

330 Rear Suspension

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GENERAL

This repair group covers removal and replacement of rear suspension components.

See also:

- **300 Suspension, Steering and Brakes-General** for a general description of the 5 Series suspension.
- **310 Front Suspension** for front suspension component replacement and active stabilizer system.
- **320 Steering and Wheel Alignment** for ride height and alignment specifications.
- **331 Rear Axle Differential** for rear drive axle and differential repairs.

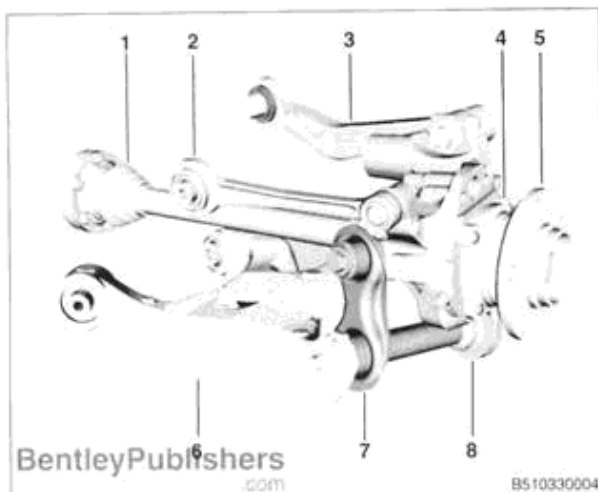
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Rear suspension description

Special service tools are required for some of the work described in this repair group. Most of these tools are specialized press jigs and pullers that may be replaced by standard pullers of various sizes. Read the procedures through before beginning any job.

Rear suspension description

The rear suspension uses a subframe as a rigid mounting platform for the differential (also called final drive) and rear suspension components. The differential is mounted to the subframe and the subframe is bolted to the body through rubber bushings which help isolate drivetrain noise and vibration.



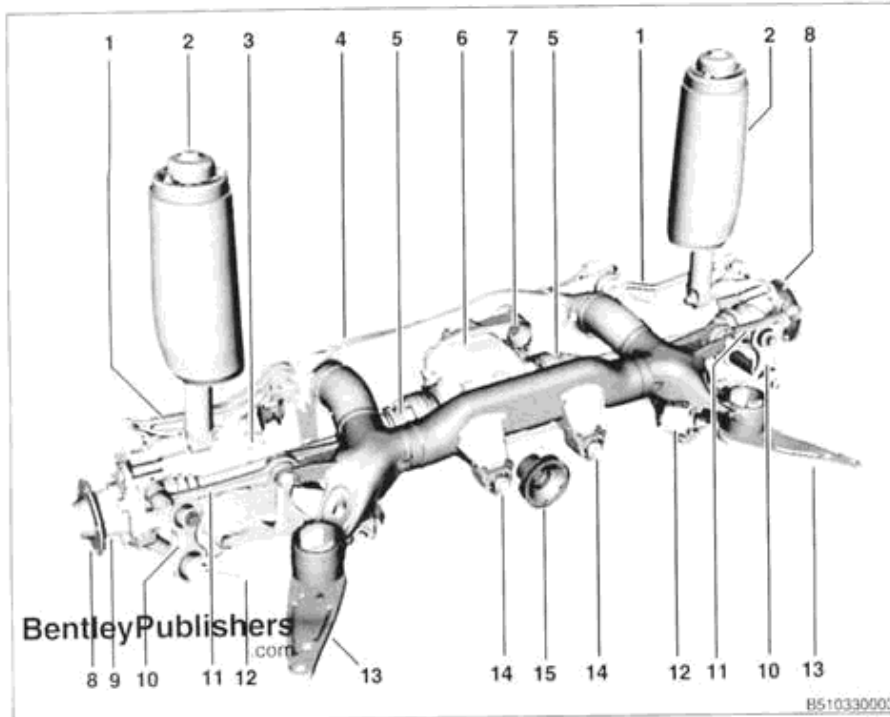
➤ In the 5 Series multi-link rear suspension, four control arms (or links) on each side locate the rear wheels. The lower control arm, called the swing arm, is attached to the wheel bearing carrier via a ball joint at rear and an articulating integral link at front.

1. Rear drive axle
2. Guide arm (traction strut)
3. Control arm
4. Wheel bearing carrier
5. Wheel hub
6. Swing arm
7. Integral link
8. Ball joint

Shock absorber and spring applications differ on Sedan and Sports Wagon models:

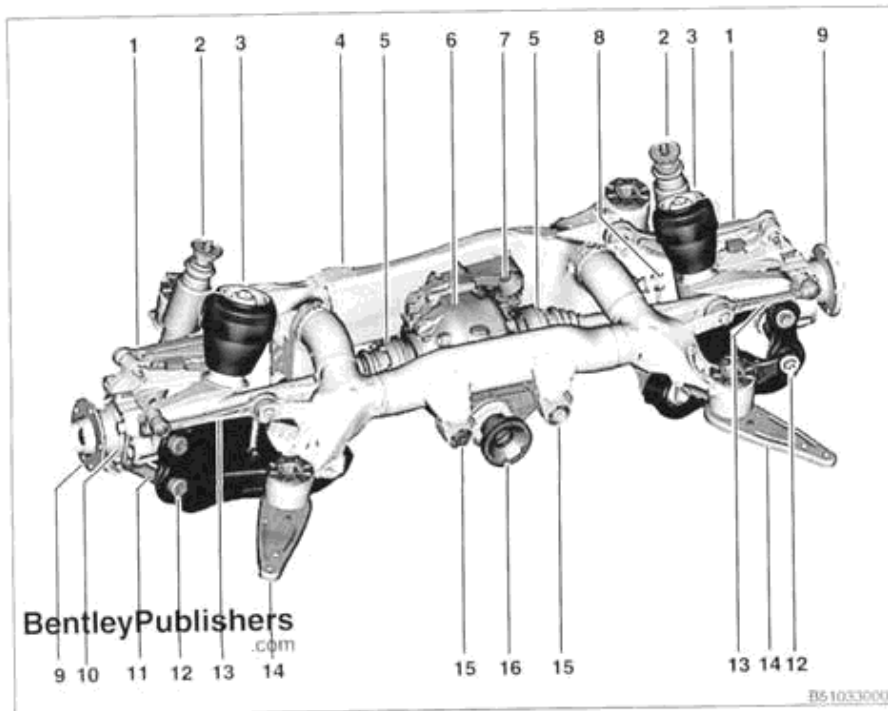
- Sedan (E60) rear springs and struts are combined in a conventional MacPherson strut assembly.
- Sports Wagon (E61) gains larger and flatter cargo space and better load capacity by being equipped with separate air springs and shock absorbers. Air spring heights are determined by the electronic height control (EHC) system.

Sedan rear suspension component



1. Control arm
2. Strut and coil spring assembly
3. Stabilizer bar link
4. Rear subframe
5. Rear drive axle
6. Rear differential
7. Differential rear mount bushing
8. Wheel hub
9. Wheel bearing carrier
10. Integral link
11. Guide arm (traction strut)
12. Swing arm
13. Thrust rod
14. Differential front mount bushings
15. Differential input flange

Sports Wagon rear suspension components



1. Control arm
2. Shock absorber
3. Air spring
4. Rear subframe
5. Rear drive axle
6. Rear differential
7. Differential rear mount bushing
8. Stabilizer bar link
9. Wheel hub
10. Wheel bearing carrier
11. Swing arm
12. Integral link
13. Guide arm (traction strut)
14. Thrust rod
15. Differential front mount bushings
16. Differential input flange

330-4 Rear Suspension

Warnings and Cautions

Warnings and Cautions

WARNING—

- Do not reuse self-locking fasteners.
- Wear protective gloves and eye wear when working with hydraulic fluid.
- Drain the EHC (self-leveling suspension) system before carrying out any work on the air supply compressor, air pipes or air springs. See **EHC, disabling, deflating, refilling** in this repair group.

CAUTION—

- Due to the chemical and corrosion characteristics of aluminum, follow these precautions when working with aluminum components:
 - Do not bring into contact with battery acid.
 - Do not use wire brushes with brass or iron bristles.
 - Do not expose to flying sparks.
 - Do not subject to steel welding splashes.
 - Do not expose to temperatures over 80°C (176°F), even for short periods. Paint shop temperatures are not a problem.
- When filling or bleeding active stabilizer bar hydraulic system, do not allow contamination of fluid or reservoir.
- Do not allow the vehicle to stand on its wheels when the EHC system is disabled or drained. Damage to air springs may result.
- When disconnecting and connecting EHC air lines, do not allow contamination to enter the lines.

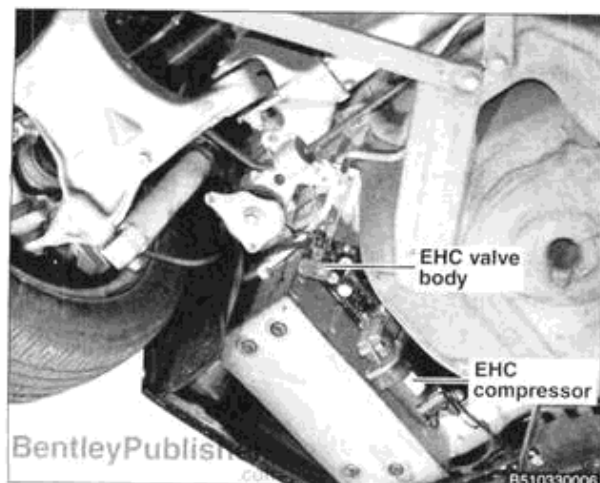
ELECTRONIC HEIGHT CONTROL (EHC)

EHC description

Sports Wagon (E61) rear suspension is equipped with air springs. Electronic control of air spring height allows the rear of the wagon to remain at a relatively stable height, thereby maintaining constant suspension geometry and handling stability. The electronic height control (EHC) system is also referred to as self-leveling suspension.

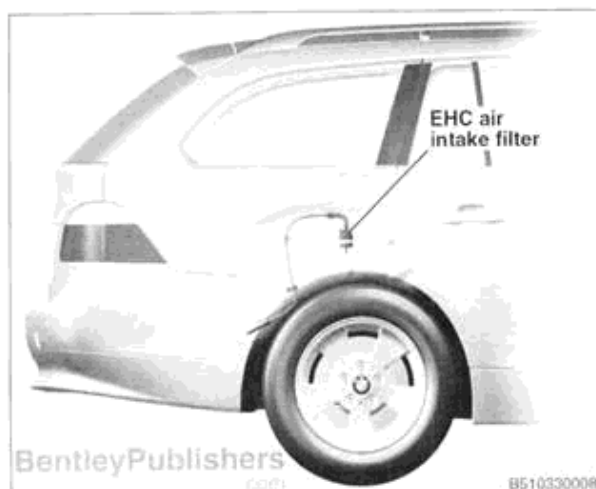
Air springs and shock absorbers are supported independently on the floor pan of the vehicle, allowing for flatter floor and larger cargo space.

- ▲ The EHC air supply system is underneath the rear of the vehicle between the spare wheel well and battery box.



Rear Suspension 330-5

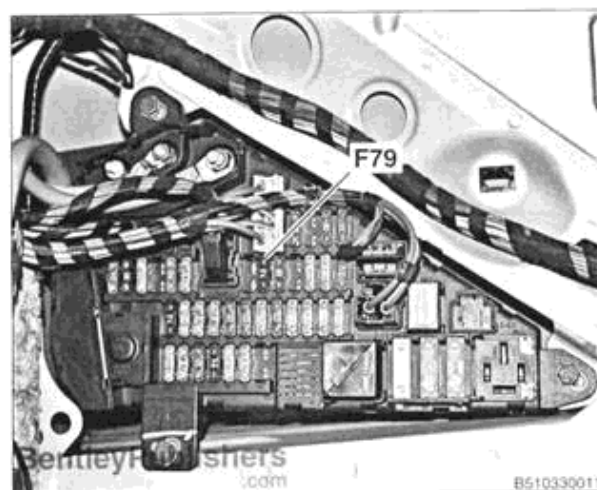
EHC power supply



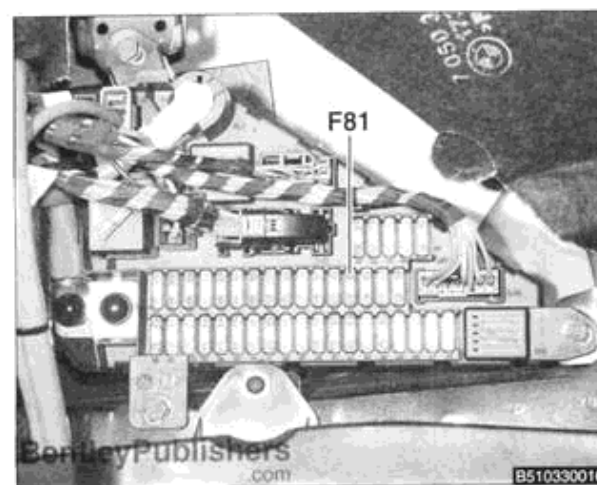
- ◀ EHC compressor filtered air intake is at right rear of vehicle behind cargo compartment paneling.

EHC power supply

The EHC power supply fuse is in the rear fuse panel at right side of cargo compartment behind trim.



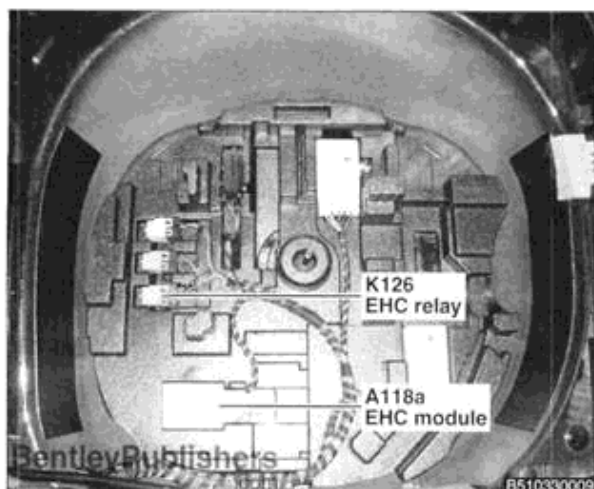
- ◀ F79, 7.5 A (to 09 / 2005)



- ◀ F81, 7.5 A (from 09 / 2005)

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EHC control electronics



EHC control electronics

EHC power relay and control module are in the cargo compartment, underneath the spare tire.

