

SHIFT KIT[®] TURBO HYDRA-MATIC 400

The 400 has proven to be very reliable transmission. It is a real performer. It's ruggedness allows it to continue to operate for many miles with smooth even shifts.

This kit improves:
Transmissions - That are being overhauled
Transmissions - That are being serviced
Transmissions in new cars: Eliminates late, soft shifts and excessive passing gear.

Your customer gets improved up-shift timing. Shifts will occur at the proper speed (before the power falls off). Excessive passing gear and late shifts which cause that "HANGY-HOLD-BACK-FEELING" are eliminated.

Mechanic: We thought you might like to know what the kit does and how it does it.

1-2 SHIFT BUMP, CHATTER or SLIDE

It is easy to think that bump or chatter is caused by the intermediate clutches applying too fast or holding too good. Just the opposite is true - Here is why. During the 1-2 shift, intermediate oil flows to clutches and to the 1-2 accumulator. If clutches are not firmly applied before the accumulator is compressed, a bump or chatter will occur. A long slide is because the clutches apply too slowly.

The separator plate in this kit, working in coordination with the pressure regulator spring, furnishes more oil flow and pressure to the intermediate clutches allowing them to engage before the accumulator is compressed. If the clutches are of reasonable quality and condition, the result will be a quick and smooth 1-2 shift.

Soft 2-3 Shift

Often this condition is worn clutch plates. Even when this is true the clutch plate wear and slippage has usually been caused by excessive oil leaks between the valve body and the clutches and a slow release during passing gear. This is why replacing the clutches will not always restore good shift performance, and durability. Separator plate, pressure regulator spring and modulator valve co-ordinate to furnish as up to twice as much oil to the direct (high) clutches. This means that half the oil could be lost in excessive leaks without causing a malfunction.

Excessive Passing Gear

Complaint is common even with low miles. This kit has proven to be a 90% cure for this complaint. **Cause:** Leaks to the direct clutches. **Correction:** Increased oil flow to the clutches.

Cause: Low performance in relationship to manifold vacuum.

Correction: Decreasing modulator pressure while maintaining correct mainline pressure. This is accomplished with a modulator spring and pressure regulator spring.

Slow Acting Passing Gear

This is one of the main causes of direct (high) clutch wear. Most customer and mechanics don't notice this weak point. Cross leaks and original orificing releases the direct clutches very slowly and lets them drag while the 2-3 accumulator is un-stroking. This condition causes more heat and wear than the 2-3 up-shift. Recalibration to improve shifts and to correct this condition require a new separator plate because several holes need to be smaller and others need to be bigger.

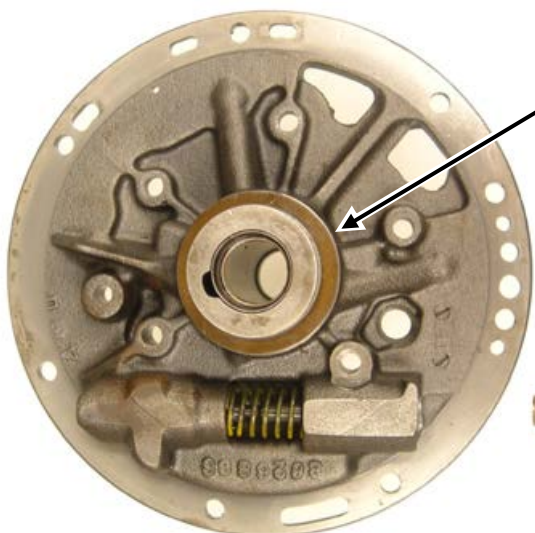
Late Shifts

Nothing is more annoying to the car owner than a transmission that runs in low or second when it should have already shifted. He knows he is using extra gasoline and it also causes extra wear on the transmission and engine.

The modulator system, pressure regulator and 2-3 shift valve springs work together to furnish shifts at the correct time with the correct pressure. The results are improved up-shift timing. Shifts will occur at the proper speed (before the power falls off). This eliminates that hanging hold back feeling and gives the car a healthy responsive feel.

Normal wear in a 400 transmission lets the 1-2 shift get late, long and rough and the 2-3 shift late, long and soft. This kit is calibrated to make the 1-2 earlier smoother and quicker and the 2-3 shift earlier, quicker and firmer.

