



A Pentair Company

INSTRUCTION MANUAL FOR:

LOBOY 16 AIR CONDITIONERS

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INSTRUCTION MANUAL

TABLE OF CONTENTS

Receiving the Air Conditioner.....	1
Handling and Testing the Air Conditioner	1
Model Information	2
Model Drawing	2
Model Number Information	3
Installation Instructions.....	3
Cut Out Drawing	3
Technical Information	5
Sequence of Operation	5
Component Operation	5
Refrigerant Properties	6
Unit Characteristics	7
Functional Data	7
Wiring Diagrams	8
Service Data	10
Component List	10
Maintenance	8
Trouble Shooting	11
Technical Support	12
McLean Cooling Warranty.....	13

RECEIVING THE AIR CONDITIONER

Inspect the air conditioner and check for concealed damage that may have occurred during shipment. Damage evident upon receipt should be noted on the freight bill. Save the packing material and request an inspection. Then file a claim with the delivering carrier within 15 days of delivery.

McLean Cooling cannot accept responsibility for freight damages; however, we will assist you in any way possible.

HANDLING & TESTING THE AIR CONDITIONER

If the air conditioner has been in a horizontal position, be certain it is placed in an upright, vertical or mounting position for a minimum of five (5) minutes before operating.

Warning: Do not attempt to operate the air conditioner while it is horizontal or on its side, back or front. The refrigeration compressor is filled with lubricating oil. This will cause permanent damage to the air conditioner and also voids the warranty.

TEST FOR FUNCTIONALITY **BEFORE** MOUNTING THE AIR CONDITIONER TO THE ENCLOSURE.

Refer to the nameplate for proper electrical current requirements, and then wire unit to a properly grounded power supply. Minimum circuit ampacity should be at least 125% of the amperage shown in the design data section for the appropriate model. No other equipment should be connected to this circuit to prevent overloading.

Immediately after applying power the evaporator blower (enclosure air) should start running. Operate the air conditioner with the compressor running for five (5) to ten (10) minutes. You will need to set the cooling thermostat below the ambient temperature to operate the compressor.

Condenser air temperatures should be warmer than normal room temperatures within a few minutes after the condenser air blower starts.

See sequence of operation for specifics on how the unit operates when powered up.

MODEL INFORMATION

Model Drawing

NOTE:
 1. CONDENSATE FROM ENCLOSURE DRAINS TO BOTTOM PAN OF UNIT WHERE IT IS EVAPORATED BY CONDENSER HEAT.
 2. SERVICE CORD TERMINATED WITH APPROPRIATE PLUG CAP.
 3. FRONT MTC HOLES ARE NOT INTENDED TO SUPPORT ENTIRE WEIGHT OF AIR CONDITIONER. SLIDE RAILS SHOULD BE PROVIDED.

Model No.	Voltage	Hz	Full Load Amps	Ph.	BTU/hr ● Max. Amb. Temp.	Max. °F Amb. Temp.	Shipping Weight
LB16-0515-XXX	115	50/60*	12.6	1	4200/5000	125	140 lbs.
LB16-0516-	115	60	12.6	1	5000	125	135 lbs.
LB16-0525-	230	50	6.3	1	5000	125	135 lbs.
LB16-0526-	230	60	6.3	1	5000	125	135 lbs.
LB16-0615-	115	50/60*	15.0	1	5000/6000	125	140 lbs.
LB16-0616-	115	60	15.0	1	6000	125	135 lbs.
LB16-0625-	230	50	7.5	1	6000	125	135 lbs.
LB16-0626-	230	60	7.5	1	6000	125	135 lbs.
LB16-0716-	115	60	16.0	1	7000	125	135 lbs.
LB16-0725-	230	50	8.0	1	7000	125	135 lbs.
LB16-0726-	230	60	8.0	1	7000	125	135 lbs.
LB16-0816-	115	60	16.0	1	8000	125	140 lbs.
LB16-0825-	230	50	8.0	1	8000	125	140 lbs.
LB16-0826-	230	60	8.0	1	8000	125	140 lbs.
LB16-0916-	115	60	19.4	1	9000	125	140 lbs.
LB16-0925-	230	50	9.5	1	9000	125	140 lbs.
LB16-0926-	230	60	9.5	1	9000	125	140 lbs.
LB16-1016-	115	60	20.0	1	10,000	125	140 lbs.
LB16-1025-	230	50	10.0	1	10,000	125	140 lbs.
LB16-1026-	230	60	10.0	1	10,000	125	140 lbs.

