Front wheel suspension

240, 260

Section	Groups
6	60, 61

Front wheel suspension

240, 260

VOLVO

Contents

TP 30 000/1
4500.3.79

Printed in USA

Specifications

Wheel alignment (unloaded car)

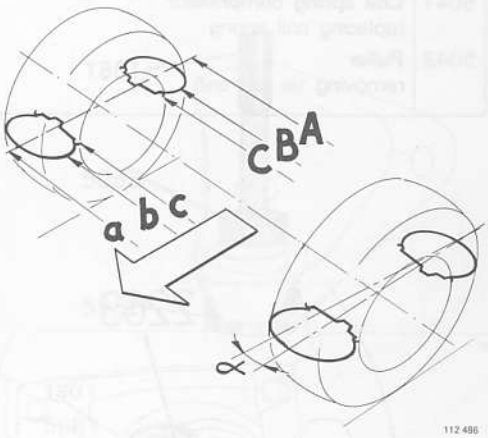
Caster: (All cars up to and including 1978 year models)	+2° to +3°
1979 year models with manual steering	+2° to +3°
1979 year models with power steering	+3° to +4°
Camber set as near 0° as possible	0 to +1°
King pin inclination at 0° camber	12°

Turning angles: At 20.0° turning of outer wheel, inner wheel should be turned 20.8°

Toe-in:

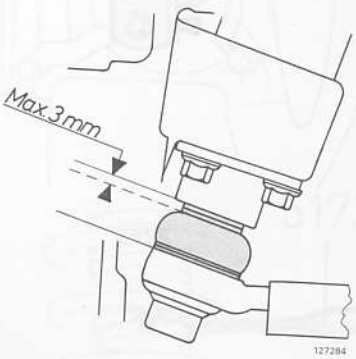
	Angle (2 α)	A-a (mm)	B-b (mm)	C-c (mm)
Manual steering	24'±8'	4.5±1.5	3.5±1	2.5±1
Power steering	16'±8'	3.0±1.5	2.0±1	1.5±1

All measurements are made with the car unloaded. The measurements are taken at hub height, as the angle measurement α, or the difference in mm between the front and rear edge of the wheels at points A, B or C (the tire's wear thread inside shoulder or rim corner).



Ball joints

Max. axial play with normally loaded front end: 1/8" (3 mm).



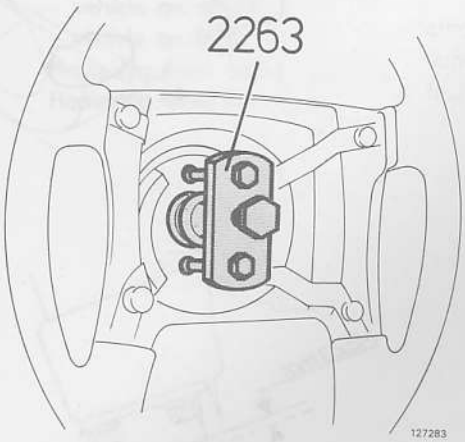
Tightening torques

	Nm	Ft. lbs.
Nut for control arm rear bushing	55±5	40±4
Bracket for control arm rear bushing	40±10	29±7
Front bolt for control arm bushing	75±20	54±14
Ball joint. to control arm	115±15	83±11
Ball joint to attachment or strut	60±10	43±7
Ball joint attachment to strut	23±5	17±4
Steering rod to steering arm	60±10	43±7
Nuts for upper journalling	20±5	14±4
Steering wheel nut	60±15	43±11
Wheel nuts	120±20	87±9

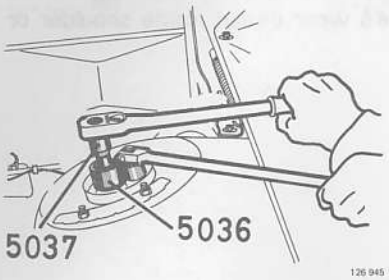
Special tools

1801	**Standard handle**
2263	**Puller** removing steering wheel
5036	**Socket** shock absorber shaft nut
5037	**Socket** to retain shock absorber shaft when removing and tightening nut
5038	**Adjustment tool** front end alignment
5039	**Spanner** shock absorber nut on strut (hydraulic shock absorber)
5040	**Coil spring hook-up tool** removing and installing coil spring
5041	**Coil spring compressor** replacing coil spring
5043	**Puller** removing tie rod end

5045	**Retaining hook** for control arm when replacing shock absorber
5081	**Adapter** pressing in control arm rear bushing
5082	**Adapter** pressing out/in control arm rear bushing
5083	**Adapter** pressing in control arm rear bushing
5084	**Adapter** pressing in control arm front bushing
5085	**Adapter** pressing out/in control arm front bushing
5091	**Adapter** pressing out control arm front bushing
5173	**Wrench** shock absorber nut on strut (gas-pressure shock absorber)



2263



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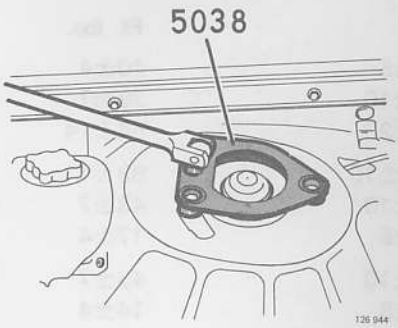

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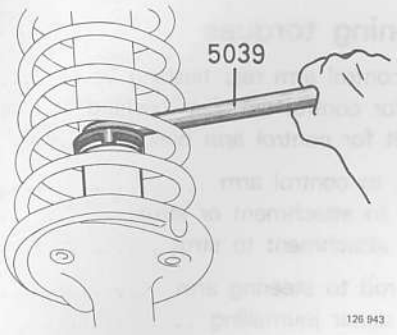

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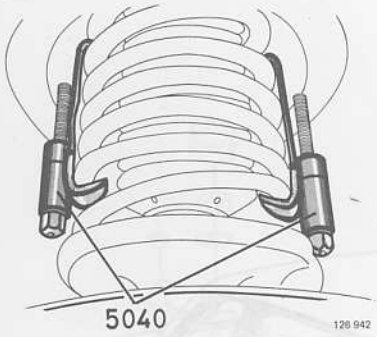

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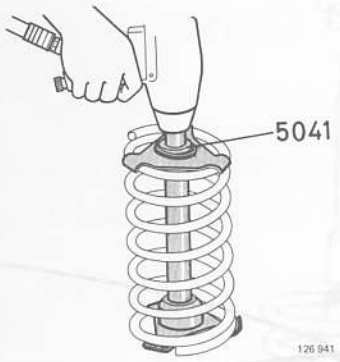

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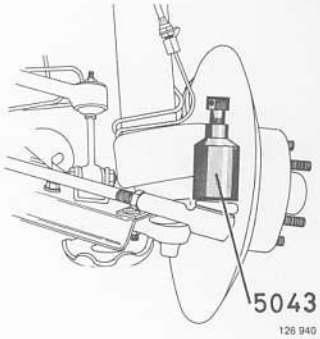

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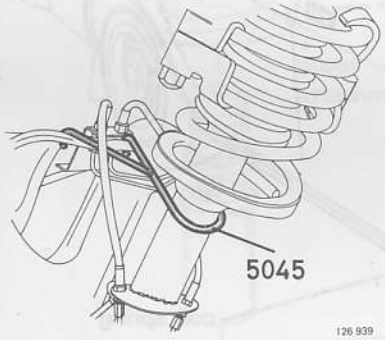

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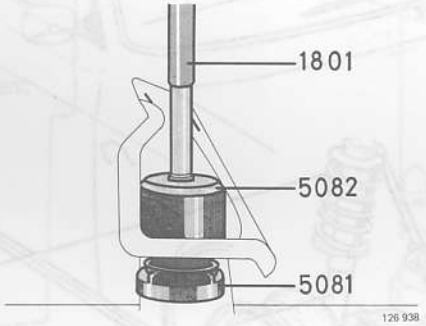

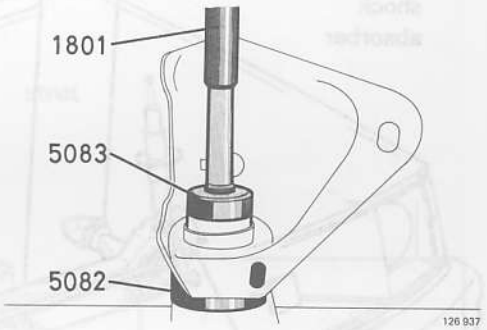

1801
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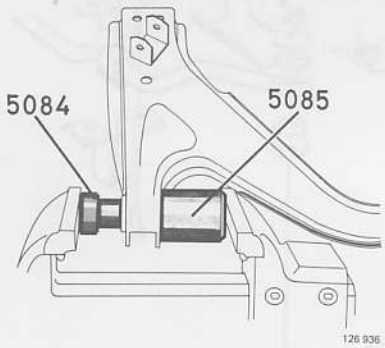

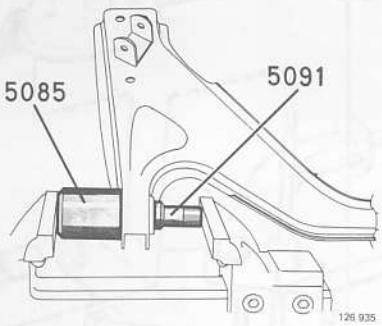

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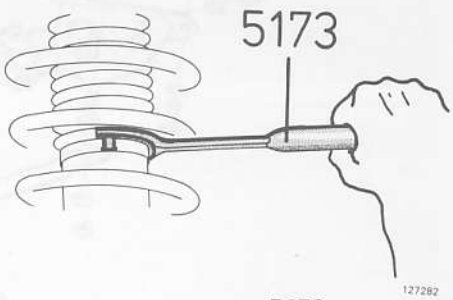
5091



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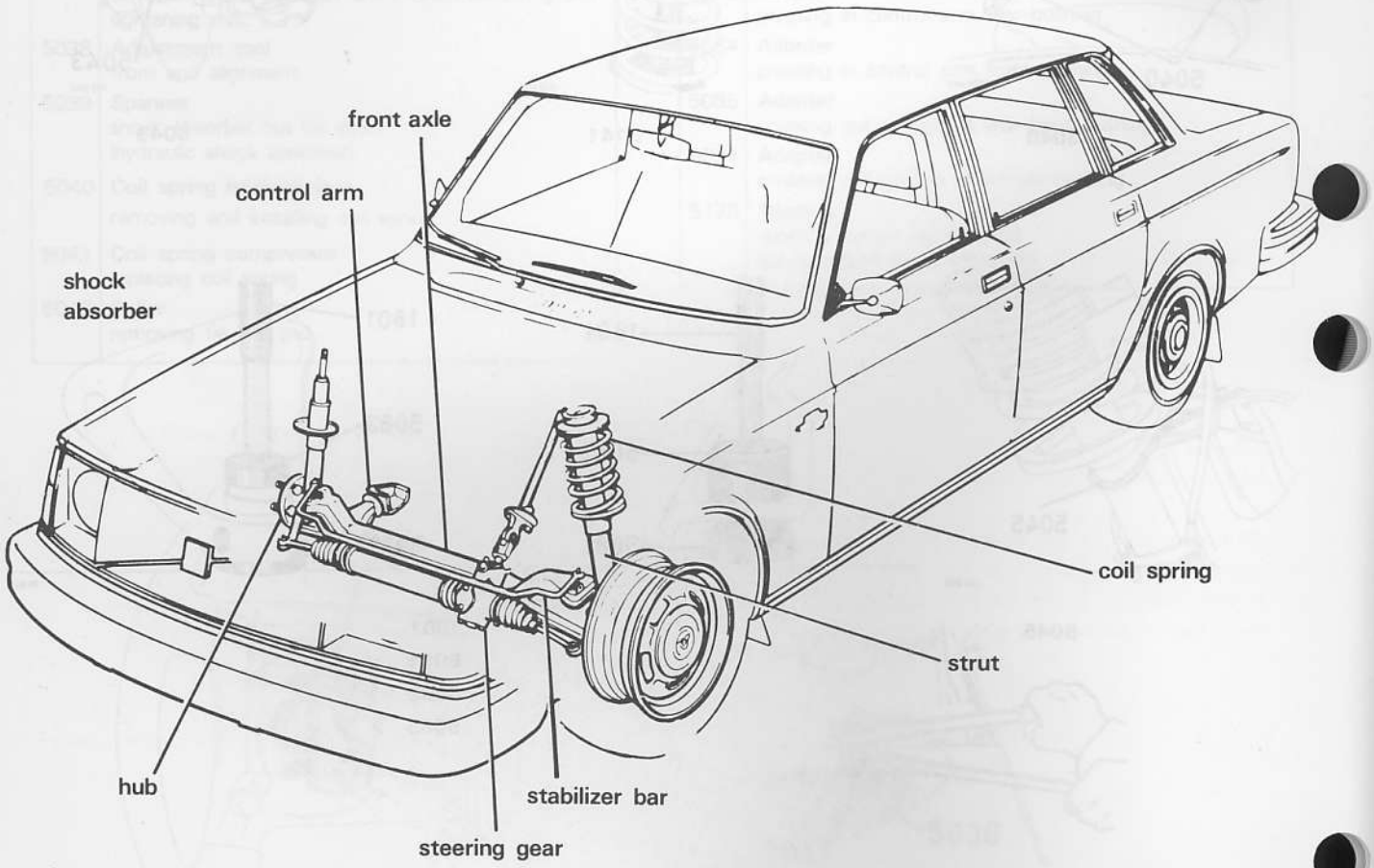
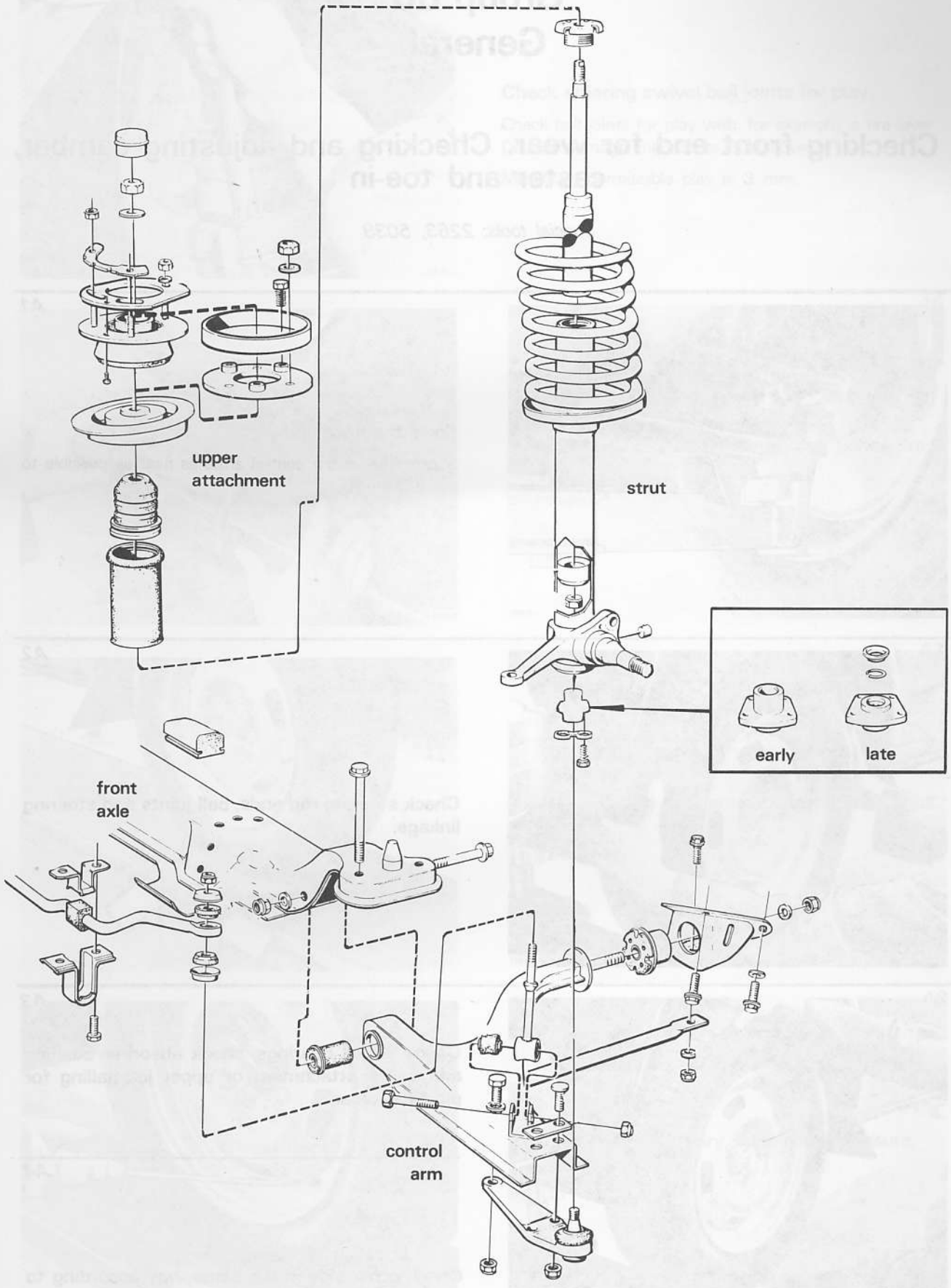

front axle
control arm
shock absorber
coil spring
strut
hub
stabilizer bar
steering gear

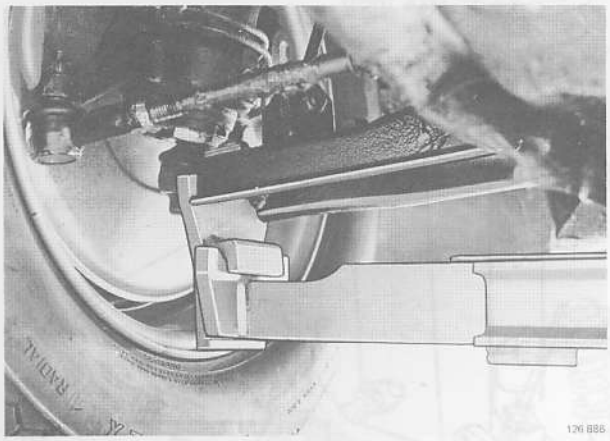

upper
attachment
strut
early
late
front
axle
control
arm

Group 60
General

Checking front end for wear. Checking and adjusting camber, caster and toe-in

Special tools: 2263, 5038

A1



Raise the front end.

Support under the control arms as near as possible to the ball studs.

A2

Check steering rod ends, ball joints and steering linkage.

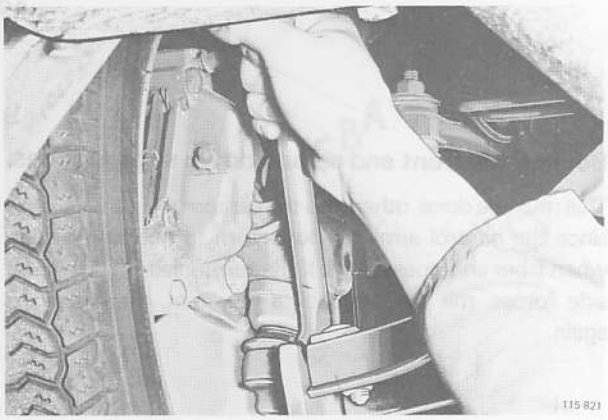
A3

Check wheel bearings, shock absorber bushing and upper attachment or upper journalling for play and wear.

A4

Check other side in the same way according to A2–A3.

A5

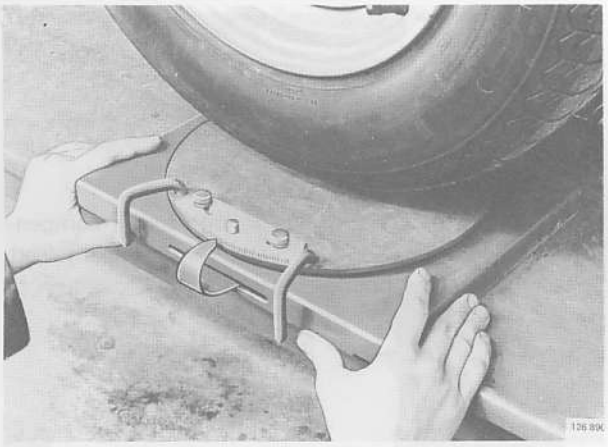


Check steering swivel ball joints for play.

Check ball joints for play with, for example, a tire lever. Do not damage the rubber dust cover.

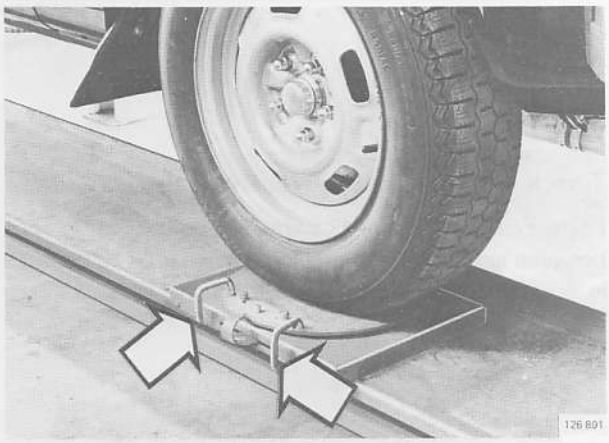
Maximum permissible play is **3 mm.**

A6



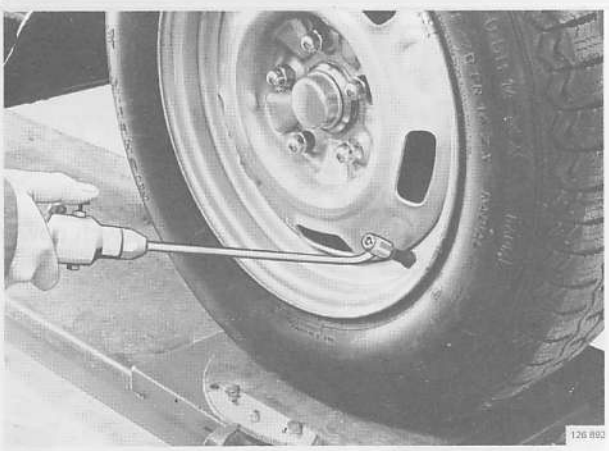
Place wheel alignment turntables under front wheels.

