NORITZ®

RESIDENTIAL LEVEL 1

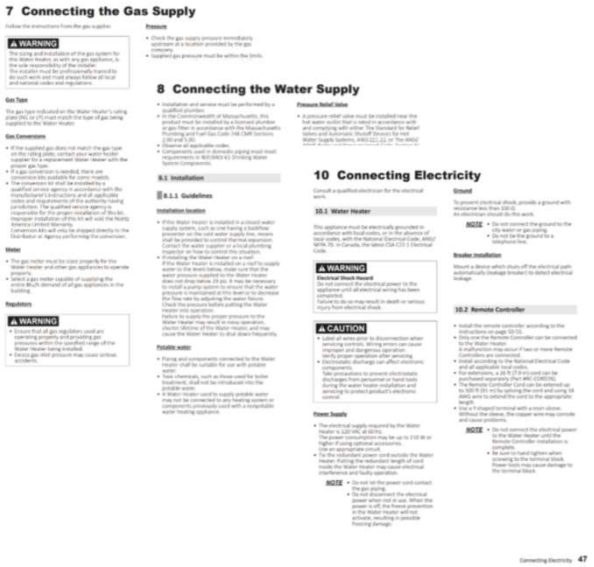
Product Line, Accessories and Installation Basics

1

READ THE MANUAL

Tankless units are combustion appliances that contain gas, water and electricity in a unit the size of a suitcase.

The proper, safe and reliable operation of our units is 100% contingent on a correct installation and proper maintenance throughout its life.


7 Connecting the Gas Supply

8 Connecting the Water Supply

10 Connecting Electricity

NORITZ® TANKLESS WATER HEATERS

Low NOx Approved by SCAQMD 14 ng/J or 20 ppm (Natural Gas Only)

2

TRAINING SECTIONS

NORITZ
TANKLESS WATER HEATERS

Residential Product Line:

- Standard Efficiency
- High Efficiency
- Pre-mix Units
- EZTR Packages

Installation:

- Unit Sizing
- Gas Line
- Choosing Location
- Venting
- Condensate Line
- Circuit Board Dipswitches
- Install Checklist

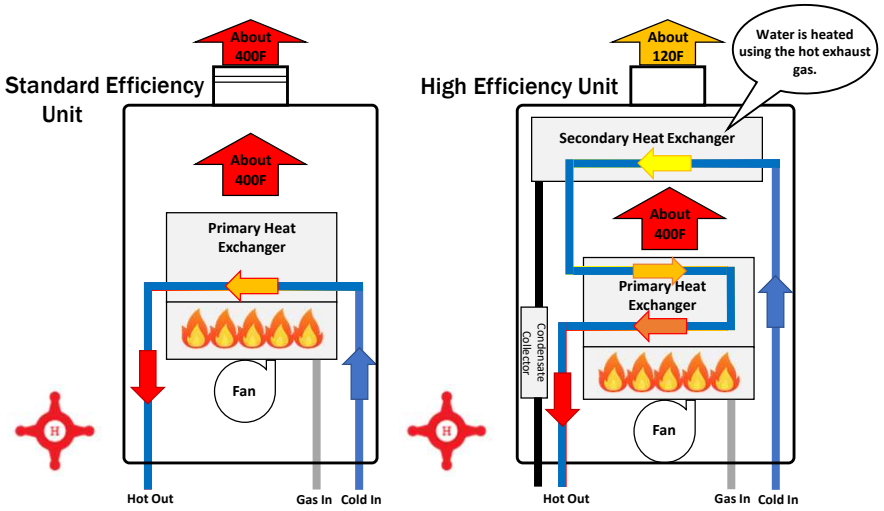
Maintenance:

- Water Quality
- Water Treatment
- Cleaning Unit

3

WHAT IS A TANKLESS WATER HEATER?

A tankless water heater uses a burner and heat exchanger to produce an endless supply of hot water on-demand.



Tankless Operation:

1) Hot water fixture is opened
2) Tankless detects flow
3) Burner ignites
4) Water is heated in the Heat Exchanger
5) Hot water exits the tankless to the fixture
6) Fixture is closed and tankless shuts off

NORITZ
TANKLESS WATER HEATERS

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STANDARD EFFICIENCY UNITS

NR98SV

Max 199k btu

- Non-Condensing Units
- 120k to 199k btu
- UEF = 0.82
- Indoor and Outdoor Units Available (7 units total)
- Indoor Units Require Cat III Stainless Steel Venting
- All Units Satisfy 20ppm Low NOx Requirements
- Copper Heat Exchanger
- 12 Years Heat Exchanger
- 5 Years All Other Parts
- 1 Year Reasonable Labor

NORITZ TANKLESS WATER HEATERS

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HIGH EFFICIENCY UNITS

NRC98DV

Max 180k btu

- Condensing Units
- 120k to 199k btu
- UEF = 0.87 to 0.92 (depending on the unit)
- Indoor and Outdoor Units Available (8 units total)
- Indoor Units Use 3” or 4” PVC/CPVC/PP
- All Units Satisfy 20ppm Low NOx Requirements
- Copper Primary Heat Exchanger
- Stainless Steel Secondary Heat Exchanger
- 12 Years Heat Exchanger
- 5 Years All Other Parts
- 1 Year Reasonable Labor

NORITZ TANKLESS WATER HEATERS

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STANDARD & HIGH EFFICIENCY UNITS

NRC98DV

Max 180k btu

NR98SV

Max 199k btu

All units include either an external remote control or built in display window for easy indication of set temperature along with monitoring and diagnostics capability.

NRC661DV

Max 120k btu

NR660D

Max 120k btu

NORITZ TANKLESS WATER HEATERS

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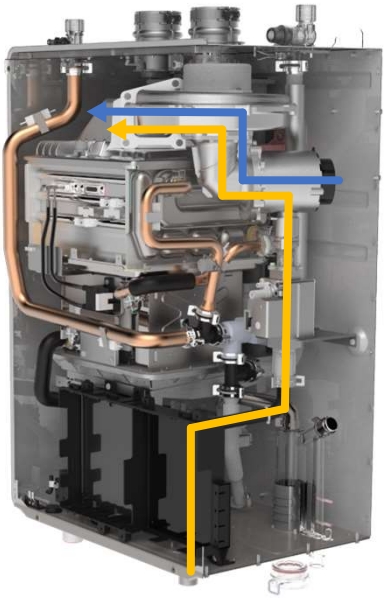
HIGH EFFICIENCY PRE-MIX UNITS



Pre-Mix refers to how the air and gas is pre-mixed in the fan before entering the burner

Pre-Mix units have Dual Stainless Steel Heat Exchangers

The Noritz Pre-mix Lineup:

- EZ PRO Series
- NRCR PRO Series
- NRCB Boiler
- NCC199CDV PRO (commercial unit)

NORITZ TANKLESS WATER HEATERS

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EZ SERIES PRO OVERVIEW

Available Models:

EZ71DV: 12,800 – 160,000 BTUh / 0.4 - 9.0 gpm
EZ98DV: 12,800 – 180,000 BTUh / 0.4 - 9.8 gpm
EZ111DV: 12,800 – 199,900 BTUh / 0.4 – 11.1 gpm

Key Features:

- Top Mounted Water Connections
- UEF = 0.98
- EZ Start Plus Bluetooth® App
- Built-in Display
- Field Gas Conversion (included in the box)
- Versatile Venting (one model for Indoor and Outdoor installations)
- 2", 3" or 4" PVC/CPVC/PP
  - 2" Max length: 75'
  - 3" Max length: 150'
  - 4" Max length: 65'
- Flexible 2" SV up to 35'
- 25 Year Heat Exchanger Warranty

NORITZ TANKLESS WATER HEATERS

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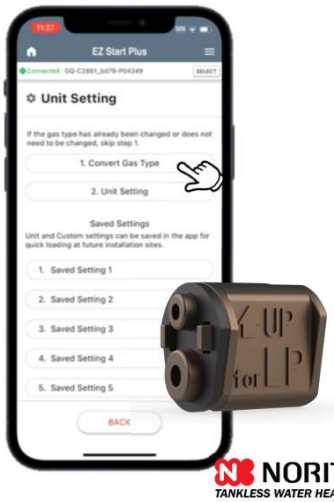
EZ SERIES PRO GAS CONVERSION

Scan for Conversion Video

All PRO Series models are ready for use with NG and include a simple field gas conversion to LP.



NORITZ TANKLESS WATER HEATERS

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NRCR PRO OVERVIEW

Available Models:

NRCR92DV: 12,800 – 165,000 BTUh / 0.4 - 9.2 gpm

NRCR111DV: 12,800 – 199,900 BTUh / 0.4 – 11.1 gpm

Key Features:

- Built-In Recirculation Pump
- UEF = 0.98
- EZ Start Plus Bluetooth® App
- Versatile Venting (Just like EZ Pro Series)
- Steady BTU Control
- 15 Year Heat Exchanger Warranty

Recirc Setting:

- Auto Learning (Default)
- Manual Timer (Using EZ Start Plus Bluetooth app)
- Title 24 (On Demand)

Recirc Types:

- Dedicated Recirculation
- Crossover (up to 2)

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NRCR PRO VENTING

The NRCR PRO is a pre-mix style unit and thus has the same venting options as the EZ PRO Series:

- DV Direct Vent
- SV Single Vent
- OD Outdoor
- No Roof Kit
- FSV Flexible Single Vent
- Common Vent Capable (2 Units Quick Connected)

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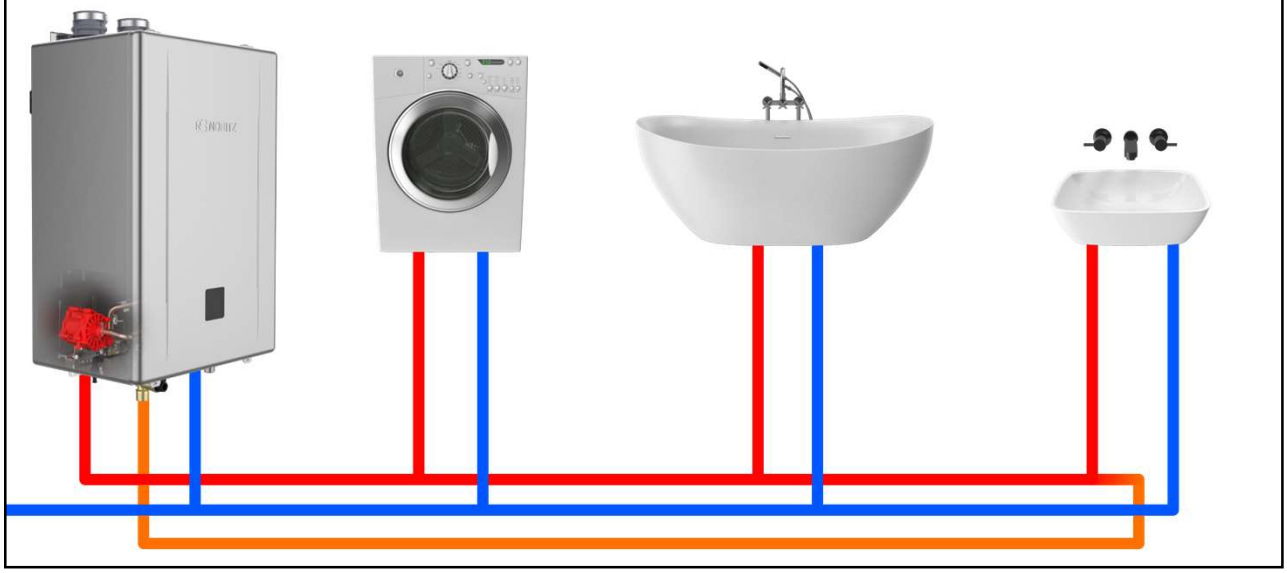
NRCR PRO DEDICATED

NORITZ TANKLESS WATER HEATERS

Return Line should have a shut off valve, hose bibb and expansion tank



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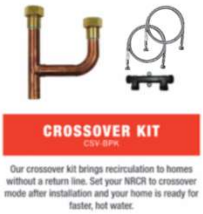
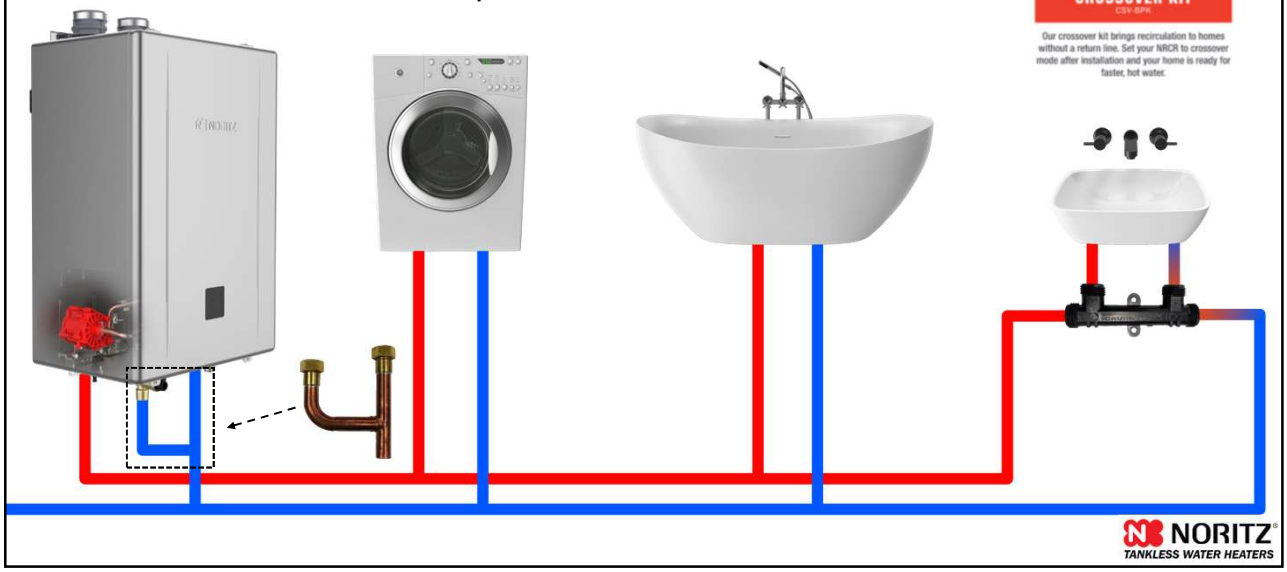
NRCR PRO CROSSOVER

