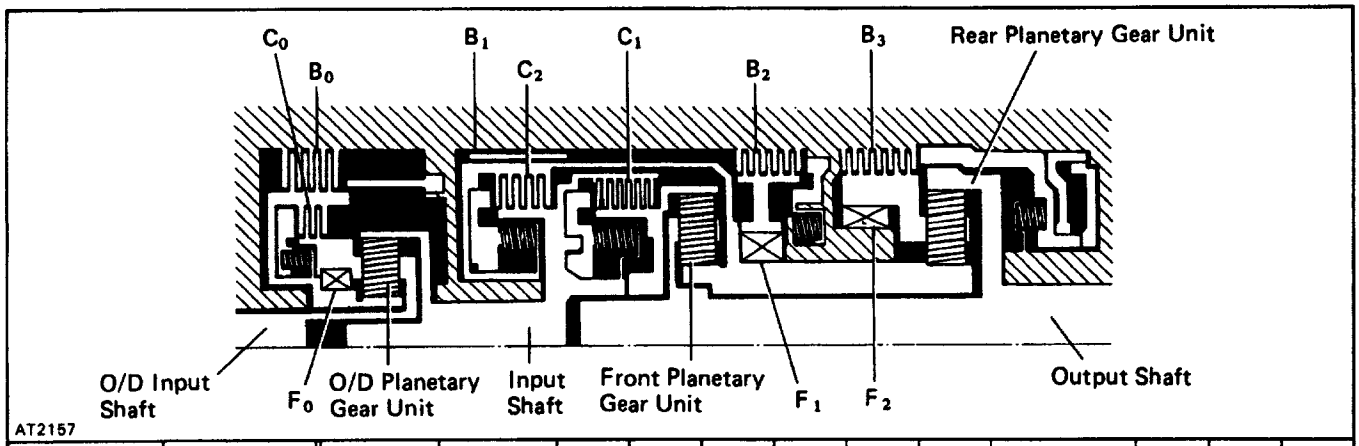
OPERATION

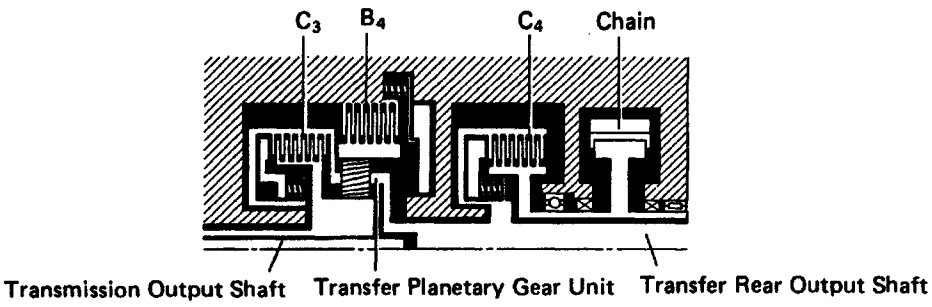
Transmission



Shift Lever Position	Gear	No. 1 Solenoid Valve	No.2 Solenoid Valve	C_0	C_1	C_2	B_0	B_1	B_2	B_3		F_0	F_1	F_2
										I.P.	O.P.			
P	Parking	ON	OFF	●										
R	Reverse	ON	OFF	●		●				●	●	●		
N	Neutral	ON	OFF	●										
D	1st	ON	OFF	●	●							●		●
	2nd	ON	ON	●	●				●			●	●	
	3rd	OFF	ON	●	●	●			●			●		
	O/D	OFF	OFF		●	●	●		●					
2	1st	ON	OFF	●	●							●		●
	2nd	ON	ON	●	●			●	●			●	●	
	3rd	OFF	ON	●	●	●			●			●		
L	1st	ON	OFF	●	●					●	●	●		●
	*2nd	ON	ON	●	●			●	●			●	●	

