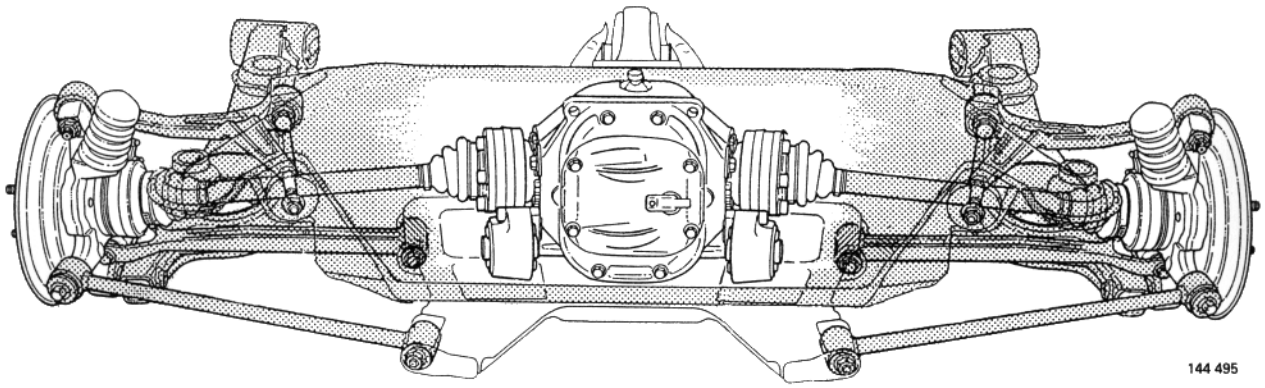
Rear suspension

This manual deals with the repair and maintenance of the Multi-link rear suspension on the Volvo 760 4-door/780.



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Volvos are sold in versions adapted for different markets. These adaptations depend on many factors including legal, taxation and market requirements.

This manual may therefore show illustrations and text which do not apply to cars in your country.

Volvo owners planning to export their car(s) to another country should investigate the applicable safety and exhaust emission requirements. In some cases it may be impossible to comply with these requirements.

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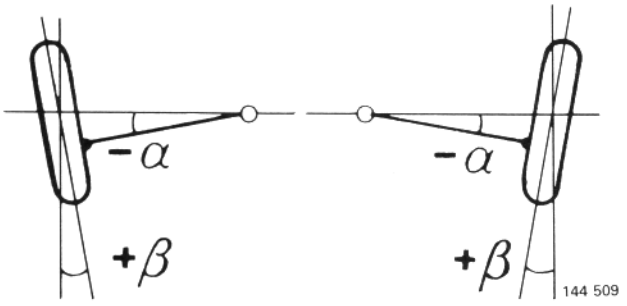
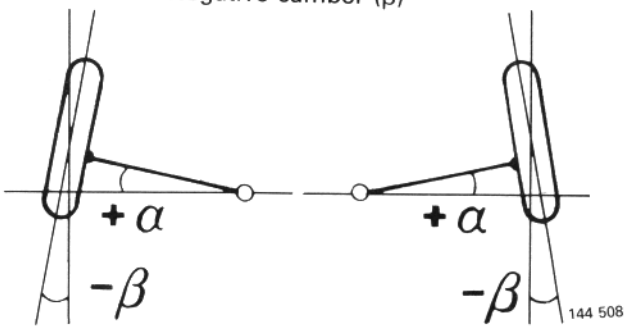
Specifications

Camber

Positive camber (β)

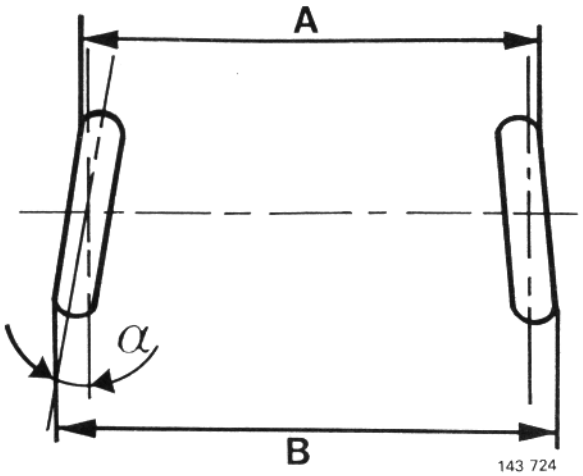


Negative camber (β)



Control arm angle as measured with protractor (α)	Specified camber (β)	Permissible variation (β ±0.25°)
−2°	0.7°	0.95° → 0.45°
−1°	0.5°	0.75° → 0.25°
0°	0.3°	0.55° → 0.05°
+1°	0.15°	0.4° → −0.1°
+2°	−0.05°	0.2° → −0.3°
+3°	−0.3°	−0.05° → −0.55°
+4°	−0.55°	−0.3° → −0.8°

1° = 60′ 1′ = 0.016°



Toe-in

As angular measurement

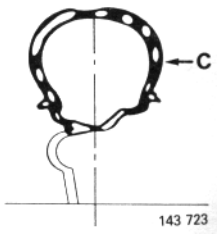
Toe-in angle α = 2′±3′ per wheel.

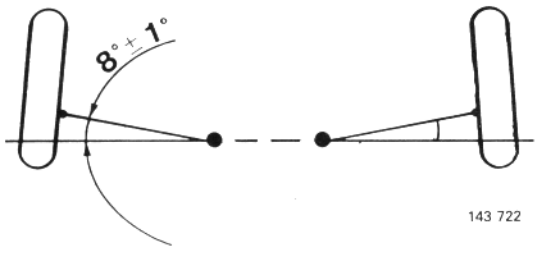
The following applies to toe-in:

The toe-in dimension (B–A) as measured at point C (see figure on right) shall be 0.5±0.8 mm.

N.B. Camber must always be set before adjusting toe-in.

Rear wheel alignment is described on page 8.





Toe-in variation

Measure the toe-in with the car unloaded, as described above.

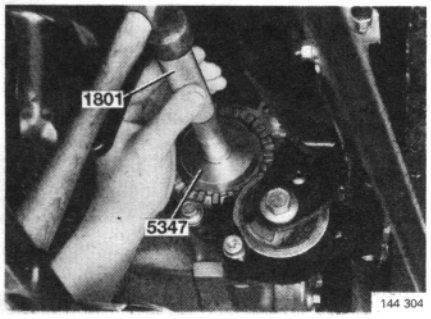
Load the car until the lower control arms assume an angle of 8°±1°.

Measure the toe-in again and compare the two values.

The max. permissible deviation is 3′ per wheel.

Special tools

999-	Description – application
1801-3	Standard drift handle
2731-1	Drift for front bushing in upper control arm
2904-4	Counterhold for front bushing in upper control arm
5087-5	Counterhold for front bushing in upper control arm
5090-9	Drift for front bushing in upper control arm
5310-1	Drift for bushing in lower control arm
5342-4	Drift for bushing in lower control arm
5343-2	Counterhold for bushing in lower control arm
5344-0	Press tool for front bushing in upper rear axle member



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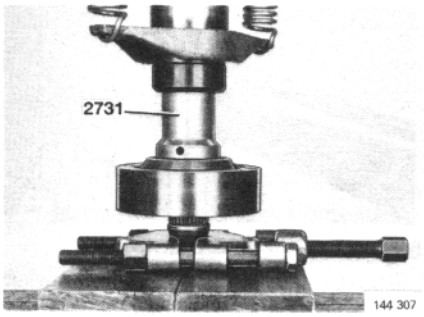

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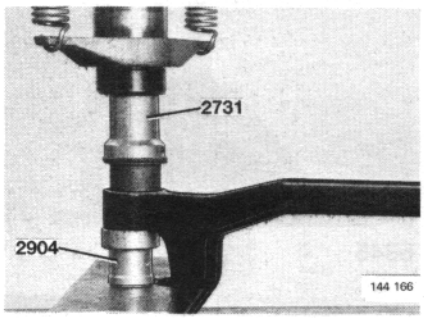

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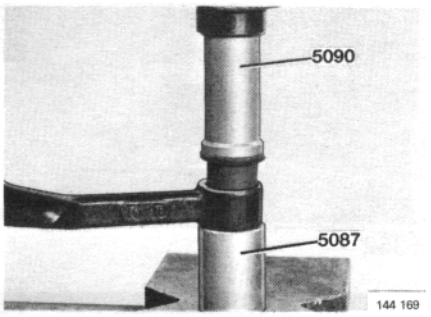

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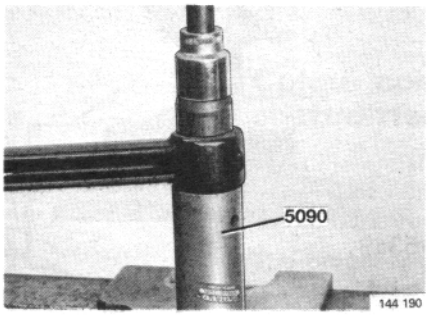

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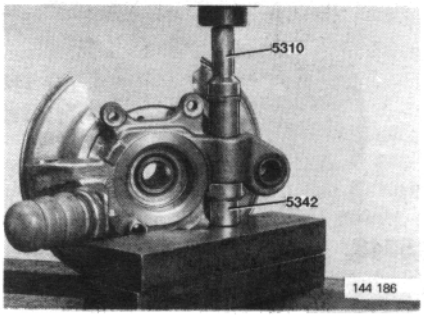

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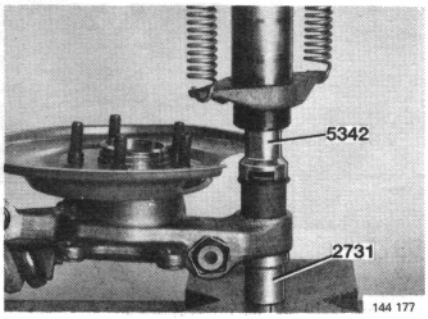

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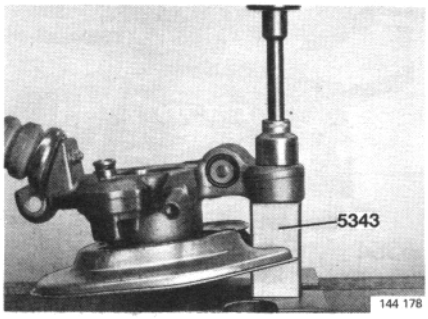

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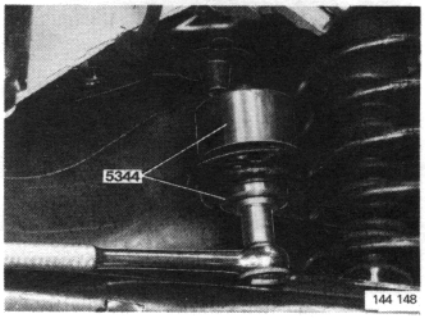
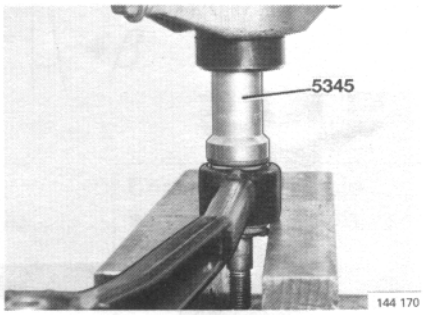


5344

Special tools

999-	Description – application
5345-7	Drift for outer bushing in upper control arm
5346-5	Counterhold for front support arm bushing
5347-3	Drift for front support arm bushing
5348-1	Spacer for front support arm bushing
5349-9	Drift for lower bushing in differential housing
5352-3	Press tool for rear bushing in upper rear axle member
5353-1	Press tool for upper control arm bushing
5354-9	Press tool for upper bushing in differential housing
5972-8	Jacking fixture



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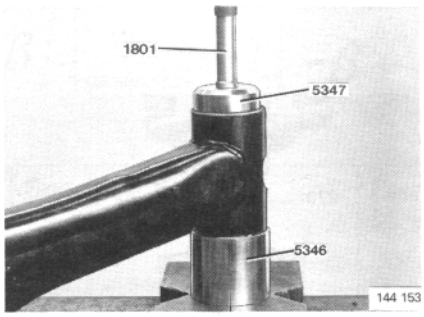

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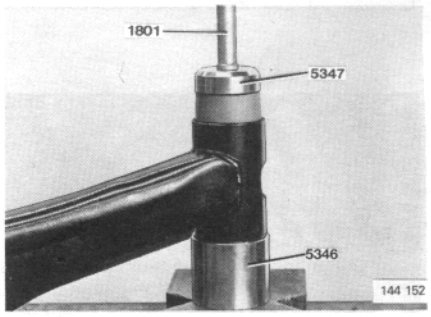

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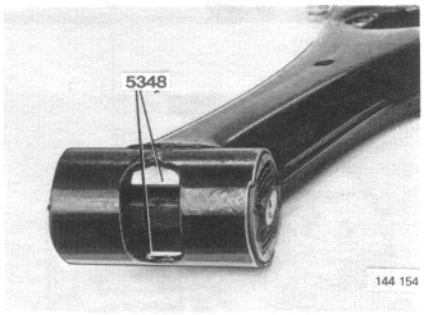

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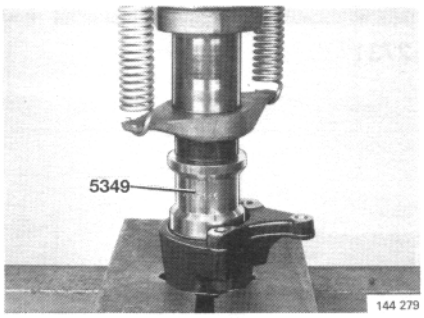

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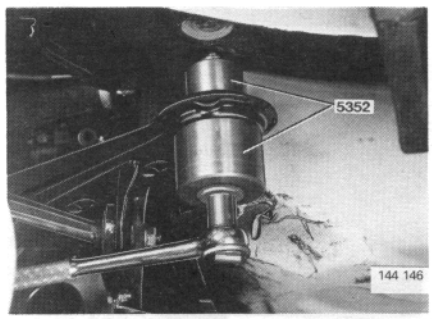

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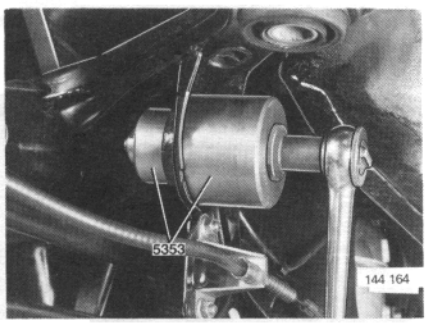

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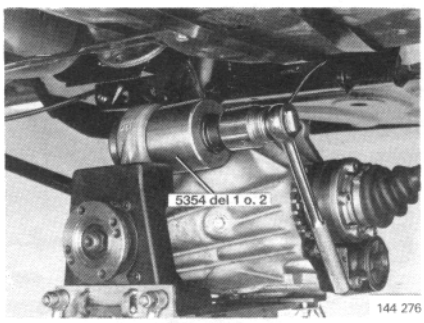

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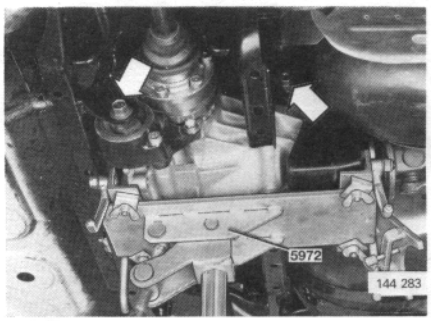

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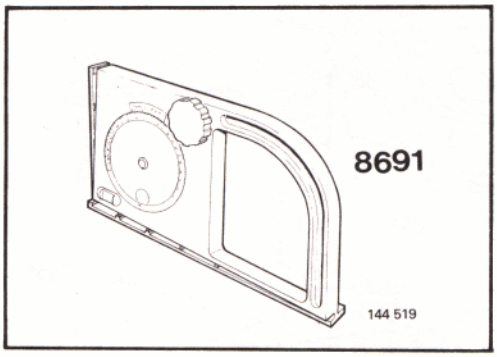
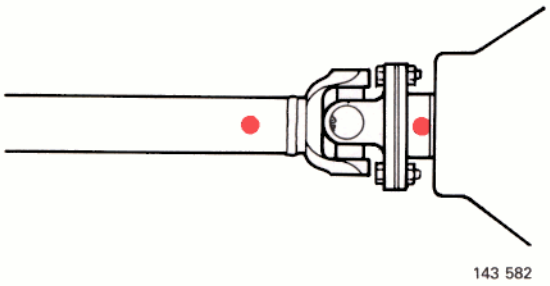
Special tools

998-	Description – application
8691-3	Protractor
8700-2	Wheel alignment instrument



8691



Colour coding of propeller shaft/differential coupling

The differential coupling on the new final drive is provided with a pink marking at the point on the flange where the throw is greatest (i.e. the 'heaviest' point).

The propeller shaft flange is provided with a similar marking at the 'lightest' point.

When assembled, these markings should be aligned as closely as possible. This is a last, fine adjustment designed to minimize noise and vibrations.

Reassembly of bolted joints

General requirements

- Clean all mating surfaces, first physically and then with a solvent.
- Renew bolts and nuts in torqued joints as required. Clean and oil reused parts.
- Always renew bolts or bolts/nuts in torqued joints which are further tightened to a specified angle.
- Use a recommended type of protractor when reassembling torqued joints which are further tightened to a specified angle.
- The following torques should be applied to an accuracy of ±5% or better.

