PEAK+

Contents

Introduction

This manual lists the parts included to be installed and describes their use and some of the methods that may be employed as a guide to install the Peak⁺ System on various styles of HVAC Units. It is not intended to be an exact method to perform each time you install a Peak⁺ System, as each style system (whether it be packaged, remote condenser, or a chiller) is different. Remember this is a guide.

This guide is intended for the mechanical contractor who will be installing the system for an end user.

Warranty Information

a) All Peak⁺ frames, valve boxes, performance monitoring and water equipment come with a standard one-year parts only limited warranty provided the system is properly installed and maintained per the Peak⁺ IOM procedures. Warranty may be extended year to year for a total of five years provided a preventative maintenance program is placed on the Peak⁺ system (to include maintenance on water equipment) and maintenance is performed per Peak⁺ requirements by a qualified maintenance provider. Note: Additional OEM component warranties may apply

b) System Commissioning must be performed by Peak⁺ qualified personnel to begin the warranty coverage period.

Maintenance

Routine maintenance is necessary to ensure the Peak⁺ System is functioning with the highest performance. Maintenance procedures are covered in the Peak⁺ System Maintenance Guide. Not performing maintenance according to the Peak⁺ System Maintenance Guide (EC0065) may invalidate your warranty.

⚠️	**NOTICE!** **Maintenance of the Peak+ System is required for proper function after installation. Failure to maintain the system may result in damage to critical components or facilities.**

Supplied Equipment

Locate the shipping list of equipment for your project and verify that you have received all the necessary equipment. Each HVAC Unit will have its own required equipment list.

Below are images showing the Peak⁺ supplied equipment for an individual HVAC unit.

Evaporative Cooling System Equipment

Figure 1. (Below) EZ-Frame™ rear view
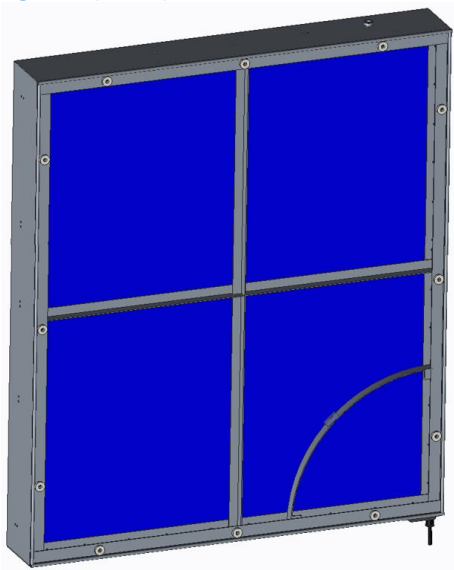
Figure 2. (Below) EZ-Frame™ front view
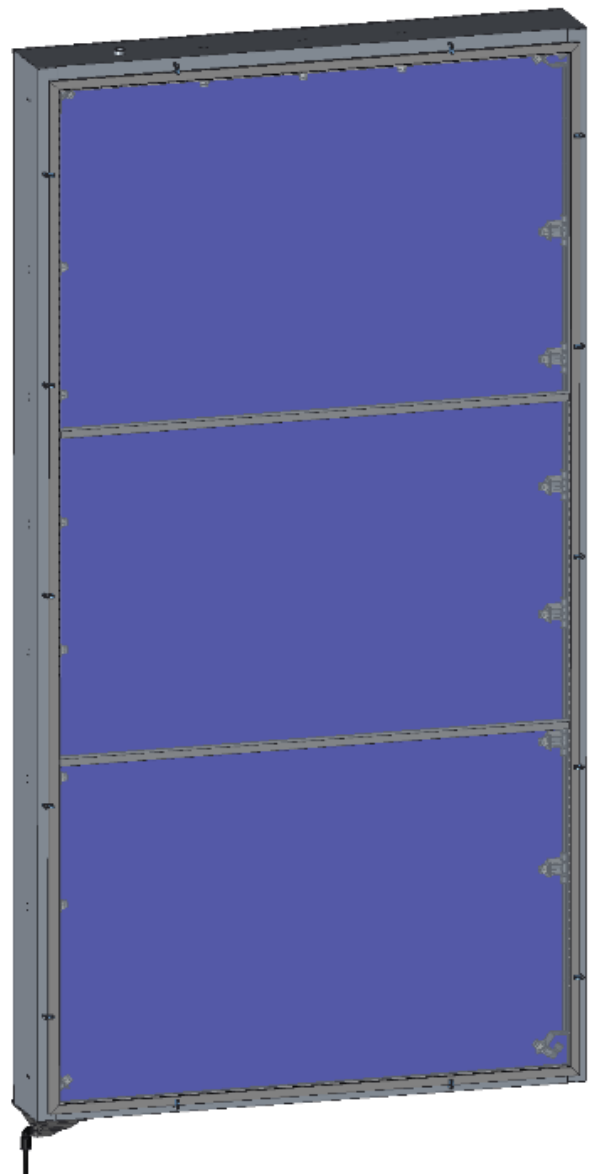
Figure 3. (Below) Peak⁺ Controller

Figure 4. (Above) Valve Boxes (Junction on left, Termination on right)

Figure 5. (Above) Insulated ½" Tubing and Push to Connect Fittings

Figure 6. (Above) 16-3 SOOW Cable

Figure 7. (Above) Power Supply Kit with 24VAC step down transformer, Fuses and Fuse Holder.

Figure 8. (above) Peak⁺ Master Controller (CMM)

Figure 9. (above) Peak⁺ Client Controller (CMC)

Figure 10. (Above) Weather Station (CMM only)
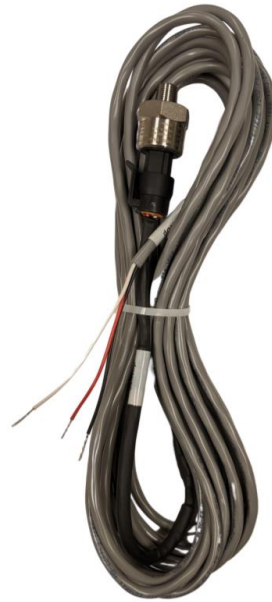
Figure 11. System Water Pressure transducer (CMM only).

Figure 12. (Above) Pre-wired current transducer (CT)

Figure 13. (Above) Condenser Liquid line and Condenser Air Temperature sensors

Water Filtration and Treatment Equipment

Figure 14. (Above) 20" filter housings (4.5" on left, and 2.5" shown on right).

Figure 15. (Above) Bag filter and SS housing

Figure 16. (Above) Standard pleated filter (Left) and Scalephos Treatment Cartridge (Right) Shown for comparison.

Figure 17. (Above) Bag Filters shown below are all available as standard filtration or as Scalephos Treatment Filters.

Figure 18. (Above) Fluid Filled Water Pressure Gauge

Figure 19. (Above) Ion exchange water softening system

Figure 20. (Above) Bladder Tanks (indoor and outdoor version shown)

Figure 21. (Above) Nema 1 Indoor Booster Pump

Figure 22. (Above) Nema 4 Enclosed Booster Pump

Figure 23. (Above) Double Check Assy

Figure 24. (Above) Nema 4 Pump Skid Assembly.

Installation Outline

The outline below shows the general steps to follow when installing a Peak⁺ System. Detailed instructions are on the following pages.

