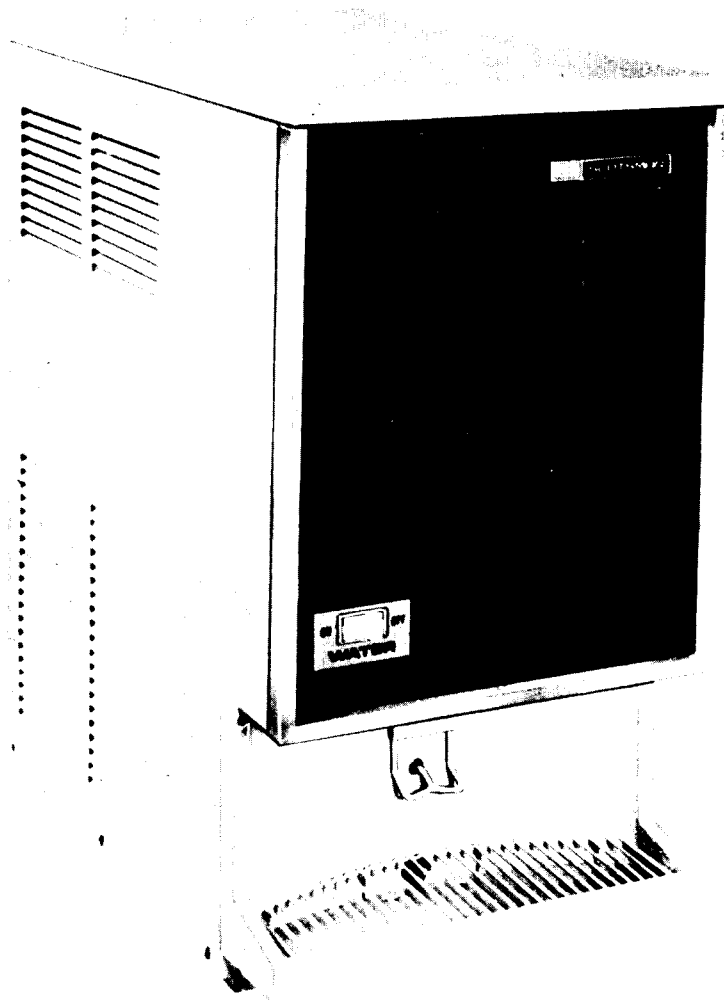


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FD4 SERIES ICEMAKER- DISPENSERS

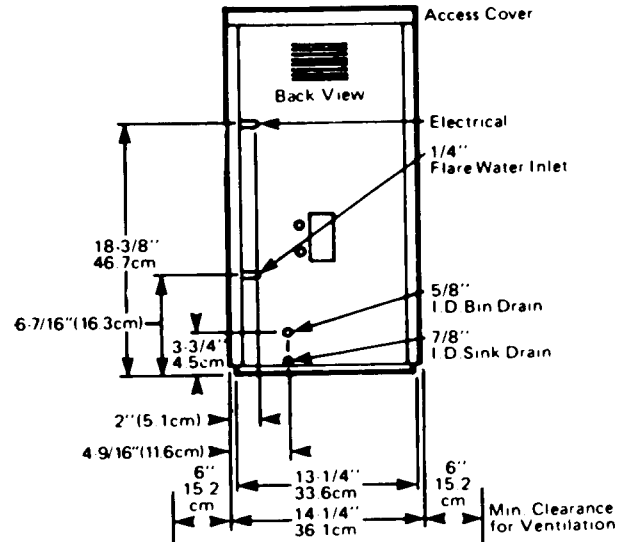
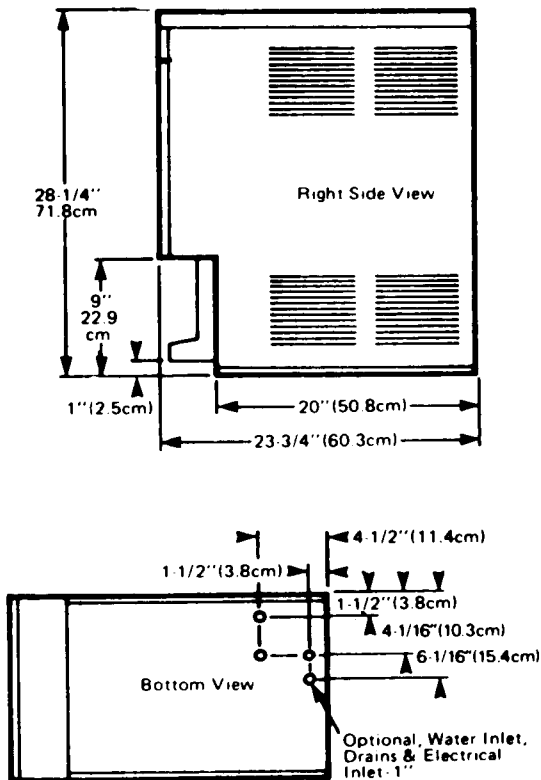
ice making capacity

Daily Ice Capacity is directly related to condenser air inlet temperature, water temperature, and age of machine.

To keep your SCOTSMAN FLAKER DISPENSER performing at its maximum capacity, it is necessary to perform periodic maintenance as outlined on page 29-30 of this manual.

FD4 flake ice dispenser

Storage Bin: 8 lbs. (3.3kg.) All stainless steel
Height: 38-1/4" (71.8cm), 33-1/4" (83.8cm) with Drain Extension Kit.
Width: 14-1/4" (36.1cm); **Depth:** 23-3/4" (60.3cm)
Ice Vend: Continuous Flow
Shipping Wt: FD4 model — 192 lbs. (87kg.)



FLAKER/ DISPENSER MODEL	Bin Capacity pounds	24 Hr. Product. pounds	1 Hr. Product. pounds	Full Bin Vends/Recovery Rate Vends per Hour			
				2 OZ.	4 OZ.	6 OZ.	8 OZ.
FD4 Air Cooled	8	445	18.5	64/148	32/74	21/49	16/37

Note: All production and vend figures are approximate, based on temperatures of 70° air and 50° water.

FINISH: Walnut Vinyl front panel with Sandalwood enamel cabinet.
SPK FD3/FD4 STAINLESS STEEL PANEL KIT: Contains Stainless Steel sides, back, top and front to replace enameled cabinet.

SPECIFICATION — FD4

Model Number	Cond. Unit	Comp. HP	Finish	Ship. Wt. lbs./kgs.
FD4AE	Air	1/2	Enamel	192/87

Basic Electricals	Running Amps	Max. Oper. Amps	No. of Wires	Min. Circuit Ampacity	Max. Fuse Size
FD4	11.6	13.8	2	15.9	15

**Note: Use this value to determine minimum wire size required to meet national electrical code standards.

We reserve the right to make product improvements at any time. Specifications and design are subject to change without notice.

OUNCES DISPENSED AT PEAK PERFORMANCE

FD4 model dispenses 212 2-oz. vends first hour of operation, 360 2-oz. vends thru second hour.



IMPORTANT OPERATING REQUIREMENTS

Electrical Voltage: Machine requires voltage indicated on rating nameplate. Failures caused by improper voltage are not considered factory defects.

Scotsman products are not designed for outdoor installations or installations where air temperatures are below 50° F. or above 100° F. and the water temperature is below 40° F. or above 100° F. Extended periods of operation at temperatures exceeding these limitations will constitute misuse under the terms of Scotsman manufacture's limited warranty resulting in a loss of warranty coverage.

Scotsman Ice Systems include a full line of modular and self-storing cubers, flakers, drink dispensers, bins and accessories.



SCOTSMAN

QUEEN PRODUCTS DIVISION
 KING-SEELEY THERMOS CO.
 505 FRONT ST., ALBERT LEA, MN 56007

COMMERCIAL ICE SYSTEMS/HOME ICE MAKERS

GENERAL DESCRIPTION

This unit is a counter or table-top type of dispenser with a self-contained refrigeration unit, flaked ice freezer, storage bin and automatic dispensing mechanism.

The primary purpose of this machine is to fill water or drink glasses with water and ice or just ice by actuating a control arm with the glass.

Press the actuator arm and a continuous flow of ice can be obtained. By pushing a water switch to "on" water will be dispensed with the ice or as long as the glass actuator arm is energized.

The sink or area in which the ice is dispensed is constructed of plastic. The drain grill is 100% nylon coated steel wire. The cabinet is of stainless steel or steel with a baked-on enamel finish. Water lines within the cabinet are of copper and drain lines are Tygon (plastic) tubing.

The complete machine has been designed with sanitation and ease of cleaning emphasized. The complete dispensing unit can be dismantled for cleaning without the need of tools. By removing two winged screws the cabinet top can be removed. Three winged bolts on the storage bin cover may be loosened and the cover can be lifted off. This exposes the entire dispensing mechanism which can be lifted out of the storage bin.

The base of the machine contains a sealing gasket which will seal the machine tight against the table or counter top, thereby, eliminating the possibility of dirt or bugs lodging under the base.

The top, back, front, sink or either side of the cabinet can be removed in a matter of minutes.

To clean the condenser or for access to the control box, the left side panel is removed.

INSTALLATION LIMITATIONS

ELECTRICAL

1. Scotsman purchases electrical motors that are rated to operate within 10% variance above or below nameplate ratings.
2. Improper voltages applied to Scotsman equipment can cause premature failures burnouts. Failures of this type are not considered as factory fault or defect.

AMBIENT

WARNING — This machine is not designed for outdoor installations. This machine will not operate when air temperatures are below 50° F. or above 100° F.

This unit was not fabricated nor intended to be installed outdoors.

WATER

3. Scotsman Ice Systems require 20 pounds flowing water pressure to operate satisfactorily. Pressures lower than 20 pounds or interruptions in the water supply can cause serious mechanical damage to this product.

This machine will not operate when water supply temperatures are below 40° F. or above 100° F.

WARNING

This machine is not designed for outdoor installations or installations where air temperatures are below 50° F or above 100° F and the water temperature is below 40° F or above 100° F. Extended periods of operation at temperatures exceeding these limitations will constitute misuse under the terms of the Scotsman manufactureres limited warranty resulting in a loss of warranty coverage.

INSTALLATION INSTRUCTIONS

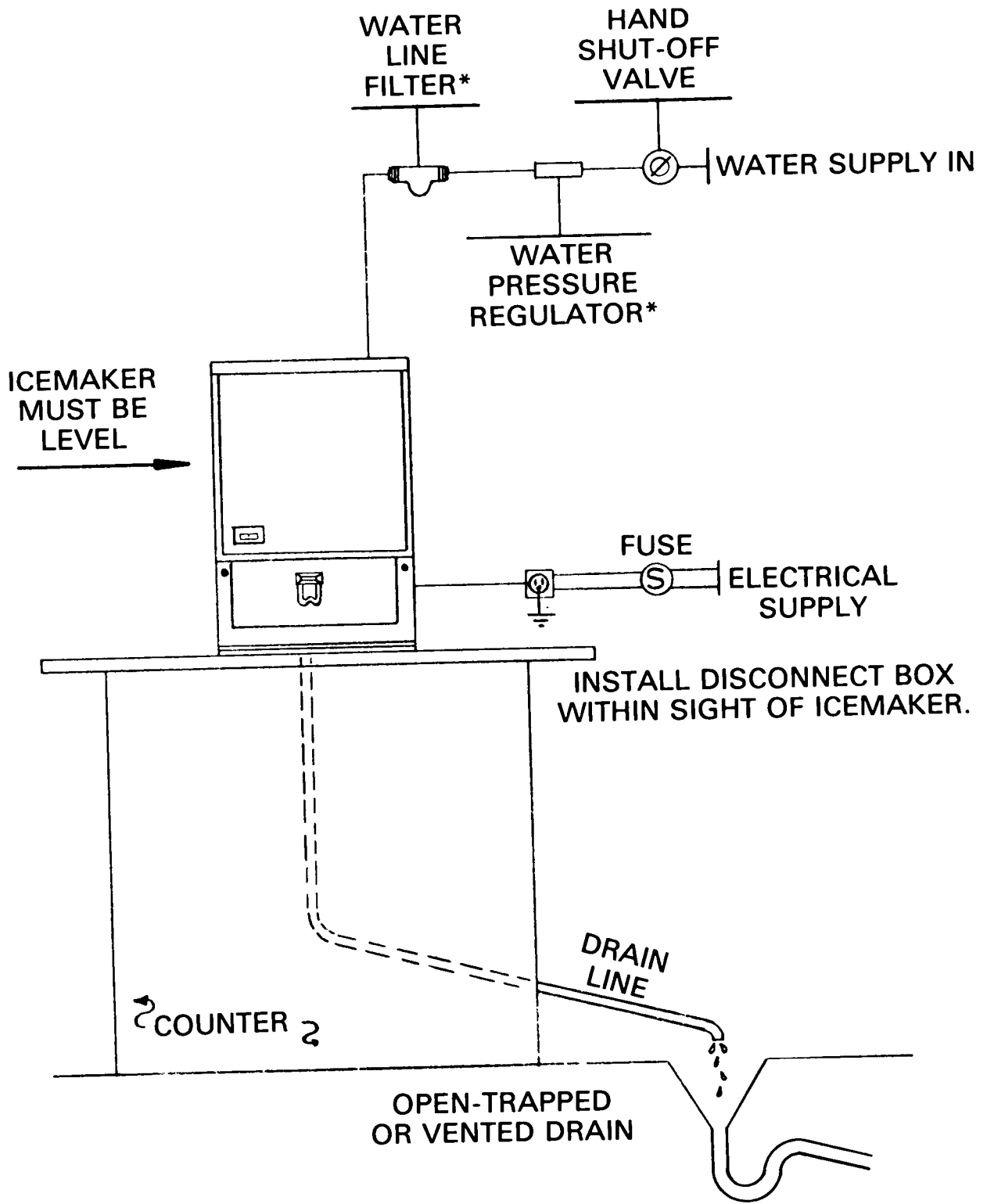
The following installation instructions were written for use by an authorized tradesman only, not the user or customer. We suggest you call your local authorized Scotsman Service Agency for hook-up, start-up, and check out. He's listed under "Ice Making Machinery & Equipment" in your telephone book, yellow pages.

