SPECIAL NOTE
To maintain color continuity and functional emphasis, hydraulic circuit illustrations shown in the 73-12 film and this book use colors which differ from the circuit color-coding used in the Service Manuals.

IT'S BEST TO TEST

Telling a customer that his car or truck transmission needs overhauling is seldom a pleasing task. But it is even more disturbing to find later that simple adjustment or a fluid and filter change could have solved the problem. Experience shows that testing before teardown reduces the chances of incorrect diagnosis and aids in finding the trouble if repairs are needed.

In general, transmission testing before internal work is performed should be a routine procedure. That way, you can verify the reported trouble and establish a basis for comparing transmission operation before and after repairs or adjustments are made. In fact, your after-service comparison may turn up other unsatisfactory characteristics which were not originally present, so don't pass up this important source of troubleshooting information.

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BEFORE ROAD TESTING

The cure for an ailing TorqueFlite can be as simple as a fluid level adjustment or as involved as a teardown, depending on the cause and extent of the trouble. To cope with such wide-ranging possibilities, it becomes obvious that a logical diagnosis procedure should be followed if we are to locate and correct transmission troubles quickly and efficiently.

GO ALL THE WAY
The dangers of playing a guessing game when troubleshooting a transmission are many, especially when symptoms are mistaken for causes. A worn-out clutch, for example, is easy to find by teardown inspection but the cause may be more elusive. However, the slipping which caused the breakdown can be due to an off-center manual valve, which will continue its mischief undetected if the selector linkage setting is not checked.

INFORMATION SAVES TIME
As you know, finding the correct remedy for transmission trouble can be a problem when information about the condition is sketchy, so try to discuss the situation thoroughly with the customer.

BE ALERT FOR CLUES
A good description of the trouble gives basic guidance, but additional information about the circumstances is also helpful. If the condition came on gradually, it suggests some internal fault such as a pressure leak, a clogged filter, or contaminated fluid. In contrast, trouble which happens suddenly or after some other work is performed is more likely to be external, something like a disturbed adjustment or interference with linkage movement.

IT ONLY HAPPENS WHEN...
Even a minor detail can be important, like the fact that the transmission acts up only after the first start, when it’s cold. Without this information, it could be difficult to verify the trouble and track it down.

JUDGE FOR YOURSELF
Unfortunately, repair order instructions are sometimes vague, and the customer’s version of the trouble can be misleading, so you may have to depend on your own investigation to determine the basic problem.

FOLLOW REGULAR PROCEDURE
You may recognize the reported condition from past experience and probably guess the cause and its cure. But where there is any doubt, the general rule should be to check the fluid and linkages first. Then run a road test and if necessary make pressure tests before you consider opening the transmission. In other words, work from the outside to the inside and then, from operating characteristics, try to pinpoint the trouble before you drain the fluid and drop the pan.

TAKE IT FROM THE TOP
Checking the fluid and linkages first eliminates them as possible trouble sources. If the road test results are not conclusive, pressure tests in the shop may be needed to verify and locate the trouble. Hydraulic pressure tests should, of course, be made before you open the transmission. Air pressure tests may also be required to determine whether the clutches and servos operate properly or are sticky.

DIPSTICK INDICATIONS
The fluid level is okay if it is between the FULL and ADD ONE PINT marks on the dipstick with the engine at idle speed, the transmission at operating temperature, and the selector in Neutral.

Fig. 1—Fluid level is okay between marks
**LEVEL VARIES WITH TEMPERATURE**
We check the fluid level with the engine running and the transmission warmed up so the hydraulic circuits will be filled and the fluid fully expanded. When fluid temperature is at 70 degrees, the level should be near the ADD mark, but at average operating temperature, should not be over the FULL mark.

**NEUTRAL IS BEST**
We can be more certain of an accurate level reading with the selector in Neutral because the torque converter fills too slowly in the Park position. The converter drains when the manual valve remains in Park position for a period of time and must refill before it is completely functional.

