



http://www.gotfog.com/fog_machine_chiller2.html

FOG MACHINE CHILLER

Filling the night air with menacing fog, which your trick-or-treaters must venture through and wonder what could be lurking within it, a fog machine is an absolute must for a truly creepy Halloween haunt or party.

But there are times when you might want the fog to hang the ground rather than disperse through out the air. A perfect example would be for a graveyard scene in your front yard. Instead of filling the air, you want the fog to slowly drift over the ground, around tombstones and over burial mounds, or maybe you'd like it to flow out from under your porch or even over your roof.

Unfortunately, the very nature of how these machines produce fog makes this difficult, as the fog fluid is heated to generate fog which comes out hot and rises in the air. To discourage the fog from rising it has to be cooled down before it is released into the air.

The general idea is to build a device that the hot fog enters and is cooled down as it passes through. A Fog Chiller.



We designed our Fog Chiller to be easy to build, relatively inexpensive and be a completely self-contained unit that could be moved around as needed.

PARTS AND MATERIALS LIST

- 1 - 48 quart ice-chest (cooler)**
- 2 - Feet of 3" diameter ABS plastic pipe**
- 2 - 3" ABS plastic 90 degree elbow joints (NIBCO 5807-V)**
- 2 - 3" ABS plastic coupling hubs (NIBCO C5801)**
- 1 - 3"x2" ABS plastic reducer coupling hub (NIBCO 5801)**
- 1 - 2'x3' piece of 1/2" square hole wire mesh**
- 2 - 5" expandable clamps**
- 1 - Tube of clear drying silicone caulk**
- 1 - Can of flat black spray paint**
- 1 - Fog machine (Visual Effects Party Fogger shown)**

The ice-chest is the standard type found in most department stores and only costs around \$15.00, but be sure to keep an eye out at garage sales for a used (and cheaper) one. The ABS plastic pipe and connectors are simple to work with, can be found in the plumbing department at all major hardware stores, and the pieces slip together easily.



The first step is to cut a hole through each end of the ice-chest. We used a 4" bi-metal hole saw attached to an electric drill to easily cut perfectly round holes through the center of each end. These unique saw blades (Vermont American Tool Company) can be found at most hardware stores. The bits are a little expensive at around \$25.00, so an alternative would be to use a compass to mark the circle for the hole and then use a jig-saw to cut it out.



Next, you will need to cut three lengths of the 3" ABS pipe. Two at 3 inches long and the third one about 12 inches long. The easiest way is with a hack-saw. The 12 inch piece is only a rough estimate for the length and will be re-cut later.



Using wire cutters, cut the 1/2" screen wire into a X inch by 12 inch piece. The "X" represents the inside length of the cooler (19-1/2 inches with ours). When cutting the length-wise side cut the further end of the wire so that they are left to stick out. These will be used to attached the wire to its self when rolled (pictured below-left).



Roll the screen wire piece around a spare piece of 3 inch ABS pipe so that it has a basic tube shape. Lower the wire tube into the cooler and slide the 3" id double-female connectors (the two 3" long pieces of ABS pipe you cut) through the holes you cut so that an equal amount sticks out either side. Twist the screen wire into as tight a tube as you can and attach the clamps.



Using needle-nose pliers, bend those end wires you purposely left on under and over the lower screen wire to hold it in its tube shape (pictured center). If a few of these break off its not a problem, but if a lot break off you may need to use some light-weight bailing wire to re-enforce the seam of the wire cage. What you should have is a tube-shaped wire cage that is attached at both ends of the chest (pictured right). This is the chamber that the fog will pass through and be cooled in.



Fog Chillers intake components from top to bottom.

- 3" to 2" ABS Reducer
- 3" section of 3" ABS pipe (not visible)
- 3" ABS 90 degree elbow joint
- 12" long section of 3" ABS pipe
- 3" ABS 90 degree elbow joint
- 3" section of 3" ABS pipe (not visible)
- 3" ABS plastic double-female connector



Do not glue these pieces of the intake assembly together. Once they are pushed together they will stay in place. This way if you need to swivel the section or disassemble it you'll be able to.

To prevent fog from leaking out around the connectors, you need to seal the two four inch double-female connectors at both ends of the chest with some clear silicone caulk or sealant. Be sure to apply the sealant both inside and outside of the cooler, and then let it dry thoroughly according to the sealant directions before using the fog chiller.



To help camouflage the unit at night, you will want to paint the exterior of the chest with flat black spray paint. Unfortunately, paint does not stick to the plastic very well, so you will want to prime the ice-chest first. Zinsser B-I-N Primer, available at the hardware store, is a Shellac based Primer-Sealer that works well to prime the plastic ice-chest before painting, and it dries pretty fast. Allow the paint and caulk to dry for 24 hours.



Since we cut the mid-section of 3 inch ABS pipe that runs between the two elbow joints extra long for final adjustment, you will need to set your fog machine on top of the Fog Chiller and cut off any excess ABS pipe until the fog machine's exit nozzle is aligned with the Fog Chiller's intake nozzle. Don't cut off too much or you will have to replace the pipe.



Your Fog Chilling unit is now complete and ready to go. When you're ready to use it all you have to do is fill it up to the top with ordinary ice cubes (ours took 35 pounds) and close the lid tightly.

