control valve corrects vision plate operation, no further repairs are needed.

B. CHECK AIR SUPPLY TO AIR CYLINDER:

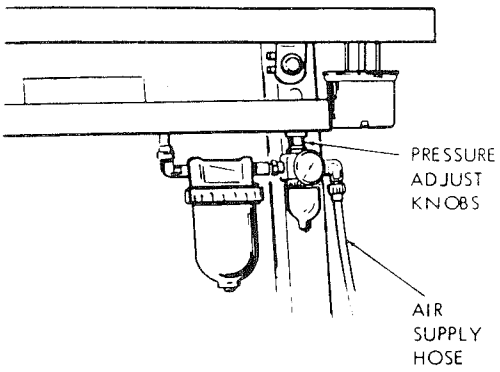
(1) If adjustment of air flow control valve does not cause vision plate to operate, remove air line at outlet side of vision plate air flow control valve.



(2) Operate foot switch to first step while observing valve air outlet fitting. Air should be released from valve outlet when foot switch is operated.

(3) If no air is released from valve, check air line from solenoid to valve for breaks and kinks.

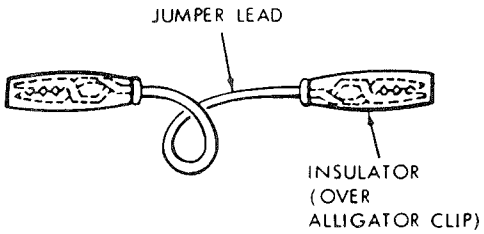
(4) If air supply is present at valve, go to paragraph G.



C. CHECK INPUT AIR SUPPLY:

(1) If no air is present at vision plate air flow control valve, check input air supply.

(2) Input air pressure should be between 40 and 45 psig. If air pressure setting is incorrect adjust air pressure regulator and check vision plate operation.



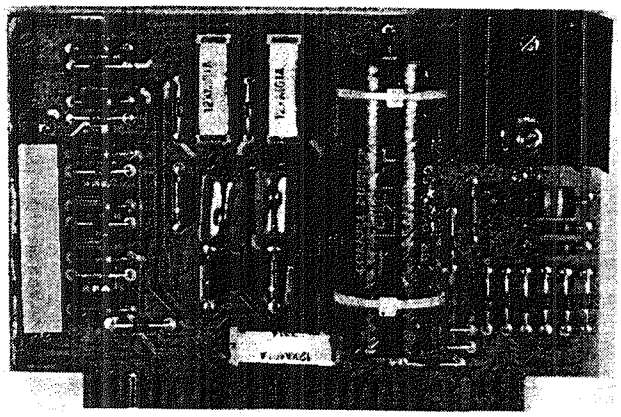
D. CHECK SOLENOID OPERATION:

(1) If air supply is present at system inlet, get an 18-inch jumper with insulated alligator clips on both ends.

(2) Connect jumper lead from test point G on interconnection board to terminal 11 of terminal strip "T". Air should be released from airflow control valve fitting when jumper lead is connected.

(3) If solenoid does not operate, releasing air from airflow control valve when jumper lead is connected, solenoid is defective. Refer to REPAIR PARTS LIST for replacement part number.

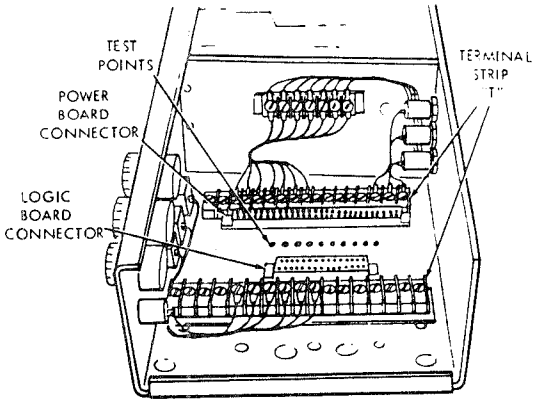
(4) Remove jumper lead.



E. CHECK POWER BOARD:

(1) If vision plate solenoid checks good, check power board.

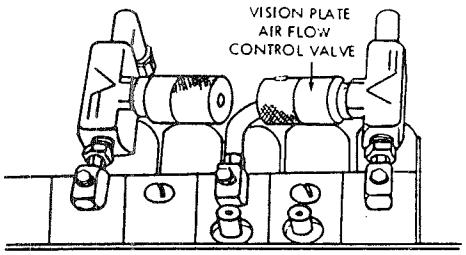
(2) Refer to Item 2, paragraph J, steps (2) through (23) for power board test procedure.



F. CHECK P.C. BOARD CONNECTORS:

(1) If power board checks good, disconnect electrical power from equipment.

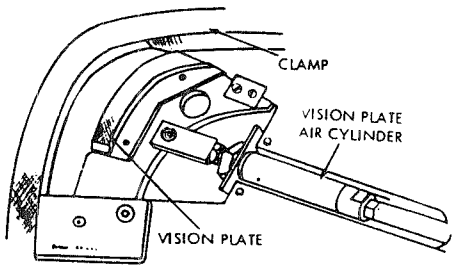
(2) Check P.C. Board connectors using procedure given in Item 2, paragraph K. If P.C. board connectors check good, logic board is defective. Refer to REPAIR PARTS LIST for replacement part number.



G. CHECK VISION PLATE AND AIR CYLINDER FOR MECHANICAL BINDING:

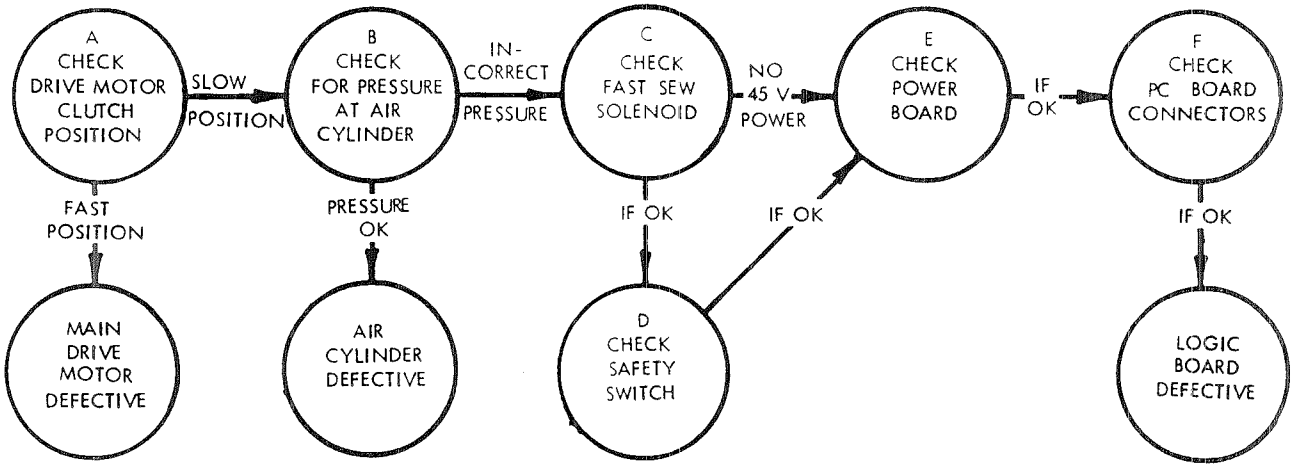
(1) If air supply to vision plate air cylinder checks good, remove air line at outlet side of vision plate air flow control valve.

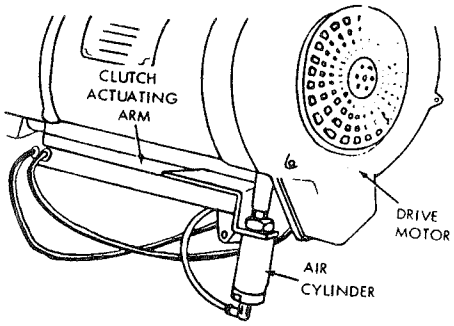
(2) Actuate vision plate by hand. With air line removed from air flow control valve, vision plate and air cylinder arm should move freely with no binding.



(3) Replace air line on air flow control valve.

10. MACHINE WILL NOT FAST SEW





A. CHECK DRIVE MOTOR CLUTCH POSITION:

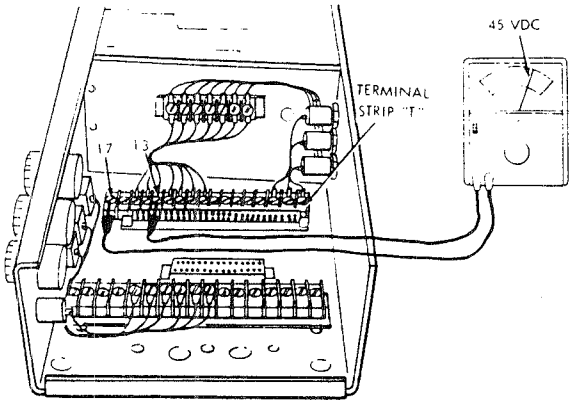
(1) Visually check position of drive motor clutch arm. Arm should be in its extended or fast position after selected number of slow stitches have been completed.

(2) If clutch arm operates properly main drive motor clutch assembly is defective. Refer to drive motor instruction manual for motor repair or replacement instructions.

B. CHECK FOR PRESSURE AT AIR CYLINDER:

(1) If drive motor clutch arm is in its retracted position, and does not change during machine operation, remove air hose from air cylinder on clutch arm, and operate unit. Air pressure should be off at beginning of cycle, then come on after selected number of slow stitches have been completed.

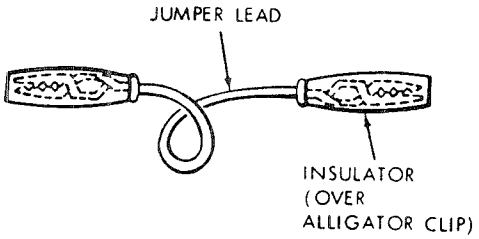
(2) If air pressure operates properly at air cylinder hose, air cylinder is defective. Repair or replace air cylinder and recheck unit. Refer to REPAIR PARTS LIST for replacement part number.



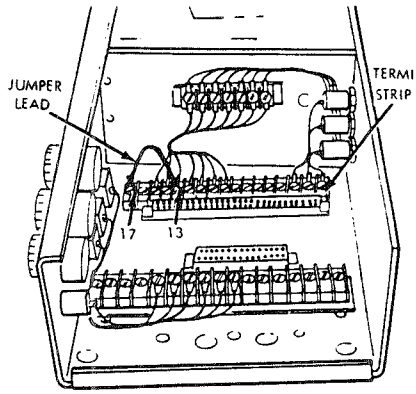
C. CHECK FAST SEW SOLENOID:

(1) If no air pressure is present at motor clutch air cylinder hose, remove cover from control box. Get a DC voltmeter capable of reading 45 volts.

(2) Connect voltmeter positive (+) probe to terminal 13 of terminal strip "T" and connect negative (-) probe to terminal 17. Voltmeter should read 45 volts DC. If voltmeter does not read 45 volts DC, go to paragraph E.

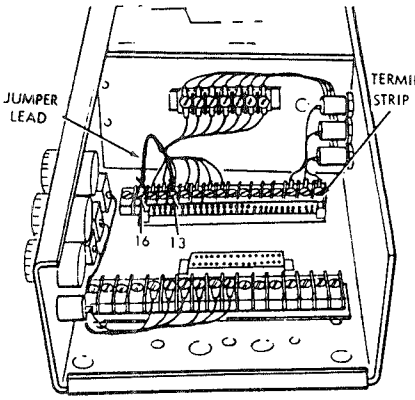


(3) If voltmeter reads 45 volts DC, connect air hose back to air cylinder and disconnect hose from fast sew solenoid. Set CLAMP switch to THREAD position and make sure clamp goes to lowered position. Get a jumper lead with insulated alligator clips on each end.



(4) Connect one end of jumper lead to terminal 13 on terminal strip "T" and connect other end to terminal 17. Fast sew solenoid should operate, and air should flow from solenoid outlet port.

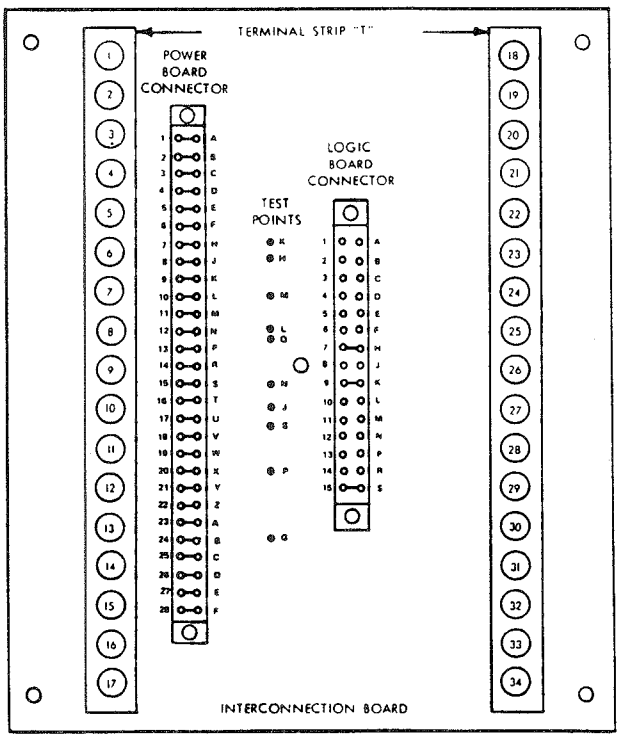
(5) If fast sew solenoid does not operate when jumper lead is installed, solenoid is defective. Refer to REPAIR PARTS LIST for replacement part number.



D. CHECK SAFETY SWITCH:

(1) If fast sew solenoid checks good, connect jumper lead between terminals 13 and 16 on terminal strip "T".

