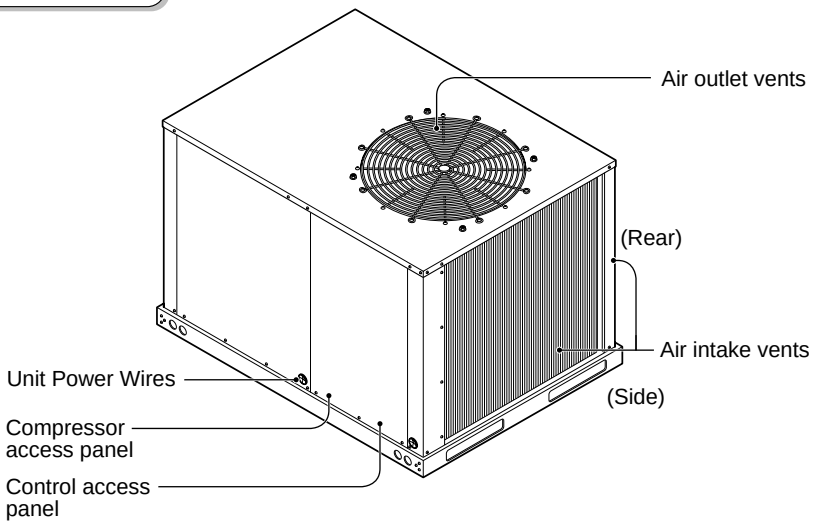
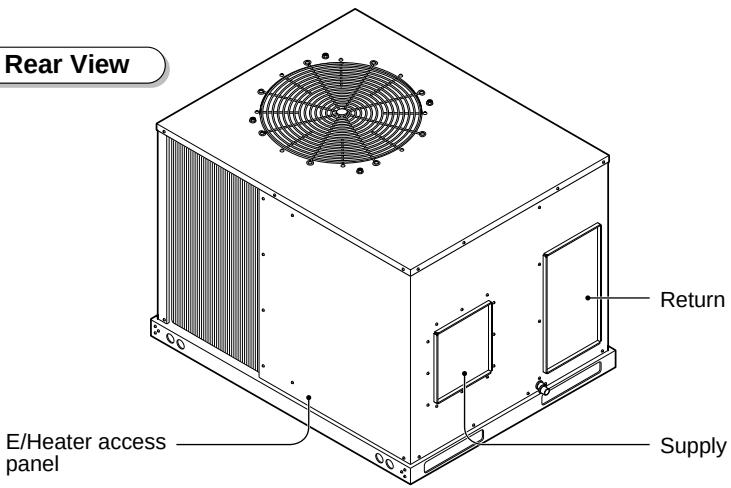
LG SINGLE PACKAGED AIR CONDITIONERS
INSTALLATION & MAINTENANCE INSTRUCTIONS

- Please read this instruction sheet completely before installing the product.
- Installation work must be performed in accordance with national wiring standards by authorized personnel only.

Front View



Rear View



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1. The following should be always observed for safety

- Please report to or take consent by the supply authority before connecting to the system.
- Be sure to read "THE FOLLOWING SHOULD BE ALWAYS OBSERVED FOR SAFETY" before installing the air conditioner.
- Be sure to observe the cautions specified here as they include important items related to safety.
- The indications and meanings are as follows.

WARNING	Could lead to death, serious injury, etc.
CAUTION	Could lead to serious injury in particular environments when operated incorrectly.

- After reading this manual, be sure to keep it together with the owner's manual in a handy place .

⚠ WARNING

Do not install it yourself (customer).

- Incomplete installation could cause injury due to fire, electric shock or leakage of water. Consult the dealer from whom you purchased the unit or special installer.

Perform the installation securely referring to the installation manual.

- Incomplete installation could cause a personal injury due to fire, electric shock, noisy operation or distortion.

Install the unit securely in a place which can bear the weight of the unit.

- When installed in an insufficient strong place, noisy operation and distortion could occur.

Perform electrical work according to the installation manual and be sure to use an exclusive circuit.

- If the capacity of the power circuit is insufficient or there is incomplete electrical work, it could result in a fire or an electric shock.

Use the specified wires to connect the unit and the field installed cut off switch box securely and attach the wires firmly to the terminal so the stress of the wires is not applied to the sections.

- Incomplete connecting and fixing could cause fire.

Attach the electrical part cover and service panel to the unit securely.