![Image: Converter fills too slowly in Park position]

**FILLING TAKES TIME**
The slow converter fill condition is normal and explains the delay in car movement that sometimes occurs after the first start in Park position. Complaints about this delay can usually be satisfied by instructing the driver to start the engine in Neutral or to place the selector in Neutral momentarily before shifting into other positions.

![Image: Low fluid level allows pump to take in air]

**CIRCULATE THE FLUID**
Incidentally, after a drain and refill, the selector should be shifted through all positions with the engine running to make sure that all the hydraulic circuits in the transmission are full when the level is checked. Apply the brakes when moving the selector to prevent dangerous lurching in Drive or Reverse positions.

**FLUID LEVEL AFFECTS OPERATION**
The importance of maintaining the correct fluid level can be seen in the TorqueFlite Service Diagnosis section of your Service Manuals where incorrect fluid level is given as a possible cause of 12 of the 21 trouble conditions covered.

**AIR MAKES FLUID SPONGY**
Low fluid level can be a general troublemaker because it allows the pump to take in air along with the fluid. The air produces sponginess which results in low hydraulic system pressure or slow pressure buildup.

![Image: Air bubbles make fluid spongy]

**SHIFTING TELLS THE STORY**
The effect of air in the fluid can be felt in delayed clutch engagement when you shift into Drive or Reverse. Air bubble sponginess can also cause upshift slipping and pump whine.

**SLIPPING MAKES THINGS HOT**
The slipping which results from low fluid level produces overheating and severe wear of clutches and bands. A low level can also cause rapid wear of other transmission parts by starving the lubricating system.
low fluid level. In either case, air in the fluid and the resultant slipping and overheating can produce a sticky varnish coating which can gum up valves, pistons, and other moving parts.

**STICK SHOULD WIPE CLEAN**
Varnish should be suspected when the dipstick does not wipe clean and can be verified by dropping the oil pan for inspection. You may also find sludge deposits if water, glycol, or other contaminants have entered the transmission.

**FOAMY FLUID CAUSES TROUBLE**
In the opposite direction, when the fluid level is too high, the gears churn up foam which results in the same sponginess and slipping produced by a

**FLUID HAB DETERGENT**
Where you find only a trace of varnish or sludge and no serious operational problems are reported, a fluid and filter change may be all that's needed to restore normal transmission operation. In these cases, the high detergency of the new fluid is sufficient to clean up the stickiness so valves and pistons can operate properly.

**CLEAN IT ALL OUT**
On the other hand, a heavy deposit of varnish or sludge is bad news and calls for a complete tear-down and cleanout. Any good degreaser solvent will remove the deposits but remember that here, as with any other hydraulic system service, cleanliness is very important. Be especially careful when handling the valves and rinse all system parts clean in new transmission fluid before reassembly.
material to deteriorate, this condition calls for complete reconditioning.

**IT WORKS BOTH WAYS**
A break in the transmission cooler unit also allows fluid to leak into the engine cooling system when the fluid pressure is higher than cooling system pressure. When correcting a fluid/coolant leak condition, the engine cooling system should be treated with a reliable system cleaning compound and then flushed out with clear water to remove any fluid residue. Make sure that the new coolant solution is mixed in the proportion specified for the cooling system.

**FLUID CHANGE NEED VARIES**
In normal passenger car use, the original fluid should not require changing during the life of the vehicle. But for trailer-towing or in taxicab, police, and other heavy-duty service, the fluid and filter should be changed as specified in the Service Manual. Truck and Motor Home transmissions have their own specific servicing requirements so if there is any doubt, check the appropriate Service Manual recommendations.

**COOLANT EMULSIFIES LIQUID**
Milky fluid on the dipstick is usually a sign of a coolant leak, possibly at the cooler unit in the radiator. Because the engine cooling system retains pressure for a period of time after shutdown, engine coolant can be forced into the transmission cooling system through any break in the walls of the cooler unit. You can verify cooler unit leaks by testing as described in the Coolant System section of the Service Manual.

