TABLE OF CONTENTS

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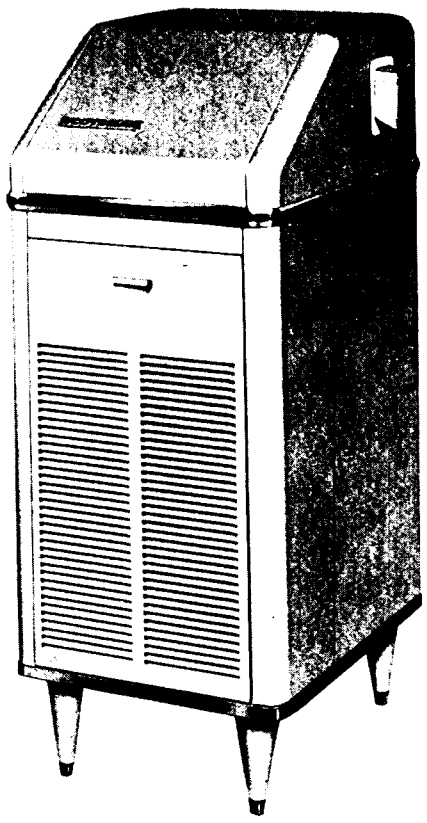
MECHANICAL SPECIFICATIONS

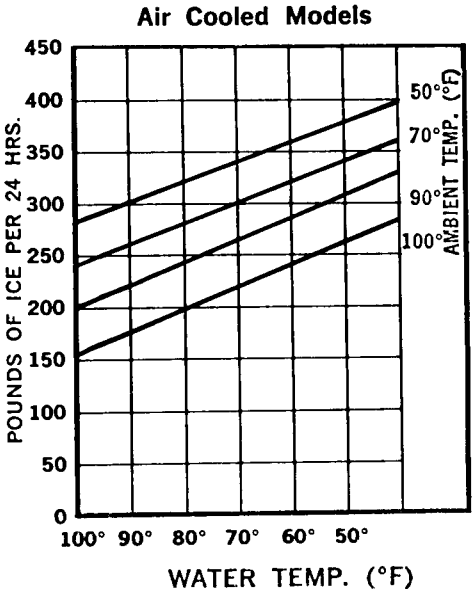
	SF-1H, SF-1WSH	SF-1WH, SF-1WWSH
Compressor	1/3 HP	1/3 HP
Condenser	Air-Cooled	Water-Cooled
Refrigerant	26 oz. R 12	24 oz. R 12
Refrigerant Control	Capillary Tube	Capillary Tube
Power Consumption	11 Amps.	11 Amps.
Current	115 V, 60 cycle 1 ph.	115 V, 60 cycle, 1 ph.
Worm Drive Motor NEMA # 48	1/4 HP	1/4 HP
Worm - R.P.M.	12	12
Water Consumption - Freezer	2 Gals. per hour	2 Gals. per hour
Water Consumption - Condensing Unit		Varies .75 to 2 G.P.M.
	SF-1H	SF-1WSH
DIMENSIONS		
Width	17 7/8"	38 1/2"
Depth	24 1/2"	24 1/2"
Height	40"	40"
Height with Legs	46"	46"
Approximate Shipping Weight	316	420

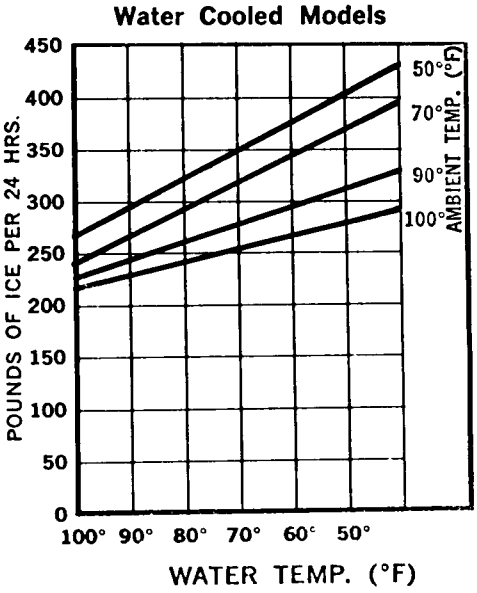
SCOTSMAN

SUPER FLAKER
SF-1
SERIES
Continuous Flow



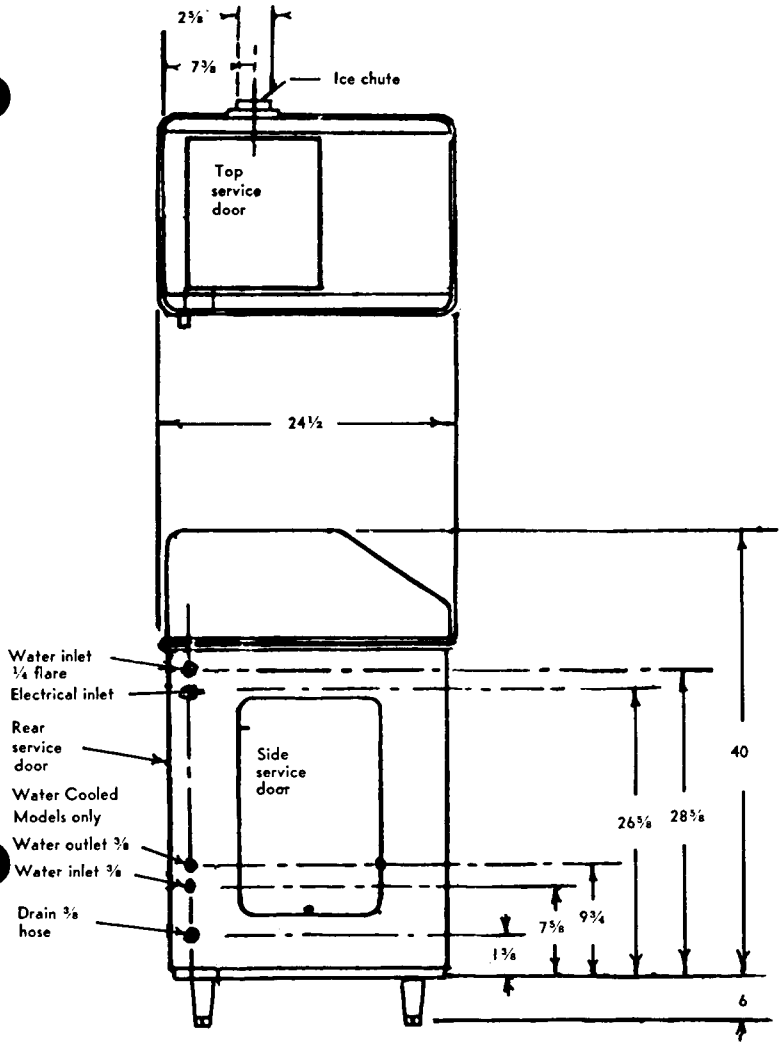
ice making capacity

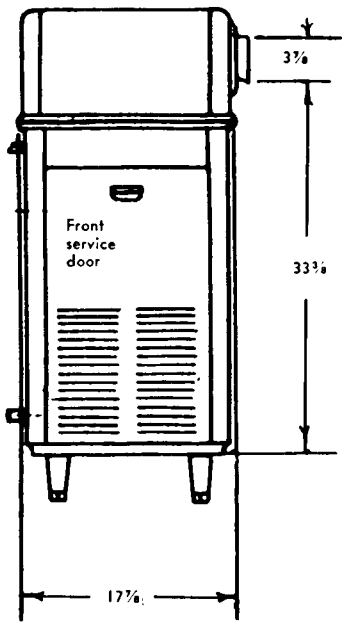




SPECIFICATIONS

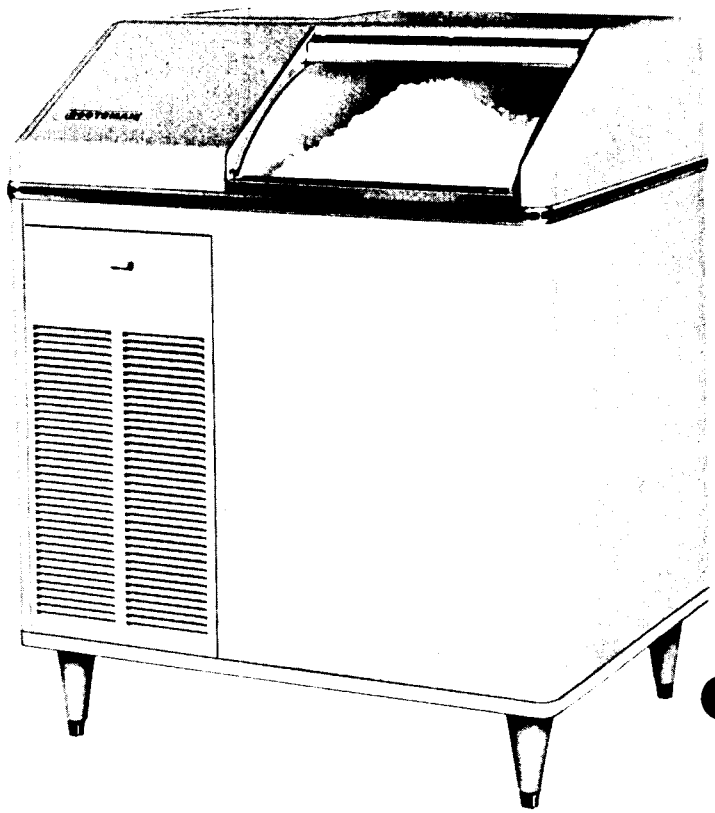
SUPER FLAKER SF-1 SERIES (Cont. Flow)	MODEL SF-1H	MODEL SF-1H-SS	MODEL SF-1WH	MODEL SF-1WH-SS
Daily capacity up to 350 lbs.	X	X	X	X
Air cooled condenser	X	X		
Water cooled condenser			X	X
Heavy duty 1/3 HP. Compressor	X	X	X	X
Standard 115 V, 60 cy, 1 ph, AC	X	X	X	X
1/4" water inlet SAE Flare	X	X	X	X
3/8" water inlet NPT			X	X
3/8" water condensate drain ID	X	X	X	X
3/8" ID water outlet tube			X	X
Hammerloid grey exterior	X		X	
Stainless steel exterior		X		X
46" height (with legs)	X	X	X	X
40" height (without legs)	X	X	X	X
17 7/8" width	X	X	X	X
24 1/2" depth	X	X	X	X
Approximate Shipping weight	316	316	316	316



