Manitowoc® ICE MACHINES

INSTALLATION INSTRUCTIONS

MODELS:
HR-0200A
HR-0201W
HD-0202A
HD-0203W
HY-0204A
HY-0205W

This product qualifies for the following listings:

KEEP THESE INSTRUCTIONS WITH THE OWNER/OPERATOR USE AND CARE GUIDE FOR FUTURE REFERENCE

General Safety Precautions

- **The ice machine must be installed according to these Installation Instructions.**
- **Connection to water service, drains, electrical service and grounding must comply with applicable local and state codes.**
- **Disconnect electrical service before servicing.**
- **Read and understand all instructions before placing the ice machine into service.**

General

The installation instructions are provided to assist the qualified installer. Check the yellow pages of your local telephone book for Manitowoc Ice Machine representation, or call Manitowoc Equipment Works for information regarding installation and start-up services available.

If any problem is encountered that is not covered by this manual, please contact your local Manitowoc Distributor or Manitowoc Equipment Works for assistance.

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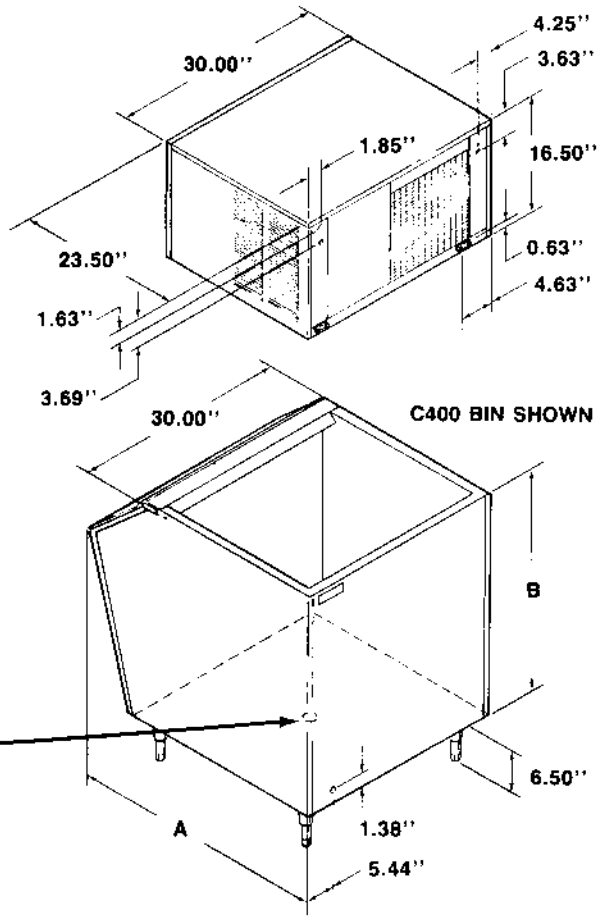
Part No. 80-0817-3
12-89

Dimensions

IC-001-IN2



BIN MODEL	DIMENSION A	DIMENSION B
C170	28.25"	19.06"
C400	34.00"	31.37"
C470	29.50"	50.50"
C570	34.00"	50.50"

Freight Damage and Claims Procedures

1. Shortages
   Check number of cartons delivered against the quantity shown on your receipt. If quantities do not tally, have driver note shortage and file your claim with the freight company.

2. No-Fault Freight Claim Procedure
   Manitowoc assumes responsibility for all freight damage claims involving participating carriers with the following exceptions:
   a. When the trucking company loses the equipment.
   b. When fire destroys the equipment en route.
   c. When a traffic accident damages the shipment en route.

3. Visible Damage
   a. If cartons appear damaged in any way, open the carton and inspect contents in the presence of the driver.
   b. To remove the ice machine carton, cut the banding on the bottom only (in case the ice machine needs to be reboxed) and slide the carton up and off the ice machine.
   c. Note the nature and extent of the damage on the freight bill.
   d. Notify your local Manitowoc distributor to inspect the merchandise within 15 days of delivery. Do not attempt to repair the damage.

4. Concealed Damage
   a. If damage is noticed at the time of installation, notify the distributor immediately and ask to have an inspection.
   b. Do not destroy packing materials until inspection is completed.
   c. These conditions must be met before your claim can be processed by the distributor.

5. Claims
   Manitowoc Equipment Works and the selling Distributor will arrange to repair or replace the equipment.

Unpacking Cartons

1. Ice Machine
   a. Cut bottom band on the carton.
   b. Lift the carton off of the ice machine.

2. Storage Bin
   a. Cut the banding on the top of the carton.
   b. Remove carton top.
   c. Remove the cardboard packing inside and place on the floor.
   d. Tip the carton on its back and slide the bin out onto the cardboard packing to protect the bin from being scratched.
   e. Screw the leveling legs onto the bottom of the bin and screw the "foot" of each leg in as far as possible, Figure 1. Set the bin upright.

