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Rear Wheel Suspension, Shafts & Axle

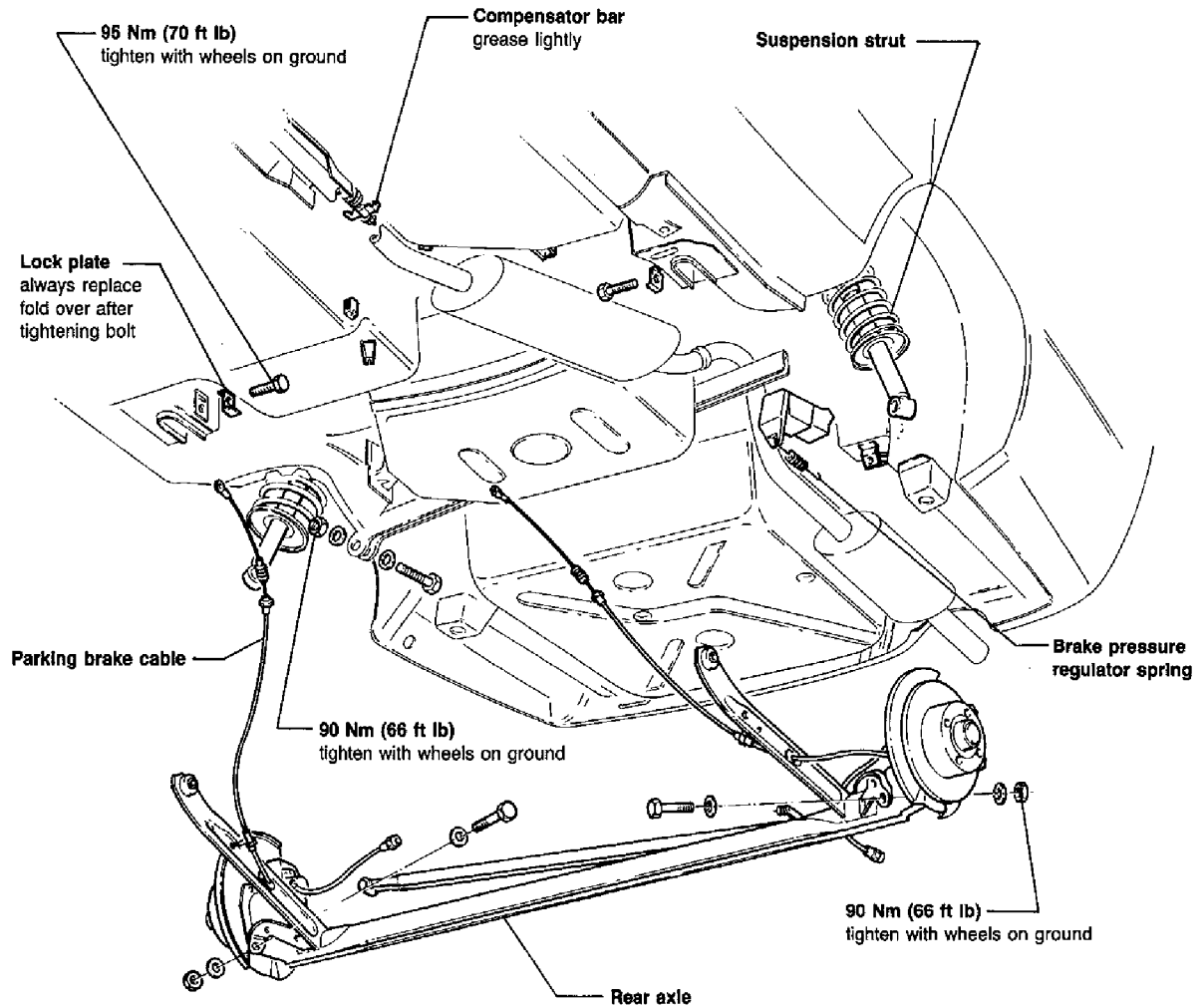
CAUTION

If rear axle beam is removed, bleed brake system and readjust brakes.

Do not attempt to straighten or weld rear axle beam or stub axles.

Note

Always use new self-locking nuts.

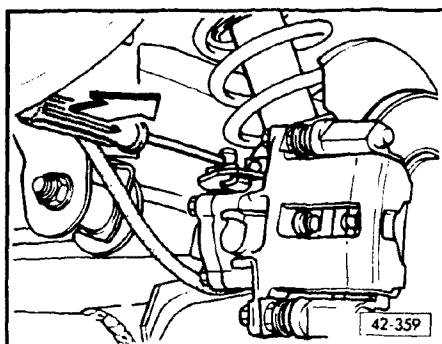


CAUTION

Do not allow rear axle to hang from body mounts only, as this may damage brake lines.

42-369

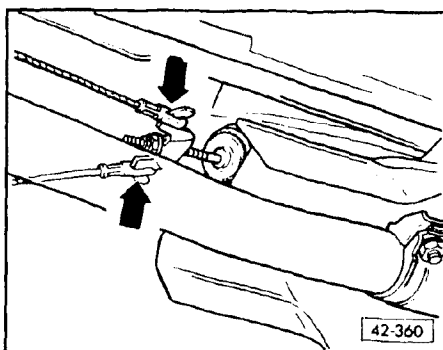
Rear Wheel Suspension, Shafts & Axle



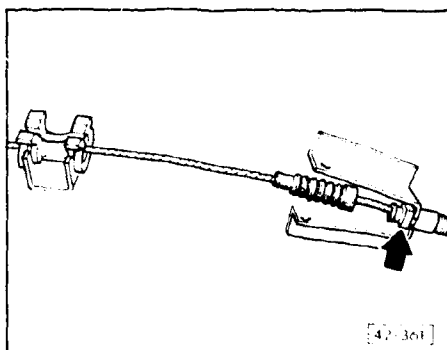
► Rear axle, removing/installing

Removing

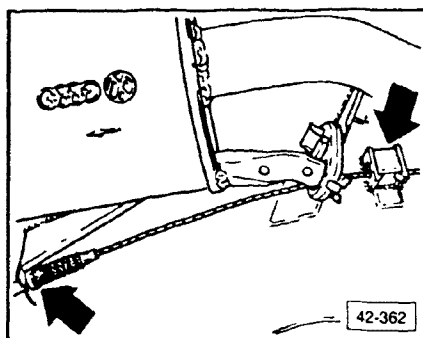
- remove rear wheels
- press lever outward and let brake cable hang out on both sides



- unhook parking brake cables from compensator bar (**arrows**)

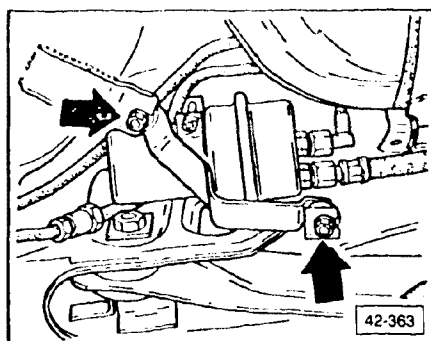


- unhook parking brake cable on right side by removing clip (**arrow**)

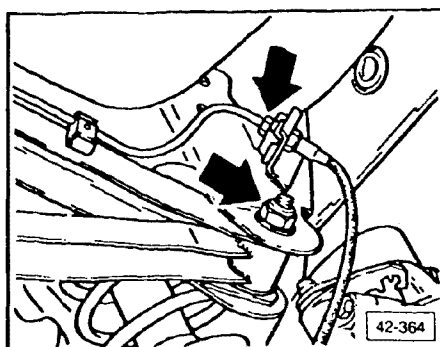


- remove clips (**arrows**) and unhook parking brake cables on left side

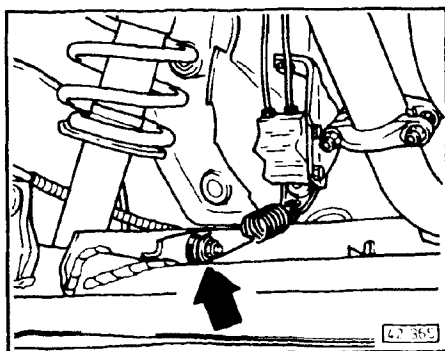
Rear Wheel Suspension, Shafts & Axle



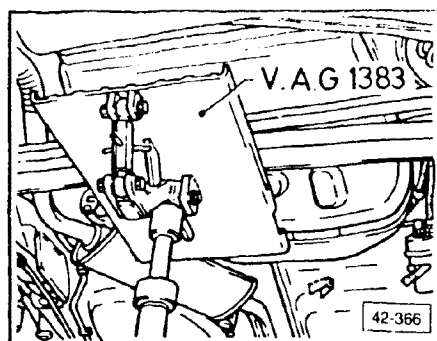
- remove bracket bolts for brake pressure regulator and remove regulator



- disconnect brake line from brake hose on both sides (**upper arrow**)
- cover brake lines with bleeder valve dust caps
- remove mounting bolt for diagonal arm (**lower arrow**)

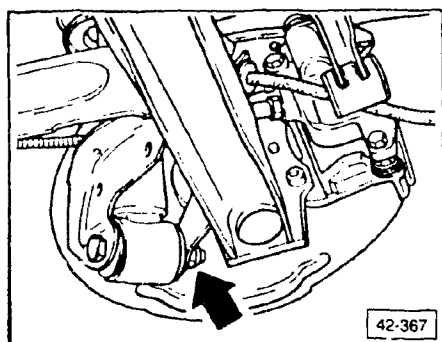


- remove brake pressure regulator spring

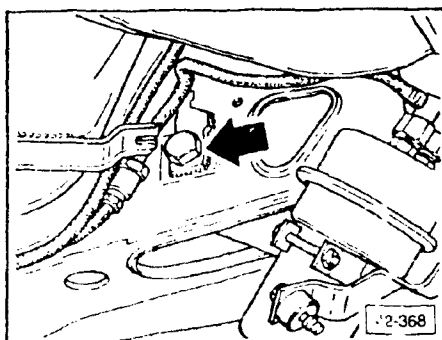


- support rear axle with transmission hoist

Rear Wheel Suspension, Shafts & Axle



- remove lower mounting bolts for suspension strut on both sides (**arrow**)



- unbend lock plates and remove mounting bolts for trailing arms (**arrow**)
- lower rear axle

Installing

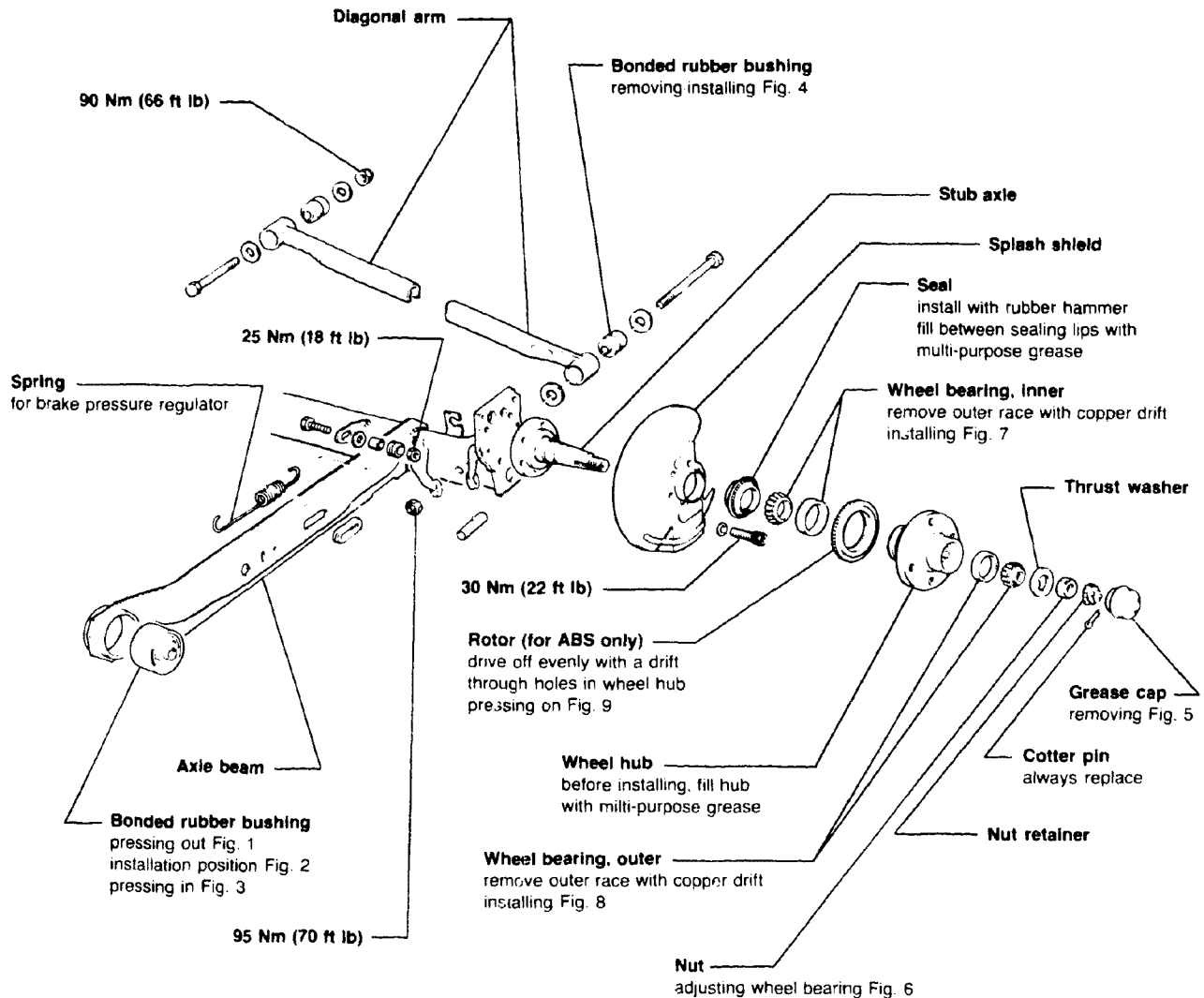
Proceed in reverse order of removal and note the following:

- always use new lock plates when installing rear axle
- bleed brake system after installing rear axle

Rear Wheel Suspension, Shafts & Axle

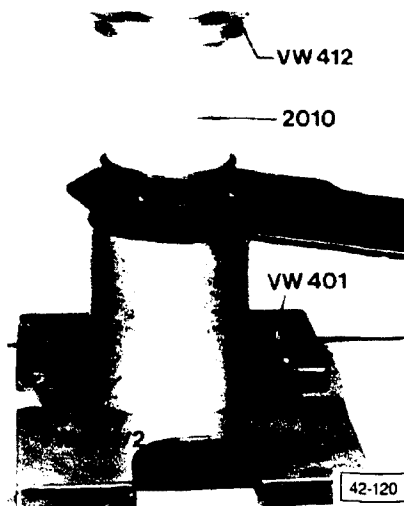
CAUTION

Do not attempt to straighten or weld rear axle beam or stub axles.

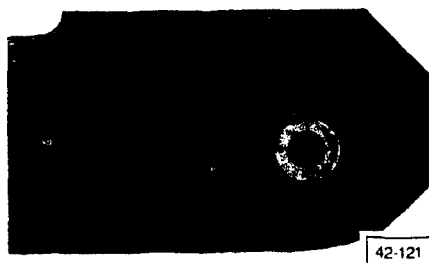


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Rear Wheel Suspension, Shafts & Axle

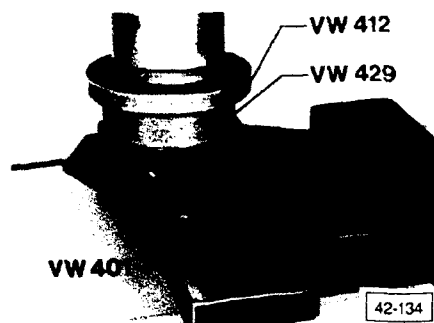


► Fig. 1 Bonded rubber bushing, pressing out

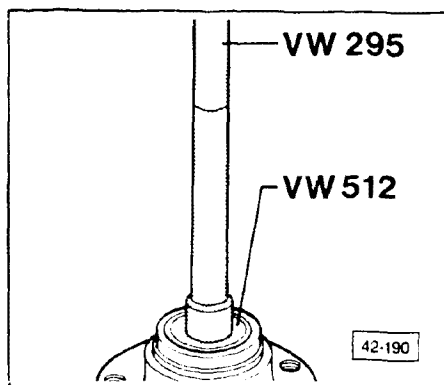


► Fig. 2 Bonded rubber bushing, installation position

• A = points in driving direction

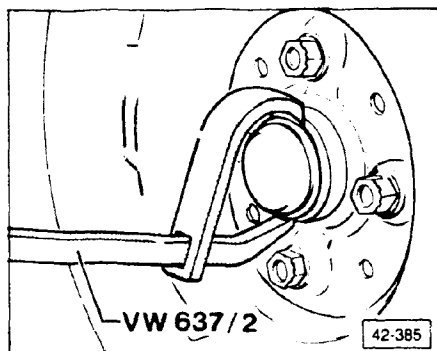


► Fig. 3 Bonded rubber bushing, pressing in



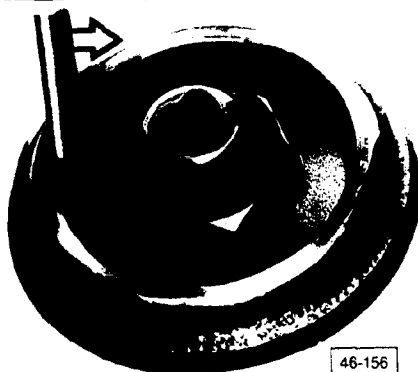
► Fig. 4 Bonded rubber bushing, removing/installing

Rear Wheel Suspension, Shafts & Axle



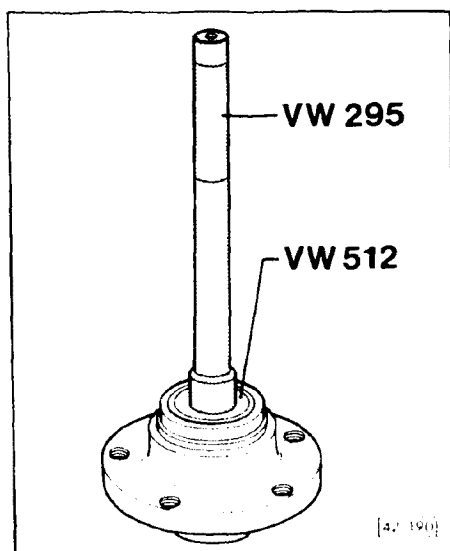
► Fig. 5 Grease cap, removing

- pry up slightly before using puller



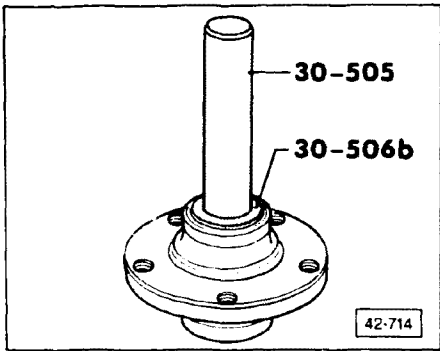
► Fig. 6 Wheel bearing play, adjusting

- tighten nut securely while turning wheel so bearing does not jam
- adjust nut so thrust washer can be moved slightly using finger pressure against a screwdriver (Do not twist or pry screwdriver)

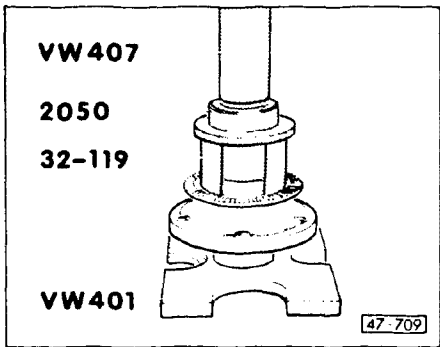


► Fig. 7 Inner wheel bearing outer race, driving in

Rear Wheel Suspension, Shafts & Axle

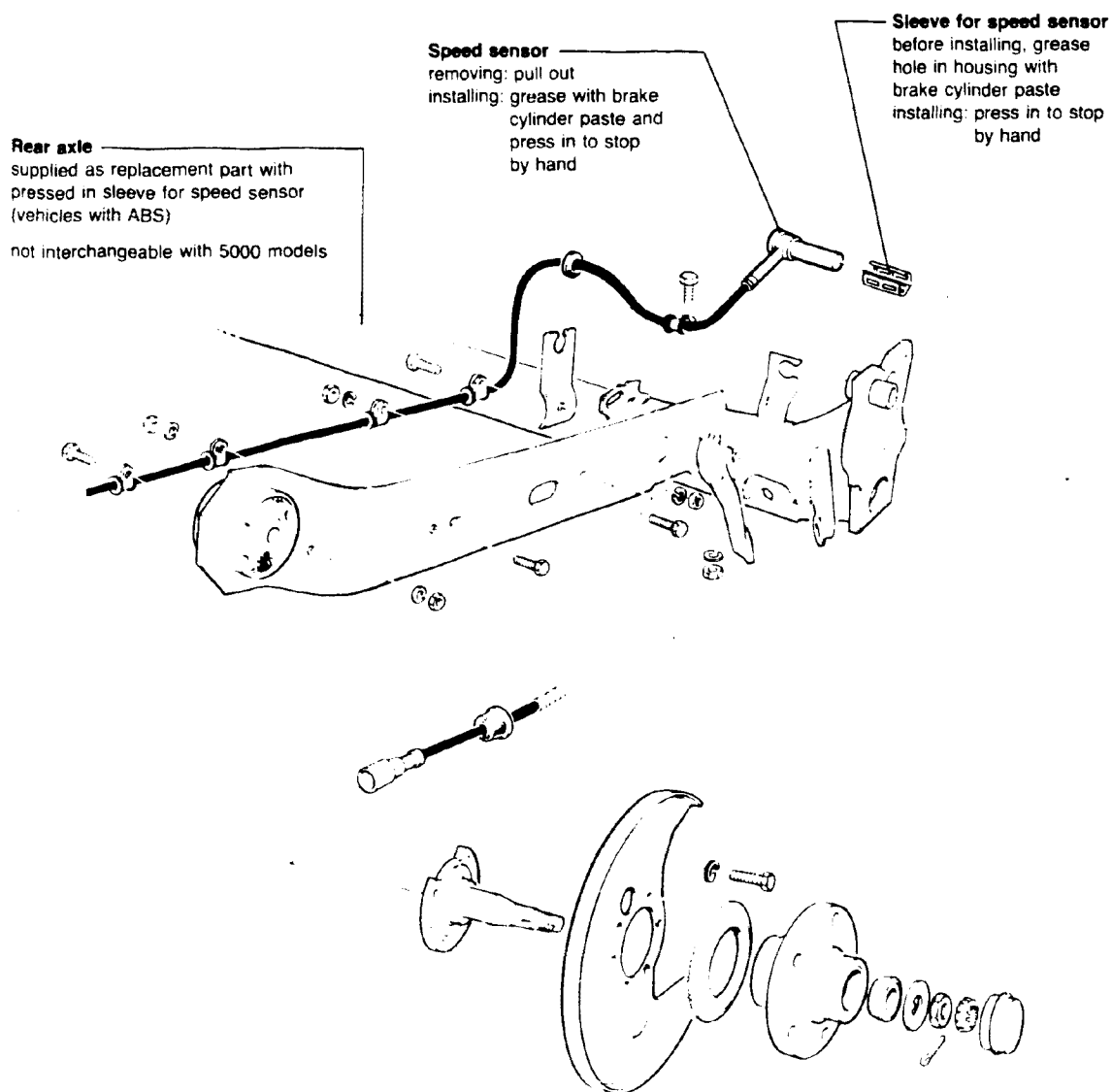


► Fig. 8 Outer wheel bearing outer race, driving in



► Fig. 9 Rotor for ABS, pressing on

Rear Wheel Suspension, Shafts & Axle



42-011

Rear Wheel Suspension, Shafts & Axle

CAUTION

Do not allow rear axle to hang from body mounts only, as this may damage brake lines.