When using a crossover valve, the minimum set temperature is 120 F





NORITZ TANKLESS WATER HEATERS

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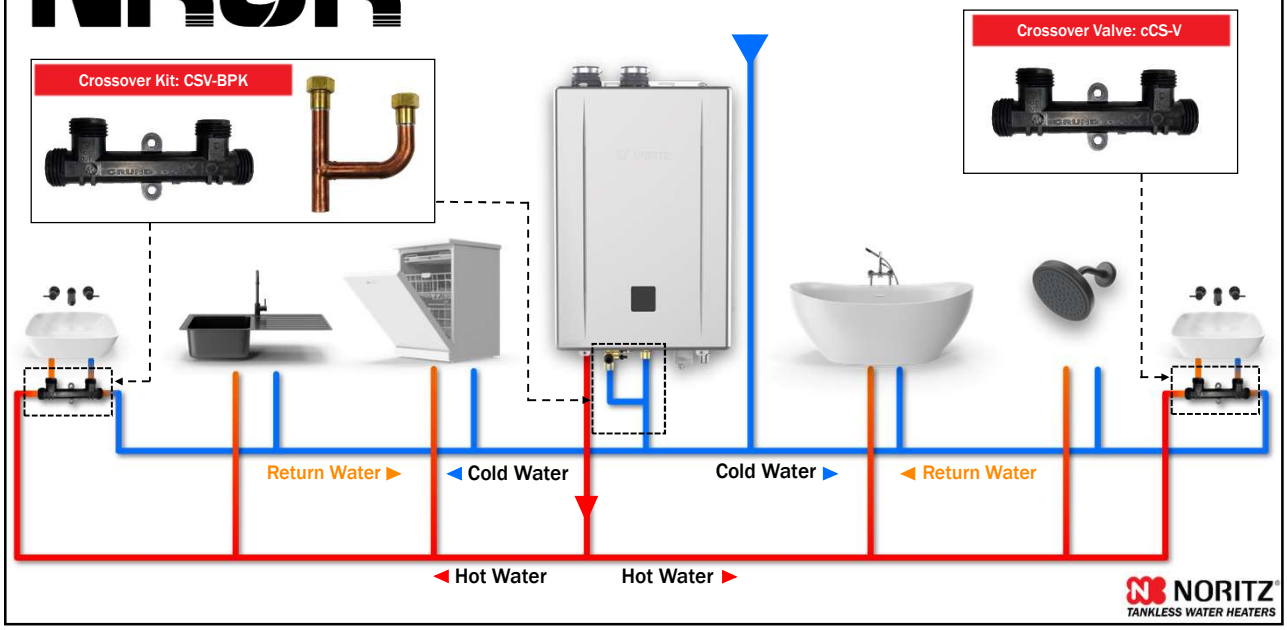
NRCR PRO 2 CROSSOVER



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NRCR PRO AUTO LEARNING

Auto Learning mode memorizes the customers usage patterns and automatically runs the pump during the hours hot water is needed. If the customers patterns change, the unit will adapt and remove times when it appears the customer no longer uses hot water.

NORITZ TANKLESS WATER HEATERS

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NRCR PRO MANUAL SCHEDULE

Schedule the NRCR PRO recirc times manually with the EZ Start Plus App. Simply tap the hours you want the pump to run.

Want the same schedule every weekday? Adjust the schedule for one day then copy to all weekdays.

No longer requires extra purchase!

NORITZ TANKLESS WATER HEATERS

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NRCR PRO TITLE 24 ON DEMAND

On Demand mode only runs the pump when the customer presses a button or activates a motion sensor.

Wireless Push Button Kit (WLB)

Optional Motion Sensor (WLB-MS)

Rocker Switch (IHK-RS)

NORITZ TANKLESS WATER HEATERS

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EZTR40 PACKAGE

- EZ Tank Replacement of a 40 Gallon Tank
- Bundle kits include Unit, Isolation Valves and 25' Flex Vent Kit (35' Optional, sold separately)
- Top Mounted Water Connections
- 120k Max btu High Efficiency Unit
- 6.6 gpm Max
- UEF = 0.87
- Copper Primary HEX and SS Secondary HEX
- 12 Year Heat Exchanger Warranty

The EZTR40 can *only* be used when replacing a tank and using the flexible venting, it *cannot* be adapted to vent with PVC or other rigid plastic venting.

NORITZ TANKLESS WATER HEATERS

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EZTR50 & EZTR75 PACKAGES

- EZ Tank Replacement of a 50 or 75 Gallon Tank
- Bundle kits include Unit, Isolation Valves and 25' Flex Vent Kit (35' Optional, sold separately)
- Top Mounted Water Connections
- EZTR50 includes EZ98 PRO Unit (180k btu/9.8 gpm)
- EZTR75 includes EZ111 PRO Unit (199k btu/11.1 gpm)
- Dual Stainless Steel Heat Exchangers
- UEF = 0.98
- EZ Start Plus Bluetooth® App
- Field Gas Conversion
- 25 Year Heat Exchanger Warranty

NORITZ TANKLESS WATER HEATERS

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EZTR PACKAGES

Use existing 3” or 4” round b-vent

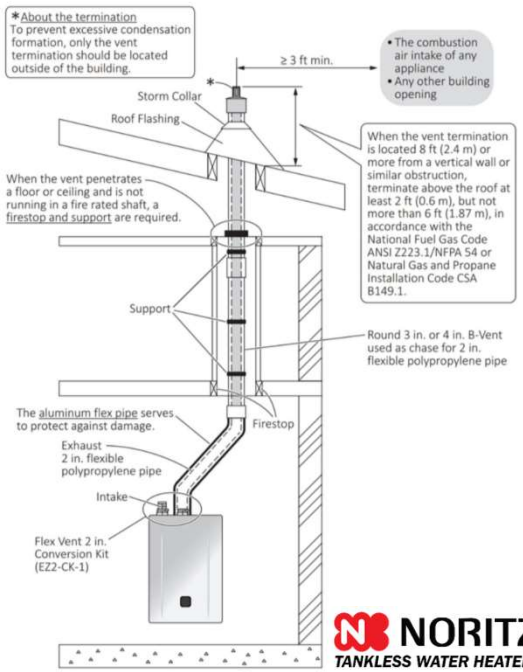
(no oval vent or common venting with other appliance)

25’ included with EZTR package.

35’ vent kit optional, part # EZ2FVK-2

NOTE: Flexible vent can be shortened but you *cannot* join 2 pieces of flexible vent to extend the length.

Example: If you need 30’, you would buy the 35’ kit and cut off 5’. You would *not* attach an extra 5’ to the included 25’ kit.



NORITZ TANKLESS WATER HEATERS

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EXTERNAL RECIRCULATION

RPK-EXT

Pump Kit

Many Noritz units are compatible with external recirculation pumps such as the Noritz RPK-EXT pump kit.

Important Notes:

- Display Window Units are not compatible with the RPK-EXT pump kit as they do not have a pump control connection. An externally controlled pump may still be used though
- Single unit installations only (Will not work with Quick Connected Systems)
- Remote included with RPK-EXT kit is optional on EZ PRO and CDV PRO units that use the EZ Start Plus App

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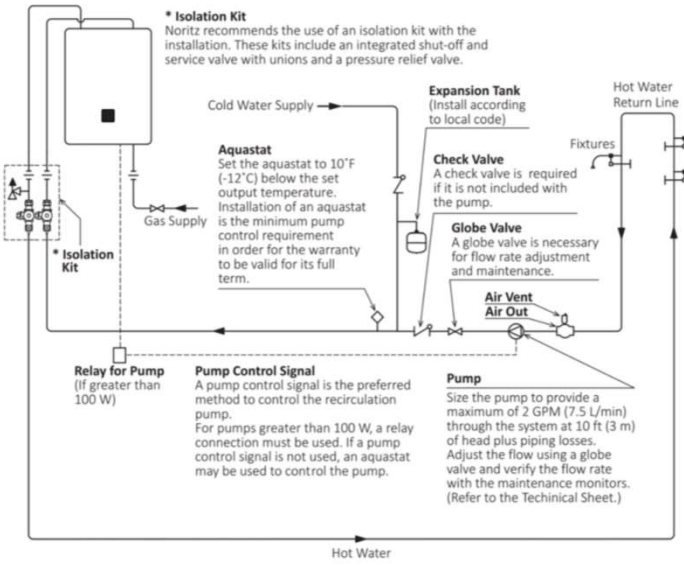
EXTERNAL RECIRCULATION



Typical Recirc Diagram

- Size pump for 2 gpm max flow
- Control pump with timer or aquastat or use pump connection wires inside unit
- Set aquastat 10 degrees below unit set temperature

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HOW TO SIZE A TANKLESS

Proper sizing is a key aspect of the customers experience and satisfaction with their tankless.

An undersized tankless *will* provide the proper temperature but the customer will not be able to run as many hot water fixtures at the same time as they want.

This problem will be more apparent in the wintertime as the cold-water temperatures are even colder.

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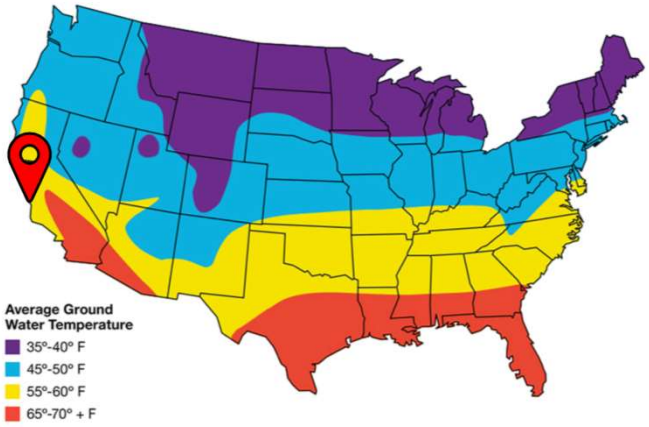
HOW TO SIZE A TANKLESS: STEP 1

Step 1: Determine your maximum temperature rise. This is the difference between the tankless set temp and the wintertime ground water temp (aka Delta T)



For the purpose of this example let's say the home is on the central coast of California.

Based on the map, we'll say the winter ground water temp is 55 F.

Now you can determine the wintertime temperature rise:

120 Set Temp – **55** Ground Water Temp = **65 Delta T**

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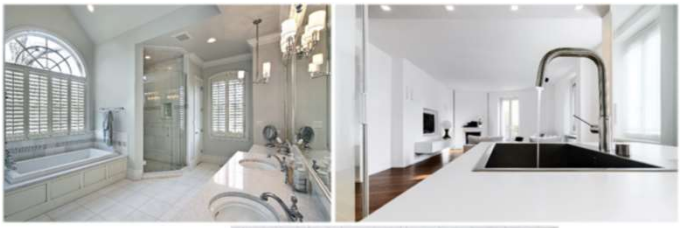
HOW TO SIZE A TANKLESS: STEP 2

Step 2: Determine the peak hot water demand of the home. If possible, ask the homeowner.

Fixtures and appliances all have different flow rates depending on manufacturer however you can use an average amount to get a ballpark figure:

Shower: 2 gpm
Lav Sink: 1 gpm
Kitchen Sink: 1.5 gpm
Dishwasher: 2 gpm
Washing Machine: 2 gpm



Example 1:
Peak usage: 2 Showers & Washing Machine = **6 gpm**

Example 2:
Peak usage: 4 Showers & Dishwasher = **10 gpm**

NORITZ TANKLESS WATER HEATERS

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HOW TO SIZE A TANKLESS: STEP 3

NORITZ TANKLESS WATER HEATERS

Step 3: Select the proper unit or pair of units using the sizing chart found online or in the product catalog.

Simply find the Temperature Rise on the left then match up a unit or pair of units that provides the approximate flow rate needed.

Temp Rise: 65

Example 1:
Peak usage: 2 Showers & Washing Machine = **6 gpm**

Ideal Models:
EZ111, NRCR111 or NRC111

Example 2:
Peak usage: 4 Showers & Dish Washer = **10 gpm**

Ideal Models:
Pair of EZ98, NRC98 or NRCR92

	Condensing								
Temp Rise (F)	EZ111 PRO	NRCR111 PRO	NRC111	EZ98 PRO	NRC98	NRCR92 PRO	EZ71 PRO	NRC711	NRC663 (EZTR40)
30	11.1	11.1	11.1	9.8	9.8	9.2	9.0	7.1	6.6
35	11.1	10.9	9.8	9.8	9.6	9.2	8.4	7.1	6.4
40	9.8	9.7	9.3	8.6	8.4	8.0	7.7	7.1	5.5
45	8.7	8.6	8.4	7.6	7.4	7.1	6.9	6.5	4.9
50	7.8	7.8	7.4	6.9	6.7	6.4	6.2	5.8	4.4
55	7.1	7.1	6.9	6.3	6.1	5.8	5.7	5.3	4.1
60	6.5	6.5	6.2	5.7	5.6	5.3	5.2	4.9	3.7
65	6.0	6.0	5.8	5.3	5.2	4.9	4.8	4.5	3.4
70	5.6	5.5	5.3	4.9	4.8	4.6	4.4	4.2	3.2
75	5.2	5.2	5.1	4.6	4.5	4.3	4.0	3.9	3.0
80	4.9	4.8	4.6	4.4	4.2	4.0	3.9	3.7	2.8
85	4.6	4.6	4.5	4.1	3.9	3.8	3.6	3.4	2.6
90	4.4	4.3	4.1	3.8	3.7	3.6	3.4	3.2	2.5
95	4.1	4.1	4.0	3.6	3.5	3.4	3.2	3.1	2.3
100	3.9	3.9	3.7	3.4	3.4	3.2	3.1	2.9	2.2

Example 1 Example 2

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HOW TO SIZE A TANKLESS: FINAL TIP

Final Sizing Tip:

SCAN HERE FOR SIZING VIDEO

It's always better to slightly oversize a tankless system than to undersize it.

There's virtually no downside to an oversized system for the home however and undersized system will not provide enough hot water for the home during all times of the year.

NORITZ TANKLESS WATER HEATERS

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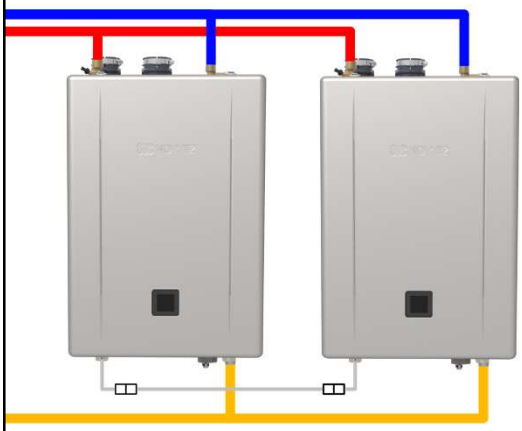
QUICK CONNECT SYSTEMS



For large residential applications 2 compatible Noritz units may be quick connected to double the hot water output.