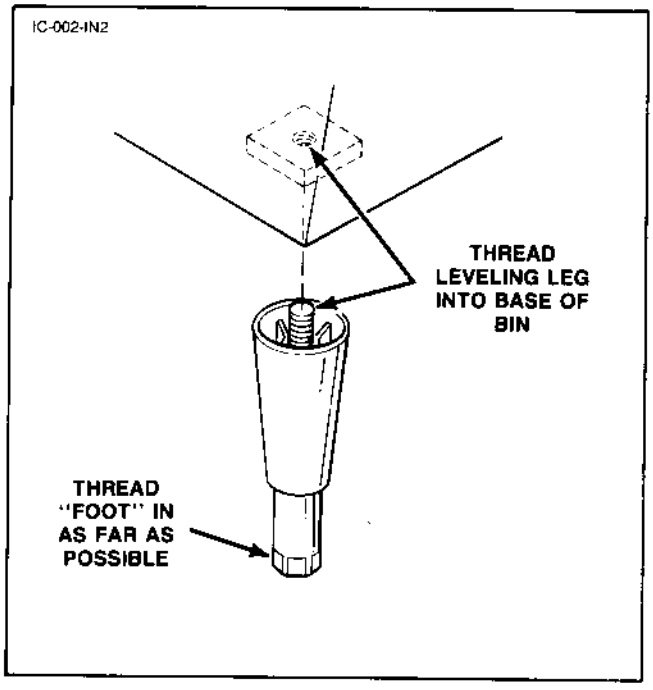


Figure 1

Location of Ice Machine

⚠ CAUTION

We do not recommend that this ice machine be installed in an area where the air temperature falls below 35°F or exceeds 110°F. If the ice machine will be subjected to below freezing temperatures, it must be protected. See REMOVAL FROM SERVICE/WINTERIZATION in the Owner/Operator Use and Care Guide.

Select a location away from heat generating equipment and direct sunlight. Manitowoc ice machines operate most efficiently when:

- LOCATED IN A CONTAMINANT FREE AREA – Air-cooled models especially should be installed in an area that is free of air-borne contaminants. An accumulation of contaminants on the condenser will adversely affect ice production.
- INSTALLED WITH A MINIMUM OF FIVE INCHES OF CLEARANCE AT SIDES AND REAR – Adequate air flow through and around the ice machine is essential to maximum ice production and long component parts life.
- CONNECTED TO A COLD WATER SUPPLY.

Ice Machine Heat of Rejection

Ice machines, like other refrigeration equipment, reject heat through the condenser. It is helpful to know the amount of heat rejected to accurately size air conditioning equipment when self-contained air-cooled ice machines are installed in air conditioned environments. **This heat rejection information is also necessary to evaluate the benefits of using water-cooled or remote condensers to reduce air conditioning loads.** The amount of heat added to an air conditioned environment by an ice machine using a water-cooled or remote condenser is negligible. Knowing the amount of heat rejected is also important when sizing a cooling tower for a water-cooled condenser unit.

Series 200 Heat Rejection (BTU/Hour)

Air Conditioning	Peak
*4300	**5500

* Because the heat of rejection varies during the ice making cycle, the figure shown is an average.

** Peak figure is to be used for sizing cooling towers.

Mounting Single Ice Machine on Storage Bin

1. Move the bin into final position.

2. Level the bin to assure bin door closes and seals properly. Turn the "foot" of the appropriate leg(s) to level bin. Use level on bin top, Figure 2.

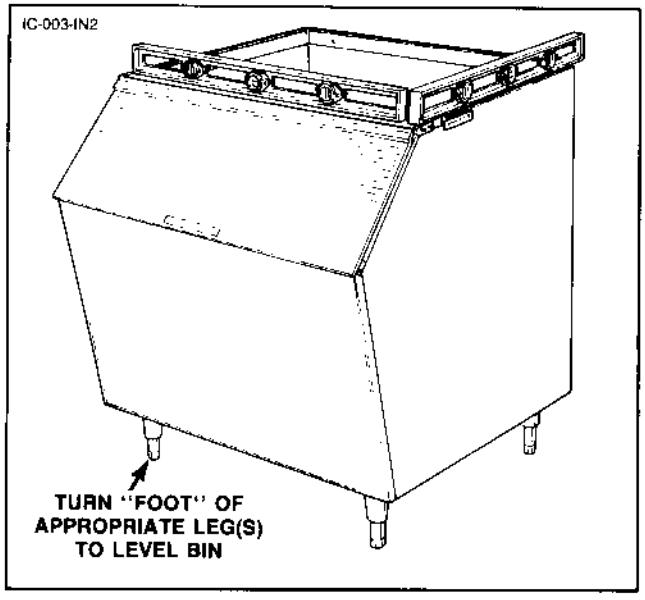


Figure 2

3. Set the ice machine on the bin, aligning the sides and back of the ice machine with the sides and back of the bin. Take care not to tear or dislodge the mounting gasket.

