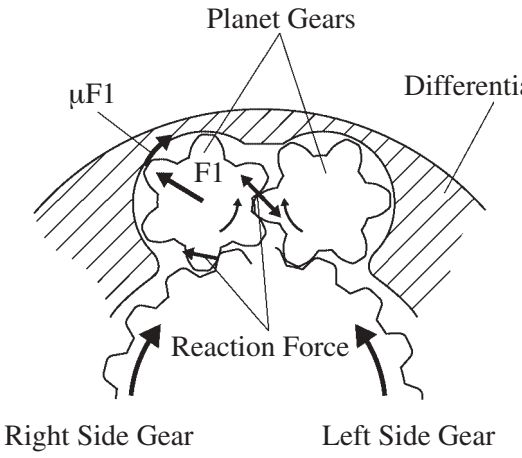
Limited Slip Differential Operation

Limited slip is accomplished primarily by the friction that is generated between the planet gear's tooth tips and the differential case's inner wall, and the friction that is generated between the side gear end face and the thrust washer.
The principle of limited slip enables the resultant reaction force F1 (which is created by the meshing reaction of the planet gear and the side gear and the meshing reaction of the planet gears themselves) to push the planet gear in the direction of the differential case in proportion to the input torque.
Due to the reaction force F1, the friction force μF1 (which is generated between the tooth tip of the planet gear and the inner wall of the differential case) acts in the direction to stop the planet gear's rotation.
At the same time, because of the helical angle that is provided in the differential gear, thrust force F2 is generated towards the axle shaft. Accordingly, friction force μF2 (which is generated between the side gear end face and the thrust washer) applies a force to cancel out the rotational difference between the side gears themselves as well as well as between the side gear and the differential case.



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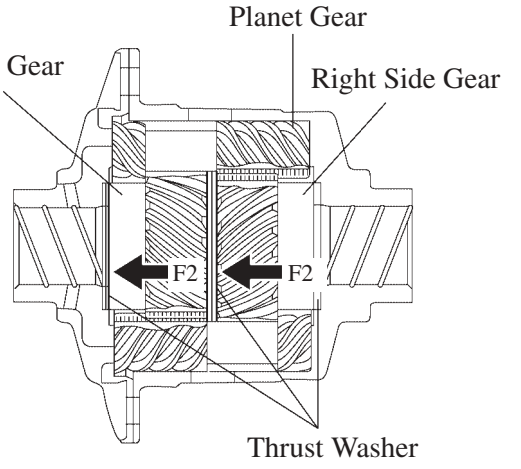

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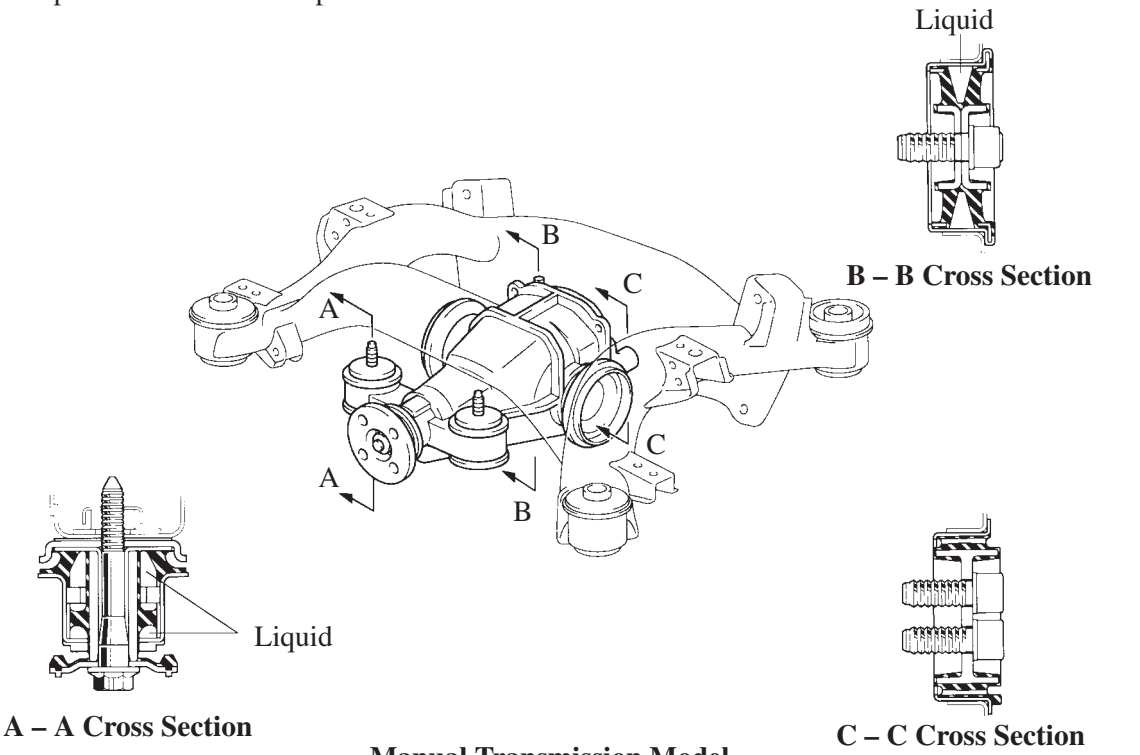
■ DIFFERENTIAL SUPPORT

- The differential of the manual transmission model is supported at 4 points: 2 front and 2 rear. The differential of the automatic transmission model is supported at 3 points: 2 front and 1 rear.
- The front mounts of all models and the rear right mount of the manual transmission model are the liquid-filled compound mounts that help realize low vibration and noise.



B – B Cross Section

A – A Cross Section

C – C Cross Section

Manual Transmission Model

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