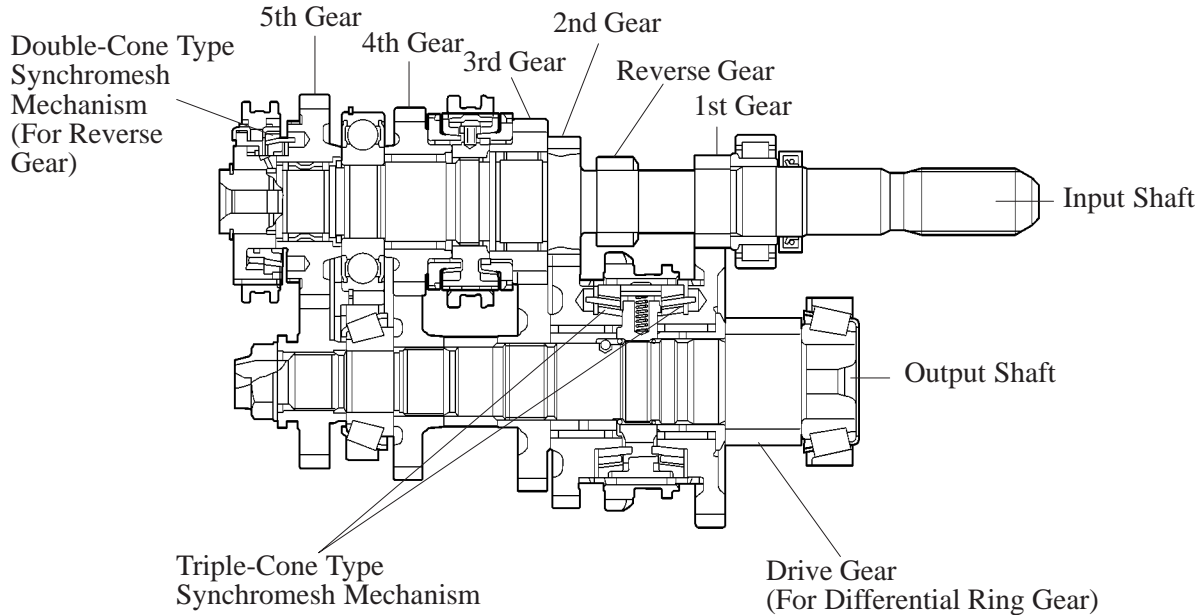


■ TRANSMISSION GEAR

1. General

- A triple-cone type synchronmesh mechanism is used in the 1st gear and 2nd gear to increase the synchronizer capacity. This helps to reduce the shifting effort and provide smoother shifting.
- A double-cone type synchronmesh mechanism is used in the reverse gear to suppress gear engagement noise.

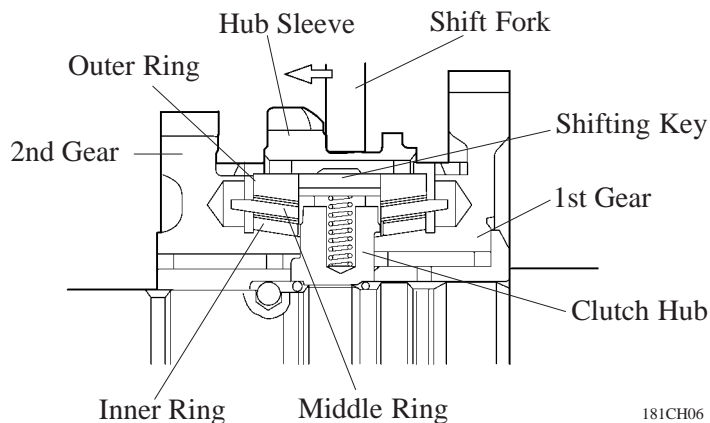


181CH05

2. Construction and Operation

1st and 2nd Gear (Triple-Cone Type Synchronmesh Mechanism)

The triple-cone type synchronmesh mechanism consists of an outer ring, middle ring, inner ring and gear piece, in addition to a clutch hub, shifting keys and a hub sleeve. The outer ring and inner ring, together with the clutch hub, shifting keys and a hub sleeve, always turn in unison with the transmission output shaft. The middle ring, together with the gear piece, always turns in unison with the transmission gear. During shifting, the shifting keys push against the outer ring via the hub sleeve. As a result, friction is generated between the three cones, comprised of the outer ring and middle ring, the middle ring and inner ring, and the inner ring and gear piece, thus causing a synchronizing action and permitting the gear piece and hub sleeve to engage smoothly.