N.B. 1 Nm = 0.7233 ft.lb

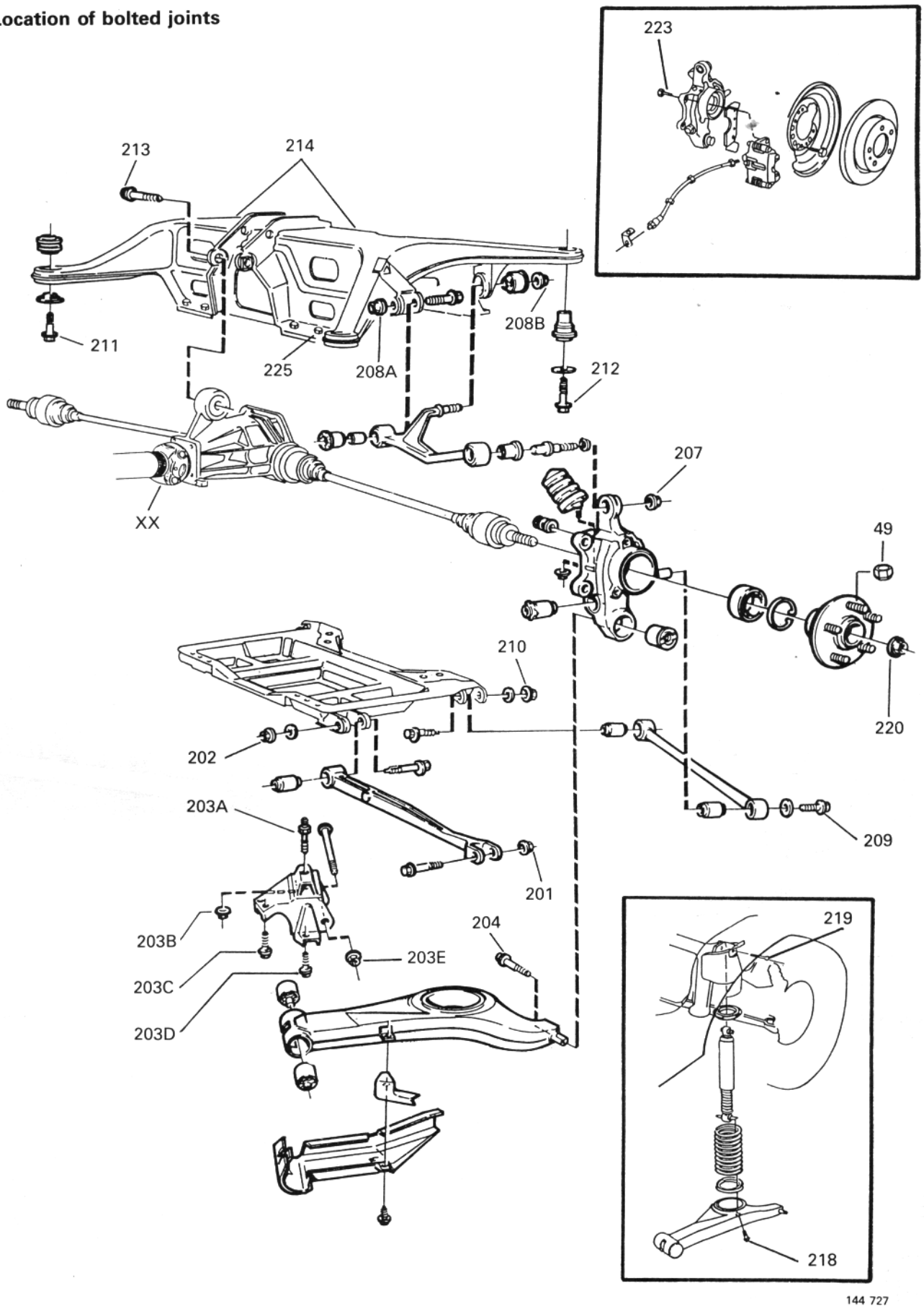
Torqued joints

Joint No.	Page	Description	Recommended torque Nm (ft.lb)
49	17, 24, 29, 34, 38	Wheel nuts	85 (62)
203A		Body studs (bolts)	70 (51)
203C	23, 42	Support arm/body mounting (bolt)	48 (35)
203D	23, 42	Support arm/body mounting (bolt)	48 (35)
207	22, 34, 37	Upper control arm/wheel bearing housing (nut)	115 (84)
208B	34	Upper control arm/rear axle member, rear (nut)	85 (62)
209	17, 22, 29, 34, 38	Track rod/wheel bearing housing (bolt)	85 (62)
210	14, 17	Track rod/rear axle member (nut)	70 (51)
213	28	Differential (front)/rear axle member (bolt)	160 (116)
214	28	Differential (rear)/rear axle member (bolt)	160 (116)
218	23	Damper/support arm (nut)	56 (41)
219	23	Damper/body (bolt)	85 (62)
223	22, 34, 38	Brake caliper/wheel bearing housing (bolt)	60 (44)
XX	28, 42	Universal joint, rear (nut)	50 (37)

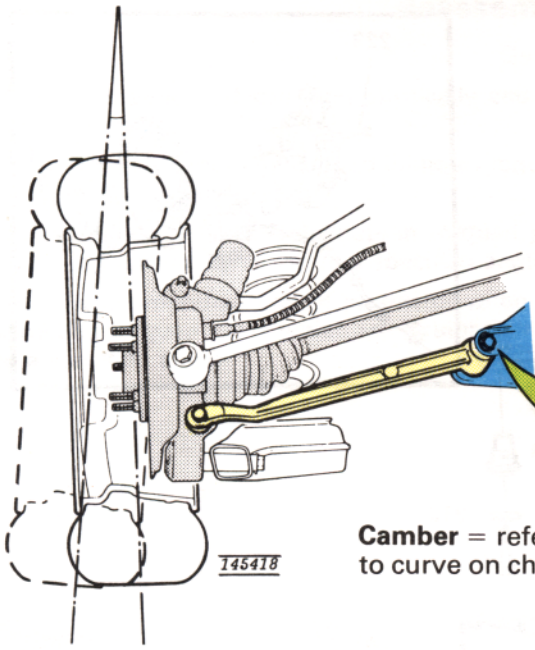
Torqued + angle-tightened joints

Joint No.	Page	Description	Recommended torque Nm	Degrees (ft.lb)
201	22, 29, 34, 38	Lower control arm/wheel bearing housing (nut)	50 (37)	90
202	14	Lower control arm/rear axle member (nut)	50 (37)	90
203B	23, 42	Support arm/body (nut)	70 (51)	90
203E	23	Support arm/support arm bracket (nut)	125 (91)	120
204	24, 29, 34, 38, 42	Support arm/wheel bearing housing (bolt)	60 (44)	90
208A	34	Upper control arm/rear axle member (front) (nut)	70 (51)	60
211	42	Rear axle member (front)/body (bolt)	70 (51)	60
212	42	Rear axle member (rear)/body (bolt)	70 (51)	60
220	24, 38	Hub nut	140 (102)	60
225	29	Rear axle member (upper)/rear axle member (lower) (bolt)	70 (51)	30

Location of bolted joints



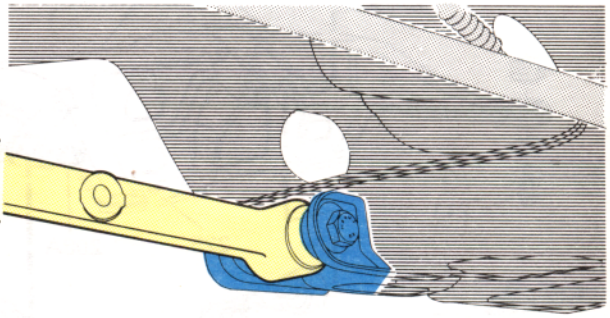
Adjusting rear wheel toe-in and camber



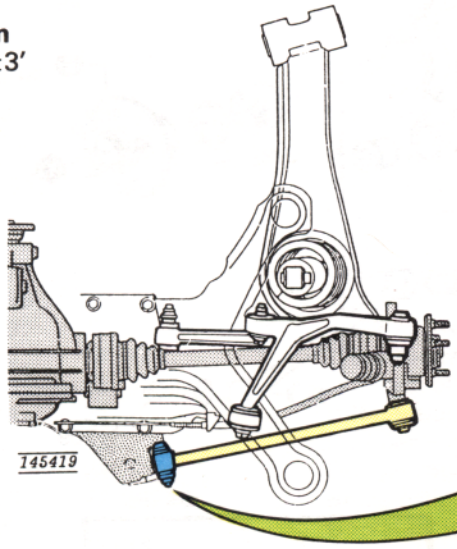
Camber = refer to curve on chart

Camber.

Use the eccentric bolts in the **lower inner link mountings.**

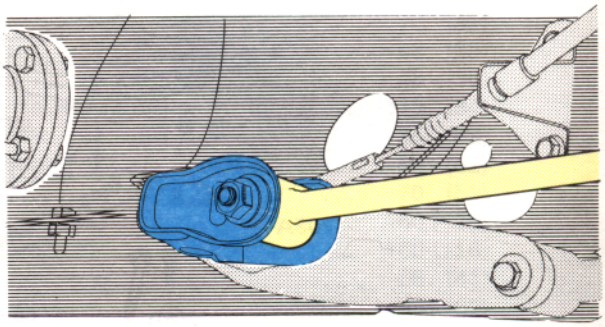


Toe-in
= 2′±3′

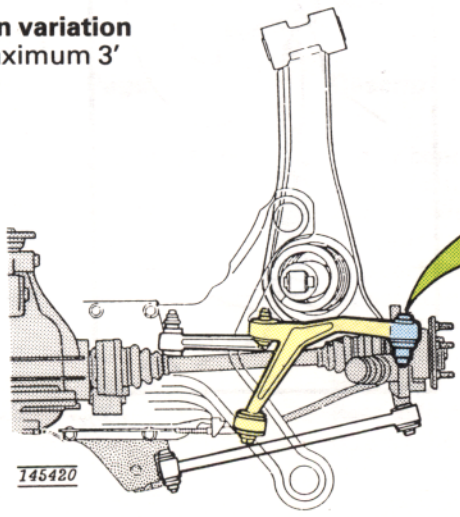


Toe-in.

Use the eccentric bolts in the **track rod inner mountings.**

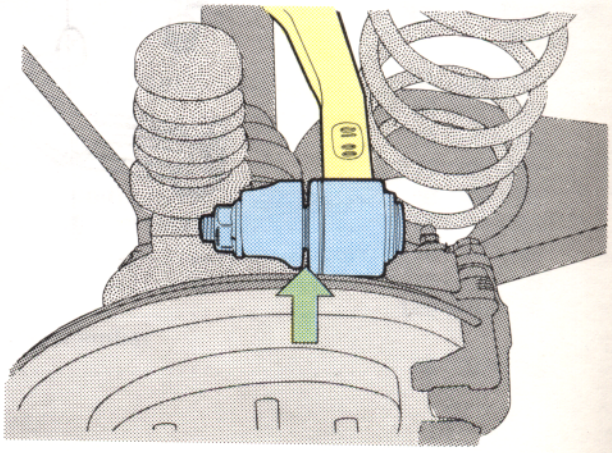


Toe-in variation
= maximum 3′



Toe-in variation.

Add or remove spacers between **upper link** and **wheel bearing housing.**



Service procedures

Setting Multi-Link rear end suspension

The mandatory equipment list requires a Hunter D111 or equivalent for 4-wheel alignment.

The multi-link alignment specifications are very precise and specific alignment procedures may vary with the type of equipment used.
It is strongly recommended that technicians who perform alignments are trained by the equipment manufacturer on the specific alignment equipment available at their respective service shops.

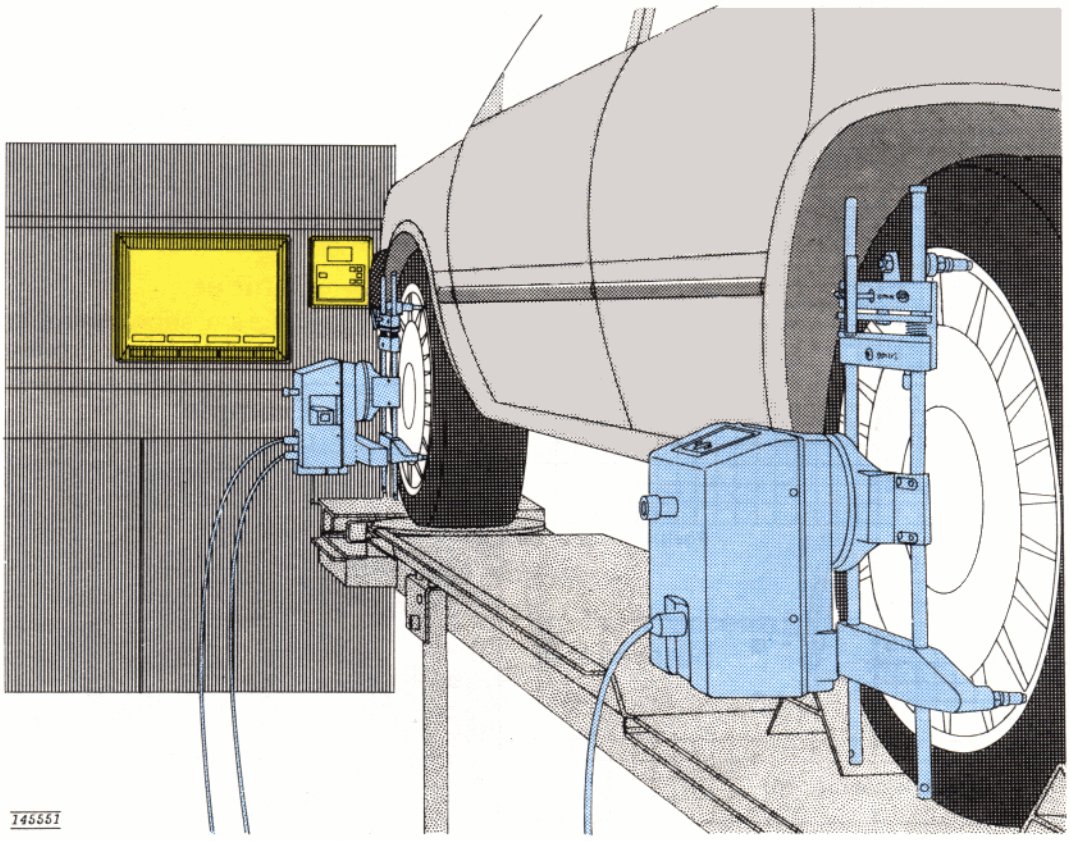
The following procedure contains guidelines and specifications to perform an alignment to the multi-link regardless of the type of equipment used.

Before measuring rear wheel alignment it is necessary to:

- Check rim out-of-true condition (wheel warp).
- Park vehicle in a straight ahead position.
- Check tire inflation pressures.
- Set up measuring equipment at all four wheels.
- Compensate for rim out-of-true condition.
- Lower vehicle to turntables.
  Remove lock pins from turntables. Wheels should be straight ahead and the parallel bars vertical. Rock vehicle to settle suspension.
- Depress brake pedal and keep in position with a brake pedal lock.

NOTE: Due to design differences, some 4-wheel alignment equipment measures in "minutes of arc" and others measure in "hundredths of a degree". The following pages make reference to both methods of dividing a degree.

Formula: 60' (minutes of arc) = 1.0° (Degree)
1' (minute of arc) = 0.016° (Degree)



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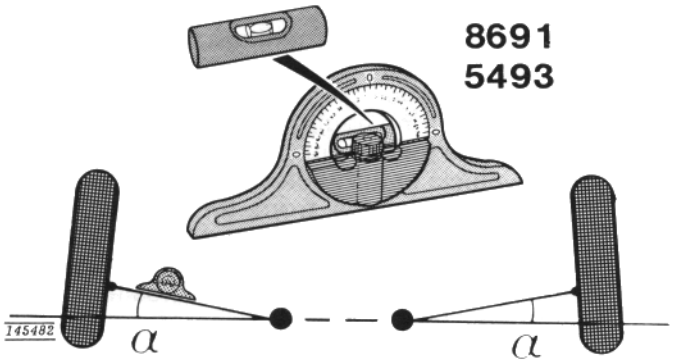
Rear wheel alignment

IMPORTANT!
Start with camber.

NOTE:
Adjusting bolts must be turned only when aligning rear wheels.
Adjust toward increased negative angle. Pressure on eccentric bolt must be on inside.

CAMBER

C1



Use level scale (5493, 8691 or equivalent) to measure lower link angles.
Must be accurate to within 0.5°.

C2

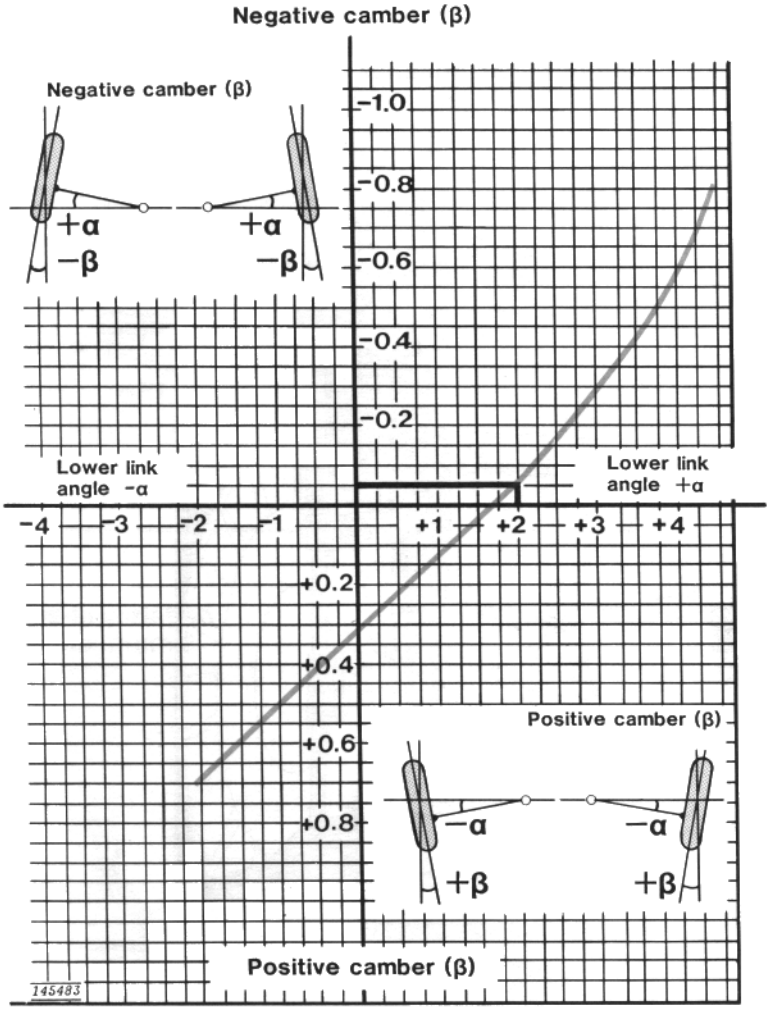


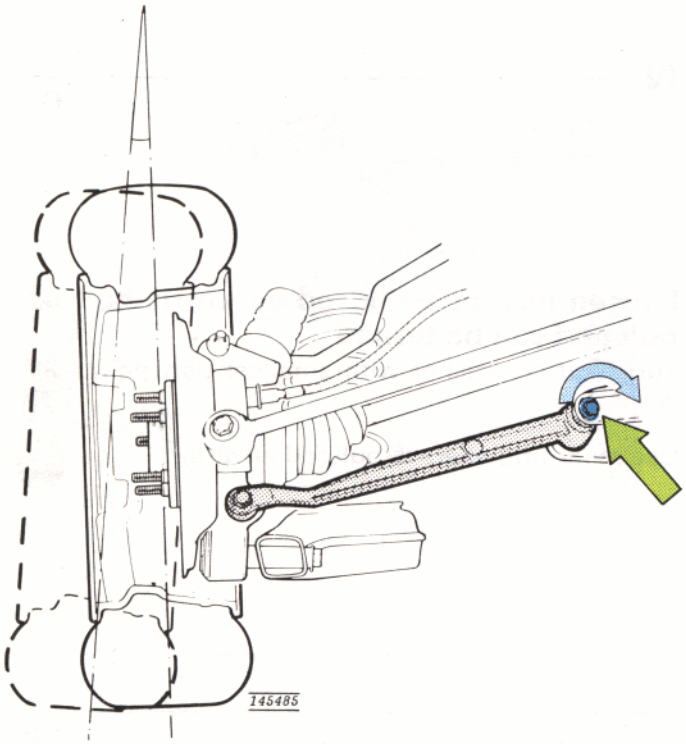
Figure correct camber value in relation to lower link angle.
Use chart.

