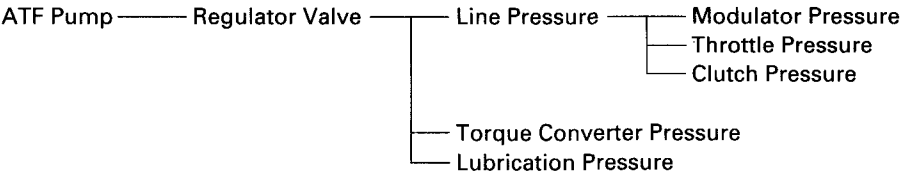


Description

Hydraulic Flow

General Chart of Hydraulic Pressure



Distribution of Hydraulic Pressure

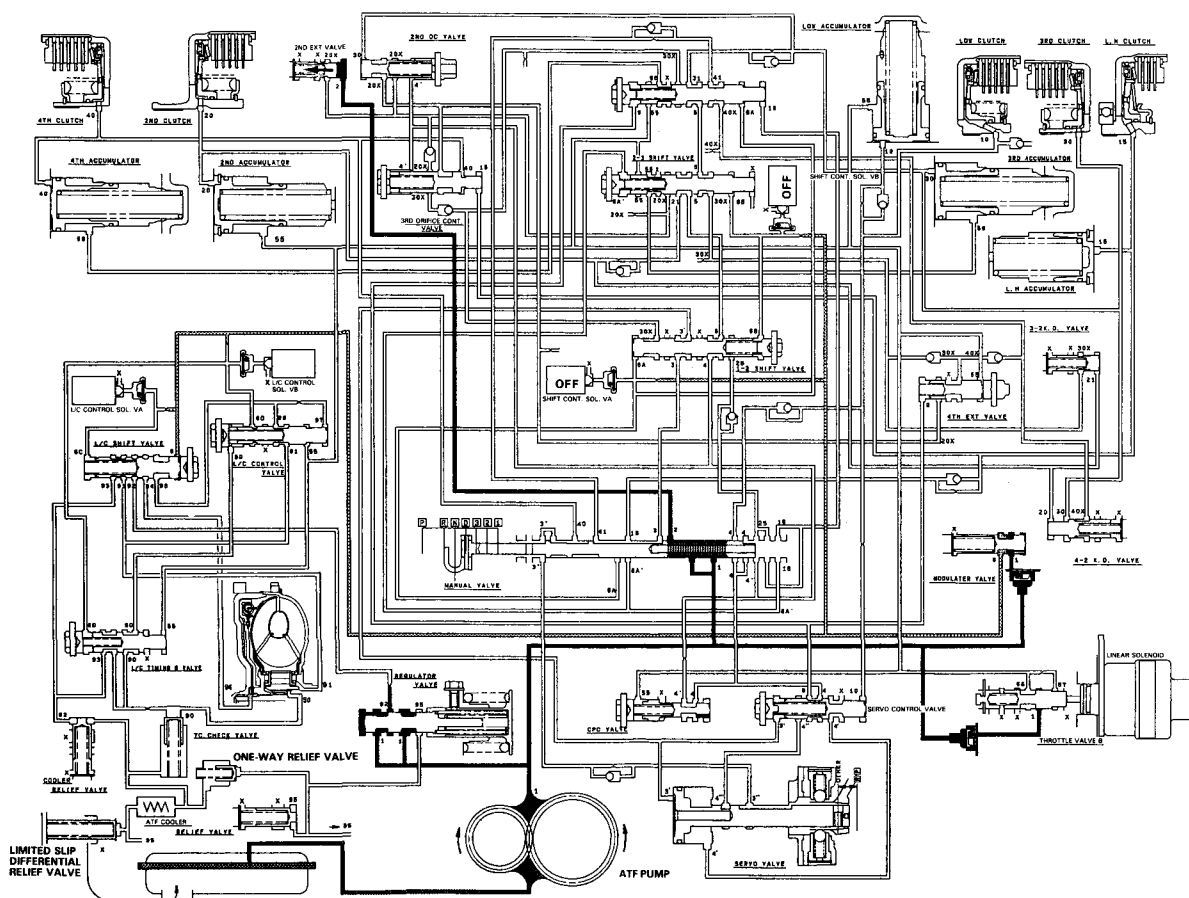
- Regulator Valve
 - Torque Converter Pressure
 - Lubrication Pressure
 - To regulate Line Pressure
- Manual Valve
 - To select Line Pressure
 - Clutch Pressure
- Modulator Valve
 - Modulator Pressure
 - Shift Control Solenoid Valves
 - Lock-up Control Solenoid Valves
- 1-2 Shift Valve
 - Clutch Pressure
- 2-3 Shift Valve
 - Clutch Pressure
- 3-4 Shift Valve
 - Clutch Pressure
- Throttle Valve
 - Throttle B Pressure