Part #: QC-2

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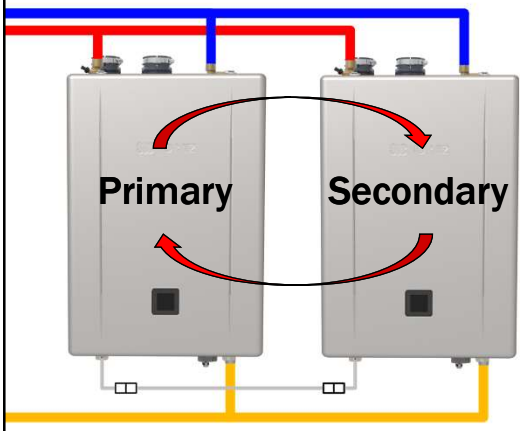
QUICK CONNECT SYSTEMS



The system will automatically rotate primary and secondary roles to ensure even use of both units.

Part #: QC-2

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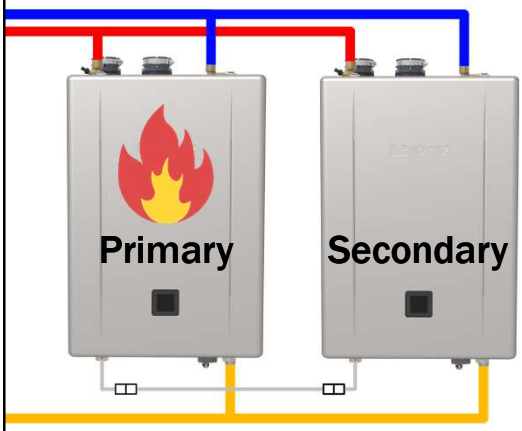
QUICK CONNECT SYSTEMS



When there's a small demand, only the primary heater will fire up to meet the demand.

Part #: QC-2

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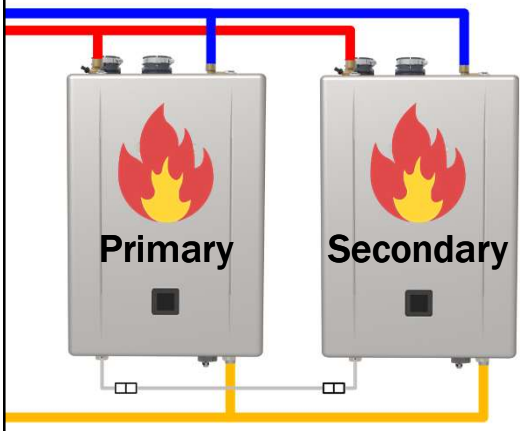
QUICK CONNECT SYSTEMS



If the demand increases the primary unit will activate the secondary unit to help meet the demand.

Part #: QC-2

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QUICK CONNECT SYSTEMS

Only the PRO Series and larger residential units with an external remote are compatible with the quick connect cable, smaller display window units are designed for single unit installations.

Quick Connect Compatible

Not Quick Connect Compatible

NORITZ TANKLESS WATER HEATERS

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GAS LINE SIZING

Of equal importance to a proper sized unit, is a properly sized and installed gas line to ensure adequate gas pressure.

Afterall, what good is selecting the perfect tankless if the gas system can't support it's needs?

Required Gas Supply Pressure

NATURAL GAS	PROPANE GAS
3.5 TO 10.5 INCHES	8.0 TO 14.0 INCHES

* Supply pressures may vary unit to unit, refer to rating plate for exact pressure range

NORITZ TANKLESS WATER HEATERS

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GAS PRESSURE CHECK

1) Locate and shut off gas valve

2) Zero manometer then connect to inlet port

3) Open gas valve and note static pressure

4) Create a high flow to ensure unit is in high fire and note dynamic pressure

- Check the pressure when the unit is sitting idle (Static Pressure)
- Check the pressure when the unit is in high fire (Dynamic Pressure)

Check the pressure on the gas connection or the bottom port of gas valve using T15 torx.

NORITZ® TANKLESS WATER HEATERS

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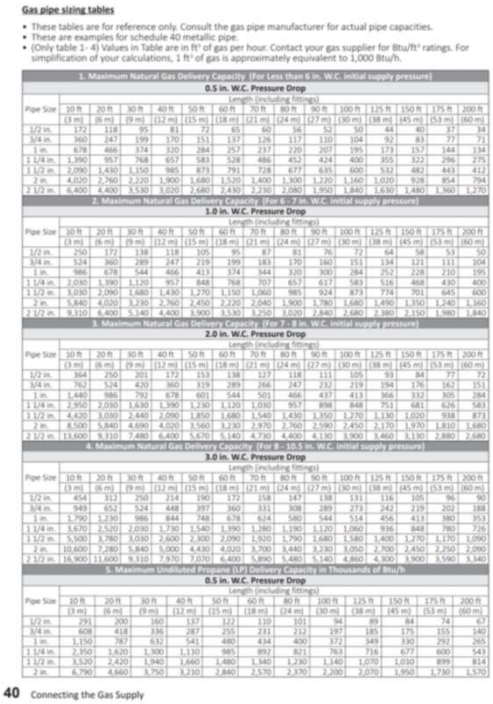
GAS LINE SIZING

PRO Series installation manuals contains 5 sizing tables for hard pipe gas lines, 4 for NG and 1 for LP.

To pick what NG chart you use, you will need to know the static supply pressure.

NORITZ® TANKLESS WATER HEATERS



Gas pipe sizing tables

- These tables are for reference only. Consult the gas pipe manufacturer for actual pipe capacities.
- These are examples for schedule 40 metallic pipe.
- (Only table 1- 4) Values in Table are in ft³ of gas per hour. Contact your gas supplier for Btu/ft³ ratings. For simplification of your calculations, 1 ft³ of gas is approximately equivalent to 1,000 Btu/h.

1. Maximum Natural Gas Delivery Capacity (For Less than 6 in. W.C. initial supply pressure)

0.5 in. W.C. Pressure Drop

Length (including fittings)

Pipe Size	10 ft (3 m)	20 ft (6 m)	30 ft (9 m)	40 ft (12 m)	50 ft (15 m)	60 ft (18 m)	70 ft (21 m)	80 ft (24 m)	90 ft (27 m)	100 ft (30 m)	125 ft (38 m)	150 ft (45 m)	175 ft (53 m)	200 ft (60 m)
1/2 in.	172	118	95	81	72	65	60	56	52	50	44	40	37	34
3/4 in.	360	247	199	170	151	137	126	117	110	104	92	83	77	71
1 in.	678	466	374	320	284	257	237	220	207	195	173	157	144	134
1 1/4 in.	1,390	957	768	657	583	528	486	452	424	400	355	322	296	275
1 1/2 in.	2,090	1,430	1,150	985	873	791	728	677	635	600	532	482	443	412
2 in.	4,020	2,760	2,220	1,900	1,680	1,520	1,400	1,300	1,220	1,160	1,020	928	854	794
2 1/2 in.	6,400	4,400	3,530	3,020	2,680	2,430	2,230	2,080	1,950	1,840	1,630	1,480	1,360	1,270

2. Maximum Natural Gas Delivery Capacity (For 6 - 7 in. W.C. initial supply pressure)

1.0 in. W.C. Pressure Drop

Length (including fittings)

Pipe Size	10 ft (3 m)	20 ft (6 m)	30 ft (9 m)	40 ft (12 m)	50 ft (15 m)	60 ft (18 m)	70 ft (21 m)	80 ft (24 m)	90 ft (27 m)	100 ft (30 m)	125 ft (38 m)	150 ft (45 m)	175 ft (53 m)	200 ft (60 m)
1/2 in.	250	172	138	118	105	95	87	81	76	72	64	58	53	50
3/4 in.	524	360	289	247	219	199	183	170	160	151	134	121	111	104
1 in.	986	678	544	466	413	374	344	320	300	284	252	228	210	195
1 1/4 in.	2,030	1,390	1,120	957	848	768	707	657	617	583	516	468	430	400
1 1/2 in.	3,030	2,090	1,680	1,430	1,270	1,150	1,060	985	924	873	774	701	645	600
2 in.	5,840	4,020	3,230	2,760	2,450	2,220	2,040	1,900	1,780	1,680	1,490	1,350	1,240	1,160
2 1/2 in.	9,310	6,400	5,140	4,400	3,900	3,530	3,250	3,020	2,840	2,680	2,380	2,150	1,980	1,840

3. Maximum Natural Gas Delivery Capacity (For 7 - 8 in. W.C. initial supply pressure)

2.0 in. W.C. Pressure Drop

Length (including fittings)

Pipe Size	10 ft (3 m)	20 ft (6 m)	30 ft (9 m)	40 ft (12 m)	50 ft (15 m)	60 ft (18 m)	70 ft (21 m)	80 ft (24 m)	90 ft (27 m)	100 ft (30 m)	125 ft (38 m)	150 ft (45 m)	175 ft (53 m)	200 ft (60 m)
1/2 in.	364	250	201	172	153	138	127	118	111	105	93	84	77	72
3/4 in.	762	524	420	360	319	289	266	247	232	219	194	176	162	151
1 in.	1,440	986	792	678	601	544	501	466	437	413	366	332	305	284
1 1/4 in.	2,950	2,030	1,630	1,390	1,230	1,120	1,030	957	898	848	751	681	626	583
1 1/2 in.	4,420	3,030	2,440	2,090	1,850	1,680	1,540	1,430	1,350	1,270	1,130	1,020	938	873
2 in.	8,500	5,840	4,690	4,020	3,560	3,230	2,970	2,760	2,590	2,450	2,170	1,970	1,810	1,680
2 1/2 in.	13,600	9,310	7,480	6,400	5,670	5,140	4,730	4,400	4,130	3,900	3,460	3,130	2,880	2,680

4. Maximum Natural Gas Delivery Capacity (For 8 - 13.5 in. W.C. initial supply pressure)

3.0 in. W.C. Pressure Drop

Length (including fittings)

Pipe Size	10 ft (3 m)	20 ft (6 m)	30 ft (9 m)	40 ft (12 m)	50 ft (15 m)	60 ft (18 m)	70 ft (21 m)	80 ft (24 m)	90 ft (27 m)	100 ft (30 m)	125 ft (38 m)	150 ft (45 m)	175 ft (53 m)	200 ft (60 m)
1/2 in.	454	312	250	214	190	172	158	147	138	131	116	105	96	90
3/4 in.	949	652	524	448	397	360	331	308	289	273	242	219	202	188
1 in.	1,790	1,230	986	844	748	678	624	580	544	514	456	413	380	353
1 1/4 in.	3,670	2,520	2,030	1,730	1,540	1,390	1,280	1,190	1,120	1,060	936	848	780	726
1 1/2 in.	5,500	3,780	3,030	2,600	2,300	2,090	1,920	1,790	1,680	1,580	1,400	1,270	1,170	1,090
2 in.	10,600	7,280	5,840	5,000	4,430	4,020	3,700	3,440	3,230	3,050	2,700	2,450	2,250	2,090
2 1/2 in.	16,900	11,600	9,310	7,970	7,070	6,400	5,890	5,480	5,140	4,860	4,300	3,900	3,590	3,340

5. Maximum Undiluted Propane (LP) Delivery Capacity in Thousands of Btu/h

0.5 in. W.C. Pressure Drop

Length (including fittings)

Pipe Size	10 ft (3 m)	20 ft (6 m)	30 ft (9 m)	40 ft (12 m)	50 ft (15 m)	60 ft (18 m)	80 ft (24 m)	100 ft (30 m)	125 ft (38 m)	150 ft (45 m)	175 ft (53 m)	200 ft (60 m)
1/2 in.	291	200	160	137	122	110	101	94	89	84	74	67
3/4 in.	608	418	336	287	255	231	212	197	185	175	155	140
1 in.	1,150	787	632	541	480	434	400	372	349	330	292	265
1 1/4 in.	2,350	1,620	1,300	1,110	985	892	821	763	716	677	600	543
1 1/2 in.	3,520	2,420	1,940	1,660	1,480	1,340	1,230	1,140	1,070	1,010	899	814
2 in.	6,790	4,660	3,750	3,230	2,840	2,570	2,370	2,200	2,070	1,950	1,730	1,570

40 Connecting the Gas Supply

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½” GAS LINE CONSIDERATIONS

After determining the initial supply pressure, you can use the charts to determine the maximum equivalent length of ½” hard pipe you may use based on the max btu of the unit.

1. Maximum Natural Gas Delivery Capacity (For Less than 6 in. W.C. initial supply pressure)

0.5 in. W.C. Pressure Drop

Pipe Size	Length (including fittings)													
	10 ft (3 m)	20 ft (6 m)	30 ft (9 m)	40 ft (12 m)	50 ft (15 m)	60 ft (18 m)	70 ft (21 m)	80 ft (24 m)	90 ft (27 m)	100 ft (30 m)	125 ft (38 m)	150 ft (45 m)	175 ft (53 m)	200 ft (60 m)
1/2 in.	172	118	95	81	72	65	60	56	52	50	44	40	37	34
3/4 in.	360	247	199	170	151	137	126	117	110	104	92	83	77	71
1 in.	678	466	374	320	284	257	237	220	207	195	173	157	144	134
1 1/4 in.	1,390	957	768	657	583	528	486	452	424	400	355	322	296	275
1 1/2 in.	2,090	1,430	1,150	985	873	791	728	677	635	600	532	482	443	412
2 in.	4,020	2,760	2,220	1,900	1,680	1,520	1,400	1,300	1,220	1,160	1,020	928	854	794
2 1/2 in.	6,400	4,400	3,530	3,020	2,680	2,430	2,230	2,080	1,950	1,840	1,630	1,480	1,360	1,270

2. Maximum Natural Gas Delivery Capacity (For 6 - 7 in. W.C. initial supply pressure)

1.0 in. W.C. Pressure Drop

Pipe Size	Length (including fittings)													
	10 ft (3 m)	20 ft (6 m)	30 ft (9 m)	40 ft (12 m)	50 ft (15 m)	60 ft (18 m)	70 ft (21 m)	80 ft (24 m)	90 ft (27 m)	100 ft (30 m)	125 ft (38 m)	150 ft (45 m)	175 ft (53 m)	200 ft (60 m)
1/2 in.	250	172	138	118	105	95	87	81	76	72	64	58	53	50
3/4 in.	524	360	289	247	219	199	183	170	160	151	134	121	111	104
1 in.	986	678	544	466	413	374	344	320	300	284	252	228	210	195
1 1/4 in.	2,030	1,390	1,120	957	848	768	707	657	617	583	516	468	430	400
1 1/2 in.	3,030	2,090	1,680	1,430	1,270	1,150	1,060	985	924	873	774	701	645	600
2 in.	5,840	4,020	3,230	2,760	2,450	2,220	2,040	1,900	1,780	1,680	1,490	1,350	1,240	1,160
2 1/2 in.	9,310	6,400	5,140	4,400	3,900	3,530	3,250	3,020	2,840	2,680	2,380	2,150	1,980	1,840

