

Installation and Instruction Manual
Cascade Rack System

Model LT199NXX1 / LT199PXX1
LT199NRX1 / LT199PRX1
RTGS199N1 / RTGS199X1
RTGR199N1 / RTGR199X1

Base Rack : ST1249
Extension Rack : ST1250

FOR YOUR SAFETY: This product must be installed and serviced by a professional service technician, qualified in hot water boiler and heater installation and maintenance. Improper installation and/or operation could create carbon monoxide gas in flue gases which could cause serious injury, property damage, or death. Improper installation and/or operation will void the warranty.



Base Rack : ST1249



Extension Rack : ST1250

STOP! Follow these instructions or warranty will be void!

⚠ WARNING

This installation shall be done by a qualified service agency in accordance with these instructions, the installation manual included with the appliance to be mounted on this rack, all applicable codes, and requirements of the authority having jurisdiction. Failure to follow these instructions could result in substantial property damage, severe personal injury, or death.

■ Installation Must Comply With:

1. This appliance must be installed in accordance with local codes if any; if not, follow ANSI Z223.1/NFPA 54 or CAN/CSA B149.1, Natural Gas and Propane Installation Code, as applicable.
2. Local, state, provincial, and national codes, laws, regulations, and ordinances. This installation shall be done by a qualified service agency in accordance with these instructions, the installation manual included with the appliance to be mounted on this rack, all applicable codes, and requirements of the authority having jurisdiction. Failure to follow these instructions could result in substantial property damage, severe personal injury, or death.

Included with Kit:

No	Description	Quantity	
		Main Rack	Extension Rack
1	Base Foot	2	1
2	Base Support	4	2
3	Angle Support	4	2
4	Vertical Post	2	1
5	Lower Beam	1	1
6	Upper Beam	1	1
7	End Cap	2	1
8	M10 Washer	44	24
9	M10 Hex Screw	22	12
10	M10 Hex Nut	22	12
11	M6 Self Tapping Screw	8	8
12	M6 Hex Screw	4	3
13	M6 Hex Nut	4	3
14	M6 Washer	8	6

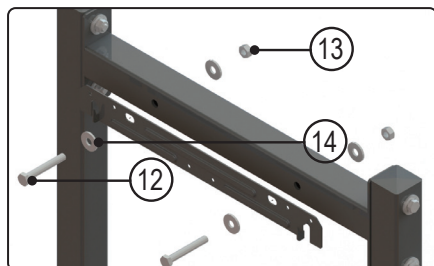
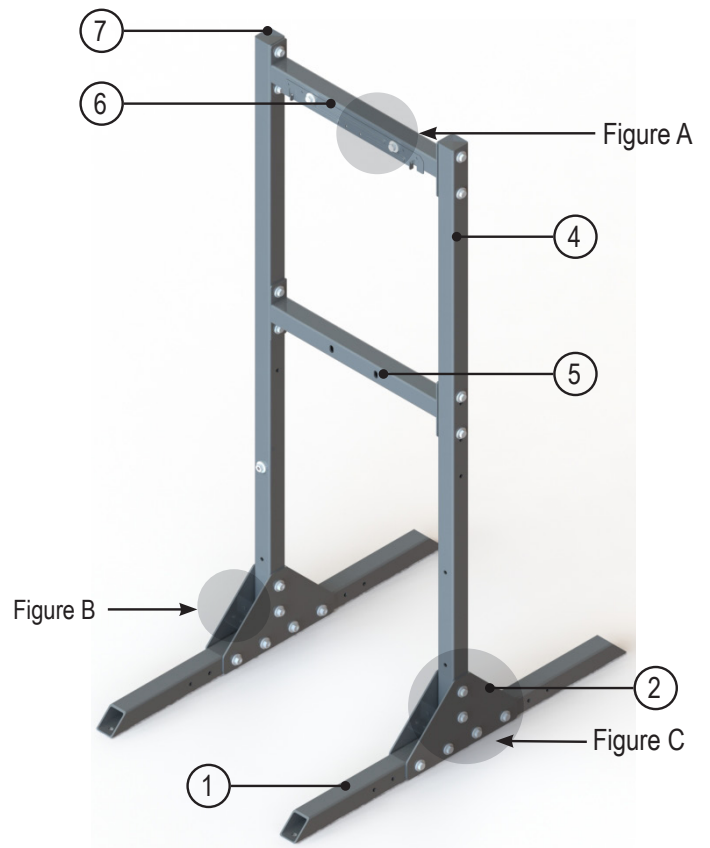


