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## HP4215 – C6 Transbrake Valve Body

Full Manual Reverse Pattern rev.a 9-2016

For over 45 years our goal has been to provide racers and enthusiasts with reliably engineered, U.S. manufactured, torque converters and drive train components for your high performance application. *Before you start your build, please take a few moments to review the important Product Safety Information and installation steps set out within this instruction manual.* If you still have questions; Hughes Performance® technical team is here to help: (1-800-274-RACE).

### **Important Product Safety Information**

Throughout these instructions important safety information is generally preceded by one of three signal words indicating the relative risk of injury. The signal words mean:

**! WARNING** a hazardous situation which if not avoided could result in death or serious injury. **You CAN be Killed or Seriously Injured if you do not follow instructions.**

**! CAUTION** a hazardous situation which if not avoided could result in minor or moderate injury. **You CAN be moderately INJURED and also may suffer property damage if you don't follow instructions.**

**! NOTICE** careful attention is required to follow this installation instruction or operation but does generally not relate to personal injury. Damage to your product or other property may result if you do not follow instructions.

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**! WARNING:** Improper selection of Hughes Performance® products, failure to follow installation instructions and/or misuse increases the risk of injury or accident. For your safety and the safety of others:

- Assure the Hughes Performance® product selected is intended for your application with an additional safety margin above your expected horsepower, torque, and intended usage of product and vehicle.
- These instructions are not intended to address all risks related to modification of your vehicle or use. Remember: *you are the builder and chief safety engineer for your modified vehicle.* Consult and follow all OEM warnings and operating limitations.

(For Calif. Residents-Prop. 65):

**! WARNING**

This product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

(for more information on Prop. 65 see [www.P65Warnings.ca.gov/product](http://www.P65Warnings.ca.gov/product))

To reduce risks: work with gloves, safety glasses, wash hands before eating, and dispose of any fluids properly.

**! WARNING:** Use protective eyewear and gloves. If dusty, use face mask, wet and wipe clean working surfaces. Transmission fluids and cleaning products are highly flammable! Avoid open flame, welding sparks, smoking, or other sources of ignition. Flexplate, torque converter, and transmission assembly involves heavy parts and pinch points. Use support jacks and review installation steps before attempting.

**! WARNING:** Cooler fittings should never be plugged. If a cooler is not used, connect lines together with a loop of hard line or appropriate flexible hose that is compatible with automatic transmission fluid and that carries a minimum 500 PSI rating.

## HP4215 – C6 Transbrake Valve Body

Full Manual Reverse Pattern

**READ THESE INSTRUCTIONS BEFORE INSTALLING THIS KIT!**

**NOTICE:** IMPORTANT: IT IS RECOMMENDED THAT THIS VALVE BODY BE INSTALLED WHILE THE TRANSMISSION IS **COLD** TO AVOID BURNS FROM HOT TRANSMISSION FLUID!

1. Place a container of at least five (5) quart capacity underneath the transmission pan. Starting from the rear of the pan, slowly remove the pan bolts until fluid

begins to leak out. Be sure to support the pan to prevent it from dropping suddenly. Remove the rest of the pan bolts, one at a time, allowing the fluid to drain before removing the next bolt, until all the pan bolts are removed. If all the pan bolts are removed and the pan has not come loose, continue to support the pan and gently tap the corners with a rubber mallet until the pan loosens. **Do not wedge a screwdriver or other sharp object between the pan and the transmission to pry the pan loose!** Remove the pan, pour the remaining fluid in a container and place the pan and pan bolts aside.

2. Remove the 8 valve body attaching bolts (3/8" socket). Lower the valve body slowly, being sure to note how the **manual lever arm** is located on the valve body.
3. With the valve body removed you can see the internal linkage assembly and detent spring.

Remove the 1/2" nut from the outer downshift arm. Remove the arm and discard it. Pull the inner downshift arm inward a little and slip a 7/8" box end wrench over it and loosen the nut holding the manual lever and shaft. Once the nut is off the threads you can pull the manual arm and shaft outward, also the down shift arm inward. Remove the selector shaft seal and replace it with a new one (P/N 60117). *(See Page 3)*

You can weld the center hole of the manual shaft or fill it with black silicone sealant. Re-install the manual arm only.

Check to see if the valve body has a detent spring lock on the manual valve. If it does, remove the detent spring from the case using a 5/16" socket.

4. Before installing the valve body, remove the servo for intermediate range. If it is a rubber servo, discard it and replace it with an aluminum piston. *(See Page 3)* See page 4 for instructions for the C-6 Servo Kit (P/N 60776).

Refer to page 4 and install the brake spring, valve and solenoid. Check and adjust according to page 5.

