IMI CORNELIUS INC ■ One Cornelius Place ■ Anoka, MN 55303-6234

Telephone (800) 238-3600 Facsimile (612) 422-3246

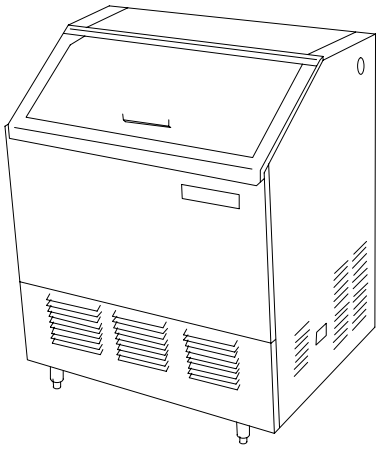
Service Manual
SELF-CONTAINED FLAKED ICE MAKER
Model: Series 200, 525, 725
(R404A Refrigerant)

IMPORTANT:

TO THE INSTALLER.

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

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



Distributed By:
Commercial Refrigeration Service, Inc.
WWW.WorldRestaurantSupply.COM
toll free (866) Ice Maker
(623) 869-8881

Part No. 166240010
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THIS DOCUMENT CONTAINS IMPORTANT INFORMATION
This Manual must be read and understood before installing or operating this equipment

PRINTED IN U.S.A

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INTRODUCTION

We have strived to produce a quality product. The design has been kept simple thus insuring trouble–free operation.

This manual has been prepared to assist servicemen and users with information concerning installation, construction and maintenance of the ice making equipment. The problems of the serviceman and user have been given special attention in the development and engineering of our ice makers.

If you encounter a problem which is not covered in this manual, please feel free to write or call. We will be happy to assist you in any way we can.

When writing, please state the model and serial number of the machine.

Address all correspondence to:

A Product of IMI Cornelius Inc.
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Anoka, MN 55303–6234

Phone 800–554–3526
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PRINTED IN USA

SPECIFICATIONS 200

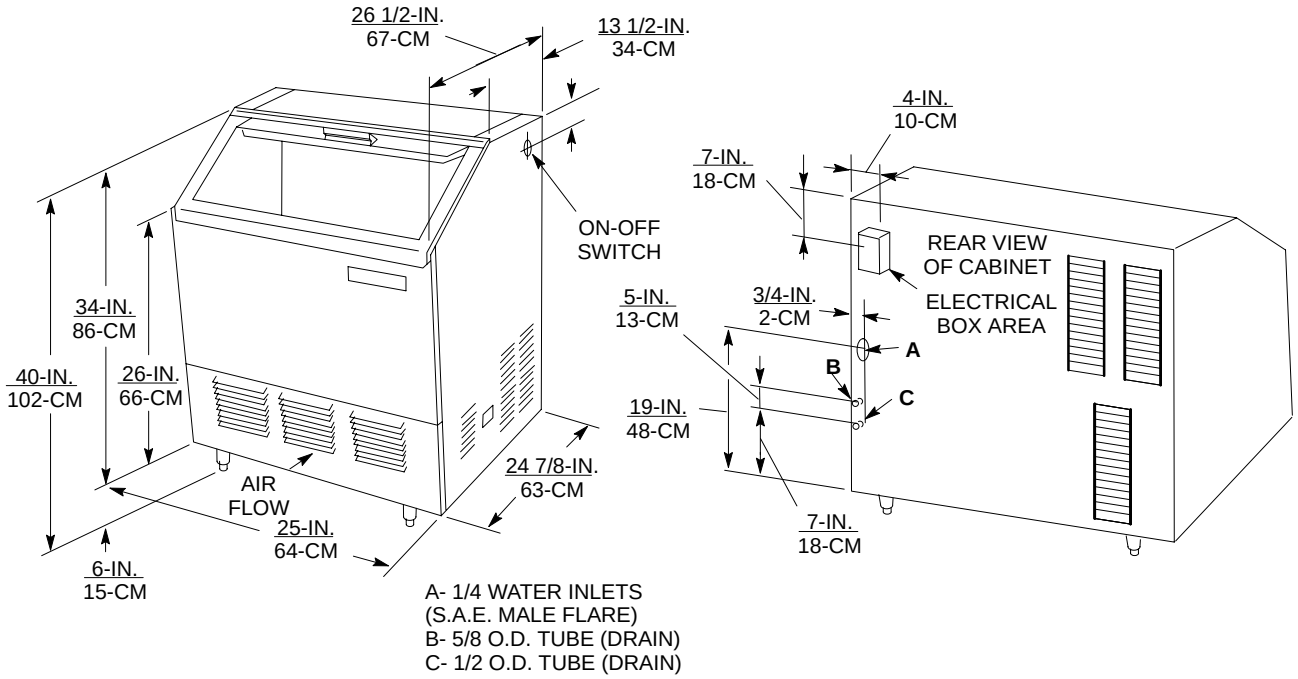


FIGURE 1. 200 SERIES SPECIFICATIONS

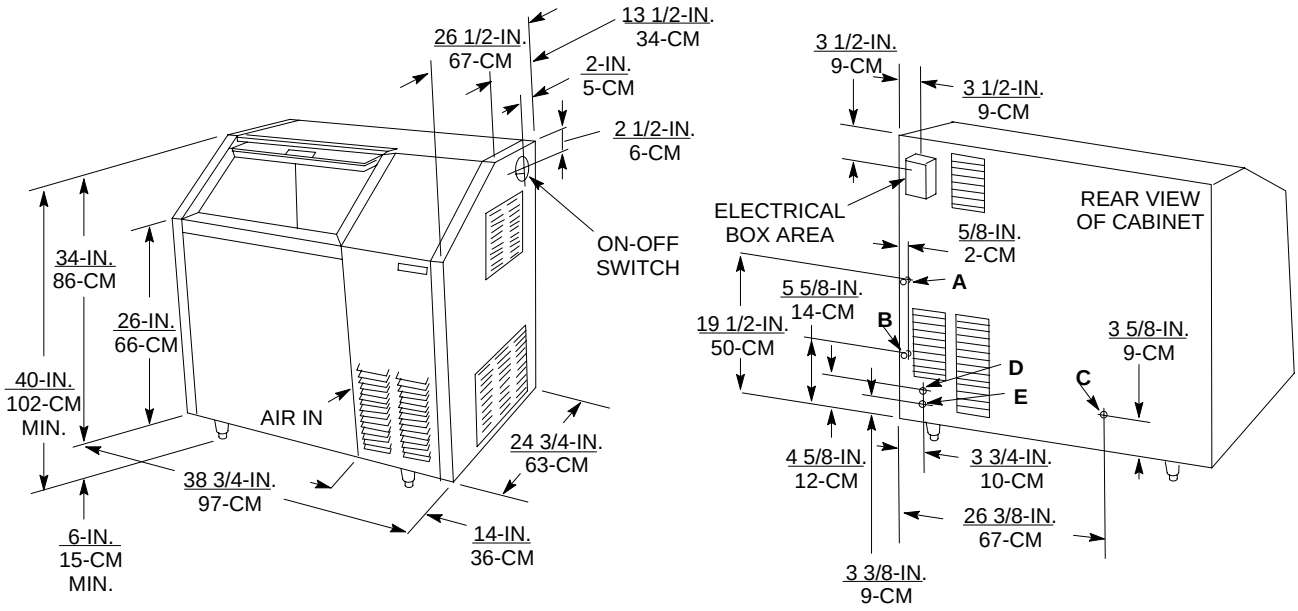
ICE PRODUCTION CAPACITY (approximate)

AF-200-P(S)-SCR PRODUCTION CHART			
AIR TEMPERATURE	**WATER TEMPERATURE**		
	50℉/10℃	**70℉/21℃**	**80℉/27℃**
50℉/10℃	219 lbs/99 kgs	188 lbs/85 kgs	175 lbs/79 kgs
70℉/21℃	208 lbs/95 kgs	174 lbs/79 kgs	166 lbs/75 kgs
90℉/27℃	161 lbs/35 kgs	130 lbs/59 kgs	117 lbs/53 kgs

AF-200-P-SC50R PRODUCTION CHART			
AIR TEMPERATURE	**WATER TEMPERATURE**		
	50℉/10℃	**70℉/21℃**	**80℉/27℃**
50℉/10℃	234 lbs/106 kgs	206 lbs/94 kgs	197 lbs/90 kgs
70℉/21℃	213 lbs/97 kgs	190 lbs/86 kgs	180 lbs/82 kgs
90℉/27℃	183 lbs/83 kgs	164 lbs/75 kgs	156 lbs/71 kgs

	200
Compressor Model	Copeland JS25CIE-IAA-203 (115V 60HZ) Copeland AS13CIE-1AZ-908 (220V 50HZ)
Condenser	Air Cooled
Refrigerant Charge	8 oz. R-404a (115V 60HZ) 7 oz. R-404a (220V 50HZ)
Refrigerant Control (115V 60HZ)	Automatic Expansion Valve (28-PSI)
Refrigerant Control (220V 50HZ)	Automatic Expansion Valve (31-PSI)
Inlet Water Supply	1/4” SAE male flare
Voltage	115V 60HZ or 220V 50HZ
Gearmotor Electrical Rating	1/8 hp
Gearmotor Amp. Rating	2 amps (115V 60 HZ) 1 amp (220V 50HZ)
Total Amp. Draw	11.0 Amps (115V 60HZ) 4.0 Amps (220V 50HZ)
Maximum Fuse Size	15 Amp (115V 60HZ) 15 Amp (220V 50HZ)

