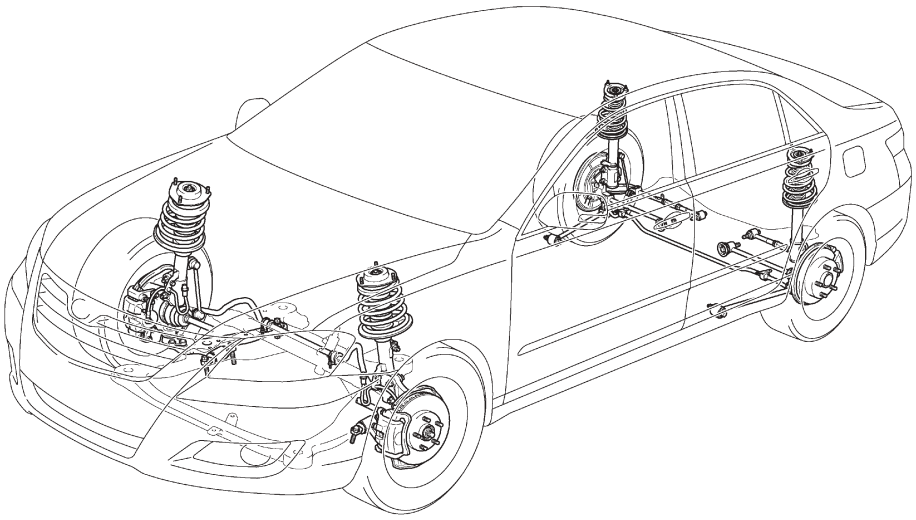
SUSPENSION AND AXLE

■ SUSPENSION

1. General

- MacPherson strut type independent suspension is used for the front.
- Dual link MacPherson strut type independent suspension is used for the rear.



02KCH26Y

Chinese models

▶ Specifications ◀

Destination			China	Australia		
Engine Type			All	2AZ-FE		2GR-FE
Transaxle Type			All	E354	U250E	U660E
Front Wheel Alignment	Type		MacPherson Strut	←	←	←
	Tread*1	mm (in.)	1,575 (62.0)	←	←	←
	Caster*1	degrees	2°45’	2°50’*2 2°55’	2°40’*2 2°45’ –2°50’*3	2°45’*3 2°50’
	Camber*1	degrees	–0°30’	–0°30’*2 –0°40’	–0°35’*2 –0°45’	–0°40’ –0°45’*3
	Toe-in*1	mm (in.)	0	←	←	←
	King Pin Inclination*1	degrees	12°15’	11°55’*2 12°10’ 12°15’*3	12°05’*2 12°20’	12°20’
Rear Wheel Alignment	Type		Dual Link MacPherson Strut	←	←	←
	Tread*1	mm (in.)	1,560 (61.4)	1,565 (61.6)	←	←
	Camber*1	degrees	1°24’	1°19’ 1°25’*3	←	1°05’*2 1°22’ 1°27’*3
	Toe-in*1	mm (in.)	4 (0.16)	←	←	←

(Continued)

Destination			G.C.C. Countries			Taiwan
Engine Type			2AZ-FE		2GR-FE	All
Transaxle Type			E354	U250E	U660E	All
Front Wheel Alignment	Type		MacPherson Strut	←	←	←
	Tread*1	mm (in.)	1,575 (62.0)	←	←	←
	Caster*1	degrees	2°50'*2 2°55'	2°40'*2 2°45' –2°50'*3	2°50'	2°50'
	Camber*1	degrees	–0°30'*2 –0°40'	–0°35'*2 –0°45'	–0°40'	–0°40'
	Toe-in*1	mm (in.)	0	←	←	←
	King Pin Inclination*1	degrees	11°55'*2 12°10' 12°15'*3	12°05'*2 12°20'	12°20'	12°15'
Rear Wheel Alignment	Type		Dual Link MacPherson Strut	←	←	←
	Tread*1	mm (in.)	1,565 (61.6)	←	←	←
	Camber*1	degrees	1°19' 1°25'*3	←	1°05'*2 1°22'	1°24'
	Toe-in*1	mm (in.)	4 (0.16)	←	←	←

