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INTRODUCTION, INSPECTION UPON RECEIPT , PROPER LOCATION CLEARANCE, AND INITIAL SET-UP

Introduction -

Hussmann HGL-TS/BS models are self-contained, low temperature, vertical display merchandisers for ice cream and frozen foods. Design features include heated glass doors for fog free visibility, automatic defrost, efficient foamed in place non-CFC insulation, cord connection for 208-230 volt application and balanced refrigeration systems for energy saving performance.

Inspection upon receipt -

Upon receipt of the cabinet, carefully examine the crating for damage. If crate is damaged, make a note on the delivery ticket before signing. Carefully remove shipping crate and examine cabinet for "concealed" damage. If damage is found, contact the delivery carrier immediately and have his agent prepare an inspection report for the purpose of filing a claim. THIS IS YOUR RESPONSI-BILITY.

Proper Location & Clearance -

Avoid locating the cabinet where direct sunlight would shine into the fixture or where drafts from air conditioning grills, fans and open doors could affect its operation.

Because the condensing unit is located at the top of the HGL-TS, at least twelve (12) inches of clearance should be allowed at the rear of the cabinet and at the top of the case. This clearance is necessary to provide free air movement to and from the condenser for maximum operating efficiency. Because the condensing unit is located on the bottom of the HGL-BS, at least twenty four (24) inches of clearance should be allowed in front of the case and six (6) inches of clearance at the rear to provide the necessary free air movement to and from the condenser for maximum operating efficiency.

Initial Set-Up

Skid -

The skid should be left on the case until it is near its final location. The skid provides protection for both case and floor. The skid is removed by raising one end of the case approximately six inches. Block securely and remove the two skid bolts on the raised end. The procedure is repeated on the opposite end. When the skid bolts are removed, the case may be slid off the skid.

Leg Installation – Top Mounts Only

After the case is near its final location and the skid has been removed, the NSF approved legs should be installed. The legs are packaged inside the cabinet. Replace the tape and door blocks. To install legs, raise one end of the cabinet approximately eight (8) inches, block securely, and install two legs. The leg mounting plates are factory installed and contain a $\frac{1}{2} \times 13$ tapped hole to mate with the leg assembly. The procedure is repeated on the opposite end. The 3-door requires legs in the center. With cabinet legs installed, the cabinet should be positioned in its final location and leveled.

The cabinet is leveled by turning the bottom section of each leg. The self-closing doors require the cabinet to be properly leveled. End to end leveling will make the door (s) close with uniform speed and tightness. A slight pitch from front to rear is desirable. THE CABI-NET BACK SHOULD NEVER BE HIGHER THAN THE FRONT.

Leveling & Sealing – Bottom Mounts Only

The case can be leveled by shimming under the cabinet base frame, or by installing optional levelers. The self-closing doors require the cabinet to be properly leveled. End to end leveling will make the doors close with uniform speed and tightness. A slight pitch from front to rear is desirable. Once level the case should be sealed to the floor as shown in the following drawing, using an NSF approved material such as General Electric RTV-102 silicone sealer or an equivalent.



Conensate Pan -

An electrically heated (300W, 208-230v) condensate pan is provided to evaporate the defrost water. The heated condensate pan slides onto the slide plate on the cabinet bottom on both the TS and BS cases. The pan is removable for cleaning. A vinyl drain tube is provided for connection to the heated condensate pan. The drain must be trapped to guard against drain line freezing and for good sanitation practice.

Bottom Louvered Panel Removal -

The louvered panel provides access to the condensing unit and the electrical box. Remove panel by removing shipping screw (s) at bottom and lifting up and pulling forward. Remove shipping screw on electrical box to allow the electrical box to slide out for servicing.

Top Decorative Panel Removal -

The top decorative panel is removed by lifting up and pulling forward.

<u>Compressor</u> –

The compressor is mounted on springs and banded for shipping purposes and this band needs to be cut upon installation. Do not loosen the compressor mounting bolts, as these are factory pre-set for proper riding on the springs.