3. Maximum Natural Gas Delivery Capacity (For 7 - 8 in. W.C. initial supply pressure)

2.0 in. W.C. Pressure Drop

Pipe Size	Length (including fittings)													
	10 ft (3 m)	20 ft (6 m)	30 ft (9 m)	40 ft (12 m)	50 ft (15 m)	60 ft (18 m)	70 ft (21 m)	80 ft (24 m)	90 ft (27 m)	100 ft (30 m)	125 ft (38 m)	150 ft (45 m)	175 ft (53 m)	200 ft (60 m)
1/2 in.	364	250	201	172	153	138	127	118	111	105	93	84	77	72
3/4 in.	762	524	420	360	319	289	266	247	232	219	194	176	162	151
1 in.	1,440	986	792	678	601	544	501	466	437	413	366	332	305	284
1 1/4 in.	2,950	2,030	1,630	1,390	1,230	1,120	1,030	957	898	848	751	681	626	583
1 1/2 in.	4,420	3,030	2,440	2,090	1,850	1,680	1,540	1,430	1,350	1,270	1,130	1,020	938	873
2 in.	8,500	5,840	4,690	4,020	3,560	3,230	2,970	2,760	2,590	2,450	2,170	1,970	1,810	1,680
2 1/2 in.	13,600	9,310	7,480	6,400	5,670	5,140	4,730	4,400	4,130	3,900	3,460	3,130	2,880	2,680

4. Maximum Natural Gas Delivery Capacity (For 8 - 10.5 in. W.C. initial supply pressure)

3.0 in. W.C. Pressure Drop

Pipe Size	Length (including fittings)													
	10 ft (3 m)	20 ft (6 m)	30 ft (9 m)	40 ft (12 m)	50 ft (15 m)	60 ft (18 m)	70 ft (21 m)	80 ft (24 m)	90 ft (27 m)	100 ft (30 m)	125 ft (38 m)	150 ft (45 m)	175 ft (53 m)	200 ft (60 m)
1/2 in.	454	312	250	214	190	172	158	147	138	131	116	105	96	90
3/4 in.	949	652	524	448	397	360	331	308	289	273	242	219	202	188
1 in.	1,790	1,230	986	844	748	678	624	580	544	514	456	413	380	353
1 1/4 in.	3,670	2,520	2,030	1,730	1,540	1,390	1,280	1,190	1,120	1,060	936	848	780	726
1 1/2 in.	5,500	3,780	3,030	2,600	2,300	2,090	1,920	1,790	1,680	1,580	1,400	1,270	1,170	1,090
2 in.	10,600	7,280	5,840	5,000	4,430	4,020	3,700	3,440	3,230	3,050	2,700	2,450	2,250	2,090
2 1/2 in.	16,900	11,600	9,310	7,970	7,070	6,400	5,890	5,480	5,140	4,860	4,300	3,900	3,590	3,340

NORITZ® TANKLESS WATER HEATERS

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½” GAS LINE CONSIDERATIONS

The higher the initial supply pressure, the longer the ½” gas line can be.

Highlighted areas indicate max equivalent length for an EZ71DV (160k btu max). Equivalent length factors in elbows and fittings, not just straight pipe.

1. Maximum Natural Gas Delivery Capacity (For Less than 6 in. W.C. initial supply pressure)

0.5 in. W.C. Pressure Drop

Pipe Size	Length (including fittings)													
	10 ft (3 m)	20 ft (6 m)	30 ft (9 m)	40 ft (12 m)	50 ft (15 m)	60 ft (18 m)	70 ft (21 m)	80 ft (24 m)	90 ft (27 m)	100 ft (30 m)	125 ft (38 m)	150 ft (45 m)	175 ft (53 m)	200 ft (60 m)
1/2 in.	172	118	95	81	72	65	60	56	52	50	44	40	37	34
3/4 in.	360	247	199	170	151	137	126	117	110	104	92	83	77	71
1 in.	678	466	374	320	284	257	237	220	207	195	173	157	144	134
1 1/4 in.	1,390	957	768	657	583	528	486	452	424	400	355	322	296	275
1 1/2 in.	2,090	1,430	1,150	985	873	791	728	677	635	600	532	482	443	412
2 in.	4,020	2,760	2,220	1,900	1,680	1,520	1,400	1,300	1,220	1,160	1,020	928	854	794
2 1/2 in.	6,400	4,400	3,530	3,020	2,680	2,430	2,230	2,080	1,950	1,840	1,630	1,480	1,360	1,270

2. Maximum Natural Gas Delivery Capacity (For 6 - 7 in. W.C. initial supply pressure)

1.0 in. W.C. Pressure Drop

Pipe Size	Length (including fittings)													
	10 ft (3 m)	20 ft (6 m)	30 ft (9 m)	40 ft (12 m)	50 ft (15 m)	60 ft (18 m)	70 ft (21 m)	80 ft (24 m)	90 ft (27 m)	100 ft (30 m)	125 ft (38 m)	150 ft (45 m)	175 ft (53 m)	200 ft (60 m)
1/2 in.	250	172	138	118	105	95	87	81	76	72	64	58	53	50
3/4 in.	524	360	289	247	219	199	183	170	160	151	134	121	111	104
1 in.	986	678	544	466	413	374	344	320	300	284	252	228	210	195
1 1/4 in.	2,030	1,390	1,120	957	848	768	707	657	617	583	516	468	430	400
1 1/2 in.	3,030	2,090	1,680	1,430	1,270	1,150	1,060	985	924	873	774	701	645	600
2 in.	5,840	4,020	3,230	2,760	2,450	2,220	2,040	1,900	1,780	1,680	1,490	1,350	1,240	1,160
2 1/2 in.	9,310	6,400	5,140	4,400	3,900	3,530	3,250	3,020	2,840	2,680	2,380	2,150	1,980	1,840

3. Maximum Natural Gas Delivery Capacity (For 7 - 8 in. W.C. initial supply pressure)

2.0 in. W.C. Pressure Drop

Pipe Size	Length (including fittings)													
	10 ft (3 m)	20 ft (6 m)	30 ft (9 m)	40 ft (12 m)	50 ft (15 m)	60 ft (18 m)	70 ft (21 m)	80 ft (24 m)	90 ft (27 m)	100 ft (30 m)	125 ft (38 m)	150 ft (45 m)	175 ft (53 m)	200 ft (60 m)
1/2 in.	364	250	201	172	153	138	127	118	111	105	93	84	77	72
3/4 in.	762	524	420	360	319	289	266	247	232	219	194	176	162	151
1 in.	1,440	986	792	678	601	544	501	466	437	413	366	332	305	284
1 1/4 in.	2,950	2,030	1,630	1,390	1,230	1,120	1,030	957	898	848	751	681	626	583
1 1/2 in.	4,420	3,030	2,440	2,090	1,850	1,680	1,540	1,430	1,350	1,270	1,130	1,020	938	873
2 in.	8,500	5,840	4,690	4,020	3,560	3,230	2,970	2,760	2,590	2,450	2,170	1,970	1,810	1,680
2 1/2 in.	13,600	9,310	7,480	6,400	5,670	5,140	4,730	4,400	4,130	3,900	3,460	3,130	2,880	2,680

4. Maximum Natural Gas Delivery Capacity (For 8 - 10.5 in. W.C. initial supply pressure)

3.0 in. W.C. Pressure Drop

Pipe Size	Length (including fittings)													
	10 ft (3 m)	20 ft (6 m)	30 ft (9 m)	40 ft (12 m)	50 ft (15 m)	60 ft (18 m)	70 ft (21 m)	80 ft (24 m)	90 ft (27 m)	100 ft (30 m)	125 ft (38 m)	150 ft (45 m)	175 ft (53 m)	200 ft (60 m)
1/2 in.	454	312	250	214	190	172	158	147	138	131	116	105	96	90
3/4 in.	949	652	524	448	397	360	331	308	289	273	242	219	202	188
1 in.	1,790	1,230	986	844	748	678	624	580	544	514	456	413	380	353
1 1/4 in.	3,670	2,520	2,030	1,730	1,540	1,390	1,280	1,190	1,120	1,060	936	848	780	726
1 1/2 in.	5,500	3,780	3,030	2,600	2,300	2,090	1,920	1,790	1,680	1,580	1,400	1,270	1,170	1,090
2 in.	10,600	7,280	5,840	5,000	4,430	4,020	3,700	3,440	3,230	3,050	2,700	2,450	2,250	2,090
2 1/2 in.	16,900	11,600	9,310	7,970	7,070	6,400	5,890	5,480	5,140	4,860	4,300	3,900	3,590	3,340

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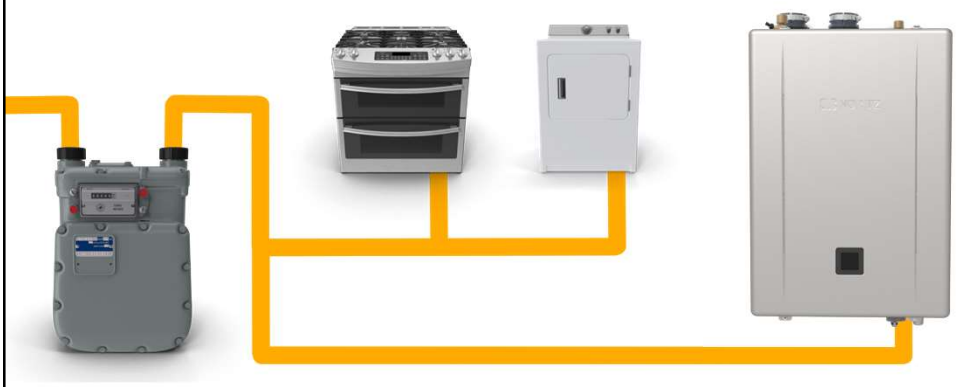
DEDICATED OR BRANCH GAS LINE?

Both Dedicated and Branching from an existing gas line are acceptable choices.



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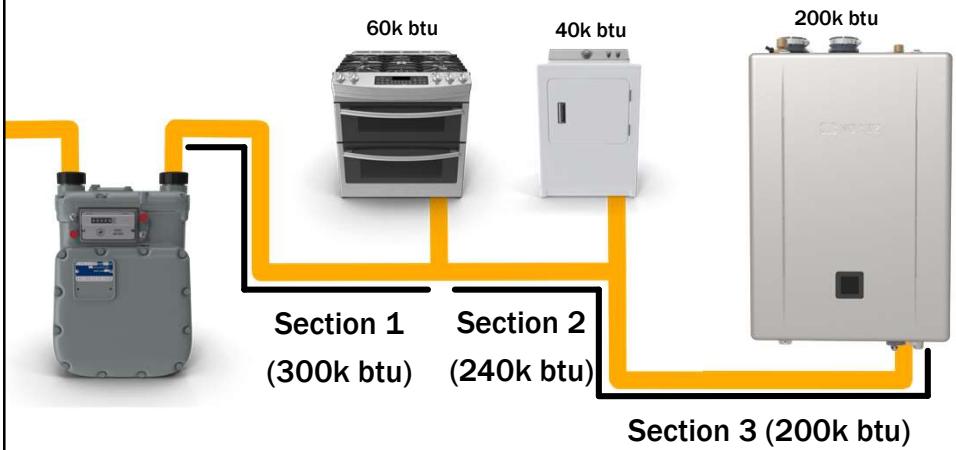
DEDICATED OR BRANCH GAS LINE?

However, if you branch off the existing gas line, you need to make sure all sections of the line can support the btu demand.



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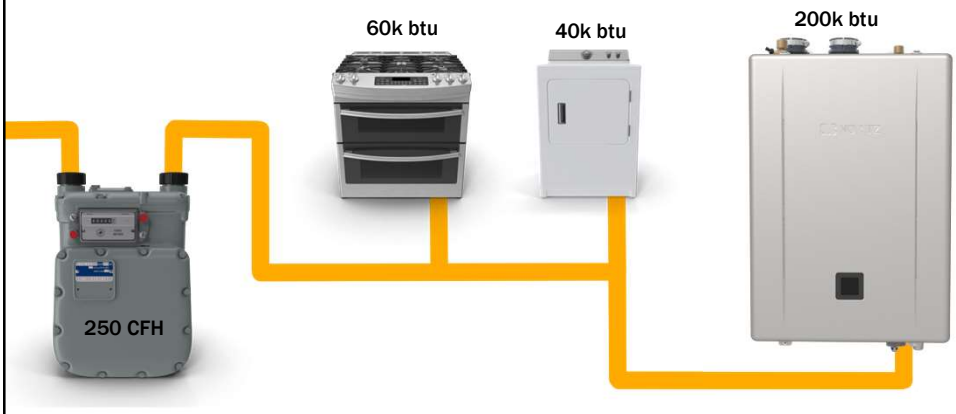
DEDICATED OR BRANCH GAS LINE?

Also make sure the gas meter can supply the total btu demand of the home.



Check Rating Plate on Meter

300k btu = total of all gas appliances

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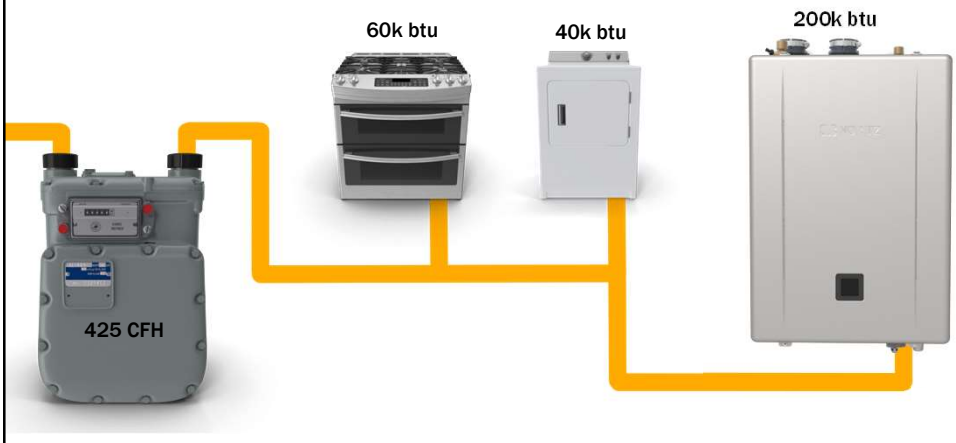
DEDICATED OR BRANCH GAS LINE?

