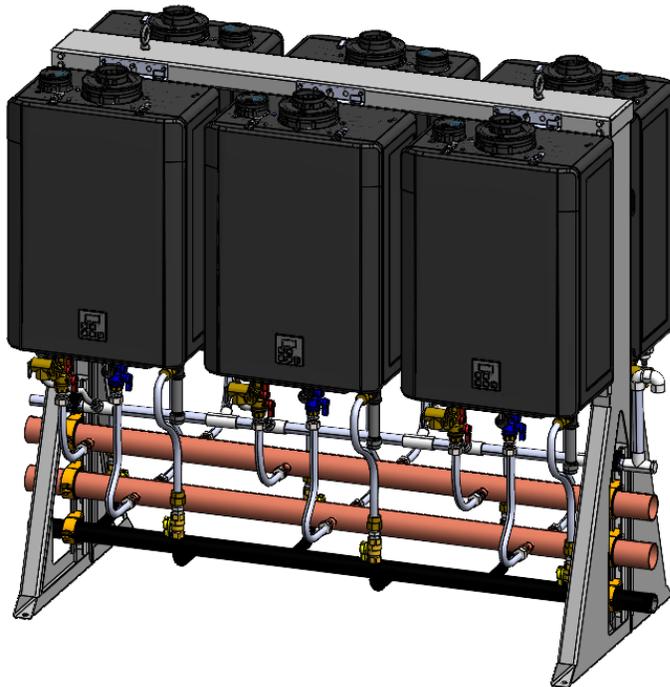




Tankless Rack System (TRS) with SENSEI™ CX Tankless Water Heaters

SPECIFICATIONS

COMMERCIAL



Free-Standing Rack with
Six Rinnai SENSEI™ CX Condensing
Tankless Water Heaters



SENSEI™ CX Condensing
Commercial Tankless Water Heater

Models:

- CX199i
- CX 160i
- CXP199i
- CXP160i

For complete details on commercial water heating solutions and maintenance services,
call 866-383-0707 or email commercialservices@rinnai.us.

1. Configurations

Tankless Rack System (TRS) configurations and part numbers are listed in the following tables.

IMPORTANT: SENSEI™ CX tankless water heaters are available in one SKU which is capable of using Natural Gas or Propane, and for being installed indoor or outdoor*.

When power is connected for the first time, you must select these settings using the controller on the front panel. Refer to the “Initial Settings” section in the “Tankless Water Heater Installation and Operation Manual” for complete instructions.

* Indoor tankless water heaters (applicable models) can convert to an outdoor installation with the Rinnai outdoor vent cap (purchased separately). Contact Rinnai for more information.

WALL-HANGING RACKS

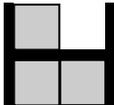
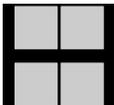
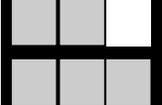
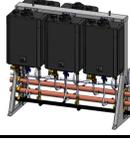
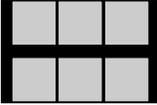
CX Series			
Part No.*	Rack Type	Configuration	Illustration
TRW02CXiN	2-unit interior wall-hanging rack, NG		
TRW03CXiN	3-unit interior wall-hanging rack, NG		
TRX02CXiN	2-unit interior compact wall-mount rack, NG		

CXP Series Featuring Smart-Circ™ Recirculation			
Part No.*	Rack Type	Configuration	Illustration
TRW02CXPiN	2-unit interior wall-hanging rack, NG		
TRW03CXPiN	3-unit interior wall-hanging rack, NG		

* Part No. Legend:

- TR = Tankless Rack
- W = Wall Hanging
- S = Stand Alone
- X = Compact
- IL = Inline
- 2/3/4/5/6 = Number of Water Heaters
- CX = SENSEI™ CX Tankless Water Heater
- i/e = Interior/Exterior
- NG/LP = Natural Gas/Liquid Propane
- TRS: Free-Standing Systems
- TRW: Wall-Hanging Systems
- TRX: Compact Wall-Mount

FREE-STANDING RACKS

Part No.*	Rack Type	Configuration	Illustration
TRS02ILCXiN	2-unit INLINE interior free-standing rack, NG		
TRS03ILCXiN	3-unit INLINE interior free-standing rack, NG		
TRS03CXiN	3-unit interior free-standing rack, NG		
TRS04CXiN	4-unit interior free-standing rack, NG		
TRS05CXiN	5-unit interior free-standing rack, NG		
TRS06CXiN	6-unit interior free-standing rack, NG		