**MILKY FLUID RUINS FACINGS**
Since a fluid and coolant mixture rapidly forms sludge and varnish, and causes seals and friction

**FLUID SHOULD REMAIN CLEAR**
The Dexron-type fluid used in Chrysler-made transmissions normally tends to darken with use, so fluid condition should not be judged by the color alone. Ideally, the fluid should remain clear even if it darkens. However, if fluid appears muddy, it may be time to change the fluid and filter and adjust the bands. Obviously, fluid that has turned black and has a burned odor signals the need for more than fluid and filter service.

**PLAY IT SAFE**
When adding to or refilling a transmission, be sure
to use only Chrysler-approved Dexron-type fluid. Type "F" fluids are intended for other makes of transmissions and can cause harsh shifting in a TorqueFlite, so don’t use "F" type fluid under any circumstances.

**LINKAGE SETTINGS**

Assuming that the fluid is okay, the gear selector linkage and transmission throttle linkage settings should be checked and reset if necessary. That way, you can eliminate them as possible trouble spots when you road-test the transmission.

**SETTING POSITIONS VALVE**

In Neutral, the selector lever detent should position the Manual valve so that both the Drive and Reverse ports in the valve body are cut off from line pressure.

**VALVE MUST BE CENTERED**

If the linkage is not properly adjusted, it positions the valve off-center, opening one of the ports to line pressure. This can cause creeping or clutch slipping, depending on how far the valve is off-center.

**IT CAN SLIP WITHOUT CREEPING**

In some cases, only a small variation in selector linkage setting can displace the Manual valve far enough to produce partial clutch engagement which allows slipping without causing the car to creep. Since this condition does not cause obvious immediate symptoms, unnecessary wear of friction material can occur if the slipping is allowed to continue. This problem can be minimized by making a regular practice of checking the selector linkage adjustment when the vehicle is in the shop for periodic maintenance servicing.

**SWITCH ACTION IS INDICATED**

Checking the selector linkage adjustment is easy because normal operation of the starter safety switch coincides with correct positioning of the Manual valve in the transmission. With the engine stopped, move the selector lever slowly until the latch drops into the Park notch of the shift gate. If the starter can be operated at this point, Park position is okay.

**CHECK BOTH ENDS**

Next, move the selector lever slowly from Park toward Neutral and stop when the Neutral detent bottoms. Again try the starter and if it also operates at this point, you know that the selector linkage is properly adjusted.

**VALVE POSITION AFFECTS SHIFTING**

With the selector linkage checked out, you can move on to the throttle linkage. Here, the linkage setting determines the transmission throttle valve...
position, which if not correct, will upset shift timing and smoothness.

**SHORT TRAVEL LOWERS PRESSURE**
Where linkage is set too short, the transmission throttle valve opens less than normal, so throttle pressure is relatively low, tipping the balance in favor of the opposing governor pressure. Upshifting can be early and there may be some engine speed flareup during the 2-3 upshift.

![Fig. 15—Throttle valve controls flow to shift valves](image)

**ENGINE FLAREUP IS TIP-OFF**
You can suspect a short throttle linkage setting if you get an upshift flareup with very light acceleration but no flareup under heavier pedal pressure. A short linkage setting can also prevent full-throttle kickdown action.

**HIGH PRESSURE DELAYS UPHILTS**
In the opposite direction, linkage that is extended too far opens the throttle valve more than normal. As a result, we get high throttle pressure which delays upshifts and makes them harsh. High pressure here also makes part-throttle kickdown operation very sensitive.

**CHECK LINKAGE TRAVEL**
Throttle valve linkage setting problems may show up after carburetor servicing or where the carburetor throttle linkage is changed for any reason. When adjusting the throttle linkage, it is important to make sure that the carburetor and transmission throttle valve levers can move to full open position. Restricted throttle valve movement limits top speed and power and can prevent full throttle kickdown action. Watch for travel-limiting interference between throttle linkage and adjacent structure especially on Motor Home installations.

