



# Meter Install Guide





**Precision Planting, Inc.**

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**Precision Planting Warranty & Liability Policy** (Revision effective 7-1-10)

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These terms and conditions represent the entire agreement between the parties hereto and there are no collateral, oral, or other agreements or understandings, unless expressly stipulated.

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**Choice of Law:**

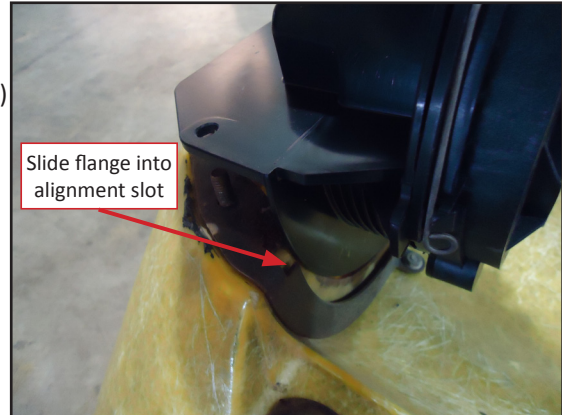
Any dispute or claim arising from or related to this Policy, or related to a product governed by this Policy, shall be governed by the laws of the State of Illinois.

# Installation

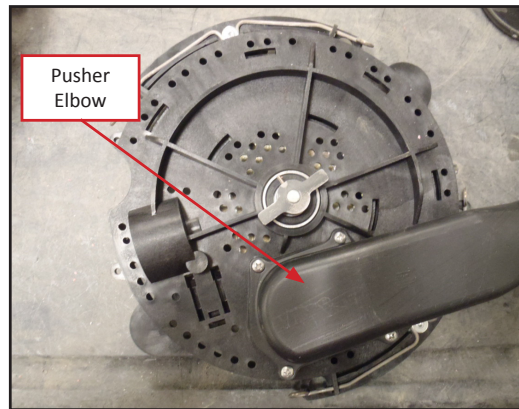
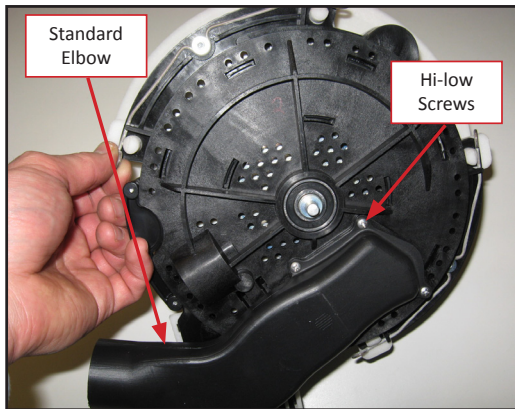
## Meter

### Steps:

1. Disengage the drive clutch and remove the hopper from the row unit.
2. Remove the 2 retaining nuts (or studs for 3000 series Kinze) fastening the existing meter to the hopper.
3. Remove the existing meter from the hopper.
4. Install the Precision vSet Meter reusing the existing mounting studs and hardware. Make sure the flange on the meter slides into the alignment guide properly on the hopper.
5. Install the seed boot on to seed chute of the meter in the **correct ridge**<sup>1</sup> for the planter you are using. (see **Figure 2**)
6. Reinstall the hopper in the row unit and engage the drive clutch.