SPECIFICATIONS 525



A- 3/8 WATER INLET (S.A.E. MALE FLARE)
B- 1/2 O.D. TUBE (CONDENSATE DRAIN)
C- 3/4 N.P.T. BIN DRAIN
D- CONDENSER WATER IN (W/C ONLY)
E- CONDENSER WATER OUT (W/C ONLY)

FIGURE 2. 525 SERIES SPECIFICATIONS

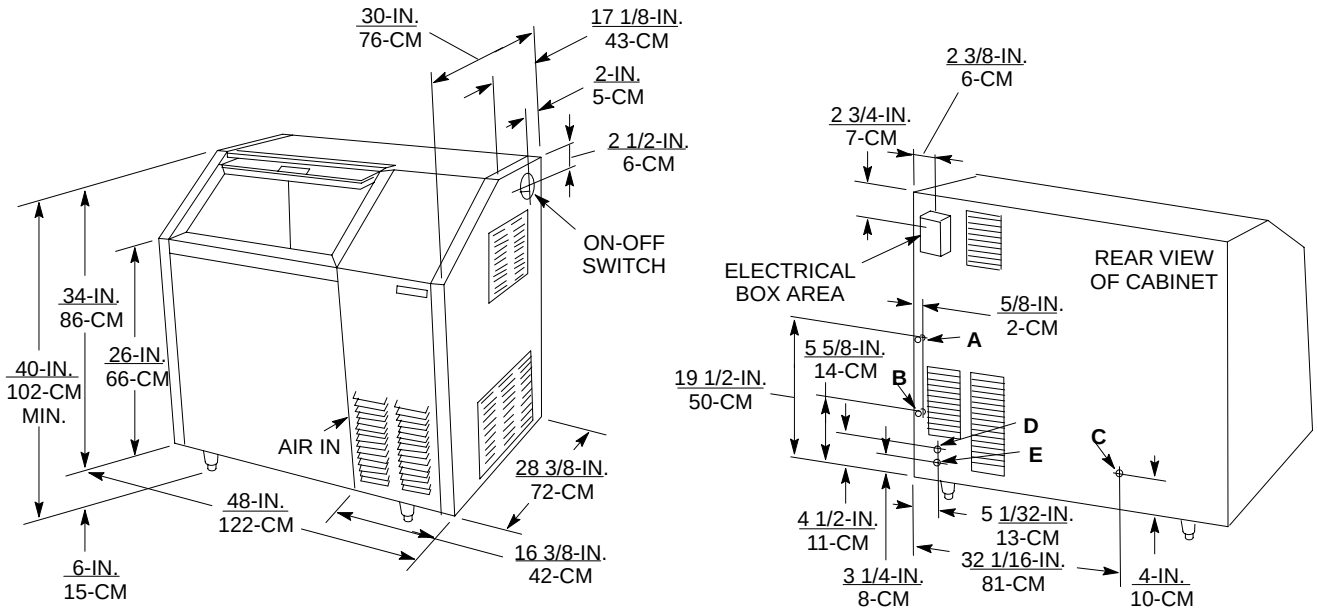
ICE PRODUCTION CAPACITY (approximate)

AF-525-P(S)-SCR PRODUCTION CHART			
AIR TEMPERATURE	**WATER TEMPERATURE**		
	50°F/10°C	**70°F/21°C**	**80°F/27°C**
50°F/10°C	654 lbs/297 kgs	588 lbs/267 kgs	552 lbs/251 kgs
70°F/21°C	639 lbs/290 kgs	563 lbs/256 kgs	521 lbs/237 kgs
90°F/27°C	562 lbs/255 kgs	479 lbs/218 kgs	448 lbs/204 kgs

AF-525-P-SC50R PRODUCTION CHART			
AIR TEMPERATURE	**WATER TEMPERATURE**		
	50°F/10°C	**70°F/21°C**	**80°F/27°C**
50°F/10°C	629 lbs/286 kgs	528 lbs/240 kgs	494 lbs/225 kgs
70°F/21°C	621 lbs/282 kgs	525 lbs/239 kgs	489 lbs/222 kgs
90°F/27°C	493 lbs/224 kgs	414 lbs/188 kgs	387 lbs/176 kgs

	525
Compressor Model	Copeland RS43CIE-IAA-214 (115V 60HZ) Copeland RS43CIE-IAZ-214 (220V 50HZ)
Condenser	Air Cooled
Refrigerant Charge	17 oz. R–404a
Refrigerant Control	Automatic Expansion Valve (34-PSI)
Inlet Water Supply	3/8” SAE Male Flare
Voltage	115V 60HZ or 220V 50HZ
Total Amp Draw	15.5 Amps (115V 60HZ) 6.0 Amps (220V 50HZ)
Gearmotor Amp Draw	2 Amps (115V 60HZ) 1 Amp (220V 50HZ)
Gearmotor Electrical Rating	1/8 hp
Maximum Fuse Size	20 Amp (115V 60HZ) 15 Amp (220V 50HZ)

SPECIFICATIONS 725



A- 3/8 WATER INLET (S.A.E. MALE FLARE)
B- 1/2 O.D. TUBE (CONDENSATE DRAIN)
C- 3/4 N.P.T. BIN DRAIN
D- CONDENSER WATER IN (W/C ONLY)
E- CONDENSER WATER OUT (W/C ONLY)

FIGURE 3. 725 SERIES SPECIFICATIONS

ICE PRODUCTION CAPACITY (approximate)

AF-725-P-SCR PRODUCTION CHART			
AIR TEMPERATURE	**WATER TEMPERATURE**		
	50°F/10°C	**70°F/21°C**	**80°F/27°C**
50°F/10°C	654 lbs/297 kgs	588 lbs/267 kgs	552 lbs/251 kgs
70°F/21°C	639 lbs/290 kgs	563 lbs/256 kgs	521 lbs/237 kgs
90°F/27°C	562 lbs/255 kgs	479 lbs/218 kgs	448 lbs/204 kgs

	725
Compressor Model	Copeland RS43CIE–IAA–214
Condenser	Air Cooled
Refrigerant Charge	17 oz. R–404a
Refrigerant Control	Automatic Expansion Valve (34-PSI)
Inlet Water Supply	3/8” SAE Male Flare
Voltage	115V 60HZ
Total Amp Draw	15.5 Amps
Gearmotor Amp Draw	2 Amps
Gearmotor Electrical Rating	1/8 hp
Maximum Fuse Size	20 Amp

INSTALLATION INSTRUCTIONS

You will get better service from the ice machine, longer life and greater convenience if you choose its location with care.

Here are a few points to consider:

1. Select a location as close as possible to where you are going to use the ice.

2. Allow a minimum of 6” space at sides and rear of machine for ventilation.

3. A kitchen installation is not desirable as a rule. If a kitchen installation is necessary, locate the machine as far away
   from the cooking area as possible. Grease laden air will form greasy deposits on the condenser. This reduces the ice making efficiency and necessitates thorough cleaning quite often.

4. If you install the unit in a storeroom, be sure the room is well ventilated.

NOTE: ***Do not install where the ambient and incoming water temperature will drop below 50°F or rise to over 100°F.***

NOTE: ***If water pressure exceeds 50 lbs., a water pressure regulator should be installed in water inlet line between water shut–off valve and strainer. Minimum incoming water pressure required is 22 lbs..***

A. Uncrate the unit by removing the staples or nails from the bottom of the carton and lift off.

B. Remove the bolts holding the skid to the machine.

C. If legs are used, adjust the leveling legs of the storage bin until the unit is level and all four (4) legs are in solid contact with the floor. Leveling is very important to obtain proper draining.

D. Provide a cold water supply line to the area selected for the installation of the unit. The incoming water line should have a shut–off valve provided at a convenient location close to the ice maker. The water strainer provided with the unit should be installed on the down–stream side of the shut–off valve. The supply line must be adequately sized to compensate for the lengths of the incoming water run. The machine is equipped with a 3/8” male flare connection for the incoming water line.

NOTE: ***ALWAYS FLUSH OUT WATER LINES BEFORE STARTING UNIT.***

Water cooled units have a water regulating valve that is factory set to operate at 270 to 310 PSIG head pressure for R404a (water outlet temp. approx. 105F) This should be checked at the time the unit is being installed.

Two water inlet connections are provided on water cooled units, one for the ice making (evaporator) section, the other is for the water cooled condenser. Both connections are 3/8” male flare fittings. Inlet water to the condenser will go to the water regulating valve first, then to the condenser coil and out the drain.

The reason for separate water inlet connections is that some installations use a water tower for cooling the water used in the water cooled condenser and some installations use treated water for the ice making inlet water.

A separate drain will be required for the outlet of the water cooled condenser.

E. Provide a suitable trapped open drain as close as possible to the area where the ice maker is going to be installed. This may be an existing floor or a 1 1/4” trapped open drain. Connect the drain line to the rear of the unit and run it with a good fall to the open drain. All plumbing must be installed according to local codes. The storage bin drains by gravity, and therefore the drain line must maintain a gradual slope to an open drain and should be insulated.

NOTE: ***IN SOME CASES IT MAY BE NECESSARY TO INSULATE THE WATER SUPPLY LINE AND DRAIN LINE. CONDENSATE DRIPPING TO THE FLOOR CAN CAUSE SERIOUS STAINING OF CARPETS OR HARDWOODS.***

F. Connect a drain hose to the condensate drain stub tube.

NOTE: ***All plumbing must be done in accordance with national and local codes.***

G. Connect the electrical supply line to the unit.

NOTE: ***Make sure the proper voltage and number of wires are provided. See serial plate for this information.***

NOTE: ***All wiring must conform to national and local codes.***

H. Turn on water supply and observe the water level in evaporator sections which should be no less than 1/4" below the inclined discharge chute opening of the shell.