<u>Shelves</u> –

Each cabinet is provided with 4-cantilever shelves per door that are adjustable on 1-inch increments and are tiltable. Each cabinet also has one bottom shelf per door. These shelves have one inch legs to allow proper airflow in the cabinet. Behind the shelves are wire flue spacers which also allow for proper airflow. All shelves and flue spacers are white, epoxy coated for durability and ease of cleaning. Shelves should be adjusted to desired operating height.

When loading product into the cabinet, care should be taken not to load product so that it touches the evaporator coil cover, also, do not extend product past the front edge of the shelf. Extending past the edge will seriously effect internal air flow through out the cabinet.

Shelves are UL rated for a maximum load of 123 lbs. <u>DO NOT OVERLOAD SHELVES.</u>

During the defrost cycle, the cover gets warm and some product softening may occur if product is touching the cover.

Air Distribution & Rear Flue Spacer -

Air is drawn through the evaporator from front to rear and is discharged down the back wall, returning up the face of the glass door to the return air grill.

Electrical Connections, Volts, Amperage and Ship Wt.

The HGL cases are supplied with a supply cord as charted below with a grounding prong for operation on 208-230 power supplies. Do not remove the grounding prong under any circumstances.

> **NOTE:** Connecting this unit to any electrical supply other than specified on the serial plate will void the warranty and may result in serious damage to the unit. The cabinet should be supplied with its own service.

Model	Cord Amperage	Plug Nema Designation
HGL-1-BS/TS	15	6 – 15 P
HGL-2-BS/TS	15	6 – 15 P
HGL-3-BS/TS	20	6 – 20 P

Electrical -

	Unit			Run		Ship
	H.P.	HZ/PH	Volts	Amps	Fuse Size	Wt.
1-BS	3/4	60/1	208-230	9.0	15 amp	667
2-BS	1	60/1	208-230	9.5	15 amp	936
3-BS	1 1/2	60/1	208-230	12.5	20 amp	1225
1-TS	3/4	60/1	208-230	9.0	15 amp	667
2-TS	1	60/1	208-230	9.5	15 amp	875
3-TS	1 1/2	60/1	208-230	12.5	20 amp	1146

Rear wire flue spacer must be in place as this forms a discharge air flue at the back of the cabinet.

Capacities -

Model		RATING T	EMPS °F	
	BTU/HR	EVAP	COND	AMB
HGL-1-BS/TS	3100	-20	110	90
HGL-2-BS/TS	4160	-20	110	90
HGL-3-BS/TS	5900	-20	110	90

The HGL cases use R-404A refrigerant. Check the serial plate for the specific refrigerant charge used. The serial plate is located in the upper left-hand corner of the case interior. It has all the pertinent information needed for proper electrical installation. The serial plate should not be removed for any reason.

INITIAL START-UP AND LOADINGGENERAL UPKEEP AND CLEANING OPERATION AND MAINTENANCE

Start-Up and Loading -

- ✓ After the wiring has been completed, set the defrost timer for the correct time of day, making sure the defrost pins are secure in the face of the clock. HGL cabinets are factory set for 2 defrost periods in 24 hours (6 a.m. and 10 p.m.)
- ✓ Cut the band holding the compressor in place during shipping.
- ✓ Check the cabinet thoroughly for loose nuts and bolts and electrical connections. Inspect the refrigerant lines for any visible damage or chafing.
- ✓ Replace the electrical box cover.
- ✓ Start the cabinet and allow to pull down to operating temperature before loading.

General Upkeep & Cleaning -

To insure good sanitation, appearance, and minimum maintenance, the cabinet should be cleaned and washed regularly as use demands. Clean with mild detergent and warm water. . Do not use an abrasive cleaner or steel wool, as they will mar the finish.

Under normal conditions, after the cabinet is installed and running, very little maintenance should be required. However, the following list of housekeeping practices will assure trouble-free operation.

- Check operation of condenser fan motors.
 Fan blades must turn freely.
- Check drain pan and heater to prevent accidental overflow.
- Make sure doors are closing properly and that the gaskets seal.
- Make sure all evaporator fan motors are running. These can be seen through grill inside cabinet.
- Clean the cabinet with a mild detergent. This will insure good sanitation, and minimize maintenance. Never use an abrasive as this could mar the finish.