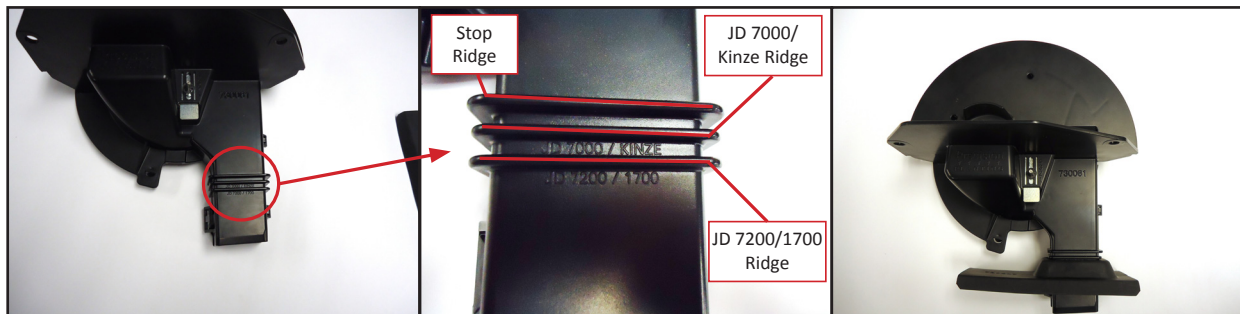


Pusher rows on twinline planters require a different inlet elbow to connect the vacuum hose to the meter. The pusher row inlet elbows are available from Precision Planting in kit 730045. To replace the inlet elbow, simply remove the four hi-low screws fastening the standard elbow, remove the standard elbow, and attach the pusher elbow using the same four hi-low screws. Make sure the vacuum seal (behind the elbow flange) is still seated properly in its groove before installing the new elbow.



When installing the seed boot onto the vSet meter you have two options for placement on the meter. For JD 7200/1700 place the seed boot on the first ridge from the exit of the seed chute. For JD 7000 and Kinze planters place the seed boot on the second ridge. The third ridge is taller than the lower two because it is a stop. The seed boot only goes on the bottom two ridges (See **Figure 2**). You can remove front tabs on the boot to allow for wire routing if needed. Do a fitup first to see if necessary.

Figure 2



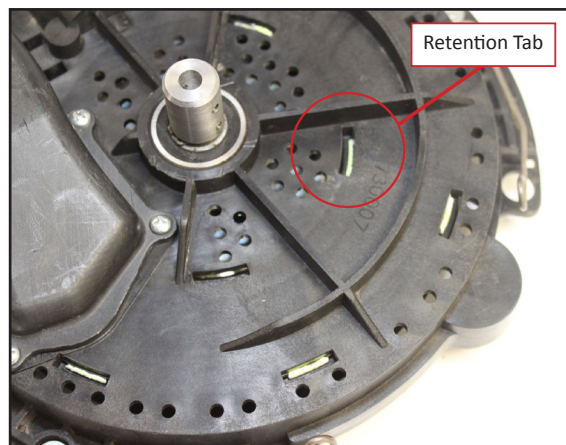
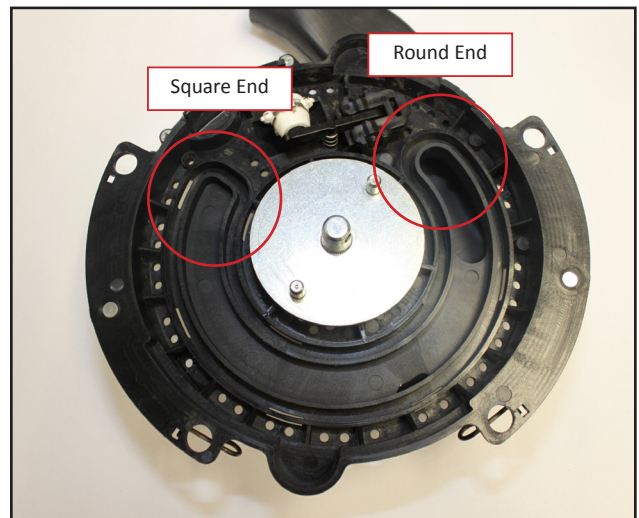
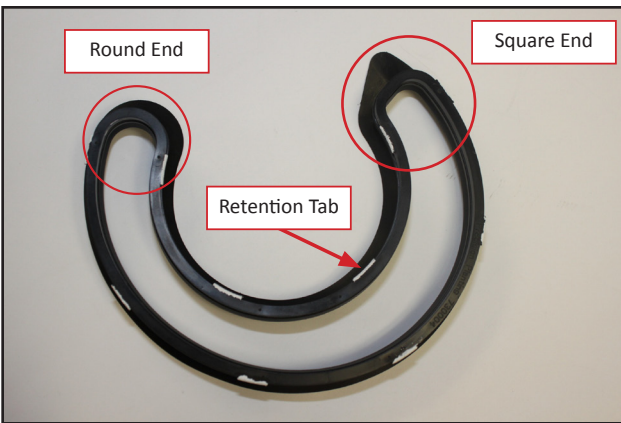
Properly installed seed boot for a JD 7200/1700 planter

<sup>1</sup>The boot will come pre-assembled on the "JD 7000 / KINZE" ridge on the exit chute.

