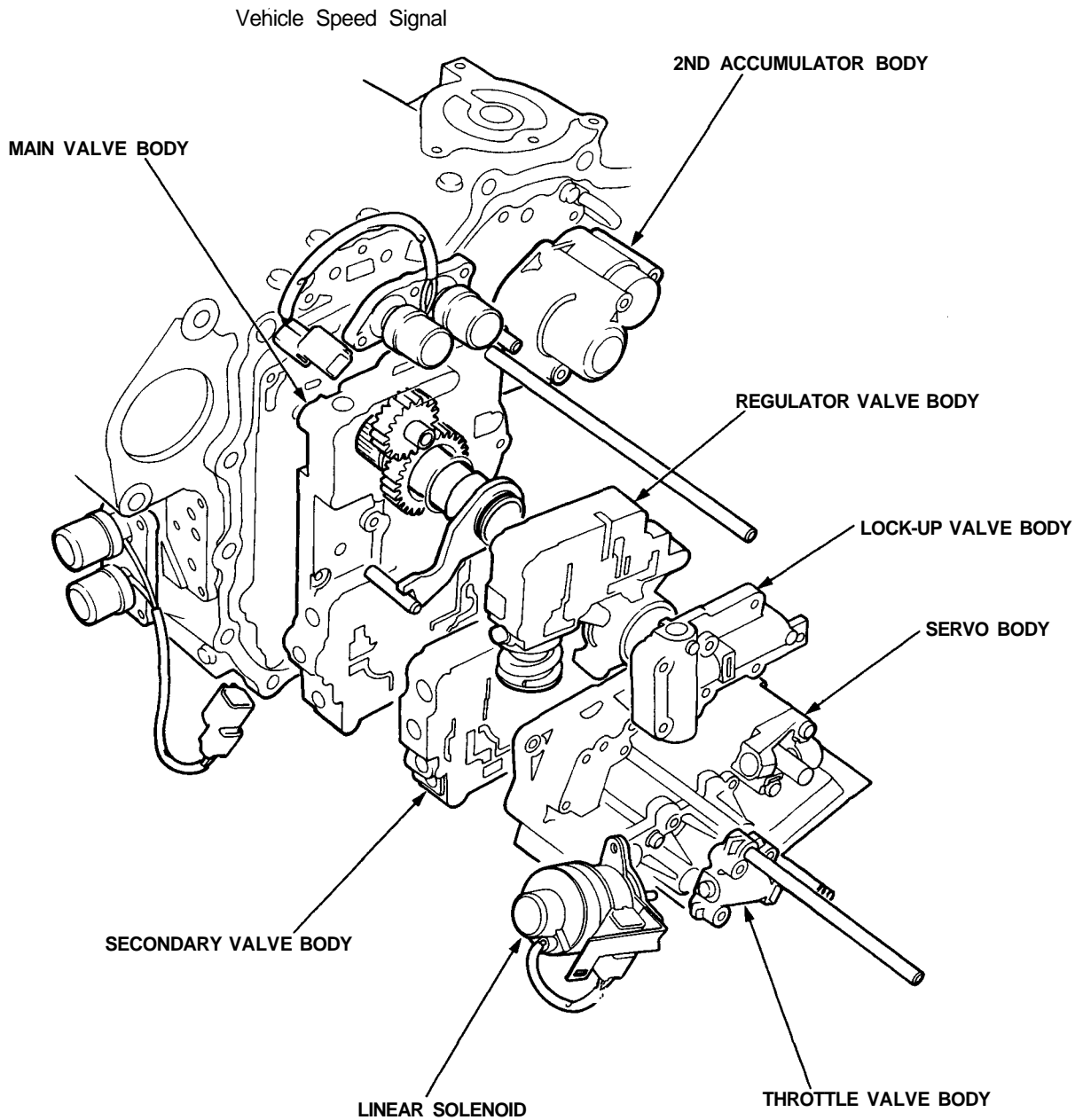


# Description

## Hydraulic Control

The valve bodies include the main valve body, regulator valve body, lock-up valve body, secondary valve body, servo body, throttle valve body and 2nd accumulator body.