Camber

Diagram shows camber angle (ß) related to lower link angle (∝).

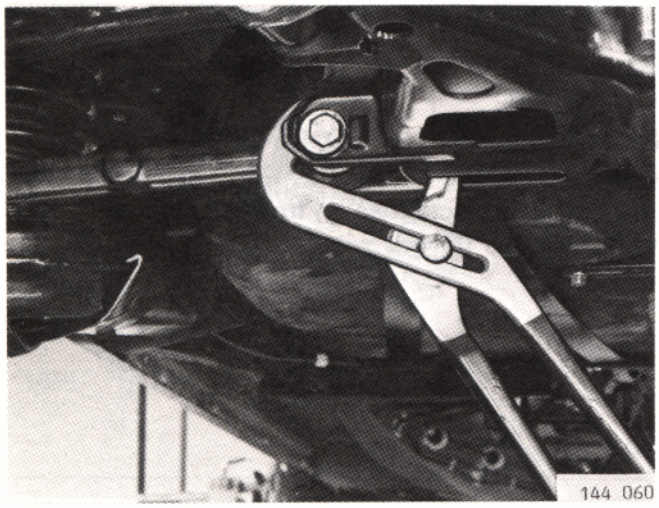
Example:

Lower link angle is +2°. Correct camber is then -3' (-0.05°) camber. Permitted camber deviation is ±15' (0.25°).



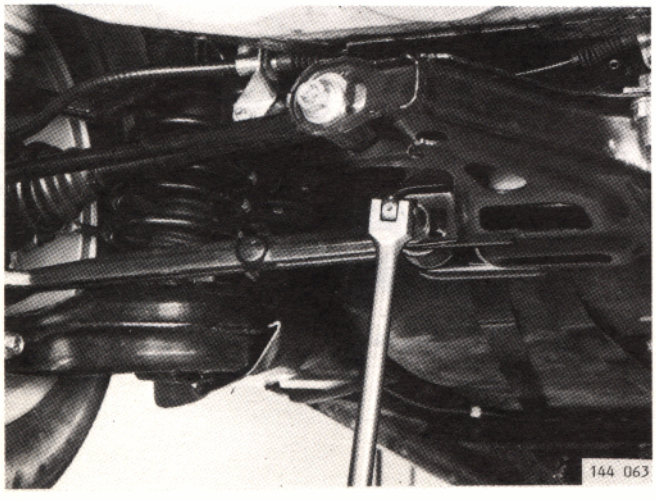
C3

Loosen nut on lower link eccentric bolt so eccentric bolt just can be turned.



C4

Use multi-grip pliers to pull link inward.

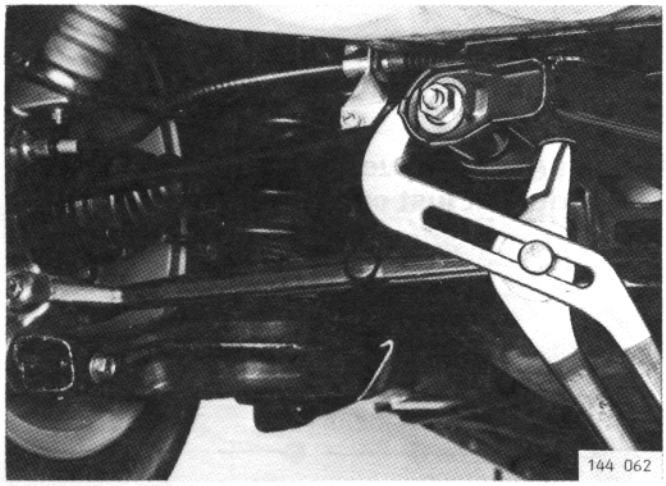


C5

Turn eccentric bolt until level bubble is centered.

TOE-IN

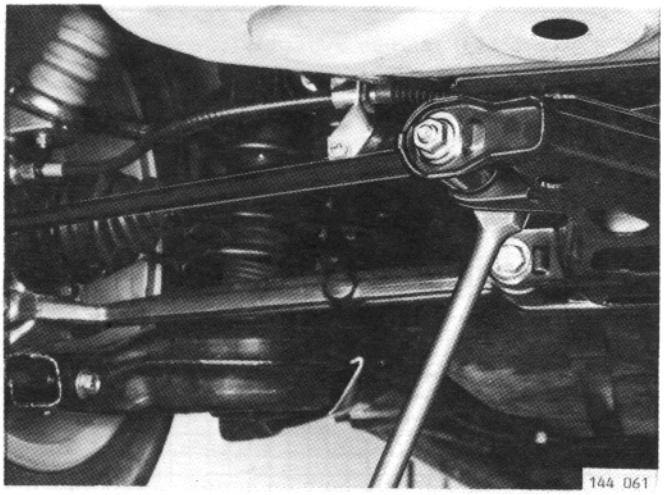
D1



Loosen nut for track rod eccentric bolt so bolt just can be turned.
Turn bolt so washer with smallest part points inward.

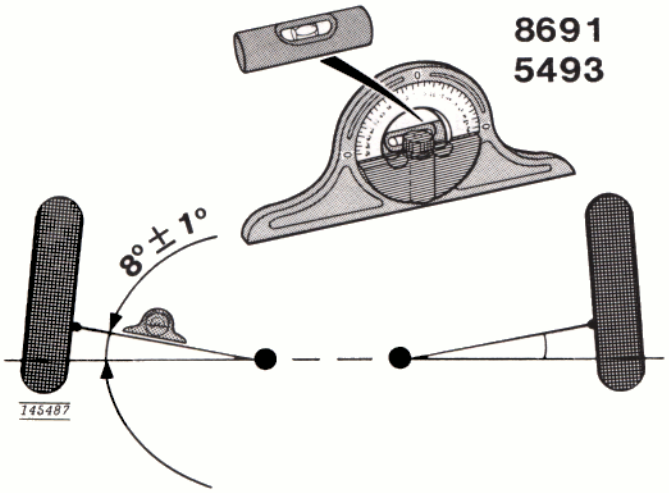
Use multi-grip pliers to pull rod inward.

D2



Set toe-in to 2′ ± 3′ (0.03° ± 0.05°) for each wheel.
Turn bolt to project cross on front wheel instrument scale via mirror on rear wheel.

TOE-IN VARIATION



In case customer complains that the vehicle feels or behaves abnormally when driving, in spite of correctly adjusted camber and toe-in, toe-in variation should be checked. This means that the toe-in is measured at various loads = various suspension positions.

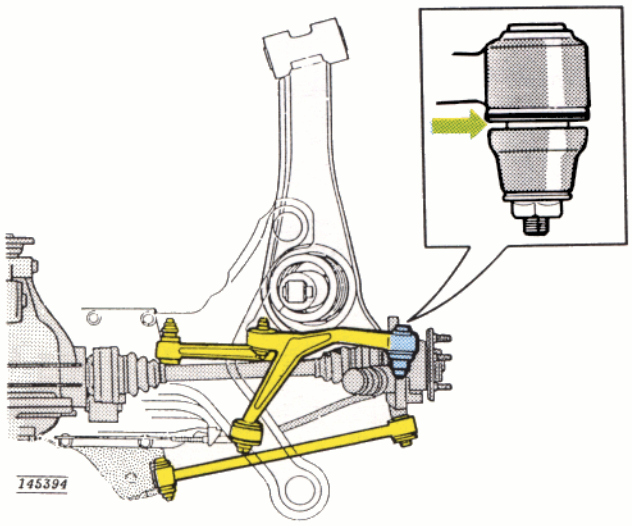
E1

Measure toe-in at different loads.

Use previously described procedures to measure toe-in at normal load.

Then measure toe-in with vehicle loaded so that lower link angle, measured with angle scale, is 8° ±1°.

Max. toe-in change per wheel must not exceed 3' (0.05°).



E2

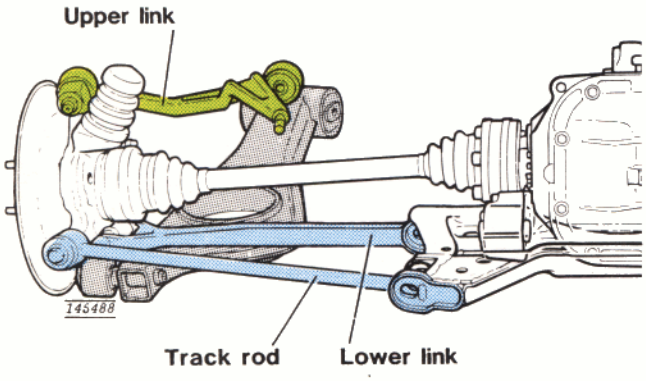
In case of excessive toe-in change.

Adjust by inserting spacers of different thickness between upper link and wheel bearing housing.

Volvo P/N	Thickness	
1 387 758-4	1mm	0.04"
1 387 759-2	2 mm	0.08"
1 387 760-0	3 mm	0.12"
1 387 783-2	0.5 mm	0.02"

Excessive toe-out: increase spacer thickness.

Excessive toe-in: reduce spacer thickness.



E3

Loosen and retighten.

Otherwise upper link rubber bushings will become preloaded.

Before track rod eccentric bolts are tightened, all other lower link and track rod connections must be:
- first loosened
- then retightened.

E4

After adjusting toe-in variation:

Readjust camber and toe-in.

Track rod bushings – replacement

Special tools: 5345, 5349

N.B. Car must be parked in straight-ahead position when tightening bushed joints.


144 196

B1

Raise car on hoist

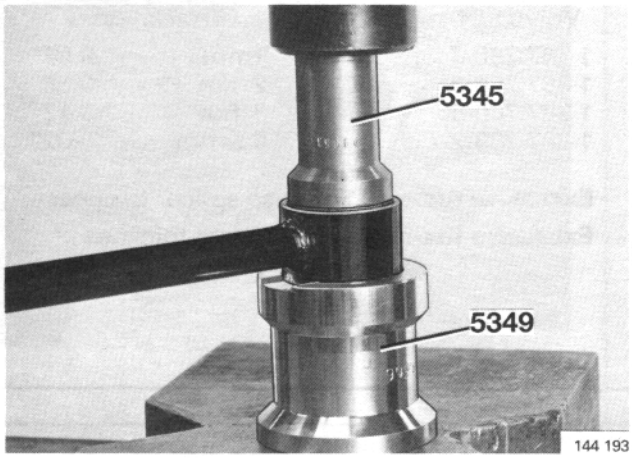
Locate front lifting arms as far forward as possible.

Ensure that rear lifting arms do not interfere with support arms.

B2

Remove

- Wheel
- Track rod.

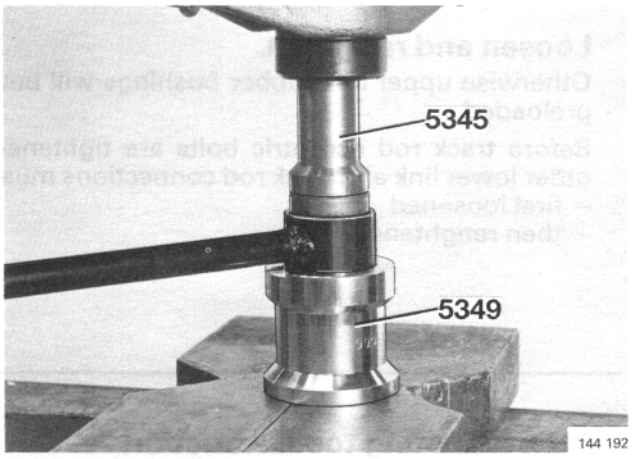


144 193

B3

Press out outer bushing

Use drift **5345** and counterhold **5349**.

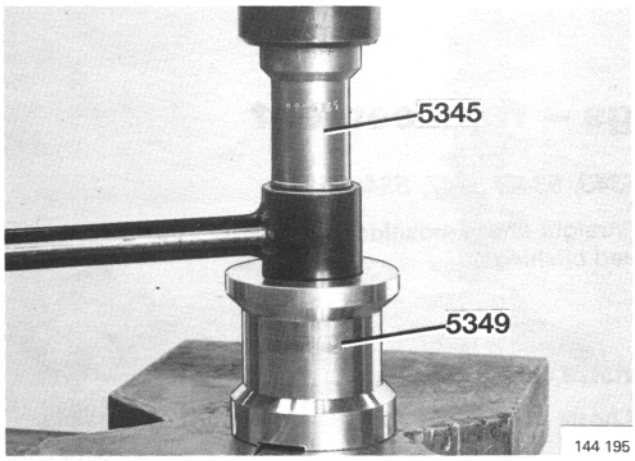


144 192

B4

Press in new bushing

Use same tools as for removal.

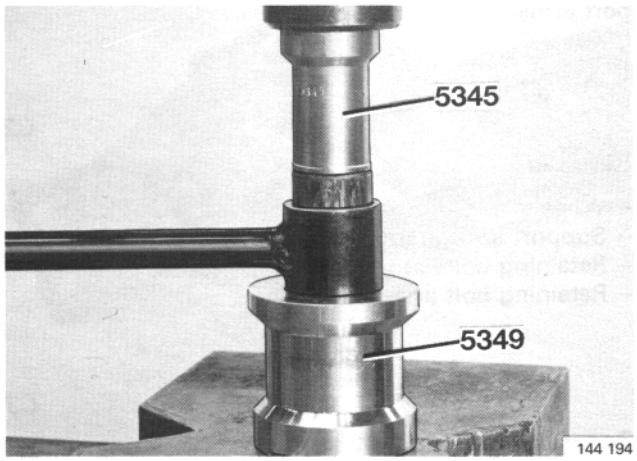


144 195

B5

Press out inner bushing

Use drift **5345** and counterhold **5349**.

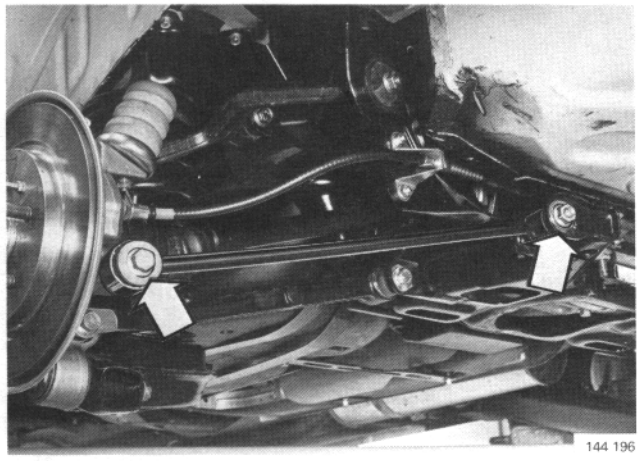


144 194

B6

Press in new bushing

Use same tools as for removal.


144 196

B7

Replace

- Track rod. Tighten:
  Bolt in wheel bearing housing to **85 Nm** (62 ft.lb).
  Nut in rear axle member to **70 Nm** (51 ft.lb).
- Wheel. Tighten wheel nuts to **85 Nm** (62 ft.lb).

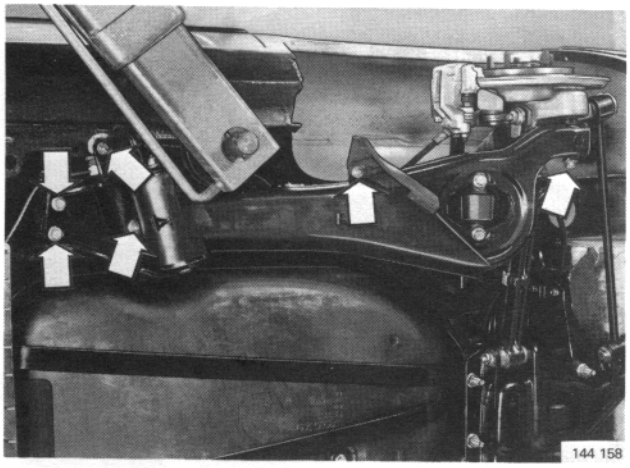
B8

Check and adjust rear wheel alignment as required. See page 8

Support arm bushings – replacement

Special tools: 1801, 2731, 5342, 5343, 5346, 5347, 5348, 5972

N.B. Car must be parked in straight-ahead position when tightening rubber insulated bushings.


144 158

C1

Raise car on hoist

Locate front lifting arms as far forward as possible.

Ensure that rear lifting arms do not interfere with support arms.

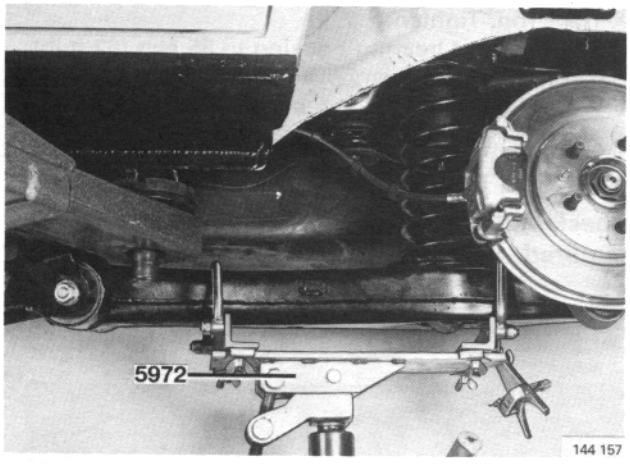
C2

Remove

- Wheels
- Support arm guards.
- Retaining bolts at front of support arm.
- Retaining bolt at rear of support arm.

C3

Separate rear end of support arm from wheel bearing housing



144 157

C4

Place jack and fixture 5972 under support arm

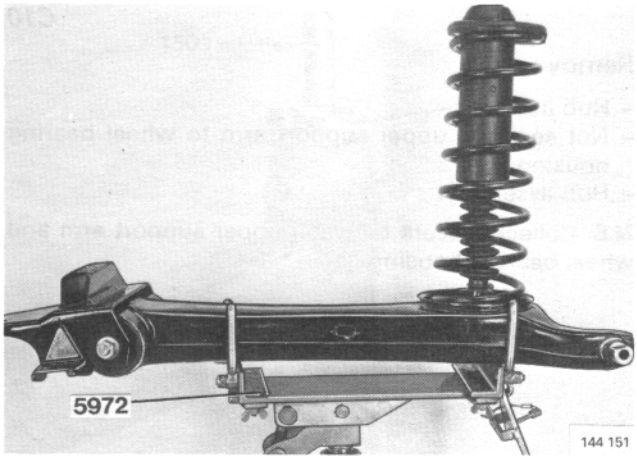
Clamp support arm with arms on fixture.

C5

Remove retaining bolt at top of damper

Relieve load on damper slightly and withdraw bolt.

