



# INSTALLATION INSTRUCTIONS

## HWC-7-11/12-\*\*P

### MAGICPAK CHASSIS

This manual must be left with the homeowner for future reference.

This manual is for the replacement of an EXISTING R-454B chassis. Reference the rating plate of the equipment being replaced. If the rating plate states R-454B refrigerant, please proceed forward. If the rating plate states R-410A, please follow the included Installation manual 508725-01.



This is a safety alert symbol and should never be ignored. When you see this symbol on labels or in manuals, be alert to the potential for personal injury or death.

#### ⚠ WARNING

This chassis shall be installed by a qualified agency in accordance with the manufacturer's instructions and all applicable codes and requirements of the authority having jurisdiction. If the information in these instructions is not followed exactly, electric shock, fire, or explosion may result, which may cause property damage, personal injury, or death. The qualified service agency performing this work assumes responsibility for properly installing this chassis.

#### ⚠ WARNING

This Chassis is designed for, and should only be used in, MagicPak All-In-One™ HWC models of similar cooling capacity. Any other use could result in actions that might cause property damage, personal injury, or death.

#### ⚠ WARNING

Turn off gas to the appliance before performing any service. Failure to disconnect gas supply can result in property damage, personal injury, or death.

#### ⚠ WARNING



Risk of electrical shock. Disconnect all remote power supplies before installing or servicing any portion of the system. Failure to disconnect power supplies can result in property damage, personal injury, or death.

#### ⚠ WARNING

Consult current HWC specifications to ensure wire and breaker are sized appropriately.

#### Parts List

Quantity	Part
1	Wiring Diagram Label
1	Installation Instructions

Manufactured By  
**Allied Air Enterprises LLC**  
215 Metropolitan Drive  
West Columbia, SC 29170



(P) 508680-01

Save these instructions for future reference

**▲ WARNING**

Auxiliary devices which may be a potential ignition source shall not be installed in the duct work. Examples of such potential ignition sources are hot surfaces with a temperature exceeding 1,292 F (700°C) and electric switching devices.

**▲ WARNING**

For appliances using A2L refrigerants connected via an air duct system to one or more rooms, only auxiliary devices approved by the appliance manufacturer or declared suitable with the refrigerant shall be installed in connecting ductwork.

**▲ WARNING**

- Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.
- The appliance shall be stored in a room without continuously operating ignition sources (for example: open flames, an operating gas appliance, or an operating electric heater).
- Do not pierce or burn.
- Be aware that refrigerants may not contain an odor.

**▲ WARNING**

Any service personnel installing, decommissioning, or performing maintenance on the unit must be properly trained with A2L refrigerants.

**▲ WARNING**

For duct connected appliances, false ceilings or drop ceilings may be used as a return air plenum if a REFRIGERANT DETECTION SYSTEM is provided in the appliance and any external connections are also provided with a sensor immediately below the return air plenum duct joint.

**▲ WARNING**

If this appliance is conditioning a space with an area smaller than  $TA_{min}$  or stored in a space with an area smaller than  $A_{min}$  as defined by this instruction, then that space must be without continuously operating open flames (e.g. an operating gas appliance) or other potential ignition sources (e.g. an operating electric heater or similar hot surface). A flame-producing device may be installed in the same space if the device is provided with an effective flame arrest system.

**NOTE** – R454B is an A2L refrigerant. The system installation must meet the following parameters based upon total refrigerant charge (line set included).  $TA_{min}$  (Total minimum conditioned area) is the minimum allowable conditioned area based upon the total system charge at sea level. Values must be multiplied by altitude adjustment factor at installed altitude.

See tables below

**$TA_{min}$  Table**

Charge (lb)	<4	4	6	8	10
Charge (kg)	<1.8	1.8	2.7	3.6	4.5
Minimum Conditioned Area (ft <sup>2</sup> )	N/A*	60	90	120	150
Minimum Conditioned Area (m <sup>2</sup> )	N/A*	5.6	8.4	11.2	14.0

**NOTE** – Multiply values in  $TA_{min}$  table by the Altitude Adjustment Factors to correct  $TA_{min}$  based on installed altitude.

