Gas Pressure Setting

Ensure gas pressure under Commissioning has been completed first. The regulator is electronically controlled and tested in the factory. No internal adjustment is required. Make adjustments only if you are not unexpected excessive pressure for incorrect operation has been eliminated.

1. Turn ON the gas supply.
2. Check the gas pressure under the control of the unit for 2 seconds and then press the ON/OFF button while continuing to hold the thermostat button.
3. Display the outlet water temperature, then display the thermostat button for 2 seconds and then press the ON/OFF button while continuing to hold the thermostat.

To Change the Temperature (°F/°C)

With the water heater turned off, press and hold the ON/OFF button until the temperature changes to the other temperature scale (5 seconds).

3. Press the ON/OFF button to turn on the unit.
4. Select the start button (Fig. 1).
5. Select the stop button (Fig. 2).
6. Select the reset button (Fig. 3).
7. Select the stop button (Fig. 4).

Troubleshooting Important Safety Information

There are a number of (live) tests that are required when fault finding this product. Extreme care should be used at all times to avoid contact with energized components inside the water heater. Only trained and qualified service technician should attempt to repair this product. Only perform checks for resistance readings at a time when the unit is not operating and the unit will not operate in any normal heating or gas firing process. Check the gas meter for open or for correct operation and set as required.

Calculation of Gas Pressure

Example:

SW No. SW 3
Gas type 1 0.7 / 0.3 kPa
Gas type 2 0.7 / 0.3 kPa
Gas type 3 0.7 / 0.3 kPa

Dip Switch Settings

Dip Switches Settings (Temperature) - The original PCB boards on the water heaters do not have the bank of dip switches. Only spare PCB boards have this bank.

Models 305 and 505 have a default maximum temperature of 125 °F (52 °C) and the bank of 5 bubbles (SW1) 1 through 5 are not used. The unit is running towards a circuit sensitivity that may cause malfunctions. Set the dip switch 0 through 5 on the SW1 bank of dip switches.

Adjust switches 2 and 3 in the bank of 8 depending on your altitude according to the table below.

Wiring Diagram

Error Codes

12. No burner operation during freeze protection mode

13. Power Intermittent during Bath Fill (Water will not flow when present)

14. Cutoff water pressure not set (check for low water pressure)

15. Air Supply or Exhaust Blockage

- Ensure approved venting materials are being used.
- Ensure that nothing is blocking the flow of air or exhaust.
- Ensure all vent components are properly used.
- Ensure vent length is within limits.
- Ensure condensation collar is installed correctly.
- Verify dip switches are set properly.
- Check for blockage.

16. Over Temperature Warning

- Check for simultaneous air flow around unit and vent terminal.
- Check for foreign materials in combustion chamber and/or exhaust pipe.
- Check for shorted flow switches.

17. Outlet Water Temperature Sensor Fault

- Check sensor wiring for damage.
- Measure resistance of sensor.
- Clean sensor of scale build-up.
- Replace sensor.


- Measure resistance of sensor.
- Measure resistance of sensor.

19. Contamination Sensor Fault

- Check sensor wiring for damage.
- Measure resistance of sensor.
- Clean sensor of scale build-up.
- Replace sensor.

20. Combi Condensate Valve Signal Aligned

- Check modulating gas solenoid valve setting for low or damage.
- Measure resistance of valve coil.

21. Combustion Fan Failure

- Check wire wiring to motor or damaged and/or loose.
- Measure resistance of motor winding.

22. Water Flow Sensor Fault (does not stop flow properly)

- Check the alarm limit setting.
- Check the water flow sensor.
- Check the water flow sensor.
- Measure resistance of solenoid coil.

23. Flame Sensor Device Failure

- Check the alarm limit setting.
- Check the water flow sensor.
- Check the water flow sensor.
- Measure resistance of solenoid coil.

24. Scale Build up in Heat Exchanger

- Check the alarm limit setting.
- Check the water flow sensor.
- Check the water flow sensor.
- Measure resistance of solenoid coil.

