



IMI CORNELIUS REMCOR INC ■ 500 REGENCY DRIVE ■ GLENDALE HEIGHTS, IL 60139-2268

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# Operator's Manual

## ICE/BEVERAGE DISPENSER

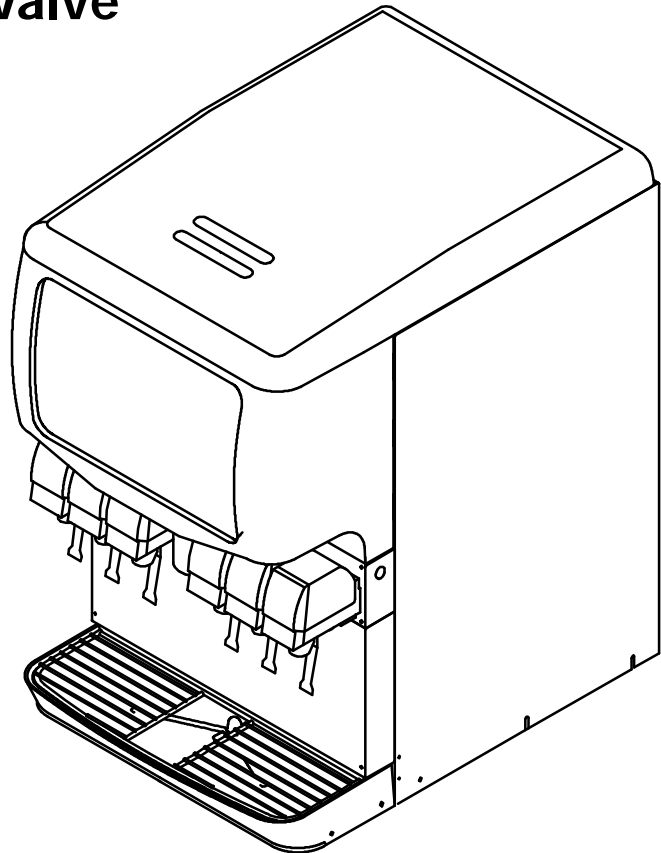
### Models: ENDURO-150 6 Valve and ENDURO-100

#### **IMPORTANT:**

##### **TO THE INSTALLER.**

It is the responsibility of the Installer to ensure that the water supply to the dispensing equipment is provided with protection against backflow by an air gap as defined in ANSI/ASME A112.1.2-1979; or an approved vacuum breaker or other such method as proved effective by test.

Water pipe connections and fixtures directly connected to a potable water supply shall be sized, installed, and maintained according to Federal, State, and Local Codes.



Part No. 92096  
November, 1995  
Revised: October, 2000  
Revision H  
Control Code A

#### **THIS DOCUMENT CONTAINS IMPORTANT INFORMATION**

This Manual must be read and understood before installing or operating this equipment

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# MAINTENANCE

The following dispenser maintenance should be performed at the intervals indicated:

## DAILY (or as required)

Remove foreign material from vending area drip tray to prevent drain blockage.

## WEEKLY (or as required)

Clean vending area. Check for proper water drainage from the vending area drip tray.

## MONTHLY

Clean and sanitize the hopper interior and beverage system, if applicable (see CLEANING INSTRUCTIONS).

## START-UP & OPERATING INSTRUCTIONS

Fill the hopper with ice. Dispense several large cups of ice (approximately 20 to 30 seconds total dispensing time) to allow ice to fill the cold plate cabinet. Add ice to the hopper as necessary to refill and replace the lid. Allow 10 to 15 minutes for the cold plate to cool down. Repeat this procedure whenever the dispenser has run out of ice. Start up the beverage system and adjust faucets to the proper brix. Contact your local syrup distributor for complete information on the beverage system.

In normal operation, pushing the ice dispenser mechanism will cause ice to flow from the ice chute. Ice flow will continue until the dispenser mechanism is released. Dispensing of any faucet will provide beverage of the appropriate flavor.



**CAUTION: Use caution to avoid spilling ice when filling dispenser. Clean up immediately any spilled ice from filling or operating the unit. To prevent contamination of ice, the lid must be installed on the unit at all times.**

If the dispenser fails to dispense ice or beverage see troubleshooting guide.

## CLEANING INSTRUCTIONS



**WARNING: Disconnect Power Before Cleaning! Do not use metal scrapers, sharp objects or abrasives on the ice storage hopper, top cover and the agitator disk, as damage may result. Do not use solvents or other cleaning agents, as they may attack the plastic material.**

Soap solution - Use a mixture of mild detergent and warm (100 degrees F) potable water.

Sanitizing solution - Use 1/2 ounce of household bleach in 1 gallon of potable water. Preparing the sanitizing solution to this ratio will create a solution of 200 PPM.