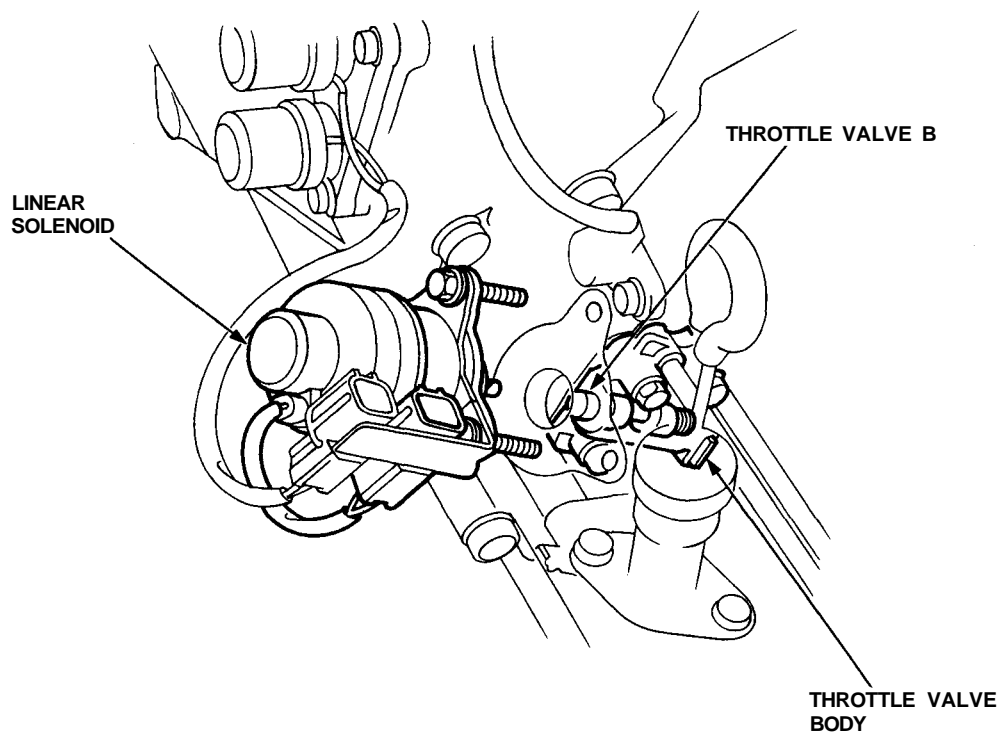
The oil pump is driven by splines on the left end of the torque converter which is attached to the engine. Oil flows through the regulator valve to maintain specified pressure through the main valve body to the manual valve, and the servo body, directing pressure to each of the clutches.





### Throttle Valve Body

The throttle valve body is mounted on the servo valve body with the throttle valve built in.

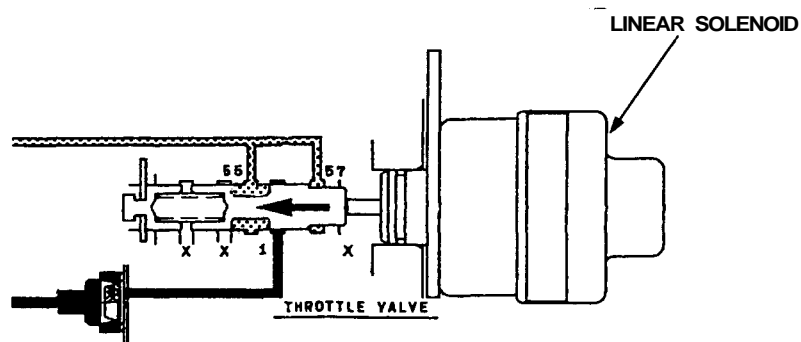


### Throttle Valve B, Linear Solenoid

Throttle valve B converts changes in the throttle opening to changes in transmission hydraulic pressure, to determine transmission shift quality and lock-up operation. The throttle valve B also operates on accumulator back pressure to make smooth changes from one gear to another.

The end of the valve contacts the linear solenoid which is controlled by the TCM.

The throttle pedal load has been reduced by eliminating the cable.



