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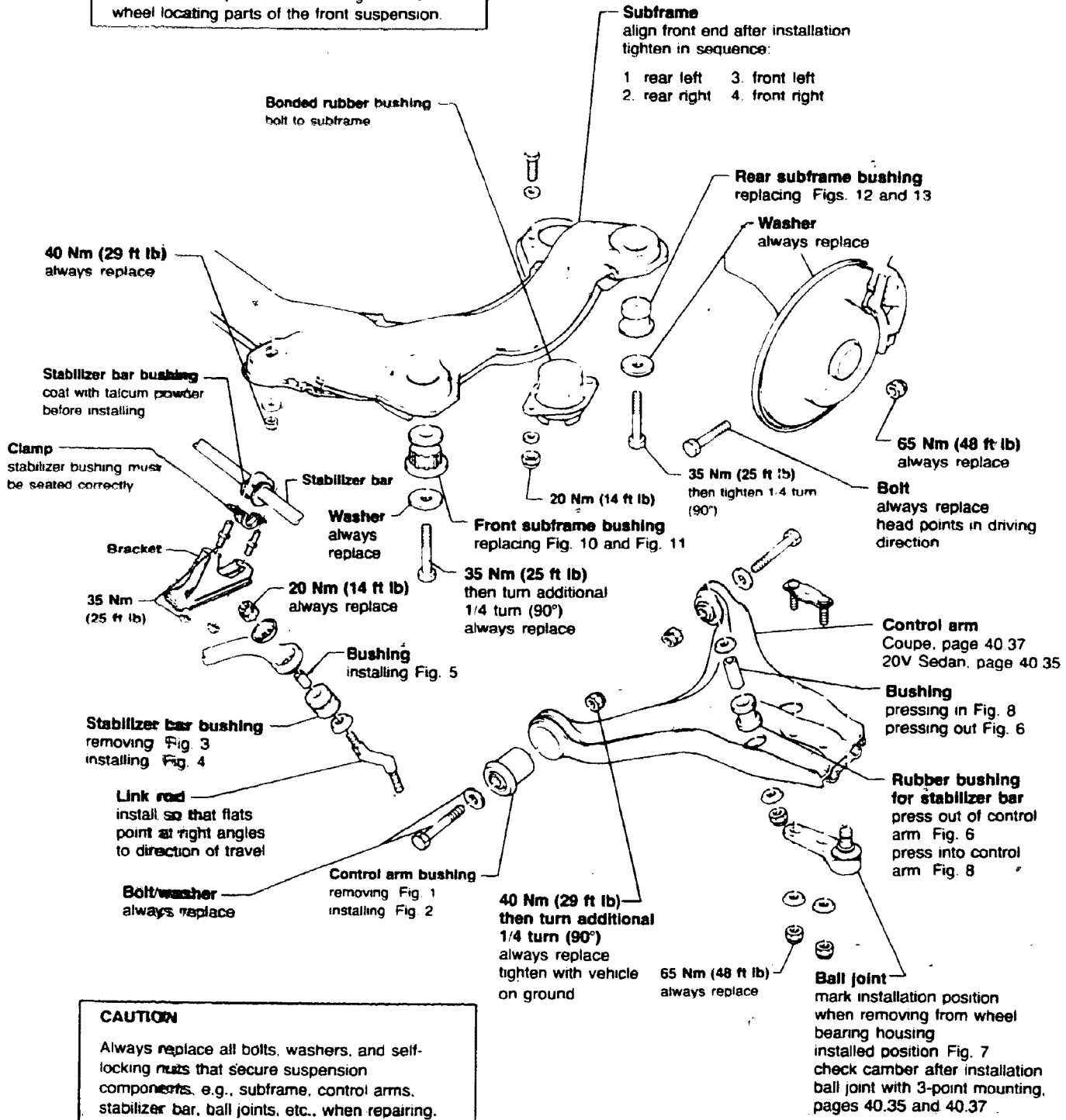
Wheel hub

- assembly 40.44
- pressing out/in 40.45

Front Wheel Suspension – Shafts & Axle

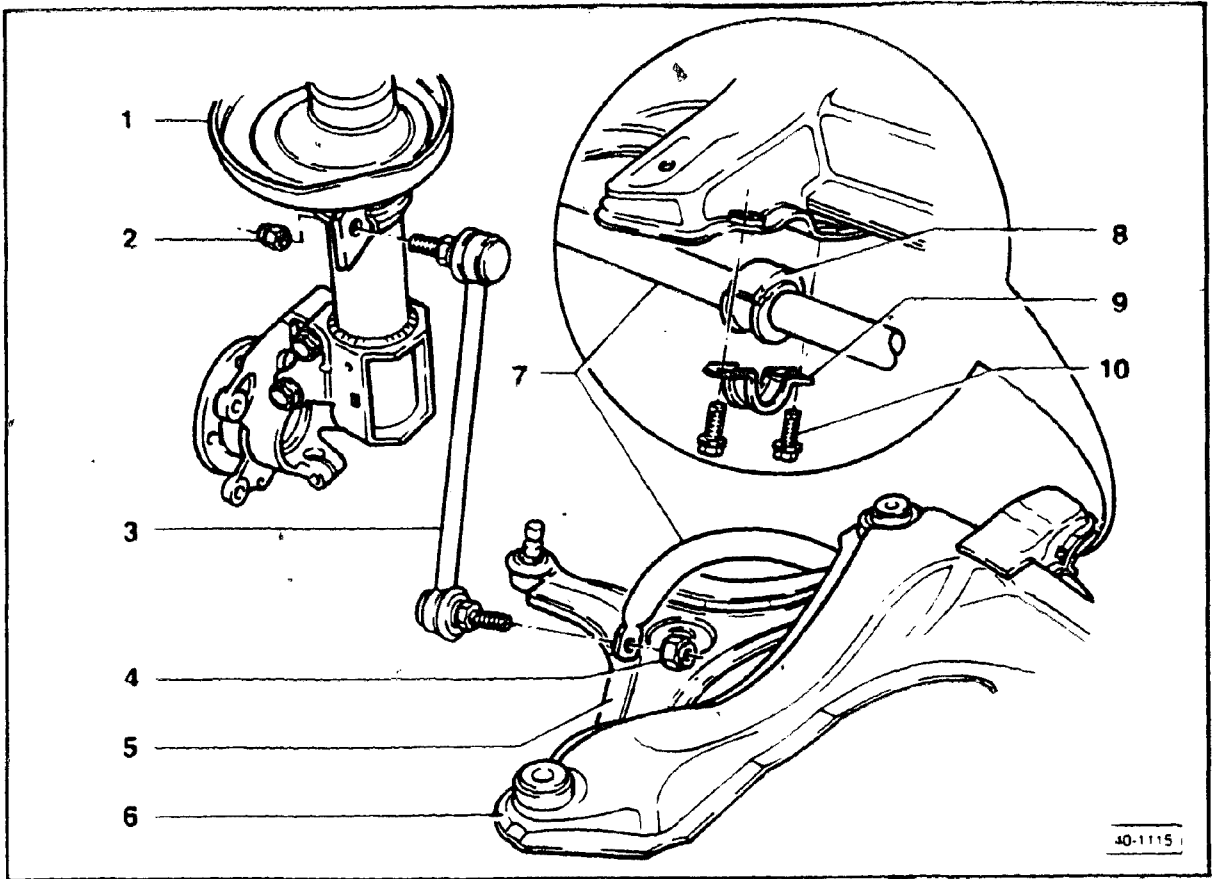
CAUTION
DO NOT attempt to weld or straighten the wheel locating parts of the front suspension.

Note
Suspension revisions for 1990 MY, see page 40.30a.



CAUTION
Always replace all bolts, washers, and self-locking nuts that secure suspension components, e.g., subframe, control arms, stabilizer bar, ball joints, etc., when repairing.

