

# Description

## Hydraulic Flow

### General Chart of Hydraulic Pressure

Oil Pump → Regulator Valve → { Line Pressure  
Torque Converter Pressure  
Lubrication Pressure

### Distribution of Hydraulic Pressure

- Manual Valve → To Select Line Pressure
- Throttle Valve B → Throttle B Pressure
- 1-2 Shift Valve }  
• 2-3 Shift Valve } → Clutch Pressure  
• 3-4 Shift Valve }
- Line Pressure → Throttle Valve

NO.	DESCRIPTION OF PRESSURE	NO.	DESCRIPTION OF PRESSURE	NO.	DESCRIPTION OF PRESSURE
1	LINE	10	1ST CLUTCH	71	1ST-HOLD CLUTCH
2	LINE	10'	1ST CLUTCH	72	1ST-HOLD CLUTCH
4	LINE	11	1ST CLUTCH	90	TORQUE CONVERTER
4'	LINE	20	2ND CLUTCH	91	TORQUE CONVERTER
4''	LINE	25	LINE	92	TORQUE CONVERTER
5	LINE	30	3RD CLUTCH	93	OIL COOLER
6	MODULATOR	40	4TH CLUTCH	94	TORQUE CONVERTER
6A	MODULATOR (SHIFT SOL A)	50	REVERSE CLUTCH	95	LUBRICATION
6B	MODULATOR (SHIFT SOL B)	55	THROTTLE B	96	TORQUE CONVERTER
6C	MODULATOR (L/C SOL A)	56	THROTTLE B	99	SUCTION
6D	MODULATOR (L/C SOL B)	57	THROTTLE B	X	BLEED
7	LINE	70	1ST-HOLD CLUTCH		