# Installation

## Installation of the vSet vacuum seal

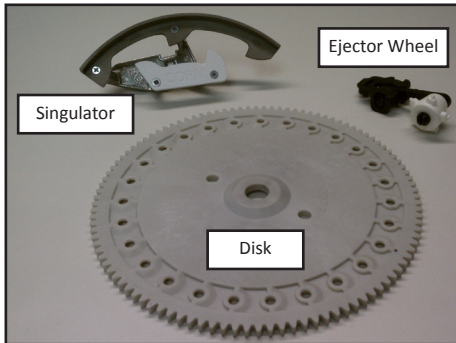
With the seal removed completely make sure that seal is cleaned. Just wipe down with water and a rag. Then when you start installation, start with the squared end first. Make sure you are aligning the seal and the housing properly (shown with picture 1 & 2). Then start seating the seal into the housing, when fully seated you will see the retention tabs of the rubber seal on the other side of the meter housing ( shown with picture 3). Continue all the way around the seal and continually check to make sure the lock tabs are showing in the open section on the back side of the meter housing. When you see all the retention tabs all seated properly then check the front side of the seal to make sure there are no wrinkles in the seal.



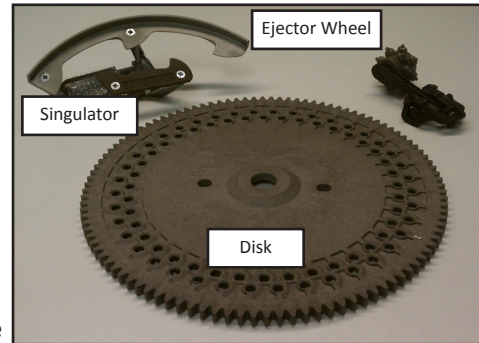
# Operation

## Switching Crops

The vSet meter has three components that are designed with a specific crop in mind. The disk, ejector wheel, and singulator will need to be interchanged whenever you change the crop you are planting. Each of these crop-specific parts are color-coded to correspond to their functionality. See **Table 1** for the crop color code.



