PRECISION
Planter Solutions

Flange Bushing Rebuild

Installation Instructions

Full Ream Kits

John Deere MaxEmerge

Kinze 2000 Pull Units

Fiberglass Hopper Planters

BITS REQUIRED FOR INSTALLATION

Verify appropriately sized reamers have been sourced, all reamers and bits are available through SI Distributing and should have been recommended at the time of purchase.

1. Parallel arm reamer, John Deere MaxEmerge row units and Kinze 2000 planters use 1-1/16" diameter bit.
    - Be sure this reamer matches the flange bushing size in the kit you have purchased.
    - This reamer is used to clean up any wear in the pivot holes in the parallel arms.
    - If you choose to purchase this reamer from an alternative supplier be aware retaining compound may be needed to ensure the flange bushing seats tight into the parallel arms.
2. Parallel arm drill bits for dowel pin on flange bushing.
    - Flange bushing pin marker bit: 3/16".
        - This bit will be used in conjunction with the included template. You will mark the location of the larger hole in a similar fashion to a "center punch".
    - Flange bushing pin hole bit: 7/16".
        - This bit will be used to drill all the way through the parallel arms to allow the flange bushing pin to seat into the arm.
3. Row unit and support plate reamer: 11/16"
    - The bolts included in this kit are a 5/8" fine threaded bolt with an 11/16" shoulder. Once reamed the shoulder is designed to fit snugly into the row unit and support plate holes filling any gaps caused by wear or oversized holes from manufacturing.

PRE-INSTALLATION PREPARATION

1. Sort and lay out packaged components by part number. Each bag should be labeled with S.I. Distributing's part number which is helpful for reference.
    - The diagrams within these instructions will be used to reference to understand the placement of the various bolts you have in your kit.
2. Check each row for clearance issues with either the bolt and/or hex bushing.
    - If you have any of the following call S.I. Distributing for alternative solutions.
        - A location that may not allow fitment of either the bolt or hex bushing.
        - Row unit has attachments to support plate (row cleaner mount, down pressure spring bracket) inhibiting the use of either the bolt or hex bushing.
        - Any clearance issue that inhibits the installation or functionality of these kits.

SAFETY REMINDER

Always wear proper safety equipment when using power tools.

SAFETY GLASSES, HEARING PROTECTION, AND GLOVES ARE A MUST WHEN WORKING WITH REAMERS AND METAL SHAVINGS!

PARALLEL ARM REAMING

1. Using a drill press or mill begin reaming each hole on the parallel arms.
    - Use plenty of cutting fluid/oil to maintain the lifespan of your reamer.
    - Run drill press/mill around 300 RPM or slower if possible.
    - It's best to only use the large reamers on the last 1/16" of metal.
    - if more than 1/16" needs to be removed, consider using a drill bit 1/16" smaller than the reamer prior to reaming.
    - Do not pull reamer back through the hole while it its turning, turn off drill before backing out.

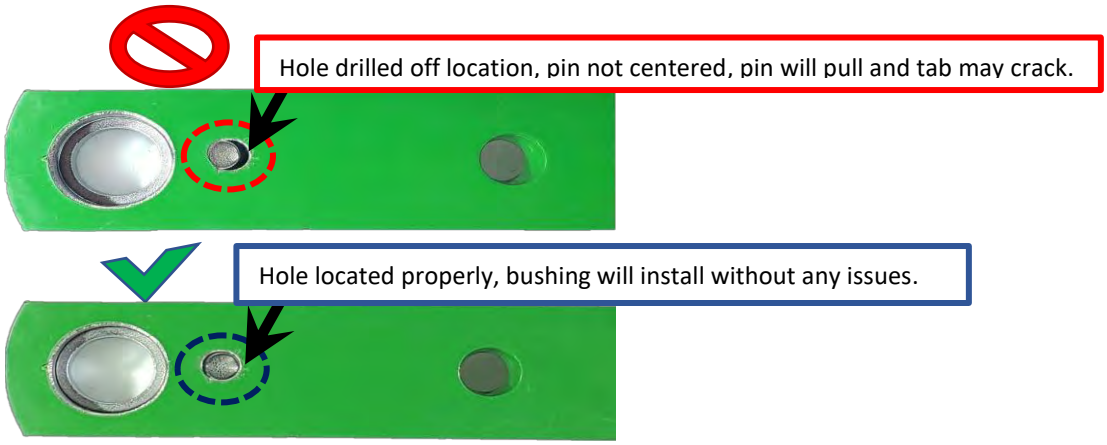
FLANGE BUSHING PIN HOLE DRILLING

When reaming of the parallel arms is complete, holes will be made to fit the pin on the flange bushing.