A7



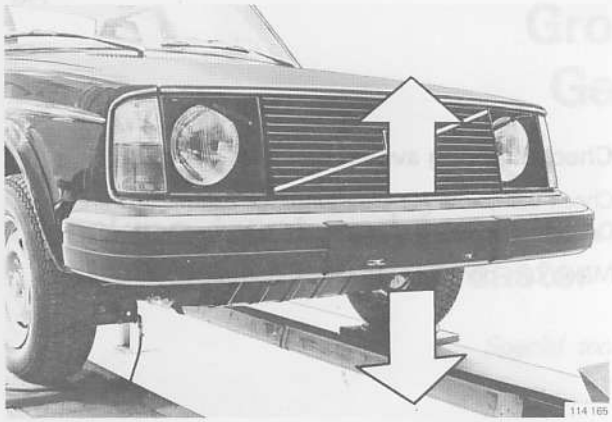
Lower front end and remove turntable catches.

A8



Check, and if necessary, adjust tire pressure.

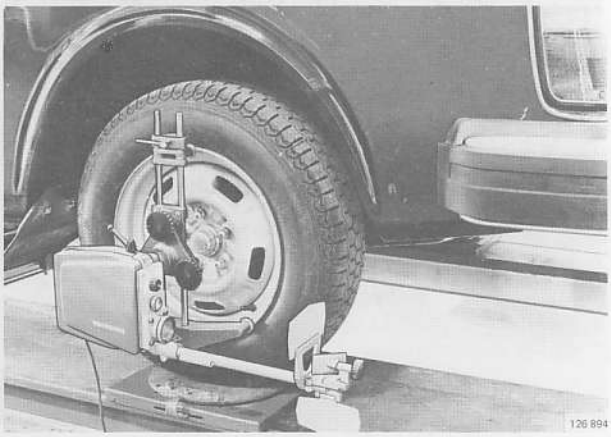
A9



Bounce the front end up and down several times.

This must be done, otherwise the camber will be excessive since the control arms do not return to normal position when front end goes down. If the turntables cannot stand side forces, roll the car back a few feet, then forward again.

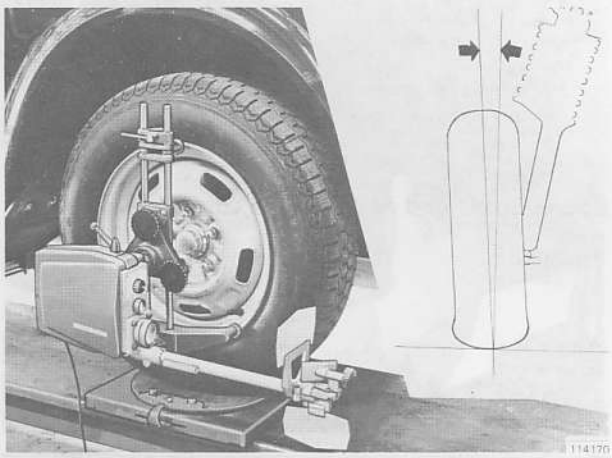
A10



Install projectors.

Follow the instructions for equipment used. If compensation for rim warp is made with front wheels raised, front end must be bounced several times to return to correct position.

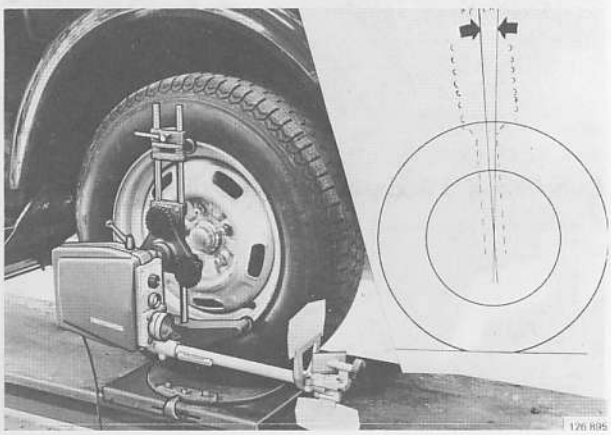
A11



Check camber on both front wheels.

Correct camber: **max. +1°**, not to exceed 1/2° difference between sides. Camber should be as near 0° as possible in order to avoid shoulder wear on the tires.

A12

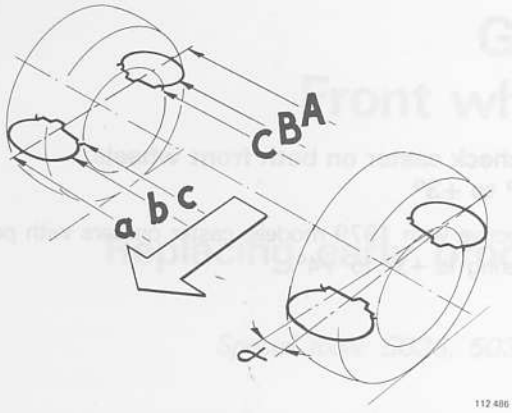


Check caster on both front wheels.

Correct caster: **+2° to +3°.**

Effective with 1979 models, caster on cars with power steering is +3° to +4°.

Caster cannot be adjusted. If caster angle is incorrect, front end components must be checked.



112 486

Toe-in

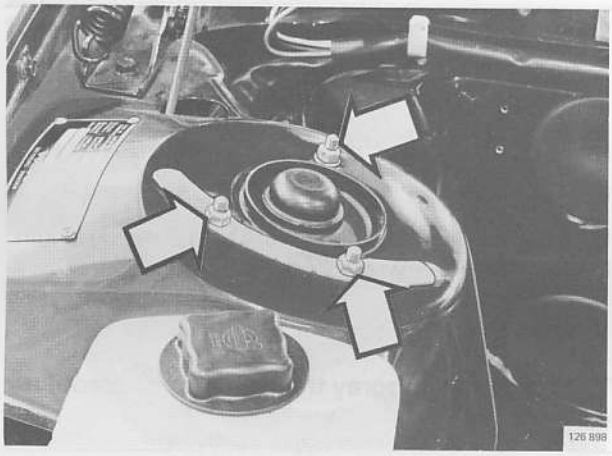
A13

The toe-in should be set as follows:

		Angle 2 α	A-a	B-b	C-c
240 series	manual steering	24'±8'	4.5±1.5 mm 3/6" (0.18±0.06")	3.5±1 mm (0.14±0.04")	2.5± mm (0.10±0.04")
240 260 series	power steering	16'±8'	3.0±1.5 mm 1/8" (0.12±0.06")	2.0±1 mm 0.08±0.04")	1.5±1 mm (0.06±0.04")

Vehicle should not be loaded. Measurements must be made at center (hub) height, α as in an angle, read on certain instruments. A, B and C refer to tire outer diameter, tire inner shoulder and rim, respectively.

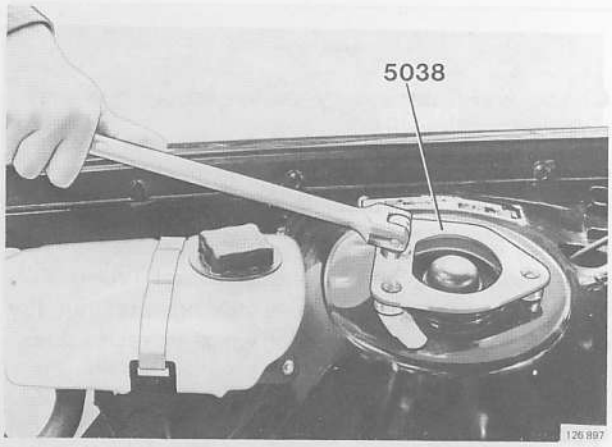
A14


126 898

To adjust, proceed as follows:

Remove nuts on strut upper attachment.

A15



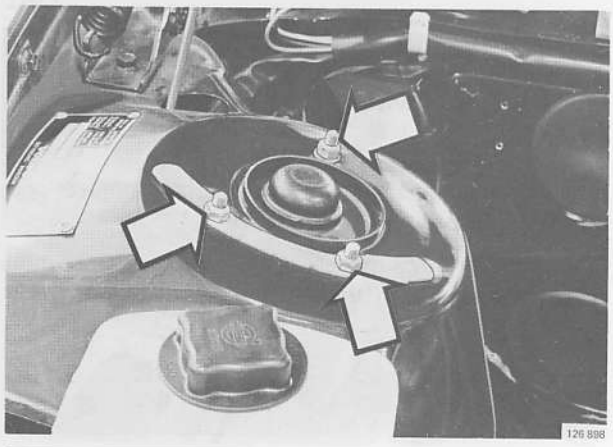
126 897

Adjust camber:

Use tool **5038**.

Correct camber: **max. +1°**. Max. 0.5° difference between right and left wheels. Camber should be as near 0° as possible to avoid shoulder wear on tires.

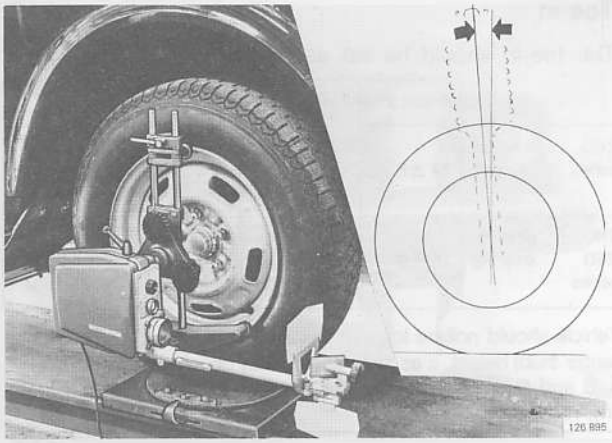
A16


126 898

Install and tighten nuts for upper attachments.

Torque: **20±5 Nm** = 14±4 ft.lbs.

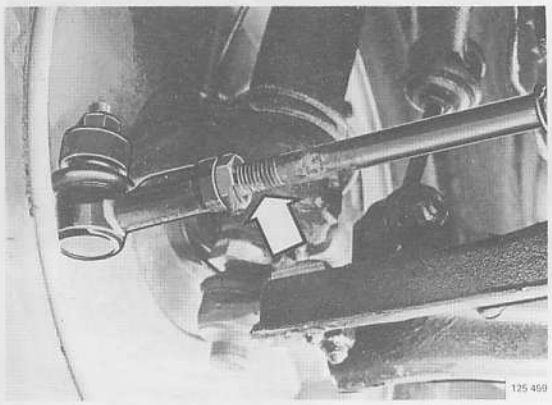
A17



Recheck caster on both front wheels.
+2° to +3°

Effective with 1979 models, caster on cars with power steering is +3° to +4°.

A18



Adjusting toe-in:

Loosen lock nuts and adjust toe-in with steering rods.

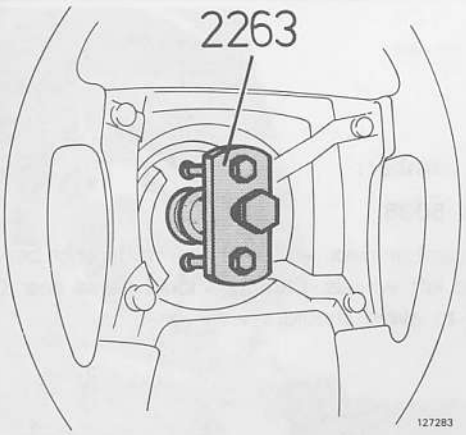
Correct toe-in: see A13.

Steering rods must not differ more than **2 mm** in length. Measure between wrench grip and lock nut.

A19

Tighten nuts and spray threads with rustproofing oil.

A20

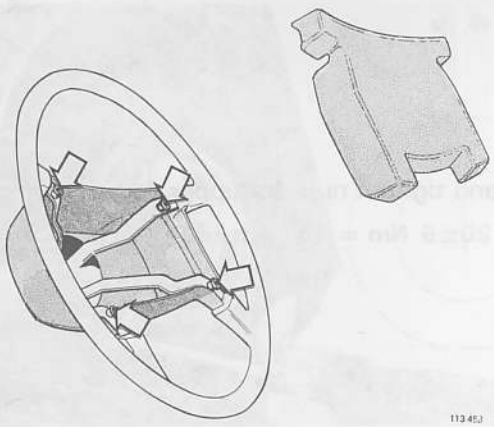


Check, and if necessary, adjust steering wheel position.

Carefully pry impact pad loose with screwdriver. Remove steering wheel with puller **2263**.

No puller is needed to remove steering wheel on 1979 year models. However, a special socket (Volvo P/N 1158146) is required to remove steering wheel nut. Pry cover washer in center of steering wheel with screwdriver.

A21



Install steering wheel.

Torque: **60±15 Nm** = 43±11 ft.lbs.

Coat insulation pins with vaseline and press impact pad securely into position.

Effective with 1979 models, a thin wall socket, 27 mm, is required to tighten the steering wheel.

Group 61
Front wheel suspension

Replacing early prod. steering swivel ball joints

Special tools: 5036, 5037, 5039, 5040, 5043, 5045, 5173

B1

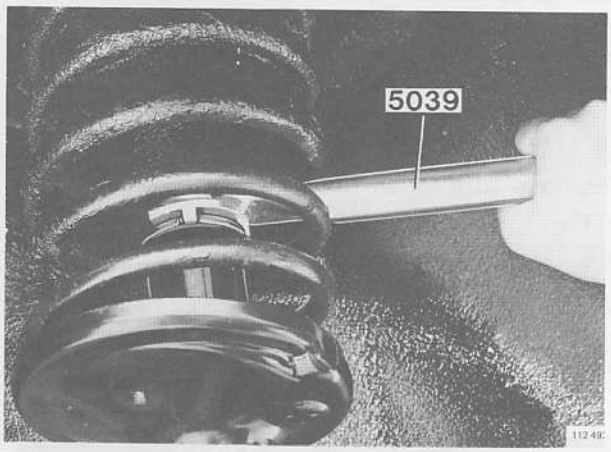
Support front end on stands.

Place stands under front jack attachments.

Mark front wheels to avoid rebalancing.

Remove front wheels.

B2



Loosen shock absorber retaining nut a couple of turns.

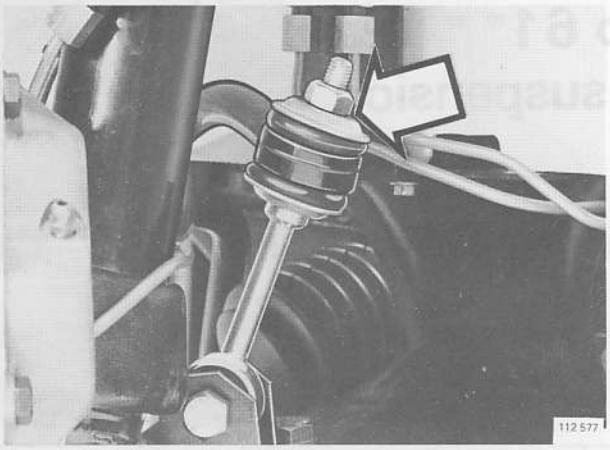
Use tool **5039** for standard (hydraulic) shock absorber and **5173** for gas-pressure shock absorber.

B3

Place jack under control arm, disconnect steering rod from steering arm.

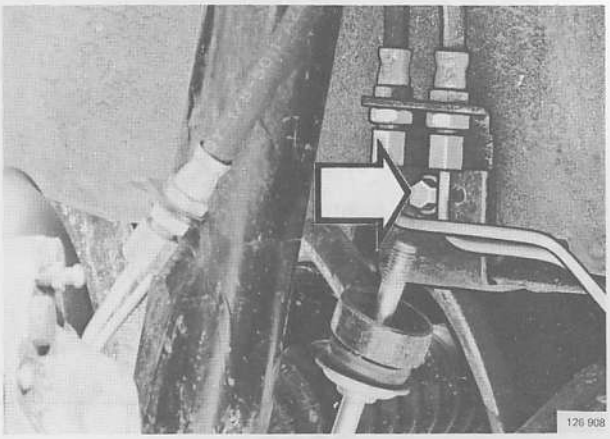
Remove nut and detach rod with **5043**.

B4



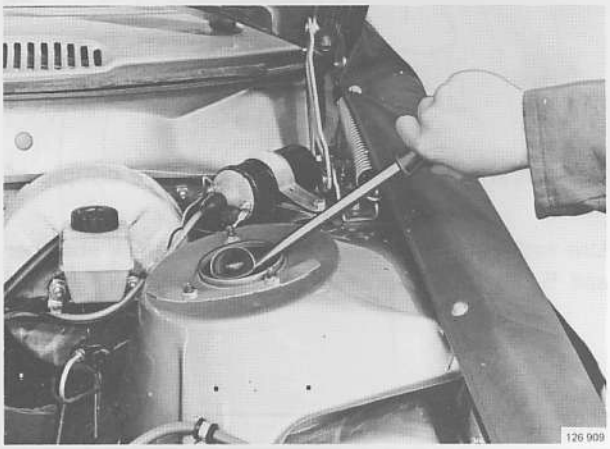
Disconnect stabilizer bar from stabilizer link upper attachment.

B5



Remove brake pipe bracket bolt.

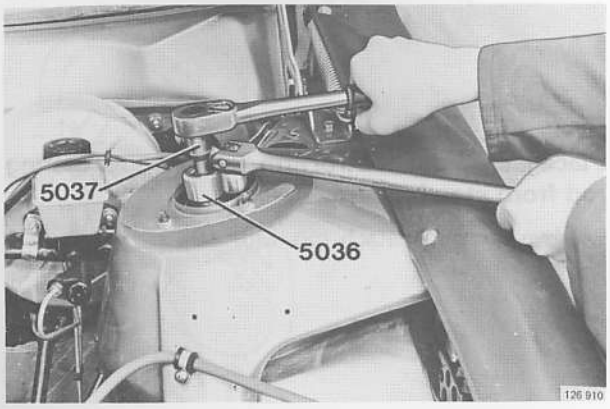
B6



Remove protective cover over shock absorber nut.

Pry loose with screwdriver.

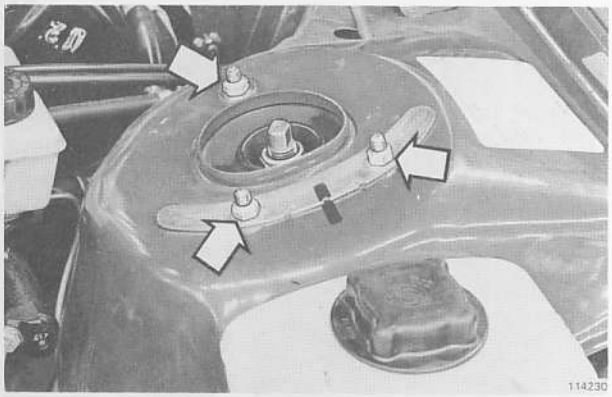
B7



Loosen center nut.

Loosen nut several turns with **5036**. Hold shock absorber plunger rod with **5037**.

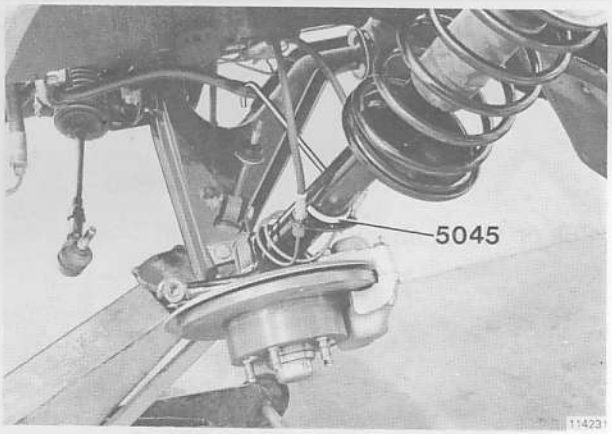
B8



Line-mark upper journal position and remove nuts.

Line-mark over nut plate and wheel housing plate as illustrated.

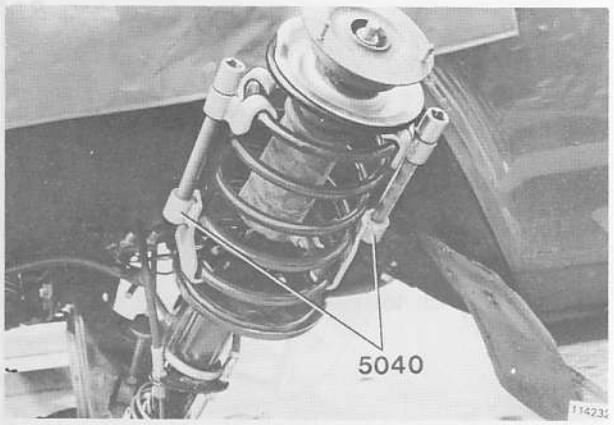
B9



Lower jack and guide out spring assembly.

Hook spring assembly to shock absorber with retaining hook **5045**.

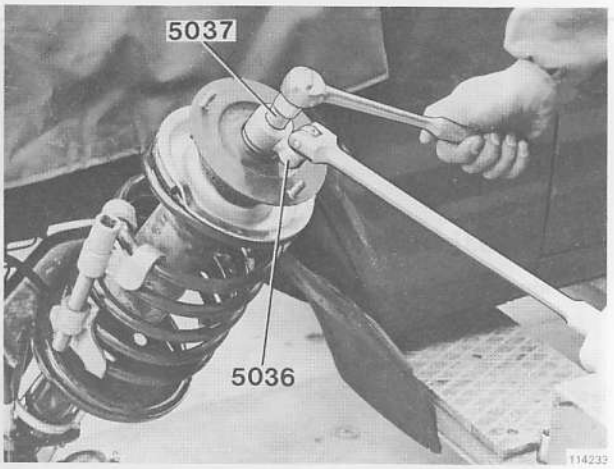
B10



Use tool 5040 to compress spring.

Place the two hook-up tools opposite each other and with three spring coils free between the claws. Compress alternately.