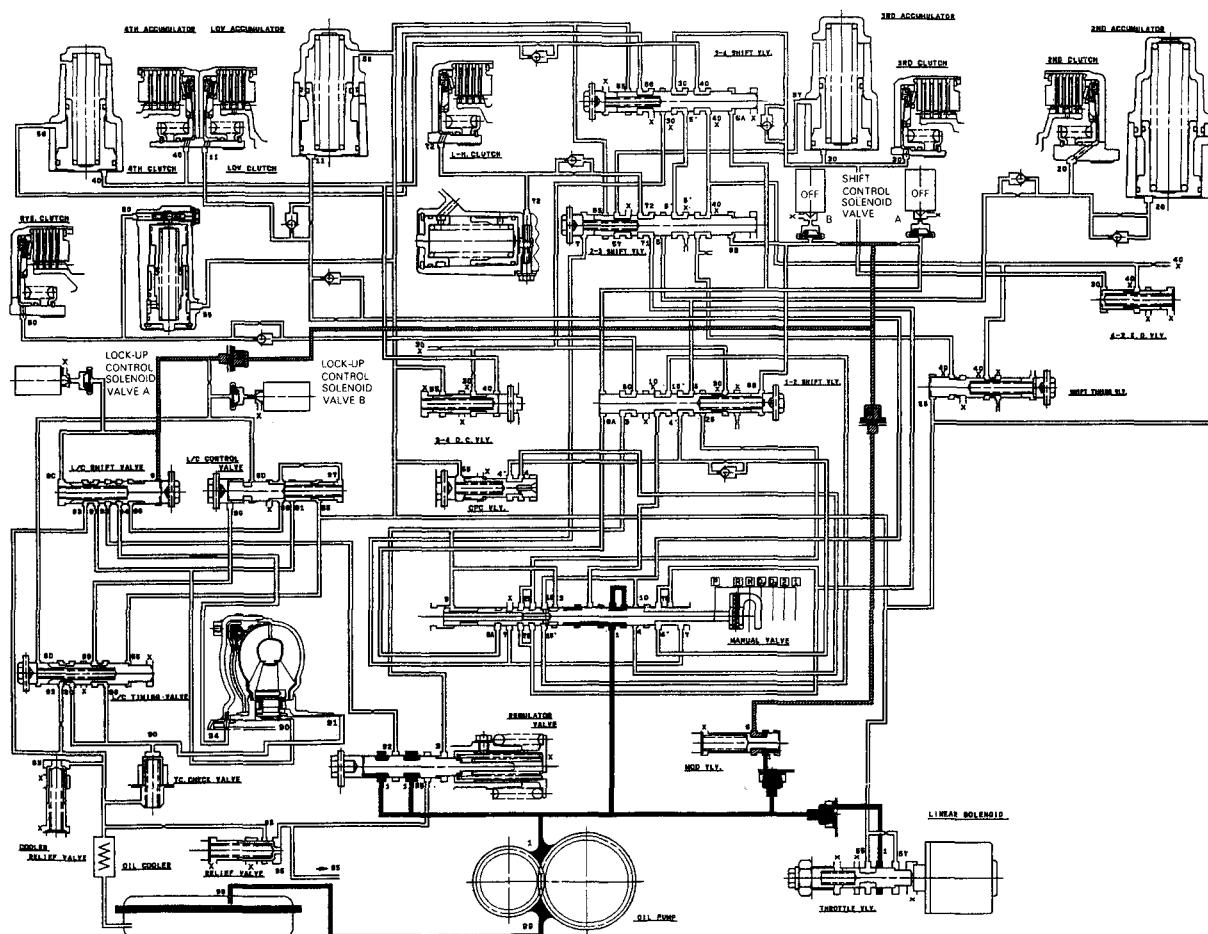


# **N Position**

As the engine turns, the oil pump also starts to operate. Automatic transmission fluid is drawn from (99) and discharged into (1). Then, ATF pressure is controlled by the regulator valve and becomes line pressure (1). The torque converter inlet pressure (92) enters (94) of