# DISPENSER

## 1. CLEANING EXTERIOR SURFACES

**Important:** Perform the following daily.

- A. Remove the cup rest from drip tray.
- B. Wash the drip tray with soap solution. Rinse with clean water and allow solution to run down the drain.
- C. Wash cup rest with soap solution and rinse in clean water. Install the cup rest into the drip tray.
- D. Clean all exterior surfaces with soap solution and rinse in clean water.

## 2. COLD PLATE INSPECTION BEFORE CLEANING

- A. Remove splash panel.
- B. Remove the plastic cold plate cover to expose the cold plate.
- C. Locate and remove any debris from the cold plate, drain trough and make certain that the drain holes are not clogged.
- D. Reinstall the cold plate cover.
- E. Reinstall the splash panel in the reverse order in which it was removed.

## 3. CLEANING INTERIOR SURFACES



**CAUTION:** When pouring liquid into the hopper, do not exceed the rate of 1/2 gallon per minute.

**Important:** Perform the following at least once a month.

- A. Remove agitator assembly.
- B. Using a long handle nylon bristle brush, clean the interior of the hopper, top, cover and cold plate with soap solution. The cold plate can be reached by going through the ice opening on the hopper bottom. Make certain to reach the entire surface of the cold plate including the corners. Clean the agitator assembly with soap solution using a nylon brush or a sponge. Thoroughly rinse the hopper, top cover, agitator and cold plate surfaces with clean potable water.
- C. Remove merchandiser and ice chute cover from dispenser.
- D. With a nylon bristle brush or sponge, clean the inside of the ice chute, gasket and cover with soap solution and rinse thoroughly to remove all traces of detergent.
- E. Re-assemble Agitator assembly. Take special care to ensure that the thumbscrew is tight.
- F. Using a mechanical spray bottle filled with sanitizing solution, spray the entire interior and agitator assembly. Allow to air dry.
- G. Re-assemble ice chute assembly.
- H. Using a mechanical spray bottle filled with sanitizing solution, spray the inside of the ice chute. Allow to air dry.
- I. Reinstall merchandiser.

## BEVERAGE SYSTEM (IF APPLICABLE)



**WARNING: Disconnect Power Before Cleaning! Do not use metal scrapers, sharp objects or abrasives on the ice storage hopper, top cover and the agitator disk, as damage may result. Do not use solvents or other cleaning agents, as they may attack the plastic material.**

Soap solution - Use a mixture of mild detergent and warm (100 degrees F) potable water.

Sanitizing solution - Use 1/2 ounce of household bleach in 1 gallon of potable water. Preparing the sanitizing solution to this ratio, the required solution of 200 PPM will be obtained.

Cleaning tank - Fill clean, empty tank with a mixture of mild detergent and five (5) gallons of warm potable water (120 degrees F).

### 1. DISPENSING VALVES

Refer to addendum supplied with the unit that is applicable to the manufacturer of the valves installed on the unit.

### 2. PRODUCT TUBING

**Only trained and qualified persons should perform these cleaning and sanitizing procedures.**

#### A. Sanitize tank systems, Post-Mix and Pre-Mix

- a. Remove all the quick disconnects from all the tanks. Fill a suitable pail or bucket with soap solution.
- b. Submerge all disconnects (gas and liquid) in the soap solution and then clean them using a nylon bristle brush. (**Do not use a wire brush**). Rinse with clean water.
- c. Prepare sanitizing solution and using a mechanical spray bottle, spray the disconnects. Allow to air dry.
- d. Using a clean, empty tank, prepare five (5) gallons of the sanitizing solution. Rinse the tank disconnects with approximately 9 oz. of the sanitizing solution. Close the tank.
- e. Prepare cleaning tank by filling clean five (5) gallon tank with a mixture of mild detergent and potable water (120 degrees F).
- f. Connect a gas disconnect to the tank and then apply one of the product tubes to the cleaning tank. Operate the appropriate valve until liquid dispensed is free of any syrup.
- g. Disconnect cleaning tank and hook up sanitizing tank to syrup line and CO<sub>2</sub> system.
- h. Energize beverage faucet until chlorine sanitizing solution is dispensed through the faucet. Flush at least two (2) cups of liquid to ensure that the sanitizing solution has filled the entire length of the syrup tubing.
- i. Allow sanitizer to remain in lines for fifteen (15) minutes.
- j. Repeat the step above, applying a different product tube each time until all tubes are filled with the sanitizing solution.
- k. For post-mix valves, remove the nozzle and syrup diffuser and clean them in a mild soap solution. Rinse with clean water and reassemble the nozzle and syrup diffuser to the valve.
- l. For pre-mix valves, disconnect all product tubes from the tank of sanitizing solution and then open the valves to allow the pressure to be relieved. Remove the valves from the dispenser, disassemble and wash thoroughly in a mild soap solution.
- m. Rinse the parts in clean water, reassemble the valve and reconnect it to the dispenser.