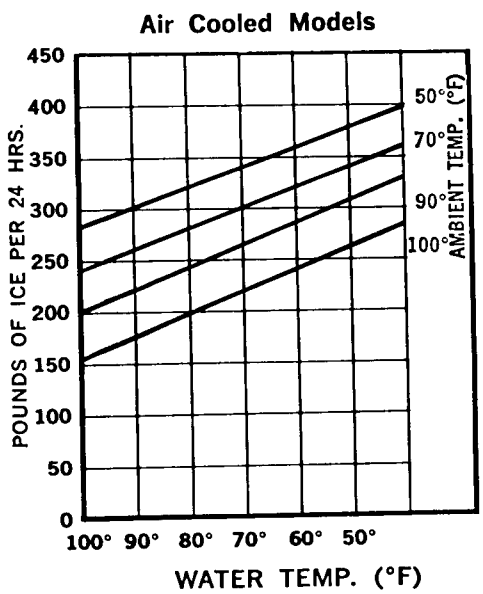


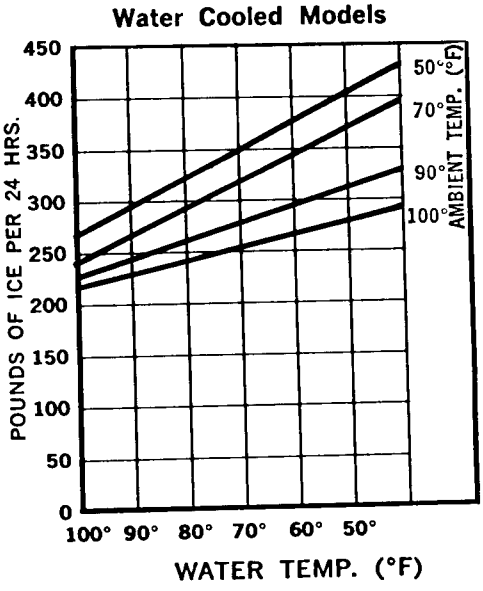
SCOTSMAN®

SUPER FLAKER
SF-1
SERIES
Storage Type



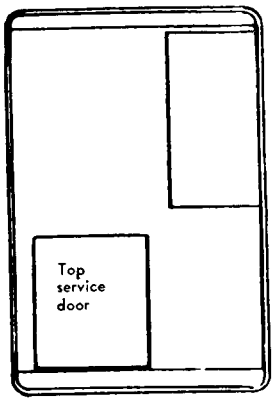
ice making capacity

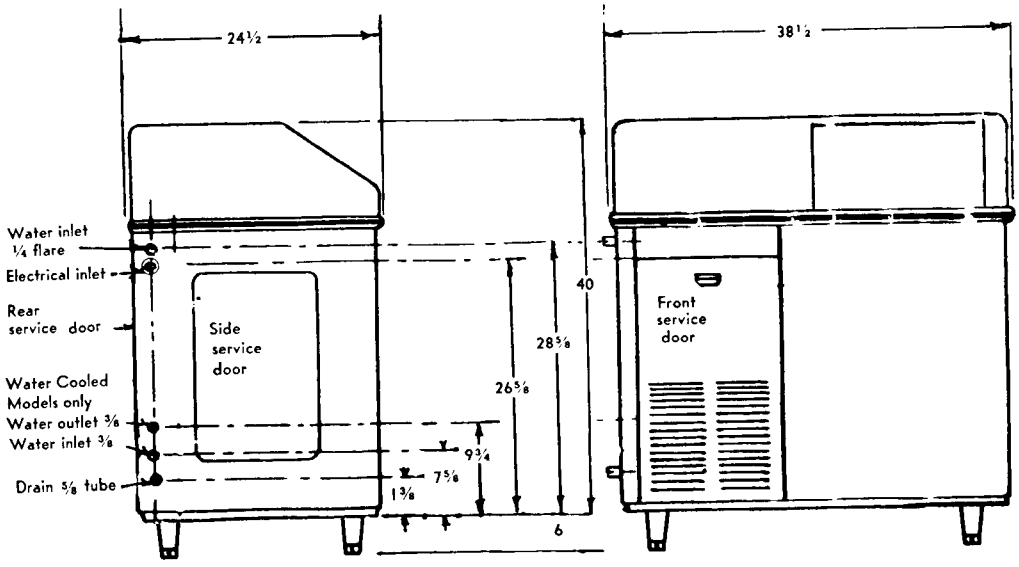




SPECIFICATIONS

SUPER FLAKER SF-1H SERIES (Storage Type)	MODEL SF-1WSH	MODEL SF-1WWSH	MODEL SF-1WSH-SS	MODEL SF-1WWSH-SS
Daily capacity up to 350 lbs.	X	X	X	X
200 lb. ice storage bin	X	X	X	X
Stainless steel bin	X	X	X	X
Air cooled condenser	X		X	
Water cooled condenser		X		X
Heavy duty 1/3 HP. Compressor	X	X	X	X
Standard 115 V, 60 cy, 1 ph, AC—	X	X	X	X
1/4" water inlet SAE Flare	X	X	X	X
3/8" water inlet NPT		X		X
5/8" bin drain OD	X	X	X	X
3/8" water outlet OD		X		X
Hammerloid grey exterior	X	X		
Stainless steel exterior			X	X
46 height (with legs)	X	X	X	X
40 height (without legs)	X	X	X	X
38 1/2" width	X	X	X	X
24 1/2" depth	X	X	X	X
Approximate shipping weight	420	420	420	420





SPECIFICATIONS

SCOTSMAN Super Flakers are designed for restaurants, super markets, soda fountains, hospitals, bakeries, fish markets, poultry stores, packing plants, etc. It is the finest Ice Maker on the market today. It will work 24 hours a day for you, or only as needed. It produces the highest quality ice available at any price.

Approximately 350 pounds of SCOTSMAN crushed ice is delivered each 24 hours to the storage bin for immediate use.

SCOTSMAN Super Flakers are easily installed requiring only standard water, drain and electrical connections.

ATTRACTIVE COMPACT CABINET. Grey hammerloid finish with chrome trim, rounded corners, and removable panels for easy access to mechanical parts. Adjustable and removable legs are under cabinet.

SEALED REFRIGERATION SYSTEM. Provides quiet, efficient operation of the machine. Compressor motor is spring mounted and the worm motor is rubber mounted for quiet operation. Compressor motor is covered by a full 5-Year Warranty.

HOW IT WORKS. An exclusive patented ice-making system, wherein water in the constant level float reservoir is fed to the bottom end of the freezing cylinder and turns to ice on the inside of this cylinder. Ice from the refrigerated walls of this cylinder is extruded past the ice breaker at the top of the cylinder through a side opening by means of a stainless steel auger driven by a motor through a V belt and gear reduction drive.

All SCOTSMAN Models SF-1H and SF-1WSH are completely automatic. A manual switch on the front starts the machine, and from then on, produces flakes automatically. When the storage bin fills, the machine automatically shuts off and starts up again when ice is taken from the storage compartment.

Model No. SF-1H is a continuous flow type machine, and is manually started by an OFF and ON switch located on the front of the cabinet as are the SF-1WSH models. Since the SF-1H does not have its own attached bin, it is necessary to use an auxillary bin such as the Model SB-500 SCOTSMAN Super Bin for ice storage. A bin thermostat is mounted in each SF-1H continuous flow type machine for the purpose of mounting control bulb from machine to bin.

SCOTSMAN SUPER FLAKERS
PREPARATION FOR INSTALLATION

1. UNCRATING

   The entire unit comes in one crate. Upon delivery a visual inspection of the crate 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 crate by pulling nails driven through sides of crate into the bottom skid. A nail puller is best suited here. Next remove (4) four bolts from underside of skid which connect to complete unit base. Unit now free from all crating.

2. Remove all service doors and panels.

3. Remove water reservoir cover and take out paper packing around float ball. Make sure plastic overflow standpipe is securely in place.

4. Remove leg packages in compartment base and install 4 legs in unit base sockets. On continuous flow models with separate storage bins, legs are put on companion machine stand, not on Ice Maker.

5. Loosen motor compressor hold down nuts until motor compressor rides freely on mounting springs.

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

7. Open electrical control box and prepare for hook up, use knock outs, cord connectors etc. Then check unit nameplate voltage against building source voltage and make sure they correspond. Caution - Improper voltage supplied to units will void your warranty protection.

8. 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. On air cooled models, select well ventilated location.

9. Remove warranty card and Users manual from storage bin, then wipe bin clean with damp cloth.

10. Fill out warranty card completely including model and serial numbers as taken from aluminum plate found behind front service panel and forward to Scotsman Factory using self mailing card.

11. Level unit with adjustable legs.

INSTALLATIONS

UNDER BAR INSTALLATIONS: Locate, if possible, so left end panel is accessible. Locate so proper circulation can be attained around the unit and behind it at least four inches.

KITCHEN INSTALLATIONS: As a rule, the kitchen is not the most practical place to install an 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.

WATER SUPPLY: The recommended water supply line is 1/4 inch OD copper tubing for SF-1. Connect to cold water supply line with regular plumbing fittings, with a 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 the arrow in the direction of the flow. Most plumbing codes also call for double check valves in the supply water line, particularly for water-cooled models.

On air-cooled models the water supply line connects to the 1/4 inch flare fitting on the machine. On water-cooled models connections are made to a 3/8 inch male pipe nipple inside of the machine compartment. Incoming water goes through the water regulating valve first and then to the water-cooled condenser. Observe arrow on water regulating valve. Water supply must be installed to confrom 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 1/4 inch pitch per foot. Drain must be installed to conform with local code. Run separate line for condenser discharge water on water-cooled models.

INSTALLATION

ELECTRICAL CONNECTIONS:

SF-1

115 Volts, 60 Cycle, 1 Phase

15 Amp. Circuit

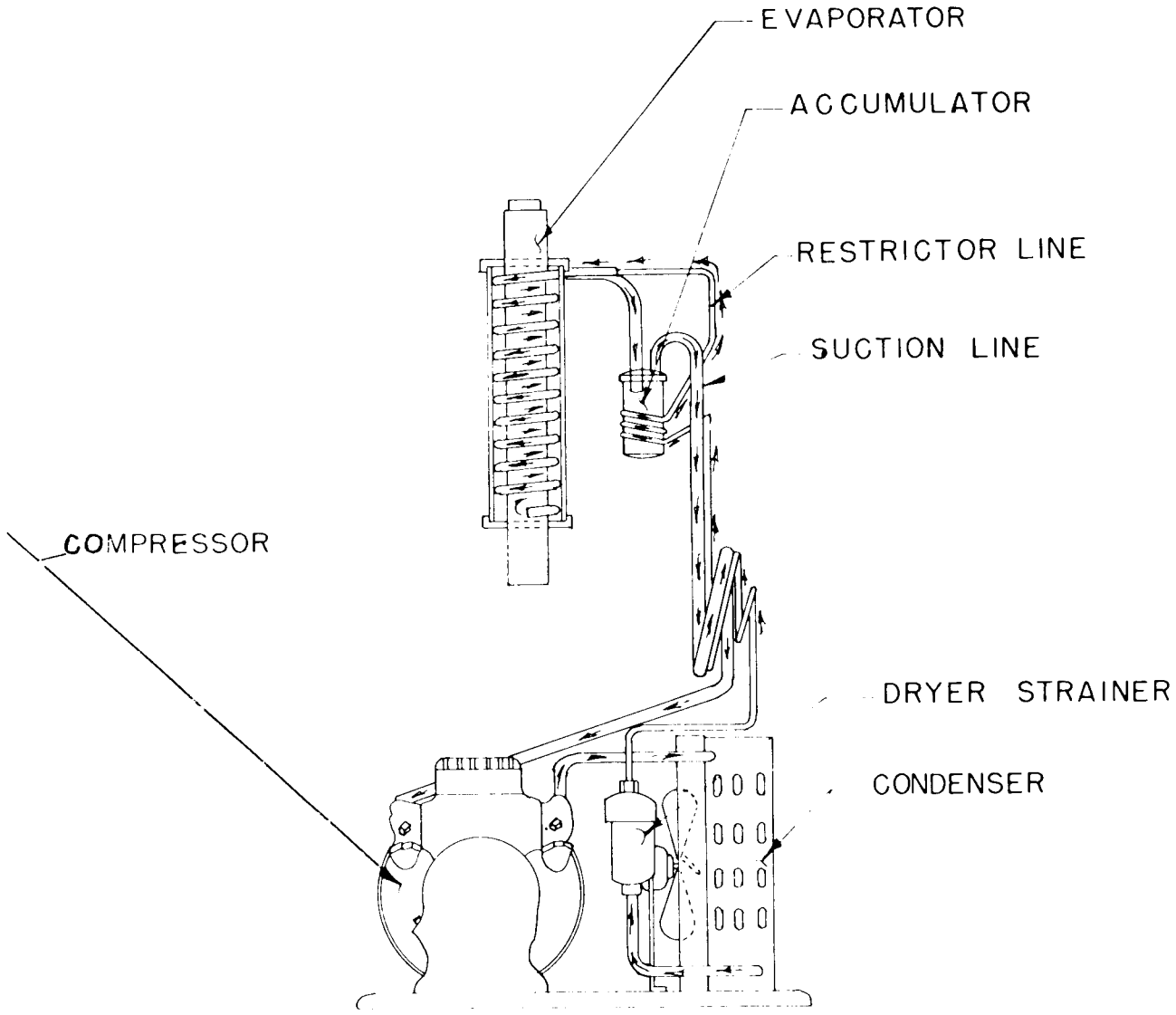
Be certain that the Super Flaker is on its own circuit and individually fused. The maximum allowable voltage variation should not exceed 10 percent of the nameplate rating even under starting conditions. Low voltage can cause erratic operation and may be responsible for serious damage to the overload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

