Workshop Manual
OCTAVIA

Running Gear

Service Department. Technical Information

S00.5103.50.20 Edition 08.96

Printed in Czech Republic

List of Supplements to OCTAVIA Workshop Manual

Edition: 06.05

Chassis

Replaces List of Supplements - Edition: 05.04

Supplement	Edition	Subject	Article Number
	08.96	Basic Edition of Workshop Manual	S00.5103.50.20
1	09.96	Supplement to Basic Edition	S00.5103.51.20
2	03.97	Supplement to Repair Group 40 and 42; Repair Group 44, 45 and 48	S00.5103.52.20
3	11.97	Engine 1.9 l/81 kW TDI	S00.5103.53.20
4	10.98	Engine 1.8 l/110 kW; Octavia Estate	S00.5103.54.20
5	12.98	Drive shafts, vehicle measurement, Brake FN-3	S00.5103.55.20
6	06.99	Modifications to steering system, brakes, rear axle, ABS; Engine 1.4 l/44 kW	S00.5103.56.20
7	11.99	4 wheel drive (4 x 4)	S00.5103.57.20
8	04.00	Vehicles with ABS/EDS/ESP	S00.5103.58.20
9	11.00	Anti-lock brake system MK60	S00.5103.59.20
10	02.01	Anti-lock brake system MK60 ESP	S00.5103.60.20
11	05.01	Mechanical brake assistant, Brake FN-3	S00.5103.61.20
12	08.01	Text modifications to Repair Group 00, 40, 42 and 45	S00.5103.62.20
13	01.02	Text modifications to Repair Group 45	S00.5103.63.20
14	06.02	Text modifications to Repair Group 00, 40, 44, 45 and 46	S00.5103.64.20
15	11.02	Engine 1.9 l/96 kW PD, Supplement to Repair Group 00, 40, 42 and 45	S00.5103.65.20
16	04.03	Text modifications to Repair Group 40, 45 and 46	S00.5103.66.20
17	05.04	Text modifications to Repair Group 00, 40 and 44	S00.5103.67.20
18	06.05	Text modifications to Repair Group 00, 40, 42 and 45	S00.5103.68.20
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Technical Data

Chassis

Nominal values front axle

	Spring strut axle (Front and 4 Wheel Drive)		
	Standard suspension[7)]	**Sport suspension**	**Rough road suspension**
Chassis	G06 G20 1GA G12 G30 1GG G13 G31 1GE G14 G32 1GH G15 G33	G35 G85	G04 1GB G07 1GW G34 G39 G40
	Explanation concerning this PR No. see page 00-4		
Overall track[2)]	0° ± 10'	0° ± 10'	0° ± 10'
Track for 14"[7)] (mm)[2)] wheels Measuring point: 184 mm from wheel centre	0 ± 1	-	0 ± 1
Track for 15" (mm)[2)] wheels Measuring point: 196 mm from wheel centre	0° ± 1.1	-	0° ± 1.1
Track for 16"[7)] (mm)[2)] wheels Measuring point: 209 mm from wheel centre	0 ± 1.2	0 ± 1.2	0 ± 1.2
Track for 17"[8)] (mm)[2)] wheels Measuring point: 225 mm from wheel centre	-	0 ± 1.3	-
Toe difference angle on turns of 20° of inside wheels[1)]	- 1° 30' ± 20'	- 1° 31' ± 20'	- 1° 27' ± 20'
Toe difference angle on turns at full lock of inside wheel[1)]	- 6° 35'	- 6° 40'	- 6° 35'
Max. wheel lock angle[1)]	40°	39° 45'	40° 45'
Continued table ⇒ page 00-2			

Comment: Technical data apply for the unladen weight of the vehicle ready for driving (full fuel tank and water reservoir for the windscreen wiper washer system, spare wheels, tool kit, jack and without driver).

1) Not adjustable, depending on design

2) Adjustable

7) Not valid for Octavia 4 x 4

8) Only Octavia RS (1.8 l/32 kW)

Continuation of table „Nominal values of front axle“ of page 00-1			
	Spring strut axle (Front and 4-Wheel Drive)		
	Standard suspension[7)]	**Sport suspension**	**Rough road suspension**
Camber[3)]	-30’ ± 30’	-33’ ± 30’	-16’ ± 30’
	-0° 25’ ± 30’[4)6)]	-	-
	-0° 28’ ± 30’[5)]	-	-
Max. difference between left and right side	30’		30’
Caster angle[1)]	7° 40’ ± 30’[8)]	7° 50’ ± 30’[8)]	7° 15’ ± 30’[8)]
	7° 40’ +30’, -60’[9)]	7° 50’ +30’, -60’[9)]	7° 15’ +30’, -60’[9)]
	8° 23’ ± 30’[4)]	-	-
	8° ± 30’[5)6)]	-	-
Max. difference of caster angle between left and right side	30’		30’

Comment:
Technical data apply for the unladen weight of the vehicle ready for driving (full fuel tank and water reservoir for the windscreen wiper washer system, spare wheels, tool kit, jack and without driver).

1) Not adjustable, depending on design

3) The camber can be changed marginally, by moving the assembly carrier.
Pay attention to: Always replace the screws and washers of the assembly carrier!
After carrying out corrections of steering geometry, inspect position of steering wheel and alter to correct position, if necessary.

4) Only Service Mobil (Octavia 1.9 l/66 kW SLX, Octavia 1.8 l/92 kW SLX)

5) Only Service Mobil (Octavia Estate 1.9 l/81 kW SLX)

6) Only Service Mobil (Octavia 1.9 l/66 kW GLX

7) Not valid for Octavia 4 x 4

8) up to MY 2000

9) as of MY 2001

Nominal values rear axle

	Twist-beam rear axle[8]		
	Standard suspension	**Sport suspension**	**Rough road suspension**
Chassis	—	—	—
	PR No. is not displayed on the vehicle data sticker. The allocation of the adjusting values to the relevant running gear occurs via the PR No. of the front axle damping.		
Overall track[1]	20' ± 10'	34' ± 10'[9]	10' ± 10'/- 7'
	30' ± 15'[4]	30 ± 10'[10]	-
	25' ± 15'[5]	-	-
Track for 14" (mm)[2] wheels Measuring point: 184 mm from wheel centre	2.1 ± 1	-	2.1 ± 1
Track for 15" (mm)[2] wheels Measuring point: 196 mm from wheel centre	2.3 ± 1.1	-	2.3 ± 1.1
Track for 16" (mm)[2] wheels Measuring point: 209 mm from wheel centre	2.4 ± 1.2	4.1 ± 1,2[9] 3.6 ± 1,2[10]	2.4 ± 1.2
Track for 17" (mm)[2] wheels Measuring point: 223 mm from wheel centre	-	4.4 ± 1.3[9]	-
Camber[1]	1° 36' ± 10'[6]	-	1° 36' ± 10'[6]
	- 1° 27' ± 10'[7]	- 1° 27' ± 10'	- 1° 27' ± 10'[7]
	- 1° 43' ± 15'[4]	-	-
	- 1° 35' ± 15'[5]	-	-
Max. difference between left and right side	30'	30'	30'
Max. misalignment of the rear axle[3]	20'	20'	20'

Comment: Technical data apply for the unladen weight of the vehicle ready for driving (full fuel tank and water reservoir for the windscreen wiper washer system, spare wheels, tool kit, jack and without driver).

1) Not adjustable, depending on design

2) It is only possible to evenly average the individual tracking values by shifting the bearing brackets

3) It is only possible to evenly average the misalignment by shifting the rear axle body

4) Only Service Mobil (Octavia 1.9 l/66 kW SLX, Octavia 1.8 l/92 kW SLX)

5) Only Service Mobil (Octavia 1.9 l/66 kW GLX, Octavia Estate 1.9 l/81 kW SLX)

6) ➤ 11.96

7) 12.96 ➤

8) Not valid for Octavia 4 x4

9) Only for Octavia RS

10) Only for Octavia Estate RS

Rear axle - Nominal values

	Longitudinal/double suspension arm axle[3]		
	—	—	Rough road suspension
Chassis	—	—	—
	PR No. is not displayed on the vehicle data sticker. The allocation of the adjusting values to the relevant chassis occurs via the PR No. of the front axle damping.		
Overall track[1]			15’ ± 10’
Track for 15” (mm) wheels[2] Measuring point: 196 mm from wheel centre			2.3 ± 1.1
Camber[1]			-30’ ± 20’
Max. difference between left and right side			30’
Max. misalignment of the rear axle[2]			20’

Comment: Technical data applies for the unladen weight of the vehicle ready for driving (full fuel tank and water reservoir for the windscreen wiper washer system, spare wheels, tool kit, jack and without driver).

1) Not adjustable, depending on design

2) The individual tracking values can be adjusted and the running direction of the rear axle can be corrected by shifting the bearing brackets.

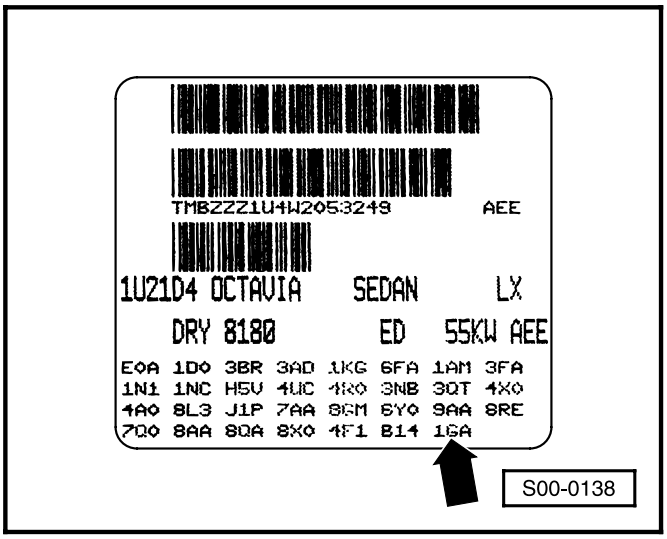
3) Only for Octavia 4x4

Chassis designations with PR numbers

A variety of chassis can be installed depending on the engine used and the equipment fitted. These all designated with a PR number.

The chassis which is installed in the vehicle is documented by the PR number for the front axle recorded on the vehicle data carrier.

The vehicle data carrier is located at the rear on the left of the base of the luggage compartment and in the service plan.



◄ **Example of a vehicle data carrier**

This example shows that the vehicle is fitted with a standard chassis 1GA -arrow-.

The table below shows a listing of the various chassis PR numbers which are decisive for the allocation of nominal values to the vehicle ⇒ Page 00-1

Front axis			
PR No.	**Engine installed / gearbox design**	**PR No.**	**Engine installed / gearbox design**
1GA	♦ All petrol engines up to 74 kW with a manual gearbox	**1GE**	♦ All petrol engines up to 74 kW with a manual or an automatic gearbox ♦ All diesel engines over 66 kW with a manual gearbox
1GG	♦ All petrol engines up to 74 kW with an automatic gearbox ♦ All diesel engines over 66 kW with a manual gearbox	**1GB**	♦ All petrol and diesel engines with a manual or an automatic gearbox ♦ Octavia 4 x 4

Rear axis			
PR No.	**Engine installed / gearbox design**	**PR No.**	**Engine installed / gearbox design**
1JD	♦ Only a sedan ♦ All petrol and diesel engines with a manual or an automatic gearbox other than the 1.8-ltr./110 kW engine	**1JB**	♦ All petrol and diesel engines with a manual or an automatic gearbox
1JH	♦ Only estate cars ♦ All petrol and diesel engines with a manual or an automatic gearbox other than the 1.6-ltr./55 kW engine	**1JW**	♦ Octavia 4 x 4

Steering

Model	All
Steering type	Rack and pinion type steering system
Steering gear	Power-steering gear
Steering-wheel turns from stop to stop	3.04
Steering-wheel diameter (mm)	370
Total ratio of steering	15.60
Lubricant for gear racks	Steering gear-flow grease TL 733 N 052 733 00 Part No.: AOF 063 000 04 (e.g. DEA ORNA F6 EPO)
Filling weight (g)	23...27
Maximum clearance between pressure plate and cover (mm)	0.05...0.1
Authorised axial force for the displacement of the gear rack (N)	250
Rotating force of the track rods from rest position (N)	1...3.5
Hydraulic oil designation	Hydraulic oil TL 52 146 N 052 146 00 Part No.: G 002 000 (e.g. PENTOSIN CHF 11S)
Hydraulic oil amount in the system (l)	0.7...0.9 l

Brakes

Engine	l/kW	1.4/44; 1.4/55		1.6/55		1.6/74;1.6/75		1.9/50 SDI	
S = (Manual) shift gearbox A = Automatic gearbox		S	-	S	-	S	A	S	-
Brake master cylinder ∅	mm	23.81							
Brake servo unit ∅	Inch	LHD models with and without ABS: 10“ RHD models with and without ABS: 7“/8“ tandem							
Front disc brakes									
Front brake calliper		**FS-III** [3]							
Front brake caliper, piston ∅	mm	54.0							
Front brake disc ∅	mm	256.0							
Brake disc, thickness	mm	22.0							
Brake disc, minimum thickness	mm	19.0							
Pad thickness with supporting plate	mm	19.5							
Minimum thickness without supporting plate	mm	2.0							
Rear disc brakes									
Rear brake caliper, piston ∅	mm	-				41.0		-	
Rear brake disc ∅	mm	-				239.0		-	
Brake disc, thickness	mm	-				9.0		-	
Brake disc, minimum thickness	mm	-				7.0		-	
Pad thickness with supporting plate	mm	-				17.0		-	
Minimum thickness without supporting plate	mm	-				2.0		-	
Rear drum brakes									
Brake drum ∅	mm	230.0							
Brake drum - maximum diameter	mm	231.0							
Wheel brake cylinder[1] ∅	mm	20.64	-	20.64	-	20.64	19.05	19.05[4]	-
Wheel brake cylinder[2] ∅	mm	20.64	-	20.64	-	20.64	20.64	20.64	-
Brake lining, width	mm	32.0							
Lining thickness without supporting shoe	mm	5.5							
Minimum thickness without supporting shoe	mm	2.5							

1) Models without ABS

2) Models with ABS

3) Not for taxi models (designation F4E)

4) For Octavia Combi: 20.64

Engine	l/kW	1.8/132		1.9/74		1.9/96			
M = Manual gearbox A = Automatic gearbox		M	-	M	-	M	-		
Master brake cylinder - ∅	mm	23.81							
Brake booster - ∅	Inch	Left-hand drive with and without ABS: 10" Right-hand drive with and without ABS: 7"/8" - Tandem							
Front brake disc									
Front brake caliper		**FN-3**		**FS-III**		**FN-3**			
Front brake caliper, piston - ∅	mm	54.0		54.0		54.0			
Front brake disc - ∅	mm	312,0		280,0		288,0			
Brake disc, thickness	mm	25,0		22,0		25,0			
Brake disc, minimum thickness	mm	23,0		19,0		23,0			
Pad thickness with supporting plate	mm	19,5		19,5		19,5			
Minimum thickness without supporting plate	mm	2,0		2,0		2,0			
Rear disc brake									
Rear brake caliper, piston - ∅	mm	38,0		41,0		41,0			
Rear brake disc - ∅	mm	256,0		239,0		232,0			
Brake disc, thickness	mm	22,0		9,0		9,0			
Brake disc, minimum thickness	mm	20,0		7,0		7,0			
Pad thickness with supporting plate	mm	17,37		17,37		17,0			
Minimum thickness without supporting plate	mm	2,0		2,0		2,0			
Drum brake									
Brake drum - ∅	mm	-							
Brake drum - maximum diameter	mm	-							
Wheel brake cylinder[1] - ∅	mm	-							
Wheel brake cylinder[2] - ∅		-							
Pad thickness	mm	-							
Pad thickness without supporting plate	mm	-							
Minimum thickness without supporting plate	mm	-							

[1] Vehicles without ABS

[2] Vehicles with ABS

Engine	l/kW	1.9/66 TDI		1.9/81 TDI		1.8/92; 2.0/85 (82)		1.8/110	
M = Manual gearbox A = Automatic gearbox		M	A	M	-	M	A	M	A
Master brake cylinder - ∅	mm	23.81							
Brake booster - ∅	Inch	Left-hand drive with and without ABS: 10“ Right-hand drive with and without ABS: 7“/8“ - Tandem							
Front brake disc									
Front brake caliper		**FN-III[3)5)]**						**FN-3[4)]**	
Front brake caliper, piston - ∅	mm	54.0						54.0	
Front brake disc - ∅	mm	280.0						288.0	
Brake disc, thickness	mm	22.0						25.0	
Brake disc, minimum thickness	mm	19.0						23.0	
Pad thickness with supporting plate	mm	19.5						19.5	
Minimum thickness without supporting plate	mm	2.0						2.0	
Rear disc brake									
Rear brake caliper, piston - ∅	mm	38.0[8)] 41.0[9)]							
Rear brake disc - ∅	mm	232.0[6)] 239.0[7)]		232.0 239.0[7)]					
Brake disc, thickness	mm	9.0							
Brake disc, minimum thickness	mm	7.0							
Pad thickness with supporting plate	mm	17.0							
Minimum thickness without supporting plate	mm	2.0							
Drum brake									
Brake drum - ∅	mm	230.0		—					
Brake drum - maximum diameter	mm	231.0		—					
Wheel brake cylinder[1)] - ∅	mm	20.64	—	—	—	—	—	—	—
Wheel brake cylinder[2)] - ∅	mm	20.64	20.64	—	—	—	—	—	—
Pad thickness, width	mm	32.0		—					
Pad thickness without supporting plate	mm	5.5		—					
Minimum thickness without supporting plate	mm	2.5		—					

1) Vehicles without ABS

2) Vehicles with ABS

3) Not valid for Taxi vehicles (identification F4E)

4) For Taxi vehicles (F4E) also 1.9/66; 2.0/85; 1.9/81

5) For Taxi vehicles (F4E) also 1.4/44; 1.4/55; 1.6/55; 1.6/74; 1.6/75; 1.9/50

6) Vehicles with ESP

7) Four-wheel drive vehicles

8) up to 07.98

9) as of 08.98

Brake fluid

Classification		Brake fluid N 052 766 US standard FMVSS 571. 116 DOT[4)] Part No.: B 000 700 A.. (A1.....M8 - Package size)
Contents of brake fluid	l	0.49 Vehicles with rear drum brakes, without ABS 0.53 Vehicles with rear drum brakes, with ABS 0.57 Vehicles with rear disc brakes, with ABS
Brake fluid change	-	every 2 years

Wheels, Tyres

Rims:

- Bolt-hole circle diameter: 100 mm
- Center hole diameter: 57 mm
- 5-hole fixing

Engine	**Tyre size[1)]**	**Light alloy rim**	**Steel rim**	**Offset (mm)**	**Snow chains Permitted**	
					yes	**no**
1.4 l/44 kW	175/80 R14 88 T, H	-	6J x 14 H2	38	X	-
1.4 l/55 kW	195/65 R15 91 T, H, V	6J x 15 H2	6J x 15 H2		X	-
1.6 l/55 kW	205/60 R15 91 H	$6^1/_2$J x 15 H2	-	43	-	X
1.9 l/50 kW	205/55 R16 91 H	$6^1/_2$J x 16 H2	-	42	-	X
	205/55 R16 91 W	$5^1/_2$J x 16 H2	-	36	X	-
1.6 l/74 kW	175/80 R14 88 H	-	6J x 14 H2	38	X	-
1.6 l/75 kW	195/65 R15 91 H, V	6J x 15 H2	6J x 15 H2		X	-
	205/60 R15 91 H	$6^1/_2$J x 15 H2	-	43	-	X
	205/55 R16 91 H	$6^1/_2$J x 16 H2	-	42	-	X
	205/55 R16 91 W	$5^1/_2$J x 16 H2	-	36	X	-
2.0 l/85 kW	195/65 R15 91 H, V	6J x 15 H2	6J x 15 H2	38	X	-
	205/60 R15 91 H	$6^1/_2$J x 15 H2		43	-	X
	205/55 R16 91 H	$6^1/_2$J x 16 H2		42	-	X
	205/55 R16 91 W	$5^1/_2$J x 16 H2		36	X	-

Continued table ⇒ page 00-9

1) Tyre inflation pressure
⇒ Inspection and Maintenance;
as well as sticker on vehicle

Engine	Tyre size[1)]	Light alloy rim	Steel rim	Offset (mm)	Snow chains Permitted	
					yes	no
1,8 l/92 kW	195/65 R15 91 H, V	6J x 15 H2	6J x 15 H2	38	X	-
	205/60 R15 91 H, V	6 1/2 J x 15 H2	-	43	-	X
	205/55 R16 91 H, V, W	6 1/2 J x 16 H2	-	42	-	X
	205/55 R16 91 W	5 1/2 J x 16 H2	-	36	X	-
1,8 l/110 kW	195/65 R15 91 V	6J x 15 H2	6J x 15 H2	38	X	-
	205/55 R16 91 V, W	6 1/2 J x 16 H2	-	42	-	X
	205/60 R15 91 V	6 1/2 J x 15 H2	-	43	-	X
	205/55 R16 91 W	5 1/2 J x 16 H2	-	36	X	-
1,8 l/132 kW	205/55 R16 91 W	6 1/2 J x 16 H2	6 1/2 J x 16 H2	42	-	X
	205/55 R16 91 W	5 1/2 J x 16 H2	-	36	X	-
	205/50 R17 89 W[2)]	7J x 17 H2	-	38	X	-
1,9 l/66 kW TDI	195/65 R15 91 T, H, V	6J x 15 H2	6J x 15 H2	38	X	-
	205/60 R15 91 H	6 1/2 J x 15 H2	-	43	-	X
	205/55 R16 91 H	6 1/2 J x 16 H2	-	42	-	X
	205/55 R16 91 W	5 1/2 J x 16 H2	-	36	X	-
1,9 l/74 kW PDi	195/65 R15 91 V	6J x 15 H2	6J x 15 H2	38	X	-
	205/60 R15 91 V	6 1/2 J x 15 H2	-	43	-	X
	205/55 R16 91 V	6 1/2 J x 16 H2	-	42	-	X
	205/55 R16 91 W	5 1/2 J x 16 H2	-	36	X	-
1,9 l/81 kW TDI	195/65 R15 91 H, V	6J x 15 H2	6J x 15 H2	38	X	-
	205/60 R15 91 H	6 1/2 J x 15 H2	-	43	-	X
	205/55 R16 91 H, V, W	6 1/2 J x 16 H2	-	42	-	X
	205/55 R16 91 W	5 1/2 J x 16 H2	-	36	X	-
1,9 l/96 kW PDi	195/65 R15 91 V	6J x 15 H2	6J x 15 H2	38	X	-
	205/60 R15 91 V	6 1/2 J x 15 H2	-	43	-	X
	205/55 R16 91 V, W	6 1/2 J x 16 H2	-	42	-	X
	205/55 R16 91 W	5 1/2 J x 16 H2	-	36	X	-

1) Tyre inflation pressure
⇒ Inspection and Maintenance as well as sticker on vehicle

2) Not valid for Octavia Estate RS

Load rating-index (Last Index):	88 = 560 kg 89 = 580 kg	91 = 615 kg
Speed symbol:	T = 190 km/h V = 240 km/h	H = 210 km/h W = 270 km/h

Notes:

- *Only use tyres of a same size and type on a vehicle, however the tread pattern and manufacturer may differ per axle. It is exceptionally allowed to use a different tyre temporarily in the event of a breakdown. Take into account a change in driving and braking behaviour.*
- *Wheel bolts with spherical collar and a thread of M14 x 1,5 - torque: 120 Nm*
- *Only use authorized on the relevant vehicle.*
- *When replacing rims always use wheel bolts to these rims (different length and spherical cap shape).*
- *Also observe the national legislation.*

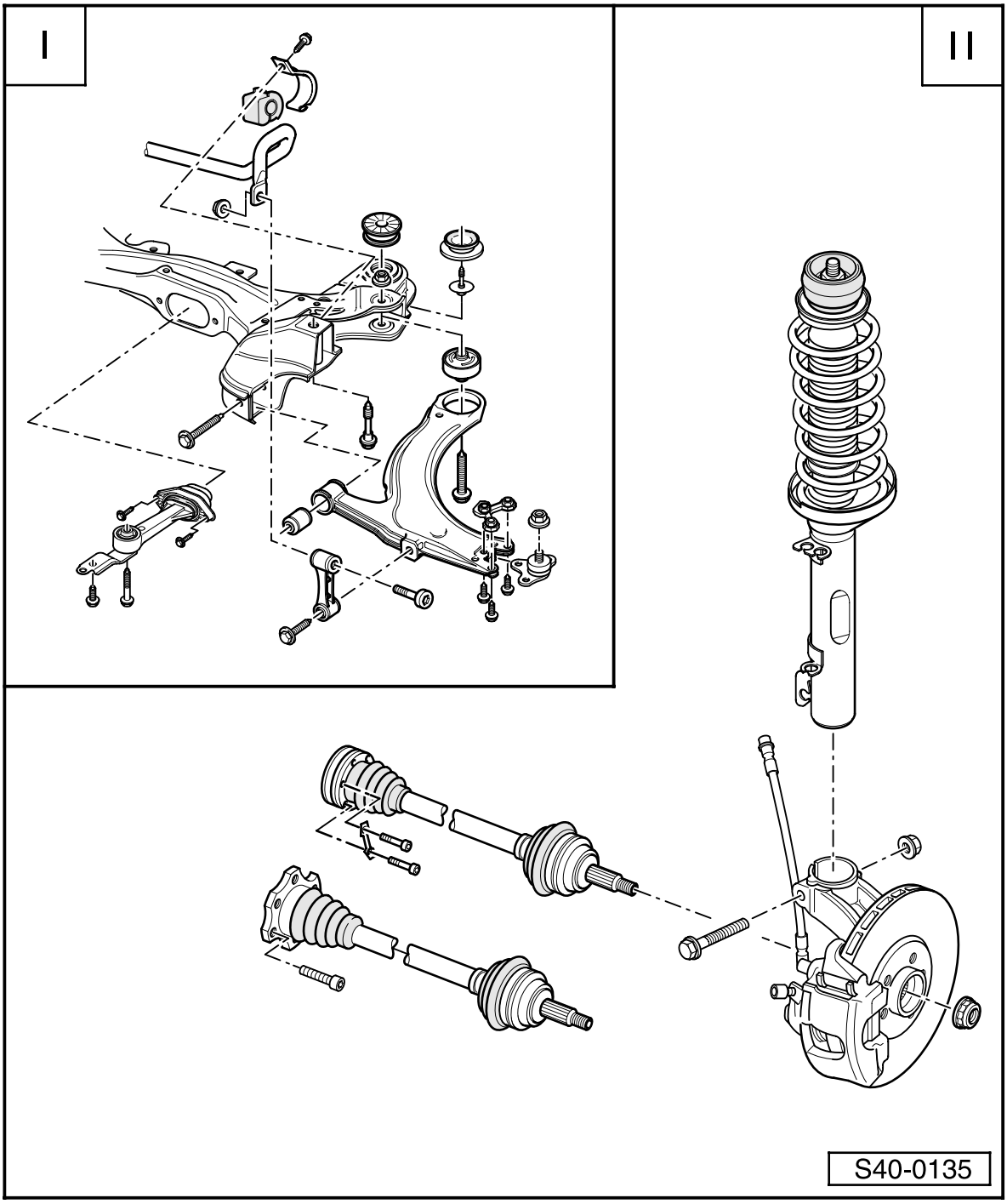
Caution!

Tyres that are more than 6 years old must only be used in case of emergency and while driving very carefully.

Tyre inscription

Inscription e.g. 175/80 R14 88 T	Meaning
175/80	Tyre width (mm)/cross section ratio of height - width (%)
R	Tyre construction (radial)
14	Wheel diameter (inch)
88	Load index
T	Speed symbol
Date of manufacture	
DOT ... 394 ◄	Manufactured in 39th week 1994 (◄ = designates decade 1990 ... 1999)
DOT ... 0300	Manufactured in 3rd week 2000 (03 = 3rd calendar week, 00 = year 2000)

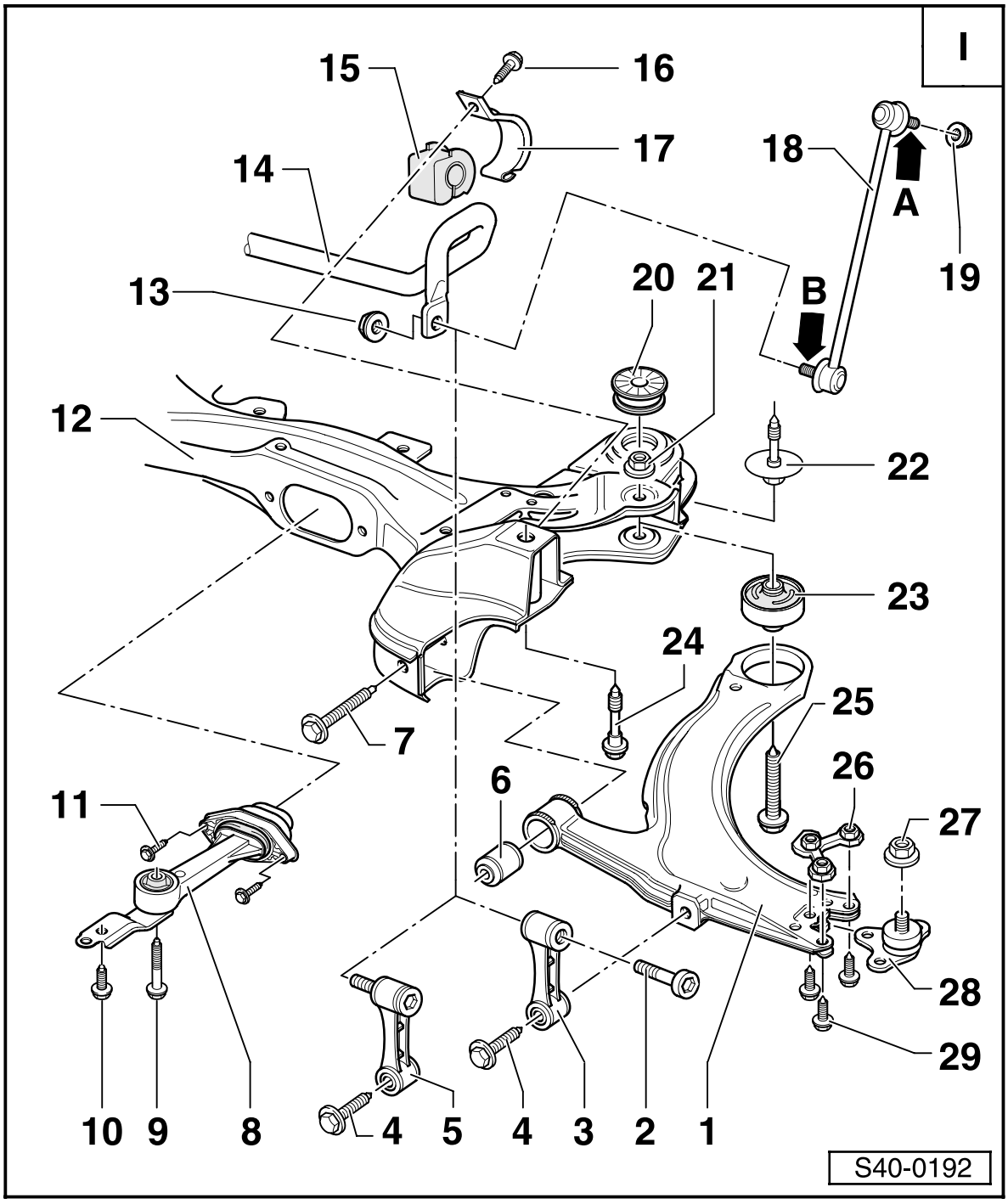
Servicing front suspension



I - Removing and installing subframe, anti-roll bar, track control arm ⇒ page 40-2

II - Removing and installing wheel mounting, suspension strut, drive shaft, brake ⇒ page 40-13

I - Summary of the components of the assembly carrier, anti-roll bar, track control arm



Comments:

- *If vehicles on which the universal drive shaft has been removed have to be moved then an outer joint must be fitted instead of the universal drive shaft which should be tightened to 50 Nm otherwise the wheel bearing will be damaged.*
- *It is not allowed to do welding and straightening work on weight carrying and wheel guiding components of the wheel suspension system.*
- *Self-locking nuts must always be replaced.*
- *Corroded bolts/nuts must always be replaced.*

1 - Axle guide

- Removing and installing ⇒ Page 40-4
- Elongated holes only serve to adjust the wheel camber!

2 - 15 Nm and turn through a further 90°

3 - Shift rail

- Shift rails on a given axle must be of the same design
- Allocation ⇒ spare parts catalogue

4 - 15 Nm and turn through a further 90°
- Replace after every disassembly operation

5 - Shift rail
- Only for anti-roll bars with a diameter of 23 mm
- Replace with a steel unit
- Shift rails on a given axle must be of the same design
- Allocation ⇒ spare parts catalogue

6 - Bearing at the front for the axle guide
- Pressing out and pressing in ⇒ Page 40-8

7 - 70 Nm and turn through a further 90°
- Replace after every disassembly operation

8 - Rocking pier

9 - 40 Nm and turn through a further 90°
- Replace after every disassembly operation

10 - 40 Nm and turn through a further 90°
- Replace after every disassembly operation

11 - 20 Nm and turn through a further 90°
- Replace after every disassembly operation

12 - Assembly carrier
- Removing and installing ⇒ Page 40-10
- The undertaking of repairs on the thread of the front axle guide screw connection is not allowed!

13 - 15 Nm and turn through a further 90°
- Replace after every disassembly operation

14 - Anti-roll bar
- The assembly carrier must be lowered in order to remove and install this

15 - Rubber bearing

16 - 25 Nm

17 - Clamp

18 - Shift rail
- Mount the spherical head with the long threaded pin -A- (above) on the spring plate
- Mount the spherical head with the short threaded pin -B- (below) on the anti-roll bar
- Allocation ⇒ spare parts catalogue

19 - 90 Nm
- Replace after every disassembly operation

20 - Metal - rubber bearing
- Pressing out and pressing in ⇒ Page 40-12

21 - Nut, self-locking
- Replace after every disassembly operation

22 - 100 Nm and turn through a further 90°
- Replace after every disassembly operation

23 - Bearing behind for the axle guide
- Installed location ⇒ Page 40-9
- Pressing out and pressing in ⇒ Page 40-9

24 - 100 Nm and turn through a further 90°
- Replace after every disassembly operation

25 - 70 Nm and turn through a further 90°
- Replace after every disassembly operation

26 - Securing plate
- Replace after every disassembly operation

27 - 20 Nm and turn through a further 90°
- Replace after every disassembly operation

28 - Axle joint
- Checking ⇒ Page 40-19
- Check the rubber bellows for damage and replace the axle joint as necessary
- Removing and installing only in connection with the wheel bearing housing ⇒ Page 40-20
- Mark the installed location before removing and place in the middle of the elongated hole when replacing the axle guide; also check the tracking

29 - 20 Nm and turn through a further 90°
- Replace after every disassembly operation

Removing and installing track control arm

Special tools, testers and aids required

- Removing tool MP 6-425
- Supporting device MP 9-200
- Torque wrench 75 ... 400 Nm, e.g. V.A.G 1576
- Torquing angle wrench, e.g. V.A.G 1756

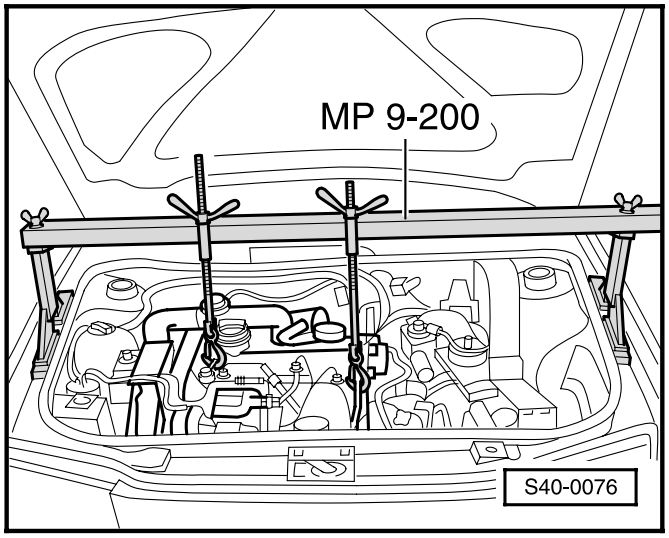
Removing

- Take off the wheel trim; pull off cap on light-alloy wheels (hook included in tool kit).
- Jack up vehicle until no weight is pressing on the front suspension.
- Slacken twelve-point nut.
- Raise vehicle and take off wheel.
- Unscrew twelve-point nut.
- Remove noise insulation panel.

⇒ Engine, Mechanical Components; Repair Group 10; Removing and installing engine

Only for models with automatic gearbox:

◄- Insert supporting device MP 9-200 and take up weight of engine/gearbox in this position.

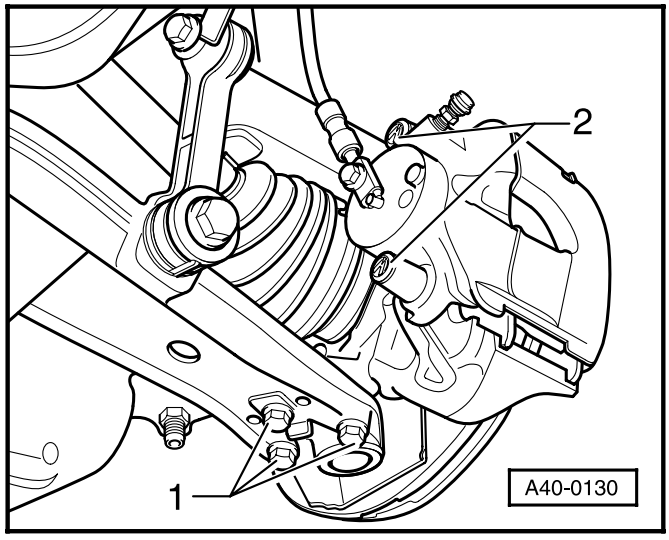


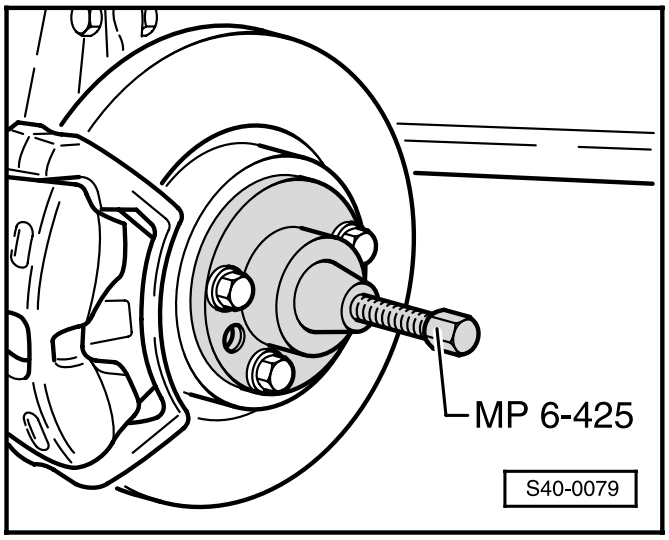
All models:

Note:

Mark installation position of the bolts -1- otherwise the axle geometry must be checked.

◄- Unscrew bolts -1-.

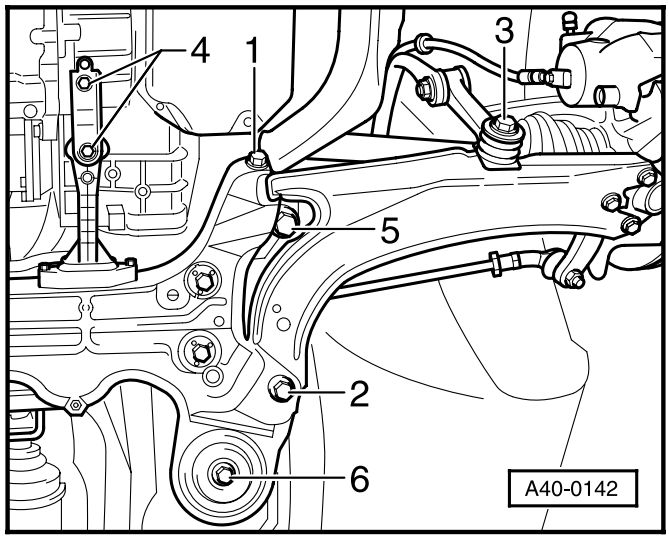




◄- Press out drive shaft. Position tool, as shown in Fig., for this step.

Note:

Ensure adequate clearance when pressing out the drive shaft.



◄- Unscrew hexagon bolt -3-, if fitted, at wishbone.

- Unscrew hexagon bolts -1- and -2-.
- Take out wishbone.

Only for models with automatic gearbox

- Unscrew hexagon bolts -4- for pendulum support.
- Unscrew bolts + washers -5- and -6- for subframe.

Note:

Pull out bolt -1- by pushing subframe slightly down and take out wishbone.

Installing

(applies to models fitted with manual and automatic gearbox)

Remove any corrosion present in the thread/ spline of the outer joint.

- Insert wishbone and attach.
- Attach subframe.
- Moisten splines of wheel hub with oil.
- Insert outer joint as far as possible into the splines of the wheel hub.
- Attach steering joint and wishbone with new bolts onto old impression.
- Bolt pendulum support to gearbox.
- Bolt coupling rod, as appropriate, to wishbone.
- **Moisten contact surface of twelve-point nut and also splines and thread of outer joint with oil and screw on twelve-point nut as far as possible.**
- Pull outer joint sufficiently far into the wheel hub until it is making contact in the wheel bearing.
- Install noise insulation.

⇒ Engine, Mechanical Components; Repair Group 10; Removing and installing engine

- Fit on wheel.
- Lower vehicle; when doing this, ensure that the wheels do not yet touch the ground.

Tightening torques:

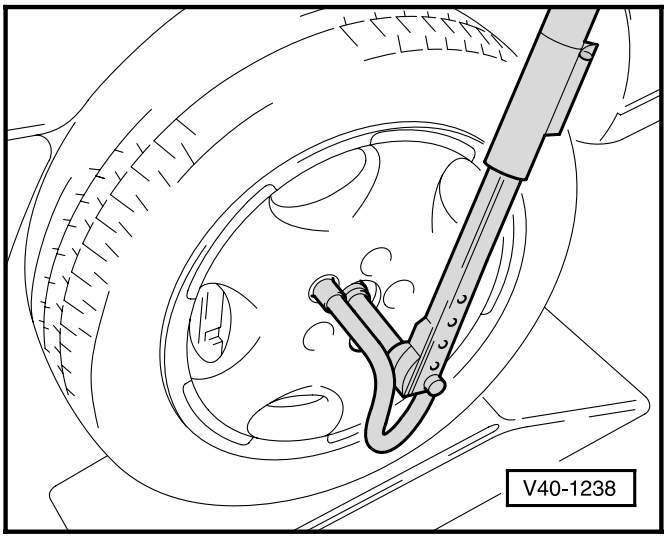
Subframe to body **Use new bolts!**	100 Nm + 90°
Steering joint to wishbone **Use new bolts and new locking plate!**	20 Nm + 90°
Pendulum support to gearbox **Use new bolts!**	40 Nm + 90°
Coupling rod to wishbone **Use new bolt!**	15 Nm + 90°

The wheel bearing will be damaged if the wheel bearings are burdened through the weight of the vehicle. The working life of the wheel bearing decreases through this.

- Operate brake (second mechanic required).
- Tighten new twelve-point nut with 225 Nm and slacken half a turn.
- Turn wheel hub at least 90°
- Tighten twelve-point nut:

Tightening torque:

50 Nm and torque a further 60°



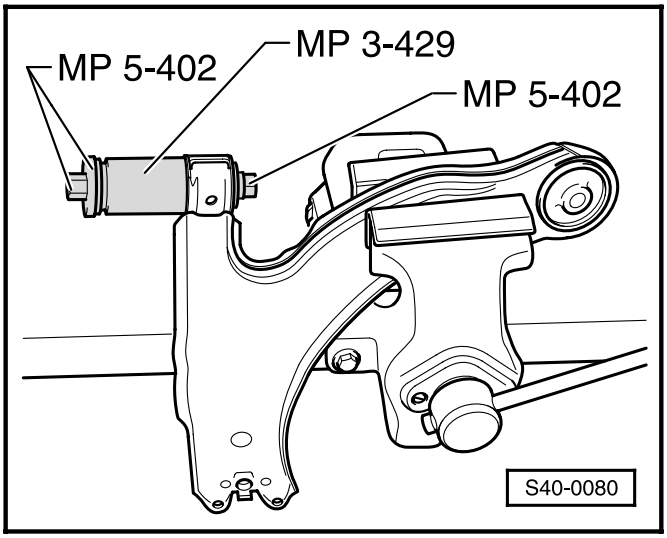
Note:

◄ *It is recommended to use the torque wrench V.A.G 1756 for tightening the twelve-point nut.*

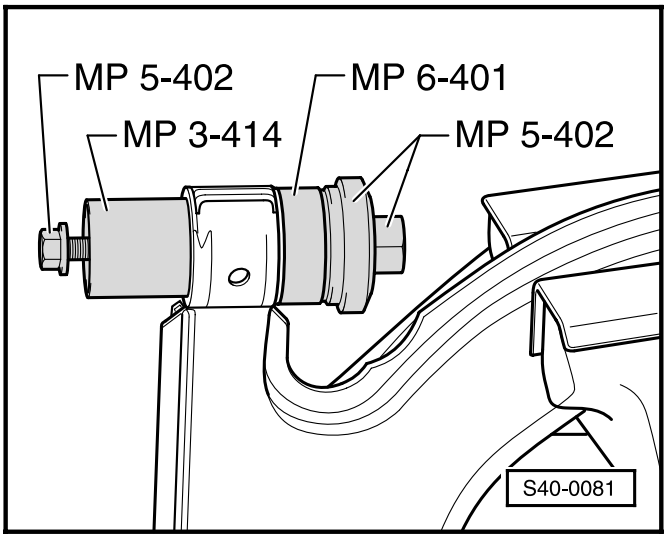
Removing and inserting bush for track control arm

Special tools, testers and aids required

- Thrust plate MP 3-406
- Thrust plate MP 3-407
- Pipe section MP 3-414
- Pipe section MP 3-429
- Thrust washer MP 3-456
- Assembly device MP 5-402
- Assembly device MP 6-401
- Plunger MP 6-405
- Base MP 6-407
- Extraction tube MP 6-408
- Workshop pressing tool, e.g. V.A.G 1290 A
- Acid-free lubricant, e.g. G 294 421



◄ **Pressing out front bush for track control arm**

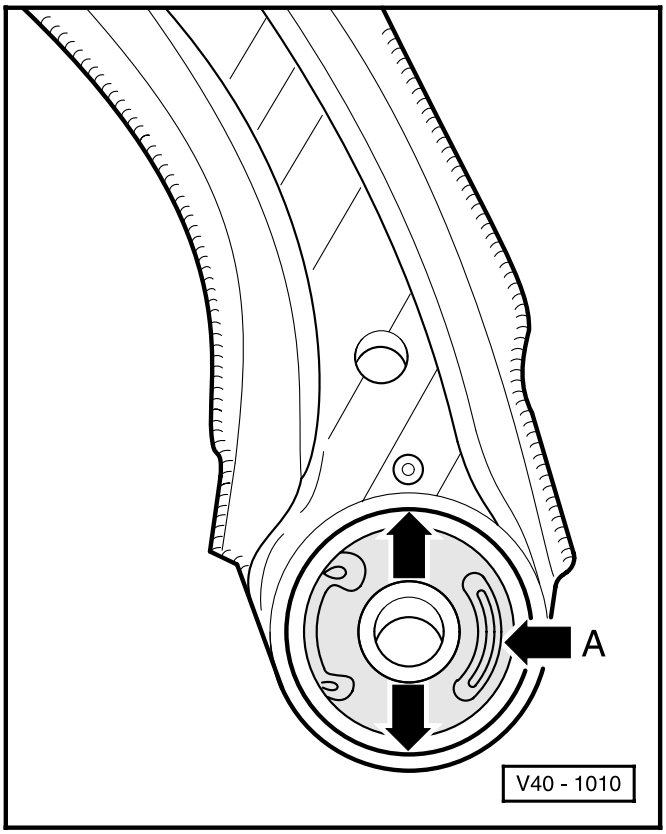


◄ **Inserting front bush for track control arm**

- Insert bush into pipe section MP 3-414.

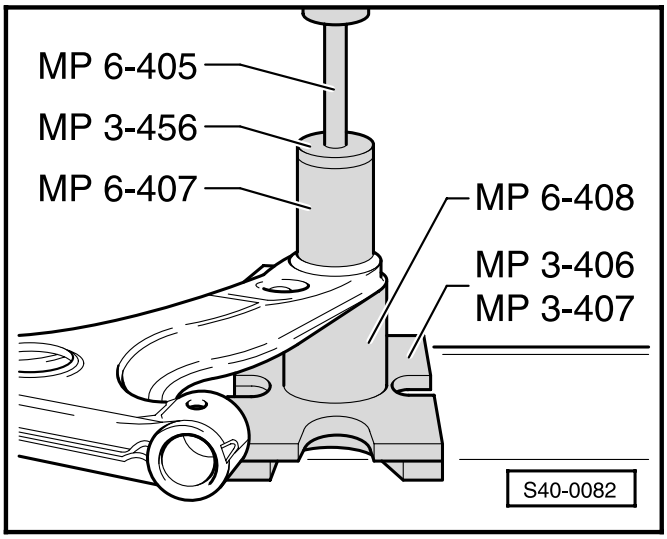
Note:

Use acid-free lubricant, e.g. G 294 421, for inserting the bush. On no account use grease or soapsuds.



◄ **Installation position for rear bush in track control arm**

One of the stamped arrows points towards the recess in the track control arm; kidney-shaped recess (arrow A) in bush points toward centre of vehicle.



◄ **Removing and inserting rear bush for track control arm**

Pay attention to installation position when inserting ⇒ Fig. V40-1010.

Removing and installing subframe

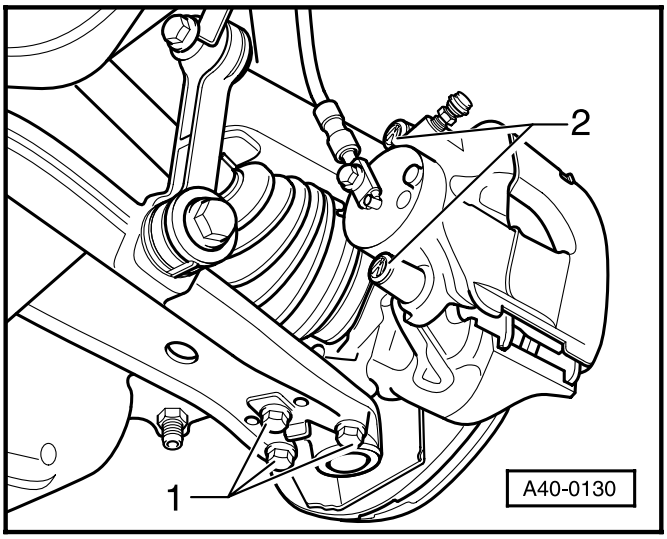
Special tools, testers and aids required

- Removal tool MP 6-425
- Gearbox jack with attachment, e.g. V.A.G 1383 A with V.A.G 1359/2

Removing

- Take off the wheel trims of the front wheels; remove caps on light-alloy wheels (hook included in tool kit).
- Jack up vehicle sufficiently so that there is no load pressing on the front suspension.
- Slacken twelve-point nut on left and right.
- Raise vehicle and take off wheels.
- Unscrew twelve-point nut on left and right.
- Remove noise insulation panel.

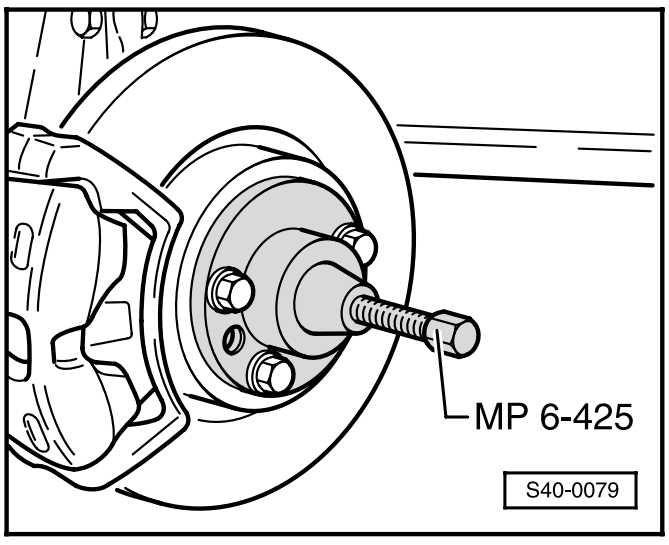
⇒ Engine, Mechanical Components; Repair Group 10; Removing and installing engine



Note:

Mark installation position of bolts -1- otherwise the axle geometry must be checked.

◄- Unscrew bolts -1-.

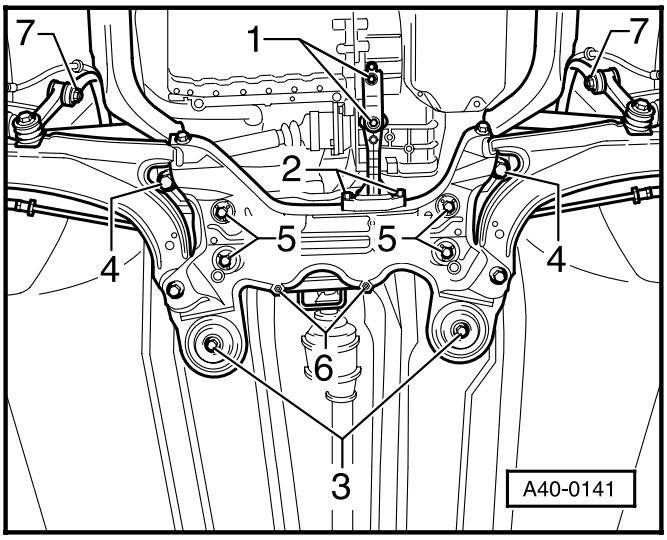


◄- Press out drive shaft on left and right. Position tool as shown in illustration for this step.

Note:

Ensure adequate clearance when pressing out the drive shafts.

- Separate track control arm on left and right from steering joint.
- Swivel wheel bearing housing and steering joint out and support.



◄ - Unscrew bolts -1- and -2- and take off pendulum support.

- Unscrew bolts for steering gear -5-.

- Unscrew nut -7- for coupling rod of anti-roll bar.

- Unscrew bolts -6- for exhaust system (only TDI).

- Position gearbox jack with attachment, e.g. V.A.G 1383 A with V.A.G 1359/2, below subframe.