- n. Discard the tank of sanitizing solution and reconnect the product (syrup or pre-mix) tanks. Operate the valves until all sanitizer has been flushed from the system and only product (syrup or pre-mix) is flowing.

**B. Sanitize syrup lines, B-I-B Systems**

- a. Remove all the quick disconnects from all the B-I-B containers.
- b. Fill a suitable pail or bucket with soap solution.
- c. Submerge all disconnects (gas and liquid) in the soap solution and then clean them using a nylon bristle brush. (**Do not use a wire brush**). Rinse with clean water.
- d. Using a plastic pail, prepare approximately five (5) gallons of sanitizing solution.
- e. Rinse the B-I-B disconnects in the sanitizing solution.
- f. Sanitizing fittings must be attached to each B-I-B disconnect. If these fittings are not available, the fittings from empty B-I-B bags can be cut from the bags and used. These fittings open the disconnect so the sanitizing solution can be drawn through the disconnect.
- g. Place all the B-I-B disconnects into the pail of sanitizing solution. Operate all the valves until the sanitizing solution is flowing from the valve. Allow sanitizer to remain in lines for fifteen (15) minutes.
- h. Remove the nozzle and syrup diffuser from each valve and clean them in a soap solution. Rinse with clean water and reassemble the nozzle and syrup diffuser to the valve.
- i. Remove the sanitizing fittings from the B-I-B disconnects and connect the disconnects to the appropriate B-I-B container. Operate the valves until all sanitizer has been flushed from the system and syrup is flowing freely.

# TROUBLESHOOTING

**IMPORTANT:** Only qualified personnel should service internal components or electrical wiring.



**WARNING:** If repairs are to be made to a product system, remove quick disconnects from the applicable product tank, then relieve the system pressure before proceeding. If repairs are to be made to the CO<sub>2</sub> system, stop dispensing, shut off the CO<sub>2</sub> supply, then relieve the system pressure before proceeding. If repairs are to be made to the refrigeration system, make sure electrical power is disconnected from the unit.

Should your unit fail to operate properly, check that there is power to the unit and that the hopper contains ice. If the unit does not dispense, check the following chart under the appropriate symptoms to aid in locating the defect.

