



ICE MAKER - WM600 AND CM600

Service Manual

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The products, technical information, and instructions contained in this manual are subject to change without notice.

These instructions are not intended to cover all details or variations of the equipment, nor to provide for every possible contingency in the installation, operation or maintenance of this equipment. This manual assumes that the person(s) working on the equipment have been trained and are skilled in working with electrical, plumbing, pneumatic, and mechanical equipment. It is assumed that appropriate safety precautions are taken and that all local safety and construction requirements are being met, in addition to the information contained in this manual.

This Product is warranted only as provided in Cornelius' Commercial Warranty applicable to this Product and is subject to all of the restrictions and limitations contained in the Commercial Warranty.

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Contact Information:

To inquire about current revisions of this and other documentation or for assistance with any Cornelius product contact:

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This document contains the original instructions for the unit described.

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SAFETY INSTRUCTIONS

READ AND FOLLOW ALL SAFETY INSTRUCTIONS

Safety Overview

- Read and follow **ALL SAFETY INSTRUCTIONS** in this manual and any warning/caution labels on the unit (decals, labels or laminated cards).
- Read and understand ALL applicable OSHA (Occupational Safety and Health Administration) safety regulations before operating this unit.

Recognition

<i>Recognize Safety Alerts</i>
 <p><i>This is the safety alert symbol. When you see it in this manual or on the unit, be alert to the potential of personal injury or damage to the unit.</i></p>

DIFFERENT TYPES OF ALERTS

DANGER:

Indicates an immediate hazardous situation which if not avoided **WILL** result in serious injury, death or equipment damage.

WARNING:

Indicates a potentially hazardous situation which, if not avoided, **COULD** result in serious injury, death, or equipment damage.

CAUTION:

Indicates a potentially hazardous situation which, if not avoided, **MAY** result in minor or moderate injury or equipment damage.

SAFETY TIPS

- Carefully read and follow all safety messages in this manual and safety signs on the unit.
- Keep safety signs in good condition and replace missing or damaged items.
- Learn how to operate the unit and how to use the controls properly.
- **Do not** let anyone operate the unit without proper training. This appliance is **not** intended for use by very young children or infirm persons without supervision. Young children should be supervised to ensure that they do not play with the appliance.
- Keep your unit in proper working condition and do not allow unauthorized modifications to the unit.

QUALIFIED SERVICE PERSONNEL

WARNING:

Only trained and certified electrical, plumbing and refrigeration technicians should service this unit. **ALL WIRING AND PLUMBING MUST CONFORM TO NATIONAL AND LOCAL CODES. FAILURE TO COMPLY COULD RESULT IN SERIOUS INJURY, DEATH OR EQUIPMENT DAMAGE.**

SAFETY PRECAUTIONS

This unit has been specifically designed to provide protection against personal injury. To ensure continued protection observe the following:

 **WARNING:**

Disconnect power to the unit before servicing following all lock out/tag out procedures established by the user. Verify all of the power is off to the unit before any work is performed.

Failure to disconnect the power could result in serious injury, death or equipment damage.

 **CAUTION:**

Always be sure to keep area around the unit clean and free of clutter. Failure to keep this area clean may result in injury or equipment damage.

SHIPPING AND STORAGE

 **CAUTION:**

Before shipping, storing, or relocating the unit, the unit must be sanitized and all sanitizing solution must be drained from the system. A freezing ambient environment will cause residual sanitizing solution or water remaining inside the unit to freeze resulting in damage to internal components.

 **CAUTION:**

Very high discharge pressure is present in system. Quick disconnects on your gauges will minimize danger and loss of refrigerant.

 **CAUTION:**

Unit requires separate electrical line. See instruction manual for proper fuse size.

 **WARNING:**

There must be adequate clearance around ice maker. Allow minimum 6" air intake and 4" air exhaust for air exhaust and panel removal.

NOTE: Unit must be installed per local plumbing and electrical codes. See Installation manual for unit requirements. Failure to do so may cause damage to unit, which would void unit warranty.

NOTE: Using any parts other than genuine factory manufactured parts relieves the manufacturer of all liability.

NOTE: Manufacturer reserves the right to change specifications at any time.

GENERAL INFORMATION

SPECIFICATIONS

Model WM (Wall Model) 600 and CM (Counter Model) 600	
Compressor	3/4 H.P. (R404 Refrigerant)
Voltage	115 VAC, 60 Hz, Single Phase
Current Draw	16 Amps
Circuit Breaker or Fuse Size	20 Amp Maximum Time Delay

DESCRIPTION

Models WM600 and CM600 Ice Makers are self-contained wall mount and counter style Units which automatically make hard compressed-style ice and store it in a sealed hopper for sanitary dispensing.

INSTALLATION INSTRUCTIONS

IMPORTANT: An Ever pure Model 9320 – 42 Systems IV Model DB900 ice maker quality water treatment unit MUST BE INSTALLED in the water supply line to the Ice Maker. Failure to do so may result in poor quality ice, low production output, and may cause premature failure of the Ice Maker evaporator and void the extended evaporator warranty.

This Ice Maker is provided with a stainless-steel evaporator designed to last the life of the product. But, some of the chemicals in treated and untreated water, specifically chlorine and sulphur (sulphide), have the ability to attack stainless-steel and cause premature failure. An initial investment in proper water treatment will pay for itself in increased production, quality, and long life of the product.

REMOVE ICE MAKER FROM CARTON:

1. Keep Unit in the upright position, remove carton and pallet from the Unit and inspect the unit for damage. Upon inspection of the unit, if any damage is found, file a claim with the carrier immediately.
2. Locate the Startup Card either on the outside of the container or on the plastic liner. Fill in the proper information and send one copy to the factory and the other copy to the Distributor. The postage is prepaid.

CABINET REMOVAL

1. Unscrew and remove the front panels for electrical and start-up access.
2. Remove shipping tape from the storage hopper cover and the agitator in storage hopper.

