



OUTLINE

- · What's New
 - Field Gas Conversion
 - EZ Start Plus Bluetooth App
 - Built in Display Window
 - Front Cover Latches
- Model Specifications
- Recirc Options
- Installation
 - Venting
 - Gas
 - Condensate
 - Unit Settings
 - Basic Maintenance



WHAT'S NEW?



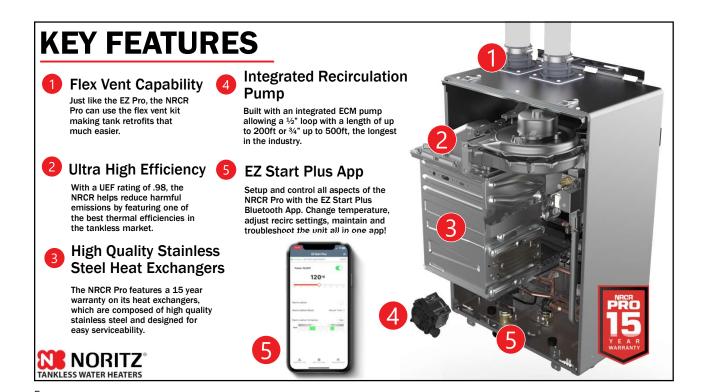
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WHAT'S NEW

- .98 UEF for all models
 - Highest UEF for complete BTU range in the industry
- Field Gas Conversion
 - Default setup for NG, conversion included to change to LP without the need to order a gas conversion kit.
- EZ Start Plus Bluetooth App
 - Physical dipswitches are gone! Unit setup is done entirely through Bluetooth app.
- · Built in Display Window
 - Remote control is optional. Maintenance Monitors and Unit Settings can be accessed through the Display Window.



Δ



FIELD GAS CONVERSION

All NRCR Pro models are ready to be used with NG. If the jobsite has LP, a simple field gas conversion can be performed without the need to purchase any additional parts. Conversion is easy and can be done in about 5 minutes.







NORITZ® TANKLESS WATER HEATERS

FIELD GAS CONVERSION





Step 1



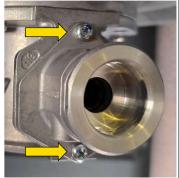
Step 3

Step 4









Remove screw

Remove the c-clip

Carefully remove gas fitting

Remove 2 screws securing venturi fitting



FIELD GAS CONVERSION

Scan Here!



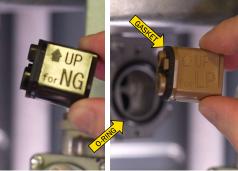
Step 5

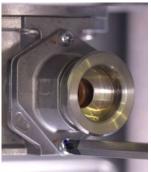


Step 7













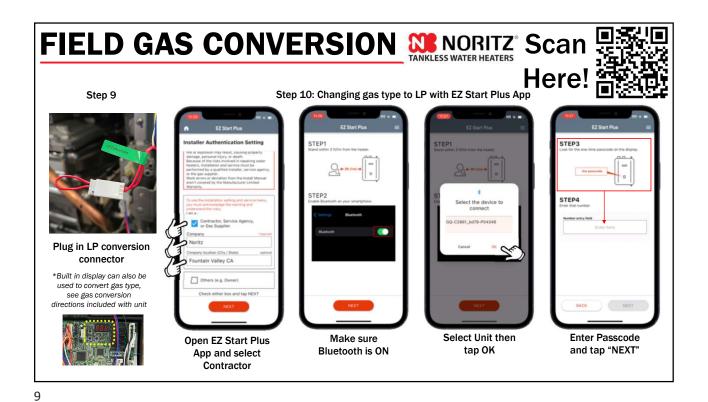
Remove NG orifice

Insert LP orifice (make sure o-ring and gasket aren't lost or damaged)

Secure venturi fitting

Insert gas fitting, secure c-clip and screw







FIELD GAS CONVERSION

MAKE SURE TO FILL OUT AND ATTATCH GAS CONVERSION STICKER TO UNIT







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EZ START PLUS APP

Initial unit setup, temperature adjustment, recirc settings and maintenance can all be handled through the new EZ Start Plus Bluetooth App!

The App will walk you through setting up the unit upon completing installation and provides an easy way to register the unit for your customers.

Error Code History can be accessed and will link you directly to help articles related to any error codes stored.

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NORITZ® TANKLESS WATER HEATERS

BUILT IN DISPLAY WINDOW



Displays temperature setting, service reminders and error codes. Also allows you to view maintenance monitors, error code history and change installation settings. The new display window makes the remote control a truly optional item.



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NEW LATCHED FRONT COVER



Easier access when performing preventative maintenance, service or operating the built in display window. Remove 2 screws at the bottom of the front cover and the latches hold the cover in place until you're ready to remove it.



