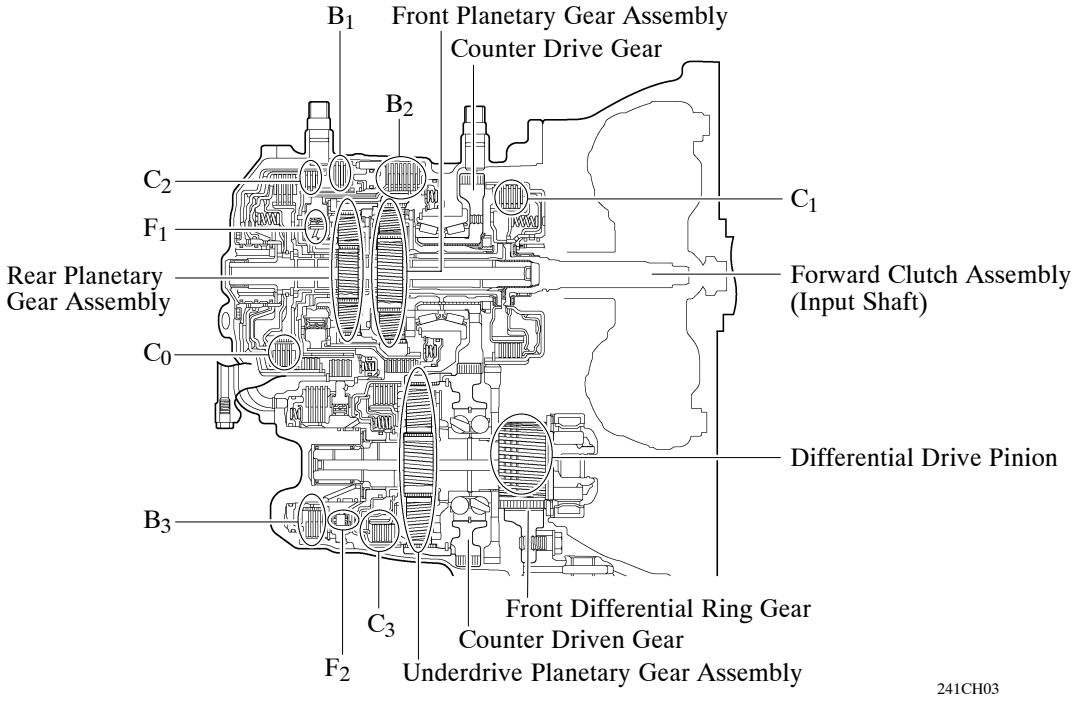
■PLANETARY GEAR UNIT

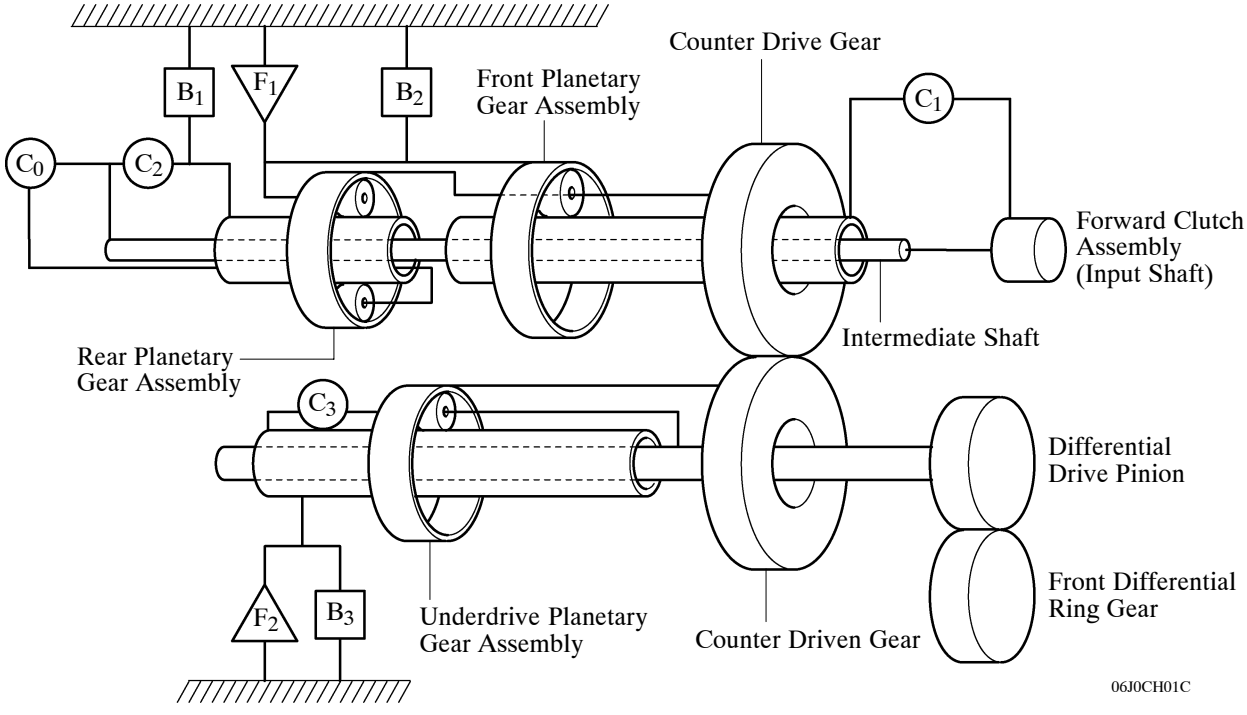
1. Construction

The counter drive and driven gears are placed in front of the front planetary gear assembly and the underdrive planetary gear assembly is placed above the counter shaft. Furthermore, the number of brakes and one-way clutches is minimized to realize the compact and high-capacity structure.

- A centrifugal fluid pressure canceling mechanism is used in the C_0, C_1, and C_3 clutches that are applied when shifting from 2nd to 3rd, from 3rd to 4th and from 4th to 5th. For details on the centrifugal fluid pressure mechanism, see page CH-12.



▶ Simple Diagram ◀



2. Specifications

Transaxle Type			U151E	U151F
C_1	Forward Clutch	The No. of Discs	5	5
C_2	Reverse Clutch		3	3
C_3	Underdrive Direct Clutch		4	4
C_0	Overdrive Direct Clutch		4	4
B_1	2nd Brake		4	4
B_2	1st & Reverse Brake		6	6
B_3	Underdrive Brake		4	4
F_1	No.1 One-way Clutch	The No. of Sprags	28	28
F_2	Underdrive One-way Clutch		24	24
Front Planetary Gear Assembly		The No. of Sun Gear Teeth	43	43
		The No. of Pinion Gear Teeth	17	17
		The No. of Ring Gear Teeth	77	77
Rear Planetary Gear Assembly		The No. of Sun Gear Teeth	31	31
		The No. of Pinion Gear Teeth	19	19
