GROUP 33

FRONT SUSPENSION

CONTENTS

GENERAL INFORMATION

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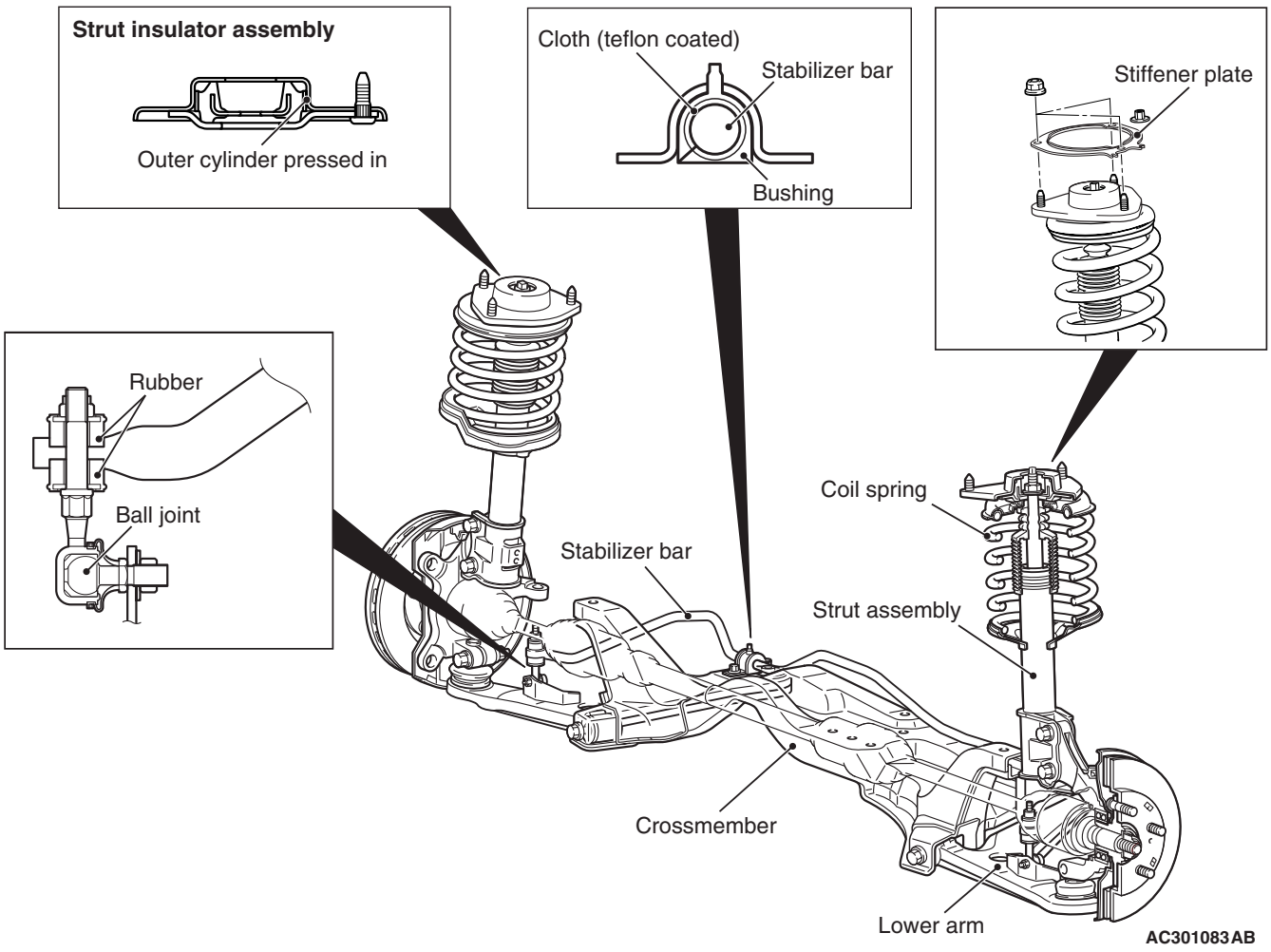
A McPherson strut independent type suspension has been adopted as the front suspension. This suspension is basically the same as that of the former COLT/LANCER except for the followings:

- Roll centre height is lowered for improvement of driving stability and ride feeling
- The wheel centre is moved forwards and downwards for use with a large size tyre. The suspension is arranged so that optimum toe and camber can be obtained at this wheel position.
- An increased caster angle improves straight ahead driving ability.
- Suspension installation strength is reinforced by flat design of crossmember for improvement of driving stability and straight stability. In addition, crossmember brace is installed at lower arm mounting section for reduction of vibration and road noise.
- A reinforcement has been added in the crossmember to enhance the crossmember-to-suspension joint and improve steering ability.
- Stroke at suspension extending side is increased for improvement of ride feeling and grounding property
- The input separation type strut insulator is adopted as strut for reduction of road noise. In addition, damping force and spring constant of coil spring are optimised for improvement driving stability and ride feeling.
- The strut insulator is of an outer cylinder press-in type, which reduces friction noise and avoids water entry from the lower part of the strut insulator to the engine compartment.
- The damping force of the strut assembly and the coil spring constant are optimised to improve steering ability and riding comfort.
- The strut housing plate is made thicker to improve strength and rigidity.
- The stiffener plate has been added on the strut installation side to enhance rigidity of the installation side, causing steering ability to improve.
- Longer lower arms allow the wheel tread to be extended, improving stability and driveability.
- Friction loss has been reduced by covering the stabilizer bar bushing contact surface with a Teflon™ coated cloth, and more rigid bushings enhance rolling rigidity.
- The stabilizer link arrangement has been tuned, and the stabilizer efficiency has been enhanced, which improves rolling rigidity and vehicle stability.
- A stabilizer link is connected to the lower arm with a ball joint. This reduces initial rolling during cornering and improves driving comfort.
- Suspension bushings optimised for improvement of ride feeling and road noise

