



Technical Information..

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U140/U240/U241 Series Diagnostic Information

Binding On 1-2 shift - To determine if you have a valve body/solenoid problem or a faulty ECM, determine if you have **R w/ the electrical connector disconnected from the trans**. If you **DON'T** have R, suspect B2 control valve is stuck on or pushed to apply position by cross leaks or DSL solenoid stuck open. If trans engages in reverse, suspect faulty ECM. The DSL solenoid (TCC) doesn't just come on for lock-up. It also energizes in manual low and to inhibit R. It's normally closed & when energized allows oil pressure to stroke B2 control valve & apply B2 clutch in manual low & block oil to the B2 clutch in R. If DSL is stuck open in D, B2 clutch applies in 1st like it does in manual low. When 1-2 shift occurs w/B2 clutch applied, too many clutches are applied & trans binds up. If DSL is stuck open in R, B2 control valve blocks oil to B2 clutch inhibiting R. The ECM (Engine Control Module) aka PCM (Powertrain Control Module) controls engine & trans. It's not uncommon for RAV4 models between 2001-2003 to have faulty ECM's. Many times they have binding/harsh shifts & produce codes P0750, P0753, P0755, P0758, & P1760. See Toyota bulletin # TC002-06 dated March 3, 2006. **NOTE:** This is an adaptive learn trans. Learned adapts **must** be reset after overhaul or valve body replacement to avoid damage. It resets all ECM learned adapts, not just trans adapts. A Toyota factory scanner can reset ECM adapts. After resetting adapts, bring trans axle to operating temp & drive vehicle @ light steady throttle through all shifts. Repeat until shifts feel normal. You may find that resetting shift adapts will correct binding on shifts, therefore, we recommend performing reset before replacing an ECM.

SOLENOID FIRING ORDER

Gear	SL1	SL2	S4	*DSL/TCC
1st	On	On	Off	
2nd	Off	On	Off	
3rd	Off	Off	Off	
3rd TCC On	Off	Off	Off	On
4th	Off	Off	On	
4th TCC On	Off	Off	On	On
Manual 1st	On	On	Off	On

*DSL/TCC Solenoid is turned on to inhibit reverse

2-3 Slip/Flair-Delayed/No Reverse - Direct clutch sealing rings wear into ring grooves of cover & direct drum can be ring grooved. Clearance between sealing ring & ringland is .003"-.005". Direct drums w/damage where sealing rings ride should be replaced. **DON'T** try to salvage drum by sanding! Another cause of pressure loss is missing/incorrectly placed washer seal between case & rear cover.

Slips In Reverse/No Reverse - In addition to direct clutch issues, a DSL solenoid stuck "on", a B2 control valve stuck in stroked position & missing/damaged B2 seals between valve body & case can cause reverse to delay, slip or miss altogether.

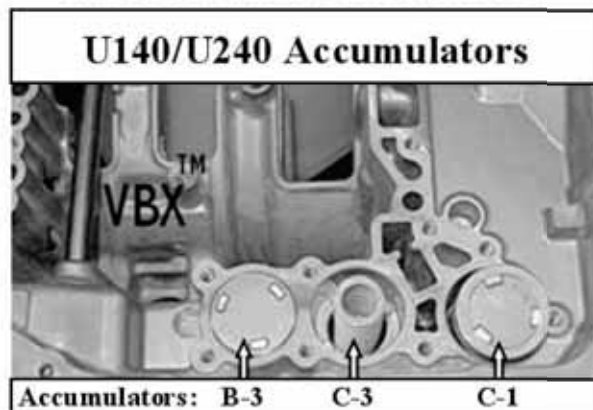
Various Shift & Engagement Feel Concerns - Can be due to accumulator spring mix up. Please see chart below for correct information.

NOTE: C1 accumulator is for N-D engagement. C3 accumulator is for 3-4 shift. B3 accumulator affects 4-3 downshift.

ACCUMULATOR SPRING CHART

Spring Type	Spring Location	Spring Color	Free Length	Dia.	# of coils	Wire Dia.
C1	Case Side	RED	3.555"	.727"	14.5	.075"
C3 Outer	VB Side	WHITE	3.645"	.738"	14	.117"
C3 Inner	VB Side	PLAIN	.470"	.450"	3	.078"
B3 Outer	Case Side	BLUE	2.945"	.856"	10	.098"
B3 Inner	Case Side	GREEN	2.370"	.625"	12	.085"

CASE ACCUMULATOR LOCATIONS



"We Build Them So You Don't Have To."