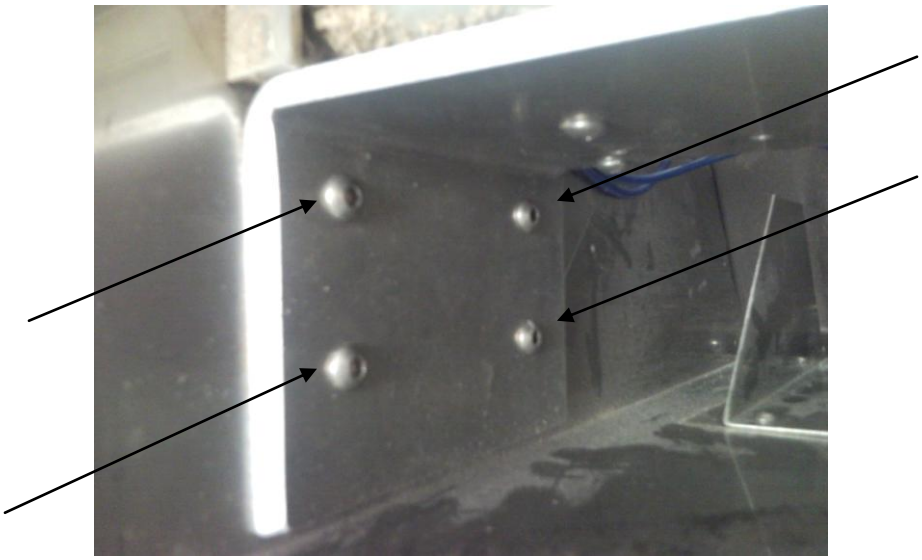
HCGG Bulk Density Sensor (BDS)
Load Cell Replacement

Required Tools:

Loc-Tite 242
Allen wrenches
3/32", 3/16", 9/64", 5/32"
3/16" wrench
Smaller Philips head screwdriver

1. Close the GrainGage air cut-off valve. Disconnect the air supply hose, power cable, and CAN cable from the Hybrid Module. Remove bucket from Grain Gauge system and place on workbench. Refer to Chapter 9 in the Weigh Bucket Removal section of your High Capacity GrainGage manual.
2. Label the 5 hoses running from the solenoids and unplug them from their connectors.