NO.	DESCRIPTION OF PRESSURE	NO.	DESCRIPTION OF PRESSURE	NO.	DESCRIPTION OF PRESSURE
1	LINE	10	1ST CLUTCH	90	TORQUE CONVERTER
2	LINE	15	1ST-HOLD CLUTCH	91	TORQUE CONVERTER
3	LINE	16	1ST-HOLD CLUTCH	92	TORQUE CONVERTER
3'	LINE	18	LINE	93	ATF COOLER
3"	LINE	20	2ND CLUTCH	94	TORQUE CONVERTER
4	LINE	21	2ND CLUTCH	95	LUBRICATION
4'	CLUTCH PRESSURE CONTROL	25	LINE	96	TORQUE CONVERTER
5	CLUTCH PRESSURE CONTROL	30	3RD CLUTCH	97	TORQUE CONVERTER
6	MODULATOR	31	3RD CLUTCH	99	SUCTION
6A	MODULATOR (SHIFT SOL. V A)	40	4TH CLUTCH	X	BLEED
6B	MODULATOR (SHIFT SOL. V B)	41	4TH CLUTCH		
6C	MODULATOR (L/C SOL. V A)	55	THROTTLE B		
6D	MODULATOR (L/C SOL. V B)	56	THROTTLE B		
9	LINE	57	THROTTLE B		



N position

As the engine turns, the ATF pump also starts to operate. The ATF is drawn from (99) and discharged into (1). Then, ATF flowing from the ATF pump becomes the line pressure (1). The line pressure (1) is regulated by the regulator valve. 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 rising. Under this condition, the hydraulic pressure is not applied to the clutches.



Description

Hydraulic Flow (cont'd)

1 Position

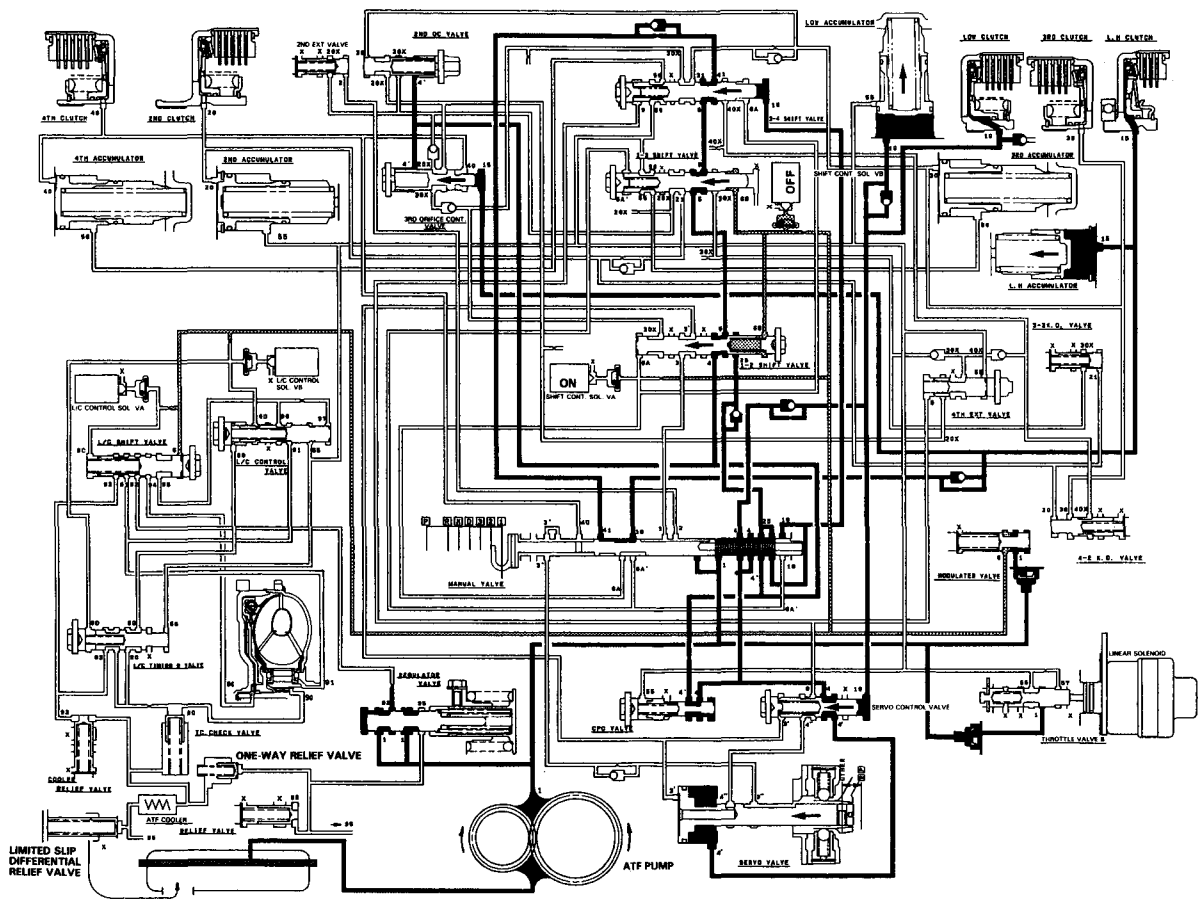
Line pressure (1) becomes line pressure (4), (18), and (25) as it passes through the manual valve. Also, line pressure (1) goes to the modulator valve through the filter and becomes modulator pressure (6). Modulator pressure (6) is supplied to the 1-2 shift valve and 2-3 shift valve.

