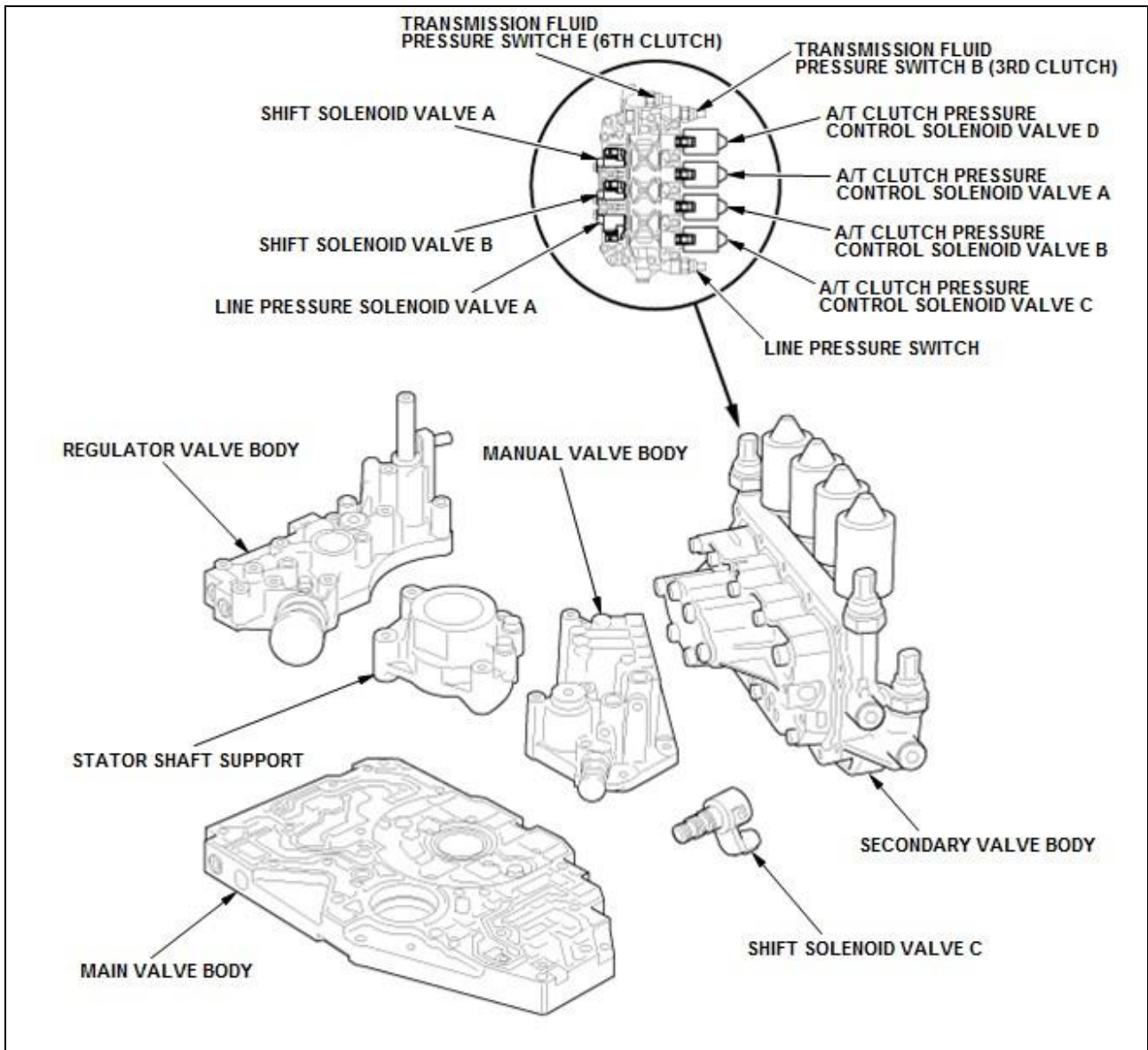


DESCRIPTION > A/T SYSTEM DESCRIPTION - HYDRAULIC CONTROLS (2013-18)