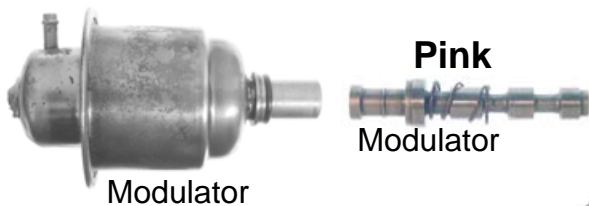
Don't reduce front end play by installing thicker washer here. Forward rings can miss locate in the drum, causing forward clutch failure. Shim drums forward to reduce front end play. Where to get shims?- TransGo 4L80 HTRK. Rear unit end play (behind support) must remain less than front end play so that rear unit thrust does not reach the pump washer. Push up on output shaft while checking for front endplay! Apply air to 2nd Clutch while checking for rear endplay.



1. Remove & discard any Horseshoe shims. Install **Yellow** Spring furnished.



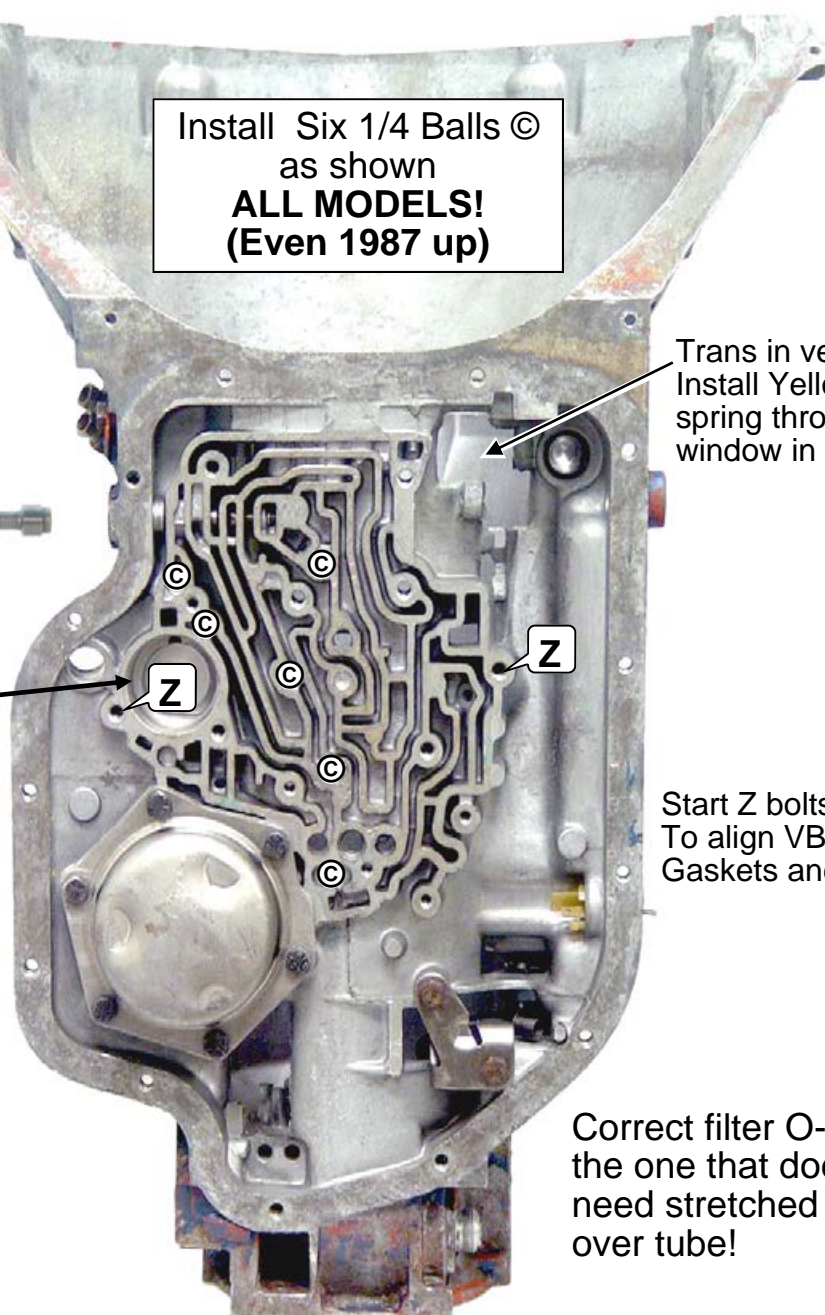
2. Modulator Valve Spring: Install **Pink** spring. After road test, if later/shorter 3/8 throttle shifts are needed, remove PINK spring.



