




TECH NOTE:	11-006
TITLE:	Granular Drop Test – Closed/Open
DATE:	03-8-11
REVISION:	1.0

Description: this process describes proper granular drop test in closed and open loop systems. See operations manual for complete set up instructions.

Granular Drop Test - Open or Closed Loop

WARNING		<p>Potential for injury due to unexpected operation of auger.</p> <p>Entanglement in the auger will cause severe injury to extremities, with possible loss of extremities.</p> <p>During initial startup and testing, the auger may start without warning. Stay clear of the auger during all startup, programming, and operation procedures.</p> <p>Do not attempt to clear a jammed auger with the hydraulic or control system active.</p>
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With the auger, spinner, and pre-wet configured and trim values present, the *SpreadSmart Rx™* or *Dual Spread™* will operate in automatic mode. Until doing a material drop test, the unit will use default values and be less accurate.

Closed Loop Drop Test (auger/conveyor sensor present):

For accurate material delivery, a drop test must be performed for each named type of granular material.

Conveyor Spreaders: accuracy is a function of the gate height settings on the truck. If multiple gate settings are used in normal operation, a material name and drop test must be run for each gate setting (Salt 2, Salt 3, Salt 4 etc). **Changes in the gate setting without changing the calibration will result in less accurate dispensation of granular material.**

- 1) Enter configuration menu by simultaneously hold the auger and pre-wet switches down to enter the “configuration screen.” You will be asked for a password, enter “_____” using the spinner controls to change the digits, and the blast/pass controls to change cursor positions. Run the cursor past the end of the password to enter setup mode.
- 2) Using the spinner switch, select “Materials,” and select material type.

<pre> Configuration ----- Setup Wizard Advanced System Setup Set Clock Trim/Cal Reset All → Materials Save and Exit <BLAST>=done <SPIN+/->=sel <PASS>=next </pre>	<pre> Material Setup ----- → Granular Prewet Anti-Ice <BLAST>=done <SPIN+/->=sel <PASS>=next </pre>
<pre> Setup ----- → 1) SALT 6) 2) SALT 2 7) 3) SALT 3 8) 4) SALT 4 9) 5) SAND 10) <BLAST>=done <SPIN+/->=sel <PASS>=next </pre>	<pre> Granular Material page 2/2 ----- Small Increment: 50 LBS/MILE Large Increment: 100 LBS/MILE → Pulses/LB: 20.0 Maximum LB/min: 2000 <SPIN+/->=sel <ICE+/->=adj <BLAST>=done </pre>

- a) Pick the material type you wish to calibrate (i.e. salt).
- b) **Scroll down to pulses per pound.**
- c) Press pass to select between calibration modes:
 - i) **Weigh Truck** (requires truck scales);
 - ii) **Weigh Material Dropped** (requires 75 lb. scale and bucket for weighing);
- d) Read the instructions and page through them using the pass switch.
 - a. **Weigh truck** – run the auger at 50% and unload at least a yard of material;
 - b. **Weigh Material** – run the auger at 50% and unload 300-500 lbs of material.
- f) Enter weight of material dropped.
- g) Accept the new calibration value in pulses/lb (note that max lbs/min is changed by the system as a result of the new value in pulses/lb).

Drop Test is now complete for the material selected. Note that for maximum accuracy and performance, a drop test must be performed for each type of granular material (salt, sand, combinations, other material, etc.).

Open Loop Drop Test (no sensor on auger/conveyor):

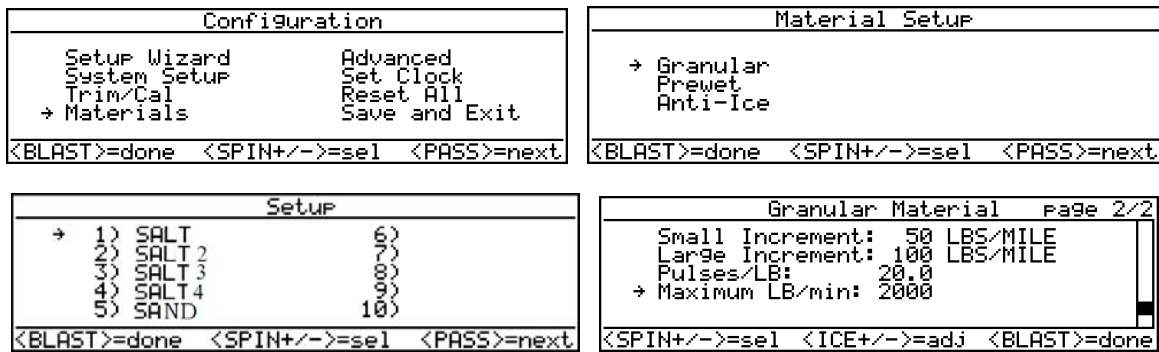
A drop test must be performed for each named type of granular material (salt, sand, mixture, etc).

Drop tests performed on open loop systems will improve accuracy, but cannot achieve the accuracy of a closed loop system. In addition, accuracy of open loop system is dependent on the accuracy of the hydraulic trimming for the auger. Best trimming requires a hand held tachometer to properly identify the max rpm of the auger (and the max trim of the auger hydraulic channel).

Conveyor Spreaders: accuracy is a function of the gate height settings on the truck. If multiple gate settings are used in normal operation, a material name and drop test must be run for each gate setting (Salt 2, Salt 3, Salt 4 etc). **Changes in the gate setting without changing the calibration will result in less accurate dispensation of granular material.**

1) Enter configuration menu by simultaneously hold the auger and pre-wet switches down to enter the “configuration screen.” You will be asked for a password, enter “_____” using the spinner controls to change the digits, and the blast/pass controls to change cursor positions. Run the cursor past the end of the password to enter setup mode.

2) Using the spinner switch, select “Materials,” and select material type.



- Pick the material type you wish to calibrate (i.e. salt).
- Scroll down to maximum LB/min.**
- Press pass to select between calibration modes:
 - Weigh Truck** (requires truck scales);
 - Weigh Material Dropped** (requires 75 lb. scale and bucket for weighing);
- Read the instructions and page through them using the pass switch.
 - Weigh truck** – run the auger at 50% and unload at least a yard of material;
 - Weigh Material** – run the auger at 50% and unload 300-500 lbs of material.
- Enter weight of material dropped.
- Accept the new calibration value in pulses/lb (note that max lbs/min is changed by the system as a result of the new value in pulses/lb).

Drop Test is now complete for the material selected.

Note that for maximum accuracy and performance, a drop test must be performed for each type of granular material (salt, sand, combinations, other material, etc.).