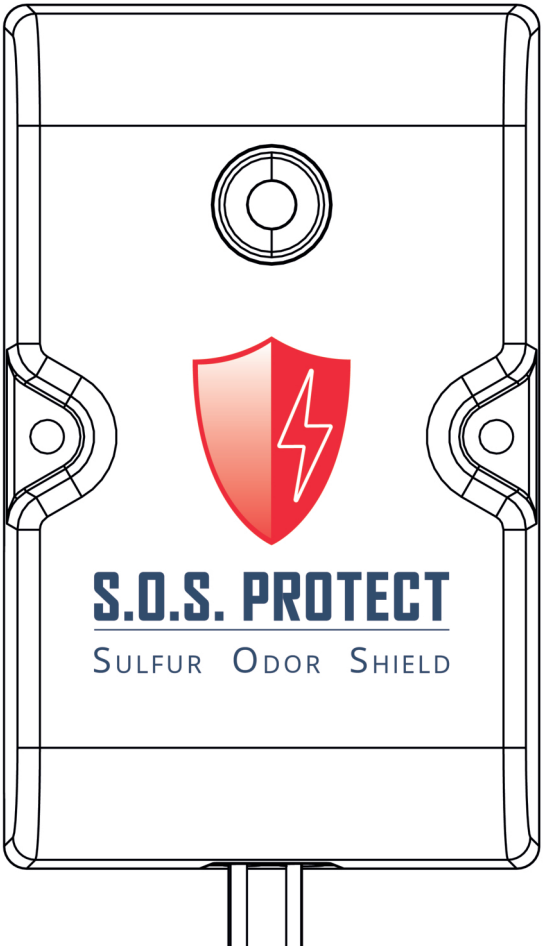
OPERATION MANUAL

Powered Anode System for Water Heaters



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1 General Information

About this operation manual

Publisher
CHECKYOURANODE.COM
Email: info@checkyouranode.com
Website: http://www.checkyouranode.com

S.O.S. PROTECT is a trademark of CHECKYOURANODE.COM.

Application and purpose

This operation manual applies to the S.O.S. PROTECT powered anode system. The operation manual provides all necessary information for installation, start up, operation, and troubleshooting.

Subject to change without notice

CHECKYOURANODE.COM reserves the right to make changes and additions to the powered anode system S.O.S. PROTECT. Deviations from the information in this operation manual are possible. Check online for the latest version of this manual.

Use of the operating manual

Pertinent safety information is included in this manual. Your safety and the safety of others is very important. Read and follow all guidelines outlined in this manual.

Target group

Qualified personnel, for example heating system technicians.

How warning notes are displayed

Danger level	Consequences of disregard	Probability
⚠ DANGER	Death or serious injury (irreversible)	Imminent
⚠ WARNING	Fatality or serious injury (irreversible)	Potentially
⚠ CAUTION	Minor injury (reversible)	Potentially
NOTE	Property damage	Potentially

Importance of the safety regulations

To ensure safe handling of S.O.S. PROTECT, all persons who work with S.O.S. PROTECT must read, understand, and follow the safety instructions.

Safety regulations for handling S.O.S. PROTECT

Use S.O.S. PROTECT only for the intended use. → *chapter 2.1, Intended use*

Follow the instructions and warnings in this manual for all work.

2 Description

2.1 Intended Use

S.O.S. PROTECT is used for permanent sulfur smell removal and continuous cathodic corrosion protection for indoor residential use enamelled storage water heaters in closed, dry rooms.
S.O.S. PROTECT must only be used for this purpose and in compliance with this operation manual. Potentiostat and titanium anode delivered with this product are only to be used in conjunction with each other, pairing a single potentiostat to a single anode. The titanium anode size must be appropriately chosen depending on storage water heater volume.
The cables attached to the potentiostat must not be modified.
This product must only be used in water heaters that use a sacrificial anode.
For Bradford White water heaters: The anode must be installed inside a hot water outlet nipple and then screwed into the hot water outlet port.

