

Trouble Shooting Guide for Champion Automatic Adapters.

Replacement parts (rubber components, gaskets, and solenoids) are available for Champion valves in repair kits through the web site and at your Champion dealer.

Note: The Champion automatic adapters are referred to as either actuators or adapters throughout this guide. When the word "valve" is used it refers to the anti-siphon body in which these adapters are normally installed.

1. [Problem: There is a slow leak at the lowest sprinkler head. The actuator is not seating completely.](#)
2. [Problem: The automatic adapter will not turn on.](#)
3. [Problem: The automatic valve does not shut off automatically. The valve continues to run at full volume \(not a slow leak\).](#)
4. [Problem: There is a loud buzzing sound from the solenoid when the valves are on.](#)

Problem: [There is a slow leak at the lowest sprinkler head. The actuator is not seating completely.](#)

Check the following:

Flow Adjustment:

See the [appendix for Champion Automatic Adapters](#), Flow Control Adjustment section.

Solenoid:

If the solenoid is not seating properly, there will be water leakage. See the [appendix for Champion Automatic Adapters](#), checking the Mechanical Operation of the Solenoid section.

Diaphragm:

If the diaphragm has lost its' elasticity or if there is a pin hole leak in the diaphragm, there will be water leakage. Replace the diaphragm.

Diaphragm support and Diaphragm Support O-Ring (model AA & AB only)

If there is a crack on the diaphragm support, or if the diaphragm support o-ring has become worn out, there will be water leakage. Replace the diaphragm support and the o-ring.

Seat Washer and Meter Screw:

If the rubber seat washer is worn or cracked, there will be water leakage. You can turn the seat washer over to the unused side and this may temporarily fix the water leakage. Polish out any blemishes on the valve seat with 400-600 grit wet/dry sandpaper. Observe the impression the valve seat makes on the seat washer to verify the alignment of the seat washer and the valve seat. If the hole through the center of the meter screw has become enlarged through normal usage, it will have to be replaced. See the [appendix for Champion Automatic Adapters](#), Seat Washer and Meter Screw section.

Water Pressure:

Are there any obvious leaks on the actuator itself? It should be completely dry. If there are any leaks, try to determine which o-ring has worn out. That o-ring will need to be replaced to stop the leakage at the lowest sprinkler head. If the screws holding the upper and lower portions of the diaphragm chamber together are leaking, tighten the screws firmly (150 ft. lbs. of torque). See the [appendix for Champion Automatic Adapters](#), Water Pressure section.

Anti-siphon Valve Seat:

If the valve seat in the anti-siphon valve body is worn out, there will be water leakage. Brass anti-siphon valves have a service life of anywhere from 5 to 10 years with many in service over 25 years. However, these valves can eventually wear out. See the [appendix for Champion Automatic Adapters](#), Anti-siphon Valves section.

Problem: The automatic adapter will not turn on.

Check the following:

Flow Adjustment:

See the [appendix for Champion Automatic Adapters](#), Flow Control Adjustment section. Use the manual bleed screw to turn the adapter on. If the adapter operates normally, there is either an electrical problem or a meter screw problem. See the [appendix for Champion Automatic Adapters](#), Seat Washer and Meter Screw section.

Wire Gauge:

If you are using the improper wire gauge for your sprinkler system, you may not be getting enough power to the automatic valves. When the distance between the timer and the valves is 0-100 feet, #16 gauge direct burial wire is recommended. For distances of less than 50 feet, #18 gauge direct burial wire can be used. For distances over 100 feet, use #14 gauge direct burial wire. single strand or braided wire can be used. The best wire for a professional installation is #14 gauge single strand direct burial wire.

Is there power to the solenoid?

Set the sprinkler timer to manual mode. Turn on the valve manually from the sprinkler controller. Check the solenoid for a slight vibration. This indicates the solenoid is getting power. You can feel the solenoid directly.

DO NOT CHECK FOR POWER BY SPARKING THE WIRES! YOUR TIMER MAY BE DAMAGED!

If the solenoid is not getting power, there is either a problem with the wiring to the automatic actuator or with the timer itself.

You can use a volt meter to check for 24 volts \pm 2 volts present at the solenoid. If you have another 24 volt solenoid you know works, connect it across the circuit and listen to see if the solenoid "clicks" to indicate sufficient power is getting through.

The solenoid may be screwed too deeply into the seat. Turn off the water to the valve and remove the solenoid. Ensure that the solenoid o-ring is in place. Replace the solenoid by turning clockwise until it is firmly seated and turn on the water supply. Turn off the valve from the controller. Back off the solenoid (counterclockwise) until it begins to leak. Re tighten 1/2 to 1 turn.

