



Meter Install Guide





Precision Planting, Inc.

23207 Townline Road Tremont, IL 61568
ph. (309) 925-5050 fax. (309) 925-5029
info@precisionplanting.com

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

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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

Base meter

1. Seed Cover Assembly (730035)
2. Mechanical Housing Assembly (730030)
3. Meter Shim (730307)

Corn Kit

1. Singulator (730063)
2. Disk (730079)
3. Ejector As. (730101)

Bean Kit

1. Singulator (730065)
2. Disk (730039)
3. Ejector As. (730102)

Spare Parts Kit

1. Spring (730036)
2. Pin (730144)
3. Shim (730113)

Base Meter



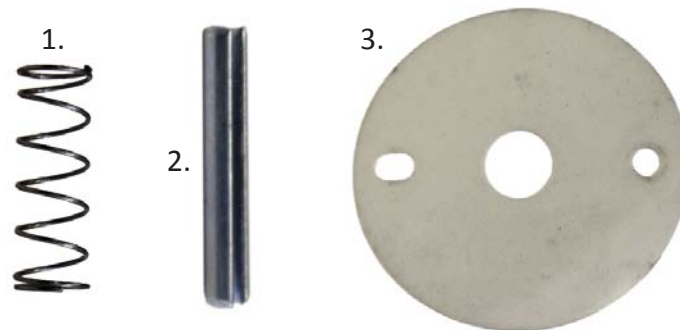
Corn Kit



Bean Kit



Spare Parts Kit



Additional Components Needed For Specific Planters

- John Deere 7200/17XX Standard Hopper – Will need 730330 adapter kit. Must have finger-meter hopper.
- John Deere 7200/17XX Mini Hopper – Will need either Precision Planting Mini Hopper for JD (730395) or Deere Mini Hopper Adapter Kit - 730335.
- Kinze 3000 Standard Hopper – Will need to purchase 730106 hopper.
- Kinze 3000 ASD – Recommend using Precision Planting Mini Hopper for KZ (730400). May also modify Kinze finger meter mini hopper (see vSet Tech Support page at www.precision.com).
- CNH 1200/1250 Series Mini Hopper - Recommend Precision Planting Mini Hopper for CNH 730405.

Installation (Continued)

Current Planter Meter Type: Finger Meter

- **John Deere 7000**
 1. Remove current meter and replace with vSet.
 2. Ensure that meter is aligned with clutch.¹
- **John Deere 7200/17XX**
 1. Remove current meter from hopper.
 2. Install Adapter Kit (730330 for Standard Hopper, 730335 for Mini-Hopper)
 3. Move meter boot to lower position.¹
 4. Install vSet on to hopper.
 5. Ensure that meter is aligned with clutch.¹
- **Kinze 2000**
 1. Remove current meter and replace with vSet.
 2. Ensure that meter is aligned with clutch.¹
- **Kinze 3000 with Standard hopper ²**
 1. Remove current meter/hopper and replace with our 730106 hopper and vSet.
 2. Ensure that meter is aligned with clutch.¹
- **Kinze 3000 with Mini hopper ²**
 1. Remove current meter.
 2. Modify hopper (using Instructions that can be found at: www.precisionplanting.com under Tech Support – vSet)
 3. Install vSet on to modified hopper.
 4. Ensure that meter is aligned with clutch.¹

Current Planter Meter Type: Vacuum Meter

- **John Deere 7200/17XX**
 1. Remove current meter and hopper.
 2. Acquire appropriate hopper and install adapter kit if necessary.
 3. Move boot to lower position.¹
 4. Move clutch to Finger Meter position. (will need to shorten chain)
 5. Install vSet on hopper
 6. Ensure that meter is aligned with clutch.¹
- **Kinze EdgeVac ²**
 1. Remove current meter and hopper.
 2. Acquire compatible hopper or modify existing hopper
 3. Move clutch to Finger Meter position (will need to shorten chain)
- **Note:** *EdgeVac Planters with AgLeader clutches may need to change the 28 tooth sprocket for a 19 tooth sprocket.*
 4. Ensure that meter is aligned with clutch.¹
- **CNH**
 1. Remove current meter and hopper.
 2. Acquire compatible hopper.
 3. Install vDrive (only compatible with vDrive).

