

Wartung und allgemeine Hinweise

Maintenance and general hints

Entretien et généralités

Manutenzione e informazioni generali

Entretienimiento e informes generales

Underhåll och allmänna anvisningar

Onderhoud en algemene aanwijzingen

00 Maintenance

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**Conversion table for
official units of measurement**

**see pages 00-0/4 and
00-0/5**

Conversion table for official units of measurement

Value	Unit symbol		Conversion
	old	new	
Length	m	m	1 m = 1000 mm 1 km = 1000 m 1 μm = 0.001 mm
	m ²	m ²	1 m ² = 10 ⁶ mm ² 1 mm ² = 0.01 cm ²
	m ³	m ³	1 m ³ = 10 ⁶ cm ³ 1 dm ³ = 0.001 m ³
Volume	l	l	1 l = 1 dm ³
Angle	°	°, rad	1 rad = 1m/m ≈ 57° 1° = π/180 rad
	(°) ²	sr	1 sr = 1 m ² /m ² (1°) ² = (π/180) ² sr
Mass	kg	kg	1 kg = 1000 g 1 g = 1000 mg 1 t = 1 Mg = 1000 kg
Density	kg/m ³	kg/m ³	1 kg/m ³ = 0.001 kg/dm ³ 1 kg/dm ³ = 1 kg/l
Imbalance	kgm	kgm	1 kgm = 1000 000 gmm
Time	sec	s	1 min = 60 s 1 h = 60 min
	s	s	
Speed of rotation	rev/sec	1/s	
	rev/min (r.p.m.)	1/min	1 U/min = 1/min 1/min = 1/(60 s)
Speed	m/s	m/s	1 m/s = 3.6 km/h
Acceleration	m/s ²	m/s ²	

Conversion table for official units of measurement (continued)

Value	Unit symbol		Conversion
	old	new	
Force	kp	N	1 N = 1 ¹ kgm/s ² 1 kp = 9.81 N
Pressure (gas, fluids)	at	N/m ²	1 at = 1 kp/cm ² = 0.981 bar = 98066.5 Pa
	kp/cm ²	Pa	1 m WS = 9806.65 Pa = 9806.65 N/m ²
	mWS	bar	1 Torr = 1.333224 mbar
	Torr	Pa	1 mm Hg = 133.322 Pa = 133.322 N/m ²
mmHg			
Mechanical load, stress	kp/mm ²	N/m ² Pa N/mm ²	1 N/m ² = 1 Pa 1 kp/mm ² = 9.81 N/mm ²
Energy, work, heat volume	kp m	J	1 J = 1 Nm
	PS h cal	kWh	1 kWh = 3.6 MJ 1 kpm = 9.81 J 1 cal = 4.1868 J
Torque	kp m	Nm	1 kpm = 9.81 Nm
Power	PS	kW	1 kW = 1000 W
	kpm/s	Nm/s	1 PS = 736 W = 75 kpm/s = 632 kcal/h
	kcal/h		1 kW = 1.36 PS = 102 kpm/s = 860 kcal/h = 0.239 kcal/s
Viscosity	dynamic	P	1 Pas = 1 Ns/m ² 1 P = 0.1 Pas = 1 g/cms
		kinematic	St
Temperature		°C	0 °C ≙ 273.15 K
		°K	°K = 1 K = 1 °C (temperature differential)

Conversion table for official units of measurement (continued)

Value	Unit symbol		Conversion
	old	new	
Elec. current	A	A	1 mA = 0.001 A 1 kA = 1000 A
Elec. potential/voltage	V	V	1 V = 1 W/A 1 mV = 0.001 V 1 MV = 10 ⁶ V
Elec. resistance	Ω	Ω	1 Ω = 1 V/A = 1/S
Magnetic flux	M	Wb, Vs	1 Wb = 1 Vs 1 M = 10 ⁻⁸ Wb
Magn. flux density	G	T	1 T = Wb/m ² 1 G = 10 ⁻⁴ T
Magn. field strength	Oe	A/m	1 A/m = 1 N/Wb 1 Oe = 10 ³ /4 π A/m
Light intensity, luminosity	HK	cd	1 cd = 1.107 HK 1 HK = 0.903 342 cd
Brightness, luminance	sb	cd/m ²	1 sb = 10 ⁴ cd/m ²
Light density	ph	lx	1 ph = 10 ⁻⁴ lx

Specifications

Maintenance and general instructions

Model	a) 320/6 b) 320/6 A	a) 323 i b) 323 i A *)
Dimensions and weights		
Overall length	4355 (171.4)	
Overall width	1610 (63.4)	
Overall height, unladen	1380 (54.3)	
Ground clearance, laden (at perm. gross weight limit)	145 (57)	
Front overhang (at perm. axle load)	781 (30.7)	
Rear overhang (at perm. axle load)	1011 (39.8)	
Overhang angle (at perm. axle load)	23°20'	
	12°	
Wheelbase (at perm. axle load)	2563 (100.9)	
Min. turning circle (wheels)	9.40 (30.8)	
	9.60 (31.5)	
Min. turning circle (overall)	10.20 (33.5)	
	10.40 (34.1)	

*) Version for Sweden

Specifications

Maintenance and general instructions

Model		a) 320/6 b) 320/6 A	a) 323 i b) 323 i A *)
Unladen weight, empty (ready for road, tank full)	kg (lb)	a) 1115 (2458) b) 1130 (2491)	a) 1135 (2502) b) ()
Permissible gross weight	kg (lb)	1550 (3417)	1570 (3461)
Permissible axle load	front rear	780 (1720) 840 (1852)	790 (1742) 850 (1873)
Dimensions and weights (continued)			
Permissible trailer load.	kg (lb)		500 (1102)
unbraked			
braked, max. gradient 16 % (1 in 6.25)	kg (lb)	a) 1000 (2205) b) 650 (1433)	a) 1000 (2205) b) 650 (1433)
braked, max. gradient 12 % (1 in 8.33)	kg (lb)	a) 1200 (2646) b) 1000 (2205)	a) 1200 (2646) b) 1000 (2205)
Towbar downthrust, max.	kg (lb)		50 (110)
Permissible load on roof (when fully laden, max. angle loads must not be exceeded)	kg (lb)		75 (165)

*) Version for Sweden

Specifications

Maintenance and general instructions

Model	a) 320/6 b) 320/6 A	a) 323 i b) 323 i A *
Performance Max. gradient	in 1st gear % (1 in)	a) 58 (1.72) b)
	in 2nd gear % (1 in)	a) 27 (3.70) b)
	in 3rd gear % (1 in)	a) 14 (7.14) b)
	in 4th gear % (1 in)	a) 9 (11.11) b)
Acceleration	km/h (mile/h)	0 ... 50 (0 ... 31)
	1st - 2nd gears s	a) 3.4 b) 5.2
	km/h (mile/h)	0 ... 80 (0 ... 50)
1st - 2nd gears s	a) 7.2 b) 9.5	a) 6.4 b)
	km/h (mile/h)	0 ... 100 (0 ... 62)
1st - 3rd gears s	a) 10.7 b) 13.6	a) 9.5 b)

*) Version for Sweden

Specifications

Maintenance and general instructions	Specifications	
Model	a) 320/6 b) 320/6 A	a) 323 i b) 323 i A *)
1st – 3rd gears	km/h (mile/h) s	0 ... 120 (0 ... 75)
	a) 15.8 b) 19.3	a) 13.6 b)
1st – 4th gears	km/h (mile/h) s	0 ... 140 (0 ... 87)
	a) 22.7 b) 29.3	a) 18.5 b)
1st – 4th gears	km/h (mile/h) s	0 ... 160 (0 ... 99)
	a) 36.0 b) 45.4	a) 27.3 b)
Standing-start kilometer (3281 ft) in	s	a) 30.9 b)
Maximum speed	km/h (mile/h)	a) 190 (118) b)

*) Version for Sweden

0000009 Free Delivery Check

- 1. Checking coolant level and concentration/adding coolant**
- 2. Tightening hose clips**
- 3. Checking engine oil level/adding oil**
- 4. Checking steering gear oil level**
- 5. Checking tightness of wire connections**
- 6. Checking and correcting V-belt tension**
- 7. Checking and correcting battery acid level**
- 8. Checking and correcting brake fluid level**
- 9. Checking and correcting windshield washer fluid level**
- 10. Checking and correcting transmission oil level**
- 11. Checking and correcting final drive oil level**
- 12. Checking steering wheel straight-ahead position, adjusting steering wheel**
- 13. Checking tightness of wheel bolts**
- 14. Checking pressure of all tires (including spare wheel)**
- 15. Checking and adjusting headlight beams**
- 16. Checking lights**
- 17. Checking interior equipment, chrome-plated parts and paint, doors, engine hood and trunk lid, door windows, sliding roof, seat belts**
- 18. Tools**
- 19. Test drive with function check**
- 20. Leak inspection after test drive**
- 21. Engine idle speed adjustment, exhaust emissions test**

1. Checking coolant level

Add coolant until level is up to a maximum of 2 cm ($\frac{3}{4}$ in) below cap.



323 00 011

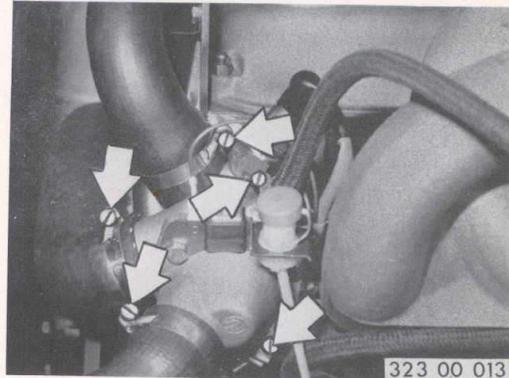
Check antifreeze concentration.
All-year antifreeze protection to -25°C (-13°F).
Add approved long-term antifreeze and corrosion inhibitor: see Service Information Gr. 17.



323 00 012

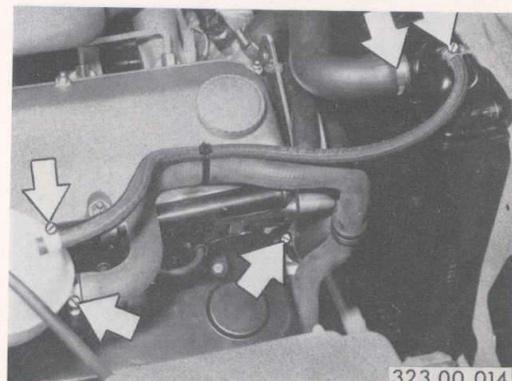
2. Tightening hose clips

Tighten all hose clips on engine.

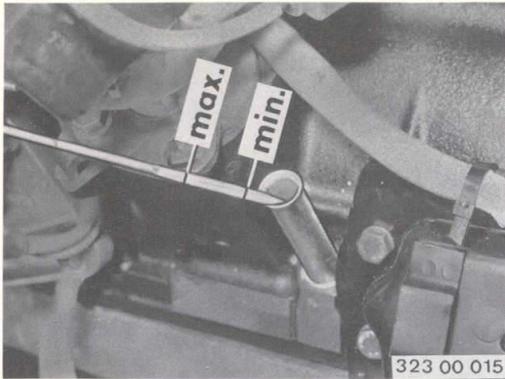


323 00 013

Tighten all hose clips on radiator and expansion tank.



323 00 014

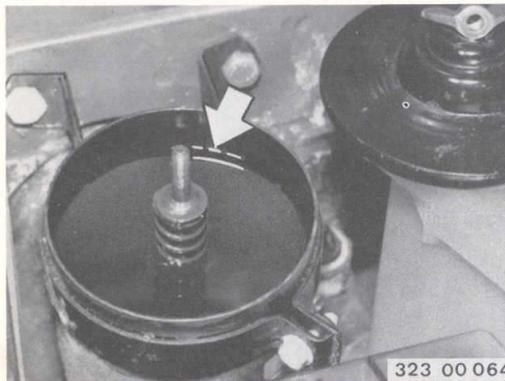


3. Checking/correcting engine oil level

Add oil until level is up to max. mark at the most.

Quantity of oil between min. and max. marks = 1.5 liters (1.5 US quarts, 2.6 Imp. pints).

For approved oil grades, see Service Information Group 11.

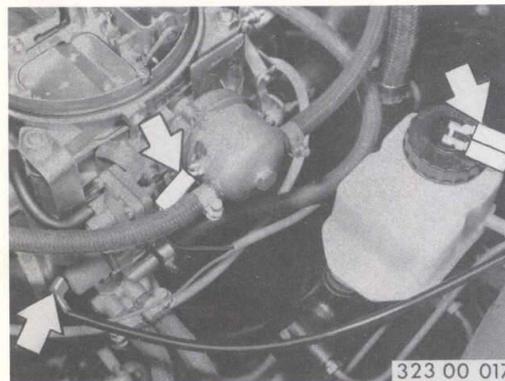


4. Checking/correcting power steering oil level

With engine stopped, remove wing nut and take off tank cover.

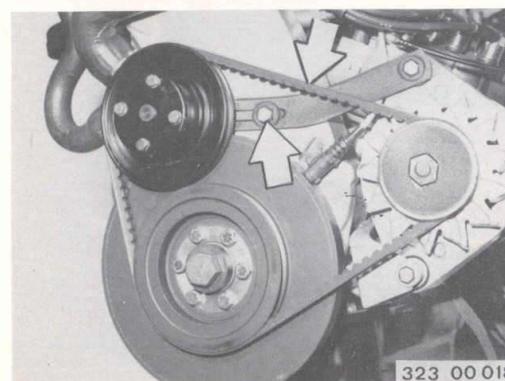
Oil level must be approx. 5 mm (0.2 in) above mark on tank wall.

Start engine and if necessary add oil until level reaches mark.



5. Checking tightness of wire connections

Check tightness of all wire plugs, bending them with pliers if necessary.



6. Checking and tightening belts

A tight belt must give under thumb pressure by 5 to 10 mm (0.2 to 0.4 in) at a point midway between two pulleys. Tighten belt for alternator and, if applicable, vane pump. Loosen alternator and, if applicable, vane pump, swing outward and tighten bolts again.

7. Checking/correcting battery acid level

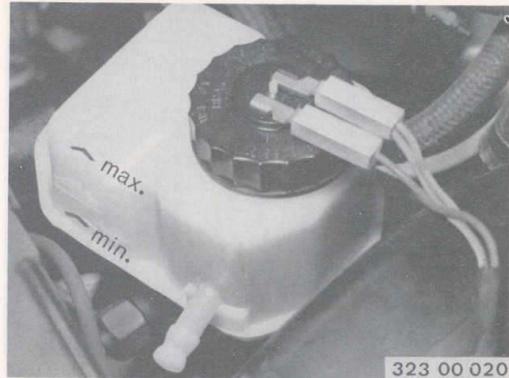
Lift off battery cover and unscrew plugs. Acid level approx. 5 mm (0.2 in) above plate upper edges in each cell or up to level mark visible in opening. Add distilled water when level is too low. Keep upper section of battery dry and clean.

