



## Replacing a Broken Sprinkler Head

Broken Sprinkler heads are common and the longer you own your system, the more common they will become. There are many reasons for a sprinkler head to become damaged, ranging from a lawn mower accident to a head reaching its peak age. The average life of a sprinkler head is ten years.

1. Cut a “doughnut” shaped hole around the head with a 6-8” radius.
2. Gently remove the “doughnut” and any excess dirt until you can view the black poly sprinkler pipe located beneath the sprinkler head.
3. Carefully unscrew the sprinkler head.
4. Check the nozzle size and insert the same size into your new sprinkler head.
  - **Hunter:** Using your sprinkler key, raise the shaft on the head, the nozzle size is listed in the upper left hand corner of the dark blue nozzle
  - **RB 1800:** The nozzle size is listed on the top of the nozzle, you can re-use the same nozzle if you would like unless it is damaged or clogged
5. With the nozzle installed, screw your new sprinkler head onto the threads.
6. Carefully replace your doughnut, and use a leaf rake to rake any excess dirt into your hole.
7. Turn on your irrigation system and adjust your new sprinkler head as needed.

## Raising or Lowering a Sprinkler Head

As your lawn ages, thatch builds up and raises the height of lawn. This raising of your lawn can often require you to raise the height of your sprinkler heads.

1. Cut a “doughnut” shaped hole around the head with a 6-8” radius.
2. Gently remove the “doughnut” and remove any excess dirt until you can view the black poly sprinkler pipe.
3. Unscrew the sprinkler head.
4. If the entire 6” of the poly cut-off nipple is used, use a threaded coupler to connect another nipple (cut to size) to it. Otherwise unscrew the original cut-off green nipple and screw in a new one (cut to size).
5. If a flex fitting is used, use a threaded coupler to attach a poly cut-off nipple to it (cut to size).
6. Screw your sprinkler head onto your new green nipple.
7. Carefully replace your doughnut, and use a leaf rake to rake any excess dirt into your hole.
8. Turn on your irrigation system and adjust your sprinkler head as needed.

## Adding a New Sprinkler Head to Your Irrigation System

It is important to consult a Clark's Irrigation Specialist before adding a new sprinkler head to your irrigation system. Otherwise you may end up with brown spots in your lawn where they didn't previously exist. You can also end up with ponds and streams where you didn't want them as well.

1. After locating the correct black poly pipe, in the correct zone, dig a trench 3-4 feet long in either direction. Dig with the pipe, creating a 6-8 foot trench.
2. Cut the black pipe (note: the pipe should have a 1-1 ¼ inch inner diameter), insert a combo reducing tee into each end of the pipe, and clamp into place, (note: one clamp for 1” pipe, 2 clamps for 1 ¼” pipe)
3. Thread a flex fitting into the combo reducing tee and run flex pipe to the location of the new head. Thread a flex fitting into the bottom of your new sprinkler head and install it to the flex line as well.
4. Bury the entire assembly and use a leaf rake to rake any excess dirt into your hole, replace grass and level as necessary.
5. Turn on your irrigation system and adjust your new sprinkler head as needed.

## Repairing a Cracked or Damaged Irrigation line

Over time stress points in your irrigation line can weaken and cause a leak in your irrigation system. These stress points are natural and are easy to repair.

1. After locating the spot of damage, cut a square in the grass 6"-1 ft around the damaged spot. Set the grass aside and save for replacement.
2. Dig down until you find the black poly pipe, then locate the break in the pipe, if it is leaking water and the sprinklers are turned off, turn the large ball valves on the vacuum breaker ¼ turn (90 degrees) to turn the water off to the system.
3. If the crack is smaller than one inch, you may use one insert coupling, if the crack is larger, it will require two insert couplers with a small section of new pipe between them.
4. Cut the pipe and insert a coupler into the pipe, and clamp into place. For a large break, insert a coupler into each end of the original pipe, then flex a piece of new pipe onto the new couplers and clamp into place.
  - If pipe kinks, it is no longer good and needs to be cut and another coupler added
  - The entire "grip" of the insert fittings needs to be covered
  - One clamp for one inch pipe
  - Two Clamps for 1 ¼ inch pipe
5. Turn on your irrigation system and make sure there are no leaks.
6. Bury the entire assembly and use a leaf rake to rake any excess dirt into your hole, replace grass and level as necessary.

## Fixing a Leaky Pressure Vacuum Breaker

The Pressure Vacuum Breaker (PVB) is where the plumbing inside your house connects to the irrigation system outside of your house. It consists of a series of seals, springs, and other parts, which only allow the water to flow out of your house and prevent the flow of water into your house. With age however, the seals in this assembly can go bad and "leak."