- **A118a** EHC control module
- K126** EHC relay

EHC, disabling, deflating, refilling

- Switch ignition OFF and remove key.
- Raise vehicle and support safely.

WARNING—

- Make sure the vehicle is stable and well supported at all times. Use a professional automotive lift or jack stands designed for the purpose. A floor jack is not adequate support.

- Remove EHC power supply fuse in rear fuse panel. See **EHC power supply** in this repair group.

- Working underneath right rear of vehicle, remove plastic cover to gain access to air compressor and valve body.

- Label air lines (**arrows**), then loosen union nuts until hiss of escaping air can be heard.
- Fully release lines once sound of escaping air stops.

CAUTION—

- Plug open air lines and ports.
- Do not lower vehicle on its wheels while air springs are depressurized.



- When installing:
 - Check union nuts for contamination. Clean if necessary.
 - Start union nut by hand carefully to avoid damaging plastic threads on valve body.

Tightening torque

EHC air line to valve body (4 mm line)	2 Nm (18 in-lb)
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- Reinstall EHC power supply fuse.
- Connect BMW scan tool.
- Switch ignition ON. Use scan tool "control unit functions" menu to activate EHC and inflate rear air springs.

EHC faults

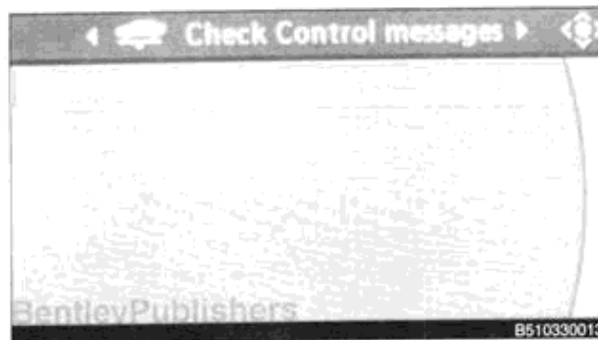
- The driver is alerted to EHC system faults by a warning icon and a Check Control warning triangle in instrument cluster.



- Check Control in center dashboard (iDrive) displays a self-leveling (EHC) malfunction message.

Stop and check the vehicle. If it is considerably lower at the rear than at the front, or on one side, go to the nearest BMW center or other qualified repair shop. Drive with appropriate caution in the meantime. The vehicle has reduced ground clearance and driving comfort may be noticeably reduced.

Even if the position of the vehicle is normal, make sure the vehicle is checked by a qualified repair shop.



330-8 Rear Suspension

Rear strut assembly, removing and installing (Sedan)

REAR STRUT ASSEMBLY (SEDAN)

Sedan rear shock absorbers are MacPherson struts. The strut is a major component of the suspension and supports the spring. Most strut assembly components are available as replacement parts.

If a shock absorber or strut is defective on one side of the vehicle, replace both shock absorbers on that axle. If a coil spring is broken due to corrosion, replace both coil springs on the axle.

Rear strut, upper strut mount or coil spring replacement is a two-step procedure:

- Removal of strut assembly from vehicle.
- Disassembly and replacement of components on work bench.

Special tools are necessary for compressing the coil spring safely. Be sure to read the complete procedure before starting work.

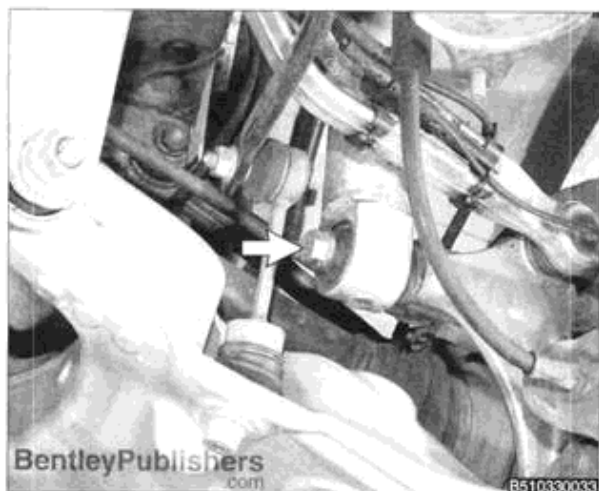
Rear strut assembly, removing and installing (Sedan)

- Raise car and remove rear wheel.

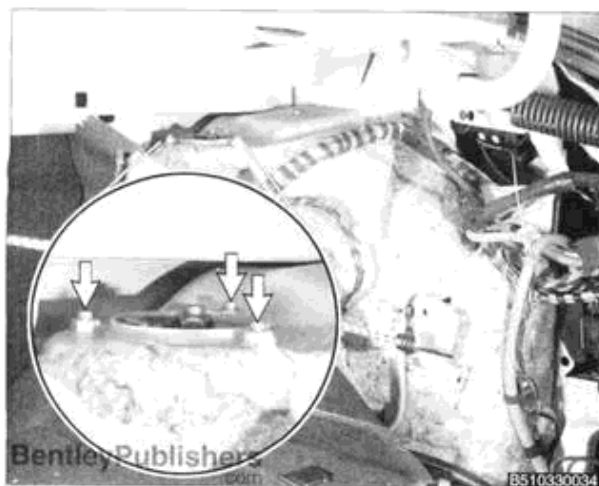
WARNING —

- Make sure the car is firmly supported on jack stands designed for the purpose. Place jack stands underneath structural chassis points, not underneath suspension parts.

- Detach stabilizer link from swing arm.
- Support rear wheel bearing carrier with suitable jack.
- Remove strut assembly lower mounting bolt (**arrow**) and detach strut base from wheel bearing carrier. Tie strut up with stiff wire to prevent it from falling out.



- Working in trunk:
 - Peel back trunk side trim covering wheel well.
 - Remove sound absorbing materials to gain access to strut top mount nuts (**arrows**).
 - Remove nuts.
- Working in wheel arch opening underneath vehicle:
 - Push wheel bearing carrier down
 - Guide strut assembly down between guide arm and control arm and lift out of wheel housing.
- If replacing strut, coil spring or upper strut mount, disassemble and reassemble strut assembly on bench. See **Rear strut assembly, disassembling and assembling** in this repair group.



— Installation is reverse of removal. Note the following:

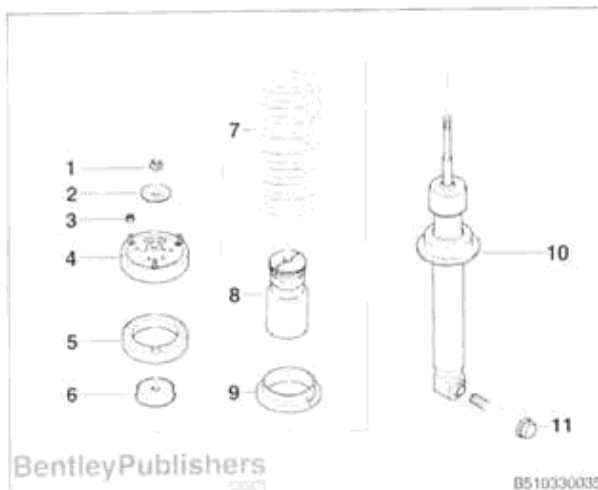
- Replace upper strut mount nuts and lower strut mount bolt with new.
- Make sure that strut lower bushing mates squarely with bore in wheel bearing housing before installing lower bolt. Do not use bolt to force strut bushing into alignment.

Tightening torques

Road wheel to hub	120 ± 10 Nm (89 ± 7 ft-lb)
Strut lower mount to wheel bearing carrier (replace M14 x 105 mm ZNS3 bolt with new)	165 Nm (122 ft-lb)
Strut upper mount to chassis (replace M8 ZNS3 self-locking nuts with new)	28 Nm (21 ft-lb)

Rear strut assembly components (Sedan)

1. M12 x 1.5 self-locking nut
 - Replace with new
 - Tighten to 27 Nm (20 ft-lb)
2. Washer plate
3. M8 ZNS3 self-locking nut
 - Replace with new
 - Tighten to 28 Nm (21 ft-lb)
4. Upper strut mount
5. Upper spring pad
6. Support
7. Coil spring
8. Rubber stop
9. Lower spring pad
10. Strut with lower spring seat
11. M14 x 105 mm bolt
 - Replace with new
 - Tighten to 165 Nm (122 ft-lb)



330-10 Rear Suspension

Rear strut assembly, disassembling and assembling (Sedan)

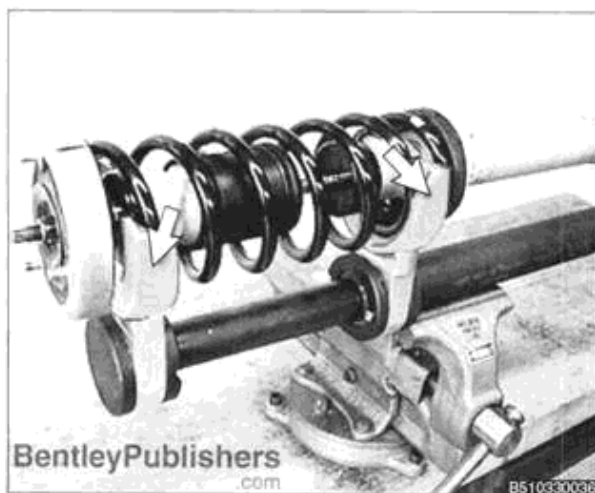
Rear strut assembly, disassembling and assembling (Sedan)

If replacing strut, upper strut mount or coil spring, first remove the strut assembly from the vehicle. See **Rear strut assembly, removing and installing (Sedan)** in this repair group.

BMW recommends the use of BMW spring compressor (special tool 31 3 340). A number of different spring compressor tools are available. Photos in this section illustrate the function of one such tool in use.

WARNING —

- Do not attempt to disassemble the strut assembly without a spring compressor designed specifically for this job.
- Prior to each use, check special tool for functionality.
- Do not use a damaged tool.
- Do not make any modifications to tool.
- Use correct size spring retainers when compressing coil spring.
- When assembling BMW spring compressor (special tool 31 3 340), make sure spring retainer plates are felt and heard snapping into place. Check seating of spring retainers carefully.

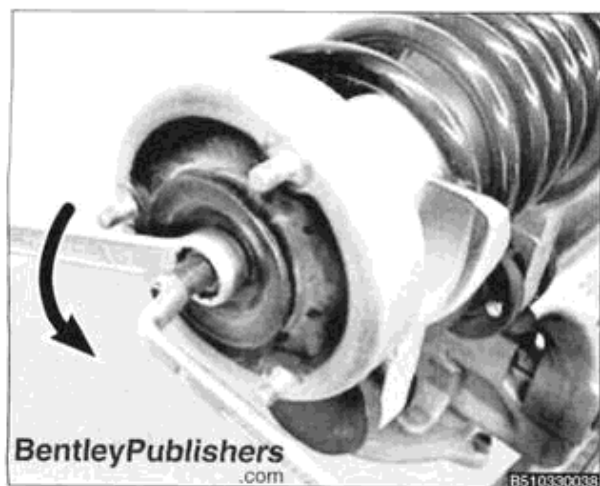


— Clamp spring compressor in shop vise.

◀ Clean coil spring to remove coarse dirt, then position between compressor spring retainers (**arrows**) as shown. Compress spring.

WARNING —

- Make sure that when tensioned, the spring coil rests completely in the spring holder recess.
- Do not tighten or loosen spring compressor with an impact tool.
- Tighten down the coil spring until stress on the upper strut mount is relieved.
- Only loosen upper strut nut if spring coils are completely inserted in the spring holder grooves. If necessary, loosen compressor, reposition and recompress.

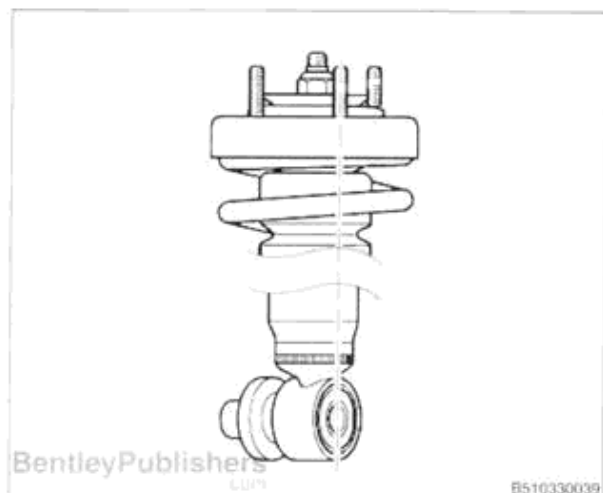


◀ Counterhold strut piston shaft with small wrench and remove upper strut nut (**arrow**).

- Remove upper strut mount and spring pad.
- If a new coil spring is being installed, relieve tension on spring compressor and remove coil spring.
- Check rubber stop and spring pads. Replace as necessary.
- Replace strut, upper strut mount or spring, as needed. If one spring is corroded or damaged, replace both springs as a matched pair.

Rear Suspension 330-11

Rear strut assembly, disassembling and assembling (Sedan)



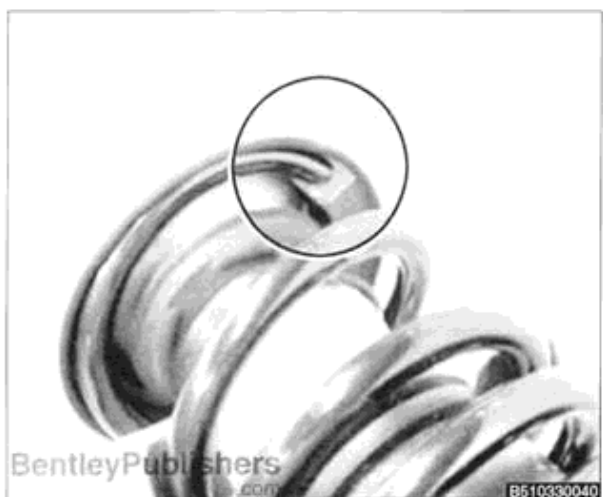
- ◀ Assemble strut with coil spring and tighten down upper mount using new nut.