1. Remove the unit from the carton and install on a table or counter with a flat, level, rigid top. Mount at a convenient height for filling glasses.
2. Avoid sliding the unit on the rubber sealing base.
3. Remove the top of the cabinet and the rear side panels.
4. Remove shipping tapes and check tubings, wiring, capillary lines for rubbing or chafing, refashion as required.
5. Pull the drain from the cabinet. This may be routed through the rear panel or through the hole provided in the base. It is possible to route all lines through holes which have been provided in the in the base. All drains should be made to a open, trapped and vented drain. (See next page.)
6. The lower drain from the sink area must never be installed higher than the base of the cabinet. Consideration should be made in regard to this drain in order to get proper flow from the sink drain.
7. Water should be supplied from a 3/8" copper or equivalent pipe. A small water supply line will only result in an increase in time for filling glasses with water.
8. Connect power to terminal strip in junction box.
9. Replace the rear panel and the cabinet cover. Disconnect electrical supply when the machine is opened for cleaning. At such a time both the unit and dispenser are disconnected.
10. Thirty minutes after the unit has been started, ice can be dispensed.

NOTE: Should this unit be improperly installed with the drain favoring front of the machine, a condition would result in slushy, wet ice as the meltage water would remain in the bottom of the storage bin, and may run out the discharge spout.

WARNING: THIS MACHINE MUST NOT BE ALLOWED TO OPERATE WHEN THE WATER SUPPLY IS SHUT OFF, OR AT BELOW RECOMMENDED WATER PRESSURE. DISCONNECT ELECTRICAL SUPPLY WHEN WATER SUPPLY IS OFF, OR WHEN WATER PRESSURE IS BELOW RECOMMENDED OPERATING PRESSURE.

INSTALLATION PRACTICE



*REGULATOR AND HAND SHUT OFF VALVE ARE ACCESSORY ITEMS TO BE INSTALLED AS CONDITIONS WARRANT

HOOK-UP PRACTICE

ELECTRICAL:

Standard electricals are 115 volts, 60 Hertz single phase current. This unit must have a solid ground wire.

Consult name plate on Icemaker back panel for proper electrical requirements and wire size.

Fuse protection is required, preferably a delay type such as Fustat, Fusetron etc. All external wiring should conform to National Underwriters, as well as State and local codes. The maximum allowable voltage variation must not exceed 10 per cent of unit nameplate ratings, even under starting conditions.

Knockouts in cabinets are made for cord connectors. Supply line ties into terminal board of control box. Use separate circuit for icemaker only.

WATER SUPPLY:

A single cold water supply line is required. Recommended tubing size 3/8" O.D. or larger, cabinet connection is to a 1/4" S.A.E. flare tee on internal cabinet bulkhead. A water strainer with clean out feature should be installed in supply line along with a hand shut off valve.

Minimum water pressure is 20 pounds gauge, maximum pressure over 50 pound gauge may cause chattering of float ball in reservoir tank. For pressures in excess of 50 pounds, use a water pressure regulator in line. Cabinet back is slotted for supply line entrance.

WATER AND CONDENSATE DRAINS:

Two soft drains (plastic tubing) are provided, see page 4. The upper drain is 5/8" I.D. tubing, the lower drain is 7/8" I.D. tubing. Drain lines should be run to an open, trapped or vented drain in accordance with your State and local code regulations. These are gravity drains, therefore maintain at least a 1/4" pitch per foot away from unit drains. knockouts are provided for either out the back or thru the base drain.

REFRIGERANT SYSTEM:

The standard Scotsman Flaker system is used in slightly modified form. Refrigerant 12 is pumped by compressor into the air cooled condenser, into the liquid line, thru a filter-drier and then into the capillary refrigerant control line.

Liquid refrigerant is then carried down to the bottom end of the shell and tube type evaporator (freezing cylinder) where it expands and rises to the top of evaporator. Here the vapors and gases are returned thru an accumulator and suction line to the compressor.

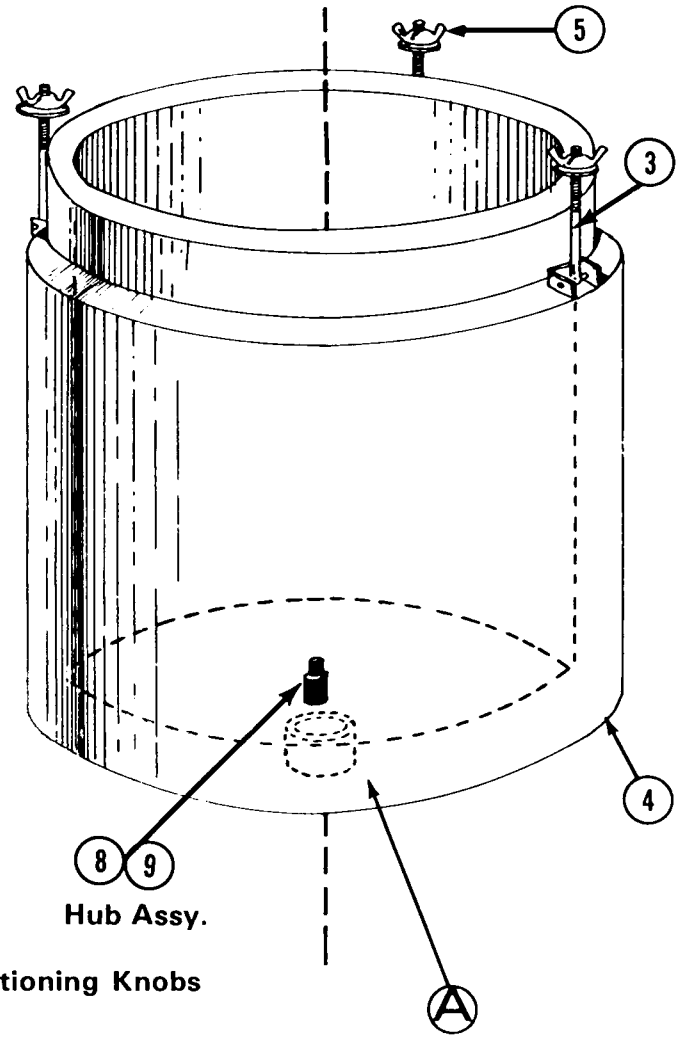
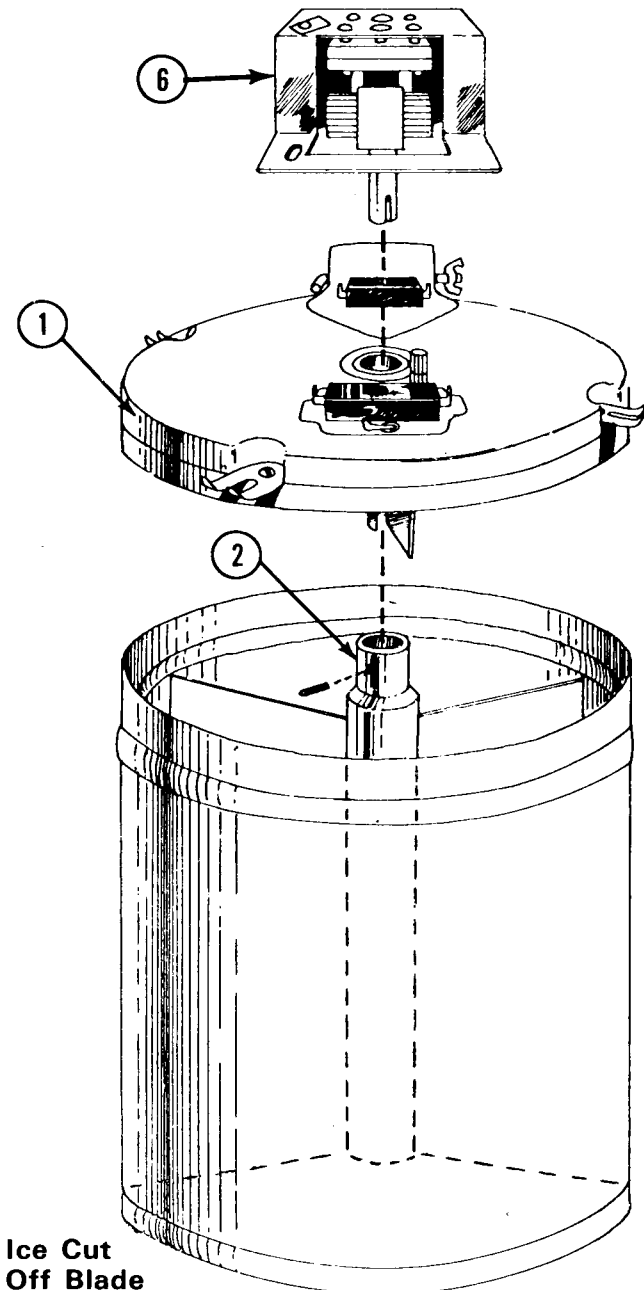
Average operating head pressure is 135 lb. gauge, operating back pressure is 14 lb. gauge.

Factory charge is 21 ounces of Refrigerant 12.

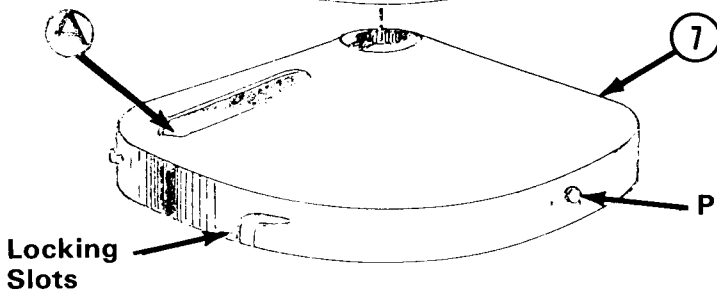
Compressor is 1/2 horsepower, 2 pole, 3500 RPM by Copeland, Proper model number is Copelaweld: RSF2-0050-1AA.

STORAGE BIN/DISPENSER

ITEM NO.	PART NO.	DESCRIPTION
1.	A16098-000	Bin Top
2.	A26440-001	Revolving Storage Bin
3.	A16004-000	Tie Bolts 3/Unit
4.	A26447-001	Storage Bin - Insulated
5.	03-0255-00	Wing Nuts 3/Unit
6.	12-1610-01	Dispensing Motor
7.	A26445-001	Tapered Bottom Plate
8.	A26435-001	Hub Assembly
9.	03-1408-08	Fiber Washer



Ice Cut
Off Blade



Locking
Slots

Positioning Knobs

8 9
Hub Assy.

Position Ice Cutoff Blade
Over Spout Opening When
Assembling.

BIN CONTROLS

There are two controls located on the underside of the cover that govern the amount of ice that is in the bin. One control, that over the spout of the freezer, turns the freezer off when the bin is full of ice. This control must be in a position as illustrated in drawing page 12. Section B-B. The second control (see Section C-C page 12) hangs into the bin and holds the freezer off for a period of vends. This flipper slides upon the ice at the first ice vend and opens the switch contacts. It operates as a differential to keep the unit from starting and stopping at each each vend and is a secondary means of stopping the unit should the spout switch fail.

Both of these controls can be easily removed for cleaning. The bin differential control has two fasteners securing it to the cover. They are tall round, knurled tubes which are unscrewed like a nut. Removing these two fasteners will drop the differential control from the cover.

The spout of the freezer has an extension that slides over the fixed spout. This removable extension has two small ears on the side. it is necessary when replacing the cover on the bin to slide this extension as far back on the freezer spout as possible. Be sure the small ears of the extension are on the outside of the cover. When the cover has been fitted over the bin and before it is bolted down, this extension should be slide toward the cover until the ears rest against it.

