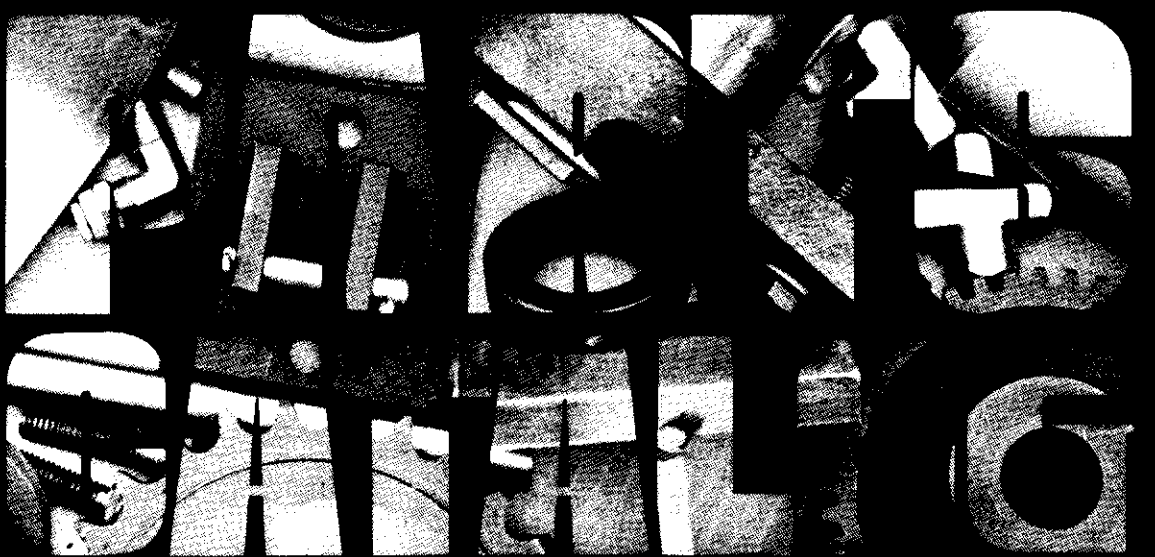
MODEL 950

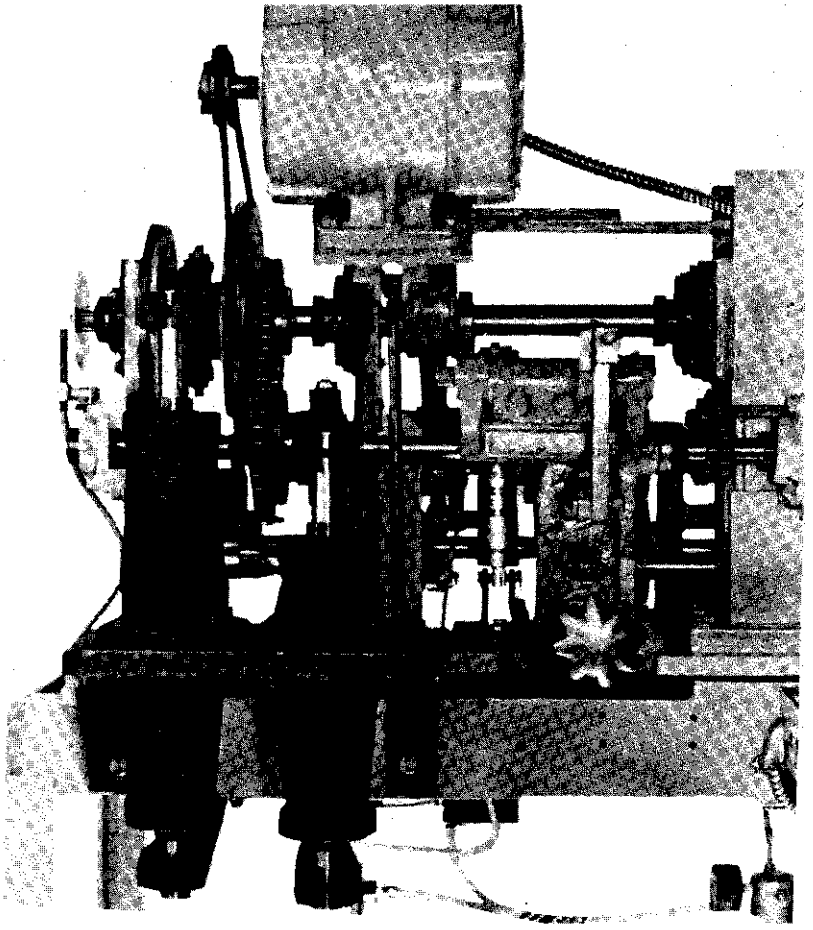


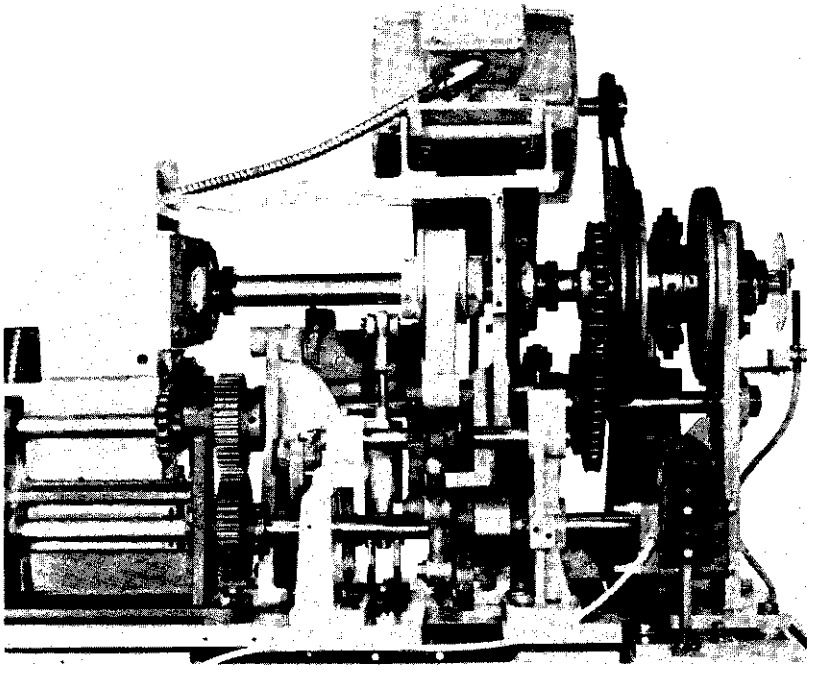
CRITTENDEN CONVERSION CORPORATION

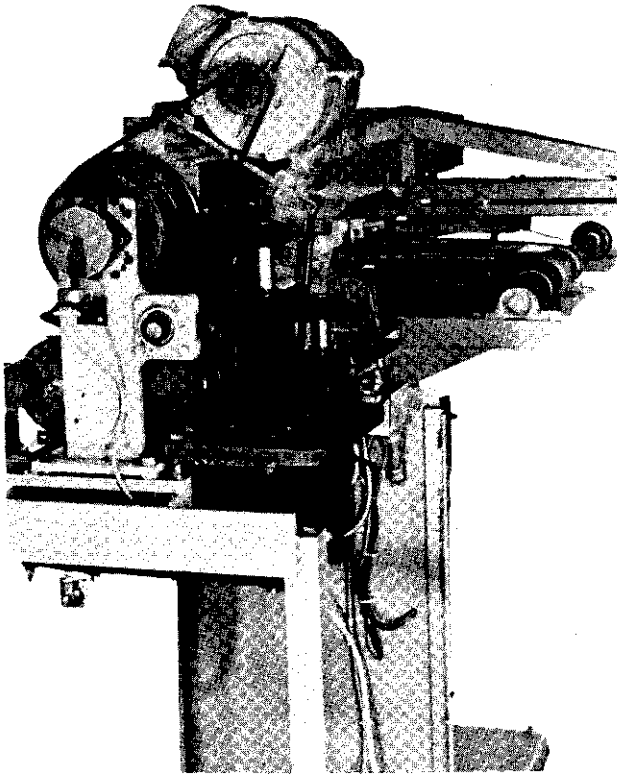
P.O. Box 719 • 30380 S.E. High Point Way • Preston, WA 98050

425-222-5167 • 1-800-755-7894 • Fax 425-222-6449

Special care has been given to the design and manufacture of your conversion to make it as trouble-free as possible. Nevertheless, there will be occasional instances of malfunctioning which, if dealt with systematically, can usually be corrected by your regular maintenance personnel. The following instructions are set forth to help you analyze your machine in order to locate and correct any difficulties that should occur.







OPERATION SEQUENCE

As flap of box hits Trip Gate, LS1 is closed, energizing C1 start side of Solenoid Valve, causing 2"x 2" Air Cylinder to retract, shifting Main Clutch/Brake to contact Flywheel.