PREPARATION OF INSTALLATION SITE

1. For maximum efficiency and ice output, select a location for your ice maker where it will not be exposed to sunlight, excessive heat or reflected radiation (preferably in a room with a temperature of 70° F to 80° F). The ice-maker normally will not function properly in temperatures below 65° F. The area surrounding the ice maker should be well ventilated. (Consult ???? for proper airflow clearance). WM600 – Two (2) mounting brackets are supplied for securing the Unit to a wall.

CM600 – Consult Figure 1B and 1C for dimensions for mounting the Unit to the counter. **Note that the Unit must be level for proper operation.**

2. The Unit must be sealed to the counter. Locate the desired position for the Unit, then mark the outline dimensions on the counter.

3. Apply a continuous bead of NSF listed silastic sealant (Dow 732 or equal) approximately 1/4-inch inside of the Unit outline dimensions. Then, position the Unit on the counter within the outline dimensions. All excess sealant must be wiped away immediately.

IMPORTANT: The WM600 with a full ice storage hopper weighs 450 pounds. Make sure that the mounting surface is adequately reinforced to support this weight.

The mounting hole dimensions for the brackets are shown in Figure 1 Use these dimensions to locate the Unit at the desired height on the wall.

IMPORTANT: Provide support for the Unit until all eight (8)–mounting bolts are installed. Do not hang the Unit from the top mounting angle bracket only while installing the lower angle.

WATER INLET HOOK-UP:

1. **Water Inlet** – The fitting is a 1/4"-in. compression fitting located at the bottom of the Unit. Connect water supply with a 1/4-inch or larger copper or flexible tubing.
2. **Water Pressure** – Unless otherwise specified, the Unit is designed to operate on a water pressures between 10 P.S.I. and 90 P.S.I. (**NOTE:** for pressures above 90 P.S.I; a water pressure regulator must be installed).
3. **Water Cooled Condensers** – The inlet uses a 3/8-inch compression fitting. Use a separate 3/8-inch or larger water line.
4. **Filters** – Filter Conditioners are recommended on supply lines to the Ice Makers. Never run the water supply to the water cooled condenser through a Filter/Conditioner. It uses up the cartridge unnecessarily and a saturated cartridge can starve the Ice Maker causing premature component damage. Separate water supplies are recommended.

WM600 – Connect a 1-1/4 inch IPS (or equal) drain line to the 1-1/4 inch diameter P-trap at the lower bottom of the Unit. The line must pitch downward to an open drain and must contain no traps or improper drainage will result.

CM600 – Connect two (2) 3/4-inch IPS (or equal) drain lines to the 3/4-inch threaded drain connections at the lower rear of the Unit. These lines must pitch downward to an open drain and must contain no traps or improper drainage will result. For water-cooled Units, a third 3/4-inch FPT drain fitting is provided for the condenser drain (see Figure 1B).

NOTE: The Unit must be installed per local plumbing codes.

ELECTRICAL SUPPLY

1. **Power Access** – Is provided by way of a 7/8-inch diameter hole located on the lower left side of the Unit. Route incoming power in conduit, to the Ice Maker electrical control box. Make connections to wires provided in the control box and the ground lug/screw.
2. **Fused Line** – Should be a dedicated circuit checked and sized according to the electrical rating shown on the Unit nameplate.

NOTE: The Unit must be installed per local electrical codes.

AUGER ENGAGEMENT

Be certain that the auger is fully engaged to the lower drive and that the extruding head is fully engaged to the evaporator.

INITIAL START UP, CHECKS AND ADJUSTMENT INSTRUCTIONS

NOTE: Do not start the Unit before completing the previous Installation steps.

Turn on the water supply and main power switch (located on top of the electrical box).

NOTE: If the Unit will not start, be sure the water reservoir is full. The low water safety control must be properly adjusted to start and shut down the Unit. If the water level drops below the bottom of the reservoir, the Unit *must* shut down. Adjustment is made by moving the magnet up or down.

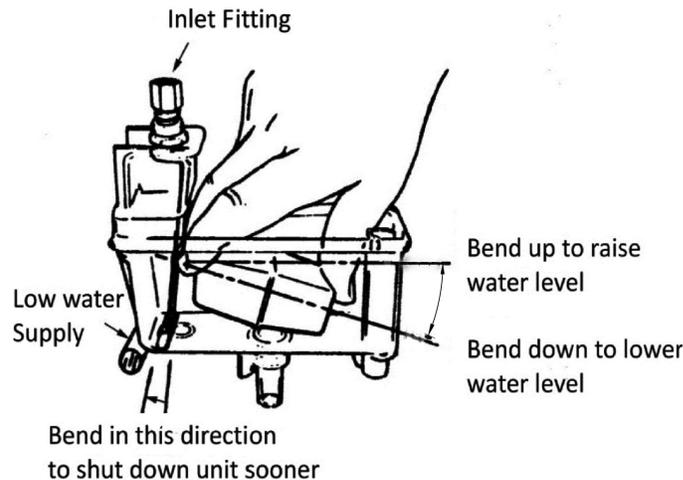


Figure 1. Float Adjustment

Water Level Control Adjustment – If necessary, adjust the float by bending the float arm up or down as needed. Push the float assembly down until the Unit stops running. Release the float and the Unit will restart. Keep water in the reservoir at the level line while the Unit is in operation (See Figure 1).

Low Water Safety Control – Adjust the magnet by bending the magnet arm as shown in Figure 1 to shut down the Unit if the water level drops below the line on the side of the reservoir.

Bin Control – Remove four clips from top of the bin cover and lift cover so the bin control switch can be manually lifted until the Unit shuts down. Release the plate and unit will restart

Dispense Switch and Mechanism – By depressing the dispense switch, the dispense mechanism door on the storage bin will open, and the agitator will rotate counterclockwise.

NOTE: If any of these checks or adjustments cannot be achieved, refer to Troubleshooting Section of this manual or call our Technical Support Center for assistance.

