

When rain accumulation measurement with large bias is recorder (see example report below), the tipping bucket maintenance would need to be performed

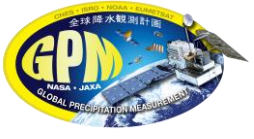
Current Report Date: 09/27/2023 Report generated 09/27/2023 @ 10:00:06 Local (09/27/2023 @ 14:00:06 UTC)											
GaugeID	Site Name	Packets	Mean Voltage	Mean RSSI	# Tips_A	# Tips_B	Accum_A [in]	Accum_B [in]	Bias [%]	Accum_A [mm]	Accum_B [mm]
PIERS0039	NPOL Radar	56/96	12.89	-93.32	1	27	0.01	0.27	-2600.00	0.25	6.86

- Upon arriving at the instrument site, check area and remove debris
- Mow, weed wack and kill grass and weeds around the instrument
- Remove and clean the upper and lower debris screens
- Remove the sensor housing assembly and thoroughly clean the collection funnel
- Carefully clean both sides of the tipping bucket assembly
- Clean the lower drain screen in the base of the sensor
- Verify the bucket moves freely. Perform 10 test tips and confirm the readings on <https://wallops-prf.gsfc.nasa.gov/Gauge/index.php>



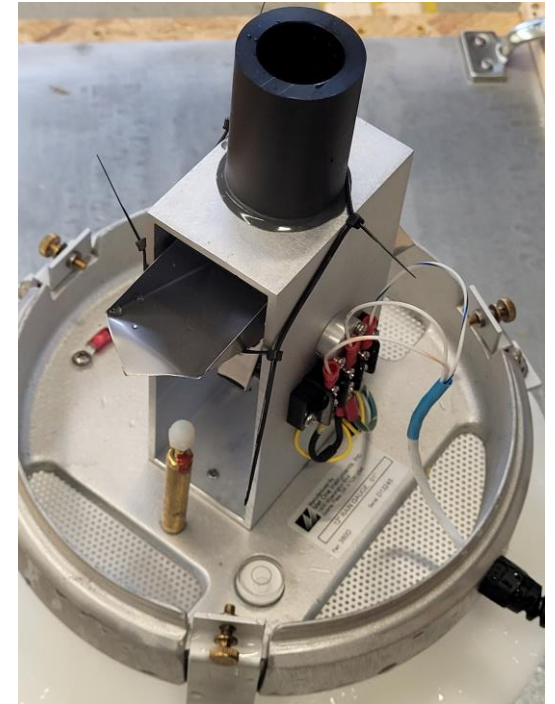


Tipping Bucket Calibration Procedure



Calibration should be performed on a one-year cycle (unless damage to the gauge is discovered)

1. Clean gauge and remove any obstruction, inside and out. Examine tipping bucket for free movement
2. Carefully fill the test container with 180mL of water
3. Slowly but steadily pour the water into the gauge and count the number of tips
4. If tips exceed 11 the tipping bucket is “Light”, if less than 9 the tipping bucket is “Heavy”
5. Adjust the nylon crown nut on the bucket post as follows:
 - If the tipping bucket is “Light” twist the nylon nut clockwise or down one turn. Repeat steps 2 – 4.
 - If the tipping bucket is “Heavy” twist the nut counterclockwise or up. Repeat steps 2 – 4.





Parsivel Disdrometer Maintenance



- Inlet and outlet openings in the sensor heads are covered with glass screens
- Depending on the time of the year and location, air pollution can lead to contamination of the glass screens
- The second value in output string provides reference concerning the current state of the optics:
 - **0** = Everything is OK
 - **1** = Screens are dirty, but measurements are still possible
 - **2** = Screens are dirty, partially covered. No usable measurements are possible
 - **3** = Laser damaged

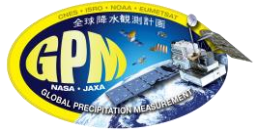
20230926000005;PIERS0038	0	21	0	0	-9.99	20000	0
20230926000015;PIERS0038	0	21	0	0	-9.99	20000	0
20230926000025;PIERS0038	0	21	0	0	-9.99	20000	0

- Make sure to keep the light pathway open by removing all impediments such as spider webs





Parsivel Disdrometer Maintenance



In case of the internal contamination of the glass screen, the sensor head enclosure would need to be taken apart to get access to the glass screen from inside

Step 1. Remove the access panel located on the bottom of sensor heads. Remove the top part of the sensor head enclosure by loosening two socket head screws (1 and 2)



Step 2. Clean the glass screen (3) on the sensor heads from inside with a soft cloth.



Step 3. Assemble the sensor heads back together and make sure the status value of the optics is back to zero.

