

# Grove Conversion Installation Instructions

Application: 20 thru 40 Series John Deere\* Tractors

Manufactured from 1964 through 1982

## Park Machine Safely

Remove all attached implements from tractor

Put in park/set parking brake

Stop the engine and remove key

Relieve all hydraulic pressure from valve

## Work In Clean Area

Clean work area and machine

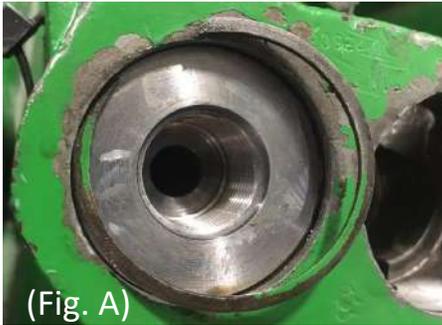
Make sure you have all necessary tools to do the job

Read all instructions thoroughly: do not attempt short cuts

Clean valve area thoroughly: front and rear, prior to disassembly

### 1. Remove OEM snap rings

Remove and retain snap rings. (Fig. A)



### 2. Remove expansion plugs

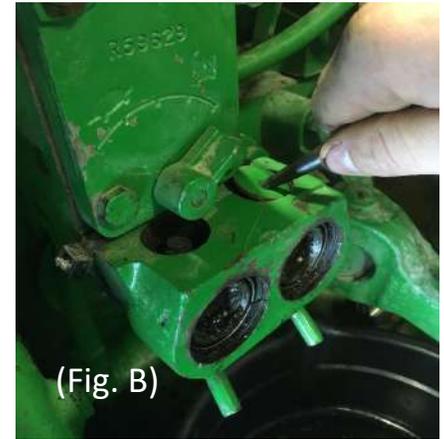
Remove expansion plugs from

The top of the valve body.

Discard plugs, new parts are

Provided.

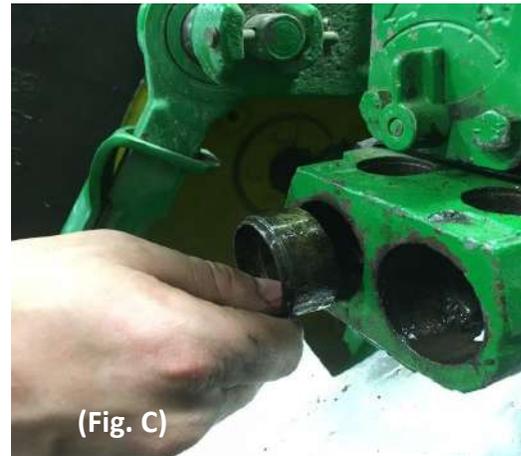
Use a sharp punch and hammer. (Fig. B)



### 3. Remove e-clips and springs

Remove e-clips and springs from the coupler barrel levers located under the expansion plugs. Remove levers and barrels from the bores. Discard e-clips, springs, levers and barrels. New parts are provided with the kit.

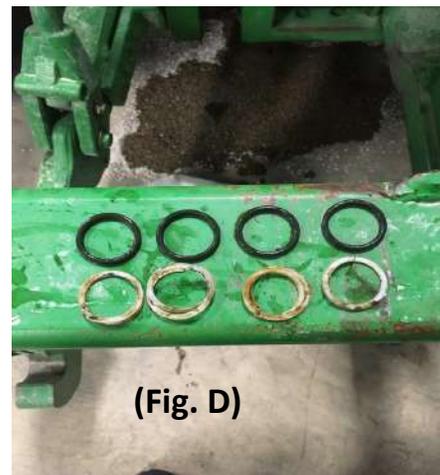
(Fig. C)



### 4. Remove OEM O-rings and backers

Remove OEM O-rings and backers from the SCV bore using a long O-ring pick. (Try not to scratch or damage the bore surface during this procedure). Discard all removed parts.

2 O-rings and 2 backers per bore (Fig. D)



## 5. Inspect valve body bore face

Assure that no damage has occurred to the valve body bore face. If damage is visible, use a half round file to smooth the surfaces. (Fig. E)

## 6. Clean SCV bore

This step is very important as damage to the O-ring or the sealing effect may be compromised. Brake Cleaner or parts cleaner is recommended. Clean both bores thoroughly. Blow dry with compressed air once debris is washed away. Inspect bores for any residual debris. (Scraping may be required.) If scraping is needed, repeat the cleaning process. Repeat step 6 for the other bore.



## 7. Remove Grove Conversion inserts from packaging

Remove 5/16 bolt, lock washer and Part 3 from the rear half of the insert. (Fig. F) O-rings will remain as received on the assembly. Assure that Part 1 and Part 2 are not tight against the O-ring. Apply grease or assembly lube liberally to O-rings.



## 8. Install insert into valve body

Threading a coupler (supplied) onto Part 1 serves as a handle to make this step easier. Remove coupler when insert is fully seated. Gently install insert into valve body bore making sure index pin (Fig. F) on part 1 is in the 12 o'clock or 6 o'clock (preferred) position. Insert until seated and snap ring groove is fully visible. (Light tapping may be required).

**Do Not Force** O-ring damage may result. When firmly seated, install OEM snap ring. (Fig. A)

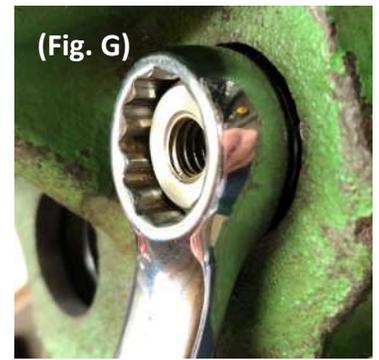
Repeat step 8 for the other bore.

## 9. Install after-market hydraulic couplers

Breakaway couplers are included in the kit. (Do not substitute). Damage to valve body may result in the event of implement breakaway if these couplers are not used. Apply grease or assembly lube to the O-ring and tighten with properly sized open end wrench. After coupler is tightened, rotate assembly by hand counter clockwise until it stops. Repeat step 9 to the other insert.

## 10. Tighten Insert

Using a 5/8 box end wrench or 5/8 socket and ratchet, tighten rear half of insert firmly, 50 ft.lbs. recommended (Fig. G). Repeat step 10 to the other insert.



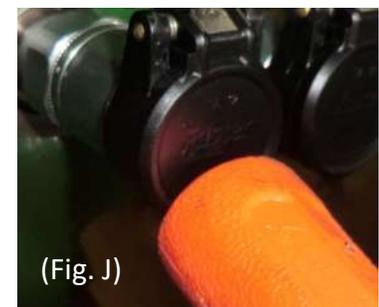
## 11. Install Part 3 (End Caps)

Install the end cap, (Part 3) refer to Fig. F, onto the rear half of the insert (Part 2). Because of our tight tolerances, some radial manipulation or light tapping may be required. Install the 5/16 bolt and lock washer provided through the end cap and thread into Part 2. Tighten firmly with 1/2 inch box end wrench. (15 ft. lbs. recommended). Repeat step 11 on the other insert.



## 11. Install Dust Caps

Install the provided Dust Caps as shown in (Fig. I). Use a rubber mallet to assist in seating the cap onto the coupler. (Fig. J) Repeat step 11 to the other coupler.



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