

**Haynes**
shows you how

BMW 3-Series (92-98) & Z3 (96-98) Haynes Online Manual

27 Wheel alignment - general information

1 A car's steering and suspension geometry is defined in four basic settings - all angles are expressed in degrees (toe settings are also expressed as a measurement); the steering axis is defined as an imaginary line drawn through the axis of the suspension strut, extended where necessary to contact the ground.

2 Camber is the angle between each wheel and a vertical line drawn through its center and tire contact patch, when viewed from the front or rear of the car. Positive camber is when the wheels are tilted outwards from the vertical at the top; negative camber is when they are tilted inwards.

3 The front camber angle is not adjustable, and is given for reference only (see Step 5). The rear camber angle is adjustable and can be adjusted using a camber angle gauge.

4 Caster is the angle between the steering axis and a vertical line drawn through each wheel's center and tire contact patch, when viewed from the side of the car. Positive caster is when the steering axis is tilted so that it contacts the ground ahead of the vertical; negative caster is when it contacts the ground behind the vertical.

5 Caster is not adjustable, and is given for reference only; while it can be checked using a caster checking gauge, if the figure obtained is significantly different from that specified, the vehicle must be taken for careful checking by a professional, as the fault can only be caused by wear or damage to the body or suspension components.

6 Toe is the difference, viewed from above, between lines drawn through the wheel centers and the car's center-line. "Toe-in" is when the wheels point inwards, towards each other at the front, while "toe-out" is when they splay outwards from each other at the front.

7 The front wheel toe setting is adjusted by screwing the tie-rod in or out of its balljoint, to alter the effective length of the tie-rod assembly.

8 Rear wheel toe setting is also adjustable. The toe setting is adjusted by loosening the trailing arm mounting bracket bolts and repositioning the bracket.