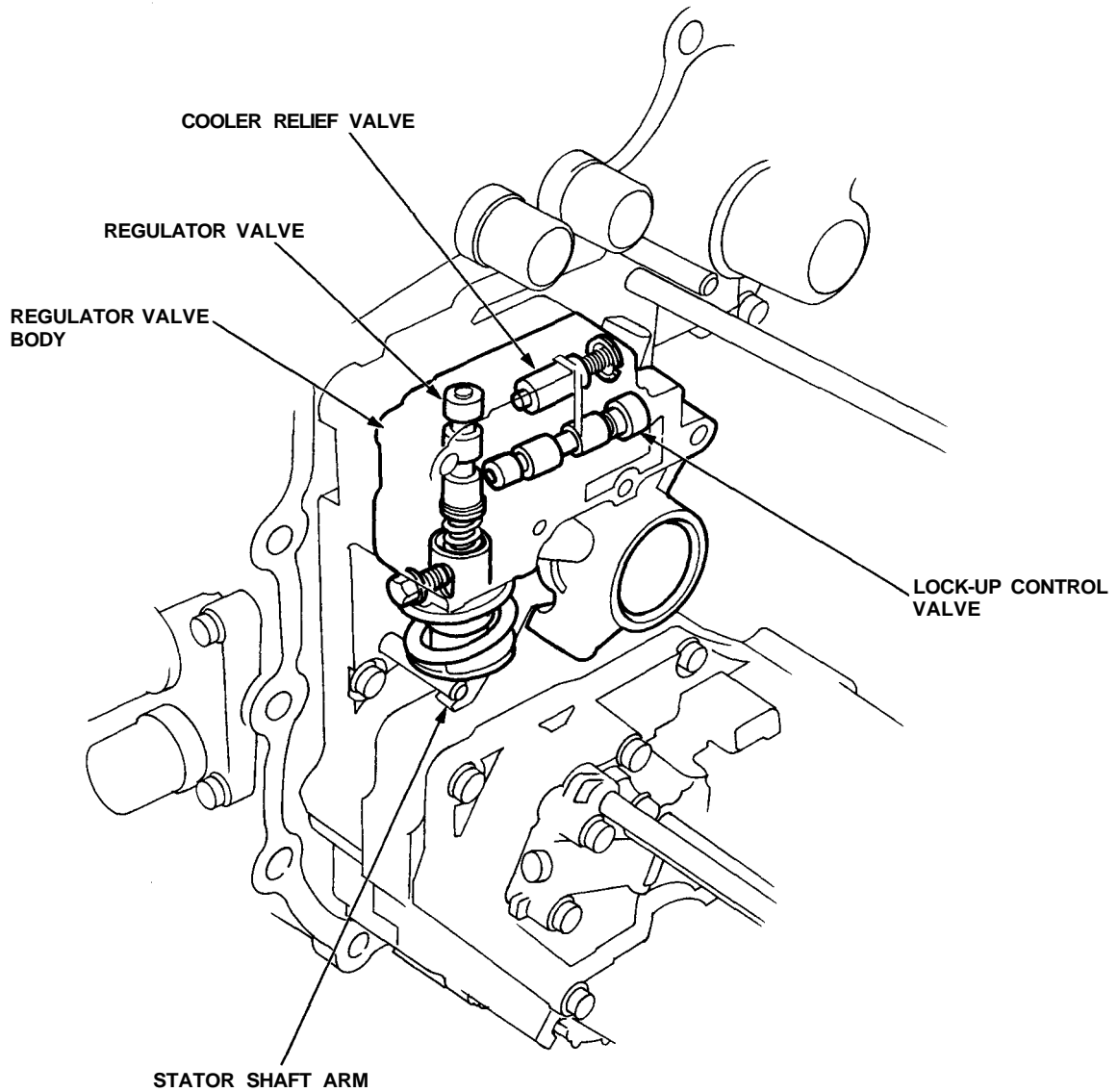
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# Description

## Hydraulic Control (cont'd)

### Regulator Valve Body

The regulator valve body is mounted on the main valve body with the regulator valve, lock-up control valve and cooler relief valve built in. The stator shaft arm contacts the end of the regulator valve. The hydraulic pressure (line pressure) is controlled by the regulator valve.