 A regular program should be set up for the cleaning of the fin-and-tube condenser. Normally, this cleaning is required every 3 to 4 months, but the individual store application may shorten or lengthen this time period. Dust and dirt accumulation can cause serious efficiency loss. On BS cases (bottom mounts) access is gained to the unit area by removing the louvered grille. The unit slides forward to facilitate cleaning and for service. Care should be taken when pushing the unit back in place to insure that the pullout coil does not become kinked or damaged in some way.

Power Switches -

The power switch is located at the electrical box, which is behind the top decorative panel (TS models) or bottom louvered panel (BS models). The switch will shut off all power to the case.

Before any service is performed on this piece of equipment, make sure the power supply to the cabinet is disconnected.

Temperature Control -

The electronic temperature control is located in the electrical box. The temperature control does not have an 'OFF' position. Adjustments may be made by turning the knob on the face of the dial. Turning it counter clockwise will give colder temperatures. There is also an adjustable temperature differential (the difference between the cut-in temperature and the cut-out temperature) located on the back of the temperature control cover. When adjusting the differential, the temperature setting may also have to be adjusted. The control has a range of -20° F to $+100^{\circ}$ F with a differential of 1° to 30° . It is factory set for approximately -18° F with a 8° differential. The temperature should be checked with a thermometer other than the case thermometer after it is running to insure that the case is running at the proper temperature for the product.

A picture of this Electronic Temperature Control board layout and terminal location is at the back of this book.

Electrical Enclosure -

The electrical enclosure contains the



defrost time clock and temperature control. For servicing convenience, access is gained by removing the access panel and electrical box cover. The cabinet supply breakers should be disconnected before removing the enclosure cover.

Defrost Time Clock -

The timer is factory pre-set for two (2) defrost cycles per day at 6:00 a.m. and 10:00 p.m. with a 40 minute failsafe. The timer must be adjusted to the proper time of day when the cabinet is started. The timer is adjusted by turning the knurled adjustment knob in the center of the dial face counter-clockwise until the time indicator corresponds with the correct time of day. The defrost pins should be checked for tightness. The timer the cabinet has the lowest usage.will require readjusting after a power failure or the cabinet supply is turned off for extended periods of time. If an additional defrost is required due to ambient or cabinet usage conditions, do not put a defrost during the middle of the day. Put any additional defrosts during the night or at a time when the cabinet has the lowest usage.

Defrost is time initiated and temperature terminated.

If the thermostat should fail, the timer is equipped with a failsafe set at 40 minutes that will allow defrost to terminate on time.

Thermometer -

The thermometer is located by looking through the right hand door onto the right hand end of the fan grill.

The Thermometer will also warm up rather rapidly when the case door is held open for a time such as when the case is being restocked or a shopper is making a decision on a product. After the door is closed it will take some time for the thermometer to pull back down to the case temperature. The thermometer and temperature control sense discharge air temp. which is 5-10° colder than the case temperature. The thermometer may be replaced by removing the two screws holding it to the evaporator fan grill. Lower the evaporator coil cover by removing the brass screws located at the two front corners of the cover, and backing out the screws along the front edge of the cover holding it to the grill. Follow the sensing lead to the center rear of the evaporator coil. Loosen the clip holding it to the bracket and slide the end of the lead out.

When installing the new thermometer be sure to run the lead of the new thermometer through the hole in the fan grill first. Finish assembly in reverse order. The same procedures should be followed in the event you wish to clean the end of the sensing lead.

Defrost Heater Thermostat -

The defrost heater thermostat is clamped to the evaporator outlet tube. It is a bi-metal thermostat that is tied in series with the evaporator fans for a delay and with defrost time clock solenoid to end defrost when the temperature has been satisfied. The evaporator fans will not come on until the thermostat senses 32° F and defrost will terminate when the stat senses 58° F.

Defrost Heater Replacement -

The defrost heaters are firmly embedded in the evaporator and held in place with spring clips. To remove the heater, first remove all the spring clips and pull the defective heater out of the slots in the evaporator, starting at the wire supply lead.

