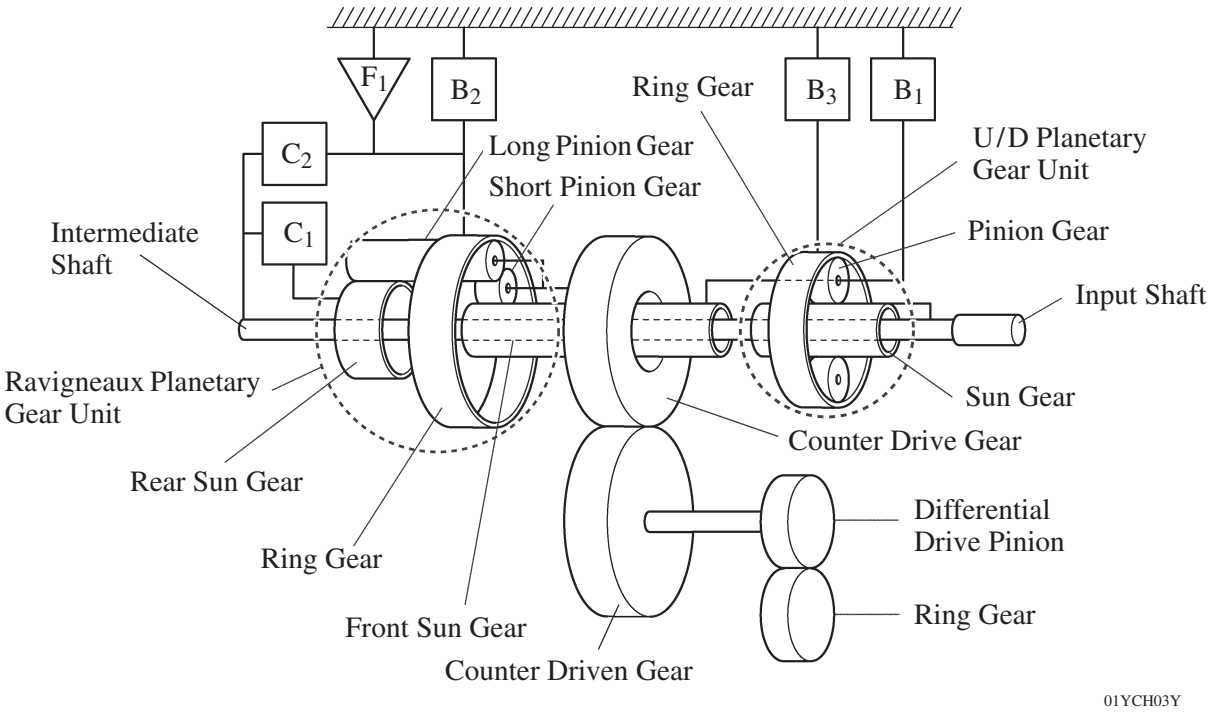
■PLANETARY GEAR UNIT

1. Construction

- The 6-speed configuration has been achieved by using 2 planetary gear units, creating a 6-speed automatic transaxle.
- A Ravingneaux type planetary gear unit is used as the rear gear unit. The gear unit consists of pairs of sun gears (front and rear) and planetary pinion gears (long and short) with different diameters within a single planetary gear.
- The centrifugal fluid pressure canceling mechanism is used.
- The shapes of the grooves in the clutches and brake linings have been optimized in order to reduce drag during clutch and brake operation.