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

The line pressure (18) is supplied to the 3-4 shift valve, and moves the valve to the left side. Line pressure (4) becomes 1st clutch pressure (10), and the 1st clutch is engaged.

Line pressure (4) becomes 1st-hold clutch pressure (16) via the 1-2 shift valve, 2-3 shift valve, 3-4 shift valve, and manual valve, and the 1st-hold clutch is engaged.

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.





2 Position

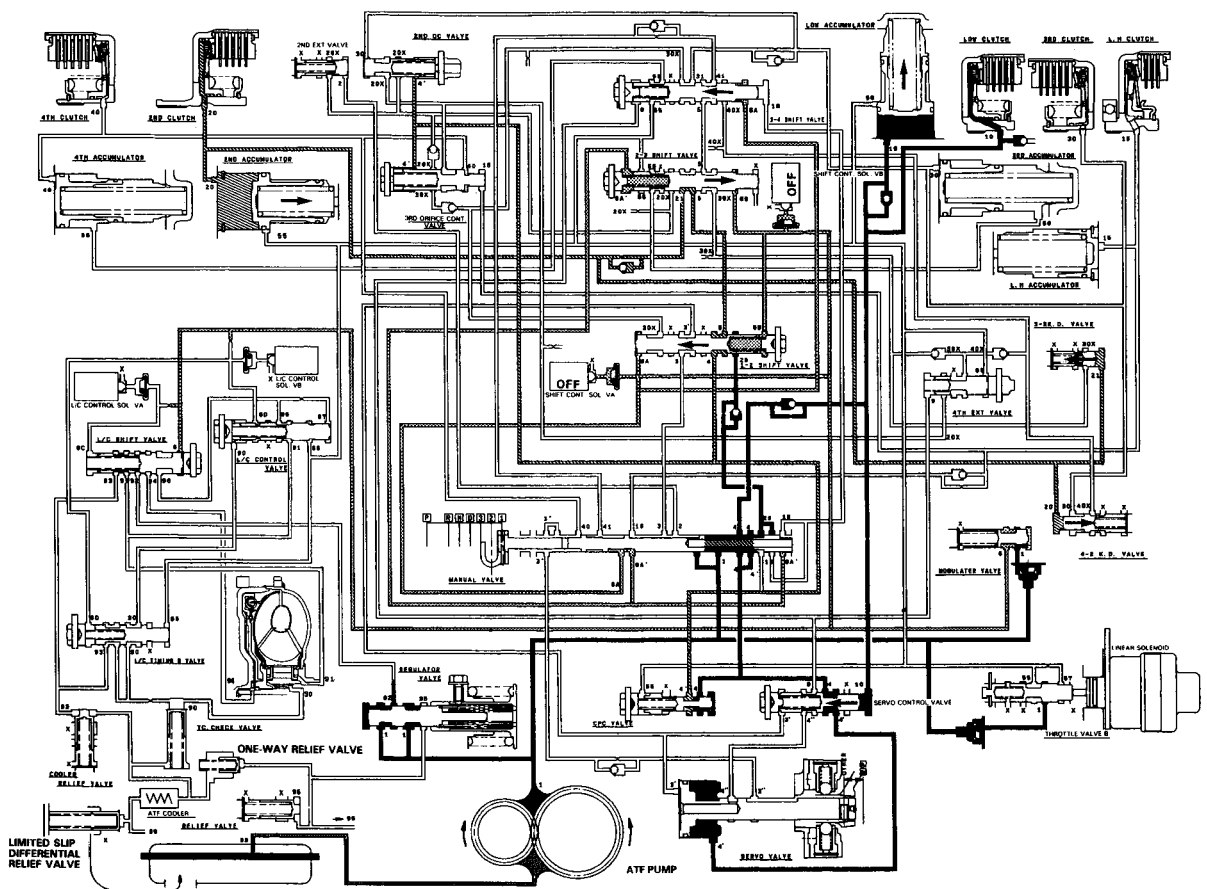
Line pressure (1) becomes the line pressure (4), (25) as it passes through the manual valve.