- Upper mount alignment: One stud on upper mount lines up with short end of strut bushing.

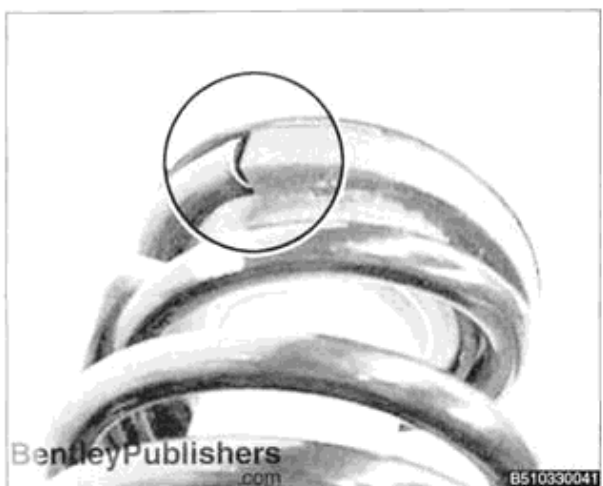
Tightening torque

Strut shaft to strut top bearing (replace self-locking M12 x 1.5 nut with new)	27 Nm (20 ft-lb)
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- Be sure coil spring ends line up correctly before releasing spring compressor. See following illustrations.



- ◀ Upper coil spring end: Place spring end in spring pad stop (*inset*).



- ◀ Lower coil spring end: Place spring end against spring pad stop (*inset*).

- Release spring compressor carefully and evenly, allowing spring to expand slowly.
- Reinstall strut assembly in vehicle.

330-12 Rear Suspension

Rear shock absorber components (Sports Wagon)

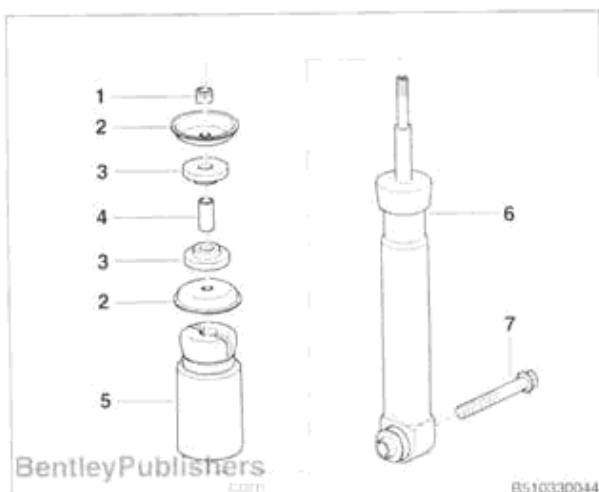
REAR SHOCK ABSORBERS AND AIR SPRINGS (SPORTS WAGON)

Sports Wagon models are equipped with rear air springs installed separately from the shock absorbers. See **Sports Wagon rear suspension components** in this repair group.

If a shock absorber is defective on one side of the vehicle, replace both shock absorbers on that axle.

Rear shock absorber components (Sports Wagon)

1. M12 x 1.5 self-locking nut
 - Replace with new
 - Tighten to 27 Nm (20 ft-lb)
2. Support washer
3. Support bushing
4. Spacer sleeve
5. Rubber bump stop and dust sleeve
6. Shock absorber
7. M14 x 105 mm bolt
 - Replace with new
 - Tighten to 165 Nm (122 ft-lb)



Rear shock absorber, removing and installing (Sports Wagon)

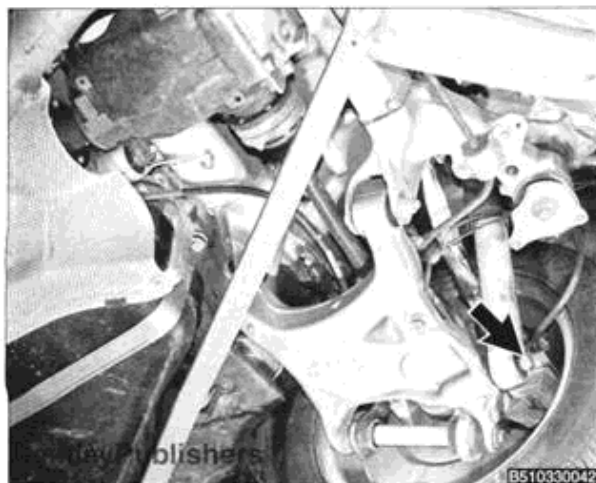
- Raise vehicle and support safely.

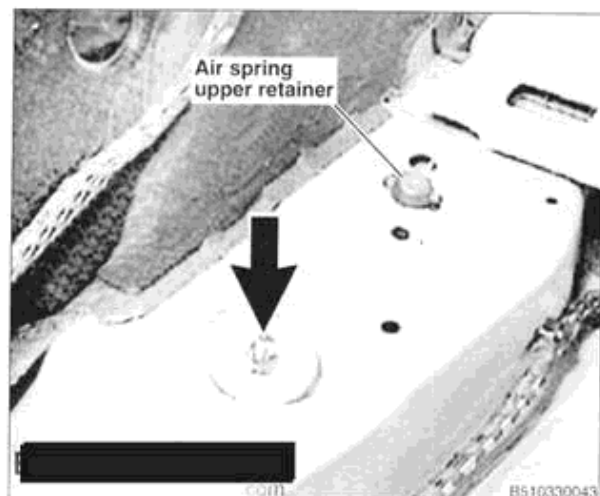
WARNING —

- Make sure the car is firmly supported on jack stands designed for the purpose. Place jack stands underneath structural chassis points, not underneath suspension parts.

- Disable and deflate EHC system. See **EHC, disabling, deflating, refilling** in this repair group.

- Remove shock absorber lower mounting bolt (**arrow**). Detach shock absorber from swing arm and tie securely to prevent it from falling out.





Working in cargo compartment:

- Remove floor covering and side plastic rails to gain access to shock absorber upper mountings.
 - Unscrew upper shock absorber nut (**arrow**) and lift off upper support washer.
- Remove shock absorber from below vehicle.
 - Inspect rubber bump stop, dust sleeve and support bushings for wear and damage. Replace as necessary.
 - Transfer used and new parts to new shock absorber. Installation is reverse of removal. Note the following:
 - Replace upper strut mount nut and lower strut mount bolt with new.
 - Make sure that shock absorber lower bushing mates squarely with bore in swing arm before installing lower bolt. Do not use bolt to force shock absorber bushing into alignment.

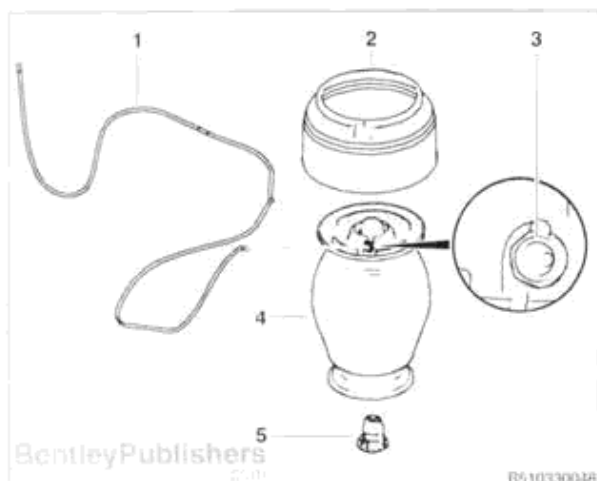
Tightening torques

Road wheel to hub	120 ± 10 Nm (89 ± 7 ft-lb)
Shock absorber lower bolt to swing arm (replace M14 x 105 mm ZNS3 bolt with new)	165 Nm (122 ft-lb)
Shock absorber upper mount to frame rail (replace M8 ZNS3 self-locking nut with new)	27 Nm (20 ft-lb)

- Reactivate and fill EHC system. See **EHC, disabling, deflating, refilling** in this repair group.

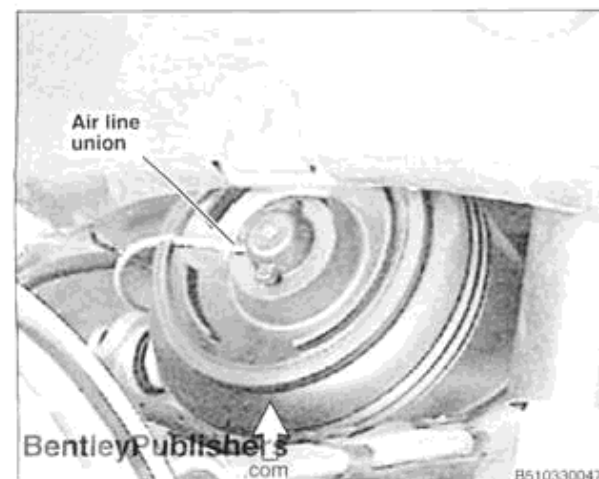
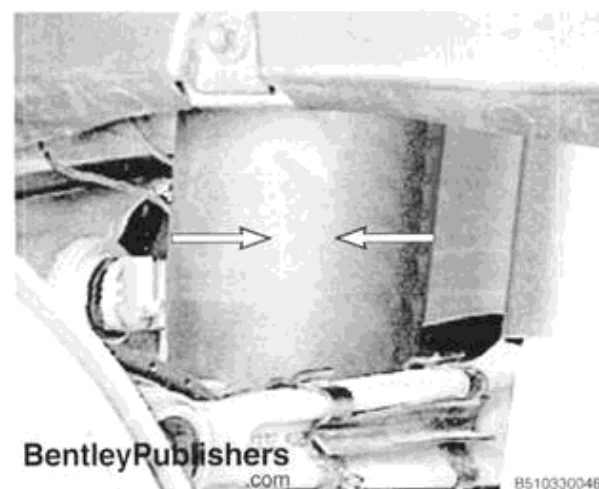
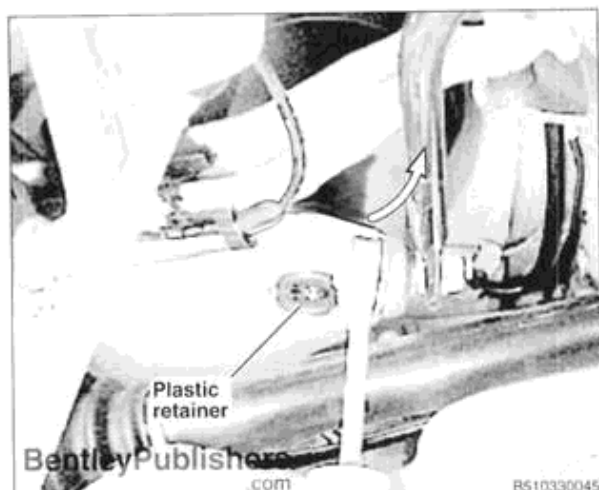
Air spring components (Sports Wagon)

1. Air line
2. Protective boot
3. Union nut
 - Plastic air line connection
 - Tighten to 2 Nm (18 in-lb)
4. Air spring
5. Plastic retainer



330-14 Rear Suspension

Air spring, removing and installing (Sports Wagon)



Air spring, removing and installing (Sports Wagon)

- Raise vehicle and remove rear wheel.

WARNING—

- Make sure the car is firmly supported on jack stands designed for the purpose. Place jack stands underneath structural chassis points, not underneath suspension parts.

- Disable and deflate EHC system. See **EHC, disabling, deflating, refilling** in this repair group.

◀ Working at base of air spring above wheel bearing carrier:

- Tilt lower section of air spring (**arrow**) by hand toward front. Rotate counterclockwise 25° against resistance of lower plastic retainer to detach.
- Note that broken off upper plastic retainer on air spring is not a problem.

◀ Squeeze air spring (**arrows**) and tilt top outward.

CAUTION—

- Do not kink, twist or crush air line.

◀ Detach air line from air spring at union.

- Moisten air spring upper protective boot (**arrow**) with soapy solution, then remove air line, air line union and boot from spring.
- Plug or tape up open air ports immediately.
- Note that union nut stays on air line.
- Lift out air spring.

- Before reinstalling, check airline, union nuts and lower retainer for damage. Replace as necessary.

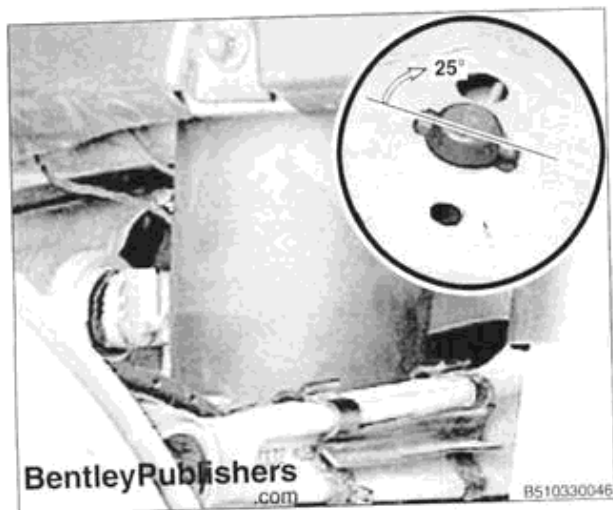
Rear Suspension 330-15

Air spring, removing and installing (Sports Wagon)

- To reinstall, place air spring at its location and place protective boot over it. Clean air line union carefully, then screw in by hand to avoid damaging plastic threads.

Tightening torque

Air line to air spring (4 mm line)	2 Nm (18 in-lb)
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- ◀ Tip air spring into place and fit upper retainer in frame rail slot. Rotate spring approx. 25° to lock in place. This ensures alignment of air spring to lower retainer.

