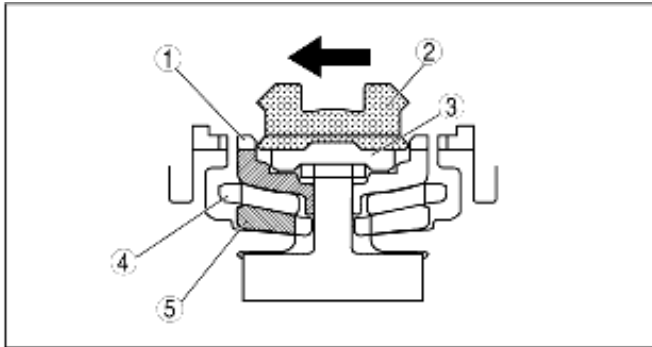


TRIPLE SYNCHRONIZER MECHANISM OPERATION [R15M-D]

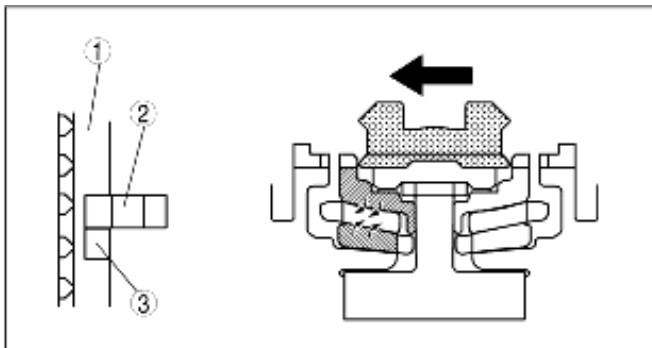
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1. When the hub sleeve moves to the left (in the direction of the arrow), the synchronizer key presses against the synchronizer ring.



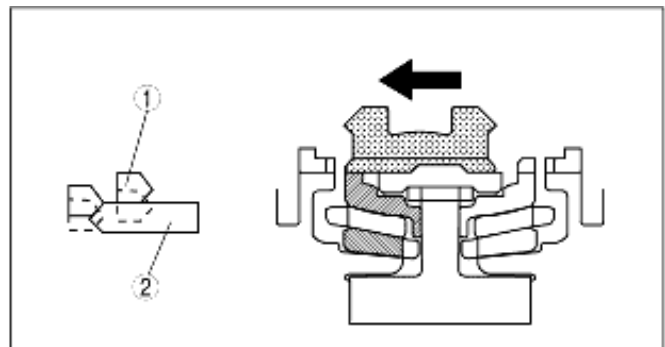
| | |
|---|-------------------|
| 1 | Synchronizer ring |
| 2 | Clutch hub sleeve |
| 3 | Synchronizer key |
| 4 | Double cone |
| 5 | Inner cone |

2. As the hub sleeve continues moving to the left, the key causes friction between the synchronizer ring, double cone, and inner cone. The synchronizer ring turns only the distance that the key groove gap allows, aligning the teeth of the hub sleeve and the synchronizer ring. As the hub sleeve continues moving, the friction between the cones becomes greater, and the difference between the rotational speeds of the synchronizer ring, inner cone, and double cone (unified with the gear) gradually disappears.



| | |
|---|-------------------|
| 1 | Synchronizer ring |
| 2 | Synchronizer key |
| 3 | Key groove |

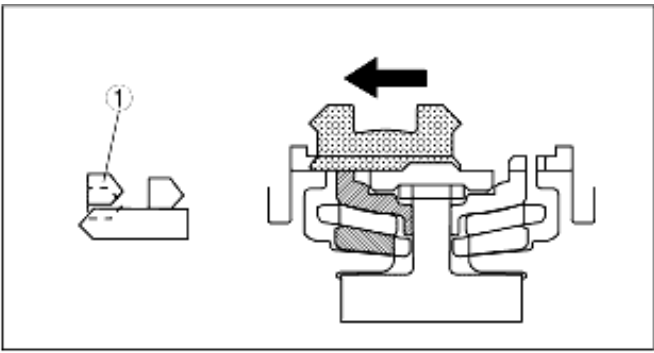
3. The hub sleeve then moves up onto the synchronizer key and engages the synchronizer ring.



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| | |
|---|-------------------|
| 1 | Synchronizer ring |
| 2 | Clutch hub sleeve |

4. The hub sleeve then engages the synchro teeth of the gear to complete shifting.



1 Synchro teeth

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