Figure A

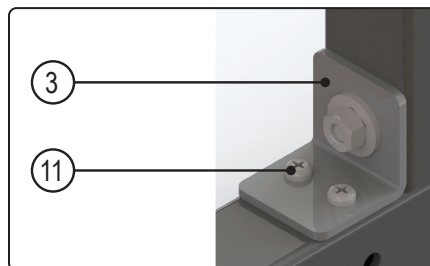


Figure B

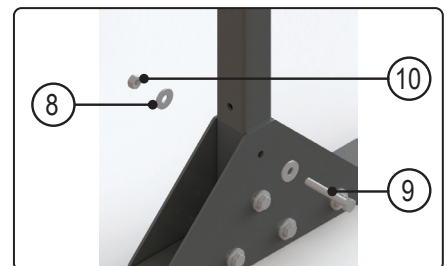


Figure C

⚠ WARNING

Installer - Read all instructions in this manual before installing. Perform steps in the given order. Obey all local codes. Obtain all applicable permits before installing this rack system.

NOTE: Install all components in such a manner that does not reduce the performance of any fire rated assembly.

User - These instructions are for use only by a qualified heating installer / service technician.

FAILURE TO ADHERE TO THE GUIDELINES ON THIS PAGE CAN RESULT IN SUBSTANTIAL PROPERTY DAMAGE, SEVERE PERSONAL INJURY, OR DEATH.

■ **Tools Required (Not Included):**

- 7 mm and 10 mm wrench
- Phillips head screwdriver
- Rubber Mallet
- Drill and proper bolts or anchors for attaching to the floor(refer to local codes).

■ **Preparing for Installation:**

Determine the best area to install the rack system. Ensure the location meets all code requirements, and that all safety and clearance requirements for the appliance(s) to be mounted to the rack are met, refer to installation manual.

⚠ CAUTION

Carefully consider installation when determining rack location. Please read the entire appliance installation manual before installing this rack. Failure to properly take factors such as appliance venting, piping, condensate removal, and wiring into account before installation could result in wasted time, money, and possible property damage and personal injury.

Do not attempt to overtighten any of the bolts as this may damage the threads and prevent the bolts from turning.

■ **Installing the Rack System:**

1. Move the rack components to the installation location. Ensure you have all the components for the installation.
2. Set the base feet in the installation location. Verify finished installation clearances will meet the service clearance requirements of the appliance(s) to be mounted on the rack.
3. Use a Phillips Head Screwdriver and eight(8) M6 Self Tapping Screws to loosely install the four(4) Angle Supports to the two(2) Base Feet. See Figure 1(a).

NOTICE

Remove all items from the packaging and ensure that all parts and accessories are included in the kit. Any claims for damage or shortage in shipment must be filed immediately against the transportation company by the consignee.

⚠ WARNING

This rack system must be properly anchored and secured to the floor BEFORE mounting appliances on it. Failure to follow these instructions could result in substantial property damage, severe personal injury, or death.

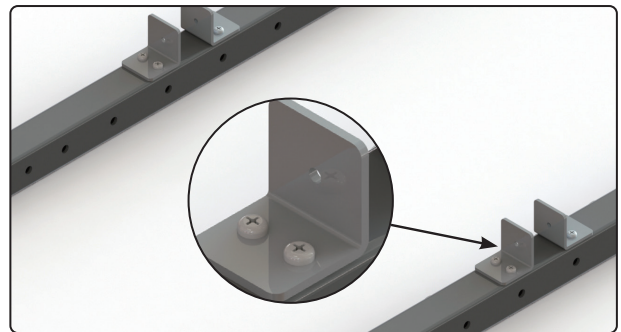


Figure 1(a) - Installed Angle Support

4. Insert the vertical posts between the loose angle supports. Before tightening the M6 self tapping screws, insert one M10 Hex Bolt with two M10 washers and M10 Hex Nut as shown in figure 1(b). Once the M10 bolt is tightened ensure all M6 Self tapping screws are tightened.

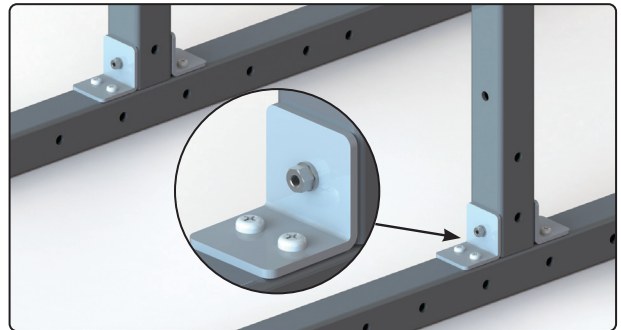


Figure 1(b) - Installed Angle Support

5. Align the Base support on each side of the vertical posts with the six holes in the vertical post and base foot. Using one M10 Hex bolt, Two M10 washers, and one M10 Hex nut for each of the 6 holes. Tighten the 6 M10 bolts for each vertical post.