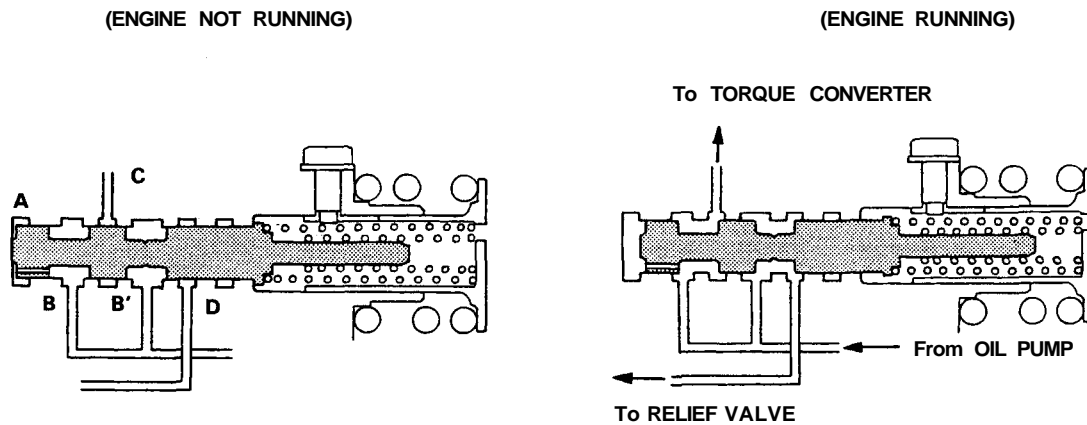




## Regulator Valve

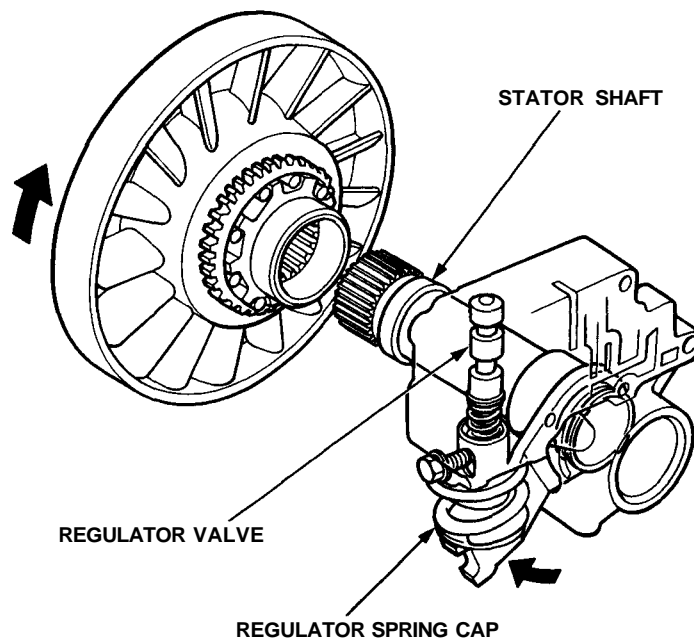
The regulator valve maintains a constant hydraulic pressure sent from the oil pump to the hydraulic control system, while also furnishing oil to the lubricating system and torque converter.

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 also changes. This operation is continued, maintaining line pressure.



## 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 in 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 arm pushes the regulator spring cap in this → direction in proportion to the reaction. The spring compresses and the valve moves to increase the regulated control pressure or line pressure. Line pressure is maximum when the stator reaction is maximum.



