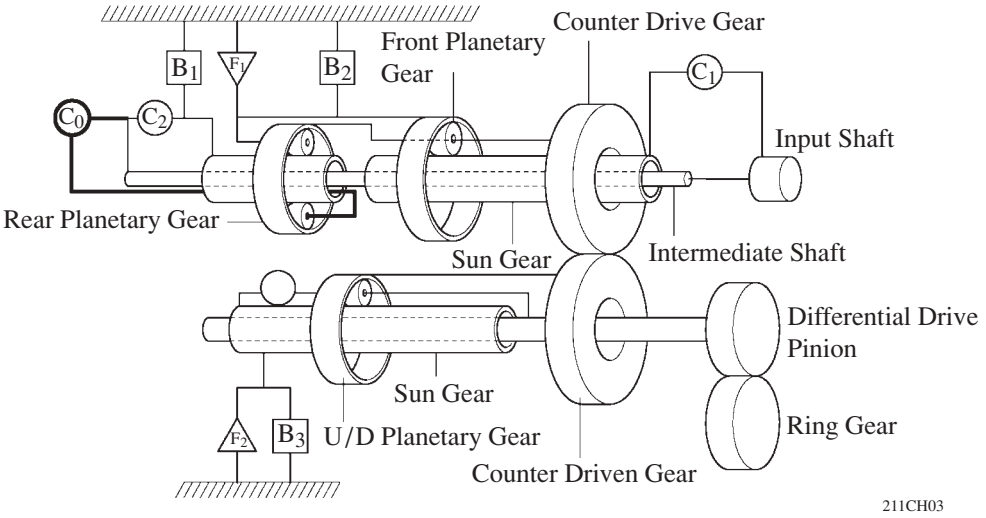
■PLANETARY GEAR UNIT

1. Construction

- The counter drive and driven gears are placed in front of the front planetary gear and the under drive (U/D) planetary gear unit is placed above the counter shaft. Furthermore, the force transmission method has been changed by eliminating the brake and the one-way clutch. As a result, a torque capacity that accommodates the high output engine has been attained, while realizing a compact gear unit.
- A centrifugal fluid pressure canceling mechanism has been adopted in the C_0, C_2, C_3, and C_1 clutches that are applied when shifting from 2nd to 3rd and from 3rd to 4th. For detail, refer to Centrifugal Fluid Pressure Canceling Mechanism section on page CH-11.
- Direct & O/D clutch (C_0) has been adopted.
- A centrifugal fluid pressure canceling mechanism has been adopted in the C_0 clutch that is applied when shifting from 4th to 5th.
- The operating gears for the C_2 clutch and the B_1 brake have been changed, and their names have been changed to the "reverse clutch" and "2nd & O/D brake", respectively.



2. Function of Components

Components		Function
C_1	Forward Clutch	Connects input shaft and front planetary sun gear.
C_2	Reverse Clutch	Connects input shaft and rear planetary sun gear.
C_3	U/D Direct Brake	Connects U/D sun gear and U/D planetary carrier.
C_0	Direct & O/D Clutch	Connects input shaft and rear planetary carrier.
B_1	2nd & O/D Brake	Prevents rear planetary sun gear from turning either clockwise or counterclockwise.
B_2	1st & Reverse Brake	Prevents rear planetary carrier from turning either clockwise orc ounterclockwise.
B_3	U/D Brake	Prevents U/D planetary sun gear from turning either clockwise or counterclockwise.
F_1	No.1 One-Way Clutch	Prevents rear planetary carrier from turning counterclockwise.
F_2	U/D One-Way Clutch	Prevents U/D planetary sun gear from turning clockwise.
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.