		The No. of Ring Gear Teeth	69	69
Underdrive Planetary Gear Assembly		The No. of Sun Gear Teeth	35	35
		The No. of Pinion Gear Teeth	28	28
		The No. of Ring Gear Teeth	91	91
Counter Gear		The No. of Drive Gear Teeth	52	52
		The No. of Driven Gear Teeth	57	57

3. Function of Components

Component		Function
C_1	Forward Clutch	Connects input shaft and front planetary sun gear.
C_2	Reverse Clutch	Connects intermediate shaft and rear planetary sun gear.
C_3	Underdrive Clutch	Connects underdrive sun gear and underdrive planetary carrier.
C_0	Overdrive Direct Clutch	Connects intermediate shaft and rear planetary carrier.
B_1	2nd Brake	Prevents rear planetary sun gear from turning either clockwise or counterclockwise.
B_2	1st & Reverse Brake	Prevents rear planetary carrier and front planetary ring gear from turning either clockwise or counterclockwise.
B_3	Underdrive Brake	Prevents underdrive planetary sun gear from turning either clockwise or counterclockwise.
F_1	No.1 One-way Clutch	Prevents rear planetary carrier and front planetary ring gear from turning counterclockwise.
F_2	Underdrive One-way Clutch	Prevents underdrive planetary sun gear from turning clockwise.
Planetary Gear		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 output speed.