**ENGINE OUTPUT AFFECTS SHIFTING**
Engine performance is directly related to throttle linkage operation. If engine output is below par, the gas pedal must be pushed down farther than normal to make up for the deficit.

**VALVE MOVES TOO FAR**
The added pedal movement moves the transmission throttle valve farther than normal, so you get the delayed and harsh upshifting that is typical of an extended throttle linkage setting, even though the linkage is set correctly.

![Fig. 16—Pedal moves valve more than normal](image)

![Fig. 17—Use tool to eliminate play in linkage](image)

**SETTING MUST BE ACCURATE**
Because accurate throttle linkage setting is important to good shifting, a special throttle lever holding tool C-4160, should be used when checking or adjusting the linkage. This tool and its spring hold the throttle lever forward against the stop so linkage free-play inaccuracies can be eliminated.
Following the fluid and linkage checks, the next step is road testing. Basically, this test consists of running through the selector ranges to compare transmission operation with known good performance. Be alert for shifting variations and note the upshift-downshift speeds.

KEEP A RECORD
You may find a diagnosis check list handy to record your findings for later analysis. Shift-point figures and pressure test results both provide valuable troubleshooting clues. In any case, this information should be available if you need factory help in diagnosing a tough one.

CONVERTER MAY ACT UP
Slow acceleration from a standstill in all ranges, or poor top-speed performance are signs of torque converter problems. If you suspect trouble in this area, run a converter stall test before you go any farther.

CHECK THE COMBINATIONS
Slipping or engine flareup in any gear may mean clutch, band, or overrunning clutch trouble. When only one clutch or band slips, it’s fairly easy to identify because clutch engagement and band application combinations are different in each range.

THE WAY IT GOES
In the "D" Position, the vehicle gets under way in Breakaway Low and then upshifts to Second gear and Direct Drive. The 2 Position follows the same pattern but upshifts only to Second gear. The 1 Position is limited to low gear.

OVERRUNNING CLUTCH HOLDS
In "D" and Position 2 the rear clutch engages. Here, in Breakaway Low, the overrunning clutch holds during acceleration, but releases on deceleration so there's no engine braking below second gear in either position.

Fig. 19—Low-Reverse band holds in Position 1

BAND HOLDS IN LOW GEAR

Fig. 18—Overrunning clutch holds in Breakaway Low

Fig. 20—Overrunning clutch releases on upshift
## CLUTCH AND BAND APPLICATION CHART

<table>
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<tr>
<th>LOW (D)</th>
<th>LOW (1)</th>
<th>SECOND</th>
<th>DIRECT</th>
<th>REVERSE</th>
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<td>(Manual)</td>
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<td>REAR CLUTCH</td>
<td>REAR CLUTCH</td>
<td>REAR CLUTCH</td>
<td>REAR CLUTCH</td>
<td>FRONT CLUTCH</td>
</tr>
<tr>
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<td>KICKDOWN BAND</td>
<td>FRONT CLUTCH</td>
<td>LOW AND REVERSE BAND</td>
</tr>
</tbody>
</table>

In Position One, the rear clutch also engages. In this case, the low and reverse band applies and holds the transmission in low gear, assisting the overrunning clutch when accelerating and providing engine braking when decelerating.

**CLUTCH OVERRUNS ON SHIFT**
In a normal 1-2 upshift, the overrunning clutch simply overruns when the kickdown band applies to cause the shift. Because the overrunning clutch releases automatically as the kickdown band applies, the upshift is smoother than possible with bands alone.

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**CHART SHOWS CONDITIONS**
In the Clutch and Band Application Chart shown in this book, you can see that the rear clutch is engaged when the transmission is in Low, Second, and Direct Drive.