t.P. ..... Inner Piston
O.P. ..... Outer Piston

Transfer



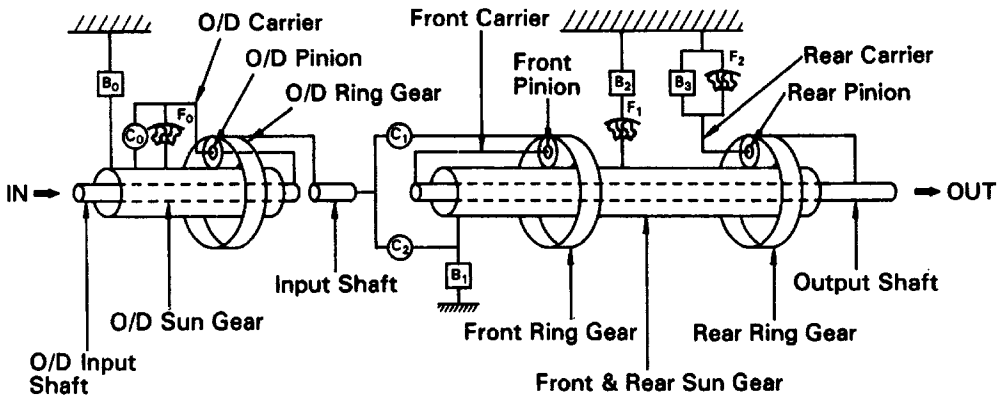
ND0045

Transfer gear position	No–4 solenoid valve	C_3	C_4	B_4
H2	OFF	●		
H4	OFF	●	●	
L4	ON		●	●

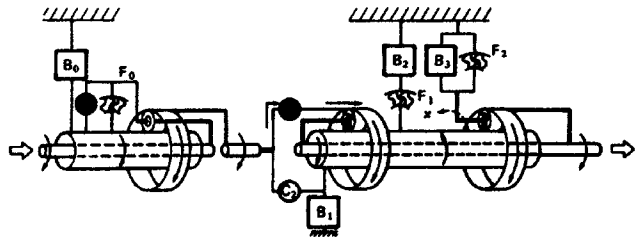
1. FUNCTION OF COMPONENTS

Transmission

Component		Function
C_1	Forward Clutch	Connects input shaft and front planetary ring gear.
C_2	Direct Clutch	Connects input shaft and front & rear planetary sun gear.
C_O	O/D Direct Clutch	Connects overdrive sun gear and overdrive planetary carrier.
B_1	2nd Coast Brake	Prevents front & rear planetary sun gear from turning either clockwise or counterclockwise.
B_2	2nd Brake	Prevents outer race of F, from turning either clockwise or counterclockwise thus preventing the front & rear planetary sun gear from turning counterclockwise.
B_3	1 st & Reverse Brake	Prevents rear planetary carrier from turning either clockwise or counterclockwise.
B_O	O/D Brake	Prevents overdrive sun gear from turning either clockwise or counterclockwise.
F_1	No. 1 One–Way Clutch	When62 is operating, this clutch prevents the front & rear planetary sun gear from turning counterclockwise.
F_2	No. 2 One–Way Clutch	Prevents rear planetary carrier from turning counterclockwise.
F_O	O/D One–Way Clutch	When the transmission is being driven by the engine, this clutch connects the overdrive sun gear and overdrive planetary carrier.
Planetary Gears		These gears change the route through which driving force is transmitted in accordance with the operation of each clutch and brake in order to increase or reduce the input and output speed.

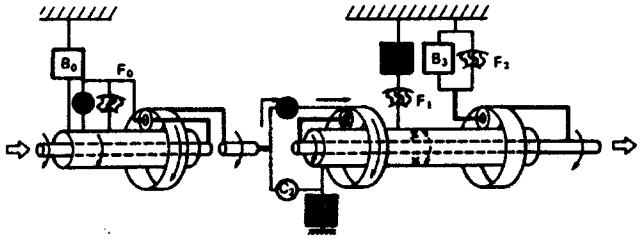


D or 2 Position 1st Gear



AT5854

2 or L Position 2nd Gear



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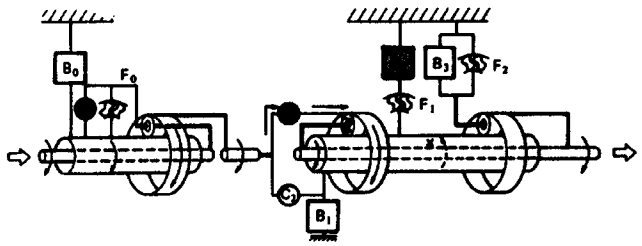
D Position 2nd Gear



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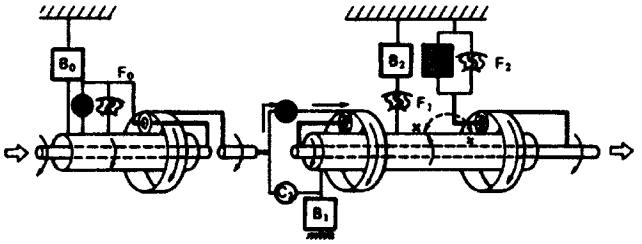
L Position 1st Gear