MODEL SPECIFICATIONS







FLOW RATES (GPM)													
Temp Rise (F)	30	40	45	50	60	70	80	90	100	110	120	130	140
NRCR111	11.1	9.8	8.7	7.8	6.5	5.6	4.9	4.4	3.9	3.6	3.3	3.0	2.8
NRCR92	9.2	8.0	7.1	6.4	5.3	4.6	4.0	3.6	3.2	2.9	2.7	2.5	2.3



Need more flow? Quick Connect two identical NRCR Pro units and double the flow!



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RECIRC OPTIONS



INTEGRATED RECIRC PUMP

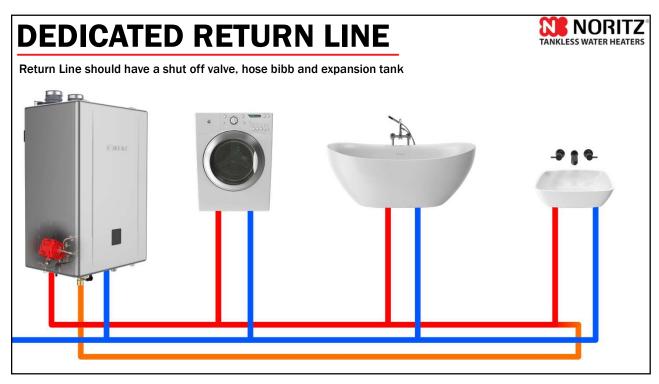
ECM Recirculation Pump

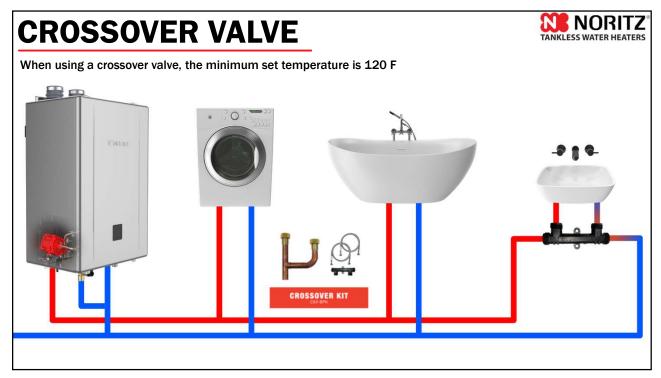
- $\frac{1}{2}$ " Loop = 200ft
- $\frac{3}{4}$ " Loop = 500ft

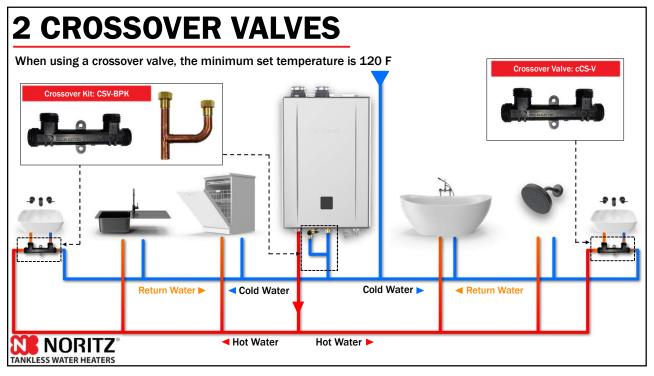




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RECIRCULATION MODES

- Auto Learning
- Manual Timer
- On Demand (Title 24)
- Always Off
- Always On

Recirculation Mode is selected in the Unit Settings section of the EZ Start Plus App.

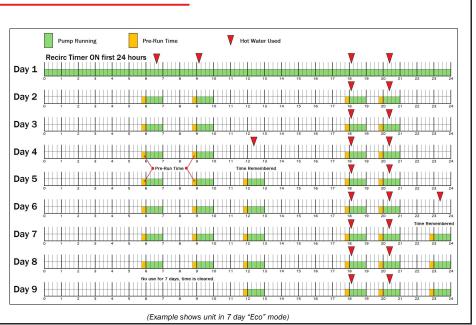




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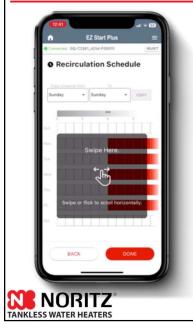
AUTO LEARNING MODE

- Recirculation ON for first 24 hours.
- Automatic 14 day learning period.
- Hot water usage more than 10 seconds.
- Pre-heats the loop 15 minutes before.





SETTING 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!

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TITLE 24 (ON DEMAND) MODE



Wireless Push Button Kit (WLB)



Optional Motion Sensor (WLB-MS)



Rocker Switch (IHK-RS)



TITLE 24 (ON DEMAND) MODE

Cut the thermo-sensor wire (looped white) in the water heater.