4. Loosen two screws holding front panel in place and remove front panel.

5. Carefully remove tape holding instructions envelope (and air baffle – air-cooled models only) to water curtain. Install air baffle per instructions on baffle.

Mounting Two Ice Machines on Storage Bin

A K00056 stacking kit is required for stacking two H200 ice machines. Installation instructions are supplied with the kit.

NOTE: The H200 ice machine can be stacked with other models of Manitowoc ice machines and on a variety of Manitowoc bins and dispensers. Consult your Manitowoc dealer or distributor for more information.

Electrical Service, Figure 3

⚠CAUTION

ALL WIRING MUST CONFORM TO LOCAL, STATE AND NATIONAL CODES.

VOLTAGE – 115V, 60 HERTZ, 1 PHASE

Provide a separate fused circuit for each ice machine. The maximum allowable voltage variation is ± 10% of the rated voltage at ice machine start-up (when the electrical load is highest).

⚠WARNING

This ice machine requires a ground that meets the National and Local Electrical Code regulations.

FUSE/CIRCUIT BREAKER – 20 AMPS MAXIMUM

Provide a separate fuse/circuit breaker for each ice machine. Circuit breakers must be H.A.C.R. rated (does not apply in Canada).

MINIMUM CIRCUIT AMPACITY – 15.6 AMPS

The minimum circuit ampacity is used to help select the wire size of the electrical supply. (It is not the ice machine's running amps.) The wire size, or gauge, is also dependent upon location, materials used, length of run, etc., and therefore must be determined by a qualified electrician.

CONNECTION AT ICE MACHINE

NOTE: 1-1/16 inch electrical entrance is provided for routing conduit. Conduit must terminate at the electrical box located inside the ice machine, not at the back of machine.

Incoming Supply		Ice Machine Connection
L1 wire	to	L1 wire
L2 wire	to	L2 wire
Ground wire	to	Ground screw

NOTE: Connecting wires in ice machine are labeled L1 and L2.

Water Service/Drains, Figure 3

⚠CAUTION

PLUMBING MUST CONFORM TO LOCAL AND STATE CODES.