- Note that broken off upper plastic retainer on air spring is not a problem.
- To make sure air line does not slip out of protective boot groove, pull air line downward during installation.

CAUTION—

- Do not kink, twist or crush air line.

- Align air spring to lower retainer and press down until retainer snaps into place. It is not necessary to replace retainer.

Tightening torque

Road wheel to hub	120 ± 10 Nm (89 ± 7 ft-lb)
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- Reactivate and fill EHC system. See **EHC, disabling, deflating, refilling** in this repair group.

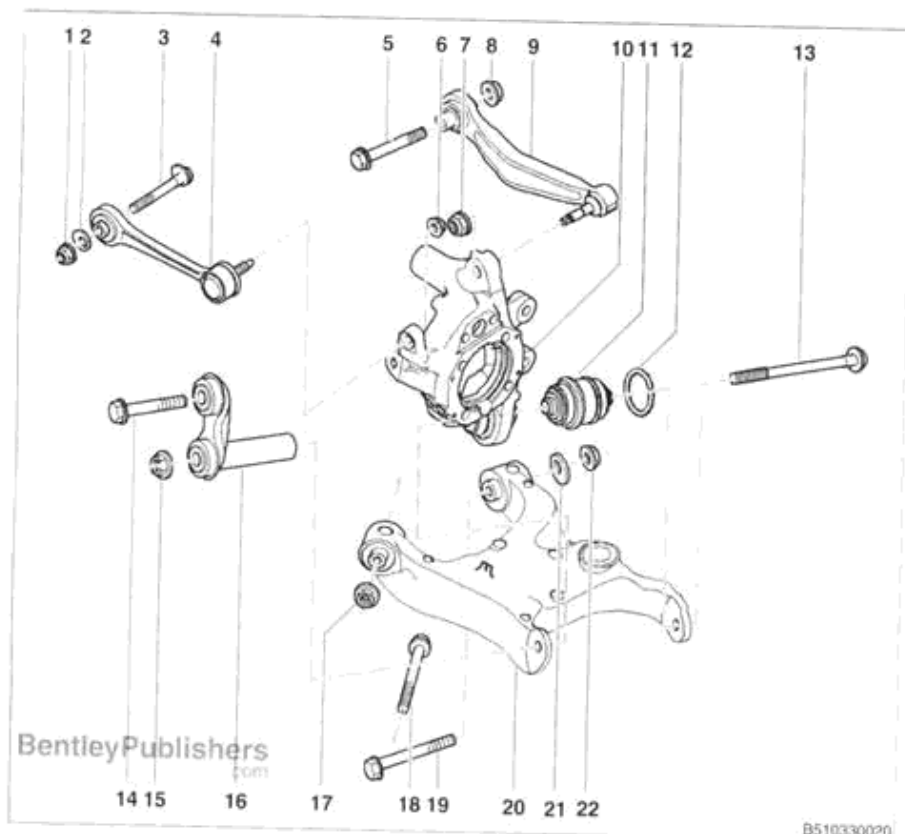
330-16 Rear Suspension

Rear suspension arm components

REAR SUSPENSION ARMS, SUBFRAME AND BUSHINGS

Rear suspension arm components

The diagram below illustrates Sedan rear control arms. Sports Wagon is similar.



1. Self-locking M10 nut (replace)
 - Tighten with suspension loaded
 - Tighten to 65 Nm (48 ft-lb)
2. Eccentric washer
3. Eccentric M10 x 66 mm ZNS3 bolt
 - Adjusts rear toe
4. Guide arm (traction strut)
5. M12 1.5 x 92 mm ZNS3 bolt
6. Self-locking M10 nut (replace)
 - Tighten to 65 Nm (48 ft-lb)
7. Self-locking M14 x 1.5 nut (replace)
 - Tighten to 175 Nm (129 ft-lb)
8. Self-locking M12 x 1.5 nut (replace)
 - Tighten with suspension loaded
 - Tighten to 100 Nm (74 ft-lb)
9. Upper control arm
10. Wheel bearing carrier
11. Swing arm ball joint
12. Circlip
13. M16 x 275 mm ZNS3 bolt
14. M12 x 1.5 x 67 mm ZNS3 bolt
15. Self-locking M16 x 1.5 nut (replace)
 - Tighten with suspension loaded
 - Tighten to 240 Nm (177 ft-lb)
16. Integral link
17. Self-locking M12 x 1.5 nut (replace)
 - Tighten with suspension loaded
 - Tighten to 100 Nm (74 ft-lb)
18. M12 x 1.5 x 98 mm ZNS3 bolt
19. Eccentric M14 x 100 mm ZNS3 bolt
 - Adjusts rear camber
20. Swing arm
21. Eccentric washer
22. Self-locking M14 x 1.5 ZNS3 nut (replace)
 - Tighten with suspension loaded
 - Tighten to 165 Nm (122 ft-lb)

Upper control arm, removing and installing

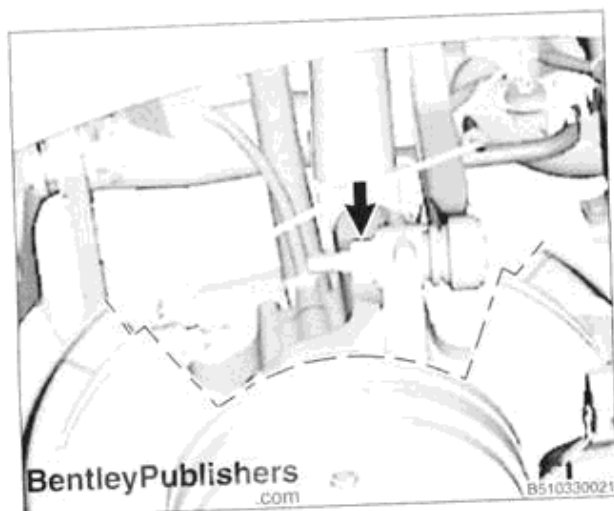
- Sports Wagon: Disable and deflate EHC system. See **EHC, disabling, deflating, refilling** in this repair group.
- Raise car and remove wheel.

WARNING —

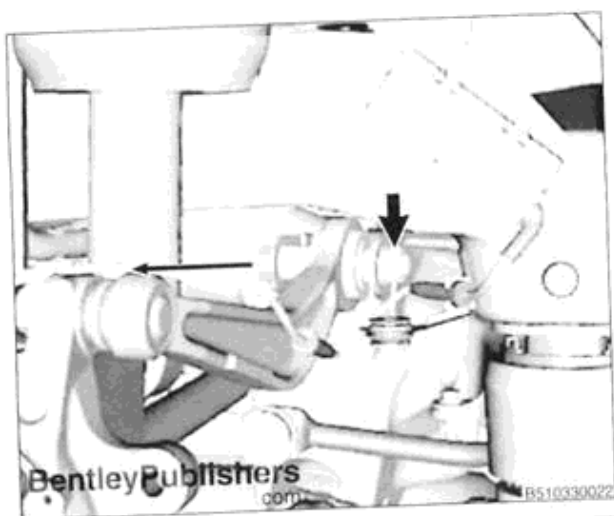
- Make sure the car is firmly supported on jack stands designed for the purpose. Place jack stands underneath structural chassis points, not underneath suspension parts.

- Release wheel speed sensor and brake pad sensor wires from brackets. Note that brake pad sensor is only on right side.

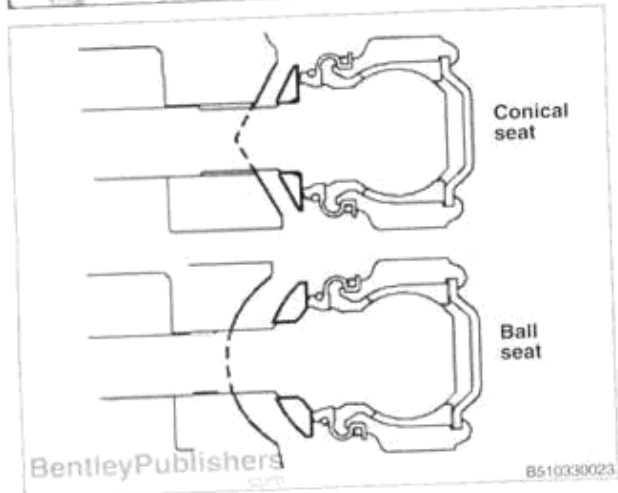
- Remove control arm ball joint nut (**arrow**) at wheel bearing carrier. Separate control arm from wheel bearing carrier. (Brake backing plate and disc cut away for purpose of illustration.)



- Remove control arm mounting nut (**arrow**) at subframe. Slide mounting bolt out and remove control arm.



- If installing new control arm, be sure to match shape of wheel bearing carrier seat for ball joint.



330-18 Rear Suspension

Guide arm (traction strut), removing and installing

- Installation is reverse of removal. Remember to:
 - Keep control arm ball joint shaft and wheel bearing carrier bore clean and grease-free.
 - Replace self-locking fasteners.
 - Head of control arm to subframe bolt faces forward.
 - Tighten control arm to subframe fastener to final torque only after vehicle is lowered and suspension has settled.
 - Sports Wagon: Reactivate and fill EHC system. See **EHC, disabling, deflating, refilling** in this repair group.

Tightening torques

Control arm to subframe (replace M12 x 1.5 self-locking nut with new)	100 Nm (74 ft-lb)
Control arm to wheel bearing carrier (replace M14 x 1.5 self-locking nut with new)	175 Nm (129 ft-lb)
Road wheel to hub	120 ± 10 Nm (89 ± 7 ft-lb)

- Have car professionally aligned when job is complete.

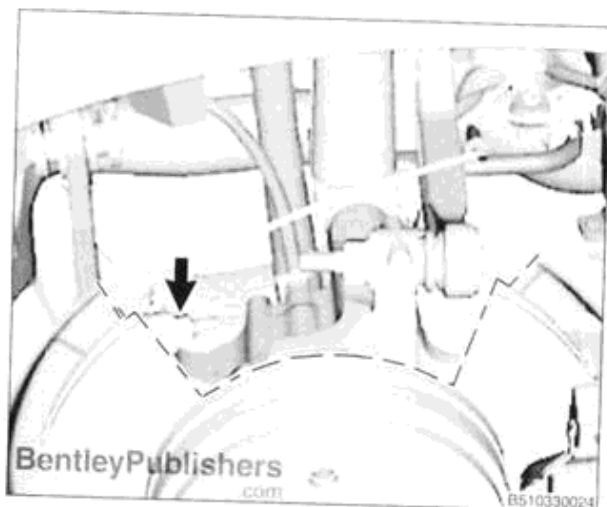
Guide arm (traction strut), removing and installing

- Raise car and remove wheel.

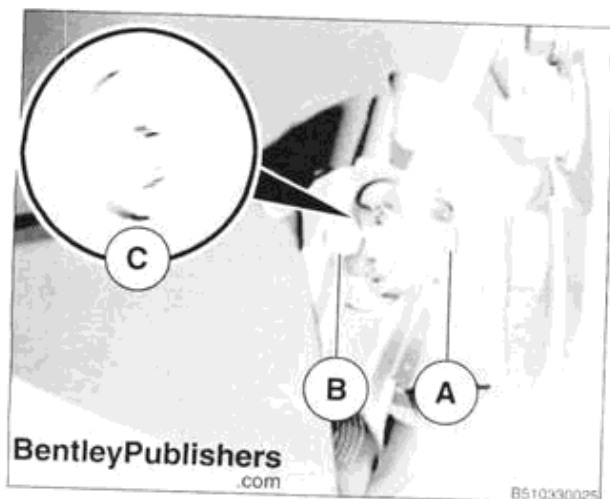
WARNING—

- Make sure the car is firmly supported on jack stands designed for the purpose. Place jack stands underneath structural chassis points, not underneath suspension parts.

- Remove guide arm ball joint nut (**arrow**) at wheel bearing carrier. Separate guide arm from wheel bearing carrier. (Brake backing plate and disc cut away for purpose of illustration.)



- Working at guide arm to subframe bolt:
 - Mark position of eccentric bolt (rear toe adjustment bolt) (**A**).
 - Remove mounting nut (**B**).
 - Remove eccentric washer (**C**) and slide out bolt.



- Installation is reverse of removal. Remember to:
 - Keep guide arm ball joint shaft and wheel bearing carrier bore clean and grease-free.
 - Replace self-locking fasteners.
 - Head of guide arm to subframe eccentric (toe-adjusting) bolt faces backward.
 - Refit eccentric washer on eccentric bolt and match marks made previously.
 - Tighten guide arm to subframe fastener to final torque only after vehicle is lowered and suspension has settled.

Tightening torques

Guide arm to subframe (replace M10 self-locking nut with new)	65 Nm (48 ft-lb)
Guide arm to wheel bearing carrier (replace M10 self-locking nut with new)	65 Nm (48 ft-lb)
Road wheel to hub	120 ± 10 Nm (89 ± 7 ft-lb)

- Have car professionally aligned when job is complete.

Swing arm, removing and installing

- Sports Wagon: Disable and deflate EHC system. See **EHC, disabling, deflating, refilling** in this repair group.
- Sports Wagon: Detach drive axle at differential output flange. See **331 Rear Axle Differential**.
- Raise car and remove wheel.

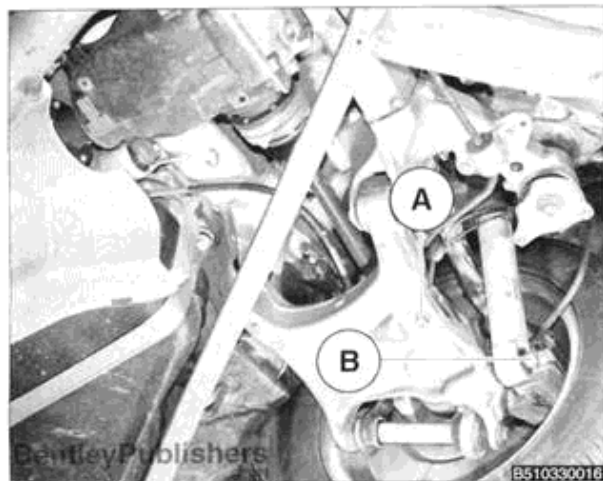
WARNING —

- Make sure the car is firmly supported on jack stands designed for the purpose. Place jack stands underneath structural chassis points, not underneath suspension parts.