Thermo-sensor.



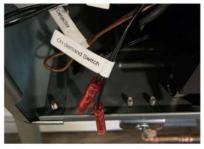
- 5. Connect to break contact (normally closed contact) on the thermostat.6. Reattach the front cover..
- Thermo-sensor
 Wire Tag

 Crimping
 Terminal

 Circuit Board

Throughway To the thermostat

Inspector Requirement for Sensor

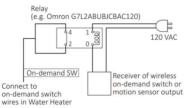


- This water heater is compatible with an ondemand switch, wireless switch and motion sensor.
- Prepare a relay when installing a wireless ondemand switch or motion sensor. Do not apply any voltage to the on-demand switch terminal. This terminal is only for no-voltage contact. Contact Rating: greater than 2.7 mA @ 15 VDC.
- (For quick connect (pro) multi-system)
 The on-demand switch can be connected to either water heater.

When a remote controller is installed, connect the on-demand switch to the water heater where the remote controller is installed.

Use a relay when connecting wireless switch or motion sensor

- Refer to the step 1-3 of "Connecting the ondemand switch".
- Choose a suitable installation location for the relay where it will be protected from moisture.
- 3. Connect the on-demand switch wires from the
- heater to the signal output on the relay.
 Cut one of the electrical supply leads and connect to the signal input on the relay.
- Secure all connections and reattach the front cover.



Relay for On-Demand switch (If needed)



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CUSTOMIZING RECIRC SETTINGS

The NRCR Pro Recirc settings can be customized if needed. Programming is done through the built in display window. See Service Manual for complete directions.

Time to Learn: Determines how long a hot water fixture needs to be used before the NRCR Pro memorizes the use and runs the pump the next day. Available options are:

- 3 Seconds
- · 10 Seconds (default)
- · 60 Seconds
- 120 Seconds.

Interval to Erase Learning Flag: determines how long the NRCR Pro will wait to erase a learned time if no hot water is used during that time. Available options are:

- 7 Days
- 14 Days (default)

Pre-Heating Adjustment:
Determines how long the NRCR Pro
will run the pump before a
scheduled time to ensure the loop is
heated and ready to be used at the
start of the scheduled hour.
Available options are:

- Pre-run Off
- 15 Minutes (default)
- 30 Minutes
- 60 Minutes.



INSTALLATION



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PRE-INSTALLATION CHECKS

Verify the following before installation and read the manual:

Check the gas:

- NRCR92 Max btu is 165k.
- NRCR111 Max btu is 199k.

Ensure the existing gas system can support that demand + other existing gas demands.

Check the power:

• NRCR Pro and all Noritz units operate on 120 VAC at 60Hz.

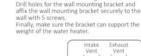
Check the vent:

- NRCR Pro uses plastic venting (PVC, CPVC and PP).
- Existing venting will likely have to be replaced unless you are replacing a similar type unit.
- Exhaust leaks into the home may lead to injury or death. Do not take shortcuts here!

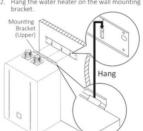


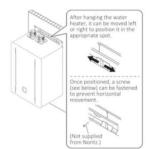
NRCR UNIT MOUNTING

Mount bracket, hang heater and shift side to side for precise alignment, secure heater.









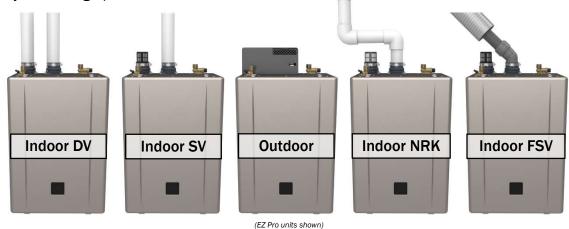




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NRCR VENTING OPTIONS

As with previous models, you have the ability to install the unit indoors or outdoors with a variety of venting options.



Max Vent Lengths DV or SV:

2": 75 Feet, 3": 150 Feet, 4": 65 Feet



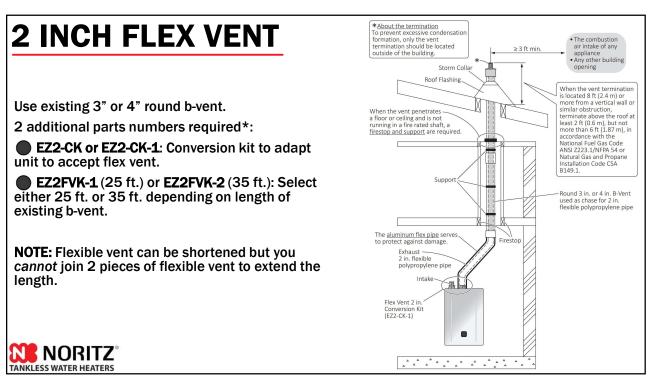


*PVC Parts must be field supplied

(EZ Pro unit shown)

