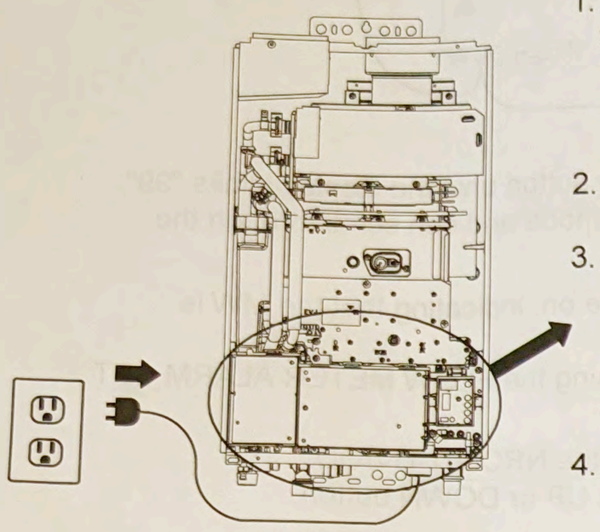
Circuit Board Replacement Procedure

When swapping in a new circuit board, the new circuit board needs to be programmed.
Failure to successfully program the circuit board will result in a 73 error code.
Typically this programming can be done with a data transfer from the old circuit board to the new circuit board.
Even a damaged circuit board can usually transfer data properly.
Always attempt the data transfer first, and if unsuccessful, retry the data transfer procedure.
Only if the data transfer is unsuccessful, then you should follow the procedure for manual programming on the reverse side of this page.

1. Data Transfer Procedure

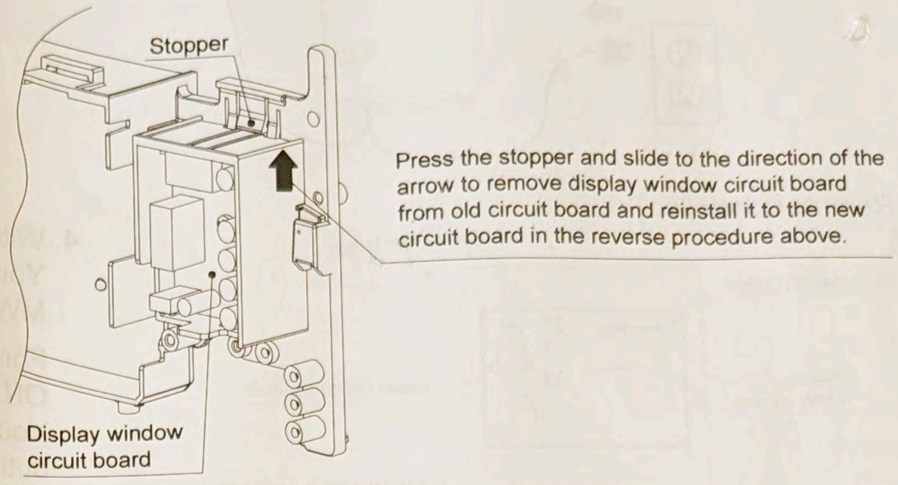


(for illustration only)

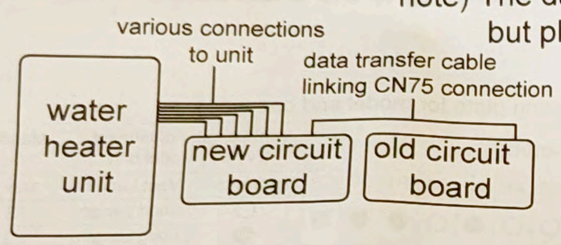
1. If the remote controller is connected, make sure the remote controller is off (completely blank), If it is ON, turn it OFF and wait for 10 seconds.