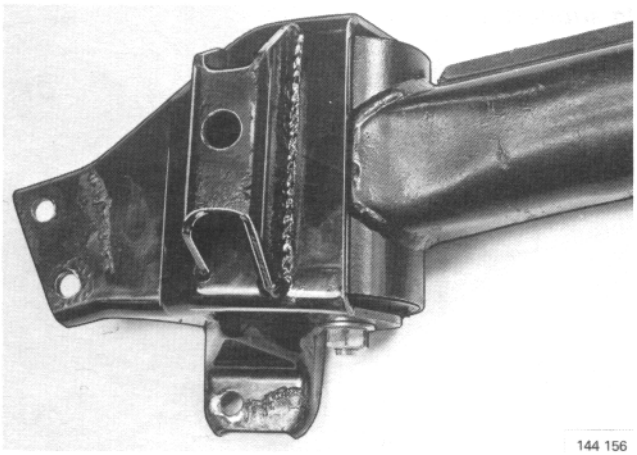
Lower support arm complete with spring and damper.



C6

Remove

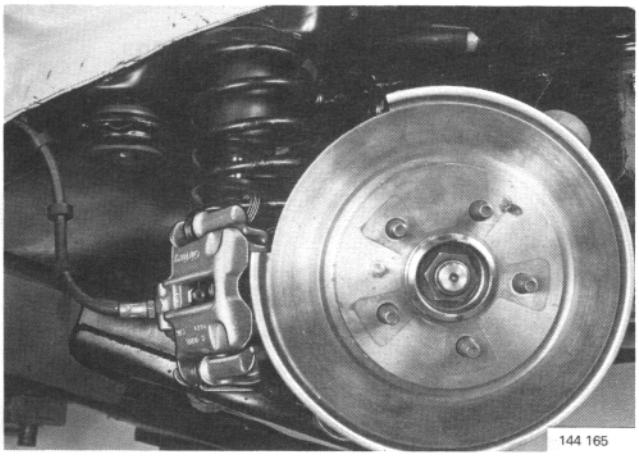
- Spring and rubber seats (top and bottom).
- Bolts attaching damper to support arm.



Support arm front bushing: *C7*

Remove bracket at front of support arm

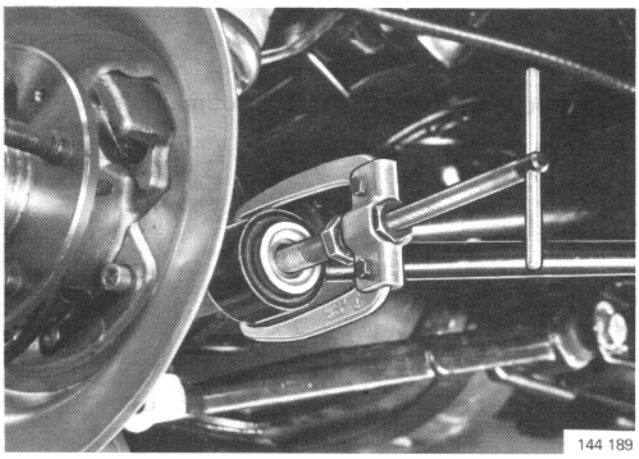
N.B. Note relative positions of bracket and arm.



Support arm rear bushing: *C8*

Remove

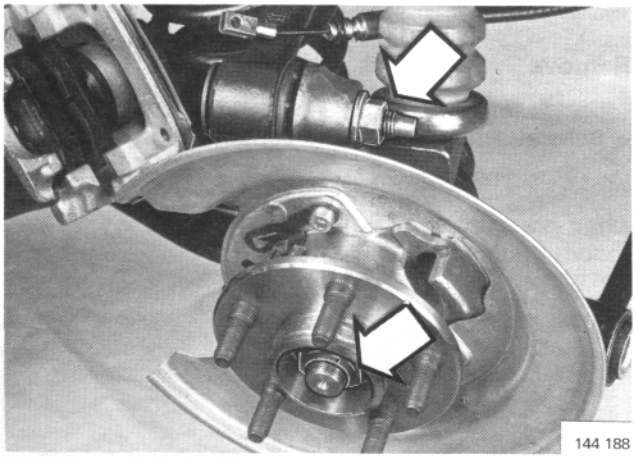
- Brake caliper mounting bolts. Tie up caliper with wire to avoid damage.
- Brake disc.
- Brake pads.
- Handbrake cable at wheel bearing housing.



C9

Remove

- Bolt and nut holding lower support arm to wheel bearing housing.
- Bolt attaching track rod to wheel bearing housing.
- Track rod. Use small puller and 50 mm long 12 mm bolt to withdraw rod from housing.


144 188

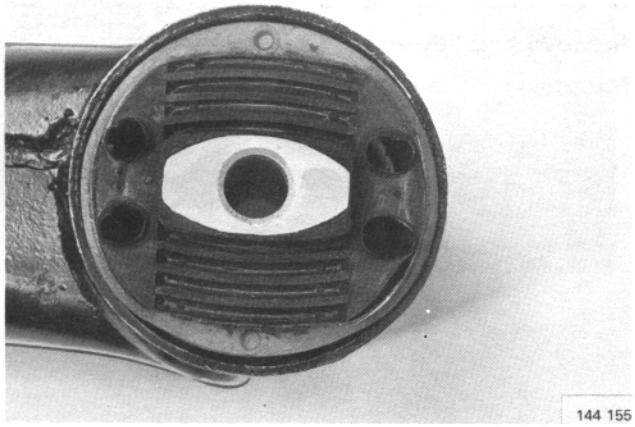
C10

Remove

- Hub nut.
- Nut securing upper support arm to wheel bearing housing.
- Hub assembly.

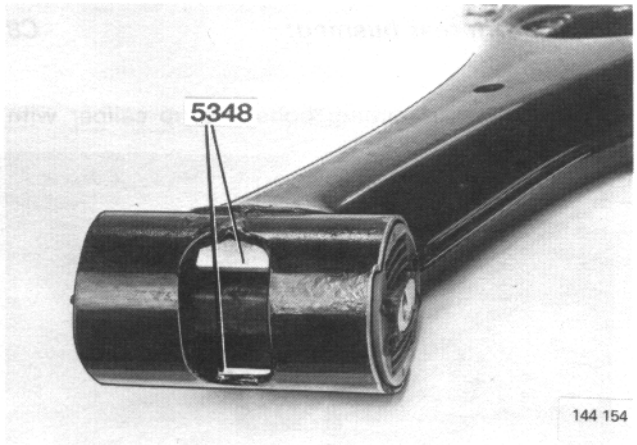
N.B. Collect spacers between upper support arm and wheel bearing housing.

In support arm:


144 155

C11

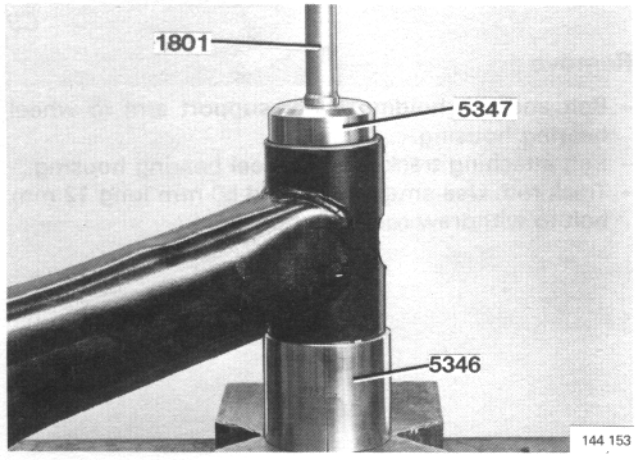
Note positioning of bushings



144 154

C12

Position spacer 5348 between bushings



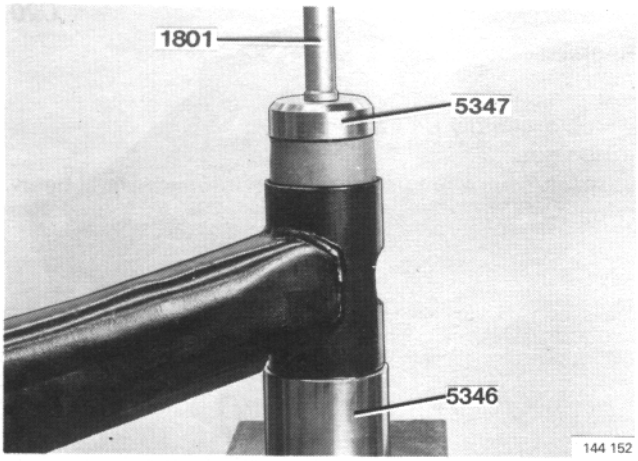
144 153

C13

Remove bushings

Use drift **5347**, handle **1801** and counterhold **5346**.

Remove one bushing at a time.

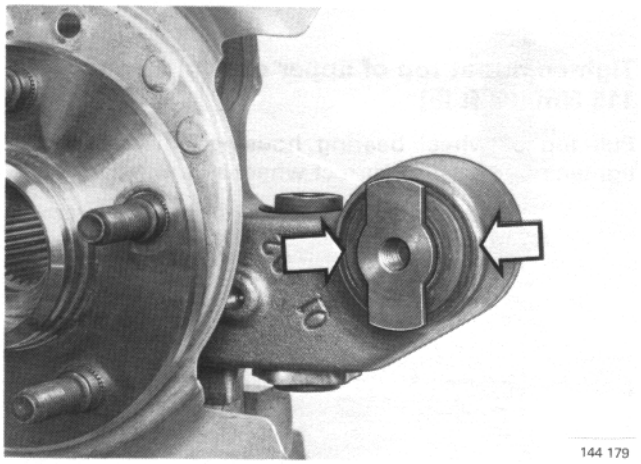


C14

Insert new bushings

Insert bushings from each side.

Ensure that bushings are orientated correctly. Use drift **5347**, handle **1801** and counterhold **5346**.



C15

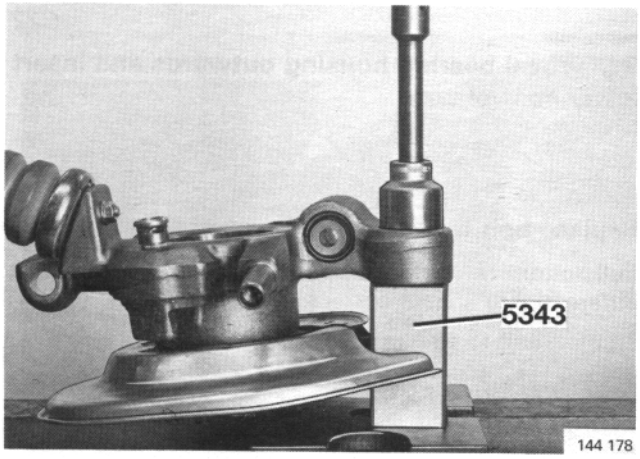
Mount wheel bearing housing in a vice

C16

Remove brake shield mounting bolts

C17

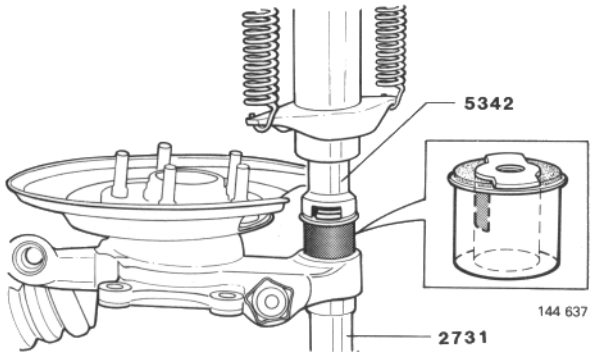
Chisel off bushing edges to provide seat for counterhold 5343



C18

Remove bushing

Use 42±0.55 mm dia. sleeve and counterhold **5343**.



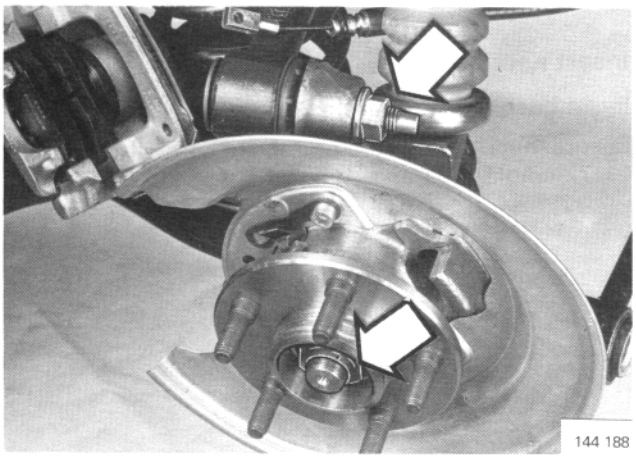
C19

Press in new bushing

Use drift **5342** and counterhold **2731**.

N.B. Bushing must be positioned with slot at top.

Support arm bushings – replacement

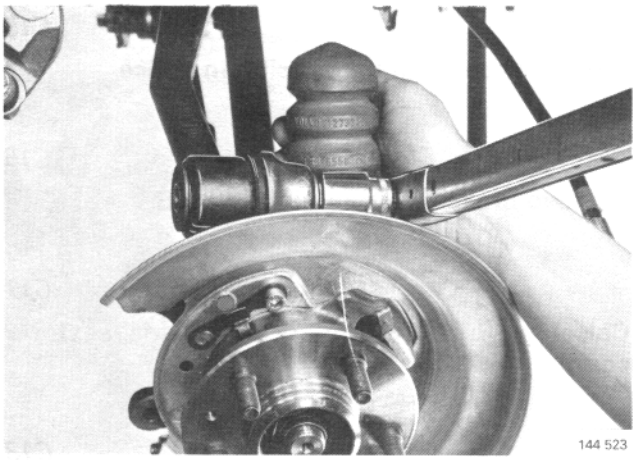


144 188

C20

Replace

- Brake shield.
- Hub assembly on half shaft.
- Hub nut.
- Spacers between upper control arm and wheel bearing housing.

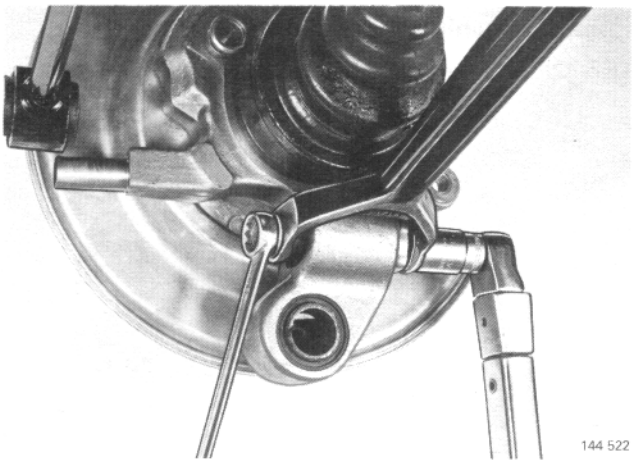


144 523

C21

Tighten nut at top of upper control arm to 115 Nm (84 ft.lb)

Pull top of wheel bearing housing outwards while tightening to ensure correct wheel alignment.



144 522

C22

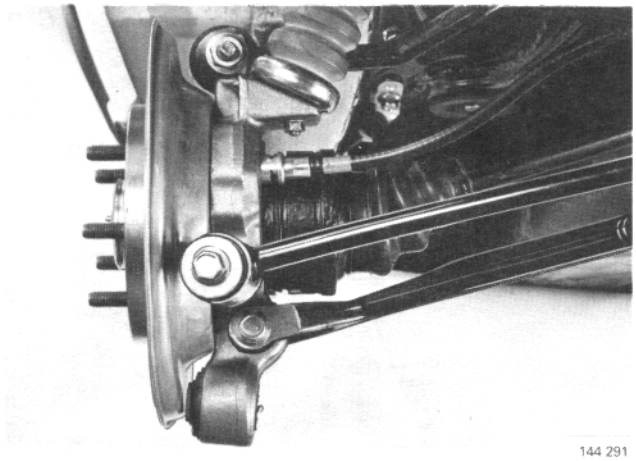
Pull wheel bearing housing outwards and insert lower control arm

C23

Replace bolt holding lower control arm

Pull bottom of wheel bearing housing inwards towards differential to ensure correct wheel alignment.

Tighten bolt to **50 Nm** (37 ft.lb) plus 90°.

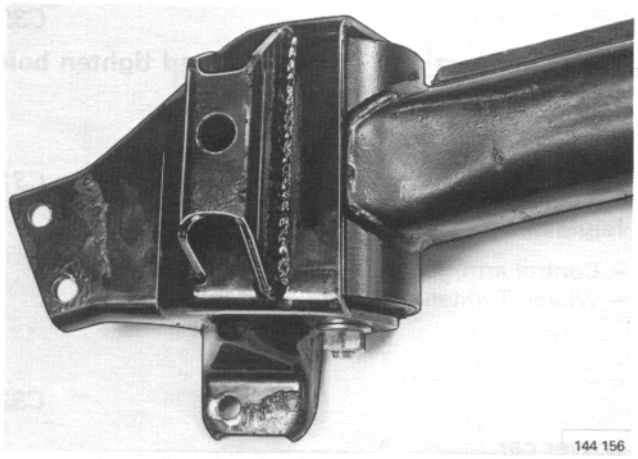


144 291

C24

Replace

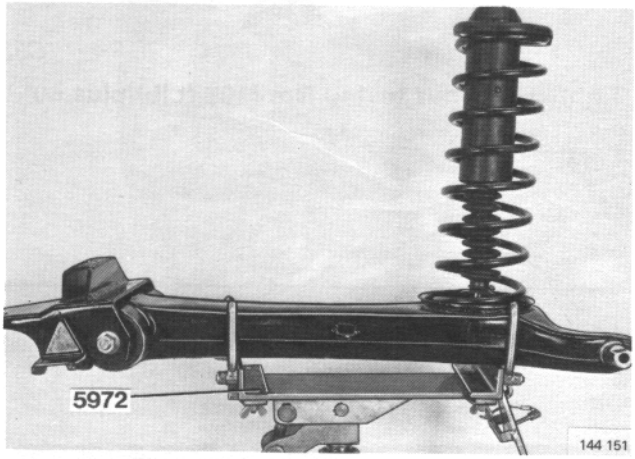
- Handbrake cable in wheel bearing housing.
- Handbrake pads.
- Brake disc.
- Brake caliper. Tighten to **60 Nm** (44 ft.lb).
- Track rod. Tighten to **85 Nm** (62 ft.lb).



C25

Replace

- Support arm bracket at correct angle. Tighten to **125 Nm** (91 ft.lb) plus 120°.
- Damper. Tighten to **56 Nm** (41 ft.lb).
- Bottom rubber seat in support arm. **N.B.** Note position of grooves in seat.