torque converter through the orifice and discharges into (90).

The torque converter check valve prevents the torque converter pressure from falling.

Under this condition, the hydraulic pressure is not applied to the clutches.



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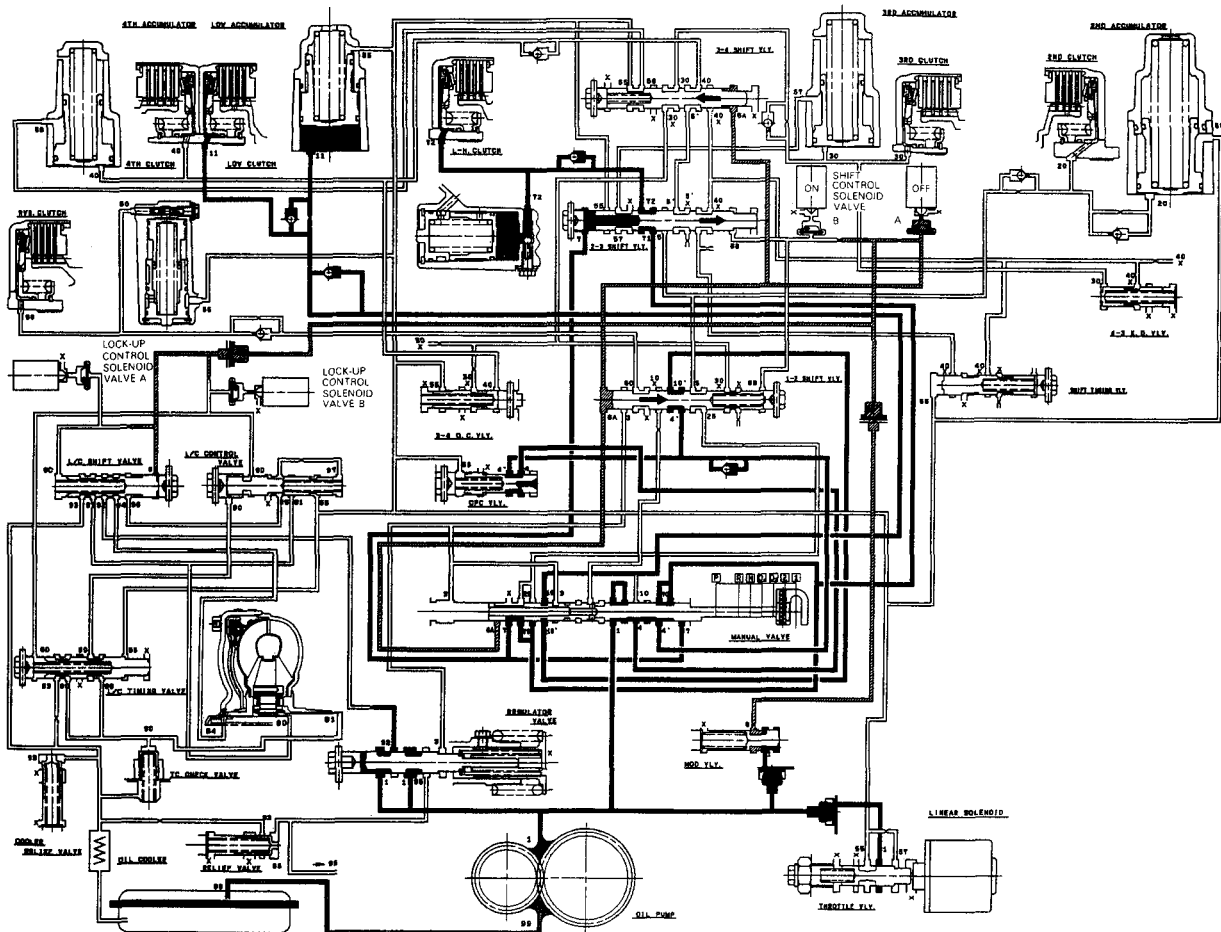
# Description