Corn Components



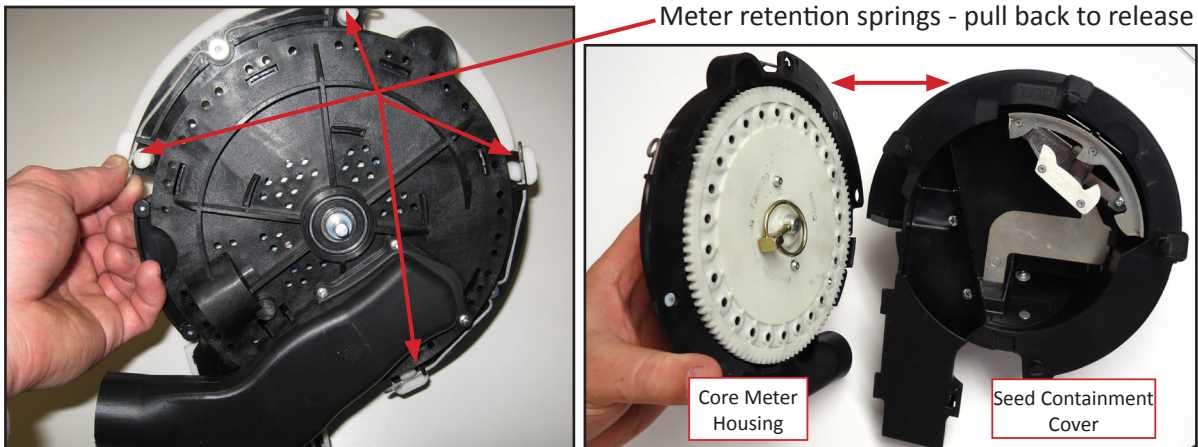
Soybean Components

Table 1 Crop Color Code

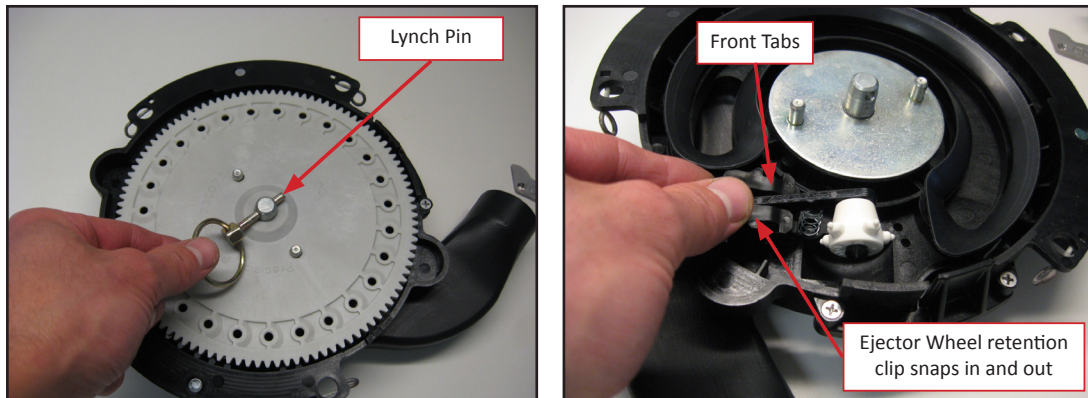
Crop	Color
Corn	Off-White
Soybeans	Brown

The following images show the meter separate from the hopper for the sake of clarity. It is **not** necessary to remove the meter from the hopper to switch the crop components.

1. Open the meter by releasing the retention springs and pulling the two halves apart. The *core meter housing* contains the disk and ejector wheel. The singulator is assembled on the other half of the meter, the *seed containment cover*.