Serious damage could result if the cover is not installed properly. The small flipper over the switch button in the ice spout of this cover must definitely be forward. Check section B-B, page 12 carefully before attempting to install the cover.

WATER SWITCH:

1. Located on the front panel.
2. When in an "ON" position, it energizes a water solenoid to dispense water with ice.
3. This is a rocker type single pole single throw switch.

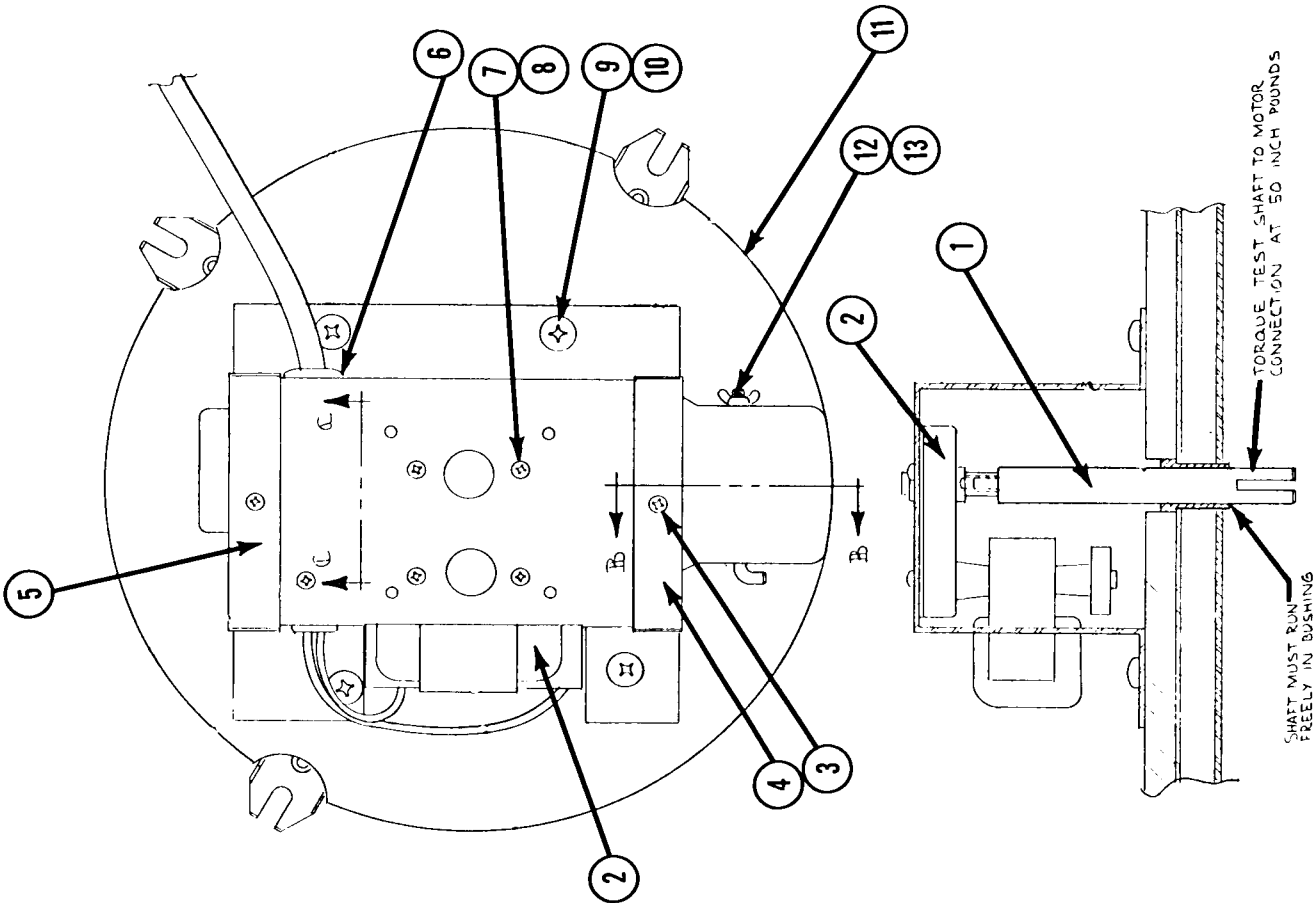
DISPENSING SWITCH:

1. Locate in the sink area on firewall back of the sink. It is accessible by removing the right side panel.
2. When depressed, usually by a water glass, it actuates the dispensing mechanism.
3. It is a double pole, double throw leaf type snap switch.

A27491-021
BIN TOP
ASSEMBLY COMPLETE

ITEM NO. PART NO. DESCRIPTION

- | | | |
|-----|------------|-----------------------|
| 1. | A21207-000 | Shaft |
| 2. | 12-1610-01 | Motor |
| 3. | 03-1404-08 | Screw |
| 4. | A27485-001 | Cover |
| 5. | A27486-001 | Cover |
| 6. | 12-0629-09 | Bushing |
| 7. | 03-1403-16 | Screw 4/Unit |
| 8. | 03-1417-05 | Washer 4/Unit |
| 9. | 03-1403-47 | Screw 4/Unit |
| 10. | 03-1417-09 | Washer 4/Unit |
| 11. | A16098-000 | Bin Top |
| 12. | A16104-000 | Hinge Pin |
| 13. | 03-0255-02 | Wing Nut |
| 14. | A16495-000 | Knurled Nut 2/Unit |
| 15. | 12-1018-01 | Micro Switch |
| 16. | A19269-000 | Bin Paddle Assembly |
| 17. | A16010-000 | Spout Paddle Assembly |



TORQUE TEST SHAFT TO MOTOR
CONNECTION AT 50 INCH POUNDS

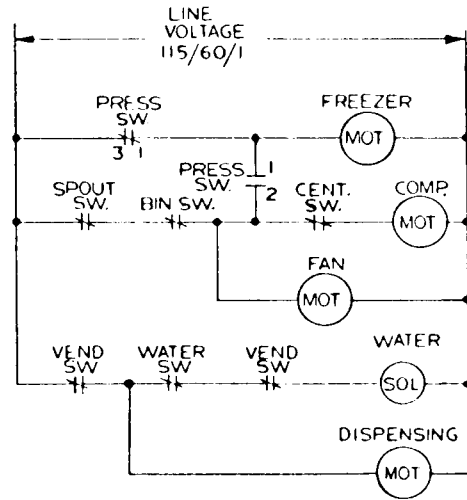
SHAFT MUST RUN
FREELY IN BUSHING

SECTION B-B

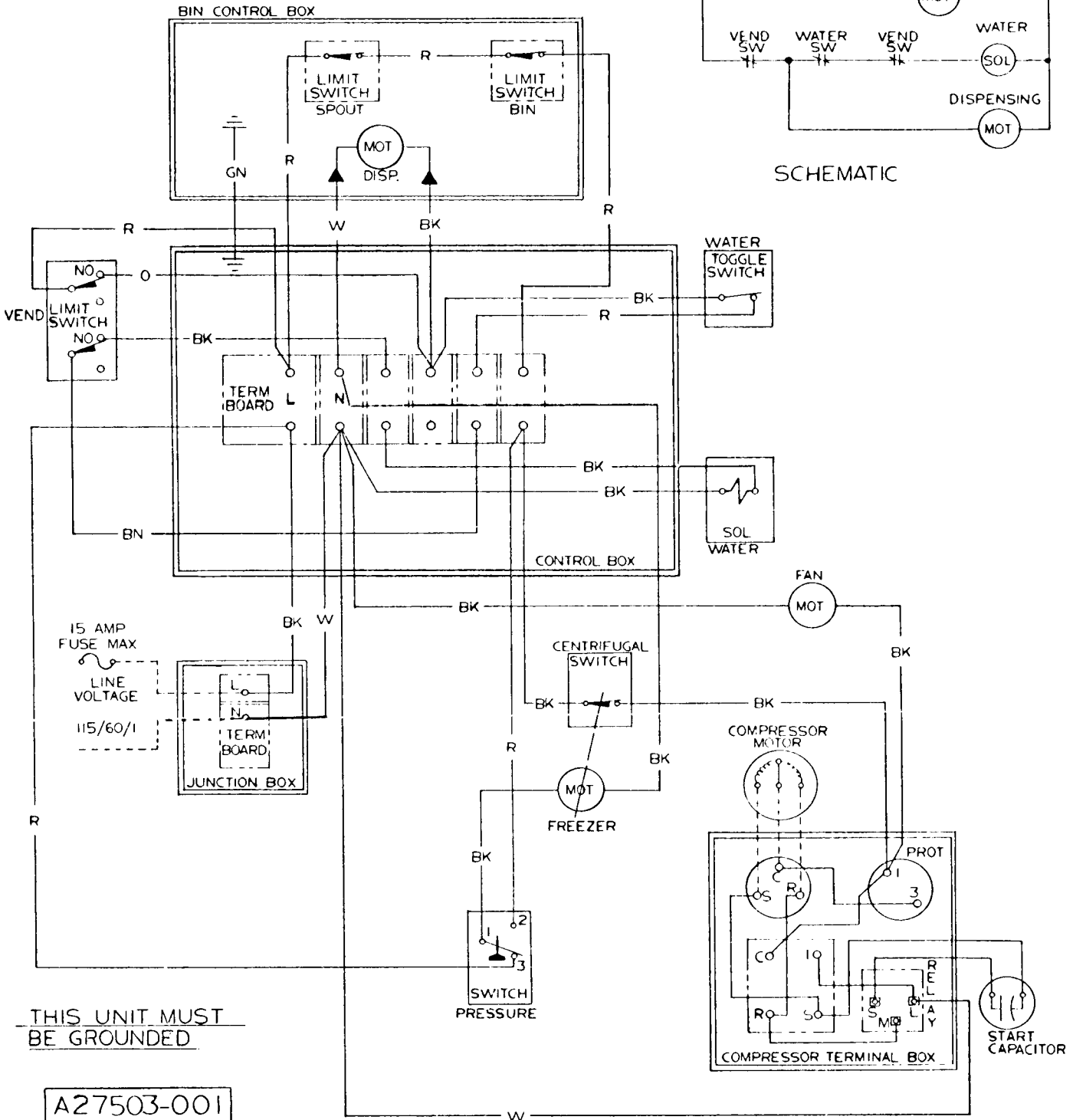
SECTION C-C

WIRING DIAGRAM
115/60/1
AIR COOLED

CONTROLS SHOWN IN THE ICE MAKING MODE
 WITH ALL DISPENSING SYSTEMS IN OPERATION



SCHEMATIC



**THIS UNIT MUST
 BE GROUND**

A27503-001

**Description of the Function of the Texas Instruments Low Pressure
Control Switch When Used on 1/10 H.P. Gear Motors**

On all Scotsman units using a 1/10 H.P. gear motor, the centrifugal switch mechanism is mounted on top of the motor. Also incorporated is a low pressure control switch. This is a single pole double throw (SPDT) switch manufactured by Texas instruments. (Queen Products Part No. 11-0396-01*).

*Refer to a typical wiring diagram, showing contacts, for description of switch function.

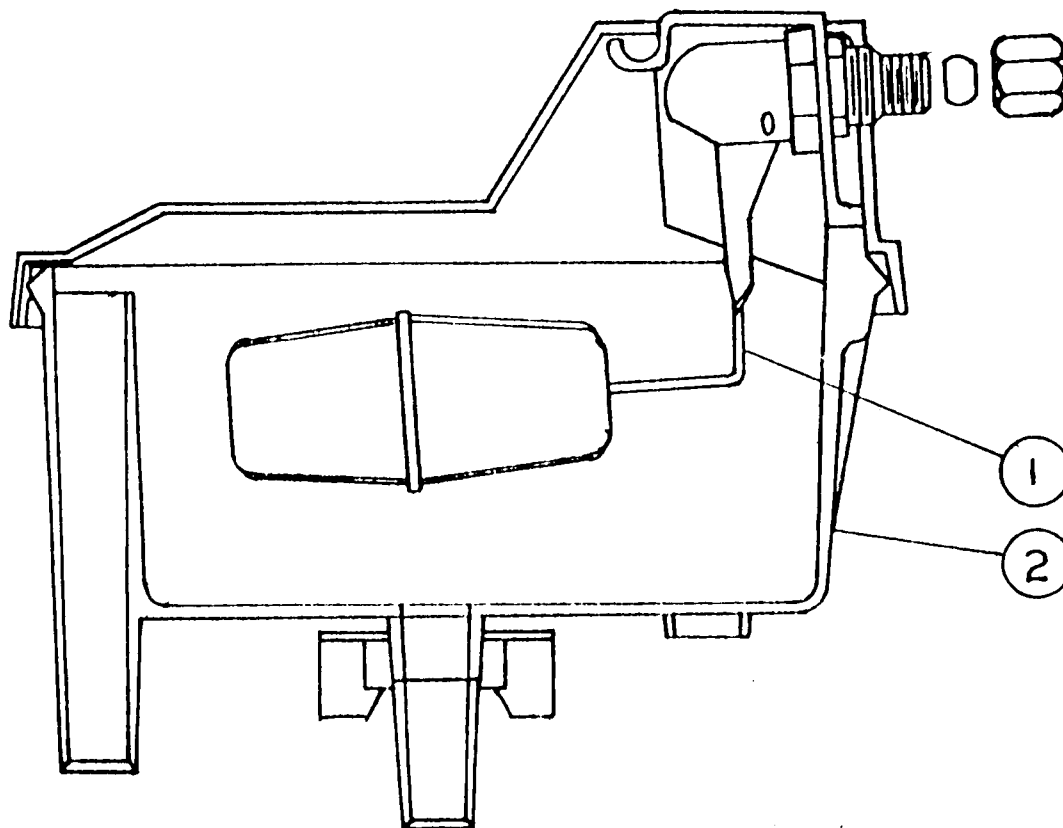
On all Queen Products wiring diagrams, the controls are shown in the ice making mode. Thus, the 1-3 contacts are shown as closed. On machine start up the 1-3 contacts are open and the 1-2 contacts are closed. As the unit begins to run, the low side pressure starts to fall from the stabilized or "at rest" pressure. As soon as the pressure drops to 20 Psig, the 1-2 contacts open and the 1-3 contacts close. This removes the operating controls, such as the bin thermostat, from the "gear motor circuit". If one of the operating controls opens, it will shut off the "compressor circuit". The gear motor will run until the low side pressure rises to 32 Psig. At this point the 1-3 contacts open and turns the gear motor off. This usually takes 1-3 minutes depending on ambient conditions. This length of time allows the auger to transport all the ice out of the freezing chamber. Consequently, when called on to start up again, there is no load to start up against. On start up, again, the 1-3 contacts are open and the 1-2 contacts closed.