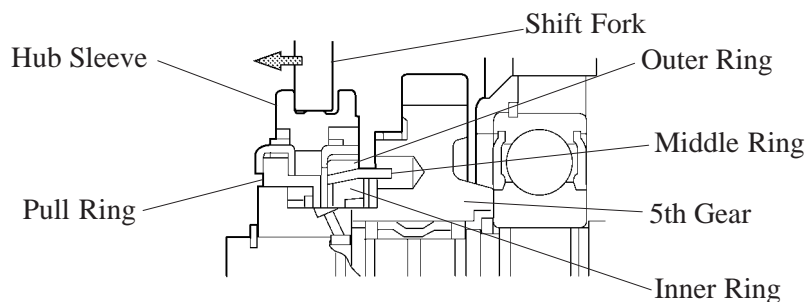


181CH06

Reverse Gear (Double-Cone Type Synchronism Mechanism)

When shifted to the reverse position, the hub sleeve is pushed to the left side (see illustration) thereby pushing the pull ring to the left also. The pull ring pulls the inner ring to the left thereby synchronizing the inner ring, middle ring and outer ring. The synchronizing action stops rotation of the input shaft of the transmission for smoothly engagement of the reverse idle gear.

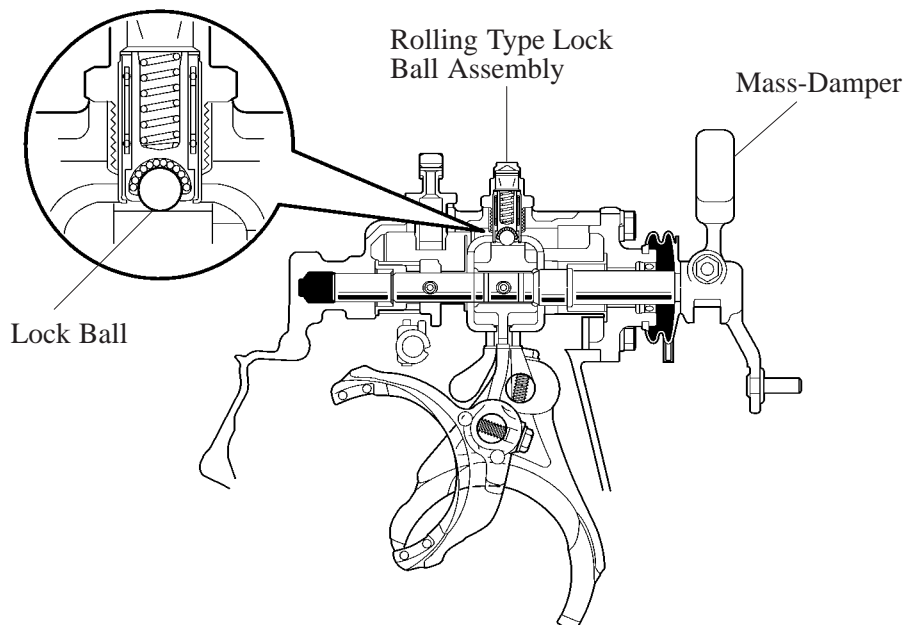
However, when the 5th synchronizer is activated, synchronization is achieved only by the middle and outer rings.



181CH07

SHIFT AND SELECT MECHANISM

The shift feel has been improved through the adoption of the mass damper (Only 1AZ-FE Engine Model) on the shift and select shaft, and a rolling type lock ball assembly.



181CH08

1AZ-FE Engine Model