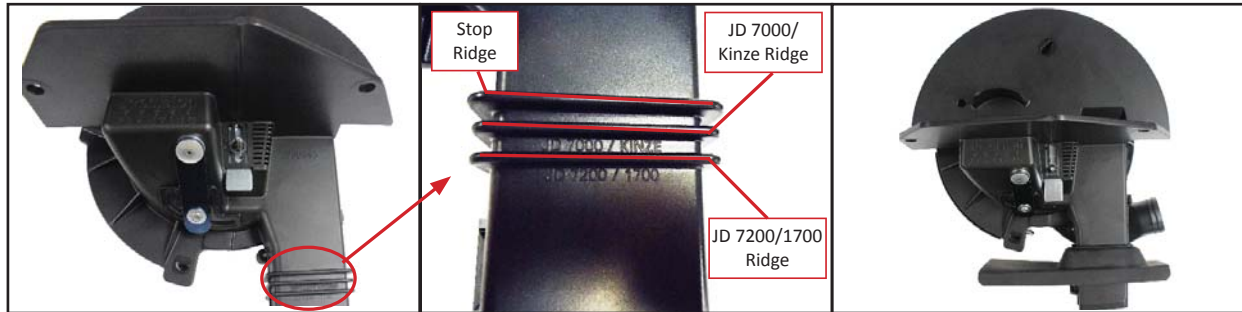
¹ See details on next page.

² For Kinze pusher units, See next page for details on how to install new vacuum elbow.

Installation (Continued)

vSet Boot Installation

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 lower ridge. For JD 7000 and Kinze planters place the seed boot on the upper. The top ridge is a stop and the boot is not positioned on it. You can remove front tabs on the boot to allow for wire routing if needed.



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

Properly installed seed boot
for a JD 7200/1700 planter

vSet Meter Alignment

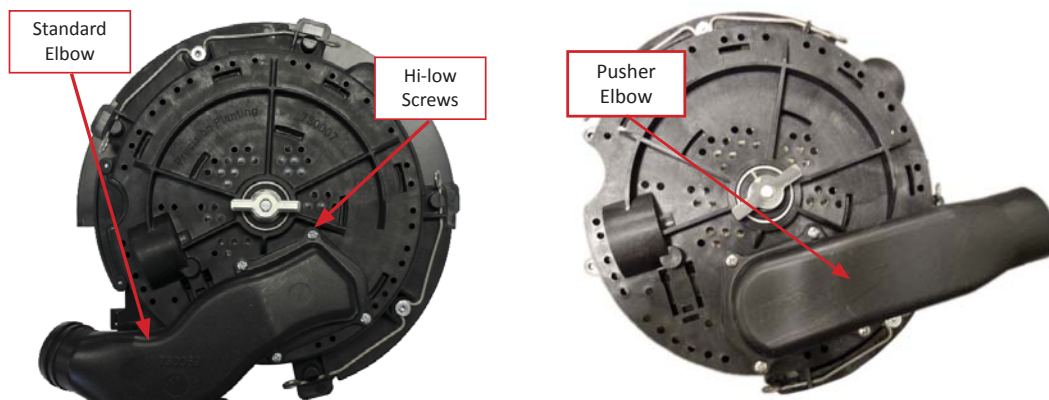
Due to variance in the tolerances on your current hopper/planter row unit, you must verify that the meter is properly aligned to the drive. Install the meter on the row unit and check visually to see if the meter is aligned with the clutch. Before checking alignment, verify that the hopper is completely seated on the row unit. Proper alignment can generally be achieved by loosening the drive clutch and shifting it so that is aligned with the meter.

In instances where you cannot vertically align the meter using the method described above, we have provided a 1/8" shim (730307) to further lower the position of your meter. Generally you should not need more than one shim per row in order to achieve alignment.

A properly aligned meter is necessary for the optimal performance of your vSet.

Kinze Pusher Unit Elbow

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.



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.

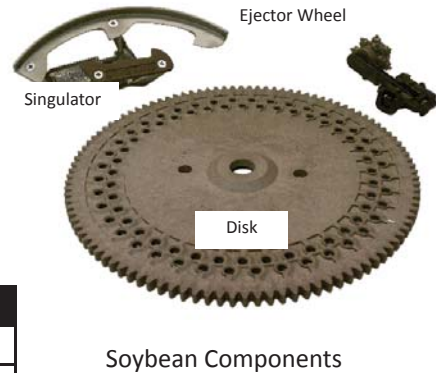
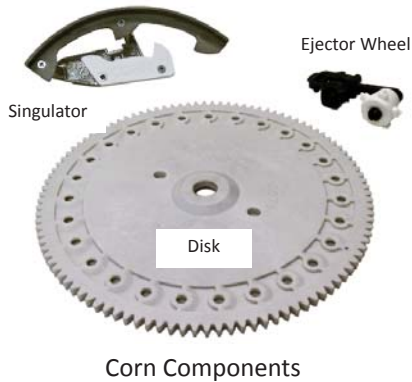