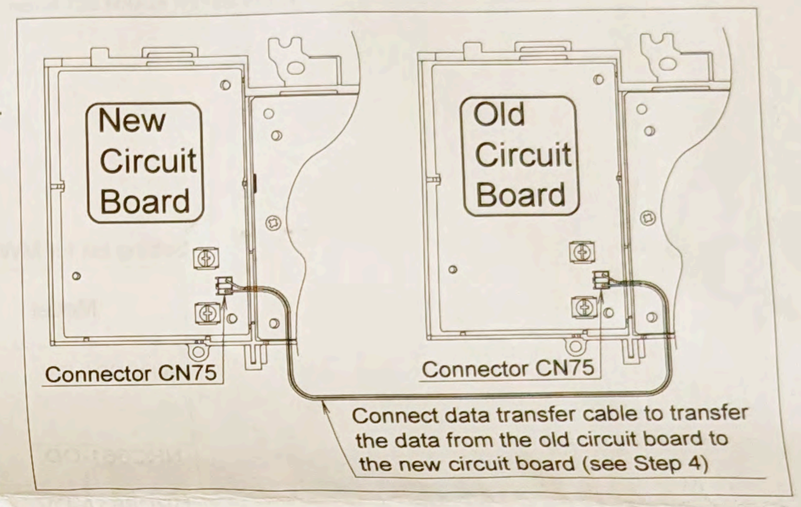
2. ...then disconnect electrical power.

3. Remove old circuit board out of the unit and install new circuit board to the unit. Then transfer all electrical connections, display window circuit board to the new circuit board.

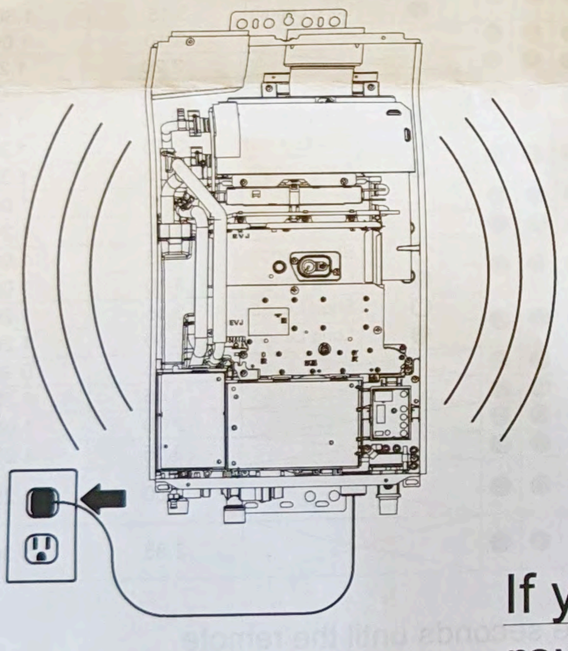


4. Use the blue and white data transfer cable supplied with the new circuit board to connect the CN75 connection from the old circuit board to the new one.
   note) The date transfer wire is marked "89", but please connect to "75" connector.





5. Connect power and wait about 30 seconds to a minute. The unit will signal a successful data transfer by spinning the fan and opening and closing the gas valve for about 3 minutes.



If you get a successful data transfer: disconnect electrical power to the unit, disconnect the data transfer cable.

Manifold pressures should be checked with a digital manometer and adjusted if necessary.
Refer to the "Setting list for MW settings and Gas manifold pressures" at reverse side.

If you fail to get a successful data transfer, refer to the reverse side for Manual Programming.

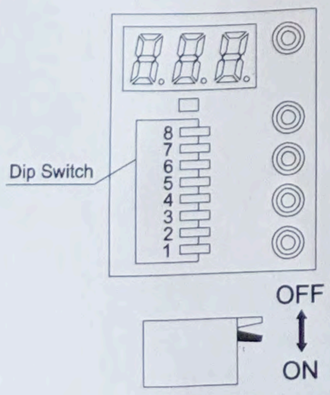
2. DIP Switch Settings

When replace only the circuit board, it is not necessary following procedures.

*Disconnect the electrical power to the unit before adjusting the DIP Switches.
DIP Switch Settings are set to the same as the old circuit board.

