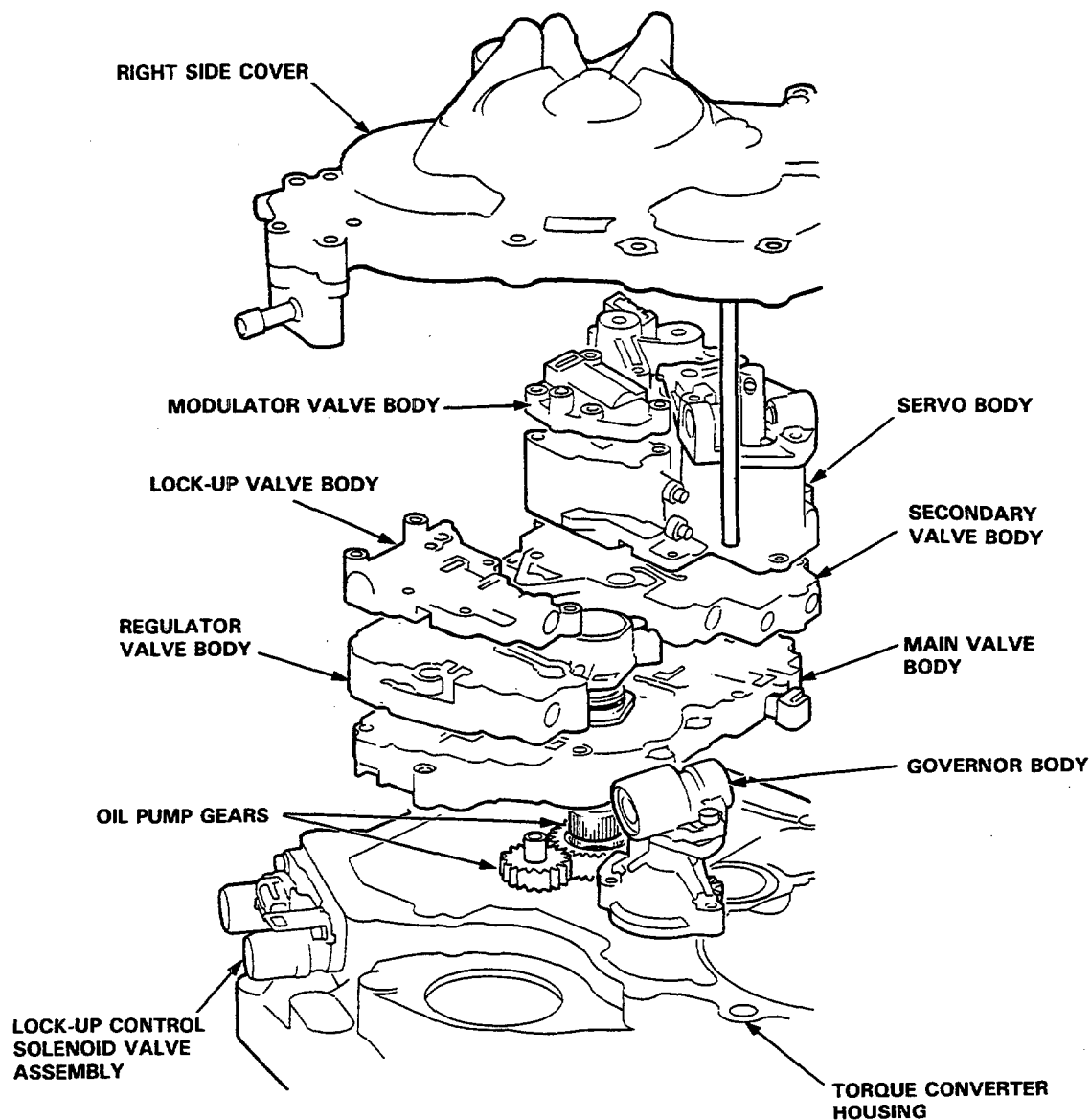


Description

Hydraulic Control

The valve bodies include the main valve body, secondary valve body, regulator valve body, servo body, lock-up valve body, governor body and modulator valve body.

The oil pump is driven by splines behind the torque converter which is attached to the engine. Oil flows through the regulator valve to maintain specified pressure through the main valve body to the manual valve, directing pressure to each of the clutches.