The replacement heater should be firmly seated in the slots by using a small block of wood and a mallet. After the new heater is in place, replace all of the spring retaining clips to assure heater retention. One lead of the defective heater may be used to pull the new leads through the cabinet to the respective terminals as marked on each lead.

<u>NOTE</u> - Care must be taken to make sure the drain stub is correctly inserted in the cabinet drain tube for proper drainage.

Lighting -

Electronically powered T-8 lamps located inside each doorway provide interior lighting. The tubes are enclosed in a patented lens system to maintain proper heat around the bulb for maximum light intensity and to protect the product in case of breakage. See the Anthony ELS instructions attached at the back of this booklet for lens removal.

Each HGL model has a convenient ON/ OFF switch so lights may be turned off to conserve energy during hours when the store is closed. The switch is located inside the cabinet above the left-hand door. This switch only controls the lights. 208-230 volt power must be shut off at the main power supply source located within the store prior to starting any service or maintenance work.

Light ballast are located in mullions of the door frames. See the Anthony ballast removal instructions at the back of the booklet.

Door Switches –

The switches at the top of the doorways operate the evaporator fan motors. These switches stop the fan motors when the doors are open. **Door and Frame Heaters** –

This cabinet is equipped with both frame and door heaters. These are thermostatically controlled and will not come on until the cabinet is at operating temperature. See door mfg instructions for heater replacement at the back of this booklet.

Alarm Thermostat (heater delay) -

The alarm (heater delay) thermostat is located on the top of the inner liner in the upper right hand corner behind the evaporator. The thermostat will not turn the heaters on until it senses 0° and in turn will turn the heaters off when it senses +18°F. This is so that unwanted heat will not be added to the case during defrost or if the case refrigeration system fails.

Expansion Valve Adjustment -

Expansion valve must be adjusted to fully feed the evaporator. Before attempting to adjust the valve make sure the evaporator is either clean or only lightly covered with frost, and that the cabinet is within 10° of its expected operation temperature. Adjust the expansion valve as follows:

Attach two sensing probes to the evaporator, one under the clamp holding the expansion valve sensing bulb and the other securely taped to one of the return bends two thirds of the way through the evaporator circuit. Some "hunting" of the expansion valve is normal. The valve should be adjusted so that during the hunting the greatest difference between the two probes is 3°F. Make adjustments of no more than one half turn of the valve stem at a time and wait for at least fifteen minutes before rechecking probe temperature and making further adjustments. Replace and tighten cover of the valve stem.

<u>Refrigeration</u> –

As stated previously, these cases are selfcontained systems featuring semi-hermetic compressors and thermostatic expansion valves. The condensers are of a fin-and tube construction and should be periodically cleaned to maintain efficient operation.

If it should become necessary to leak test the system; please adhere to the following no-tice:

BECAUSE OF CFC ATMOSPHERIC CON-SIDERATIONS BEING TAKEN TODAY, WE ASK THAT LEAK TESTING BE DONE WITH REFRIGERANT 22 MIXED WITH NI-TROGEN. IF THE CONDENSING UNIT NAMEPLATE DESIGNATES A REFRIGER-ANT OTHER THAN R-22 REMOVE ALL R-22 FROM THE IMMEDIATE AREA TO AVOID CONFUSION AFTER LEAK TEST-ING AND EVACUATING THE UNIT. RE-CHARGE THE UNIT WITH PROPER RE-FRIGERANT.

Leak Testing -

CAUTION

The test gas cylinder must be equipped

with a pressure gauge and regulator so that system test pressures do not exceed maximum allowable limits. Do not ever use anything other than an R-22/Nitrogen mixture for leak testing.

Attach a refrigerant test gas cylinder to your service manifold and connect the manifold to the charging port on the liquid line valve. Charge an R-22/Nitrogen mixture into the system, raising the pressure to the unit's nameplate for the low side and high side pressures. Using an electronic detector, carefully check the entire system for leaks. Take special care to inspect all brazed and flare connections.

