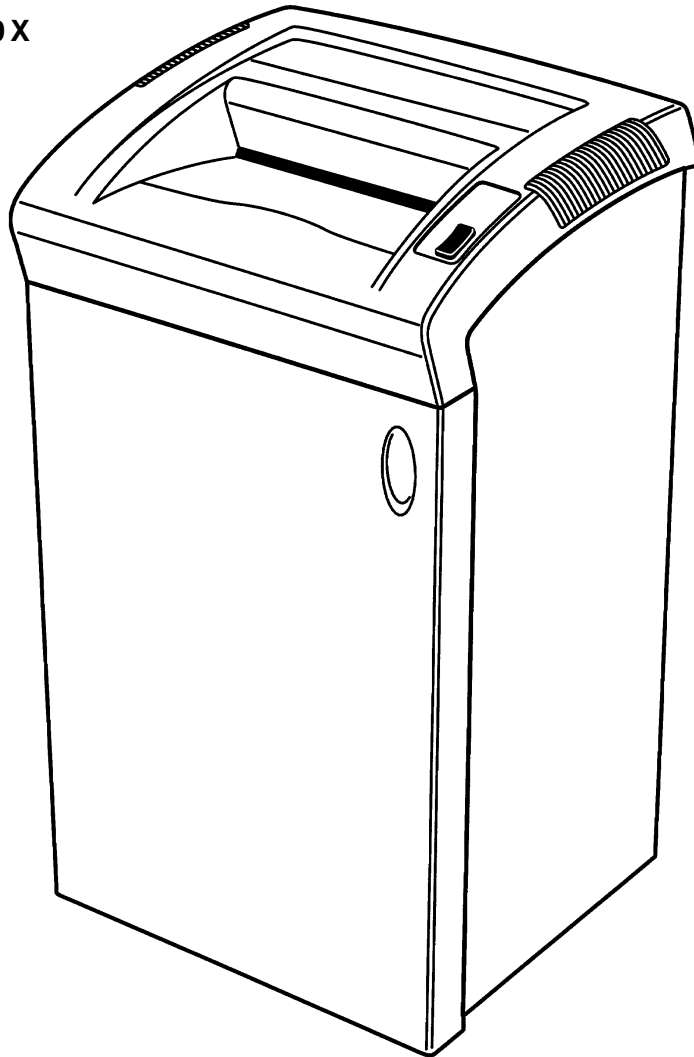




Models:
2230S • 2250X
Paper
Shredders



COPYRIGHT 1997

No part of this publication
may be reproduced in any
form without expressed
written permission from

General Binding Corporation

Printed in the USA.

2230S/2250X TABLE OF CONTENTS

	<i>Page</i>
<i>1.0 Introduction</i>	4
<i>2.0 Specifications</i>	5-6
<i>3.0/4.0 Installation/Operation</i>	7
<i>5.0 Troubleshooting</i>	8-13
5.1 Mechanical Operation	8
5.2 Electrical Operation	8
5.3 Electrical Components	8-9
5.4 Testing Electrical Components	9
5.5 General Troubleshooting	10
5.6 Troubleshooting Chart	10-11
5.7 Wiring Diagram (2230S)	12
Wiring Diagram (2250X)	13
<i>6.0 Disassembly/Assembly/Adjustments</i>	14
6.1 Necessary Tools	14
6.2 Upper Cover Removal	14
6.3 Bottom Cover Removal	14
6.4 Motor Removal	14-15
6.5 Cutter Shaft & Stripper Assembly Removal	15
6.6 Assembly	16
6.7 Cutter Timing	16
<i>7.0 Maintenance Procedures</i>	17
7.1 External Cleaning	17
7.2 Inspection	17
<i>8.0 Parts List</i>	18-31
8.1 Top/Bottom Cover View "2230S"	19-20
8.2 Internal Exploded View "2230S"	21-22
8.3 Plate "A" Exploded View "2230S"	23
8.4 Top/Bottom Cover View "2250X"	24-25
8.5 Internal Exploded View "2250X"	26-27
8.6 Plate "A" Exploded View "2250X"	28
8.7 Cabinet Exploded view "2250X"	29-30
8.8 Packaging Exploded View	31
<i>9.0 Recommended Spare Parts List</i>	32

1.0 2230S/2250X INTRODUCTION

This service manual covers adjustment, disassembly, operation, preventative maintenance, troubleshooting procedures and contains an illustrated parts list for the GBC Shredmaster 2230S/2250X shredders. The GBC Shredmaster 2230S/2250X straight cut and cross-cut models are designed for small offices and low volume requirements.

Innovative engineering has provided this shredder with the following operating and safety features:

1. **Automatic Operation** - The unit begins to operate when paper actuates the trigger in the shredder throat area. The motor stops running when the paper has cleared the cutting head and after the shredder has timed out.
2. **Overload Warning** - Whenever the capacity of the shredder is exceeded the unit will stop shredding and the "Reverse" icon will illuminate.
3. **Bin Full** - When the shred bag becomes full, the motor automatically turns off and the "Bin full" icon will illuminate. The shredder will not operate until the shredded material is either compacted or emptied.
4. **Door Ajar** - When the door of the shredder is not fully closed, the "Door Ajar" icon will illuminate. This is a safety feature that will only allow the shredder to operate when the cabinet door is in the closed position.

Before using your GBC Shredmaster shredder, carefully read the operating instructions in this manual. Once you have gained experience and familiarity with its operation, you will be better equipped to use the remaining sections of this manual to troubleshoot and repair the shredder.

2.0 2230S/2250X SPECIFICATIONS
2230S

Required Electrical Service:	115V AC +/- 10%, 60 Hz, 15 AMP	230V AC +/- 10%, 50 Hz, 10 AMP
Electrical Rating:	115V AC 3.4A, @ 60Hz	230V AC 1.19A, @ 50Hz
Motor:	1/8 Hp Thermally Protected	1/8 Hp Thermally Protected
Duty Cycle:	30 Min. on/20 Min. off	30 Min. on/20 Min. off
Power Consumption:	317 Watts @ 12 Sheets, Nominal Line	268 Watts @ 12 Sheets, Nominal Line
Dimensions: HxWxD	26.75" x 16.75"x 15"	67.9 x 42.5 x 38.1 cm
Weight W/ Cabinet:	40 Pounds	18 Kg
Shredding Speed:	30 FPM @ 1 sheet	7.8 MPM @ 1 sheet
Shred Size:	5/32"	4 mm
Throat Width:	9 1/4"	23.5 cm
Capacity:	12 sheets of 20# Bond Paper	12 sheets of 70gm
Noise Level:	68 dB No Load	68 dB No Load
Shipping Box Dimensions: HxWxD	32.06" x 22.5" x 20"	81.4 x 57.15 x 50.8 cm

2.0 2230S/2250X SPECIFICATIONS
2250X

Required Electrical Service:	115V AC +/- 10%, 60 Hz, 15 AMP	230V AC +/- 10%, 50 Hz, 10 AMP
Electrical Rating:	115V AC 2.38A, 60Hz	230V AC 1.5A, 50Hz
Motor:	1/8 Hp Thermally Protected	1/8 Hp Thermally Protected
Duty Cycle:	30 Min. on / 20 min off	30 Min. on / 20 Min. off
Power Consumption:	257 Watts @ 8 Sheets, Nominal Line	258.5 Watts @ 8 Sheets, Nominal Line
Dimensions: HxWxD	26.75" x 16.75"x 15"	67.9 x 42.5 x 38.1 cm
Weight W/ Cabinet:	41 Pounds	19 Kg
Shredding Speed:	20 FPM @ 1 sheet	5.1 MPM @ 1 sheet
Shred Size:	5/32" X 2 5/32"	4 x 55 mm
Throat Width:	9 1/4"	23.5 cm
Capacity:	8 sheets of 20# Bond Paper	8 sheets of 70gm
Noise Level:	68 dB No Load	68 dB No Load
Shipping Box Dimensions: HxWxD	32.06" x 22.5" x 20"	81.4 x 57.15 x 50.8 cm

3.0/4.0 2230S/2250X INSTALLATION/OPERATING PROCEDURES

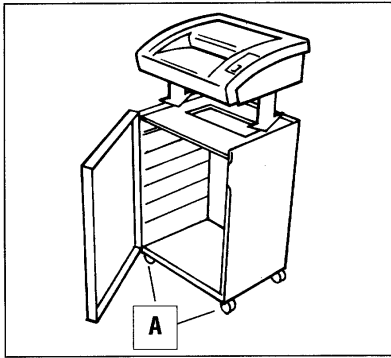
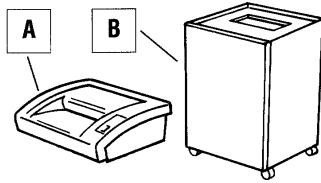


FIGURE 1.