3. Loosen and remove the 4 bolts holding the BDS assembly to the side of bucket.

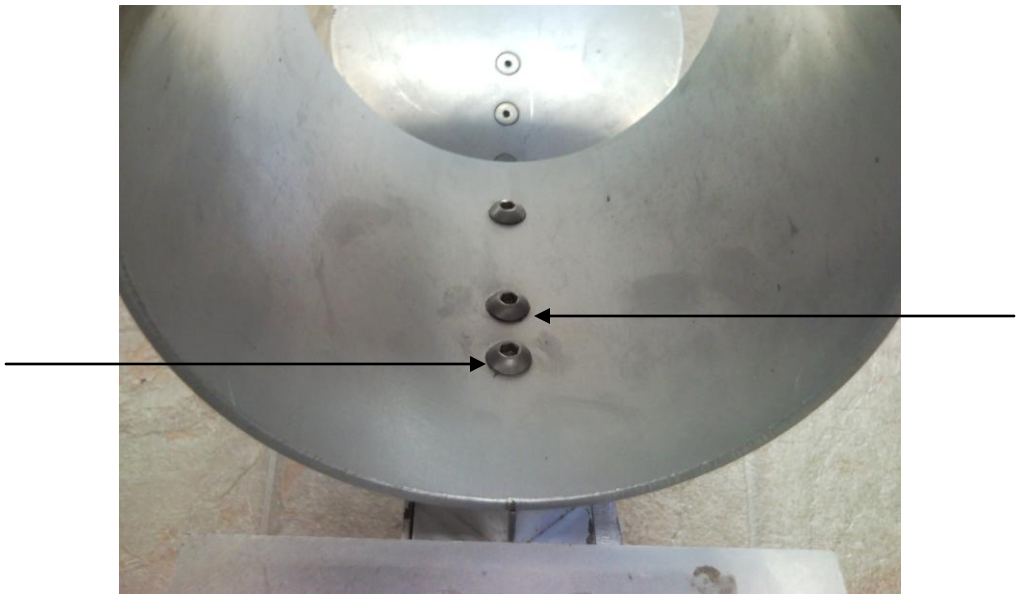


4. Remove the entire BDS assembly from the bucket, being careful not to damage the air hoses or load cell cable as you remove them from the hole in the side of the bucket. Clean out the button head screws on all locations of the BDS and use a high quality Allen wrench. We recommend replacing the four button head screws with ¼ -20 by ¾ Socket Head Cap stainless steel screws (p/n 22743).

5. Place BDS assembly on bench and remove the thin cover plate on side of BDS (screws shown already removed).

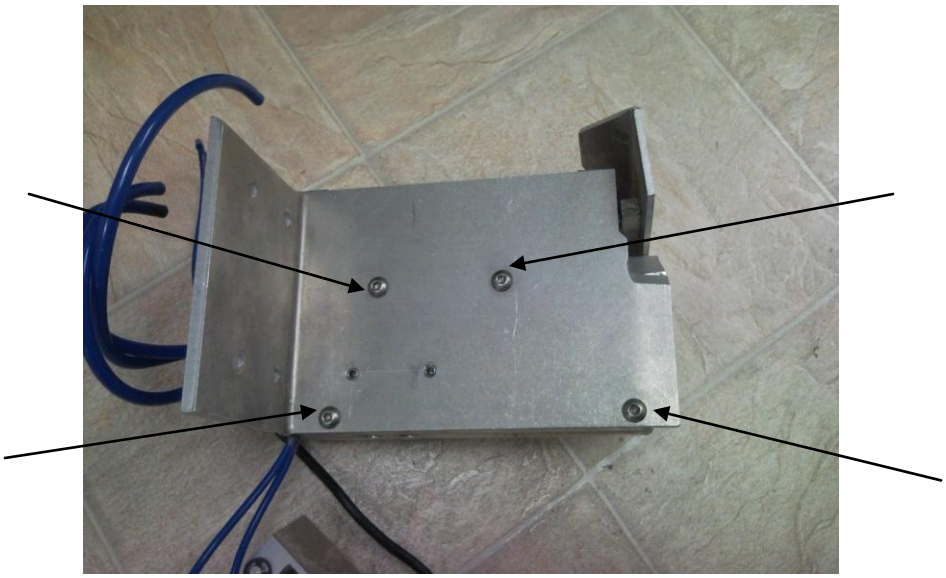
6. While you have the cover plate removed, you will need to replace the 4 small Allen head screws holding the wiper cylinder in place. These are to be replaced with the 4 supplied Phillips head screws (p/n 19962).

7. Inside the BDS cup are 3 Allen head screws. The 2 closest to the top of the cup need to be removed to disconnect the cup mount bar holding the cup, door, and air cylinder for the door.



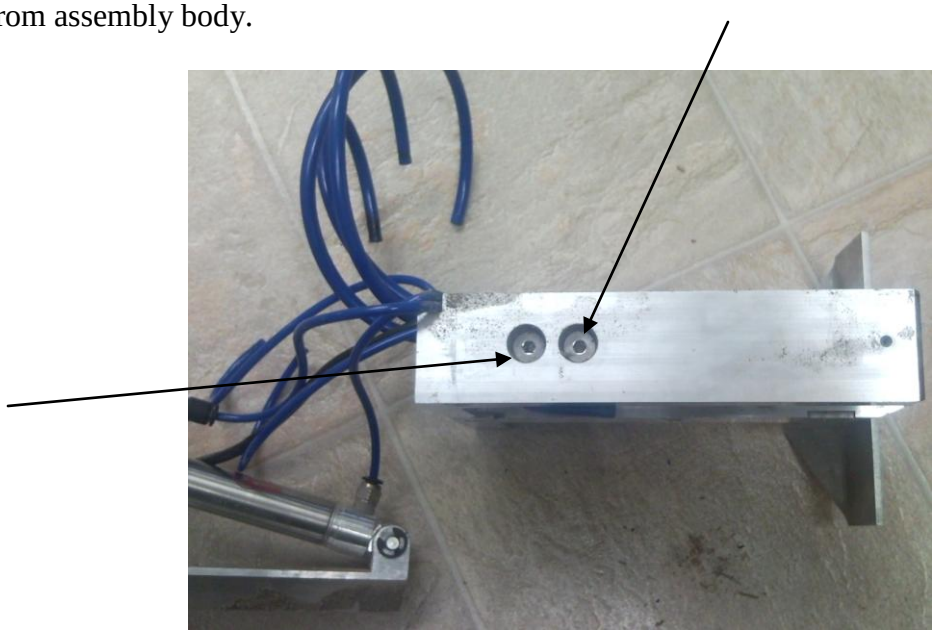
8. Rotate machined L-shaped bracket out of the way and flip BDS assembly body over.

