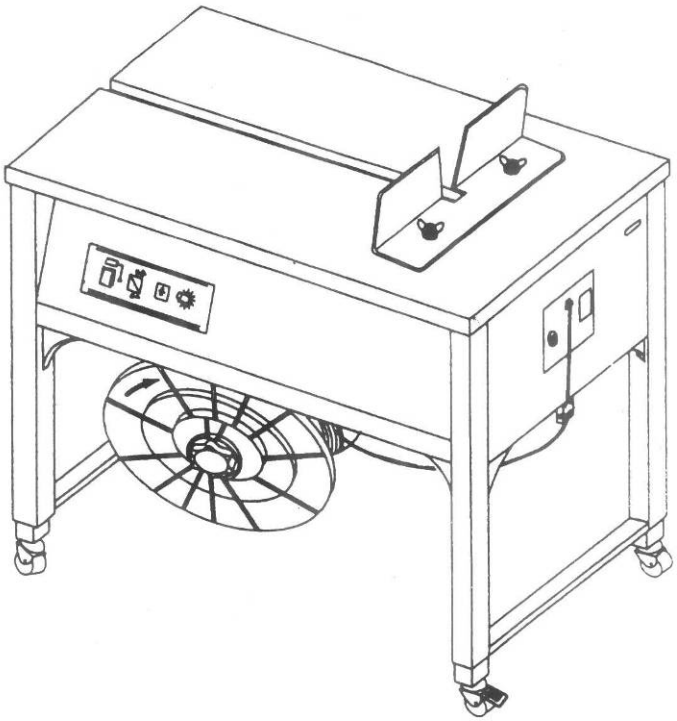
SEMI-AUTOMATIC POLYPROPYLENE

STRAPPING MACHINE

OPERATION & MAINTENANCE MANUAL



SAFETY INSTRUCTIONS

Read these safety instructions before operating
or servicing your strapping machine.

1. Before operating the machine , pleases fit over voltage and under voltage protection to the machine .
2. Wear eye or face, and hand protection. Do not wear loose clothing.
3. Keep hands or other parts of the body out of the strap chute area during operation.
4. The temperature of the heater plate is very high .Do not touch.
5. Do not insert strap while there is not a package on the operation table.
6. Do not replace any safety parts of different specifications.
7. Shut off all electric power after machine operation or servicing machine.
8. Do not use water or steam to clean the machine.
9. Keep this operation manual at your strapping machine . Refer to it often.



Specification

NO	DESCRIPTION		REMARKS
1-1	DIMENSION	LENGTH	895mm
		WIDTH	565mm
		HEIGHT	740mm
1-2	SEALING METHOD		HEAT SEALED
1-3	STRAP WIDTH		5-15mm
1-4	MACHINE TENSION		5-50kg
1-5	NET WEIGHT		100kg
1-6	ACOUSTIC NOISE		65dB(A)

Operating Requirements

NO	DESCRIPTION	REMARKS
2-1	AMBIENT TEMPERATURE	5~40°C
2-2	RELATIVE HUMIDITY	35~85%RH
2-3	INSTALLATION ALTITUDE	1000M(MAX)
2-4	TRANSPORT/STORAGE TEMPERATURE	-25~55°/70°C

TABLE OF CONTENTS

MAJOR COMPONENTS

In Fig 1.thru 4 the major components of the machine and the strapping head are shown in detail.

A detailed description of additional systems and specific components follows.

STRAP DISPENSER:

The dispenser supplies strapping material to the strapping head .It is located inside the cabinet on the lower left-hand side. A friction brake is provided to limit over-run of strap.

1. GRIP-The grip holds the lead end of the strap beneath the anvil while the remainder of the strap is being tension around the package.
2. STRAP FEED AND TENSION-Both feed and tension are achieved by two sets of gear rollers powered by an electric motor by means of a drive-belt and slip-clutch system.

   An operator controlled adjustable timer controls the duration of strap feed. When the set time for feeding is up, the timer stops feeding strap. If additional feed is required beyond that determined by the timer setting, jog feed will be facilitated by pushing the “Jog” feed button on the operator’s control panel.
3. WELDING AND CUT-OFF-Welding of the strap ends and cutting of the strap supply are facilitated in this process.
4. PACKAGE REKEASE-After a short weld-cool period (necessary to avoid welded ends from popping open) the package is released.

(Note:) The above mentioned functiond:1,3 and 4 are driven by a cam shaft coupled to the drive system by means of an electromagnetic clutch which turns one full revolution per cycle.

HOT KNIFE. The “Hot Knife” is centrally located at the front of the strapping head Movement of the knife is controlled by a cam.

ELECTRICAL SYSTEM, An all electrical system using solid state technology supplies continual power supply to the electrical components within the machine. Using simple to insert circuit boards provides for safe and fast maintenance free operation.

OPERATOR CONTROLS. The Electrical Control Panel consists of the “Main Power ON-OFF Switch” “Feed Length Timer,” “Reset Switch” and “Feed Length Switch” (Jog Feed).

INTRODUCTION

This manual contains safety, operating, and maintenance instructions for the Semiautomatic Power Strapping Machine. This model is designed to strap packages with plastic strap 1/4 “to 5/8” (6mm to 15mm) wide. The strap ends are joined by means of “hot-knife” welding process.

EXTERIOR MACHINE

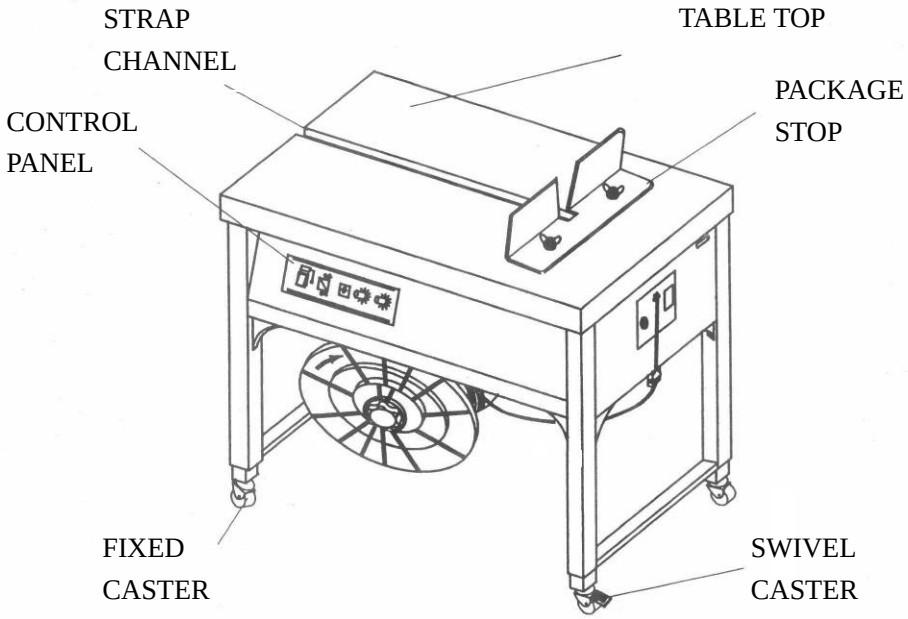


FIGURE1. MAJOR COMPONENTS, EXTERIOR

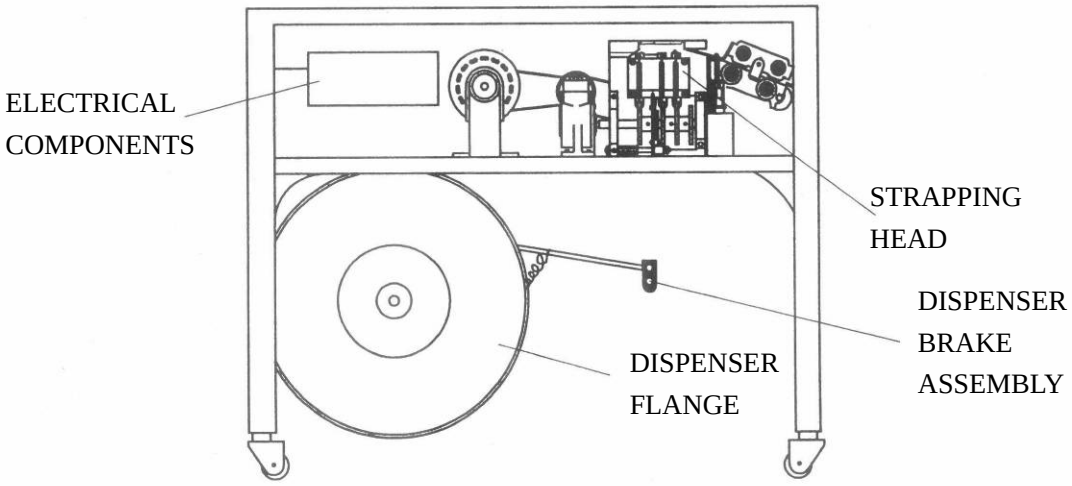


FIGURE2. MAJOR COMPONENTS, FRONT VIEW

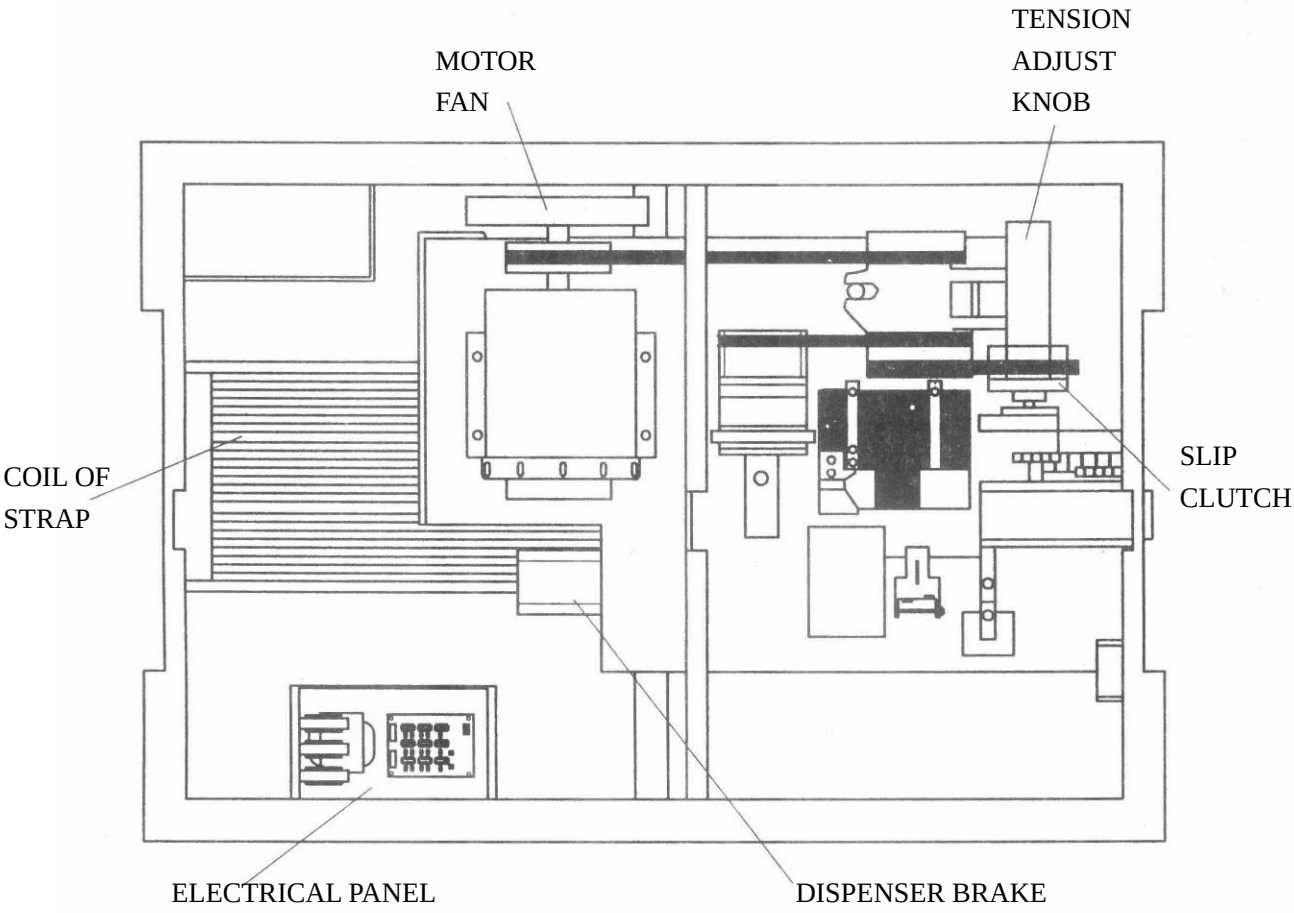


FIGURE 3. MAJOR COMPONENTS, TOP VIEW

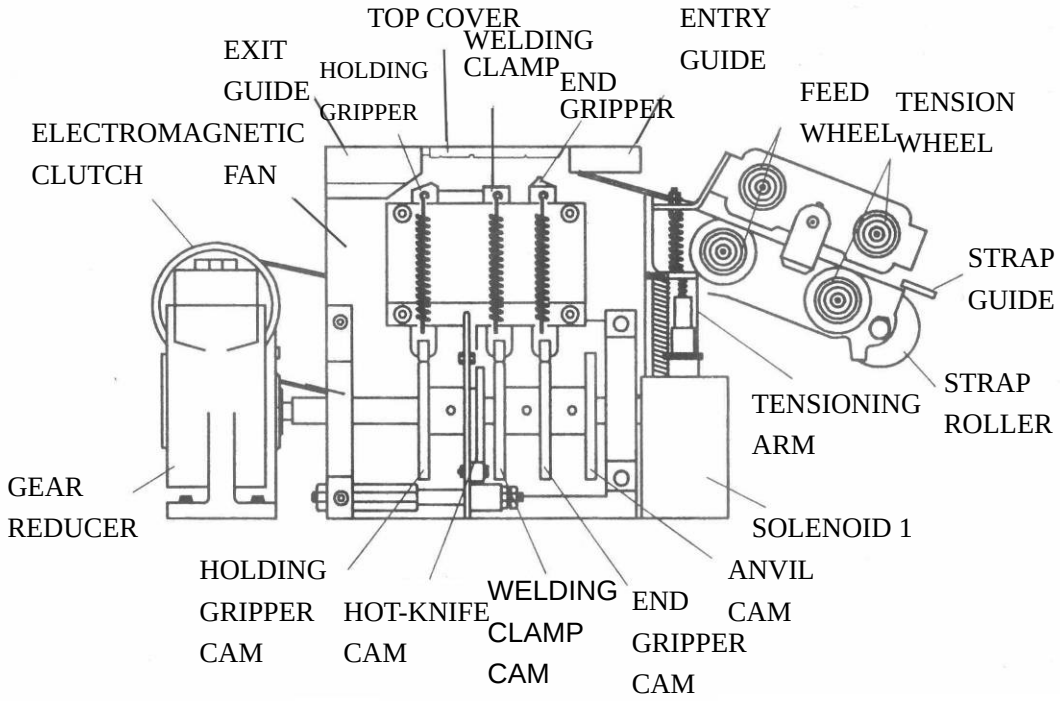


FIGURE 4. MAJOR COMPONENTS, STRAPPING HEAD

INSTALLATION

Installation of the machine, requires that the machine be uncrated, placed in it's proper position and secured in place once strap of the proper size is loaded and the power cord is plugged into the appropriate electrical outlet. Remove the screw on the top cap of speed reducer for ventilation.