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TANKLESS WATER HEATERS

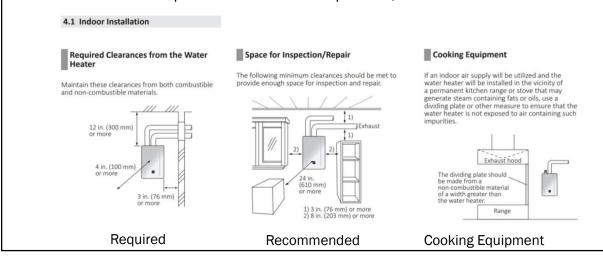


INSTALLATION CLEARANCES



Verify the following before installation and *read the manual* Select a proper installation location:

Maintain minimum required clearances and if possible, recommended clearances.



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INSTALLATION CLEARANCES



Verify the following before installation and read the manual Select a proper installation location:

Maintain minimum required clearances and if possible, recommended clearances.

Recommended clearances are not only there to provide enough space for inspection, maintenance and repair but also to make sure the homeowner has quick and unimpeded access to gas and water shut off in the unlikely event of an emergency.

Required	Recommended	Cooking Equipment
or more	1) 3 in. (76 mm) or more 2) 8 in. (203 mm) or more	the water heater. Range

1/2" GAS LINE CONDITIONS

 $\frac{1}{2}$ " Gas line is still an option with the new NRCR Series Pro assuming an 8" WC or higher initial starting pressure. As always, make sure to follow the gas sizing tables in the installation manual.

e	4. Maximum Natural Gas Delivery Capacity (For 8 - 10.5 in. W.C. initial supply pressure)													
	3.0 in. W.C. Pressure Drop													
	Length (including fittings)													
Pipe Size	10 ft	20 ft	30 ft	40 ft	50 ft	60 ft	70 ft	80 ft	90 ft	100 ft	125 ft	150 ft	175 ft	200 ft
	(3 m)	(6 m)	(9 m)	(12 m)	(15 m)	(18 m)	(21 m)	(24 m)	(27 m)	(30 m)	(38 m)	(45 m)	(53 m)	(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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GAS LINE CONDITIONS

General gas guidelines.

	Supply Pressure					
	Natural Gas	LP Gas				
Min	3.5 in. W.C.	8 in. W.C.				
Max	10.5 in. W.C.	14 in. W.C.				

In order to check the gas supply pressure to the Water Heater, a tap is provided on the gas inlet.

Remove the **9/32 in. hex head**/Philips screw from the tap.



Test inlet pressure after installation:

- Low demand (1 or 2 fixtures)
- Moderate demand (3 or 4 fixtures)
- High demand (5+ fixtures)
- Worst case scenario, 5+ fixtures + all other gas appliances.



GAS LINE CONDITIONS

An improperly sized gas line generally results in one or more of the following issues:

- Ignition Failure (Error Code 11)
- Flame Loss (Error Code 12)
- Abnormal Combustion (Error Code 10 or 90)
- Fluctuating water temperatures
- · Abnormal noises

Other items in the gas supply system that could cause problems:

- · Meter size
- · Water/debris in gas line
- Earthquake safety shutoff valve (California specific)

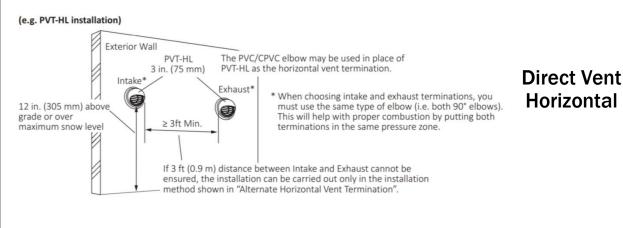


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VENTING GUIDELINES Wide variety of venting options for an easy install. Ceiling Hanger Straps **Direct Vent Horizontal** Slope the horizontal exhaust vent 3 in. (75 mm) pipe and 2 in. × 3 in. 3 in. (75 mm) or 2 in. (50 mm) 1/4 in. upwards every 12 in. (305 increaser couplings are required when using plastic horizontal mm) toward the termination. hood termination (PVT-HL). Intake Increaser couplings must be 3 in. (75 mm) or installed just above the water 2 in. (50 mm) heater's vent flue connections. Interior Wall (Example of PVT-HL installation)

VENTING GUIDELINES

Wide variety of venting options for an easy install.

