

Universal Tankless Rack System Installation Manual

Thank you for purchasing the Universal Tankless Rack System.

This manual provides instructions on installing this system. For specific questions on the Tankless Water Heaters, refer to the “Tankless Water Heater Installation and Operation Manual” supplied with each water heater in the rack system. Read this manual completely before installing the Universal Tankless Rack System (UTRS).

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Safety Symbols

This manual contains the following important safety symbols. Always read and obey all safety messages.



Safety alert symbol. Alerts you to potential hazards that can kill or hurt you and others.



WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in personal injury or death.



DANGER Indicates an imminently hazardous situation which, if not avoided, will result in personal injury or death.



CAUTION

Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It may also be used to alert against unsafe practices.

Read These Instructions

UTRS is designed to supply a packaged water heating solution as a universal racking system. The UTRS includes preassembled water and gas manifolds for 199k BTU tankless water heaters and are properly sized to maintain optimum performance.

The Rack System features design details that make installation simple and straightforward:

- **Maneuverability:** Lightweight, shipped in (3) crates that can be easily moved with one person with a hand dolly. The rack and manifolds fit fully assembled through any standard doorways and on elevators.
- **Flexibility:** Available for indoor and outdoor installations.
- **Preassembled gas and water manifolds** pressure tested and properly sized to maintain optimum performance.
- **Racks** are constructed of Galvanized Steel Strut Channel to stand up to the most demanding commercial environments while maximizing strength.
- **Optional** properly sized fully serviceable Condensate Treatment Kit.
- This rack system is designed to be used with all major tankless manufacturers.

To The Installer

- It is recommended that a trained and qualified professional who has attended a Tankless installation training class complete the installation.
- The trained and qualified professional should have skills such as:
 - Gas line sizing
 - Connecting gas lines, water lines, valves, and electricity
 - Knowledge of applicable national, state, and local codes
 - Training in installation of tankless water heaters.
- Read all instructions in this manual before assembling the UTRS. The UTRS must be installed according to the exact instructions in this manual.
- In addition to this manual, you will also need the “Tankless Water Heater Installation and Operation Manual” for specific water heater installation information, such as clearances, venting options. A copy is provided with each tankless water heater.
- Proper installation is the responsibility of the installer.
- When installation is complete, leave this manual with the rack system or give the manual directly to the consumer.

To The Consumer

- It is recommended that a trained and qualified professional who has attended a Tankless installation training class complete your installation.
- Keep this manual for future reference.

IMPORTANT: Set aside the “Tankless Water Heater Installation and Operation Manual” as you will need to reference clearances, venting options, and other information specific to the water heaters. A copy is provided with each tankless water heater.

Need Help?
Contact - **3rd Party Commercial Solutions**
805-330-7050
Service@3PCSLLC.com

Clearances

When selecting an installation location, you must ensure the tankless water heaters mounted on the rack comply with the required clearances.

For clearance requirements, check with manufacturer of field supplied tankless water heaters.

Allow access to directly in front of each side of the rack to allow for service personnel to perform maintenance.

DO NOT hoist the crate or rack.

This rack system is designed to be assembled onsite. Once securely anchored, it is safe to install the tankless heaters.

Allow clearance in front of the disconnect in accordance with NFPA70E, and any local requirements.

Specifications

6 Pack Rack

Model	B2B5BT	B2B6BT	B2B5BO	B2B6BO	B2B5ST	B2B6ST	B2B5SO	B2B6SO
Weight	165LBS	165LBS	160LBS	160LBS	155LBS	155LBS	150LBS	150LBS
Height	61"							
Length	72"							
Width	26"							
Number of Tankless	5	6	5	6	5	6	5	6
Hot/Cold Manifold Material	Rigid Copper (L)							
Hot Water Manifold Diameter	2-1/2"							
Hot Manifold Connection Type	2-1/2" PIPE							
Hot Branch Diameter	3/4"							
Hot Branch Connection Type	3/4" MIP							
Cold Water Manifold Diameter	2-1/2"							
Cold Manifold Connection Type	2-1/2" PIPE							
Cold Branch Diameter	3/4"							
Cold Branch Connection Type	3/4" MIP							
Gas Manifold Diameter	1-1/2"							
Gas Manifold Connection Type	1-1/2" MIP							
Gas Branch Diameter	3/4"							
Gas Branch Connection Type	3/4" MIP							
Gas Line Material	Iron							
Condensate Manifold Diameter	3/4"							
Condensate Branch Diameter	1/2"							
Condensate Branch Connection Type	1/2" FIP							
Condensate Material Type	PVC							
Electrical Requirements								
Prewired Electrical Assembly	YES							
Voltage	AC 120V							
Max Current (Amperes)	24							
Outdoor	YES							
Horizontal Support	1-5/8" 12 Gauge Strut Channel							
Vertical Support	13/16 Back to Back 14 Gauge Strut Channel							
Frame Material	Galvanized Steel							
Include Condensate Treatment Kit	Yes	Yes	NO	NO	YES	YES	NO	NO
Hot/Cold Connections Same Side (SAME) or Opposite sides(OPPOSITE)	SAME	SAME	SAME	SAME	OPPOSITE	OPPOSITE	OPPOSITE	OPPOSITE