- Support rear wheel bearing carrier with suitable jack.

**Working underneath swing arm:**

- Disconnect control rod for suspension level sensor.
- Remove stabilizer link nut (A) at swing arm and detach stabilizer link. See **Stabilizer bar link, removing and installing** in this repair group.
- Sports Wagon: Remove shock absorber fastener (B) at swing arm and detach shock absorber. See **Rear shock absorber, removing and installing (Sports Wagon)** in this repair group.



330-20 Rear Suspension

Swing arm, removing and installing



➤ Mark (**arrows**) position of rear inboard swing arm bolt (rear camber adjusting bolt), then remove nut. Remove eccentric washer and slide out bolt.

— Remove front inboard swing arm fasteners.

➤ Working at integral link, remove swing arm mounting nut (**arrow**). Drive outboard mounting bolt toward rear and pull swing arm downward.

— Note orientation of swing arm bolt heads:

- Eccentric (camber adjusting) bolt head points forward.
- Front inboard bolt head points backward.
- Outboard (integral link) bolt head points backward.

— Installation is reverse of removal. Remember to:

- Replace self-locking fasteners.
- Refit eccentric washer on camber bolt and match marks made previously.
- Tighten swing arm and shock absorber fasteners to final torque only after vehicle is lowered and suspension has settled.
- Sports Wagon: Reactivate and fill EHC system. See **EHC, disabling, deflating, refilling** in this repair group.

Tightening torques

Drive axle to differential output flange (replace M10 x 43 mm ZNS3 Torx bolts with new)	80 Nm (59 ft-lb)
Integral link to swing arm (M16 x 275 mm ZNS3 bolt, replace nut with new)	240 Nm (177 ft-lb)
Road wheel to hub	120 ± 10 Nm (89 ± 7 ft-lb)
Shock absorber to swing arm (replace M14 x 1.5 x 105 mm ZNS bolts with new)	165 Nm (122 ft-lb)
Stabilizer link to swing arm (replace M12 x 1.5 ZN3 self-locking nut with new)	100 Nm (74 ft-lb)
Swing arm to subframe (M12 x 1.5 x 98 mm ZNS3 bolt, replace nut with new)	100 Nm (74 ft-lb)
Swing arm to subframe (M14 x 100 mm eccentric camber adjusting bolt, replace nut with new)	165 Nm (122 ft-lb)

— Have car professionally aligned when job is complete.

Integral link, removing and installing

- Sports Wagon: Disable and deflate EHC system. See **EHC, disabling, deflating, refilling** in this repair group.
- Sports Wagon: Detach drive axle at differential output flange. See **331 Rear Axle Differential**.
- Raise car and remove wheel.

WARNING—

- Make sure the car is firmly supported on jack stands designed for the purpose. Place jack stands underneath structural chassis points, not underneath suspension parts.

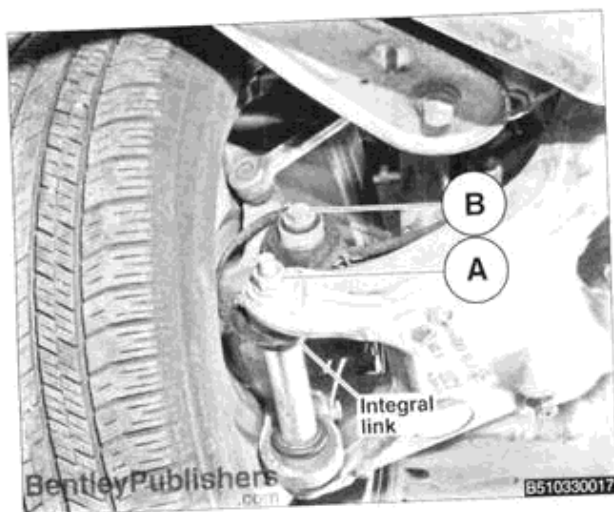
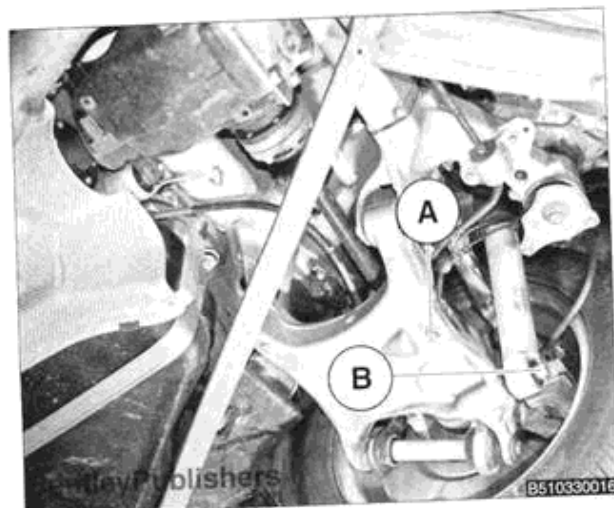
- Support rear wheel bearing carrier with suitable jack.

Working underneath swing arm:

- Disconnect control rod for suspension level sensor.
- Remove stabilizer link nut (A) at swing arm and detach stabilizer link. See **Stabilizer bar link, removing and installing** in this repair group.
- Sports Wagon: Remove shock absorber fastener (B) at swing arm and detach shock absorber. See **Rear shock absorber, removing and installing (Sports Wagon)** in this repair group.

Working at integral link:

- Remove swing arm mounting nut (A). Drive lower bolt out toward rear and pull swing arm downward.
- Remove integral link mounting bolt (B) and remove link.
- Installation is reverse of removal. Remember to:
 - Replace self-locking fasteners.
 - Tighten swing arm and shock absorber fasteners to final torque only after vehicle is lowered and suspension has settled.
 - Sports Wagon: Reactivate and fill EHC system. See **EHC, disabling, deflating, refilling** in this repair group.



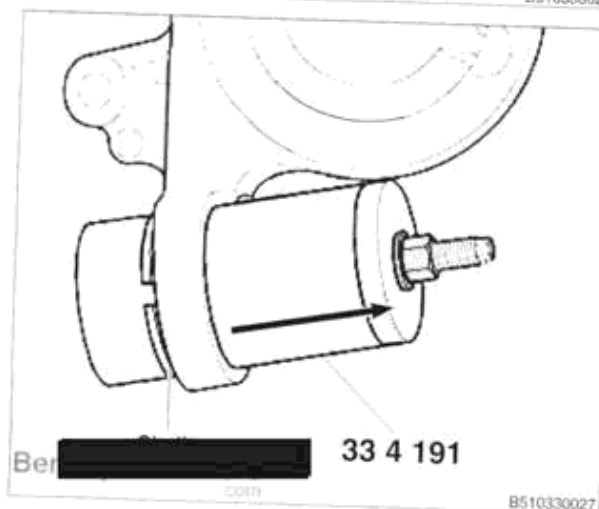
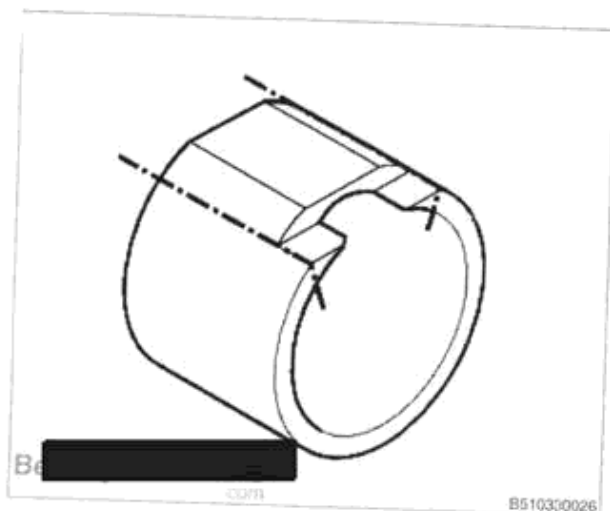
Tightening torques

Drive axle to differential output flange (replace M10 x 43 mm ZNS3 Torx bolts with new)	80 Nm (59 ft-lb)
Integral link to swing arm (M16 x 275 mm ZNS3 bolt, replace nut with new)	240 Nm (177 ft-lb)
Integral link to wheel bearing carrier (M12 x 1.5 x 67 mm ZNS3 bolt)	100 Nm (74 ft-lb)
Road wheel to hub	120 ± 10 Nm (89 ± 7 ft-lb)
Shock absorber to swing arm (replace M14 x 1.5 x 105 mm ZNS bolts with new)	165 Nm (122 ft-lb)
Stabilizer link to swing arm (replace M12 x 1.5 ZN3 self-locking nut with new)	100 Nm (74 ft-lb)

- Have car professionally aligned when job is complete.

330-22 Rear Suspension

Swing arm ball joint, removing and installing



Swing arm ball joint, removing and installing

Replace ball joints in pairs.

- Sports Wagon: Disable and deflate EHC system. See **EHC, disabling, deflating, refilling** in this repair group.
- Sports Wagon: Detach drive axle at differential output flange. See **331 Rear Axle Differential**.
- Raise car and remove wheel.

WARNING—

- Make sure the car is firmly supported on jack stands designed for the purpose. Place jack stands underneath structural chassis points, not underneath suspension parts.

- Remove integral link. See **Integral link, removing and installing** in this repair group.

Modify BMW press too 33 4 191 as illustrated. Cut area highlighted in grey and deburr edges.

Working at swing arm ball joint:

- Remove circlip.
- Use press tools to force ball joint out of wheel bearing carrier. Orient newly cut slot in special tool to point up toward wheel bearing.
- Reinstall using similar tools.
- Install new circlip.
- Installation is reverse of removal. Remember to:
 - Replace self-locking fasteners.
 - Tighten swing arm and shock absorber fasteners to final torque only after vehicle is lowered and suspension has settled.
 - Sports Wagon: Reactivate and fill EHC system. See **EHC, disabling, deflating, refilling** in this repair group.

Tightening torques

Drive axle to differential output flange (replace M10 x 43 mm ZNS3 Torx bolts with new)	80 Nm (59 ft-lb)
Integral link to swing arm (M16 x 275 mm ZNS3 bolt, replace nut with new)	240 Nm (177 ft-lb)
Integral link to wheel bearing carrier (M12 x 1.5 x 67 mm ZNS3 bolt)	100 Nm (74 ft-lb)
Road wheel to hub	120 ± 10 Nm (89 ± 7 ft-lb)
Shock absorber to swing arm (replace M14 x 1.5 x 105 mm ZNS bolts with new)	165 Nm (122 ft-lb)
Stabilizer link to swing arm (replace M12 x 1.5 ZN3 self-locking nut with new)	100 Nm (74 ft-lb)

- Have car professionally aligned when job is complete.

Rear subframe, removing and installing

- Sports Wagon: Disable and deflate EHC system. See **EHC, disabling, deflating, refilling** in this repair group.
- Raise vehicle and support safely.

WARNING—

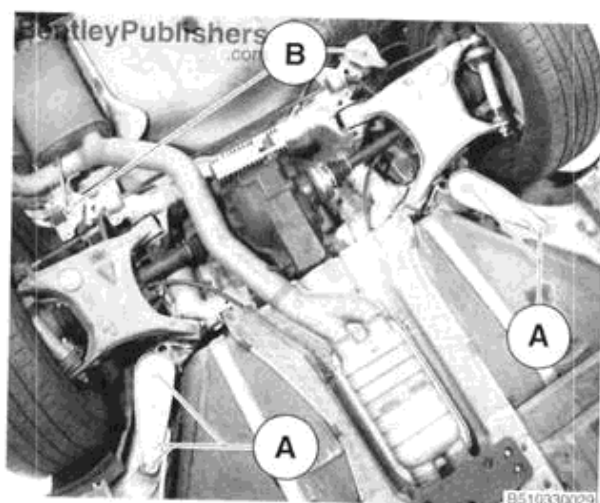
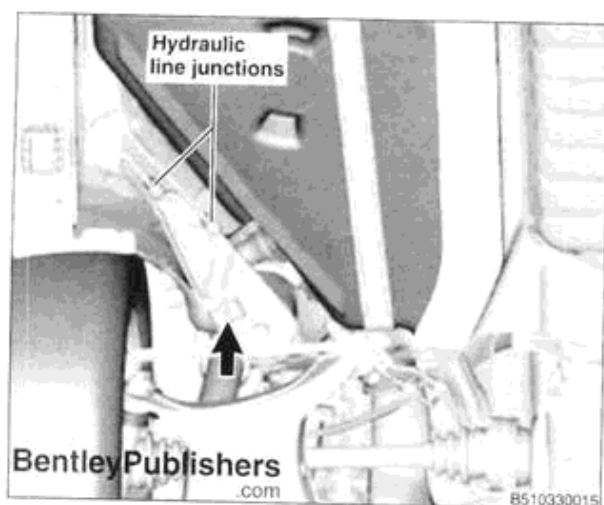
- Be sure the vehicle is stable and well supported. Removal of the rear subframe may upset the balance of the vehicle. Use tall jack stands to support the vehicle at all four corners.
- Alternatively, place 100 kg (220 lbs) in trunk or cargo compartment before starting work.
- Once it is raised up, make sure that the vehicle cannot be raised or lowered and that it does not move off the lift locating plates.

