

Service and Technical Booklet (US Model)

K 1200 RS



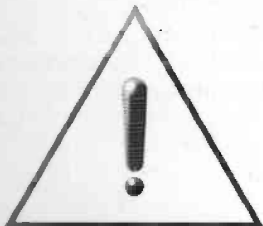
BMW AG Motorcycle Division

Order No. 01 47 9 799 937 07.97 2nd edition, US English



Warning:

This symbol stands for precautions and measures which are essential in order to protect the rider or other persons from possible severe or fatal injury.



Caution:

Specific instructions and safety precautions intended to prevent damage to the motorcycle. Disregarding them may render the warranty invalid.



Note:

Specific instructions on how to operate, control, adjust or look after items of equipment on the motorcycle.

For safety reasons and to maintain the value of your motorcycle, regular maintenance intervals have been laid down. Always keep to the specified maintenance intervals. This is the only way to ensure that any warranty claims you may submit can be accepted.

The contents of maintenance plans may be amended for safety reasons, because materials have changed or for other reasons.

Your authorized BMW motorcycle dealer can provide details of the currently specified Service, Inspection and Annual Service work needed.

Important:

If the motorcycle is damaged during repair or service work not carried out by an authorized BMW workshop, BMW cannot accept any liability for any damage which results, or any consequential damage.

Have service and inspection work carried out by your authorized BMW motorcycle dealer's specially trained, expert personnel, and confirmed by an entry in the Service Booklet.

Your BMW motorcycle dealer is supplied with all the latest technical information and therefore possesses the necessary technical know-how.

Please do not hesitate to contact your authorized BMW motorcycle dealer on all matters concerning your motorcycle.

Authorized BMW motorcycle dealers are fully informed about all aspects of your motorcycle and will gladly advise and assist you.

With every good wish,

**BMW AG
Motorcycle Division**

For your own safety, use only Genuine BMW spare parts and accessories approved by BMW.

If you choose Genuine accessories and spare parts that have been tested and approved by the manufacturer, you can be sure that BMW has carried out the appropriate tests to confirm their suitability for use on your motorcycle. BMW accepts full liability for these products.

Note, however, that BMW is unable to accept any liability for spare parts and accessories which it has not approved.

BMW cannot assess every single product of outside origin in order to decide whether it can be used on or with a BMW vehicle without constituting a safety hazard.

Nor is approval by an official technical inspection authority, or even the granting of a general operating permit necessarily a sufficient guarantee, since these test procedures are not always adequate.

Genuine BMW spare parts, BMW accessories and other BMW-approved products, as well as skilled advice and assistance concerning all these items, is available from all authorized BMW motorcycle dealers.

Maintenance work is divided up into Service, Inspection and Annual Service.

Inspection 600 miles/1000 km

BMW Running-in Check after the first 600 miles/1000 km.

BMW Service

After the first approx.

6 000 miles (10 000 km)

and every further approx.

12 000 miles (20 000 km)

(18 000 miles, 30 000 miles ...,

42 000 miles...)

BMW Inspection

After the first approx.

12 000 miles (20 000 km)

and every further approx.

12 000 miles (20 000 km)

(24 000 miles..., 36 000 miles ...,

48 000 miles...)

BMW Annual Service

Certain items of maintenance work depend on elapsed time as well as the distance the motorcycle has covered. They should therefore be carried out at least once a year (e. g. renewing the brake fluid). If these items cannot be carried out during a Service or an Inspection, an Annual Service must be performed.



Note:

Every BMW motorcycle dealer has a fixed scale of charges based on work times and carefully calculated hourly rates. Fuel, lubricants and similar substances, filters, gaskets etc. are charged for separately.