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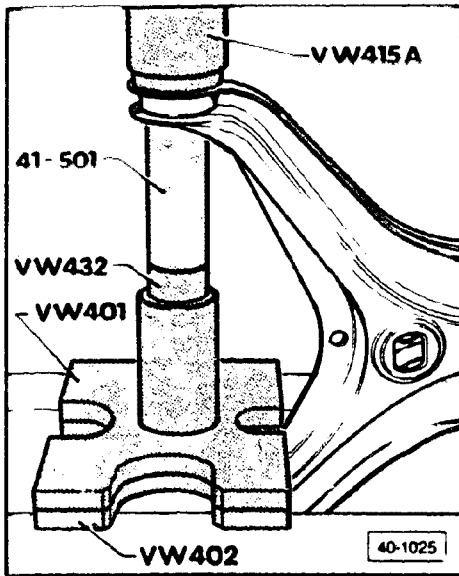
CAUTION

The revised suspension parts must not be installed in earlier vehicles.

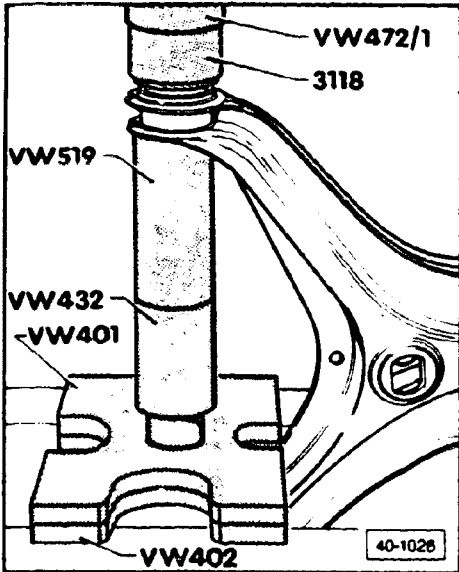
- 1 — Wheel bearing/shock absorber housing
with tab for mounting stabilizer link rod
shock absorbers revised
- 2 — 45 Nm (33 ft lb)
always replace
- 3 — Link rod
- 4 — 45 Nm (33 ft lb)
always replace

- 5 — Control arm
revised to eliminate link rod mounting
- 6 — Subframe
- 7 — Stabilizer bar
revised version
- 8 — Rubber bushing
different diameters depending on stabilizer diameter
- 9 — Clamp
revised from previous version
- 10 — 35 Nm (26 ft lb)
always replace
tighten only with vehicle on ground

Front Wheel Suspension – Shafts & Axle



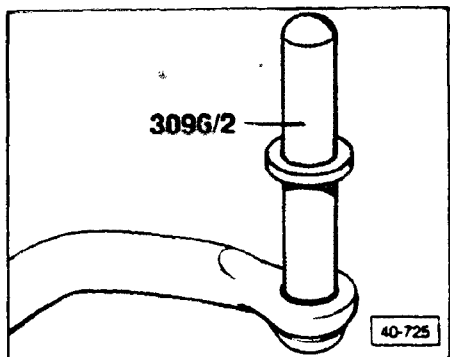
► Fig. 1 Control arm bushing, removing



► Fig. 2 Control arm bushing, installing

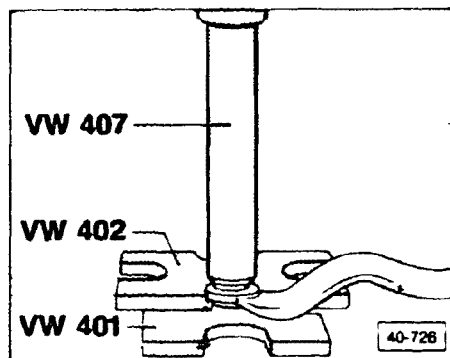
- install bushing to stop

Front Wheel Suspension – Shafts & Axle



► Fig. 3 Stabilizer bar bushing, pressing out

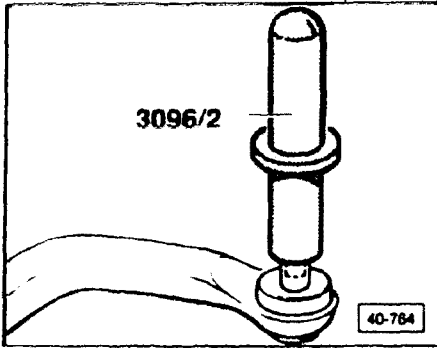
- cut collar off rubber bushing



► Fig. 4 Stabilizer bar bushing, pressing in

- apply acid-free lubricant before installation

Front Wheel Suspension – Shafts & Axle

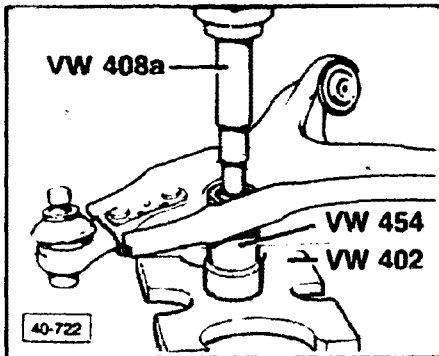


► Fig. 5 Bushing, pressing in

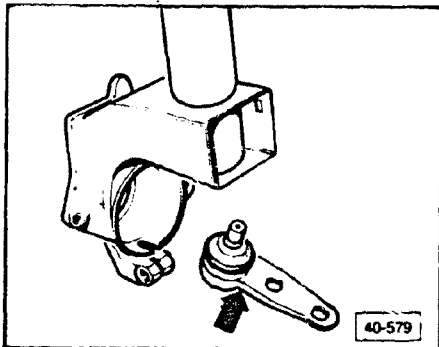
- coat bushing with acid-free lubricant before installing

Note

Inner bushing must be aligned in center of rubber bushing.

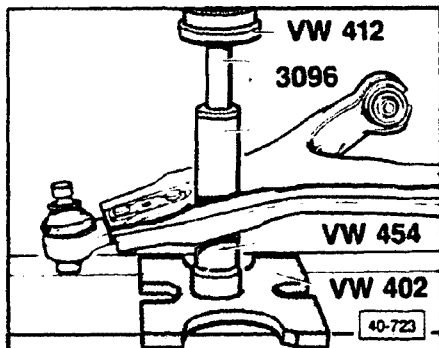


► Fig. 6 Rubber bushing in control arm, pressing out



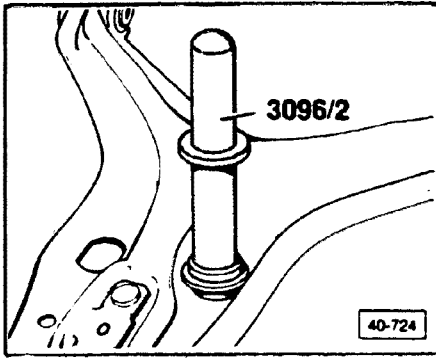
► Fig. 7 Ball joint, installing (right side shown)

- offset faces in direction of vehicle travel (arrow)
- **DO NOT** expand slot on wheel bearing housing



► Fig. 8 Rubber bushing in control arm, pressing in

- coat rubber bushing and inner section of sleeve 3096/1 with acid-free lubricant

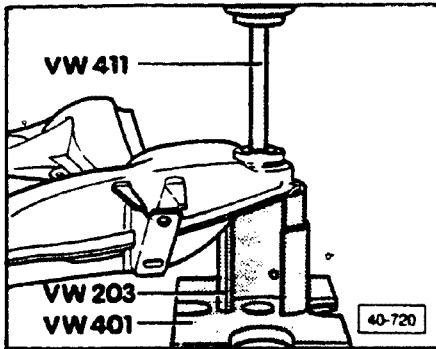


► Fig. 9 Bushing, pressing in

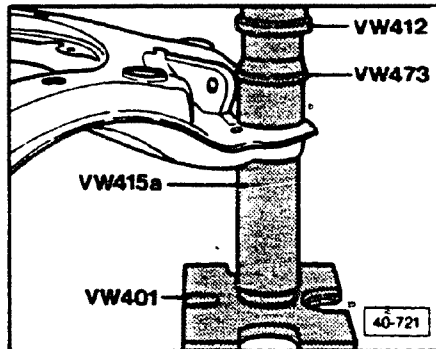
- lubricate bushing with acid-free lubricant before installing

Note

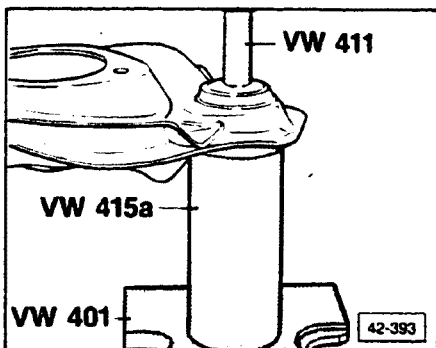
Inner bushing must be aligned in center of rubber bushing.



