



Swenson Spreader Calibration Reference Guide

Why Calibration Matters

Different materials spread at different rates — even when using the same spreader setting. Proper calibration ensures accurate material application, improves efficiency, and reduces waste. Each spreader must be calibrated with the *specific material* you intend to use.

Spreader Calibration Overview

Calibration determines how many **pounds per mile** your spreader applies at various control settings and vehicle speeds.

This process involves:

1. Measuring the **shaft revolutions per minute (RPM)** of the auger or conveyor.
2. Measuring the **amount of material discharged per revolution**.
3. Multiplying these values to calculate **discharge rate per minute**.
4. Multiplying the discharge rate by the **time to travel one mile** at a given truck speed.

Tip: Even spreaders of the same model can vary significantly. Always calibrate each unit individually.

Equipment Needed

- Scale for weighing material
- Canvas, tarp, or collection bucket
- Chalk, crayon, or marker
- Stopwatch or watch with a second hand
- Partial load of spreading material

Calibration Steps (Manual Systems)

1. **Warm up the system.** Run the truck and spreader to bring hydraulic oil to normal operating temperature.
2. **Load material.** Add a partial load of the material you plan to spread.

3. **Mark the shaft.** Use chalk or crayon to mark the auger or conveyor shaft for easy counting.
4. **Run the spreader.** Engage the spreader at operating RPM (at least 2,000 RPM).
5. **Measure revolutions.** Count the number of shaft revolutions per minute at each control setting and record the results.
6. **Collect and weigh.** Capture material discharged during one (or several) shaft revolutions in your collection container. Weigh and record it, deducting container weight.

For greater accuracy, collect material for multiple revolutions and divide by the number of turns to determine discharge per revolution.

7. **Calculate discharge rate.**

Multiply:

$$(\text{Shaft RPM}) \times (\text{Discharge per revolution}) = \text{Pounds per minute (lb/min)}$$

8. **Determine discharge per mile.** Multiply discharge rate by the minutes it takes to travel one mile at your operating speed:

For example: 20 mph = 3.0 minutes per mile

$$30 \text{ RPM} \times 7 \text{ lb} = 210 \text{ lb/min} \times 3.0 = \mathbf{630 \text{ lb per mile}}$$

Calibration for Automatic Controls

Automatic systems are factory-calibrated, but verification is recommended for accuracy.

1. Turn off or remove the spinner.
2. Set auger control to a specific number (e.g., “2”).
3. Secure a sack or heavy canvas under the discharge chute.
4. Mark a test distance (100 or 1,000 ft).
5. Drive that distance with the spreader operating.
6. Weigh the collected material.
7. Multiply the collected weight:

5.3 if tested over 1,000 ft

52.8 if tested over 100 ft

This result = **pounds of material per mile.**

Note: Calibration must be verified for each control setting.

Gate Opening Calibration (Hopper Spreaders)

For hopper-type spreaders, measure the **gate opening height** (from the conveyor floor to the bottom edge of the gate). Each specific opening must be individually calibrated.

Reference Chart – Pounds Discharged Per Mile

Control Setting	Shaft RPM (Loaded)	Discharge per Rev (lb)	Discharge Rate (lb/min)	5 mph (x12.00)	10 mph (x6.00)	15 mph (x4.00)	20 mph (x3.00)	25 mph (x2.40)	30 mph (x2.00)	35 mph (x1.71)	40 mph (x1.50)	45 mph (x1.33)
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												

Calibration Record Form

Agency:		Location:	
Truck #:		Spreader #:	
Date:		Performed By:	
Material Type:		Gate Opening:	
Speed (MPH)	Minutes per Mile	Pounds per Mile	
5	12.00		
10	6.00		

Speed (MPH)	Minutes per Mile	Pounds per Mile
15	4.00	
20	3.00	
25	2.40	
30	2.00	
35	1.71	
40	1.50	
45	1.33	

Pro Tips for Effective Calibration

- Calibrate **at the start of each season** and whenever changing materials.
- Use **the same material** you'll spread during operations — moisture and granule size affect flow.
- Record calibration data and keep it accessible in the cab or maintenance log.
- Clean equipment thoroughly before calibrating to ensure consistent results.

Swenson Support

Need help with calibration or spreader setup?

Swenson's team can guide you through step-by-step calibration for your model and material.

Contact Swenson Products

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