4. Transaxle Power Flow

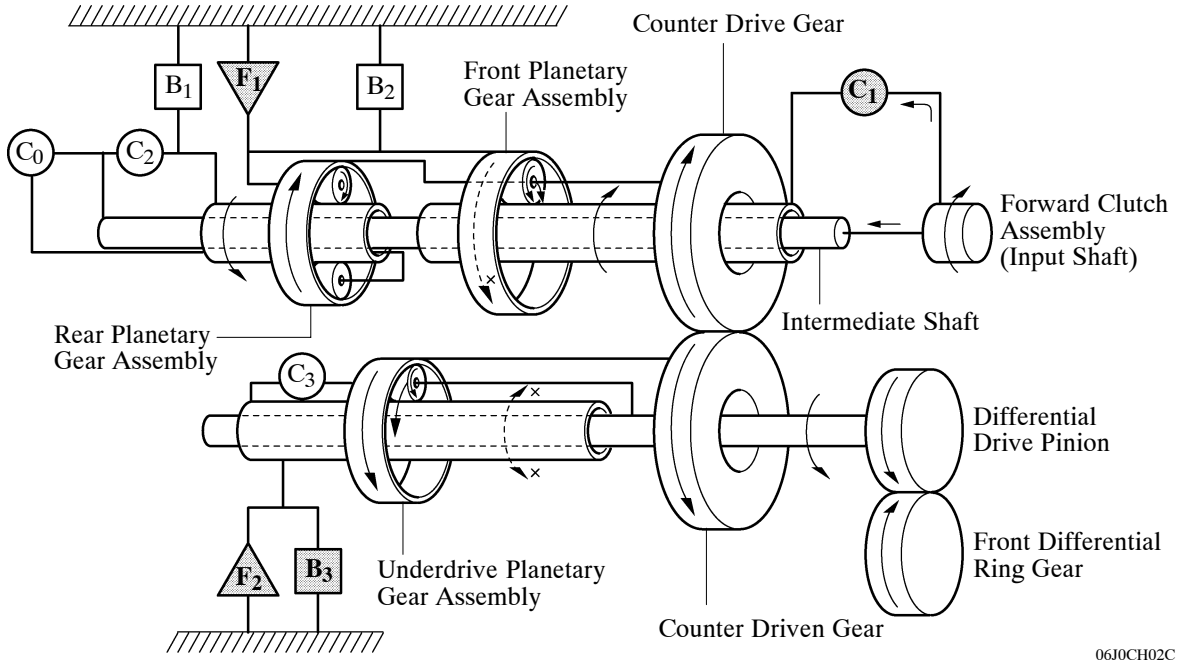
General

Shift Lever Position		Solenoid Valve						C_0	C_1	C_2	C_3	B_1	B_2	B_3	F_1	F_2
		SL1	SL2	SL3	S4	SR	DSL									
P		ON	ON	OFF	OFF	OFF	OFF							○		
R		ON	ON	OFF	OFF	OFF	OFF			○			○	○		
N		ON	ON	OFF	OFF	OFF	OFF							○		
D S5	1st	ON	ON	OFF	OFF	OFF	OFF		○					○	○	○
	2nd	OFF	ON	OFF	OFF	OFF	OFF		○			○		○		○
	3rd	ON	OFF	OFF	OFF	ON	OFF	○	○					○		○
	4th	OFF	OFF/ ON*	ON	OFF	ON	OFF/ ON*	○				○		○		○
	5th	OFF	OFF/ ON*	ON	ON	ON	OFF/ ON*	○			○	○				
S4	1st	ON	ON	OFF	OFF	OFF	OFF		○					○	○	○
	2nd	OFF	ON	OFF	OFF	OFF	OFF		○			○		○		○
	3rd	ON	OFF	OFF	OFF	ON	OFF	○	○					○		○
	4th	OFF	OFF/ ON*	ON	OFF	ON	OFF/ ON*	○				○		○		○
S3	1st	ON	ON	OFF	OFF	OFF	OFF		○					○	○	○
	2nd	OFF	ON	OFF	OFF	OFF	OFF		○			○		○		○
	3rd	ON	OFF	OFF	OFF	ON	OFF	○	○					○		○
S2	1st	ON	ON	OFF	OFF	OFF	OFF		○					○	○	○
	2nd	OFF	ON	OFF	OFF	OFF	OFF		○			○		○		○
S1	1st	ON	ON	OFF	OFF	OFF	ON		○				○	○	○	○

