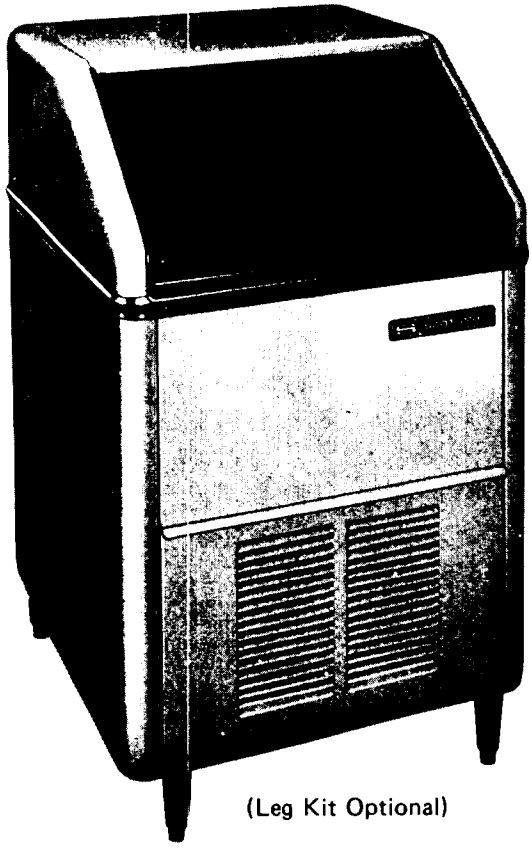
## TABLE OF CONTENTS

THIS PAGE
INTENTIONALLY
LEFT BLANK

THIS PAGE
INTENTIONALLY
LEFT BLANK

SCOTSMAN®
COMMERCIAL ICE SYSTEMS/HOME ICE MAKERS



(Leg Kit Optional)

# AF1 series
## self-contained flaker

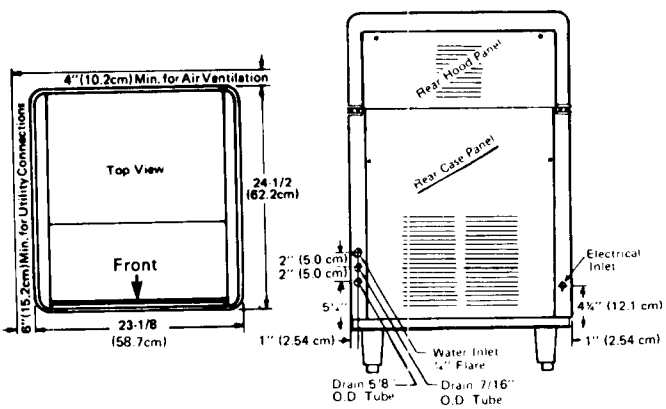
Where space is at a premium, the AF1 self-contained flaker is a perfect problem solver. This large capacity, compact unit takes up only four square feet of floor space. It has a storage capacity of 55 pounds. Because of its compact size, the AF1 flaker fits perfectly under a counter . . . that's convenience!

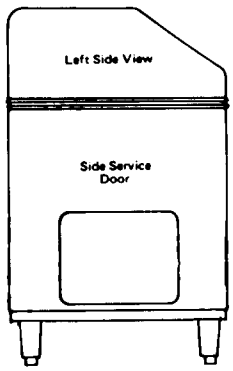
## ice making capacity

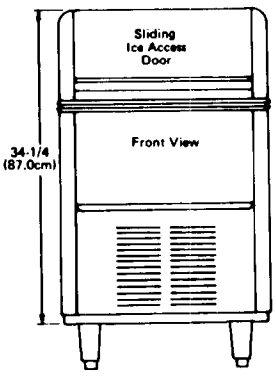
Daily Ice Capacity is directly related to condenser air inlet temperature, water temperature, and age of machine.

NOTE: To keep your SCOTSMAN AUTOMATIC FLAKER performing at it's maximum capacity, it is necessary to perform periodic maintenance as outlined on page 24 of this manual.

# AF1 series flaker with storage




***Capacity:** Refer to Ice Making Capacity chart
**Storage Bin:** 55 lbs. (25 kg)
**Height:** 34-1/4" (87.0 cm)
**Width:** 23-1/8" (58.7 cm)
**Depth:** 24-1/2" (62.2 cm)
**Weight:** 208 lbs. (94 kg)

**OPTIONAL LEG KITS**
Four metal legs screw into mounting plates on cabinet base. Provide 6" minimum height including adjustable leveling foot. N.S.F. approved.
**KLP2E:** Black enamel finish. Recommended for enameled cabinets.
**KLP2S:** Nickel plated, brushed metal finish with stainless steel foot. Recommended for stainless steel cabinets.

**IMPORTANT OPERATING REQUIREMENTS**
**Electrical Voltage:** Machine requires voltage indicated on rating nameplate. Failures caused by improper voltage are not considered factory defects.
**Ambient Temperature:** Machine is not designed for outdoor installation. Machine will not operate when air temperature is below 50° F. or above 100° F.
**Water Pressure & Temperature:** Requires 20 lbs. flowing water pressure, without interruption. Machine will not operate when water supply temperature is below 40° F. or above 100° F.

**AF1 MACHINE SPECIFICATIONS**

| Model | Condensing Unit | Compressor Horsepower | Finish* | Shipping Weight lbs. | kg. |
|---|---|---|---|---|---|
| AF1AE | Air | 1/4 | Enamel | 208 | 94 |
| AF1AS | Air | 1/4 | Stainless Steel | 208 | 94 |

| Basic Electricals | Max. Oper. Amps | No. of Wires | Max. Fuse Size |
|---|---|---|---|
| Air-Cooled: 115/60/1 | 8.3 | 2 | 15 |

** Use this value to determine minimum wire size required to meet National Electric Code Standards.

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

SCOTSMAN®
COMMERCIAL ICE SYSTEMS/HOME ICE MAKERS
QUEEN PRODUCTS DIVISION
KING-SEELEY THERMOS CO.
505 FRONT ST., ALBERT LEA, MN 56007

## SELECTING LOCATION

**UNDER BAR INSTALLATIONS:** When selecting location for ice maker, consideration should be given to service. A minimum of 4" is required behind the machine for proper ventilation. A minimum of 6" should be allowed along left side of unit for access to utility connections. If possible, additional space is desirable along left side to facilitate service.

**KITCHEN INSTALLATIONS:** As a rule, the kitchen is not the most practical place to install and air-cooled condensing unit, as grease is almost always present and makes cleaning of the condensing unit difficult. Do not locate near range or steam table or other heating devices that may be used in the kitchen.

**STOREROOM INSTALLATIONS:** Be sure storeroom is of adequate size and properly ventilated. A small, poorly ventilated room will greatly impair the efficiency of the unit. The storeroom must be kept above 50 degrees in the winter months.

**BASEMENT INSTALLATIONS:** Locate machine in the coolest place. Locate machine in a dry place. Keep away from furnace and boiler room. Keep away from service chutes and runways; also coal or other dust of any kind. If the machine is set over a floor drain, block the machine up enough to level it. If there is any chance of basement flooding, block the machine up enough to eliminate any possible damage to the machine.

## INSTALLATION INSTRUCTIONS

The following installation instructions were written for use by a 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.

* Standard Models AF1 do not include legs. Sales department carries leg package under accessory items.

# INSTALLATION LIMITATIONS

## ELECTRICAL

1. Scotsman, like most manufacturers, purchases electrical motors that are rated to operate within 10% variance above or below nameplate ratings.

   Improper voltages applied to Scotsman equipment can cause premature failures and burnouts. Failures of this type are not considered as factory fault or defect.

## AMBIENT

2. **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.

## SCOTSMAN SUPER FLAKERS

## PREPARATION FOR INSTALLATION

1. The entire unit comes in one carton. Upon delivery a visual inspection of the carton should be made and any severe damage noted should be reported to the delivering carrier and a concealed damage claim filed subject to internal inspection with carrier representative present. Remove carton by cutting on dotted line of crate into the bottom skid. Next remove (4) four bolts from underside of skid which connect to complete unit base. Lift carton up and off unit.