Important! Be careful not to spill any acid or wipe any lead oxide from the pole connections on clothes. Never work with an open flame near a battery – danger of explosion.



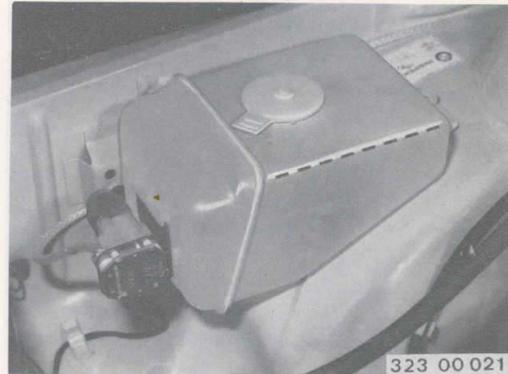
8. Checking/correcting brake fluid level

Brake fluid level in transparent tank for brake system between min. and max. marks. Correct level only up to max. mark. Refer to Service Information Gr.34 for approved brake fluids.



9. Checking/correcting windshield washer fluid level

The windshield washer and headlight cleaner systems will always be ready for use by adding 40% household spirit for temperatures down to -20°C (-4°F).



10. Checking/correcting transmission oil level

a) Manual gearbox

Unscrew oil filler plug with a 17 mm socket wrench.

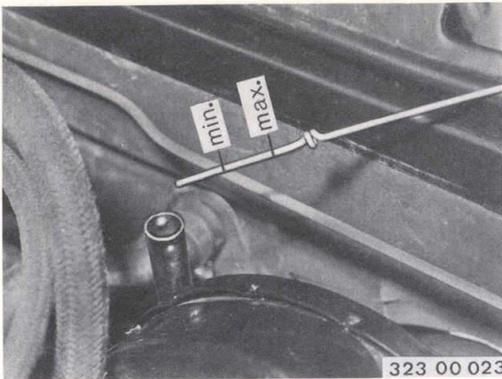
Oil level up to lower edge of filler opening.

Use only brand name SAE 80 gear oils.

Specification MIL-L-2105 or

API-GL-4





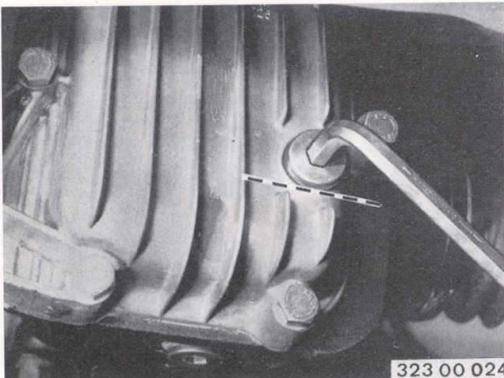
b) Automatic transmission

Requirement: Car on level ground, transmission at operating temperature, selector lever at "P" and engine running at idle speed.

Oil level must be between min. and max. marks.

Quantity of oil between min. and max. marks = 0.4 liter (0.7 Imp. pin, 0.42 US quart).

Important: Do not wipe oil dipstick with a fluffy cloth. Refer to Service Information Gr.24 for approved automatic transmission fluids.



11. Checking/correcting final drive oil level

Unscrew oil filler plug with a 10 mm socket wrench.

Oil level up to lower edge of filler opening. Use only brand name hypoid SAE 90 gear oils. Refer to Service Information Gr.33 for approved final drive oil grades.



12. Checking steering wheel straight ahead position and steering wheel fastening

Check straight ahead position of steering wheel during a test drive. Lift off BMW emblem to adjust the steering wheel. Unscrew nut, take off steering wheel and put it on in straight ahead position. Use a new self-locking nut. Torque¹⁾



13. Checking tightness of wheel bolts

Check tightness of wheel bolts with a torque wrench.

Torque¹⁾

¹⁾ See Specifications

14. Checking pressure of tires (including spare wheel)

(Filling pressure¹)



15. Checking and aiming headlight beams

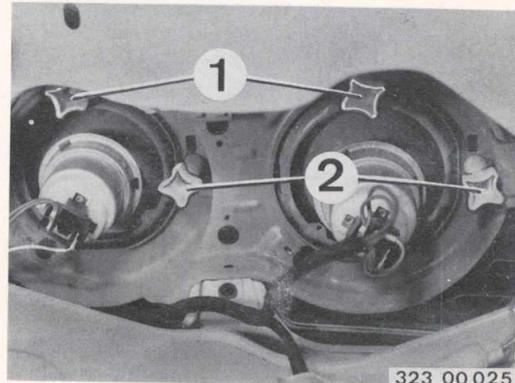
Requirement: Correct tire pressures, car on level ground and rear seat loaded at center by one person or 70 kg (154 lb).

Check low and high beams with optical testing equipment.

Take off covers. Correct beams with adjusting screws.

(1) Vertical adjustment

(2) Lateral adjustment



16. Checking lights

Check function of parking lights, high and low beam headlights, tail lights, stop lights, backup lights, tail fog light, license plate light, turn signals, hazard lights, horns, windshield wipers and windshield washer.

Adjust windshield washer jets. Check function of heater blower, interior lamp, glove box lamp, trunk and engine compartment lamps, instrument lights and all indicator and warning lamps, and the cigar lighter.

17. Check interior equipment, chrome-plated parts, paint, doors, engine hood, trunk lid, door windows, steel-panel sliding roof and seat belts

Check headliner, trim and carpets for correct installation, damage or dirt.

Check chrome-plated parts for damage or defects. Check painted parts for scratches, dust inclusions or silicone pits. Check function and alignment of doors, engine hood, trunk lid, door windows and steel sliding roof, correcting if necessary. Check function of seat belts.

¹) See Specifications



520 00 033

18. Tools

Check whether all tools are present.



520 00 048

Spare key, owner's handbook, service booklet,
list of dealers and warranty card.
Car jack and wheel wrench.
Check whether these items are in car.

19. Test drive with function check

Check function of engine, cooling system, transmission, final drive, steering and brakes during a test drive. Check items affecting road safety. Bed down the handbrake by applying to 4 notches at lever and driving app. 400 m (1300 ft.).
Check instrument readings.

20. Leak test after test drive

Check (visual inspection) engine, cooling system, transmission, final drive, fuel, clutch and brake systems for leaks after a test drive.

21. Adjusting engine idle speed – exhaust emissions test

1) Idle speed

Requirement: correct ignition timing.

Engine at operating temperature.

Oil temperature at least 60°C (140°F).

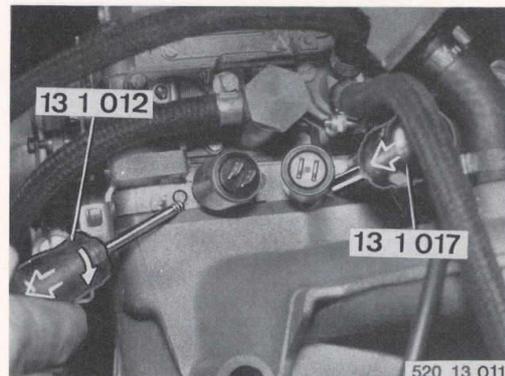
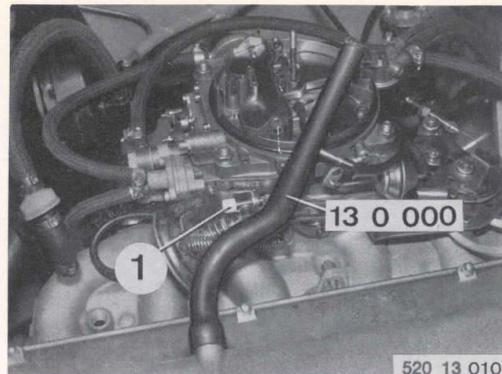
Remove air cleaner – 13 71 000.

Connect air cleaner simulator 13 0 000, using the hose between the air cleaner and the rocker cover.

Connect BMW digital tester.

Adjust engine idle speed with screw (1).¹⁾

Important: remove existing locks on adjusting screws with 13 1 012 puller. After adjusting idle speed, install new locks (color blue) with tool 13 1 017.



2) CO level in % by volume

Remove plugs from exhaust manifold and insert test probes 13 0 020.

Connect CO level tester.

Measure CO level separately at front and rear exhaust manifolds.

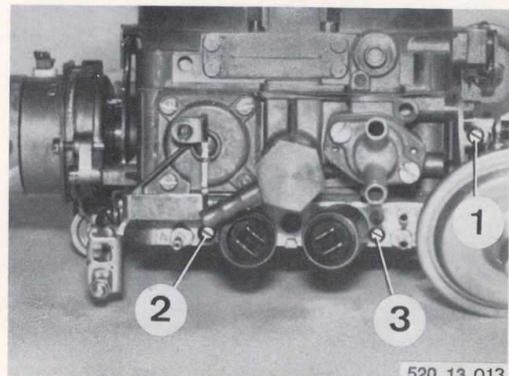


Adjust CO level with the mixture control screws (2 and 3).¹⁾

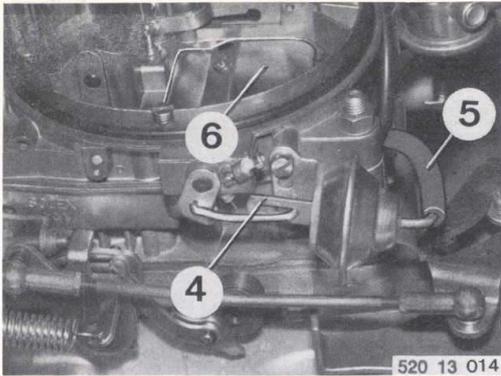
Screw (2) – rear exhaust manifold

Screw (3) – front exhaust manifold

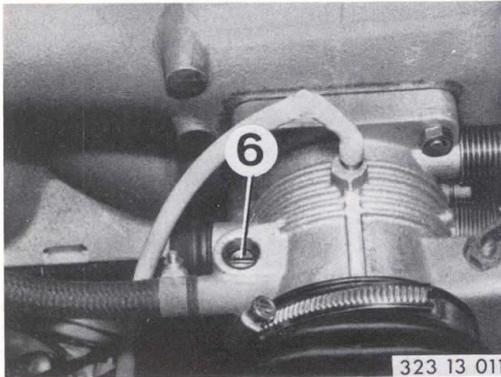
Correct any change in idle speed with screw (1).



¹⁾ See Specifications

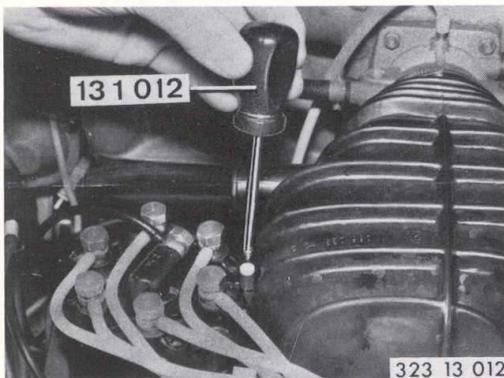


3) Checking function of stage II damper
 Check easy movement of air flap and closing of throttle butterfly.
 Run engine at idle speed.
 Lever (4) must be pulled against the stop by the diaphragm.
 Pinch hose (5) with a Matra clamp or other means.
 Operate air flap (6) several times.
 The diaphragm is in working order when the lever always returns to the final stop.
Important: attach actuating rod with kink facing down, or accelerator linkage may jam.

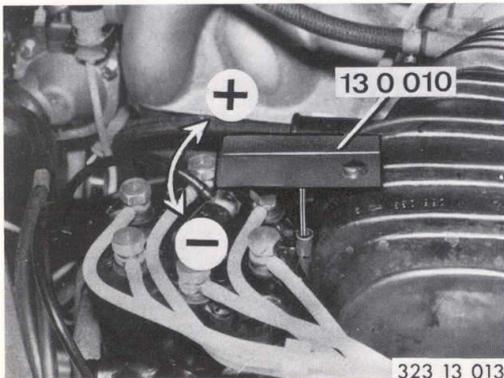


B) Fuel injection engine

– Engine at normal operating temperature –
 1) Idle speed
 Turn screw (6) to adjust idle speed.¹⁾



2) Adjusting CO level in % by volume
 Remove screw plugs from exhaust manifolds and insert test probes 13 0 020.
 Connect exhaust emissions tester.
 Measure CO value at front and rear exhaust manifolds separately.
Important: remove screw lock with puller 13 1 012. After adjusting idle speed, attach new lock.



Use adjusting wrench 13 0 010 to set CO value.¹⁾

¹⁾ See Specifications

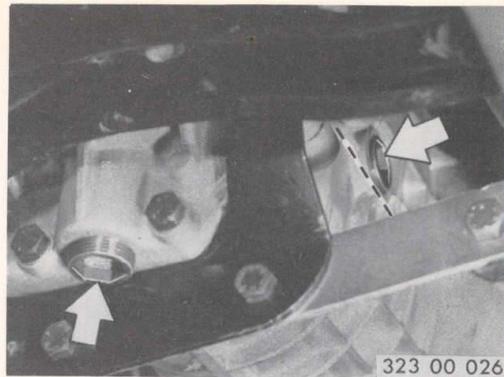
**0000079 Extra work during BMW Inspection
– every 30000 km (20000 miles)**

- 1. Transmission oil change**
- 2. Final drive oil change**
- 3. Checking installed clutch for wear**
- 4. Checking and aiming headlight beams**
- 5. Cleaning fuel strainers or renewing fuel filter**

00 00 079 Extra work during BMW Inspection – every 30 000 km (20 000 miles)

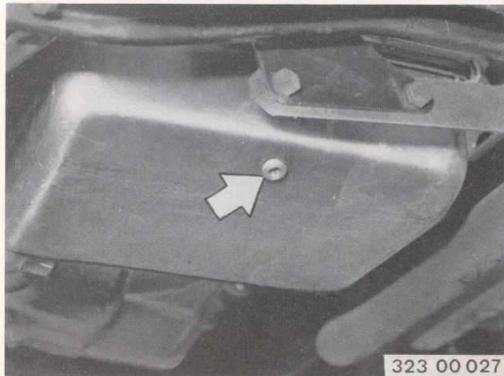
1. Transmission oil change
a) Manual gearbox

Transmission at operating temperature. Unscrew oil drain plug and filler plug with a 17 mm Allen socket wrench. Remove, clean and insert oil drain plug.¹⁾ Add brand name SAE 80 gear oil. Oil level up to lower edge of filler opening.¹⁾ Specifications MIL-L-2105 or API-GL-4.