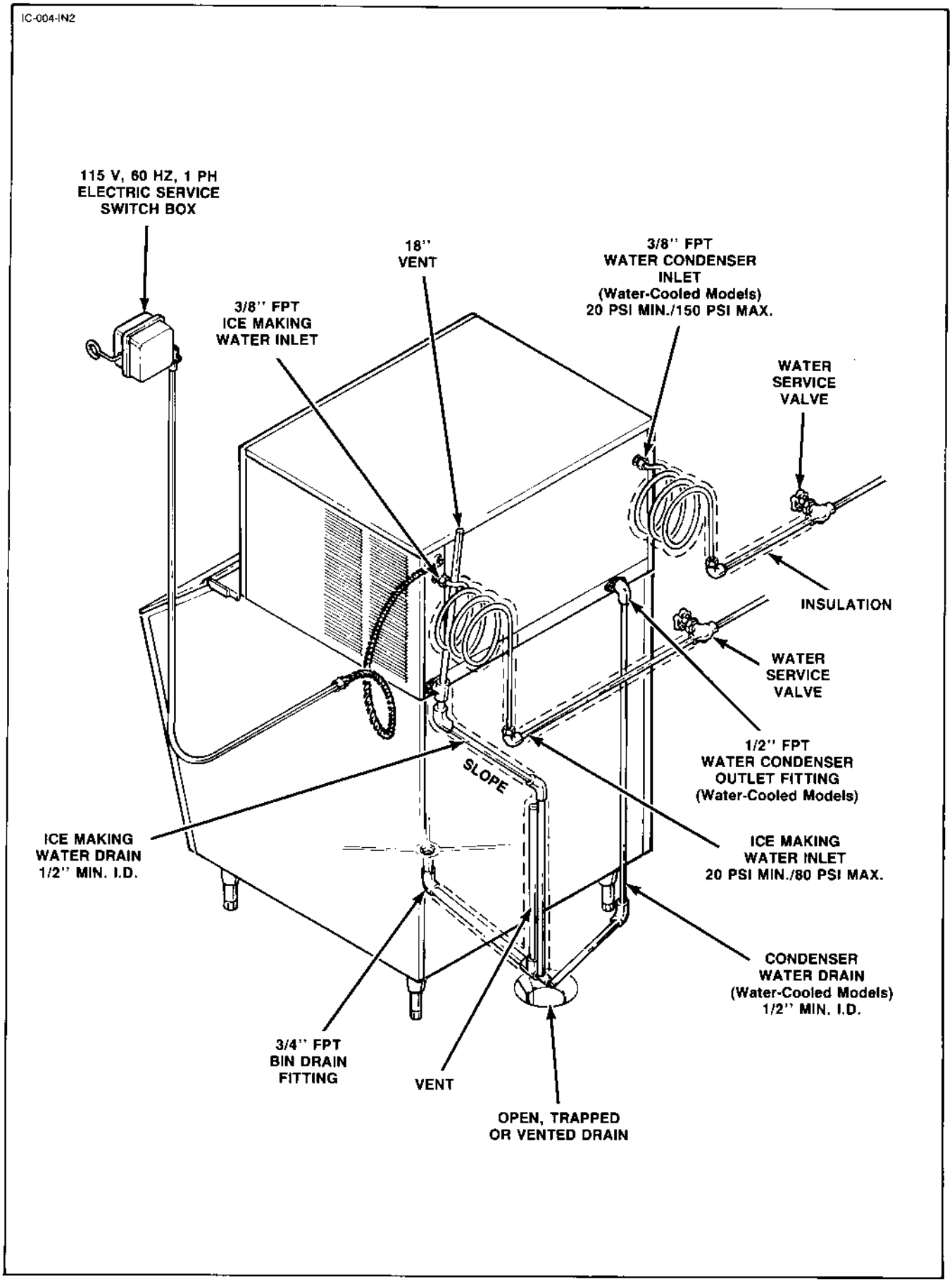

IC-004-IN2
115 V, 60 HZ, 1 PH
ELECTRIC SERVICE
SWITCH BOX
18"
VENT
3/8" FPT
WATER CONDENSER
INLET
(Water-Cooled Models)
20 PSI MIN./150 PSI MAX.
3/8" FPT
ICE MAKING
WATER INLET
WATER
SERVICE
VALVE
INSULATION
WATER
SERVICE
VALVE
1/2" FPT
WATER CONDENSER
OUTLET FITTING
(Water-Cooled Models)
SLOPE
ICE MAKING
WATER DRAIN
1/2" MIN. I.D.
ICE MAKING
WATER INLET
20 PSI MIN./80 PSI MAX.
CONDENSER
WATER DRAIN
(Water-Cooled Models)
1/2" MIN. I.D.
3/4" FPT
BIN DRAIN
FITTING
VENT
OPEN, TRAPPED
OR VENTED DRAIN

Figure 3

WATER SUPPLY

Local water conditions may require the installation of water treatment devices in the ice making water supply line.

If water treatment systems such as deionization, reverse osmosis, or if distillation is to be used, contact your Manitowoc distributor for instructions.

Temperature: Minimum 33°F, Maximum 90°F

The ice machine must not be connected to a hot water supply. Be sure all hot water restrictors (check valves) installed for other equipment (sink fauctes, dishwashers, etc.) are in working order.

Ice making water pressure: Minimum 20 psi, Maximum 80 psi

If water pressure exceeds maximum psi, obtain a pressure regulator (Part No. 13-6122-1) from your Manitowoc distributor.

Condenser pressure (water-cooled models): Minimum 20 psi, Maximum 150 psi

INLET WATER CONNECTIONS

Ice making water: 3/8 inch F.P.T.

Condenser (water-cooled models): 3/8 inch F.P.T.

All water connections must conform to local and national codes. Install a shut-off valve for both the ice making and condenser water lines. All water lines should be insulated to prevent condensation.

The ice making water supply is connected to a 3/8 inch female pipe fitting in the rear panel. Use 3/8 inch O.D. tubing.

The condenser water supply is connected to a 3/8 inch female pipe fitting in the rear panel. Use a minimum of 1/2 inch O.D. tubing up to the 3/8 inch fitting.

DRAIN CONNECTIONS

Ice making water drain: 1/2 inch F.P.T.

Condenser drain (water-cooled models only): 1/2 inch F.P.T.

Bin drain: 3/4 inch F.P.T.