Maintenance schedule

	Inspection 600 miles	BMW Service	BMW Inspection	BMW Annual Service
Change the engine oil while at regular operating temperature, and renew the filter element ¹⁾	X	X	X	X
Change the oil in the transmission while at regular operating temperature			X	
Change the oil in the final drive while at regular operating temperature (every 24 000 miles/40 000 km)	X		X	
Check valve clearances and adjust if necessary ⁴⁾			X	
Renew spark plugs			X	
Renew the fuel filter element (every 24 000 miles/40 000 km) ^{3) *}			X	
Check hose clips on fuel and cooling systems for leaks and retighten them if necessary; check coolant level and concentration and correct if necessary	X		X	
Renew the coolant every 2 years [*]				X
Check battery acid level and add distilled water if necessary; clean and grease battery posts			X	X
Renew the intake air cleaner element ^{2) *}		X	X	
Examine brake pads and disks for wear, renew if necessary [*]		X	X	
Check brake fluid at front and rear, and add fluid if necessary [*] [→ SI 00 027 95 (716)]	X	X	X	

Maintenance schedule

	Inspection 600 miles	BMW Service	BMW Inspection	BMW Annual Service
Check operation of brake system and freedom from leaks; repair/renew items if necessary [*]			X	
Renew the brake fluid at least once a year				X
Grease the side stand		X	X	
Check the main stand and grease if necessary		X	X	X
Check the function of the contact switch on the side stand	X	X	X	
Check tightness of rear wheel studs	X			
Clean the inductive sensor at the rear wheel	X		X	
Read out the MOTRONIC fault memory		X	X	
Check throttle cable play and adjust if necessary	X		X	
Final inspection with road safety and functional check: trial run if necessary	X	X	X	X

1) At least every 6 months; if motorcycle is used only for short journeys or at outside temperatures below 32 °F (0 °C), every 3 months, but at the latest every 1800 miles

2) If severe dirt and dust are encountered, renew the intake air cleaner element every 6000 miles or even more frequently

3) If poor-quality fuel must be used, every 12 000 miles

4) Renew the chain-tensioner rail surface material and the guide rail every 36 000 miles

^{*} Charged as an additional item

Your motorcycle is equipped with Digital Motor Electronic (MOTRONIC) engine management and a high-power ignition system.



Warning:

When the engine is running or the ignition is switched on, do not touch any electrically live components, terminals or wiring.

– Risk of fatal accident!

Work on the electrical system only if the circuit has been interrupted (switch off ignition and lights). For greater safety, disconnect and insulate the negative battery lead.

If you intend to perform the maintenance and general care work described in the following section yourself, you must possess the necessary knowledge of technical matters and mechanical skills.

Your motorcycle is built to high technological standards. Special tools and purpose-designed diagnosis and testing equipment, together with the appropriate knowledge, are needed to **keep your motorcycle** in optimum working order.

Your authorized BMW motorcycle dealer possesses the necessary technical know-how and employs company-trained staff. He can guarantee that your motorcycle is always maintained in a fault-free technical condition.

Remember: the safety and reliability of your motorcycle are the most important considerations.

You should therefore not attempt any complex repair or maintenance tasks.

Keep to the specified Inspection and Service intervals.

If the motorcycle is damaged during repair or service work not carried out by an authorized BMW workshop, BMW cannot accept any liability for any damage which results, or any consequential damage.

Technical modifications



Warning:

The data stored in the MOTRONIC control unit have been arrived at by way of extensive experimental and testing work.

For this reason, any form of tampering with the MOTRONIC control unit is bound to represent a greater safety risk for the motorcycle's rider.



Note:

As soon as the MOTRONIC is tampered with in any way, the warranty will be invalidated.

There is only limited scope for technical modifications to the motorcycle.

Whenever you are planning such modifications, comply with all the legal requirements. The motorcycle must not infringe on your national road-vehicle construction and use regulations.

Your authorized BMW motorcycle dealer will gladly advise you on technical requirements, the manufacturer's recommendations and the overall benefit likely to be obtained.

Genuine BMW Parts

For safety reasons, use only Genuine BMW Parts and Accessories.

Genuine BMW parts are identical with those fitted to your bike as Genuine equipment.

BMW AG Motorcycle Division guarantees that materials and workmanship are genuine and free from defects, but cannot accept any liability for spare parts or accessories of outside origin.

- Toolkit under dualseat

Contents

- 1 wallet
- 2 fuses (4 A, 15 A)
- 1 universal pliers
- 1 screwdriver, large, reversible blade
- 1 screwdriver, small
- 2 pair of open-ended wrenches
 - AF* 0.31 x 0.39 in (8 x 10 mm)
 - AF* 0.39 x 0.51 in (10 x 13 mm)
- 5 Allen keys
 - AF* 0.12, 0.16, 0.20 in (3 mm, 4 mm, 5 mm),
 - AF* 0.24, 0.31 in (6 mm, 8 mm)
- 1 ABS feeler gauge
- 1 spark plug wrench
- 1 wheel stud wrench
- 1 hook wrench for suspension strut
- 1 tubular extension
- 1 oil filling aid

* AF = width across flats



Note:

To make sure that the dualseat can be closed correctly, pack the tools in the positions indicated on the wallet. Place the oil filling aid under the tools.