Step 1   Turn off electrical disconnect at HVAC unit and follow lockout/tagout procedure

Step 2   Clean HVAC condenser coils

Step 3   Select a suitable location for the Peak⁺ controller and place on the HVAC unit

Step 4   Mount the 24VAC transformer in the control cabinet of HVAC unit

Step 5   Install in-line fuse holders and fuses between primary power and transformer

Step 6   Connect provided 16-3 SOOW cables to the secondary power output on transformer, route and connect to controller

Step 7   Install current transducers on compressor leads (lead condenser fan on some units), run wires out of the control cabinet, and connect to the controller

Step 8   Close the electrical cabinet on the HVAC unit and restore power

Step 9   **(Master controller only)** Install the weather station and water pressure transducer, route wires, and connect to controller

Step 10   Install and insulate the condenser liquid line temperature sensors in proper locations, route wires, and connect to controller

Step 11   Install the condenser inlet air temperature sensors, route wires and connect to controller

Step 12   Mount solenoid valve boxes in locations **shown on the Peak⁺ System Layout.**

Step 13   Wire solenoid valve boxes **as shown on the Peak⁺ System Layout.** Route wires back from valve boxes and connect to controller

Step 14   Install any necessary sheet metal that is needed for EZ-Frame™ attachment.

Step 15   Attach the EZ-Frames™ to the HVAC unit

Step 16   Lay out but do not connect the provided ½" insulated tubing from main water supply line to valve boxes and then to EZ-Frames™ **as shown on the Peak⁺ System Layout**

Step 17   Flush the tubing from the main water supply to the valve boxes, then complete connections to the valve boxes and flush the tubing from the valve boxes to the EZ-Frames™

Step 18   Initiate "Test Spray" mode, check all tubing/fittings for leaks, and check sprayers in the EZ-Frames™ for proper operation

Step 19   Observe operation of Peak⁺ System

Step 20   Screen Placement

Step 1: Turning off the electrical disconnect

Turn off and lock out the electrical disconnect in the off position. Use approved lockout/tagout procedures (Figure 25).
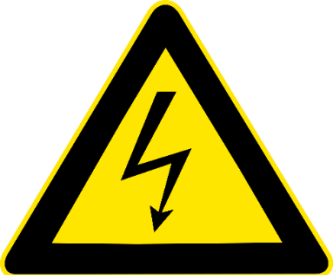
	DANGER! **To reduce the potential for personal injury; before turning off anything review the owners lock out and tag out procedure, work schedule and "on" and "off" times for the unit you are working on. Make sure that any security badges and safety equipment are current and adequate for the job you are about to perform.**

Figure 25. Locked out/tagged out disconnect

Step 2: Cleaning the HVAC unit condenser coils

If not recently cleaned, follow the unit's manufacturer procedures to clean the unit's condenser coils. Use an environmentally approved coil cleaner that is harmless to humans, animals, and marine life.

	CAUTION! **Wear proper personal protective equipment such as safety glasses and gloves during mixing and application of any coil cleaning solution.**

Step 3: Mounting the Peak⁺ controller

The Peak⁺ controllers are supplied with magnets (Figure 26 and Figure 27) at each corner to secure the controller to the HVAC unit. Locate an open area to attach the master controller (approx. 12" x 12" for the CMM, and 9.5" x 12" for the CMC). Mount controller in a location that does not block the door from opening and allows enough space below for cables. (Figure 27). Depending on unit layout, field supplied sheet metal may be required to provide a location for controller mounting.

⚠	**NOTICE!** Before proceeding, you need to notify the Peak+ engineering department so that the Peak⁺ controllers can be properly activated. Please call **901-382-7809**, or email support@peakplus.energy and note your jobsite name.

Figure 26. (Above) Master Controller rear view

Figure 27. (Above) Master Controller as mounted

Step 4: Installing the 24VAC Power Supply Kit

Note: It is recommended on systems with more than one unit to route external power to the Master Controller where available to ensure that the controller remains powered on even when the unit is powered down. Locate the transformer and fuse block in an area where they will not interfere with any operating equipment in the control cabinet. First, mount the transformer with the supplied sheet metal screws (Figure 28 on next page).
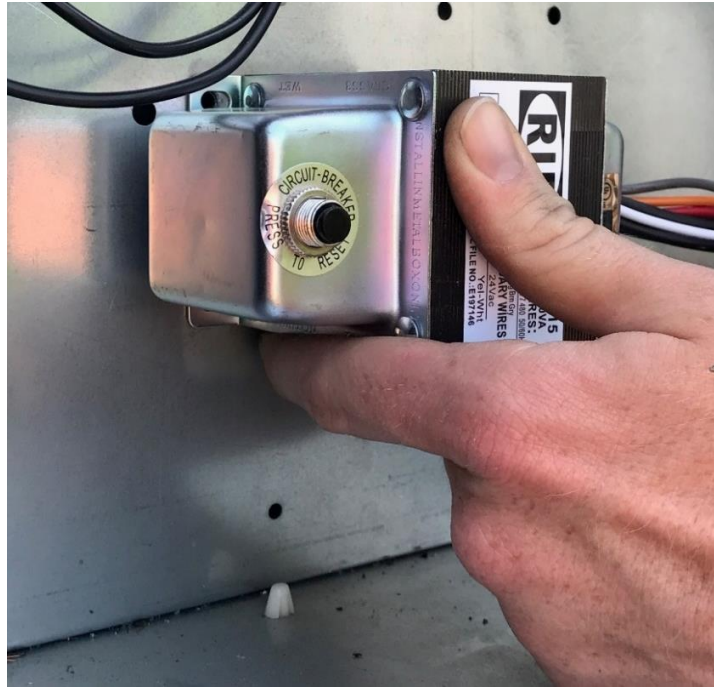
Figure 28. Transformer installation

Then, mount the 4" section of the din rail in proximity with the transformer hub wire terminations utilizing two appropriate field supplied screws. Attach the fuse block to the rail and snap into place (Figure 29 and Figure 30)

Figure 29. (Above) Mounting fuse block **Figure 30. (Above) Installing fuses in fuse block**

The included fuses are intended for the voltage of the selected equipment. Check installation document included with kit to ensure the correct fuse is being used.

Ensure the fuses are installed into the fuse block (Figure 30). The direction of the fuses may be different than shown. Fully close the fuse block and check all connections by lightly tugging on each wiring connection to ensure they are secure. You will likely need to drill a hole to run the provided 16-3 SOOW cord to the controller. If that is necessary, ensure the use of a water-tight cord grip. Run 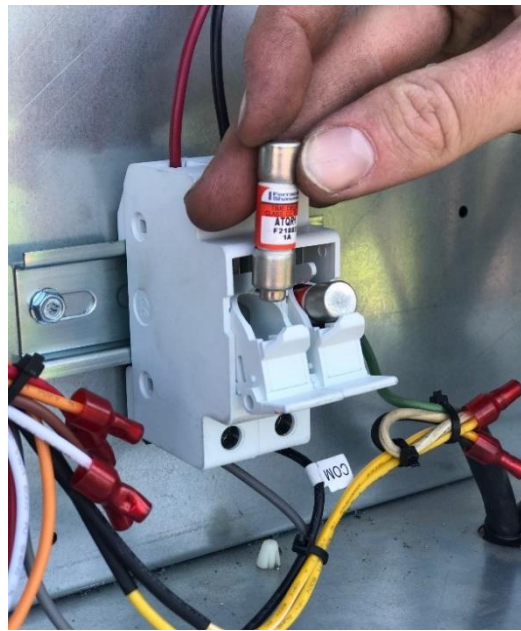the cord into one of the open cable grips on the controller and connect to the like colors to the three wires on the power switch inside the box using the provided caps or wire nuts.