Line pressure (1) goes to the modulator valve 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 and 3-4 shift valves are moved to the left side, and the 2-3 shift valve is moved to the right side, because the shift control solenoid valve A and B are turned OFF by the TCM.

Line pressure (4) goes through the 2nd clutch pressure (20) to the 2nd clutch, then the 2nd clutch is engaged.

Line pressure (4) passing through the orifice becomes the 1st clutch pressure (10) and 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 hydraulic circuit.



(cont'd)

Description

Hydraulic Flow (cont'd)

3/M and D Positions

1. 1st Gear

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

Line pressure (1) becomes line pressure (4) and 1st clutch pressure (10).

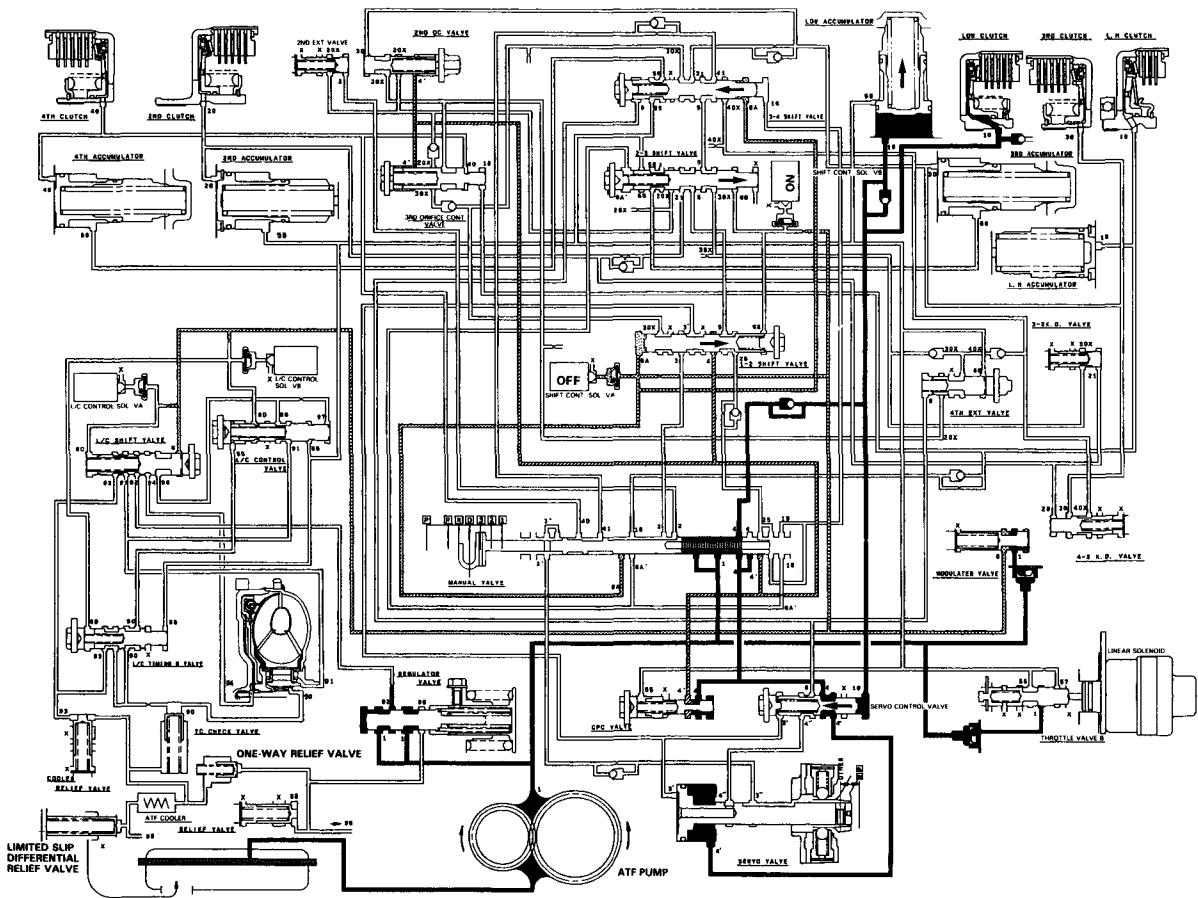
The 1st clutch pressure is applied to the 1st clutch and 1st accumulator, and the vehicle will move as engine power is transmitted.

