

FMVB INSTALLATION INSTRUCTIONS

- Please note that 2003+ trucks will require a tuning revision to eliminate a check engine light. Since the governor pressure transducer and solenoid are omitted on a MPT manual valve body, it will set codes. Inform your tuner that you are running a manual valve body and need all governor pressure, transducer and overdrive/ lockup solenoid codes turned off. These codes will not derate engine horsepower, however they will cause a check engine light.
- Inspect your FMVB for any damages that may have happened in shipping before installation. Report any damages and document images of packaging immediately. Do not discard packaging.
- If your transmission is installed in a vehicle, remove the transmission pan and remove the overdrive housing. A new overdrive housing gasket is recommended when reassembling the transmission.
- Once the overdrive housing is removed, drive the pin out that holds the reverse servo arm with a long driver (A 10" length ¼" extension or equivalent works well)
- Remove servo arm and set aside.
- Install included servo spacer and replacement retaining clip on to servo. * Aftermarket low/ reverse servos are compatible, as long as they are shimmed solid. * Reference Figure 1 on page 2 for image example.
- Before proceeding to the next step, check the orientation of the low/ reverse servo spring. One end of the spring is larger than the other. The large end of the spring will rest on the retainer and the narrow end of the spring will rest in the servo cover. See Figure 2 on page 2 for image example.
- Install the servo into the transmission case followed by the tapered spring and billet retainer.
- Once the low/ reverse servo is installed into the transmission case and affixed with circlip and retainer, install the low /reverse servo arm/ low reverse servo arm pin.
- Check the low/ reverse band adjustment. Loosen the low/ reverse band adjustment locknut, torque adjustment stud to 72-inch pounds and back off 2-3/4 turns. Tighten locknut.
- Check front band adjustment. Loosen locknut and tighten front band to 72-inch pounds, back off 1- ¾ turns.
- Install overdrive housing back onto transmission. Apply thread sealant to bolts and torque to 35-foot pounds.
- Remove neutral safety switch.
- If installing our manual valve body into a 48RE transmission, swap your original rooster comb from your 48RE. All MPT manual valve bodies are built with 47 rooster combs. If installing manual valve body into a 47RE/RH, the rooster comb that comes with your valve body is compatible.
- Install the manual valve body into transmission. Please note that RH manual valve bodies will require longer bolts and in the area under the main line accumulator (piston between two servos in the transmission case). Longer bolts will be included with MPT RH manual valve bodies.
- Torque the valve body bolts to 110-inch pounds.
- Install the neutral safety switch.
- Install the transmission pan.
- Configure electrical/ run ignition on power to PIN 1. (See page 3)
- Fill the transmission running in neutral. Double check the fluid level after transmission has been cycled through all of its gears.
- 48RE transmissions should have the sealing ring removed from their stator. This alleviates excess converter charge pressure and reduces the chance of converter ballooning.
- Check line pressure. MPT manual valve bodies are configured to make 140-150 PSI in gears 1-3 with torque converter unlocked. With torque converter in lockup or in fourth gear, line pressure is set to 170-190 PSI. Pressures should be checked above 2000 RPM.
- If pressures need to be adjusted, one turn counter clockwise on the PR adjustment bolt will raise pressure 10 PSI. You will need a cut down 3/16" Allen key to adjust pressures.
- Check for any leaks.
- Road test.

Rooster Comb Info

If you are installing our full manual valve body into a **03+ 47/48RE**, **you will have to swap rooster combs from your core valve body**. We do not ship full manual valve bodies with 48RE rooster combs, as many times they get damaged in shipping, (cores are not packaged properly and we get damaged 48RE rooster combs returned). If you send us a 48RE core valve body before we send your full manual valve body out, we will build it with your 48RE rooster comb.

In any case, your core return to Muldoon's Performance Transmissions **MUST** include a rooster comb in order to qualify for a full core refund.

Rooster Comb ID



Transmission Preparation for Valve Body

Figure 1.