Step 5: Wiring the primary side of the transformer

Verify the primary transformer voltage supply and refer to the voltage color coding on the transformer and the transformer/fuse kit wiring schematic for the proper wire combination. Secure the primary transformer voltage wires into the terminal connections on the bottom of the fuse block as shown on the kit wiring diagram. Cap the ends of the unused primary leads using the supplied end caps. And tie off neatly so they are out of the way. (Figure 31). In the event you cannot locate the transformer near the fuse block, use supplied 16-gauge wire and caps to extend leads.
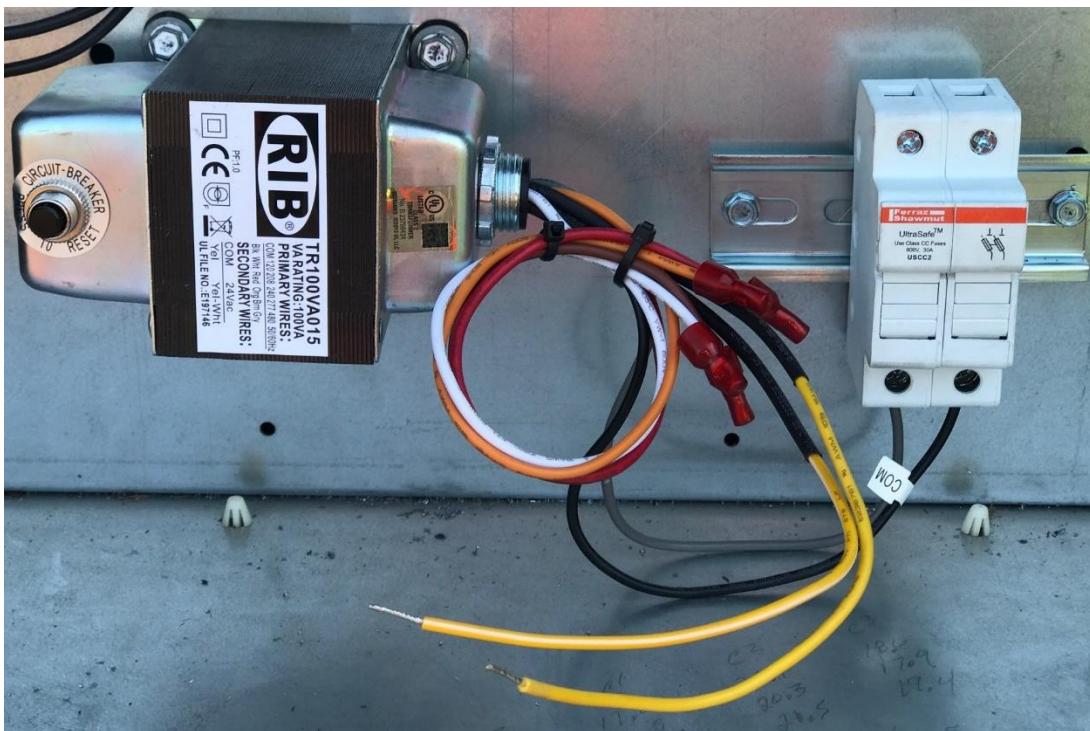
Figure 31. Capping unused transformer leads

Using the supplied 16-gauge wire connect the fuse block to the supply voltage of the unit. Connect to the line side of any disconnect or load side of main disconnect, or main power distribution block. (Figure 32 and Figure 33). Ensure that the points picked have voltage applied anytime the disconnect is energized.
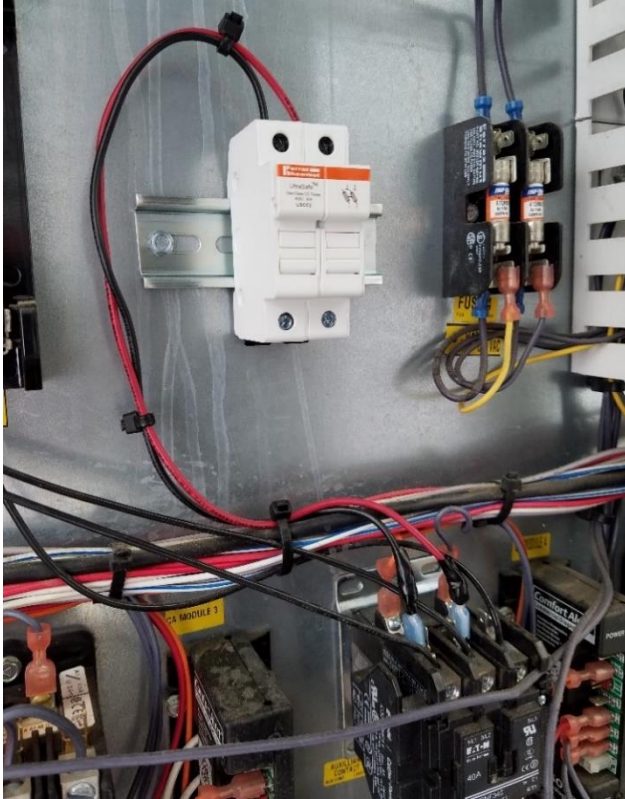
Figure 32. (Above) Fuse Block wired to line side of a compressor contactor.
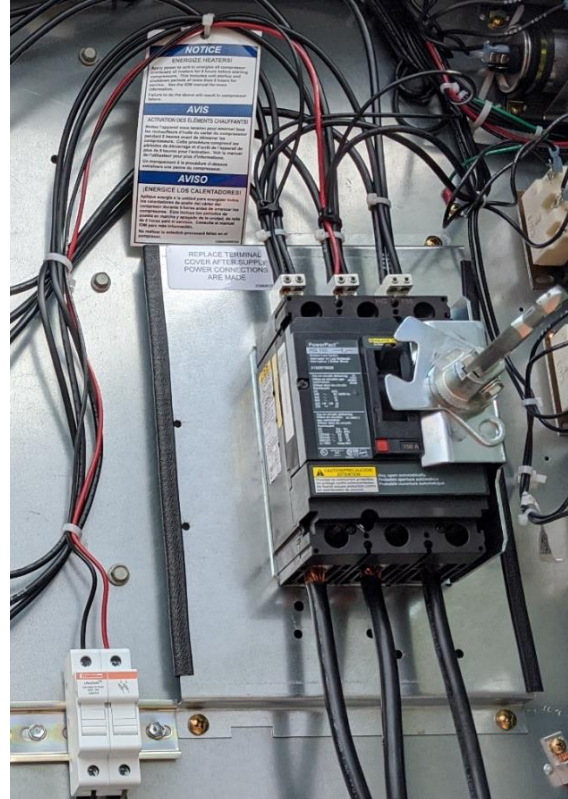
Figure 33. (Above) Fuse Block wired to the load side of the main disconnect.

From Existing HVAC/R Unit
Panel Power Distribution Block

Kit Provided
MTW 16 Ga.
600 Volt, Black Wire

Kit Provided
MTW 16 Ga.
600 Volt, Red Wire

Kit Provided Din Rail & Din Rail Mounted Fuse Block Provided Primary Fuses: 600 VAC, 1 Amp, Time Delay
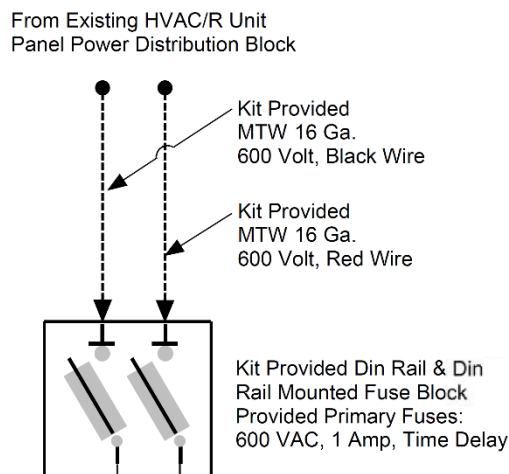
Figure 34. Contactor-fuse block connections