High Speed Clutch is now disengaged, Crank Rod is moving Step-Feed Shaft. The Overrun of the Step-Feed Shaft is controlled by the Auxiliary Brake, which is energized only in stitch position. You will note that Auxiliary Brake Air Regulator indicates pressure only while stitching.

The *spacing between stitches* is controlled the same as before conversion.

The *number of stitches* will be determined by the following:

You will have one of two models of counters.

With **Model 102 Counter** you will be able to count stitch and stitch using Limit Switches.

With **Model 205 Counter** you will be able to count stitch, stitch using Limit Switches, tie-stitch using count, and tie-stitch using Limit Switches.

The last stitch is controlled by the Reed Switch (RS1) which closes each time the Magnet, mounted on aluminum disc on end of Crank Shaft, passes by switch.

Upon completion of last stitch, the counter emits an output on Terminal number 4, energizing C2 stop side of Solenoid Valve causing 2"x 2" Air Cylinder to extend, shifting Main Clutch/Brake to contact Stationary Brake Plate. High Speed Clutch engages, causing ejection of completed box.

When operating stitcher in limit mode, the following differences should be noted:

The Count Circuit is inoperative in this mode.

The last stitch is controlled by the first Limit Switch (LS2) on the Off-Feed Conveyor and the Reed Switch (RS1).

The front of the box contacts and closes LS2 then the Magnet passes and closes RS1 completing the stop circuit through C2 causing 2"x 2" Air Cylinder to extend moving Clutch/Brake to "Brake" position. When box contacts and opens LS3 this opens the stop circuit allowing the machine to begin stitching the next box.

Stitching using Limit Switch Mode is recommended when running larger boxes having 20 or more stitches, as last stitch placement is more closely controlled than would be when using Count Mode.

The following are examples of Model 205 Counter setups to assist you when setting up to run a box that requires tie-stitching. We recommend that Tie-Limit Mode be used when stitching larger boxes that require 20 or more stitches.

TIE-COUNT REQUIREMENTS:

16 total stitches with 1 tie at front of box and 1 tie at back of box.

COUNTER SETTINGS WOULD BE:

Counter Switch—on, mode switch—in tie-count position.
Total Knobs—left knob on 1, right knob on 6.
Back Tie Knobs—left knob on 1, right knob on 5.
Front Tie Knob— on 1

From this you will note that the front tie setting is a direct reading, where the back number of ties is attained by subtracting the back tie setting from the total setting.

TIE LIMIT REQUIREMENTS:

29 total stitches with 2 ties at front of box and 2 ties at back of box.

COUNTER SETTINGS WOULD BE:

Counter Switch—on, Mode Switch—in tie limit position.
Note: Since Count Circuit is inoperative in this mode, the total number of stitches (in this case 29) would be arrived at by adjustments of Stitch Space Lever and LS2 and LS3 Limit Switches on Off-Feed Conveyor. This is usually done after the front and back Tie Limit Timer controls are correctly set.
Tie-Stitch Front Timer Knob—set at approximately 2.
Tie-Stitch Back Timer Knob—set at approximately 2.
Note: Since numbers on Tie Timer Knobs are only relative it will be necessary to rotate knobs one way or another to arrive at desired number of Tie Stitches. For example—the final setting might be between 2 and 3 to arrive at 2 ties.

TROUBLE SHOOTING

Machine Will Not Start Stitching

1. Check N.O. LS1 micro switch and wiring to junction box.
2. Check solenoid valve for excessive oil, foreign matter, etc.
3. Check wiring to solenoid valve.
4. Check for sticking bottom rail on trip frame.
5. Check for 110 VAC across terminals 1 and 4. This should be a momentary signal only. A constant signal will prevent stitcher from starting as this is the stop circuit.

Machine Will Not Stop Stitching

1. Check RS1 N.O. reed switch (count input).
2. Be sure counter switch is in on position.
3. Be sure counter mode switch is in count position.
4. Check for 110 VAC output between terminals 1 and 4 (stop circuit). **NOTE:** This should be a momentary signal at end of each stitch cycle.
5. Check solenoid valve and wiring.
6. Check for loose magnet disc or missing magnet.
7. Check to see that N.O. LS1 micro switch is not stuck closed.

After Stitching, Box Does Not Eject Satisfactorily

1. Check high speed clutch adjustment.
   Caution: Do not overtighten, as this will cause erratic stopping. Tighten only to the point where box ejects properly.
2. Be sure trip is not set too low, causing excessive drag between gate and box.
3. Check auxiliary brake regulator for sticking open.

