#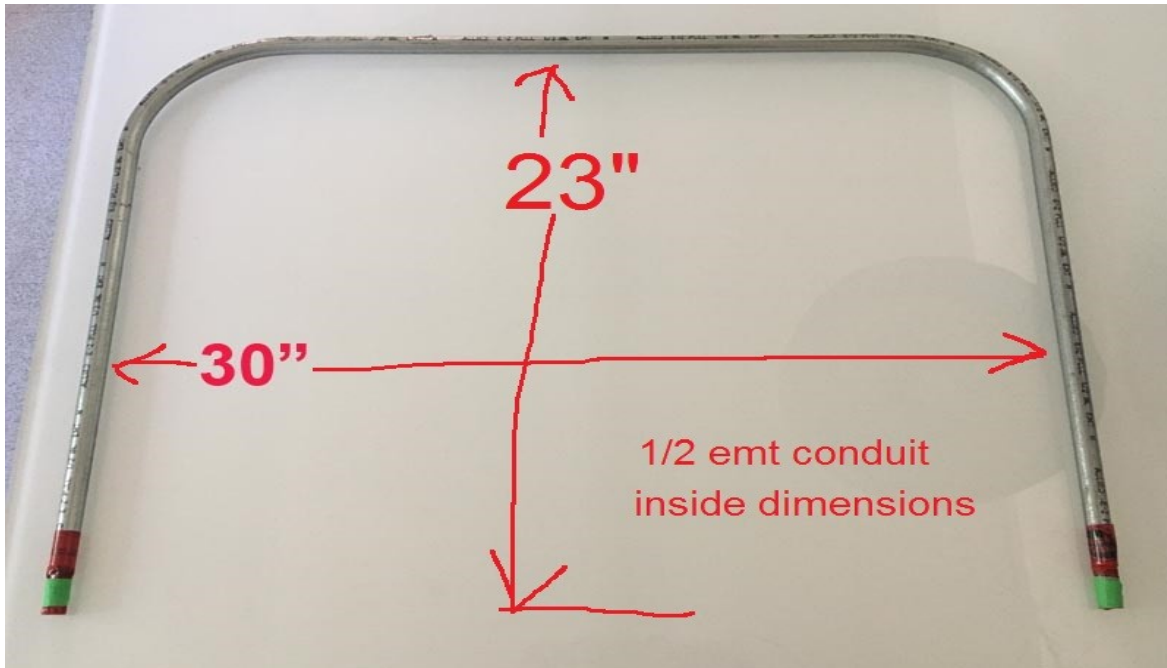 Stretching Clear Chinese Balloons a simple method of measuring the volume of the balloon. ...Faster stretching requires > 70% humidity

Dave VE3KCL

Bend a ½ emt metal conduit so the interior dimensions are 30 inches wide and 23 inches high.