Specifications

4 Pack Rack

Model	B2B3BT	B2B4BT	B2B3BO	B2B4BO	B2B3ST	B2B4ST	B2B3SO	B2B4SO
Weight	125LBS	130LBS	120LBS	125LBS	125LBS	125LBS	120LBS	120LBS
Height	61"							
Length	44"							
Width	26"							
Number of Tankless	3	4	3	4	3	4	3	4
Hot/Cold Manifold Material	Rigid Copper (L)							
Hot Water Manifold Diameter	2"							
Hot Manifold Connection Type	2" PIPE							
Hot Branch Diameter	3/4"							
Hot Branch Connection Type	3/4" MIP							
Cold Water Manifold Diameter	2"							
Cold Manifold Connection Type	2" PIPE							
Cold Branch Diameter	3/4"							
Cold Branch Connection Type	3/4" MIP							
Gas Manifold Diameter	1-1/2"							
Gas Manifold Connection Type	1-1/2" MIP							
Gas Branch Diameter	3/4"							
Gas Branch Connection Type	3/4" MIP							
Gas Line Material	Iron							
Condensate Manifold Diameter	3/4"							
Condensate Branch Diameter	1/2"							
Condensate Branch Connection Type	1/2" FIP							
Condensate Material Type	PVC							
Electrical Requirements								
Prewired Electrical Assembly	YES							
Voltage	AC 120V							
Max Current (Amperes)	15							
Outdoor	YES							
Horizontal Support	1-5/8" 12 Gauge Strut Channel							
Vertical Support	13/16" Back to Back 14 Gauge Strut Channel							
Frame Material	Galvanized Steel							
Include Condensate Treatment Kit	Yes	Yes	NO	NO	YES	YES	NO	NO
Hot/Cold Connections Same Side (SAME) or Opposite sides(OPPOSITE)	SAME	SAME	SAME	SAME	OPPOSITE	OPPOSITE	OPPOSITE	OPPOSITE

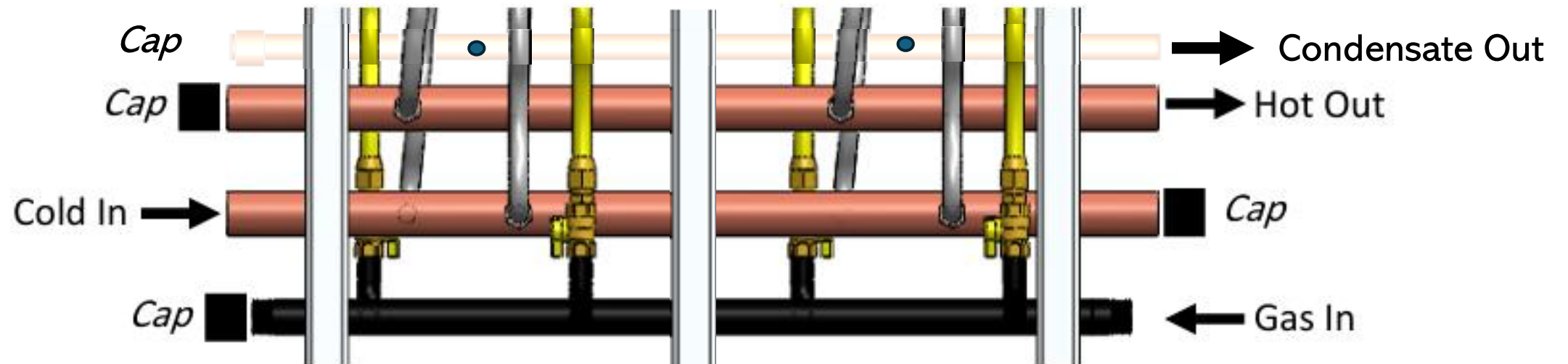
Connections

Straight Manifold

Piping End Caps / Connections End caps are field-supplied and must be the following materials:

- Cold water cap - Brass or Copper
- Hot water cap - Brass or Copper
- Gas cap - Black Iron
- Condensate cap or vent - PVC

When water flow direction, gas supply and condensate side are determined, the other (opposite) side of the manifold must be capped. See the example below. Leak check the capped ends of the manifolds. The open end of the condensate can also be used as a vent (see Condensate section in this manual).



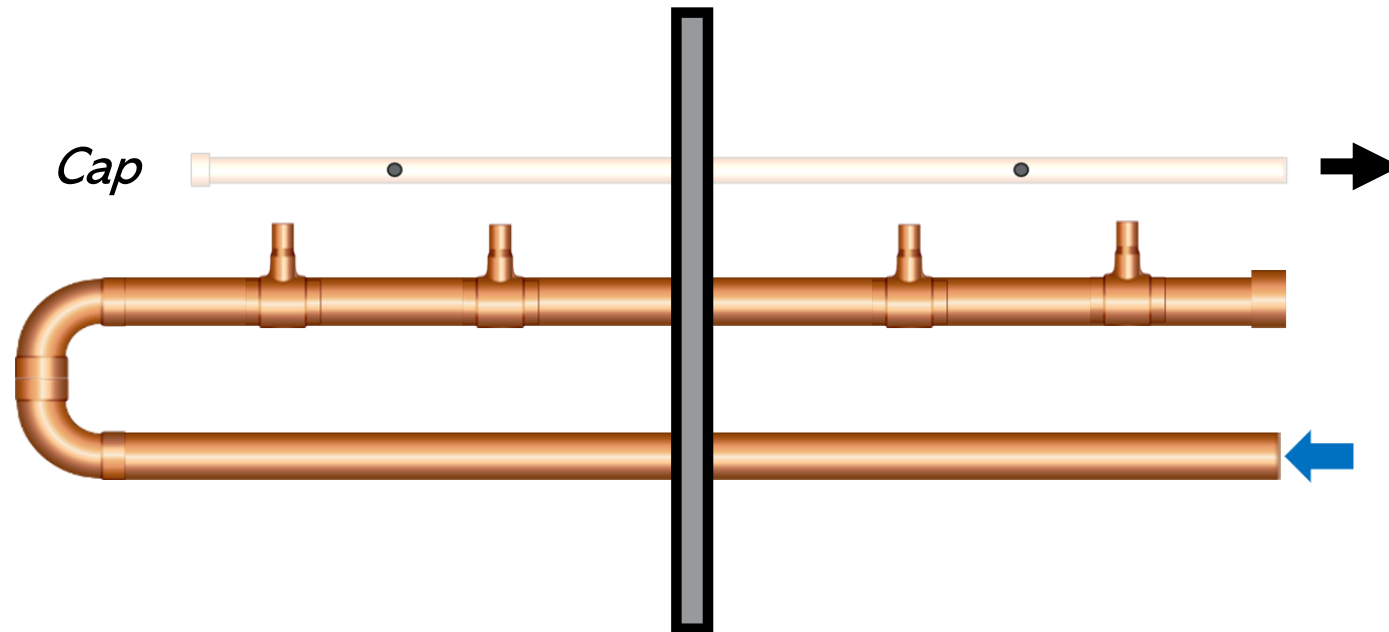
Balanced Cold Manifold

Gas and Condensate end caps are field-supplied and must be the following materials:

- Gas cap - Black Iron
- Condensate cap or vent - PVC

End caps are installed on the Cold Manifolds to help maintain equal flow (reverse return).

When Condensate side is determined, the other (opposite) side of the manifold must be capped. See the example below.



* Manifolds branches are shown vertical for illustration purposes. ALL branches are horizontal in manifold kits.