The valve bodies include the main valve body, the regulator valve body, the secondary valve body, the stator shaft support, and the manual valve body. The ATF pump is driven by splines on the end of the torque converter which is attached to the engine. Fluid flows through the main regulator valve to maintain specified pressure through the manual valve body, directing pressure to each of the clutches. The hydraulic control body is attached to the secondary valve body, which includes the main shift hydraulic circuit, the solenoid valves, the hydraulic pressure switches, etc. to shorten the fluid passage and optimize the hydraulic pressure. The secondary valve body has shift solenoid valves A and B, line pressure solenoid valve A, the line pressure switch, transmission fluid pressure switch B (3rd clutch), transmission fluid pressure switch E (6th clutch), and automatic transmission (A/T) clutch pressure control solenoid valves A, B, C, and D, and is mounted to the transmission housing. Shift solenoid valve C is mounted to the torque converter housing.

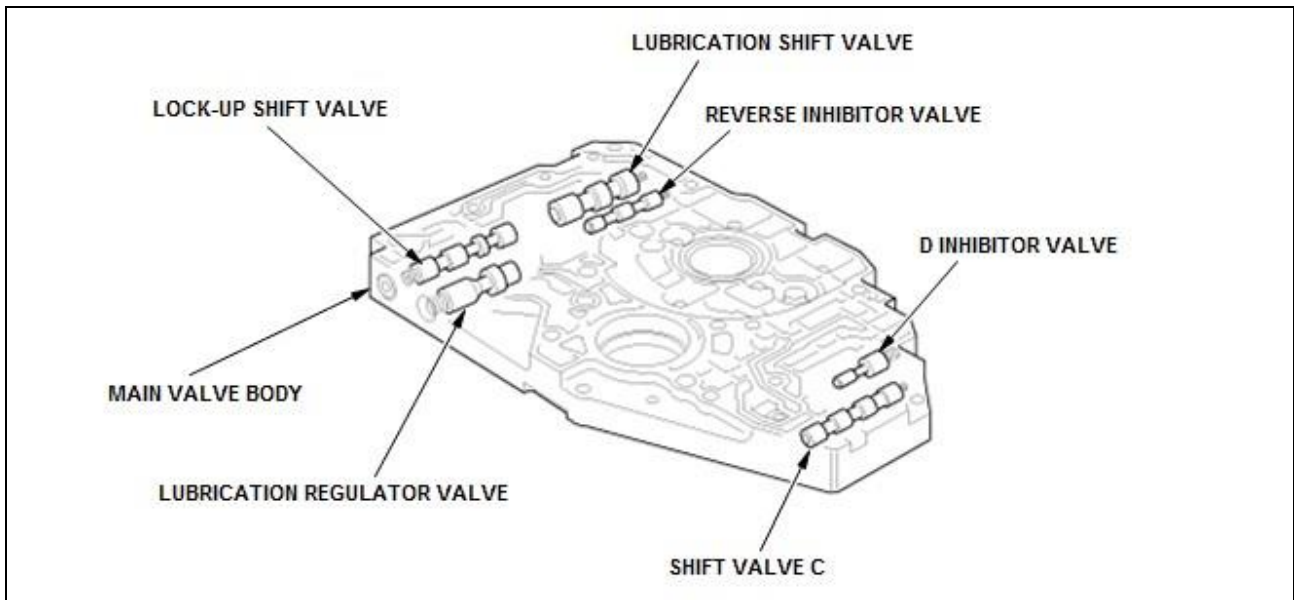




Courtesy of HONDA, U.S.A., INC.