Make a foam measuring gizmo with a paper slider that can slide down the foam to touch the top of the conduit. Mark the middle of the conduit (blue lines)
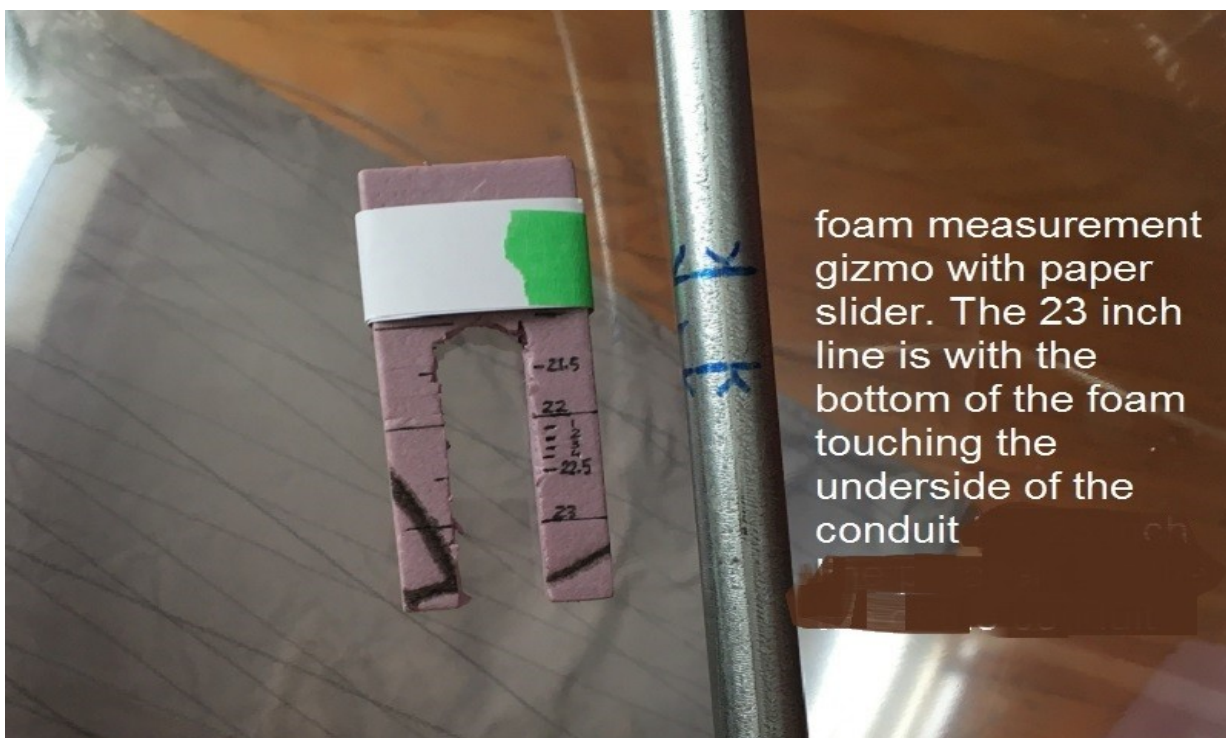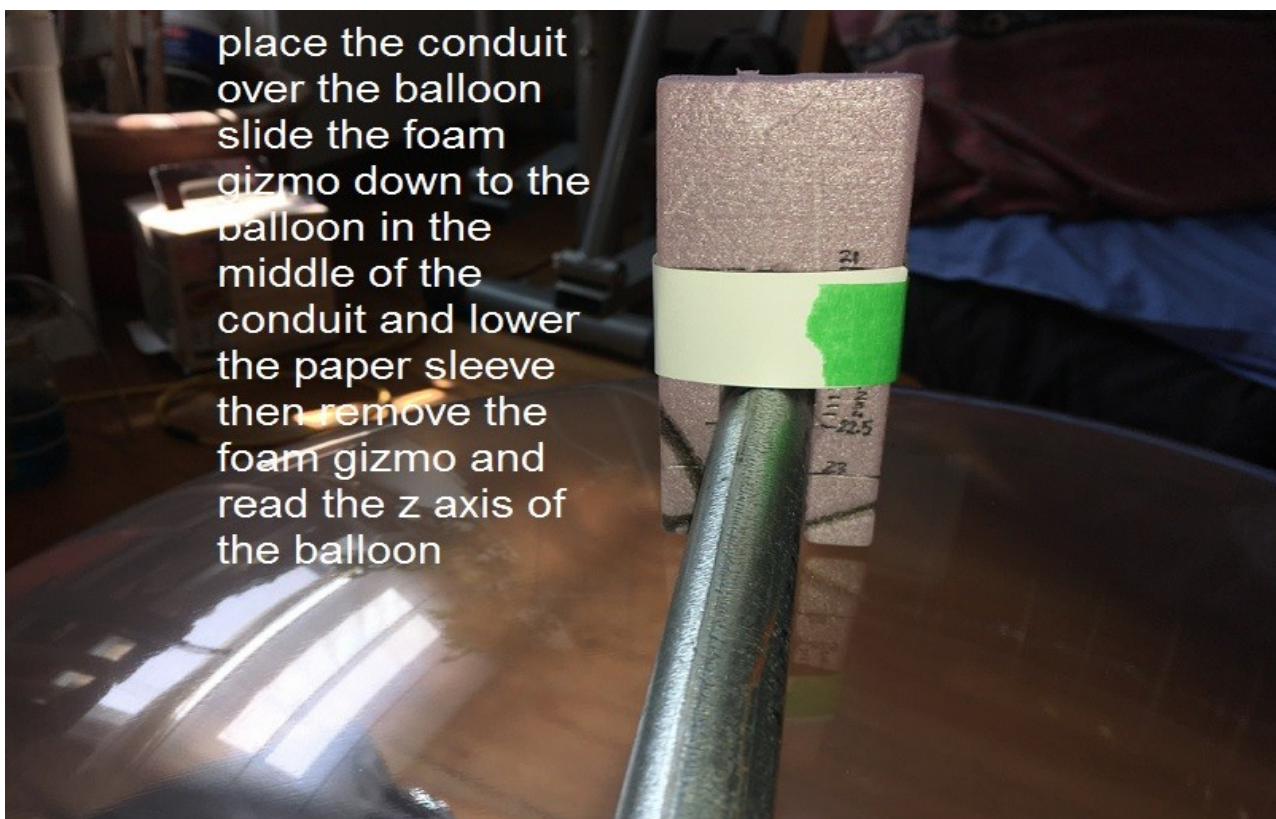

Place the conduit over the middle of the inflated balloon.

place the conduit
over the middle of
the balloon

Put the measurement gizmo in place in the middle of the conduit till the bottom of the gizmo touches the top of the balloon and slide down the paper slider till it touches the upper side of the conduit.

place the conduit
over the balloon
slide the foam
gizmo down to the
balloon in the
middle of the
conduit and lower
the paper sleeve
then remove the
foam gizmo and
read the z axis of
the balloon

Remove the gizmo and measure read the z axis or altitude of the clear Chinese balloon. In this case I read the z axis or altitude at about 22.1 inches.

If you want to stretch larger you will have to make the conduit width larger than 30 inches (and measure inside for the width) but this rig will measure a volume of about .175 cubic meters down to .15 cubic meters or less.

You enter the values of width and altitude radii into a spreadsheet for calculating the volume of an oblate spheroid. For example: Volume $V=4/3*\pi*(b)2*c$
A spreadsheet is handy to do the math as you are stretching and entering numbers.

Substitution: b squared is 15" x15" (radius is ½ of 30 as the balloon was touching the inside of the conduit) and c (the altitude radius) is 22.1 divided by 2 = 11.05" we get a volume of about 10414 cubic inches or about .1706 cubic meters. These numbers are not really this exact but give you a general idea of the stretch volume. I shoot for about .17 cubic meters volume but .15 cubic meters volume works quite well also with but with less altitude at float.