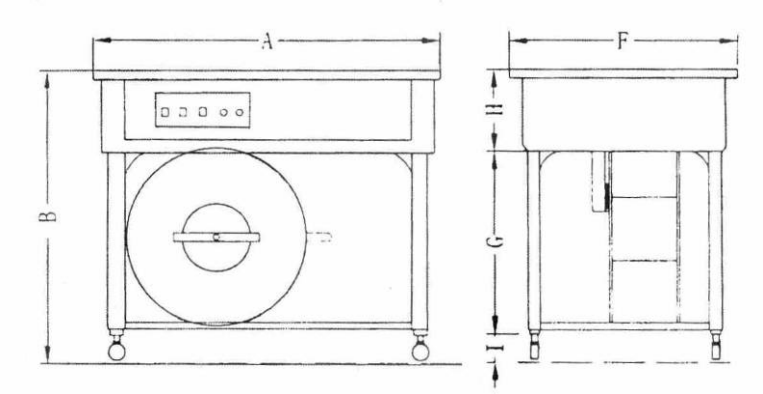
One set of tools and spare parts is packed with each machine for use in making adjustments and for replacement of parts as needed. Please compare your supplied tools with the following list:

TOOLS PARTS

1 Phillips screwdriver(4")
2 8mm/10mm open end wrench
1 5mm Allen wrench
1 4mm Allen wrench
1 3mm Allen wrench
1 2.5mm Allen wrench

SPARE PARTS

1	104G001	Micro switch, heavy(LS-1)
1	2201210020	Tension spring, short
1	2201011022	Tension spring, long
1	2201213047	Brake spring
1	4-01000-150	Retainer, top cover holder



A-895mm	G-400mm
B-740mm	H-230mm
F-565mm	I-110mm

FIGURE 5. INSTALLATION DIMENSIONS AND CLEARANCES

OPERATING INSTRUCTIONS

OPERATOR'S CONTROLS

Control Panel. The control panel is located on the left-hand side of the front panel of the machine.
Refer to Figure 6.

(1) Power Switch.
Push on the button to make red light glow, which shows that all electrical circuits and the electric motor are energized. Then you can operate the machine. Push down the button, power supple is cut off. If the machine is stopped incidentally(not in "reset" mode),push on the button, the machine resets automatically

(2) Manual Feedback/Reset switch When the green light is lighted, press the button, you can feedback PP strap; When the yellow light is lighted, press the butt ion, you can reset the machine.

(3) Manual feed
When in "reset" mode (green light is lighted), you can press the button to feed PP strap manually.

(4) Length Adjustment knob.

Turn knob clockwisely, you can make machine feed bond longer automatically.

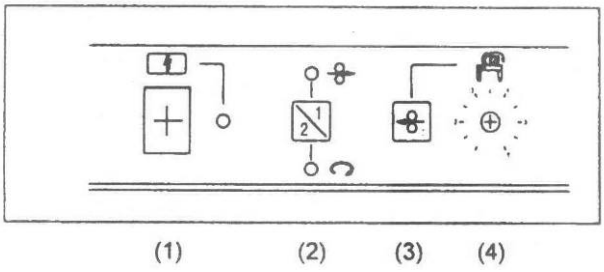


FIGURE6.OPERATOR'SCONTROL PANEL

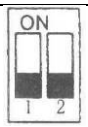
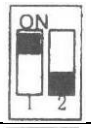
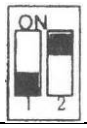
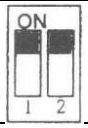
COOLING TIME ADJUSTMENT

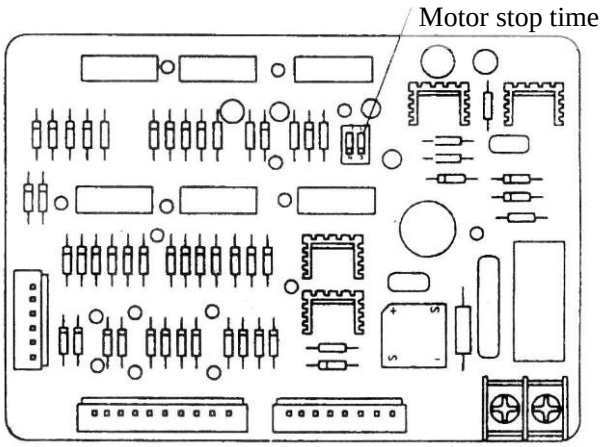
The cooling time adjustment on your machine allows the user to adjust the cooling time to meet his strapping qiurement. Please refer to page 34, turn the knob clockwise, the Cooling time is longer.

MOTOR STOP TIME DIP-SWITCH ADJUSTMENT

The motor stop time adjustment on your machine allows the user to adjust the motor stop time. Please follow the steps below to adjust the stop time of the motor.

Attention: Before making any dip-switch changes Power must be OFF

Motor stop time is about 10'	
Motor stop time is about 20'	 OR 
Motor stop time is about 30'	



LOADING STRAP IN MACHINE

Refer to Figure 7. and proceed as follow:

1. Withdraw the dispenser assembly. Place the assembly as shown.(Fig.7,P.6)
2. Turn the reel nut hand wheel to disengage from the roll pin that protrudes from the shaft.
3. Lift the plastic flange B from the dispenser shaft.
4. Place a coil of strap on the plastic flange A allowing the shaft to poke through the plastic wrap. Pay-off must be from the top of the coil if the friction brake is to operate properly, as shown in Figure11.

5. Replace the Plastic B and reinstall the Reel nut hand wheel.
6. At this time the securing straps can be removed from the coil of strap.
7. Place the dispenser assembly back into the rearend of the machine, Make sure the assembly is placed in properly. The Reel nut hand wheel should be positioned to the right. This can be verified by noting that the drag arm of the friction brake contacts the Plastic flange A.
8. When installed, close the rear panel door.

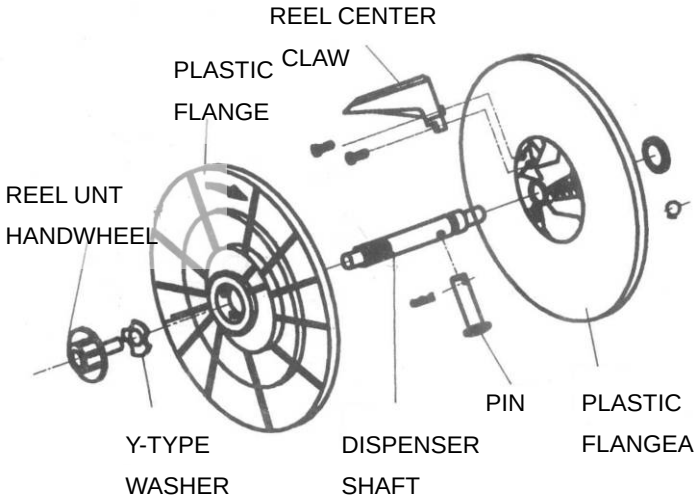


FIGURE 7. DISPENSER ASSEMBLY

Please follow instruction below to adjust the Reel center claw (part NO. #4-07000-130) for various inner coils. Refer to Fig. 8:

1. For 200mm inner coil diameter, position 2 holes on the Reel center claw (Item 6) to #1 and #3 holes of the Plastic Flange A (Item 7).
2. For 230mm inner coil diameter, position 2 holes on the Reel center claw (Item 6) to #2 and #4 holes of the Plastic Flange A (Item 7).
3. For 280mm inner coil diameter, position 2 holes on the Reel center claw (Item 6) to #3 and #5 holes of the Plastic Flange A (Item 7).

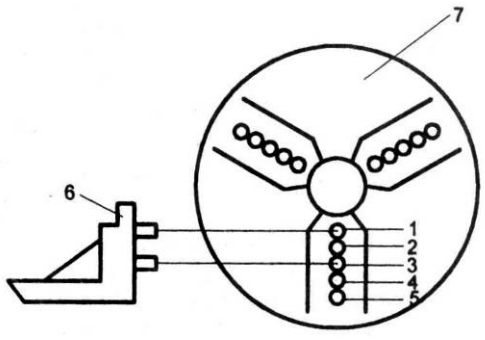


FIGURE 8. THREADING STRAP THROUGH MACHINE

The threading procedure involves routing strap from the dispenser and up through the strapping head.
Refer to Figure 9 and proceed as follows:

1. Open the right-hand door and pull about 3 feet (1M)of strap from the coil.
2. Thread the strap through the looper (B), pass it under roller (C) and allow it to exit the cabinet. Close the right-hand door.
3. Pull up on the strap, then insert the lead-end between the guide and roller (D).
4. Continue to push the strap through the head until it can be seen at point (E).

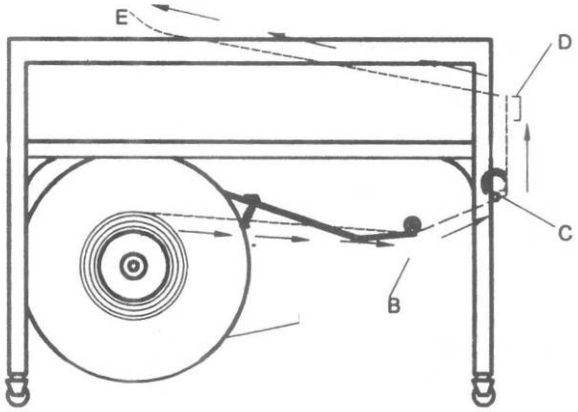


FIGURE 9. STRAP THREADING DIAGRAM

STRAPPING CYCLE

The machine is now ready for strapping a package.
To operate the EXS-206, proceed as follow:

1. Push the power switch to the “NO” position and allow the hot knife 5 seconds to reach operating temperature.
2. Place a package on the table top, directly above the sealing head. Allow the package to contact the two package stops.
3. Grasp the strap on the left side on the package, bring it over the package and insert the lead-end into the strap closes LS1, the strap will be tensioned, welded and then released, all automatically. “CAUTION!!” Be sure to keep fingers from beneath the strap.
4. Remove the strapped package and note the length of the strap fed out for the next cycle. Adjust the time as needed.
5. Note the condition of the weld and the tension of the tie on the package, If the condition of the weld or the level of tension is unsatisfactory, adjust the hot knife temperature or the tension level as needed. Ref: Operating Adjustments.

OPERATING ADJUSTMENTS

ADJUSTING TENSION

If tension adjustment is required, proceed as follows:

1. Loosen the locking knob at the right hand end of the machine.
2. Turn the knurled knob, located at the rear of the machine, clockwise to increase tension, counterclockwise to decrease tension.
3. When set to the desired tension level, tighten the locking knob.

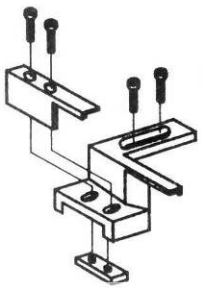


FIGURE 10. EXIT GUIDE

ADJUSTING HOT-KNIFE TEMPERATURE

If the weld appears to be only minimal, it may be that the temperature is improperly set. Make all corrections, in small increments, according to the following condition.

RASING HOT-KNIFE TEMPERATURE

If the weld appears to have insufficient heating, turn the hot-knife rheostat (item 19 on the PC board), in a clockwise direction.

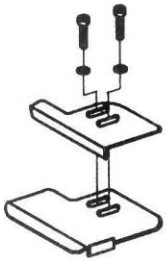


FIGURE 11. ENTRY GUIDE

LOWERING HOT-KNIFE TEMPERATURE

If the condition of the weld appears to have been over heated, turn the rheostat counter clockwise.

STRAP GUIDE ADJUSTMENT TO VARIOUS WIDTH OF P.P. STRAP

1. Strap Guide Adjustment
   Loosen the Socket head cap screws (item #1 #2) and put the upper Strap Guide against the side of Main body block (item #8). Place p.p. strap between upper Strap Guide (item #3) and lower Strap Guide (item #4) properly. Screw those 2 Socket head cap (item #1& #2) screws real tight.
2. Strap Guide Adjustment
   Loosen the Socket head cap screws (item #1 & #2). Place p.p. strap between strap Guide (item #5) and Adjusting strap (item #9). Adjust item #9 to a proper room for the p.p. strap then tighten the Socket head cap screws (item #6 & #7).

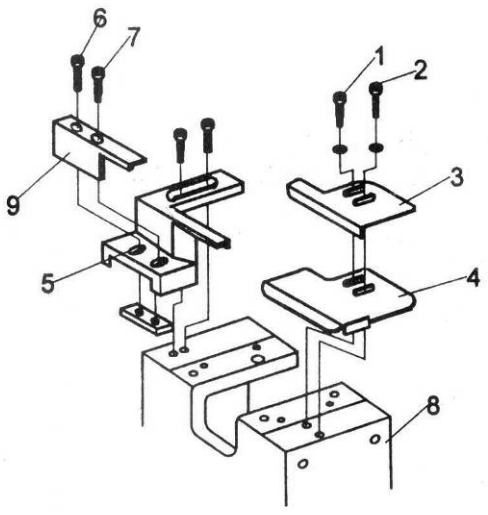


FIGURE 12. GUIDE LOCATION

PRINCIPLES OF OPERATION

GENERL
The strapping cycle can be divided into three distinct operations:
a. Grip and tension.
b. Weld, cut, and release.
c. Feed.

The following descriptions refer to Figures 13 through 18. Note that both the mechanical and the control function of the micro switches are described.

1. NEUTRAL POSITION. When the strap is initially threaded through the machine. It enters the head under the strap guide and over roller D. between two sets of feed and tension rollers and on through a slot in the end gripper. It then passes beneath the anvil. Over the welding clamp and holding gripper and out into the strap channel on the left-hand access to it,

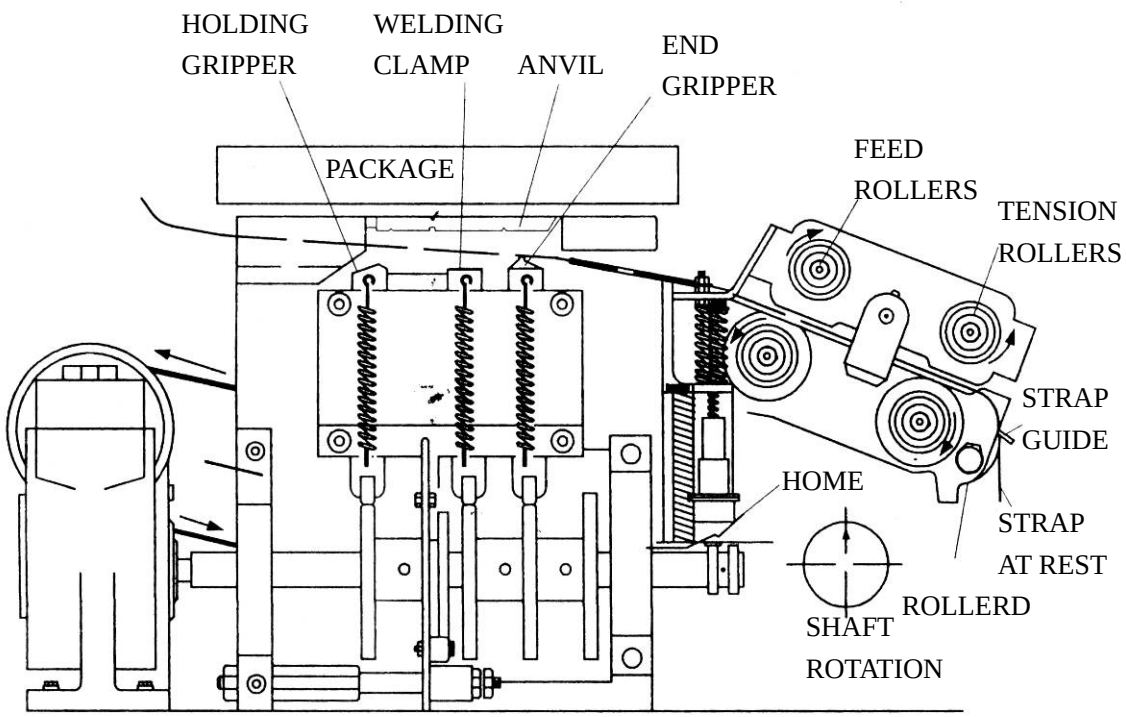


FIGURE 13. NEUTRAL POSITION

2. ENCIRCLING PACKAGE; TRIPPING LS1.

Grip and tension is initiated by the operator who encircles the package with the strap and inserts the strap end into the slot of the upper strap guide on the right-hand end of the machine. In doing so, the strap is guided between the gripper portion of the end gripper and anvil then into a slot in the anvil where it makes contact with the start switch detector lever. As the lever moves to the left, it trips the cycle start switch, LS1.