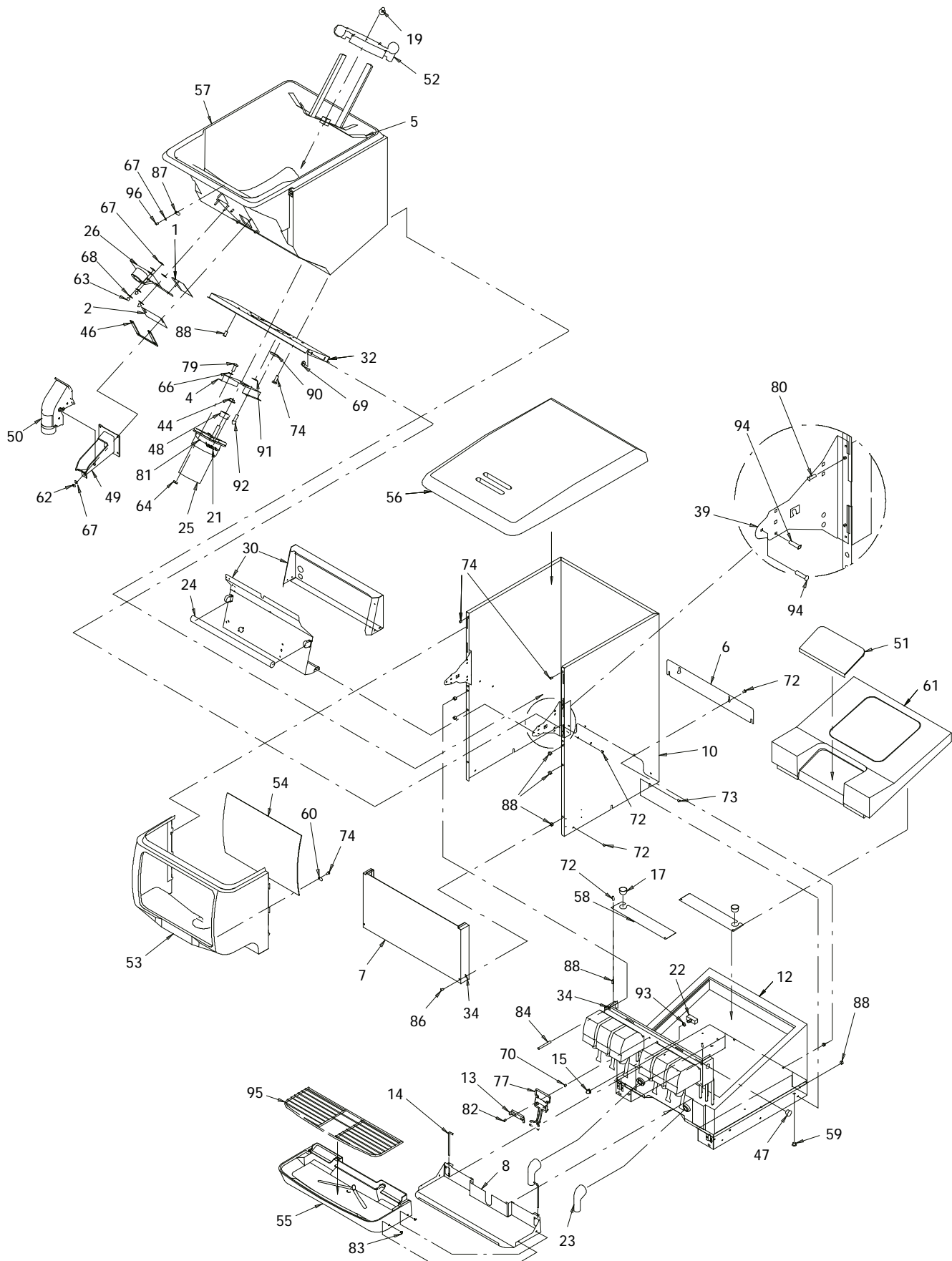
Trouble	Probable Cause
BLOWN FUSE OR CIRCUIT BREAKER.	<ul style="list-style-type: none"> <li>A. Short circuit in wiring.</li> <li>B. Defective gate solenoid.</li> <li>C. Defective agitator motor.</li> </ul>
GATE DOES NOT OPEN. AGITATOR DOES NOT TURN.	<ul style="list-style-type: none"> <li>A. No power.</li> <li>B. Bent depressor plate (does not actuate switch).</li> <li>C. Defective dispensing switch.</li> </ul>
GATE DOES NOT OPEN OR IS SLUGGISH. AGITATOR TURNS.	<ul style="list-style-type: none"> <li>A. Defective gate solenoid.</li> <li>B. Excessive pressure against gate slide.</li> <li>C. Defective rectifier.</li> </ul>
ICE DISPENSES CONTINUOUSLY.	<ul style="list-style-type: none"> <li>A. Stuck or bent depressor plate (does not release switch).</li> <li>B. Defective dispensing switch.</li> <li>C. Improper switch installation.</li> </ul>
SLUSHY ICE. WATER IN HOPPER.	<ul style="list-style-type: none"> <li>A. Blocked drain.</li> <li>B. Unit not level.</li> <li>C. Poor ice quality due to water quality or icemaker problems.</li> <li>D. Improper use of flaked ice.</li> </ul>
BEVERAGES DO NOT DISPENSE.	<ul style="list-style-type: none"> <li>A. No 24 volt power to faucets.</li> <li>B. No CO<sub>2</sub> pressure.</li> </ul>
BEVERAGES TOO SWEET.	<ul style="list-style-type: none"> <li>A. Carbonator not working.</li> <li>B. No CO<sub>2</sub> pressure in carbonator.</li> <li>C. Faucet brix requires adjusting.</li> </ul>

Trouble	Probable Cause
BEVERAGES NOT SWEET ENOUGH.	A. Empty syrup tank. B. Faucet brix requires adjusting.
BEVERAGES NOT COLD (UNITS WITH BUILT-IN COLD PLATE).	A. Unit standing with no ice in hopper - no ice in cold plate cabinet.

**Contact your local syrup or beverage equipment distributor for additional information and troubleshooting of beverage system.**