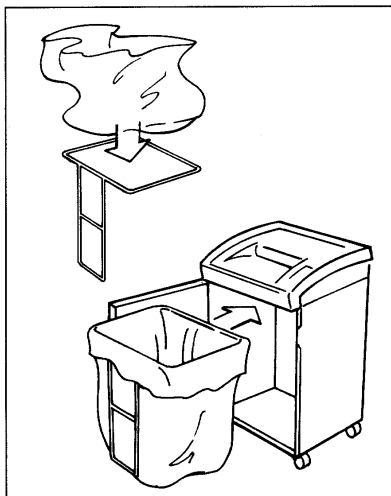


FIGURE 2.

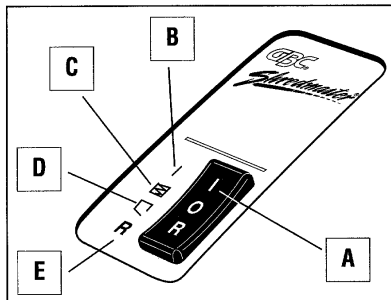


FIGURE 3.

SET UP

To insure proper installation and avoid injury GBC recommends that two people set up this unit.

To protect against damage your shredder has been shipped in two parts, the shredder head A, the cabinet B.

FIGURE 1. Lock the casters (A) before using the machine to prevent any moving or sliding.

Open the cabinet door. Lift the shredder head by the outside edges and place onto the cabinet.

FIGURE 2. Remove the wire bag rim from the cabinet. Place one of the starter bags onto the rim. Slide the rim with bag back into the cabinet. Close the cabinet door. Your shredder ready for use!

OPERATION -FIGURE 3.

Connect power cord to an appropriate power source. Press the rocker switch (A) to the on "I" position. When the shredder is properly set up with cabinet door fully closed the Power On light (B) will illuminate.

You are now ready to shred!

To shred simply insert paper into the throat of the unit. Once your document has activated the Automatic On switch the unit will start and then will stop once your document is shredded.

BIN FULL

In order to prevent shreds from backing up into the cutters and jamming your shredder this unit features an automatic bin full shut off. Once the shred bin is full the unit will shut off automatically and the Bin Full light (C) will illuminate. You can now either compact the shreds and continue shredding, or empty the shred bag.

DOOR AJAR

Your shredder is equipped with a safety interlock which will not allow the unit to operate if the cabinet door is open. The Door Ajar light (D) will illuminate if your cabinet door is not fully closed.

OVERLOAD

If too much paper is inserted into the throat of the unit the shredder will sense an overload and the Overload Light (E) will illuminate. To clear the overload, switch the unit to Reverse "R" mode until the paper is clear of the throat area. Switch your unit back into the Power On position, separate your pages into smaller sets and shred.

5.0 2230S/2250X TROUBLESHOOTING

5.1 Mechanical Operation

The 2230S/2250X utilizes two rotating cutting shafts, which are driven by an electrical motor to shred paper. The upper and lower cutter blades are driven by a series of external double and single drive gears.

5.2 Electrical Operation

When the rocker Standby/Off /Reverse switch (S1) is depressed in the "I" position, the green control light will illuminate to indicate the shredder is in the standby mode. When the mechanical actuator is triggered on, power is supplied from the hot side of the circuit through the following components: the fuse, door ajar switch, bin full switch and the motor. The neutral line is fed through the control board, power switch, trigger switch (only in the auto mode) and the motor.

Stand-by Mode

When the shredder is in the stand-by mode and the door of the shredder is opened, the door ajar icon illuminates. The normally closed door ajar micro switch is opened and

prevents power to the motor until the door is closed.

When the bag full flap switch is opened, the bag full icon will illuminate. The opened switch prevents power to the motor until the shredder bag is either cleared or emptied.

Jam Stopper

When the shredder is severely loaded, the jam stopper circuitry senses the condition and illuminates the reverse icon.

5.3 Electrical Components

Motor - The motor is a 1/8 Hp, thermally protected gearmotor which is designed for intermittent operation.

Capacitor - The purpose of the capacitor in the 2230S/2250X shredders, (all Voltages) is to assist the motor in starting and running.

5.O 2230S/2250X TROUBLESHOOTING

5.3 Electrical Components

P.C board - The P.C board senses the following conditions; door ajar, bin full and jam state. The appropriate control panel icon will illuminate when the shredder is in any one of these conditions.

Safety Switches - The safety switches are both normally open micro switches which are actuated by a two triggers on the cabinet door (100V only). The switches are normally open when the door is closed and when the machine head is installed on the cabinet. *The 115V and 230V models utilize a single safety switch actuated by a trigger on the cabinet door.*

Flap Switch - When the shred bag is full of shredded material, the bag full flap switch is actuated by the flap and removes power from the motor circuit.

5.4 Testing Electrical Components



WARNING: Always disconnect the power cord from receptacle before making continuity or resistance tests.

Micro Switches

Set meter to read continuity. Check switches for continuity from common to normally closed contacts and infinity from common to the normally open contact. Actuate the switch for proper open and closed checks to common.

Fuse P.C Board

Set meter to read continuity. Check the fuse between **AM8 and AM9** on the fuse p.c board for continuity.

Control Board Motor Output Voltages - Set DVM to read 200VAC on the control board for the below checks.

Forward Mode

- Check for 115VAC present across AM8 and AM5 for the forward mode

Reverse Mode

- Check for 115VAC present across AM8 and AM4 for the reverse mode.

5.O 2230S/2250X TROUBLESHOOTING

5.5 General Troubleshooting

Malfunction corrections are based on visual observations made by the operator. The causes of the malfunctions are isolated by the symptom of the malfunction and noting at which point in the operating cycle the malfunction occurred. Malfunctions may be pinpointed to a defective electrical component or mechanical part by referring to the Principles of Operation, the troubleshooting guide and the wiring diagram.

5.6 Troubleshooting Chart

The troubleshooting guide chart that follows is arranged in order of the normal operational sequence. When a malfunction occurs, read down the SYMPTOM column until you find the appropriate description for your symptom. Read the corresponding PROBABLE CAUSE, then perform the recommended procedure in the CORRECTIVE ACTION column. When replacing electrical components that have push on terminals, label the electrical leads that were removed, to facilitate reconnecting them. Refer to the wiring diagram in Figure 5.7 to resolve any wiring difficulties that may occur.

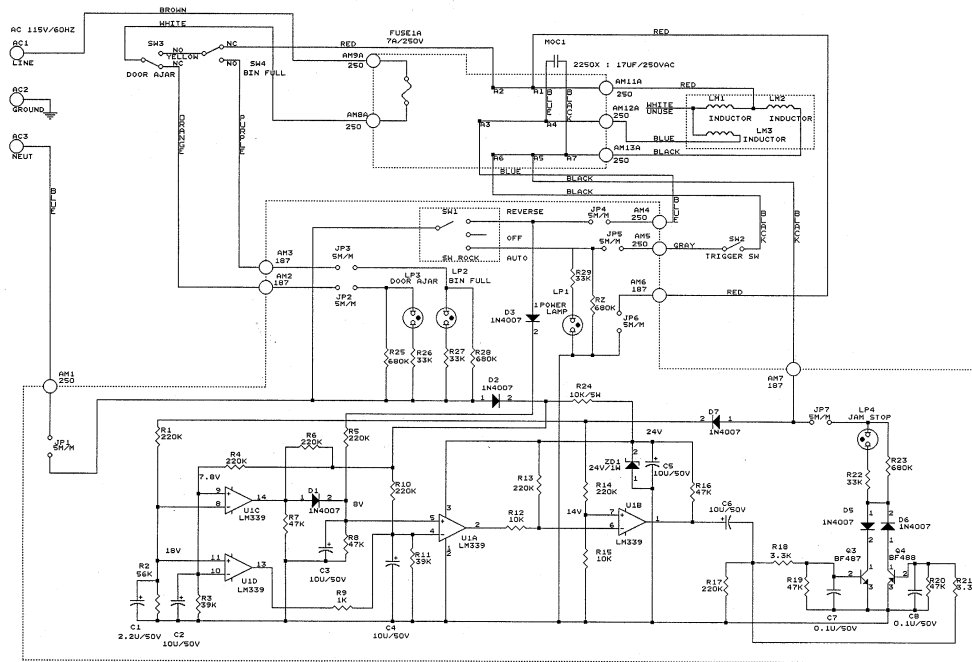


WARNING: Always unplug the shredder to avoid possible electrical shock hazard before attempting to perform any repairs.