*** Part No. Legend:**

- TR = Tankless Rack
 - W = Wall Hanging
 - S = Stand Alone
 - X = Compact
 - IL = Inline
 - 2/3/4/5/6 = Number of Water Heaters
 - CX = SENSEI™ CX Tankless Water Heater
 - i/e = Interior/Exterior
 - NG/LP = Natural Gas/Liquid Propane
- TRS: Free-Standing Systems
 - TRW: Wall-Hanging Systems
 - TRX: Compact Wall-Mount

2. Specifications

WALL-HANGING RACKS

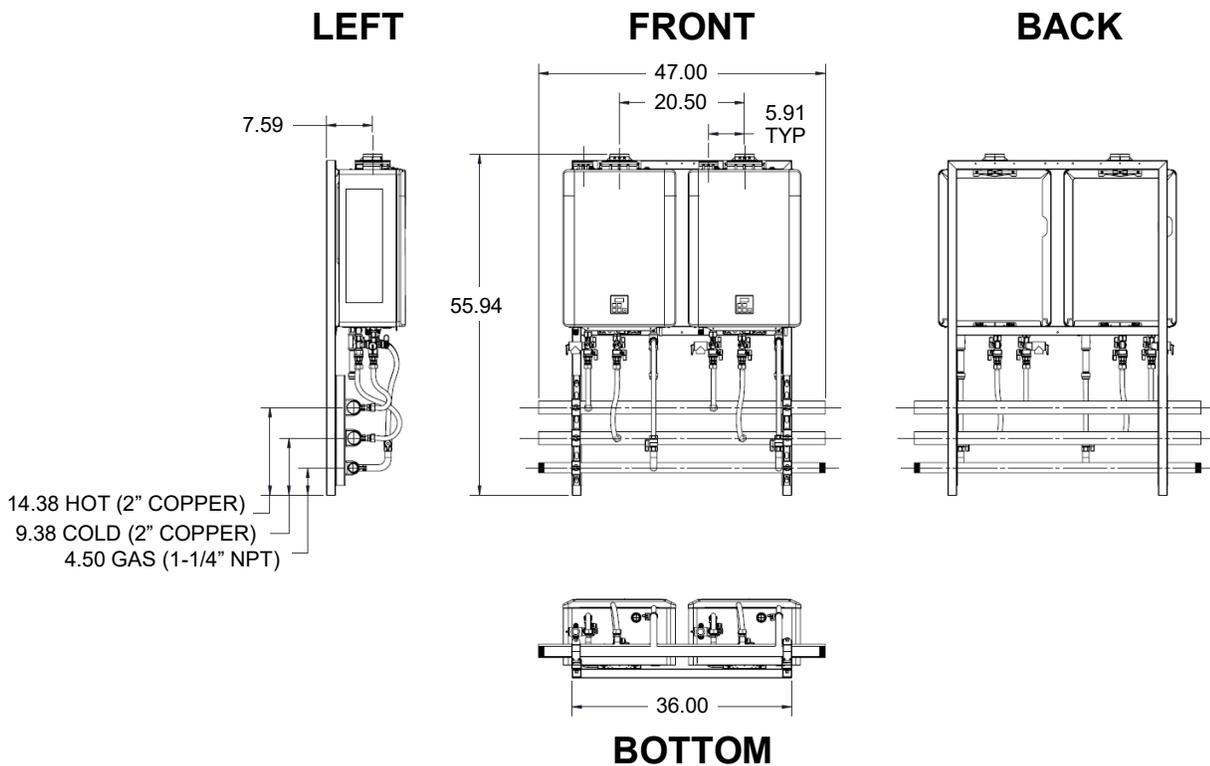


Available Configurations

- 2-Units
- 3-Units

CX and CXP Series

2-Unit
Wall-Hanging Frame

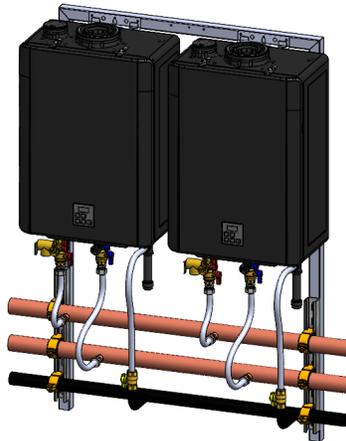


Model	Configuration	Illustration
TRW02CX		

CX and CXP Series 2-Unit Wall-Hanging Frame (Continued)

