

The Rusty Shovel Landscape Shop's  
**Sprinkler System Installation Guide**



**Install Your Own Do-It-Yourself Sprinkler System with Help  
From The Rusty Shovel Landscape Shop**



## **How to read your design and line list**

With your Rusty Shovel sprinkler system package, you will receive the plan you provided to us with the sprinkler head locations and lines drawn on. You will also receive a line list for your system, which is a spreadsheet that shows which heads go on each line and which nozzles and fitting(s) go with each head.

Here's what you should know:

- The lines will be drawn on connecting sprinkler heads together. At the end of each line there will be an arrow (---->). That simply means that you need to run that line from the last sprinkler back to the valve box the best route you see fit. It's OK to put more than one line in a single trench.
- We try to use a different colour line to represent the separate zones of the system.
- The main line running from the valve out to the sprinkler heads will be ¾" or 1" Blu-Lock pipe. You will branch off to your ½" Blu-Lock swing pipe where the line changes to red.
- We've included the fittings that will work with the sprinkler design we've drawn. If you choose to run the lines differently, you run the risk of having the wrong fittings or running out of pipe for your project. Your best bet is to dig the trench lines the way we have them drawn to avoid problems with your fittings. If you need to make changes, let us know and we can work something out.
- The line list will often have two or more fittings for one sprinkler (Ex. 37370+37373+37971). That generally means that we have included a fitting for you to tee off of the main line to get water into a sprinkler location.



- The fittings and nozzles should have the listed number marked somewhere on the unit. We also include a list of the different fittings with pictures for an easy reference. You can find the Blu-Lock fitting list and spec sheet at <http://www.rustyshovel.ca/f/BluLockSpecSheet.pdf>

## **Marking Your Yard**

- Before you start anything, you'll want to flag each of the sprinkler locations.
- The most efficient way to flag your yard is to extend a tape measure along each length of your yard. From your plan, you can find the location of each sprinkler (ex. 0, 15', 30', 45', 60'). Put a flag, stake or spray paint marker at each location.
- You can also use spray paint to mark the path your trenches will take to make it easy to follow when you are hand digging or running a trencher.
- If you are having someone pull the pipe in for you, please make sure the head locations are marked out prior to their arrival to avoid additional charges.

## **Trenching and Running Pipe**

- Your sprinkler line trenches should be dug generally between 8" and 12" deep. This helps to keep the lines from freezing in the spring and fall when the temperature dips below zero overnight. It also helps keep them out of harm's way when you're doing any minor digging or aerating in the yard.

- Instead of digging square trenches, we try to save you money on the number of fittings you need by allowing you to gradually bend the pipe into the areas you need it. The pipe is fairly flexible, so as long as you don't put kinks in it you should be good to go.
- Having said that, we often provide a few extra elbows and couplers just in case you need to make a sharp corner or make a mistake.
- When you are running pipe out of the manifold, try to keep it as straight as possible for one or two feet before bending it in the direction you need to go. Bending it right away can have a negative effect on your water pressure. You may want to consider using elbows in situations where you need to change directions quickly out of the manifold.
- With Blu-Lock, you'll want to run your pipe just beside the location of each head so you can tee off with ½" swing pipe, which makes setting your sprinkler much easier.

### **Recommended Videos:**

[http://www.therustyshovel.ca/blulock\\_instructions.html](http://www.therustyshovel.ca/blulock_instructions.html)

### **Installing Your House Connection**

- We will usually send your house connection pre-assembled so you know how it goes together. **However, this is not the finished product.** You need to take each piece apart and add Teflon tape to all the threads and tighten everything up.
- Screw off the existing lawn service tap, which should leave a ¾" female thread for the house connection to screw into. Your builder may have also run a dedicated line out for sprinklers - that will work too.
- If your taps are soldered on, contact us in advance so we can help create a house connection that will work in your situation. You'll either need to cut off the tap and solder on a new adapter, or we can provide an adapter to the tap if you don't want to cut it off.
- Take your existing lawn service tap that you removed and add it into the open thread on the house connection. This will allow you access to water service outside of your sprinkler system.
- Slide the clamp provided over the pipe and attach it to the adapter coming out of the bottom of the house connection. Tighten the clamp with a flat head screwdriver.
- You can run the supply line straight down into an insert elbow and into the manifold, or bend it into the manifold with no elbow.

### **Recommended Videos:**

[http://www.therustyshovel.ca/house\\_connection.html](http://www.therustyshovel.ca/house_connection.html)

### **Manifold System**

- Your manifold system may come pre-assembled so you know how it goes together. However, this is not the finished product. Teflon tape is not necessary with the manifold wherever rubber O-rings are present, but they do need to be hand tightened.

