

Rain Calibration Procedure

by Eugene Bright

Throughout this introduction, we will go over an unofficial way to calibrate your 5-in-1 rain sensor.

Similar calibration procedure can be applied to a different rain sensors. For more info or help with this procedure contact me at calibration@wufyi.com

For this procedure you will require:



A 5 ml graduated syringe (available at your local pharmacy)

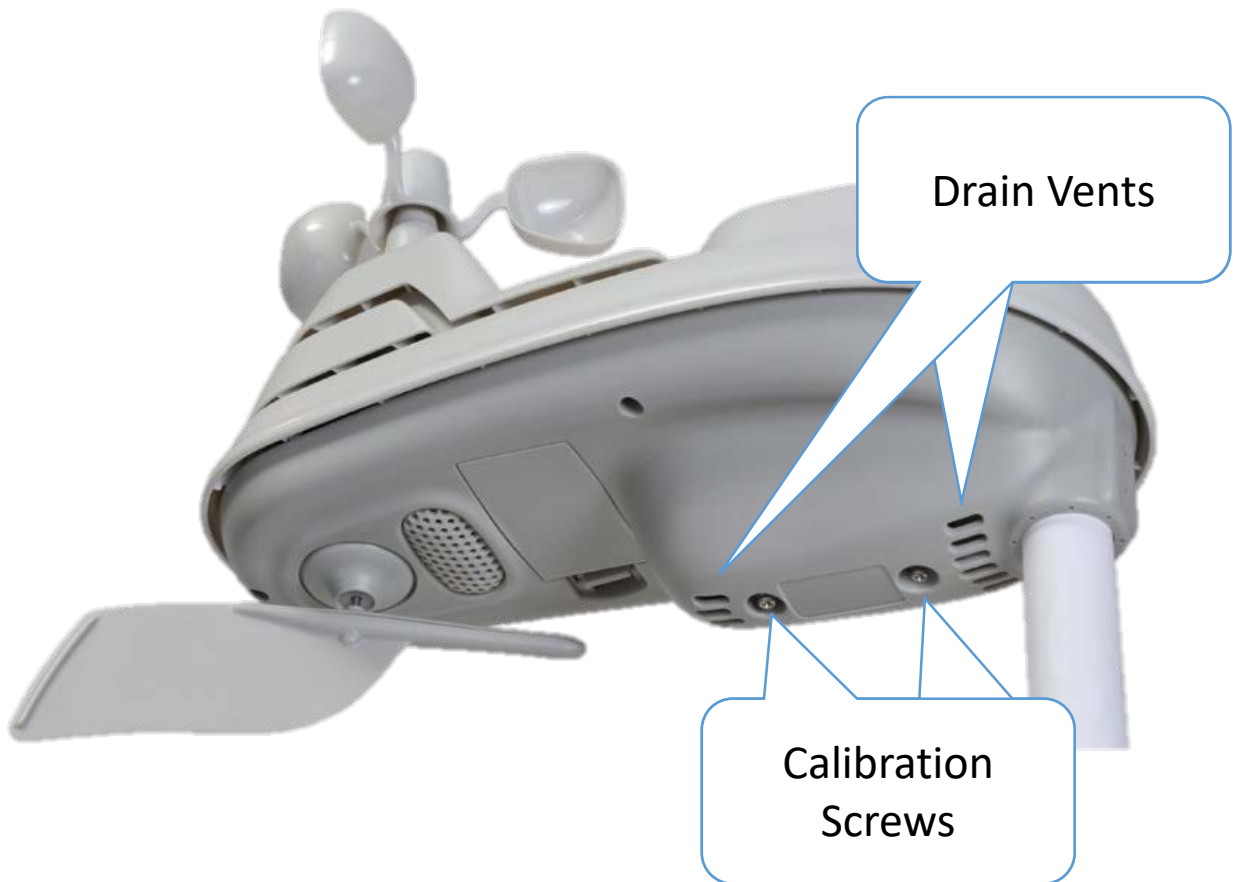


A Philips head screwdriver

A drinking straw with a cup of water



Overview of the sensor



This procedure will require an understanding of drain vents and calibration screws