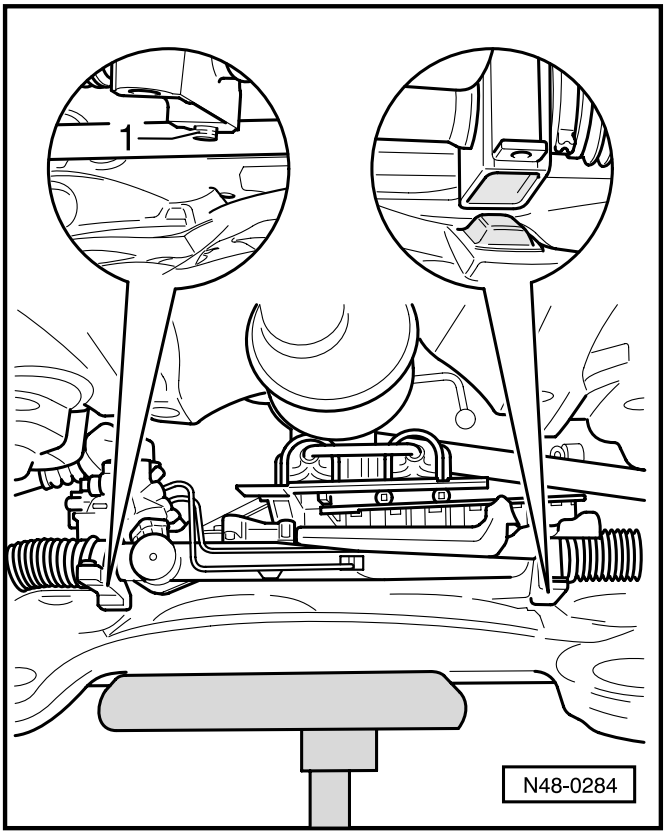
- Unscrew bolts -3- and -4- for subframe.

- Lower subframe with gearbox jack.

Note:

Ensure that the steering gear detaches from the subframe.

- Support steering gear; take up weight with tensioning strap if necessary.



Installing

Before fitting on the bolts for the subframe, position steering gear on subframe and then insert bolts for steering gear.

◄ The threaded sleeve -1- should be located in the hole of the subframe.

The remaining installation is carried out in the reverse order.

Tightening torques ⇒ page 40-2.

After installing, carry out a road test in order to check the position of the steering wheel.

If the steering wheel is not properly centred, it is then necessary to check the axle alignment.

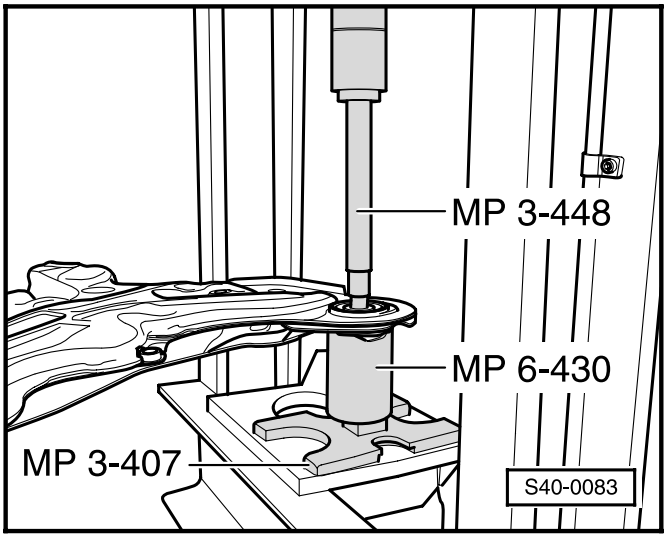
Removing and installing bonded rubber bush

Special tools, testers and aids required

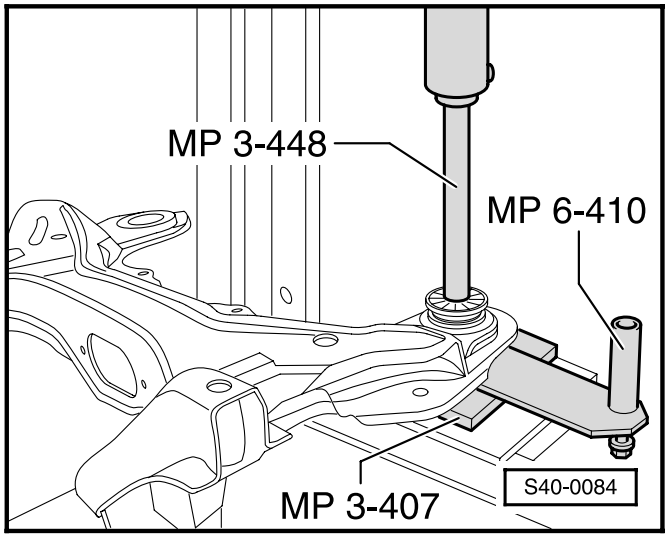
- Pressure plate MP 3-407
- Pressure die MP 3-448
- Counterholder MP 6-410
- Removal tool MP 6-425
- Assembly device MP 6-430
- Workshop press, e.g. V.A.G 1290 A
- Gearbox lift with attachment, e.g. V.A.G 1383 A with V.A.G 1359/2
- Acid-free lubricant, e.g. G 294 421 A1

It is possible to remove and install the bonded rubber bush after removing the subframe.

- Removing and installing subframe ⇒ page 40-10.



◄ **Pressing out bonded rubber bush**

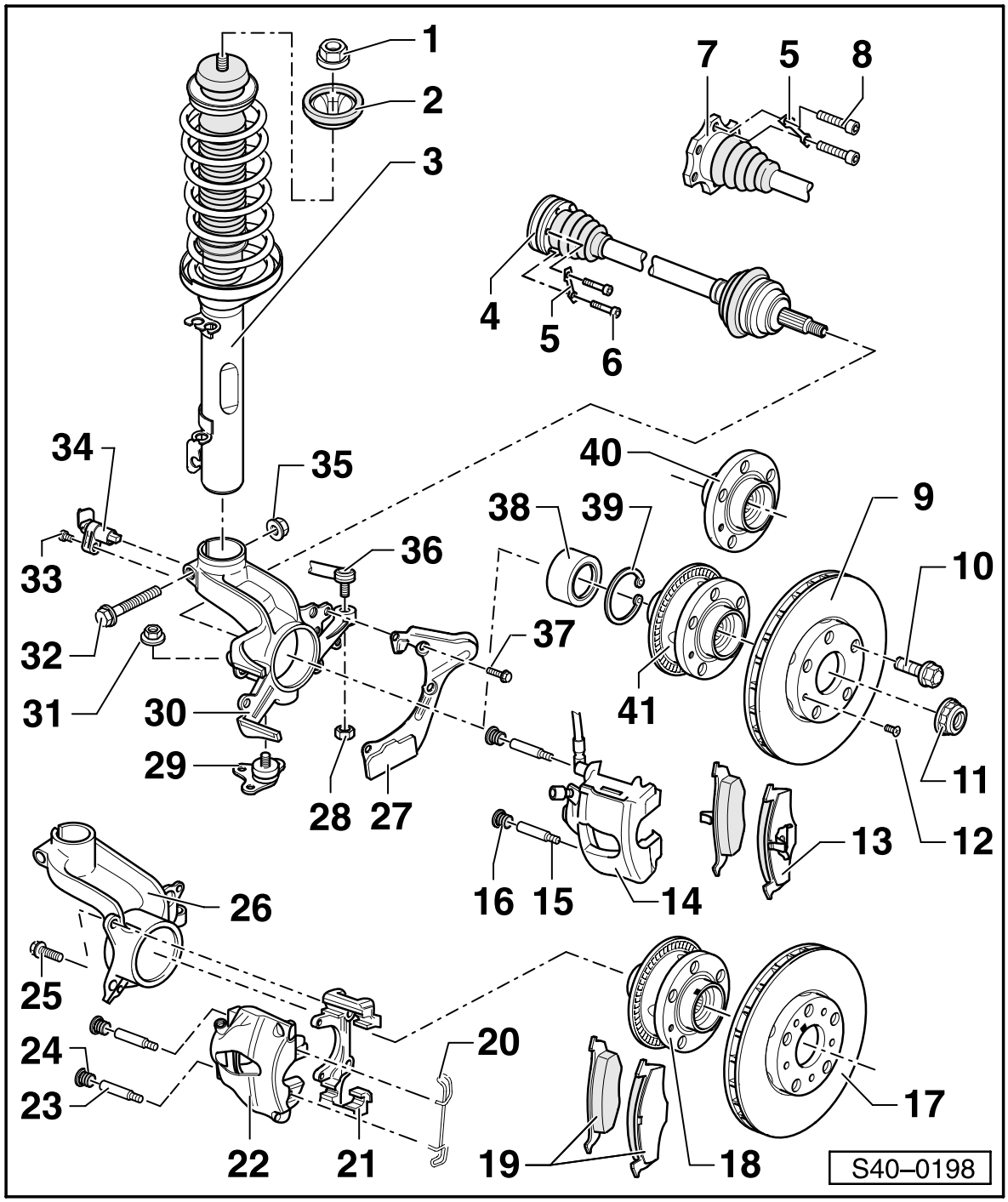


◄ **Pressing in bonded rubber bush**

Note:

Coat bonded rubber bush in subframe with acid-free lubricant, e.g. G 294 421 A1, before pressing in. On no account use grease or soap suds.

II - Assembly overview of wheel mounting, suspension strut, drive shaft, brake



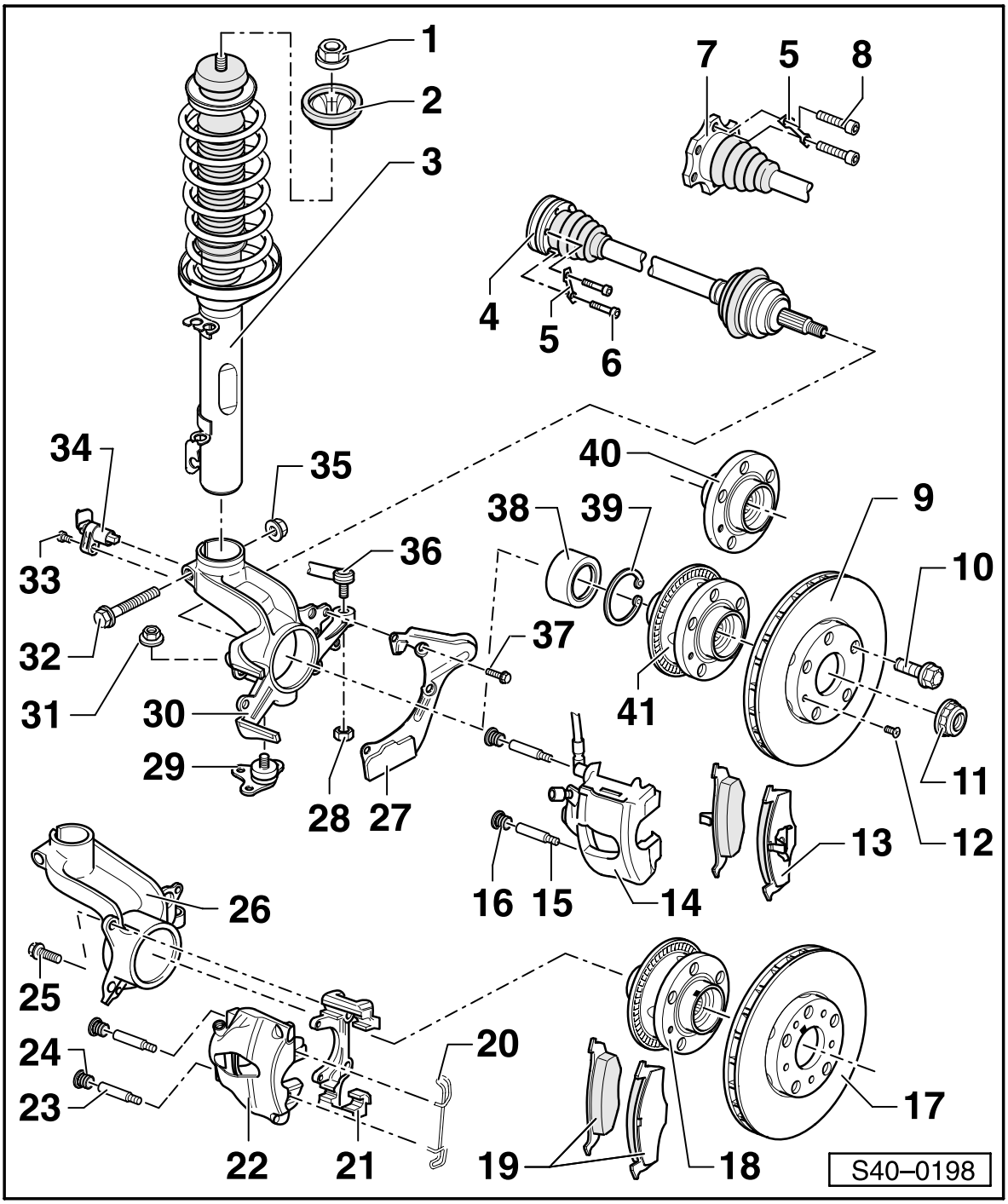
Notes:

- *If it is necessary to move a vehicle on which the drive shaft has been removed, first of all install an outer joint in place of the drive shaft and tighten to 50 Nm otherwise the wheel bearing will be damaged.*
- *It is not permitted to carry out any welding and straightening work on load-bearing and wheel-locating components of the front suspension.*
- *Always replace self-locking nuts.*
- *Always replace corroded nuts and bolts.*

1 - Self-locking hexagon collar nut, 60 Nm
- replace each time removed

2 - Stop

3 - Suspension strut
- removing and installing ⇒ page 40-21
- servicing ⇒ page 40-25
- assignment ⇒ Parts List



4 - Drive shaft with inner CV joint
- ♦ removing and installing ⇒ page 40-34
- ♦ servicing ⇒ page 40-38

5 - Base plate

6 - Machine bolt with internally serrated head
- ♦ replace each time removed
- ♦ tighten initially to 10 Nm, then diagonally across to final torque
  M8 = 40 Nm
  M10 = 70 Nm
- ♦ assignment ⇒ Parts List

7 - Drive shaft with inner tripod joint
- ♦ removing and installing ⇒ page 40-34
- ♦ servicing ⇒ page 40-49

8 - Machine bolt with internally serrated head
- ♦ replace each time removed
- ♦ tighten initially to 10 Nm, then diagonally across to final torque
  M8 = 40 Nm
  M10 = 70 Nm
- ♦ assignment ⇒ Parts List

9 - Brake disc (FS-III)
- without marking for axial run-out
- with a fixing hole for the wheel hub
- assignment ⇒ electronic catalogue of original parts

10 - Wheel bolt, 120 Nm

11 - Twelve-point nut, self-locking
- loosen and tighten ⇒ page 40-6
- replace after each disassembly

12 - Screw, 4 Nm

13 - Brake pads (FS-III)
- removing and installing ⇒ page 46-3

14 - Brake caliper (FS-III)
For vehicles with engine up to 92 kW.
- do not release brake hose when working on the front wheel suspension
- tie up with wire or anything similar
- repairing ⇒ page 47-8

15 - Guide bolts (FS-III), 28 Nm
- removing and installing ⇒ from page 46-3

16 - Cap (FS-III)

17 - Brake disc (FN-3)
- with marking for axial run-out
- with 5 fixing holes for the wheel hub
- removing and installing ⇒ from page 46-5.7
- assignment ⇒ electronic catalogue of original parts

18 - Wheel hub with pulse rotor for speed sensor
- with marking for minimum axial run-out
- only on vehicles with ABS
- pressing out ⇒ page 40-16 and futher
- pressing in ⇒ page 40-16 and further
- removing inner ring of bearing ⇒ page 40-16 and further
- inspecting lateral run-out of pulse rotor ⇒ page 45-61
- assignment ⇒ electronic catalogue of original parts

19 - Brake pads (FN-3)
- removing and installing ⇒ page 46-5.2

20 - Retaining spring (FN-3)

21 - Brake carrier (FN-3)

22 - Brake caliper (FN-3)
For vehicles with engine as of 96 kW
- do not release brake hose when working on the front wheel suspension
- tie up with wire or anything similar
- removing and installing brake pads ⇒ Repair Group 46
- repairing ⇒ Repair Group 47

23 - Guide bolts (FN-3), 28 Nm
- removing and installing ⇒ page 46-5.2

24 - Cap (FN-3)

25 - Bolt with safety collar (FN-3), 125 Nm
- clean ribbing on underside

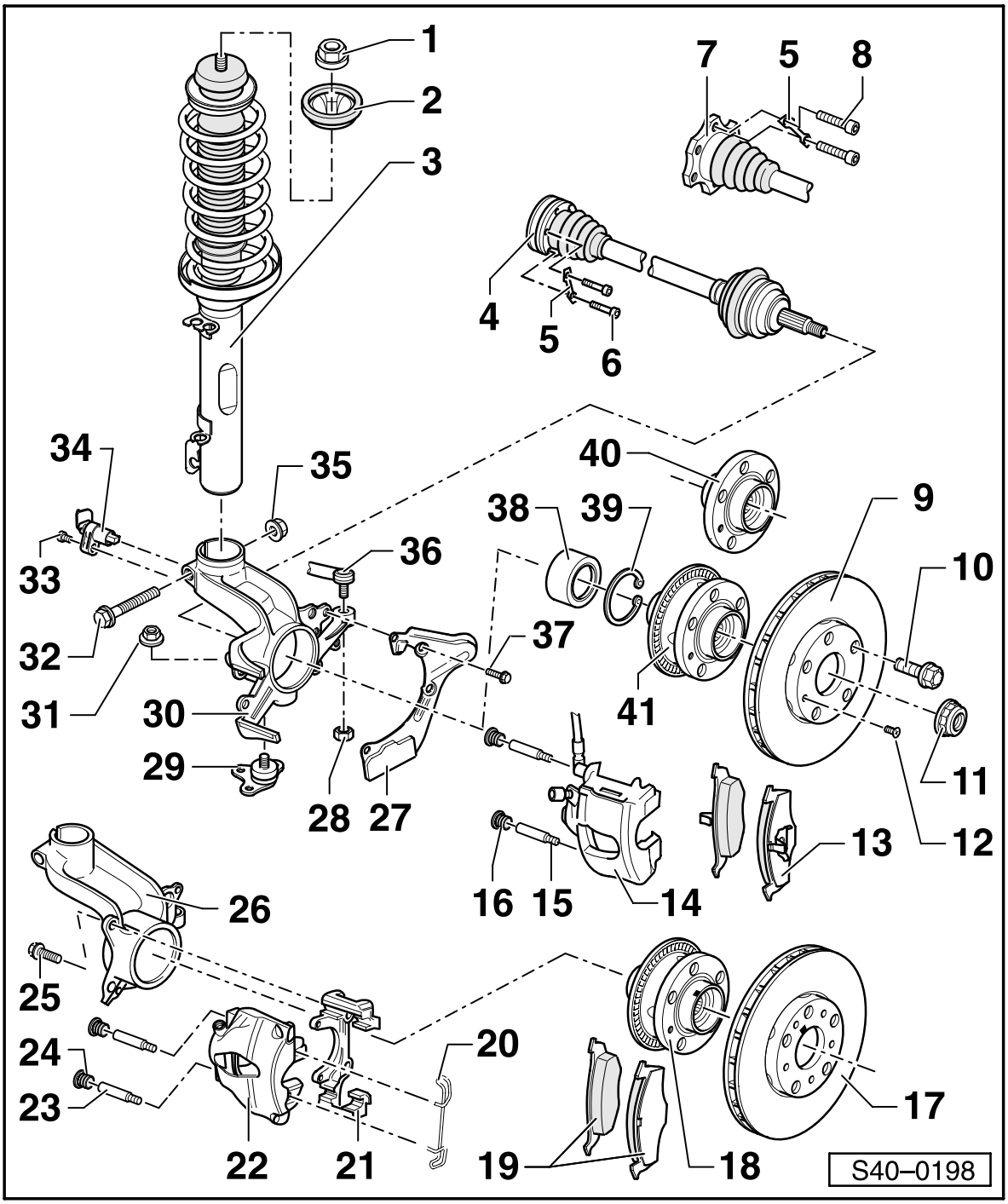
26 - Wheel bearing housing
For vehicles with engine as of 96 kW
- removing and installing ⇒ page 40-21
- repairing ⇒ from page 40-16
- before pressing in wheel bearing coat evenly the entire wheel bearing seat in the wheel bearing housing with G 052 723 A2

27 - Cover plate

28 - Self-locking nut, 45 Nm
- replace after each disassembly

29 - Steering joint
- inspecting ⇒ page 40-19
- inspecting rubber bellows for damage, if necessary replace steering joint
- removing and installing ⇒ page 40-20

30 - Wheel bearing housing
For vehicles with engine up to 92 kW
- removing and installing ⇒ page 40-21
- repairing ⇒ from page 40-16
- before pressing in wheel bearing coat evenly the entire wheel bearing seat in the wheel bearing housing with G 052 723 A2



31 - Self-locking hexagon collar nut, 20 Nm + torque a further 90° (1/4 turn)
- replace each time removed

32 - Hexagon bolt
- replace each time removed

33 - Hexagon socket bolt, 10 Nm

34 - ABS wheel speed sensor
- only on models with ABS
- insert with lubricating paste G 000 650 (e.g. Wolfrakote Top Paste)

35 - Self-locking hexagon collar nut
- up to 05.98: 50 Nm + torque a further 90° (1/4 turn)
  from 06.98: 60 Nm + torque a further 90° (1/4 turn)
- torque not less than 90°
- torquing angle tolerance 90° to 120°
- replace each time removed

36 - Track rod with track rod end
- removing and installing ⇒ page 40-22

37 - Hexagon bolt, 10 Nm

38 - Wheel bearing
- pressing out ⇒ from page 40-16
- replace, is destroyed when pressed out
- pressing in ⇒ from page 40-16
- replacement part only available as kit “wheel bearing with assembly parts” (items 11, 39, 38, 28, 31 and 35)

39 - Circlip
- ensure properly installed ⇒ from page 40-16
- replace each time removed

40 - Wheel hub without pulse rotor
- only on models without ABS
- assignment ⇒ Parts List

41 - Wheel hub with pulse rotor for wheel speed sensor
- without marking for minimum axial runout
- only on models with ABS
- pressing out ⇒ from page 40-16
- pressing in ⇒ from page 40-16
- pulling off bearing inner race ⇒ from page 40-16
- inspecting lateral runout of pulse rotor ⇒ page 45-61
- assignment ⇒ Parts List

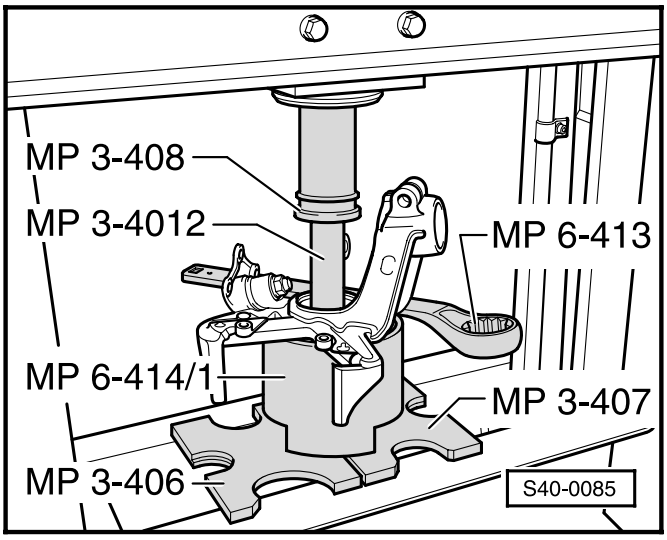
Repairing wheel bearing housing

Special tools, testers and aids required

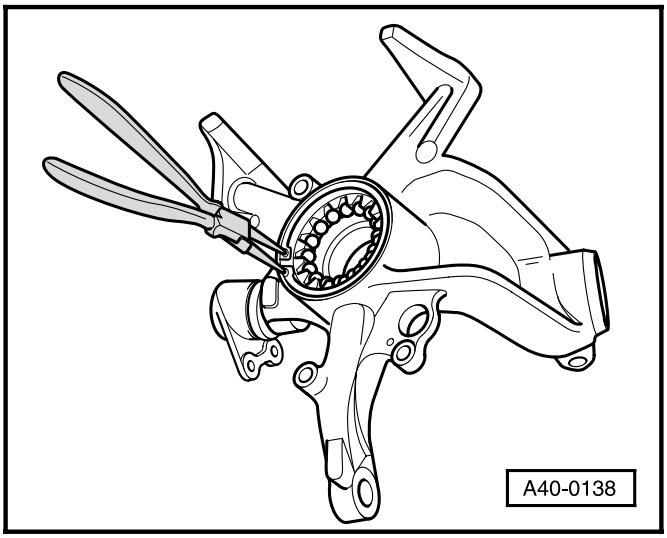
- Thrust plate MP 3-406
- Thrust plate MP 3-407
- Thrust plunger MP 3-408
- Tube section MP 3-4012
- Tube section MP 3-450
- Thrust plate MP 3-467
- Ring wrench WAF 46 MP 6-413
- Assembly device MP 6-414/1
- Washer MP 6-415
- Washer MP 6-416
- Thrust plate MP 6-418
- Tube MP 6-419
- Pressure pipe MP 6-420
- Extractor MP 6-425
- Socket wrench insert WAF 21 MP 6-427
- Spreader 3424
- Extractor Kukko V 176
- Workshop press, e.g. V.A.G 1290 A
- Torque wrench, e.g. V.A.G 1756
- Cross member Kukko 18-0
- Grease G 052 723 A2 (Molykote)

The repair of the wheel bearing housing by pressing out and in the wheel hub and the wheel bearing is only possible after removing the suspension strut and wheel bearing housing.

- Removing and installing suspension strut and wheel bearing housing ⇒ page 40-21.



◄ **Pressing wheel hub out of wheel bearing**

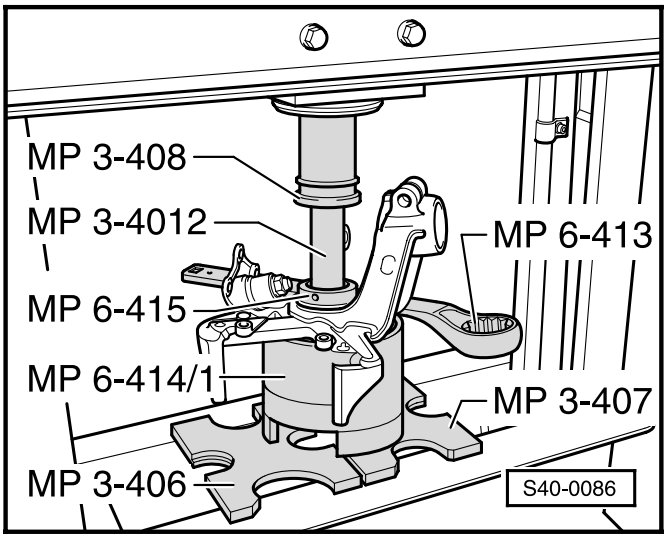


◄ **Removing and installing circlip**

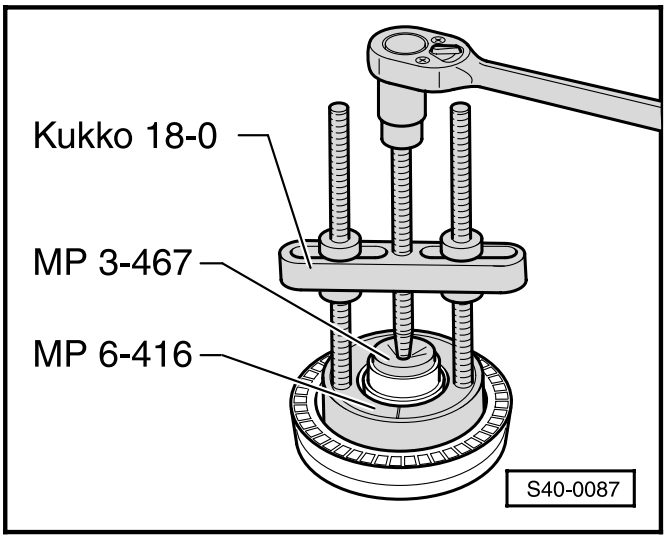
- Use commercially available circlip pliers to remove and replace circlip.

Notes:

- *Replace*
- *When inserting, ensure the circlip is correctly located.*

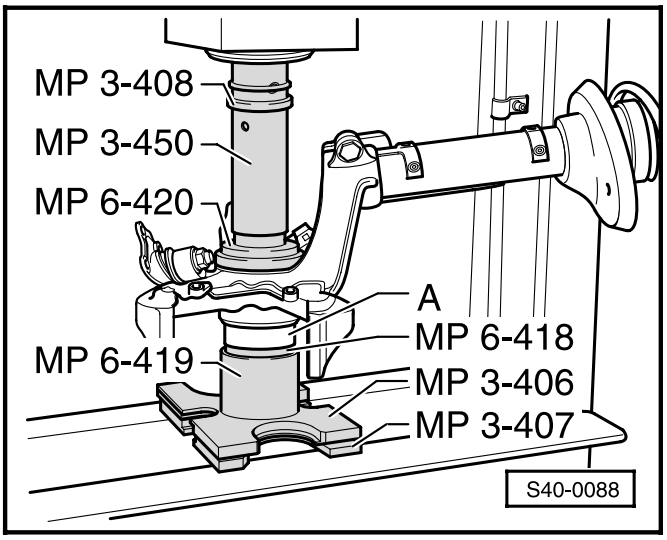


◄ **Pressing wheel bearing out of wheel bearing housing**



◄ **Pull the inner ring of the bearing off the wheel hub**

- Insert washer MP 6-416 as shown.
- Screw cross member Kukko 18-0 into washer MP 6-416.
- Install pressure plate MP 3-467 onto wheel hub and pull off inner ring of bearing by turning the threaded spindle.



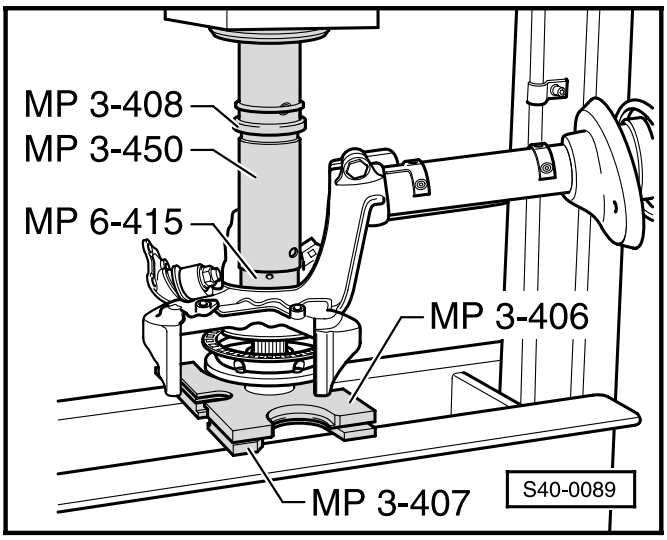
◄ **Press wheel bearing into wheel bearing housing**

A - wheel bearing

- Before pressing in wheel bearing coat evenly the entire wheel bearing seat in the wheel bearing housing with G 052 723 A2.

Note:

After pressing in the wheel hub, the circlip must be inserted ⇒ page 40-17.



◄ **Press wheel hub into wheel bearing**

Note:

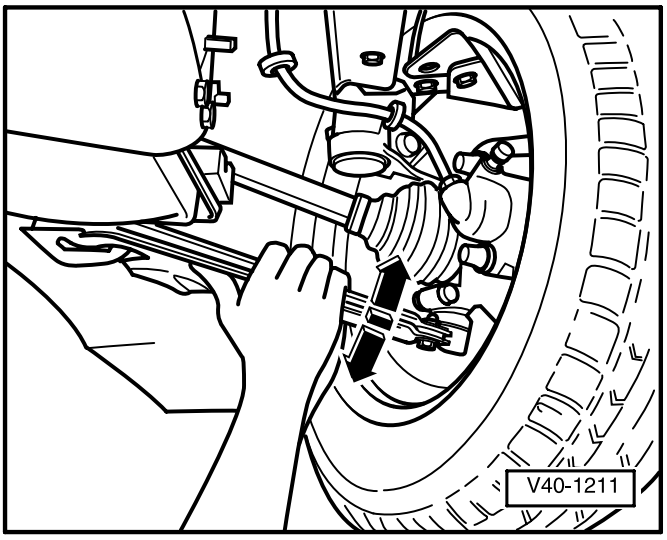
- *When pressing in the wheel hub, make sure the washer MP 6-415 is supported at the inner ring of the bearing.*
- *Observe assignment of wheel hub with wheel bearing housing and wheel hub for vehicles with engine as of 110 kW (Brake FN-3)*

⇒ Spare Part catalogue.

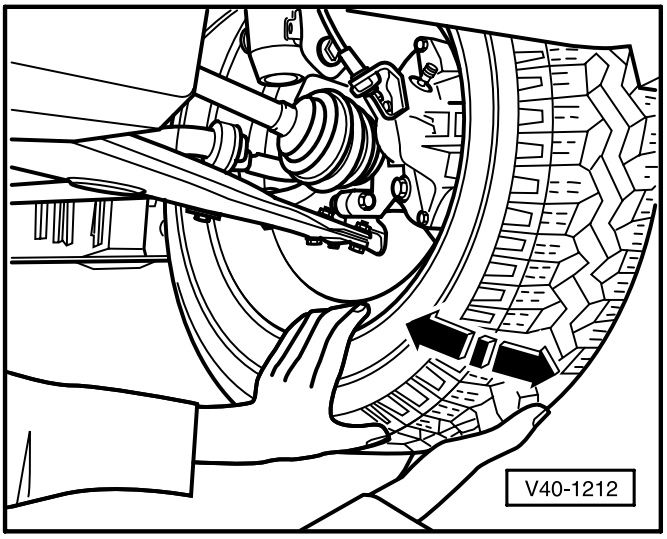
- *Wheel hubs with a 3 mm wide ink jet mark for marking of minimum axial run-out can also be combined with brake discs without marking of maximum axial run-out.*
  The reduction of the entire axial run-out for Brake FN-3 is then not effective.

Inspecting steering joint

Inspecting axial play



◄ - Pull steering link firmly down and push up again.



Inspecting radial play

◄ - Push wheel firmly in and out at the bottom.

Notes:

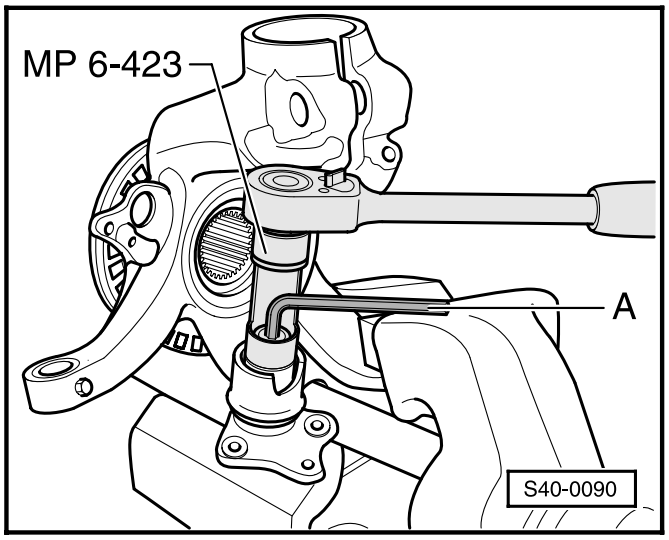
- *There must not be any perceptible or visible play present when conducting both inspections.*
- *Observe steering joint when carrying out the inspections.*
- *Allow for any wheel bearing play which is present or "play" in the top suspension strut bush.*
- *Inspect rubber boot for damage; replace steering joint if necessary.*

Removing and installing steering joint

Special tools, testers and aids required

- Wrench socket waf 19 MP 6-423
- Extraction tool MP 6-425
- Wrench socket waf 21 MP 6-427
- Expanding tool 3424
- Torquing angle wrench, e.g. V.A.G 1756
- Puller, Matra V176

Removing

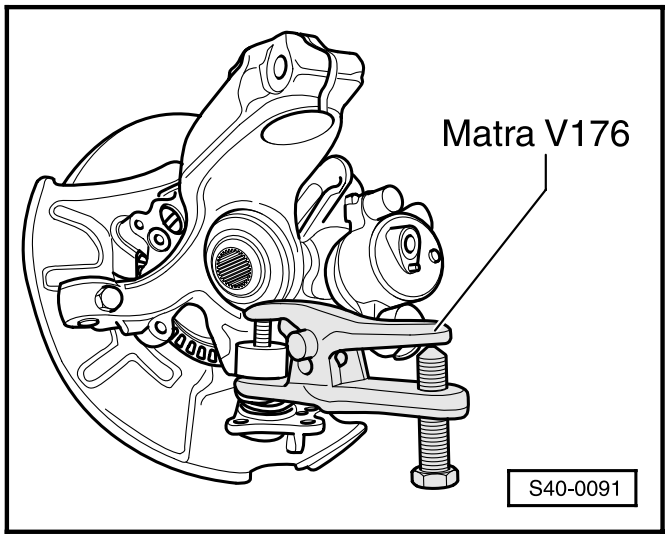


It is only possible to remove the steering joint after removing the suspension strut and wheel bearing housing.

- Removing and installing suspension strut and wheel bearing housing ⇒ page 40-21.

◄- Position special tools as shown in illustration, and slacken hexagon nut.

A - Torx T 30



◄- Position puller as shown in illustration, and press out steering joint.

Installing

Installation is carried out in the reverse order.

Note:

Replace hexagon collar nut.

Tightening torque:

Steering joint to wheel bearing housing:
20 Nm + torque a further 90°.

Removing and installing suspension strut and wheel bearing housing

Special tools, testers and aids required

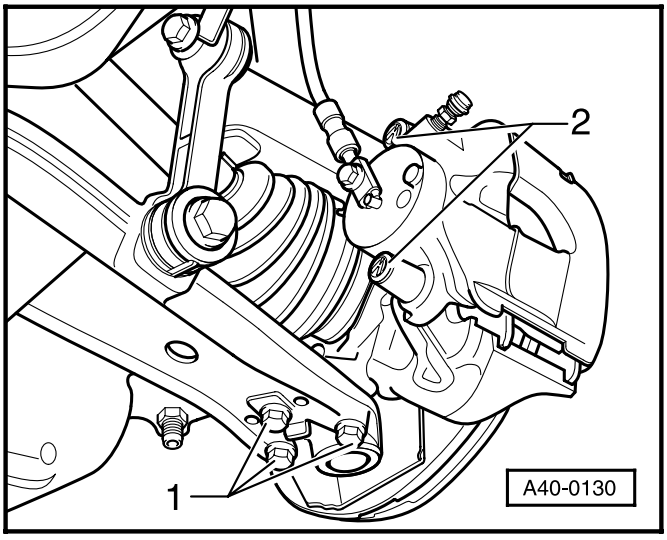
- Extractor MP 6-425
- Socket wrench bit waf 21 MP 6-427
- Expander 3424
- Torque wrench 75 ... 400 Nm, e.g. V.A.G 1576
- Torquing angle wrench, e.g. V.A.G 1756
- Puller Matra V176

Removing

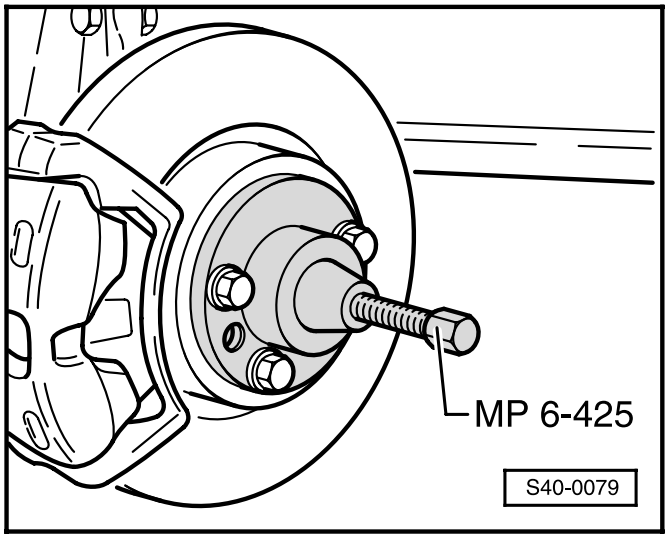
- Take off wheel trim; pull off cap of light alloy wheels (hook for pulling off cap in tool kit).
- Raise vehicle sufficiently so that no load is acting on the front suspension.
- Slacken twelve-point nut.
- Take off wheel and raise vehicle.

Note:

Mark fitting location of the bolts -1- otherwise the suspension geometry has to be inspected.



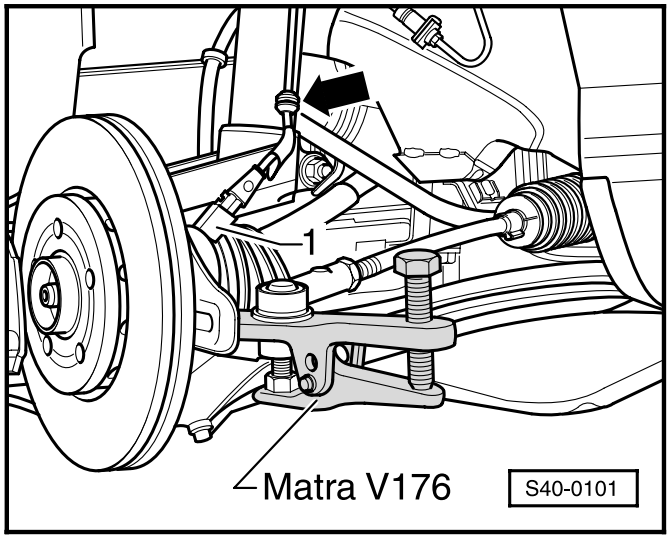
◄ - Unscrew bolts -1-.



◄ - Press out drive shaft. Position tool as shown in illustration for this step.

Note:

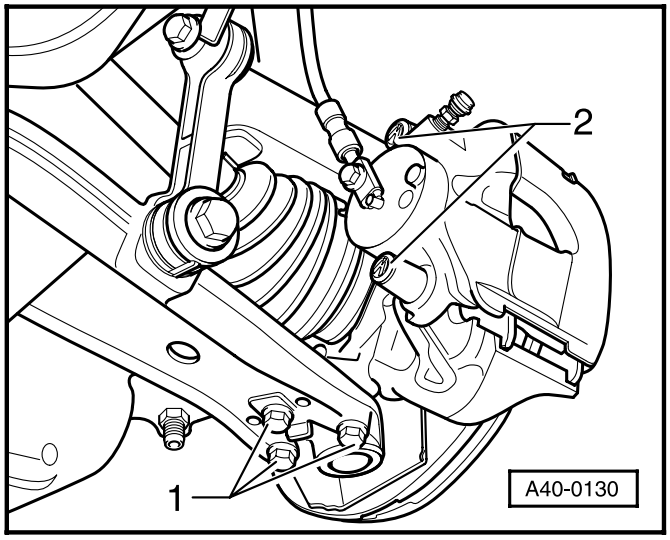
Ensure adequate clearance when pressing out the drive shaft.



◄ - Use puller Matra V176 (commercial) to press track rod off the steering arm

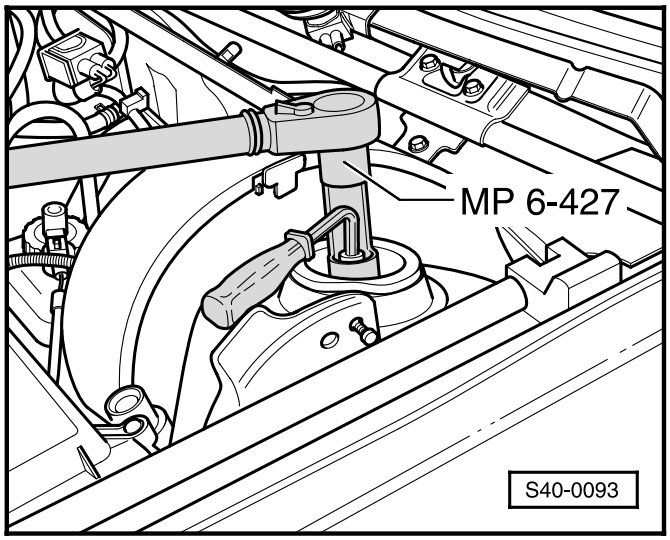
- Unplug connector -1- ABS speed sensor from the mountings.

- Disconnect the ABS speed sensor from the mountings -arrow-.



◄ - Remove caps -2- and unscrew brake caliper. Secure the brake caliper with wire to the body.

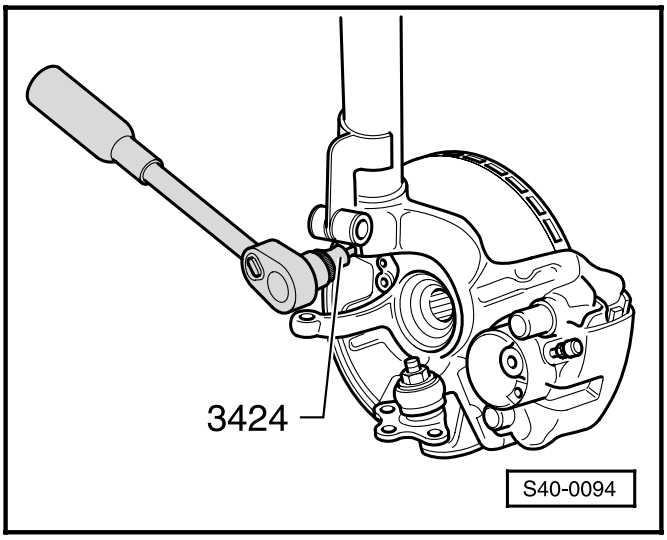
- Remove the brake disc (brake disc is fixed with one screws to the wheel hub).



- If necessary remove the coupling rod from the suspension rod.

◄ - Unscrew the suspension strut on the body using the socket wrench insert -MP 6-427

- Remove suspension strut with wheel-bearing housing.



◄ **Separating suspension strut from wheel bearing housing**

- Insert special tool -3424- as shown, and spread wheel bearing housing apart.
- Take out suspension strut.

Installing

Remove any corrosion present in the thread/ spline of the outer joint.

- Insert suspension strut together with wheel bearing housing and attach to suspension strut dome.
- Attach coupling rod, if fitted, to suspension strut.
- Moisten splines of wheel hub with oil.
- Insert outer joint as far as possible into the splines of the wheel hub.
- Attach steering joint and wishbone with new bolts to old impression.
- Attach brake caliper housing to wheel bearing housing.

Note:

Tighten FN-3 brakes to wheel bearing housing with a torque of 125 Nm.

- Insert cable of ABS wheel speed sensor into fixtures.
- Plug in connector of ABS wheel speed sensor.
- **Moisten contact surface of twelve-point nut and also splines and thread of outer joint with oil and screw on twelve-point nut as far as possible.**
- Pull outer joint sufficiently far into the wheel hub until outer joint is making contact in the wheel bearing.
- Fit on wheel.

Tightening torque:

Suspension strut to suspension strut dome	60 Nm
Use new nuts!	
Coupling rod to suspension strut	90 Nm
Use new nuts!	
Steering joint to track control arm	20 Nm + 90°
Use new screws and new lock washer!	
Brake caliper to wheel bearing housing	28 Nm

- Make sure when lowering the vehicle that the wheels do not touch the ground.

The wheel bearing will be damaged if the wheel bearings are burdened through the weight of the vehicle. The working life of the wheel bearing decreases through this.

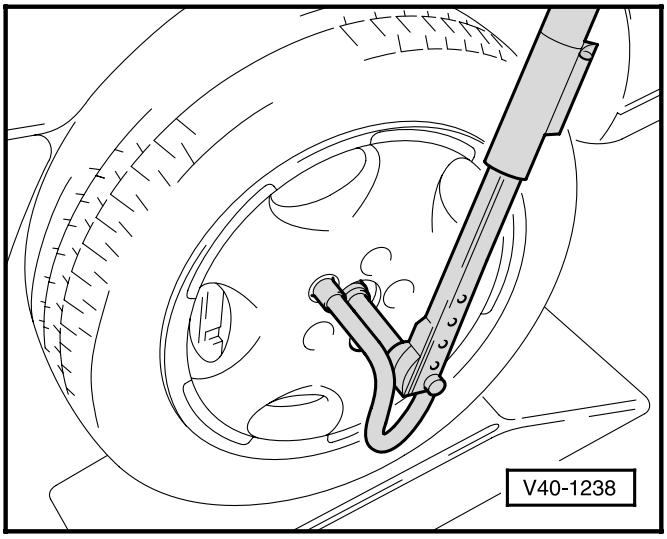
- Operate brake (second mechanic required)
- Tighten new twelve-point nut with 225 Nm and slacken half a turn.
- Turn wheel hub at least 90°.
- Tighten twelve-point nut:

Tightening torque

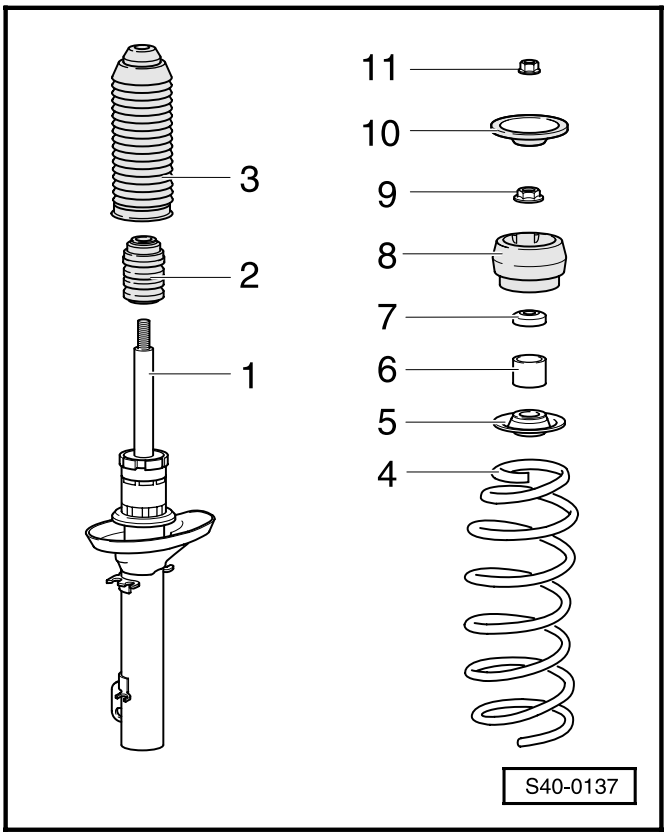
50 Nm and torque a further 60°

Note:

◄ ♦ *It is recommended to use the torque wrench V.A.G 1756 for tightening the twelve-point nut.*



Servicing front suspension strut



Special tools, testers and aids required

- Wrench insert waf 21 MP 6-427
- Spring tensioning device, e.g. S 505 501 V or V.A.G 1752/1
- Suspension strut mount, e.g. V.A.G 1752/2
- Spring holder with protective insert, e.g. V.A.G 1752/4

1 - Shock absorber
- Always replace complete
- Assigning ⇒ Parts List
- Can be replaced individually
- Inspecting shock absorber ⇒ page 40-28
- Disposal ⇒ page 40-31

2 - Bump stop

3 - Protective sleeve

4 - Coil spring
- Removing and installing ⇒ from page 40-26, Fig. 1, 2, 3, 4
- Assigning ⇒ Parts List
- Pay attention to colour coding
- Surface of spring coil must not be damaged
- Always replace on both sides
- Use only coil springs of same manufacturer on an axle

5 - Spring disc

6 - Bush
- Only on models with heavy-duty suspension (PR No. 1GB). This PR No. is indicated on the vehicle data sticker in the boot or in the Service Schedule ⇒ page 00-4

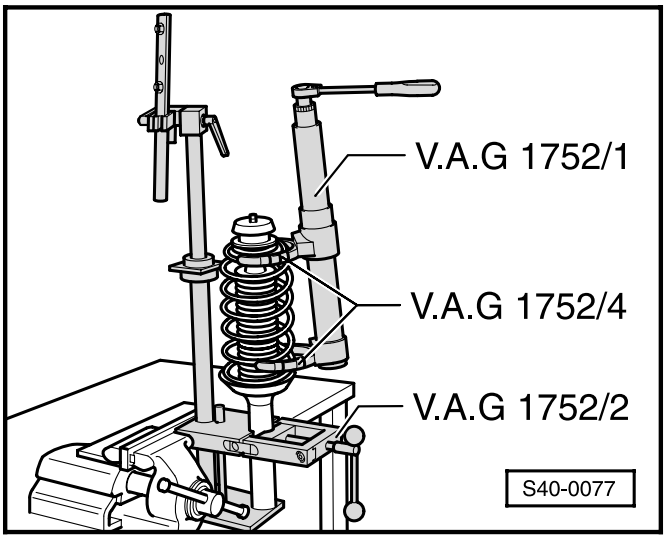
7 - Axial grooved ball bearing

8 - Suspension strut bearing

9 - Collar nut, 60 Nm
- Replace each time removed
- Slackening and tightening ⇒ page 40-26

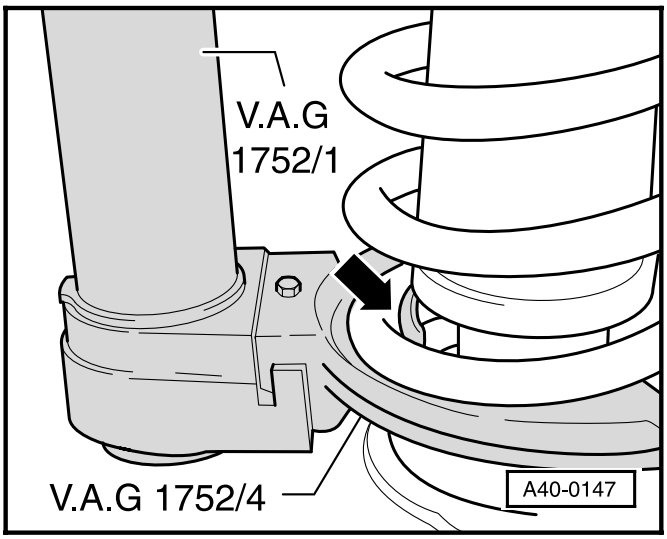
10 - Stop

11 - Hexagon collar nut, self-locking, 60 Nm
- Replace each time removed



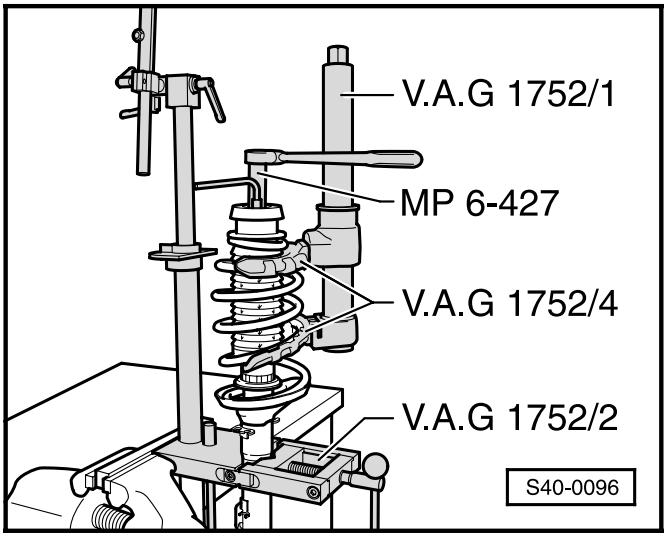
◄ **Fig. 1 Removing coil spring**

- Clamp suspension strut mount, e.g. V.A.G 1752/2, in a vice.
- Clamp suspension strut at shock absorber tube in suspension strut mount.
- Prestress screwdriver sufficiently with tensioning device, e.g. V.A.G 1752/1, until the spring disc at the top is free.