2. Function of Components

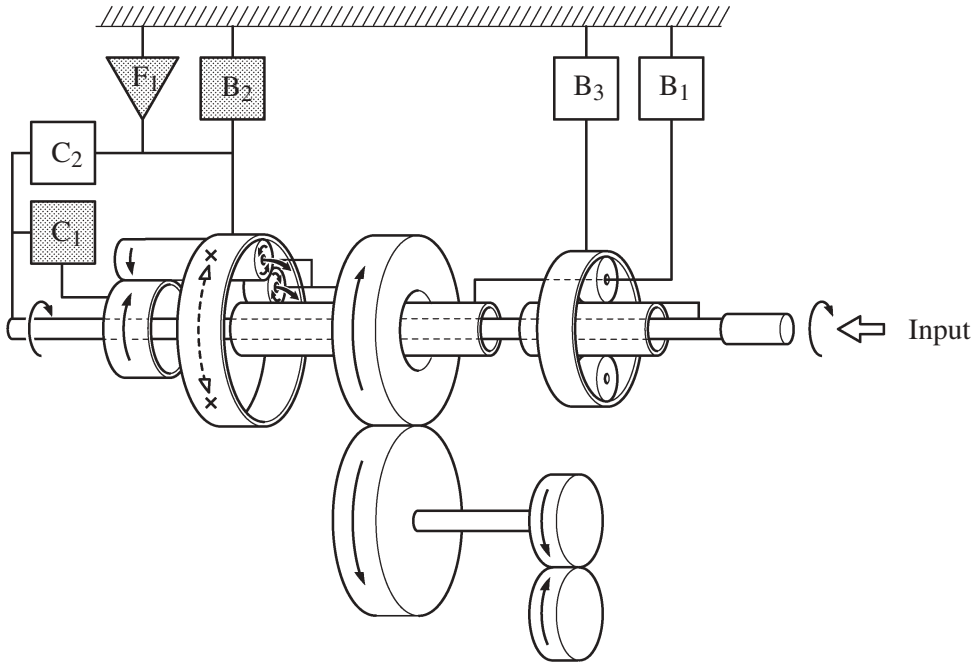
Component		Function
C_1	No.1 Clutch	Connects intermediate shaft and Ravigneaux planetary rear sun gear.
C_2	No.2 Clutch	Connects intermediate shaft and Ravigneaux planetary ring gear.
B_1	No.1 Brake	Prevents Ravigneaux planetary front sun gear and U/D planetary carrier from turning either clockwise or counterclockwise.
B_2	No.2 Brake	Prevents Ravigneaux planetary ring gear from turning either clockwise or counterclockwise.
B_3	No.3 Brake	Prevents U/D planetary ring gear from turning either clockwise or counterclockwise.
F_1	No.1 One-Way Clutch	Prevents Ravigneaux planetary ring gear from turning counterclockwise.
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 speeds.

3. Transaxle Power Flow

Shift Lever Position	Gear	Solenoid Valve						Clutch		Brake			One-way Clutch
		SL	SL1	SL2	SL3	SL4	SLU	C_1	C_2	B_1	B_2	B_3	F_1
P	Park		○										
R	Reverse	●				○					○	○	
N	Neutral		○										
D, S6	1st		○					○					○
	2nd	○	○		○		Δ	○		○			
	3rd	○	○			○	Δ	○				○	
	4th	○	○	○			Δ	○	○				
	5th	○		○		○	Δ		○			○	
	6th	○		○	○		Δ		○	○			
S5	1st		○					○					○
	2nd	○	○		○		Δ	○		○			
	3rd	○	○			○	Δ	○				○	
	4th	○	○	○			Δ	○	○				
	5th	○		○		○	Δ		○			○	
S4	1st		○					○					○
	2nd	○	○		○		Δ	○		○			
	3rd	○	○			○	Δ	○				○	
	4th	○	○	○			Δ	○	○				
S3	1st		○					○					○
	2nd		○		○			○		○			
	3rd		○			○		○				○	
S2	1st		○					○					○
	2nd		○		○			○		○			
S1	1st		○				○	○			○		○