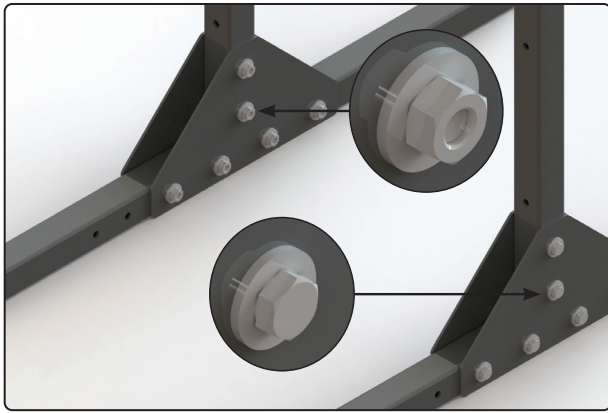


Figure 2 - Installed Base Support

6. Gather the Upper beam and align the holes. Use an M10 Hex Bolt, two M10 Washers, and one M10 Hex Nut to loosely attach the upper beam to the two vertical post as shown in figure 3. If adding an extension rack insert the M10 Hex Bolt from the inside toward the extension rack to make adding the extension easier.

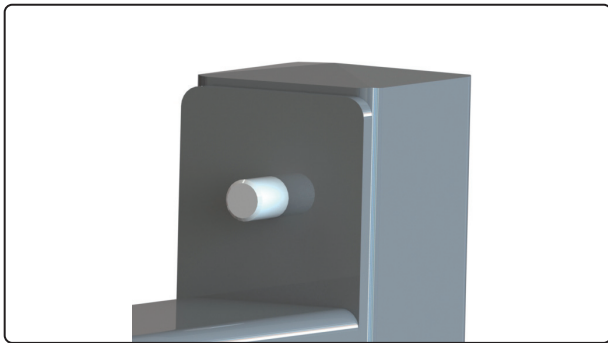


Figure 3 - Open Ended Bolt

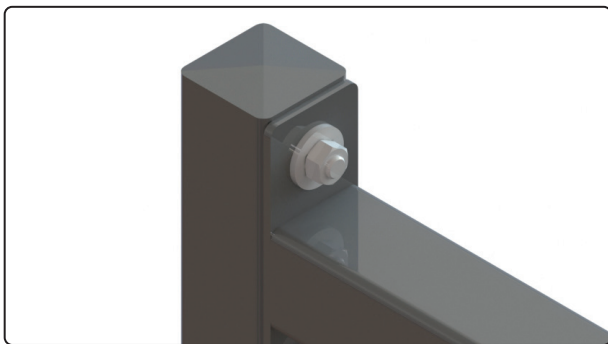


Figure 4 - Installed Upper Beam

7. Observe the posts. Labels marked “ALL TANKLESS WATER HEATERS”, “80 – 140kBTU APPLIANCES”, and “175 – 199kBTU APPLIANCES” cover the upper lower beam mounting holes. Remove the label that corresponds to the appliance that will be mounted. Align the holes from the Lower Beam with the correct mounting holes for the appliance being mounted to the rack. Using an M10 hex bolt, two

M10 washers, and one M10 hex bolt secure the lower beam to the vertical post through each of the four mounting holes. If adding an extension rack insert the M10 Hex Bolt from the inside toward the extension rack to make adding the extension easier.

8. Use a mallet to install the end caps into each vertical posts as shown in figure 5.
9. If installing a single Main Rack, rack installation is complete. Ensure all nuts and bolts and screws are tightened.

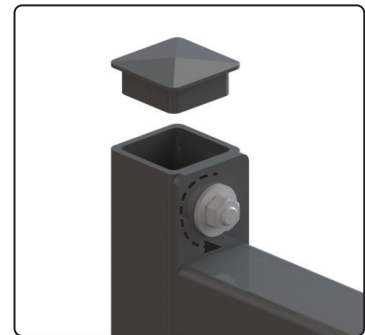


Figure 5 - Installed End Cap

■ Installing an Extension Rack :

1. Repeat steps 3, 4, and 5 to assemble the additional vertical post assembly.
2. Repeat steps 6 and 7 to install the upper and lower beams on the new vertical post assembly.
3. Attach the new vertical post assembly (with upper and lower beam) to the base rack using the existing M10 hex bolts, M10 hex nuts, and washers. Ensure all bolts are tight.
4. Install any remaining end caps for the new vertical posts.
5. If required by local code use appropriate anchors for the flooring material to secure the Rack to the floor.