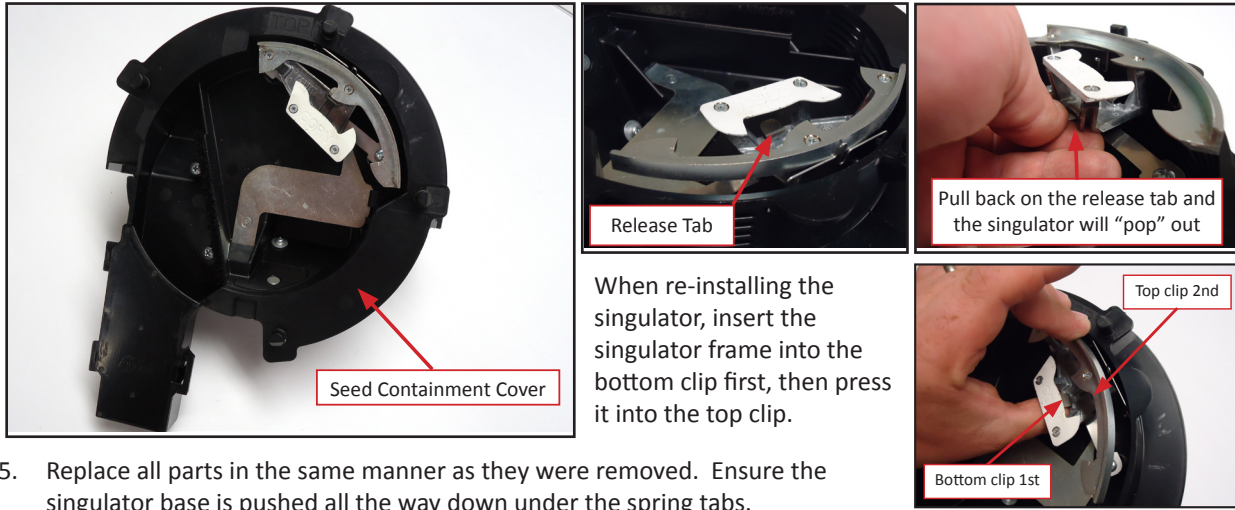


2. Remove the lynch pin holding the disk in place. The disk can now be removed freely. Be careful not to misplace the lynch pin. Also be careful to leave the disk shims under the disk in place when removing the disk.
3. Behind the disk you will find the ejector wheel assembly. This is removed by simply pulling up on the back side of the retainer rear tab. The wheel assembly should “snap” in and out. Install the ejector assembly by first inserting the front hinges into the base, then push down on the rear tab until the retainer snaps into place.



# Operation Continued

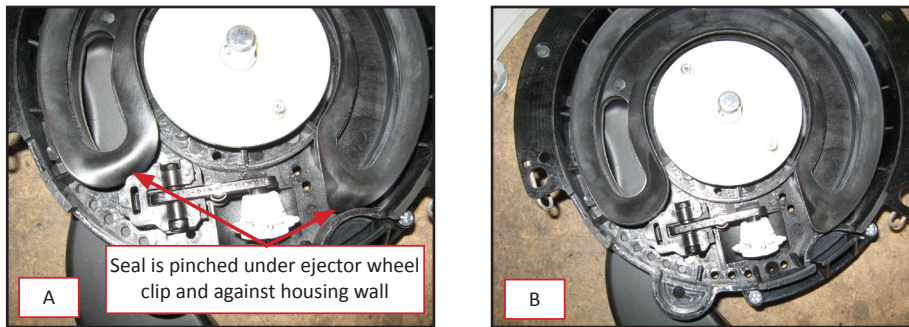
- On the other half of the meter, the seed containment cover, the singulator can be removed by releasing it from the axial spring. This is done by supporting the singulator under spring with index finger and pulling back on release tab with thumb.



When re-installing the singulator, insert the singulator frame into the bottom clip first, then press it into the top clip.

- Replace all parts in the same manner as they were removed. Ensure the singulator base is pushed all the way down under the spring tabs.

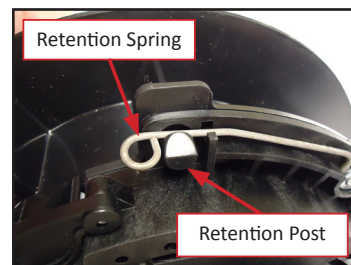
Make sure the seal is not pinched under the ejector wheel clip when reinstalling the ejector wheel assembly (see **Figure 3**).



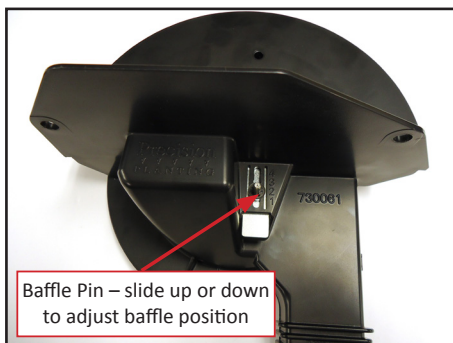
**Figure 3**

- Wrong Installation, shows pinched seal under ejector wheel clip and against housing wall.
- Correct installation.

When assembling the two halves of the meter, make sure the retention springs are fully engaged with the seed containment cover retention post and that the two halves are snugly together.



The baffle position may also need to be adjusted, depending on the crop being planted. Table 5 shows the recommended baffle positions for the various crops. To adjust the baffle, slide the pin up or down until it lands in the next detent position (see **Figure 4**).



**Figure 4**

**Table 5 Recommended Baffle Positions**

Crop	Position
Small grains	1
Corn, soybeans	2
Large seeds	3-4

# Troubleshooting

## General troubleshooting tip:

A good way to troubleshoot issues with specific rows is by process of elimination. Try switching out components from "bad" rows with components from "good" rows until you narrow down the root cause.