- If the electrical part cover panel are not attached securely, it could result in a fire or electric shock due to dust, water etc.

Check that the refrigerant gas do not leak after installation is completed.

Be sure to use the part provided or specified parts for the installation work.

- The use of defective parts could cause an injury or leakage of water due to a fire, electric shock etc.

Bodily injury can result from high voltage electrical components or fast moving fan drives. For protection from these inherent hazards during installation and servicing, the electrical supply must be disconnected. If operating checks must be performed with the unit operating, it is the technician's responsibility to recognize these hazards and proceed safely.

UNIT CONTAINS AN HCFC (R-22) REFRIGERANT
Section 608 paragraph C of the 1990 Clean Air Act states: Effective July 1, 1992 it shall be unlawful for any person, in the course of maintaining, servicing, repairing or disposing of an air conditioning system, to knowingly vent or release any CFC or HCFC refrigerant minimal releases (air purges of refrigerant hoses) associated with good faith attempts to recapture or recycle are exempted from the ban on venting.

⚠ CAUTION

Having perfect vacuum process in the factory, our units don't have drier but have filter in the refrigerant circuit.
In case of recharging R-22 gas in the field,
"DRIER" must be installed on the liquid line which is connected from discharge part of condenser to intake part of evaporator. Because the refrigerant circuit is capable of containing water with imperfect vacuum.

2. Dimensional Data

Single packaged cooling unit are designed for outdoor mounting with vertical condenser discharge. They can be located either at ground level or on roof.
Each unit contains an operating charge of Refrigerant 22 as shipped.

Unit Dimensions(Figure 1A)

Unit : Inch(mm)

UNITS	LK-0480CH	LK-0380CH
A	31.89(810)	23.43(595)
B	27.95(710)	27.95(710)
C	48.86(1,241)	48.86(1,241)
D	25.55(649)	25.55(649)
E	4.57(116)	4.57(116)

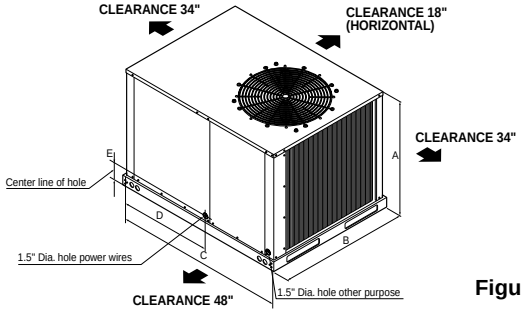

Figure 1A

Horizontal Application Unit(Figure 1B)

Rear view showing duct opening for horizontal air flow.

Unit : Inch(mm)

UNITS	LK-0480CH	LK-0380CH
A	11.30(287)	9.53(242)
B	4.53(115)	4.43(112.5)
C	8.58(218)	7.32(186)
D	1.54(39)	1.54(39)
E	7.72(196)	5.81(147.5)
F	19.02(483)	15.8(402)
G	12.99(330)	11.89(302)
H	10.87(276)	5.81(147.5)

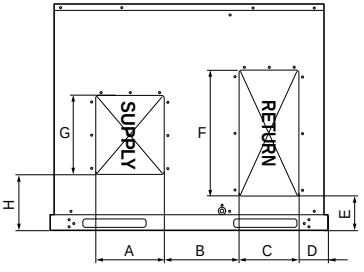

Figure 1B

3. Installation of Unit

3-1. Inspection

1) Check for damage after unit is unloaded. Report promptly, to the carrier, any damage found to unit. Do not drop unit.
2) Check the unit nameplate to determine if the unit voltage is correct for the application. Determine if adequate electrical power is available. Refer to the application specifications.
3) Check to be sure the refrigerant charge has been retained during shipment. Access to 1/4" flare pressure taps may be gained by removing compressor compartment access panel.

3-2. Location and Recommendations

1) Unit Support

If unit is to be roof mounted check building codes for weight distribution requirements.

2) Location and Clearances

Installation of unit should conform to local building codes and the National Electrical Code.

Select a location that will permit unobstructed airflow into the condenser coil and away from the fan discharge and permit unobstructed service access into the compressor compartment. Suggested airflow clearances and service clearances are given in Figure 1.

3) Placing and Rigging

Rig the unit using either belt or cable slings. The sling eyelet must be placed through the lifting holes in the base rail of the unit. The point where the slings meet the lifting eyelet should be at least 6 feet above the unit. Use spreader bars to prevent excessive pressure on the top of the unit during lifting.