- Don't over-tighten the manifold pieces or use wrenches on them. Just hand tighten them so they are snug.
- Screw the manifold nipples into the valves. Note that there are arrows on the automatic valves to show which way the water is supposed to flow.
- Screw your automatic or manual valves onto the manifold using the swivel union connections.
- If your Blu-Lock adapter isn't already pre-installed, Teflon tape your Blu-Lock adapter threads and screw them into your valves. For drip lines you will need to screw in your pressure regulator first. If you have valves with male threads, we will have included PVC couplers to enable you to use your male threaded Blu-Lock adapters.
- Dig a hole for your valves deep enough for your valve box to sit on top with the cover even with ground level. Position the hole so you can easily run the pipe from your house connection into the adapter. You may need to bend the pipe a bit to make it work for your situation or use the 3/4" grey insert elbow with clamps that is often included for this purpose.
- Place some crushed rock as a base for the manifold for a neat finish. **Do not use crusher dust, gravel, or sand!** This can cause troubles in the valves when you are making any adjustments or repairs.
- Slide the clamp provided over the pipe and attach it to the adapter on your manifold. Tighten the clamp with a flat head screwdriver.
- Run a piece of pipe for each zone into each Blu-Lock adapter.
- Place a brick or block of wood at the four corners of your manifold for the valve box to sit on. You may also want to consider using our optional valve box platform instead.
- Place the valve box on your support bricks/wood blocks.



### Recommended Videos:

[http://www.rustyshovel.ca/manifold\\_instructions.html](http://www.rustyshovel.ca/manifold_instructions.html)

### Blu-Lock Fittings

- Your design includes a spreadsheet that tells you which connections go with each sprinkler head. You'll have part numbers and pictures of each fitting.
- You can find a list of fittings at <http://www.rustyshovel.ca/f/BluLockSpecSheet.pdf>
- Each sprinkler will need either a 37971 or 37970 fitting on the bottom unless you are using cut-off risers or garden risers which have male threads.
- When you get to a sprinkler location (marked by your flag), cut the pipe with your pipe cutting knife.
- Make sure the pipe is clean and push it into the fitting until you feel it bottom out.
- For most 1/2" swing pipe fittings, you can pull back on the black release collar to release the teeth if required.
- Repeat for each connection.



### Recommended Videos:

[http://www.rustyshovel.ca/blulock\\_instructions.html](http://www.rustyshovel.ca/blulock_instructions.html)

## **Turnseal Connections**

- **This section is not applicable with Blu-Lock systems.**
- Your design includes a spreadsheet that tells you which connections go with each sprinkler head
- We also include a turnseal connection master sheet that shows you what each number of house connection looks like.
- At each sprinkler location, you'll need a turnseal connection.
- When you get to a sprinkler location (marked by your flag), cut the pipe with your pipe cutting knife.
- Screw off the black nut and white collar and slide it over the pipe.
- Connect the pipe to the grey end of the turnseal.
- Slide the black nut and white collar back over the pipe and screw it back on to the connection.
- Repeat for each connection.

## **Installing and Adjusting Spray Heads**

- Spray heads are a small body generally marked with an X on your plan.
- Unscrew the plug at the top of the spray head.
- Drop the screen into the turret
- Screw on the nozzle (choose the nozzle that corresponds with the head as shown on your plan/spreadsheet)
- Screw your sprinkler head onto the appropriate Blu-Lock elbow (37970 in most cases)
- Push the elbow into the ½" swing pipe.
- Ensure that the sprinkler head is pointed straight up and down and pack tightly around it with dirt to hold it in place.
- Pull up the turret and ratchet it so that the left hand edge of the nozzle lines up with the left hand edge of your yard.
- Rotate the nozzle to increase or decrease the right hand edge of the spray
- Turn the screw on top of the nozzle to adjust the distance that the sprinkler sprays. Clockwise should decrease the distance.

### **Recommended Videos:**

[http://www.rustyshovel.ca/spray\\_head\\_installation.html](http://www.rustyshovel.ca/spray_head_installation.html)

## **Installing and Adjusting Rotor Heads**

- Rotor heads are larger rotating sprinklers that are generally marked with larger circles on your plan.
- Remove the appropriate blue nozzle from the nozzle tray as shown on your Rusty Shovel line list.
- Use the Rain Bird adjustment tool to pull up the turret (insert it into the slot, give it a quarter turn and pull up).
- Insert the nozzle into the slot.