2.2 Technical Data

Main power supply

The potentiostat requires the following electrical supply:

Voltage	120 V
Frequency	50/60 Hz
Power consumption	0.5 W

Operation values

The powered anode system operates at the following values:

Maximum corrosion protection current	50 mA
Nominal operating voltage	5 V

Operation characteristics

The following requirements apply to the operation of the potentiostat:

Temperature range	32 °F - 140 °F
Enclosure protection class	Class II, IP43

2.3 Items included

The contents included depend on the model variant purchased, example shown below:

Item	Qty.	Description
1	1	Potentiostat (control unit) with indicator lights and pre-mounted cables: Black power cable Black ground connection Black and white anode connection
2	1	Titanium anode with insulated mounting screw plug and flat blade connector
3	1	Anode bypass fitting (BWC kit only)
4	1	Operation manual (not shown)
5	1	Mounting material (not shown)

3 Installation

Step 1: Requirements

The storage water heater must function properly.

There must be a suitable power outlet nearby.

⚠ CAUTION ELECTRICITY

Working with electrical equipment always poses the risk of eletrical shock; proceed with care.

- The power outlet must comply with all applicable electrical codes.
- The voltage of the power outlet must correspond to the voltage for the power supply of the potentiostat.
- The position of the power outlet must allow safe routing of the power supply cable to the potentiostat on the storage water heater (Note: The Power supply cable has a length of 10 ft)
- If there is not an outlet within range of the cord, please have a new outlet installed by a professional electrician. Do NOT use an extension cord to power the unit. Use of an extension cord can pose a fire risk and will void the warranty
- Allow safe routing for the anode cable and grounding cable.

The storage water heater must be switched off and disconnected from the main power supply and gas supply.

⚠ CAUTION ELECTRICITY / GAS

Working with electrical equipment poses the risk of eletrical shock; working with gas poses the risk of leakage; proceed with care.

- Turn off the water heater and disconnect it from the power source.
  Electric: Locate the switch of the circuit breaker and turn it OFF.
  Gas: Locate the thermostat dial and turn it to the OFF position.
  Locate gas shut-off valve and turn to off position

Depressurize the storage water heater. Depending on the location of the anode socket the water heater may need to be emptied.

⚠ CAUTION **HOT WATER**

Working on a water heater without previously depressurizing it may lead to discharge of hot water. To prevent injuries, follow the guidelines, wear adequate protective gear and proceed with care.

- Locate the water supply valve and turn it to the closed position. (perpendicular to flow direction)
- To relieve water pressure from the water heater, use the pressure release valve, typically located at the top of the tank. Ensure proper drainage, as water will be discharged during this process. Alternatively, you may turn on a hot water faucet at any location in the house and allow water to run until the flow stops. Once the pressure has been released, turn off the faucet.

Step 2: Anode Removal (S.O.S. PROTECT STD and XL)

⚠ WARNING **HEAT AND/OR CUTTING INJURIES**

Existing anode may still be hot. To prevent heat-related injuries wear adequate protection gear while working on the existing anode.

Cutting the anode into pieces poses the risk of cutting injuries, wear adequate protection gear and proceed with caution.

To ensure the device functions properly, all magnesium anodes must be removed.

1.) Locate the magnesium anode(s):
Anodes are usually mounted on the top, but some may be mounted from the side. If the socket is located on the side of the tank, make sure it is emptied out to prevent water from leaking. Review your water heater's owners manual or contact the manufacturer to confirm the anode location(s).
In order to access the anode socket, you may have to remove socket caps and insulation.

2.) Loosen the anode(s):
Use a wrench equipped with the correct socket (usually 1 1/16”) to loosen the anode rod. If the existing anode screw is overly tight, you may need to use a long lever (breaker bar) or an impact wrench.

3.) Remove the existing anode(s):
Depending on the amount of head clearance above the water heater, you may need to cut the anode into smaller pieces. Hold onto the anode with your hands or use a pair of vice-grips to keep the anode from falling into the tank! If your water heater has more than one sacrificial anode rod installed, do not forget to remove the additional rods and cover all additional anode sockets with blind plugs (not included).