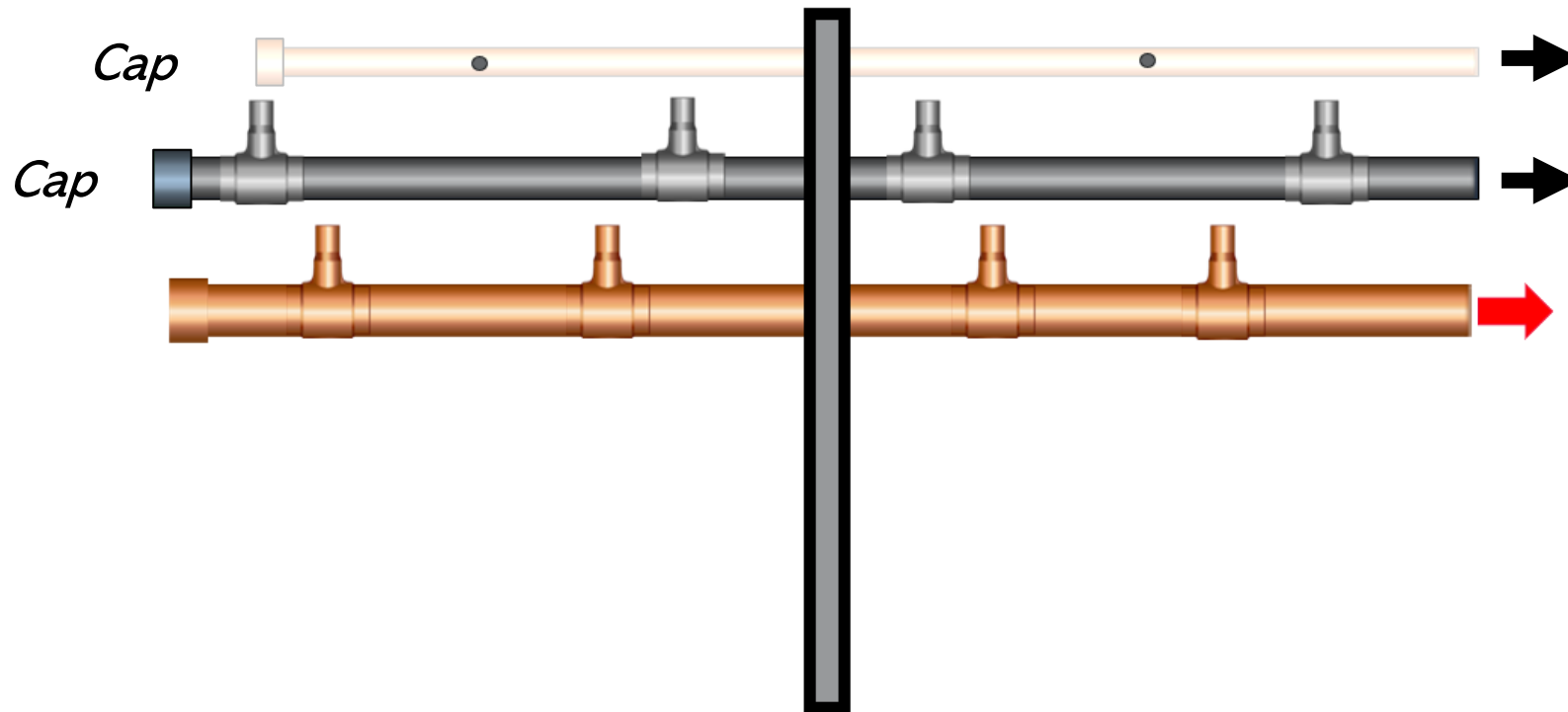
Balanced Hot Manifold

Gas and Condensate end caps are field-supplied and must be the following materials:

- Gas cap - Black Iron
- Condensate cap or vent - PVC

End caps are installed on the Hot Manifolds to help maintain equal flow (reverse return).

When Condensate and gas supply side is determined, the other (opposite) side of the manifold must be capped. See the example below.



* Manifolds branches are shown vertical for illustration purposes. ALL branches are horizontal in manifold kits.

