1. FEATURES AND SPECIFICATIONS

A. FEATURES

(1) Portable
This machine is compact and light-weight, enabling easy transportation and only requires a small space for installation.

(2) Single Motor Operation
A single motor (single phase, 1/3HP, 4P-180W with capacitor) is kept rotating throughout the whole operation. Stable operation is assured even if the voltage drops.

(3) Increased Productivity
Driven by an electro magnetic clutch, this machine offers at fast cycle up to 20 straps per minute. Older type machines, mostly driven by chain, could operate at 12 straps maximum.

(4) Easy Adjustment for Changing Strap Width
Adjustment for use of any strap in a width up to 1/2 inch (12mm) can be made by slackening only two screws.

(5) No Strap Damage
The feeding system, strap tensioning device and cams are so designed as to eliminate splitting, bending and scratching.

(6) Applicable to Round Objects and High Tension
The width of the slide table is small, allowing for simple bundling of pipes and irregular shaped objects. This machine is equipped with a special press bar timer which can delay the cam closing cycle. This will hold the center press bar in place longer to achieve a better weld. Especially when high tension is to be applied to very hard or very soft articles, the welds of two straps usually pop open or peel off easily, A consistent weld can be assured by simply setting this special timer on.

(7) Simple Operation
The free end of the strap appears on the table which can be pulled out by hand for strapping an article. No complicated switch operation is necessary.

(8) Easy Maintenance and Useful Manual Switches
Replacment the bad electrical component parts is easy. This machine uses an instant heating plate, enabling fast heating. It only requires 35 seconds for it to reach the best heat-sealing temperature, while the old type heater would generally require 5 to 10 minutes for it to reach the same temperature in order to have two straps heat sealed. Also this machine is equipped with two useful manual switches, in the event of the failure of any microswitches and/or breaking round belt, it can be used to complete the strapping cycle. The machine may be used in this manner until the microswitches and or round belt are repaired cr replaced.

B. SPECIFICATIONS

The CMA 818 gives you the unique option of using three (3) different strap sizes (1/4", 3/8" and 1/2"). This machine offers you versatility as well as built in growth potential. At 20 cycles/minute it offers increased productivity and extremely low maintenance and operational costs.

The CMA818 is totally portable and runs on single phase 110 volts (220 volts or 240 volts can be made available if it was specified before delivery). You can utilize it in your office, shipping room or production line. To change strap coil is simple and speedy. The reliability of this machine enables us to offer you the most comprehensive maintenance and service in the package industry today.

SPECIFICATIONS

Overall width	36 inches (915mm)
Overall length	23 inches (610mm)
Overall height	32 inches (815mm)
Machine weight	200 pounds (91 kgs)
Minimum package size	2-1/2 inches wide (64mm)
Sealing method	Instant heat seal type
Strapping width	1/4", 3/8", 1/2" (6-12mm)
Electrical wiring	110 volts-single phase
Strapping cycle	3 seconds
Tension strength	143 pounds (65 kgs) maximum
Casters	2 inches standard (52mm)

2. INTRODUCTION

2.1 PURPOSE OF THE STRAPPING MACHINE

The primary purpose of the strapping machine is to automatically strap mail, packages, cartons, pieceparts, printed matter, newspapers, laundry, produce, meat, and other miscellaneous materials and products requiring a secure package.

The strapping machine straps almost everything that was previously packaged by hand in offices, factories, and commercial establishment.

The machine reduces packing time, employee effort and fatigue. It enables operators to make secure bundles quickly, larger bundles with greater ease and efficiency, and discourages tampering because the seal cannot be duplicated by hand.

General Description
The strapping machine consists of a sealing head assembly, electrical controls, strap reel and support, and cabinet.

The machine is of steel and cast iron construction. Caster wheels are provided for fast easy mobility. All moving parts are enclosed.

Controls are located in the front of the machine within easy, and comfortable reach of the operator. The sealing cycle begins automatically when the strap is inserted into the strap and inlet channel.

Operator maintenance points are easily reached without the use of tools.

2.2 PRINCIPLES OF OPERATION

When the machine power cord is connected to an appropriate power source, and the power switch moved to the on position, the electrical control chassis is energized, and the heater of the sealing unit begins to heat. If the machine is started cold, it will take about thirtyfive seconds for it to reach the sealing temperature. An indicator light indicates that the power is on. Turning on the motor mode switch readies the sealing unit for packaging and a preset length of strap is pushed into the recessed section of the machine top. After the heater has been allowed time to reach sealing temperature, the item to be strapped is placed on the table top and positioned so that the section where the strap is to be applied is over the groove, and the right hand edge is even with or partially covering the narrow channel to the right of the black sealing section.

The strapping action is begun when the end of the strap is looped around the package and inserted into the narrow channel at the right side of the table. The strap actuates a switch which starts the cycle. An electro magnetic clutch engages and the unit known as the feedback roller pulls back excess strap and tensions the strap around the package to whatever tension has been preset on the sealing head. Reaching the desired tension signals the machine that the strap is ready for sealing. A gripper holds the strap tight while the heater is inserted between the two layers of strap where they cross and after heating them to the correct temperature, quickly pulls out and the straps are pressed together to cool. When the seal is complete, the strap is cut and the grippers release. The package is then pushed out to be ready for the next package. The complete sealing cycle takes less than three seconds.

3. HOW TO LOAD STRAPPING COIL

STEP 1

Remove coil

STEP 2

Lay the reel side-ways. Lightly hold the lower side plate, and pull up the upper side plate.

STEP 3

Mount a new roll of strap on the laid down lower side plate. Place the upper side plate by pushing three plate springs into the paper core of the strap.

STEP 4

After the reel side plates have been properly set, mount the strap reel on the machine in the reverse order of STEP 1. The tip of the strap should come out from the top of the reel.

STEP 5

Open the door on the right side of the machine, and feed the strap from the reel to the top of the machine through the roller guides. The tip of the strap should be first taken outside the door before feeding.

4. OPERATING STEPS

(1) PREHEAT THE HEATER
Set the heater temperature control dial (part #268 on Electrical Part Diagram) to "3". Turn the power switch "ON". It takes approximately 35 seconds for the heater to reach the desired temperature.

(2) SET STRAP FEED TIMER
The strap feed timer is located on the front of the control panel (Part #254 on Electrical Part Diagram). This timer controls the length of strap that will feed out of the machine after each cycle.The timer is graduated from 0 to 5 seconds. each second equals 3 feet of strap feed. If you require 6 feet of strapping to secure your package, then set the feed timer on 2.

(3) TURN ON MOTOR
The motor starts and continues to run as long as the motor switch is in the "ON" position and the table top is closed. (A safety shut-off switch, LS-4, is located under the table top. Raising the table top will turn off the motor.)

(4) PREFEED THE STRAP
With the motor switch "ON", turn the power switch "OFF" and then "ON" again. This will feed the length of strapping previously indicated by the timer setting; or, "press" the feed button on the control panel and hold it in until the desired length of strap is fed out.

Prefeeding the strapping is only necessary after changing a new strap coil or unthreading the machine. After each cycle, the strap will automatically feed out.

(5) TO STRAP THE PACKAGE
Place the package on the machine. Insert the leading edge of the strap into the strap inlet to activate the strapping cycle. Strap tension starts as soon as the cycle is activated and the heat sealing process takes place automatically after the tension cycle is complete. The timer is activated, strap is fed out and the machine is ready for the next cycle.

Electricity can be saved when the machine is not in use. The motor switch can be turned "OFF" until there is a need to strap again.

