

INSTALLATION METHOD FOR SHIFT IMPROVER KIT

Disassembly

1. Some Turbo 350 transmissions do not have drain plugs. Drain the oil by removing the rear oil pan bolts and work towards the front slowly. Do not remove the front two pan bolts yet. If the pan sticks to the gasket, insert a screwdriver between the pan and case and pry the pan down slightly to break it loose. Now remove the two front bolts slowly. This will lower the pan to allow the rest of the fluid to drain. Lower the pan and set it aside. Put the pan bolts in your tray.

NOTE: Some vehicles will require removal of the cross member to remove the pan. Make sure you support the back of the transmission so you don't damage the distributor.

2. Use a screwdriver to remove two screws and remove the oil filter and filter gasket. Put them in the oil pan. (See Fig. 1)
3. Observe the location of the following: (See Fig. 2) Manual linkage, detent spring and roller, S-link or offset link, detent control valve wire and lever, and support plate.
4. Remove pivot clip holding detent control valve lever in place. (See Fig. 3) Remove lever also and set them in the tray. Remove eighteen valve body attaching bolts. (See Fig. 2) Leave drain pan positioned as there is still oil between valve body and separator plate. Remove valve body by pulling straight down and disengaging manual valve and link from manual lever. (Do not let manual valve fall out of valve body.) Put the valve body in the oil pan.
5. Remove support plate bolts and support plate. (See Fig. 2) Remove stock separator plate, gaskets and four check balls. You will not reuse your stock separator plate. Leave drain pan positioned is there as still oil between separator plate and case. Check balls are between the plate and case. If front servo assembly falls out install it back in position with grease to retain it. Order of assembly is: spring, retainer, pin, washer and piston. See Fig. 5A,
6. Scrape off any excess gasket material that may be stuck to the valve body. This is very important as stray gasket material can cause leaks. Wash valve body in solvent to remove residue. Be careful not to lose the roll pins that hold sleeves in place.
7. Clamp the spacer support plate in a vise and run a file across the surface that will contact the separator plate. (See Fig. 4) The Spacer support must be flat or it will leak. If your spacer support plate is bent or excessively warped, it should be replaced.
8. Scrape off any excess gasket material that may be stuck to the case surface. This is very important as stray gasket material can cause leaks.

Installation

1. Install upper valve body gasket in position on the transmission case side of the separator plate. Use a small amount of grease to hold it in place. Install the lower valve body gasket (identified by the Z-shaped slot) in position on the valve body side of the separator plate. Use a small amount of grease to hold it in place. Check ball positioning: Street: Use only one check ball in location 1. (See Fig. 6) Heavy Duty: Use only two check balls, one in location 1 and one in location 2. (See Fig. 6) Use a small amount of grease to hold checkball(s) in position. Discard remaining check balls. Install separator plate/gasket assembly in position and use a pan bolt in the middle to hold the assembly in place (See Fig. 7). Make sure each check ball is in its proper location Separator plate check ball locations are shown on Figure 5, page 4.
2. Install middle support plate (silver color) in position against separator plate gasket at front of transmission. (See Fig. 8) On top of middle support plate install oil transfer plate (gold color). Note that the two holes in the middle support plate and slot in the oil transfer plate line up with the two holes in the separator plate and plate gasket.
3. On top of oil transfer plate install your stock spacer support plate (The order of the plates must be correct!) Install the seven support plate bolts finger tight. Align separator plate bolts with transmission case bolt holes as well as possible. Tighten the seven support plate bolts to 100 in.-lbs. "S" link model (See Fig. 9): Rotate the range inner selector lever noting clearance with bolt 'A' (See Fig. 8) If range selector inner lever contacts bolt "A" head or there is not a 1/16" clearance between the two, mark that area of bolt head. Remove bolt & grind or file angle flat at that portion of bolt head. Reinstall bolt and check clearance again. Failure to provide clearance may keep transmission shifter from fully

shifting or cause a lock up between drive and second. Failure to provide detent roller engagement into range selector inner lever may prevent transmission from shifting into park.