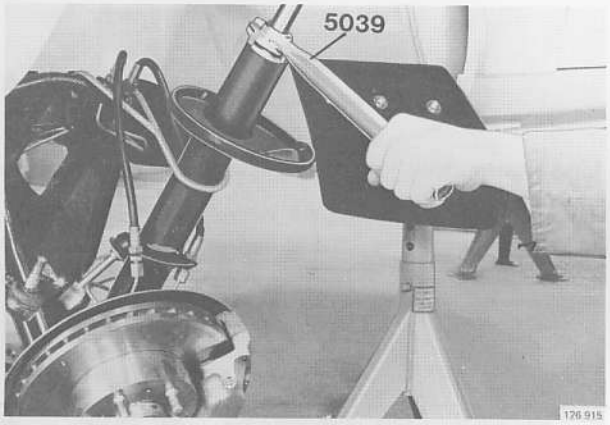
B11



Remove center nut, lift off upper journal.

Use tool **5036** to remove nut. Hold shock absorber with **5037**.

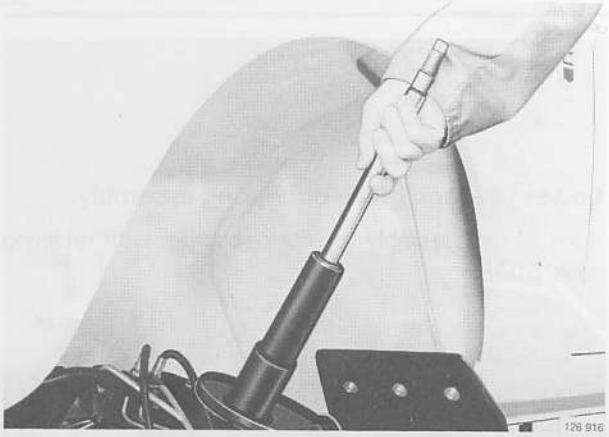
B12



Remove shock absorber retaining nut.

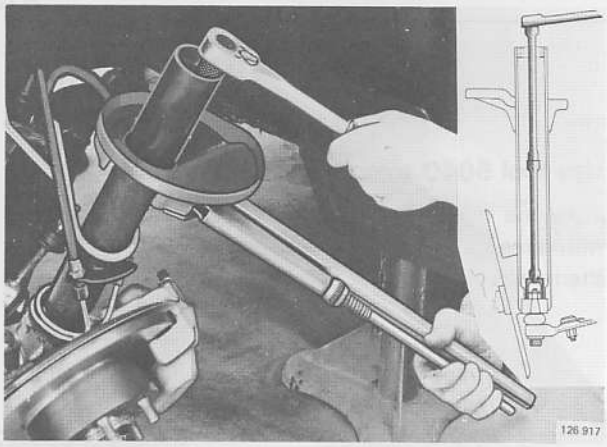
Use tool **5039** for standard (hydraulic) shock absorber and **5173** for gas-pressure shock absorber.

B13



Pull up shock absorber.

B14

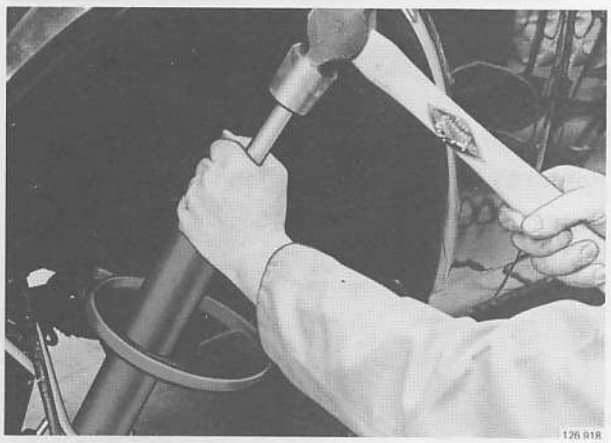


Loosen ball joint retaining nut.

Loosen a few turns until ball joint bracket comes loose. Use **19 mm** socket.

Use pipe wrench to hold on the weld.

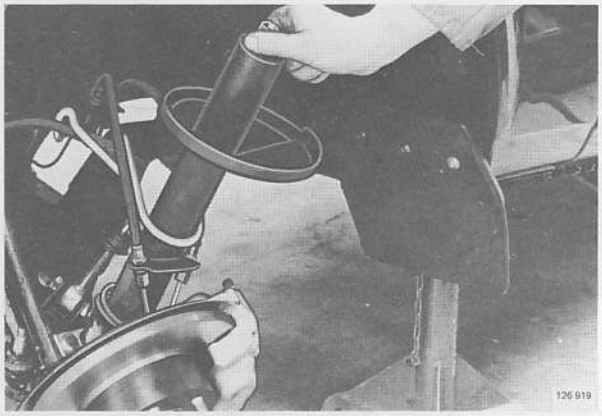
B15



Loosen ball joint conical part from strut assembly.

Use long brass drift and hammer.

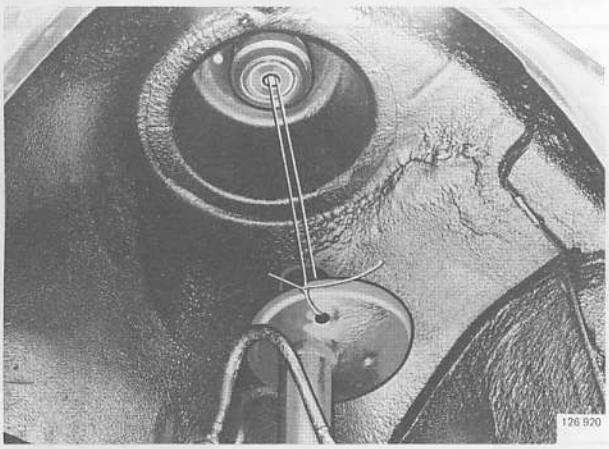
B16



Remove nut.

Coat inside of socket with vaseline or similar lubricant so nut may be lifted when loose from thread.

B17

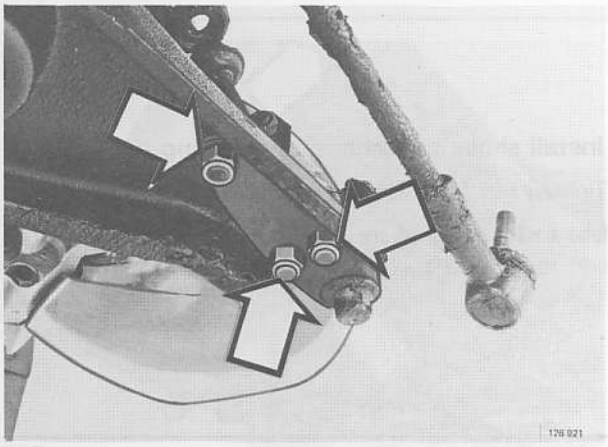


Hang up strut assembly.

Use steel wire to hang strut assembly to upper attachment. Remove hook. Disconnect ball joint from strut assembly.

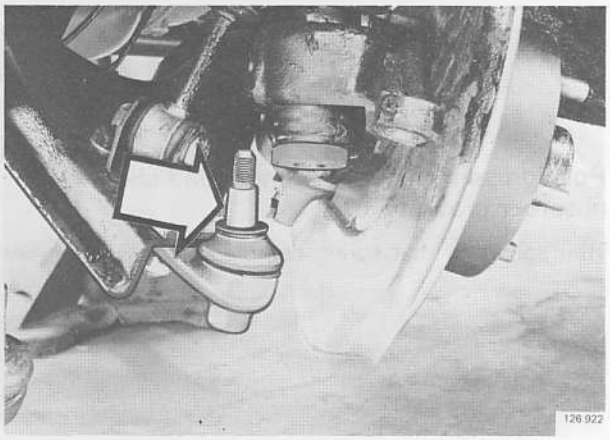
Do not stretch or damage brake hoses.

B18



Disconnect ball joint from control arm.

B19

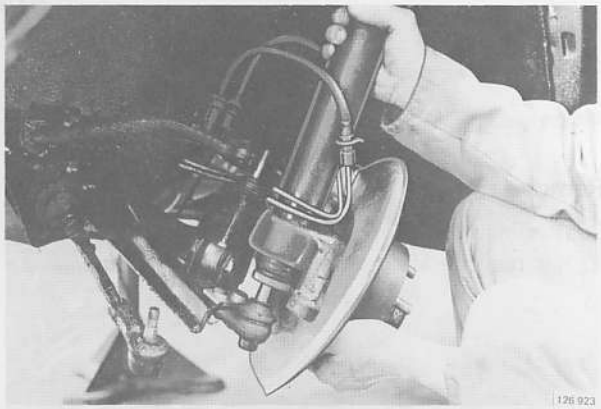


Attach new ball joint to control arm.

Torque: **115±15 Nm** = 83±11 ft.lbs.

Clear grease from ball joint. If this is neglected, stud can be tightened too far into cone so that rubber bellow sticks to strut.

B20



Lift strut assembly onto ball joint.

Remove wire and hook up retaining hook **5045**.

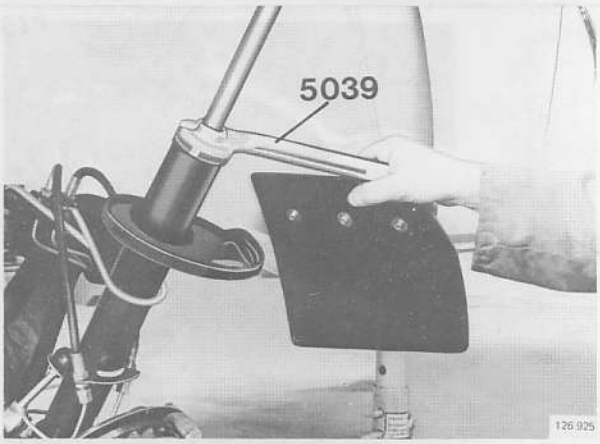
B21

Install ball joint nut.

Torque: **60±10 Nm** = 43±7 ft.lbs.

Hold with pipe pliers around the weld.

B22

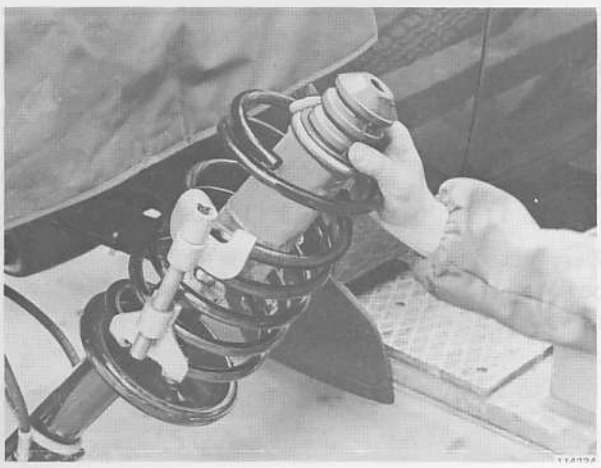


Install shock absorber and retaining nut.

Tighten nut as much as possible without turning strut.

Use tool **5039** for standard (hydraulic) shock absorber and tool **5173** for gas-pressure shock absorber.

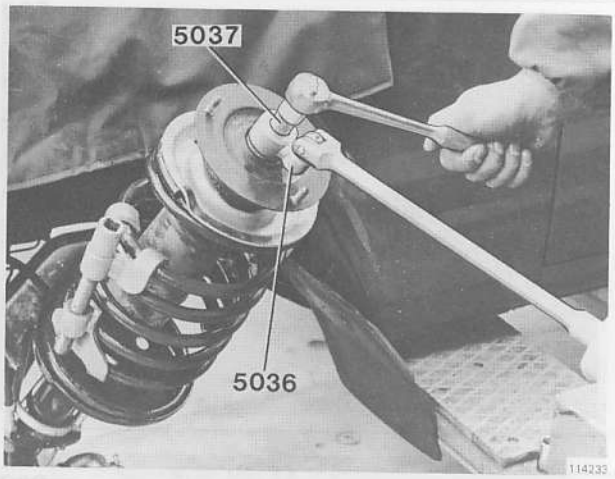
B23



Position spring, rubber bumper and shock absorber protection.

Turn spring so that spring compressor claws face up.

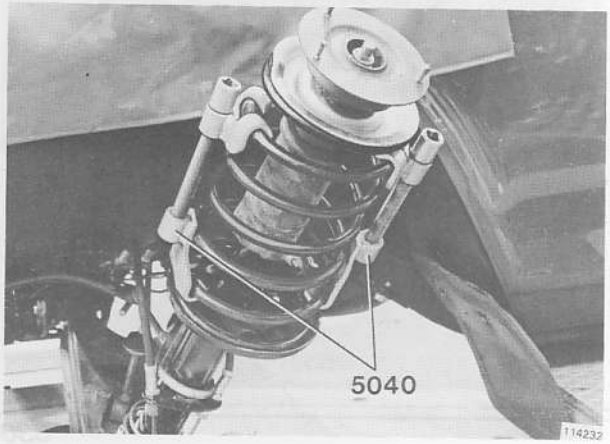
B24



Install spring seat, upper journal, washer and nut.

Tighten nut with **5036** and hold with **5037**.

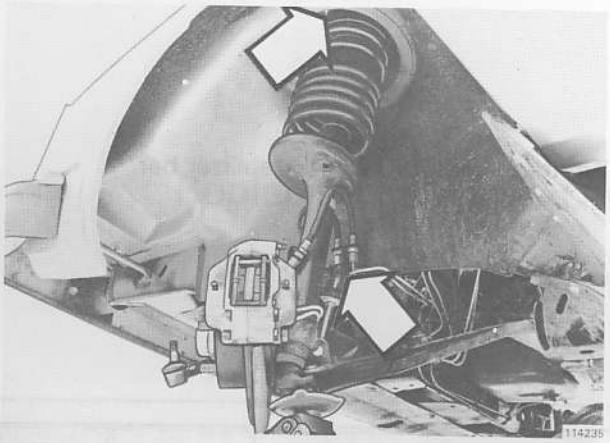
B25



Remove spring compressor.

Loosen spring compressor bolts alternately. Make sure spring ends seat correctly in upper and lower seats.

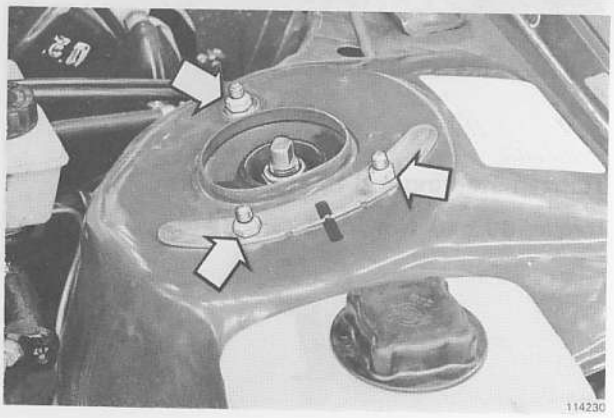
B26



Guide strut assembly into upper attachment in wheel housing.

Remove retaining hook and raise jack. Make sure stabilizer link is guided into position.

B27

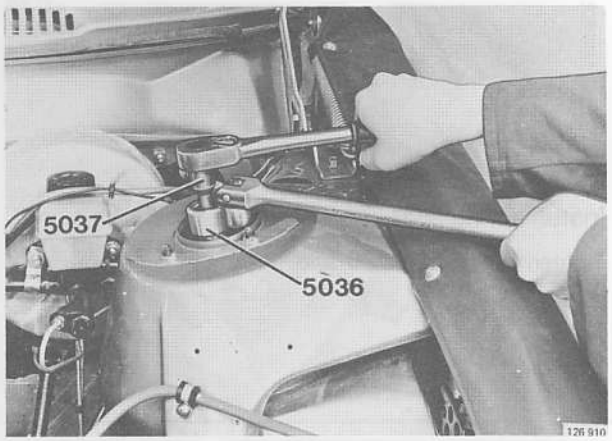


Turn journal to correct position and tighten nuts.

Position journal according to line-up marks.

Torque: **20±5 Nm** = 14±4 ft.lbs.

B28

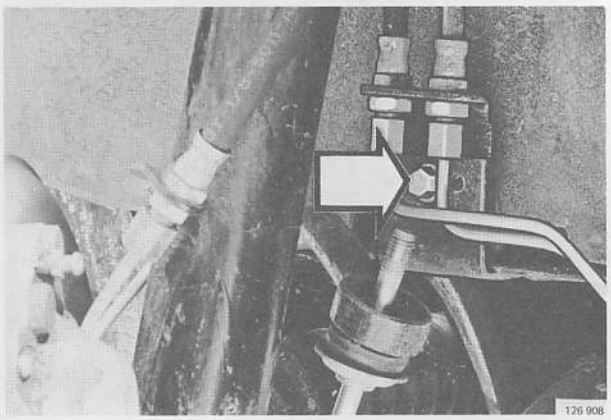


Tighten shock absorber retaining nut.

Tighten nut with **5036** and hold with **5037**.

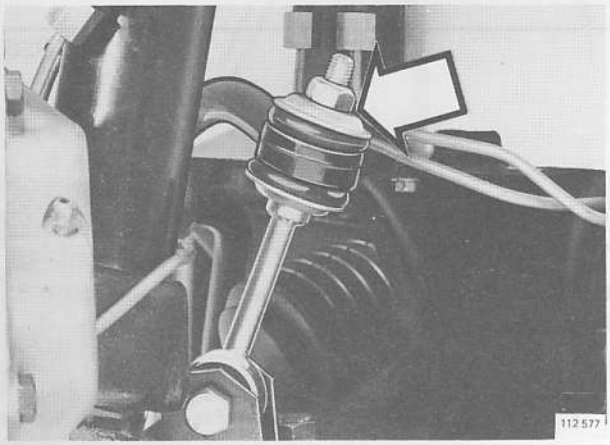
Press protective cover into position.

B29



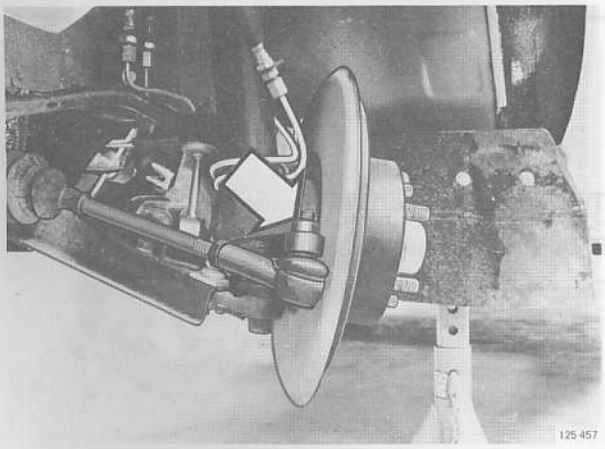
Tighten brake pipe bracket bolt.

B30



Tighten stabilizer link to stabilizer bar.

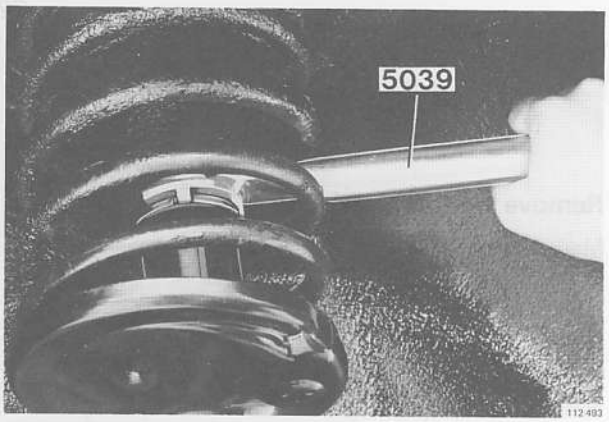
B31



Tighten steering rod to steering arm.

Torque: **60±10 Nm** = 43±7 ft.lbs.

B32



Tighten shock absorber nut in strut assembly.

Use tool **5039** for standard (hydraulic) shock absorber and tool **5173** for gas-pressure shock absorber.

B33

Install front wheel.

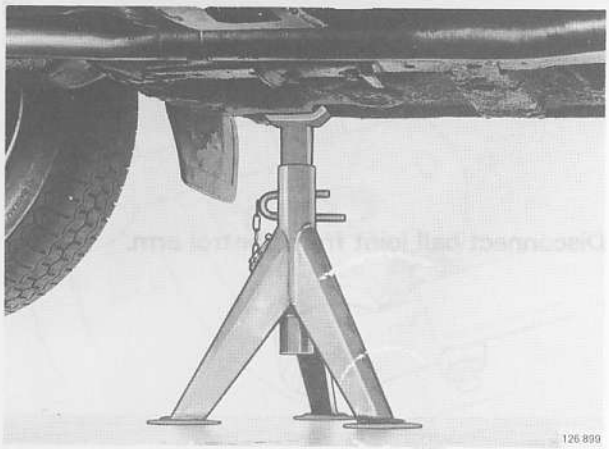
Use the marks made previously.

Torque: **120±20 Nm** = 87±9 ft.lbs.

Replacing late prod. steering swivel ball joint

Special tools: 5039, 5173

C1



Support front end on stands.

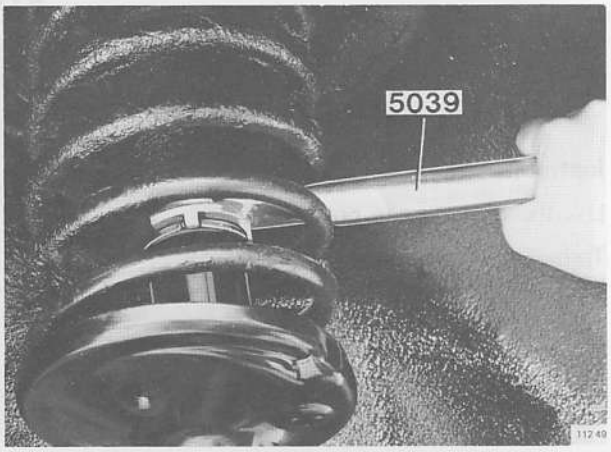
Place stands under front jack attachments.

C2

Remove front wheels.