**Altitude Adjustment Factor**

<b>Altitude (m)</b>	0	200	400	600	800	1000	1200	1400	1600
<b>Altitude (ft)</b>	0	660	1310	1970	2620	3280	3940	4590	5250
<b>Adj. Factor</b>	1	1	1	1	1.02	1.05	1.04	1.1	1.12
<b>Altitude (m)</b>	1600	1800	2000	2200	2400	2600	2800	3000	3200
<b>Altitude (ft)</b>	5250	5910	6560	7220	7870	8530	9190	9840	10500
<b>Adj. Factor</b>	1.12	1.15	1.18	1.21	1.25	1.28	1.32	1.36	1.4

- Work shall be undertaken under a controlled procedure so as to minimize the risk of a flammable gas or vapor being present while the work is being performed.
- The area shall be checked with an appropriate refrigerant detector prior to and during work, to ensure the technician is aware of potentially toxic or flammable atmospheres.
- Ensure that the detection equipment being used is suitable for use with all applicable refrigerants, i. e. n non-sparking, adequately sealed or intrinsically safe.
- If any hot work is to be conducted on the refrigerating equipment or any associated parts, the appropriate fire extinguishing equipment shall be available to hand.
- Have a dry powder or CO2 fire extinguisher adjacent to the charging area.
- No person carrying out work in relation to a refrigerating system which involves exposing any pipe work shall use any sources of ignition in such a manner that it may lead to the risk of fire or explosion. All possible ignition sources, including cigarette smoking, should be kept sufficiently far away from the site of installation, repairing, removing and disposal, during which refrigerant can possibly be released to the surrounding space. Prior to work taking place, the area around the equipment is to be surveyed to make sure that there are no flammable hazards or ignition risks. "No Smoking" signs shall be displayed.
- Ensure that the area is in the open or that it is adequately ventilated before breaking into the system or conducting any hot work. A degree of ventilation shall continue during the period that the work is carried out.
- Pipe-work including piping material, pipe routing, and installation shall include protection from physical damage in operation and service, and be in compliance with national and local codes and standards
- All field joints shall be accessible for inspection prior to being covered or enclosed
- Where electrical components are being changed, they shall be fit for the purpose and to the correct specification. At all times the manufacturer's maintenance and service guidelines shall be followed. If in doubt, consult the manufacturer's technical department for assistance. The following checks shall be applied to installations using FLAMMABLE REFRIGERANTS as applicable:
  1. The actual refrigerant charge is in accordance with the room size within which the refrigerant containing parts are installed.
  2. The ventilation machinery and outlets are operating adequately and are not obstructed.
  3. If an indirect refrigerating circuit is being used, the secondary circuit shall be checked for the presence of refrigerant.

4. Markings on the equipment should be visible and legible. Markings and signs that are illegible shall be corrected.

5. Refrigerating pipe or components are installed in a position where they are unlikely to be exposed to any substance which may corrode refrigerant containing components, unless the components are constructed of materials which are inherently resistant to being corroded or are suitably protected against being so corroded.

- For systems containing refrigerant, all repair and maintenance to electrical components shall include initial safety checks and component inspection procedures such as that capacitors are discharged in a safe manner to avoid possibility of sparking, that no live electrical components and wiring are exposed while charging, recovering, or purging the system, and that there is continuity of earth bonding. If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with. If the fault cannot be corrected immediately but it is necessary to continue operation, an adequate temporary solution shall be used that is reported to the owner of the equipment, so all parties are advised.

**NOTE** – Sealed electrical components shall be replaced, not repaired.

**NOTE** – Intrinsically safe components must be replaced, not repaired.

**NOTE** – All maintenance staff and others working in the local area shall be instructed on the nature of work being carried out with work in confined spaces being avoided.

