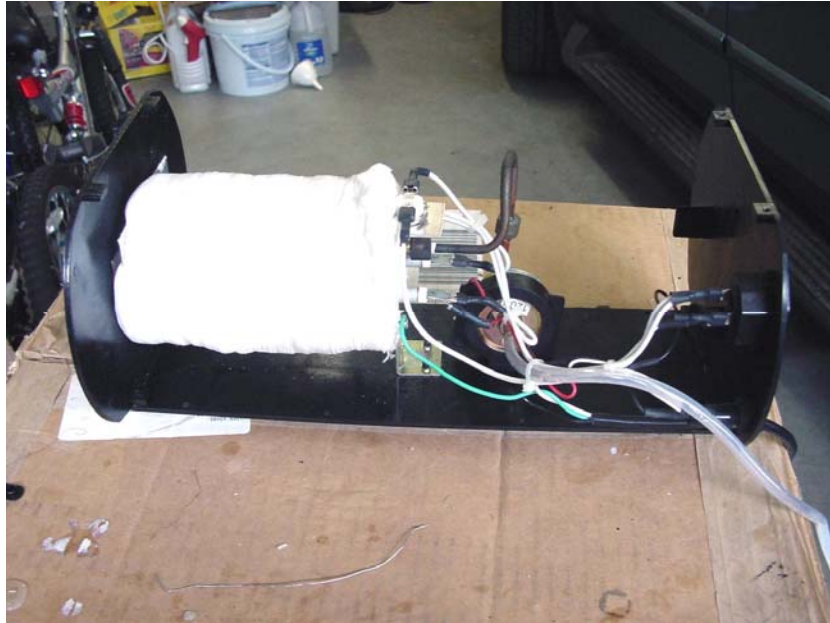


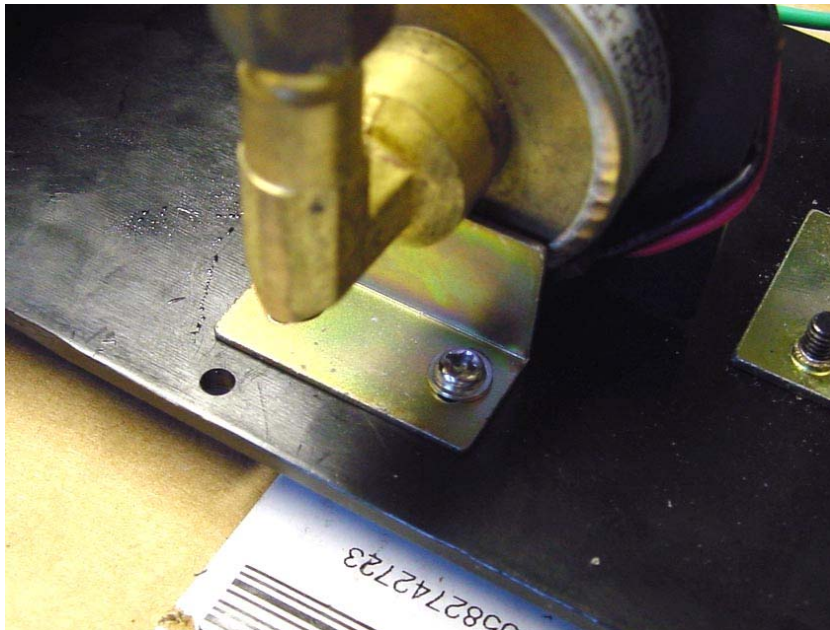
## Fog Machine Pump Repair How-To:

Please read the entire instruction. Note that this instruction may not address the cause of failure for your machine. However, if you have cleaned the daylights out of your fogger and it hasn't helped, or you hear a loud rattle or buzz when the pump is running but no fog comes out, this is the likely cause.