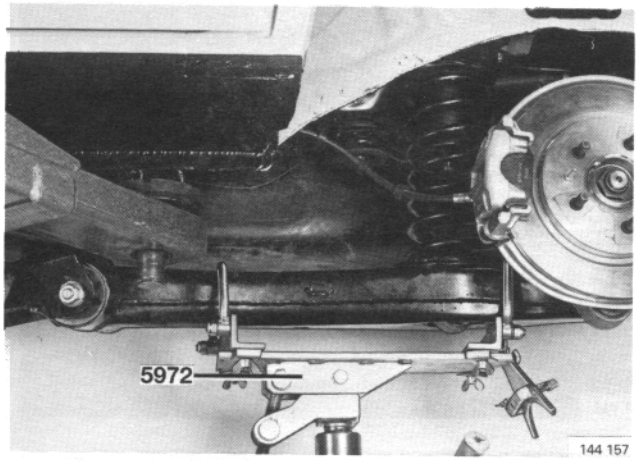
C26

Replace spring and top rubber seat

C27

Place support arm on jack and fixture 5972

Clamp support arm in position using arms on fixture.



C28

Lift support arm and compress spring until damper is in correct position

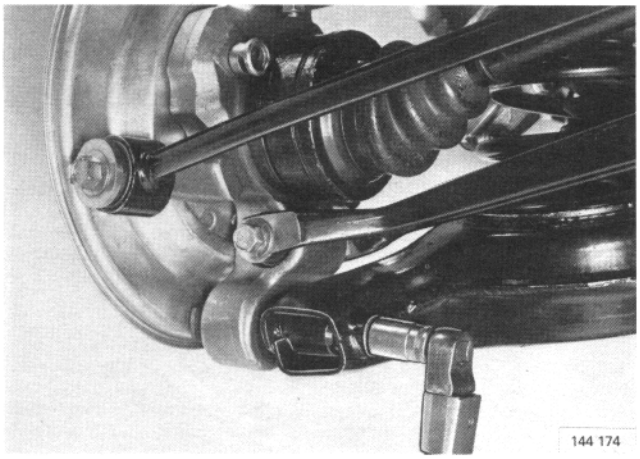
Fix damper in position by inserting screwdriver in hole. Insert bolt and tighten to **85 Nm** (62 ft.lb).

C29

Replace mounting bolts and nuts at front of support arm

Tighten

- Large nut to **70 Nm** (51 ft.lb) plus 90°.
- Bolts to **48 Nm** (35 ft.lb).



C30

Tap in support arm at rear end and tighten bolt to 60 Nm (44 ft.lb) plus 90°

C31

Replace

- Control arm guard.
- Wheel. Tighten to **85 Nm** (62 ft.lb).

C32

Lower car

C33

Tighten hub nut to 140 Nm (102 ft.lb) plus 60°

Differential housing bushings – replacement

Special tools: 5349, 5354, 5972

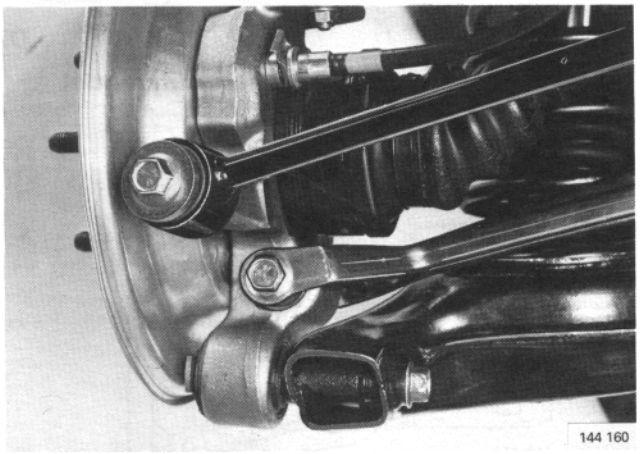
N.B. Car must be parked in straight-ahead position when tightening rubber insulated bushings.

D1

Raise car on hoist

Locate front lifting arms as far forward as possible.

Ensure that rear lifting arms do not interfere with support arms.

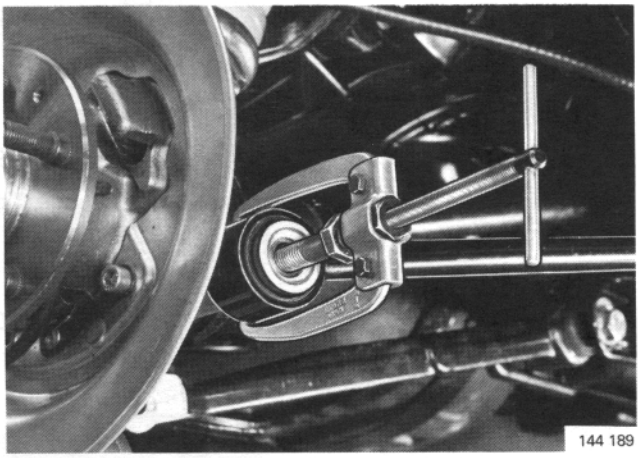

144 160

D2

Remove

- Wheels.
- Bolt attaching support arms to wheel bearing housings. Tap out arms.
- Bolts and nuts holding lower control arms to wheel bearing housings.

Remove support arm bolt on one side.


144 189

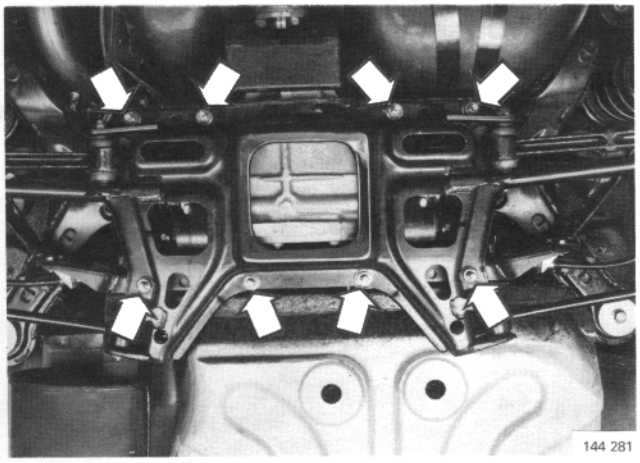
D3

Remove bolt attaching track rod to wheel bearing housing on each side

D4

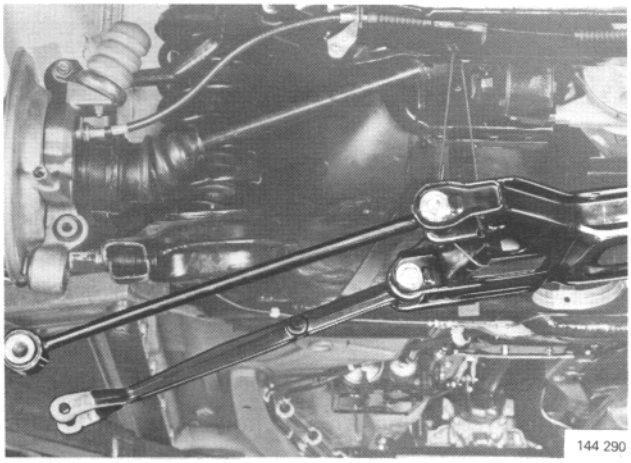
Disconnect track rods from wheel bearing housings

Use small puller and 50 mm long 12 mm bolt.


144 281

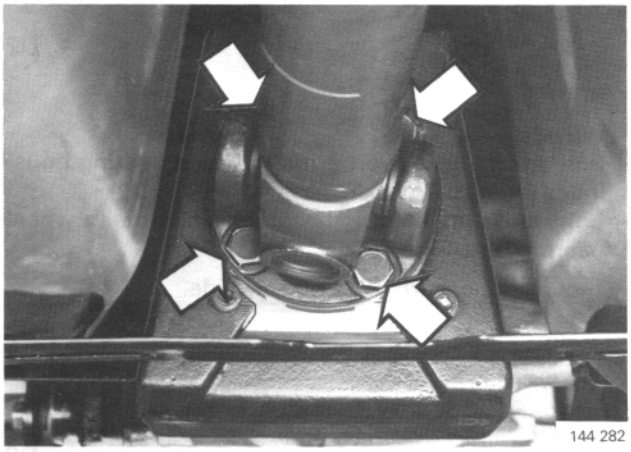
D5

Remove bolts joining upper and lower sections of rear axle member



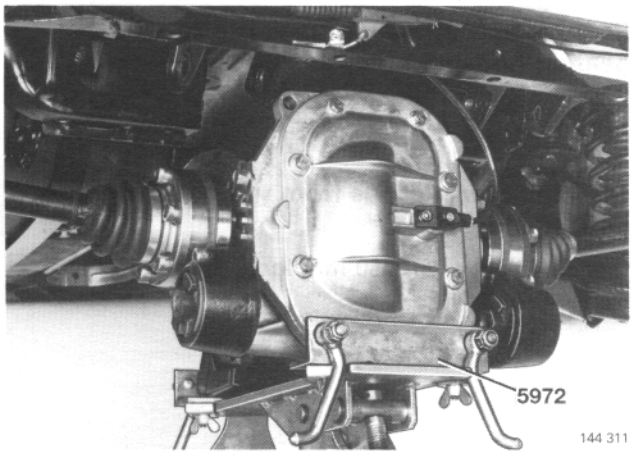
D6

Pull wheel bearing housings outwards. Remove lower section of rear axle member complete with track rods and control arms



D7

Remove bolts in propeller shaft/differential coupling



D8

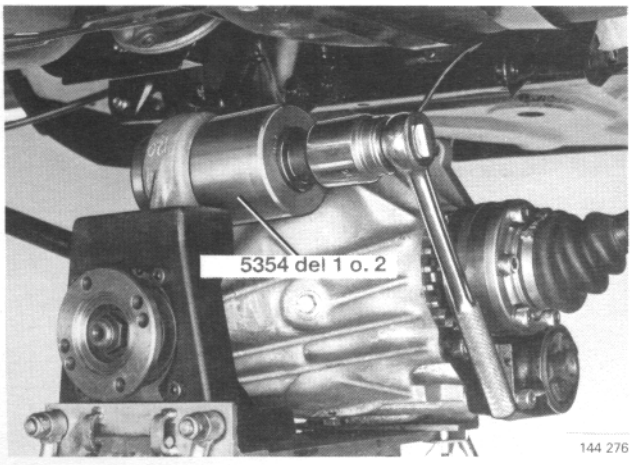
Place jack and fixture 5972 under differential

D9

Remove bolts (3) holding differential to rear axle member

D10

Lower differential slightly



Upper bushing

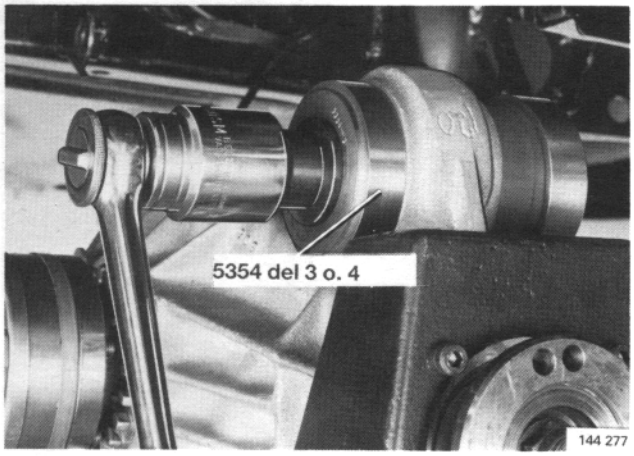
D11

Press out bushing

Use press tool **5354**, parts 1 and 2.

Note orientation of bushing.

D12



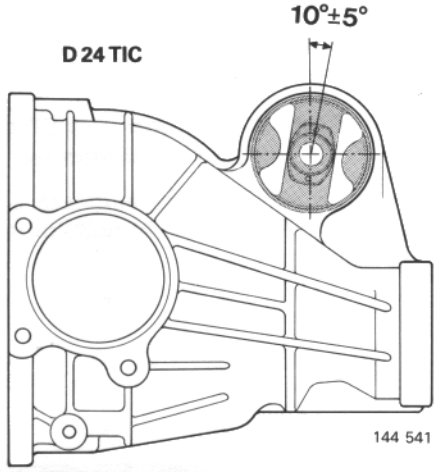
Press in new bushing

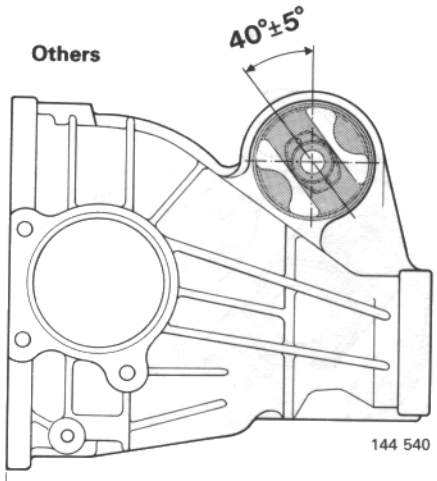
Use press tool **5354**, parts 3 and 4. Position part 3 with recess facing housing to ensure bushing is centred.

Press in bushing partially.

Reverse part 3 and press bushing home.

See figures below for bushing orientation.

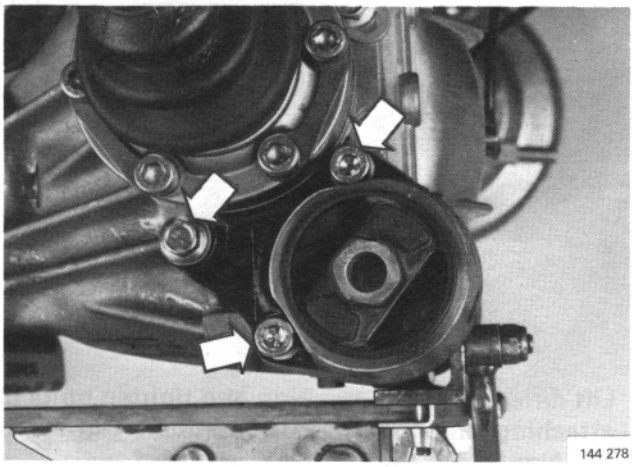




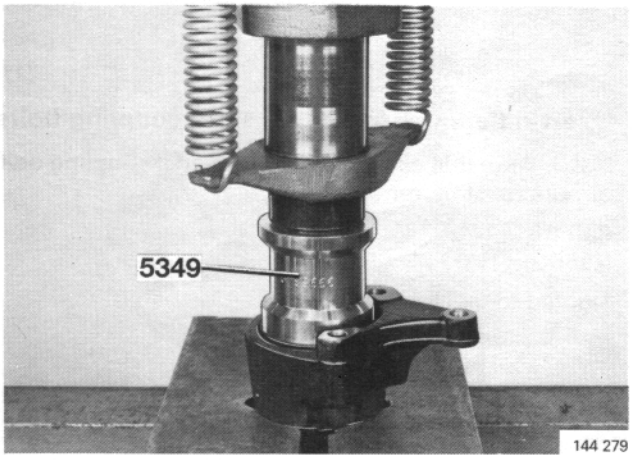
Lower bushings

D13

Remove bushing bracket retaining bolts (3)

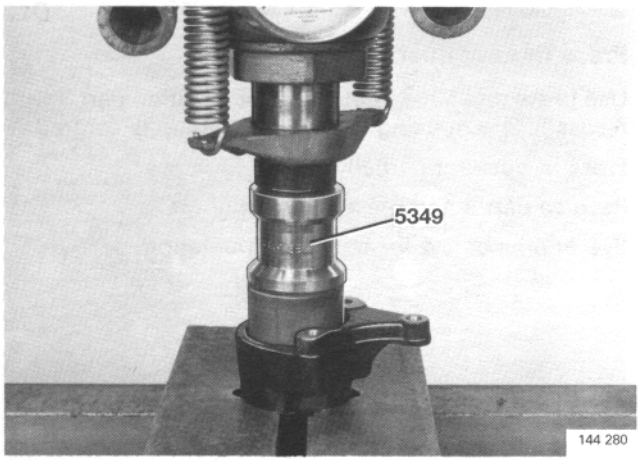


D14



Press out bushing

Use drift **5349** with V-block as counterhold.



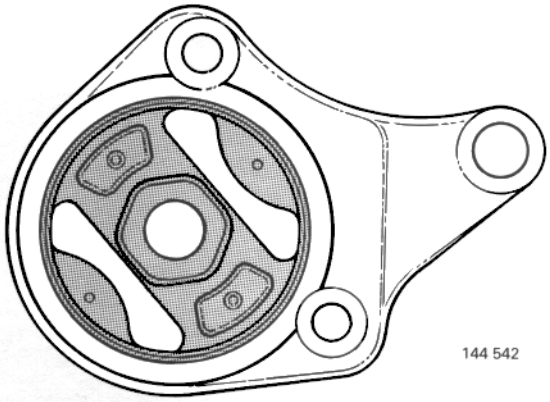
D15

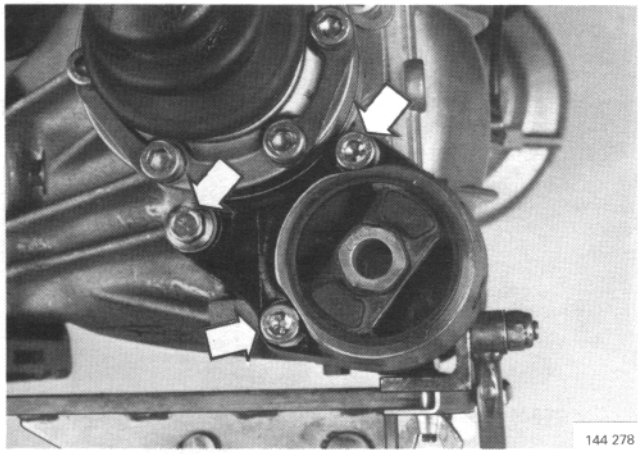
Press in new bushing

Use drift **5349** with V-block as counterhold.

D16

Position bushing as illustrated below



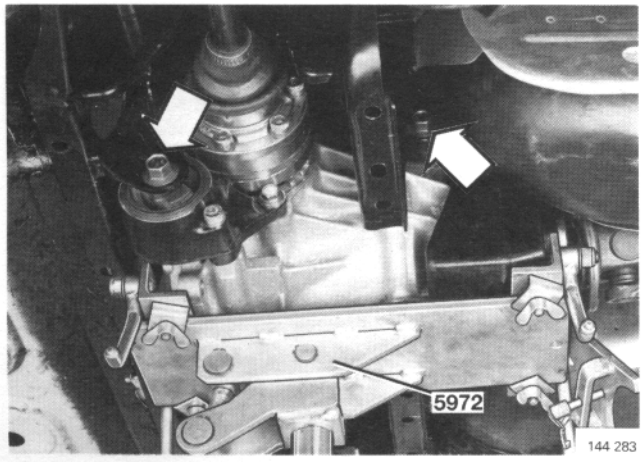


D17

Insert bushing bracket retaining bolts

D18

Lift differential into position and tighten bolts (3) attaching unit to rear axle member. Tighten to 160 Nm (116 ft.lb)



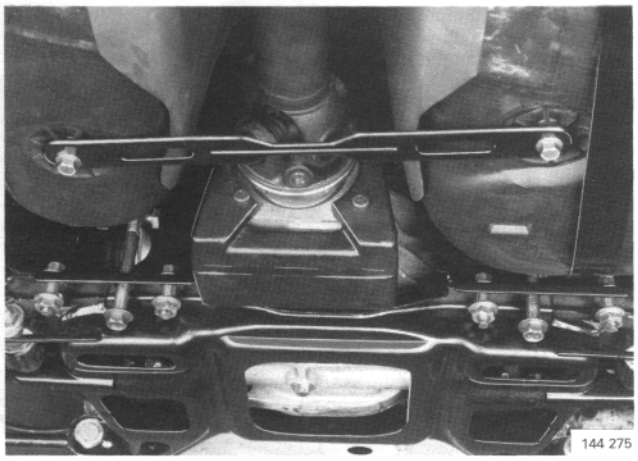
D19

Insert differential/propeller shaft coupling bolts

N.B. Ensure that correct parts are used if coupling bolts or nuts must be renewed.