I. Turn machine on and check for proper voltage and amp draw on the entire unit as well as components such as the gearmotor and fan motor.

J. Check refrigerant circuit and all plumbing connections for leaks, etc.

K. Check bin thermostat or mechanical shut–off for proper operations. In the mid–range the bin thermostat will open at 42° and has a 6° differential.

ADJUSTMENT PROCEDURE

WARNING: WATER LEVEL MUST BE MAINTAINED AT THE TOP OF THE EVAPORATOR.

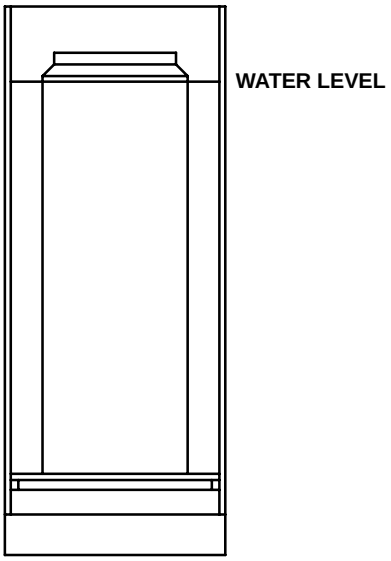


FIGURE 4. WATER LEVEL ADJUSTMENT PROCEDURE

1. Remove gearmotor and auger.
2. Adjust float valve to get water level to top seam of the evaporator.
3. Re–install auger. WATER LEVEL WILL RISE WHEN AUGER IS INSERTED BUT WHEN THE MACHINE IS TURNED BACK ON AND ICE STARTS BEING MADE, THE WATER LEVEL WILL GO BACK TO THE ORIGINAL SETTING.
4. Re–install gearmotor assembly and start machine.

TYPICAL WATER CIRCUIT

The supply water enters the float chamber through a small orifice. The water level rises and lifts the buoyant float with it. The float attached to the float arm seats a valve to shut off any further water supply. As water leaves the float chamber, the level drops along with the float and arm, causing the valve to open and admit more water. Thus the water level is maintained automatically as the machine operates.

Water now flows through a hose connected to the float chamber and enters the opening of the evaporator shell. The water level in the shell will rise to the same level that is maintained in the float chamber. The water that is in immediate contact with the center post evaporator will be reduced in temperature. As a result, freezing occurs and ice forms on the surface of the evaporator.

As more water is frozen, the thickness of the ice increases until it exceeds the distance allowed between the evaporator and auger. The auger rotates at a slow speed to wipe off the accumulated ice as well as help it to the surface. After the ice reaches the surface it is discharged through the top opening in the shell. An ice chute attached to the shell conveys the ice to the storage bin where it accumulates in the insulated bin until it is used. The ice will pile up to a point where the bin thermostat tubing is located. When the ice touches this brass tubing, the unit will shut–off and remain off until enough ice is used or melted to reduce the pile. Any ice that melts will pass through the drain and drain hose to an open drain.

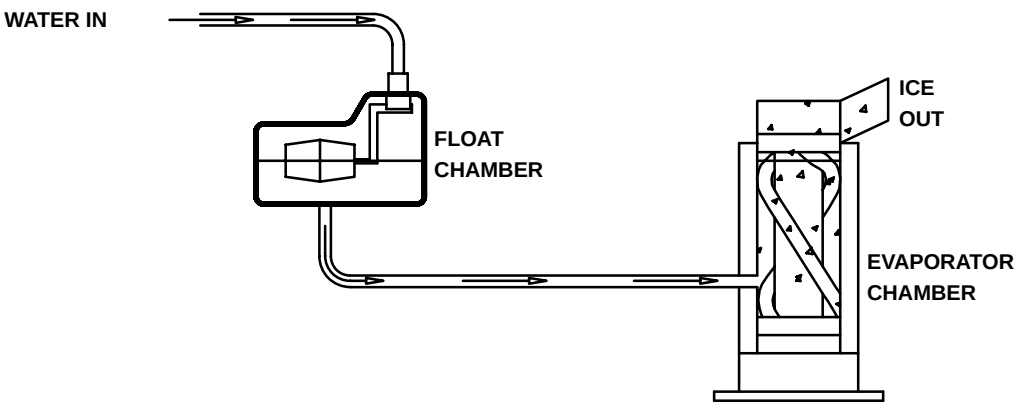


FIGURE 5. TYPICAL WATER CIRCUIT

TYPICAL REFRIGERANT CIRCUIT

Heat always flows from hot to cold and therefore, the ”heat load” supplied to the evaporator section by water gives up its heat to the refrigerant which is at a temperature below the freezing point of water. This refrigerant now passes through the heat exchanger back to the compressor, as a low pressure vapor.

This low pressure vapor is compressed in the compressor, as it leaves the compressor at a high pressure in vapor form it enters the top of the condenser. The condenser has a rapid flow of cool air across it which removes much of the heat from the hot refrigerant vapor.

As the vapor, passing through the condenser, loses heat it condenses back to a liquid since it is still under high pressure and cooler than when it entered the condenser. The liquid refrigerant then passes through the drier/filter still under pressure and goes through the heat exchanger where further cooling takes place. As the refrigerant leaves the automatic expansion valve, the pressure has dropped, causing the refrigerant to vaporize and boil off as it picks up heat in the evaporator and since the pressure is low, the refrigerant will be cold.

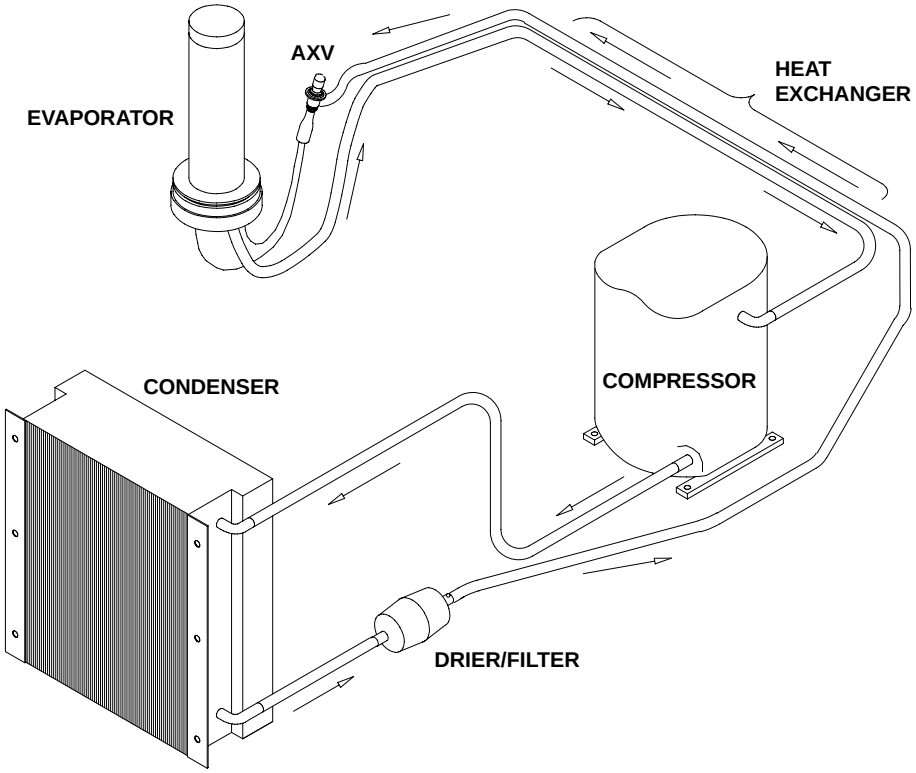


FIGURE 6. TYPICAL REFRIGERANT CIRCUIT

ELECTRICAL CIRCUIT

CIRCUIT DESCRIPTION

As the manual on–off circuit breaker switch is pushed to ”on”, an electrical circuit is completed to the gearmotor via the circuit breaker gearmotor overload, power relay/contactor, gearmotor delay thermostat and the bin thermostat. After the previous circuit has been completed the condenser fan motor will start as will the compressor (via the high pressure control, the compressor starting relay and low ambient control).

ON–OFF SWITCH/CIRCUIT BREAKER

This switch interrupts power to the entire unit. The switch has a circuit breaker incorporated into its’ design. This circuit breaker will trip out in the event the gearmotor draws to high of amps. In such an event the power is interrupted to the unit. To reset the circuit breaker and reestablish power to the unit, push the switch to the “off” position and then back to the “on” position.

BIN THERMOSTAT

This is electrically in ”series” with the ice making system. when the bin is full, the contact opens, terminating power to the machine.

HIGH PRESSURE CONTROL

Switch contact will open at 450 PSI for R404a breaking the circuit to the compressor. This control is manually resetable.

GEARMOTOR START RELAY

This is a current type relay which means as the gearmotor run winding comes ”on” the line, the current draw initially is relatively heavy through the relay coil (coil is in series with run winding). It then acts like a normal relay and the N.O. start contact ”makes”, completing a circuit through the start capacitor to the start winding. As the gearmotor picks up speed, the amp draw through the relay coil drops off allowing the armature to return to its normal position (start contact ”opens”). This action removes the start winding from the circuit.

POWER RELAY/CONTACTOR

This relay controls the compressor power only.

FAN CYCLING SWITCH

The function of this switch is to maintain condensing pressures at a satisfactory level during–low ambient conditions. The switch breaks the circuit to the condenser fan motor at 205 PSI and makes the circuit at 275 PSI.