► Fig. 10 Front subframe bushing, pressing out

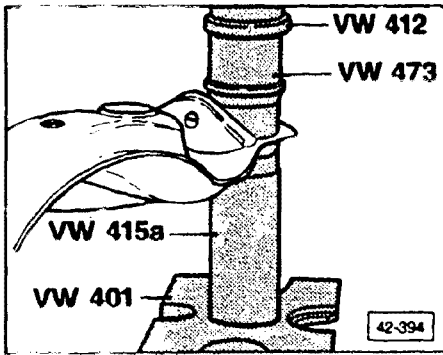


► Fig. 11 Front subframe bushing, pressing in



► Fig. 12 Rear subframe bushing, pressing out

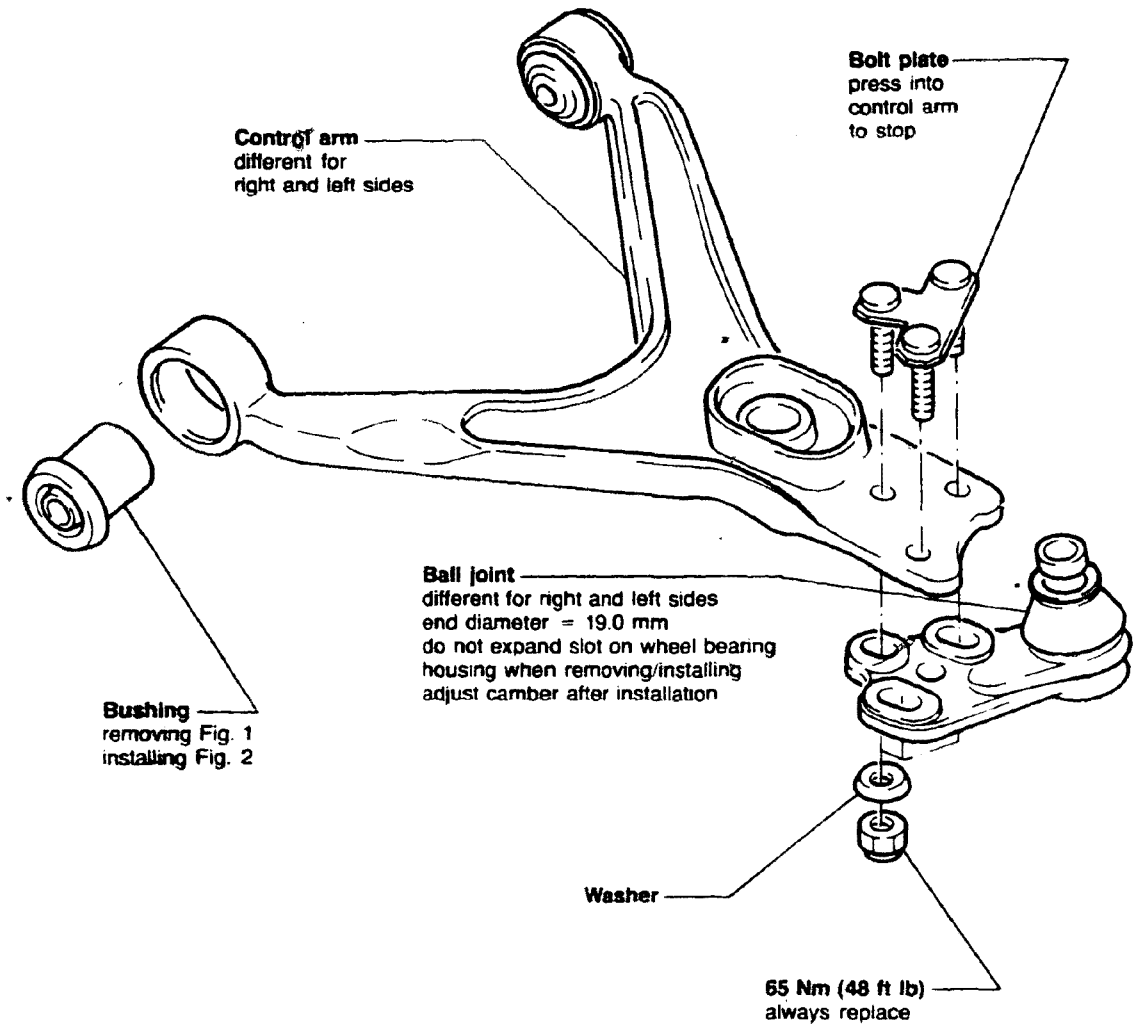
Front Wheel Suspension – Shafts & Axle



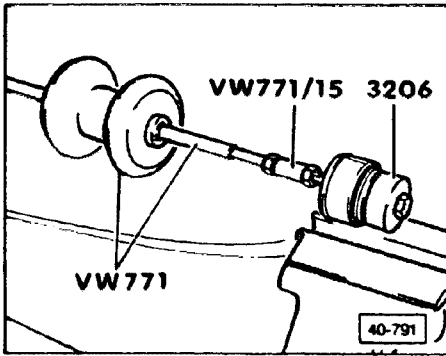
► Fig. 13 Rear subframe bushing, pressing in