1. There are two large ball valves on your PVB, one is located between the house and the PVB the other sits to the side of the PVB and is connected to a pipe that runs into the ground. Turn them both ¼ turn (90 degrees), then open the first one which is located between the house and the PVB, this can sometimes "POP" the seals into place, if it still leaks, shut the first valve again. Your seals have gone bad and need to be replaced.
2. Using a wrench, carefully remove the nut from the top of your PVB, and then the brass cover. Place the brass cover in an area out of the way and use it to place any small parts you may remove, including the nut you just removed.
3. You are now looking at the "Bonnet" assembly of your PVB, carefully unthread counter clockwise. A screwdriver or pair of channel locks may be used to do this, but be careful because if it cracks it will need to be replaced as well. After you have unthreaded the bonnet, set it and its seals in the brass cover.
4. After you have removed the "Bonnet Assembly," you will see the "Poppet Assembly." This is usually the source of the problem, remove it and install a new one in its place.
5. Thread the bonnet back into place. Make sure the shaft of the bonnet lines up with the inner cavity of the poppet.
6. Open the first valve again, if it still leaks, try replacing the bonnet. Otherwise open the second valve, and replace the brass cover and the nut.

## Relocating a Sprinkler Head

As your yard grows and ages around you, it may become necessary to move a sprinkler head in order to receive better coverage. It is important to remember though that moving a head can cause a dry spot to occur where there wasn't one before so choose an appropriate spot when relocating your sprinkler head.

1. Cut a "doughnut" shaped hole around the head with a 6-8" radius.
2. Gently remove the "doughnut" and any excess dirt until you can view the black poly sprinkler pipe located beneath the head.
3. Cut a "doughnut" shaped hole in the new location you are moving your head to.

4. Dig a shallow trench to connect the two heads that is approximately the same depth as the height of the head. Pull back the grass as if you were rolling carpet and lay it aside.
5. Carefully unscrew the sprinkler head and replace it with a Spiral Barb Elbow (flex fitting). Install a second flex fitting in the bottom of your sprinkler head.
6. Using flex pipe, connect the head to the original poly fitting in its old location.
7. Bury the entire assembly and use a leaf rake to rake any excess dirt into your hole. Replace the grass and level as necessary
8. Turn on your irrigation system and adjust as necessary.

## Fixing or Replacing a Damaged Valve

Each zone of your irrigation system is controlled by its own electric valve, sometimes these valves get blocked or damaged and as a result they lose their ability to turn a zone on or off. A valve consists of many parts and several things could go wrong and cause a valve to not function properly.

- A. **The Bleeder Screw**- A tiny knob on the top of the valve which can be used to manually turn a zone on or off. If a sprinkler zone won't shut off, first try turning this knob clockwise
- B. **The Solenoid**- On the top of the valve rests a raised portion with two wires, this is the solenoid and it controls when the valve opens or closes. Turning it counter-clockwise causes the valve to open and the specified zone to turn on. If a zone won't turn off:
  - Turn the solenoid and bleeder screw clockwise
  - Try replacing the solenoid or cleaning the old one
  - If the zone still won't turn off, two step can be taken:
    1. You can replace the valve
    2. Attempt to clean the old seals and inside of the valve

## Replacing the Valve

1. At the Pressure Vacuum Breaker, turn one or more of the ball valves  $\frac{1}{4}$  turn (90 degrees) to shut off the water.
2. Cut a "doughnut" with an 8-12" radius around the valve in question, and a 1-2 foot trench following the black poly pipe which leaves the valve.
3. Clean away the dirt beneath the valve, creating a hole six inches deep.
4. Cut the black poly pipe connected to the valve, several inches from the valve, and disconnect the wires that are attached to it.
5. Using a pair of *channel locks*, grip the valve in the bulk of its body and twist it counter-clockwise so that it unthreads from the PVC connection.
6. Apply Teflon to the threads of the new valve and thread it into place, careful to follow the "Flow Arrows."
7. On the "Out" side of the valve, attach a small piece of pipe and use an insert coupling to attach it to the original pipe.
8. Clamp everything together using two clamps on each side of a connection, and wire the valve up to the original wires.
9. Turn on your irrigation system, and make the zone is operating properly
10. Bury the entire assembly and use a leaf rake to rake any excess dirt into your hole, replace grass and level as necessary.

## Cleaning the Old Valve Housing

1. Remove solenoid and clean with soap and water and dry well
2. Using a screwdriver, unbolt the top of the valve; be careful not to lose any screws or any other parts of the valve. Wash the top of the valve as well.
3. Carefully remove the old diaphragm within the valve, if this is cracked or corroded at all, it is best to replace the entire valve, otherwise, wash it as well.

4. Then carefully lay everything back in place and bolt the top back on. Tighten the solenoid in place making sure it is still wired to the irrigation wires
5. Turn on your irrigation system, and make sure the zone is operating properly. If not, follow the instructions for replacing a valve.