○: Operates *: Flex Lock-up: ON

CH

1st Gear (D Position or S Position*)

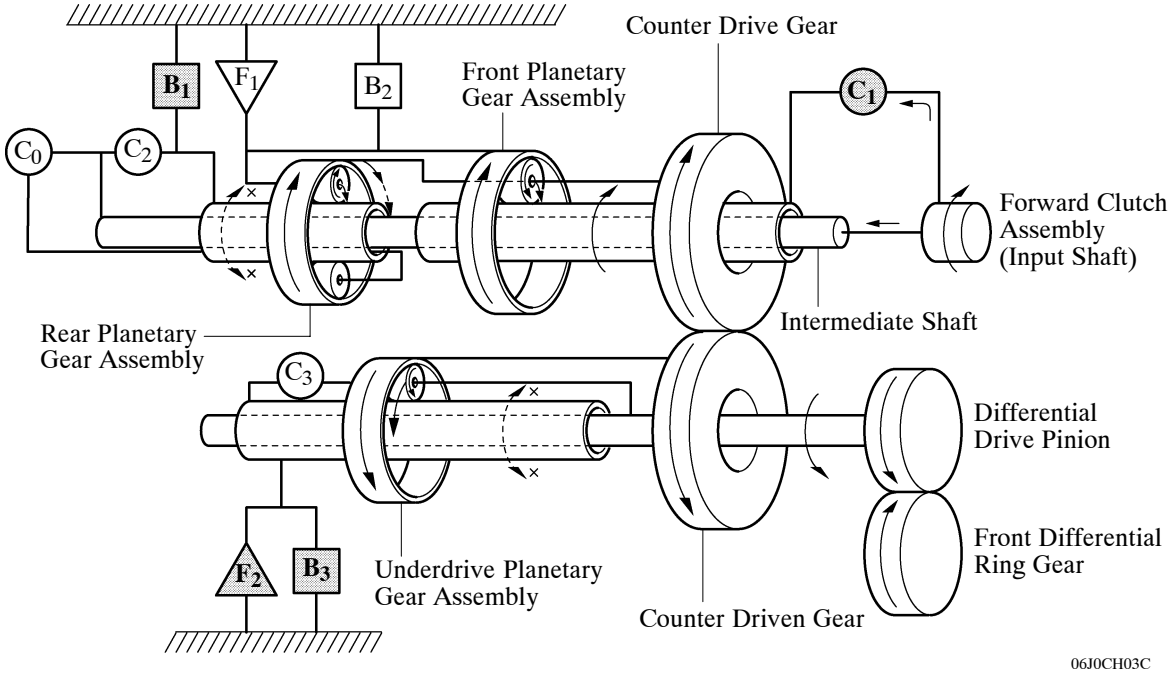


C_0	C_1	C_2	C_3	B_1	B_2	B_3	F_1	F_2
	○					○	○	○

○: Operates

*: Does not include S1 range

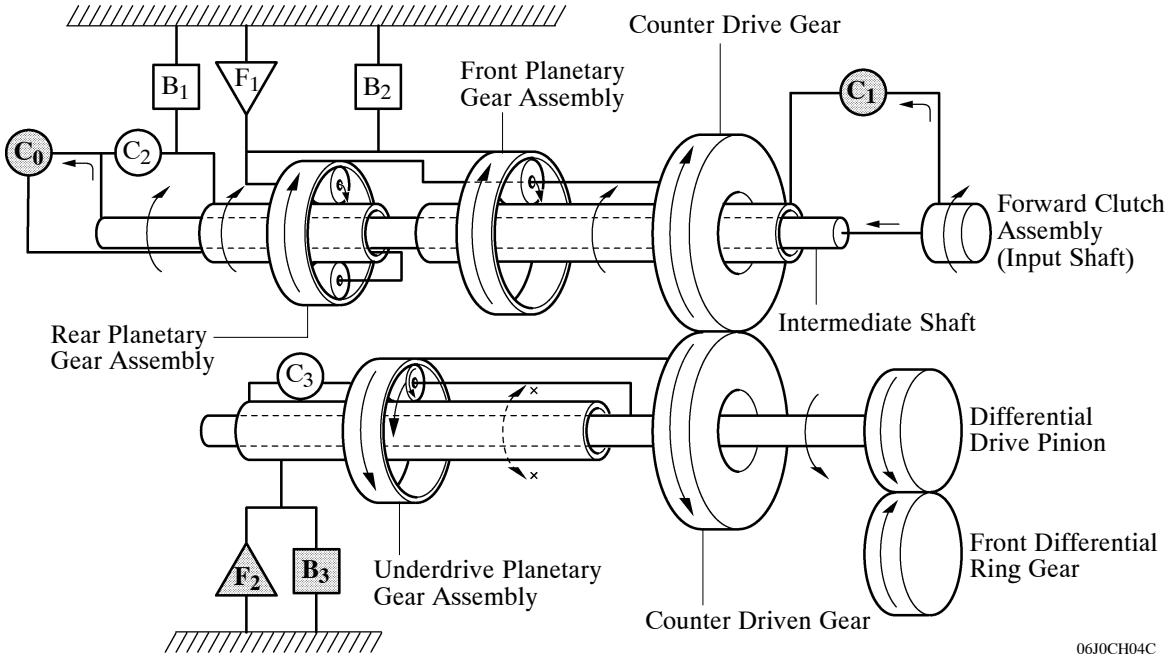