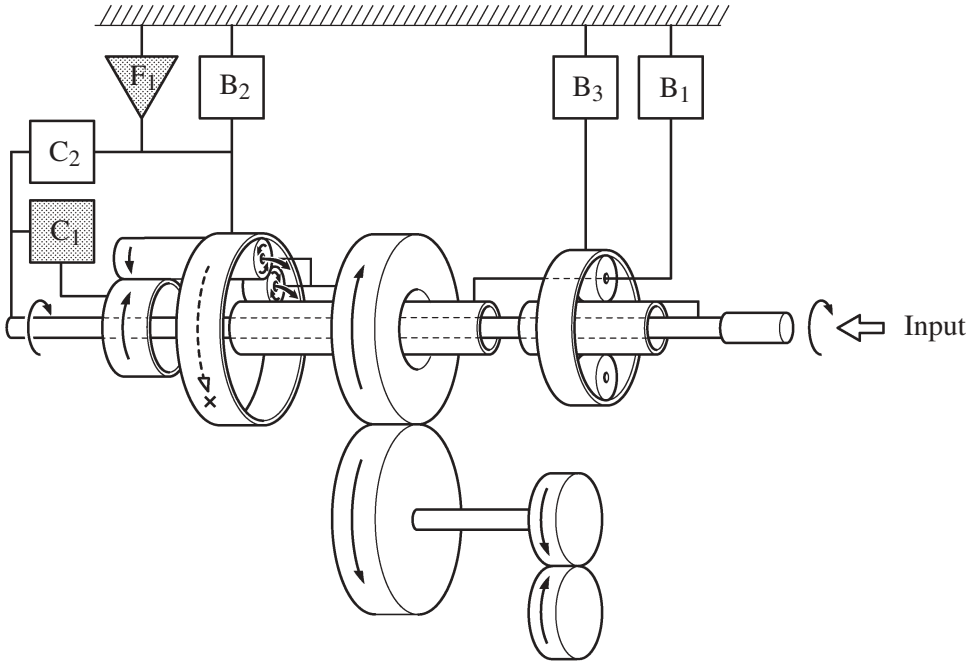
○: ON Δ: In accordance with flex lock-up ●: ON while engaging, OFF after engaged

1st Gear (S Mode 1 Range)



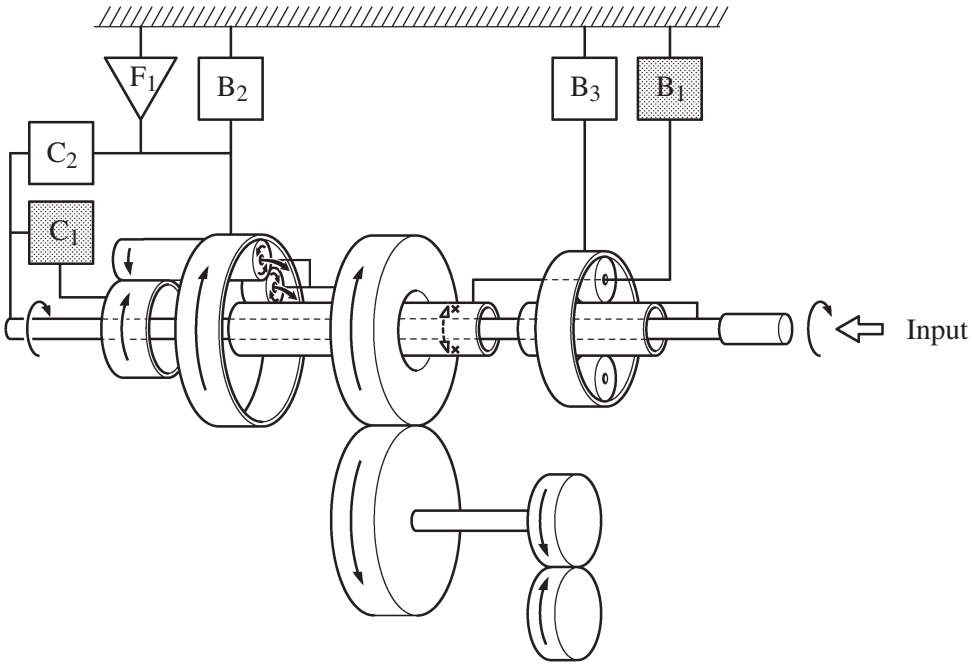
01YCH08Y

1st Gear (D Position or S Mode)