1. Place the flange bushing template into the reamed hole on the parallel arm, center the small hole in template with parallel arm and clamp it down.
    - On cast arms, grind ridge flat to allow flange on bushing to seat fully against the arm and prevent the bit from moving when marking with template.
2. With the 3/16" bit, make a "center punch" like mark on the parallel arm using the small hole of the template.

- It is not necessary to drill completely through the arm with this bit. Doing so will cause wear to the template hole making it harder to center the bit appropriately.

3. Remove template and drill hole all the way through with a 7/16” drill bit.
   - Ensure hole for flange pin properly located and drilled perpendicular to the arm.
   - If hole is not straight or is off location, damage to flange tab and/or pin will occur.
4. Using a flange bushing, line up and check pin hole on both sides of arm to ensure it has a clean travel path when pressed in.
   - Pin cannot make excessive contact with edge of hole. (even though you are only inserting the bushing from one side, checking it from both sides is necessary to ensure clean path for flange pin)
   - If the pin on the flange bushing does not have a clean path, you will need to enlarge pin hole to accommodate pin.
   - To enlarge the hole a die grinder and burr bit works well to remove excess material on the side of the hole where bushing pin will make contact.
   - A larger drill bit can also be used if the hole is close to accommodating pin.



FLANGE BUSHING INSTALLATION

1. Using a hydraulic press or similar, apply even pressure over the entire surface of the flange bushing, push the flange busing into the parallel arm until it is fully seated.
   - Remember to verify location of support plate in relation to parallel arms before pressing bushings.
     - On some Deere planters the parallel arms are assembled on the inside of the support plate. For these planters the flange bushings must be installed on the inside of the parallel arms where they attach to the support plate.

- Arms that are assembled on the outside of the support plate, the flange bushings must be installed on the outside of the parallel arms.
- On all planters, the side of the parallel arms that attaches to the row unit, the flange bushings will press in from the outside.

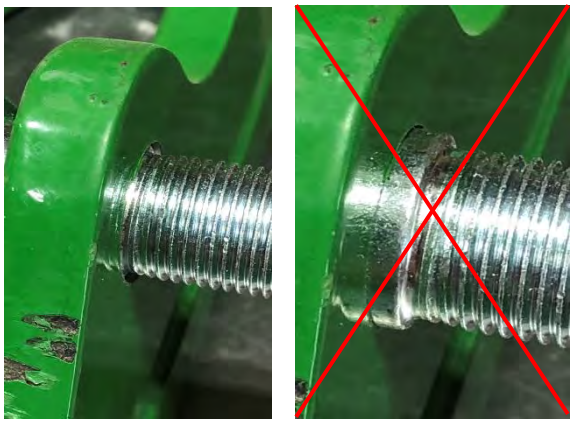
2. Ensure flange bushings are pressing in tight.
    - If bushings do not require much effort to press in, check the following:
        - Does there appear to be a gap between any portion of the inserted part of the flange bushing in relation to the reamed hole?
            - A larger flange bushing and reamer is required if there are any gaps between bushing and arm.
            - Failure to increase the size of bushing will result in, in field damage to flange bushing.
        - Did you source a reamer from an alternative supplier?
            - Provided there are no gaps between the round part of the bushing and hole in parallel arm you will need to use retaining compound to seat bushing in tight.

SUPPORT PLATE/ROW UNIT REAMING

1. Begin reaming the support plate and row unit holes with the 11/16” reamer.
    - Use plenty of cutting fluid to extend the life of the bit.
    - Do not pull reamer back through the hole while it is turning.
    - The “cup” or ”puck” bracket (if applicable) used for the hopper hooks on box planters will also need to be reamed out to 11/16”.
2. Tips for tight clearance areas.
    - A 12” long ½” bit extension can be used to reach from one side of the support plate to the other.
    - A right-angle chuck/drill may be necessary in hard-to-reach areas.
    - Longer reamers can be modified with a chop saw to shorten.
    - Some situations may require the removal of the support plate.

