

SPT 4R VB R&R Instructions

Read completely before starting project. The safety measures outlined in any off-the-shelf DIY mechanics manual should be observed before you proceed (ie. Jack stands, wheel chocks, etc) A specific manual for your vehicle will have more in depth R&R instructions than provided here.

Tools Required:

- 1) 10mm socket
- 2) 8mm socket
- 3) Snap ring pliers



- 4) Vaseline / ATF lube
- 5) 12 quarts of preferred choice ATF, Mercon V
- 6) Torque wrench (10ft or 100in min)
- 7) Rags and scraping tools

Step 1 - DRAIN

Traditional Method: Position drain-pan to rear of transmission pan. Remove pan bolts starting at the rear, up both sides to the point fluid starts to drain from the loosened pan. Once stopped draining, carefully continue to remove all pan bolts and bring pan down towards your drain-pan. No loose objects should be in pan.

Alt Method: Remove return coolant line (AOD-Bottom Line, AODE/4R-Top line) from trans – place a short section of hose onto line draining to catch pan. Start the engine. This will pump 80% of the fluid out of the trans and is often less messy. Kill the engine as soon as you see the stream has stopped. Wait a few minutes and repeat. The transmission is now empty enough to remove. *Dispose of fluid in environmentally responsible manner*
If you encounter a loose plastic plug – spinning top in appearance - discard it.

Remove pan gasket and discard. If gasket material sticks to transmission pan or case, remove all material completely with razor/wire brush. Now is a good time to install a drain plug. They can be found at your local auto parts retailer. **Stash all the VB parts you remove including the pan bolt in the transmission pan during this process so not too lose them**

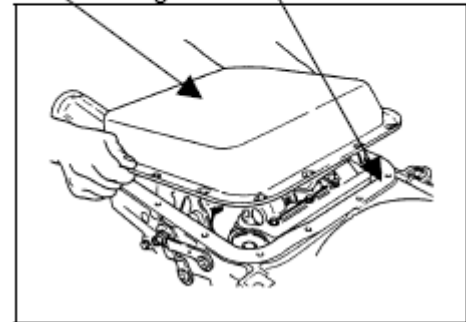
Step 2 – REMOVE FILTER

Carefully remove the oil filter by pull straight down, discard it. Often the orange filter grommet will remain in the filter bore, remove and discard it. Remove manual lever detent spring (8mm).

Step 3 – REMOVE VB

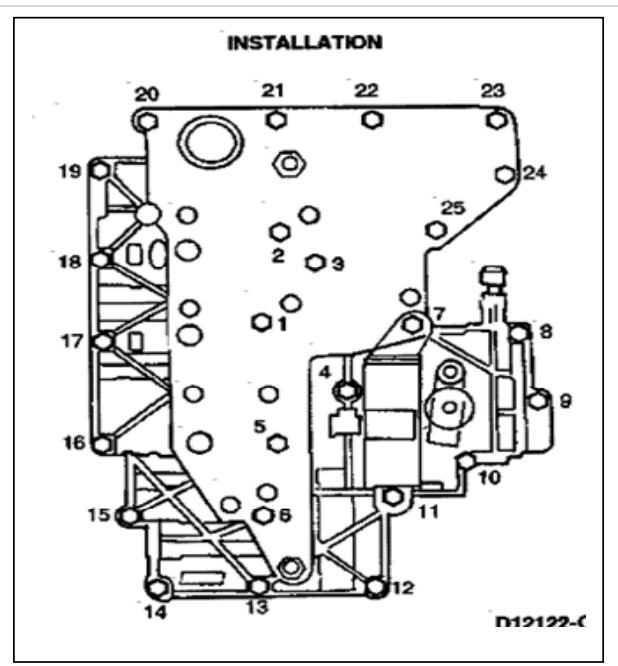
Remove the twenty-five valve body bolts with 8mm heads only – leave center bolt ½ turn loose. Once bolts are out, support VB and remove center bolt – fluid WILL run out. There are 13 short bolts and 12 long bolts. The longer bolts only go on the steel reinforced plate.

Remove the 14 oil pan attaching bolts,
Oil Pan Gasket



Remove the manual lever detent
spring and roller assembly.

Detent spring and roller



NOTE 1 SPT-4R-MVB and SPT-4R-MVB-TB owners please continue to the "Installation" section of this document and disregard the accumulator and firmness sections.

Step 3A - 2-3 ACCUMULATOR INSTALL (SPT-4R1 VB ONLY)

Locate the 2-3 Accum. in pic. Using snap ring pliers dig out the metal retainer if it did not fall already. Remove the accumulator from the bore, replace with new supplied accumulator. **THE BORE IS AT A SLIGHT ANGLE. It is not 90 degrees of pan.** Reference FIRMESS section for further details on spring combo. The pointed cap you removed points DOWN towards the VB and has spring legs...you can slightly bend them to help secure during VB replacement.

Step 3b - 1-2 ACCUMULATOR INSTALL (SPT-4R1 VB ONLY)

Locate the 1-2 Accum. in pic. Using snap ring pliers remove the snapping retainer while holding pressure on the cover. Remove the accumulator from the bore, replace with new supplied accumulator. Reference FIRMESS section for further details on spring combo. Reverse procedure to replace.