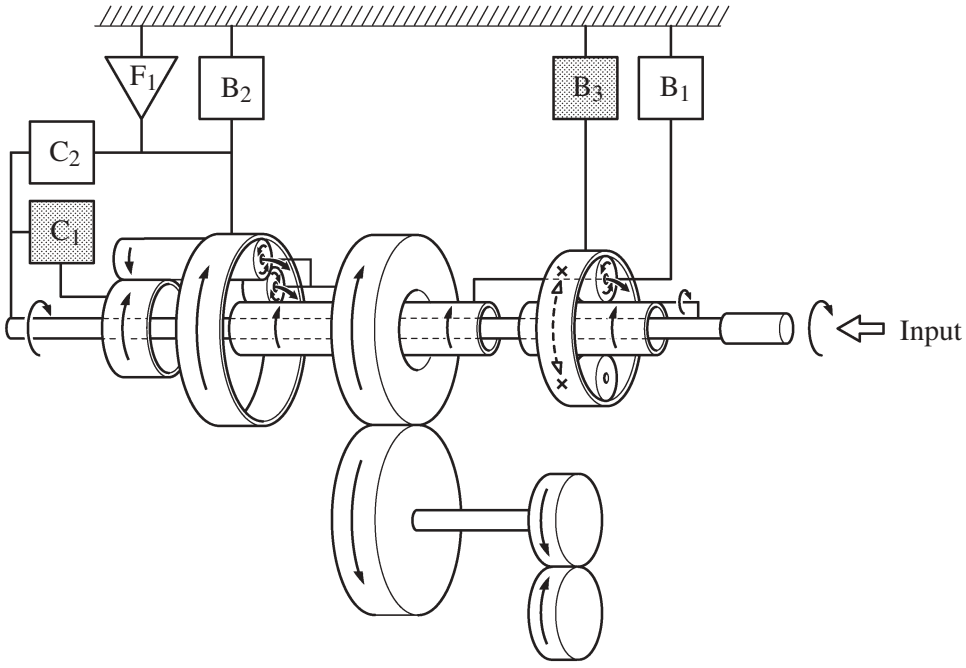
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2nd Gear (D Position or S Mode)



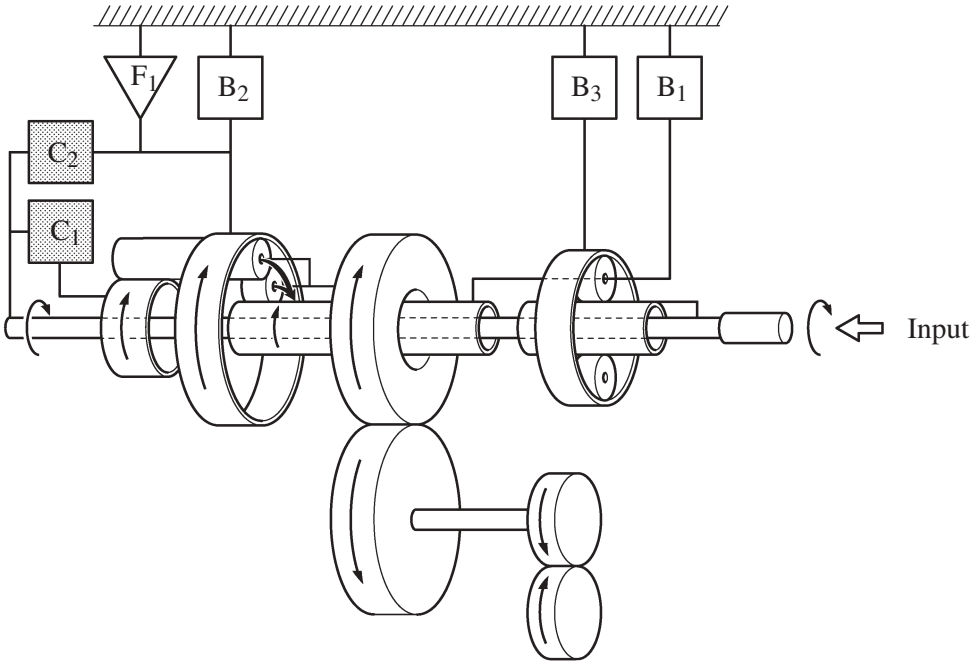
01YCH10Y

3rd Gear (D Position or S Mode)