Line pressure (1) becomes modulator pressure (6) by the modulator valve and travels to each shift valve.

The 1-2 shift valve is moved to the right side because the shift control solenoid valve A is turned OFF and B is turned ON by the TCM.

Line pressure (1) also flows to the throttle valve.

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.





2. 2nd Gear

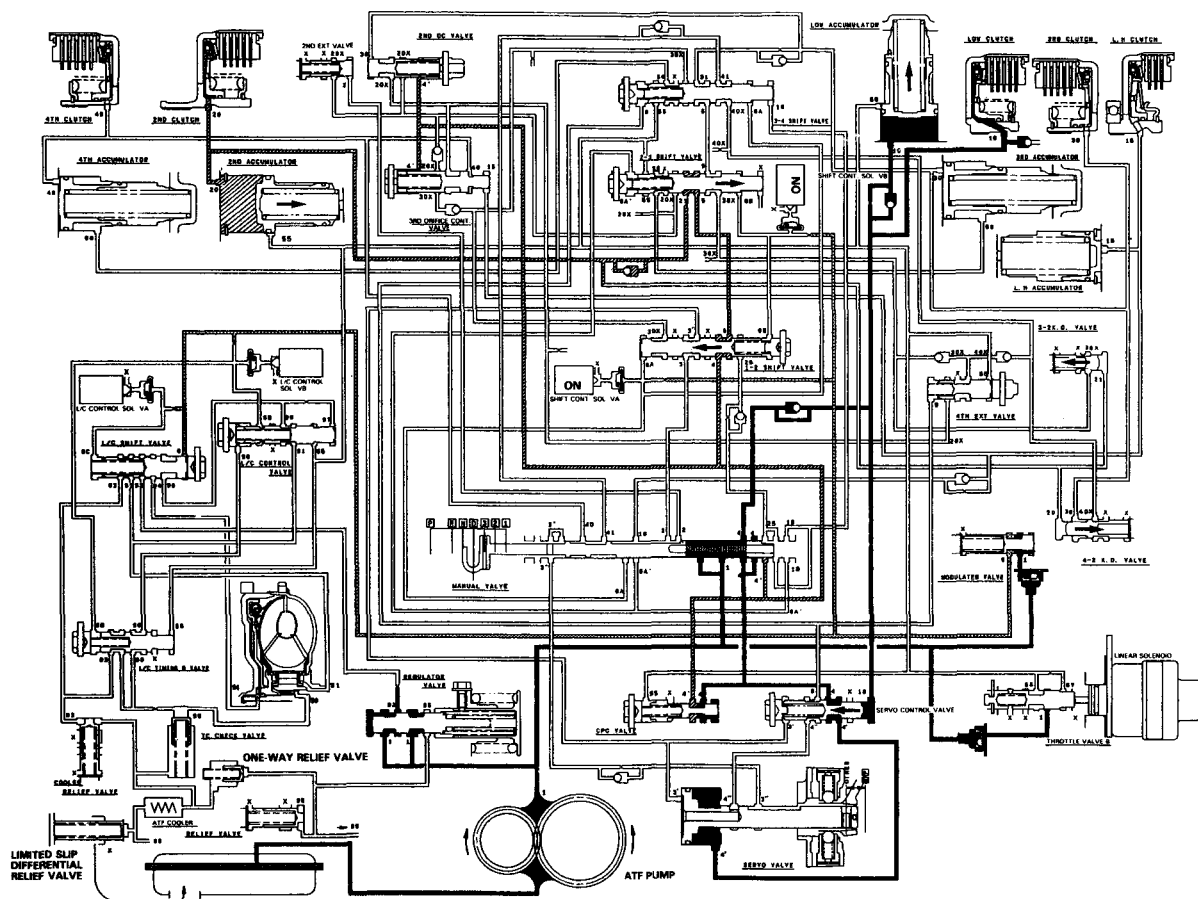
The flow of fluid to the 1-2 and 2-3 shift valves is the same as in 1st gear. As the speed of the vehicle reaches the prescribed value, solenoid valve A is turned ON by the TCM. As a result, the 1-2 shift valve is moved to the left side and uncovers the port leading to the 2nd clutch, and the 2nd clutch is engaged.

Fluid flows by way of:

— Line Pressure (4) → CPC Valve — Clutch Pressure Control (4') → 1-2 Shift Valve — Clutch Pressure Control (5) → 2-3 Shift Valve — 2nd Clutch Pressure (21) → Orifice — 2nd Clutch Pressure (20) → 2nd Clutch

Hydraulic pressure also flows to the 1st clutch. However no power is transmitted through of the one-way clutch.

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.