Hot & Cold Supply to Heater

Connect the water heater supply lines to the hot and cold $\frac{3}{4}$ " MIP connections provided with the manifold kit. Connect water heater supply lines to the same corresponding numbers for equal flow. Connect hot supply to the red number and the cold supply to the blue number (see picture below). All valves and supply lines are purchased separately.



Condensate

Each Condensing Tankless Water Heater has a condensate drain outlet on the bottom of the unit. A drain line must be connected to each water heater to direct the condensate to an approved disposal location. All UTRS rack systems include a prefabricated condensate manifold. Condensate piping must be CPVC or PVC material and must not be smaller than the drain connection on the appliance. Components of the condensate drainage shall be CPVC or PVC material. All components must be selected for the pressure and temperature rating of the installation. If the drain lines from more than one rack are manifolded together for condensate drainage, the pipe or tubing shall be sized in accordance with an approved method as dictated by local codes. Condensate must be disposed of according to local codes.

Without Treatment Kit

Condensate manifolds are installed above the Gas manifolds on all racks. Racks without treatment kits will be indicated by a **O** at the end of the Model Number, (example = **B2B4BO**). Racks without treatment kits have a point of connection on each side of the rack. Condensate manifolds can be adjusted to slope either direction by loosening the strut clamps and sliding the ends of the pipe up or down. A field connection can be made on the upper end of the condensate manifold to add a vent. If a vent is not needed, then a cap or plug will be required to seal the upper end.



IMPORTANT! Vent, cap, or plug the upper end of condensate manifold



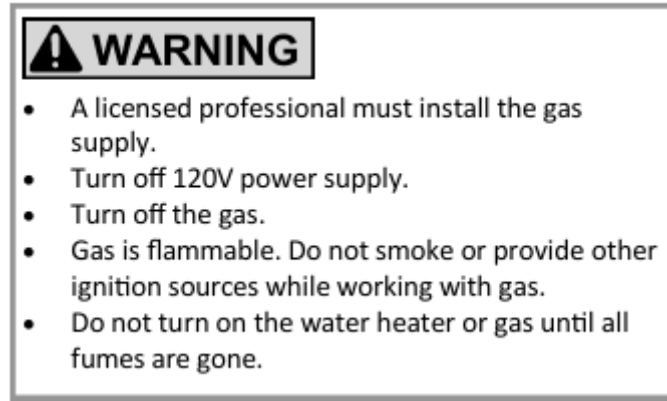
With Treatment Kit

Models available with condensate treatment kits included are indicated by a **T** at the end of the model number (example = **B2B4BT**). Treatment kits are meant to be serviceable one at a time with minimal service disruption. (2) PVC condensate vent line connection pieces are included with the manifold kits including a treatment kit. The open end on the condensate manifold is for the field connection for the vent line provided with the manifolds. Each vent line is labeled for the side it is to be connected to. Solvent weld the pieces provided into the end of the condensate manifold the label corresponds with and align guide marks on top of the fittings (see illustration below). (2) points of condensate connection will be located at the bottom end of the rack when treatment kits are included.

Follow manufacturer instructions on priming the condensing tankless unit prior to connecting and operating water heaters!



Gas Supply



To connect gas supply, follow the instructions below:

- 1) Check the type of gas and gas supply pressure before connecting the water heaters. If the water heaters are not of the gas type that the building is supplied with, DO NOT connect the water heaters. Contact the dealer for the proper water heaters to match the gas type.
- 2) Check the gas supply pressure immediately upstream at a location provided by the gas company. Supplied gas pressure must be within the limits shown in the Specifications section with all gas appliances operating.
- 3) Before placing the appliance in operation, all joints, including the heaters, must be checked for gas tightness by means of soap, gas leak detector solution, or an equivalent nonflammable solution, as applicable. Since some leak test solutions, including soap and water, may cause corrosion or stress cracking, the piping shall be rinsed with water after testing, unless it has been determined that the leak test solution is non-corrosive.
- 4) Any compound used on the threaded joint of the gas piping shall be a type that resists the action of liquefied petroleum gas (Propane/LPG).
- 5) The gas supply line shall be gas tight, sized, and installed as to provide a supply of gas sufficient to meet the maximum demand of the heaters and all other gas consuming appliances at the location without loss of pressure.
- 6) Perform a leak and pressure test prior to operating the water heaters. If a leak is detected, do not operate the water heaters until the leak is repaired.