Important: The use of "spreader bars" is required when hoisting the unit (prevents damage to sides and top). Top crating can be used as spreader bars.

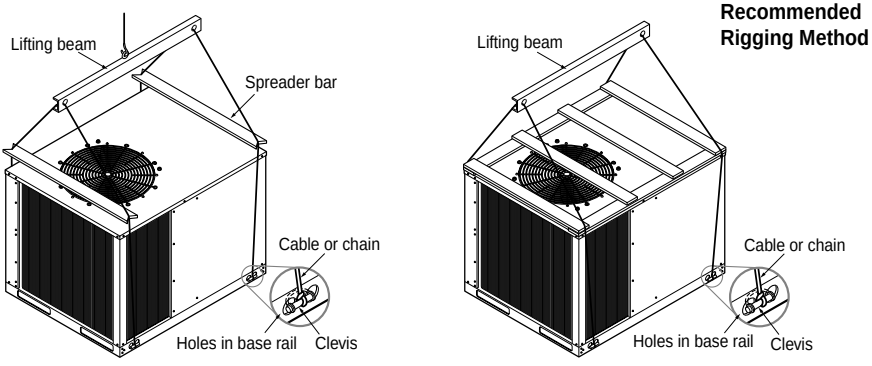

Figure 2

4) Slab Mount

"For ground level installation, the unit base should be adequately supported and hold the unit near level. The installation must meet the guidelines set forth in local codes."

4. Ductwork

1. Ductwork construction guidelines

Connections to the unit should be made with three-inch canvas connectors to minimize noise and vibration transmission.

Elbows with turning vanes or splitters are recommended to minimize air noise and resistance.

The first elbow in the ductwork leaving the unit should be no closer than three times blower diameter to avoid turbulence and back pressure.

2. Attaching Horizontal Ductwork to the Unit

All conditioned air ductwork should be insulated to minimize heating and cooling duct losses. Use minimum of 2" of insulation with a vapor barrier. The outside ductwork must be weather proofed between the unit and the building.

When attaching ductwork to a horizontal unit, provide a flexible water tight connection to prevent noise transmission from the unit to the ducts. The flexible connection must be indoors and molded out of heavy canvas.

Note: Do not draw the canvas taut between the solid ducts.

5. Condensate Drain Piping

A 3/4 inch male condensate drain connection is located on the corner of the unit next to the evaporator section access panel. A trap should be installed and filled with water before starting the unit to avoid air from being drawn through. Follow local codes and standard piping practices when running the drain line. Pitch the line downward, away from the unit, and avoid long horizontal runs. See Figure 3.

Do not use reducing fittings in the drain lines.
The condensate drain must be:

1. Made of 3/4" pipe size.
2. Pitched 1/4" per foot to provide free drainage to convenient drain system.
3. Trapped
4. Must not be connected to closed drain system.

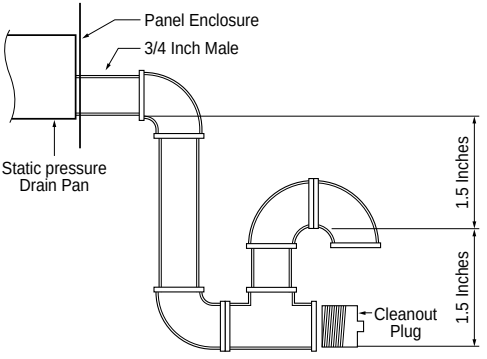

Figure 3

6. Filter Installation

The units are shipped without a filter and is the responsibility of the installer to secure a filter in the return air ductwork.

Filter must always be used and must be kept clean.
When filters become dirt laden, insufficient air will be delivered by the blower, decreasing your units efficiency and increasing operating costs and wear-and-tear on the units and controls.

Filters should be checked monthly especially since the unit may be used for both heating and cooling.

Important: Do not operate unit without filters in place.

7. Electrical Wiring

Check the unit nameplate for the required supply voltage. Determine if adequate electrical power is available. Refer to application specifications.

Electrical wiring and grounding must be installed in accordance with local codes and with the National Electric code Latest Revision.

Electrical Power

It is important that proper electrical power is available for the unit. Voltage variation should remain within the limits stamped on the nameplate.

Disconnect Switch

Provide an approved weatherproof disconnect either on the side of unit or within close proximity.

Over Current Protection

The branch circuit feeding the unit must be protected as shown on the unit rating plate.

