PARALLEL ARM FLANGE BUSHING REBUILD KIT

INSTALLATION INSTRUCTIONS

John Deere MaxEmerge

S.I. DISTRIBUTING

Any questions pertaining to the installation of this product please contact S.I. Distributing at 1-800-368-7773

Covered by U.S. Patent Nos. 10,986,763, 11,849,658, 12,274,187 and patent pending
Https://www.precisionplantersolutions.com/patents

STEP 1: PRE-INSTALLATION PREPARATION

1. Sort and lay out packaged components, each box contains the hardware for one row unit.
    - Reference the description on each bag of bolts to understand the placement.
2. Prior to installation, 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 units that have 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.

STEP 2: BITS REQUIRED FOR INSTALLATION

1. Parallel arm reamer bit, 1-1/16” (included in bit package).
2. Parallel arm drill bits for dowel pin on flange bushing.
    - Flange bushing pin marker bit: 3/16” (not included in bit package).
        - This bit will be used in conjunction with the included template. You will mark the location of the 7/16” hole through the template in a similar fashion to a “center punch”.
    - Flange bushing pin hole bit: 7/16” (include in bit package).
        - 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 bit: 11/16” (included in bit package)

STEP 3: 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!

STEP 4: PARALLEL ARM REAMING

SKIP TO STEP 7 IF YOU HAVE "PREMIUM" ARM KITS

SKIP TO STEP 8 IF YOU HAVE "NO-REAM" ARM KITS

1. Using a drill press or mill, begin reaming each hole on the parallel arms. *(See Figure 1)*
    - Use plenty of cutting fluid/oil to maintain the lifespan of your reamer.
    - Run drill press/mill around 300 RPM or slower if possible to help maintain reamer life.
    - Do not pull reamer back through the hole while it its turning, turn off drill before backing out.

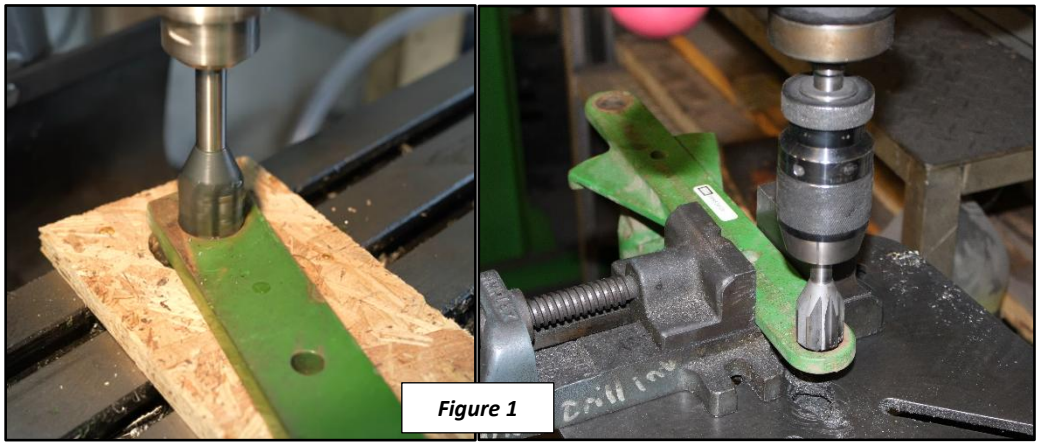
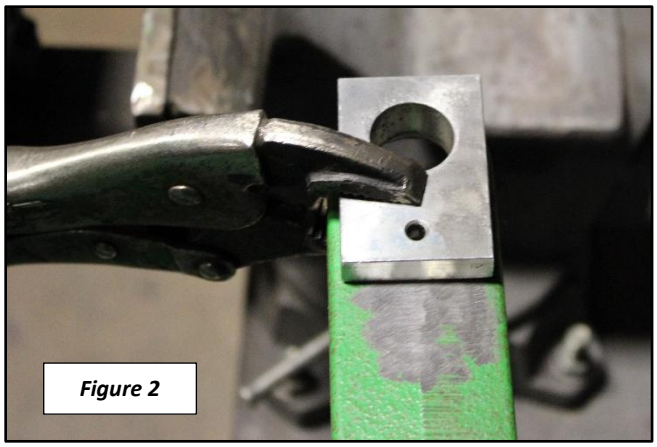