Step 6: Wiring secondary side to the Peak⁺ controller

Attach the two output wires (yellow/white-24V, solid yellow-COM) of the 24VAC transformer to the black and white leads on the supplied 16-3 cable (match the common from the transformer to the white lead); ensuring to ground the green wire somewhere inside of the unit's cabinet (Figure 35).
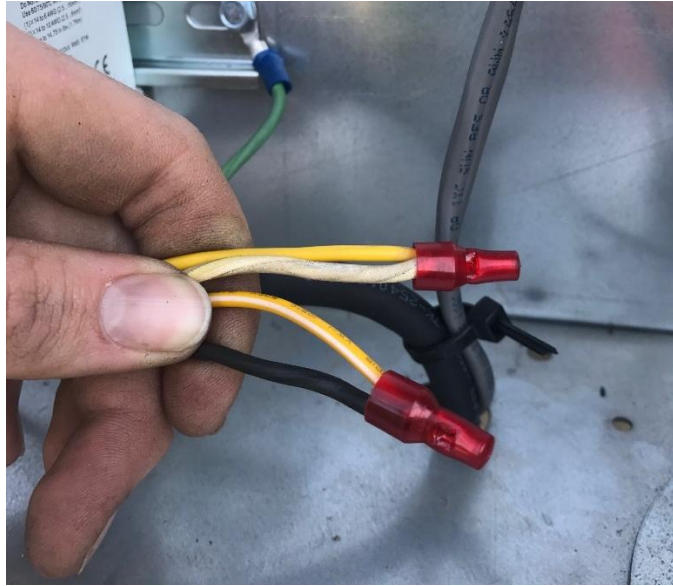
Figure 35. Transformer secondary side wiring.

	DANGER! **When running power and sensor cables through sheet metal, always use grommets to protect the wires! Failure to do so could damage the wires and create a short.**

HVAC units vary in layout and construction, and in most units it is necessary to drill holes through the cabinet to run the power connections to the Peak⁺ controller and valve boxes. The sensor leads and power connections cannot be run through the same cabinet hole. Always use grommets to protect leads, and where necessary use liquid tight cable grips to prevent water intrusion into the cabinet. See Figure 36 on next page.

Figure 36. Master controller (CMM) mounted with wiring connected
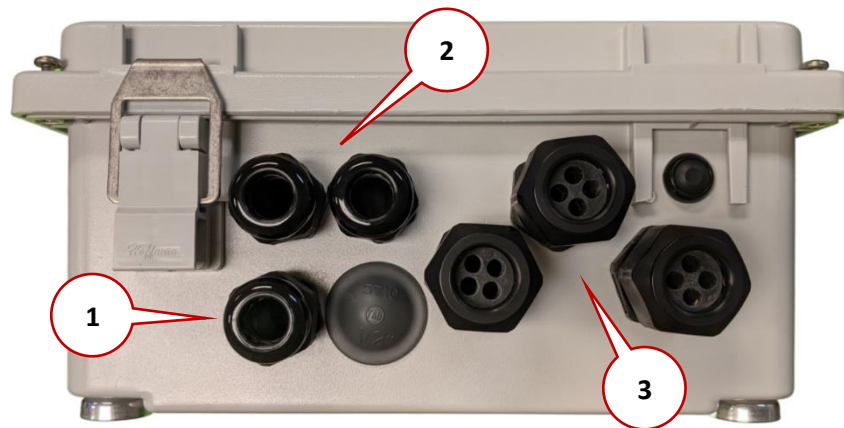
Figure 37. 1). Wire grips for power connections 2). Wire grips for valve box lines

3). Wire grips for sensors

Take the 16-3 cable that you attached to the grounded output leads of the 24 VAC transformer and route it through the side of the unit to the controller (Figure 36). Use a grommet to protect all wires routed through metal and a liquid tight cord grip if water can get into the control's cabinet. Route wires into controller through designated cord grips (Figure 37). Once the 16-3 cable is routed into the controller remove the sheathing all the way back to the cord grip so that wires can be tucked out of the way within the controller.

Connect the free ends of the 16-3 cable from the transformer output to the leads on the controller power switch, shown in Figure 38.
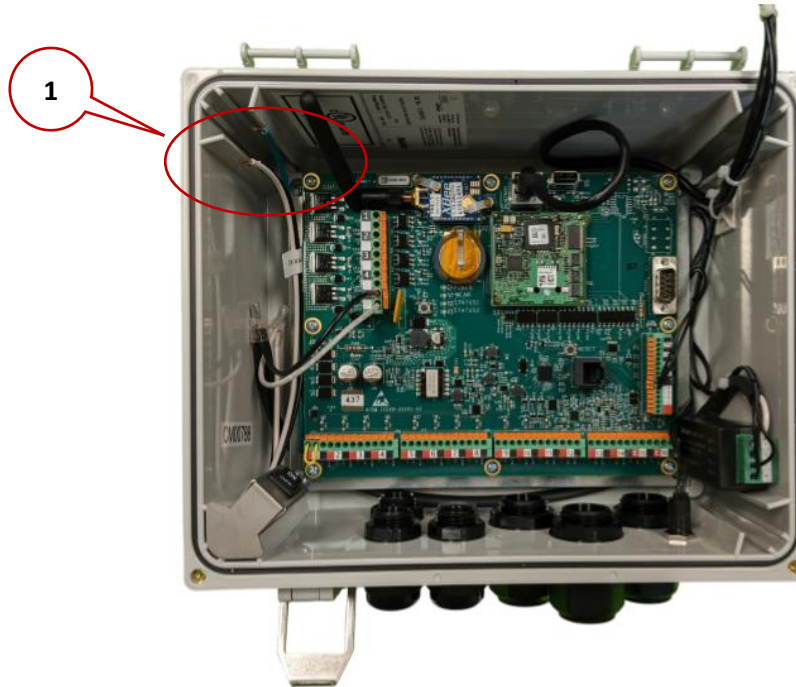
Figure 38. Power connections for the controller.
1). 24V Connection from Transformer to Controller Power Switch Leads.

To prevent the possibility of a ground potential difference in the 24-volt system, you need to ensure that all Peak⁺ electrical items are tied into the unit's ground. Properly ground the 16-3 cable in the control's cabinet (Figure 35) and junction all ground wires together in the controller and valve boxes. Ultimately, you will have a complete 24VAC circuit with a common ground tied to the unit's ground.

Step 7: Installing current transducers

The number and type of current transducers (CT's) required is dependent on several factors specific to each unit (including unit type, circuit configuration, compressor number and size, condenser fan arrangement, etc.). Refer to the Peak⁺ System layouts for unit specific Instructions.

⚠	**NOTICE!** For use with a controller, CT's need to be placed on the #2 leg if it is a compressor, or appropriate condenser fan leads if installing on a single-phase condenser fan motor circuit.

Figure 39. Example of how the CT's should be arranged.

Once the CT's are properly located and attached, bring the free end of the control wire back to the Peak+ controller. Then, pull the lead into the controller via one of the three 4-wire cord grips for control wiring and connect the wire to the proper location in the terminal block, according to the wiring diagram located in the door of the corresponding controller (Figure 40).

Figure 40. Wiring Diagram in the door

Step 8: Restoring power to the HVAC unit

⚠️	**CAUTION!** Ensure nothing is in the way of any condenser fans or other moving parts before reapplying power. Also ensure the Peak⁺ controller power switch is in the "OFF" position.

Before moving the disconnect switch from the "**OFF**" to the "**ON**" position be careful and make sure there is nothing in the way of any condenser fans, any moving parts, or anything that could drop into the fans or unit upon startup. Also make sure that the Peak⁺ controller is in the "**OFF**" position before resetting the disconnect (Figure 41). Using standard lockout/tagout procedures, remove the lock installed in **Step #1** and move the switch arm from the "**OFF**" to the "**ON**" position (Figure 42).