Evacuation -

After the system is proven leak tight, thoroughly evacuate the system according to the following procedure:

- ✓ Discharge the refrigerant-nitrogen mixture, allowing it to blow from the system as rapidly as possible, into an empty cylinder. Be sure that all service valves and solenoid valves are open to allow all of the mixture to be discharged.
- ✓ Connect a deep-drain vacuum pump to both the high and low side of the system.
 Pull a vacuum on the system to at least 1500 microns.
- ✓ Break the vacuum by adding refrigerant into the system until the pressure is above 0 psig. Always charge the refrigerant line into the system through a new drier in the charging manifold line. A 16 cubic inch drier is sufficient for this purpose.

✓ Repeat steps 2 and 3 two more times, the third time evacuating the system to 500 microns.

Operational Data –

The following is typical data for HGL models based on lab tests, and may vary under field operating conditions. All data is based on a discharge air temperature of -25°F and a return air temperature of -10°F. See chart below

CASE MODELS	HGL-1/2	BS-TS	HGL-3-BS/TS
Ambient Temperature	75°F	80°F	75°F 80 °F
Head Pressure (psi)	230-240	235-245	230-240 235-250
Suction Pressure (psi)	5-6	5-7	6 - 8 $6 - 8$
Refrigerant	R-404A -		

RECEIVER -

The receiver should not be confused for a filter-drier or muffler. The receiver is in the liquid line after the condenser and just ahead of the filter-drier. The manufacturer may label the receiver as a muffler or a drier but it is in fact an empty shell.

<u>CRANKCASE PRESSURE</u> <u>REGULATOR</u> –

The HGL-1 and 2 cases employ a crankcase pressure regulator in the suction line. The CPR is set for 10 psi. The purpose of the valve is to maintain a low suction pressure on startup so that the compressor will start properly. On start-up, the valve will hold the suction pressure at the desired setting until the suction pressure has dropped below the setting, then the valve will open. If it becomes necessary to check or reset the setting, the case must be warm such as after a defrost cycle or from an initial warm case condition. Put a suction compound gauge on the compressor suction valve, start the compressor. If the pressure needs to be reduced turn the adjustment screw clockwise or counterclockwise to raise the pressure

DO NOT SET THE VALVE BASED ON THE NAMEPLATE AMPERAGE RATING AS THE PRESSURE SETTING WILL BE TOO HIGH AND THE COMPRESSOR WILL NOT START PROPERLY

TROUBLE SHOOTING, LIGHTING TROUBLE SHOOTING WARRANTY and ELECTRONIC LIGHTING SYSTEM INSTRUCTIONS

TROUBLE SHOOTING CHARTS

TROUBLE

PROBABLE CAUSE

SOLUTION

Compressor runs continu- ously, Product too warm	1. Short of refrigerant	1. Leak check. Change drier. Evacuate and re- charge		
	2. Inefficient compressor	2. Replace		
	3. Dirty condenser	3. Clean		
High head pressure	1. Cabinet location too warm	1. Relocate cabinet		
	2. Restricted condenser air flow	2. Clean condenser to re- move air flow restriction		
	3. Defective condenser fan motor	3. Replace		
	4. Air or non-condensable gases in system	4. Leak check., change drier, evacuate, and re- charge		
Warm storage temperatures	1. Temperature control not set properly	1. Reset control		
	2. Short of refrigerant	2. Leak check, change drier, evacuate, and re- charge.		

	4. Too much refrigerant	4. Change drier, evacuate, and recharge
	5. Low voltage. Compressor cycling on overload	5. Check power
	6. Condenser dirty	6. Clean
Compressor runs continuously Product too cold	. 1. Defective control	1. Replace
	2. Control feeder tube not in positive contract	2. Assure proper contract
	3. Short on refrigerant	3. Leak check, change drier, evacuate, and recharge
Compressor will not start, no noise	1. Blown fuse or breaker	1. Replace fuse or reset breaker
	2. Defective or broken wiring	2. Repair or replace
	3. Defective overload	3. Replace
	4. Defective temperature con- trol	4. Replace
	5. Power disconnected	5. Check service cord or wir- ing connections
Compressor will not start, cuts out on overload	1. Low voltage	1. Contact electrician
	2. Defective compressor	2. Replace
	3. Defective relay	3. Replace
	4. Restriction or moisture	4. Leak check, replace drier, evacuate and recharge
	5. Inadequate air over con- denser	5. Clean condenser