*Units wired for 50 Hz operation when shipped. A single internal wiring change is required for 60 Hz operation. Most models available with Hz selector switch, if desired; consult factory.
 -XXX will be replaced with three digits designating all options desired. Consult factory for specific model numbers.

ATTENTION:
 THIS DRAWING AND THE INFORMATION IT CONTAINS ARE THE EXCLUSIVE PROPERTY OF McLEAN THERMAL. ANY UNAUTHORIZED USE, DISCLOSURE, OR REPRODUCTION WITHOUT THE EXPRESS WRITTEN CONSENT OF McLEAN THERMAL IS PROHIBITED.

McLean
 16 SERIES LOBOY AIR CONDITIONER

DWG. NO. LB16-0000
 SHEET: 1 OF 1

How to Read Model Numbers

LB16	-	10	2	6	-	G015
1		2	3	4		5

1. Identifies the type/family of air conditioner and the approximate height (i.e. LB16 = LOBOY family about 16" high).
2. This is the air conditioner's listed capacity in Btu/hr at rated conditions. (i.e. 10 = 10,000 Btu/h at 125/125F)
3. 1 = 115 Volt, 2 = 230 Volt, 4 = 460 Volt.
4. 6 = 50/60 Hz or 60 Hz only.
5. Unique set of numbers for each air conditioner which identifies the accessories on a model.