Destination			Vietnam	Philippines, Thailand, Indonesia and Malaysia
Engine Type			All	←
Transaxle Type			All	←
Front Wheel Alignment	Type		MacPherson Strut	←
	Tread*1	mm (in.)	1,575 (62.0)	←
	Caster*1	degrees	2°45'	2°50'
	Camber*1	degrees	–0°35'	–0°40'
	Toe-in*1	mm (in.)	0	←
	King Pin Inclination*1	degrees	12°05'	12°15'
Rear Wheel Alignment	Type		Dual Link MacPherson Strut	←
	Tread*1	mm (in.)	1,565 (61.6)	←
	Camber*1	degrees	1°20'	←
	Toe-in*1	mm (in.)	4 (0.16)	←

*1: Unload Vehicle Condition

*2: Rough Road Package models

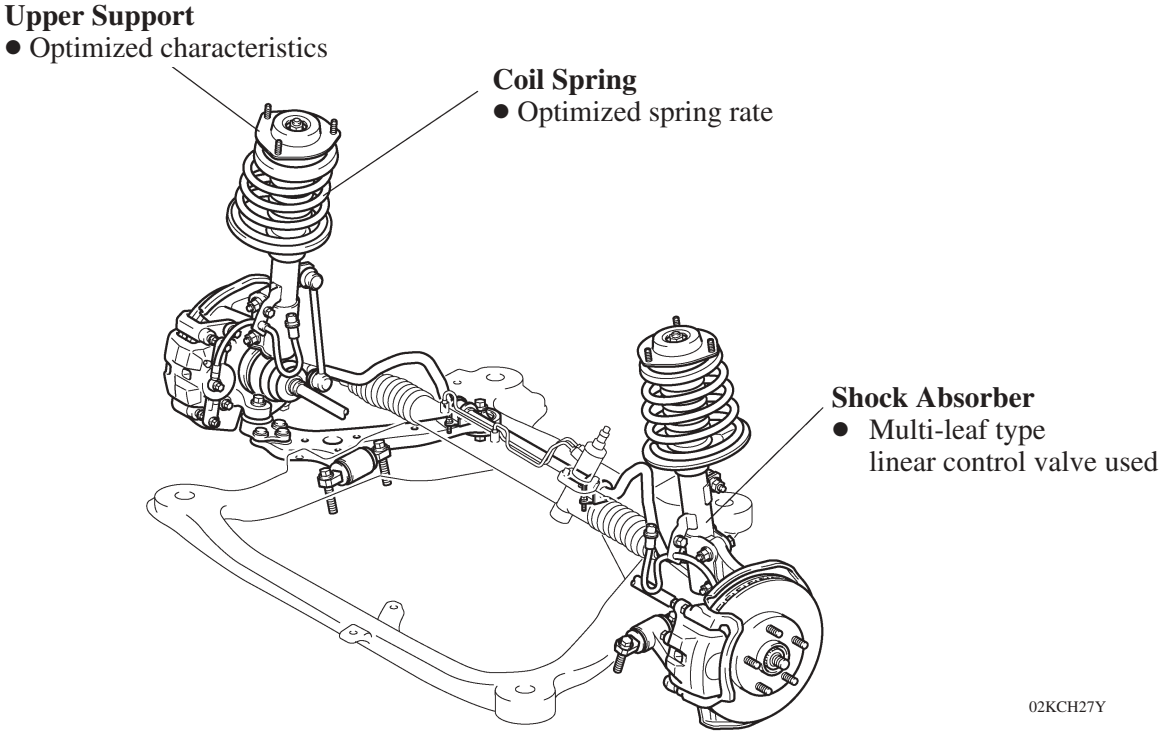
*3: S and V grade models

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2. Front Suspension

General

Through the optimal location of components, and the use of Nachlauf geometry, the front suspension provides excellent riding comfort and controllability.



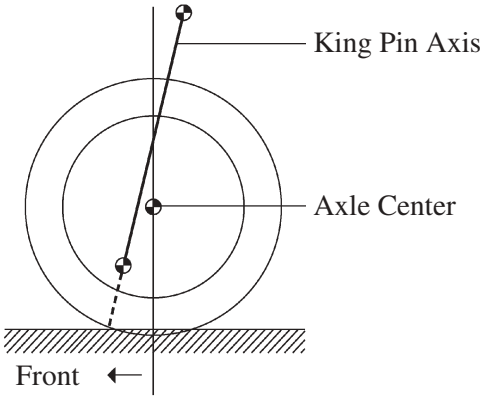
Chinese models

Service Tip

To prevent hazardous conditions, make sure to empty the gas from the shock absorber before discarding a low-pressure (N_2) gas sealed shock absorber. For details, see the Camry Repair Manual.