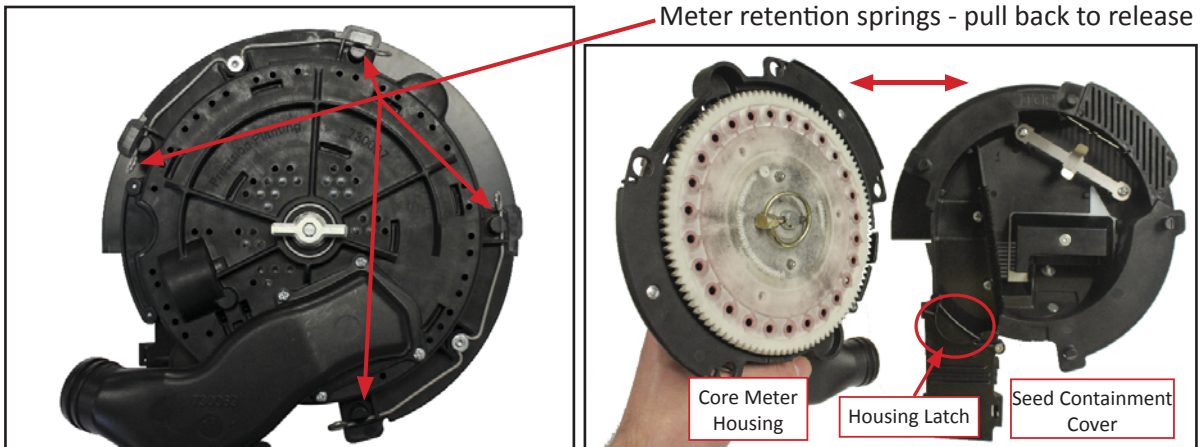
Table 1 Crop Color Code

Crop	Color
Corn	Off-White
Soybeans	Brown
Specialty	See Crop Guide*

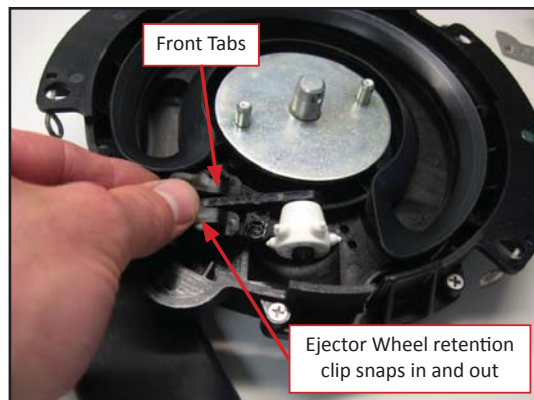
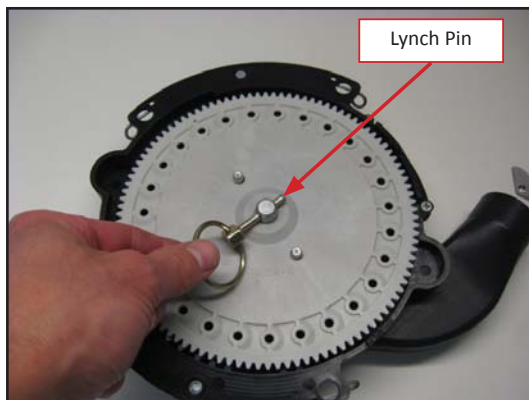
*vSet Crop Setup Guide by Crop is available at www.precisionplanting.com on the vSet Tech Support page.

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)

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

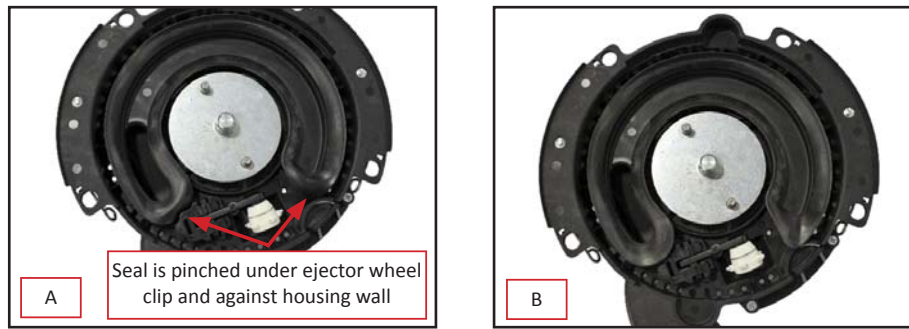


Figure 3

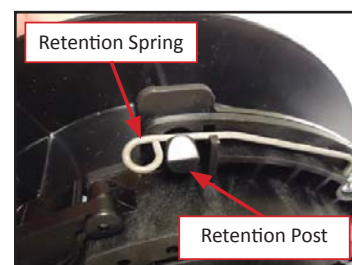
- (A) Wrong Installation, shows pinched seal under ejector wheel clip and against housing wall.
(B) Correct installation.