(6) MANUAL SWITCHES
The machine is equipped with manual switches for each step of the cycle.

a. Strap Feed Switch - Out feeds the strap.

b. Tension Switch - Will complete tension cycle.

c. Reset Switch - Will complete cutting, the heat sealing process,and return the machine to the ready position.

Note: The Tension Switch and Reset Switch are the same switch. Pushing the switch once will tension the strap; pushing the switch after tensioning will complete cutting, the heat sealing, and return the machine to the ready position.

If the switch is pushed and held, the machine will complete a full cycle.

d. In the event of a failure of any microswitches in the machine, and/or breaking of the round belt, the manual switches can be used to complete the strapping cycle. The machine may be used in this manner until the microswitches and/or the round belt are replaced.

D. VERY HIGH TENSION

The Model CMA-818 is equipped with a special timer (press bar timer) to be used in high tension application. This timer is located inside the machine in the left hand corner (Part #275 on Electrical Parts Diagram). When high tension is required and welds of the two straps pop open easily, turn press bar timer up until a consistent weld is achieved. The press bar timer holds the center press bar (Part #69 on Part Diagram 1) in place longer to achieve a better weld.

7. TROUBLESHOOTING

7.1 PROBLEMS AND HOW TO SOLVE THEM

A. STRAP JAMMED IN THE FEED/REVERSE ROLLERS OR STRAP GUIDES

a. Turn the motor switch off.
b. Pull the strap out of the machine. (Figure 4)
If the strap remains jammed, the roller bracket (A) must be removed.(see Figure 5)

B. REMOVING THE ROLLER BRACKET (A)

a. Remove hex socket head bolt M6.
b. Strike the roller bracket holding arm (Part #135 on Part Diagram 2) lightly so that the holder arm moves away from the roller bracket (A). (Part #123)
c. Disengage the spring pin and release the holding arm from the roller bracket (A)
d. Remove set screw M4 at pin intersection.
e. Remove pin.
f. Lift roller assembly and clear jam.

Note: Do not loosen or change position of hex nuts painted red, marked #1 in Figure 5.

TO REASSEMBLE THE ROLLER BRACKET (A) FOLLOW THE SAME PROCEDURE IN REVERSE.

C. STRAP NOT FEEDING PROPERLY - OSCILLATING BACK AND FORTH

This occurs when the roller contacts the strap guide. Remove the roller bracket (A) loosen flat head screw for fixing the strap guide and then refix the strap guide with a clearance of 1.00mm, (.039") (see Figure 5).

D. IMPROPER SEAL

A heater temperature setting that is too low or too high will cause failure of the strap seal. The temperature setting should be between 3 and 5 on the temperature control dial for ambient temperatures of 45F to 95F. For freezer or outside use where ambient temperature is below 45F, higher settings can be used.

a. Low Heater Temperature - The strap has no trace of having been melted and is easily peeled off.

Remedy - Raise heater temperature.

b. High Heater Temperature - The strap is deformed, curled, or improperly placed together and not sealed.

Remedy - Lower heater temperature.

Note: If both remedies fail, set heater to #3 position and increase press bar timer. This timer should be factory set to "0".

E. IMPROPER FEEDING OF THE STRAP THROUGH THE SEALING HEAD

a. This can be caused by the front clamp bar (Part #79 on Part Diagram 1) being too high. Turn the motor switch "OFF" then back "ON" again. This will reset cams to home position.

b. Check LS-1, located under the slide table of the sealing head. Contact Lever must move freely and can not be bent (see Figure 8).

F. IMPROPER TENSIONING

Machine goes into reverse or tension, but does not stop, and heat sealing does not take place, either.

This occurs when a soft article is being loosely strapped. The cause is failure of the friction disc (Part #176 on Part Diagram 2) to stop the motion of the gears. (Part #129 on Part Diagram 2).

Remedy - Increase the tension by turning the tension adjusting nut. (see Strap Tension, Figure 3). Turn nut in a clockwise direction one or two turns. Then turn the motor switch "OFF". Wait until the motor comes to a complete stop, and then turn the motor switch "ON" again. Test. If same failure occurs, increase tension again and test.

This condition may also be caused by oil on the reverse tension roller (Part #117 on Part Diagram 2) causing the strap to slip. Oil on clutch plate pulley (Part #175), pulleys (Part #139,210), round belt (Part #143) would create the same trouble. Keep the rollers and pulleys free of oil at all times. This problem may occur when round belt is broken. To correct this problem the round belt should be replaced.

7.2 USEFUL REFERENCES

USEFUL REFERENCES

TROUBLE	CAUSES	SOLUTIONS	REFERENCES
Strap does not feed	Feed timer is faulty	Replace	Part #254
	Timer is set to "0"	Turn it on	Part #254
	Arm Lever of LS-3 is not engaging switch when cam rotates	Adjust Lever position	Fig.6
	LS-3 is faulty	Replace	Part #86-2
	Relay is faulty	Replace	Part #257-1
	Solenoid is faulty	Replace	Part #98
	Rectifier is faulty	Replace	Part #258
	Oil on rollers	Clean	Fig.7
	Strap is not threaded through brake arm release	See instruction on inside door panel	
Strap is pulled back after completion of one cycle	Short circuit of LS-1	Replace	Part #86
	LS-1 lever is bent or stuck	Repair or Replace if bad	Part #87 Fig.8
	Relay is not making contact	Replace	Part #257-1
20 Amp. fuse blown	Short circuit of rectifier	Replace	Part #258
	Short circuit of spark killer	Replace	Part #269
	Short circuit	Check wiring	
Failure to seal	Failure of Temperature	Replace	Part #268
	Control or heating	Replace	Part #265
	Soiled contact point of heater plate	Wipe off oil or foreign matter	Part #111-1
	Incorrect angle of heater plate	Adjust	Part #111-1 Fig.9
	Broken heater wire	check wiring	
	Heater temperature is too high or too low	Lower or Raise	Part #268
	Insufficient cooling of weld after cycle with high tension	Increase press bar timer	Part #275
	Weak heater spring	Replace spring	Part #71 Fig.9

Strap is fed, but failure to tension	LS-1 is faulty	Replace	Part #86
	Relay is faulty	Replace	Part #257-1
	Solenoid is faulty	Replace	Part #98
	Oil on feed/tension roller	Clean	Part #117
	LS-5 is faulty	Replace	Part #270
	Electro magnetic clutch is faulty	Replace	Part #273
Strap is placed around package but no sealing takes place	LS-2 is aulty	Replace	Part #86-1
	Relay is faulty	Replace	Part #257-1
	Round belt on		
	LS-2 is broken	Replace	Part #143
	LS-3 is not making contact	Adjust	Fig.10 Fig.6
	LS-5 is stuck	Replace if bad	Part #270
	LS-6 is faulty	Replace	Part #271
	LS-7 is stuck	Replace if bad	Part #272

8. OPERATING SEQUENCE

(Numbers in bracket ( ) refer to line numbers on wiring diagram (10.2). Reference numbers refer to Parts list.)

Strap is inserted, closing LS-1 (15), energizing RY (12) through LS-5b, (15), LS-1 (15). Electro Magnetic Clutch (17) is energized through RY-b(17) and cams start to turn. LS-6(16) and LS-5a (14) close and LS-5b (15) opens. RY (12) is maintained through LS-6 (16) and RY-a (16). Cam continues to turn until feedback cam (ref.24) lifts bearing (ref. 167) causing feedback arm (ref. 165)to rise, forcing roller bracket (A) (ref. 123) to pivot on pin (ref. 124) moving back roller (ref. 177) downward engaging the strap in reverse and tension.