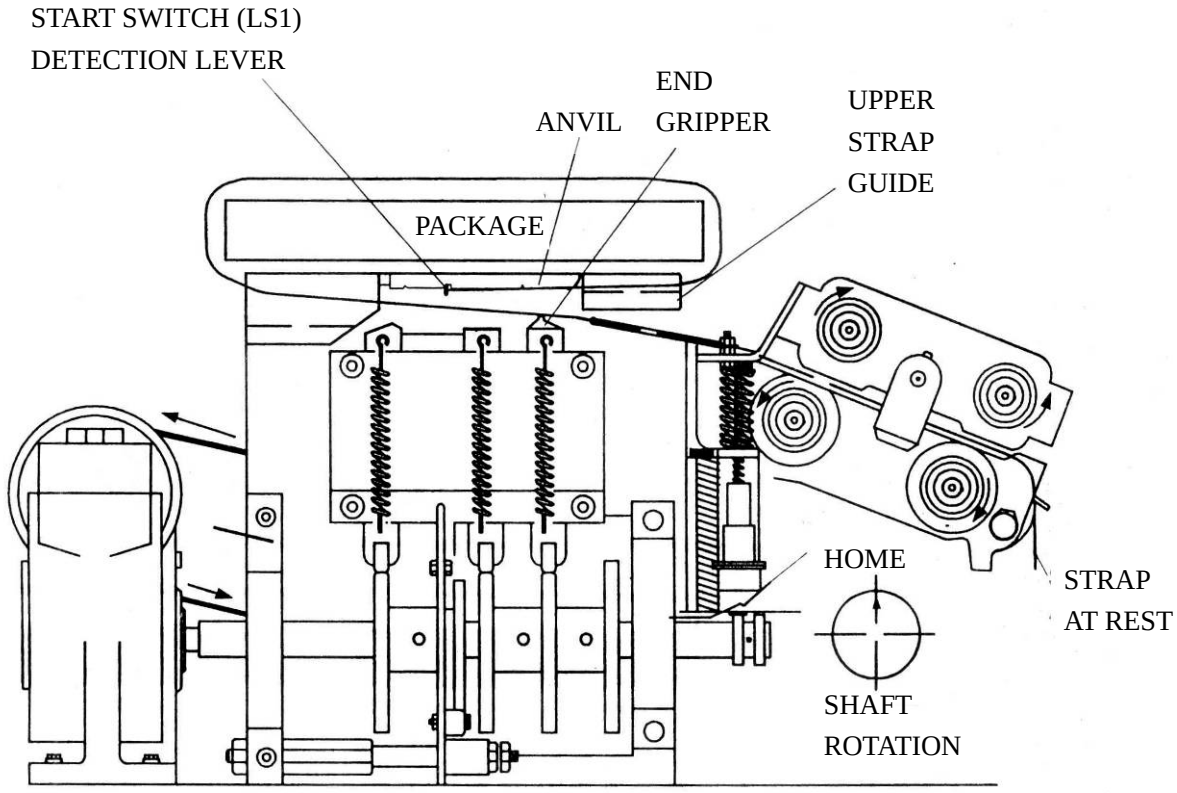


FIGURE 14. ENCIRCLING PACKAGE; TRIPPING LS1

3. TENSION. When LS1 is closed, the electromagnetic clutch energizes and the cam shaft rotates approximately 45 degrees. This small amount of shaft rotation is controlled by LS3, mounted at the right-hand end of the cam shaft. When LS3 closes it de-energizes the electromagnetic clutch and the end gripper will have been moved upward to contain the upper strap beneath the anvil.

The tension lever pivots and closes the tension rollers. The tension rollers close against the strap, drawing it back through the head, thus tensioning it around the package. When full tension detector reacts at same time, the electromagnetic clutch energizes again.

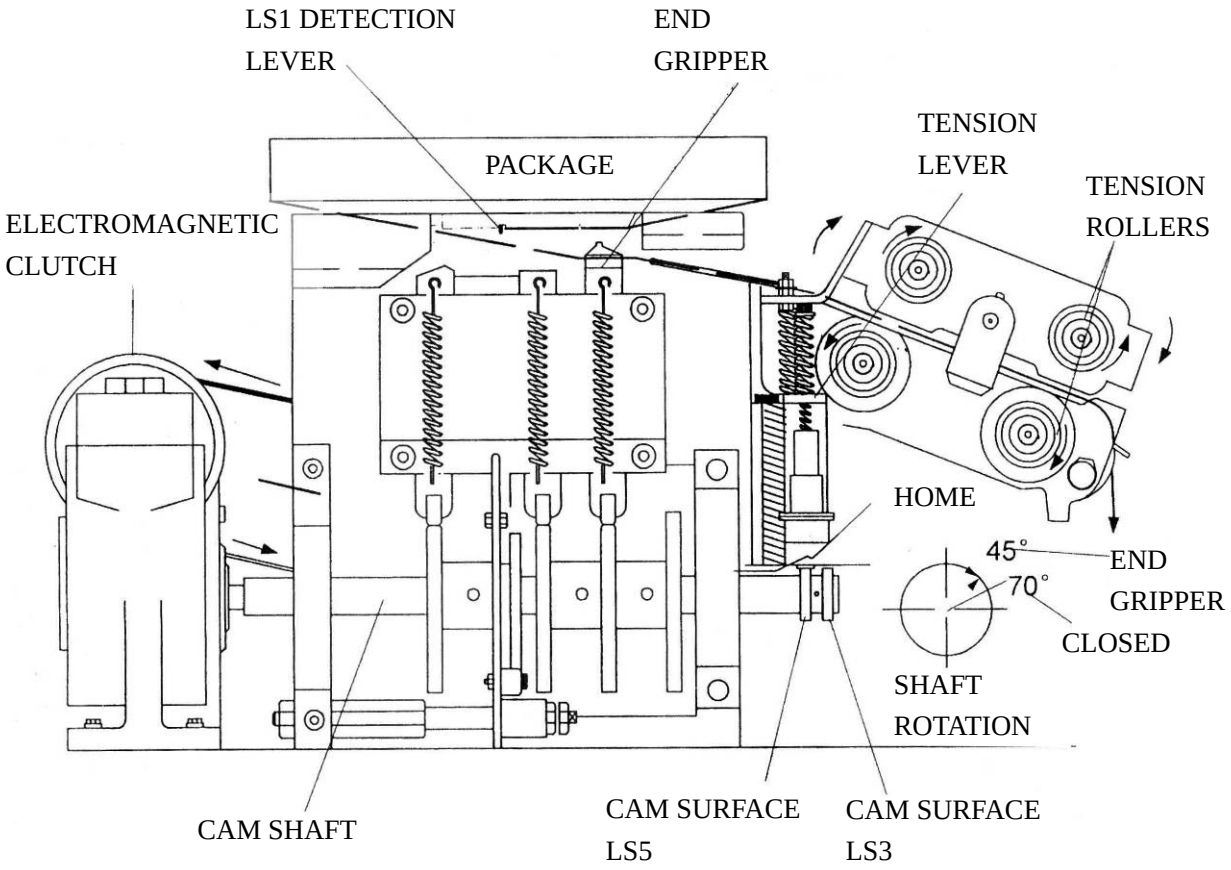


FIGURE 15. TENSION

4. HOLDING GRIPPER RISES; HOT-KNIFE MOVES INWARD. Momentarily electron tension detector energizes the control circuit to energize the electromagnetic clutch and turn the cam shaft. As the cam shaft turns, the holding gripper rises to contain the other end of the strap beneath the anvil. The tension lever is lowered to release tension and the welding clamp begins to rise.

It's important to note that all tension to the strap must be released before the strap is cut, otherwise the strap-end could be damaged and feeding reliability will be affected. The hot-knife moves in between the two layers of strap.

NOTE: TENSION ROLLERS ARE RELEASED AND STRAP IS AT REST.

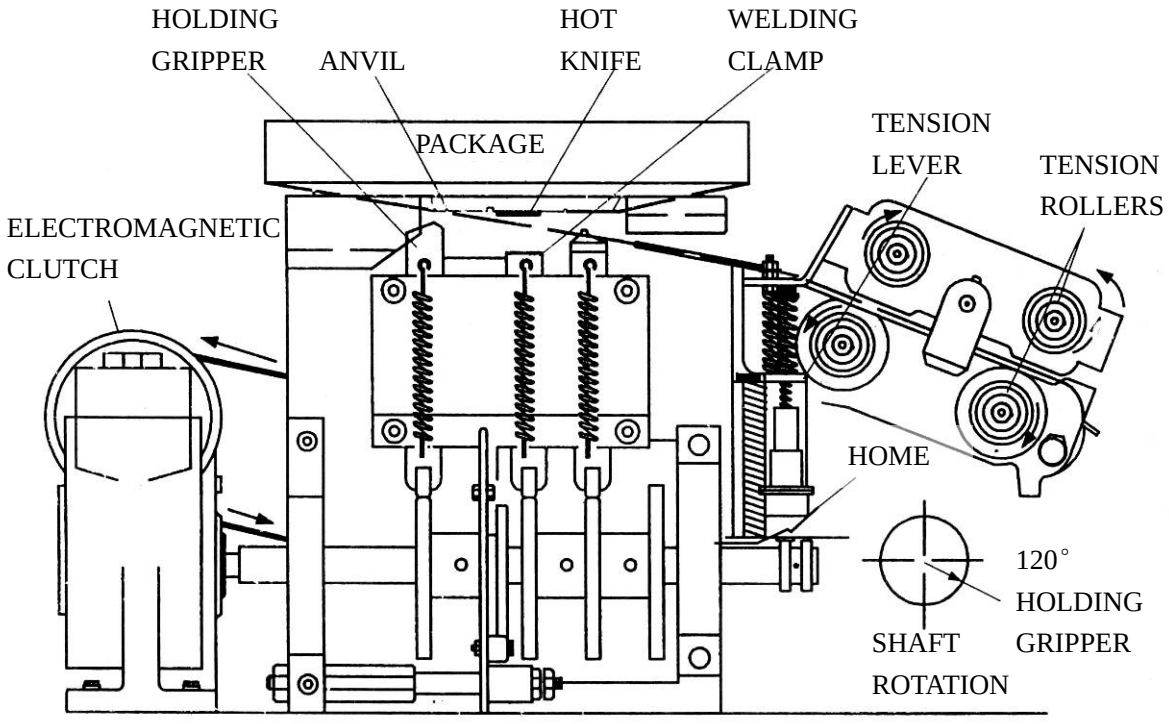


FIGURE 16. HOLDING GRIPPER AND HOT-KNIFE

5. STRAP IS CUT; WELD IS MADE. The welding clamp cuts the strap during it's upward movement then pushes the upper surface of the lower strap against the lower surface of the hot-knife. It then pushes the hot-knife the lower surface of the upper strap.

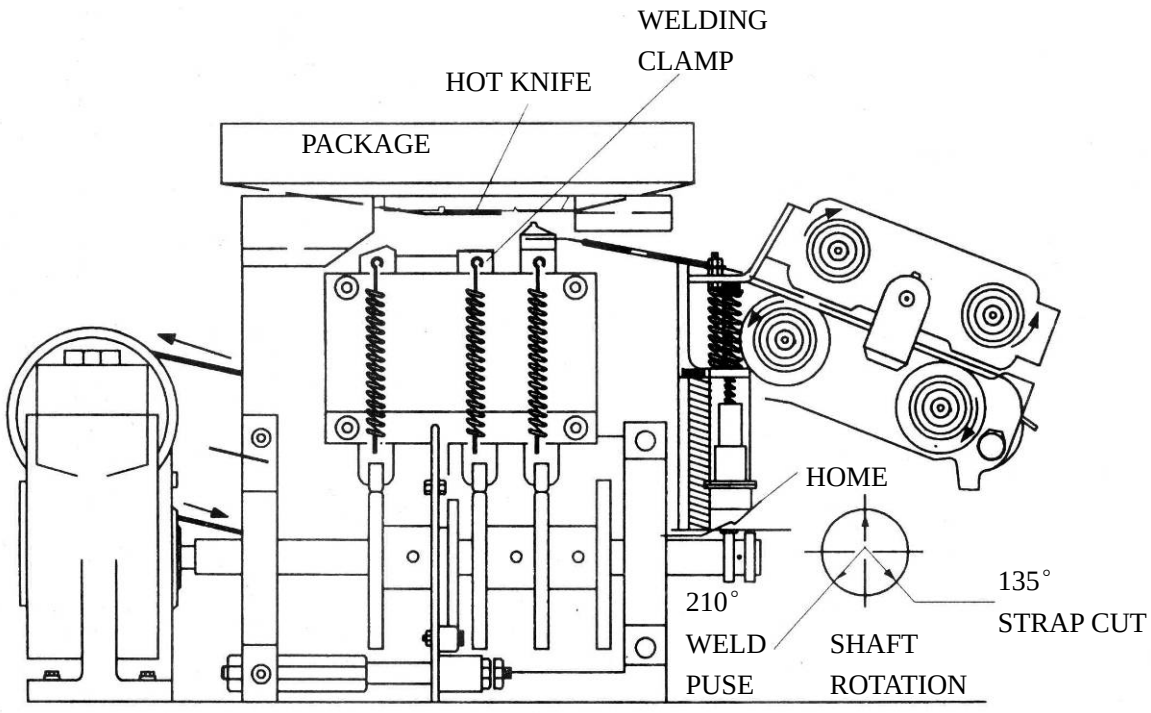


FIGURE 17. STRAP IS CUT & WELD IS MADE

6. WELD IS RELEASED; HEAD RETURNS TO HOME POSITION.

The hot-knife retracts and the welding clamp pushes the two molten surfaces together, welding the strap.

After this short delay to ensure that the strap fuses properly, the cam shaft again turns and the holding gripper retract to the neutral position.

The anvil then retracts and welded strap is released to the lower side of the package.

The cam shaft returns to the home position and closes LS3 and LS5. The electromagnetic clutch is de-energized by LS3 while LS5 energizes SOL1. As the solenoid pulls down on the tensioning lever, the feed rollers close against the strap, pushing it through the head and out into the strap channel. The feed timer de-energizes and sol1 is released.

Strap feed stops and the machine is ready for the next cycle.

NOTE: SOL1 ENERGIZES TO CLOSE FEED ROLLERS AND FEED STRAP AFTER THE CAM SHAFT REACHES HOME POSITION.

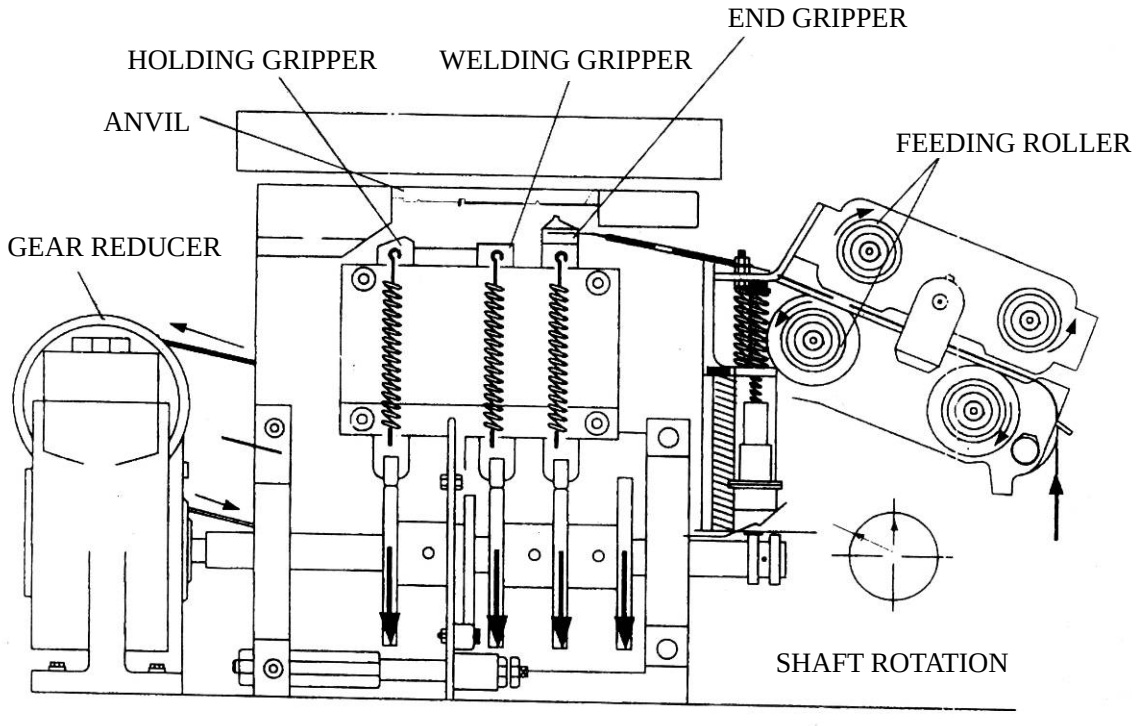


FIGURE 18. WELDING STRAP IS RELEASED; HEAD IS IN HOME POSITION; STRAP FEEDS

ADJUSTMENTS CLEARANCES

Anvil to ensure that anvil operates smoothly a minimum clearance between the anvil and the left and right guides must be maintained. To adjust, proceed as follows:

1. Make sure the right-hand guide is securely mounted.
2. Loosen the left-hand guide mounting screws.
3. Insert a shim, .002” (0.50mm) thick 0..118” (3mm) wide by 5” (130mm) long between the shoulder of the anvil and the left guide.
4. Push the left guide against the anvil and tighten the left guide mounting screws.
5. Remove the shim and check to make sure the anvil moves smoothly.

