## Universal Commercial Gas Troubleshooting Table

<table>
<thead>
<tr>
<th>NATURE OF TROUBLE</th>
<th>POSSIBLE CAUSES</th>
<th>SERVICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Hot Water</td>
<td>Manual switch turned off</td>
<td>Turn to ON</td>
</tr>
<tr>
<td></td>
<td>Blown service panel fuse or breaker</td>
<td>Replace or reset</td>
</tr>
<tr>
<td></td>
<td>High limit switch tripped</td>
<td>Cool tank by turning on a hot water faucet</td>
</tr>
<tr>
<td></td>
<td>Damper Assembly not working</td>
<td>Check and replace</td>
</tr>
<tr>
<td></td>
<td>Thermostat faulty</td>
<td>Check and replace</td>
</tr>
<tr>
<td></td>
<td>Thermostat out of calibration</td>
<td>Check and replace</td>
</tr>
<tr>
<td></td>
<td>Improper or loose wiring</td>
<td>Check and replace</td>
</tr>
<tr>
<td>Not Enough Hot Water</td>
<td>Thermostat set too low</td>
<td>Increase thermostat setting</td>
</tr>
<tr>
<td></td>
<td>Improper or loose wiring</td>
<td>Rewire per wiring diagram</td>
</tr>
<tr>
<td></td>
<td>Thermostat not seated in tank</td>
<td>Reseat thermostat</td>
</tr>
<tr>
<td></td>
<td>Heater is undersized</td>
<td>Resize and compare</td>
</tr>
<tr>
<td></td>
<td>Improper gas supply</td>
<td>Check gas pressure</td>
</tr>
<tr>
<td>Water too hot</td>
<td>Thermostat setting too high</td>
<td>Lower thermostat setting</td>
</tr>
<tr>
<td></td>
<td>Thermostat out of calibration</td>
<td>Check and replace</td>
</tr>
<tr>
<td></td>
<td>Thermostat not seated in tank</td>
<td>Reseat thermostat</td>
</tr>
<tr>
<td>Slow hot water recovery</td>
<td>Improper gas supply</td>
<td>Check gas pressure</td>
</tr>
<tr>
<td>Noisy water heater</td>
<td>Sediment build-up on the bottom of the tank</td>
<td>Clean tank</td>
</tr>
<tr>
<td>Excessive relief valve operation</td>
<td>Excessive water pressure (just a little water from the T&amp;P)</td>
<td>Check for open or closed system. Install thermal expansion tank. Install proper expansion tank on cold side</td>
</tr>
<tr>
<td></td>
<td>Excessive temperature (approximately 2/3 of tank volume is on the floor)</td>
<td>Check thermostat; lower setting or replace. Thermostat not seated in tank</td>
</tr>
<tr>
<td>Rusty or black water</td>
<td>Anode rod dissolved</td>
<td>Check anode rod and replace</td>
</tr>
<tr>
<td></td>
<td>Excessive sediment build-up</td>
<td>Drain tank; replace tank if sediment build up is excessive</td>
</tr>
<tr>
<td>Water heater is leaking (Caution: Do not confuse normal T&amp;P operation as a leaking tank. If the puddle dries up, then look for a T&amp;P problem.)</td>
<td>Cold in or hot out joints T&amp;P valve</td>
<td>Check joints and repair</td>
</tr>
<tr>
<td></td>
<td>Anode rod or hand hole gaskets</td>
<td>Check, tighten and replace</td>
</tr>
<tr>
<td></td>
<td>Inner tank has a pin hole</td>
<td>Check, tighten and replace</td>
</tr>
<tr>
<td></td>
<td>Also, check for signs of condensation when diagnosing a leaking heater.</td>
<td>Replace water heater</td>
</tr>
</tbody>
</table>

(When diagnosing a leaker - you will notice a puddle of water on the floor, next to the heater, that will not go away.)
Troubleshooting Table – Parallel Installation and Storage Tanks

Check the water heaters with the previous table; then check............

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<th>POSSIBLE CAUSES</th>
<th>SERVICE</th>
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<tbody>
<tr>
<td>No Hot Water</td>
<td>Circulating pump to storage tank is not operating</td>
<td>Check and replace</td>
</tr>
<tr>
<td>Not Enough Hot Water</td>
<td>Circulating pump to storage tank is not operating</td>
<td>Check and replace</td>
</tr>
<tr>
<td>Water too hot</td>
<td>Check for stacking</td>
<td>Install circulating lines and pump</td>
</tr>
</tbody>
</table>

Universal Commercial Gas with System Sentinel™ Troubleshooting Table

See the Use and Care Manual for the System Sentinel™ for a comprehensive diagnostics flow chart.

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<th>NATURE OF TROUBLE</th>
<th>POSSIBLE CAUSES</th>
<th>SERVICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>If the <strong>POWER</strong> LED is not illuminated -</td>
<td>No power to heater</td>
<td>Turn ON/OFF switch to ON</td>
</tr>
<tr>
<td></td>
<td>No power to transformer</td>
<td>Check circuit breaker</td>
</tr>
<tr>
<td></td>
<td>Transformer is damaged</td>
<td>Replace ON/OFF switch</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Replace transformer</td>
</tr>
<tr>
<td>If the <strong>THERMOSTAT</strong> LED is not illuminated -</td>
<td>Thermostat set too high</td>
<td>Lower thermostat setting and check for LED</td>
</tr>
<tr>
<td></td>
<td>Thermostat defective or out of calibration</td>
<td>Replace thermostat</td>
</tr>
<tr>
<td>If the <strong>IGNITION</strong> LED is not illuminated -</td>
<td>Damper assembly did not open</td>
<td>Inspect and test damper</td>
</tr>
<tr>
<td></td>
<td>Wiring harness is defective</td>
<td>Replace wiring harness</td>
</tr>
<tr>
<td>If the <strong>PILOT VALVE</strong> LED is not illuminated -</td>
<td>Pilot electrode (spark ignitor) is defective</td>
<td>Check for proper gap. Check for cracks.</td>
</tr>
<tr>
<td></td>
<td>Orange ignition cable is defective</td>
<td>Replace spark ignitor; Replace ignition cable</td>
</tr>
<tr>
<td></td>
<td>Ignition control module is defective</td>
<td>Replace ignition control module</td>
</tr>
<tr>
<td></td>
<td>Gas control valve is defective</td>
<td>Replace gas control valve</td>
</tr>
<tr>
<td>If the <strong>ECO</strong> LED is not illuminated -</td>
<td>Water in tank is too hot</td>
<td>Cool tank down by drawing off hot water</td>
</tr>
<tr>
<td></td>
<td>ECO is defective</td>
<td>Replace ECO</td>
</tr>
<tr>
<td>If the <strong>MAIN VALVE</strong> LED is not illuminated -</td>
<td>Ignition control module is defective</td>
<td>Replace ignition control module</td>
</tr>
<tr>
<td></td>
<td>Gas control valve is defective</td>
<td>Replace gas control valve</td>
</tr>
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</table>