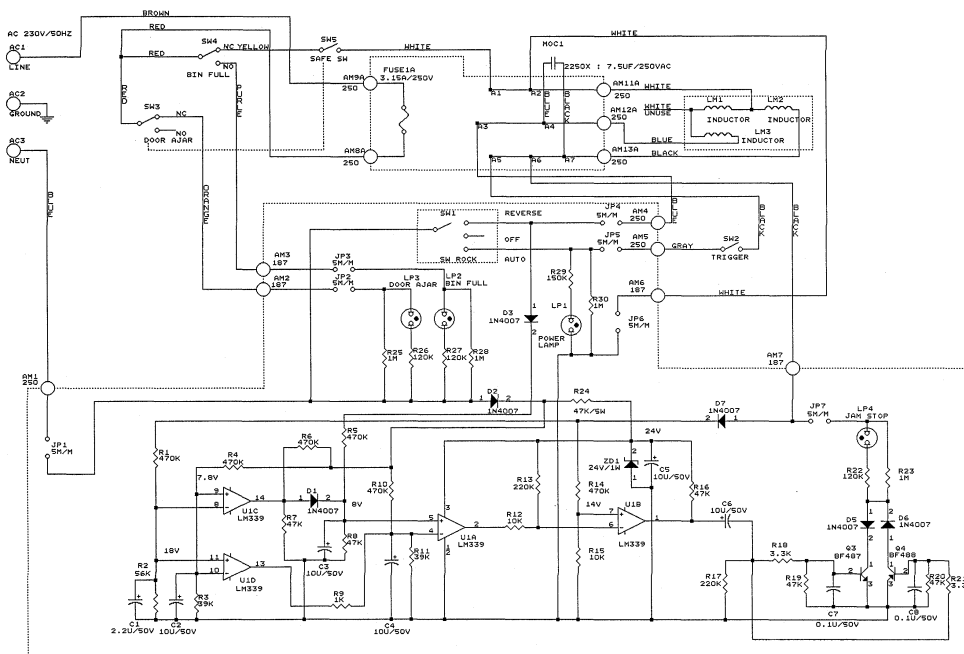
5.0 2230S/2250X TROUBLESHOOTING

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
Shredder Does Not Operate, No Indication Of Power	Power Cord Disconnected.	Connect Power Cord
	Stand-By/Off/Reverse Switch Defective	Test (Section 5.4) And Replace P.C Board If Necessary
	Internal Fuse Blown	Replace Fuse
Shredder Does Not Operate, With Indication Of Power Present	Cabinet Door Open	Close Door
	Shred Bag Full	Empty Bag
	Motor Thermal Cut Off Triggered	Allow Motor To Cool
	Door Micro Switch Defective	Test (Section 5.4) And Replace If Necessary
	Control Board Defective	Test (Section 5.4) And Replace If Necessary
	Defective Capacitor	Replace Capacitor
Shredder Does Not Operate, (Automatic Mode Only)	Motor Defective	Check Motor Input Voltage Replace Motor If Necessary
	Actuator Broken	Inspect And Replace If Necessary.
Shredder Runs Continuously	Actuator Micro Switch Defective	Test (Section 5.4) And Replace If Necessary
	Actuator Locked In The Forward Position	Inspect And Replace If Necessary
Sheet Capacity Diminished	Defective Or Incorrectly Wired Actuator Micro Switch	Test (Section 5.4) And Replace If Necessary
	Dull Cutters	Replace Cutters
	Worn Bearings	Replace Bearings
	Damaged Drive Gears	Inspect And Replace If Necessary

5.0 2230S/2250X Troubleshooting



5.7 2250X "115V" Wiring Schematic



5.7 2250X "230V" Wiring Schematic

6.0 2230S/2250X DISASSEMBLY/ASSEMBLY/ ADJUSTMENTS

6.1 Necessary Tools

The following specialty tool list is necessary for disassembly/assembly/adjustments.

1. Snap ring pliers
2. Volt/ohm multimeter

6.2 Upper Cover Removal

Disassembly of the shredder is described in the following steps. Referencing Section 8.0 will help you understand the text.



CAUTION!

Disconnect the unit from the receptacle before performing any disassembly procedures.

1. Pull the shredder head out from the cabinet and place the head upside down on a secure area.
2. Remove the four phillips head screws from the bottom housing.
3. After noting the wiring sequence on the P.C board disconnect all six leads.
4. Remove and carefully place the cover to the right side.

6.3 Cutter Head Removal

1. Complete Section 6.2, **Upper Cover Removal.**
2. After noting wiring sequence, disconnect the bag full flap and auto on switch leads.
3. Disconnect the ground wire from the front support plate.
4. Disconnect the three motor leads.
5. Remove the four mounting bolts located on the left and right hand side frames.
6. Remove the cutter head chasis out of the bottom cover.
7. Place unit upside down to avoid damage to the bag full flap.

6.4 Motor/Drive Gear Removal **READ SECTION 6.8 Cutter Timing BEFORE PROCEEDING!**

1. Complete Section 6.2, **Upper Cover Removal.**
2. Complete Section 6.3, **Cutter Head Removal.**
3. Remove the four phillips head screws from the double drive idler gear side support bracket.
4. Remove the snap ring from the main drive gear, slide out and remove the double drive gear.
5. Slide out and remove the double drive gear.
6. Remove the four phillips screws securing the motor.

6.0 2230S/2250X DISASSEMBLY/ASSEMBLY/ ADJUSTMENTS

6.4 Motor/Drive Gear Removal (Cont.)

⇒ **Note the orientation of the cutter shaft gears for assembly purposes. For best shredding quality, mark both shafts for reassembly. (Cross Cut Model Only)**

7. Slide pin out from the upper cutter shaft and slide out the cutter gear.
8. Remove the snap ring from lower cutter gear and slide out.



CAUTION!

Sharp Cutters!

6.5 Cutter Shaft and Stripper Assembly Removal

1. Complete Section 6.2, **Upper Cover Removal**.
2. Complete Section 6.3, **Cutter Head Removal**.
3. Complete Section 6.4, Motor/Drive Gear Removal.
4. Remove the E-ring from the lower cutter shaft on the L.H. side frame.
5. Remove reverse cam by depressing the three locking tabs on the auto gear.
6. Remove E-ring and auto gear from the upper cutter gear.
7. Remove the E-ring from the upper cutter shaft on the L.H. side frame.
8. Remove the five 1/2" phillips screws from the R.H. side frame.
9. Remove the four 3/8" phillips screws, mounting the R.H. side frame and the bearing holder together .
10. Cut the wire tie holding motor wires to support plate-D.
11. Remove cutter assembly.

6.0 2230S/2250X DISASSEMBLY/ASSEMBLY/ ADJUSTMENTS

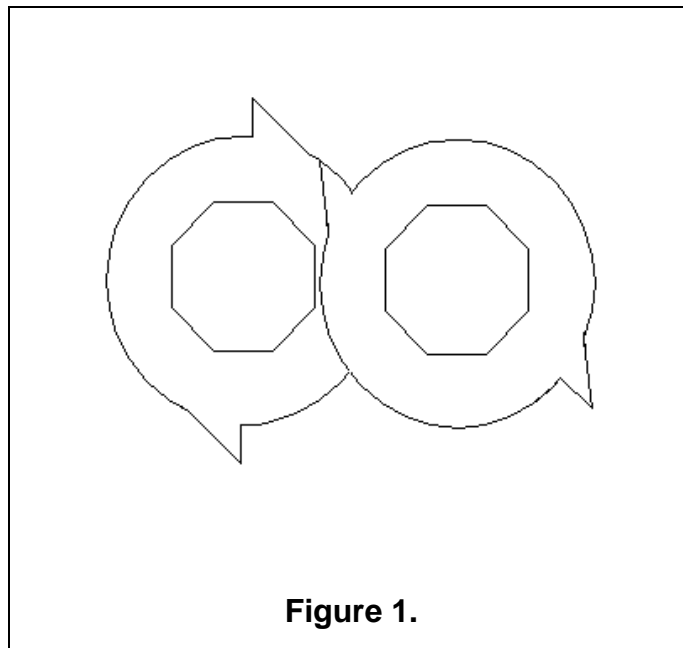
6.7 Assembly

1. The shredder is easily assembled by following the disassembly instructions in the reverse order.

6.8 Cutter Timing (Cross Cut Model Only)

The 2250X cutters must be aligned to ensure proper chip size. These spurs are shown in Figure 1.