INSTALLATION INSTRUCTIONS

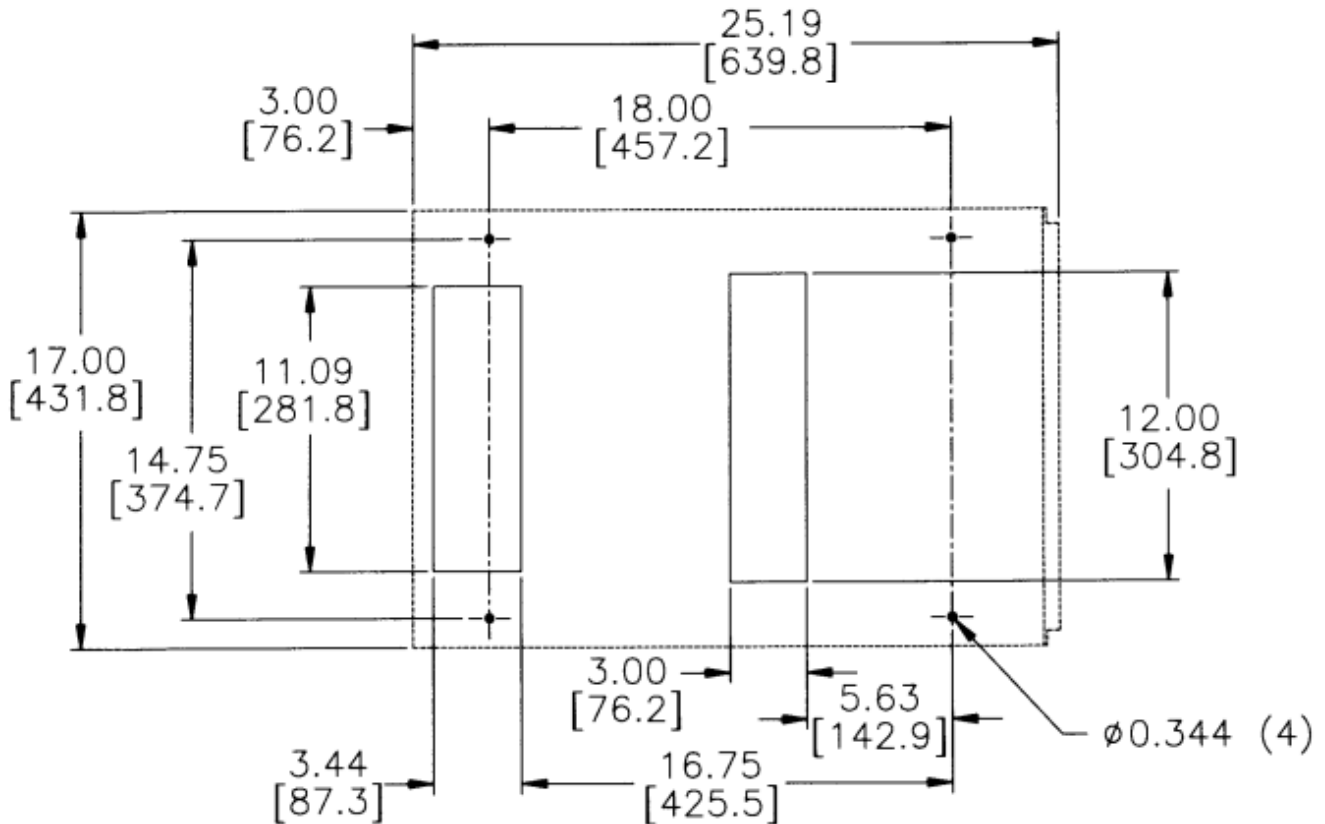


Figure 1 – Cutout Drawing 5 Ton

Step 1: Inspect air conditioner. Verify functionality before mounting the air conditioner, see Handling & Testing the Air Conditioner on page 1.

Step 2: Use the cut out drawing in Figure 1 for proper openings for the air conditioner. Using the mounting gasket kit provided with the unit, install gaskets to the air conditioner.

Step 3: Mount air conditioner on enclosure taking care not to damage the mounting gasket. The mounting gasket is the seal between the air conditioner and the enclosure. Avoid dragging the air conditioner on the enclosure with the mounting gasket attached as this could cause rips or tears in the gasket and risk losing the water tight seal.

Step 4: Allow unit to remain upright for a minimum of five (5) minutes before starting. Caution: Air conditioner must be in upright position during operation.

Step 5: Refer to the nameplate for electrical requirements. Wire the unit to a properly grounded power supply. Electrical circuit should be fused with slow blow or HACR circuit breaker.

Step 6: Some air conditioners require a remote mounted thermostat. Wire the thermostat outputs to the appropriate terminals on the 24VAC terminal strip (note locations on the wiring diagram).

Step 7: Set thermostat for required cabinet temperature. Refer to Sequence of Operation for tstat adjustment & operation.

TECHNICAL INFORMATION

Sequence of Operation

The air conditioner comes standard with one internally mounted thermostat. When the unit is plugged in, the evaporator fan will be running.

Cooling

When the enclosure temperature is above the cooling thermostat setpoint, power is applied through the time delay relay. After the delay time the contactor is energized and the compressor starts. The condenser fan will start once the compressor starts. Component specific information is listed below.

Operating the air conditioner below the minimum ambient temperature or above the maximum ambient temperatures indicated on the nameplate voids all warranties.

The moisture that the enclosure air can contain is limited. If moisture flows from the drain tube continuously this can only mean that ambient air is entering the enclosure. Be aware that frequent opening of the enclosure's door admits humid air that the air conditioner must then dehumidify.

Standard and Optional Component Operation

Thermostat

The LB16 air conditioner uses our standard 52-6155-02 thermostat. The thermostat setpoint equals the temperature that the air conditioner turns off. The thermostat has an adjustable differential from setpoint until it calls for cooling; the typical differential is 5°F. An example of operation is shown below.