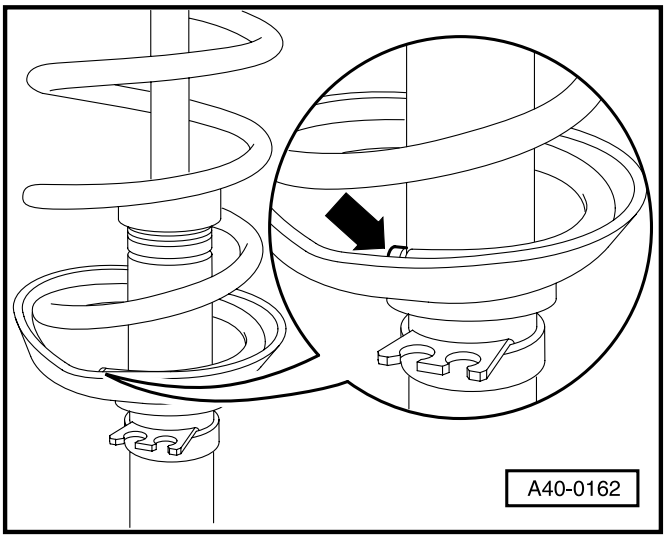
◄ **Fig. 2 Removing coil spring**

- Ensure that the coil spring is correctly located in the adapter, e.g. V.A.G 1752/4, -arrow-.



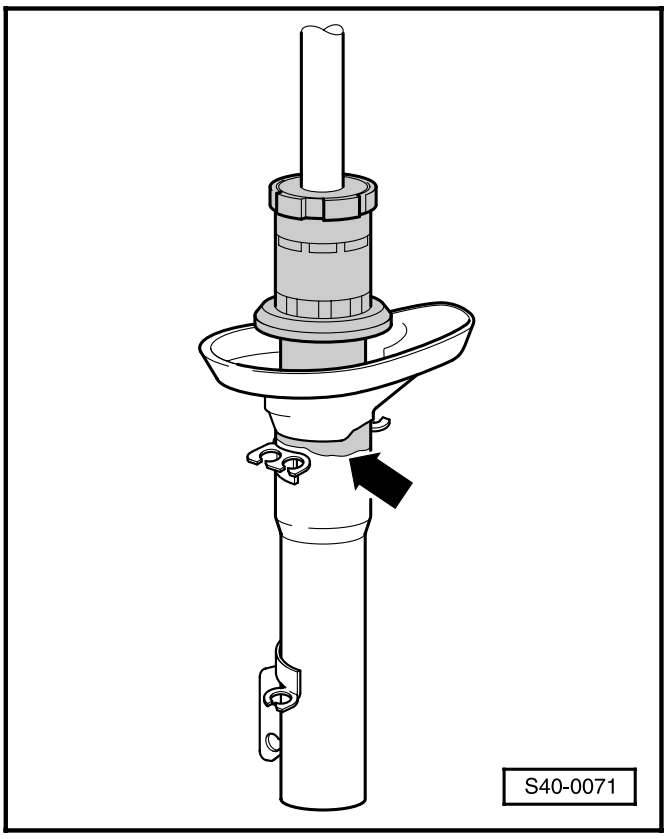
◄ **Fig. 3 Removing coil spring**

- Use special tool -MP 6-427- to unscrew collar nut from the piston rod; restrain with hexagon socket wrench during this step.
- Take off individual parts of suspension strut and prestressed screwdriver with tensioning device, e.g. V.A.G 1752/1.



◄ **Fig. 4 Installing coil spring**

- Mount pretensioned screwdriver with tensioning device, e.g. V.A.G 1752/1, onto spring base at bottom; the end of the spring coil should be touching the stop -arrow- when this is done.



Inspecting shock absorbers

◄ **Leaks at shock absorbers**

A slight oil leakage (sweating) at the gasket of the piston rod is not a reason for replacing the shock absorber.

If an oil stain is visible (but mat, possibly dry because of dust) and does not spread any further than from the top shock absorber closure (piston rod seal) to the bottom spring retainer (arrow), the shock absorber is regarded as being in proper order.

Note:

A slight outflow of oil is advantageous as this lubricates the seal and thus increases the service life. This applies both to the front and rear shock absorbers.

Noises at shock absorbers

We have reason to point out that, if a complaint is received regarding noise, the shock absorbers are too often regarded as a source of the noise.

Note:

When dealing with complaints which can be interpreted as a rumbling or snapping noise, it is essential to first of all carry out a road test together with the customer in order to find out where, when and how the noises exist (this is best done on a dry road surface with bumps).

Inspecting shock absorber without gas pressure

Faulty shock absorbers can be detected when driving as a result of rumbling noises - as a consequence of the wheel jumping - particularly on a poor road surface, and should be replaced. The cause of the problem is in most cases a loss of oil. The shock absorber can then be compressed and/or pulled apart suddenly. There is an „idle travel“ before the shock absorber begins to operate.

Note:

Shock absorbers require no maintenance. It is not possible to top up the shock absorber fluid.

Testing shock absorber with gas pressure

Faulty shock absorbers with gas pressure are also recognizable from loud rumbling noises because of the wheel jumping and, in most cases, as a result of an oil loss visible on the outside.

It is possible to carry out an inspection by hand to determine whether the shock absorber is faulty or not:

- Compress shock absorber by hand.
- When this is done, it must be possible to move the piston rod with even pressure and free of jerks over the entire stroke.
- Release piston rod; if the shock absorber has an adequate gas pressure, the piston rod automatically returns to its initial position.
- If this is not the case, it is not immediately necessary to replace the shock absorber as it continues to operate like a conventional shock absorber (see Notes below).

Notes:

- *The damping function is fully retained even without gas pressure provided no major oil loss has occurred. There may, however, be a deterioration in the noise characteristics. On older vehicles, a shock absorber which has become pressureless but is otherwise operating properly, can continue to be reused.*
- *Shock absorbers with gas pressure are fitted only to the rear axle.*
- *The gas pressure in the shock absorber improves the noise characteristics and operation when driving on poor road surfaces.*

Disposing of shock absorbers

Special tools, testers and aids required

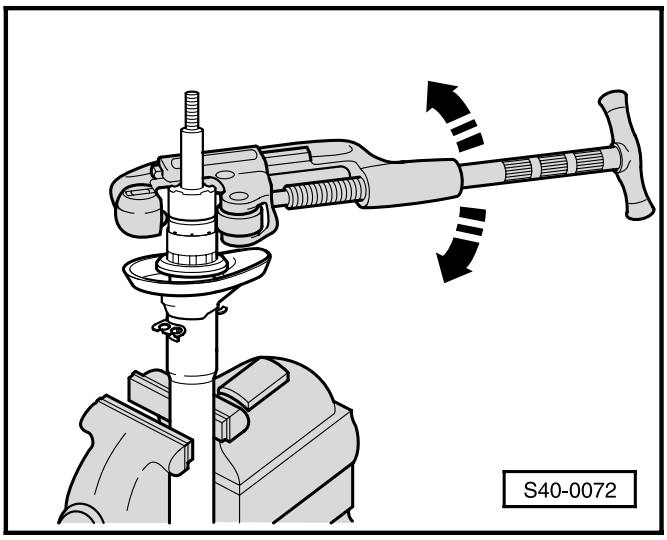
- Pipe cutter, e.g. Stahlwille Express 150/3
- Protective goggles
- Oil drip tray

Warning!

Cover over opening and wear eye protection when releasing the gas pressure (gas pressure of new shock absorber as much as 25 bar).

Notes:

- *All the shock absorbers contain hydraulic fluid. The hydraulic fluid can be drained after drilling into, sawing or cutting open the part. In addition, gas pressure shock absorbers are filled with gas. The gas should be released from the gas pressure shock absorbers before disposing of them.*
- *The hydraulic fluids used in shock absorbers do not contain any harmful substances. These fluids can be disposed of together with old oil from engines and gearboxes.*
- *Old oils (this term refers to used engine and gearbox oils incl. ATF as well as mineral hydraulic fluids), which are suitable for reprocessing, must on no account be mixed with brake fluid, antifreeze agent, synthetic resin or nitro thinners, chemicals etc.*
- *After draining, allow any remaining fluid to adequately drip out.*



Draining front shock absorber

◄ - Clamp shock absorber in a vice.

- Use an assembly lever or a similar tool to lever off the protective cap, and take off protective tube.

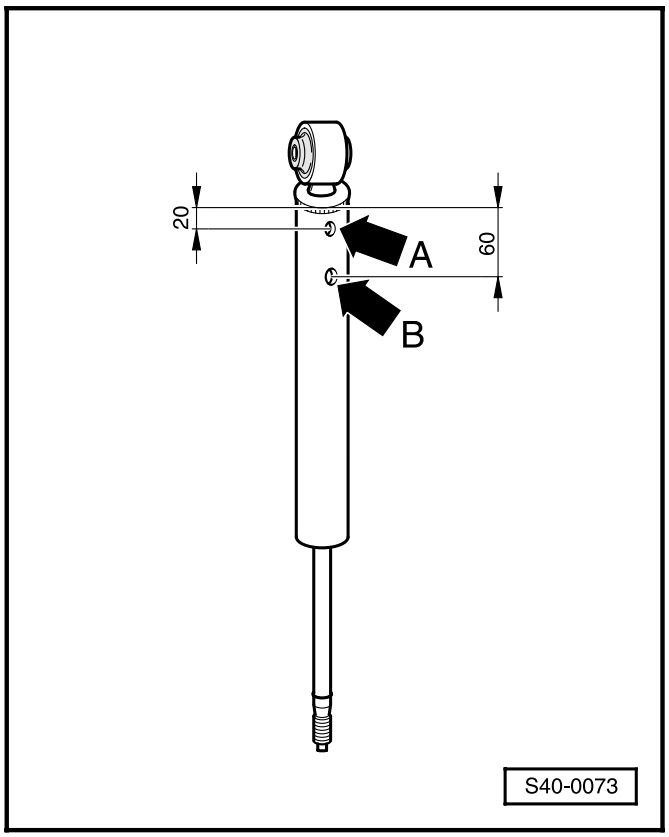
Protective cap and protective tube are fitted only to caulked shock absorbers.

- Fit on pipe cutter, e.g. Stahlwille Express 150/3, and cut through outer tube.

- Pull up piston rod; hold the inner tube tight with water pipe pliers for this step, and push down so that the inner tube remains in the outer tube when the piston rod is pulled slowly up.

- Pull piston rod off the inner tube.

- Drain shock absorber.



Draining rear shock absorber (gas pressure shock absorber)

- Clamp shock absorber vertically in a vice, with the piston rod facing down.

◄ - Drill a ∅ 3 mm hole (arrow A) in the outer tube.

Warning!

Wear eye protection.

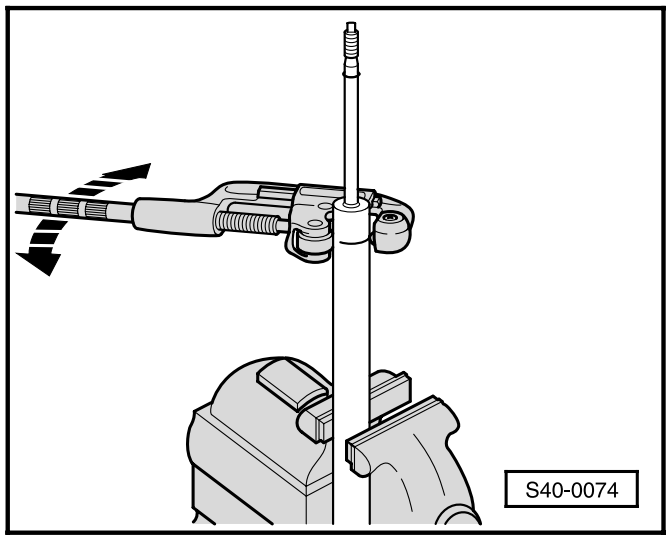
Note:

Gas escapes when drilling through the first pipe wall (only in the case of gas pressure shock absorbers).

- Continue drilling until you have drilled through the inner tube (about 25 mm deep).

- Drill a second ∅ 6 mm hole (arrow B) deep enough to pierce the inner tube.

- Hold shock absorber over oil drip tray, move piston rod up and down several times over the entire stroke until no further fluid flows out.



Note:

◄ *Shock absorber can also be opened with a pipe cutter ⇒ page 40-32. First of all, render the shock absorber pressureless by drilling into the outer tube (arrow A)⇒ previous Fig. (S40-0073).*

Removing and installing drive shafts

Special tools, testers and aids required

- Removal tool MP 6-425
- Torque wrench 75 ... 400 Nm, e.g. V.A.G 1576
- Tightening angle wrench, e.g. V.A.G 1756

Removing

Notes:

- *If the twelve-point nut is slackened, do not apply a load on the wheel bearing. If the weight of the vehicle is allowed to press on the wheel bearing, it will suffer initial damage and the life of the wheel bearing will be reduced as a result.*
- *If it is necessary to remove a vehicle at which the drive shaft has been removed, first of all install an outer joint in place of the drive shaft and tighten to 50 Nm to avoid the wheel bearing being damaged.*

Assignment and marking of drive shafts
⇒ Parts List.

- Take off wheel trim; pull off cap on light-alloy wheels (hook included in tool kit).
- Jack up vehicle so that no load is pressing on the front suspension.
- Slacken twelve-point nut.
- Take off wheel and raise vehicle.
- Remove noise insulation panel.

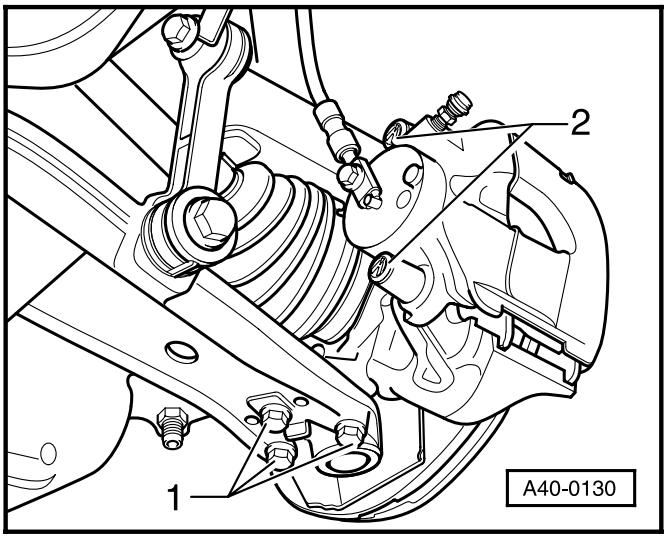
⇒ Engine, Mechanical Components; Repair Group 10; Removing and installing engine

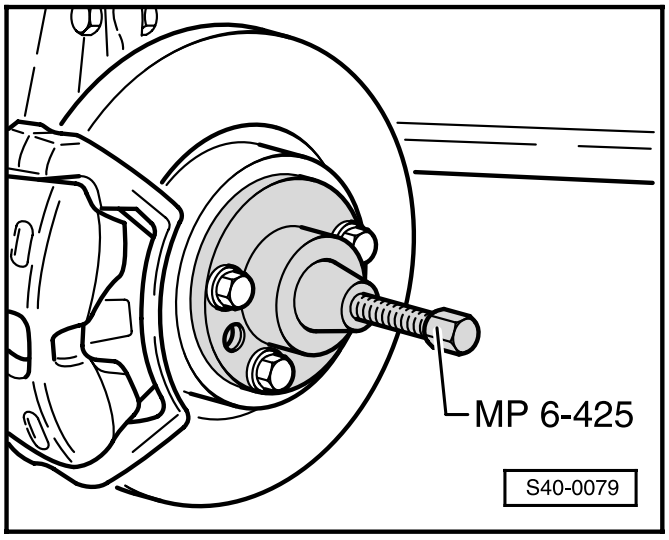
- Unbolt drive shaft from flange shaft/gearbox.

Note:

Mark installation position of the bolts -1- otherwise the axle geometry must be checked.

◄ - Unscrew bolts -1-.



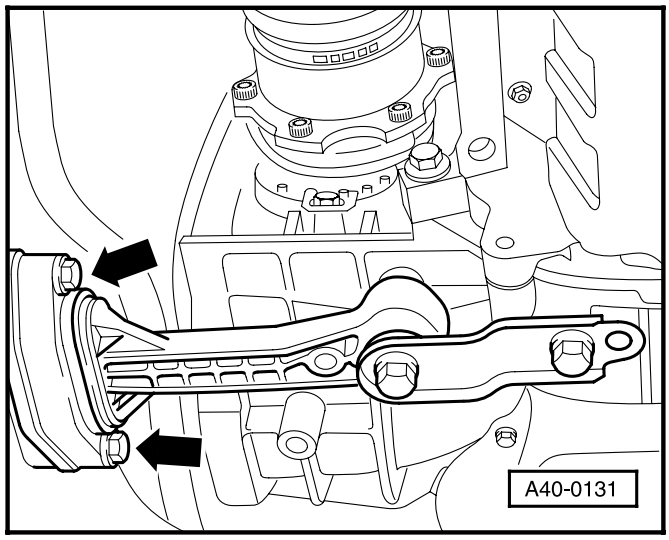


◄ - Press out drive shaft. Position tool as shown in the illustration for this step.

Notes:

- *Ensure adequate clearance when pressing out the drive shaft.*
- *The drive shaft must not hang down when it is pressed out. Otherwise, the inner joint will be damaged as a result of excessive flexing.*

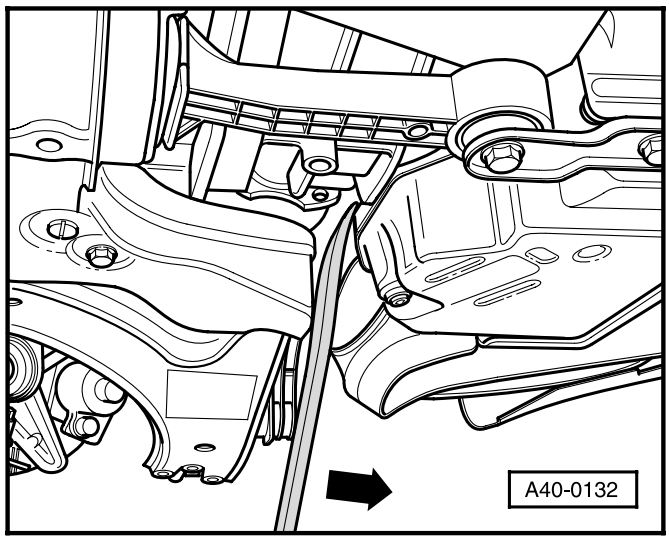
- Take out drive shaft.



Note:

The step described below only requires to be carried out on models with automatic gearbox.

◄ - Slacken gearbox supporting bolts -arrow- at the subframe.



◄ - Use assembly iron to lever engine/gearbox unit in direction of travel; the tripod drive shaft can be taken out at the same time.

- Arrow points in direction of travel.

Installing
(models fitted with manual and automatic gearbox)

Remove any corrosion present in the thread/ spline of the outer joint.

- Moisten splines of wheel hub with oil.
- Insert drive shaft.
- Insert outer joint as far as possible into the splines of the wheel hub.
- Attach steering joint and wishbone with new bolts onto old impression.
- Tighten drive shaft fully to flange shaft.
- Bolt pendulum support to subframe.
- **Moisten contact surface of twelve-point nut and also splines and thread of outer joint with oil and screw on new twelve-point nut as far as possible.**
- Draw outer joint sufficiently far into the wheel hub until outer joint is making contact in the wheel bearing.
- Install noise insulation.

⇒ Engine, Mechanical Components; Repair Group 10; Removing and installing engine

- Fit on wheel.

Tightening torques:

Steering joint to wishbone **Use new bolts and new locking plate!**	20 Nm + 90°
Drive shaft to flange shaft M8, tighten diagonally across in 2 stages (I and II) **Use new bolts!**	I - 10 Nm II - 40 Nm
Drive shaft to flange shaft M10, tighten diagonally across in 2 stages (I and II) **Use new bolts!**	I - 10 Nm II - 70 Nm
Pendulum support to subframe **Use new bolts!**	20 Nm + 90°

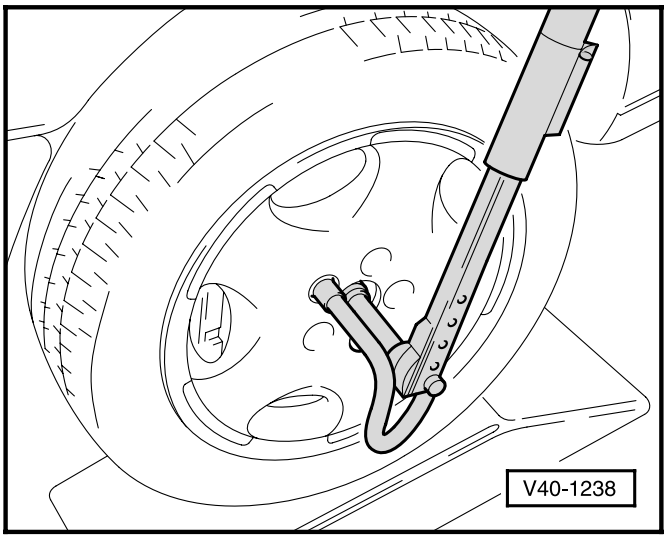
- Make sure when lowering the vehicle that the wheels do not touch the ground.

The wheel bearing will be damaged if the wheel bearings are burdened through the weight of the vehicle. The working life of the wheel bearing decreases through this.

- Operate brake (second mechanic required)
- Tighten new twelve-point nut with 225 Nm and slacken half a turn
- Turn wheel hub at least 90°
- Tighten twelve-point nut:

Tightening torque:

50 Nm and torque a further 60°



Note:

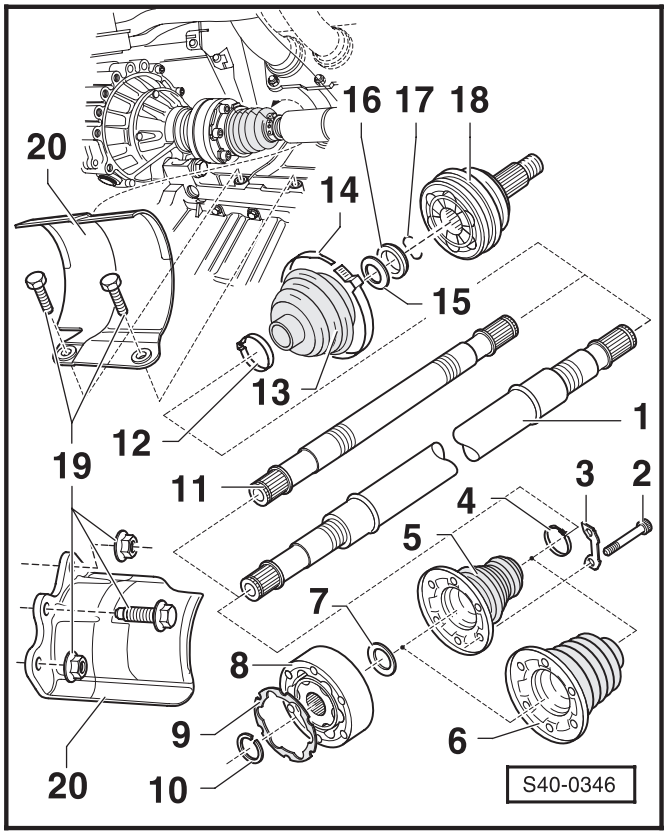
◄ *It is recommended to use the torque wrench V.A.G 1756 for tightening the twelve-point nut.*

Servicing drive shaft

Servicing drive shaft with outer and inner CV joint

Special tools, testers and aids required

- Circlip pliers, e.g. VW 161 A
- Thrust plate MP 3-406
- Thrust plate MP 3-407
- Thrust plunger MP 3-448
- Supporting sleeve MP 6-428
- Clamping device MP 6-429
- Workshop press, e.g. V.A.G 1290 A
- Torque wrench
- Tensioning pliers, e.g. V.A.G 1682
- Sealant D 454 300 A2



Notes:

- *Assignment of the drive shafts*

⇒ Electronic catalogue of original parts

- *Grease joint if necessary, when replacing the joint boot.*
- *Spread the grease filling evenly in the joint boot - only on the joint side.*

1 - Right drive shaft (tubular shaft)
- assignment ⇒ electronic catalogue of original parts

2 - Fillister head screw with internal serration
- replace after each disassembly
- initially tighten to 10 Nm, subsequently tighten crosswise to final torques
  M 8 = 40 Nm
  M 10 = 70 Nm
- assignment ⇒ electronic catalogue of original parts

3 - Shim
- assignment ⇒ electronic catalogue of original parts

4 - Warm-type clamp
- replace
- tighten ⇒ Fig. 10

Grease quantities and grade of grease

Grease packing of CV joints with high-temperature grease G 000 603 or G 000 633.

Notes:

- *G 000 603 - Can containing 90 g grease*
- *G 000 633 - Can containing 120 g grease*
- *Re-grease joint, if necessary, when replacing joint boot.*

Engine/ gearbox	Left/right drive shaft	Outer joint	Grease	of which in:		Inner joint	Grease	of which in:	
	Part No.	Ø mm	Total quantity (g)	Joint [1] (g)	Joint boot [2] (g)	Ø mm	Total quantity (g)	Joint [1] (g)	Joint boot [2] (g)
1.6 l/55 kW (AEE) 02K	1 J0 407 271 F 1 J0 407 272 F	81	80	40	40	94	80	60	20
1.6 l/74 kW (AEH, AKL) 02K	1 J0 407 271 Q 1 J0 407 272 AB	81	80	40	40	94	80	60	20
1.8 l/92 kW (AGN) 02J	357 407 271 R 1 J0 407 272 AC	90	100	50	50	100	110	80	30
1.9 l/50 kW (AGP) 02K	1 J0 407 271 F 1 J0 407 272 F	81	80	40	40	94	80	60	20
1.9 l/66 kW (AGR) 02J	1 J0 407 271 H 1 J0 407 272	90	100	50	50	100	110	80	30
1.9 l/81 kW (AHF) 02J	1 J0 407 271 H 1 J0 407 272	90	100	50	50	100	110	80	30

1) The quantity of grease stated for the inner joint should be inserted into the joint from both sides.

2) Distribute the grease packing evenly in the joint boot.

5 - Joint boot for inner CV joint, ∅ 94 mm
- material: Hytrel (Polyelastomere)
- inspect for tears and chafing points
- remove CV joint with drift
- fitting location of joint boot for inner CV joint for left shaft is identical to the fitting location of the joint boot for the outer CV joint ∅ 84 mm ⇒ Fig. 12
- fitting location of joint boot for inner CV joint for right shaft is identical to the fitting location of the joint boot for the outer CV joint ∅ 84 mm ⇒ Fig. 12
- before assembling coat inner cap with sealant D 454 300 A2
- assignment ⇒ electronic catalogue of original parts

6 - Joint boot for inner CV joint, ∅ 100 mm
- material: rubber
- inspect for tears and chafing points
- remove from CV joint with drift
- fitting location for left shaft ⇒ Fig. 6
- fitting location for right shaft ⇒ Fig. 7
- before assembling coat inner cap with sealant D 454 300 A2
- assignment ⇒ electronic catalogue of original parts

7 - Disc spring
- Fitting location ⇒ Fig. 3

8 - Inner CV joint
- must be replaced completely
- pressing out ⇒ Fig. 2
- pressing on ⇒ Fig. 5
- grease ⇒ page 40-62
- inspecting ⇒ page 40-46
- assignment ⇒ electronic catalogue of original parts

9 - Gasket
- adhesive surface on the inner CV joint must be free of grease and oil!
- replace
- pull off protective foil and stick gasket in the housing
- assignment ⇒ electronic catalogue of original parts

10 - Circlip
- replace
- remove with circlip pliers, e.g. VW 161 A
- assignment ⇒ electronic catalogue of original parts

11 - Left drive shaft (solid shaft)
- assignment ⇒ electronic catalogue of original parts

12 - Warm-type clamp
- replace
- tighten ⇒ Fig. 9

13 - Joint boot
- material: Hytrel (Polyelastomere)
- inspecting for tears and chafing points
- assignment ⇒ electronic catalogue of original parts
- pay attention to different version:
  ∅ 84 mm
  ∅ 90 mm
- fitting location of joint boot for outer CV joint for left shaft ∅ 90 mm ⇒ Fig. 11
- fitting location of joint boot for outer CV joint ∅ 90 mm for right shaft determined by the fitting location on the shaft is identical as ⇒ Fig. 11
- fitting location of joint boot for outer CV joint ∅ 84 mm for left shaft ⇒ Fig. 12
- fitting location of joint boot for outer CV joint ∅ 84 mm for right shaft ⇒ Fig. 12

14 - Warm-type clamp
- replace
- tighten with tensioning pliers, e.g. V.A.G 1682 ⇒ Fig. 8

15 - Disc spring
- fitting location ⇒ Fig. 4

16 - Thrust ring
- fitting location ⇒ Fig. 4

17 - Circlip
- replace
- insert in the groove on the shaft

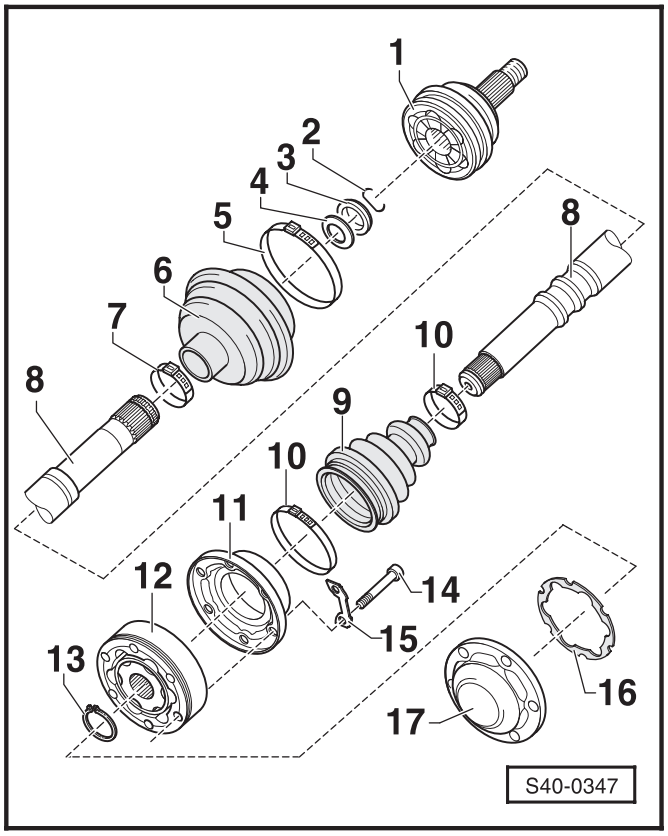
18 - Outer CV joint
- must be replaced completely
- removing ⇒ Fig. 1
- installing: drive onto the shaft with a plastic hammer until the compressed circlip expands
- grease ⇒ page 40-62
- inspecting ⇒ page 40-45

19 - M8 = 25 Nm, M10 = 35 Nm

20 - Protective cap

Servicing drive shaft with outer and inner CV joint VL 3700

Special tools, testers and aids required
⇒ page 40-38



Notes:

- *Assignment of the drive shafts*

⇒ Electronic catalogue of original parts

- *Grease joint if necessary, when replacing the joint boot.*

1 - Outer CV joint
- must be replaced completely
- removing inspect for tears and chafing points
- remove ⇒ Fig. 1
- installing: drive onto the shaft with a plastic hammer until the compressed circlip expands
- grease ⇒ page 40-62
- inspect ⇒ page 40-45

2 - Circlip
- replace
- insert in the groove on the shaft

3 - Thrust ring
- Fitting location ⇒ Fig. 4

4 - Disc spring
- Fitting location ⇒ Fig. 4

5 - Clamp
- replace
- tighten with tensioning pliers, e.g. V.A.G 1682 ⇒ Fig. 8

6 - Joint boot for outer CV joint
- material: Hytrel (Polyelastomere)
- inspect for tears and chafing points
- fitting location for left shaft ⇒ Fig. 14
- fitting location for right shaft ⇒ Fig. 15
- assignment ⇒ electronic catalogue of original parts

7 - Clamp
- replace
- tighten ⇒ Fig. 9

8 - Left drive shaft (solid shaft)
- assignment ⇒ electronic catalogue of original parts

9 - Joint boot for inner CV joint
- material: Arnitel (Polyelastomere)
- inspect for tears and chafing points
- fitting location for left shaft ⇒ Fig. 13
- fitting location for right shaft ⇒ Fig. 13
- assignment ⇒ electronic catalogue of original parts

10 - Clamp
- replace

11 - Cap
- remove from CV joint with drift
- before assembling coat sealing surface of cap with sealant D 454 300 A2
- sealing surface must be clean and free of grease

12 - Inner CV joint
- must be replaced completely
- pressing out ⇒ Fig. 2
- pressing on ⇒ Fig. 5
- grease ⇒ page 40-62
- inspecting ⇒ page 40-46
- assignment ⇒ electronic catalogue of original parts

13 - Circlip
- replace
- remove with circlip pliers, e.g. VW 161 A

14 - Fillister head screw with internal serration
- replace after each disassembly
- initially tighten to 10 Nm, subsequently tighten crosswise to final torques
  M 8 = 40 Nm
  M 10 = 70 Nm
- assignment ⇒ electronic catalogue of original parts

15 - Shim
- assignment ⇒ electronic catalogue of original parts

16 - Gasket
- adhesive surface on the inner CV joint must be free of grease and oil!
- replace
- pull off protective foil and stick gasket in the joint
- assignment ⇒ electronic catalogue of original parts

17 - Cap
- remove from CV joint with drift
- before assembling coat sealing surface of cap with sealant D 454 300 A2
- sealing surface must be clean and free of grease

Grease quality and grease quantity

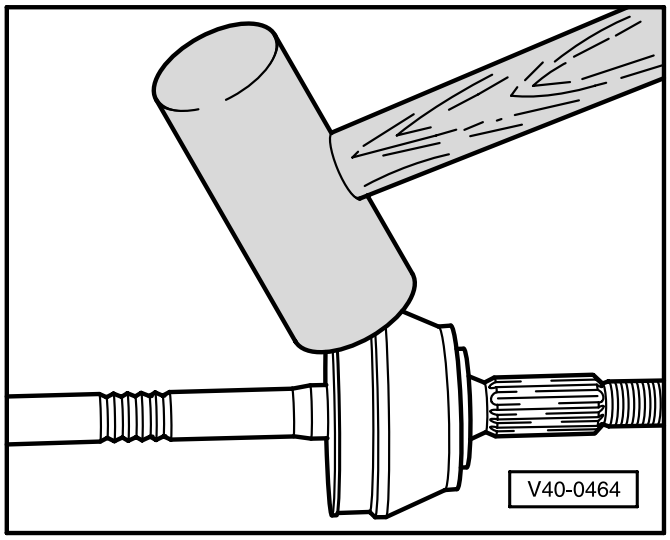
Notes:

- *The outer joints of the drive shaft are filled with:*
  - *grease for normal temperatures Part-No. G 052 738 A2*
  - *grease from the relevant repair kit*
  - *High temperature grease Part No. G 052 133 A2, or Part No. G 052 133 A3*
- *The inner joints of the drive shaft must be filled with high temperature grease from the relevant repair kit or with grease Part No. G 052 133 A2 or Part No. G 052 133 A3*

⇒ Electronic catalogue of original parts

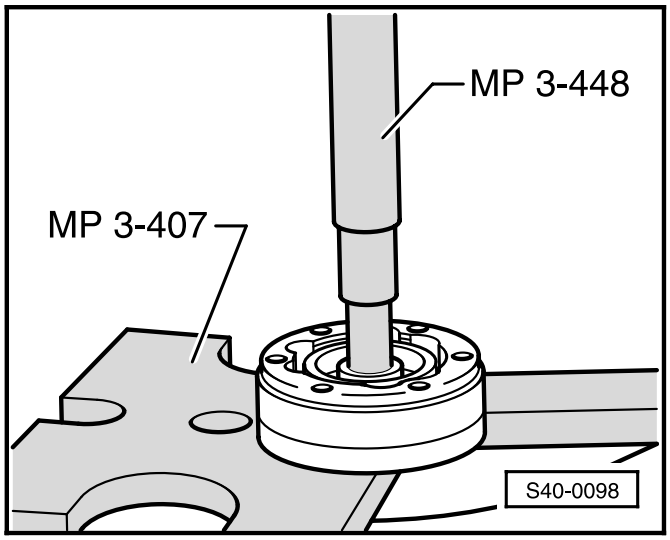
Grease quantity

⇒ page 40-62



◀ **Fig. 1 Removing outer CV joint**

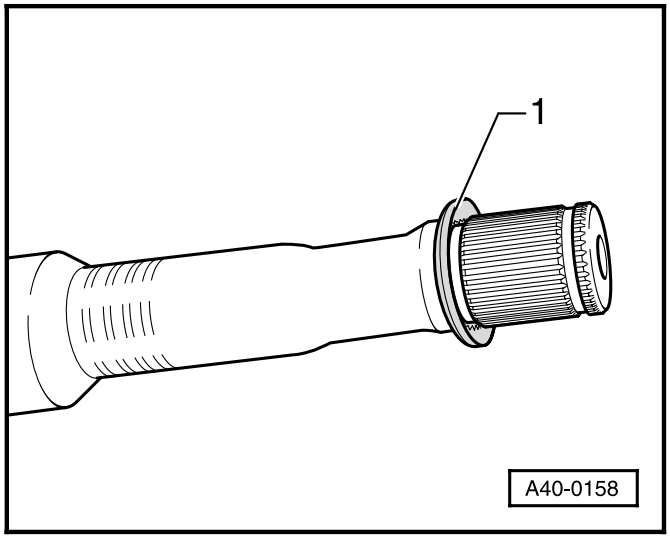
- Remove the CV joint with a drift.
- Drive off the drive shaft with a strong blow of a plastic hammer.



◀ **Fig. 2 Pressing off inner CV joint**

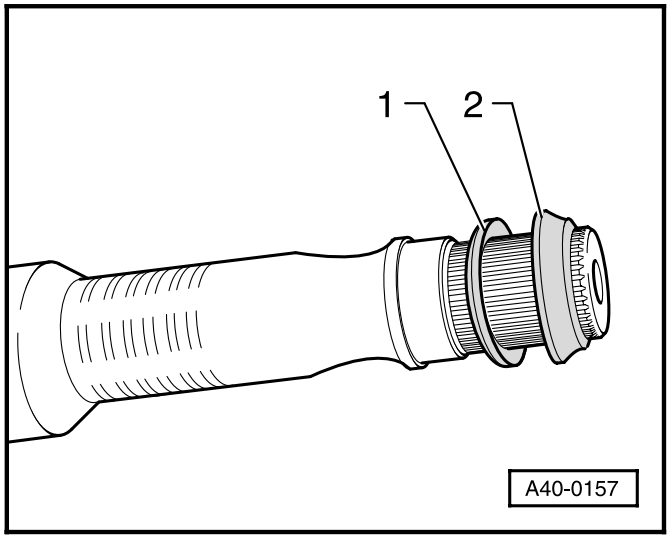
Note:

Support ball hub.



◀ **Fig. 3 Fitting position of the disc spring at outer joint (gearbox side)**

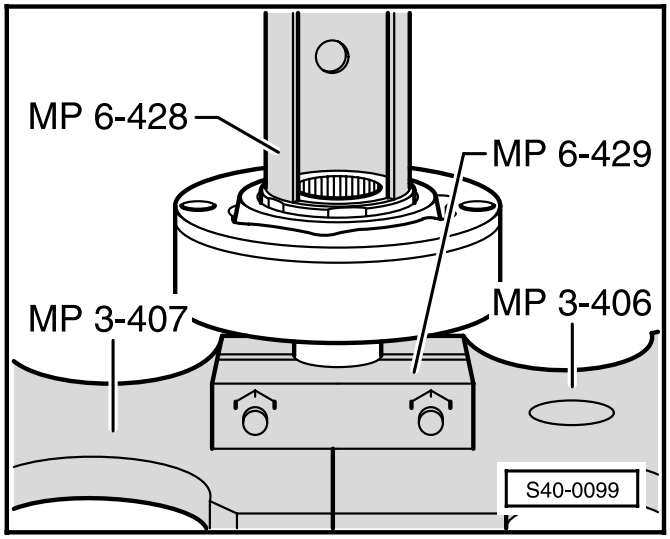
1 - Disc spring



◄ **Fig. 4 Fitting position of the disc spring and thrust ring at outer joint (gearbox side)**

1 - Disc spring

2 - Thrust ring

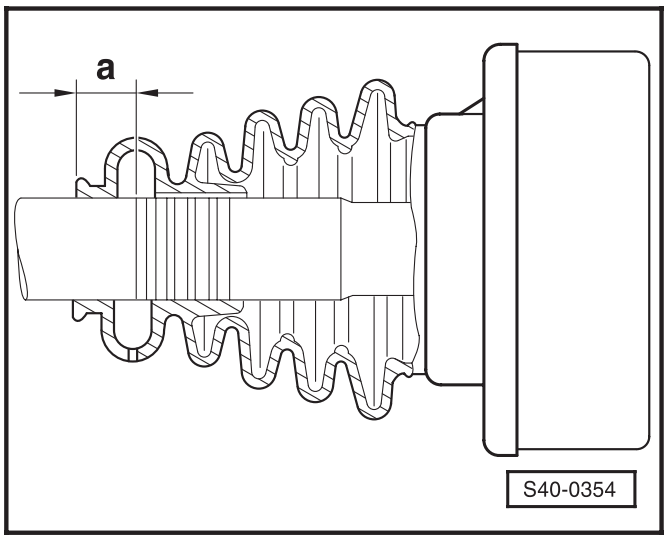


◄ **Fig. 5 Pressing in the inner CV joint**

- Press the joint up to the stop.
- Compressing the circlip.

Note:

Chamfer on inner diameter of the ball hub (serration) must point towards the bearing collar of the drive shaft.

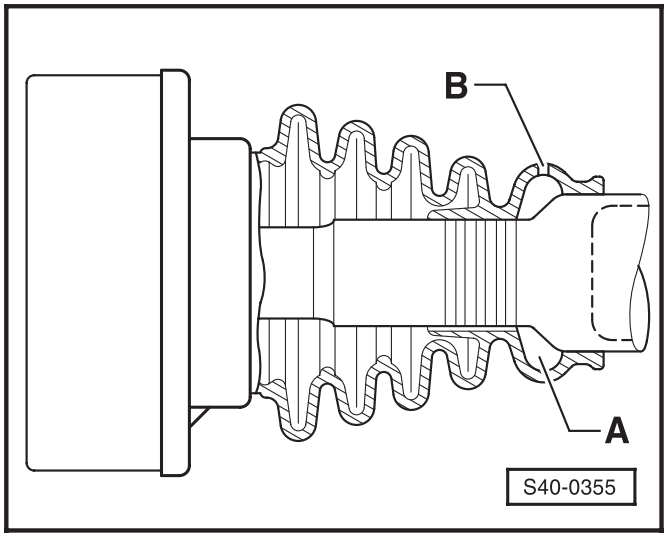


◄ **Fig. 6 Fitting position of the joint boot for the outer joint ∅ 100 mm on the left shaft**

Dimension a = 17 mm

Note:

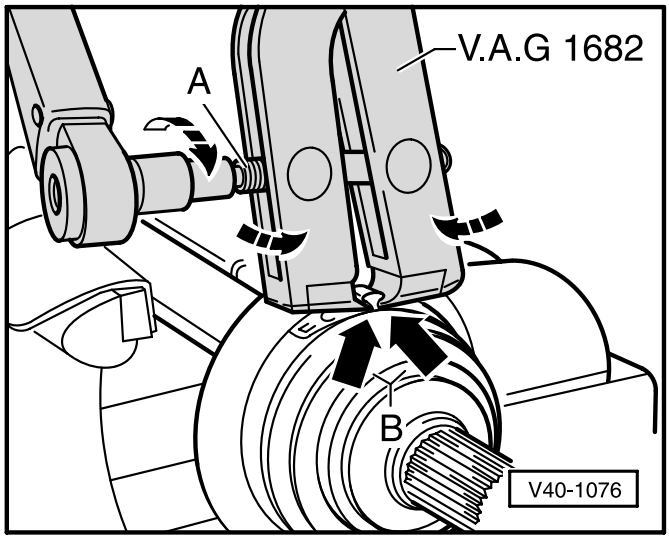
Mark dimension -a- before assembling the joint boot on the drive shaft, e.g. using colour or adhesive tape. The paintwork must never be damaged with a sharp object.



◄ **Fig. 7 Fitting position of the joint boot for the outer joint ∅ 100 mm on the right shaft**

The ventilation chamber -A- must be located on the largest pipe diameter.

B - Ventilation hole

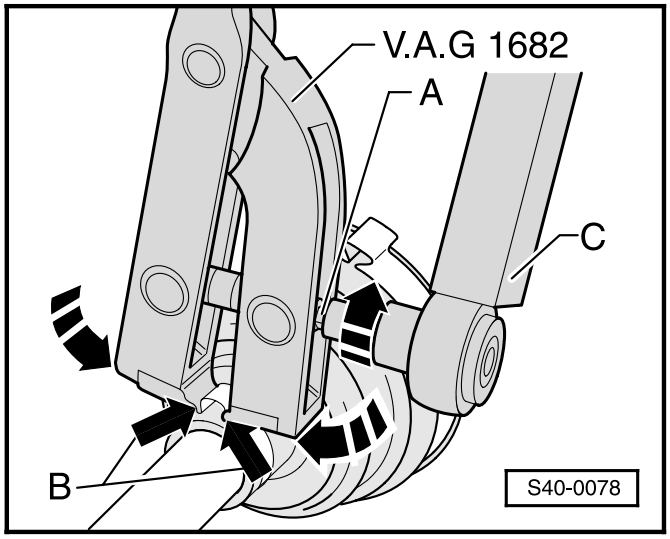


◄ **Fig. 8 Tighten warm-type clamp at outer joint (large diameter)**

Notes:

- *In view of the hard material (as opposed to rubber) of the joint boot, which requires the use of a stainless steel warm-type clamp, it can only be correctly tightened with tensioning pliers e.g. V.A.G 1682.*
- *Tightening torque: 25 Nm*
- *Use a torque wrench.*
- *Make sure the thread of the spindle -A- of the tensioning pliers is smooth. If necessary grease with Molykote MoS_2.*
- *If it is not smooth, e.g. if the thread is dirty, the necessary tensioning force of the warm-type clamp is not reached at the given torque.*

- Position the tensioning pliers, e.g. V.A.G 1682, as shown in the Fig. Make sure the cutting edges of the pliers are positioned in the corners (arrows -B-) of the warm-type clamp.



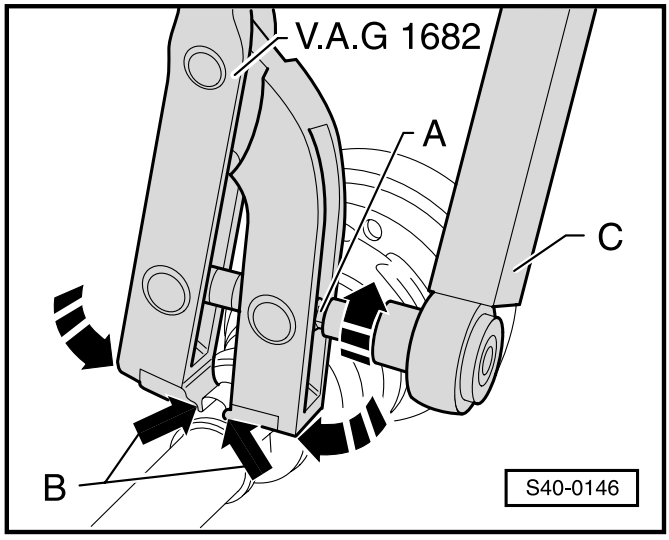
- Tighten the warm-type clamp by turning the spindle with a torque wrench (do not tilt the pliers during this process)

A - Spindle of tensioning pliers

B - Cutting edges of tensioning pliers

◄ **Fig. 9 Tighten warm-type clamp at outer joint (small diameter)**

- Position the tensioning pliers, e.g. V.A.G 1682, as shown in the Fig. Make sure the cutting edges of the pliers are positioned in the corners (arrows -B-) of the warm-type clamp.



- Tighten the warm-type clamp by turning the spindle with a torque wrench (do not tilt the pliers during this process)

  A - Spindle of tensioning pliers

  B - Cutting edges of tensioning pliers

  C - Torque wrench

◄ **Fig. 10 Tighten warm-type clamp at inner joint**

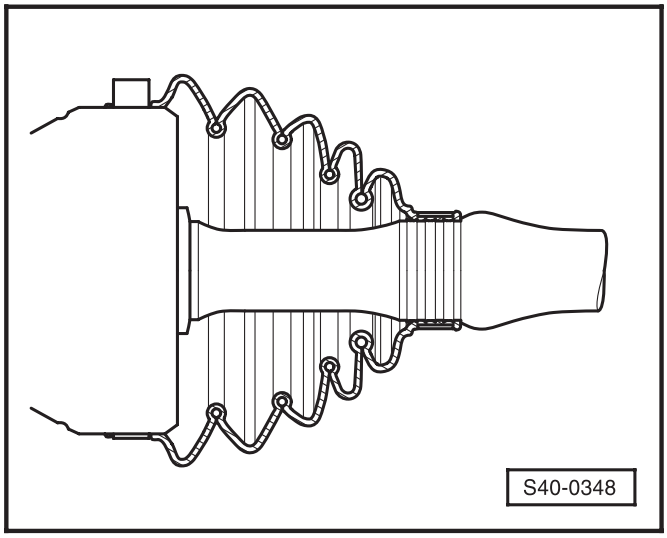
- Position the tensioning pliers, e.g. V.A.G 1682, as shown in the Fig. Make sure the cutting edges of the pliers are positioned in the corners (arrows -B-) of the warm-type clamp.

- Tighten the warm-type clamp by turning the spindle with a torque wrench (do not tilt the pliers during this process).

  A - Spindle of tensioning pliers

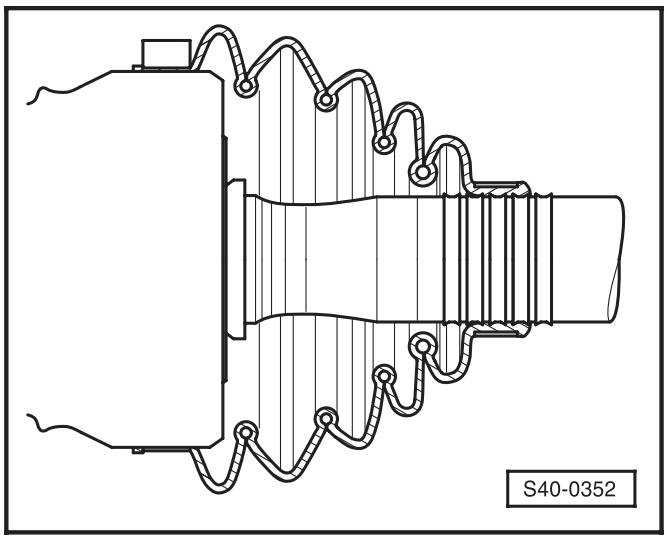
  B - Cutting edges of tensioning pliers

  C - Torque wrench



◄ **Fig. 11 Fitting position of the joint boot for the outer joint ∅ 90 mm on the left shaft**

The sealing surface of the joint boot must be positioned up to the stop on the shoulder of the shaft.

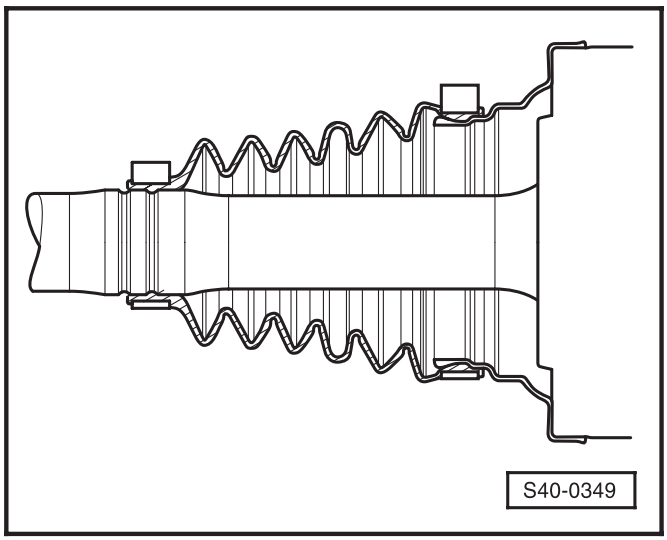


◄ **Fig. 12 Fitting position of the joint boot for the outer joint ∅ 84 mm on the left and right shaft**

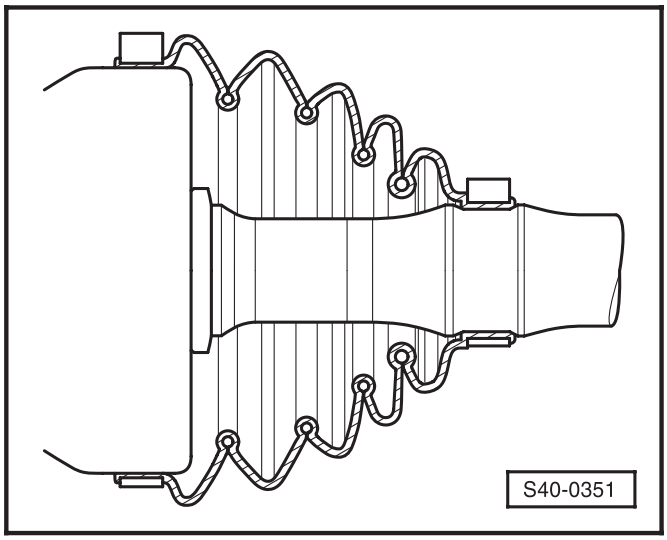
1 to 1 $^{1}/_{2}$ groove must be visible on the drive shaft

Note:

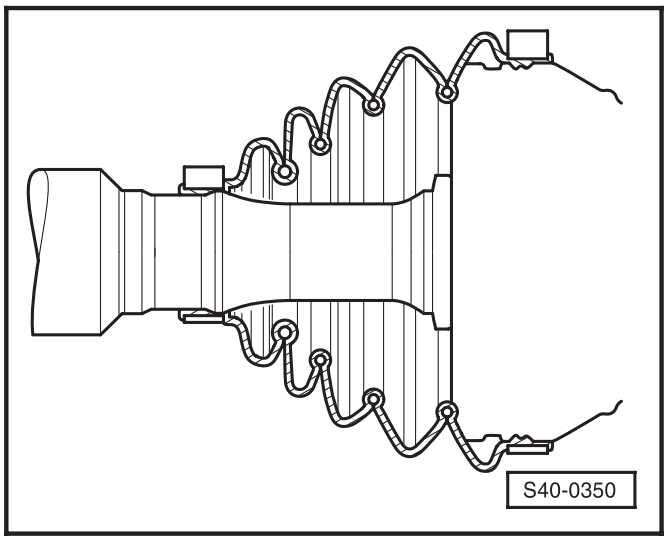
The above-mentioned condition regarding the fitting position is valid also for the joint boot for inner CV joint ∅ 94 mm.