In some cases, it may need to be upsized to handle the added demand of the tankless unit.



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PROPANE TANK & ORIFICE

IF GAUGE READS	250 GAL TANK	500 GAL TANK
80%	200	400
70%	175	350
60%	150	300
50%	125	250
40%	100	200
30%	75	150

PROPANE GAS

8.0 TO 13.0 INCHES

If using the PRO Series units only an Orifice Change and programing with EZ Start Plus App is needed. LP Orifice is included with the unit.

Gauge at 82% or above is considered full

Gauge appears to be empty, if tank is completely empty sometimes a leak test is required which comes with a fee. So fill tank before its empty to avoid this.

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CHOOSING INSTALLATION LOCATION

Now that you've sized out the perfect unit for the job and made sure the gas system can support the new tankless, it's time to pick the perfect installation location.

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CHOOSING INSTALLATION LOCATION

For cold climates where snow is a regular or even occasional occurrence, you'll want to install the unit indoors.

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CHOOSING INSTALLATION LOCATION

For warm climates that never see freezing weather, installing the unit outdoors is a great way to free up space inside the home.

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CHOOSING INSTALLATION LOCATION

Keep in mind all tankless water heaters have motorized parts. When in operation they *are* fairly quiet, but the noises may bother some customers so keep that in mind when scouting a location to install the unit.

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CHOOSING INSTALLATION LOCATION

If possible, avoid installing the unit on a bedroom wall or other areas where customers might expect a quiet space.

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INDOOR VENTING OPTIONS

When installing the unit indoors, you have a few different venting options available to you although they will generally fall into 1 of 2 categories:

DV Direct Vent

SV Single Vent

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INDOOR VENTING OPTIONS

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Direct Vent Examples:

Two Pipes
To Outside

Concentric
Terminations

DVC Style
Unit

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INDOOR VENTING OPTIONS

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Single Vent Examples:

DV to SV Conversion

Flex Vent Kit

SV Style Unit

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HORIZONTAL OR VERTICAL VENTING

All Noritz indoor units may be vented either horizontally or vertically regardless of SV or DV vent type, with the only exception being the EZTR packages that use the 2" flexible vent.

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VENTING MATERIAL

NORITZ TANKLESS WATER HEATERS

Standard efficiency non-condensing units must be vented with category III stainless steel venting and high efficiency condensing models may use plastic venting such as PVC, CPVC or PP depending on code requirements.

Non-Condensing Model

Condensing Model

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PVC VENTING

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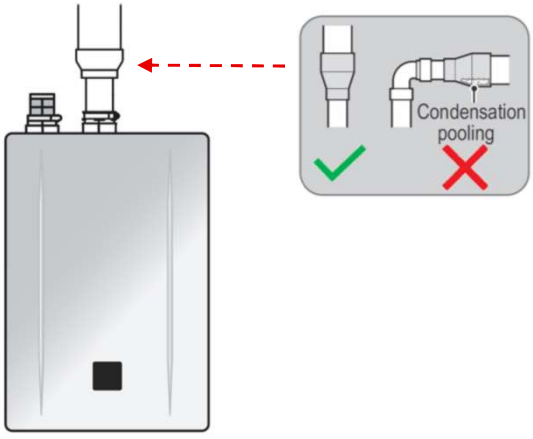
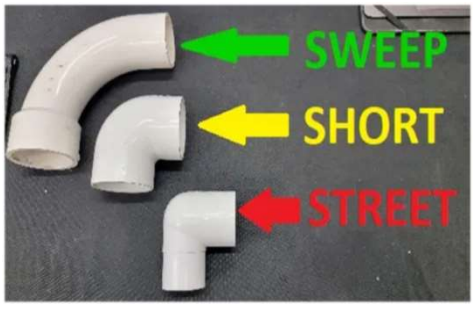
Horizontal Exhaust runs should pitch towards the unit to allow condensation to drain in the unit and out the trap.



Long Sweep Turns vs Short Radius Turns

Long sweep 90° creates a smooth transition of the exhaust gases from one direction to another

Long sweep 90° causes the least amount of turbulence.



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PRO SERIES VENTING OPTIONS

NORITZ TANKLESS WATER HEATERS

One SKU, All Venting Options.

Direct Vent | Single Vent | Outdoor | No Roof Kit | Flex Vent Kit

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PRO SERIES VENTING OPTIONS

DV – Direct Vent

Ideal For:

- Areas with dirty combustion air
- Tight locations without combustion air
- When unit is installed in a conditioned space (Why draw conditioned air through the unit?)

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PRO SERIES VENTING OPTIONS

SV – Single Vent

Ideal For:

- Areas with clean combustion air
- Areas with plenty of combustion air

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PRO SERIES VENTING OPTIONS

OD – Outdoor

Ideal For:

- Warm climates without snow
- Reclaiming space in the home

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PRO SERIES VENTING OPTIONS

NRK – No Roof Kit

Scan for NRK-1 Install Video

Ideal For:

- Straight up b-vent runs 8.5’ or under
- Tank Retrofits
- Saving time by not replacing venting or getting on the roof

NORITZ TANKLESS WATER HEATERS

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PRO SERIES VENTING OPTIONS

FSV – Flexible Single Vent

Ideal For:

- B-vent runs with 45 degree turns
- B-vent runs 5’ to 35’
- Tank Retrofits
- Saving time by not replacing venting

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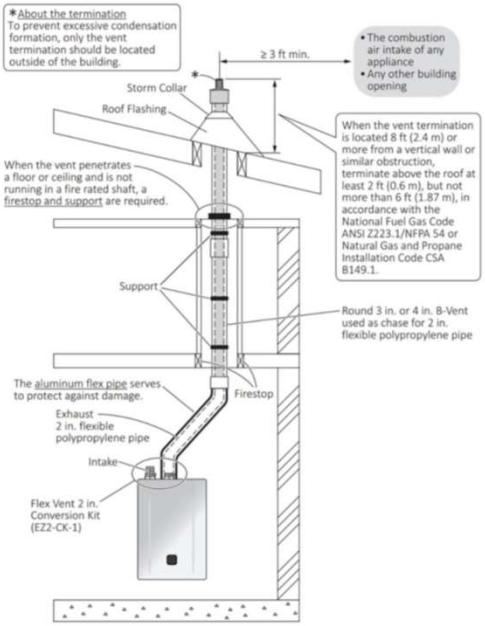
EZTR FLEX VENTING



EZTR installations *must* be run vertically through the existing round b-vent and *cannot* be run horizontally.

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WHEN TO DIRECT VENT

When combustion air is likely to be contaminated, such as in:

Attics

Laundry Rooms

Commercial Kitchens

It's best to install a Direct Vent unit.

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WHEN TO DIRECT VENT

Pulling in dirty combustion air with an SV unit will require quite a bit of preventative maintenance and likely shorten the overall lifespan of the unit.

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2 PIPE TERMINATION OPTIONS

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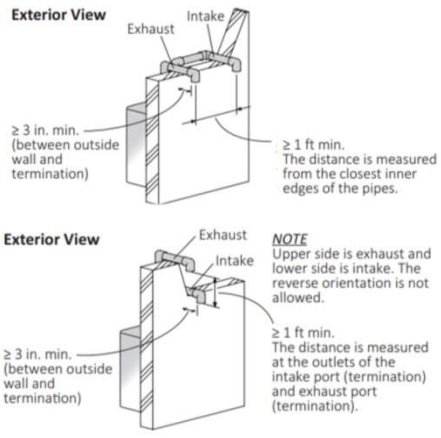
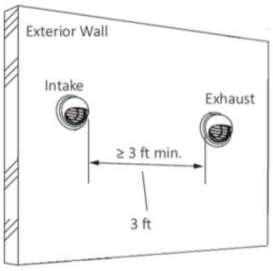
Direct Vent Horizontal

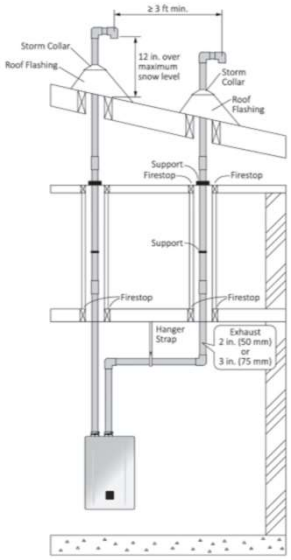


Using 90 PVC elbows the distance between the intake and exhaust is 1 ft



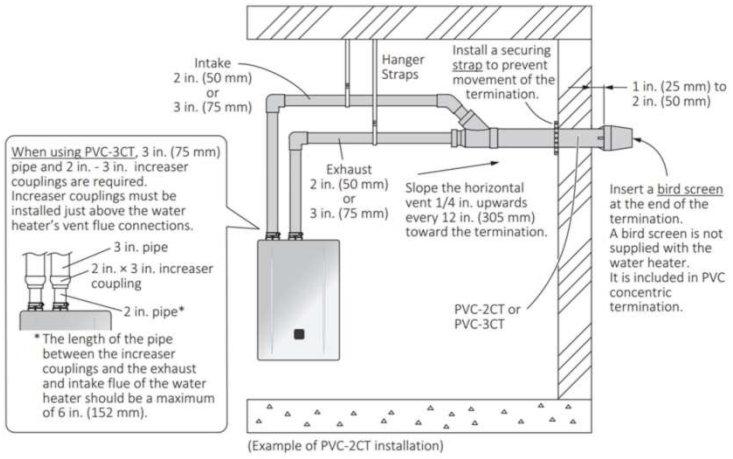
Using PVT-HL terminations the distance between the intake and exhaust is 3 ft

Direct Vent Vertical



64

CONCENTRIC HORIZONTAL TERMINATION



(Example of PVC-2CT installation)

- PVC-2CT: 2" Connections
- PVC-3CT: 3" Connections

NORITZ TANKLESS WATER HEATERS

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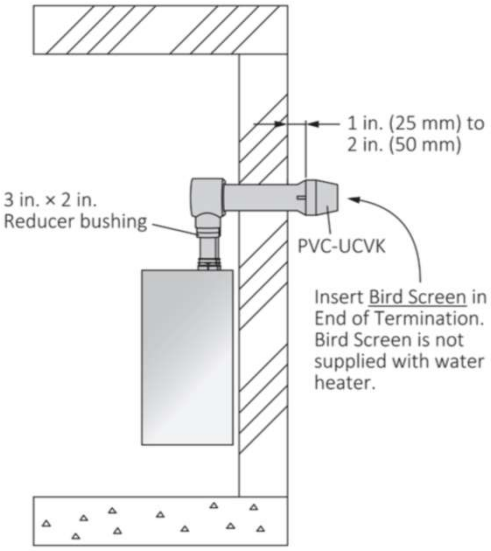
CONCENTRIC HORIZONTAL TERMINATION



PVC-UCVK: For easy up and out venting

NORITZ TANKLESS WATER HEATERS

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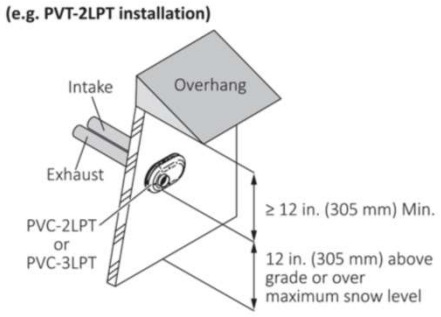
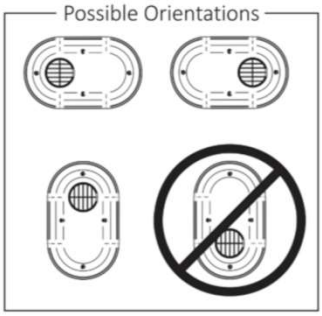
CONCENTRIC HORIZONTAL TERMINATION





- PVC-2LPT: 2" Connections
- PVC-3LPT: 3" Connections

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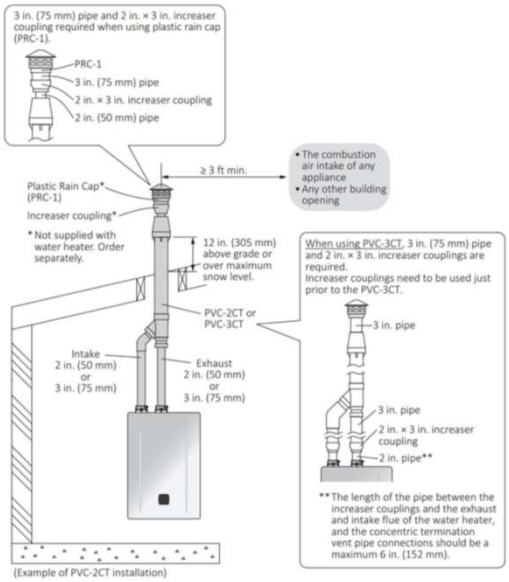
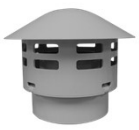
CONCENTRIC VERTICAL TERMINATION



- PVC-2CT: 2" Connections
- PVC-3CT: 3" Connections
- PRC-1: Plastic Rain Cap



NORITZ TANKLESS WATER HEATERS

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SV TERMINATION OPTIONS

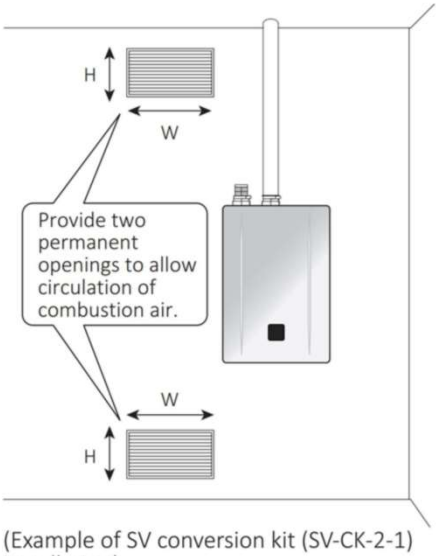
If the installation location meet the combustion air requirements in the manual, you have the option to install a Single Vent unit or use the SV conversion kit on a compatible DV unit and run a single exhaust vent to the outside.

EZ111DV (GQ-C3261WX-FF US)

Indoor make up air is provided		200 in.²
	Example (W) × (H)	20 in. × 10 in.
Outdoor make up air is provided	Direct or Vertical ducts	50 in.²
	Example (W) × (H)	10 in. × 5 in.
	Horizontal ducts	100 in.²
	Example (W) × (H)	20 in. × 5 in.