Bolt 6814141-5
Nut 6814142-3

Tighten to **50 Nm** (37 ft.lb).


144 275

D20

Raise lower section of rear axle member

D21

Loosely insert bolts joining upper and lower sections of rear axle member

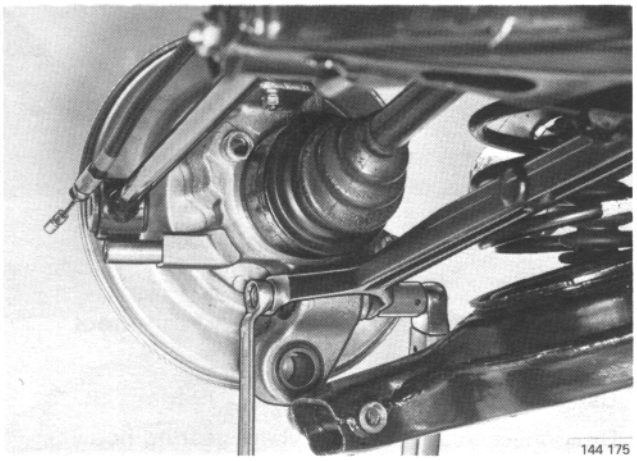
D22

Insert two 12 mm bolts or 12 mm drifts in rear axle member centering holes

N.B. This is essential to ensure correct wheel alignment on completion of assembly.

D23

Tighten rear axle member assembly bolts to 70 Nm (51 ft.lb) plus 30°


144 175

D24

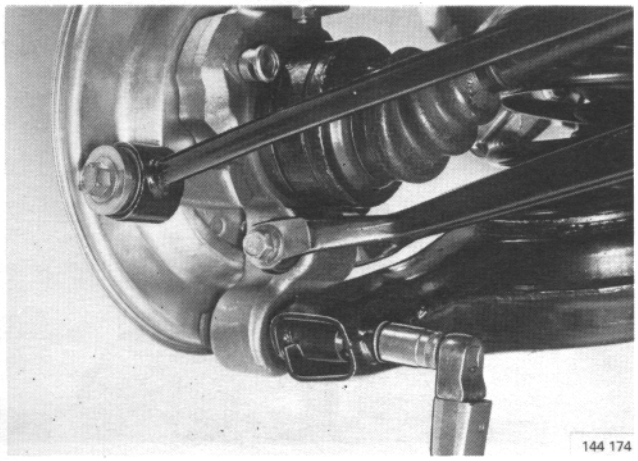
Insert bolts attaching control arms to wheel bearing housings

D25

Pull wheel bearing housings inwards towards differential

This is essential to ensure correct wheel alignment.

Tighten control arm bolts to **50 Nm** (37 ft.lb) plus 90°.


144 174

D26

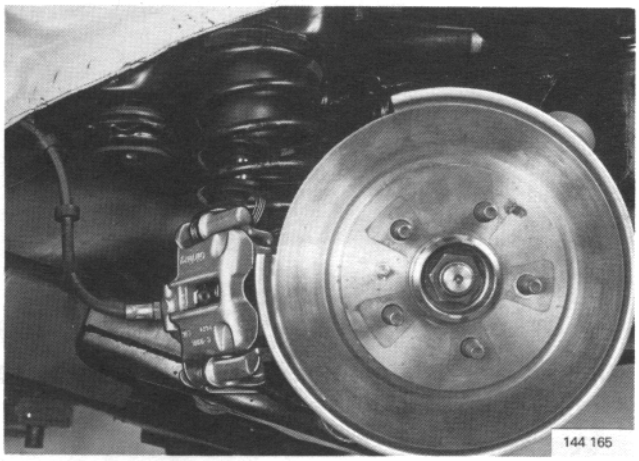
Reconnect

- Support arms. Tighten to **60 Nm** (44 ft.lb) plus 90°.
- Track rods. Tighten to **85 Nm** (62 ft.lb).
- Wheels. Tighten to **85 Nm** (62 ft.lb).

Upper control arm bushings – replacement

Special tools: 2731, 2904, 5087, 5090, 5343, 5345, 5347, 5353

N.B. Car must be parked in straight-ahead position when tightening bushed joints.


144 165

E1

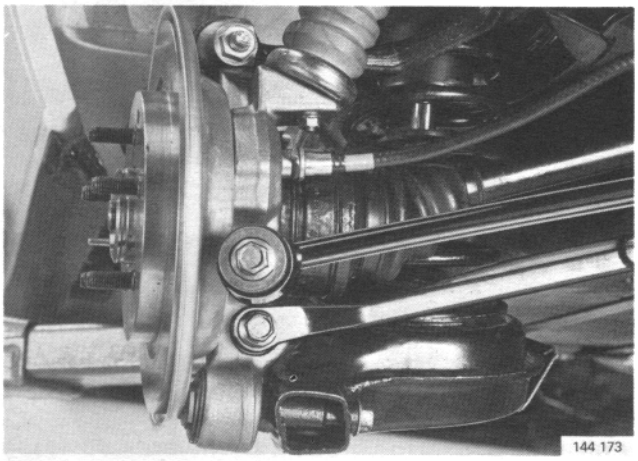
Raise car on hoist

Ensure that rear lifting arms do not interfere with support arms.

E2

Remove

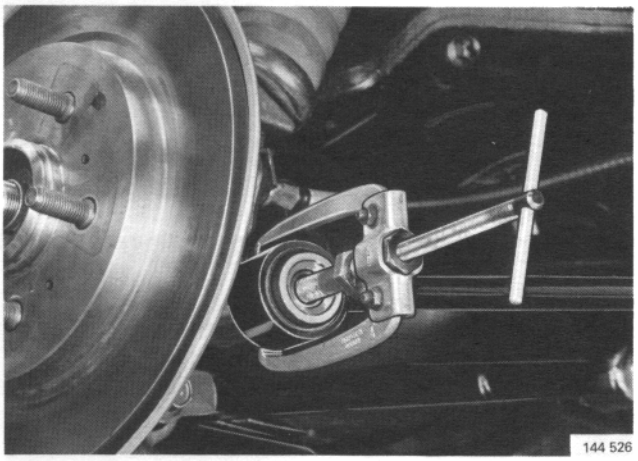
- Wheel.
- Brake caliper. Tie up caliper with wire to avoid damage.


144 173

E3

Remove

- Bolt attaching support arm to wheel bearing housing. Tap out support arm.
- Bolt and nut attaching lower control arm to wheel bearing housing.

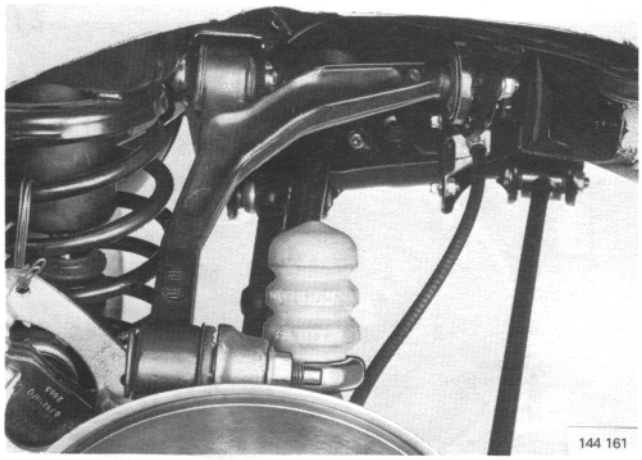

144 526

E4

Remove bolt attaching track rod to wheel bearing housing

Use small puller and 50 mm long 12 mm bolt.

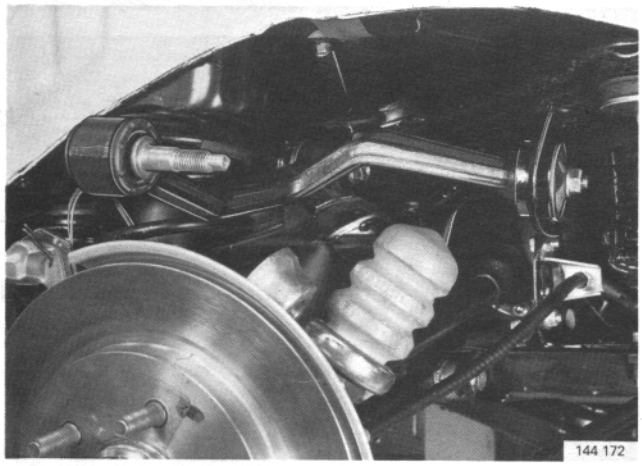
Disconnect track rod from wheel bearing housing.


144 161

E5

Remove nut securing upper control arm to wheel bearing housing

Collect spacers located between upper control arm and wheel bearing housing.

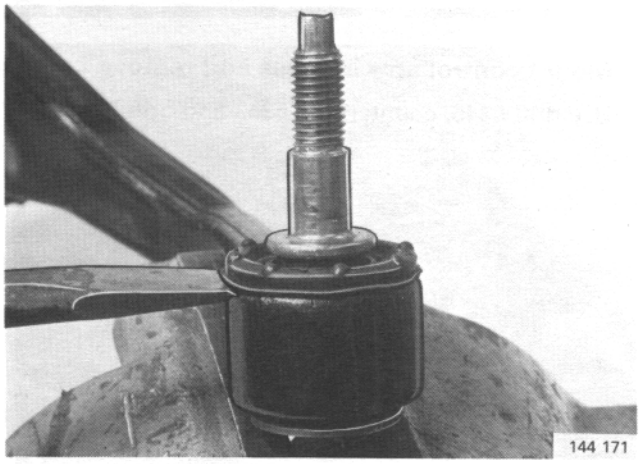

144 172

E6

Remove

- Nut securing control arm to rear axle member (at rear).
- Bolt and nut securing control arm to rear axle member (at front).
- Control arm. Use a pair of adjustable pliers.

Outer bushing

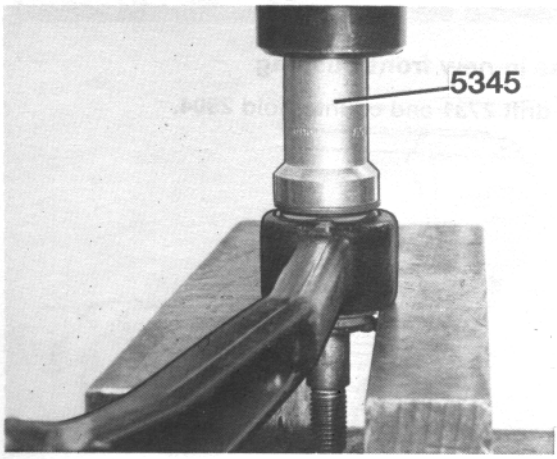

144 171

E7

Mount control arm in a vice

E8

Use a chisel to pry edge of bushing as illustrated



144 170

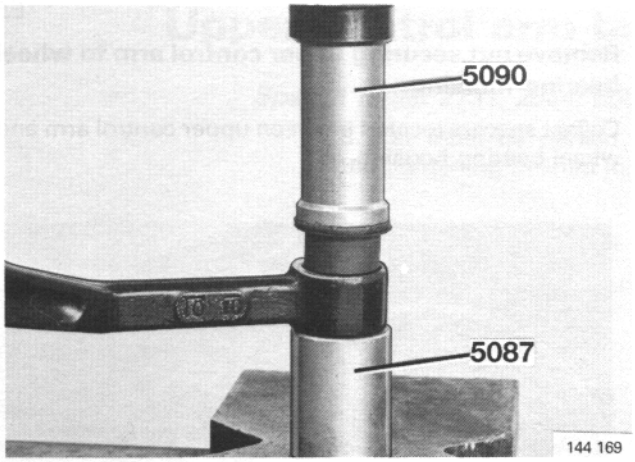
E9

Mount control arm in press using two V-blocks as counterholds

E10

Press out bushing

Use drift **5345**.

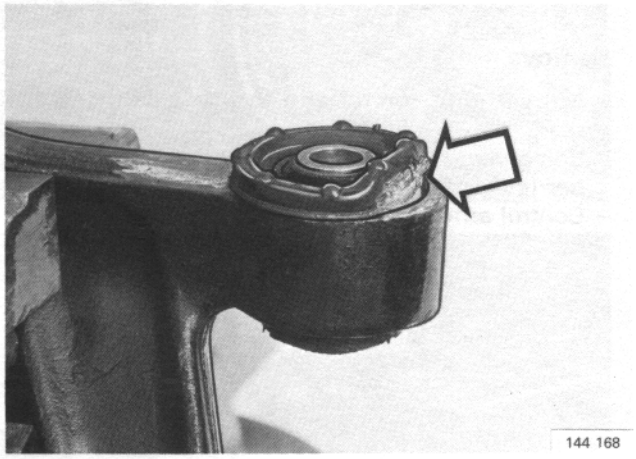


E11

Press in new bushing

Use drift **5090** and counterhold **5087**.

Inner front bushing

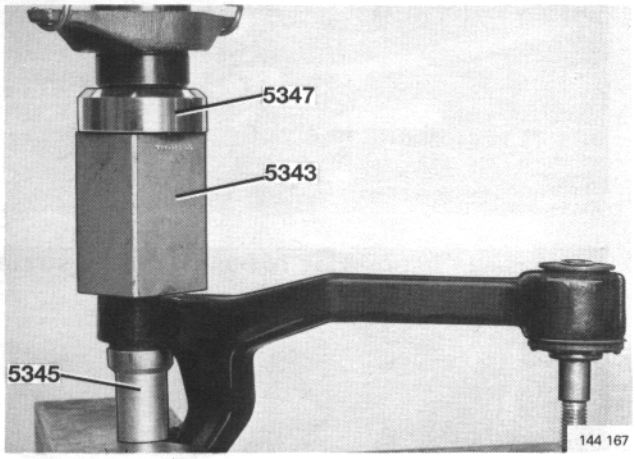


E12

Mount control arm in a vice

E13

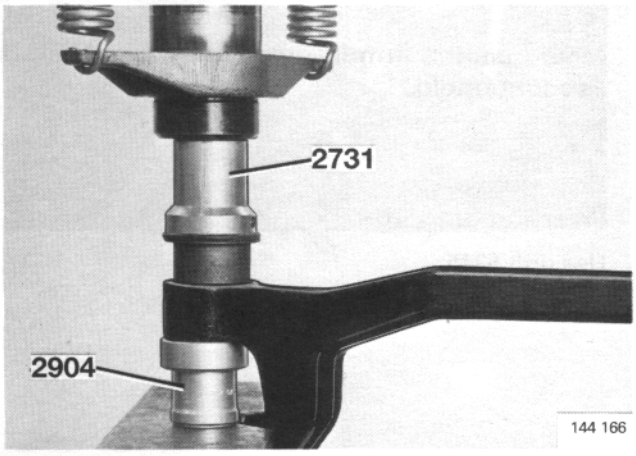
Use chisel to pry edge of bushing as illustrated



E14

Mount control arm in press and remove bushing

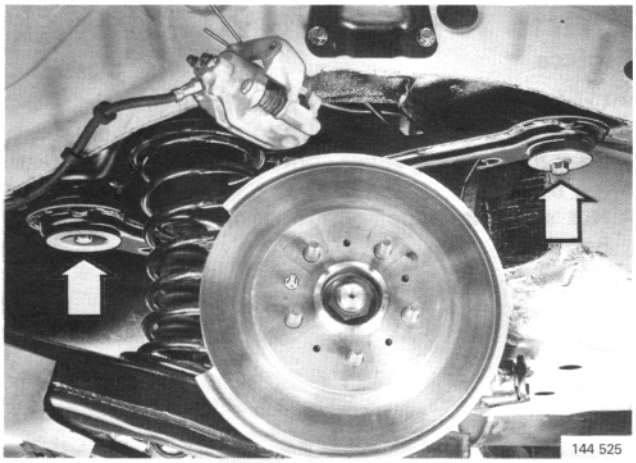
Use drift **5345**, counterhold **5343** and drift **5347**.



E15

Press in new front bushing

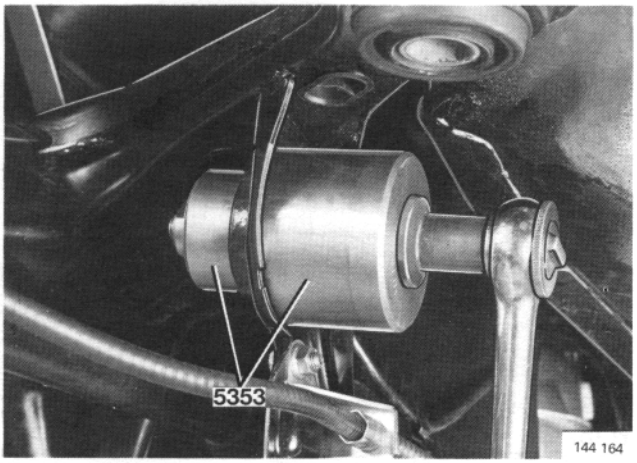
Use drift **2731** and counterhold **2904**.


144 525

E16

Inner rear bushing

N.B. Lower support arm slightly when replacing bushing on left-hand side.

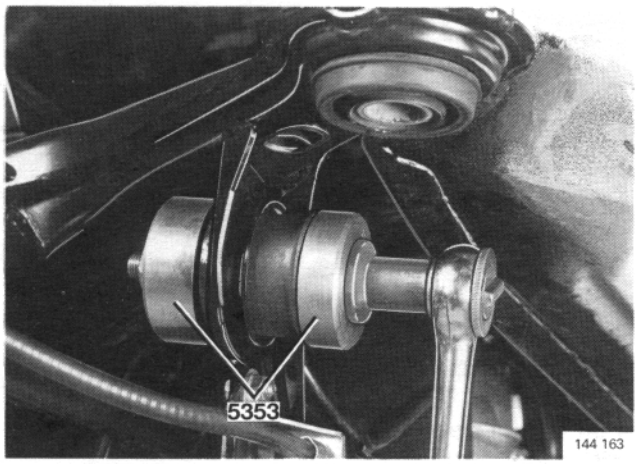


144 164

E17

Press out upper control arm bushing

Use press tool **5343**, parts 1 and 2.