Simultaneously, LS-6 (16) opens, deenergizing RY (12), which deenergizes electro magnetic clutch (17)(ref. 273), stopping cam rotation at this point. When strap is tight around package, friction disc (ref. 176) slips against clutch plates (ref. 170 & 175,175-1), shaft stops turning and inertia force causes snap arm (ref. 146) to momentarily close LS-2 (14), energizing RY (12) through LS-5a (14).

Electro magnetic clutch (17) is energized through RY-b (17), turning cams. LS-6 (16) closes, maintaining RY (12) through RY-a (16). Cam continues to rotate moving heater in and out and moves press bars to sealing position. At this point, LS-6 (16) opens, deenergizing RY (12) which deenergizes electro magnetic clutch (17) stopping cam rotation. Simultaneously, LS-7 (8) closes, energizing press bar delay closing timer TR-2 (8).

When TR-2 times out, contacts TR-2 (12) close, energizing RY (12). RY-b (17) energizes electro magnetic clutch (17) initiating cam rotation. LS-6 (16) closes maintaining RY (12) through RY-a (16). LS-7 (8) opens, resetting timer TR-2 (8). When cams reach home position, LS-6 (16) opens, deenergizing RY (12) which deenergizes electro magnetic clutch (17), stopping cam rotation. LS-3 (1) closes at home position energizing timer TR-1 (1). Contacts TR-1 (2) close, engaging feed solenoid (5) (ref. 98) through the rectifier (3).

Solenoid pulls down on feedback arm (ref. 165), forcing roller bracket (A) (ref. 123) to pivot on pin (ref. 124) moving the front roller (ref. 117) into contact with the strap, prefeeding it for the next cycle. When timer TR-1 (1) times out, contacts TR-1 (2) open, removing power from feed solenoid. Machine is now ready for next cycle.

9. PART LISTS

9.1 ELECTRICAL PARTS

ELECTRICAL PARTS

CODE	PART NO.	PART NAME	QTY	TYPE
86 (**)	LS-1	Microswitch	1	VV-15-3A, 2 pins
86-1(**)	LS-2	Microswitch	1	AH-4100, 3 pins
86-2(**)	LS-3	Microswitch	1	VV-15-3A, 2 pins
98 (**)	SOL (*)	DC Solenoid	1	Caster, 3 Kgs
99 (**)	M (*)	Motor with Starter	1	Caster, 1/3HP,4P-180W
251-1	SW	Lighted up Switch	2	Dreft, 18A
253	TO	Thermal Overload	1	6A
254 (**)	TR1 (*)	Feed Timer	1	TRY-P, AC, 5 Seconds.
257-1(**)	RY	Power Relay	1	HP-2, AW5222, DC24V
258 (**)	SI-RF	Silicon Rectifier	2	S4VB
259 (**)	F	Tube Fuse	1	20A
260 (**)	FF (*)	Fume Extractor Fan	1	AC
261	FH	Fuse Housing	1	Plastic
262 (**)	LS-4	Safety Switch	1	Z-15GW22-B
263	TRS	Reset Switch	1	Red,25mm Diameter.
264	FSW	Feeding Switch	1	Green,25mm Diameter.
265 (**)	IHT (*)	Instant Heating	1	Caster, 1.8V
268	TMR	Temperature Dial	1	0-7 Scales
269 (**)	ZNK (*)	Spark Killer	1	NEC
270	LS-5	Limit Switch	1	Z-15GW22-B
271	LS-6	Limit Switch	1	Z-15GW22-B
272	LS-7	Limit Switch	1	Z-15GW22-B
273	EMC	Electro Magnetic Clutch	1	0.6 Kgs, DC24V
274	TF (*)	Transformer	1	Step Down 24V.
275 (**)	TR2 (*)	Press Bar Timer	1	SH-3, AC, 3 Seconds.

Remark: The part numbers, being marked with (*), are all AC 110 Volts. If the parts required, other than 110 Volts, such as 220 Volts or 240 Volts, are also available if they were specified before delivery.

Note: Recommended spare parts are marked (**).

9.2 PARTS FOR CAM, GRIPPER, PRESS & SEPARATOR

PARTS FOR CAM, GRIPPER, PRESS & SEPARATOR

CODE	PART NO	QTY	PART NAME
1	7101	1	Cam Bracket
2	B-6x25	4	Hex bolt
	WS-6	4	Spring Washer
5	5x5x100	1	Parallel Key (round ends)
6	5x5x15	1	Parallel Key (round ends)
8	7103	1	Bearing Housing (A)
9	BH-6x25	3	Hex Recessed Head Bolt
	WS-6	3	Spring Washer
10	BH-6x45	1	Hex Recessed Head Bolt
	WS-6	1	Spring Washer
11 (**)	6003ZZ	2	Bearing,17x35x10
12	7104	1	Press Front Grip Cam
13	SH-6x6	4	Hex Socket Head Set Screw
14	7106	1	Separator Cam
15	7107-1	1	Heater Rear Grip Cam
17	7113	1	Bearing Housing (B)
20	7115-2	1	Motor Pulley
23	7122	1	Microswitch LS-3 Bracket
24	7123	1	Feedback Cam
26	SH-6x8	1	Hex Socket Head Set Screw
42 (**)	YF-4	1	Reduction Gear
43	B-6x25	4	Hex Recessed Head Bolt
	WS-6	4	Spring Washer
	WP-6	4	Plain Washer
45	5x5x20	1	Parallel Key (round ends)
64	7201-1	1	Clamp Bar Guide
65	BH-6x55	2	Hex Socket Head Bolt
66	BH-6x25	2	Hex Socket Head Bolt
	WS-6	2	Spring Washer
67	7202	1	Clamp Bar Guide Lid
68	BH-6x20	2	Hex socket Head Bolt
69 (**)	7203	1	Press Bar
70 (**)	PR-3x18	3	Spring Pin
71 (**)	7210	5	Return Spring
72	7211	2	Machine Screw
74 (**)	7213	1	Rear Clamp Bar
75	7214	3	Plunger
76 (**)	635ZZ	5	Micro bearing, 5x19x6
77 (**)	PR-5x16	3	Spring Pin
78 (**)	7215	3	Plunger Spring
79 (**)	7218	1	Front Clamp Bar
80 (**)	7301	1	Slide
81	BH-5x5	1	Hex Socket Head Bolt
82 (**)	PR-4x16	1	Spring Pin
83 (**)	7302-1	1	Separator
84	SR-3x15	3	Cross Recessed Round Head Screw
	AL-1	1	Arm Lever
	WS-3	2	Spring Washer

86 (**)	LS-1,	1	Microswitch, 2 Pins
86-1(**)	LS-2,	1	Microswitch, 3 Pins
86-2(**)	LS-3,	1	Microswitch, 2 Pins
87 (**)	7305	1	Switch Lever
88 (**)	7346	1	Switch Lever Hinge Pin
89	7308	1	Spring Hook
90	7314-2	1	Separator Arm
91	PR-5x20	1	Spring Pin
92	BH-5x25	1	Hex Socket Head Bolt
	Wp1-5	2	Plain Washer
	N1-5	2	Nut
93	SR-4x20	1	Cross Round Head Machine Screw
	N1-4	1	Nut
94	7318-3	1	Pin
95	7325-1	1	Base Guide (A)
96	BH-5x16	4	Hex Socket Head Bolt
97	SR-4x12	2	Cross Recessed Round Head Machine Screw
	WS-4	4	Spring Washer
98 (**)	SOL	1	DC Solenoid
98-1	7316	1	Mandrel
	Z-12	1	Rubber O-Ring
98-2	7317	1	Collar
99 (**)	M	1	Motor
222	B-6x20	2	Hex Bolt
	B-6x25	2	Hex Bolt
	WP-6	4	Plain Washer
	WS-6	4	Spring Washer
	N1-6	4	Nut
226	7332	1	Base Guide (B)
228 (**)	M21	1	V-Belt
229	7341	2	Collar
230	WP-5	1	Plain Washer
238	E4	1	Snap Ring
239	7249	1	Cutter Holder
240	BH-5x20	2	Hex Socket Head Bolt
262 (**)	LS-4	1	Limit Switch
270	LS-5	1	Limit Switch
271	LS-6	1	Limit Switch
272	LS-7	1	Limit Switch
273	EMC	1	Electric Magnetic Clutch
301	7700	1	Spring Holding Arm
305	7250	1	Reduction Gear Pulley
306	7251	1	Limit Switch Cam

Note: Recommended spare parts are marked (**).