◄ **Fig. 13 Fitting position of the joint boot for the inner joint on the left and right shaft**

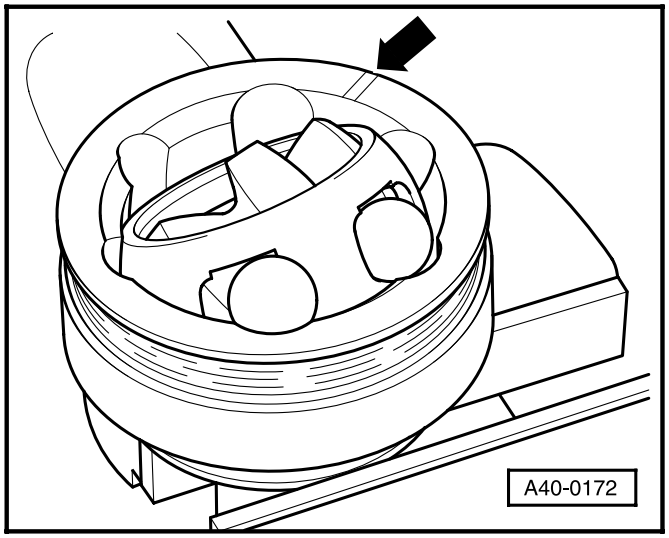


◄ **Fig. 14 Fitting position of the joint boot for the outer joint on the left shaft**



◄ **Fig. 15 Fitting position of the joint boot for the outer joint on the right shaft**

Inspecting outer CV joint



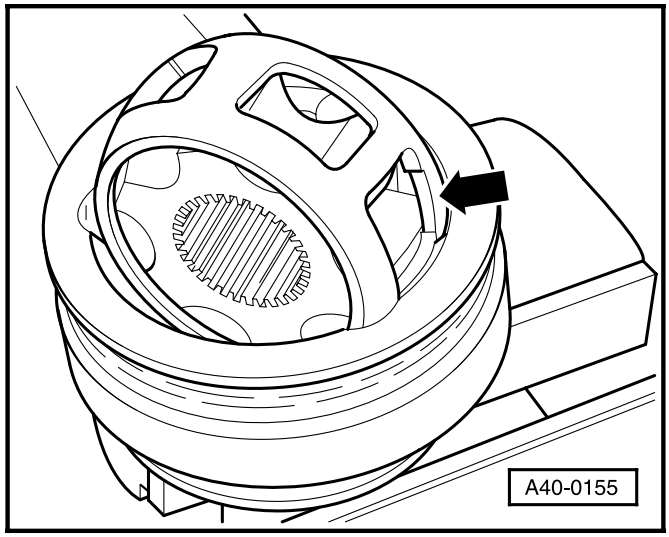
The joint should be disassembled to replace the grease if the grease is extremely dirty or if the running surfaces of the balls need to be inspected for signs of wear and damage.

Removing

◄ - Use an electric pen or dressing stone to mark the position of the ball hub relative to the ball cage and the housing before disassembling (see arrow).

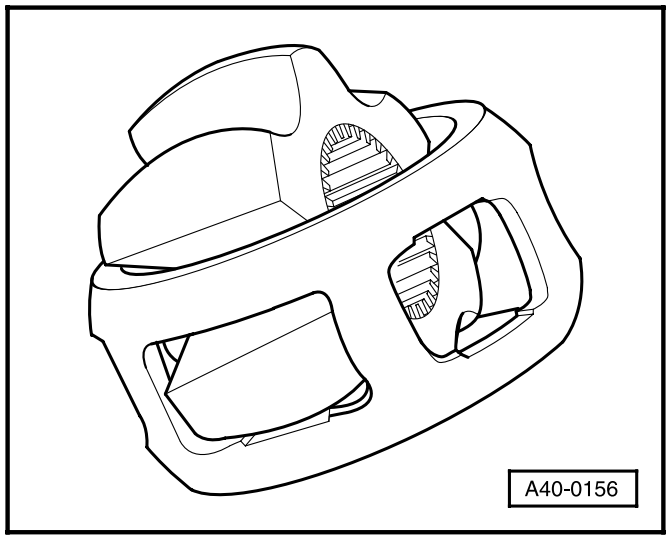
- Swivel ball hub and ball cage

- Take out the balls one after the other



◄ - Rotate cage until two cage windows (arrow) are positioned at the joint body.

- Lift out cage with hub.



◄ - Swivel segment of the hub into the cage window.

- Tilt hub out of cage.

Note:

- *The 6 balls for each joint are assigned to a tolerance group. Inspect stub axle, hub, cage and balls for pitting and signs of rubbing. Excessive torsional play in the joint is noticeable from load change jolts. The joint should be replaced in such cases. Smooth areas and traces of running produced by the balls are not a reason for replacing the joint.*
- *Inspect cage for cracks.*

Installing

- Press the required grease quantity into the joint part ⇒ page 40-62; grease quality and grease quantity

- Insert the cage and hub in the joint body.

Note:

The cage must be inserted in the correct position.

- Press in opposite balls one after the other, during this process observe the prior position of the ball hub relatively to the ball cage and to the joint body.

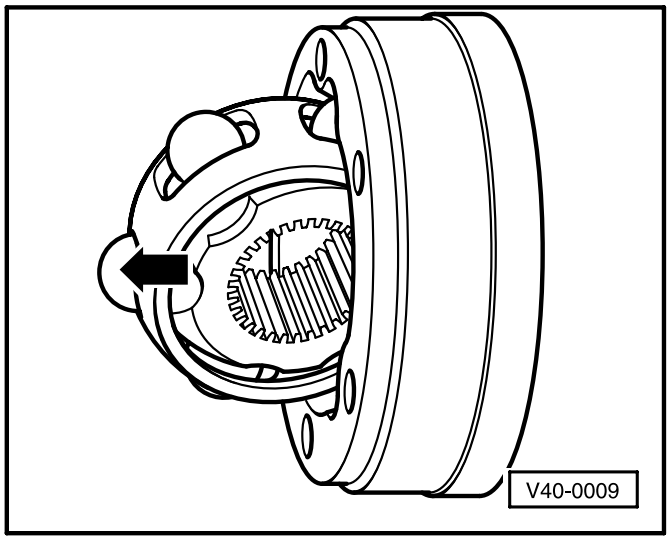
- Insert new circlip in the groove of the shaft.

- Spread any residual grease in the joint boot ⇒ page 40-62

- Assembling the joint boot ⇒ page 40-41 and further.

Inspecting inner CV joint

Disassemble the joint to replace badly soiled grease and if the contact surfaces and the balls must be inspected for wear and damage.



Removing

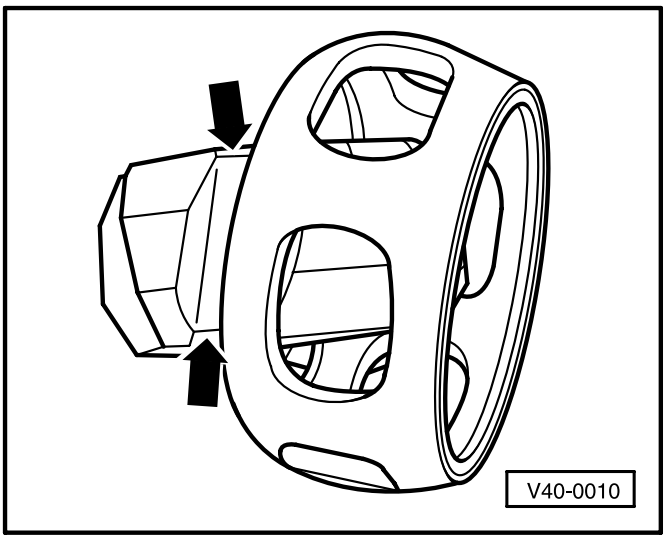
Note:

The ball hub and joint piece are paired and must be marked before disassembly. Do not interchange the bearing track assignment.

◄ - Rotate the ball hub and ball cage.

- Press the ball hub and ball cage out of the joint part -arrow-.

- Press out the balls from the cage.

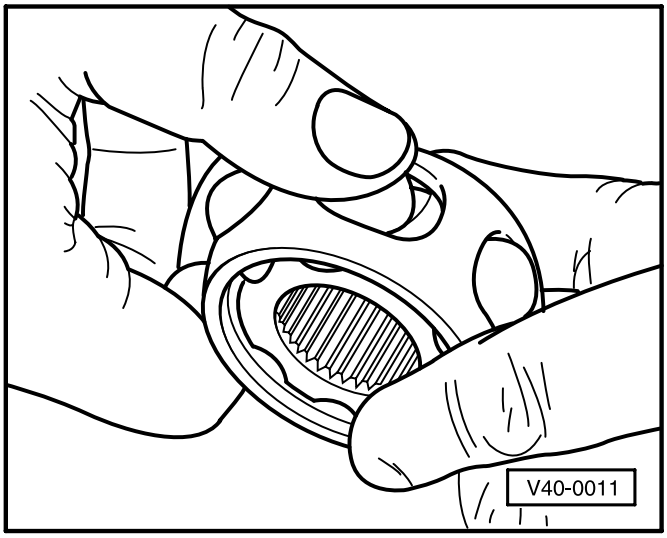


◄ - Tilt the ball hub out of the ball cage over the ball track (arrow).

- Inspect the joint body, ball hub, ball cage and balls for pitting and signs of rubbing.

Note:

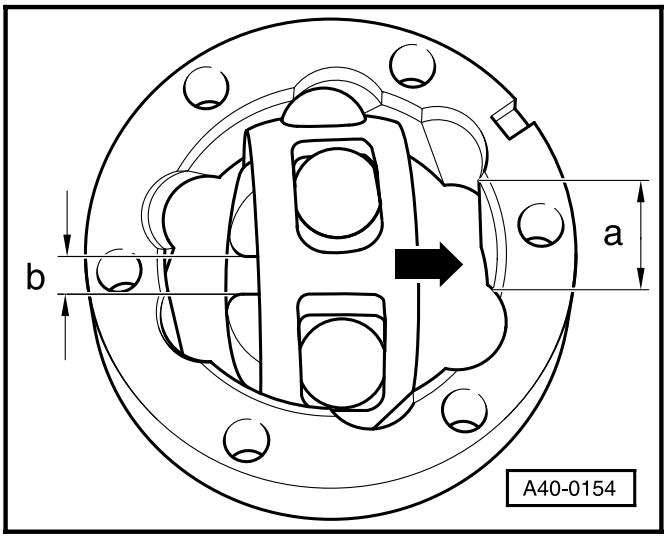
Excessive torsional play in the joint is noticeable from load change jolts. The joint should be replaced in such cases. Smooth areas and traces of running produced by the balls are not a reason for replacing the joint.



Installing

◄ - Insert the ball hub over the two chamfers in the ball cage. The fitting location is at random. Press the balls in the cage.

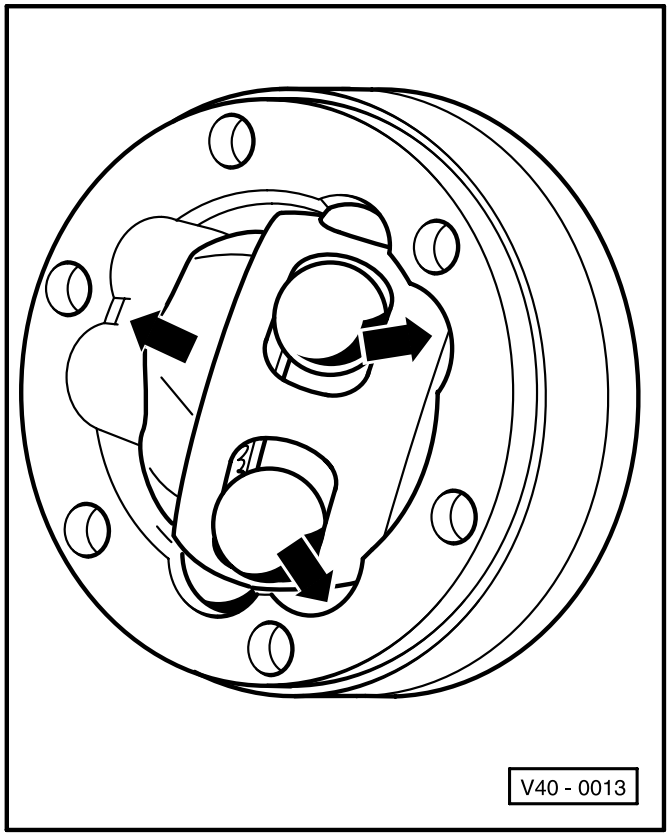
- Insert the hub with cage and balls edgeways into the joint body.



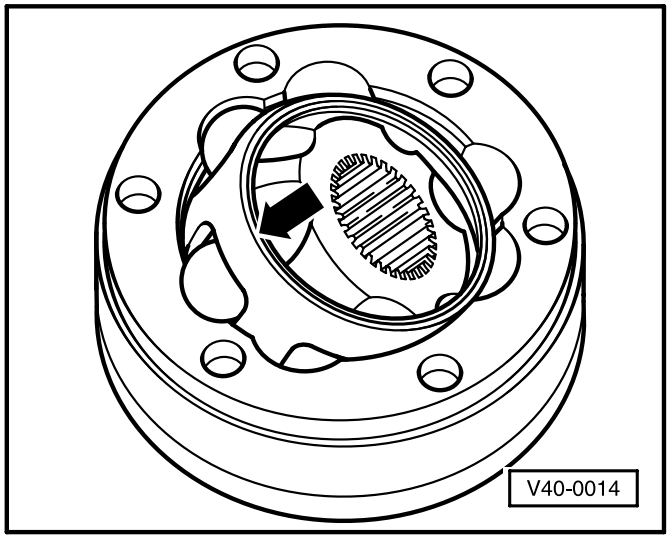
Note:

◄ ♦ *During insertion make sure wide distance -a- on the joint body coincides with narrow distance -b- on the hub after swivelling (arrow).*

♦ *Chamfer on the inside diameter of the ball hub (serration) must point towards the large diameter of the joint body.*



◄ - Swivel in the ball hub. To do so swivel the hub out of the cage until the balls are at bearing track distance -arrow-.



◄ - Lock the hub with the balls into position by exerting considerable pressure on the cage -arrow-.

Inspecting the operation of the inner CV joint:

- The CV joint is correctly assembled if the ball hub can be rolled by hand up and down the entire linear compensation.
- Push the clamp and the joint boot onto the drive shaft.
- Install the drive shaft.
- Push the grease quantity indicated for the inner joint from both sides into the joint.
- Distribute the specified grease quantity evenly into the joint boot.

  Grease quality and grease quantity ⇒ page 40-62.
- Install joint boot ⇒ page 40-42 and further.

Servicing drive shaft with tripod joint AAR 2900 and CV joint

Special tools, testers and aids required

- Thrust plate MP 3-406
- Thrust plunger MP 3-448
- Tube section MP 3-4012
- Tensioning pliers, e.g. V.A.G 1275, V.A.G 1682
- Workshop press, e.g. V.A.G 1290 A
- Torque wrench
- Circlip pliers (commercially available)

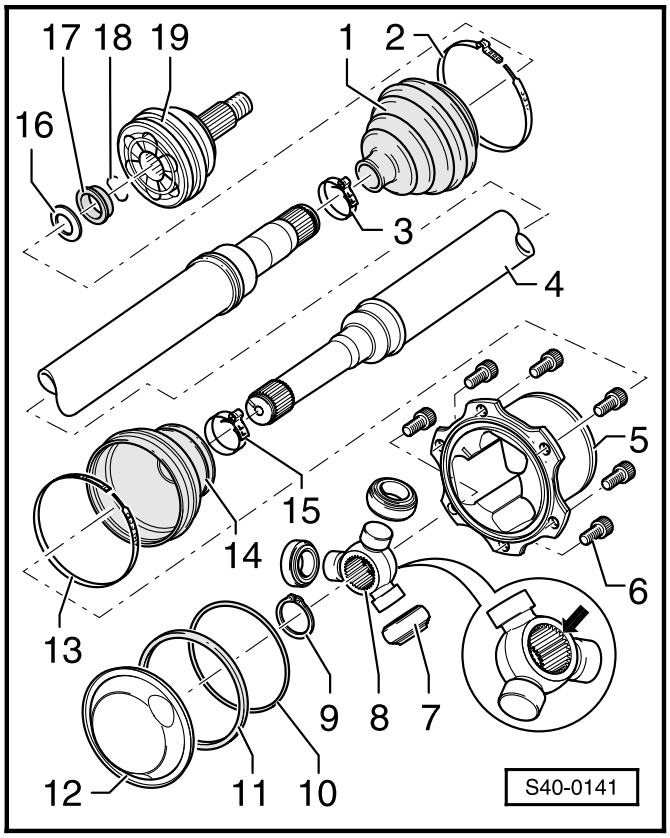
Grease quality and grease quantity

Notes:

- *Only use high temperature grease from the relevant repair kit for filling the inner CV joints and tripod joints*

⇒ Spare Part catalogue

- *Quantity of grease for outer CV joint ⇒ page 40-62*
- *Quantity of grease for inner tripod joint ⇒ page 40-62.*



Notes:

- *Assignment of drive shafts*

⇒ electronic catalogue of original parts

- *Grease joint if necessary, when replacing joint boot.*
- *On tripod joints only apply grease in the joint never in the joint boot*

1 - Joint boot for inner CV joint
- inspecting for tears and chafing points
- assignment ⇒ electronic catalogue of original parts

2 - Warm-type clamp
- replace
- tighten ⇒ page 40-42, Fig. 8

3 - Warm-type clamp
- replace
- tighten ⇒ page 40-42, Fig. 9

4 - Drive shaft
- assignment ⇒ electronic catalogue of original parts

5 - Joint part
- grease ⇒ page 40-62
- assignment ⇒ electronic catalogue of original parts

6 - Fillister head screw with internal serration
- replace after each diassembly
- initially tighten to 10 Nm, subsequently tighten crosswise to final torques
  M 8 = 40 Nm
  M10 = 70 Nm
- assignment ⇒ electronic catalogue of original parts

7 - Rollers

8 - Tripod spider
- Chamfer -arrow- points toward the drive shaft serration

9 - Circlip
- replace
- insert in the groove on the shaft

10 - O-ring seal
- not required for assembling the drive shaft

11 - Rectangular seal
- seal is contained in the repair kit
- seal is not fitted in the series, it is only necessary for the spare part sector
- assignment ⇒ electronic catalogue of original parts

12 - Cover
- is destroyed after every removal
- It is not required any more for assembling the drive shaft and is therefore not available as a spare part

13 - Warm-type clamp
- for tripod joint
- always replace

14 - Joint boot for tripod joint
- Inspecting for tears and chafing points

15 - Warm-type clamp
- for tripod joint
- always replace
- tighten ⇒ page 40-55, Fig. S40-0107

16 - Disc spring
- fitting location ⇒ page 40-41, Fig. 4

17 - Thrust ring
- ♦ fitting location ⇒ page 40-41, Fig. 4

18 - Circlip
- ♦ replace
- ♦ insert in the groove on the shaft

19 - Outer CV joint
- ♦ must be replaced completely
- ♦ removing ⇒ page 40-40, Fig. 1
- ♦ installing: drive onto the shaft with a plastic hammer until the compressed circlip expands
- ♦ grease ⇒ page 40-62
- ♦ inspecting ⇒ page 40-45

Disassembling and assembling Tripod joint AAR 2900

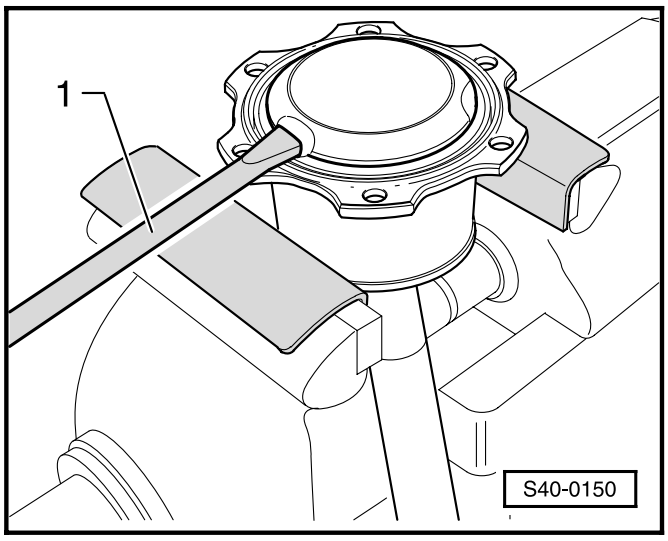
Special tools, testers and aids required

⇒ page 40-49

Grease quality and grease quantity

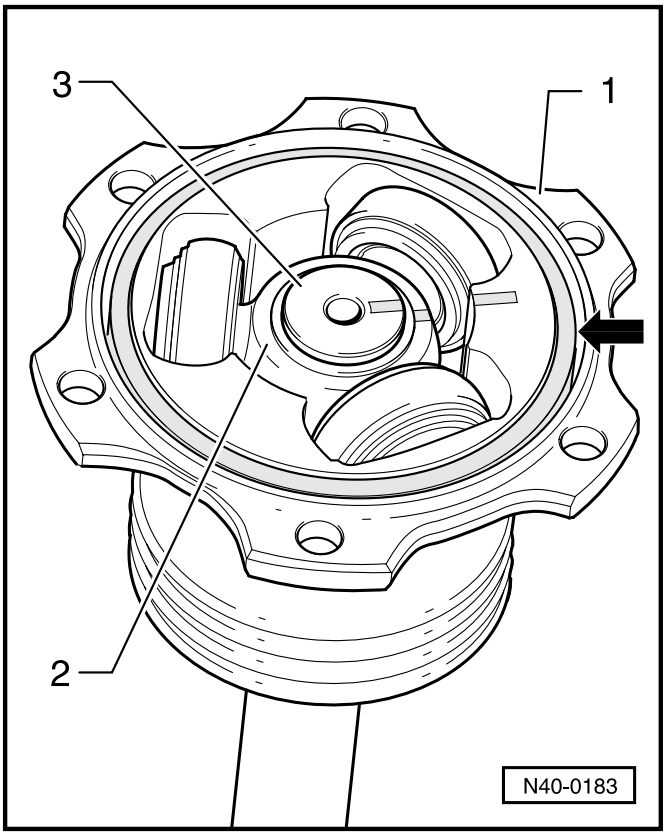
⇒ page 40-62

Disassembling



- Open warm-type clamp on joint part.
- Open warm-type clamp to the drive shaft and push back joint boot.
- ◄ - Clamp drive shaft on joint part in a vice with protective jaws.
- Lever the cover -1- off with a screwdriver.

Notes:
- ♦ *If the cover cannot be levered out, we recommend the re-insertion of the screwdriver on the opposite side and then lever out the cover.*
- ♦ *The cover will be damaged when levered off and it is no longer required for assembling the drive shaft.*



◄- Take O-ring -arrow- out of groove.

- Mark fitting location of parts 1 ... 3.

  1 - Joint

  2 - Tripod star

  3 - Drive shaft

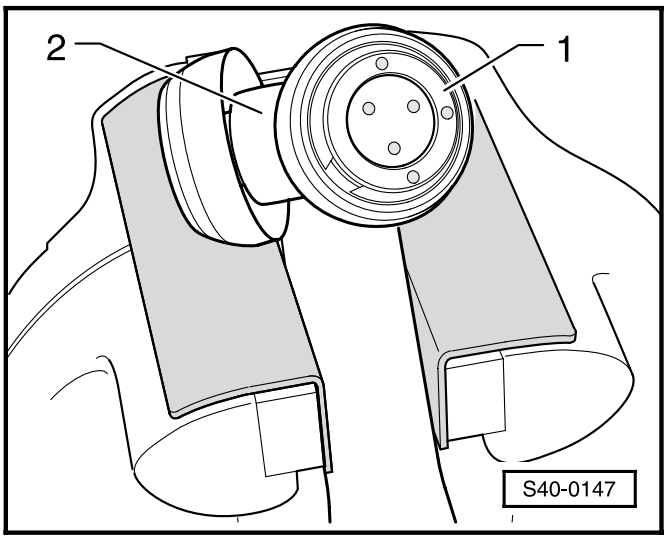
Notes:

- *If parts 1 ... 3 are not marked and are not re-installed in their previous position when assembled, this may result in noise problems subsequently when driving.*
- *A waterproof felt pen is suitable for marking the position of the parts.*

- Hold joint tight and take drive shaft out of the vice.

  Ensure that the rollers do not slip off the tripod star and fall onto the ground!

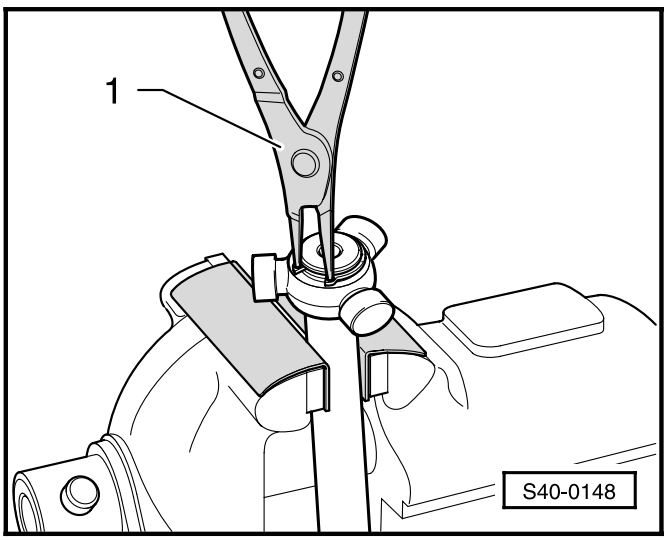
- Hold drive shaft with joint vertically and slowly push back the joint with your other hand.



◄- Clamp the drive shaft in a vice with protective jaws.

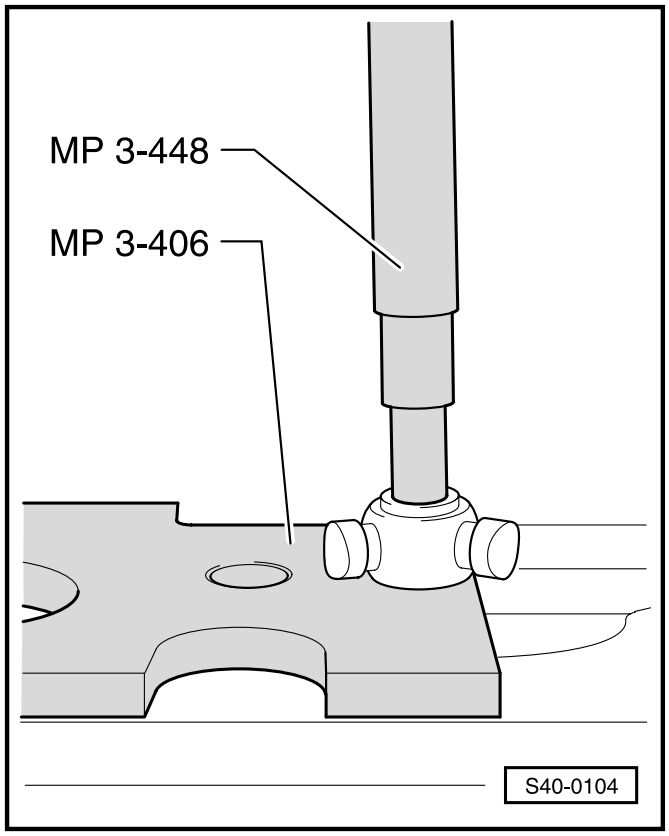
- Mark fitting location of the rollers -1- relative to the tripod star -2- with a felt pen.

- Take off rollers -1- and place down on a clean surface.



◄- Remove circlip.

  1 - Commercially available circlip pliers



- Insert drive shaft into press.

◄ - Hold drive shaft tight and press out the tripod star.

- Pull joint together with joint boot off the drive shaft.

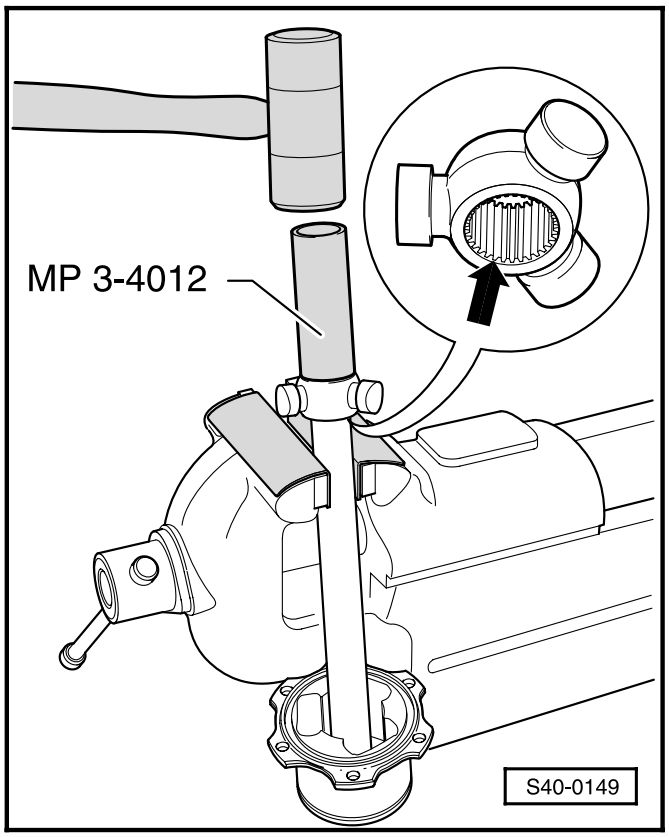
- Clean drive shaft and joint.

Assembling

- Fit small hose strap for joint boot onto the drive shaft.

- Push joint boot onto the drive shaft.

- Push joint onto the drive shaft.



Installing tripod star

◄ - Clamp the drive shaft in a vice with protective jaws.

Note:

Chamfer -arrow- on the tripod star should face toward the drive shaft. The chamfer is used as an assembly aid.

- Fit tripod star onto the drive shaft according to the marking made and knock on as far as the stop.

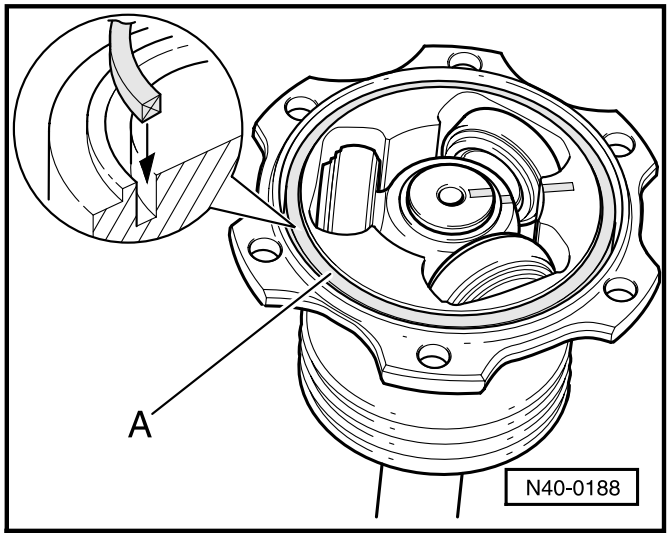
- Insert new circlip; ensure circlip is correctly located.

- Fit rollers onto the tripod star according to the markings.

- Take drive shaft out of the vice.

- Push joint over the rollers and hold tight.

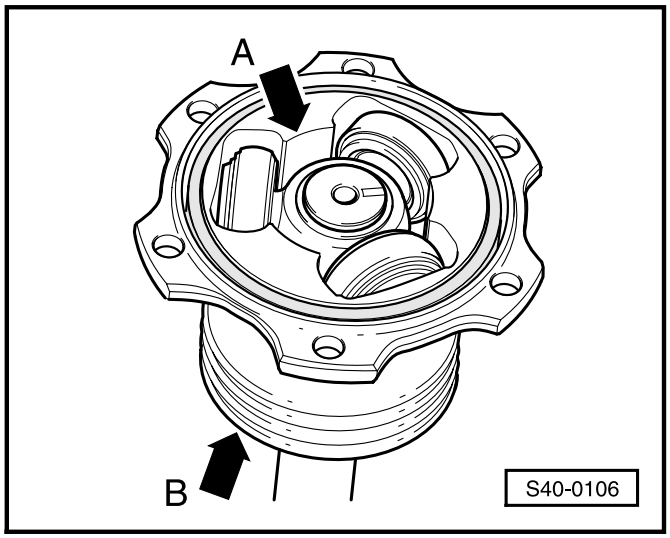
- Clamp joint in the vice.



◄ - Insert rectangular seal -A- from repair kit into the groove -arrow-.

Notes:

- *A direct sealing between tripod joint (joint part) and joint flange (gearbox side) occurs through the shape of the rectangular section of the seal.*
- *Cover is no longer required.*

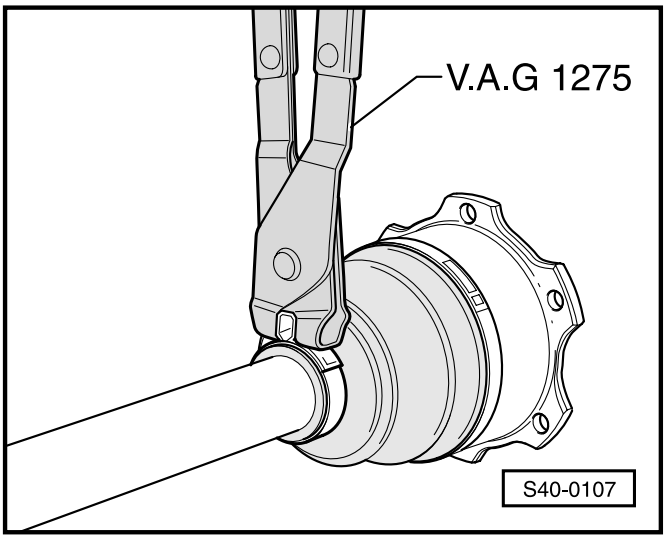


◄ - Press high temperature grease from the repair kit evenly in the tripod joint (tripod spider side) -arrow A- and in the rear of the tripod joint -arrow B-.

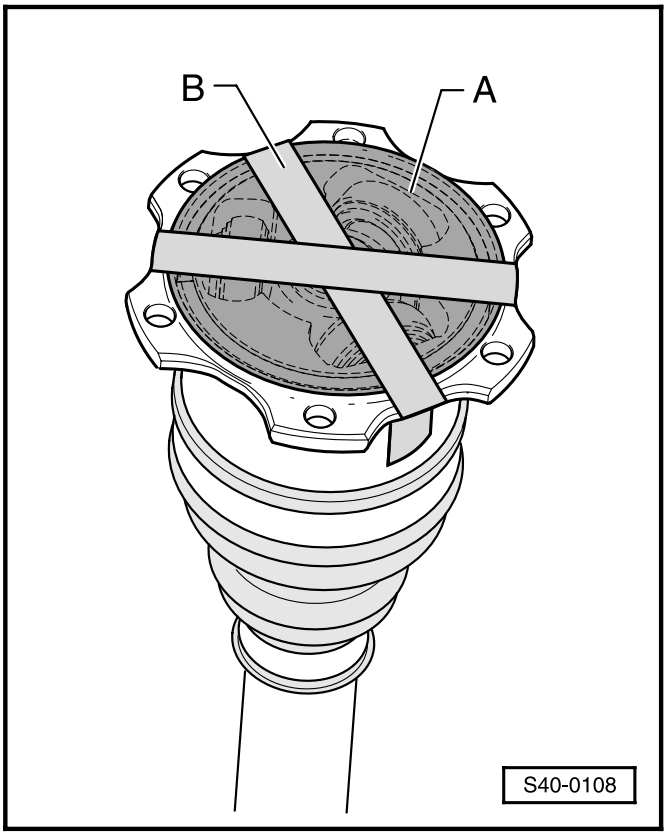
Grease quality and grease quantity
⇒ page 40-62

- Fit on joint boot.

- Tighten warm-type clamp with pliers.



◄- Tighten warm-type clamp (drive shaft side) with tensioning pliers e.g. V.A.G 1275.



◄- Cover tripod joint with cardboard disk -A- and adhesive tape -B-.

Notes:

- *After repairing, the tripod joint is covered with a clean cut cardboard disk -A- and adhesive tape -B-. A contamination of the tripod spider, the joint part and the grease filling is prevented through this. Furthermore an accidental push back of the tripod joint is avoided when installing the drive shaft.*
- *The adhesive tape and cardboard disk must only be removed when screwing the drive shaft to the drive flange.*

Servicing drive shaft with inner tripod joint AAR 2000 and outer CV joint

Special tools, testers and aids required

- Thrust plate MP 3-406
- Thrust plate MP 3-407
- Thrust plunger MP 3-408
- Distance sleeveMP 3-458/2
- Thrust plunger MP 6-405
- Supporting sleeve MP 6-428
- Clamping device MP 6-429
- Workshop press, e.g. V.A.G 1290 A
- Torque wrench
- Tensioning pliers, e.g. V.A.G 1275, V.A.G 1682
- Circlip pliers (commercially available)

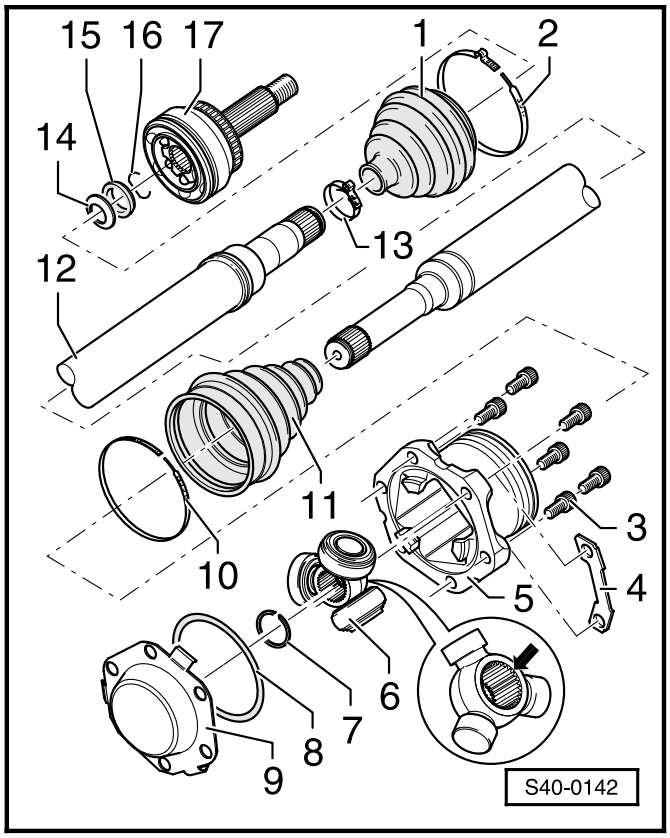
Grease quality and grease quantity

Notes:

- *Only use high temperature grease from the relevant repair kit for filling the inner joints and tripod joints*

⇒ Spare Part catalogue

- *Quantity of grease for outer CV joint ⇒ page 40-62*
- *Quantity of grease for inner tripod joint ⇒ page 40-62*



Notes:

- *Assignment of drive shafts*

⇒ electronic catalogue of original parts

- *Grease joint if necessary, when replacing the joint boot*
- *On tripod joints only apply grease in the joint, never in the joint boot.*

1 - Joint boot with inner CV joint
- inspecting for tears and chafing points
- assignment ⇒ electronic catalogue of original parts

2 - Warm-type clamp
- replace
- tighten ⇒ page 40-42, Fig. 8

3 - Fillister head screw with internal serration
- replace after each disassembly
- initially tighten to 10 Nm, subsequently tighten crosswise to tightening torques
  M 8 = 40 Nm
  M 10 = 70 Nm
- assignment ⇒ electronic catalogue of original parts

4 - Shim
- assignment ⇒ electronic catalogue of original parts

5 - Joint part
- grease ⇒ page 40-62
- assignment ⇒ electronic catalogue of original parts

6 - Tripod spider with rollers
- chamfer -arrow- points toward the drive shaft serration.

7 - Circlip
- replace
- insert in the groove on the shaft

8 - O-ring seal
- replace

9 - Cover
- replace

10 - Warm-type clamp
- for tripod joint
- always replace

11 - Joint boot for tripod joint
- inspecting for tears and chafing points
- assignment ⇒ electronic catalogue of original parts

12 - Drive shaft
- assignment ⇒ electronic catalogue of original parts

13 - Warm-type clamp
- replace
- tighten ⇒ page 40-42, Fig. 9

14 - Disc spring
- fitting location ⇒ page 40-41, Fig. 4

15 - Thrust ring
- fitting location ⇒ page 40-41, Fig. 4

16 - Circlip
- replace
- insert in the groove on the shaft

17 - Outer CV joints
- must be replaced completely
- removing ⇒ page 40-40, Fig. 1
- installing: drive onto the shaft with a plastic hammer until the compressed circlip expands
- grease ⇒ page 40-62
- inspecting ⇒ page 40-45
- assignment ⇒ electronic catalogue of original parts

Disassembling and assembling tripod joint AAR 2000

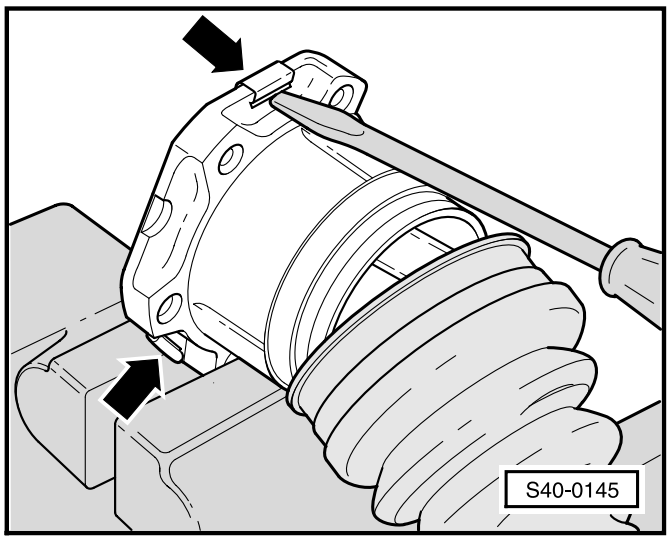
Special tools, testers and aids required

⇒ page 40-56

Grease quality and grease quantity

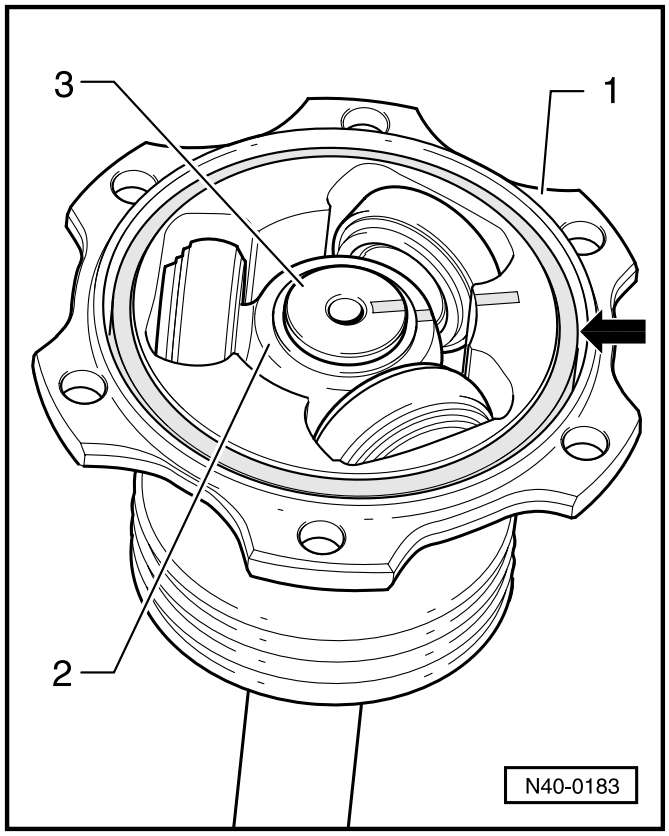
⇒ page 40-62

Disassembling



- Open warm-type clamp on joint part.
- Push back joint boot.

◄ - Straighten the metal tabs -arrows- with a screwdriver and lever off.



◄- Take O-ring seal -arrow- out of groove.

- Mark fitting location of parts 1 ... 3.

  1 - Joint

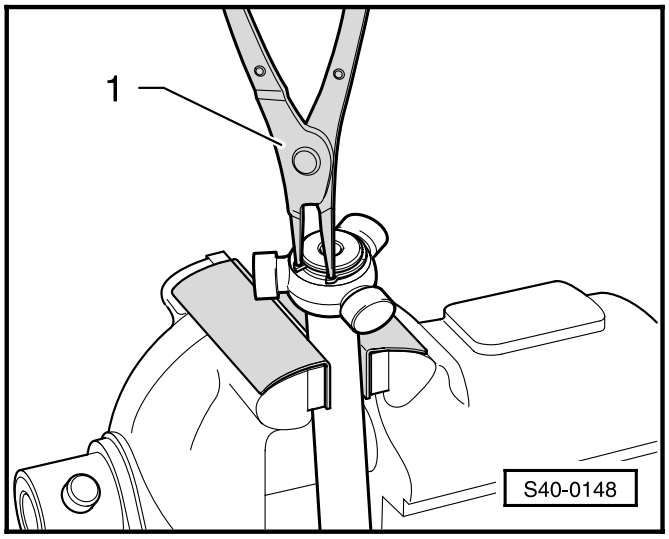
  2 - Tripod star

  3 - Drive shaft

Notes:

- *If parts 1 ... 3 are not marked and are not re-installed in their previous position when assembled, this may result in noise problems subsequently when driving.*
- *A waterproof felt pen is suitable for marking the position of the parts.*

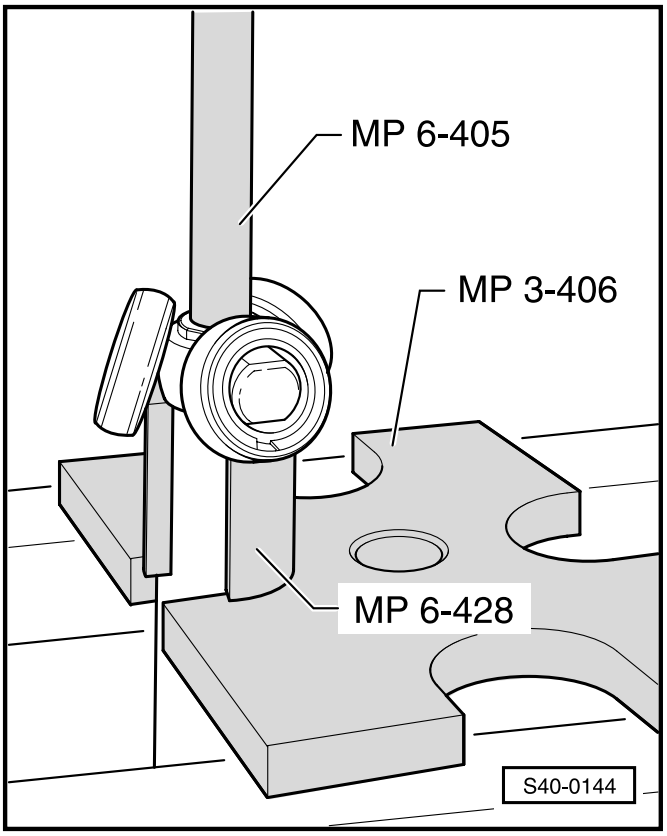
- Hold joint tight and take drive shaft out of the vice.



◄- Clamp drive shaft in a vice with protective jaws.

- Remove circlip

  1 - commercially available circlip pliers



- Insert drive shaft into press.

◄- Hold drive shaft tight and press out the tripod star.

- Remove tripod star with rollers and place on a clean surface.

- Pull joint off the drive shaft.

- Pull joint boot off the drive shaft.

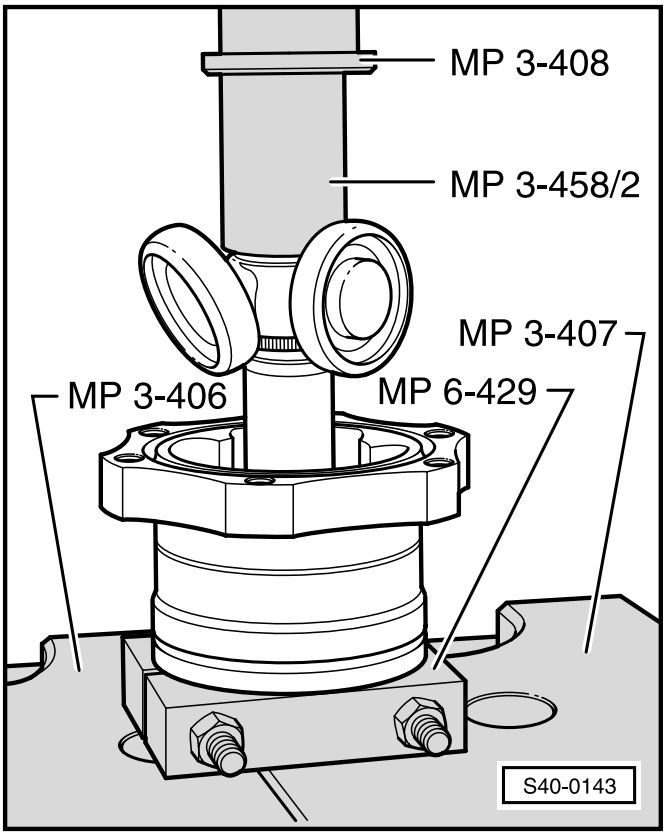
- Clean drive shaft and joint.

Assembling

- Push joint boot onto the drive shaft.

- Push joint onto the drive shaft.

Installing tripod star



Note:

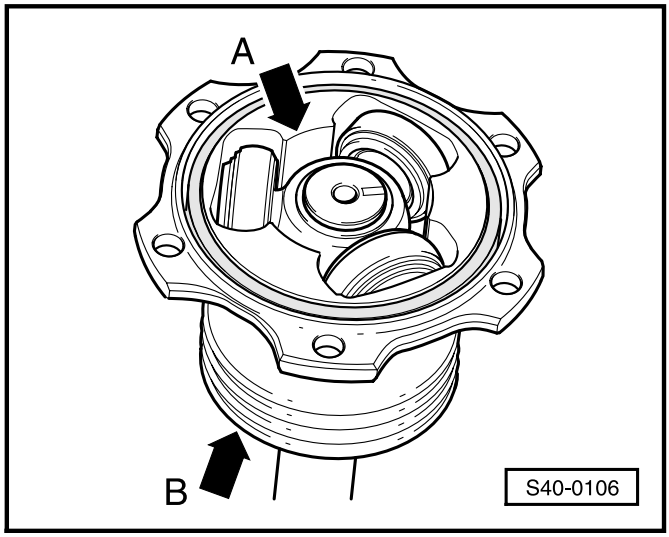
Chamfer -arrow- on the tripod star should face toward the drive shaft. The chamfer is used as an assembly aid.

◄- Fit tripod star onto the drive shaft according to the marking made and knock on as far as the stop.

- Insert new circlip; ensure circlip is correctly located.

- Push joint over the rollers and hold tight.

- Remove drive shaft from special tool and clamp in vice.



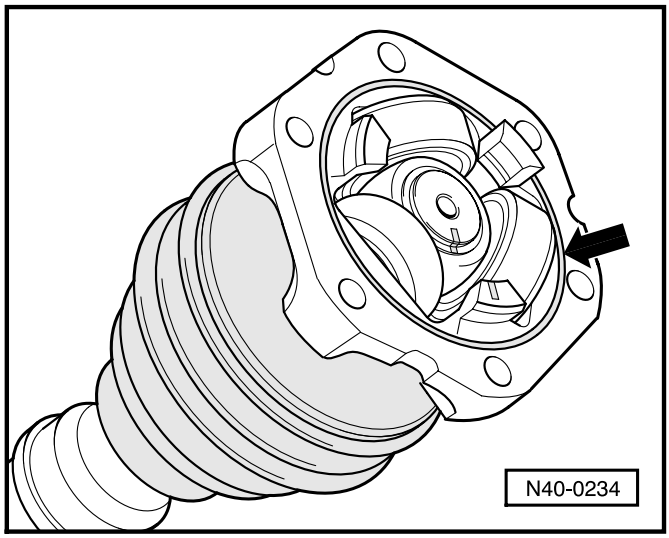
◄ - Press high temperature grease from the repair kit evenly in the tripod joint (tripod spider side) -arrow A- and in the rear of the tripod joint -arrow B-.

Grease quality and grease quantity
⇒ page 40-62

- Assembling the joint boot.

Note:

The bead in the joint boot must fit into the groove of the joint part.



- Remove drive shaft from the vice and clamp the joint part.

◄ - Insert new gasket ring -arrow- from the repair kit in the groove.

- Fit the new cover on the joint part.

Note:

The bores of the cover and the joint part must be flush.

- Tighten warm-type clamp with pliers.

Grease quantity

Outer CV joint ∅ mm	Total grease (g) Distribute evenly into the joint	Inner CV joint ∅ mm	Total grease (g)	of which	
				Joint (g)	Joint boot (g)
81	90	94 (joint)[1)]	90	45	45
90	110	100 (joint)[1)]	120	60	60
90	110	108 (tripod)[1)]	110	110	-
90	110	124 (tripod)[1)]	140	140	-
98	130	100 (joint)[2)]	190	190	-

1) Valid for all vehicle, except engines 1.9 l/74 kW PD and 1.9 l/96 kW PD.

2) Valid for vehicles with engines 1.9 l/74 kW PD and 1.9 l/96 kW PD.