2. Remove all service doors and panels.

3. Thru cabinet upper rear service door, locate water reservoir, remove water reservoir cover and check free operation of float ball.

4. Remove water strainer from storage bin for installation on unit or in water supply line feeding unit.

5. Remove electrical control box cover and check unit nameplate voltage against building source voltage and make sure they correspond. Caution — improper voltage supplied to units will void your parts exchange program.

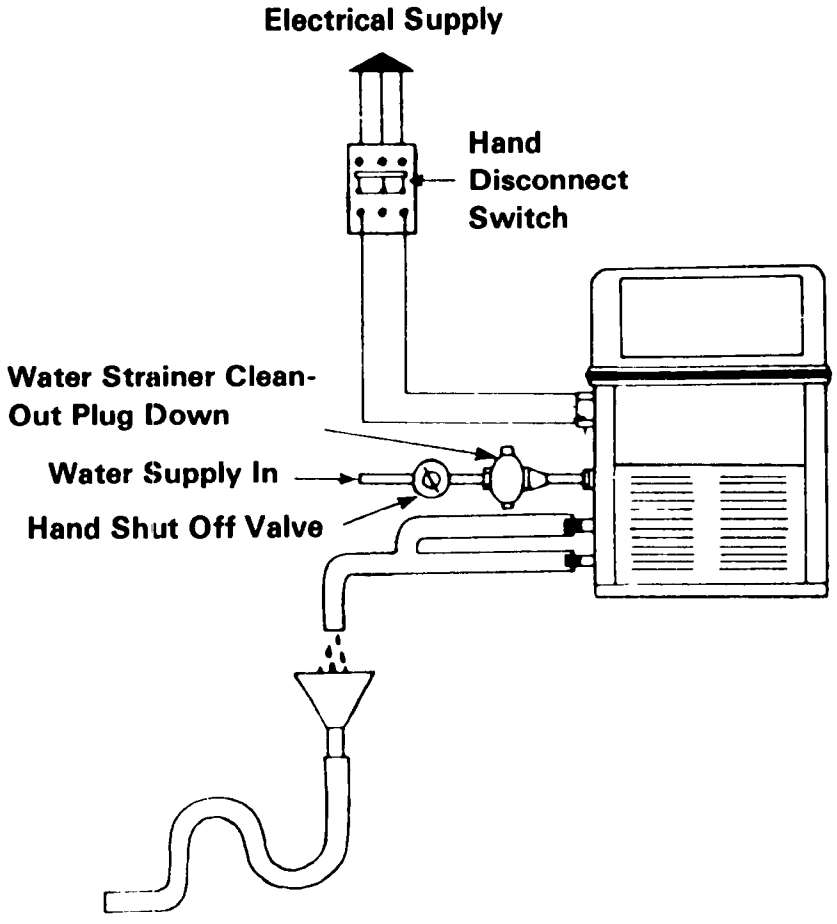
6. Select unit location prior to hook up of water drain and electricals in accordance with local and national codes. Minimum room temperatures is 50° Fahrenheit, maximum room temperatures 100° Fahrenheit. On air cooled models, select well ventilated location.

7. Use clean damp cloth to wipe out storage bin and cabinet exterior.

8. Fill out owners registration card including model and serial numbers as taken from aluminum plate found behind service panel and forward to Scotsman factory using self mailing card.

9. Call your authorized Scotsman Distributor or Dealer for proper installation, start-up and check out. He's listed under "Ice Making Equipment and Machinery" in the telephone book yellow pages.

## INSTALLATION PRACTICES




WATER SUPPLY. The recommended water supply line is 1/4 inch OD copper tubing. Connect to cold water supply line with regular plumbing fittings, with shut-off valve installed in an accessible place between supply line and machine. A water strainer must be installed with the unit and mounted with clean-out plug down. Locate the strainer next to the machine with an arrow in the direction of the flow. Most plumbing codes also call for double check valves in the supply water line. Minimum water pressure is 20 lb. gauge.

The water supply line connects to the 1/4 inch flare fitting on the machine. Water supply must be installed to conform with local code. In some cases a licensed plumber and/or a plumbing permit will be required.

DRAIN. The recommended drain from the bin is 5/8 inch OD copper tubing. Must be run to an open trapped and vented drain. If drain is a long run, allow a 1/4 inch pitch per foot. Drain must be installed to conform with local code.

# INSTALLATION

## ELECTRICAL CONNECTIONS

### AF1C-1A
### 115 Volts, 60 Hertz, 1 Phase
### 15 Amp. Circuit

Be certain that the Flaker is on its own circuit and individually fused. The maximum allowable voltage variation should not exceed 10 per cent of the nameplate rating even under starting conditions. Low voltage can cause erratic operation and may be responsible for serious damage to the overload switch and motor windings.

All external wiring should conform to the National Underwriters and local Electrical Code requirements. Usually an electrical permit and the services of a licensed electrician will be required.

## ELECTRICAL INSTALLATION:

### AF1

| | | |
|---|---|---|
| Compressor | 1/4 HP | Tecumseh |
| | Voltage | 115 |
| | Amp. rating F.L.A. | 4.15 |
| | Hertz | 60 |
| | Phase | Single |
| Gear Drive Motor | 1/10 HP | Queen Products |
| | Voltage | 115 |
| | Amp. rating | 4.0 |
| | Hertz | 60 |
| | Phase | Single |
| | | Thermally Protected |

**WARNING:** THIS MACHINE MUST NOT BE ALLOWED TO OPERATE WHEN THE WATER SUPPLY IS SHUT OFF, OR AT BELOW RECOMMENDED WATER PRESSURE. TURN MASTER SWITCH TO "OFF" POSITION WHEN WATER SUPPLY IS OFF, OR WHEN WATER PRESSURE IS BELOW RECOMMENDED OPERATING PRESSURE.

## SERVICE

STARTING THE MACHINE: When the machine is placed and inspected as per instructions and all plumbing and electrical connections are completed and tested, turn on the water supply. Be sure the float cover is removed to check on the float operation and water level in the water reservoir. Be sure the water reservoir is filled before starting the machine. Water level should be 1/4 inch below the reservoir overflow.

When this is completed, turn on the manual switch on the control box and the machine is in automatic operation. In two to three minutes ice will start dropping off the worm shaft and out the ice chute. Let the machine operate for at least 30 minutes and check for any excess noise other than the normal compressor noise. Test the ice storage control bulb by holding a handful of ice around the bulb until the machine shuts off. One minute should be normal for the control to function. Within minutes after the ice is removed, the bulb will warm up and the machine will automatically start up. The control is factory set and should not be reset until this test is made. Normal setting of this control should be approximately 35 degrees cut out, 45 degrees cut in.

Check low pressure setting at the time of start-up. The frost line should extend 8" out of the accumulator if properly charged with refrigerant and suction pressure will range between14 and 15 PSI with 50° F. inlet water.

Explain the machine to the owner, showing him how the machine works and go over the owner's instruction sheet with him. Answer all the owner's questions about the machine, and do not leave with any doubt in the owner's mind about the machine, how to operate it or where to reach you should he need service on the machine. Call back the next day to check the machine again and answer any other questions the owner may have.