*Function 11-0396-01 Low Pressure Control Switch

1-3 Contacts - Open on Pressure Rise
Opens at 32 Psig
Closes at 20 Psig

1-2 Contacts - Open on Pressure Fall
Opens at 20 Psig
Closes at 32 Psig

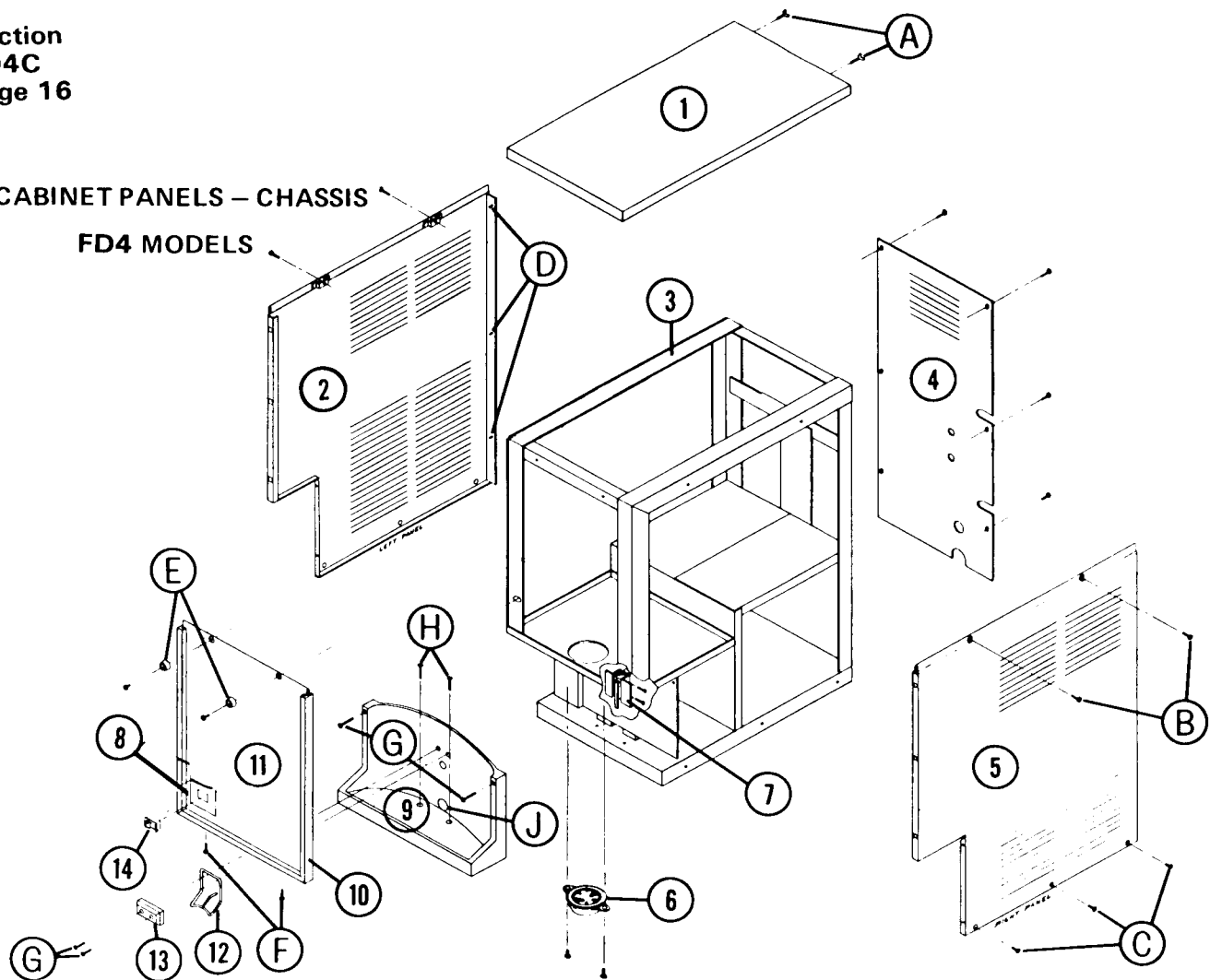
NOTE: Refer also to Pages 21-22 for additional information concerning Gearmotor Centrifugal Switch.



RESERVOIR ASSEMBLY

ITEM NO.	PART NO.	DESCRIPTION
1.	02-2217-02	Valve Assy.
2.	02-2217-01	Reservoir Complete

CABINET PANELS - CHASSIS
FD4 MODELS

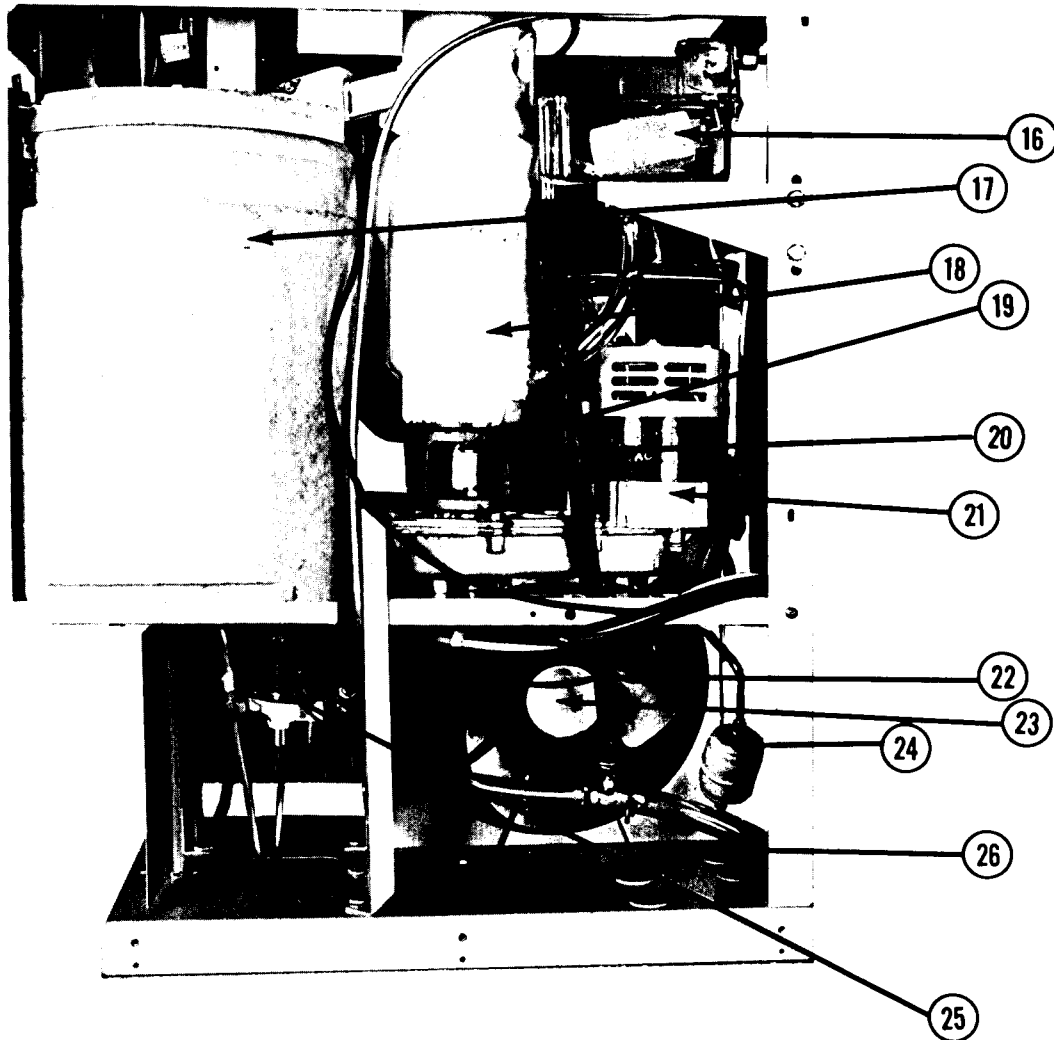


ITEM NO. PART NO. DESCRIPTION

1.	A16317-004	Top Panel - Painted
	A16317-001	Top Panel St. Steel
2.	A21415-002	Left Side Panel - Painted
	A21415-001	Left Side Panel - St. Steel
3.		Cabinet Frame
4.	A21405-002	Back Panel - Painted
	A21405-001	Back Panel - St. Steel
5.	A21416-002	Right Side Panel - Painted
	A21416-001	Right Side Panel St. Steel
6.	02-1804-00	Spout Extension
7.	12-1641-00	Vend Switch
8.	15-0621-01	Decal - Water
9.	A21429-000	Sink
	02-1473-00	Sink Grate
10.	15-0507-00	Moulding Trim
11.	A27500-002	Front Panel - Walnut Vinyl
	A27500-001	Front Panel St. Steel
12.	A21544-000	Actuator Arm
13.	02-1833-00	Adapter
14.	12-1377-00	Water Switch
A.	03-1578-01	Screw 2/Unit
B.	03-1403-21	Screw 4/Unit

