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**This is not a direct burial loop, do not use in direct burial applications.**

## 1. Confirm Loop Size and Type for Application

This is a saw-cut style loop to be used in existing concrete or asphalt where a groove is cut and this product is inserted into the groove then sealed with loop sealant. **Do not use this loop in a direct burial application** (examples: concrete pour, gravel road, dirt road, or buried under pavers). To confirm this loop is the proper size for the application review the additional literature included with this loop.

## 2. Mark the Pattern

Mark loop position and pattern including the lead-in run\*. **Make your measurements slightly conservative and the loop will fit every time.** If the measurements are too large the loop will not stretch to fit.

Excess loop can be taken up into the lead-in run. The 3 corners of the loop (not including the corner where the lead-in run starts) should be marked with a 45° dog-ear cut that measures: **5½" x 5½" x 7¾"**. See reverse side of this sheet for a 45° dog-ear cut template and guide on how to adjust loop size.

\*If you need help determining loop size and placement contact BD Loops.

## 3. Cut the Pattern

Use a <sup>3</sup>/<sub>16</sub>" or <sup>1</sup>/<sub>4</sub>" saw-cut blade. Groove depth should be 1 <sup>1</sup>/<sub>4</sub>" - 1 <sup>1</sup>/<sub>2</sub>". Deeper cuts require more loop sealant to seal. Cut into the installation surface following the marks previously made. No backer-rod is required if using a <sup>3</sup>/<sub>16</sub>" saw-cut blade. <sup>1</sup>/<sub>4</sub>" or wider cuts require backer-rod be inserted into the groove. Use 1-2" pieces every 3'-4' to hold the loop to the bottom of the saw-cut groove. Saw-Cut depth can be as shallow as <sup>3</sup>/<sub>4</sub>" for indoor parking garage applications. Reference step #4 to see how the yoke area should be cut.

## 4. V-Cut Yoke

A wider groove is needed for the yoke (area where the loop meets the lead-in). Drop the blade twice to make a "V" cut. The V-cut should be 1½" wide at it's widest point and 8"-10" in length. Before putting the yoke into the V-cut groove, put a layer of sealant down; then place the yoke into the groove and cover with additional sealant. **Sealing the yoke this way will fully encapsulate the yoke in sealant and provides an additional layer of protection for your saw-cut loop.** Do not bend or crush the yoke area, this could damage the watertight seal.

## 5. Insert the Loop

Prepare to insert the loop into the saw-cut groove in this orientation: black wire side up, red wire side down. Start by positioning the red mark on the loop (this mark is made at the factory) at the corner opposite of the yoke/lead-in run. **Do not fully insert the loop into the saw-cut groove at this time.** Partially insert the loop into the saw-cut groove adjusting the position of the loop to align the yoke into the V-cut. After aligning the yoke start at the red mark (opposite of the yoke) and fully push the loop into the bottom of the saw-cut groove. **Do not push the lead-in wire yet!** Before pushing the lead-in into the groove put a layer of loop sealant under the yoke (to fully encapsulate the yoke in loop sealant) then place the yoke down and push the lead-in into the groove. Do not use a tool that has a sharp edge to push the loop into the groove. BD Loops recommends the use of its PR-3/16" (Pizza Wheel) to push saw-cut loops into the groove.

## 6. Seal the Groove

Seal the saw-cut groove with a loop sealant (such as BD-LS). **Do not use a water based sealant.** Follow sealant instructions. Apply loop sealant to a dry and clean surface. Use of a shop vac and compressed air can help remove debris and dry the groove quicker. Save time by using a flat 3/16" sealant tip to fill the groove from the bottom up in one pass.

**For Harness Wiring: Solder all connections**

**For Plug/Screw Connectors: Tin all wire connections**

## Basic Loop Guidelines to Follow:

### General Loop Layout Guidelines:

- 4' from the gate/door.
- Swing gates require 4' standoff from the gate's complete open and closed positions.
- **Large gates (20'+) require 5'-6' standoff distances.**
- 0-2' from each curb.
- 4' from every other loop.

### Loop FAQs:

- **Cuts don't have to be exact!** The loop can be made up to 4' smaller. See reverse side for more information.
- Detection height is roughly 2/3 the short leg of the loop.  
4' short leg = 32" of detection height.  
6' short leg = 48" of detection height.
- **Loops detect moving metal objects.**  
Stationary metal such as rebar, manhole covers, and metal drains will be taken into account by the detector module and not cause false detections.



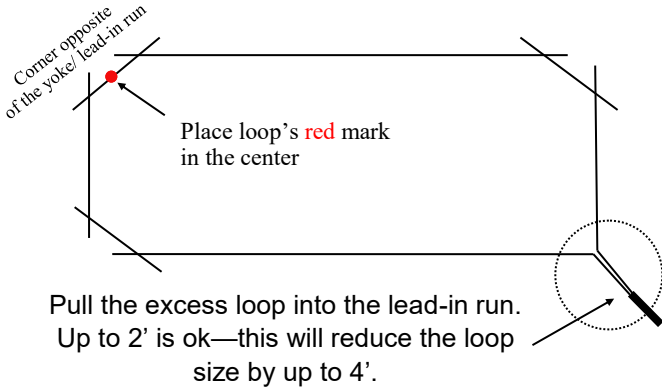
### V-Cut Yoke

*V-Cut Yoke with loop inserted. Fully encapsulate the yoke with sealant to add an additional layer of protection to your installation.*