Mark location to avoid re-balancing.

C3

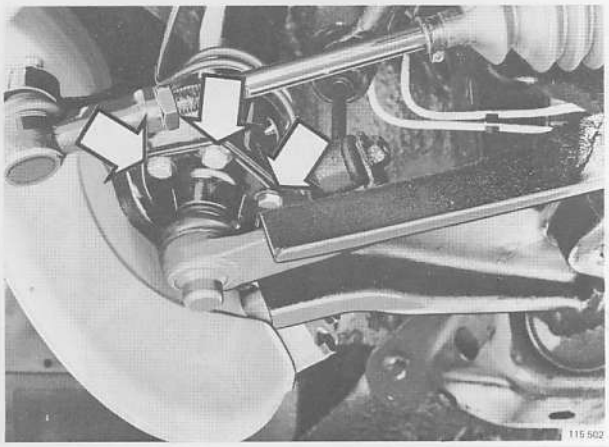


Loosen shock absorber retaining nut a couple of turns.

Use tool **5039** for standard (hydraulic) shock absorber and **5173** for gas-pressure shock absorber.

On vehicles from 1978 models it is not necessary to loosen the shock absorber retaining nut. The shock absorber does not rest against ball joint attachment.

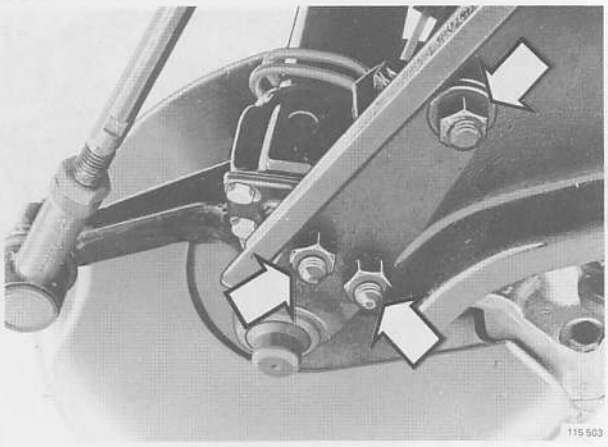
C4



Remove four retaining bolts for ball joint attachment.

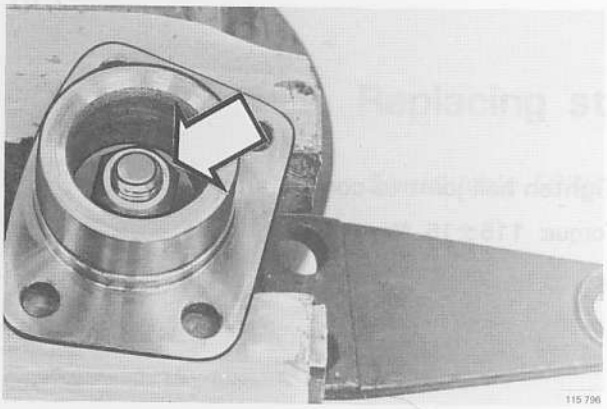
If bolts are secured with lock washers, first pry these loose with a screwdriver.

C5



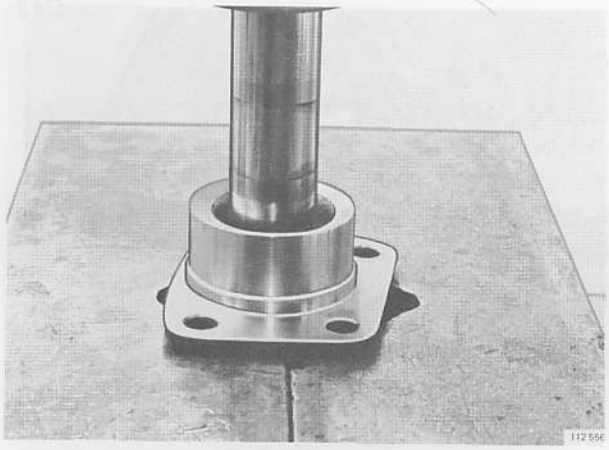
Disconnect ball joint from control arm.

C6



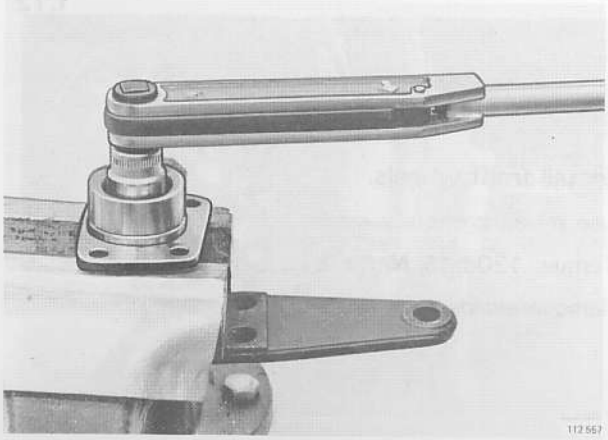
Remove ball joint retaining nut.

C7



Press ball joint out of attachment.

C8



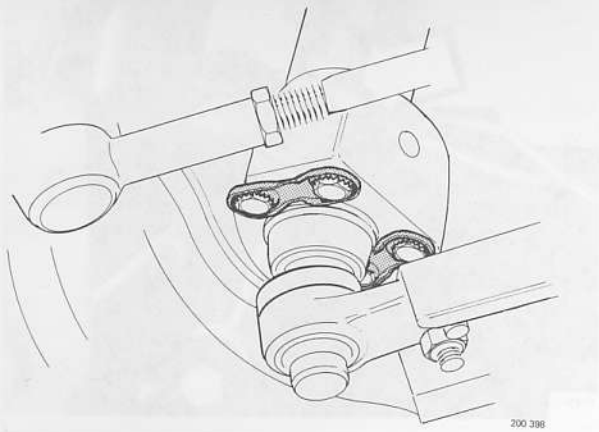
Attach the new ball joint.

Torque: **60±10 Nm** = 43±7 ft.lbs.

Remove grease from ball joint stud. Otherwise it can be tightened too far into cone so that rubber bellow sticks to attachment.

Effective from 1979 models with power steering, ball joints are different for left and right sides. Compared to previous years, ball joint is 10 mm forward in control rod attachment. It is therefore most important that these ball joints are installed on correct side.

C9

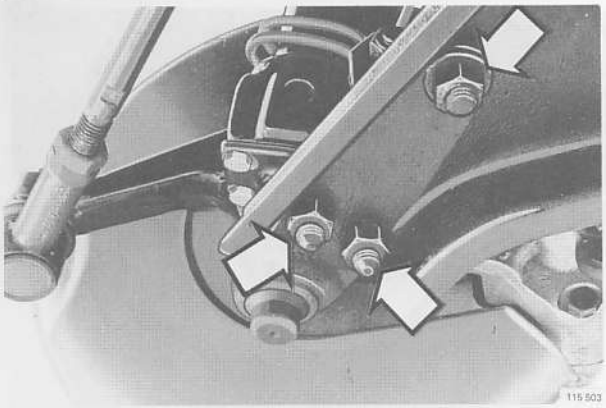


Attach ball joint to spring assembly.

Use new lock bolts. On vehicles equipped with lock washers (see step C4), new lock washers must be used. P/N 1229417.

Torque: **23±5 Nm** = 17±4 ft.lbs.

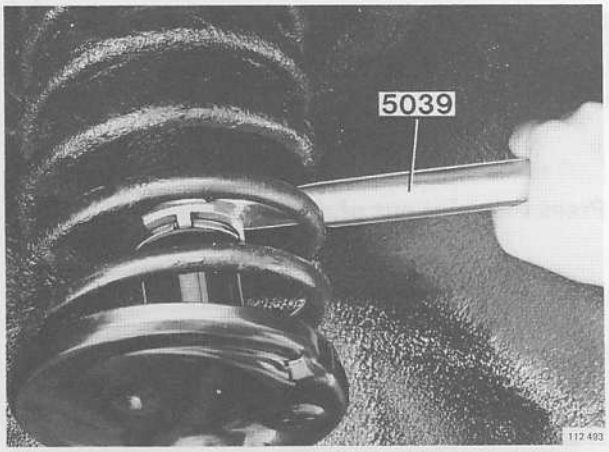
C10



Tighten ball joint to control arm.

Torque: **115±15 Nm** = 83±11 ft.lbs.

C11



Tighten shock absorber retaining nut if previously loosened.

See Step C3.

C12

Install front wheels.

Use marks previously made.

Torque: **120±15 Nm** = 87±9 ft.lbs.

Remove stands.

Replacing strut upper journal

Special tools: 5036, 5037, 5040, 5043, 5045

D1

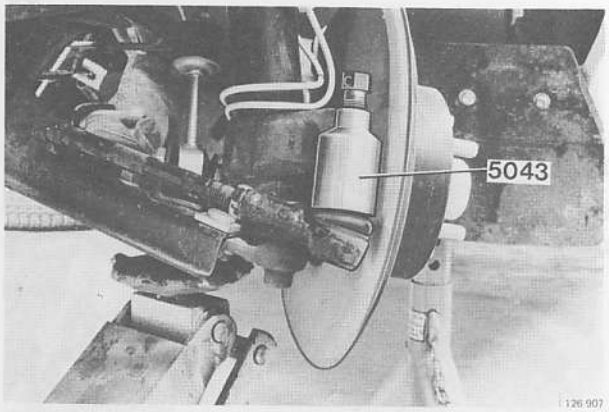
Support front end on stands.

Place stands under front jack attachments.

Mark front wheels to avoid rebalancing.

Remove front wheels.

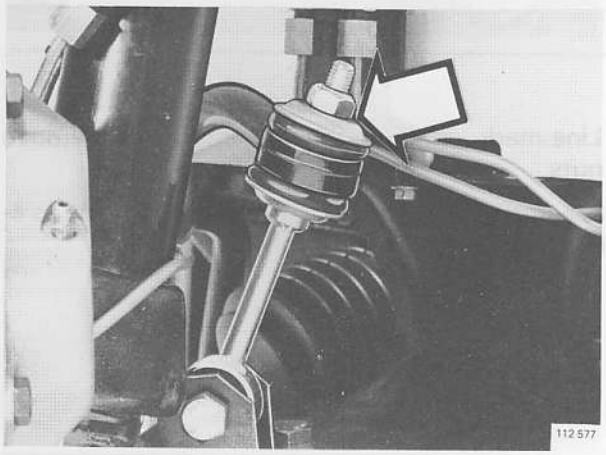
D2



Place jack under control arm, disconnect steering rod from steering arm.

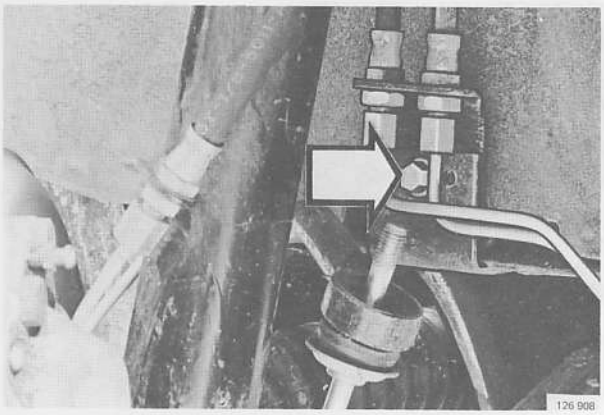
Remove nut and detach rod with **5043**.

D3



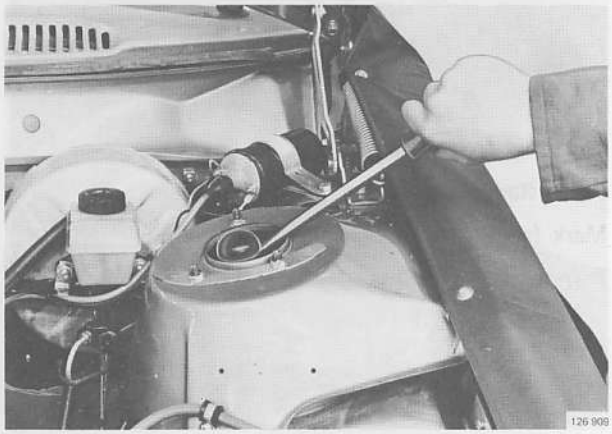
Disconnect stabilizer bar from stabilizer link upper attachment.

D4



Remove brake pipe bracket bolt.

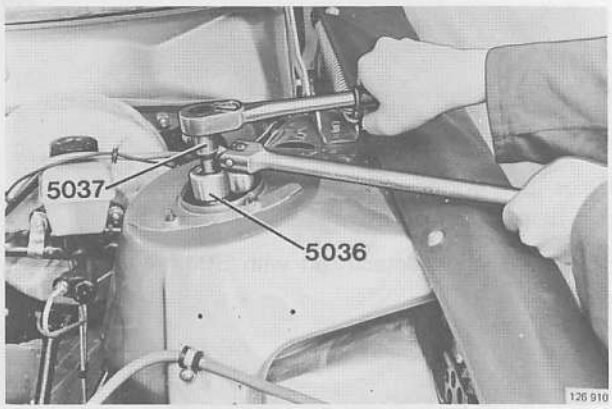
D5



Remove protective cover over shock absorber nut.

Pry loose with screwdriver.

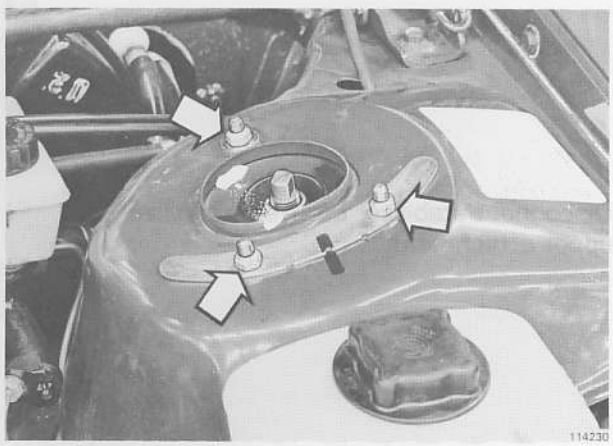
D6



Loosen center nut.

Loosen nut several turns with **5036**. Hold shock absorber plunger rod with **5037**.

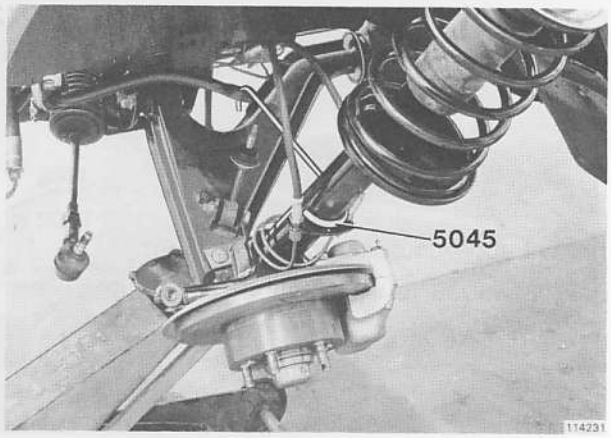
D7



Line-mark upper journal position and remove nuts.

Line-mark over nut plate and wheel housing plate as illustrated.

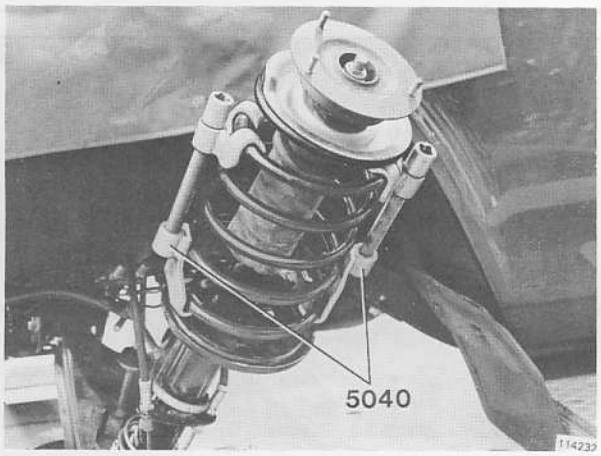
D8



Lower jack and guide out spring assembly.

Hook spring assembly to shock absorber with retaining hook **5045**.

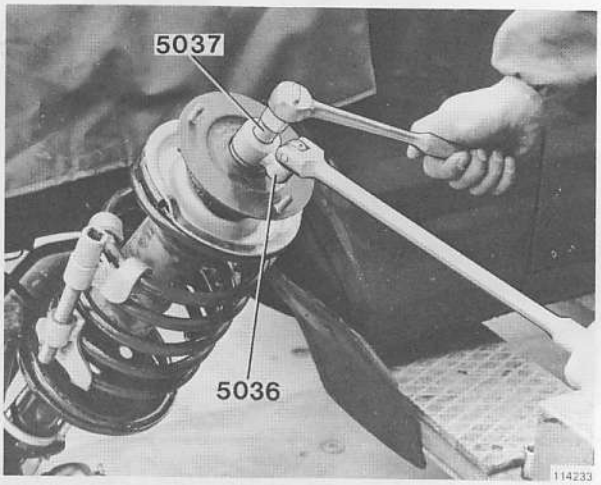
D9



Use tool 5040 to compress spring.

Place the two hook-up tools opposite each other and with three spring coils free between the claws. Compress alternately.

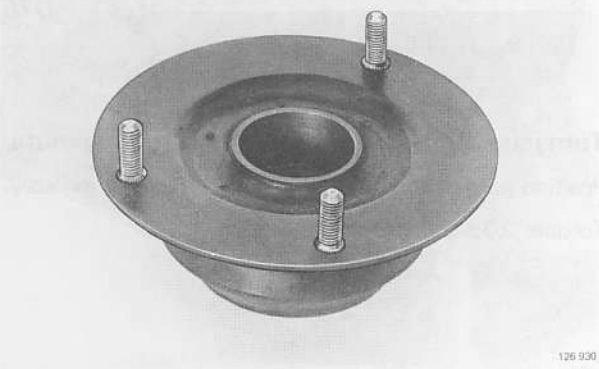
D10



Remove center nut, lift off upper journal.

Use tool **5036** to remove nut. Hold shock absorber with **5037**.

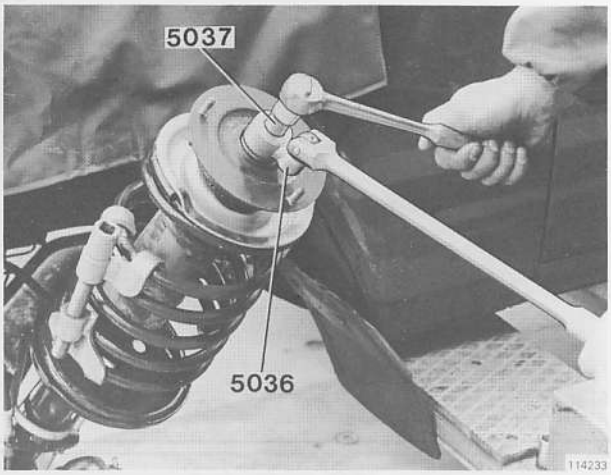
D11



Replace journal assembly.

For vehicles with reinforcing rod (GT etc), one bolt is longer than the others.

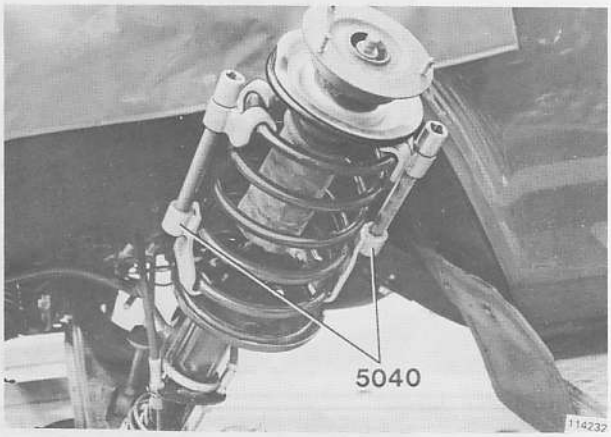
D12



Install upper journal, washer and nut.

Use tool **5036** to tighten nut. Hold with **5037**.

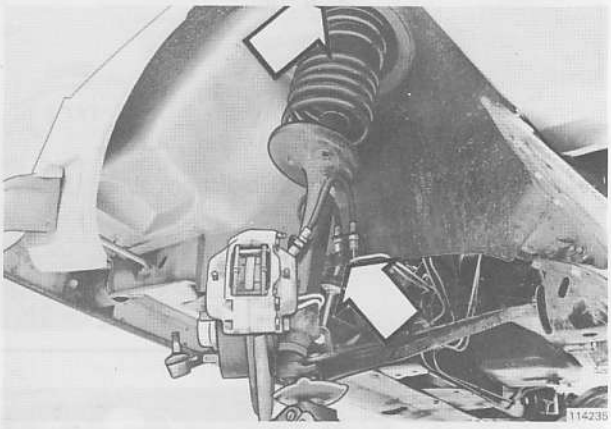
D13



Remove spring hook-up tool.

Loosen alternately. Make sure spring ends seat correctly in upper and lower seats.

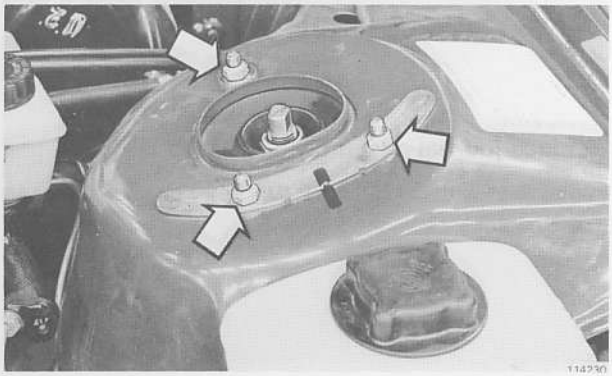
D14



Guide spring assembly into wheel housing.

Remove retaining hook and raise jack. Guide stabilizer link into position.