For cooling (75-100°F range):

Tstat setpoint = 80°F

Cooling turns on at 85°F

Cooling turns off at 80°F

Time Delay Relay

Factory set for 6 minutes (top dial at 1-10 minutes, bottom dial at 6)

The purpose of the time delay relay is to prevent short cycling of the compressor.

Contactor

The contactor uses a 230V coil.

Standard and Optional Component Operation (continued)

Refrigerant Properties Chart (R407c)

°F	°C	Bubble Pt	Dew Point	°F	°C	Bubble Pt	Dew Point
-40	-40	2.9	4.5	60	15.6	117.7	96.8
-35	-37.2	5.2	0.7	65	18.3	128.7	106.7
-30	-34.4	7.9	1.7	70	21.1	140.2	117.2
-25	-31.7	10.7	4	75	23.9	152.5	128.4
-20	-28.9	13.9	6.5	80	26.7	165.5	140.4
-15	-26.1	17.3	9.3	85	29.4	179.2	153.1
-10	-23.3	21.1	12.4	90	32.2	193.6	166.5
-5	-20.6	25.2	15.8	95	35	208.8	180.8
0	-17.8	29.6	19.5	100	37.8	224.9	195.8
5	-15	34.4	23.6	105	40.6	241.8	211.8
10	-12.2	39.6	28	110	43.3	259.6	228.7
15	-9.4	45.2	32.7	115	46.1	278.2	246.5
20	-6.7	51.3	37.9	120	48.9	297.8	265.3
25	-3.9	57.8	43.6	125	51.7	318.3	285.2
30	-1.1	64.7	49.6	130	54.4	339.9	306.1
35	1.7	72.2	56.2	135	57.2	362.4	328.2
40	4.4	80.2	63.2	140	60	386	351.4
45	7.2	88.7	70.7	145	62.8	410.7	375.9
50	10	97.8	78.8	150	65.6	436.5	401.7
55	12.8	107.5	87.5				