DELAY THERMOSTAT

This thermostat keeps the gearmotor running until the suction line temperature reaches 45° after the full bin switch terminates power to the power relay.

COMPRESSOR START RELAY

This is a current type relay and contains a N.O. contact which is connected in series with the start winding of the compressor. The relay coil is electrically in series with the run winding. When power is applied, the compressor draws high current which sets up a magnetic field in the magnet coil which causes the relay to operate, closing the relay contact. As the compressor approaches operating speed, the current flowing through the coil decreases, permitting the relay contact to open, thereby opening the starting circuit.

POTENTIAL RELAYS

The potential relay is used as a compressor starting relay, The contact in the potential relay is N.C.. The magnet coil is connected across (parallel) the start winding and is affected by induced voltage, generated by the start winding. As the compressor comes up to design speed, the voltage across the relay coil increases and at running speed is sometimes as much as 2 1/2 times the supply voltage. This voltage sets up a magnetic field which causes the relay to operate. The starting relay is calibrated to remove the start capacitor (open the starting circuit) at approximately 85% of the motor design speed.

NOTE: ***BOTH TYPES OF RELAYS ARE DESIGNED TO OPERATE WITHIN VERY NARROW LIMITS OF VOLTAGE AND CURRENT DICTATED BY MOTOR DESIGN, THEREFORE, WHEN MAKING A REPLACEMENT OF A RELAY ALWAYS PROVIDE AN EXACT REPLACEMENT, RECOMMENDED BY THE COMPRESSOR MANUFACTURER.***

CAPACITORS – GENERAL

An electrical capacitor is a device which stores up electrical energy. Capacitors are used with single phase motors to provide starting torque and improve running characteristics; by feeding this energy to the start winding in step with the run winding.

Any capacitor has three (3) essential parts, two (2) of which are usually foil plates separated and insulated by the third part called the dielectric.

Two general types of capacitors are used with electric motors. The electrolytic starting capacitor usually uses a very thin film of oxide on the metallic plate as the dielectric. The running capacitor usually is of the liquid filled type.

MAINTENANCE

THE FOLLOWING MAINTENANCE SHOULD BE PERFORMED AT LEAST EVERY SIX MONTHS ON FLAKED ICE MACHINES:

1. Check power supply with machine running for proper voltage.

2. Check water level in the float tank reservoir. Water level should be maintained at the top of the evaporator. Adjust if necessary. (See illustration and adjustment procedure)

3. Clean the air–cooled condenser coil with a stiff brush or vacuum cleaner (See procedure)

CAUTION: ***CONDENSER COOLING FINS ARE SHARP, USE CARE WHEN CLEANING.***

4. Clean the ice storage bin and flush the bin drain at least once a month.

5. If a water conditioner is installed in the inlet water line, change, replace, or clean the filter, strainer or cartridge as required.

6. If heavy mineral deposits on the auger and evaporator shell are encountered due to bad local water conditions, follow sanitizing and cleaning procedure.

7. Loosen hold–down cam locks and remove gearmotor assembly.

8. Check thrust washer; replace if noticeably worn.

9. Lift out auger and examine for wear. The corkscrew auger guide bushing pressed into the drive block should be checked for wear. Replace if loose or if worn flat with auger drive block. If the Helix auger on the corkscrew auger round bar becomes flat on the inside more than 1/8 of an inch over a length of two inches or more it should be replaced.

NOTE: ***HELIX AUGERS DO HAVE MACHINED FLAT RELIEF SURFACES. DON'T CONFUSE THEM WITH WORN FLAT AREAS.***

Check the insert in the bottom ring of the Helix auger and replace if excessively worn.

10. Check shell vertical strips for wear. Replace the shell if excessive wear is shown.

11. Check O–Ring, replace if worn or cut.

12. Re–assemble, steps 7 through 11.

CAUTION: IN RE–ASSEMBLING THE AUGER GEARMOTOR, THE HOLD DOWN CLAMPS MUST BE RIGHT AND SECURE. IN RE–INSTALLING THE EVAPORATOR SHELL, BE ABSOLUTELY SURE THAT THE "O" RING IS NOT PINCHED OFF AS THIS WOULD CAUSE A WATER LEAK AROUND THE BASE OF THE EVAPORATOR. LUBRICATE THE "O" RING WITH FOOD GRADE LUBRICANT BEFORE RE–ASSEMBLING SHELL. IN RE–ASSEMBLING THE AUGER GEARMOTOR, THE HOLD DOWN CLAMPS MUST BE RIGHT AND SECURE. IN RE–INSTALLING THE EVAPORATOR SHELL, BE ABSOLUTELY SURE THAT THE "O" RING IS NOT PINCHED OFF AS THIS WOULD CAUSE A WATER LEAK AROUND THE BASE OF THE EVAPORATOR. LUBRICATE THE "O" RING WITH FOOD GRADE LUBRICANT BEFORE RE–ASSEMBLING SHELL.

13. Check for alignment of ice chute. Make sure chute gasket is not blocking path of ice flow.

14. Check bin thermostat operation. In the mid–range position the bin thermostat will open at 42° and has a 6° differential.

SANITIZING AND CLEANING PROCEDURE

1. Turn unit off at switch in upper rear right side panel.
2. Turn water off and remove water hose from bottom of float chamber inside of ice bin and allow to drain from the evaporator via the hose end; or
3. Remove float chamber cover and while holding float up to prevent more water from entering the float chamber, remove water hose from float chamber and proceed to drain the float chamber and evaporator.
4. With water still off, restore water hose to float chamber and add 1 oz. of ”sanitizer” (see note below). Turn water on.
5. Remove the bin door, float chamber cover, ice chute trim cover, two thumb screws and chute trim gasket.
6. Using soap, hot water, and a non–metallic bristle brush or plastic scouring pad, scrub the parts removed in step 4 as well as the interior of the ice bin, ice chute, thermowell, door tracks, ice bin top, and around bin opening.

NOTE: ***Use care when cleaning around thermowell sensing tube; the small capillary is easily broken.*** **Rinse all parts in clean water.**

7. In a 5 gallon bucket, mix a sanitizing solution of 1 oz. of sanitizer to 1 gallon of warm water (100° to 120° F).
8. Place all small, loose parts into the sanitizing solution and allow them to soak for 10 minutes.
9. Using a clean cloth and the sanitizing solution, wipe down the interior of the ice chute, thermowell door tracks, ice bin top, and around bin opening. Allow to air dry.
10. Reassemble the float chamber cover, ice chute gasket and cover, and bin door.
11. Turn unit switch on and allow machine to make ice for at least 1/2 hour then discard all of the ice. **DO NOT ALLOW ICE WITH SANITIZER IN IT TO BE USED.**

NOTE: ***APPROVED SANITIZER: Household bleach such as Hi–Lex or Clorox.***

WATER TREATMENT

During the freezing process, the impurities in the water have a tendency to be rejected.

However, the more dissolved solids in the water, the more troublesome the freezing operation will be. Bicarbonates in the water are the most troublesome of the impurities. These impurities will cause scaling on the evaporator, clogging of the float valve mechanism and other parts in the water system. If the concentration of impurities is high, wet mushy ice may be the result.

Parts of the ice maker, that are in contact with the water or ice, may corrode if the water is high in acidity. In some areas, water may have to be treated in order to overcome some of the problems that arise because of the mineral content.

IMI Cornelius has water filter/treatment systems available to control imputities found in your water supply. Contact your local dealer for more information.

WINTER STORAGE

If the unit is to be stored in an area where the temperature will drop below freezing, it is most important that all water lines be drained to prevent them from freezing and possible rupture.

To blow out the water line, disconnect the water supply at the cabinet inlet and use air pressure to force the water into the water reservoir pan. This can then be removed from the water pan.