Model	TRW02CXi	TRW02CXPi
Water Heater Model	CX199i (NG/LP)	
Crate Dimensions (HxLxD) - in	66 x 70 x 35	
Weight - Fully Assembled - lbs	153	
Weight - Shipping (total) - lbs	363	
Rack Frame - Specifications		
Frame Material	Aluminum	
Frame Finish	Powder Coat	
Color	Gray	
Water & Gas Connections		
Hot Water Trunk Line Diameter	2"	
Cold Water Trunk Line Diameter	2"	
Hot Water Trunk Line Material	Rigid Copper	
Cold Water Trunk Line Material	Rigid Copper	
Water Trunk Connection Type	2" Pipe	
Gas Trunk Line Diameter	1-1/4"	
Gas Trunk Connection Type	1-1/4" MNPT	
Gas Trunk Line Material	Sch 40 Steel	
Gas Branch Line Material	PVC Over CSST	
Electric Requirements		
Voltage	AC 120 Volts - 60 Hz	
Maximum Current (Amperes)	8	
BTU and Flow Rates for CX199i (NG/LP)		
Number of Tankless Water Heaters	2	
Flow rate @ 70°F rise (gpm)	10.8	
Flow rate @ 100°F rise (gpm)	7.6	
Minimum input rate (Btuh)	15,000	
Maximum input rate (Btuh)	398,000	

