

# Grove Conversion Installation Instructions

Application: 50 –70 Series John Deere\* Tractors

Manufactured from 1983 through 1996

## 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

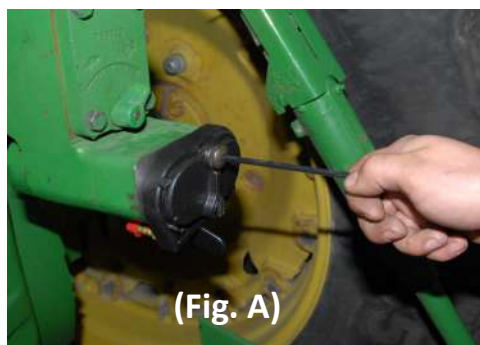
Make sure you have all necessary tools to do the job

Read all instructions thoroughly: do not attempt short cuts

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

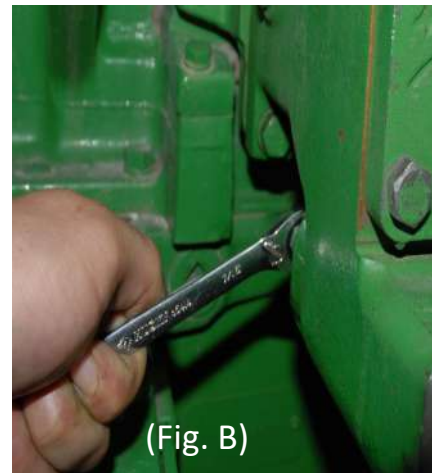
### 1. Remove OEM dust cover

Remove the 2 screws that attach the dust cover to the SCV body and remove dust cover. **(Fig. A)**



### 2. Remove rear cover

Using a 7/16 wrench, remove four 1/4 inch bolts attaching the rear cover to the SCV body. **(Fig. B)** Leave the cover attached to the drain hose. The cover will be re-attached later in the installation.



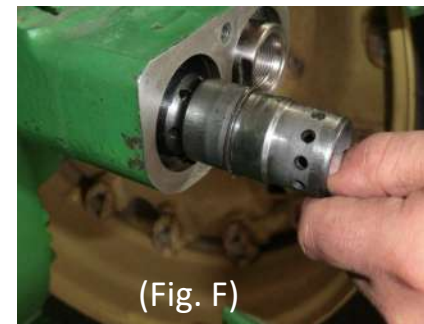
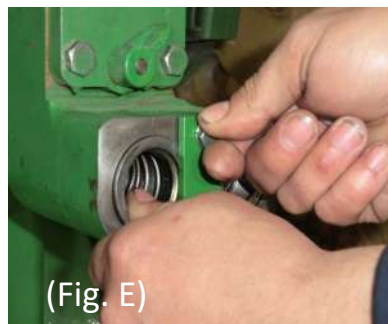
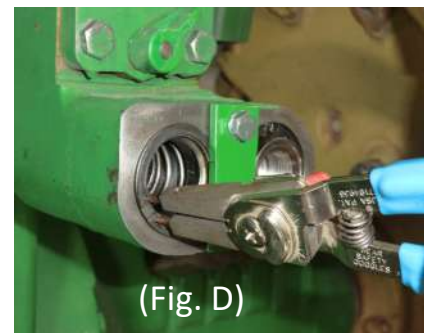
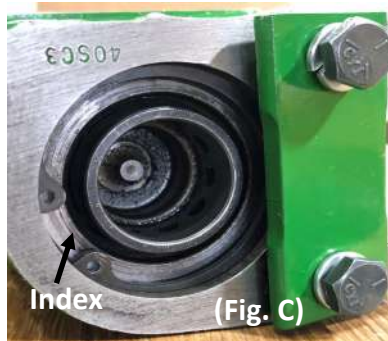
### 3. Remove OEM snap rings

Remove and retain snap rings.

**CAUTION:** (There is very strong spring pressure against the snap ring.) Some inward force may be needed to remove. OEM recommends the use of Spring Installer tool #JDG 266 to perform this step. However, this step may be accomplished with out this tool AT YOUR OWN RISK.

(Wapsi Innovations and all associated entities recommend you use the OEM tool and are NOT liable for any damages.)

Install the supplied anti-rotation plate and 1/4 inch bolts as shown in **(Fig. C)**. Make sure the snap-ring is indexed as shown. Using a snap-ring pliers, release snap-ring as in **(Fig. D)**. Slowly back the 1/4 inch bolts out until most of the spring pressure is released from the sleeve **(Fig. E)**. Remove the anti-rotation plate, sleeve, spring, and barrel as in **(Fig. F)**. Repeat Step 3 for the other barrel.



#### 4. Remove OEM seals

Remove OEM seals with a long O-ring pick and discard. (Fig. G)

There are 2 seals per bore.



#### 5. 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 5 for the other bore.

#### 6. Remove Grove Conversion inserts from packaging and Install Inserts

Remove 5/16 bolt, lock washer and Part 3 from the rear half of the insert. (Fig. H) Unthread Part 1 and part2 approximately 1/2 turn. Next, thread Part 1 and Part 2 together until both parts lightly touch O-ring 1 (Do not overtighten). O-ring 2 will remain as received.