2nd Gear (D Position or S Position)



C_0	C_1	C_2	C_3	B_1	B_2	B_3	F_1	F_2
	○			○		○		○

○: Operates

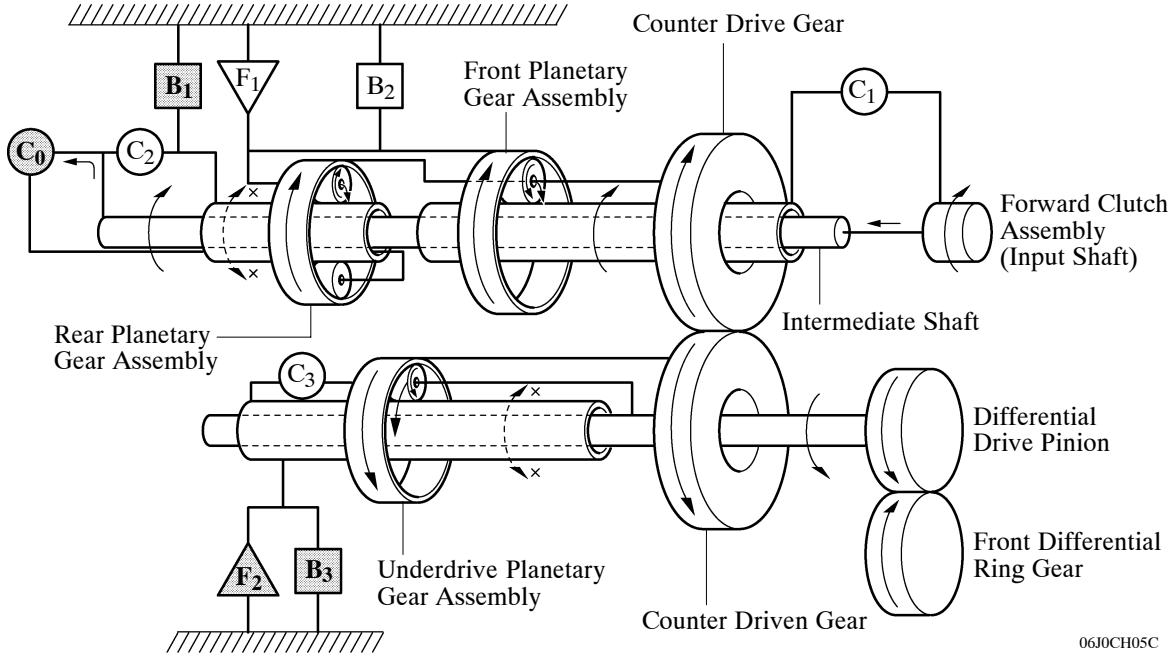
3rd Gear (D Position or S Position)



C_0	C_1	C_2	C_3	B_1	B_2	B_3	F_1	F_2
○	○					○		○

○: Operates

4th Gear (D Position or S Position)

