

Construction of a Bar Jump or Hurdle

By Roger at www.instantagility.com



This is the most basic of agility obstacles. It's easy to make, will only take you about **an hour** and will cost about **\$12** in materials. You will need two adjustable jump cups (see below) in addition to the materials listed below for every jump bar on your hurdle.

Tools

You will need a **PVC cutting tool**, **measuring tape**, and a **Sharpie** or similar marking tool. In addition, you will need paper towels for cleaning glue joints.

Materials

Below are the pre-cut pieces, ready to be assembled. The straight pieces of 1" pipe are less than 14 feet in total length, which means you'll need two 10 foot pieces of pipe to construct one jump, or three pieces to construct two jumps (in which case you need to double the connectors shown below). In addition, you will need a 4' section of 3/4" pipe for every jump bar.



The parts you'll need (all 1" diameter pipe and appropriate connectors except as noted):

- 1 slip end caps (6)
- 2 slip "T" connectors (4)
- 3 12" pipe feet (4)
- 4 30" pipe uprights (2)
- 5 1 3/4" pipe stubs to join "T" connectors (2)
- 6 50" pipe lower cross bar (1)
- 7 48" pipe jump bar, 3/4" diameter (1)

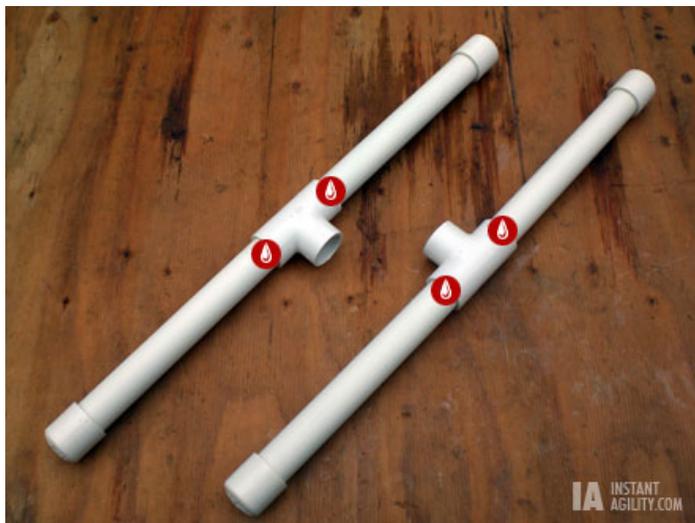
Note: You can have as many jump bars as you like, of course, just clip them on.

Assembly

Please see the [tips](#) page for general hints on cutting and assembling PVC pipe. Look for the red glue symbols in the photos to show the freshly glued joints in each step.



Start by gluing four end caps 1 to the four feet 3.



Glue the feet into two of the “T” connectors 2.



Glue the stubs 5 into the foot assemblies.



Set aside the feet and glue the two remaining “T” connectors 2 to the 50” cross bar 6. It is important that these two connectors be coplanar. Glue one first and let it set, then glue the other in place ensuring that both connectors are flat on your work surface as shown.



Glue one foot to the cross-bar. You can eyeball this pretty easily, let the corners of your work surface guide you as you twist the foot into place.



Repeat the process for the other foot.



Glue the two remaining end caps 1 to the two uprights 4.



Finally, glue the uprights into the base assembly. Assuming you've made your adjustable jump cups, you're done!



You can see that the jump cups just clip right onto the upright.



The finished jump. Use colored electrical tape to provide contrasting stripes on the jump bar to help your dog see it; this bar would benefit from another stripe in the center. You can also use the tape on your uprights to help them stand out.

Alternative Designs

You can make the jump bar height permanent by cutting the uprights and inserting modified “T” connectors to hold the jump bar, as described in the “jump cup” post. You can leave pieces unglued to aid storage, though I would always glue the “T” connectors to the cross bar, that is where most of the strength of this obstacle resides. You could use your Sharpie to add reference marks to the uprights for easily setting the jump bar at particular height(s).



To make a jump with more than one jump bar, just add a couple of clips and another bar.

Adjustable Jump Cups

Adjustable cups for holding cross-bars make constructing standard jumping obstacles a piece of cake. The secret to our cups is to raid the do-it-yourself irrigation section at Home

Depot. Each cup will take just a **few minutes** to make and cost about **\$1**.

The clip-on part of the cup is sold as a “1-inch Snap On Saddle” for irrigation systems and can be found (usually) sharing the same aisle as the pipe fittings. Making cups this way means that your cross-pieces need to be $\frac{3}{4}$ ” pipe (ideally). The smaller pipe for the cross pieces will be easier on your dog’s paws if they do strike the bar, too.

Tools

You will need your **PVC cutter**, a **marker** and a **measuring tape** or ruler.

Materials

Each cup will require one saddle piece and one 2” section of 1” diameter PVC pipe. You need two cups to hold up one bar.

Assembly

Important Safety Note: When you use the PVC cutter to make the lengthwise cuts in the PVC pipe, you are using it in a way it was not designed for. It’s pretty safe but take your time and be very aware of where your fingers are when you’re making the lengthwise cuts. The cutter cuts as slowly as you squeeze, but it is sharp, so be careful!