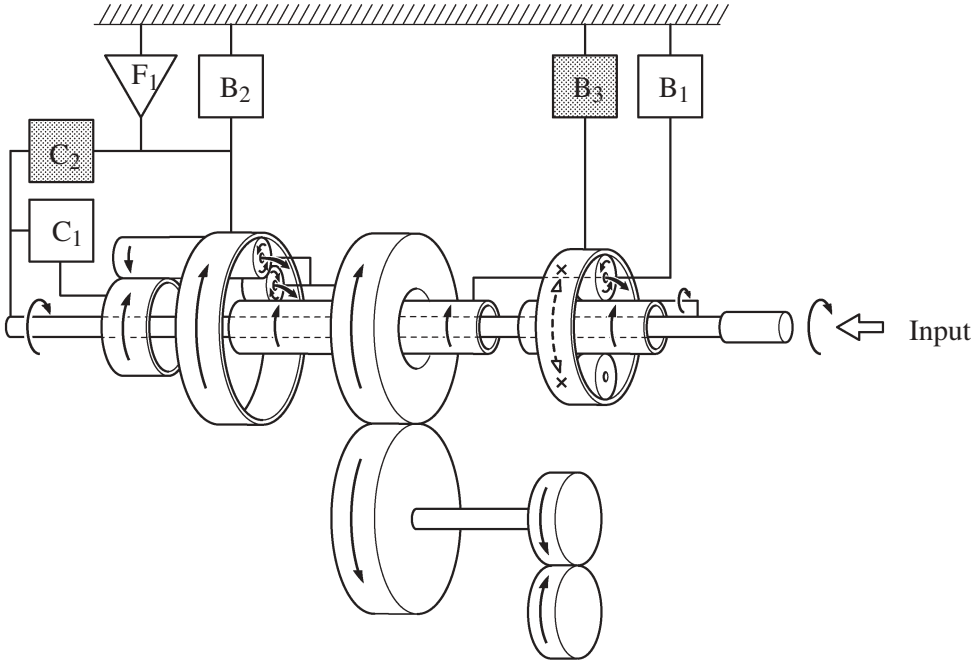
01YCH11Y

4th Gear (D Position or S Mode)



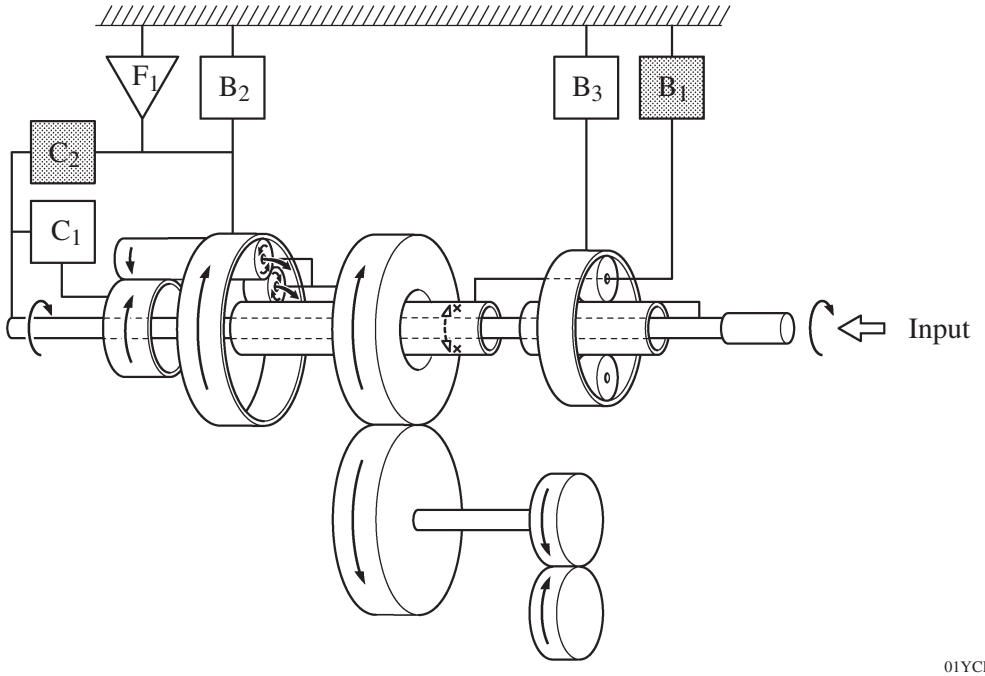
01YCH12Y

5th Gear (D Position or S Mode)