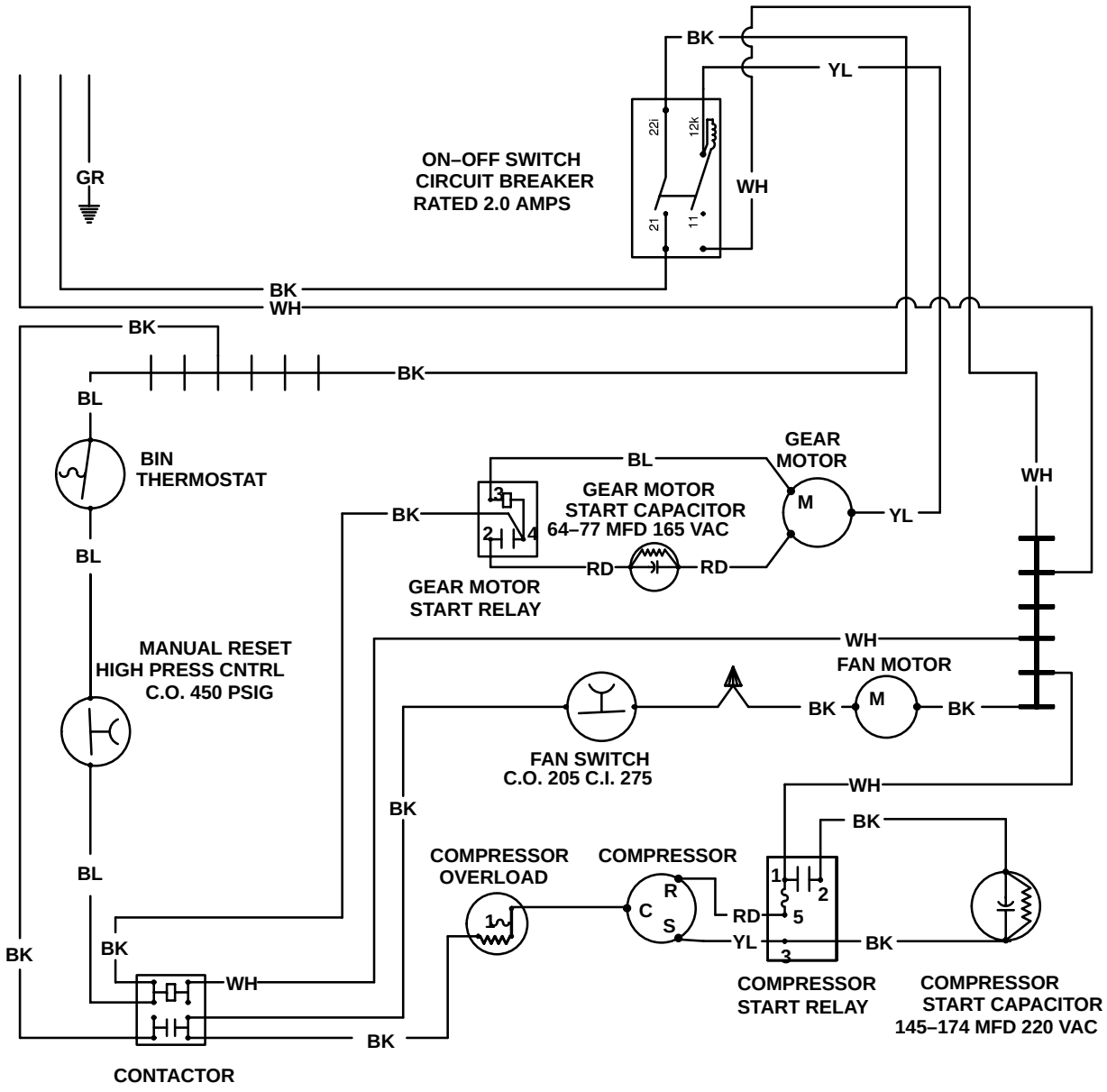
WATER COOLED CONDENSER – To remove water from condenser unhook water supply and attach compressed air hose. Start machine. As head pressure reaches the appropriate level opening the water regulating valve, the compressed air will force the water out. Do not let the machine operate longer than necessary.

CLEANING THE CONDENSER (AIR COOLED)

In order to produce at full capacity, the refrigeration condenser must be kept clean. The frequency of cleaning will be determined by surrounding condition. A good maintenance plan calls for an inspection at least every two months.

Remove the unit compartment grill at the front. With a vacuum cleaner, remove all accumulated dust and lint that has adhered to the finned condenser.

CAUTION: CONDENSER COOLING FINS ARE SHARP. USE CARE WHEN CLEANING.



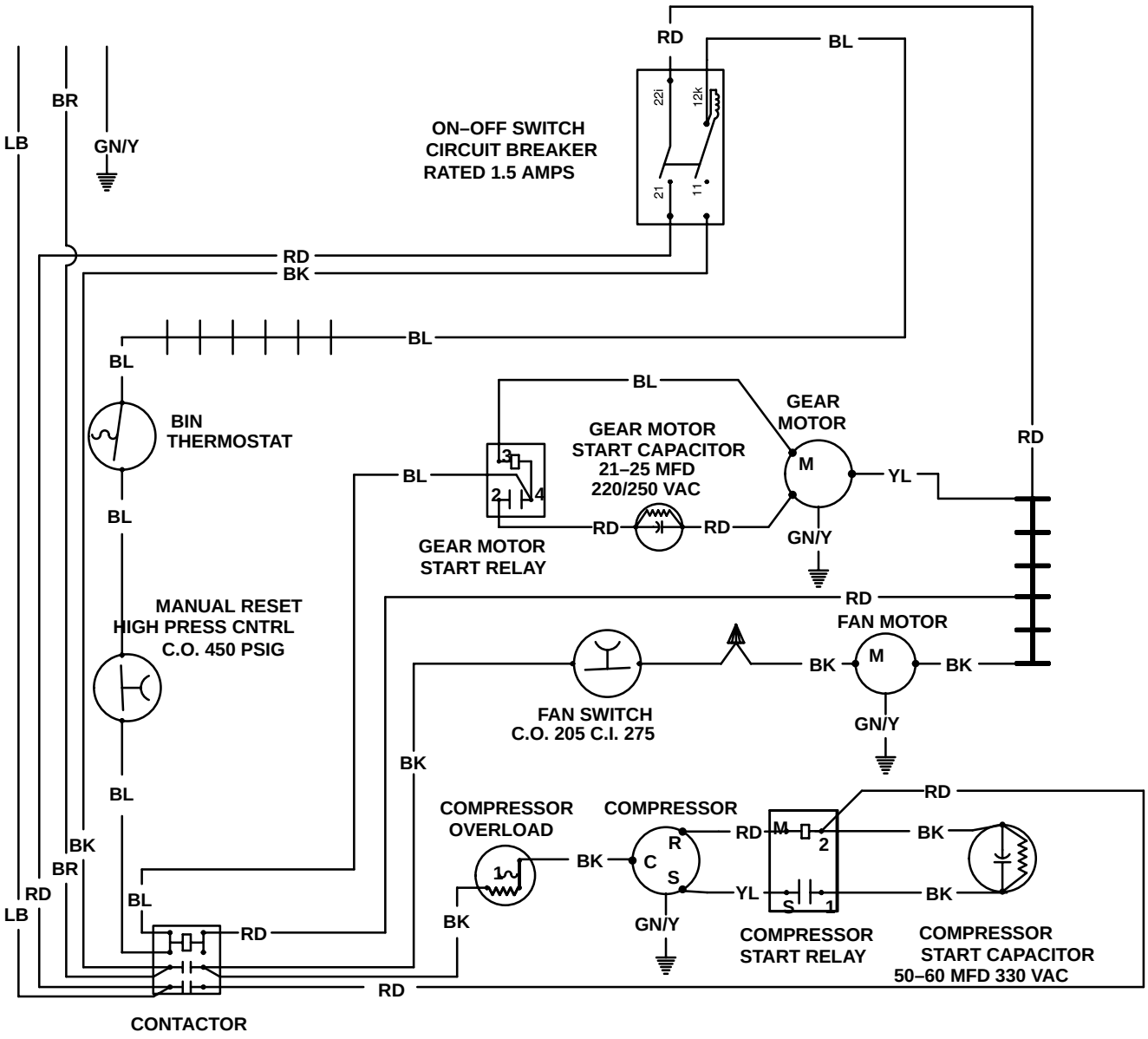
115 VOLTS 60 Hz

AF–200–P–SC–R

IMI CORNELIUS INC.

