Most times the Atmos has a bubble level and many times that level is out of fluid. Here's a procedure that has had great success.

I've had good success in drilling (drill bit # 63) right next to the old brass fill pin, which is located near the front of the level as you look at the clock. This is done on a drill press while supporting the base with a piece of 2" by 4" pine that has been drilled with a 1/2" wood drill bit. Only drill about 1/2" down into the pine. This hole allows the top of the level to pass through the hole in the pine block because you will be drilling through the bottom of the level.

It is imperative that you do not puncture the clear plastic top of the level and that any brass particles left over from the drilling must be removed. I do this by hitting the base, containing the level, and moving the base around. This forces the particles out of the hole you just drilled.

Then I use a 20 gauge syringe with needle, which can be obtained via the Internet. The # 63 drill bit will just allow the 20 gauge needle to pass through.

I fill the syringe about 1/2 way with odorless mineral spirits, which can be obtained from any hardware store and inject the spirits through the newly drilled hole.

This is done while the level is over my head and this may take a few attempts. Wait until the leftover air forms a bubble that is slightly smaller that the diameter of the center black circle.

Once accomplished, then I cut a brass tapered pin to size. By size, I mean a finished brass pin that will seat once it clears the brass back of the level. A few gently taps on the pin to seat, all the while making sure that it will not extend too far beyond the bottom of the level. You can use the old fill pin as a guide.

When you have a good tight fit, then I cut the brass pin as close to the bottom of the level as possible and then a few whacks with a brass hammer and the pin will flush itself to the bottom of the lever.

All this hitting must be done while supporting the top of the level. I use a different piece of pine for my support. This is a solid piece of pine without the hole. Then use an independent small bubble level just above the Atmos level you just filled and sealed (see below) and check to make sure it is indeed level.

If it is not level then you can use some acetone on the bottom of the level to weaken the shellac that holds the level in place and very gently tap the level on its top sides to regain level. This too should be supported with the solid pine wood.

Once the procedure is accomplished then you must seal the level. You can use any sealant or glue to affix the newly filled level and apply on the bottom only. Shellac, polyurethane, white glue, wood glue, or
Loctite will suffice. But to keep it as original as possible, please use shellac.

Mike

A specialist in Atmos and 400-day clock repair.
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In continuous horological service since 04/01/1982.

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