# Coiling A Hose By Walking In A Straight Line, Version 1.2

By R. G. Sparber

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In order to properly water all of my shrubs and trees here in the Sonoran Desert, I must supplement my irrigation system by hand watering. This means dragging around a 75-foot long hose and then storing it next to the house. After hundreds of uses, it finally dawned on me that I'm wasting far too much time coiling the hose so it won't be tangled the next time I need it.
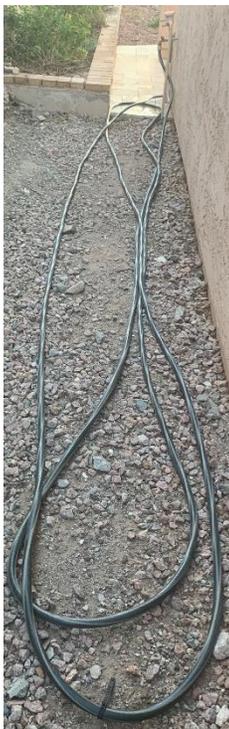
Rather than hanging the hose on hooks mounted on the wall,

I coiled it on the ground. That saved time and effort. But I still needed to fuss over pulling all of the hose to the area. This typically took a few passes.

Notice the narrow path between the spigot[2] and the raised bed? The coil you see in this area is a tripping hazard. It must be moved out of the way.

After thinking about the task for a few days, I figured out the correct way to *think* about the problem. Then the solution was painfully obvious.

I will first show you how I coil up the hose. Then I will explain the logic behind the procedure.

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[2] If you look closely at the picture, you will see that I am using a spigot that points straight down. This further opens up this narrow passageway. The hose loops behind the pipe to prevent tension on the hose from stressing the spigot.

Placing the Mark

My hose is 75 feet long but at the spigot end, I use up 1 foot to anchor it. The math on page 5 says I should put my mark 19 ½ feet from the nozzle end.

If it is acceptable to have the coil be right at the spigot and you didn't anchor the end, the mark will be simply one quarter of the way from the end: $\frac{75}{4} = 18\frac{3}{4}$ feet. Call it 19 feet if you like.

John Herrmann and I kicked around a few ideas and came up with an alternate way to place the mark. Rather than using math and a tape measure, a bit more walking is involved.
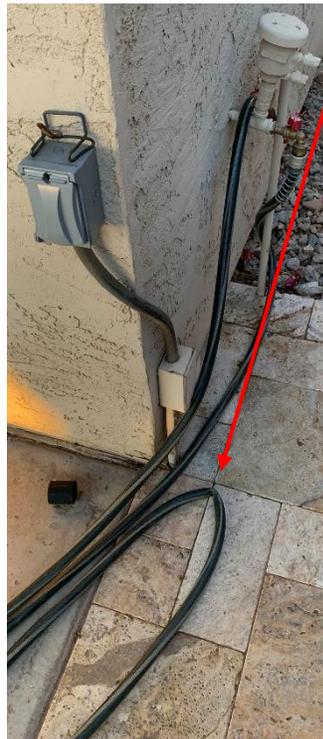
First pull the hose straight.

Then hold the nozzle and walk it to the spigot.

Walk back to the point where the hose changes direction and pick up the loop.

Carry the loop to a point about 2 feet from the spigot.

Then walk back to the point where the hose changes direction. Mark the loop closest to the nozzle end.

Coiling Procedure

With the hose fully extended,

I pick up the marked point.

Then I walk along the hose towards the spigot until the loop being formed lines up with a point about 2 feet from the nozzle end.

Next, I pick up the hose at my feet.

I walk past the spigot until the hose is taut and put down the loops of hose.

Done. The coil is completely out of the narrow area in front of the spigot.

John Herrmann pointed out a simplification if the hose can be stored on the same side it is fed out:

Put the mark at the center of the hose. With the hose fully extended and while holding the nozzle, walk to the mark. Pick up the hose at the mark and continue walking to the spigot. It is that simple.

Theory

nozzle   spigot

A

3

1 •   •

B

2
(mark)

4
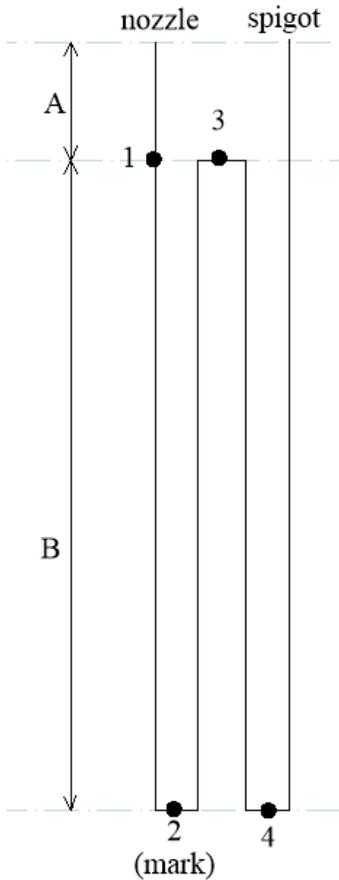
Here is a schematic of the hose path. I can ignore the length used to form the ends of each loop.

I have chosen to have two full loops. This means I bend over to pick up the hose twice. It is an acceptable tradeoff between the compactness of the coil and the required effort.

Distance "A" is the separation of the spigot or nozzle from the hose coil. I need to find "B" in order to place my mark at point 2 which is A+B feet from the nozzle.

Given a hose of length "L" with "n" loops in the coil, I can say

$$L = 2A + 2nB \qquad (1)$$

L is measured, A and n are chosen. Rearranging terms I get

$$B = \frac{L - 2A}{2n} \qquad (2)$$

The mark is then A+B feet from the nozzle. Using (1) and (2), I can say

$$mark\ location = A + \frac{L - 2A}{2n} \qquad (3)$$

For my specific case, L = 74 feet, I chose A = 2 feet, and chose n to be 2 loops:

$$mark\ location = 2 + \frac{74 - (2 \times 2)}{2 \times 2}$$

$$mark\ location = 19\frac{1}{2}\ feet \text{ from the nozzle end.}$$

If I wanted to save a few steps and didn't mind bending over one more time, I could go with 3 loops. Then I would put my mark at $2 + \frac{74 - (2 \times 2)}{2 \times 3}$ which is 11 feet 8 inches. That would save me walking about 8 feet.

Acknowledgments

Thanks to "whatnext", Chuck Peterson, and John Herrmann for finding that I used the wrong word for "taut".

Also, thanks to John for pointing out a simplification if the hose can be coiled on the same side it is fed out plus collaborating with me on an alternate way to place the mark without any math or tape measure.

I welcome your comments and questions.

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