Unit Characteristics

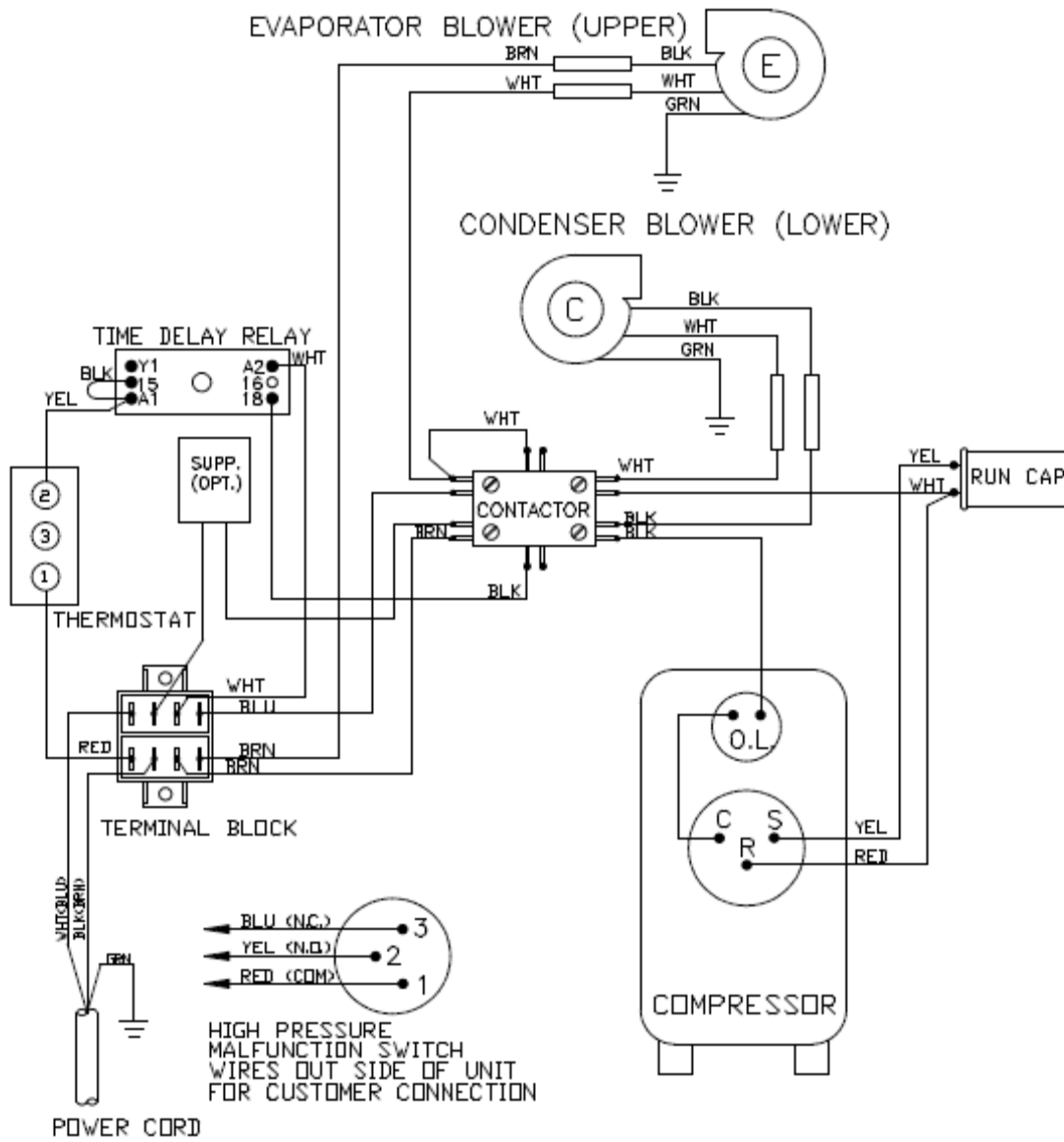
Model	
LB16-1026-GXXX	
Dimensional Data	
Height	15.75"
Width	19"
Depth	25.2"
Unit Weight	140
Unit Protection Rating	Type 12, 4
Cooling Data	
Refrigerant	R-407c
Refrigerant Charge	25oz. / 709g
Cooling Capacity at 95F enclosure 95F ambient (Btu/hr / W)	8343 / 2445
Cooling Capacity at Max Conditions (Btu/hr / W)	9038 / 2649
Maximum Ambient Temp	125F / 52°C
Minimum Ambient Temp	-40F / -40°C
Condensate Management	Hose discharge
Electrical Data	
Rated Voltage (50/60 Hz)	230 V
Rated Frequency	50 / 60 Hz
Voltage Range	+/- 10% of rated
Cooling Amps at Max Conditions (50/60 Hz)	12.4/11.0

-XXX will be replaced with a three-digit number designating all desired options. Consult the factory for specific model numbers.

Functional Data

LB16-1026-GXXX							
Evaporator Air In (°F)	Condenser Air In (°F)	Unit Amps	Evaporator Pressure (psi)	Condenser Pressure (psi)	Evaporator Delta (°F)	Condenser Delta (°F)	Condenser Subcooling (°F)
65-95	65-95	7.0-8.0	-	-	18-25	-	-

Wiring Point to Point Diagram



WIRING DIAGRAM 04-2001-694 REV. 0

Figure 3 – Wiring Diagram

SERVICE DATA

LB16 Series Component List

Part Description	Part Number
Blower Motor, Condenser	10-1020-04
Blower Motor, Evaporator	10-1020-10
Capacitor, Condenser Blower	52-6083-00
Capacitor, Evaporator Blower	52-6084-05
Capacitor, Compressor, Run	52-6031-01
Time Delay Relay	10-1005-71
Coil, Condenser	16-7001-00
Coil, Evaporator	52-6121-01
Compressor	10-1026-115
Contact, Compressor	10-1005-42
Evaporator Inlet Filter	10-1000-08
Filter/Dryer	52-6028-00
Capillary Tube	99-0640-35
Thermostat	52-6155-02

Maintenance

Compressor

The compressor requires no maintenance. It is hermetically sealed, properly lubricated at the factory and should provide years of satisfactory operating service.

