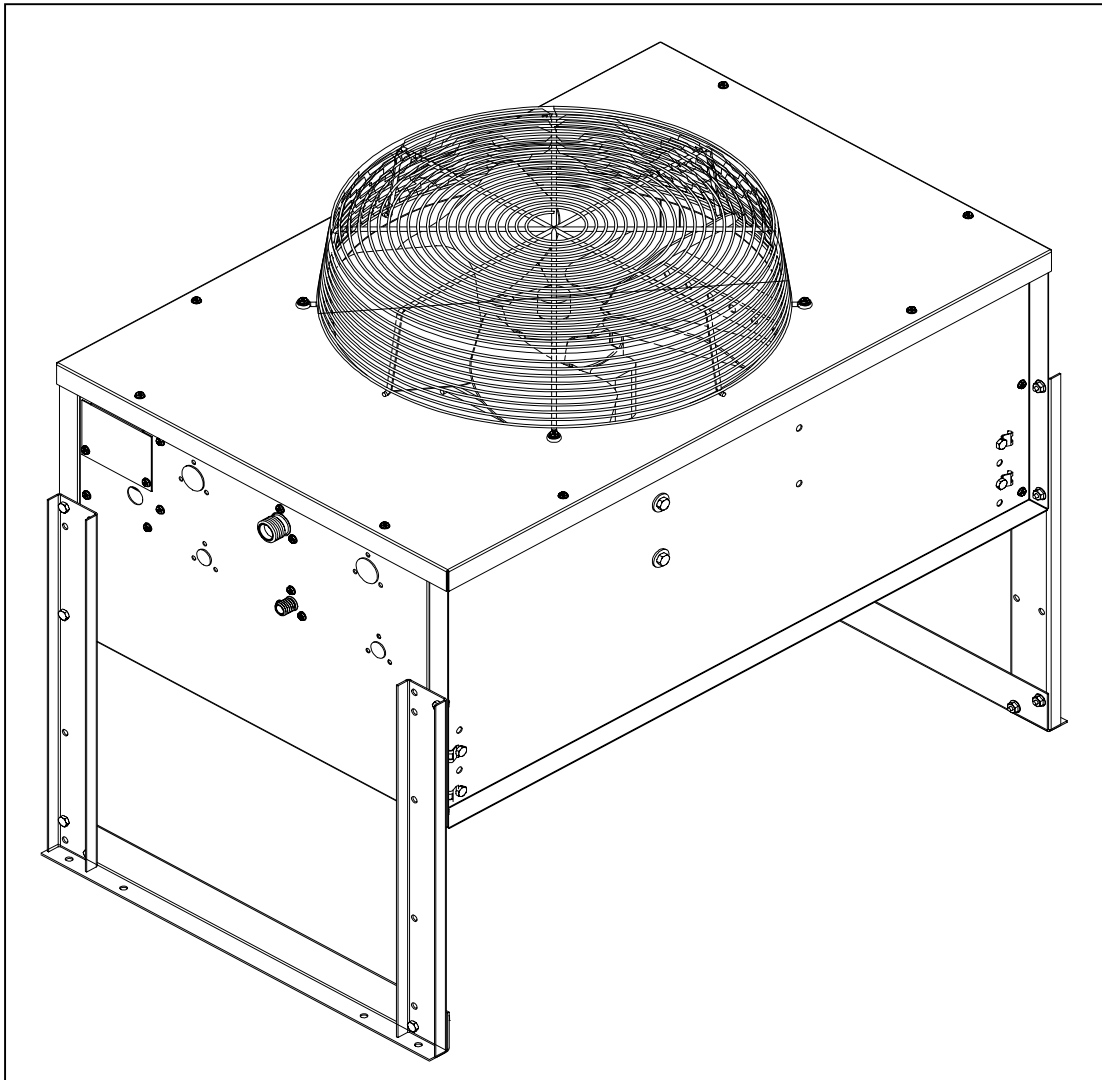




# Ice-O-Matic<sup>®</sup>

**PARTS AND INSTALLATION MANUAL  
REMOTE CONDENSERS  
ERC1002, ERC1062, ERC2061, ERC2062  
ERC2661, ERC4061, ERC5061  
LRC2661**



**Mile High Equipment  
11100 East 45th Ave  
Denver, Colorado 80239**

**Part Number 9081245-01**

**Print Date 2/03**

To the owner or user: This product manual is a source of information about the installation, start up, cleaning, maintenance, and repair of the product.

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**Ice-O-Matic manufactured Remote Condensers have a 2 year parts and labor warranty.**

**Condenser Dimensions (Inches)**

<b>Model</b>	<b>Length</b>	<b>Width</b>	<b>Height</b>
ERC1002	34.75	22.50	30.33
ERC1062	34.75	22.50	30.33
ERC2061	34.75	22.50	30.33
ERC2062	44.75	22.50	30.33
ERC2661	34.75	22.50	30.33
ERC4061	44.75	22.50	30.33
ERC5961	58.75	22.50	30.33
LRC2661	34.75	22.50	30.33

**Note the warning symbol where it appears in this manual. It is an alert for important safety information on a hazard that might cause serious injury. Keep this manual for future reference.**



**Ice-O-Matic  
11100 E. 45<sup>th</sup> Ave.  
Denver, Co. 80239  
800-423-3367**

**Introduction**

Ice-O-Matic Remote Condenser Systems are comprised of three components. The pre-charged remote condenser, the pre-charged ice maker and the pre-charged line set. The pre-charged line sets are available in 25, 40, 45 or 60 foot line set lengths. The 60 foot line set will require adding an additional 15 ounces of refrigerant to the system.