## Hydraulic Flow (cont'd)

### 1 Position

The line pressure (1) becomes the line pressure (4), (4'), (70) as it passes through the manual valve. Also, the line pressure (1) goes to the modulator valve through the filter and becomes the modulator pressure (6). The modulator pressure (6) is supplied to the 1-2 shift valve and 3-4 shift valve. The 1-2 shift valve is moved to the right side and the 3-4 shift valve is moved to the left side because the shift control solenoid valve A is turned OFF and B turned is ON by the ECU. The line pressure (4') becomes the 1st clutch pressure (10) via the 1-2 shift valve. The 1st clutch pressure (10) passed through the manual valve to the 1st clutch, then the 1st clutch is engaged. The 1st-hold clutch pressure (70) goes to the 1st-hold clutch via the 2-3 shift valve, then the 1st-hold clutch is engaged.

NOTE: When used, "left" or "right" indicates direction on the flow chart.





## 2 Position

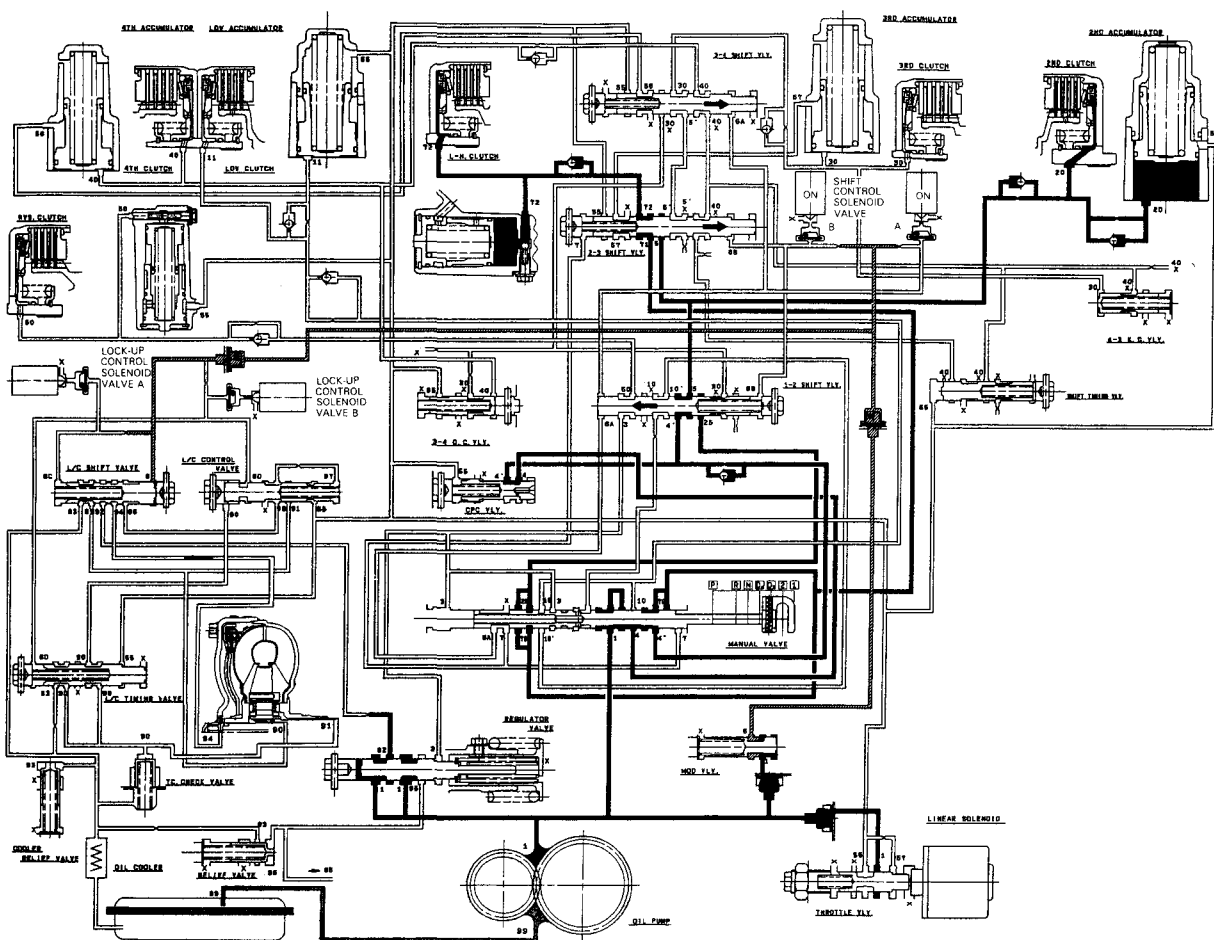
The line pressure (1) becomes line pressure (4), (4'), (70) as it passes through the manual valve.