Suspension strut, disassembling

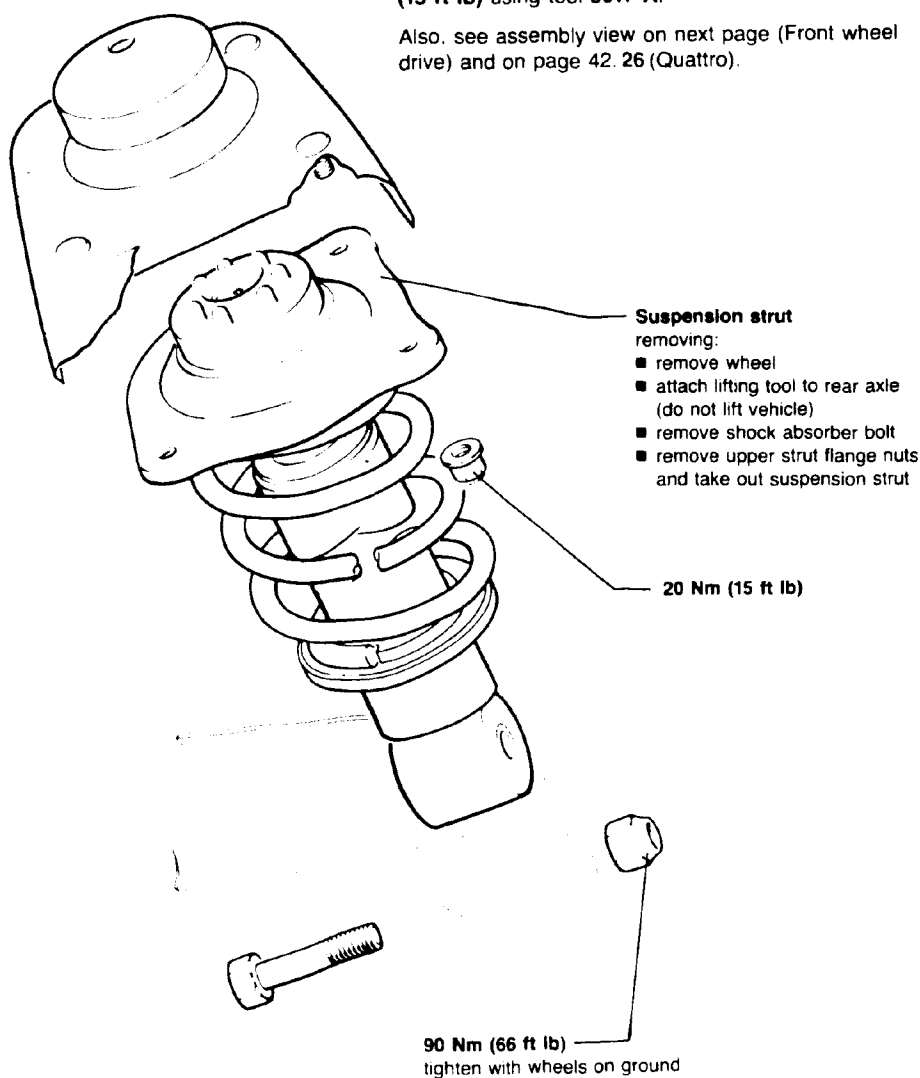
- compress suspension strut spring using **US 1117** or **US 4475**
- remove nut from shock absorber shaft with **3017 A**
- disassemble parts

Note

Suspension strut can also be disassembled with spring tension tool **VW 340**.

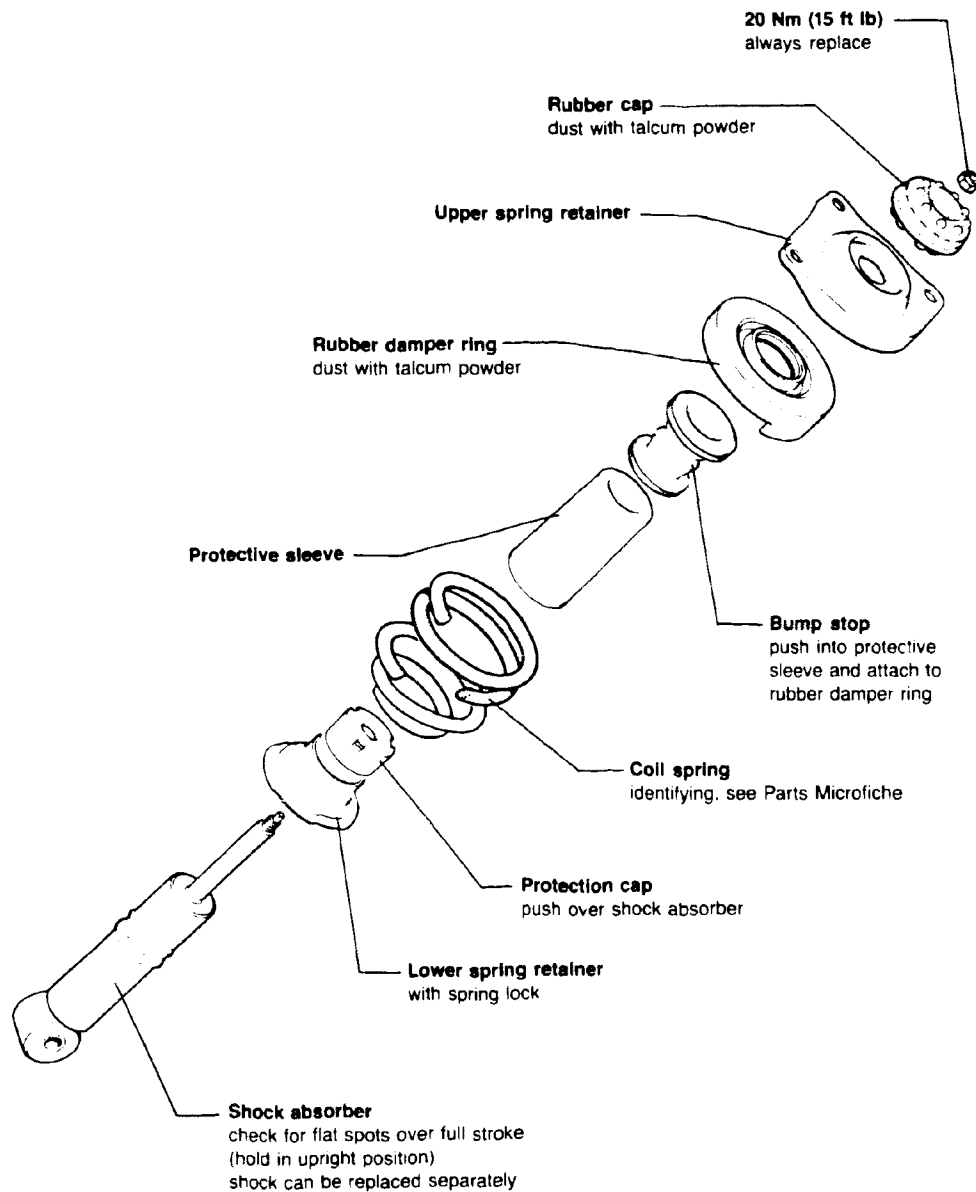
Tighten nut of shock absorber shaft to **20 Nm (15 ft lb)** using tool **3017 A**.

Also, see assembly view on next page (Front wheel drive) and on page 42. 26 (Quattro).