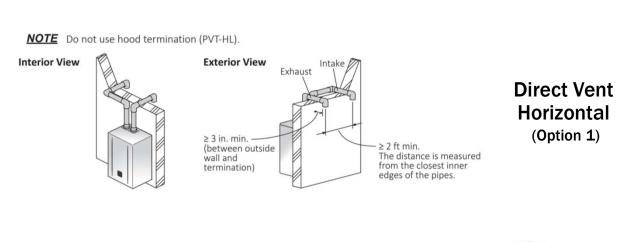


NORITZ® TANKLESS WATER HEATERS

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VENTING GUIDELINES

Wide variety of venting options for an easy install.

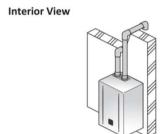


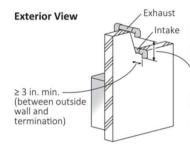
NORITZ®
TANKLESS WATER HEATERS

VENTING GUIDELINES

Wide variety of venting options for an easy install.

NOTE Do not use hood termination (PVT-HL).





NOTEUpper side is exhaust and lower side is intake. The reverse orientation is not allowed.

\$\leq 1 ft min.
The distance is measured at the outlets of the intake port (termination) and exhaust port (termination).

Direct Vent Horizontal (Option 2)

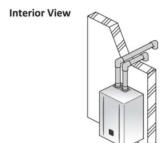


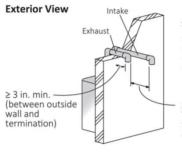
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VENTING GUIDELINES

Wide variety of venting options for an easy install.

NOTE Do not use hood termination (PVT-HL).

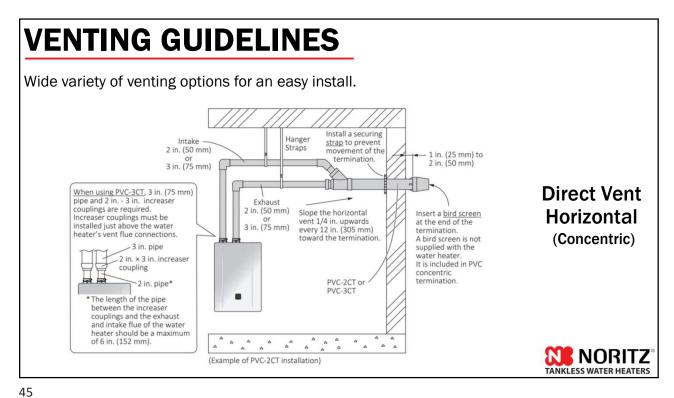




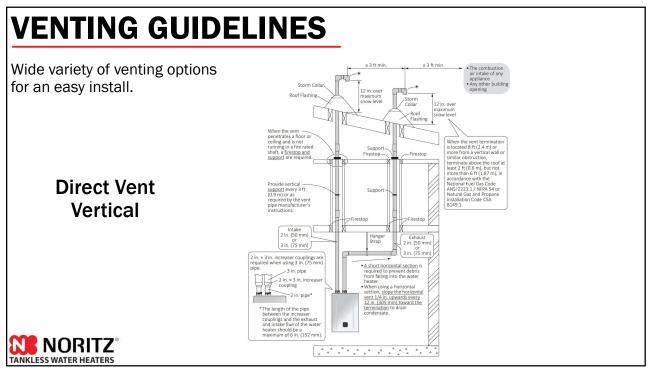
NOTE
The pipe farther from the wall is the intake, the pipe closer to the wall is the exhaust. The reverse orientation is not allowed.

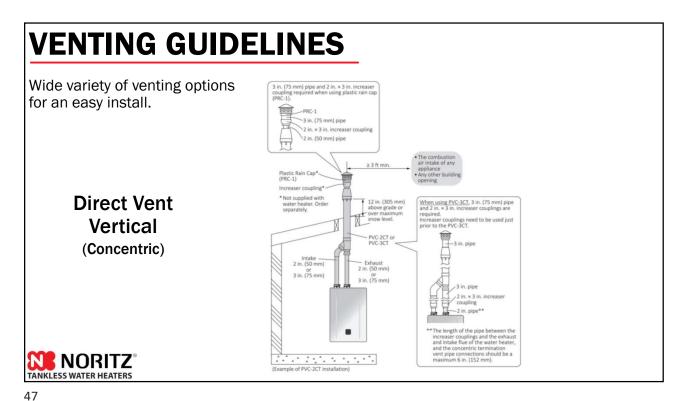
≥ 1 ft min. The distance is measured from the closest inner edges of the pipes. Direct Vent Horizontal (Option 3)

