<table>
<thead>
<tr>
<th>NATURE OF TROUBLE</th>
<th>POSSIBLE CAUSES</th>
<th>SERVICE</th>
</tr>
</thead>
</table>
| No Hot Water      | Manual switch turned off  
Blown service panel fuse or breaker  
High limit switch tripped  
Thermostat faulty  
Faulty contactors (open)  
One or both transformer fuses are blown  
Thermostat out of calibration  
Improper wiring  
  a. Shorted or loose wiring  
  b. Undersized service wire | Turn to ON  
Replace or reset  
Manually reset ECO button  
Check and replace  
Check and replace  
Check and replace  
Check and replace  
Check and rewire | Rewire per wiring diagram |
| Not Enough Hot Water | Thermostat set too low  
Faulty element(s)  
Faulty Contactors (open)  
Faulty fuse on fuse block  
Improper or loose wiring  
Improper heating elements  
Scale formation on heating elements  
Thermostat not flush with tank  
Poor grounding of tank  
Heater is undersized  
Damaged dip tube (ELDs only) | Increase thermostat  
Check for open or grounded elements and replace  
Check and replace  
Check and replace  
Rewire per wiring diagram  
Check and tighten  
Check wattage/voltage to rating plate and replace  
Check elements; clean or replace  
Position thermostat so back touches the tank. Make sure cavity insulation covers thermostat  
Check grounding and tighten  
Resize and compare  
Check and replace | |
| Water too hot     | Thermostat setting too high  
Thermostat out of calibration  
Thermostat not flush with tank  
Faulty contactors (closed) | Lower thermostat setting  
Check and replace  
Position thermostat so back touches the tank  
Check contactors and replace | |
| Blows fuses and / or trips breaker | One or more elements are grounded  
Loose terminal screws on heating element(s)  
Faulty contactors  
Undersized heater | Check and replace  
Check and tighten  
Check contactors and replace  
Resize and compare | |
| Slow hot water recovery | Heating elements too small  
Faulty contactors  
Fuses on fuse block are blown | Check wattage and replace  
Check contactors and replace  
Check fuses and replace | |
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<tr>
<td>Noisy water heater</td>
<td>Scale build-up on elements</td>
<td>Remove, clean or replace</td>
</tr>
<tr>
<td></td>
<td>High watt density elements in the heater</td>
<td>Install low watt density elements</td>
</tr>
<tr>
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<td>Contactors are ‘chattering’</td>
<td>Check for foreign material in the contactors. Check for broken or weak spring</td>
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<tr>
<td>Excessive relief valve operation</td>
<td>Excessive water pressure (just a little water from the T&amp;P)</td>
<td>Install proper expansion tank on cold side</td>
</tr>
<tr>
<td></td>
<td>Excessive temperature (a whole bunch of water from the T&amp;P)</td>
<td>Check for open or closed system. Install thermal expansion tank</td>
</tr>
<tr>
<td>Rusty or black water</td>
<td>Scale formation on elements</td>
<td>Clean or replace elements</td>
</tr>
<tr>
<td></td>
<td>Anode rod dissolved</td>
<td>Check anode rod and replace</td>
</tr>
<tr>
<td></td>
<td>Excessive sediment build-up</td>
<td>Try to 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 Heating elements, anode rod and gaskets Inner tank has a pin hole</td>
<td>Check joint and repair Check valve and replace Check, tighten and replace Replace water heater (When diagnosing a leaker - you will notice a puddle of water on the floor, next to the heater, that will not go away.)</td>
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### Multi-Stages, Series and Parallel Installation

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  a. Shorted or loose wiring<br>  b. Undersized service wire | Turn to ON<br>Replace or reset<br>Manually reset ECO button<br>Check and replace<br>Check and replace<br>Check and replace<br>Check and replace<br>Check and rewire<br>Rewire per wiring diagram |
| Not Enough Hot Water| Thermostats set too low<br>Faulty element(s)<br>Faulty Contactors (open)<br>Faulty fuse on fuse block<br>Improper or loose wiring<br>Improper heating elements<br>Poor grounding of tank<br>Heater is undersized | Increase thermostat setting<br>Check for open or grounded elements and replace<br>Check and replace<br>Check and replace<br>Rewire per wiring diagram<br>Check and tighten<br>Check wattage/voltage to rating plate and replace<br>Check grounding and tighten<br>Resize and compare |
| Water too hot       | Thermostat setting too high<br>Thermostat out of calibration<br>Faulty contactors (closed) | Lower thermostat setting<br>Check and replace<br>Check contactors and replace |
| Blows fuses and / or trips breaker | One or more elements are grounded<br>Loose terminal screws on heating element(s)<br>Faulty contactors<br>Undersized heater | Check and replace<br>Check and tighten<br>Check contactors and replace<br>Resize and compare |