REMOVING PANELS & SINK

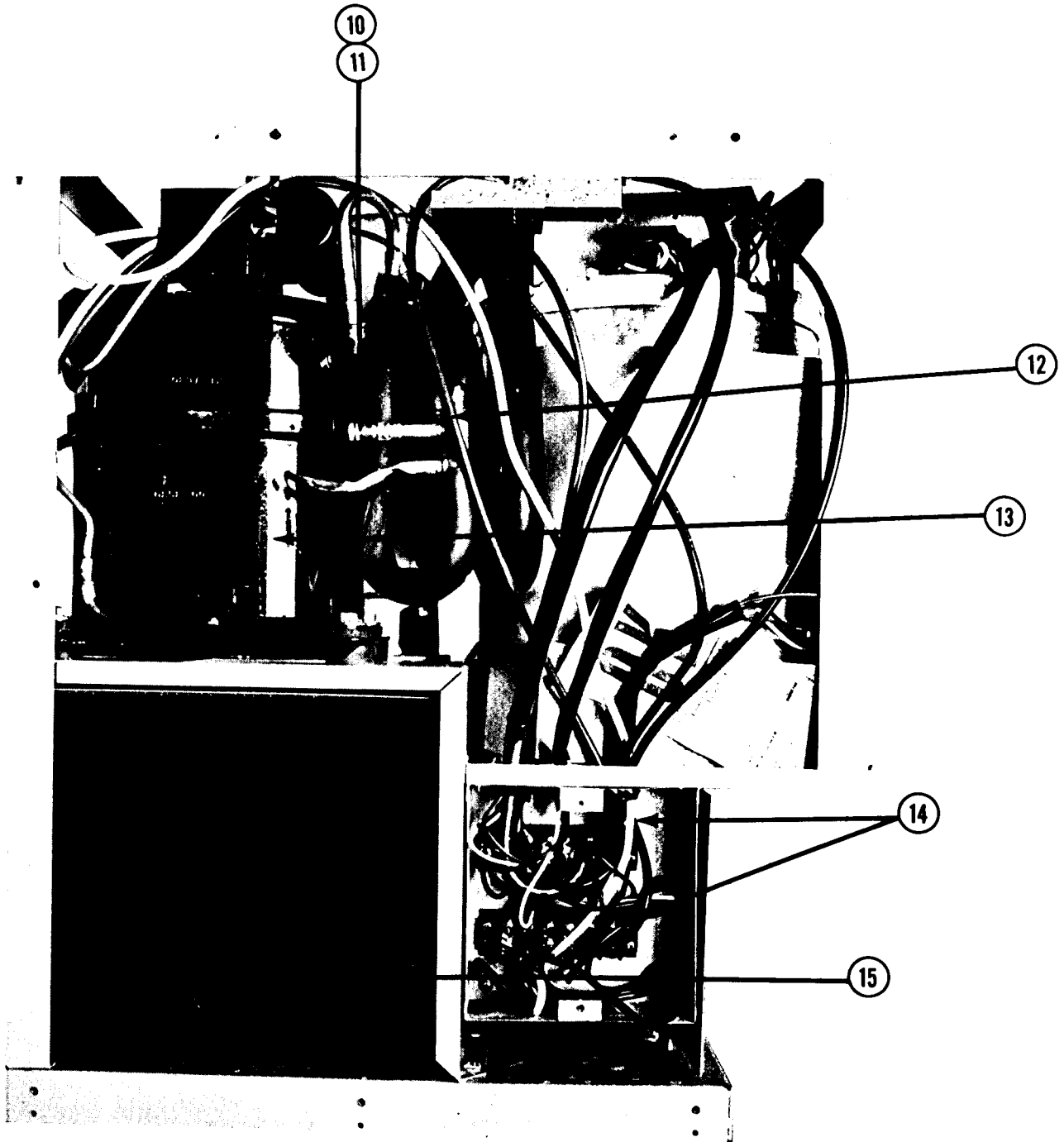
1. To remove either side panel or front, first remove the two bolts in the back of cover No. 1, Item (A). Lift the back of the cover upward and push forward to release.
2. Either side panel can be taken off by removing two screws across the top (B) and three across the bottom of the panel. (C) These are the only screws that hold the panel. Pull the panel from in back of sink, then slide backward about 1/2 inch. There are no screws in the back of the panel, only pins that slide into holes in the frame. (D) The front edge of the panel merely fits under the aluminum trim.
3. The front panel is removed by unscrewing the two rubber bumpers at the top of the panel (E) and two screws under the sink top area. (F) The water switch (14) will snap out and the quick connects can be removed from the switch.
4. The sink (9) can be removed by removing four screws (G) on the front side of the switch and two screws in the bottom of the sink. (H) These screws are sealed to eliminate water leaks. The drain tube connection (J) is fastened to the sink rear by a hose clamp. To remove the clamp, it is necessary to remove the right side panel.
5. Remove top and left side panel to clean air cooled condenser.



Right Side

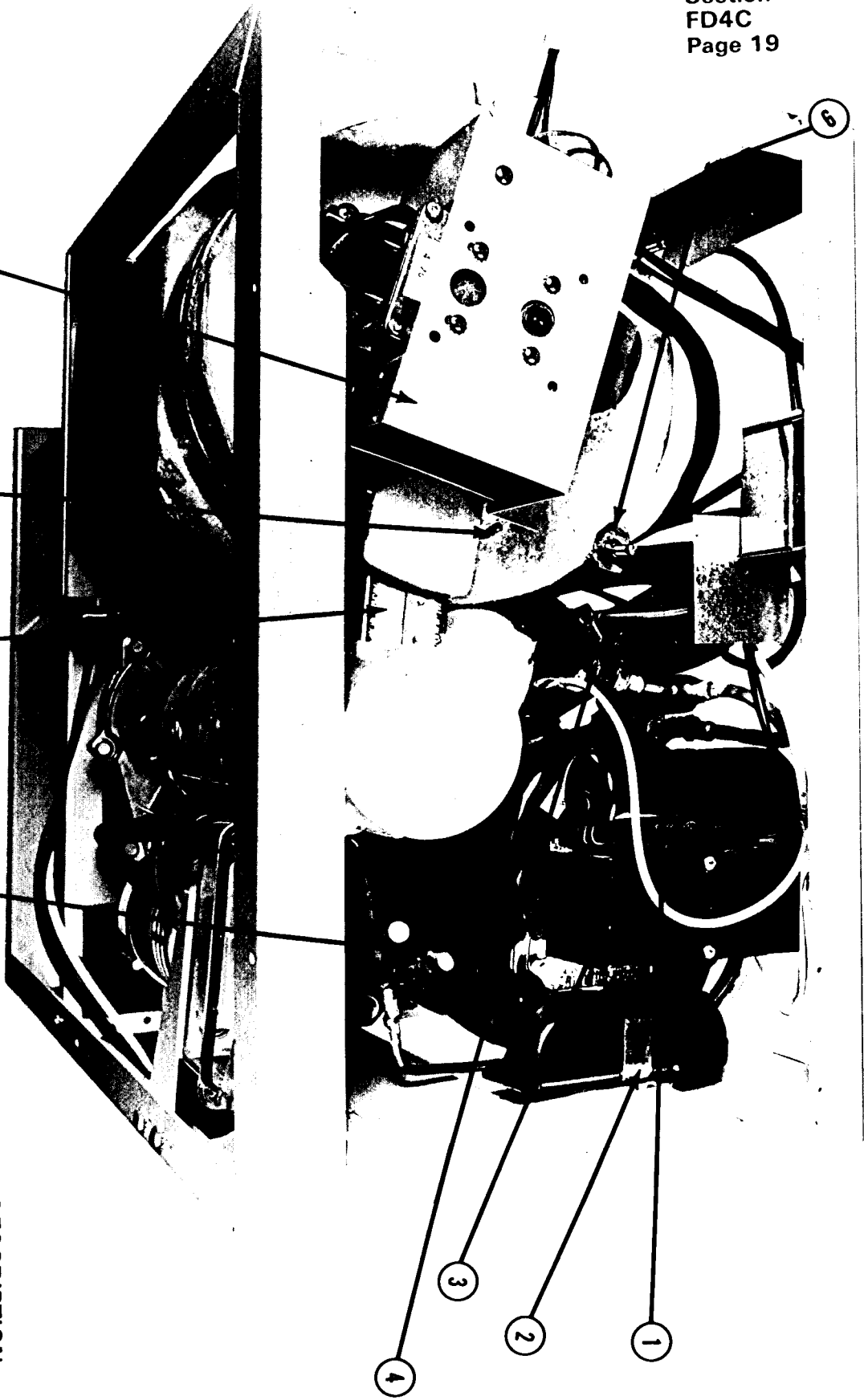
ITEM NO.	PART NO.	DESCRIPTION
16.	02-2217-0	Reservoir
17.	A-26447-001	Storage Bin
18.	A-26743-020	Freezer Assembly
19.	15-0575-01	Coupling
20.	08-0595-01	Adapter
21.	A25995-021	Gearmotor
22.	18-0137-01	Fan Blade
23.	12-1576-01	Fan Motor
24.	02-0831-00	Drier
25.	12-1434-04	Inlet Water Solenoid
26.	18-0422-00	Bracket-Fan Motor

CHASSIS ASSEMBLY



Left Side

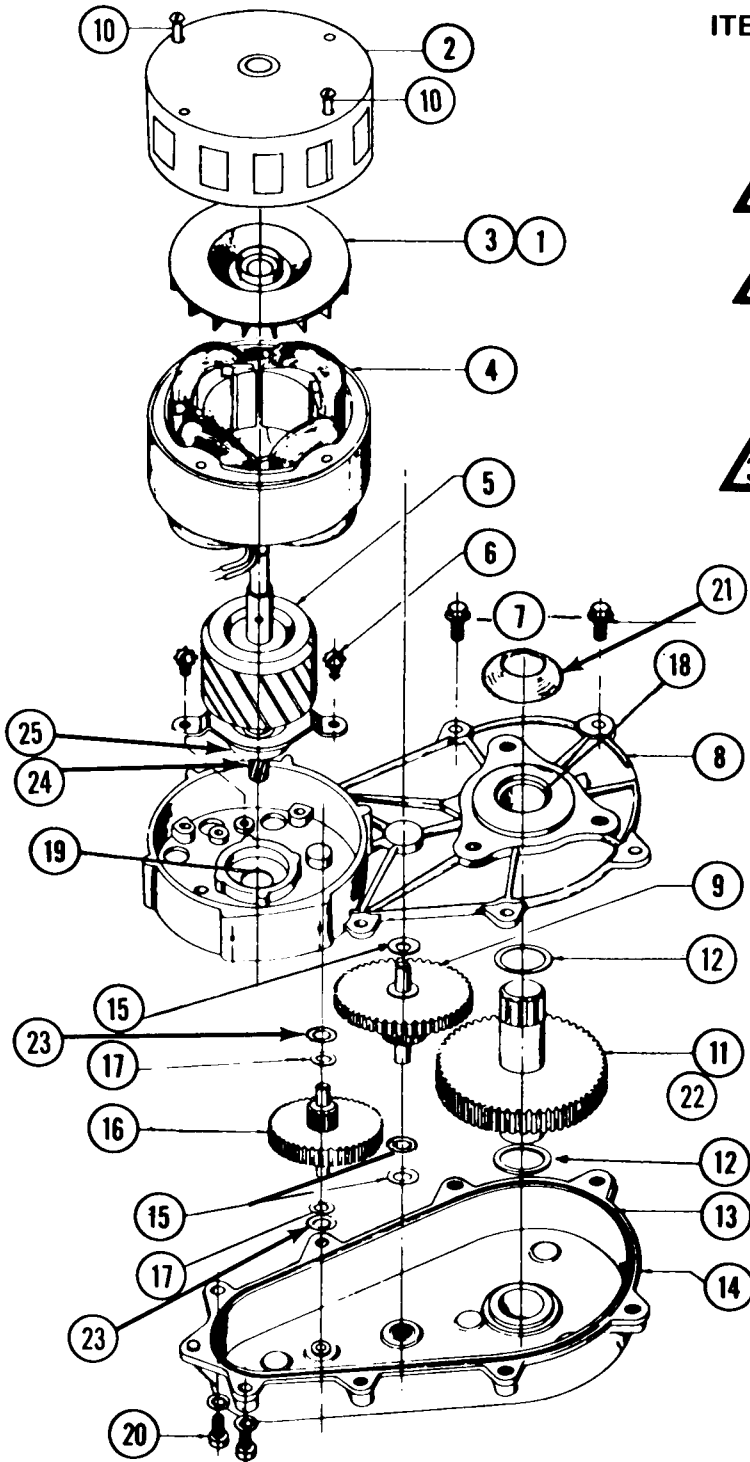
- | | | |
|-----|------------|---------------------------|
| 10. | 16-0563-00 | Cap |
| 11. | 16-0560-00 | Core |
| 12. | 16-0673-18 | Process Header - Low Side |
| 13. | 18-2200-01 | Compressor |
| 14. | 12-0813-03 | Terminal Strip |
| 15. | 18-1927-00 | Condensor - Air Cooled |



ITEM NO.	PART NO.	DESCRIPTION
1.	18-1901-33	Start Capacitor
2.	18-2200-26	Start relay
3.	18-2200-25	Klixon Overload (Not Shown)
4.	11-0396-01	Pressure Switch
5.	16-0673-02	Hi Side Process Header
	16-0563-00	Valve Cap
	16-0560-00	Valve Core
6.	A16151-000	Sliding Spout Extension
7.	A16104-000	Hinge Pin - Spout
8.	A27493-001	Motor Mount
9.	03-0255-00	Wing Nuts 3/Unit

A25995-021
GEAR MOTOR ASSEMBLY
1/10 H.P.
115/60/1

11.5 RPM at output shaft



ITEM NO. PART NO.