GUIDE TO SERVICE

IMPORTANT: Preventive maintenance can increase the trouble-free life of your Ice Maker. Failure to perform preventive maintenance could void your equipment warranty.

ICE MAKER CLEANING AND SANITIZING PROCEDURES

IMPORTANT: Do not use any of the ice made during cleaning operations.

Clean and sanitize ice storage area when cleaning Ice Maker.



WARNING:

Disconnect power to the unit before servicing. Follow all lock out/tag out procedures established by the user. Verify all power is off to the unit before performing any work.

Failure to comply could result in serious injury, death or damage to the equipment.

1. Turn Ice Maker off.
2. Shut off water supply.
3. Remove ice from storage bin.
4. Mix approved cleaner (2 gallons as directed). Recommended cleaner: Calgon Corp. or Virginia Chemicals, ice machine cleaner. Mixture: 3–1/3 ounces per gallon water. Do not use nickel safe cleaners.
5. Turn Ice Maker on and add cleaner solution to water level control (float reservoir) until 2 gallons have been used.
6. Turn on water supply and operate Ice Maker for 15 minutes.
7. Turn Ice Maker off. Remove and discard all ice.
8. Sanitize using household liquid bleach (50 ppm chlorine). Mixture: 1 fluid ounce per gallon room temperature water. Allow a two minute exposure time.
9. Sanitize pre-cleaned inside areas of storage bin liner, door frame, door, as well as all exposed surfaces of the evaporator assembly and the bin shutoff assembly with sanitizing solution. Allow to air dry.

MAINTENANCE

Preventative Maintenance can increase the trouble-free life of your Ice Maker. Many Authorized Cornelius Service Agencies offer service contracts. Contact your local distributor for further information.

Monthly

1. Clean the condenser coil. Use a brush, vacuum cleaner, or blow from inside the coil with air or CO₂ gas.
2. Inspect the water feed reservoir at least once a month until a definite pattern for cleaning and sanitizing has been established.

Quarterly

This is the maximum period of time between cleaning and sanitizing the Ice Maker. In addition to recommended monthly procedure, and if a more frequent cleaning and sanitizing pattern has not been established, the Ice Maker must be cleaned and sanitized quarterly.

Semi-Annually

Semi-annually, in addition to all previously established service procedures, perform the following:

1. Check for water leaks; tube connections, water fittings, and the lower icemaker water seal.
2. Check the drain tubes for clogs and "aged" tubes. Replace if tubes are stained or brittle.

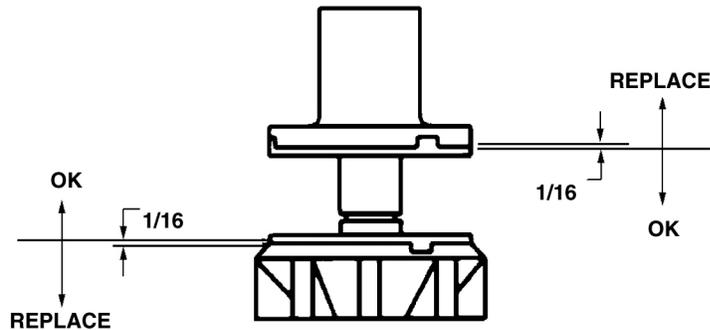


Figure 2. Auger Assembly

3. Check for signs of condensation. Clean where necessary and replace insulation properly.
4. Check safety circuits for proper operation.
5. Check refrigeration system (see REFRIGERATION SYSTEMS section of this manual).
6. Check Unit for abnormal noise. Tighten machine and cabinet screws, if necessary.
7. Check white upper bearings on auger assembly (see Figure 2). If bearing are less than 1/16-inch thick, replace the bearings.

WATER LEVEL CONTROL

WATER LEVEL CONTROL OPERATION

When water is introduced through the inlet fitting, the float rises (see Figure 1). The float pushes against a lever that in turn, forces the poppet assembly against the inlet fitting valve seat that seals the water off. Before the water inlet is sealed, the safety switch is operated. In the event of a water failure, the float would drop down and operate the safety switch to shut off the Unit.

If water level control will not shut off and seal at level as indicated, be sure inlet pressure does not exceed recommended factory operating range.

Under ordinary circumstances, the water level control adjustment should not be necessary providing the control was properly adjusted when the Unit was installed or relocated (see “Water Level Control Adjustment” in “INSTALLATION INSTRUCTIONS” SECTION of this manual). If however, the water level control becomes inoperative, repair or replace the control.

PURPOSE OF WATER LEVEL CONTROL

1. To automatically maintain the proper water level in the evaporator when the Unit is operating and making ice.
2. A safety switch is operated in the event of an interruption in the water supply. The switch shuts off the electrical power to the Ice Maker and its refrigeration system. The switch will reset as soon as the cause of the water failure has been corrected and the proper water level in the Ice Maker has again been reached.
3. The transparent bowl not only provides a visible check of the water level, but also is a good guide to the internal conditions which exist within the Ice Maker assembly itself (see cleaning procedure).

TO REPLACE WATER LEVEL CONTROL

WARNING:

Disconnect power to the unit before servicing. Follow all lock out/tag out procedures established by the user. Verify all power is off to the unit before performing any work.

Failure to comply could result in serious injury, death or damage to the equipment.

1. Shut off the water supply. Shut off the main power switch or unplug the Ice Maker from electrical outlet.
2. Remove flexible tubing from bottom of the water level control, then drain water from the water level control and evaporator.
3. Remove flexible tubing at bottom of the water level bowl connected to the overflow.
4. Hold water inlet fitting with proper tool to prevent it from rotating when disconnecting the water inlet.
5. Remove wing nut holding the water control to its mounting bracket. The control can be removed by lifting it straight up.

TO REPLACE WATER LEVEL SAFETY SWITCH

WARNING:

Disconnect power to the unit before servicing. Follow all lock out/tag out procedures established by the user. Verify all power is off to the unit before performing any work.