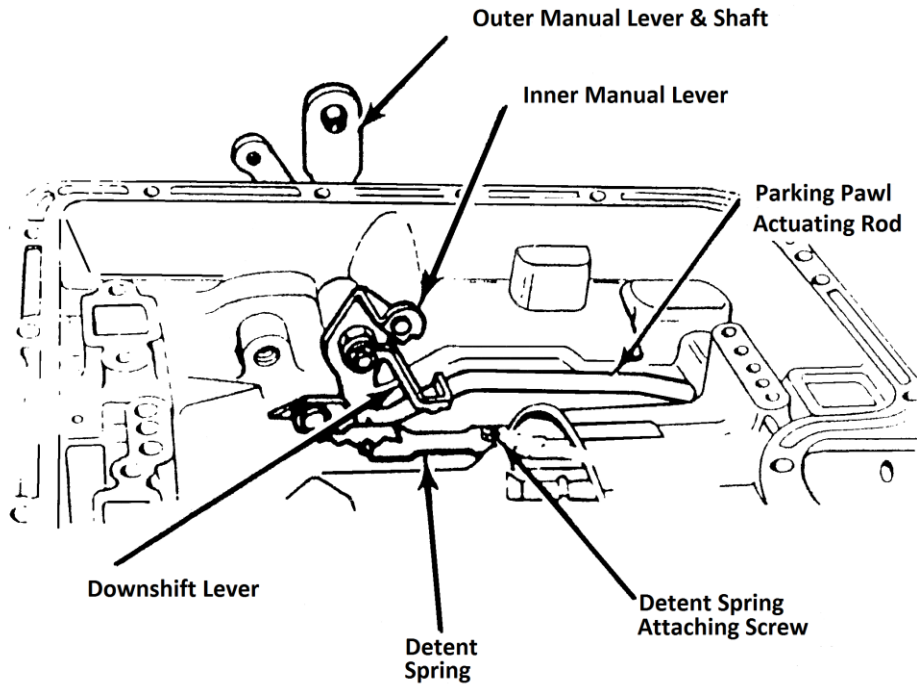
5. Reinstall the valve body, being sure to line up the manual lever arm with the manual valve. Install four (4) valve body attaching bolts and finger tighten them. Move the shift linkage arm. It should click solidly into each range. If the arm does not operate properly, loosen the valve body and line up the linkage again. Once the arm operates properly, install the rest of the valve body attaching bolts and tighten all valve body attaching bolts to 8-10 foot pounds. The 2 longer bolts go through the filter. *(See Page 5)*

**NOTICE:** Pay attention to the filter bolts. There is one (1) bolt that is 1 1/2" long. See the diagram on page 5 for proper installation of this bolt.

Clean the transmission pan thoroughly, being sure to remove all gasket material from the pan and transmission case. Install the pan and tighten the pan bolts to 10 foot pounds.

6. Fill the transmission with four (4) quarts of new transmission fluid. Start the engine with the shifter in PARK. Check the fluid and add as needed until full. **WITH THE BRAKE APPLIED, SHIFT TO REVERSE, THEN TO DRIVE AND BACK TO PARK.** Check the fluid again and add as needed.