- Remove both rear wheels.
- Remove rear brake calipers and tie aside securely with stiff wire. Do not separate brake lines. Do not hang using brake hose. See **340 Brakes**.
- Remove both rear brake rotors. See **340 Brakes**.
- Remove both rear wheel speed sensors and unclip wiring harnesses from control arms and subframe. See **340 Brakes**.
- Sports Wagon: Remove X-brace underneath rear suspension.
- Remove complete exhaust system. See **180 Exhaust System**.
- Detach rear driveshaft and tie aside. See **260 Driveshafts**.
- Sedan: Remove both rear strut assembly lower bolts and detach assembly from wheel bearing carriers. See **Rear strut assembly, removing and installing (Sedan)** in this repair group.
- Sports Wagon: Detach bottom of air springs from subframe. See **Air spring, removing and installing (Sports Wagon)** in this repair group.
- Sports Wagon: Detach both rear shock absorbers from swing arms.
- Disconnect ride-height sensor electrical connector and unclip harness from subframe.
- Disengage both parking brake cables from brake backing plates. See **340 Brakes**.
- ◀ Working underneath rear of vehicle, remove fasteners (**arrows**) and remove splash shields underneath front subframe mounting bolts.



330-24 Rear Suspension

Rear subframe, removing and installing



Vehicle with active stabilizer system:

- Remove hydraulic line anchor mounting bolt (**arrow**) at right thrust rod.
- Separate hydraulic lines at junctions. Be prepared to catch dripping hydraulic fluid and dispose in a safe manner.

CAUTION—

- Do not allow dirt to enter hydraulic lines. Plug fluid line openings.

While supporting subframe with transmission jack or other suitable device:

- Remove thrust rod mounting bolts (**A**) and remove both thrust rods.
 - Remove subframe rear mounting bolts (**B**) and carefully lower subframe, checking to make sure no lines, hoses or harnesses become snagged.
- To install, jack subframe into position. Install thrust rods in their original positions and tighten subframe mounting bolts.

Tightening torque

Rear subframe to body (M14 x 1.5 x 138 mm)	165 Nm (122 ft-lb)
Thrust rod to body (M10 x 1.5 10.9 grade)	48 Nm (35 ft-lb)

- Remainder of installation is reverse of removal, noting the following.
 - Tighten shock absorber fastener to final torque only after vehicle is lowered and suspension has settled.
 - Vehicle with active stabilizers: Make sure hydraulic lines are correctly isolated and free of tension. Fill and bleed hydraulic system. Check for leaks once engine is running. See **310 Front Suspension**.
 - Sports Wagon: Reactivate and fill EHC system. See **EHC, disabling, deflating, refilling** in this repair group.
 - Bleed entire brake system before driving car. See **340 Brakes**.
 - Adjust parking brake.

Tightening torques

Brake caliper to wheel bearing carrier (M12 x 1.5 x 43 mm ZNS3 bolts)	110 Nm (81 ft-lb)
Brake rotor to wheel hub (M8 x 14 mm bolt)	16 Nm (12 ft-lb)
Hydraulic line junction union nuts	30 Nm (22 ft-lb)
Road wheel to hub	120 ± 10 Nm (89 ± 7 ft-lb)
Shock absorber to swing arm (replace M14 x 1.5 x 105 mm ZNS bolts with new)	165 Nm (122 ft-lb)

Tightening torques

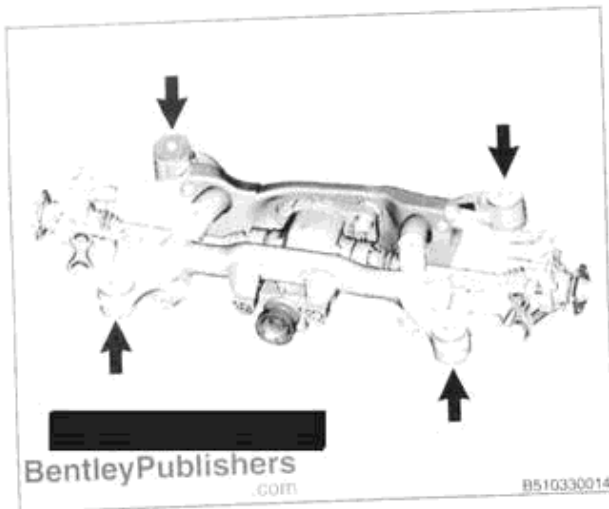
Strut to wheel bearing carrier (replace M14 x 1.5 x 105 mm ZNS3 bolt with new)	165 Nm (122 ft-lb)
Wheel speed sensor to wheel bearing carrier	8 Nm (6 ft-lb)
X-brace to chassis	
• M10 bolts	59 Nm (44 ft-lb)
• M10 nut	41 Nm (30 ft-lb)

- Have car professionally aligned when job is complete.

Rear subframe bushings, removing and installing

- The aluminum subframe bolts to the vehicle chassis via 4 large rubber bushings (**arrows**).

- Lower rear subframe. See **Rear subframe, removing and installing** in this repair group.



- Working at subframe bushing boss (**arrow**):

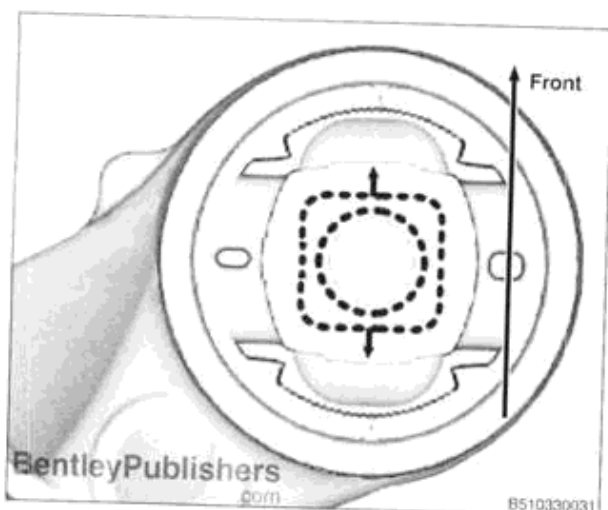
- Assemble press tools for bushing removal as illustrated.
- Use hot air blower to heat subframe boss at maximum 600°C (1100°F) for approx. 2 minutes.
- Rotate press tool nut to remove bushing.

WARNING —

- Do point hot air jet at fuel tank.

330-26 Rear Suspension

Rear wheel bearing components



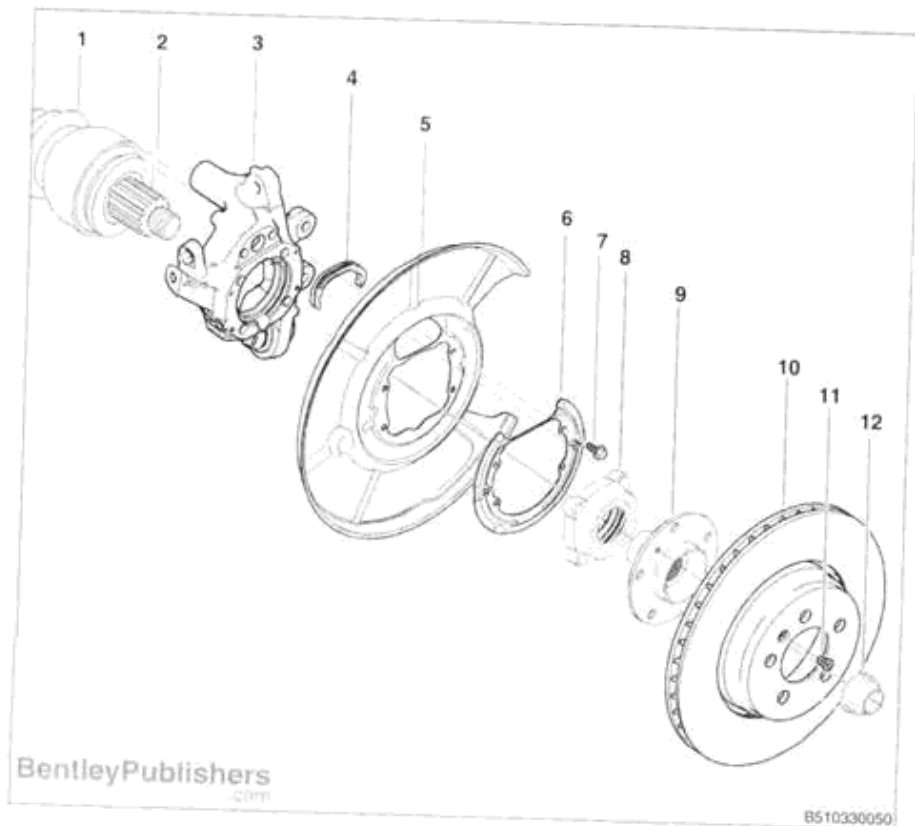
When installing:

- Orient bushing so that inner sleeve (**arrows**) point to front and rear as illustrated. Maximum deviation allowed from this orientation is 7°.
- Coat bushing with Circolight® antifriction agent.
- Press bushing in using special tools.

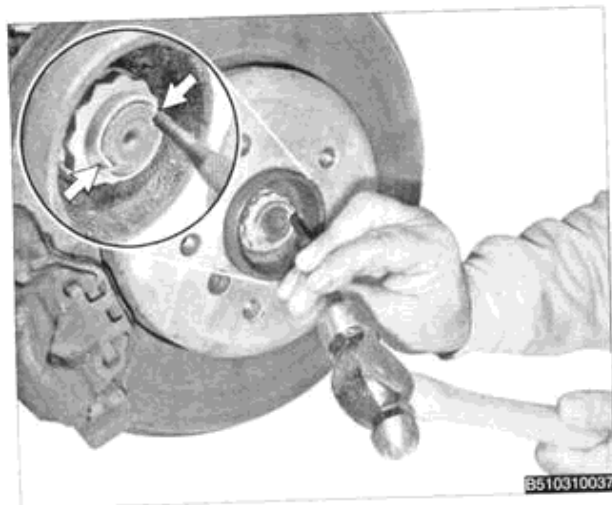
REAR WHEEL BEARINGS

The rear wheel bearing is bolted to the rear wheel bearing carrier. The wheel bearing can be replaced without removing the rear wheel bearing carrier. The rear wheel hub is pressed into the rear wheel bearing. Removing the hub destroys the wheel bearing. To service the wheel bearing, remove the wheel hub and replace the wheel bearing.

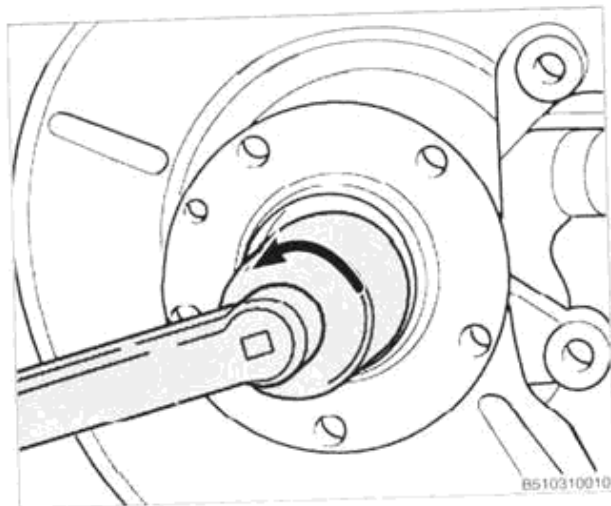
Rear wheel bearing components



1. Drive axle
2. M10 x 1 x 34 mm Torx bolt
 - Replace with new
 - Tighten in 2 stages:
30 Nm (22 ft-lb)
additional 110°
3. Wheel bearing carrier
4. Gasket
5. Backing plate
6. Reinforcement
7. M6 x 14 mm 8.8 grade bolt
8. Wheel bearing
9. Wheel hub
10. Brake rotor
11. M8 x 14 Allen bolt
 - Tighten to 16 Nm (12 ft-lb)
12. M27 collar nut
 - Replace with new
 - Tighten to 420 Nm
 - Stake to axle end



BS10310037



BS10310010

Rear wheel bearing carrier, removing and installing

- Raise vehicle and remove rear wheel.

WARNING—

- Make sure the car is firmly supported on jack stands designed for the purpose. Place jack stands underneath structural chassis points, not underneath suspension parts.

- Using a suitable punch, straighten staked sides of wheel hub collar nut (arrows).

- With an assistant holding down brake pedal, remove collar nut and discard.

CAUTION—

- The drive axle collar nut is tightened to a high torque. If necessary, reinstall road wheel and place vehicle on floor before breaking collar nut free.

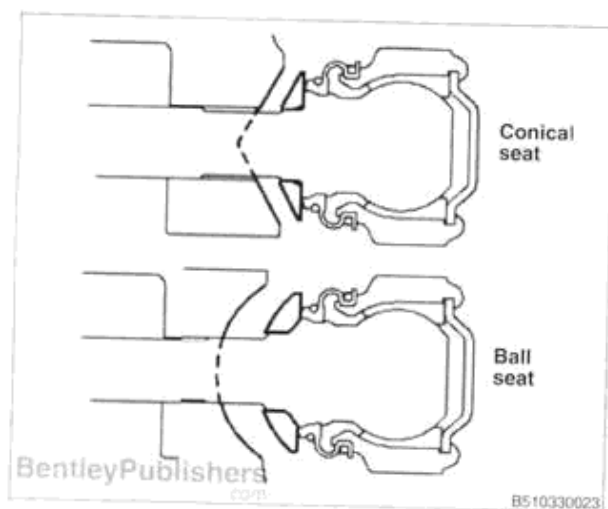
- Sports Wagon: Disable and deflate EHC system. See **EHC, disabling, deflating, refilling** in this repair group.
- Sports Wagon: Remove air spring. See **Air spring, removing and installing (Sports Wagon)** in this repair group.
- Remove brake caliper and brake rotor. Hang brake caliper aside with stiff wire. Do not disconnect brake fluid hoses. See **340 Brakes**.
- Disconnect parking brake cable from brake shoe expander. See **340 Brakes**.
- If replacing wheel bearing carrier with new: Remove rear wheel hub. See **Rear wheel hub, removing and installing** in this repair group.
- Remove ABS wheel speed sensor from wheel bearing carrier. See **340 Brakes**.
- Detach rear stabilizer link from stabilizer bar. See **Stabilizer bar link, removing and installing** in this repair group.
- Sedan: Detach strut from wheel bearing carrier. See **Rear strut assembly, removing and installing (Sedan)** in this repair group.
- Remove integral link. See **Integral link, removing and installing** in this repair group.
- Use BMW special tools 33 2 200 or equivalent to press drive axle out of wheel bearing hub.