Placement of First Stitch Erratic

1. Restrictor valve on trip open too far.
2. Feed rolls too loose.

Feed Rolls Stop and Fail to Eject Box After Completing the Stitching Cycle and the Stitcher Motor is Still Running

1. Check shifting linkage for missing or broken parts.
2. Check auxiliary brake regulator for sticking open.

Front End of Boxes Being Excessively Broken Down Due to Impact with Trip Gate

1. Feed rolls too tight.
2. Restrictor valve on trip is closed too far and not allowing gate to open fast enough.

Boxes Show Stitch Deformation or Tearing

1. Check mechanical timing (head drive cam with respect to crank shaft). Refer to Bostitch manual.

Boxes Come out of Machine with no Staples

1. Check head for faulty wire feed mechanism or wire may be tangled on spool.

First Two Staples Too Close Together or on Top of One Another

1. Restrictor valve on trip closed too far.
2. Faulty step-feed clutch.

Erratic Placement of Stitches

1. Feed rolls too loose.
2. Auxiliary brake not holding properly due to low air pressure, worn discs or oil on brake disc.
3. Faulty step-feed clutch.
4. Grease, wax or oil on feed rolls.
5. Box guides set too tight.
6. Off-feed conveyor set too high, which usually shows up by a gradual increase in stitch spacing towards back of box.

Machine Puts in Wrong Number of Staples

1. Check counter settings.
2. Check for faulty RS1 N.O. reed switch.
3. Check for loose magnet disc and adjustment of reed switch position with respect to magnet.
4. Check for faulty counter or plug in modules.

Machine Stops Consistently with Formers in Wrong Position (Down)

1. Loosen magnet disc and rotate CW or CCW until desired stopping position of head is attained. Be sure to firmly tighten disc retaining bolt.

Erratic Stopping of Machine (More Than a Total of Approx. 20 Degrees)

1. High speed clutch too tight.
2. Grease or oil on main brake lining.
3. Binding in main shifting air cylinder.
4. Loose main brake disc.

Machine Stops and Cannot be Turned Over By Hand

1. Check stitch head for wire jamming or broken parts.
2. Check to see that connecting rod is not frozen to eccentric.
3. Check for sticking auxiliary brake regulator.

Will Not Tie-Stitch in Tie-Count Mode

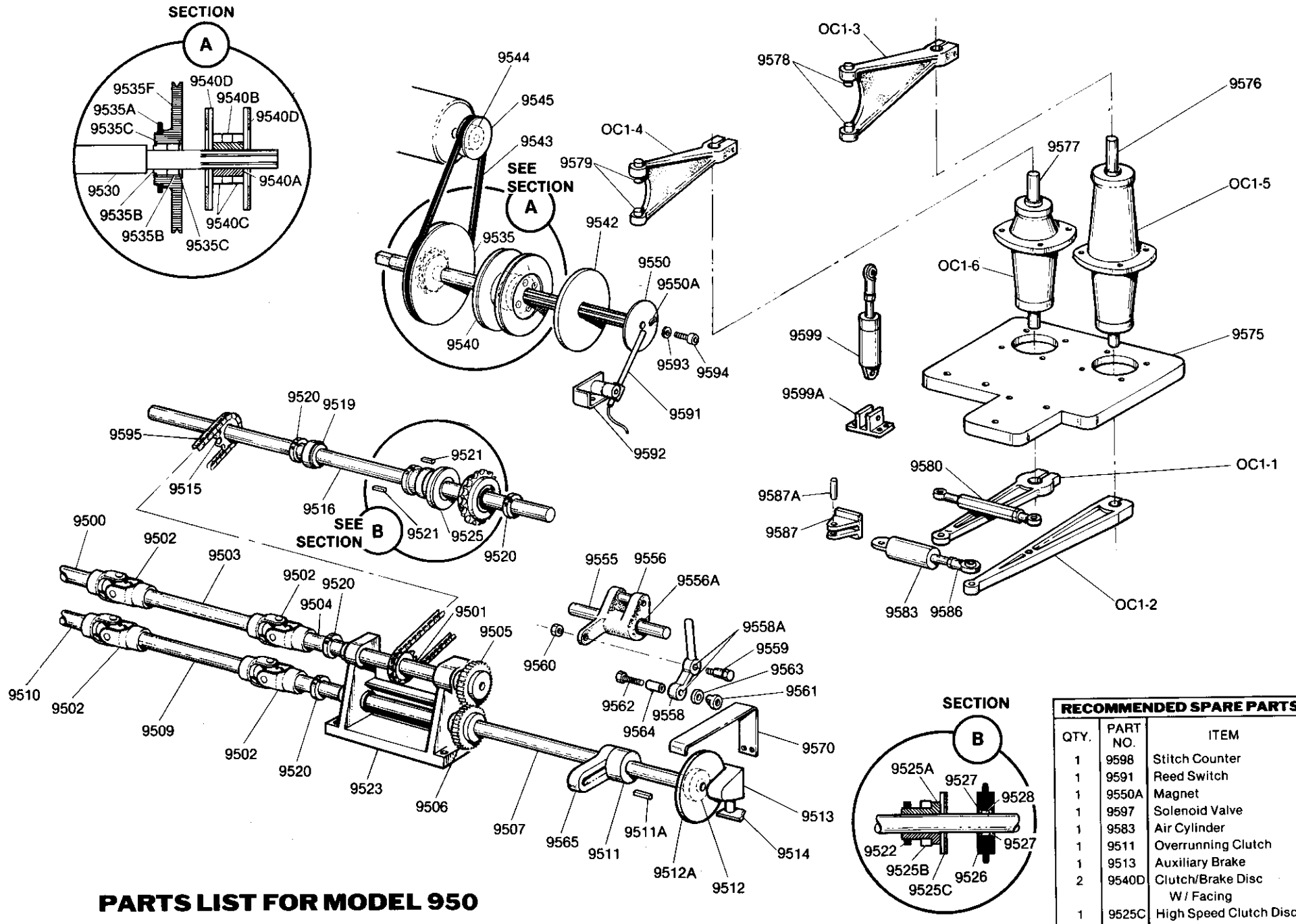
1. Re-Check counter settings
2. Mode switch is not in tie-count position. In tie-count position, tie-stitch air cylinder should be retracted—if not—check the following:
   a. Tie-stitch solenoid valve (TSC-1).
   b. Tie-stitch air cylinder.
   c. Pinched or broken air lines.
   d. Electrical circuit, including counter, for loose or broken connections.
   e. Replace plug-in count module in counter.
3. If cylinder is retracted but will not tie-stitch.
   a. Check tie-stitch bell crank mechanism for proper adjustment and broken parts.