9. Remove the 4 Allen screws from the Angle Mounting Bracket on the assembly body and remove mounting plate.



10. Flip assembly body upside down so striker arm is on the bottom.

11. Remove 2 Allen head screws from bottom of load cell mount bracket to remove load cell from assembly body.



Replacement of Load Cell

1. Replacement is almost the opposite of removal, the only difference being in the initial installation of the load cell and replacing button head screws with socket head cap screws (p/n 10393). Be sure to apply Loc-tite 242 on all screws upon reassembly.

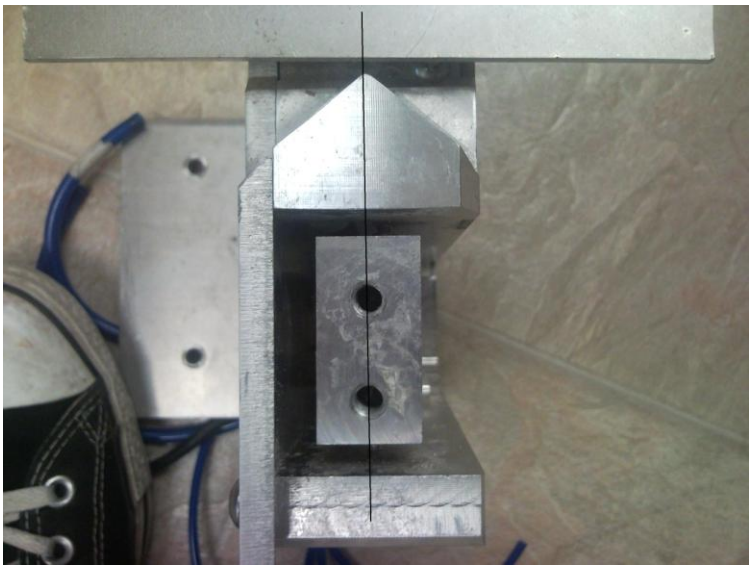
2. Place the new load cell (p/n 20257) in the assembly, routing the cable and hoses as shown:

3. Insert screws through the bottom of the Load Cell Mount Bracket into the load cell. Leave screws snug so the load cell can be slid back and forth.

IMPORTANT NOTE: Check that the load cell is in a free position when screws are tightened. Interference could cause load cell damage.