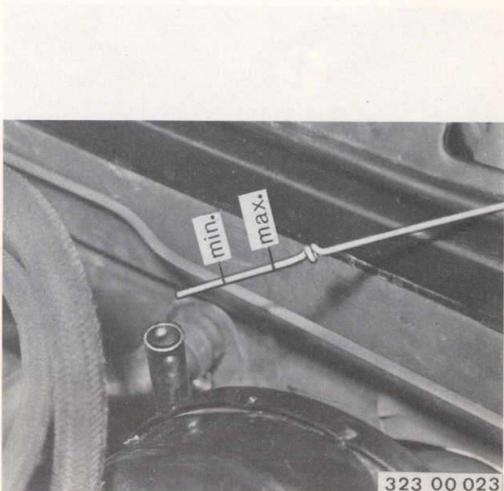


b) Automatic transmission

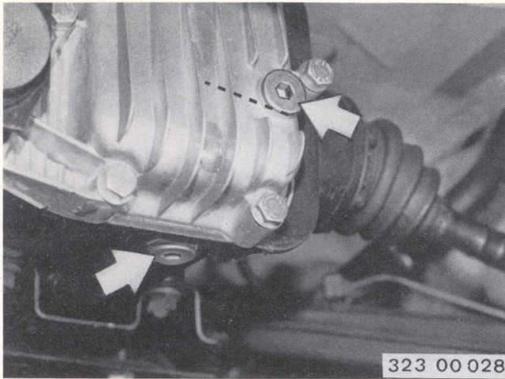
Transmission at operating temperature. Unscrew oil drain plug with a 5 mm Allen socket wrench. *When installing:* Check gasket and renew if necessary. Pull out oil dipstick and add 2.0 liters (3.5 Imp. pints, 2.1 US quarts) of ATF. Refer to Service Information Gr.24 for approved ATF grades.



Check oil level.
Requirement: Car on level ground, transmission at operating temperature, selector lever at "P" and engine running at idle speed. Oil level must be between min. and max. marks. Quantity of oil between min. and max. marks = 0.4 liter (0.7 Imp. pint, 0.42 US quart). *Important!* Never wipe off oil dipstick with a fluffy cloth.

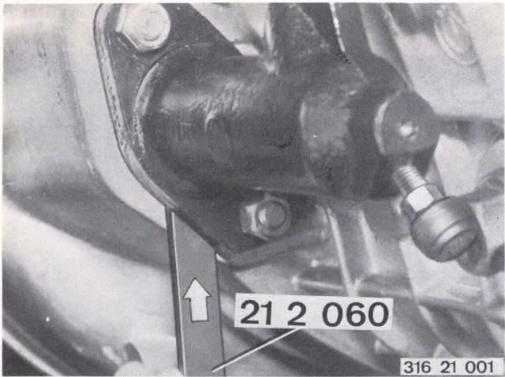


¹⁾ See Specifications



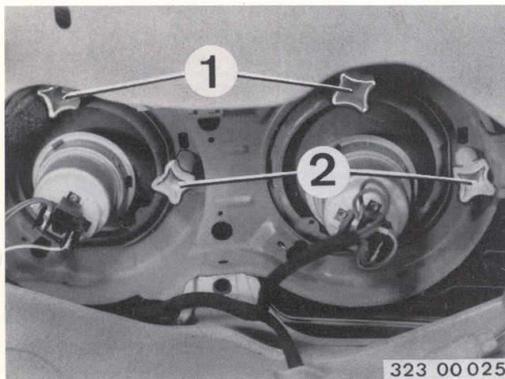
2. Final drive oil change

Final drive at operating temperature. Unscrew oil drain plug and filler plug with a 10 mm Allen socket wrench. Clean oil drain plug. Check seal and insert drain plug. Add brand name hypoid SAE 90 gear oil.¹⁾ Oil level up to lower edge of filler opening. Refer to Service Information Gr.33 for approved oils.



3. Checking installed clutch for wear

Clutch linings are good as long as gauge 21 2 060 can be inserted into the opening of the slave cylinder up to the stop. When there is a gap of 5 mm (0.2 in) between the gauge 21 2 060 and slave cylinder, the drive plate is worn and must be replaced.



4. Checking and aiming headlight beams

Requirement: Correct tire pressures, car on level ground and rear seat loaded at center by one person or 70 kg (154 lb) of weight. Check low and high beams with an optical tester. Lift off covers. Adjust beams with the adjusting screws.

- (1) Vertical adjustment.
- (2) Lateral adjustment.

¹⁾ See Specifications

5. Cleaning fuel strainers or renewing fuel filter

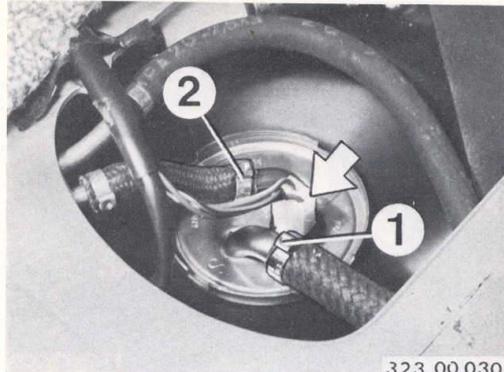
Remove rear seat.

Take off cover plate.

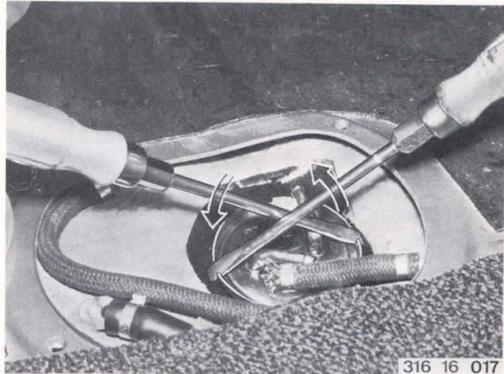
Detach hoses and cables from suction head.

When installing: **1. Suction line**

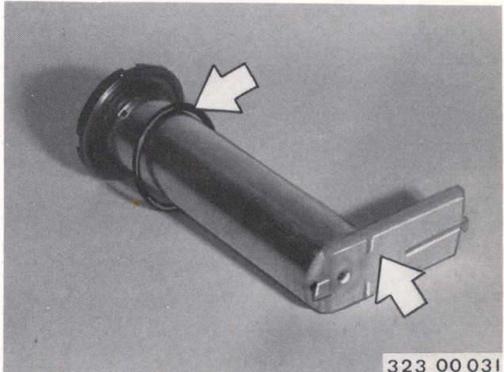
2. Return line



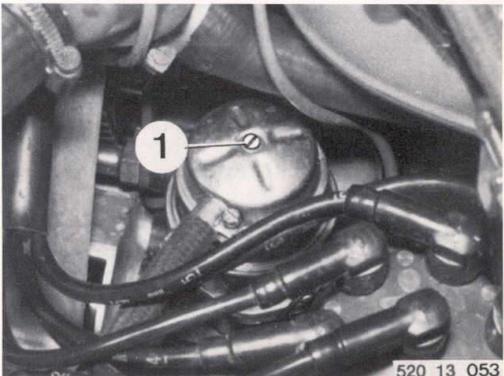
Unscrew fuel suction device by applying two crossed screwdrivers and turning counter-clockwise.

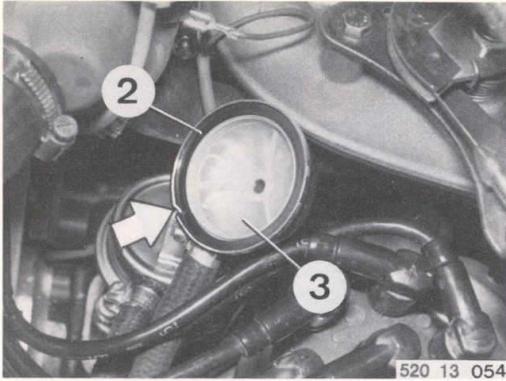


When installing: **clean fuel strainer. The round cord seal swells when in contact with gasoline and in this manner provides a perfect seal. Check round cord seal and renew if necessary.**



**Carburetor engine:
Clean strainer in fuel pump. Loosen screw (1).**



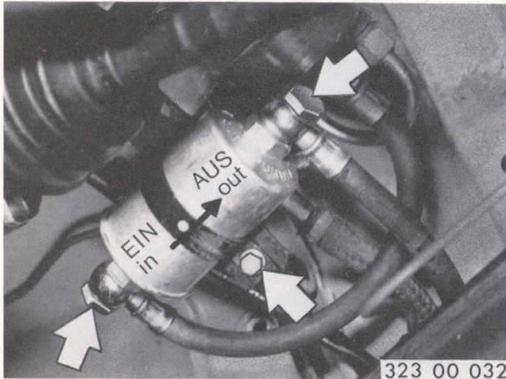


520 13 054

Remove cover with sealing ring (2) and strainer (3).

Clean strainer.

When installing: lug must engage in pump housing.



323 00 032

Fuel injection engine:

Detach hose unions and clip.

When installing: note correct direction of flow.

0000090 Extra work during BMW Inspection
– every 60000 km (40000 miles)

- 1. Checking high pressure pump and function of power steering (special equipment)**
- 2. Renewing power steering filter**
- 3. Checking/adjusting front wheel bearing play**
- 4. Checking handbrake linings (in rear disc brakes)**

00 00 090 Extra work during BMW Inspection – very 60 000 km (40 000 miles) –

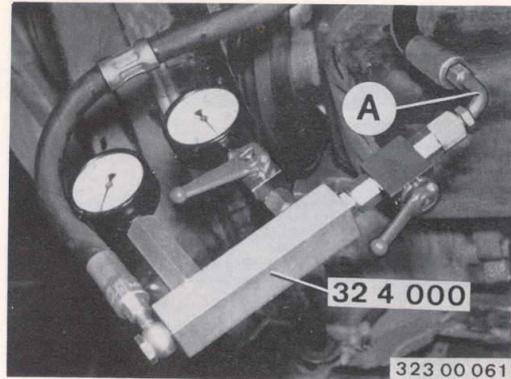
1. Checking vane pump and function of power steering (special equipment)

A) Vane pump

Always check delivery pressure of vane pump first.

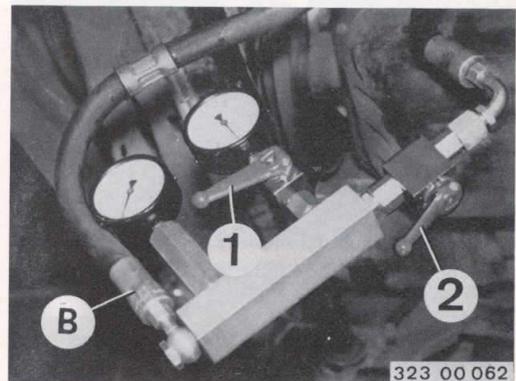
Detach pressure line (A) at vane pump and connect it to pressure tester 32 4 000.

Important! Never use oil which has run out.



Connect pressure line (B) from pressure tester to vane pump. Close cut-off valve (1). Open cut-off valve (2) and bleed hydraulic system while engine is running at idle speed – 32 13 006. Engine must be at operating temperature for this. After bleeding has been completed, close cut-off valve (2) for max. 10 seconds and read the pressure. The pressure¹⁾ given on the vane pump's data plate must not drop by more than 10%.

Important: shutoff valve (1) must remain closed for all high pressure measurements.

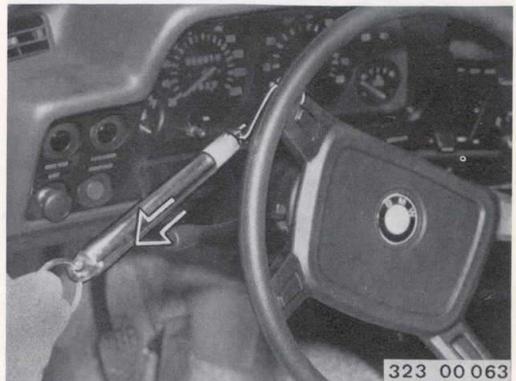


B) Power steering

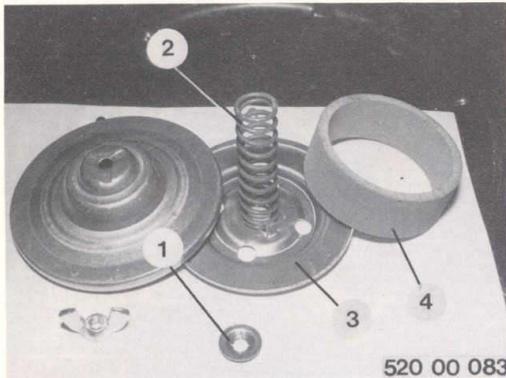
Let engine run.

Pull steering wheel against lock stop with a force of 100 N (22 lb) for approx. 5 seconds. Read pressure from pressure tester 32 4 000. Repeat same test at right lock.

The pressure¹⁾ quoted on the vane type pump data plate must not drop by more than 10%.



¹⁾ See Specifications



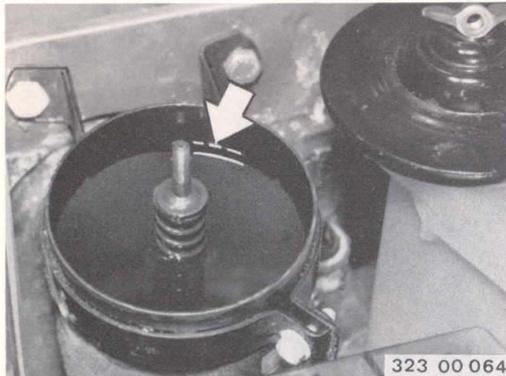
2. Renewing power steering filter

Unscrew cover.

Take out keeper (1).

Remove spring (2), washer (3) and filter (4).

When installing: renew keeper (1). Locate filter in its detent.

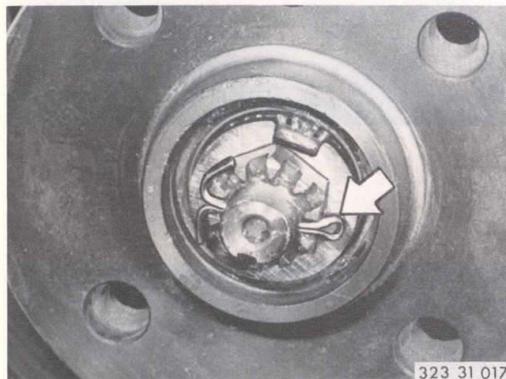


Checking power steering oil level:

Stop engine. Remove wing nut and tank lid.

Oil level must be app. 5 mm (0.2 in) above mark on inside of tank.

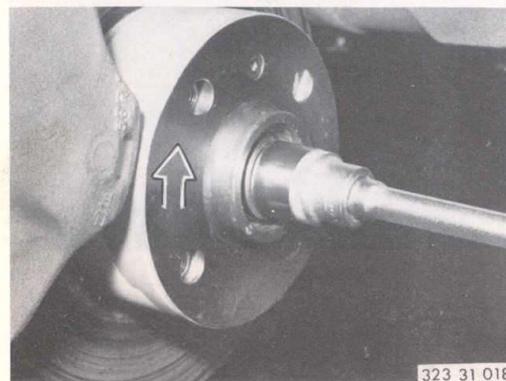
Start engine. Add oil if necessary until level is correct.



3. Checking/adjusting front wheel bearing play

Remove and install cap – 31 21 050.

Remove cotter pin and unscrew castle nut.