Tubeless tire repair kit

- Tubeless tire repair kit under dualseat



Note:

For repair procedure, please refer to the accompanying instructions.



Warning:

Only repair tire damage up to 0.16 in (4 mm) in diameter.

Max. permitted speed:
37 mph (60 km/h).

Max. permitted distance:
250 miles (400 km).

Always have the damaged tire renewed!

Troubleshooting chart

Troubleshooting chart

Malfunction: Engine does not start at all or is very difficult to start

Possible cause	Remedy	See ➔ Page
Wrong ignition key position	Ignition key in ON position	Rider's Manual ➔ 8
Emergency-stop switch in off position	Emergency-stop switch in middle position	Rider's Manual ➔ 50
Side stand extended, gear selected	Select neutral or fold side stand and pull up clutch lever	Rider's Manual ➔ 45, 50
Gear engaged, clutch not released	Select neutral or pull clutch lever	Rider's Manual ➔ 50
No fuel in tank	Add fuel	Rider's Manual ➔ 24
Fuel pump not working	Fuse 4 (in the left fuse holder) has blown	Service and Technical Booklet ➔ 53
Incorrect operation of twistgrip		Rider's Manual ➔ 51
Blocked air cleaner element	Renew	
Defective spark plug	Renew	
Spark plugs/leads or caps wet	Blow out/dry with compressed air	
Insufficient battery charge	Recharge battery	Service and Technical Booklet ➔ 55



Noté:

Any more serious malfunctions – and those not described on Pages 16...63 – must be rectified by an authorized BMW motorcycle dealer or workshop.



Note:

You can obtain further technical information from the following publications:

- Repair manual
- BMW electrical circuit diagrams

Removing the front wheel

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Maintenance and care



Caution:

Avoid damage to brake lines, disks and pads when removing the wheel.

Keep dirt and moisture away from the wheel bearings.

Note on motorcycles with ABS: do not damage the ABS sensor wires, toothed ring or sensor.

- Place the motorcycle on its main stand on a firm, flat surface



Warning:

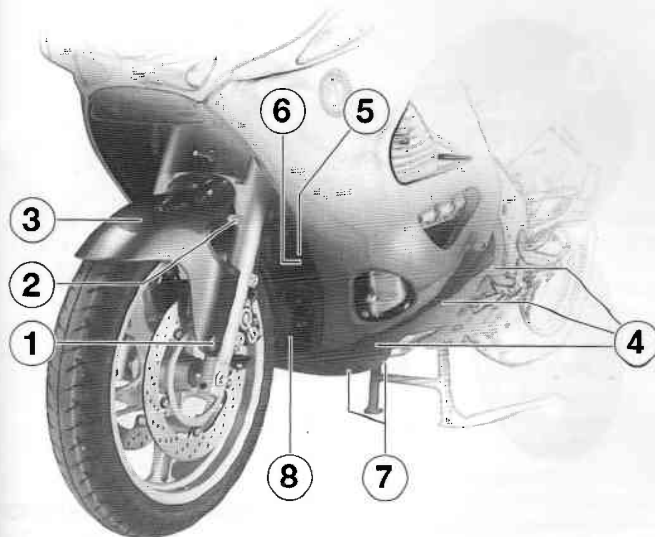
To remove the front wheel, support the motorcycle so that the front wheel can turn freely but the motorcycle is still standing firmly and cannot tip over forwards or to either side.