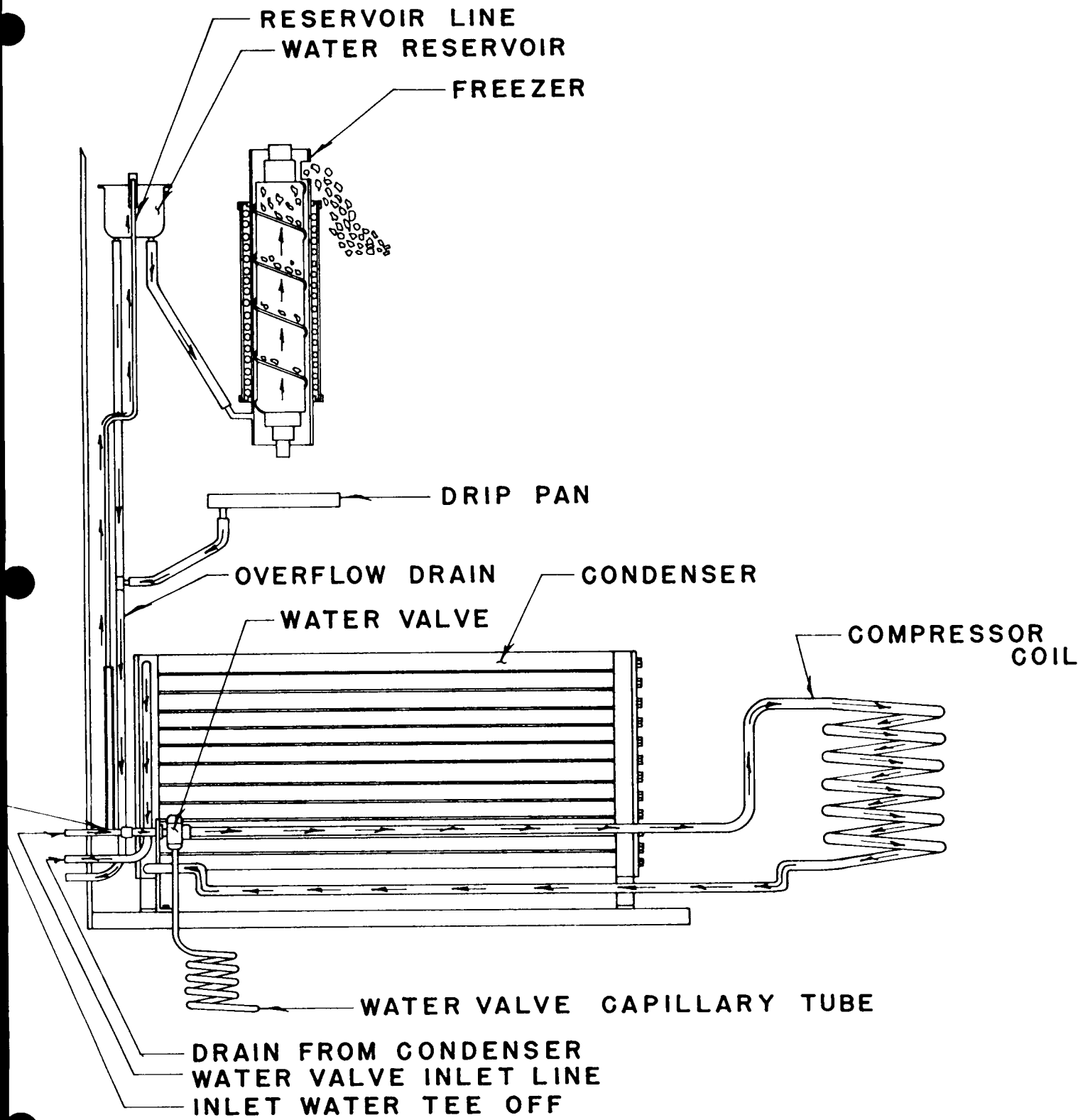
ELECTRICAL INSTALLATION:

SF-1H

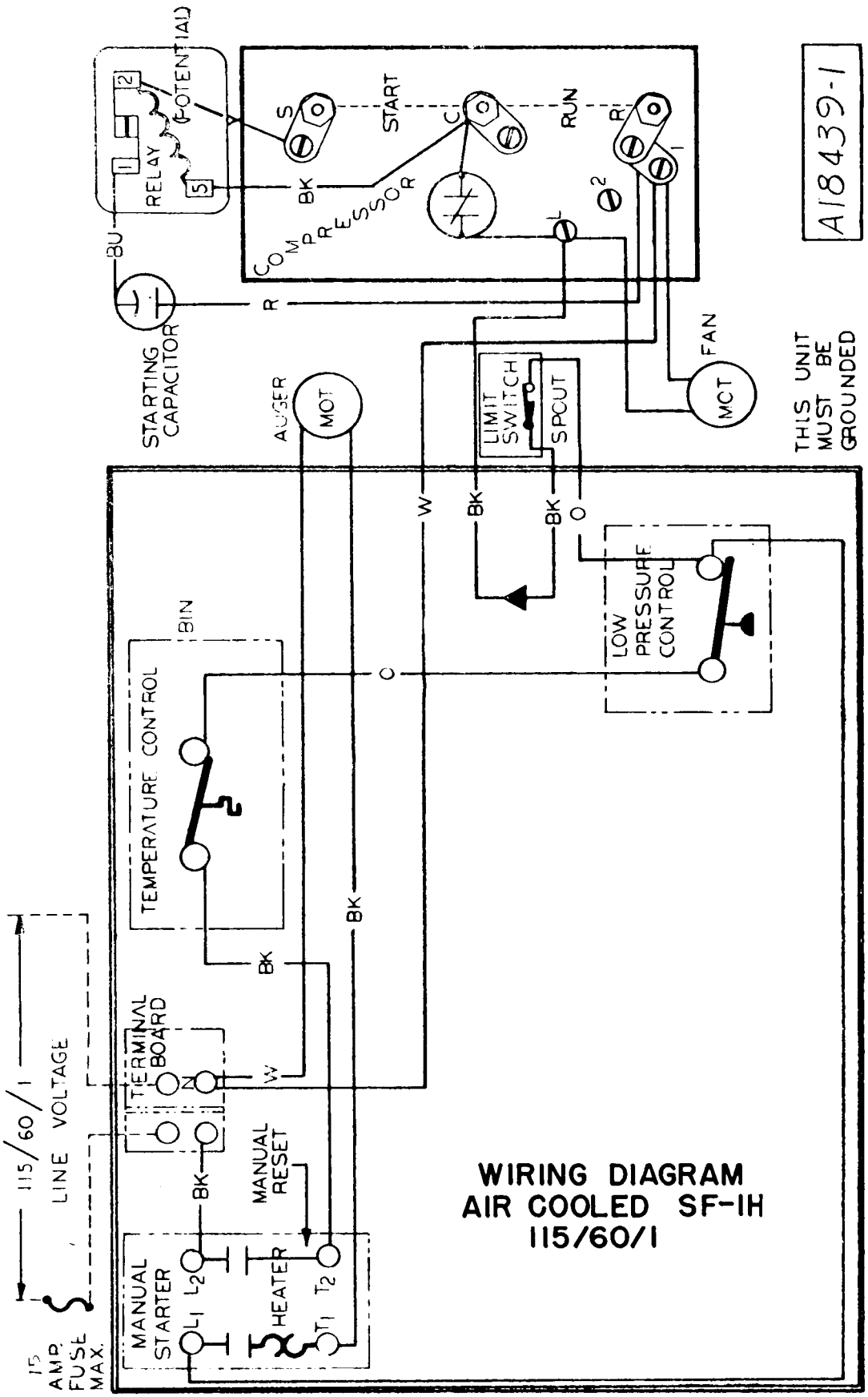
Compressor	H.P.	1/3
	Voltage	115
	Amp. rating	5.0
	Cycle	60
	Phase	Single
Drive Motor	H.P.	1/4 NEMA Size 48
	Voltage	115
	Amp. rating	4.5
	Cycle	60
	Phase	Single



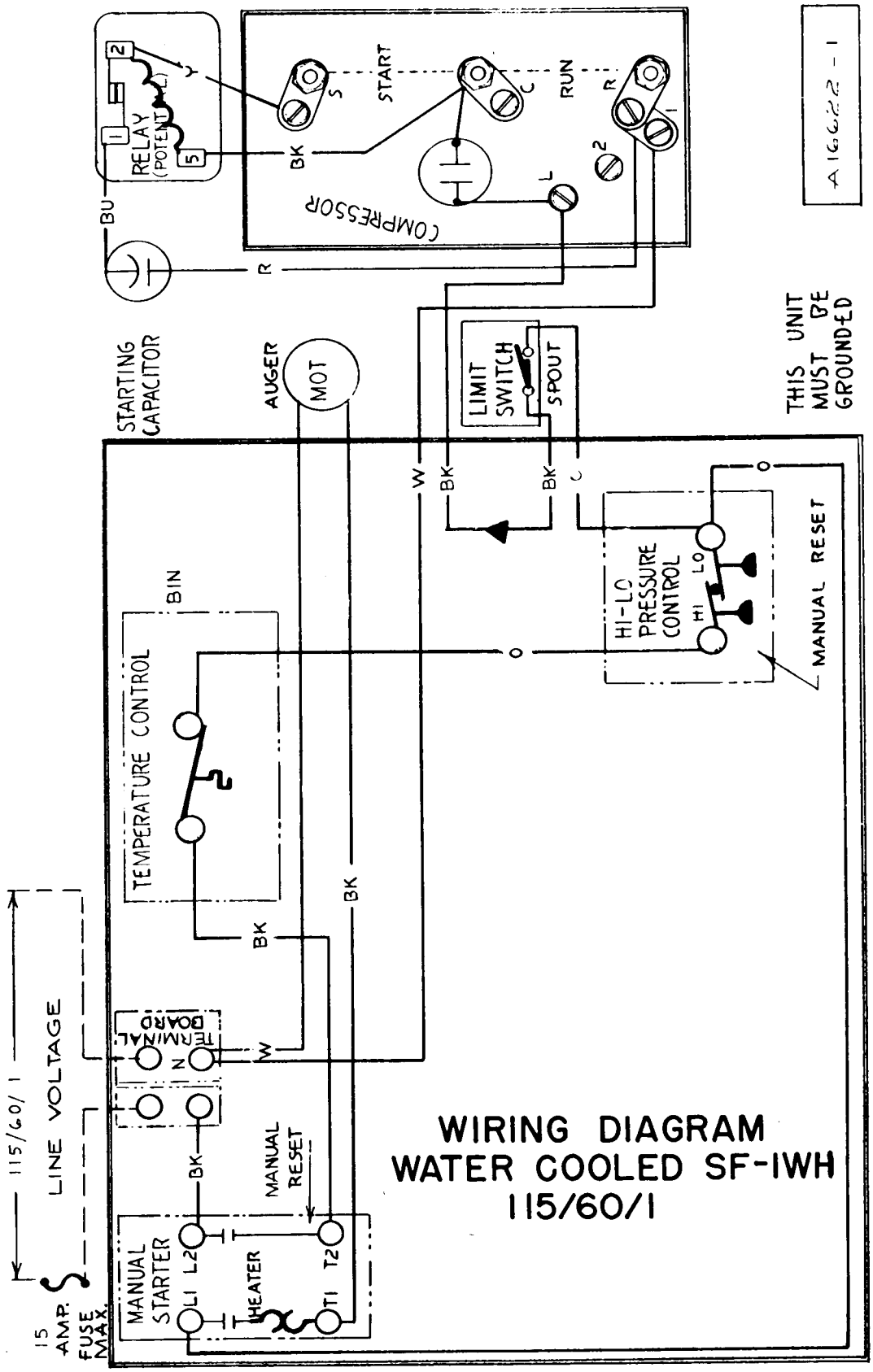
REFRIGERATION CYCLE SF-1 ALL MODELS



WATER SCHEMATIC SF-WH & SF-1WWSH



WIRING DIAGRAM
AIR COOLED SF-IH
115/60/1


A16622-1
RELAY (POTENTIAL)
COMPRESSOR
START
RUN
BU
BK
R
Y
W
STARTING CAPACITOR
AUGER
MOT
LIMIT SWITCH
SPOUT
THIS UNIT MUST BE GROUNDED
HI-LO PRESSURE CONTROL
MANUAL RESET
BIN
TEMPERATURE CONTROL
TERMINAL BOARD
MANUAL STARTER
HEATER
115/60/1 LINE VOLTAGE
15 AMP. FUSE MAX.
WIRING DIAGRAM
WATER COOLED SF-IWH
115/60/1

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 front of the cabinet 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 and 45 degrees cut-in.

Check pressure settings at the time of start-up. On the water-cooled models set the head pressure at 135 PSI. On the air-cooled models the head pressure will vary between 130 and 145 PSI head pressure. The frost line should extend out of the accumulator if properly charged with refrigerant and suction pressure will range between 14 and 16 PSI with 50° F inlet water.

