

This an appendix to the Champion Arrowhead Automatic Adapters Trouble Shooting Guide

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

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

Flow Control Adjustment

When installing a new Champion sprinter adapter in an anti-siphon valve (or replacing a rebuilt adapter in the valve body), it is necessary to 'fine tune' the actuator to your system flow and pressure requirements as well as bleed any air out of the diaphragm chamber. By following these steps you can eliminate many problems associated with automatic adapters due to improper flow adjustment. These steps can also be used at any time a slow leak is encountered.

1. Close the flow adjustment screen completely.
2. Open the bleed screw completely. There will be a continuous spray of water from the bleed screw but the sprinklers will not come on.
3. Let the valve run for approximately one (1) minute to flush any air from the diaphragm chamber.
4. Slowly open the flow adjustment screen until full coverage from the sprinkler heads is obtained (generally (3) to five turns of the flow adjustment screw). If the flow adjustment screw is opened too far a leak may occur because the valve will fail to shut off completely. If the flow adjustment screw is too far closed the adapter will not be able to open.
5. Close the bleed screw completely. The adapter and sprinkler heads will shut off.

Checking the Mechanical Operation of the Solenoid

Turn off the water supply to the valve.

Square Solenoid:

Remove the black cap on the top of the coil/yoke assembly. Remove the coil/yoke assembly by pulling it up and off of the solenoid tube assembly. Remove the solenoid tube assembly from the actuator top using a flat blade screwdriver. There will be a cylinder shaped armature with a spring around it inside the solenoid tube assembly.

Round Solenoid:

Remove the encapsulated solenoid assembly from the actuator top using a flat blade screwdriver. There will be a cylinder shaped armature with a spring around it inside the solenoid tube assembly. The spring should extend just over half the length of the armature. If the spring has become compressed, you can stretch it slightly.

Check the solenoid for dirt or debris. There should be no dirt or rust on the inside of the solenoid tube or on the armature itself. With water if necessary.

In the impression where the solenoid tube assembly seats there are two (2) ports passing into the top of

the actuator. Both of these should be completely clear so that water can pass through them. If the ports have become blocked the actuator will not turn on. You can clear the ports using a paper clip or similar object. If the ports are extremely clogged you will have to disassemble the adapter and flush out the ports from the inside.

Ensure that the o-ring in the bottom of the solenoid seat is in good condition and not overly compressed. If the o-ring is crushed and the solenoid screwed in too deeply, the armature will not rise high enough for the actuator to open. If the o-ring is broken and allowing water to seep out the solenoid seat threads in the valve will weep when shut off.

Seat Washer and Meter Screw

Turn off the water supply to the valve.

Unscrew the automatic actuator from the anti-siphon valve body. Note: on some models you will have to loosen and remove the anti-siphon cap at the same time in order to remove the actuator from the anti-siphon body.

Inspect the rubber seat washer for cracks or swelling. The seat washer should be flat with the exception of a round impression from the valve seat. If not, replace the seat washer.

Inspect the hole in the meter screw for signs of enlarging through normal wear and tear. It should be symmetrically round. If worn, replace.

If the meter screw has become obstructed the valve will not open. Remove and clean the meter screw passage.

Water Pressure

Automatic actuators are rated to a maximum of between 125 psi and 200 psi depending on the model. The optimal pressure however is 80 psi - 100 psi for the best performance and optimal water conservation. Once above 100 psi problems may be encountered by any model. You can contact your local Department of Water and Power for the approximate water pressure in your area if you are unable to precisely measure your pressure with a pressure gauge.

If you suspect high water pressure is the problem, first adjust the valve according to Flow Control Adjustment above. Additionally, you can reduce the pressure on the inlet side of the valve by turning on a hose bib or other faucet on the same supply line. If reducing the pressure by opening a hose bib causes the valve to operate, a pressure regulator needs to be installed in your system.

Water Hammer (a loud vibrating noise when opening or closing)

Water hammer indicates an imbalance between the pressure and flow requirements of the system as installed and the capabilities of the available pressure and flow. To reduce or eliminate water hammer, a special fitting called a water hammer arrester needs to be installed on the supply line.

Note: One provider of additional information on water hammer as well as a manufacturer of the fittings is Sioux Chief, which manufactures the Hydra-Rester. They can be contacted at (800) 821-3944, or at P.O. Box 397, Old South 71 Highway, Peculiar, Missouri, 64078 and on the web at www.siouxchief.com.

Anti Siphon Valves

To determine if the anti-siphon valve or the adapter is the problem, follow these steps:

1. Turn off the water supply to the valve.

2. Unscrew the automatic actuator from the anti-siphon valve body. Note: On some models you will have to loosen and remove the anti-siphon cap at the same time in order to remove the actuator from the anti-siphon body.
3. Refer to the instructions under Seat Washer and Meter Screw above to ensure that neither one is the problem.
4. With the actuator removed from the anti-siphon valve inspect the valve seat. It should look like a smooth, raised circle. If one side of the circle is excessively worn, pitted, or damaged, the anti-siphon body will need to be replaced.

A good test to perform prior to replacing an anti-siphon valve body is to take a properly functioning actuator from another valve if available, and install it in the leading anti-siphon valve. If the valve stops leaking and begins to function properly, then the problem is with the actuator. If the valve continues to leak with a actuator known to operate properly, then the anti-siphon body needs to be replaced.

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.