4. 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.



5. 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.

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**).

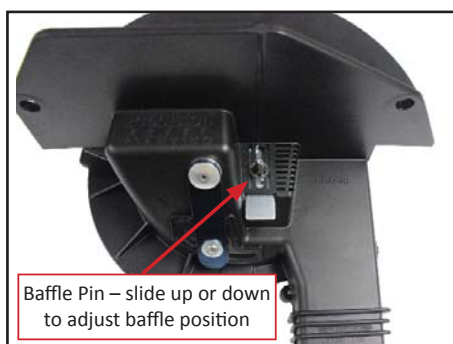


Figure 4

Table 5 Recommended Baffle Positions

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

Maintenance

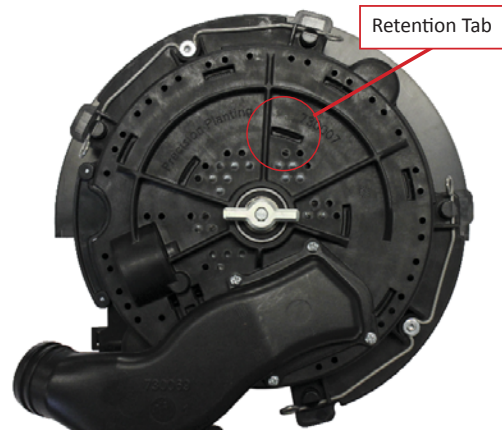
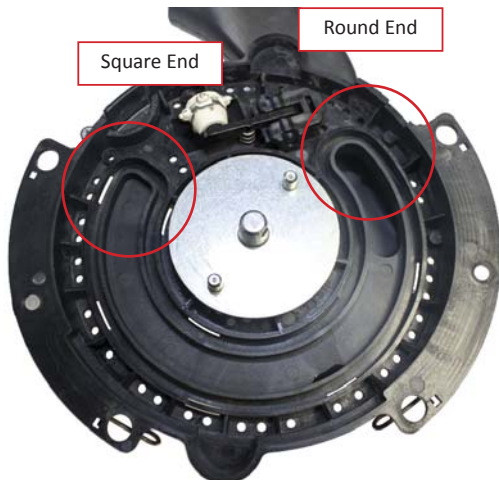
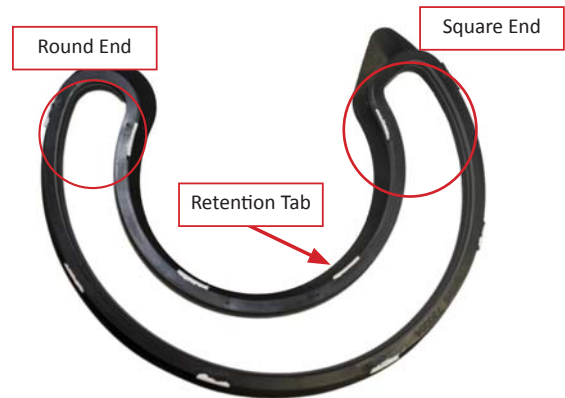
Annual Maintenance

1. Check Singulator for wear.
 - Replace when excessive wear occurs. An increase in Doubles can indicate excessive wear on this part.
 - A singulator check using the eSet Gauging tool can be used.
2. Check Vacuum seal for cracks/wear.
3. Check Disk to see if graphite is worn away. (Reapply graphite if gone)
 - Replace Disk if holes on disk become excessively deformed, or significant scoring occurs on vacuum side of disk.
4. Check Ejector wheel for wear.
 - Check Spring tension, and replace assembly if excessive wear occurs on arm inside of ejector wheel. Also, inspect pins to verify all are intact.
5. Check Brush for excessive wear.
 - Replace when gaps/wear on brush becomes significant enough for seed to pass through.
6. Test meters on MeterMax Test Stand to ensure Maximum Performance.

When not in use, store disks outside the meter housing on a flat, dry surface.