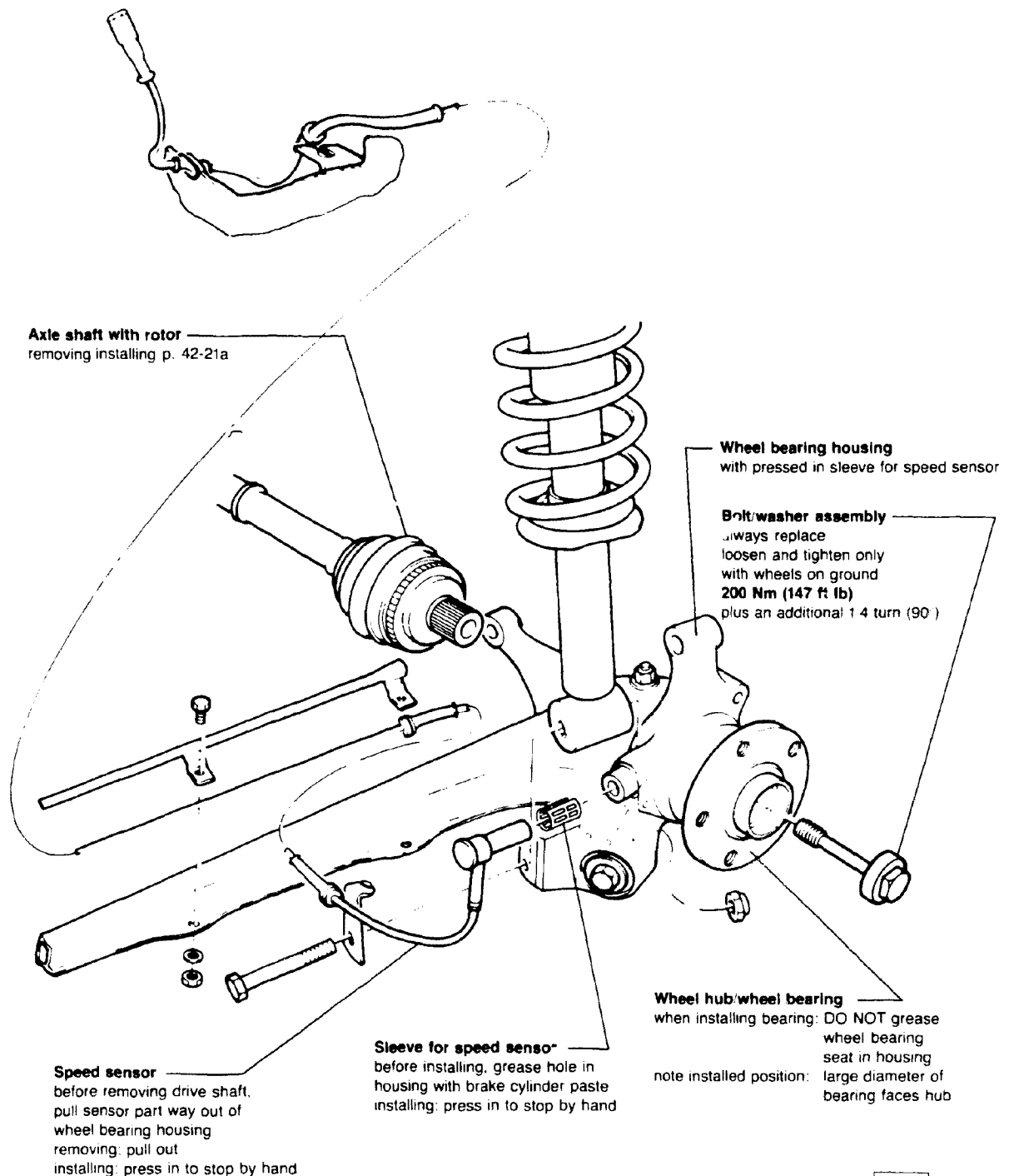
42-358

Rear Wheel Suspension, Shafts & Axle



42-353

Rear Wheel Suspension, Shafts & Axle

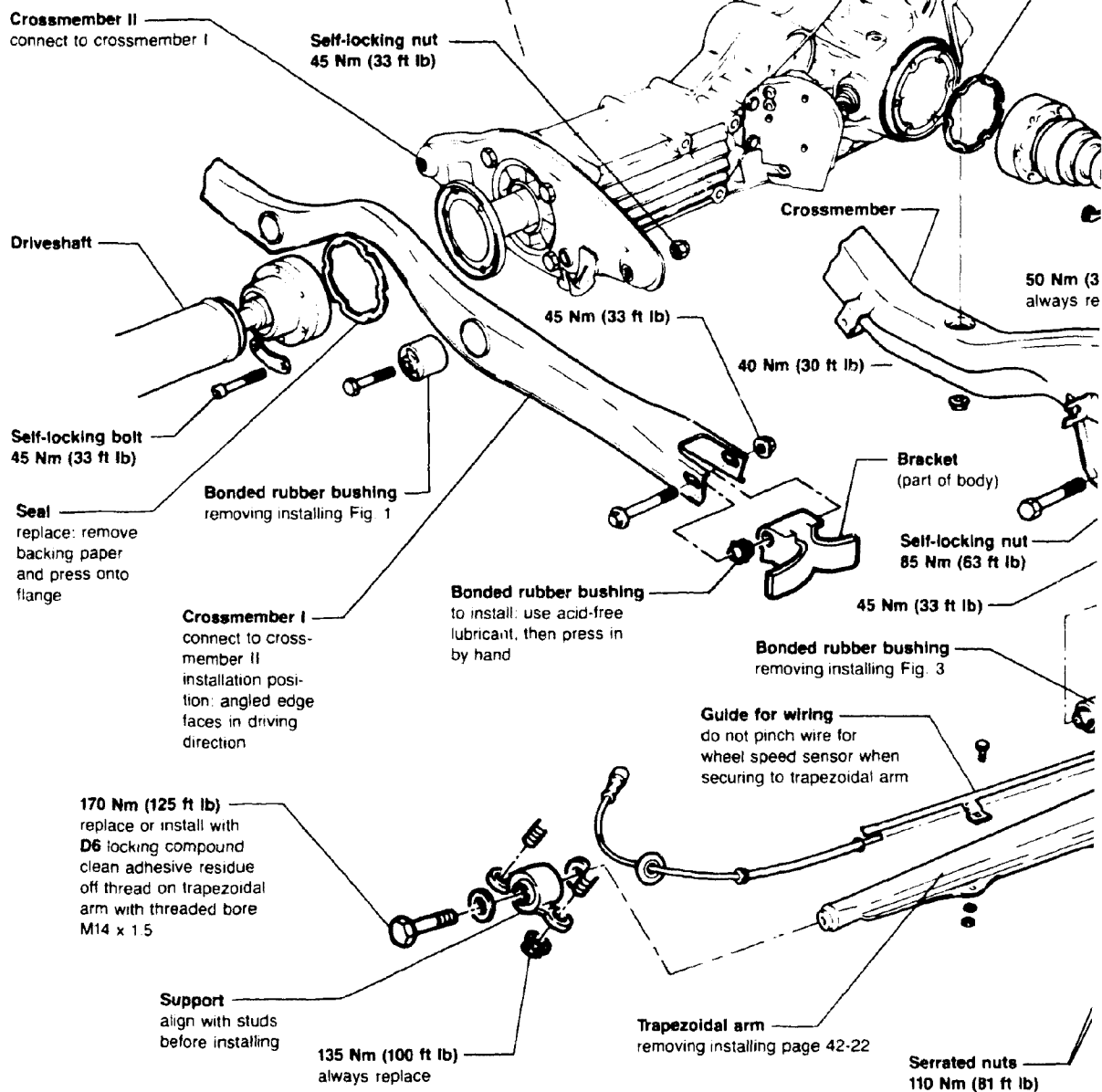


Note

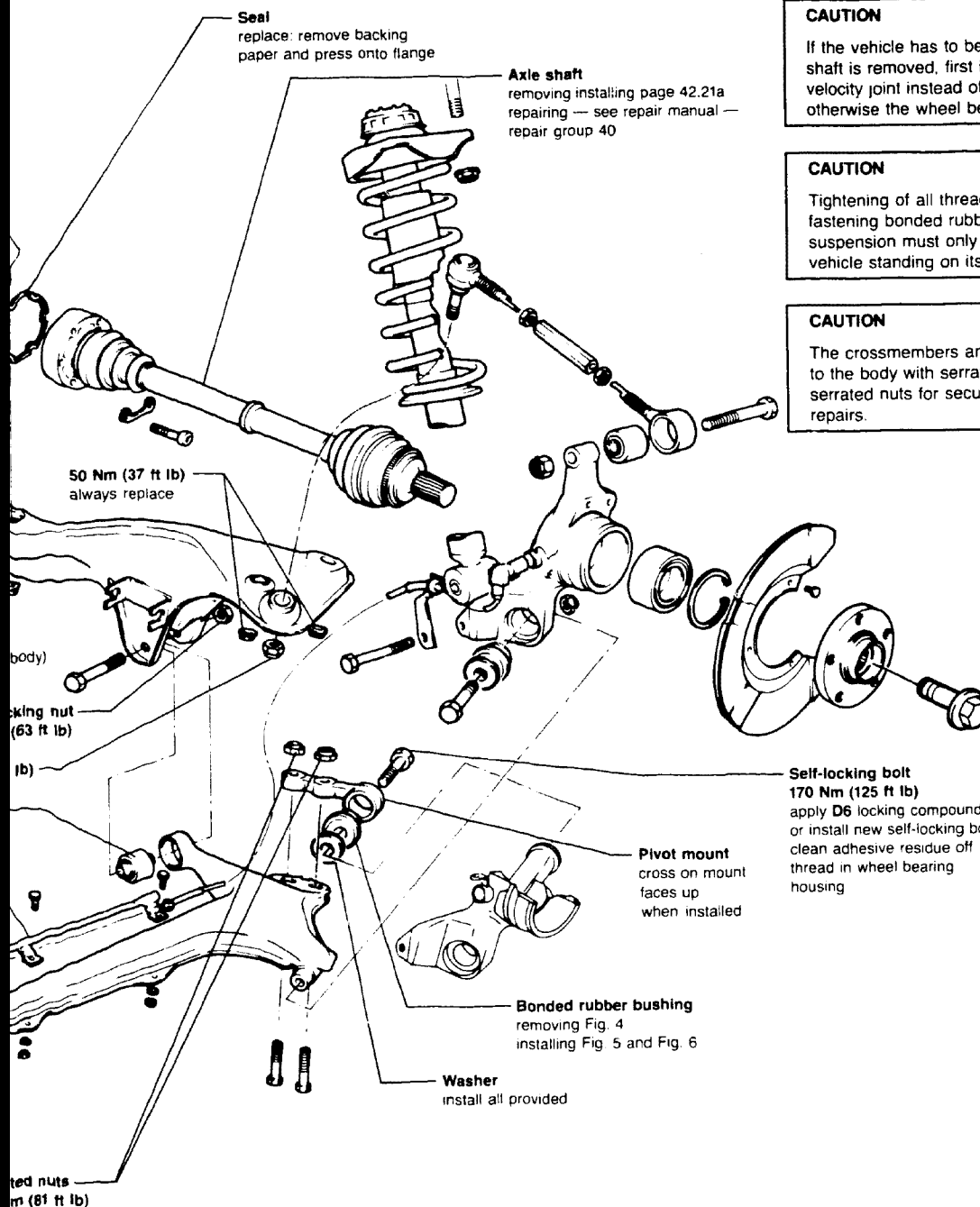
Do not attempt to weld or straighten stress-bearing or wheel-locating components of the rear suspension.

CAUTION

Always use **new** self-locking bolts and nuts.



Rear Wheel Suspension, Shafts & Axle



CAUTION

If the vehicle has to be moved after an axle shaft is removed, first install an outer constant velocity joint instead of the axle shaft as otherwise the wheel bearing will be damaged.

CAUTION

Tightening of all threaded connections fastening bonded rubber bushings in the rear suspension must only be completed with the vehicle standing on its wheels.

CAUTION

The crossmembers and supports are secured to the body with serrated nuts. Always use new serrated nuts for securing these parts during repairs.

42-525A

Quattro

Crossmembers
Trapezoidal arm
Axle shaft

42.15

CAUTION

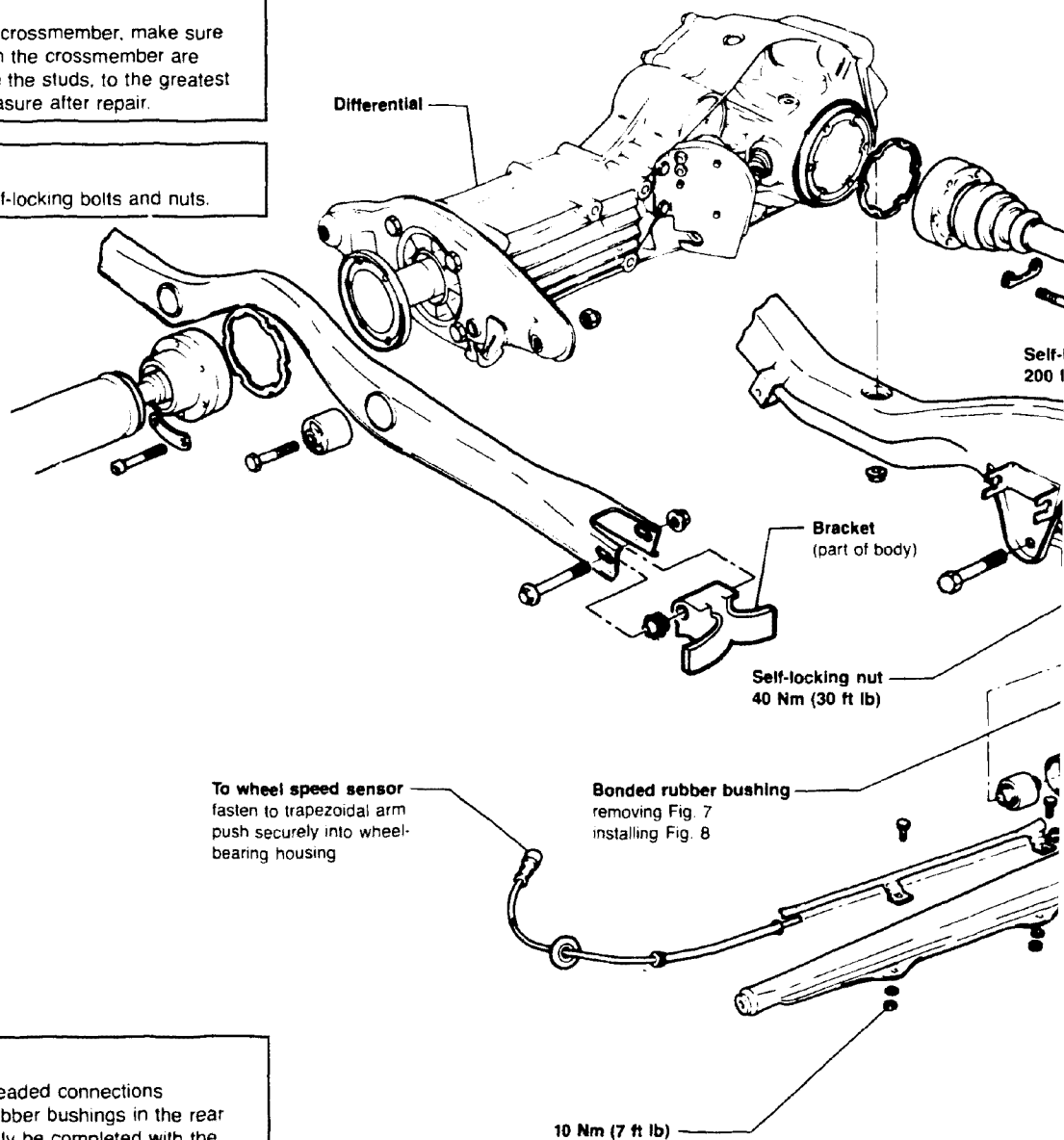
Wheel speed sensors are supplied as spare parts in a special protective package. The sensors must be stored in this container until they are installed to prevent a loss of magnetism.

CAUTION

When attaching the crossmember, make sure that the four holes in the crossmember are aligned (center) with the studs, to the greatest extent possible. Measure after repair.