Check the hand reset low pressure control setting. This safety device should be set at approximately 5 PSI below normal operating suction pressure and should cut off in case of interruption in water supply, shortage of refrigerant, low ambient or any other cause of abnormally low suction pressure.

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 guage connections are available on both high and low side service valves.

To install guages to any of these connections, replace 1/8 inch IP plug with 1/8 inch MPT x 1/4 inch flare half union. Purge free of any non-condensable gases before starting any test operation.

REFRIGERANT CHARGE: The below refrigerant charge is approximate. When charging, set at 135 PSI head pressure and charge so that the frost line extends out of the evaporator and into the accumulator after fifteen minutes of operation.

Model	Freon Charge	Motor Compressor Oil Level
Air-Cooled	26 oz. R-12	Oil level should be kept at 1/3 way up sight glass. Do not fill over 1/2.
Water-Cooled	24 oz. R-12	

SERVICE

WATER SYSTEM: A water level is maintained in the water reservoir by a float operated valve. Water is piped from the water reservoir to the freezing chamber by a gravity feed line maintaining an equal water level. A removable overflow pipe is installed in the water reservoir for cleaning the reservoir as well as preventing damage should the inlet water valve fail.

The water reservoir is eauipped with a 2 inch air gap to prevent back siphoning and meet all health codes.

The water level in the water reservoir is adjusted by the float linkage adjustment. The water level should be set 1/4 inch below the overflow pipe. A condensate drip pan is connected to the drain circuit to automatically dispose of condensate moisture.

A water strainer must be installed in the supply line. Use strainer sent with machine.

ELECTRICAL SYSTEM: The Super Flaker Model SF-1 is designed to work on standard voltage - 115/60/1

Special voltage requirements are available on special order. Therefore, always check nameplate for this information before checking electrical supply.

Nameplate voltage should not vary more than plus or minus 10 percent.

The electrical circuit consists of condensing unit, drive motor, hand reset combination or low pressure cut-out, storage bin thermostat. ON and OFF switch, micro (safety) switch.

A. CONDENSING UNIT: The compressor terminal box houses the motor compressor terminal block, and the motor overload Klixon. To gain access to the terminal box, remove the two screws holding the beveled metal cover. The starting capacitors, running capacitors and starting relays are housed and fastened to the unit base under the drive motor.

B. DRIVE MOTOR: Model SF-1 Flakers are equipped with standard 1/2 inch shaft, 1/4 HP, capacitor start, induction motors. These motors turn counter-clockwise and may be replaced with any standard make motor corresponding to the nameplate rating. (Be sure motor runs counter-clockwise viewed from the shaft end.) NEMA frame size 48.

C.HIGH-LOW PRESSURE CUT OUT: Hand reset on water cooled models only. Ranco control is located in control box. Factory setting cut-out 8 pounds on low pressure and 180 PSI on high pressure. This control prevents operation at abnormal pressures.

D. STORAGE BIN THERMOSTAT: Control located in control box. Factory settings 35^{o} cut-out, 45^{o} cut-in. This control shuts off complete machine when ice in storage bin builds up to control. Removing ice from bulb causes unit to start up.

E. MICRO SAFETY SWITCH: The micro switch is located in the top of the ice chute. The switch is operated by a plate in top of the ice chute by the ice backing up in the chute should the storage bin thermostat fail. Micro switch will shut off the condensing unit only, when operated.

F. ON-OFF SWITCH: A manual on-off switch with built-in thermal overload protection to prevent drive motor failures is used. See page 38 for overload size.

REMOVAL & INSTALLATION OF PARTS

CABINET TOP (HOOD)

1. Remove two back end screws of chrome strip.
2. Pull out tape concealing screws.
3. Remove balance of screws in chrome strip.
4. Lift off hood.

HOOD SERVICE DOOR

1. Remove screw on front edges.
2. Lift door up and back.

CABINET SIDE SERVICE DOOR

1. Remove four screws on edges.
2. Lift out door.

CABINET FRONT SERVICE DOOR

1. Front door pulls out.

CABINET REAR SERVICE DOOR.

1. Remove four screws on corners of rear service door.
2. Pull door out.

ICE STORAGE DOOR

1. Raise and push door six inches rear of track. Hold up on underside of door - pull forward.
2. Door will now slide out.

ICE STORAGE DOOR FRAME

1. Remove six screws at bottom and sides.
2. Frame will now lift out.

MOTOR COMPRESSOR

1. Front seat both suction service valve and discharge service vlave on valve compressor.
2. Disconnect wiring from the compressor.
3. Remove the bolts holding the service valve to the compressor.
4. Remove the compressor hold-down nuts and lift compressor out of the units.
5. Reverse steps 1 through 4 in replacing compressor.
6. Check the oil in the compressor before connecting lines. Sight glass not over 1/2 full.

FREEZER ASSEMBLY

1. In most instances, it will be faster to faciltate freezer removal by removing cabinet top or hood. (See Removing & Installing Cabinet Parts.) Assembly can be changed if necessary through hood top panel.
2. Shut off water supply and drain water reservoir.
3. Remove refrigerant from system.
4. Remove suction and liquid line connections. (CAUTION: Plug all connections to prevent moisture from entering system.)
5. Remove tygon tube to water inlet connection at base on freezing chamber.
6. Loosen knurled nut holding spout to freezer and remove.
7. Remove two bolts holding freezer chamber to frame.
8. Lift freezer assembly up and out of unit.
9. Remove rubber drip pan from defective assembly and install it on new assembly.
10. Reverse above procedure to install new assembly.

WORM SHAFT

1. Turn unit off, before removing worm shaft.
2. Shut off water supply to unit.
3. Remove hood service door.
4. Remove two slotted head screws which fit through cnamber wall into ice breaker.
5. Complete worm shaft with ice breaker attached will now come out by lifting up on freezer cap pull ring. NOTE: Top half of water seal will come out with worm shaft.
6. To remove ice breaker from shaft, first remove retainer ring in top of ice breaker.
7. Remove freezer cap and pull ring from ice breaker.
8. Loosen hex head bolt holding shaft through bearing and pull worm shaft free from ice breaker and bearing.
9. If shaft is defective, remove water seal top half and put on new worm shaft before reassembling - when reassembling, by reversing above, put a small amount of Vaseline on squared shaft end. This will allow shaft to slide smoothly through rubber bottom half of water seal without tearing it. See freezer assembly Page 23.

WATER SEAL

1. To replace water seal, follow steps 1 through 6 under Worm Shaft Removal.
2. Next slide three-jaw drive coupling down on reducer or else remove top half of coupling.
3. Pull rubber drip pan down.
4. Remove large brass nut holding lower bearing and lower portion of water seal in place.
5. Lightly force lower bearing out.
6. Reach in and pull bottom portion of water seal out.
7. Reassembly is reverse of above.

SERVICE

STORAGE BIN THERMOSTAT

1. Disconnect electrical supply.
2. Remove bin thermostat bulb from bin location along with its capillary tube.
3. Remove control box cover.
4. Loosen solid conduit connector nut which will drop control away from the frame.
5. Disconnect two leads.
6. Replace with new control and reassemble in reverse of above.
7. CAUTION: Always check new control power element charge before installation to assure receiving an operative control. A handful of ice on the bulb will register an audible 'click' at cut-off. Settings 35^{o} cut-out, 45^{o} cut-in.

WATER RESERVOIR

1. Remove service panel in cabinet hood.
2. Turn off water supply and drain reservoir.
3. Remove 1/4 inch copper inlet water line.
4. Remove 1/2 inch plastic feed line to freezer.
5. Lift out reservoir.
6. To replace, reverse procedure.

HAND RE-SET LOW PRESSURE CUT-OUT SWITCH

1. Disconnect electrical supply.
2. Remove control cover.
3. Put jumper across control wires if needed. Connect electrical supply and pump down to one pound PSI on lowside guage.
4. Disconnect electrical supply again, then remove electrical lead to the control.
5. Loosen cap tube from crankcase and remove complete control. Cap up 1/4 inch flare fitting.
6. Install new control, being sure to purge at crankcase fitting when tightening up refrigerant connection.

SERVICE

MICRO SWITCH IN SPOUT

1. Remove hood service panel.
2. Remove micro box cover, loosen two screws at rear of box holding switch in place, lift up.
3. Disconnect electric leads.
4. Reassemble with new micro switch.

DRIVE MOTOR

1. Remove case hood - See Cabinet Top Removal Section.
2. Remove electrical connections.
3. Remove four base bolts.
4. Remove drive belt.
5. Lift out defective motor.
6. Remove pulley and install on new motor.
7. To replace, reverse procedure.
8. CAUTION: Drive motor rotation is COUNTER-CLOCKWISE facing shaft end.

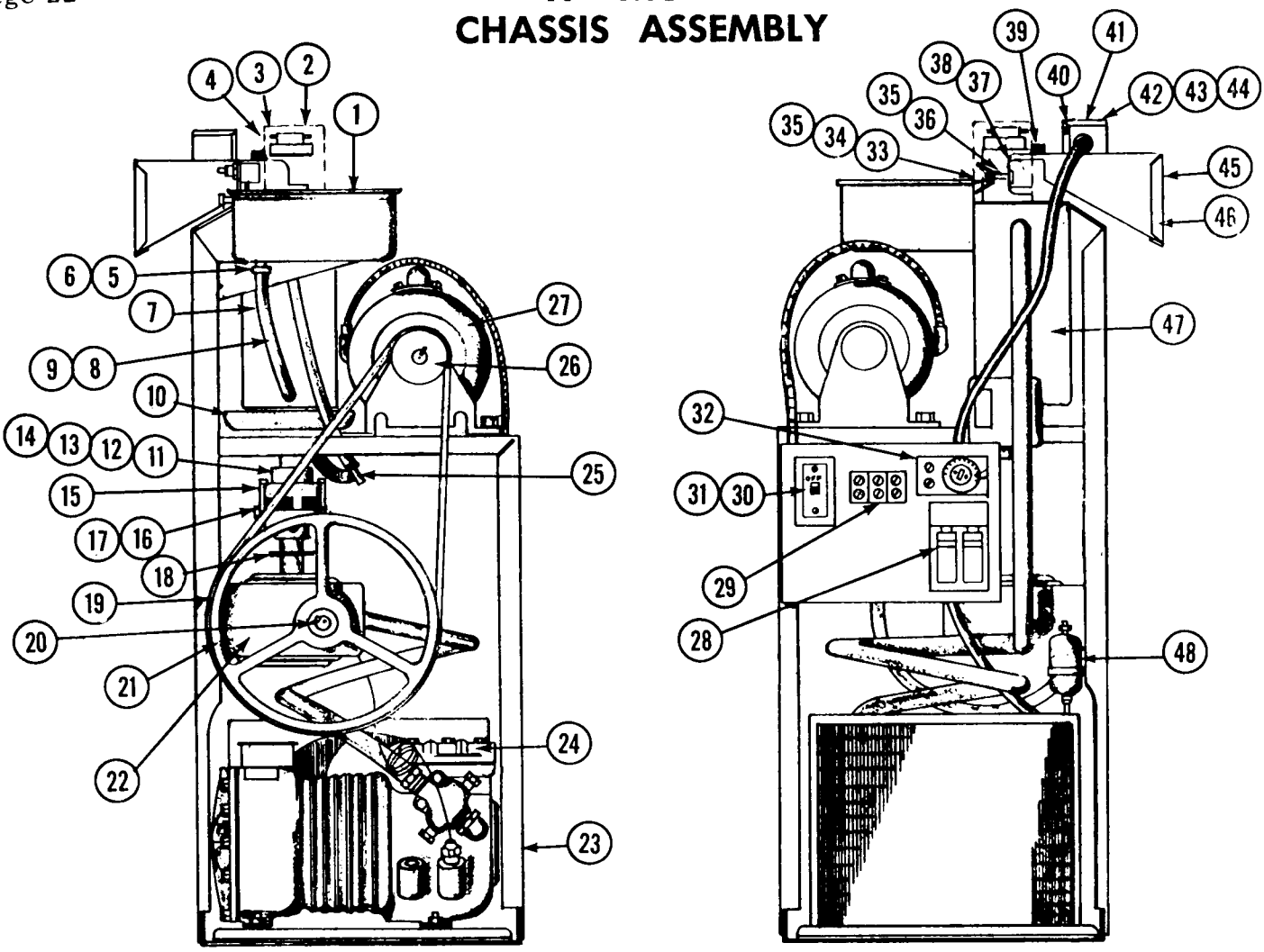
MANUAL ON AND OFF SWITCH

1. Remove front service door.
2. Remove control box cover.
3. Remove two screws holding switch box bracket.
4. Disconnect electrical leads from switch.
5. Remove switch.
6. To replace, reverse procedure.