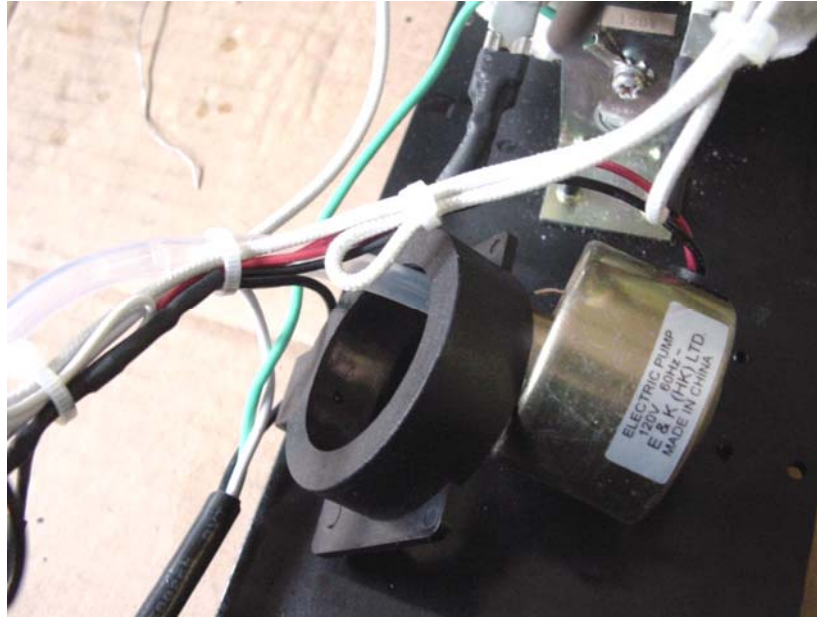
1. Drain the fog fluid reservoir. Remove the top cover and both side panels as shown. Do not remove the screws that hold the end panels. Remove the fluid container.



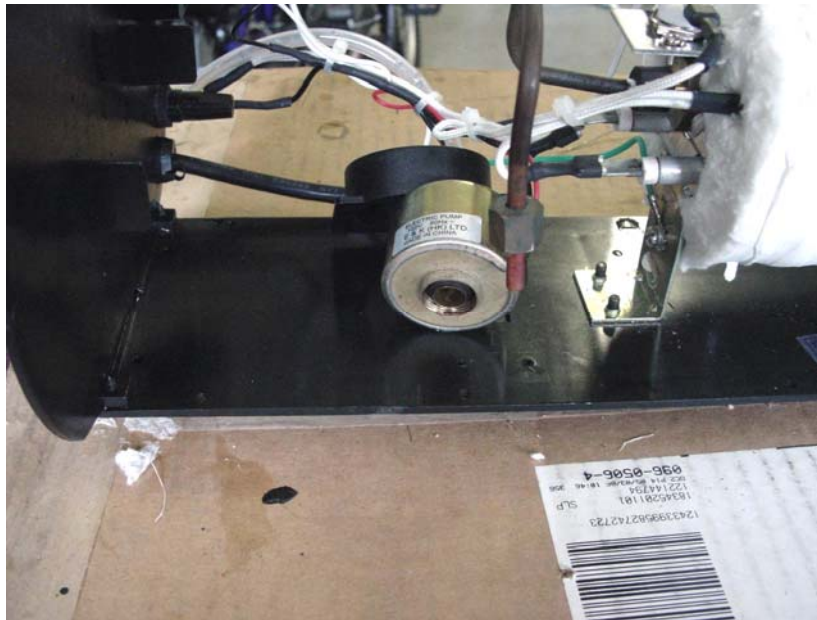
2. Remove the 2 screws that hold the pump retainer plate. Remove the retainer plate.