Figure 1

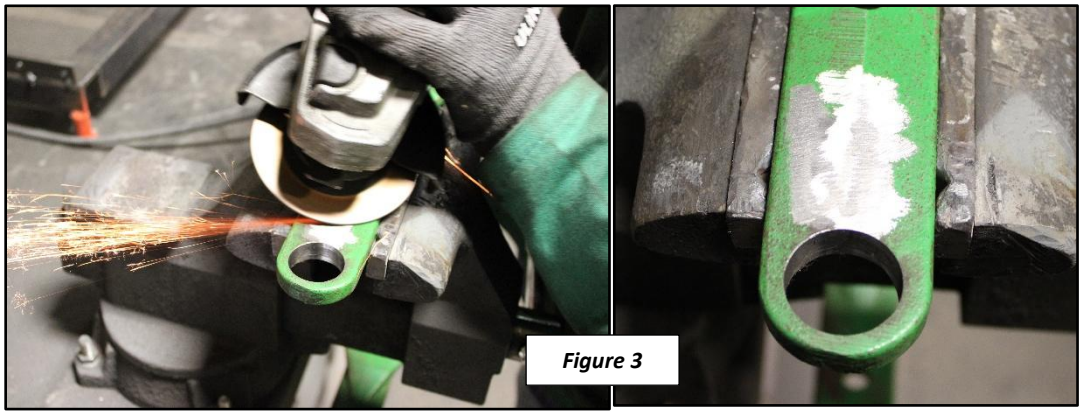
STEP 5: FLANGE BUSHING PIN HOLE DRILLING

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

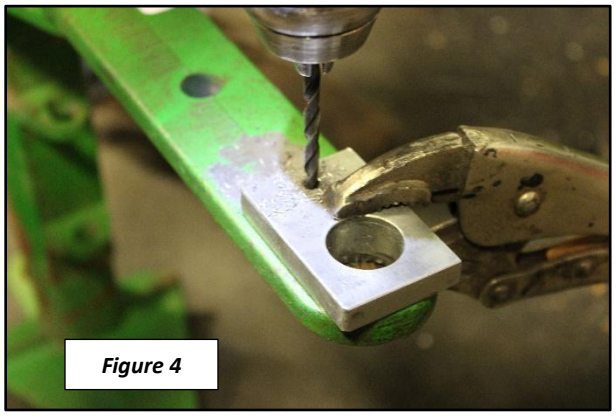
1. Place the flange bushing template into the reamed hole on the parallel arm, center the small hole in template with parallel arm and clamp it down. *(See Figure 2)*



- 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. *(See Figure 3)*



2. With the 3/16" bit, make a "center punch" like mark on the parallel arm using the small hole of the template. *(See Figure 4)*
    - 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. *(See Figure 5)*
    - 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.