TRW02CX / TRW02CXP



WALL-HANGING RACKS → CX SERIES

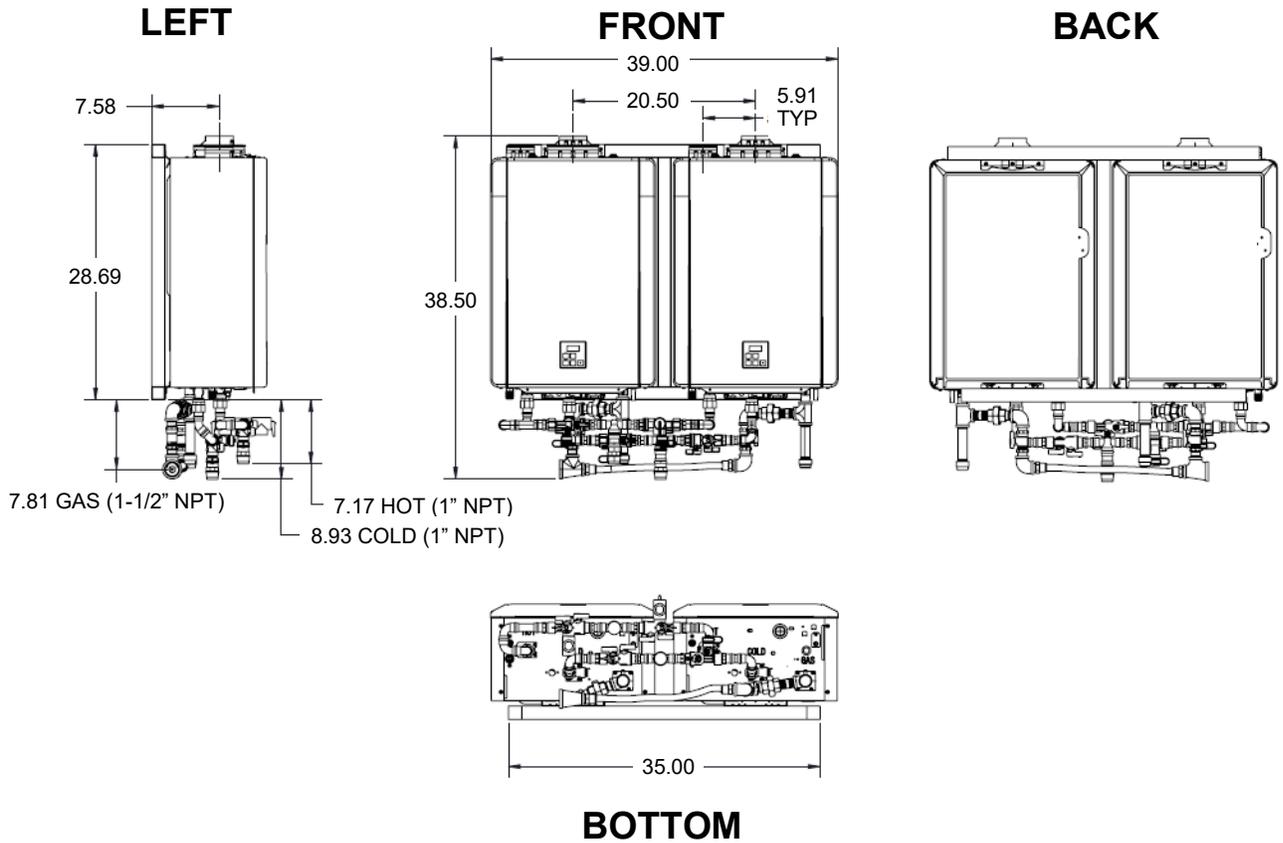
Available Configurations

- 2-Units



CX Series

2-Unit Compact Wall-Mount Frame

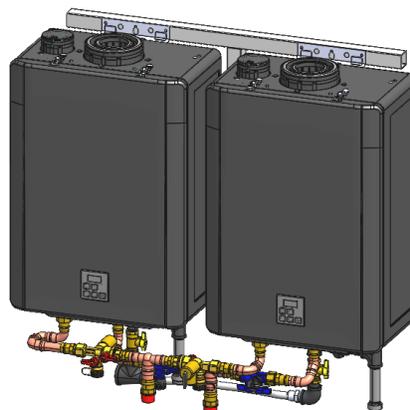


Model	Configuration	Illustration
TRX02CX		

CX Series 2-Unit Compact Wall-Mount Frame (Continued)

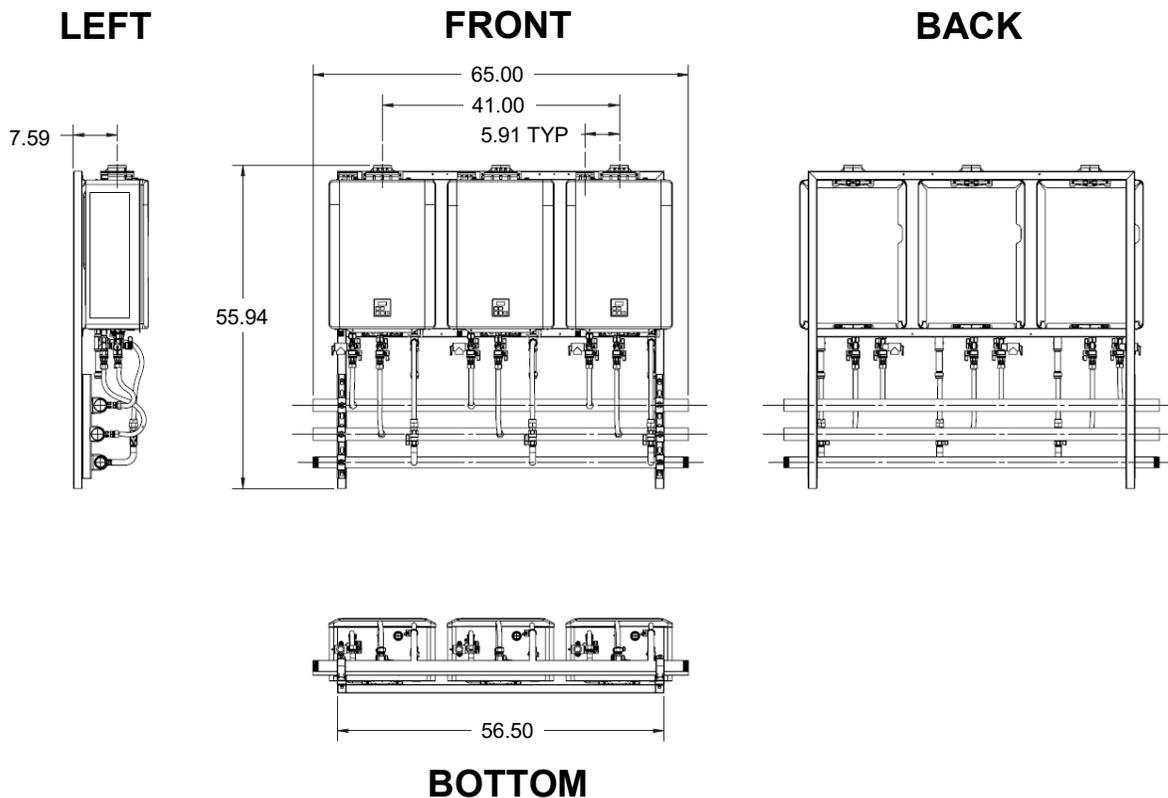
Model	TRX02CX
Water Heater Model	CX199i (NG/LP)
Crate Dimensions (HxLxD) - in	46 x 42 x 48
Weight - Fully Assembled - lbs	160
Weight - Shipping (3 components) - lbs	540
Rack Frame - Specifications	
Frame Material	Aluminum
Frame Finish	Powder Coat
Color	Gray
Water & Gas Connections	
Hot Water Trunk Line Diameter	1 in.
Cold Water Trunk Line Diameter	1 in.
Hot Water Trunk Line Material	Rigid Copper
Cold Water Trunk Line Material	Rigid Copper
Water Trunk Connection Type	1 in. MNPT
Gas Trunk Line Diameter	1-1/2 in.
Gas Trunk Connection Type	1-1/2 in. MNPT
Gas Trunk Line Material	Schedule 40 Steel
Gas Branch Line Material	PVC Over CSST
Electric Requirements	
Voltage	AC 120 Volts - 60 Hz
Maximum Current (Amperes)	8
BTU and Flow Rates for CX199i (NG/LP)	
Number of Tankless Water Heaters	2
Flow rate @ 70°F rise (gpm)	10.8
Flow rate @ 100°F rise (gpm)	7.6
Minimum input rate (Btuh)	15,000
Maximum input rate (Btuh)	398,000
Accessories	
Cascade Controls - REU-EZC-3	Pre-installed
Offset Wall Bracket	Included
Free Standing Leg Kit	Optional Accessory

