

Dickey-John GAC-2000 Grain Analyzer

This document does not purport to address all of the hazards. Individuals are responsible for obtaining full safety and hazard training prior to attempting this procedure.

Summary of activity: Prepare grain for and obtain moisture content using the Dickey-John GAC-2000 grain analyzer.

Hardware for drying samples:

GAC-2000 Grain Analyzer

Plastic “Spring Fling” cup (vessel capable of holding at least 15 oz).

Grain

Dust mask (especially for moldy grain)

Data collection sheet

Ink pen

Prior to using, contact Bob Nielsen (49-44802) rnielsen@purdue.edu, for authorization.

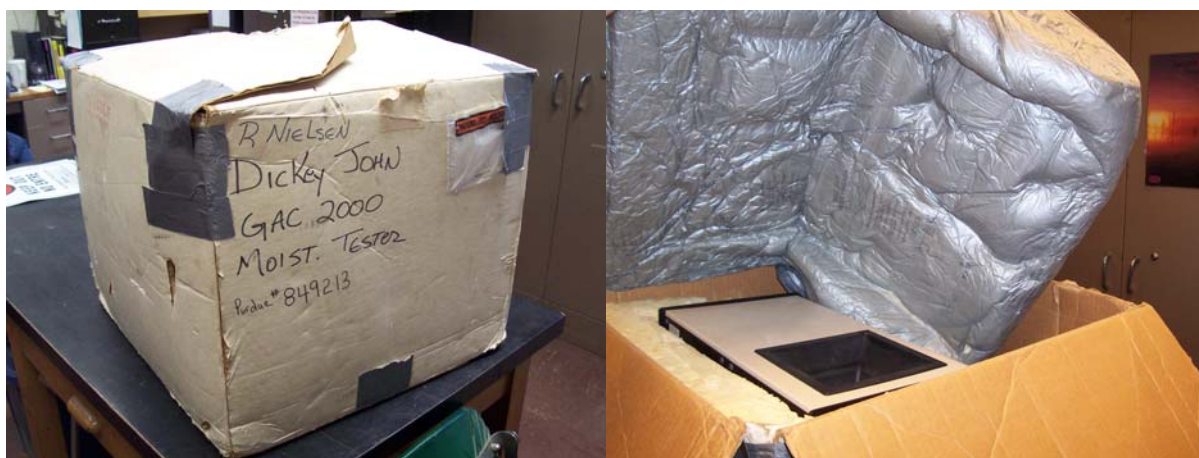
This unit is currently calibrated for testing moisture on corn, soybeans, canola and wheat. The unit will process a number of other grains, but is not currently calibrated to do so.

Note: This procedure covers set up, use, and storage of the GAC 2000. The unit may be left set up through the season and prepared for storage when all grain testing for the season is complete.

Procedure

Preparing the Dickey-John for operation

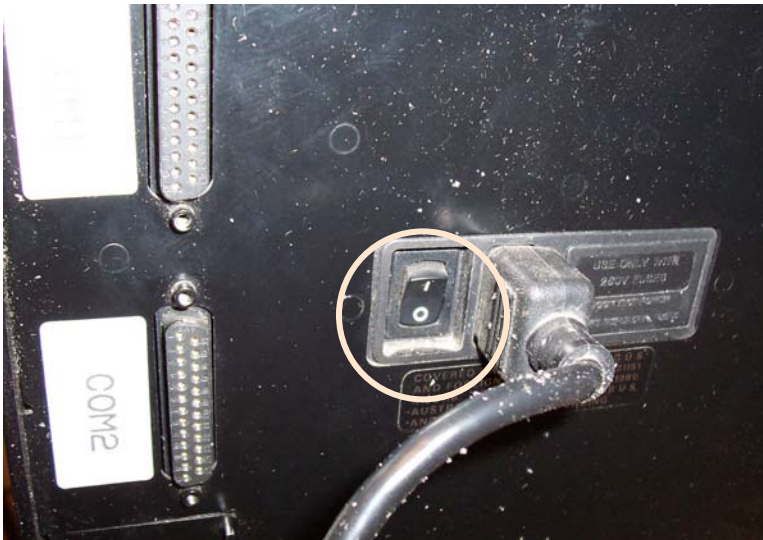
1. The Dickey-John unit is ALWAYS stored in the original box. This box is labeled with the Purdue Property ID number. Do not dispose of the packing material or the box.



