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BMW 3-Series 320i & 320xi (12-14), 325i, 325xi, 330i & 330xi (06) & 328i & 328xi (07-14) Haynes Online Manual

4 Front strut - removal, overhaul and installation

Removal

1 Block the rear wheels, apply the parking brake, then raise the front of the vehicle and support it securely on jackstands. Remove the appropriate wheel. Remove the fasteners and remove the engine under-shield.

2 Remove the brake disc (see [Chapter 9](#)).

3 Trace the wiring back to the connectors, and disconnect the ABS wheel speed sensor and the brake pad wear sensor. Unclip the wiring from any retaining clips.

4 Release the clamp and detach the ride height sensor rod from the control arm (see [illustration 3.4](#)) , if equipped.

5 Loosen the bolt/nut securing the control arm to the front subframe (see [illustration 3.5](#)) . This will prevent damage to the mount bushings as the hub carrier is removed.

6 Detach the control arm and tension strut from the hub carrier (see [Section 5](#)).

7 Undo the nut and detach the tie-rod end from the hub carrier (see [Section 25](#)).

8 Counterhold using the flats on the balljoint shank, then remove the nut securing the stabilizer bar link to the strut (see [illustration](#)) . Discard the nut; a new one must be installed. **Note:** *The brake hose bracket is also retained by the nut .*

4.8 Counterhold the balljoint, and remove the stabilizer bar link nut



9 Place a floor jack under the hub carrier to prevent it falling as the upper mounting nuts are removed.

Models with strut tower braces

10 Remove the plastic cap from the center of the cowl trim panel. Two different types of the cap are used: one with a central slot, removed by rotating it 45-degrees counterclockwise, and one without a central slot, which is pried out (see illustration) . **Note:** *If the cap or seal are damaged, they must be replaced. Failure to do so may result in water leaks.*

4.10 Remove the cap from the center of the cowl trim panel



11 Remove the bolt in the center of the cowl, exposed by the cap removal. Discard the bolt; a new one must be installed.

12 Remove the bolt at each outer end of the braces, then hold the rubber grommet in place and slide the braces outwards (see illustration) . Do not allow the grommet to be displaced. Discard the bolts; new ones must be installed.

4.12 Remove the bolts at the end of the braces



All models

13 From within the engine compartment, unscrew the strut upper mounting nuts, then carefully lower the strut assembly out from underneath the fender. **Note:** *On some models, a centering pin fixed to the strut upper mounting plate aligns with a corresponding hole in the body (see illustration) . On models where no centering pin is installed, make alignment marks between the mounting plate and vehicle body. It is essential that the mounting plate is installed in its original location to preserve the strut camber angle. Remove the sealing washer and mounting shim from between the strut and the fender (see illustrations) .*

4.13a Centering pin location



4.13b Remove the sealing washer . . .



4.13c . . . and mounting shim



Overhaul

Warning:

Before attempting to disassemble the front suspension strut, a suitable tool to hold the coil spring in compression must be obtained. Adjustable coil spring compressors are readily available, and are recommended for this operation. Any attempt to disassemble the strut without such a tool is likely to result in damage or personal injury.

14 With the strut removed from the vehicle, clean away all external dirt, then mount it upright in a vise.

15 Loosen and remove the bolt securing the suspension strut to the hub carrier. Remove the ABS sensor wiring bracket, then slide the hub carrier down and off from the end of the strut. Discard the nut; a new one must be installed. To ease removal, insert a suitably-sized Allen key into the slot on the back of the hub carrier and slightly spread the hub carrier clamp (see illustrations 3.8a and 3.8b) . Take care to spread the carrier clamp only as much as absolutely necessary, as excessive force will cause damage.

16 Install the spring compressor, and compress the coil spring until all tension is relieved from the upper spring seat (see illustration) .

4.16 Compress the spring until the upper seat is no longer under tension



17 Remove the cap from the top of the strut to gain access to the strut upper mount retaining nut. Loosen the nut while retaining the strut piston with a suitable Allen bit (see illustrations) .

4.17a Pry off the cap



4.17b Use an Allen bit to prevent the piston rod rotating . . .