25. No Code (nothing happens when water flow is actuated)

- Check outlet water flow.
- Check electrical wiring for damage.
- Measure resistance of sensor.
- Measure resistance of sensor.

26. Water Flow

- Check for low water flow in a circulating system causing short-
- Measure resistance of solenoid.
- Measure resistance of solenoid.
- Measure resistance of solenoid.
- Measure resistance of solenoid.

27. Remote control does not light up but you have 12 VDC at the terminals for control.

- Check outlet water flow.
- Check electrical wiring for damage.
- Measure resistance of sensor.
- Measure resistance of sensor.

28. Water Flow

- Check outlet water flow.
- Check electrical wiring for damage.
- Measure resistance of sensor.
- Measure resistance of sensor.

29. Water Flow

- Check outlet water flow.
- Check electrical wiring for damage.
- Measure resistance of sensor.
- Measure resistance of sensor.

30. Water Flow

- Check outlet water flow.
- Check electrical wiring for damage.
- Measure resistance of sensor.
- Measure resistance of sensor.

31. Water Flow

- Check outlet water flow.
- Check electrical wiring for damage.
- Measure resistance of sensor.
- Measure resistance of sensor.

32. Water Flow

- Check outlet water flow.
- Check electrical wiring for damage.
- Measure resistance of sensor.
- Measure resistance of sensor.

33. Water Flow

- Check outlet water flow.
- Check electrical wiring for damage.
- Measure resistance of sensor.
- Measure resistance of sensor.

34. Water Flow

- Check outlet water flow.
- Check electrical wiring for damage.
- Measure resistance of sensor.
- Measure resistance of sensor.

35. Water Flow

- Check outlet water flow.
- Check electrical wiring for damage.
- Measure resistance of sensor.
- Measure resistance of sensor.

36. Water Flow

- Check outlet water flow.
- Check electrical wiring for damage.
- Measure resistance of sensor.
- Measure resistance of sensor.

37. Water Flow

- Check outlet water flow.
- Check electrical wiring for damage.
- Measure resistance of sensor.
- Measure resistance of sensor.

38. Water Flow

- Check outlet water flow.
- Check electrical wiring for damage.
- Measure resistance of sensor.
- Measure resistance of sensor.

39. Water Flow

- Check outlet water flow.
- Check electrical wiring for damage.
- Measure resistance of sensor.
- Measure resistance of sensor.

40. Water Flow

- Check outlet water flow.
- Check electrical wiring for damage.
- Measure resistance of sensor.
- Measure resistance of sensor.

41. Water Flow

- Check outlet water flow.
- Check electrical wiring for damage.
- Measure resistance of sensor.
- Measure resistance of sensor.

42. Water Flow

- Check outlet water flow.
- Check electrical wiring for damage.
- Measure resistance of sensor.
- Measure resistance of sensor.

43. Water Flow

- Check outlet water flow.
- Check electrical wiring for damage.
- Measure resistance of sensor.
- Measure resistance of sensor.

44. Water Flow

- Check outlet water flow.
- Check electrical wiring for damage.
- Measure resistance of sensor.
- Measure resistance of sensor.

45. Water Flow

- Check outlet water flow.
- Check electrical wiring for damage.
- Measure resistance of sensor.
- Measure resistance of sensor.

46. Water Flow

- Check outlet water flow.
- Check electrical wiring for damage.
- Measure resistance of sensor.
- Measure resistance of sensor.

47. Water Flow

- Check outlet water flow.
- Check electrical wiring for damage.
- Measure resistance of sensor.
- Measure resistance of sensor.

48. Water Flow

- Check outlet water flow.
- Check electrical wiring for damage.
- Measure resistance of sensor.
- Measure resistance of sensor.

49. Water Flow

- Check outlet water flow.
- Check electrical wiring for damage.
- Measure resistance of sensor.
- Measure resistance of sensor.