Failure to comply could result in serious injury, death or damage to the equipment.

1. Shut off main power switch or unplug the Ice Maker from electrical outlet.
2. Unplug Molex connector connecting switch to the electrical box.
3. Remove two screws anchoring the water level safety switch to the bottom of the water level control mounting bracket.

ICE LEVEL CONTROL

The ice level control assembly is secured to the top of the ice storage container cover. When the switch assembly is down, due to lack of ice in the ice storage container, an electrical impulse is sent to the compressor to start the ice making cycle. As ice level increases in the ice storage container, the switch assembly is pushed back. When the ice storage container is full, it de-actuates the switch which stops the compressor and the ice making cycle.

REFRIGERATION SYSTEMS

REFRIGERATION SYSTEM ADJUSTMENTS

A complete understanding of the Ice Maker and the hermetic refrigeration system is necessary before any adjustments are made. The refrigeration technician must use high and low side pressure readings, water and air temperatures, plus general conditions of cleanliness to assess the refrigeration system status when making any adjustments.

All Ice Maker products are tested and adjusted at the factory prior to shipment where the ambient temperature ranges from 65° F to 90° F, depending on the season of the year.

Whenever a new Ice Maker is initially installed and started, it is imperative that the start-up operator make the following checks and readjustments for local conditions.

EXPANSION VALVE

You will find a thermal expansion valve on Cornelius Ice Makers, which is used to control the amount of refrigerant flowing through the evaporator. Improperly installed or defective expansion valves may cause low production, soft ice, squeaking from evaporator, and excessive load inside the evaporator.

By using the general refrigeration trouble shooting along with the pressure charts, you can easily determine whether or not the expansion valve is working properly.

ADJUSTMENT AND TROUBLESHOOTING

When troubleshooting the expansion valve, you *must*:

1. Be sure you have adequate water flowing into the evaporator, a clean and properly ventilated condenser, and the system is properly charged and free of any restrictions. Also be sure compressor is operating properly.
2. Take reservoir water temperature and air temperature from the condenser inlet and determine at what pressure the Ice Maker should be operating. On Ice Makers equipped with a thermostatic valve, there is NO adjustment. If the correct pressure cannot be obtained, be sure the system has time to stabilize (10–15 minutes).
3. Be sure the sensing bulb is located at the outlet side of the evaporator (about 3–4 inches away from the evaporator) and be sure to insulate well and clamp tightly to tubing. If the system pressures are still not adequate, take second water and air temperature reading and go over other parts of the system for possible problems. If proper refrigerant charge is questionable, evacuate the refrigeration system and recharge to nameplate specifications. Leak check the refrigeration system. If the expansion valve still malfunctions replace the valve.

Use general refrigeration system practices when replacing and recharging the unit. After new valve is in place, go through previous monitored adjustments and troubleshooting to be sure valve is functioning properly.

NOTE: On water-cooled Units, adjust the condenser modulating valve before troubleshooting the expansion valve.



CAUTION:

Very high discharge pressure is present in the refrigeration system. Quick disconnects on your gages will minimize Danger and loss of refrigerant. Comply with federal regulations for reclaiming refrigerant.

TEMPERATURE / PRESSURE CHART*

REFRIGERANT TYPE R404A		± 10 lb Discharge Pressure		
		Water Temperature(°F)		
Air Temperature(°F)		40	65	90
	50	174	177	180
	60	202	205	208
	70	230	233	236
	80	265	269	272
	90	300	304	307
	100	328	334	340

NOTE: *The thermostatic expansion valve is non-adjustable on all models

CONDENSER MODULATING VALVE (Water Cooled Only)

The reason for using a water modulating valve is to supply the correct amount of water to the condenser to maintain the proper operating pressure in the refrigeration system high side. The flow of water through the valve is increased as the high side pressure rises and decreases as high side pressure lowers.

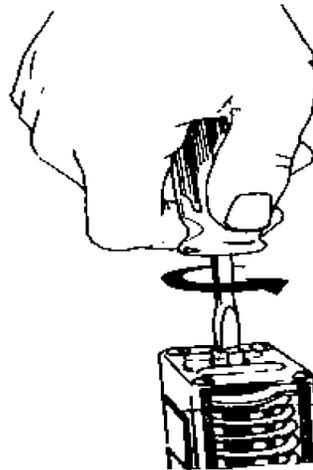


Figure 3. Adjustment Screw

To calibrate the amount of water flow with the refrigeration system high side pressure, turn adjustment screw located on end of the valve opposite the bellows (see Figure 3). Turn adjustment screw counterclockwise to raise opening point. Opening point of valve should be set to maintain proper operating pressure in refrigeration system high side. Refer to TEMPERATURE/PRESSURE CHART. Closing point of valve should be set low enough to close valve during compressor stand by periods.

NOTE: Cold water will absorb more heat faster than warm water. The water flow will therefore automatically increase as inlet temperature increases.

CONDENSER MODULATING VALVE REMOVAL

WARNING:

Disconnect power to the unit before servicing. Follow all lock out/tag out procedures established by the user. Verify all power is off to the unit before performing any work.

Failure to comply could result in serious injury, death or damage to the equipment.

1. Shut off water supply to condenser, then reclaim refrigerant from system.
2. Remove inlet water line from Condenser modulating Valve. Also remove tube from refrigerant high side line.
3. Remove Condenser Modulating Valve and bracket from unit.
4. Remove valve from bracket.
5. Replace Condenser Modulating Valve by reversing Steps 2 thru 4, then pull system into vacuum.
6. Recharge unit with refrigerant per nameplate.
7. Turn power and water on to the unit.
8. With unit operating, adjust modulating valve to proper setting.
9. Go through a complete system check.

GEAR MOTOR

The gear motor is equipped with a start relay and a manual reset overload. When current is applied, the relay energizes and completes the circuit to the start winding. The motor reaches a predetermined speed and the relay drops out, disconnecting the start winding. The run winding remains in the circuit as long as current is applied.