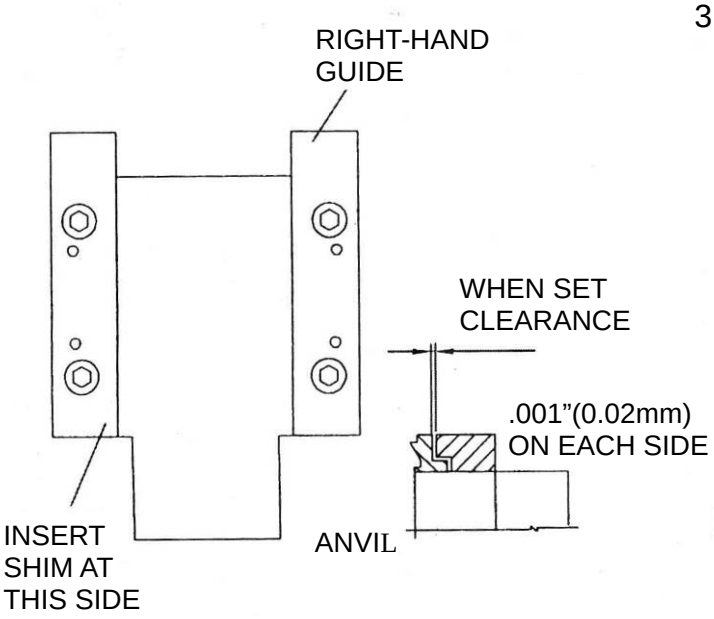


FIGURE 19. ANVIL CLEARANCE

SWITCH CAM: The outer cam actuates LS3. To make sure the cams are set properly, proceed as follows:

1. Make sure the machine is in the neutral or home position.
2. If the micro-switches need adjusting, loosen the mounting screws and LS5 as seen in Figure 20. When properly set, tighten the mounting screws.

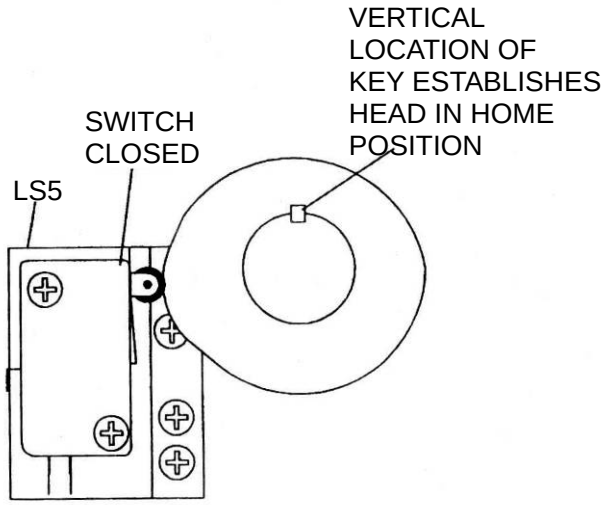


FIGURE 20. LS5

3. Position LS3 as shown in Figure 24. When set, tighten the mounting screws.
   As the cam rotating clockwise, the touching point of micro switch with cam changes from B to A, then the cooling time starts.

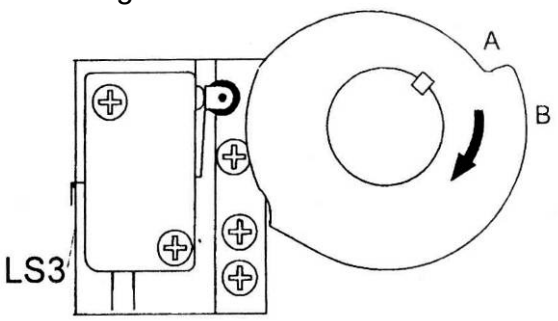
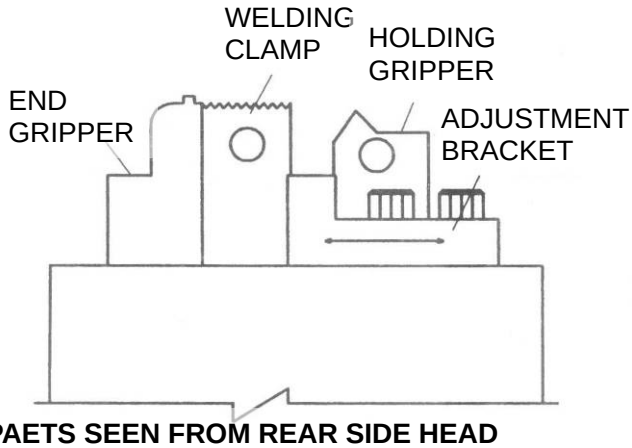


FIGURE 21.LS3

WELDING CLAMP AND END GRIPPER. To adjust the clearance between the welding clapper and the gripper, refer to Figure 22 and proceed as follows:

1. Remove the anvil.
2. Loosen the two socket head cap screws that secure the “L” shaped adjustment bracket to the casting.
3. Push the block left or right to adjust the clearance secure the “L” shaped adjustment bracket to the casting.
4. When set, securely tighten the mounting screw.



PAETS SEEN FROM REAR SIDE HEAD
FIGURE 22. WELDING CLAMP AND GRIPPER CLEARANCE

Note: If the cutting surface of the welding clamp has become dull, the welding clamp can be turned 180 degrees, thus doubling the life of the part.
TENSION LEVER. Before making any adjustments to the tension lever, check to see if the tension lever is in a lever condition. To check and adjust if need be proceed as follows:

1. Manually turn the rotor of the electromagnetic clutch until the key, seen at the end of the end of the cam shaft is positioned as shown in Figure 23.

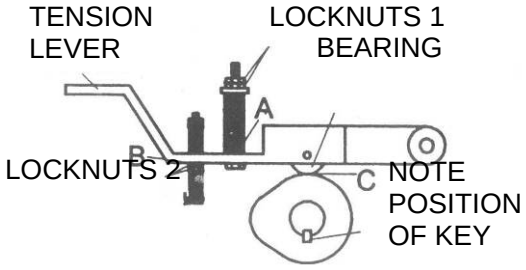


FIGURE 23. ADJUSTING TENSION LEVER

2. Make sure the tension lever bearing is in contact with the surface of the cam.
3. If there is no clearance at point A, B and C then the tension lever is considered lever..
4. If there is clearance at any point, loosen locknuts (1) and (2) and adjust all clearance out at points A, B and C.
5. When set, tighten the locknuts.

FEED AND TENSION ROLLERS. When the machine is in the neutral position. The feed and tension rollers should not come into contact with the strap. The clearance between the rollers should be .040” (1.0mm). To adjust the feed rollers away from the strap proceed as follows:

1. Loosen the locknuts and turn all 4 nuts upward. Make all adjustments in very small increments. When set. Insert a 0.202” (0.5mm) shim between the angle plate and locknut B and tighten locknut A against locknut B

2. Remove the shim and press down on the angle plate. Tighten the locknuts C and D.

To adjust the tension rollers away from the strap reverse the above procedure.

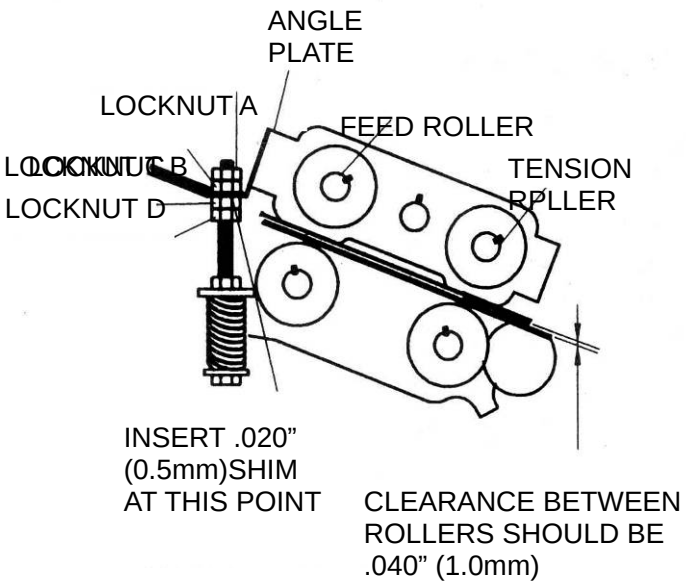


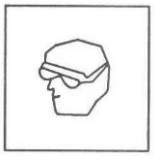
FIGURE 24. ADJUSTING FEED AND TENSION ROLLERS

MAINTENANCE

⚠ WARNING

BEFORE SERVICING MACHINE

Wear safety glasses with side shields which conform to ANS Standard Z87.1



Failure to wear safety glasses could result in severe personal injury or blindness.

PROTECT YOUR EYES

- only trained personnel should service machine.
- Unless specified, shut off and disconnect all electrical power.
- Follow all service instructions.
- Make sure the hot-knife blade is cool before servicing.
- Use the correct tools.
- Never adjust, repair or oil moving machinery.

READ GENERAL SAFETY INSTRUCTION, PAGE 2 OF THIS MANUAL

Note: When you move the machine, you should push it slowly.

GENERAL. Periodic checks of all drive belts for replacement should be made to prevent worn cut or stretched belts which will affect tension.

LUBRICATION. Make sure the machine is clean before applying lubricants to the points shown in the figure below. Note: Use a brush or compressed air to dispose of debris.

TENSION TRIP ARM ASSEMBLY SLEEVES.

Apply a few drops of light machine oil to the edge of the sleeve so that the oil can penetrate to the shoulder of the screw.

TOP SLIDE, GUIDE PLATES, WELDING CLAMP, END GRIPPER, AND HOLDING GRIPPER.

Apply light machine oil to these parts at the point indicated in Figure 25.

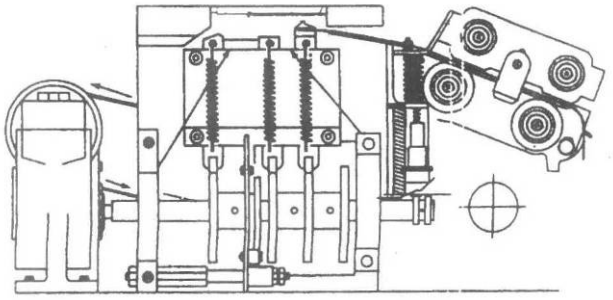


FIGURE 25. LUBRICTION POINTS

REAR REDUCE. Replace the oil in the gear reducer once a year in the following manner:

1. Remove the lower plug and allow the oil to drain from the gearing.
2. Reinstall the lower plug and fill with gear oil.
3. Reinstall the upper plug

Note: The following parts should NEVER be lubricated:

1. Electromagnetic clutch
2. Roller assemblies
3. Belts and pulleys
4. Clutch disc

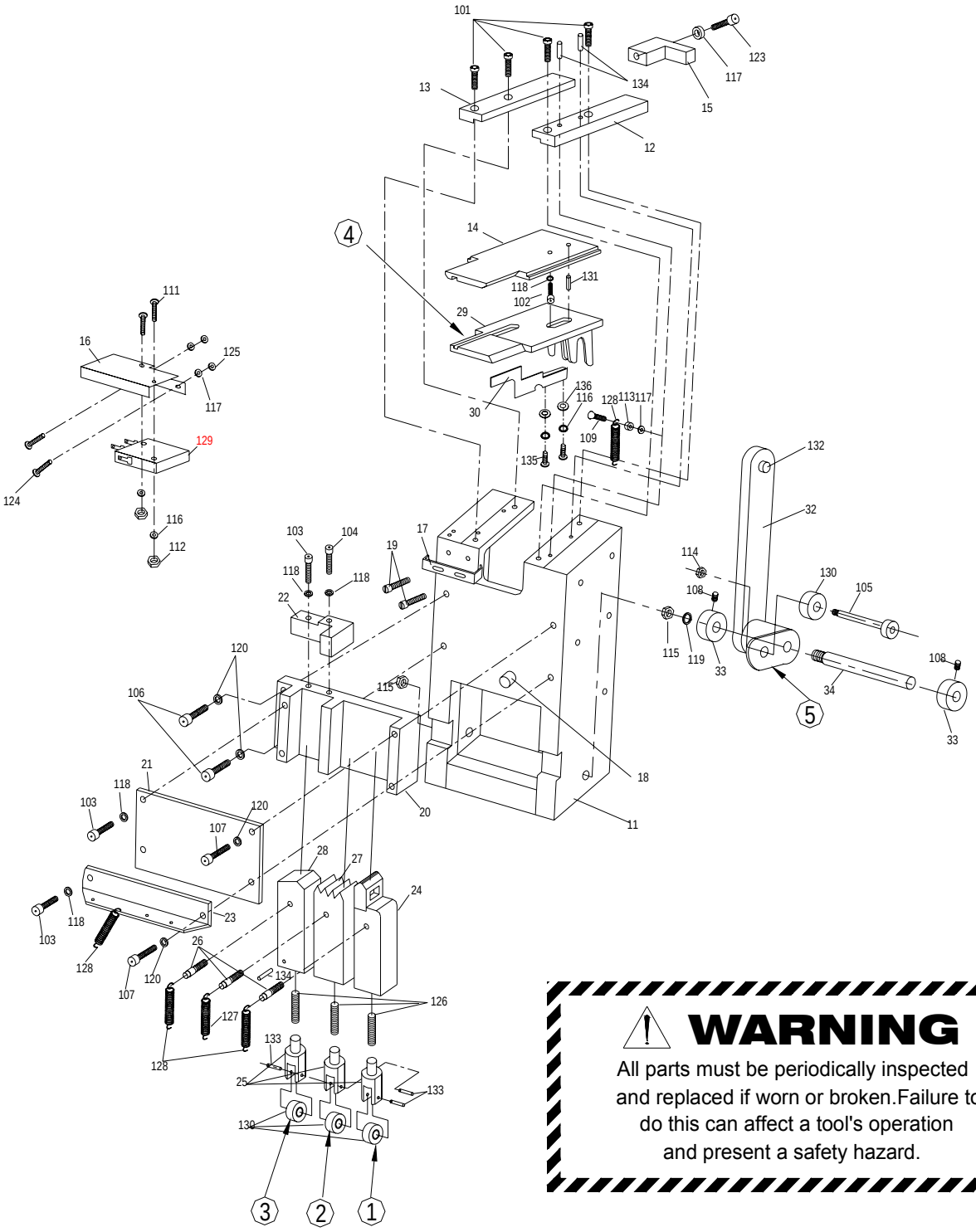
TROUBLESHOOTING

CAUSE	REMEDY
SYMPTOM: Strap jams in strapping head while feeding.	
1. Debris accumulation in feed/tension roller area.	1. Disassemble the roller assembly and remove debris. See Adjustment Section. Figure 24.
SYMPTOM: Strap pulls from head before seal and cut-off.	
1. Worn gripper.	1. Replace gripper
SYMPTOM: Strap is not feed.	
1. Solenoid 1 will not activate.	1. Adjust the clearance of LS5 in relation to the switch cam. Refer to Figure 20. 2. Replace LS5. 3. Adjust LS3 if needed to ensure the head stops in HOME position.
SYMPTOM: Strap is not being cut-off upon completion of strapping cycle.	
1. LS3 inoperative 2. LS3 improperly adjusted. 3. Clearance between welding clamp and end gripper too great. 4. Cutting surface on welding clamp is dull.	1. Replace and adjust LS3. refer to Fig. 21. 2. Adjust LS3 as required. 3. Adjust the clearance as detailed in adjustments and clearance section. 4. Turn the welding clamp 180° to bring new cutting surface into play. Details in Adjustments and Clearance Section.
SYMPTOM: Machine will not complete seal and cut-off.	
1. The belt that activates the tension trip arm is broken or has come off the pulleys. 2. LS2 inoperative.	1. Replace the belt, if necessary. Remount the belt if it has come off the pulleys. Refer to Parts List Figure 4. 2. Replace LS2. Refer to Parts List, Fig. 4
SYMPTOM: Poor strap weld.	
1. Hot-knife temperature is too high or too low. 2. The 5 amp fuse has blown.	1. Adjust the hot-knife temperature. Details in Operating Instructions Section. 2. Before replacing the 5 amp fuse, attempt to identify the cause of why the fuse failed and make necessary repairs.