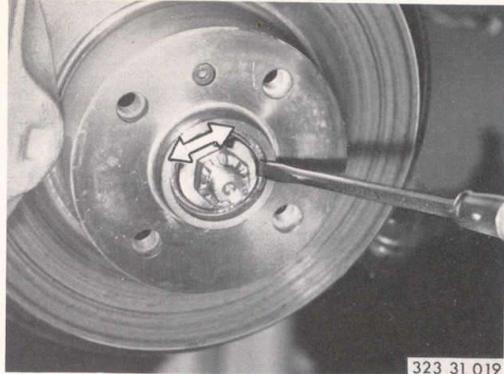
Tighten castle nut to 30... 33 Nm (22... 24 ft. lb) while constantly turning the wheel.

This will line up the taper rollers and bearing inner races. It will also force out the grease causing play. Turn tightened bearing assembly by at least 2 more turns.

When doing this, the castle nut must not be loosened nor tightened.

Loosen castle nut until there is axial play, whereby the hub must turn again. Tighten castle nut to max. 3 Nm (2 ft. lb) and lock with a cotter pin.

Checking axial bearing play: It must be possible to move tabbed disc (1) quickly and without any noticeable resistance.



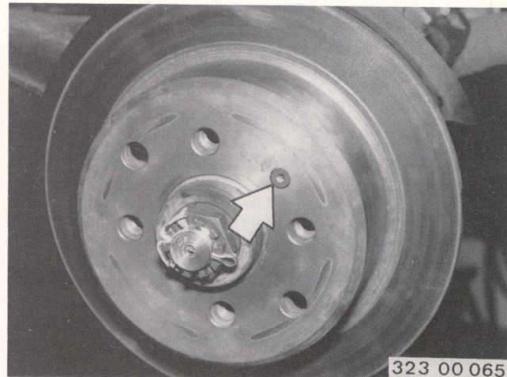
4. Check handbrake linings

Detach and attach rear wheel – 36 10 320.
Remove fixed caliper. Brake pipe remains attached.

Remove 4 mm Allen screw.

Detach brake disc from axle shaft.

When installing: note relative positions of holes in brake disc and axle shaft flange.



Check minimum thickness and condition of linings.

Brake linings must be at least 1.5 mm (0.06 in) thick at the thinnest point.

When the minimum thickness of 1.5 mm is reached, renew the handbrake shoes.



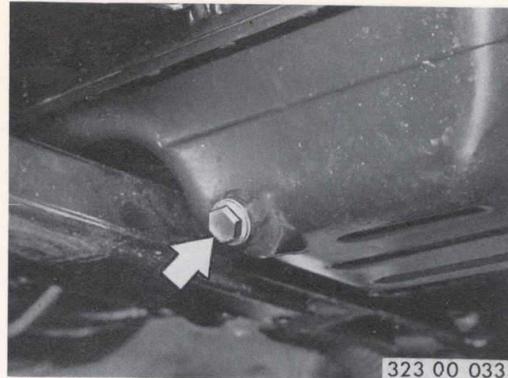
**0000219 1st BMW Inspection
– at 1000 km/600 miles –**

- 1. Engine oil change and oil filter renewal**
- 2. Manual gearbox oil change**
- 3. Final drive oil change**
- 4. Half-shafts**
- 5. Power steering oil level check**
- 6. Cooling system**
- 7. Brakes**
- 8. Fuel pump mounting**
- 9. Carburetor nounting**
- 10. Fuel injection system**
- 11. Checking/tensioning V-belts**
- 12. Tightening nuts and bolts on engine**
- 13. Valve clearances – adjusting**
- 14. Tightening nuts and bolts**
- 15. Checking foot brake/handbrake**
- 16. Checking tire pressures, including spare wheel**
- 17. Checking/correcting toe of front wheels**
- 18. Checking/correcting headlight beams**
- 19. Checking lights**
- 20. BMW program test/digital tester – diagnosis**
- 21. Final inspection**

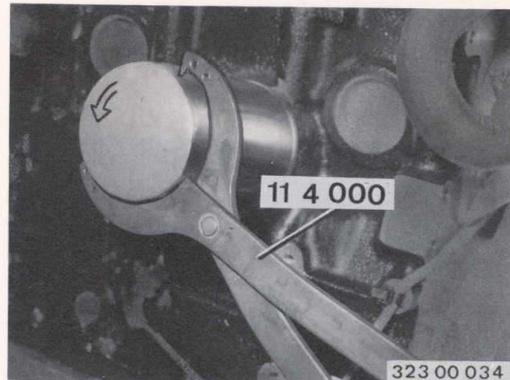
00 00 219 1st BMW Inspection
– at 1 000 km / 600 miles –

1. Engine oil change and oil filter renewed

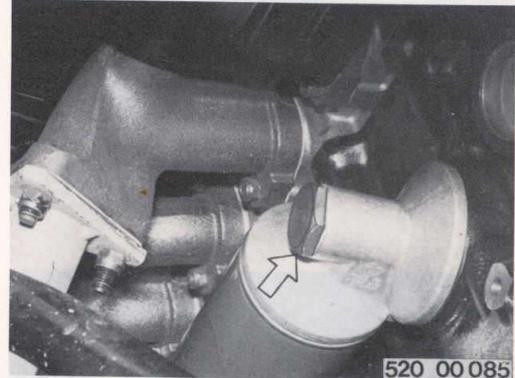
Engine at operating temperature.
Unscrew oil drain plug (19 mm $3/4$ " wrench) at bottom right of oil pan. After oil has drained, install and tighten plug. Torque¹⁾.
When installing: Check oil drain plug and seal; renew if necessary.



Unscrew oil filter with special tool 11 4 000.



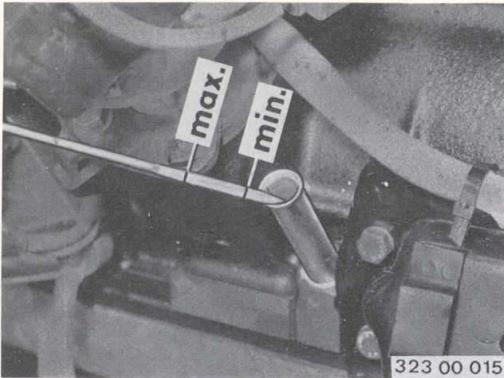
For cars with air conditioning:
Unscrew adaptor with a 32 mm ($1\frac{1}{4}$ in) wrench and separate filter from adaptor.



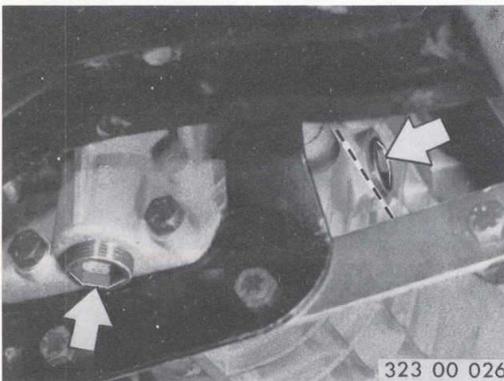
When installing: insert adaptor in lock. Renew the aluminum seal. Tightening torque¹⁾.



¹⁾ See Specifications

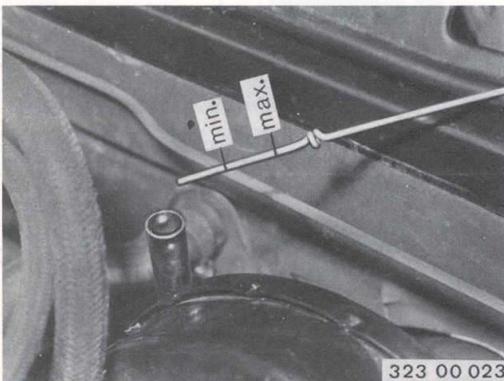


Add brand name engine oil. Quantity¹⁾.
Oil level not higher than max. mark.
Quantity of oil between min. and max. marks
= 1.5 liters (1.6 US quarts, 2.6 Imp. pints).
For approved oil grades, see Service Information Group 11.



2. Oil change only for manual gearbox

Transmission at operating temperature.
Unscrew oil drain plug and filler plug with a
17 mm wrench. Clean and install oil drain plug,
tightening torque¹⁾. brand name SAE 80 gear
tightening torque¹⁾. Add brand name SAE 80
gear oil.
Oil level¹⁾ up to lower edge of filler opening.
Specifications MIL-L-2105 or
API-GL-4



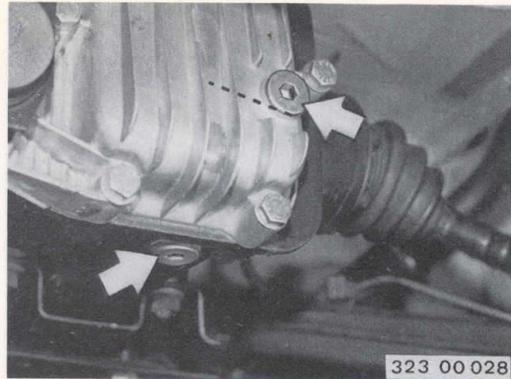
Automatic transmission – checking oil level

Requirement: car on flat, level surface. Transmission at normal operating temperature, selector lever at P, engine idling.
Oil level must be between max. and min. marks.
Quantity of oil between marks: 0.4 liter (0.42 US quart, 0.7 Imp. pint).
Important: do not clean oil dipstick with a fluffy cloth.
For approved grades of ATF, see Service Information Group 24.

¹⁾ See Specifications

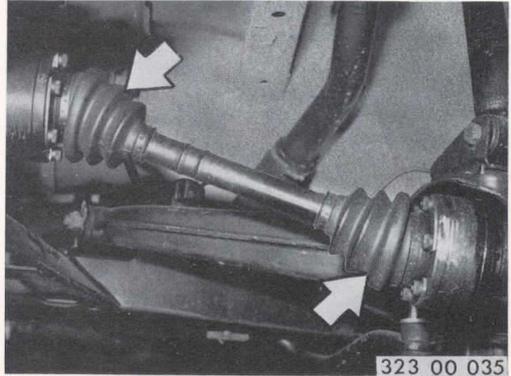
3. Final drive oil change

Final drive at operating temperature. Unscrew oil drain plug and filler plug with a 10 mm Allen socket wrench. Clean oil drain plug, check seal and install drain plug. Torque¹⁾. Add brand name SAE 90 hypoid gear oil. Oil level up to mark. Quantity¹⁾. Refer to Service Information Gr.33 for approved oils.



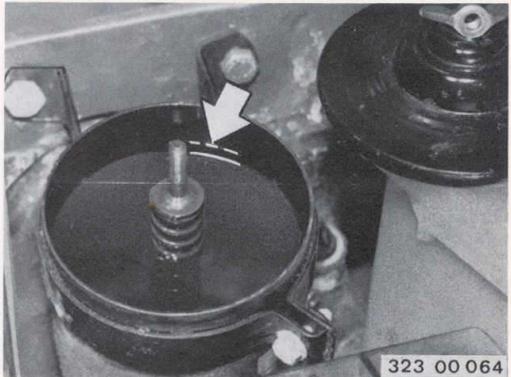
4. Output shafts

Check dust covers for leaks. Tighten mounting bolts. Torque¹⁾.



5. Checking power steering oil level

Stop engine. Unscrew wing nut on oil tank cover and remove cover. Oil level must be app. 5 mm (0.2 in) above mark on tank wall. Start engine. Add oil if necessary up to correct level.



6. Cooling system

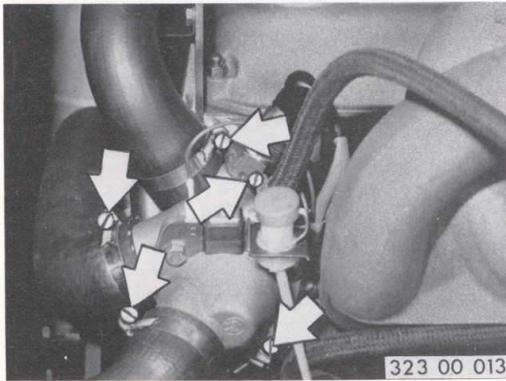
Check coolant level. Add coolant until level is not more than 2 cm (0.8 in) below radiator cap.



¹⁾ See Specifications



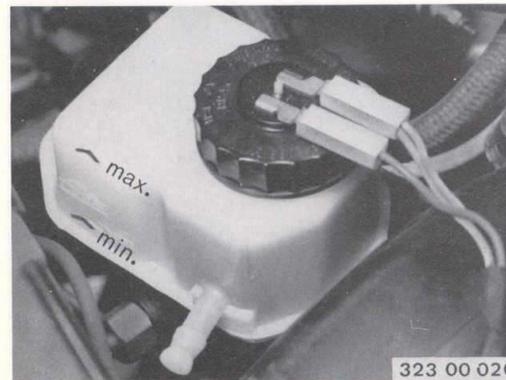
Check antifreeze concentration.
All-year antifreeze protection: -25°C (-13°F).
Refer to Service Information Gr. 17 for approved long-term antifreeze and corrosion inhibitors.



Tighten all hose clips on engine.



Tighten all hose clips on radiator and expansion tank.

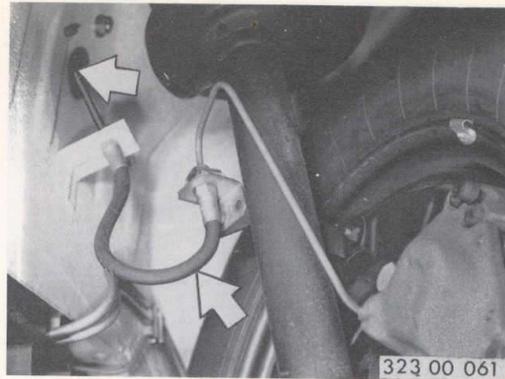


7. Brakes

Brake fluid level in transparent reservoir for braking system must be between min. and max. marks.

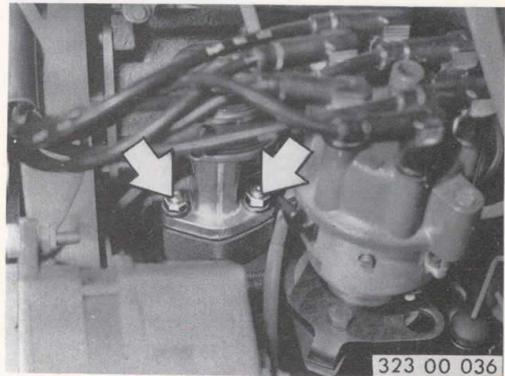
Add fluid only up to max. mark. Refer to Service Information Gr. 34 for approved brake fluids.
Important! Change brake fluid annually.

Check brake lines, brake hoses, connections and parking brake cables for correct routing, tightness and leaks.



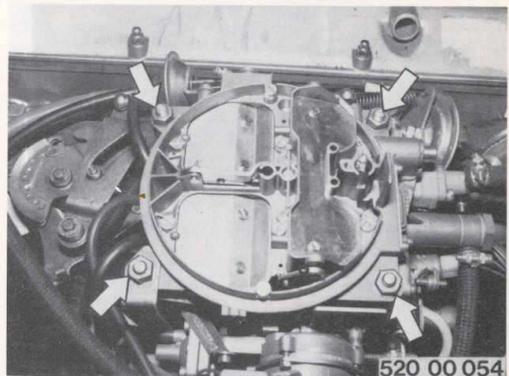
8. Fuel pump mounting

Tighten nuts of fuel pump. Torque¹⁾.
Check (visual inspection) fuel pump and connections for leaks.