Figure 41. Master controller power switch kept in OFF position Figure

Figure 42. Restoring power to disconnect

Step 9: Installing weather station and water pressure transducer (master controller only)

⚠️	**CAUTION!** Controller sensor cables can be easily damaged and will not work correctly if handled improperly. Neatly route to controller, coiling any excess cable out of the way. Always use grommets to protect cable routing through metal.

Included with the Peak+ System is a weather station and water pressure transducer required to be connected to the master controller. The weather station should be mounted at about the same height as the Condenser Air Temperature (CAt) Sensors located on the frames. The weather station is mounted to the outdoor unit using magnets. To install the water pressure transducer, you will need a ¼" FNPT connection into the incoming water line. The transducer <u>must be installed vertically upwards</u>.

Wiring information is shown in the wiring diagram on the inside of the door of the Peak+ controller. Additional instructions are included on the Peak+ System Layouts.

Step 10: Installing Condenser Liquid Temperature (CLt) sensors

Locate the liquid line leaving the condenser for each circuit. The sensor should be placed <u>just after</u> all collector lines have merged for a given circuit, and before the expansion valve. Attach the sensor to the corresponding condenser liquid line with a zip tie, wrap with electrical tape, and then wrap with insulating cork tape (Figure 43). Some applications differ slightly from this arrangement and instructions for those will be in the Peak+ System Layouts.

Figure 43. Liquid line temperature sensor, zip-tied before insulating

Condenser Liquid Line Temperature Sensor Detail

Condenser Liquid Line Temperature Sensor (CLt)
Place on leaving liquid line just after all collectors of the
same circuit merge together. Zip-tie wire to bare pipe and
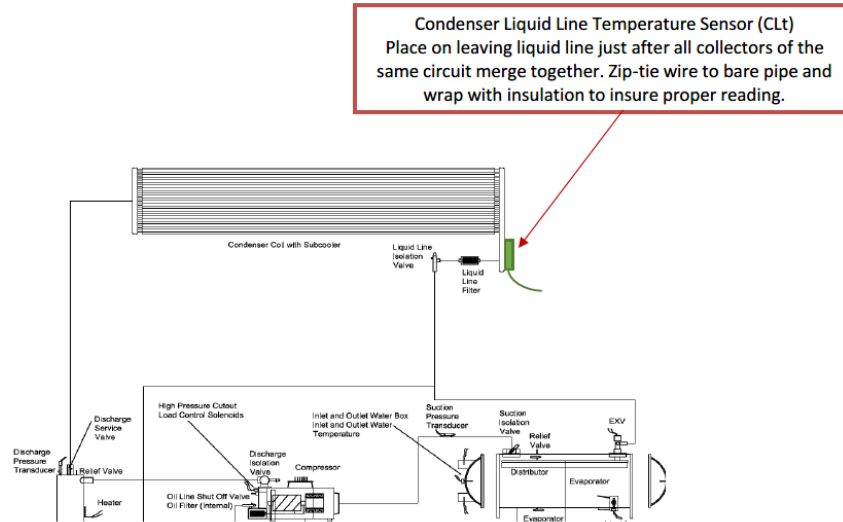wrap with insulation to insure proper reading.

Figure 44. Liquid line temperature sensor placement within a general HVAC schematic.

Each sensor should have ample length to be able to return to the Peak⁺ controller. Be careful not to damage the sensor cable while routing. Pull the lead into the controller via one of the three 4 wire cord grips for control wiring. As with the other sensors, refer to the wiring diagram provided in the door of the corresponding controller or this manual for specific wiring locations in the terminal block. Neatly coil any excess wire out of the way. **Do not trim the wires in the event a sensor needs to be relocated.**

Step 11: Installing Condenser Air Temperature (CAt) sensors

Condenser Air Temperature (CAt) Sensors are mounted on certain EZ-Frames™ specified in the Peak⁺ System Layouts. The CAt sensors measure the air temperature directly after the air has flowed through the evaporative media to determine the performance of the Peak⁺ System. The EZ-Frames™ designated to have the temperature sensor have a mounting location installed (Figure 45). To install the temperature sensor on the back side of the frame, place the sensor tip so that 1/2" or more is exposed to the air stream and not in contact with the mounting clip. Push the rest of the sensor clip so that it snaps into the clip. Route the sensor back through the unit to the controller. Do not tie the sensor to the corresponding EZ-Frames™. They are designed so that, when removing the frame, the sensor will snap out of the frame so that it is not damaged.

Condenser Air Temp (CAt) Sensor Mounting Detail

CAt Sensor Mounting Detail:

1) Pre-assembled Sensor Mounting Bracket.

2) Sensor Mounting Clip.

3) Mount sensor with at least 1/2" of the tip exposed directly to the airstream.

4) Route cable to the top or side of frame. Ensure cable is away from the magnets and that the seal compresses neatly around cable.

5) Route cable along machine to controller. Secure cable to the machine ensuring enough slack to be able to re-install sensor during frame/unit maintenance.

Frame Identification:

• 2 refers to the unit # (e.g. CH-2).

• N refers to frame # as seen on Controller Layout.

• See Controller Layout for CAt Sensor Bracket Locations.

Do Not Permanently Secure Sensor Cable to Frame.
Sensor must be released in case frame is removed without knowledge of sensor.
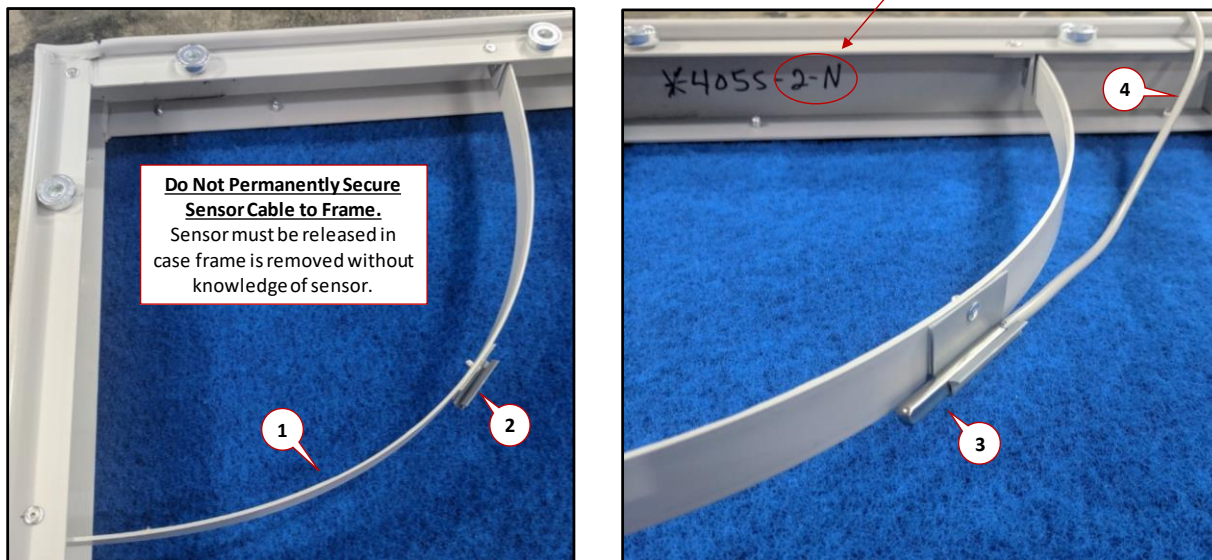
Figure 45**. Condenser Air Temperature (Cat) sensor mounted in bracket**

Step 12: Mounting the solenoid valve boxes

The solenoid valve boxes come with magnets to attach them to the HVAC unit. Locate an open area approximately 7" x 5" to attach each of the valve boxes. Ensure clearance for the water lines (in and out). Valve boxes can be mounted flat on top or vertically on the sides of outdoor units (ensuring drain plug is oriented so that it does not hold water).

