



# Hydraulic-Run Spreader Calibration

NH Best Management Practices

## WHY CALIBRATE?

You can't reduce your salt use if you don't know how much salt you actually use! The goal of calibrating is to know how much material you are putting down on a roadway or parking lot for every setting on your truck that you use. This is why calibrating your equipment is the first step to reducing salt use and saving money!

## REMEMBER:

Each truck must be independently calibrated for each material it will be used to spread (the salt calibration chart *will* be different than the sand calibration chart).

Calibrations should be performed annually, or after a spreader is serviced.

## CALCULATIONS:

There are a few simple calculations you must perform in order to complete the calibration.

Once all of the necessary data is recorded, head back inside and warm up! Refer to the reverse side of this fact sheet for calculation instructions.



## Step 1: Load the Truck

Partially load the truck. Half of a full load should be more than adequate for calibration purposes.

## Step 2: Set Your Controls

**Gate Height:** Set the gate height to its lowest practical setting (~2"). This should be kept constant throughout the calibration process. If you find that not enough material is dispensed with this setting, try 2.5" to 3".  
**Engine Speed:** Warm the truck up and run the engine at the typical rate seen during spreading (approximately 2000 rpm).



## Step 3: Measure Spread Width

Measure the width that the material covers during spreading. Do this for each conveyor/auger setting you are calibrating. Round your numbers to the nearest half foot and record them in column "W" of the calibration chart (see reverse side).

## Step 4: Collect & Weigh Material

You will need either a sheet of canvas, a tarp, or a bucket to collect the material that is dispensed from the spreader, as well as a scale. Weigh the object you are using to collect the material in, and record that value in the purple box above the discharge rate column. Collect material for 1 minute. Weigh the collected material and subtract the weight of the tarp/canvas/bucket. Record this value in the first purple column of the calibration chart. Do this 3 times for each conveyor/auger setting that is typically used. Average these three values together and record in the orange column in the calibration chart.



## Step 5: Perform Calculations

Go inside and calculate your discharge rate using the calibration chart for each truck speed and conveyor/auger setting you normally use. Refer to the reverse side of this fact sheet for calculation instructions. The formula you will be using is shown below:

$$D = \frac{B \times C}{A}$$

## Step 6: Distribute Completed Calibration Cards!

Put a copy of the calibration chart in the truck you just calibrated. Also, leave a copy of the calibration chart in the office so you have a copy in case the original is damaged.

Produced in partnership with:



# Calibration Chart (Hydraulic Type)

Material: \_\_\_\_\_ Truck/Spreader ID: \_\_\_\_\_

Date: \_\_\_\_\_ Performed by: \_\_\_\_\_

Tarp/Canvas/Bucket Weight:		Discharge Rate (lb/min.)				Pounds of Material Discharged per 1000 square ft. (D = B x C ÷ A)						
Conveyor or Auger Setting	W	A	Discharge Rate (lb/min.)			D						
	Spread Width (ft.)	5.28 x W	Run 1	Run 2	Run 3	5 mph (C = 12)	10 mph (C = 6)	15 mph (C = 4)	20 mph (C = 3)	25 mph (C = 2.4)	30 mph (C = 2)	
1												
2												
3												
4												
5												
EX	14	5.28 x 14 = 73.92	87	92	93	12 x 90.67 ÷ 73.92 = 14.72	6 x 90.67 ÷ 73.92 = 7.36	4 x 90.67 ÷ 73.92 = 4.91	3 x 90.67 ÷ 73.92 = 3.68	2.4 x 90.67 ÷ 73.92 = 2.94	2 x 90.67 ÷ 73.92 = 2.45	
			Average Discharge Rate ((Run1 + Run2 + Run3)/3)			(87+92+93)÷3 = 90.67						

Calculation Instructions: Multiply the spread width from column **W** by **5.28** and record the answer in column **A**. For each conveyor/auger setting, add **Run 1**, **Run 2**, and **Run 3** together. Divide the result by **3** and record in column **B** to get the average discharge rate. To find the pounds of material discharge per 1000 square feet, you must know the number of minutes it takes to travel one mile at every truck speed you intend to calibrate for. These numbers are designated as variable "**C**". The "**C**" value for each travel speed is shown in red under that given speed. Multiply column **B** by the "**C**" value for that speed and divide by the **A** column to find the number of pounds of material discharged per 1000 square feet for the given speed. Record these numbers in the **D** columns. The full equation is shown here:

$$D = \frac{B \times C}{A}$$