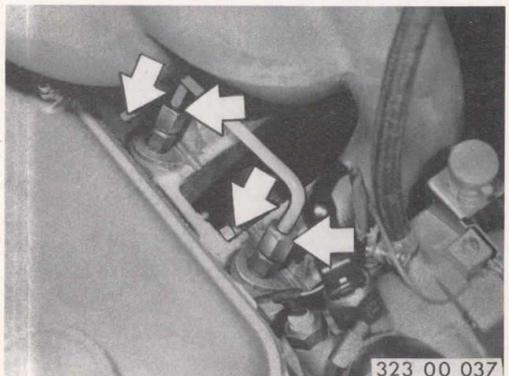
9. Carburetor mounting

Take off air cleaner.
Check tightness of carburetor nuts. Torque¹⁾.

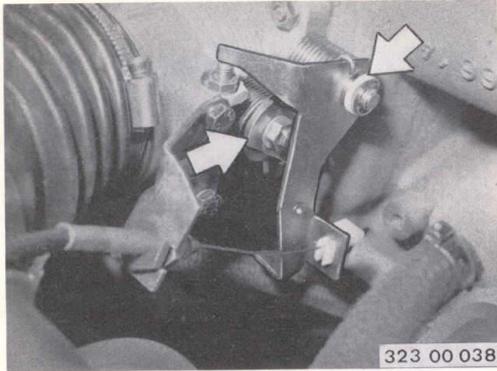


10. Fuel injection system

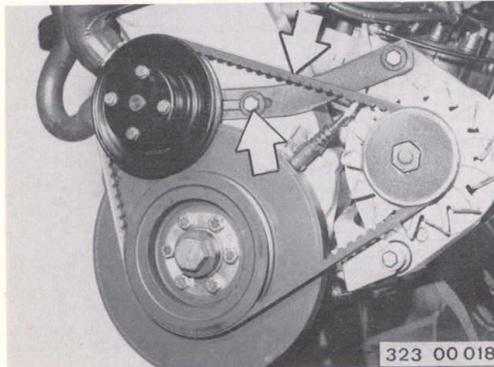
Take up any slack at injector pipe collar nuts and intake pipe retaining nuts. Check pipes for correct seating and leakage.



¹⁾ See Specifications



Oil pivots of throttle butterfly arm.



11. Checking/tensioning V-belts¹⁾.

The V-belts when tightened correctly must yield under thumb pressure by 5 to 10 mm (0.2 to 0.4 in) at a point midway between two pulleys. Tighten V-belt for alternator and, if applicable, vane pump. Loosen alternator and, if applicable, vane pump, swing outward and re-tighten the bolts.

Tighten V-belt for compressor (air conditioning).

Loosen compressor at holder and press downward.

Tighten the mounting bolts.



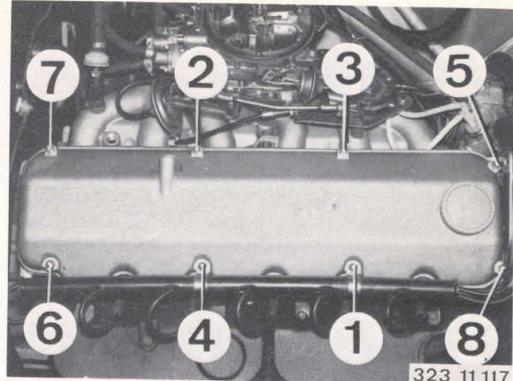
12. Tightening nuts and bolts on engine

Tighten left and right engine rubber mounts, engine mounting stirrup, toothed belt cover mounting bolts, intake/exhaust manifolds and oil pan mounting bolts.

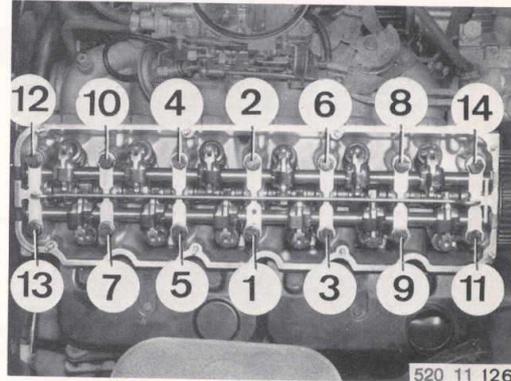
¹⁾ See Specifications

Tighten cylinder head bolts. For this purpose remove the air cleaner (carburetor engine). Take off cylinder head cover.

Installation Note! Tighten nuts in sequence of 1...8.



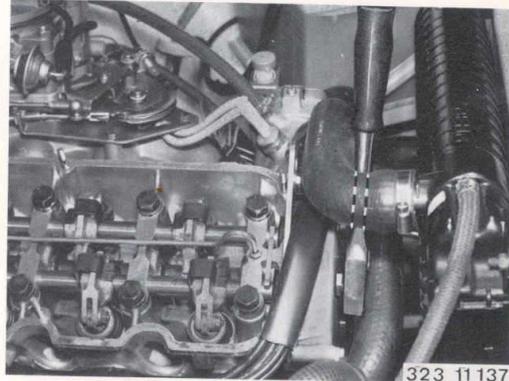
Max. engine temperature: +35°C (95°F). Tighten cylinder head bolts one after the other in the sequence 1... 14, in two stages:



13. Valve clearances – adjusting

Important: take out spark plugs before turning over engine.

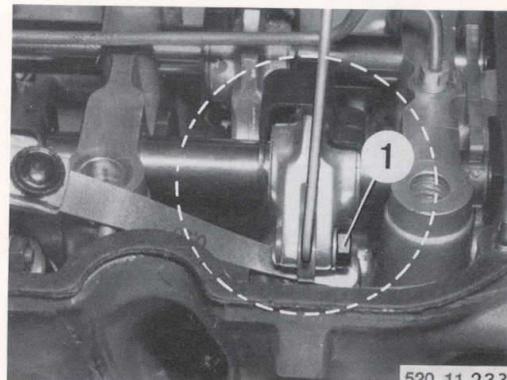
Turn engine over with a 1/2-inch ratchet head.



Adjust valves in same sequence as firing order (1-5-3-6-2-4), at compression to dead center (TDC).

Adjust valve clearance between valve and eccentric after loosening nut (1).

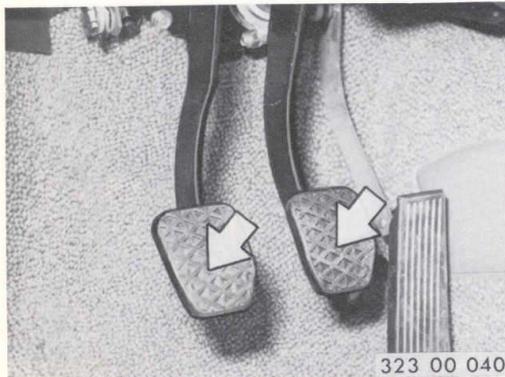
Tighten nut (1) with special ring spanner 11 1 150 and torque wrench 00 2 050. Note correct tightening torques¹⁾.



¹⁾ See specifications

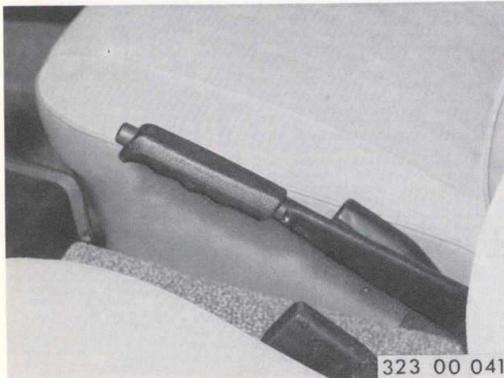
14. Tightening nuts and bolts¹⁾

Front axle beam to body
Wishbone to front axle beam
Steering gear to front axle beam
Track rod clamping bolts
Transmission to engine
Bearing mount to transmission
Rubber mount to cross member
Cross member to body
Exhaust pipes to exhaust manifold
Exhaust (all exhaust holders) to front exhaust pipes
Propeller shaft (manual gearbox), front
Propeller shaft (automatic transmission), front
Center bearing to body
Propeller shaft to final drive
Front brake calipers
Wheel bolts



15. Checking foot brake and handbrake

Check pedal action during test drive.
Check that brakes do not pull to one side or judder.



Check handbrake adjustment.
Apply handbrake lever by 5 notches.
Wheels should just turn by hand without local stiffness. If necessary, adjust brakes and handbrake cables.

¹⁾ See Specifications

16. Checking tire pressures, including spare wheel

Check filling pressure¹⁾ with cold tires.
Check valves for tightness.



17. Checking/adjusting toe of front wheels

Vehicle in normal-load position:¹⁾
Position steering at 0 and check toe with optical testing equipment.¹⁾
If necessary, adjust toe at track rods.

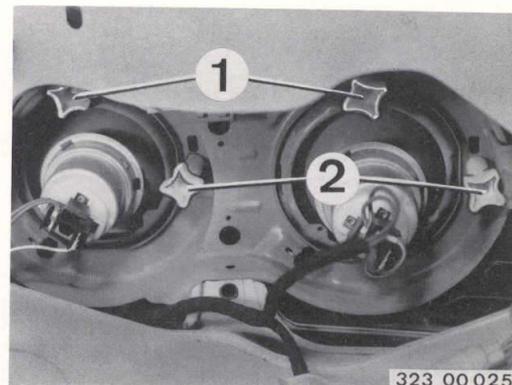


18. Checking/aiming headlight beams

Requirement: Correct tire pressures, car on level ground and rear seat loaded at center by one person or 70 kg (154 lb) weight.
Check low and high beams with optical testing equipment.

Remove covers. Make corrections with adjusting screws.

- (1) Vertical adjustment
- (2) Lateral adjustment



¹⁾ See Specifications

19. Checking lights

Check function of parking lights, high and low beam headlights, tail lights, stop lights, backup lights, tail fog light, license plate light, turn signals, hazard warning lights, horns, windshield wipers and windshield washer. The windshield washing and headlight cleaning system can be kept ready for use all year around down to temperatures of -20°C (-4°F) by adding 40% household spirit. Adjust windshield washer jets. Check function of heater blower, interior lights, glove box lamp, trunk and engine compartment lamps, instrument lights and all indicator lamps and cigar lighter.

20. Diagnosis with BMW program tester / digital tester

See 11 00 005.

21. Final inspection

Test drive to check road safety and function of engine, cooling system, transmission, rear axle, steering and brakes. After test drive check engine, cooling system, transmission, rear axle, steering and brakes for leaks.

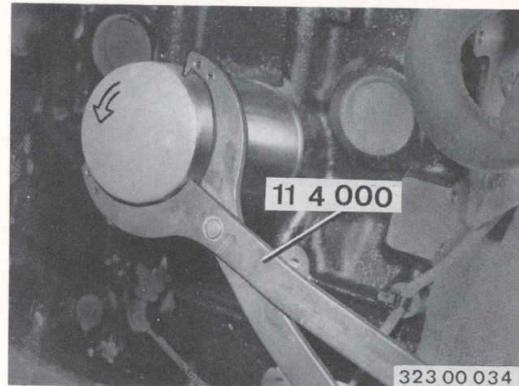
**00 00 229 1st BMW Oil Service
– at 7500 km (5000 miles) –**

1. Engine oil change and oil filter renewal

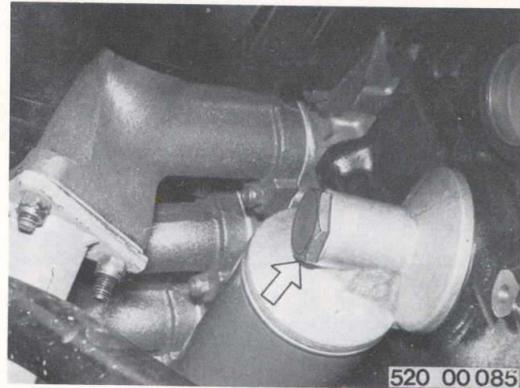
Engine at operating temperature.
Unscrew oil drain plug (19 mm $\frac{3}{4}$ in wrench) on bottom of oil pan, right-hand side. After oil has drained install and tighten plug.¹⁾
When installing: Check oil drain plug and seal and renew if necessary.



Unscrew oil filter with special tool 11 4 000.



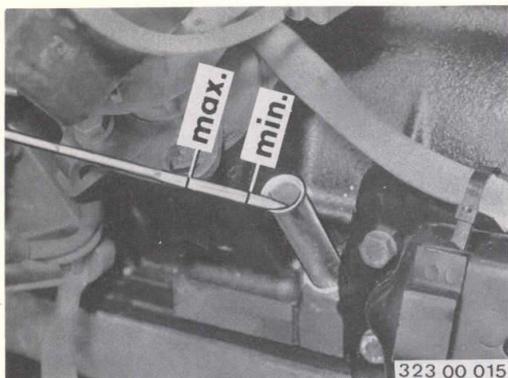
For version with air conditioning:
Unscrew adaptor with 32 mm ($1\frac{1}{4}$ in) wrench and separate filter from adaptor.



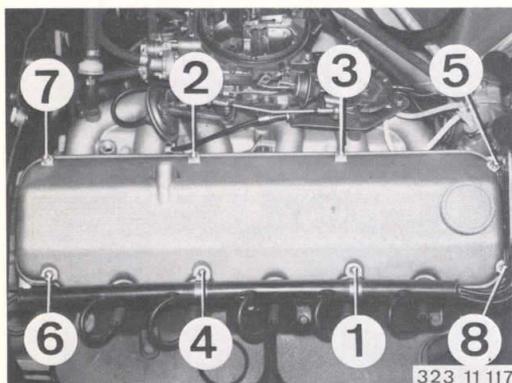
When installing: Insert adaptor in lock.
Renew aluminum seal.
Tightening torque:¹⁾



¹⁾ See Specifications

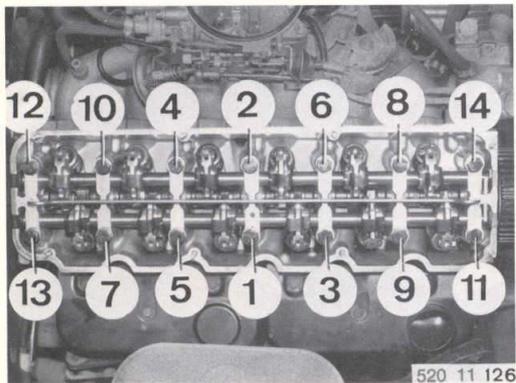


Add brand name engine oil.
 Oil level at most up to max. mark only.
 Quantity of oil between min. and max. marks
 = 1.5 liters (1.6 US quarts, 2.6 Imp. pints).