TRX02CX



CX and CXP Series

**3-Unit
Wall-Hanging Frame**



Model	Configuration	Illustration
TRW03CX		

CX and CXP Series 3-Unit Wall-Hanging Frame (Continued)

Model	TRW03CXi	TRW03CXPi
Water Heater Model	CX199i (NG/LP)	QTY 2 CXP199i & QTY 1 CX199i
Crate Dimensions (HxLxD) - in	66 x 70 x 35	
Weight - Fully Assembled - lbs	228	
Weight - Shipping (total) - lbs	449	
Rack Frame - Specifications		
Frame Material	Aluminum	
Frame Finish	Powder Coat	
Color	Gray	
Water & Gas Connections		
Hot Water Trunk Line Diameter	2"	
Cold Water Trunk Line Diameter	2"	
Hot Water Trunk Line Material	Rigid Copper	
Cold Water Trunk Line Material	Rigid Copper	
Water Trunk Connection Type	2" PIPE	
Gas Trunk Line Diameter	1-1/4"	
Gas Trunk Connection Type	1-1/4" MNPT	
Gas Trunk Line Material	Sch 40 Steel	
Gas Branch Line Material	PVC Over CSST	
Electric Requirements		
Voltage	AC 120 Volts - 60 Hz	
Maximum Current (Amperes)	12	
BTU and Flow Rates for CX199i(NG/LP)		
Number of Tankless Water Heaters	3	
Flow rate @ 70°F rise (gpm)	16.2	
Flow rate @ 100°F rise (gpm)	11.4	
Minimum input rate (Btuh)	15,000	
Maximum input rate (Btuh)	597,000	

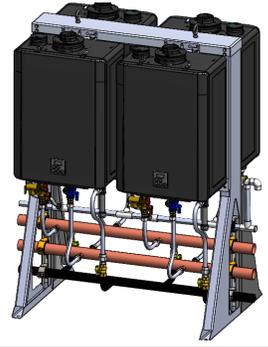
TRW03CX / TRW03CXP



FREE-STANDING RACKS

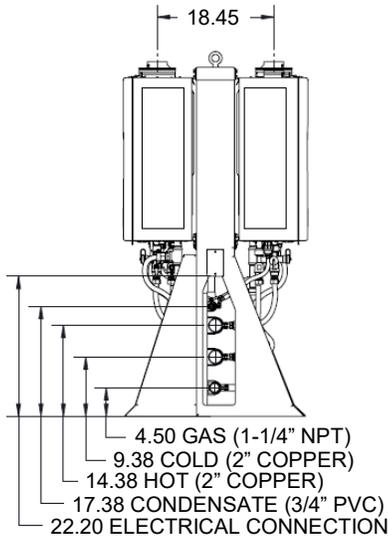
Available Configurations

- 2-Units, 3-Units, 4-Units, 5-Units, 6-Units

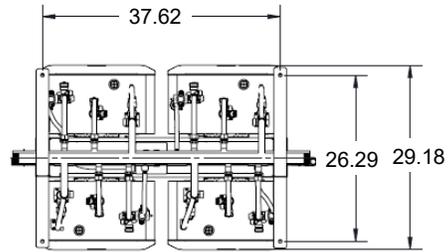
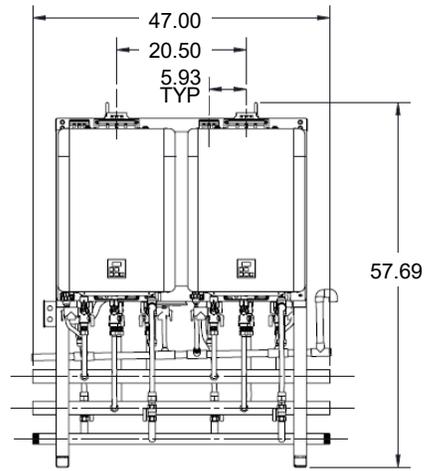