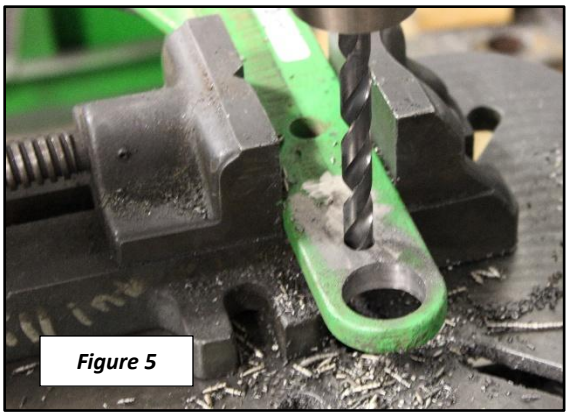


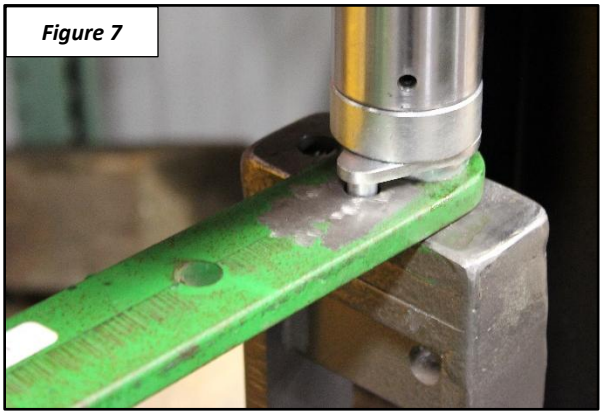
Figure 5

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. *(See Figure 6)*
    - 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, use a die grinder with burr bit. This setup 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.

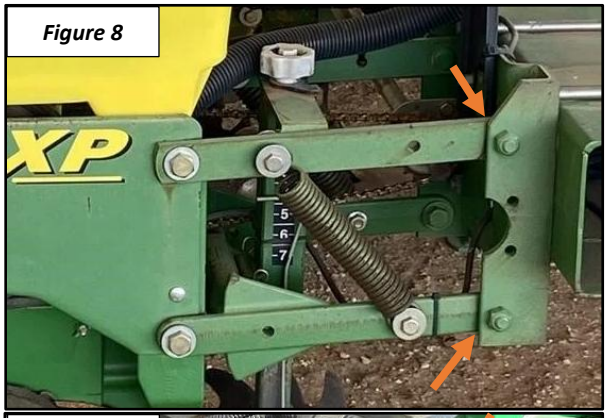
Figure 6

STEP 6: FLANGE BUSHING INSTALLATION

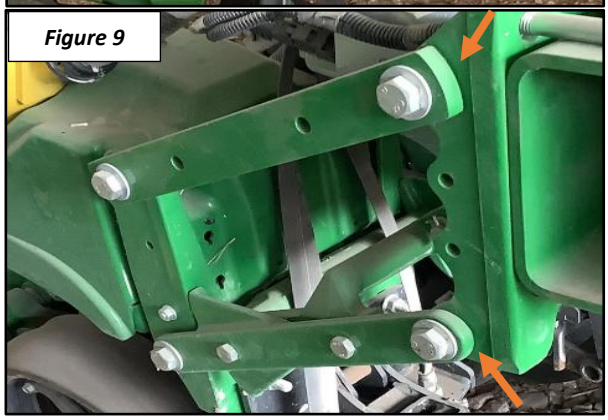
1. Using a hydraulic press or similar, apply even pressure over the entire surface of the flange bushing, push the flange bushing into the parallel arm until it is fully seated. *(See Figure 7)*



- Remember to verify location of support plate in relation to parallel arms before pressing bushings.
  - Some Deere row units, 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. *(See Figure 8)*



  - Arms that are assembled on the outside of the support plate, the flange bushings must be installed on the outside of the parallel arms. *(See Figure 9)*



  - On all row units, 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, 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. If gaps are noticeably present, you will need to sub to new parallel arms.

STEP 7: SUPPORT PLATE/ROW UNIT REAMING

1. Begin reaming the support plate and row unit holes with the 11/16" reamer. *(See Figure 10)*
   - Use plenty of cutting fluid to extend the life of the bit.
   - Do not pull reamer back through the hole while it is turning.