Power Wiring

The power supply lines must be run in approved conduit to the disconnect, and in the bottom of the unit control box. Provide strain relief for all conduit with suitable connectors. Provide flexible conduit supports whenever vibration transmission may cause a noise problem within the building structure.

Power Entry Guide

Important: Holes are provided for low-voltage and high-voltage wiring. It is not necessary to punch any new holes in either the interior or exterior unit panels. If new holes are punched, performance will be adversely affected unless they are resealed to be both air- and watertight.

Typical Field Wiring Diagram (Figure 4)
(For three phase 4 wire electricity product)

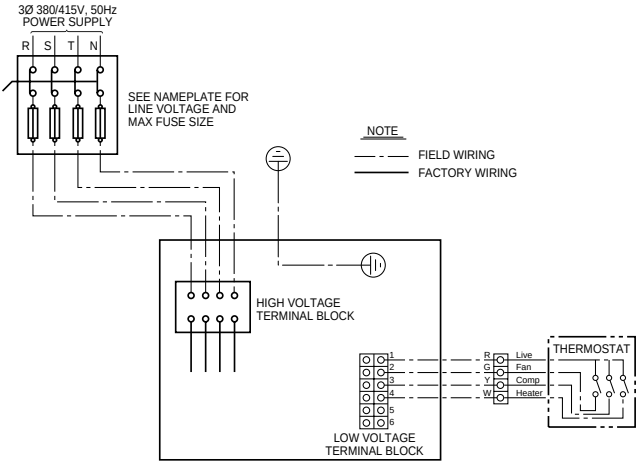

Figure 4

- See wiring diagram for details.

Note : For branch circuit wiring(main power supply to unit disconnect), Wire size for the length of run should be determined using the circuit ampacity found on the unit nameplate and the N.E.C..

GROUNDING : THE UNIT MUST BE ELECTRICALLY GROUNDED IN ACCORDANCE WITH LOCAL CODES AND THE NATIONAL ELECTRICAL CODE.

(Note)
- Keep all wires away from the refrigerant pipe.
- Following diagram is the example of wiring arrangement.

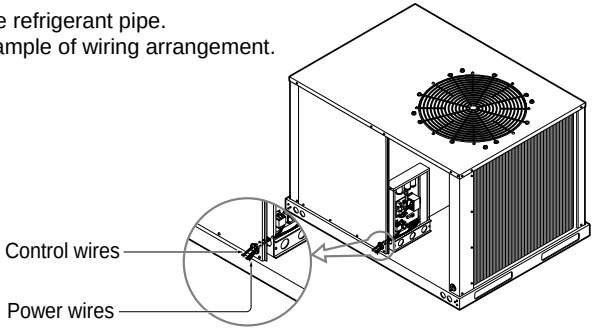

Figure 5

8. Start-Up Pre-Start Quick Check List

• Is unit level and located with proper clearances?	→ See Figure 1.
• Is the duct work correctly sized, run, taped, insulated and weather proofed with proper unit arrangement?	→ See duct work installation
• Is condensate line properly sized, run trapped and pitched?	
• Is the filter of the correct size, clean and in place?	
• Is the wiring properly sized and run in according to the unit wiring diagram?	
• Are all wiring connections tight including those in unit and compressor electrical boxes?	
• Has the unit been properly grounded and fused with the recommended fuse size?	
• Have the air conditioning systems been checked at the service ports for charge and leak tested if necessary?	
• Does the condenser fan and indoor fan turn freely without rubbing and are they tight on the shafts?	
• Visually inspect the unit to ensure that the airflow required for the condenser coil is not obstructed from the unit.	
• Inspect the control panel wiring to verify that all electrical connections are tight, and that wire insulation is intact.	
• Is the indoor fan and rotation correct?	
• Has the indoor fan speed been determined and the proper speed been set?	
• Has all work been done in accordance with applicable local and national codes?	→ See air flow performance data
• Are all covers and access panels in place to prevent air loss and safety hazards?	

⚠ WARNING

Bodily injury can result from high voltage electrical components. If operating checks must be performed with the unit operating, it is the technician's responsibility to recognize these hazards and proceed safely. Failure to do so could result in severe personal injury or death due to electrical shock or contact with moving parts.

9. Starting the Unit

Heating Mode

(If unit is equipped with electric heat.)

Check to ensure all grilles and registers are open and all unit access doors are closed before start-up.

Turn on unit main power supply.

Move the system switch to the "Heat" position.