DESCRIPTION

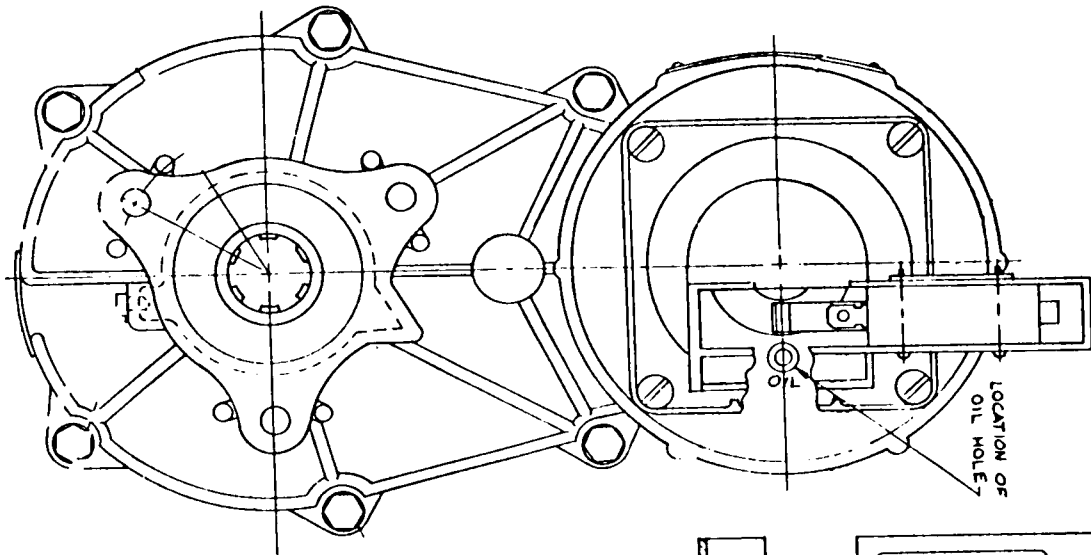
	1.	03-1246-00	Set Screw (2)
	2.	A17047-000	Motor Housing
	3.	A16915-000	Cooling Fan
	4.	12-1400-01	Stator Assy.
2	5.	A26454-001	Rotor & 1st. Gear Kit
	6.	03-1245-00	Screws (2)
1	7.	03-1251-00	Flange Screws (6)
	8.	A16920-021	Gear Case Cover
	9.	02-1521-00	Gear and Pinion
	10.	03-1403-43	Motor Bolts (4)
	11.	A26650-001	Gear and Output Shaft
	12.	03-1408-21	Washer (2)
3	13.	02-1505-00	"O" Ring
	14.	A24184-001	Gear Case Kit
	15.	03-1408-06	Washer (3)
	16.	02-2224-01	1st Gear and Pinion
	17.	03-1408-19	Washer (2)
	18.	02-1503-00	Grease Seal
	19.	02-1504-00	Grease Seal
	20.	03-1252-00	Screw (2)
	21.	13-0709-01	Water Shed
	22.	03-1475-01	Key
	23.	03-1408-20	Washer (2)
	24.	13-0617-04	Slinger Ring
	25.	02-1501-00	Rotor Bearing

NOTE:

- 1 Cover comes with grease seals items 18 & 19.
- 2 Fiber gear (item 16 and rotor bearing (item 25) included in the rotor kit.
- 3 Includes items: 8, 13, 15, 17, 18, 19, 23 and gear lube.

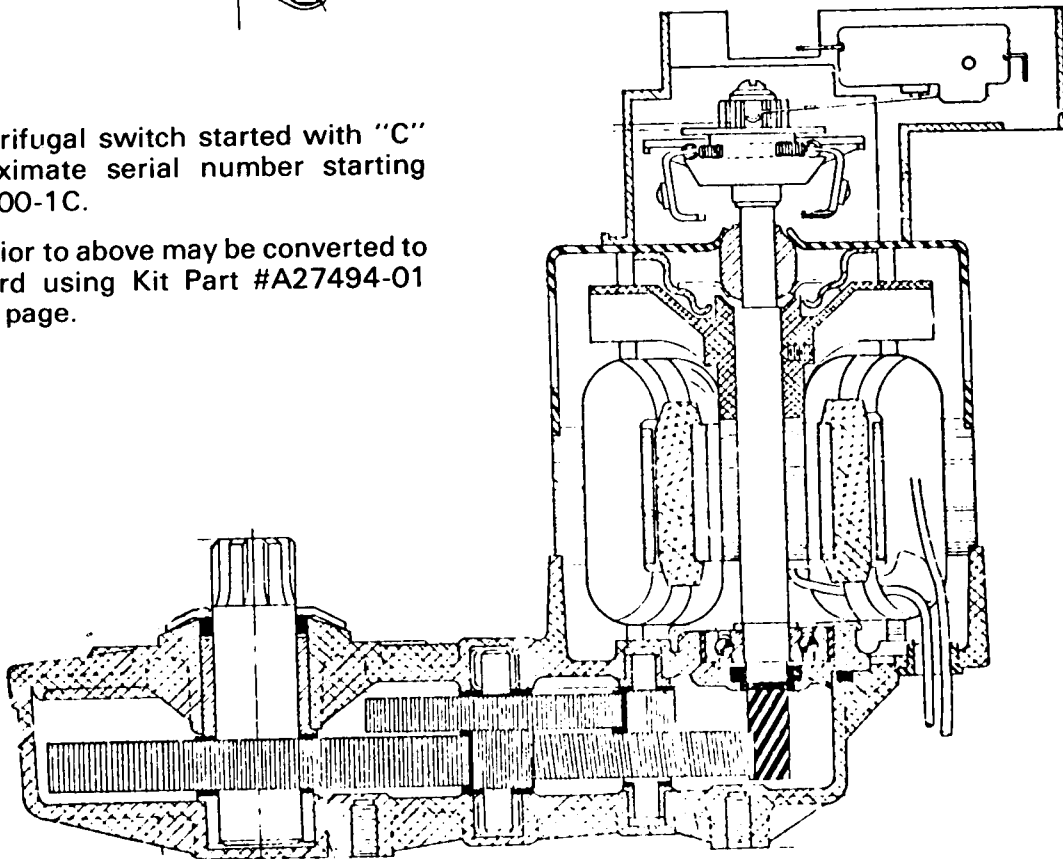
GEAR MOTOR ASSEMBLY/CENTRIFUGAL SWITCH
Part #A25995-001

Section
FD4C
page 21

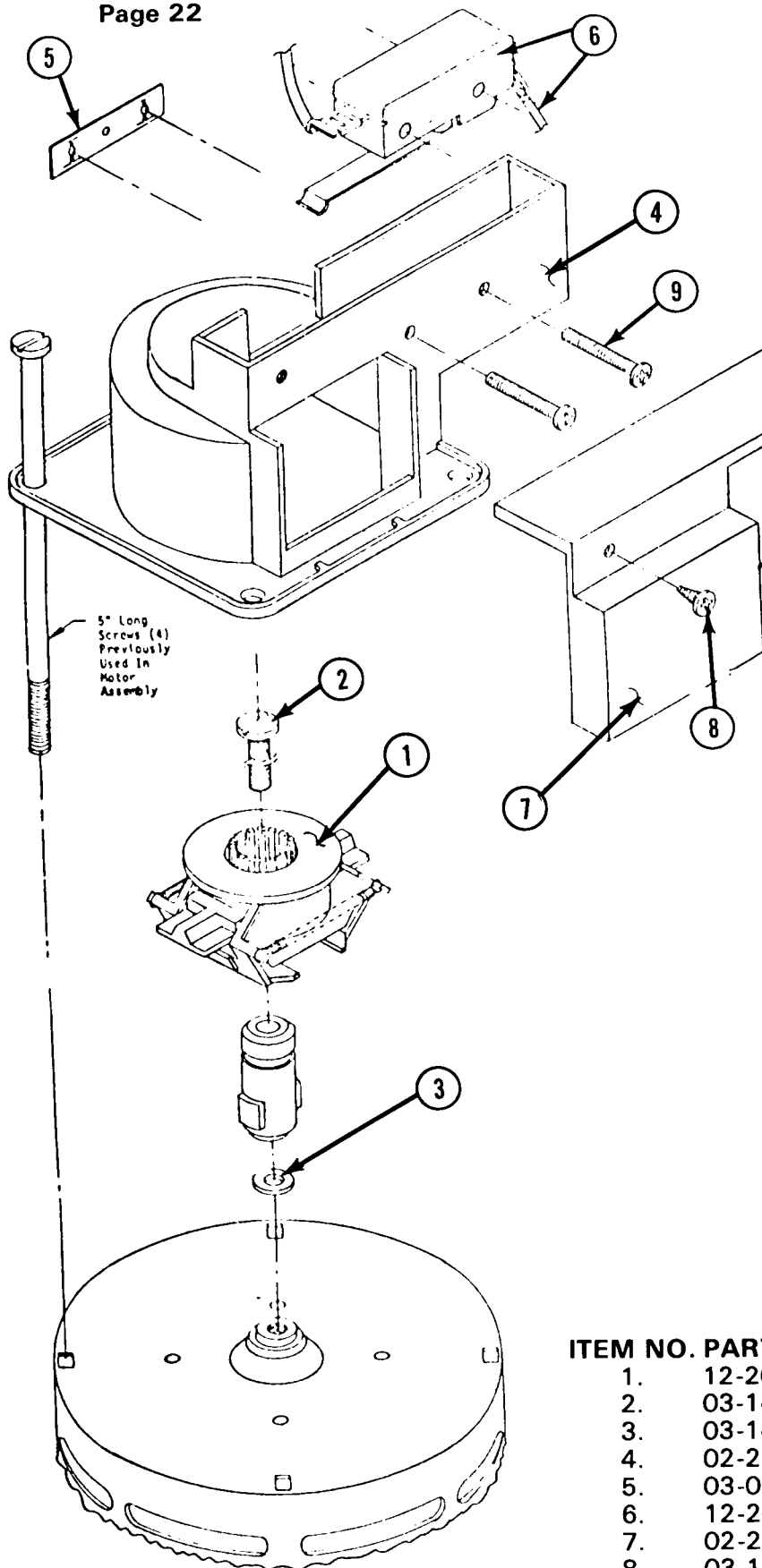


New style centrifugal switch started with "C" models. Approximate serial number starting usage is: 346800-1C.

FD-4 models prior to above may be converted to current standard using Kit Part #A27494-01 shown on next page.

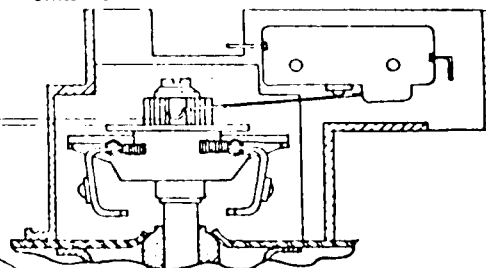


CENTRIFUGAL SWITCH KIT INSTALLATION INSTRUCTIONS



SWITCH ADJUSTMENT

.03 minimum gap between switch lever and mechanism with centrifugal mechanism actuated (Motor running). Switch circuit should be closed. When motor is stopped and centrifugal mechanism deactivates, the switch circuit should be broken. There should be enough adjustment by loosening the switch mounting screws and tilting switch in direction required. If this fails a small amount of bending can be done on the switch lever.



CENTRIFUGAL MECHANISM INSTALLATION INSTRUCTIONS

In order to replace an existing centrifugal mechanism or just adding this new centrifugal mechanism into your unit, the installation procedure is the same.

REMOVAL

1. Remove all existing hardware from the top of the drive motor so that all that is visible on the top of the motor is the shaft of the motor and the four holes left vacant by the motor support screws. Do not remove motor housing cover.

NOTE:1 These four screws (approximately 5" long) will be reused to assemble the new mechanism.

NOTE: These four screws (approximately 5" long) will be reused to assemble the new mechanism.

You are now ready to install the new mechanism.

INSTALLATION

1. Install Item 1 centrifugal actuator to motor shaft with Item 2 #10-32 screw and Item 3 small flat washer. A small amount of Locktite should be used on the screw threads to prevent screw from backing out.

NOTE: The shaft extension shown has been factory installed into the centrifugal actuator for your convenience.

2. install Item 4 switch case using four 5" long screws previously removed when disassembling unit.

NOTE: Switch has been factory installed for your convenience.

3. Make any necessary adjustments noted in sketch above.
4. As the purpose of this mechanism is to turn the compressor off when the gear motor slows down, the switch in this mechanism should be wired into the neutral line of the compressor.

NOTE: Two white wires Items 5 and 6 have been furnished with this kit to ease your assembly. The insulated terminals should terminate at the centrifugal switch. The remaining ends of these wires will connect at the terminals vacated when the neutral wire from the compressor is removed.

5. After wiring has been completed, install Item 7 cover, with Item 8 thread forming screw.

This unit is now optional.

NOTE: The intent of this mechanism is not in any way related to the function of the Texas instrument low pressure switch installed in certain models.

ITEM NO.	PART NO.	DESCRIPTION
1.	12-2060-01	Centrifugal Actuator
2.	03-1403-77	Screw
3.	03-1408-36	Washer
4.	02-2373-01	Case
5.	03-0886-00	Twin Speed Nut
6.	12-2059-01	Switch
7.	02-2373-02	Case Cover
8.	03-1404-05	Screw
9.	03-1403-09	Screws 2/Unit

Item 4 & 3 Supplied in Case Assembly Kit
Part# A27895-001.