**Note: Do not exceed the maximum 60 foot line set run.**

Normal installation of the ice maker should be followed. Reference the installation instructions included with the ice maker.

In any installation, the pre-charged line sets, consisting of a liquid line (3/8" dia.) and a discharge line (1/2" dia.) are used as a one time initial charge type installation.

Once the sealed couplings are connected and the internal seal is broken, the lines cannot be disconnected without losing the refrigerant charge. They are, however, reusable and when the couplers are removed and reconnected, the complete refrigeration system must be evacuated and re-charged with the proper amount of refrigerant. Reference the ice maker data plate or ice maker service manual for proper refrigerant charge.

**General Description**

The remote condenser should be used in areas where sufficient airflow is not available in the area the ice maker is being installed or the heat being rejected by the condenser coil is un-desirable.

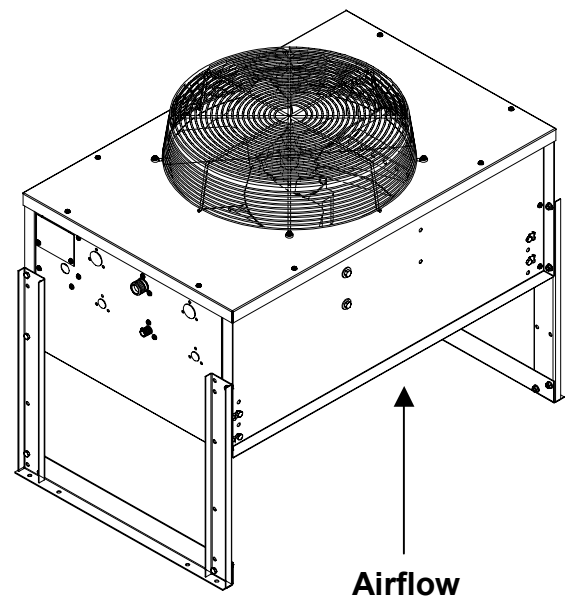
The condenser coil should not be exposed to temperatures below -20°F or above 120°F.

The remote condenser functions as a normal refrigeration system until the temperature at the condenser coil drops below 70°F. At this time the mixing valve will begin to bypass enough hot gas from the discharge line directly into the receiver to keep the liquid line feeding the expansion valve at a steady pressure. The amount of gas bypassed will depend on the temperature at the condenser coil (The colder the temperature at the condenser coil, the more gas will bypass and the tubing between the Mixing Valve and Receiver will become warmer). For the complete explanation of this valve, refer to the schematic on page 5 of this manual.

**Condenser Location**

When choosing a location for the remote condenser, reference the following guidelines.

1. Choose a location that is protected from extremes of dirt, dust, rain, sun and prevailing winds.
2. Vertical discharge mounting of the condenser is required.
3. Condenser should be mounted higher than the ice machine.
4. Condenser must be level.
5. Condenser should not be exposed to temperatures below -20°F or above 120°F.
6. Installation must meet all local and national building, plumbing and electrical codes.



**Remote Condenser Installation**

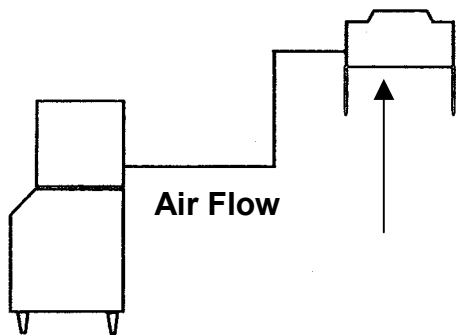
For proper operation of the Ice-O-Matic ice machine, the following installation guidelines must be followed. Failure to do so may result in loss of production capacity, premature part failure, and may void all warranties.

**Installation Guidelines**

- Ambient operating temperatures: -20°F (-28.9°C) to 120°F (48.9°C)
- Maximum refrigerant line length: 60 ft. (18.29 Meters)
- Maximum vertical rise: 16 ft. (4.88 Meters)
- Minimum condenser height: **ICE Series** ice machine remote condensers must not be installed more than 6 feet (1.3 meters) below the refrigerant line quick connects at the rear of the ice machine. No part of the refrigerant lines, between the ice machine and the remote condenser, should fall below this point. **Condensers must have a vertical airflow.**

When installing the condenser above the machine:

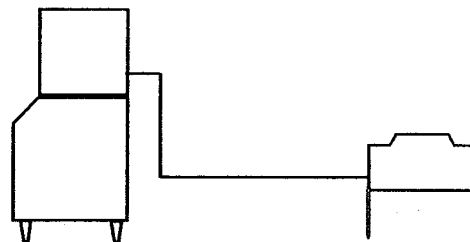
**DO** Slope refrigerant lines downward toward compressor.