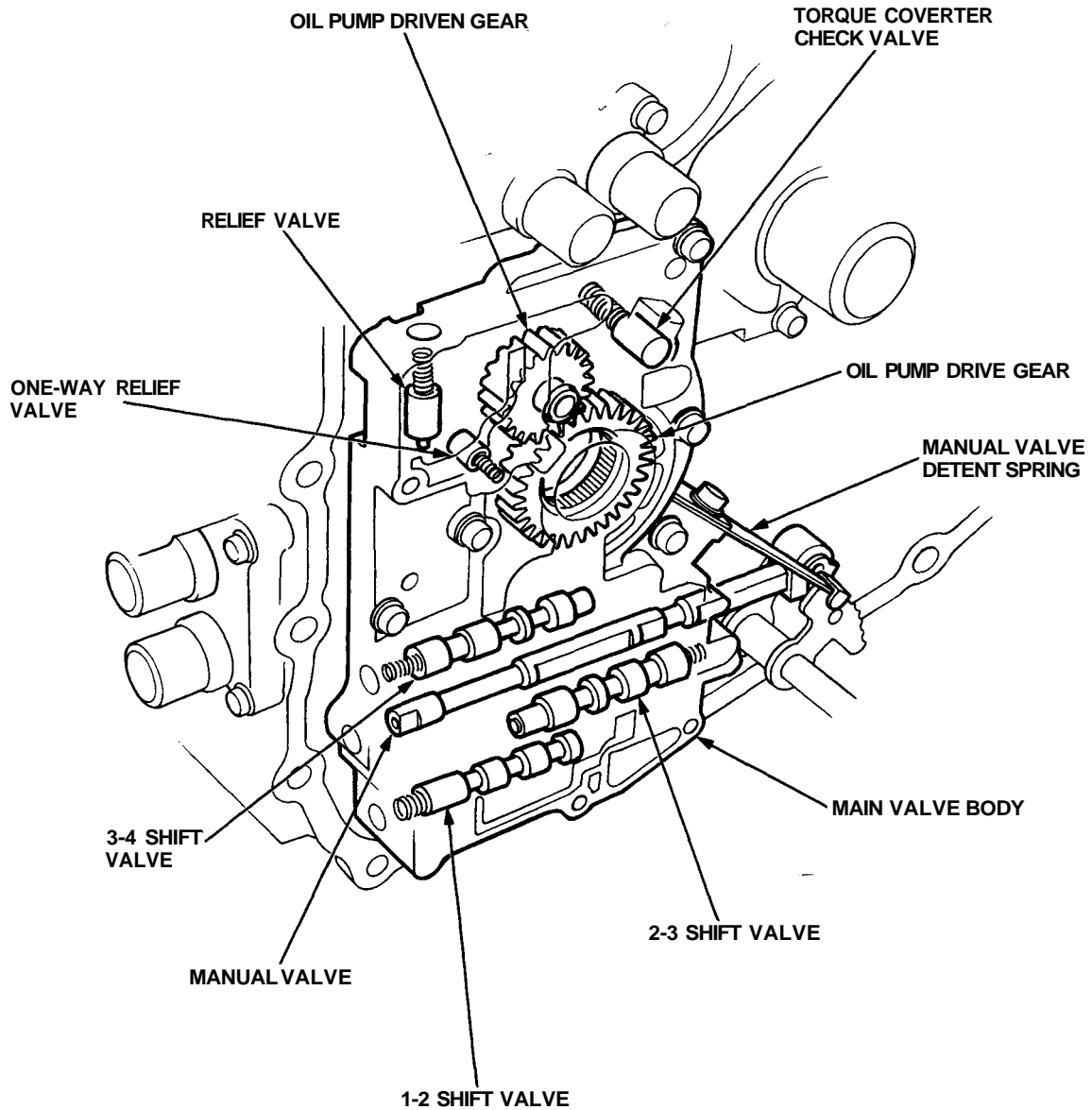
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# Description

## Hydraulic Control (cont'd)

### Main Valve Body

The main valve body is located on the torque converter housing. The oil pump gear, torque converter check valve, manual valve, 1—2, 2—3, 3—4 shift valves, relief valve and one-way relief valve are all built into the main valve body. The primary function of this valve body is switching on and off oil passages and controlling the hydraulic pressure going to the hydraulic control system.