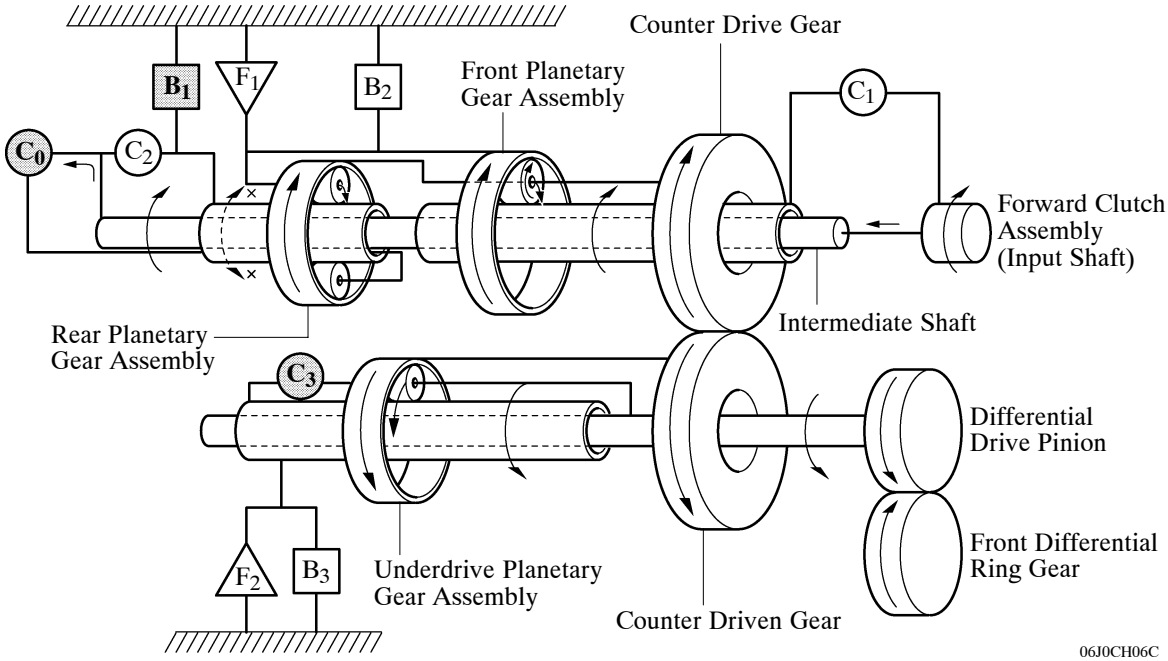


C_0	C_1	C_2	C_3	B_1	B_2	B_3	F_1	F_2
○				○		○		○

○: Operates

CH

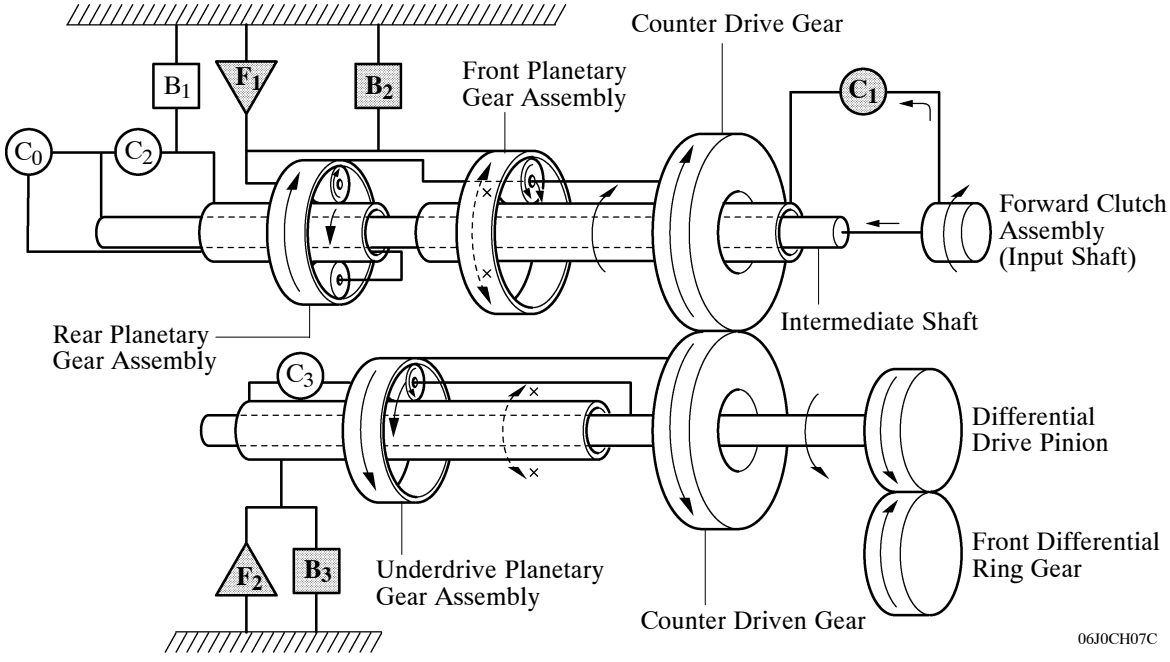
5th Gear (D Position or S Position)