The purpose of the overload is to automatically shut off the motor in the event of a mechanical bind of the transmission, an overload condition within the evaporator, or an electrical malfunction. It does this by sensing amperage draw. If the motor stalls the start relay would energize and stay energized. The amperage would surge to 5 to 6 times greater than normal draw. In this event, the overload would shut off the transmission in 4 to 8 seconds.

If the motor is subjected to an abnormal load, but does not reach stall condition, the overload will react, but over a greater period of time. The reaction time depends upon the amperage to which it is subjected.

The overload, through the safety circuit, also shuts off the compressor.

Refer to Troubleshooting Guide.

TROUBLESHOOTING

IMPORTANT: Only qualified personnel should service internal components or electrical wiring.

TROUBLESHOOTING GEAR MOTORS

Basically, Gear motor problems can be narrowed down to three areas of checkout.

The Gearmotor Will Not Run

1. No voltage to the transmission terminals – check external circuit.
2. Low voltage – check voltage supply.
3. Problems in the gear motor electrical circuit. See Figure 4.

The Gearmotor Starts but Trips Repeatedly On The Overload Protector

1. Voltage – high or low voltage can cause the overload to trip.
2. High Gear motor amperage draw, see Specification Chart for ratings and Troubleshooting Guide.

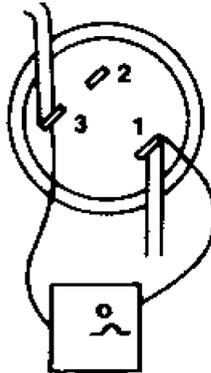


Figure 4. Output Shaft

The Motor Runs but Output Shaft Does not Rotate

Replace defective gear motor.



WARNING:

Be sure unit is disconnected from the power source. Disconnect the transmission cable.

OVERLOAD CHECK:

1. Allow motor to cool and reset overload if necessary.
2. Remove motor end bell and stator, if necessary.
3. Check terminals 1 and 3 on overload. No continuity replace overload. Use a volt-ohm meter. See Figure 4 and Figure 5.

MOTOR CHECK:

The resistance readings on the windings will be between 5 to 25 ohms. A meter capable of these low readings must be used. The Start Relay cover must be removed. NOTE: Gear motor and related components can be checked from Pin Connector. See Figure 5 and Figure 6.

If no continuity on start or run winding test, replace stator. If continuity on grounded motor test, replace stator.

INSTALLATION AND SHAFT SEAL REPLACEMENT (See Figure 5)

1. Place shaft seal locator seat over gear motor output shaft, embossed side down, and push down until shaft seal seat rests flush on top of gear motor.
2. Place rubber coated ceramic seal (important: ceramic face up) over output shaft and push down until seal rests on top of the shaft seal seat. (Lubricate rubber on ceramic seal with [#06195] rubber lubricant.)
3. Place shaft seal with carbon face down (spring up) over output shaft and push (gently) downward until seal rests on carbon face of the output shaft seal.
4. Push down on the washer compressing the spring on the output shaft seal. While holding the seals (down) in place slide the E-ring into the groove on the output shaft.

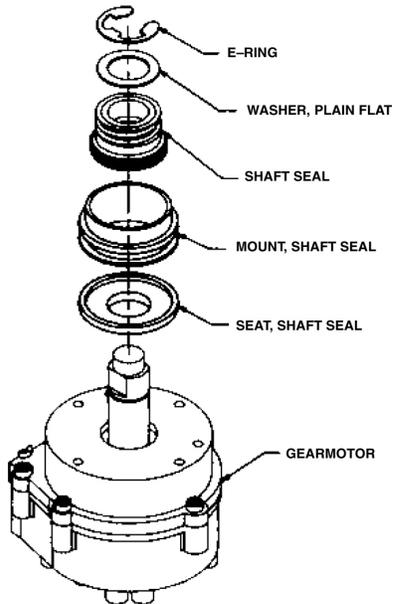


Figure 5. Shaft Seal Replacement

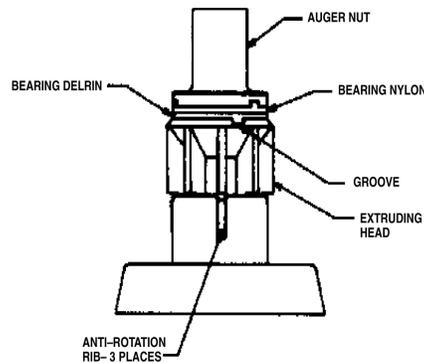


Figure 6. Extruding Head

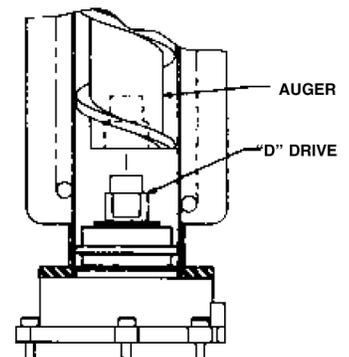


Figure 7. Auger

AUGER & EXTRUDING HEAD REMOVAL

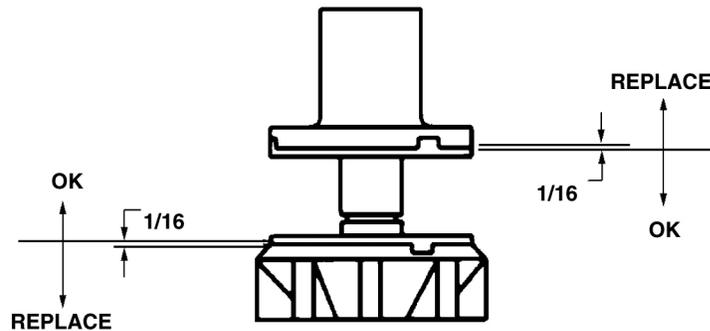


Figure 8. Upper Nut and Bearing

The upper bearings located on top of the auger is used to absorb the force between the auger and extruding head.