3. Transaxle Power Flow

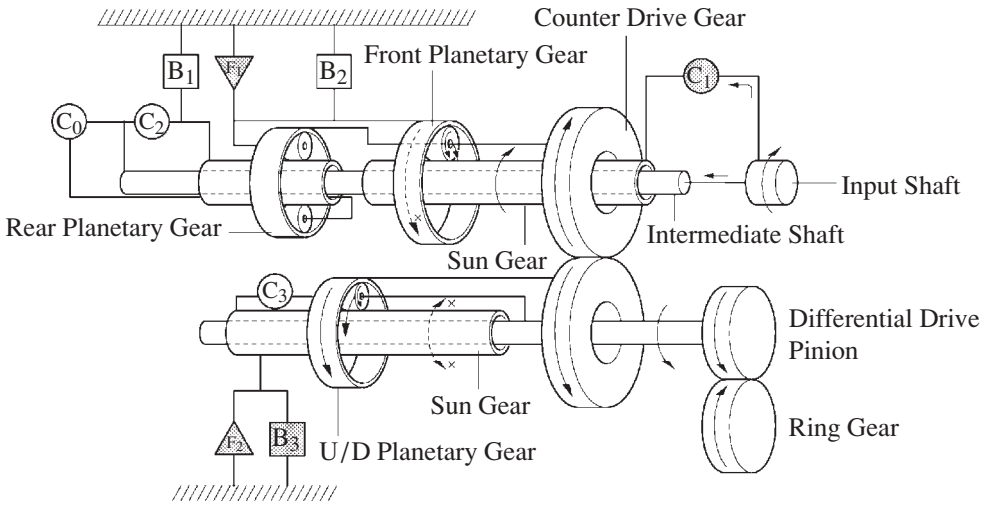
Shift Lever Position	Gear	Solenoid Valve						Clutch				Brake			One-way Clutch	
		S4	SR	DSL	SL1	SL2	SL3	C_0	C_1	C_2	C_3	B_1	B_2	B_3	F_1	F_2
P	Park				○	○								○		
R	Reverse				○	○				○			○	○		
N	Neutral				○	○								○		
D	1st				○	○			○					○	○	○
	2nd					○			○			○		○		○
	3rd		○	Δ*2	○	Δ*2		○	○					○		○
	4th		○	Δ*1◆		Δ*1◆	○	○				○		○		○
	5th	○	○	Δ◆		Δ◆	○	○			○	○				
4	1st				○	○			○					○	○	○
	2nd					○			○			○		○		○
	3rd		○	Δ*2	○	Δ*2		○	○					○		○
	4th		○	Δ◆		Δ◆	○	○				○		○		○
3	1st				○	○			○					○	○	○
	2nd					○			○			○		○		○
	3rd		○		○			○	○					○		○
2	1st				○	○			○					○	○	○
	2nd					○			○			○		○		○
L	1st			○	○	○			○				○	○	○	○

[○ : ON Δ : Lock-up ON ◆ : Flex lock-up ON (during deceleration only)]

*1: Shift control operates only when 5th is prohibited while traveling uphill/downhill.

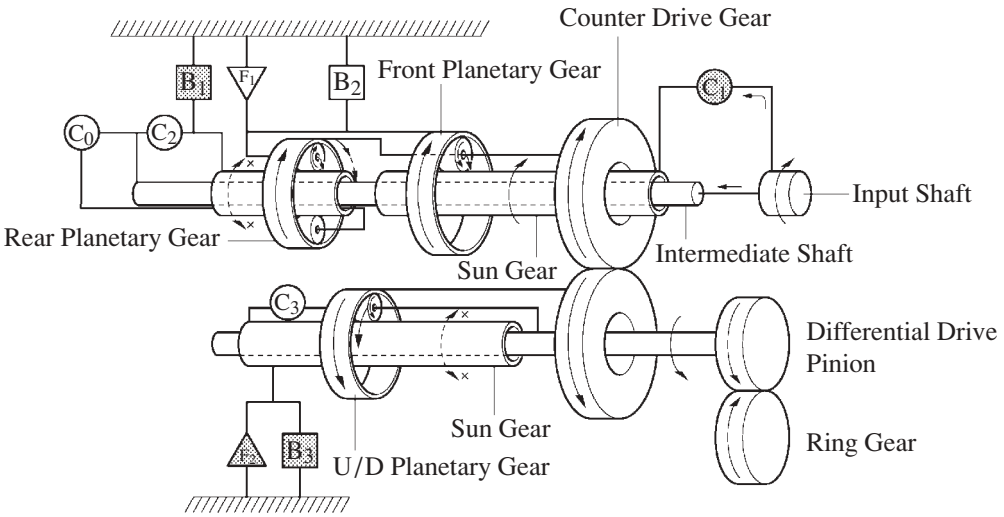
*2: Shift control operates only when 4th is prohibited while traveling uphill/downhill.