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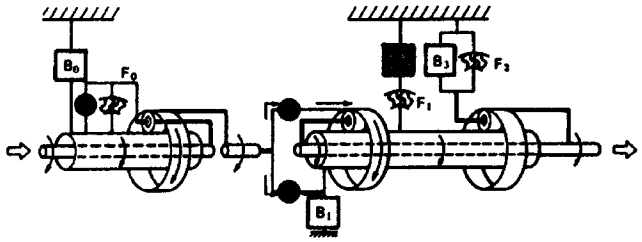
D or 2 Position 3rd Gear



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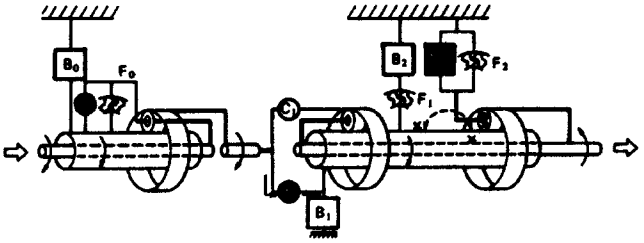
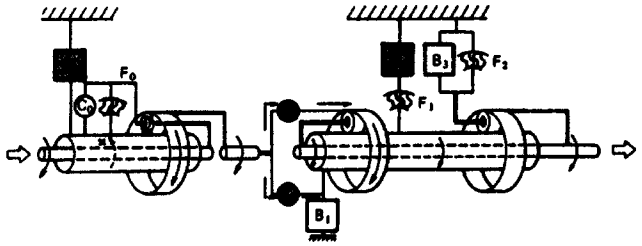
R Position Reverse Gear



AT5854

D Position O/D

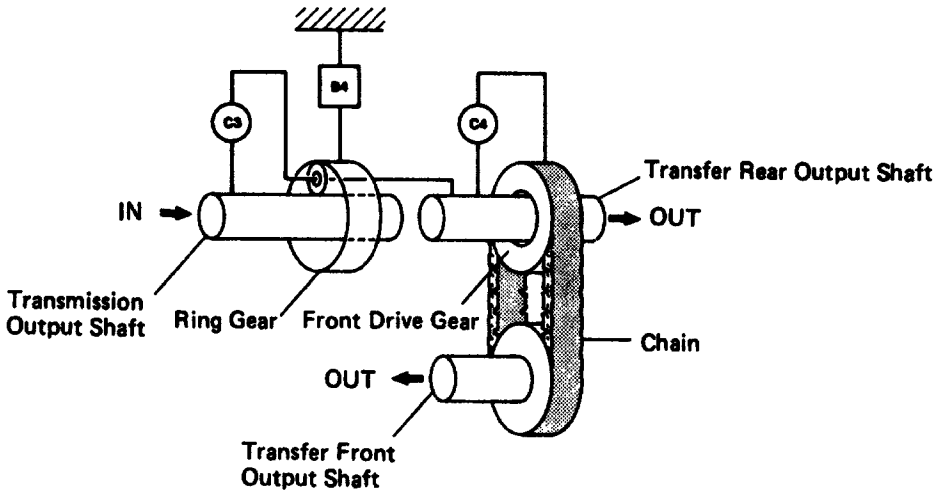


AT5854

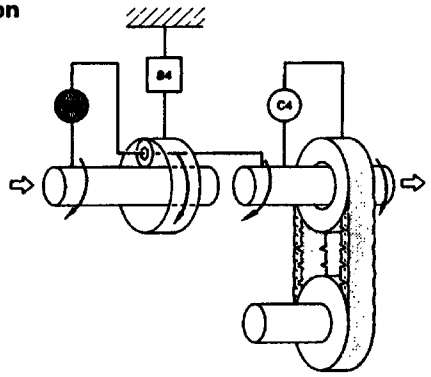
V03403

Transfer

Component		Function
C_3	Forward Clutch	Connects transmission output shaft and transfer pinion gear.
C_4	Direct Clutch	Connects transfer rear output shaft and front drive gear.
B_4	O/D Direct Clutch	Prevents transfer ring gear from turning either clockwise or counterclockwise.