---

**Fig. 21—Locate slipping element by elimination**

**Fig. 22—Overrunning clutch can slip in D or 2**

**REAR CLUTCH IS COMMON ELEMENT**
When starting to move in D or Position 2, the rear clutch and the overrunning clutch work together. In Position 1 however, the rear clutch and the low and reverse band do the job. From this it follows that slipping, in Breakaway Low of D or 2 and in Manual Low of Position 1, is probably caused by the rear clutch. On the other hand, if there is slipping only during light acceleration in Breakaway Low but not in Position 1, the trouble is in the overrunning clutch.

**BAND APPLIES ONLY ON UPSHIFT**
In a normal 1-2 upshift, the rear clutch stays engaged and the kickdown band applies. Here, if the transmission does not slip in Breakaway Low, but does slip in Second, the cause is at the kickdown band and not in the rear clutch.
**SHIFT DELAY CAUSES THUMP**

If there is only a slight kickdown band slip, it can cause a short upshift delay with a noticeable thump as the kickdown band takes over from the overrunning clutch. The shift is usually harsh because engine speed is higher than normal when the band takes hold.

**LOW PRESSURE CAUSES SLIP**

Another condition to watch for is an engine speed flareup during the 2-3 upshift but no apparent slip in Direct Drive. This condition can mean that the throttle linkage setting is too short or that the front clutch is beginning to fail.

**LOOSE BAND LEAVES GAP**

Where the kickdown band slips badly or does not apply at all, the upshift will skip Second completely. When that happens, the overrunning clutch holds from Breakaway Low until car speed is high enough for a shift into Direct Drive.

**FRONT CLUTCH IS VARIABLE FACTOR**

Returning to the Clutch and Band Application Chart, you’ll notice that when the rear clutch is engaged in Low, Second, and Direct Drive, the front clutch engages only in Direct. From this we can deduce that when the transmission operates properly in Low and Second but slips in Direct Drive, the rear clutch is okay but the front clutch is faulty.
L-R BAND APPLIES IN REVERSE
We can follow the same logic for the Reverse position. In this setting, the front clutch and the Low and Reverse Band are applied. If there’s no slipping in Direct, but you do get slipping in Reverse, the Low and Reverse band is the probable cause.

FLAREUP CAUSES VARY
If you get engine speed flareup on a full throttle 3-2 kickdown, band adjustment may be the answer. However, where you notice a flareup during a 2-3 upshift, the cause could be clutch slipping as a result of a short throttle linkage setting or low system pressure.

PRESSURE TESTING

Road testing is mainly concerned with checking for slipping; early, late or erratic shift timing; and shift harshness. We check transmission operation in all ranges and then analyze the results to help narrow down the cause of trouble.

GET AT THE CAUSE
In our analysis, it would be shortsighted to blame slipping on a clutch when the basic cause is low hydraulic system pressure, so the next step in our process of elimination should be pressure testing.

PRESSURES MUST BE CORRECT
The main point here is to remember that when clutch or band failures result from low system pressure, new parts will also fail rapidly unless correct pressures are restored. Besides, pressure tests can give valuable clues about conditions which cause erratic operation.

OPERATING SYSTEM TESTS

Pressure tests will not tell you if the clutches and servos operate properly, but you can eliminate the hydraulic supply system as a possible source of trouble if the operating pressures are within specifications.

LOW PRESSURE CAUSES SLIPPING
When line pressure is low, the transmission slips in all forward speeds. The low pressure can result from low fluid level, leaky seals, low pump output, sticky valves, or a clogged filter.

CLOGGING DROPS OUTPUT
Pump output volume lowers gradually as the filter clogs and this reduction delays band application and clutch engagement, especially in Reverse. In some cases, replacing the fluid and filter will restore normal operation. But where this change and band adjustment does not do the trick, the transmission probably needs reconditioning.

ACCUMULATOR REDUCES HARSHNESS
Line pressure can also be low if there’s a leak...
at the accumulator. When this pressure is lower than normal, the accumulator does not cushion kickdown band application as it should, so you get harsh 1-2 upshifting.