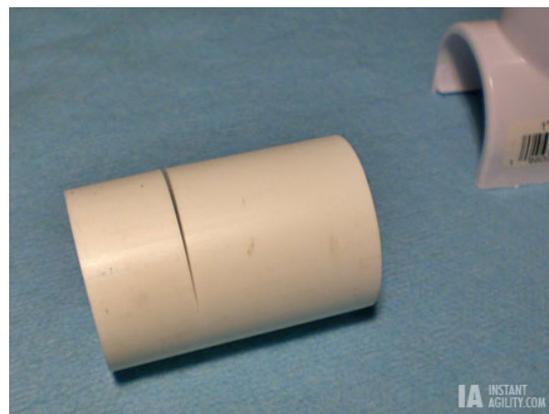


Here are the (uncleaned) pieces you need to make one cup. On the left is the “Snap Saddle” as can be seen from its label, and on the right is a two-inch section of 1” diameter PVC pipe. Make a pen mark $\frac{3}{4}$ ” from the end of the pipe; this will guide you when making the cut partially through the pipe.



Using the mark you made, cut a little more than halfway through the pipe, as illustrated above. Certain professional organizations have precise measurements for the depth of the cup, but “a bit more than halfway” is fine for casual agility.

To remove the partially cut pipe from the cutter, open the jaws and use a rotating motion parallel to the blade.



This is what your pipe will look like when you remove it from the cutter.



I have made a mark on the pipe to guide me as I place the blade to make the long cut. I eyeballed it by looking at the cutter from above to ensure the mark was under the blade, but you could be more precise by extended the mark out to the end of the pipe.

As mentioned in the safety note above, I'm using the cutter for a purpose other than which it was designed. I have a firm grip on the pipe, my fingers are out of the way, and when I squeeze the cutter I am doing so very slowly.

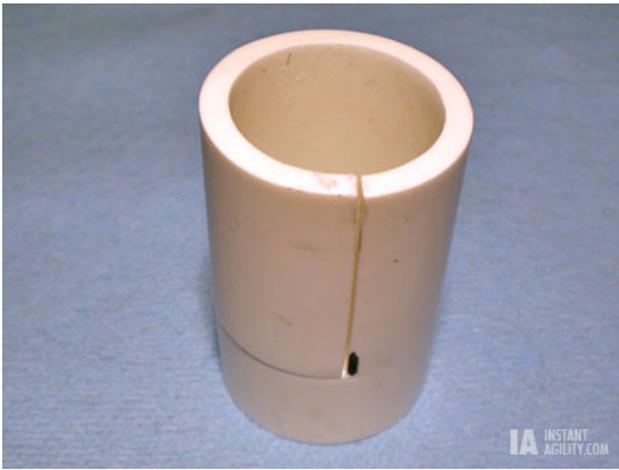
Starting the cut is the only tricky part; the pipe will want to push away from the blade. Use your hand to hold the

pipe firmly in place as you start the cut (see above illustration). Once it is started, the cutter will pretty much finish the cut itself, though keeping a bit of pressure on the pipe will make it easier. As you approach your previous cut, proceed very slowly for best results.

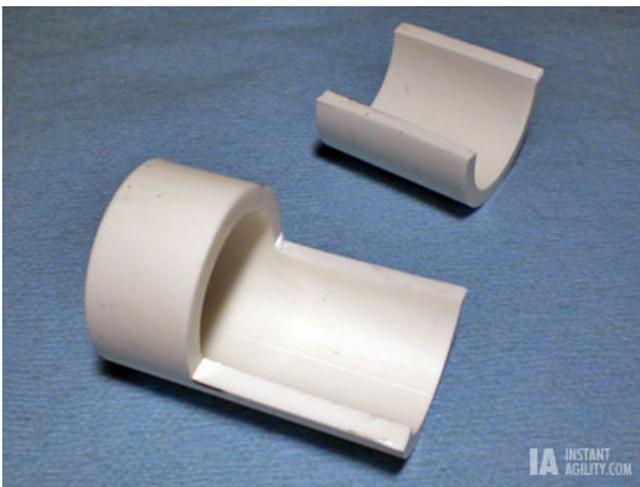
You cutter will probably not open wide enough in any case, but don't be tempted to try both cuts at once. Do one side at a time, slowly and with awareness at all times of where your hand is in relation to the blade.



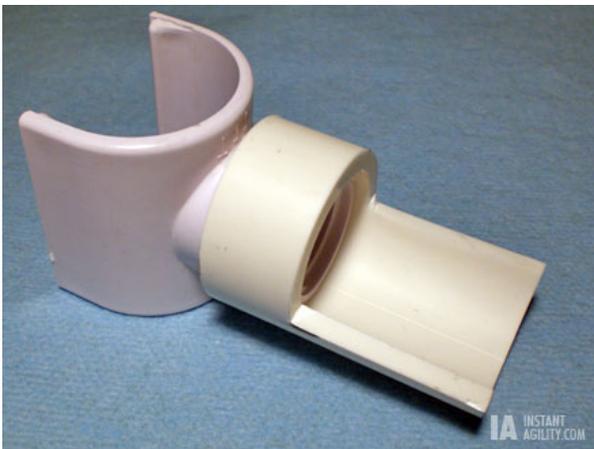
Here the cut is almost complete. You may wish to open the cutter and adjust the pipe so the blade is closer to perpendicular to the pipe for a neater finish.



The cut is complete. Repeat the process for the other side.



Both cuts are complete. The piece is almost done!



Dry fitted together, all this needs to be complete is some glue (see the top image of this post for a pair of completed cups). Note that this join is a pretty tight fit, so you will probably not be able to smoothly twist it into place. Use enough glue and press it firmly home using pressure on the inside of the saddle and the remaining “entire circle” section of the pipe. The cups will work fine even if they are a few degrees out of “perfect” when the glue sets.

Alternative Design

You can make permanent jump cups out of “T” connectors. You do so by using a saw to mimic the cuts we made here on the “90 degree” side of the “T”. Cups made this way will use 1” cross bars, assuming you use 1” “T” connectors on 1” uprights.