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Automotive suspension -- Terms and definitions

汽车悬架术语和定义

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Automotive suspension -- Terms and definitions

This Standard specifies the terms and definitions of automotive suspension.

1 Terms of suspension

No.	Term	Definition	Illustration
1.1	suspension	A device located between the vehicle frame (or body) and the axle (or wheel) to mitigate and attenuate the impact and vibration caused by the ground, while transmitting various forces and moments acting between the wheel and the vehicle frame (or body).	
1.1.1	rigid axle suspension	A suspension type that uses a whole axle to connect the left and right wheels and is connected to the frame (or body) through the suspension.	
1.1.2	independent suspension	A suspension type that the left and right wheels are not connected to a whole axle, but are connected to the frame (or body) through the suspension alone, and can move independently.	
1.1.3	equalizing type of suspension	A suspension type that balances the loads on the front and rear or left and right wheels (or axles).	Figure 1

2 Terms classified by structural type

No.	Term	Definition	Illustration
2.1	parallel leaf spring type	A suspension type with leaf springs arranged vertically on the axle.	Figure 2
2.1.1	over slung type	A suspension type with leaf springs mounted on the axle.	
2.1.2	under slung type	A suspension type with leaf springs mounted under the axle.	
2.2	transversal leaf spring type	A suspension type with leaf springs arranged parallel to the axle.	Figure 3
2.3	double wish-bone arm type	A suspension type that uses upper and lower wishbones to connect the wheels (or axles) to the frame (or body).	Figure 4

2.4	double trailing arm type	A suspension type that uses upper and lower trailing arms to connect the wheels (or axles) to the frame (or body).	Figure 5
2.5	single swing arm type	A suspension type that uses a wishbone to connect the wheels to the final drive (or body).	Figure 6
2.6	single trailing arm type	A suspension type that uses a trailing arm to connect the wheels to the frame (or body).	Figure 7
2.7	single oblique arm type	A suspension type that uses an inclined arm to connect the wheels to the frame (or body).	Figure 8
2.8	four link type	In a non-independent suspension, a suspension type that uses four (or three or five) thrust rods to control the position of the wheel.	Figure 9
2.9	torque tube drive type	A suspension type that the rear axle housing is installed on the rear end of the transmission or the body with the help of a torque tube and ball hinge extending to the front end.	Figure 10
2.10	De Dion type	A suspension type that the main reducer is installed on the frame (or body), and the left and right wheels are connected with a rigid shaft.	Figure 11
2.11	sliding pillar type	A suspension type in which the wheels move along the kingpin axis.	Figure 12
2.12	Mcpherson type	A suspension type consisting of a hinged sliding column and a lower wishbone (sliding column-jointed type).	Figure 13

3 Terms classified by elastic element

No.	Term	Definition	Illustration
3.1	metal spring type	A suspension type that uses metal springs such as leaf springs, coil springs, and torsion bar springs as elastic elements.	Figure 2 Figure 10 Figure 5
3.2	air spring type	A suspension type using gas spring as elastic element.	Figure 14
3.3	hydro-pneumatic spring type	A suspension type that uses liquid to transmit load and gas as elastic element.	
3.4	hydro-rubber spring type	A suspension type that uses liquid to transmit load and rubber springs as elastic elements.	Figure 15
3.5	rubber spring type	A suspension type with rubber spring as elastic element.	Figure 16

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