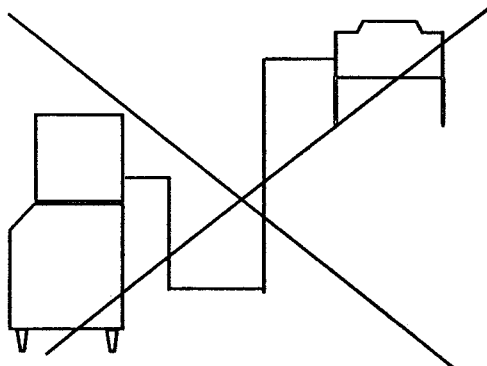
When installing condenser below the ice machine

**DO** Add 3 lbs (1361 grams) of refrigerant to system.

**DO** Slope refrigerant lines downward toward condenser

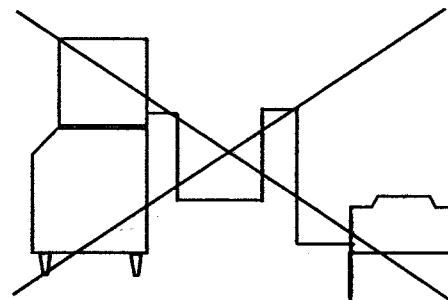


**DO NOT** Install any part of the refrigerant lines below the quick connect fittings at rear of machine.



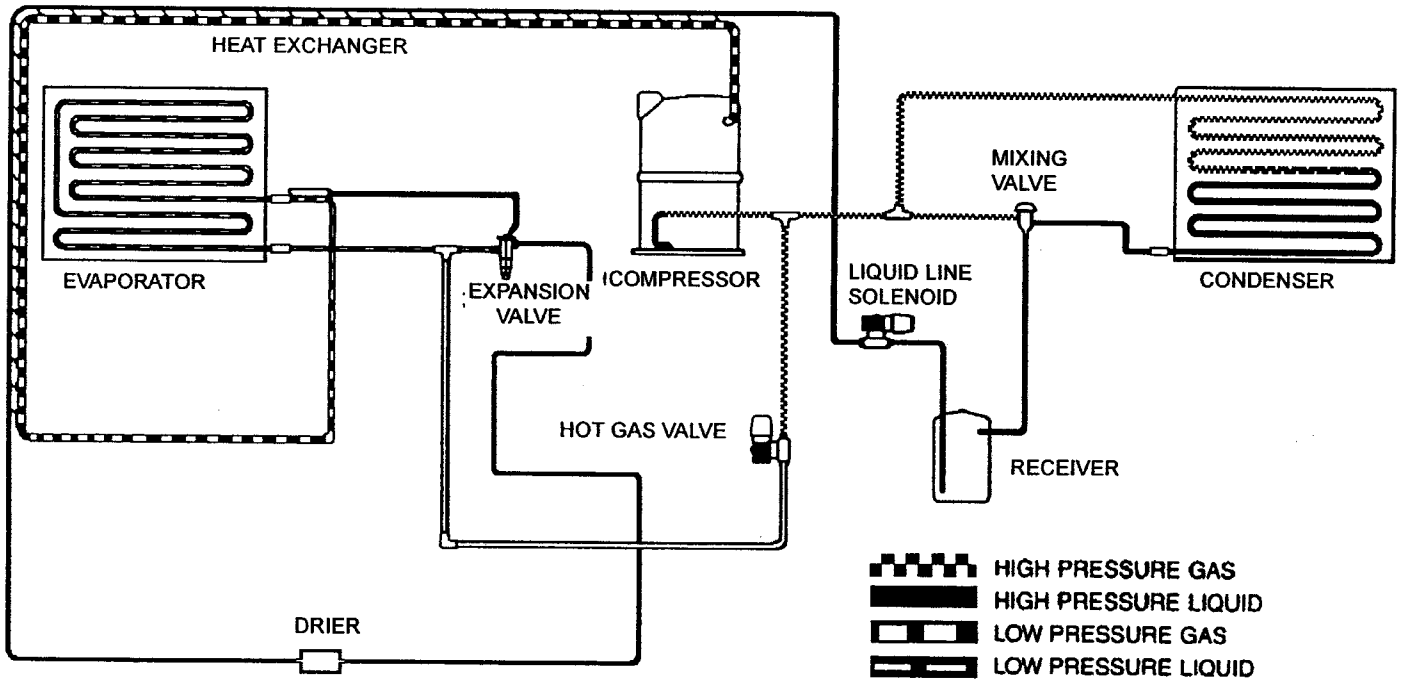
**DO NOT** Install the condenser lower than 6' (1.83 meters) below the quick connect fittings at rear of machine.

**DO NOT** Create oil traps in refrigerant lines by sloping lines downward then rising upward.



**Connecting Precharged Line Sets**

Before connecting line set fittings to the machine and condenser lubricate threads and o-rings with refrigerant oil. Leak check connections after connecting.



The Remote Refrigeration system is shown in the above diagram. During the freezing cycle, high temperature and high pressure liquid refrigerant is directed from the condenser through a mixing valve, receiver, liquid line solenoid heat exchanger and a filter drier. The expansion valve meters refrigerant to the coils on the back of the evaporator.