(2) If fast sew solenoid operates, go to paragraph E. If fast sew solenoid does not operate, safety switch is defective.



E. CHECK POWER BOARD:

(1) If safety switch checks good, remove jumper lead.

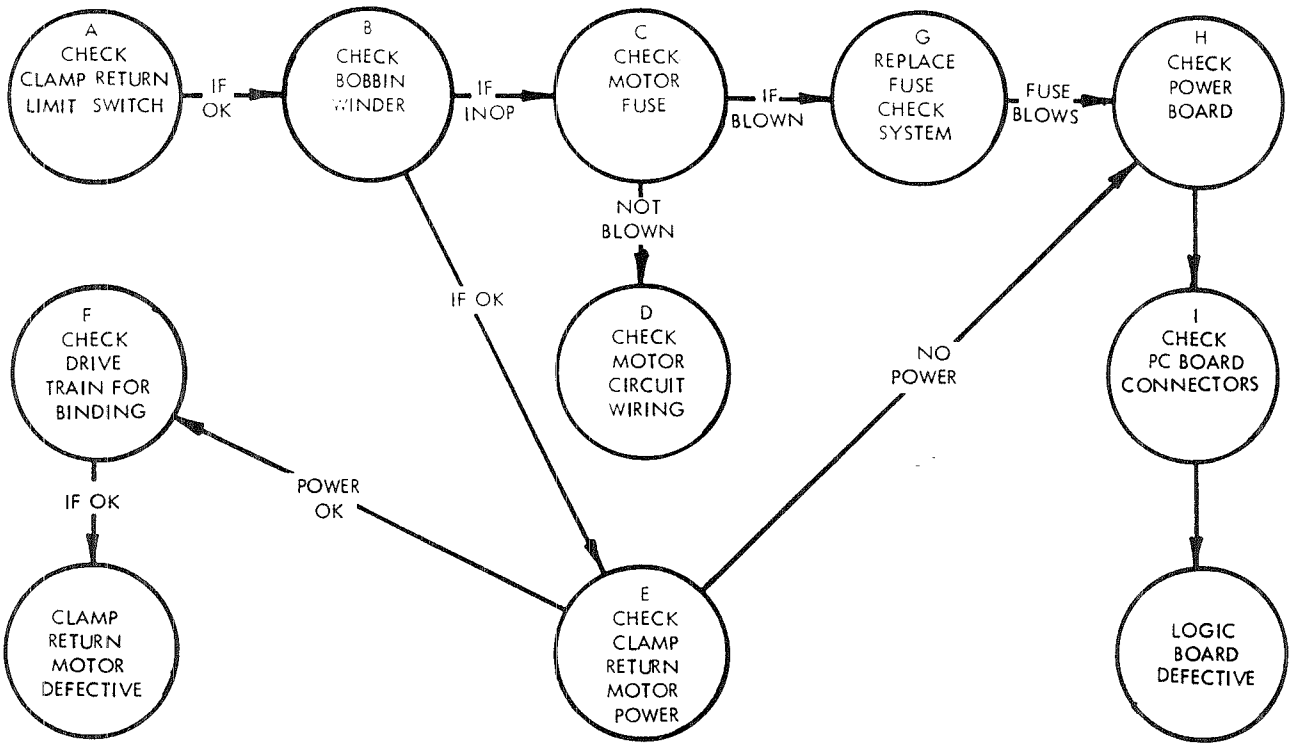
(2) Check power board using procedure given in Item 2, paragraph J, steps (2) through (23).

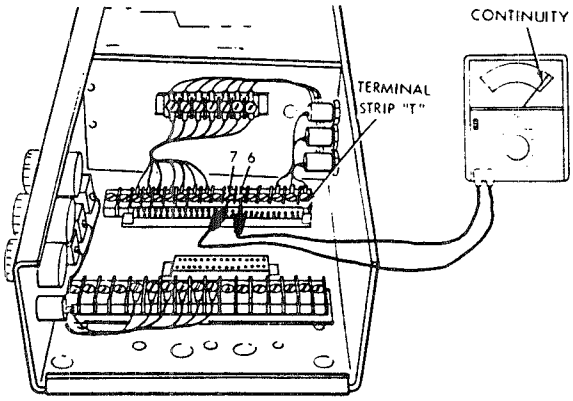
F. CHECK P.C. BOARD CONNECTORS:

(1) If power board checks good, remove electrical power from equipment.

(2) Check P.C. board connector using procedure given in Item 2, paragraph K.

(3) If P.C. board connectors check good, replace logic board.

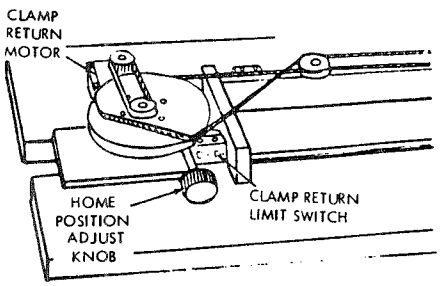




A. CHECK CLAMP RETURN LIMIT SWITCH:

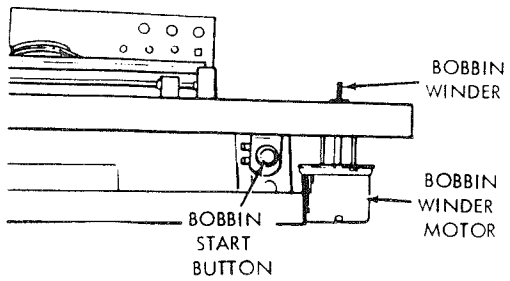
(1) Set CONTROL POWER switch to OFF position. Get ohmmeter or other continuity checking device. Remove cover from control box.

(2) Connect ohmmeter across clamp return limit switch terminals (terminals 6 and 7 on terminal strip "T".



(3) With switch in unactuated position, (clamp not in home position) ohmmeter should read continuity.

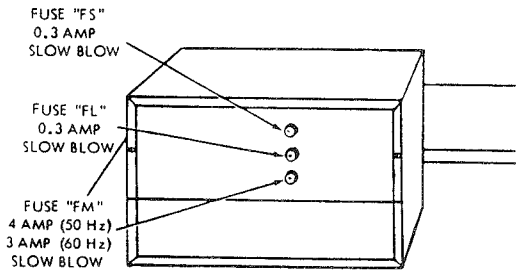
(4) Manually actuate clamp return limit switch while observing ohmmeter reading. Ohmmeter reading should go from continuity to open when switch is actuated; if not, remove clamp return limit switch and replace with a new item. Refer to REPAIR PARTS LIST for replacement part number.



B. CHECK BOBBIN WINDER:

(1) If clamp return limit switch checks good, set CONTROL POWER switch to ON position and press bobbin winder start button. Bobbin winder motor should run.

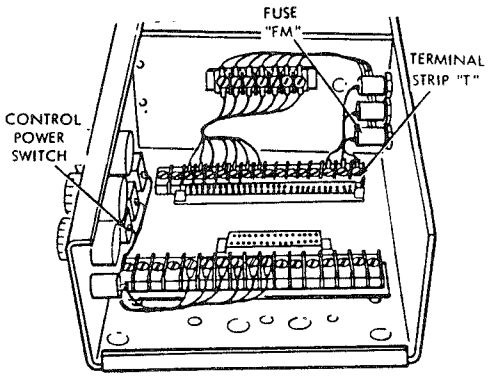
(2) If bobbin winder motor runs after start button is pressed, go to paragraph E.



C. CHECK MOTOR FUSE:

(1) If bobbin winder motor is found to be inoperaitive, check fuse "FM".

(2) If fuse "FM" is blown, go to paragraph G.



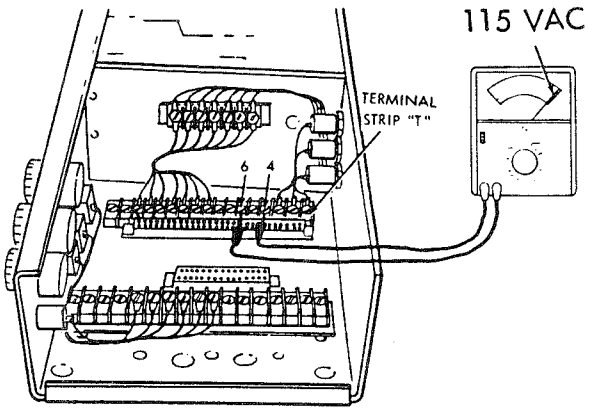
D. CHECK MOTOR CIRCUIT WIRING:

(1) If both motors are inoperative and fuse is not blown, turn power off. Get an ohmmeter. Remove control box cover.

(2) Check continuity of wiring common to both motors as follows:

a. Check continuity of black lead from fuse "FM" to clamp return motor.

b. Check continuity of lead from output side of CONTROL POWER switch to terminal 12 on terminal strip "T".



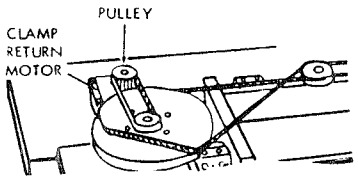
E. CHECK CLAMP RETURN MOTOR POWER:

(1) If bobbin winder checks good, remove cover from control box. Get AC voltmeter capable of reading in 115 volt range.

(2) Set CONTROL POWER switch to ON position. Operate unit; connect meter across terminals 4 and 6 on terminal board "T" while carriage is at its extreme left position. Voltmeter should read 115 volts AC.

(3) If voltmeter reads zero, go to paragraph H.

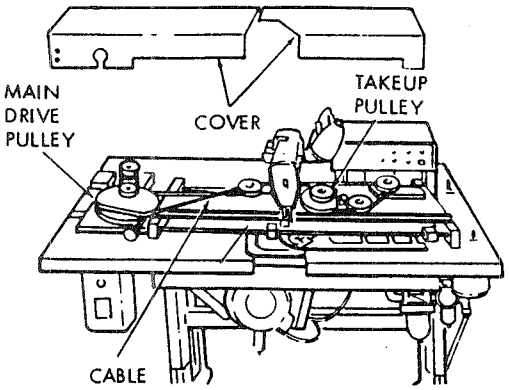
F. CHECK DRIVE TRAIN FOR BINDING:



(1) If clamp return motor power checks good, remove cover from left side of clamp carriage mechanism.

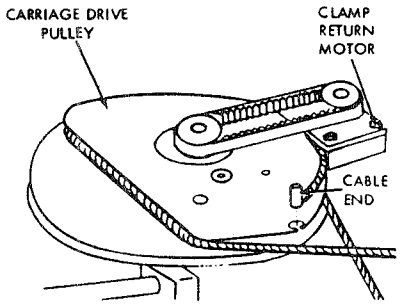
(2) Loosen two set screws on clamp return motor drive pulley and remove pulley from motor.

(3) Apply power to equipment and check clamp return motor with drive pulley disconnected.

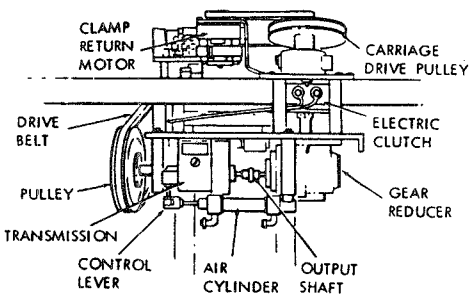


(4) If clamp return motor does not run when disconnected from machine, clamp return motor is defective. Refer to REPAIR PARTS LIST for replacement part number.

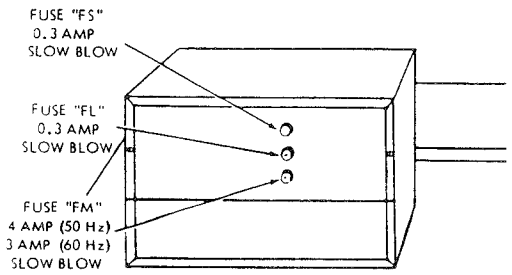
(5) If motor runs when disconnected from machine, remove other cover from clamp carriage mechanism and check carriage for binding. Clamp carriage should move freely in both directions.



(6) If clamp carriage does not move freely, adjust mechanical HOME position control knob as necessary to remove tension from clamp carriage drive cable, then disconnect cable by lifting pin from opening in pulley. Check clamp carriage mechanism. If carriage still does not move freely, disassemble carriage and correct binding condition.



(7) If clamp carriage is not binding, rotate clamp drive pulley manually. Pulley should rotate freely; if not, check electric clutch to ensure that clutch is fully disengaged. If clutch is not disengaged, refer to adjustment procedures and check clutch adjustment.

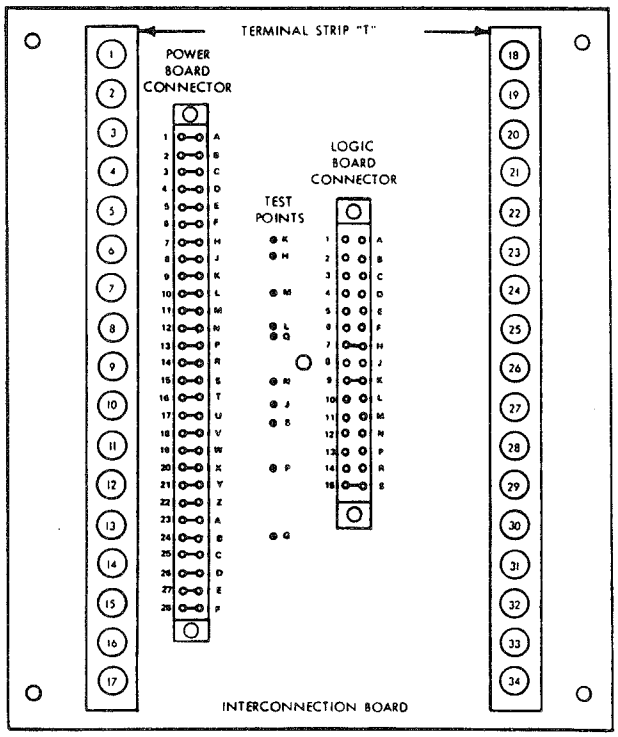


G. REPLACE FUSE, CHECK SYSTEM:

(1) If fuse "FM" is found to be blown, replace fuse and recheck system.