IMPORTANT SAFETY INFORMATION

DANGERS:

Natural Gas and Liquefied Petroleum Safety

- Never attempt to convert the water heater from natural gas to LP. The water heater should only use the fuel type in accordance with listing on data plate— natural gas for natural gas units and LP for LP units. Any other fuel usage will result in death or serious personal injury from fire and/or explosion. This water heater is not certified for any other fuel type.
- Both natural gas and propane (LP) have an odorant added to aid in detecting a gas leak. Some people may not physically be able to smell or recognize this odorant. If you are unsure or unfamiliar with the smell of natural gas or LP, ask the gas supplier. Other conditions, such as “odorant fade,” which causes the odorant to diminish in intensity, can also hide or camouflage a gas leak.
- Water heaters using LP gas are different from natural gas models. A natural gas water heater will not function safely on LP and vice versa.
- LP water heaters should not be installed below grade (for example, in a basement) if such installation is prohibited by federal, state, and/or local laws, rules, regulations, or customs.
- LP must be used with great caution. It is heavier than air and will collect first in lower areas, making it hard to detect at nose level.
- Before attempting to light the water heater, make sure to look and smell for gas leaks. Use a soapy solution to check all gas fittings and connections. Bubbling at a connection indicates a leak that must be corrected. When smelling to detect a gas leak, be sure to also sniff near the floor.
- Gas detectors are recommended in LP and natural gas applications, and their installation should be in accordance with the detector manufacturer’s recommendations and/or local laws, rules, regulations, or customs.
- Combustible materials, such as clothing, cleaning materials, or flammable liquids, must not be placed in the vicinity of the water heater.
- If a gas leak is present or suspected:– DO NOT attempt to find the cause yourself.– Never use an open flame to test for gas leaks. The gas can ignite resulting in death, personal injury, or property damage.– Follow the steps listed under “What to Do If You Smell Gas” found on the front cover of this manual.

WARNINGS:

- The installation of gas piping must conform to local utility company requirements and/or in the absence of local codes, use the latest edition of National Fuel Gas Code (NFGC), ANSI Z223.1/NFPA 54, or CAN/ CSA B149.1, Natural Gas and Propane Installation Code.
- If inlet gas pressure is out of allowable range [4.0” w.c. (1.0kPa) – 10.5” w.c. (2.6kPa)] for Natural Gas, or [8.0” w.c. (2.0kPa) – 13.0” w.c. (3.2kPa)] for LP gas, a gas pressure regulator must be installed to maintain the allowable inlet gas pressure.
- Should overheating occur or the gas supply fail to shut off, turn off the manual gas control valve to the water heater.

CAUTIONS:

- DO NOT attempt repair of electrical wiring, gas piping, remote control, burners, vent connectors, or other safety devices. Refer repairs to qualified service personnel.
- Turn off the manual gas shut-off valve if the water heater has been subjected to overheating, fire, flood, physical damage, or if the gas supply fails to shut off.
- DO NOT turn on the water heater unless the water and gas supplies are completely opened.

Unit Gas Connection

Every gas appliance is required to have its own accessible shut off. The UTRS has a $\frac{3}{4}$ " MIP gas connection for each tankless heater (see picture below). A valve must be installed upstream from the union before connecting to a heater. Valve and supply line are purchased separately. Test every connection before operating equipment.





DO NOT connect the tankless water heaters to the outlet located at end of rack prior to connecting building power supply to the rack electrical gang box. Doing so may cause damage to the PC Boards of the tankless water heaters.

IMPORTANT: The outlet is designed for use with Tankless Water Heaters only. Do not insert power cords belonging to other appliances or electrical sources into the outlet.

 WARNING

- Do not use an extension cord or adapter plug with this appliance.
- The water heater must be electrically grounded in accordance with local codes and ordinances or, in the absence of local codes, in accordance with the National Electrical Code, ANSI/ NFPA No. 70.
- Water heaters are equipped with a three-prong (grounding) plug for your protection against shock hazard and should be plugged directly into a properly grounded three-prong receptacle. Do not cut or remove the grounding terminal from this plug.