NOTE **Safe disposal**

Please dispose of the magnesium anode safely and in accordance with the laws and regulations of your local municipality.

Step 2: Anode Removal (S.O.S. PROTECT BWC)

⚠ WARNING **HEAT AND/OR CUTTING INJURIES**

Existing anode may still be hot. To prevent heat-related injuries wear adequate protection gear while working on the existing anode.

Cutting the anode into pieces poses the risk of cutting injuries, wear adequate protection gear and proceed with caution.

To ensure the device functions properly, all magnesium anodes must be removed.

1.) Locate the magnesium anode(s):
Certain water heater models use anodes that are connected to the pipe nipple and are screwed into the hot water outlet port. The hot water outlet is located at the top of the water heater. It is marked by red indicators and/ or the word “HOT”. If your water heater has more than one anode, the remaining anodes will be screwed into separate anode sockets. Those anode sockets are usually mounted on the top, but some may be mounted from the side. If an anode socket is located on the side of the tank, make sure the tank is emptied out to prevent water from leaking. Review your water heater's owners manual or contact the manufacturer to confirm the location(s) of the anode(s). In order to access the anode socket(s), you may have to remove socket caps and insulation.

2.) Loosen the anode(s):
Use a pipe wrench to loosen the hot water pipe. Also use the pipe wrench to loosen the pipe nipple that includes the anode. If your water heater has more than one anode rod: Use a wrench equipped with the correct socket (usually 1 1/16") to loosen the other anode rod(s). If the existing anode screw is overly tight, you may need to use a long lever (breaker bar) or an impact wrench.

3.) Remove the existing anode(s):
Remove all existing anodes including the pipe nipple. Depending on the amount of head clearance above the water heater, you may need to cut the anode into smaller pieces. Hold onto the anode with your hands or use a pair of vice-grips to keep the anode from falling into the tank! If your water heater has more than one sacrificial anode rod installed, do not forget to remove the additional rods and cover all additional anode sockets with blind plugs (not included).

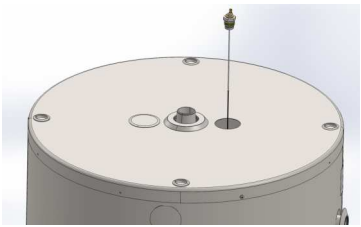
NOTE **Safe disposal**

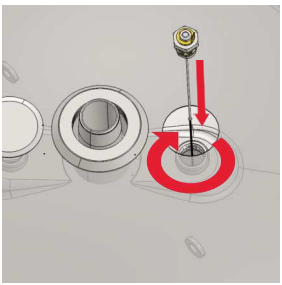
Please dispose of the magnesium anode safely and in accordance with the laws and regulations of your local municipality.

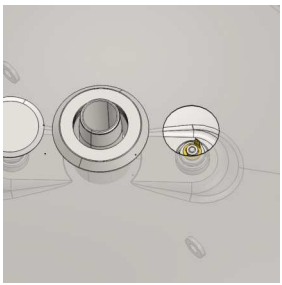
Step 3: Installing and connecting the anode (S.O.S. PROTECT STD and XL)

Use the socket from which you removed the magnesium anode. If there were several anodes, use the top socket.

1.

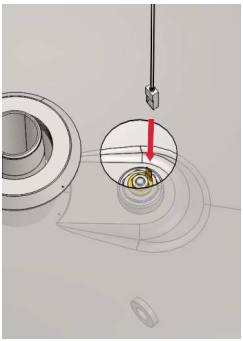


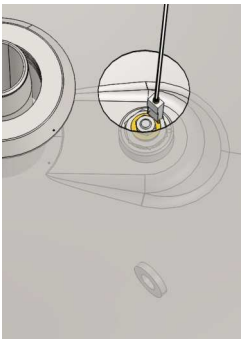




Insert the titanium anode and manually screw the plug into the threaded socket on the water heater until it is water tight.
Use a 1 1/16th inch nut with an extension bar.
Important: Removing the titanium anode from the socket will damage the pre-applied thread sealant. If the pre-applied thread sealant is compromised, apply additional sealing material, such as PTFE tape, to maintain a proper seal. Additional sealing material should be applied to a reducing socket.