Use the following guidelines to prevent backflow of drain water into the ice machine and storage bin.

- Drain lines must have 1-1/2 inch drop per 5 feet of run. Do not create any traps.
- The floor drain must be sized to accomodate drainage from all drains.
- Run the bin and ice machine drain lines separately and insulate to prevent condensation.
- The ice machine drain lines require a minimum of 1/2 inch I.D. tubing.
- The bin drain line requires a minimum of 3/4 inch I.D. tubing.
- The ice making water drain and bin drain must be vented to the atmosphere. Do not vent condenser drain (water-cooled models).

WATER-COOLED MODELS (COOLING TOWER APPLICATIONS)

A water-cooling tower installation does not require modification to the ice machine; the water regulator valve for the condenser continues to control the refrigeration discharge pressure. It is necessary to know the amount of heat rejection (see page 3) and the pressure drop through the condenser and water valve (inlet and outlet of the ice machine) to apply these types of systems to the ice machine.

- Water entering the condenser must not exceed 90°F.
- Water flow through the condenser must not exceed 5 GPM.
- Allow for a pressure drop of 7 psi between the condenser water inlet and outlet of the ice machine.
- Condenser water exiting temperature must not exceed 110°F.

Installation Check List

- ☐ Is ice machine level?
- ☐ Has all internal packing been removed?
- ☐ Have all electrical and water connections been completed?
- ☐ Has supply voltage been tested and checked against the rating on the nameplate?
- ☐ Is there a minimum of 5 inches clearance around the ice machine for proper air circulation?
- ☐ Has air baffle been installed on air-cooled models?
- ☐ Is the ice machine installed where ambient temperatures will not vary below 35°F or above 110°F? Incoming water temperature range 33°F/90°F. (See Use and Care Guide for winterizing.)
- ☐ Is there a separate drain for the water-cooled condenser?
- ☐ Are ice machine and bin drains vented?
- ☐ Are all electrical leads free from contact with refrigeration lines and moving components?
- ☐ Has filter screen in float valve been cleaned? See Figure 4.
- ☐ Has owner/operator been instructed regarding maintenance procedures and the use of Manitowoc Cleaner and Sanitizer?
- ☐ Has owner/operator completed the warranty registration card?
- ☐ Has Owner/Operator Use and Care Guide been left with owner/operator?
- ☐ Was bin and ice machine sanitized?

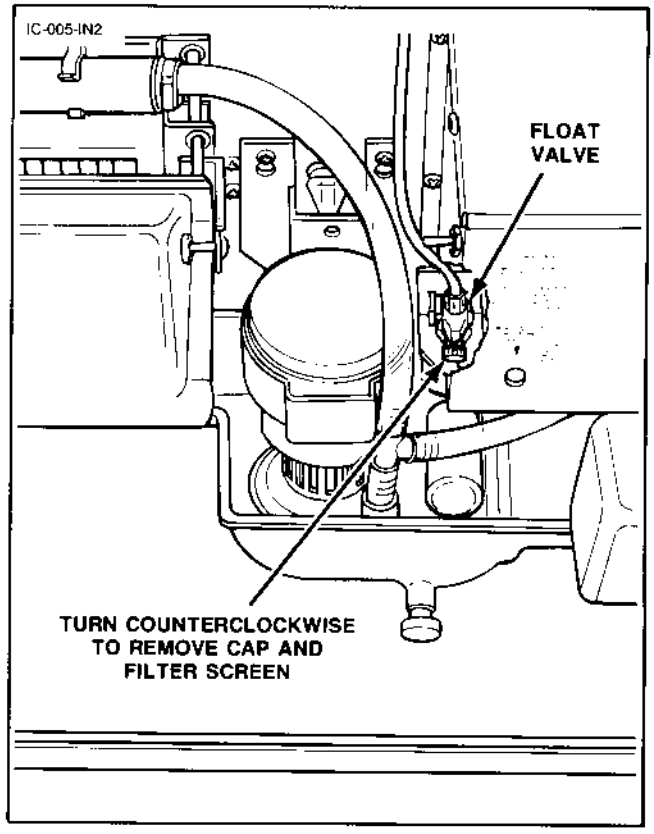


Figure 4

Before Starting Ice Machine

All Manitowoc Ice Machines are factory operated and adjusted before shipment. Normally no adjustments are necessary for new installations.

To ensure proper operation, follow the OPERATIONAL CHECK in the Owner/Operator Use and Care Guide.

Starting the ice machine and completing OPERATIONAL CHECK is the responsibility of the owner/installer. Adjustments and maintenance as outlined in the Owner/Operator Use and Care Guide are not covered by warranty.

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