In low ambient conditions (Below 70°F air temperature at the condenser) the mixing valve opens to mix discharge gas with liquid returning from the condenser, in the receiver, to maintain discharge and liquid line pressures.

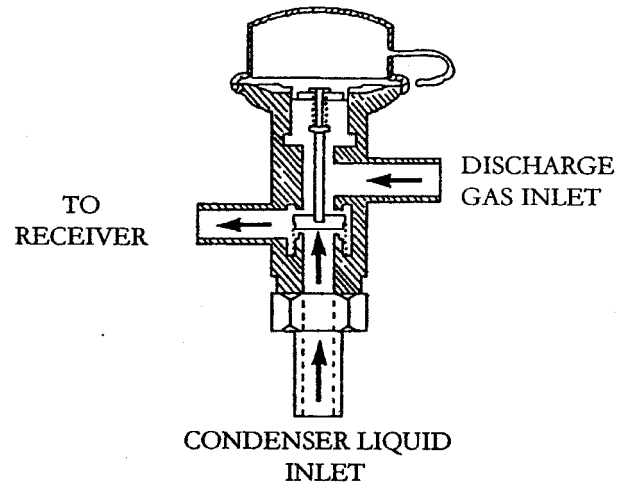
The low temperature and pressure refrigerant leaving the evaporator is directed through the suction line heat exchanger and is returned to the compressor. There it is compressed to a high temperature and high pressure gas. It is then directed to a condenser to be converted again to a high pressure and high pressure liquid.

During the harvest cycle, the hot gas solenoid valve (Normally closed during the freeze cycle), opens and directs the high temperature gas leaving the compressor into the evaporator. Once the evaporator has reached approximately 40°F, the harvest motor overcomes the capillary attraction of the ice and the evaporator releases the ice from the evaporator. At the end of the harvest cycle, the hot gas solenoid valve closes and another freeze cycle begins.

During the off cycle, the liquid line solenoid valve closes and the system is will pump down to 10-20 psi to prevent refrigerant migration to the roof top condenser.

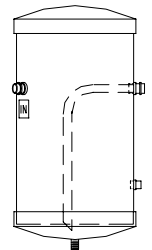
**Mixing Valve**

This valve serves as the head pressure regulating valve. It contains a pre-determined charge of nitrogen in the valve bellows. When the temperature at the condenser is above 70°F (21°C), the refrigerant flow from the compressor is directed by the mixing valve through the condenser and into the receiver. When the temperature at the condenser drops below 70°F (21°C), the pressure in the bellows of the mixing valve becomes greater than the pressure of the liquid refrigerant coming from the condenser. This change allows the valve to partially restrict the flow of refrigerant leaving the condenser and allows discharge gas to by-pass the condenser and flow directly into the receiver, mixing with the liquid refrigerant from the condenser. The amount of discharge gas that bypasses the condenser increases as the ambient temperature decreases. This action of the mixing valve allows the discharge pressure to be maintained at approximately 240 psi (16.5 bar) during low ambient conditions. If the refrigerant system is undercharged and the ambient temperature is below 70°F (21°C), the mixing valve will not work properly. The mixing valve will allow too much refrigerant to bypass the condenser.



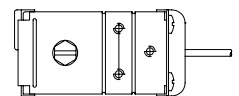
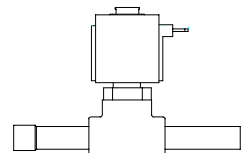
**Receiver**

The quantity of liquid refrigerant in the receiver will vary with the temperature at the condenser coil.



**Liquid Line Solenoid and Pump Down Low Pressure Control**

When the bin is full or the ON-OFF switch is turned to the OFF position, the liquid line solenoid valve closes and the system begins to pump down. When the low pressure reaches 10-20 psi, the pump down low pressure control opens and the contactor shuts the machine off. As the ice is removed from the bin or the ON-OFF switch is turned to the ON position, the liquid line solenoid valve opens and the high side and low side pressures begin to equalize. When the low side pressure reaches 50-75 psi, the pump down low pressure control closes and the machine begins a freeze cycle. When the machine is off for extended periods of time (Either a full bin or the ON-OFF switch in the OFF position), it will pump down approximately once every hour. This is due to the equalization of pressures during the off cycle resetting the pump down low pressure control. It is a normal function of the refrigeration system.