KIT PART #A27494-01

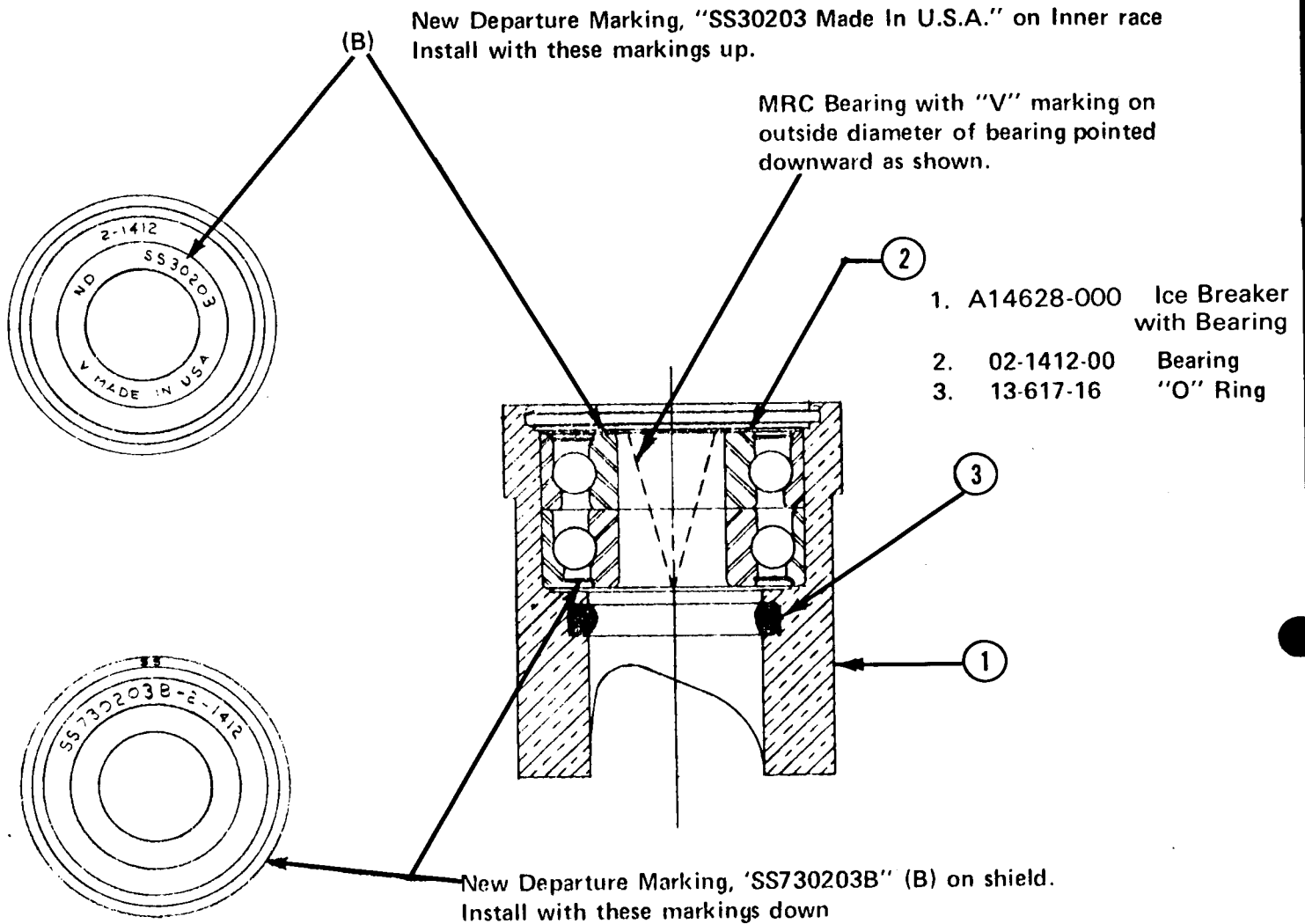
The top bearing assembly (part number 02-1412-00) used in the freezer assemblies on the FD-4 models consists of **two** single row bearings which are pressed into the ice breaker, one on top of the other.

The bearings are supplied as a matched set, secured together by a holding strap.

These bearings are lifetime lubricated and have shields on the **exterior** side.

To prevent premature failures, the following instructions must be observed.

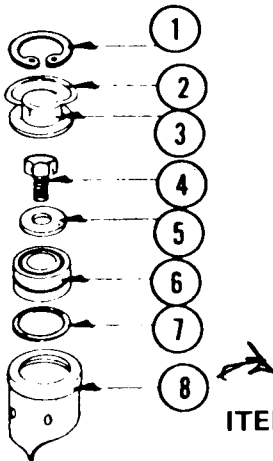
1. Bearing must be installed "Right Side Up." (Correct position is illustrated on the next page.)
2. Bearings must be pressed in by the outer race.
3. Apply 30 foot pounds, plus or minus 5 foot pounds, on a torque wrench when tightening the hex cap screw down on the stainless flat washer over the top of the bearing. Excessive pressure on the cap screw will shorten bearing life.
4. Use care in storing and handling bearings. Keep free of dirt, moisture, etc.



CAUTION:

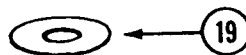
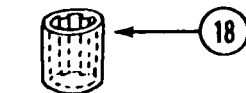
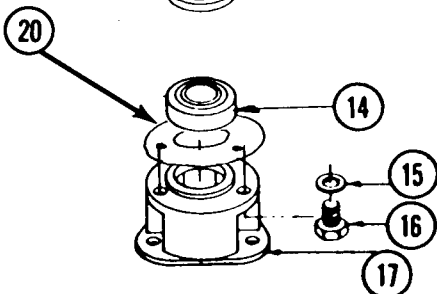
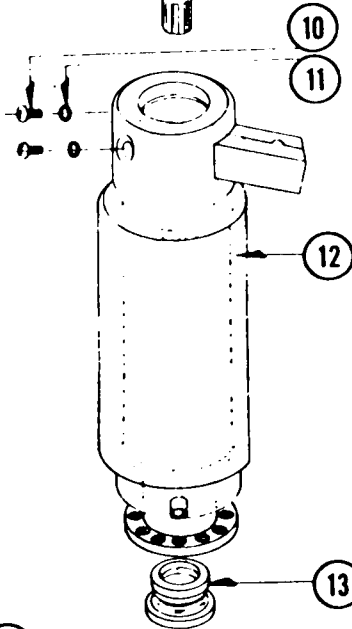
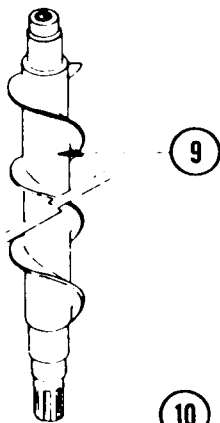
- A. Install MRC BEARINGS with "V" markings pointing downward as shown.
- B. Install NEW DEPARTURE BEARINGS with shields on exterior sides and with markings as shown.
- C. Peer Bearing. Same as A.

FREEZER ASSEMBLY



ITEM NO. PART NO. DESCRIPTION

1.	03-1558-03	Retainer Ring
2.	A08162-000	Cap Hook
3.	A07701-000	Cap
4.	03-0758-00	Screw
5.	A07699-000	Washer
6.	02-1412-00-20	Top Bearing-Matched Set See Page 10 & 11
7.	13-0617-16	"O" Ring
8.	A14678-000-20	Breaker with Bearing -
9.	02-1538-00	Auger
10.	03-1403-46	Screw
11.	03-1417-07	Washer
12.	A26742-020	Evaporator shell (includes suction line)
13.	A18945-000	Water Seal — 02-1300-01
14.	02-0417-00	Bearing, Lower
15.	03-1410-04	Washer, (3 req'd)
16.	03-1405-42	Cap Screw (3 req'd)
17.	08-0595-01	Adapter-Amaloy
18.	15-0575-01	Spline Drive Coupling
19.	13-0709-01	Shaft Drip Shield-Rubber
20.	03-1505-00	Gasket



SERVICE ANALYSIS
ICE MAKER SECTION FD4

SYMPTOM	POSSIBLE CAUSE	CORRECTION
Water Leaks.	Defective water seal. Gravity feed line leaking. Water level in reservoir too high.	Replace Check hose clamps. Adjust to 1/4 inch below overflow pipe.
Excessive noise or chattering	Mineral or scale deposit on auger and inner freezing chamber walls. Low suction. Intermittent water supply. Water level in reservoir too low. Gear reducer loose on frame. Motor compressor not solid on rubber mounts.	Remove and manually polish auger, polish inner chamber walls of freezer barrel. For lighter concentration use Scotsman Ice Machine Cleaner periodically. Add gas to raise suction pressure. Check and clean water strainer. Check gravity feed line for air lock. Remove air lock. Adjust to 1/4 inch below overflow pipe. Tighten bolts. Repair or replace rubber mounts.
Gearmotor noise.	Low on oil.	Remove case cover to check for proper oil level. Top of gears should be covered. Use 600W or similar.
Unit will not run.	Blown fuse. Loose electrical connection. Inoperative master switch.	Replace fuse and check for cause of blown fuse. Check wiring. Replace switch.

SERVICE ANALYSIS
ICE MAKER SECTION FD4

SYMPTOM	POSSIBLE CAUSE	CORRECTION
Compressor cycles intermittently.	<p>Low voltage.</p> <p>Dirty condenser.</p> <p>Air circulation blocked.</p> <p>Inoperative condenser motor.</p> <p>Non-condensable gases in system.</p>	<p>Check for overloading.</p> <p>Clean.</p> <p>Move unit to correct.</p> <p>Replace.</p> <p>Purge off.</p>
Making wet ice.	<p>Surrounding air temperature.</p> <p>Under or over-charge of refrigerant.</p> <p>High water level in water reservoir.</p> <p>Faulty compressor.</p>	<p>Correct or move unit.</p> <p>Recharge with the proper amount.</p> <p>Lower to 1/2 inch below overflow pipe.</p> <p>Replace or repair.</p>
Low ice production.	<p>Loss of refrigerant, under or over-charge of refrigerant.</p> <p>Dirty or plugged condenser.</p> <p>Low water level in water reservoir.</p> <p>Partial restriction in capillary tube or drier.</p> <p>Inlet water strainer partially plugged.</p> <p>Corroded or stained worm shaft due to water condition.</p>	<p>Check and recharge with proper amount of refrigerant.</p> <p>Clean condenser.</p> <p>Adjust to 1/2 inch below overflow pipe.</p> <p>Moisture in system. Overcharge of oil in system. Remove charge and drier. Replace and recharge system.</p> <p>Remove screen and clean.</p> <p>Remove worm shaft and clean.</p>
Machine runs but makes no ice	<p>Loss or under-charge of refrigerant.</p> <p>Water not entering freezing chamber.</p> <p>Moisture in system.</p> <p>Water seal leaking.</p> <p>Water turned off while unit was operating.</p>	<p>Check for leaks and recharge.</p> <p>Plugged strainer or supply line. Check and clean. Air lock in gravity feed line. Check and remove air lock.</p> <p>Check and remove charge and drier. Replace and recharge.</p> <p>Replace seal.</p> <p>Inlet water line froze shut. Unit must be turned off and defrosted.</p>

SERVICE ANALYSIS
ICE MAKER SECTION FD4

SYMPTOM	POSSIBLE CAUSE	CORRECTION
Will not dispense.	Power off. Motor overload open. Spout jammed with ice. Unit not level or holding glasses against spout. Wires off dispensing switch.	Check line fuses and plug. See correction under motor overload. Remove ice and clear ice under removable bottom. Check reservoir possibly too high. Check switch terminals.
Motor hot—Overload Open.	Ice under removeable bottom. Wing nuts on cover turned down too tight. Rotating bin does not turn free. Ice too hard.	Remove ice. Keep wing nuts only slightly snug—never tight. Check and repair any drag. Raise freezer water level and check refrigerant charge.
Dispenser does not stop.	Brake on drive motor not working properly.	Brake must be free and stop the motor before 5 revolutions after the dispensing switch is released
Water will not dispense.	Solenoid defective. Lines closed up.	Replace. Clean.
Water runs too slow.	Water line too small.	Increase size.

MAINTENANCE INSTRUCTIONS — FLAKER SECTION

THE FOLLOWING MAINTENANCE SHOULD BE SCHEDULED THREE TIMES PER YEAR.

1. Check and clean water strainers and float valve. Depress float valve to insure full stream of water.
2. Check water level and machine level. Keep water level below overflow, but as high as possible and still not run out of spout opening with machine off. Water should come out of spout with ice at all times. Adjust as required.
3. Clean reservoir and interior of freezer assembly using SCOTSMAN Ice Machine Cleaner. See cleaning instructions on next page.

A. If machine has been cleaned regularly and no problems such as dry ice chatter are noticed, clean by making ice from solution of 4 oz. of cleaner to 2 quarts of water.

B. If heavy mineral deposits on auger and walls, or sediment at inlet to freezer are encountered, clean by pouring strong solution 1/2 acid - 1/2 water into reservoir and operate drive motor only for agitation. Allow 1/2 hour or longer as required. Drain by disconnecting tygon at water inlet to freezer.

NOTE: Cleaning requirements vary according to local water conditions. Visual inspection of the auger before and after cleaning will indicate best procedure to be followed in local area.