The bearings are 3/32" thick. When they wear below 1/16" they should be replaced. Bearings to be inspected for wear during quarterly maintenance. See Figure 8.

TO REPLACE BEARINGS

WARNING:

Disconnect power to the unit before servicing. Follow all lock out/tag out procedures established by the user. Verify all power is off to the unit before performing any work.

Failure to comply could result in serious injury, death or damage to the equipment.

1. Dispense all ice from unit.
2. Remove panels.
3. Unplug Dispense Motor and Ice Level Switch.
4. Remove four screws holding dispense cover in place.
5. Remove dispense cover assembly.
6. Use an open end wrench on auger nut connected to bearing and turn counterclockwise to remove assembly.
7. Remove worn bearings. Replace with new bearings and then reinstall assembly.

NOTE: If auger turns with nut, remove cover on top of gear motor stator and hold rotor while loosening nut.

8. Reconnect power to icemaker.

TROUBLESHOOTING COMPRESSOR

Basically the compressor problems can be narrowed down to three areas of checkout—

1. THE COMPRESSOR WILL NOT RUN
 - A. No voltage to the compressor terminals – check circuit.
 - B. Low voltage – below 90% of nameplate rated voltage.
 - C. Problems in the compressor electrical circuit. See Electrical Checkout instructions.
2. THE COMPRESSOR STARTS BUT TRIPS REPEATEDLY ON THE OVERLOAD PROTECTOR
 - A. Check for proper fan operation and clean condenser.
 - B. Check the compressor suction and discharge pressures.
 - C. Voltage – The voltage should be within 10% of the rated nameplate voltage.

D. High compressor amperage draw, it should never exceed 120% of the rated nameplate amperage. See Electrical Checkout Instructions.

3. THE COMPRESSOR RUNS BUT WILL NOT REFRIGERATE

A. Check the compressor suction and discharge pressures. See TEMPERATURE/PRESSURE CHART.

ELECTRICAL CHECKOUT

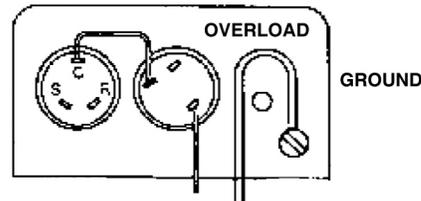


Figure 9. Electrical Box

WARNING:

Disconnect power to the unit before servicing. Follow all lock out/tag out procedures established by the user. Verify all power is off to the unit before performing any work.

Failure to comply could result in serious injury, death or damage to the equipment.

1. Be sure the unit is disconnected from the power source. Remove the compressor electrical box cover. Check for obvious damage and loose wires.
2. Disconnect the fan motor leads. Since capacitors store energy, short the capacitor with a screwdriver. This will prevent shocks.
3. Disconnect the compressor terminal wires.

OVERLOAD CHECK (See Figure 4)

Using a volt-ohm meter check the continuity across the overload, contacts #1 & #3. If none, wait for unit to cool down and try again. If still no continuity, the overload protector is defective and should be replaced.

COMPRESSOR CHECK (See Figure 9)

The resistance readings on the windings will be between 0.25 and 10.00 ohms, a meter capable of these low readings must be used.

1. Check between "C" & "R." Replace compressor if there is no continuity as the run windings are open.
2. Check between "C" & "S." Replace the compressor if there is no continuity as the start windings are open.
3. Check between "C" & "R", or "S" and shell of the compressor. If there is continuity replace the compressor as the motor is grounded.
4. Check between screw terminal on the overload and "C" on the compressor. Check and repair the lead or connections if there is no continuity.

CAPACITOR CHECK

1. Check or replace start capacitor, disconnect bleed resistor before checking for shorted capacitor.
2. Check or replace run capacitor (if supplied) check or shorted capacitor or either terminal grounded to case.

SAFETY CONTROLS

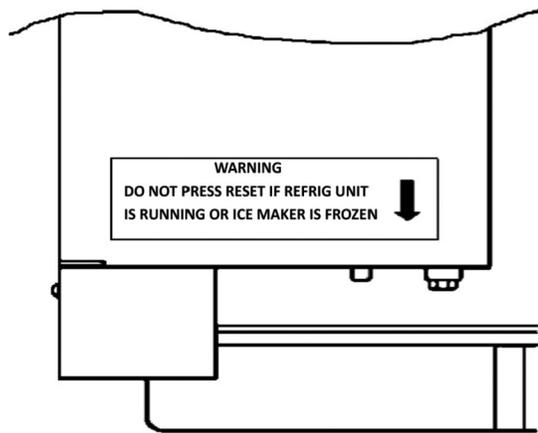


Figure 10. Gear Motor Thermal Overload

Your Icemaker unit has several safety and control devices incorporated into its design.

⚠ WARNING:

None of the below described devices should ever be "bypassed" to allow the unit to function.

The safety and control system shut-off devices are:

1. Low water shut off reed switch located in icemaker float assembly. (Automatic reset type).
2. Gear motor thermal overload, manual reset type (red button on motor). See Figure 10.
3. Compressor thermal overload, automatic reset type.
4. Main service switch located on top of the control box.
5. Hopper shut-off.
6. High pressure cut out (water cooled only).

⚠ WARNING:

Do not reset gear motor overload if ice is present in the evaporator.