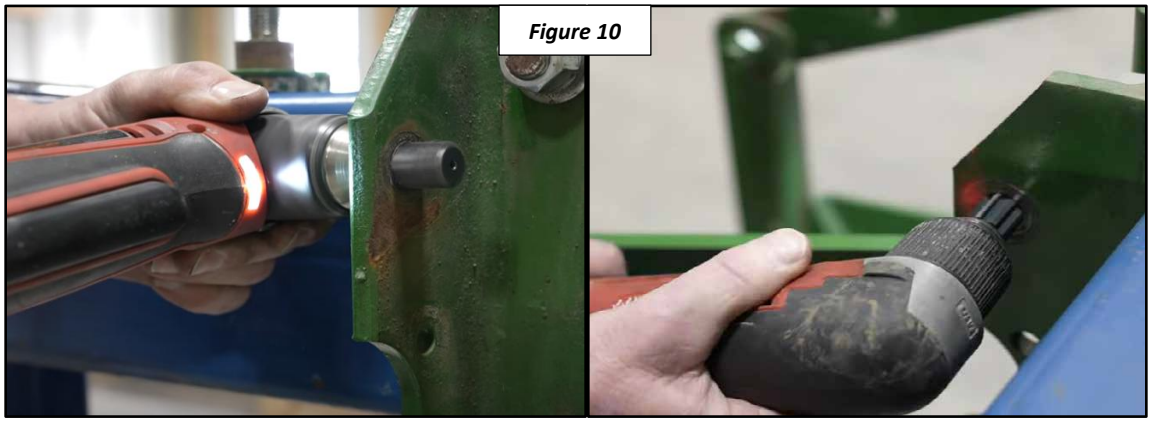


Figure 10

3. The pivot bracket also referred to as "cup" or "puck" bracket (if applicable) used for the hopper hooks on box planters will also need to be reamed out to 11/16". *(See Figure 11)*

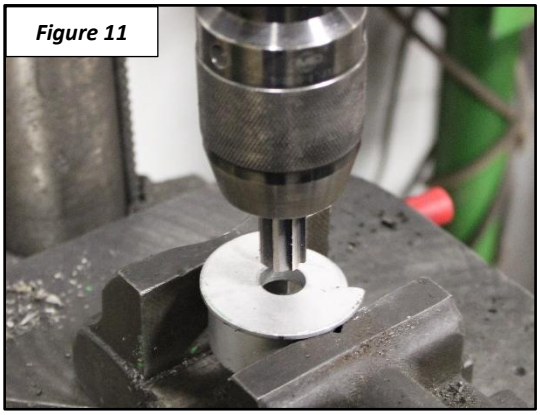


Figure 11

2. Tips for tight clearance areas.
   - A right-angle chuck/drill may be necessary in hard-to-reach areas.
   - A 12" long ½" bit extension can be used to reach from one side of the support plate to the other.
   - Some situations may require the removal of the support plate.

STEP 8: 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. The hex bushing **MUST NOT** contact the bolt shoulder for proper fitment. *(See Figure 12)*

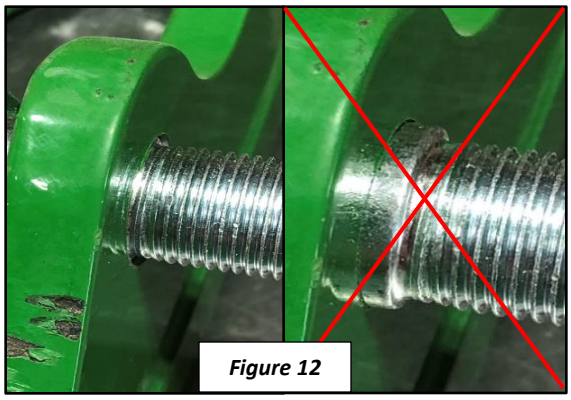


Figure 12

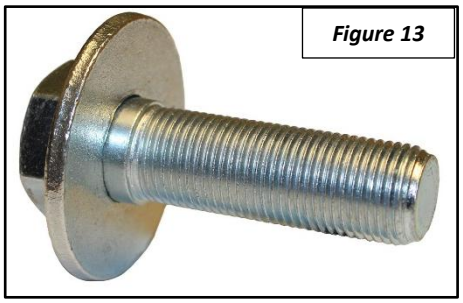


Figure 13

    - Planters with ¼" thick support plates will need use a washer under the head of the bolt to shim the shoulder back. *(See Figure 13)*