- apply acid-free lubricant before installing

Front Wheel Suspension – Shafts & Axle

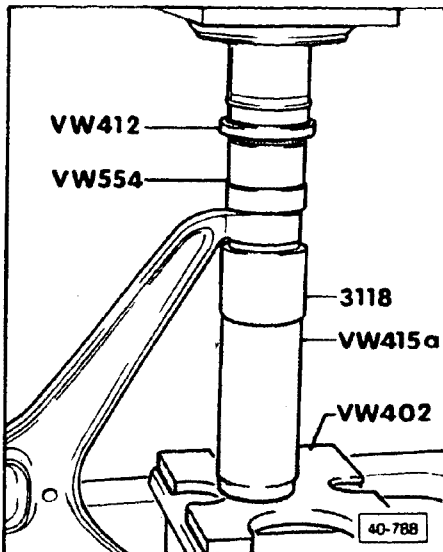


40-787



► Fig. 1 Control arm bushing, removing

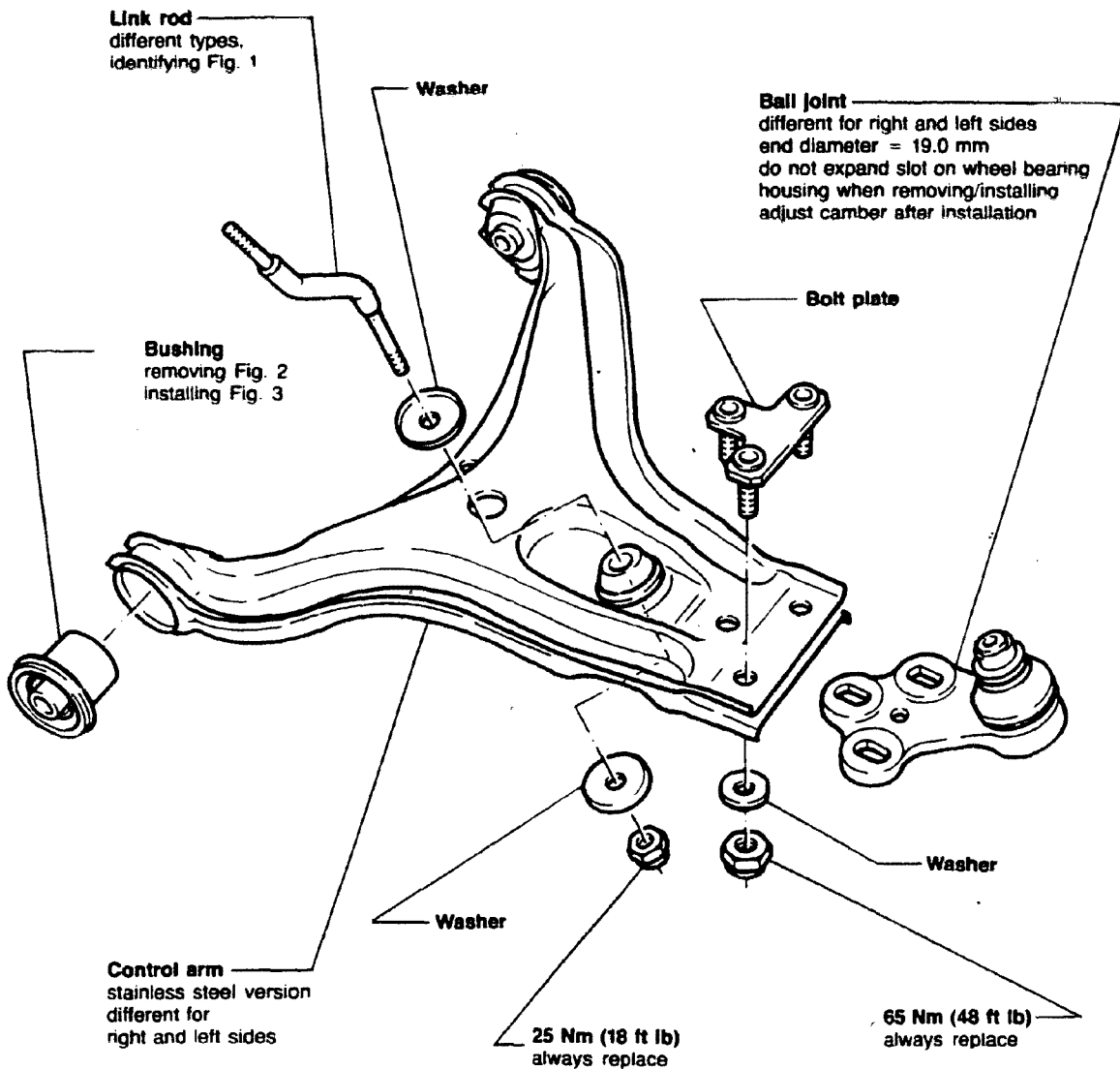
- mount control arm in vise (use jaw covers)
- remove with 3206



► Fig. 2 Control arm bushing, installing

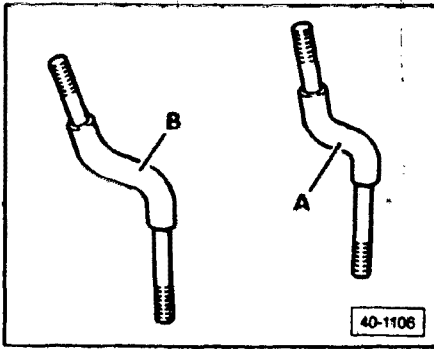
- press in up to stop

Front Wheel Suspension – Shafts & Axle



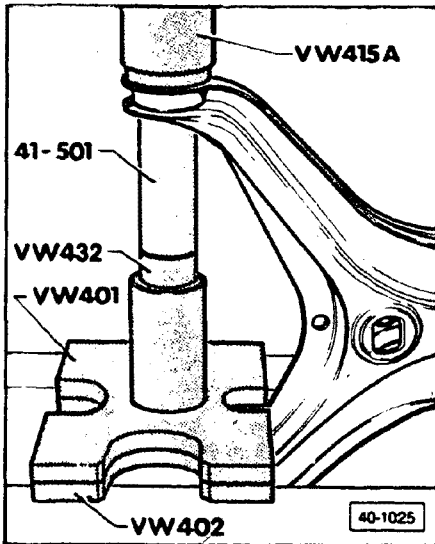
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Front Wheel Suspension – Shafts & Axle

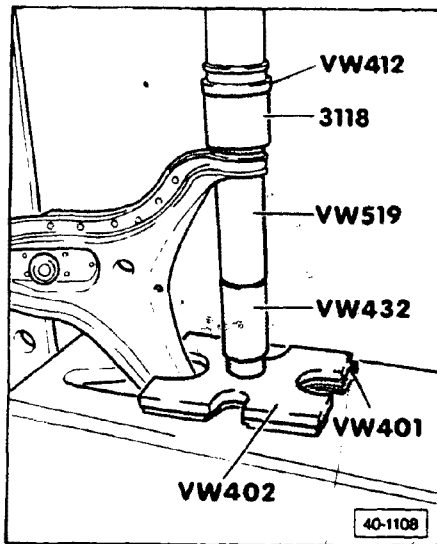


► Fig. 1 Link rods, identifying

A = Coupe
B = Sedan



► Fig. 2 Control arm bushing, removing



► Fig. 3 Control arm bushing, installing

■ press bearing in up to stop

Front Wheel Suspension – Shafts & Axle

CAUTION

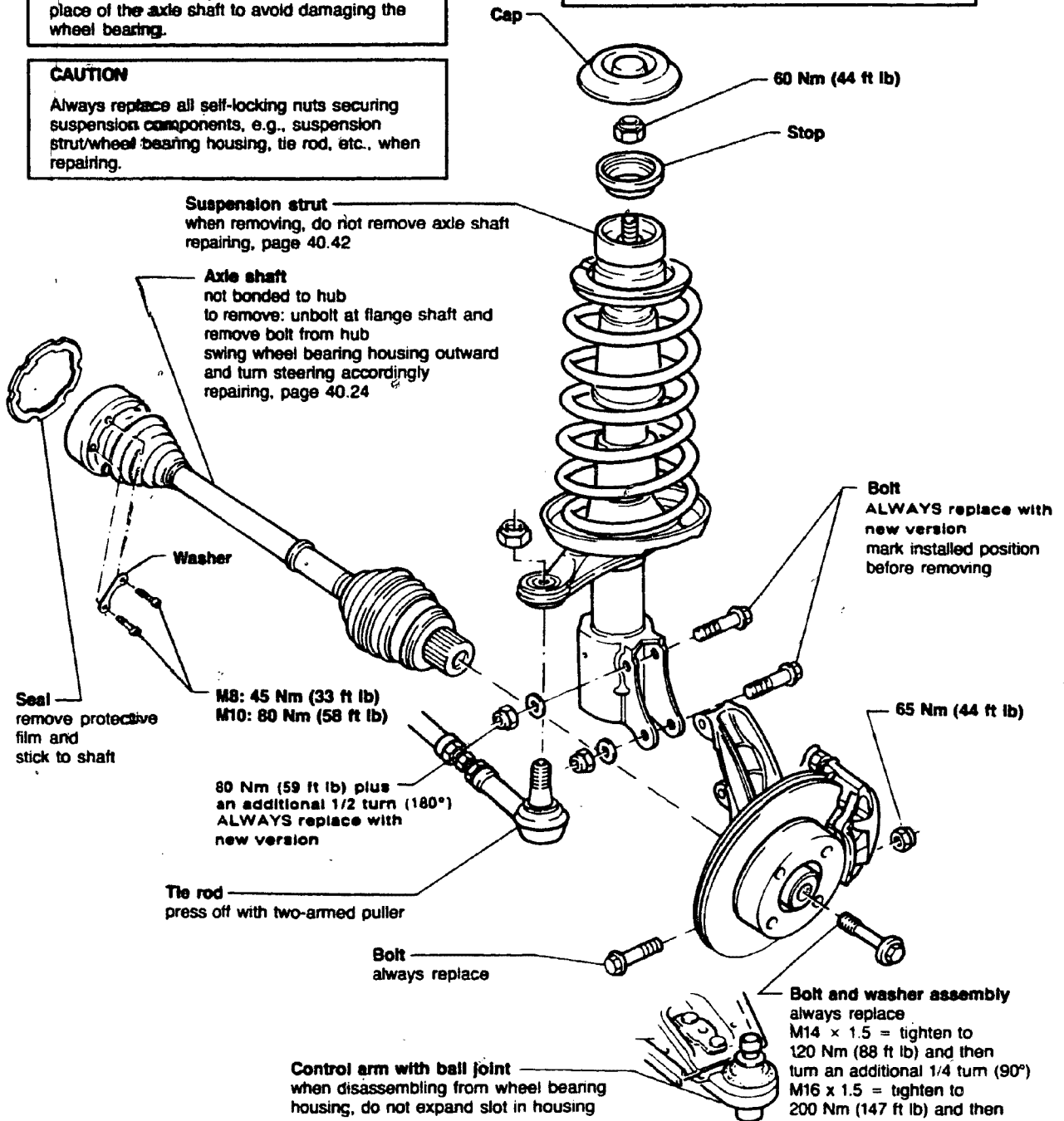
If vehicles have to be moved after removing an axle shaft, an outer joint has to be installed in place of the axle shaft to avoid damaging the wheel bearing.