EZ98DV (GQ-C2861WX-FF US)

Indoor make up air is provided		180 in.²
	Example (W) × (H)	20 in. × 9 in.
Outdoor make up air is provided	Direct or Vertical ducts	45 in.²
	Example (W) × (H)	10 in. × 4 1/2 in.
	Horizontal ducts	90 in.²
	Example (W) × (H)	20 in. × 4 1/2 in.



(Example of SV conversion kit (SV-CK-2-1) installation)

NORITZ TANKLESS WATER HEATERS

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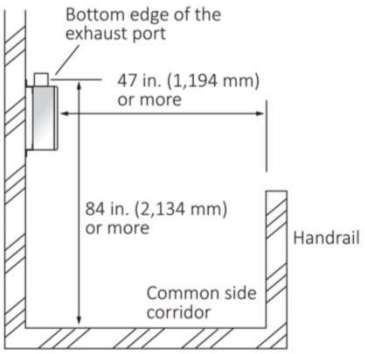
OUTDOOR INSTALL CONSIDERATIONS

Outdoor installations are probably one of the easiest options if the climate allows. However, there are still things to consider such as clearances to building openings and how close the unit is to a neighboring building. The last thing you want is for the exhaust or operational noises to affect the neighbors.

When installing the water heater in a common side corridor



NORITZ TANKLESS WATER HEATERS

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COMMON VENTING 2 PRO SERIES UNITS

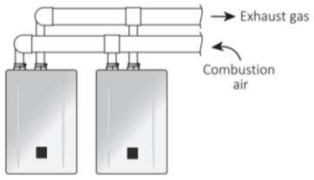
The EZ PRO and NRCR PRO units can be common vented

Common Vent

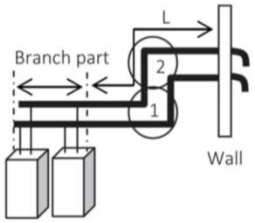
This water heater is suitable for a common vent system. To make a common vent system, contact Noritz America at 1-866-766-7489 or scan the following two-dimensional barcode and then refer to the common vent installation manual for detailed information.

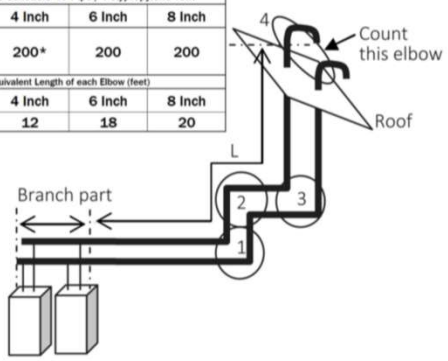
Common Direct Vent

Set the vent type setting to "Common Direct Vent".



Model	Number of Units	Vent Diameter (inch) and Maximum Equivalent Vent Length (feet) PVC or CPVC Schedule 40 Pipe / Polypropylene vent			
		3 Inch	4 Inch	6 Inch	8 Inch
EZ71, EZ98 & EZ111 NRCR92 & NRCR111	2	65*	200*	200	200
	Diameter of Elbow	Equivalent Length of each Elbow (feet)			
		3 Inch	4 Inch	6 Inch	8 Inch
	Length	5	12	18	20





**The Btu/h input of the unit will be reduced by up to 9%.*

NORITZ® TANKLESS WATER HEATERS

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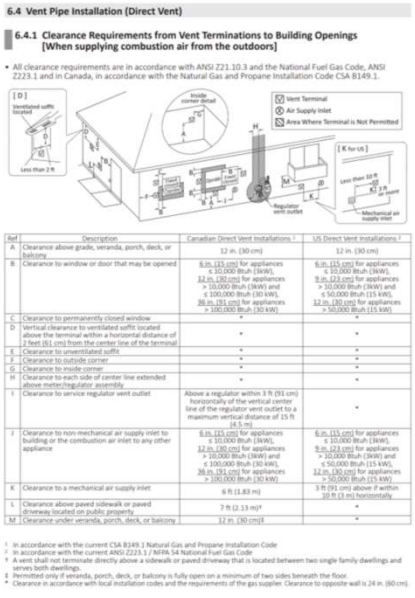
INSTALLATION CLEARANCE REQUIREMENTS



6.4 Vent Pipe Installation (Direct Vent)

6.4.1 Clearance Requirements from Vent Terminations to Building Openings [When supplying combustion air from the outdoors]

- All clearance requirements are in accordance with ANSI Z21.10.3 and the National Fuel Gas Code, ANSI Z223.1 and in Canada, in accordance with the Natural Gas and Propane Installation Code CSA B149.1.

Ref	Description	Canadian Direct Vent Installations †	US Direct Vent Installations ‡
A	Clearance above grade, veranda, porch, deck, or balcony	12 in. (30 cm)	12 in. (30 cm)
B	Clearance to window or door that may be opened	6 in. (15 cm) for appliances ≤ 10,000 Btuh (3kW), 12 in. (30 cm) for appliances > 10,000 Btuh (3kW) and ≤ 100,000 Btuh (30 kW), 36 in. (91 cm) for appliances > 100,000 Btuh (30 kW)	6 in. (15 cm) for appliances ≤ 10,000 Btuh (3kW), 9 in. (23 cm) for appliances > 10,000 Btuh (3kW) and ≤ 50,000 Btuh (15 kW), 12 in. (30 cm) for appliances > 50,000 Btuh (15 kW)
C	Clearance to permanently closed window	*	*
D	Vertical clearance to ventilated soffit located above the terminal within a horizontal distance of 2 feet (61 cm) from the center line of the terminal	*	*
E	Clearance to unventilated soffit	*	*
F	Clearance to outside corner	*	*
G	Clearance to inside corner	*	*
H	Clearance to each side of center line extended above meter/regulator assembly	*	*
I	Clearance to service regulator vent outlet	Above a regulator within 3 ft (91 cm) horizontally of the vertical center line of the regulator vent outlet to a maximum vertical distance of 15 ft (4.5 m)	*
J	Clearance to non-mechanical air supply inlet to building or the combustion air inlet to any other appliance	6 in. (15 cm) for appliances ≤ 10,000 Btuh (3kW), 12 in. (30 cm) for appliances > 10,000 Btuh (3kW) and ≤ 100,000 Btuh (30 kW), 36 in. (91 cm) for appliances > 100,000 Btuh (30 kW)	6 in. (15 cm) for appliances ≤ 10,000 Btuh (3kW), 9 in. (23 cm) for appliances > 10,000 Btuh (3kW) and ≤ 50,000 Btuh (15 kW), 12 in. (30 cm) for appliances > 50,000 Btuh (15 kW)
K	Clearance to a mechanical air supply inlet	6 ft (1.83 m)	3 ft (91 cm) above if within 10 ft (3 m) horizontally
L	Clearance above paved sidewalk or paved driveway located on public property	7 ft (2.13 m)†	*
M	Clearance under veranda, porch, deck, or balcony	12 in. (30 cm)‡	*

† In accordance with the current CSA B149.1 Natural Gas and Propane Installation Code
‡ In accordance with the current ANSI Z223.1 / NFPA 54 National Fuel Gas Code
* A vent shall not terminate directly above a sidewalk or paved driveway that is located between two single family dwellings and serves both dwellings.
‡ Permitted only if veranda, porch, deck, or balcony is fully open on a minimum of two sides beneath the floor.
* Clearance in accordance with local installation codes and the requirements of the gas supplier. Clearance to opposite wall is 24 in. (60 cm).

The terminations of all gas burning appliances are subject to National Fuel Gas Codes clearance requirements to building openings. The installation manual provides these diagrams and many clearance requirements directly from the national fuel gas code for both US and Canada.

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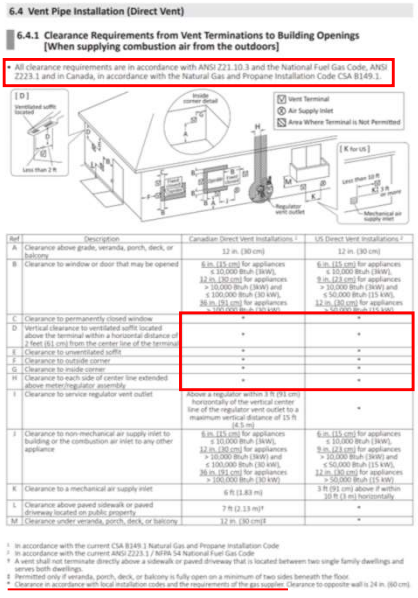
INSTALLATION CLEARANCE REQUIREMENTS



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[D] Ventilated soffit located above

Inside corner detail

Vent Terminal
Air Supply Inlet
Area Where Terminal is Not Permitted

[K for US]

Less than 2 ft

Less than 10 ft

Regulator vent outlet

Mechanical air supply inlet

Ref	Description	Canadian Direct Vent Installations [1]	US Direct Vent Installations [2]
A	Clearance above grade, veranda, porch, deck, or balcony	12 in. (30 cm)	12 in. (30 cm)
B	Clearance to window or door that may be opened	6 in. (15 cm) for appliances ≤ 10,000 Btuh (3kW), 12 in. (30 cm) for appliances > 10,000 Btuh (3kW) and ≤ 100,000 Btuh (30 kW), 36 in. (91 cm) for appliances > 100,000 Btuh (30 kW)	6 in. (15 cm) for appliances ≤ 10,000 Btuh (3kW), 9 in. (23 cm) for appliances > 10,000 Btuh (3kW) and ≤ 50,000 Btuh (15 kW), 12 in. (30 cm) for appliances > 50,000 Btuh (15 kW)
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D	Vertical clearance to ventilated soffit located above the terminal within a horizontal distance of 2 feet (61 cm) from the center line of the terminal	*	*
E	Clearance to unventilated soffit	*	*
F	Clearance to outside corner	*	*
G	Clearance to inside corner	*	*
H	Clearance to each side of center line extended above meter/regulator assembly	*	*
I	Clearance to service regulator vent outlet	Above a regulator within 3 ft (91 cm) horizontally of the vertical center line of the regulator vent outlet to a maximum vertical distance of 15 ft (4.5 m)	*
J	Clearance to non-mechanical air supply inlet to building or the combustion air inlet to any other appliance	6 in. (15 cm) for appliances ≤ 10,000 Btuh (3kW), 12 in. (30 cm) for appliances > 10,000 Btuh (3kW) and ≤ 100,000 Btuh (30 kW), 36 in. (91 cm) for appliances > 100,000 Btuh (30 kW)	6 in. (15 cm) for appliances ≤ 10,000 Btuh (3kW), 9 in. (23 cm) for appliances > 10,000 Btuh (3kW) and ≤ 50,000 Btuh (15 kW), 12 in. (30 cm) for appliances > 50,000 Btuh (15 kW)
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M	Clearance under veranda, porch, deck, or balcony	12 in. (30 cm)‡	*

[1] In accordance with the current CSA B149.1 Natural Gas and Propane Installation Code
[2] In accordance with the current ANSI Z223.1 / NFPA 54 National Fuel Gas Code
† A vent shall not terminate directly above a sidewalk or paved driveway that is located between two single family dwellings and serves both dwellings.
‡ Permitted only if veranda, porch, deck, or balcony is fully open on a minimum of two sides beneath the floor.
* Clearance in accordance with local installation codes and the requirements of the gas supplier. Clearance to opposite wall is 24 in. (60 cm).

It's important to note that Noritz does not make these clearance requirements and thus cannot overrule any local, state, provincial or national code. When there is no national code clearance listed, local code or the requirements of the gas supplier must be followed.

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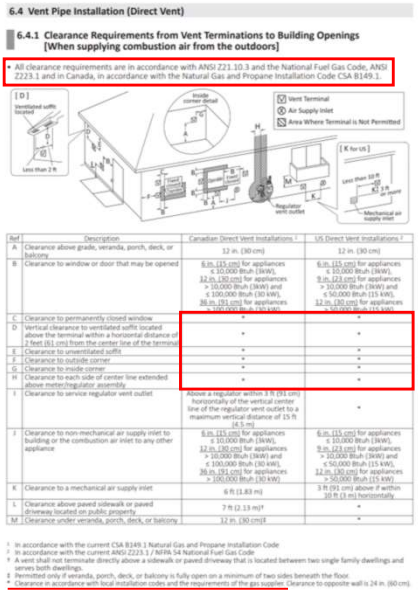
INSTALLATION CLEARANCE REQUIREMENTS



6.4 Vent Pipe Installation (Direct Vent)

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[D] Ventilated soffit located above

Inside corner detail

Vent Terminal
Air Supply Inlet
Area Where Terminal is Not Permitted

[K for US]

Less than 2 ft

Less than 10 ft

Regulator vent outlet

Mechanical air supply inlet

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C	Clearance to permanently closed window	*	*
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E	Clearance to unventilated soffit	*	*
F	Clearance to outside corner	*	*
G	Clearance to inside corner	*	*
H	Clearance to each side of center line extended above meter/regulator assembly	*	*
I	Clearance to service regulator vent outlet	Above a regulator within 3 ft (91 cm) horizontally of the vertical center line of the regulator vent outlet to a maximum vertical distance of 15 ft (4.5 m)	*
J	Clearance to non-mechanical air supply inlet to building or the combustion air inlet to any other appliance	6 in. (15 cm) for appliances ≤ 10,000 Btuh (3kW), 12 in. (30 cm) for appliances > 10,000 Btuh (3kW) and ≤ 100,000 Btuh (30 kW), 36 in. (91 cm) for appliances > 100,000 Btuh (30 kW)	6 in. (15 cm) for appliances ≤ 10,000 Btuh (3kW), 9 in. (23 cm) for appliances > 10,000 Btuh (3kW) and ≤ 50,000 Btuh (15 kW), 12 in. (30 cm) for appliances > 50,000 Btuh (15 kW)
K	Clearance to a mechanical air supply inlet	6 ft (1.83 m)	3 ft (91 cm) above if within 10 ft (3 m) horizontally
L	Clearance above paved sidewalk or paved driveway located on public property	7 ft (2.13 m)†	*
M	Clearance under veranda, porch, deck, or balcony	12 in. (30 cm)‡	*

[1] In accordance with the current CSA B149.1 Natural Gas and Propane Installation Code
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† A vent shall not terminate directly above a sidewalk or paved driveway that is located between two single family dwellings and serves both dwellings.
‡ Permitted only if veranda, porch, deck, or balcony is fully open on a minimum of two sides beneath the floor.
* Clearance in accordance with local installation codes and the requirements of the gas supplier. Clearance to opposite wall is 24 in. (60 cm).

These codes are designed to prevent the exhaust from a gas burning appliance from entering the home and putting the occupants at risk.