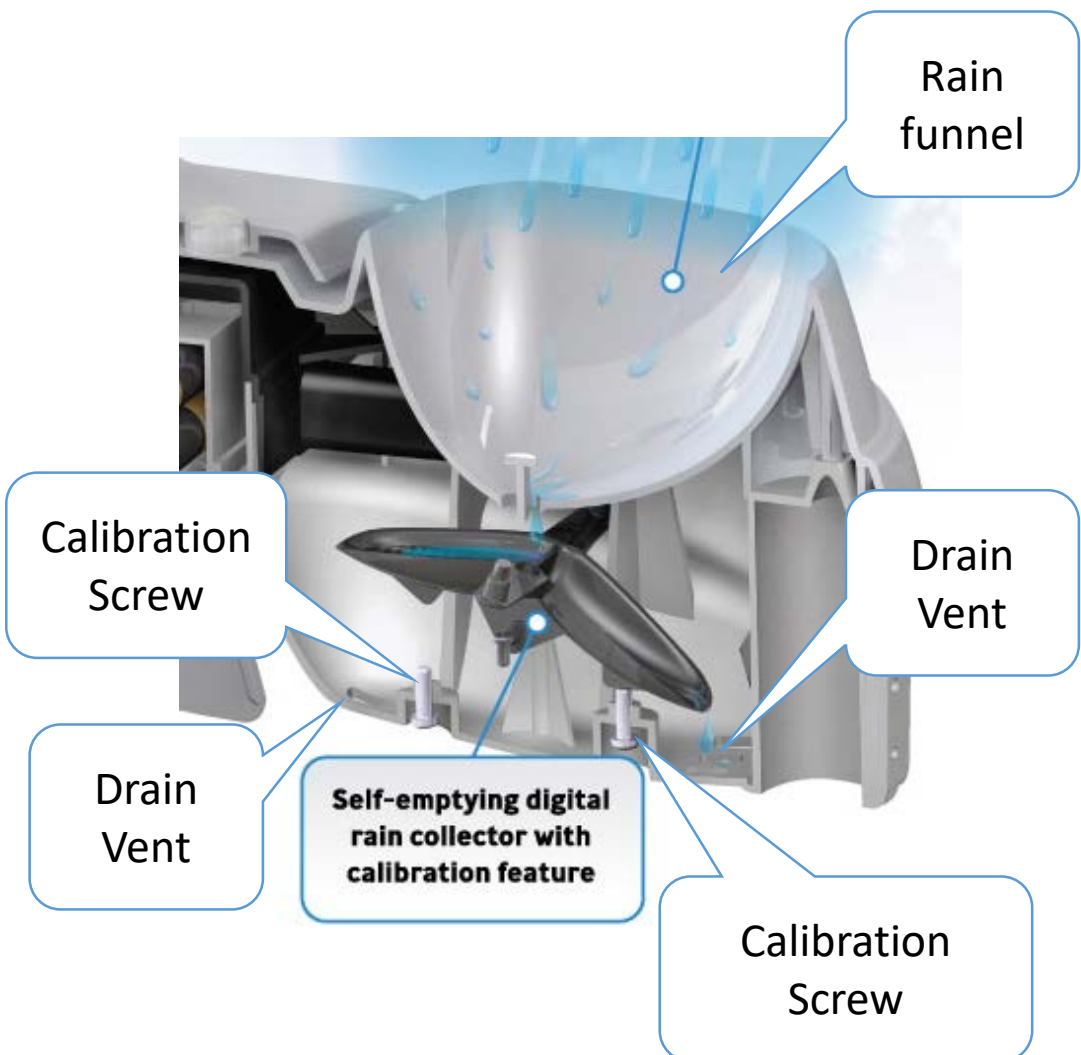
They are pictured here as visible when viewed from underneath of 5-in-1 sensor

Internal operation

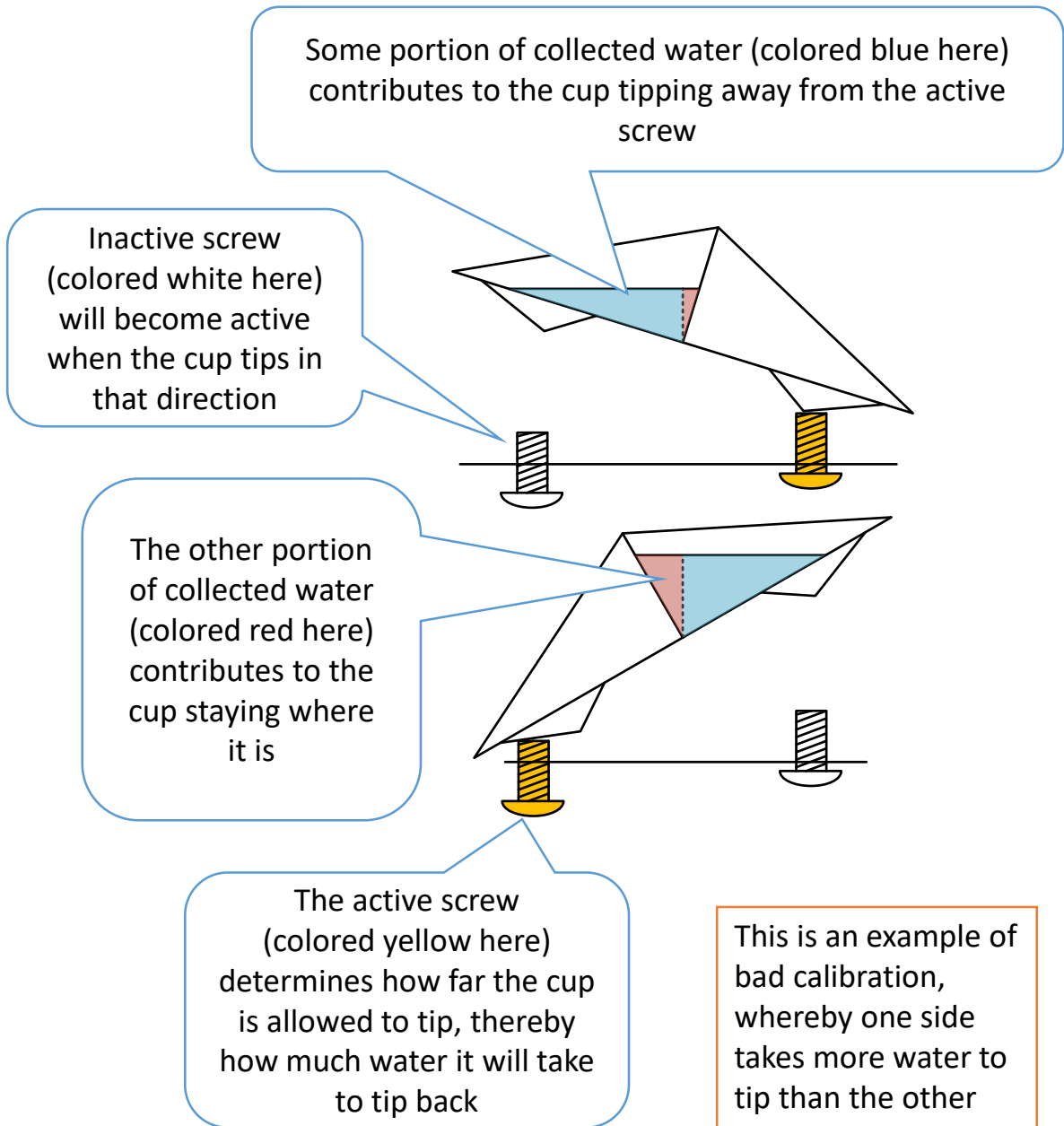
The way the system works is that rain collector gathers rain water into the rain collector (which features two cups).