2. Tightening cylinder head bolts at 7500 km (5000 miles); this job is not part of any later Oil Service

Remove air cleaner housing.
 Take off cylinder head cover.
 When installing: Tighten nuts in sequence of 1... 8.¹⁾



Max. engine temperature: +35°C (+95°F).
 Tighten cylinder head bolts one after the other in sequence 1... 14, in 2 stages:¹⁾

¹⁾ See Specifications

**0000239 BMW Inspection (starting at 15000 km/10000 miles
and then every 15000 km/10000 miles)**

1. Engine oil change and oil filter renewal
2. Checking/correcting transmission oil level
3. Checking/correcting final drive oil level
4. Half-shafts
5. Power steering oil level check
6. Cooling system
7. Checking/correcting battery acid level
8. Checking/correcting brake fluid level
9. Checking/correcting belt tightness
10. Lubricating carburetor linkage or throttle butterfly controls with oil or grease
11. Tightening nuts and bolts on engine
12. Checking/adjusting valve clearances
13. Replacing spark plugs
14. Replacing contact breaker points
15. Replacing air cleaner element
16. Checking steering
17. Checking propeller shaft
18. Tightening nuts and bolts
19. Checking exhaust system
20. Checking brake linings
21. Checking condition of braking systems/adjusting parking brake
22. Checking hinges and locks
23. Checking lights
24. Checking seat belts
25. Diagnosis with BMW program tester/digital tester
26. Final inspection

00 00 239 BMW Inspection

– starting at 15 000 km (10 000 miles) and then every 15 000 km (10 000 miles) –

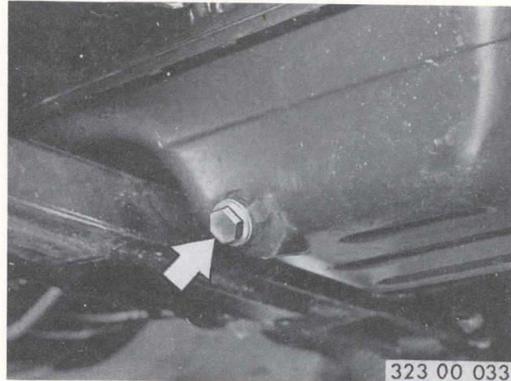
1. Engine oil change and oil filter renewal

Engine at operating temperature.

Unscrew oil drain plug (19 mm ($\frac{3}{4}$ " wrench) from bottom of oil pan on right-hand side. After oil has drained, install and tighten plug. Torque¹⁾.

When installing: Check oil drain plug and seal, and renew if necessary.

Unscrew oil filter with special tool 11 4 000.



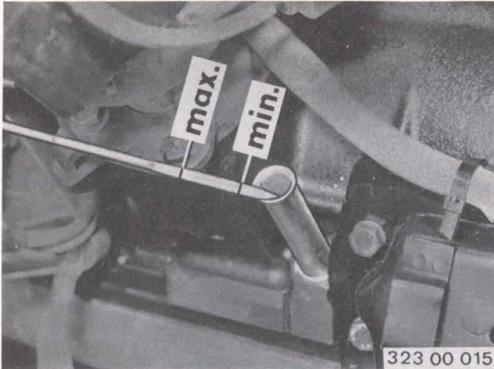
For version with air conditioning:
Unscrew adaptor with a 32 mm ($1\frac{1}{4}$ in) wrench and separate filter from adaptor.



When installing: Place adaptor in lock. Renew aluminum seal. Tightening torque:¹⁾



¹⁾ See Specifications



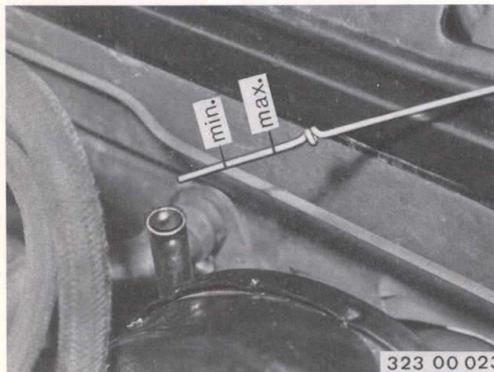
Add brand name engine oil.
 Oil level up to max. mark, not higher.
 Quantity of oil between min. and max. marks
 = 1.5 liters (1.6 US quarts, 2.6 Imp. pints).
 For approved grades of oil, see Service Information Group 11.



2. Checking/correcting transmission oil level

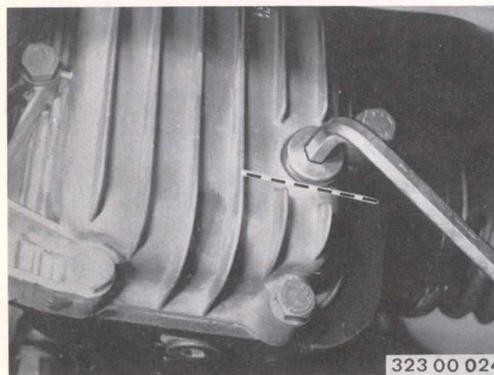
a) Manual gearbox.

Unscrew oil filler plug with a 17 mm socket wrench.
 Oil level up to lower edge of filler opening.
 Use only brand name SAE 80 gear oil.
 Specifications MIL-L-2105 or API-GL-4.



b) Automatic transmission:

Requirement: Car on level ground, transmission at operating temperature, selector lever at "P" and engine running at idle speed.
 Oil level must be between min. and max. marks.
 Quantity of oil between min. and max. marks = 0.4 liter (0.42 US quart, 0.7 Imp. pint).
Important! Never wipe oil dipstick with a fluffy cloth. Refer to Service Information Gr.24 for approved automatic transmission fluids.

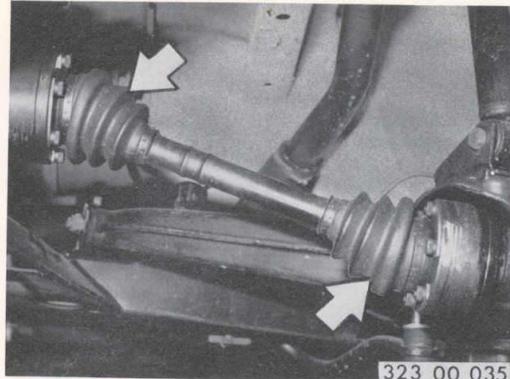


3. Checking/correcting final drive oil level

Unscrew oil filler plug with 10 mm socket wrench.
 Oil level up to lower edge of filler opening.
 Use only brand name hypoid SAE 90 gear oils.
 Refer to Service Information Gr.33 for approved oils.

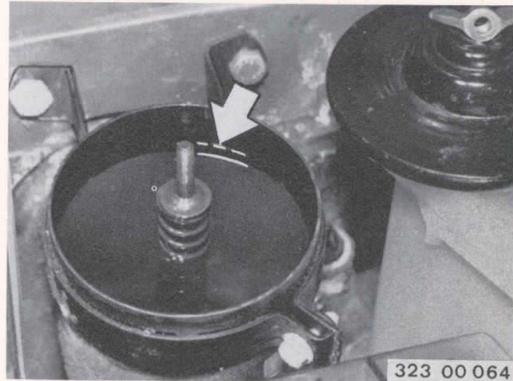
4. Half-shafts

Check flexible gaiters for leakage.
Take up any slack at the attachment bolts;
(tightening torque¹).



5. Checking oil level in power steering

With engine stopped, unscrew wingnut from
fluid reservoir and take off lid.
The oil level must be approx. 5 mm (0.2 in)
above the mark on the tank wall.
Start the engine and add fluid if necessary until
the oil level agrees with the mark.



6. Cooling system

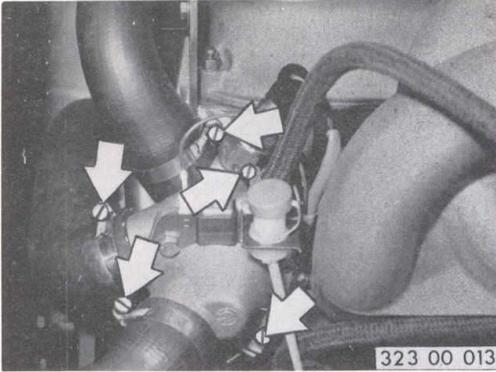
Check coolant level.
Add water if necessary to not higher than 2 cm
(0.8 in) below the filler cap.



Check antifreeze concentration.
Antifreeze protection level: down to -25°C
(-13°F) all the year round. For approved long-
term antifreeze and corrosion inhibiting addi-
tives, see Service Information, Group 17.



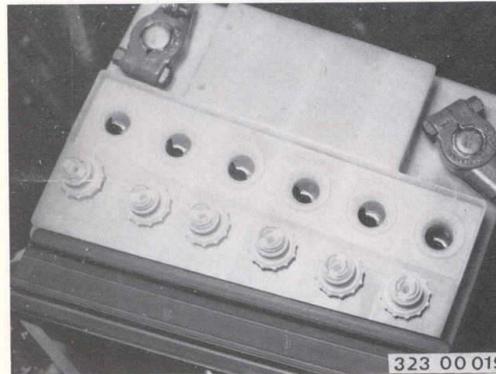
¹) See Specifications



Take up slack at all hose clips on the engine.



Take up slack at all hose clips on radiator and coolant expansion tank.



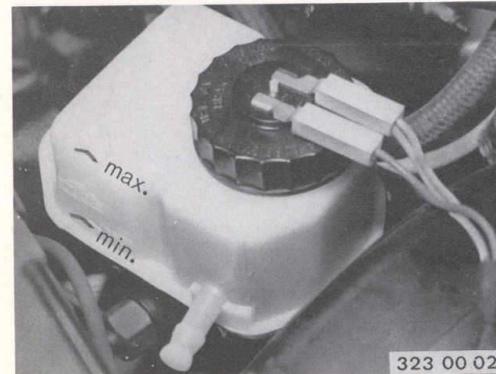
7. Checking battery acid level/adding distilled water if necessary

Take off the battery cover and unscrew the cell plugs.

Battery acid level should be app. 5 mm (0.2 in) above the plates in each cell, or up to the mark visible in each cell opening.

Add distilled water if the level has dropped. Keep the upper part of the battery dry and clean.

Important: do not allow acid or lead oxide from the terminal posts to reach the clothing. Do not bring a naked light near the battery or an explosion may occur.



8. Brake fluid level – checking/restoring

The brake fluid level in the translucent reservoir for the brake system should be between the 'MIN' and 'MAX' marks.

Add fluid up to the 'MAX' mark if necessary. For approved grades of brake fluid, see Service Information, Group 34.

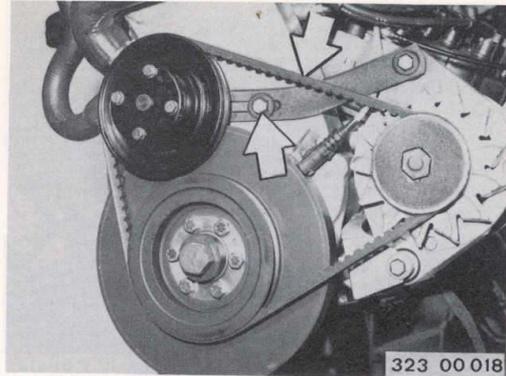
Important: brake fluid must be renewed at least once a year.

9. V-belt – checking condition, correcting tension

It should be possible to depress V-belts by 5 to 10 mm (0.2 to 0.4 in) at the centre of their runs if correctly tensioned.

Adjust the tension of the V-belts for the alternator and the power steering pump (if installed) if necessary.

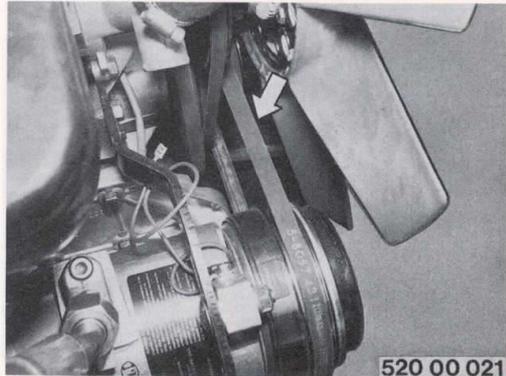
Loosen the alternator (and the power steering pump if installed) at top and bottom, swing out and retighten bolts.



Correct tension of the compressor V-belt for the air conditioning (if installed).

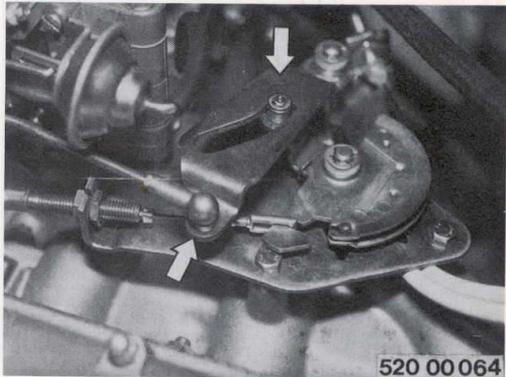
Slacken off the compressor at its mounting and press down.

Tighten the retaining bolts again.



10. Oil/grease the carburetor linkage or throttle butterfly actuating mechanism

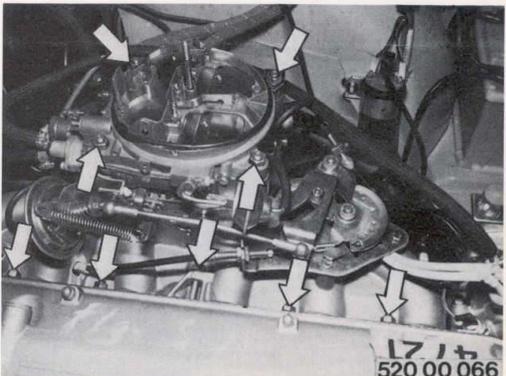
Oil or grease the pivots, bearing points and gate of the carburetor linkage or throttle butterfly actuating mechanism as appropriate.



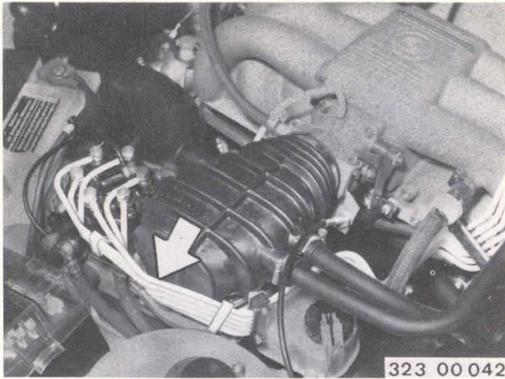
11. Take up slack at nuts and bolts on engine

Detach the air cleaner.

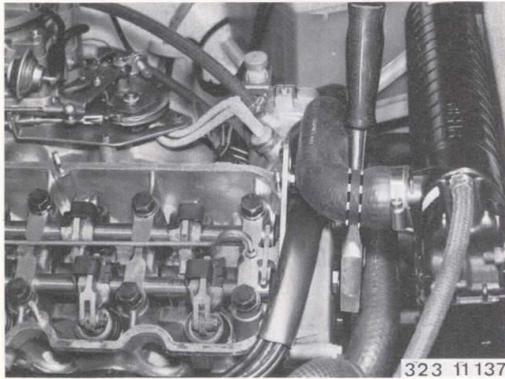
Tighten nuts on exhaust manifold, carburetor retaining nuts and fuel pump retaining nuts.¹⁾



¹⁾ See Specifications



Check fuel lines at carburetors or fuel injection system for correct location, general condition and freedom from leaks.