(2) If equipment operates properly after fuse is replaced, operate through several cycles to ensure that fuse does not blow.

(3) If equipment operates properly and fuse does not blow when clamp return motor operates, operate bobbin winder. If fuse blows when bobbin winder starts, go to Item 16.



H. CHECK POWER BOARD:

(1) If fuse blows again after replacement, or if there is no power to clamp return motor while bobbin winder is OK, remove cover from control box.

(2) Check power board using procedure given in Item 2, paragraph J, steps (2) through (23).

I. CHECK P.C. BOARD CONNECTORS:

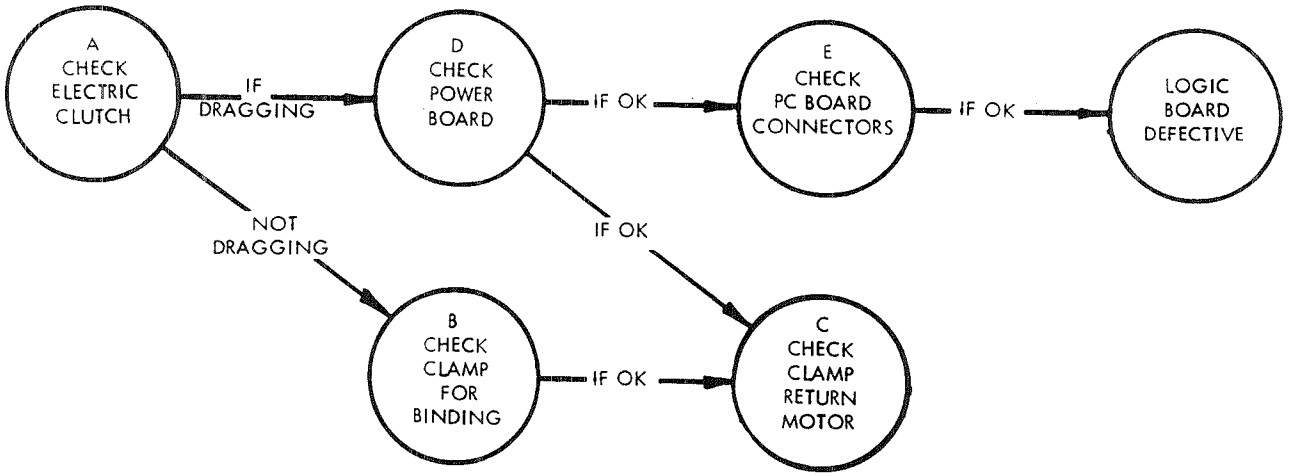
(1) If power board checks good, disconnect electrical power from equipment.

(2) Check P.C. board connectors using procedure given in Item 2, paragraph K.

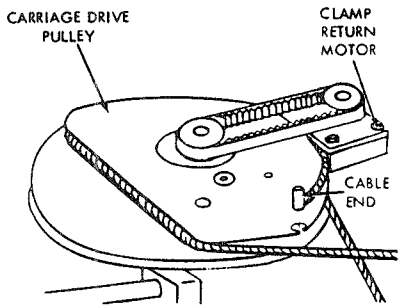
(3) If P.C. board connectors check good, replace logic board. Refer to REPAIR PARTS LIST for replacement part number.

12. CLAMP RETURNS TOO SLOWLY

ITEM NO. 12



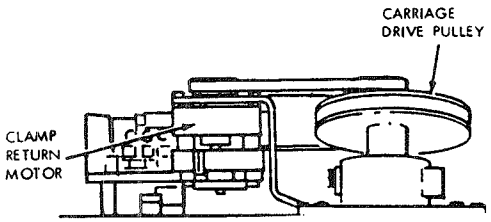
A. CHECK ELECTRIC CLUTCH:



(1) Remove cover from left end of clamp carriage and disconnect clamp carriage drive cable by lifting pin out of slot in drive pulley.

(2) Loosen two set screws in clamp return motor drive pulley and remove pulley from motor.

(3) Turn on CONTROL POWER switch.

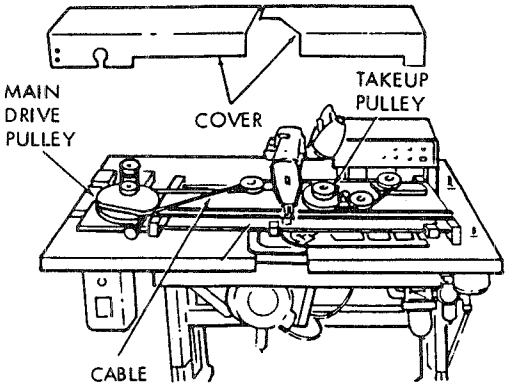


(4) Rotate clamp drive pulley in both directions by hand. There should be very little drag on pulley.

(5) If there is excessive drag on pulley, turn off CONTROL POWER switch and rotate clamp drive pulley. If still dragging, electric clutch is defective.

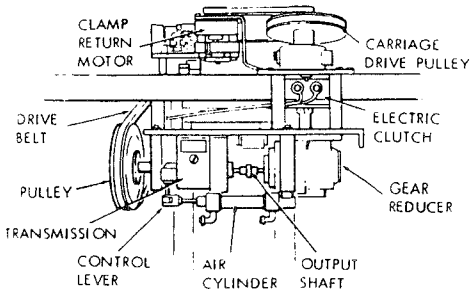
(6) If pulley stops dragging when switch is turned off, go to paragraph D.

B. CHECK CLAMP FOR BINDING:



(1) If clutch is not dragging, move clamp carriage in both directions with cable disconnected from clamp drive pulley. Clamp carriage should move freely in both directions. If clamp operates freely, leave cable disconnected, and go to paragraph C.

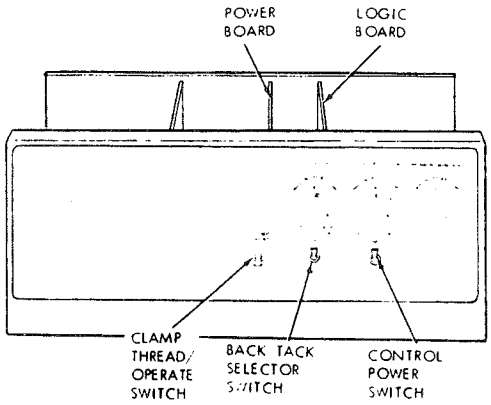
(2) If clamp does not move freely, disassemble clamp carriage mechanism and correct binding condition.



C. CHECK CLAMP RETURN MOTOR:

(1) If clamp carriage operates freely, set CONTROL POWER switch to OFF position.

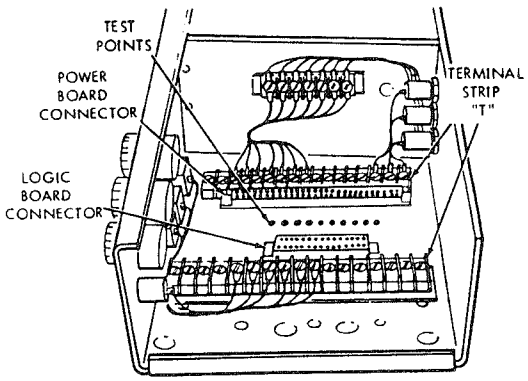
(2) Rotate clamp drive pulley away from home position, then set CONTROL POWER switch to ON position.



(3) If clamp motor runs slowly with clamp drive cable disconnected, set CONTROL POWER switch to OFF position and rotate motor shaft by hand. If shaft turns hard, check motor pulley to ensure that pulley does not rub on motor housing. Check timing belt for proper tension, and check two timing pulleys to ensure that they are properly tightened on their respective shafts.

(4) If motor runs slowly with clamp drive cable disconnected, and no mechanical binding is observed in motor drive mechanism, clamp return motor is defective. Refer to REPAIR PARTS LIST for replacement part number.

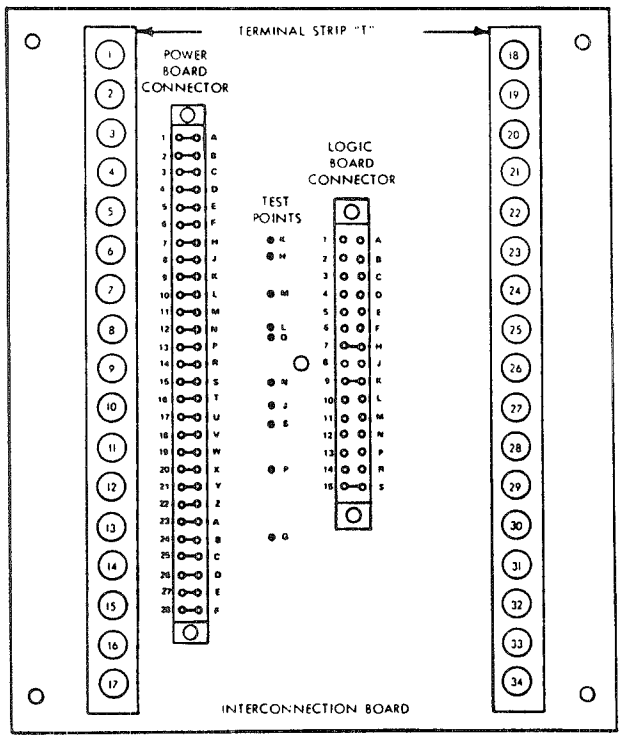
(5) If motor runs properly with clamp drive cable disconnected, clamp carriage mechanism is binding.



D. CHECK POWER BOARD:

(1) If electric clutch is dragging, or if clamp return motor checks good, remove cover from control box.

(2) Check power board using procedure given in Item 2, paragraph J, steps (2) through (23).



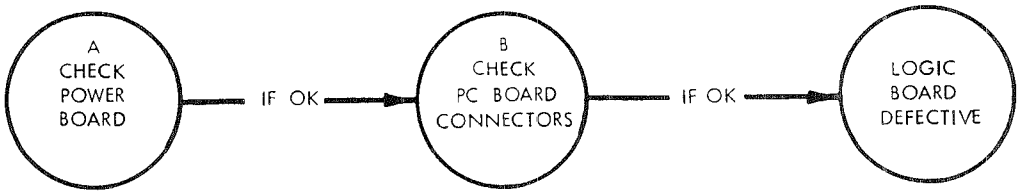
E. CHECK P.C. BOARD CONNECTORS:

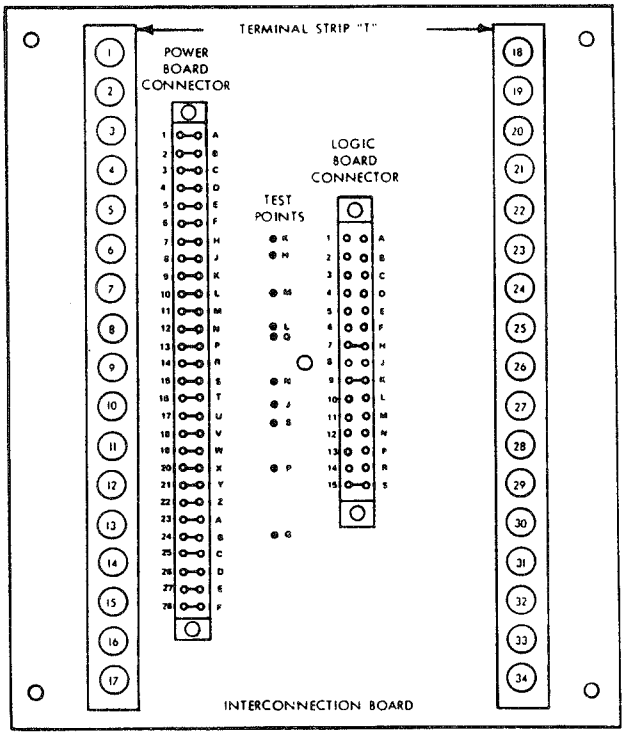
(1) If power board checks good, remove electrical power from equipment.

(2) Check P.C. board connectors using procedure given in Item 2, paragraph K.

(3) If P.C. board connectors check good, replace logic board. Refer to REPAIR PARTS LIST for replacement part number.

13. MACHINE SEWS ONLY WHEN FOOT SWITCH IS ENGAGED





A. CHECK POWER BOARD:

(1) Remove cover from control box.

(2) Check power board using procedure given in Item 2, paragraph J, steps (2) through (23).

B. CHECK P.C. BOARD CONNECTORS:

(1) If power board checks good, remove electrical power from equipment.

(2) Check P.C. board connectors using procedure given in Item 2, paragraph K.

(3) If P.C. board connectors check good, replace logic board. Refer to REPAIR PARTS LIST for replacement part number.