- Under no circumstances shall potential sources of ignition be used in the searching for or detection of refrigerant. A halide torch (or any other detector using a naked flame) shall not be used. The following detection methods are deemed acceptable for all refrigerant systems. Electronic detectors may be used to detect refrigerant, but in the case of flammable refrigerants, the sensitivity may not be adequate, or may need re-calibration. (Detection equipment shall be calibrated in a refrigerant-free area.) Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant used. Detection equipment shall be set at a percentage of the LFL of the refrigerant and shall be calibrated to the refrigerant employed, and that 12.5 % refrigerant is confirmed. Detection fluids are also suitable for use with most refrigerants but the use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode the copper pipe-work. In the event refrigerant is detected by sensor, all naked flames shall be removed/ extinguished. If refrigerant is found which requires brazing, all of the refrigerant shall be recovered from the system, or isolated (by means of shut off valves) in a part of the system remote from refrigerant detection.

- When breaking into the refrigerant circuit to make repairs – or to any other purpose – conventional procedures shall be used. However, for flammable refrigerants it is important that best practice be followed and, since flammability is a consideration, procedures such as safely removing refrigerant following local and national regulations, purging the circuit with inert gas (optional for A2L), evacuating (optional for A2L), or opening the circuit by cutting or brazing be adhered to. The refrigerant charge shall be recovered into the correct recovery cylinders if venting is not allowed by local and national codes. For appliances containing flammable refrigerants, the system shall be purged with oxygen-free nitrogen to render the appliance safe for flammable refrigerants. This process might need to be repeated several times. Compressed air or oxygen shall not be used for purging refrigerant systems. For appliances containing flammable refrigerants, refrigerants purging shall be achieved by breaking the vacuum in the system with oxygen-free nitrogen and continuing to fill until the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum (optional for A2L). This process shall be repeated until no refrigerant is within the system (optional for A2L). When the final oxygen-free nitrogen charge is used, the system shall be vented down to atmospheric pressure to be able to perform the required work. Ensure that the outlet for the vacuum pump is not close to any potential ignition sources and working area is well ventilated.

## General Instructions

This chassis is the self-contained cooling section of a MagicPak All-In-One™ HWC unit. It is designed to be assembled into an HWC cabinet, and is not intended for any other use or application.

This chassis is a replacement chassis for HWC\*-7-11-\*\* or HWC\*-7-12-\*\* series units. HWC-7-12-\*\*chassis may be used as replacement for HWC\*\*-7-11-\*\* series units. While not recommended due to efficiency loss, HWC-7-11-\* chassis may replace HWC-7-12-\*.

**NOTE:** *The tonnage of this replacement chassis must match the tonnage of the chassis being replaced.*

If any damage to the contents is found at the time of delivery, proper notation should be made on the carrier's freight bill. Damage claims should be filed with the carrier at once. Claims of shortage should be filed with the manufacturer within 5 days.

### Removing the Old Chassis

1. Make sure that the electrical supply is disconnected and the gas supply is turned off.
2. Remove the filter access panel and center rear panel.
3. Disconnect the wire harness plug and remove the line voltage wires from the contactor.
4. Disconnect the condensate drain tube from drain pan.
5. Remove the blower close-off panel and remaining screws retaining the chassis in the cabinet.
6. Slide out the existing chassis.
7. Slide in new HWC chassis and attach chassis in reverse order of the removal.
8. Re-Install the center rear panel on the unit, being careful not to pinch any wiring.
9. Re-install the filter access panel on the center rear panel.

### **▲ WARNING**

Consult current HWC specifications to ensure wire and breaker are sized appropriately.

10. Establish the gas and electrical supply to the unit and check the following.
  - a. Set thermostat for a call for cooling.
  - b. The compressor, condenser fan, and blower will start approximately 8 seconds after the thermostat calls for cooling.
  - c. When the thermostat is satisfied in the cooling mode, the compressor and condenser fan motor will shut off immediately. The circulating air blower will continue to operate for approximately 90 seconds.
  - d. Set the thermostat to call for heat.
  - e. Verify the main burners are lit. The circulating air blower will start approximately 60 seconds after the thermostat calls for heat.
  - f. Allow the unit to reach steady state conditions and verify that the unit is operating within the rise range shown on the unit rating plate. If the unit is not operating within the rise range, adjust the blower speed.
  - g. Turn thermostat down. The circulating air blower will continue to operate for approximately 120 seconds after the thermostat is satisfied.
11. Install the new wiring diagram (supplied) on the unit over the existing wiring diagram. If wire modifications were required, mark the changes on the wiring diagram for future reference.