4-Unit Free-Standing Frame

LEFT



FRONT



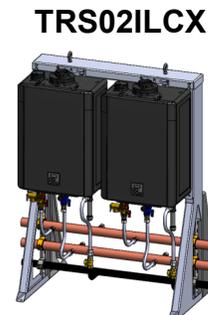
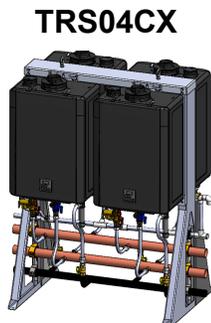
BOTTOM

Model	Configuration	Illustration
TRS04CX		
TRS03CX		

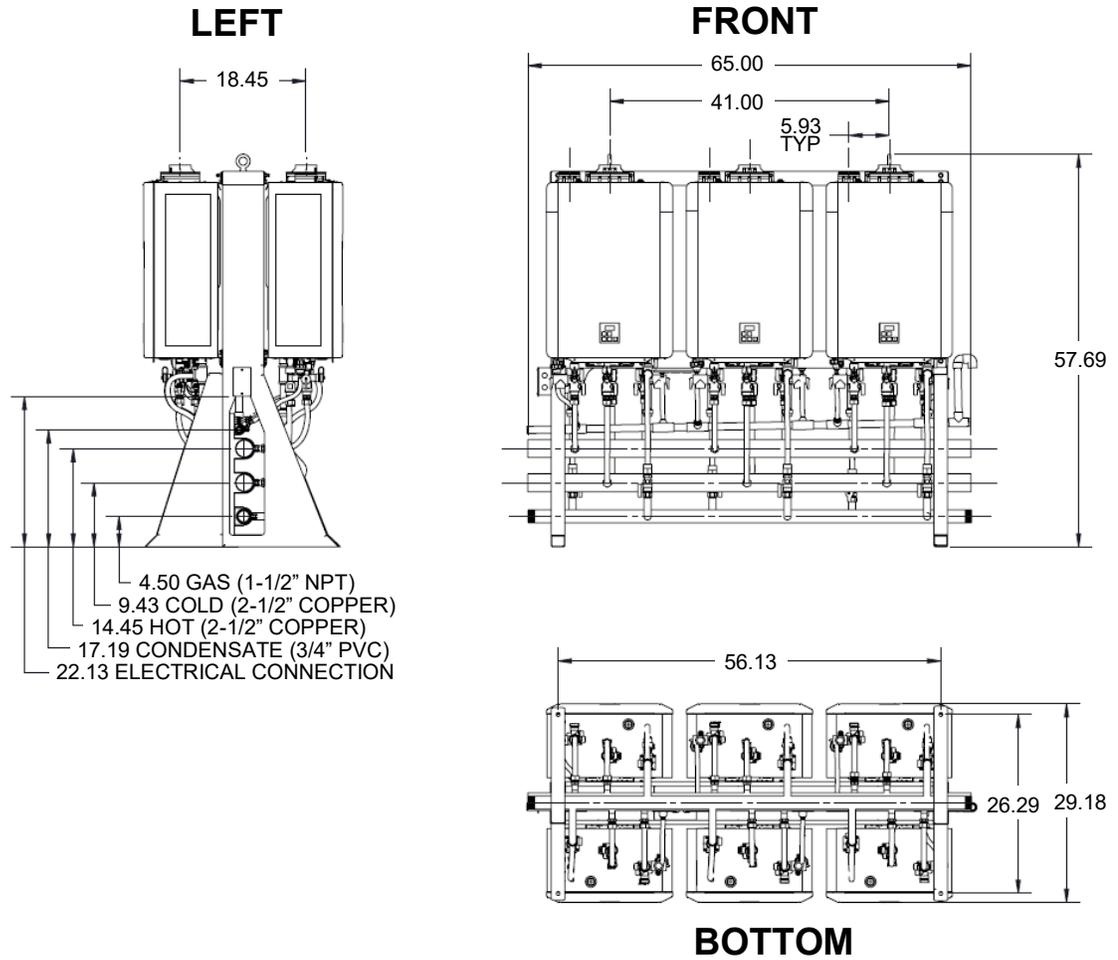
Model	Configuration	Illustration
TRS02ILCX	 Inline (facing same direction)	