9.3 PARTS FOR HEATER, FEED ROLLER & STRAP GUIDE

PARTS FOR HEATER, FEED ROLLER; & STRAP GUIDE

CODE	PART NO	QTY	PART NAME
102	7404-1	1	Heater Arm
103	7405	1	Pin
104	N1-8	1	Nut
	WS-8	1	Spring Washer
105	E7	1	Snap Ring
106	PR-4x36	2	Spring Pin
107	7408	1	Side Plate
108	7409	1	Heater Base
111-1 (**)	7410	1	Instant Heating Plate
117	7504	4	Roller
118	7504-1	1	Roller Shaft
120	5x5x16	6	Key
121	SH-5x6	4	Hex Socket Head Set Screw
122	7505	1	Roller Shaft
123	7506	1	Roller Bracket (A)
124	7507-1	1	Pin
125	7508	1	Collar
126	SH-5x6	4	Hex Socket Head Set Screw
127	7509	2	Teflon Gear
128	7510	8	Collar
129	7511	1	Teflon Gear
130	7512-1	1	Spring
131	7513	1	Adjusting Screw
132	WS-6	4	Spring Washer
	N1-6	9	Nut
133	7514	1	Adjusting Nut
133-1	7518	4	Spring Housing
134	7515	1	Steel Gear
134-1	7516	1	Steel Gear
135	7519	1	Roller Bracket Holding Arm
136	BH-5x16	2	Hex Socket Head Bolt
137-1	7524-1	1	Counter Shaft
138	5x5x19	3	Parallel Key
139	7520	1	Pulley
140	CH-22	1	Stop Ring
142	608ZZ	1	Bearing, 8x22x7
143 (**)	7595	1	Round Belt
144	58531	1	Shaft
145	E9	1	Snap Ring
146	7535-1	1	Snap Arm
148	7536	1	Bracket
149	BH-6x20	2	Hex Socket Head Bolt
151	SR-3x20	2	Cross Recessed Round Head Machine Screw
	WS-3	2	Spring Washer
152	7537	1	Pin
153	N1-6	1	Nut
	WS-6	1	Spring Washer
154	7538	1	Spring
155	7542	1	Tension Adjusting Nut

156	6002ZZ	9	Bearing, 15x32x9	220
156-1	6002Z	2	Bearing, 15x32x9	
157 (**)	7M500	2	V-Belt	
158	7551	1	Roller Bracket (B)	221
159	BH-6x25	4	Hex Socket Head Bolt	
160	7552-1	1	Bearing Housing (C)	
161	BH-6x20	2	Hex Socket Head Bolt	223
	WS-6	2	Spring Washer	224
	WP1-6	2	Plain Washer	231
162	7554	1	Roller Shaft	232
163	5x5x38	1	Key	233
164	7555	1	Roller Shaft	
165	7556	1	Feedback Arm	234
166	PR-5x20	1	Spring Pin	235
167 (**)	635ZZ	1	Micro Bearing, 5x19x6	
168	7557	1	Feedback Arm Pin	260
169	N1-8	1	Nut	265
170	7567	1	Pulley	274
175	7577	1	Clutch Plate Pulley	302
175-1	7577-1	1	Clutch Plate	303
176 (**)	7579-1	2	Friction Disc	
177	71508	1	Joint	304
180	WP1-6	4	Plain Washer	
181	BH-5x12	1	Hex Socket Head Bolt	
184	7586	1	Stopper Bracket	Note
185	BH-5x12	2	Hex Socket Head Bolt	
186	7587	1	Spring	
187	7588	1	Spring	
190	SH-6x8	1	Hex Socket Head Set Screw	
192	7602	1	Roller	
193 (**)	7614-1	1	Inlet Cover	9.4
194	SR-4x10	4	Cross Recessed Round Head Machine Screw	
	WS-4	4	Spring Washer	
195 (**)	7615-1	1	Outlet Cover	
196	SR-4x12	5	Cross Recessed Round Head Machine Screw	
	WS-4	5	Spring Washer	
197	7620	1	Front End Guide	CODE
198	SR-5x12	2	Cross Recessed Round Head Machine Screw	
	WS-5	2	Spring Washer	11
199	7622-1	1	Pin	42
200	GS-10	2	Grip Ring (Shaft)	69
201 (**)	7638-1	1	Outlet Guide	70
203 (**)	7639-1	1	Center Guide	71
204	SF-4x6	12	Cross Recessed Round Head Machine Screw	74
205 (**)	7640-1	1	Inlet Guide	76
206 (**)	7461-1	1	Center Cover	77
207 (**)	7642-1	1	Center Side Cover	78
208	7643	1	Front End Adjusting Plate	79
209 (**)	7644	1	Strap Adjusting Plate	80
210	7553-1	1	Pulley	82
211	CH-16	1	Snap Ring (Hole)	83
212	625ZZ	1	Bearing, 5x16x5	86
213	BH-5x30	1	Hex Socket Head Bolt	86-1
214	N1-5	1	Nut	86-2
215	58592-1	1	Collar	87
216	7163	1	Pull Shaft	88
217	SR-4x20	2	Cross Recessed Round Head Machine Screw	98

220	SR-4x20	1	Cross Recessed Round Head Machine Screw
	N1-4	1	Nut
	WP1-5	1	Plain Washer
221	BH-5x12	1	Hex Socket Head Bolt
	N3-5	1	Nut
	WP1-5	1	Plain Washer
223	7503	1	Washer
224	7539-1	2	Spring Retainer
231	7479	1	Hinge Pin
232	7480	1	Hinge Bracket
233	BH-6x20	2	Hex Socket Head Bolt
	WS-6	2	Spring Washer
234	7478	1	Tension Bolt
235	WP-6	1	Plain Washer
	N1-6	2	Nut
260 (**)	FM	1	Fume Extractor Fan
265 (**)	IHT	1	Instant Heating
274	TF	1	Step Down Transformer
302	7601	1	Fan Support Arm
303	BH-6x16	2	Hex Socket Head Bolt
	N1-6	2	Nut
304	7602	1	Double Pulley

Note: Recommended Spare Parts are marked (**).