4. Check top bearing of freezing tube. Remove retainer ring around edge of stamped brass cap, pull cap off. If moisture is around bearing, wipe up and remove grease. Add new grease. Use Beacon No. 325 or equal.
5. Clean air cooled condenser. Always shut off machine when cleaning.
6. Oil condenser fan motor when possible.
7. Check for refrigerant leaks and proper frost line. Should frost out of accumulator at least one-half way to compressor, and in some areas, back to service valve.
8. Check for water leaks. Tighten drain line connections. Run water down drain line to make sure it is open.
9. Check quality of ice. Ice should be wet when formed, but will cure rapidly to normal hardness in the bin.

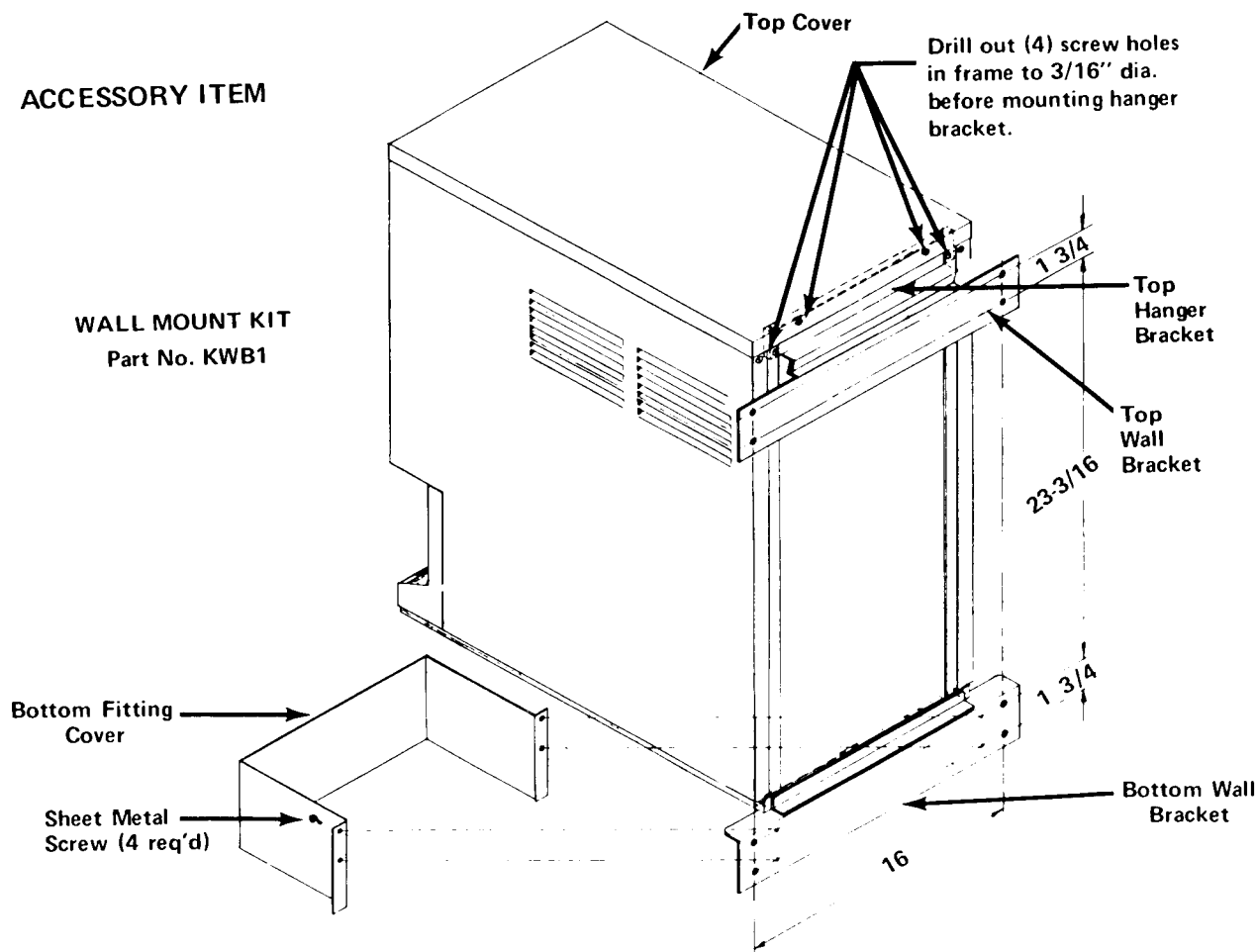
**CLEANING INSTRUCTIONS FOR SCOTSMAN
ICE MACHINE MODEL FD4**

1. Depress ice actuator arm and vend until bin is empty.
2. Remove top cabinet cover. Disconnect (unplug) electrical supply.
3. Remove storage bin cover and spout extension.
4. Remove both ice control flippers from storage bin cover. Note positions of these parts, if parts re-assembled incorrectly damage to the machine may result.
5. Remove inner bin and bin bottom.
6. Replace bin cover.
7. Turn *off* water supply or block float. Drain reservoir by disconnecting tube between reservoir and freezer.
After draining, reconnect tubing.
8. Plug unit in and pour cleaning solution into reservoir. (Use 4 oz. of Scotsman cleaner and 1 qt. of hot water.) Do not fill above overflow tube. Do not allow unit to operate with less than 1" of solution in reservoir.
9. Remove drain grate and ice vend lever from sink. Wash and sanitize these parts and parts removed from storage bin in accordance with local health department regulations.

Finish washing parts during step #11 if necessary.
10. Unplug unit. Wash and rinse reservoir, turn water on or remove float block.
11. Plug unit in. Let run for at least 15 minutes to flush out any cleaning fluid. Check ice for acid taste - - - run until ice tastes sweet.
12. Unplug unit and remove bin cover. Add hot water to ice in bin, using this melt water thoroughly wash and rinse the underside of the storage bin top, rubber ice spout and all surfaces within the storage bin.
13. Using solution from step #9, thoroughly wash and rinse sink and grille.
14. Re-assembly storage bin and sink parts.
15. Replace cabinet cover. Plug in and unit is ready for normal operation.

ACCESSORY ITEM

WALL MOUNT KIT
Part No. KWB1



THE KIT

1. Top Case Hanger Bracket
Attach to inside of frame of the dispenser.
2. Top Wall Bracket
Mounts to wall and engages top case hanger bracket to support dispenser.
3. Bottom Wall Bracket
Mounts to wall and supports bottom of dispenser.
4. Bottom Fittings Cover
Fastened to bottom wall bracket to conceal electrical and plumbing fittings from view.

TOP HANGER BRACKET:

1. Remove back cover and save four screws for mounting bracket.
2. Remove top cover.
3. Drill out four holes of weld nuts in back of frame with 3/16 dia. drill as indicated in illustration.
4. Place bracket inside of frame and fasten solidly with four screws, saved from Step 1, through drilled out holes.

TOP WALL BRACKET:

1. Position bracket in desired location.
2. Secure to wall with fasteners of any suitable type for that particular wall through the four holes in bracket. These fasteners or lag screws are not furnished. Be sure to secure bracket rigidly.

BOTTOM WALL BRACKET:

1. Hang the dispenser on top wall bracket.
2. Position bottom bracket so that moulding on dispenser base bottoms in channel of the bracket.
3. Secure bracket to wall through the four large holes with suitable fasteners. Fasteners not furnished.

BOTTOM FITTINGS COVER:

1. Connect water inlet, bin drain and sink drain of dispenser through bottom of case. Also run electrical cable in from bottom.
2. Secure fitting cover to bottom wall bracket with the four sheet metal screws provided in this kit.

SINK EXTENSION KITS
KDE1 – Painted
KDE1-SS – Stainless Steel

KIT:

02-1699-00	Sink Assembly (4) 3-1403-29 Screws
02-1828-00	Splash Plate (6) 3-1403-7 Screws
02-1701-00	Drain Grill (6) 3-1406-1 Nuts
A21538-000	Base (2) 3-1403-6 Screws
A21538-001	Base—Stainless Steel

FEATURES:

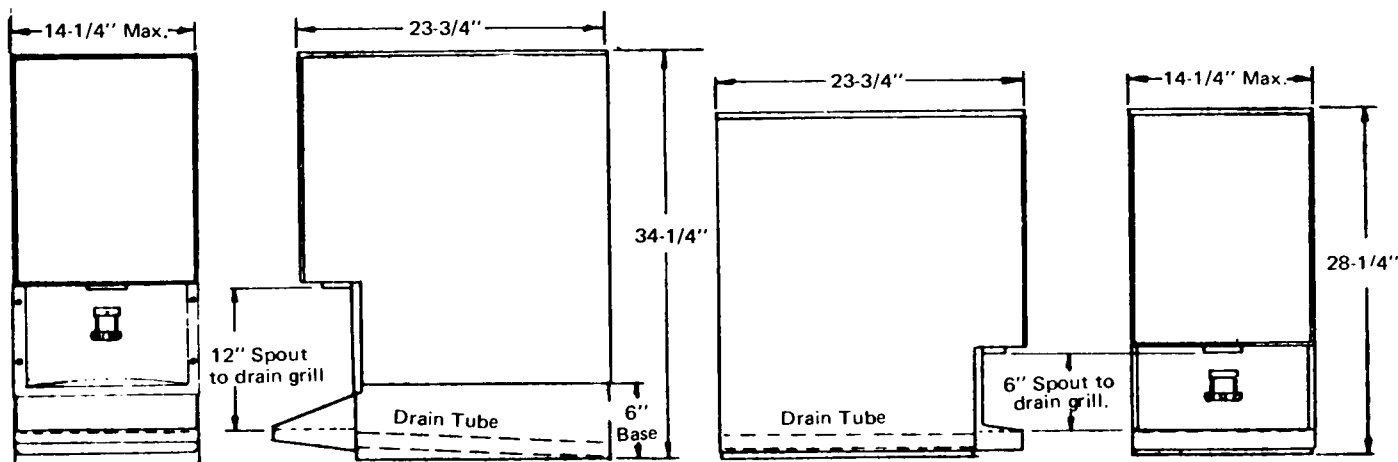
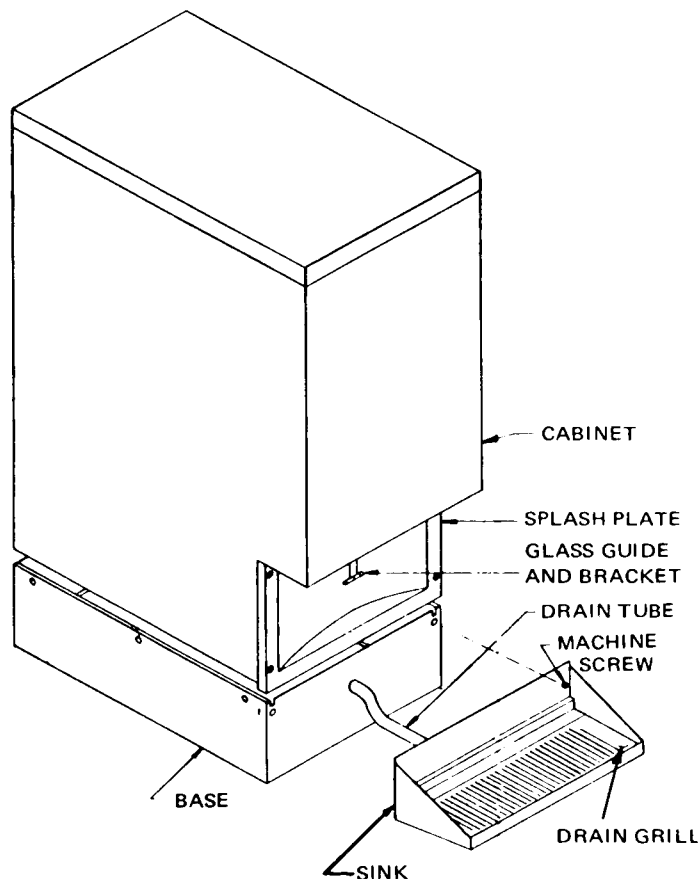
By the use of the splash plate, only, and the wall bracket Kit No. (another accessory), the FD4 model can be mounted on a wall over an existing sink.

As a counter-top model, the dispenser is mounted on the six-inch base, A21538. The splash plate, sink and grill replace the conventional sink on the models.

INSTALLATION:

1. Remove conventional sink from cabinet.
2. Remove glass actuator arm and holder from sink.
3. Remove drain tube from original sink.
4. Install drain tube to replacement sink.
5. Remove rubber seal from base of the dispenser.
6. Mount the dispenser on base, A21538. The flange of the dispenser base is to fit in slots provided in the base extension. Secure with the 3 screws on each side of base.
7. Mount sink in place and secure with two machine screws.
8. Install splash plate to cabinet with four machine screws, furnished. The splash plate fits over top of sink.
9. Install glass actuator arm and holder to splash plate. The plunger on the arm must operate freely through hole in splash plate.
10. Install grate.

A conversion for the FD4 dispenser to increase the distance between the discharge spout and the sink to twelve inches and to provide a faster sink drainage.



UNIT WITH SINK EXTENSION KIT

UNIT WITHOUT KIT