5 Front suspension arms - removal, overhaul and installation

Note:
New control arm front balljoint nuts will be required on installation.

Removal

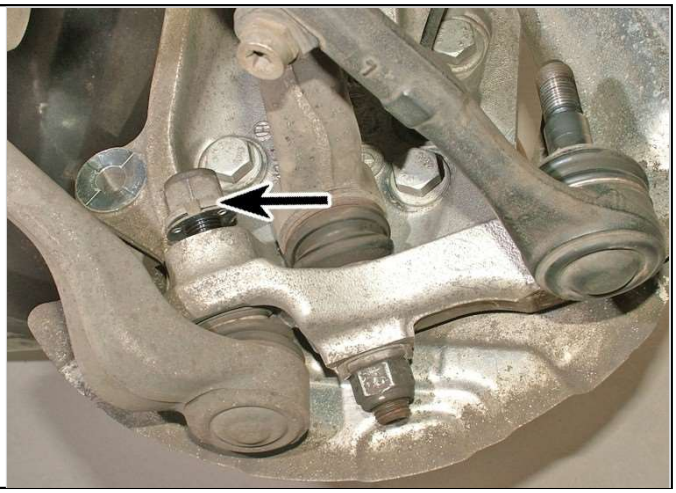
1 Block the rear wheels, firmly apply the parking brake, then raise the front of the vehicle and support it securely on jackstands. Remove the appropriate front wheel. Remove the fasteners and remove the engine under-shield **(see illustration 3.1)** .

Control arm

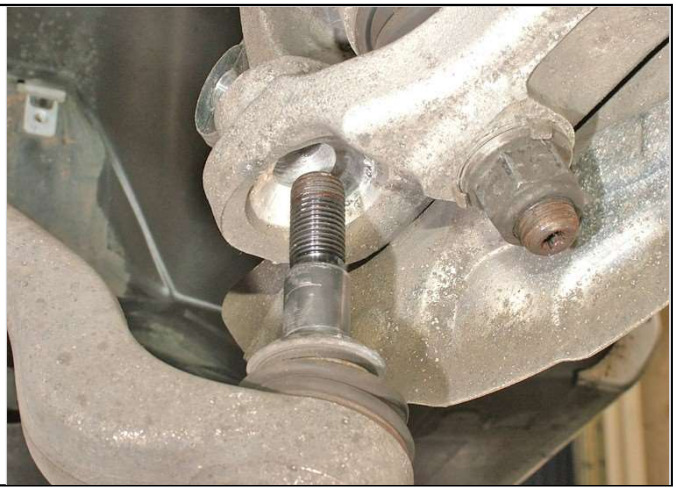
2 On models equipped with suspension ride-height sensors, release the clamp and disconnect the sensor link bracket from the arm.

3 Unscrew the control arm balljoint nut to the point where the edge of the nut is flush with the end of the balljoint shank, then release the arm from the hub carrier by gently tapping the end of the balljoint shank with a soft-faced hammer **(see illustrations)** . There is no need to use a balljoint separator.

5.3a Remove the control arm balljoint nut . . .



5.3b . . . and tap the balljoint from the hub carrier



4 Remove the nut and pull the inner mounting bolt from the control arm **(see illustration 3.5)** . **Note:** *The bolt is inserted from the rear* . Discard the nut; a new one must be installed.

5 Remove the lower arm assembly from underneath the vehicle. **Note:** *The balljoint may be a tight fit in the crossmember and may need to be tapped to release it.*

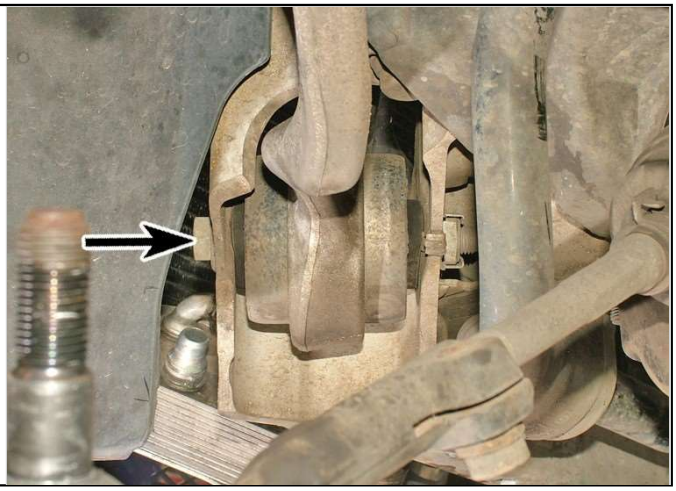
Tension strut

6 Remove the tension strut balljoint nut. If necessary, use a Torx bit in the end of the balljoint shank to counter-hold the nut, then release the arm from the hub carrier by gently tapping the end of the balljoint shank with a soft-faced hammer **(see illustration)** . There is no need to use a balljoint separator.

5.6 Use a Torx bit to counter-hold the tension-strut balljoint shank while removing the nut

7 Remove the inner mounting bolt and remove the strut from the subframe **(see illustration)** . Discard the nut; a new one must be installed.

5.7 Tension strut-to-subframe bolt



Overhaul

8 Thoroughly clean the arm or strut and the area around the mounts, removing all traces of dirt and undercoating if necessary, then check carefully for cracks, distortion or any other signs of wear or damage, paying particular attention to the mount bushings and balljoint. **Note:** *The balljoints are integral with both the arm and the strut. If the tension strut bushing requires replacement, the strut should be taken to a dealer or qualified shop. A hydraulic press and suitable spacers are required to press the bushing out of position and install the new one* .

Installation

Control arm

9 Locate the inner end of the control arm with the subframe, insert the bolt from the rear, then install the new nut - do not tighten the nut yet. On models with height sensors, install the bracket before installing the retaining nut.

10 Ensure the balljoint studs and mounting holes are clean and dry, then move the control arm into position and engage the balljoint with the hub carrier. If necessary, press the inner balljoint stud into position using a jack positioned beneath the arm.

11 Install a new nut to the outer balljoint stud, and tighten it to the specified torque setting.

12 On models equipped with suspension ride-height sensors, install the sensor link bracket to the control arm and secure the clamp.

13 Raise the front suspension with a floor jack to simulate normal ride height, then tighten the control arm inner bolt/nut to the specified torque.

14 Install the engine under-shield.

15 Install the wheel, then lower the vehicle to the ground and tighten the wheel bolts to the specified torque.

16 On models with active steering, it may be necessary to have the steering angle sensor calibration carried out using BMW diagnostic equipment.

17 We recommend that the front wheel alignment be 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.

Tension strut

18 Position the inner end of the strut in the subframe bracket, then insert the bolt and install the new nut - do not tighten the nut yet.

19 Engage the strut balljoint with the hub carrier, install the new nut and tighten it to the specified torque.

20 Raise the front suspension with a floor jack to simulate normal ride height, then tighten the strut inner bolt/nut to the specified torque.

21 Install the engine under-shield.

22 Install the wheel, then lower the vehicle to the ground and tighten the wheel bolts to the specified torque.