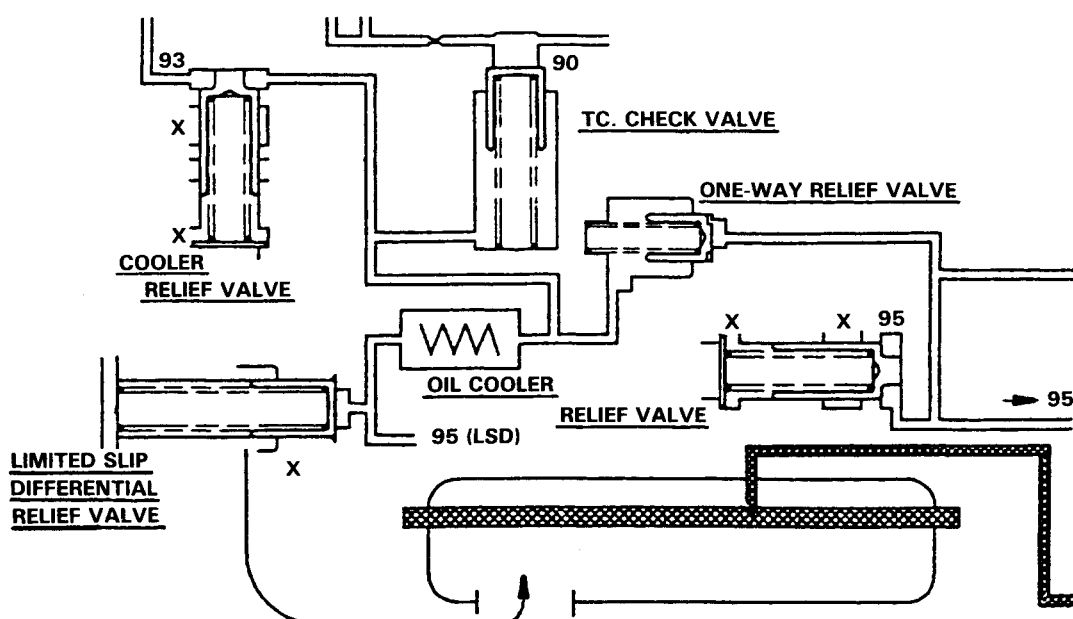


### Oil Pump

The external tooth gear type oil pump consists of a housing together with the main valve body, a pump drive gear, a pump driven gear, and a pump shaft. The oil pump is installed on the torque converter housing. The pump's driving force is transmitted by the torque converter pump (directly connected to the engine) to the pump shaft. The gears are provided in the housing. The intake and exhaust lines and the torque converter line are provided in the housing.

### One way Relief Valve

The one-way relief valve is used at times of high speed or high temperature to send relief oil to the oil cooler so that cooling of ATF will be effective.



(cont'd)