## **PARTS LIST / EXPLODED VIEW**



**FIGURE 1. CABINET SECTION EXPLODED VIEW**

# CABINET SECTION PARTS LIST

Index No.	Part No.	Name
1	21491	Gate Slide
2	22081R	Gate Restrictor
3	Not Used	
4	**29303R	Plate, Motor Mounting
5	15346	Agitator Assy
6	29483	Cover, Rear Wrapper
7	629080206	Lower Panel (For Drip Tray)
	629080202	Lower Panel (Z Model)
8	15199	Extension Assy, Drip Tray
9	Not Used	
10	29313	Wrapper (ED 150)
	620033701	Wrapper (ED 100)
11	Not Used	
12	Contact Sales	Panel Cold Plate/Faucet Assy
13	27107	Retainer, Lever, Ice Dispenser
14	10145	Pin, Drip Tray Mounting
15	31007	Boot, Switch
16	Not Used	
17	50767	Snap Bushing
18	Not Used	
19	15087	Retainer, Agitator
20	Not Used	
21	30794	Agitator Motor Heater, 120 Volt
	32826	Agitator Motor Heater, 220-240 Volt
22	30895	Dispense Switch
23	53011	Elbow, Cold Plate, Drain
24	31622	Bulb-Daylight 18"
25	**620307901	Agitator Motor, 120 Volt
	**620307902	Agitator Motor, 220-240 Volt
26	32954	Solenoid Assembly, 120 Volt
	33409	Solenoid Assembly, 220-240 Volt
27	Not Used	
28	Not Used	
29	Not Used	
30	620302001	Electrical Box Ass'y, 120 Volts (ED 150 B and BC Models)
	620303301	Electrical Box Ass'y, 120 Volts (ED 150 Ice Only)
	620302301	Electrical Box Ass'y, 220-240 Volts (ED 150 B and BC Models)
	620303302	Electrical Box Ass'y, 220-240 Volts (ED 150 Ice Only)
	620310701	Electrical Box Ass'y, 120 Volts (ED 100 B and BC Models)
31	Not Used	
32	29304	Bracket, Motor Mounting

## CABINET SECTION PARTS LIST (CONT'D)

33	Not Used	
34	71010	Washer, Captivating No. 8
35	Not Used	
36	Not Used	
37	Not Used	
38	Not Used	
39	620019701	Hinge, Gusset
40	Not Used	
41	Not Used	
42	Not Used	
43	Not Used	
44	**51859	Seal, Agitator Motor Shaft
45	Not Used	
46	51891	Gasket, Gate
47	***51908	Plug (120 Volt Models Only)
48	**52876	Gasket, Motor Shaft
49	620500901	Ice Chute
50	53168	Cover, Ice Chute
51	53241	Access Cover (Cold Plate Models Only)
52	53227	Agitator Disk
53	52878	Merchandiser, Black (ED 150)
	52999	Merchandiser, Gray (ED 150)
	15756	Merchandiser, S.S. (ED 150)
	620011513	Merchandiser, S.S. (ED 150 For Lid and Straw Holder)
	620011503	Merchandiser, S.S. (ED 150 For Medallion)
	620011502	Merchandiser, S.S. (ED 150 For Low Ice Light)
	620511802	Merchandiser, Black (ED 100)
	620511803	Merchandiser, Gray (ED 100)
54	52877	Panel, Plexiglass, Inner (ED 150)
	620511804	Panel, Plexiglass, Inner (ED 100)
55	53202	Drip Tray, Black
	53222	Drip Tray, Gray
56	52879	Lid, Dispenser, Black
	53019	Lid, Dispenser, Gray
57	52872	Hopper Assy., Foamed (ED 150)
	620511805	Hopper Assy., Foamed (ED 100)
58	15437	Baffle
59	52967	Plug
60	52972	Clip, White
61	53236	Cover (Cold Plate Models Only)
62	70016	Hex Nut, No. 10-32
63	70017	Hex Nut, No. 10-32, Nylloc
64	**70018	Hex Nut, 1/4-20

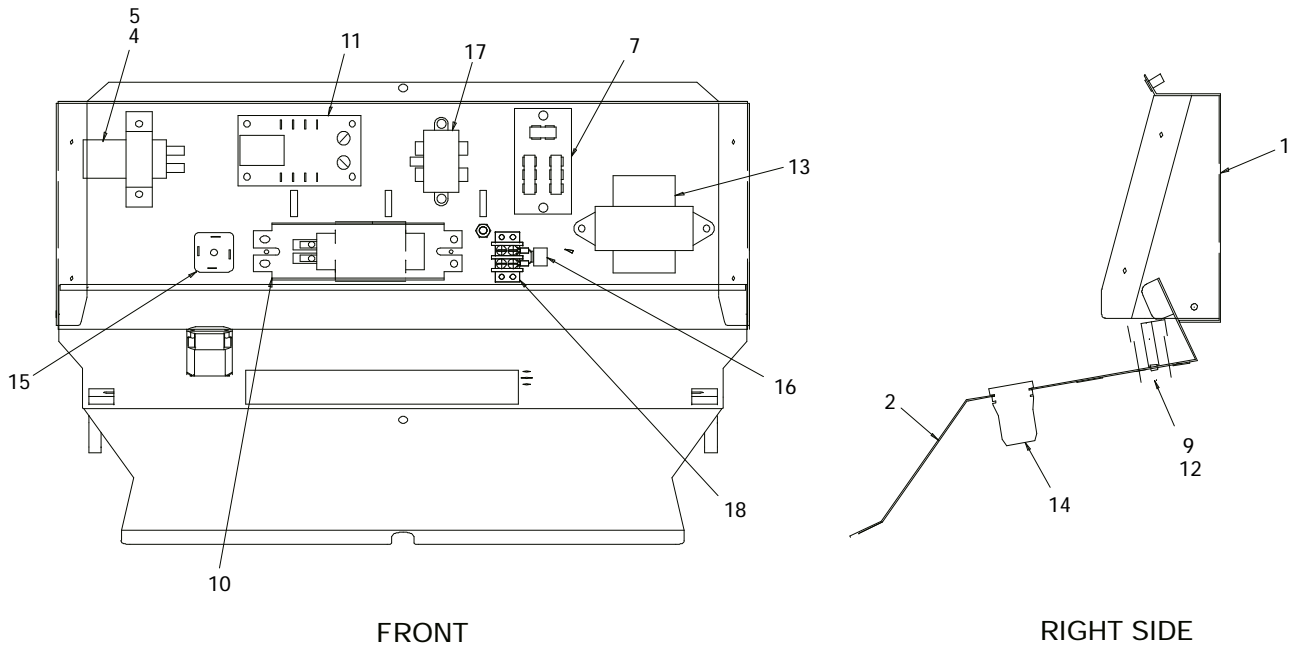
## CABINET SECTION PARTS LIST (CONT'D)