9.4 RECOMMENDED SPARE PARTS

RECOMMENDED SPARE PARTS

CODE	PART NO	QTY	PART NAME
11	6003ZZ	6	Bearing,17x35x10
42	YF-4	1	Reduction Gear
69	7203	1	Press Bar
70	PR-3x18	6	Spring Pin
71	7210	10	Return Spring
74	7213	1	Rear Clamp Bar
76	635ZZ	5	Micro Bearing, 5x19x6
77	PR-5x16	6	Spring Pin
78	7215	3	Plunger Spring
79	7218	1	Front Clamp Bar
80	7301	1	Slide
82	PR-4x16	1	Spring Pin
83	7302-1	1	Separator
86	LS-1	1	Microswitch
86-1	LS-2	1	Microswitch
86-2	LS-3	1	Microswitch
87	7305	1	Switch Lever
88	7346	1	Switch Lever Hinge Pin
98	SOL	1	DC Solenoid

99	M	1	Motor
111-1	7410	1	Instant Heating Plate
143	7595	2	Round Belt
157	7M500	2	V-Belt
176	7579-1	2	Friction Disc
193	7614-1	2	Inlet Cover
195	7615-1	2	Outlet Cover
201	7638-1	2	Outlet Guide
203	7639-1	2	Center Guide
205	7640-1	2	Inlet
206	7461-1	2	Center Cover
207	7642-1	2	Center Side Cover
208	7643	2	Front End Adjusting Plate
209	7644	2	Strap Adjusting Plate
228	M21	1	V-Belt
254	TR1	1	Feed Timer
257-1	RY	1	Power Relay
258	SI-RF	2	Silicon Rectifier
259	F	2	Tube Fuse
260	FF	1	Fume Extractor Fan
262	LS-4	4	Limit Switch
265	IHT	1	Instant Heating
269	ZNK	1	Spark Killer
275	TR2	1	Press Bar Timer

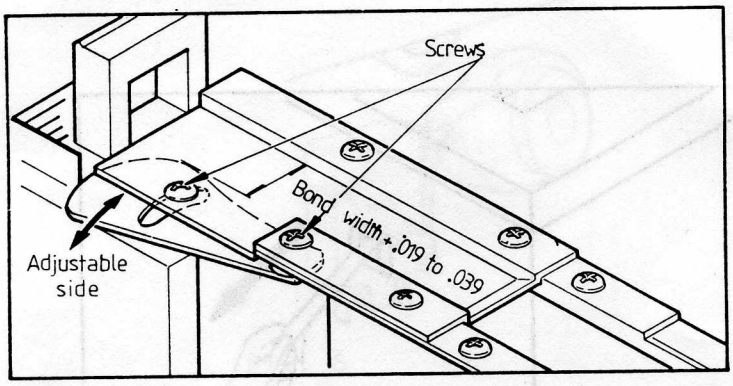


Fig. 1

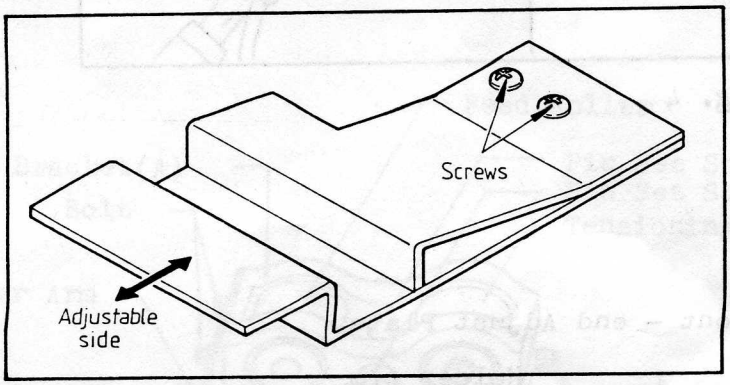


Fig. 2

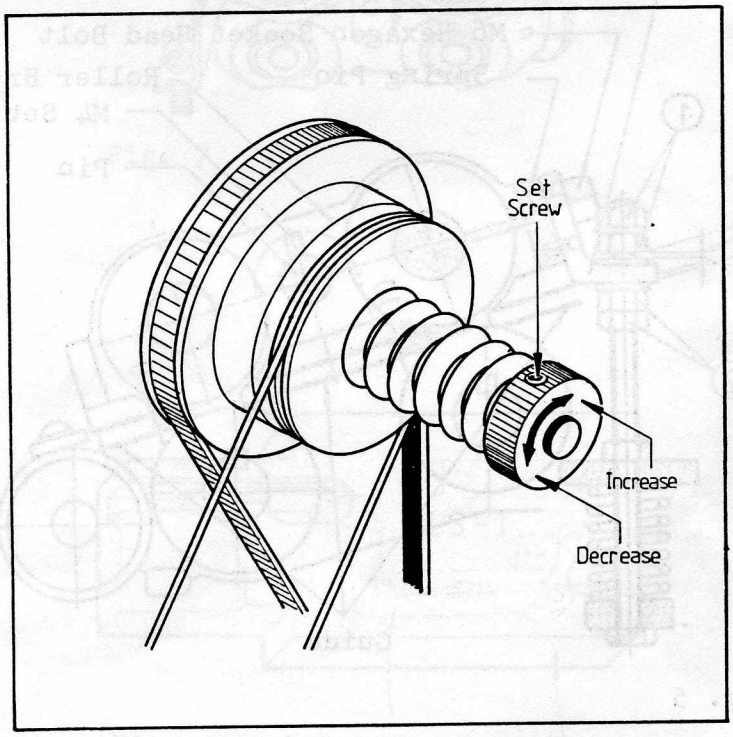


Fig. 3

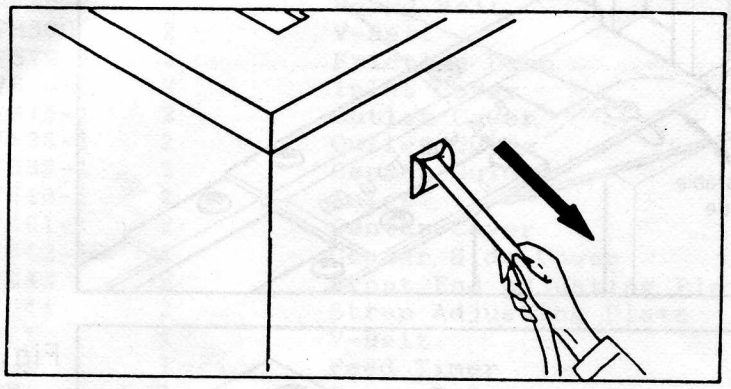


Fig. 4

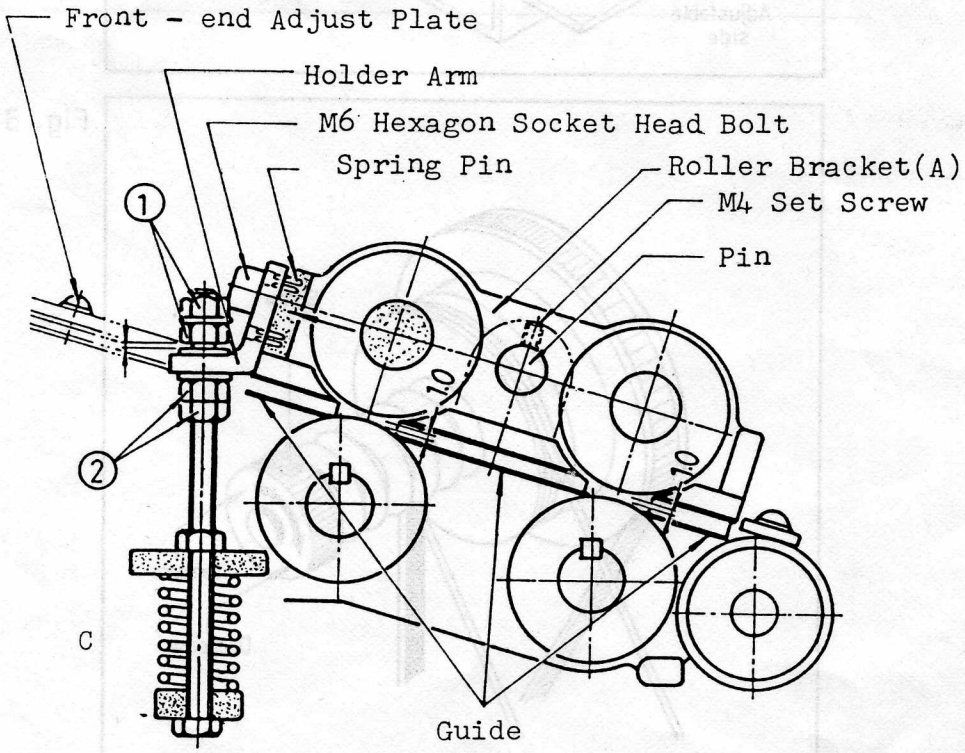

Front - end Adjust Plate
Holder Arm
M6 Hexagon Socket Head Bolt
Spring Pin
Roller Bracket(A)
M4 Set Screw
Pin
1
2
10
10
C
Guide