Don't forget to install the piston and pin here.

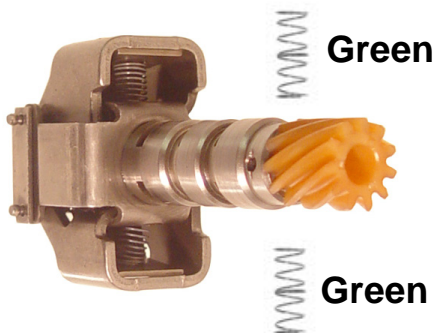
Install Six 1/4 Balls © as shown **ALL MODELS! (Even 1987 up)**

Trans in vehicle? Install Yellow spring through window in case.



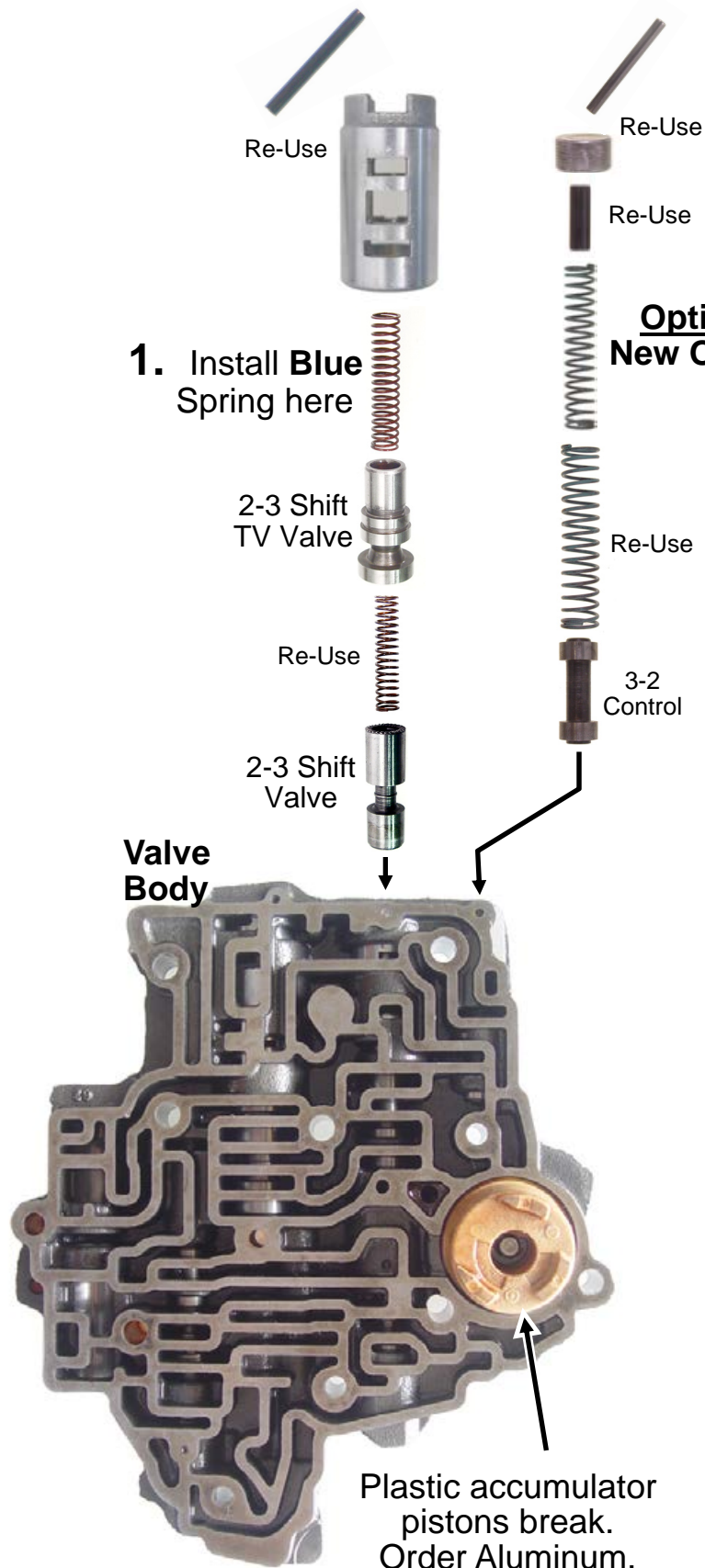
Start Z bolts first. To align VB, Plate, Gaskets and Case.