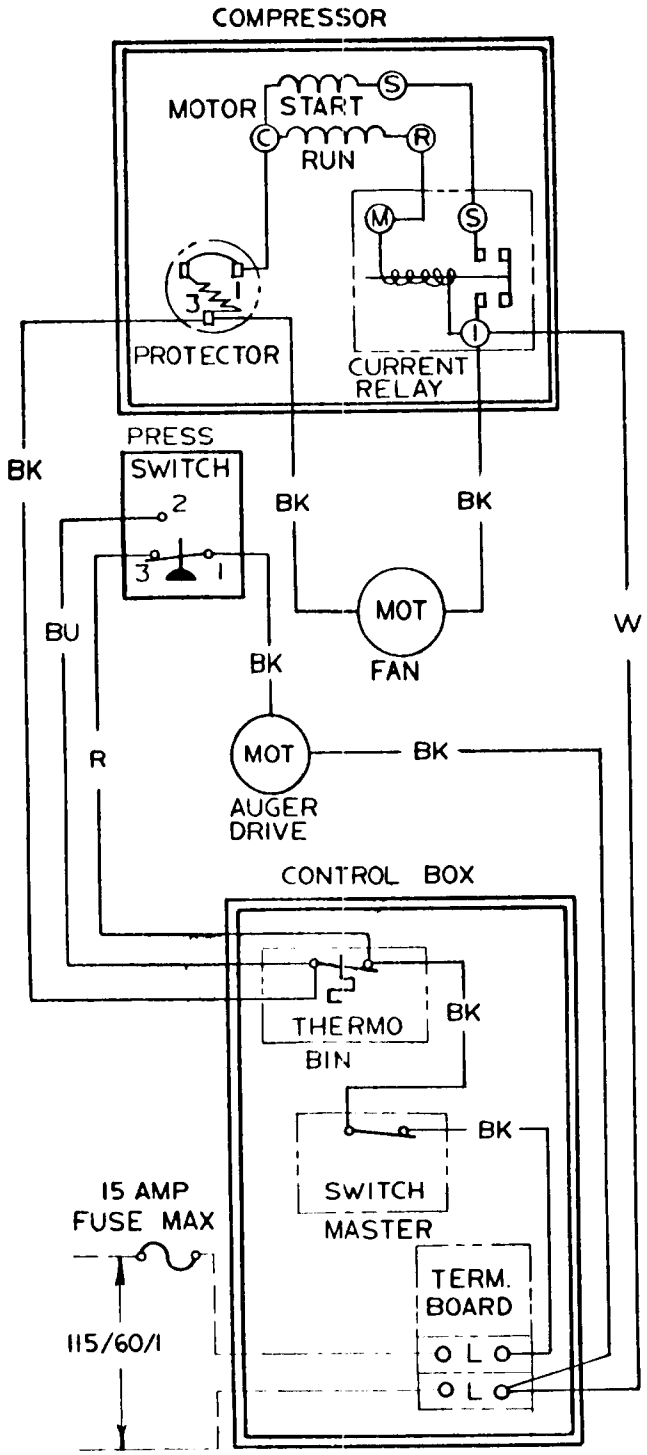
Service gauge connection is available on low side service valve. Purge free of any non-condensable gases before starting any test operation.

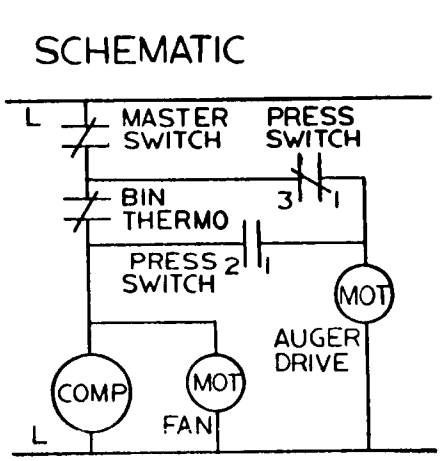
REFRIGERANT CHARGE: The below refrigerant charge is approximate. Charge so that the frost line extends 8" out of the accumulator after fifteeen minutes of operation. Factory charge 15 oz. refrigerant 12.

## FINAL CHECK LIST

1. Is the unit level? (IMPORTANT)
2. Have all electrical and piping connections been made?
3. Has the voltage been tested and checked against the nameplate rating?
4. Is the water supply valve open and the electric power on?
5. Is the water reservoir filled and shut off? All packing removed?
6. Have unit and bin been wiped clean?
7. Has owner been given the Operating Instruction Sheet, and has he been instructed on how to operate the machine?
8. Have the installation and warranty cards been filled out? This is the owner's protection.
9. Check all refrigerant and conduit lines to guard against vibration and possible failure.
10. Installed in a well ventilated room where ambient temperatures do not fall below 50° Fahrenheit.
11. Is unit installed with a minimum 4" air space around sides and back?

# WIRING DIAGRAM
115/60/1
Air Cooled




THIS UNIT MUST BE GROUNDED

CONTROLS SHOWN IN NORMAL ICE MAKING MODE

A27194-001

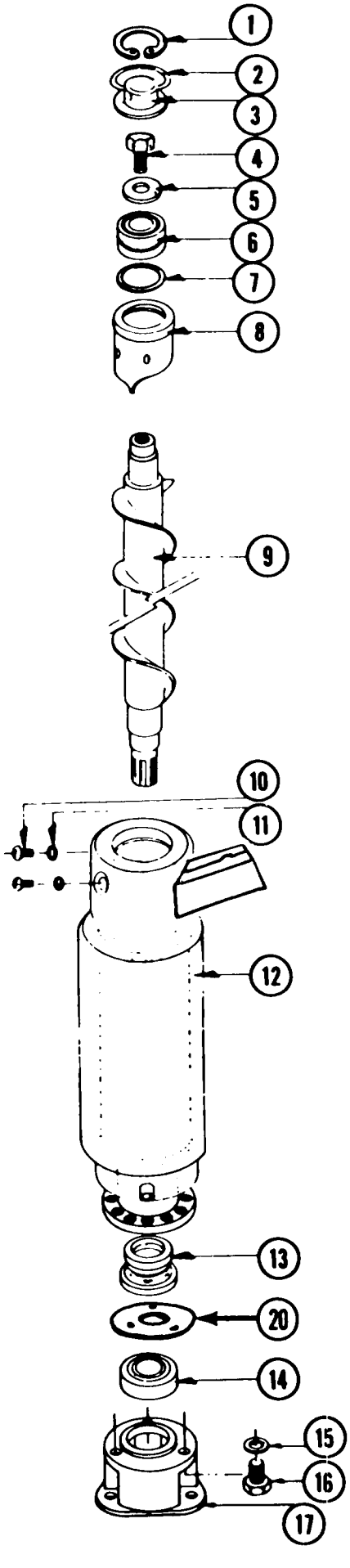
## SERVICE ANALYSIS

| SYMPTOM | POSSIBLE CAUSE | CORRECTION |
|---|---|---|
| Unit will not run | Blown Fuse | Replace fuse and check for cause of blown fuse. |
| | Thermostat set too high | Adjust thermostat. 35° cut-out and 45° cut-in. |
| | Loose electrical connection | Check wiring. |
| | Switch in OFF position | Turn switch to ON. |
| | Inoperative master switch | Replace switch. |
| Compressor cycles intermittently | Low voltage | Check for overloading. |
| | Dirty Condenser | Clean. |
| | Air circulation blocked | Move unit to correct. |
| | Inoperative condenser motor | Replace. |
| | Non-condensable gases in system | Purge off. |
| Making wet ice | Surrounding air temperature | Correct or move unit to cooler location. |
| | Under or over-charge of refrigerant | Recharge with the proper amount. |
| | High water level in water reservoir | Lower to 1/4 inch below overflow pipe. |
| | Faulty compressor | Repair or replace. |
| Low ice production | Loss of refrigerant, under or over-charge of refrigerant. | Check and recharge with proper amount of refrigerant. |
| | Dirty or plugged condenser | Clean condenser. |
| | Low water level in water reservoir | Adjust to 1/4 inch below overflow pipe. |
| | Partial restriction in capillary tube or drier | Moisture in system. Overcharge of oil in system. Remove charge and drier. Replace and recharge system. |
| | Inlet water strainer partially plugged. | Remove screen and clean. |
| | Corroded or stained worm shaft due to water condition | Remove worm shaft and clean. |
| Machine runs but makes no ice | Loss or under-charge of refrigerant | Check for leaks and recharge. |
| | Drive gearmotor or drive coupling stripped. | Check. Repair and/or replace. |
| | Water not entering freezing chamber. | Plugged strainer or supply line. Check and clean. Air lock in gravity feed line. Check and remove air lock. |
| | Moisture in system | Check and remove charge and drier. Replace and recharge. |
| | Water seal leaking | Replace seal. |
| | Defective manual overload switch. | Replace switch. |