(cont'd)

Description

Hydraulic Flow(cont'd)

3. 3rd Gear

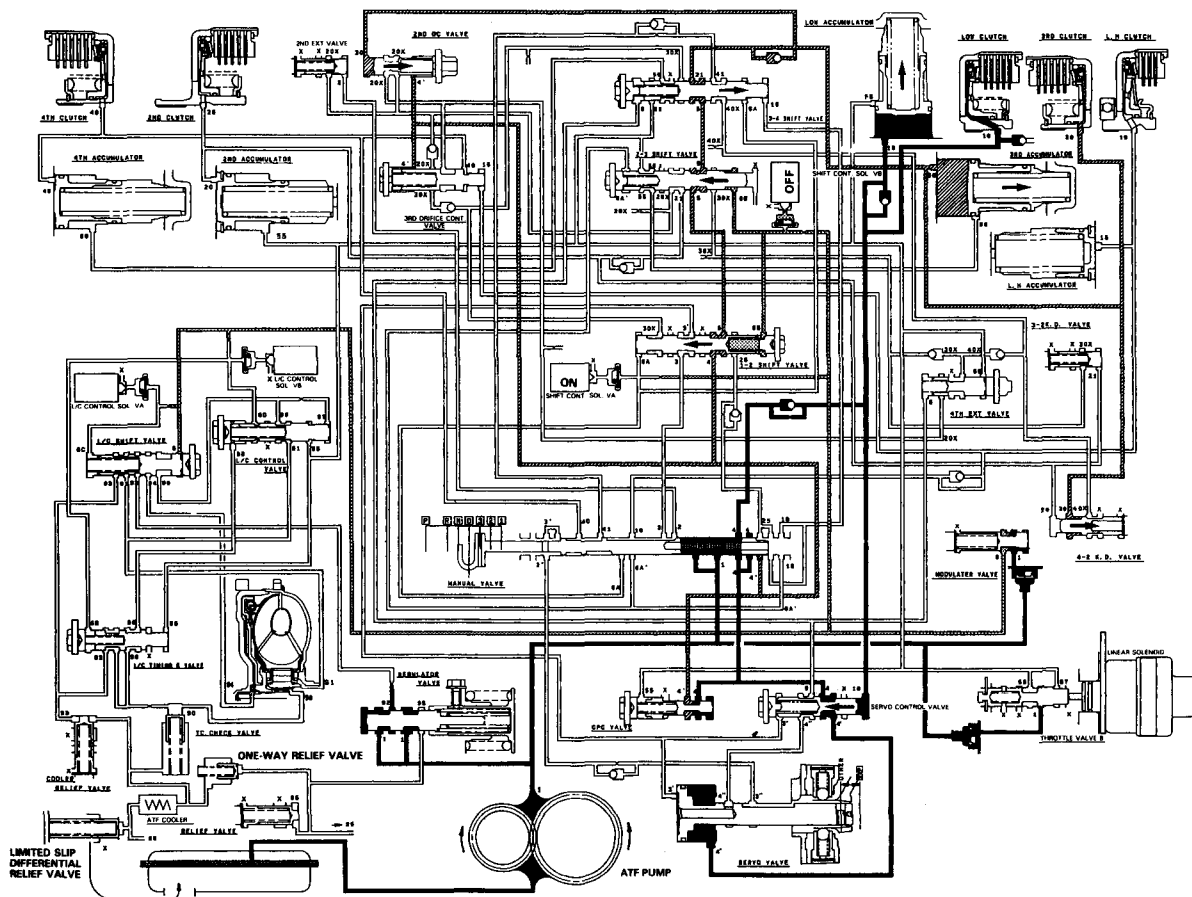
The flow of fluid to the 1-2, 2-3, and 3-4 shift valves is the same as in 2nd gear. As the speed of the vehicle reaches the prescribed value, shift control solenoid valve B is turned OFF (Shift control solenoid valve A remains ON). The 2-3 shift valve is then moved to the left side, uncovering the fluid port leading to the 3rd clutch. Since the 3-4 shift valve is moved to the right side to cover the fluid port to the 4th clutch, the 3rd clutch is engaged.

Fluid flows by way of:

— Line Pressure (4) → CPC Valve — Clutch Pressure Control (4') → 1-2 Shift Valve — Clutch Pressure Control (5) → 2-3 Shift Valve — Clutch Pressure Control (5) → 3-4 Shift Valve — 3rd Clutch Pressure (31) → 3rd Clutch

Hydraulic pressure also flows to the 1st clutch. However no power is transmitted through of the one-way clutch as in 2nd gear.

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.