**Condenser Fan Motor**

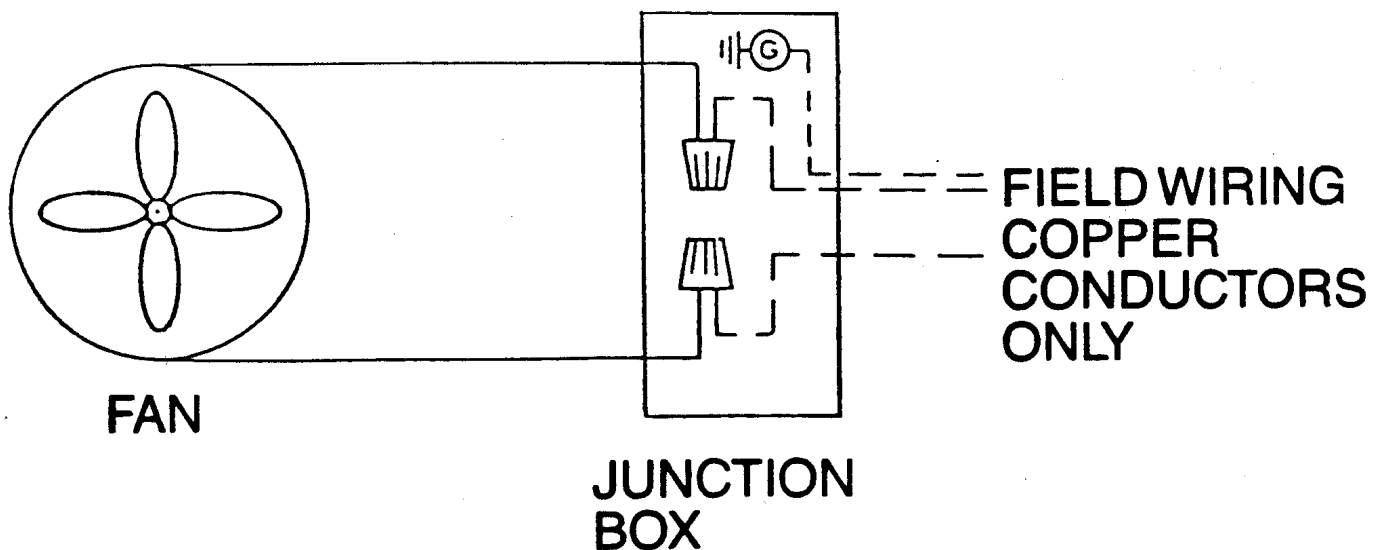
Is a single speed, permanent split capacitor motor and should be wired according to the wiring diagram on page 6 in this manual. The motor is permanently lubricated for long service life.

Note. If two machines are being run on a dual circuit condenser, the fan motor should be wired to a separate power source to run 100% of the time.

**Electrical Connections**

1. The icemaker and the remote condenser both require a solid earth ground that meets National, State and Local Codes.
2. Reference the ice machine and condenser date plate for current requirements to determine wire size for electrical hook up.
3. Make sure the supply voltage is the same as the rated voltage shown on the nameplate.
4. Reference wiring diagram below for proper connections.

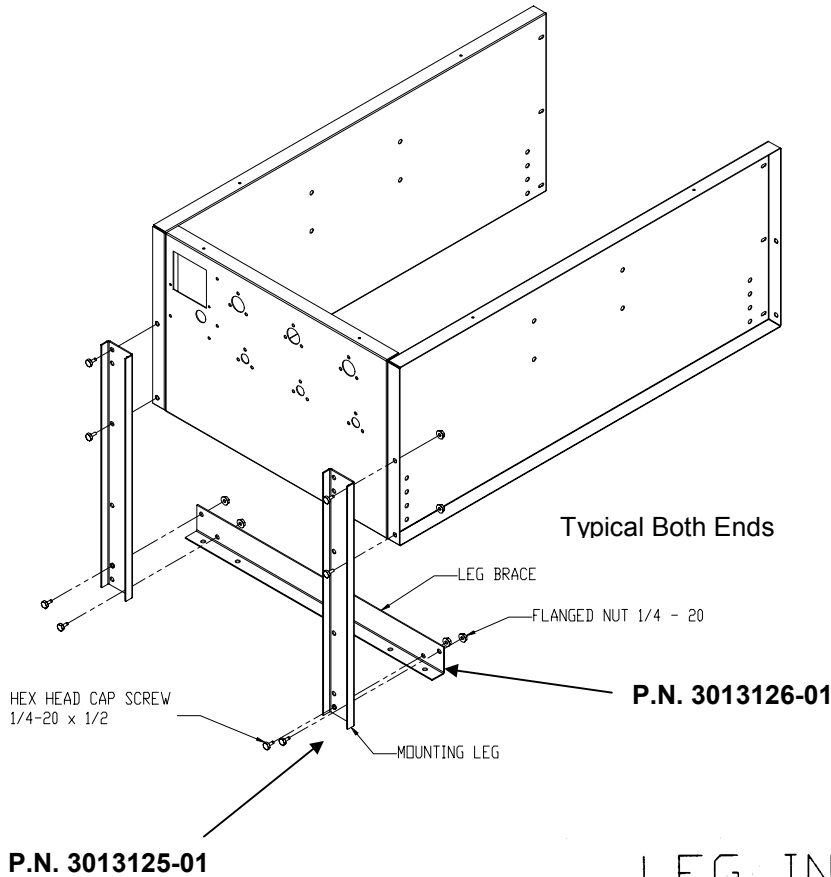
**INSTALLATION NOTICE:  
THE “LRC” SERIES REMOTE CONDENSER MAY ONLY BE  
USED WITH ICE-O-MATIC ICEMAKERS MARKED “LRC  
COMPATIBLE”**