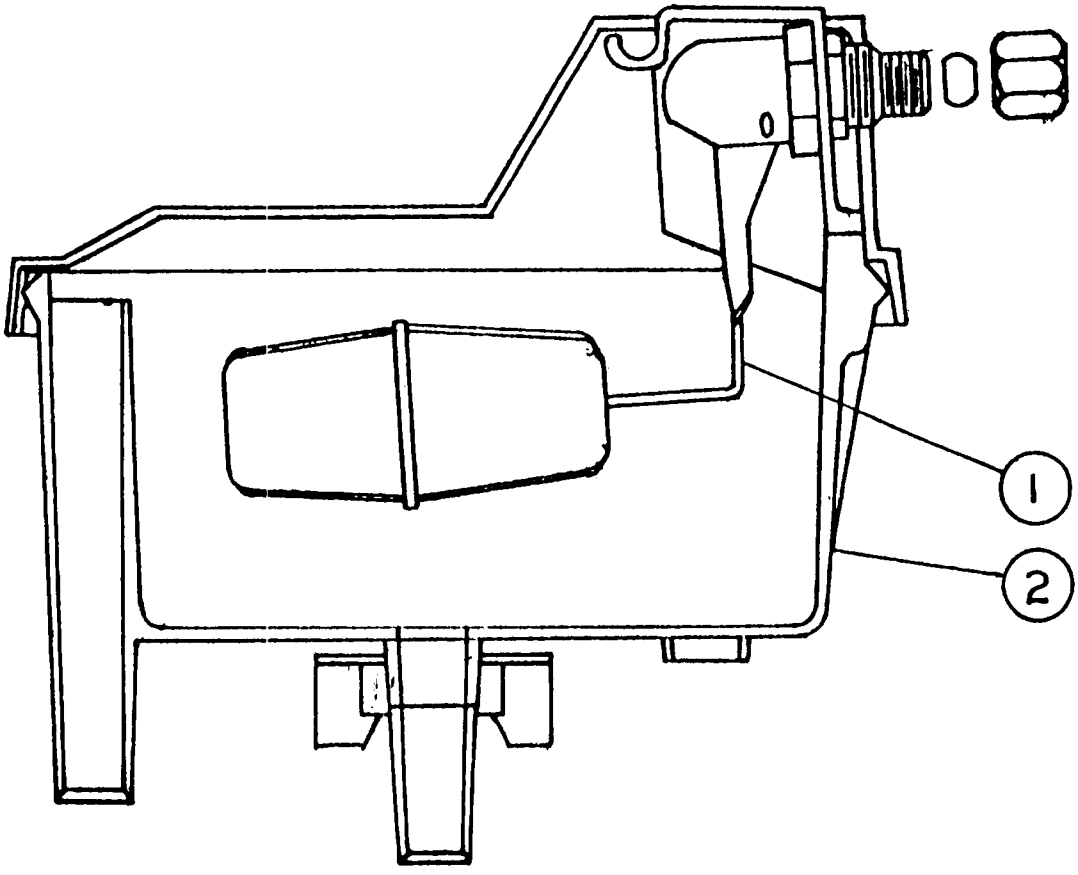
## SERVICE ANALYSIS

| SYMPTOM | POSSIBLE CAUSE | CORRECTION |
|---|---|---|
| Water Leaks | Defective water seal | Replace |
| | Gravity feed line leaking | Check hose clamps. |
| | 'O' ring in spout casting leaking | Remove spout casting and install new 'O' ring. |
| | Storage bin drain & connecting fittings | Check and repair. |
| | Water level in reservoir too high | Adjust to 1/4 inch below overflow pipe. |
| Excessive noise or chattering | Mineral or scale deposits on auger and inner freezing chamber walls. | Remove and manually polish auger, polish inner chamber walls of freezer barrel. |
| | | For lighter concentrations use Scotsman Ice Machine Cleaner periodically. |
| | Low suction | Add gas to raise suction pressure. |
| | Intermittent water supply | Check & clean water strainer. Check gravity feed line for air lock. Remove air lock. |
| | Water level in reservoir too low | Adjust to 1/4 inch below overflow pipe. |
| | Gear motor loose on frame | Tighten. |
| | Gear motor end-play or worn bearings. | Repair or replace. |
| Machine continues to run with full storage bin | Storage bin thermostat not properly set | Reset or replace. 35° cut-out, 45° cut-in Check operation with handful of ice. |

## FREEZER ASSEMBLY

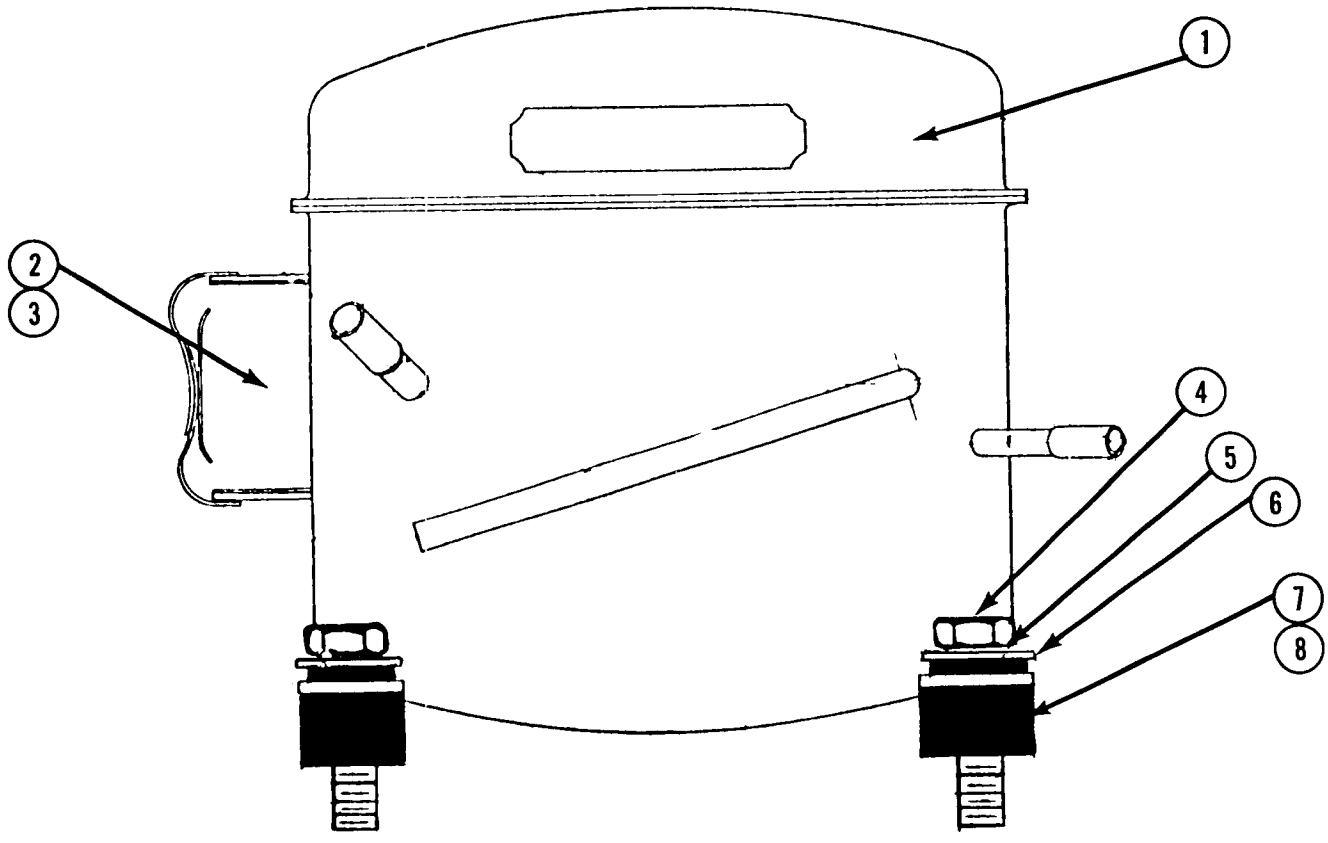



| ITEM | PART NO. | *NAME* |
|---|---|---|
| 1. | 03-1558-03 | Retainer Ring |
| 2. | A08162-000 | Cap Hook |
| 3. | A07701-000 | Cap |
| 4. | 03-0758-00 | Screw |
| 5. | A07699-000 | Washer |
| 6. | 02-0547-00 | Top Bearing |
| 7. | 13-0617-16 | "O" Ring |
| 8. | A26706-001 | Breaker w/Bearing |
| 9. | 02-1313-00 | Auger |
| 10. | 03-1403-46 | Screw |
| 11. | 03-1417-07 | Washer |
| 12. | A27192-001 | Evaporator Shell Includes Suction Line, Etc. |
| 13. | A18945-000 | Water Seal |
| 14. | 02-0417-00 | Bearing, Lower |
| 15. | 03-1410-04 | Washer (3 reqd) |
| 16. | 03-1405-42 | Cap Screw (3 reqd) |
| 17. | 08-0595-01 | Adapter |
| 18. | 15-0575-01 | Spline Drive Coupling |
| 19. | 13-0709-01 | Shaft Drip Shield - rubber |
| 20. | 03-1505-00 | Gasket |
| 21. | 13-0628-00 | Gasket |
| 22. | A18153-000 | Drip Pan Ass'y. |