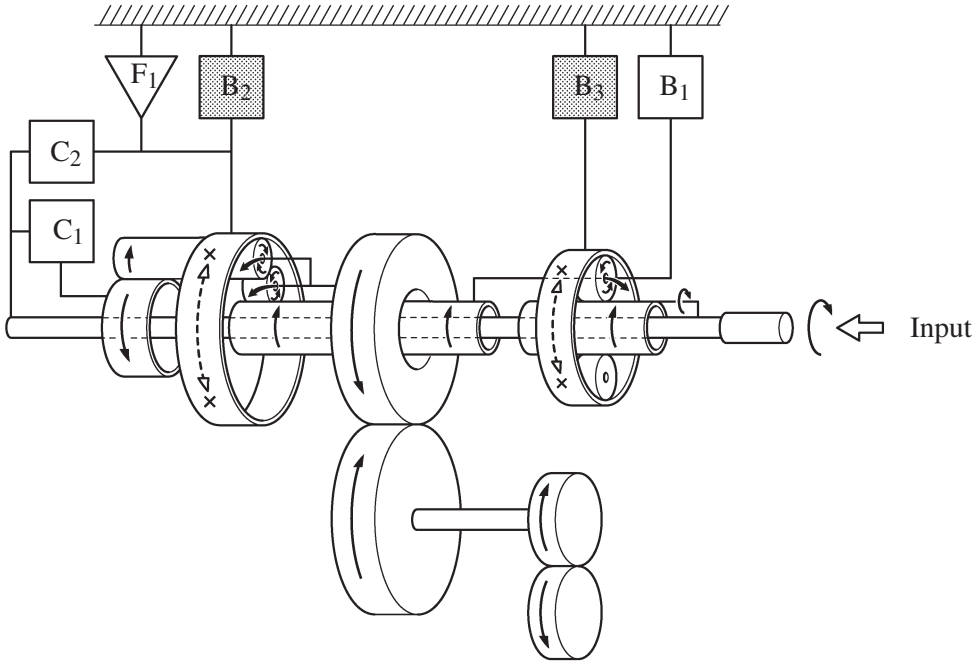
01YCH13Y

6th Gear (D Position or S Mode)



01YCH14Y

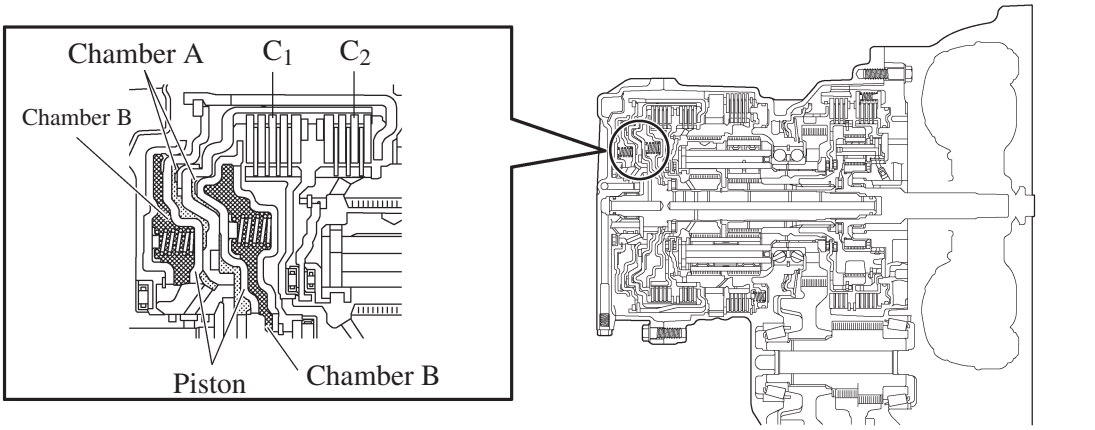
Reverse Gear (R Position)