Main Valve Body

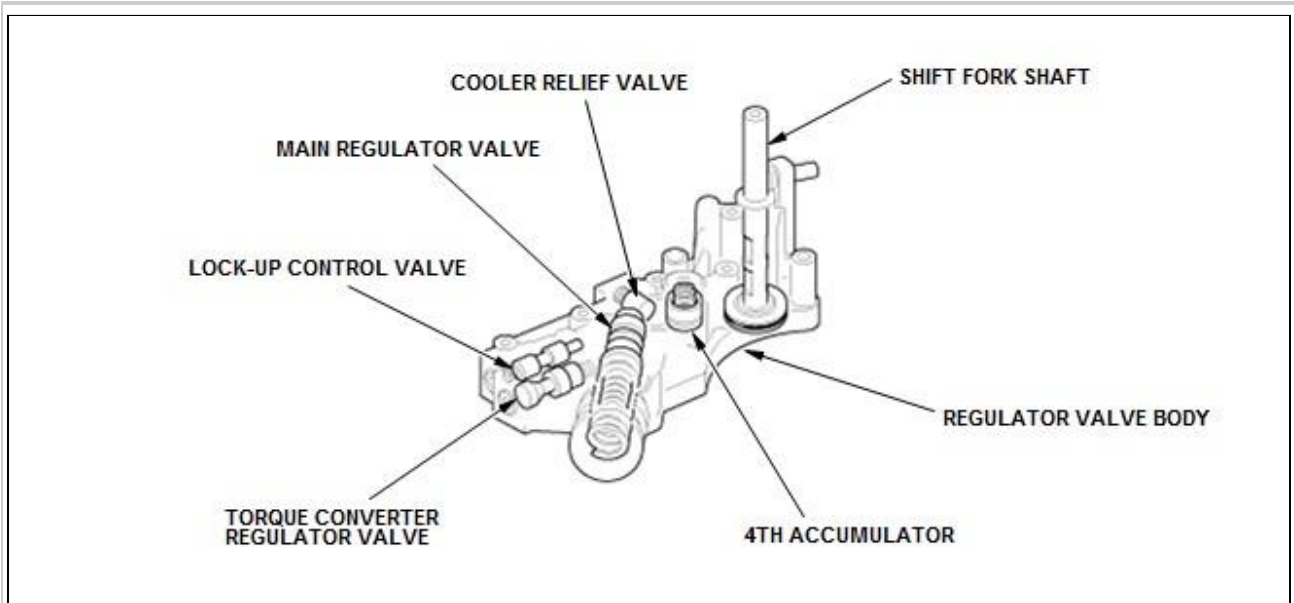
The main valve body contains shift valve C, the D inhibitor valve, the reverse inhibitor valve, the lock-up shift valve, the lubrication regulator valve, the lubrication shift valve, the ATF pump drive gear, and the ATF pump driven gear. The primary function of the main valve body is to switch hydraulic pressure ON and OFF to control the hydraulic control system.



Courtesy of HONDA, U.S.A., INC.

Regulator Valve Body

The regulator valve body is located on the main valve body. The regulator valve body contains the main regulator valve, the cooler relief valve, the torque converter regulator valve, the lock-up control valve, the shift fork shaft, and the 4th accumulator.

