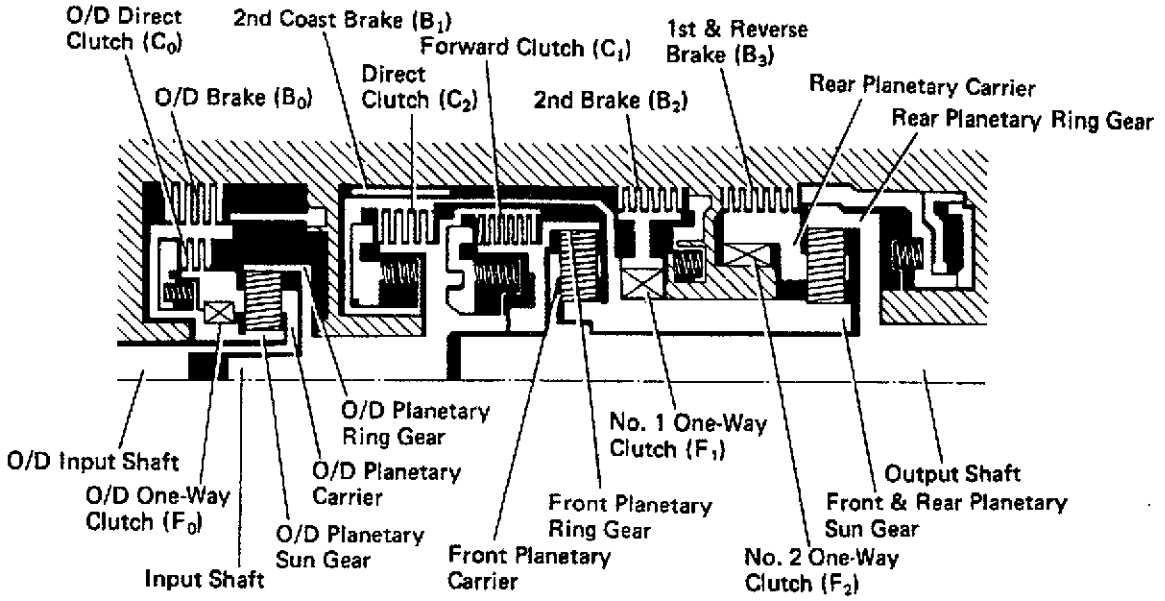
OPERATION

1. OPERATING CONDITIONS

ATOPT−03

AT



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○ ..... Operating

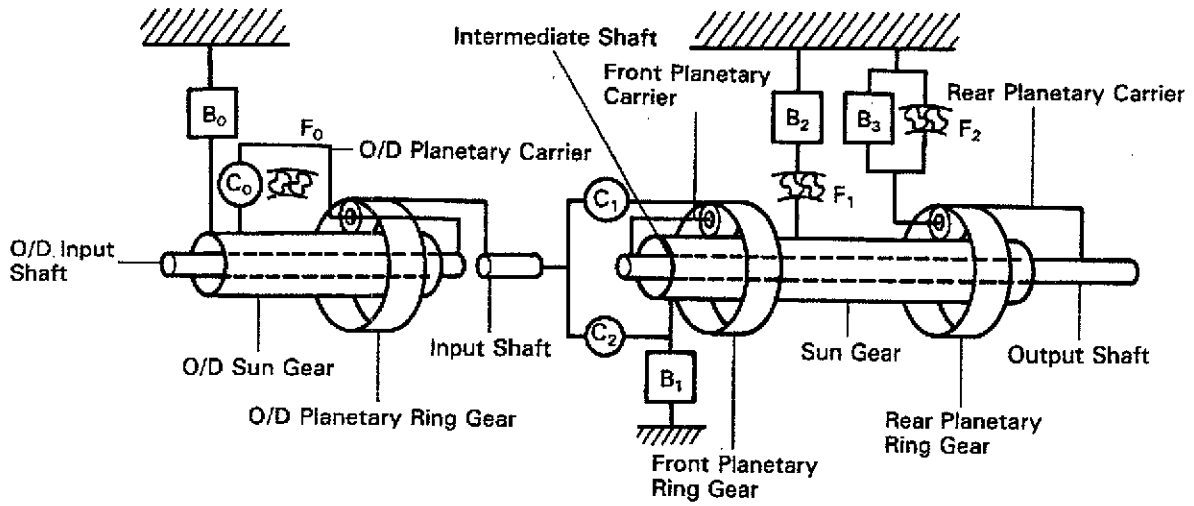
Shift lever position	Gear position	C_0	C_1	C_2	B_0	B_1	B_2	B_3	F_0	F_1	F_2
P	Parking	○									
R	Reverse	○		○				○	○		
N	Neutral	○									
D	1st	○	○						○		○
	2nd	○	○				○		○	○	
	3rd	○	○	○			○		○		
	O/D		○	○	○		○				
2	1st	○	○						○		○
	2nd	○	○			○	○		○	○	
	3rd	○	○	○			○		○		
L	1st	○	○					○	○		○
	*2nd	○	○			○	○		○	○	