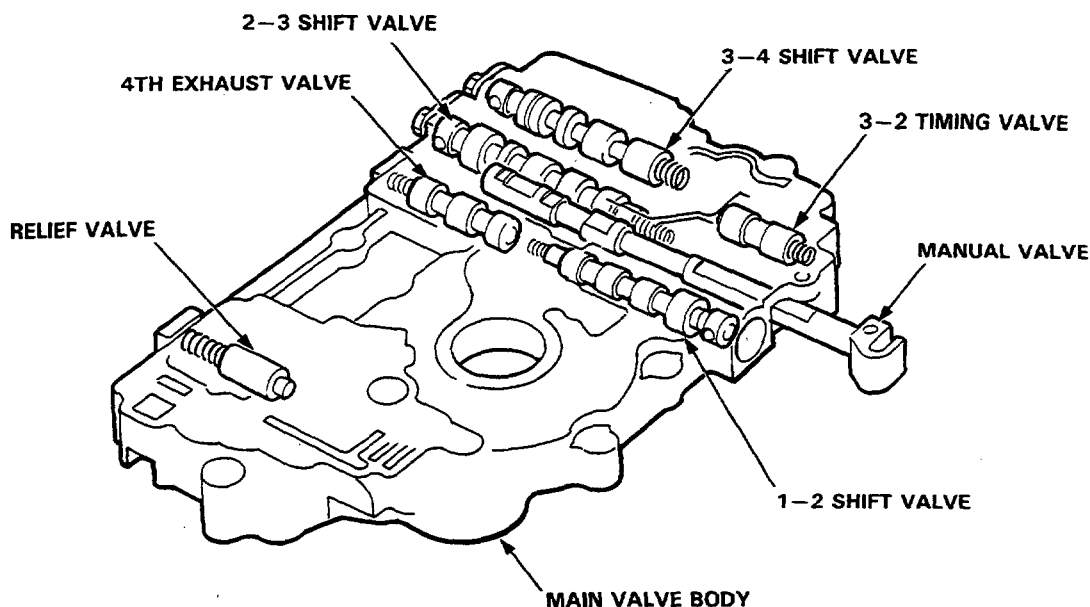




Main Valve Body

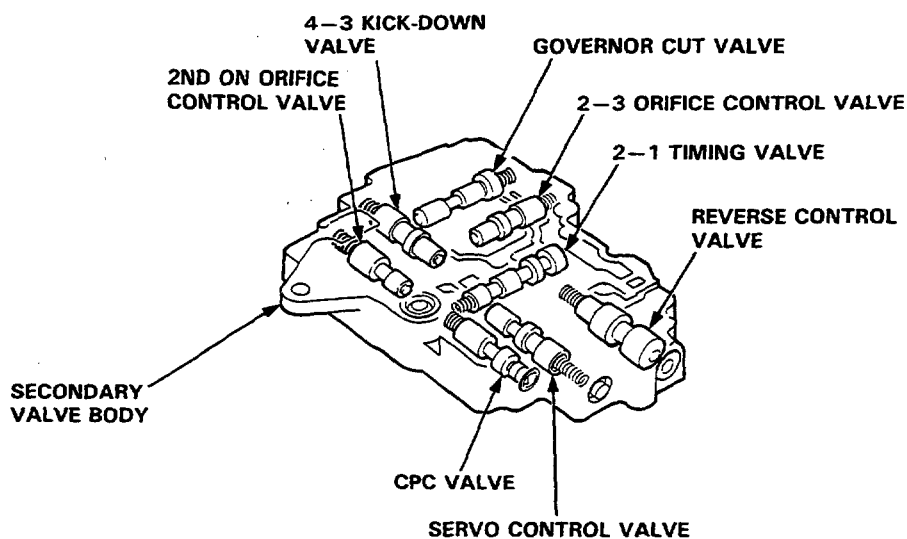
The manual valve, 1-2 shift valve, 2-3 shift valve, 3-4 shift valve, 4th exhaust valve, 3-2 timing valve, and relief valve are all assembled in the main valve body.

The primary function of this valve body is to switch oil passages on and off and to control the hydraulic pressure going to the hydraulic control system.