C_0	C_1	C_2	C_3	B_1	B_2	B_3	F_1	F_2
○			○	○				

○: Operates

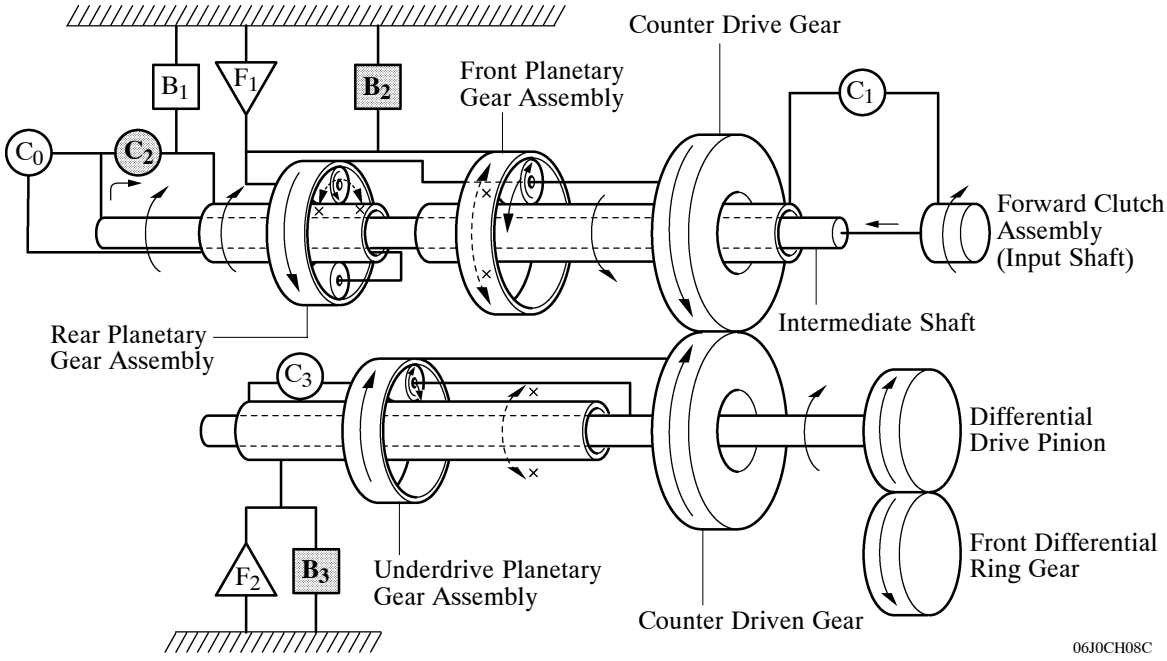
1st Gear (S1 Range)



C_0	C_1	C_2	C_3	B_1	B_2	B_3	F_1	F_2
	○				○	○	○	○

○: Operates

Reverse Gear (R Position)