REF. NO.	PART NUMBER	DESCRIPTION	AMOUNT REQUIRED
1	RM-3263 D	Bulk Union	1
2	671-70	Push Button Valve	1
3	670 E-302	Switch Assy. with Cable & Connector	1
	RM-3740-1	(SPST) Switch Only	1
4	AS49-10	Control Panel	1
5	671 A-46	Double Acting Cylinder	1
6	671 C-4	Male Connector	2
7	RM-2852 B	Flow Control Valve	2
8	RM-3287-2	1/8 Hex Nipple	2
9	RM-2881-1	1/8 Street Elbow	2
10	RM-3728-1	Male Elbow	3
11	AS49-5	End Plate	2
12	RM-3633-1	Swivel Fitting	2
12A	671 F-4	Barb Fitting	2
13	671-71	Solenoid Assembly	1
14	RM-2997 D	Black Poly-Flow Tubing	Specify Length
15	AS49-7	Bottom Plate	1
16	RM-2951 B	Cable Clamp	2
17	670 E-301	Supply Cable Assembly	1
18	660-576	Spacer	3
18A	RM-2805-3	6-32 x 3/4" B.H. Screw	3
18B	RM-2805-4	6-32 x 3/8" B.H. Screw	2
19	RM-5267	Unloader Circuit Board	1
20	671 F-37	Barb Run Tee	1
21	RM-3595	Quick Exhaust Valve	1
22	671 F-41	Barbed Tee	1
23	HO-103	White Tubing	Specify Length
24	671 A-47	Single Acting Cylinder	1
25	AS49-3	End Plate	1
	RM-2808-1	6-32 x 1/4 S. Set Screw	6
26	AS49-1	Unloader Clamp	1
	RM-3211-1	1/4-28 Hex Nut	1
27	AS49-4	Cylinder Bracket	1
	RM-3162-6	1/4-20 x 1/2 H.H. Bolt	5
28	AS49-6	Cylinder Support	1
29	RM-2993-1	Clevis with Nut	1
	RM-2994 c	Celvis Pin	1
	660-142	Cotter Pin	1
30	AS49-2	Shaft	2
31	AS49-11	Base	1
32	RM-2747-2	#6 L.W.	11
33	53678 N	6 F.W.	6
34	RM-2805-6	6-32 x 1-1/2 B.H.S.	2
35	RM-3162-6	1/4-20 x 1/2 H.H.C.S.	2
36	RM-3293-1	1/4 F.W.	6
37	652 C-16	1/4 L.W.	2
38	RM-2733 A	6-32 x 1/2 B.H.S.	4
39	RM-2808-1	6-32 x 1/4 H.S.S.S.	6
NOT]	AS49-8	Unloader Cover	1
SHOWN]	AS49-9	Rear Cover	1
]	RM-2736 A	6-32 x 1/4 B.H. Screw	16
]	RM-2730 A	12 x 1-1/2 P.H. Screw	4

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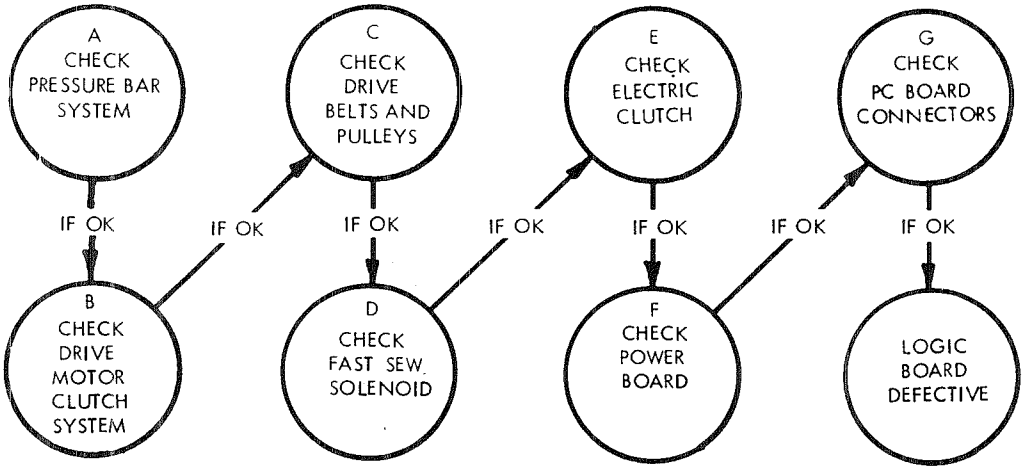
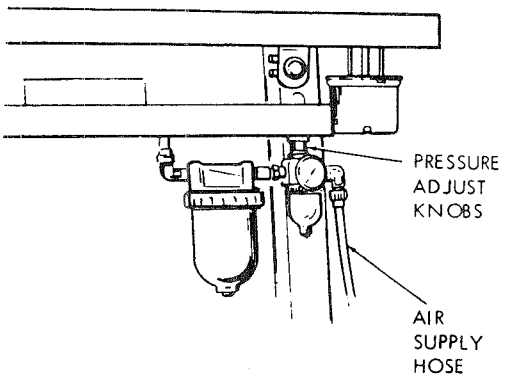
14. STITCH LENGTH VARIES

ITEM NO. 14





A. CHECK PRESSER BAR SYSTEM ON SEWING HEAD:

(1) Check to see sufficient pressure applied to presser spring on sewing head.

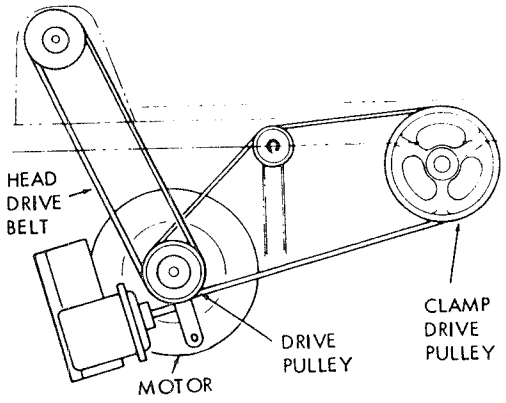
(2) Check for binds in presser bar mechanism.

(3) Check to see clamp block fully contacts clamp plate surface when clamp in down position.

B. CHECK DRIVE MOTOR/CLUTCH SYSTEM:

(1) Check drive motor and clutch system.

(2) Refer to drive motor instruction manual for motor and clutch test procedure.



C. CHECK DRIVE TRAIN:

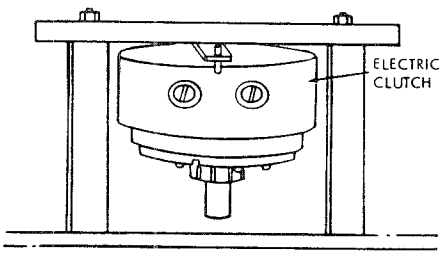
(1) If drive motor and clutch system checks good, check all drive belts and pulleys for jams and binding.

(2) Check transmission and speed reducing gear box for slipping, sticking or binding.

D. CHECK FAST SEW SOLENOID:

(1) If drive belts and pulleys are found to be OK, check fast sew solenoid for intermittent operation.

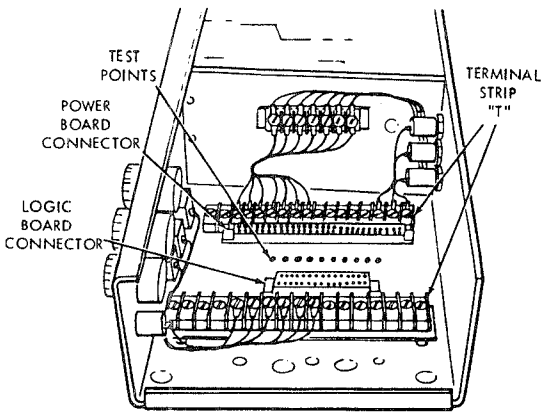
(2) Refer to Item 10, paragraph C for solenoid test procedure.



E. CHECK ELECTRIC CLUTCH:

(1) If fast sew solenoid checks good, check electric clutch operation.

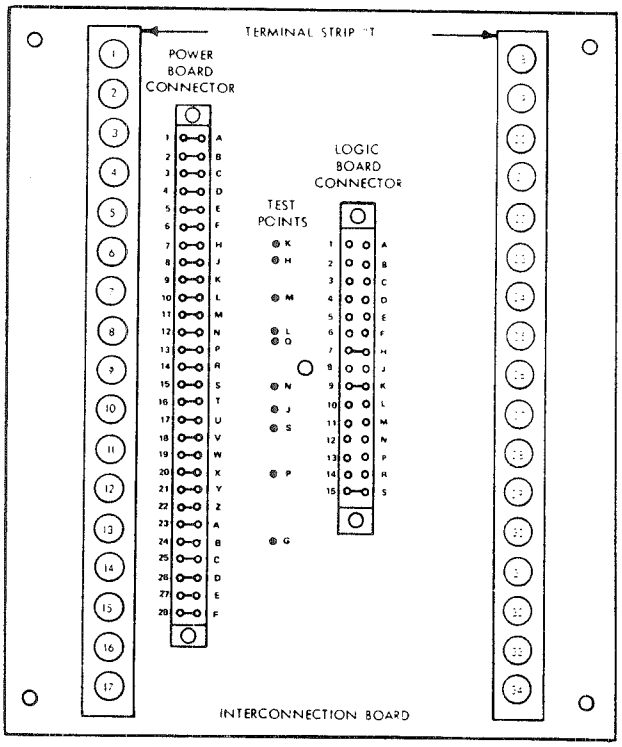
(2) Refer to Item 4, paragraph M for electric clutch test procedure.



F. CHECK POWER BOARD:

(1) If electric clutch checks good, remove cover from control box.

(2) Check power board using procedure given in Item 2, paragraph J, Steps (2) through (23).



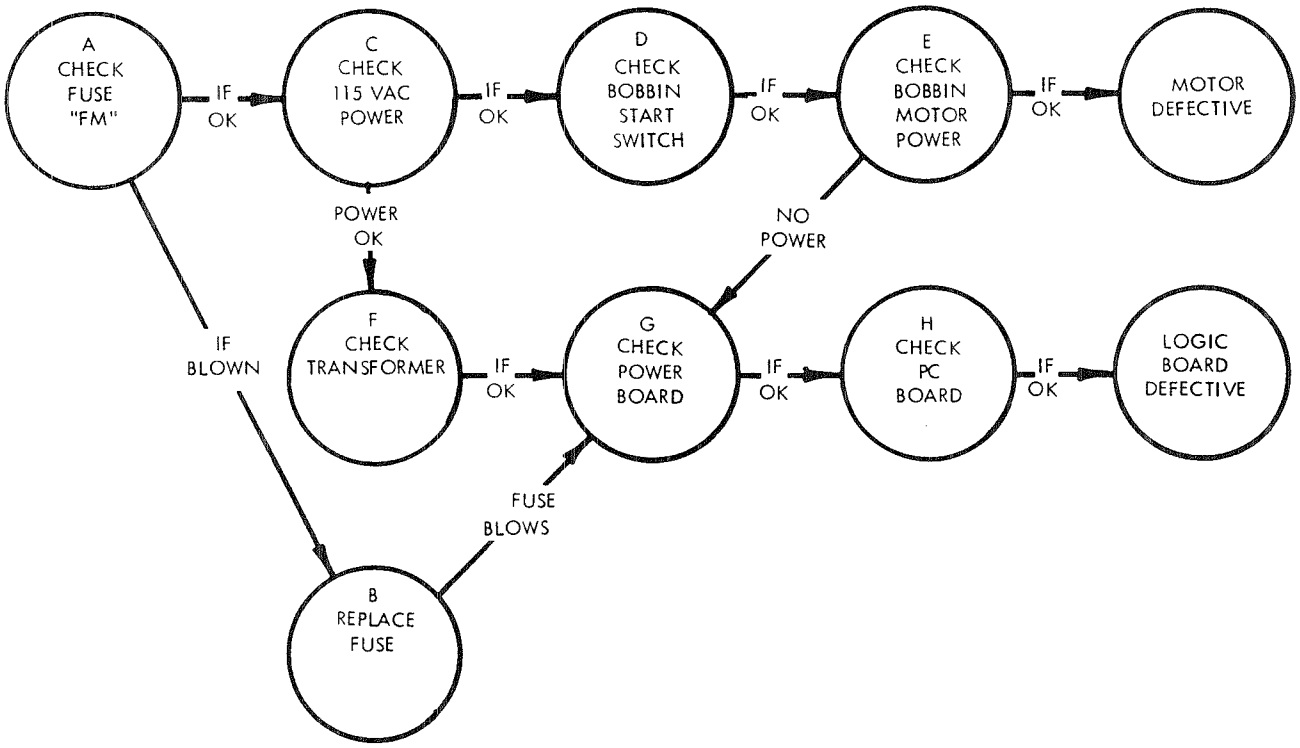
G. CHECK P.C. BOARD CONNECTORS:

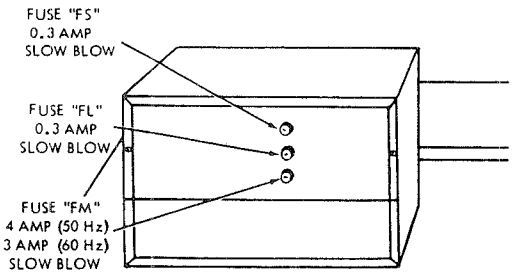
(1) If power board checks good, remove electrical power from equipment.

(2) Check P.C. board connectors using procedure given in Item 2, paragraph K.

(3) If P.C. board connectors check good, replace logic board. Refer to REPAIR PARTS LIST for replacement part number.

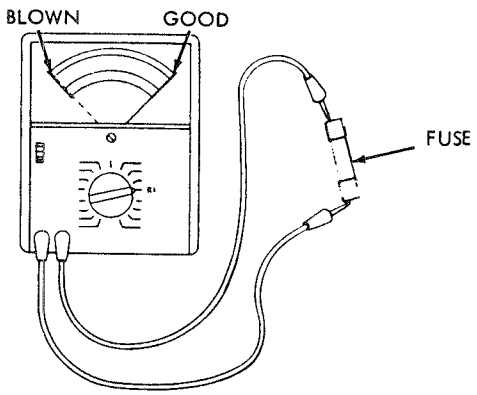
15. BOBBIN MOTOR WILL NOT OPERATE





A. CHECK FUSE "FM":

(1) Remove fuse holder "FM" on rear of control box and check fuse.



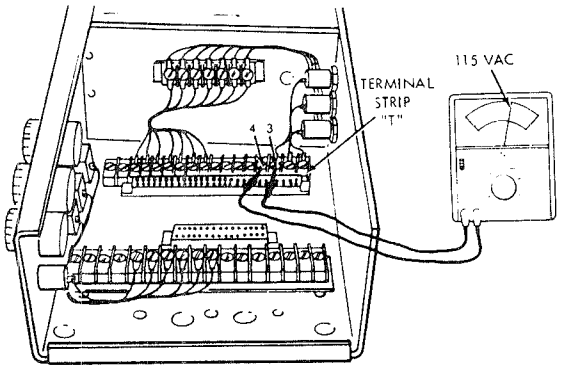
(2) If fuse does not appear to be blown, verify fuse condition by checking for continuity through fuse with ohmmeter. If fuse is good, go to paragraph C.

