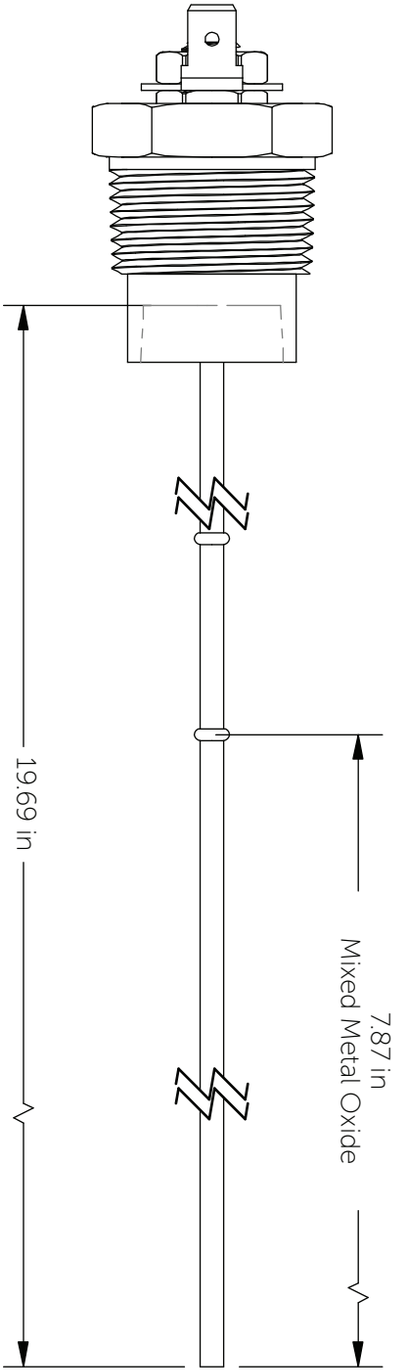
# PRODUCT PRESERVERS™
POWERED ANODE SYSTEM

The Product Preservers™ Powered Anode System replaces sacrificial anodes which are normally shipped with water heaters.

The Powered Anode System has exclusive technology that can sense water conditions and provide the proper level of corrosion protection. In some areas, sulfates in the water react with the anode in the water heater to create hydrogen sulfide which gives hot water a rotten egg or sulfur like smell. The Powered Anode System eliminates the reaction and solves most smelly water issues.




## SPECIFICATIONS

The Powered Anode System can be used with any water heater which is 50 gallons or less and contains a dedicated sacrificial anode. An application where the water heater is installed in the attic area is acceptable; however, the Powered Anode System is not recommended for outdoor water heater applications.

## FEATURES

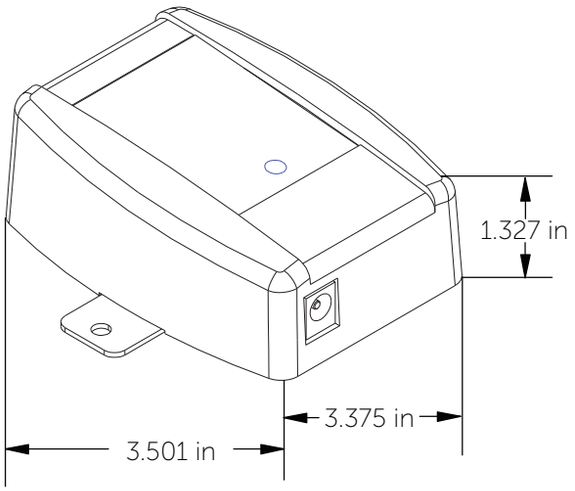
- Patented adaptive technology to quickly adjust to the local water conditions.
- Built-in LED fault light and audible alarm for system notifications.
- Easy installation with a standard 120 volt wall outlet.
- Eliminates smelly water caused by sulfate reactions with sacrificial magnesium anodes.
- Protects for years; no maintenance required.
- Great for softened water applications.