Upon reassembly, slight rotation of the cutter gears may be necessary to align the teeth of the cutter gears when installing. Before installing the remaining gear train, test the chip size by manually shredding one sheet of paper. Failure to align the cutters will result in incomplete shredding and reduced shred capacity.



7.0 2250X MAINTENANCE PROCEDURES

7.1 External Cleaning

Make sure you disconnect the shredder from its power source before cleaning. The cover and cabinet may be cleaned with a soft cloth moistened with a mild detergent and warm water. Do not use chemical cleaners or solvents as these may have a harmful effect. Use detergent sparingly to avoid contact with electronic components.

7.2 Inspection

Whenever the cover has been removed for corrective maintenance, visually inspect for defects such as loose screws or nuts, damaged wire insulation, loose terminals, etc. Correct any defects before returning the shredder into service.

Periodic lubrication of the cutter gears is not required. However, when gears are replaced they should be lubricated with a good quality gear lubricant.

Section 8.0 2230S/2250X Parts List

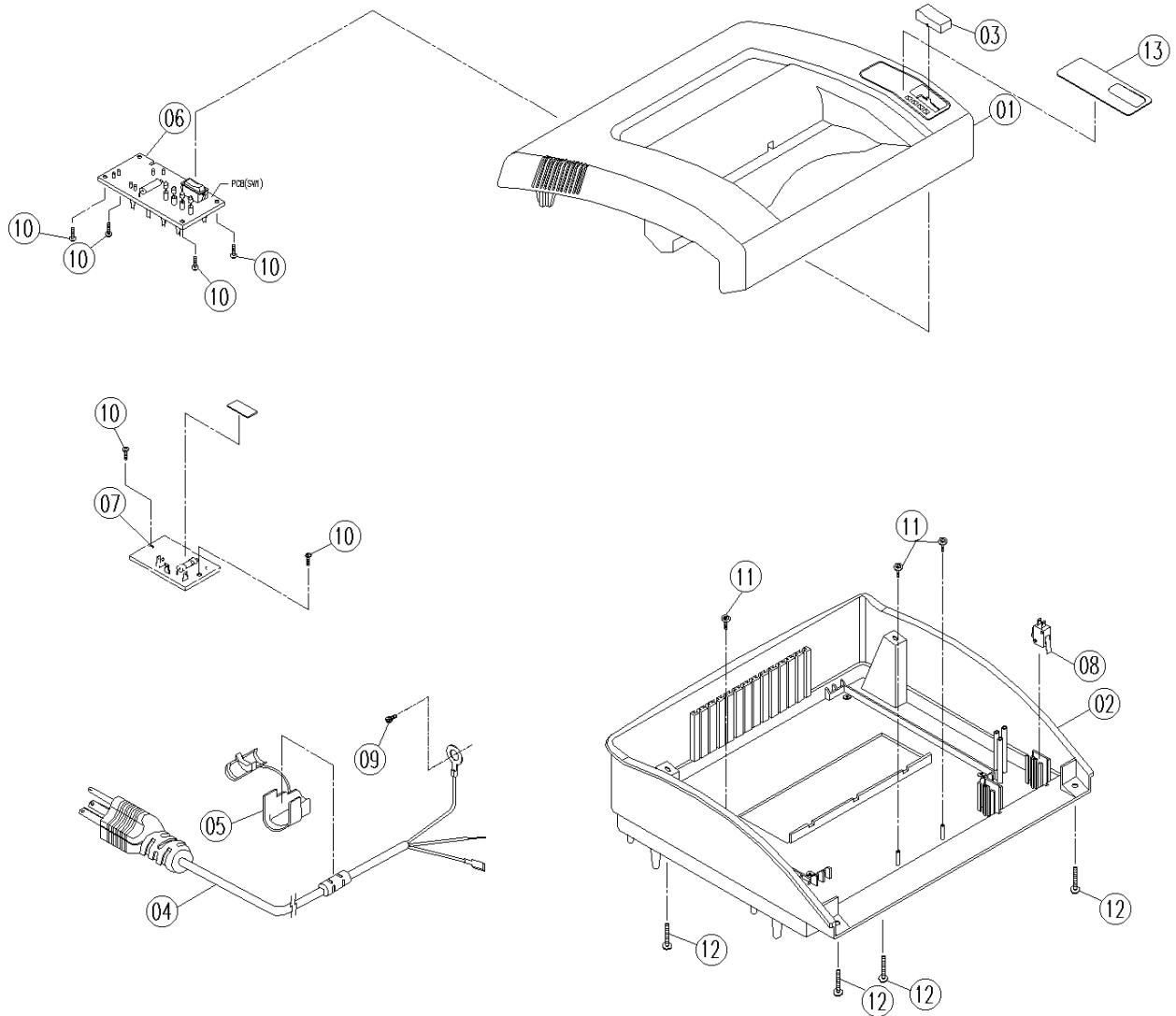
All parts in each illustration are keyed with an index number for reference to the respective part number, part name and quantity in the parts list. The quantities for the 2230S/2250X shredders are shown in the respective quantity column.

When ordering service parts, always include the following information:

- Machine Model Number
- Machine Serial Number
- Part Number
- Part Name
- Quantity Required

NOTE: The NORTHBROOK Service Parts Department does not stock all hardware. To avoid delay, standard hardware shown in this parts list should be procured locally whenever possible.

