

# Ao Smith Troubleshooting Guide

## INTELLI-VENT TROUBLESHOOTING GUIDE

### ERROR CODE 2 - REVERSED POLARITY

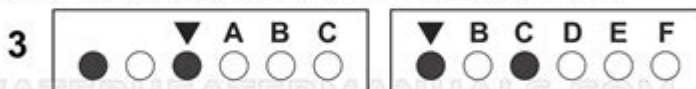


Power supply to Intelli-Vent™ control has reversed polarity.

#### Check / Repair:

- Insure the wall outlet is properly wired.
- Insure all internal 120 VAC wiring connections on the water heater are not reversed. 120 VAC "hot" wire should connect to the on/off switch.
- Insure the wiring harness between the Intelli-Vent control and the wiring box has no crossed wires with an ohm meter. (see 7)
- Double check all ground connections insure they are clean, tight, and intact.

### ERROR CODE 3 - PRESSURE SWITCH CIRCUIT REMAINS CLOSED



<sup>†</sup>Pressure switch circuit (see 7) remaining closed for more than 5 seconds after heating cycle is activated. Blower does not start.

#### Check / Repair:

- Insure air pressure switch circuit wiring is correct and the air pressure switch is not jumpered.
- Turn off power and unplug the water heater from wall outlet. Disconnect both wires from the air pressure switch terminals. Check between the wiring terminals of the air pressure switch with an ohm meter for continuity.
  - A If pressure switch contacts show continuity (closed circuit) replace the pressure switch.
  - B If pressure switch contacts show open circuit and all wiring is correct - replace Intelli-Vent control.

<sup>†</sup> To verify a closed air pressure switch circuit is preventing the heat sequence from advancing (IE the combustion blower is not being energized): Turn off power & unplug the water heater from the wall outlet. Disconnect one wire from the air pressure switch (tape off end of wire - insure this wire does not touch ground). Plug the water heater back in and turn the power switch back on. If a call for heat is still present error code 3 should not return and the Intelli-Vent control should energize the combustion blower.

AO Smith Troubleshooting Guide: Understanding how to troubleshoot common issues with AO Smith water heaters can save you time and money. Water heaters are essential appliances in any home, providing hot water for showers, washing dishes, and laundry. When they malfunction, it can lead to discomfort and inconvenience. This guide will provide you with a comprehensive troubleshooting approach for your AO Smith water heater, helping you identify issues and resolve them effectively.

## Common Issues with AO Smith Water Heaters

Before diving into troubleshooting steps, it's essential to understand the common issues that AO Smith water heaters might encounter. Below are several problems that homeowners frequently face:

- No Hot Water: The most common issue is the lack of hot water.
- Inconsistent Water Temperature: Water may be too hot or too cold intermittently.
- Leaking Water Heater: Puddles or leaks around the water heater.
- Strange Noises: Banging, popping, or hissing sounds coming from the unit.
- Foul Odors: Unpleasant smells emanating from the hot water.
- Discolored Water: Rusty or cloudy water coming from the taps.

## **Troubleshooting Steps**

When faced with any of the above issues, follow these troubleshooting steps to diagnose and potentially fix the problem.

### **1. Safety First**

Before attempting any troubleshooting or repairs, ensure your safety:

- Turn off the power supply to the water heater.
- If it's a gas water heater, turn off the gas supply.
- Allow the water heater to cool down if it has been in use.

### **2. No Hot Water**

If you find that your water heater is not producing hot water, follow these steps:

- Check the Thermostat:
  - Ensure that the thermostat is set to an appropriate temperature (generally 120°F to 140°F).
  - If it's set too low, adjust it and wait for the water to heat up.
- Inspect the Circuit Breaker:
  - Check the electrical panel to see if the circuit breaker has tripped.
  - Reset the breaker if necessary.
- Examine the Heating Elements:
  - For electric water heaters, test the heating elements with a multimeter.
  - If they are faulty, they will need to be replaced.
- Inspect the Gas Supply (for gas heaters):
  - Ensure the gas valve is open and that there is gas supply.
  - Check the pilot light; if it's out, relight it according to the manufacturer's instructions.

### **3. Inconsistent Water Temperature**

Experiencing fluctuations in water temperature can be frustrating. Here's how to diagnose the issue:

- **Thermostat Calibration:**
  - Check if the thermostat is properly calibrated. Adjust it if necessary.
- **Sediment Buildup:**
  - Mineral buildup can affect heating efficiency. Flush the tank to remove sediment:
  - Turn off power/gas supply.
  - Attach a hose to the drain valve and open it to let the water out.
  - Flush until the water runs clear.
- **Faulty Heating Elements:**
  - Similar to the no hot water issue, faulty heating elements can lead to inconsistent temperatures. Test and replace them as needed.

