



®

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HUGHES PERFORMANCE® HP3210 VALVE BODY

Installation Instructions 2/21/17

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)

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

SAFETY INFORMATION SPECIFIC TO THE HP3210 VALVE BODY

! WARNING: This valve body is intended for use in a competition application only never to be used on public streets or highways. This valve body is not intended for use in a street-driven application.

! CAUTION: We recommend that you secure the services of an experienced transmission builder in order to achieve proper installation of this product. These instructions and Safety messages are a general guide to assist the builder in the installation of this product. They are not intended to be a transmission rebuilding guide. The steps herein are designed for the experienced professional to follow in detail for proper installation and transmission function. Specialty tools are required to complete proper installation of this valve body.

! WARNING: Do not shift the transmission into neutral under load or with vehicle or drive shaft in motion. Do not turn off engine under load or with vehicle or drive shaft in motion. Doing so will cause an over speed condition of the direct drum within the transmission, increasing risk of direct drum failure, explosion, and injury.

! CAUTION: Recommended Burn Out Procedure: (1). Place transmission in second gear. (2). Begin burn out procedure and shift transmission into third gear while tires are still spinning. (3). Complete burn out procedure accordingly with transmission remaining in third gear. Failure to follow this burn out procedure is considered product misuse, and will result in excessive shock to the intermediate sprag (or roller clutch) within the transmission, resulting in premature sprag (or roller clutch) wear and increased risk of transmission failure.

NOTICE: Please verify all appropriate parts have been included with the valve body kit before beginning installation. The following components will be included inside the box:

- Valve body
- Separator plate
- Upper and lower valve body gaskets
- Modulator plug and o-ring
- Modified governor
- (4) check balls
- (17) Springs for direct drum

NOTICE: Valve body requires manual shifting in all modes of operation, and features a forward shift pattern (P-R-N-3-2-1).

Installation Sequence

! 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.

1. We recommend that an upgraded direct drum featuring a 36-element intermediate sprag or a mechanical diode be installed into the transmission when installing this valve body if the engine in the vehicle is producing in excess of 500 flywheel horsepower, or if the vehicle will be used in any severe duty or abusive environment. Hughes Performance® offers an upgraded direct drum with 36-element intermediate sprag under part number HP3279.
2. Clean all dirt, grease, oil, and any other foreign substances or contaminants from the outside of the transmission and all associated surfaces. Be sure to dispose of all cleaning products and chemicals in a manner consistent with local regulations.

3. Remove transmission pan, filter, valve body, separator plate, support plate, valve body gaskets, and check balls. Make sure all old gasket material is properly removed from transmission case. Use an appropriate scraping tool and safety glasses/gloves if necessary to remove old gasket material, taking care not to gouge or damage the surface of the transmission case.
4. The kickdown feature is deleted from the transmission when using this valve body. Delete kickdown cable from transmission. Plug hole in the transmission case accordingly.
5. **NOTICE** Install (4) new check balls onto new upper valve body gasket and new separator plate (*see figure 1*). Use some TransJel® assembly lubricant or petroleum jelly to hold check balls to gasket and separator plate if necessary. Install check balls, upper gasket, and separator plate onto transmission. Use the support plate to hold the gasket and separator plate in place. Lightly hand-tighten the support plate bolts. DO NOT fully tighten the support plate bolts until valve body is installed. DO NOT install any other check balls into the transmission other than the (4) new check balls included in the kit.

(Figure 1)

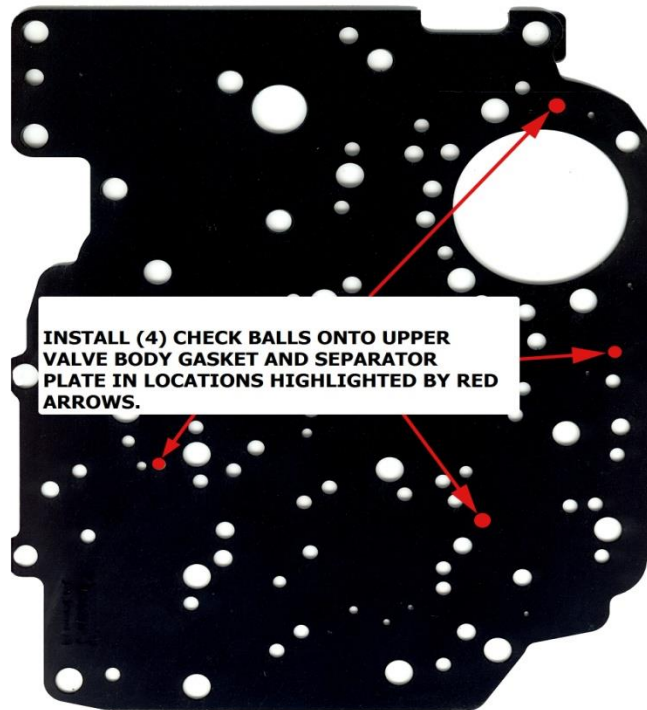


Figure 1

6. **NOTICE** Install new lower valve body gasket and valve body onto transmission. Make sure when installing valve body that you engage the manual valve "S" link into the shift linkage.
7. Tighten all valve body bolts and cover plate bolts. We recommend tightening all valve body bolts to 100 inch/pounds using an appropriate inch/pound torque wrench.
8. Remove the round governor cover located on the driver side of the transmission case towards the rear of the transmission. Remove and discard the original governor. Install the new modified governor included with the kit into the transmission case. Reassemble the governor cover onto the transmission case. You may choose to use a small amount of permanent red thread locking compound around the outer lip of the governor cover to help insure it stays in place after reassembly.
9. Remove and discard the vacuum modulator located on the passenger side rear of the transmission. Leave the original modulator valve in place inside of the transmission case. Install the modulator plug and o-ring included in the kit. Use the original clamp and bolt to hold the plug in place.
10. Install filter and pan.

! 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.

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Your Hughes Performance® product is covered by our Exclusive Limited Warranty (see separate term sheet or online at www.hughesperformance.com). *Failure to follow these instructions is considered misuse, which at Hughes option may void your coverage under your Limited Warranty.* If you have any questions regarding your purchase, installation, or other Hughes Performance® products, please contact us at: 1-800-274-RACE, (fax: 602-340-8429), or online at www.hughesperformance.com

**RACE WELL AND ENJOY YOUR HUGHES PERFORMANCE® PURCHASE.
WE APPRECIATE YOUR SUPPORT OF OUR PRODUCTS!**