TABLE OF CONTENTS

PARTS LIST, FIGURE 1 WELDING COMPONENTS

KEY	Q'TY	PART NO.	DESCRIPTION	FPS-500-010
1	1	4-01010	END GRIPPER UNIT	
2	1	4-01020	WELDING CLAMP UNIT	
3	1	4-01030	HOLDING GRIPPER UNIT	
4	1	4-01041	SEPARATING PLATE UNIT	
5	1	4-01050	SEPARATING ARM UNIT	
11	1	4-01000-110	Main body block	
12	1	4-01000-120	Guide plate, right hand side	
13	1	4-01000-130	Guide plate, left hand side	
14	1	4-01000-140	Top cover holder	
15	1	4-01000-150	Retainer, top cover holder	
16	1	4-01000-162	Microswitch seat	
17	1	4-01000-170	Microswitch spring plate	
18	1	4-01000-180	Spring hook	
19	2	4-01000-190	Screw	
20	1	4-01000-200	Guide slot	
21	1	4-01000-210	Guide plate	
22	1	4-01000-220	L-type angle plate	
23	1	4-01000-230	Spring hook plate	
24	1	4-01010-240	End gripper	
25	3	4-01010-250	Clevis	
26	3	4-01010-260	Spring hook	
27	1	4-01020-270	Welding clamp	
28	1	4-01030-280	Holding gripper	
29	1	4-01040-290	Separating plate	
30	1	4-01040-301	Microswitch detector lever(out)	
32	1	4-01050-320	Separating arm	
33	2	4-01050-330	Sleeve, separating arm pin	
34	1	4-01050-340	Separating arm pin	
101	7	200A05012	Socket head cap screw, M5*12	
102	1	200A05006	Socket head cap screw, M5*6	
103	1	200A05016	Socket head cap screw, M5*16	
104	1	200A05020	Socket head cap screw, M5*20	
105	1	200A05025	Socket head cap screw, M5*25	
106	2	200A06025	Socket head cap screw, M6*25	
107	2	200A06050	Socket head cap screw, M6*50	
108	2	200G05008	Socket head set screw, M5*8	
109	1	200E04016	Phillips head machine screw, M4*16	
111	3	200E03015	Phillips head machine screw, M3*15	
112	2	201A03	Hex nut, M3	
113	1	201A04	Hex nut, M4	
114	1	201A05	Hex nut, M5	
115	2	201A08	Hex nut, M8	
116	2	202B03	Lock washer, M3	
117	4	202B04	Lock washer, M4	
118	7	202B05	Lock washer, M5	
119	1	202B08	Lock washer, M8	
120	5	202B06	Lock washer, M6	
123	1	200A04016	Socket head cap screw, M4*16	
124	2	200E04008	Phillips head machine screw, M4*8	
125	2	202A0410	Plain washer, M4*10	
126	3	2212310042	Compression spring, 2.3*10*42	
127	1	2201210020	Tension spring, short 1.2*10*20	
128	4	2201011022	Tension spring, long 1*10.8*22	
129	1	104G010	Microswitch, heavy MQS-216 16A	
130	4	210A0635ZZ	Ball bearing, 635ZZ	
131	1	211A0414	Spring pin, 4 dia.*14	
132	1	211A0520	Spring pin, 5*20	
133	3	211A0514	Spring pin, 5 dia.*14	
134	5	211A0318	Spring pin, 3 dia.*18	
135	2	200E03005	Phillips head machine screw, M3*5	
136	2	202A0308	Plain washer, M3*8	



WARNING

All parts must be periodically inspected and replaced if worn or broken.Failure to do this can affect a tool's operation and present a safety hazard.

FIGURE1.WELDING COMPONENTS

PARTS LIST, FIGURE 2 DRIVE AND CAM ASSEMBLIES

KEY	Q'TY	PART NO.	DESCRIPTION	FPS-500-021
1	1	4-02010	REDUCTION GEAR UNIT	
2	1	4-02021	CAM UNIT	
3	1	4-02030	MOTOR FAN UNIT,FOR 50HZ	
3	1	4-02031	MOTOR FAN UNIT,FOR 60HZ	
11	1	4-02010-110	Pulley	
12	1	4-02010-120	Reduction gear	
14	1	4-02020-140	Cam shaft, M17*192	
15	1	4-02020-150	Cam	
16	1	4-02020-160	Cam	
17	1	4-02020-170	Cam	
18	1	4-02020-180	Cam	
19	1	4-02020-190	Cam	
20	1	4-02020-210	Cam	
20.1	1	4-02021-200	Cam	
21	1	4-02020-211	Bearing bracket (aluminium)	
22	1	4-02020-221	Bearing bracket (aluminium)	
23	1	4-02000-230	Motor pulley, for 50Hz	
23	1	4-02000-231	Motor pulley, for 60Hz	
24	1	4-02000-240	Motor fan	
25	1	4-02000-250	Microswitch seat	
27	1	4-02000-270	Plate	
28	1	4-02000-280	Clutch shrim	
101	10	200E04008	Phillips head machine screw, M4*8	
102	10	202B04	Lock washer, M4	
103	2	201A10	Hex nut, M10	
104	1	202B10	Lock washer, M10	
105	2	201A03	Hex nut, M3	
106	8	200M06025	Hex bolt with washer, M6*25	
107	8	202A0613	Plain washer, Φ6*13	
108	12	202B06	Lock washer, M6	
109	8	201A06	Hex nut, M6	
110	4	200C06020	Hex bolt, M6*20	
112	1	200G06010	Socket head set screw, M6*10	
113	2	200A05012	Socket head cap screw, M5*12	
114	3	200A06020	Socket head cap screw, M6*20	
115	1	200A06045	Socket head cap screw, M6*45	
116	2	200E03030	Phillips head machine screw, M3*30	
118	2	202B05	Lock washer, M5	
119	2	202B03	Lock washer, M3	
120	4	202A061620	Plain washer, M6*16*2	
121	2	212AS17	Ring, S-17	
122	2	210A6201ZZ	Ball bearing, 6201ZZ	
123	1	101A1160018	Motor, 1PH, 110/220V60Hz,1/4HP	
123	1	101A2350018	Motor, 1PH, 220/230V50Hz 1/4HP	
123	1	101A2450018	Motor, 1PH 240V50Hz 1/4HP	
124	2	210A6003ZZ	Ball bearing, 6003ZZ	
125	1	202G121604	Spacer, M12*16*4	
126	1	202E121801	Shim, M12*18*1	
126	1	202E121802	Shim, M12*18*0.2	
126	1	202E121804	Shim, M12*18*0.4	
127	2	213A0505014	Key, 5*5*14	
128	1	213A0505080	Key, 5*5*80	
129	2	213A0505016	Key, 5*5*16	
130	2	202F172906	Plastic circlet, M17*29*6	
131	2	202F172910	Plastic circlet, M17*29*10	
132	2	202F172912	Plastic circlet, M17*29*12	
133	1	202G121608	Spacer, M12*16*8	
135	1	226K163	Oil cover	
136	1	227A02020	Rubber washer, (Φ20)	
137	1	102F06	Magnetic clutch CD-F-0.6	
138	2	104G012	Microswitch with roller, heavy (LS-3,5) MQS-2, 16A 250VAC	
140	1	202F172908	Plastic circlet, M17*29*8	

⚠ WARNING

All parts must be periodically inspected and replaced if worn or broken.Failure to do this can affect a tool's operation and present a safety hazard.

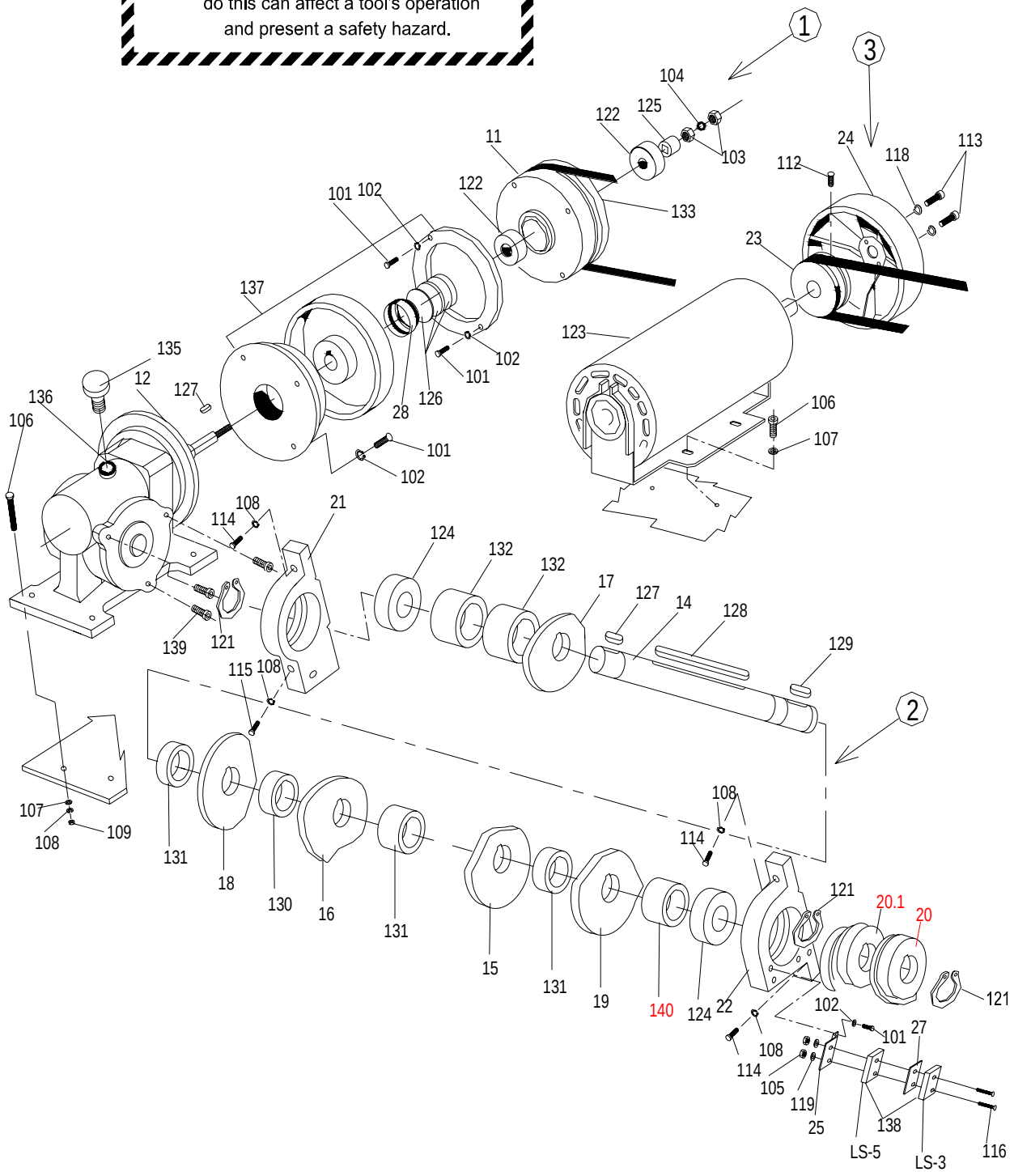
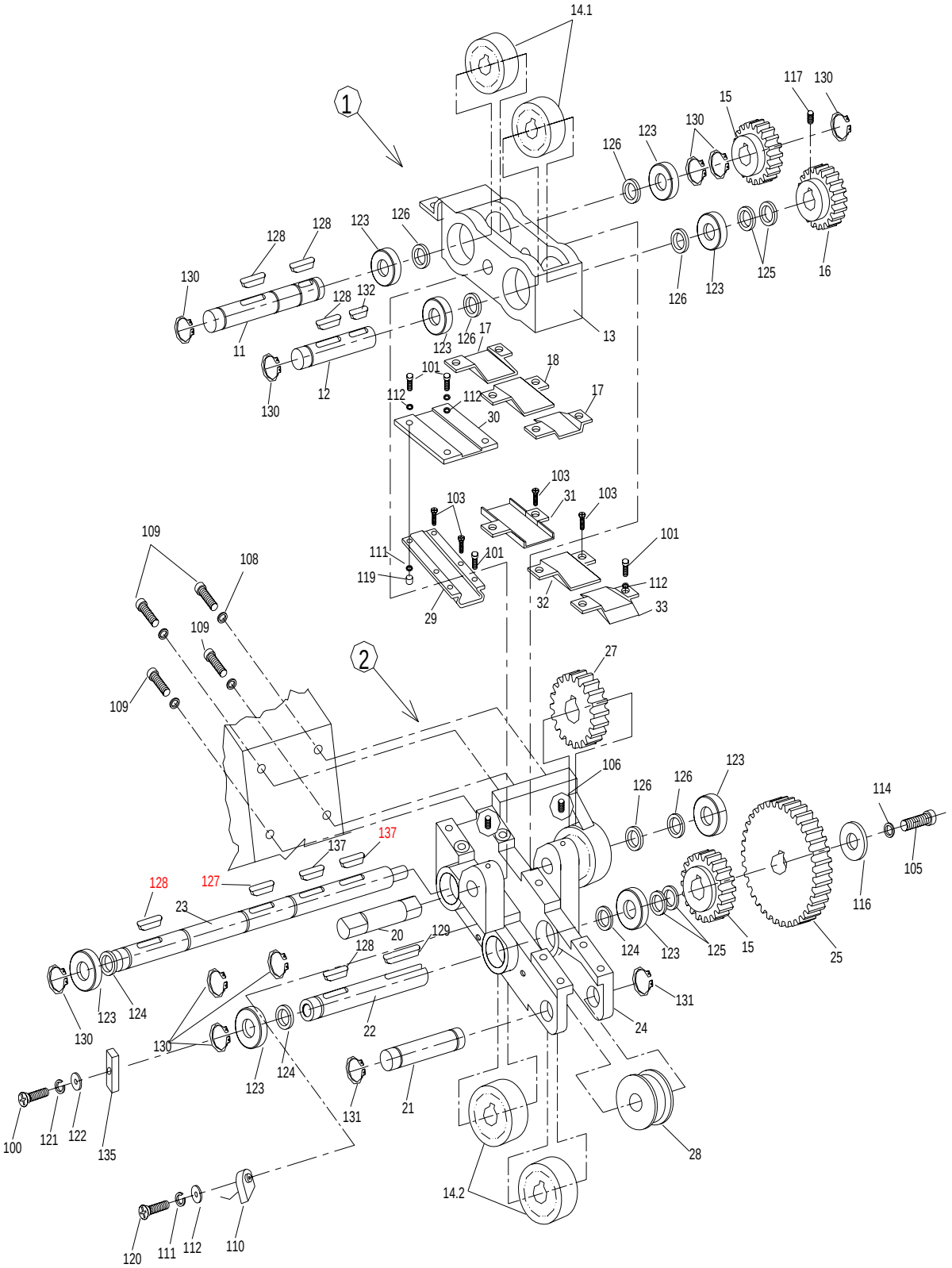