Will Not Tie-Stitch in Tie-Limit Mode

1. Re-check counter settings.
2. Mode switch is not in tie-limit position. In this position, tie-stitch air cylinder should be retracted—if not—check the following:
   a. See 2a thru d above.
   b. Check N.C. LS4 # B (**NOTE:** This may be a microswitch or a pressure switch depending on when conversion was installed.

Wrong Number of Tie Stitches

1. Recheck counter settings.
2. Check for binding of tie-stitch air cylinder.
3. See 3 (a) above.
4. See 2 (e) above.

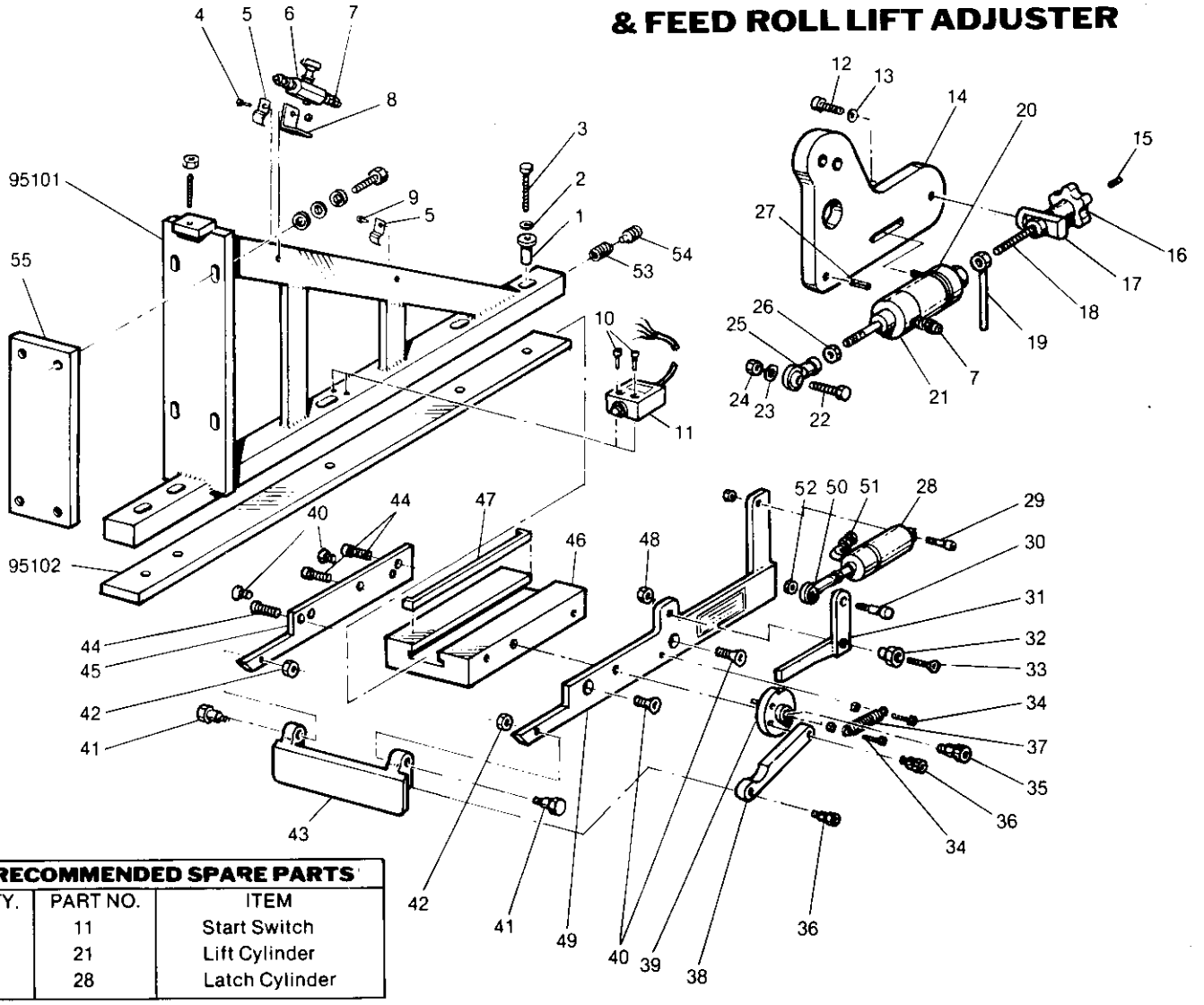


PARTS LIST FOR MODEL 950

RECOMMENDED SPARE PARTS		
QTY.	PART NO.	ITEM
1	9598	Stitch Counter
1	9591	Reed Switch
1	9550A	Magnet
1	9597	Solenoid Valve
1	9583	Air Cylinder
1	9511	Overrunning Clutch
1	9513	Auxiliary Brake
2	9540D	Clutch/Brake Disc W/ Facing
1	9525C	High Speed Clutch Disc W/ Facing

9500	TOP FEED ROLL SHAFT
9501	TOP FEED ROLL SPROCKET—18 TOOTH
9502	TOP UNIVERSAL JOINT
9503	TOP JACK SHAFT
9504	REVERSE GEAR SHAFT
9505	TOP REVERSE GEAR
9506	BOTTOM REVERSE GEAR
9507	STEP FEED SHAFT
9509	BOTTOM JACK SHAFT
9510	BOTTOM FEED ROLL SHAFT
9511	OVERRUNNING CLUTCH
9511A	OVERRUNNING CLUTCH KEY
9512	AUXILIARY BRAKE HUB
9512A	AUXILIARY BRAKE DISC
9513	AUXILIARY BRAKE
9514	AUXILIARY BRAKE MOUNT
9515	SPROCKET
9516	HIGH SPEED SHAFT
9519	THRUST BEARING # E9
9520	SQUEEZE-LOCK
9521	KEY
9522	LOCK COLLAR
9523	REVERSE GEAR CASTING