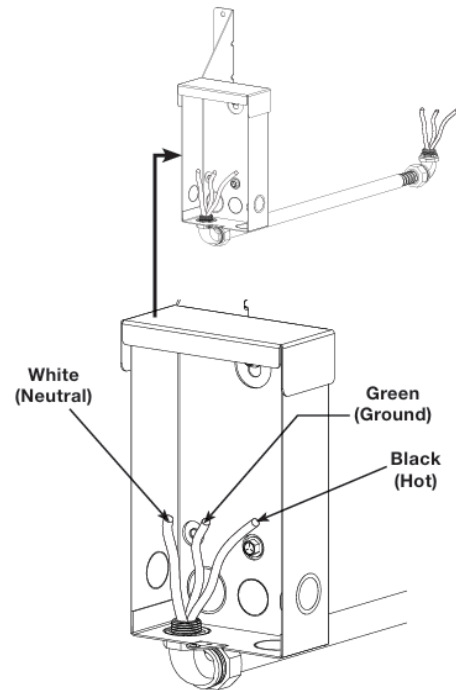
When connecting the power supply, follow these guidelines:

- Do not rely on the gas or water piping to ground the water heater. Ground locations are provided inside the water heater.
- The water heater requires 120 VAC, 60 Hz power from a properly grounded circuit.
- Use the power cord supplied with the water heater, plug it into a standard 3 prong 120 VAC, 60 Hz properly grounded outdoor rate outlet.
- For outdoor installation, a field-supplied disconnect switch is provided at the end of the rack for the incoming 120 VAC power. The switch is suitable for outdoor use. Check the National Electrical Code, ANSI/NFPA 70 and your local codes for a proper switch type to use in your area. Power connections must be protected from the weather.

Post-Power Supply Connection Checklist

- ☐ Confirm that the electricity is supplied from 120 VAC, 60 Hz power source and is in a properly grounded circuit.
- ☐ Confirm that an extension cord or an adapter plug has NOT been used with the water heater.

1. Locate the gang box on the side of the UTRS frame.
2. Remove the 2 screws securing the front panel to the gang box.
3. Remove the front panel.
4. Run building-supplied electrical wiring and conduit to the gang box.
5. Connect building wiring to the 3 12AWG, THHN wires, Hot (Black), Neutral (White), and Ground (Green).
6. Reinstall the front panel to the gang box using 2 screws.
7. When the building electrical power supply has been wired to the rack system, plug the units into the outlet located under the end of the rack frame.



Anchoring/Securing

All mechanical components shall be anchored and installed in accordance with national and/or local codes having jurisdiction. Base holes to secure all free standing RTRS are 0.5 inches in diameter. The base of the rack is industry standard 13/16” 14-gauge strut channel. Reference local codes regarding minimum concrete thickness and use appropriate expansion anchors that can support the UTRS operating weight and equipment or where installation is outdoor, anchors should be capable supporting the UTRS weight all equipment and wind shear. Reference and follow anchor manufacturer’s use and installation requirements.

Refer to the tankless water heater installation manual for properly securing the tankless to the rack system.

LIMITED WARRANTY

For 3PCS LLC's Universal Tankless Rack System

GENERAL

This Limited Warranty is only available to the original owner of the rack system at the original installation location. This Limited Warranty is not transferable. 3rd Party Commercial Solutions, LLC (3PCS LLC) warrants this rack system, and its component parts, to be free from defects in materials and manufacture, under normal use and service, for the Applicable Warranty Period specified below. At its option, 3PCS LLC will repair or replace the defective component part(s), in accordance with the terms of this Limited Warranty, if it fails in normal use and service during the Applicable Warranty Period. The replacement must be manufactured by 3PCS LLC. The replacement component part(s) must be 3PCS LLC authorized component part(s). The replacement part will be warranted only for the unexpired portion of the original parts Applicable Warranty Period. 3PCS LLC strongly recommends that this universal rack system be installed by a contractor that is licensed, state qualified and trained on tankless products because improper installation may invalidate warranty coverage.

EFFECTIVE DATE: The Effective Date of warranty coverage (or the beginning of the Applicable Warranty Periods) is the date of the original installation of the rack system, if properly documented. Otherwise, it is the date of manufacture of the rack system plus ninety (90) days.

APPLICABLE WARRANTY PERIODS: The Applicable Warranty Period on commercial installation is one (1) year from the Effective Date for the component parts. No labor warranty.

Disclaimer: Exceeding the flow rates/velocity through headers will void warranty.