The line pressure (1) goes to the modulator valve and becomes the modulator pressure (6). The modulator pressure (6) is not supplied to the shift valve. The 1-2 shift valve is moved to the left side and the 2-3 and 3-4 shift valves are moved to the right side because the shift control solenoid valves A and B are turned ON by the ECU.

The line pressure (4') becomes the line pressure (5) via the 1-2 shift valve. The line pressure (5) passed through the orifice becomes the 2nd clutch pressure (20). The 2nd clutch pressure (20) goes to the 2nd clutch, then the 2nd clutch is engaged.

The 1st-hold clutch pressure (70) goes to the 1st-hold clutch via the 2-3 shift valve, then the 1st-hold clutch is engaged.

NOTE: When used, "left" or "right" indicates direction on the flow chart.



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# Description

## Hydraulic Flow (cont'd)

### D<sub>4</sub> or D<sub>3</sub> Position

#### 1. 1st speed

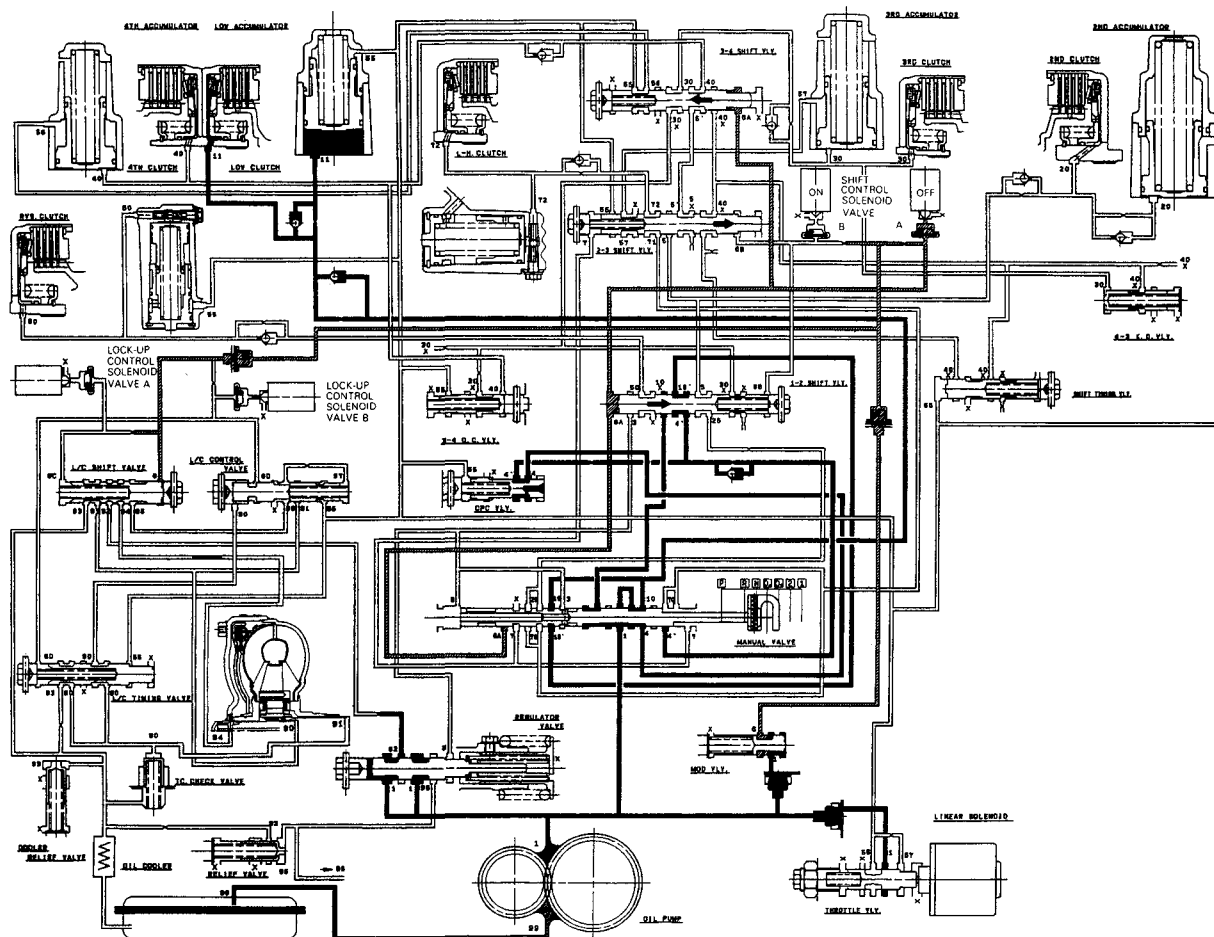
The flow of fluid through the torque converter is the same as in **N** position.

The line pressure (1) becomes the 1st clutch pressure (10), as it passes through the manual valve. The 1st clutch pressure is applied to the 1st clutch and the 1st clutch accumulator, consequently the vehicle will move as the engine power is transmitted.

The line pressure (1) becomes the modulator pressure (6) by the modulator valve and travels to each shift valve. The 1-2 shift valve is moved to the right side and the 3-4 shift valve is moved to the left side because the shift control solenoid valve A is turned OFF and valve B is turned ON by the ECU.

The line pressure (1) also flows to the throttle valve.

NOTE: When used, "left" or "right" indicates direction on the flow chart.