When sufficient water is collected within one of the cups, rain collector tips, thereby exposing an empty cup to allow further collection of water and dumping the gathered rain out of the drain vent.

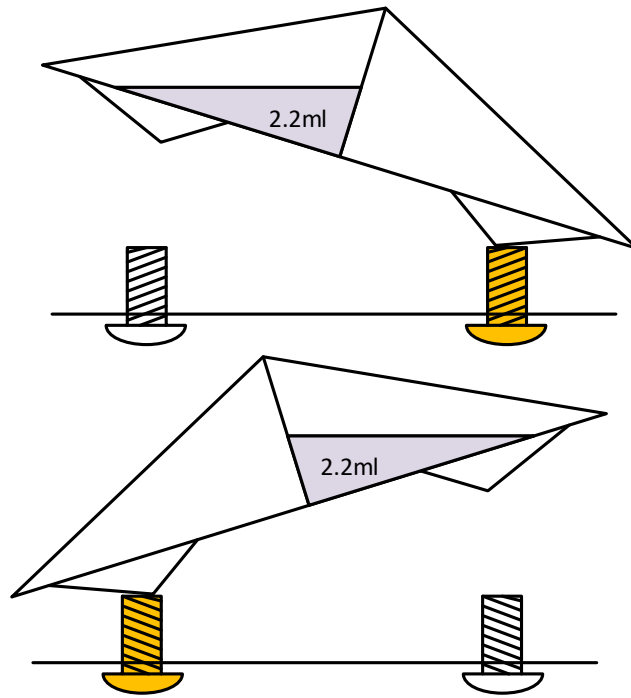
Calibration screws determine how much water it takes to tip the rain collector.



Understanding calibration screws



Our goal at the end of the calibration procedure



The goal is simple, adjust the calibration screws such that it takes 2.2ml of liquid to tip the cups in either direction.

Here the cups are shown just as they are about to tip over to another side.

2.2ml is calculated based on the area of the opening for the rain catcher. For more info contact us at calibration@wufyi.com