2.





Connect the blade receptacle of the end of the black and white anode cable to the flat connector on the titanium anode.

3.

Connect the fork terminal of the black ground cable with the “tank ground connection” flag to a metal section of the water heater tank so it is grounded:

- Ideally use the water heaters grounding screw, which is usually a green screw located on the tank shell or inside an electrical cabinet. Refer to your water heater's manual to locate the grounding screw.

- Alternatively, if your water heater does not have an available grounding screw or you cannot locate it, use a metal section of the tank or use the tank jacket if it is made of metal.
- If the metal tank jacket is painted or coated, remove the coating or paint at the point of contact to the fork terminal with sandpaper.
- Make sure the connection has a tight fit to ensure electrical contact.
- Do NOT use plastic piping or a tank jacket made from plastic.
- As a last resort, grounding can be achieved by attaching a grounding clamp or copper wire to the hot/cold water pipe nipple made of metal. Connect the fork terminal of the black ground wire to the attached clamp.

Proceed to perform a functional test to ensure the device functions properly.

NOTE **Grounding verification**

Ground connection must be established and verified with a multimeter before operation. The installer is solely responsible for testing and confirming proper grounding. Failure to verify grounding may result in property damage.
The manufacturer assumes no liability for improper installation or inadequate grounding verification.

Step 3: Installing and connecting the anode (S.O.S. PROTECT BWC)

Use the hot water outlet for installation even if there were several anodes installed previously.

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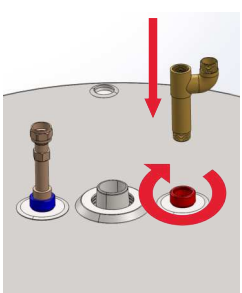

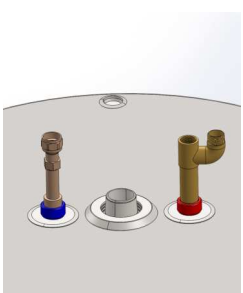

Insert the fitting into the threaded hot water outlet socket located on top of the water heater and manually screw it in until it is water tight.

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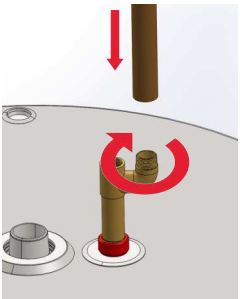
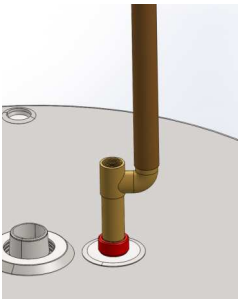
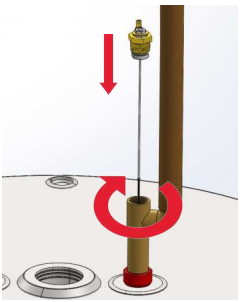
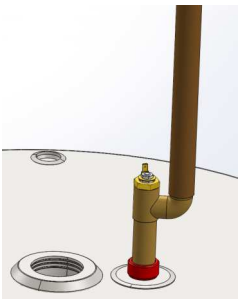




Place the hot water outlet pipe onto the 90-degree elbow of the fitting and manually screw it on until it is water tight.

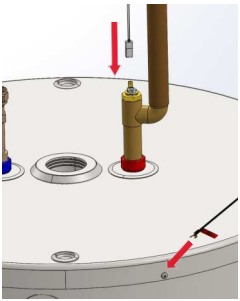
3.

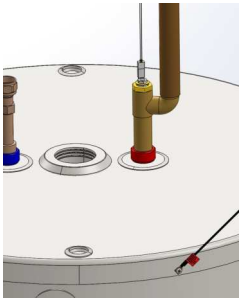




Insert the titanium anode and manually screw the plug into the threaded socket of the anode bypass fitting until it is water tight.

4.