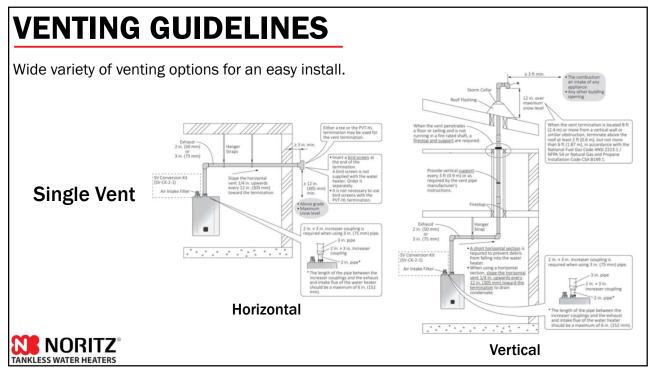


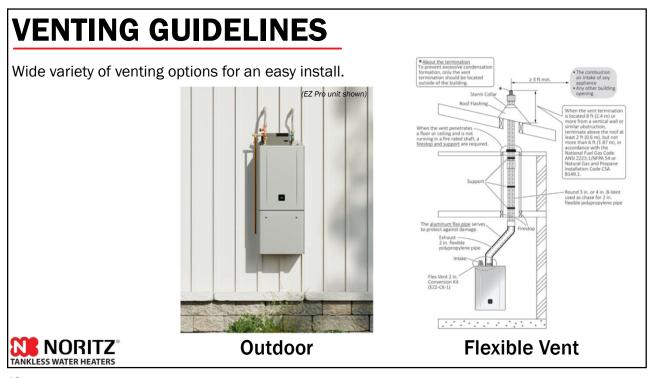


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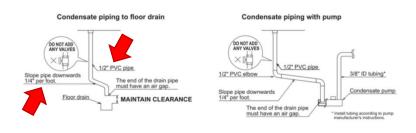


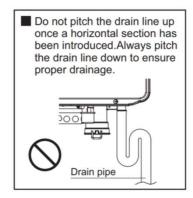




CONDENSATE DRAIN LINE

Guidelines for routing the condensate drain line.



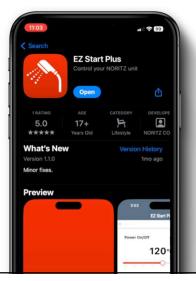




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PROGRAMMING THE UNIT

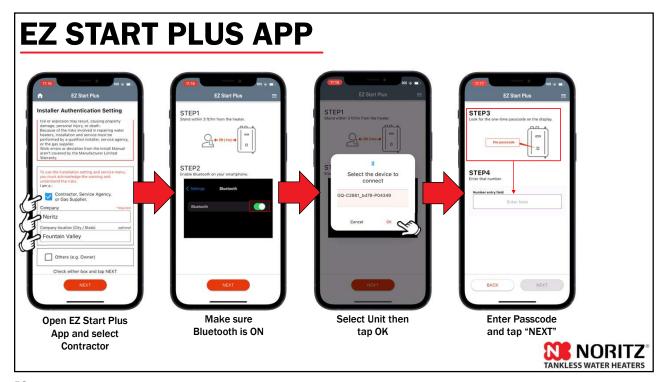
Pro Series units no longer have physical dipswitches on the circuit board. All programming of the unit is done with the new EZ Start Plus App or the built in display window.