- Turn the radius adjustment (adjustment screw opening in the arrow above the nozzle) clockwise. A screw should turn down and lock the nozzle into place.
- You can rotate the turret by hand, with the arrow showing which way the spray would be shooting. Turn the arrow to the left until you can no longer turn it. This is your left hand fixed stop.
- Screw your sprinkler head onto the appropriate Blu-Lock elbow (37971 in most cases)
- When turning the sprinkler head, tighten it so that the arrow points at the furthest left hand point you want the sprinkler to spray. If you can't get this lined up at first, turn the turret to the left hand stop and utilize the slip clutch by continue turning it until your left hand stop is pointed in the correct direction.
- Adjust the arc of the spray by turning the top screw marked +/- . This will adjust the right hand stop only.
- To reduce the distance your sprinkler sprays, turn the same adjustment screw you used to lock in the nozzle clockwise. The screw will break up the spray and reduce the distance your sprinkler will spray.

### **Recommended Videos:**

[http://www.therustyshovel.ca/rain\\_bird\\_5000\\_install.html](http://www.therustyshovel.ca/rain_bird_5000_install.html)

### **Installing Drip Irrigation**

- Turn the nipple into the pressure regulator and screw it into the valve.
- Turn the Turnseal or Blu-Lock adapter into the pressure regulator and connect your poly pipe or Blu-Lock pipe.
- You can trench in the first portion of your pipe until you get to your shrub or flower bed, then just lay your pipe on top of the ground throughout the bed.
- Use your drip puncture tool to poke a hole in the pipe near each shrub.
- Insert the coupler into the pipe.
- Measure the length from the pipe to your shrub and cut that amount of tubing from your roll.
- Attach the tubing to the coupler.
- At the other end of the tubing, insert the drip emitter.
- Place the clamp over the portion of the tubing where the drip emitter is inserted and squeeze it tight (clamps are optional).
- Slide the tubing onto the stake.
- Push the stake into the ground a few inches away from the base of the shrub/tree/plant.
- Repeat for each shrub/tree/plant.
- You may need to use insert fittings and clamps to attach multiple lengths of pipe.
- At the end of each drip line you'll need to have a plug.
- If you have requested a straight plug, just push it into the end of the pipe.
- The other plug option includes a faucet. Make sure the faucet is closed and attach it to the plug. Push the plug into the end of the pipe. At the end of the year when it's time to blow out your sprinkler lines, just open up the faucets and you will save a lot of time.
- Use mulch or rock to cover up the drip line as needed.

## **Recommended Videos:**

[http://www.therustyshovel.ca/drip\\_installation.html](http://www.therustyshovel.ca/drip_installation.html)

### **Installing Micro-Sprays**

Option 1 – Thick Stake:

- Use the puncture tool to poke a hole into the pipe.
- Insert the coupler into the hole.
- Attach the tubing into the coupler and run it up to the stake.
- Attach the tubing to the stake.
- Install the nozzle to the stake.

Option 2 – Thin Stake:

- Use the puncture tool to poke a hole in the pipe.
- Install the micro spray stake directly into the pipe.
- Install the nozzle

## **Recommended Videos:**

### **Wiring Automatic Valves**

- Strip the ends of your multi-strand wire.
- Take one wire from each valve and put them together with the white wire in the multi-strand wire using the large wire connector. This is your ground wire.
- With the remaining wire from each valve, connect each wire to a wire in the multi-strand wire using a small wire connector.
- Run the wire to the location of your control timer.
- Attach each strand of the multi strand wire to the corresponding spot on the timer. (i.e. Common, Zone 1, Zone 2, Zone 3 etc.)

## **Recommended Videos:**

[http://www.therustyshovel.ca/valve\\_instructions.html](http://www.therustyshovel.ca/valve_instructions.html)

### **Controller Installation**

- Due to the fact that we carry so many different models of controllers, your best bet is simply to follow the instructions that come with your controller.
- Make sure that you have a battery backup for your controller. This will keep your programs in tact during power loss, but will not be able to operate your valves. Your controller needs to be plugged in to send a signal to the valves.
- Rain/Freeze sensors and remotes can be added to your controller simply by following the instructions included with each unit.

## **Troubleshooting Tips**

- 90% of all problems after the installation come from dirt, stones, and other debris in the system. Whether it's the sprinkler heads, lines, or valves, make sure everything is free of debris before swapping anything out.
- If you notice something isn't working quite right, please don't hesitate to contact us. There is often an easy fix that can save you a ton of frustration.
- For the most up to date video instruction and troubleshooting advice, visit our YouTube channel at <http://www.youtube.com/RustyShovelTV>

Hopefully these instructions have been helpful in your sprinkler installation. If you still have questions, just send an email to [sean@therustyshovel.ca](mailto:sean@therustyshovel.ca) or give Sean and the team a call at the shop 306-757-2227.

**After you've finished your project, we want to hear how it went! Email your pictures and comments to [sean@therustyshovel.ca](mailto:sean@therustyshovel.ca) or post them to our Facebook page at [www.facebook.com/TheRustyShovel](http://www.facebook.com/TheRustyShovel)!**