C_0	C_1	C_2	C_3	B_1	B_2	B_3	F_1	F_2
		○			○	○		

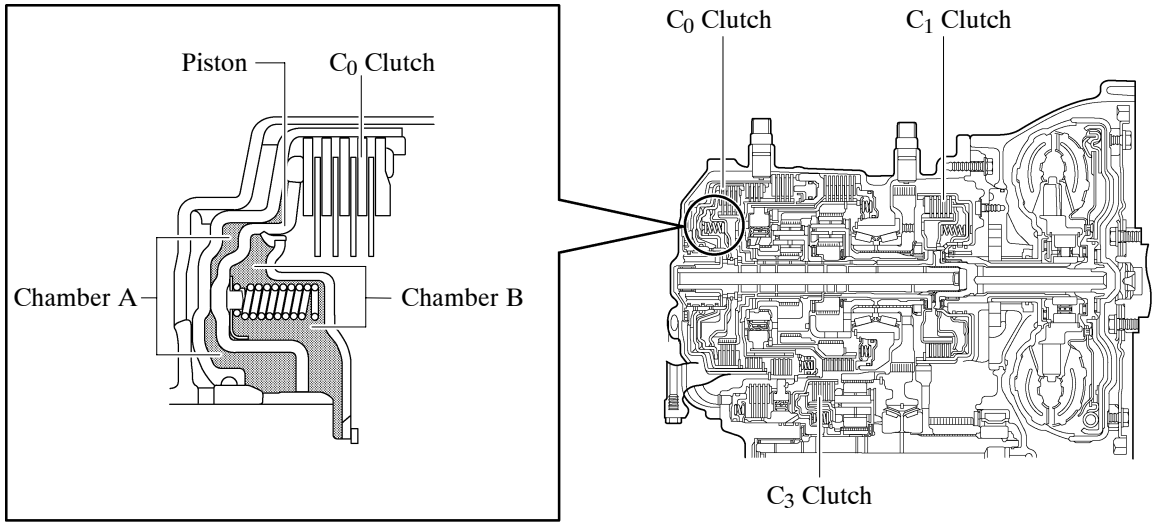
○: Operates

CH

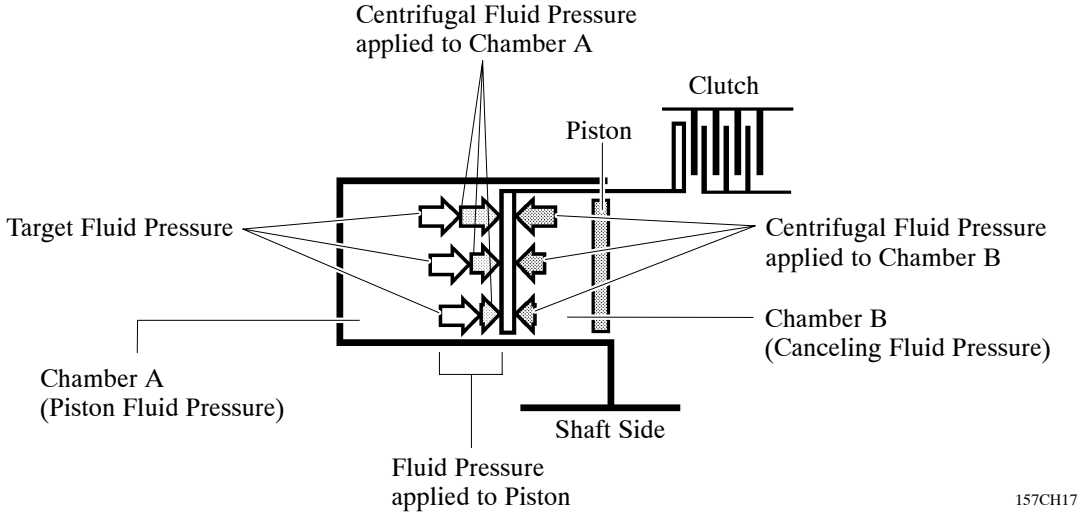
5. Centrifugal Fluid Pressure Canceling Mechanism

For the following reason, a centrifugal fluid pressure canceling mechanism is used on the C_0, C_1, and C_3 clutches.

- Clutch shifting operation is affected not only by the valve body controlling fluid pressure but also by centrifugal fluid pressure that is present due to fluid in the clutch piston oil pressure chamber. The centrifugal fluid pressure canceling mechanism has chamber B to reduce this effect on chamber A. As a result, smooth shifting with excellent response is achieved.



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