## Symptom: Meter stops seeding

### Solution:

- If one meter stops seeding while the others continue and it is not due to a swath event, then it is most likely because that row either ran out of seed, the swath control clutch failed, or the vacuum has been disconnected.
- If none of these explains the problem check the drive system. One component that should be examined is the shear pin, which connects the drive adapter to the drive shaft. This is simply a  $3/32"$  x  $5/8"$  roll pin designed to shear under higher than allowable torque. Replace the pin by driving in the new one which will simultaneously drive out the old one. Also, look inside the meter to investigate the cause of shearing. The likelihood of something being jammed in the meter is high since the roll pin is designed to shear in that situation.



- If there are no foreign objects in the meter, look for evidence of seeds milling. If that appears to be the case it may be that the disk is not shimmed properly. Disk shims are set at the factory, but it is possible for them to fall out. Check the disk alignment by holding the disk flat against the center drive plate while spinning the disk manually. On the bottom edge of the meter housing is an alignment gauge for the disk. View the surface of the disk with respect to the gauge. The disk surface should land between the first and second step on the gauge. (Figure 5 Disk Shims)

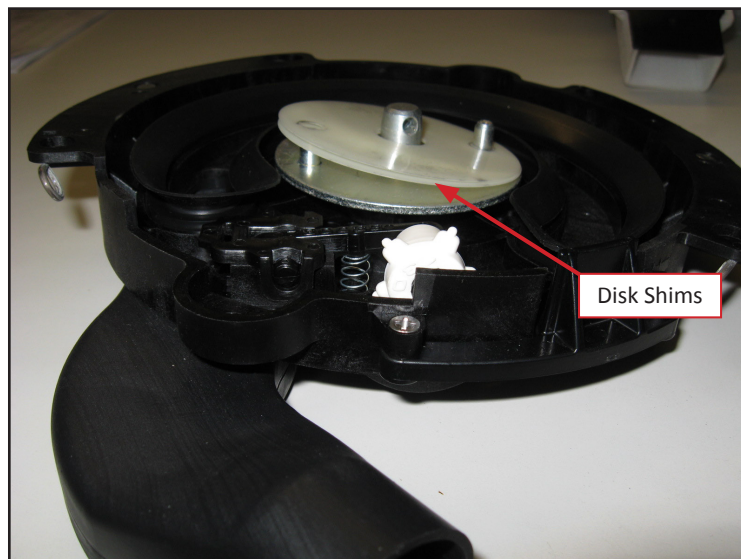
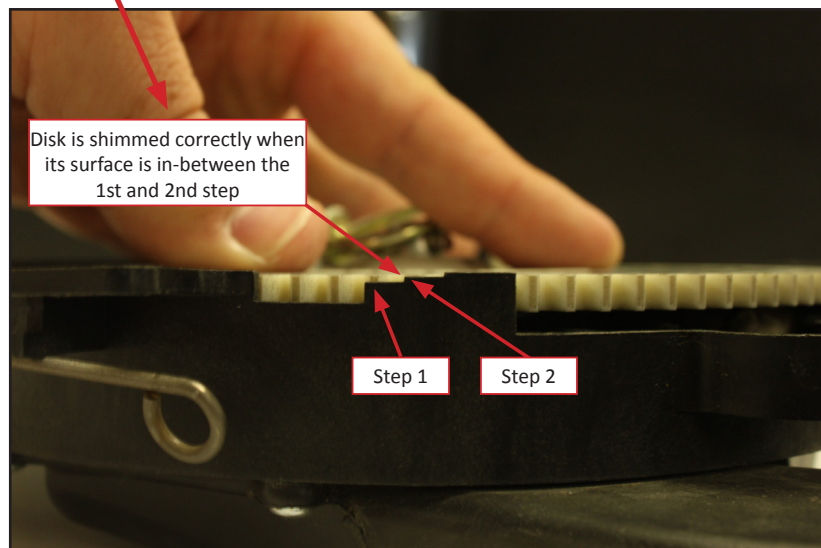
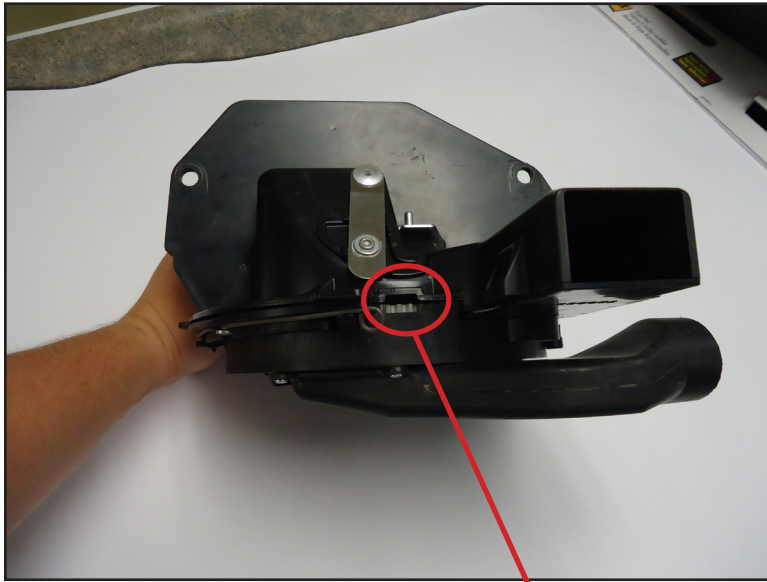