# RESERVOIR ASSEMBLY

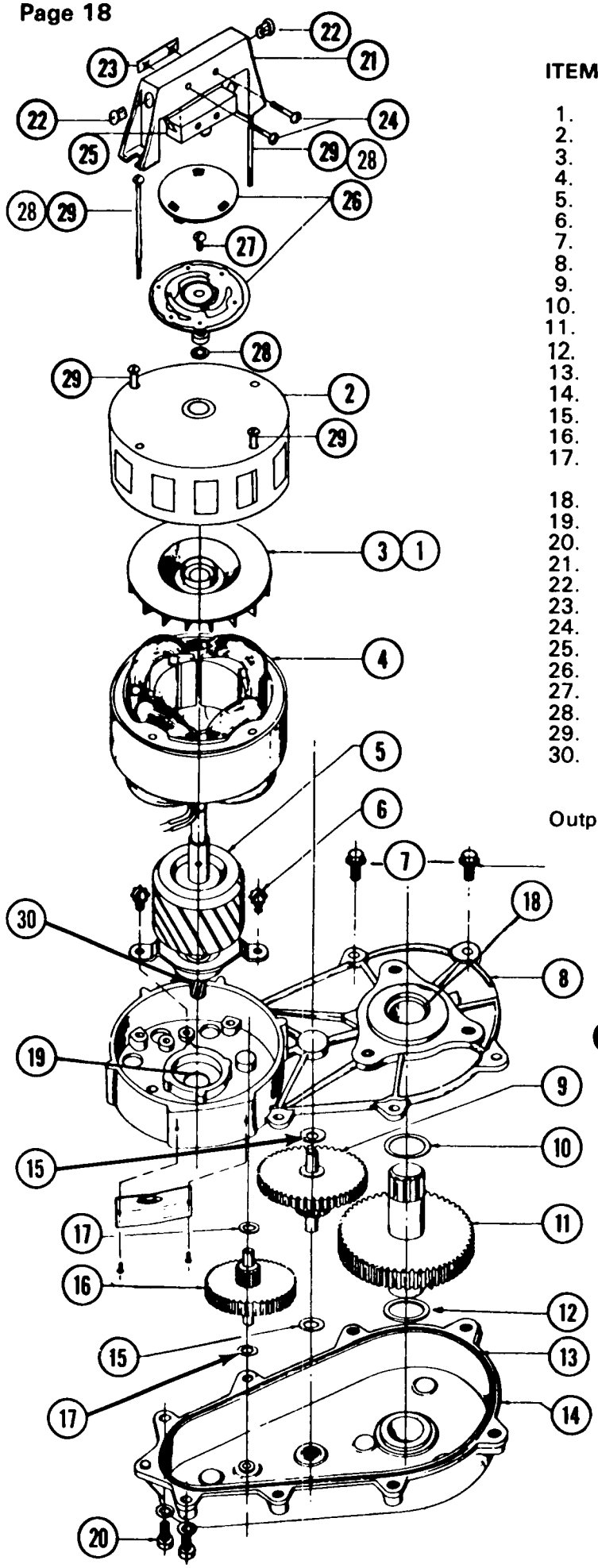
| ITEM | PART NO. | DESCRIPTION |
|---|---|---|
| 1. | 02-2217-02 | Valve Assy. |
| 2. | 02-2217-01 | Reservoir Complete |




# COMPRESSOR ASSEMBLY

# 115/60/1

| ITEM | PART NO. | DESCRIPTION |
|---|---|---|
| 1. | 18-4700-01 | Compressor |
| 2. | 18-4700-30 | Relay — Tecumseh 820RR12B11<br>GE 3ARR12-WR17<br>Relay — Tecumseh 82003CRB15<br>TI 3CR211-179 |
| 3. | 18-4700-29 | Overload — Tecumseh 830MR5C21<br>TI MRT28AGK-296 |
| 4. | 03-1405-20 | Screw |
| 5. | 03-1410-04 | Lockwasher |
| 6. | 03-1408-29 | Flatwasher |
| 7. | 18-4700-28 | Mounting Grommet |
| 8. | 18-0108-41 | Mounting Sleeve |




| ITEM | 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. |
| 5. | A26454-001 | Rotor Assy. and 1st Gear |
| 6. | 03-1245-00 | Screws (6) |
| 7. | 03-1251-00 | Flange Screws |
| 8. | A24184-001 | Gear Case Cover |
| 9. | 02-1521-00 | Gear and Pinion |
| 10. | 03-1408-21 | Washer |
| 11. | A26650-001 | Gear and Output Shaft |
| 12. | 03-1408-21 | Washer |
| 13. | 02-1505-00 | "O" Ring |
| 14. | A16919-000 | Gear Case Assy. |
| 15. | 03-1408-06 | Washer |
| 16. | 02-2224-01 | 1st Gear and Pinion |
| 17. | 03-1408-20 | Washer |
| | 03-1407-19 | Washer |
| 18. | 02-1503-00 | Grease Seal |
| 19. | 02-1504-00 | Grease Seal |
| 20. | 03-1252-00 | Screw (2) |
| 21. | 03-0579-00 | Switch Bracket |
| 22. | 12-1213-03 | Snap Bushings |
| 23. | 03-0886-00 | Twin Speed Nut |
| 24. | 03-1403-10 | Screws |
| 25. | 12-1644-00 | Switch |
| 26. | A19898-000 | Synchro Snap Assy. |
| 27. | 03-1248-01 | Screw |
| 28. | 03-1417-06 | Washer |
| 29. | 03-1403-43 | Motor Bolts |
| 30. | 13-0617-04 | Oil Slinger ring |
| | A25995-021 | Gear Motor Assy. Complete |