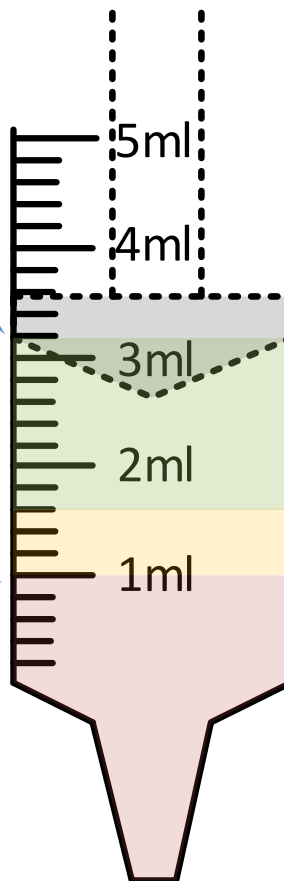
Using the syringe



For the best results, start with 3.2ml in the syringe

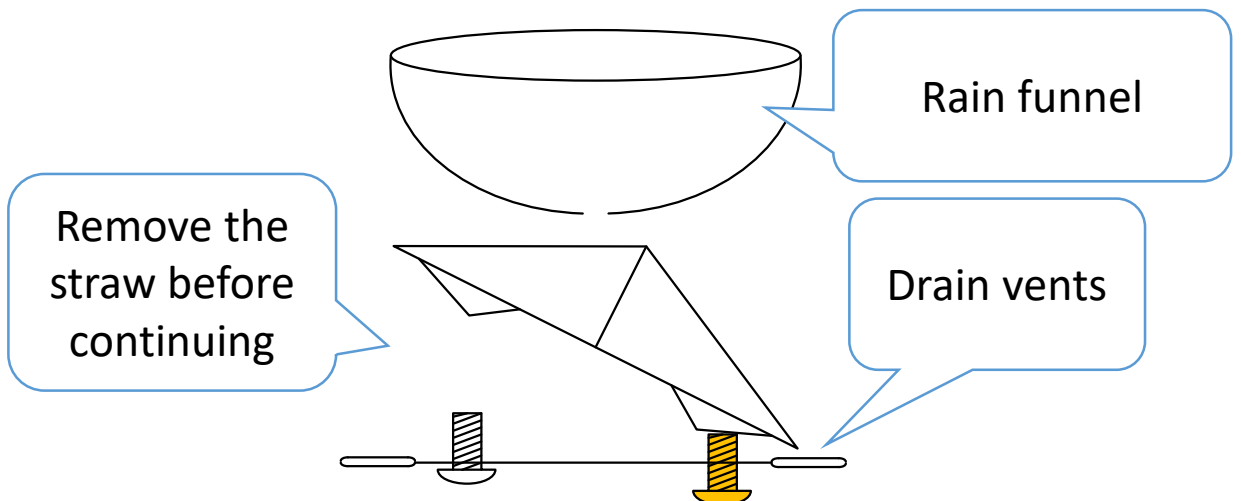
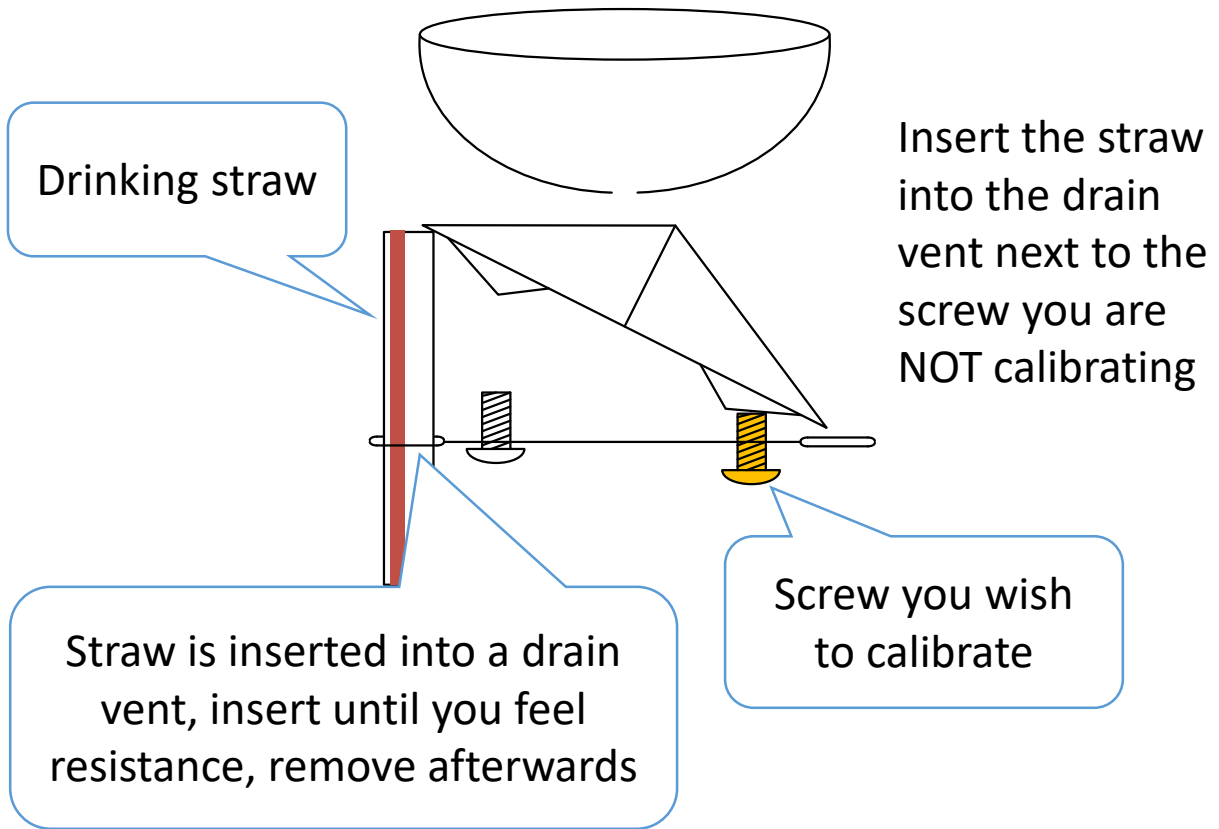
Make measurements from the bottom of the black plunger, not the tip