Install Rear Servo Spacer
(Helps alleviate 1-2 Shift Overlap).

NOTE: Removal of Overdrive Housing is required to remove and install servo.



Figure 2.

Install included spring into rear servo.

Install the included tapered spring into the low/ reverse servo. When installing this spring, ensure the tapered part of the spring is located inside of the servo cover.

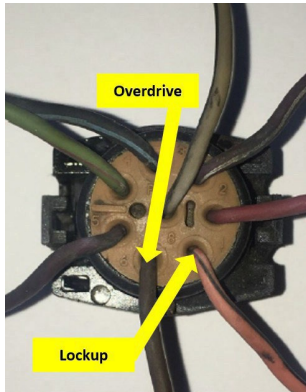


Ensure the tapered part of the spring is located in this part of the servo cover. Fitment should be recessed.

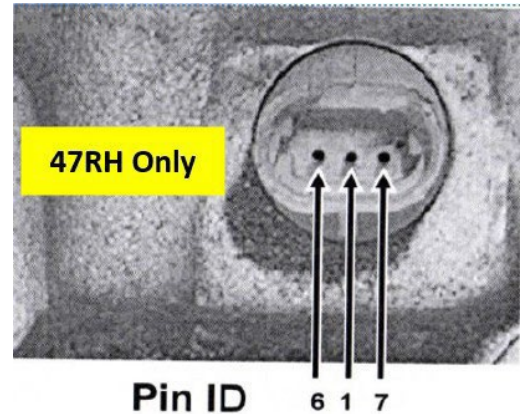
Transmission Wiring ID

- **Pin 1** Is +12V Ignition on Power (You must run independent 12-volt ignition on power supply)
- This is required because the governor pressure solenoid and transducer are disabled in a full manual valve body, so the truck will no longer supply power to the existing pin 1 wire. If you have an aftermarket lift pump on your vehicle such as a FASS or Airdog, it is an excellent source to tap into for ignition on power. Use the power coming from the relay that powers up the lift pump.
- PIN 7 is Torque converter clutch, PIN 6 is Overdrive clutch

47RE Valve Body Connector



47RH Valve Body Connector



Troubleshooting

We often receive questions regarding to 1-2 shift overlaps (rear tires locking on 2-1 downshift or 1-2 upshift). This is typically caused by one or more of the following factors:

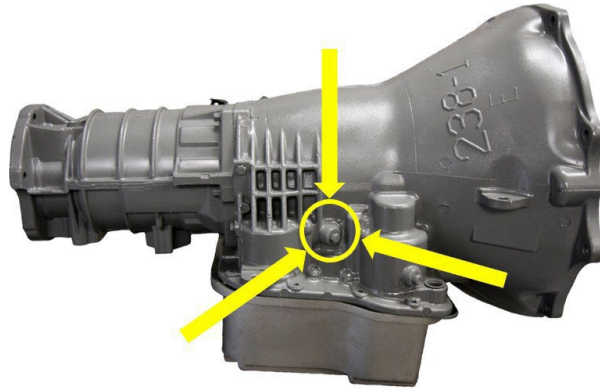
- Shifter is not indexed properly with the valve body (shift cable adjustment issue). To alleviate, set both the shifter and the transmission to neutral and make sure everything is aligned properly from there.
- All of the included parts (spacer and rear servo spring) were not installed.
- Low/Reverse servo has wear
- Bands are set too tight – our instructions are guidelines of where the bands should set be when new. Band adjustment is contingent upon band wear and condition and our guidelines may not apply to every application.
- Rear band has a dent in the pin apply surface causing the pin to stick.
- A 5.0 lever is being used for the kickdown band.
- The intermediate servo is a style that steps down case bore inner diameter.
- Incorrect spring is in the intermediate servo.