Fig. 5

Correct Position of Cam when machine stops

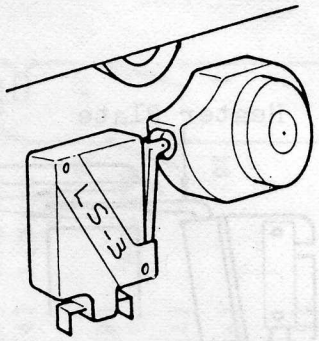


Fig. 6

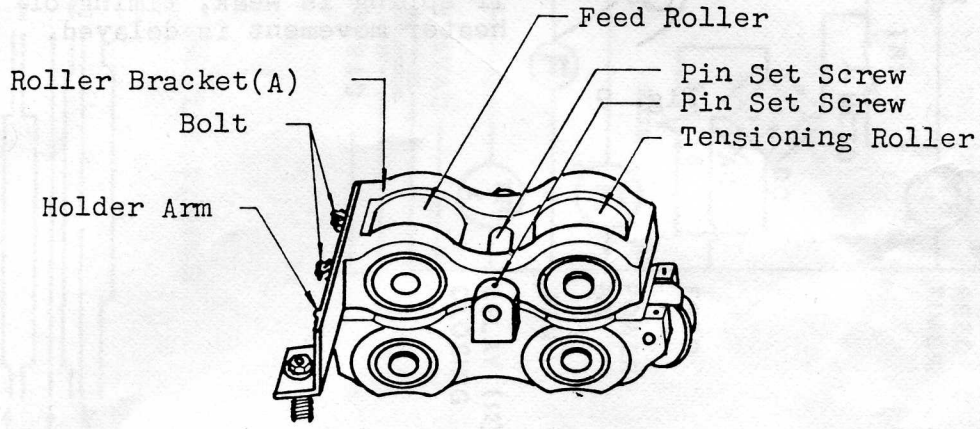


Fig. 7

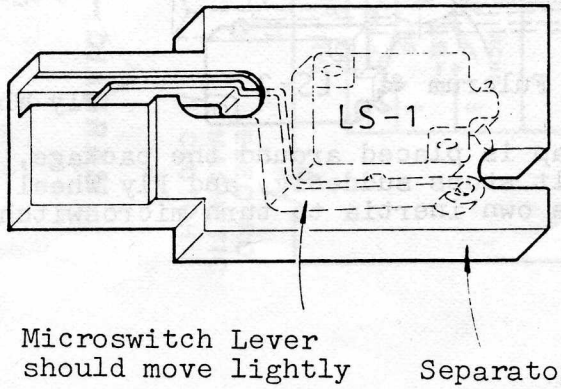


Fig. 8

Adjust to be inbetween overlapping straps and parallel to them.