## 2. 2nd speed

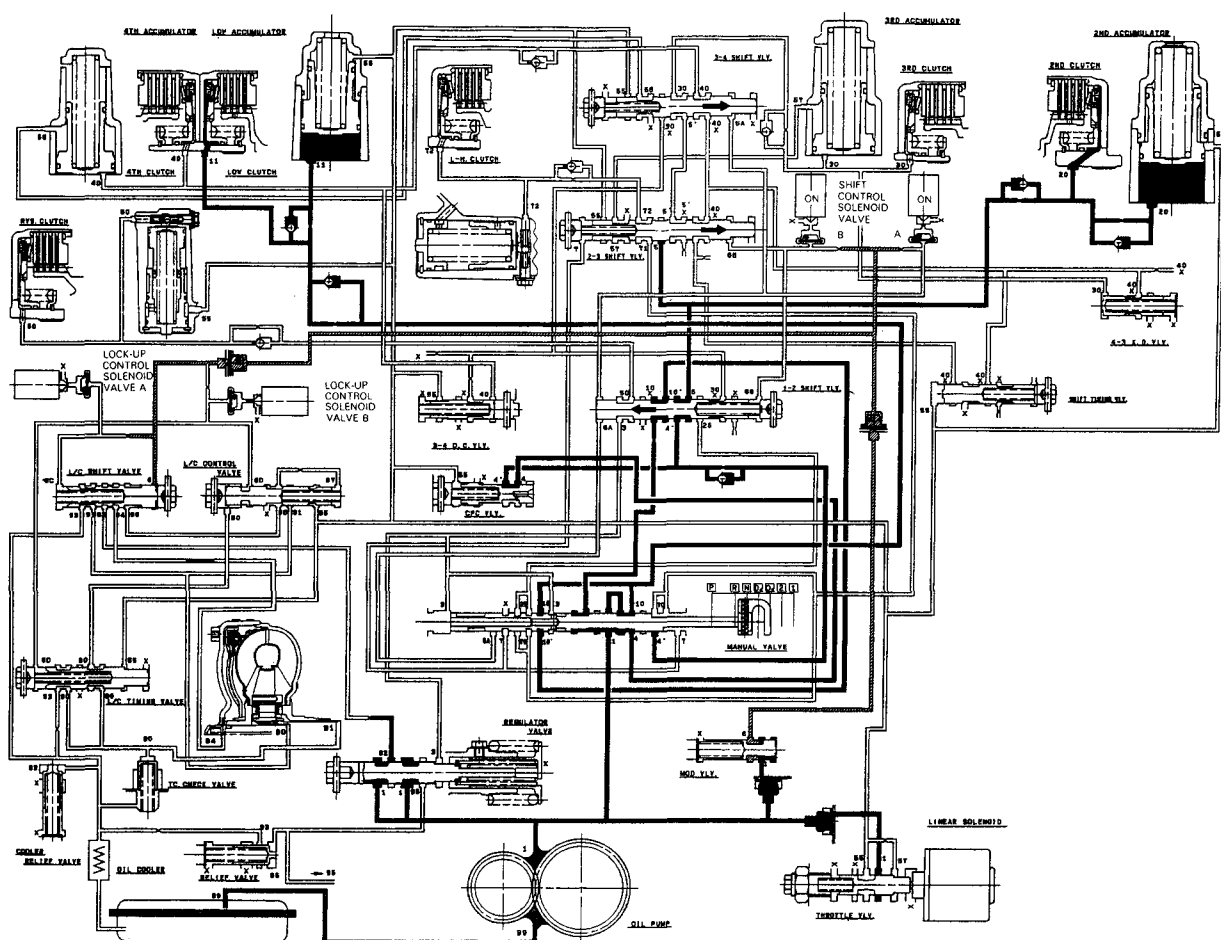
The flow of fluid up to the 1-2 and 2-3 shift valves is the same as in the 1st speed range. As the speed of the car reaches the prescribed value, the shift control solenoid valves A and B are turned ON by means of the ECU. As a result, the 1-2 shift valve is moved to the left side and uncovers the port leading to the 2nd clutch; the 2nd clutch is engaged.

Fluid flows by way of:

- Line Pressure (4) → CPC valve — Line Pressure (4') → 1-2 Shift Valve — Line Pressure (5) → Orifice
- 2nd Clutch Pressure (20) → 2nd Clutch

The hydraulic pressure also flows to the 1st clutch. However no power is transmitted by means of the one-way clutch.

NOTE: When used, "left" or "right" indicates direction on the flow chart.



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## Description

## Hydraulic Flow (cont'd)

### 3. 3rd Speed

The flow of fluid up to the 1-2, 2-3 and 3-4 shift valves is the same as in the 2nd speed range.

