TROUBLESHOOTING GUIDE

Residential Gas-fired Water Heaters
Atmospheric Vent

Note: Troubleshooting must be done by a qualified service technician familiar with the start up and check out procedure.

1. Manifold gasket properly sealed.
2. Viewport not damaged or cracked.
3. Flame-arrestor free of debris and undamaged.
4. Two piece wire connector properly installed.
5. No leaks at pilot and manifold connection.
6. Manifold door screws securely tightened.
7. Depress the button on the thermal switch

TROUBLESHOOTING CHART

PROBLEM	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
BURNER WILL NOT IGNITE	1. Pilot not lit 2. Thermostat set too low 3. No gas 4. Dirt in the gas lines 5. Pilot line clogged 6. Main burner line clogged 7. Non-functioning thermocouple 8. Non-functioning thermostat 9. Heater installed in a confined area	1. Light pilot 2. Turn temp. dial to desired temperature 3. Check with gas utility company 4. Notify utility-install trap in gas line 5. Clean, locate source and correct 6. Clean, locate source and correct 7. Replace thermocouple 8. Replace thermostat 9. Provide fresh air ventilation
SMELLY WATER	1. Sulfides in the water	1. Replace the anode with a special anode
BURNER FLAME YELLOW-LAZY	1. Insufficient secondary air 2. Low gas pressure 3. Water heater flue or vent system blocked 4. Main burner line clogged 5. Heater installed in a confined area 6. Obstruction in main burner orifice	1. Provide ventilation to water heater 2. Check with gas utility company 3. Clean, locate source and correct 4. Clean, locate source and correct 5. Proper fresh air ventilation 6. Clean or replace orifice
PILOT WILL NOT LIGHT OR REMAIN LIT	1. Non-functioning igniter 2. The thermal switch tripped 3. Wire lead connection at thermal switch loose 4. Thermocouple connection loose 5. Air in gas line 6. Low gas pressure 7. No gas 8. Dirt in gas lines 9. Cold drafts 10. Thermostat ECO switch open 11. Pilot line or orifice clogged 12. Non-functioning thermocouple 13. Air for combustion obstructed 14. Flammable vapours incident, FVIR function actuated	1. Replace igniter pilot assembly 2. See “Pilot Light Troubleshooting Flowchart section” 3. Remove and reconnect the wire leads at thermal switch, confirm connections are tight and not loose 4. Finger tighten; then 1/4 turn with wrench 5. Bleed the air from the gas line 6. Check with gas utility company 7. Check with gas utility company 8. Notify utility-install dirt trap in gas line 9. Locate source and correct 10. Replace thermostat 11. Clean, locate source and correct 12. Replace thermocouple 13. See maintenance section for inspection and cleaning of flame trap 14. Replace water heater, eliminate flammable vapours source. Contact a qualified service technician.
HIGH OPERATION COSTS	1. Thermostat set too high 2. Sediment or lime in tank 3. Water heater too small for job 4. Wrong piping connections 5. Leaking faucets 6. Gas leaks 7. Wasted hot water 8. Long runs of exposed piping 9. Hot water piping in exposed wall	1. Set temperature dial to lower setting 2. Drain/flush-provide water treatment if needed 3. Install adequate heater 4. Correct piping-dip tube must be in cold inlet 5. Repair faucets 6. Check with utility-repair at once 7. Advise customer 8. Insulate piping 9. Insulate piping
INSUFFICIENT HOT WATER	1. Thermostat set too low 2. Sediment or lime in tank 3. Water heater too small 4. Wrong piping connections 5. Leaking faucets 6. Wasted hot water 7. Long runs of exposed piping 8. Hot water piping in outside wall 9. Low gas pressure	1. Turn temperature dial to desired setting 2. Drain/flush-provide water treatment if needed 3. Install adequate heater 4. Correct piping-dip tube must be in cold inlet 5 Repair faucets 6. Advise customer 7. Insulate piping 8. Insulate piping 9. Check with gas utility company

January 2025

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PROBLEM	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
SLOW HOT WATER RECOVERY	1. Insufficient secondary air 2. Water heater flue or vent system blocked 3. Low gas pressure 4. Improper calibration 5. Thermostat set too low 6. Water heater too small 7. Wrong piping connections 8. Wasted hot water	1. Provide ventilation to water heater. Check flue way, flue baffle, and burner 2. Clean flue, locate source and correct 3. Check with gas utility company 4. Replace thermostat 5. Turn temperature dial to desired setting 6. Install adequate heater 7. Correct piping-dip tube must be in cold inlet 8. Advise customer
DRIP FROM RELIEF VALVE	1. Excessive water pressure 2. Heater stacking 3. Closed water system	1. Use a pressure reducing valve and relief valve 2. Lower the thermostat setting 3. See “Closed System/Thermal Expansion”
THERMOSTAT FAILS TO SHUT-OFF	1. Thermostat not functioning properly 2. Improper calibration	1. Replace thermostat 2. Replace thermostat
COMBUSTION ODOURS	1. Insufficient secondary air 2. Water heater flue or vent system blocked 3. Heater installed in a confined area	1. Provide ventilation to water heater. Check flueway, flue baffle, and burner 2. Clean, locate source and correct 3. Provide fresh air ventilation
SMOKING AND CARBON FORMATION (SOOTING)	1. Insufficient secondary air 2. Low gas pressure 3. Water heater flue or vent system blocked 4. Thermostat not functioning properly 5. Heater installed in a confined area 6. Burner flame yellow-lazy	1. Provide ventilation to water heater. Check flue way, flue baffle, burner 2. Check with gas utility company 3. Clean, locate source and correct 4. Replace thermostat 5. Provide fresh air ventilation 6. See “Burner Flame Yellow-Lazy”
CONDENSATION	1. Temperature setting too low	1. Increase the temperature setting
BURNER FLAME FLOATS AND LIFTS OFF PORTS	1. Orifice too large 2. High gas pressure 3. Water heater flue or vent system blocked 4. Cold drafts	1. Replace with correct orifice 2. Check with gas utility company 3. Clean flue and burner-locate source and correct 4. Locate source and correct
BURNER FLAME TOO HIGH	1. Orifice too large	1. Replace with correct orifice
FLAME BURNS AT ORIFICE	1. Thermostat not functioning properly 2. Low gas pressure	1. Replace thermostat 2. Check with gas utility company
PILOT FLAME TOO SMALL	1. Pilot line or orifice clogged 2. Low gas pressure	1. Clean, locate source and correct 2. Check with gas utility company

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