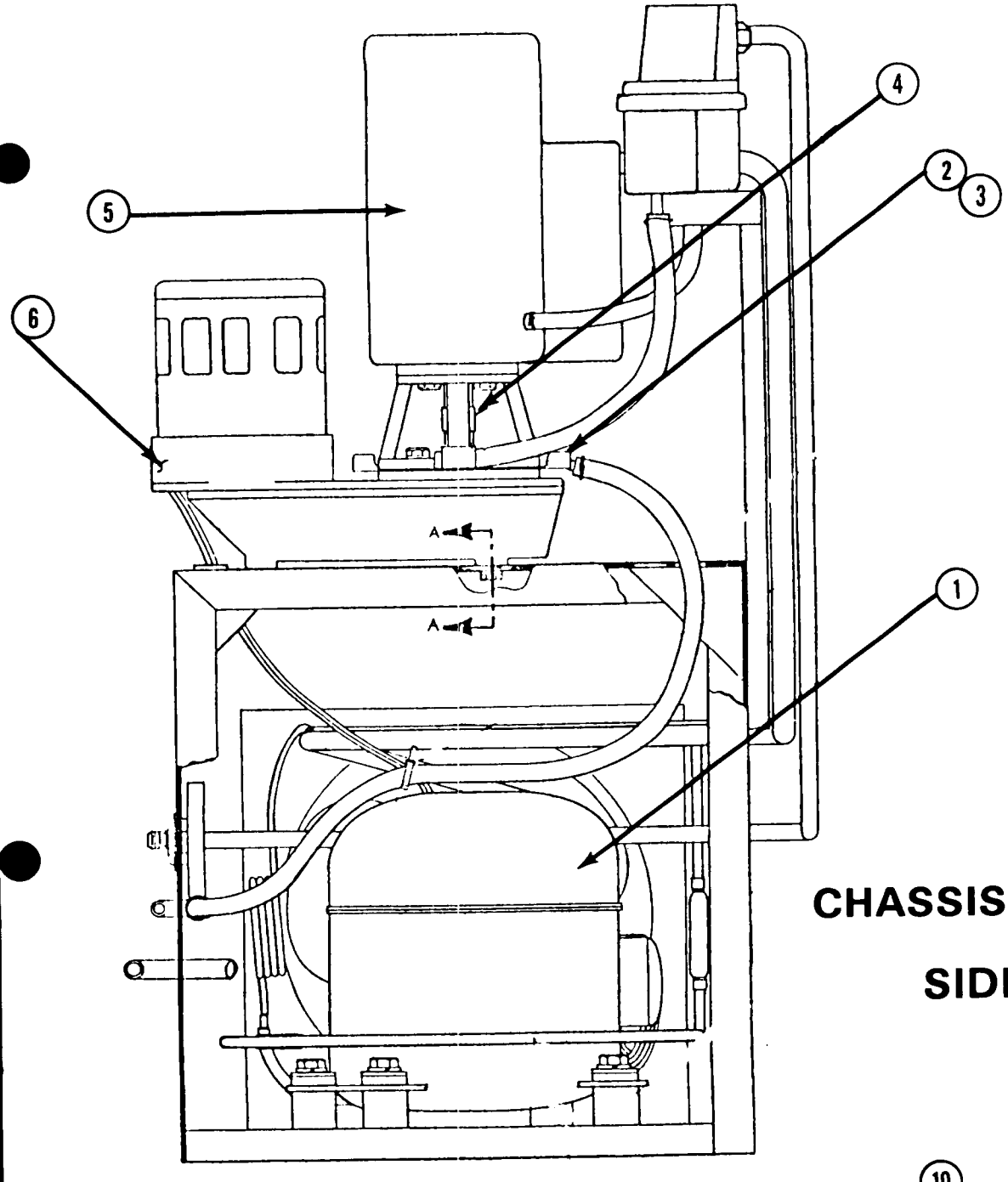
Output Shaft turns at 11.5 RPM.

# GEAR MOTOR ASSEMBLY

## 1/10 H.P.

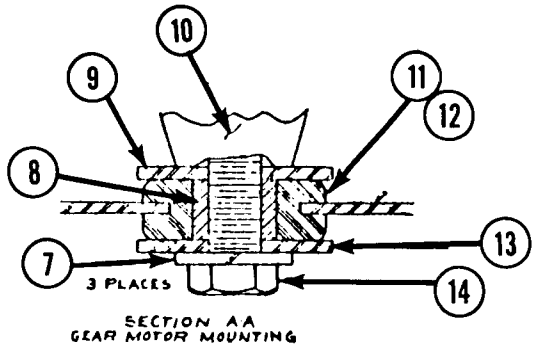
## 115/60/1

NOTE: Items 21 thru 28 are used on all model AF1's up to the middle of the B series then discontinued on the remainder of the B series and all of the C series. If your present machine has a synchro snap assembly on the gear motor continue to use it on the replacement motor. If your machine does not presently have snap assembly on do not use snap assembly on the replacement motor.



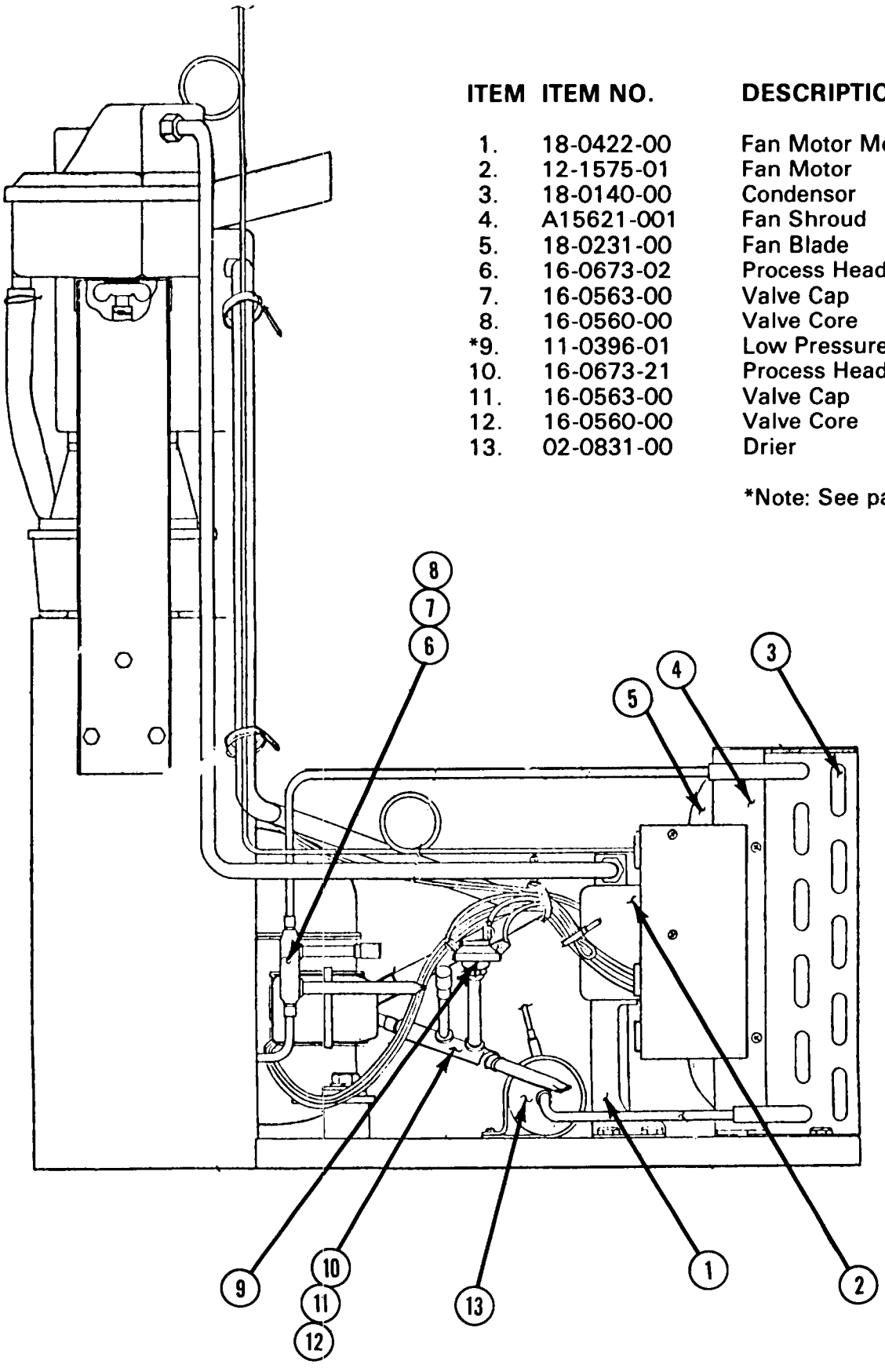

# CHASSIS ASSEMBLY

## SIDE VIEW




| ITEM | PART NO. | DESCRIPTION |
|---|---|---|
| 1. | 18-4700-01 | Compressor |
| 2. | A18153-000 | Drip Pan |
| 3. | 13-0628-00 | Gasket |
| 4. | 15-0575-01 | Spline Coupling |
| 5. | | See Exploded View |
| 6. | A25995-021 | Gear Motor |
| 7. | 03-1410-03 | Washer |
| 8. | A24925-001 | Spacer |
| 9. | 03-1408-02 | Washer |
| 10. | | Gear Motor Assy. |
| 11. | 13-0639-00 | Grommet |
| 12. | | Chassis Assy. |
| 13. | 03-1408-02 | Washer |
| 14. | 03-1405-45 | Screw |