2. Install the bolts through the row unit/support plate holes then through the flange bushings in the parallel arms. *(See Figure 14 then reference diagram per location on following pages)*

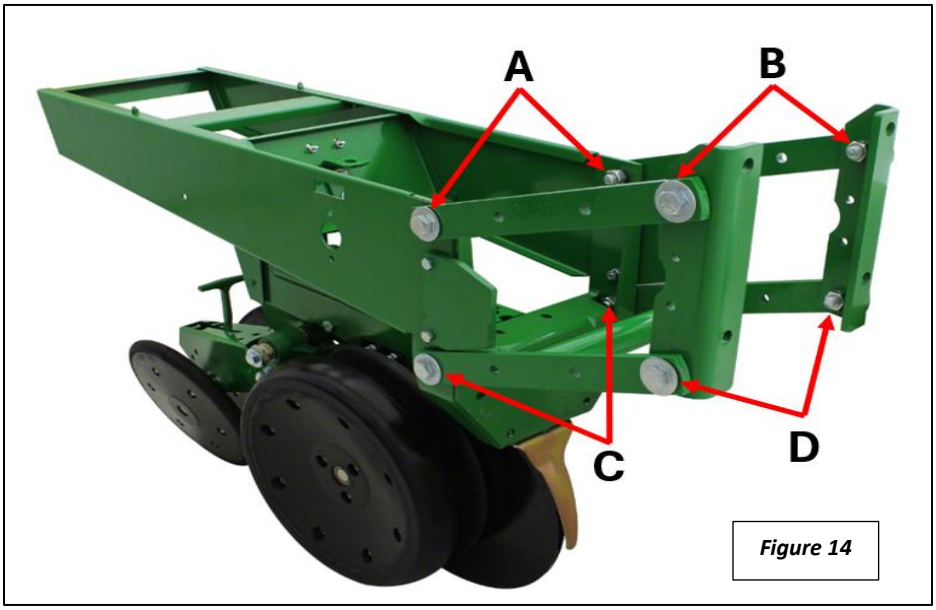


Figure 14

3. Add spacer washers to hex bushings according to diagrams for each location. *(See Figure 14 then reference diagram per location on following pages)*
    - All locations will use two 1/8" thick 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.

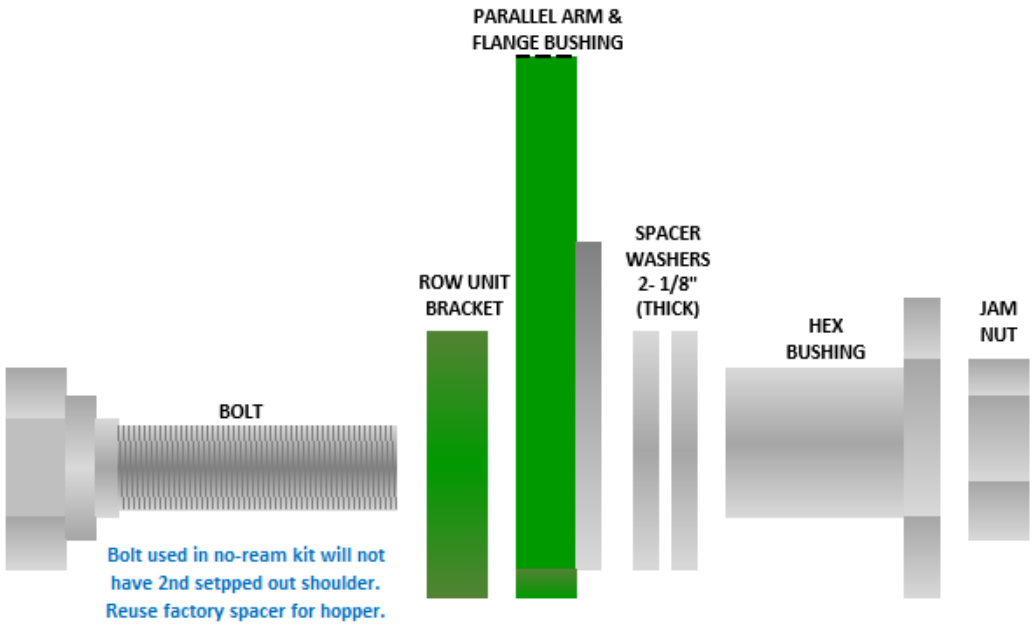
REMOVE SPACER WASHERS IF NECESSARY, DO NOT OVER-SHIM.