CAUTION—

- In order to avoid damaging drive axle threads, do not drive out stub axle using impact tool.

330-28 Rear Suspension

Rear wheel bearing carrier, removing and installing



- Detach guide arm from wheel bearing carrier. See **Guide arm (traction strut), removing and installing** in this repair group.
- Detach upper control arm from wheel bearing carrier. See **Upper control arm, removing and installing** in this repair group.
- Remove wheel bearing carrier.
- If installing new wheel bearing carrier, be sure to match shape of upper control arm ball joint.
- Installation is reverse of removal. Remember to:
 - Replace self-locking fasteners.
 - Tighten swing arm and shock absorber fasteners to final torque only after vehicle is lowered and suspension has settled.
 - Tighten drive axle collar nut with wheel on the ground. Stake nut to axle end.
 - Sports Wagon: Reactivate and fill EHC system. See **EHC, disabling, deflating, refilling** in this repair group.
 - Adjust parking brake.

Tightening torques

Brake caliper to wheel bearing carrier (M12 x 1.5 x 41 mm ZNS3 bolts)	110 Nm (81 ft-lb)
Brake rotor to hub (M8 x 14 mm Allen bolt)	16 Nm (12 ft-lb)
Control arm to wheel bearing carrier (replace M14 x 1.5 self-locking nut with new)	175 Nm (129 ft-lb)
Drive axle collar nut to wheel hub (replace M27 collar nut with new, lightly oil contact face, stake nut to axle end)	420 Nm (310 ft-lb)
Guide arm to wheel bearing carrier (replace M10 self-locking nut with new)	65 Nm (48 ft-lb)
Integral link to swing arm (M16 x 275 mm ZNS3 bolt, replace nut with new)	240 Nm (177 ft-lb)
Integral link to wheel bearing carrier (M12 x 1.5 x 67 mm ZNS3 bolt)	100 Nm (74 ft-lb)
Road wheel to hub	120 ± 10 Nm (89 ± 7 ft-lb)
Shock absorber to swing arm (replace M14 x 1.5 x 105 mm ZNS bolts with new)	165 Nm (122 ft-lb)
Stabilizer bar link to stabilizer bar (M10 x 1.5 x ZNS3 nut)	65 Nm (48 ft-lb)
Wheel speed sensor to wheel bearing carrier	8 Nm (6 ft-lb)

- Have car professionally aligned when job is complete.

Rear Suspension 330-29

Rear wheel hub, removing and installing

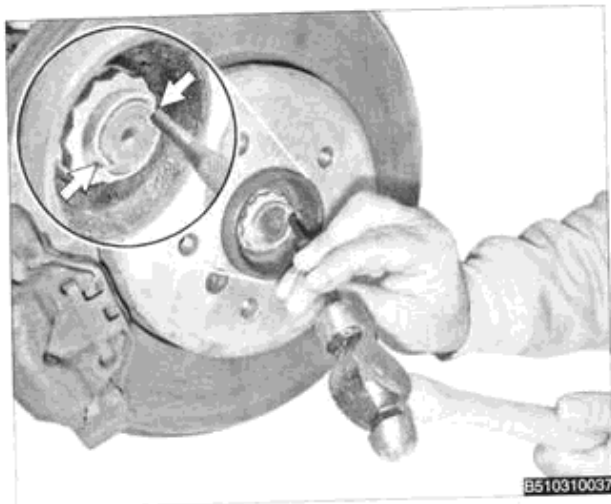
Rear wheel hub, removing and installing

- Raise car and remove wheel.

WARNING—

- Make sure the vehicle is stable and well supported at all times. Use a professional automotive lift or jack stands designed for the purpose. A floor jack is not adequate support.

- Using a suitable punch, straighten staked sides of wheel hub collar nut (arrows).

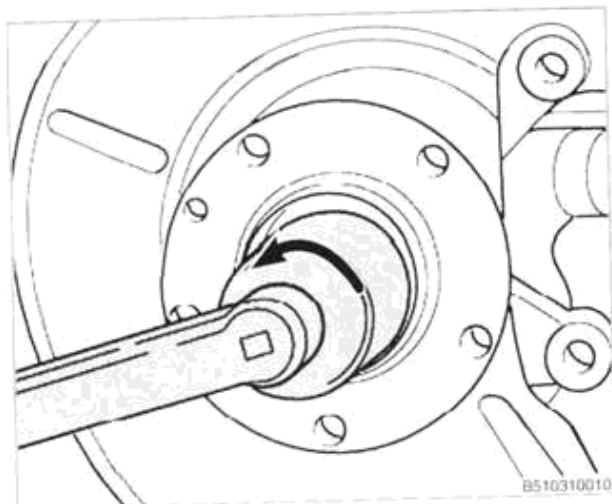


- With an assistant holding down brake pedal, remove collar nut and discard.

CAUTION—

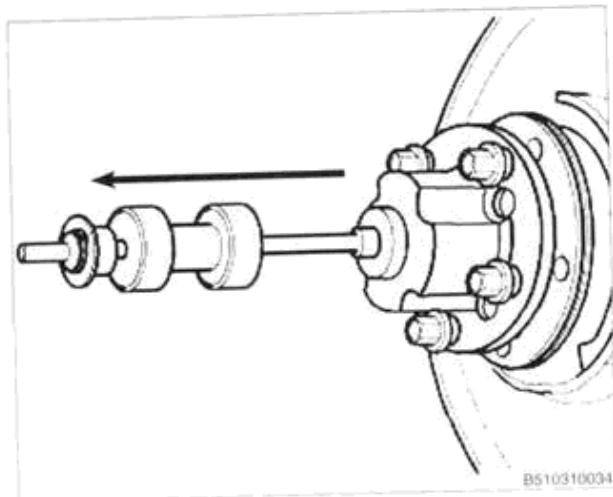
- The drive axle collar nut is tightened to a high torque. If necessary, reinstall road wheel and place vehicle on floor before breaking collar nut free.

- Detach front brake caliper from steering knuckle and suspend aside using stiff wire. Do not detach brake fluid hose. See **340 Brakes**.
- Remove brake rotor. See **340 Brakes**.



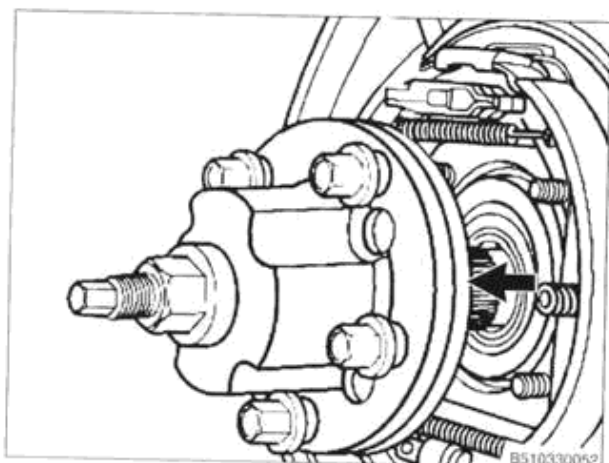
- Attach slide hammer hub puller to wheel hub using 5 wheel bolts. Drive hub off wheel bearing.
- Note that wheel bearing inner race is removed with hub, thus destroying bearing. Separate race from hub and discard race. Do not damage hub.

- Replace wheel bearing. See **Rear wheel bearing, replacing** in this repair group.



330-30 Rear Suspension

Rear wheel bearing, replacing



- To install wheel hub:
 - Oil hub (**arrow**) lightly and place over splines of output shaft.
 - Use BMW special tools or equivalent to draw hub into wheel bearing.
- Remainder of installation is reverse of removal. Remember to:
 - Tighten drive axle collar nut with wheel on the ground. Stake nut to axle end.
 - Adjust parking brake when job is complete.

Tightening torques

Brake caliper to wheel bearing carrier (M12 x 1.5 x 41 mm ZNS3 bolts)	110 Nm (81 ft-lb)
Brake rotor to hub (M8 x 14 mm Allen bolt)	16 Nm (12 ft-lb)
Drive axle collar nut to wheel hub (replace M27 collar nut with new, lightly oil contact face, stake nut to axle end)	420 Nm (310 ft-lb)
Road wheel to hub	120 ± 10 Nm (89 ± 7 ft-lb)

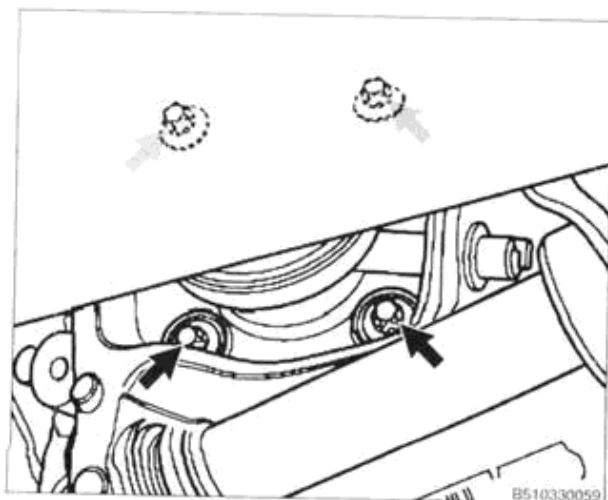
Rear wheel bearing, replacing

- Remove rear wheel hub (drive flange). See **Rear wheel hub, removing and installing** in this repair group.

CAUTION—

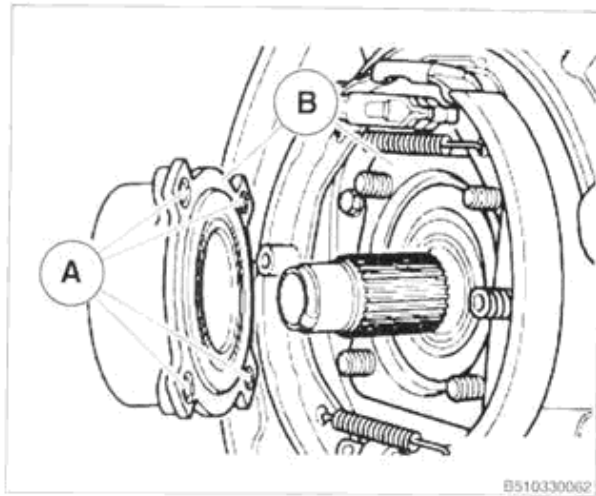
- The wheel bearing is destroyed when the drive flange is removed. Replace wheel bearing.

- Press wheel bearing inner race off wheel hub shaft.
- Working at back of wheel bearing carrier, remove wheel bearing fasteners and remove bearing.



Rear Suspension 330-31

Rear wheel bearing, replacing



- To install, make sure threads (A) and contact surface of wheel bearing and wheel bearing (B) carrier are clean and free of oil and grease. If necessary, rethread bearing bolt holes (A).

- Install new wheel bearing.

Tightening torque

Wheel bearing to wheel bearing carrier
(replace M10 x 1 x 34 mm Torx bolts with new):

- Stage 1
- Stage 2

30 Nm (22 ft-lb)
additional 110°

- Remainder of installation is reverse of removal. Remember to:
- Tighten drive axle collar nut with wheel on the ground. Stake nut to axle end.
 - Adjust parking brake when job is complete.

Tightening torques

Brake caliper to wheel bearing carrier (M12 x 1.5 x 41 mm ZNS3 bolts)	110 Nm (81 ft-lb)
Brake rotor to hub (M8 x 14 mm Allen bolt)	16 Nm (12 ft-lb)
Drive axle collar nut to wheel hub (replace M27 collar nut with new, lightly oil contact face, stake nut to axle end)	420 Nm (310 ft-lb)
Road wheel to hub	120 ± 10 Nm (89 ± 7 ft-lb)

330-32 Rear Suspension

Active stabilizer bar (dynamic drive)

REAR STABILIZER BAR

The rear stabilizer bar is mounted to the rear subframe and attached to the swing arms with stabilizer bar links.

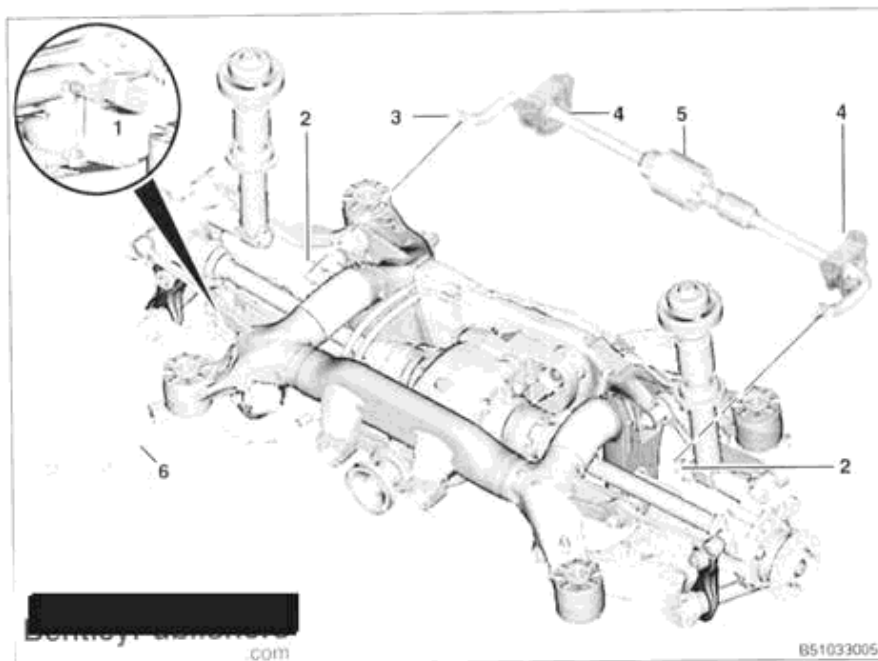
Active stabilizer bar (dynamic drive)

5 Series vehicles may be equipped with the optional active stabilizer system (acronym ARS). The system is also referred to as dynamic drive.