1st Gear (Except L Position)



211CH04

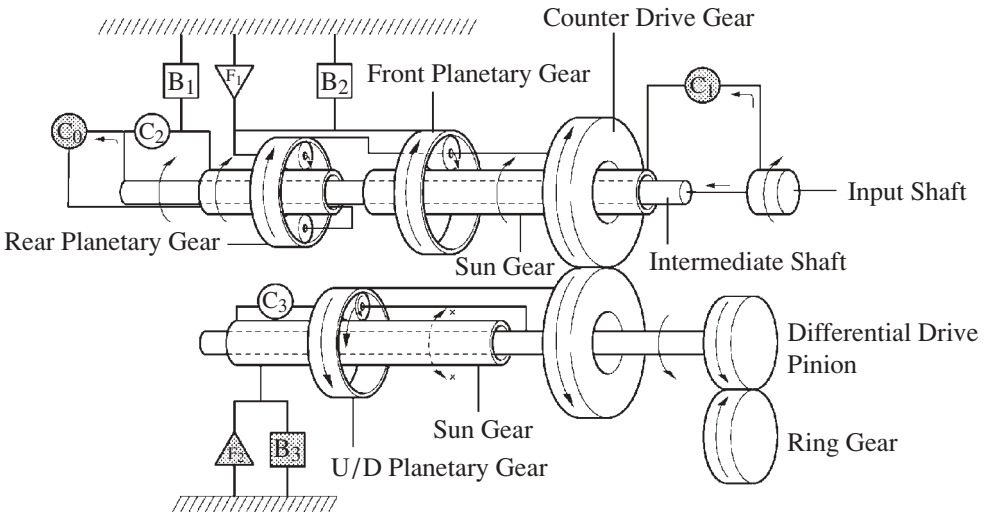
2nd Gear



211CH05

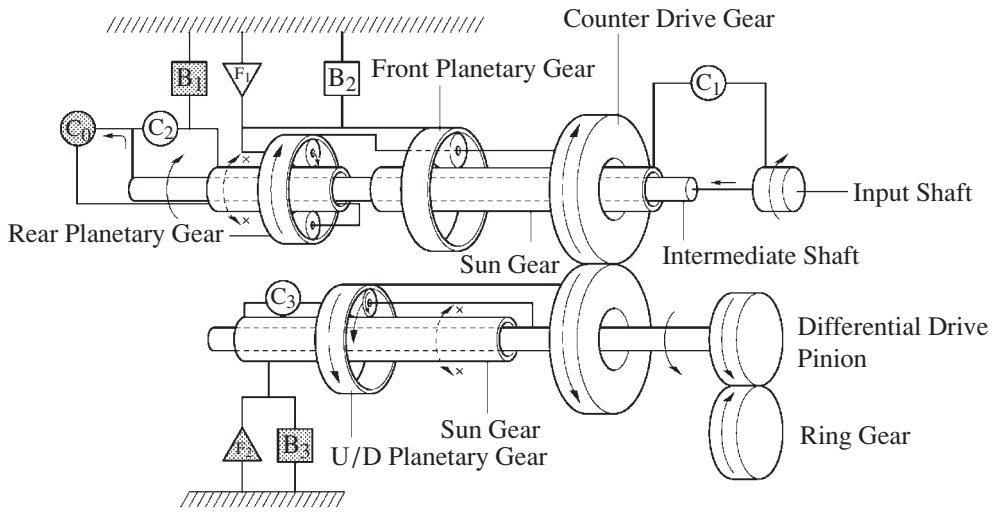
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3rd Gear