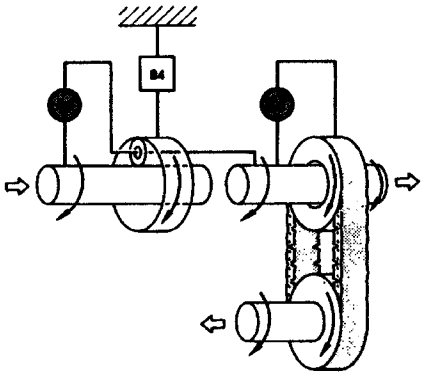


H2 Position



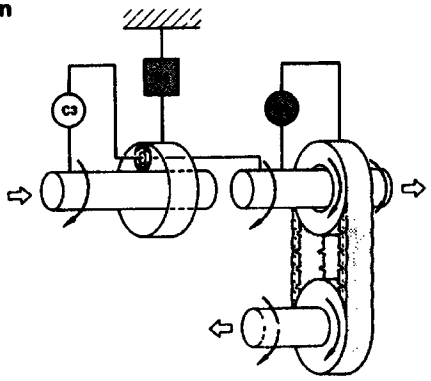
ND0047

H4 Position



ND0047

L4 Position



ND00047

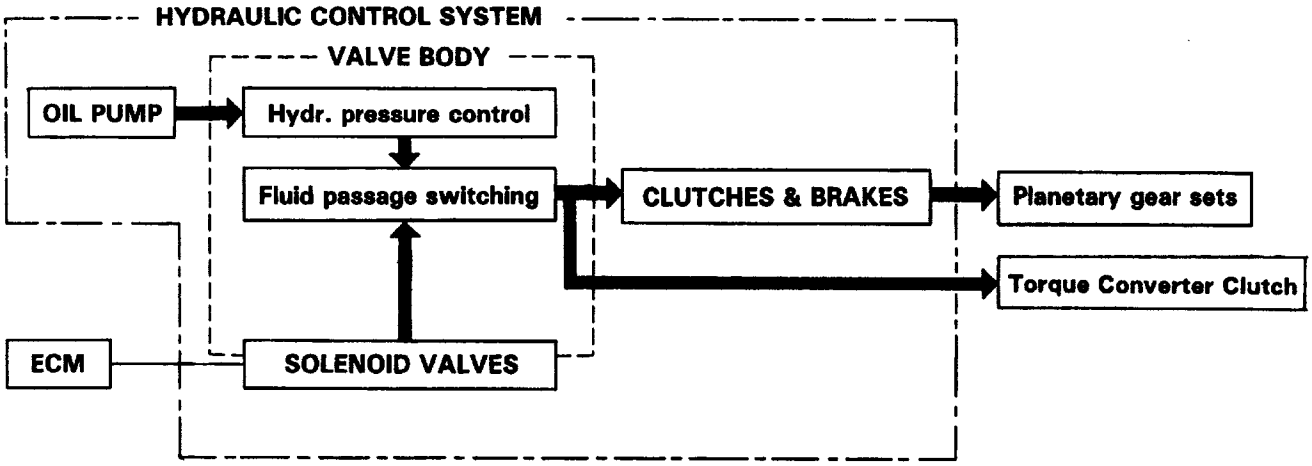
2. HYDRAULIC CONTROL SYSTEM

Transmission

The hydraulic control system is composed of the oil pump, the valve body, the solenoid valves, and the clutches and brakes, as well as the fluid passages which connect all of these components.

Based on the hydraulic pressure created by the oil pump, the hydraulic control system governs the hydraulic pressure acting on the torque converter clutch, clutches and brakes in accordance with the vehicle driving conditions.

There are 3 solenoid valves on the valve body. These solenoid valves are turned on and off by signals from the ECM to operate the shift valves. These valves then switch the fluid passages so that fluid goes to the torque converter clutch and planetary gear units.



V01537

Transfer

The hydraulic control system consists of a valve body, No.4 solenoid valve, a brake (134) and 2 clutches (C3, C4) and passages that connect these elements. It hydraulically controls the planetary gear unit either manually, or automatically by the ECM.

3. ELECTRONIC CONTROL SYSTEM

The electronic control system, which controls the transmission and transfer shift timing and the operation of the lock–up clutch, is composed of the following three parts:

1. Sensor:

These sensors respond to the vehicle speed, throttle opening and other conditions and transmit these data to the ECM in the form of electrical signals.

2. ECM

The ECM determines the transmission and transfer shift timing and lock–up timing based upon the signals from sensors, and controls the solenoid valves of the hydraulic control unit accordingly.

3. Actuators

These are four solenoid valves that control hydraulic pressure acting on the hydraulic valves to control shifting and lock–up timing.