GEAR REDUCER AND COUPLING

1. Remove rear door if accessible.
2. Remove drive pulley.
3. Loosen drive coupling set screw and slide down on gear reducer shaft.
4. Loosen four mounting bolts.
5. Lift out from rear of machine.
6. To replace, reverse procedure.
7. Check new gear reducer for proper oil level.
8. Remove shipping plug from oil vent plug.

"H" MODELS
CHASSIS ASSEMBLY



ITEM NO.	PART NO.	NAME	
1.	A-8339	Reservoir Assy.	
2.	A-15070	Spout Insulation-left	
3.	A-15071	Spout Insulation-right	
4.	A-8736	Strap	
5.	2-694	Clamp	
6.	2-535	Clamp	
7.	5-186	Tygon Hose	per foot
8.	13-79	Tubing	per foot
9.	2-534	Clamps	
10.	13-213	Drip Pan	
11.	S-8525	Top Coupling	
12.	13-131	Rubber Insert	
13.	S-7716	Bottom Coupling	
14.	3-585	Set Screw	
15.	S-8496	Clamp (2)	
16.	3-206	Screw	
17.	3-89	Washer	
18.	13-152	Rubber Shield	
19.	13-558	V Belt	
20.	S-6035	Key	
21.	2-1463	Pulley	
22.	2-337	Reducer	
23.	A-15976	Frame	
24.	18-257	Compressor	
25.	A-7387	Tee	

ITEM NO.	PART NO.	NAME
26.	2-1462	Pulley
27.	12-864-1	Drive Motor 115/60/1
28.	11-273-1	Low Press. Control A.C.
	11-286-1	Hi-Lo Press. Control W.C
29.	12-813-4	Terminal Board AC.
	12-1308	Terminal Board W.C.
30.	12-1220A	Switch
31.	12-1221	Overload (state motor mfg.)
32.	11-99-1	Bin Control
33.	S-9237	Spout Casting, back
34.	3-207	Screws
35.	3-679	Washers
36.	3-671	Screws 2 1/2"
37.	A-14254	Spout Casting, front
38.	2-560	"O" Ring
39.	A-14256	Knurled Nut
40.	A-14241	Limit Box Cover
41.	3-698	Screws (2)
42.	12-1018	Switch
43.	3-886	Speed Nut
44.	3-698	Screws (2)
45.	A-16360	Pressure Plate
46.	2-1321	Spring
47.	A-14886-1	Freezer Assy.
48.	2-350	Drier

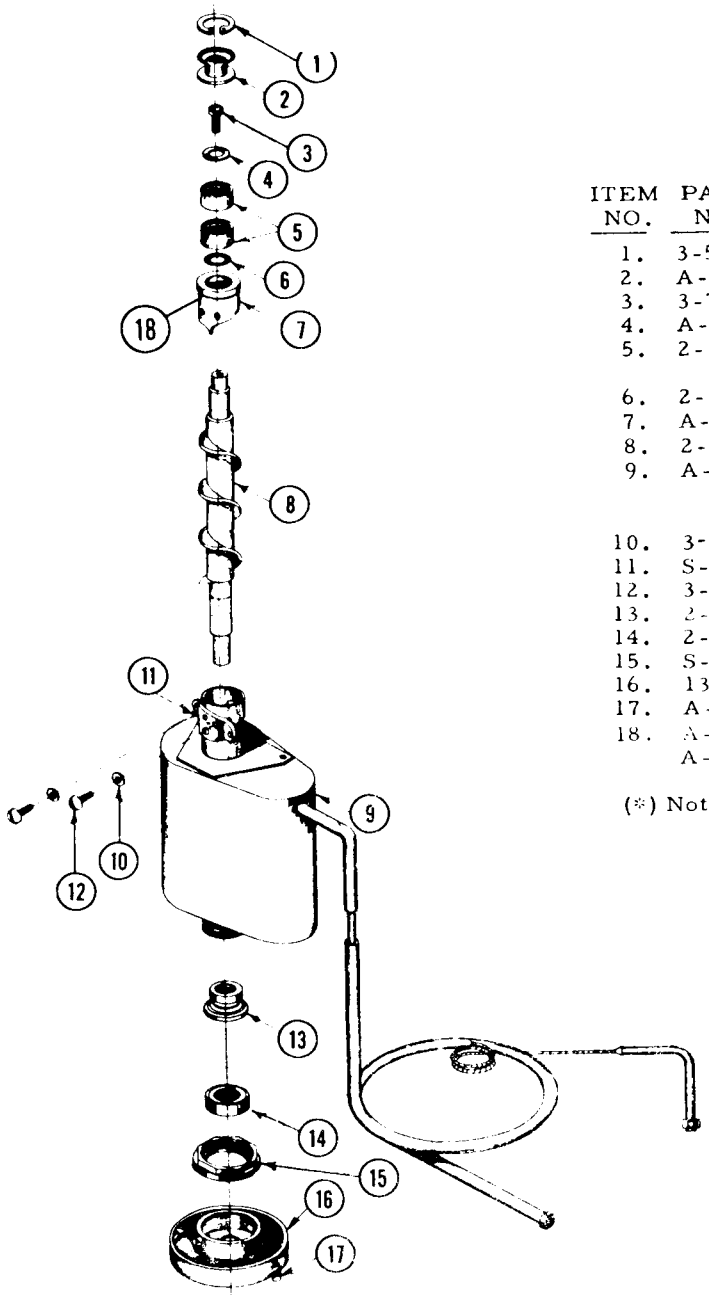
discontinued
But a supplier has been located

Service Eng. Co
P.O. Box 25021
Raleigh, NC.
27611
919-834-1275

* See overload chart page 38 for correct dash no.

SF-1 FREEZER

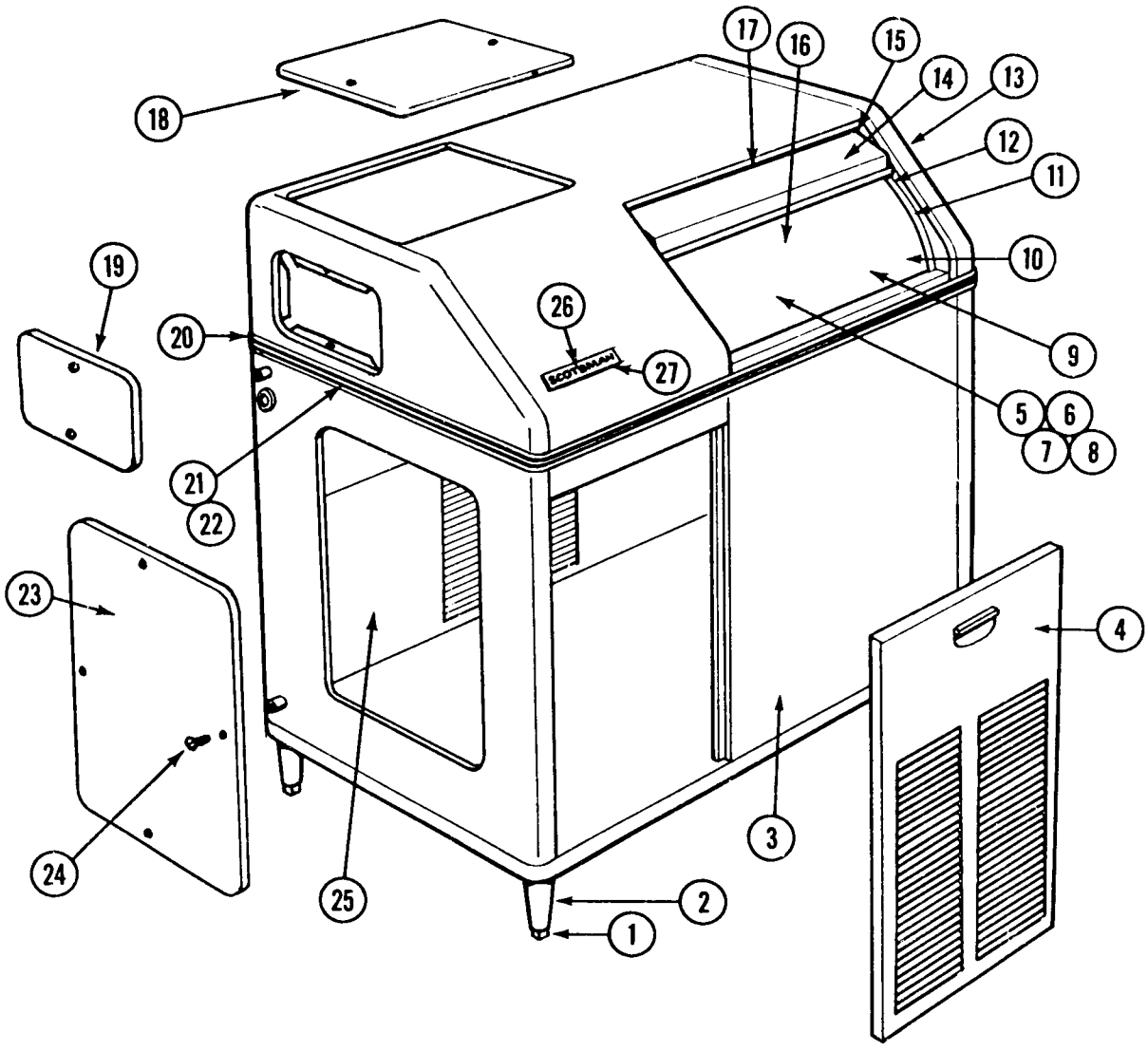
Part No. A-14886-1



ITEM NO.	PART NO.	NAME
1.	3-553	Snap Ring
2.	A-7701	Worm Shaft Cap
3.	3-758	Cap Screw
4.	A-7699	Worm Tube Washer
5.	2-1412	Bearing (matched set of two)
6.	2-386	'O' Ring
7.	A-14591	Ice Breaker
8.	2-1413	Worm Shaft
9.	A-7826	Worm Tube, Accumulator, Suction, & Cap Tube Assembly
10.	3-679	Washer (2 reqd.)
11.	S-9237	Casting (spout)
12.	3-207	Bolt (2 reqd.)
13.	2-1300	Water Seal
14.	2-417	Lower Bearing
15.	S-8817	Worm Tube Nut
16.	13-213	Rubber Drip Pan
17.	A-8002	Drain Tube (copper) (*)
18.	A-14678	Breaker & Bearing Ass'y
	A-14886-1	Freezer Complete