B. REPLACE FUSE:

(1) If fuse is blown, replace with good fuse of proper value and recheck system. (Refer to REPAIR PARTS LIST for fuse part number). RM 3048-4 FUSE.

(2) If fuse blows when replaced, go to paragraph G.

(3) If system operates properly after fuse is replaced, observe unit through several operating cycles with bobbin motor running and machine operating.

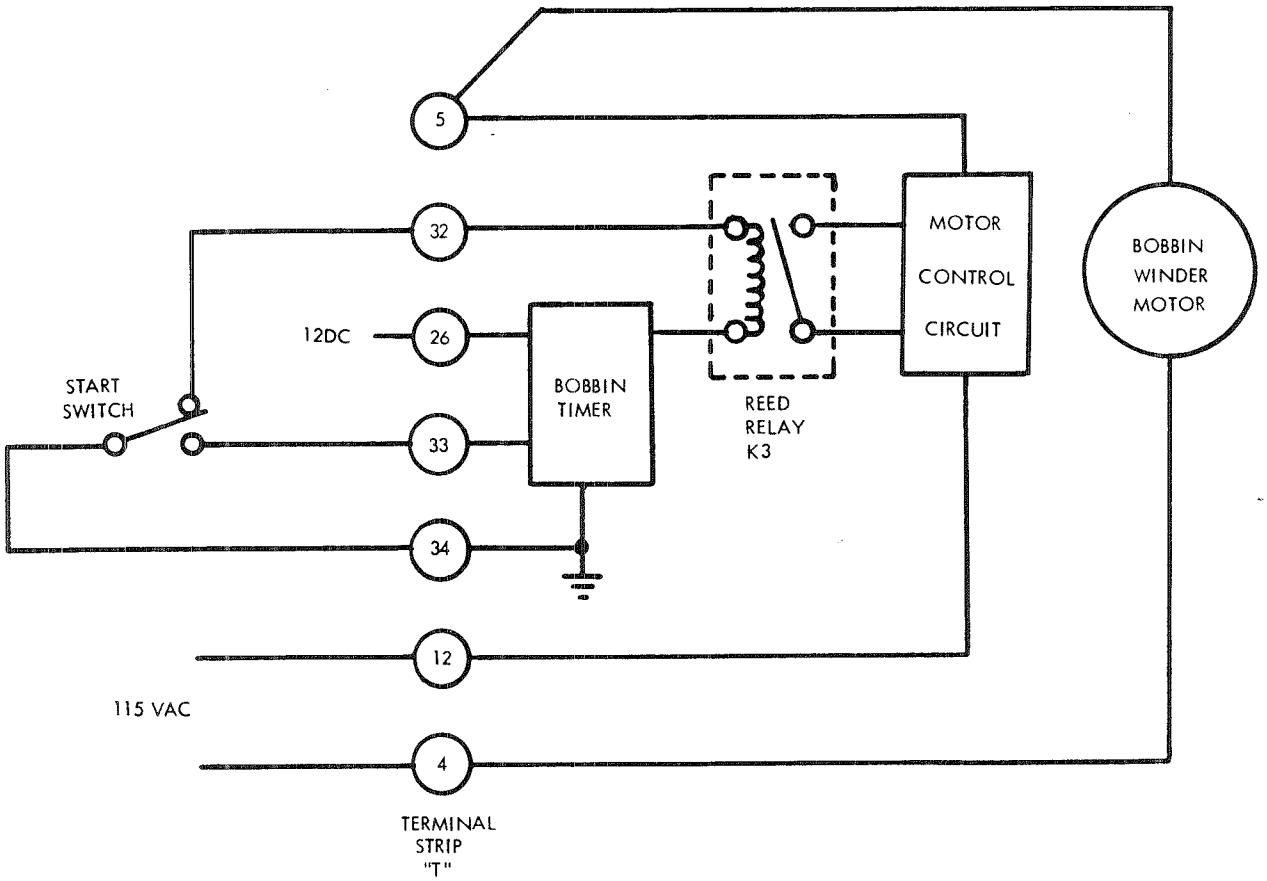


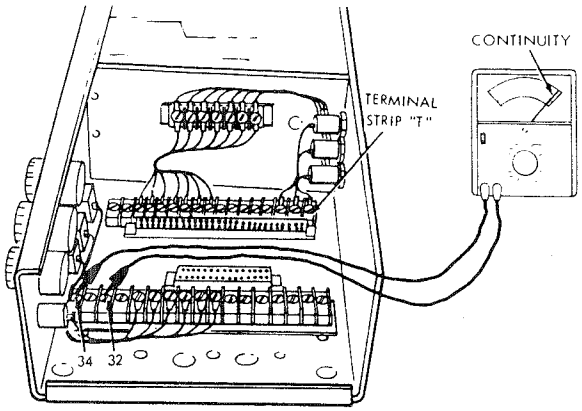
C. CHECK 115 VAC POWER:

(1) If fuse "FM" checks good, remove control box cover and get voltmeter capable of reading in 120 volt AC range.

(2) Connect voltmeter leads between terminals 3 and 4 on terminal board "T". Voltmeter should read 115 volts AC.

(3) If voltmeter does not read 115 volts AC, go to paragraph G.



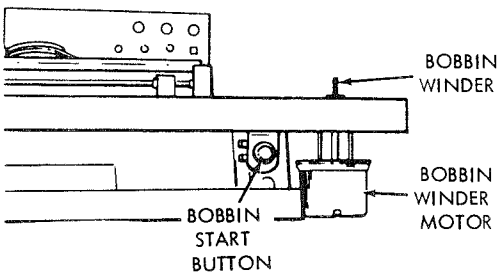


D. CHECK BOBBIN START SWITCH:

(1) If 115 volt power checks good, turn CONTROL POWER switch off. Get ohmmeter.

(2) Remove cover from control box and pull power board and logic board out.

(3) Connect ohmmeter leads between terminals 32 and 34 on terminal board "T". Ohmmeter should read continuity with bobbin start button in unactuated position.

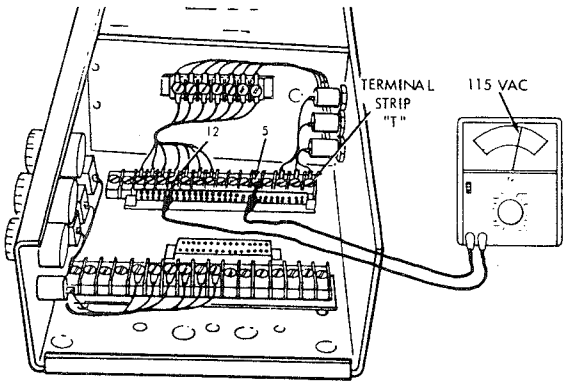


(4) Press start button while observing ohmmeter indication. Ohmmeter indication should go from continuity to open when start button is pressed.

(5) Remove lead from terminal 32 and connect it to terminal 33. Ohmmeter should read open with start button in unactuated position.

(6) Press start button while observing ohmmeter reading. Ohmmeter indication should go from open to continuity when start button is pressed.

(7) If proper indications are not read on ohmmeter in steps (3) through (6) replace start switch.



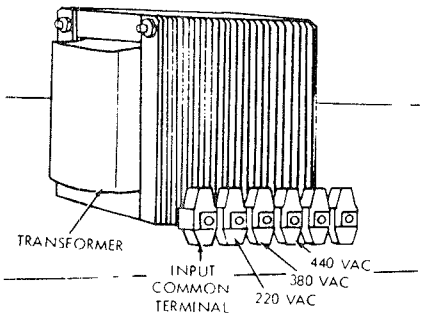
E. CHECK BOBBIN MOTOR POWER:

(1) If bobbin start switch checks good, connect an AC voltmeter between pins 5 and 12 of terminal strip "T". Remove thread from bobbin winder.

(2) Press bobbin start button and release it. If voltmeter reads 115 volts AC after bobbin start button is released, bobbin motor is defective.

(3) If voltmeter does not read 115 volts AC after bobbin start button is released, go to paragraph G.

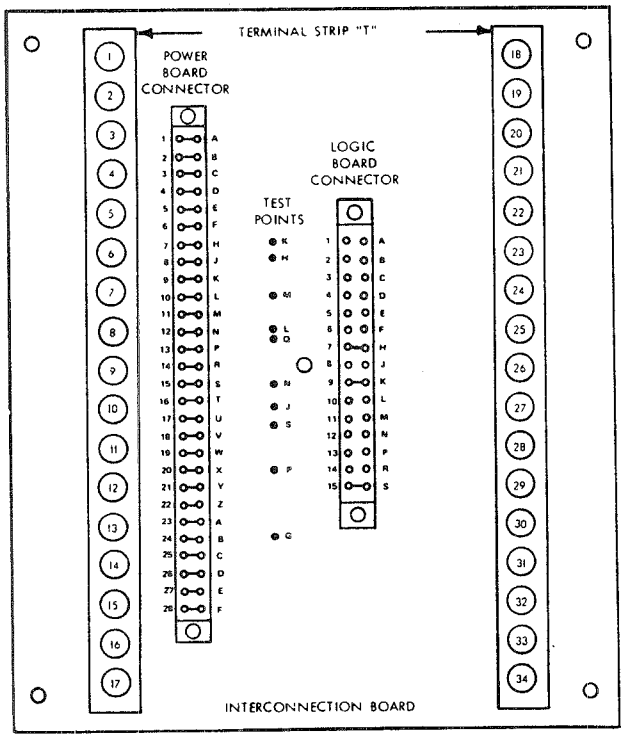
4 EXTENSION CORD PLUG INTO 115 VAC OUTLET PLUG DIRECTLY IN TO BOBBIN MOTOR. IF RUNS MOTOR IS GOOD IF NOT MOTOR IS BAD.



F. CHECK TRANSFORMER:

(1) If no 115 volt AC power is present at terminals 3 and 4 of terminal strip "T" check transformer.

(2) Refer to Item 3, paragraph I for transformer test procedure.



G. CHECK POWER BOARD:

(1) If transformer checks good, remove cover from control box.

(2) Check power board using procedure given in Item 2, paragraph J, steps (2) through (23).

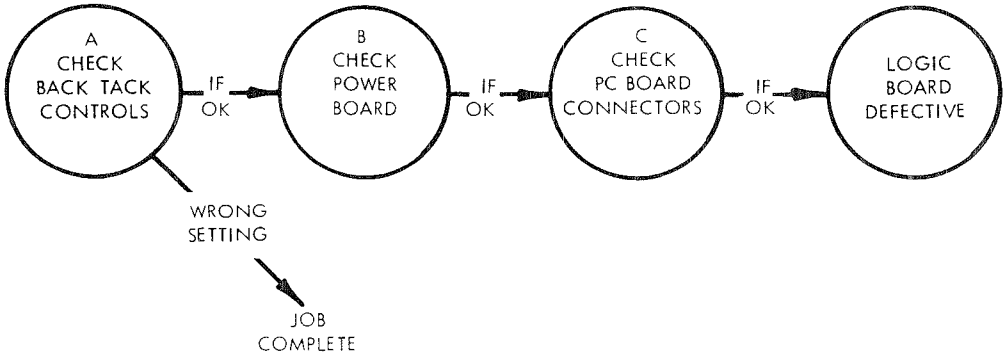
H. CHECK P.C. BOARD CONNECTORS:

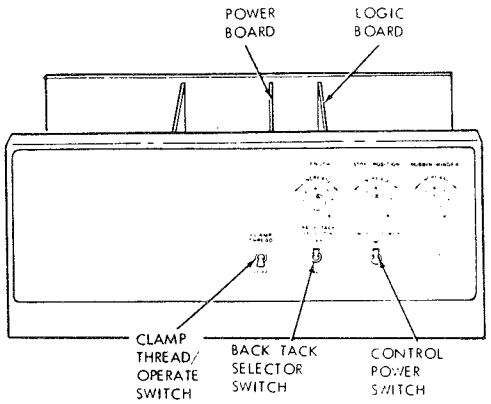
(1) If power board checks good, remove electrical power from equipment.

(2) Check P.C. board connectors using procedure given in Item 2, paragraph K.

(3) If P.C. board connectors check good, replace logic board. Refer to REPAIR PARTS LIST for replacement part number.

16. MACHINE DOES NOT BACK-TACK

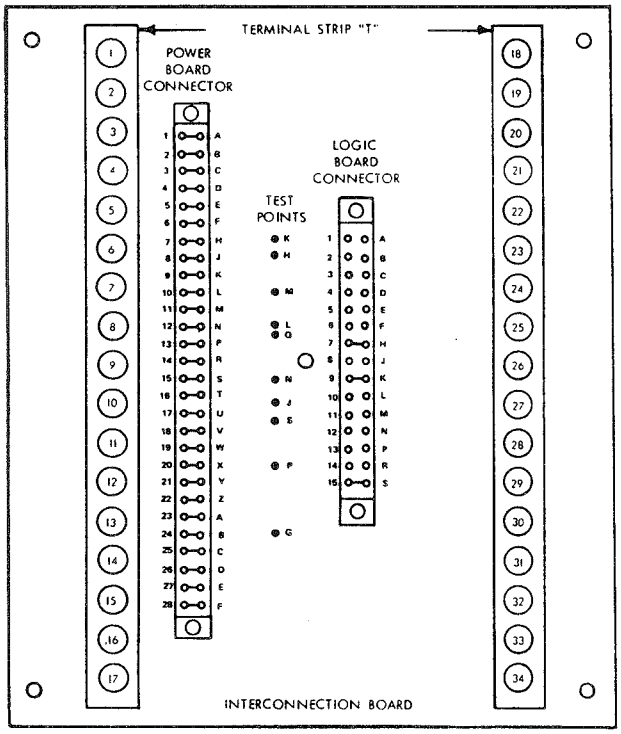




A. CHECK BACK-TACK CONTROLS:

(1) Check setting of back-tack controls. BACK-TACK switch should be set to YES position, and potentiometer should not be in full counter-clockwise setting.