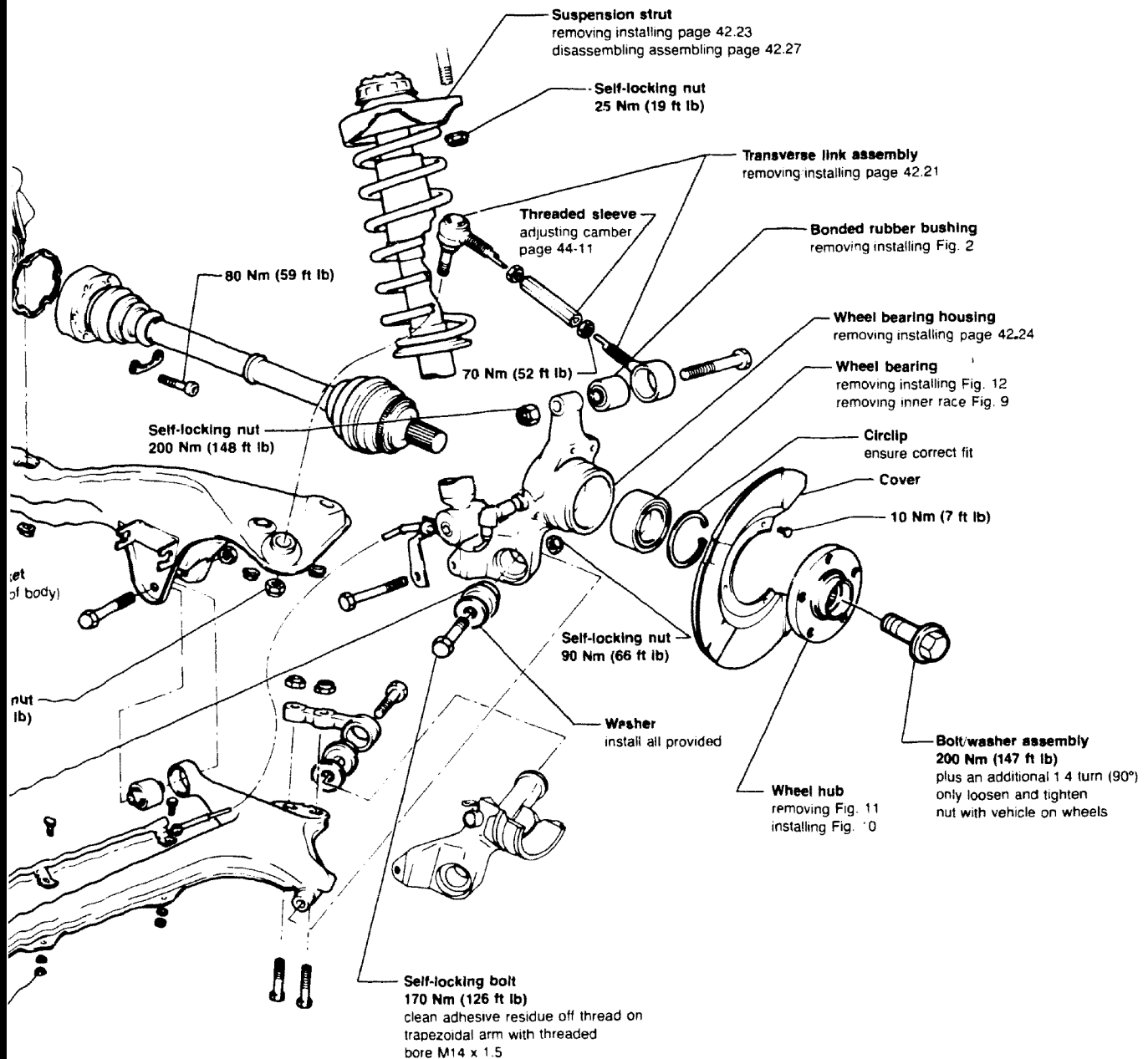
CAUTION

Always use **new** self-locking bolts and nuts.

**CAUTION**

Tightening of all threaded connections fastening bonded rubber bushings in the rear suspension must only be completed with the vehicle standing on its wheels.

Rear Wheel Suspension, Shafts & Axle



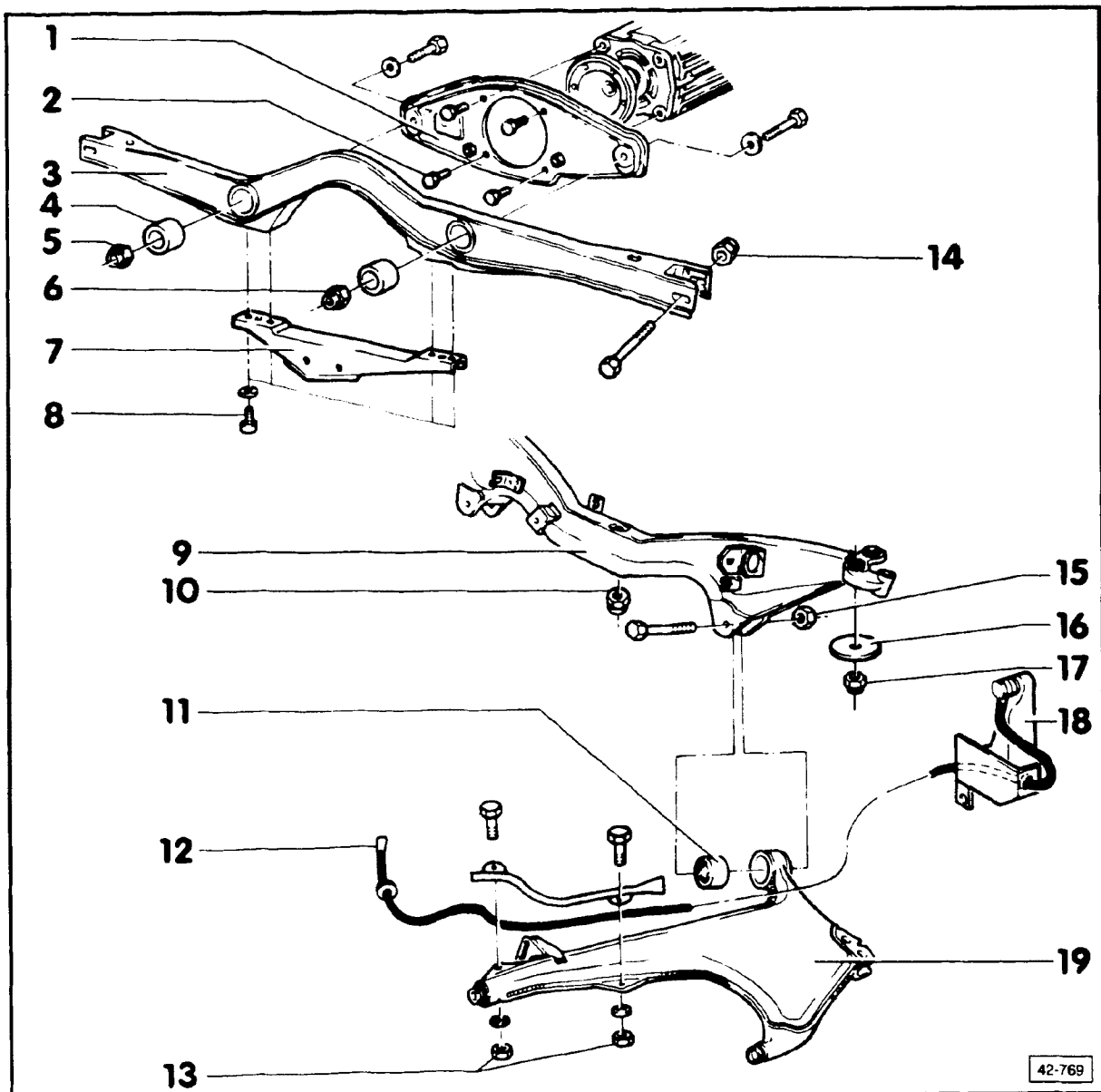
42-525A

Quattro

Suspension strut
Wheel bearing housing
Transverse link

42.17

Rear Wheel Suspension, Shafts & Axle



- 1 — Crossmember II
- 2 — 45 Nm (33 ft lb)
- 3 — Crossmember I
- 4 — Bonded rubber bushing
removing/installing, page 42.18
- 5 — 45 Nm (33 ft lb)
- 6 — 45 Nm (33 ft lb)
- 7 — Bracket
- 8 — 55 Nm (41 ft lb)

- 9 — Rear crossmember
supplied with bonded rubber bushing
- 10 — 45 Nm (33 ft lb)
- 11 — Bonded rubber bushing
removing/installing, page 42.18
- 12 — Speed sensor
to install: push in to stop
- 13 — 10 Nm (7 ft lb)
- 14 — 45 Nm (33 ft lb)
- 15 — 85 Nm (63 ft lb)

Rear Wheel Suspension, Shafts & Axle

- 16 — Washer
- 17 — 55 Nm (41 ft lb)
- 18 — Wheel bearing housing
- 19 — Trapezoidal arm
removing/installing, page 42.25a

CAUTION

Tightening of all threaded connections fastening bonded rubber bushings in the rear suspension must only be completed with the vehicle standing on its wheels.

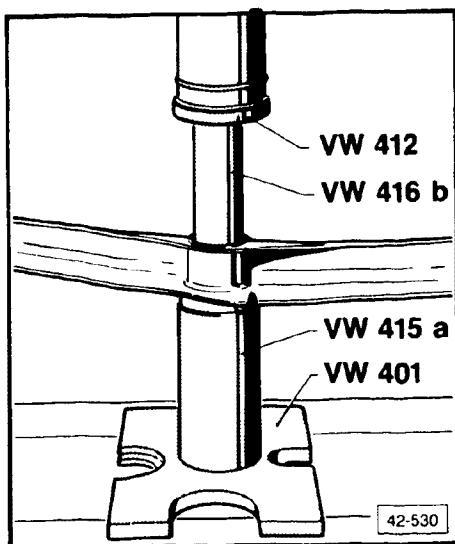
CAUTION

Always use **new** self-locking nuts and bolts.

CAUTION

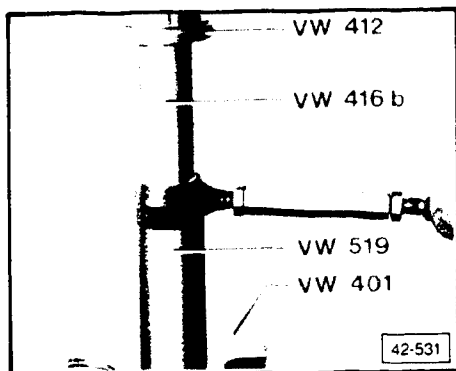
Do not attempt to weld or straighten stress-bearing or wheel-locating components of the rear suspension.

Rear Wheel Suspension, Shafts & Axle



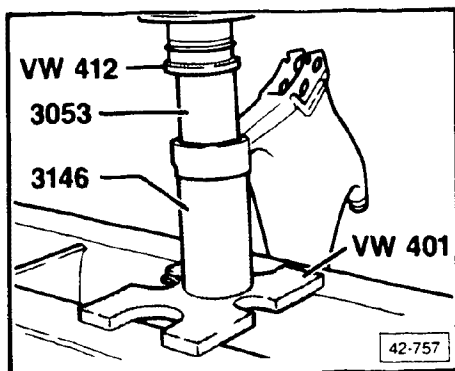
► Fig. 1 Bonded rubber bushing in crossmember, removing/installing

- oval-shaped sections of bushing must be horizontal to crossmember
- press bushing in until outer race is flush with bushing welded in (rear), when facing driving direction



► Fig. 2 Bonded rubber bushing in transverse link, pressing in/pressing out

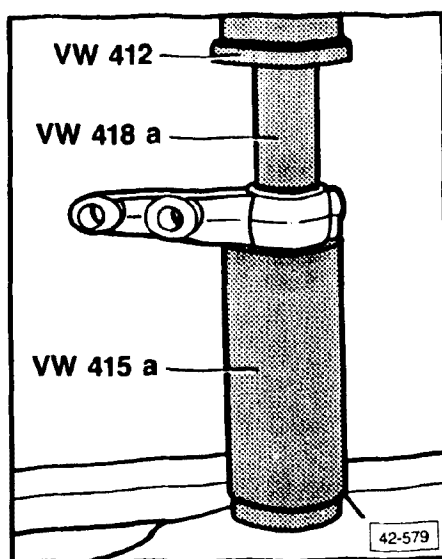
- if bonded rubber bushing is worn or noisy, install complete ball joint (outer) on both sides



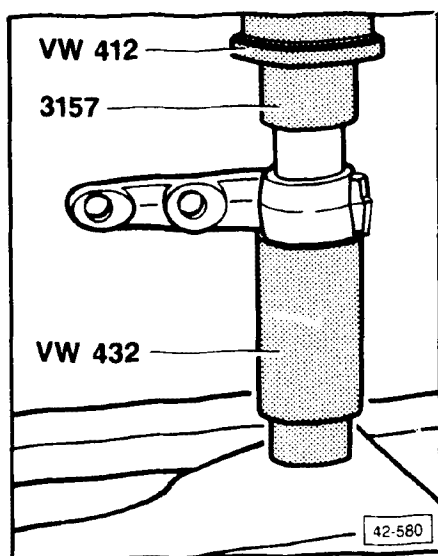
► Fig. 3 Bonded rubber bushing in trapezoidal arm, removing/installing

- press in bushing until flush

Rear Wheel Suspension, Shafts & Axle



► Fig. 4 Bonded rubber bushing in pivot mount, removing



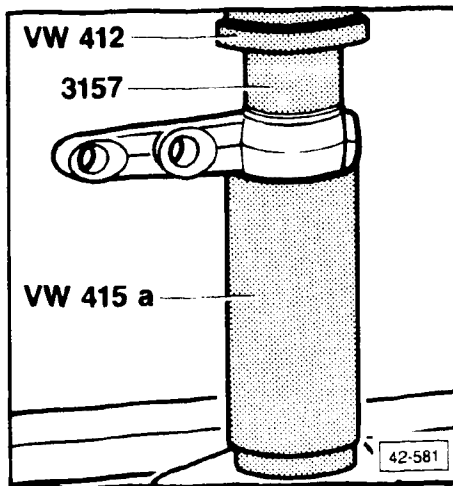
► Fig. 5 Bonded rubber bushing in pivot mount, pressing in part way

- press in approximately 20 mm (13/16 in.)