6. Defective condenser fan mo-	6. Replace
tor	
7. CRO not set properly	7. Reset to 10 psi.

Icing condition in drain pan	1. Low voltage	1. Check voltage at compressor
	2. Cabinet not level	2. Check front to rear leveling, adjust legs accordingly
	3. Defective drain tube heater	3. Replace
	4. Defective drain pan heater	4. Replace

TROUBLE SHOOTING LIGHTING SYSTEM

Lights won't start	1. Check light switch
	2. Check continuity to ballast
	3. Check to see if bulbs are inserted properly into sockets
	4. Check voltage
Lights flicker	1. Allow lamps to warm up
	2. Check lamp sleeve for cracks
	3. Check sockets for moisture and proper contact
	4. Bulb replacement may be necessary
	5. Check voltage
	6. New bulbs tend to flicker until used
Ballast hums	1. Check voltage
	2. Replace ballast

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This HGL case was manufactured in Gloversville, New York. Our phone #'s are (518) 725-0644 for New York residents, and toll free # 800-753-7790 for outside New York – should you have any further questions.

WARRANTY -

Please read carefully to assure prompt and accurate service

Ordering Replacement Parts –

- * Contact your nearest Hussmann Distributor.
- ✤ Always specify model and serial number of cabinet.
- If correct part number is not known, give a clear description of part itself and its function in the cabinet or remote unit.

Warranty Parts Procedure –

- Same as items above
- Give original installation date of cabinet and, if possible, forward a copy of the original invoice or delivery receipt.
- All shipments of in-warranty replacement parts will be invoiced from the factory until such time as the defective part is returned and proved to be defective by our Quality Control Department.
- **Contact your Hussmann Distributor for instructions on returning in-warranty parts.**
- Warranty parts must be returned to the factory within 30 days of date of failure to assure proper disposition.
- Lack of any of the above information may result in the shipment of the wrong part, or a delay in shipment.

Compressor Replacement Procedure –

- ***** Replacement compressors will not be shipped from the Hussmann factory. They may be obtained from your nearest Copeland Wholesaler.
- Your wholesaler will replace, free of charge, any compressor found to be defective within twelve months of installation, not to exceed twenty months from the date of manufacture, as determined by the compressor serial number on the compressor serial plate.

For any defective compressor beyond the twelve or twenty month time period, a salvage value credit will be given too partially offset the invoice for the replacement.

To obtain reimbursement forward to: Hussmann Corporation 140 East State Street Gloversville, NY 12078

the following information:

- 1. The cabinet model and serial number
- 2. A copy of the wholesaler's invoice, along with a copy of the salvage value credit.

WIRING DIAGRAMS ARE ATTACHED AT THE BACK OF THIS BOOKLET

Electrical Components Replacement List

MODEL	HGL-1-TS/BS	HGL-2-TS/BS	HGL-3-TS/BS	8
Compressor (Cope- land)	KAAB-007E-CAV	KALB-010E-CAV	KALB-015E-	CAV
Condenser Fan Motor Evaporator Fan Moto	r EMS ESPL25EM23 or Morrill SPB5EM2	EMS ESPL25EM2 Morrill SPB5EM2	3EMS ESPL25 Morrill SPB5F	EM23 EM2
Light Ballast Huss.Pt.	#	6-S-183-1 (1)	6-8-183-1 (1)	6-S-183-2 (2)
Fluorescent lamps	FO4OW-T8-60"	6-S-183-2 (1) same	same	

ADDENDUM TO HGL/HGM

COMMERCIAL DOOR

LITERATURE



HOLD OPEN REPLACEMENT

- Remove door from frame.
 - a. Holding the top hinge pin with a 5/16" wrench loosen the lock nut with a 11/16" wrench. This will release the spring tension.
 - b. Open the door and remove the two screws from the door plug. Then unplug the cord from the frame.
 - With the door open about 90°, lift the hold open cam off the slide pin.
 - d. Lift the door up and out off the bottom hinge pin.
- **2** Use a flat screwdriver to remove retaining clip allowing cam to slide off.

CAUTION: NOTE ORIENTATION OF CAM POSITION.