9525A	HIGH SPEED CLUTCH SLEEVE
9525B	THRUST BEARING # E20
9525C	HIGH SPEED CLUTCH DISC W/FACING
9525	HIGH SPEED CLUTCH COMPLETE
9526	HIGH SPEED SPROCKET
9527	SNAP RING
9528	BEARING—SL-16
9530	CRANK SHAFT
9535A	SPROCKET
9535B	BEARING # SL 16
9535C	SNAP RING
9535F	FLYWHEEL
9535	FLYWHEEL ASSY. COMPLETE
9540	CLUTCH/BRAKE ASSY. COMP.
9540A	CLUTCH & BRAKE SLEEVE
9540B	COLLAR
9540C	THRUST BEARING # E25
9540D	CLUTCH & BRAKE DISC
9542	BRAKE PLATE
9543	V-BELT # 3 V 450
9544	BUSHING
9545	SHEAVE
9550	DISC
9550A	MAGNET
9555	SHAFT
9556	BELL CRANK
9556A(2)	BELL CRANK BUSHING
9558	STITCH SPACE LEVER
9558A(2)	BUSHING
9559	SHOULDER SCREW
9560	NUT
9561	T-SLOT NUT
9562	SCREW
9563	HARD WASHER
9564	BUSHING
9565	OVERRUNNING CLUTCH HUB CASTING
9570	AUXILIARY BRAKE GUARD
9575	BASE PLATE
9576	SHAFT
9577	SHAFT
9578	SCREW
9579	SCREW
9580	TURNBUCKLE ASSY. COMPLETE
9583	AIR CYLINDER
9586	ROD END # FR 8
9587	AIR CYLINDER CLEVIS
9587A	AIR CYLINDER CLEVIS PIN
9591	REED SWITCH
9592	REED SWITCH CLAMP
9593	LOCK WASHER
9594	SCREW
9595	CHAIN # 40
9596	BEARING SF-16 (NOT SHOWN)
9597	SOL. VALVE -B02 (NOT SHOWN)
9598	STITCH COUNTER (NOT SHOWN) (SPECIFY TYPE)
9599	AIR CYLINDER
9599A	AIR CYLINDER CLEVIS
OC1-1	HIGH SPEED CLUTCH ARM
OC1-2	CLUTCH/BRAKE ARM
OC1-3	CLUTCH/BRAKE SHIFTING YOKE
OC1-4	HIGH SPEED CLUTCH YOKE
OC1-5	LARGE BEARING HOUSING CASTING
OC1-6	SMALL BEARING HOUSING CASTING