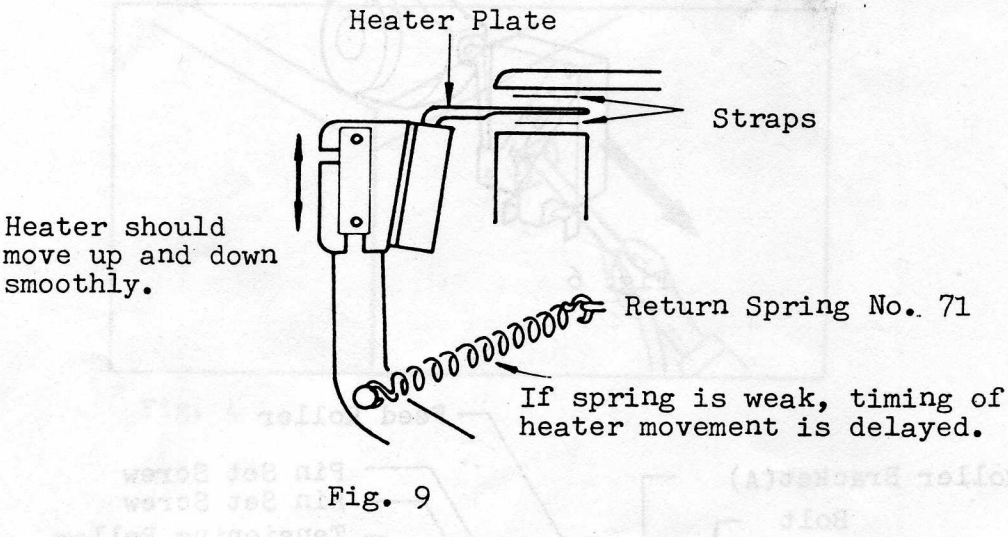


Fig. 9

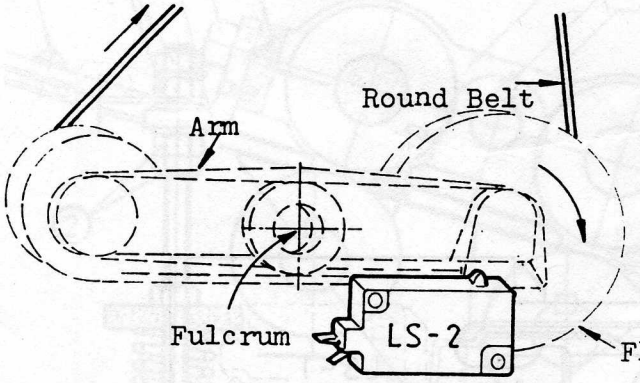
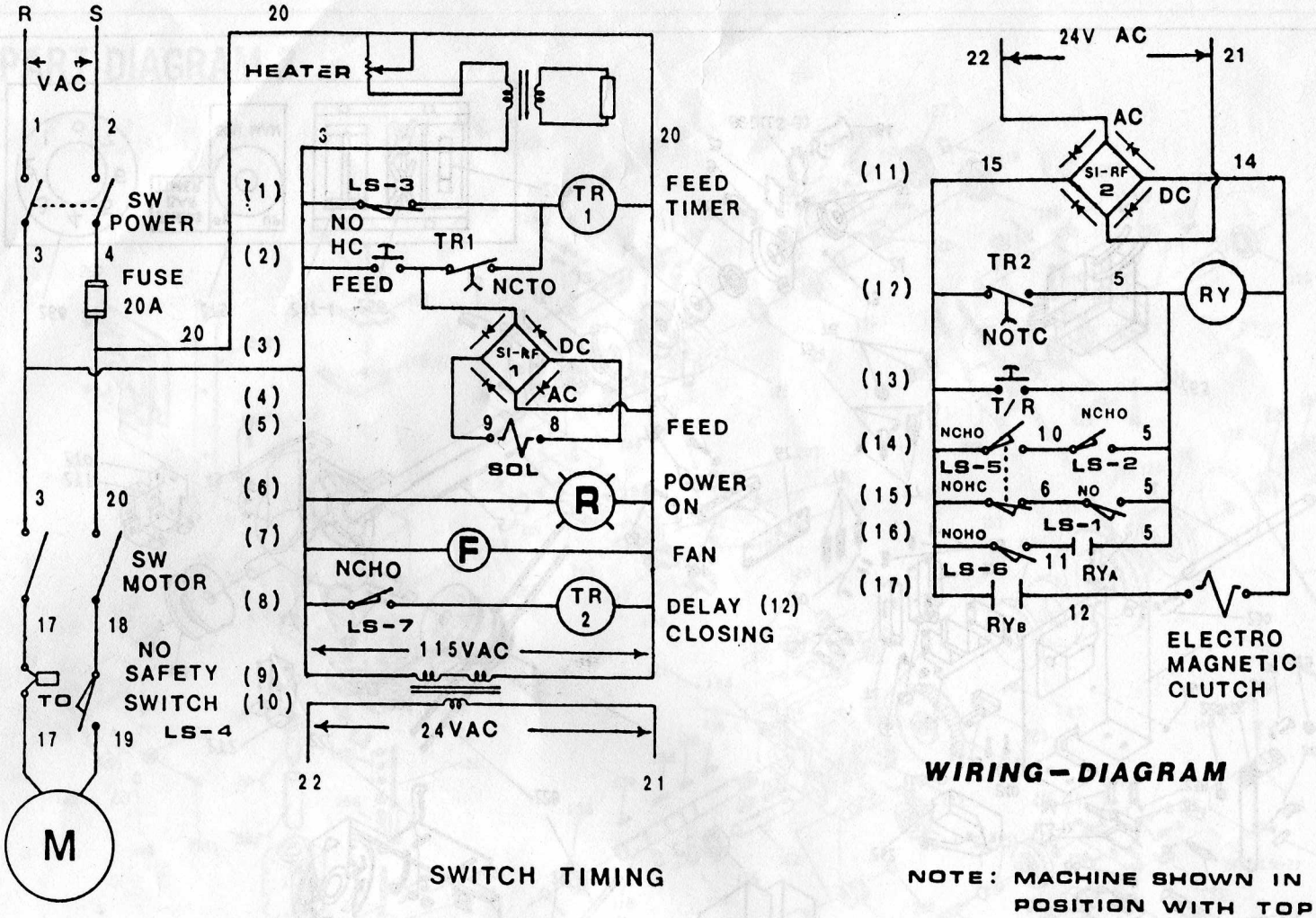


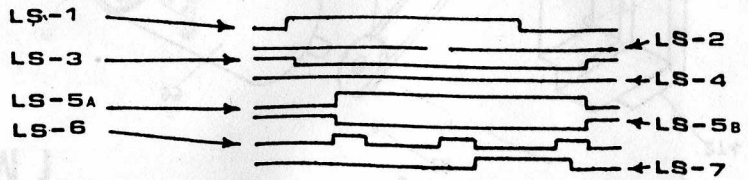
Fig. 10

When strap is placed around the package, the round belt stops suddenly, and Fly Wheel jumps up by its own inertia to turn microswitch LS-2 on.