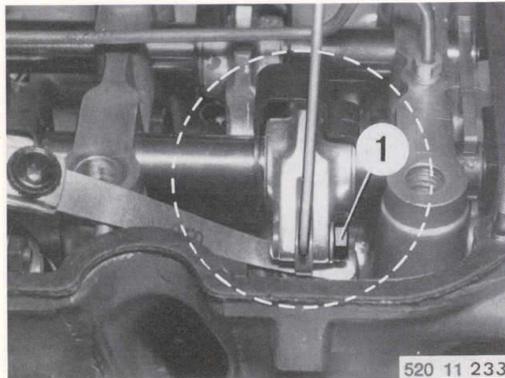


12. Valve operating clearances – checking/adjusting

Take off the rocker cover – 11 12 000.

Important: remove spark plugs before turning over engine.

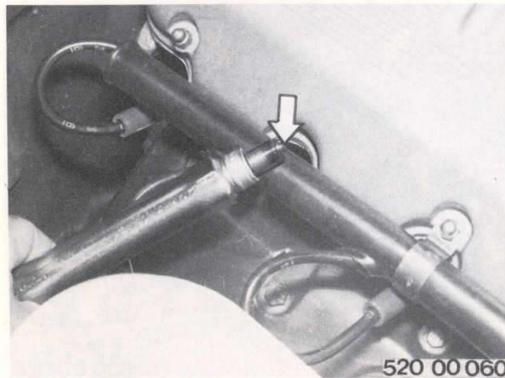
Turn the engine at the adapter with a $\frac{1}{2}$ " ratchet.



The order of adjustment is the same as the firing order: 1-5-3-6-2-4, and is carried out at top dead center (TDC) on the compression stroke. Adjust valve clearance between the valve and the eccentric after slackening off nut (1).

Tighten nut (1) with special ring spanner 11 1 150 used in conjunction with torque wrench 00 2 050.

Note correct tightening torque¹⁾.



13. Spark plugs – renewing

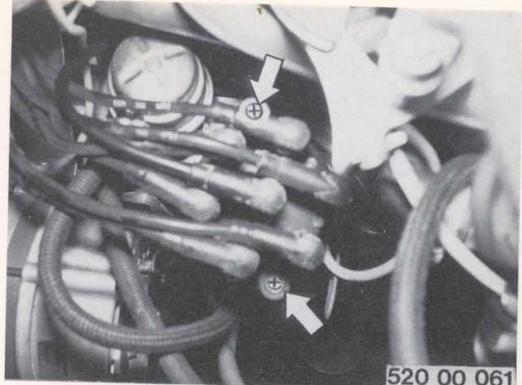
Before screwing in the new spark plugs, check their electrode gaps¹⁾

Correct if necessary by bending the earth (ground) electrode.

¹⁾ See specifications

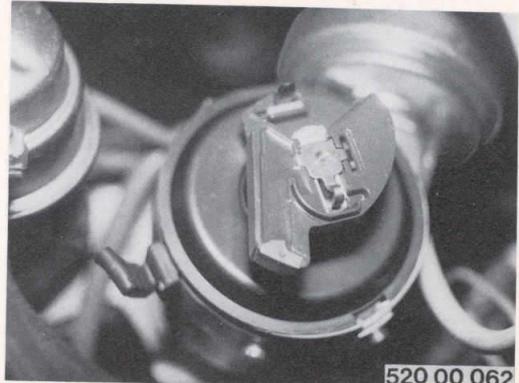
14. Breaker points – renewing

After overcoming the spring loading, turn the catch to the left and remove the distributor cap.
When installing: Make sure that the distributor cap locks into position and the catches are correctly seated.



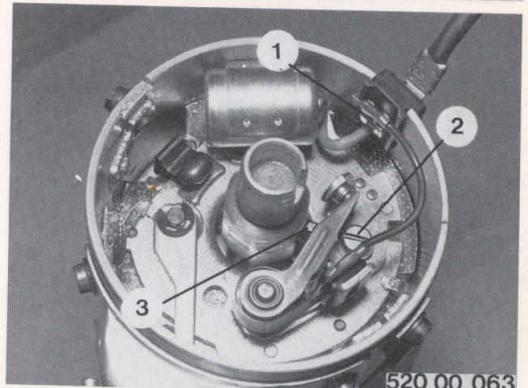
520 00 061

Remove the distributor rotor and dust cover.



520 00 062

Pull off the flat pin plug (1).
Remove screw (2).
Pull out the breaker points assembly.
When installing: clean new breaker points to remove grease.
Apply Bosch Ft 1 v 4 grease to the cam and ramp (3) of the breaker arm.
Adjust dwell angle and ignition timing – 12 11 004.



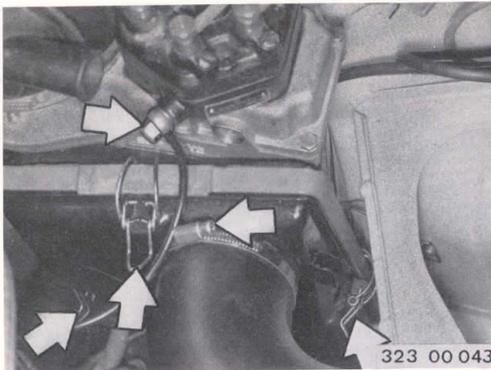
520 00 063

15. Air cleaner element – renewing

Carburetor engine:
Loosen nut and snap catch.
Take out and renew element.
When installing: rubberized inner ring faces up.
Arrows on intake pipe and air cleaner cover must be aligned.



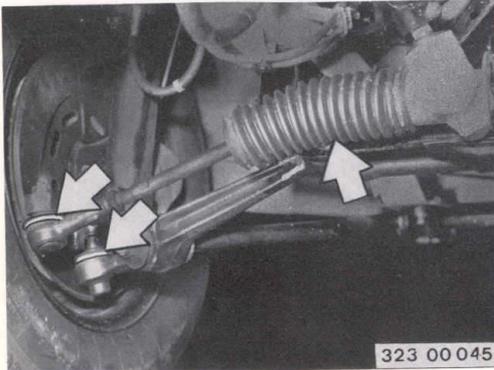
520 00 065



Fuel injection engine:
Unscrew the pipe.
Detach air inlet trumpet.
Release snap fasteners.

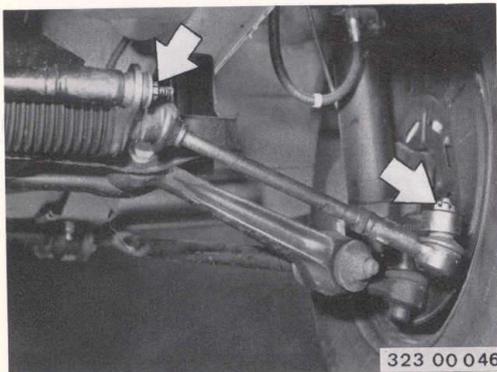


Take the air cleaner out upwards.
When installing: note "Top" inscription on element.
Arrows must point towards flow distributor.



16. Checking steering

Check front suspension and steering joints for freedom from wear and damage, and absence of play.
Check condition of flexible gaiters and sealing sleeves.



Detach left and right track rods.
Detach the steering damper.
When installing: note correct tightening torque¹⁾.

¹⁾ See specifications

Lift out the BMW badge and install BMW friction gauge 00 2 000.

Using the friction gauge, turn the steering spindle from full left to right lock, and check for local stiffness or partial seizure.

To determine the friction coefficient, move the steering rack to a central position and read off the friction value.¹⁾

If necessary, remove the rack and pinion steering gear and repeat the measurement. See 32 10 004.



17. Propeller shaft – checking

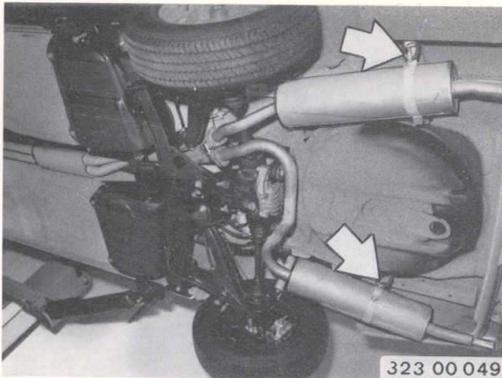
Inspect the propeller shaft, rubber coupling, universal joints and center bearing for signs of damage and absence of play.



18. Take up slack at nuts and bolts¹⁾

- Front axle beam to body
- Wishbone to front axle beam
- Steering gear to front axle beam
- Track rod clamp bolts
- Gearbox to engine
- Pivot mount to gearbox
- Rubber mounting to cross-member
- Cross-member to body
- Exhaust pipes to exhaust manifold
- Exhaust system to front exhaust pipes
(all exhaust system mountings)
- Propeller shaft (manual gearbox), front
- Propeller shaft (automatic transmission), front
- Center bearing to body
- Propeller shaft to final drive
- Front brake calipers

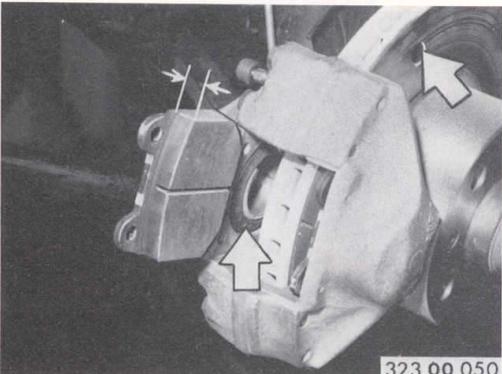
¹⁾ See Specifications



323 00 049

19. Exhaust system – checking

Check condition, path, mountings and freedom from leaks of exhaust system.



323 00 050

20. Brake linings – checking

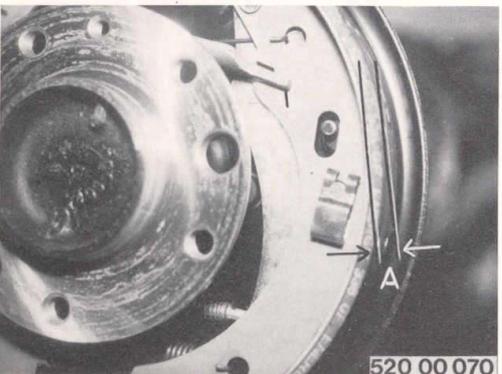
Detach the wheels.

Remove brake pads at front (and at rear if appropriate).

Renew brake pads if lining thickness (without backing plate) is only 2.0 mm (0.08 in).

Inspect the surfaces of the brake discs.

Clean out the brake calipers and check condition of sealing sleeves.



520 00 070

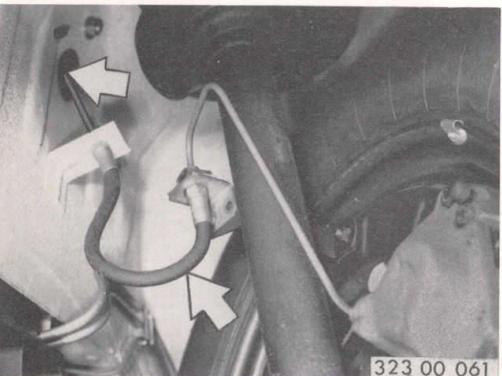
Rear drum brakes:

Remove screw and take off brake drum.

Check lining thickness. Renew brake linings if thickness (A) is only 2.0 mm (0.08 in).

Inspect the rubbed surfaces in the brake drums.

Clean out the brake drums.

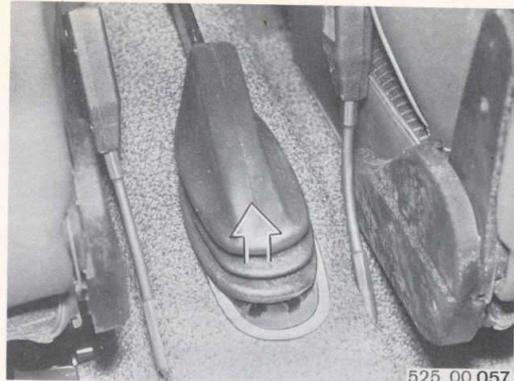


323 00 061

21. Checking condition of brake system/adjusting handbrake

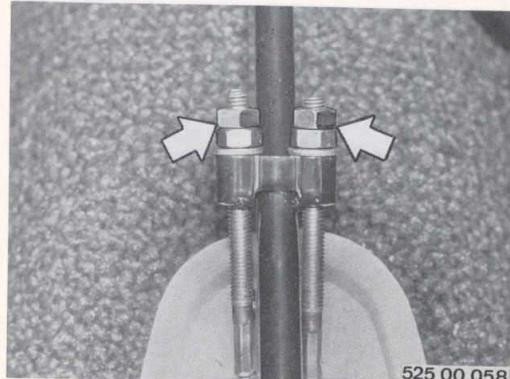
Check that unions and pipes on the brake system are tight and correctly located. Check that the handbrake cables move freely.

Adjusting handbrake:
pull off the rubber cover.



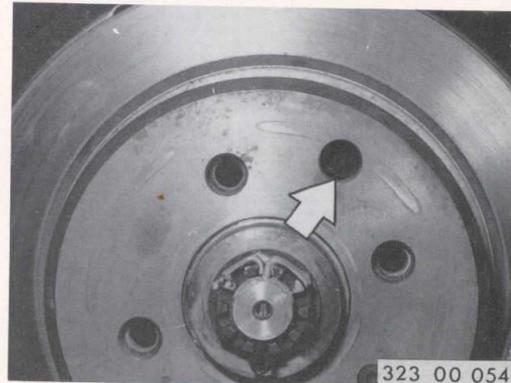
525 00 057

Unscrew the handbrake cable nuts until the cables are no longer taut.



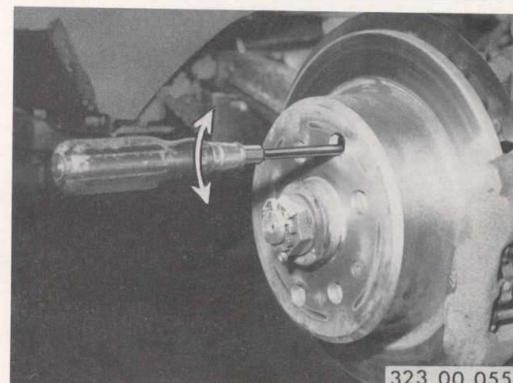
525 00 058

Rear disc brakes:
Take off the rear wheels.
Turn the left rear brake disc until the large inspection hole is approx. 10° behind vertical at the top.
On the right brake disc the large inspection hole should be app. 10° ahead of vertical at the top. In these positions, the adjusting nut can be seen through the inspection hole.