Grease quantity - outer CV joint
Outer CV joints can be filled with the following grease qualities:

- Grease for normal temperatures, Part-No.: G 052 738 A2
- Grease from the relevant repair kit
- High temperature grease, Part-No.: G 052 133 A2 or Part-No.: G 052 133 A3

Grease quantity - inner CV joint
Outer CV joints can be filled with the following grease qualities:

- Grease from the relevant repair kit
- High temperature grease, Part-No.: G 052 133 A2 or Part-No.: G 052 133 A3

Notes:

- *G 052 133 A2 - can with 90g grease content*
- *G 052 133 A3 - can with 120g grease content*
- *Put grease into the joint if necessary or grease joint if necessary, when replacing the joint boot.*
- *Distribute grease quantity for joint evenly into the joint on the left and right.*
- *Distribute grease quantity for joint boot evenly into the joint boot - only on the joint side.*

Servicing rear suspension - drum brakes

Removing and installing rear suspension

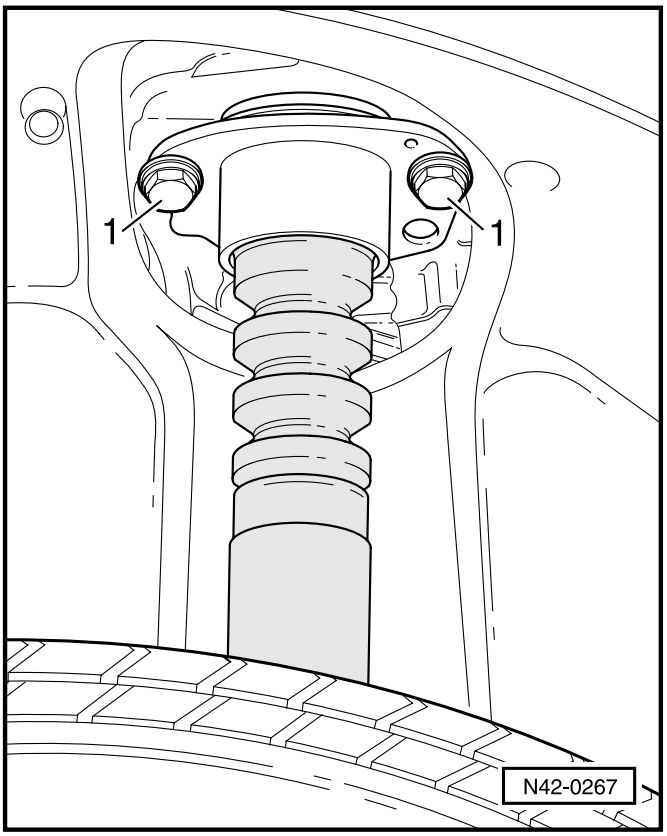
Special tools, testers and aids required

- Tester for brake pressure regulator, e.g. V.A.G 1310
- Gearbox jack with attachment, e.g. V.A.G 1383 A with V.A.G 1359/2
- Brake filling and bleeding appliance, e.g. ROMESS S 15
- Sealing plug for brake line
- Brake fluid ⇒ page 00-8
- Assembly paste G 052 150 A2

Removing

Note:

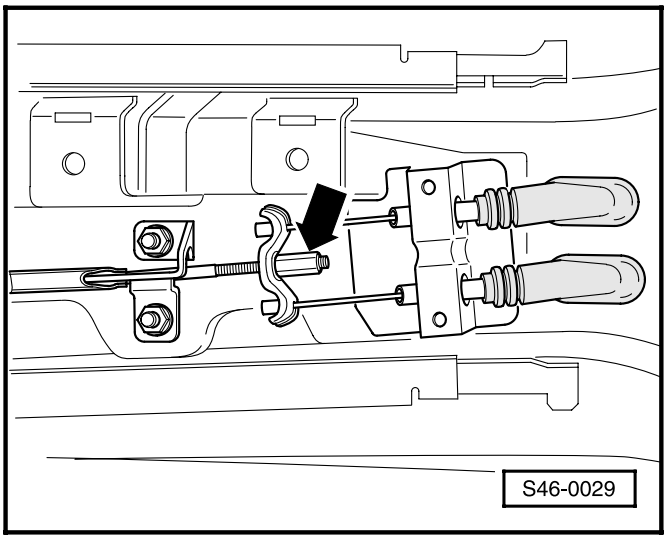
To remove the rear suspension, do not slacken bearing bracket at the body otherwise it is necessary to check the wheel toe of the rear suspension and to align if necessary.



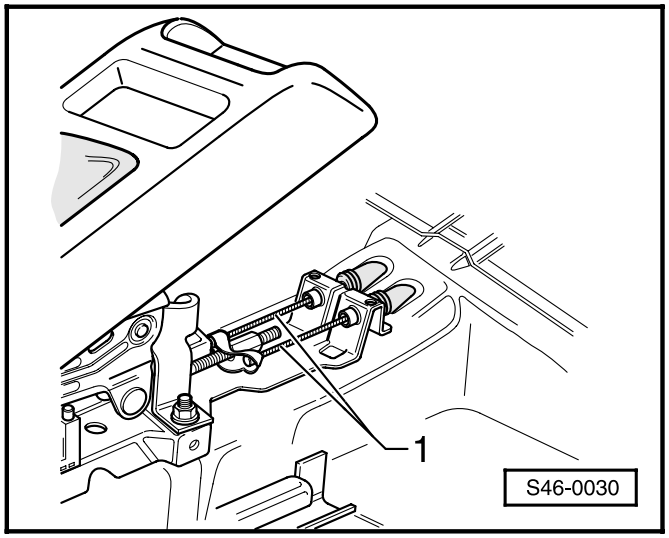
◄- Remove bolts -1- with vehicle standing on its wheels. Jack up vehicle sufficiently, if necessary, until the bolts are accessible.

- Jack up vehicle to fitting height so that no load is pressing on the coil spring.
- Take off wheels.
- Release handbrake.
- Tilt forward rear centre console, remove if necessary.

⇒ Body Fitting Work; Repair Group 68; Interior Equipment

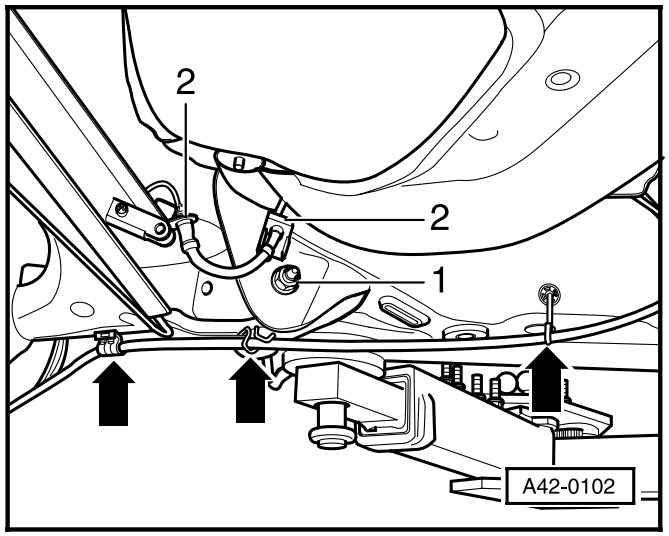


◄- Slacken adjusting nut -arrow-.



◄- Detach handbrake cables -1- from handbrake lever.

- Pull handbrake cables out of the guide tubes.



◄- Unclip brake cables -arrows-.

- Detach clips -2- from brake hose fixture and

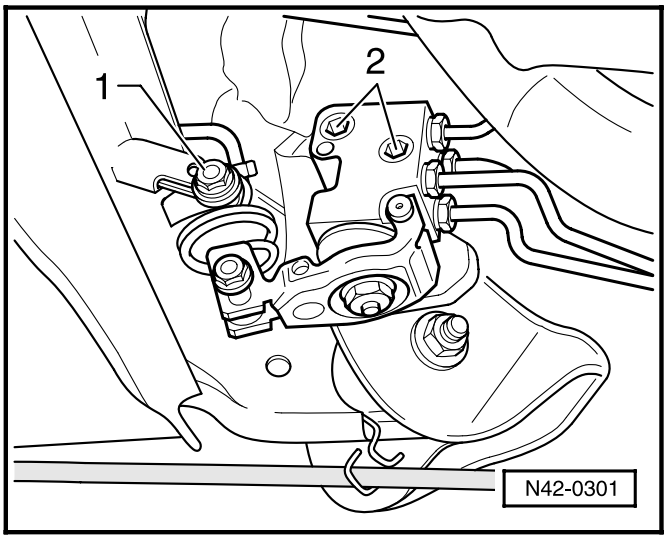
- Separate brake lines.

Note:

Seal lines with plugs.

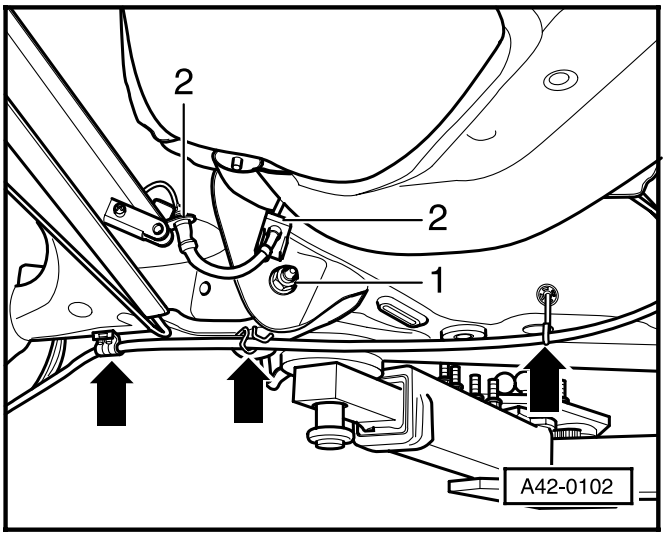
- Unplug connectors of wheel speed sensors.

- Unclip cable for wheel speed sensor from the fixture.



Only on models with load-sensitive brake pressure regulator (without ABS):

◄- Unscrew bolt -1- for brake pressure regulator.



Continued for all models:

- Support rear axle with gearbox lifter and adapter, e.g. V.A.G 1383 A with V.A.G 1359/2.

◄- Unscrew hexagon bolts -1- of the bonded rubber bush and lower rear axle.

Installing

- Before inserting the rear axle, grease the kidney-shaped cavities of the bonded rubber bushes with assembly paste G 052 150 A2.

Installation is carried out in the reverse order.

Notes:

- *When tightening the hexagon bolt of the bonded rubber bush, the axle beam must be in the horizontal position (unladen weight condition).*
- *When installing the handbrake cables, pay attention to Fitting location ⇒ page 46-18.*

- Bleed brake system ⇒ from page 47-18.

- Inspect load-sensitive brake pressure regulator, if fitted, and adjust if necessary ⇒ page 47-16.

After completing installation, it is necessary to check the position of the steering wheel during a road test.

If the steering wheel is not straight, carry out a check of the wheel alignment!

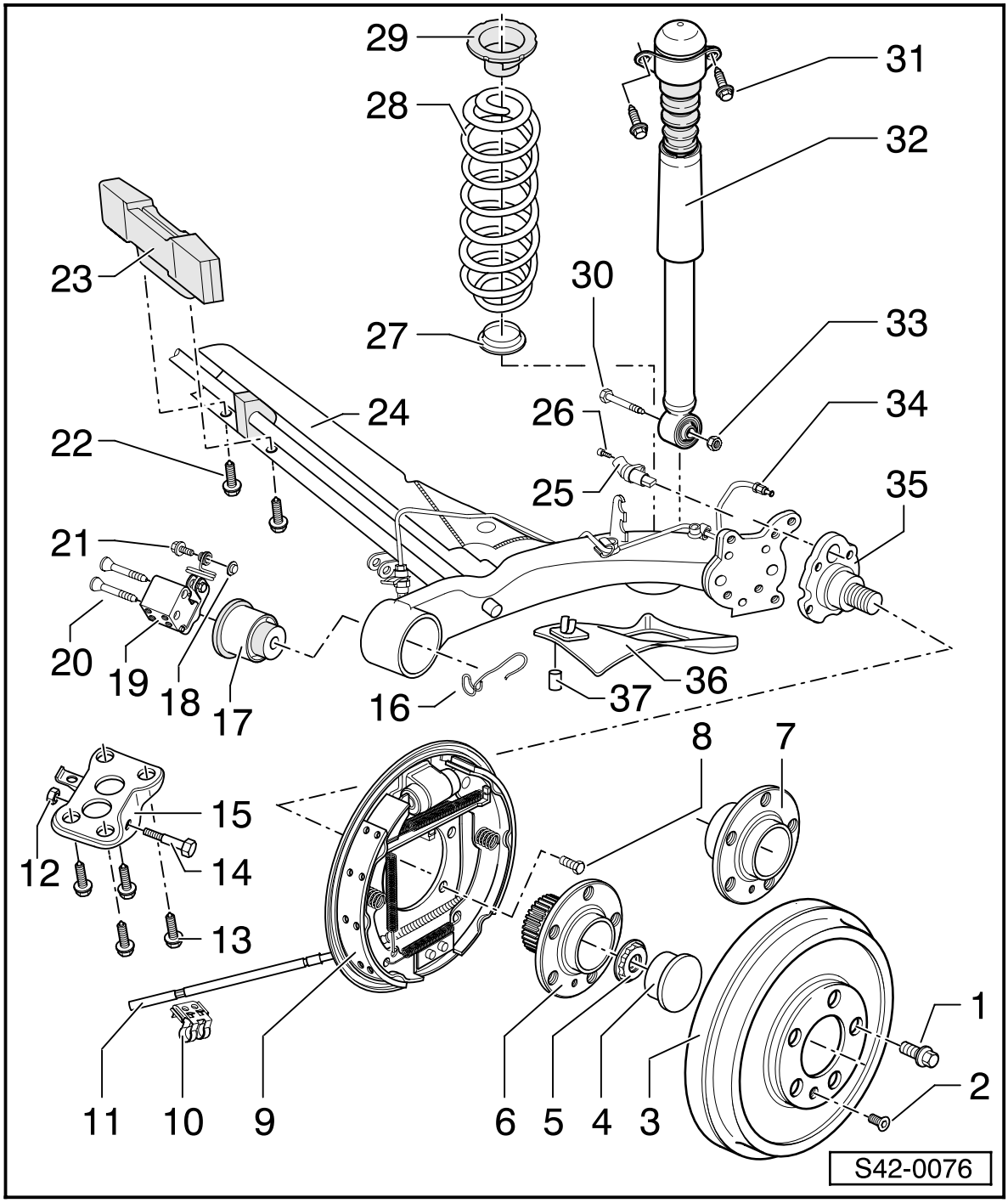
Note:

After slackening or replacing the bearing bracket, check total wheel toe of rear axle, and align if necessary.

Tightening torques:

Shock absorber to body **Use new bolts!**	30 Nm + 90°
Rear axle to bearing bracket **Use new nuts and bolts!**	45 Nm + 90°
Bolts attaching brake lines	14 Nm

Summary of components of rear axle



Notes:

- *Welding and straightening on axle body and axle studs not allowed.*
- *Always replace the self-locking nuts and screws.*
- *Tighten pipe screws of the brake lines to 14 Nm.*

1 - Wheel bolt, 120 Nm

2 - Screw, 4 Nm

3 - Brake drum

- reset brake before removing the brake drum ⇒ page 42-24, Fig. 1

4 - Cap

- replace after each removal
- pressing off ⇒ page 24-25, Fig. 2 and 3
- inserting ⇒ page 42-27, Fig. 8

5 - Twelve-point nut, self-locking, 70 Nm and torque a further 40°
- Replace each time removed

6 - Wheel hub with wheel bearing and pulse rotor
- Only on models with ABS
- Wheel bearing and wheel hub are installed together in a housing
- This wheel bearing/wheel hub unit requires no maintenance and is free of play. It is not possible to carry out any setting or servicing work!
- Removing and installing ⇒ from page 42-23

7 - Wheel hub with wheel bearing without pulse rotor
- Only on models without ABS
- Wheel bearing and wheel hub are installed together in a housing
- This wheel bearing/wheel hub unit requires no maintenance and is free of play. It is not possible to carry out any setting or servicing work!
- Removing and installing ⇒ from page 42-23

8 - Bolt + washer, 50 Nm and torque a further 60°
- Replace each time removed

9 - Brake carrier with brake shoe

10 - Bracket for handbrake cable
- Replace

11 - Handbrake cable

12 - Hexagon nut, self-locking
- Replace each time removed

13 - Hexagon bolt, self-locking, 30 Nm and torque a further 90°
- Replace each time removed
- If thread of welded nut is damaged, thread can be repaired with Heli-Coil threaded insert. Pay attention to manufacturer's instructions.
- Reworking of thread of welded nut is permissible at not more than 2 bolted connection points on each side of vehicle.

14 - Hexagon bolt, 45 Nm and torque a further 90°
- Replace each time removed
- Insert from outside of vehicle
- When tightening hexagon bolt, axle beam should be horizontal (unladen weight condition)

15 - Bearing bracket for rear axle
- After installing, inspect total wheel toe of rear axle, and align if necessary
- Do not slacken if possible for removing rear axle

16 - Bracket for handbrake cable

17 - Bonded rubber bush
- Removing and installing ⇒ page 42-7

18 - Nut

19 - Brake pressure regulator
- Only on models without ABS
- Inspecting and setting ⇒ page 47-16

20 - Hexagon socket bolt, 20 Nm

21 - Hexagon bolt, 20 Nm

22 - Hexagon bolt, 20 Nm and torque a further 45°
- Replace each time removed

23 - Balancing weight

24 - Axle beam
- Contact surface and threaded holes for axle journal must be free of paint and dirt

25 - ABS wheel speed sensor
- Only on models with ABS

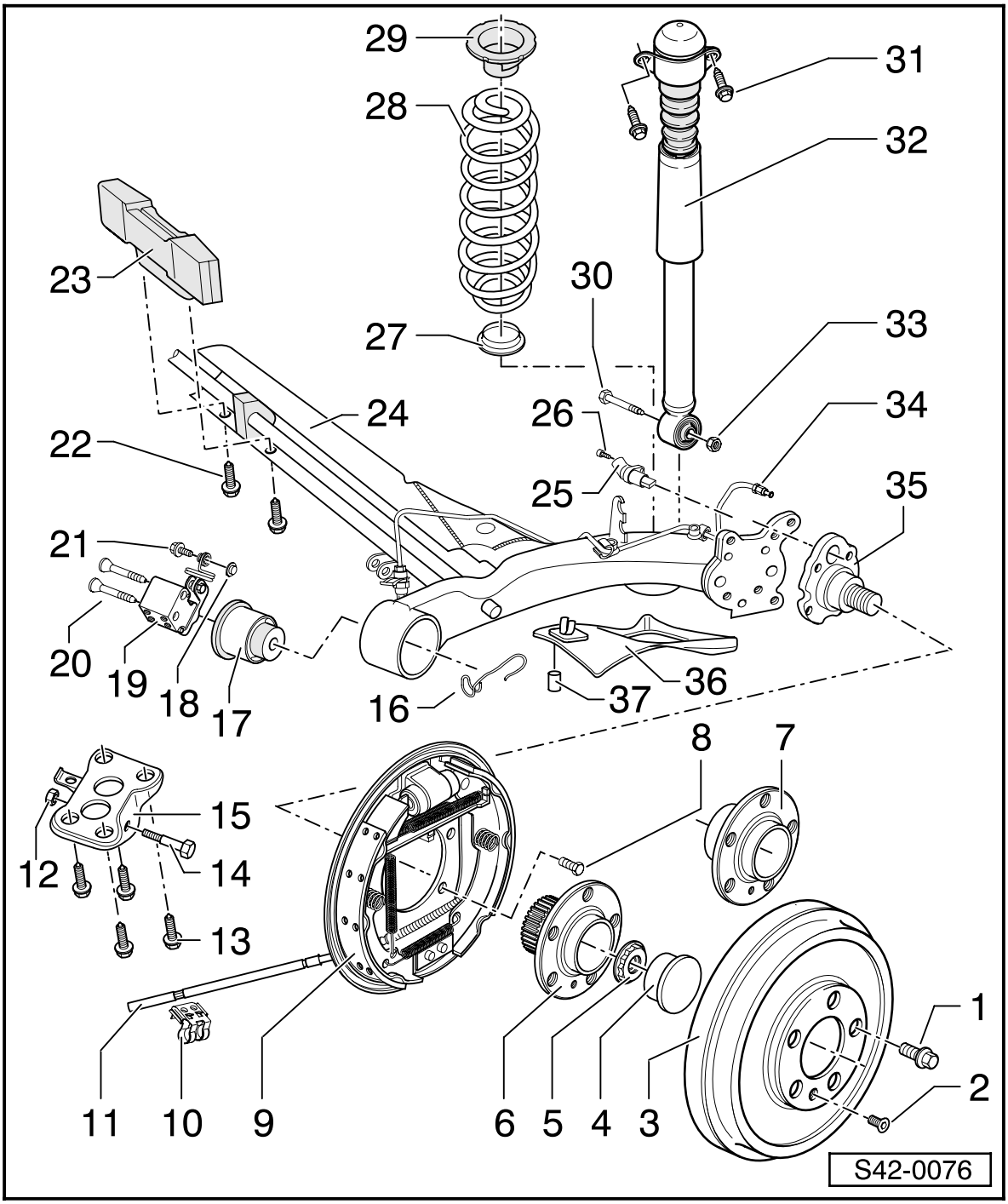
26 - Hexagon socket bolt, 8 Nm

27 - Bottom base

28 - Coil spring
- Removing and installing ⇒ page 42-10
- Inspect for paint damage, touch up any paint damage
- Assigning ⇒ Parts List
- Always replace on both sides of axle
- Fit only coil springs of same manufacturer to rear axle

29 - Top base
- Installing ⇒ Notes, page 42-10

30 - Hexagon bolt, 60 Nm
- Replace each time removed
- Insert from inside of vehicle
- When tightening, pay attention to installation angle of rear axle to shock absorber ⇒ Fig. 1
- Tighten hexagon bolt when vehicle standing on its wheels and load of about 100 kg in boot



31 - Hexagon bolt, self-locking, 30 Nm and torque a further 90°

- Replace each time removed
- If thread of welded nut is damaged, thread can be repaired with Heli-Coil threaded insert. Pay attention to manufacturer's instructions.
- Reworking of thread of welded nut is permissible at not more than 1 bolted connection points on each side of vehicle.

32 - Shock absorber

- Can be replaced individually
- Removing and installing ⇒ page 42-10
- Assigning ⇒ Parts List
- Disposal ⇒ page 40-31
- Inspecting shock absorber ⇒ page 40-28
- Fit only shock absorbers of same make to rear axle

Note:

No provision made for servicing shock absorbers.

33 - Hexagon nut, self-locking,

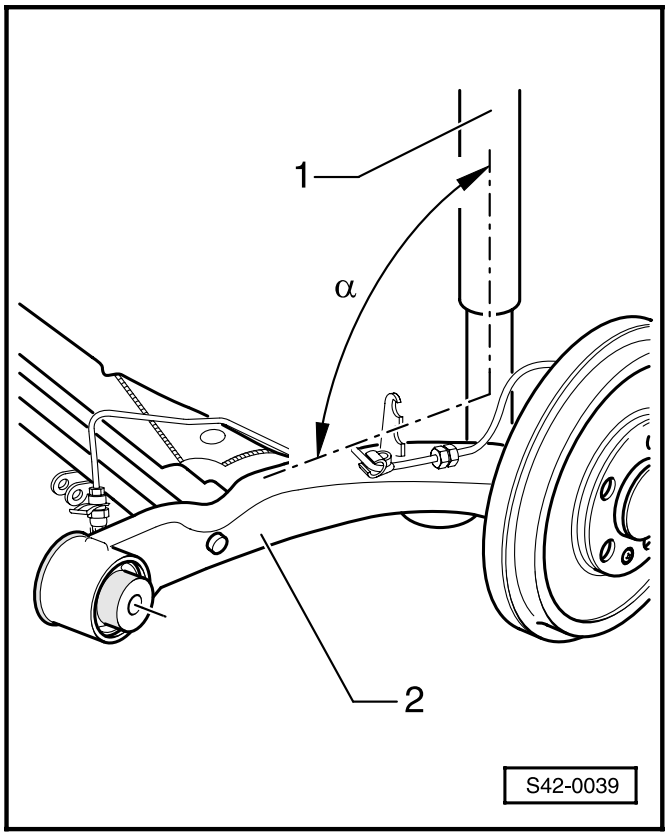
- Replace each time removed

34 - Brake line

35 - Axle stub
- ♦ No straightening work permitted!
- ♦ It is not permitted to re-tap thread.

36 - Stone chip guard

37 - Element for attaching stone chip guard
- ♦ Included in parts supplied with stone chip guard



◄ **Fig. 1 Installation angle of rear axle/shock absorber**

1 - Shock absorber

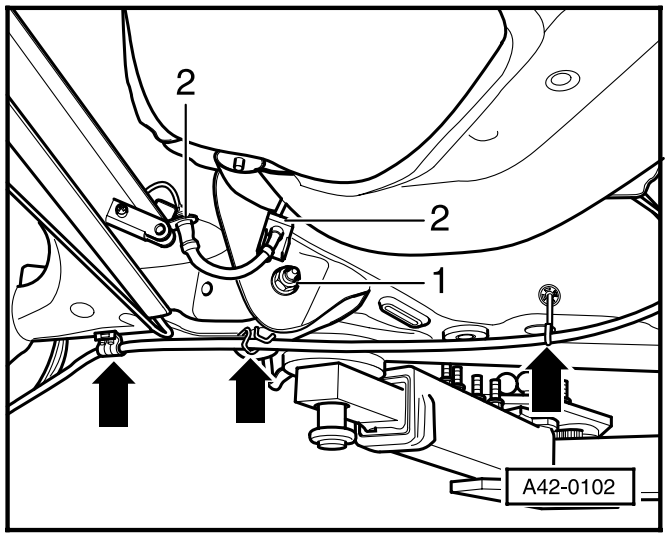
2 - Track control arm

α - approx. 104°

Removing and installing bonded rubber bush

Special tools, testers and aids required

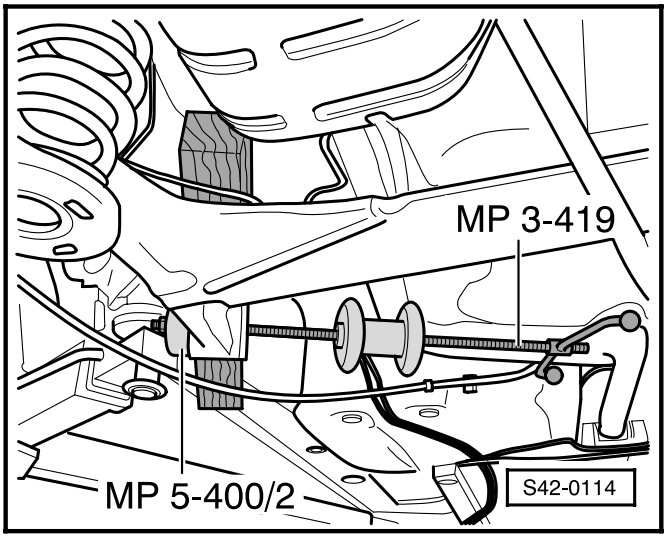
- ♦ Universal tool MP 3-419
- ♦ Thrust piece MP 5-400/1
- ♦ Thrust piece MP 5-400/2
- ♦ Supporting tube MP 5-400/3
- ♦ Installation device MP 5-401



Removing

◄ - Unclip brake cables -arrows-.

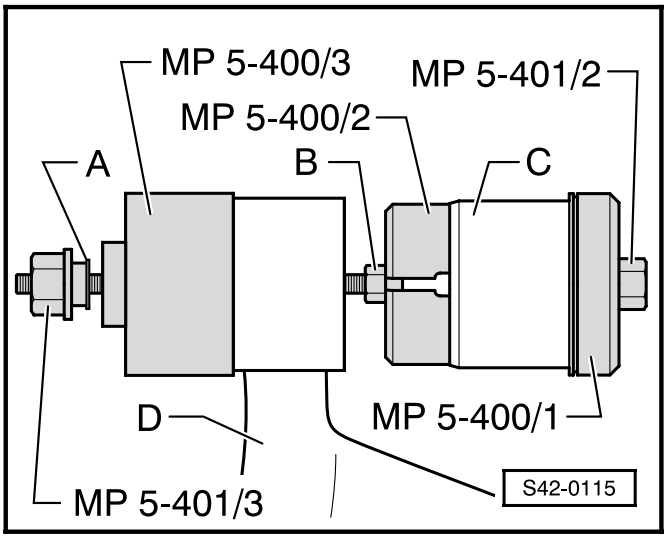
- Detach clips -2- of brake hose fixture.
- Unscrew hexagon bolt -1- of bonded rubber bush at both track control arms.



Note:

Place a soft block of wood of about 10 cm between axle beam and body in order to be able to fit on the special tool.

◄- Insert special tool and knock bonded rubber bush out of axle beam.



Installing

◄- Use special tool to pretension bonded rubber bush -C- and insert into the bearing seat of the axle beam -D-.

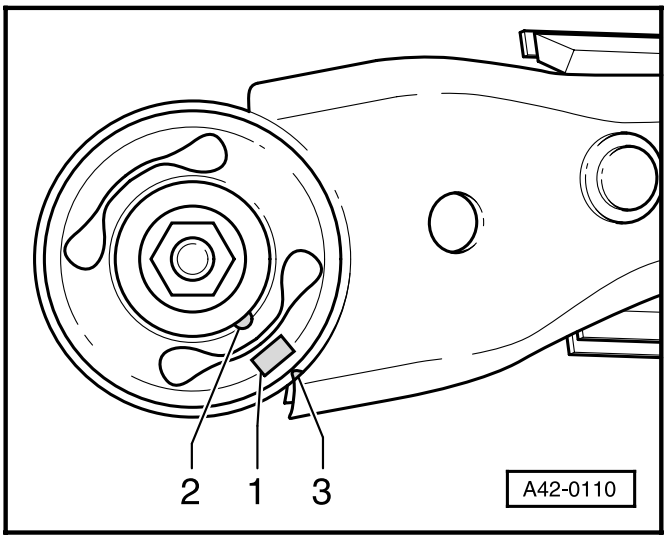
A - Washer of installation device MP 5-401

B - Hexagon nut of installation device MP 5-401

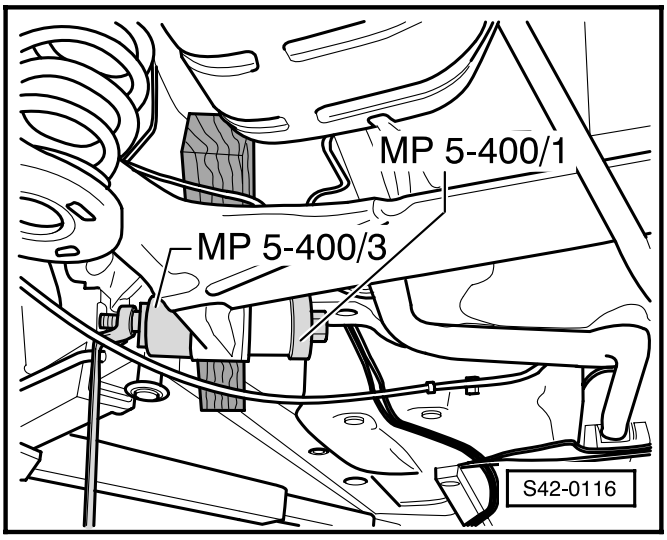
- Pay attention to installation position before drawing in ⇒ Fig. A42-0110, page 42-8.

Note:

♦ *It is essential to install the bonded rubber bush in the specified position in the rear axle beam otherwise this will result in a deterioration in the handling of the car when cornering.*



◄- Align orientation studs -1- and orientation bead -2- to edge of track control arm -3-.

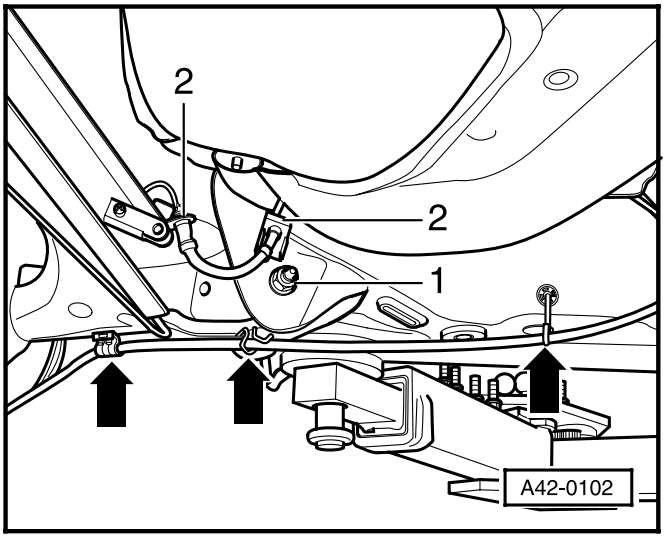


◄- Insert bonded rubber bush into axle beam and then draw in as shown in the illustration.

- Inspect Fitting location ⇒ Fig. A42-0110, page 42-8.

- Remove soft wooden block between axle beam and body.

- Insert axle beam with bonded rubber bush into bearing bracket.



◄- Insert hexagon bolt into the bearing bracket/ bonded rubber bush from the outside of the vehicle, screw on hexagon nut -1- and tighten fully.

Tightening torque: 45 Nm + torque a further 90°

Note:

When tightening the hexagon bolt of the bonded rubber bush, the axle beam must be in horizontal position (unladen weight condition).

- Push on clips -2- of brake hose fixture.

Note:

When installing the handbrake cables, pay attention to Fitting location ⇒ page 46-18.

- Clip brake cables into place -arrows-.

- Fit on wheels and lower vehicle.

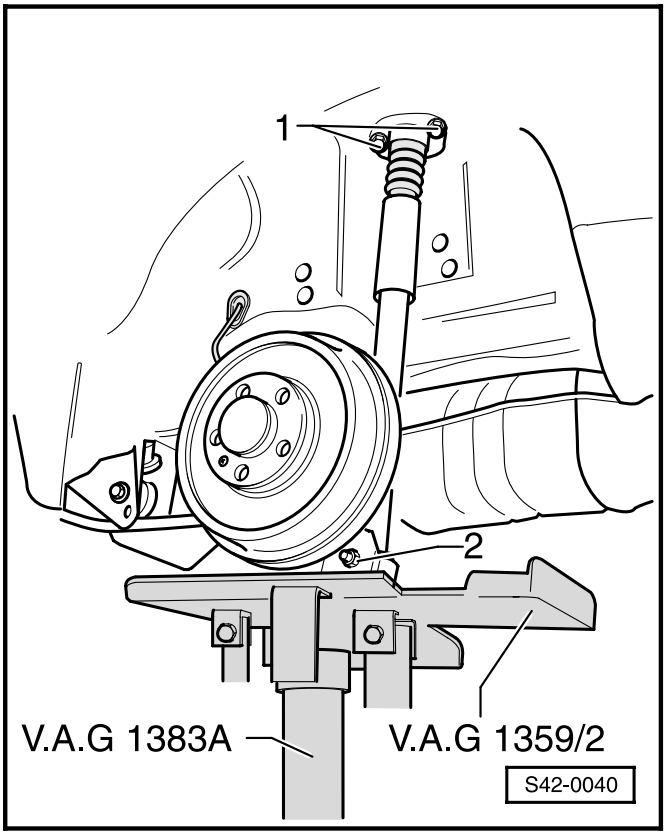
Removing and installing shock absorber/spring

Special tools, testers and aids required

- Gearbox lifter with adapter, e.g. V.A.G 1383 A with V.A.G 1359/2

Notes:

- *It is not necessary to take out the coil spring in order to remove the shock absorber.*
- *It is not necessary to take out the shock absorber in order to remove the coil spring.*



Removing shock absorber

- Take off wheel trim or pull off cap on light-alloy wheels (hook for removing cap included in car tool kit).
- Take off wheel and raise vehicle.

◄ - Unscrew bolts -1- and -2- and take out shock absorber.

Removing spring

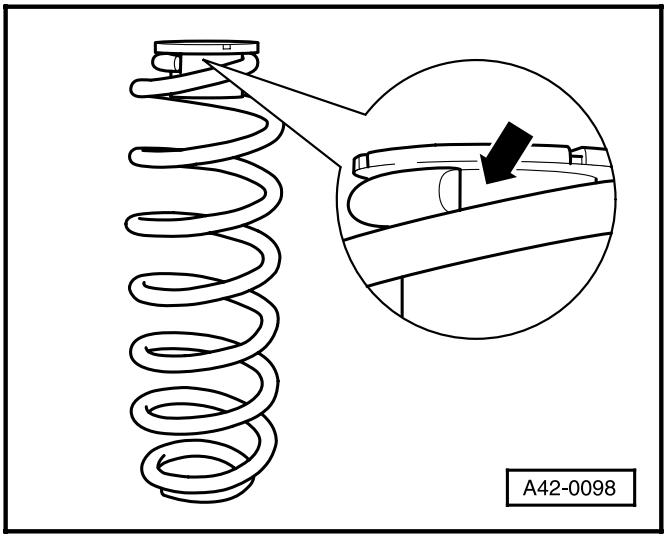
- Take off wheel trim or pull off cap on light-alloy wheels (hook for removing cap included in car tool kit).
- Take off wheel and raise vehicle.
- Separate plug connection of wheel speed sensor cable.
- Unscrew bolt -2-.
- Lower gearbox lifter and take out spring.

Installing

Installation is carried out in the reverse order.

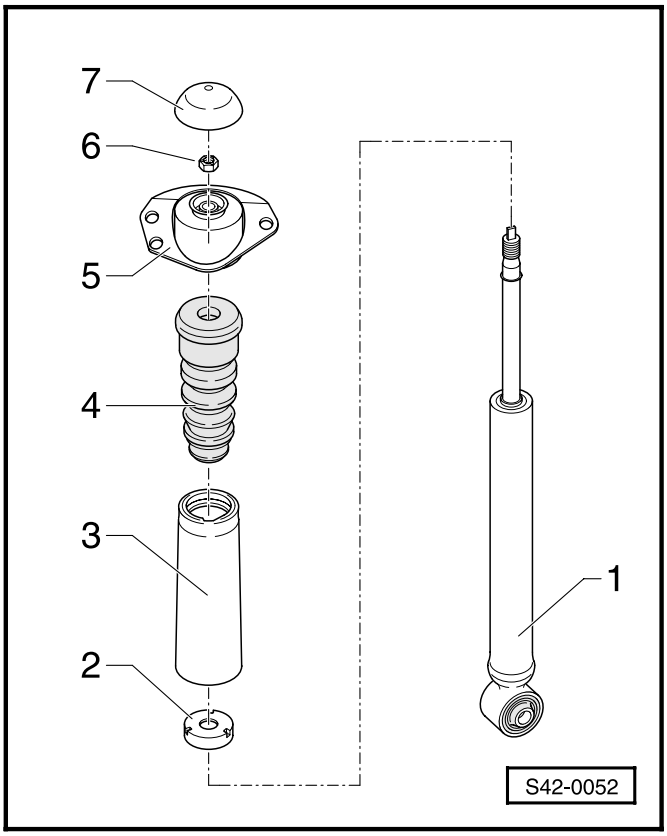
Notes:

- *Ensure that the top base (rubber) for the spring is correctly inserted when placing into the mount of the body.*
- *Pay attention to the correct colour coding.*
- *The start of the coil at the bottom must always point toward the middle of the vehicle.*



◄ - Start of spring -arrow- must be positioned at the stop of the bottom base.

Disassembling and assembling shock absorber



1 - Shock absorber
- Can be replaced individually
- Removing and installing ⇒ page 42-10
- Assigning ⇒ Parts List
- Disposing ⇒ page 40-31
- Inspecting shock absorber ⇒ page 40-28

Note:

Shock absorbers must not be disassembled or repaired.

2 - Protective cap

3 - Protective tube

4 - Bump stop

5 - Top shock absorber bearing

6 - Self-locking hexagon nut, 25 Nm
- Replace each time removed
- Counterhold at the piston rod of the shock absorber for slackening and tightening the hexagon nut

7 - Cover

Servicing rear suspension - disc brakes

Removing and installing rear suspension

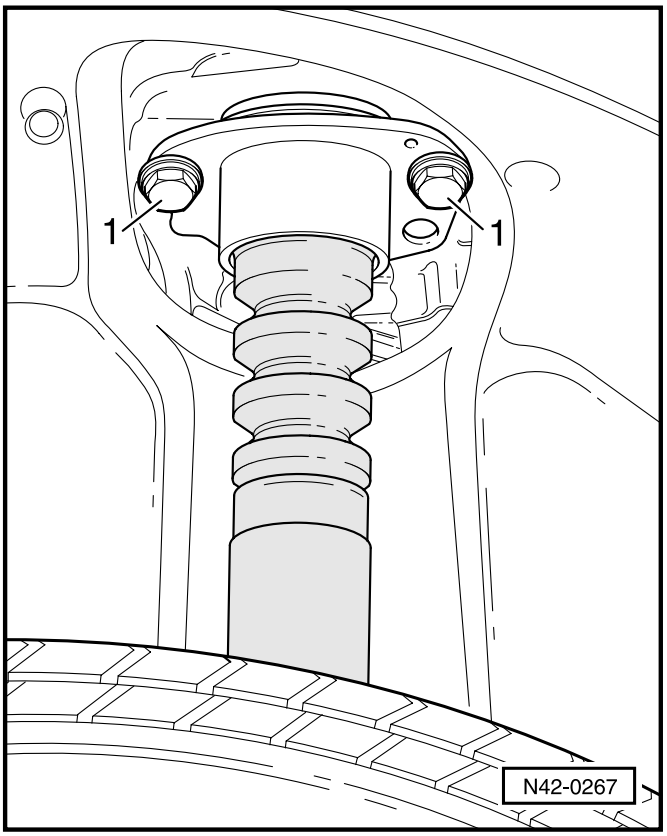
Special tools, testers and aids required

- Gearbox jack with attachment, e.g. V.A.G 1383 A with V.A.G 1359/2
- Brake filling and bleeding appliance, e.g. ROMESS S 15
- Sealing plug for brake line
- Brake fluid ⇒ page 00-8
- Assembly paste G 052 150 A2

Removing

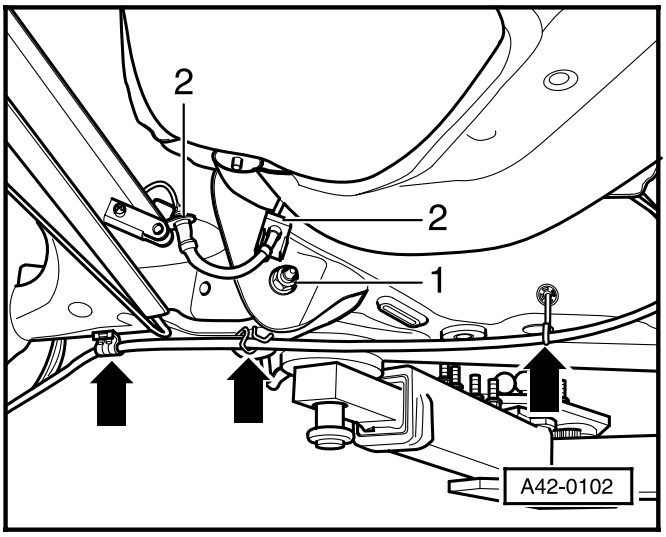
Note:

To remove the rear suspension, do not slacken bearing bracket at the body otherwise it is necessary to check the total wheel toe of the rear suspension and to align if necessary.



◄- Remove bolts -1- with vehicle standing on its wheels. Jack up vehicle sufficiently, if necessary, until the bolts are accessible.

- Jack up vehicle to fitting height in order to take the load off the coil spring.
- Take off wheels.
- Release handbrake.



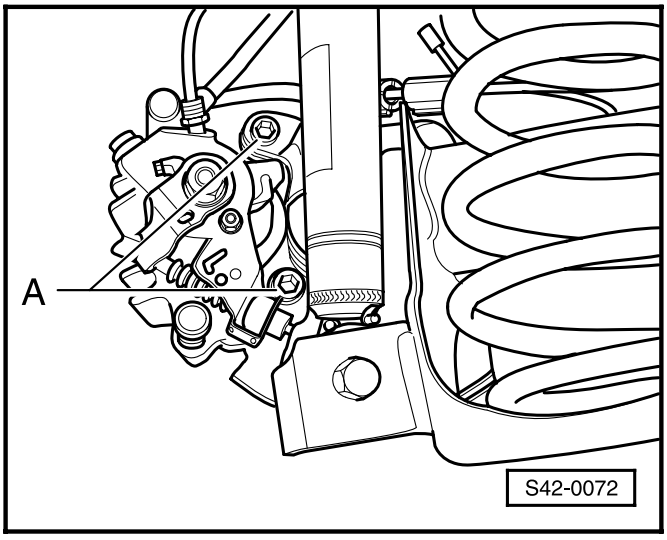
◄- Unclip brake cables -arrows-.

- Detach clips -2- of brake hose fixture.

- Separate brake lines.

Note:

Seal lines with plugs.

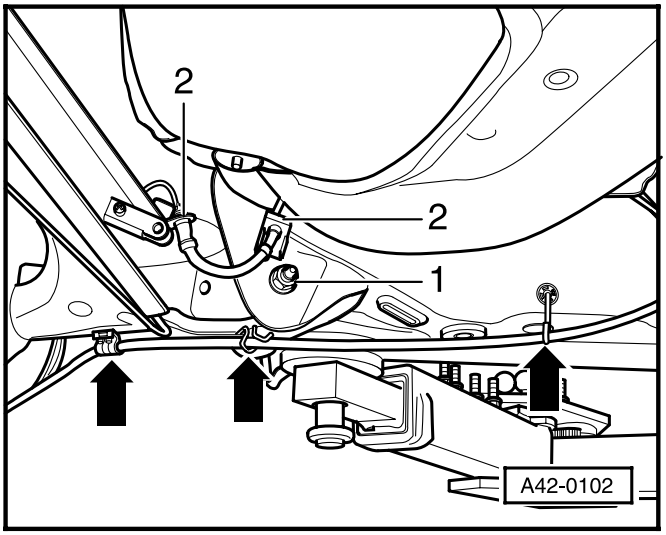


◄- Unscrew bolts -A- attaching brake caliper housing and attach brake caliper housing to body with a wire.

- Unplug connectors of the wheel speed sensors.

- Unclip cable for wheel speed sensor from the fixture.

- Support rear axle with gearbox lifter and adapter, e.g. V.A.G 1383 A with V.A.G 1359/2.



◄- Unscrew hexagon bolts -1- of the bonded rubber bush and lower rear axle.

Installing

- Before inserting the rear axle, grease the kidney-shaped cavities of the bonded rubber bushes with assembly paste G 052 150 A2.

Installation is carried out in the reverse order.

Notes:

- *When tightening the hexagon bolt of the bonded rubber bush, the axle beam must be in the horizontal position (unladen weight condition).*
- *When installing the handbrake cables, pay attention to Fitting location ⇒ page 46-18.*

- Bleed brake system ⇒ from page 47-18.

After completing installation, it is necessary to check the position of the steering wheel during a road test.

If the steering wheel is not straight, carry out a check of the wheel alignment!

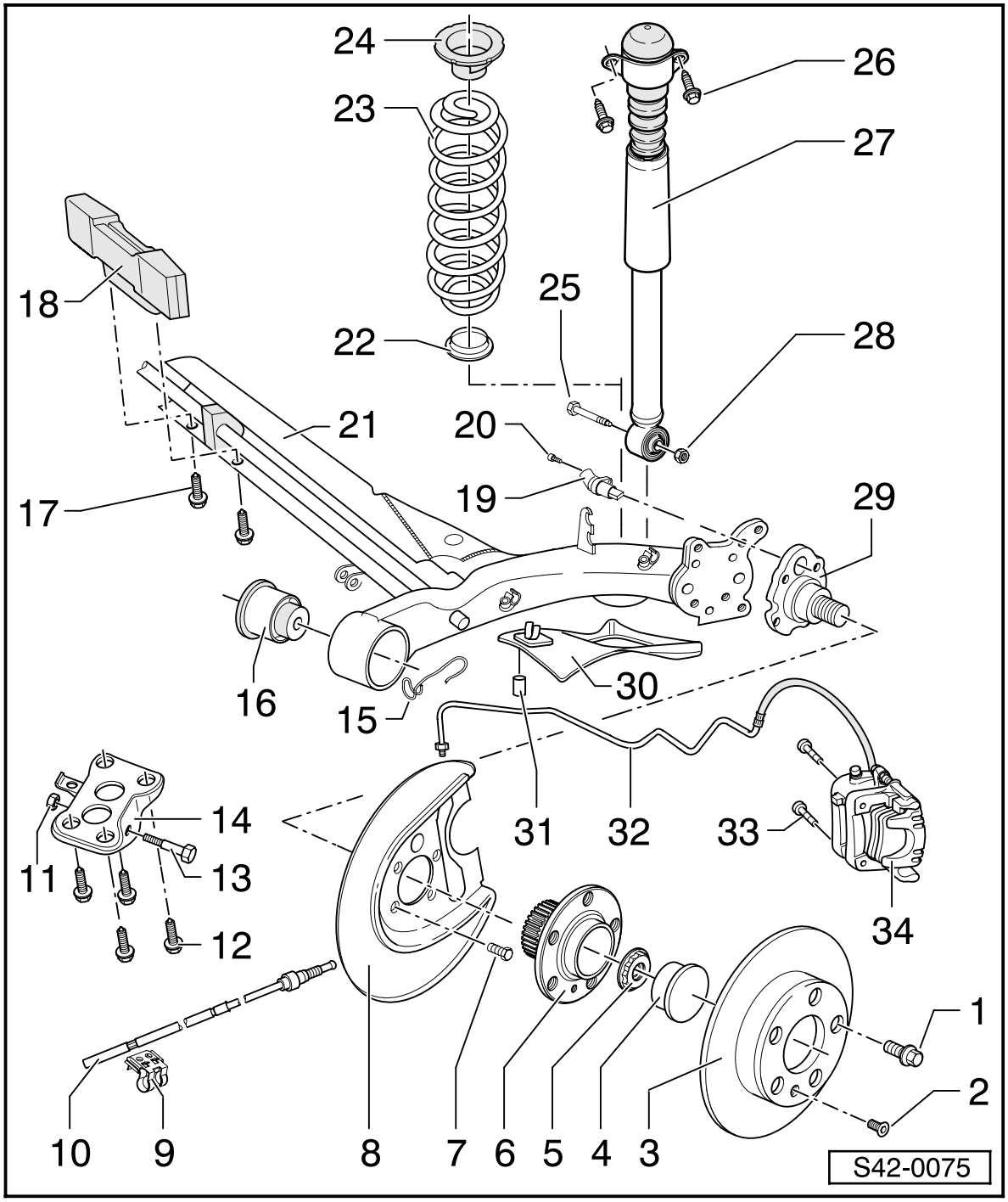
Note:

After slackening or replacing the bearing bracket, check total wheel toe of rear axle, and align if necessary.

Tightening torques:

Shock absorber to body **Use new bolts!**	30 Nm + 90°
Rear axle to bearing bracket **Use new nuts and bolts!**	45 Nm + 90°
Bolts attaching brake lines	14 Nm

Summary of components of rear axle



Notes:

- *Welding and straightening on axle body and axle studs not allowed.*
- *Always replace the self-locking nuts and screws.*
- *Tighten pipe screws of the brake lines to 14 Nm.*

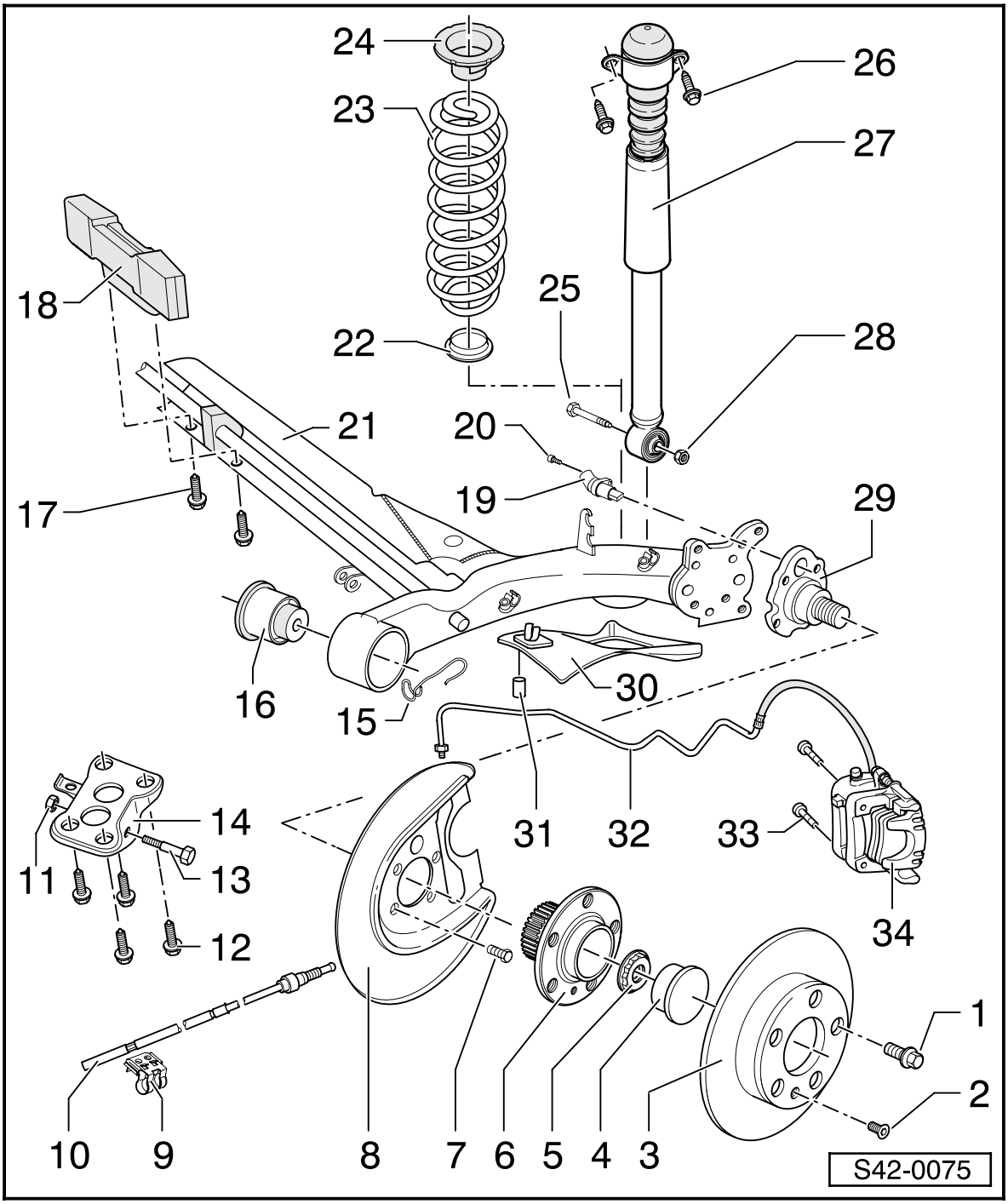
1 - Wheel bolt, 120 Nm

2 - Screw, 4 Nm

3 - Brake disc

4 - Cap
- replace after each removal
- pressing off ⇒ page 42-29, Fig. 1 and 2
- inserting ⇒ page 42-31, Fig. 8

5 - Self-locking twelve-point nut, 70 Nm and tighten a further 40°
- replace after each removal



6 - Wheel hub with wheel bearing and pulse rotor
- Only on models with ABS
- Wheel bearing and wheel hub are installed together in a housing
- This wheel bearing/wheel hub unit requires no maintenance and is free of play. It is not possible to carry out any setting or servicing work!
- Removing and installing ⇒ from page 42-28
- Always replace complete

7 - Bolt + washer, 30 Nm and torque a further 45°
- Replace each time removed

8 - Splash guard

9 - Bracket for handbrake cable
- Replace

10 - Handbrake cable

11 - Hexagon nut, self-locking
- Replace each time removed

12 - Hexagon bolt, self-locking, 30 Nm and torque a further 90°
- Replace each time removed
- If thread of welded nut is damaged, thread can be repaired with Heli-Coil threaded insert. Pay attention to manufacturer's instructions.
- Reworking of thread of welded nut is permissible at not more than 2 bolted connection points on each side of vehicle.