 **WARNING**

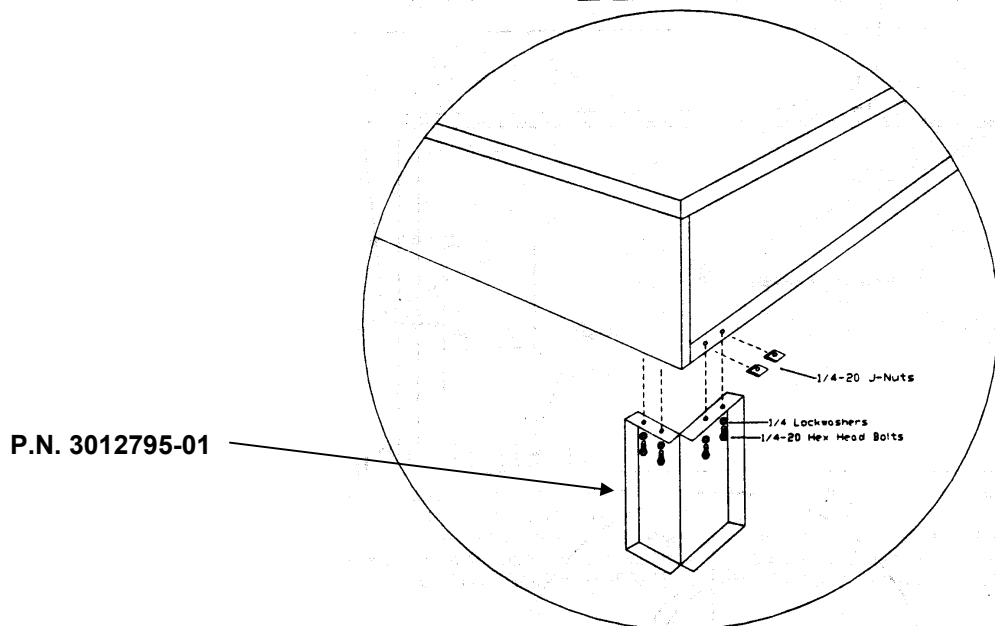
Electrical shock and/or injury from moving parts inside this machine can cause serious injury. Disconnect electrical supply voltage to the machine and condenser prior to performing any adjustments or repairs.

**Support Leg Installation.**

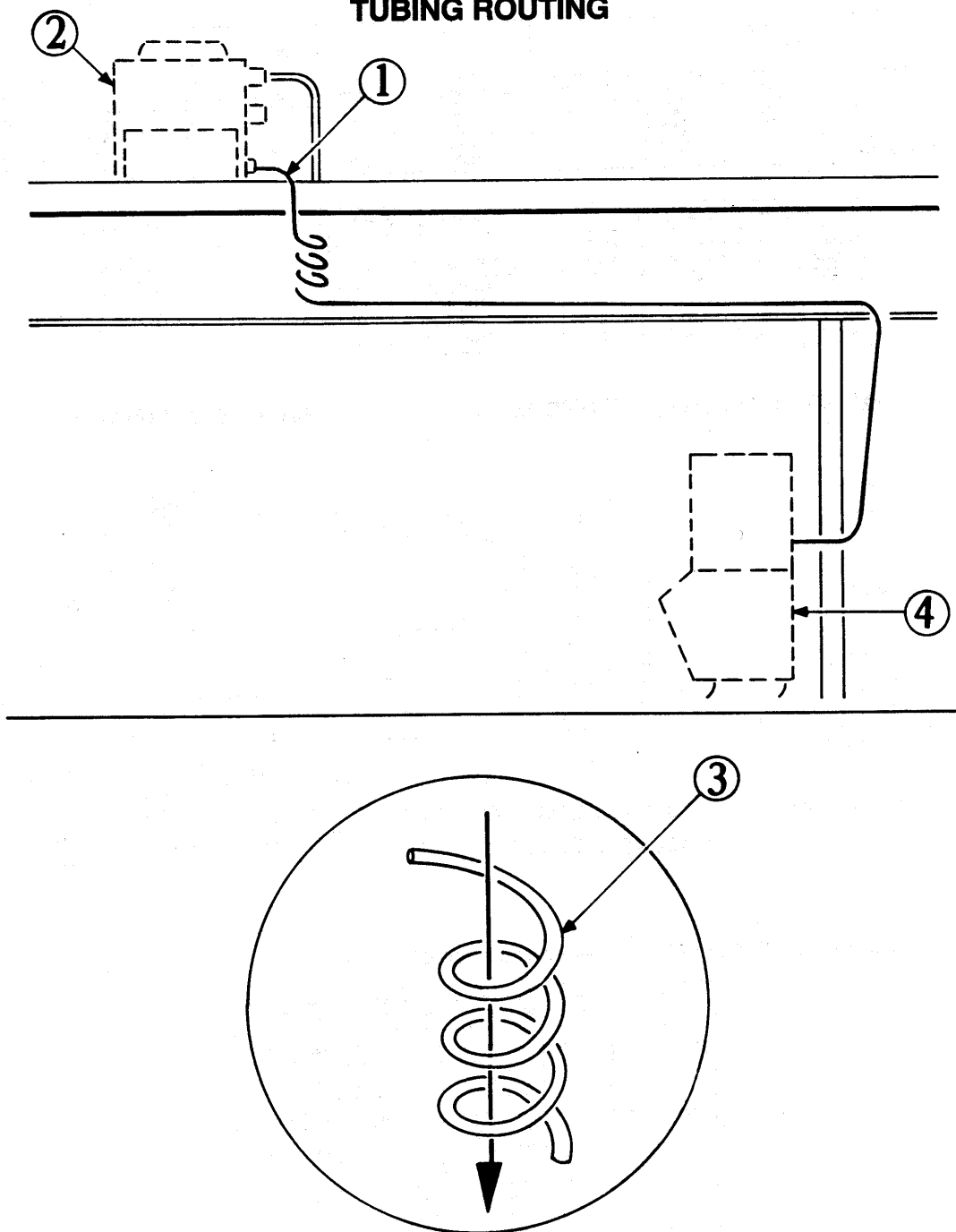
1. Ice-O-Matic remote condensers are designed to utilize Ice-O-Matic support legs. Installation must meet National, State and Local Codes.
2. Reference diagrams below for appropriate support leg installation.