Secondary Valve Body

The secondary valve body is located on the main valve body. The 2nd ON orifice control valve, 4-3 kick-down valve, 2-3 orifice control valve, governor cut valve, 2-1 timing valve, reverse control valve, servo control valve, and clutch pressure control (CPC) valve are assembled in the secondary valve body.



(cont'd)

Description

Hydraulic Control (cont'd)

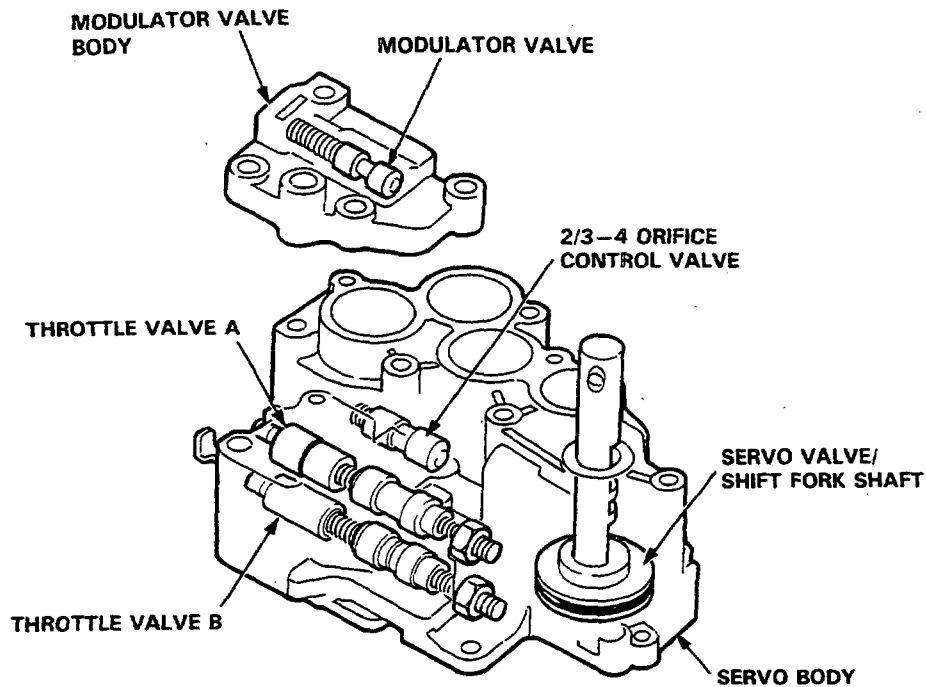
Servo Body

The servo body is located on the secondary valve body.

The servo valve which is integrated with the shift fork shaft, throttle valve A and B, 2/3-4 orifice control valve, and accumulator pistons are all assembled in the servo body.

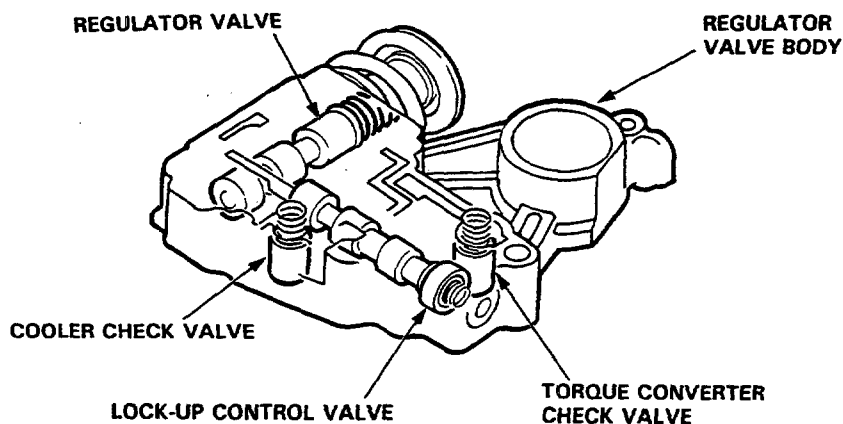
Modulator Valve Body

The modulator valve body with the modulator valve is located on the servo body.



Regulator Valve Body

The regulator valve body is located on the main valve body. The regulator valve body consists of the regulator valve, torque converter check valve, cooler check valve, and lock-up control valve.