CAUTION

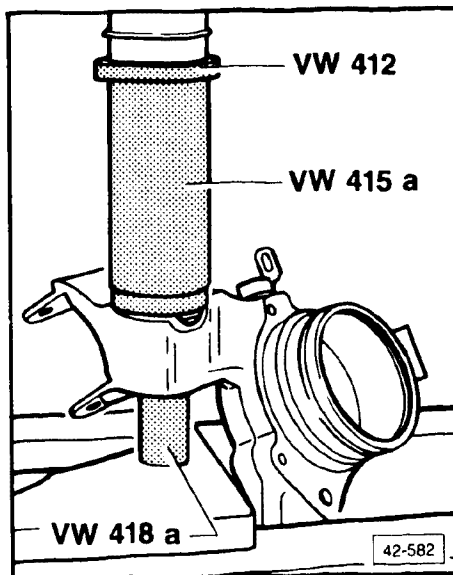
Before installing the bushing in the pivot mount, make sure that the collar of the bushing is facing the driving direction.

Rear Wheel Suspension, Shafts & Axle

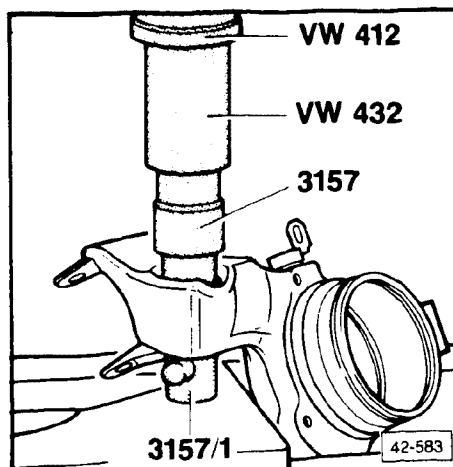


► Fig. 6 Bonded rubber bushing in pivot mount, pressing in

- press in to stop



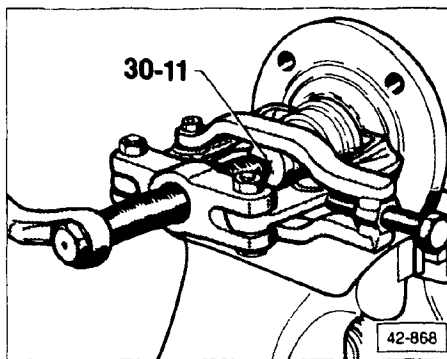
► Fig. 7 Bonded rubber bushing in wheel bearing housing, pressing out



► Fig. 8 Bonded rubber bushing in wheel bearing housing, pressing in

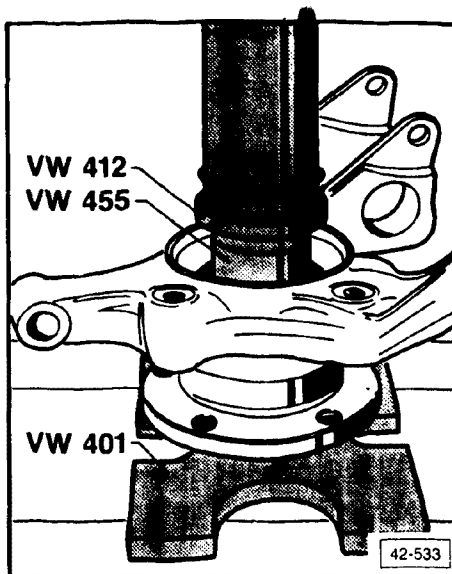
- press in to stop

Rear Wheel Suspension, Shafts & Axle



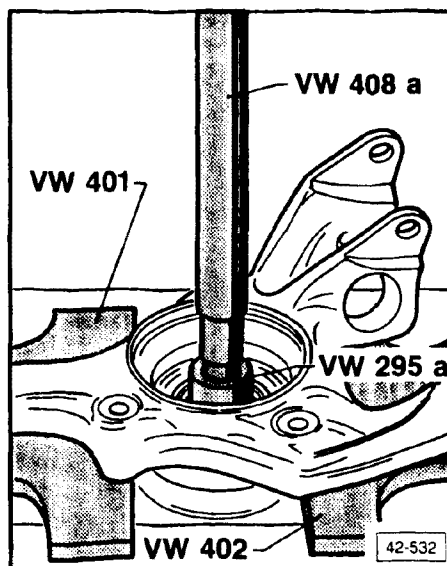
► Fig. 9 Wheel bearing inner race, removing

- use suitable puller with clamp
e.g., Kukko 204-1



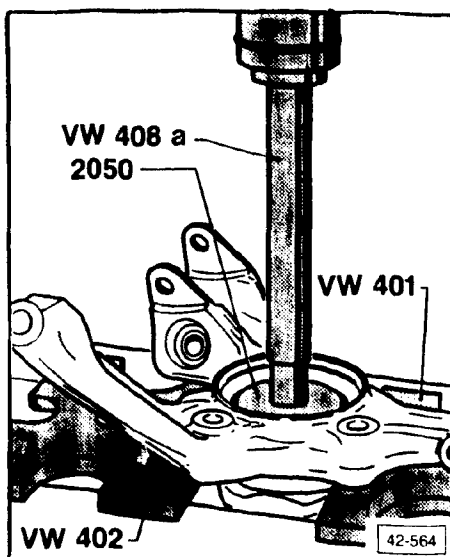
► Fig. 10 Wheel hub, pressing in

- tool **VW 455** must only support the inner race



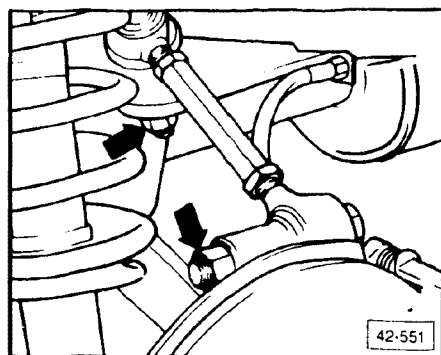
► Fig. 11 Wheel hub, pressing out

Rear Wheel Suspension, Shafts & Axle



► Fig. 12 Wheel bearing, pressing out/in

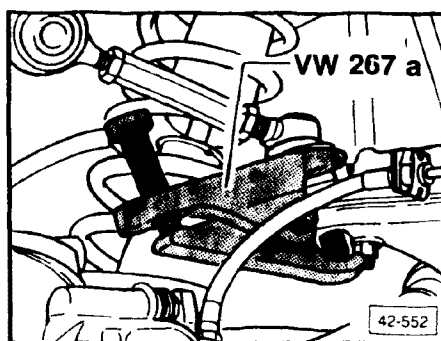
- flex circlips before installing
- always install new wheel bearing
- wheel bearing must not be coated with grease before it is installed
- when installed, greater inside diameter of wheel bearing faces hub



Transverse link, removing/installing

Removing

- remove wheel cover
- remove bolt/washer assembly (vehicle on wheels)
- raise vehicle and remove wheel
- remove transverse link nuts from wheel bearing housing and crossmember

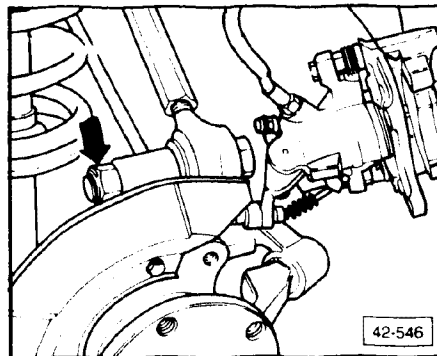
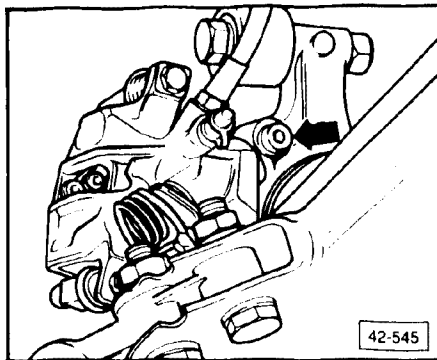


- raise transverse link
- install **VW 267 a**
- remove link from crossmember

Installing

Proceed in reverse order of removal and note tightening torques.

Rear Wheel Suspension, Shafts & Axle



Axle shaft, removing/installing

Removing

- remove wheel cover
- remove bolt/washer assembly (vehicle on wheels)
- ▶
- raise vehicle and remove wheel
- remove brake caliper mounting bolts (arrow) and hang caliper from body with wire
- remove brake disc
- loosen axle shaft bolts from differential flange
- ▶
- remove bolt securing transverse link to wheel bearing housing (arrow)
- remove mounting bolt for lower part of suspension strut

Note

Before removing axle shaft, pull speed sensor out of housing slightly.

- press down on wheel bearing housing and remove axle shaft

Installing

Proceed in reverse order of removal and note tightening torques.

- brake caliper tightening torque at wheel bearing housing: 65 Nm (48 ft lb)

Note

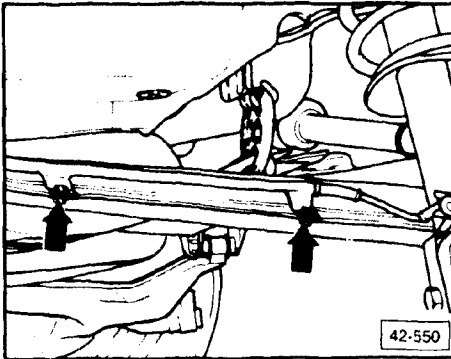
After installing axle shaft, press wheel-speed sensor into wheel bearing housing up to stop by hand.

Rear Wheel Suspension, Shafts & Axle

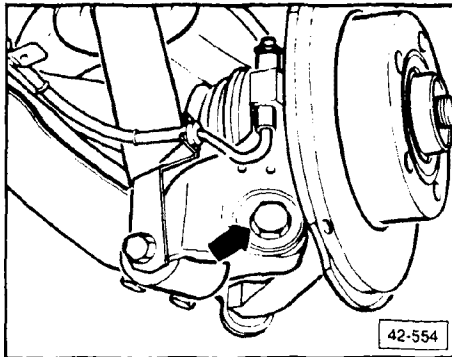
Trapezoidal arm, removing/installing

Removing

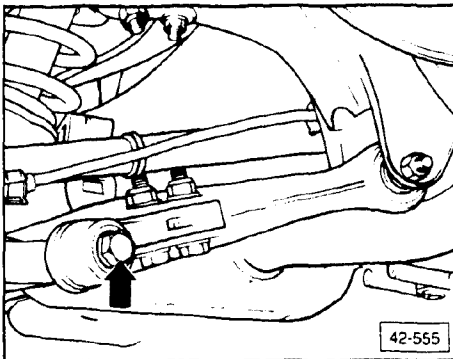
- remove wheel
- remove fasteners securing guide for wheel speed sensor wiring (**arrows**) and remove guide
 - do not pinch wheel-speed sensor when installing wiring guide



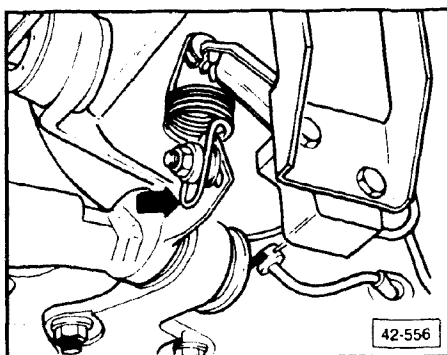
- remove bolt at front securing wheel bearing housing to trapezoidal arm (**arrow**)
 - always replace with new bolt



- remove bolt at rear securing trapezoidal arm to wheel bearing housing (**arrow**)
- remove bolt fastening trapezoidal arm to crossmember
 - always replace with new bolt



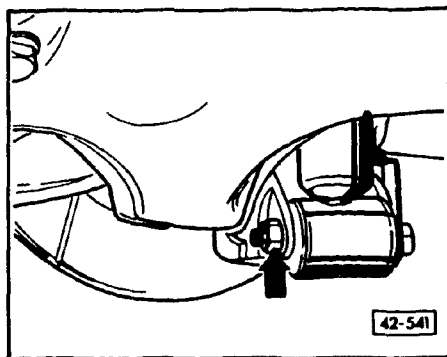
Rear Wheel Suspension, Shafts & Axle



- disengage spring for brake pressure regulator (**arrow**)
- remove bolt at front support and pull trapezoidal arm down to remove

Installing

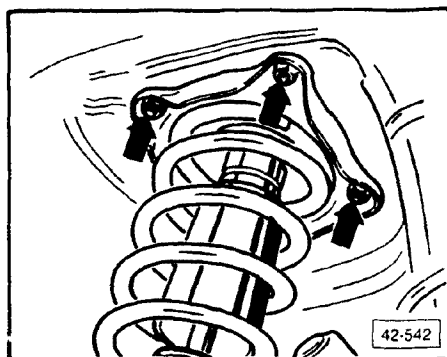
Proceed in reverse order of removal.