65	Not Used	
66	**70048	Washer, .255 I.D.
67	70056	Washer, No. 10, .219 I.D.
68	70067	Washer, .218 I.D.
69	70076	Hex Nut, No. 8-32
70	70104	Insert, Threaded, No. 8-32
71	Not Used	
72	70171	Machine Screw, Phil Truss Hd, No. 8-32 By 3/8-In. Long
73	70178	Machine Screw, Phil Truss Hd, No. 8-32 By 1/2-In. Long
74	70204	Sheet Metal Screw, Phil Truss Hd, No. 8 By 1/2-In. Long
75	Not Used	
76	Not Used	
77	15500	Lever, Dispense, Short (Cup Activated)
	15488	Lever, Dispense, Long (Cup Activated)
	15502	Lever, Dispense (Ice Dispense)
78	Not Used	
79	**70260	Machine Screw, Phil Rd Hd, 1/4-20 By 1-In. Long
80	70320	Pop Rivet, 1/8
81	70341	Spring, Motor Heater
82	620701601	Thread Forming Screw, Phil Pan Hd, No. 10-16 By 1/2-In. Long
83	70478R	Clip, Push On
84	70555	Machine Screw, Phil Truss Hd, No. 8-32 By 2 5/8-In. Long
*85	70750	Hose Clamp, Worm
86	71006	Machine Screw, Phil Truss Hd, No. 8-32 By 2 1/8-In. Long
87	53299	Clip, Black
88	70959	Hex Nutsert, No. 8-32
*89	71011	Leg
90	70992	Receptacle, 1/4 Turn
91	**70993	Retainer, 1/4 Turn
92	**70994	Stud Wing Head, 1/4 Turn
93	70847	Spacer, Switch
94	70456	Pop Rivet, 3/16
95	71036	Cup Rest
96	71089	Shoulder Screw, No. 8-32
*97	51288	Adapter, 1" Barb x 3/4 MPT
*98	50952	Adapter, 3/4 Soc x 3/4 FPT
*99	620702201	Cold Plate Cleaning Brush

**NOTE: \* Not Shown**

**\*\*Parts Included in Agitator Motor Kit**

**\*\*\*For 220-240V Models, 51908 Plug Replaced  
By 620303001 Push-Button Switch Actuator and  
620303002 Switch Block**