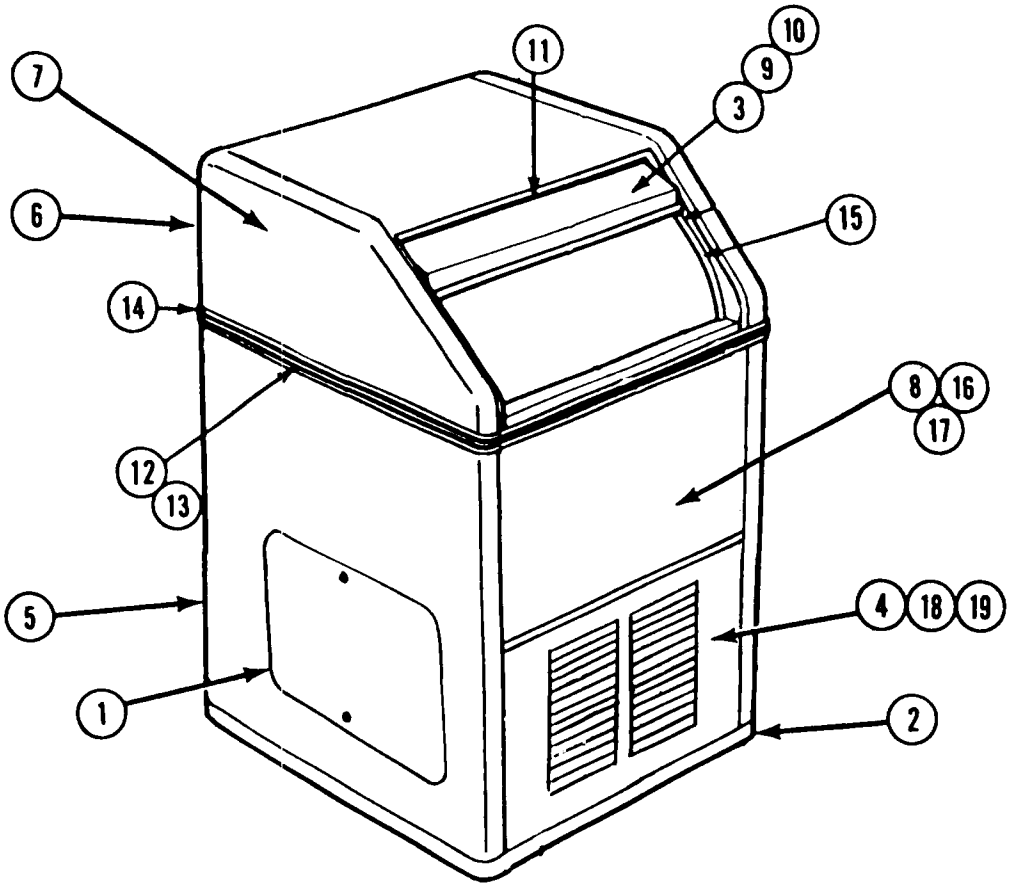
# CHASSIS ASSEMBLY
# REAR VIEW




| ITEM | ITEM NO. | DESCRIPTION |
|---|---|---|
| 1. | 18-0422-00 | Fan Motor Mount |
| 2. | 12-1575-01 | Fan Motor |
| 3. | 18-0140-00 | Condensor |
| 4. | A15621-001 | Fan Shroud |
| 5. | 18-0231-00 | Fan Blade |
| 6. | 16-0673-02 | Process Header |
| 7. | 16-0563-00 | Valve Cap |
| 8. | 16-0560-00 | Valve Core |
| *9. | 11-0396-01 | Low Pressure Switch |
| 10. | 16-0673-21 | Process Header |
| 11. | 16-0563-00 | Valve Cap |
| 12. | 16-0560-00 | Valve Core |
| 13. | 02-0831-00 | Drier |

*Note: See page 25 for description.

# CABINET ASSEMBLY



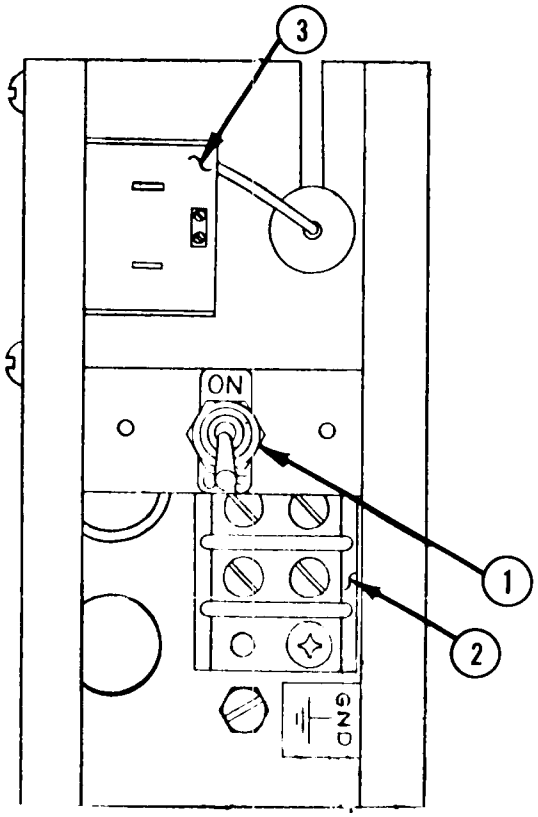

**ENAMEL**

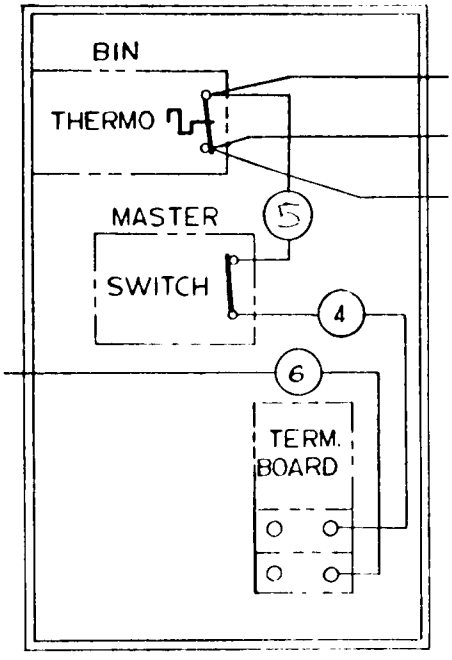
| ITEM | PART NO. | DESCRIPTION |
|---|---|---|
| 1. | A07676-005 | Service Door |
| 2. | | Not Req'd |
| 3. | 02-1735-01 | Access Door |
| 4. | A24427-001 | Front Door Assy. |
| 5. | A25326-001 | Case Panel Rear |
| 6. | A25325-001 | Hood Panel Rear |
| 7. | A24429-001 | Hood Assy. |
| 8. | A25847-001 | Case Assy. |
| 9. | 03-1276-00 | Wing Screw |
| 10. | 02-1736-00 | Door Lanyard |
| 11. | 03-1195-00 | Hood Guide (3) |
| 12. | A25342-001 | Moulding Strip |
| 13. | 15-0324-00 | Plastic Insert Per Foot |
| 14. | S08983-000 | Clip (2) |
| 15. | A16208-000 | Door Track |
| 16. | 15-0156-00 | Scotsman Emblem |
| 17. | 03-0271-00 | Push Nut (2) |
| 18. | 03-0468-00 | Door Catch (2) |
| 19. | 13-0113-00 | Door Grommet (2) |