## KIT COMPONENTS

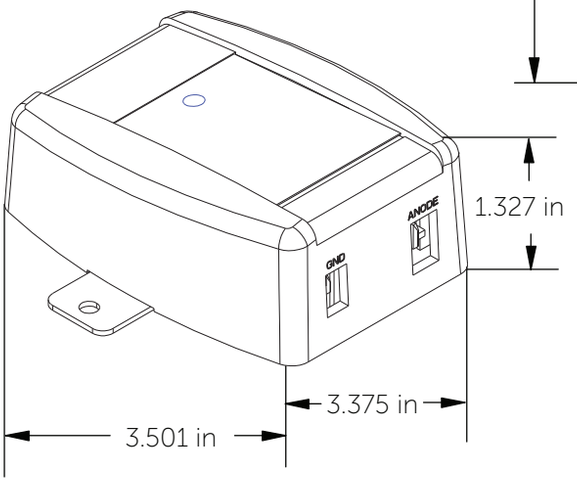
- Control Module with two self-tapping screws
- Anode (electrode)
- Power Supply (Input 120 VAC/Output to module: 12 VDC)
- Wiring Harness
- Kit #100305721

## ENVIRONMENTAL SPECIFICATIONS

- Humidity up to 95% non-condensing.
- Temperature, operational = $4^0$F to $158^0$F (-$20^0$C to $70^0$C)
- Temperature, storage = -$40^0$F to $176^0$F (-$40^0$C to $80^0$C)
- Vibration = 0.5G




**Front View of Control Module**




**Back View of Control Module**

Distributed by
APCOM
125 Southeast Pkwy
Franklin, TN 37064
www.productpreservers.com

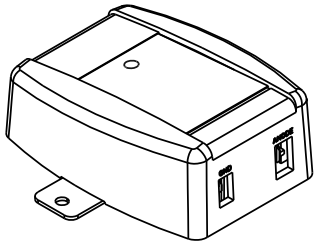
Printed in U.S.A.

Next Generation of Corrosion Protection for Water Heaters
**Part of the Product Preservers™ Protection Family**

# POWERED ANODE SYSTEM

**USER'S GUIDE**

PRODUCT PRESERVERS™



MODULE

ANODE (ELECTRODE)

## Table of Contents



**PLEASE KEEP THIS GUIDE WITH THE MANUAL AND WARRANTY THAT CAME WITH YOUR WATER HEATER. RETAIN EACH ORIGINAL RECEIPT AS PROOF OF PURCHASE.**


**100305154_2000557959 (A)**
**June 2018**

# IMPORTANT SAFETY INFORMATION

**Read and follow all safety messages and instructions in this guide as well as in your water heater's use and care guide.**

**This is the safety alert symbol. It is used to alert you to potential physical injury hazards. Obey all safety messages that follow this symbol to avoid possible property damage, serious injury or death. Do not remove any permanent instructions, labels, or the data plate from either the outside of the water heater or on the inside of the access panels. Keep this manual near the water heater.**

| | |
|---|---|
| **DANGER** | **DANGER indicates hazardous situation that, if not avoided, will result in death or serious injury.** |
| **WARNING** | **WARNING indicates a hazardous situation that, if not avoided, could result in death or serious injury.** |
| **CAUTION** | **CAUTION indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.** |
| ***NOTICE*** | **NOTICE indicates practices not related to physical injury.** |

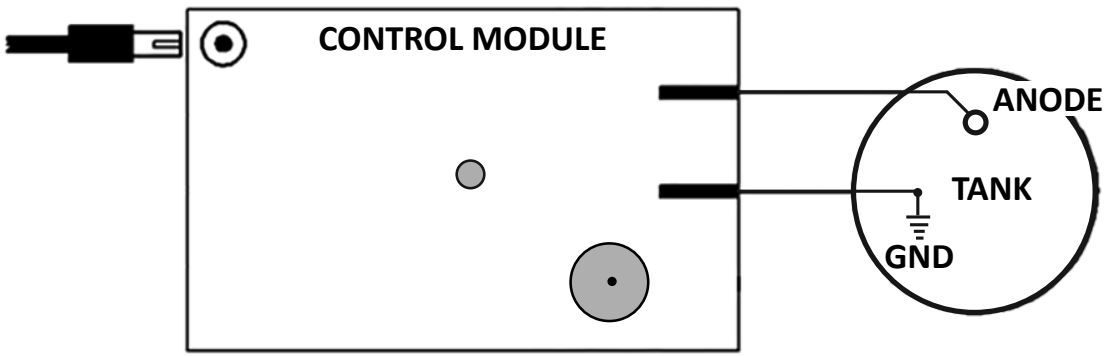
**⚠ WARNING! Read and follow all instructions, cautions, and warnings in this manual as well as in the water heaters' use and care guide. Failure to do so can lead to property damage, personal injury or death.**

**If you lack the necessary skills to install the Powered Anode System properly, or you have difficulty following the instructions, do not proceed with the installation. Have a qualified person perform the installation.**