## **4. Leaking Water Heater**

A leaking water heater can cause significant damage if not addressed quickly. Here's how to troubleshoot:

- **Inspect the Drain Valve:**
  - Ensure that the drain valve is tightly closed. If it's leaking, you may need to replace it.
- **Check the Anode Rod:**
  - A corroded anode rod can lead to leaks. Inspect and replace if necessary.
- **Examine the Tank for Rust:**
  - A rusting tank may indicate that the water heater has reached the end of its lifespan. If the tank is leaking, replacement may be necessary.
- **Look for Pipe Leaks:**
  - Inspect all connections and pipes for leaks. Tighten any loose fittings and replace damaged pipes.

## **5. Strange Noises**

If your water heater is making unusual noises, it could indicate several issues:

- **Sediment Buildup:**
  - Popping or rumbling sounds might be due to sediment buildup. Flushing the tank can help eliminate noise.
- **Heating Element Issues:**
  - A failing heating element can cause strange noises. Inspect and test the element for continuity.

- Expansion and Contraction:
- Normal expansion and contraction of the tank can cause some noises. If the sounds are excessive, further investigation may be needed.

## **6. Foul Odors**

Foul odors in hot water can be caused by bacteria or sediment:

- Flush the Tank:
- Bacteria can thrive in stagnant water. Flushing the tank can help eliminate odors.
- Check the Anode Rod:
- If the anode rod is made of magnesium, it can react with the water and produce a rotten egg smell. Consider replacing it with an aluminum anode rod.
- Disinfect the Water Heater:
- In severe cases, disinfect the tank with hydrogen peroxide or bleach (follow manufacturer guidelines).

## **7. Discolored Water**

Rusty or discolored water can be a cause for concern:

- Inspect the Anode Rod:
- A corroded anode rod can lead to rust. Replace it if necessary.
- Check for Pipe Corrosion:
- Old or corroded pipes may also contribute to discolored water. Inspect pipes and replace when needed.
- Flush the Tank:
- Regularly flushing the tank can help prevent sediment buildup and discolored water.

## **Regular Maintenance Tips**

To avoid future issues with your AO Smith water heater, consider the following maintenance tips:

- Regular Flushing: Flush the tank at least once a year to remove sediment buildup.
- Inspect the Anode Rod: Check the anode rod every couple of years and replace it if it's heavily corroded.
- Check the Pressure Relief Valve: Test the pressure relief valve annually to ensure it's functioning correctly.
- Monitor the Thermostat: Regularly check the thermostat settings to maintain optimal water temperatures.

- Professional Inspections: Consider scheduling a professional inspection every few years to ensure everything is functioning correctly.

## **Conclusion**

The AO Smith Troubleshooting Guide provides a comprehensive overview of common issues you might encounter with your water heater. By following the outlined troubleshooting steps, you can identify and resolve many problems yourself. However, if you are ever in doubt or if the issue persists, it is advisable to contact a licensed technician. Regular maintenance and prompt attention to any signs of trouble can extend the life of your water heater and ensure you always have access to hot water when you need it.

## **Frequently Asked Questions**

### **What should I do if my A.O. Smith water heater is not producing hot water?**

Check the thermostat settings and ensure that the temperature is set correctly. If it's gas-powered, verify that the pilot light is lit. For electric models, inspect the circuit breaker for tripped switches.

### **How can I troubleshoot a leaking A.O. Smith water heater?**

Identify the source of the leak, which could be from the drain valve, inlet/outlet connections, or the tank itself. Tighten any loose connections, and if the tank is corroded, it may need replacement.

### **What are the signs of a faulty thermostat in my A.O. Smith water heater?**

Signs include inconsistent water temperatures, the heater not turning on, or water being too hot or too cold. Testing the thermostat with a multimeter can help confirm if it needs replacement.

### **How do I reset my A.O. Smith water heater?**

Locate the reset button on the water heater, usually found on the upper thermostat. Press the button, and wait for a click indicating it has reset. Ensure the power supply is connected.

### **What steps should I take if my A.O. Smith water heater**

## **is making strange noises?**

Check for sediment buildup by flushing the tank. Noises may indicate overheating or pressure issues, which can be addressed by inspecting the heating elements and pressure relief valve.

## **Why is my A.O. Smith water heater displaying error codes?**

Error codes indicate specific issues, such as overheating, ignition failure, or sensor problems. Refer to the user manual for specific codes and troubleshooting steps.

## **What maintenance tips can help prevent issues with my A.O. Smith water heater?**

Regularly flush the tank to remove sediment, check the anode rod annually, inspect for leaks, and ensure the thermostat and pressure relief valve are functioning properly.

## **How can I improve the energy efficiency of my A.O. Smith water heater?**

Insulate the tank and pipes, set the thermostat to 120°F, and schedule regular maintenance. Consider installing a timer to reduce heating during non-peak hours.

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