PARALLEL ARM INSTALLATION

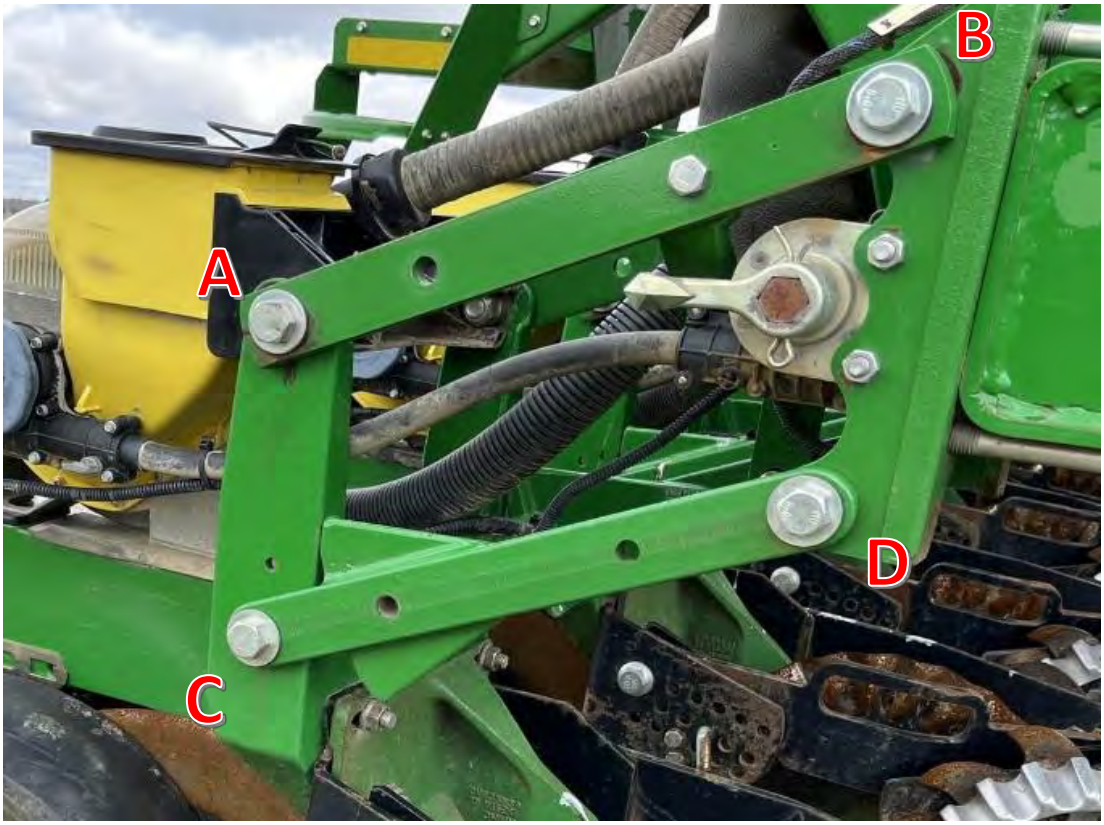
1. Check to make sure you have the correct bolts for each of the hole locations.
    - The shoulder on the bolts must be recessed and not protrude outside of the hole on the support plate/row unit. If the shoulder is too long, a washer can be placed under the head of the bolt to shim the shoulder back.
        - The hex bushing **MUST NOT** contact the bolt shoulder for proper fitment.