**The powered anode system must be installed according to all local and state codes or, in the absence of local and state codes, the current edition of the "National Electrical Code", ANSI/NFPA 70.**

# SYSTEM CONTROL WIRING DIAGRAM

**+12V EXTERNAL**



# INTRODUCTION

**⚠ WARNING**

**Electric Shock Risk**
**Contact with electrical components can result in severe injury or death from electrical shock.**

- **Ensure that power to the module is disconnected before installing or servicing the Powered Anode System.**
- **Electric water heaters only: Disconnect power to the water heater by opening the circuit breaker(s) before installation or service.**
- **Use a non-contact circuit tester to confirm that power is off before installation or service.**

## How Does the Powered Anode System Work?

The Powered Anode System replaces sacrificial anodes which are normally shipped with water heaters.

In order to protect the water heater from corrosion, a traditional anode deteriorates over time. As a result, when an anode is consumed by the corrosive effects of water, the tank will begin to deteriorate. Leaks result. However, the Powered Anode System will not be consumed over time, and if it is not working properly, its alert system will notify you.

In short, the Powered Anode System measures the low levels of voltage that exist in the tank's water. It then supplies the necessary current (very slight) to help protect the tank's metal parts. It may also control water odor.

**NOTICE:** The powered anode system must remain plugged into a non-switched, powered outlet. Failure to do so could result in water heater damage, leaks, and property damage.

## On Which Models Can I Use the Powered Anode System?

The Powered Anode System can be used with any water heater which is 50 gallons or less. Also, the water heater must have a stand-alone anode (i.e., the anode is not combined with an outlet nipple). If you are unsure of your anode's location, refer to the manual or call the manufacturer's technical assistance number.

**Figure 1:** Front view of module

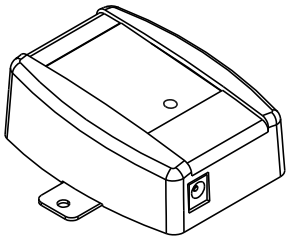


**Figure 2:** Back view of module

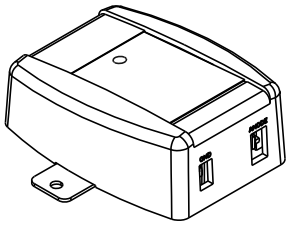


**Figure 3:** Anode (electrode) included in Powered Anode System*

* Wire harness not shown.

**Figure 4:** Power supply
(Cord length: approx. 58 inches)

# INSTALLATION

**FOLLOW ALL SAFETY NOTICES IN YOUR WATER HEATER'S MANUAL.**

**⚠ WARNING**

**Electric Shock Risk**
**Contact with electrical components can result in severe injury or death from electrical shock.**

- **Ensure that power to the control module is disconnected before installing or servicing the Powered Anode System.**
- **Electric water heaters only: Disconnect power to the water heater by opening the circuit breaker(s) before installing or servicing. Use a non-contact circuit tester to confirm that power is off before installation or service.**

**⚠ WARNING**

**GAS WATER HEATERS:**
**Fire & Explosion Risk**
**Shut off the main gas supply before servicing the water heater. Failure to do so can result in severe injury or death.**

## Kit Components:

- Control Module with two self-tapping screws
- Anode (Electrode)
- Power Supply (Input 120 VAC/ Output to module: 12 VDC)
- Wiring Harness

## Tools and Supplies Required:

- 1-1/16" deep-well socket
- Air compressor (if an air impact wrench is used)
- Electric or air impact wrench
- Screwdriver or nut driver (to loosen/ tighten screw on water heater jacket
- Water Hose

## 1 Shut off the electric power and/or gas supply to your water heater.

Refer to the shutdown instructions in your water heater's manual.

## 2 Drain the water heater according to these steps:

**A.** Turn off the cold water supply to the water heater.

**B.** Open hot water faucets to relieve the water pressure.

**C.** Attach a water hose to the drain valve. Run the hose to a drain or outdoors.

**D.** Open the drain valve and drain about five gallons of water from the water heater. (Water inside the heater will help hold the unit steady while removing the anode rod.)

