

To have a functioning bioconverter/filter when suddenly needed can be accomplished by taking some bioconverter media such as a Japanese mat, Matala mat, reticulated foam, springflo or other media and place it in the top of a updraft barrel bioconverter, in the pre-filter, in front of the pond return, anywhere in the pond system that ensures good water flow thru the media. Keep this media in the pond system at all times.

When a temporary hospital/quarantine tank is needed, set up the tank, get a submersible pump, place it in the tank and plumb it to a plastic trash can, bucket or whatever bioconverter barrel device that was previously chosen to put the aforementioned bioconverter media in. You now have a temporary holding tank/quarantine tank complete with a fully functional bioconverter/filter.

Remember when catching a koi to move to your quarantine/temporary treatment tank, don't lift anything but small koi out of the water with a net. Use the net to guide the koi into a tub, than lift the tub, koi and its water out of the pond and transport it to the temporary holding tank. Again, never use the net to lift anything but very small koi out of the water.

Figure 30 below is the quick-reference plumbing guide we have been referring to throughout this section. It should prove quite useful in your detective work.

The following sections on filtration, water quality, health assessment and maintenance, etc. will add to your expertise allowing you to become a happier hobbyist or KHA.

To find your Total Head Loss for your pond plumbing setup:

1. Take your Total length in Feet of All your Vertical & Horizontal Pipe that's run hopefully in the same Diameter & call this <A>.
2. Now count the number of 90° Elbows used and Add the correct amount of "Elbow friction feet" <B> from the Elbow Loss Chart below to the Total <A>.
3. This will give you your "Total Straight Pipe Run" which is used in the "Friction Loss Chart" below. Find your pumps size in GPH in the chart and using your pipes size (ID) find the Friction Head Loss per 10 Feet or move the Decimal to the left once for Head Loss per 1 Foot.
4. Now take the Friction Loss Number & Multiply by figures <A> + <B> for Friction Head Loss Total per 10 feet.
5. Finally take any Vertical Head Height Above water that's used for say a waterfall and Add it to figure #4.
6. This is the Height in feet to apply to your pumps "Head Curve Chart" which will show you just how many GPH you'll receive at that height from the output.