**SERVO FOLLOWS LINE PRESSURE**

With the selector in the D Position, kickdown servo release pressure should follow line pressure closely as engine speed is raised and reduced to the check point. Low servo release pressure can indicate a leak at the front clutch seals, at the reaction shaft support seal rings, or at the kickdown servo rod guide.

**LEAKS DROP SERVO PRESSURE**

Another possible cause of low kickdown servo release pressure is a leak at the servo piston or guide seals. However, a leak at these points is hard to spot because both sides of the servo are pressurized in direct drive.

![SERVO LEAK CAUSES LOW L-R PRESSURE](image)

Fig. 30—Test L-R pressure only if kickdown is okay

**CHECK KICKDOWN PRESSURE FIRST**

If the tests show that kickdown servo release pressure is okay, you can then check the low and reverse pressure. A leak in the low and reverse servo can cause low pressure and slipping in reverse.

**CONTROL SYSTEM TESTS**

As we have seen, line pressure and servo pressures are directly related to the operation of the clutches and bands. In comparison, the throttle and governor pressures primarily affect shift timing and smoothness.

**BALANCE CONTROLS TIMING**

Shift timing is controlled by a balance between the two pressures. Throttle pressure increases as the gas pedal is pushed down and governor pressure increases as vehicle speed goes up.

**PRESSURE DIFFERENCE MOVES VALVES**

Both shift valves are moved to downshift position by spring and throttle pressure on one end, and in sequence, to their upshift positions by governor pressure on the opposite ends. Obviously, both pressures must be correct or the shift timing will be off.

**STICKY VALVE LIMITS PRESSURE**

If the throttle valve sticks for any reason, throttle pressure can remain low and cause early upshifts until full-throttle kickdown action mechanically forces the valve to move. When this happens, the valve breaks loose and the throttle pressure increases abruptly.

**LINKAGE SETTING ADJUSTS BALANCE**

Since the governor valve is not adjustable, the shift valve pressure balance depends largely on correct throttle linkage adjustment. Just remember that an extended linkage setting produces higher than normal pressure and delayed upshifts, while a short linkage setting causes low pressure and early upshifts.

**PRESSURE DROP ALLOWS DOWNSHIFT**

When the vehicle is stopped, the governor valve vents its hydraulic circuit and the pressure drops. Reduced governor pressure allows the shift valves to move to their downshift positions, putting the transmission in Breakaway Low.

**VENTING HOLDS PRESSURE DOWN**

If the governor valve sticks in the vented position, it prevents pressure buildup in the governor circuit. When this happens, the transmission does not upshift.

**HIGH PRESSURE DELAYS DOWNSHIFT**

In the opposite direction, when the governor valve is stuck in full pressure position, governor circuit pressure will be too high. In this case, upshifts are early or erratic and you won’t get normal downshifting action.

**PRESSURE OPERATES VALVES**

A sticky shift valve can also affect upshift and downshift timing. Since they are operated by throttle and governor pressure, sticky shift valves need more than normal pressure to make them move, so upshifts and downshifts are delayed.
assembly includes a throttle plug which provides part-throttle downshift action. If this plug is stuck, the shift valve can still operate but there will be no part-throttle downshift action.

**SHUTTLE VALVE MAY STICK**
The shuttle valve controls shifting smoothness. As with the throttle valve, there’s no positive way of checking shuttle valve operation by pressure testing. If shifting is erratic and linkage adjustments or overall pressure tests do not give the answers, a sticky shuttle valve may be the cause.

**AND LAST BUT NOT LEAST**
Lubrication system pressure should be up to specifications when you check out line pressure and servo release pressure. This check should also be made after a transmission overhaul, a system clean-out, or following cooler system repairs.

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**TEST QUESTIONS**

1. Slipping and erratic shifting can result from several conditions however, in all cases the first thing to check should be:
   A. Linkage settings.
   B. Fluid level and condition.
   C. Breather vent condition.

2. If the fluid and linkage check out okay but you get clutch or band slippage on a road test, pressure testing will tell you if:
   A. Clutches and servos operate properly.
   B. Hydraulic system pressures are correct.
   C. Band adjustment is needed.