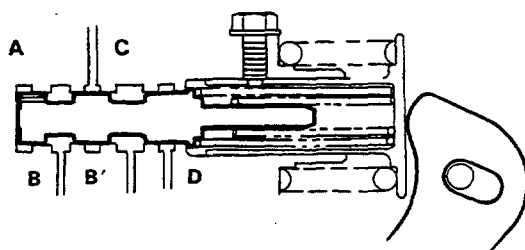


Regulator Valve

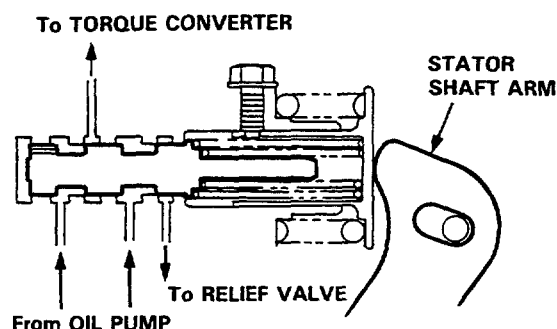
The regulator valve maintains a constant hydraulic pressure from the oil pump to the hydraulic control system, while also furnishing oil to the lubricating system and torque converter.

Oil flows through B and B'. The oil which enters through B flows through the valve orifice to A, pushing the regulator valve to the right. According to the level of hydraulic pressure through B, the position of the valve changes, and the amount of the oil through B' from D thus changes. This operation is continued, thus maintaining the line pressure.

(ENGINE NOT RUNNING)

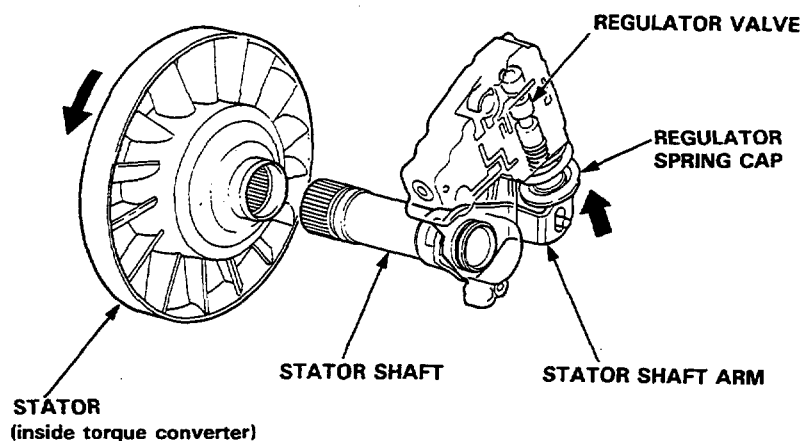


(ENGINE RUNNING)



Stator Reaction Hydraulic Pressure Control

Hydraulic pressure increase, according to torque, is performed by the regulator valve using stator torque reaction. The stator shaft is splined to the stator and its arm end contacts the regulator spring cap. When the car is accelerating or climbing (Torque Converter Range), stator torque reaction acts on the stator shaft and the stator shaft arm pushes the regulator spring cap in this → direction in proportion to the reaction. The spring compresses and the regulator valve moves to increase the regulated control pressure or line pressure. Line pressure is maximum when the stator reaction is maximum.



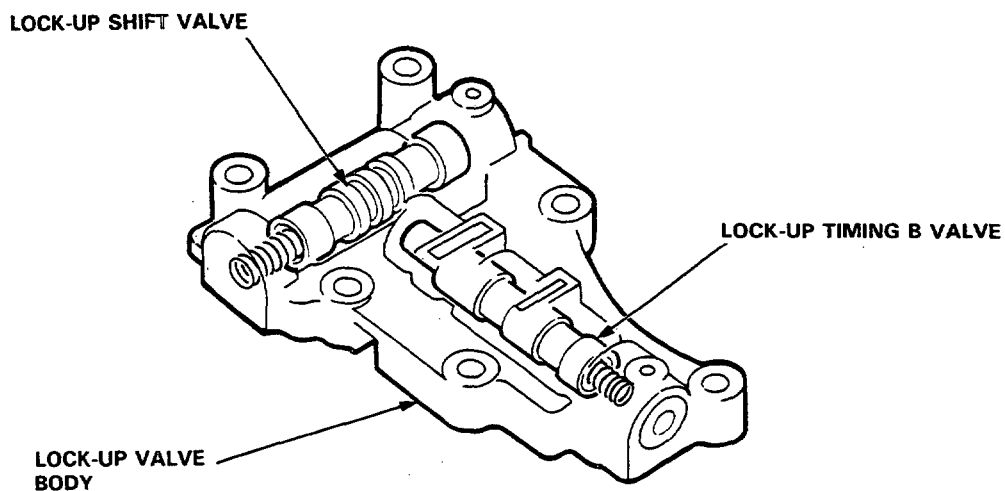
(cont'd)