Figure 6 - Installed Main Rack and Extension Rack

⚠ WARNING

This rack system must be properly anchored and secured to the floor BEFORE mounting appliances on it. Failure to follow these instructions could result in substantial property damage, severe personal injury, or death.

■ General Notes on Securing the Rack to a Concrete Floor :

⚠ WARNING

When locating the rack and preparing to install concrete anchors, IT IS MANDATORY to check for buried electrical cables, gas tubing, and water or radiant heating piping. DO NOT drill into or drive fasteners into concrete slab unless absolutely certain it is safe to do so. If in doubt, CONSULT A PROFESSIONAL to determine and accurately locate buried objects. Failure to follow this warning could result in property damage, serious personal injury, or death.

■ General Rules for Drilling in Concrete :

Concrete drillers must comply with OSHA's general rules. Operators must be adequately trained to use concrete drilling equipment, and the drilling equipment must be maintained in safe operating condition. Operators must wear personal protective equipment (PPE), including goggles, long pants, protective noise equipment, and steel-toed work boots. Operators should wear a respirator whenever exposed to hazardous materials. Adequate ventilation is required whenever drilling in concrete.

■ Utility Precautions

OSHA rules state that concrete drillers should make certain they are not drilling into electrical cables. They should use the services of the underground utility and cable locating companies prior to drilling. Concrete drillers should maintain a minimum distance of 10 feet from high voltage power cables to install the vertical posts and waste time.

⚠ WARNING

If seismic anchoring is required, consult state and local codes for requirements and instructions. If in doubt as to whether seismic anchoring is necessary in your installation location, CONSULT A PROFESSIONAL. Failure to follow this warning could result in property damage, serious personal injury, or death.

■ General Anchoring Instructions :

1. Position the stand in the installation location.
2. Once properly positioned, use a pencil to mark the drill holes for the lag screws / expansion anchors. Then move away the stand.
3. Prepare to drill holes into the mounting surface (either 4" thick minimum Wood Structural Member, or 4" thick minimum Concrete Flooring). Consult lag screw or expansion anchor manufacturer for predrill diameters.
4. After taking appropriate precautions, drill the four anchor holes.
5. Reposition the stand with attached seismic anchors over the newly drilled anchor holes.
6. Install the washers and lag screws or expansion anchors (depending on the installation and code requirements).

■ Installing Appliance(s) on the Rack :

1. a. If mounting one(1) appliance to the rack, use a 10mm Ratchet or Socket Driver and wrench and two(2) M6 bolts and included washers and nuts to mount the top mounting bracket to the upper beam of the rack. See Figure 7.
1. b. If mounting two(2) appliances to the rack, use a 10mm Ratchet or Socket Driver and wrench and two(2) M6 bolts and included washers and nuts to mount two(2) top mounting brackets to the upper beam of the rack. See Figure 8.
2. Hang the appliance(s) from the top mounting bracket(s). See Figure 7.

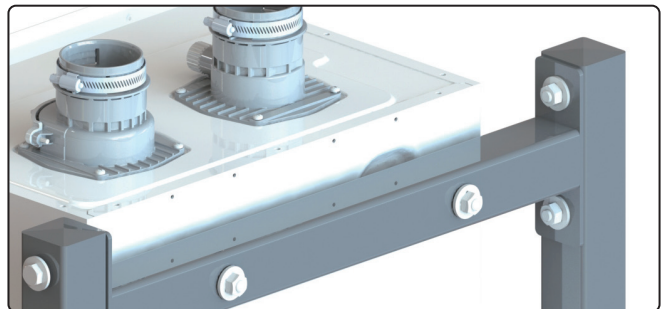


Figure 7 - Single Appliance Mounted on Top Mounting Bracket

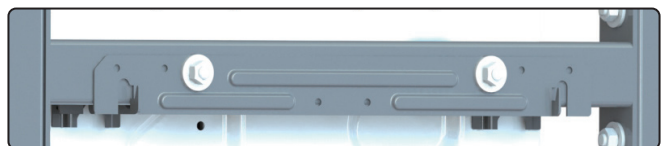


Figure 8 - Secured Top Mounting Bracket for Back to Back Appliance Mounting

3. Use a 10mm Ratchet/Socket Driver and wrench to secure the lower mounting bracket(s) to the lower beam, using the two(2) M6 bolts and the included washers/nuts. See Figures 9 and 10.