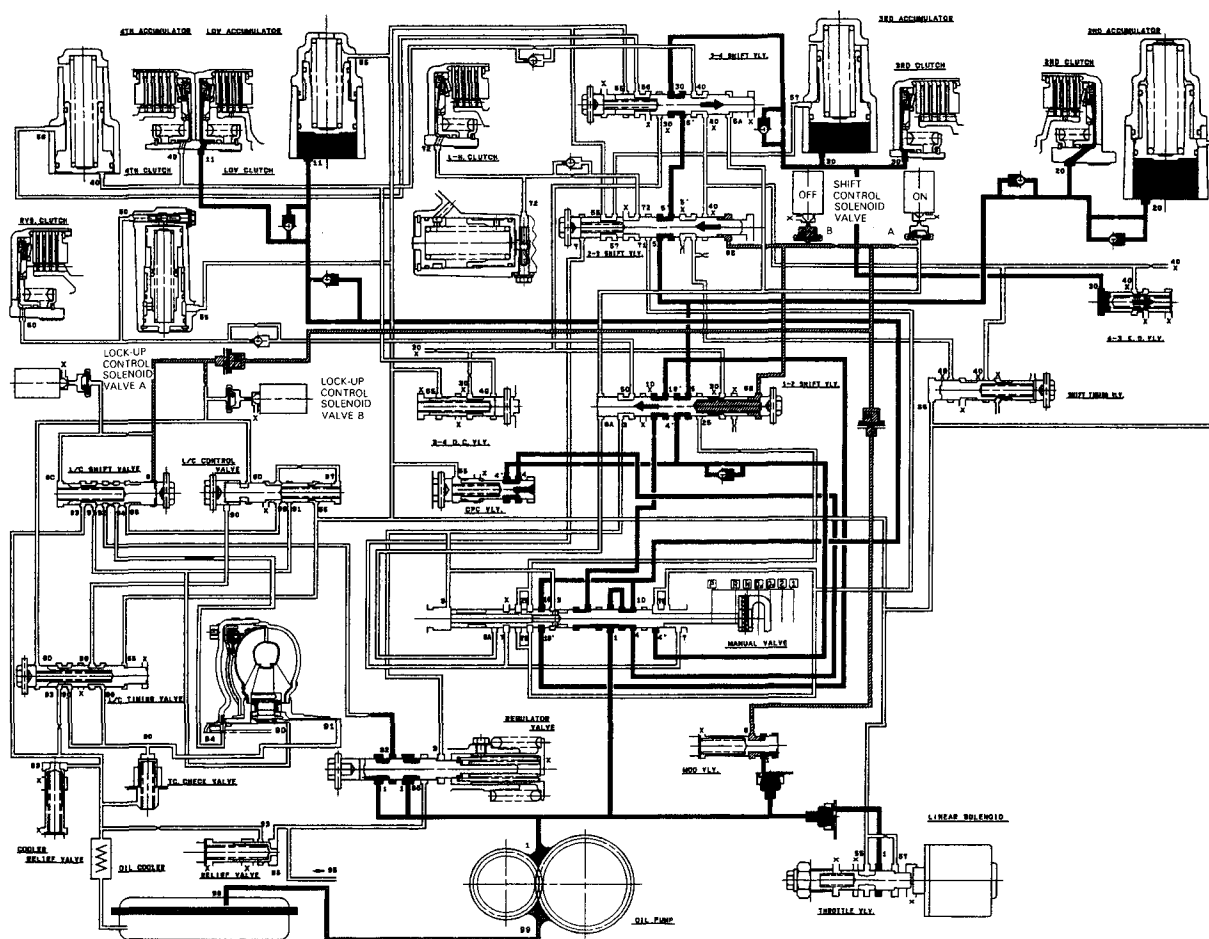
As the speed of the car reaches the prescribed value, the shift control solenoid valve B is turned OFF (Shift control solenoid valve A remains ON). The 2-3 shift valve is then moved to the left side, uncovering the oil port leading to the 3rd clutch. Since the 3-4 shift valve is moved to the right side to cover the oil port to the 4th clutch, the 3rd clutch is engaged.

Fluid flows by way of:

- Line Pressure (4) → CPC Valve — Line Pressure (4') → 1-2 Shift Valve — Line Pressure (5) → 2-3 Shift Valve  
— Line Pressure (5') → 3-4 Shift Valve — 3rd clutch Pressure (30) → Orifice → 3rd Clutch

The hydraulic pressure also flows to the 1st clutch and to the 2nd clutch. However no power is transmitted by means of the one-way clutch.

NOTE: When used, "left" or "right" indicates direction on the flow chart.







# Description

## Hydraulic Flow (cont'd)

### **R** Position

The line pressure (1) becomes the line pressure (3) as it passes through the manual valve. Also, the line pressure (1) goes to the modulator valve through the filter and becomes the modulator pressure (6). The modulator pressure (6) is supplied to the 1-2 shift valve and 2-3 shift valve.