Section 8.0 2230S/2250X Parts List
2230S Exploded View
Figure 8.1

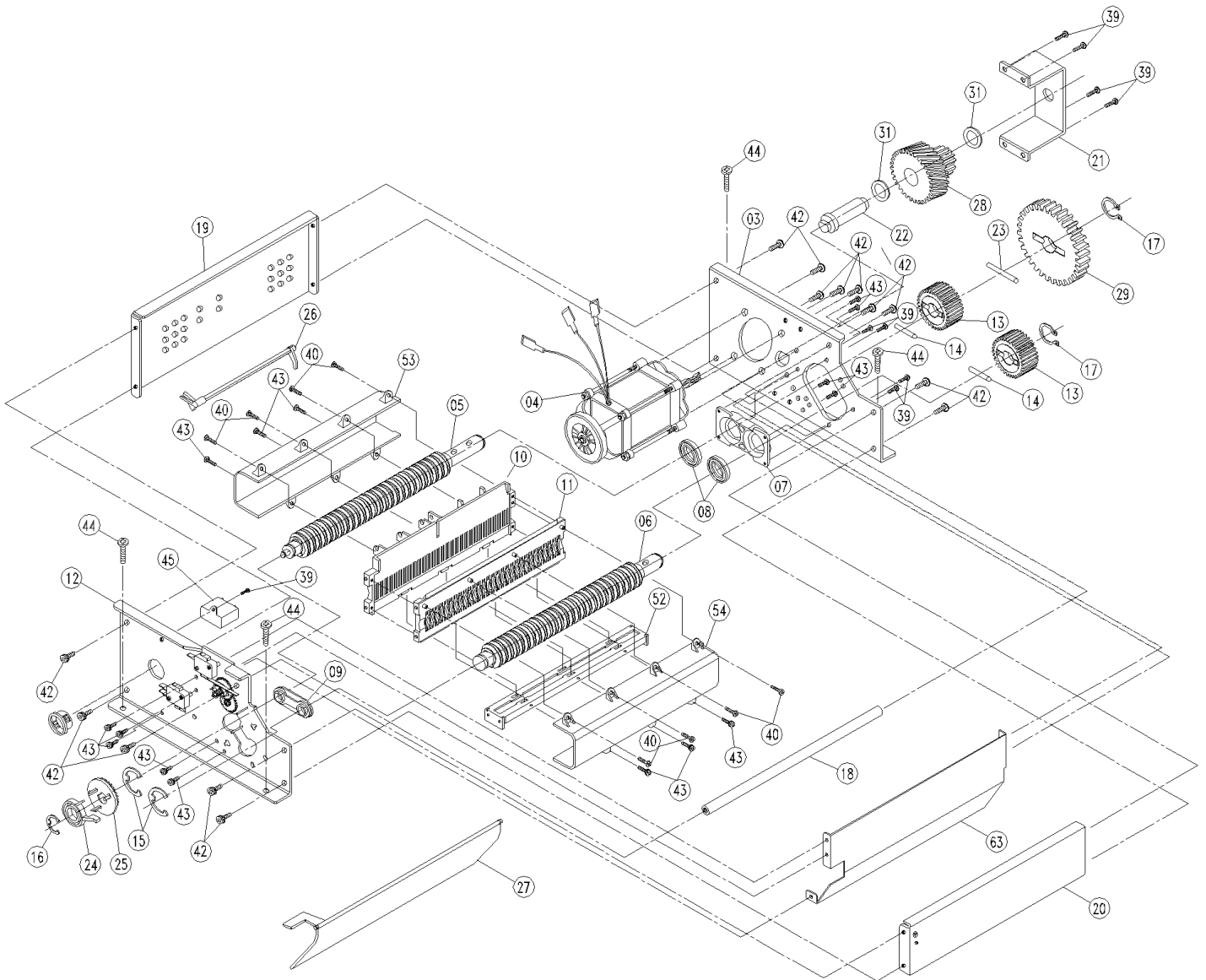


Section 8.0 2230S/2250X Parts List
2230S Parts List
Figure 8.1

				QTY	
*	1751726	KL7350000A	Warning Label	1	1
13	1751900	XF2500000A	Name Plate	1	1
12	-REF-	S1VKF00000	Screw 5X16 Tapping	8	8
11	-REF-	S1DJN0000F	3X8 With Washer	3	3
10	-REF-	S1RYN00000	Screw #3X8 Tap	14	14
9	-REF-	S1VGF0000E	Screw M4X8 P Gear Washer	10	10
8	6202038	ESWC02270X	Micro Switch, Door	1	1
7	1751726	ASYMO7421A	Fuse PCB		1
7	1751901	ASYMO7149X	Fuse PCB	1	
6	1751727	ASYMO7148A	PCB, Control		1
6	1751717	ASYMO736X	PCB, Control	1	
5	1751902	XF0400000X	Strain Relief Bushing	1	1
4	1751903	EACC0351SA	AC Power Cord	1	
3	1751904	PW040A068A	Switch Cap	1	1
2	1751905	PV241A18ZA	Bottom-Housing	1	1
1	1751906	PV230A1E1B	Housing-Top	1	1
ITEM	PRT NO.	REF. NO.	DESCRIPTION	115V	230V

* Not shown located on the bottom cover

Section 8.0 2230S/2250X Parts List
2230S Exploded View
Figure 8.2



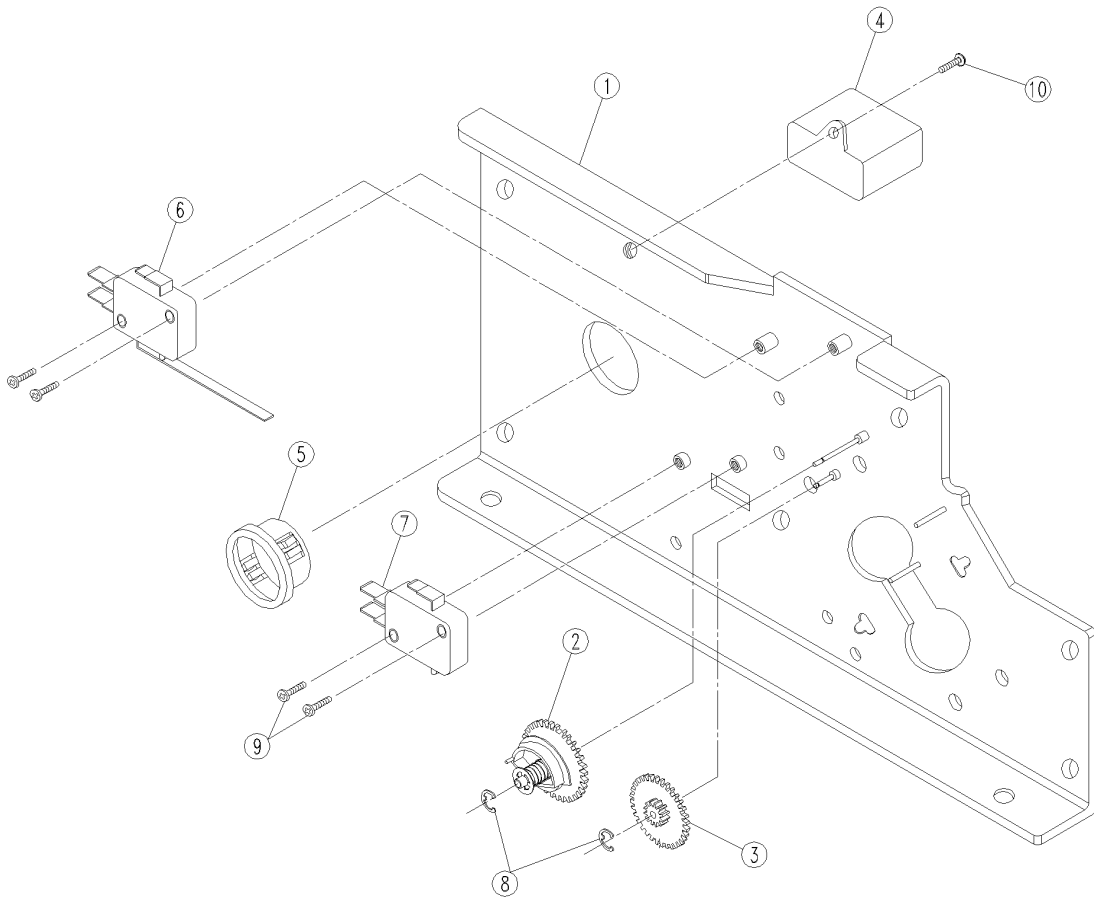
Section 8.0 2230S/2250X Parts List

2230S Parts List

Figure 8.2

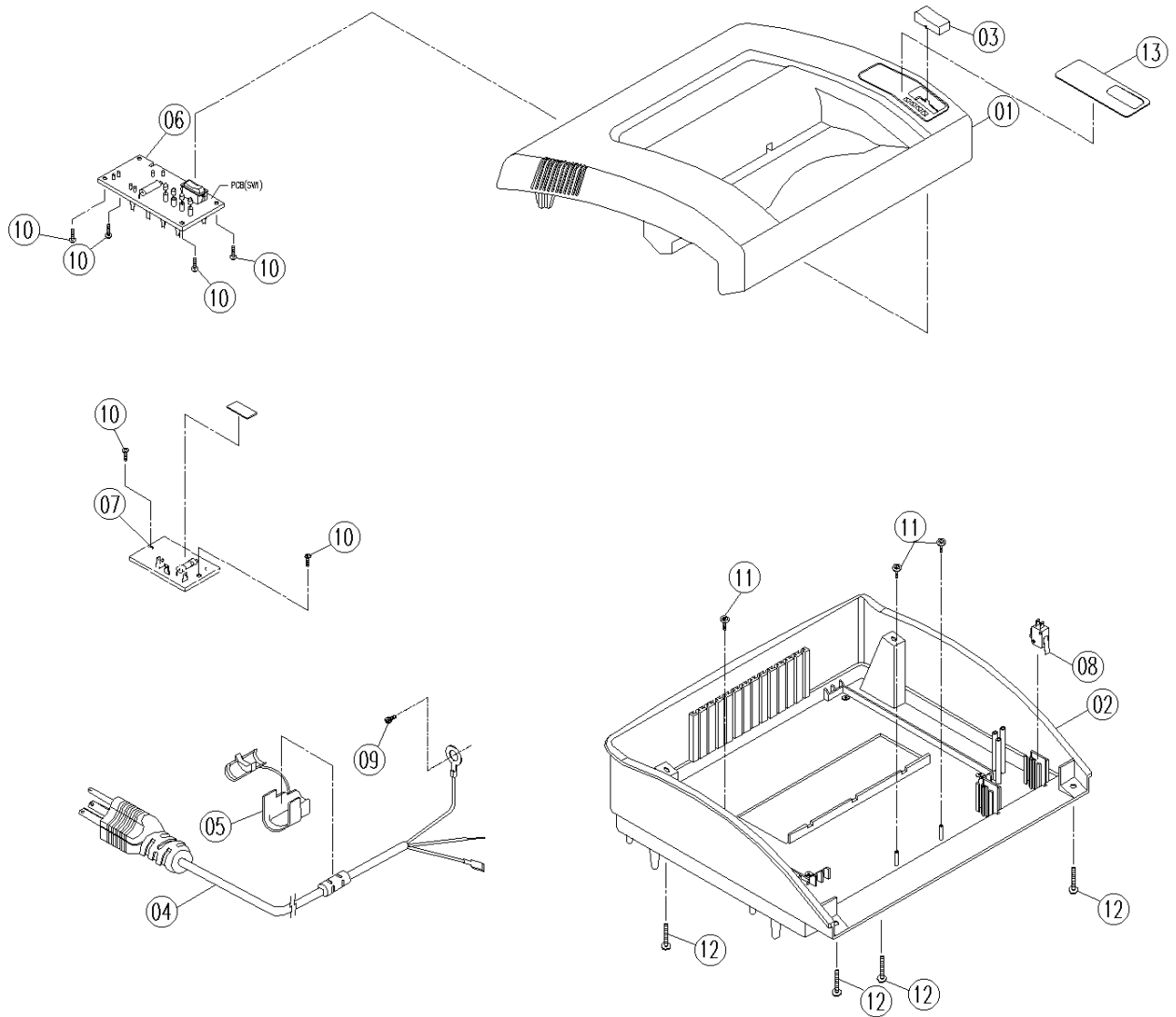
ITEM	PRT NO.	REF. NO.	DESCRIPTION	QTY	
				115V	230V
54	1751926	PW240XXXXX	Knife Cover-Front	1	1
53	1751925	PW250XXXXX	Knife Cover-Rear	1	1
52	1751924	ML6300000X	Paper Guide-Bracket	1	1
45	1751728	ECAP606600	Capacitor 9uf/400VAC		1
45	1751923	ECAP60310X	Capacitor 30uf/250VAC	1	
43	-REF-	S1VHF0000E	Screw M3X8 P Gear Washer	15	15
42	-REF-	S1VFF0000E	Screw M5X10 B Gear Washer	14	14
31	-REF-	X99800000X	Spacer	2	2
29	1751708	PV860D7XXX	Spur Gear 45T	2	2
28	1751709	PV850H5XXX	Gear -A 47T+13T	1	1
27	1751922	PV300XXXXX	Flap	1	1
26	1751716	PV290XXXXX	Auto Parts	1	1
25	6180021	PH820HOXXX	Auto Gear 32T	1	1
24	1751921	PH810HOXXX	Rev Cam	1	1
23	1750713	MM0600000X	Knife Shaft Pin	1	1
22	1751920	ML6500000X	Gear Shaft	1	1
21	1751919	ML6200000X	Gear Holder	1	1
20	1751918	ML6100000X	Plate-D	1	1
19	1751917	ML5000000X	Plate-C	1	1
18	1751916	MIA4800000X	Side Plate Support	1	1
17	-REF-	MC5000000X	#15 C-Ring	2	2
16	-REF-	MC4700000X	#5 E-Ring	1	1
15	-REF-	MC4600000X	#12 E-Ring	2	2
14	1751915	MC3400000X	Knife Pin	2	2
13	6180029	MC1000000X	Spur Gear-A 20T	1	1
12	1751914	ASYMO5841X	Plate-A Ass'y	1	1
11	1751913	PV260XXXXX	Paper Guide - Front	1	1
10	1751912	PV250XXXXX	Paper Guide - Rear	1	1
9	1750714	MC2300000X	Bushing	1	1
8	1751911	MM0900000X	Bearing 6002	2	2
7	1751910	ML6600000X	Bearing Holder	1	1
6	1751909	ASYMO5840X	4mm Knife Shaft(B) Ass'y	1	1
5	1751908	ASYM04839X	4mm Knife Shaft(A) Ass'y	1	1
4	1751729	EMTR01040A	2P AC Motor		1
4	1751718	EMTR01010X	2P AC Motor	1	
3	1751735	ASYMO7045A	Plate-B		1
3	1751907	ML7300000X	Plate-B	1	