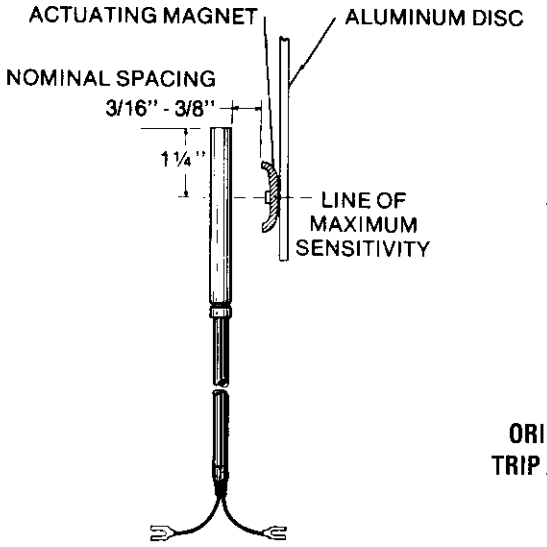
950 TRIP/GATE ASSY. & FEED ROLL LIFT ADJUSTER



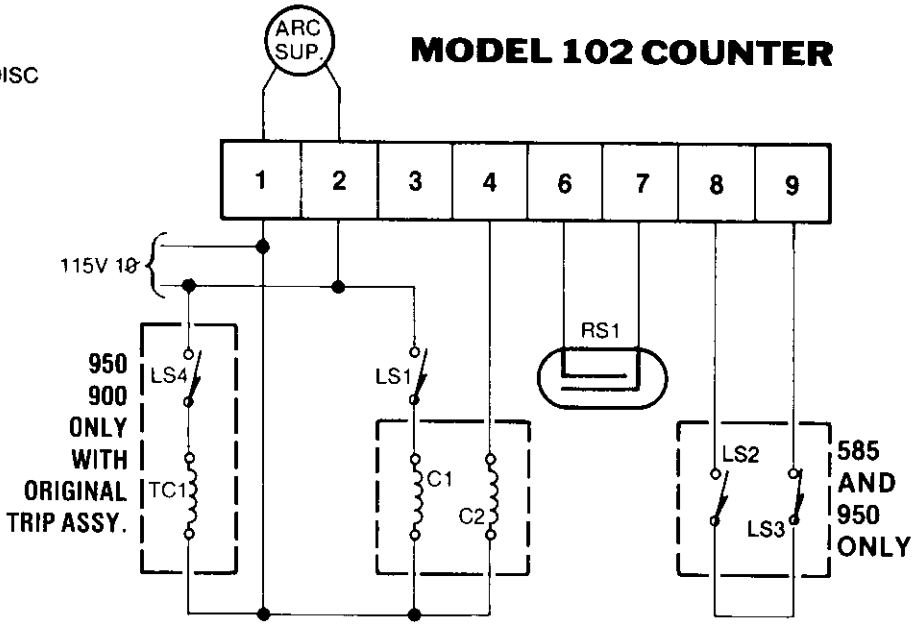
RECOMMENDED SPARE PARTS		
QTY.	PART NO.	ITEM
1	11	Start Switch
1	21	Lift Cylinder
1	28	Latch Cylinder