Suspension strut, removing/installing

Removing

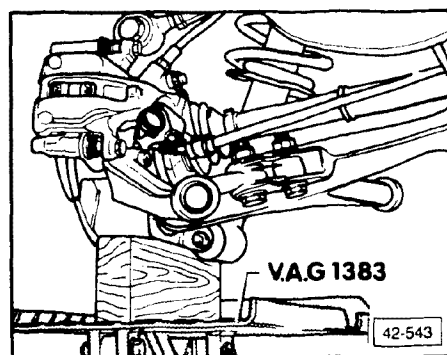
- remove wheel
- remove bolt from lower strut mount (**arrow**)



- remove bolts at top strut mounting (**arrows**) and take strut assembly out

Installing

- install bolt securing suspension strut at lower mounting
 - 90 Nm (66 ft lb)



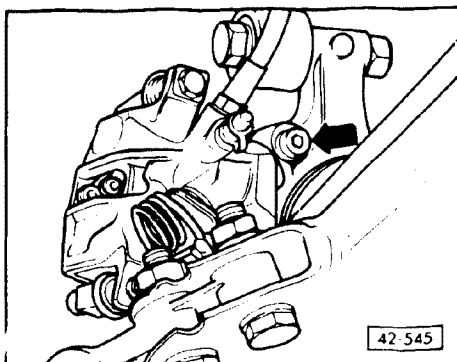
- jack up wheel bearing housing until mounting nuts can be installed at top
 - 20 Nm (15 ft lb)

Rear Wheel Suspension, Shafts & Axle

CAUTION

Remove and install axle bolt only with wheels on the ground.

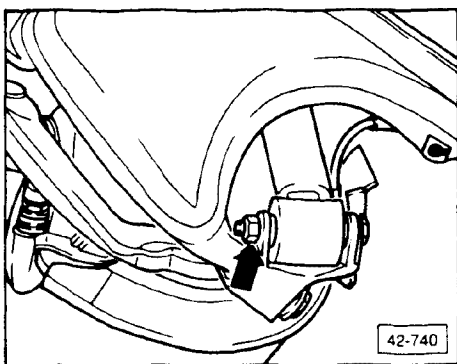
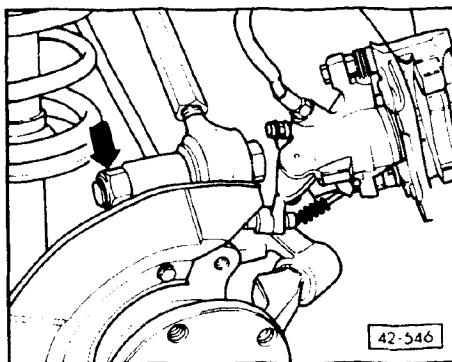
Do not move vehicle without driveshaft outer CV joint installed or wheel bearing will be damaged.



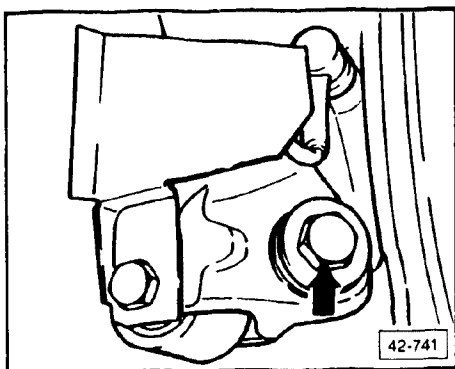
Wheel bearing housing, removing/installing

Removing

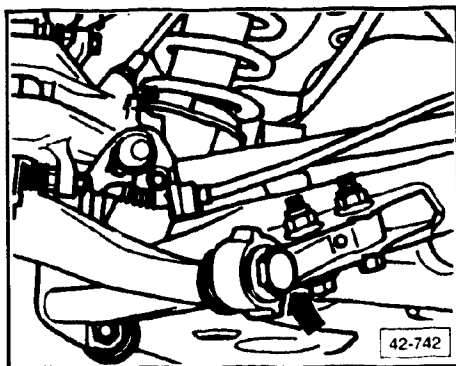
- remove wheel trim
- loosen wheel lug bolts
- remove axle bolt
- remove wheel bolts and wheel
- remove bolt holding caliper (**arrow**)
- remove caliper and secure to body with wire
- remove brake disc
- remove nut and bolt (**arrow**) securing transverse link to wheel bearing housing
- remove bolt from lower suspension strut mounting



Rear Wheel Suspension, Shafts & Axle



- remove bolt securing wheel bearing housing to trapezoidal arm (**lower arrow**)
- remove wheel speed sensor



- remove bolt from pivot mount to wheel bearing housing (**arrow**)
- remove wheel bearing housing from axle shaft

Installing

Proceed in reverse order of removal and note the following:

- press speed sensor in to stop by hand (see page 42.13)

Rear Wheel Suspension, Shafts & Axle

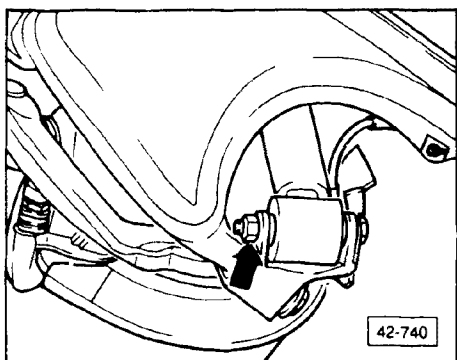
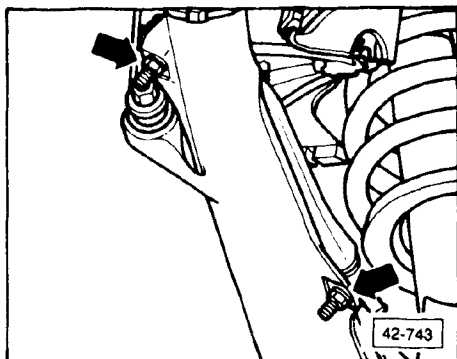
Trapezoidal arm, removing/installing

Removing

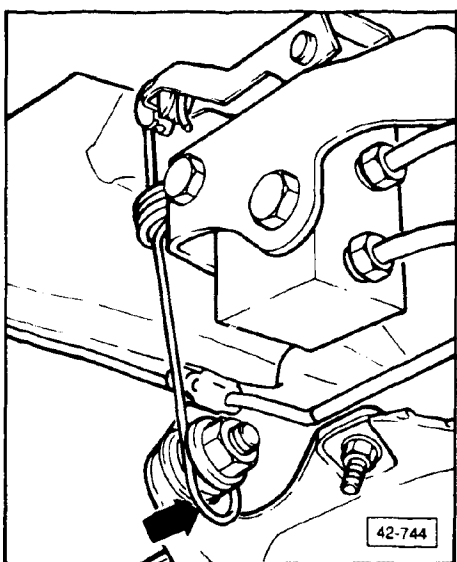
- remove wheel
- remove guide for speed sensor wiring

CAUTION

Do not pinch wheel speed sensor wiring when installing wiring guide.