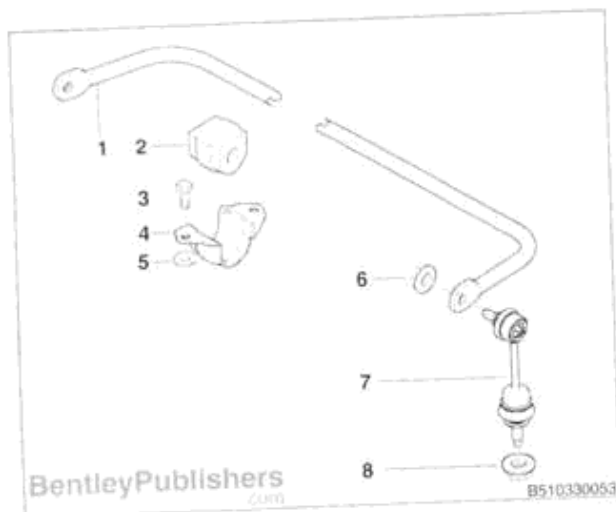
With this system, front and rear stabilizer bars are split in half, with the halves connected to each other via hydraulic oscillating motors. An electronic control module operates through a valve body to control the coupling of the two stabilizer bar halves.

For additional details, including active stabilizer troubleshooting and commissioning, see **300 Suspension, Steering and Brakes-General**. Hydraulic bleeding of active stabilizer system is in **310 Front Suspension**.

Active stabilizer components, rear



1. Rear ride height sensor
2. Stabilizer bar link
3. Stabilizer bar
4. Stabilizer bar mount
5. Rear oscillating motor
6. Oscillating motor pressure lines



Rear stabilizer bar components (mechanical stabilizer)

1. Stabilizer bar
2. Stabilizer bar mounting bushing
3. M8 x 30 mm 10.9 grade bolt
4. Stabilizer bar mount
5. M8 ZNS3 self-locking nut
 - Replace with new
 - Tighten to 28 Nm (21 ft-lb)
6. M10 ZNS3 self-locking nut
 - Replace with new
 - Tighten to 65 Nm (48 ft-lb)
7. Stabilizer bar link
8. M12 x 1.5 ZNS3 self-locking nut
 - Replace with new
 - Tighten to 100 Nm (74 ft-lb)

Rear stabilizer bar, removing and installing (mechanical stabilizer)

The rear stabilizer is attached to the rear subframe.

- Raise vehicle and safely support.

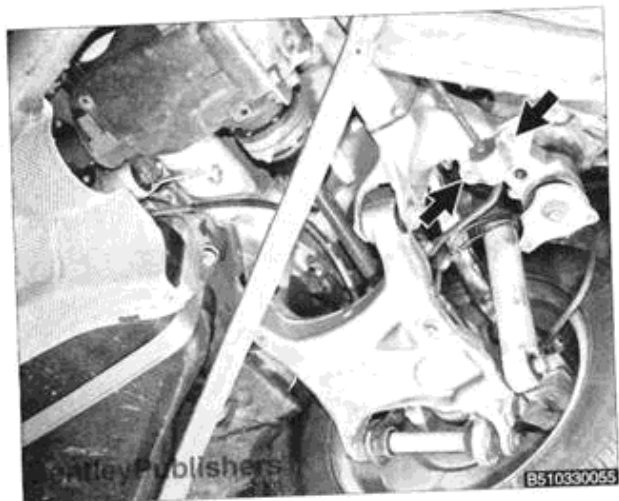
WARNING —

- Make sure the car is firmly supported on jack stands designed for the purpose. Place jack stands underneath structural chassis points, not underneath suspension parts.

- Detach stabilizer links from both ends of stabilizer bar. See **Stabilizer bar link, removing and installing** in this repair group.
- If necessary, remove vibration damper from right stabilizer bar mount.
- Remove mounting nuts (arrows) at both stabilizer bar mounts.
- Slide stabilizer bar sideways to remove.
- Check rubber mounting bushings. Replace if necessary.
- Installation is reverse of removal. Remember to replace self-locking fasteners.

Tightening torques

Stabilizer bar mount to subframe (replace M8 ZNS3 self-locking nuts with new)	28 Nm (21 ft-lb)
Stabilizer bar link to stabilizer bar (replace M10 x 1.5 x ZNS3 self-locking nut with new)	65 Nm (48 ft-lb)



330-34 Rear Suspension

Rear stabilizer bar, removing and installing (active stabilizer bar)

Rear stabilizer bar, removing and installing (active stabilizer bar)

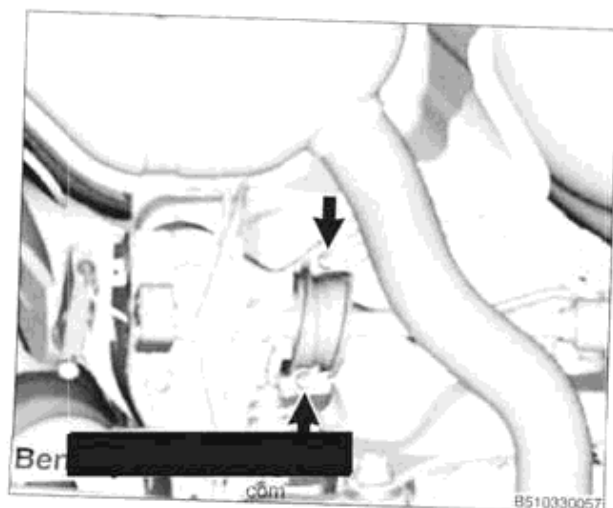
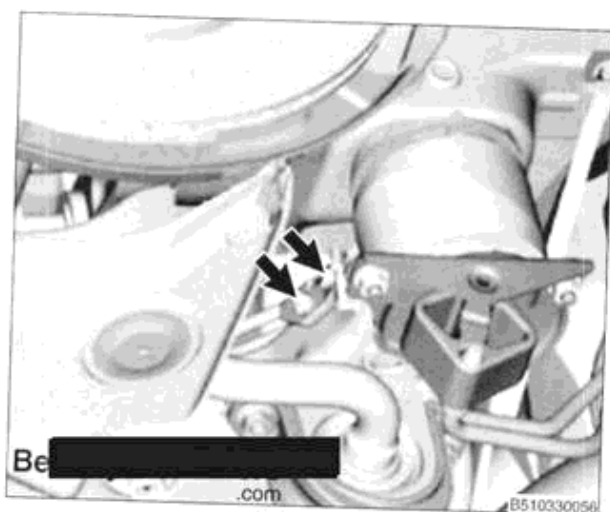
The rear stabilizer is attached to the rear subframe.

- Use BMW scan tool to read and print fault codes.
- Raise rear of vehicle and support safely.

WARNING—

- Make sure the vehicle is stable and well supported at all times. Use a professional automotive lift or jack stands designed for the purpose. A floor jack is not adequate support.

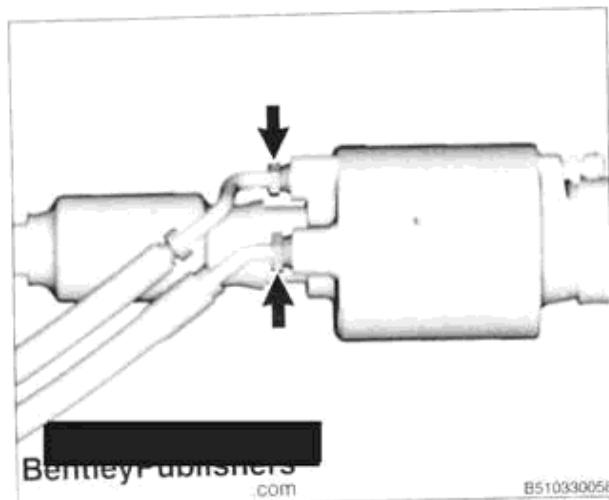
- Sports Wagon: Remove X-brace underneath rear suspension.
- ◀ Remove pressure line bracket screws (**arrows**).
- Sports Wagon: If necessary, remove vibration damper from right stabilizer bar mount.



- ◀ Remove mounting nuts (**arrows**) at both stabilizer bar mounts.

Rear Suspension 330-35

Rear stabilizer bar, removing and installing (active stabilizer bar)



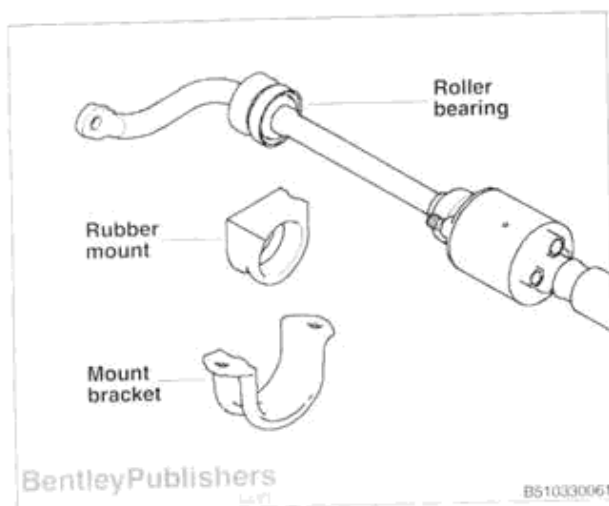
- Lower stabilizer bar and note carefully installation positions of fluid pressure lines and brackets at oscillating motor. Then detach pressure line unions (**arrows**) from motor. Be prepared to catch dripping hydraulic fluid and dispose in a safe manner.

CAUTION—

- Do not allow dirt to enter hydraulic lines. Plug fluid line openings.

To avoid confusion when installing, pressure lines are different dimensions and the unions have different threads.

- Detach stabilizer links from both ends of stabilizer bar. See **Stabilizer bar link, removing and installing** in this repair group.
- Slide stabilizer bar sideways to remove.



- Separate stabilizer bar mount brackets and rubber mounts from roller bearings.

- Check roller bearings for free movement. Slight discharge of grease from bearing is acceptable. Replace stabilizer bar if a bearing binds or is otherwise damaged.
- Replace rubber mounts if damaged. Keep rubber grease-free.

- When reinstalling, first attach stabilizer bar to stabilizer links.
 - Use new self-locking nuts.
 - Use Torx tool (T30) to counterhold shaft of stabilizer bar link ball joint while tightening nut.

Tightening torque

Stabilizer bar link to stabilizer bar (replace M10 x 1.5 x ZNS3 self-locking nuts with new)	65 Nm (48 ft-lb)
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- Attach pressure line unions to oscillating motor finger-tight.

- Place special tool 33 0 170 over lines and tighten wing nut. This forces pressure lines into correct alignment with motor. Tighten fluid lines. Make sure lines do not contact stabilizer bar. Minimum distance = 5 mm (1/4 in).

Tightening torque

Fluid pressure line to oscillating motor (union nut)	30 Nm (22 ft-lb)
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- Reinstall stabilizer bar to subframe, noting the following.
 - To prevent stabilizer bar distortion, install left mount bracket first (without elongated holes). Then install right mount bracket (with elongated holes).
 - Replace self-locking fasteners.

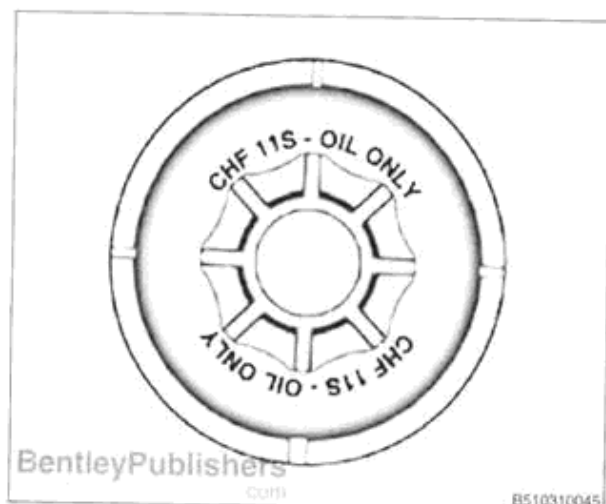
Tightening torque

Stabilizer bar mount to subframe (replace M8 ZNS3 self-locking nuts with new)	28 Nm (21 ft-lb)
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330-36 Rear Suspension

Stabilizer bar link, removing and installing



- Align pressure lines to subframe and tighten bracket screws.

Tightening torque

Pressure lines to subframe	8 Nm (6 ft-lb)
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- Remainder of installation is reverse of removal.

Tightening torque

X-brace to chassis	59 Nm (44 ft-lb)
• M10 bolts	41 Nm (30 ft-lb)
• M10 nut	

- Fill hydraulic fluid reservoir (same as power steering fluid reservoir).

Active stabilizer system fluid

Hydraulic fluid for tandem pump system	Pentosin CHF 11S
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- Use BMW scan tool to bleed air out of active stabilizer system. See **Hydraulic system, bleeding** in this repair group. Check lines and connections for leaks.
- Carry out commissioning procedure. See **Active stabilizer, commissioning** in 300 Suspension, Steering and Brakes-General.

Stabilizer bar link, removing and installing

- Raise vehicle and safely support.

WARNING—

- Make sure the car is firmly supported on jack stands designed for the purpose. Place jack stands underneath structural chassis points, not underneath suspension parts.

- Remove stabilizer link mounting nut (A) at stabilizer bar. Use Torx tool (T30) to counterhold shaft of stabilizer bar link ball joint while loosening nut.

- Remove stabilizer link mounting fastener (B) at swing arm.
- Press out stabilizer link ball joint and remove stabilizer link.
- Installation is reverse of removal.

Tightening torques

Stabilizer bar link to subframe (replace M12 x 1.5 ZN3 self-locking nut with new)	100 Nm (74 ft-lb)
Stabilizer bar link to stabilizer bar (replace M10 x 1.5 x ZNS3 self-locking nut with new)	65 Nm (48 ft-lb)