95101	TRIP FRAME	18	ADJUSTING ROD	37	SPRING
95102	SLIDE RAIL	19	LOCK HANDLE	38	LINK
1(5)	SPACER	20	SPRING PIN	39	LATCH CAM
2(5)	LOCK WASHER	21	LIFT CYLINDER	40 (4)	SCREWS
3(5)	SCREW	22	SCREW	41 (2)	SHOULDER SCREW
4	SCREW	23	LOCK WASHER	42 (2)	JAM NUT
5	CABLE CLAMP	24	NUT	43	TRIP GATE
6	RESTRICTOR VALVE	25	ROD END—TF-7	44	LOCK SCREWS
7 (3)	POLY-FLO FITTING	26	JAM NUT	45	SIDE RAIL
8	BRACKET	27	SPRING PIN	46	SLIDE BLOCK
9	SCREW	28	LATCH CYLINDER	47	KEY
10	SCREW	29	SCREW	48	NUT
11	MICRO SWITCH—OCT-35	30	SCREW	49	SIDE RAIL
12	SCREW	31	LATCH	50	ROD END—TF-5
13	LOCK WASHER	32	LATCH ECCENTRIC	51	POLY-FLO FITTING
14	LIFT PLATE	33	SCREW	52	NUT
15	SET SCREW	34 (2)	SCREW	53	SPRING
16	KNOB	35	SHOULDER SCREW	54	SPRING ADJ. SCREW
17	GUIDE	36	SHOULDER SCREW	55	MOUNTING PLATE

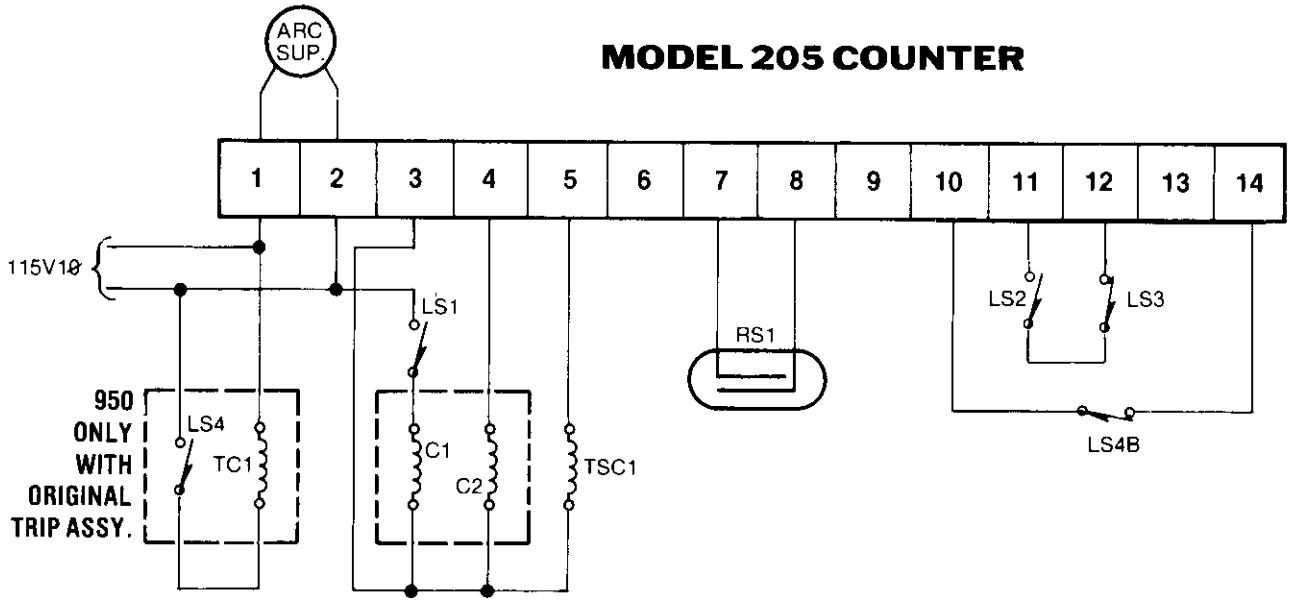
REED SWITCH



MODEL 102 COUNTER



MODEL 205 COUNTER



PNEUMATIC CIRCUIT