FIGURE 2. DRIVE AND CAM ASSEMBLIES

PARTS LIST, FIGURE 3 STRAP FEED/TENSION ASSEMBLY

KEY	Q'TY	PART NO.	DESCRIPTION	FPS-500-030
1	1	4-03011	BEARING HOUSING, UPPER UNIT (ALUMINIUM)	
2	1	4-03021	BEARING HOUSING, LOWER UNIT (ALUMINIUM)	
11	1	4-03010-110	Roller shaft 15*85	
12	1	4-03010-120	Roller shaft 15*66	
13	1	4-03011-130	Bearing housing, upper (aluminium)	
14.1	2	4-03010-140	Steel roller	
14.2	2	4-03010-142	Steel roller	
15	2	4-03010-150	Nylon gear, 20 teeth	
16	1	4-03010-160	Gear	
17	2	4-03010-170	Strap guide	
18	1	4-03010-180	Strap guide	
20	1	4-03020-200	Pin	
21	1	4-03020-210	Roller shaft 10*49	
22	1	4-03020-220	Roller shaft 15*85	
23	1	4-03020-231	Tightness adjustment shaft 15*285	
24	1	4-03021-240	Bearing housing, lower (aluminium)	
25	1	4-03020-250	Nylon gear, 40 teeth	
27	1	4-03020-270	Plastic gear	
28	1	4-03020-280	Plastic roller	
29	1	4-03020-290	Strap guide	
30	1	4-03020-300	Strap guide	
31	1	4-03020-310	Strap guide	
32	1	4-03020-320	Strap guide	
33	1	4-03020-330	Strap guide	
100	1	200E03016	Phillips head machine screw, M3*16	
101	6	200E04008	Phillips head machine screw, M4*8	
103	12	200F04008	Flat head cap screw, M4*8	
105	1	200A05012	Socket head cap screw, M5*12	
106	2	200G05008	Socket head set screw, M5*8	
108	4	202B06	Lock washer, M6	
109	4	200A06020	Socket head cap screw, M6*20	
110	1	104Y002	Inductor SK3-X	
111	7	202B04	Lock washer, M4	
112	7	202A0410	Plain washer, M4*10	
114	1	202B05	Lock washer, M5	
116	1	202A062120	Plain washer, M6*21*2	
117	1	200G06008	Socket head set screw, M6*8	
119	2	201A04	Hex nut, M4	
120	1	200E04020	Phillips head machine screw, M4*20	
121	1	202B03	Lock washer, M3	
122	1	202A0308	Plain washer, M3*8	
123	8	210A6002ZZ	Ball bearing, 6002ZZ	
124	4	202F152205	Plastic circlet, M15*22*5	
125	4	202E152110	Plain washer,φ15*21*1	
126	6	202F152204	Plastic circlet, M15*22*4	
127	2	213A0505012	Key, 5*5*12	
128	6	213A0505016	Key, 5*5*16	
129	1	213B0505032	Key, 5*5*32	
130	9	212AS15	Ring, S-15	
131	2	212AS10	Ring, S-10	
132	1	213A0505014	Key, 5*5*14	
135	1	103T200805	Magnet, 20*8*5	
137	2	213A0505010	Key, 5*5*10	

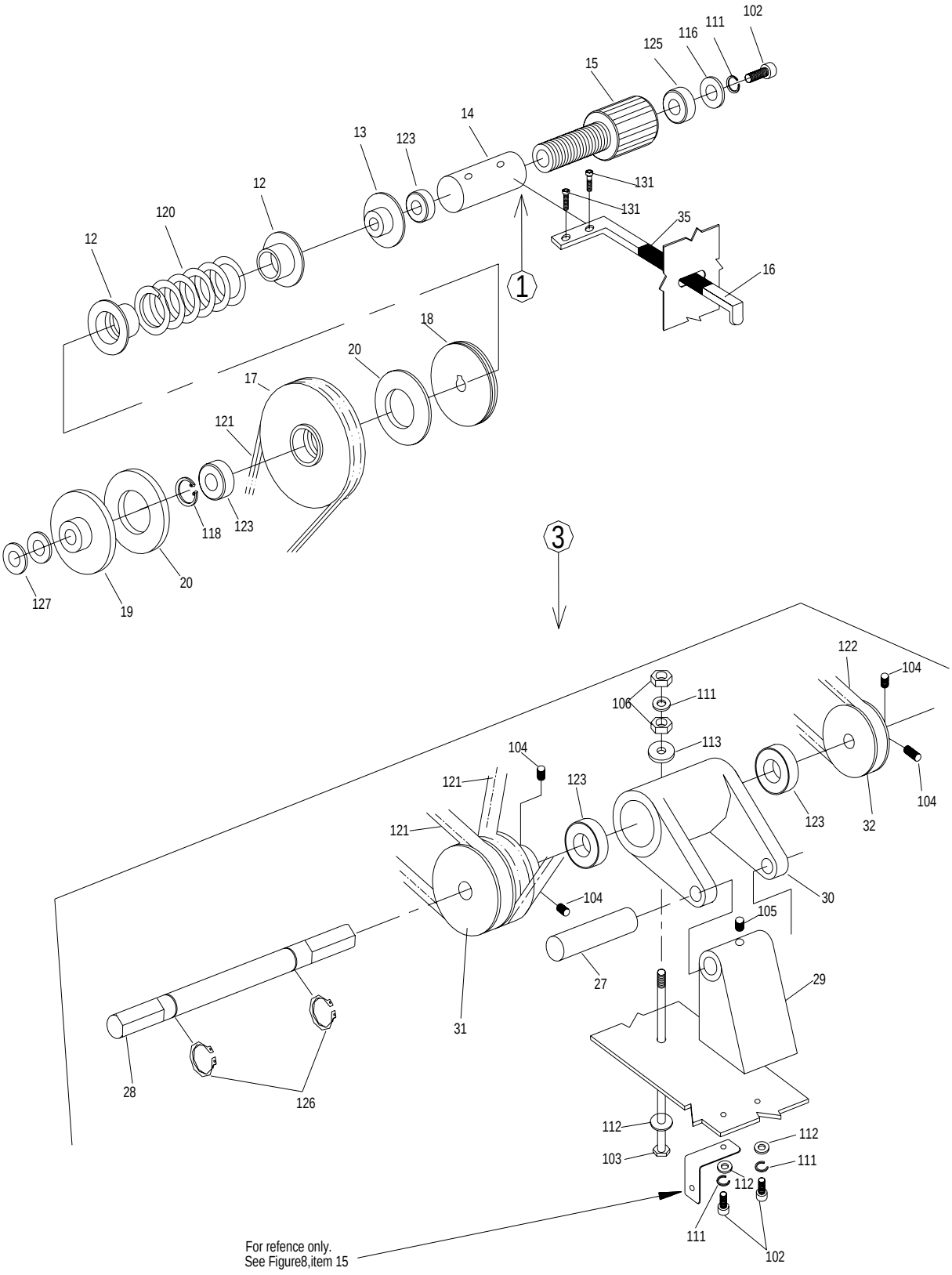
FIGURE 3.STRAP FEED/TENSION ASSSEMBLY



PARTS LIST, FIGURE 4 TENSION ADJUSTMENT AND SENSING ASSEMBLIES

KEY	Q'TY	PART NO.	DESCRIPTION	FPS-500-045
1	1	4-04010	TIGHTNESS DIRECTOR UNIT	
3	1	4-04031	TRANSMISSION BRACKET UNIT	
12	2	4-04000-120	Spring guide	
13	1	4-04010-130	Tightness adjustment cover	
14	1	4-04010-140	Tightness adjustment sleeve	
15	1	4-04010-150	Tightness adjustment nut	
16	1	4-04010-160	Tightness director	
17	1	4-04000-170	Tightening pulley	
19	1	4-04000-190	Tightening pulley	
20	2	4-04000-200	Clutch disc	
27	1	4-04030-270	Transmission bracket pin	
28	1	4-04030-281	Transmission bracket shaft 15*123	
29	1	4-04030-291	Transmission bracket (aluminium)	
30	1	4-04030-301	Transmission bracket	
31	1	4-04030-311	Pulley	
32	1	4-04030-321	Pulley	
35	1	4-04000-350	Plastic sleeve	
102	3	200A06016	Socket head cap screw, M6*16	
103	1	200C06070	Hex bolt, M6*70	
104	2	200G06010	Socket head set screw, M6*10	
105	1	200G06006	Socket head set screw, M6*6	
106	5	201A06	Hex nut, M6	
111	6	202B06	Lock washer, M6	
112	7	202A061620	Plain washer, M6*16*2	
113	4	202A0613	Plain washer, M6*13	
116	1	202A062120	Plain washer, M6*21*2	
118	1	212AR32	Ring, R-32	
120	1	2214239052	Compression spring, 4.2*39*52	
121	2	214AK019	V-belt, K-19	
122	1	214AM030	V-belt, M-30	
123	4	210A6002ZZ	Ball bearing, 6002ZZ	
125	1	210A6000ZZ	Ball bearing, 6000ZZ	
126	2	212AS15	Ring, S-15	
131	2	200A05008	Socket head cap screw, M5*8	

FIGURE 4. TENSION ADJUSTMENT AND SENSING ASSEMBLIES



PARTS LIST, FIGURE 5 HOT-KNIFE AND TENSION LEVER ASSEMBLIES

KEY	Q'TY	PART NO.	DESCRIPTION	FPS-500-050
1	1	4-05010	HEATER ARM UNIT	
2	1	4-05020	HEATER HEAD UNIT	
3	1	4-05030	TENSION LEVER UNIT	
4	1	4-05040	STRAP GUIDE UNIT, ENTRY	
5	1	4-05050	STRAP GUIDE UNIT, EXIT	
11	1	4-05010-110	Heater arm side plate	
12	1	4-05010-120	Heater arm	
13	1	4-05010-130	Heater arm screw	
14	1	4-05020-140	Heater blade holder	
15	1	4-05020-150	Instant heating heater plate	
16	1	4-05030-160	Adjustable nut	
17	1	4-05030-170	Tension lever	
18	1	4-05000-180	Solenoid shaft asse.	
21	4	4-05000-210	Spring cover	
22	1	4-05000-220	Bracket	
23	1	4-05000-230	Feed back arm screw	
26	1	4-05050-260	Strap guide, exit	
27	1	4-05050-270	Strap guide adjuster, exit	
28	1	4-05050-280	Guide nut, M4	
29	1	4-05040-290	Strap guide adjuster, entry	
30	1	4-05040-300	Strap guide, entry	
31	1	4-05030-310	Protuberant sleeve	
101	1	200C06090	Hex bolt, M6*90	
102	1	200C06100	Hex bolt, M6*100	
103	1	200A06050	Socket head cap screw, M6*50	
104	1	200E04016	Phillips head machine screw, M4*16	
105	5	200A05012	Socket head cap screw, M5*12	
106	9	202B05	Lock washer, M5	
107	2	201A04	Hex nut, M4	
108	5	201A05	Hex nut, M5	
109	8	202B04S	Lock washer, M4	
110	13	201A06	Hex nut, M6	
111	7	202B06	Lock washer, M6	
112	1	201A08	Hex nut, M8	
113	2	202B08	Lock washer, M8	
114	1	200E04015	Phillips head machine screw, M4*15	
115	2	200A04025	Socket head cap screw, M4*25	
116	8	200C05012	Hex bolt, M5*12	
117	9	202A0512	Plain washer, M5*12	
118	2	202A0613	Plain washer, M6*13	
119	8	202C041003	Copper washer, M4*10*0.3	
121	1	202A062120	Plain washer, M6*21*2	
122	1	2200505006	Heater spring, 0.5*0.5*6.5	
123	1	2201011022	Tension spring, long 1*10.8*22	
124	2	2210812051	Compression spring, 0.8*12*51	
125	2	210A0635ZZ	Ball bearing, 635ZZ	
126	1	2214024039	Compression spring, 4*24*39	
127	1	212AE12	Ring, E-12	
129	1	2211610026	Compression spring, 1.6*10*26	
130	2	211A0440	Spring pin, 4 dia.*40	
131	1	211A0520	Spring pin, 5*20	
132	1	103T024-1	Solenoid 24VDC	
133	1	227A02016	Rubber washer, (Φ16)	
134	8	200C04010S	Hex bolt, M4*10	