D15

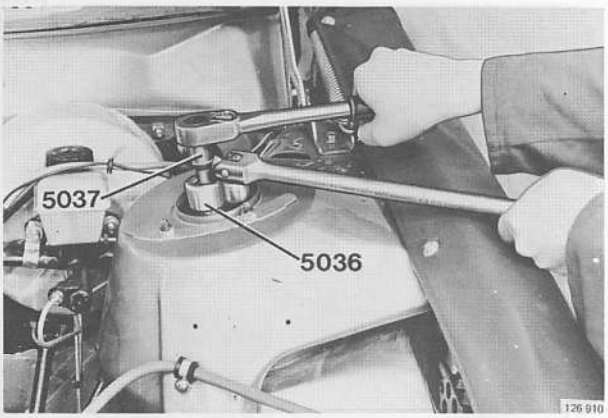


Turn journal to correct position and tighten nuts.

Position journal according to linemark made previously.

Torque: **20±5 Nm** = 14±4 ft.lbs.

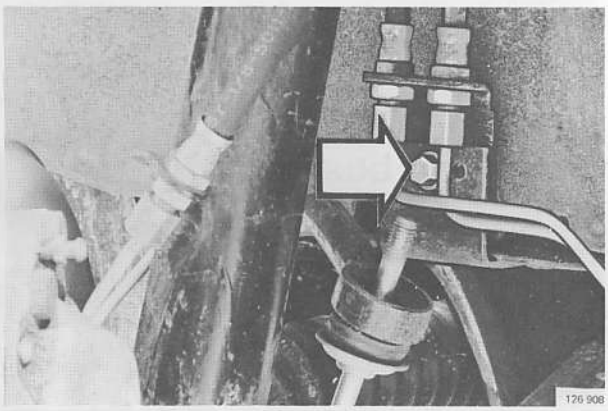
D16



Tighten center nut and press protective cover into position.

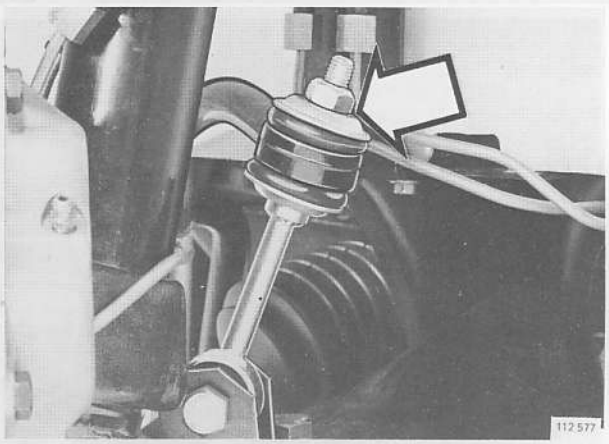
Use tool **5036** to tighten and **5037** to hold.

D17



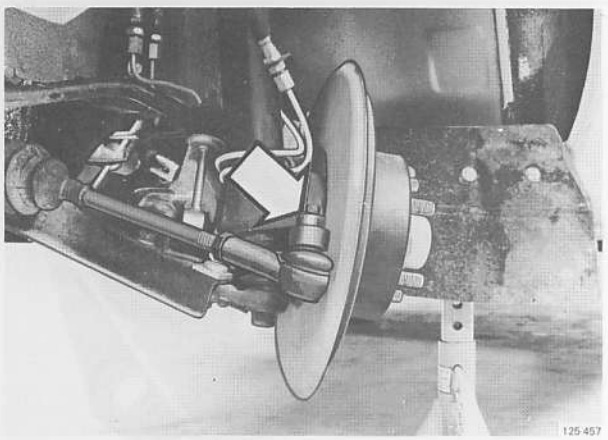
Tighten brake pipe bracket nut.

D18



Tighten stabilizer link to stabilizer bar.

D19



Tighten steering rod to steering arm.

Torque: **60±10 Nm** = 43±7 ft.lbs.

D20

Install front wheels.

Use marks previously made.

Torque: **120±15 Nm** = 87±9 ft.lbs.

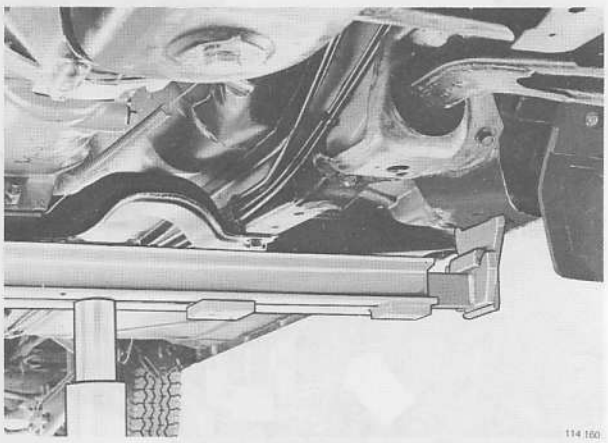
Remove stands.

Replacing control arms and/or bushings

Vehicle on rail lift

Special tools: 1801, 5081, 5082, 5083, 5084, 5085, 5091

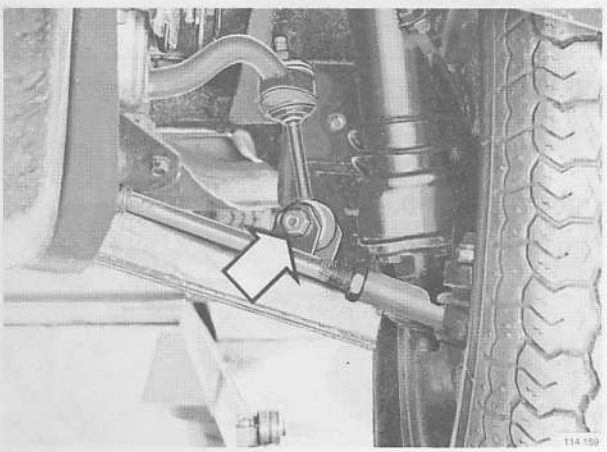
E1



Lift front end.

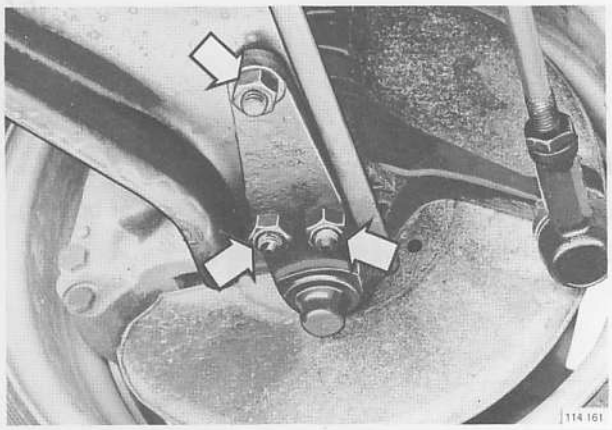
Lift under jack attachments until wheels almost lift from rail.

E2



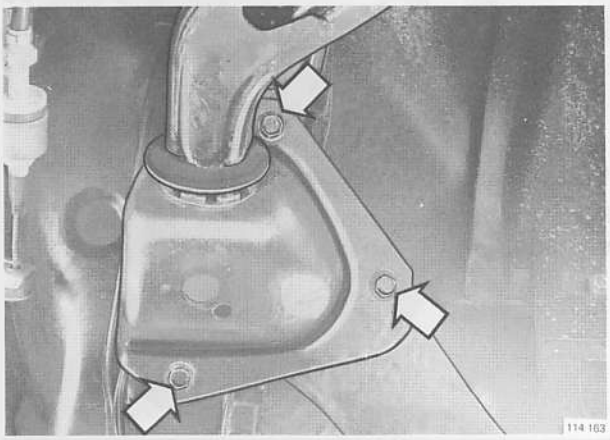
Disconnect stabilizer link from control arm.

E3



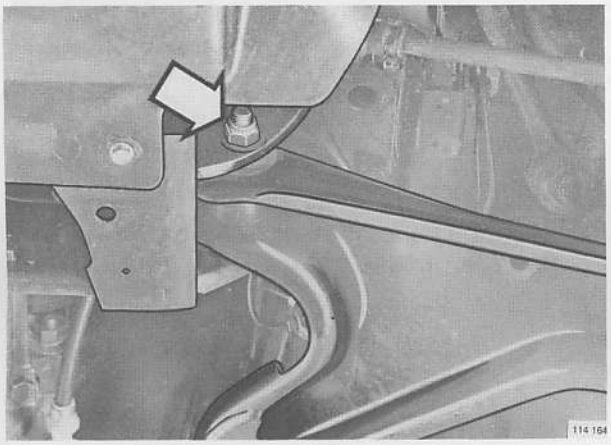
Disconnect ball joint from control arm.

E4



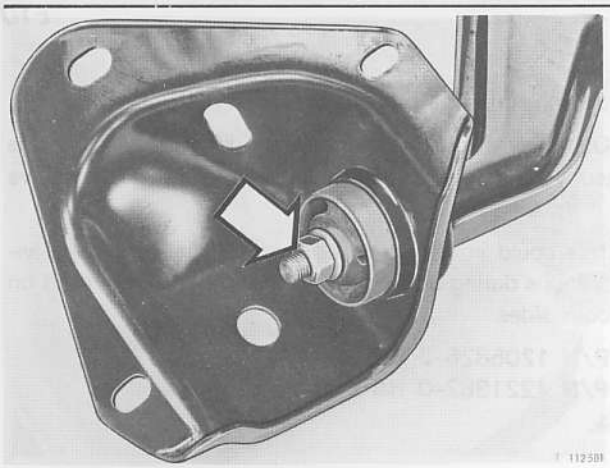
Disconnect rear bushing bracket from side member.

E5



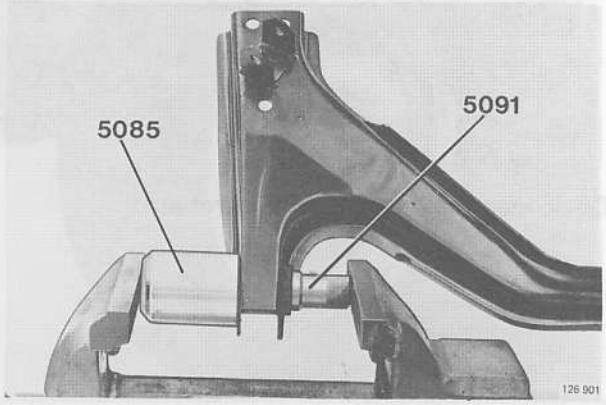
Remove control arm front retaining bolt.

E6



Remove control arm. Remove bracket.

E7

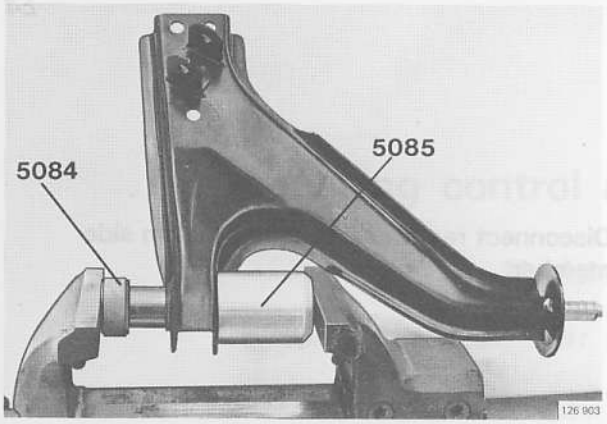


Press out control arm bushing.

Using vice, place tool **5085** over collar side of bushing.

Use tool **5091** to press out bushing.

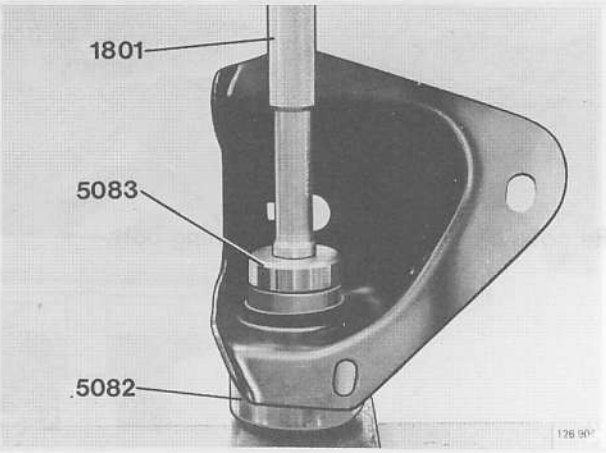
E8



Press in control arm bushing.

Place tool **5084** against bushing collar side. Press with tool **5085** on reverse side.

E9



Press out control arm bracket bushing.

Place tool **5082** under bracket. Press out bushing with tool **5083** and handle **1801**.

E10

1205826-9
soft

1221982-0
hard 126 934

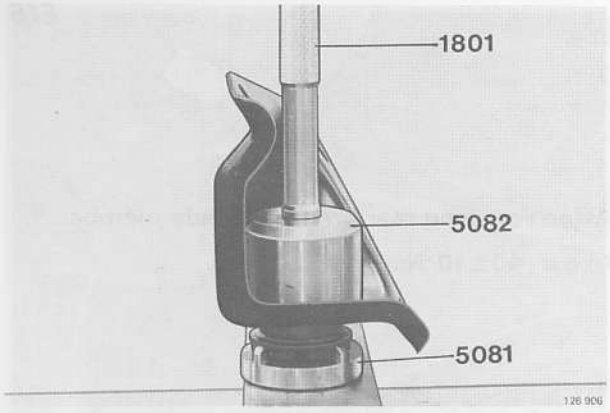
Install new bushing in bracket.

On earlier vehicles, bushings were different for right side (soft) and left side (hard) to make the car less sensitive to imbalance.

This could in certain cases result in steering wheel vibrations during braking. Hard bushings are now used on both sides.

P/N 1205826–9 Soft bushing
P/N 1221982–0 Hard bushing

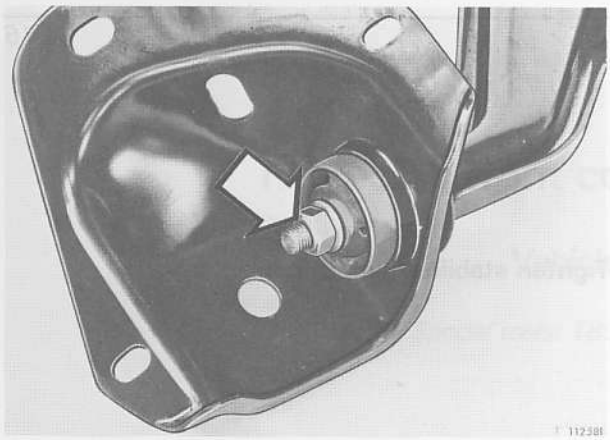
E11



Press in control arm bracket bushing.

Place tool **5081** against bushing collar side. Press on bracket with tool **5082** and handle **1801**.

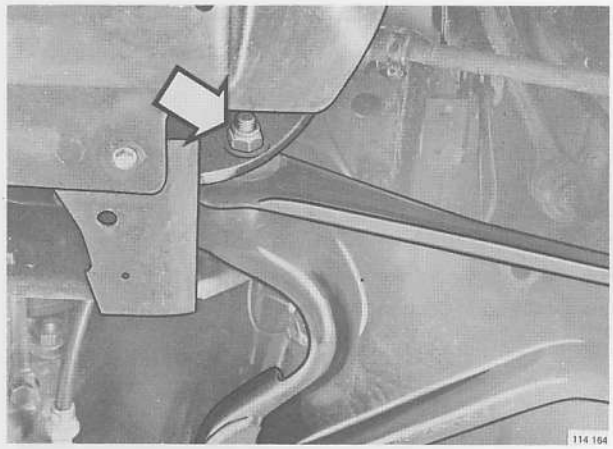
E12



Attach bracket to control arm.

Install bracket, washer and nut. Do not tighten nut harder than washer can be turned by finger force.

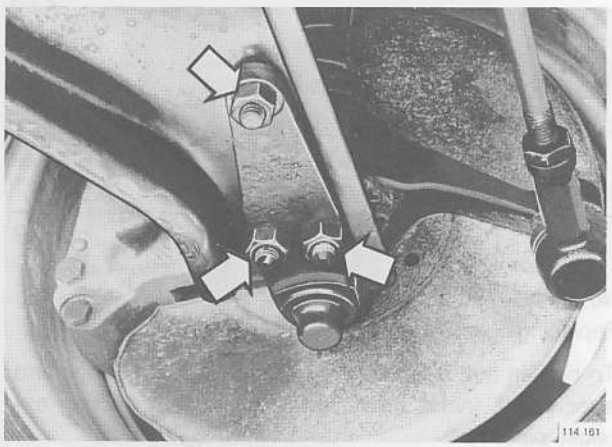
E13



Attach control arm.

Install front retaining bolt without tightening nut.

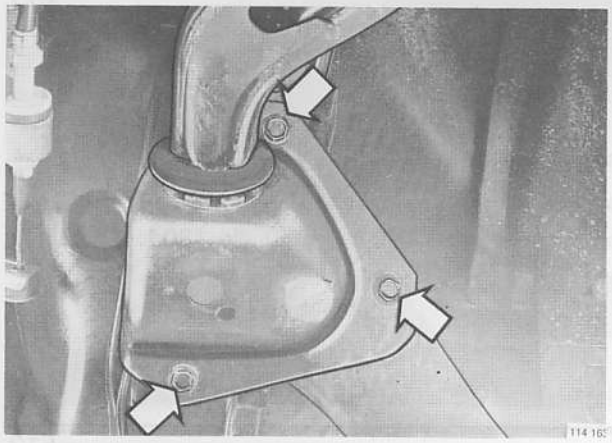
E14



Guide stabilizer link into position. Tighten ball joint to control arm.

Torque: **115±15 Nm** = 83±11 ft.lbs.

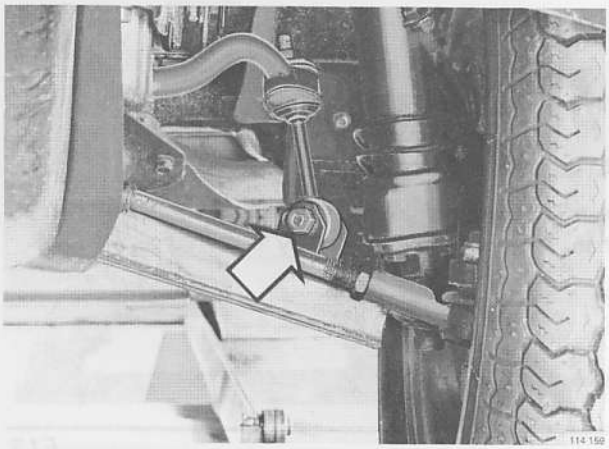
E15



Attach bushing rear bracket to side member.

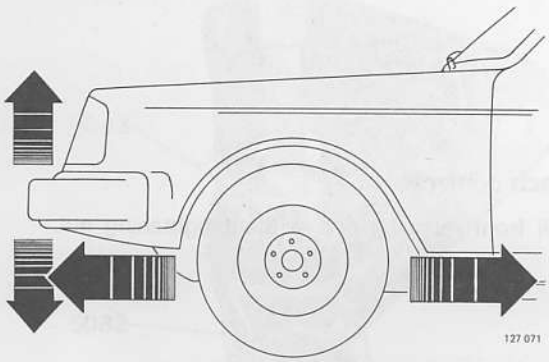
Torque: **40±10 Nm** = 29±7 ft.lbs.

E16



Tighten stabilizer link to control arm.

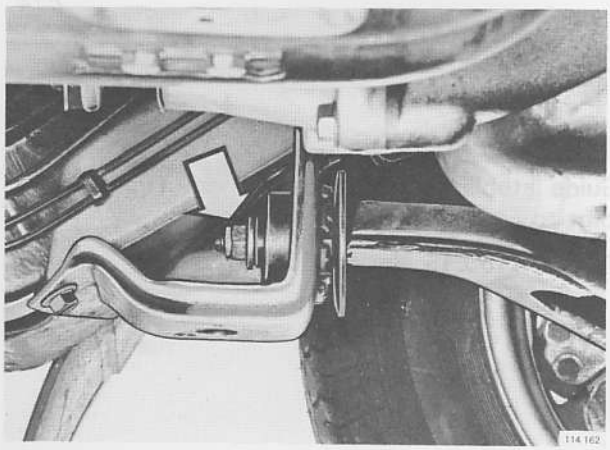
E17



Lower front end.

Roll car back and forth while bouncing it up and down several times to let control arms take up normal position.

E18



Tighten bushing rear nut.

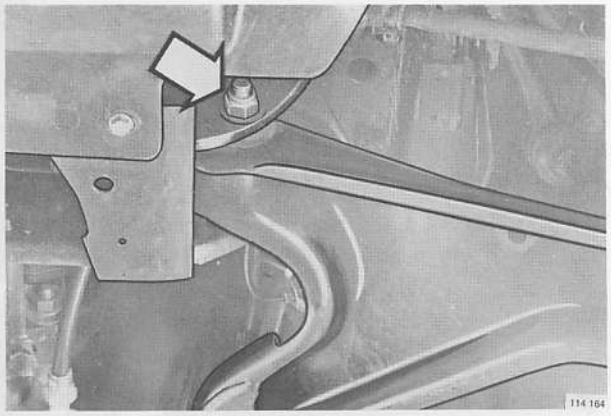
Torque: **55±5 Nm** = 40±4 ft.lbs.

E19

Note:
Replacing right side bushings on vehicles with B21 engine:

To tighten nut, disconnect exhaust pipe from flange and attachment. Install new gasket when reconnecting exhaust pipe.

E20



Tighten front bushing bolt.

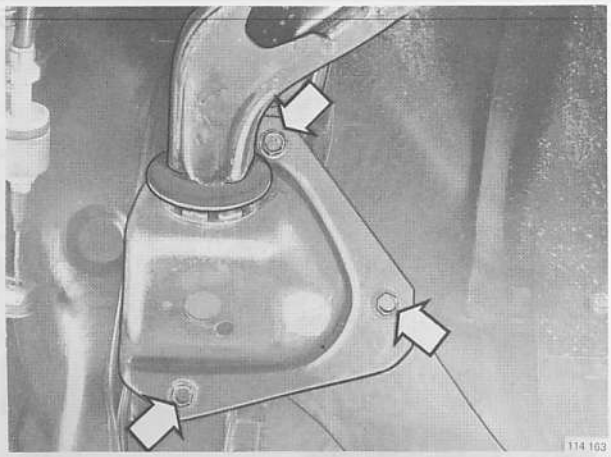
Torque: **75±20 Nm** = 54±15 ft.lbs.