Connect the blade receptacle of the black and white anode cable to the flat connector on the titanium anode. Connect the fork terminal of the black ground cable with the “tank ground connection” flag to a metal section of the water heater tank so it is grounded:

- Ideally use the water heaters grounding screw, which is usually a green screw located on the tank shell or inside an electrical cabinet. Refer to your water heater's manual to locate the grounding screw.
- Alternatively, if your water heater does not have an available grounding screw or you cannot locate it, use a metal section of the tank or use the tank jacket if it is made of metal.
- If the metal tank jacket is painted or coated, remove the coating or paint at the point of contact to the fork terminal with sandpaper.
- Make sure the connection has a tight fit to ensure electrical contact.
- Do NOT use plastic piping or a tank jacket made from plastic.
- As a last resort, grounding can be achieved by attaching a grounding clamp or copper wire to the hot/cold water pipe nipple made of metal. Connect the fork terminal of the black ground wire to the attached clamp.

Proceed to perform a functional test to ensure the device functions properly.

Important: Removing the titanium anode or the fitting from the socket will damage the pre-applied thread sealant. If the pre-applied thread sealant is compromised, apply additional sealing material, such as PTFE tape, to maintain a proper seal. Additional sealing material should be applied to a reducing socket as well.

NOTE **Grounding verification**

Ground connection must be established and verified with a multimeter before operation. The installer is solely responsible for testing and confirming proper grounding. Failure to verify grounding may result in property damage.
The manufacturer assumes no liability for improper installation or inadequate grounding verification.

Step 4: Functional Test

Commissioning and testing

1. Fill the storage water heater completely and check the anode socket(s) (and hot water outlet) for leak tightness.
2. Connect the potentiostat to a wall outlet.
3. Check the indicator lights on the potentiostat:
   - Green indicator light is lit: Potentiostat is ready for operation
   - Green indicator light is not lit or red indicator light is lit:
     → *Chapter 5, Troubleshooting*
4. Check the connection of the potentiostat to the tank ground using a multimeter.

Regular monitoring

Check the indicator lights on the potentiostat at least once a month:
- Green indicator light is lit: Potentiostat working.
- Green indicator light is not lit or red indicator light is lit:
  → *Chapter 5, Troubleshooting*

Check the ground connection of the potentiostat at least once a month.

4 FAQ

What makes the BWC kit different from the regular kits?

- Some water heaters do not use separate anode sockets to mount their anode. Instead they combine the anode with the hot water outlet nipple to mount it on the tank. To install S.O.S. PROTECT inside this type of water heater, you have to make use of an anode bypass fitting (subject to change). This fitting gives you the possibility to mount the anode inside the hot water outlet while maintaining proper flow of hot water. This fitting is only included in this specific kit.

How much power does the device consume anually?

- Exact power consumption varies based on tank size, water quality, and other parameters. The maximum power consumption is under 5 kWh per year. With that in mind, the total cost to run the S.O.S. PROTECT for 1 calendar year is approximately $1.

What happens if my water heater has two magnesium anodes, can one of them be left inside the tank?

- No, extra magnesium anodes must be removed from the tank in order for the electronics to function properly. If your tank has a second anode, remove it and cover the threaded socket with a blind plug.

Should I unplug the device if the water heater is turned off for a long period of time (e. g. at a vacation home)?

- If the water heater is properly drained and empty after being turned off, the device can safely be turned off by unplugging it from the outlet. The device cannot properly function in an empty tank and the red LED will turn on indicating an error.
- If you leave the water heater filled with water, keep the S.O.S. PROTECT unit plugged in to prevent corrosion and smell accumulation.

Is it possible for me to use S.O.S. PROTECT even if I have a water softener installed?

- o Yes, it is actually highly recommended to use a powered anode if there is a water softener installed in your water supply.
- o Protective anodes rely on the conductivity of the water inside the tank to provide protection. Water softeners inevitably reduce the conductivity of the water which can render sacrificial anodes ineffective.
  The powerful S.O.S. PROTECT system adapts to any water condition, providing optimal foul smell removal and corrosion protection.

