



**Haynes**  
shows you how

**BMW 3-Series and Z4 (99-05) Includes 2006 325ci/330ci Coupe and Convertible models Haynes Online Manual.**

## 25 Tie-rod end - removal and installation

### Note:

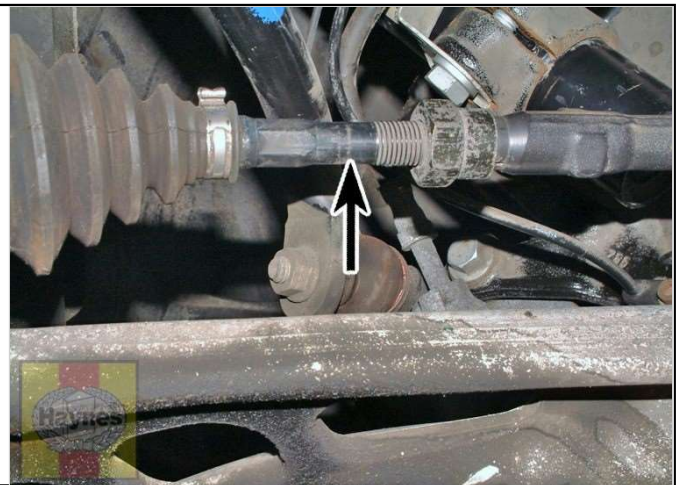
A new tie-rod end balljoint retaining nut will be required on installation.

### Removal

1 Apply the parking brake, then raise the front of the vehicle and support it securely on jackstands. Remove the appropriate front wheel.

2 Make a mark on the tie-rod and measure the distance from the mark to the center of the balljoint (see illustration) . Note this measurement down, as it will be needed to ensure the wheel alignment remains correctly set when the balljoint is installed.

**25.2 Make a mark on the tie-rod and measure from here to the center of the tie-rod end balljoint**



3 Hold the tie-rod, and unscrew the balljoint locknut.

4 Loosen and remove the nut securing the tie-rod end to the steering knuckle, and release the balljoint tapered shank using a universal balljoint separator (see illustration) .

## 25.4 Use a balljoint separator to release the tie-rod end



5 Counting the exact number of turns necessary to do so, unscrew the tie-rod end.

6 Carefully clean the threads on the ballstud. Replace the tie-rod end if the balljoint's movement is sloppy, too stiff, excessively worn or damaged in any way. Also, carefully check the stud taper and threads. If the balljoint boot is damaged, the tie-rod end must be replaced; it is not possible to obtain the boot separately.

## Installation

7 If necessary, transfer the locknut and collar to the new tie-rod end.

8 Screw the tie-rod end onto the tie-rod by the number of turns noted on removal. This should position the balljoint at the relevant distance from the tie-rod mark that was noted prior to removal.

9 Reinstall the balljoint shank to the steering knuckle, then install a new retaining nut and tighten it to the specified torque. Tighten the locknut securely.

10 Reinstall the wheel, then lower the car to the ground and tighten the wheel bolts to the specified torque.

11 Check and, if necessary, adjust the front wheel toe setting as described in [Section 28](#) , then tighten the tie-rod end locknut to the specified torque setting.