3. Want earlier shifts: Install new **Green** governor springs. Don't disassemble governor



Correct filter O-ring is the one that doesn't need stretched to go over tube!

Valve Body & Plate

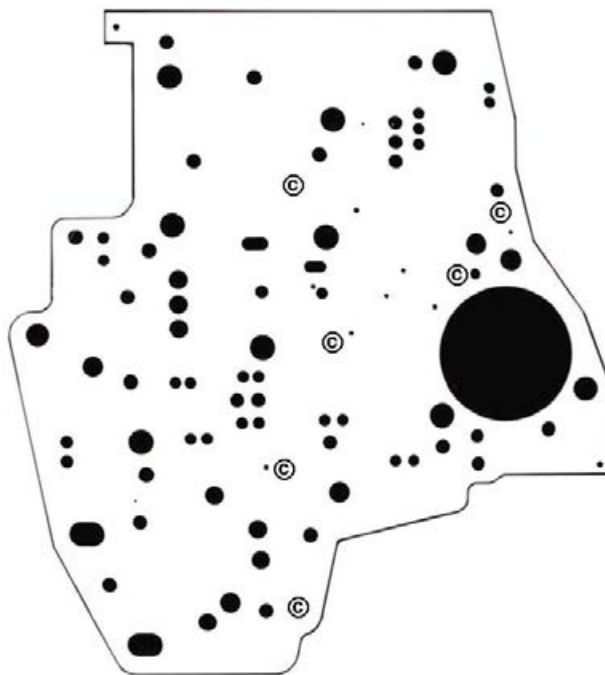


Optional:

For more low speed, 3-2 part throttle sensitivity, install **New ORANGE** spring *inside* the original 3-2 control spring. Re-use spacer & end plug.

Optional New Orange

Trans in vehicle:
Install Six 1/4" Checkballs
All Models!
(Even 1987up 7 ball models!)



New SK[®] plate produces short smooth shifts. This product is not for making firm Hi-Perf type of shifts. If you want firm shifts and complete gear control order TransGo Reprogramming Kit.

ADDITIONAL INFORMATION

Friction Plates

Soak friction plates in transmission fluid for no less than 5 minutes before installation. Dry lining on clutches or bands acts as an insulator that holds friction heat. This can cause premature failure due to surface glazing or burning. A thoroughly soaked friction plate dissipates heat, away from the surface, and through the fluid retained in the lining.

High Quality Friction

This trans loves High quality clutches. Don't pinch pennies here, it can cause slide bump, chatter, squawk or jerk during 1-2 shift, and soft shifts into high.

Steel Plates

Condition of the steel plates in this trans is important to shifting quality. Don't use glazed steel plates. Use new plates or hand sanded or tumbled plates.



Intermediate Sprag
Outer Race must
freewheel as shown.

Direct Drum **or** Piston **must** have check ball.

Case Wear: This case wear problem that has driven many a good man right up the wall. Wear at this point allows excessive center support movement and misalignment. This can cause high clutch failure, late or no 2-3 shift, falls out of high when hot; center support bushing wear, front planet wear and stator support failure. Only use center support that uses a steel shim in the case under the support.



Valve Bodies: Be sure that gaskets do not cover any holes in the separator plate!

VB is easy to over tighten! Tighten valve body to 100 inch pounds. (Never use Impact wrench.)

FLUID LEVEL IS CRITICAL

Before road testing, fluid should be just below the "ADD" mark. At normal temperature (4-5 miles of road testing) fluid level should be right at or slightly above the add mark. Over filling can cause foaming and loss of oil on freeway or highway driving, especially in hot weather.

Vacuum Flow: Restricted vacuum is a common cause of trouble with this transmission.

Check: With engine idling, pull off hose at modulator, engine must speed up, or idle rough, with hose off. If engine does not speed up, or idle rough, vacuum is restricted.

Correction. Check for collapsed hose. Drill out restriction with 3/32" or larger drill. Engine must speed up with hose off.

Governor Cover and Gasket: A worn governor or over thick gasket can cause a temporary neutral condition during passing at highway speeds. Tap the center of cover with ball peen hammer to reduce governor end clearance.

It is never wrong to install engine to body ground straps. It will prevent starter motor from burning transmission bushings.

If you give these things your personal touch, you'll know you are doing a first class job.



Mr. Shift

"The parts & data here has been thoroughly tested. It has stood the test of time."