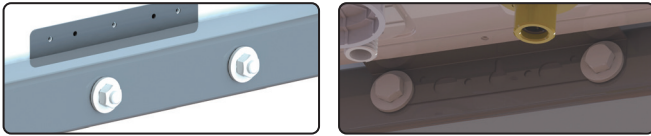


Figure 9 - Single Appliance Secured Lower Bracket



Figure 10 - Secured Lower Bracket for Back to Back Appliance Mounting

4. See Figures 11, 12, 13 for mounted appliance images.
5. Repeat the previous steps for installing additional appliances on Extension Rack(s).



Figure 13 - Mounted Side by Side Appliances (Possible with Extension Rack)

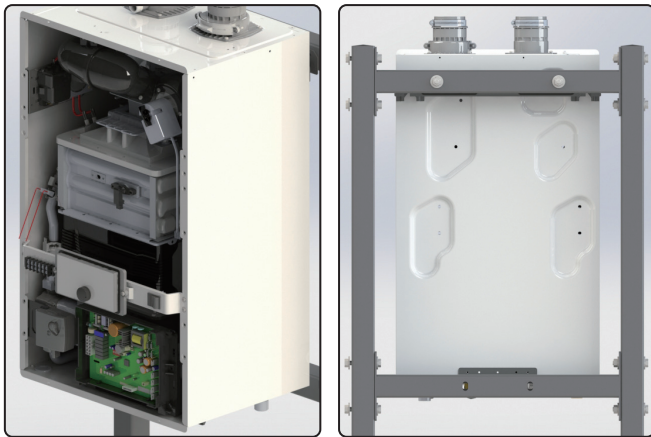


Figure 11 - Mounted Single Appliance

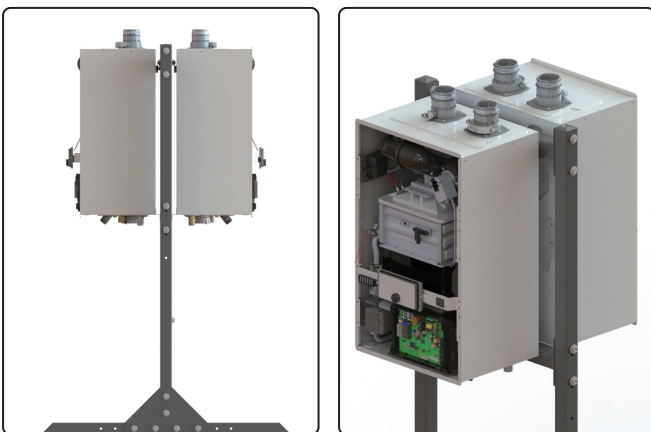
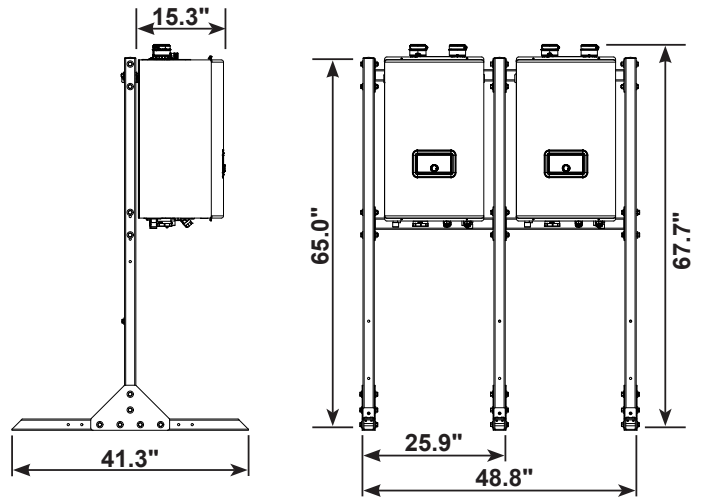


Figure 12 - Mounted Back to Back Appliances

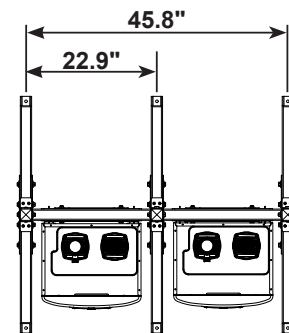


Figure 14 - Rack Dimensions