CAUTION

Always replace all self-locking nuts securing suspension components, e.g., suspension strut/wheel bearing housing, tie rod, etc., when repairing.

CAUTION

Always align front end after installation of suspension strut.



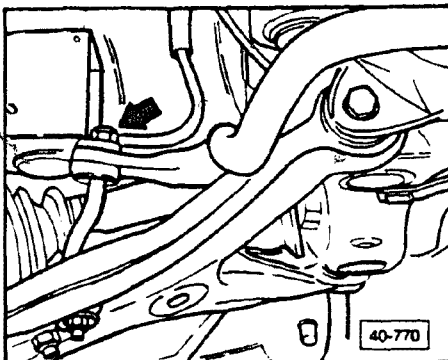
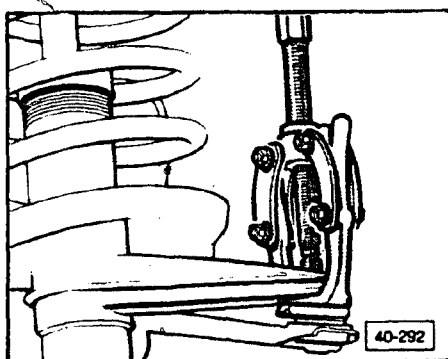
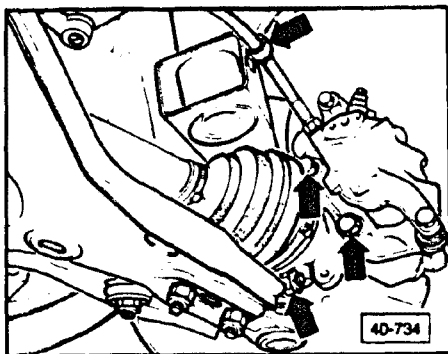
Note

All vehicles with 5-cylinder engines have the front suspension with a forged wheel bearing housing.

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Front Wheel Suspension – Shafts & Axle

Suspension strut, removing/installing



Removing

- loosen wheel bolts
- remove hub/axle shaft bolt (vehicle standing on its wheels)
- remove washer
- remove wheel
- remove brake caliper bolts and brake caliper (**middle arrows**)
- remove brake disc
- remove bracket for brake hose (**upper arrow**) and fasten caliper to body with wire
- remove mounting bolt for ball joint to wheel bearing housing (**lower arrow**)

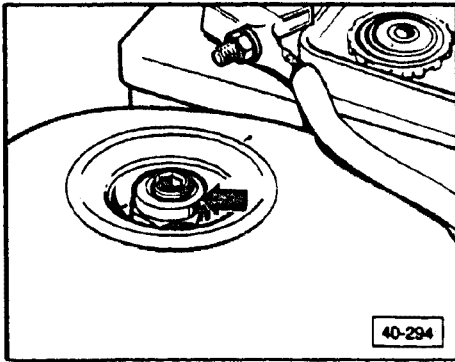
- press off tie rod end

- remove nut from link rod (**arrow**)
- pry down on control arm to remove ball joint from wheel bearing housing

Note

While prying ball joint out move steering wheel alternately from left to right (2 mechanics required).

Front Wheel Suspension – Shafts & Axle



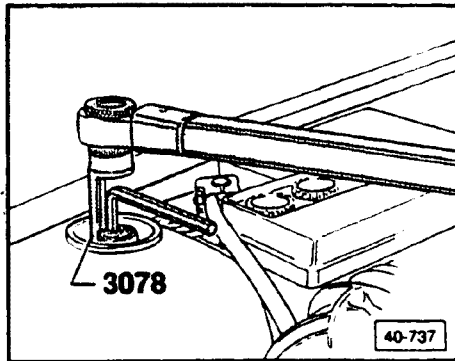
- remove cover plate
- support suspension strut from below
- loosen nut from shock absorber (arrow) while holding piston rod with internal socket wrench

Installing

Proceed in reverse order of removal and note the following:

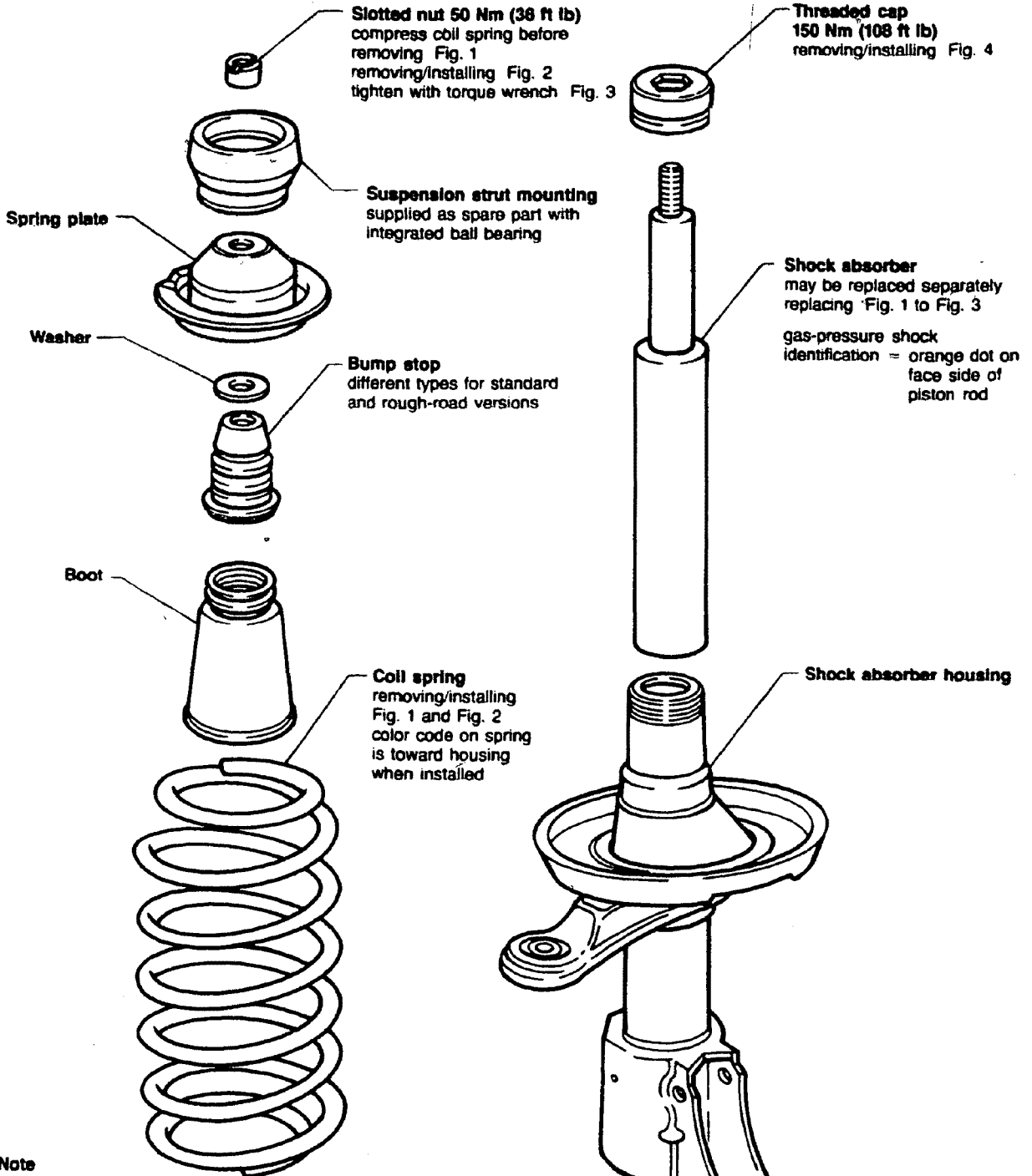
CAUTION

Splines on axle shaft and wheel hub must be free of oil and grease.