Section 8.0 2230S/2250X Parts List
2230S Exploded View "Plate-A"
Figure 8.3



ITEM	PRT NO.	REF. NO.	DESCRIPTION	QTY	
				115V	230V
10	-REF-	S1VGF0000X	Screw M4X8P Gear Washer	1	1
9	-REF-	S1CFNOOOOX	M3 X 14	2	2
8	-REF-	MA8400000X	#1.5 E-Ring	2	2
7	1751930	ESWCO2280X	Micro Switch	1	1
6	1750294	ESWC03000X	Trigger Switch	1	1
5	1751929	XF1400000X	Snap Bushings	1	1
4	1751728	ECAP606600	Capacitor 9uF/250VAC		1
4	1751923	ECAP60310X	Capacitor 30uF/250VAC	1	
3	1750308	PC370HOXXX	Gear (A)	1	1
2	1751928	ASYMO2755X	Auto Cam Ass'y	1	1
1	1751927	ML7500000X	Plate-A	1	1
ITEM	PRT NO.	REF. NO.	DESCRIPTION	115V	230V

Section 8.0 2230S/2250X Parts List
2250X Exploded View
Figure 8.4

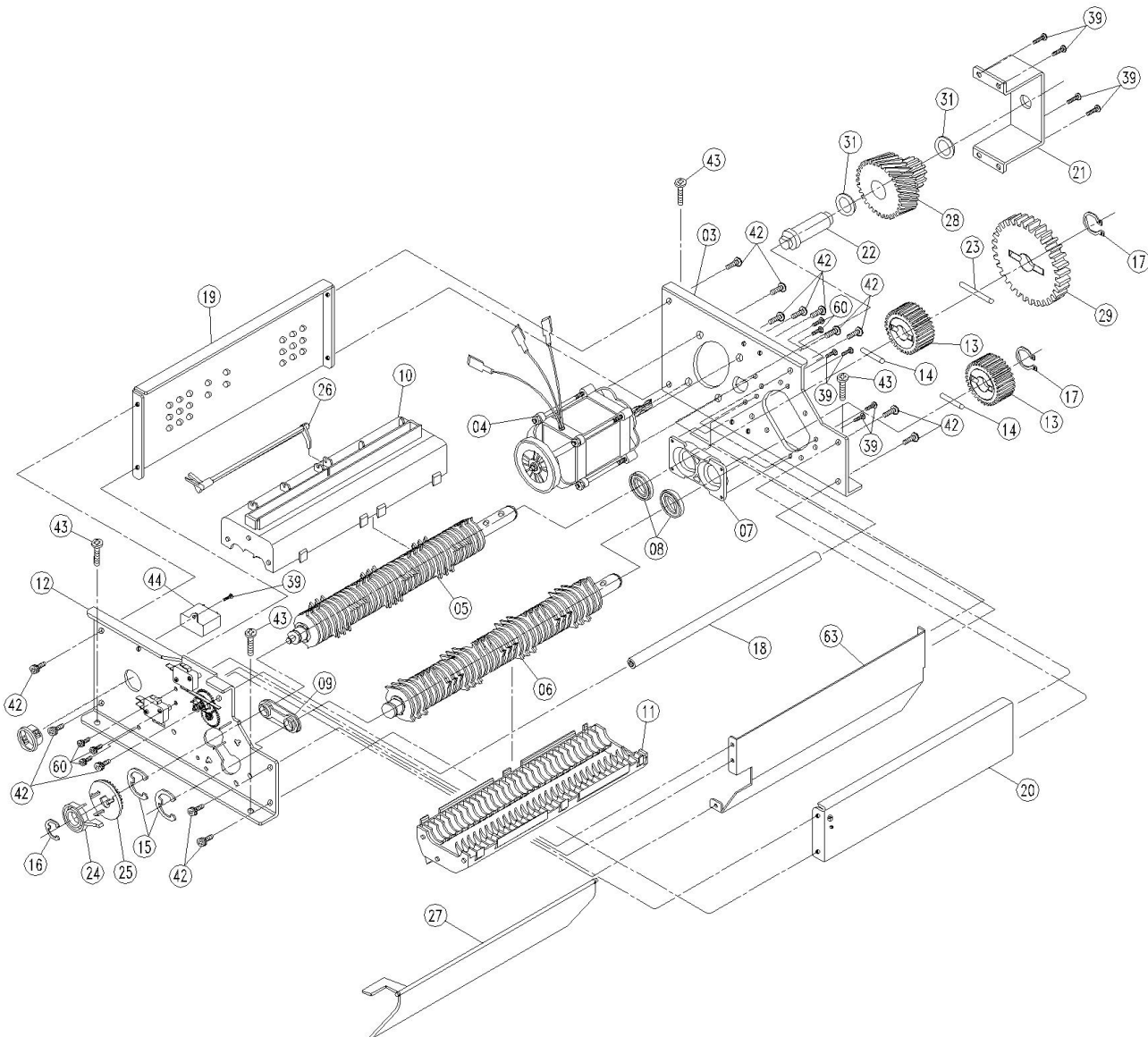


Section 8.0 2230S/2250X Parts List
2250X Figure 8.4
Exploded View Parts List

				QTY	
*	1751726	KL7350000A	Warning Label	1	1
13	1751931	XF2501000X	Name Plate	1	1
12	-REF-	S1VKF00000	Screw 5X16 Tapping	8	8
11	-REF-	S1DJN0000F	3X8 With Washer	3	3
10	-REF-	S1RYN00000	Screw #3X8 Tap	14	14
9	-REF-	S1VGF0000E	Screw M4X8 P Gear Washer	10	10
8	6202038	ESWC02270X	Micro Switch, Door	1	1
7	1751726	ASYMO7421A	Fuse PCB		1
7	1751901	ASYMO7149X	Fuse PCB	1	
6	1751727	ASYMO7148A	PCB, Control		1
6	1751717	ASYMO7367X	PCB, Control	1	
5	1751902	XF0400000X	Strain Relief Bushing		1
4	1751903	EACC0351SA	AC Power Cord	1	
3	1751904	PW040A068A	Switch Cap	1	1
2	1751932	PV240XXXXX	Bottom-Housing	1	1
1	1751906	PV230A1E1B	Housing-Top	1	1
ITEM	PRT NO.	REF. NO.	DESCRIPTION	115V	230V