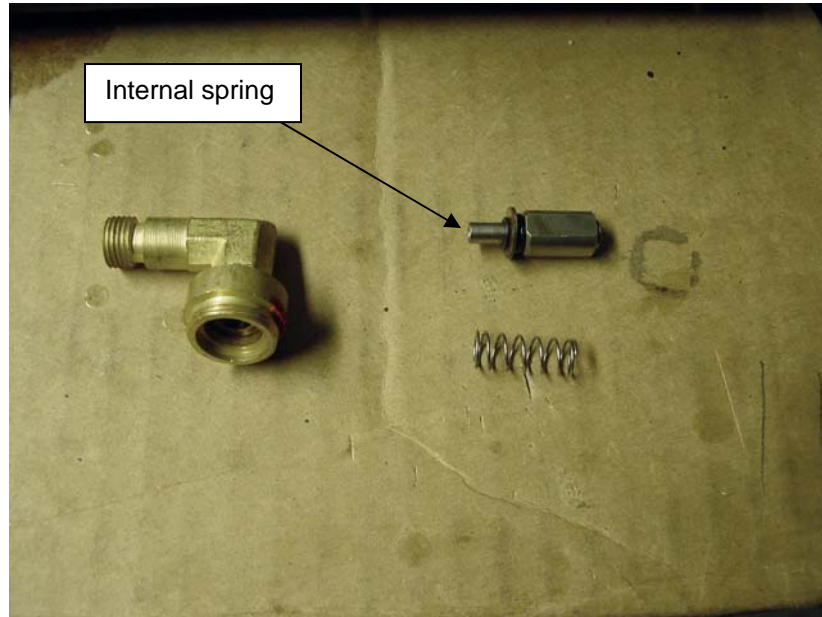
3. Remove the 2 screws that hold the pump bracket. Lift the bracket out of the bottom panel. The pump body can be pressed out of the bracket.



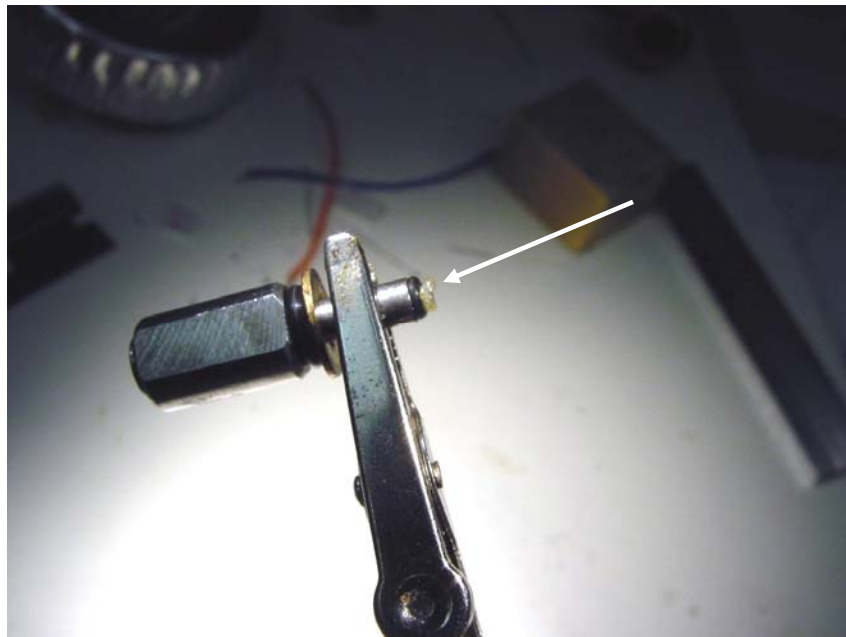
4. Use a wrench to carefully remove the brass tube fitting from the elbow fitting. This fitting may be very tight.



5. Lift the tube out of the elbow fitting. Rotate the elbow to remove it from the pump body. Caution: Depending on the nature of the pump failure, there may be small parts inside the elbow fitting. Look carefully to be sure that no parts fall out and get lost. There is a spring inside of the plunger. This spring may be able to fall out of the plunger. If it does, then this is your problem. Here's a pic of the parts inside the pump.



6. Your plunger should look something like this. If the cap on the end of the plunger is missing, look inside the elbow fitting. It may look like a bit of dried fog fluid. Do not lose this part!