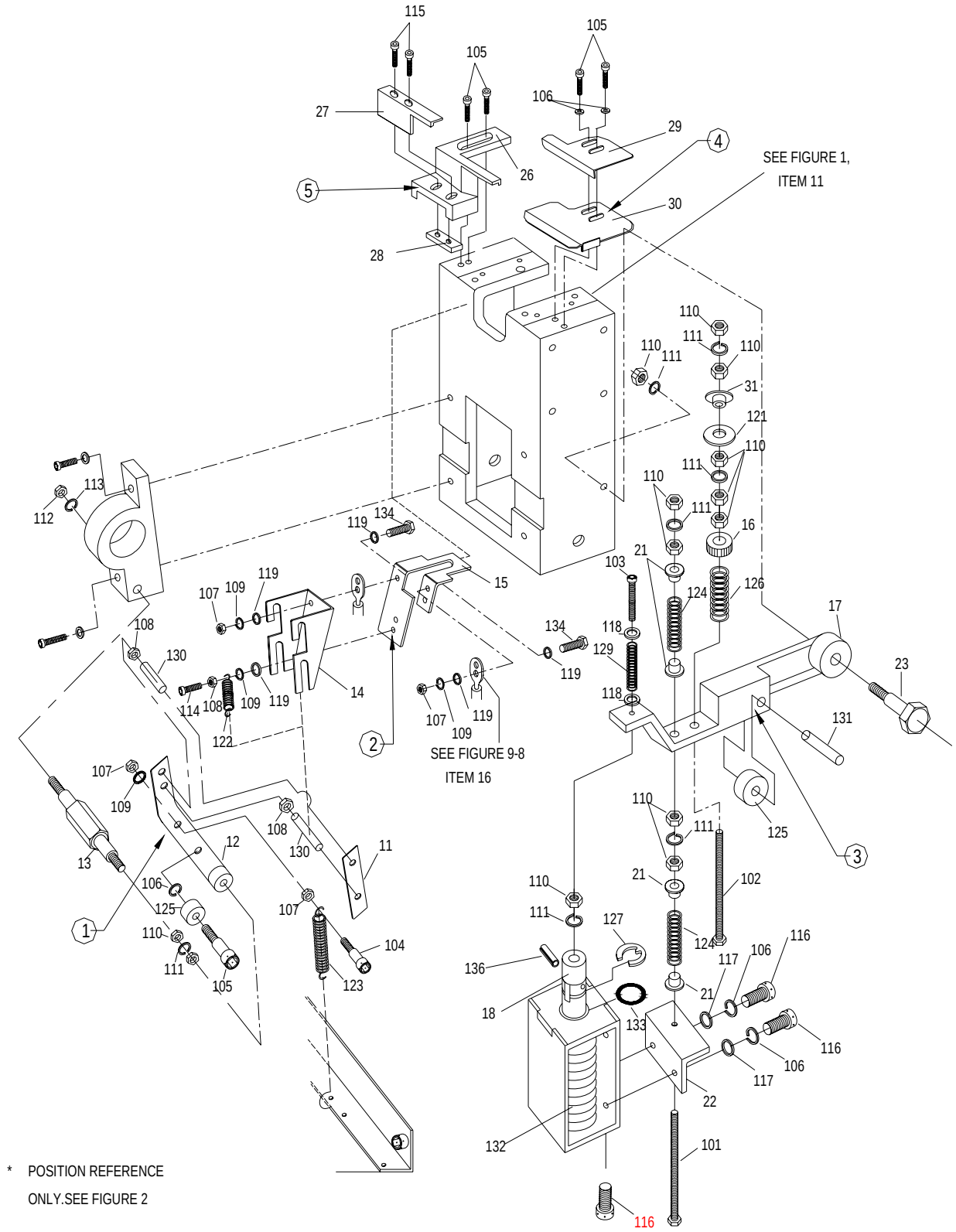


FIGURE 5.HOT-KNIFE AND TENSION LEVER ASSEMBLIES

PARTS LIST, FIGURE 6-2C CABINET COMPONENTS

KEY	Q'TY	PART NO.	DESCRIPTION FPS-503-062C
1	1	4-06010	PLASTIC ROLLER BRACKET UNIT
11	1	4-06200-112	Body
12	1	4-06200-121	Door
14	1	297E0010	Door magnet
15	1	4-06000-151	Plastic package stop
16	1	4-06201-160	Stainless steel top cover
17	2	229D16075CH-GY	Wheel swivel 75mm
17.1	2	229E16075CH-GY	Wheel fixed 75mm
18	1	4-06000-180	Door holder
19	1	4-06000-191	Sustaining plate
20	1	4-06000-200	Guide plate
21	1	4-06400-211	Hinge
22	1	4-06000-222	Coller
23	1	4-06000-230	Top cover screw
24	1	4-06010-240	Plastic roller
25	1	4-06010-250	Roller pin
26	1	4-06010-260	Roller frame
27	1	4N-01000-470	Liner
28	1	4-09041-121	Switch Dog
29	1	4-06200-291	Control panel
30	4	4-06200-300	Leg
35	1	4-06000-352	Bracket
100	2	202H04	Tooth head washer, M4
101	1	211A0514	Spring pin, 5 dia.*14
102	4	202B06	Lock washer, M6
103	4	202A0613	Plain washer, M6*13
104	18	201H06	Locknut, M6
105	6	200C06020	Hex bolt, M6*20
106	8	202B08	Lock washer, M8
107	2	200A06020	Socket head cap screw,M6*20
108	8	202A0816	Plain washer, M8*16
109	4	200H04012	Truss head machine screw, M4*12
111	2	201A04	Hex nut, M4
114	2	202A061620	Plain washer, M6*16*2
117	2	200A06012	Socket head cap screw, M6*12
118	1	118B	CABLE
119	2	200H05020	Truss head machine screw, M5*20
120	8	200C08020	Hex bolt, M8*20
122	2	2210708021	Compression spring, 0.7*8.2*20.5
123	2	201K06	Wn M6
124	2	202B04	Lock washer, M4
126	2	200E05030	Flat head cap screw, M5*30
127	4	202B05	Lock washer, M5
129	2	201A05	Hex nut, M5
130	2	200M06012	Hex bolt with washer, M6*12
132	1	200AR06020	Socket head cap screw,M6*20

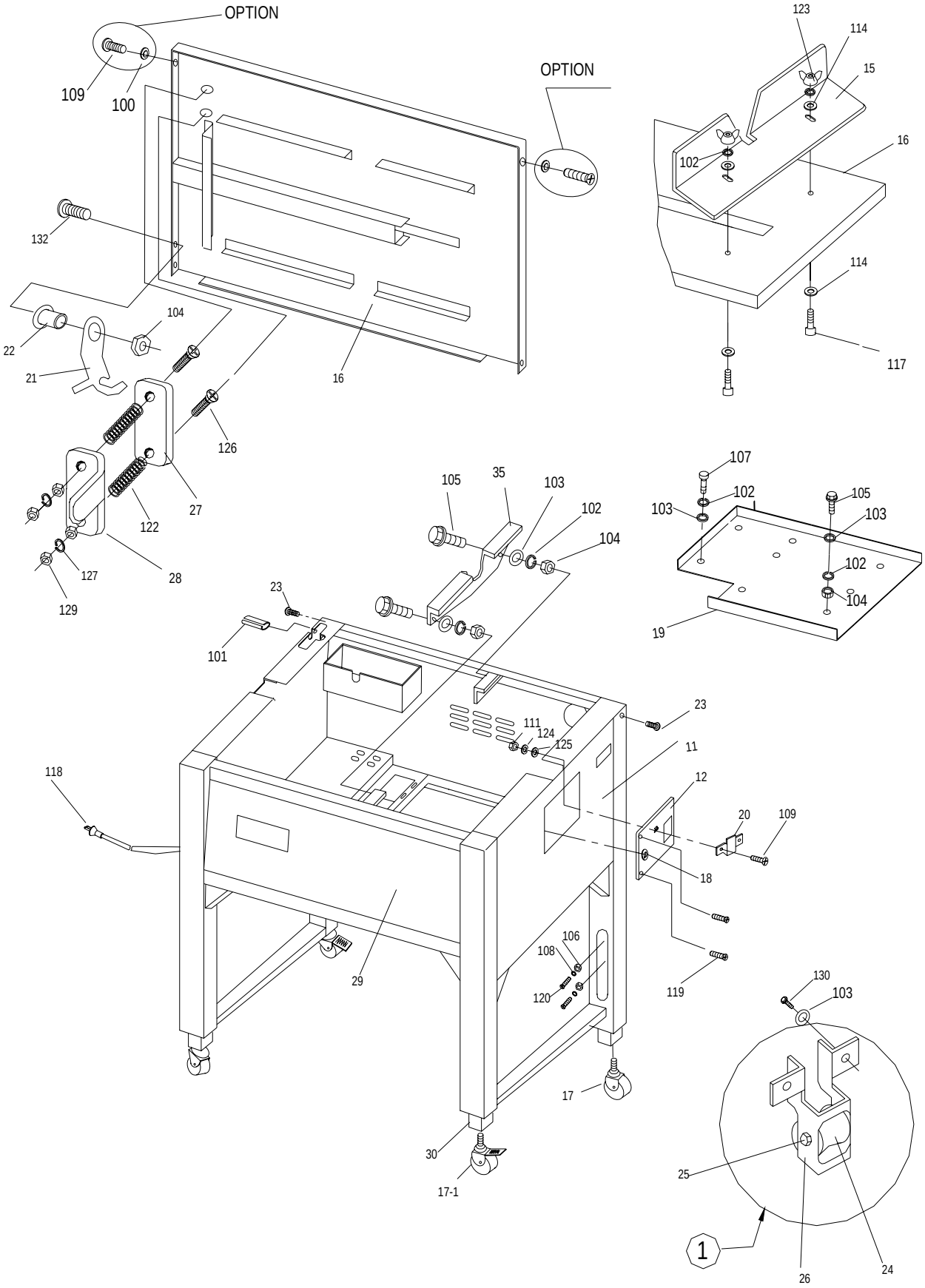


FIGURE 6-2C.CABINT COMPONENTS

PARTS LIST, FIGURE 8-2 DISPENSER ASSEMBLIES

KEY	Q'TY	PART NO.	DESCRIPTION	FPS-503-082
1	1	4-08200	REEL BRAKE UNIT	
2	1	4-08210	PLASTIC FLANGE UNIT	
11	1	4-08000-110	Pin	
12	1	4-08000-120	Plastic roller	
13	1	4-08200-130	Roller frame	
14	1	4-08200-140	Brake belt	
16	1	4-08200-160	Belt pin	
17	1	4-08200-170	Brake arm	
18	1	4-08200-180	Belt holder plate	
19	1	4-08200-190	Reel shaft	
20	2	4-07000-110	Plastic flange	
22	1	4-07000-130	Reel center claw	
24	1	4-07000-150	Y-type washer	
25	1	4-07000-170	Pin	
27	1	4-07000-190	Reel nut handwheel	
28	1	4-08200-280	Brake belt tightener	
29	1	4-08200-290	Spring pillar	
30	1	4-08200-300	Reel brake pulley	
31	1	4-06400-330	Plastic bracket	
32	1	4-08200-320	Reel brake bracket	
33	1	4-08200-330	Brake shaft	
37	1	4-08500-370	Brake arm fixed shaft	
100	7	202B06	Lock washer, M6	
101	7	200A06020	Socket head cap screw, M6*20	
102	1	212AS25	Ring, S-25	
103	4	200E04025	Phillips head machine screw, M4*25	
104	8	201A04	Hex nut, M4	
105	14	202A0409	Plain washer, M4*9	
106	2	212AE04	Ring, E-4	
107	1	212AS10	Ring, S-10	
108	2	210A6003ZZ	Ball bearing, 6003ZZ	
109	1	212AS15	Ring, S-15	
110	3	202A0613	Plain washer, M6*13	
111	1	212CR08	Snap pin-R08	
113	6	200E04016	Phillips head machine screw, M4*16	
114	3	202B08	Lock washer, M8	
115	1	202A0816	Plain washer, M8*16	
116	3	201A08	Hex nut, M8	
117	1	200A08030	Socket head cap screw, M8*30	
118	1	200A06016	Socket head cap screw, M6*16	
119	5	201A06	Hex nut, M6	
120	8	202B04	Lock washer, M4	
121	4	200C06025	Hex bolt, M6*25	
122	8	202A061620	Plain washer, M6*16*2	
123	2	212AS20	Ring, S-20	
125	1	2201213047	Brake spring, 1.2*13*47	

PARTS LIST,FIGURE 9-5 ELECTRICAL COMPONENTS

KEY	Q'TY	PART NO.	DESCRIPTION FPS-500-095
1	1	4-09010	SMOKE FAN UNIT
2	1	4-09020	INSTANT HEATING TRANSFORMER UNIT,110V
12	Option	4-09041-120	Switch holder
13	1	4-09010-132	Fan bracket
14	1	4-09010-143	Protect cover
15	1	4-09010-151	Protect cover bracket
16	2	4-09020-160	Instant heating cable
17	2	4-09020-170	Insulating tube
18	1	4-09020-180	Transformer foot
19	1	4-09000-190	Heating transformer cover
106	10	202B05	Lock washer, M5
107	8	201A04	Hex nut, M4
112	6	202A0510	Plain washer, M4
115	6	200E04012	Phillips head machine screw, M4*12
116	6	202B04	Lock washer, M4
121	1	108BK500	Potentiometer, adjustable VR-500K(24D)
122	1	153K0617B	Knob
124	1	116AD024	Smoke fan, 24VDC 80*80
125	1	103A1101	Instant heating transformer, 110V-1V
125		103A2201	Instant heating transformer, 220V-1V
125		103A2401	Instant heating transformer, 240V-1V
126	Option	104Y1638	Cut safety switch XK-1099
127	1	153K0619R	Knob
128	1	PC-FP-24D03-11060	Heating PC board asse. FP-24D03 110V/60HZ
128		PC-FP-24D03-23050	Heating PC board asse. FP-24D03 220-230V/50HZ
128		PC-FP-24D03-22060	Heating PC board asse. FP-24D03 220V/60HZ
128		PC-FP-24D03-24050	Heating PC board asse. FP-24D03 240V/50HZ
129	1	254A0011	Lable
130	2	200E05016	Phillips head machine screw, M5*16
132	2	202B05	Lock washer, M5
134	4	202A0510	Plain washer, M5*10
136	2	201A05	Hex nut, M5
138	4	200C04010	Hex bolt, M4*10

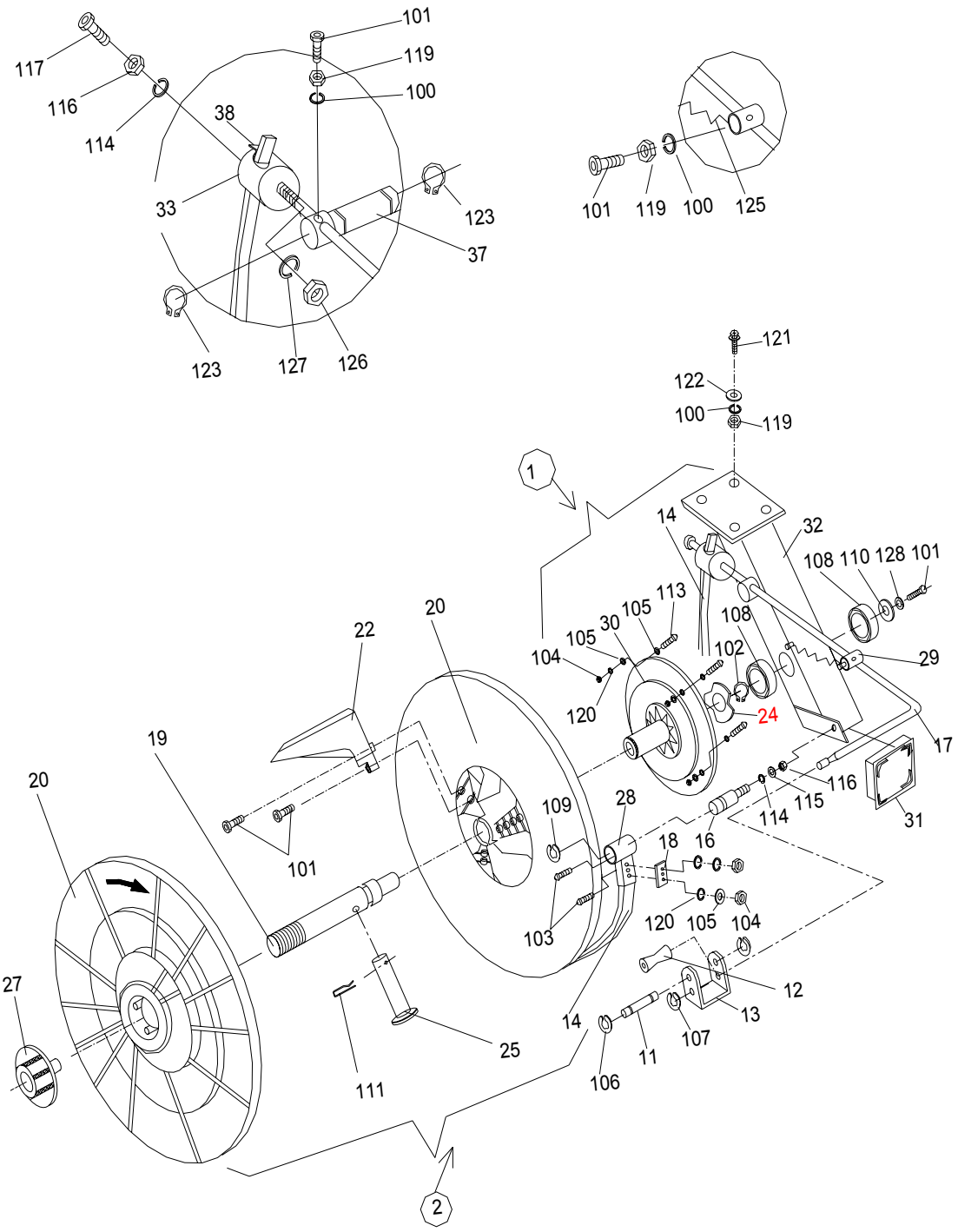


FIGURE 8-2.DISPENSER ASSEMBLY

⚠ WARNING

All parts must be periodically inspected and replaced if worn or broken.Failure to do this can affect a tool's operation and present a safety hazard.