* Not shown located on the bottom cover

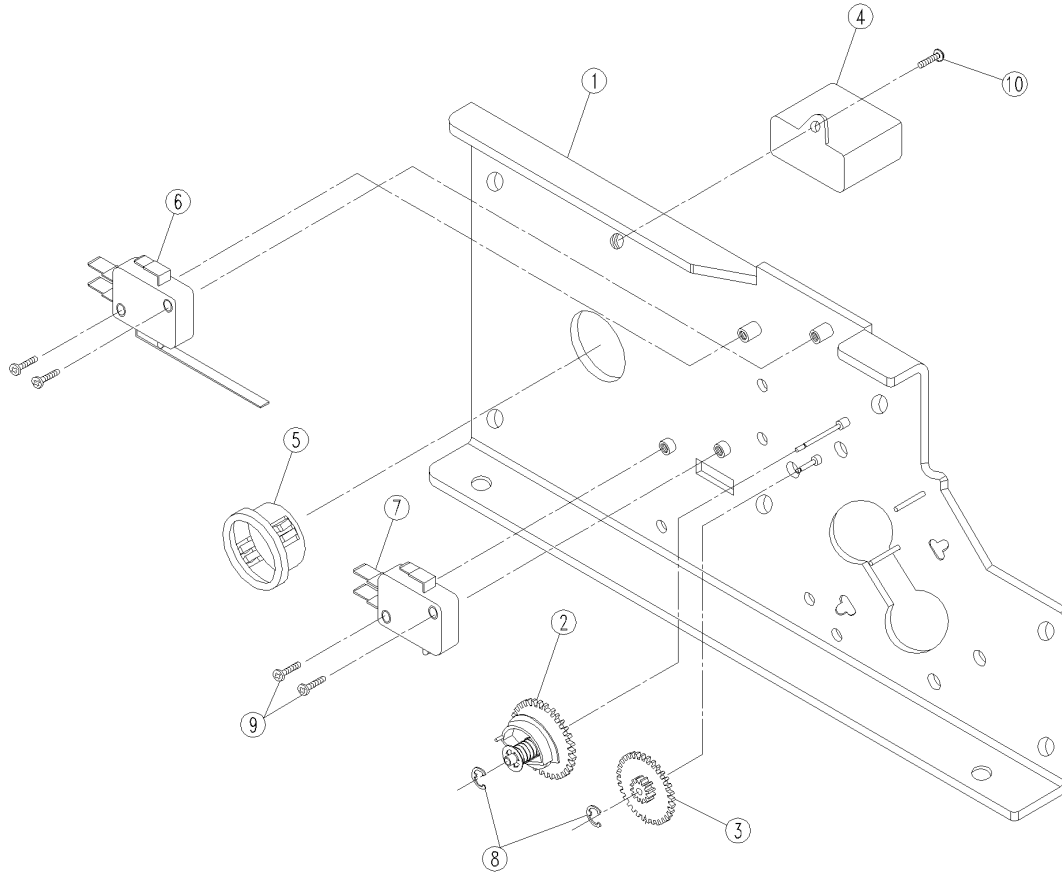
Section 8.0 2230S/2250X Parts List
2250X Exploded View
Figure 8.5



Section 8.0 2230S/2250X Parts List
2250X Figure 8.5
Exploded View Parts List

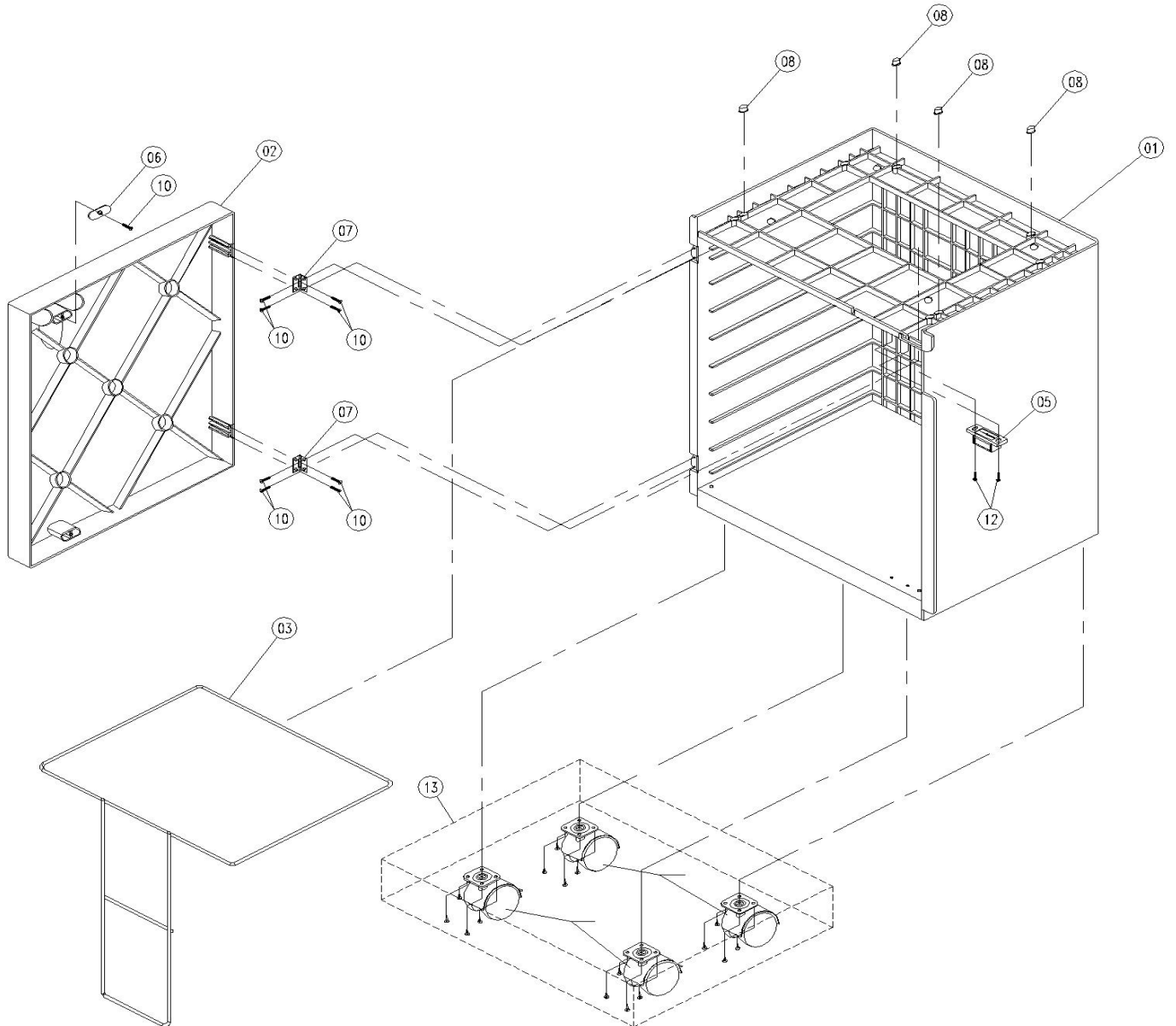
				QTY	
44	1751736	ECAP606700	Capacitor 7.5uf/400VAC		1
44	1751947	ECAP60300X	Capacitor 20uf/250VAC	1	
43	-REF-	S1VKF00000	Screw #5X16 B Tapping	8	8
42	-REF-	S1VFF0000E	Screw #5X10 B Gear Washer	14	14
31	-REF-	X99800000X	Spacer	2	2
29	1751938	PV880D7XXX	Spur Gear 50T	1	1
28	1751766	PV870H5XXX	Gear -A 53T+11T	1	1
27	1751922	PV300XXXXX	Flap	1	1
26	1751716	PV290XXXXX	Auto Parts	1	1
25	6180021	PH820HOXXX	Auto Gear 32T	1	1
24	1751921	PH810HOXXX	Rev Cam	1	1
23	1750713	MM0600000X	Knife Shaft Pin	1	1
22	1751920	ML6500000X	Gear Shaft	1	1
21	1751919	ML6200000X	Gear Holder	1	1
20	1751918	ML6100000X	Plate-D	1	1
19	1751917	ML5000000X	Plate-C	1	1
18	1751916	MIA4800000X	Side Plate Support	1	1
17	-REF-	MC5000000X	#15 C-Ring	2	2
16	-REF-	MC4700000X	#5 E-Ring	1	1
15	-REF-	MC4600000X	#12 E-Ring	2	2
14	1751915	MC3400000X	Knife Pin	2	2
13	6180029	MC1000000X	Spur Gear-A 20T	2	2
12	1751939	ASYMO5833X	Plate-A Ass'y	1	1
11	1751937	PV280XXXXX	Paper Guide - Bottom	1	1
10	1751936	PV270XXXXX	Paper Guide - Top	1	1
9	1750714	MC2300000X	Bushing	1	1
8	1751911	MM0900000X	Bearing 6002	2	2
7	1751910	ML6600000X	Bearing Holder	1	1
6	1751935	ASYMO5831X	Cross Cutter (B) Ass'y	1	1
5	1751934	ASYMO5830X	Cross Cutter (A) Ass'y	1	1
4	1751737	EMTR01030A	2P AC Motor		1
4	1751767	EMTR00990X	2P AC Motor	1	
3	1751738	ASYMO7044A	Plate-B		1
3	1751933	ML7400000X	Plate-B	1	
ITEM	PRT NO.	REF. NO.	DESCRIPTION	115V	230V

