Installation Instructions for Circuit Board Replacement

660 EF/EFO

Part no. 8 700 928 341 0

Warning: This kit must be installed by a qualified installer in accordance with these instructions and all applicable codes and requirements of the authorities having jurisdiction.

6 720 645 771 (2010/08) US/CA

BOSCH

1 Circuit Board Replacement

Caution: It is necessary to transfer data when replacing a circuit board. Vital information about the water heater such as the settings and unit history will have to be written to the new board. Please transfer data using the following procedure. If the transfer is not successful, the unit will not operate and the error indicator light on the unit will flash or a "73" code will flash on the optional remote controller.

A remote controller may be necessary to complete the set-up of the new circuit board.

1.1 Installation

- Remove retaining screw on circuit board.
- Gently remove board and unplug all wire harnesses connected.
- Each wire harness connection is unique so labeling is not required.
- Reconnect wire harnesses to the new circuit board.
- Secure board inside heater with retaining screw.

1.2 Data Transferring Procedure

When a circuit board is replaced, data must be transferred from the old board, otherwise the error indicator light on the unit will flash or a "73" code will flash on the optional remote controller and the unit will not operate. After installing the new circuit board, please transfer data according with the following procedure:

- **1.** With the electrical power disconnected, connect the new and old circuit boards by inserting the supplied data transfer wire into connection number CN75[1)] of each circuit board. If a temperature selection wire is inserted into CN75 on the old circuit board, remove this connector and save it for the new circuit board.
- **2.** Reconnect the electrical power. The data transfer will be completed in about 30 seconds.
  The unit will signal a sucessful transfer by rotating the fan and opening and closing the gas solenoid valve (3 minutes).
- **3.** After confirming a successful transfer, turn the power off. Remove the cable connecting the new and old circuit boards.
- **4.** If a temperature selection wire was removed from the old circuit board, reinsert it into CN75 on the new circuit board.

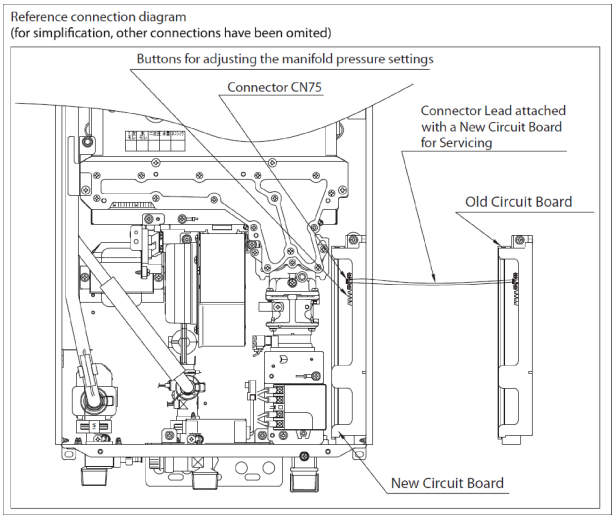

Fig. 1

After replacing the board, check and adjust manifold gas pressure settings to listed in the "Manifold Gas Pressure Maximum and Minimum Values" table of the unit.

Manifold Gas Pressure Adjustment

Use the following procedure to adjust the manifold gas pressure only if it can be done with a high flow rate through the unit.

When the manifold gas pressure is adjusted, the front cover will be off. Adjust the manifold gas pressureto the value of "Cover Off" in the table (because it is not possible to adjust the manifold gas pressure with the front cover on).

- **1.** With a manometer or pressure gauge connected to the manifold pressure tap, press and hold the maximum manifold gas pressure set button. Use the manifold gas pressure increase and decrease buttons to adjust to the correct pressure.
- **2.** Press and hold the minimum manifold gas pressure set button. Use the manifold gas pressure increase and decrease buttons to adjust to the correct pressure.
- **3.** Repeat steps 1 and 2 until both are at the correct pressure.

1) The data transfer wire is marked "89", but please connect it to connection number CN75

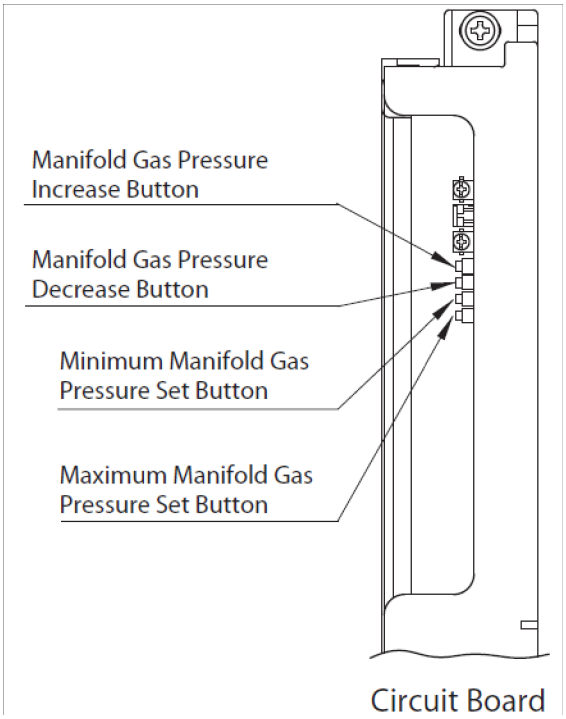

Fig. 2

Model	Gas type	Supply Pressure (inch H_2O)	Manifold Pressure (inch H_2O) Cover on		Manifold Pressure (inch H_2O) Cover off	
			Max. Value	Min. value	Max. Value	Min. value
660 EF	NG	7.9	2.20	0.60	2.77	0.88
	LPG	11.0	2.75	0.70	3.46	1.09
660 EFO	NG	7.9	2.20	0.60	2.77	0.84
	LPG	11.0	2.80	0.70	3.46	1.09