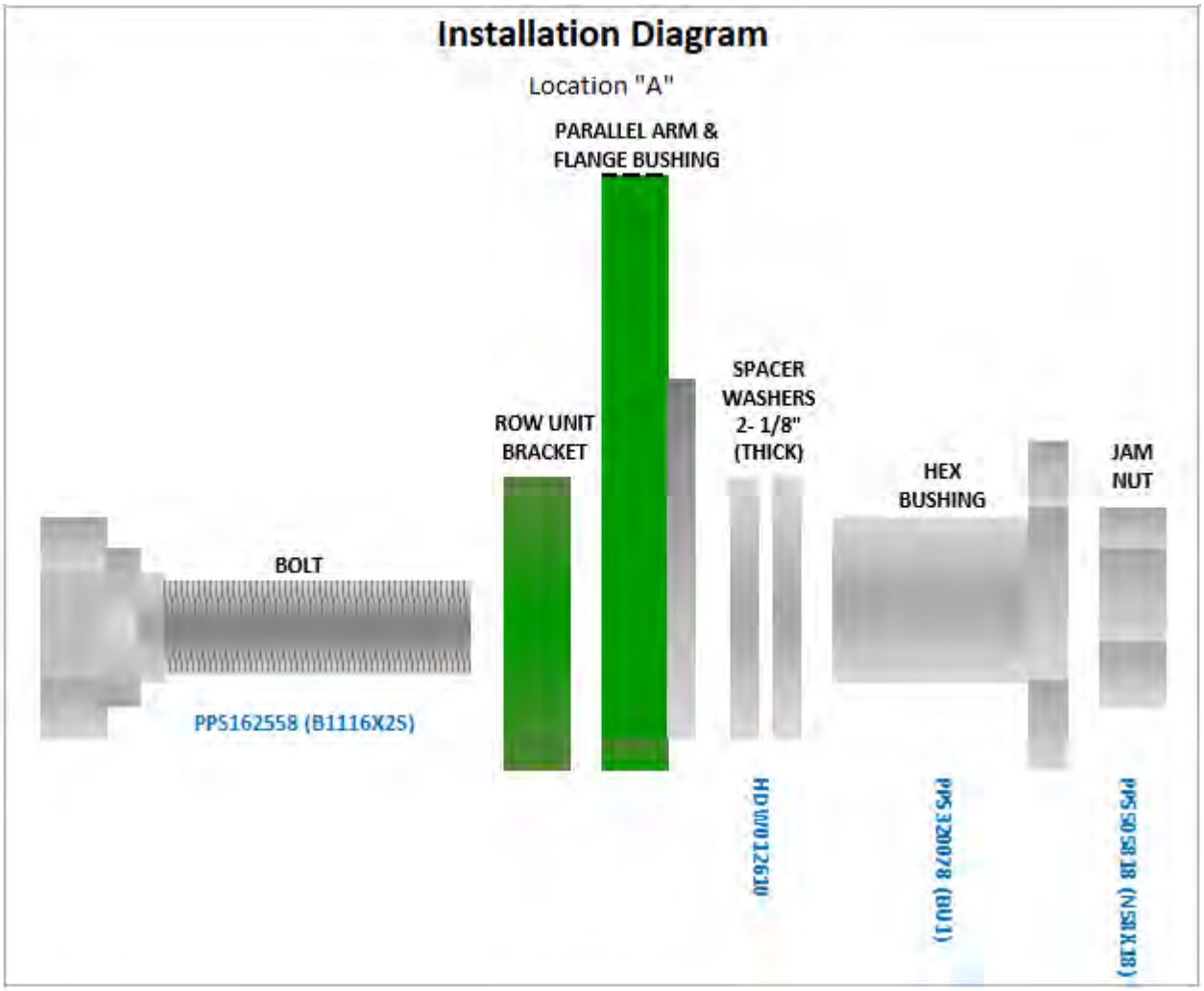
2. Install the bolts through the row unit/support plate holes then through the flange bushings in the parallel arms.

3. Add spacer washers to hex bushings according to diagram.
    - Locations “A”, “B”, & “D” in diagram, front support plate and upper row unit locations, will use two 1/8” (thick) spacer washers. A slight gap up to 1/8” on the hex bushing is normal and necessary to allow the parallel arms to move freely.
    - Location “C” in diagram, lower rear row unit, will use up to three 1/16” (thin) spacer washers.

Washers must be free to turn on the top parallel arm holes and at least one side of the bottom parallel arm holes. Remove washers if necessary.