4. Install mounting bracket (p/n 20224) on BDS assembly

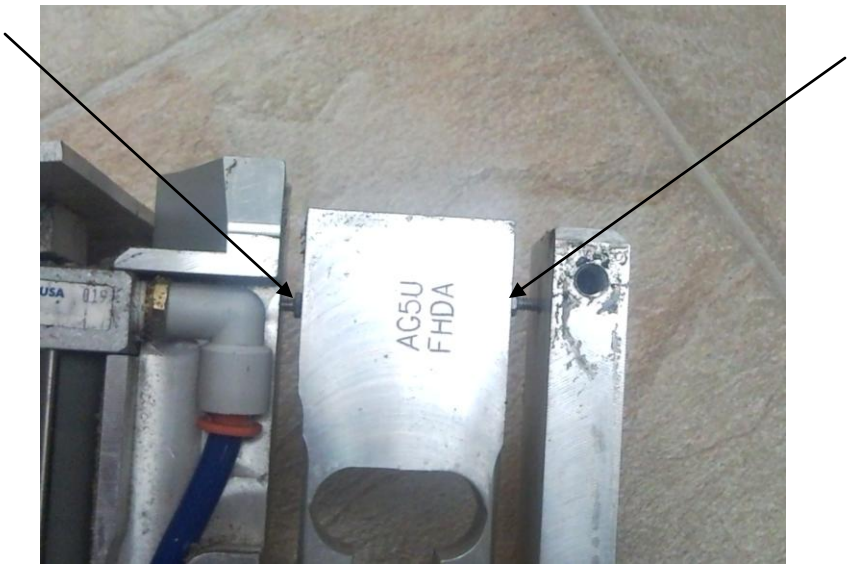
5. Center cup mounting holes in line with the point on the assembly just under the wiper:



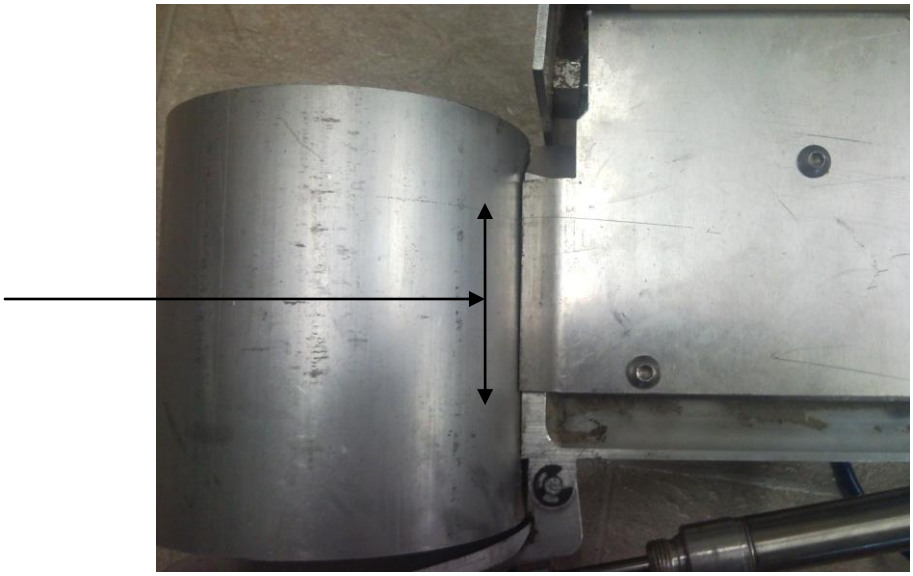
6. Snug up the set screws (p/n 22573) in mounting plate until you cannot shift the load cell left and right. You will be able to look down the left side of the load cell and see the set screws touching the load cell.

7. Tighten up load cell mounting screws.

8. Check gap on overload protection pins and check gap between the pin face and the load cell. The pins use a 3/16" wrench and the gap should be set at .014 inches.



9. Check for final clearances on cup before reinstalling BDS sensor into bucket. You should be able to slide a business card between the thin plate and the cup and not have any binding issues.



10. Install the BDS Sensor back in the bucket, making sure not to pinch or cut any hoses or wires as you fish them through the hole. Make sure to use the new ¼ -20 by ¾ Socket Head Cap stainless steel screws (p/n 22743) to bolt the sensor back in. Also make sure the sensor is squarely installed to the wall by sliding an Allen wrench or other object down the crack

between the edge of the mounting bracket and the corner of the bucket to make sure the gap is even.

11. Connect your handheld to the Harvest Data System, and run FRS. While in FRS, go to Diagnostics, and Test weight.

12. Push down and pull up on the cup to check that the load cell stops do not allow the load cell to flex up or down more than 50% over the rated capacity (30kg or 66.14 lbs)

13. If the load cell does flex more than the allowed tolerance, take the thin cover plate off and readjust the stop screws.

14. Also note while pushing down and pulling up on the cup that the weight reading returns back to 0. If not, the cup is binding and you will need to hunt down and adjust where it is binding.