

Hearsemans Hangout



<http://www.geocities.com/Area51/Dimension/1475/chiller.html>

BUILD A LOW COST FOG CHILLER

MATERIALS NEEDED:

Large plastic chest style cooler (the larger the better)
4" thin wall P.V.C. pipe (thick wall will work if you can't find thin wall)
hardware cloth, 1/2" square mesh
1"X 2" wooden furring strips
poultry staples
clear silicon caulk
4" low voltage D.C. cooling fan and transformer (computer or surplus store will have these)
waterproof glue
small nails or screws
wire ties
vinyl tubing that will fit over the drain hole in your cooler

TOOLS NEEDED:

4" hole saw and drill
sheet metal snips
hammer
utility knife
pliers
wood saw



Here is the fog chiller that I built for a haunted house I work at. It is reliable, lightweight when empty and is very durable. I used a 48 quart cooler but you could use a smaller one if you wanted to. This chiller easily handles a fogger with an output of 7000 c.f.m. If you have a larger fogger than that I would suggest a 48 quart or larger for sure. Cut a 4" hole centered on both ends of the cooler with a hole saw just below the handles.

If you cut the holes too low you will have problems with water coming out of the pipe ends. Cut two pieces of 4" P.V.C. pipe approx 6" long. Insert the pipe into the holes making sure that one of the pipes sits flush with the inside wall and the other sticks in about 2" further. (See photo below) Seal around both of the pipes inside and out with the clear silicon.



Install the 4" fan to the inside of the cooler that has the pipe flush with the inside wall. I used long skinny sheet metal screws to attach the fan. Be sure you have the fan facing the correct way so it is blowing out the pipe. On the other side of the cooler is where the fog machine will go so the fan sucks the fog through the chiller.

Cut a small slot in the lip of the cooler where the lid meets so the cord will not lay in the bottom of the cooler where melted ice will make contact with the cord. Also put a slot in the lid just above the other slot.



Now comes the most difficult step of the whole construction, building the cage that holds the ice. Cut two pieces of 1"x2" about 1/2" wider than the inside width of your cooler, then cut two more pieces of 1"x2" just long enough so you can fit the cage frame into the cooler.

You then need to cut pieces of the wire hardware cloth and assemble them as shown making sure that the bottom of the cage rests at least 1" from the bottom of the cooler.

Be sure to wear leather gloves and safety glasses while building the chiller and be very careful not to cut yourself while handling the wire mesh hardware cloth, it has very sharp edges.

I use plastic wire ties to assemble the cage pieces and this way holds up real well. Assemble the wooden pieces as shown using the glue and screws or nails and attach the wire cage to the frame. You then need to cut four slots in the lip of the cooler body to the cage rests in them otherwise the lid will not seal when closed, (see photos). Attach the vinyl hose to the drain of the cooler to allow the melt water to drain. If you do not hook up a drain hose to your chiller you will have to keep a close eye on the water level so it does reach the fan or you will have electrical shorting problems and perhaps even a fire could result. There are some more photos for reference on the next page.



To run your chiller fill the cage with ice AFTER it is installed in the cooler. If you try to lift the cage full of ice outside of the cooler you will damage the cage due to the weight of the ice. The cage I built holds about 20 lbs. of ice. After the ice has been filled close the lid and plug the fan into the power supply. Set your fog machine approx. 1"-2" away from the inlet pipe, this will allow the fog to mix with a little air on its way in and will start to cool the fog making your ice last longer. Plug in your fog machine and you're ready to go. You may have to set your fogger on some pieces of 4x4 to raise the fog outlet to meet with the chiller inlet.

One thing to note, you must use a fog fluid that can be chilled or the fog will not lie low to the ground as wanted. Some fluids that I use are Roscoe Stage and Studio fluid and VEI Ground Fog fluid. If in doubt, contact the manufacturer of your fog machine for a fluid to use.

If you want to direct the chilled fog to a location away from the chiller attach some 4" flexible vinyl dryer hose to the outlet. I hope this information will help you have a spookier Halloween this year, ENJOY!

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