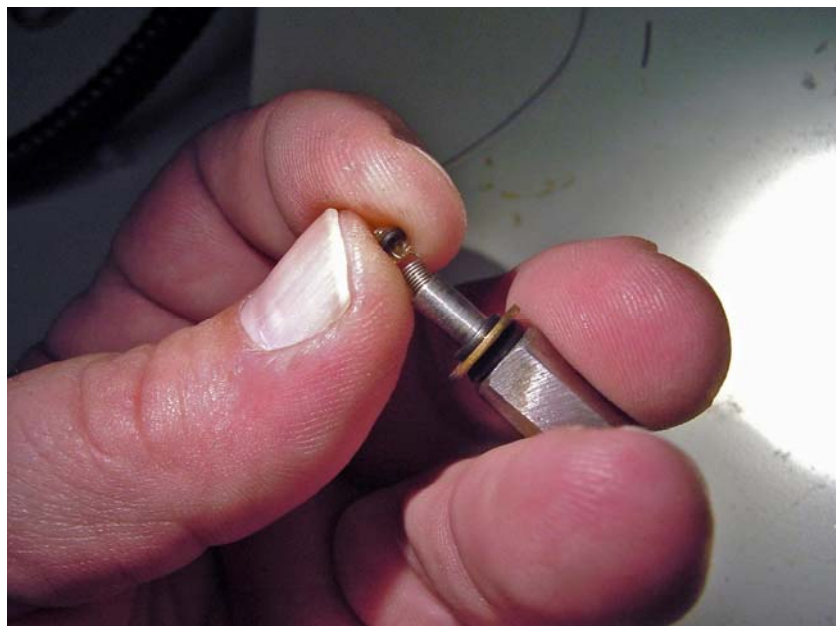


7. The reason my pump failed was that the end loop of the internal spring broke off, and the cap/O-ring fell out of the plunger. This can be fixed easily.



This is the portion of the spring that broke off. The small plastic cap was found in the 90° elbow fitting. The barrel of the plunger is beveled to accept an O-ring, so I found a small one and placed it on the cap, then bent the last coil of the spring upwards and threaded it through the hole in the cap. If you don't see this cap in the end of the plunger, look for it in the elbow fitting. Don't lose it – it's essential to the operation of the pump.

8. It's a bit difficult to get the O-ring on the cap, but keep trying and you'll get it. Use a tweezers to bend the last loop of the spring upwards as shown. Insert the spring into the plunger so that the spring loop can be hooked with a wire. Pull it out of the plunger as shown below and insert the loop through the hole in cap.



9. Now you have a repaired plunger. Check the other parts for debris, clogs etc before re-assembling the pump. Inside the elbow fitting is a check valve. It is pressed into the fitting and can't be removed. Press carefully on the valve plate (at the bottom of the fitting) with a stiff wire to make sure that it depresses and returns easily. This valve is what allows the fluid to go into the heater and prevents vaporized fog from coming back into the pump.



10. Wet all the parts with fog fluid before assembling. Insert the plunger into the pump body, large end first. Attach the elbow fitting. Tighten it back to the original position. Insert the brass tube into the elbow fitting and tighten the nut. Press the pump body back into the bracket. Position the bracket and screw it onto the baseplate. Attach the pump retainer plate.
11. Using a small syringe, squirt fog fluid into the intake tube to prime the pump. Make sure that fluid has gone into the pump body. You'll get some pressure in the line, and will probably get squirted with a bit of fluid. Note: Be sure to check the outlet nozzle for clogs. Remove the nozzle with a socket wrench and clean out any bits of debris. Replace the nozzle.
12. Now to test the repair. You don't need to re-attach the covers yet. Fill the fluid bottle and place it in the pump. Screw on the cap, plug in the fogger and let it go to work. You may hear a rattle at first as the pump fills, but this should stop pretty quickly. If this was the cause of the fogger failure, you should be pumping out fog big time. If all is well, let it cool down, put the covers back on and store it as-is.