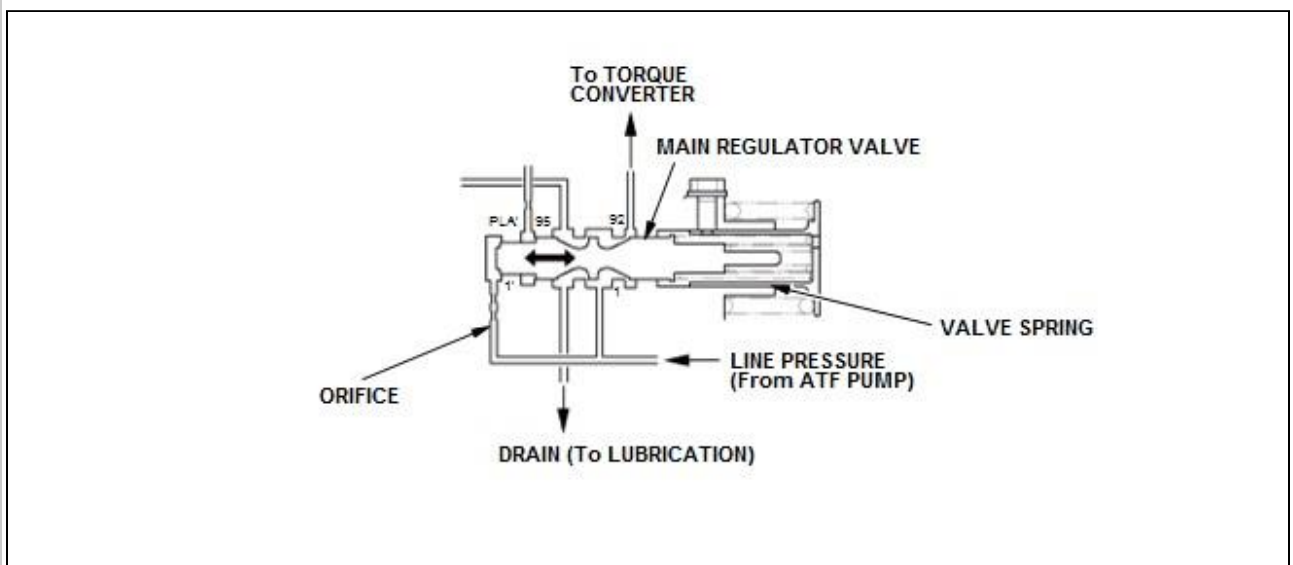


Courtesy of HONDA, U.S.A., INC.

Main Regulator Valve

The main regulator valve maintains constant hydraulic pressure from the ATF pump to the hydraulic control system, while also providing fluid to the torque converter and the lubrication system. Fluid from ATF pump flows through the 1' cavity and the 1' cavity of the main regulator valve. Then the fluid entered in the 1' cavity pushes the main regulator valve to the spring side, this movement uncovers the fluid ports to the torque converter and the lubrication system on the main regulator valve. The fluid flows out to the torque converter and the lubrication system, then the main regulator valve returns under spring

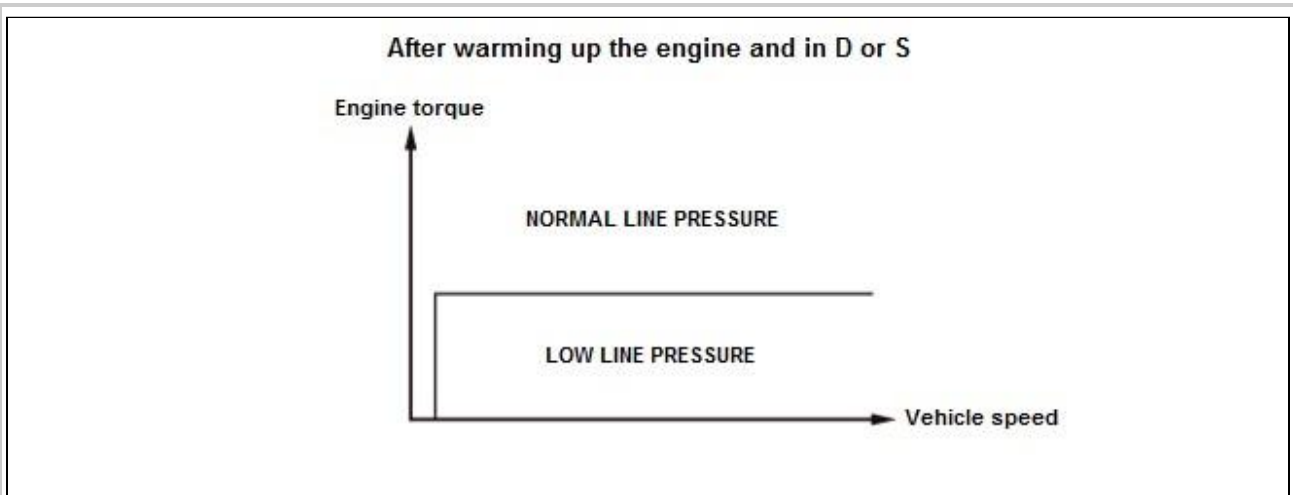
force when the pressure in the 1' cavity of the main regulator valve is lowered below that in the 1 cavity, which covers the fluid ports to the torque converter and the lubrication system. According to the level of the hydraulic pressure through the 1' cavity, the position of the main regulator valve changes, and the amount of fluid from the 1 cavity through the torque converter changes. This operation is continued maintaining the line pressure.