GUIDE TO GOOD ICE

CUSTOMER COMMENTS	CHECK ICEMAKER LOCATION CONDITIONS FIRST	CHECK ICEMAKER
<p>It runs but the ice is too soft.</p> <p>The icemaker is not producing enough ice.</p> <p>The ice is too wet.</p>	<p>Under compression</p> <p>Proper air flow for condensing system</p> <p>Location too close to high temp units such as coffee urns, deepfreezers, grills etc.</p> <p>Supply water conditions.</p> <p>Water too warm (above 90°F)</p> <p>Water artificially softened above 262 PPM sodium chloride.</p> <p>Normal water supply too high.</p>	<p>Use gages for checking suction and head pressures. See manual for correct reading and conditions.</p> <p>Check water level for proper adjustment and restrictions. See Manual.</p> <p>Check evaporator assembly for worn parts, bearings, scored evaporator and, bad expansion valve, etc.</p>
<p>It makes too much noise.</p> <p>(with this comment the ice is usually extremely hard and larger than normal).</p>	<p>Over Compression</p> <p>Check to see if noise objection objections is normal fan and air flow noise.</p> <p>Water supply conditions.</p> <p>Water too cold (below 50°F)</p> <p>(Possibly running from Pre-cooler).</p>	<p>Obstructions partially blocking ice exit from top of evaporator.</p> <p>Check fan and fan shroud.</p> <p>Check for loose parts and screws rattling.</p> <p>Check evaporator assembly for worn parts, bearings, scored evaporator and auger, bad expansion valve etc.</p>