Part No. 161909061
Artwork 50922

FIGURE 7. WIRING DIAGRAM AF– 200–P-SC-R 115 VOLTS 60 HZ

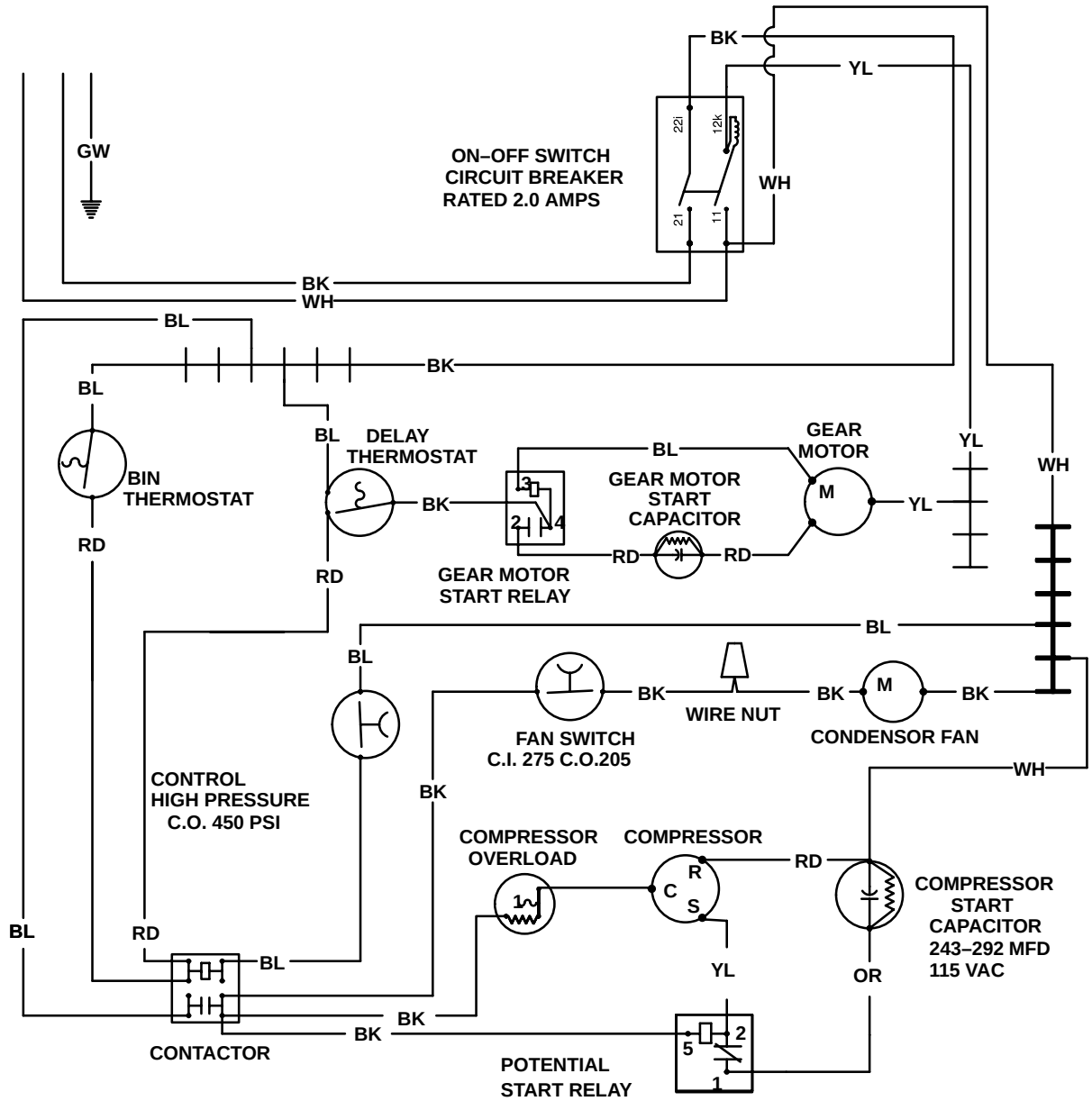


220 VOLTS 50 Hz

AF–200–P–SC–50–R

Part No. 161909064
Artwork 50929

FIGURE 8. WIRING DIAGRAM AF-200-P-SC-50-R 220 VOLTS 50 HZ



115 VOLTS 60 Hz

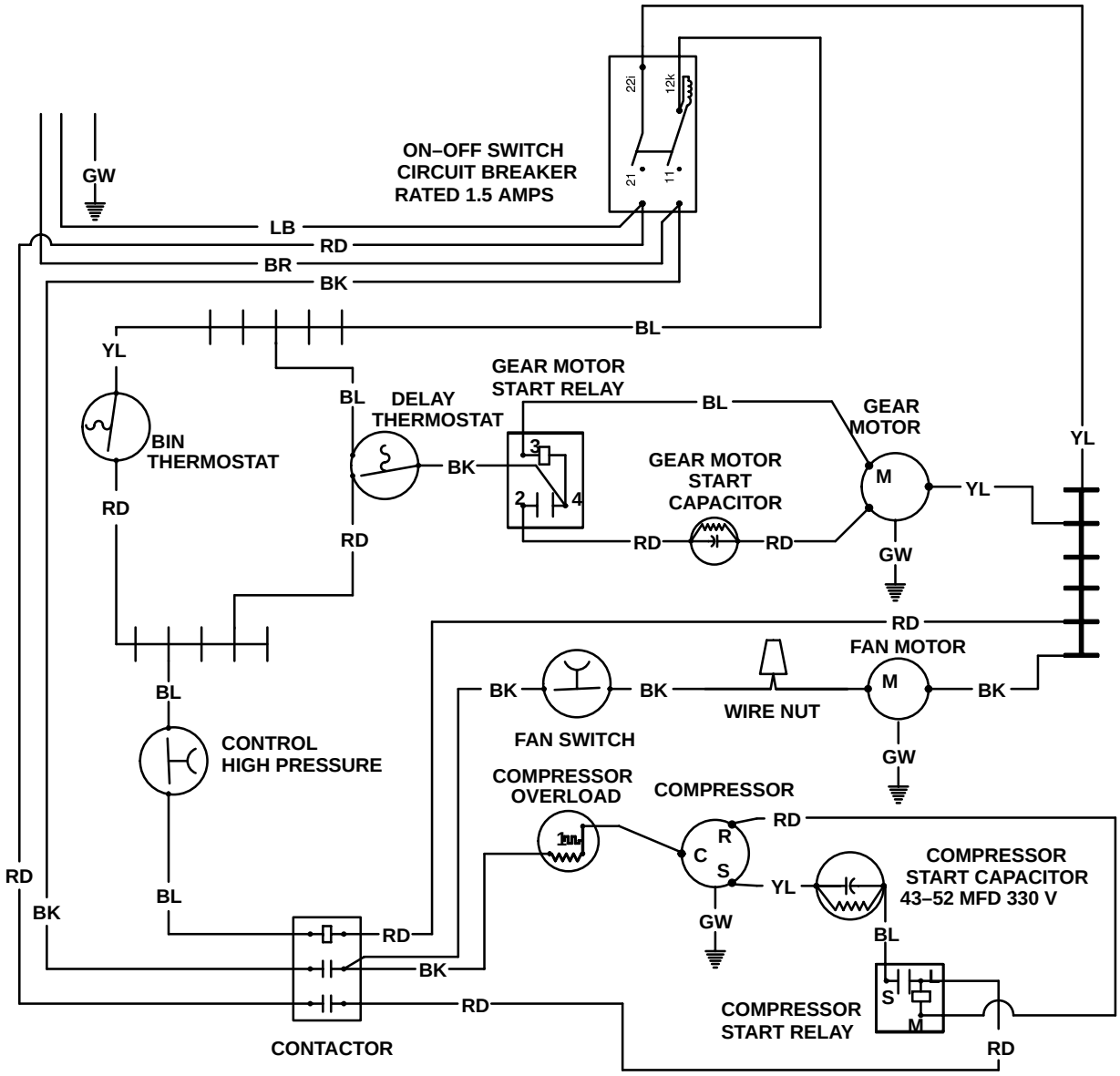
AF525–SC–R

AF725–SC–R

IMI CORNELIUS INC.

Part No. 161909062
Artwork 50923
Rev. B

FIGURE 9. WIRING DIAGRAM AF525–SC-R AND AF725-SC-R 115 VOLTS 60 HZ



220 VOLTS 50 Hz

AF/WF–525PSC–50–R

Part No. 161909063
Artwork 50925
Rev. A

FIGURE 10. WIRING DIAGRAM AF/WF-525PSC-50-R 220 VOLTS 50 HZ

SERVICE ANALYSIS

Trouble		Probable Cause		Remedy
UNIT WILL NOT RUN	A.	On–off switch in ”off” position.	A.	Turn switch to ”on”.
	B.	Defective on–off switch.	B.	Check and replace.
	C.	Blown fuse.	C.	Replace fuse and check for cause of blown fuse.
	D.	Thermostat set too warm for ambient.	D.	Adjust colder.
	E.	Power relay contacts corroded.	E.	Check and clean.
	F.	Defective thermostat.	F.	Check and replace.
	G.	Loose electrical connection.	G.	Check wiring.
	H.	Gearmotor overload protector has cut off machine.	H.	Turn switch to off then to on.
COMPRESSOR CYCLES INTERMITTENTLY.	A.	Low voltage	A.	Check line voltage
	B.	Dirty condenser	B.	Clean condenser
	C.	Air circulation restricted	C.	Remove restriction
	D.	Defective condenser fan motor	D.	Check and replace
	E.	Defective relay, overload protector or starting capacitor.	E.	Check and replace
	F.	Loose electrical connection	F.	Check wiring
MAKING WET ICE.	A.	Surrounding air temperature too high	A.	Correct or move unit
	B.	High water level in float reservoir	B.	Lower water level, see page 6
	C.	Dirty condenser	C.	Clean condenser
	D.	Faulty compressor	D.	Check and replace*
	E.	Refrigerant leak	E.	Check and repair
	F.	”O” ring leaking at bottom of evaporator shell	F.	Check and replace

***NOTE: Special care must be used with R404a (HP62) charged systems using (POE) Polyolester oil. The refrigeration system must not be open longer than 15 min., and the appropriate drier must be used due to the moisture absorption properties of the POE oil.**

UNIT RUNS BUT MAKES NO ICE.	A.	Leak in refrigerant system	A.	Check and repair
	B.	Moisture in system	B.	Check, dehydrate and add drier to system
	C.	No water	C.	Check water supply
	D.	”O” ring leaking at bottom of evaporator shell	D.	Check and replace ”O” ring
	E.	Compressor not running	E.	Check and replace ”O” ring

Trouble	Probable Cause	Remedy
WATER LEAKS.	A. Worn or bad float valve	A. Check and replace
	B. Float and arm assembly stuck	B. Check and replace
	C. ”O” ring leaking at bottom of evaporator shell	C. Check and replace
	D. Storage bin drain and tubing	D. Check and repair
EXCESSIVE NOISE OR CHATTERING.	A. Mineral or scale deposits on inside of evaporator shell	A. Remove and clean inside surfaces by immersing evaporator shell in ice machine cleaner
	B. Intermittent water supply	B. Check inlet water line
	C. Water level in float tank too low	C. Check and adjust water level
	D. Auger gearmotor end–play or worn bearings	D. Repair or replace
	E. Air lock in gravity water supply line from float tank to evaporator shell	E. Check and adjust warmer
MACHINE RUNS WITH FULL BIN OF ICE.	A. Storage bin thermostat set too cold	A. Check and adjust warmer
	B. Bin thermostat thermowell out of path of ice	B. Adjust thermowell
UNIT OFF ON RESET.	A. Ice jams up in evaporator shell	A. Clean inside surface of evaporator shell
	B. Bin thermostat will not shut–off machine. Set too cold.	B. Check and adjust or replace
	C. Auger motor has worn bearings	C. Check and replace
UNIT GOES OFF ON RESET.	A. Ice chute out of alignment, restricted ice flow out of evaporator section	A. Re–align
	B. Ice chute center separator bent restricting ice flow out of evaporator section	B. Replace ice chute
	C. Incoming water temperature too cold	C. Maintain temperature above 50°F
	D. Bin thermostat does not shut–off when bin is full of ice	D. Replace bin thermostat if necessary
	E. Mineral or scale deposits on inside of evaporator shell and evaporator	E. Inspect and clean
	F. Strips loose or missing on inside of evaporator shell	F. Inspect and replace evaporator shell if necessary
	G. Low ambient temperature in room where unit is located	G. Maintain temperature above 50°
	H. Gearmotor sticking which causes it to draw excessive amperage (over 2.0 amps)	H. Check amp draw of gearmotor with an amprobe (1.7 amps)