CONSTRUCTION DIAGRAM



SPECIFICATIONS

SUSPENSION SYSTEM

Item	Specification
Suspension method	McPherson strut with coil springs

WHEEL ALIGNMENT

Item		Specification
Camber		- 0°10'
Caster		3°15'
Kingpin inclination		12°25'
Toe-in	At the centre of tyre tread mm	1
	Toe-angle (per wheel)	0°03'
Toe-out angle on turns (inner wheel when outer wheel at 20°)		22°00'

COIL SPRING

Item	2WD	4WD
Wire diameter mm	14	14
Average diameter mm	160	160
Free length mm	300	305

STRUT ASSEMBLY

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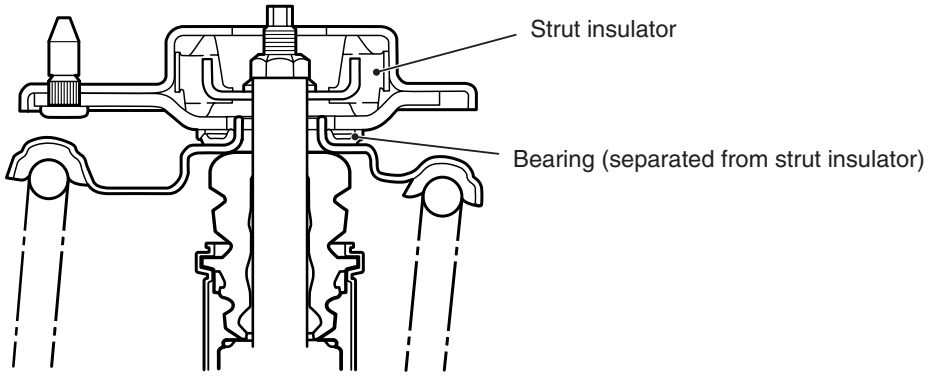
STRUT INSULATOR



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The input separation type of strut insulator has been adopted to reduce road noise. This insulator has a structure to transfer coil spring input through bearing to strut mounting section, and transfer shock absorber input through strut insulator to strut mounting section.

LOWER ARM

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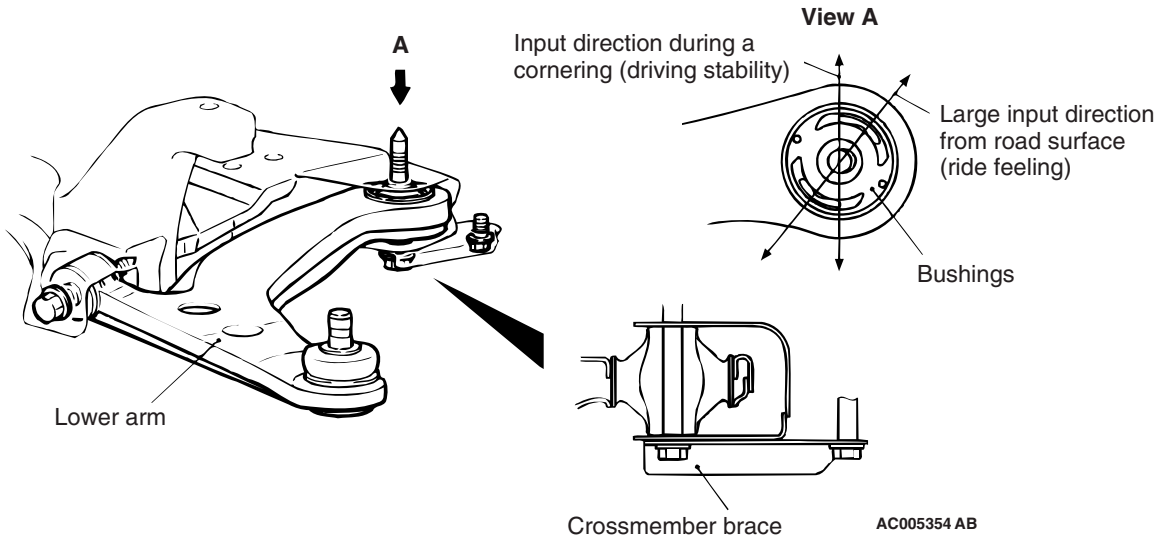

Enlarging the size of mounting bolts at the front and rear sides of crossmember mounting section on lower arm has increased reliability. In addition, bushings with soft spring characteristic at the rear side for the large input direction from road surface and with hard spring characteristics for the input direction during a cornering are used to achieve both driving stability and riding comfort. Lowered ball joint friction torque has been established to enhance driving stability and riding comfort. Crossmember brace installed at lower arm mounting section on crossmember has reduced road noise.

NOTES