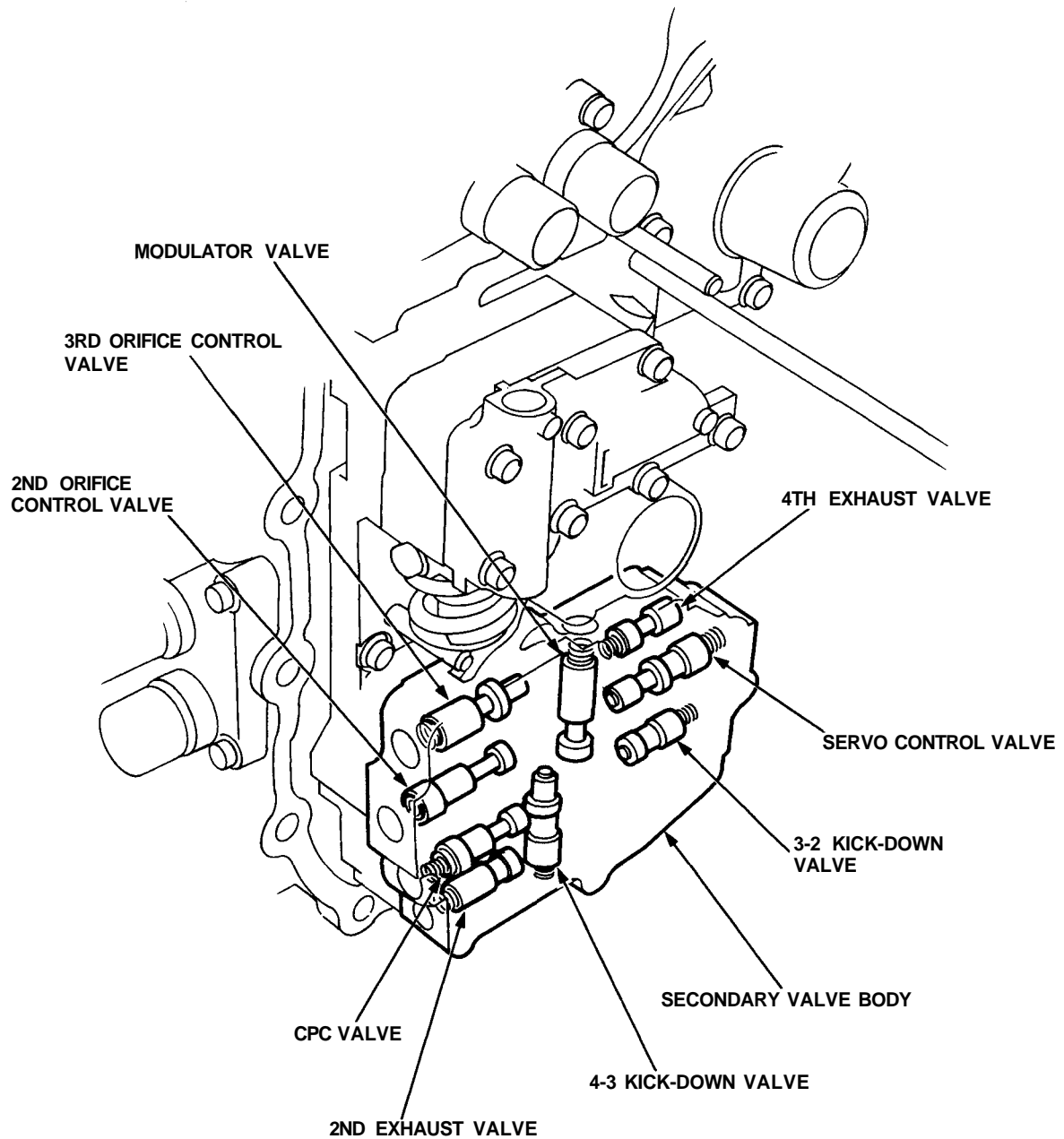
# Description

## Hydraulic Control (cont'd)

### Secondary Valve Body

The secondary valve body is also mounted on the main valve body with the 3-2 kick-down valve, CPC valve, 2nd orifice control valve, 3rd orifice control valve, modulator valve, 4th exhaust valve, 2nd exhaust valve, servo control valve and 4-3 kick-down valve built in.

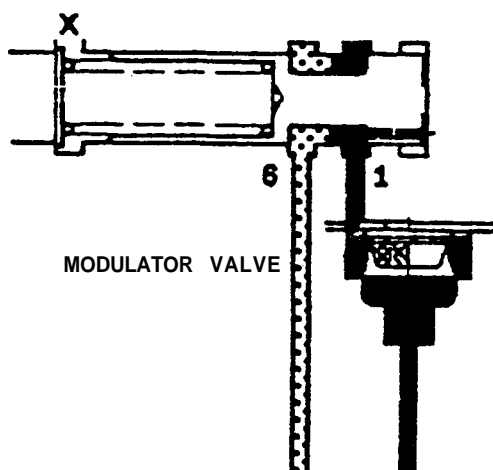
Primarily, it regulates shift valve operation timing and clutch pressure for shock reduction during shifting.





### Modulator Valve

The modulator valve maintains line pressure from the regulator that is supplied to shift control solenoid valves A/B and lock-up control solenoid valves A/B, thus maintaining accurate shift and lock-up characteristics.

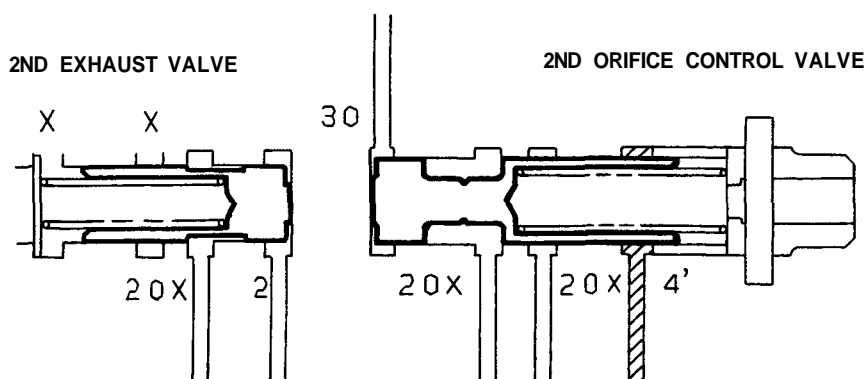


### 2nd Orifice Control Valve

For smooth shifting between the 2nd and 3rd gear, the open pressure on the 2nd gear side is relieved through a fixed orifice. The valve also moves to equalize pressure differences between the 2nd and 3rd gear.

### 2nd Exhaust Valve

The 2nd exhaust valve is installed to release 2nd clutch pressure quickly when shifting from the range at which hydraulic pressure is applied to the 2nd clutch to the **N** position.



(cont'd)