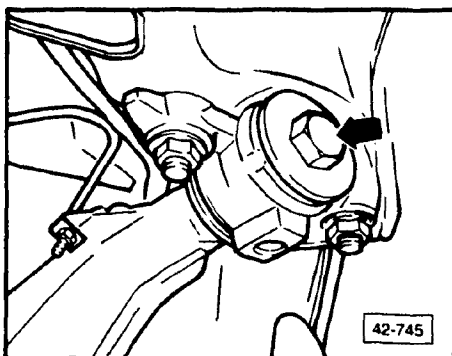


- remove bolt from lower shock mounting

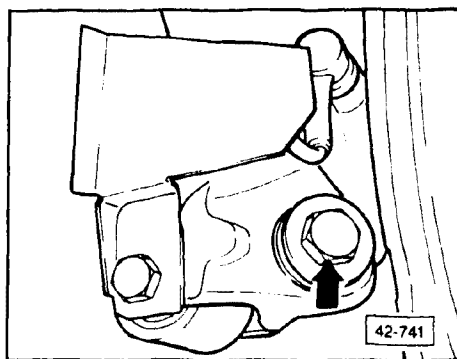


- unhook spring from brake pressure regulator

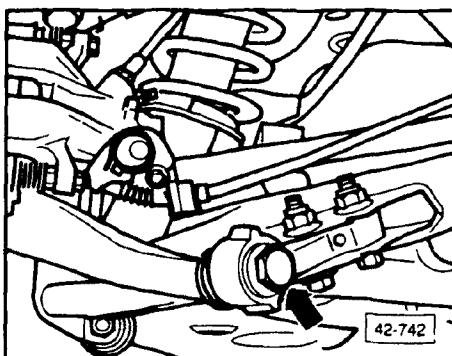
Rear Wheel Suspension, Shafts & Axle



- remove bolt from trapezoidal arm at front support



- remove bolt from connection of trapezoidal arm to wheel bearing housing

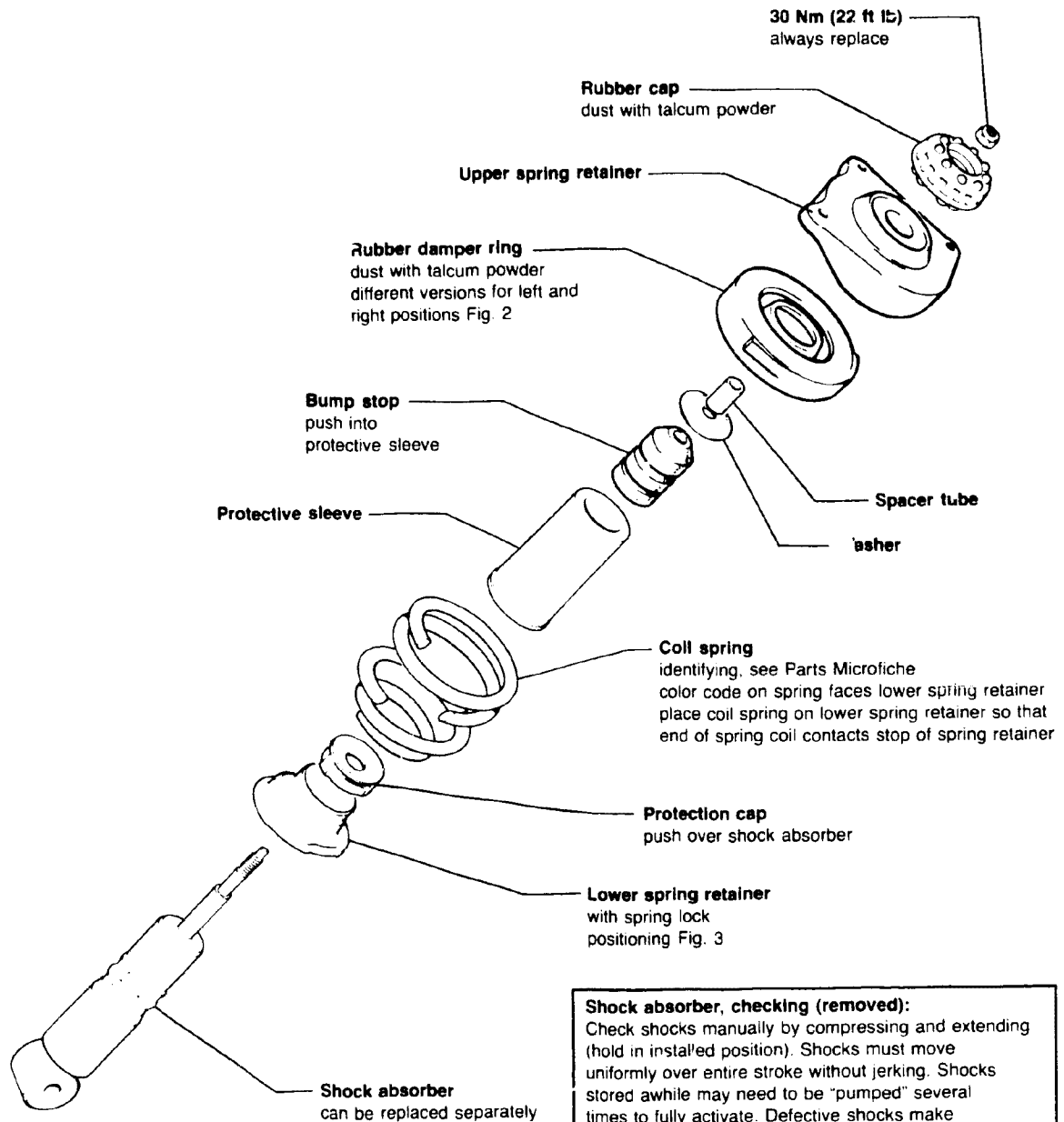


- remove bolt from pivot mount to wheel bearing housing
- remove bolt from trapezoidal arm connection to rear crossmember
- remove trapezoidal arm

Installing

Proceed in reverse order of removal.

Rear Wheel Suspension, Shafts & Axle

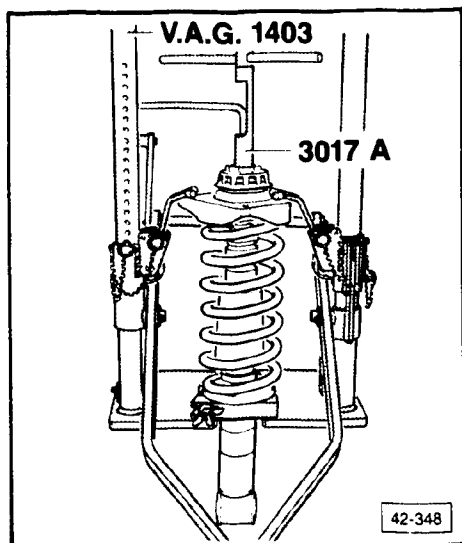


Shock absorber, checking (removed):

Check shocks manually by compressing and extending (hold in installed position). Shocks must move uniformly over entire stroke without jerking. Shocks stored awhile may need to be "pumped" several times to fully activate. Defective shocks make rumbling noises during driving. If function is satisfactory, slight traces of shock absorber oil are no reason to change them. Excessive oil loss compromises pulling or pressure stages. Gas pressure shocks are manually checked by compressing in the installed position. The shock must move uniformly over entire stroke without jerking, and return to initial position.

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Rear Wheel Suspension, Shafts & Axle

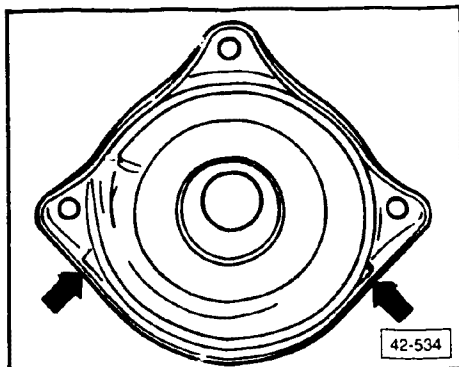


► Fig. 1 Suspension strut, disassembling/ assembling

- tension coil spring
- remove nut from shock absorber
- remove individual parts

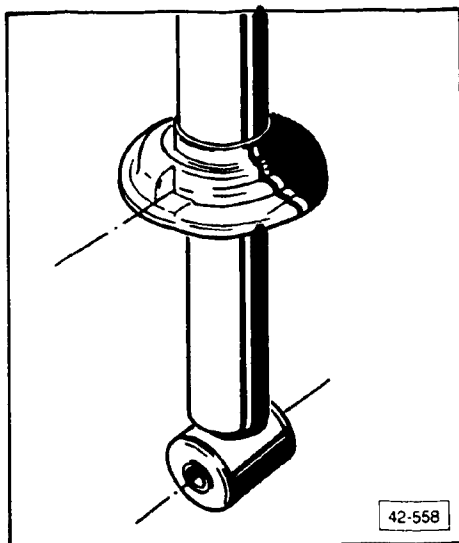
CAUTION

Tighten nut on shock absorber with tool **3017 A**, also using a torque wrench. Tightening torque: 30 Nm (22 ft lb).



► Fig. 2 Rubber damper ring, positioning

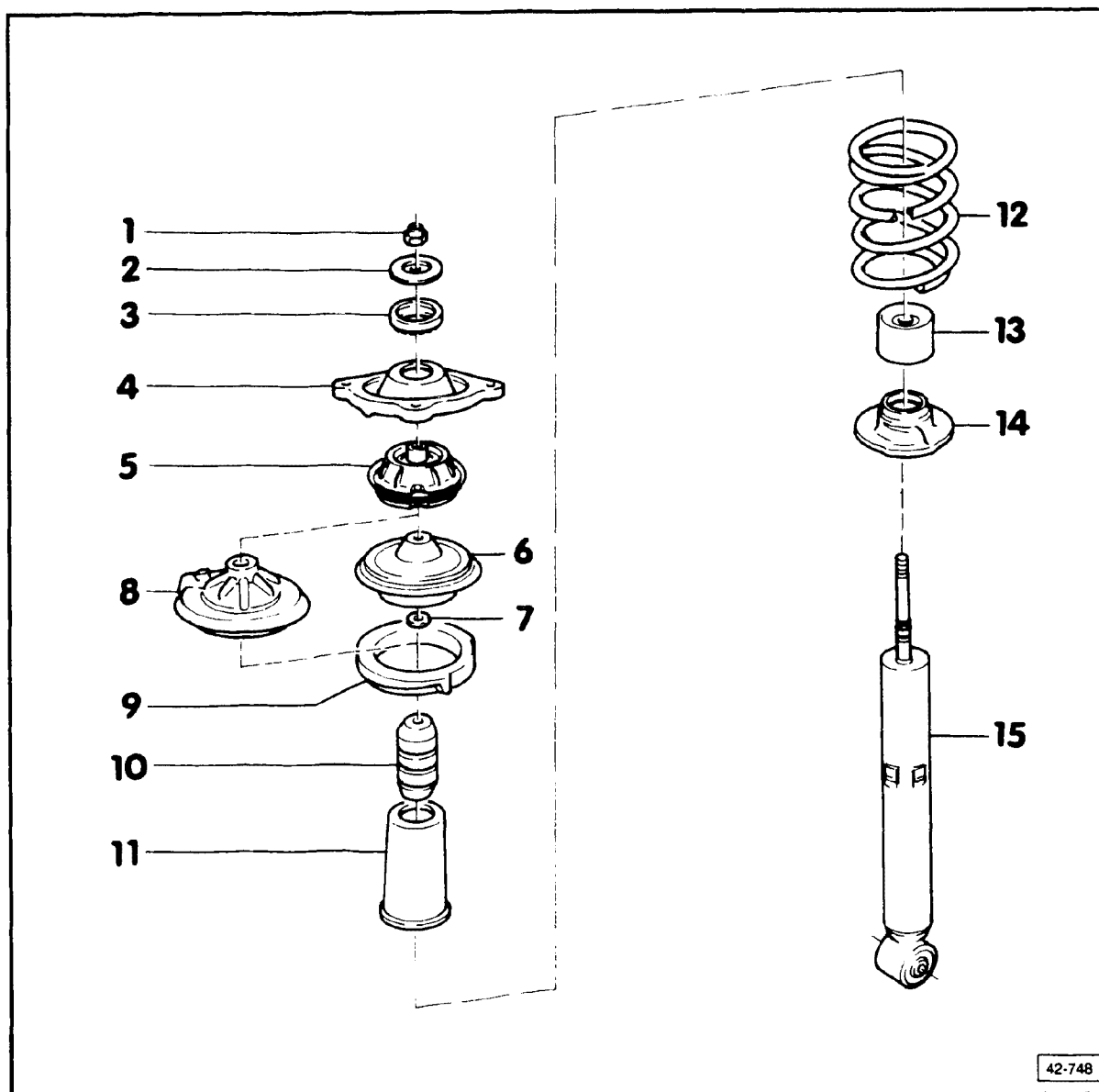
- two lugs of damper ring must be seated against spring retainer (**arrows**)



► Fig. 3 Lower spring retainer, positioning

- stop for coil spring is aligned with hole for shock absorber mounting

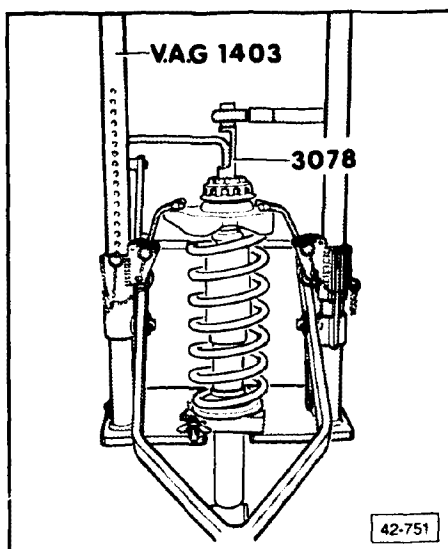
Rear Wheel Suspension, Shafts & Axle



- 1 — 50 Nm (37 ft lb)
always replace
- 2 — Stop disc
- 3 — Stop ring
- 4 — Strut adapter
 - different part for left and right sides
 - tab (left = rounded, right = square) points outward
- 5 — Strut bearing
- 6 — Upper spring seat
- 7 — Ring
- 8 — Not for U.S.
- 9 — Deadener ring
identical part for right and left sides

- 10 — Bump stop
insert in protective sleeve
- 11 — Protective sleeve
- 12 — Coil spring
increased rate for 20V engine
- 13 — Cap
install on shock absorber
- 14 — Lower spring seat
installed position, page 46.29
- 15 — Gas pressure shock absorber
 - replace individually
 - to check: manually compress in installed position.
Shock must move uniformly over entire stroke
without jerking and return to initial position

Rear Wheel Suspension, Shafts & Axle



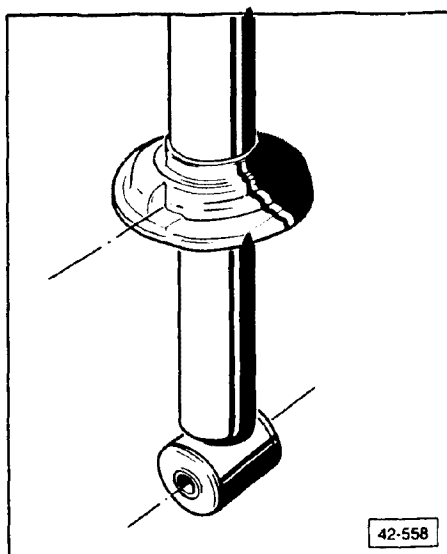
Suspension strut, disassembling/ assembling

- tension coil spring
- remove nut from shock absorber piston
- remove individual parts

Note

Strut can also be disassembled using VW 340.

- assemble strut with tool 3078 and torque nut to 50 Nm (37 ft lb)



Lower spring seat, installed position

- stop for coil spring is aligned with hole for shock absorber mounting