* Down-shift only in the L position and 2nd gear − no up-shift.

V03089

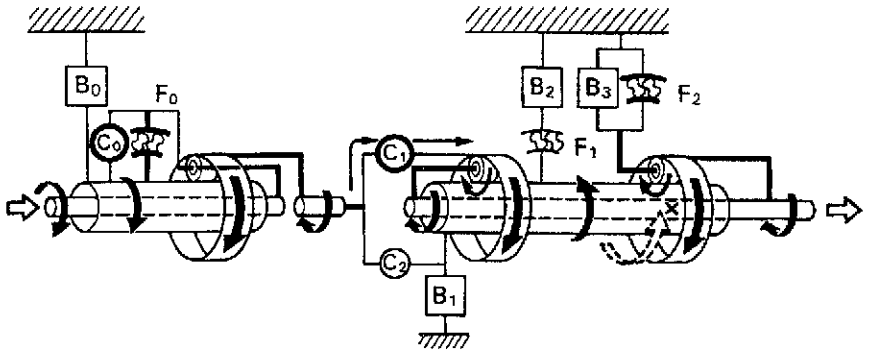
2. COMPONENTS FUNCTION

NOMENCLATURE	OPERATION
O/D Direct Clutch (C_0)	Connects overdrive sun gear and overdrive carrier
O/D Brake (B_0)	Prevents overdrive sun gear from turning either clockwise or counterclockwise
O/D One-Way Clutch (F_0)	When transmission is being driven by engine, connects overdrive sun gear and overdrive carrier
Forward Clutch (C_1)	Connects input shaft and front planetary ring gear
Direct Clutch (C_2)	Connects input shaft and front & rear planetary sun gear
2nd Coast Brake (B_1)	Prevents front & rear planetary sun gear from turning either clockwise or counterclockwise
2nd Brake (B_2)	Prevents outer race of F_1 from turning either clockwise or counterclockwise, thus preventing front & rear planetary sun gear from turning counterclockwise
1st & Reverse Brake (B_3)	Prevents rear planetary carrier from turning either clockwise or counterclockwise
No.1 One-Way Clutch (F_1)	When B_2 is operating, prevents front & rear planetary sun gear from turning counterclockwise
No.2 One-Way Clutch (F_2)	Prevents rear planetary carrier from turning counterclockwise