4-Unit Free-Standing Frame (Continued)

Model	TRS04CX	TRS03CX	TRS02ILCX
Water Heater Model	CX199i (NG/LP)		
Crate Dimensions (HxLxD) - in	66 x 70 x 35		
Weight - Fully Assembled - lbs	365	290	214
Weight - Shipping (total) - lbs	562	490	416
Rack Frame - Specifications			
Frame Rail Type	Sheet Metal		
Frame Material	Aluminum (0.090 5052-H32)		
Frame Finish	Powder Coat		
Color	Gray		
Water & Gas Connections			
Hot Water Trunk Line Diameter	2"		
Cold Water Trunk Line Diameter	2"		
Hot Water Trunk Line Material	Rigid Copper		
Cold Water Trunk Line Material	Rigid Copper		
Water Trunk Connection Type	2" PIPE		
Gas Trunk Line Diameter	1-1/4"		
Gas Trunk Connection Type	1-1/4" MNPT		
Gas Trunk Line Material	Sch 40 Steel		
Gas Trunk Branch Line Material	PVC Over CSST		
Condensate Trunk Line Diameter	3/4"		N/A
Condensate Trunk Material	Sch - 40 PVC		N/A
Condensate Trunk Connection Type	3/4" Pipe		N/A
Electric Requirements			
Prewired Electrical Assembly	Yes (Indoor Models Only)		N/A
Voltage	AC 120 Volts - 60 Hz		
Maximum Current (Amperes)	16	12	8
BTU and Flow Rates for CX199i (NG/LP)			
Number of Tankless Water Heaters	4	3	2
Flow rate @ 70°F rise (gpm)	21.6	16.2	10.8
Flow rate @ 100°F rise (gpm)	15.2	11.4	7.6
Minimum input rate (Btuh)	15,000		
Maximum input rate (Btuh)	796,000	597,000	398,000



6-Unit Free-Standing Frame

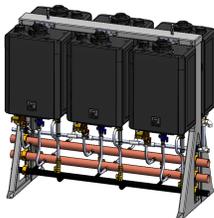


Model	Configuration	Illustration	Model	Configuration	Illustration
TRS06CX			TRS03ILCX		
TRS05CX					

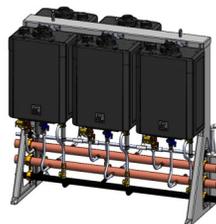
6-Unit Free-Standing Frame (Continued)

Model	TRS06CX	TRS05CX	TRS03ILCX
Water Heater Model	CX199i (NG/LP)		
Crate Dimensions (HxLxD) - in	66 x 70 x 35		
Weight - Fully Assembled - lbs	540	465	315
Weight - Shipping (total) - lbs	737	662	512
Rack Frame - Specifications			
Frame Rail Type	Sheet Metal		
Frame Material	Aluminum (0.090 5052-H32)		
Frame Finish	Powder Coat		
Color	Gray		
Water & Gas Connections			
Hot Water Trunk Line Diameter	2-1/2"		2"
Cold Water Trunk Line Diameter	2-1/2"		2"
Hot Water Trunk Line Material	Rigid Copper		
Cold Water Trunk Line Material	Rigid Copper		
Water Trunk Connection Type	2-1/2" PIPE		2" PIPE
Gas Trunk Line Diameter	1-1/2"		1-1/4"
Gas Trunk Connection Type	1-1/2" MNPT		1-1/4" MNPT
Gas Trunk Line Material	Sch 40 Steel		
Gas Branch Line Material	PVC Over CSST		
Condensate Trunk Line Diameter	3/4"		
Condensate Trunk Line Material	Sch - 40 PVC		
Condensate Trunk Connection Type	3/4" Pipe		
Electric Requirements			
Prewired Electrical Assembly	Yes (Indoor Models Only)		
Voltage	AC 120 Volts - 60 Hz		
Max Current (Amperes)	24	20	12
BTU and Flow Rates for CX199i (NG/LP)			
Number of Tankless Water Heaters	6	5	3
Flow rate @ 70°F rise (gpm)	32.4	27.0	16.2
Flow rate @ 100°F rise (gpm)	22.8	19.0	11.4
Minimum input rate (Btuh)	15,000		
Maximum input rate (Btuh)	1,194,000	995,000	597,000