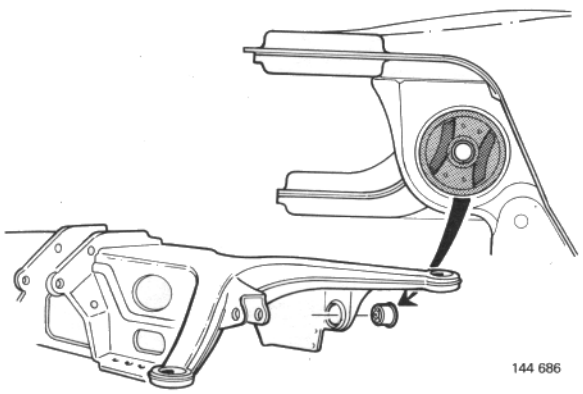
144 163

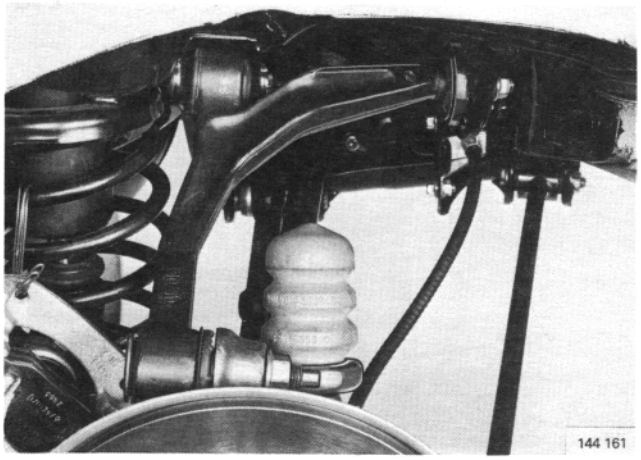
E18

Press in new bushing

Use press tool **5353**, parts 3 and 4.

Install bushing as illustrated below

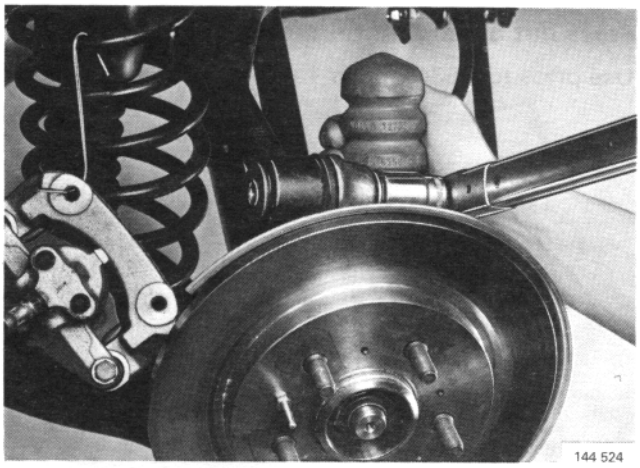

144 686


144 161

E19

Replace

- Control arm. Use a pair of adjustable pliers.
- Bolt and nuts attaching arm to rear axle member.
- Spacers between upper control arm and wheel bearing housing.
- Nut securing upper control arm to wheel bearing housing.


144 524

E20

Tighten

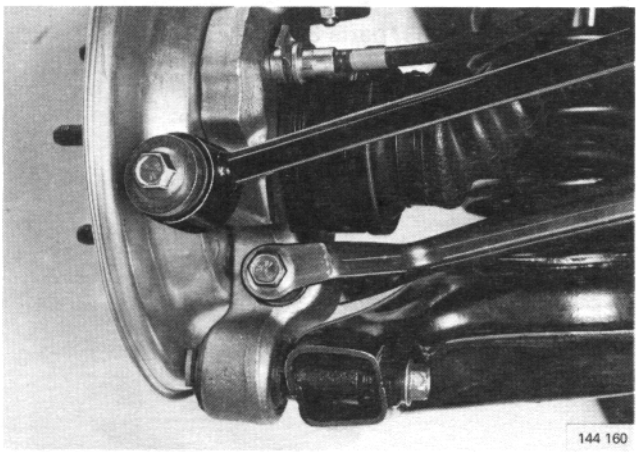
- Inner rear nut to **85 Nm** (62 ft.lb).
- Inner front bolt and nut to **70 Nm** (51 ft.lb) plus 60°.

E21

Pull top of wheel bearing housing ourwards

This is essential to ensure correct wheel alignment.

Tighten upper control arm nut to 115 Nm (84 ft.lb)


144 160

E22

Pull wheel bearing housing outwards and insert lower control arm

E23

Insert lower control arm bolt

E24

Pull wheel bearing housing inwards towards differential

This is essential to ensure correct wheel alignment.

Tighten control arm nut to 50 Nm (37 ft.lb) plus 90°

E25

Reconnect

- Support arm. Tighten to **60 Nm** (44 ft.lb) plus 90°.
- Track rod. Tighten to **85 Nm** (62 ft.lb).
- Brake caliper. Tighten to **60 Nm** (44 ft.lb).
- Wheel. Tighten to **85 Nm** (62 ft.lb).

Lower control arm bushings – replacement

Special tools: 5090, 5310, 5342, 5343

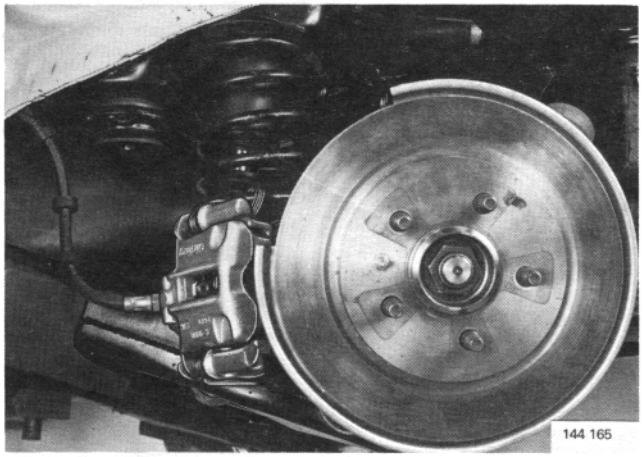
N.B. Car must be parked in straight-ahead position when tightening rubber insulated bushings.

F1

Raise car on hoist

Locate front lifting arms as far forward as possible.

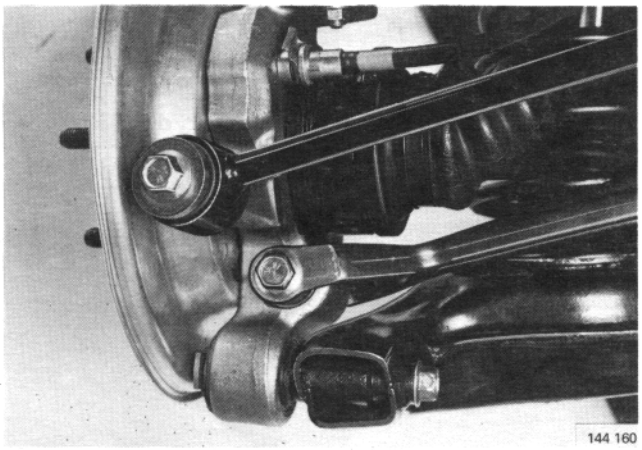
Ensure that rear lifting arms do not interfere with support arms.


144 165

F2

Remove

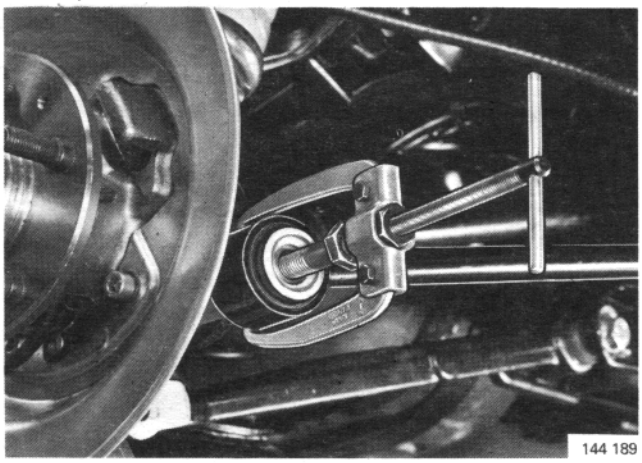
- Wheel.
- Brake caliper mounting bolts. Tie up caliper with wire to prevent damage.
- Brake disc. Mark disc in relation to guide pin.
- Handbrake pads.
- Handbrake cable.


144 160

F3

Remove

- Bolts attaching support arm to wheel bearing housing. Tap out support arm.
- Bolt and nut attaching lower control arm to wheel bearing housing.
- Bolt and nut attaching lower control arm to rear axle member.
- Control arm.

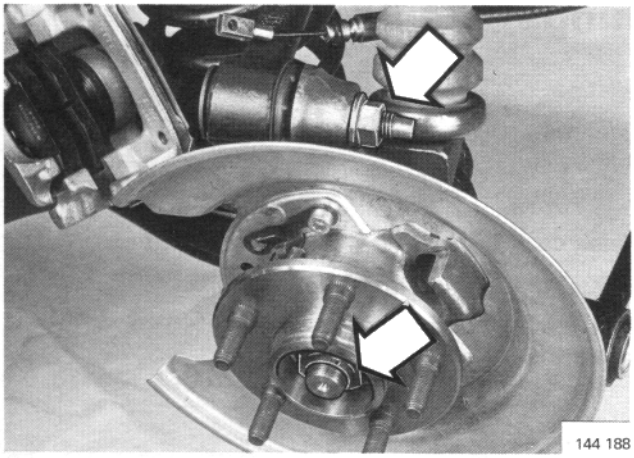

144 189

F4

Remove bolt attaching track rod to wheel bearing housing

Use small puller and 50 mm long 12 mm bolt.

Disconnect track rod from wheel bearing housing.

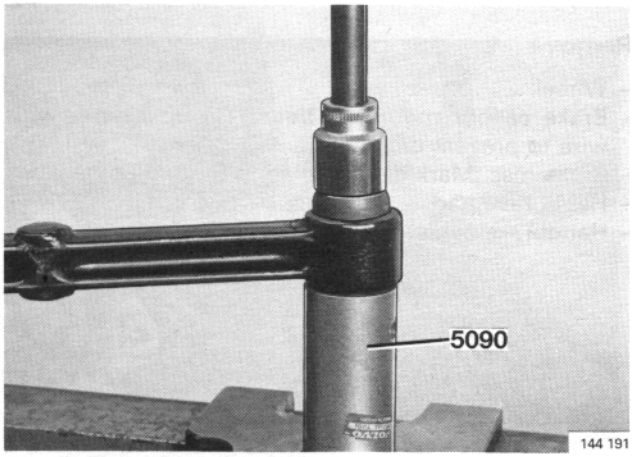

144 188

F5

Remove

- Hub nut.
- Nut securing upper control arm to wheel bearing housing.
- Hub assembly.

N.B. Collect spacers inserted between upper control arm and wheel bearing housing.

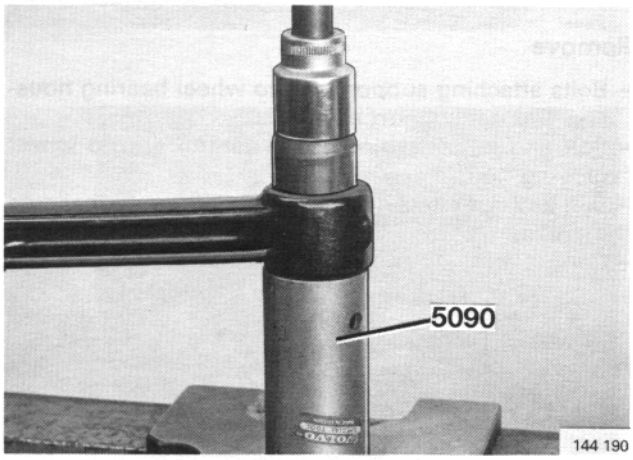


144 191

F6

Press out control rod bushing

Use counterhold **5090** and sleeve with outside diameter of 34±0.5 mm.



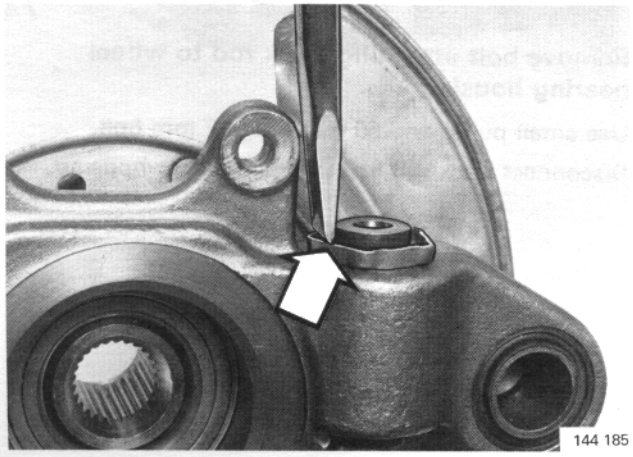
144 190

F7

Press in new bushing

Use counterhold **5090** and sleeve with outside diameter of 34±0.5 mm.

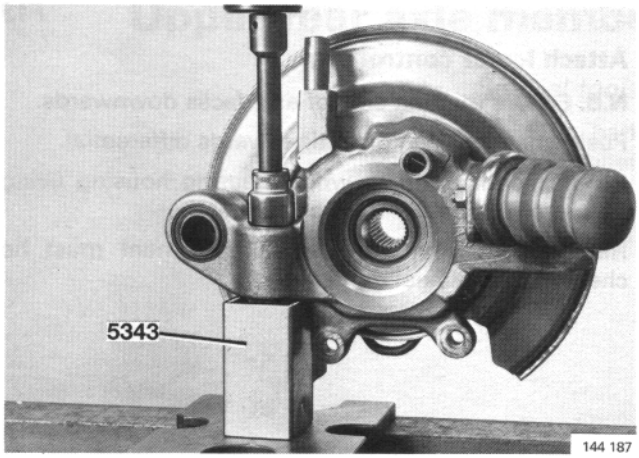
N.B. Bushing should project 10 mm on either side.


144 185

F8

Mount hub assembly in a vice

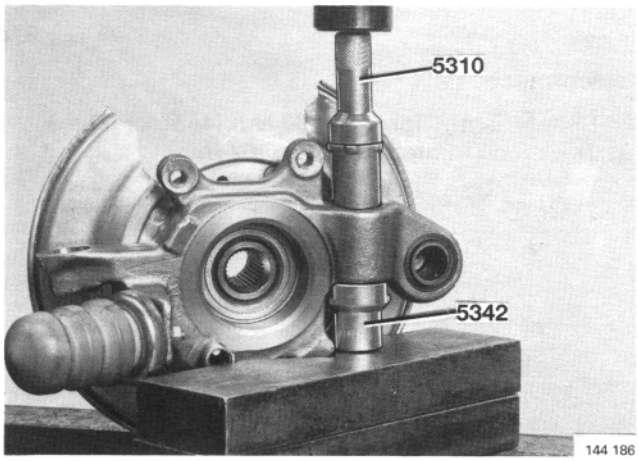
Use chisel to remove edge of bushing.



F9

Press out bushing

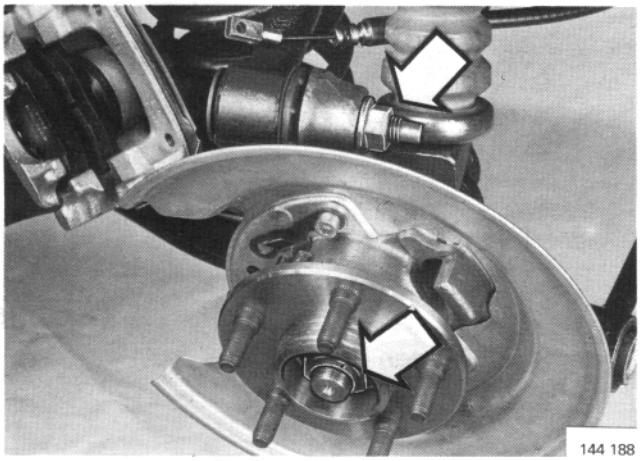
Use counterhold **5343** and a 34±0.5 mm sleeve.



F10

Press in new bushing

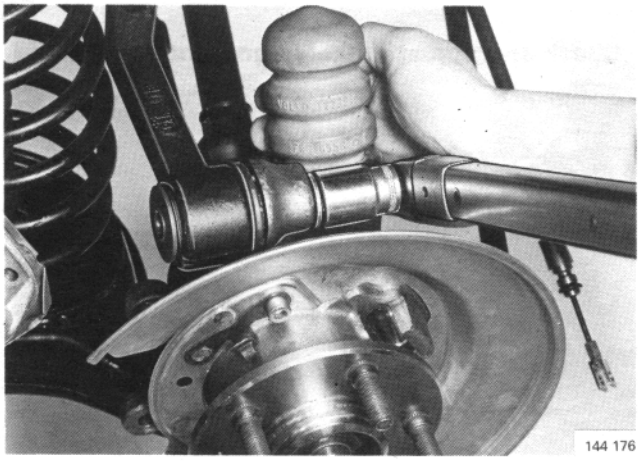
Use counterhold **5342** and drift **5310**. Position counterhold as illustrated.



F11

Replace

- Hub assembly on half shaft.
- Hub nut.
- Spacers between upper control arm and wheel bearing housing.
- Wheel bearing housing on upper control arm.
- Control arm nut.

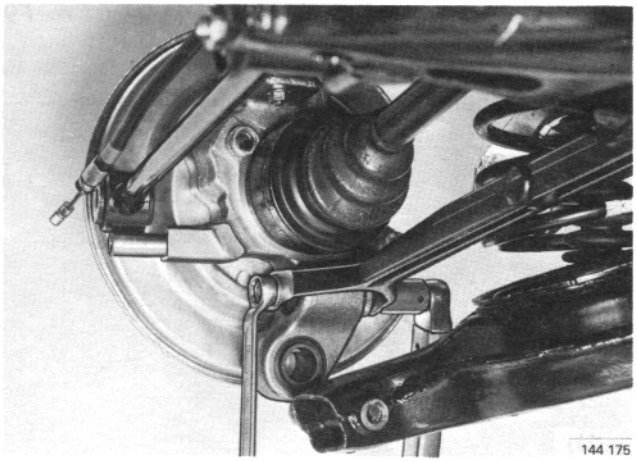


F12

Pull wheel bearing housing outwards at top

This is essential to ensure correct wheel alignment.