End with 1ml remaining

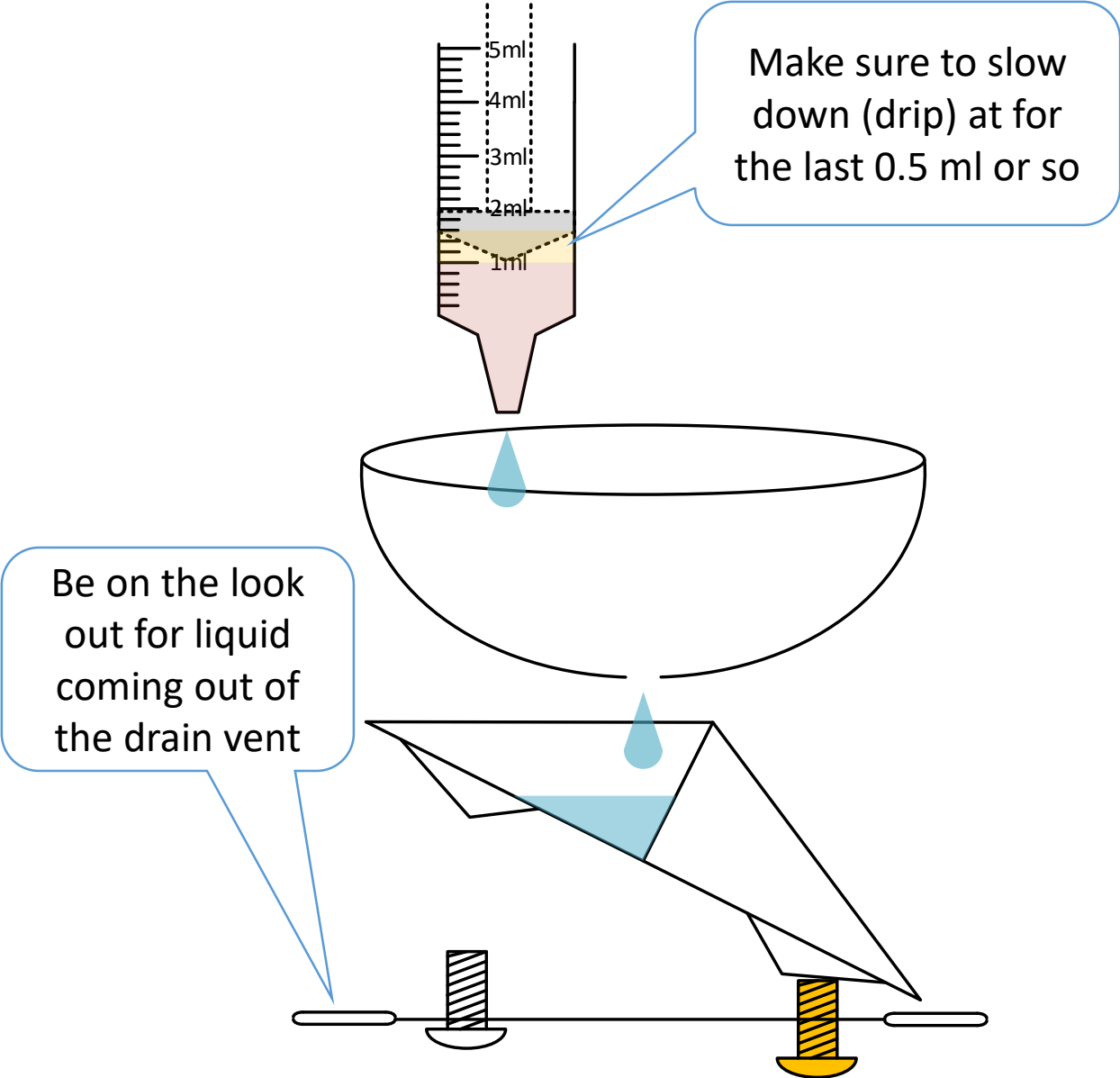


Initially, first 1.5ml, you may dispense liquid quickly (green region);
For the last half of a ml (yellow region) you should slow down;
Stop when there is 1 ml remaining (red region)
Starting at 3.2 ml and stopping at 1ml will give you $3.2 - 1 = 2.2$ ml,
this will also negate the effects of any bubbles within the syringe.