4. Remove center pan bolt. Guide valve body into position. Engage manual valve linkage in selector lever. "S" link can only be installed one way. Offset linkage must be installed with the link in the forward position. (See Fig. 9) Install valve body bolts finger tight. Install detent roller spring so it engages range selector inner lever. Tighten valve body bolts to 100 !n.-lbs. Make sure range selector inner lever operates freely at this point with positive indexing in each gear. "S" link model (See Fig. 9): Rotate range selector inner lever all the way forward and check to see that bolt 'B' does not prevent range selector inner lever from going into last detent slot. (See Fig. 8) If bolt head 'B' prevents this action, rotate range selector inner lever out of the way. Remove bolt and grind or file a small amount off top of bolt head 'B'. Reinstall bolt 'B' and check again.
5. Connect detent control valve lever to detent cable wire. Position lever on body. Install pivot clip. (See Fig. 3) if pivot clip contacts spacer support plate and does not fully seat into slot on detent control lever, trim pivot clip until just clears support plate. Detent control lever must pivot freely for correct operation. If detent control valve lever contacts bolt 'C' (See Fig. 3), Remove lever and file or grind clearance. Tighten screws securely.
6. Clean pan in solvent and scrape any excess gasket material off the pan and case surface. Install pan with new gasket. Install pan bolts and tighten to 13 ft. lbs. Tighten drain plug, if so equipped.
7. **HEAVY DUTY ONLY:** Use an awl or small screwdriver to dislodge the accumulator snap ring located on the right side of the transmission case. (See Fig. 10) Pry the snap ring out with a screwdriver. There is some spring loading underneath so exercise care. Remove the accumulator cover, O-ring and accumulator spring. Discard the O-ring and spring. Install new O-ring supplied with the kit in position on the accumulator cover. Lubricate the O-ring with automatic transmission fluid and install cover and O-ring into case. Install snap ring making sure it is fully seated in its groove.
8. Check shifter adjustment. Place selector lever in each gear position making sure detents in transmission correspond exactly with selector lever detents. Adjustments can be made by loosening pinch bolt on rod or cable.
9. Detent cable: Depress accelerator pedal fully and check that throttle is opening fully. Adjust if necessary. Adjust detent cable so that full throttle coincides with maximum cable position.
10. Lower vehicle. Keep the rear wheels off the ground if possible. Add transmission fluid. Place transmission in neutral, start engine and fill to the "Add" mark. Place selector lever in all gear positions. If the wheels are off the ground, allow the transmission to shift through all gears. Check fluid level and make sure it is between "Add" and "Full".
11. Lower vehicle and drive for 1-2 miles to warm fluid. Check level again. **DO NOT OVERFILL!** This can use foaming and overheating.

Photos Below:

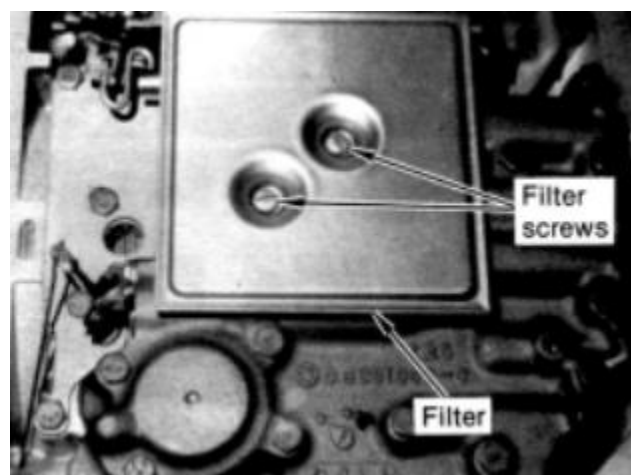


Figure 1

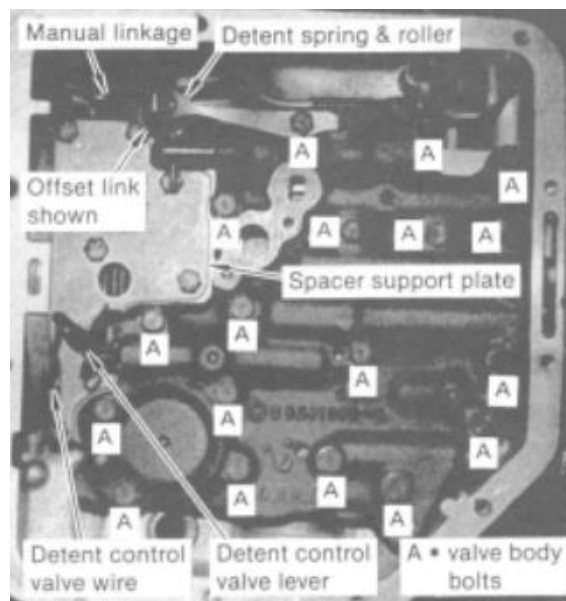


Figure 2

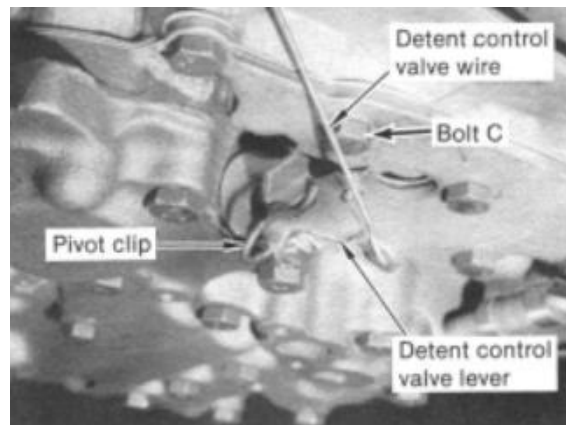


Figure 3

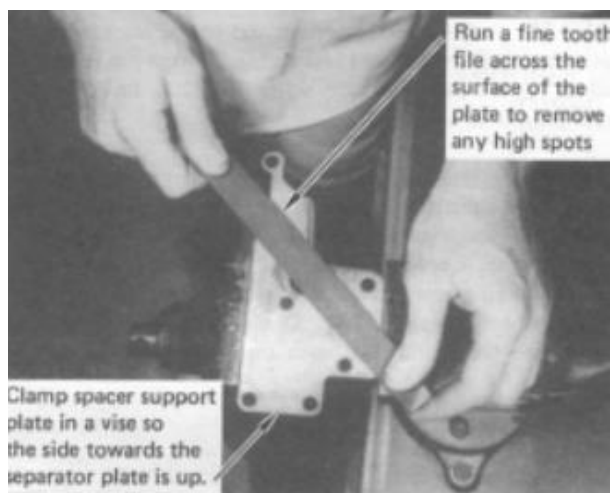
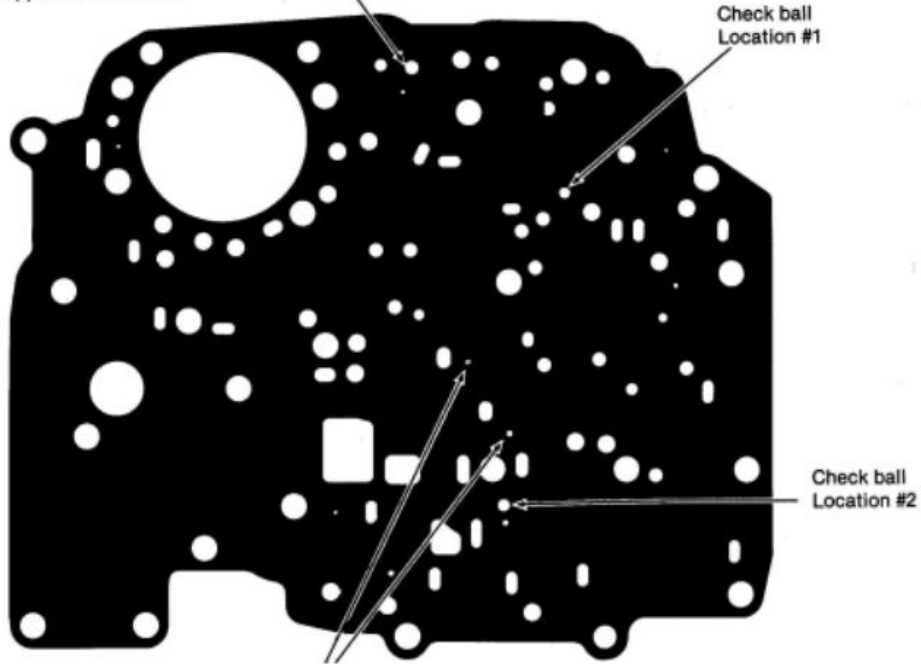


Figure 4

SEPARATOR PLATE MODIFICATION

Heavy Duty: Drill a 3/16" hole in the plate in this location, using your stock plate as a guide. Use the drill supplied with the kit.



Street and Strip: Enlarge these two holes to 3/16" in the plate. Use the drill supplied with the kit.