We have also received inquiries regarding a 2-3 shift flare (trans goes to "neutral" for a split second on the 2-3 upshift). This is typically caused by one or more of the following:

- Direct clutch orifice cup plug installed.
- Kickdown band is set too loose - Kickdown band lever should have 1/4" of free play.
- Direct clutch apply piston seals are torn or Direct clutch has excessive clearance. MPT recommends .080" initial clutch pack clearance.
- Transmission has 2 springs installed in the kickdown servo. Remove the larger of the 2 springs and run a single spring in the servo.
- Too many direct drum piston springs installed - MPT recommends 12 springs maximum.

Checking Pressures

Pressures are checked at the accumulator port of the transmission, passenger side, second port back (behind intermediate servo) – commonly referred to as kickdown servo. This can be seen in the photo below:



If pressures are too high or low, adjust the pressure regulator screw on driver side of the valve body with a cut down 3/16" allen key.

Do not adjust the TV minimum (blue loctite screw).

For every 1 turn counter-clockwise, you will gain 10 PSI line. 1 turn clockwise will drop 10 PSI line.

FMVB OPERATIONAL NOTES

- Recommended shift pattern is 1,2,3,4 Lockup.
- Downshift to manual 1st at speeds below 15MPH.
- Locked shifts can lead to premature shaft failure.
- Running with the torque converter in lockup will help lower transmission temperatures. It is recommended to unlock the torque converter between gear changes.
- A transmission temperature gauge is recommended due to the inherent higher temperatures associated with a constant pressure valve body.
- Due to the aggressive shift characteristics of a manual valve body, traction bars are recommended to lessen wheel hop/ axle wrap. Traction bars will greatly improve transmission shaft life if locked transmission shifts are frequently commanded.
- (Forward pattern Switched Shifter) In order to keep an accidental neutral, upshift, keep the shifter grip trigger depressed/ squeezed upon the 2-3 upshift.



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General Policy

All core returns must be,

- Like for like, no mixed models (IE 48RE for 48RE)
- Drained of all fluids (\$50 Deduction)
- No Part Disassembled
- No fire damage
- No Excessive Rust or Water Damage
- Valve Body Core Return Sheet filled out & included (\$25 Deduction)

Returned cores that fail to follow the above conditions will be disallowed and scrapped or returned at customer's expense. MPT reserves the right to deny cores as it sees fit and may deviate from its policy.

MPT VALVE BODY CORE ACCEPTANCE POLICY	
Model	Deduction
Valve Bodies	<ul style="list-style-type: none"> • Missing filter bolts (\$5 each Deduction) • Missing 8 pin / 3 pin bolt (\$5 Deduction) • Missing throttle valve lever (\$25 Deduction) • Missing rooster comb (\$100 for 47RE \$150 for 48RE) • Excessive corrosion (No Credit) • Part disassembled (No Credit) • Broken Castings (No Credit)

Please detach next page and return with core



610 South Street New Castle, DE 19720

CORE RETURN

Customer Name: _____

Customer Telephone: _____

Customer Address _____

Product Purchased: MPT Full Manual Valve Body

Order / Invoice #: _____

- I am returning my core after purchasing/receiving a Muldoon's product.

OR

- I am sending my core in up-front prior to the shipment of a Muldoon's product.

Core Return Policy

- Core refunds are processed in the form of a check mailed to the shipping address provided.
- Cores must be returned within 2 weeks of product receipt. Cores returned after 2 weeks are subject to a \$25.00 refund reduction per day.
- If returned core is found to be damaged, compromised or unacceptable in any way Muldoon's Performance Transmissions has the right to refuse it. It is the responsibility of the customer to properly package and secure the core for return shipment. Please reuse the packaging in which your valve body was sent.
- Valve Bodies must be unmodified and have original rooster comb.
- Valve bodies must be completely drained of all oil.
- We don't need it, so please do not send in your park rod.

Purchasing a return shipping label through MPT for core refund

If you would like to purchase a return shipping label from MPT, scan the QR code below or go to <https://www.muldoonsdiesel.com/products/valve-body-core-return-shipping>

Scan this barcode with a smartphone/ tablet camera and open link to purchase return label through MPT website. Label will be generated and emailed within two business days.