Figure 5

# Troubleshooting



- Seed bridging is another possible cause of the meter failing to plant. If you detect bridging, consider opening up the baffle to a higher position (see **Figure 4** on page 5).



# Troubleshooting

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## **Symptom: Excessive skipping**

### **Solution:**

- Make sure the correct singulator, disk and ejector wheel are installed in the meter (i.e. the off-white singulator that says “CORN” is used with the off-white corn disk and off-white ejector wheel when planting corn, etc).
- If the meter is skipping consistently, check to make sure there aren't fragments lodged in any of the disk holes.
- When assembling the meter, make sure the singulator is installed properly and the lobes are seated flush against the disk surface.
- Check the exit chute of the meter and the seed tube on the row unit for debris that could be deflecting seeds.
- Check that the disk is shimmed properly as shown in **Figure 5** on page 6. The disk may struggle to load if the gap is too large
- If all else seems to be in order, try increasing the vacuum. 20” H2O is generally adequate for all seed types, but try increasing beyond that if necessary. Continue increasing the vacuum pressure until meter singulation improves. Also, check for leaks in the vacuum system which could cause certain rows to have less vacuum. However in general, if singulations issues are a result of lack of vacuum pressure, you would expect to see singulation errors across the planter.

## **Symptom: Excessive doubling**

### **Solution:**

- Make sure the correct singulator, disk and ejector wheel are installed in the meter (i.e. the off-white singulator that says “CORN” is used with the off-white corn disk and off-white ejector wheel when planting corn, etc).
- When assembling the meter, make sure the singulator is installed properly and the lobes are seated flush against the disk surface. Make sure the radial spring (which pushes the singulator toward the center of the disk) is installed and acting on the singulator.
- Check the exit chute of the meter and the seed tube on the row unit for debris that could be deflecting seeds.

## **Symptom: Poor spacing**

### **Solution:**

- Check the exit chute of the meter and the seed tube on the row unit for debris that could be deflecting seeds.
- Check the drive system. Make sure chains are in good condition and well lubricated.
- Try spinning the meter manually. Look, feel, and listen for unusual sights or sounds as it spins. If it turns hard, remove the disk and look for debris that may be jammed in the meter.
- Look for evidence of where the seed is making contact with the seed tube and exit chute. Make sure the hopper is positioned such that the meter drops seeds down the middle of the seed tube.

## **Symptom: Wrong population**

### **Solution:**

- If you're using RowFlow, double check the motor calibration and configuration. Make sure the “seeds per meter revolution” is correct: corn = 27 holes, soybeans = 80 holes.
- If you're using ground drive, double check the sprocket configuration. Refer to **Rate Chart Conversion Guide** (separate document) for the population settings. Note: all ground drive chart information is approximate and will vary depending on tire inflation and ground conditions.