

RUNNING UNDERGROUND CABLE

There are a few ways that you can run underground wire safely. The easiest and most practical way is the 12-inch deep PVC conduit method of running a general 15-amp line. You can also use the 12-inch deep direct burial of underground feeder (UF) cable.

It may be a better option to use PVC conduit since it will give more damage protection. Both methods must be ground fault circuit interrupter (GFCI) protected before the wires go into the ground in order to guard against electrocution if the wire is cut by accident when you are digging into the ground. It does not matter the method you decide to use you have to get an electrical permit beforehand.

If you tie into an already existing garage outlet it is generally the easiest way to give power to the outside outlet. First of all the electrical boxes tend to be exposed so hookups are simple. Second, any outlets in a garage that was constructed after 1981 should be GFCI protected. This automatically protects the outside outlet. However there are many garage outlets that are not protected so you have to check the outlet before you start the job. The best, and safest, way to check the outlet is purchase a GFCI receptacle tester and use it to test the garage outlets. These GFCI receptacle testers generally cost around \$10. If the outlet is not protected you have to install a GFCI when doing the job.

You can get the electrical supplies you need at a hardware store. You can start by installing a permanent post used for mounting the pond outlet box and for digging a one-foot deep trench.

These are the things you will need when doing the electrical work.

* 2 electrical boxes that are weatherproof. You will need one for mounting the receptacle at the point of the pond and another for the garage so you can splice the transition at the point between the cables and individual wire. If the electrical boxes are made of metal they have to be grounded to either the bare or insulated

ground wire that is in the box.

- * A cable clamp so you can run the cable from the back of the box from the outlet in the garage. You can use duct seal putty in order to seal the penetration in the wall so that moisture will not get into the box.

- * 1/2 inch Schedule PVC conduit, elbows, and couplings so you can contain the wires and connect the exterior boxes. To join the parts together use PVC cement.

- * PVC adapters to connect the conduit to the electrical boxes that are weatherproof.

- * THWN insulated wire, which is resistant to moisture, so you can pull the PVC conduit between the 2 boxes. You have to have three different colors: green – grounding wire, white-neutral wire, and black or red – hot wire. Take the existing wire in the electrical box and match the wire gauge you will be getting the power for the new outlet.

- * Conventional cable, usually type NM-B, in order to connect the outlet in the garage to the individual THWN wires that are in the outside garage splice box.

- * Rain proof covers in order to protect both the plug and the receptacle.

Other things you will need are:

- * Cable staples

- * Receptacle

- * Wire connectors

- * Conduit straps

You can mark the garage outlet plate cover that you will be tying into with either a GFCI sticker or a handwritten notice. The inspector will look into the below-grade depth as well as the connections. Because of this do not refill the trench until the work is inspected. If you do refill the trench beforehand you may have to re-dig it so that inspection can take place.

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