(*) Not Shown

SF-1 "WSH" Models

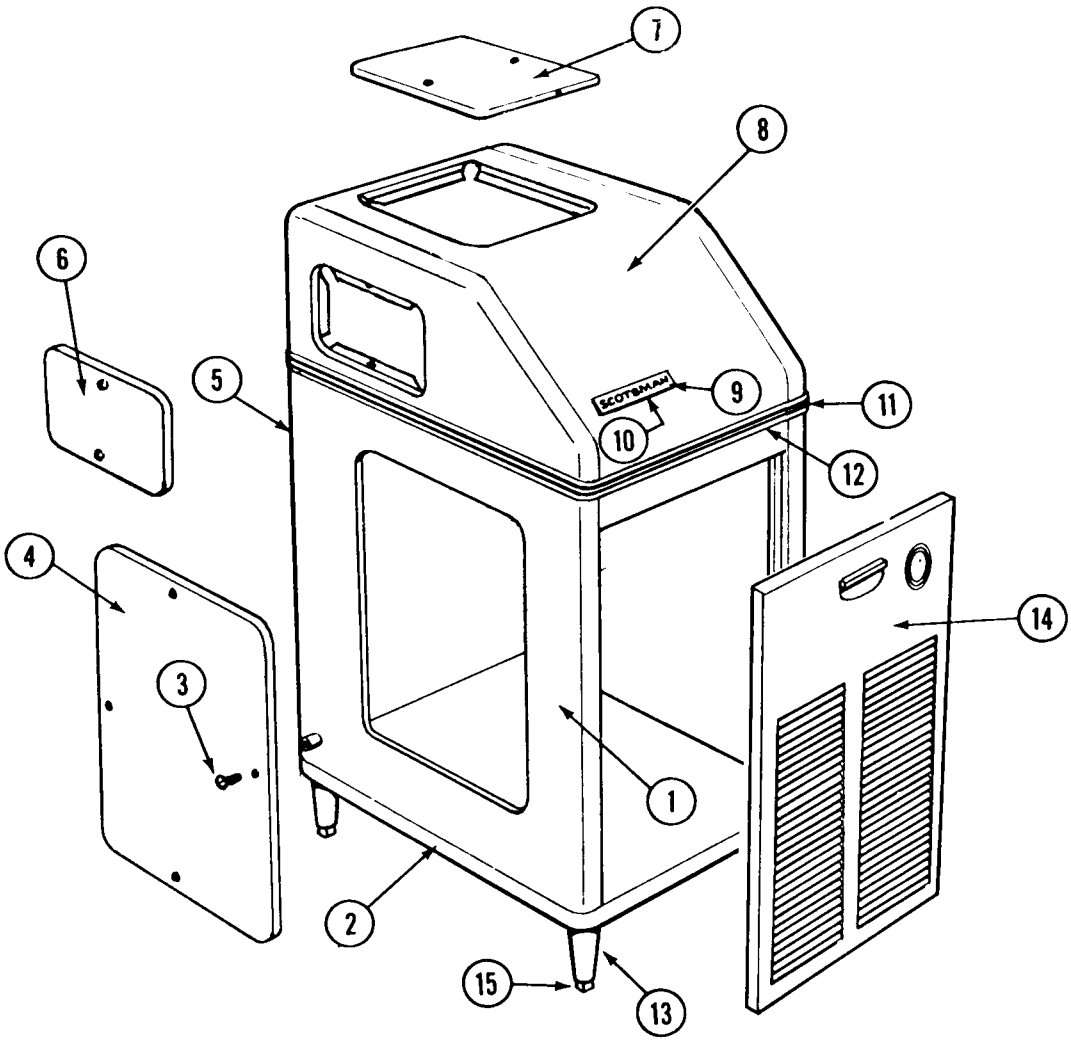


ITEM NO.	PART NO.	NAME
1.	8-522	Leg Levelers
2.	A-15803	Legs
3.	A-15932	Case Assembly
4.	A-15791	Front Door
5.	A-18093	Drain Assembly *
6.	2-530	"O" Ring (drain) *
7.	A-18090	Storage Bin Drain (male) *
8.	A-6448	Drain Screen *
9.	A-15729	Storage Bin Assy. *
10.	A-15735	Insulation Layout *
11.	3-640	Door Glides (door)*
12.	3-1195	Door Glides (hood)*
13.	A-15600	Case Hood Assy.

ITEM NO.	PART NO.	NAME
14.	A-15559	Sliding Door
15.	A-16208	Door Track
16.	3-1212	Bulb Holder *
17.	A-16209	Door Catch *
18.	A-7676	Top Door
19.	A-6530	Top Side Door
20.	A-5796	Rear Trim
21.	15-324	Plastic Moulding-trim
22.	S-3646	Front Moulding Strip
23.	S-6713	Side Door
24.	2-775	Screw (stainless)
25.	A-8740	Rear Door
26.	15-156	Emblem
27.	3-271	Speednuts *

* Not Shown

SF-1H CASE ASSEMBLY

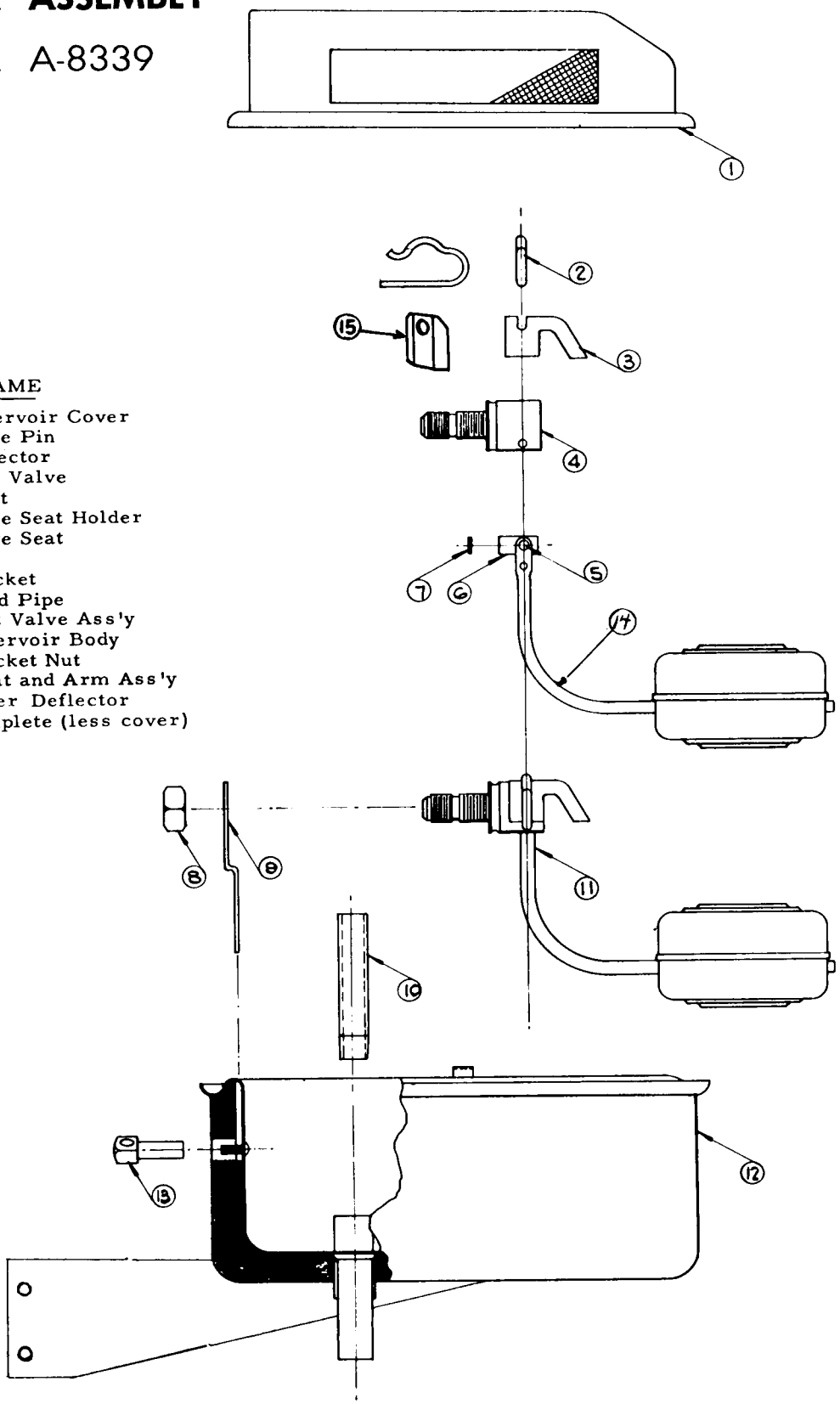


ITEM NO.	PART NO.	NAME
1.	A-15933	Case Assembly (less doors)
2.	A-8902-1	Moulding Strip (bottom) (2 reqd.)
3.	3-775	Screw (s,s)
4.	S-6713	Side Door
5.	A-8740	Rear Door (*)
6.	A-6530	Top Side Door
7.	A-7676	Top Door
8.	A-16236	Case Hood (less doors)
9.	15-156	Scotsman Emblem
10.	3-271	Speed Nuts
11.	15-324	Plastic Trim Insert
12.	S-6218	Moulding Strip (top)
13.	A-15803	Legs (4 reqd.)
14.	A-15791	Front Door
15.	8-522	Leg Levelers

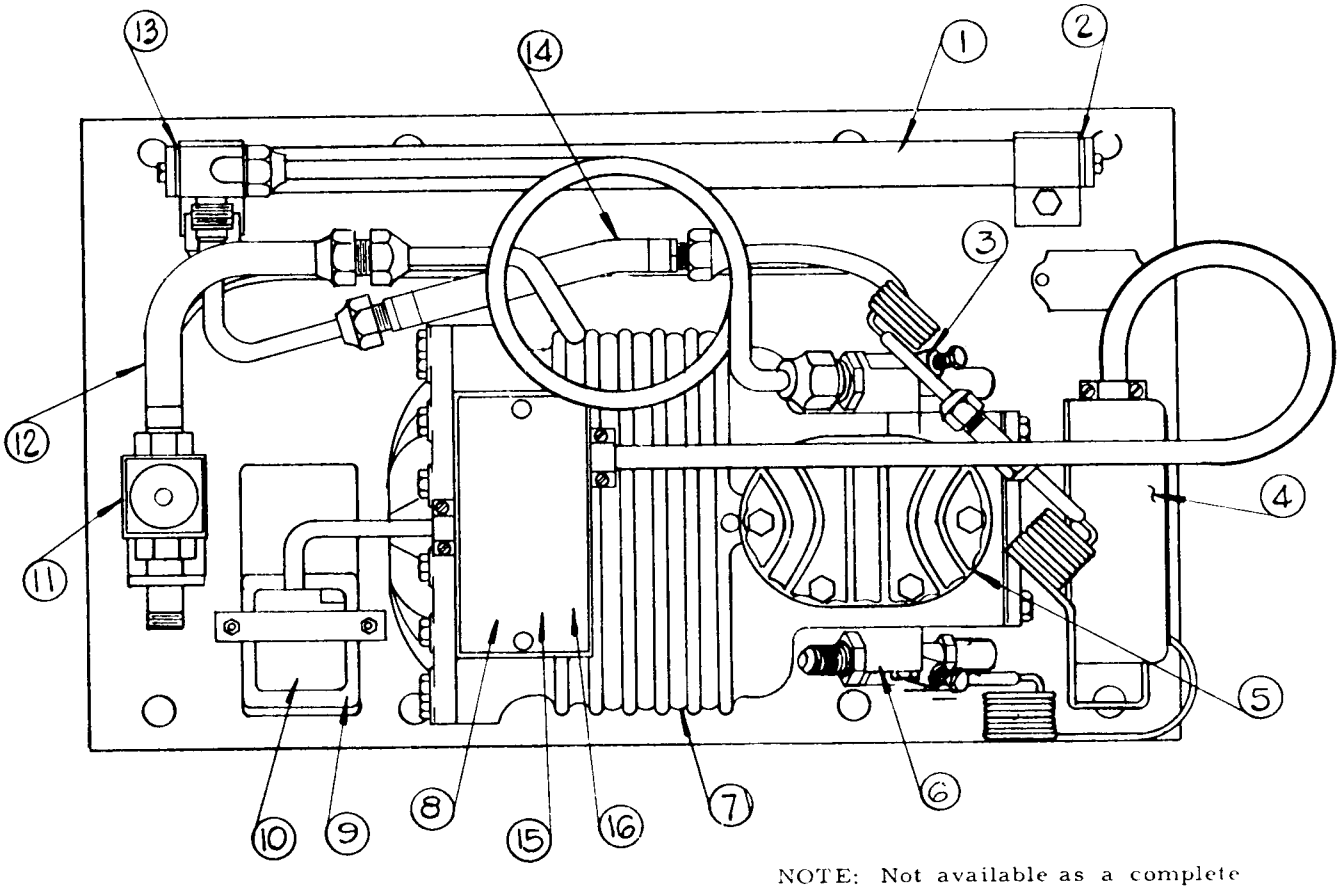
(*) Not Shown

SF-1
RESERVOIR ASSEMBLY
Part No. A-8339

ITEM NO.	PART NO.	NAME
1.	A-8341	Reservoir Cover
2.	2-1259	Valve Pin
3.	2-1320	Deflector
4.	S-8770	Inlet Valve
5.	3-1001	Rivet
6.	A-5777	Valve Seat Holder
7.	S-6947	Valve Seat
8.	S-7044	Nut
9.	A-12869	Bracket
10.	S-6715	Stand Pipe
11.	S-8138	Inlet Valve Ass'y
12.	A-13409	Reservoir Body
13.	A-8055	Bracket Nut
14.	A-12067	Float and Arm Ass'y
15.	A-18418	Water Deflector
	A-8339	Complete (less cover)