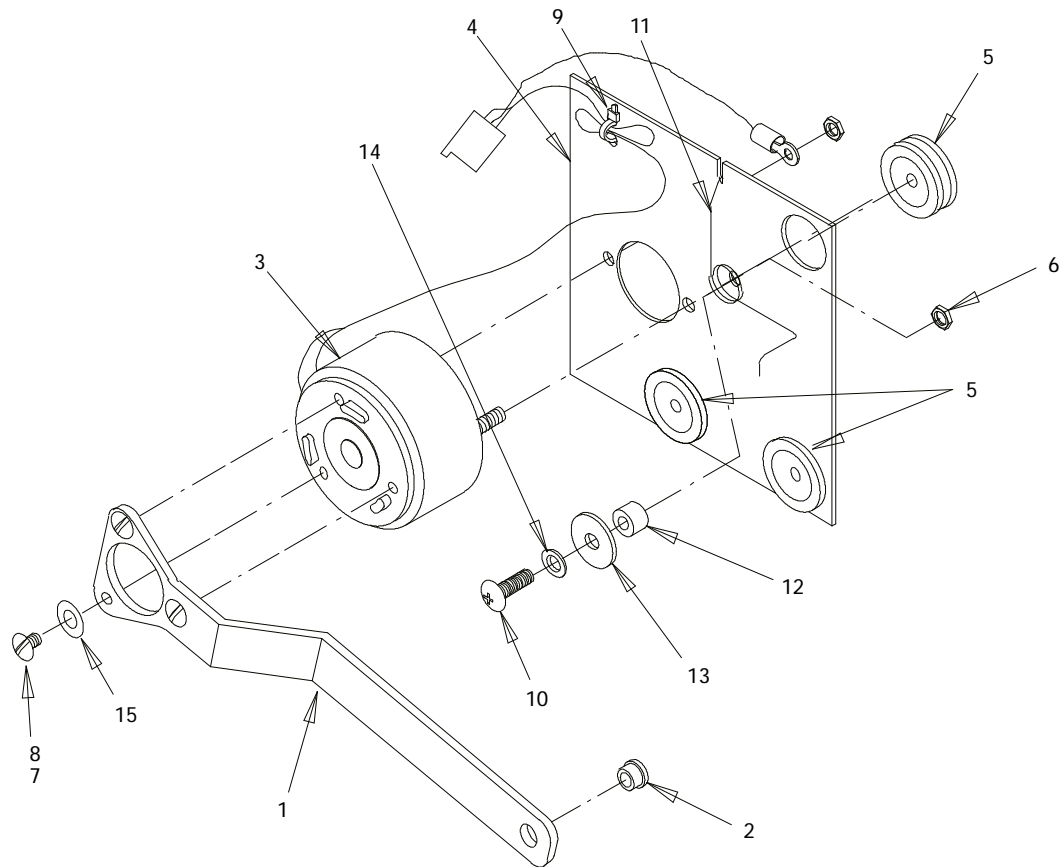


**FIGURE 2. ELECTRICAL BOX ASSEMBLY EXPLODED VIEW**

## ELECTRICAL BOX ASSEMBLY

Item No.	Part No.	Name
1	620019001	Electrical Box (ED 150)
	620033704	Electrical Box (ED 100)
2	620019101	Reflector, Panel (ED 150)
	620033703	Reflector, Panel (ED 100)
3	Not Used	
4	30514	Clamp, Capacitor, 120 Volts
	620308102	Clamp, Capacitor, 220-240 Volts
5	30774	Capacitor, 120 Volt
	620308101	Capacitor, 220-240 Volt
6	Not Used	
7	31107	Terminal Board
8	Not Used	
9	31620	Starter
10	31621	Ballast, 120 Volt
	33662	Ballast, 220-240 Volt
11	31763	Timer, Agitation, 120 Volt
	32828	Timer, Agitation, 220-240 Volt
12	620302201	Socket, Starter
13	32682	Transformer, 120 Volts
	32829R	Transformer, 220-240 Volts
14	620302101	Lamp-holder
15	32958	Rectifier
16	620304601	Varistor, 220-240 Volts
17	620307301	Filter, 220-240 Volts
18	32244	Terminal Strip, 220-240 Volts