Courtesy of HONDA, U.S.A., INC.

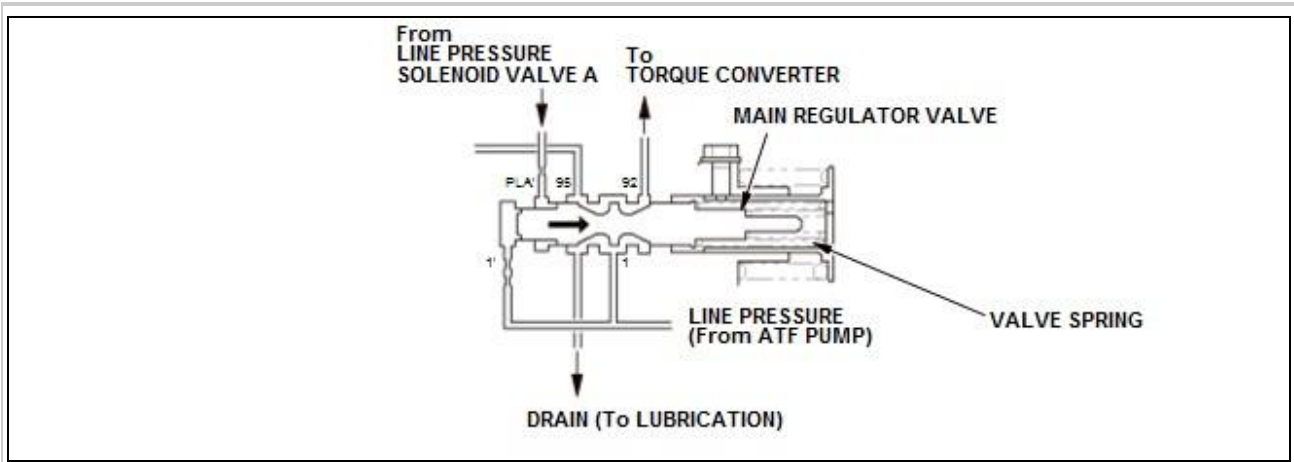
Line Pressure Control During Low Loading

Both in D or S under low engine load condition after warming up the engine and in all ranges (P, R, N, D, or S) under the low ATF temperature condition, the PCM operates line pressure solenoid valve A, and switches the line pressure to a pressure that is lower than normal. This operation can reduce the friction in the transmission.



Courtesy of HONDA, U.S.A., INC.

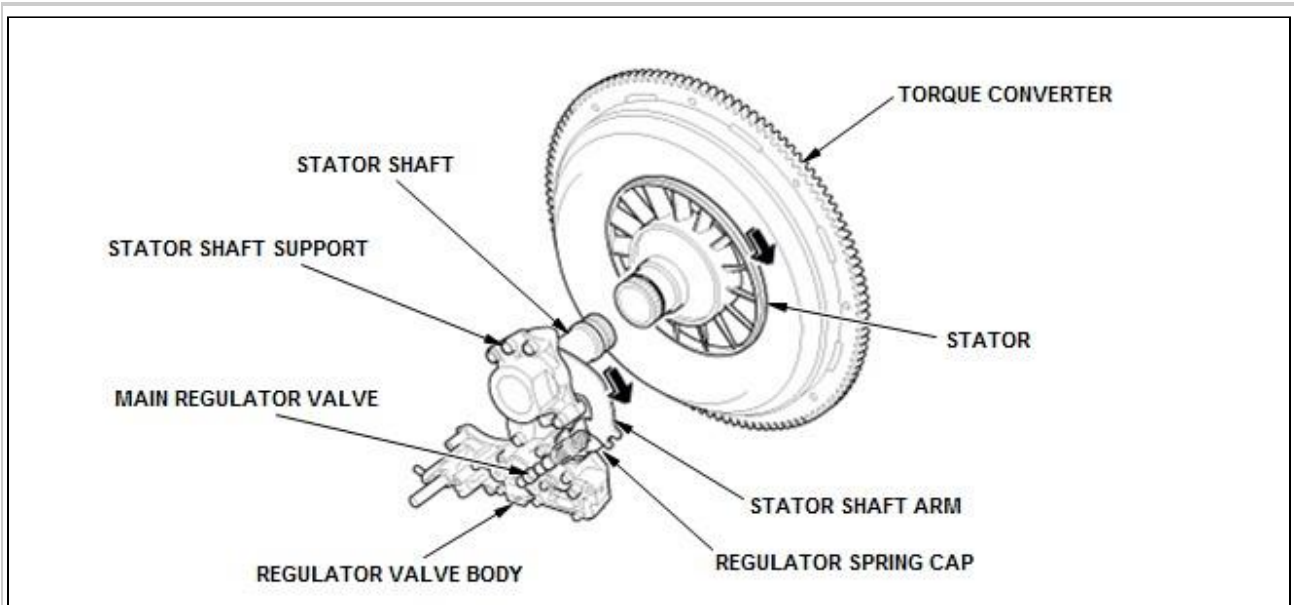
The PCM turns line pressure solenoid valve A ON, and applies the hydraulic pressure to the PLA' cavity on the main regulator valve. When hydraulic pressure is applied to the PLA' cavity, the main regulator valve is pushed to the spring side. This operation reduces the drain port of the main regulator valve, and causes the line pressure to be lower than normal.