4. 4th Gear

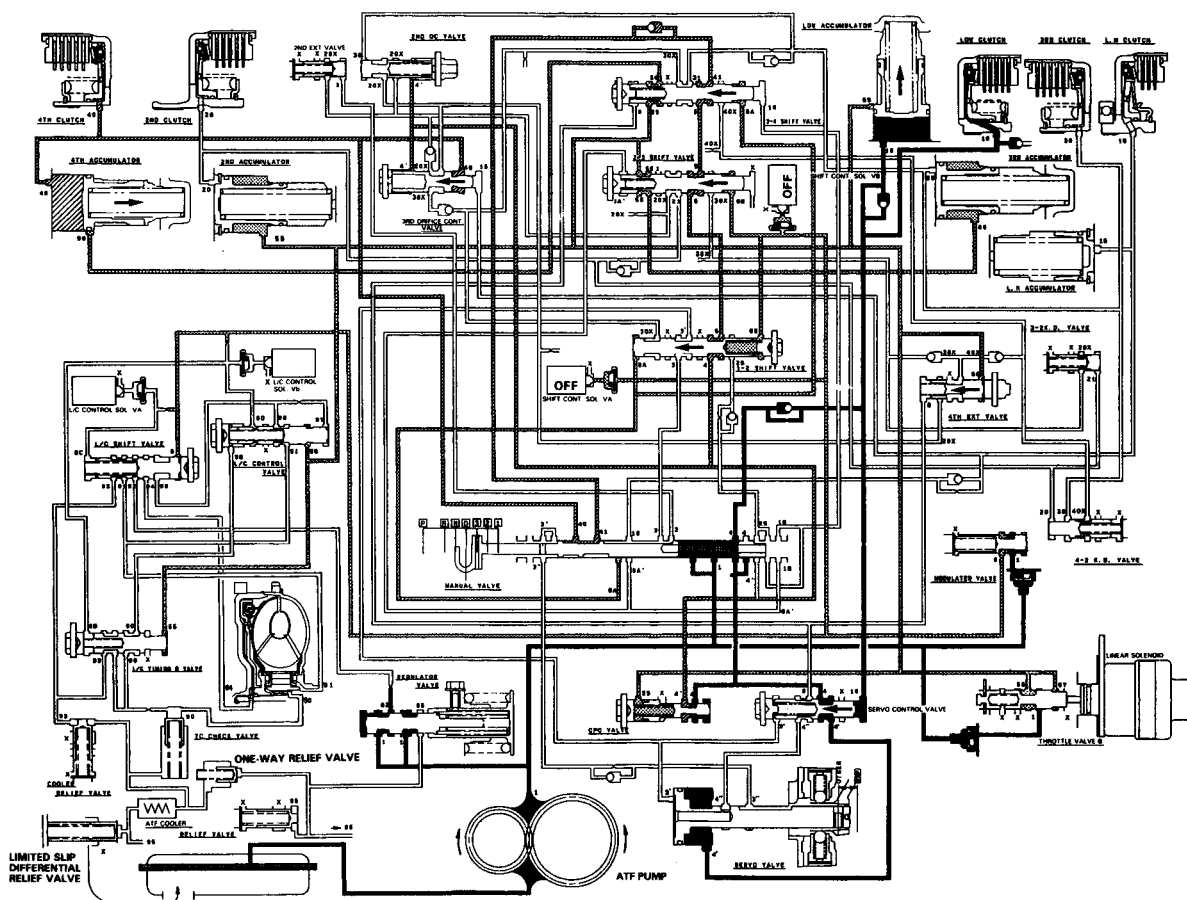
The flow of fluid to the 1-2, 2-3, and 3-4 shift valves is the same as in 3rd gear. When the speed of the vehicle reaches the prescribed valve, shift control solenoid valve A is turned OFF (Shift control solenoid valve B remains OFF). As this takes place, the 3-4 shift valve is moved to the left side and uncovers the fluid port leading to the 4th clutch. Since the 1-2 and 2-3 shift valves are kept on the left side, the fluid flows through the 4th clutch, and power is transmitted through the 4th clutch.

Fluid flows by way of:

— Line Pressure (4) → CPC Valve — Clutch Pressure Control (4') → 1-2 Shift Valve — Clutch Pressure Control (5) → 2-3 Shift Valve — Clutch Pressure Control (5) → 3-4 Shift Valve — 4th Clutch Pressure (41) → Manual Valve — 4th Clutch Pressure (40) → 4th Clutch

Hydraulic pressure also flows to the 1st clutch. However no power is transmitted through of the one-way clutch as in 2nd and 3rd gear.

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.