Removing the front wheel

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Maintenance and care



Detaching the engine spoiler

- Remove the 3 bolts **4** at left and right (M5x16)
- Remove 1 bolt **5** at left and right (M5x16)
- Remove 1 bolt **6** at left (M5x16)
- Remove 2 bolts **7** from underside of engine (M6x20)
- Carefully detach engine spoiler **8** downwards and toward front

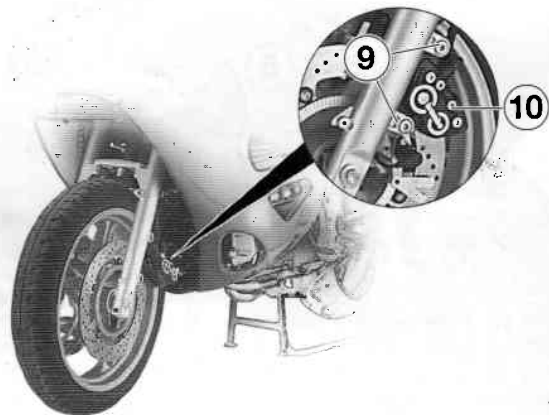
Detaching front mudguard

- Take out 1 screw **1** at left and right (M5x12, flat end)
- Take out 1 screw **2** at left and right (M6x25)
- Carefully detach front mudguard **3**

Removing the front wheel

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Maintenance and care



Removing brake caliper

- Take out 2 screws **9** for brake caliper **10** at left and right
- Tilt brake calipers to force the brake pads in
- Carefully take off left and right brake calipers **10**



Caution:

Avoid damage to brake lines, disks and pads when removing the wheel.

Do not scratch the wheel when forcing back the brake pads or removing the calipers (apply masking tape if necessary). Do not damage the ABS sensor wires, toothed ring or sensor.



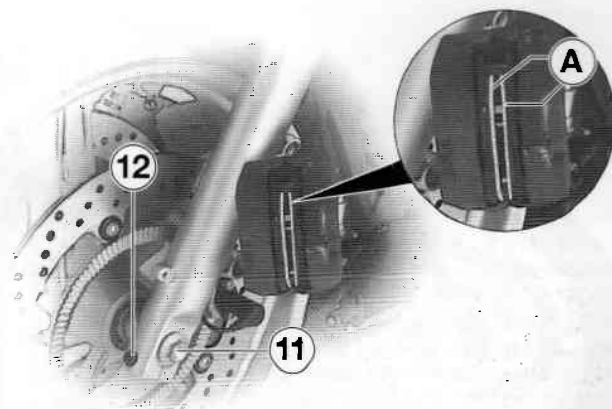
Caution:

To prevent damage to the brake caliper and possible difficulty when assembling: never actuate the brake lever when the brake calipers have been removed.

Removing the front wheel

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Maintenance and care



Checking brake pads

- Check/measure brake pad thickness **A** without pad backing plate
- Minimum pad thickness: **0.06 in (1.5 mm)**
- Before minimum pad thickness is reached:

Have the brake pads renewed by an authorized BMW motorcycle dealer.



Caution:

Always renew pads before the minimum permitted thickness is reached.

- Unscrew and remove axle bolt **11**
- Loosen 1 axle clamp screw **12** at left and right

Removing the front wheel

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Maintenance and care



- Support motorcycle so that front wheel can still turn freely



Warning:

Make sure that the motorcycle is standing firmly and cannot tip forwards or to either side



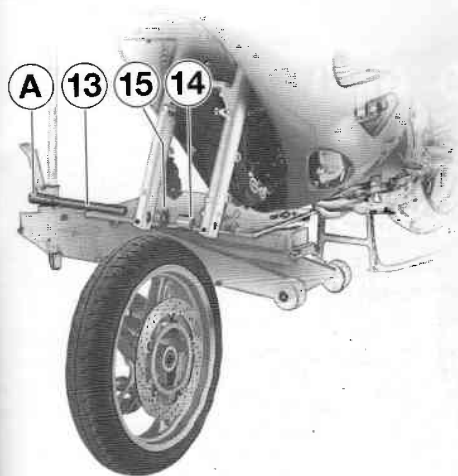
Note:

A hydraulic car jack or a scissors-pattern jack, with an additional wooden board to protect the motorcycle's sump, is a suitable means of supporting the motorcycle.

Removing the front wheel

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Maintenance and care



- Insert a screwdriver through hole **A** on quick-release axle **13** and pull this out to right while turning it slightly
- Remove spacing bushings **14**
- Roll front wheel out forwards and **15**



Note:

Mark the installed position on the tire and ABS toothed ring; also note the direction-of-rotation arrow if it is marked on the tire.