The included Peak⁺ System Layout will show which EZ-Frames™ need to be fed by each valve box and **must be followed exactly during installation!** The layout sheet will also show the approximate locations to place the valve boxes. Pictures of the valve boxes are shown below in Figure 46 through Figure 48.

Figure 46. (Above) front view of valve boxes (Left: Junction, Right: Termination)

Figure 47. (Above) Junction Solenoid Valve Box- Water In (Left) and Water Out (Right)
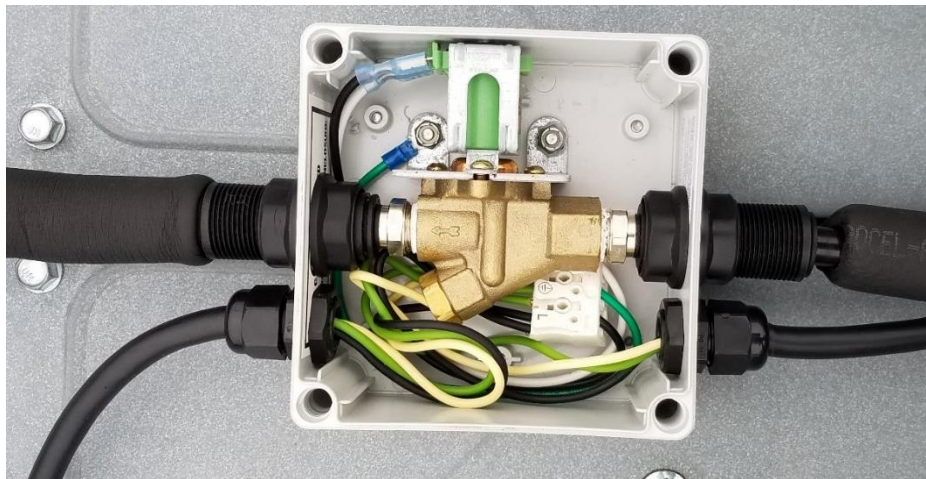

Figure 48. (Above) Open Valve Box Installed on top of Unit. Always verify valve position and check for leaks.

Below are some selected sections from a Peak⁺ System Layout to show what information is included in one (Figure 49 and Figure 50). There is also some information that pertains to the wiring of the valve boxes that will be covered in the next section.
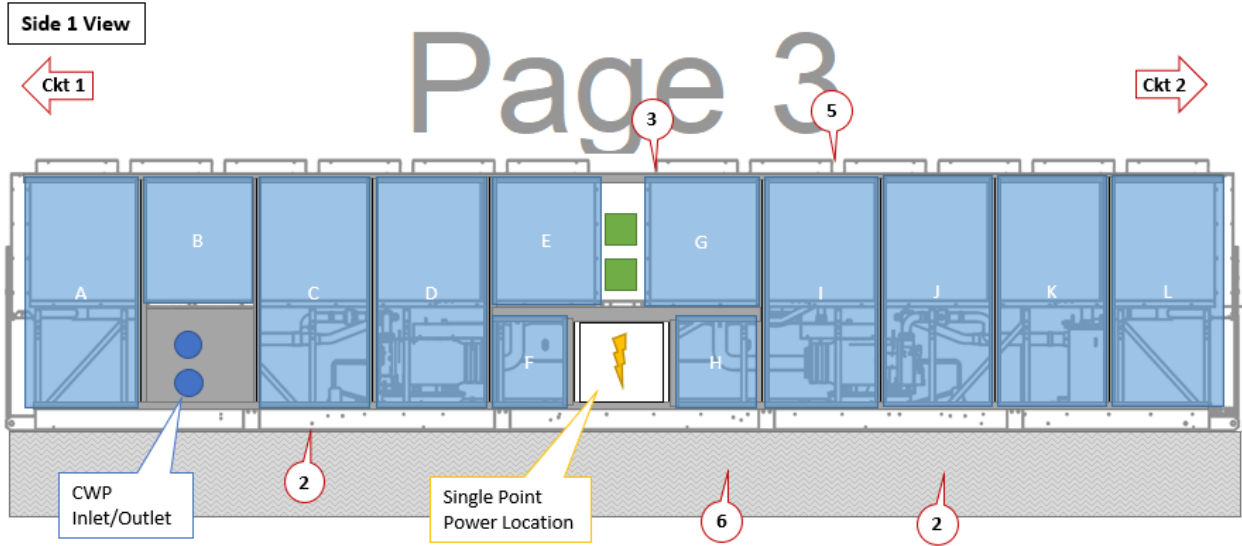
Figure 49. Frame locations on a layout diagram- side view

Frame and Valve Box notes:

1) 3/4" Branch Line w/ FP Isolation Ball Valve. Run as shown on Water Distribution Layout. Run to top of unit and manifold as shown w/ (1) 1/2" FNPT outlet per valve box.

2) EC supplied 1/2" insulated nylon tubing and push to connect (PTC) fittings.

3) Frame Inlet locations. Use 3" long piece of tubing between inlet and elbow or tee for clean installation. **Always use min. 3" long pieces of tubing between PTC fittings.**

4) Suggested Controller Location. (See Controller Layout for further detail).

5) Tee in 1/8" FNPT fitting for water pressure sensor (Mounted Vertically Upwards).

Figure 50. Valve Box Locations on a Layout- Top View

Step 13: Wiring solenoid valve boxes

The solenoid valve boxes contain a brass valve with quick connect fittings installed on the inlet and outlet of the valve. There is also a white connector to make wiring connections when installing a Peak⁺ System. The inside of this assembly is shown in Figure 51.
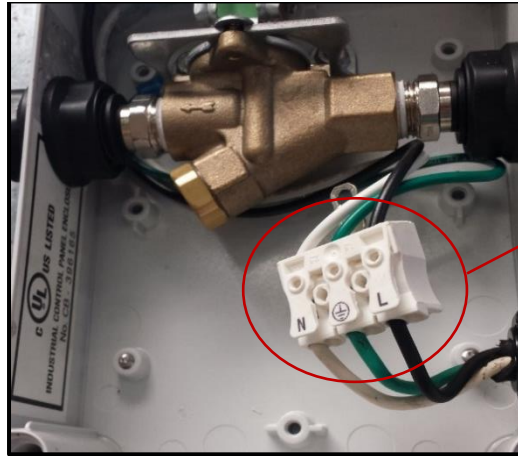
Strip wires 3/8" and insert into corresponding quick connect:
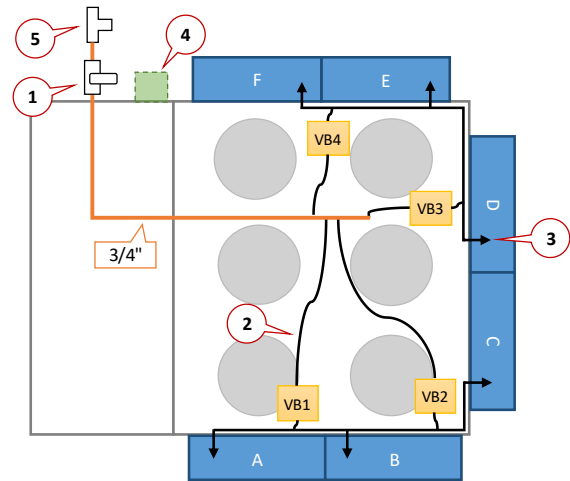**N= White**
L= Black
Gnd = Green
Release key allows for easy removal of wire.