TROUBLESHOOTING CHART – ICEMAKER NOT OPERATING

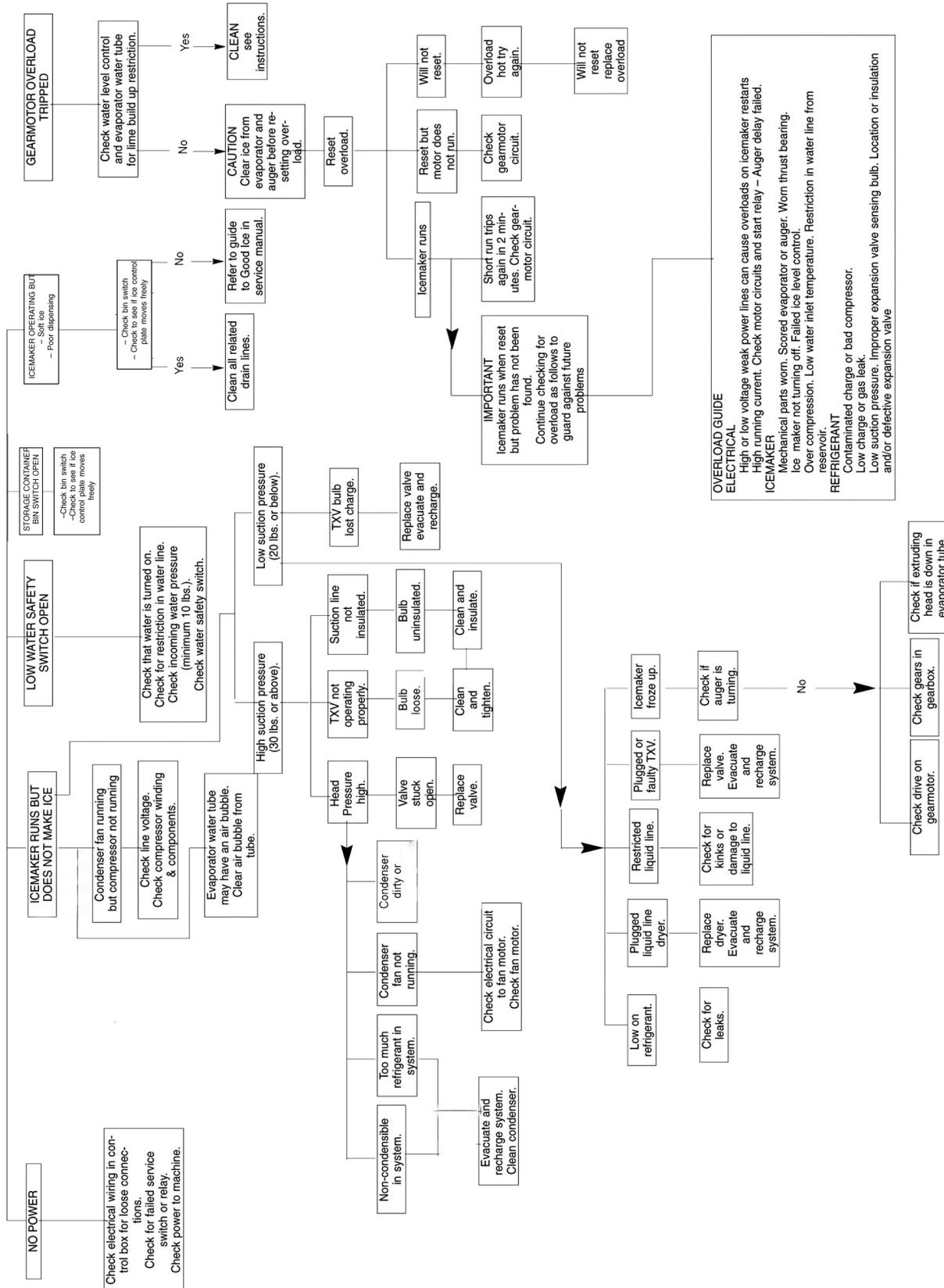


Figure 11. Troubleshooting Chart

SCHEMATIC DIAGRAM
WM600-60

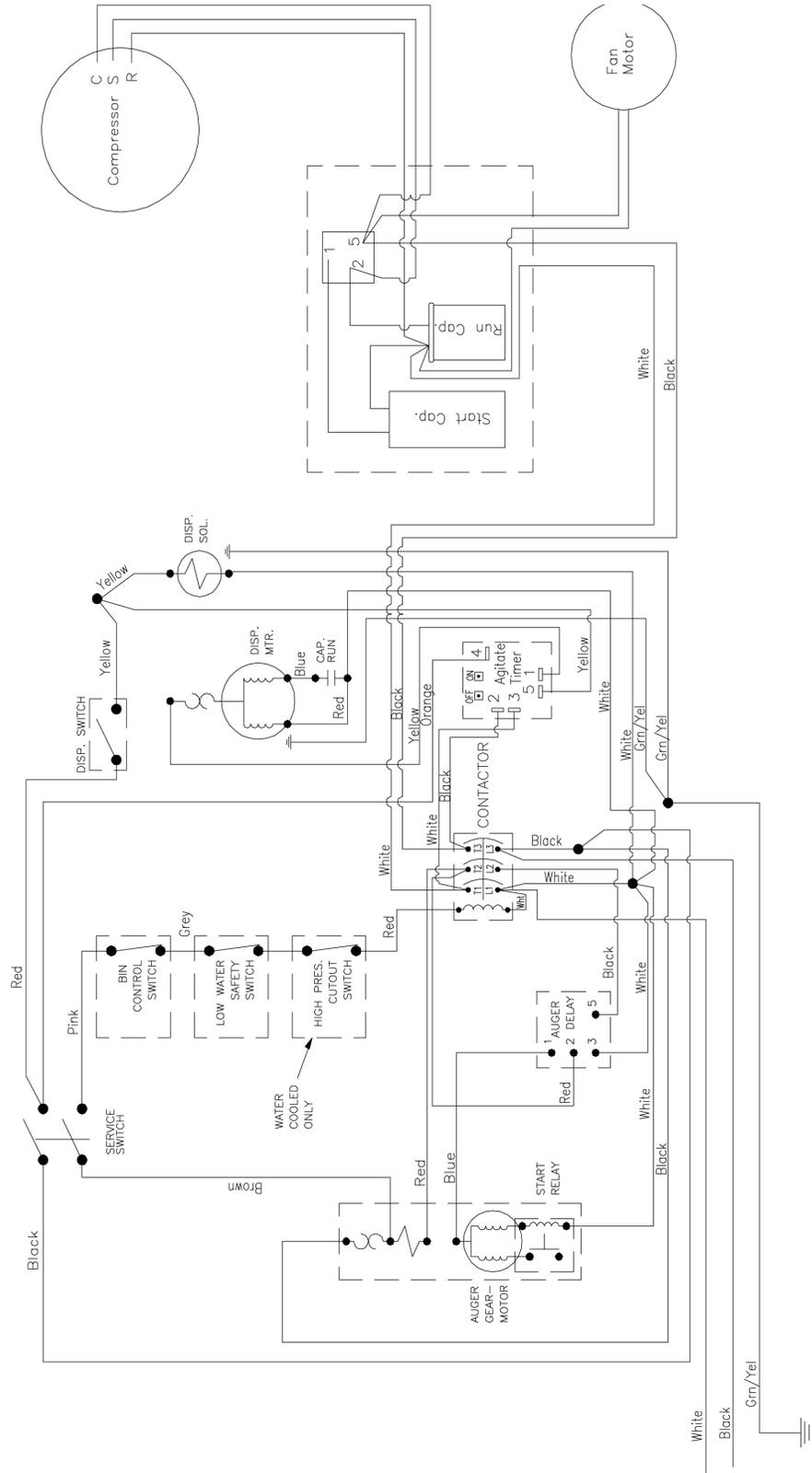


Figure 12. Wiring Diagram

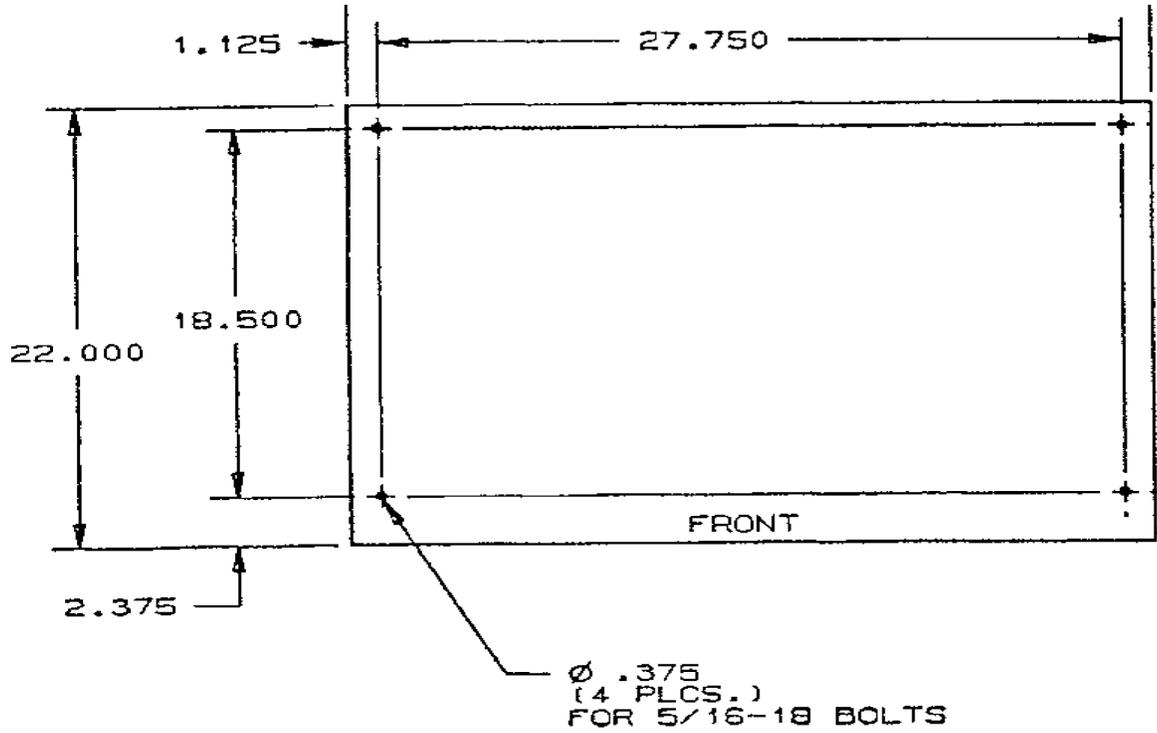


Figure 13. Mounting Template



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