Construction Techniques that Lead to Leaks

By Jan Schreier

When I started my own business in water gardening, I figured that I could spend all of my time doing the things I love. That was the best career decision that I've ever made. And while I've had one of the best summers of my life, what I quickly found out, however, was that those things that I like the least about water gardening (namely finding and fixing leaks) happened to be the thing that people were most willing to hire someone (me) to do.

Usually, the leak is in a stream bed or around a waterfall. While frustrating to find, once found, they are pretty easy to fix. I had always maintained that the last place to look for a leak was in the return pipe (from the pump to the top of the waterfall) for two reasons: 1. It is extremely rare to have a leak in the hose, and 2. Without digging up the entire hose, it is one of the most difficult to find (second only to a puncture in the liner). This summer, I changed my mind, and I'm putting hose leaks higher in the list of probabilities for one reason, and for one reason only. This year, I diagnosed and fixed four leaks that turned out to be leaks in the hose and there was one thing that all four of those ponds had in common. It had absolutely nothing to do with the material of the hose (Flexible PVC, Vinyl, Hard PVC), the diameter of the hose, or how deep the hose was buried. What they all had in common, was an area in the hose that held water even after the pump was disconnected. For various reasons of topography and construction all of the leaking hoses happened to have a dip that held water even after the pond was drained. This area is a prime spot for freeze-thaw cycle that can cause a small rupture in the hose. Unless the entire hose is buried below the frost line (and this can be 3-4 feet here in Minnesota so I wouldn't recommend that), one needs to take care that there are no places in the return hose that dips down & then up that would trap water in much the same way as the trap in a sink drain holds water all the time. In places where this is just not practical due to the topography of the area surrounding the pond, there are two suggestions I have to prevent this from becoming a problem.

One suggestion is to blow out the return pipe once the pump is pulled from the pond for the winter. Anyplace that does this for automatic sprinkler systems can do this for your pond. Then, both ends of the hose should be capped off to prevent additional water from entering the hose.

The other suggestion is to install a Y in the lowest part of the hose, with a ball valve that can drain it to a lower part of the yard. (See diagram.) Normally, as the pump is running, the ball valve is closed, and water flows through the main return hose. In the fall, once the pump is pulled, the ball valve is opened, and the last bit of water can be drained from the hose. The ball valve is kept open throughout the winter seasons, and then closed again once the pond is started up again in the spring. I installed one of these Y systems in a pond this year which solved the problem very well.

So, before the ground freezes too far this year, check to make sure that your hose is completely drained, or you could be digging up the whole thing & replacing it next spring.