

brakes. Then follow one of the brake pipes from the OTHER servo down to the front caliper. Fit your second fluid collection bottle to the bleed nipple on the caliper that is on the circuit of this OTHER servo. Open this bleed nipple slightly and open the rear nipple one turn. Get the person on the brake pedal to push the pedal to the floor as before. When no more bubbles are coming from the rear bleed pipe, lock the bleed nipple up on the down stroke. Repeat the process for the other rear brake. There is no need to change the nipple you are bleeding on the front, as you are only bleeding the other circuit of the brakes to enable the brake pedal to go its full travel.

When the rear brakes are successfully bled, fit one of the fluid collection bottles to the upper front caliper bleed nipple and the other to the inside lower bleed nipple. Again get the brake pedal operator to depress and release the brake pedal until no air bubbles are coming from either bleed nipple and close the bleed nipples on the down stroke. Repeat the operation for the lower outer bleed nipple, again with the upper nipple slightly open. Again repeat the bleeding process for the brake caliper on the other side. By following the above instructions, you should end up with perfectly bled brakes.

For LHD cars the brake bleeding operation is exactly the same with the exception that the servo does not need to be bled.

Front brake dust shields

The dust shields for the front brake calipers on the 2002tii models are no longer available. However, the caliper dust shields for the 2002 turbo models were available at the time this book was written and will fit the 2002tii models with no modification.

STEERING

Steering geometry

It's not a bad idea to have the total steering and suspension geometry checked on your 02 before you strip it out for a complete restoration. From the information that you receive, you may be able to ascertain whether or not the car has been involved in an accident in the past and if the repairs have been carried out properly.

Toe-In: BMW's specification for the 02 models is between 1mm and 2.5mm toe-in when the car is "normally" loaded - which means carrying 65kg on each of the front two seats, 65kg on the back seat, 30kg of luggage in the boot on the left hand side and a full tank of fuel. This can be a bit of a problem when you want to take your 02 to have its steering geometry set up. Finding two 65kg friends who fancy a visit to the wheel alignment centre may be a bit difficult, and then there is the problem of slimming or over-eating to get your own weight to 65kg! Even if you did go to the extremes of aligning the wheels with the above loads, but normally drove your 02 with just you in the car, the wheel alignment, in all probability, would be wrong and the tyres may wear unevenly. My method of doing the job might not be "by the book", but it is more accurate than BMW's method.

In theory you want the front wheels to be parallel when you are driving down the road. Because the steering geometry, and toe-in, changes slightly between the loaded and unloaded conditions it is better to load the car as you would normally drive it before adjusting the toe-in. If it is just you in the car for most of the time, you should sit in the driver's seat whilst the toe-in is adjusted to between 0 and 1mm. If you are intending to have a long holiday travelling thousands of miles with four adults and lots of luggage, load the car accordingly and set the toe-in to 0 to 1mm toe-in. When you return from your travels and intend to just have you in the car for most of the time have the toe-in readjusted to 0 to 1mm with just the weight of you in the car.

Camber: this is the "lean in" and "lean out" of the wheels, in relation to their tops and bottoms. If the top of the wheel is further out than the bottom, then there is "positive camber"; if the bottom of the wheel is further out than the top, then there is "negative camber". The specification for all the 02s, apart from the 2002 turbo, is 0° to 1° of negative camber. The 2002 turbo has 1° to 2° of negative camber. Alpina front struts have 2° negative camber. On a standard 02, if the camber is out of specification there could be a problem with bent suspension or body. The figures given here assume that the car is fully laden as per BMW's specification, but what you are really looking for is a difference between the camber angle on the right front wheel and the camber