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	Default temperature setting
○	○	120°F (50°C)
●	●	130°F (54°C)
●	○	135°F (57°C)
○	●	140°F (60°C)

3	Intake Air supply type -DV Model only
○	Outdoor : DV
●	Indoor : SV

5	6	Elevations above 2,000ft
○	○	0~2,000ft (0~610m)
●	○	2,001~4,000ft (611~1,220m)
○	●	4,001~6,000ft (1,221~1,830m)
●	●	6,001~8,000ft (1,831~2,440m)

7	Vent Length Adjustment -DV(-SV) Model only
○	Short Length
●	Long Length

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.

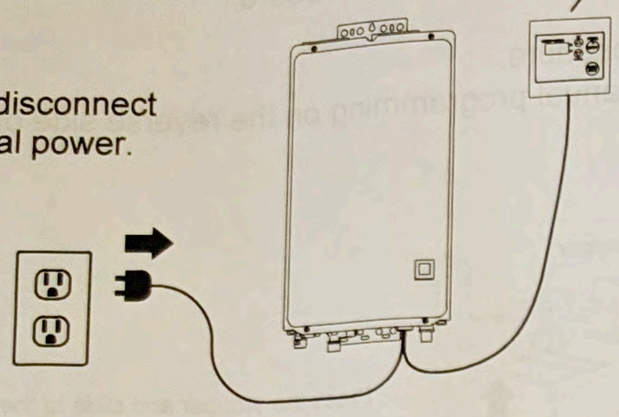
Manual Programming

(only do this if the data transfer on the reverse side is unsuccessful)

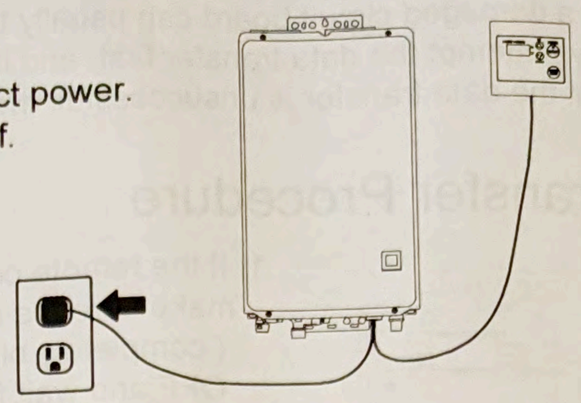
This procedure will require the remote controller.
Make sure the circuit board is completely connected.

1. Make sure the remote controller is off (completely blank), If it is ON, turn it OFF and wait for 10 seconds.

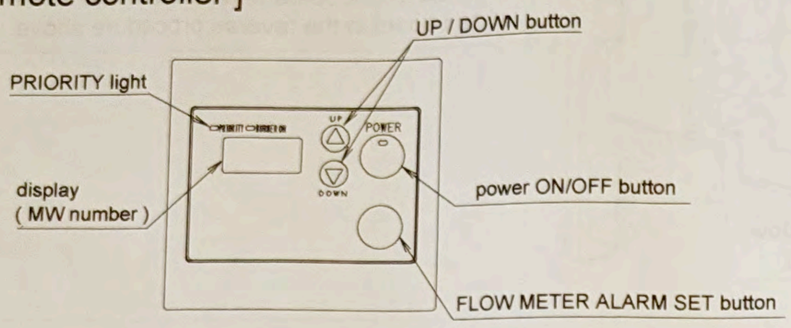
2. ...then disconnect electrical power.

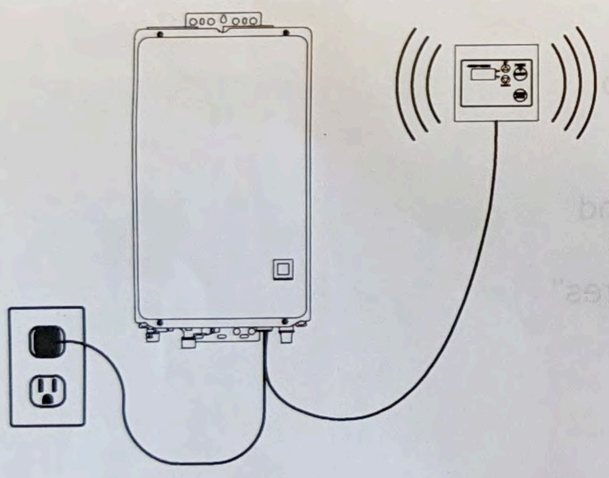


3. Wait 10 seconds and reconnect power.
   Leave the remote controller off.



[Remote controller]





4. With the remote controller blank, press the up button until the display blinks "99".
   You are now in the maintenance writer (MW) mode and can scroll through the MWs using the UP and DOWN buttons.