SF-1
CONDENSING UNIT
⅓ HP Water Cooled, Copeland



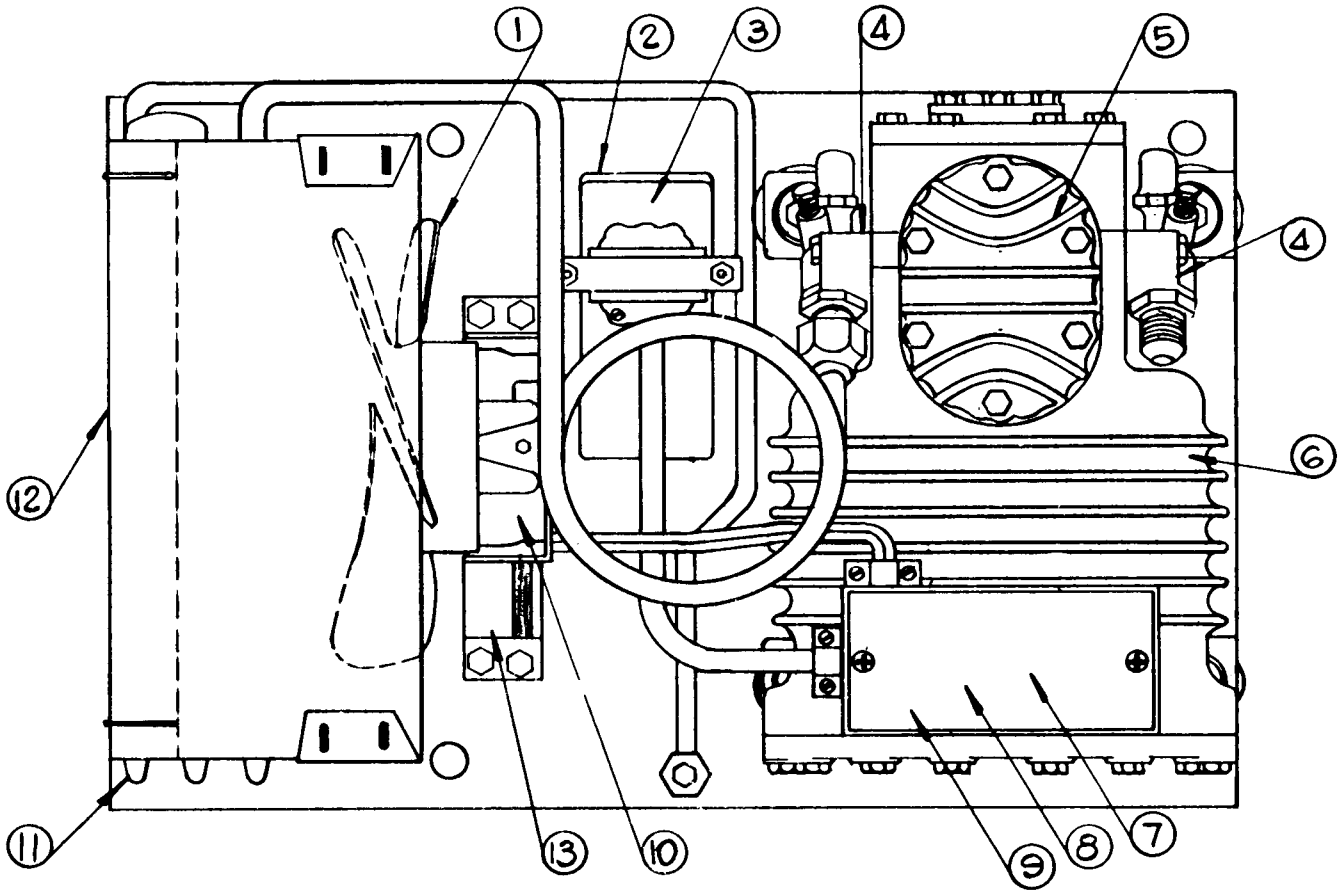
NOTE: Not available as a complete mounted assembly.

ITEM NO.	PART NO.	NAME
1.	18-259	Condenser
2.	18-262	Plain Gasket
3.	18-237	Discharge Service Valve
4.	11-286-1	High-Pressure Control
5.	18-222	Valve Plate & Gasket Kit Assembly (*)
6.	18-237	Suction Service Valve
7.	18-257	Motor Compressor 115/60/1 WC
8.	18-240	Klixon (overload) (*)
9.	18-1901-4	Starting Capacitor
10.	18-1903-4	Relay
11.	11-198	Water Valve
12.	18-260	Compressor to Valve Water Hose
13.	18-263	Manifold Gasket
14.	18-261	Compressor to Condenser Water Hose
15.	18-270	Terminal Board (*)
16.	18-241	Terminal Ass'y

(*) Not Shown

SF-1
CONDENSING UNIT

1/3 HP Air Cooled, Copeland



NOTE: Not available as a complete mounted assembly.

ITEM NO.	PART NO.	NAME
1.	18-231	Fan Blade
2.	18-1901-4	Starting Capacitor
3.	18-1903-4	Relay
4.	18-237	Suction & Discharge Service Valves
5.	18-222	Valve Plate & Gasket Kt Kit Assembly (*)
6.	18-221	Motor Compressor 115/60/1 AC
7.	18-240	Overload Klixon
8.	18-241	Terminal Ass'y) (*)
9.	18-270	Terminal Board (*)
10.	18-150-1	Fan Motor
11.	18-234	Condenser
12.	A-12109	Shroud
13.	18-422	Fan Motor Bracket

(*) Not Shown

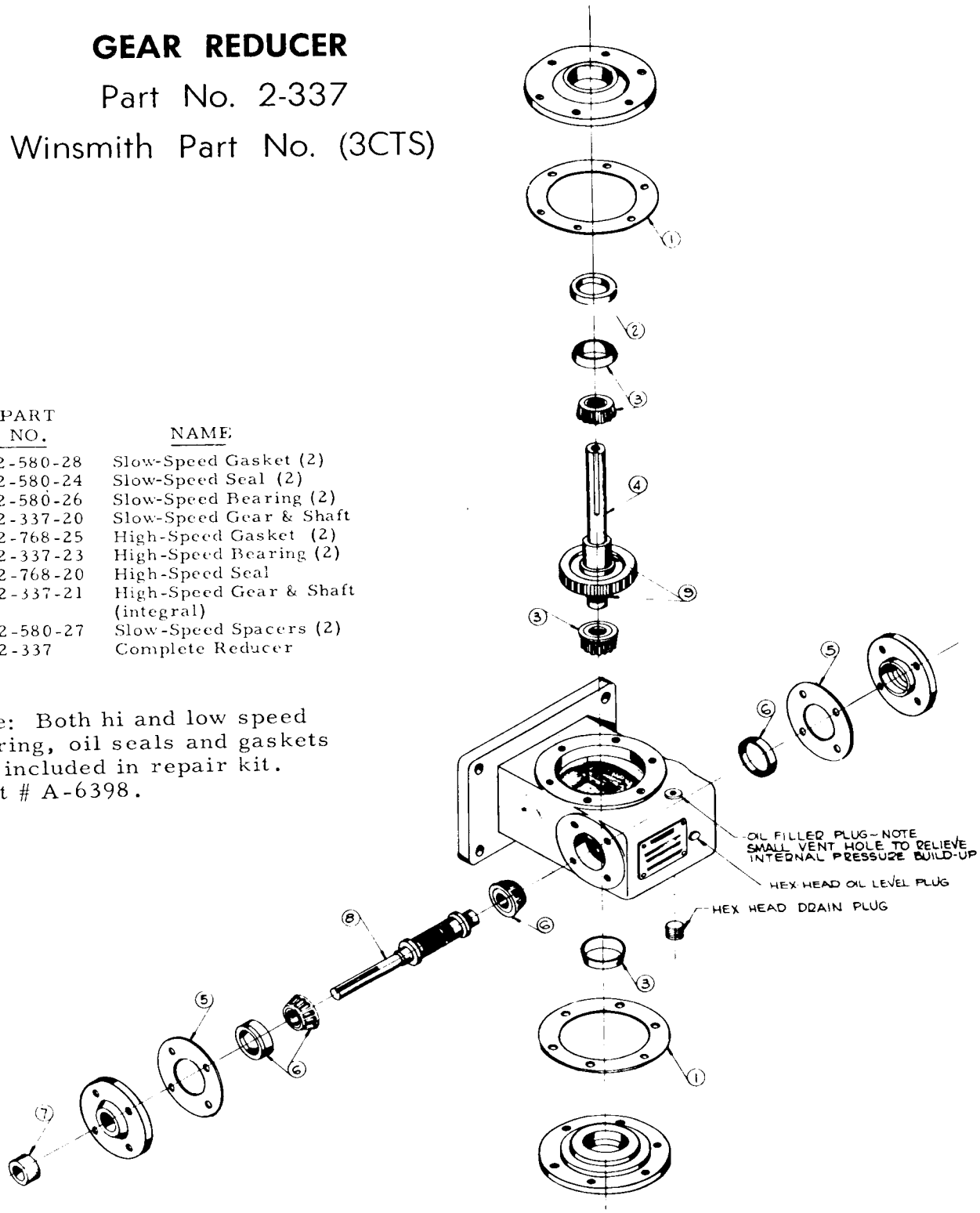
GEAR REDUCER

Part No. 2-337

Winsmith Part No. (3CTS)

ITEM NO.	PART NO.	NAME
1.	2-580-28	Slow-Speed Gasket (2)
2.	2-580-24	Slow-Speed Seal (2)
3.	2-580-26	Slow-Speed Bearing (2)
4.	2-337-20	Slow-Speed Gear & Shaft
5.	2-768-25	High-Speed Gasket (2)
6.	2-337-23	High-Speed Bearing (2)
7.	2-768-20	High-Speed Seal
8.	2-337-21	High-Speed Gear & Shaft (integral)
9.	2-580-27	Slow-Speed Spacers (2)
	2-337	Complete Reducer

Note: Both hi and low speed bearing, oil seals and gaskets are included in repair kit. Part # A-6398.



In answer to many field requests, we are pleased to release the following chart showing the companies whose products are acceptable substitutes for the 600W supplies by Winsmith as factory recommended.

Note the third column which most accurately represents the normal temperature operating range. Also the Alemite or Zerk fitting to bearing is greased with Mobilgrease BRB No. 1, or any good grade ball bearing grease as obtained from local service stations.

600W oils and equivalents are classified as industrial oils and most likely will be found in bulk plants rather than local service stations.

WORM GEAR REDUCERS

CB-CT-CV-CBD-CVD-CBX-CTX-CVX-DBI-TSR

Ambient Temperature °F	-30 to 15	16 to 50	51 to 110	111 to 165
Maximum Operating Temperature °F	150	185	225	225
Viscosity @ 210°F, SUS	40 to 90	90 to 125	125 to 190	190 to 350
Compounded with	(Optional)	3 to 10% Acidless Tallow or E.P. Base	3 to 10% Acidless Tallow or E.P. Base	3 to 10% Acidless Tallow or E.P. Base
AGMA Lubricant		#7 Compound	#8 Compound	
Cities Service Oil Co.	Pacemaker Oil #5	Optimus Oil #10	Optimus Oil #6	Optimus Oil #12
Fiske Bros. Refining Co.	#3Lubriplate	#8Lubriplate	#8Lubriplate	APG Lubriplate
Gulf Oil Corporation	Multipurpose Gear Lubricant	E.P. Lubricant #115	E.P. Lubricant #145	E.P. Lubricant #250
Shell Oil Company	Vitrea Oil 71	Valvata Oil #J 78	Valvata Oil #J 78	Valvata Oil #J 83
Sinclair Refining Co.	Duro Oil 160	#87 Heavy Duty Oil	#101 Super-Heat Valve Oil	#212 Super-Heat Valve Oil
Standard Oil Co.	Stanogear Compound #1	Stanogear Compound #4	Standard Worm Gear Oil	Calumet SH Cyclinder Oil
Sun Oil Company	Sunep 70	Sunep #110	Sunep #150	HV Cyl. Oil
Socony Mobil Oil Co., Inc.	Vactra Oil #1	Mobil Compound DD	Mobil Cylinder Oil #600W	Mobil Cylinder Oil # 600W
The Texas Company	Meropa Lub. #1	Meropa Lub. #3	Meropa Lub. #6	Meropa Lub. #6

MAINTENANCE INSTRUCTIONS

FOR

SCOTSMAN SUPER FLAKERS

The following services must be accomplished a minimum of two (2) times per year on all Scotsman Super Flakers.

