**PARAMETER SETTINGS**

**To adjust the parameters:**

1. Press the “A” button for 1 second.

2. Use the (up) and (down) buttons to scroll to the desired setting (see Parameter Settings Table).

3. Once the desired setting is selected, use the “On/Off” button to toggle the checkmark to select the setting.

4. To exit the parameters, press the “A” button on the PCB for 1 second.

**MC CONTROLLER MODEL**

2004 depends on connection status of another controller.

**NOTE:** Wiring diagram is available in manual and on the inside front cover.

**Important Safety Notes**

There are a number of (up) (down) buttons required when performing electrical diagnostics on this product. Proceed with caution as always avoid contact with energized components inside the water heater. Only trained and certified service technicians should attempt to repair this product. Before checking for resistance readings, disconnect the power source to the unit and isolate the form from the circuit (processing).

**Freeze Protection**

This unit has freeze protection heaters mounted at different points to protect the water heater from freezing. All of them should be displayed a positive red light reading.

**Flame Rod**

Place clean end of your flamer to the flame rod and the other side to ground. With the controller energized, the flame rod should read between 5-150 ohms for every meter to the micro (up) (down) amp scale and ammeter meter leads in line with the flame rod. You should adjust a lamp or lamp for proper flame circuit (lower). If the event of low flame circuit, remove the flame rod and flush for carbon or damage.

**Amp Fuses**

In the event there are fuse located on the PCB, one inline (up) (down) and one (up) (down) amp glass fuse. Remove the fuse and check continuity through it. If you have continuity through with fuse then it is functioning. Otherwise the fuse is blown and must be replaced.

**Thermostats**

Check all thermostats by inserting meter leads into each of the thermostat plugs. Play your meter to the 20 scale and read resistance. Applying heat to the thermostat bulb should decrease the resistance. Applying heat to the thermostat bulbs should increase the resistance. Below are examples of typical temperatures and resistance readings.

**Electrical Diagnostics**

**To display diagnostic codes:**

1. Turn off the water heater by pressing the “On/Off” button.

2. Press and hold the “On/Off” button for 3 seconds and then the “A” button simultaneously.

3. The last 9 maintenance codes display and flash one after the other.

4. To exit diagnostic codes and return the water heater to normal operation, press and hold the “On/Off” button for 5 seconds or until the “A” button is pressed again.

**Power interuption during both firing**

- Check sensor wiring for damage
- Measure resistance of sensor (see Electrical Diagnostics)
- Clear sensor of scale build up
- Replace sensor

**No Gas Flame**

- Check sensor wiring for damage
- Measure resistance of sensor (see Electrical Diagnostics)
- Clear sensor of scale build up
- Replace sensor

**Low Combustion Flow**

- Check sensor wiring for damage
- Measure resistance of sensor (see Electrical Diagnostics)
- Clear sensor of scale build up
- Replace sensor

**Component Failure**

- Check sensor wiring for damage
- Measure resistance of sensor (see Electrical Diagnostics)
- Clear sensor of scale build up
- Replace sensor

**High Combustion Flow**

- Check sensor wiring for damage
- Measure resistance of sensor (see Electrical Diagnostics)
- Clear sensor of scale build up
- Replace sensor

**No Flame**

- Check sensor wiring for damage
- Measure resistance of sensor (see Electrical Diagnostics)
- Clear sensor of scale build up
- Replace sensor

**Venturi Control**

- Check the motor used for controlling (safety shutdown because water heater is too hot)
- Replace gas valve assembly
- Ensure dip switch on PC board is in the OFF position
- Replace PC board

**Flame Rod**

- Check sensor wiring for damage
- Measure resistance of sensor (see Electrical Diagnostics)
- Clear sensor of scale build up
- Replace sensor

**Combustion Fan**

- Check sensor wiring for damage
- Measure resistance of sensor (see Electrical Diagnostics)
- Clear sensor of scale build up
- Replace sensor

**Heat Exchanger Overheat**

- Check sensor wiring for damage
- Measure resistance of sensor (see Electrical Diagnostics)
- Clear sensor of scale build up
- Replace sensor

**Combustion Valve**

- Check sensor wiring for damage
- Measure resistance of sensor (see Electrical Diagnostics)
- Clear sensor of scale build up
- Replace sensor

**Electronic Circuits**

**To adjust the parameters:**

1. Press the “A” button for 1 second.

2. Use the (up) and (down) buttons to scroll to the desired setting (see Parameter Settings Table).

3. Once the desired setting is selected, use the “On/Off” button to toggle the checkmark to select the setting.

4. To exit the parameters, press the “A” button on the PCB for 1 second.

**MC CONTROLLER MODEL**

2004 depends on connection status of another controller.

**NOTE:** Wiring diagram is available in manual and on the inside front cover.

**Important Safety Notes**

There are a number of (up) (down) buttons required when performing electrical diagnostics on this product. Proceed with caution as always avoid contact with energized components inside the water heater. Only trained and certified service technicians should attempt to repair this product. Before checking for resistance readings, disconnect the power source to the unit and isolate the form from the circuit (processing).

**Freeze Protection**

This unit has freeze protection heaters mounted at different points to protect the water heater from freezing. All of them should be displayed a positive red light reading.