**E.** Close the water heater drain valve, then close the hot water faucets.

## 3 Remove the old anode rod.

**A.** Locate the anode rod's hex head on top of the water heater.

**B.** Loosen the hex head with a quick burst from the impact wrench (1-1/16" socket).

**C.** Unscrew the anode by hand once it is loose. (This prevents tank damage.)

**D.** Remove the old anode rod. If you are in an area with a low ceiling, you can bend the anode rod, if needed.

## 4 Install the new anode from your kit:

**A.** Insert the new anode into the anode opening and start screwing it in by hand (clockwise).

**NOTICE:**

- **DO NOT use pipe dope or thread sealing tape on the anode's threads. It has sealant on the threads already.**
- **During the next step, use a deep well socket only. Doing so will prevent damage to the anode's flag terminal.**

**B.** Tighten the anode with a deep well 1-1/16" socket until tight.

**Figure 5:** Top view of electric water heater.

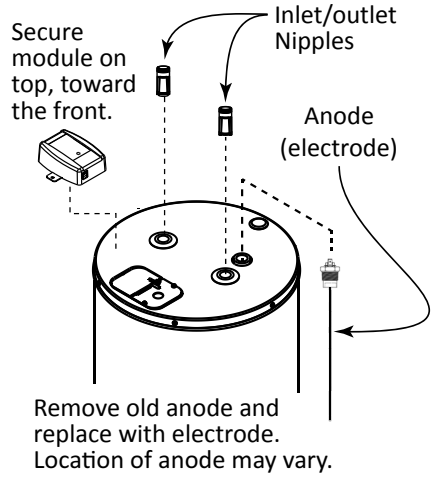
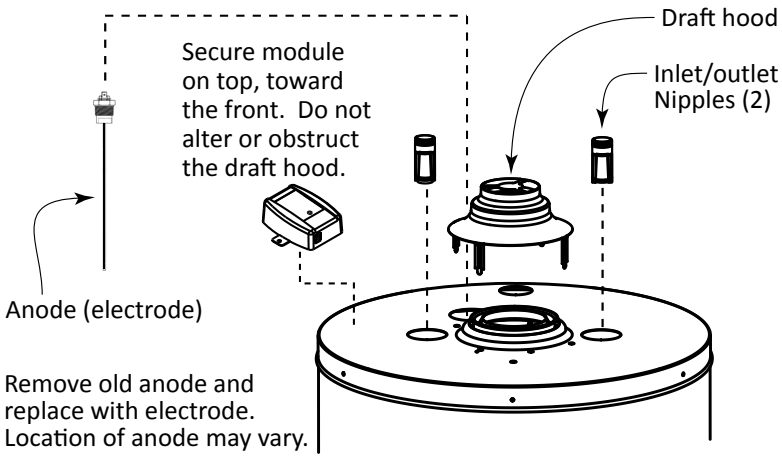



**Figure 6:** Top view of gas water heater.



## 5 Attach the new control module:

**A.** Set the control module on top of the water heater. See Figure 5 or Figure 6.

⚠ **WARNING!** If you have a gas water heater, place the module as far away from the draft hood as possible. The draft hood can get hot during operation. Also, the draft hood must not be altered or obstructed. Improper venting could lead to serious injury or death from carbon monoxide poisoning.

**B.** Secure the module to the water heater's top with two self-tapping screws (provided).

## 6 Connect the wiring harness:

**NOTICE:** During the following steps, plug each harness connector into the module carefully. To avoid damage, **do not** use excessive force or twist the connectors during installation.