(2) If either control is not properly set, reset control and recheck equipment. If machine operates properly, there are no defects in equipment.



B. CHECK POWER BOARD:

(1) If control settings are correct, remove cover from control box.

(2) Check power board using procedure given in Item 2, paragraph J, Steps (2) through (23).

C. CHECK P.C. BOARD CONNECTORS:

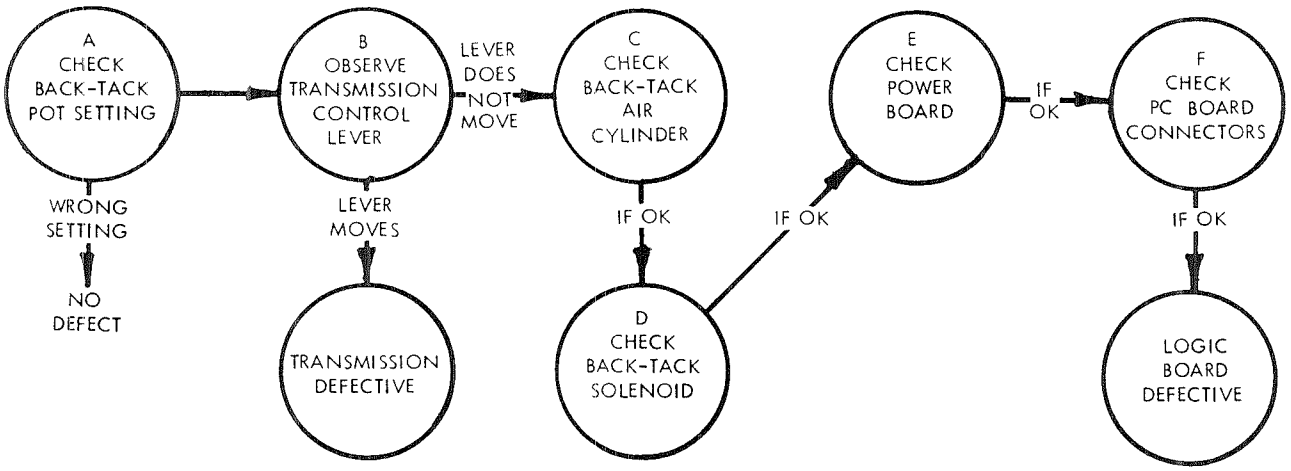
(1) If power board checks good, remove electrical power from equipment.

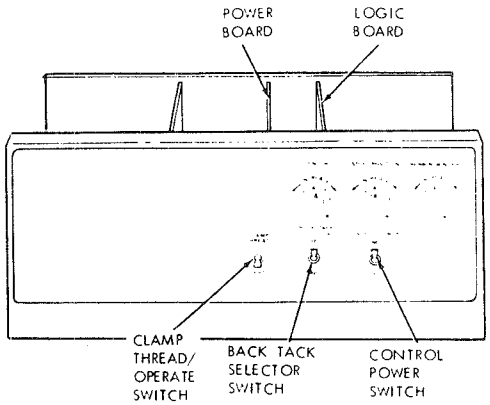
(2) Check P.C. board connectors using procedure given in Item 2, paragraph K.

(3) If P.C. board connectors check good, replace logic board. Refer to REPAIR PARTS LIST for replacement part number.

17. MACHINE STOPS, THEN TACKS FORWARD WHEN SET TO BACK TACK

ITEM NO. 17

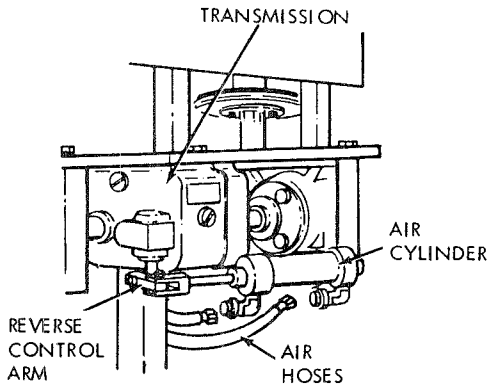




A. CHECK BACK-TACK POT SETTING:

(1) Check setting of BACK-TACK pot on control panel. If BACK-TACK pot is set at zero (to extreme left) adjust pot to desired setting.

(2) Recheck equipment operation with pot set to correct position. If machine now back-tacks properly, there is no defect.



B. OBSERVE TRANSMISSION CONTROL LEVER:

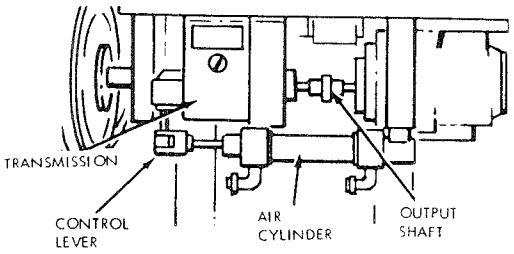
(1) Operate system and observe transmission control lever during end of cycle. Air cylinder should move transmission control lever into reverse position.

(2) If transmission control lever moves to reverse position, and machine does not reverse, transmission is defective.

C. CHECK BACK-TACK AIR CYLINDER:

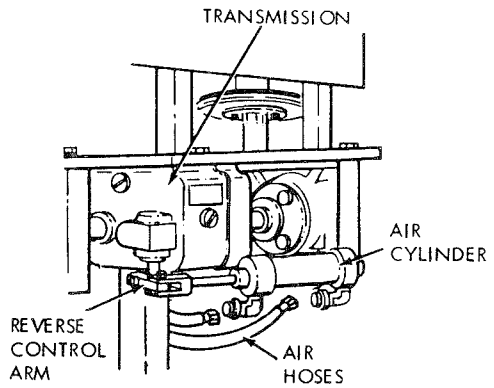
(1) If transmission control lever does not move at end of cycle, remove both air hoses from air cylinder on transmission.

(2) Manually move air cylinder piston rod in and out. Rod should move freely.



(3) If air cylinder piston rod does not move freely while connected to transmission control lever, disconnect rod from control lever to determine which unit is binding.

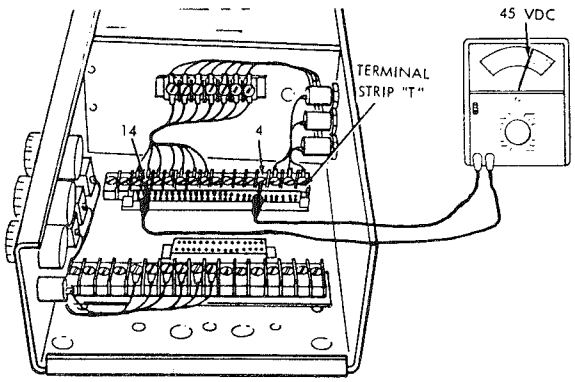
(4) If transmission control lever is binding, repair or replace transmission. If air cylinder piston rod is binding, replace air cylinder.



D. CHECK BACK-TACK SOLENOID:

(1) If back-tack air cylinder and transmission check good, leave air hoses disconnected from air cylinder.

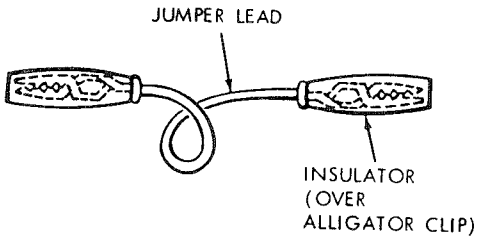
(2) Operate unit while observing hose near piston rod end of air cylinder. Air should be released from hose during back-tack cycle time.



(3) If air is not released from proper hose of air cylinder, get voltmeter a capable of reading in 45 volt DC range.

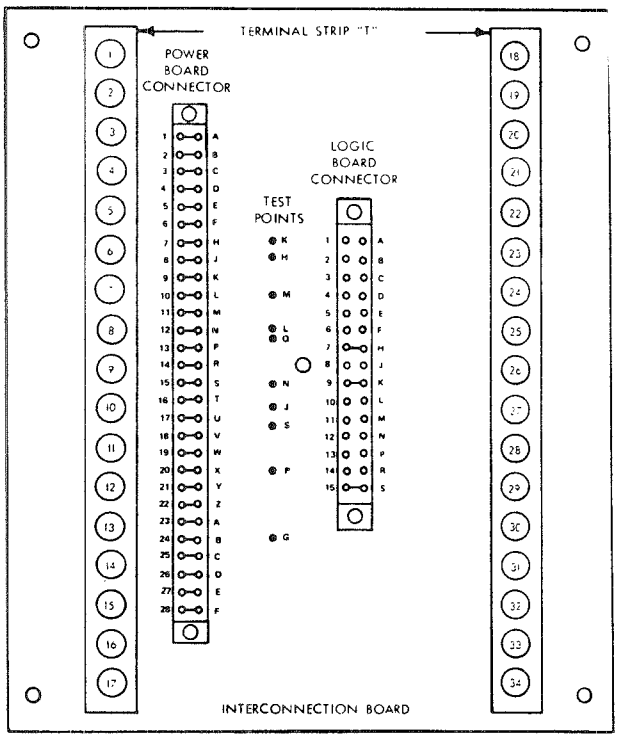
(4) Connect positive voltmeter lead to terminal 4 of terminal strip "T" and connect negative lead to terminal 14. Operate machine through a complete cycle. Voltmeter should read 45 volts during back-tack cycle time.

(5) If voltmeter reads 45 volts DC, and back-tack solenoid does not energize, solenoid is defective.



(6) If voltmeter does not read 45 volts DC, get jumper lead with insulated alligator clips on each end. Connect one end of jumper lead to terminal 14, and connect other end to terminal 17. Back tack solenoid should operate when jumper lead is connected.

(7) If back-tack solenoid does not operate when jumper is connected, repair or replace solenoid. Connect air hoses and remove jumper.



E. CHECK POWER BOARD:

(1) If back-tack solenoid checks good, remove cover from control box.

(2) Check power board using procedure given in Item 2, paragraph J, Steps (2) through (23).

F. CHECK P.C. BOARD CONNECTORS:

(1) If power board checks good, remove electrical power from equipment.

(2) Check P.C. board connectors using procedure given in Item 2, paragraph K.

(3) If P.C. board connectors check good, replace logic board. Refer to REPAIR PARTS LIST for replacement part number.

MAIN MOTOR TROUBLESHOOTING

NOTE

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

CONDITION	CAUSES	CURES
Unit does not position	Blown fuse on motor control panel	Replace fuse 998-223-2.5
	Synchronizer plug not connected	Plug synchronizer plug into right socket of main motor control panel
	Synchronizer leads not connected to plug	Check leads continuity between brush holder and plug
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 counterclockwise until machine stops, and then make one more turn
	Defective microswitch	Replace microswitch 998-233
Solenoids do not energize	Synchronizer not adjusted properly	Readjust synchronizer per instructions
	Relay 4 coil not energizing due to bent contacts	Reshape contacts of relay 3
Machine stops down	Microswitch in clutch arm closed at all times. Defective micro-switch	Replace microswitch 998-286
Unit positions up and trims and thread pulls out of needle	Tension opening late	Relay 4 is sticking. Replace board
Unit positions very slowly	Positioning belt stretched out of shape	Replace belt 998-235
	Not enough clearance space in auxiliary clutch	Put additional spacers in auxiliary clutch 995-218
Klipp-It knives stick in open position	Relay points pitted	Replace or clean relay points in auxiliary control box

SEWING HEAD TROUBLESHOOTING

CONDITION	CAUSES	CURES
Skipped stitches or thread breakage	Burred needle	Replace needle
	Wrong needle	Replace with either 135-RMN-116 or 135-RMN-216
	Needle incorrectly inserted in needle bar	Realign needle so needle eye faces operator
	Burr in needle hole in throat plate	Polish out needle hole
	Needle hole too large	Replace throat plate RM-2385 D
	Burrs on inside edges of clamp slot	Polish edges
	Burr on hook point. Hook out of time	Polish hook point. Retime hook, Section IV
	Bobbin case damaged	Replace bobbin case 63913 B
TRIMMER TROUBLESHOOTING		
Both threads not cut	Solenoid not working	Check lead connections. Make continuity check
	Lower knife not moving far enough right	Reset stop screw
	Lower knife too far forward	Relocate knife. Check for nicks on radius
	Lower knife too far back	Relocate knife
Needle thread not cut, but bobbin thread cut	Broken spring retainer wire	Replace with 63450 A
	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
	Bobbin case improperly threaded	Thread properly
	Needle hole in throat plate too big	Replace throat plate with RM-2385 D
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 right
	Lower knife rubbing hook point	Raise lower knife

(continued)

CONDITION	CAUSES	CURES
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. Slightly decrease tension on knife return spring. Check thread pull-off at cones
	Tension disc not open	Check setting of tension release solenoid and electrical operation of 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 unstroke
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	Slightly decrease tension on knife return spring by moving bracket left

BOBBIN MOTOR
TERMINAL STRIP

# 32	BLACK WIRE.	FROM BOBBIN MOTOR.
33	RED WIRE.	
34.	BLUE WIRE	

PUSH BUTTOM (START BOBBIN MOTOR).

COPPER.	BLUE WIRE JUMPER WIRE.	RED WIRE.
CHROME.		BLACK WIRE.