Replacing front control arm rear bushing

Vehicle on rail lift

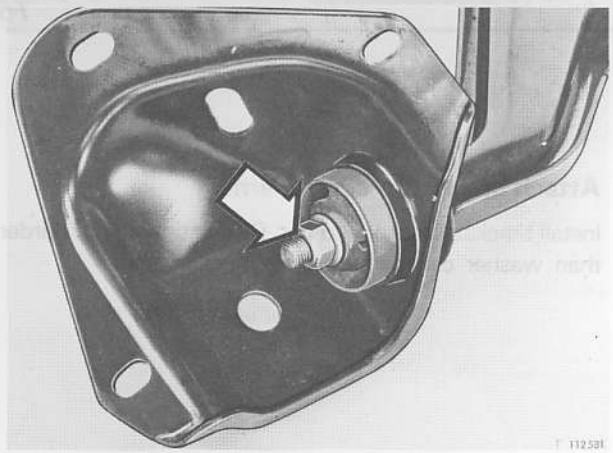
Special tools: 1801, 5081, 5082, 5083

F1



Disconnect rear bushing bracket from side member.

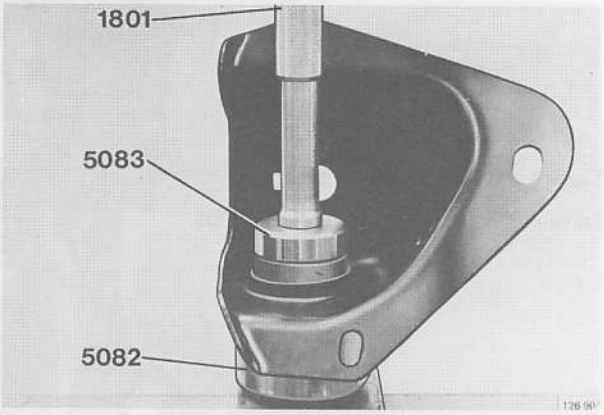
F2



Remove bracket from control arm.

Remove nut and bracket from control arm.

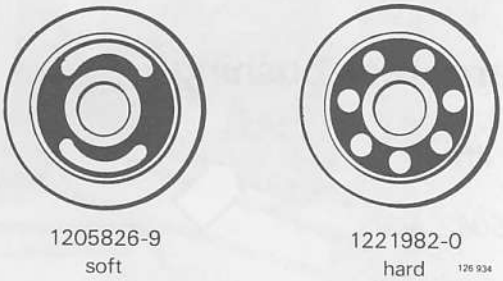
F3



Press out control arm bracket bushing.

Place tool **5082** under bracket. Press out bushing with tool **5083** and handle **1801**.

F4



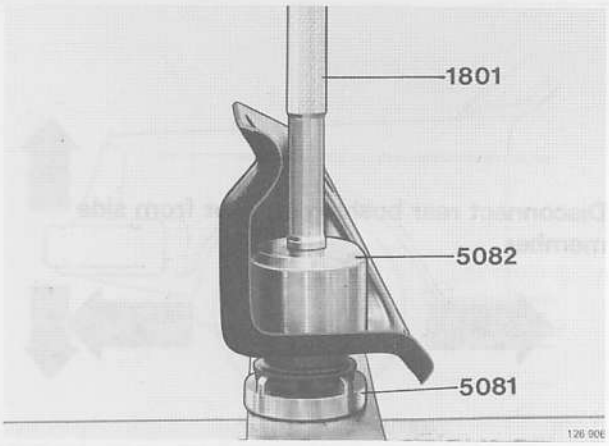
Install new bushing in bracket.

On earlier vehicles, bushings were different for right side (soft) and left side (hard) to make the car less sensitive to imbalance.

This could in certain cases result in steering wheel vibrations during braking. Hard bushings are now used on both sides.

P/N 1205826–9 Soft bushing
P/N 1221982–0 Hard bushing

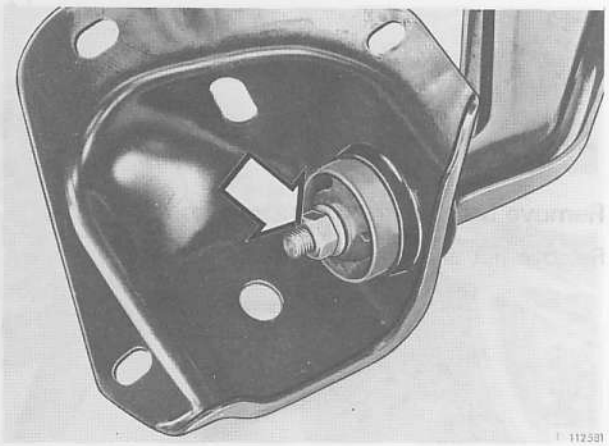
F5



Press in control arm bracket bushing.

Place tool **5081** against bushing collar side. Press on bracket with tool **5082** and handle **1801**.

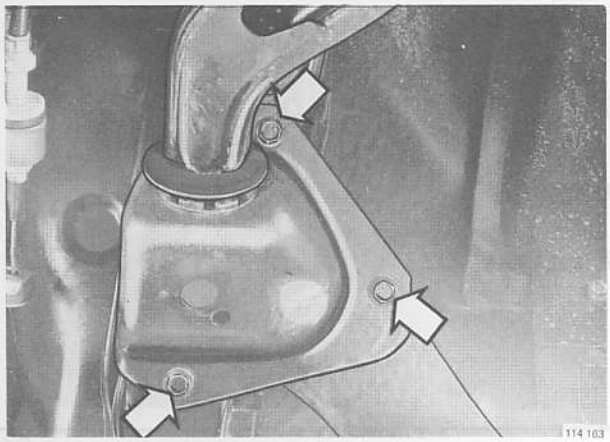
F6



Attach bracket to control arm.

Install bracket, washer and nut. Do not tighten nut harder than washer can be turned by finger force.

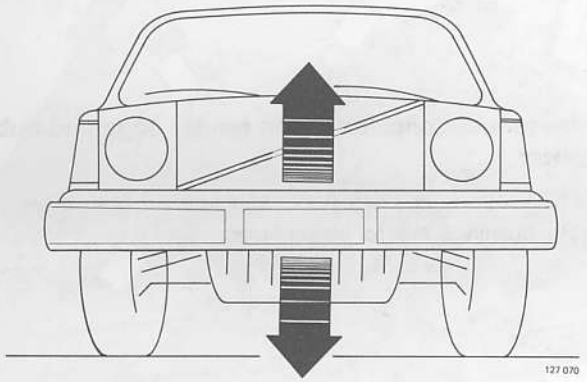
F7



Attach bushing rear bracket to side member.

Torque: **40±10 Nm** = 29±7 ft.lbs.

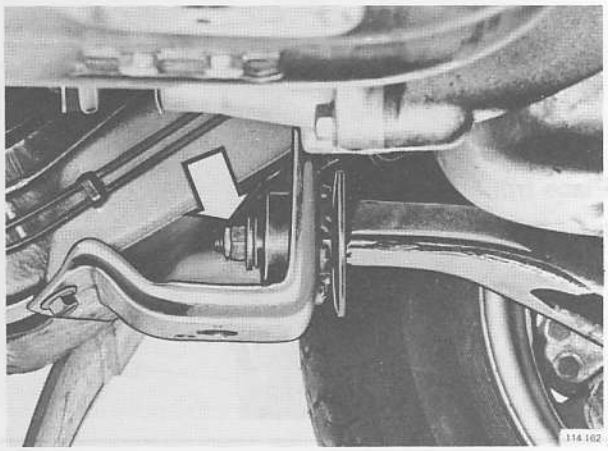
F8



Bounce front end.

Bounce front end up and down several times to let control arms take up normal position.

F9



Tighten bushing rear nut.

Torque: **55±5 Nm** = 40±4 ft.lbs.

F10

Note:
Replacing right side bushings on vehicles with B21 engine:

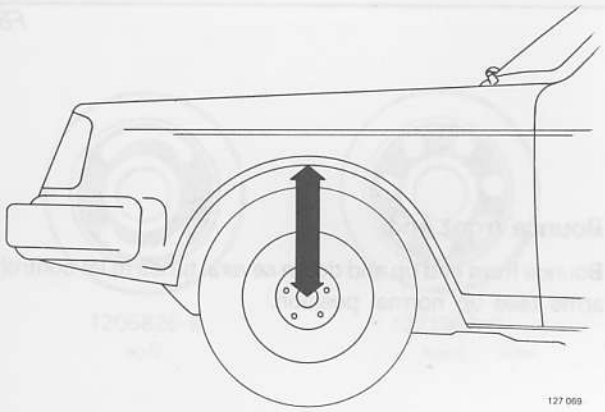
To tighten nut, disconnect exhaust pipe from flange and attachment. Install new gasket when reconnecting exhaust pipe.

Replacing control arm rear bushing

Vehicle on floor

Special tools: 1801, 5081, 5082, 5083

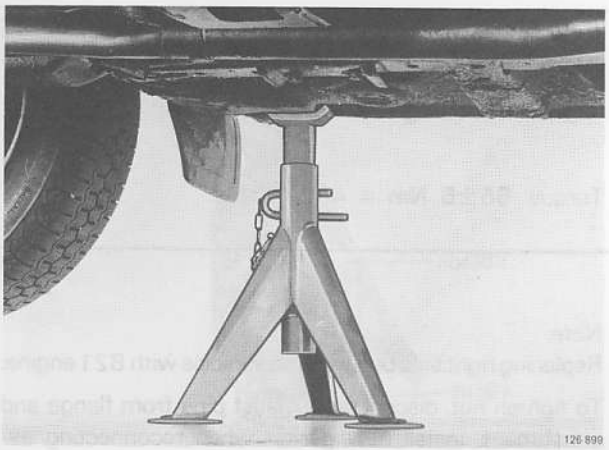
G1



Measure distance between fender edge and hub center.

Before lifting car from floor. Measure on both sides if both bushings are to be replaced.

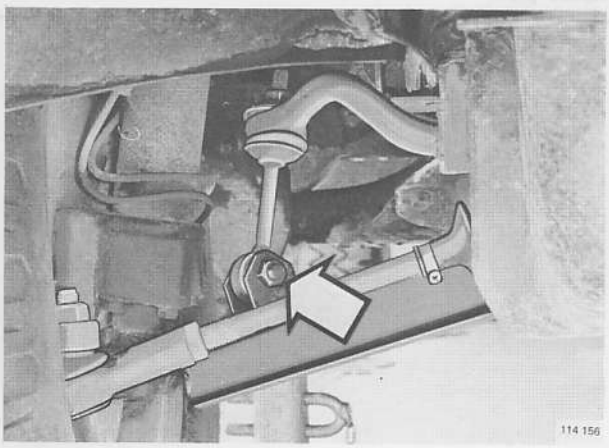
G2



Place front end on stands.

Place stands under front jack attachments.

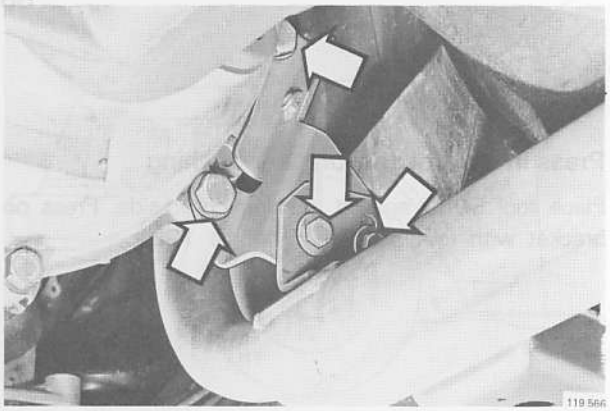
G3



Disconnect stabilizer links from control arms.

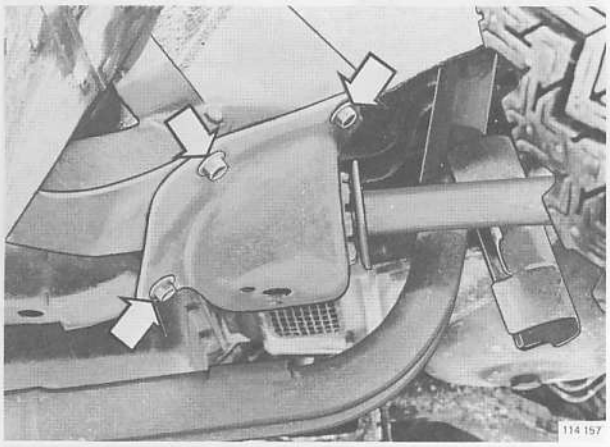
Disconnect on both sides even if only one bushing is replaced. The reason is to let the control arms take up correct position when tightening.

G4



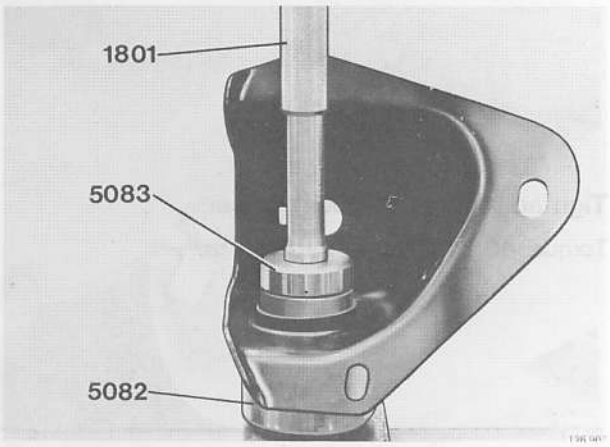
Note:
When replacing right side bushings on vehicles with B21 engines, disconnect exhaust pipe from flange and front attachment.

G5



Disconnect bracket from side member and control arm.

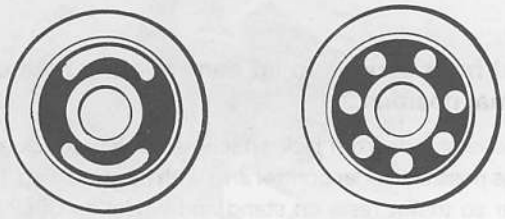
G6



Press out control arm bracket bushing.

Place tool **5082** under bracket. Press out bushing with tool **5083** and handle **1801**.

G7



1205826-9
soft

1221982-0
hard

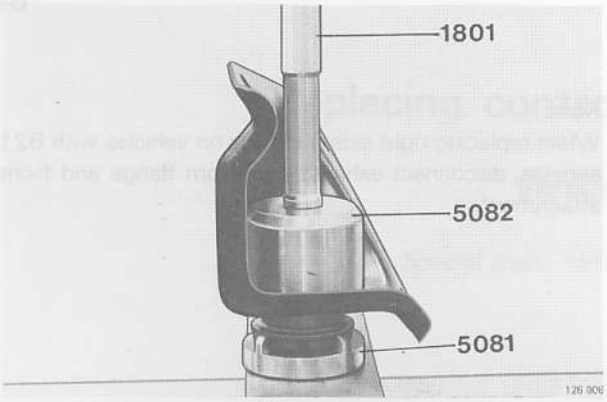
Install new bushing in bracket.

On earlier vehicles, bushings were different for right side (soft) and left side (hard) to make the car less sensitive to imbalance.

This could in certain cases result in steering wheel vibrations during braking. Hard bushings are now used on both sides.

P/N 1205826–9 Soft bushing
P/N 1221982–0 Hard bushing

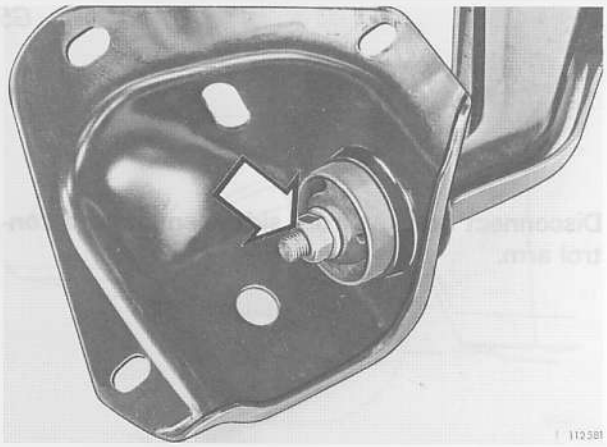
G8



Press in control arm bracket bushing.

Place tool **5081** against bushing collar side. Press on bracket with tool **5082** and handle **1801**.

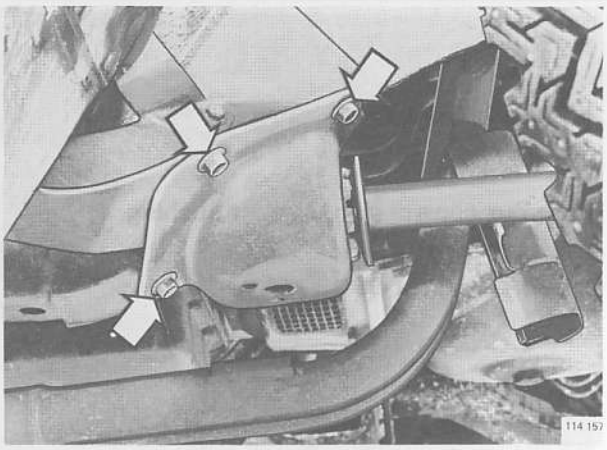
G9



Attach bracket to control arm.

Install bracket, washer and nut. Do not tighten nut harder than washer can be turned by finger force.

G10



Tighten bracket to side member.

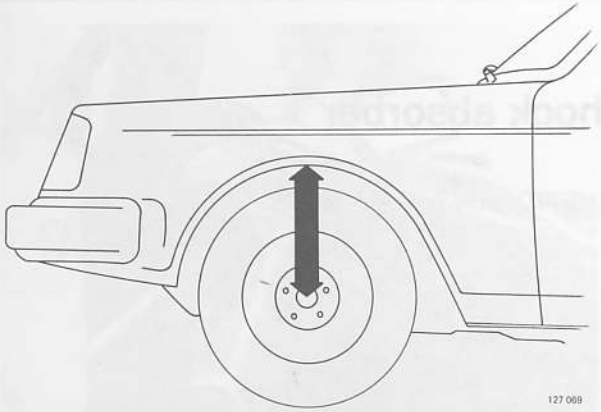
Torque: **40±10 Nm** = 29±7 ft.lbs.

G11

Load front springs to let control arms take up normal position.

Remove stands from jack attachments. Place jack as far out as possible under control arm with new bushing. Lower car so that it rests on stand and wheel on other side.

G12

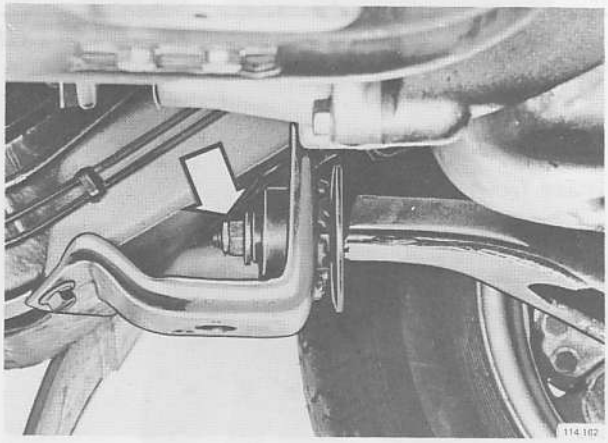


Measure distance between fender edge and hub center.

Bounce car several times and measure distance. It should be same as in Step G1.

NOTE:
One side on wheel, one side on stand will not introduce inaccuracy and is necessary to be able to reach the nut in next step.

G13

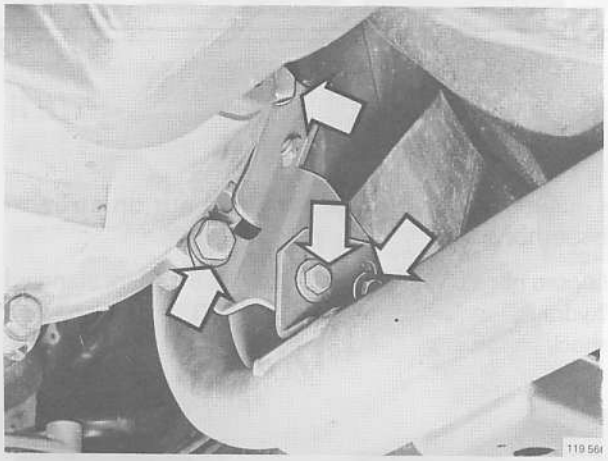


Tighten rear bushing.

Torque: **55±5 Nm** = 40±4 ft.lbs.

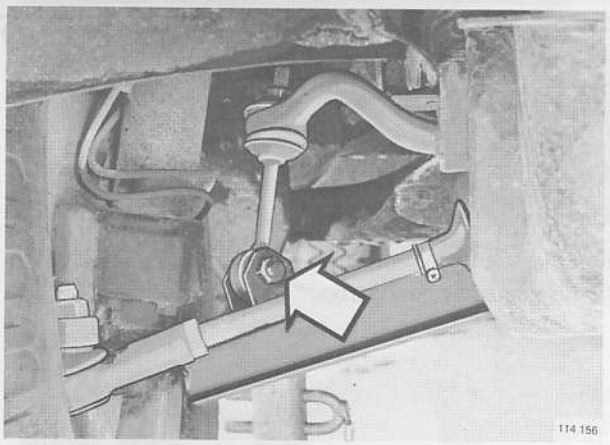
Raise car again and put it on two stands.

G14



NOTE:
When replacing right side bushings on vehicles with B21 engine, install new flange gasket. Attach exhaust pipe to flange and front attachment.

G15



Tighten stabilizer links on both sides.