**A.** Plug the harness' red wire connector into the module (Figure 7).

**B.** Plug the harness' green wire connector into the module (Figure 7).

**C.** Slide the wire harness' red wire spade connector onto the anode's flag terminal. See Figure 7 and Figure 8.

**D.** Secure the green wire's fork terminal underneath a jacket screw. See instructions in Figure 7 and Figure 9.

## 7 Return the water heater to service:

**A.** Ensure that the drain valve is closed, then open the cold water supply to the refill the water heater.

**B.** Open a hot water faucet and allow the water to run until it flows with a full stream.

**C.** Let the water run full stream for three minutes. **Check for leaks at the anode.**

**D.** Plug the power supply cord into the module.

**Figure 7:** Harness Installation

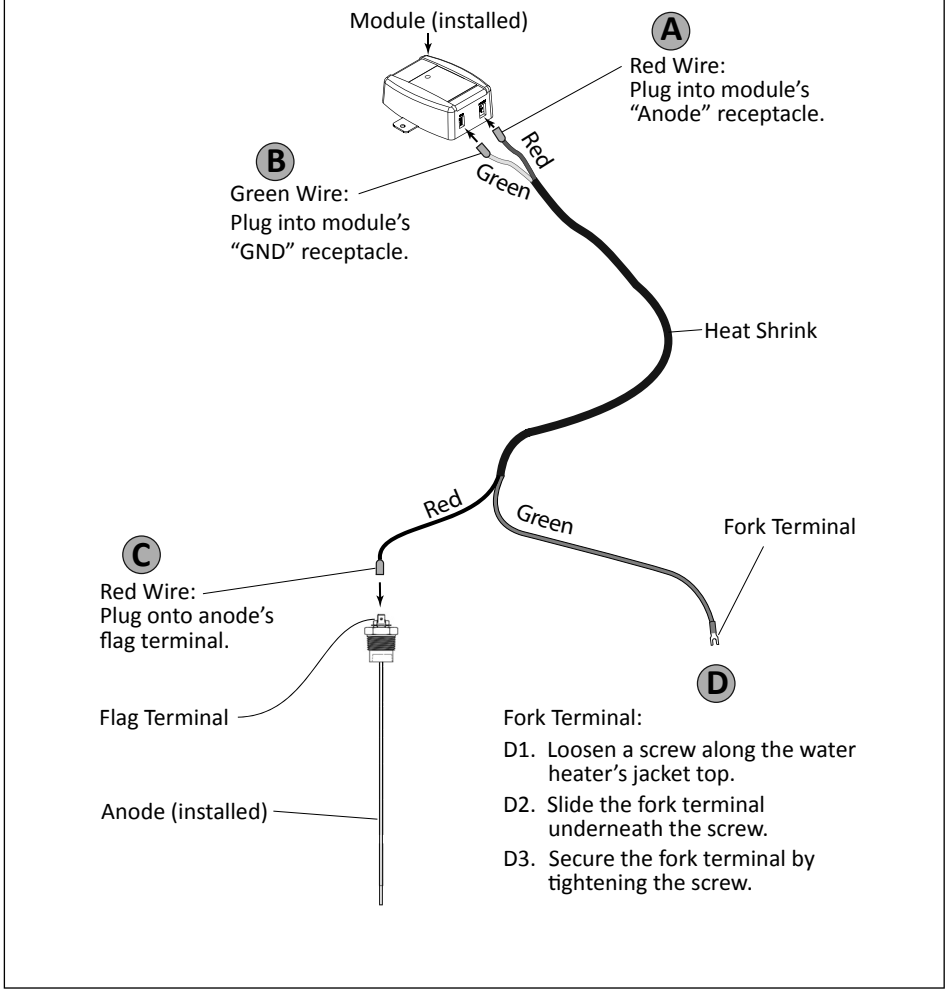
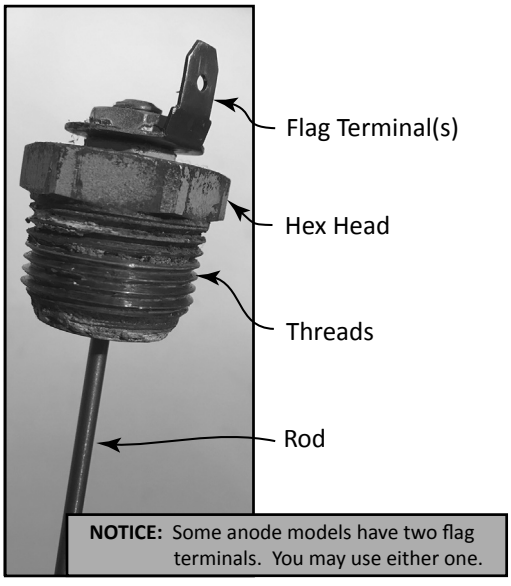
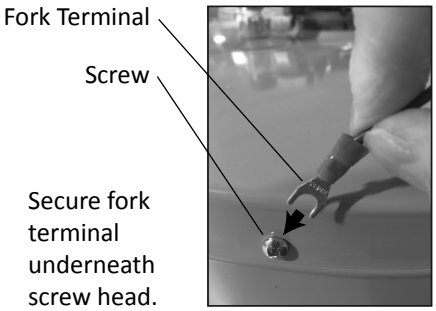