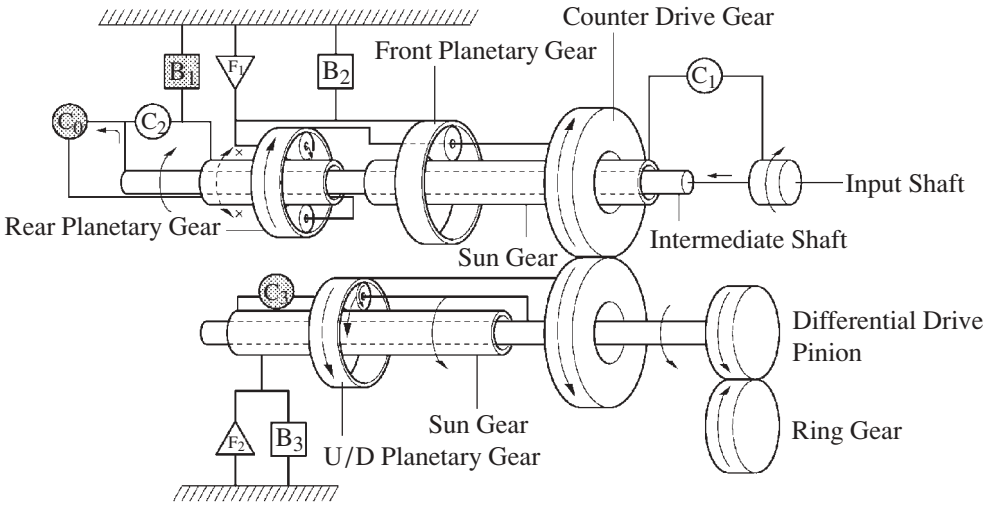
211CH06

4th Gear

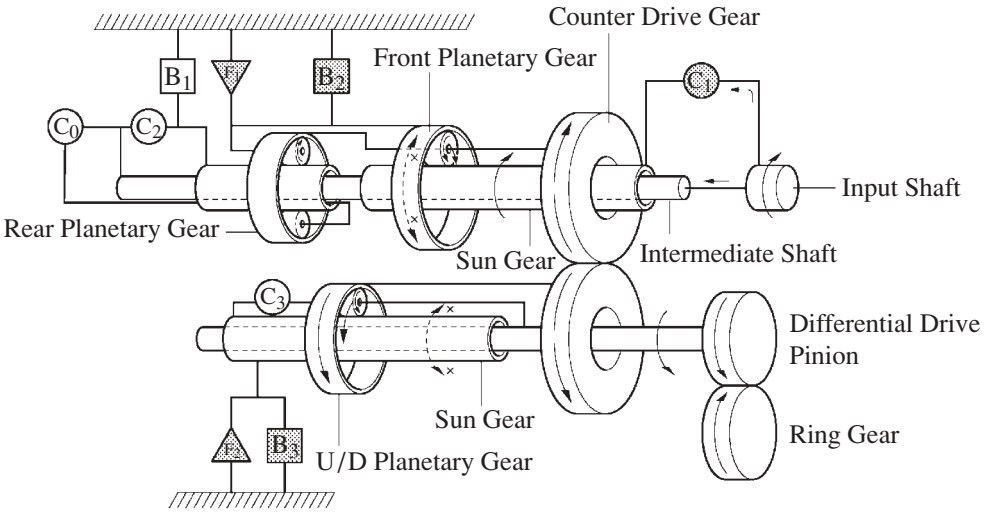


211CH07

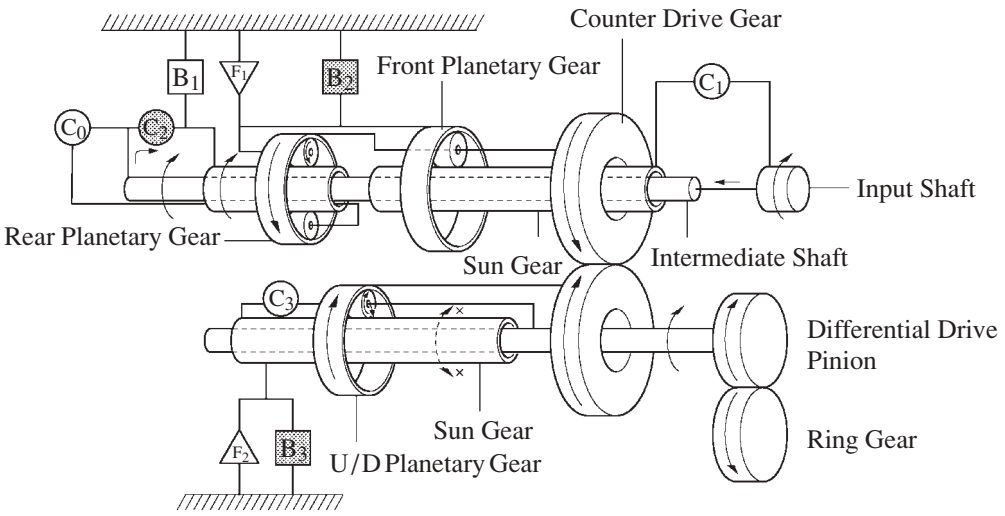
5th Gear



1st Gear (L Position)



Reverse Gear (R Position)