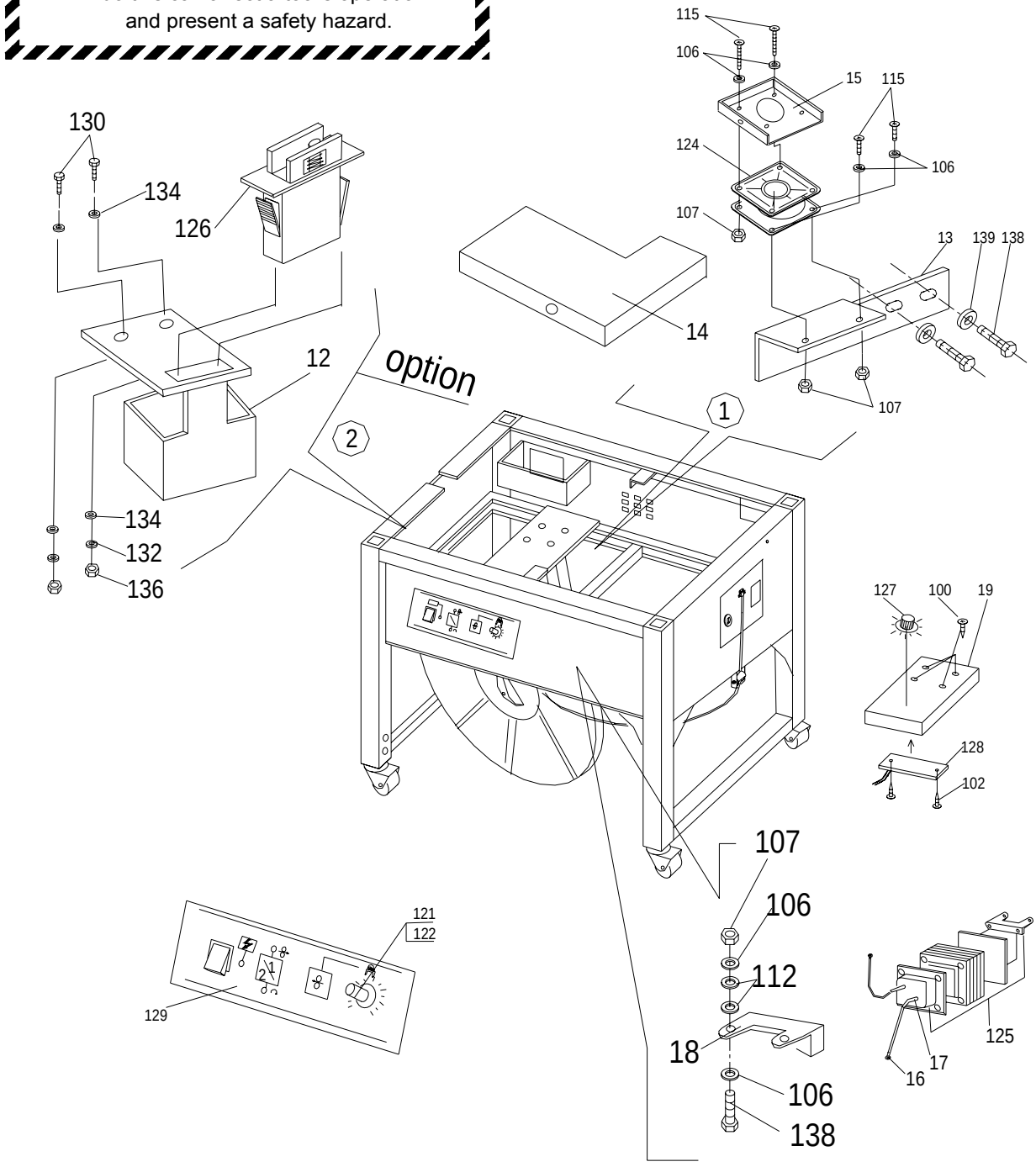


FIGURE 9-5.ELECTRICAL COMPONENTS

PARTS LIST, FIGURE 10-2 CONTROL BOX ASSEMBLY

KEY	Q'TY	PART NO.	DESCRIPTION	FPS-500-102
11	1	4-10200-110	Control box	
12	1	4-10200-120	Control box cover	
17	1	PC-FP-30B01	Control PC board asse. FP-30B01	
102	1	103B1122035	Transformer, 110V/22V 35VA	
102	1	103B2322035	Transformer, 220-230V/22V 35VA	
102	1	103B2422035	Transformer, 240V/22V 35VA	
104	1	115N0630	Fuse seat,(Φ6.3*30)	
	1	115ASL-0630-02	Circuit Protector, 2A-6*30mm	110V
	1	115ASL-0630-02	Circuit Protector, 2A-6*30mm	220V
105	1	115N0630	Fuse seat,(Φ6.3*30)	
	1	115ASL-0630-03	Circuit Protector, 3A-6*30mm	110V
	1	115ASL-0630-03	Circuit Protector, 3A-6*30mm	220V
106	1	115N0630	Fuse seat,(Φ6.3*30)	
	1	115ASL-0630-15	Circuit Protector, 15A-6*30mm	110V
108	4	200E03006	Phillips head machine screw, M3*6	
109	4	153J002	Speed clamp	
110	2	200A06016	Socket head cap screw, M6*16	
111	4	202A0612	Plain washer,M6*12	
112	4	200F03012	Flat head cap screw, M3*12	
113	8	202B03	Lock washer, M3	
114	8	201A03	Hex nut, M3	
115	1	PC-FP-30S	Control PC Board Asse.FP-30S	
116	1	108BK500	Potentiometer, adjustable VR-500K(24D)	
122	1	153K0619R	Knob	

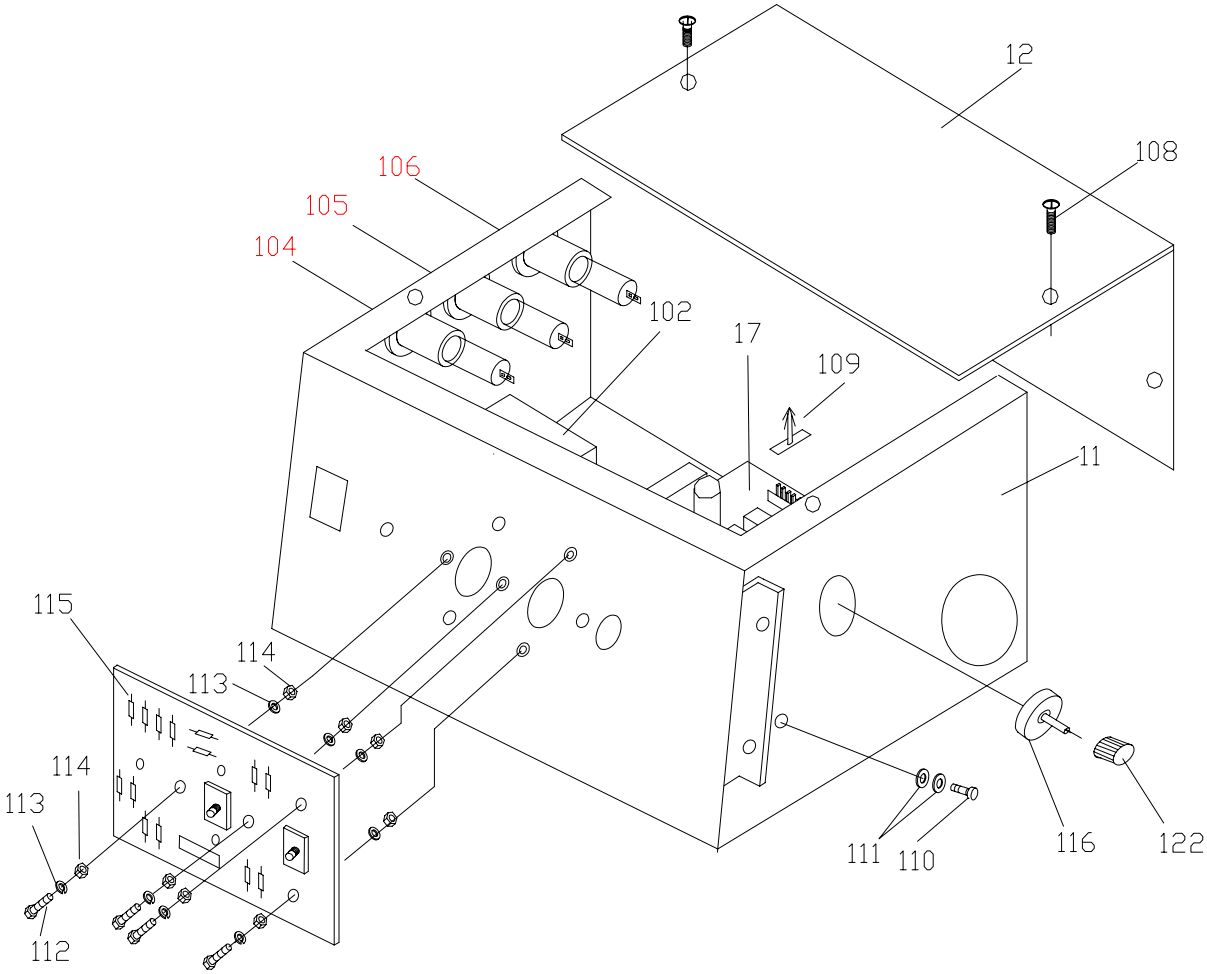
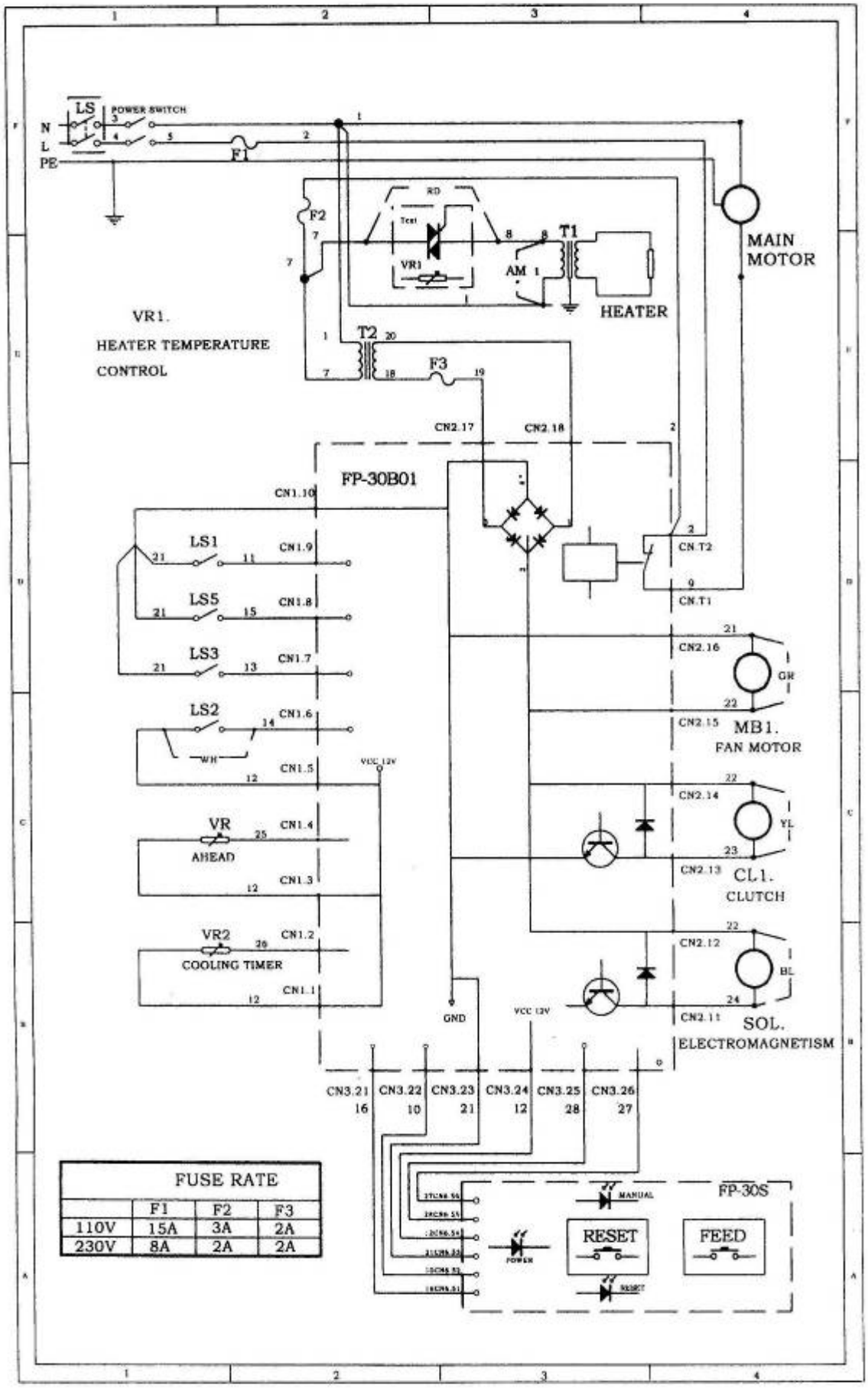
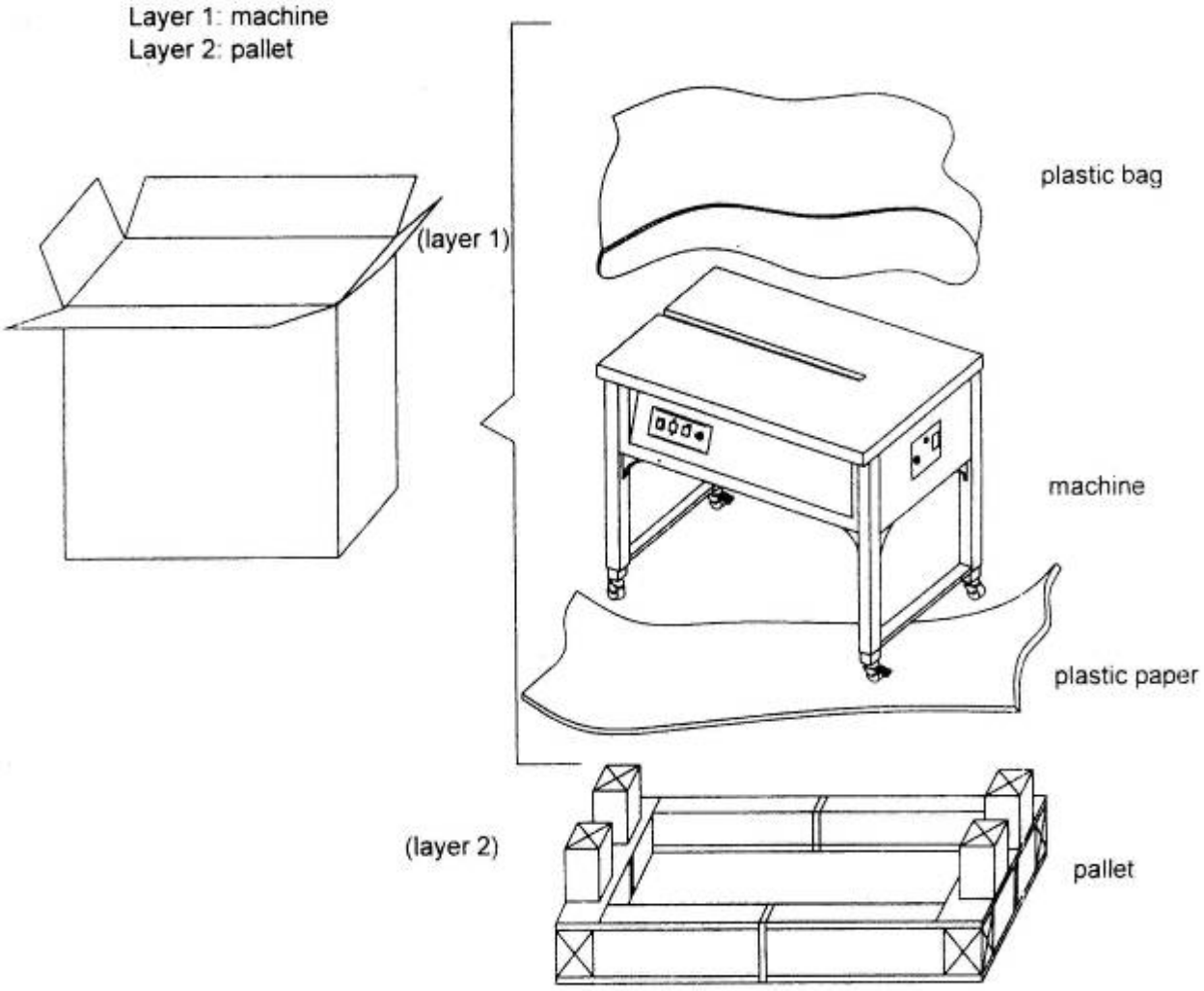


FIGURE10-2. CONTROL BOX ASSEMBLY



FUSE RATE			
	F1	F2	F3
110V	15A	3A	2A
230V	8A	2A	2A

MACHINE PARTS LAYING SKETCH



(FIGURE 1)

The way to pack machine(206):

1.First,put the paper-board on the pallet;
2.Set the machine on the paper-board;
3.To pack machine with PE film;
4.Use plastic bag to pack machine;
5.Seal the paper box with adhesive film;
6.Use PP band to pack the machine and the pallet together.