Replacing front shock absorber

Special tools: 5036, 5037, 5039. 5040, 5043, 5045, 5173

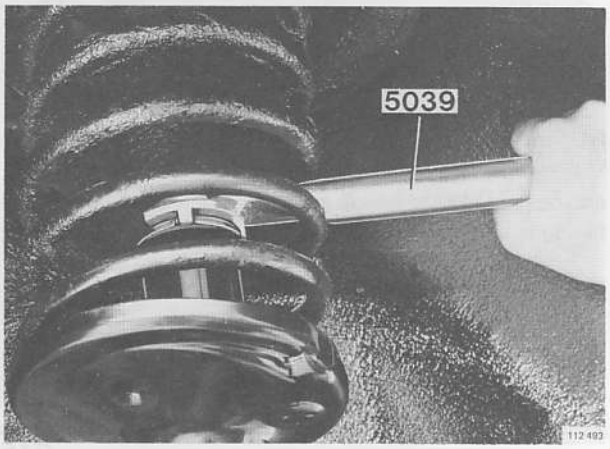
H1

Raise front end.

Jack up front end. Place stands under front jack attachments.

Mark wheel location to avoid rebalancing. Remove wheels.

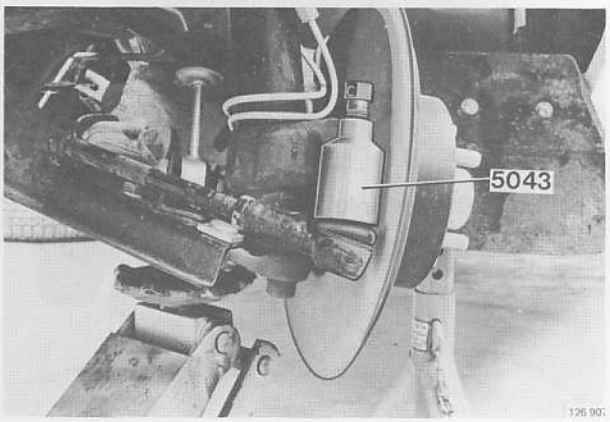
H2



Loosen shock absorber retaining nut on strut assembly.

Loosen nut a couple of turns. Use tool **5039** for standard (hydraulic) shock absorbers and **5173** for gas-pressure shock absorbers.

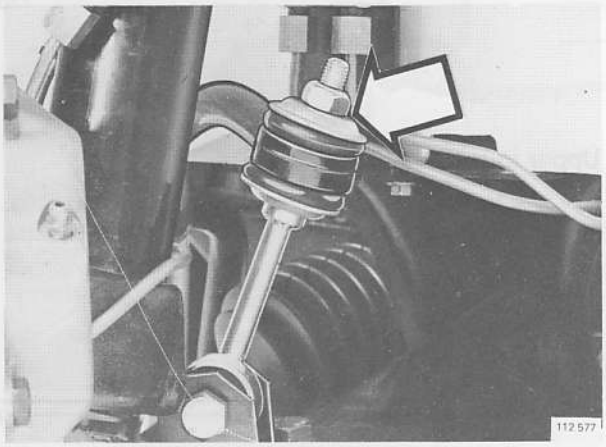
H3



Disconnect steering rod from steering arm.

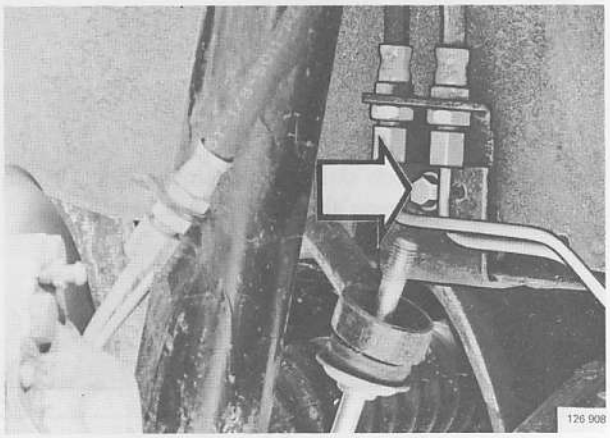
Place jack under control arm. Remove nut. Use tool **5043** to disconnect steering rod.

H4



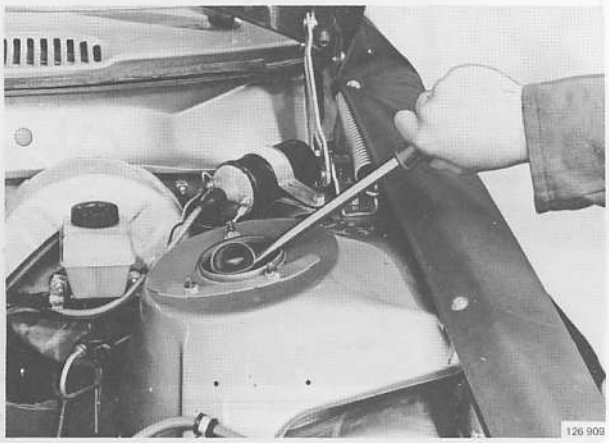
Disconnect stabilizer from upper link attachment.

H5



Remove bolt for brake pipe bracket.

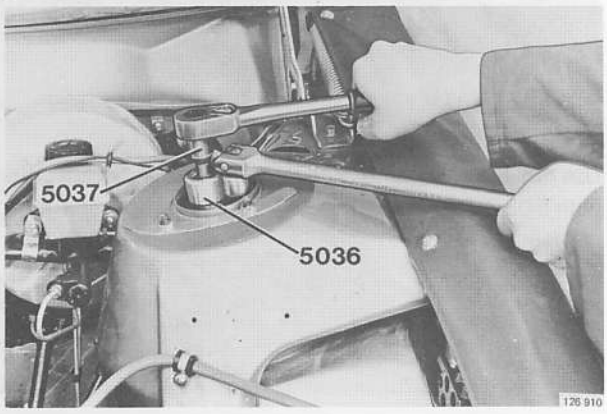
H6



Remove protective cover over center nut.

Pry loose with screwdriver.

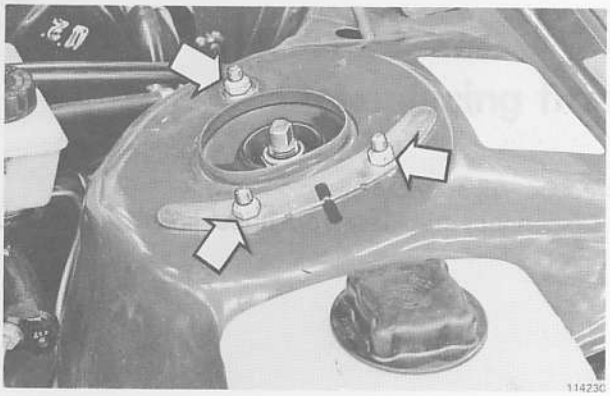
H7



Loosen shock absorber retaining nut.

Loosen nut several turns. Use tool **5036** and hold shock absorber plunger rod with 5037.

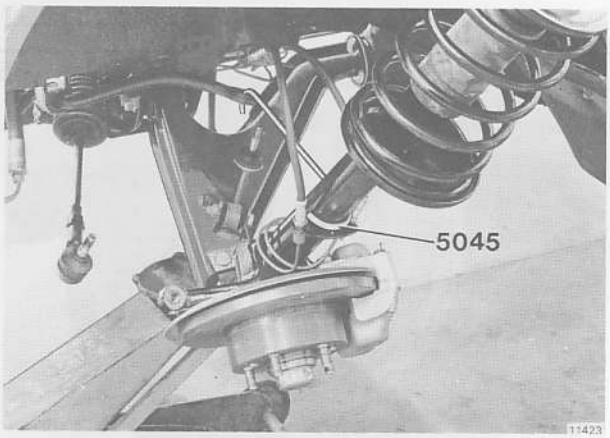
H8



Upper journal.

Line-mark over nut plate and wheel housing plate. Remove nuts.

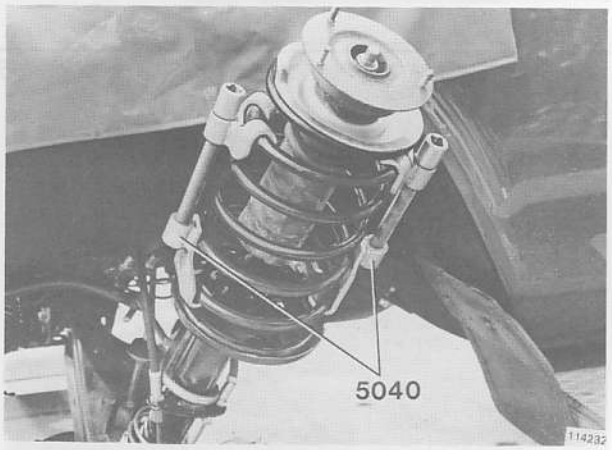
H9



Strut.

Lower jack and guide out strut assembly. Hook it into stabilizer with retaining tool **5045**.

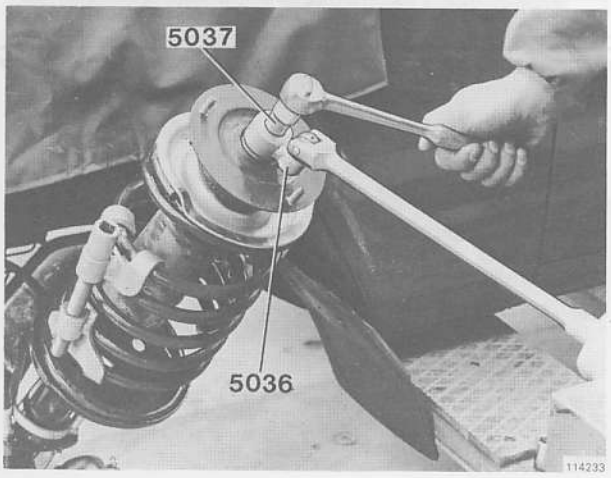
H10



Spring.

Attach spring hook-up tools opposite each other. Three spring coils free between claws. Compress alternately.

H11



Upper journal.

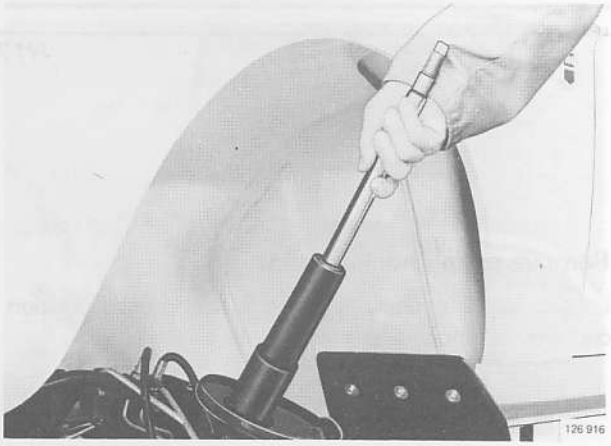
Use tool **5036** to remove center nut. Hold shock absorber with **5037**. Remove upper journal, spring seat and rubber bumper.

H12

Remove shock absorber retaining nut.

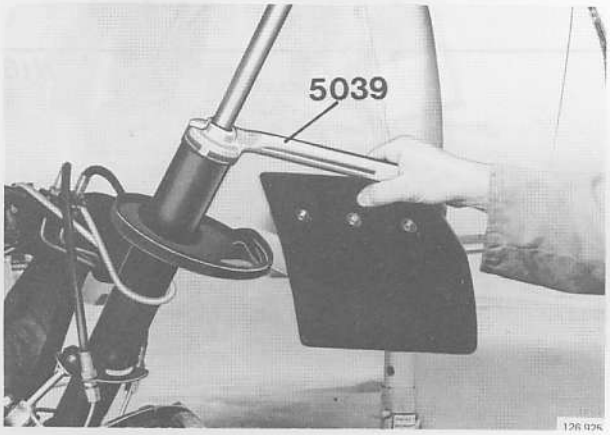
Use tool **5039** for standard (hydraulic) shock absorber and **5173** for gas-pressure shock absorber.

H13



Pull up shock absorber.

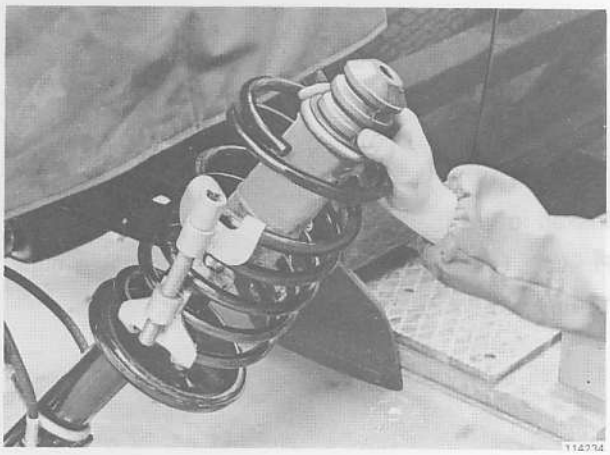
H14



Insert new shock absorber.

Tighten nut as much as possible without turning strut. Use tool **5039** for standard (hydraulic) shock absorber and **5173** for gas-pressure shock absorber.

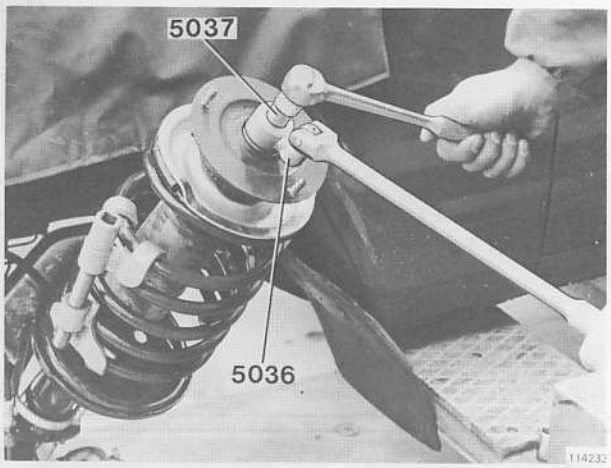
H15



Install spring, rubber damper and shock absorber protection.

Turn spring so that spring hook-up tool claws face up.

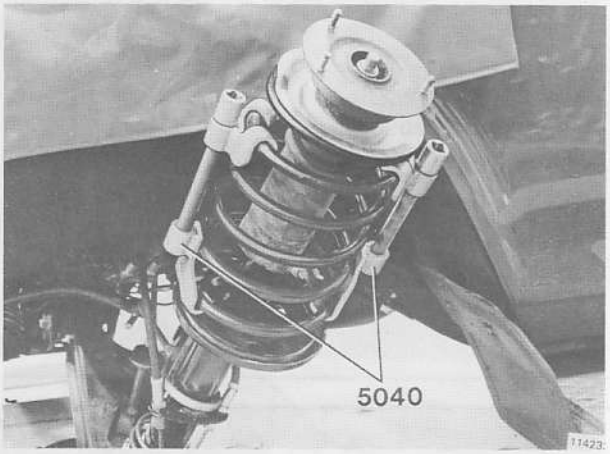
H16



Install spring seat, upper journal, washer and nut.

Use tool **5036** to tighten and **5037** to hold.

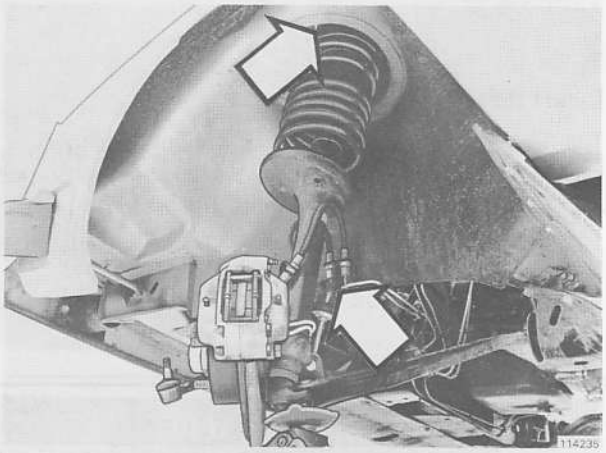
H17



Remove spring hook-up tool.

Loosen tool alternately. Make sure spring ends position correctly in upper and lower seats.

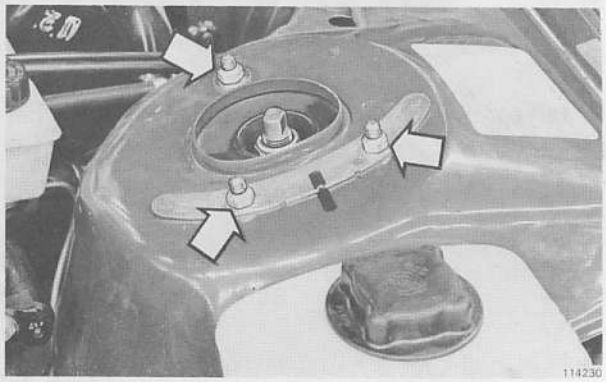
H18



Guide strut assembly into wheel housing.

Remove retaining hook. Raise jack. Make sure stabilizer link guides into position.

H19

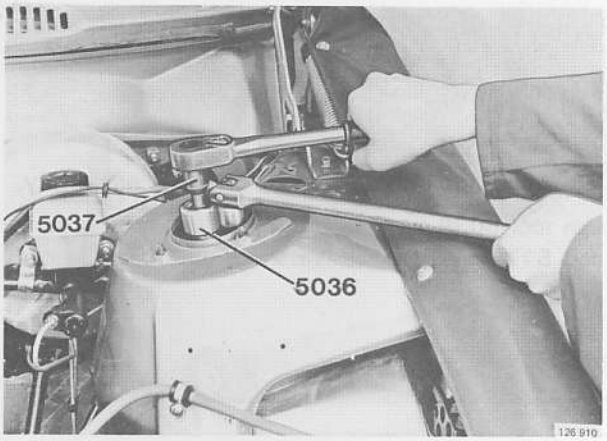


Install journal.

Position journal according to line-marks. Tighten nuts.

Torque: **20±5 Nm** = 14±4 ft.lbs.

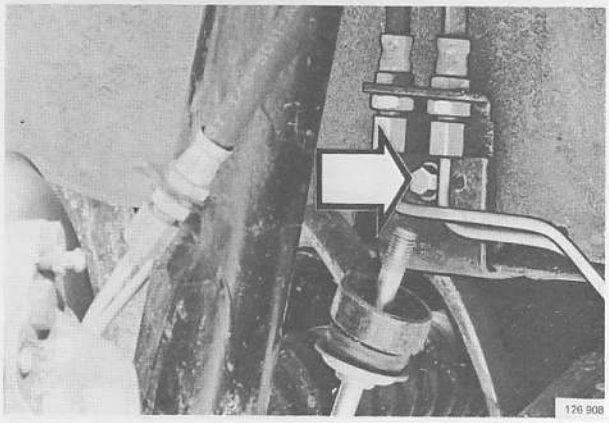
H20



Tighten center nut.

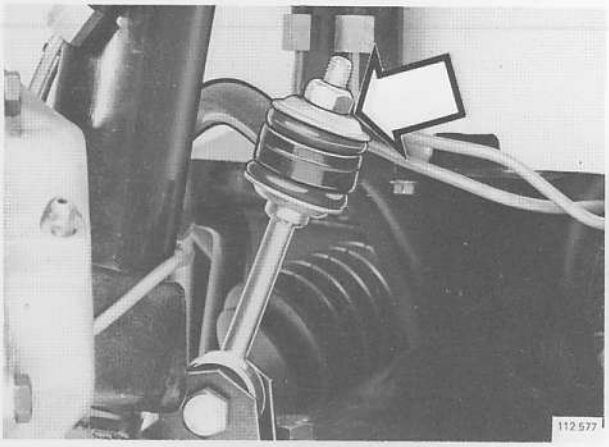
Use tool **5036** to tighten and **5037** to hold. Press protective cover into position.

H21



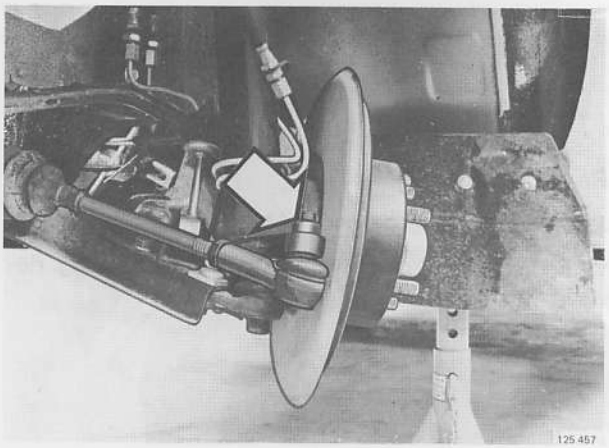
Tighten brake pipe bracket.

H22



Tighten stabilizer link to bar.

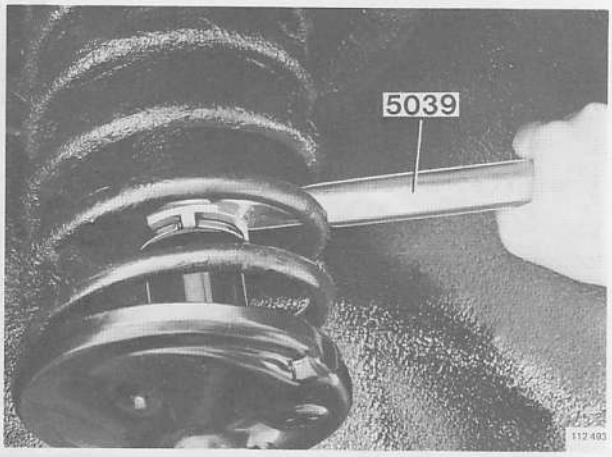
H23



Tighten steering rod to steering arm.

Torque: **60±10 Nm** = 43±7 ft.lbs.

H24



Tighten shock absorber nut on strut assembly.

Use tool **5039** for standard (hydraulic) shock absorber and **5173** for gas-pressure shock absorber.

H25

Install front wheel.

Use markings, previously made.
Torque: **120± 20 Nm** = 87±9 ft.lbs.