1. Check and clean water strainers and float valves. 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.
   A. CLEANING INSTRUCTIONS
      1. Set main switch to OFF.
      2. Remove all ice from storage bin.
      3. Turn off water supply or block float. Drain reservoir by removing overflow tube (gray plastic tube) in reservoir. Replace overflow tube.
      4. Set main switch to ON and pour cleaning solution into reservoir. Do not fill above overflow tube.
         Models SF1 & SF75 -- Use 4 oz. of Scotsman cleaner and 1 qt. hot water.
      5. Continue to make ice on solution until the solution is used up and reservoir is empty.
      6. Set main switch to OFF. Remove overflow tube, wash and rinse reservoir, replace overflow tube, turn water on or remove float block.
      7. Turn MAIN SWITCH to ON. Let unit run for at least (15) minutes to flush out any cleaning fluid. Check ice for acid taste -- run until ice tastes sweet.
      8. Turn MAIN SWITCH to OFF. Add hot water to ice bin, using this melt water, thoroughly wash and rinse all surfaces within the storage bin.
      9. Turn MAIN SWITCH to ON. Replace Service Door. Unit is ready for normal operation.
   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 areas.
4. Check high and low side pressures. On air cooled models head pressures range between 130 and 145 PSI. On water cooled models, set pressure at 130 PSI. Suction pressure should be above 12 PSI and will range up to 16 PSI depending upon ambient and water temperatures.

5. Set hand reset low pressure control to cut off in event of water supply interruption or low ambient temperature at approximately 5PSI.
6. Change oil in gear reducer. Use 600W or grease with BRB No.1 or equivalent when grease fittings are evident. Particularly important when there is evidence that water has gotten into gear housing. Remove gear reducer to facilitate.
7. Oil drive motor. Use SAE 20 oil.
8. Check top bearing of freezing tube. Remove retainer ring and stamped brass cap. If moisture is around bearing, wipe up and remove grease. Add new grease. Use lubriplate No. 5.
9. Check and adjust belt tension.
10. Clean air cooled condenser. Inform customer to clean frequently. Always shut off machine when cleaning.
11. Oil condenser fan motor when possible.
12. Check for refrigerant leaks and proper frost line. Should frost out of accumulator approximately two feet.

If unit is to be operated in an excessively low ambient a head pressure control kit should be added. Scotsman Part No. A-18440-1.

This kit consists of a reverse acting hi-pressure control connected electrically to the fan motor. As the head pressure drops below the cut in setting the control opens allowing the current to pass thru a resistor in the line feeding the fan motor. This slows the shaded pole motor down to approximately 1/4 speed, thus increasing the head pressure. When the control cuts in the full voltage again flows to the fan motor allowing it to operate at full speed.

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.
	Under or over-charge of refrigerant	Recharge with the proper amount.
	High water level in water reservoir	Lower to 1/4 inch below over-flow 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 over-flow pipe.
	Partial restriction in capil-lary Tube or drier	Moisture in system. Over-charge of oil in system. Re-move charge and drier. Re-place 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 motor, belts, gear reducer or drive coupling inoperative	Check. Repair and/or replace.
	Pulleys loose on shafts	Tighten - repair 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	Check hose clamps.
	'O' ring in spout casting leaking	Remove spout casting and install new 'O' ring.
	Storage bin drain & connecting fittings	Check & repair.
	Water level in reservoir too high	Adjust to 1/4 inch below overflow pipe.
Excessive noise or chattering	Mineral or scale deposit 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 pressure	Add gas to raise suction pressure. Raise head pressure control setting.
	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.
	Misaligned coupling or worn insert	Repair or replace.
	Gear reducer low on oil change	Check oil level and refill to oil level plug.
	Gear reducer loose on frame	Tighten.
	Pulleys worn or loose on shaft	Repair or replace.
	Belt cracked or worn	Replace belt.
	Drive motor end-play or worn bearings	Reapir or replace.
	Motor compressor not floating on springs	Loosen hold-down bolts.
Machine continues to run with full storage bin	Storage bin thermostat not properly set	Reset or replace. 35^{o} cut out, 45^{o} cut in.

PARTS LIST

SF-1H & SF-1WSH

	SF-1H & SF-1WSH
FREEZER ASSEMBLY, COMPLETE	A-14886-1
Ice Breaker	A-14591
'O' Ring	2-386
Top Bearing	2-1412 (set of 2)
Unit Cap	A-7701
Cap Screw	3-758
Washer	A-7699
Worm Shaft	2-1413
Retainer Ring	3-553
Water Seal	2-1300
Lower Bearing	2-417
Worm Tube Nut	S-8817
Drip Pan Assembly	13-213
SPOUT ASSEMBLY - STAINLESS STEEL (ONLY)	A-14194
Spout Casting Holder	S-9237
Spout Casting	A-14254
'O' Ring - Spout Casting	2-560
Spring for Spout Pressure Plate	2-1321
Screws - 1/4x2x1-1/4	3-671
Lockwashers	3-679
Nut, Knurled	A-14256
Pressure Plate, Spout	A-16360
Micro Switch Box	A-14243
Micro Box Cover	A-14241

PARTS LIST

SF-1H & SF-1WSH

ELECTRICAL COMPONENTS

Bin Thermostat	11-99-1
Low Pressure Control - Ranco - Hand Reset	11-273-1
Micro Switch for Spout - Stainless Steel	12-1018
On - Off Overload Switch	12-1220A
Overload Heater for Switch, See overload chart Page 38	12-1221

CONDENSING UNITS

	AIR COOLED	WATER COOLED
Drier	2-350	Same
Motor Compressor Only 115/60/1 1/3 HP	18-221	18-257
Valve Plate & Gasket Kit	18-222	Same
Cylinder Head	18-225	Same
Relay	18-1903-4	Same
Starting Capacitor	18-1901-4	18-258
Fan Blade	18-231	
Fan Motor Only	18-150-1	
Condenser	18-234	
Condenser Shroud	A-12109	
Klixon Thermal Overload	18-240	Same
Terminal Assembly	18-241	Same
Service Valve Gasket	18-242	Same
Compressor to Water Valve Hose		18-260
Compressor to Condenser Hose		18-261
Plain Gasket - Water-Cooled Condenser		18-262
Manifold Gasket - Water-Cooled Condenser		18-263
Water Regulating Valve		11-198
Dual Pressure Control		11-286-1

MISCELLANEOUS

Ice Scoop	2-540
Ice Machine Cleaner - 8 oz. Bottle	19-343
Grey Spray-On Touch-Up Paint	10-153
Upper Bearing Grease-Freezer Ass'y - Pt. Cans Only	19-309
600W Gear Reducer Transmission Oil - Pt. Cans Only	19-359
Tygon Tubing (1/2" ID X 3/4" OD) Per Foot	5-186
Rubber Tubing (3/8" ID) Per Foot Black	13-79
Clamp (For Tygon Tubing - Freezer End)	2-694
Clamp (For Tygon Tubing - Reservoir End)	2-535
Clamp (For Rubber Tubing - Reservoir End)	2-534
Clamp (For Rubber Tubing - Tee End)	2-538

PARTS LIST

SF-1H & SF-1WSH

CABINET PARTS	SF-1H	SF-1WSH
Case Assembly	A-15933	A-15932
Storage Bin Assembly		A-15729
Storage Bin Bulb Bracket		3-1212
Drain Fitting, (Male)		A-18090
Drain 'O' Ring		2-530
Case Hood Assembly	A-16236	A-15600
Large Hood Top Door	A-7676	A-7676
Door Slide Assembly		A-16208
Sliding Door		A-15559
Left Side Door Panel	S-6713	S-6713
Front Door Panel	A-15791	A-15791
Rear Door Panel	A-8740	A-8740
Rear Moulding Strip		A-5796
Front Moulding Strip	S-6218	S-3646
SCOTSMAN Emblem	15-156	15-156
Legs for Raising Base	A-15803	A-15803
Plywood Crate	1-648	1-649
Leg Levelers	8-522	8-522
WATER CIRCUIT		
Water Reservoir Assembly	A-8339	Same
Water Inlet Valve	S-8138	Same
Rubber Valve Seat For S-8138	S-6947	Same
Valve Pin	2-1259	Same
Deflector, plastic	2-1320	Same
Float Ball and Arm	A-12067	Same
Standpipe	S-6715	Same
Reservoir Cover Assembly	A-16012	Same
Water Strainer, Supply Line	16-162	Same
DRIVE CIRCUIT		
Gear Reducer	2-337	Same
Gear Reducer Repair Kit	A-6398	Same
Three-jaw Coupling - Bottom Half	S-7716	Same
Three-jaw Coupling - Top Half	S-8525	Same
Rubber Coupling Insert	13-131	Same
Allen Set Screw	3-385	Same
Clamp - 2 per coupling	S-8496	Same
Cap Screw - 2 per coupling	3-206	Same
Rubber Drip Shield - Gear Reducer Shaft	13-152	Same
Drive Belt	13-558	Same
1/4 HP Drive Motor	12-864	Same
Pulley for Drive Motor 2 1/2"	2-1462	Same
Pulley for Gear Reducer 8"	2-1463	Same

OVERLOAD HEATER CHART FOR MANUAL STARTER SWITCH

QUEEN PART NO. 12-530, GE PART NO. CR101H1, QUEEN PART NO. 12-1221 AND WESTINGHOUSE PART NO. MST02SN

Queen Motor No.	Manufacturer	Electrical Characteristics	Manuf. Part No.	Queen Part No. for G.E. Overload	Manuf. Part No.	Queen Part No. For Westing-house Overload	Manuf. Part No.
12-864-1	G. E.	115/60/1 ¼ HP	KC35KG312	12-708-29	123H6.25A	12-1221-27	MSH6.0A
12-864-1	Westinghouse	115/60/1 ¼ HP	S309P520	12-708-27	123H5.29A	12-1221-27	MSH6.0A
12-864-1	Century	115/60/1 ¼ HP	CSF48HKA	12-708-26	123H4.86A	12-1221-25	MSH5.0A
12-864-2	G. E.	230/60/1 ¼ HP	KC35KG319	12-708-21	123H3.17A	12-1221-20	MSH3.1A
12-864-2	Westinghouse	230/60/1 ¼ HP	S309P334	12-708-20	123H2.91A	12-1221-19	MSH2.8A
12-864-2	Century	230/60/1 ¼ HP	CSF48HKA	12-708-18	123H2.45A	12-1221-19	MSH2.8A
12-864-7	G. E.	208/60/1 ¼ HP	KC35KG317	12-708-22	123H3.46A	12-1221-21	MSH3.4A
12-864-7	Westinghouse	208/60/1 ¼ HP	S309P334	12-708-19	123H2.67A	12-1221-18	MSH2.5A
12-864-7	Century	208/60/1 ¼ HP	CSF48HKA	12-708-20	123H2.91A	12-1221-19	MSH2.8A
12-649-1	Westinghouse	115/60/1 1/3 HP	311P096	12-708-33	123H8.73A	12-1221-31	MSH8.8A
12-649-1	Century	115/60/1 1/3 HP	CSJ56-KKA	12-708-29	123H6.25A	12-1221-27	MSH6.0A
12-649-1	G. E.	115/60/1 1/3 HP	5KC42JG24	12-708-30	123H6.80A	12-1221-28	MSH6.6A
12-649-2	Westinghouse	230/60/1 1/3 HP	311P061	12-708-25	123H4.46A	12-1221-24	MSH4.5A
12-649-2	Century	230/60/1 1/3 HP	CSJ56-KKA	12-708-21	123H3.17A	12-1221-20	MSH3.1A
12-649-2	G. E.	230/60/1 1/3 HP	5KC42JG2	12-708-22	123H3.46A	12-1221-21	MSH3.4A
12-649-7	Century	208/60/1 1/3 HP	CSJ56-KKA	12-708-22	123H3.46A	12-1221-21	MSH3.4A
12-649-7	G. E.	208/60/1 1/3 HP	5KC42JG31E	12-708-22	123H3.46A	12-1221-21	MSH3.4A
12-649-7	Westinghouse	208/60/1 1/3 HP	311P061	12-708-24	123H4.10A	12-1221-31	MSH8.8A

NOTE: The overloads as listed are in accordance with Underwriters requirements. Any deviation will be in violation.