   For each MW the PRIORITY light will either be on, indicating that the MW is ON, or off, indicating the MW is OFF.
   You can toggle each MW to be ON or OFF using the FLOW METER ALARM SET button.

   a) MW "#23" must be ON for all units except the NRC661-DV/OD.
   b) Turn MW "FC" and "FE" ON and press the UP or DOWN button.
      (Display blinks with "A0 ".)
      Configure the remaining MWs according to the chart below based on your unit's model and gas type.

Setting list for MW settings and Gas manifold pressures (Check the rating plate for model and gas type) (● :ON ○:OFF)

Model	Gas type	Circuit board MW setting																	Vent Length Adjustment -DV(-SV) Model only		Manifold Pressure (inch H_2O) Cover off	
		A1	A2	A3	A4	A5	A6	A7	A8	A9	AA	AB	AE	AF	B0	B1	BC	C8	Dip Switch 7	Vent Length	Max value	Min value
NRC661-DV	Natural	●	○	○	○	●	○	●	●	●	○	○	○	●	○	●	●	●	○	Short Length	3.15	1.05
																			●	Long Length	3.20	1.05
	LPG	○	○	○	○	●	○	●	●	●	○	○	○	●	○	●	●	●	○	Short Length	3.15	1.30
																			●	Long Length	3.15	1.30
NRC661-OD	Natural	●	○	○	○	●	○	○	●	●	○	○	○	●	○	●	●	●	⊠		3.10	1.05
	LPG	○	○	○	○	●	○	○	●	●	○	○	○	●	○	●	●	●	⊠		3.20	1.20
NRC661A-DV	Natural	●	○	○	○	●	○	●	●	●	○	○	●	●	○	●	●	●	○	Short Length	3.15	1.05
																			●	Long Length	3.20	1.05
	LPG	○	○	○	○	●	○	●	●	●	○	○	●	●	○	●	●	●	○	Short Length	3.15	1.30
																			●	Long Length	3.15	1.30
NRC661A-OD	Natural	●	○	○	○	●	○	○	●	●	○	○	●	●	○	●	●	●	⊠		3.10	1.05
	LPG	○	○	○	○	●	○	○	●	●	○	○	●	●	○	●	●	●	⊠		3.20	1.20
NRC711-DV	Natural	●	○	○	○	●	○	●	○	●	○	○	○	●	○	●	●	●	○	Short Length	3.05	1.05
																			●	Long Length	3.10	1.05
	LPG	○	○	○	○	●	○	●	○	●	○	○	○	●	○	●	●	●	○	Short Length	3.55	1.20
																			●	Long Length	3.60	1.20
NRC711-OD	Natural	●	○	○	○	●	○	○	○	●	○	○	○	●	○	●	●	●	⊠		2.75	0.95
	LPG	○	○	○	○	●	○	○	○	●	○	○	○	●	○	●	●	●	⊠		3.45	1.20
NR501-OD	Natural	●	○	○	○	●	○	○	○	○	●	○	○	○	○	●	●	●	⊠		2.70	1.05
	LPG	○	○	○	○	●	○	○	○	○	●	○	○	○	○	●	●	●	⊠		3.05	1.25
NR662-OD NER66OD (GQ-2039WS ET US)	Natural	●	○	○	○	●	○	○	○	●	○	○	○	○	○	●	●	●	⊠		2.80	1.25
	LPG	○	○	○	○	●	○	○	○	●	○	○	○	○	○	●	●	●	⊠		2.85	1.30

5. Once complete, hold the UP and DOWN buttons together for five seconds until the remote controller starts beeping rapidly.
   This is the signal that the changes to the MWs have been saved and the unit is ready for use.
6. Check manifold pressures with a digital manometer and adjust if necessary.