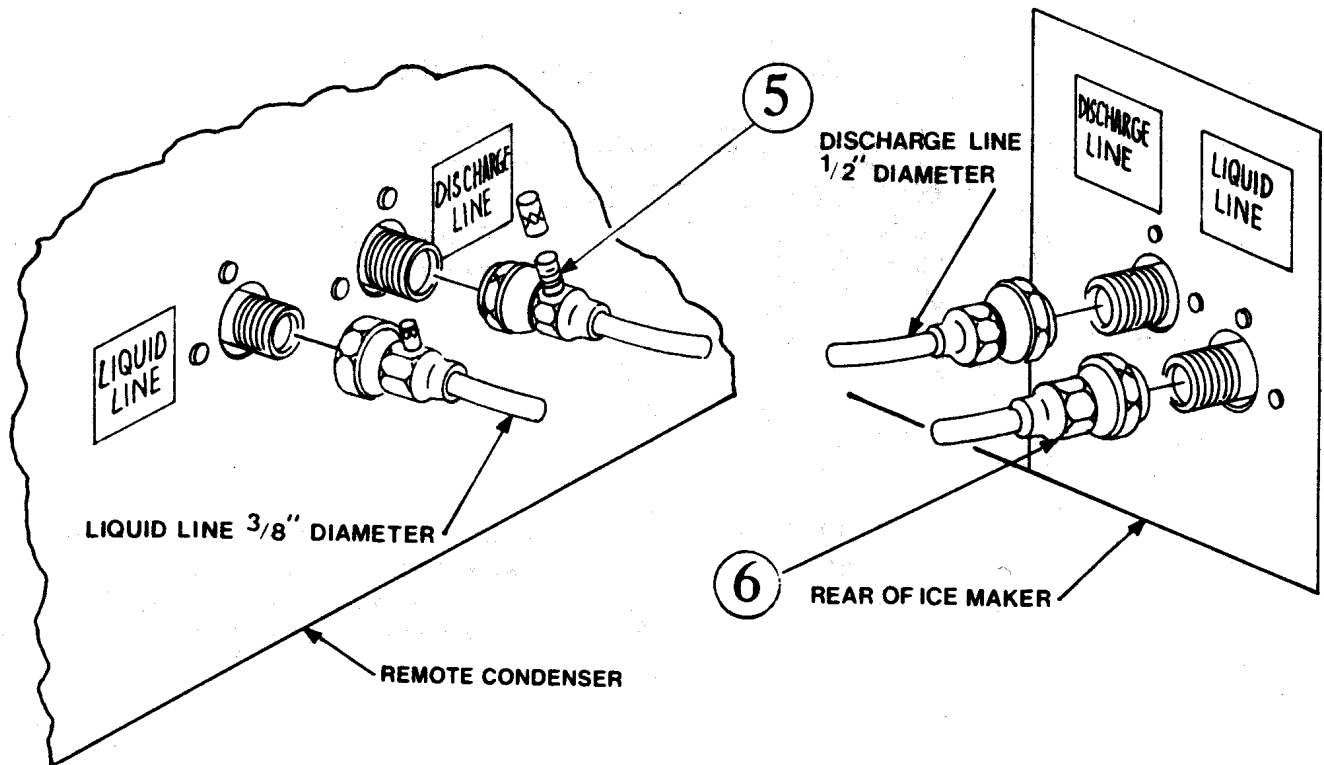


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**TUBING ROUTING**





### Proper Tubing Routing

When installing the discharge and liquid lines from the remote condenser to the icemaker, please use the following guidelines:

1. The remote condenser (#2) should always be installed above the icemaker (#4) as shown with a vertical air flow.
2. All excess tubing (#1) should be routed inside the building and coiled in a vertical spiral as shown (3#) to prevent oil trapping in the lines. Any tubing run outside should be insulated to protect it from surrounding ambient conditions. Tubing should follow straight line routing whenever possible. The lowest spot in the tubing run should be the connection at the rear of the icemaker.