01YCH15Y

4. Centrifugal Fluid Pressure Canceling Mechanism

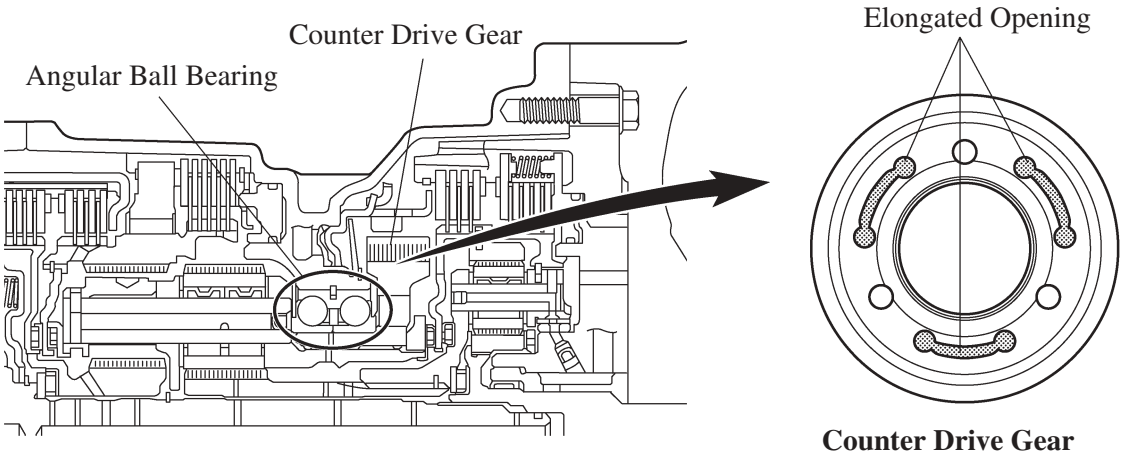
This mechanism is applied to C_1, and C_2 clutches when shifting between the 1st to 6th gears. The basic construction and operation of the mechanism are the same as those used on U241E. For detail, refer to U241E section on page CH-14.



025CH27Y

5. Counter Drive Gear

- Angular ball bearings are used to support the counter drive gear and the Ravigneaux planetary gear unit, reducing the rolling resistance and noise.
- By providing three elongated openings in the counter drive gear, the vibration conduction characteristic of the gear has been optimized. As a result, both gear noise and weight reductions have been achieved.

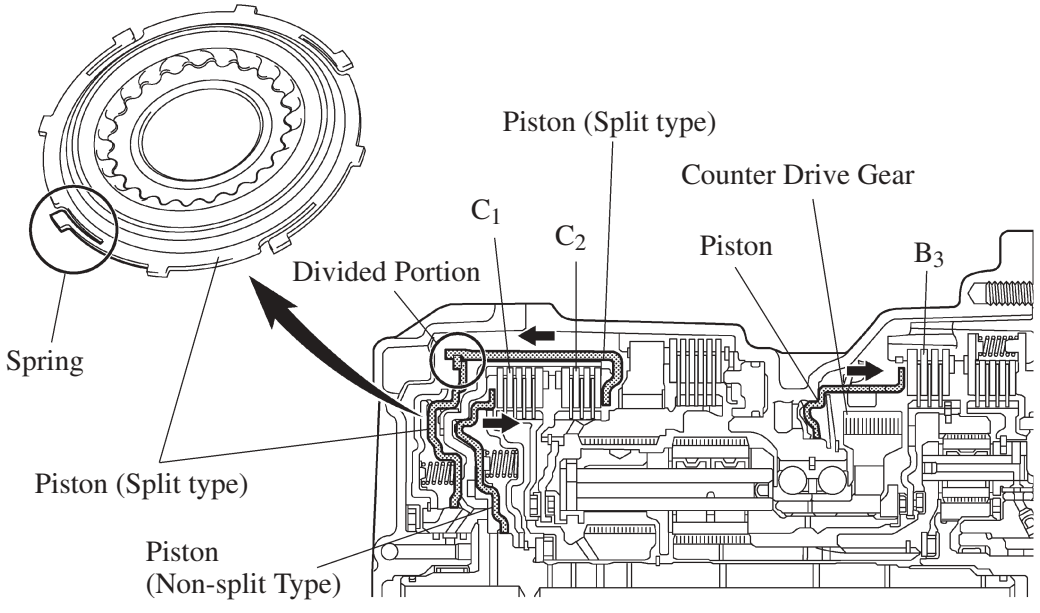


Counter Drive Gear

01YCH17Y

6. Clutch and Brake Pistons

- Two types of pistons are used; a non-split piston that acts in the push direction for the No.1 clutch (C_1) operation, and a split piston that acts in the pull direction for the No.2 clutch (C_2) operation. These two types of pistons contribute to making the entire clutch structure compact.
- When the split piston operates, clutch drag occurs due to rattling cause by the divided portion of the piston. However, by fitting springs on the piston circumference, such rattling is restrained and the occurrence of clutch drag is minimized.
- By setting the piston for the No.3 brake (B_3) operation around the counter drive gear, the brake structure has been made more compact.



01YCH18Y