

Water Leaks and Mysteries

This document discusses several water leak issues that have occurred in the past several months at our house, and how they were resolved. These involve leaks with a toilet tank, the humidifier on the heater, and the dishwasher. The mystery involves a smoke detector.

First, the toilet tank. One day I noticed a small puddle of water appearing behind a toilet. I first checked the supply pipe, which seemed to be fine. After several minutes of probing, I noticed evidence of water running down the outside of the tank. I then took off the top of the tank, and tried a flush. I immediately noticed that when the float went down and water was being supplied to the tank, that some of the water was spraying upward. This water would then hit the underside of the top of the tank, run to the side, and then flow down the side of the tank and drip onto the floor. Since the valve worked properly otherwise, and shut off completely when the float was high, I addressed the problem by cutting an empty plastic container that was just a bit larger than the valve mechanism, and placing the inverted bottom of the container over the valve, after also cutting a slot for the float mechanism. In this manner, water can spray out of the valve in any direction, but will be contained by the plastic part, and simply fall into the tank. This fixed the problem, and turned out to be a quick, efficient (and inexpensive) remedy.

Now the Humidifier. Many of our homes have had Aprilaire Humidifiers installed on the main heater. These are very good humidifiers that provide much-needed moisture to the air during the cold months of Winter, when the indoor air can get very dry without them. Our humidifier (Model 600) has worked very well for six years. However, these humidifiers have a replaceable element inside, that needs to be replaced periodically (the manufacturer recommends every year). To replace this element, you need to remove the outside shell of the humidifier, and then extract the black plastic housing for the element. The top of the black plastic housing will come off, and then you can remove and replace the element (available at Lowe's, Home Depot, etc.). The problem is, that after replacing the element several or multiple times, the top of the black plastic housing does not fit as securely as it did originally. If it gets a little loose, then the gray curved plastic hose can cause this top piece to tilt slightly, as a result of the torque from the curvature of the hose. If this happens, then the water in the top piece, instead of flowing to the holes as it should, will instead flow to the low side, and drip out into the removable shell of the humidifier, from where it will leak out the bottom onto the floor.

This happened in our case, and I discovered it only accidentally by stepping barefoot into a puddle on the basement floor. To fix this problem, I located two plastic tabs on the side of the housing opposite where the leak was, and drilled small holes into them at a point where the top piece should be. I then used pieces of 18-gauge wire in the holes that were drilled, to keep the top piece in place, and avoid any tilting. This fixed the problem. The wires are removable, so that the next time that the element needs to be changed, it can still be done easily.

Now for the dishwasher. About a month ago, my wife Maureen told me that she sometimes saw a small amount of water on the floor under the door of the dishwasher. In a classic case of denial, I said that it was probably just from the door, or something simple like that. It was not a lot of water. Then about a week later, I noticed a small stream of water coming from under the dishwasher on the left side, as the dishwasher was running. OK – now I knew it was not just the door. So I took off the bottom black panel under the door (two screws), and looked underneath with a light. Careful inspection of the pump and other mechanisms under there did not reveal anything unusual. However, I did notice evidence on the floor under the dishwasher of a leak (buildup of lime, etc.) on the left side, away from the mechanisms. I had to wait until we ran the dishwasher again to find the leak, since it only occurs during an active wash cycle. When we ran it the next time, about 5 or 6 minutes into the cycle, I started to see a drip occurring on the extreme left side of the dishwasher. It was a slow but steady drip. It took some doing, using mirrors on extenders under the dishwasher, but I saw that the drip was starting midway up the left wall of the dishwasher. Now there are no water lines in that area (at least on my unit). However, if you look on the inside of the dishwasher, near the back on the lower left side, you will see a small gray plastic opening and fitting, which I believe may be for air in the drying cycle. On my unit, when I inspected this piece, I discovered that it had gotten somewhat loose (probably from vibration), and therefore was allowing water (which is sprayed all over the place during the wash cycle) to get into a crack and flow down the outside of the left wall, and this was the source of the leak. After some work, I was able to tighten this fitting, but not as well as I would have liked, since it did not seem to want to thread properly. ***If any of you inspect this, be very careful with this fitting and do not disturb it if all looks OK (no evidence of looseness, no water under the left side of the dishwasher when running, etc.). By all means do not over-tighten, since this fitting is prone to improper threading.*** Anyway, this seems to have fixed the problem, although I am still inspecting it underneath to ensure that the leak has not occurred again.

Mystery of the Universe #127

Ever wonder why our smoke detectors announce that their backup batteries are low, at 3 AM instead of 3 PM? My own theory is that as the battery ages and degrades, its output voltage becomes related to the temperature somewhat. That is, it puts out a little more voltage when it is warm, than when it is cooler. Therefore, since many of us use setback thermostats that turn the temperature down at night while we are sleeping, then 3 AM becomes a prime time for that incessant chirping that a failing backup battery causes. I recently got up at that time and dragged out the ladder to replace a battery just because I could no longer stand to hear that \$%^&\$*\$ chirping at 3 AM. Of course, after that I still could not sleep even though the chirping had ceased. One thing that I have found, is that you should press the "Test" button after replacing the battery, to ensure that the chirping stops. Of course, the real fun in this endeavor is locating which of the many smoke detectors is chirping, especially at 3 AM.