Section 8.0 2230S/2250X Parts List
2250X Exploded View
Figure 8.6



					QTY	
10	-REF-	S1VGF0000X	Screw M4X8P Gear Washer	1	1	
9	-REF-	S1CFN0000X	M3 X 14	2	2	
8	-REF-	MA8400000X	#1.5 E-Ring	2	2	
7	1751930	ESWCO2280X	Micro Switch	1	1	
6	1750294	ESWC03000X	Trigger Switch	1	1	
5	1751929	XF1400000X	Snap Bushings	1	1	
4	1751736	ECAP606700	Capacitor 7.5uF/400VAC		1	
4	1751947	ECAP60300X	Capacitor 20uF/250VAC	1		
3	1750308	PC370HOXXX	Gear (A)	1	1	
2	1751928	ASYMO2755X	Auto Cam Ass'y	1	1	
1	1751927	ML7500000X	Plate-A	1	1	
ITEM	PRT NO.	REF. NO.	DESCRIPTION	115V	230V	

Section 8.0 2230S/2250X Parts List
2230S/2250X Cabinet Exploded View
Figure 8.7

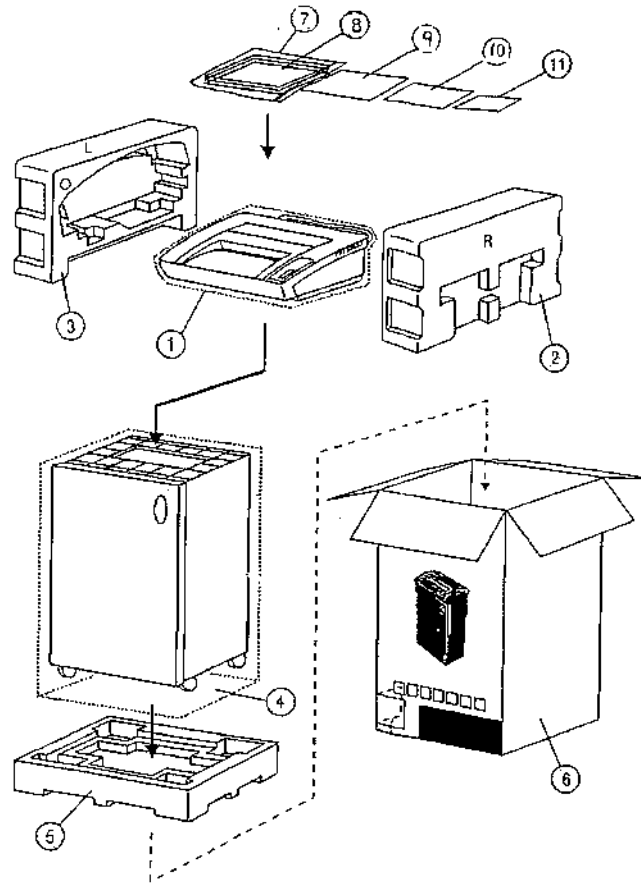


Section 8.0 2230S/2250X Parts List
2230S/2250X Cabinet Parts List
Figure 8.7

				QTY	
*	1751739	KL8201200A	Bag Reorder Label		1
*			Bag Reorder Label	1	
13	1751707	ASYP07137A	Castor Set	1	1
12	-REF-	S1VJN0000X	Screw 3X12 Washer Tapping	2	2
11	-REF-	S1VIF0000X	Screw M4X14	4	4
10	-REF-	S1VDB0000X	Screw #3X12 Type P F Black	9	9
8	1751946	XF1100000A	Cushion	4	4
7	1751945	MH1300000A	Hinge	2	2
6	1751944	MM1000000A	Magnet Plate	2	2
5	1751943	XF1500000A	Magnet	2	2
4	1751942	MN210Z000A	Support Bar	2	2
3	1751706	ML640L900A	Bag Rim	1	1
2	1751941	PV830JOE1A	Door	1	1
1	1751940	ASYM05835A	Cabinet Ass'y	1	1
ITEM	PRT NO.	REF. NO.	DESCRIPTION	115V	230V

* Not shown

Section 8.0 2230S/2250X Parts List
2230S/2250X Packaging Exploded View
Figure 8.8



11		KM3240000X	Manual (Consign)	1	1
10		KM2390400X	Warranty Card	1	1
9			Operator Manual, International		1
9	1751955	KM2981800A	Operator Manual, U.S	1	
8		KP8390000X	P.E Bag	1	1
7	1751954	KP8400000X	P.E Bag	1	1
6	1751953	KG5190000X	Gift Box	1	1
5	1751952	XG2000000A	Polyfoam, Bottom	1	1
4	1751951	KP8380000X	P.E Bag	1	1
3	1751950	XG1800000A	Polyfoam, LH	1	1
2	1751949	XG1900000A	Polyfoam, RH	1	1
1	1751948		Bag, Shredder Head	1	1
ITEM	PRT NO.	REF. NO.	DESCRIPTION	115V	230V

9.0 2230S/2250X *Recommended Spare Parts

2230S			QTY	
6180029	MC1000000X	Spur Gear-A 20T	1	1
1751706	ML640L900A	Bag Rim	1	1
1751707	ASYP07137A	Castor Set	1	1
1751708	PV860D7XXX	Spur Gear 45T (2230S)	1	1
1751709	PV850H5XXX	Gear -A 47T+13T (2230S)	2	2
1751716	PV290XXXXX	Auto Parts	1	1
1751727	ASYMO7148A	PCB, Control		1
1751717	ASYMO7367X	PCB, Control	1	
1751729	EMTR01040A	2P AC Motor (2230S)		1
1751718	EMTR01010X	2P AC Motor (2230S)	1	
1751930	ESWCO2280X	Micro Switch	1	1
1750294	ESWC03000X	Trigger Switch	1	1
PRT NO.	REF. NO.	DESCRIPTION	115V	230V

2250X			QTY	
6180029	MC1000000X	Spur Gear-A 20T	1	1
1751706	ML640L900A	Bag Rim	1	1
1751707	ASYP07137A	Castor Set	1	1
1751938	PV880D7XXX	Spur Gear 50T (2250X)	1	1
1751766	PV870H5XXX	Gear -A 53T+11T (2250X)	2	2
1751716	PV290XXXXX	Auto Parts	1	1
1751727	ASYMO7148A	PCB, Control		1
1751717	ASYMO7367X	PCB, Control	1	
1751737	EMTR01030A	2P AC Motor (2250X)		1
1751767	EMTR00990X	2P AC Motor (2250X)	1	
1751930	ESWCO2280X	Micro Switch	1	1
1750294	ESWC03000X	Trigger Switch	1	1
PRT NO.	REF. NO.	DESCRIPTION	115V	230V

*Based On One Hundred Machines.



One GBC Plaza
Northbrook, Illinois 60062
<http://www.generalbinding.com>

Issued: 11/97
Assembly# 2230S 1751700 U.S
2250X 1751760 U.S

Printed in the U.S.A.