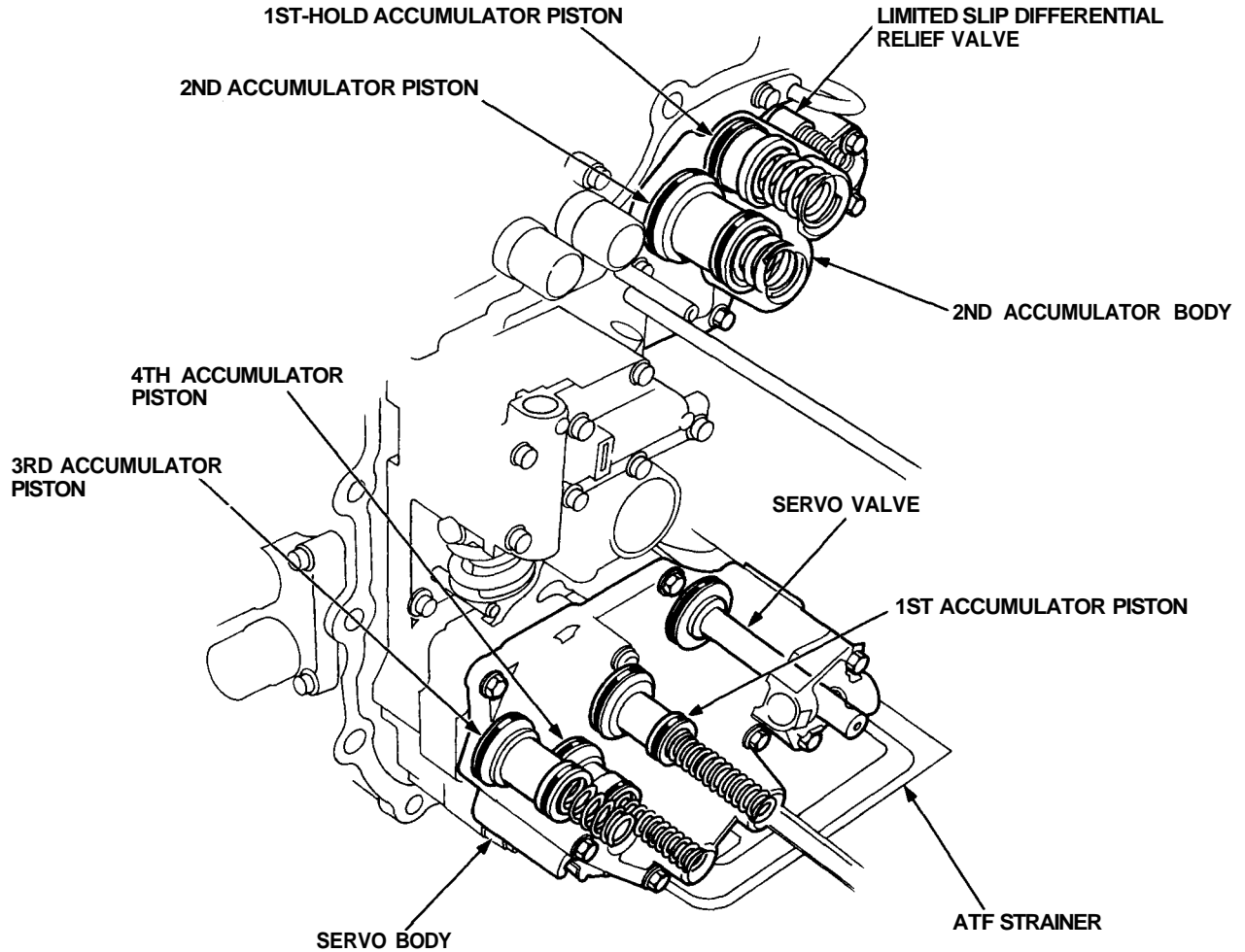
# Description

## Hydraulic Control (cont'd)

### Servo Body/2nd Accumulator Body

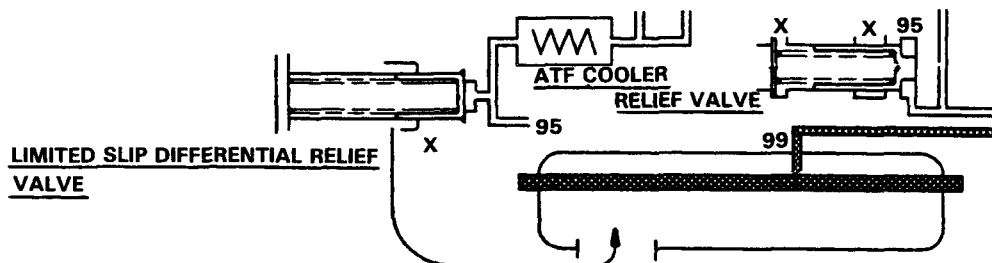
The servo body is mounted on the secondary valve body with the servo valve, 1st accumulator piston, 3rd accumulator piston and 4th accumulator piston built in. The primary function of the servo body is forward and reverse switching and control.

The 2nd accumulator body is mounted on the torque converter housing with the 1st-hold accumulator, 2nd accumulator and limited slip differential relief valve built in.



### Limited Slip Differential Relief Valve

When the resistance of oil flow inside the limited slip differential becomes large, the limited slip differential relief valve is opened, and oil is sent to the ATF cooler and cooled.





### Lock-up Valve Body

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

The capacity of the lock-up clutch is controlled by the lock-up valve body.