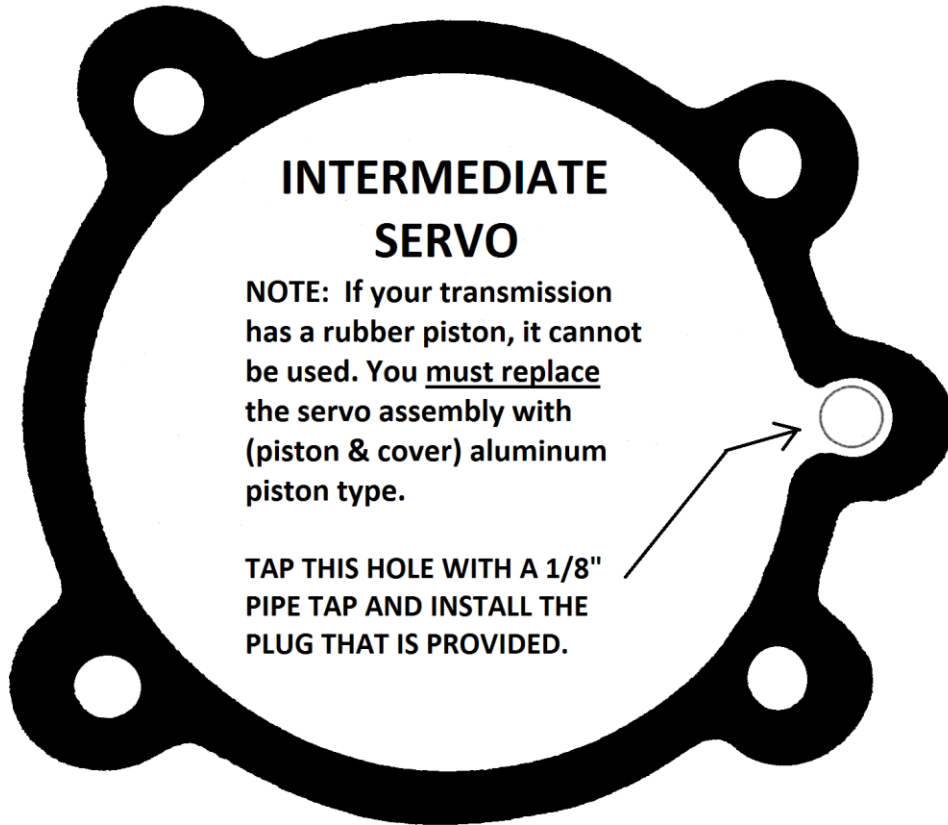
**! WARNING DO NOT FREE WHEEL! WHEELS IN THE AIR CAN CAUSE SEVERE DAMAGE!**

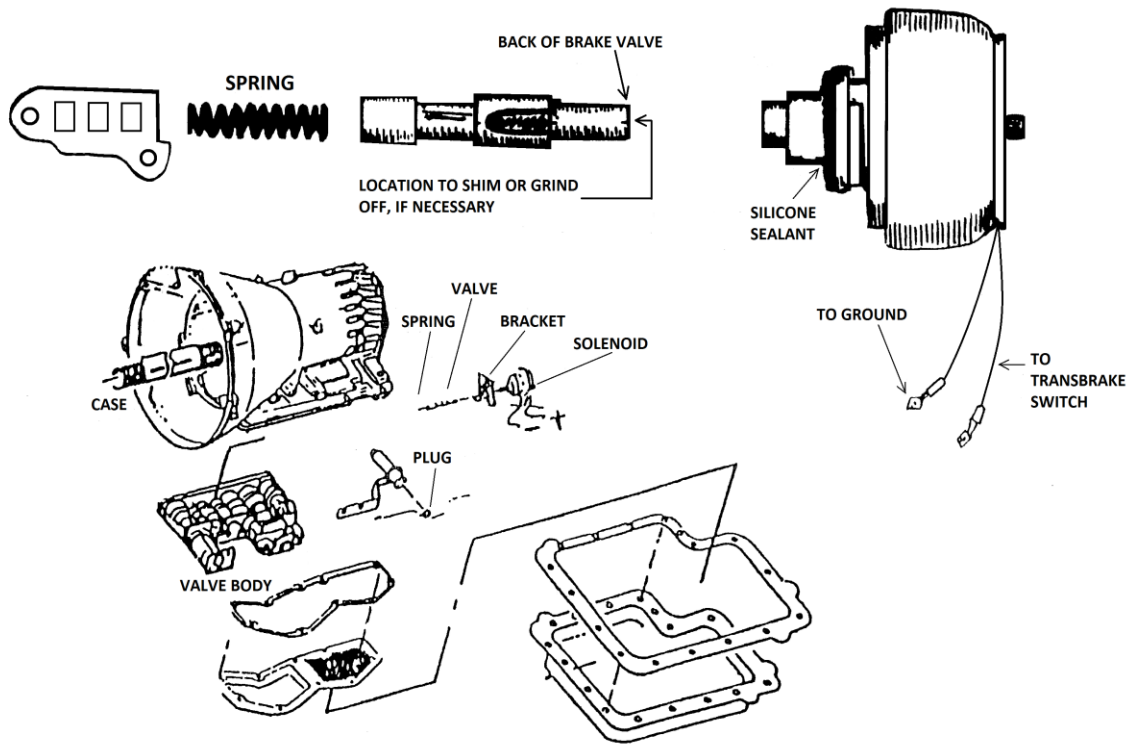
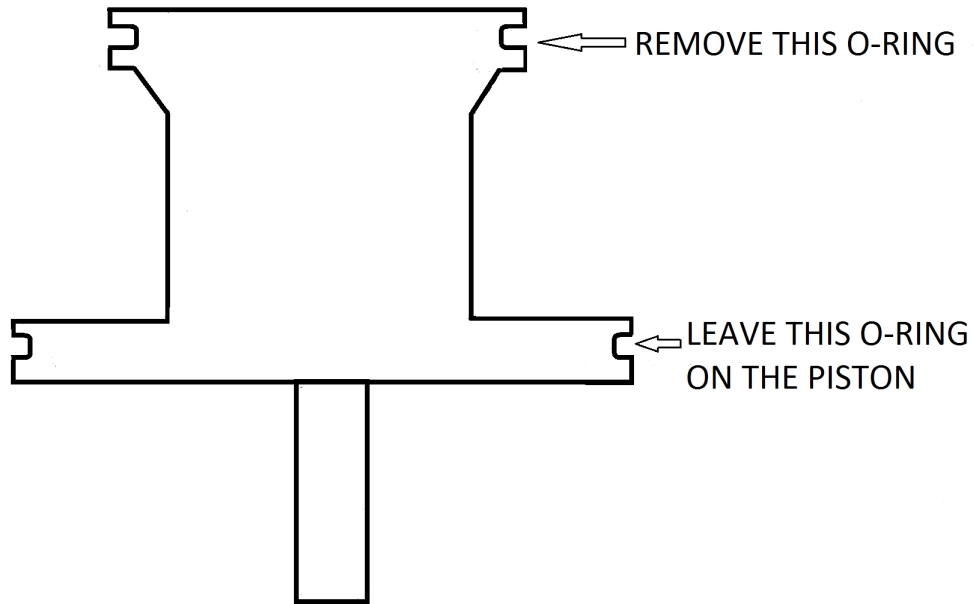