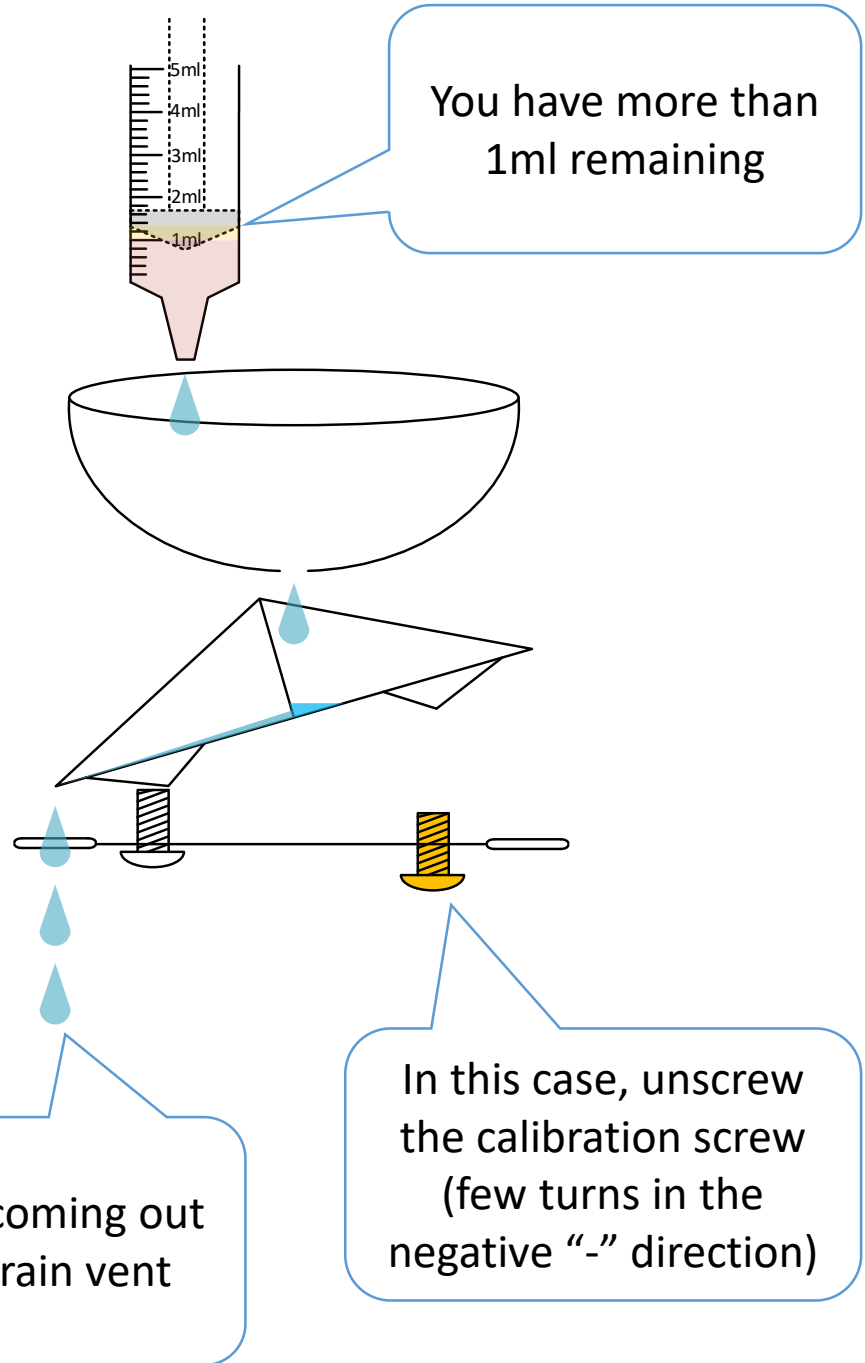
Setting up the cup



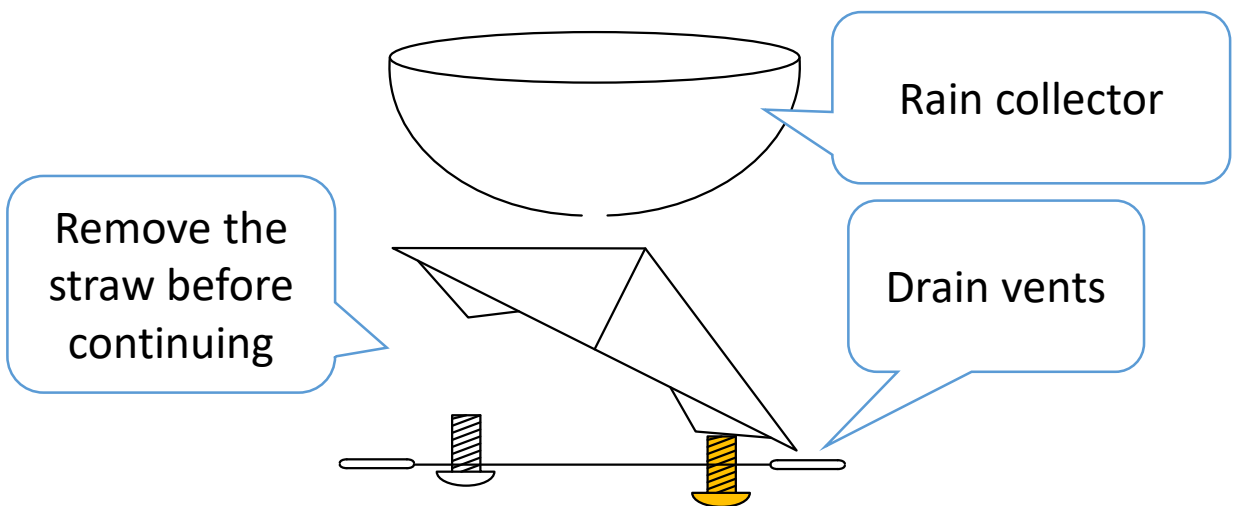
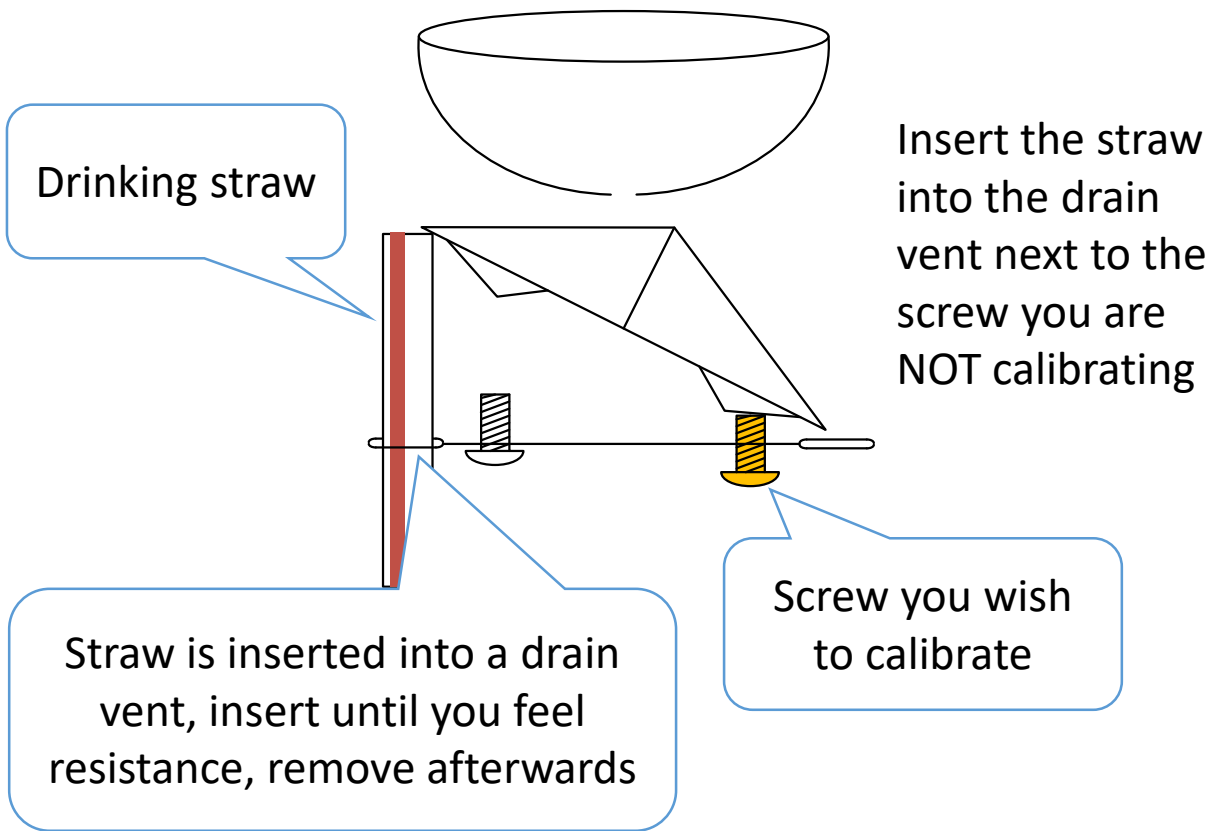
Add 2.2ml of liquid via the rain funnel