13 - Hexagon bolt, 40 Nm and torque a further 90°
- Replace each time removed
- Insert from outside of vehicle
- When tightening hexagon bolt, axle beam should be horizontal (unladen weight condition)

14 - Bearing bracket for rear axle
- After installing, inspect total wheel toe of rear axle, and align if necessary
- Do not slacken if possible for removing rear axle

15 - Bracket for handbrake cable

16 - Bonded rubber bush
- Removing and installing ⇒ page 42-18

17 - Hexagon bolt, 20 Nm and torque a further 45°
- Replace each time removed

18 - Balancing weight

19 - ABS wheel speed sensor
- Only on models with ABS

20 - Hexagon socket bolt, 8 Nm

21 - Axle beam
- Contact surface and threaded holes for axle journal must be free of paint and dirt

22 - Bottom base

23 - Coil spring
- Removing and installing ⇒ page 42-21
- Inspect for paint damage, touch up any paint damage
- Assigning ⇒ Parts List
- Always replace on both sides of axle
- Fit only coil springs of same manufacturer to rear axle

24 - Top base
- Installing ⇒ Notes, page 42-21

25 - Hexagon bolt, 60 Nm
- Replace each time removed
- Insert from inside of vehicle
- When tightening, pay attention to installation angle of rear axle to shock absorber ⇒ Fig. 1
- Tighten hexagon bolt when vehicle standing on its wheels and load of about 100 kg in boot

26 - Hexagon bolt, self-locking, 30 Nm and torque a further 90°
- Replace each time removed
- If thread of welded nut is damaged, thread can be repaired with Heli-Coil threaded insert. Pay attention to manufacturer's instructions.
- Reworking of thread of welded nut is permissible at not more than 1 bolted connection points on each side of vehicle.

27 - Shock absorber
- Can be replaced individually
- Removing and installing ⇒ page 42-21
- Assigning ⇒ Parts List
- Disposal ⇒ page 40-31
- Inspecting shock absorber ⇒ page 40-28
- Fit only shock absorbers of same make to rear axle

Note:

No provision made for servicing shock absorbers.

28 - Hexagon nut, self-locking,
- Replace each time removed

29 - Axle stub
- No straightening work permitted!
- It is not permitted to re-tap thread.

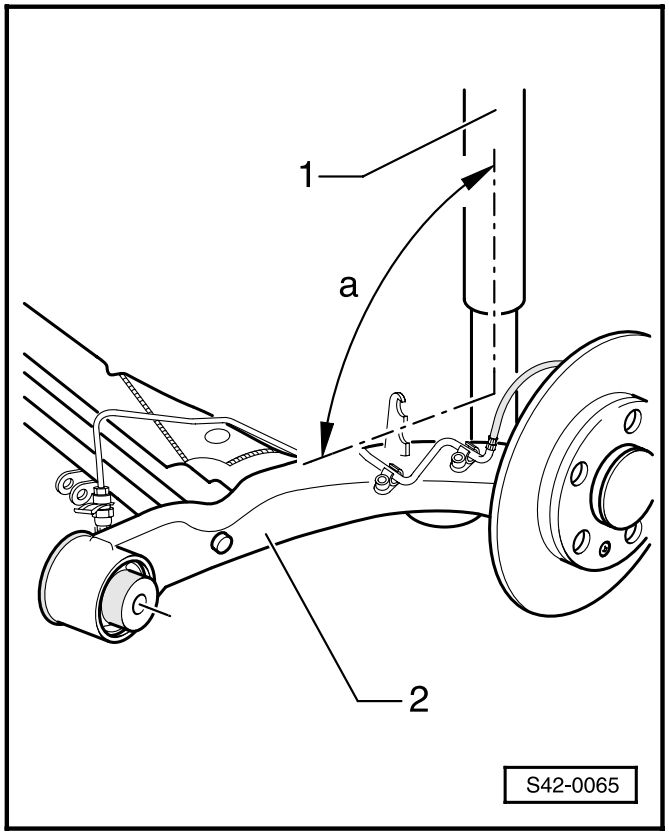
30 - Stone chip guard

31 - Element for attaching stone chip guard
- Included in parts supplied with stone chip guard

32 - Brake line

33 - Hexagon socket bolt, 30 Nm and torque a further 30°
- Replace each time removed

34 - Brake caliper
- Servicing ⇒ from page 47-11



◄ **Fig. 1 Installation angle of rear axle/shock absorber**

1 - Shock absorber

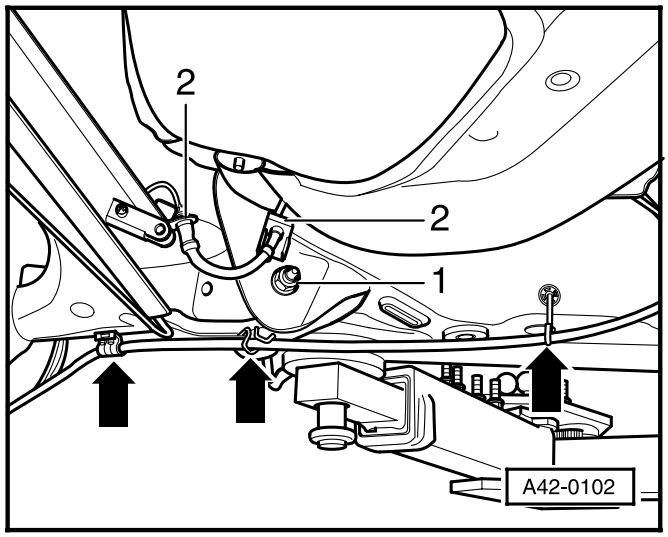
2 - Track control arm

α - approx. 104°

Removing and installing bonded rubber bush

Special tools, testers and aids required

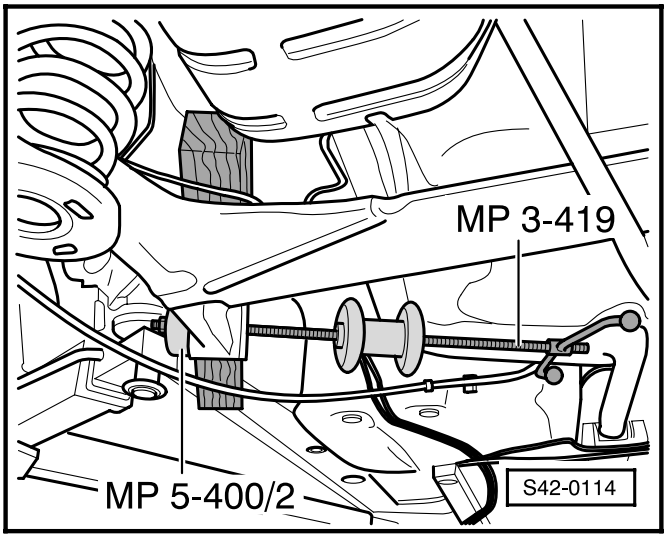
- Universal tool MP 3-419
- Thrust piece MP 5-400/1
- Thrust piece MP 5-400/2
- Supporting tube MP 5-400/3
- Installation device MP 5-401



Removing

◄ - Unclip brake cables -arrows-.

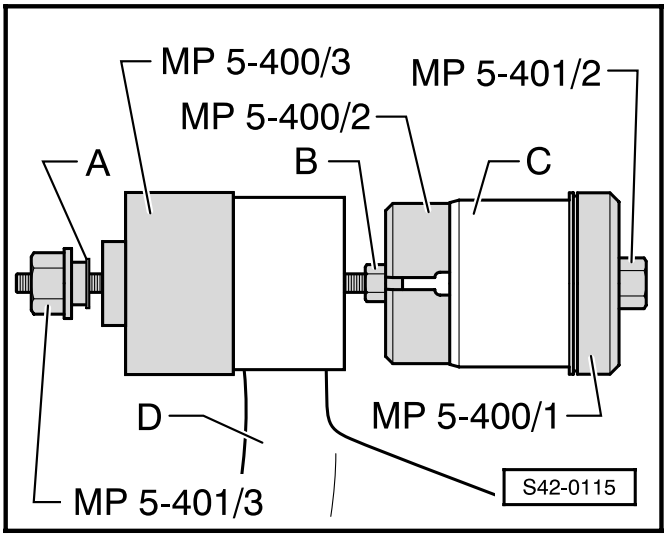
- Detach clips -2- of brake hose fixture.
- Unscrew hexagon bolt -1- of bonded rubber bush at both track control arms.



Note:

Place a soft block of wood of about 10 cm between axle beam and body in order to be able to fit on the special tool.

◄- Insert special tool and knock bonded rubber bush out of axle beam.



Installing

◄- Use special tool to pretension bonded rubber bush -C- and insert into the bearing seat of the axle beam -D-.

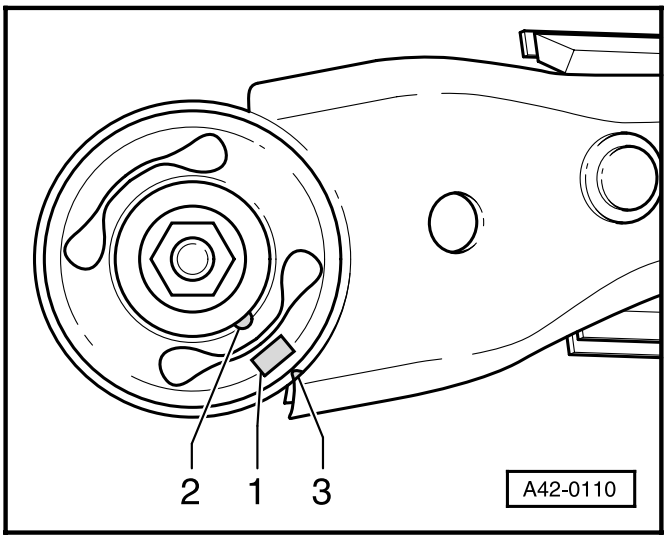
A - Washer of installation device MP 5-401

B - Hexagon nut of installation device MP 5-401

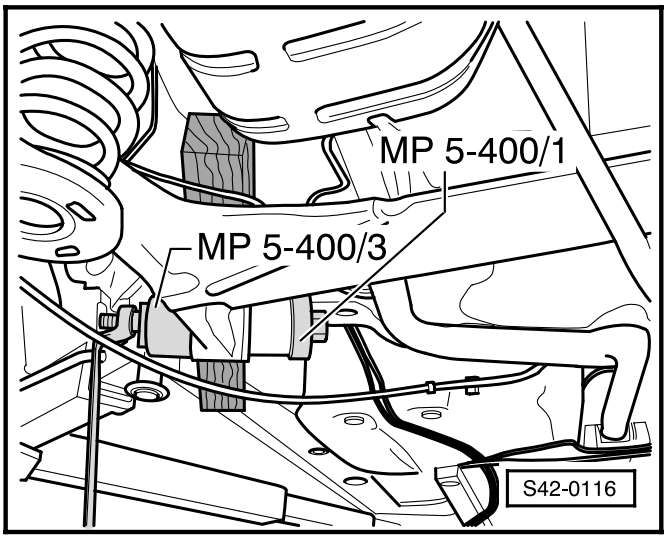
- Pay attention to installation position before drawing in ⇒ Fig. A42-0110, page 42-19.

Note:

♦ *It is essential to install the bonded rubber bush in the specified position in the rear axle beam otherwise this will result in a deterioration in the handling of the car when cornering.*



◄- Align orientation studs -1- and orientation bead -2- to edge of track control arm -3-.

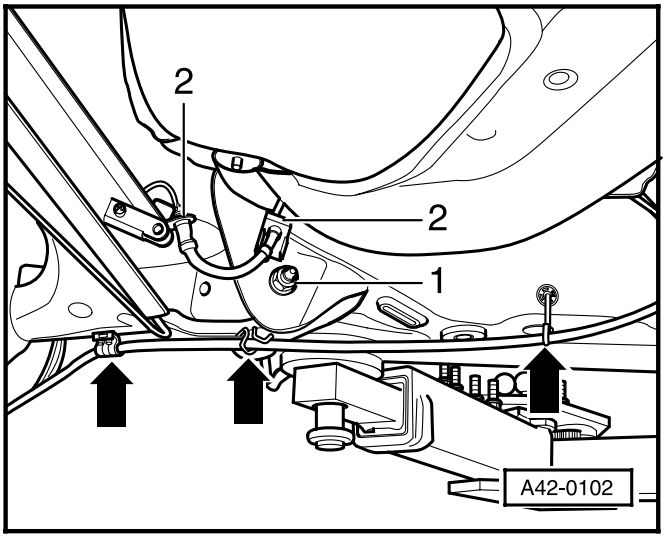


◄- Insert bonded rubber bush into axle beam and then draw in as shown in the illustration.

- Inspect Fitting location ⇒ Fig. A42-0110, page 42-19.

- Remove soft wooden block between axle beam and body.

- Insert axle beam with bonded rubber bush into bearing bracket.



◄- Insert hexagon bolt into the bearing bracket/ bonded rubber bush from the outside of the vehicle, screw on hexagon nut -1- and tighten fully.

Tightening torque: 45 Nm + torque a further 90°

Note:

When tightening the hexagon bolt of the bonded rubber bush, the axle beam must be in horizontal position (unladen weight condition).

- Push on clips -2- of brake hose fixture.

Note:

When installing the handbrake cables, pay attention to Fitting location ⇒ page 46-18.

- Clip brake cables into place -arrows-.

- Fit on wheels and lower vehicle.

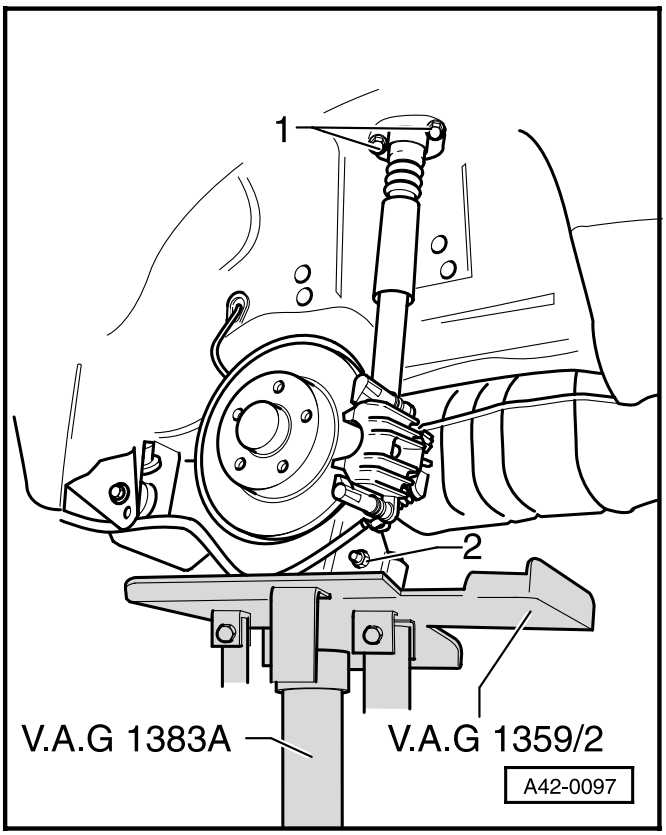
Removing and installing shock absorber/spring

Special tools, testers and aids required

- Gearbox lifter with adapter, e.g. V.A.G 1383 A with V.A.G 1359/2

Notes:

- *It is not necessary to take out the coil spring in order to remove the shock absorber.*
- *It is not necessary to take out the shock absorber in order to remove the coil spring.*



Removing shock absorber

- Take off wheel trim or pull off cap on light-alloy wheels (hook for removing cap included in car tool kit).
- Take off wheel and raise vehicle.

◄ - Unscrew bolts -1- and -2- and take out shock absorber.

Removing spring

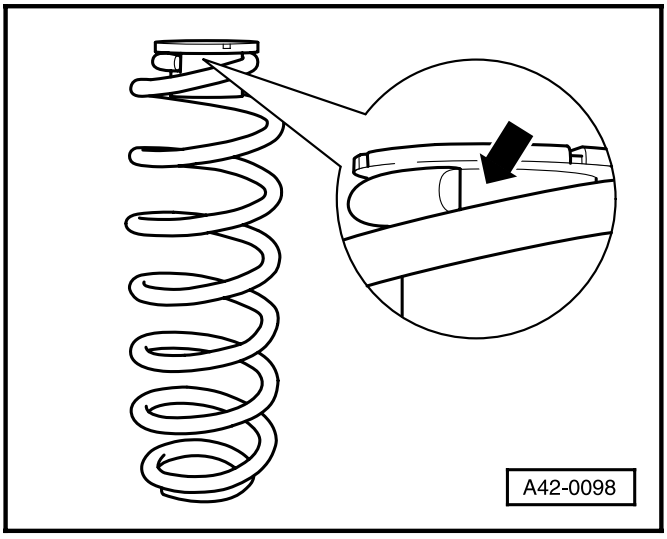
- Take off wheel trim or pull off cap on light-alloy wheels (hook for removing cap included in car tool kit).
- Take off wheel and raise vehicle.
- Separate plug connection of wheel speed sensor cable.
- Unscrew bolt -2-.
- Lower gearbox lifter and take out spring.

Installing

Installation is carried out in the reverse order.

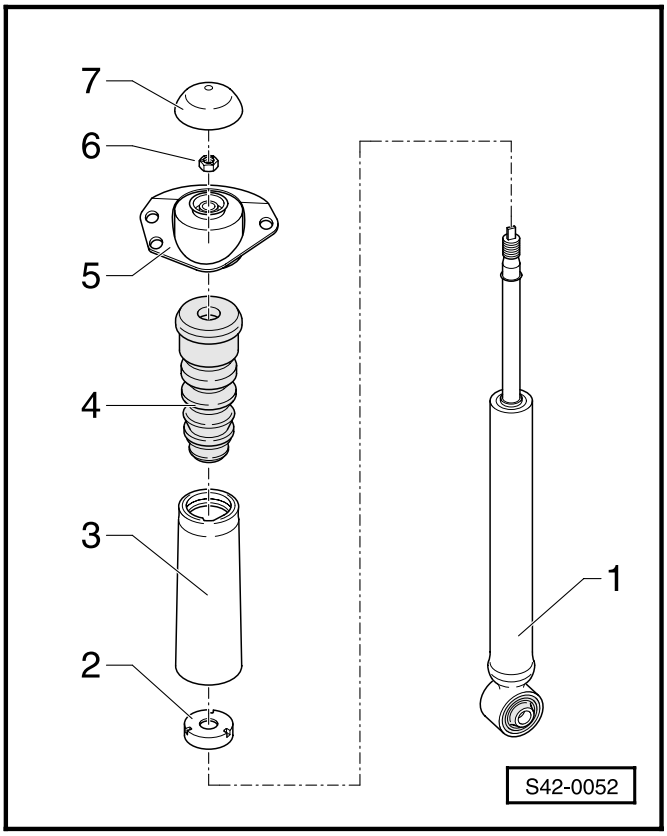
Notes:

- *Ensure that the top base (rubber) for the spring is correctly inserted when placing into the mount of the body.*
- *Pay attention to the correct colour coding.*
- *The start of the coil at the bottom must always point toward the middle of the vehicle.*



◄ - Start of spring -arrow- must be positioned at the stop of the bottom base.

Disassembling and assembling shock absorber



1 - Shock absorber
- Can be replaced individually
- Removing and installing ⇒ page 42-21
- Assigning ⇒ Parts List
- Disposing ⇒ page 40-31
- Inspecting shock absorber ⇒ page 40-28

Note:

Shock absorbers must not be disassembled or repaired.

2 - Protective cap

3 - Protective tube

4 - Bump stop

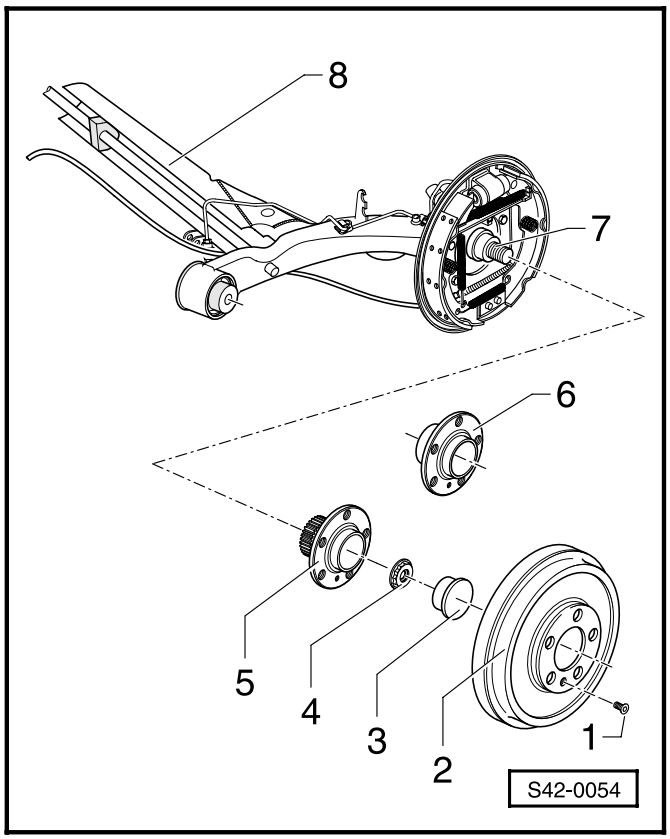
5 - Top shock absorber bearing

6 - Self-locking hexagon nut, 25 Nm
- Replace each time removed
- Counterhold at the piston rod of the shock absorber for slackening and tightening the hexagon nut

7 - Cover

Repairing the wheel bearing

Repairing the wheel bearing, vehicles with front-wheel-drive vehicles - drum brakes



Special tools, testers and aids required

- Drive bushing MP 3-427
- Assembly device MP 5-403
- Hub cover puller MP 5-404
- Puller Kukko 20/2
- Puller Kukko 204/1

1 - Screw, 4 Nm

2 - Brake drum
- reset brake before removing the brake drum ⇒ Fig. 1

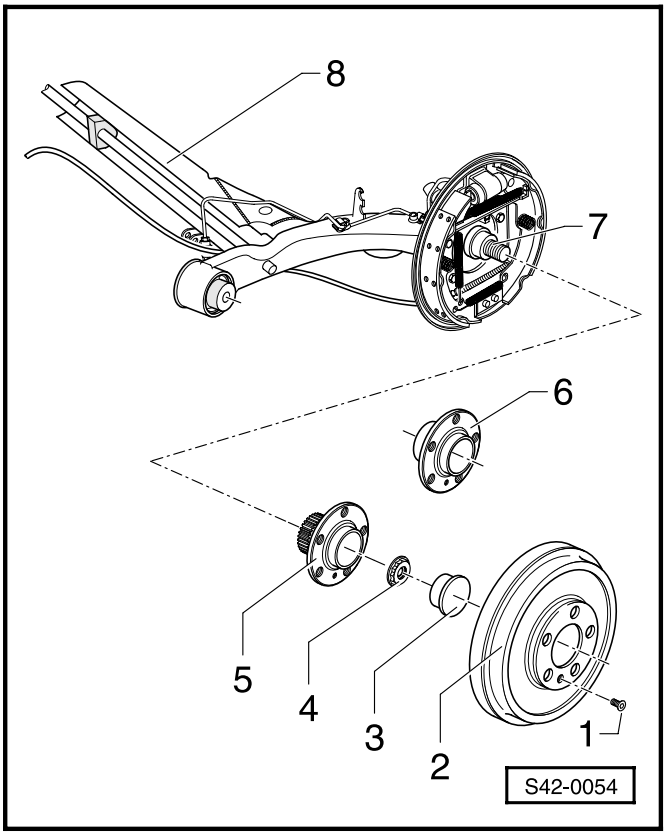
3 - Cap
- replace after each removal
- pressing off ⇒ Fig. 2 and 3
- inserting ⇒ Fig. 8

4 - Self-locking twelve-point nut, 175 Nm
- replace after each removal

5 - Wheel hub with wheel bearing and pulse rotor
- only on vehicles with ABS
- wheel hub and wheel bearing are fitted together in one housing
- the wheel hub and the wheel bearing are a single unit; it does not need servicing and is free of play; it is not possible to undertake any kind of adjustment or repair work on it
- replace completely after each removal
- Remove wheel hub with wheel bearing from axle stud ⇒ Fig. 4
- Pull the wheel hub with wheel bearing onto the axle stud ⇒ Fig. 6 and 7

Notes:

- *After pulling off the wheel hub with the wheel bearing, the inner ring of the bearing remains on the axle stud, then pull off the old inner ring of the bearing before pressing on the new wheel hub with wheel bearing ⇒ Fig. 5.*
- *The inner ring of the bearing is a component part of the new wheel hub with wheel bearing and is therefore not pressed on separately.*



6 - Wheel hub with wheel bearing without pulse rotor

- Only on models without ABS
- Wheel bearing and wheel hub are installed together in a housing
- This wheel bearing/wheel hub unit requires no maintenance and is free of play. It is not possible to carry out setting or repair work!
- Replace complete each time removed
- Pulling wheel hub and bearing off axle end ⇒ Fig. 4

Notes:

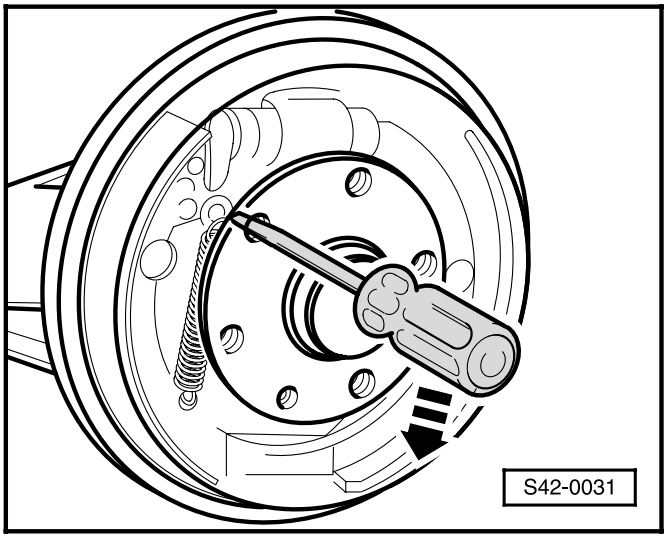
⇒ *Item 5*

- Fitting wheel hub and bearing onto axle end ⇒ Figs. 6 and 7

7 - Axle end

- It is not permitted to carry out straightening work
- It is not permitted to re-tap the thread

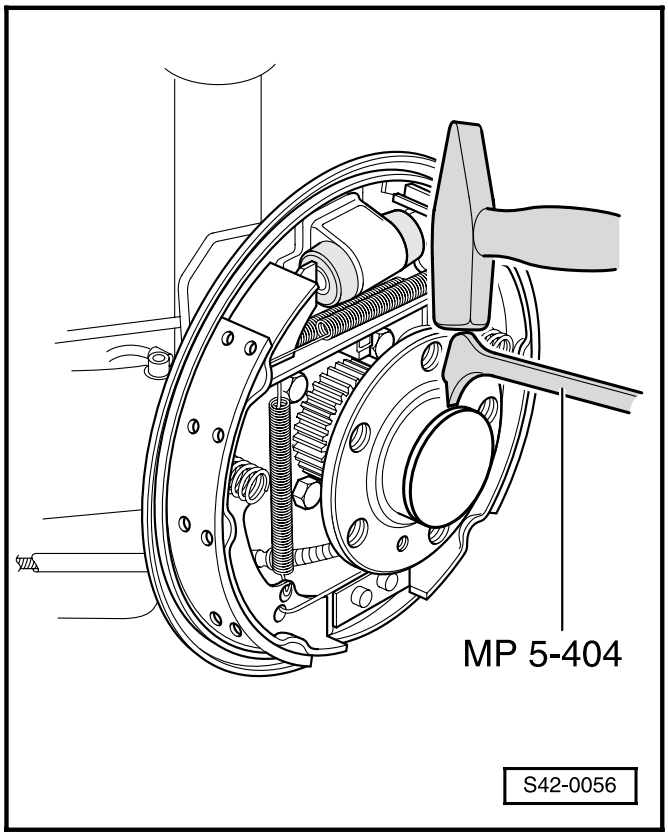
8 - Axle beam



◄ **Fig. 1 Moving back brake**

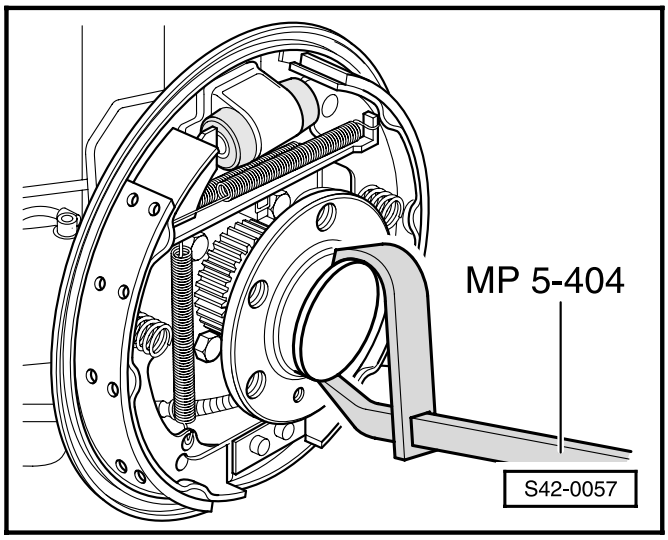
- To do this, insert the screwdriver through a hole in the brake drum and push the wedge up.

- Removing brake drum ⇒ page 46-6, Removing and installing rear brakes.

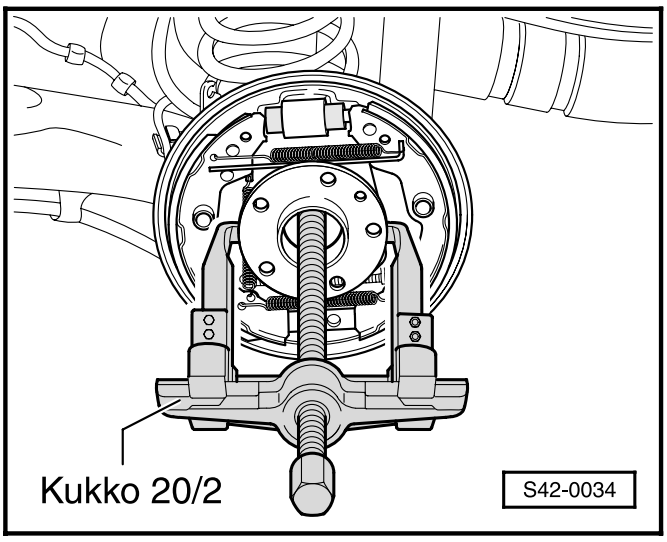


◄ **Fig. 2 Pressing off cap**

- Detach cap from its seat by striking with light blows on the claw.

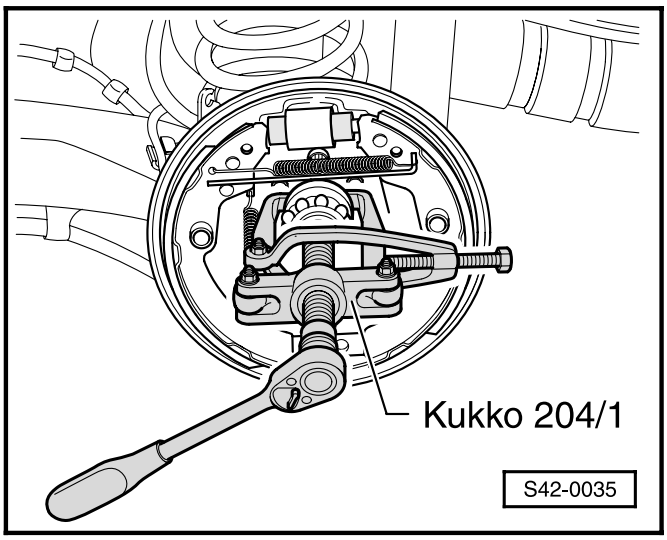


◄ **Fig. 3 Pressing off cap**



◄ **Fig. 4 Pulling wheel hub and wheel bearing off axle end**

Use a commercially available puller, e.g. Kukko 20/2.

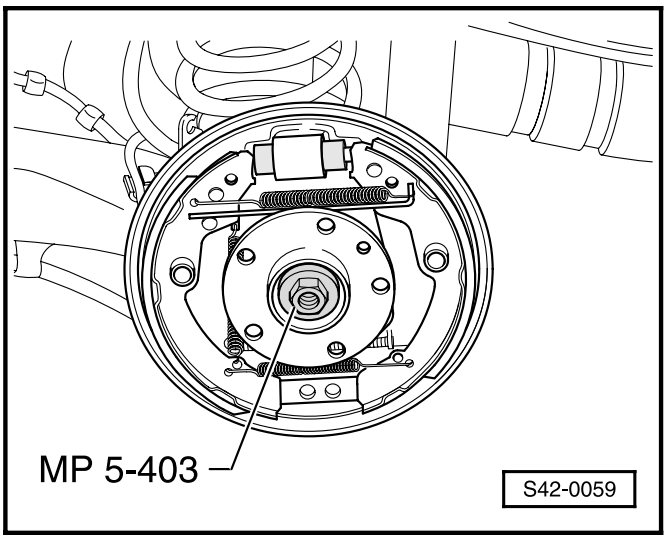


◄ **Fig. 5 Pulling bearing inner race off axle end**

Use a commercially available puller, e.g. Kukko 204/1.

Note:

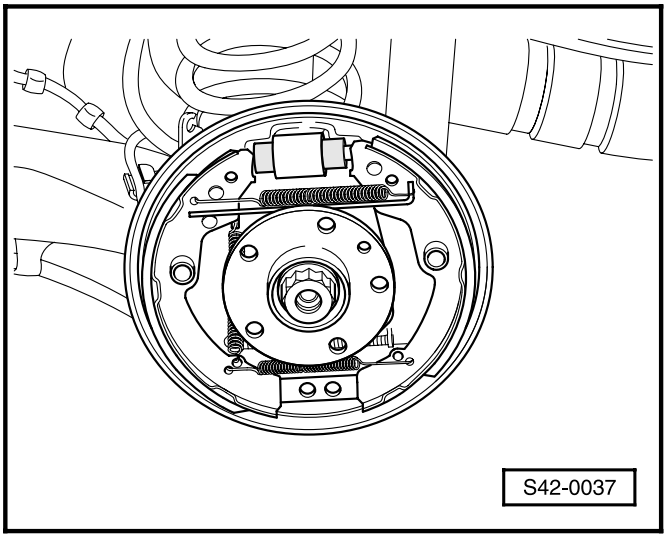
Do not damage the ABS sensor when pulling out the bearing inner race.



◄ **Fig. 6 Fitting wheel hub and wheel bearing onto axle end**

Use special tool MP 5-403.

- Fit wheel hub and wheel bearing as far as possible onto axle end.
- Screw on special tool MP 5-403 and pull on wheel hub and wheel bearing as far as the stop.

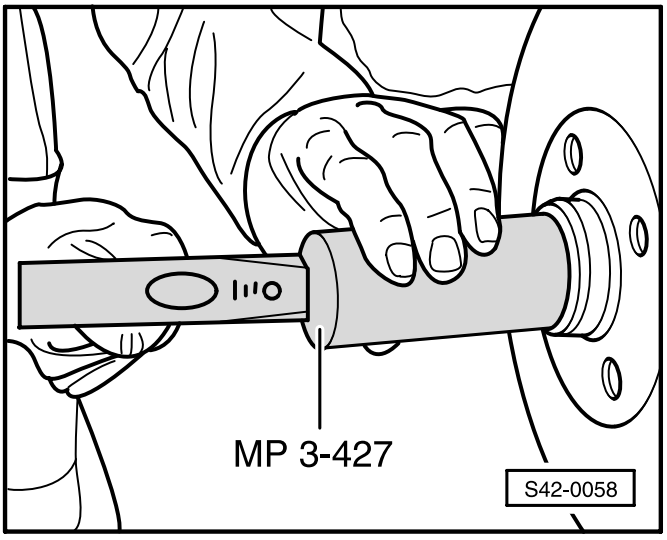


◄ **Fig. 7 Fitting wheel hub with wheel bearing onto axle stub**

- Remove special tool MP 5-403 and screw on new twelve-point collar nut and tighten fully.

  Tightening torque: 70 Nm + torque a further 40°

- Install brake drum ⇒ page 46-6, Removing and installing rear brakes.

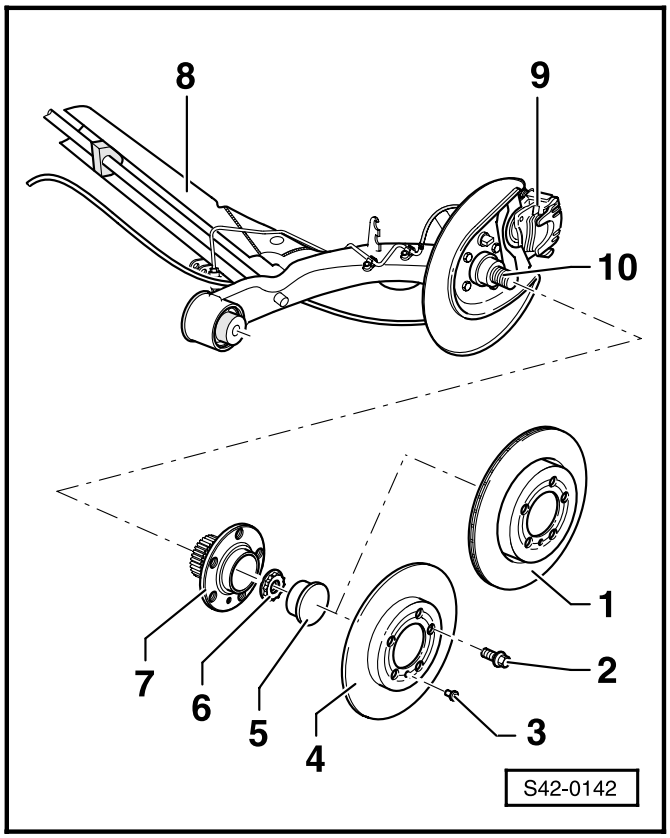


◄ **Fig. 8 Knocking in cap**

Notes:

- *Replace cap each time removed.*
- *If a cap is damaged, this allows moisture to get in. It is therefore essential to use the tool illustrated.*

Repairing the wheel bearing - Disc brake



Special tools, testers and aids required

- Drive bushing MP 3-427
- Assembly device MP 5-403
- Hub cover puller MP 5-404
- Puller Kukko 20/2
- Puller Kukko 204/1

1 - Brake disc, internally ventilated
- assignment ⇒ electronic catalogue of original parts

2 - Wheel bolt, 120 Nm

3 - Screw, 4 Nm

4 - Brake disc
- assignment ⇒ electronic catalogue of original parts

5 - Cap
- replace after each removal
- pressing off ⇒ Fig. 1 and 2
- inserting ⇒ Fig. 8

6 - Self-locking twelve-point nut, 70 Nm and tighten a further 40°
- replace after each removal

7 - Wheel hub with wheel bearing and pulse rotor
- only on vehicles with ABS
- wheel hub and wheel bearing are fitted together in one housing
- the wheel hub and the wheel bearing are a single unit; it does not need servicing and is free of play; it is not possible to undertake any kind of adjustment or repair work on it
- replace completely after each removal
- Remove wheel hub with wheel bearing from axle stud ⇒ Fig. 4
- Pull the wheel hub with wheel bearing onto the axle stud ⇒ Fig. 6 and 7

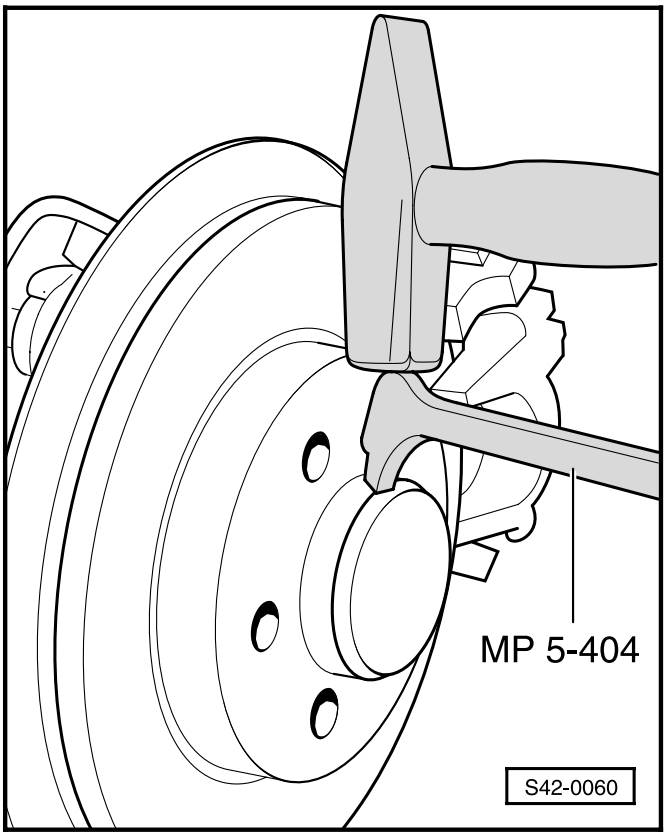
Notes:

- *After pulling off the wheel hub with the wheel bearing, the inner ring of the bearing remains on the axle stud, then pull off the old inner ring of the bearing before pressing on the new wheel hub with wheel bearing ⇒ Fig. 5.*
- *The inner ring of the bearing is a component part of the new wheel hub with wheel bearing and is therefore not pressed on separately.*

8 - Axle body
- removing and installing ⇒ page 42-12

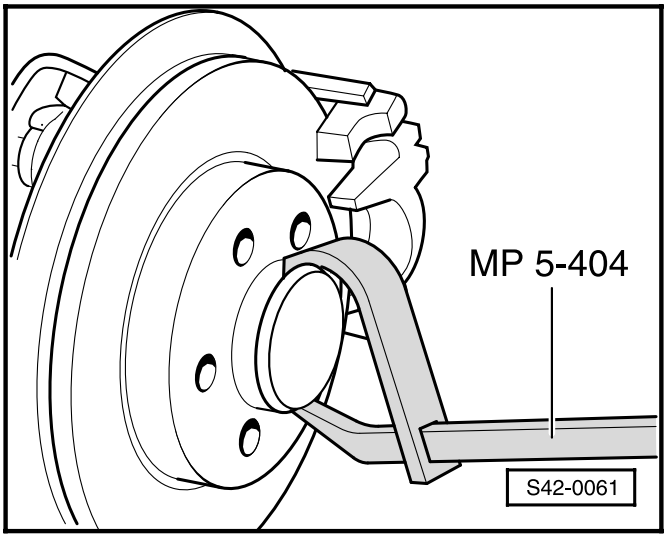
9 - Brake caliper
- removing ⇒ Fig. 3.

10 - Axle stud
- Straightening work is not allowed!
- Re-cutting the thread is not allowed.

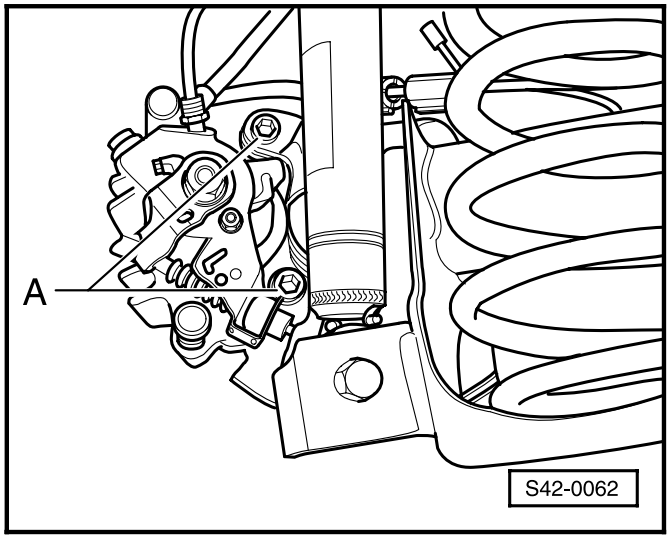


◄ **Fig. 1 Pressing off cap**

- Detach cap from the seat by applying light blows to the claw.



◄ **Fig. 2 Pressing off cap**



◀ **Fig. 6 Removing the brake caliper**

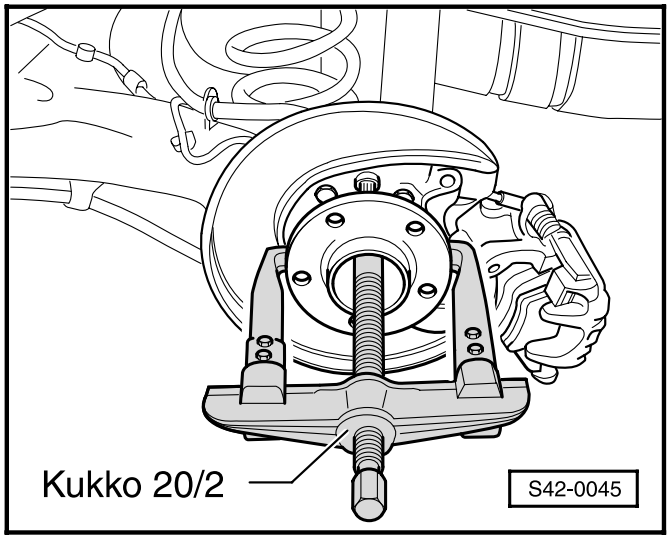
- Unscrew screws -A-, remove brake caliper and tie up with wire to the body.

Note:

Do not unscrew the brake hose to remove the brake caliper.

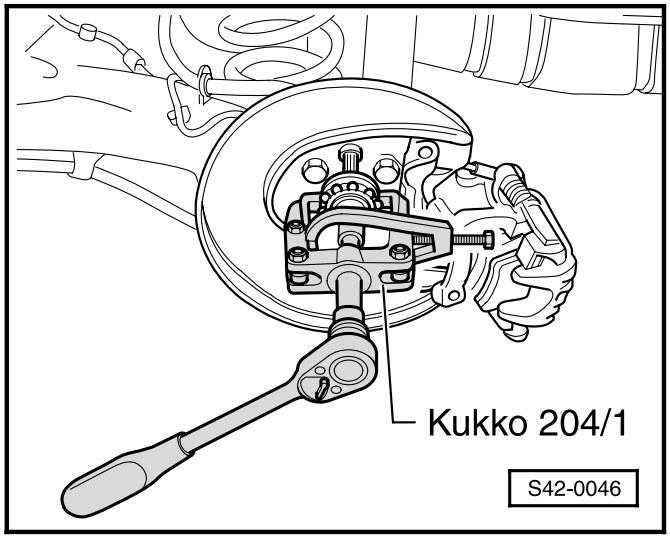
- Unscrew the fixing screws of the brake disc and remove brake disc.

- Unscrew twelve-point nut



◀ **Fig. 7 Removing wheel-bearing housing from axle stud**

Use puller (commercially available) Kukko 20/2.

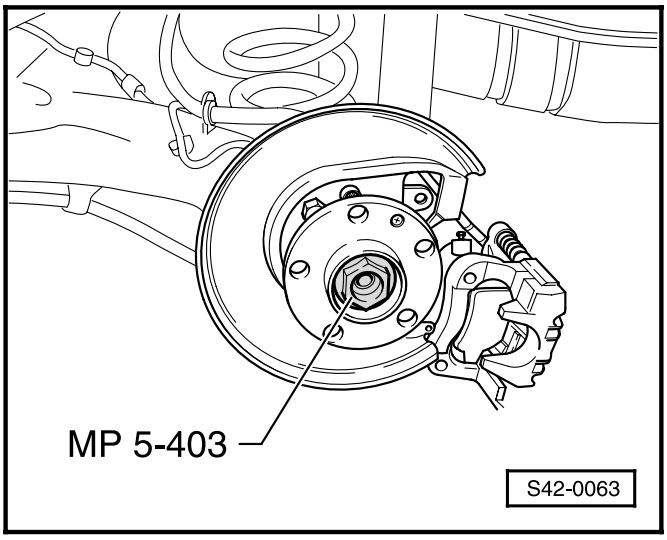


◀ **Fig. 8 Removing inner ring of the bearing from axle stud**

Use puller (commercially available) Kukko 204/1.

Note:

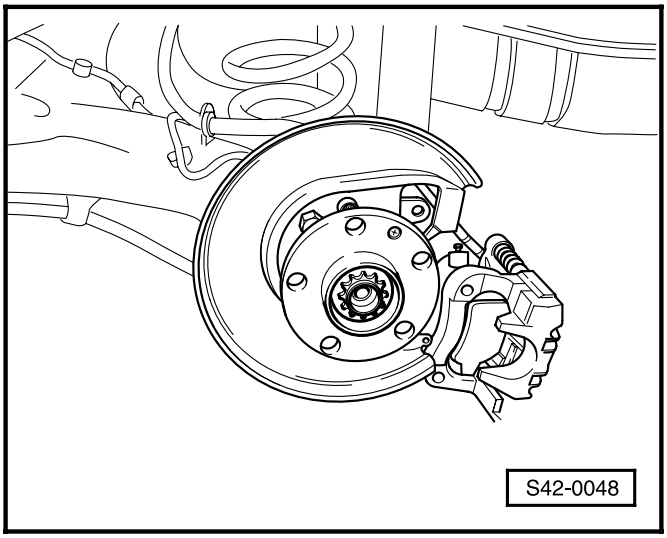
Do not damage the ABS-speed sensor when removing the inner ring of the bearing.



◄ **Fig. 6 Fitting wheel hub and wheel bearing onto axle stud**

Use special tool MP 5-403.

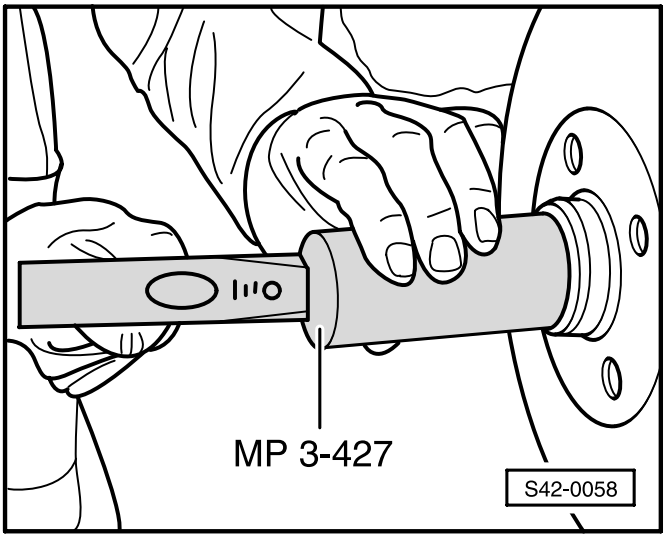
- Fit wheel hub and wheel bearing as far as possible onto axle stud.
- Screw on special tool MP 5-403 and pull on wheel hub and wheel bearing as far as the stop.



◄ **Fig. 7 Fitting wheel hub with wheel bearing onto axle stub**

- Remove special tool MP 5-403 and screw on wheel hub with twelve-point collar nut and tighten fully.

  Tightening torque: 70 Nm + torque a further 40°
- Install brake disc, insert cross-head screw and tighten to 4 Nm.



◄ **Fig. 8 Knocking in cap**

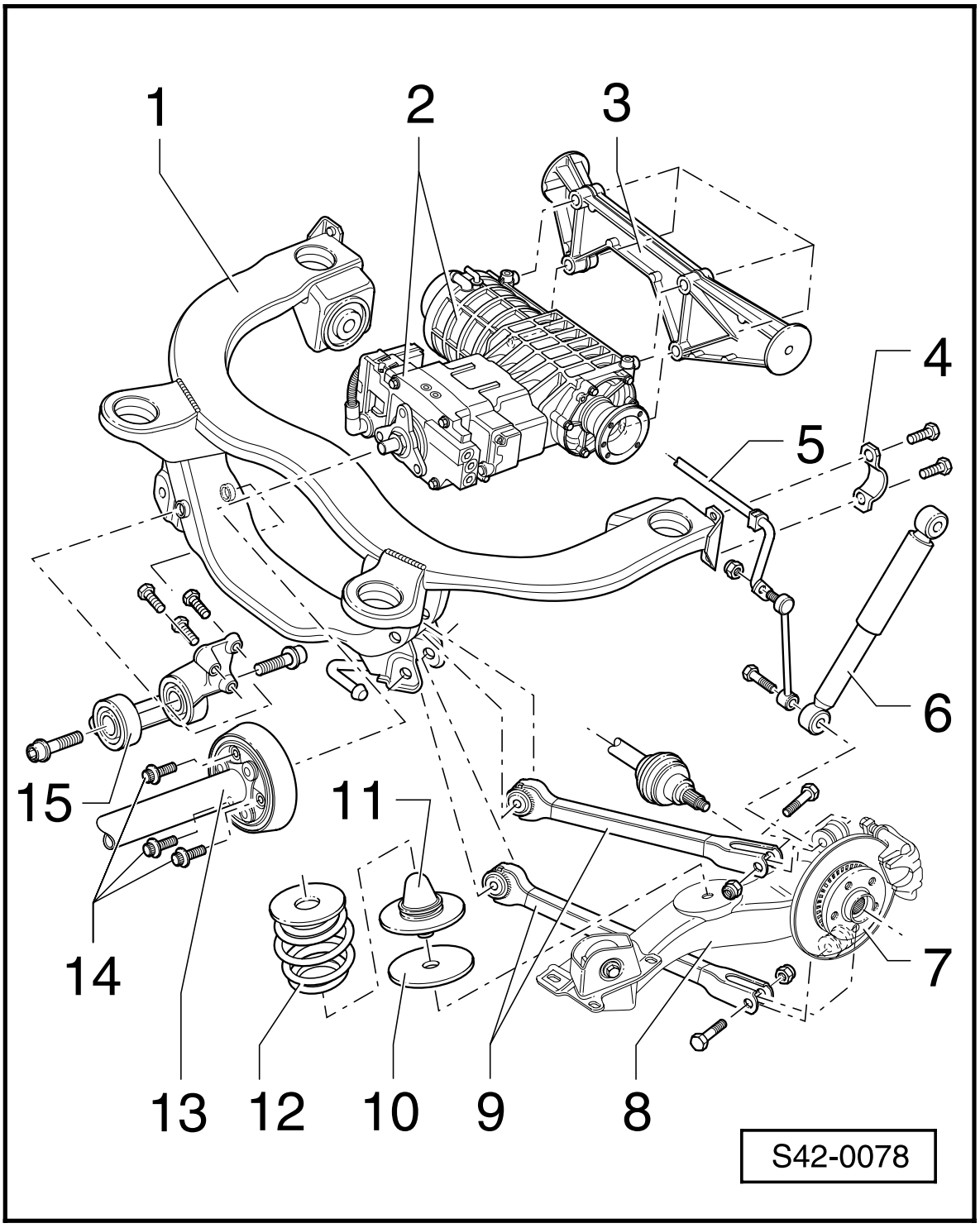
Notes:

- *Replace cap each time removed.*
- *If a cap is damaged, this allows moisture to get in. It is therefore essential to use the tool illustrated.*

- Install brake caliper and tighten hexagon socket bolts fully to 65 Nm.