IF BOBBIN motor DCL. RUNS with-out ENGAGING BUTTON - POSSIBLE FAULTY LOGIC BOARD

AIR VALVES

1 Presser Foot
2 Clamp
3 Vision Flap
4 Back Rack
5 Blower

RM 3081 D Bracket
22772 A SHLD. Screw
RM 3088 D - Plastic
RM 3289-5 mounting Screw
RM 2293-6 - WASHER

FUSES - Pg. 46 E-3 SECTION VIII

ERATIC STOPING with unloader working - unloader solenoid not working properly - unloader work-o -

Cause: Bad crimp on black wire #34 Terminal.

AUTOMATED SYSTEMS

TECHNICAL BULLETIN

Machine Styles: 2800E2, E3, and E4 Left Fly Units | Bulletin No.: TB24

March 22, 1995

Subject: D.C. Motor Conversion

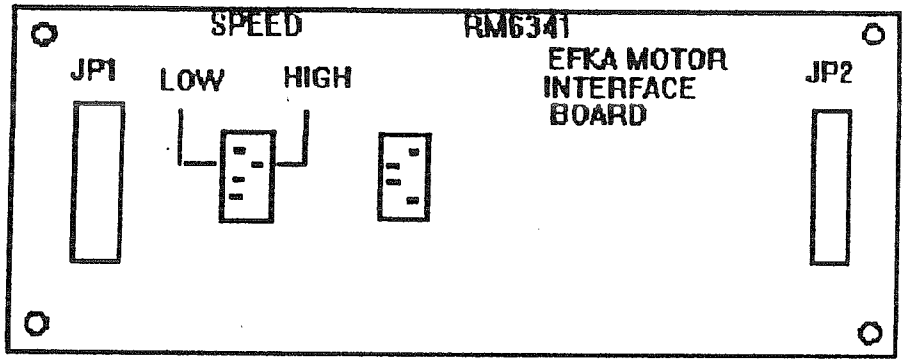
Available for sale is kit # 29480ANS, D.C. Motor Conversion Kit. This kit will update from the Quick A.C. Motor to the Efka D.C. Motor. The conversion is for all models of Left Fly Stations and comes with complete installation instructions.

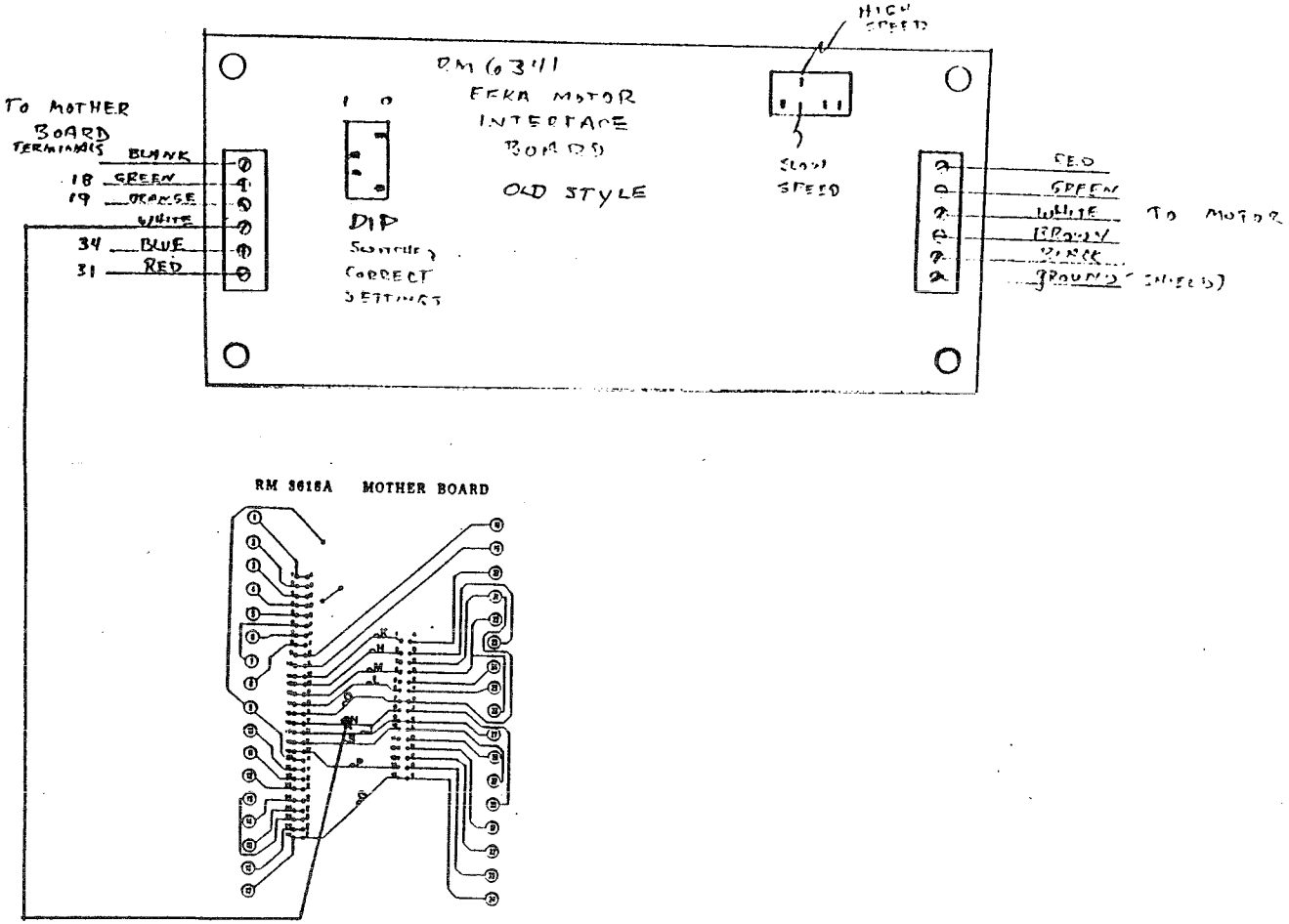
Please contact out Customer Service Department listed below to receive price and availability.

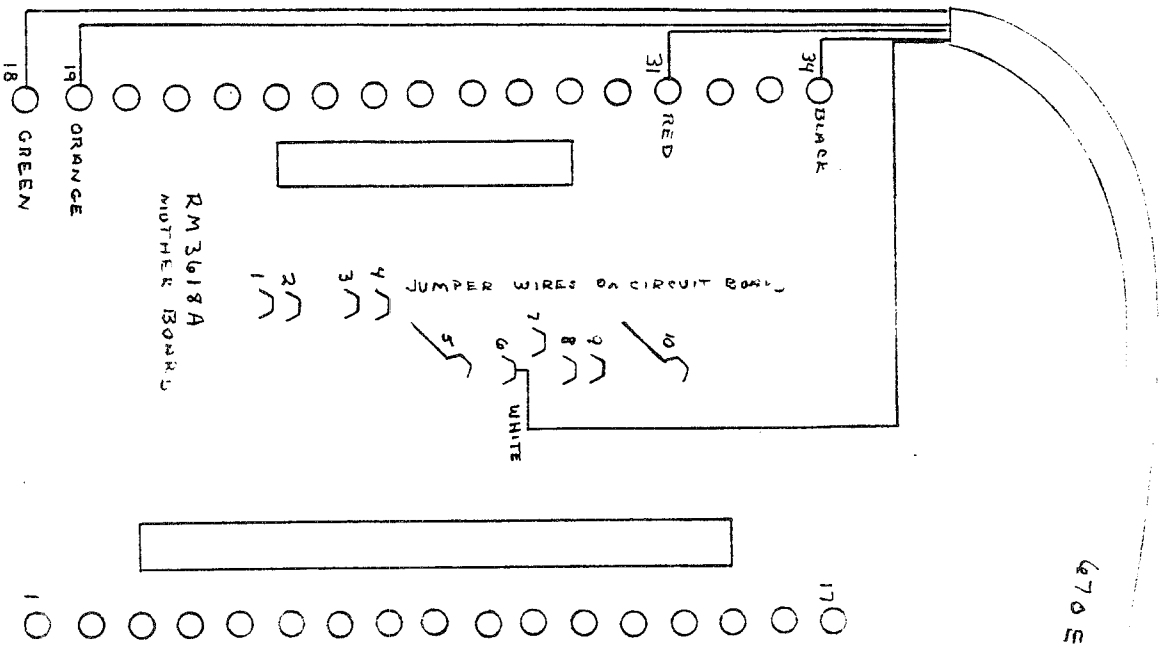
instructions to update 2800ES motor interface board.

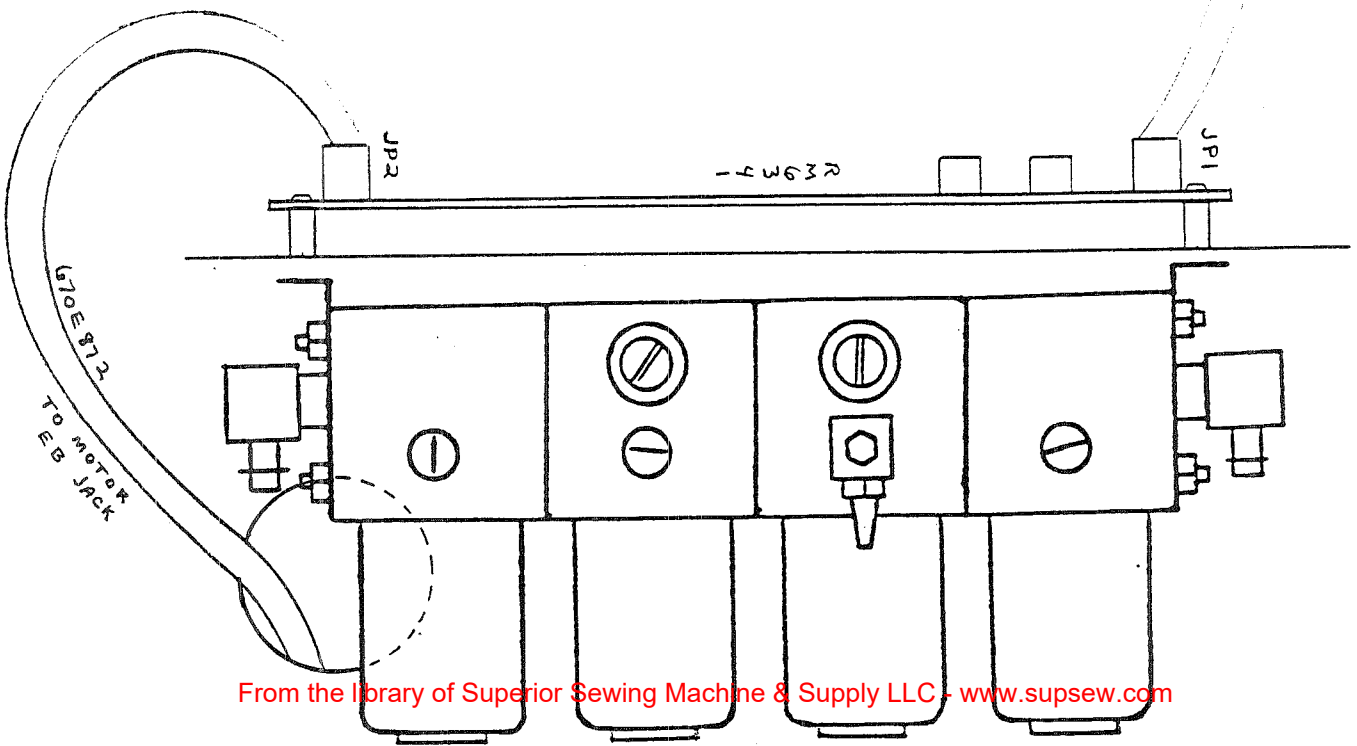
Please return enclosed tool and old parts to receive proper credit

Thanks
Rick







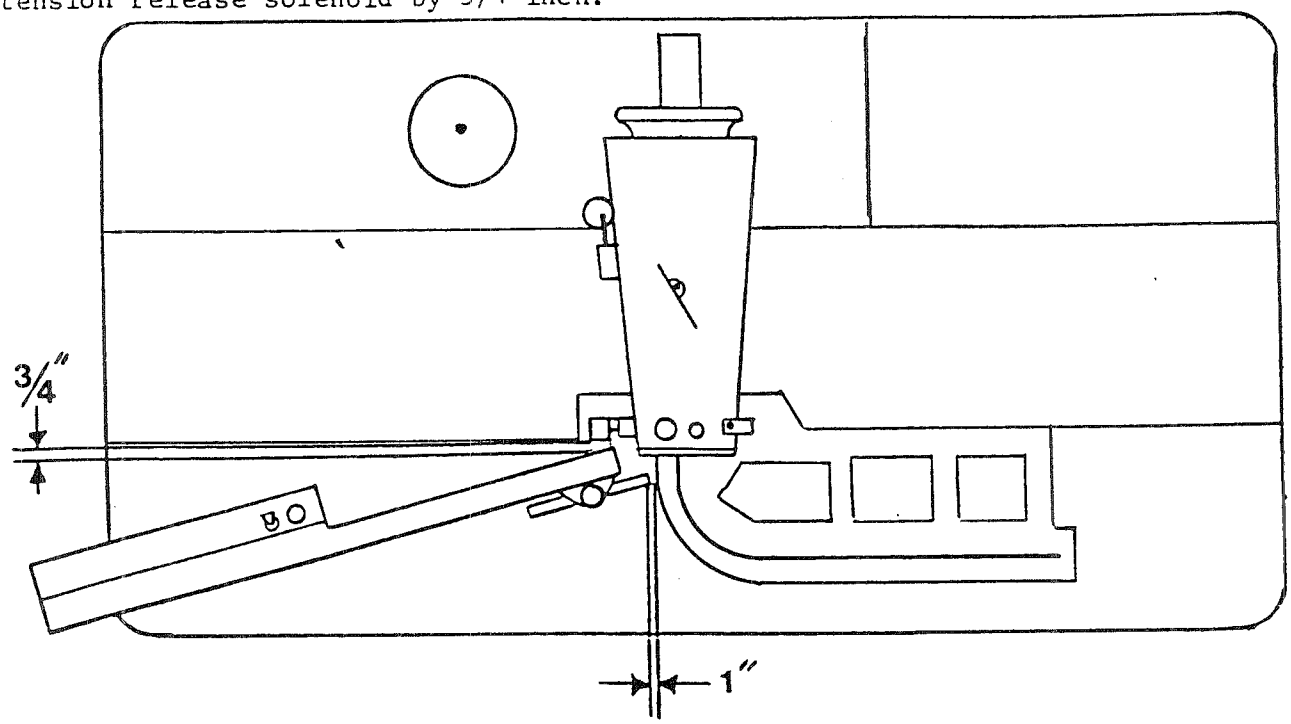


PL-1035
2899 UL UNLOADER FOR
2800 E-2/3/4 LEFT FLY STATIONS

I. INSTALLATION INSTRUCTIONS

A. MOUNT TO TABLEBOARD

1. Position the 2899 UL unloader on the left hand side of the tableboard so that when the 671 A-46 double acting cylinder rod is fully extended, the unloader clamp clears the fly station clamp in the home position by 1 inch and the unloader's back cover clears the tension release solenoid by 3/4 inch.