Nachlauf Geometry

The front suspension uses the Nachlauf geometry in which the king pin axis is located ahead of the axle center. As a result, excellent straight-line stability and steering feel has been improved.

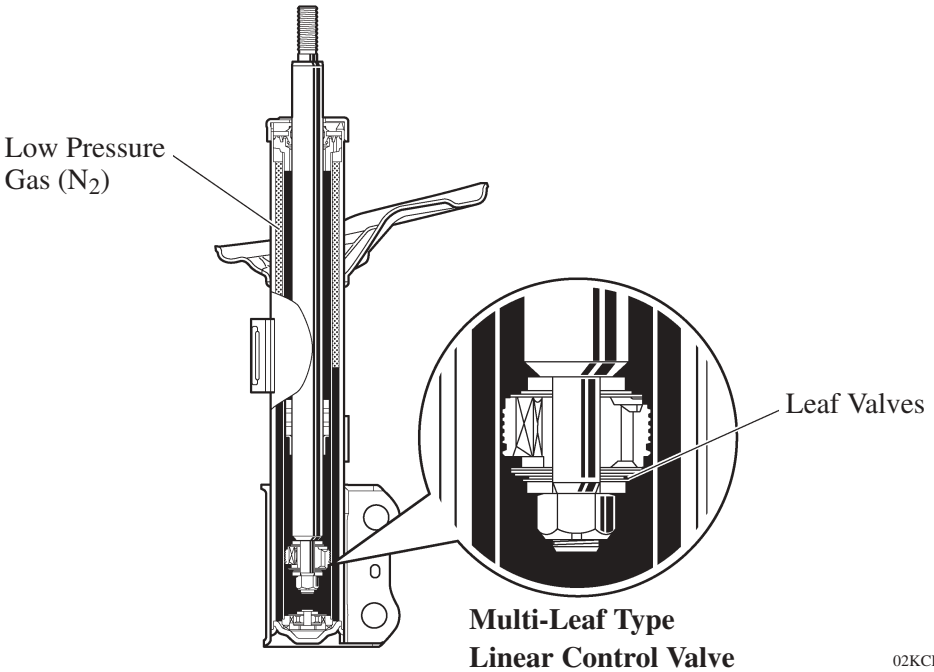


Shock Absorber

1) General

The two functions listed below are used for the shock absorber to realize both driving stability and riding comfort.

- A low-pressure (N_2) gas sealed type construction is used to suppress cavitation.
- A multi-leaf type linear control valve is used to attain linear damping force characteristics.

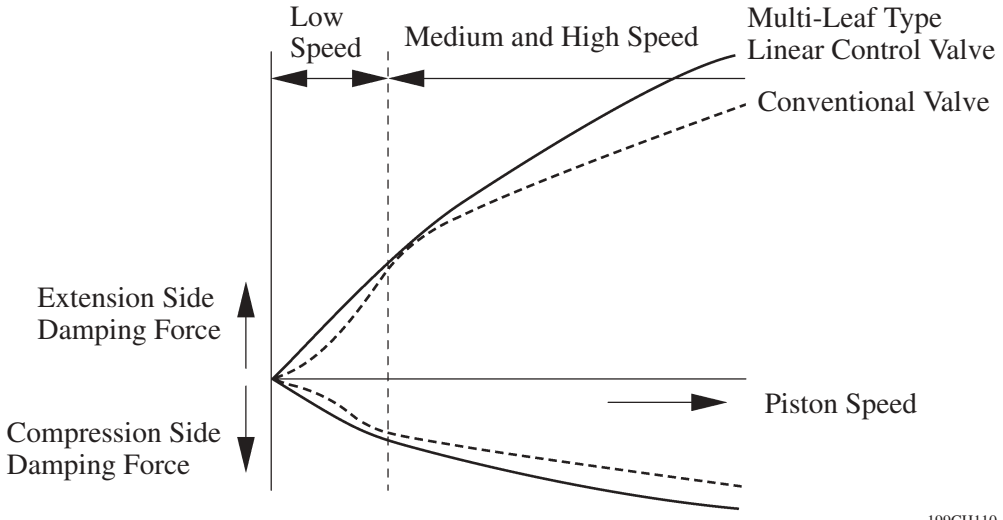


Multi-Leaf Type
Linear Control Valve

02KCH28Y

2) Construction of Multi-Leaf type Linear Control Valve

The multi-leaf type linear control valve has a structure consisting of several layered leaf valves with different diameters. Through use of the multi-leaf type linear control valve, changes in the damping force are made constant at low piston speeds, thus realizing excellent riding comfort and controllability.