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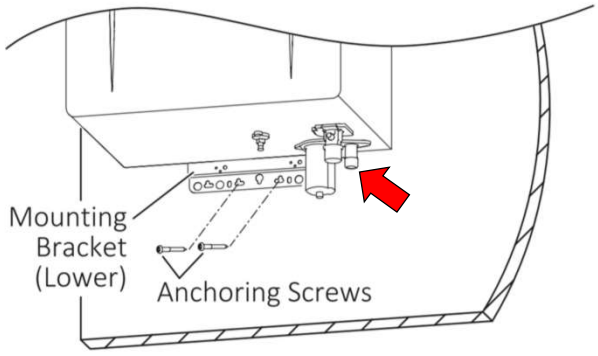
CONDENSATE DRAIN CONNECTION



Condensing heaters will have a ½" condensate drain connection on the bottom of the unit.

NORITZ TANKLESS WATER HEATERS

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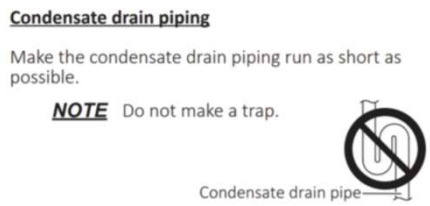
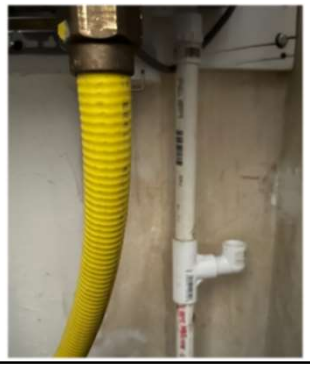
CONDENSATE DRAIN CONNECTION



The condensate drain line should be as short and direct as possible and you do not need to create a trap as that's what the collector inside the unit does.

Adding an air vent on the condensate line will help with draining the condensate and not backing up into the unit.



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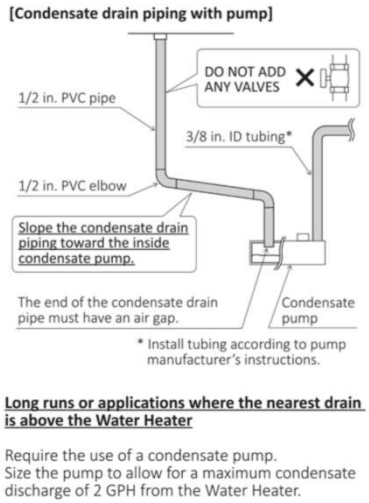
CONDENSATE DRAIN CONNECTION



Long runs or applications where the nearest drain is above the Water Heater

Require the use of a condensate pump.
Size the pump to allow for a maximum condensate discharge of 2 GPH from the Water Heater.

If the desired drain location is a long distance from or above the heater, a condensate pump should be used. The pump should be sized to handle 2 gallons per hour.

NORITZ TANKLESS WATER HEATERS

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CONDENSATE DRAIN CONNECTION

In cold climates with freezing weather, the condensate should not be drained to the outside as the condensate line could freeze and the heater will stop operating.

NORITZ TANKLESS WATER HEATERS

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CONDENSATE DRAIN CONNECTION

Material of the condensate drain piping

Use plastic pipe, such as PVC, for the drain line.

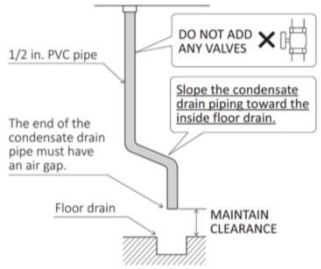
NOTE Do not use steel, black iron, or any other material which can corrode when placed into contact with acidic condensate.

Sizing of the condensate drain piping

In order to drain the condensate, a 1/2 in. threaded fitting is provided at the base of the Water Heater.

NOTE Do not reduce the size of the fitting or the condensate drain piping to less than 1/2 in.

[Condensate drain piping to floor drain]



The drain line should be plastic as the acidic condensate will corrode metal pipes and the line should be no smaller than ½".

Horizontal runs should be sloped downward a ¼" for every 1 foot of piping.

Make sure you leave an air gap at the end of the drain line.

NORITZ TANKLESS WATER HEATERS

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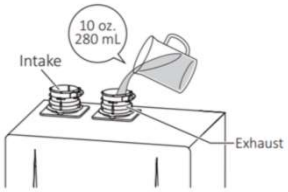
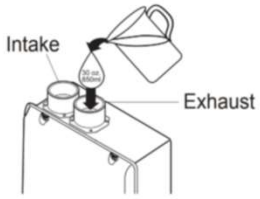
FILLING CONDENSATE TRAP

Fill the condensate container by pouring approx. 10 oz. (280 mL) of water into the exhaust flue on the top of the Water Heater as illustrated below.



1) Fill the condensate container by pouring approx. 30 oz.(850ml) of water into the exhaust accessory on the top of the appliance as illustrated below.



The condensate collector inside the unit that should be pre-charged with water to prevent carbon monoxide leakage during initial operation of the unit. Pre-mix models such as the EZ series need about 10 oz of water while traditional condensing units like the NRC111 need about 30 oz.

NORITZ TANKLESS WATER HEATERS

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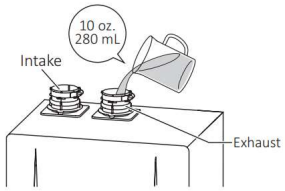
FILLING CONDENSATE TRAP



If the vent pipe has already been installed:
After installing the condensate drain pipe, make sure that the area around the Water Heater is well ventilated; open a window or a door if necessary. Then, operate the Water Heater and verify that condensate is coming out of the condensate drain pipe.
(During normal use of the Water Heater, condensate will begin to discharge from the condensate drain pipe within 15 minutes of use. However, depending on the season and/or installation site conditions, it may take longer.)

If you forget to pre-charge the condensate collector, make sure the installation area is well ventilated for the first 15-20 minutes of operation as the unit creates condensate and fills the collector.

NORITZ TANKLESS WATER HEATERS

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NEUTRALIZING THE CONDENSATE

Condensing Water Heater

- In order to ensure proper operation of this Water Heater, need to install the condensate drain pipe to drain acidic condensate which produces during operation.
- The pH level of the condensate is approximately 2-3.
  An external neutralizer must be installed on the condensate drain piping prior to disposal when required by local code or when the condensate could cause damage.

NOTE Damage caused by improperly handled condensate is not covered by the Noritz America Limited Warranty.

Treating the acidic condensate created by high efficiency units may be required by local code and is a good practice even if code doesn't require it.

NORITZ TANKLESS WATER HEATERS

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NEUTRALIZING THE CONDENSATE

[If an external neutralizer is installed]

Periodic replacement of the neutralizing agent will be required.
Refer to the instructions supplied with the neutralizer for suggested replacement intervals.

Noritz offers external neutralizers to raise the pH level of the acidic condensate to that of water so it can be drained safely.

The residential neutralizer is recommended to be installed 1 per unit.

NORITZ TANKLESS WATER HEATERS

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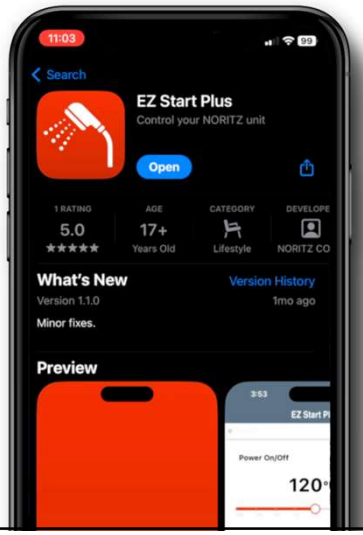
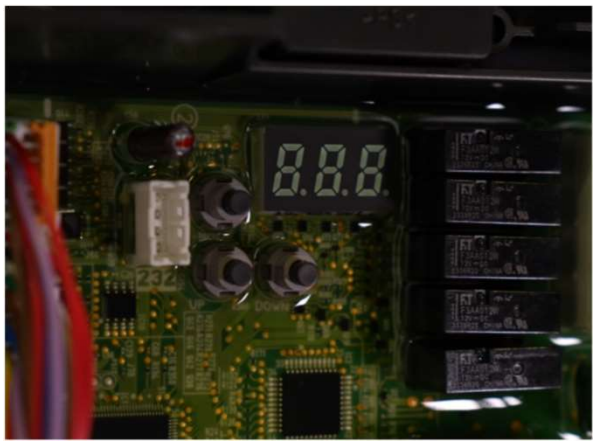
EZ START PLUS APP

NORITZ TANKLESS WATER HEATERS

Pro Series models no longer have physical dipswitches on the circuit board. All programming of the unit is done with the new EZ Start Plus App or the built in display window.





Directions can be found in the manual

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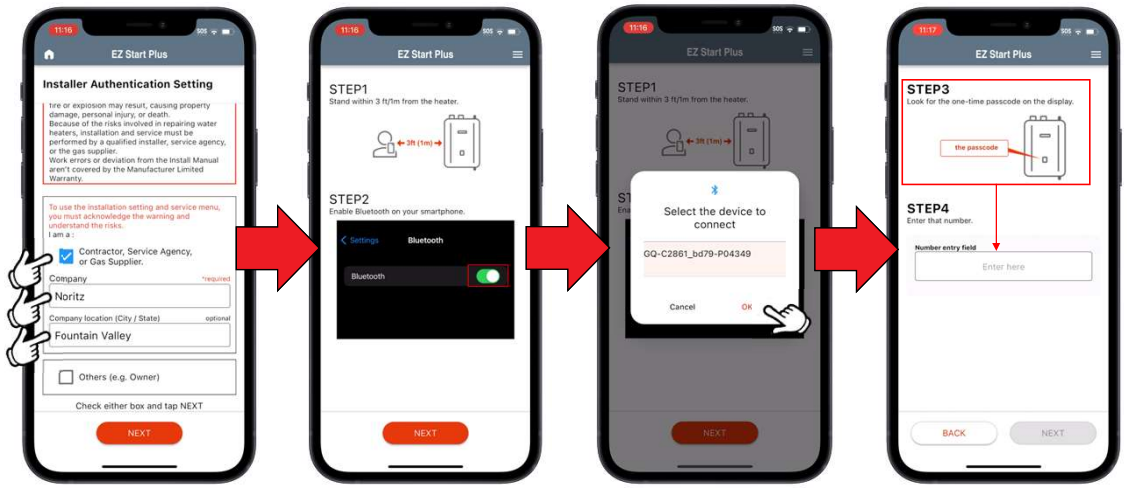
EZ START PLUS APP

NORITZ TANKLESS WATER HEATERS



Open EZ Start Plus App and select Contractor

Make sure Bluetooth is ON

Select Unit then tap OK

Enter Passcode and tap "NEXT"

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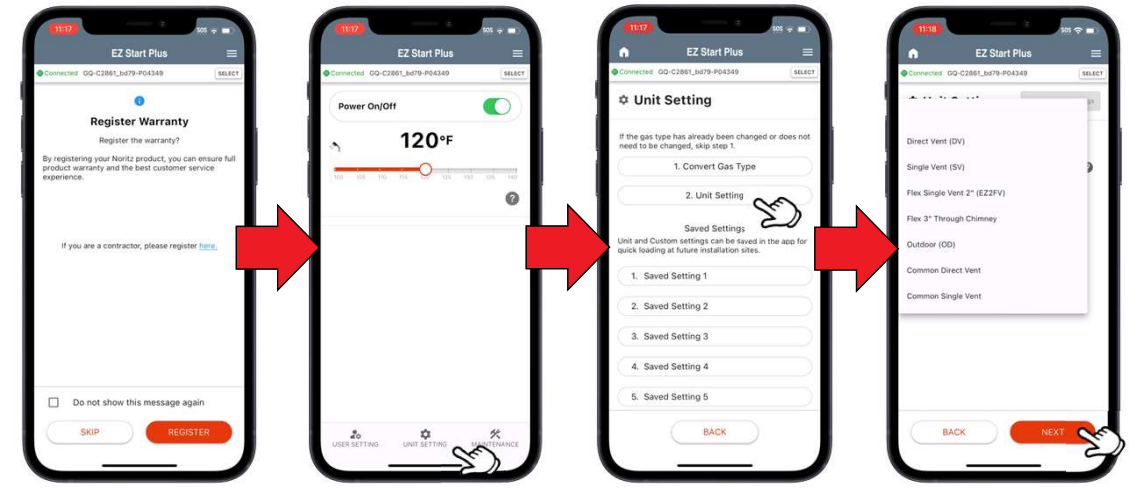
EZ START PLUS APP

NORITZ TANKLESS WATER HEATERS



Register Warranty or skip

Tap "Unit Setting"

Tap "Unit Setting"

Select Options Based on Installation then tap NEXT

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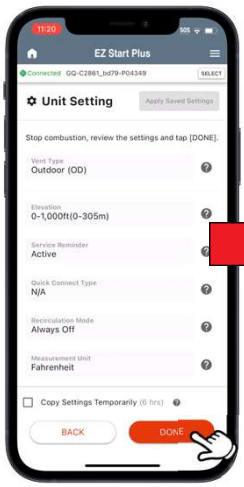
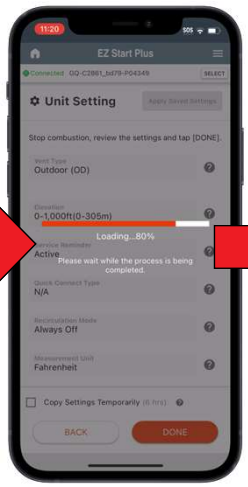
EZ START PLUS APP

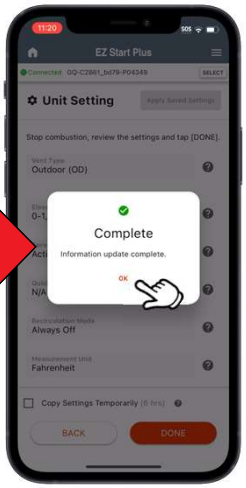
Upon completion, email app will open to allow emailing the installation settings to Noritz. This is not required, but very helpful for Customer Care.



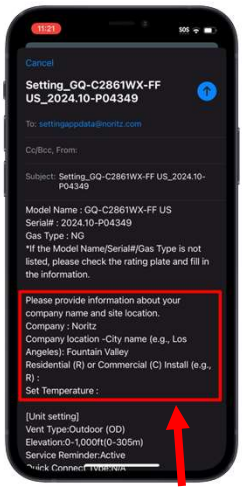
Review your selections then tap DONE



App programs unit



Tap OK when complete



Please fill out these items if you opt in to send.

Scan Here!

NORITZ TANKLESS WATER HEATERS

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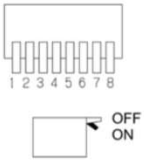
SETTING THE DIPSWITCHES

■ DIP Switch Settings

Disconnect the electrical power to the water heater before adjusting the DIP Switches.