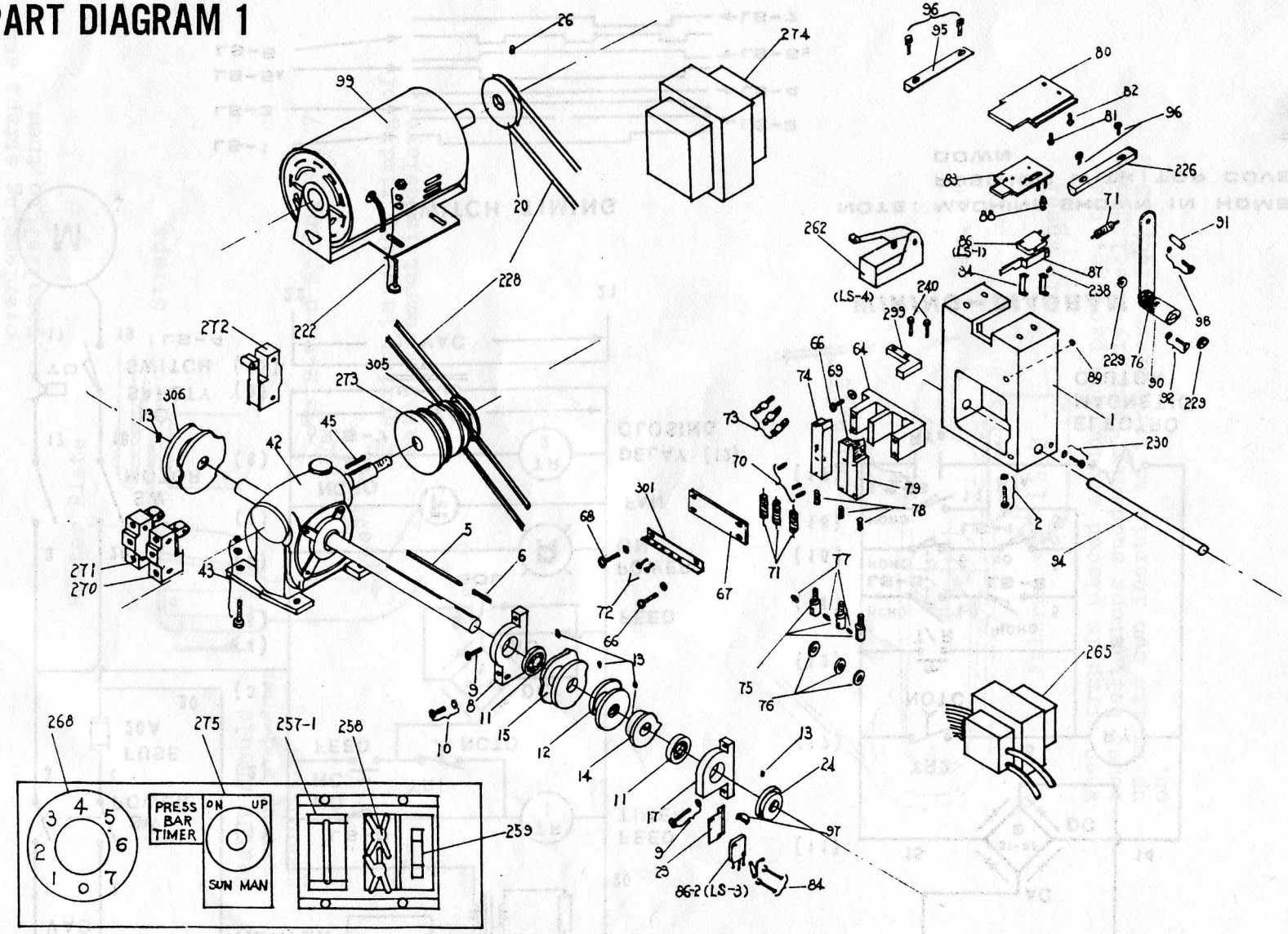
WIRING—DIAGRAM

SWITCH TIMING

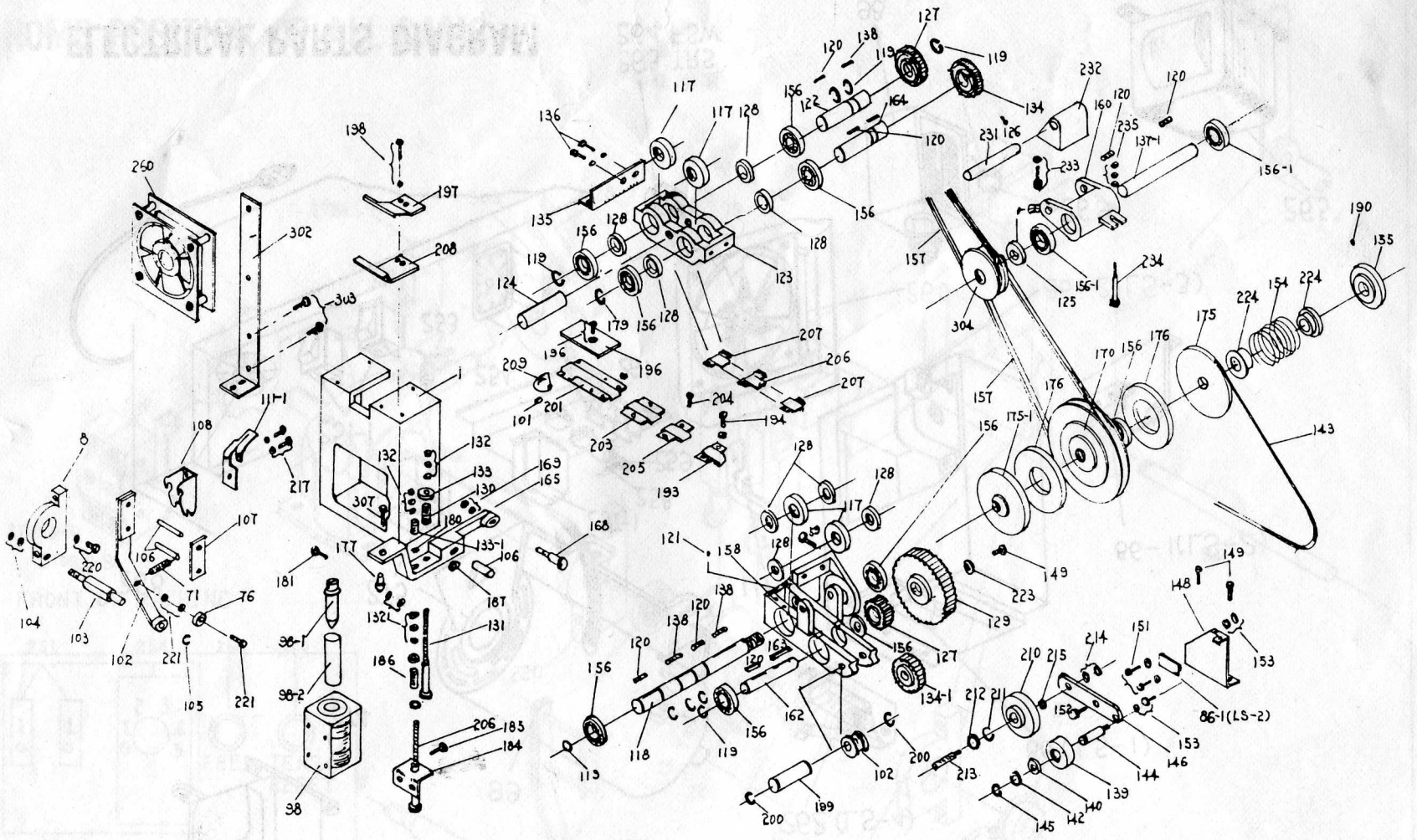


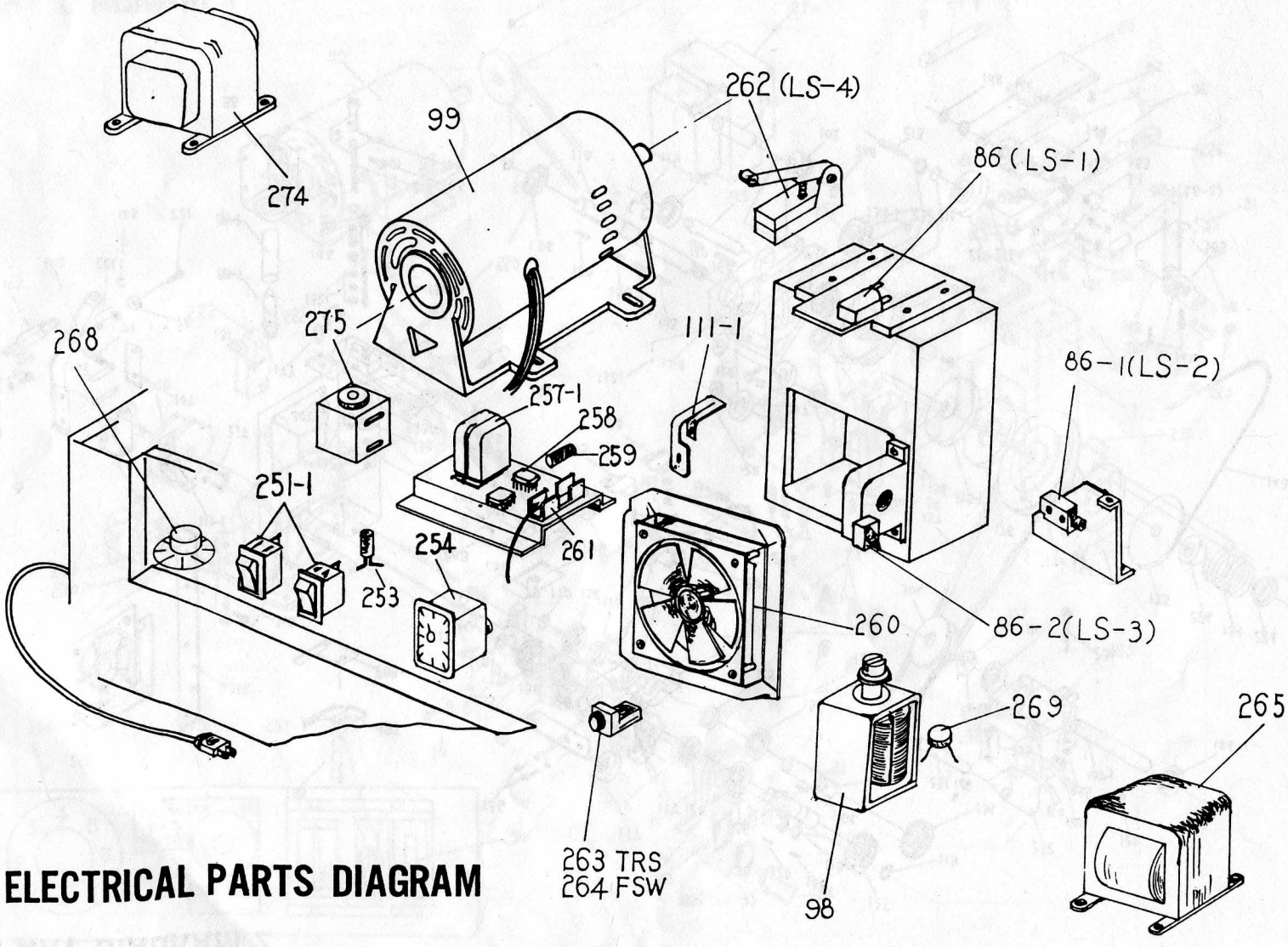
NOTE: MACHINE SHOWN IN HOME POSITION WITH TOP COVER DOWN

PART DIAGRAM 1



PART DIAGRAM 2





ELECTRICAL PARTS DIAGRAM

HOME POSITION OF ALL CAMS