Servicing rear suspension (4x4 models)

Overview of rear suspension for 4x4 models



Notes:

- *Always replace self-locking nuts and bolts.*
- *Always replace nuts and bolts which have signs of surface rust.*

1 - Subframe

- ♦ Assembly overview ⇒ page 42-60

2 - Final drive

- ♦ Removing and installing

⇒ 5-Speed Manual Gearbox 02C 4x4; Repair Group 39; Removing and installing rear final drive

- ♦ Servicing

For technical reasons it has not yet been possible to prepare the repair description. It will be published in a subsequent supplement.

At present, if any faults exist at the rear final drive, it should be replaced complete.

3 - Cross member

4 - Clamp

5 - Anti-roll bar
- ♦ if necessary eliminate paint damage and carry out protection against corrosion

6 - Pressurized shock absorber
- ♦ summary of components ⇒ page 42-33
- ♦ removing and installing ⇒ page 42-39

7 - Wheel bearing
- ♦ pressing in and out ⇒ page 42-44

8 - Trailing arm
- ♦ summary of components ⇒ page 42-41

9 - Suspension arm
- ♦ summary of components ⇒ page 42-41

10 - Spacer
- ♦ only on vehicles with rough road suspension
- ♦ on vehicles without spacer this must not be installed subsequently
- ♦ summary of components ⇒ page 42-33

11 - Stop buffer
- ♦ summary of components ⇒ page 42-33

12 - Helical spring
- ♦ summary of components ⇒ page 42-33

13 - Propshaft
- ♦ removing and installing

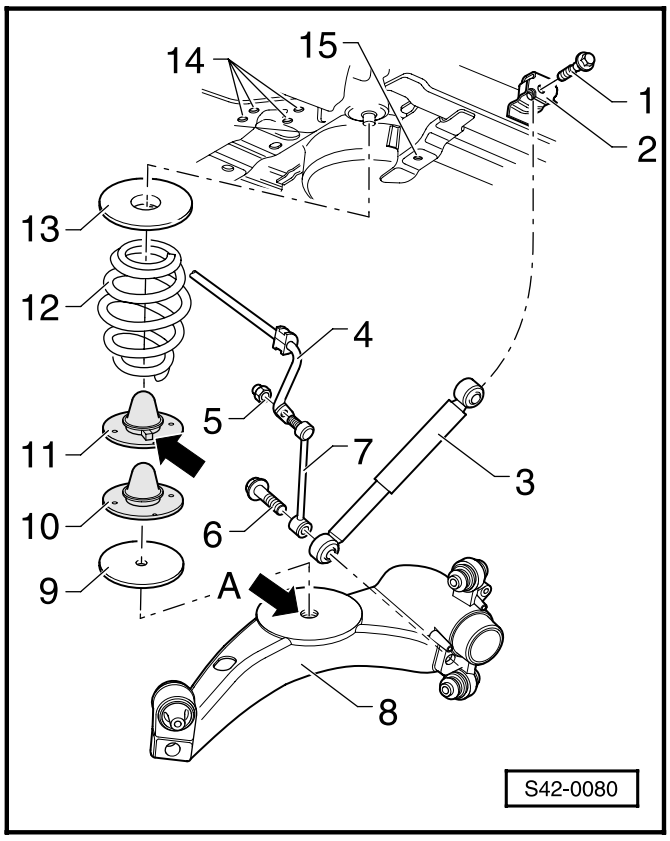
⇒ 5-speed Manual Gearbox 02C Four-wheel drive; epair Group 39; Removing and installing propshaft
- ♦ repairing

⇒ 5-speed Manual Gearbox 02C Four-wheel drive; Repair Group 39; Repairing propshaft

14 - Screw, 60 Nm

15 - Support for final drive
- ♦ summary of components ⇒ page 42-60

Summary of components - helical spring and shock absorber on vehicles with four-wheel drive



1 - Screw, 60 Nm
- ♦ replace after each removal

2 - Shock absorber bushing

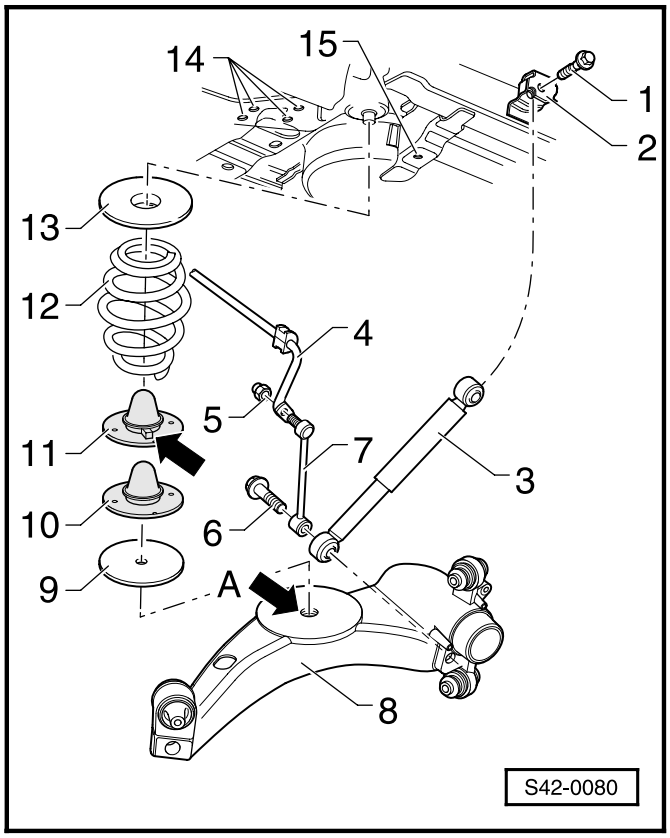
3 - Pressurized shock absorber
- ♦ removing and installing ⇒ page 42-39
- ♦ inspecting ⇒ page 40-30
- ♦ assignment ⇒ electronic catalogue of original parts
- ♦ disposing ⇒ age 40-31
- ♦ can be replaced individually
- ♦ per rear axle only use shock absorbers of the same make

4 - Anti-roll bar

5 - Nut, self-locking 25 Nm
- ♦ replace after each removal

6 - Screw 110 Nm
- ♦ M 14 x 1.5 x 90

7 - Coupling rod



8 - Trailing arm
- Thread -arrow A- for support of the stop buffer -Pos. 10- is no longer applicable as of 08.99
- in case the stop buffer -Pos. 11- is installed in the trailing arm before the manufacturing date 08.99 the thread -arrow A- is bored out to ∅ 10.5 mm

9 - Spacer
- only on vehicles with rough road suspension
- on vehicles without spacer, it must not be installed subsequently

10 - Stop buffer with threaded pin, 10 Nm
- no longer inserted as of 08.99
- stop buffer -Pos. 11- is supplied as spare part

11 - Stop buffer with positioning pin
- as of 08.99
- the correct fitting position is determined by the positioning pin
- the positioning pin must be removed on the bottom side when used for vehicles manufactured before 08.99
- the start of the spring coil must lie against the leg -arrow-
- Fitting position of helical spring ⇒ page 42-38

12 - Helical spring
- removing and installing ⇒ page 42-35
- check for paint damage, if necessary eliminate paint damage
- check colour coding
- assignment ⇒ electronic catalogue of original parts
- replace axle-wise
- per rear axle only use shock absorbers of the same make

13 - Base

14 - Thread in the frame side rail
- in the event of damage of the thread of the welded nuts in the trailing arm, the thread can be repaired with the Heli-Coil-Thread kit
- reworking the thread of the welded nuts is allowed on two permissible screw points per vehicle side
- pay attention to installation instructions of the manufacturer

15 - Thread in the cross arm
- in the event of damage of the thread of the welded nuts in the trailing arm, the thread can be repaired with the Heli-Coil-Thread kit
- pay attention to installation instructions of the manufacturer

Removing and installing coil springs

Special tools, testers and aids required

- Spring tensioning device, e.g. V.A.G 1752/1
- Spring retainer set, e.g. V.A.G 1752/15

  The spring retainer set consists of:

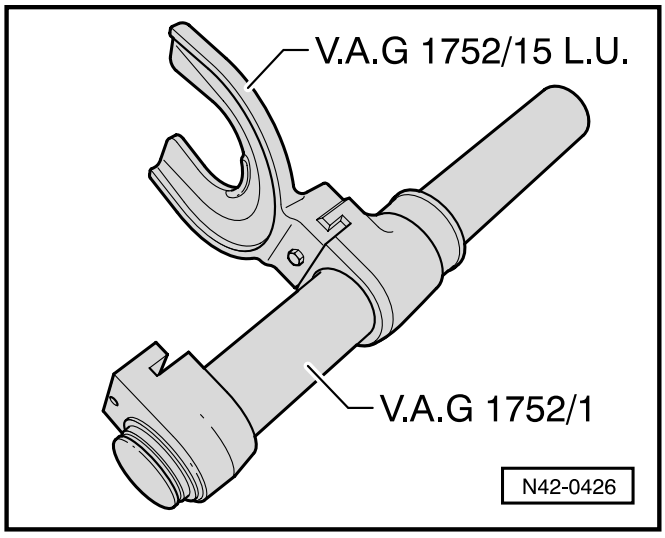
  - Spring retainer, e.g. V.A.G 1752/15 L. U. (left bottom)
  - Spring retainer, e.g. V.A.G 1752/15 L. O. (left top)
  - Spring retainer, e.g. V.A.G 1752/15 R. U. (right bottom)
  - Spring retainer, e.g. V.A.G 1752/15 R. O. (right top)

Notes:

- *The spring retainer set V.A.G 1752/15 has been specially developed for 4x4 vehicles in order to provide reliable removal and installation of the coil springs.*
- *Very high forces are produced when tensioning the coil springs. For this reason, it is important to closely observe the following safety precautions.*

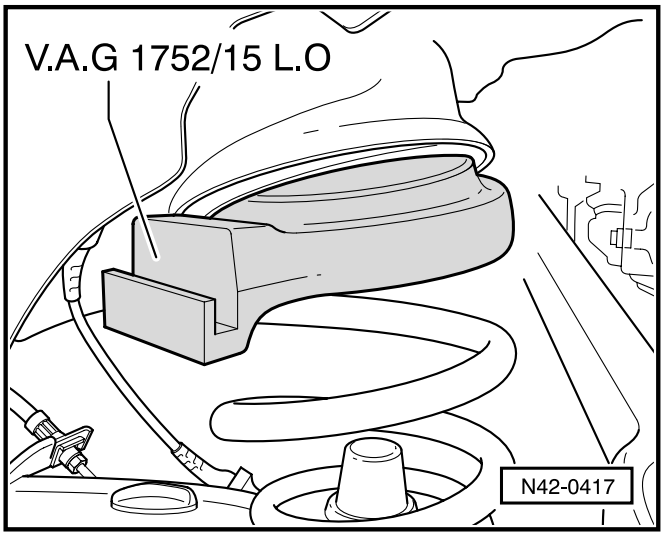
Warning!

- ***Ensure that the spring retainers are positioned as close as possible to the spring coils.***
- ***During the tensioning operation, ensure that the spring retainers are correctly located at the spring coils.***
- ***On no account use an impact screwdriver!***

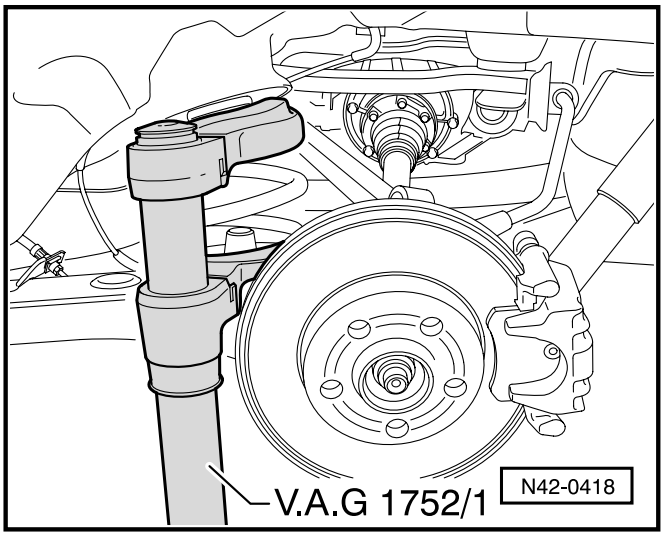


Removing left coil spring

◄- Install the spring retainer, e.g. V.A.G 1752/15 L. U. at the spring tensioning device, e.g. V.A.G 1752/1.



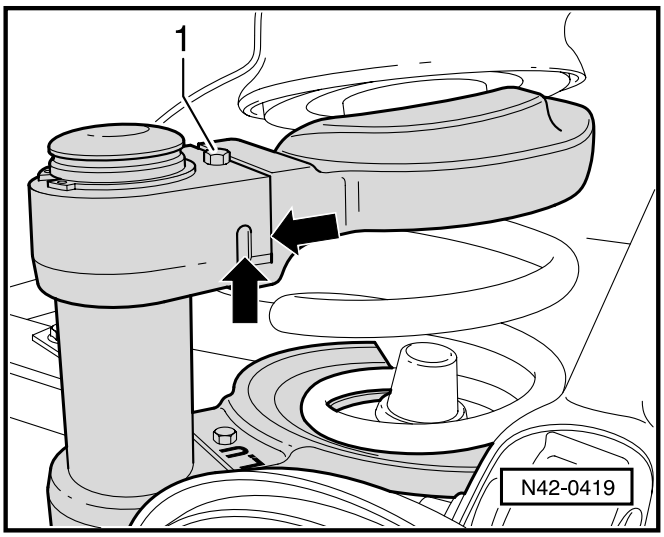
◄- Position spring retainer, e.g. V.A.G 1752/15 L. O. onto the topmost accessible spring coil.



◄- Insert the spring tensioning device, e.g. V.A.G 1752/1.

Note:

Do not use an impact screwdriver or similar for tensioning the coil spring.



◄- Turn the shaft of the spring tensioning device in a clockwise direction until the claws -arrows- of the spring tensioning device and spring retainer mesh into each other.

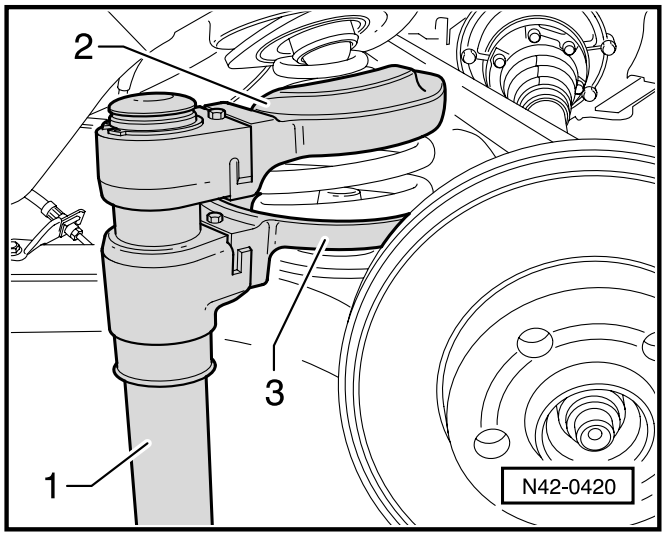
- Insert bolt -1- at the top spring retainer from below, screw on hexagon nut and tighten fully.

- Turn the shaft of the spring tensioning device until the coil spring is slightly tensioned.

- **Inspect whether spring retainers are correctly positioned at the spring coils; adjust position, if necessary.**

Note:

It is essential to end the tensioning device once the spring coils touch.



◄ - Tension coil spring sufficiently until it can be removed.

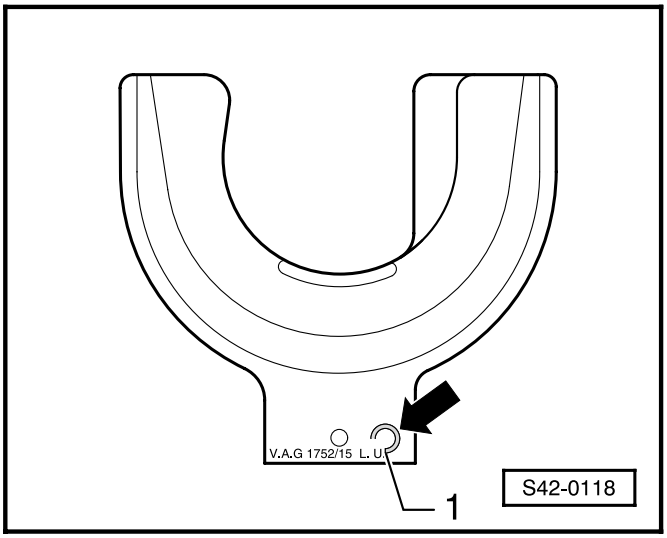
- Take the coil spring out of the vehicle together with the spring tensioning device.

- Take coil spring out of spring tensioning device.

1 - Spring tensioning device, e.g. V.A.G 1752/1

2 - Spring retainer, e.g. V.A.G 1752/15 L. O.

3 - Spring retainer, e.g. V.A.G 1752/15 L. U.



Installing left coil spring

◄ The start of the spring coil must be positioned in the spring retainer, as shown in the illustration -arrow-.

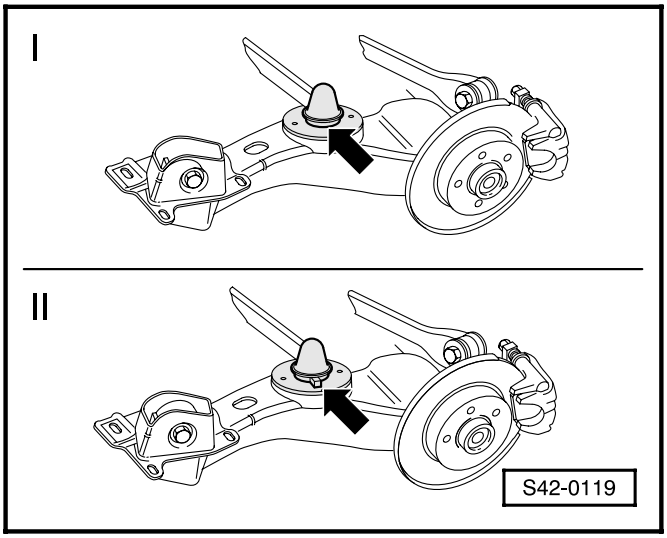
1 - Start of spring coils

- Insert coil spring into the spring tensioning device, e.g. V.A.G 1752/1, together with the spring retainers, e.g. V.A.G 1752/15 L. U. and V.A.G 1752/15 L. O., and position.

- **Inspect whether spring retainers are correctly positioned at the spring coils; adjust position, if necessary.**

Notes:

- *Do not use an impact screwdriver or similar for tensioning or slackening the coil spring.*
- *It is essential to end the tensioning device once the spring coils touch.*



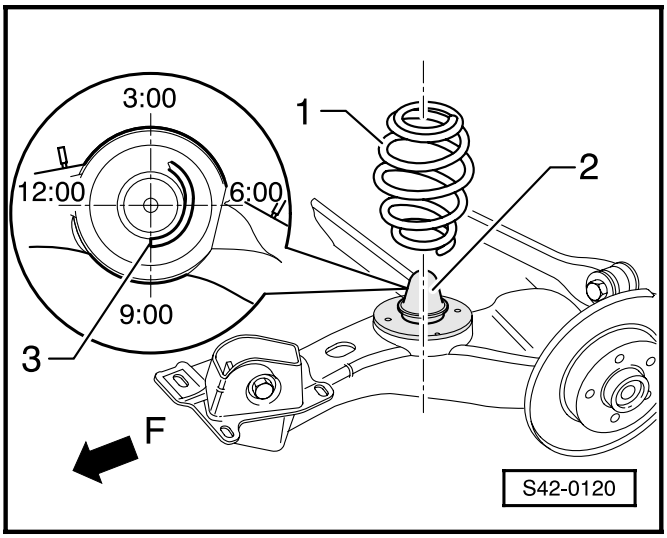
- Tension coil spring sufficiently until it can be inserted into the vehicle.

◄ - Inspect which version of bump stop is mounted on the trailing arm.

I - Bump stop without stop for coil spring -arrow-

II - Bump stop with stop for coil spring -arrow-

- Insert the coil spring with the spring tensioning device into the vehicle, paying attention to the correct installation position.



Installation position of left coil spring

◄ Models without stop on bump stop:

The start of the spring coil -3- must be in the 9 o'clock (9:00) position.

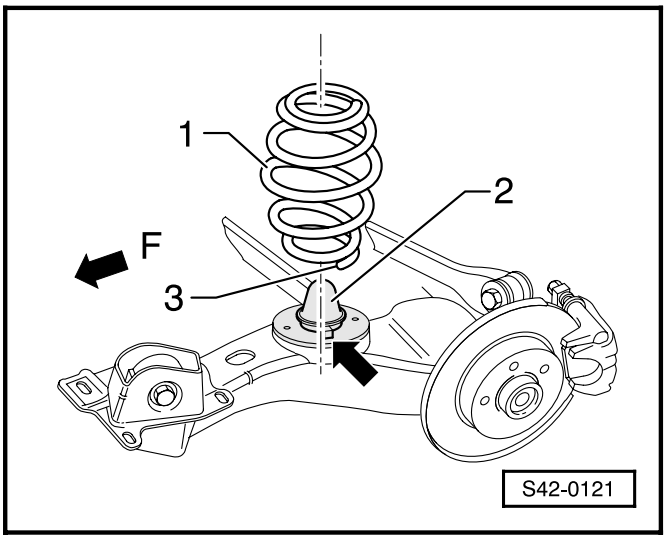
1 - Coil spring

2 - Bump stop without stop for coil spring

F - Direction of travel

Notes:

- *The theoretical line between 12 o'clock (12:00) and 6 o'clock (6:00) points parallel to the longitudinal axis of the vehicle in the direction of travel.*
- *The 9 o'clock (9:00) position for the left and right coil springs is identical.*
- *On no account install the right coil spring in a mirror image.*



◄ Models with stop at bump stop:

The start of the spring coil -3- must be positioned against the stop -arrow-.

1 - Coil spring

2 - Bump stop without stop for coil spring

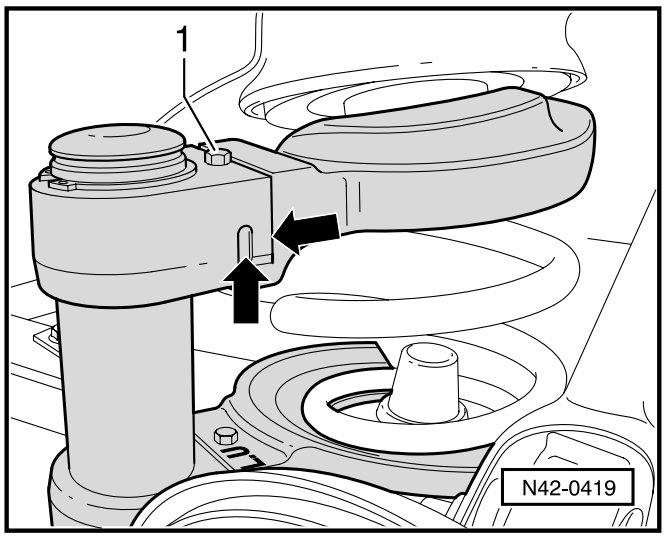
F - Direction of travel

Notes:

- *Installation position for left and right coil springs is identical.*
- *On no account install the right coil spring in a mirror image.*

- Release the tension of the coil spring by turning the shaft of the spring tensioning device in an anti-clockwise direction.

- During the slackening process, check that the coil spring is in the correct installation position.



◄- Unscrew hexagon nut -1- and take off bolt together with spring retainer.

- Take spring tensioning device out of the coil spring.

Removing and installing right coil spring

Removal and installation of the right coil spring is similar to the procedure for the left coil spring ⇒ page 42-35.

In place of the special tools

- Spring retainer, e.g. V.A.G 1752/15 L. U. (left bottom)
- Spring retainer, e.g. V.A.G 1752/15 L. O. (left top)

use the

- Spring retainer, e.g. V.A.G 1752/15 R. U. (right bottom)
- Spring retainer, e.g. V.A.G 1752/15 R. O. (right top).

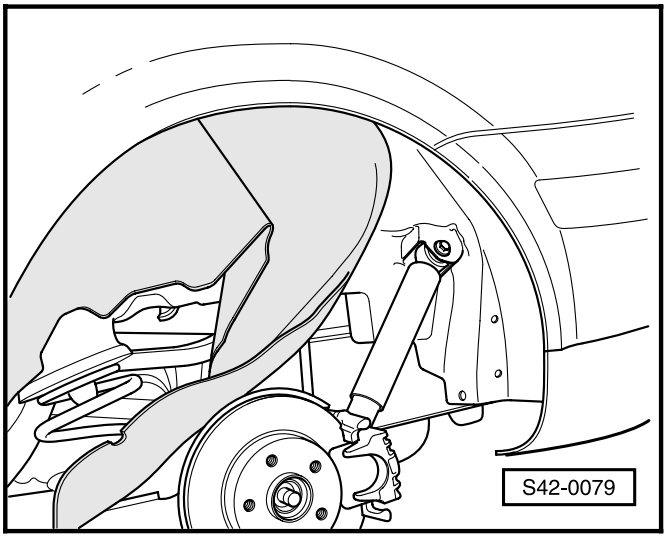
Installation position of right coil spring

The installation position of the right coil spring is identical to that of the left coil spring ⇒ page 42-38.

Removing and installing shock absorbers

Special tools, testers and aids required

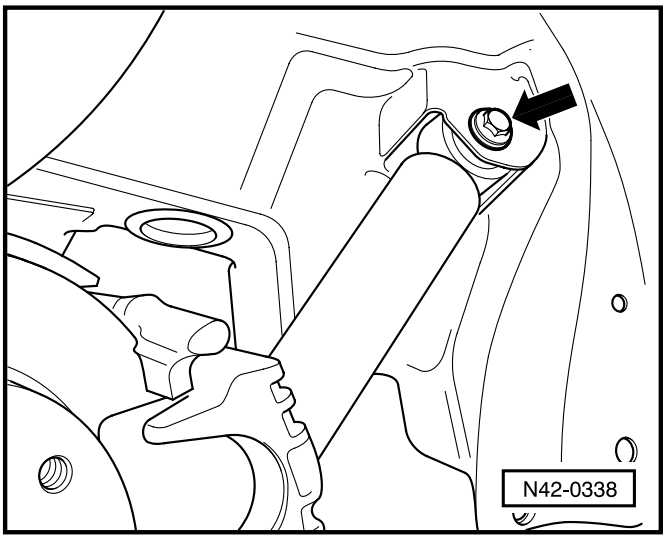
- Gearbox lift, e.g. V.A.G 1383 A
- Attachment, e.g. V.A.G 1359/2



Removing

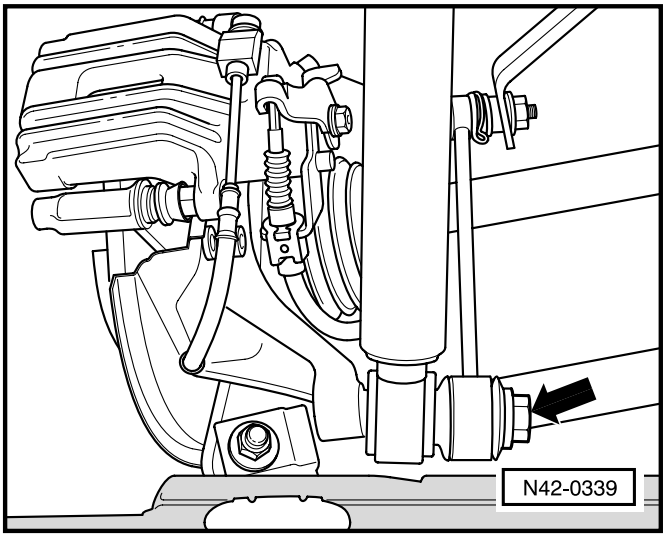
- Raise vehicle.
- Take off wheel.
- Remove coil spring ⇒ page 42-35.
- Unclip cable for wheel speed sensor from fixture.

◄ - Partially detach wheelhouse liner, if necessary.



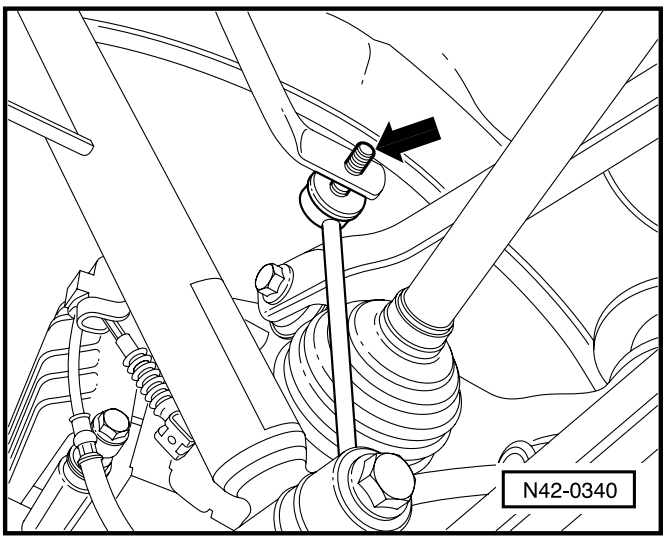
◄- Unscrew top bolt for shock absorber -arrow-.

- Use gearbox lift and attachment, e.g. V.A.G 1383 A with V.A.G 1359/2, to slowly lower trailing arm.



◄- Unscrew bottom bolt for shock absorber -arrow-.

- Take shock absorber out of the vehicle.



Installing

◄- If necessary, unbolt the coupling rod from the anti-roll bar -arrow-.

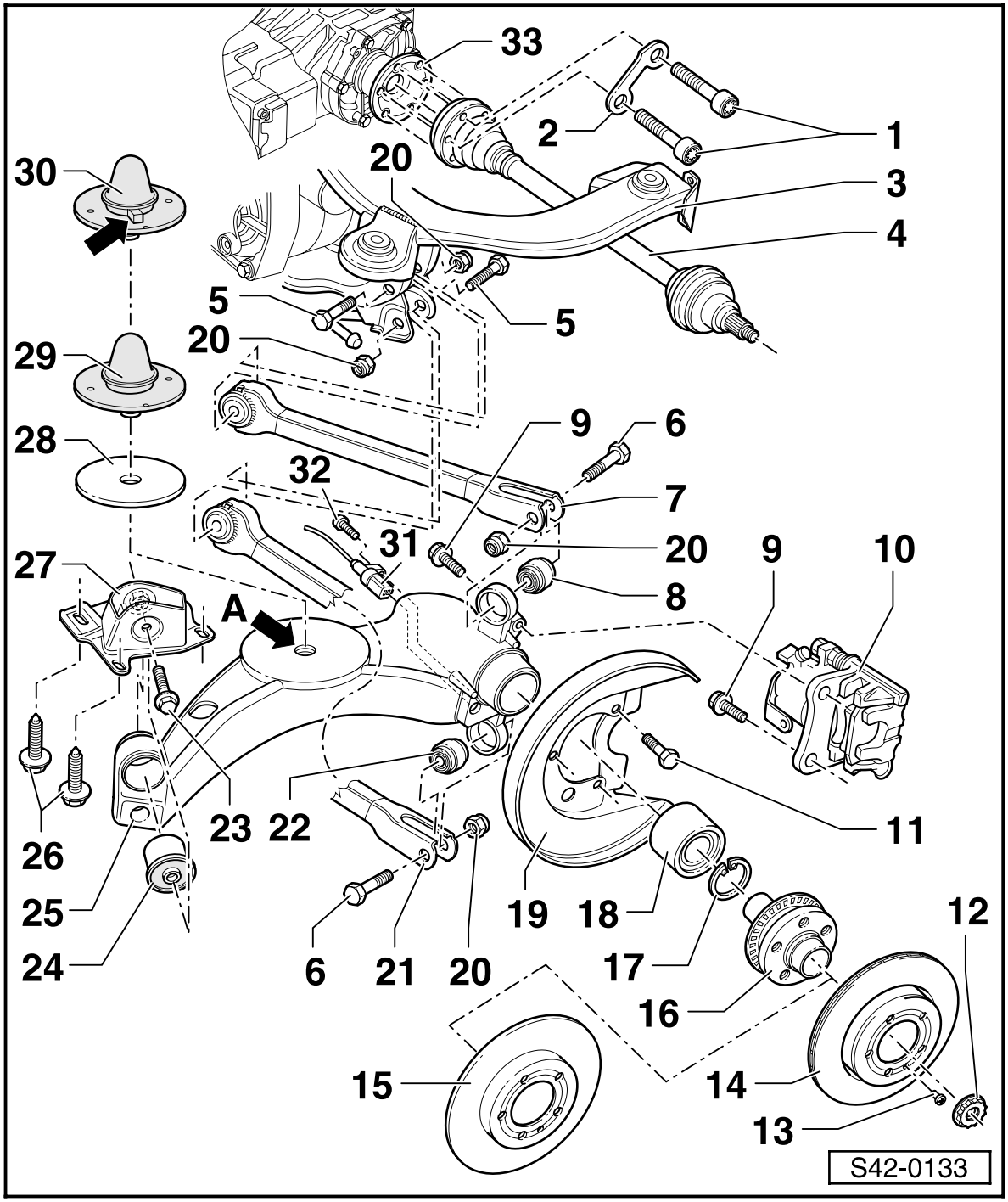
This makes it easier to position the bottom bolt for the shock absorber.

Further installation is carried out in the reverse order.

Tightening torques:

Shock absorber to body **Use new bolts!**	60 Nm
Shock absorber to trailing arm Vehicle must be standing on its wheels and one person sitting on the rear seat for this step.	110 Nm
Anti-roll bar to coupling rod **Use new nut!**	25 Nm
Wheel bolt	120 Nm

Summary of components - trailing arm and suspension arm



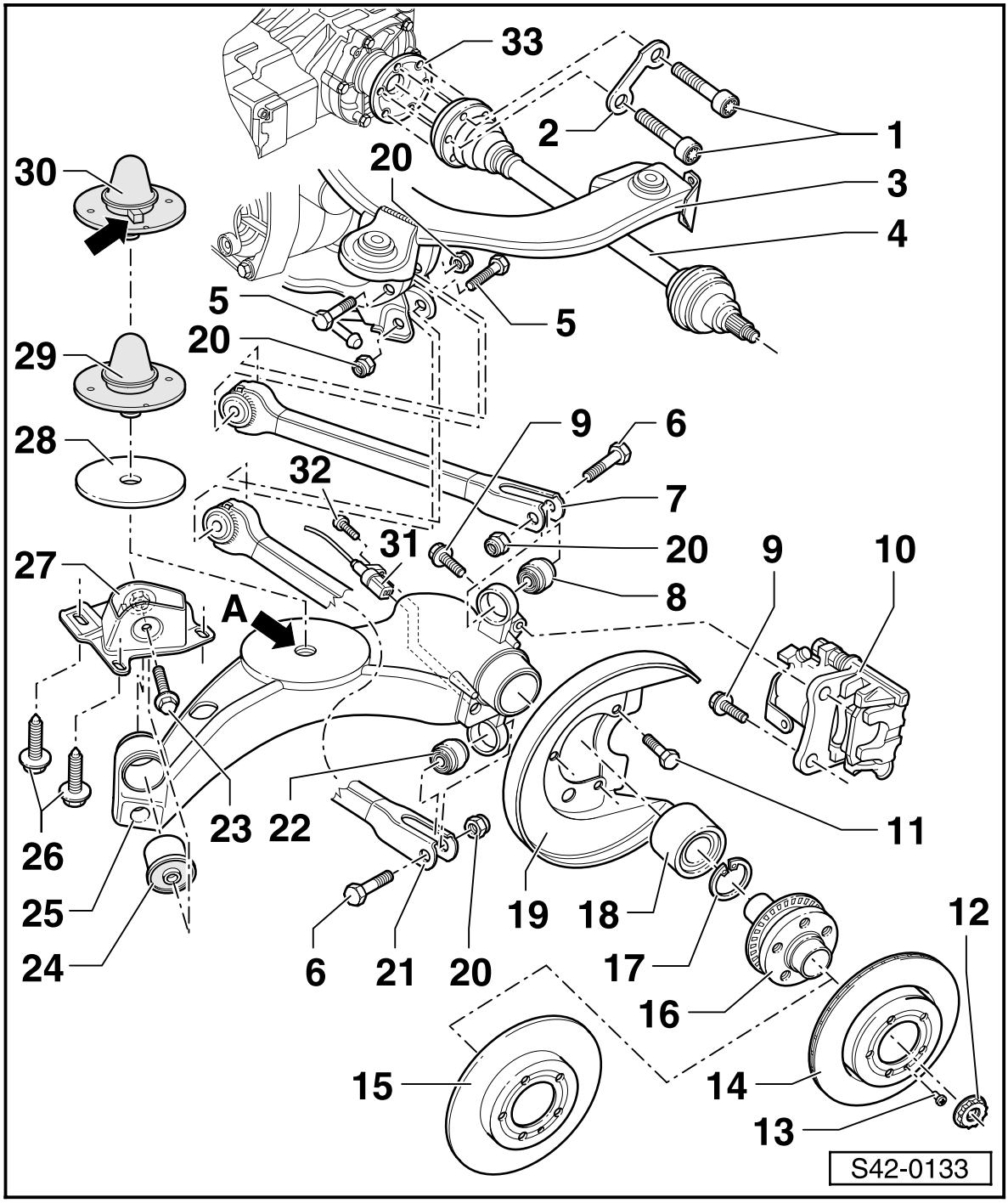
Notes:

- *Never load the wheel-bearing, if the drive shaft was removed!*
- *In case the vehicle is placed onto its wheels and moved, temporarily the outer joint of a drive shaft must be inserted.*
- *Welding and straightening work is not allowed on the bearing and wheel control components of the front wheel suspension.*
- *Always replace self-locking nuts.*
- *Always replace corroded screws/nuts.*

1 - Fillister head screw with internal serration, 40 Nm

- replace after each removal
- initially tighten to 10 Nm, subsequently tighten crosswise to final torques

2 - Shim



3 - Assembly carrier
- removing and installing ⇒ page 42-61

4 - Drive shaft with inner CV joint
- removing and installing ⇒ page 42-72
- repairing ⇒ page 42-75

5 - Tighten screw 70 Nm and 90°
- M 12 x 1.5 x 80
- replace after each removal

6 - Tighten screw 70 Nm and 90°
- M 12 x 1.5 x 75
- replace after each removal

7 - Top suspension arm
- removing and installing ⇒ page 42-58
- different versions, assignment ⇒ electronic catalogue of original parts

8 - Guide joint
- removing and installing ⇒ page 42-52

9 - Collar screw, 65 Nm

10 - Brake carrier with brake caliper
- ♦ repairing ⇒ page 46-24
- ♦ removing and installing brake pads ⇒ page 46-26

11 - Screw, 10 Nm

12 - Self-locking twelve-point nut
- ♦ tightening ⇒ page 42-74
- ♦ replace after each removal

13 - Screw, 4 Nm

14 - Brake disc
- ♦ assignment ⇒ electronic catalogue of original parts

15 - Brake disc, internally ventilated
- ♦ assignment ⇒ electronic catalogue of original parts

16 - Wheel hub with pulse rotor for speed sensor
- ♦ pulse rotor is welded to the wheel hub
- ♦ inspect axial run-out of pulse rotor ⇒ page 45-61
- ♦ pressing in and out ⇒ page 42-44

17 - Circlip
- ♦ replace after each removal
- ♦ check for firm seating

18 - Wheel bearing
- ♦ pressing in and out ⇒ page 42-44
- ♦ replace, is destroyed when pressing out
- ♦ spare part supplied only as kit „wheel bearing with assembly parts“ (with Pos. 12, 17)

19 - Cover plate

20 - Nut, self-locking
- ♦ replace after each removal

21 - Bottom suspension arm
- ♦ removing and installing ⇒ page 42-58
- ♦ different versions, assignment ⇒ electronic catalogue of original parts

22 - Guide joint
- ♦ removing and installing ⇒ page 42-52

23 - Screw, 90 Nm
- ♦ replace after each removal
- ♦ insert from the vehicle outside

24 - Rubber metal bearing
- ♦ for trailing arm
- ♦ removing and installing ⇒ page 42-50

25 - Trailing arm
- ♦ removing and installing ⇒ page 42-54
- ♦ Thread -arrow A- for support of the stop buffer -Pos. 29- is no longer applicable as of 08.99
- ♦ in case the stop buffer -Pos. 30- is installed in the trailing arm before the manufacturing date 08.99 the thread -arrow A- is bored out to ∅ 10.5 mm

26 - Screw 75 Nm
- ♦ replace after each removal

27 - Mount for rear axle
- ♦ check the overall tracking of the rear axle after installation and take the mean as necessary
- ♦ the track can be correct by moving the mount

28 - Spacer
- ♦ only on vehicles with rough road suspension
- ♦ on vehicles without spacer this must not be installed subsequently

29 - Stop buffer with threaded pin, 10 Nm
- ♦ no longer inserted as of 08.99
- ♦ stop buffer -Pos. 30- is supplied as spare part

30 - Stop buffer with positioning pin
- ♦ as of 08.99
- ♦ the correct fitting position is determined by the positioning pin
- ♦ the positioning pin must be removed on the bottom side when used for vehicles manufactured before 08.99
- ♦ the start of the spring coil must lie against the leg -arrow-
- ♦ fitting position of helical spring ⇒ page 42-38 and page 42-39

31 - Speed sensor
- ♦ removing and installing ⇒ page 45-82
- ♦ insert with solid lubricant paste G 000 650 (e.g. Wolfrakote Top Paste)

32 - Allen screw, 8 Nm

33 - Flange shaft of rear axle gearbox

Removing and inserting wheel bearing

Special tools, testers and aids required

- Gearbox lift with attachment, e.g. V.A.G 1383 A with V.A.G 1359/2
- Foot pump with high-pressure hose, e.g. V.A.G 1389 A/1 (Paschke)
- Hydraulic removal and insertion device for wheel bearings, e.g. V.A.G 1459 B (Paschke)

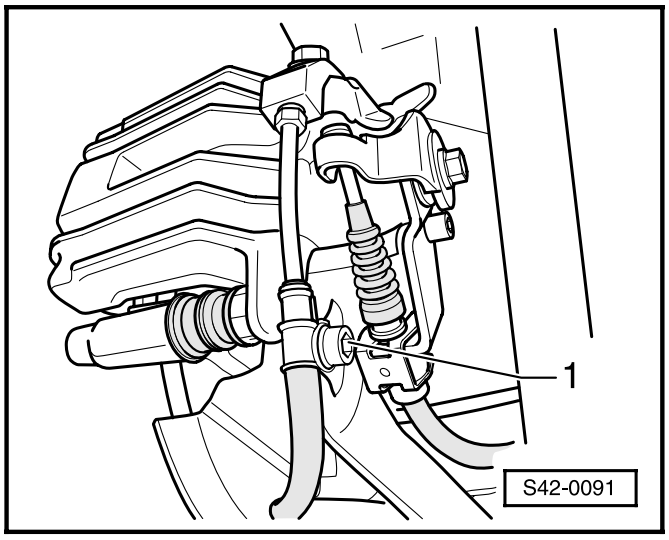
  with the following individual tools:

  - Hollow piston cylinder, e.g. HKZ-15, with thrust piece, e.g. E-0-204T
  - Tensile pin, e.g. E-0-217 + 218
  - Special nut, e.g. E-8-214
  - Thrust piece, e.g. E-5
  - Centring device with clip, e.g. E-76-2
- Complementary set, e.g. V.A.G 1459 B/2

  with the following individual tools:

  - Thrust sleeve, e.g. E-44
  - Bell, e.g. E-40
  - Thrust piece, e.g. E-6-1
  - Thrust piece, e.g. E-13-1
- Thrust plate, e.g. E-39 (VAS 5146)
- Thrust plate MP 3-467
- Grip of wheel bearing inner race MP 6-416
- Cross member Kukko 18-0

- Raise vehicle.
- Take off wheel.
- Remove drive shaft ⇒ page 42-72.

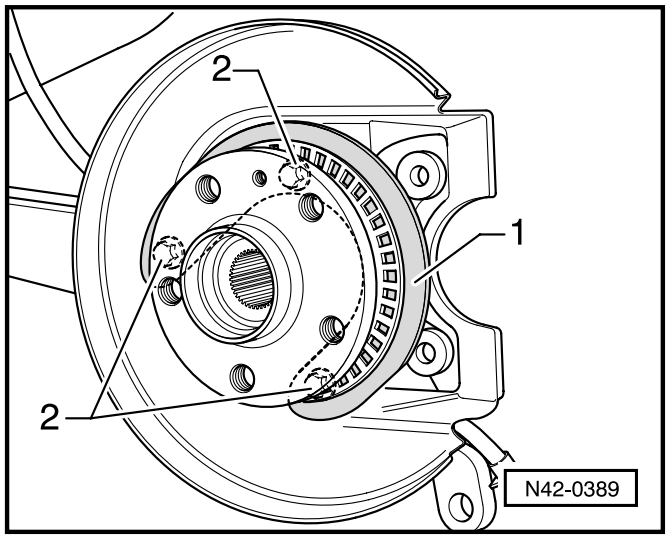


◄- Unscrew bolts -1- attaching brake carrier and take brake carrier off together with brake caliper.

Note:

Top bolt attaching brake carrier is concealed.

- Attach the brake caliper to the body. Brake line must not be subjected to excessive pull.
- Remove cross-head screw for brake disc and take off brake disc.
- Remove ABS wheel speed sensor from housing of trailing arm ⇒ page 45-82.

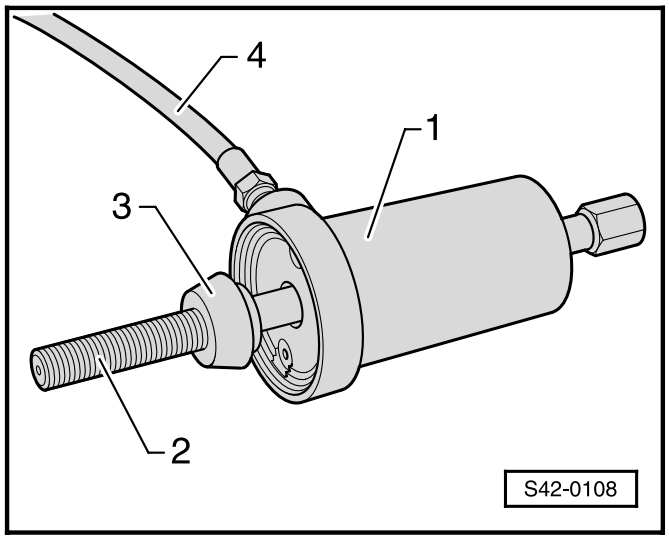


Pressing out wheel hub

◄- Insert the thrust plate -1-.

Position the thrust plate -1- so that it is resting all round on the bolt heads -2-.

1 - Thrust plate, e.g. E-39 (VAS 5146)



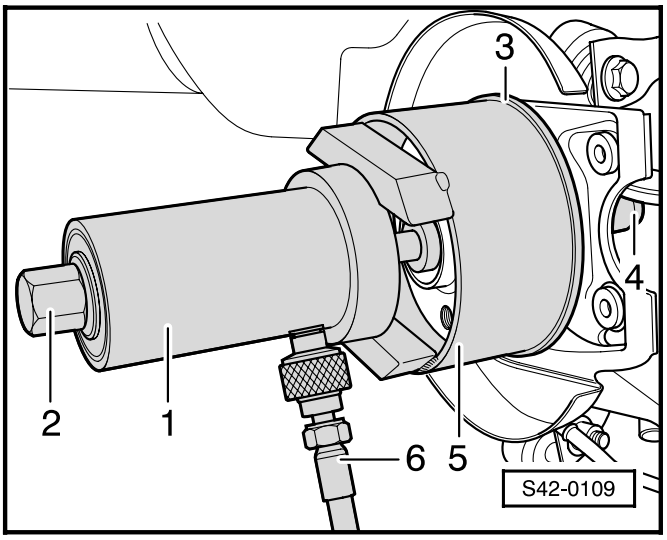
◄- Install the centring device with clip, e.g. E-76-2.

1 - Hollow piston cylinder, e.g. HKZ-15, with thrust piece, e.g. E-0-204T hydraulic

2 - Tensile bolt, e.g. E-0-217

3 - Centring device with clip, e.g. E-76-2

4 - High-pressure hose with quick coupling, part of foot pump, e.g. V.A.G 1389 A/1



◄- Install hollow piston cylinder -1- together with tensile bolt -2-, bell -5- and special nut -4-.

1 - Hollow piston cylinder, e.g. HKZ-15, with thrust piece, e.g. E-0-204T hydraulic

2 - Tensile bolt, e.g. E-0-217

3 - Thrust plate, e.g. E-39 (VAS 5146)

4 - Special nut, e.g. E-8-214

5 - Bell, e.g. E-40

6 - High-pressure hose with quick coupling, part of foot pump, e.g. V.A.G 1389 A/1

- Build up pressure by pumping with the foot pump.

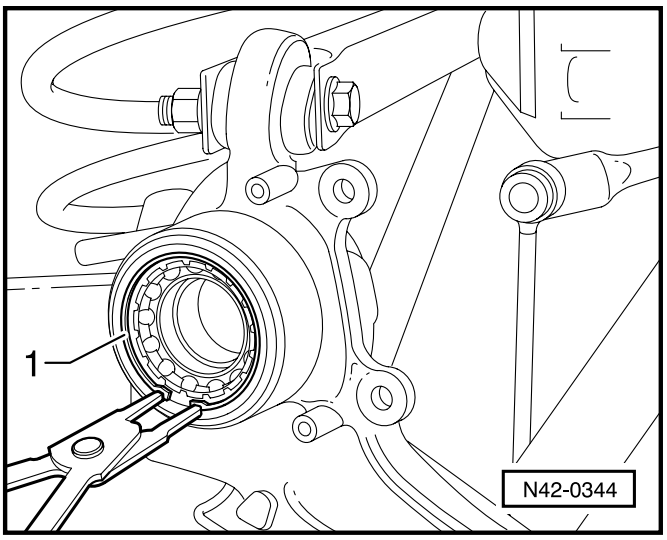
- Check whether all the tools are correctly centred; adjust position, if necessary.

Note:

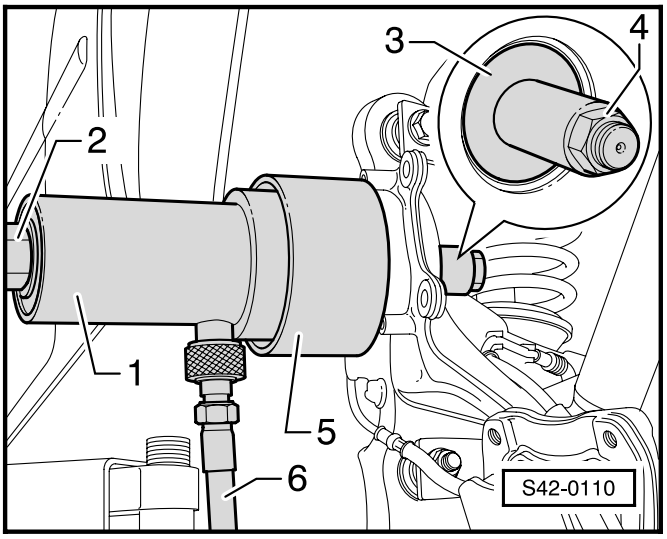
Place gearbox lift with attachment below, e.g. V.A.G 1383/A with V.A.G 1359/2 (risk of accident from parts dropping off when wheel hub pressed out).

- Press wheel hub out of wheel bearing by pumping.

Pressing out wheel bearing



◄- Remove circlip -1-.



◄- Position thrust piece -3- on the rear of the wheel bearing.

- Install hollow piston cylinder -1- with tensile bolt -2- and special nut -4-.

1 - Hollow piston cylinder, e.g. HKZ-15, with thrust piece, e.g. E-0-204T hydraulic

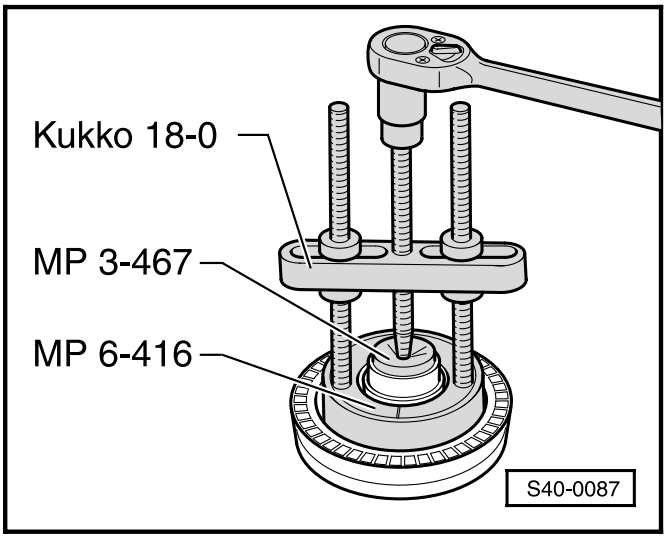
2 - Tensile bolt, e.g. E-0-217

3 - Thrust piece, e.g. E-5

4 - Special nut, e.g. E-8-214

5 - Bell, e.g. E-40

6 - High-pressure hose with quick coupling, part of foot pump, e.g. V.A.G 1389 A/1



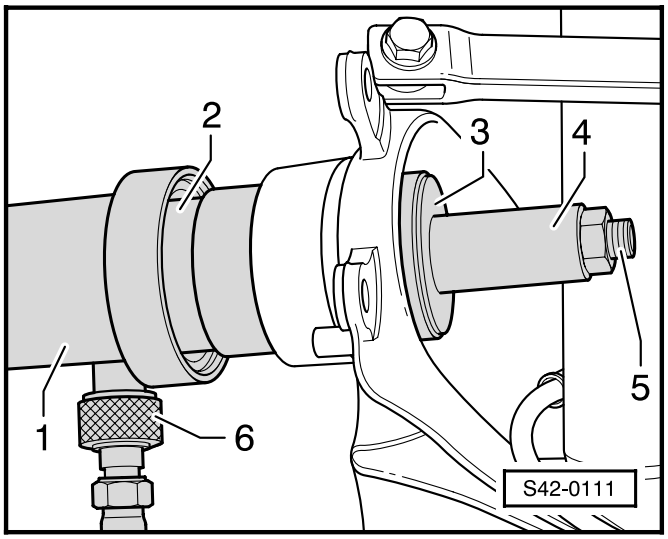
- Build up pressure by pumping with the foot pump.
- Check whether all the tools are correctly centred, adjust position, if necessary.
- Press wheel bearing out of wheel bearing housing of trailing arm by pumping.

◄- Pull bearing inner race off the wheel hub.

- Insert special tool -MP 6-416-, as shown.
- Screw cross member -Kukko 18-0- into special tool -MP 6-416-.
- Fit special tool -MP 3-467- onto wheel hub and pull off bearing inner race by turning the threaded spindle.

Pressing in wheel bearing

- Position the wheel bearing at the wheel bearing housing of the trailing arm.



◄- Place thrust piece -3- onto the rear of the wheel bearing housing.