**STAINLESS STEEL**

| ITEM | PART NO. | DESCRIPTION |
|---|---|---|
| 1. | A07676-00S | Service Door |
| 2. | A08902-014 | Molding Strip (2) |
| 3. | A15559-000 | Ice Access Door |
| 4. | A24427-002 | Front Door |
| 5. | A25326-002 | Case Panel Rear |
| 6. | A25325-002 | Hood Panel Rear |
| 7. | A24429002 | Hood Assy. |
| 8. | A25847-002 | Case Assy. |
| 9. | 03-1276-00 | Wing Screw |
| 10. | 02-1736-00 | Door Lanyard |
| 11. | 03-1195-00 | Hood Guide (3) |
| 12. | A25342-001 | Moulding Strip |
| 13. | 15-0324-00 | Plastic Insert per foot |
| 14. | S08983-000 | Clip (2) |
| 15. | A16208-000 | Door Track |
| 16. | 15-0156-00 | Scotsman Emblem |
| 17. | 03-0271-00 | Push Nut (2) |
| 18. | 03-0468-00 | Door Catch (2) |
| 19. | 13-0113-00 | Door Grommet (2) |

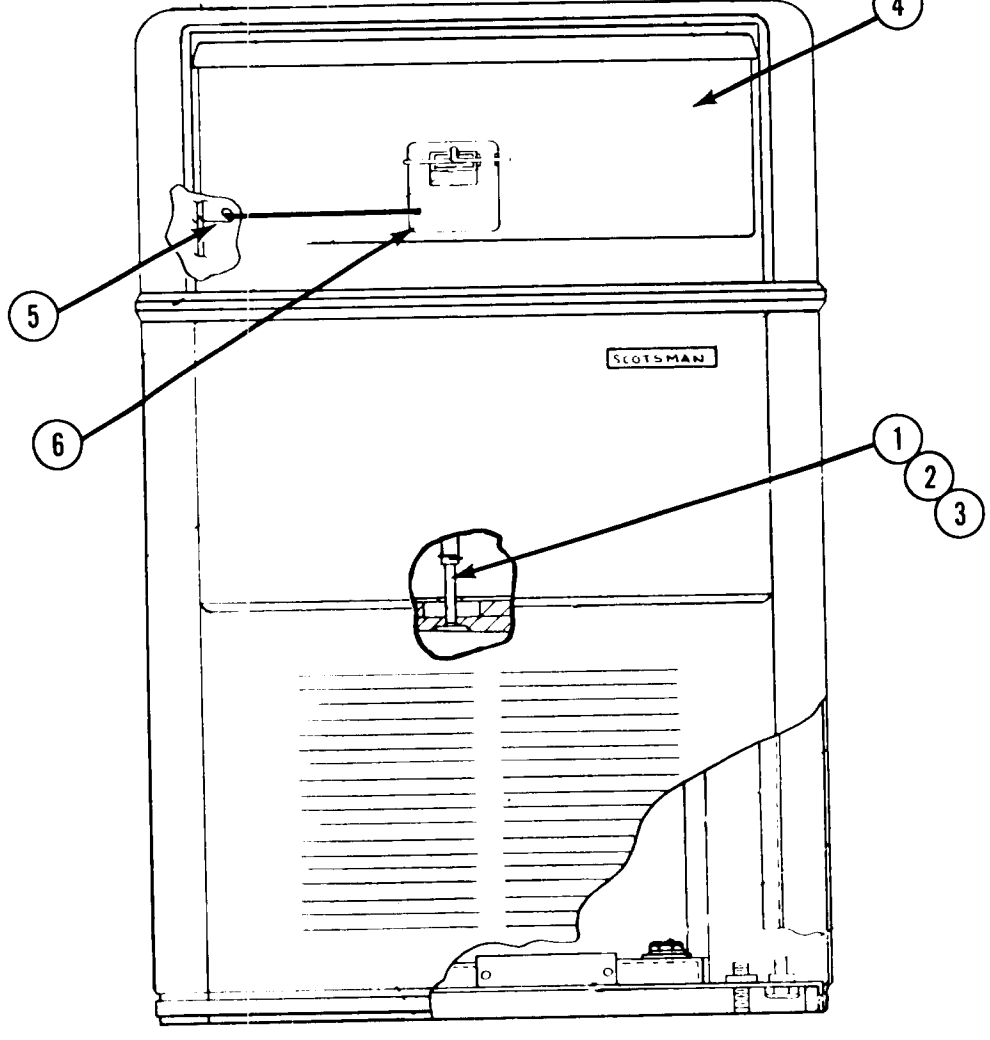
# CONTROL BOX ASSEMBLY




| ITEM | PART NO. | DESCRIPTION |
|---|---|---|
| 1. | 12-0426-01 | Switch |
| 2. | 12-0813-04 | Terminal Block |
| 3. | 11-0354-00 | Temp. Control |

# AF1 FRONT VIEW




| ITEM | PART NO. | DESCRIPTION |
|---|---|---|
| 1. | 02-1957-00 | Drain Tube |
| 2. | 02-1751-00 | Drain Fitting |
| 3. | 13-0617-36 | O Ring |
| 4. | 02-2103-01 | Storage Bin |
| 5. | 03-1415-00 | Bulb Holder |
| 6. | 13-0779-01 | Spout Grommet |
| 7. | 13-0780-01 | Sealing Gasket |

## MAINTENANCE INSTRUCTION – FLAKERS

THE FOLLOWING MAINTENANCE MUST BE ACCOMPLISHED TWO TIMES PER YEAR ON ALL SCOTSMAN FLAKERS. CALL YOUR AUTHORIZED SCOTSMAN SERVICE DEPARTMENT.

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 droplets come out of spout with ice at all times. Adjust as required.
3. Clean reservoir and interior of freezer using SCOTSMAN Ice Machine Cleaner.
   If machine has been cleaned regularly and no problems such as dry ice or chatter are noticed, clean as per the following instructions:
   a. Turn master switch OFF.
   b. Remove all ice from storage bin.
   c. Mix cleaning solution (4 oz. Scotsman Cleaner to one quart of hot water) in pan and clean inside and outside of spout with nylon brush.
   d. Remove upper rear panel.
   e. Turn off water supply or block float assembly in reservoir.
   f. Turn master switch ON. Pour one quart of cleaning solution slowly into reservoir. Do not fill above overflow tube.
   g. Continue to make ice with the cleaning solution until it is all used up and the reservoir is empty.
   h. Turn master switch OFF. Wash and rinse inside of reservoir with clean water. Turn water supply back on or remove block from float assembly.
   i. Turn master switch ON and let unit run for at least fifteen (15) minutes to flush out any remaining cleaning solution. Check ice for acid taste – run until ice tastes normal.
   j. Use clear water to rinse inside and outside of spout with nylon brush.
   k. Turn master switch OFF. Add hot water to ice now in storage bin. Using this solution, thoroughly wash and rinse all surfaces within the storage bin.
   l. Rinse inside of storage bin with clear water.
   m. Turn master switch ON. Replace all service panels and doors. Unit is now ready for normal operation.

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 areas.

4. Check high and low side pressures. On air-cooled models head pressures range between 130 and 145 PSI. Suction pressure should be above 12 PSI and will range up to 16 PSI depending upon water and ambient temperatures.
5. Check gearmotor operation. Normal running temperatures are in the area of 160° Fahrenheit, which is hot to the touch. Check operation of centrifugal switch and the micro switch it actuates. When micro switches actuated, compressor stops, gearmotor continues to run.
6. Check top bearing of freezing tube. Remove retainer ring around edge of stamped brass cap. If moisture is around bearing, wipe up and remove grease. Add new grease. Use Beacon No. 325. Replace cap and retainer ring.
7. Clean air-cooled condenser. Inform customer to clean frequently. Always shut off machine when cleaning.
8. Oil condenser fan motor when possible.
9. 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.
10. Check for water leaks. Tighten drain line connections. Run water down bin drain line to make sure it is open.
11. Check quality of ice. Ice should be wet when formed, but will cure rapidly to normal hardness in bin.
12. Bin thermostat should be set at 10° differential and should keep entire machine off at least twenty minutes in high ambients (longer in low) during normal operation. Settings are 35° cut out, 45° cut in.

## Description of the Function of the Texas Instruments Low Pressure Control Switch When Used on 1/15 and 1/10 H.P. Gear Motors

On all Scotsman units using a 1/15 or 1/10 H.P. gear motor, the centrifugal switch mechanism, mounted on top of the motor, was removed and replaced, in the system, with 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 21 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 29 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 at 32 Psig

*See wiring diagram*