4. Apply high strength threadlocker (Vibra-Tite 131 included in the reamer package) 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 to specification.**
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.

Any questions pertaining to the installation of this product please contact S.I. Distributing at 1-800-368-7773

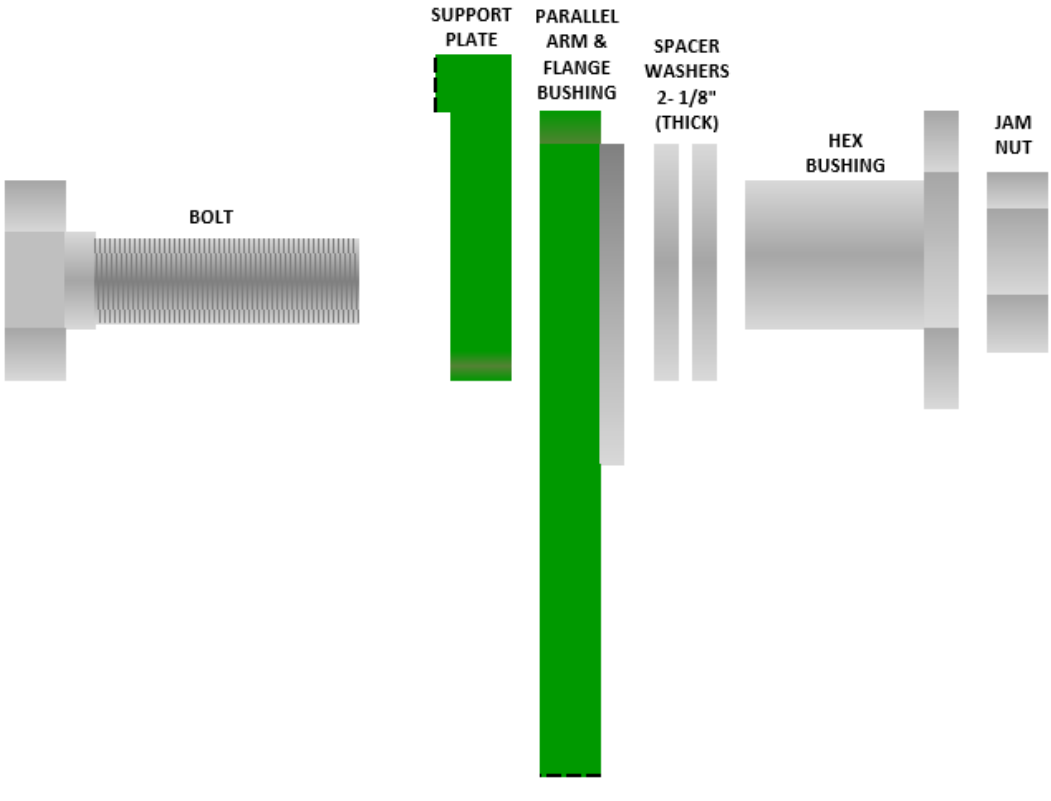
Installation Diagram

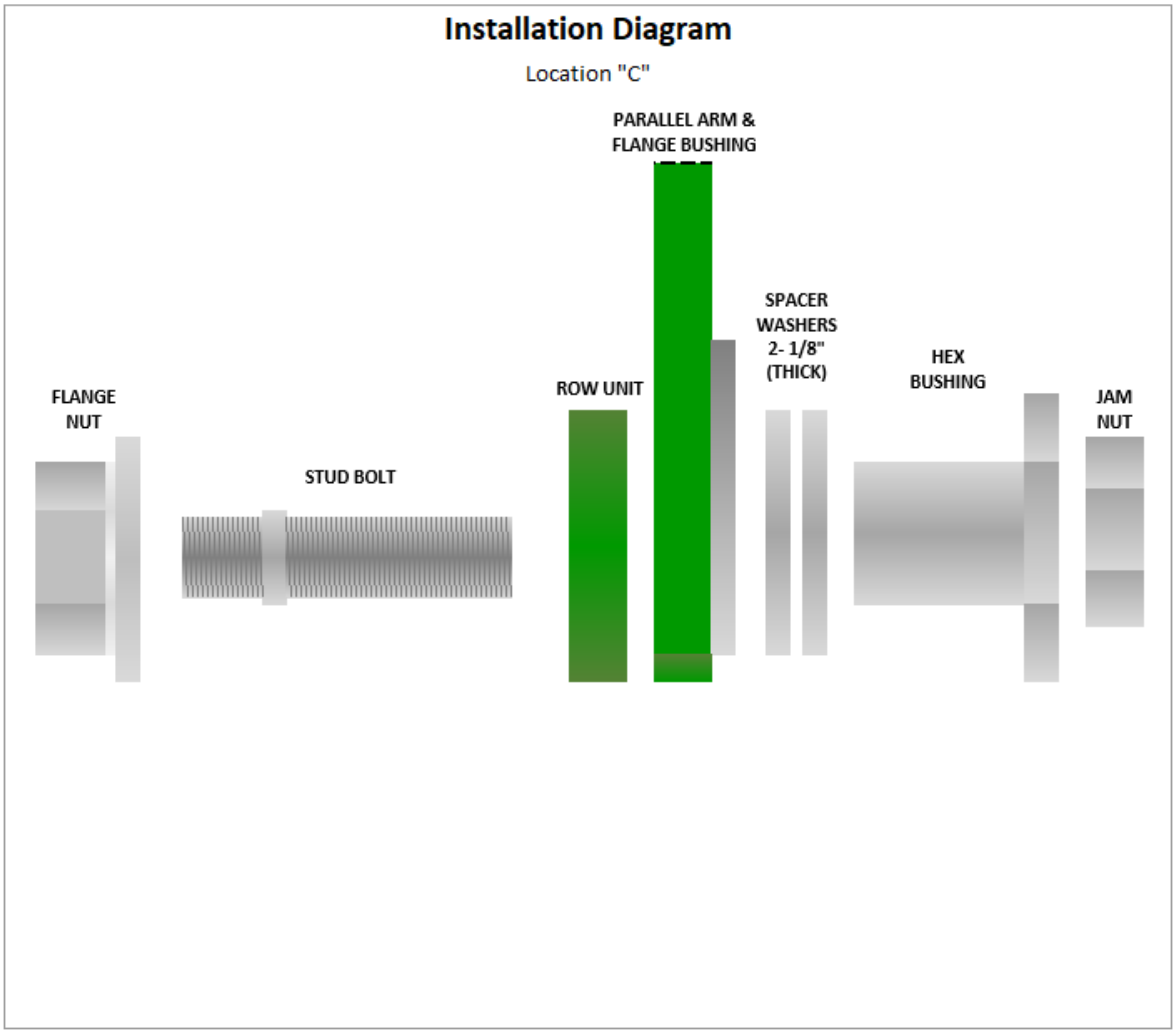
Location "A"



Installation Diagram

Locations "B" & "D"




Installation Diagram
Location "C"
PARALLEL ARM &
FLANGE BUSHING
SPACER
WASHERS
2- 1/8"
(THICK)
HEX
BUSHING
FLANGE
NUT
ROW UNIT
JAM
NUT
STUD BOLT

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