(cont'd)

Description

Hydraulic Flow (cont'd)

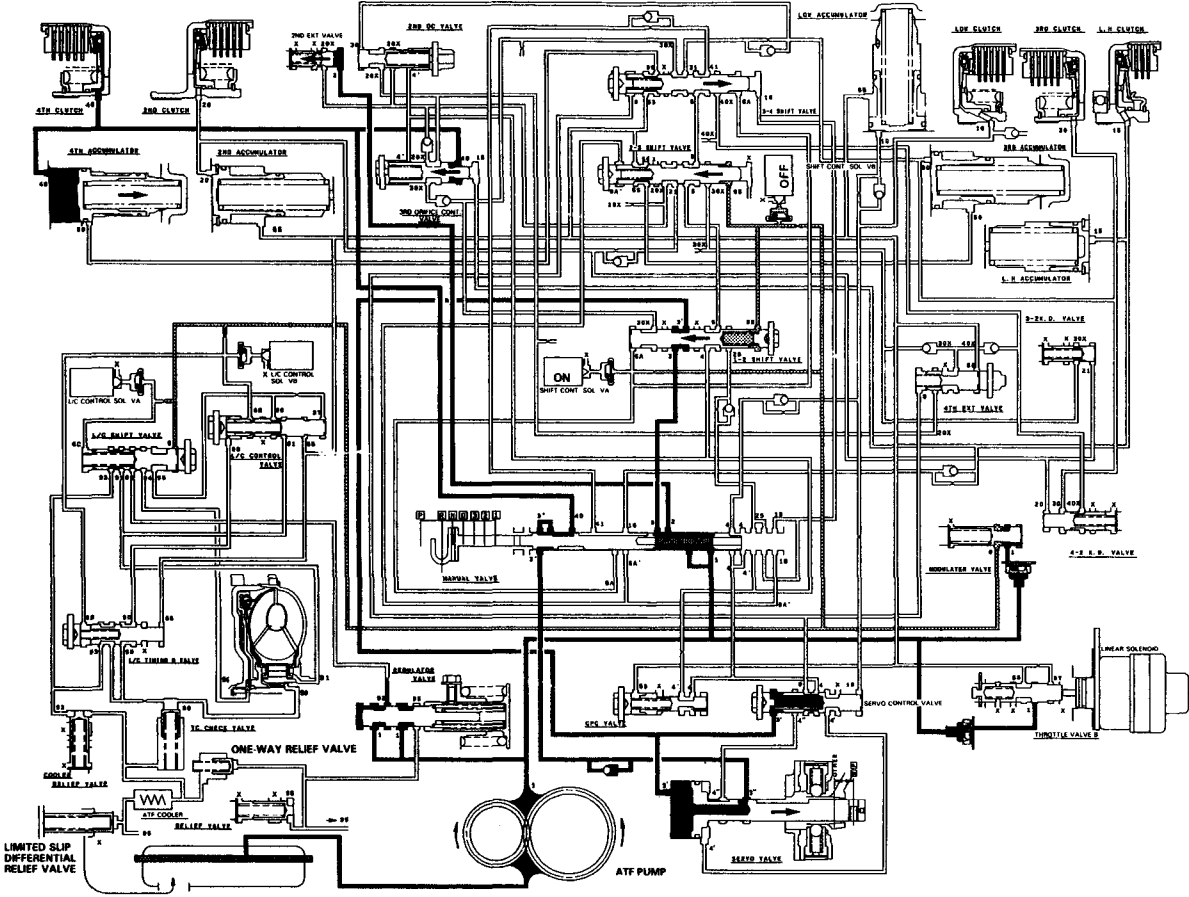
R Position

The flow of fluid through the torque converter circuit is the same as in the **N** position. Fluid (1) from the ATF pump flows through the manual valve and becomes line pressure (3). It then flows through the 1-2 shift valve to the servo valve (3), moving the shift fork shaft to the reverse position. Under this condition, shift control solenoid valve A is turned ON and valve B is turned OFF as in 3rd gear. As a result, the 1-2 shift valve moves to the left side. Fluid (3') flows through the servo valve and the manual valve to the 4th clutch, and power is transmitted through the 4th clutch.

Reverse Inhibitor Control

When the **R** position is selected while the vehicle is moving forward at a speed over 6 mph (10 km/h), the TCM outputs 1st signal (A: OFF, B: ON), and the 1-2 shift valve is moved to the right side. Line pressure (3) is intercepted by the 1-2 shift valve, and power is not transmitted since the 4th clutch and the servo valve are not operating.

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.





P Position

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

Line pressure (1) becomes line pressure (3) as it passes through the manual valve. Line pressure (3) flows through the 1-2 shift valve, to the servo valve, and to the servo control valve, moving the shift fork to the reverse position as in the **R** position.

Hydraulic pressure is not supplied to the clutches, and power is not transmitted.

NOTE: When used, "left" or "right" indicates direction on the hydraulic circuit.