Replacing the vSet vacuum seal

1. Remove current seal by pulling it out from the meter housing, starting from the square end.
2. Verify that both the replacement seal and the groove in the meter housing are clean from debris. They can both be cleaned using water and a rag. If needed, you can use compressed air to clean the groove in the meter housing, just be careful not to lose your shims when performing this operation.
3. Insert new seal into the housing starting with the square end first, working your way around to the round end. As you are doing this, check to make sure the retaining tabs on the opposite surface of the meter are showing. Once you are done, run your finger around the seal to ensure that it is seated firmly and that there are no waves or bumps.



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

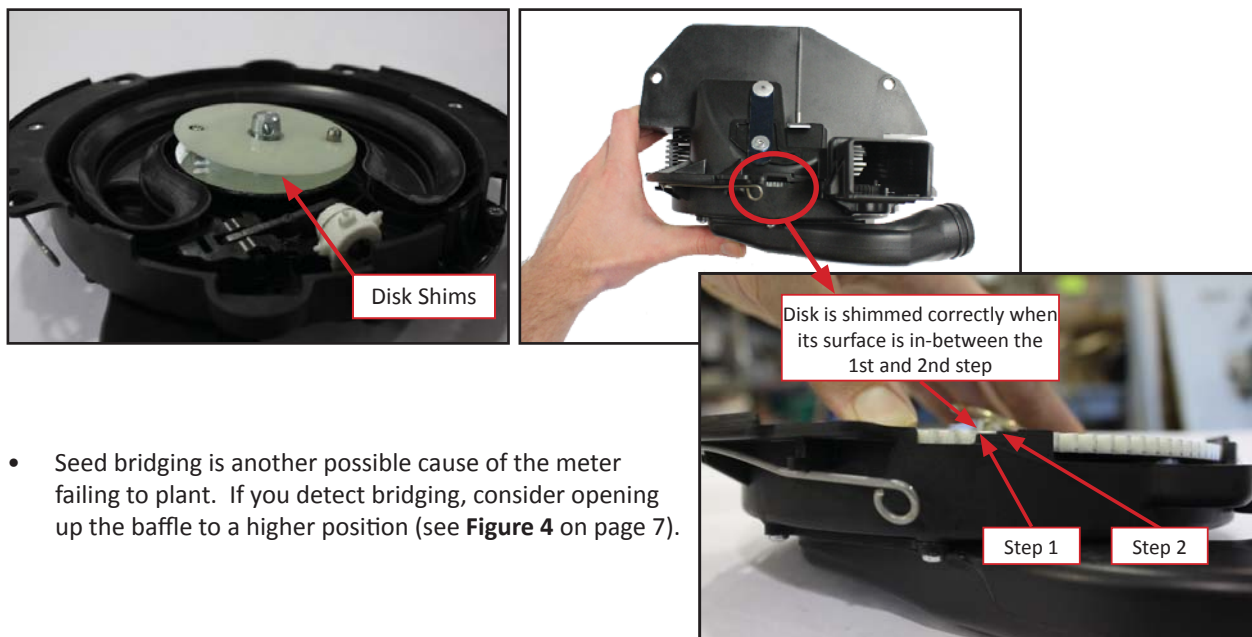
Solution:

- 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 $\frac{3}{32}$ " x $\frac{5}{8}$ " 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). For vDrive and small specialty crops, shim at to .010" below Step 3 of gauge.

Figure 5



- 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 7).

Troubleshooting

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 9. The disk may struggle to load if the gap is too large
- Increase the vacuum. 20” H2O is generally adequate for all seed types, but increase 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. In general however, if singulation issues are a result of lack of vacuum pressure, you should 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.
- Check Singulator for excessive wear.
- Decrease the vacuum. 20” H2O is generally appropriate for all seed types, but decrease if necessary. Continue decreasing vacuum pressure until meter singulation improves. If doubles are caused by excessive vacuum pressure, you should see singulation errors across the planter.

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 and ensure that it is appropriately shimmed (see figure 5 on page 9).
- If running vDrive, check for seed fragments between disk teeth. Clean and add shims (see figure 5, page 9).
- 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.
- Look to verify that the meter is properly aligned.
- Verify that your air vents are allowing free air flow into the meter. If debris is plugging the vent, you may need the vSet Snorkel Kit (730385)
- Slow down to see if poor spacing is caused by row unit ride.
- Ensure that eFlow is being used and that it is stirred into the seed pool.

Symptom: Wrong population

Solution:

- If you’re using hydraulic motors or vDrive, 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.