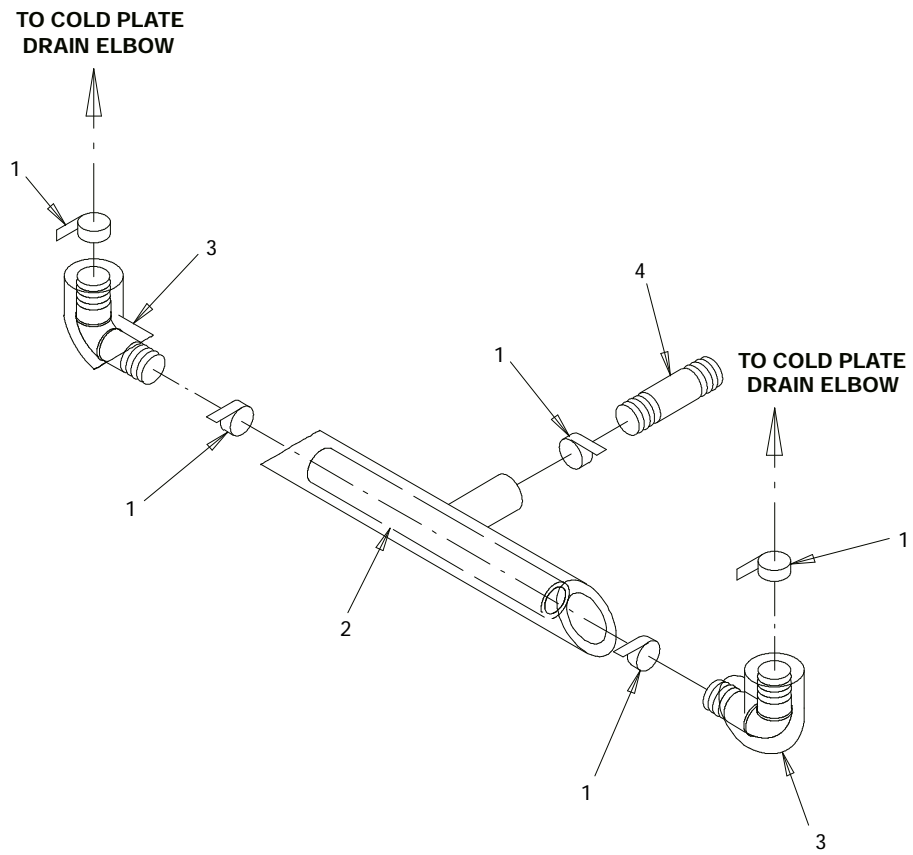
# SOLENOID ASSEMBLY



**FIGURE 3. SOLENOID ASSEMBLY**

Item No.	Part No.	Name
1	28173	Arm, Gate Lift
2	50754	Bearing, Gate Arm
3	32957	Solenoid, 120 Volts
	33397	Solenoid, 220-240 Volts
4	28172	Plate, Solenoid Mounting
5	50752	Isolator
6	70015	Hex Nut, No. 10-32
7	51689	Locktite
8	70162	Screw, No. 8-32 By 1/4-In. Long
9	50705	Tie Cable
10	70165	Screw, No. 8-32 By 5/8-In. Long
11	71007	Spring, Solenoid Arm
12	51348	Spacer
13	70067	Washer, .218 I.D. By .875 O.D.
14	70057	Lockwasher, No. 10
15	70052	Flatwasher, No. 8

# DRAIN



**FIGURE 4. COLD PLATE DRAIN FOR Z STYLE UNITS**

Item No.	Part No.	Name
1	70750	Hose Clamp
2	53170	Drain Tube
3	51280	Elbow
4	53293	Coupler



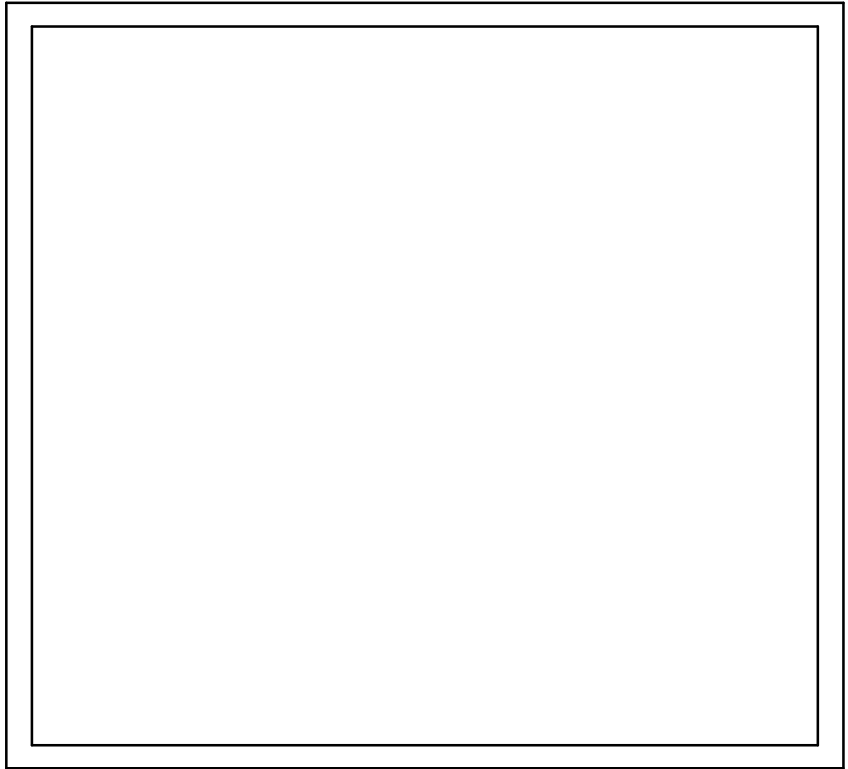
# WARRANTY

IMI Cornelius Inc. warrants that all equipment and parts are free from defects in material and workmanship under normal use and service. For a copy of the warranty applicable to your Cornelius, Remcor or Wilshire product, in your country, please write, fax or telephone the IMI Cornelius office nearest you. Please provide the equipment model number, serial number and the date of purchase.

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