- torque shock absorber nut while holding piston rod
 - 60 Nm (44 ft lb)

Front Wheel Suspension – Shafts & Axle

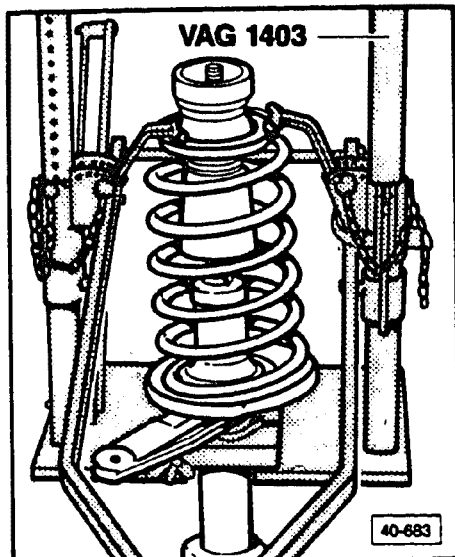


Note

Check operation of shock absorbers by extending and compressing by hand (while holding shock absorber in the same position as when installed). The resistance felt must be even and smooth over the full stroke and piston rod must return to initial position.

40-782

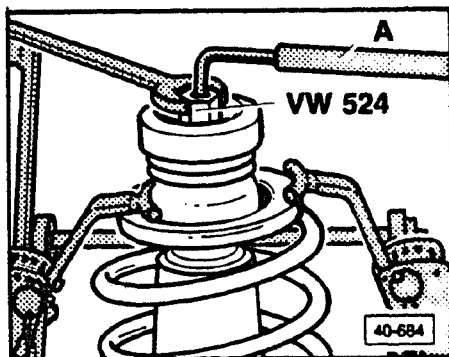
Front Wheel Suspension – Shafts & Axle



► Fig. 1 Coil spring, removing/Installing

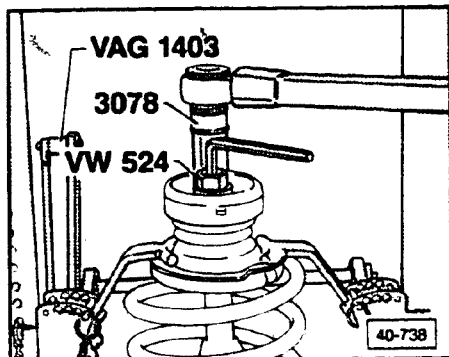
Note

If tool VAG 1403 is not available, use tool VW 340.



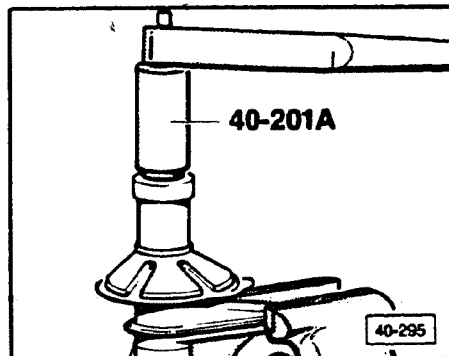
► Fig. 2 Coil spring, removing/Installing

- hold shock absorber shaft with internal socket wrench



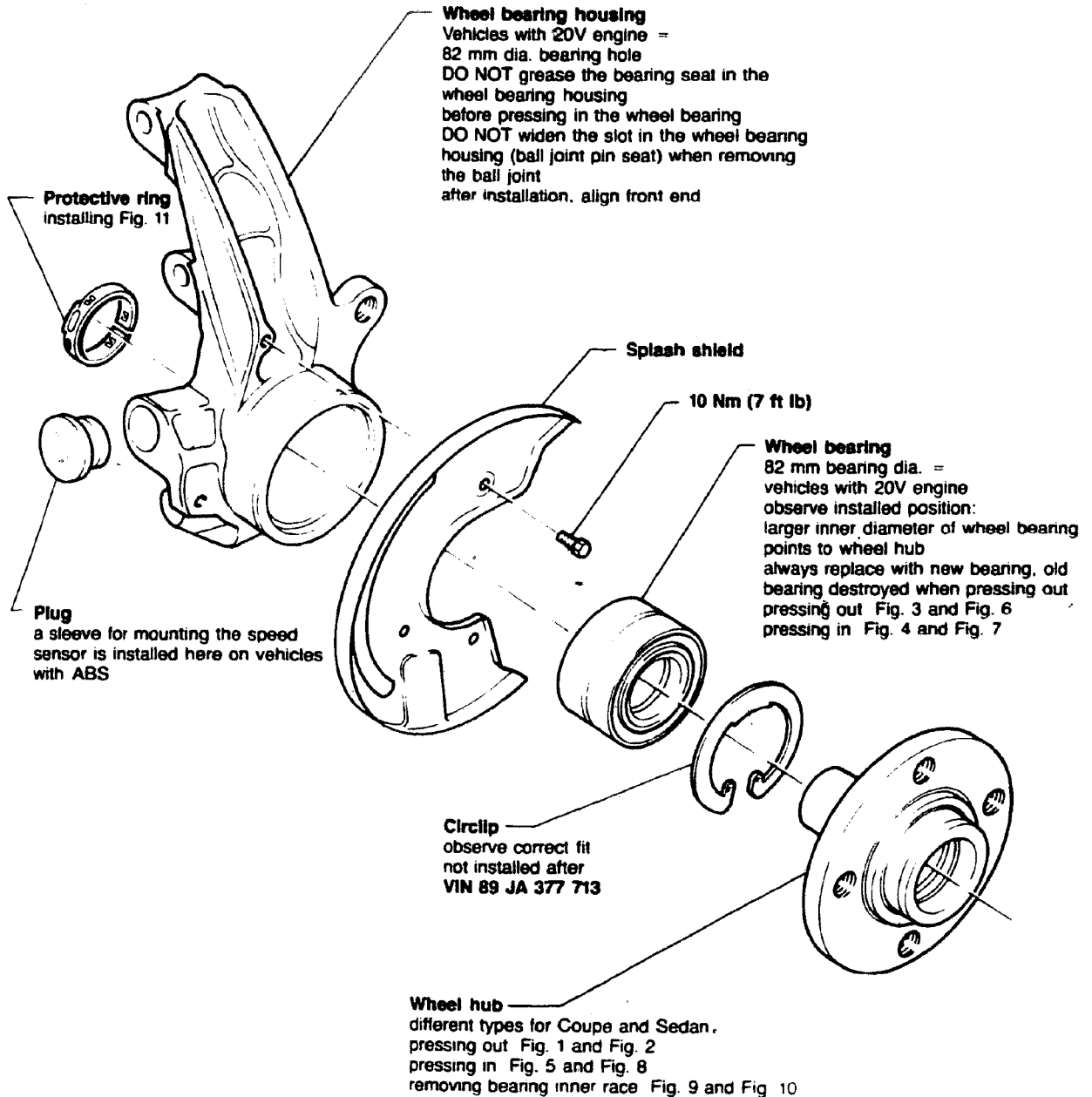
► Fig. 3 Shock absorber, installing

- tighten slotted nut to 50 Nm (36 ft lb)



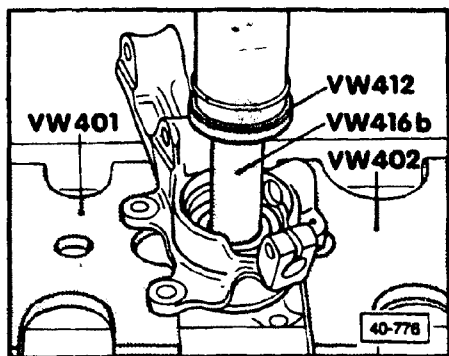
► Fig. 4 Threaded cap, removing/Installing

