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AquafoTM
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Early AquafoTM design ideas

Continued from June 2007 CTI Newsletter

City Theatrical has always specialized in dry ice fog. Like many of our products, our inspiration came from one of our customers. When the first national tour of *Phantom of the Opera* was preparing to go on the road, the production electrician, J.R. Sample, asked us to consider building some large and rugged stainless steel dry ice tanks for them. We designed them and they were superior in every way to existing dry ice machines. They were large and powerful, and held 100 lbs. of dry ice. They heated quickly and could make large amounts of fog for 30 minutes. In short, they were very industrial! We named them the SS6000 Dry Ice FoggerTM (SS for stainless steel, 6000 for 6000 watts of heating power).

The SS6000 quickly became the standard of Broadway and touring shows for low lying fog. But we wondered if we could make a smaller, more user friendly machine. Our design concept for what was to become the **AquafoTM 3300** was:

- 115 volt input
- 230 volt models for use outside the U.S.
- Light enough to move about easily and to even transport in a car
- Up to 15 minutes of fog output
- Temperature control
- Low water cutout switch
- Pump and fan built in
- Stylish appearance
- A tank that would not rust or corrode

To save time and cost, we explored ways to fabricate the tank without forming and welding stainless steel sheets. We considered fiberglass, but chose a technology called rotational molding which allows excellent detail with low tooling costs for large molds.

We developed a temperature control system and combined it with a low water level cutout switch to remove one of the perils of homemade dry ice machines: boiling all the water away and melting the heating elements. This is quite dramatic but not uncommon on homemade machines!

The interior of the AquafoTM 3300 includes a stainless steel ice shelf that is removable to inspect the tank and heating elements. The heating elements screw in and are easily replaced.

We created a large custom gasket for the plastic lid to prevent fog leaks and sealed it closed with two clasps on the sides of the machine.

Now, more than 10 years after we developed the AquafoTM, many, many rental shops around the world have them in their inventory and many productions of *The Nutcracker* fill the stage with AquafoTM dry ice fog each holiday season. Since the AquafoTM is nearly indestructible, they seem to last forever with simple maintenance to the heating elements and pump.



One early design idea looked a lot like a trash can.



This rejected idea reminded us of a vacuum cleaner.



Another rejected idea. This was too Jetsons.