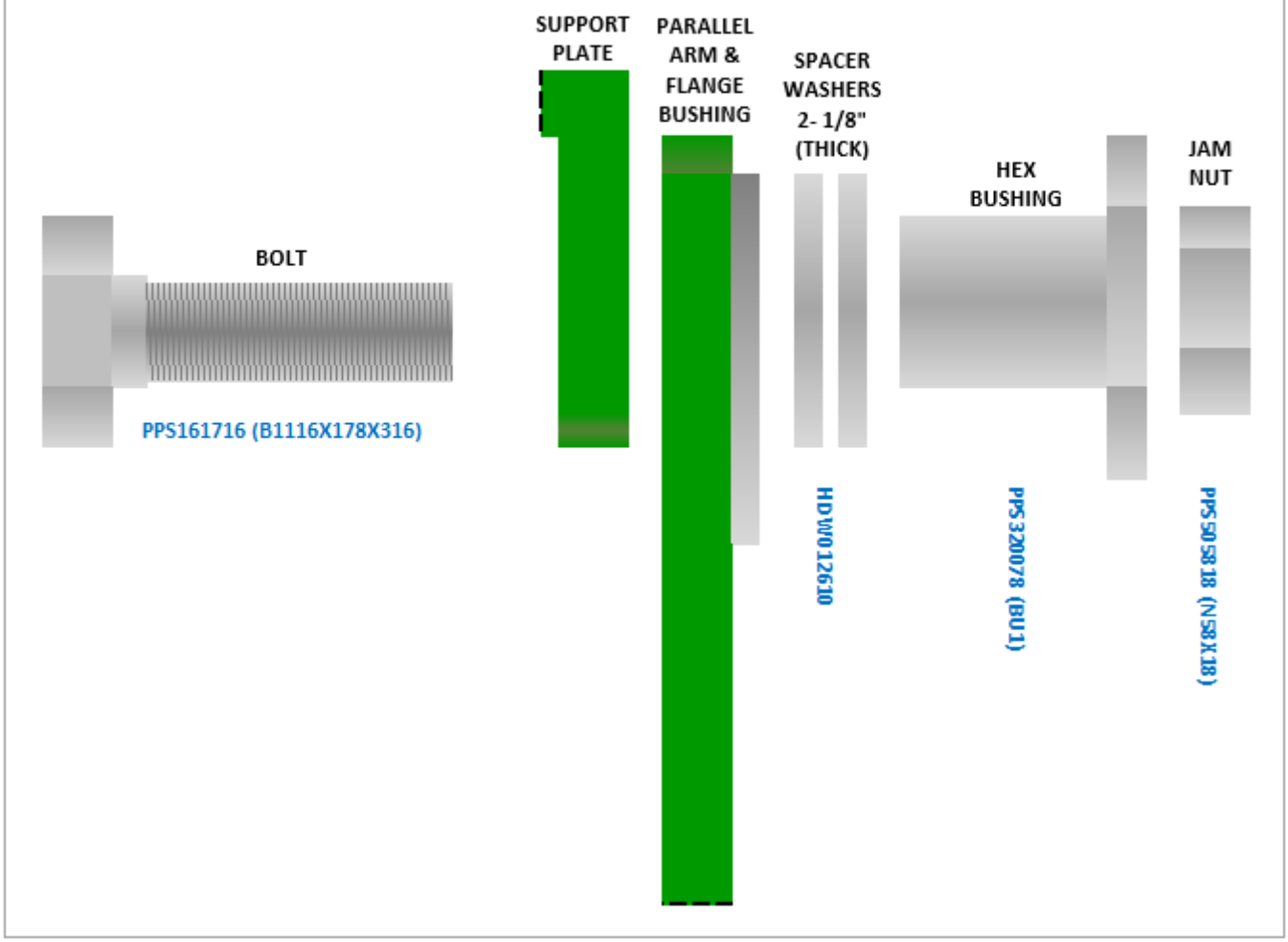


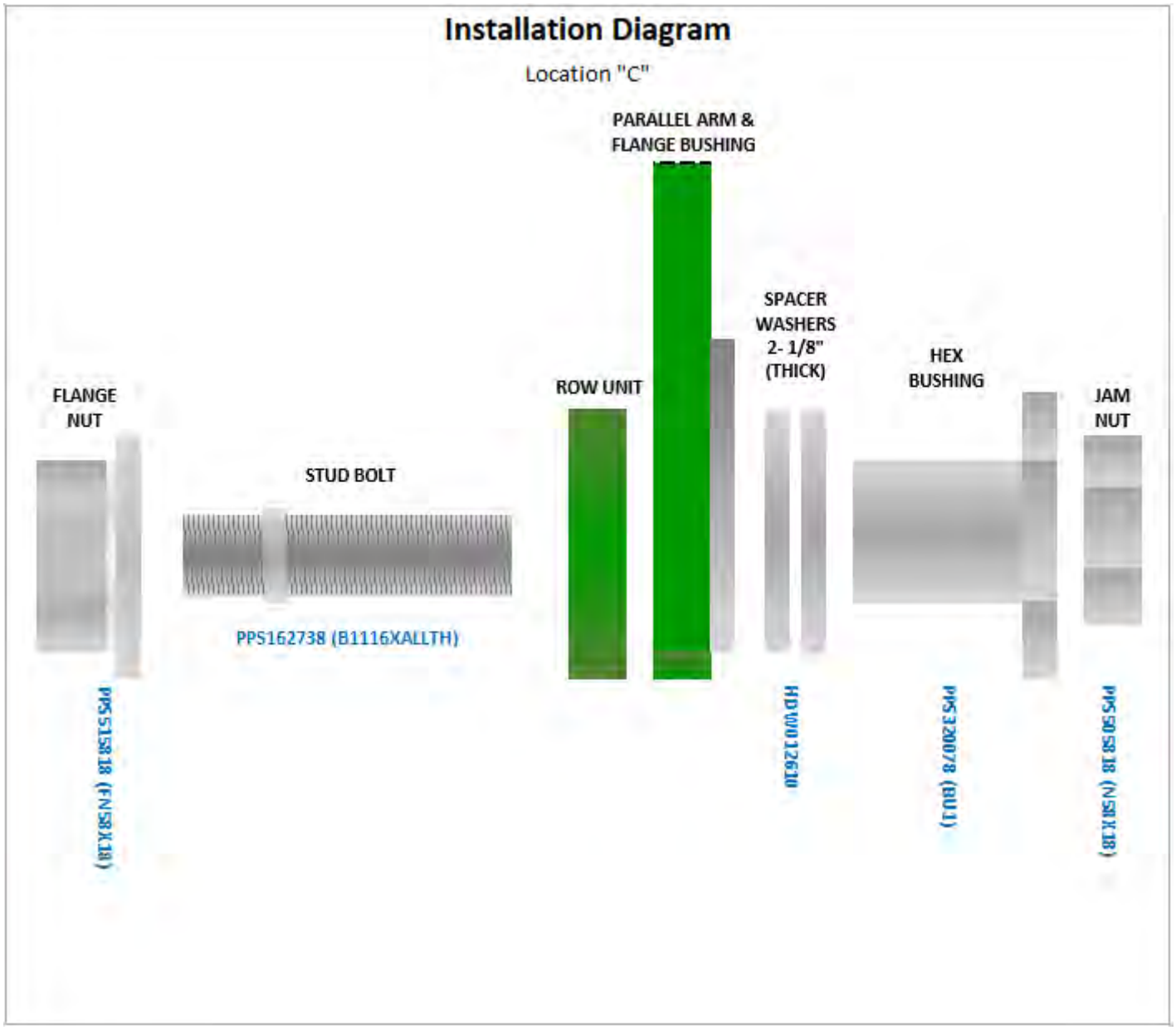
4. Apply high strength threadlocker (Vibra-Tite 131) starting ½" from bolt end, then hand thread hex bushing with spacer washers onto bolt through the flange bushing in the parallel arm.
    - The hex bushing must "bottom out" against the row unit and support plate brackets.
    - **DO NOT** tighten with an impact as damage to bushings may occur.
5. Using torque wrench tighten hex bushing to 145 ft. lbs.
    - Make sure the spacer washers still turn after torqued.
6. Apply threadlocker to remaining threads on the bolt, then thread jam nut on by hand.
    - Torque jam nut to 100 ft. lbs.
7. When assembly is complete, spray each bushing with a small amount of penetrating oil and make sure row unit moves freely.


Installation Diagram
Location "A"
PARALLEL ARM &
FLANGE BUSHING
SPACER
WASHERS
2- 1/8"
(THICK)
ROW UNIT
BRACKET
HEX
BUSHING
JAM
NUT
BOLT
PPS162558 (B1116X2S)
HD001630
PPS32078 (BU1)
PPS50838 (N58X1B)

Installation Diagram

Locations "B" & "D"




Installation Diagram
Location "C"
PARALLEL ARM &
FLANGE BUSHING
SPACER
WASHERS
2- 1/8"
(THICK)
HEX
BUSHING
JAM
NUT
FLANGE
NUT
ROW UNIT
STUD BOLT
PPS162738 (B1116XALLTH)
PPS1518 (FNS8X18)
HD00012610
PPS32078 (BU1)
PPS5018 (NS8X18)

S.I. DISTRIBUTING

13540 Spencerville Road • Spencerville, Ohio 45887

Phone: 800-368-7773 • 419-647-4909

Fax: 877-398-8074 • 419-647-6290

www.sidist.com • info@sidist.com