3. If the gas pedal is pushed down farther than normal to compensate for below-par engine output, the transmission throttle valve moves:
   A. Less than normal — causes early shifting.
   B. More than normal — causes late shifting.
   C. More than normal — causes early shifting.

4. After a drain and refill, the range selector should be shifted through all positions with the engine running to make sure that all hydraulic circuits are full when the fluid level is checked.
   True ___________ False ___________

5. Where internal inspection reveals heavy varnish deposits, a fluid and filter change is all that is needed to clear up sticky valve problems.
   True ___________ False ___________

6. Checking the range selector linkage adjustment is easy because normal operation of the starter safety switch coincides with correct positioning of the Manual valve in the transmission.
   True ___________ False ___________

7. In a normal 1-2 upshift, the rear clutch stays engaged and the kickdown band applies. If the transmission does not slip in Breakaway Low, but does slip in Second, the cause is in the rear clutch.
   True ___________ False ___________

8. The rear clutch engages in Low, Second and Direct Drive but the front clutch engages only in Direct. If Low and Second operate properly but there is slipping in Direct Drive, the trouble is in the front clutch.
   True ___________ False ___________

9. Since the governor valve is not adjustable, the shift valve pressure balance depends largely on correct throttle linkage adjustment.
   True ___________ False ___________

10. Where the kickdown band slips badly or does not apply at all, there will be no upshift at any speed.
    True ___________ False ___________
FLUID LEVEL & CONDITION:
- Fluid level should be between FULL and ADD ONE PINT
- Low fluid level admits air, can cause delayed engagement, slipping, overheating and noise
- High fluid level causes foam and fluid loss, can form varnish
- Dark, muddy fluid with burned smell indicates overheating and worn friction material
- Milky fluid indicates coolant leak
- Varnish makes dipstick hard to wipe clean

LINKAGE ADJUSTMENTS:
If Selector Linkage setting is off . . .
- Car may creep in Neutral
- Starter may not operate with selector in Neutral or Park positions
- Parking sprag may not hold
If Throttle Linkage is set too short . . .
- Upshifting is early
- Engine speed may flare up on 2-3 upshift
- No full-throttle kickdown response
If Throttle Linkage is set too long . . .
- Upshifts are delayed and harsh
- Part-throttle downshift operation is sensitive

CLUTCH AND BAND CONDITIONS:
- D Position . . . Car gets underway in Breakaway Low: then upshifts to 2nd and Direct
- 2 Position . . . Same as in D but upshifts only to 2nd
- 1 Position . . . Limited to Low
In D or Position 2 . . .
- Rear clutch applies and overrunning clutch holds during breakaway acceleration
- Overrunning clutch releases on deceleration
- No engine braking in Breakaway Low
In Position 1 . . .
- Rear clutch engages, low-reverse band applies
- Overrunning clutch does not operate
- Full engine braking is available during coast-down
In Reverse . . .
- Front clutch engages, low-reverse band applies

ROAD TESTING:
In D and Position 1 rear clutch is engaged . . .
- Slipping in Drive Breakaway Low and Position 1 points to rear clutch
- Slipping only in Drive Breakaway Low indicates trouble in overrunning clutch
In a 1-2 upshift, rear clutch stays on and kickdown band applies . . .
- Slipping in 2nd but not in Breakaway Low results from kickdown band trouble
- When kickdown band slips badly or does not apply, upshift skips 2nd
- If band only slips a little, there’s a short upshift delay followed by a bump
In Direct Drive both clutches are engaged . . .
- The front clutch engages only when in direct drive and reverse
- Slipping in direct drive but not in 2nd and Low is caused by front clutch
- Engine speed flareup only during 2-3 upshift may indicate failure starting in front clutch
In Reverse, front clutch and low-reverse band are applied . . .
- Slipping in Reverse but not in direct drive points to Low-Reverse band

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