Replacing front coil spring

Special tools: 5036, 5037, 5040, 5041, 5043, 5045

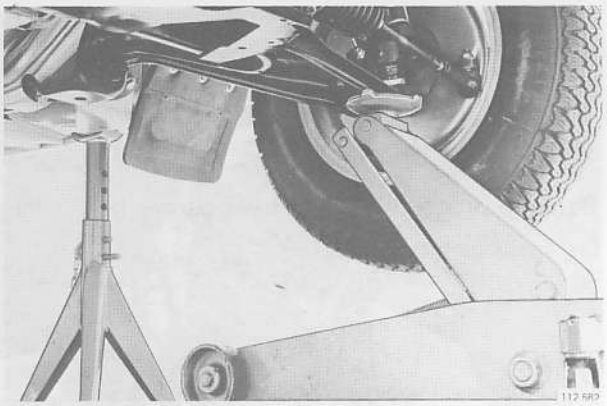
I 1

Raise front end.

Jack up, place stands under front jack attachments.

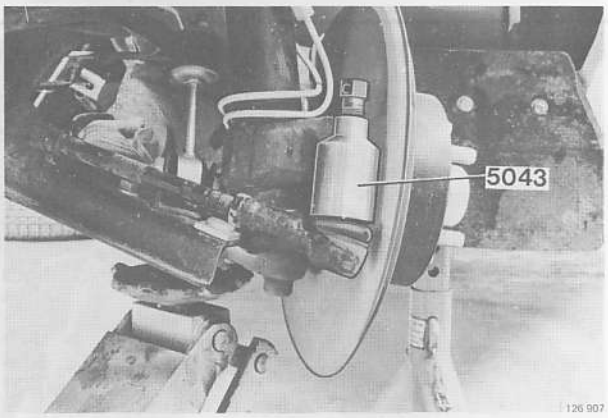
Mark location of front wheels to avoid re-balancing. Remove wheels.

I 2



Place jack under control arm as support.

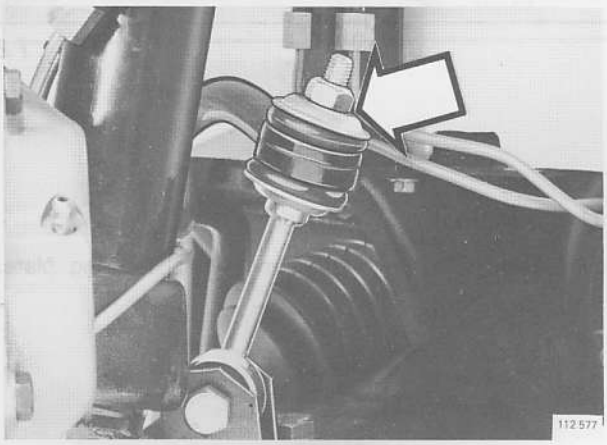
I 3



Disconnect steering rod from steering arm.

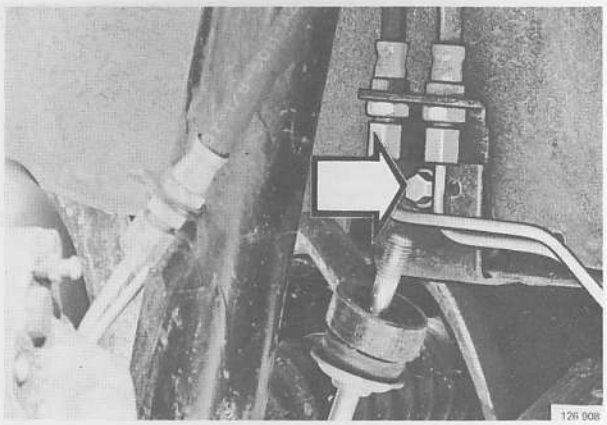
Use tool **5043**.

I 4



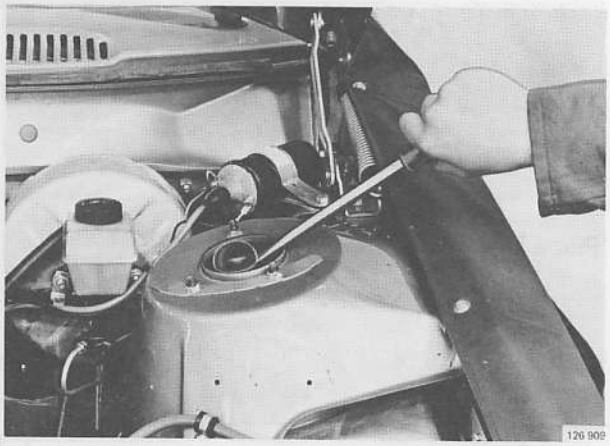
Disconnect stabilizer from link.

I 5



Remove bolt for brake pipe bracket.

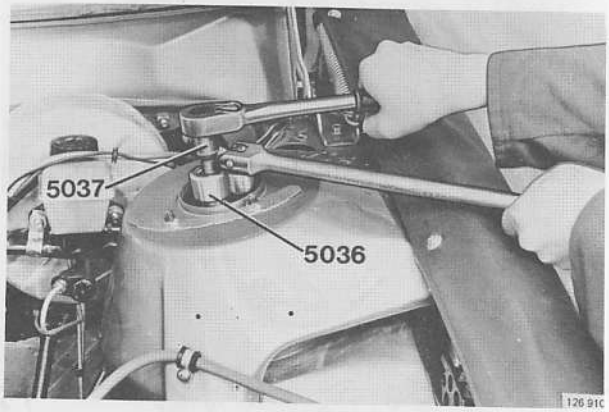
I 6



Remove protective cover over center nut.

Pry loose with screwdriver.

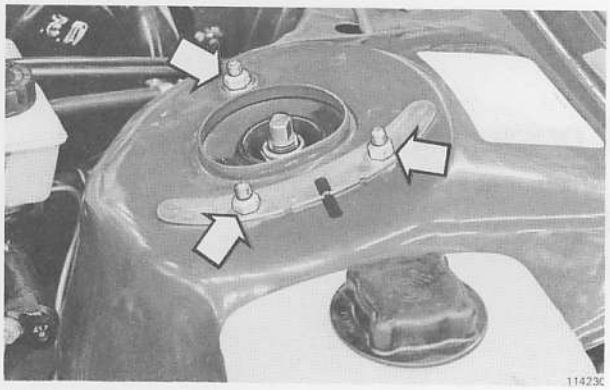
I 7



Loosen center nut.

Loosen several turns. Use tool **5036** and hold shock absorber plunger with **5037**.

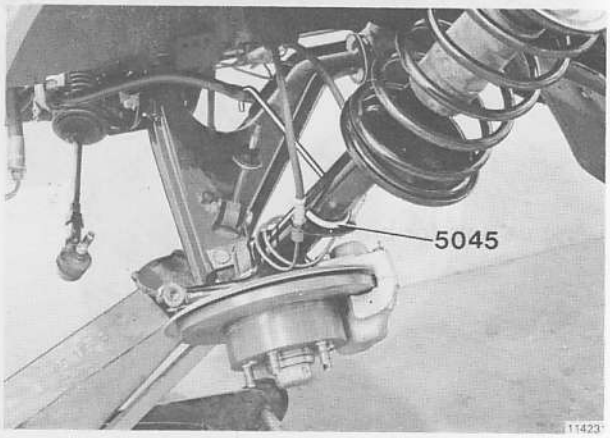
I 8



Upper journal.

Line-mark across nut plate and wheel housing plate. Remove nuts.

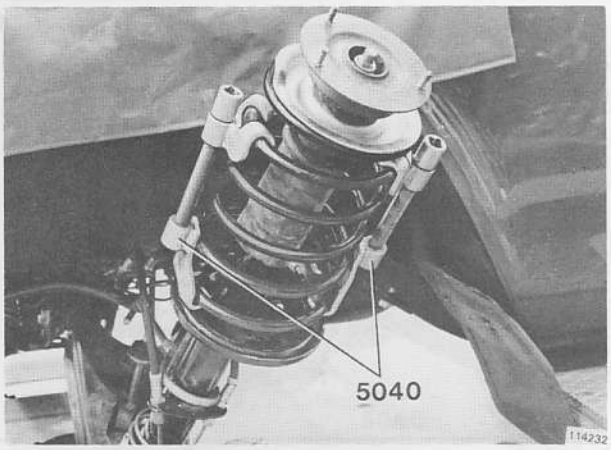
I 9



Disconnect strut.

Lower jack and guide out strut assembly. Hook strut assembly to stabilizer with retaining hook **5045**.

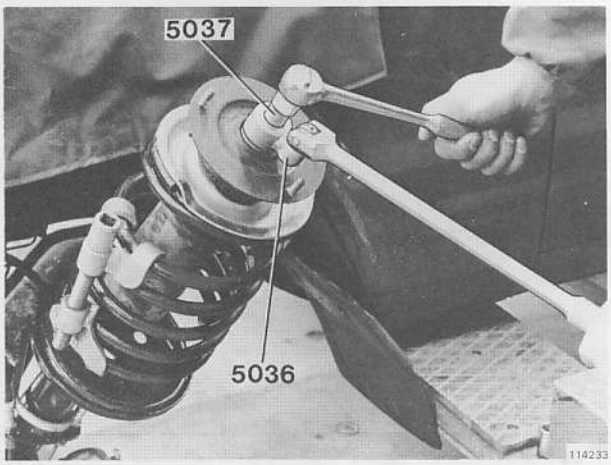
I 10



Spring:

Attach spring hook-up tools opposite each other. Three spring coils free between claws. Compress alternately.

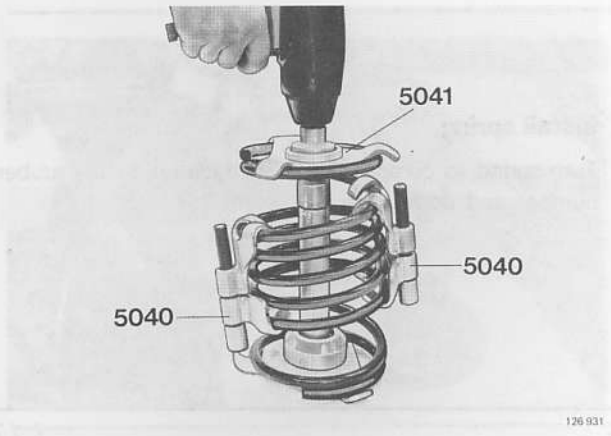
I 11



Upper Journal:

Use tool **5036** to remove center nut. Hold shock absorber with **5037**. Remove upper journal, spring seat and rubber bumper.

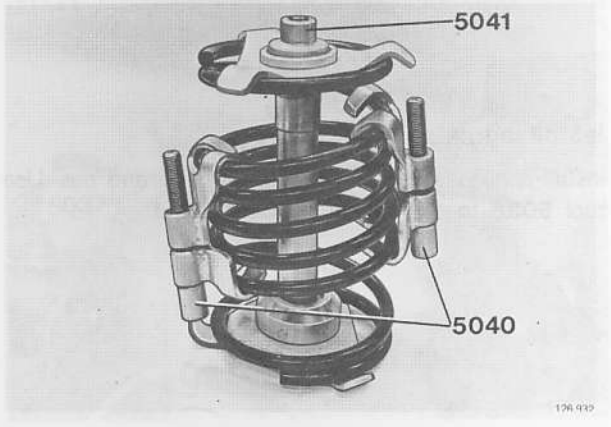
I 12



Compress spring.

Use spring compressor **5041** and impact gun.

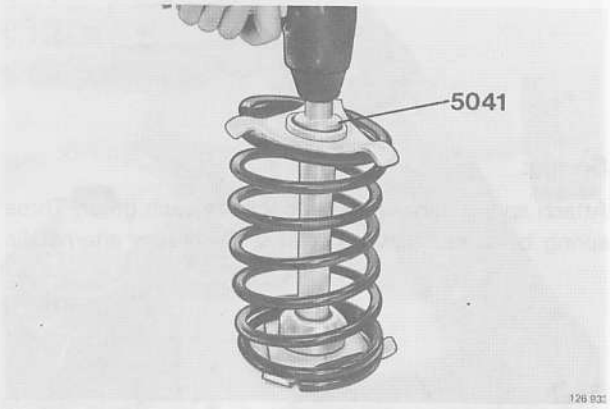
I 13



Free spring.

First remove spring hook-up tool **5040**, then spring compressor **5041**.

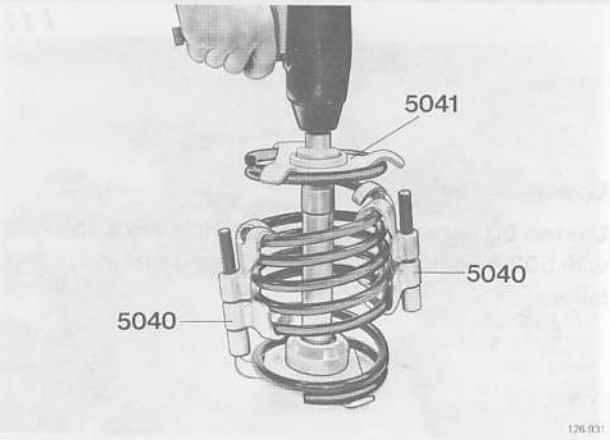
I 14



Compress new spring.

Use spring compressor **5041** and impact gun.

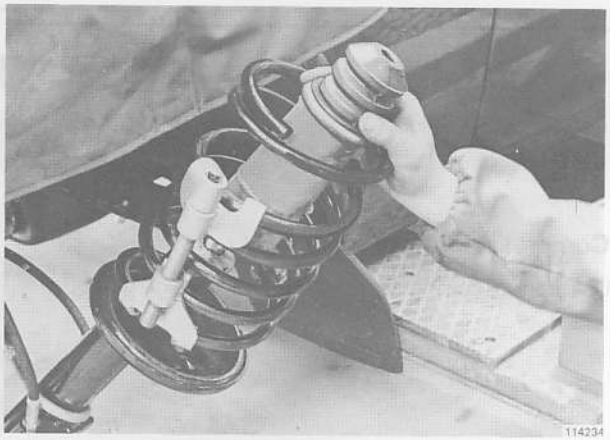
I 15



Install spring hook-up tool.

Place spring hook-up tools **5040** opposite each other. Three free spring coils between claws. Compress alternately. Remove spring compressor **5041**.

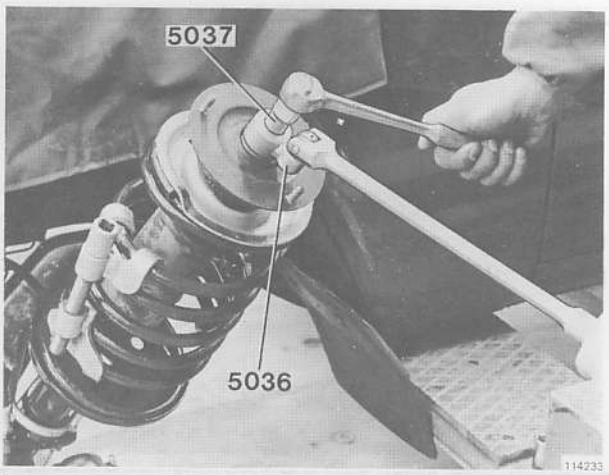
I 16



Install spring.

Turn spring so compressor claws face up. Install rubber bumper and dust cover.

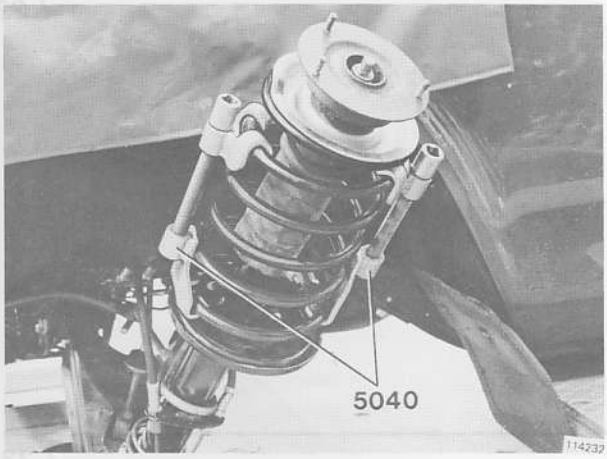
I 17



Install journal.

Install spring seat, upper journal, washer and nut. Use tool **5036** to tighten and **5037** to hold.

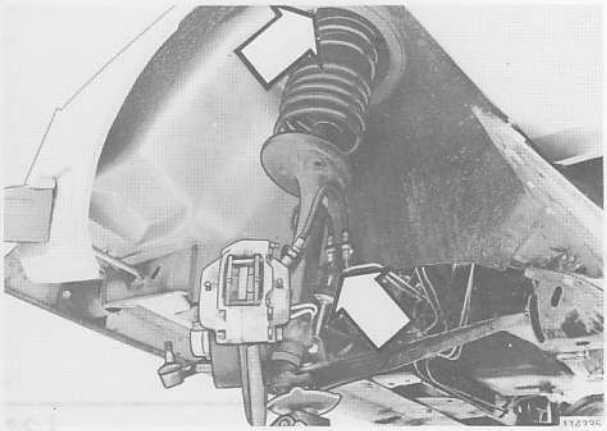
I 18



Remove spring hook-up tool.

Loosen tool alternately. Make sure spring ends position correctly in upper and lower seats.

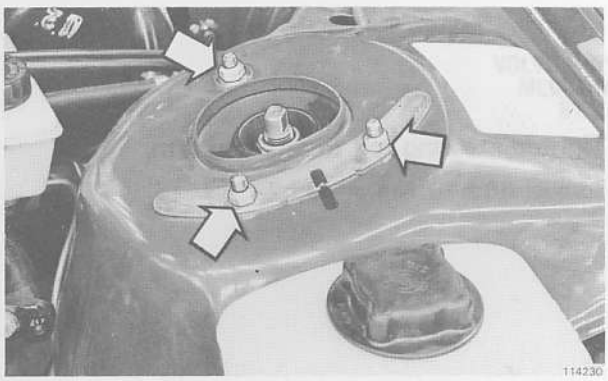
I 19



Guide strut assembly into wheel housing.

Remove retaining hook. Raise jack. Make sure that stabilizer link guides into position.

I 20

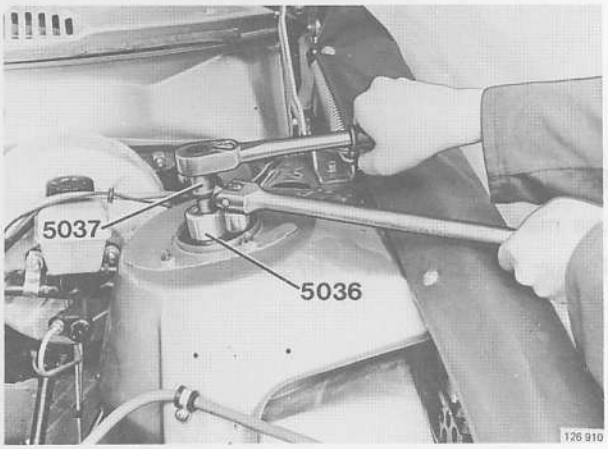


Install journal.

Position journal according to line-marks. Tighten nuts.

Torque: **20±5 Nm** = 14±4 ft.lbs.

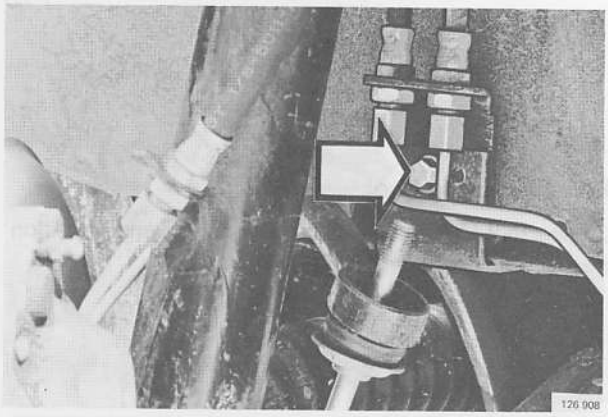
I 21



Tighten center nut.

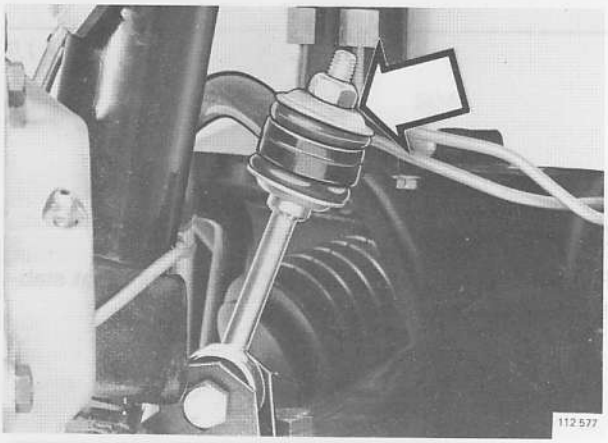
Use tool **5036** to tighten and **5037** to hold. Press protective cover into position.

I 22



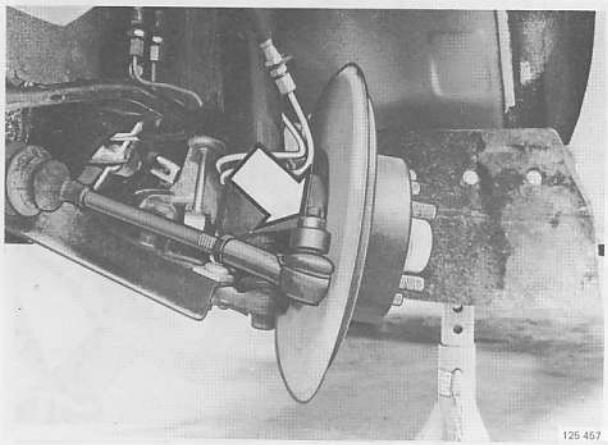
Tighten brake pipe bracket.

I 23



Tighten stabilizer link to bar.

I 24



Tighten steering rod to steering arm.

Torque: **60±10 Nm** = 43±7 ft.lbs.

I 25

Install front wheel.

Use markings, previously made.

Torque: **120±20 Nm** = 87±9 ft.lbs.

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