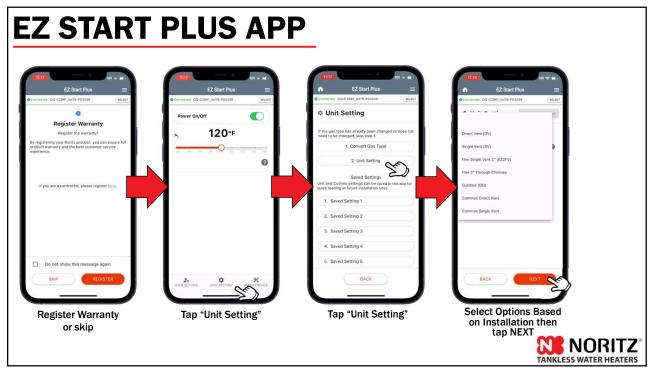


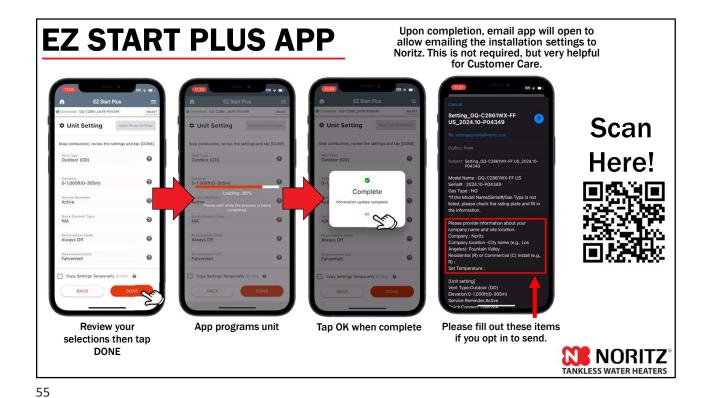


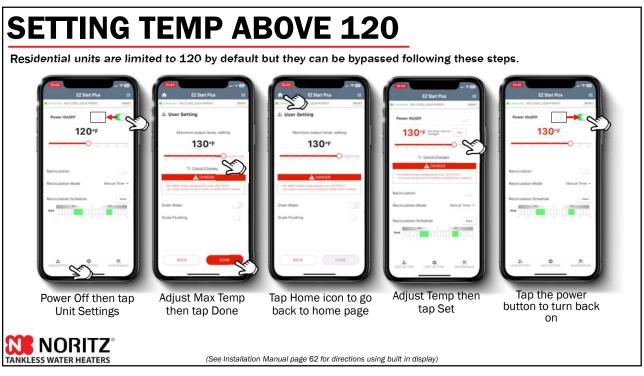
Directions can be found in the manual

NORITZ® TANKLESS WATER HEATERS



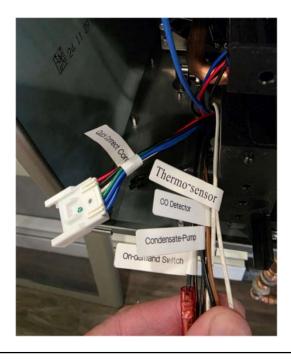






OPTIONAL WIRES

- Quick Connect Cord
- On-Demand Switch
- Condensate Pump
- Thermo-Sensor
- CO Detector





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NRCR PRO SPECIFIC ERROR CODES

- Error Code 06: Low Recirculation Flow (Only Warning Indication)
 - · Check Return Line Filter.
 - Purge air in the domestic hot and return line (Dedicated Mode)
 - Check crossover valve filter (Crossover Mode)
 - Check crossover valve for correct orientation
- Error Code 63: Recirculation Abnormality (No Recirculation Flow)
 - · Check Return Line Filter.
 - Purge air in the domestic hot and return line (Dedicated Mode)
 - · Check that the "Crossover" connector is connected together
 - Check crossover valve filter (Crossover Mode)
 - Check crossover valve for correct orientation



FILLING AND PURGING







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INSIDE THE NRCR PRO



Component List
Error Codes
Maintenance Monitors
Unit Settings w/ Display Window
Voltage Checkpoints
Gas Pressures

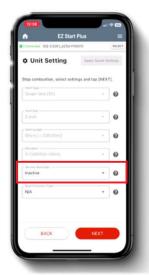


BASIC MAINTENANCE



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SERVICE REMINDER



Set "Service Reminder" setting to "Active" during setup (Default is Inactive)

Heater will use the Set Temp, Average BTU Use and Combustion Time to determine when a flush should be performed.

	Treatme	ent Guidelines		
Type of Water	Hardness Level	Treatment Device 1)	Flush Frequency 2)	1) When selecting a treatment device,
Soft	0-1 gpg (0-17 mg/L)	None	None	you must consult its spec sheet and installation manual for guidelines and
Slightly Hard	1-3 gpg (17-51 mg/L)	None	None	limitations. Not all water supplies are compatible.
Moderately Hard	3-7 gpg (51-120 mg/L)			A water test may be required. 2) Install Noritz isolation valves to allow flushing.
Hard	7-10 gpg (120-171 mg/L)	Scale Shield or	Once a Year 3)	Flushing is required if a water treatment device is not installed.
Very Hard	10-12 gpg (171-200 mg/L)	Water Softener	Once a rear or	treatment device is not instance.
Extremely Hard	> 12 gpg (> 200 mg/L)			

NOTE:

Water quality guidelines in the manual still need to be followed. Damage to the unit when used with water hardness over 12 gpg may not be covered by the warranty.

<u>NOTE</u> 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)
- The display window displayed a "C1# (service reminder)" indicating scale build-up, but the heat exchanger has not been flushed.

NORITZ TANKLESS WATER HEATERS

POOR WATER QUALITY ISSUES

Here are some issues related to Hard Water or Poor Water Quality:

Scale Buildup

Unstable Water Temperature

Error Codes: 14, 16, 20, 65

Clogged Inlet/Recirc Filter Screen









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WATER QUALITY

Water Quality Guidelines in the Installation Manual should always be followed.

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 the suggested treatment and maintenance measures based on the water hardness level according to the below table.