Table 1 Manifold Gas Pressure Maximum and Minimum Values

1.3 Data Transfer Troubleshooting

When you cannot transfer data between the boards, please follow the procedures under “Data Transfer Troubleshooting”.

- **1.** If this is the first time tha the circuit board has been replaced: please follow the procedure **“Initial Circuit Board Settings”.**
- **2.** If this is the second time that the circuit board has been replaced: please follow the procedure **“Circuit Board Resetting”.**

If data as already been transferred to the board, follow the resetting procedure. Once data has been transferred to a new board, the transfer procedure cannot be performed again.

1.4 Initial Circuit Board Settings

After replacing the circuit board, make sure that all connections are made before making the initial circuit board settings.

When the water heater has no remote controller, make sure to connect a remote controller before performing the initial settings below.

- **1.** Connect electrical power to the unit and wait ten seconds before proceeding to step 2.
- **2.** Within the first ten minutes of connecting power, before turning it on, hit the "up" or "down" button on the remote controller and hold until the display blinks "99". If the unit does not go into maintenance mode, unplug the unit and try again.
- **3.** Use the “up” or “down” button on the remote controller to change the maintenance writer number.
- **4.** Press the "FLOW METER ALARM SET" for 0.5 sec to change the setting ON/OFF.
  ON: “PRIORITY” lamp flashes.
  OFF: “PRIORITY” lamp goes OFF.
- **5.** Change “2B” from OFF to ON.
- **6.** Change “FE” and “FC” from OFF to ON in order to access the hidden maintenance writers (display blinks with “A0”).
- **7.** Now the maintenance writers can be accessed by hitting the "up" or "down" button on the remote controller. Refer to the "Setting list for DIP settings" table for the correct writer setting.
- **8.** Press the "FLOW METER ALARM SET" for 0.5 sec to change the setting ON/OFF.
  ON: “PRIORITY” lamp flashes.
  OFF: “PRIORITY” lamp goes OFF.
- **9.** When all of the maintenance writers have been set correctly, confirm the settings by pressing and holding both the “up” and “down” buttons on the remote controller until the controller emits a beeping noise. The new settings will be lost if this is not done.

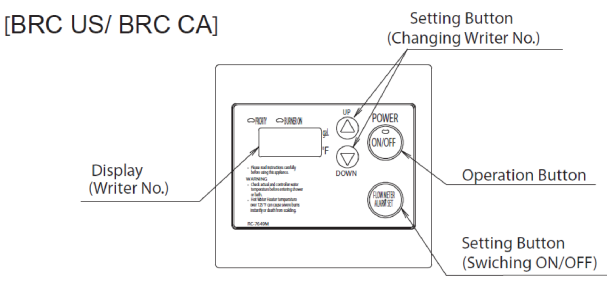

Fig. 3

To cancel the settings, let the controller sit for 10 minutes, or turn on the operation button. The information set previously will be canceled. To change settings again, follow steps 1 through 8.

Only change data as listed in the “Setting list for DIP settings table.

Model	Gas type	Circuit Board DIP settings (●: ON ○: OFF)																		
		1F	2B	A1	A7	A8	A9	AB	AD	AE	B0	B1	B5	B7	B8	BC	BE	C1	C3	C4
660 EF	NG	○	●	●	●	●	○	●	●	●	○	●	●	●	●	●	●	●	●	●
	LPG	○	●	○	●	●	○	●	●	●	○	●	●	●	●	●	●	●	●	●
660 EFO	NG	○	●	●	○	●	○	●	●	●	○	●	●	●	●	●	●	●	●	●
	LPG	○	●	○	○	●	○	●	●	●	○	●	●	●	●	●	●	●	●	●

Table 2 Setting list for DIP settings

1.5 Circuit Board Resetting

When the water heater has no remote controller, make sure to connect a remote controller before performing the below steps.

- **1.** Install the circuit board into the unit and make all wiring connections.
- **2.** Within the first ten minutes of connecting power to the unit, perform steps 1 through 4 and step 6 of the “Initial Circuit Board Settings” procedure. This should result in “A0” blinking on the remote controller.
- **3.** If the “A0” maintenance writer is “ON” (“PRIORITY” lamp flashes), press the “FLOW METER ALARM SET" button for 0.5 seconds to change “A0” to “OFF” (“PRIORITY” lamp goes off).
- **4.** Press and hold both the “up” and “down” buttons on the remote controller until the controller emits a beeping noise. The new settings will be lost if this is not done.
- **5.** If this is a replacement board that had initial problems with data transfer, follow the “Data Transferring Procedure”.

Replacement Parts available from:

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