- Position hollow piston cylinder -1- together with tensile bolt -5-, thrust piece -2- and special nut -4-.

  1 - Hollow piston cylinder, e.g. HKZ-15, with thrust piece, e.g. E-0-204T hydraulic

  2 - Thrust piece, e.g. E-13-1

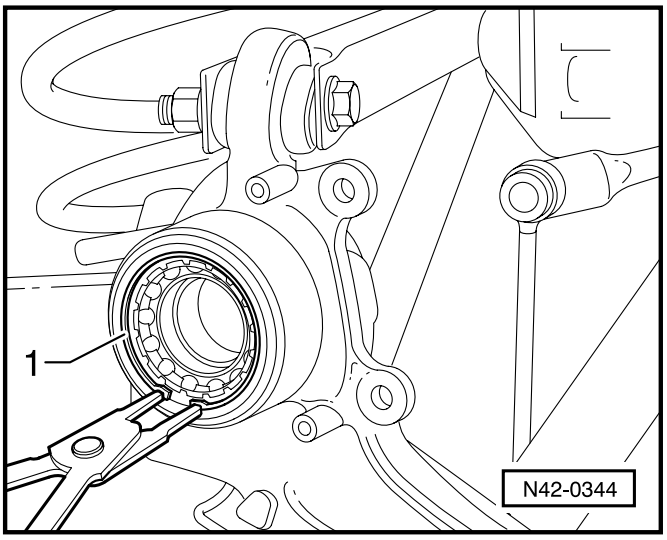
  3 - Thrust piece, e.g. E-6-1

  4 - Special nut, e.g. E-8-214

  5 - Tensile bolt, e.g. E-0-217

  6 - High-pressure hose with quick coupling, part of foot pump, e.g. V.A.G 1389 A/1

- Build up pressure by pumping with foot pump.
- Check whether all the tools are correctly centred; adjust position, if necessary.
- Press wheel bearing into wheel bearing housing of trailing arm by pumping.

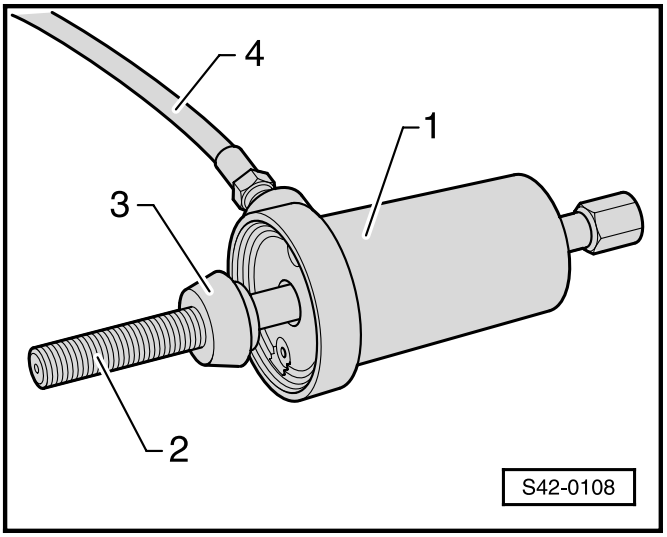


Notes:

- *Replace circlip each time removed.*
- *When inserting circlip, ensure it is correctly installed.*

◄- Insert new circlip -1-.

Pressing in wheel hub



- Position the wheel hub against the wheel bearing.

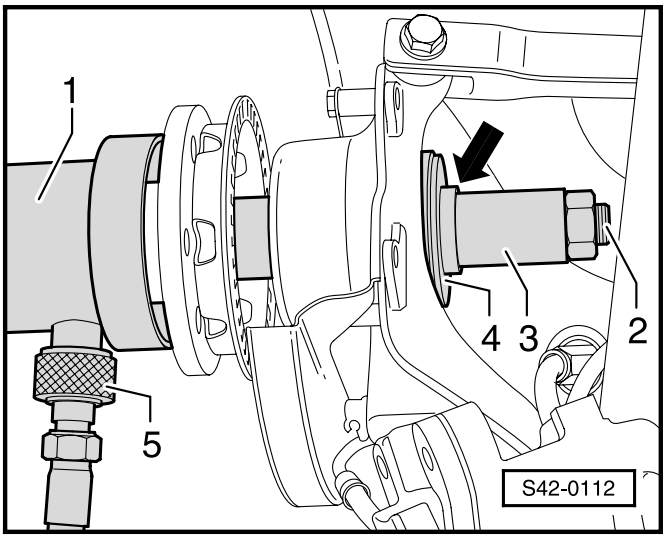
◄- Install the centring device with clip, e.g. E-76-2.

1 - Hollow piston cylinder, e.g. HKZ-15, with thrust piece, e.g. E-0-204T hydraulic

2 - Tensile bolt, e.g. E-0-217

3 - Centring device with clip, e.g. E-76-2

4 - High-pressure hose with quick coupling, part of foot pump, e.g. V.A.G 1389 A/1



◄- Position thrust piece -4- onto the rear of the wheel bearing housing.

Note:

The collar -arrow- of the thrust piece -4- must be pointing toward the special nut -3-.

- Position hollow piston cylinder -1- with tensile bolt -2- and special nut -3-.

1 - Hollow piston cylinder, e.g. HKZ-15, with thrust piece, e.g. E-0-204T hydraulic

2 - Tensile bolt, e.g. E-0-217

3 - Special nut, e.g. E-8-214

4 - Thrust piece, e.g. E-5

5 - High-pressure hose with quick coupling, part of foot pump, e.g. V.A.G 1389 A/1

- Build up pressure by pumping with the foot pump.

- Check if all tools are correctly centered, if necessary correct position.

- Then press in wheel hub by pumping with the foot pump.

Further installation occurs in reverse order.

- Install ABS speed sensor ⇒ page 45-82.

- Install brake disc.

- Install brake carrier with brake calliper.

- Install drive shaft ⇒ page 42-72.

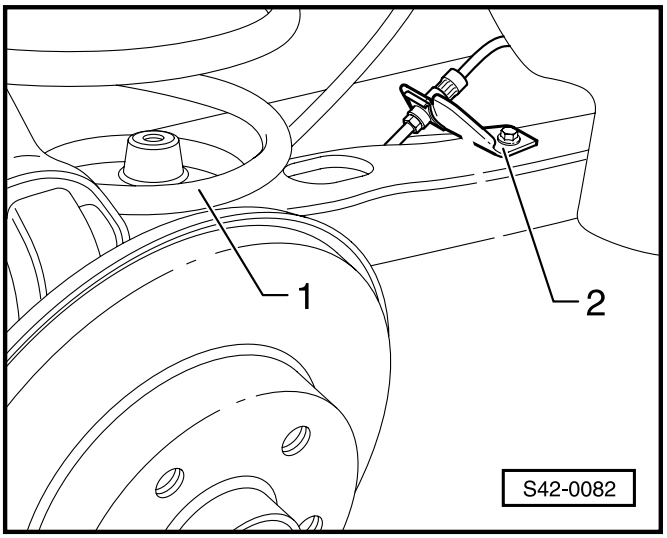
Tightening torques:

Screw for ABS speed sensor	8 Nm
Screw for brake disc	4 Nm
Brake carrier with brake calliper to trailing arm	65 Nm
Tighten drive shaft to flange shaft M8 crosswise in 2 steps (I and II)	I - 10 Nm II - 40 Nm
Use new screws!	
Wheel screw	120 Nm
Nut to wheel hub	
Always use new nut!	
Tightening torque ⇒ page 42-74	

Removing and installing bonded rubber bush for trailing arm

Special tools, testers and aids required

- Assembly device MP 5-401
- Assembly device MP 5-402
- Assembly device T10030
- Assembly device T30016

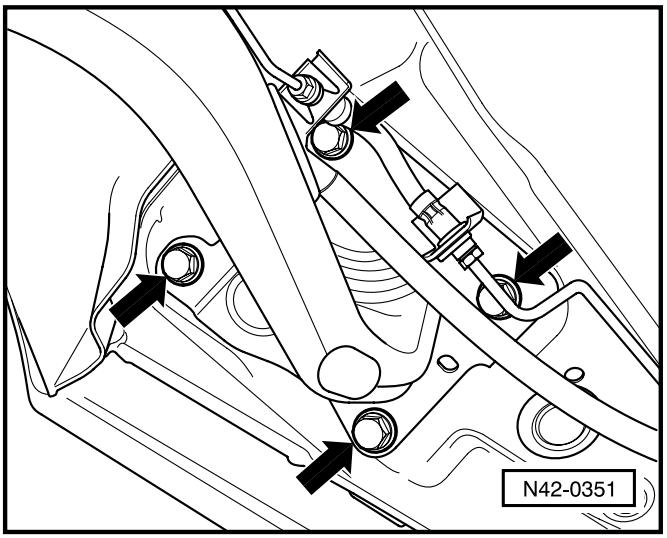


Removing trailing arm

- Raise vehicle.
- Take off wheel.

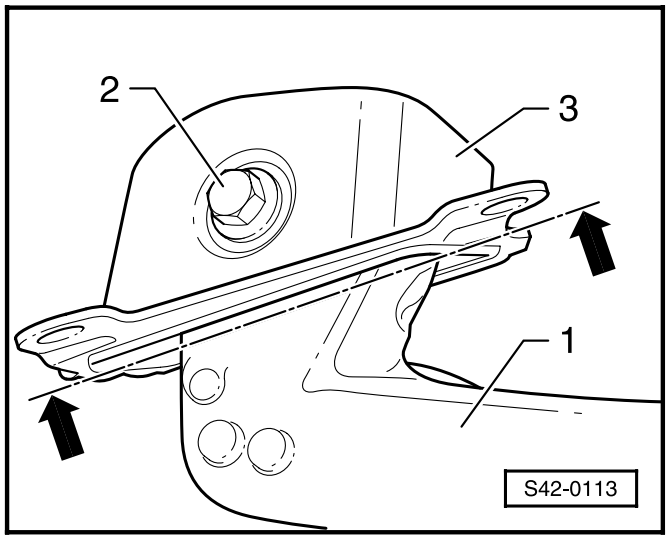
◄ - Remove coil spring -1- ⇒ page 42-35.

- Unbolt bracket for brake line -2- from trailing arm.
- Unclip brake line from bracket.



◄ - Mark the installation position of the bearing bracket at the body -arrows-.

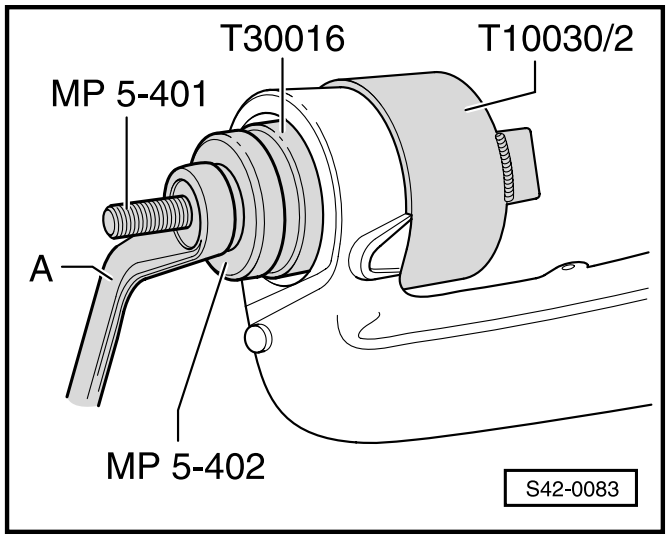
- Unbolt the bearing bracket from the body.



◄- Mark the installation position of the bearing bracket -3- relative to the trailing arm -1-, e.g. with a felt pen.

See arrows and dash-dotted line.

- Unscrew hexagon bolt -2- and take bearing bracket -3- off the trailing arm.

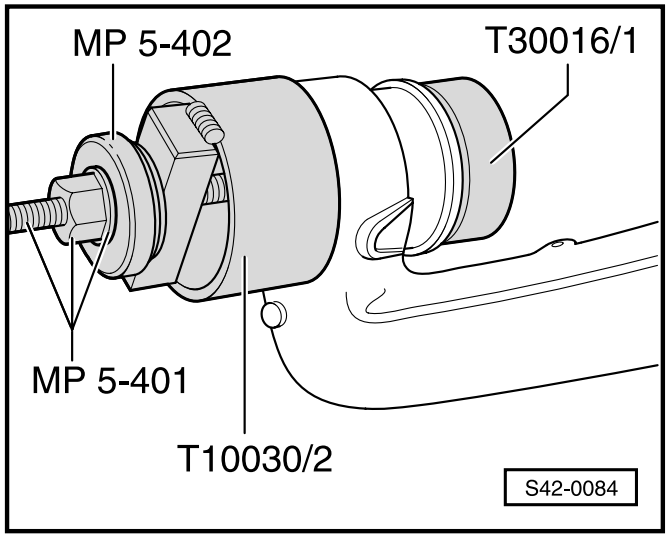


Pulling out bonded rubber bush at trailing arm

◄- Position special tools, as shown in illustration.

- Pull out bonded rubber bush by turning the shaft.

A - Ring wrench



Inserting bonded rubber bush

◄- Position special tools, as shown in the illustration.

- Draw in the bonded rubber bush by turning the shaft.

Installing trailing arm

Installation is carried out in the reverse order ⇒ page 42-54.

If the installation position of the bearing bracket to the trailing arm was not marked, it is then necessary to determine the installation position ⇒ page 42-57.

Removing and installing the guide joint

Special tools, testers and aids required

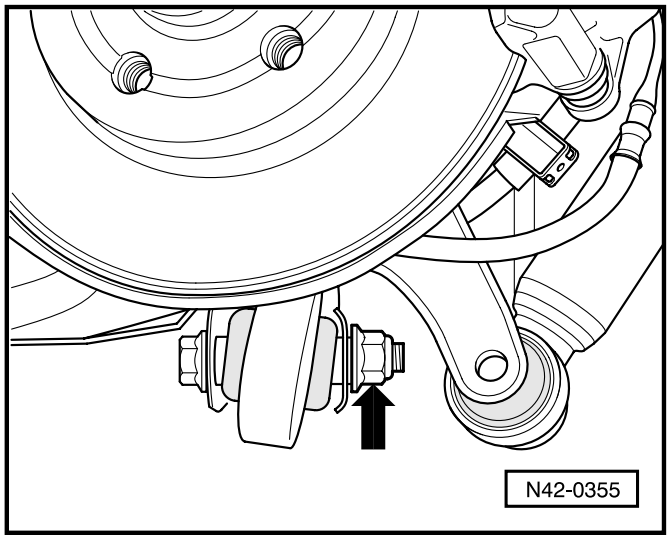
- Assembly device MP 5-401
- Assembly device MP 5-402
- Assembly device T10030
- Assembly device T30017

Caution!

If the top and bottom guide joint must be replaced, first of all the helical spring must be removed.

- Remove helical spring ⇒ page 42-35.

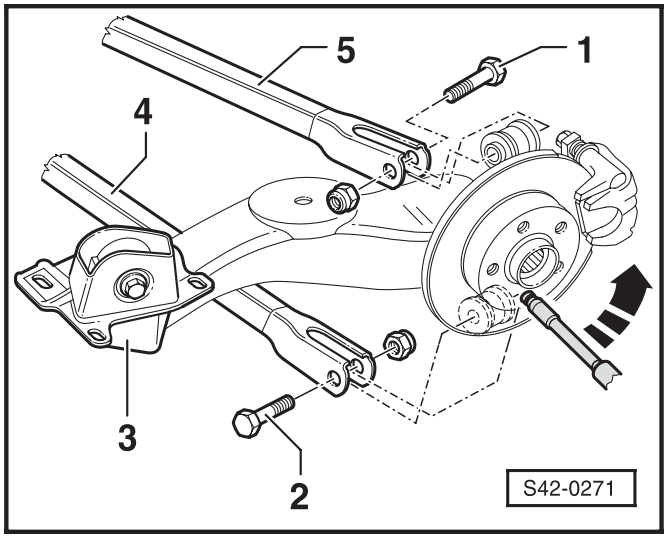
Removing guide joint



- Raise vehicle.
- Remove wheel

◄ - Unscrew bottom suspension arm from the trailing arm -arrow-.

- Screw the wheel bolt up to the stop into the brake disc.



◄ - Fit socket nut with two extensions onto the wheel bolt.

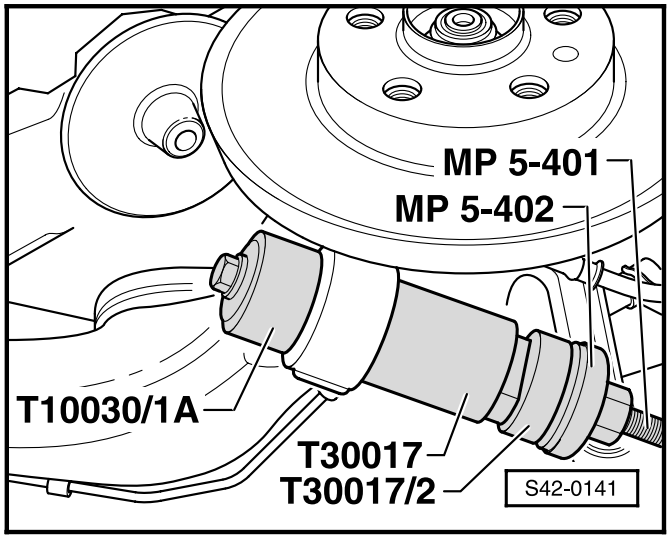
- Press extension slightly upwards -arrow- and pull out screw -2-.

1 - Screw for top suspension arm - do not slacken!

3 - Trailing arm

4 - Bottom suspension arm - do not remove!

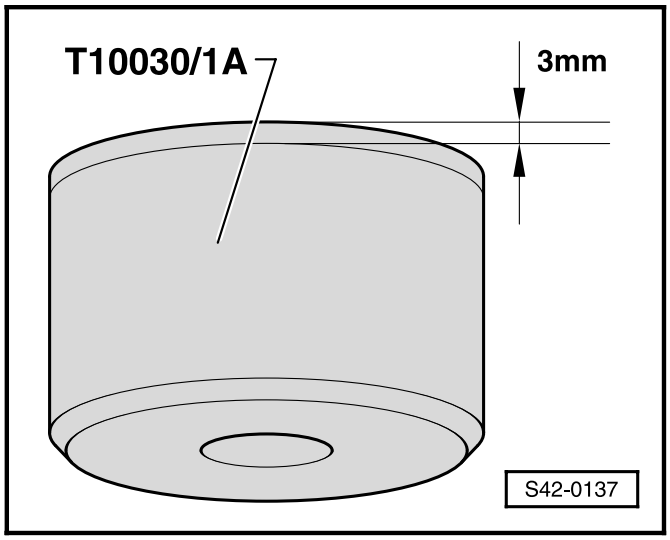
5 - Top suspension arm



- Press down the bottom suspension arm only so far, that the assembly device can be mounted.

◄ - Position the special tools as shown.

- Pull out the guide joint by turning the spindle.



Installing bottom guide joint

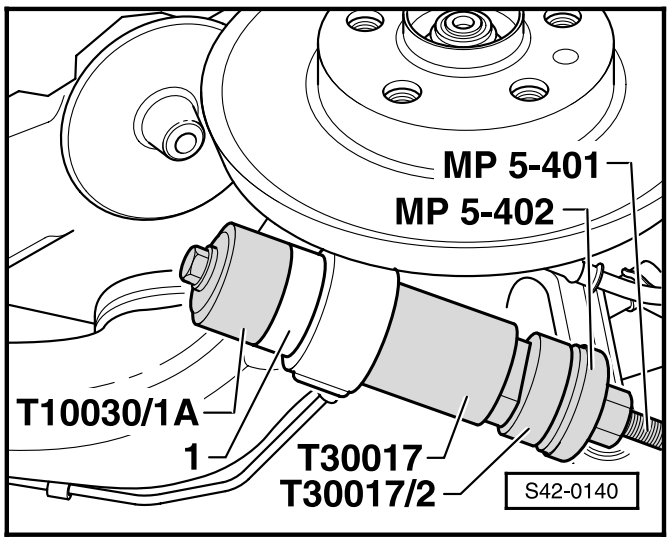
◄ - Before positioning, the pressure plate T10030/1A must be marked along the entire circumference.

Distance: 3 mm

The marking must be towards the open side.

Note:

The marking is required for positioning the guide joint in the trailing arm.



◄ - Position the special tools as shown.

- Press in the guide joint -1- by turning the spindle until the marking on the pressure plate T10030/1A reaches the support on the trailing arm.

- Slacken special tools, do not remove.

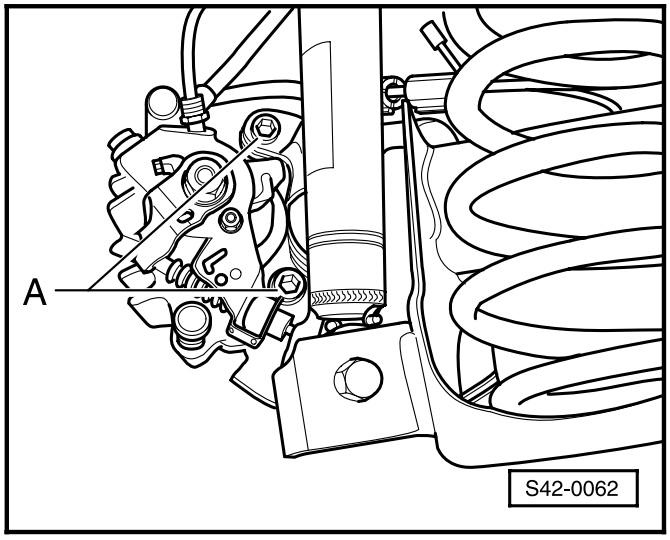
- Check if the guide joint is located in the middle in the support of the trailing arm.

- If this is not the case, correct the fitting position of the guide joint accordingly.

- Install bottom suspension arm ⇒ page 42-58.

- Install the wheel.

- Lower the vehicle.



Removing top guide joint

Caution!

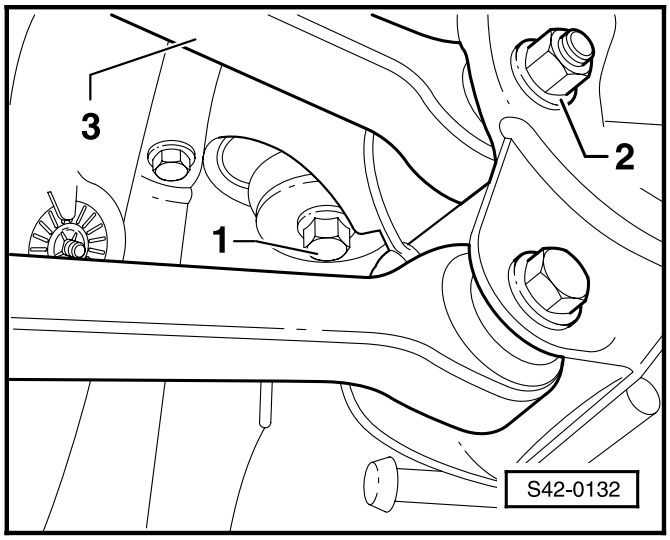
If the top and bottom guide joint must be replaced, first of all the helical spring must be removed.

- Raise the vehicle.
- Remove the wheel.

◄ - Unscrew screws -A-, remove brake caliper and tie up with wire or anything similar.

Note:

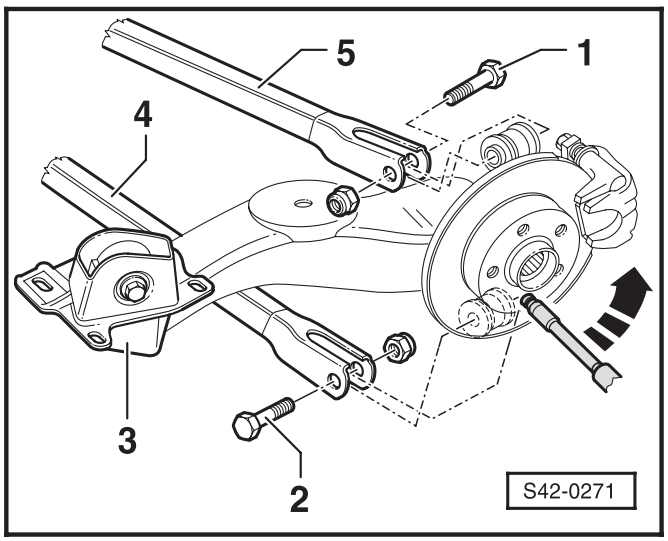
Do not unscrew the brake hose to remove the brake caliper.



- Unscrew the screw for the brake disc and remove brake disc.

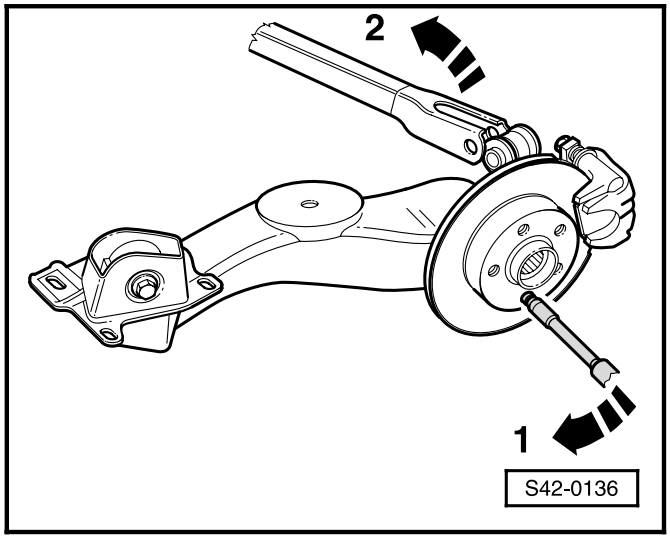
◄ - Unscrew screw -1- from the assembly carrier.

- Unscrew nut -2- for top suspension arm.



◄ - Unscrew nut of screw -1-.

- Screw the wheel bolt up to the stop into the wheel hub.
- Fit socket nut with two extensions onto the wheel bolt.
- Press extension slightly upwards -arrow- and pull out screw -1-.

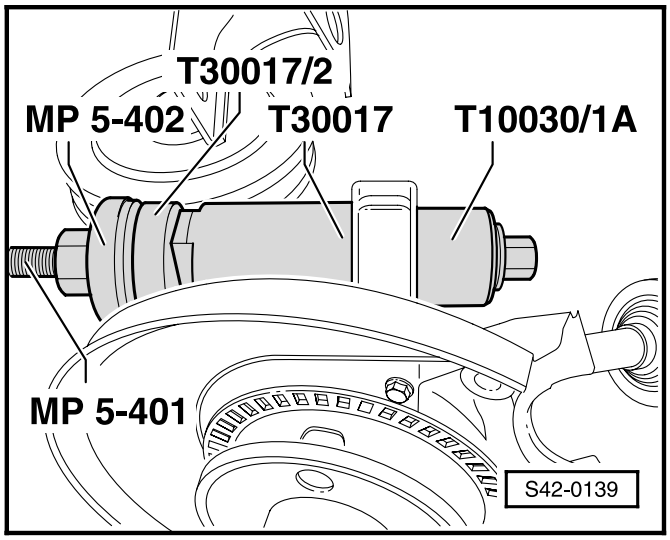


◄- Press down the extension only so far -arrow 1-, that the top suspension arm can be removed upwards -arrow 2-.

Note:

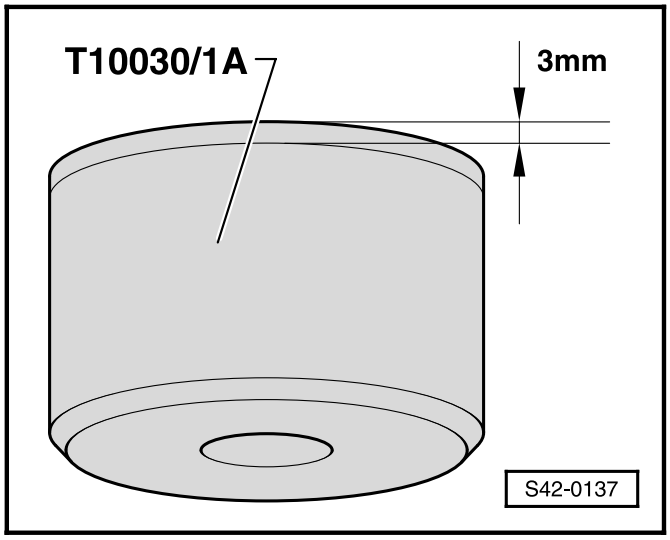
If the extension is pushed so far downwards, the drive shaft can be damaged.

- Pull screw and top suspension arm out of the assembly carrier.



◄- Position the special tools as shown.

- Pull out the guide joint by turning the spindle.



Installing top guide joint

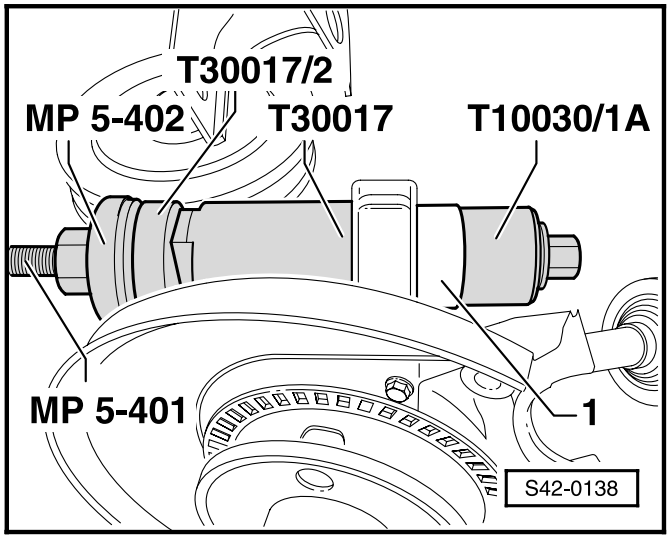
◄- Before positioning, the pressure plate T10030/1A must be marked along the entire circumference.

Distance: 3 mm

The marking must be towards the open side.

Note:

The marking is required for positioning the guide joint in the trailing arm.



◄ - Position the special tools as shown.

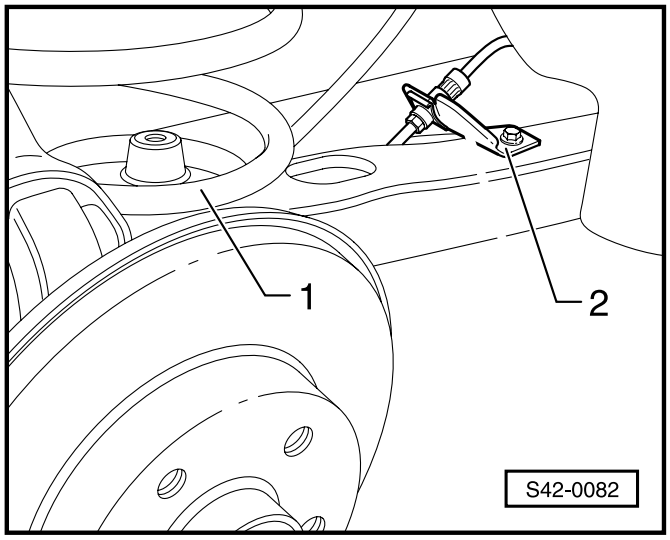
- Press in the guide joint -1- by turning the spindle until the marking on the pressure plate T10030/1A reaches the support on the trailing arm.
- Slacken special tools, do not remove.
- Check if the guide joint is located in the middle in the support of the trailing arm.
- If this is not the case, correct the fitting position of the guide joint accordingly.
- Install bottom suspension arm ⇒ page 42-58.
- Install the wheel.
- Lower the vehicle.

Removing and installing the trailing arm

Special tools, testers and aids required

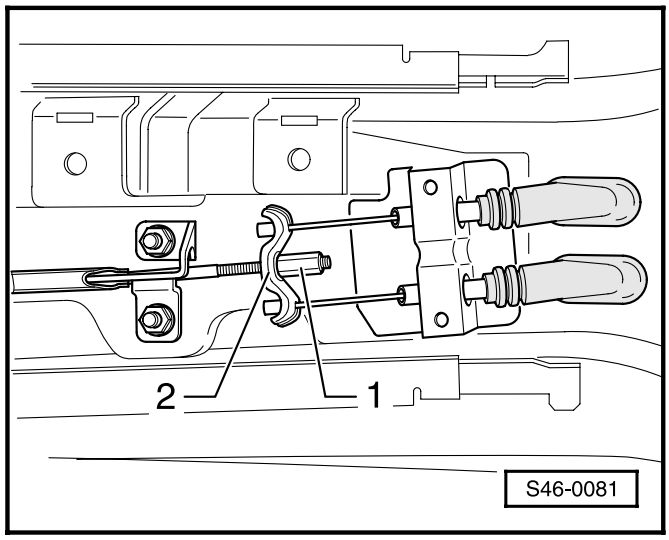
- Gearbox jack e.g. V.A.G 1383 A
- Adapter e.g. V.A.G 1359/2

Removing



- Raise the vehicle.
- Remove the wheel.

◄ - Remove helical spring -1- ⇒ page 42-35.



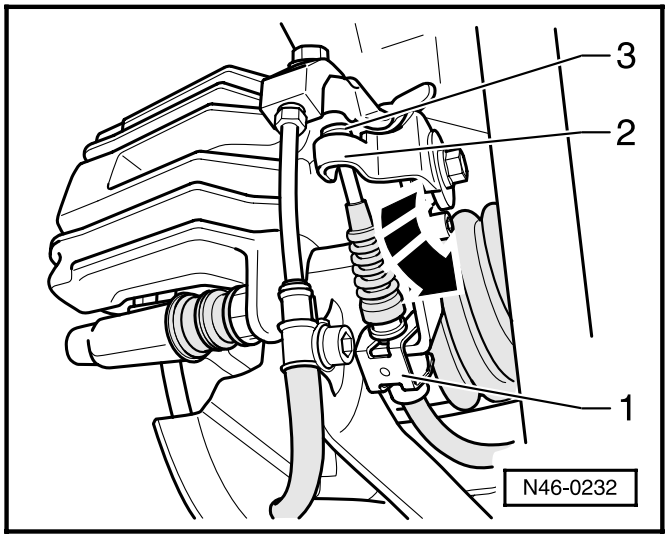
- Unbolt bracket for brake line -2- from trailing arm.
- Unclip brake line from bracket, if necessary.
- Lower vehicle.
- Remove rear centre console.

⇒ Body Fitting Work; Repair Group 68; Interior Equipment

- Release handbrake.

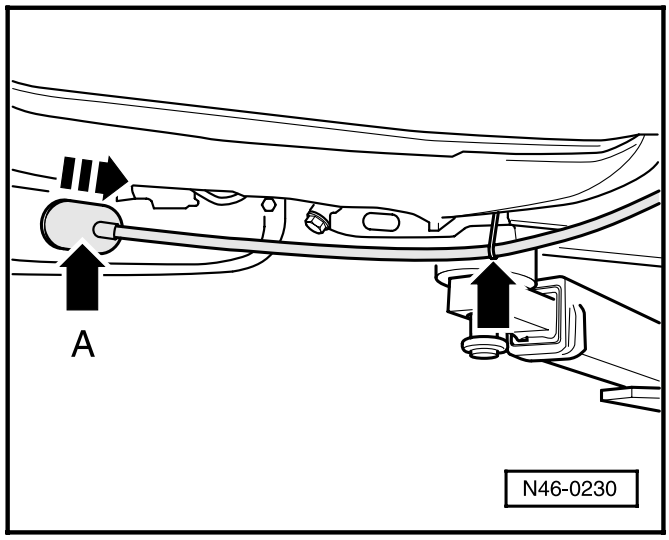
◄- Slacken adjusting nut -1- sufficiently until the handbrake cable can be released from the compensating arm -2-.

- Raise vehicle.



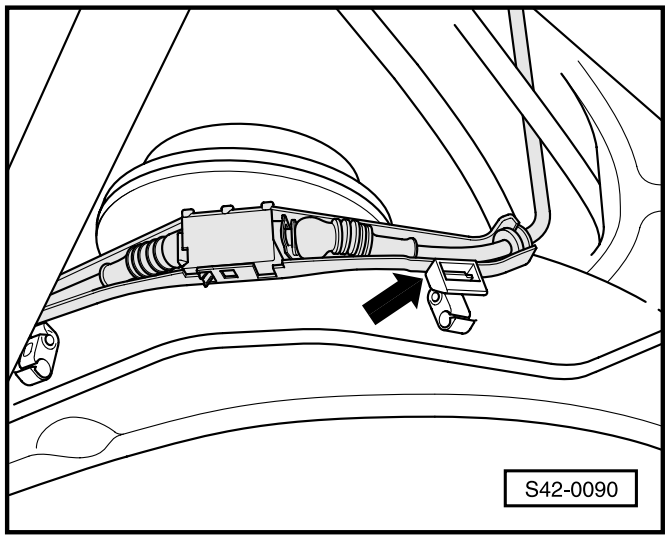
◄- Use a screwdriver to lever out clip -1- and pull down and off.

- Press brake lever -2- in direction of arrow and release handbrake cable -3-.



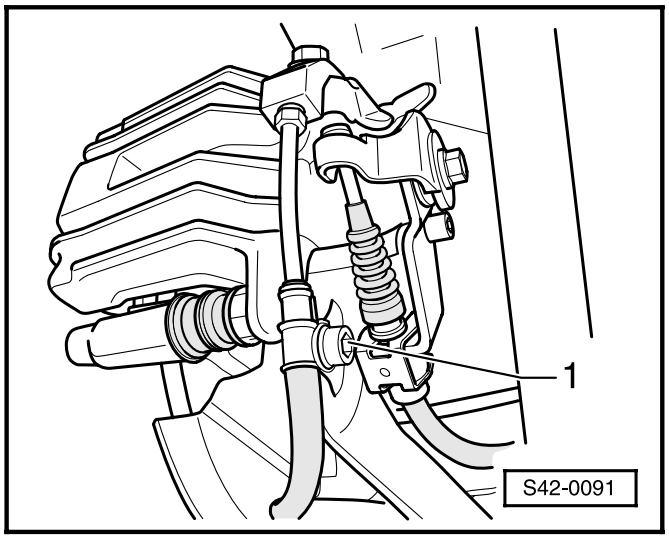
◄- Remove rubber grommet -arrow A- from the trailing arm.

- Detach handbrake cable from fixture -arrow- and pull it out of trailing arm in direction of arrow.
- Remove drive shaft ⇒ page 42-72.



◄- Unclip cable for wheel speed sensor from fixture -arrow-.

- Remove ABS wheel speed sensor from trailing arm housing.



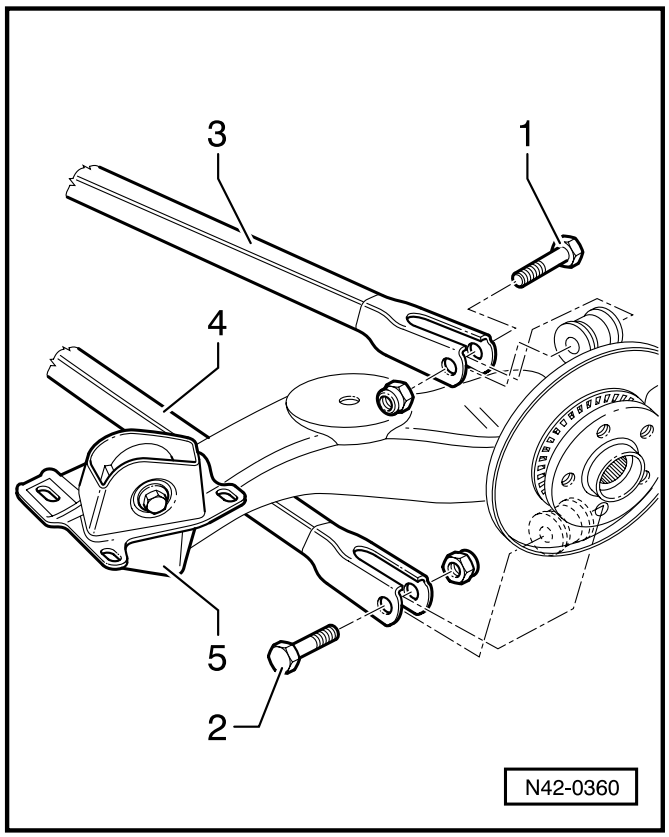
◄- Unscrew bolts -1- attaching brake carrier and take brake carrier off together with brake caliper.

Note:

Top bolt attaching brake carrier is concealed.

- Attach the brake caliper at the body. Brake line must not be subjected to pulling stresses.

- Remove cross-head screw for brake disc and take off brake disc.

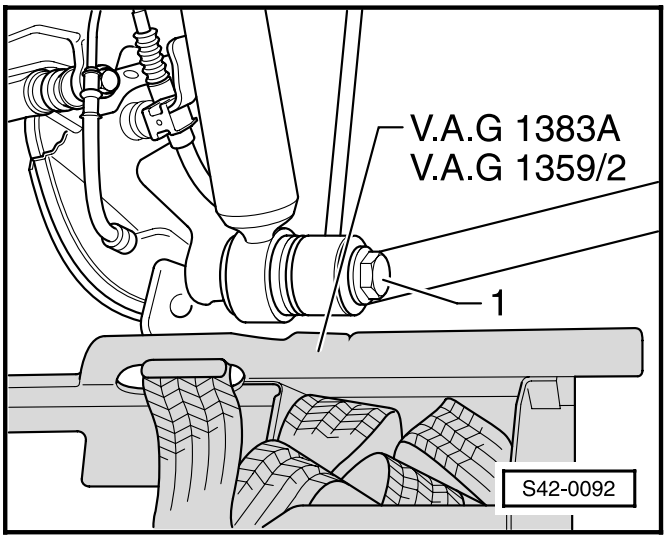


◄- Unscrew bolts -1- and -2- for track control arms.

3 - Top track control arm

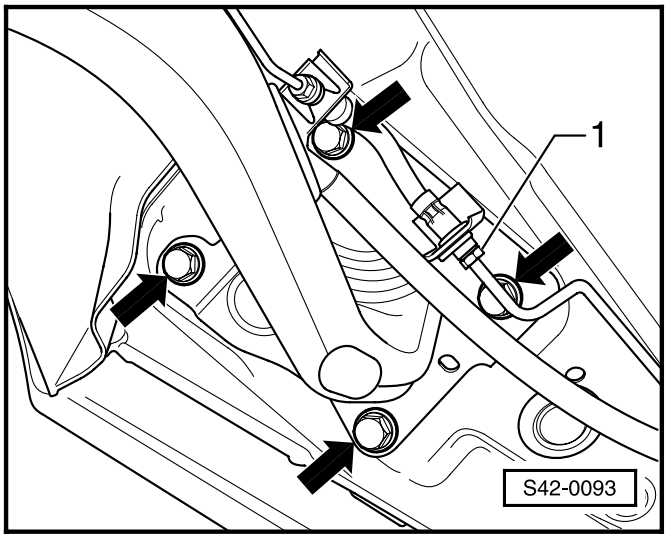
4 - Bottom track control arm

5 - Trailing arm



◄ - Position the gearbox lift with attachment, e.g. V.A.G 1383A with V.A.G 1359/2, below the trailing arm.

- Unscrew bolt -1- for shock absorber.



◄ - Separate brake line at the pipe union -1-.

- Seal brake lines.

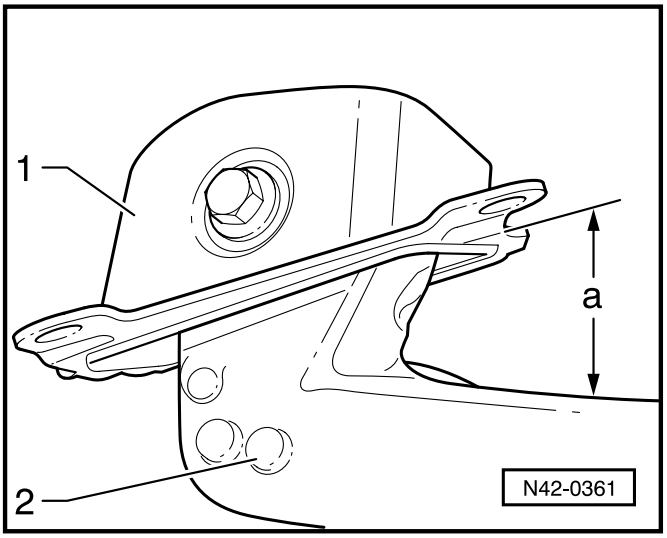
- Mark the installation position of the bearing bracket at the body.

- Unbolt the bearing bracket from the body -arrows-.

Notes:

- *If the trailing arm is replaced, use the existing track control arm.*
- *The installation position of the bearing bracket must then be set as described on page 42-57.*

Determining installation position of bearing bracket relative to trailing arm



◄ The dimension -a- is 53.5 ± 2 mm.

1 - Bearing bracket

2 - Trailing arm

Installing

Installation is carried out in the reverse order.

- Bleed brake system ⇒ page 47-18.

- Adjust handbrake ⇒ page 46-29.

After installing, inspect camber and wheel toe on axle alignment stand, and set if necessary ⇒ page 44-1.

Tightening torques:

Brake carrier with brake calliper to trailing arm	65 Nm
Bracket to trailing arm	90 Nm
Bracket to body	75 Nm
Suspension arm to trailing arm **Use new screws and nuts!**	70 Nm + 90°
Shock absorber to trailing arm Vehicle must be standing on its wheels and loaded with one person on the rear seat.	110 Nm
Tighten drive shaft to flange shaft M8 crosswise in 2 steps (I and II) **Use new screws!**	I - 10 Nm II - 40 Nm
Pipe bolted connection - brake line	14 Nm
Wheel screw	120 Nm
Nut to wheel hub **Always use new nut!**	

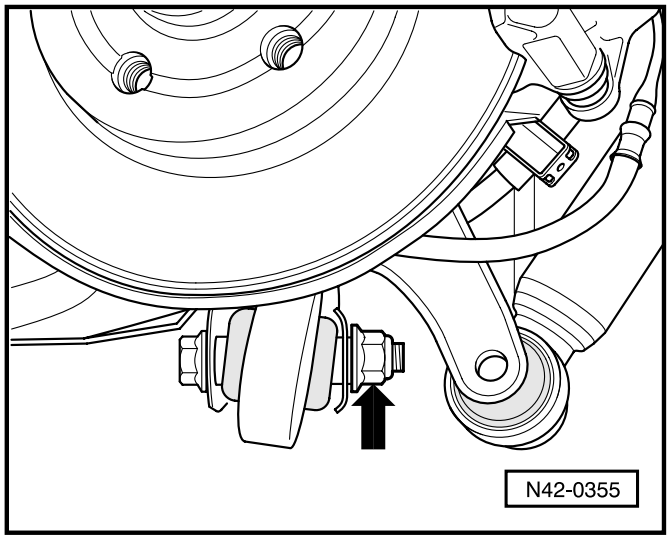
Tightening torque ⇒ page 42-74

Removing and installing suspension arm

Caution!

If the top and bottom guide joint must be replaced, first of all the helical spring must be removed.

- Remove helical spring ⇒ page 42-35.

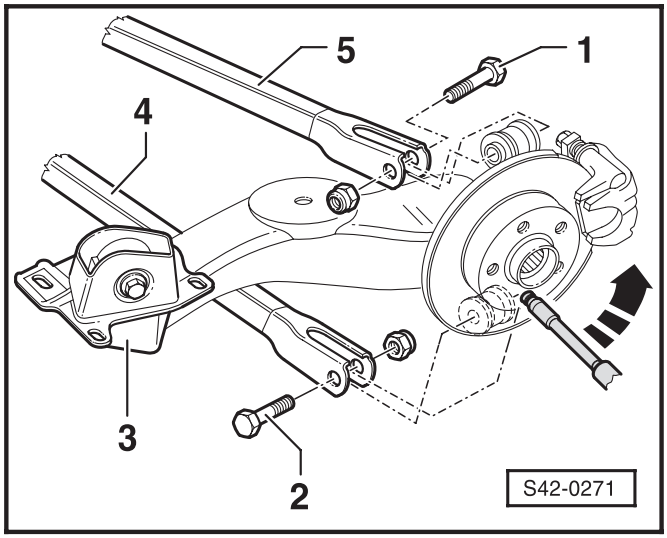


Removing bottom suspension arm

- Raise the vehicle.
- Remove the wheel.

◄ - Unscrew bottom suspension arm from the trailing arm -arrow-.

- Screw the wheel bolt up to the stop into the brake disc.



◄ - Fit socket nut with two extensions onto the wheel bolt.

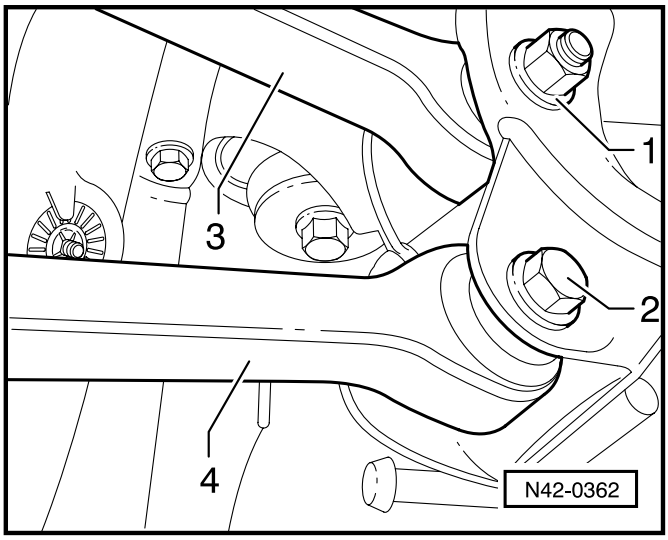
- Press extension slightly upwards -arrow- and pull out screw -2-.

1 - Screw for top suspension arm - do not slacken!

3 - Trailing arm

4 - Bottom suspension arm - do not remove!

5 - Top suspension arm



◄ - Unscrew screw -2- from the assembly carrier.

- Unscrew bottom suspension arm -4- from the assembly carrier.

Installing bottom suspension arm

Further installation occurs in reverse order.

The screw for bottom suspension arm must only be tightened for a vehicle standing on its wheels!

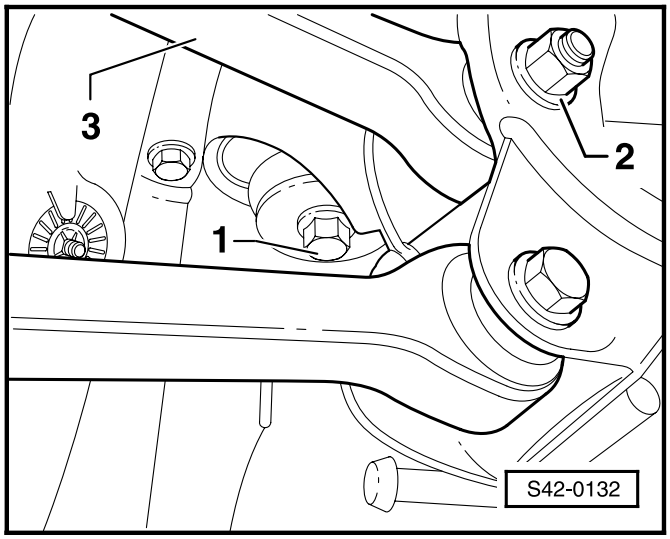
After installation inspect the wheel toe and camber, if necessary adjust ⇒ page 44-1.

Tightening torques:

Suspension arm to trailing arm **Use new screws and nuts!**	70 Nm + 90°
Suspension arm to assembly carrier **Use new screws and nuts!**	70 Nm + 90°

Removing top suspension arm

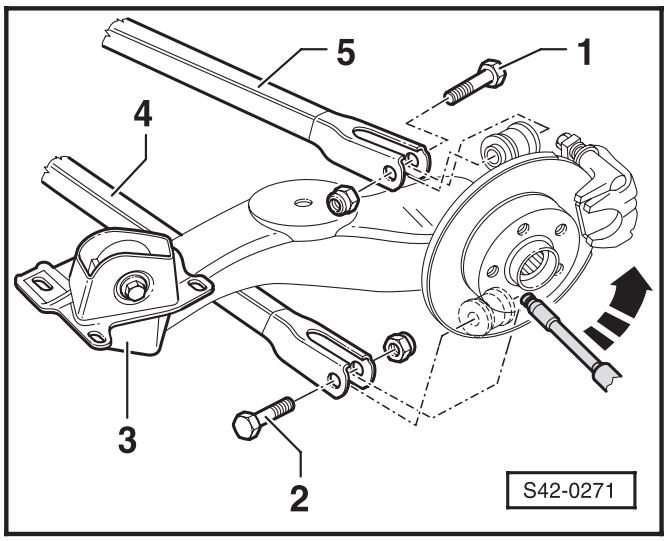
> ***Caution!***
>
> ***If the top and bottom suspension arm must be replaced, first of all the helical spring must be removed.***



- Raise the vehicle.
- Remove the wheel.

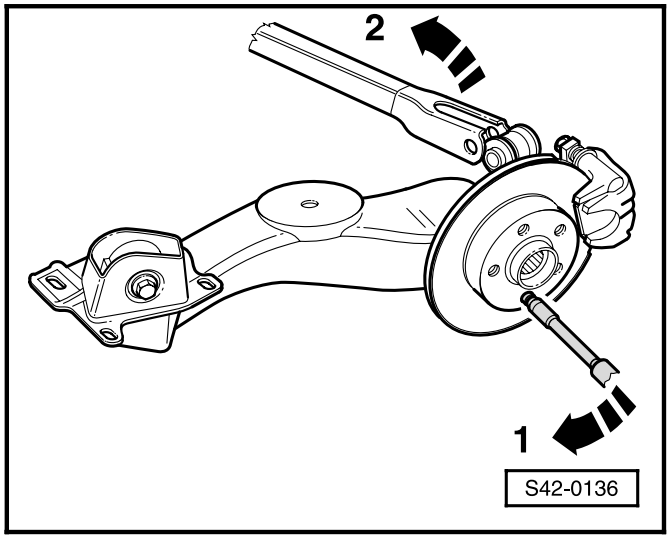
◄ - Unscrew screw -1- from the assembly carrier.

- Unscrew nut -2- for top suspension arm.



◄ - Unscrew nut of screw -1-

- Screw the wheel bolt up to the stop into the brake disc.
- Fit socket nut with two extensions onto the wheel bolt.
- Press extension slightly upwards -arrow- and pull out screw -1-.



◄ - Press down the extension only so far -arrow 1-, that the top suspension arm can be removed upwards -arrow 2-.

Note:

If the extension is pushed too far downwards, the drive shaft can be damaged.

- Pull screw and top suspension arm out of the assembly carrier.

Installing top suspension arm

Further installation occurs in reverse order.

The screw for top suspension arm must only be tightened for a vehicle standing on its wheels!

After installation inspect the wheel toe and camber, if necessary adjust ⇒ page 44-1.

Tightening torques:

Suspension arm to trailing arm **Use new screws and nuts!**	70 Nm + 90°
Suspension arm to assembly carrier **Use new screws and nuts!**	70 Nm + 90°
Assembly carrier to body **Use new screw!**	110 Nm + 90°