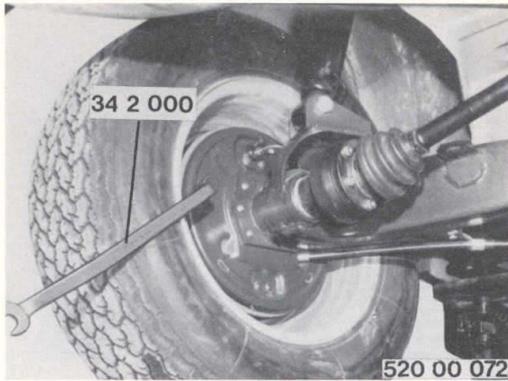


323 00 054

Insert a screwdriver and engage with the teeth on the adjusting nut.
Turn the adjusting nut with the screwdriver blade to move the handbrake shoes up to the drum so that the brake disc can no longer be turned. Then slacken the adjusting nut off by 4-6 teeth.
To lock the handbrake, turn the screwdriver downwards.
To release the handbrake, turn the screwdriver upwards.
Attach the wheels again.

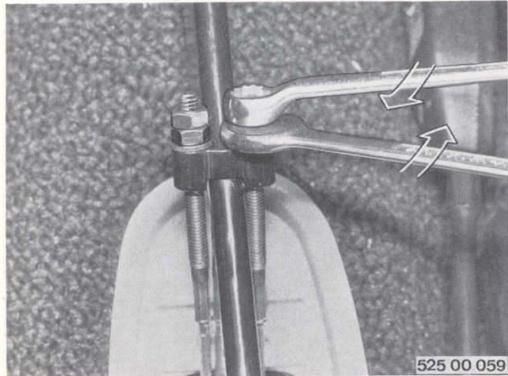


323 00 055



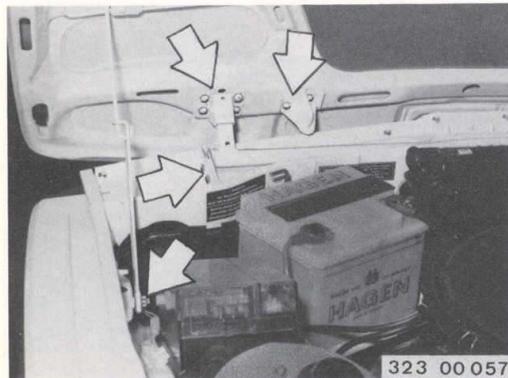
Rear drum brakes:

Using adjusting wrench 34 2 000, turn adjusting eccentric anti-clockwise on left and clockwise on right of car until the road wheel, which should be turned continuously, is locked. After this, slacken the eccentric screw by $\frac{1}{8}$ turn so that the road wheel just turns freely.



Adjust the handbrake cables.

Apply the handbrake lever by 4 notches and take up slack at the handbrake cables until the left and right rear wheels can just be turned without local stiffness. Release the handbrake lever and check that the road wheels can now rotate freely. Tighten the locknuts.



22. Check hinges, catches and locks

Take up slack at all retaining bolts for door and lid hinges which can easily be reached. Grease or oil the hinges. Check settings and correct operation of doors and lids.

23. Check lighting equipment

Check operation of sidelights, low and high beam headlights, reversing (backup) lights, brake lights, rear lights, rear fog light, license plate lights, flashing turn indicators, hazard warning flashers, horns, wipers and windshield washer. Position windshield washer jets correctly. To keep the windshield and headlight washer unit operational at temperatures down to -20°C (-4°F), add 40% domestic spirit to the reservoir. Check operation of the heater blower, interior light, glove box light, luggage compartment and engine compartment lights, instrument lighting and all warning and telltale lamps and the cigar lighter.

24. Check seat belts

Check condition and correct operation of seat belts.

25. Diagnosis with BMW Program tester/digital tester

See 11 00 005.

26. Final inspection

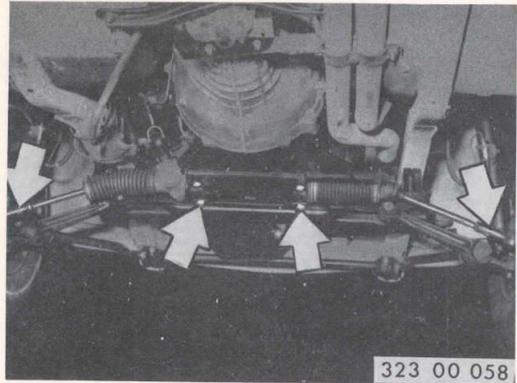
Test drive: check road safety and operation of engine, cooling system, transmission, rear axle, steering and brakes. Check handbrake. After test drive, inspect engine, transmission, cooling system, rear axle, steering and brakes for signs of leakage.

0000259 BMW Safety Test

- 1. Check steering**
- 2. Check brakes**
- 3. Check tires and tire pressures**
- 4. Check lighting**
- 5. Check warning equipment**
- 6. Check wipers and washer system**
- 7. Check seat belts**
- 8. Exhaust emissions test**

1. Checking steering

Check steering gear mountings, track rods and track rod pivots and steering column joints for correct attachment or play.

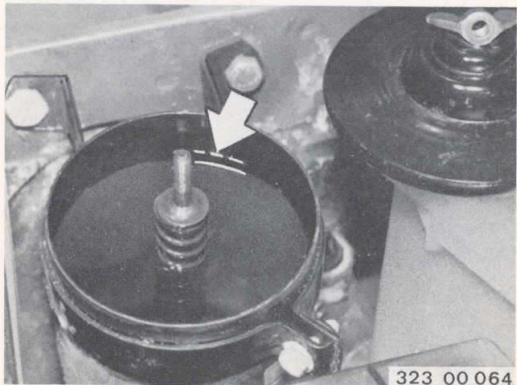


Power steering:

Inspect steering gear and hose connections for leaks.

To check oil level stop the engine, unscrew the wing nut from the fluid tank and take off the lid. The oil level must be approx. 5 mm (0.2 in) above the mark on the wall of the tank.

Start the engine and add oil if necessary until the level is at the mark.



Checking power steering pump V-belt: when correctly tensioned, it should be possible to depress the center of the belt run by 5 to 10 mm (0.2 to 0.4 in).



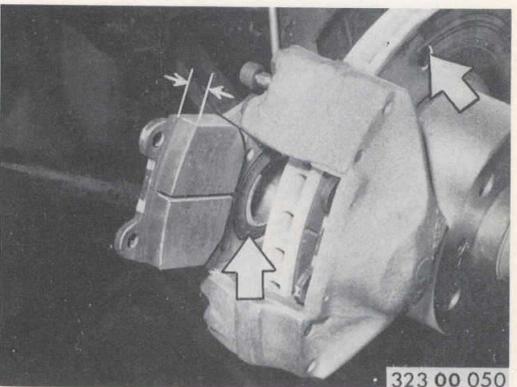
2. Checking brakes

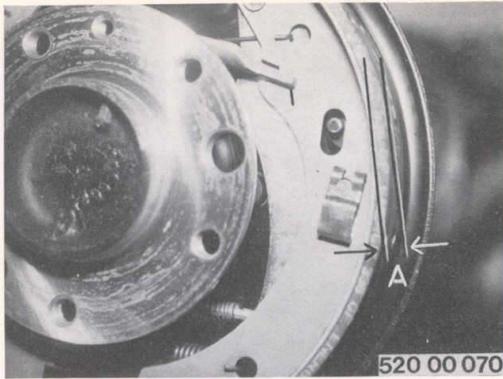
Take off the wheels.

Remove the front brake pads (and the rear pads if installed).

Renew the brake pads if the minimum thickness of 2.0 mm (0.08 in) is reached (lining material without backing plate).

Inspect the rubbed surfaces of the brake discs. Clean out the brake calipers and inspect the sealing sleeves.





Rear drum brakes:

Remove the screw and take off the brake drum. Check brake lining thickness. Renew linings if the minimum thickness (A) has reached 2 mm (0.08 in).

Inspect the rubbed surfaces in the brake drums.

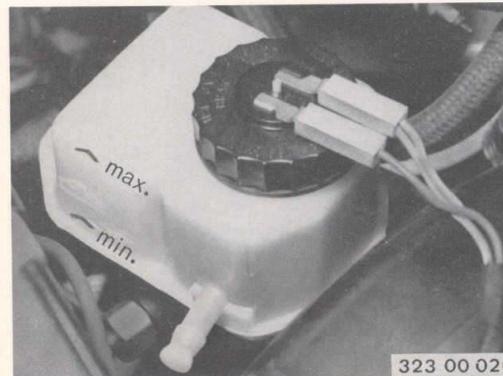
Clean the drum brakes.



Check handbrake setting.

Apply the handbrake by 5 notches.

It should just be possible to turn the wheels smoothly by hand.

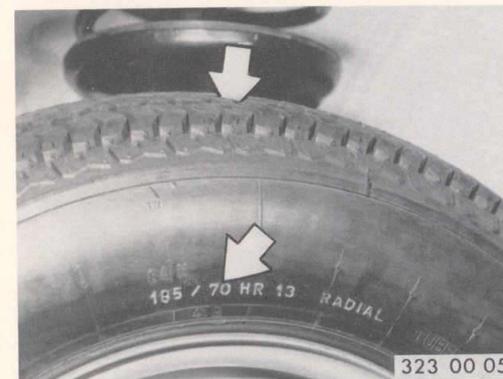


Check brake pipes, hoses, unions and the handbrake cables for correct location, strength and freedom from leaks.

The brake fluid level in the translucent reservoir for the brake system should be between the 'MIN' and 'MAX' markings.

Restore the level to the 'MAX' mark if necessary. For approved grades of brake fluid, see Service Information, Group 34.

Important: brake fluid must be renewed once a year.



3. Tires and tire pressures – checking

Although the law may permit tires to be used with only 1 mm (0.04 in) of tread depth, the car's tires should not be allowed to drop below 3 mm (0.12 in) depth of tread for safety reasons. Failing this, there is a severe risk of 'aquaplaning' at high speeds even when the road is covered only with a thin film of water. Inspect tires and rims for damage and make sure that they are of the correct size.

Checking tire pressures including spare wheel¹⁾.



4. Checking lights

Check function of headlights and auxiliary driving lights, and adjust beam settings with an optical alignment device. Check operation of side (parking) lights, rear lights, reversing (backup) lights, license plate lighting, instrument and inscription lighting, telltale and warning lights.

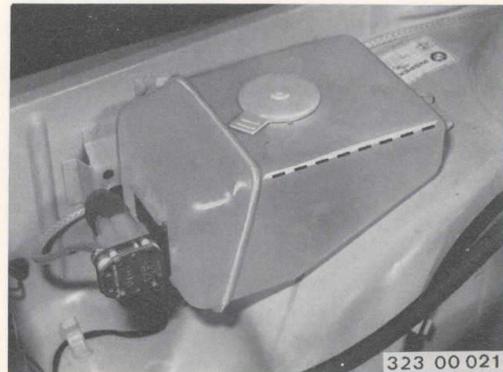
5. Checking warning equipment

Check operation of horn, turn indicators, hazard warning system, brake lights, headlight flasher and rear fog light.

6. Checking wipers/washer

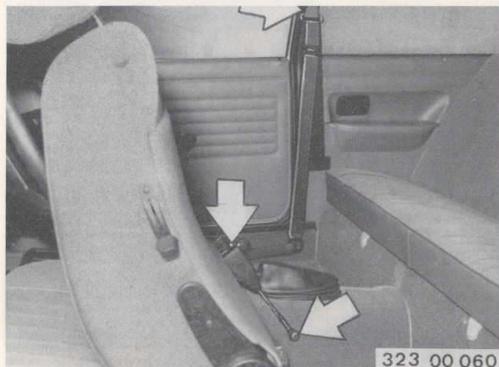
Check wiper blades, washer system (windshield and headlights if installed) and spray jets.

To keep the windshield washer and headlight cleaning systems operational at temperatures down to -20°C (-4°F), add 40% domestic spirit to the reservoir.



7. Checking seat belts

Check seat belts for correct function, general condition and correct attachment.



¹⁾ See Specifications



8. Exhaust emissions test

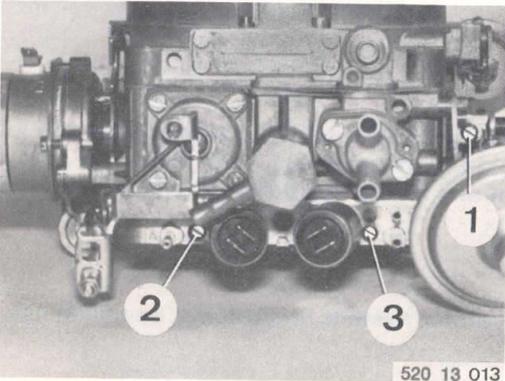
Run the engine at idle speed and at normal operating temperature.

A) Carburetor engine

Remove the screw plugs from the exhaust manifolds and insert 13 0 020 measuring probes.

Connect the exhaust emissions tester.

Take a separate CO value reading from the front and rear exhaust manifolds.



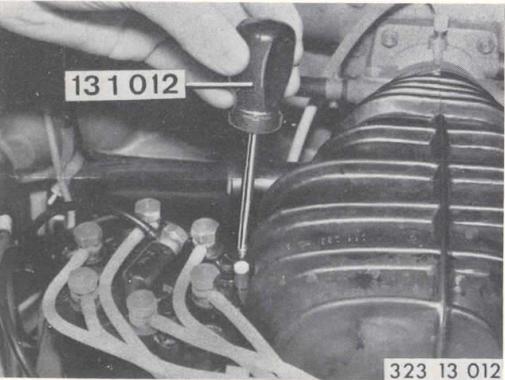
With mixture regulating screws (2 and 3), adjust the CO level in the exhaust¹⁾.

Screw (2) = rear exhaust manifold

Screw (3) = front exhaust manifold

If the idle speed varies, correct at screw (1).

After adjusting engine idle speed and exhaust emissions, install new anti-tampering devices.



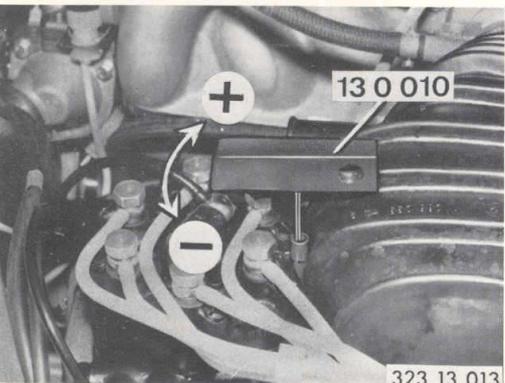
B) Fuel injection engine

Remove the screw plugs from the exhaust manifolds and insert measuring probes 13 0 020.

Connect the exhaust emissions tester.

Take separate readings for the CO level at the front and rear exhaust manifolds.

Important: remove the anti-tampering device with extractor 13 1 012. After adjusting engine idle speed and exhaust emissions, install a new anti-tampering device.



Adjust the CO value¹⁾ with adjusting wrench 13 0 010.

¹⁾ See Specifications