The following settings can be adjusted using the DIP Switches:
1. To set up with the common vent system, SW 1 needs to be turned on.*
2. By using SW 2 and 3, it can adapt to the setting of the exhaust type.**
3. By using SW 5 and 6, adjustments can be made for use at high elevation.
4. By using SW 7 and 8, adjustments can be made for extended vent lengths. Refer to the "Setting list for DIP Switches" table for details.

[DIP Switches]



Setting list for DIP Switches (● :ON ○ :OFF)

SW1	SW2	SW3	SW5	SW6	SW7	SW8
Common vent system*	Exhaust type**		Elevations above 2000ft		Vent Length Adjustment and Vent Size	

SW1	SW2	SW3		SW5	SW6	High Elevation Adjustment	SW7	SW8	
○	○	○	DV	○	○	0~2000ft (0~610m)	○	○	2" Short Length
●	●	○	OD	●	○	2001~4000ft (611~1219m)	●	○	2" Long Length
	○	●	SV	○	●	4001~7000ft (1220~2134m)	○	●	3" Short Length
	●	●	EZTR	●	●	7001~10000ft (2135~3048m)	●	●	3" Long Length

* Refer to the Installation Manual of common vent system for detail information.
** DV : Direct Vent, OD : Outdoor (using VC-6), SV : Single Vent (using SV Conversion Kit), EZTR : 2" PP Flexible Pipe (using EZ2-CK)

Non-PRO units will have 8 dipswitches located on the circuit board for adjusting the unit based on vent type, elevation, vent length and size.

NORITZ TANKLESS WATER HEATERS

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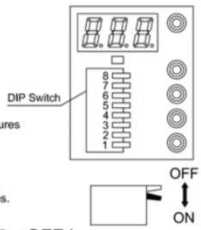
SETTING THE DIPSWITCHES

■ DIP Switch Settings

*Disconnect the electrical power to the unit before adjusting the DIP Switches.

The following settings can be adjusted using the DIP Switches.

1. By setting DIP Switches 1 and 2, the unit can be programmed to different default temperatures if the remote controller is removed.
2. (-DV Model only) By setting DIP Switch 3, the intake air supply type can be set to direct vent(DV) or non-direct vent(SV).
3. By setting DIP Switches 5 and 6, adjustments can be made for high elevation installations.
4. By setting DIP Switches 7, adjustments can be made for extended vent lengths installations. Refer to the "Setting list for DIP Switches" table for details.



Setting list for DIP Switches (● :ON ○ :OFF)

1	2		3		5	6		7	
Default temperature setting			Intake Air supply type -DV Model only		Elevations above 2,000ft			Vent Length Adjustment -DV(-SV) Model only	
1	2		3	Intake Air supply	5	6	High Elevation Adjustment	7	Vent Length
○	○	120°F (50°C)	○	Outdoor : DV	○	○	0~2,000ft (0~610m)	○	Short Length
●	●	130°F (54°C)	●	Indoor : SV	●	○	2,001~4,000ft (611~1,220m)	●	Long Length
●	○	135°F (57°C)			○	●	4,001~6,000ft (1,221~1,830m)		
○	●	140°F (60°C)			●	●	6,001~8,000ft (1,831~2,440m)		

note) The unit is fixed with minimum combustion, if you change No.4 to ON. It is possible to cause the trouble, please do not change it. No.8 does not have any function.

On smaller units that don't include a remote control, the dipswitches will also allow you to set the output temperature above the default 120 degrees F.

NORITZ TANKLESS WATER HEATERS

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SETTING THE DIPSWITCHES

Be sure to make dipswitch changes with the power off otherwise an error code 73 will occur.

NORITZ TANKLESS WATER HEATERS

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SETTING THE DIPSWITCHES

EC73 TECH TIP VIDEO

To Clear EC73:

- Disconnect Power
- Make Dipswitch Changes
- Reconnect Power

NORITZ TANKLESS WATER HEATERS

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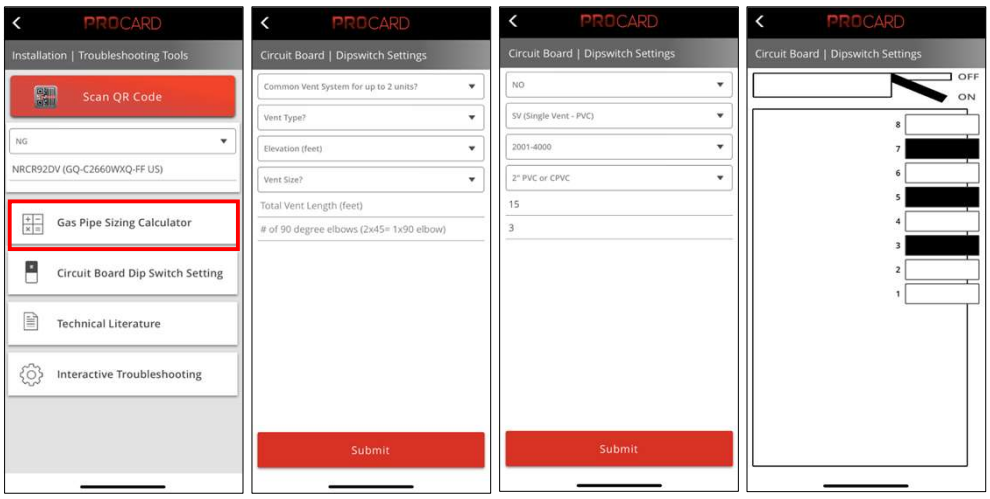
SETTING DIPSWITCHES WITH PROCARD

Use the PROCard App to make dipswitch settings simple!



ANDROID APP ON Google play

Download on the App Store

NORITZ TANKLESS WATER HEATERS

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WATER QUALITY CONSIDERATIONS

Water quality, and specifically hard water, is the #1 factor that affects the lifespan of any water heating appliance.

NORITZ TANKLESS WATER HEATERS

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WATER QUALITY CONSIDERATIONS

8.3 Water Treatment

If this Water Heater will be installed in a location where the hardness of the supply water is high, scale Build-up may cause damage to the Heat Exchanger.
Perform suggested treatment and maintenance measures to be taken based on the water hardness level according to the below table.

Treatment Guidelines

Type of Water	Hardness Level	Treatment Device*	Flush Frequency**
Soft	0-1 gpg (0-17 mg/L)	None	None
Slightly Hard	1-3 gpg (17-51 mg/L)		
Moderately Hard	3-7 gpg (51-120 mg/L)	Scale Shield or Water Softener	Once a Year***
Hard	7-10 gpg (120-171 mg/L)		
Very Hard	10-12 gpg (171-200 mg/L)		
Extremely Hard	> 12 gpg (> 200 mg/L)		

* When selecting a treatment device, you must consult with the device's spec sheet and installation manual for guidelines and limitations. Not all water supplies are compatible. A water test may be required.
** Install Noritz Isolation Valves to allow for flushing.
*** Flushing is required if a water treatment device is not installed.

NOTE Damage to the Water Heater as a result of the items below is not covered by the Noritz America Limited Warranty.
- Water in excess of 12 gpg (200 mg/L) of hardness
- Poor water quality (See the Water Quality List on page 12.)
- The Remote Controller has displayed a "C1# (Service Reminder)" indicating Scale Build-up, but the Heat Exchanger has not been flushed.

When installing a Noritz Tankless in an area with hard water, it's important to follow the water quality and treatment guidelines in the installation manual.

NORITZ TANKLESS WATER HEATERS

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WATER QUALITY CONSIDERATIONS

A Scale Shield is highly recommended for hard water areas. It's always better to prevent scale build up rather than cleaning it up afterwards.

NORITZ TANKLESS WATER HEATERS

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WATER QUALITY CONSIDERATIONS

As a last resort if there's no softener or scale shield, descales should be completed on a yearly basis. This involves circulating a calcium lime rust remover or food grade white vinegar through the unit for 1 hour.

NORITZ TANKLESS WATER HEATERS

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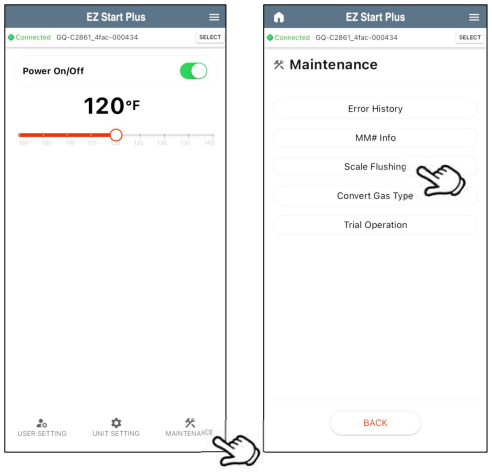
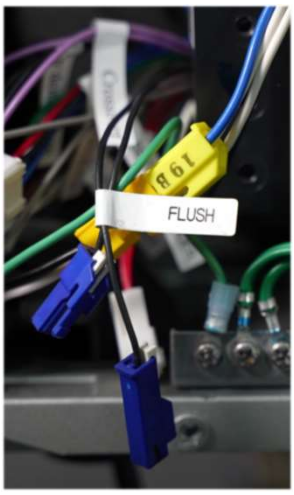
WATER QUALITY CONSIDERATIONS

All* units since 2016 have a “Flush Mode” used when descaling the unit.



PRO Series Models



2016+ Models

*NC380-SV Does not have a flush connector.

NORITZ TANKLESS WATER HEATERS

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WATER QUALITY CONSIDERATIONS

Descale procedures can be found:

- In the Manual
- In the PROCard App
- SUPPORT.NORITZ.COM
- YOUTUBE.COM/NORITZAMERICA

NORITZ TANKLESS WATER HEATERS

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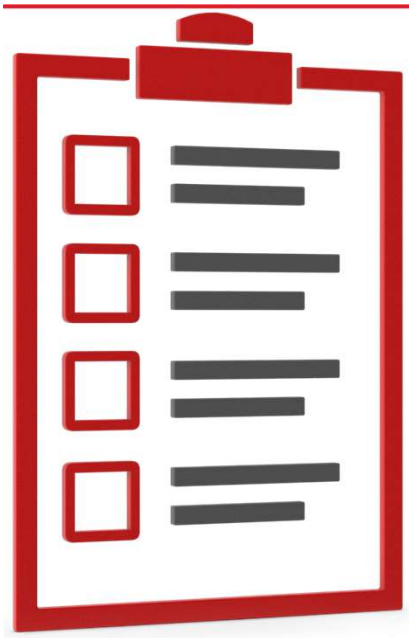
INSTALLATION CHECKLIST



Before leaving the jobsite and calling the installation complete, it's a good practice to verify everything is working properly.

NORITZ TANKLESS WATER HEATERS

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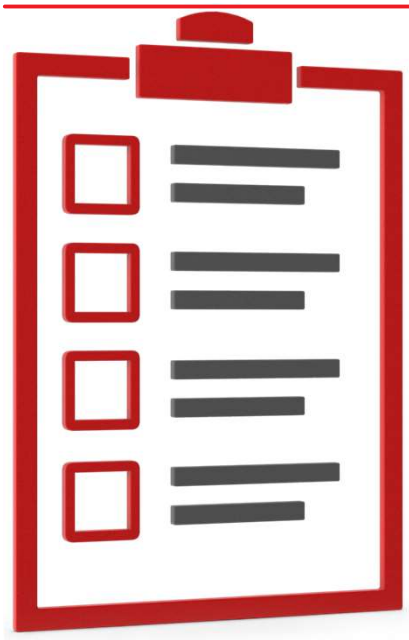
INSTALLATION CHECKLIST



This includes, but is not limited to:

- Double check unit settings
  - EZ Start Plus App for Pro Series
  - Dipswitches for other models
- Checking inlet water filter
- Testing the heater at low, moderate and high flow rates for a few minutes
- Registering the warranty

NORITZ TANKLESS WATER HEATERS

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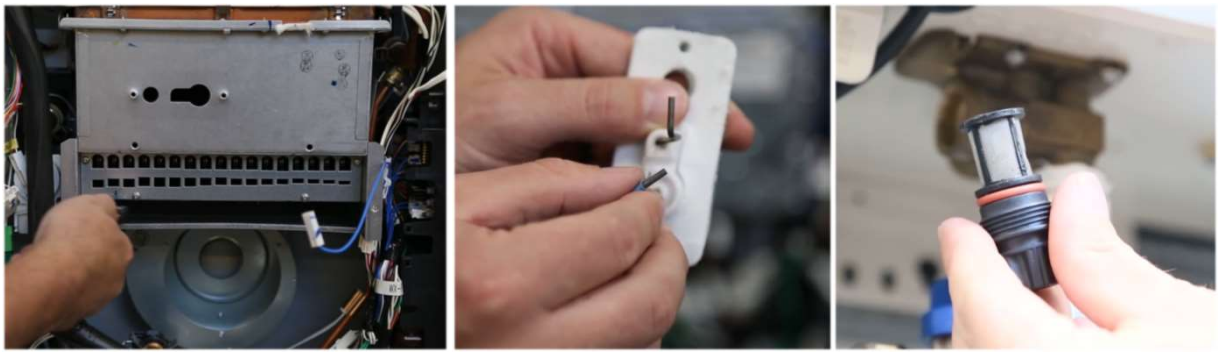
REGULAR MAINTENANCE ITEMS

NORITZ TANKLESS WATER HEATERS

To keep the tankless running at peak performance and efficiency throughout its life, here are a few other regular maintenance items to keep in mind.

- Cleaning the unit and combustion chamber if excessive build up is noticed.
- Cleaning the ignition and flame rods.
- Checking and cleaning the cold water inlet filter.



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REGULAR MAINTENANCE ITEMS

Encourage your customers to visually check the unit once in awhile.

Tankless heaters, like any other gas appliance, are not meant to be installed and forgotten about.

NORITZ TANKLESS WATER HEATERS

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REGULAR MAINTENANCE ITEMS

Periodically inspecting the unit for any minor issues will help prevent it from becoming a bigger problem.

NORITZ TANKLESS WATER HEATERS

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HELPFUL CONTACT INFO

866-7NORITZ (866-766-7489)

- Monday – Friday: 5am to 6pm PST
- Saturday: 6am to 3pm PST

EZ Start Plus App

Gas Conversion

SUPPORT.NORITZ.COM

NORITZ.COM/TECHTIPS

HELP.NORITZ.COM

TRAINING.NORITZ.COM

YOUTUBE.COM/ NORITZAMERICA

PROCARD.NORITZ.COM

NORITZ TANKLESS WATER HEATERS

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THANK YOU

NORITZ®

TANKLESS WATER HEATERS

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