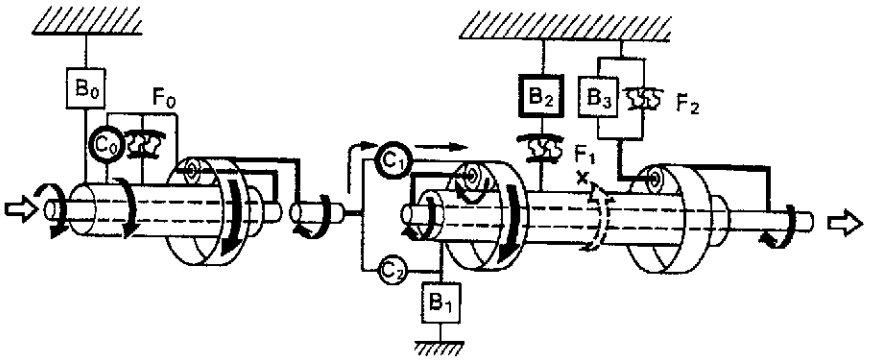
AT

D or 2 Position 1st Gear



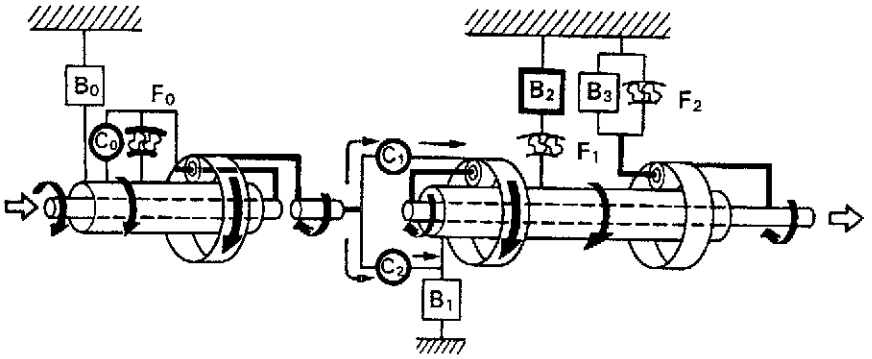
AT6675

D Position 2nd Gear



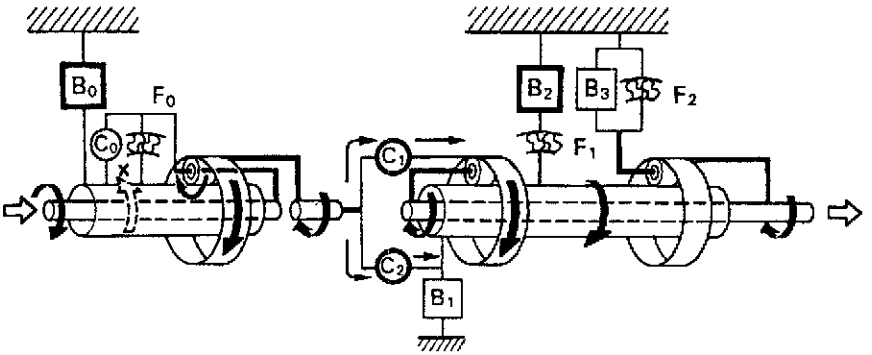
AT6676

D or 2 Position 3rd Gear



AT6677

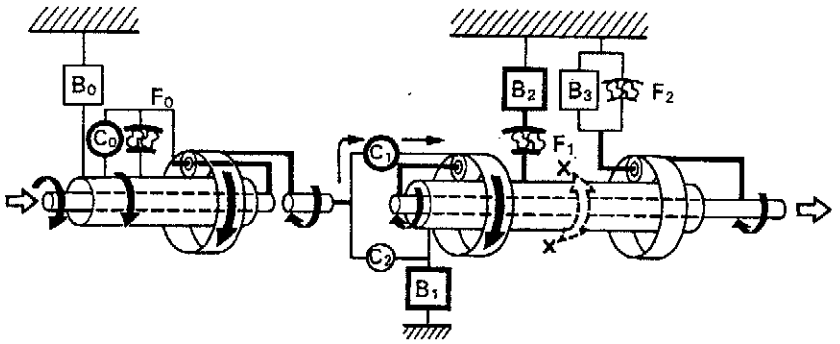
D Position O/D



AT6678

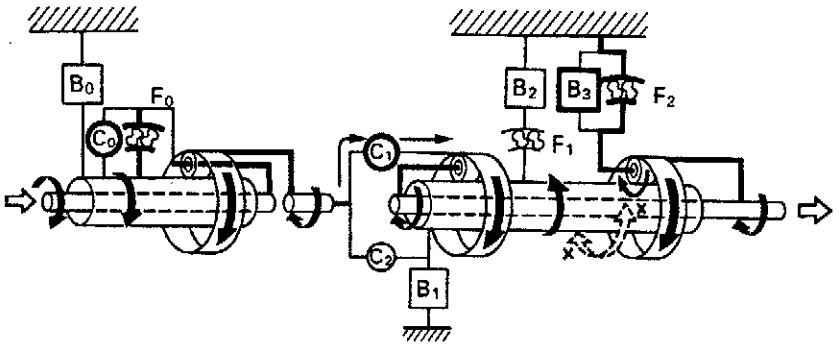
V02110

2 or L Position 2nd Gear



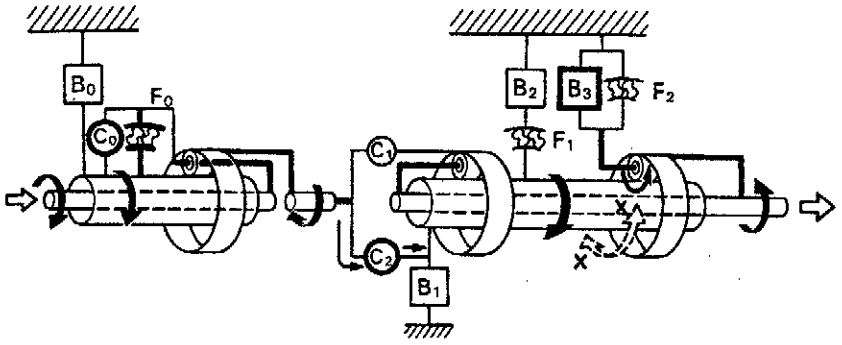
AT6679

L Position 1st Gear



AT6680

R Position Reverse Gear



AT6681

V02111

3. HYDRAULIC CONTROL SYSTEM

The hydraulic control system is composed of the oil pump, the valve body, the solenoid valves, the accumulators, 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.

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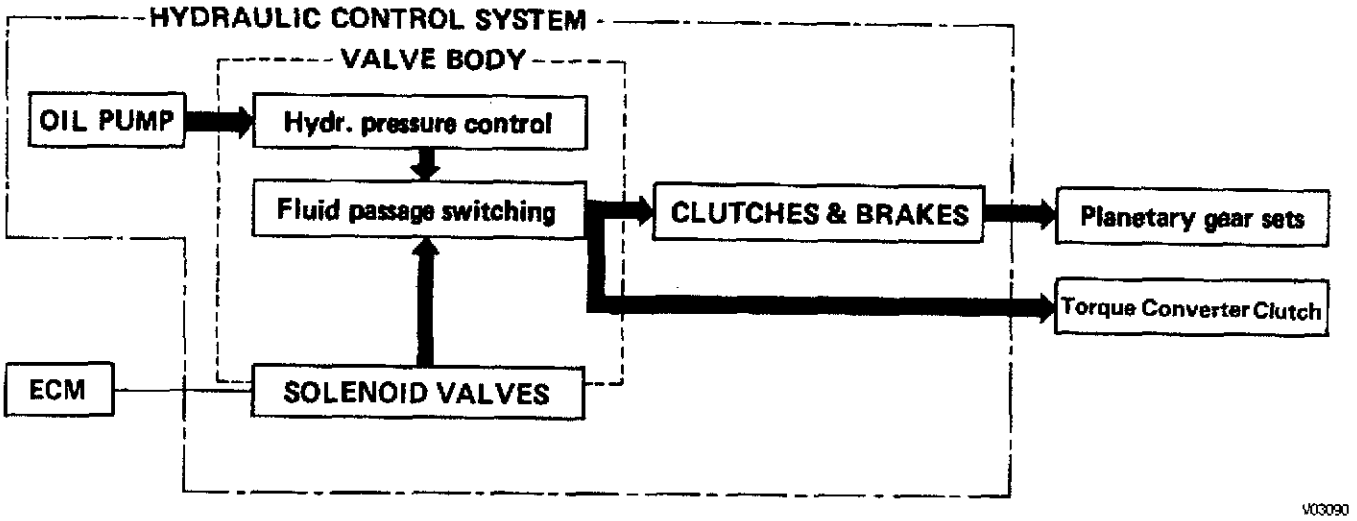
There are 5 solenoid valves on the valve body.

The No.1 and No.2 solenoid valves are turned on and off by signals from the ECM to control the shift valves, and change the gear shift position.

The No.3 solenoid valve is operated by signals from the ECM to engage or disengage the lock–up clutch of the torque converter clutch.

The No.4 solenoid valve is operated by signals from the ECM to control the engagement speed and reduce gear shift shock.

The No.5 solenoid valve is operated by signals from the ECM to regulate the line pressure to throttle pressure.



4. ELECTRONIC CONTROL SYSTEM

The electronic control system for the A340E automatic transmission provides extremely precise control of the gear shift timing and lock–up timing in response to driving conditions as sensed by various sensors located throughout the vehicle and in response to the engine's running condition.

In addition, the ECM control reduces vehicle squat when the shift lever is moved from N to D.

The electronic control system is also equipped with a self diagnosis system which diagnoses malfunctions for the vehicle to continue functioning when a malfunction occurs.

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CONSTRUCTION

The electronic control system can be broadly divided onto three groups; the sensors, ECM and actuators.