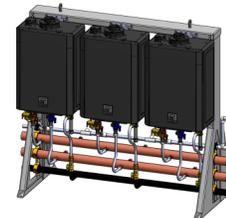
TRS06CX



TRS05CX



TRS03ILCX



3. Venting

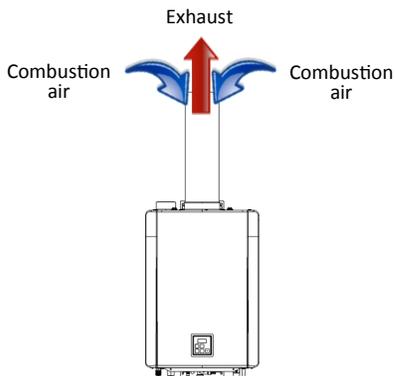
Venting components are packaged separately from the pre-assembled rack for field assembly of the vent system by the contractor.

The following vent options are available:

- Direct Vent with Concentric Pipe
- Direct Vent with Twin Pipe
- Common Vent

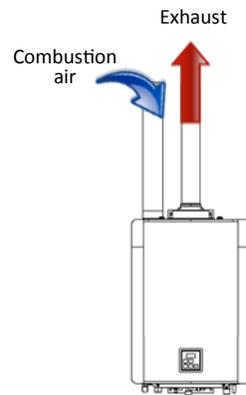
Direct Vent (Concentric Pipe)

Combustion air and exhaust vent directly through a single concentric connection. Hot exhaust exits through the interior tube, while combustion air enters through the outer layer.



Direct Vent (Twin Pipe)

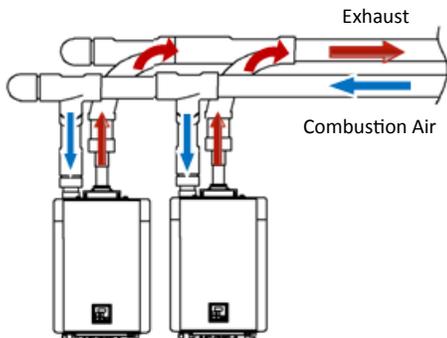
Combustion air and exhaust vent directly through separate penetrations.



Common Vent (Indoor Units Only. Direct Vent and Non-Direct/Room Air Vent)

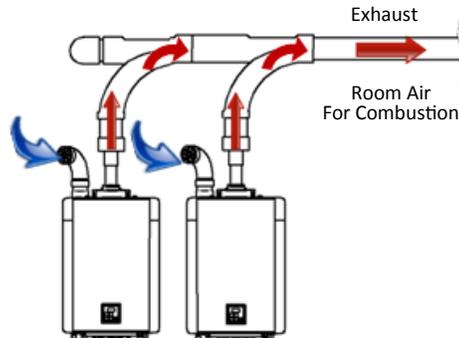
Direct Vent

Multiple water heaters sharing a combustion air header and a separate exhaust header that vents directly through separate penetrations to the outside.



Non-Direct (Room Air) Vent

Multiple water heaters using room air for combustion while sharing an exhaust header that vents directly to the outside.



Vent Options

The following table lists the vent options for the CX and CXP Series tankless water heaters.

Vent Options for CX and CXP Series Tankless Water Heaters

Vent Options	Vent Material		Diameter		Max. Units	Maximum Vent Length
	Exhaust	Intake	Header	Vent		
Common Vent	Polypropylene or Schedule 40 PVC/CPVC	Polypropylene or Schedule 40 PVC/CPVC	3 in.		2	65 FT
			4 in.		4	1-3 Units: 150 FT 4 Units: 65 FT
			4 in.	6 in.	7	1-6 Units: 150 FT 7 Units: 70 FT
			6 in.		8	150 FT
Concentric Pipe	Polypropylene	Schedule 40 PVC	[Shaded]		5 in.	150 FT
					4 in.	75 FT
Twin Pipe	Polypropylene* or Schedule 40 PVC/CPVC	Schedule 40 PVC/CPVC	[Shaded]		3 in.	150 FT
					2 in.	75 FT

* Twin Pipe Polypropylene venting is provided by Centrotherm through their own distribution network.

4. Multiple Water Heaters

With use of cascade cable(s) up to 24 water heaters can be electronically connected. This connection will rotate water heater operation order to ensure equal usage among the entire system and enables all water heaters connected to modulate operation and function as one hot water source.

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