Figure 51. Wiring inside a valve box

The Peak⁺ System Layout will tell you how many valve boxes to assign to each specific circuit and which valve boxes are on which circuit (Figure 52).

Frame Schedule:

Frame #	W (in)	H (in)	Sprayers
A	36.75	65.5	13
B	36.75	65.5	13
C	36.75	65.5	13
D	34.25	27.5	5
E	34.25	27.5	5
F	36.75	65.5	13
G	36.75	65.5	13
H	36.75	65.5	13

Valve Box Schedule:

VB #	Frames	GPM	CKT
VB1	A,B	3.12	1
VB2	C,D	2.16	1
VB3	E,F	2.16	2
VB4	G,H	3.12	2

Figure 52. Peak⁺ System Frame and Valve Box Schedules

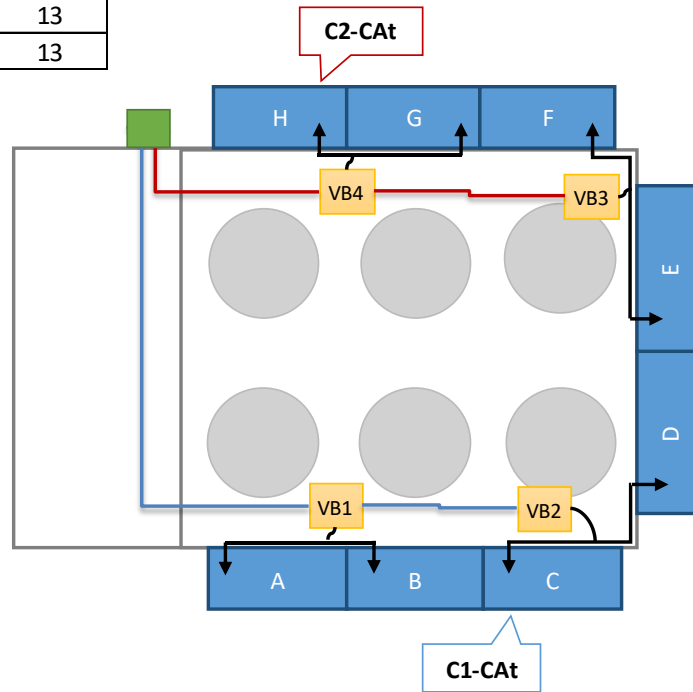When wiring multiple solenoid valves together on an individual circuit, you need to wire them in parallel with each other, and connect with one main cable back to the appropriate sprayer channel on the Peak⁺ controller. Wire terminations in the solenoid valve box are made using the connector provided in the valve box.

There is also a provision in the connector to allow you to junction wires together for running to the next valve in the series (Figure 53). Once connections are made in the Peak⁺ controller's terminal block under whichever spray output circuit you are connecting, you will need to tie the ground (green) wire to the ground you brought in with the 24VAC power wire in **step 6.** The wiring diagram in the door of the master controller and this manual will show the proper locations for connecting the wires on the board.

VB Wiring Detail

1) Layout valve boxes (See Controller Layout) ensuring that the termination valve box is at the end of the line.

2) Wire valve boxes using supplied 16-3 SOOW cord. Trim 6" of cord insulation and insert into supplied Heyco 3213 cord grip so that insulation is flush with interior of box .

16-3 SOOW Cord (Supplied) run through supplied connector (Heyco 3213 cord grip)

Valve Box - Junction

Provided 16-3 SOOW Cord

Valve Box

Valve Box

Channel 1 ———
Channel 2 ———

Valve Box

Valve Box

Valve Box - Termination

Strip wires 3/8" and insert into corresponding quick connect:
    N= White
    L= Black
    Grd = Green
Release key allows for easy removal of wire.

Controller

Figure 53. Peak⁺ System layout diagram- valve box wiring

Step 14: Installing Installer-Provided Sheet Metal

⚠️	**NOTICE!** **If the bottom of the unit is open and allows air to bypass the Peak⁺ system it will need to be sealed off with 22-gauge minimum galvanized sheet metal or will need to be sealed between the frame of the unit and the ground using Peak⁺ engineering approved material.**

There is a complete manual (the Peak⁺ Measurement Guide) that covers reasons why sheet metal may be needed to install with the Peak⁺ System. At this point, install any sheet metal necessary prior to installing the EZ-Frames™. Below are pictures of a couple of examples of sheet metal used during a Peak⁺ System install (Figure 54 through Figure 56). Refer to the Peak⁺ System Layouts for further details.
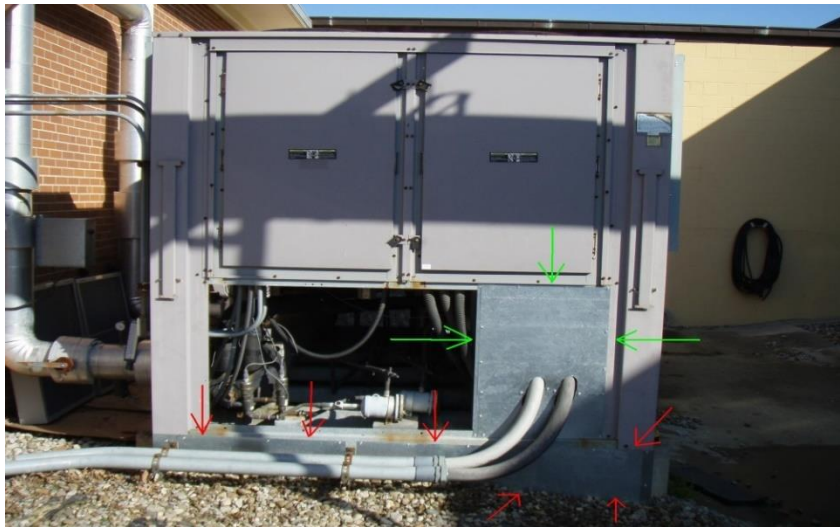

Figure 54. (Above) Sheet metal used to seal off openings identified by arrows

Figure 55. Sheet metal used to seal off openings surrounding a chilled water pipe

Figure 56. Field Provided Sheet Metal used for mounting EZ-Frames

Step 15: Affixing EZ-Frames™ to HVAC unit

EZ-Frames™ are equipped with magnets to hold them into place on the HVAC unit. Refer to the Peak⁺ System Layout for individual EZ-Frame™ placement in specific locations. Each EZ-Frame™ is identified on the inside bottom as to which unit and frame assembly it is (i.e."2-D").

If you encounter a situation where a magnet on the back of an EZ-Frame™ needs to be moved due to an obstruction on the HVAC unit, remove the magnet from the frame by drilling out the rivet and move it along the back of the frame to an area where it is no longer obstructed. Drill a new hole in the frame, and reattach the magnet using an appropriately sized nut and bolt.

Step 16: Installing water tubing

Provided with your Peak⁺ System are ½" insulated water lines and push-to-connect fittings. The Peak⁺ System comes from the factory with enough

tubing to connect the water supply, valve boxes, and EZ-Frames™ when run in accordance with the Peak⁺ System layout diagram.

⚠️	**NOTICE!** If tubing is not installed correctly it will leak. All tubing must be a minimum of 2.5" in length for the push-to-connect fittings to secure correctly. Ensure that all cuts in tubing are square and straight so that tubing fits snugly into fitting.
⚠️	**NOTICE!** The waterlines must be run from the valve boxes to the EZ-Frames™ exactly as shown on the valve box layout sheet.
⚠️	**NOTICE!** All outdoor water lines, including those installed by the contractor, must be insulated. Uninsulated lines permit heat absorption to the water supply, impacting the performance of the Peak⁺ System.