4.17c . . . then remove the nut using a socket and a box-end wrench



18 Remove the mounting nut, and lift off the mounting plate, thrust bearing, shim, washer and supporting ring/seat as an assembly.

19 Lift off the coil spring, followed by the bump stop, boot and lower spring seat.

20 With the strut assembly now completely disassembled, examine all the components for wear, damage or deformation, and check the upper mounting bearing for smoothness of operation. Replace any of the components as necessary.

21 Examine the strut for signs of fluid leakage. Check the strut piston for signs of pitting along its entire length, and check the strut body for signs of damage.

22 If any doubt exists about the condition of the coil spring, carefully remove the spring compressors and check the spring for distortion and signs of cracking. Replace the spring if it is damaged or distorted, or if there is any doubt as to its condition.

23 Inspect all other components for damage or deterioration, and replace any that are suspect.

24 Install the lower spring seat, and slide the bump stop and boot onto the strut piston (see illustrations) .

4.24a Install the lower spring seat . . .

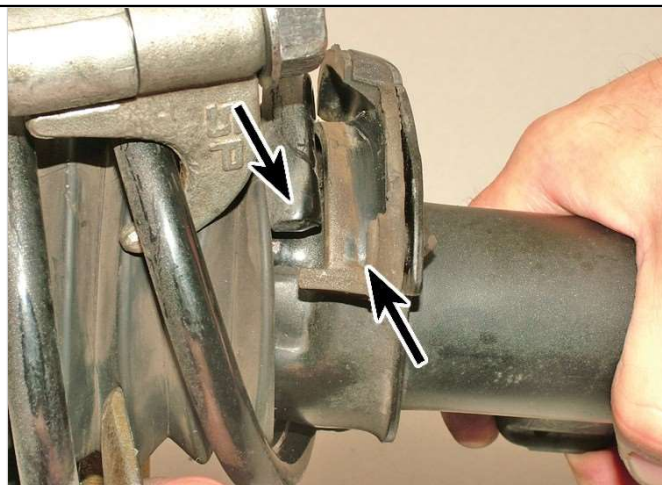


4.24b . . . followed by the boot and bump stop



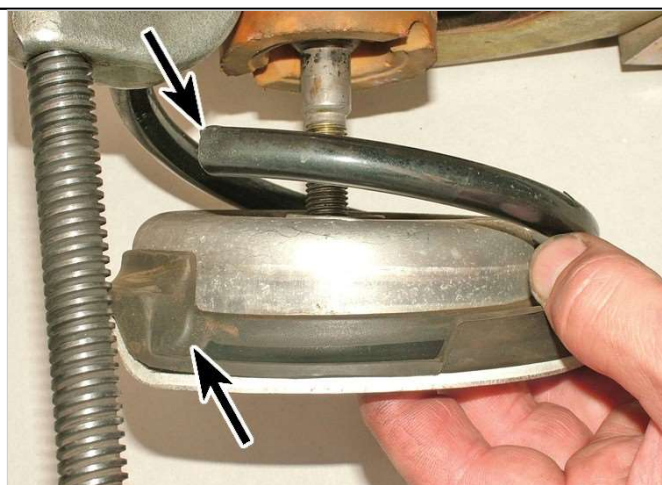
25 Install the coil spring onto the strut, making sure the rubber seat and spring are correctly positioned (see illustration) .

4.25 Ensure the spring end and seat are correctly positioned



26 Install the support ring/seat, shim, washer and upper mounting plate, so that the spring end is against the seat stop (see illustrations) .

4.26a Install the support ring/seat, aligning the spring end with the seat



4.26b Install the shim . . .



4.26c . . . washer . . .**4.26d . . . and upper mounting plate**

27 Install the new mounting plate nut and tighten it to the specified torque.

28 Ensure the spring ends and seats are correctly positioned, then carefully release the compressor and remove it from the strut. Reinstall the cap to the top of the strut.

Installation

29 Installation is the reverse of removal, noting the following points:

- A. Tighten all fasteners to their specified torque where given.
- B. Replace all self-locking nuts.
- C. We recommend the front wheel alignment is checked at the earliest opportunity. On models with active steering, have the steering angle sensor calibration checked using BMW diagnostic equipment. Entrust this task to a dealer or qualified suspension shop.