

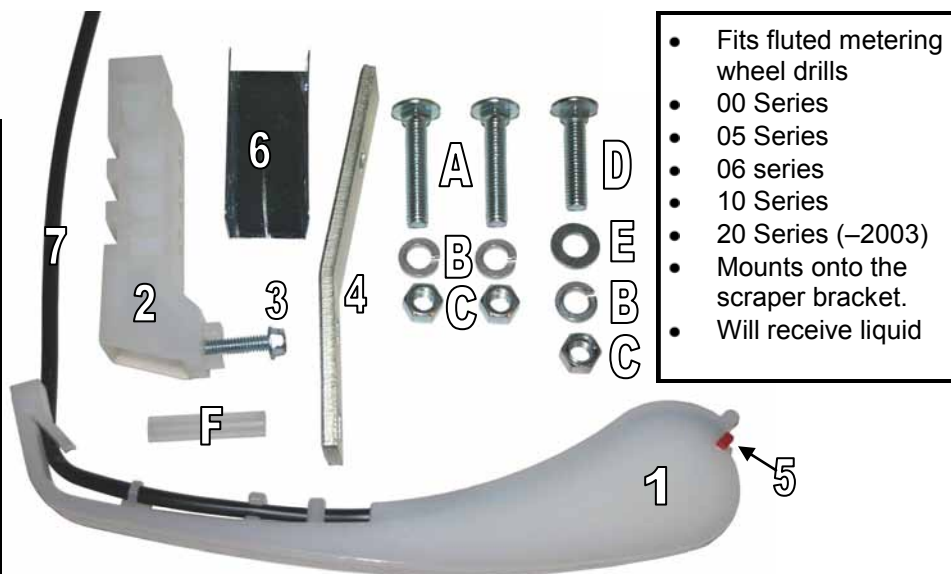
# Mounting Instructions for a Great Plains Drill

## Parts List

1. Firmer Tail, (120820)
2. Poly Mounting Bracket,
3. Tension Screw, (32411)
4. Metal Mounting Bracket, (129002)
5. Liquid Splitter, (125006)
6. Tube Guard (129BXT827)
7. Tubing, (129BXT814)

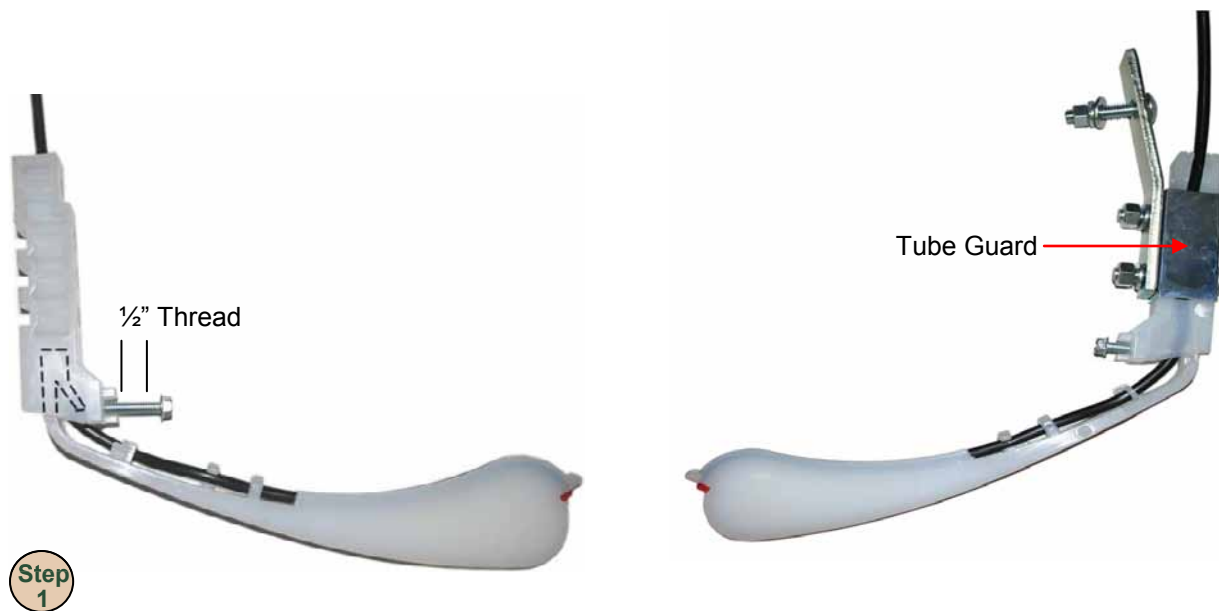
### Hardware Kit Includes

- A) 2 -  $\frac{3}{8}$  x 2" Carriage Bolt, (21361)
- B) 3 -  $\frac{3}{8}$ " Lock Washer, (33622)
- C) 3 -  $\frac{3}{8}$ " Hex Nut, (36306)
- D) 1-  $\frac{3}{8}$  x 1 $\frac{3}{4}$ " Carriage Bolt (21360)
- E) 1-  $\frac{3}{8}$ " Flat Washer (33008)
- F) 1 -  $\frac{1}{4}$  x  $\frac{3}{8}$ " Splice Piece, (900107)



- Fits fluted metering wheel drills
- 00 Series
- 05 Series
- 06 series
- 10 Series
- 20 Series (-2003)
- Mounts onto the scraper bracket.
- Will receive liquid

## Installation Instructions



**Step 1**

Assemble 2-piece liquid firmer by inserting the Tail into the poly base as shown. Make sure tension screw is below the tab on Tail section.

