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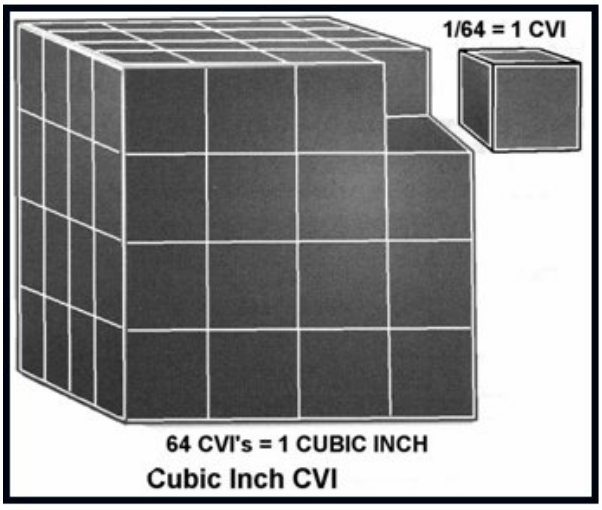
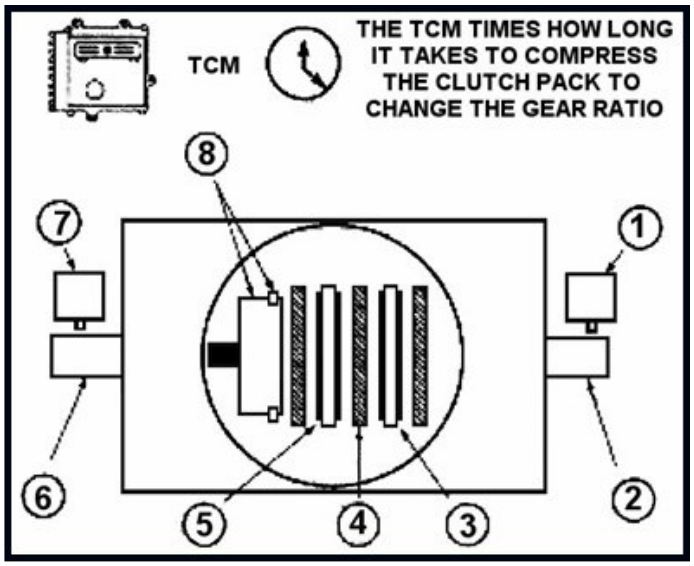
Understanding Clutch Volume Index (CVI)

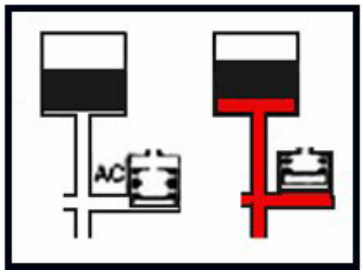
CVI is the measurement of the physical amount of fluid required to fill the clutch and stroke the piston. CVIs are in general updated when a clutch is applied. These measurements require the use of speed sensing devices (input and output speed sensors).

Note: 1 (one) CVI is equal to 1/64 of a cubic inch of transmission fluid (64 CVIs would equal one square inch of oil). Gear Ratios are determined by monitoring change in speed rotations of input signals from the Input and Output speed sensors. By comparing the two inputs, the TCM determines not only which gear you are in but also the CVI monitor value. These values are based on how long it takes to complete a gear change.





1	OUTPUT SPEED SENSOR	5	FRICTION DISCS
2	OUTPUT SHAFT	6	INPUT SHAFT
3	CLUTCH PACK	7	INPUT SPEED SENSOR
4	SEPARATOR PLATE	8	PISTON AND SEAL



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Understanding Clutch Volume Index (CVI) (continued)

Electronically, the upshifts are performed by timing the venting of the releasing clutch to the filling of the applying clutch. The releasing clutch must lose its holding capacity at the same time the applying clutch gains holding capacity. Proper CVI values are critical to properly perform upshifts.

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CLUTCH VOLUMES		
Clutch	**When Updated**	**Proper Clutch Volume**
L/R	2-1, 3-1 or 4-1 downshift.	45 to 134
2C	4-3 or 3-2 downshift.	25 to 85
2C Alternate	5-6 upshift	25 to 85
OD	3-4 upshift	30 to 100
4C	4-5 upshift	30 to 85
4C Alternate	2-3 upshift	30 to 85
UD	5-4 or 6-4 kickdown shift	30 to 100

Each accumulator has the holding value of 64 CVIs. If the measurement of oil passing through the valve passageways and applying the holding clutch element was an additional 64 CVIs that would give a value of 128 CVIs (Too High). The accumulator CVIs are not taken into consideration when the scan data is shown, only the clutch volume (applying oil) is which would be 64.