Set the temperature approximately 5˚C above room temperature.

Cooling Mode

Verify that the unit airflow rate is adjusted according to information provided in "Determining Evaporator Fan Adjustment" section of this manual.

To start the unit in the cooling mode, close unit disconnect switch and set the operating mode to COOL and move the cooling setpoint approximately 5˚C below room temperature. The condenser fan motor, compressor and evaporator fan motor should operate automatically. There will be a delay of up to 3 minutes before the unit will start in the cooling mode.

Operating Pressures

After the unit has operated in the cooling mode for a short period of time, install pressure gauges on the gauge ports of the discharge and suction line valves.

Note: Always route refrigerant hoses through the port hole provided and have compressor access panel in place.

Check the suction and discharge pressures and compare them to the normal operating pressures provided in the unit's Service Manual.

Note: Do not use pressures from Service manual to determine the unit refrigerant charge. The correct charge is shown on the unit nameplate. To charge the system accurately, use superheat charging or weigh the charge.

Voltage

With the compressor operating, check the line voltage at the unit. The voltage should be within the range shown on the unit nameplate. If low voltage is encountered, check the size and length of the supply line from the main disconnect to the unit. The line may be undersized for the length of the run.

⚠ WARNING

Bodily injury can result from high voltage electrical components. If operating checks must be performed with the unit operating, it is the technician's responsibility to recognize these hazards and proceed safely. Failure to do so could result in severe personal injury or death due to electrical shock or contact with moving parts.

10. Final Installation Checklist and Maintenance

- Does unit run and operate as described in the "Sequence of Operation" in the unit Service Manual?
- Is the condenser fan and indoor blower operating correctly, with proper rotation and without undue noise?
- Are the compressors operating correctly and has the system been checked with a charging chart?
- Have voltage and running currents been checked to determine if it is within limits?
- Have the air discharge grilles been adjusted to balance the system?
- Has the ductwork been checked for air leaks and condensation?
- Has the indoor airflow been checked and adjusted if necessary?
- Has the unit been checked for tubing and sheet metal rattles and are there unusual noises to be checked?
- Are all covers and panels in place and properly fastened?
- Has the owner or maintenance personnel been given this manual, warranty, and been instructed on proper operation and maintenance?

Routine Maintenance By Owner

You can do some of the periodic maintenance functions for your unit yourself; this includes cleaning air filters, cleaning unit cabinet, cleaning the condenser coil, and conducting a general unit inspection on a regular basis.

⚠ WARNING

Before removing access panels to service unit, disconnect power supply. Failure to disconnect power before attempting any servicing can result in severe injury or death.

Air Filters

It is very important to keep the central duct system air filters clean. Be sure to inspect them at least once each month when the system is in constant operation. (In new buildings, check the filters every week for the first 4 weeks.)

Permanent type filters can be cleaned by washing with a mild detergent and water. Ensure that the filters are thoroughly dry before reinstalling them in the unit (or duct system).

Condenser coil

Unfiltered air circulates through the unit's condenser coil and can cause the coil's surface to become clogged with dust, dirt, etc.. To clean the coil, vertically (i.e., along the fins) stroke the coil surface with a soft bristled brush.

Keep all vegetation away from the condenser coil area.

Maintenance Performed by Serviceman-Cooling Season

To keep your unit operating safely and efficiently, the manufacturer recommends that a qualified serviceman check the entire system at least once each year, or more frequently if conditions warrant. Your serviceman may examine these areas of your unit:

1. Filters	→ For cleaning
2. Motors and drive system components	
3. Condenser coils	→ For cleaning
4. Safety Controls	→ For mechanical cleaning
5. Electrical components and wiring	→ For possible replacement or connection tightness
6. Condensate drain	→ For cleaning
7. Inspect the unit duct connections to ensure they are physically sound and sealed to the unit casing.	
8. Inspect the unit mounting support to see that it is sound.	
9. Inspect the unit to ensure there is no obvious deterioration.	

Maintenance Performed By Serviceman-Heating Season

Complete the unit inspections and service routines described below at the beginning of each heating season.

⚠ WARNING

To prevent injury or death due to electrical shock of contact with moving parts, lock unit disconnect switch in open position before servicing unit.
To prevent an explosion and possible injury, death and equipment damage, do not store combustible materials, gasoline or other flammable vapors and liquids near the unit.

Inspect the control panel wiring to verify that all electrical connections are tight and wire insulation is intact.