Courtesy of HONDA, U.S.A., INC.

Line Pressure Control During High Loading

Increases in hydraulic pressure according to torque are regulated by the main regulator valve using stator torque reaction. The stator shaft is splined to the stator in the torque converter, and the stator shaft arm end contacts the regulator spring cap. When the vehicle is accelerating or climbing (torque converter range), stator torque reaction occurs on the stator shaft, and the stator shaft arm pushes the regulator spring cap in the direction of the arrow in proportion to the reaction. The stator reaction spring compresses, and the main regulator valve moves to increase the line pressure which is regulated by the main regulator valve. The line pressure reaches its maximum pressure when the stator torque reaction reaches its maximum position.

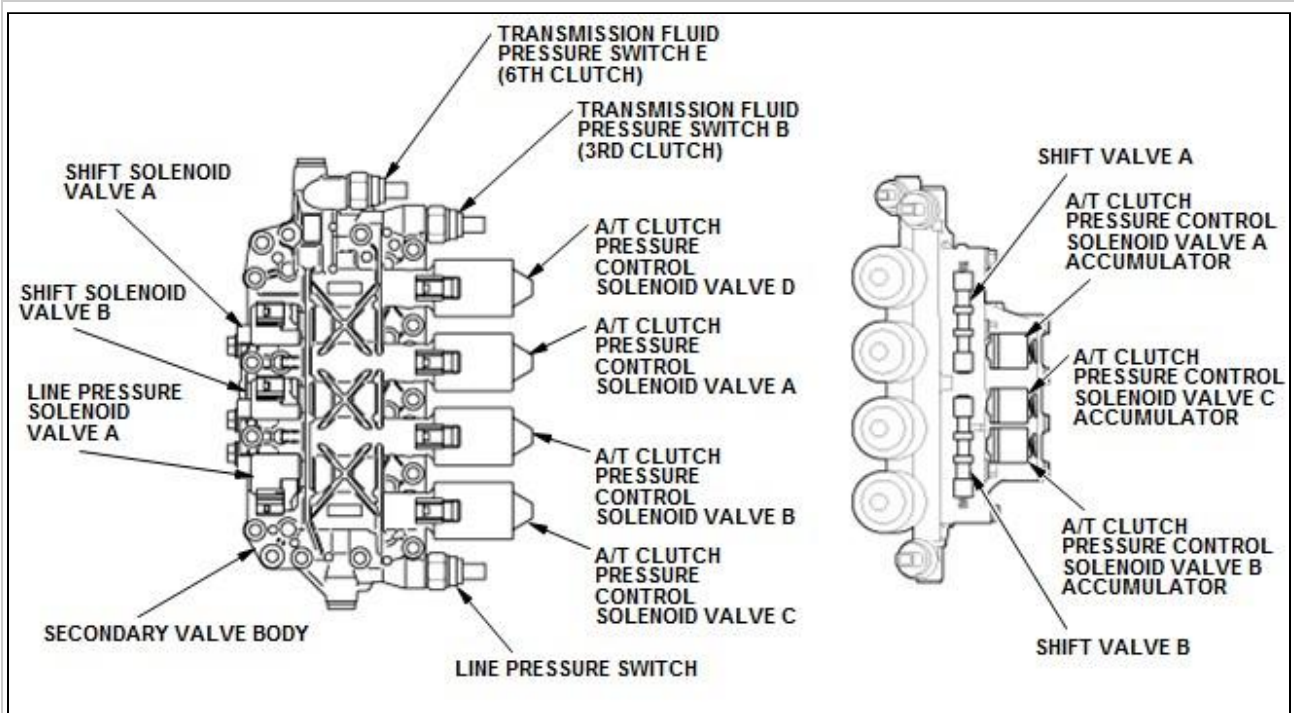


Courtesy of HONDA, U.S.A., INC.

Secondary Valve Body