Trouble	Probable Cause	Remedy
UNIT GOES OFF ON RESET. (CONT'D)	I. Plugged expansion valve, causing low back pressure	I. Check back pressure, replace valve, evacuate and re–charge system, replace drier–strainer
	J. Slight leak, causing low back pressure	J. Check back pressure, find gas leak, repair leak, evacuate system, add drier and recharge
	K. Loose hold–down assy	K. Check and tighten or replace
	L. Auger worn excessively on the inside surfaces causing thicker flaked ice to be made	L. Replace auger
	M. Auger out of line causing excessive wear on the lower outside surface where it rubs against evaporator shell liner at the bottom	M. Replace auger and evaporator shell
	N. Broken auger	N. Replace auger
	O. Evaporator surfaces worn or gouged, causing thicker ice to be made	O. Inspect and replace evaporator if necessary
	P. Auger guide bushing worn down	P. Replace auger guide bushing (corkscrew type augers only)
	Q. Loose gearmotor mounting plate	Q. Check and tighten
	R. Low water level in float tank reservoir	R. Adjust float arm to maintain correct water level
	S. Worn thrust washer	S. Replace

ILLUSTRATED PARTS BREAKDOWN, SERIES 525–725

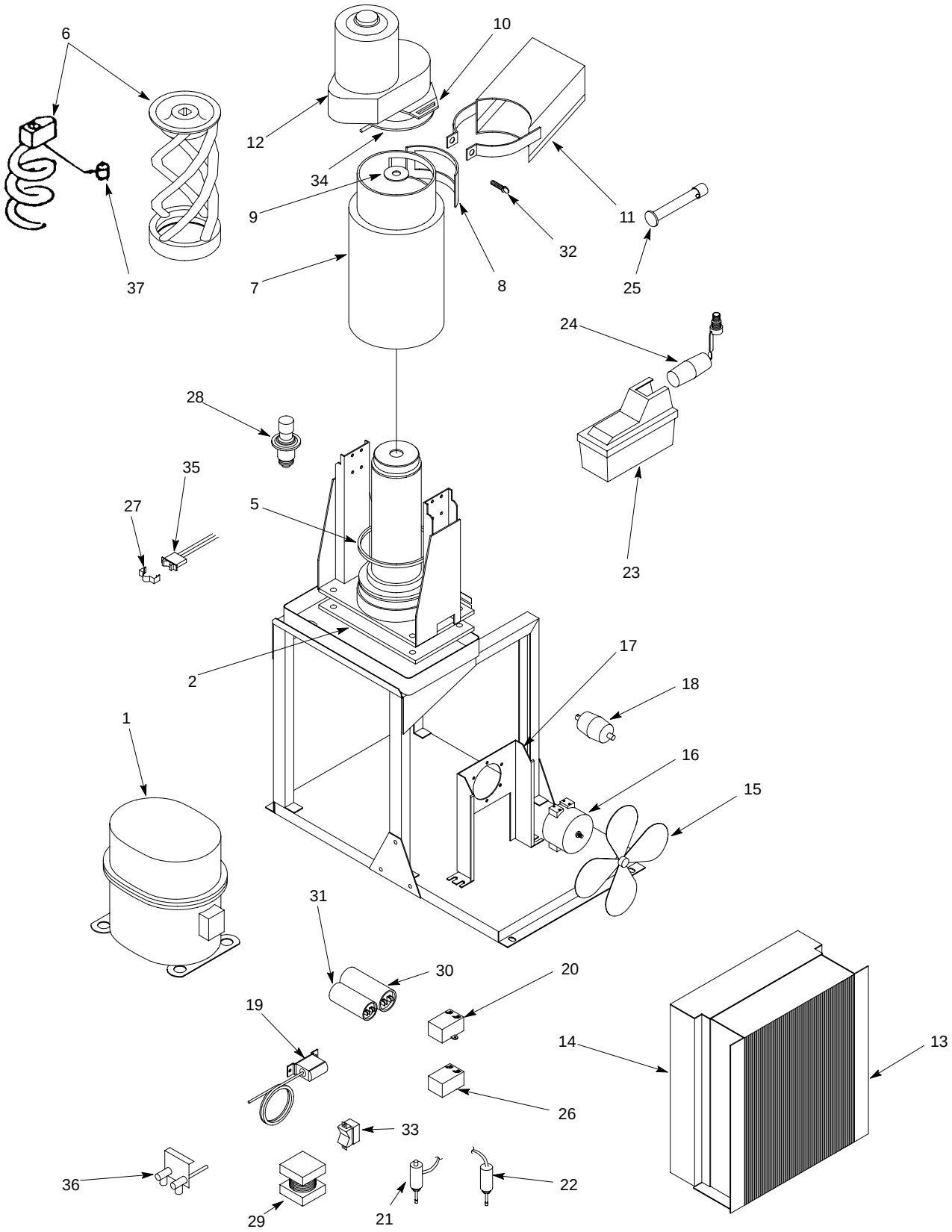


FIGURE 11. PARTS BREAKDOWN

PARTS LIST

ITEM NO .	DESCRIPTION	200	525	725
1	Compressor (115V 60HZ)	162964053	162964011	162964011
	Compressor (220V 50HZ)	162964054	162964038	———
2	Pad, Masonite	09115	36310	36310
3	Hold–Down, Evaporator	163277001	163277002	163277002
4	Evaporator	01501	41100	41100
5	O–Ring	00122	03120	03120
6	Auger	04062	03796	03796
7	Shell, Evaporator	01508	09182	09182
8	Gasket, Evaporator Shell	01916	08666	08666
9	Washer, Thrust	08043	8043	08043
10	Plate, Gearmotor Mounting	04060	03163	03163
11	Chute, Inclined Ice	166046000	08720	08720
12	Gearmotor (Von Weiss; 115V 60HZ)	164826001	164826001	164826001
	Gearmotor (Von Weiss; 220V 50HZ)	164826002	164826002	———
13	Condenser	02908	25446	25446
14	Shroud, Condenser	161890013	36074	36074
15	Blade, Condenser Fan	165595008	25578	25578
16	Motor, Condenser Fan (115V 60HZ)	23526	25242	25242
	Motor, Condenser Fan (220V 50HZ)	23645	300835000	———
17	Bracket, Condenser Fan Motor	00260	36075	36075
18	Drier	166184001	166184001	166184001
19	Thermostat, Bin	09570	09570	09570
20	Relay, Gearmotor Start (Von Weiss; 115V 60HZ)	161627001	161627001	161627001
	Relay, Gearmotor Start (Von Weiss; 220V 50HZ)	161627002	161627002	———
21	Control, High Pressure	165677006	165677006	165677006
22	Control, Fan Switch	165677005	165677005	165677005
23	Float Tank, Complete	21789	21789	21789
24	Float Valve Only	21924	21924	21924
25	Thermowell	20773	29541	29541
26	Relay, Power (115V 60HZ)	164884002	164884002	164884002
	Relay, Power (220V 50HZ)	40713	40713	———
27	Clip, Delay Thermostat	———	25871	25871
28	Valve, Automatic Expansion	161921004	161921004	161921004
29	Relay, Compressor Start (115V 60HZ)	161998016	161998008	161998008
	Relay, Compressor Start (220V 50HZ)	161998017	161998011	———
30	Capacitor, Compressor Start (115V 60HZ)	161165015	161165007	161165007
	Capacitor, Compressor Start (220V 50HZ)	161165016	161165010	———
31	Capacitor, Gearmotor Start (Von Weiss; 115V 60HZ)	161165000	161165000	161165000
	Capacitor, Gearmotor Start (Von Weiss; 220V 50HZ)	29519	29519	———
32	Screw, Wing	00890	00890	00890
33	Switch, On–Off/Circuit Breaker (115V 60HZ)	166220001	166220001	166220001
	Switch, On–Off/Circuit Breaker (220V 50HZ)	166220000	166220000	———
34	Disc, Centering	———	20956	20956
35	Thermostat, Gearmotor Delay	———	25864	25864
36	Valve, Refrigeration Service	162978003	162978003	162978003
37	Bushing, Auger Guide	02040	———	———