## Adjusting Loop Size

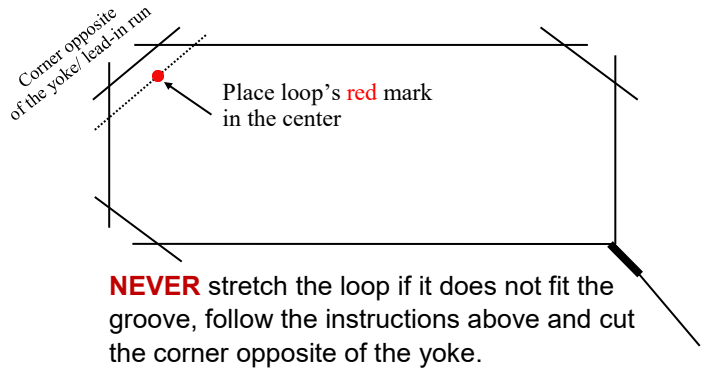
### Made the cut too small?

Push the yoke down the lead-in run, up to 2'.



### Made the cut too large?

Cut the dog ear corner opposite of the yoke to make the loop's perimeter smaller.



## How to Properly Exit the Roadway

### Exiting into Dirt/Gravel/Garden Bed:

When exiting a concrete or asphalt driveway it is important to protect the lead-in run from damage that could be caused by digging/gardening.

- Drop the blade to the bottom at the edge of the roadway.
- Exit the roadway 6-8" below the surface, or as deep as possible to better avoid damage from gardening tools.
- **Always run lead-in through PVC conduit.** *If you have a gopher problem lead-in can be run in metallic conduit.*

### Exiting Through a Curb:

There are a few options for exiting through a curb, the goal is to not leave any wire exposed.

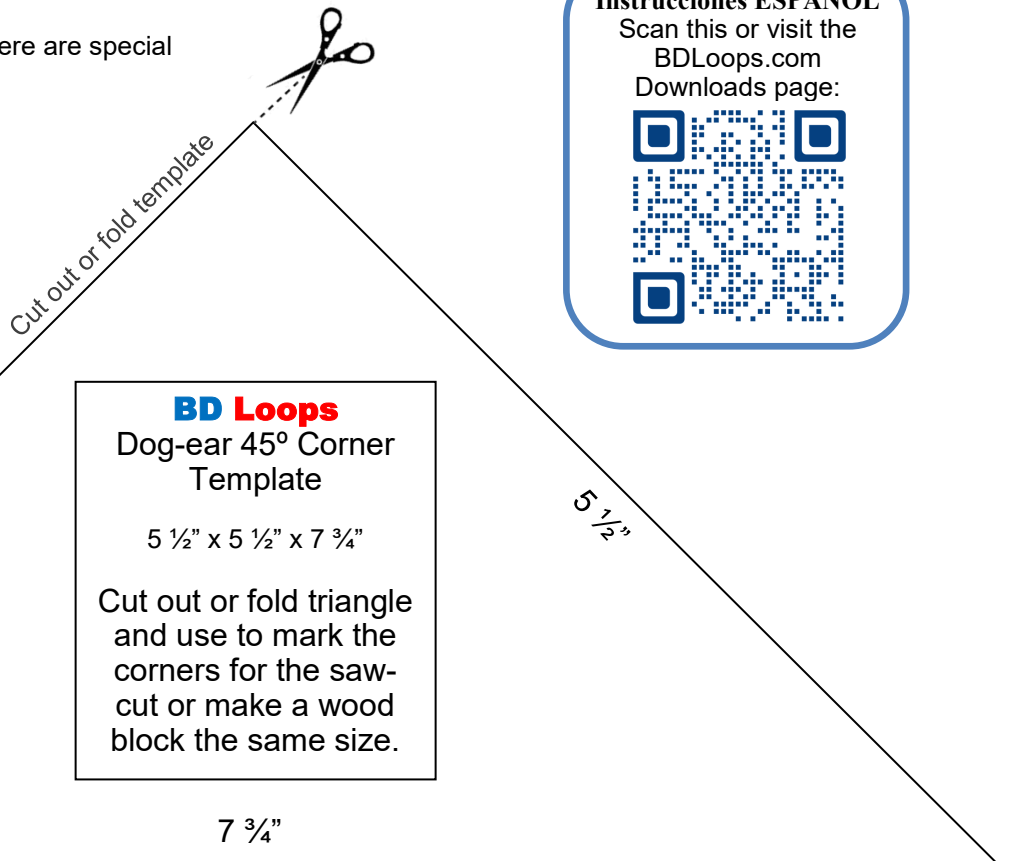
- Drop the blade to cut through the curb and seal with loop sealant.
- Drill through the curb and seal with loop sealant.
- Enter a junction box, do not leave any exposed wire.
- **Always run any exposed lead-in through PVC conduit.**

## Other Notes & 45° Corner Template

Thoroughly test the loops system to make sure it meets your detection needs/objectives.

These instructions may not be suitable if there are special circumstances at your job site.

45° (dog-ear) corner cuts are necessary to prevent placing too much stress on the wire. In general wires are not designed for 90° bends. When wire is bent 90° or at a sharper angle stress cracks are likely to form which can lead to loop failure.



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