## INTERMEDIATE SERVO

NOTE: If your transmission has a rubber piston, it cannot be used. You must replace the servo assembly with (piston & cover) aluminum piston type.

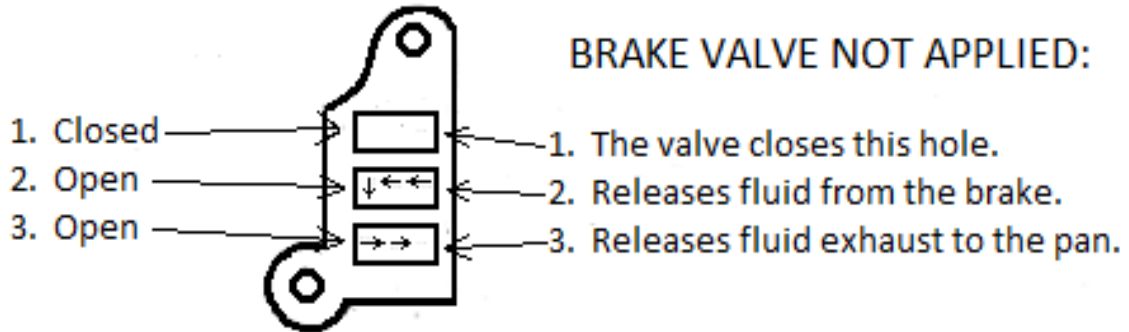
TAP THIS HOLE WITH A 1/8" PIPE TAP AND INSTALL THE PLUG THAT IS PROVIDED.



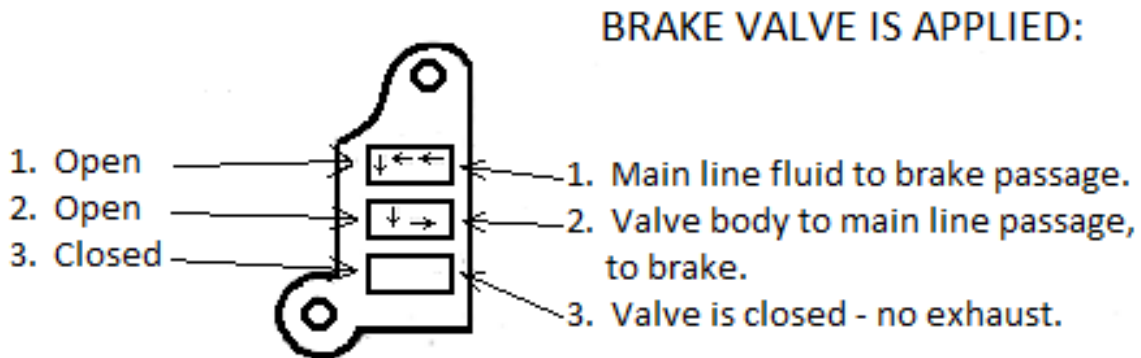


REFER TO PAGE 2, INSTRUCTION 4

## EXAMPLE OF BRAKE VALVE FLUID WHEN BRAKE VALVE IS NOT APPLIED



## EXAMPLE OF BRAKE FLUID VALVE WHEN BRAKE VALVE IS APPLIED



Pay close attention to the different lengths and diameters of the bolts.  
REFER TO PARAGRAPH 5, PAGE 2 FOR SPECIFIC INSTRUCTIONS