The secondary valve body contains the main shift hydraulic circuit, the solenoid valves, the hydraulic pressure switches, etc. The secondary valve body consists of shift solenoid valves A and B, line pressure solenoid valve A, A/T clutch pressure control solenoid valves A, B, C, and D, shift valves A and B, the A/T clutch pressure control solenoid valve A accumulator, the A/T clutch pressure control solenoid

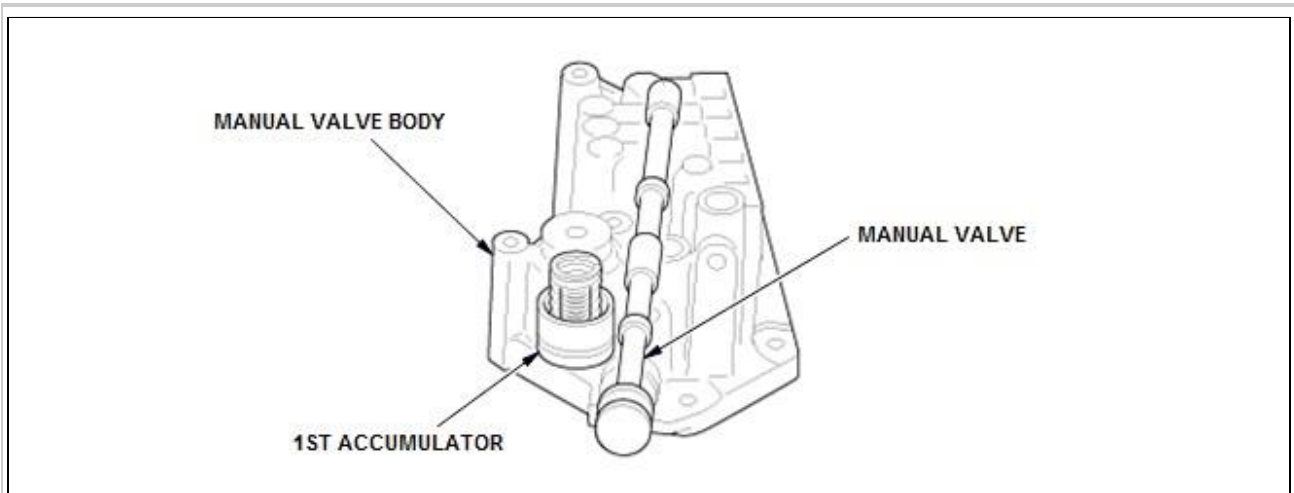
valve B accumulator, the A/T clutch pressure control solenoid valve C accumulator, the line pressure switch, transmission fluid pressure switch B (3rd clutch), and transmission fluid pressure switch E (6th clutch). The secondary valve body is mounted on the transmission housing.



Courtesy of HONDA, U.S.A., INC.

Manual Valve Body

The manual valve body is located on the main valve body; it contains the 1st accumulator and the manual valve.



Courtesy of HONDA, U.S.A., INC.