Front Wheel Suspension – Shafts & Axle

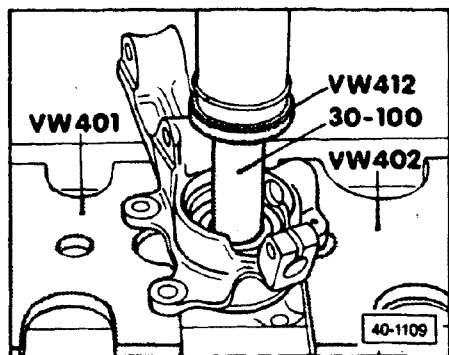


42-758

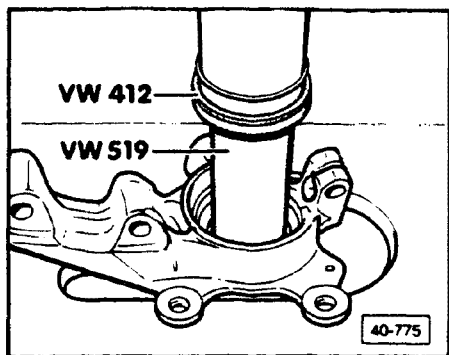
Front Wheel Suspension – Shafts & Axle



► Fig. 1 Wheel hub (75 mm diameter wheel bearing), pressing out

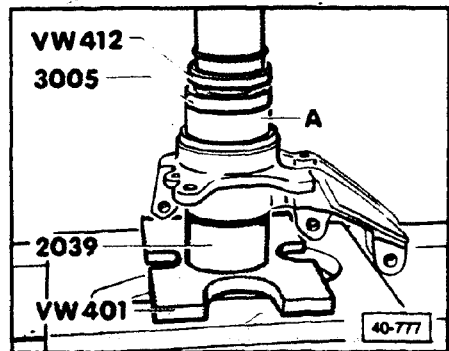


► Fig. 2 Wheel hub, (82 mm diameter wheel bearing), pressing out



► Fig. 3 Wheel bearing (75 mm diameter), pressing out

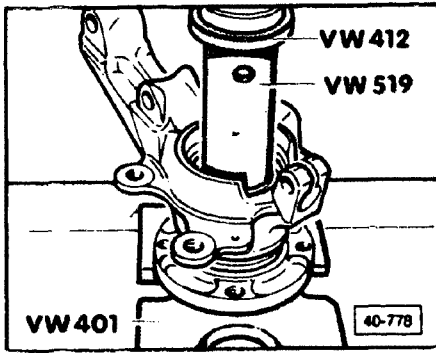
- first remove circlip



► Fig. 4 Wheel bearing (75 mm diameter), pressing in

- larger diameter of wheel bearing points to wheel hub

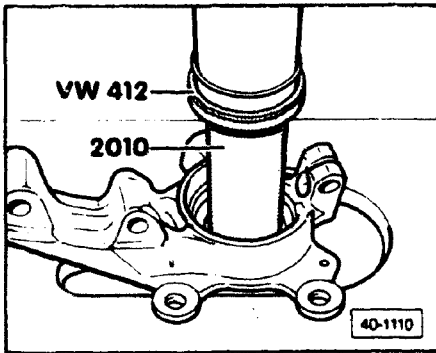
Front Wheel Suspension – Shafts & Axle



► Fig. 5 Wheel hub (75 mm diameter wheel bearing), pressing in

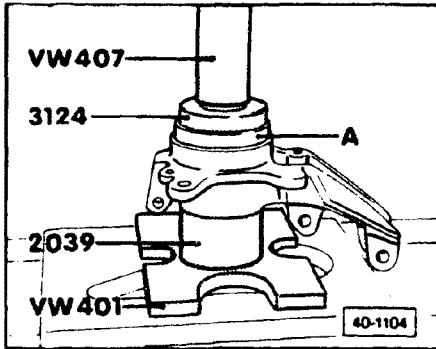
Note

Tool VW519 must only support the wheel bearing inner race.



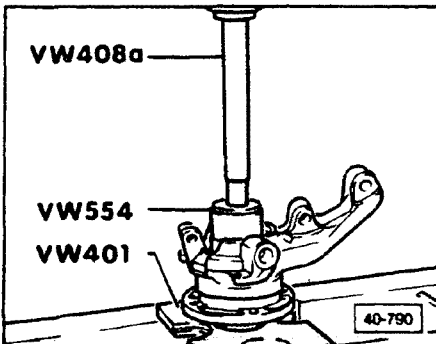
► Fig. 6 Wheel bearing (82 mm diameter), pressing out

- first remove circlip



► Fig. 7 Wheel bearing (82 mm diameter), pressing in

- larger diameter of wheel bearing points to wheel hub

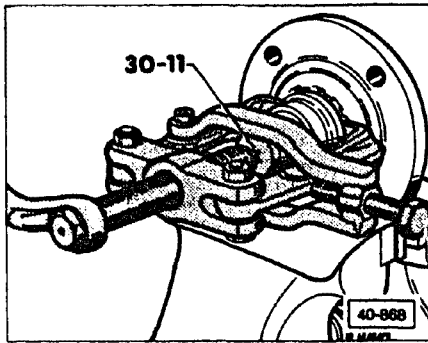


► Fig. 8 Wheel hub (82 mm diameter wheel bearing), pressing in

Note

Tool VW519 must only support the wheel bearing inner race.

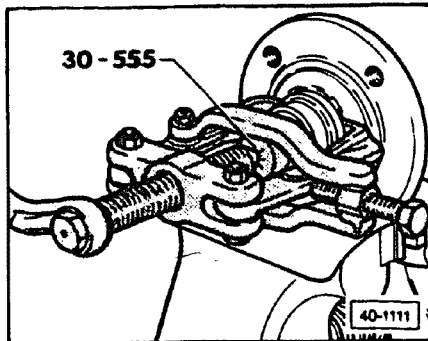
Front Wheel Suspension – Shafts & Axle



► Fig. 9 Wheel bearing (75 mm diameter) inner race, removing

Note

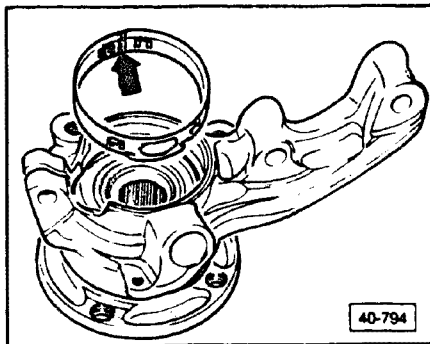
Use an extractor with a clamp, e.g. Kukko 204-1.



► Fig. 10 Wheel bearing (82 mm diameter) inner race, removing

Note

Use an extractor with a clamp, e.g. Kukko 204-1.



► Fig. 11 Protective ring, installing in wheel bearing housing

- before installing, coat wheel bearing housing bore in protective ring area with oil
- press ring in by hand until tabs lock
 - ring must not overlap (arrow)

Note

Vehicles not produced with a protective ring must not be supplied with one later.