Treatment Guidelines

Type of Water	Hardness Level	Treatment Device 1)	Flush Frequency 2		
Soft	0-1 gpg (0-17 mg/L)	None	None		
Slightly Hard	1-3 gpg (17-51 mg/L)	None	None		
Moderately Hard	3-7 gpg (51-120 mg/L)				
Hard	7-10 gpg (120-171 mg/L)	Scale Shield or	Once a Year 3)		
Very Hard	10-12 gpg (171-200 mg/L)	Water Softener			
Extremely Hard	> 12 gpg (> 200 mg/L)				

- 1) When selecting a treatment device, you must consult its spec sheet and installation manual for guidelines and limitations. Not all water supplies are compatible
- A water test may be required.
- 2) Install Noritz isolation valves to allow 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 display window displayed a "C1# (service reminder)" indicating scale build-up, but the heat exchanger has not been flushed.

DESCALING/FLUSHING

So, what do you need to perform a proper descale?

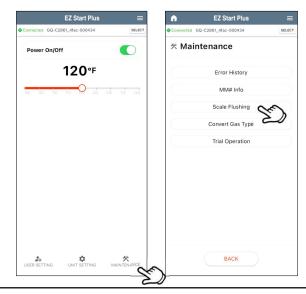




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DESCALING/FLUSHING

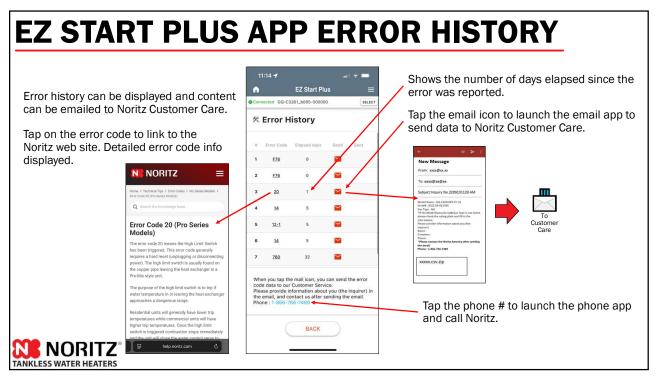
The flush connector is gone and descale mode is started with the EZ Start Plus App or the built in display.

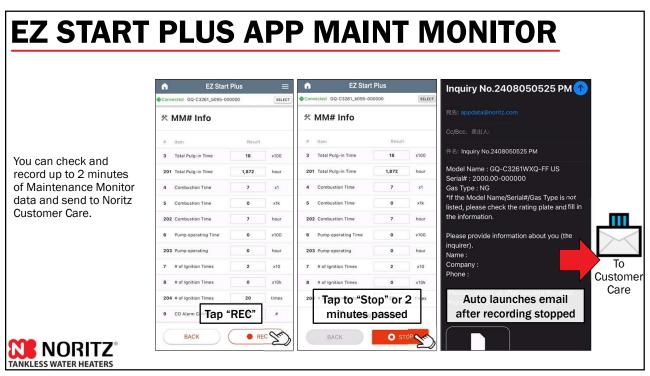




Directions can be found in the manual







COMMONLY USED MAINT MONITORS

Maintenance Monitors (MM) tell you exactly what the unit is doing. They should be used in any situation regarding flow rates, temperatures and verifying what Recirculation Mode the unit is set to.

Error Code history is also found in Maintenance Monitor mode.

		Da	ata	Minimum Value for			
MM	Item	Multiplier	Unit	Indication			
03	Total Plug-in Time	x100	Hour	100 Hours			
04	Total Combustion Time	x1	Hour	1 Hour			
05	Total Combustion Time	x1000	Hour	1000 Hours			
06	Total Pump Operating Time	x100	Hour	100 Hours			
07	Number of Ignition Times	x10	Times	10 Times			
08	Number of Ignition Times	x10000	Times	10000 Times			
14	Total Flow Rate	x0.1	0.1gpm	0.1gpm			
17	Recirculation Flow Rate	x0.1	0.1gpm				
30	Cold Water Thermistor	x1	F (C option)	1 F (0.5 C)			
31	Hot Outlet Thermistor		F (C option)	1 F (0.5 C)			
32	Heat Exchanger Thermistor		F (C option)	1 F (0.5 C)			
86	Recirculation Mode	Dedicated Mode	Crossover Mode				
	Auto Recirc (Default)	11	21				
1	Manual Timer Recirc	12	22				
	Recirc Always ON	13	23				
	Recirc Always OFF	14	24				
1	On-Demand (Title 24) Mode	15	25				
91	Error Code History 1		Most Recent E	rror Code			
92	Error Code History 2		Next Most Recen	nt Error Code			
93	Error Code History 3	- 1	Next Most Recen	nt Error Code			
94	Error Code History 4		Next Most Recent Error Code				
95	Error Code History 5		Next Most Recen	nt Error Code			
96	Error Code History 6		Next Most Recen	t Error Code			
97	Error Code History 7		Next Most Recent Error Code				
98	Error Code History 8		Next Most Recen	nt Error Code			



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HELPFUL CONTACT INFO

866-7NORITZ (866-766-7489)

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



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