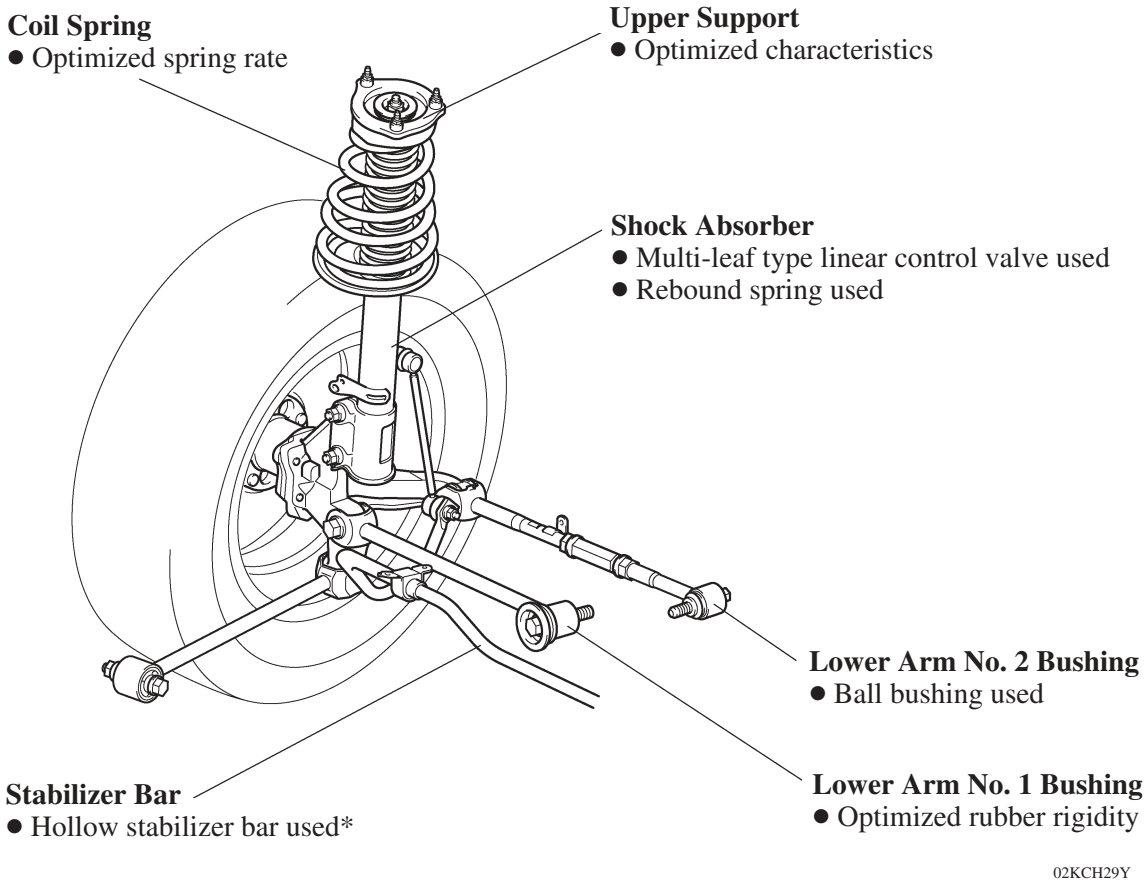
199CH110

Damping Force Characteristics

3. Rear Suspension

General

Excellent stability and controllability have been realized by optimizing the suspension geometry and allocation of components.



*: Except S and V grade models for Australia and G.C.C. countries and Chinese models