Lay out all the water lines before making your final cut. Use the magnetic line straps to hold the lines in place. Ensure that you make a clean, square cut on the tubing to ensure a good connection. Make connections by pushing the line into the fitting until you feel the end of the tubing bottom out in the fitting, then gently tug on the tubing to ensure it is secure. The minimum insertion length needed is 1". To release the tubing from the fitting, press the collar down into the fitting and pull the tubing.

Do not permit the tubing to have a tight bending radius such that the tubing kinks. Keep all bends wide enough to permit unobstructed water flow.

Step 17: Flush the Water system

⚠️	**CAUTION!** Before turning the water on to the system, _FLUSH ALL LINES THOUROUGHLY!_ Failure to do so can cause debris to clog strainers in solenoid valves and orifices in the sprayer heads inside the EZ-Frames™.

Before flushing the system, become familiar with the "Test Spray" mode on the controller. To enter "Test Spray" mode:

Step 1   Ensure the water supply valve is closed, and that there is power to the controller.

Step 2   Open the controller and power on (if not already). Keep door open and look for the LEDs near the Valve Box output connector.

Step 3   Press and hold the button on the right side underneath the controller for 10 seconds. 1st LED should light up indicating output.

Step 4   Press the button momentarily (2 seconds) to cycle to the second channel.

Step 5   To cancel "Test Spray" mode immediately, momentarily press the button (2 seconds), otherwise the spray will shut off after 120 seconds.

Perform the following procedure to flush the system:

Step 1   Connect the tubing to the main water supply

Step 2   Open the main water supply valves and flush for 2 minutes

Step 3   Close the main water supply valves and connect the tubing from the main water supply to the solenoid valves

Step 4   Connect the tubing from the solenoid valves to the EZ-Frames™, stopping short of the final connection to the EZ-Frame™ inlet

Step 5   Open the main water supply valves and set the Peak⁺ controller to "Test Spray" (see above)

Step 6   Allow the water to run for 2 minutes on each channel while checking for leaks at the valve boxes.

Step 7   Exit the "Test Spray" mode and close the main water supply valves

Step 8   Remove the tape covering the inlet on the EZ-Frames™ and make the final connections

Step 18: Using "Test Spray" mode to check for leaks and verify sprayer operation

After having made all connections in the water tubing system, initiate the "Test Spray" mode in the Peak⁺ controller again and check for leaks. As you inspect for leaks, visually verify that all sprayers are producing a fine, even spray, and spraying parallel to the evaporative pad media and not directly into or away from it. It is recommended to remove the screen on the EZ-Frame™ to clearly see the spray pattern due to ambient lighting conditions.

Step 19: Verify proper operation of Peak⁺ controller

Cancel the test mode in the Peak⁺ controller by temporarily pressing the "Test Spray" button and observe normal cooling system operation, checking it several times over a period of a few cycles. If needed, adjust settings for optimal operation by following the instructions from the Peak⁺ controller operating manual.

Step 20: Screen Placement

The use of rotating latches and a façade-based screen mount greatly reduces the amount of space needed to remove screens, and in many instances removes the need to use a step ladder. Weather stripping is provided on each frame to prevent any gaps between the screen and the frame.

First, note the rotating latches surrounding the screen. To insert the screen, ensure the bottom latches are in their upright position, and gently tilt and lower the screen so that the latches hold the bottom part of the screen against the EZ-Frame™. Then, one at a time, rotate the latches into position to hold the screen in place.

To remove the screen, rotate all but the bottom latches out of the way, tilt the top of the screen towards you, then lift the screen slightly and pull toward you.

Figure 57. Keeping the bottom latches in an upright position, Tilt and lower the screen into place with the latches.

Figure 58. Rotate the latches one at a time to secure the screen in place.

Water filtration and treatment equipment installation

Water filtration equipment (provided by Peak⁺)

Peak⁺ provides water filtration equipment with every system as shown on page 8 of this manual. Filter housing is selected on the required flowrate that they need to handle, and the number is decided by how many main water supply points there are feeding the Peak⁺ Systems that your project has.

Gauges are also provided to be installed either before and after the filter housing or in the filter housing itself (depending on model) so that the differential pressure can be easily identified. This is to allow for proper maintenance of the filter cartridge or bag according to the Peak⁺ Maintenance Guide.

All filter housings are to be installed according to local codes and following Peak⁺ System Layouts concerning placement of components.

Water treatment equipment (provided by Peak⁺)

Peak⁺ offers two solutions to treat hard water. An ion exchange water softener system and a sequestering water conditioner. If the location of the Peak⁺ System cannot provide soft water one of these two options will need to be installed.

The ion exchange water softener needs to be installed according to local codes and follow the OEM installation manuals provided with the equipment. Follow Peak⁺ System layout diagram concerning placement of components.

The water conditioner is contained in the filter cartridge/bag and does not require any extra equipment. See the Water filtration equipment section above for details on installation of filter housing.

Booster pump installation

On projects with less than the Peak⁺ specified operating water pressure, we provide a self-contained booster pump system with a variable frequency drive. These pump solutions need to be installed according to local codes, following Peak⁺ System layout diagram concerning placement of components, and in accordance with the OEM installation manuals provided with them.

Bladder tank installation

Bladder tank(s) are usually required as part of the water distribution system. The bladder tank(s) need to be installed according to local codes and following Peak⁺ System layout diagram concerning placement of components. Bladder tanks will need to be installed so that they can be isolated and drained down. The air pressure should be set to 5-10psi below the water pressure (note they MUST be drained down before setting the air pressure).

While the preceding text provides a general overview of the Peak⁺ System and the services provided in connection therewith, the actual components, materials and services which will be used in connection with any work will be as provided in a proposal or signed work order.

IMPORTANT NOTICES REGARDING PEAK⁺ SYSTEMS

The information contained in this Peak⁺ System Installation Manual and the Peak⁺ System Maintenance Guide is intended for use by individuals possessing adequate backgrounds and experience in air-conditioning equipment, electrical wiring, and mechanical systems.

⚠️ **SAFETY**: **Installing and maintaining a Peak⁺ System or any associated air conditioning equipment can be hazardous due to system pressures, electrical components, and equipment location. Any attempt to install or maintain a Peak⁺ System or any associated air conditioning equipment may result in severe personal injury and/or property damage to you or others. Only trained, qualified installers and service mechanics should install or maintain the equipment.**

PRECAUTIONS: When working on the equipment, observe precautions in the Peak⁺ System Installation Manual and Peak⁺ System Maintenance Guide and on tags, stickers and labels attached to the equipment. Further, you should:
Follow all safety codes.
Keep a quenching cloth and fire extinguisher nearby.
Wear safety glasses and work gloves.
Use care in handling, rigging, and setting bulky equipment.

⚡ **WARNING!** **Electrical shock can cause personal injury and death. Shut off all power to the Peak⁺ System and any associated air conditioning equipment during installation. There may be more than one disconnect switch. Follow lock-out, tag-out procedures at all disconnect locations to alert others not to restore power until work is completed.**

IMPORTANT: The Peak⁺ System and any associated air-conditioning equipment may generate, use, and radiate radio frequency energy and, if not installed and used in accordance with the Peak⁺ System Installation Manual, may cause radio interference.

DISCLAIMER: Neither Peak⁺, LLC nor any of its members, employees or affiliates shall be responsible for the interpretation of the information contained in the Peak⁺ System Installation Manual and Peak⁺ Systems Maintenance Guide, nor shall such parties assume any liability in connection with the use of such information. Content within this manual is subject to change without notification or incurring any obligations.