Condenser and Evaporator Blower Motors

Blower motors require no maintenance. All bearings, shafts, etc. are lubricated during manufacturing for the life of the motor.

Caution: Operation of the air conditioner in areas containing airborne caustics or chemicals can rapidly deteriorate condenser coils, blowers and motors, etc. Contact McLean Cooling for special recommendations.

Refrigerant Loss

Each air conditioner is thoroughly tested prior to leaving the factory to insure against refrigeration leaks. Shipping damage or microscopic leaks not found with sensitive electronic refrigerant leak detection equipment during manufacture may require repair or recharging of the system. This work should only be performed by qualified professionals, generally available through a local, reputable air conditioning repair or service company.

Should the refrigerant charge be lost, access ports on the suction and discharge sides of the compressor are provided for recharging and/or checking suction and discharge pressures. Under no circumstances should the access fitting covers be loosened, removed or tampered with. Breaking of seals on compressor access fittings during warranty period will void warranty on hermetic system. Recharging ports are provided for the ease and convenience of reputable refrigeration repair service personnel for recharging the air conditioner.

Refer to the data on the nameplate that specifies the type of refrigerant and the charge size in ounces.

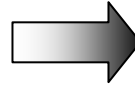
Before recharging, make sure there are no leaks and that the system has been properly evacuated into a deep vacuum. Technician must weigh in charge according to the nameplate specifications.

Troubleshooting

1. Check manufacturer's nameplate located on the unit for correct power supply.
2. Turn the power to the unit on. The evaporator (Enclosure or "COLD" air) blower should come on. Is there airflow?

YES, proceed to step # 3.

NO, possible: Open motor winding
 Stuck blower motor
 Obstructed wheels/blades

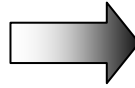


**Repair or Replace
defective parts.**

3. Check thermostat setting? Adjust thermostat to the lowest setting. This should turn the condenser blower and the compressor on. Did condenser blower and compressor come on when the thermostat was turned on?

YES, proceed to step #4.

NO, possible: Defective thermostat



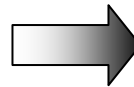
Replace part.

4. Are both blowers and the compressor running? If not the unit will not cool properly.

5. Check condenser (Ambient or "HOT" air) blower for airflow. Is there airflow?

YES, proceed to step # 6.

NO, possible: Defective thermostat
 Open motor winding
 Stuck blower motor
 Obstructed wheels/blades

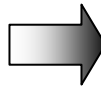


**Repair or Replace
defective parts.**

6. Carefully check the compressor for operation - motor should cause slight vibration, and the outer case of the compressor should be warm.

YES, wait 5 minutes, then proceed to step #7.

NO, possible: Defective thermostat
 Defective capacitor
 Defective overload
 Defective relay



**Repair or Replace
defective parts.**

7. Make sure the coils are clean. Then check evaporator "air in" and "air out" temperatures. If the temperatures are the same:

Possible loss of refrigerant
Possible bad valves in the compressor



**Repair or Replace
defective parts.**

8. To check for a bad thermostat. Turn power to the unit off. Remove control box cover, place both thermostat wires onto one terminal (replace control box cover for safety). This will bypass the switch in the thermostat. Turn the power on. If both blowers and the compressor come on, the thermostat needs to be replaced.

Symptoms and Possible Causes:

<u>SYMPTOM</u>	<u>POSSIBLE CAUSE</u>
Unit won't cool	<ul style="list-style-type: none">* Clogged fins on coil(s)* Dirty filters* Blowers/fans not running* Compressor not running* Compressor runs, but has bad valves* Loss of refrigerant
Compressor tries to start but won't run	<ul style="list-style-type: none">* Low line voltage at start. Should be +/-10% rated voltage* Compressor motor stuck* Bad contactor* Bad overload switch* Bad run/start capacitor
Unit blows breakers	<ul style="list-style-type: none">* Under sized breaker/fuse or not time delayed* Short in system
Getting water in enclosure	<ul style="list-style-type: none">* Drain plugged* Drain tube kinked* Enclosure not sealed (allowing humidity in)* Mounting gasket damaged

For additional technical support contact McLean Cooling at 866-545-5252.