Figure 5

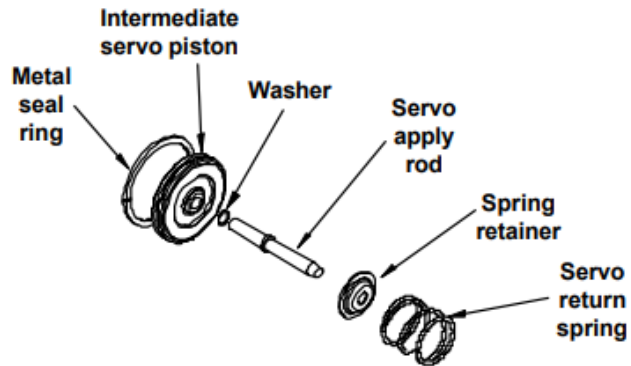


Figure 5A

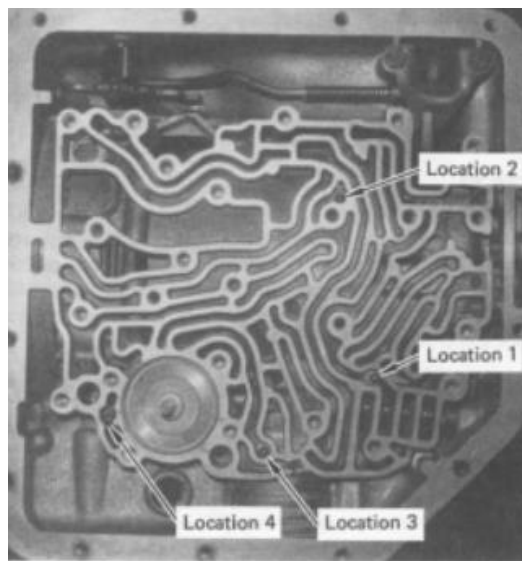


Figure 6

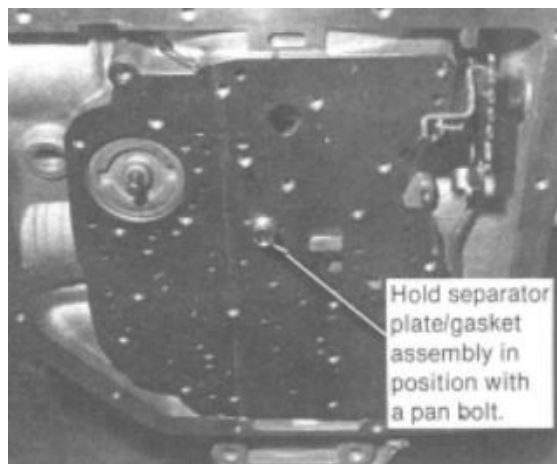


Figure 7

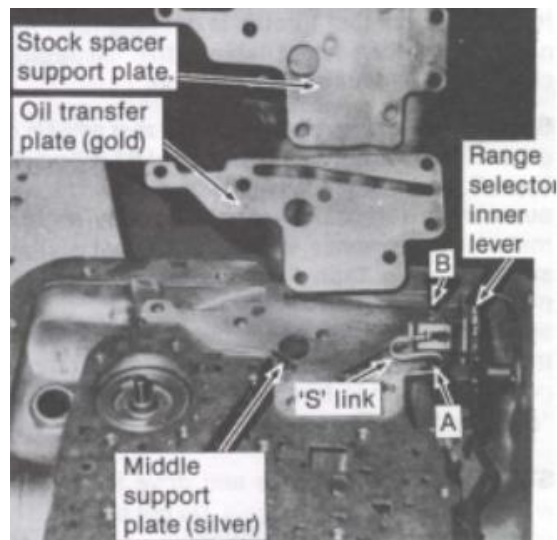


Figure 8

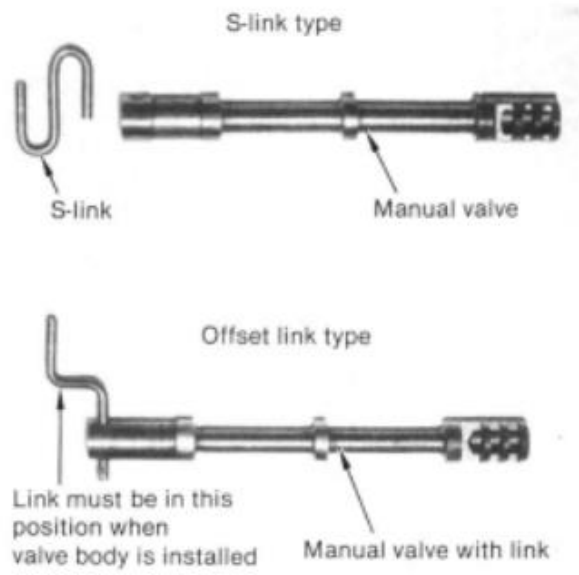


Figure 9

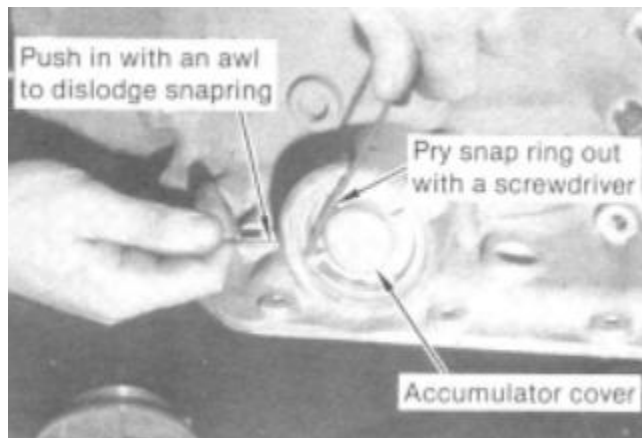


Figure 10