Service Tip

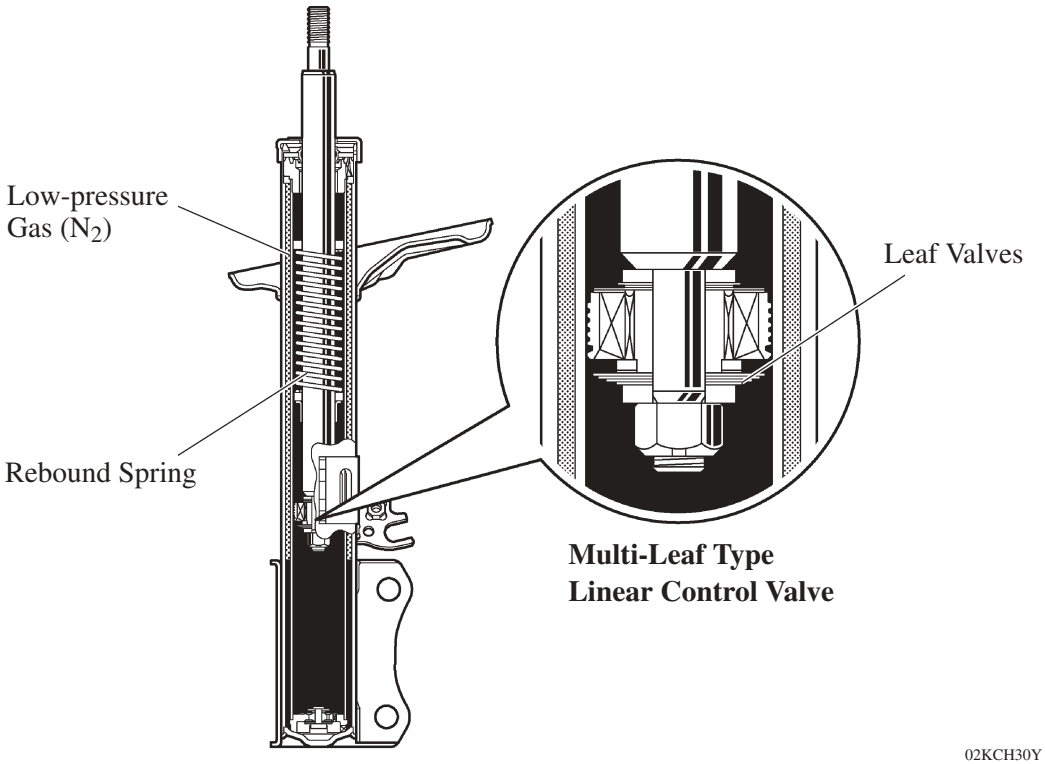
To prevent hazardous conditions, make sure to empty the gas from the shock absorber before discarding a low-pressure (N_2) gas sealed shock absorber. For details, see the Camry Repair Manual.

Shock Absorber

1) General

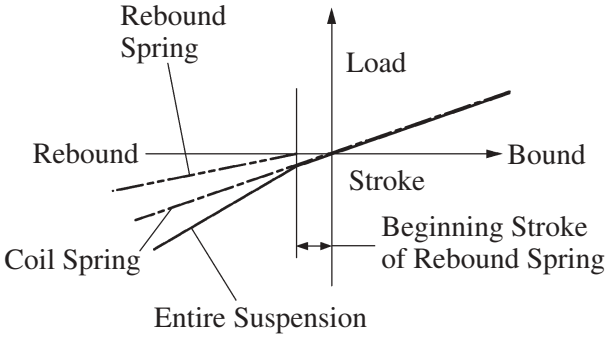
The three functions listed below are used for the shock absorber to realize both driving stability and riding comfort.

- A low-pressure (N_2) gas sealed type construction is used to suppress cavitation.
- A multi-leaf type linear control valve is used to attain linear damping force characteristics. For details, refer to Front Suspension section on page CH-110.
- A rebound spring is used on sports grade models to ensure vehicle stability during cornering.