3 Remove the pivot pin from the door and the slide pin from the frame with a 3/4" wrench.

CAUTION: NEVER REMOVE MORE THAN ONE PIN AT A TIME FROM EITHER THE DOOR OR FRAME.

- 4 Hand start the new pivot pin and the new slide pin and tighten both parts with a 3/4" wrench to approximately 25 foot pounds.
- 5 If bottom hinge bushing is black, do not remove. If it is not black, remove, slide spacer washer on, hand start hinge bushing and tighten with a 3/4" wrench to approximately 25 foot pounds.
- Slide cam onto pivot pin, (orientation must be the same as before removal with offset toward frame). Hold cam in position and snap retaining clip in place with pliers.



- 7 Remove existing nylon washer and replace with the new piece.
- 8 Replace door by engaging top hinge pin into top bushing of door and lift door over bottom hinge pin allowing door to drop into proper position.

CAUTION: MAKE SURE NYLON WASHER IS IN PLACE ON BOTTOM HINGE PIN.

g To adjust door tension.

- a. Using a 5/16" wrench on top hinge pin, turn toward direction of door closing to increase tension.
- b. Tighten top lock nut with a 11/16" wrench.

Installation is now complete, open and close door to check operation.



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TOP HINGE BUSHING REPLACEMENT

- Remove door from frame as follows:
 - a. Holding the top hinge pin with a 5/16" wrench loosen the 11/16" lock nut. This will release the spring tension.
 - b. Open the door and remove the two screws from the door plug. Then unplug the cord from the frame.
 - c. With the door open about 90°, lift the hold open cam off the slide pin.
 - d. Lift the door up and out off the bottom hinge pin.
- **2** Remove the retainer ring from the top hinge hole by compressing the open ends together using retainer ring pliers.
- Pull the top hinge bushing from the door. If it is still attached to the torque rod, do not pull it more than 6" out of the door. If the bushing is not attached to the torque rod, pull the torque rod from the top hinge hole but not more than 6".
- To replace top hinge bushing, hold the torque rod and pull old bushing off. If bushing is black, remove old spring from the torque rod and slide new spring in place. If bushing is beige, do not remove spring. To install new top hinge bushing align square of torque rod to square hole in top hinge bushing and tap onto torque rod.
- 5 The torque rod and hinge bushing can now be pushed back into the door. Top hinge bushing should go low enough to expose retainer clip groove. If groove is not visible, then the top hinge bushing is not far enough on the torque rod. Once the groove is visible, then replace the retainer ring by compressing the open ends.

NOTE: Before replacing door remove existing nylon washer from bottom hinge pin and install new washer in place.

- Replace door by engaging top hinge pin into top bushing of door and lift door over bottom hinge pin allowing door to drop into proper position.
- To adjust door tension.

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- a. Using a 5/16" wrench on top hinge pin, turn toward direction of door closing to increase tension.
- b. Tighten top lock nut.



COMMERCIAL REFRIGERATOR DODR COMPANY





FIGURE 3

FIGURE 4

÷.,

DOOR REMOVAL

- 1 Remove door plug connected to frame (Fig. 1).
- 2 Loosen the top hinge pin locknut and allow hinge pin to move freely.
- Opening door to a 90 degree position, disconnect the hold open cam (Fig. 2) by lifting the cam over the slide pin.

With door open, lift up and pull out on the bottom of the door. Once the bottom of the door is off the bottom hinge pin and away from the frame, pull down on the

door to disengage the door from the top hinge pin.
 '(Fig. 4 A-C). CAUTION: Do not lose the nylon washer which rests on the bottom hinge pin.

CAUTION:

TO AVOID INJURY, BE SURE ALL ELECTRICAL POWER IS DISCONNECTED FROM FRAME AND DOOR WHILE SERVICING OR ADJUSTING.

DOOR INSTALLATION

- **1** Hold door at a 90 degree angle to frame and lift door into top hinge pin.
- 2 Seat door on bottom hinge pin. Make sure nylon washer is in place and attach hold open cam to slide pin.
- **3** Tighten upper hinge pin locknut after adjusting door tension (see door tension adjustment on page 3).
- 4 Attach and secure the door plug.