Description

Hydraulic Control (cont'd)

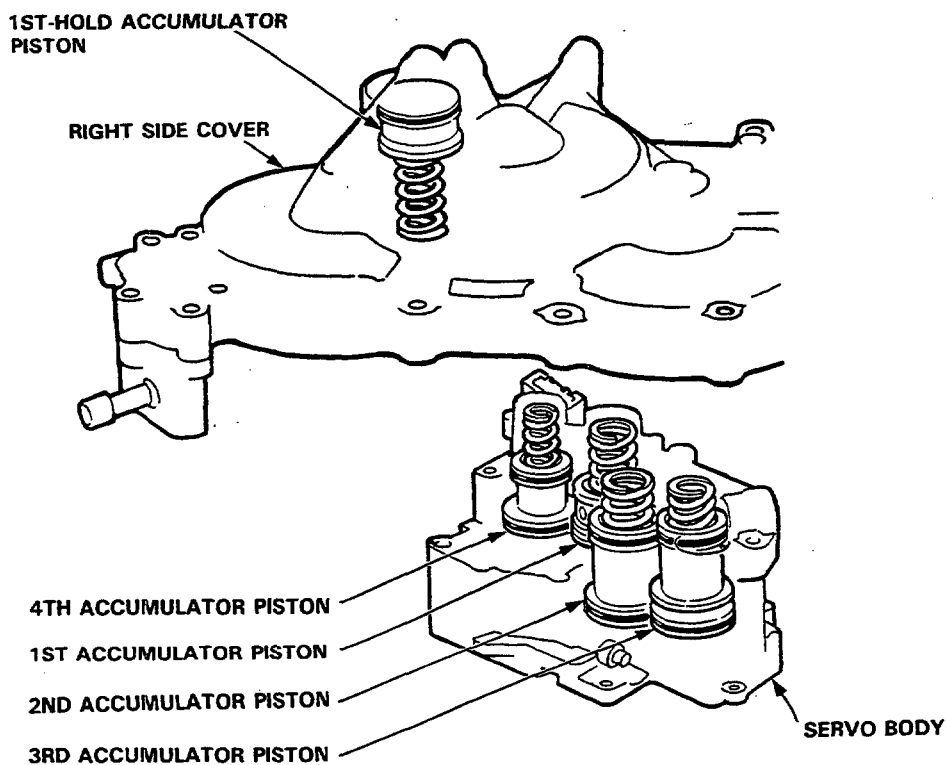
Lock-up Valve Body

The lock-up valve body with the lock-up shift valve and lock-up timing B valve is located on the regulator valve body.



Accumulator Pistons

The accumulator pistons are built into the servo body and right side cover. The 1st-hold accumulator piston is in the right side cover, and the 1st, 2nd, 3rd, and 4th accumulator pistons are built in the servo body.





Governor Valve

The governor valve generates hydraulic pressure depending on the car speed. The governor valve generates high pressure when the car speed is high, and low pressure when the car speed is low.

The governor valve-generated pressure acts on the shift valve and is one of the two causes of automatic speed change. The governor gear meshes with the final gear, rotates the governor shaft and operates the governor valve using centrifugal force. The governor valve receives the line pressure. Adjusting this line pressure causes governor pressure to be generated. This pressure is thus adjusted to the value that balance with the power generated by the centrifugal force of the primary, secondary and third weights (centering around the rotation axis) depending on the force due to the difference between the governor valve diameters and the number of revolutions. This number of revolutions depends on car speed. Governor pressure increases as car speed increases.