2. There are handles on either side of the unit to be used to lift the unit from the box.



3. On the back of the unit is the power switch, printer connections,



4. and a transportation restriction lever.

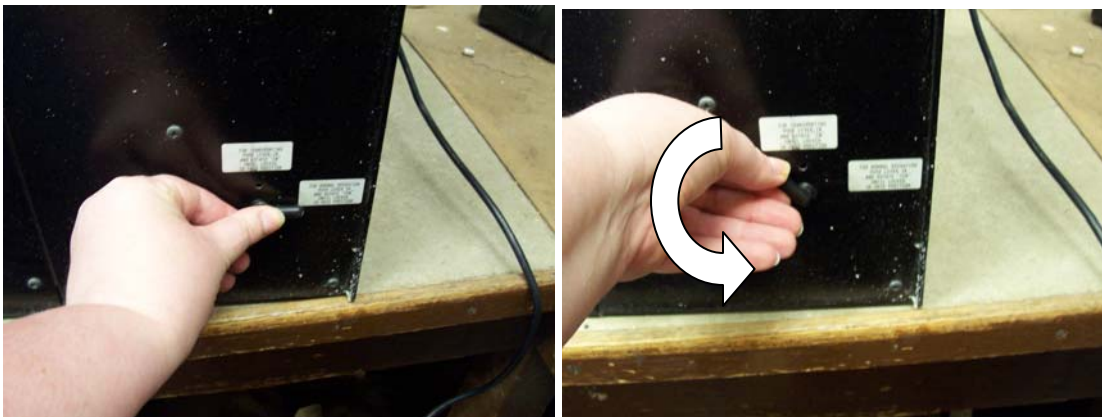


5. The transportation lever operates an arm inside of the unit which prevents the tipping bucket from tipping or moving during transportation. Photos below are taken looking in the window at the front of the unit.

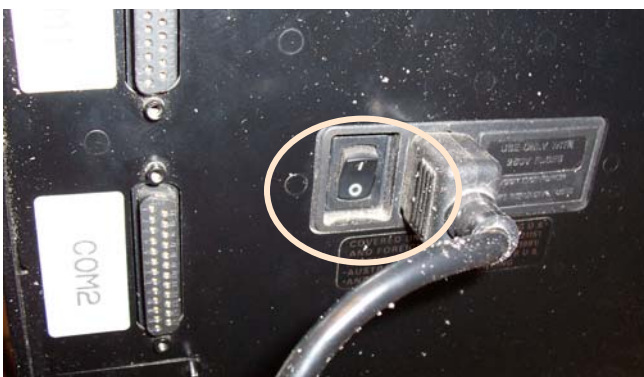


Transportation arm restricting tipping bucket Transportation arm moved to normal operation

6. If it is not moved to “Operation” prior to use, the arm will interfere with the operation, causing it to vibrate, give an error, and preventing the tipping bucket from being emptied.
 - a. Move the arm by pushing the lever at the back of the unit “in” and rotating counter clockwise to “normal operation”.



- b. To clear an error due to interference by the arm, shut off the unit, move the arm to “normal operation” and turn on the unit.
7. Turn on the machine using the switch on the back of the machine.



8. The unit will run a self test and then the main menu will appear on the computer screen above the keypad.



9. First select the grain that is to be analyzed, selecting "2: SELECT GRAIN".
 - a. Press "2" on the numbered key pad.



10. This will bring up the grain selection menu.



- a. There are four pages of grains to select from. The unit is currently calibrated for corn, corn high moisture, soybeans, wheat and canola.
 - b. Corn, high moisture is for corn with moisture content of greater than 20%.
11. For this example we will analyze corn, but the method is the same despite the grain.
- a. We want to select “corn” so press the number 1 on the numbered keypad.