Caution:

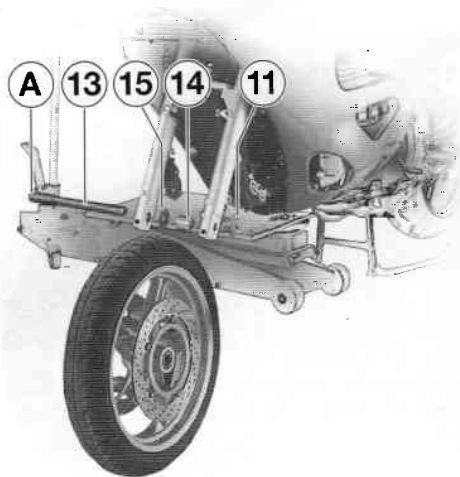
When setting down the front wheel, avoid damage to the brake disks and ABS toothed ring.
Keep dirt and moisture away from the wheel bearings.

Installing the front wheel

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Maintenance and care



Caution:

Avoid damage to brake lines, disks and pads when installing. Keep dirt and moisture away from the wheel bearings. Do not damage the ABS sensor wires, toothed ring or sensor.

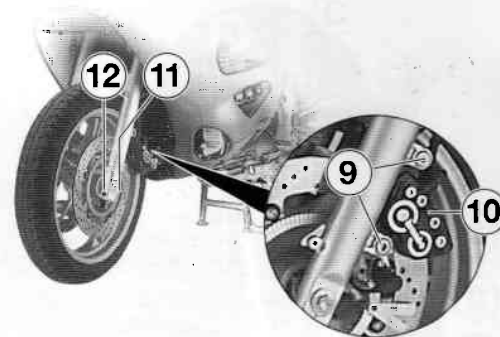
- Roll front wheel between the fork legs – note ABS toothed ring and direction arrow on tire
- Insert clean spacing bushings. Looking forwards:
 - right: narrow bushing 15
 - left: wide bushing 14
- Clean quick-release axle 13, grease it and insert it from right (raising wheel slightly as necessary)
- Screw up axle bolt 11 hand-tight

Installing the front wheel

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Maintenance and care



- Remove support from under motorcycle



Warning:

Before tightening axle bolt 11, axle clamp screws 12 and brake caliper screws 9, remove the support from under the motorcycle.

- Tighten axle bolt 11 to specified torque (insert a screwdriver through hole A in quick-release axle 13 and prevent axle from turning)
- Tighten axle clamp screws 12 right/left to specified torque

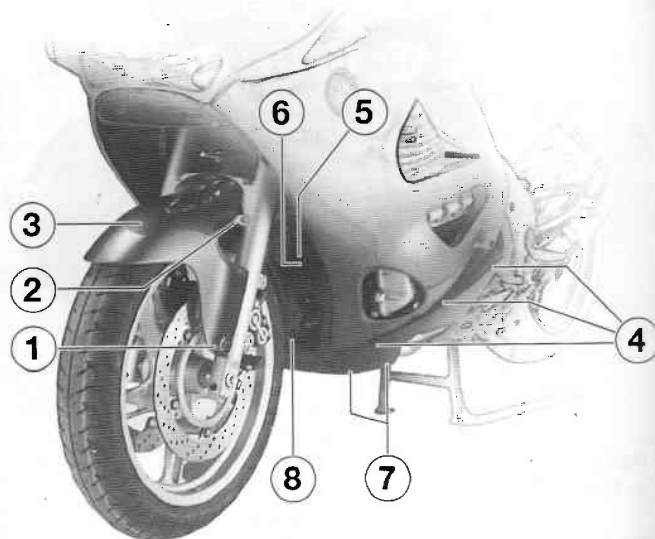
Installing brake calipers

- Carefully push brake caliper 10 over brake disc at left and right
- Install brake caliper 10 at left and right and tighten 2 screws 9 for each caliper 10 at left and right to specified torque

Installing the front wheel

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Maintenance and care



Attaching front mudguard

- Attach front mudguard **3** with care
- Tighten one of screws **2** at left and right (M6x25), and align rear section of front mudguard so that it is centered over wheel
- Tighten one screw **1** at left and right (M5x12)