Front Wheel Suspension – Shafts & Axle

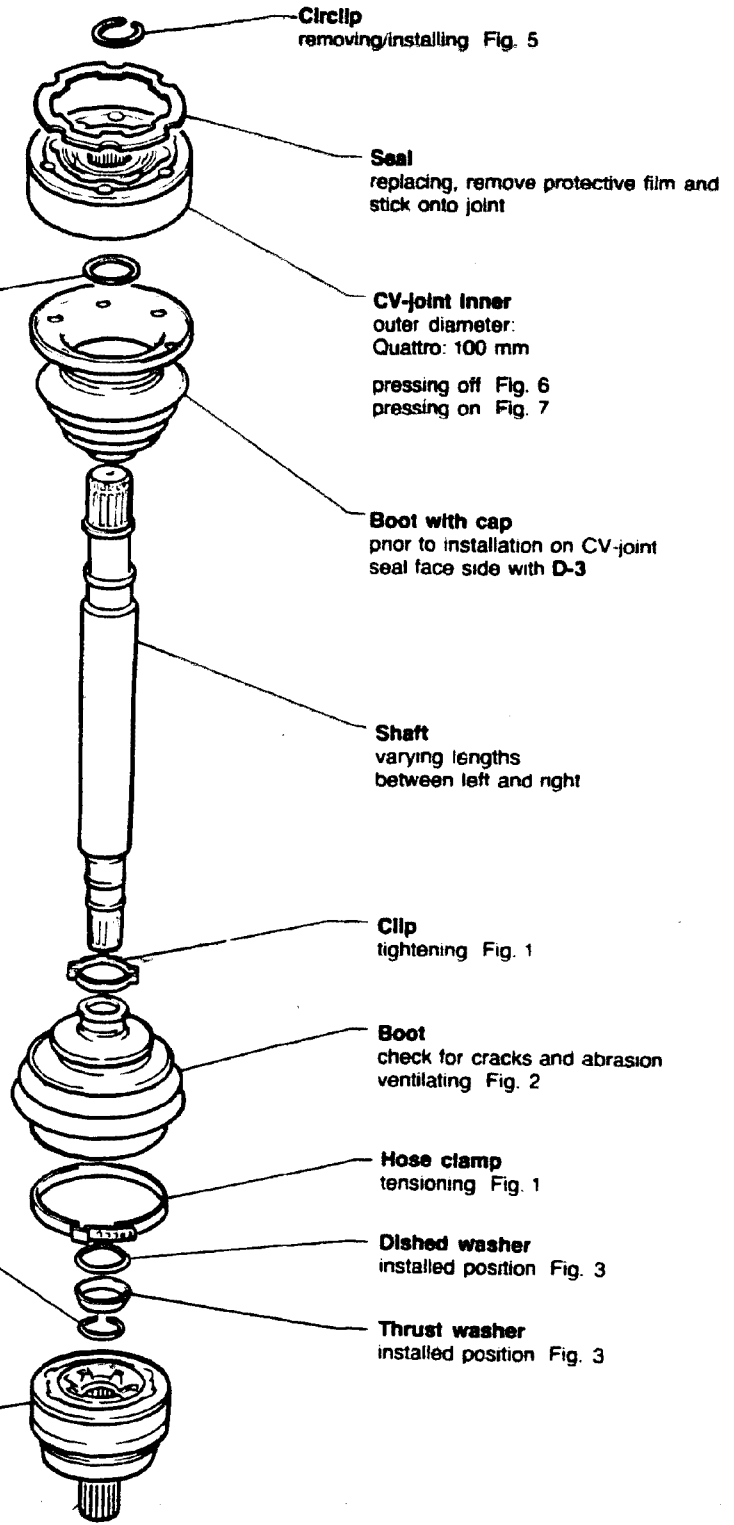
Note

Grease packing on **Quattro** vehicles: grease inner and outer CV-joint with 90g each of G-6 grease.

Dished washer

Note 2 types:

- 1 — with inner splines
 - 2 — without inner splines
- when replacing reinstall the same type installed position Fig. 8



Circlip
removing/installing Fig. 5

Seal
replacing, remove protective film and stick onto joint

CV-joint Inner
outer diameter:
Quattro: 100 mm
pressing off Fig. 6
pressing on Fig. 7

Boot with cap
prior to installation on CV-joint
seal face side with D-3

Shaft
varying lengths
between left and right

Clip
tightening Fig. 1

Boot
check for cracks and abrasion
ventilating Fig. 2

Hose clamp
tensioning Fig. 1

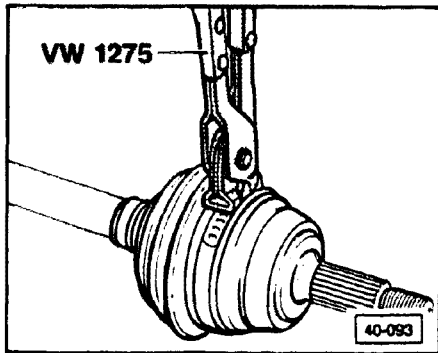
Dished washer
installed position Fig. 3

Thrust washer
installed position Fig. 3

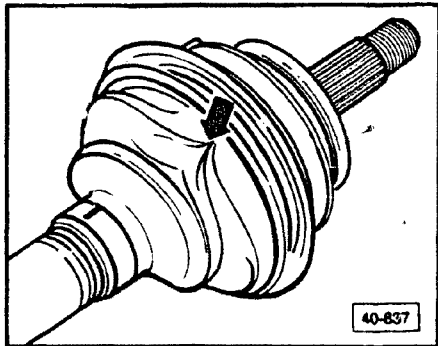
Circlip
installed position Fig. 3
install into ring
groove of shaft (not visible
with installed joint)

CV-joint. outer
replace complete only
installed position Fig. 4
installing: drive joint onto shaft
with plastic hammer until circlip
is engaged

40-767



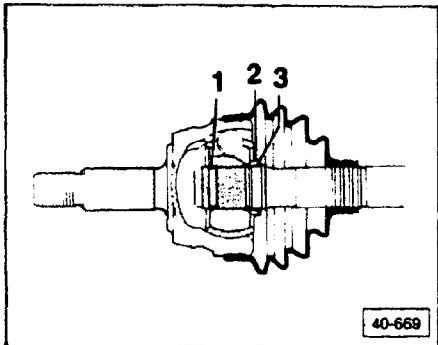
► Fig. 1 Clamp, tensioning



► Fig. 2 Boot venting

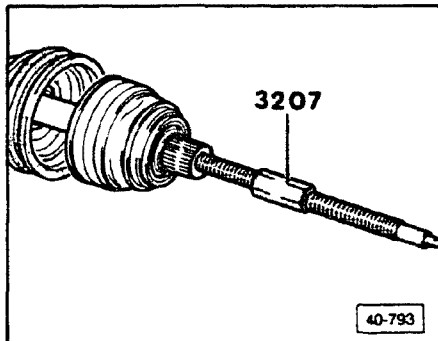
Note

Boot can be pressed in during installation causing an inward fold (arrow) during vehicle operation. After installing, pull the small diameter end of the boot open momentarily to allow the pressure to equalize. This venting of the boot will prevent an inward fold.



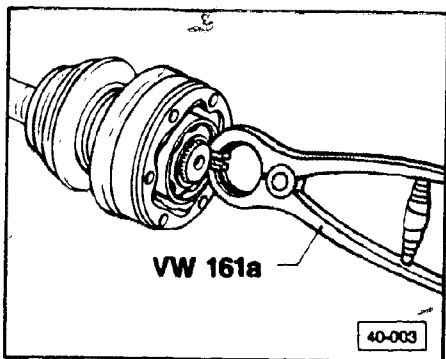
► Fig. 3 Dished washer, thrust washer
Installed position

- 1 — circlip
- 2 — thrust washer
- 3 — dished washer

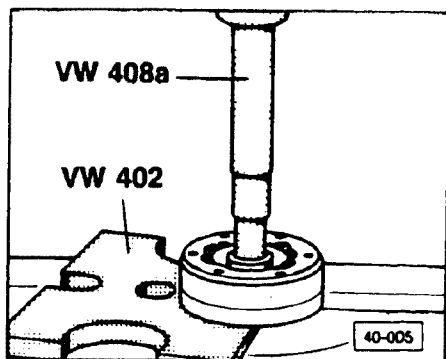


► Fig. 4 CV-joint (outer), removing

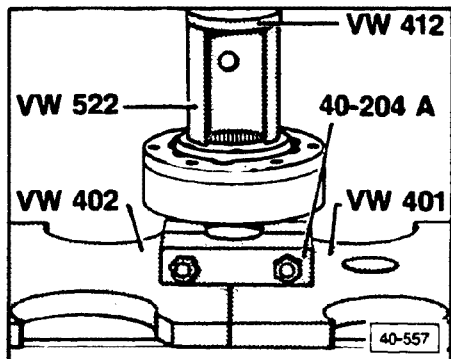
- clamp shaft in vise
- pull back boot
- thread in special tool until CV-joint pushes away from shaft



► Fig. 5 CV-joint (inner) circlip, removing

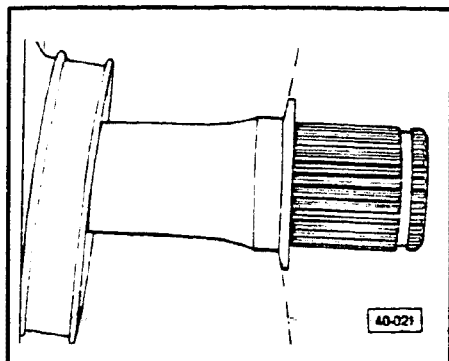


► Fig. 6 CV-joint (inner), removing



► Fig. 7 CV-joint circlip, installing

- press joint on to stop
- insert circlip



► Fig. 8 Dished washer, installing

- note position