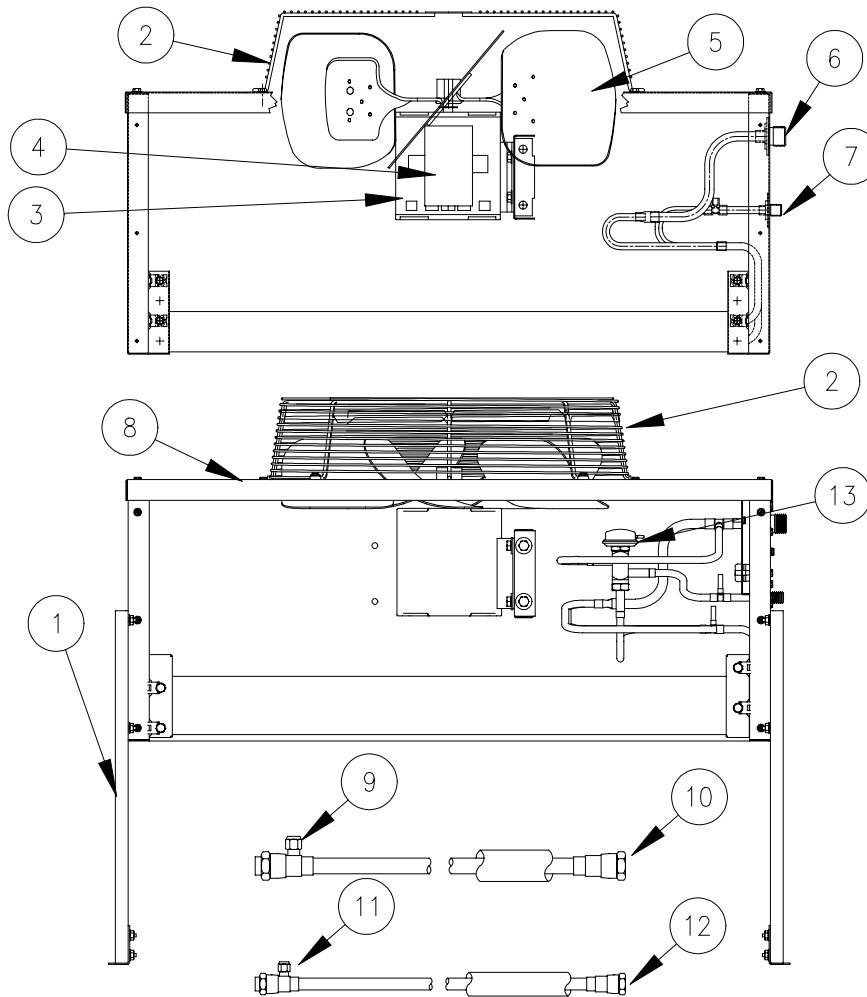
Both the discharge line and liquid line quick connect couplers are supplied with a Schrader Valve on one end of the line set. The Schrader Valve end should be connected to the remote condenser on both the discharge and liquid line for access to pressure readings at the condenser as shown (#5).

When attaching the quick connect couplers (#6), always lubricate the couplers with refrigerant oil. The couplers should be tightened until snug, then tightened another quarter (1/4) of a turn.

**Always leak check the quick connect couplers after installation has been made.**

### For Dual Circuited Condenser

The dual pass condenser is two separate condensers contained in a single cabinet. When routing lines, insure that the discharge and liquid lines from each machine are routed to one circuit of the condenser. Do not connect the discharge line from one machine and the liquid line from another line machine to the same circuit.



Item Description	Component Part Number By Condenser Model Number							
	ERC1002	ERC1062	ERC2061	ERC2062	ERC2661	ERC4061	ERC5061	LRC2661
1 Mounting Leg	See Page 7	See Page 7	See Page 7	See Page 7	See Page 7	See Page 7	See Page 7	See Page 7
2 Fan Guard	9131356-01	9131356-01	9131356-01	9131356-01	9131356-01	9131356-01	9131356-01	9131356-01
3 Fan Motor	9161110-01	9161110-02	9161110-02	9161110-02	9161110-02	9161110-02	9161110-02	9161110-02
4 Capacitor	9161110-91	9161110-92	9161110-92	9161110-92	9161110-92	9161110-92	9161110-92	9161110-92
5 Fan Blade	9131357-01	9131357-01	9131357-01	9131357-01	9131357-01	9131357-01	9131357-01	9131357-01
6 Coupling 1/2"	9091001-12	9091001-12	9091001-12	9091001-12	9091001-12	9091001-12	9091001-12	9091001-12
7 Coupling 3/8"	9091001-11	9091001-11	9091001-11	9091001-11	9091001-11	9091001-11	9091001-11	9091001-11
8 Top Panel	3013124-01	3013124-01	3013124-01	3013128-01	3013124-01	3013128-01	3013130-01	3013124-01
9 Coupling 1/2"	9091001-10	9091001-10	9091001-10	9091001-10	9091001-10	9091001-10	9091001-10	9091001-10
10 Coupling 1/2"	9091001-08	9091001-08	9091001-08	9091001-08	9091001-08	9091001-08	9091001-08	9091001-08
11 Coupling 3/8"	9091001-04	9091001-04	9091001-04	9091001-04	9091001-04	9091001-04	9091001-04	9091001-04
12 Coupling 3/8"	9091001-02	9091001-02	9091001-02	9091001-02	9091001-02	9091001-02	9091001-02	9091001-02
13 Mixing Valve	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9151027-06