CABINET PARTS LIST

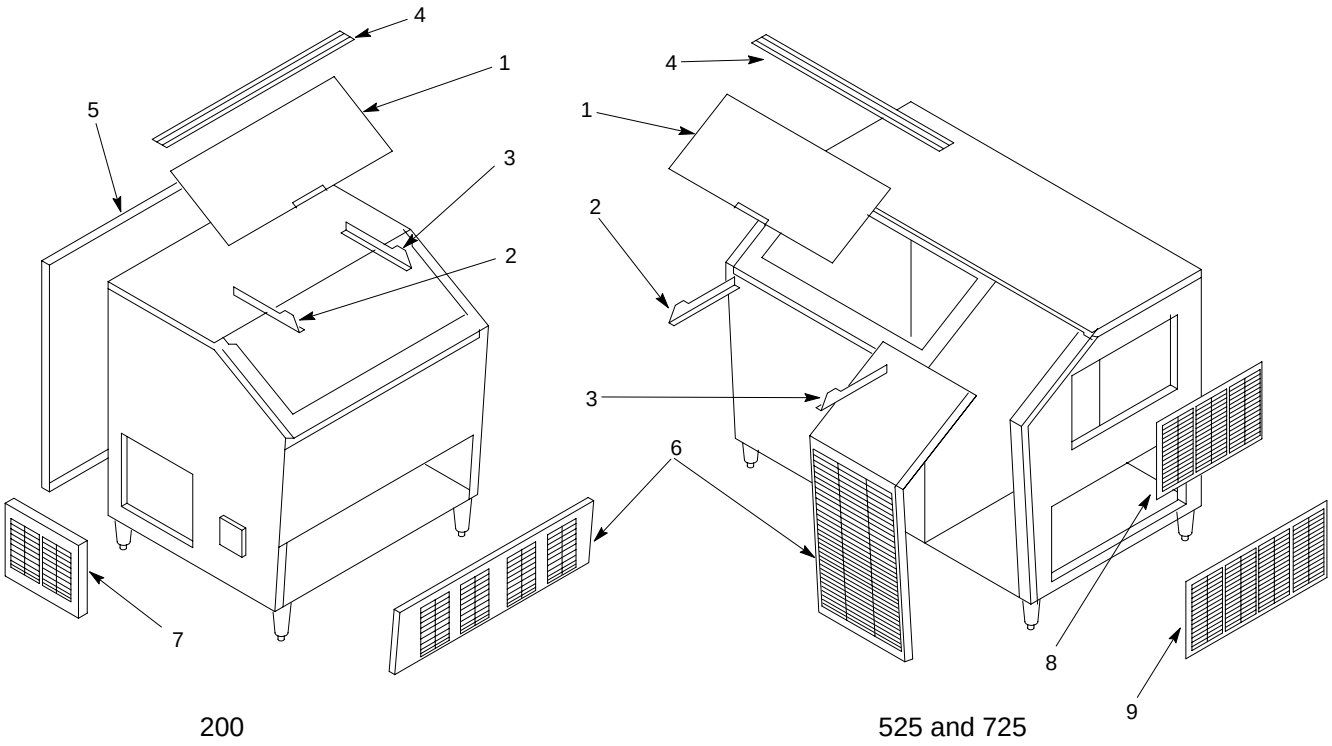


FIGURE 12. CABINET PARTS BREAKDOWN

ITEM NO .	DESCRIPTION	AF200PSCR AF200PSC50R	AF200SSCR	AF525PSCR AF525PSC50R	AF525SSCR	AF725PSCR
1	Bin Door	09120	09120	09120	09120	36555
2	Door, Track, LH	25007	25007	25007	25007	25007
3	Door, Track, RH	08824	08824	08824	08824	08824
4	Door Trim	09112	09112	09112	09112	08681
5	Back Panel	163278001	25043	N/A	N/A	N/A
6	Front Panel	163275002	25853	163283002	26857	163283001
7	Side Louvered Panel	163275013	163275014	N/A	N/A	N/A
8	Upper Louvered Access	N/A	N/A	163275003	25042	163275003
9	Lower Louvered Access	N/A	N/A	163275001	24154	163275004

CORNELIUS LIMITED COMMERCIAL WARRANTY PLAN
TO THE ORIGINAL OWNER OF A CORNELIUS COMMERCIAL FLAKE ICEMAKER

This warranty applies to Icemakers installed within the United States, Canada, Mexico and Puerto Rico only.

For warranty information outside the U.S., Canada, Mexico and Puerto Rico, contact your nearest IMI Cornelius Sales Office.

PARTS WARRANTY PERIOD

IMI CORNELIUS INC., hereinafter referred to as CORNELIUS, warrants to the original owner of a new CORNELIUS commercial flake ice machine ("Machine") who buys solely for commercial uses, that the Machine shall be free from defects in material and/or factory workmanship if properly installed, operated and maintained, under normal and proper use and service conditions with competent supervision. The parts warranty period is two years (24 months) from the date of installation or 27 months from the date of shipment by CORNELIUS whichever time period elapses first. With respect to compressor and the evaporator, and the evaporator only for refrigeration leaks and restrictions which would effect the normal operation of the unit, the warranty period will be five years (60 months) from the date of installation or 63 months from the date of shipment by CORNELIUS whichever time period elapses first. The obligation of CORNELIUS under this warranty is limited to repair or replacement (at the option of CORNELIUS) FOB factory in Mason City, Iowa of the part (or Parts) of any Machine that is proven defective.

LIMITED LABOR WARRANTY PERIOD

In addition to the parts warranty, CORNELIUS will pay scheduled straight time labor to repair or replace a defective component when failure occurs within one year (12 months) from the date of installation or 15 months from the date of shipment by CORNELIUS whichever time period elapses first. With respect to the compressor, evaporator, refrigeration condenser, condenser fan motor, and auger gearmotor, the labor warranty period will be two years (24 months) from the date of installation or 27 months from the date of shipment by CORNELIUS whichever time period elapses first. Time and rate schedules for labor compensation will be published periodically by CORNELIUS. **Additional expenses including but not limited to travel time, truck charges, overtime charges, material cost, accessing or removal of the ice machine, normal prescribed maintenance cleaning, adjustments, and ice purchases are the responsibility of the original owner.**

No parts warranty or labor allowance on the motor compressor assembly will apply when the ice machine's refrigeration system is modified with a condenser heat reclaim device, or parts and assemblies not provided by CORNELIUS, unless CORNELIUS provides approval, in writing, for these modifications for specific locations.

The parts warranty shall not apply when destruction or damage is caused by alterations, unauthorized service, using other than factory authorized replacement parts, risks of transportation, accidents, misuse, damage by fire, flood or acts of God. No components or assembly from which the serial number or identification number has been altered or removed will be covered. Any defective parts to be repaired or replaced must be returned to us through a CORNELIUS distributor/dealer, transportation charges prepaid, and they must be properly sealed and tagged. The serial and model number of the Machine and the date of original installation of such Machine must be given. The warranty of repaired or replaced parts will not extend beyond the period of the original warranty. The decision of the CORNELIUS Service Department regarding the warrantability of parts and eligibility for the labor allowance will be final.

No representative, distributor/dealer or any other person is authorized or permitted to make any other warranty or obligate CORNELIUS to make any other warranty or obligate CORNELIUS to any liability not strictly in accordance with this policy. This warranty is in lieu of all other warranties expressed or implied and of all other obligations or of liabilities on our parts.

OUR LIABILITIES ARE LIMITED SOLELY AND EXCLUSIVELY TO REPAIR OR REPLACEMENT OF THE DEFECTIVE PRODUCT. WE ARE NOT LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND WHATSOEVER. In those jurisdictions where liability for damages cannot be disclaimed, original purchaser's recovery shall not exceed the cost of the warranted product.

Except for descriptions of size, quantity and type, which may appear on CORNELIUS product with specifications of certain industry, government or professional organizations standards which may appear as product information disclosures in CORNELIUS literature and other documents from time to time, THIS WARRANTY IS IN LIEU OF AND EXCLUDES ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OR MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

CORNELIUS MAKES NO WRITTEN WARRANTY TO ANY PURCHASER WHO BUYS FOR PERSONAL, FAMILY OR HOUSEHOLD USE.

IMI CORNELIUS INC.
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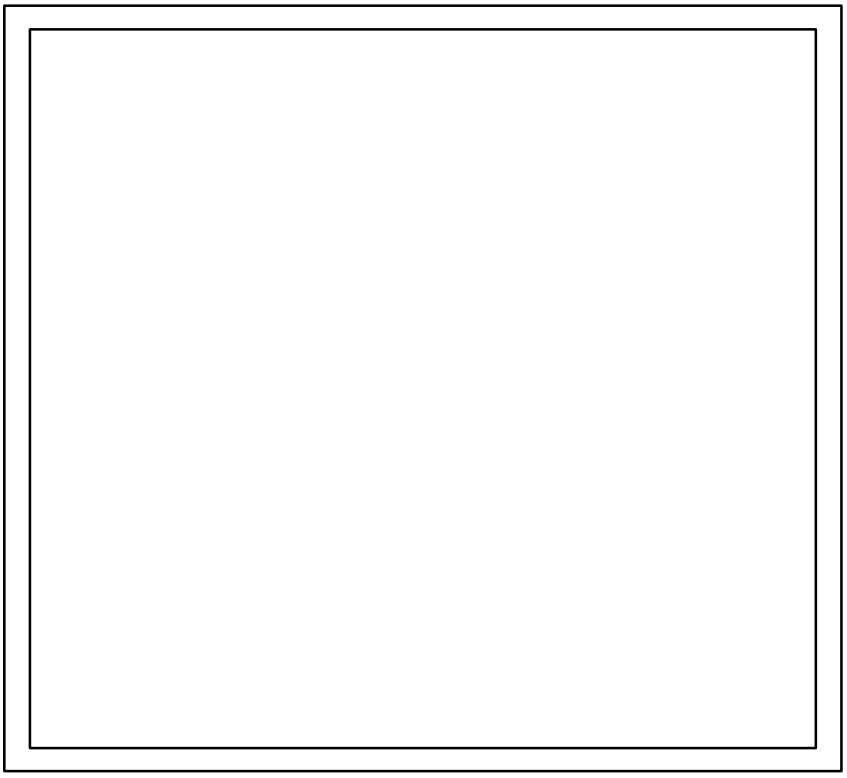
ANOKA, MINNESOTA 55303-6234

P/N 163238002
Effective March. 1, 1996
Starting with Production
Serial
Number Code 9603



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