Tighten upper control arm nut to 115 Nm (84 ft.lb)



F13

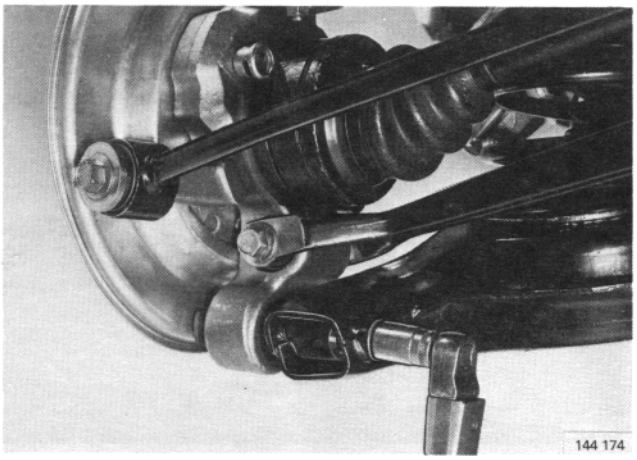
Attach lower control arm

N.B. Ensure that flat side of arm faces downwards.

Push wheel bearing inwards towards differential.

Secure control arm to wheel bearing housing using torque of **50 Nm** (37 ft.lb) plus 90°.

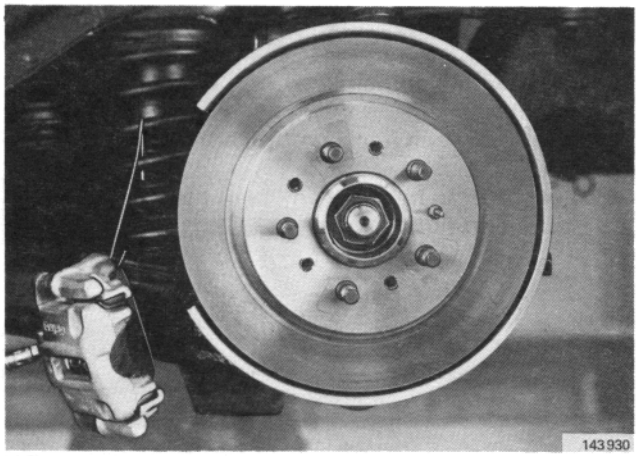
Hand-tighten inner nut; wheel alignment must be checked before final tightening.



F14

Reconnect

- Support arm. Tighten to **60 Nm** (44 ft.lb) plus 90°.
- Track rod. Tighten to **85 Nm** (62 ft.lb).



F15

Install

- Handbrake pads.
- Handbrake cable.
- Brake disc.
- Brake caliper. Tighten to **60 Nm** (44 ft.lb).
- Wheel. Tighten to **85 Nm** (62 ft.lb).

F16

Lower car. Tighten hub nut to 140 Nm (102 ft.lb) plus 60°

F17

Check and adjust wheel alignment as required

See page 8.

Upper rear axle member bushings – replacement

Special tools: 5344, 5352, 5972

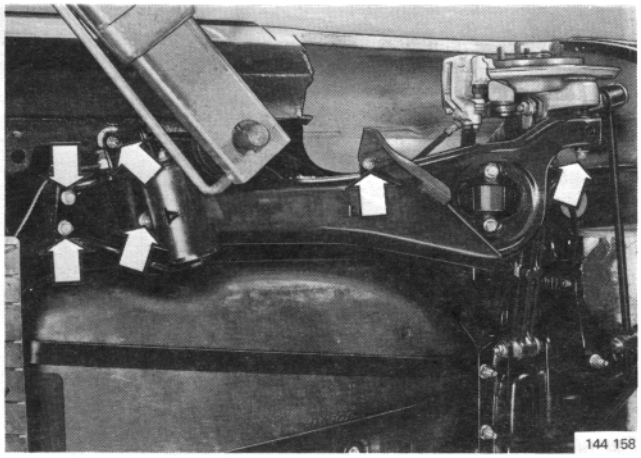
N.B. Car must be parked in straight-ahead position when tightening rubber insulated bushings.

G1

Raise car on hoist

Locate front lifting arms as far forward as possible.

Ensure that rear lifting arms do not interfere with support arms.


144 158

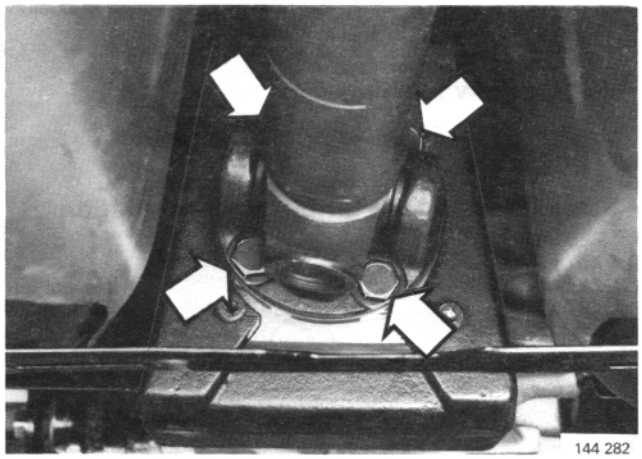
G2

Remove

- Wheels.
- Brake caliper. Tie up caliper with wire to avoid damage.
- Support arm guards.
- Bolts and nuts at front of support arms.
- Bolts securing support arms at rear.

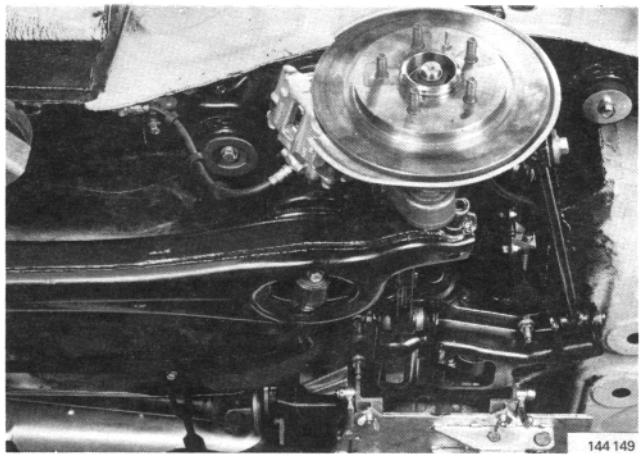
G3

Tap out support arms at rear


144 282

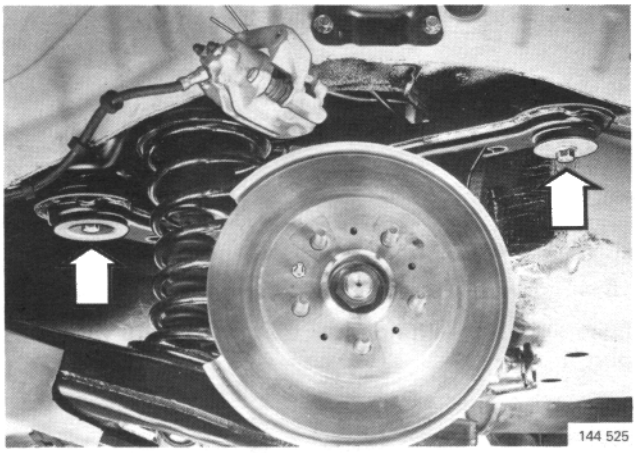
G4

Remove propeller shaft/differential coupling bolts


144 149

G5

Place jack and fixture 5972 underneath assembly

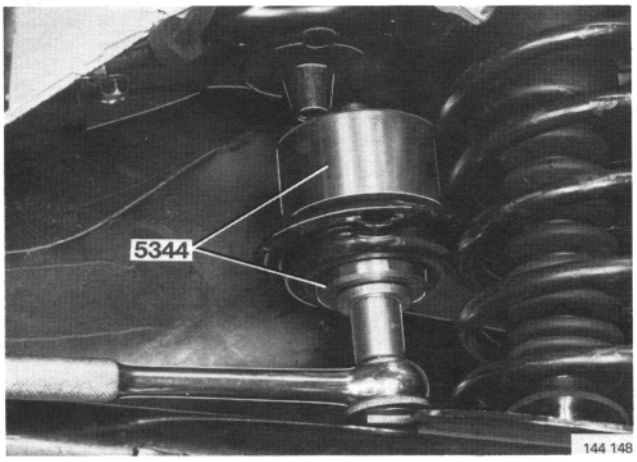


Front bushing

G6

Remove bolts (4) securing upper section of rear axle member to floor

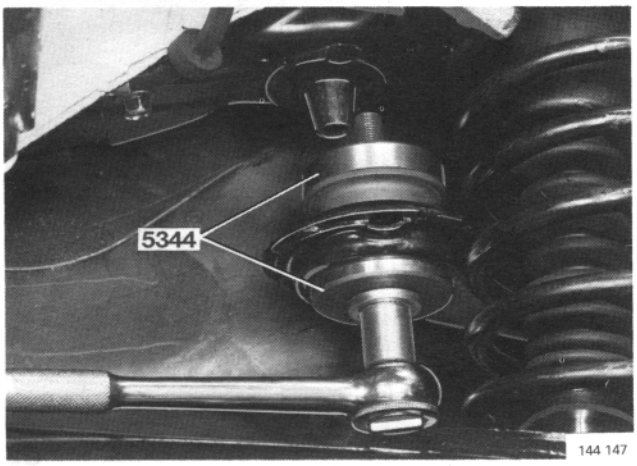
Lower rear axle slightly



G7

Press out front bushing

Use press tool **5344**, parts 1 and 2.

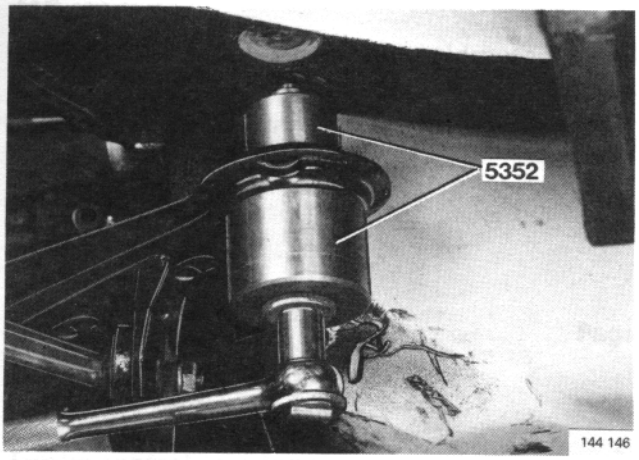


G8

Press in new bushing

Use press tool **5344**, parts 3 and 4.

See following page for bushing orientation

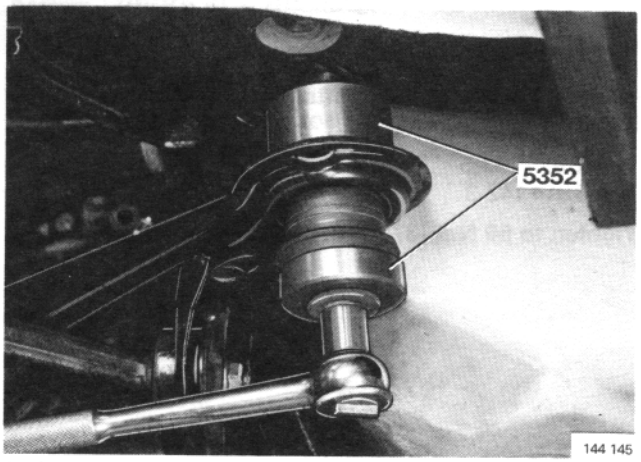


Rear bushing

G9

Press out rear bushing

Use press tool **5352**, parts 1 and 2.

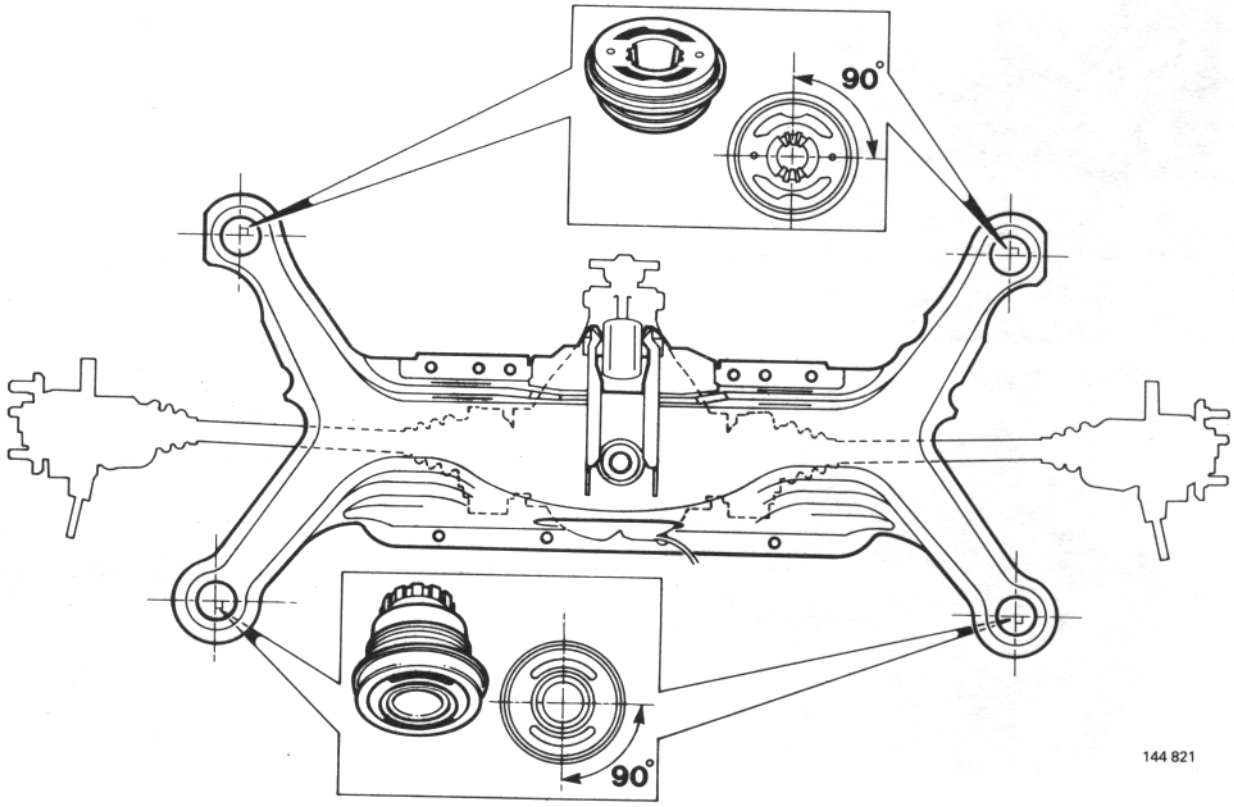


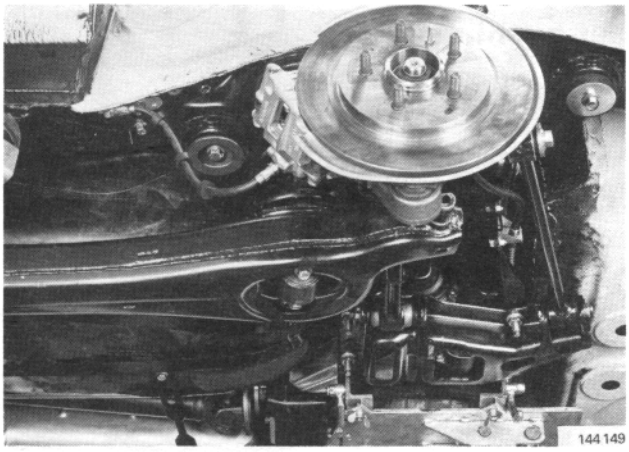
G10

Press in new bushing

Use press tool **5352**, parts 3 and 4.

See figure below for bushing positioning

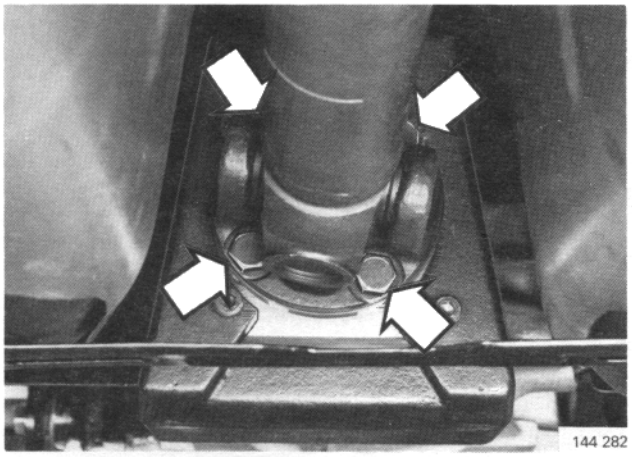



144 149

G11

Raise assembly and insert lower attachment bolts

Tighten bolts to **70 Nm** (51 ft.lb) plus 60°.


144 282

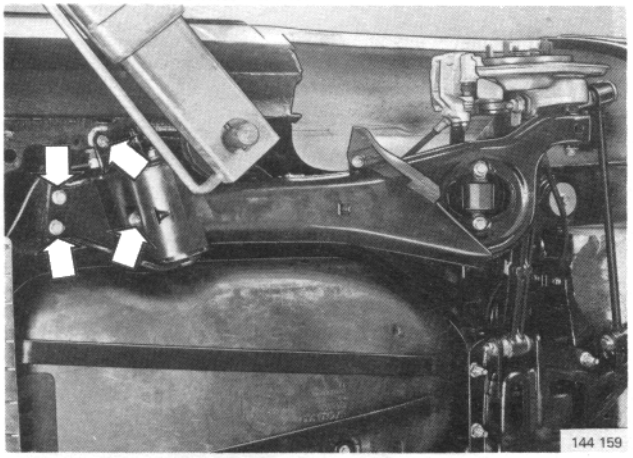
G12

Insert differential/propeller shaft coupling bolts

N.B. Ensure that correct parts are used if coupling bolts or nuts must be renewed.

Bolt 6 814 141-5
Nut 6 814 142-3

Tighten to **50 Nm** (37 ft.lb).

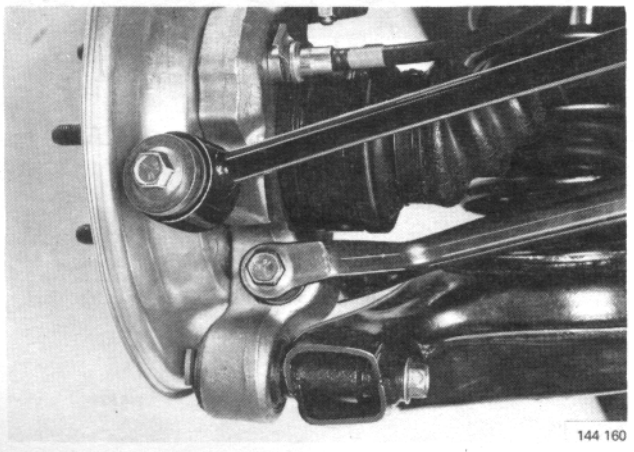

144 159

G13

Insert front nuts and bolts in support arms

Tighten

- Large nut to **70 Nm** (51 ft.lb) plus 90°.
- Bolts to **48 Nm** (35 ft.lb).


144 160

G14

Tap in support arms at rear

Tighten bolts to **60 Nm** (44 ft.lb) plus 90°.

G15

Install support arm guards and install wheels

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