

# Gate Valve Repair

Many Dimension One Spas have gate valves at each large jet pump to allow for easy repair or replacement without draining the spa. That's pretty useful if a pump needs attention in mid-February when there's ice and snow on the ground. However, over time gate valves become less reliable so sometimes just repairing them is a good idea. Experience tells us there are 5 places where the gate valve itself can begin to leak. We'll show you how to fix those leaks with the least effort and expense. Please note, each of those fixes will require you to drain the spa and remove the large jet pump, but hopefully there won't be snow on the ground when you need to tackle the job.

## Repair #1 Replacing the O-rings



If a leak occurs where the collar attaches to the pump, (Figure 1-A), the O-ring may be the culprit. The O-ring can flatten over time causing leaks. You will need to remove the original O-ring and replace it with a new one. To remove the old O-ring, (Figure 1-B), insert the tip of a small flathead screwdriver between the O-ring and the plastic collar and pop it out of its seat. Insert a new O-ring (part number 01510-371) in its place. (Figure 1-C) We recommend replacing the O-ring on both Gate Valves at this time.

We hope you will find these 5 quick fixes helpful. Please don't hesitate to call us with any questions or comments on this instruction sheet.

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## Repair #2 Replacing the Collar





Figure 2-B

Figure 2-C

If the collar itself breaks, (Figure 2-A), you'll need a Split Nut – (part number 01510-184), to replace it. Using a Dremel, or an oscillating tool, (Figure 2-B), cut the collar as shown.

A hacksaw blade will also work but takes more time and patience. As you are cutting, be careful not to damage the threads on fitting below the damaged collar. Wedge a large flathead screwdriver into the cut and twist, (Figure 2-C), so the collar opens enough for easy removal. If this proves difficult, make a second cut on the opposite side of the first. This should make the collar easier to remove.



Figure 2-D

Figure 2-E

To install the new Split Nut, place one half under the fitting, (Figure 2-D). Lay the mating half of the union on top and line up the holes. Insert a screw into the recessed portion of the fitting and tighten halfway; (Figure 2-E). Thread the second screw almost all the way, then go back to the first screw and finish tightening it. Be sure everything is still aligned. Return to the second screw and tighten it completely. Install a new O-ring and reinstall the jet pump. All done!

## Repair #3 Sealing the Collar Glue Joints

#### **Required tools:**

Part number 01512-196K - Plastic Welder Repair Kit

#### Note: Always wear rubber gloves when working with Plastic Welder.

If a leak appears at the base of the valve (Figure 3-A), you'll need to seal the appropriate joints inside and outside the gate valve. Look about ¼" into the front of the valve assembly to locate the leaky joint (Figure 3-B).





Figure 3-A

Figure 3-B



Figure 3-C

Figure 3-D

Figure 3-E

Put on the rubber gloves and using the Plastic Welder Repair Kit, apply a bead of epoxy over the seam, (Figure 3-C). Spread it evenly with your forefinger, or a popsicle stick. Be sure to cover the entire seam but keep the O-ring and collar clean. (Figure 3-D). You don't want to get the Plastic Welder on these two components, so please, work carefully.

Now, apply a bead of epoxy around the joint shown in Figure 3-E and spread it evenly with your finger. Don't get any epoxy on the back end of the collar or you won't be able to turn it. Once the epoxy has cured, (about 1 hour), reattach the pump and you are done.

### Repair #4 Sealing the Rear Joint



Figure 4-A



Figure 4-B

If you have a leaky front glue joint and are going to seal it, you may as well go ahead and do the rear one, too. This is where the back hose and gate valve are glued together, (Figure 4-A). You'll find the rear joint 2 ¾" from the front of the valve assembly. Be sure to keep the epoxy out of the gate seat or you won't be able to open and close the gate valve in the future. With your rubber gloves on, apply a bead of Plastic Welder over the seam and spread it evenly over the entire joint with your finger or a mixing stick. (Figure 4-B). It's easy to get a little epoxy in places it does not belong, so have a rag ready to wipe it off quickly, (it begins to set up in less than a minute). Once the epoxy is dry, you're done.

## Repair #5 Sealing the Valve Handle



Figure 5-A

Figure 5-B

This one's a little different than the other repairs. If your gate valve is leaking at the top of the assembly where the metal stem enters the valve assembly, (Figure 5-A), you'll have to drill out the center rubber gate. Push the valve handle all the way down so the gate is fully seated, (Figure 5-B).



Figure 5-C

Figure 5-D

Look into the valve and using a 2" hole saw, (Figure 5-C), cut out the center of the gate. Remove the plug and shavings, leaving a hole, (Figure 5-D). Leave the handle in the closed position too. The hole will allow water to flow through the gate valve, while the remaining portion of the gate prevents leaking from the top.



As a final precaution, apply epoxy around the circle where the remnants of the black gate remains. (Figure 5E). This will prevent any water from working its way up and through the handle stem. Wait 5 minutes and add a second layer for good measure. (Figure 5-F)