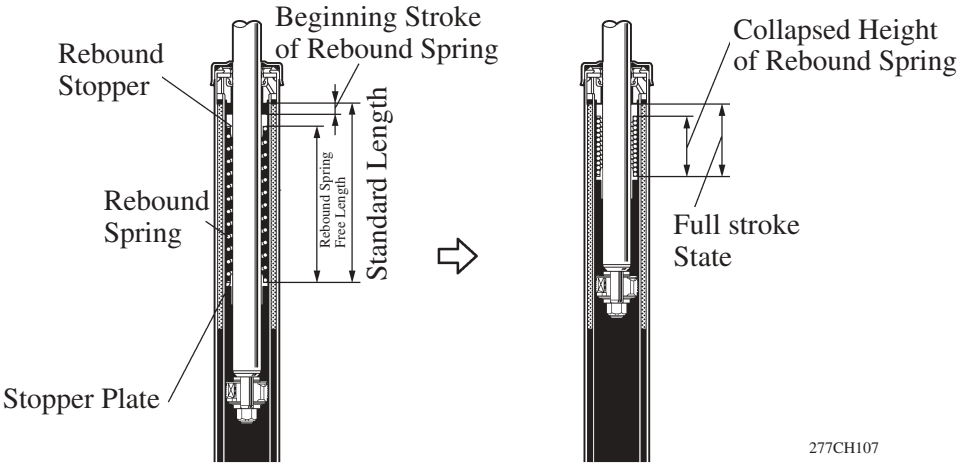
2) Rebound Spring

The function of the built-in rebound spring is to combine with the function of the coil spring in order to restrain the elongation of the entire suspension during rebounds. Consequently, only the function of the coil spring is applied when the suspension stroke is small during normal driving, in order to realize a soft and comfortable ride. However, when the inner wheel makes large rebounds, such as when the vehicle is cornering, the functions of both the rebound spring and the coil spring are combined in order to reduce the elongation of the entire suspension. As a result, the vehicle has excellent maneuverability and stability.



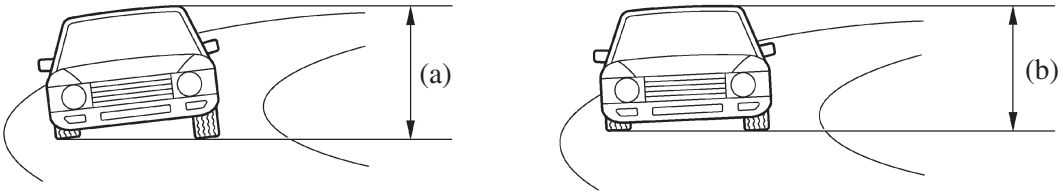
Characteristic of Shock Absorber with Built-in Rebound Spring

185CH16



277CH107

▶ During Cornering ◀



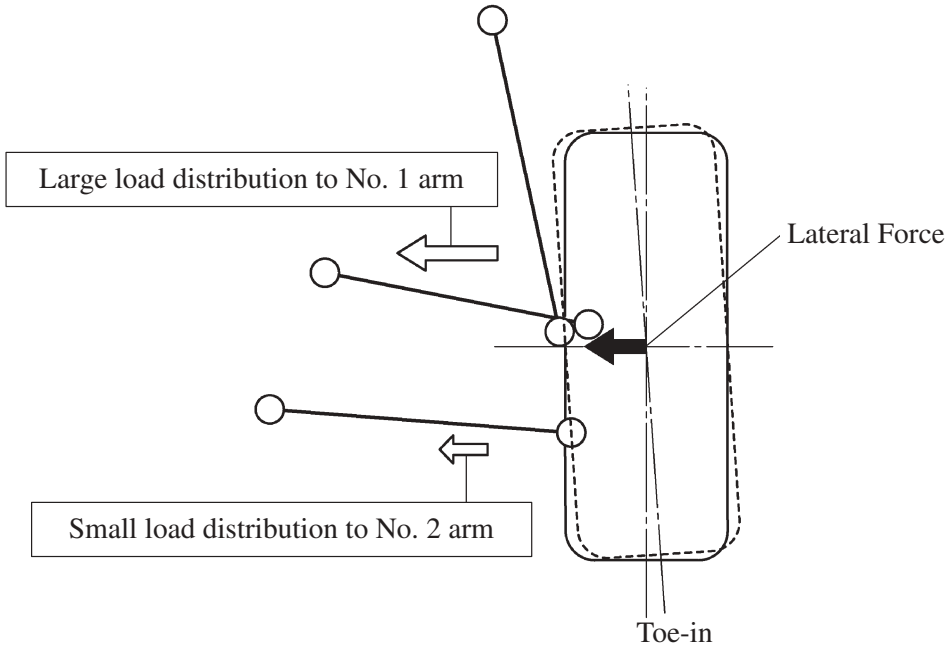
Without Rebound Spring **With Rebound Spring**

(a) > (b)

02KCH58Y

Cornering Geometry

When a lateral force is generated, the load becomes distributed to the No. 1 and No. 2 suspension arms. The illustration shown below indicates the lateral force distribution on suspension arms of the right side rear wheel during left cornering. This causes the wheels to toe-in, in order to ensure the proper stability of the rear suspension.



Braking Geometry

When the longitudinal force is generated, the displacement locus of the No. 1 and No. 2 suspension arms will toe-in as shown below, in order to ensure the stability of the vehicle.