MCLEAN COOLING TECHNOLOGY WARRANTY

Please note: Warranty effective at time of shipment.

McLean Cooling Technology warrants that all material and workmanship are free of defects in quality which impair the usefulness of the air conditioner or heat exchanger for a period of five (5) years for non-operating parts, except for the filter; and for one (1) year for everything else when installed and operated under the following conditions:

- A. Maximum voltage variation no greater than plus or minus 10% of nameplate nominal rating.
- B. Maximum frequency variation no greater than plus or minus 3 Hz. of nameplate nominal rating.
- C. Must not exceed minimum and maximum stated temperatures on the nameplate.
- D. Not to exceed (BTU/Hr.) rating, including any heat sink, as indicated on the nameplate.
- E. The unit must not be restarted for a period of one (1) minute after intentional or accidental shut-off. (This does not apply to heat exchanger or filter fan.)
- F. Extended operation with thermostat stop screw removed and setting below 70°F.

McLean Cooling warrants that all material and workmanship are free of defects in quality which impair the usefulness of the filter fan package and all custom air conditioners and heat exchangers for a period of one (1) year, except for the filter, when installed and operated under conditions A, B, C and D as listed above.

Not covered in this warranty is damage to the air conditioner or heat exchanger due to the introduction of other than the nameplate-designated refrigerant. Operation of any McLean Cooling product that has not been designed with proper protective coatings and/or options and is in an abnormal or corrosive environment voids the warranty. Prolonged operation with dirty filters also voids the warranty.

Should any part prove defective within the above warranty period, the customer may choose to return the defective product that is under warranty to McLean Cooling for repair at no charge or the customer has the option to repair the defective products at his own expense and McLean Cooling will supply repair parts at no charge providing the defective part is returned and found to have failed under warranty. Parts supplied as warranty replacement parts will assume the balance of the warranty on the part returned for warranty consideration.

Please be advised: According to the Federal Register, no person maintaining, servicing, repairing, or disposing of appliances may knowingly vent or otherwise release into the environment any class I or class II substance used as refrigerant.

McLean Cooling assumes no liability beyond the repair or replacement of its own product. Customer modification of any McLean Cooling product voids this warranty.

The purchaser assumes the responsibility of grounding the unit and installing it in accordance with local electrical and safety codes, as well as the National Electric Code (NEC) and OSHA.

This express warranty constitutes the entire warranty with respect to the PRODUCT and IS IN LIEU OF ALL OTHERS, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OR MERCHANTABILITY AND WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE AND IN NO EVENT IS MCLEAN COOLING RESPONSIBLE FOR ANY CONSEQUENTIAL DAMAGES OF ANY NATURE WHATSOEVER.

HOLD HARMLESS

In consideration of purchase of equipment from McLean Cooling by a customer, McLean Cooling agrees to indemnify and hold harmless such customer and users with a defense, as to any claim, demand, statutory court cost, fees for attorney's services provided for below, and/or judgment, for actual or alleged patent infringement in any country, arising out of the use, sale or advertisement of any equipment manufactured or sold by McLean Cooling to McLean Cooling's own specifications, provided that the customer or user shall promptly notify McLean Cooling in writing of any such claim or demand, provided further that McLean Cooling shall have the right and option to undertake and control the entire defense of such claim, or demand instituted against the customer or user, but limited to the products made or sold by McLean Cooling, through counsel selected by McLean Cooling, and to settle and pay any claim award arising out of such claim or demand, and provided further that the customer or user will provide such information and assistance as McLean Cooling may request subject to reimbursement by McLean Cooling for any out-of-pocket expense incurred in providing such requested assistance. Liability of McLean Cooling for any infringement or claim thereof shall be limited to the above undertaking.