Have additional questions?
Scan the QR-Code above.

5 Troubleshooting

Indicator lights	Meaning	Action
Green off, red on, buzzer beeps in interval	Malfunction	Check whether the following malfunctions are present: 1 Potentiostat malfunction → *Reset potentiostat: Disconnect the potentiostat from the power supply for approx. 30 seconds. Reconnect the potentiostat to the power supply.* 2 Storage water heater not completely filled → *Fill storage water heater completely with water* 3 Magnesium anode present/not removed → *Make sure all magnesium anodes are removed. For guidance check: → Chapter 4* 4 Connection between potentiostat and anode defective → *Make sure the connection at the anode is secure.* 5 Short circuit following contact between anode and tank ground → *When installing the titanium anode, ensure it is not bent so it does not come into contact with any metal parts inside of the tank. Also check the anode gasket for limescale. Make sure it is clean to prevent a short circuit at the gasket.*
Off	Power supply missing	• Plug in the power cable. • Check the outlets fuse in the circuit breaker panel.

If the previous steps did not succeed in rectifying the fault, please contact customer service via email or phone.
→ *www.checkyouranode.com*

6 Compliance Information

The manufacturer declares that the product complies with the following directives with regard to design, construction, testing and operation:

- Protection type according to IEC 60529: IP43
- Electrical Protection Class according to IEC 60335-1: Class II, SELV
- International product compliance given due to available CB report according to IEC 60730-1
- RoHS compliant
- CSA conformity verified for USA and Canada

7 Warranty

LIMITED WARRANTY

What is covered?
CHECKYOURANODE.COM (in the following, called "Company") guarantees that the powered anode system (in the following called "Product") is both free from material defects as well as from errors of craftsmanship as long as it is installed and operated under its intended use conditions. This only applies for the duration of the warranty (in the following, called "Warranty Period") and only to the person that has made the original purchase of the product (in the following, called "Customer"). The warranty is subject to the following stipulations.

What is not covered?
This limited warranty does not cover any damage sustained from:
• Usage outside of the intended use clearly stated in the operation manual
• Accidents and natural disasters (storms, earthquakes etc.)
• Damage related to improper handling
• Regular usage (wear and tear) that is not clearly the result of either material defects or errors of craftsmanship
The water heater which the product is installed in as well as all other components not manufactured by checkyouranode.com are explicitly not covered by this warranty.

Warranty period
This product comes with a base warranty of five (5) years from the date of the original purchase.

• **Extended warranty**

We offer all customers the opportunity to register their product on the Company's website within ninety (90) days of purchase, provided the product is installed in a single-family residence. This will extend the base warranty of five (5) years to a total of twenty (20) years. This warranty extension comes at no additional cost. Should the product not be registered within the given time period, the base warranty of five (5) years will stay active. By registering the product, we can confirm warranty claims in the future, even if the original purchase receipt is no longer available.

Process of making a warranty claim

To make a warranty claim, please contact the company's customer service at www.checkyouranode.com/service within the warranty period.

Initial shipping costs as well as the process of arranging the shipment to the company are the customers responsibility.

Our service provided

If an error in craftsmanship or material defect of the product is detected during the warranty period the claim is deemed valid. The company will then either replace or repair the product under it's own discretion. Shipping costs for returning the repaired or replaced product back to the customer will be paid by the company.

Limitation of Liability:

The responsibility of the company is limited to replacement or repairing services under this warranty. In no circumstance can the company be made liable for consequential, incidental or indirect damages.

Additional Rights:

This Limited Warranty provides specific legal rights to the Customer. Additional rights may be available, depending on the state or province. In some jurisdictions, the exclusion or limitation of incidental damages is not permitted, so these limitations may not apply.

Governing Law:

This Limited Warranty is governed by the laws of the state or province where the product was purchased.

Warranty registration

To activate the Extended Warranty, the Product must be registered on the Company's website at www.checkyouranode.com/warranty within ninety (90) days from the date of purchase.

Or scan the QR-Code and register your product for extended warranty.

Warranty