Tighten the tension screw leaving a 1/2" of thread showing between the bracket and the head of the tension screw.

**Step 2**

Bolt the Tube Guard and the Steel Bracket to the firmer using the 2-  $\frac{3}{8}$  x 2" carriage bolts and 2 lock washers provided.

The Tube Guard is always placed on the tube side of the firmer.

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## Continued Installation Instructions


**Step 3**

The long angle of the mounting bracket should be secured to the front side of the scraper bracket using the 1 $\frac{3}{4}$ " carriage bolt, flat washer, and lock washer.

If the drill has scrapers, mount the Firmer and scraper using this bolt. Align the hole in the Firmer bracket with the lower hole in the drill's scraper and secure with washers and nut.

Lower the drill so that the opening disks rest on a flat surface or on the shop floor.


**Step 4**

After mounting the first unit on the drill, measure the height from the Firmer's tension screw to the ground. That distance should be approximately 4" to 4-1/2". Repeat the procedures for each unit.

If tension screw cannot be placed in correct height, undo the 2 carriage bolts on the firmer and move the firmer up and down until the tension screw is at the correct height. Line up holes on firmer with bracket and reattach bolts at correct height. Then re-install opening disk.

Repeat for each unit.

**Step 5**

**Liquid Firmer Tubing Connections:** Liquid Firmers include 1/4" tube splicers. These splicers are provided so you can splice the provided tubes into the supply line from your manifold. If you are NOT using liquid, simply remove the black tube by snipping the tie strap that secures the tube to the firmer. Then remove the red splitter which is attached to the tube at the end of the firmer tail.

**Step 6**

**Reinstall disk openers:** Check your drill manual for proper shimming and contact of your double disk openers. Replace the disks and tighten all bolts.

**Step 7**

**Adjusting Firmer tension:** Ideal firmer tension is 12-20 ounces of force when set on a hard level surface. To determine if the tension is correct, lower the drill to the ground. Attach a small hanging scale (i.e. fish scale) to the firmer near the end. Lift until the firmer just comes off the ground. Tighten the tension screw until it takes 20 ounces or 1 1/4 lbs to raise the firmer. Tension should be checked before every season and if tension is weak, tighten screw. A quick check for down pressure is to lift the firmer tail 2" off the ground and release. If the firmer does not "smack" the ground it needs to be tightened or replaced.

**Note:** Trim the length of the tail if it is making contact with the Press wheel.



**Backing Up** tractor while drill is not fully raised can result in damage to the Keeton Seed Firmers.

**Storage:** Installed Firmers should not be stored touching the ground between planting seasons.

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## Maximum Liquid Capacity

Method	PSI At Firmer	GPM	GPA for 20" Rows				GPA for 30" Rows				GPA for 36" Rows			
			4 mph	5 mph	6 mph	7 mph	4 mph	5 mph	6 mph	7 mph	4 mph	5 mph	6 mph	7 mph
On Seed	5 psi	.47	35	28	23	20	23	19	16	13	19	16	13	11
	10 psi	.73	54	43	36	31	36	29	24	21	30	24	20	17
	Squeeze Pump	.5	37	30	25	21	25	20	16	14	21	16	14	12
Splitter	5 psi	.30	22	18	15	13	15	12	10	9	12	10	8	7
	10 psi	.46	34	27	23	20	23	18	15	13	19	15	13	11
	Squeeze Pump	.33	24	20	16	14	16	13	11	9	14	11	9	8

- ▶ This chart is for reference to maximum flow rates using starter fertilizer (11 lb. per gallon).
- ▶ It is recommended that flow be distributed through an orifice system to ensure equal flow to each row.
- ▶ Pump pressure can be run higher if an orifice is used to regulate flow.

## Troubleshooting Guide

Problem	Solution
Firmer not centered in trench.	1 ▶ Check to see if row unit is trailing straight.
Groove worn on side of firmer.	2 ▶ Verify that mounting bracket is installed correctly.
	3 ▶ Check to see that disc openers are shimmed equally.
	4 ▶ Check to see if firmer is bent or damaged.
Starter leaking on closing wheel or firmer.	1 ▶ Make sure hose is connected directly to barb on firmer.
	2 ▶ Check hose for splits at barb or damage from pinching or rubbing.
Uneven starter flow.	1 ▶ Check tubes for kinks or plugs.
	2 ▶ Use manifold with orifice to ensure even distribution.
Dirt builds up on firmers.	1 ▶ Some build-up on firmers is acceptable as long as it is on the sides and top of the firmer, and does not get wider than the V-trench sidewalls.
	2 ▶ If build-up happens on the bottom of the firmer, check for proper tension.
	3 ▶ Check for damage or rough spots on the bottom of the firmer.
Uneven wear on bottom.	1 ▶ Check opener disk contact and shim if necessary.
	2 ▶ Make sure firmer tail is trailing down center of trench.

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