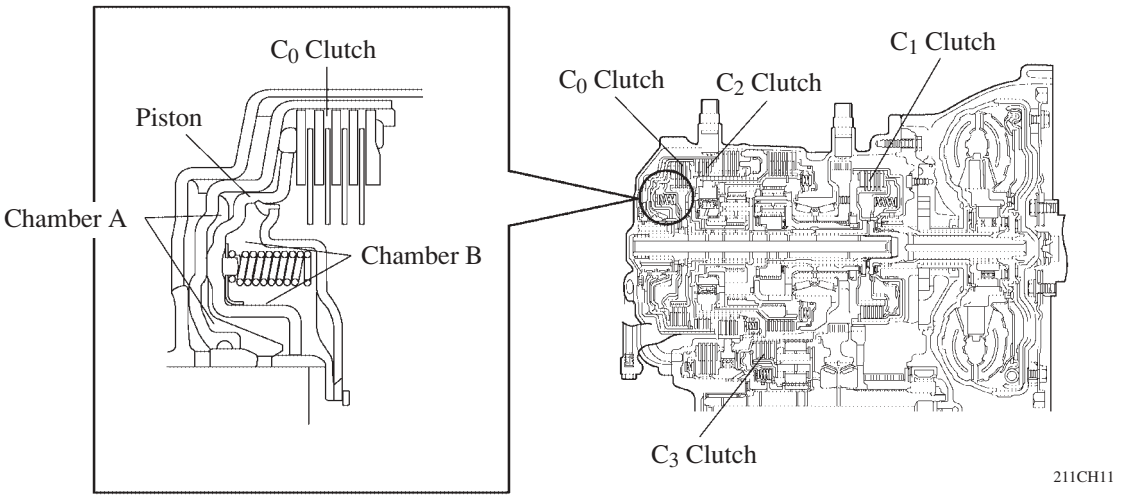
241CH96

4. Centrifugal Fluid Pressure Canceling Mechanism

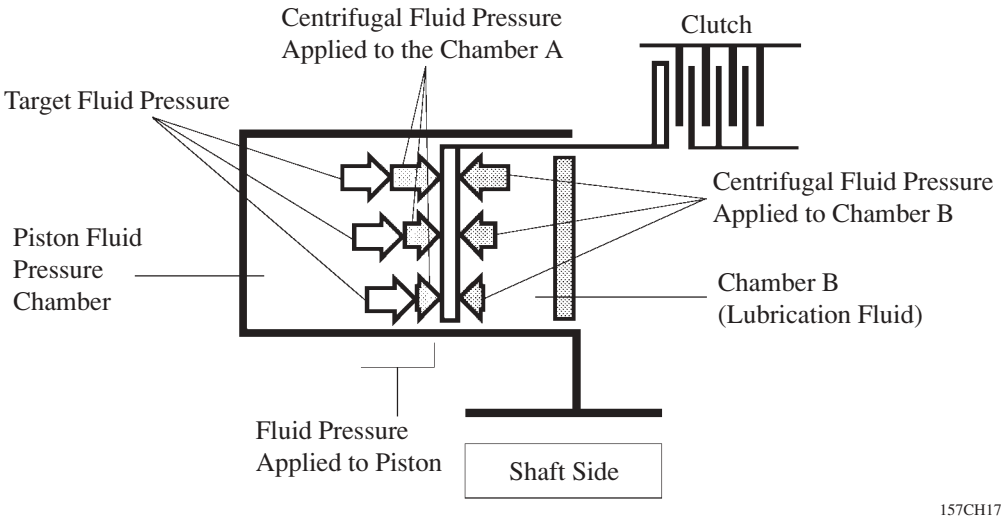
There are two reasons for improving the conventional clutch mechanism:

- To prevent the generation of pressure by the centrifugal force that applied to the fluid in piston fluid pressure chamber (hereafter referred to as "chamber A") when the clutch is released, a check ball is provided to discharge the fluid. Therefore, before the clutch can be subsequently applied, it takes time for the fluid to fill the chamber A.
- During shifting, in addition to the original clutch pressure that is controlled by the valve body, the pressure that acts on the fluid in the chamber A also exerts influence, which is dependent upon revolution fluctuations.

To address these two needs for improvement, a canceling fluid pressure chamber (hereafter referred to as "chamber B") has been provided opposite chamber A.



By utilizing the lubrication fluid such as that of the shaft, the same amount of centrifugal force is applied, thus canceling the centrifugal force that is applied to the piston itself. Accordingly, it is not necessary to discharge the fluid through the use of a check ball, and a highly responsive and smooth shifting characteristic has been achieved.



Fluid pressure applied to piston	—	Centrifugal fluid pressure applied to chamber B	=	Target fluid pressure (original clutch pressure)