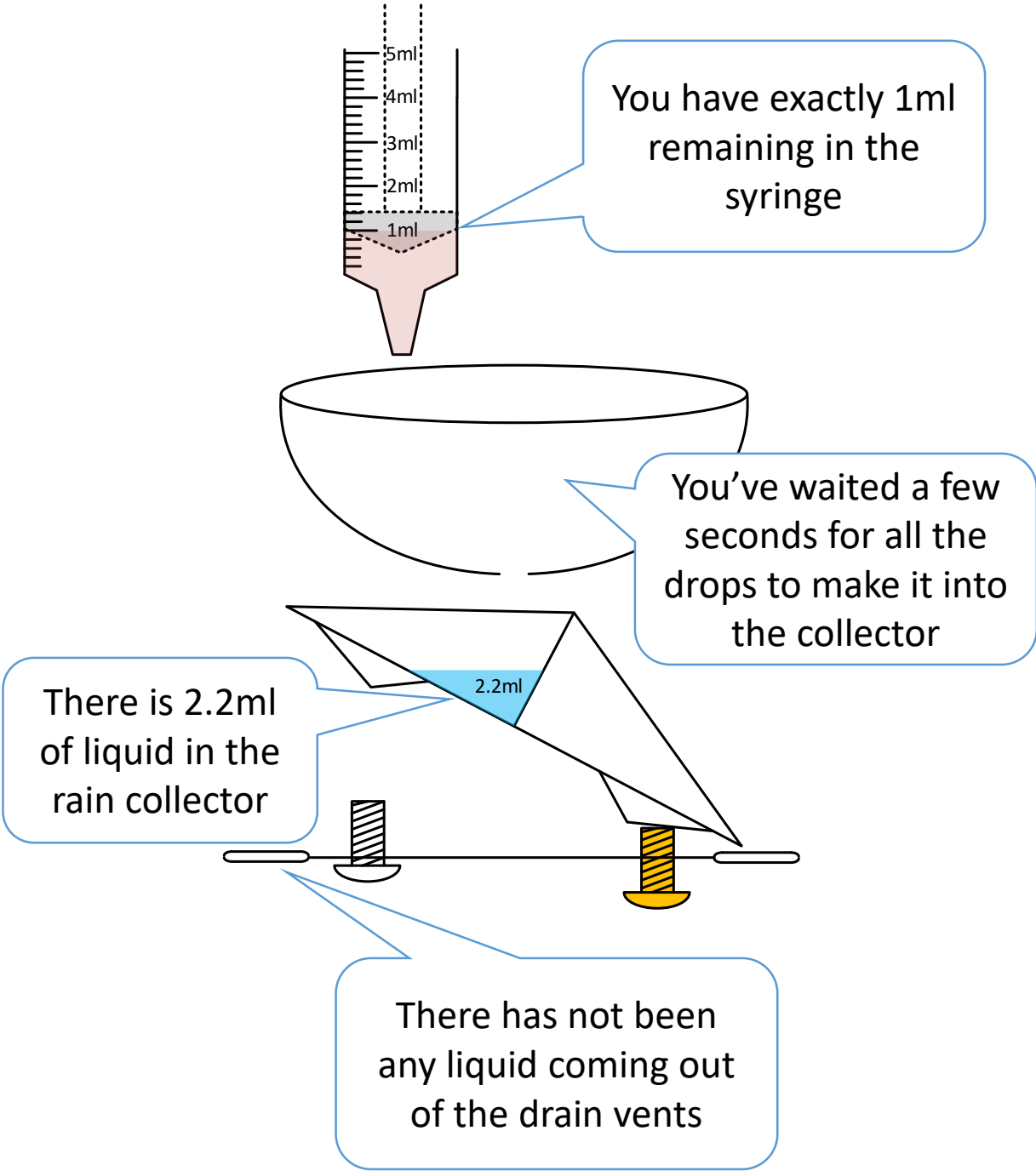
Be on the lookout for premature tip over



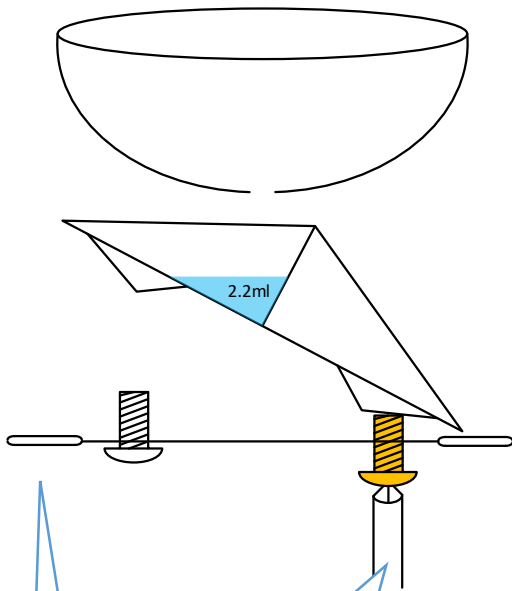
Be sure to reset the system prior to continuing