FIRMNESS (SPT-4R1 VB ONLY)

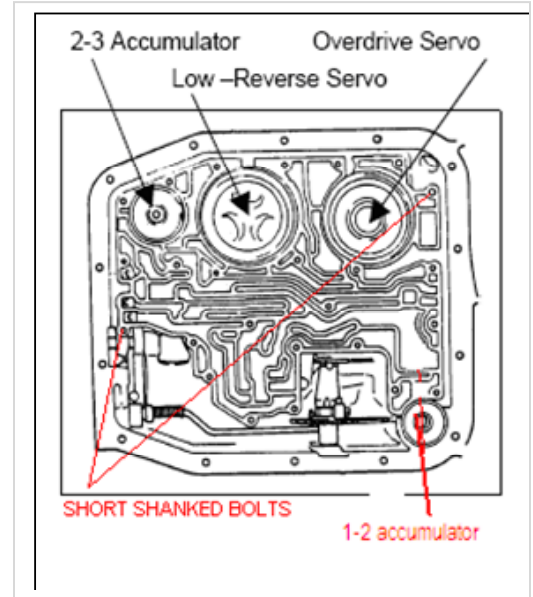
With the SPT-4R VB you have the ability to upgrade your shift firmness if you desire so. The VB has been calibrated according your needs/desires – however if not noted in this literature or addition literature supplied with this VB – you can tailor the shift feel for firmer settings by removing the bottom 2-3 accumulator spring, and removing the bottom only (towards the cap or VB) of the 1-2 accumulator. This will result in more consistently firmer shifts at ALL throttle positions instead of just hi rpm. IT IS SUGGESTED TO LEAVE THE SPRINGS IN TACT FOR THE FIRST ROAD TEST, and only remove them if a firmer shift that calibrated is desired. If you remove the spring, be sure to replace all the accumulator components (cover, snaprings, ect...)

Step 4 - VB INSTALL

NOTE 2 If your vb is not supplied with a case to valve body gasket DO NOT INSTALL ONE. Due to the poor quality of gaskets available, SPT has tested and approved the installation of the VB without the gasket.

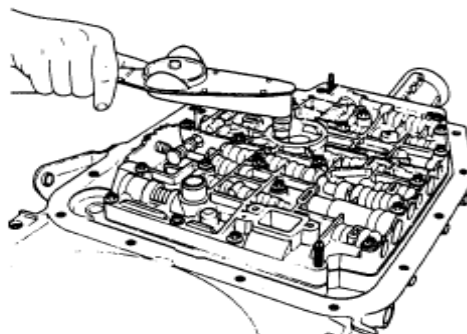
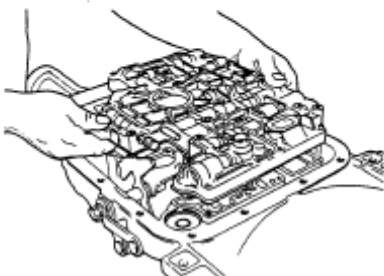
On newer 4R70Ws you might find a box shaped filter screen. Reinstall with vasoline as an adhesive. Its position is to the side of the 1-2 accumulator in a casted area that fits the screen. Lift VB into place, sure to engage the manual valve with the rooster comb knob in the OUTERMOST slot in the valve. Once everything is aligned and nothing is binding, insert a long center bolt finger tight. Next place EPC solenoid bracket with long bolt.

Reinstall the remaining twenty-three (23) bolts, paying attention to the long and short bolt locations. Tighten the bolts to 10 foot/pounds (100in pounds) working from the middle of the valve body out. **DO NOT OVERTIGHTEN BOLTS.** Reinstall the wire harness (longest plug/wire goes to EPC solenoid) or black pcb harness (push firmly into place on each solenoid). Install new filter (simply push into place firmly snug to the vb)



NOTE: Make sure the manual and throttle levers are properly positioned before installing the valve body attaching bolts

Loosely install 22 valve body attaching bolts using an 8mm socket. Starting at the center and working outward tighten the bolts to 9-11 N.m. (80-100 lb-in.).



Reinstall the oil pan using the supplied gasket or the OEM reusable unit . Tighten the bolts to 10 foot/pounds. Refill the transmission in a known fashion. Recommend fill with 4 quarts, start engine, continue fill to full. **DO NOT OVERFILL TRANSMISSION!** After first road test recheck transmission for leaks and proper fluid level.

This VB has been custom calibrated to the specs you have provided. Contents Include: VB, 1-2 and 2-3 accumulator, 1-2 Accumulator springs, filter and instructions. Be cautious to keep work area clean and the components clean for installation. (CONTENTS MAY VARY DEPENDING ON YEAR/MODLE OF VEHICAL, and VB CHOICE!)

If your transmission is showing signs of weakness (e.g. burnt fluid, excessive slippage, erratic operation or other indications of mechanical failure), this valve body will not cure the transmissions problems. In fact installation of this kit will probably only worsen the problem due to demand in an increase in the performance of the internals of a weak transmission. This valve body is designed to reduce slippage, increase life of transmission, and increase performance of the shift overlap and some lubrication aspects. However it can not replace any lost friction material or fix any internal issues. The attached warranty is only valid for use on normal operating known good transmissions.

All instructions must be followed correctly. Any deviation may result in default of warranty.

Valve bodies are not tested and may be subject to influences that are out of SPT's control. Though this is a rare case, please understand I will do anything in my power to supply you with 100% satisfaction.

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