12. The unit will run a self check



13. The machine is now ready to run samples.



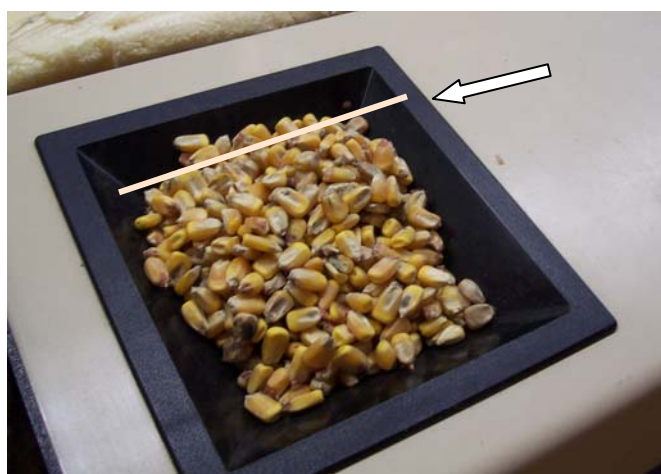
- a. If not using a printer, entering an identification number is not required.

Loading Grain Sample

1. Scoop a sample of grain from the plastic bag. *If the grain is moldy or if the operator is sensitive to dust, a dust mask may be worn.*



2. Pour grain into the top hopper. There should be enough grain that it is about level with the top of the hopper.



14. Confirm that the grain drawer on the left side, bottom is completely pushed in. If it is not, grain will dump onto the counter top. This is not a problem for operation, but will require clean-up.

- a. Lift the unit up and away.
- b. Sweep up the spilled grain.



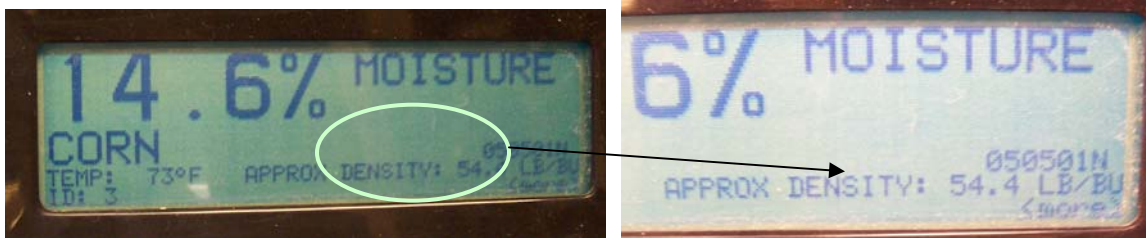
3. When ready to measure the grain moisture, press the load button.



4. The unit will run automatically at this point, opening the top door to drop the grain into the internal hopper, then leveling the grain off with a sweeper arm, and analyzing the grain.



5. When the analysis is complete, the moisture content and density will be shown on the computer screen.



6. Using an ink pen, record both the moisture and the density on the back of the identification tag and on the data recording sheet. Return the tag to the bag.
7. Empty the internal hopper by pressing the unload key.



- a. The grain in the internal hopper will be dumped into the grain drawer below.



8. Remove the grain drawer from the lower left side of the unit and return the grain to its plastic bag.



9. If a nutrient analysis is to be performed on the grain, at this time pull off two cups of the grain for drying and place into a separate labeled paper sample bag.

Shutting down and storing the unit

1. When finished running samples for the day:
 - a. Make sure the machine is empty of grain samples.
 - b. The grain drawer is empty and fully installed.
 - c. Shut off the power with the switch on the back of the unit.
 - d. Unplug the unit to protect it from power surges.
2. When finished with the unit for the season.
 - a. Make sure the unit is empty of all grain
 - b. Dust the unit surface with a soft dry cloth.
 - c. Dust the grain drawer.
 - d. Dust the top hopper.
 - e. Set the transportation lever to the transportation setting.
 - f. Place the unit back into the original storage box, oriented so all of the packing material will fit around the unit.
 - g. Re-install the top foam.
 - h. Close the box
 - i. Return the unit to the top shelf in PS 103.