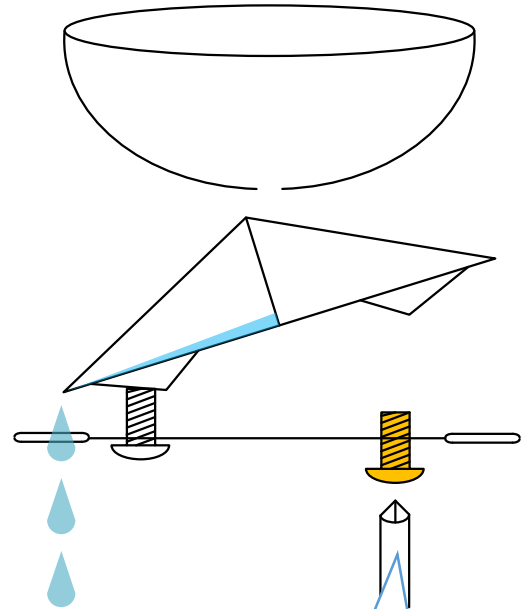
System is primed for calibration



Calibration



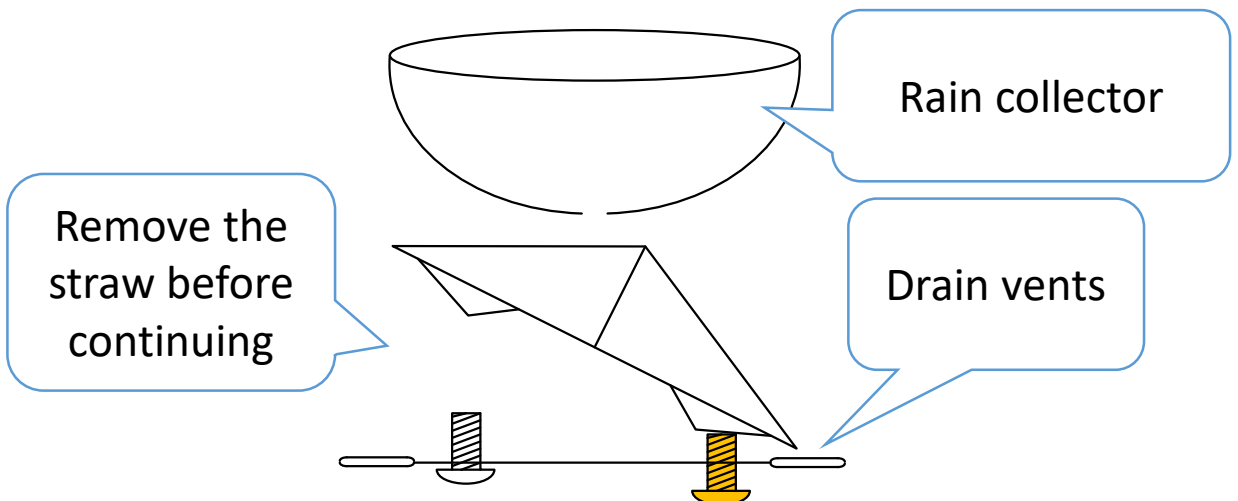
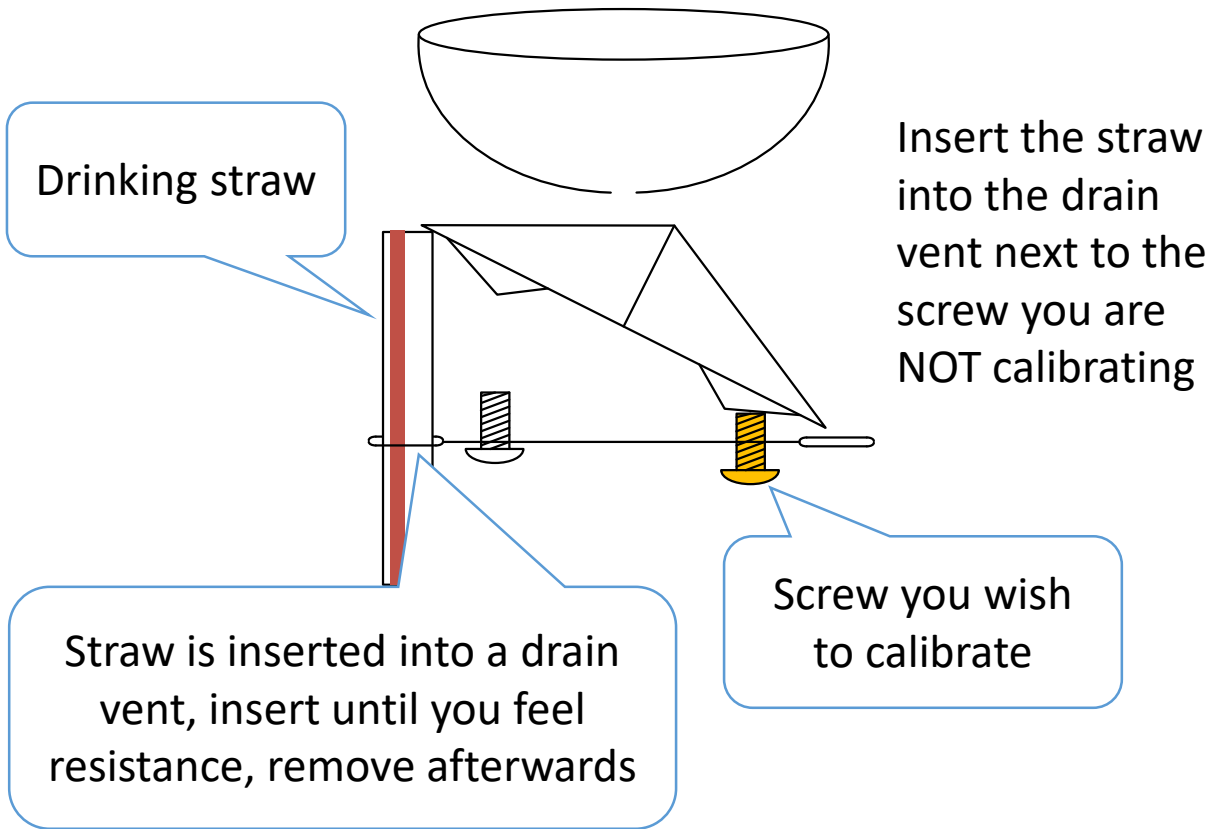
Use a screwdriver to **slowly** turn the calibration screw in the positive "+" direction



Stop as soon as you see the water starts coming out of the drain vent

Be on the lookout for water dripping out of the drain vent

Reset the system for verification



Check for proper calibration