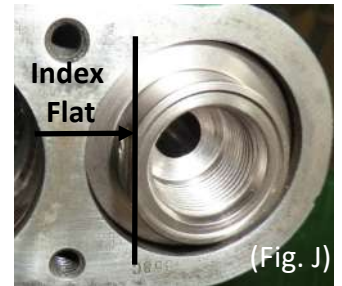
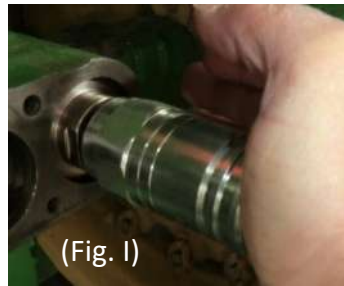
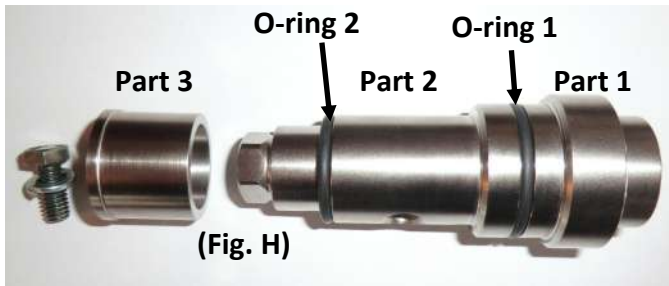
We recommend using a coupler (supplied) as a handle to install the insert. (Fig. I) Grease both O-rings liberally.

Gently install the insert into the valve body until fully seated and the snap ring gland is completely visible.

(Light tapping may be required) use a rubber mallet to reduce risk of damage. (Do not force) O-ring damage may result.

When firmly seated, rotate the assembly until the indexing flat is vertical and facing the center of the SCV body. (Fig. J)

Install the recently retained OEM snap ring. Repeat step 6 for both bores. The indexing flats will be perpendicular to each other.



#### 7. Install Anti-Rotation Plate

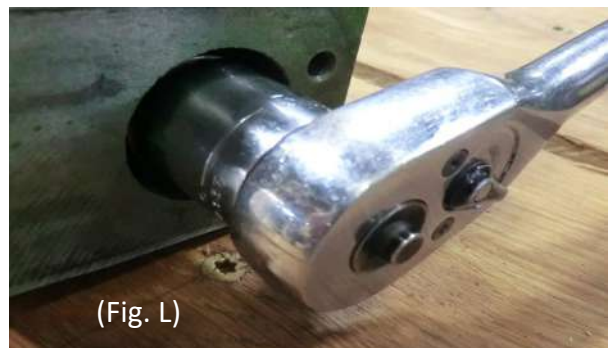
Install the anti-rotation plate with the 1/4 inch bolts and lock washers provided. Make sure the plate seats firmly against the face of the SCV body and in between the indexing flats. (Some radial manipulation of the inserts may be needed to achieve this.) (Fig. K) Tighten the 1/4 inch bolts firmly. (8 ft. lbs. recommended)



#### 8. Tighten Insert

Using a 3/4 inch socket, tighten the rear half of the insert firmly, (60 ft. lbs. recommended). (Fig. L).

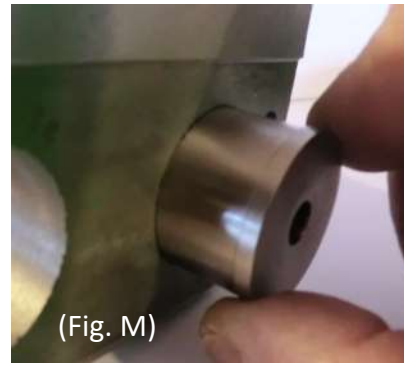
Repeat this procedure on the other insert.



## 9. Install Part 3 (End Caps)

Install the end cap (part 3) onto the rear half of the insert (part 2). (Fig. M) 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, (15 ft. lbs. recommended). Repeat step 9 on the other insert.



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## 10. Install after-market hydraulic couplers

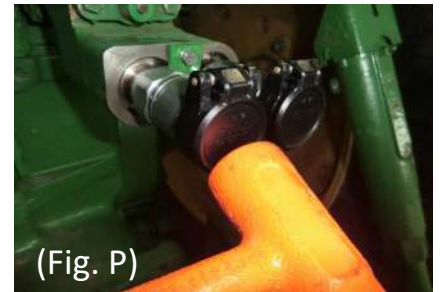
Breakaway couplers included in kit. Do not substitute. Damage to valve body may result in the event of implement breakaway if these couplers are not used.

Apply grease or assembly lube to O-ring and tighten with properly sized open end wrench. (Fig. N)

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## 11. Install Dust Caps

Install the provided Dust Caps as shown in (Fig. O). Use a rubber mallet to assist in seating the cap onto the coupler. (Fig. P)



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## 12. Install rear cover

Install rear cover that was removed in Step 2. (Refer to step 2 Fig. B)

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Thank You for purchasing our product!  
If you have any questions or concerns  
please call (641) 330-1658

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