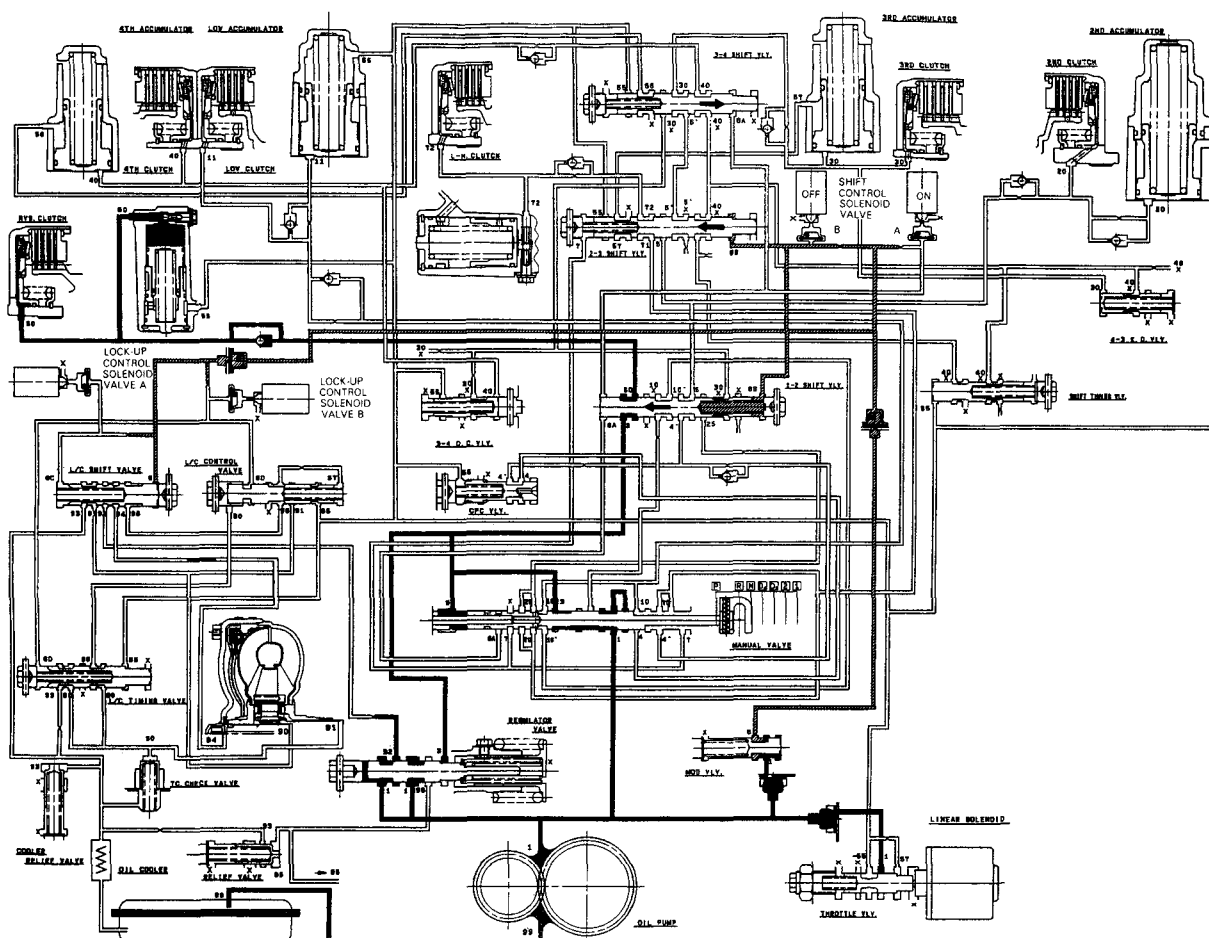
The 1-2 and 2-3 shift valves are moved to the left side because the shift control solenoid valve A is turned ON and B is turned OFF by the ECU.

The line pressure (3) becomes the reverse clutch pressure (50) via the 1-2 shift valve. The reverse clutch pressure goes to the reverse clutch, then the reverse clutch is engaged.

### Reverse Inhibitor Control

When the **R** position is selected while the vehicle is moving forward at more than a certain speed, the ECU outputs 1st signal (Shift control solenoid valve A: ON, B: OFF), and the 1-2 shift valve is moved to the right side. The line pressure (3) is intercepted by the 1-2 shift valve; consequently the power is not transmitted, since the reverse clutch is not operated.

NOTE: When used, "left" or "right" indicates direction on the flow chart.





**P Position**

The flow of fluid through the torque converter is the same in **N** position.

The line pressure (1) is intercepted by the manual valve and is not supplied to the clutches. The power is not transmitted.