2. With the unloader held in position, move the fly station J curve clamp to the left end of its travel. Make sure the unloader clamp clears the fly station J curve clamp.

3. When unloader is properly positioned, mark the tableboard with a pencil through the 4 holes on the unloader base.

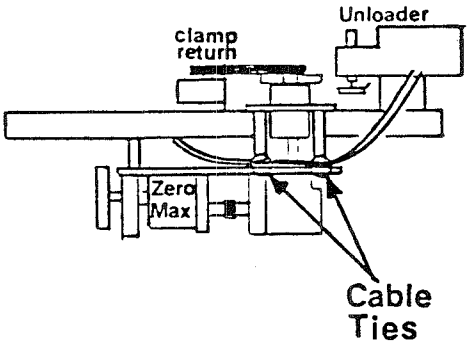
4. Remove the two 1/4-20 bolts mounting the base to the unloader. Using a 5/32 inch drill, drill one hole in the tableboard marked by pencil. Secure the unloader base to the tableboard using one of the RM-2730 A (#12 x 1-1/2 pan head sheet metal screw).

5. Making sure the marked holes line up with the remaining 3 holes, use the base as a template and drill the 3 remaining holes.

6. Tighten the three remaining screws. Mount the unloader to the base using the two 1/4-20 bolts.

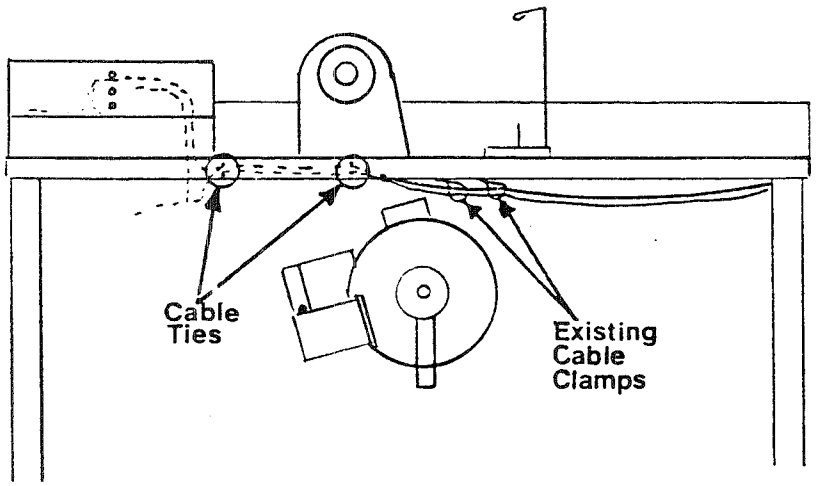
B. CONNECT AIR AND ELECTRICAL SUPPLY

1. Take both the air hose and the cable from the unloader and tie them to the two electric clutch supports using 2 RM-2871 B cable ties.



2. Route both cable and air hose in between tableboard and Zero Max plate.

3. Route both cable and air hose through two existing large cable clamps. Make sure cable and hose clear V belts.

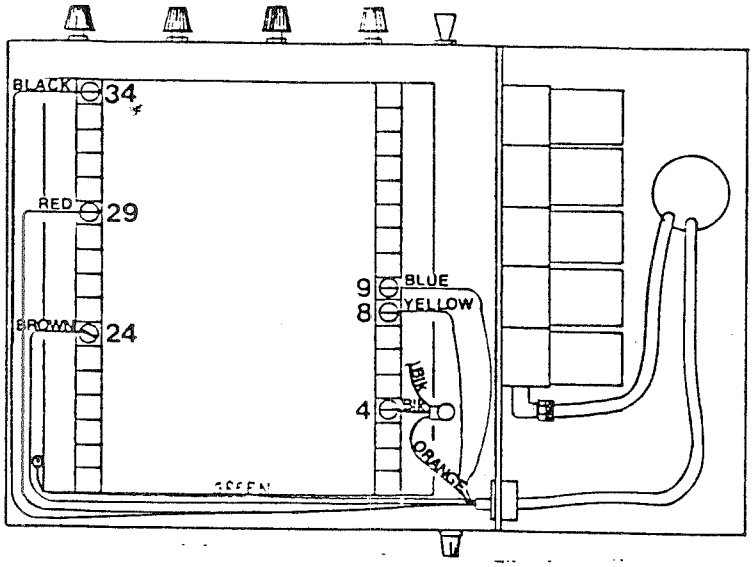


4. Tie cable and hose to inside of angle iron using the existing holes in the angle iron.

5. Locate the air line from the oil lubricator to the rear male elbow of the solenoid bank. With air supply off, cut the air line with a razor blade just under the hole in the tableboard for air hoses from the pneumatic control box.

6. Connect the 671 F-41 barbed elbow to the air line. Connect the air hose from the unloader to the barbed tee, cutting off any excess tubing.

7. Route the electrical cable through the tableboard hole and up through the pneumatic box hole. Continue to route the cable through the grommet in the pneumatic/electric control box divider wall.

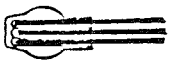


8. Remove the existing black wire from screw terminal 4 on the mother board. (NOTE: Make sure both main and control power switches are turned off.) Cut the black wire as close to the spade connector as possible.

9. Locate the 2 inch long black wire RM-3750-10 shipped with the unloader and make sure there is 1/4 inch of insulation removed from one end of the wire. Crimp the RM-3352 spade connector to the 2 inch wire making sure the wire is crimped and not the insulation.

10. Locate the 670 G-17 splice connector. Slide black wire from terminal 4, 2 inch black wire and orange wire from unloader cable into the splice connector. Wire insulation does not have to be removed when using this splice connector. Sometimes it may be easier to slide wire into splice connector if insulation is removed.

1.



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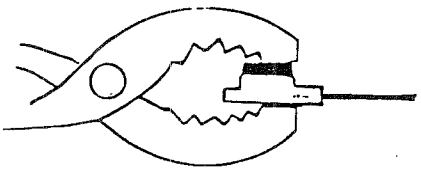
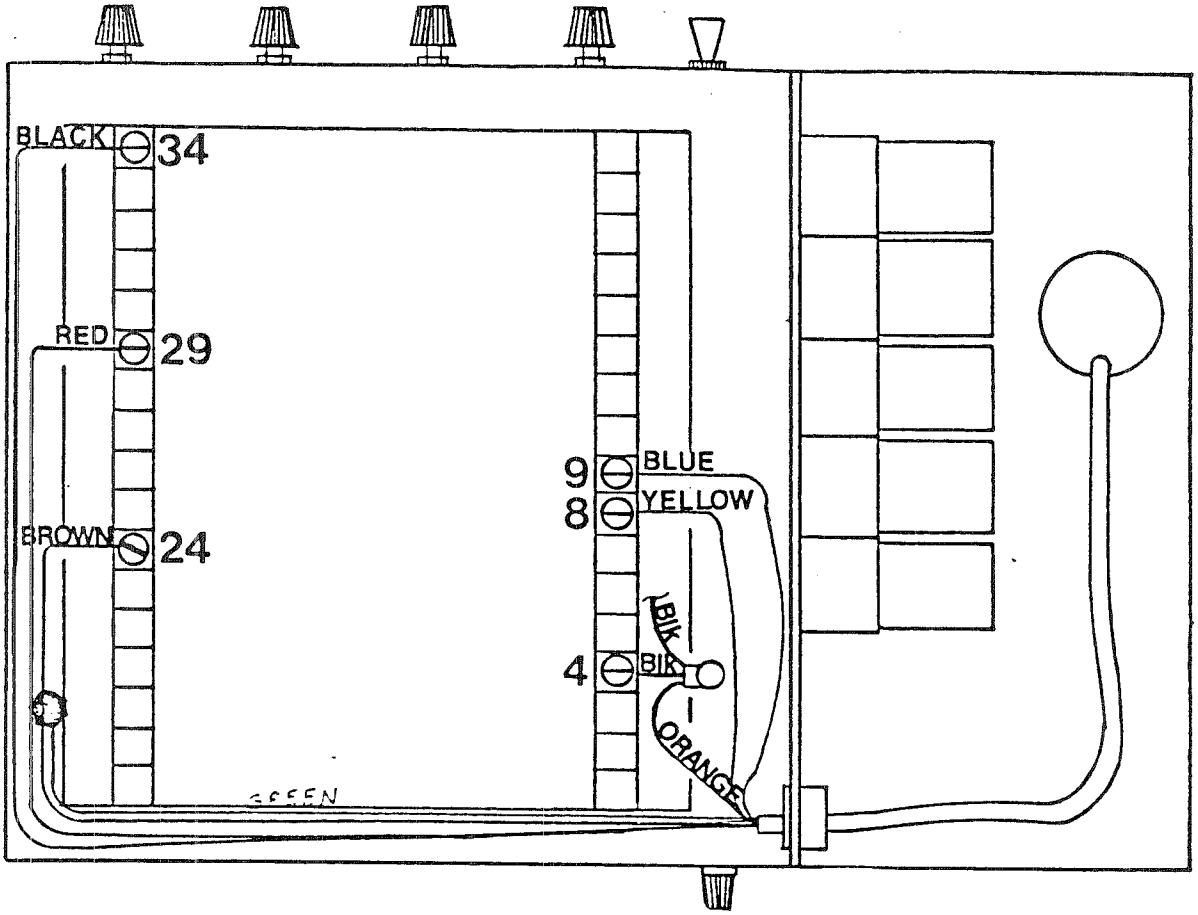


3.

11. Crimp the red button on the splice connector with a pliers making sure wires remain inserted as far as they will go. After crimping, the red button should be flush with the clear plastic top.

12. Connect the 2" long black wire to terminal 4. Connect the 5 remaining cable wires to the terminals shown below.

NOTE: When connecting cable wires to the mother board terminals, make sure the existing wires remain connected to the screw terminal.



II. UNLOADER CONTROL PANEL

A. ON/OFF SWITCH

In the On position, the unloader will automatically unload fly at the end of sewing. In the Off position, all other machine functions will operate except the unloader.

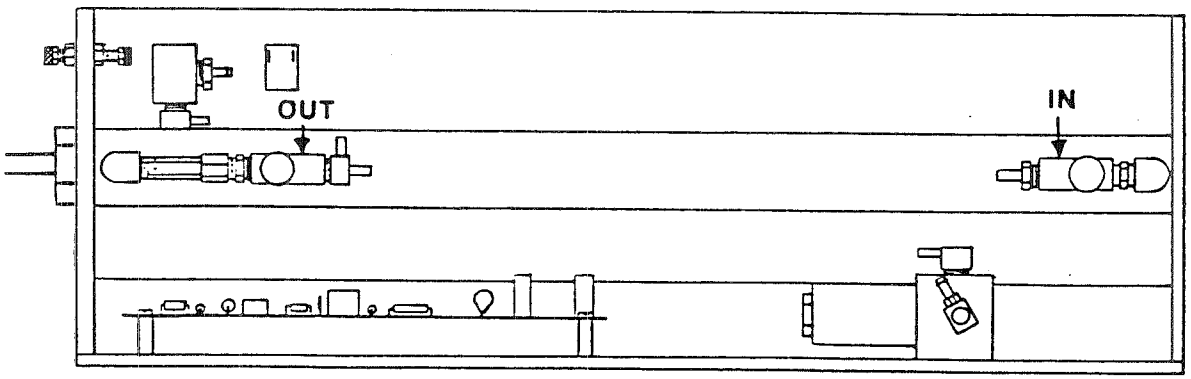
B. CLAMP RELEASE PUSHBUTTON

When pressed and held, the button causes the unloader clamp to lift. The unloader clamp automatically lifts at the start of sewing the next fly. At the end of a bundle, however, the operator must push the clamp release button to release the garment.

III. CONTROLS INSIDE CONTROL BOX

A. UNLOADER CYLINDER IN FLOW CONTROL

The unloader cylinder in flow control is mounted to the back port of the cylinder (near solenoid). The flow control should be adjusted so that the cylinder rod extends quickly but does not bang.



B. UNLOADER CYLINDER OUT FLOW CONTROL

The unloader cylinder out flow control is mounted to the front port of the cylinder (below ON/OFF switch). The flow control should be adjusted so that the cylinder rod retracts smoothly and quickly.

C. UNLOADER CLAMP LIFT DELAY POTENTIOMETER

The unloader clamp lift delay potentiometer is located on the RM-5267 unloader circuit board. The potentiometer controls the amount of time between when the foot switch is activated to start sewing and when the unloader clamp lifts to release panel. The potentiometer should be set so that the operator has just enough time to grasp finished garment after loading next fly. Potentiometer may need to be adjusted as operator's speed increases. Turning potentiometer Counterclockwise Decreases time delay.