**Figure 8:** Top of new anode




**NOTICE:** Some anode models have two flag terminals. You may use either one.

**Figure 9:** Fork Terminal Placement




**E.** Plug the external power supply into a 120VAC wall outlet.

**F.** Return the water heater to service according to its user manual. Verify proper operation.

# SYSTEM FEEDBACK

| LED | Description/ Corrective Action |
|---|---|
| **Solid (Green)** | System is operating properly (i.e., components are installed properly, module is powered, and the tank is full of water). |
| **1 Flash (Red)*** | Anode disconnected. Check for loose connections and breaks in the wire between the control module and the anode/ tank. The tank connection must be to bare metal (i.e., not paint). |
| **2 Flashes (Red)*** | Anode shorted.<br>1.) Check for shorted wiring. Correct wiring as necessary.<br>2.) Check for corrosion on top of anode (electrode) and clean with a brush.<br>3.) Anode may have corrosion or contamination. Clean as described below.<br>⚠ **WARNING!** Electric Shock Risk. Contact with electrical components can result in severe injury or death from electrical shock. Use a non-contact circuit tester to confirm that power is off.<br>Turn off power to the Powered Anode System. Disconnect power to the water heater if it is an electric model. Remove the anode and clean it with a cloth. |
| **3 Flashes (Red)*** | Module failure. Replace the control module. |

***** Beeper will sound during error code.

**NOTICE:**

- It will take about 20 seconds for the system to indicate an error condition.
- It may take several seconds for the system to show correct operation after corrections are made.

# REGULATORY NOTICES

**FCC (United States of America)**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against interference in a commercial installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician

CAUTION: Changes or modifications to this equipment not expressly approved by the party responsible for compliance (A.O. Smith) could void the user's authority to operate the equipment.

**ICES-003 (Canada)**

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

# SPECIFICATIONS

### Environmental Specifications:

- Humidity up to 95% non-condensing.
- Temperature, operational = -4°F to 158°F (-20°C to 70°C)
- Temperature, storage = -40°F to 176°F (-40°C to 80°C)
- Vibration = 0.5G

### Power Supply (Provided):

Input 100-240VAC, 50-60Hz. 0.5A
Output 12V DC, 1.0A

### Power Supply Requirements for Powered Anode System:

12V @ 150mA

# ASSISTANCE

For warranty questions, call:

800.527.1953

When calling, be ready to provide the following information: your name, address, and telephone number; the serial number of your Powered Anode System; proof of purchase/installation; and a clear description of the problem.

## NOTES:

# LIMITED WARRANTY

### EFFECTIVE

A.O. Smith warrants this Powered Anode System product ("part") against defects in materials or workmanship for one year from date of purchase, as provided in this warranty when installed in a single-family residence in the United States or Canada. If this part is installed in any location other than a single-family residence, the warranty period is reduced to 90 days. This warranty sets forth owner's only remedy and our sole responsibility with respect to any defect in this part.

### WHAT IS COVERED

Subject to these terms, in the event of a defect appearing during the first year, we will replace the part covered under this warranty. If an identical part is no longer available due to a change in law, regulation, or standard, we will replace the part with one having similar functionality. In these instances, the owner will have the option of paying the difference between what was paid for the original part and the new part with the additional features, or receiving a refund of the portion of the purchase price on a pro rata basis allocable to the unexpired portion of the warranty. Replacement of the sacrificial anode with the Product Preservers™ Powered Anode System will **not** void the water heater warranty on the following brands: American, A.O. Smith, A.O. Smith Canada, GSW, John Wood, Lochinvar, Reliance, State Industries, U.S. Craftmaster, and Whirlpool.

### WHAT IS NOT COVERED

- Improper installation or maintenance
- Failure to follow applicable codes
- Failure to follow printed instructions
- Alterations to the part
- Failure to operate the part at the specified voltage/wattage
- Damage during shipping, transport or installation
- Abuse, misuse, accident, fire, flood, or Acts of God
- Service trips to teach you how to install, use, or maintain the part
- Replacement parts after the expiration of this warranty
- The water heater itself or any of its components which are not part of the Powered Anode System product.

### LIMITATIONS

THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED TO THE APPLICABLE DURATION OF THIS WARRANTY. ALL OTHER WARRANTIES ARE EXPRESSLY DISCLAIMED. IN NO EVENT SHALL WE BE LIABLE FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL, PUNITIVE OR OTHER DAMAGES, WHETHER LIABILITY IS BASED ON TORT, CONTRACT, STRICT LIABILITY OR ANY OTHER THEORY. Some states or provinces do not allow limitation and/or the above exclusion on how long implied warranties last, or do not allow for the exclusion of incidental or consequential damages, so the above limitations may not apply to you. This warranty gives you specific legal rights and you may also have other rights, which vary upon location.