Is the timer working properly? Do other actuators on the same timer work?

If the solenoid is getting power and all of the other actuators turn on and off, then the problem is the actuator, not the timer. If none of the actuators operate properly from the timer, the problem is either the timer or the wiring to the actuators. Check the wiring to be sure the common wire has not become severed.

You can connect the "hot lead" (numbered 1-6 on the terminal strip) directly to either terminal marked 24v on your timer. If the station turns on when connected directly to 24v, but will not turn on from the timer in manual mode, then the timer is bad.

What brand of sprinkler controller timer is being used?

If your timer is not a Champion timer, and the automatic valves will not turn on, it is possible that your timer is not compatible with Champion automatic actuators. This problem occurs in the lowest priced timers from other sprinkler companies. Due to cost considerations, the power supply in these timers is not sufficient to power the solenoid in the Champion actuators. Before concluding that your timer is not compatible, double check all of your wiring and connections, and see the [appendix for Champion Automatic Adapters](#), Water Pressure section.

Remove the automatic adapter from the anti-siphon valve and check for an internal blockage that is preventing water from flowing through the plumbing.

Check the water pressure at the valve. If the pressure exceeds 125 psi, you cannot use plastic actuators, you must use a brass adapter. If the pressure exceeds 150 psi, you must use Champion Classic actuators (the larger diaphragm model). If the pressure exceeds 200 psi, you must use a pressure regulator upstream of the valves. See the [appendix for Champion Automatic Adapters](#), Water Pressure section.

Problem: The automatic valve does not shut off automatically. The valve continues to run at full volume (not a slow leak).

Check the following:

Is the valve getting power from the timer?

Check the timer to see if it is sending power to the station. If the timer is malfunctioning, you can always unplug it and all Champion valves will shut off.

The valve is not getting power from the timer and it continues to run.

Try tapping gently on the adapter with a rubber mallet or other tool that will not damage the valve or the adapter. If the adapter closes after tapping it, the adapter may need a thorough cleaning to prevent it from sticking. You may also wish to check the seat washer and meter screw, the solenoid, and clean the seat of the anti-siphon valve. See the [appendix for Champion Automatic Adapters](#), Seat Washer and Meter Screw and Solenoid sections.

If the valve will not shut off after tapping it.

You can always shut the center flow control screw completely on a Champion valve to shut the water flow off. Turn the center screw down until the valve shuts off. The valve will remain off until it can be serviced either by yourself or a service person.

You can also try turning off the water supply to the valve, removing the automatic adapter from the anti-siphon valve and checking for an internal blockage that is keeping the valve open.

The solenoid may be stuck open.

See the [appendix for Champion Automatic Adapters](#), Solenoid section.

The diaphragm may be ruptured or have a pinhole in it.

Check the water usage in gallons per minute (GPM) at the station. If the station is using less than 4

GPM (such as in a drip irrigation system), Champion actuators will not be able to close properly. To correct this problem, add to the volume of water being used on each station experiencing this problem by adding more spray heads or misters.

Problem: There is a loud buzzing sound from the solenoid when the valves are on.

Check the following:

The wire size may be too small to allow enough voltage to turn on the actuator.

If the solenoid is not getting sufficient voltage from the timer, the solenoid will buzz. You can determine if the timer is the problem by switching the hot wires at the timer (for example switch the wires between stations 1 and 2). If the problem is corrected by switching the wires, and the station that worked fine before the wires were changed is now buzzing, the problem is in the timer.

This problem can often be solved on models with square solenoids by changing the orientation of the solenoid coil assembly. It can be rotated on the solenoid tube by turning it from side to side. To see if this will correct the problem, turn the valve on manually from the sprinkler timer. With the valve on, re-orient the coil assembly until the buzzing sound is very faint or gone. If this does not solve the problem, refer to the [appendix for Champion Automatic Adapters](#), Solenoid section.

If you need further assistance:

1. Please check out the [Champion Arrowhead Forum](#) for more tips and help
2. Spec sheets for many products are available on the web site at www.championarrowhead.com
3. Click on [Have a Question?](#) on the web site to email a question.
4. Contact Champion Arrowhead customer service at (213)221-2108 or (800) 33-CHAMP (outside the 213 area code). Business hours are Monday through Friday 8:00AM until 4:30PM PST. After hours messages are normally returned the next business day.