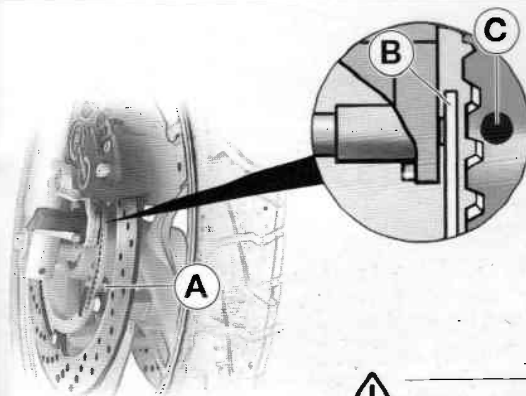
Attaching engine spoiler

- Carefully attach engine spoiler **8** forwards and downwards
- Tighten two screws **7** at underside of engine (M6x20)
- Tighten three screws **4** at left and right (M5x16)
- Tighten one screw **5** at left and right (M5x16)
- Tighten one screw **6** at left and right (M5x16)

Installing the front wheel

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Maintenance and care



Caution:

After installing the front wheel, always use feeler gage **A** to check gap **B** where it is greatest (paint mark **C** on ABS toothed ring).

Gap for front wheel:
0.018 ... 0.022 in
(0.45 ... 0.55 mm)



Tightening torque:

Brake caliper screws **9** ... 40 Nm
Axle bolt **11** 30 Nm
Axle clamp screws **12** 22 Nm



Caution:

Always have the tightening torques checked by an authorized BMW motorcycle dealer.



Warning:

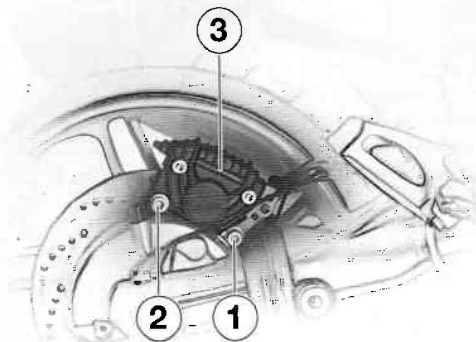
When assembly work has been completed, pull the handlebar lever firmly several times to check that the front brake is operating correctly.

Removing the rear wheel

2

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Maintenance and care



Caution:

Avoid damage to brake lines, brake disk, brake pads and wheel when removing. Do not damage the ABS sensor wires, toothed ring or sensor.

Removing the brake caliper

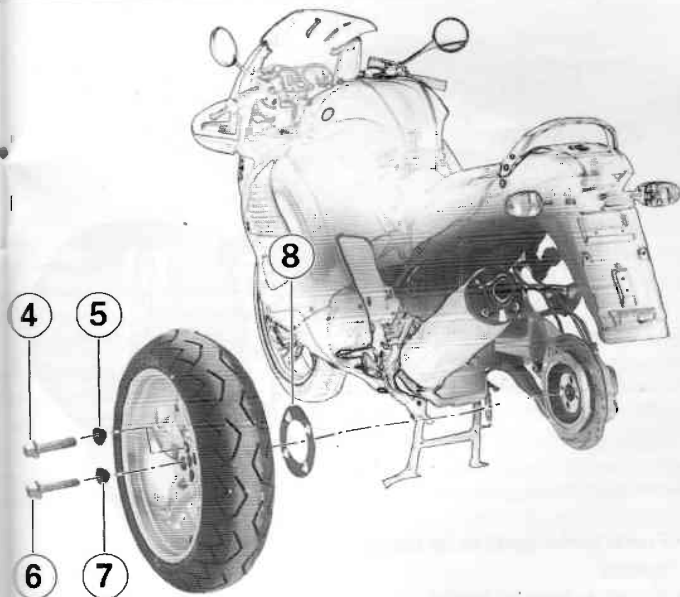
- Place motorcycle on its main stand, making sure that surface is flat
- Select first gear
- Push splash guard fully up
- Take out reamed bolt 1 and screw 2 for brake caliper 3

Removing the rear wheel

2

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Maintenance and care



Caution:

Do not scratch the wheel when forcing back the brake pads or removing the caliper (apply masking tape if necessary). To prevent damage to the brake caliper and possible difficulty when assembling: never operate the brake pedal when the brake caliper has been removed.

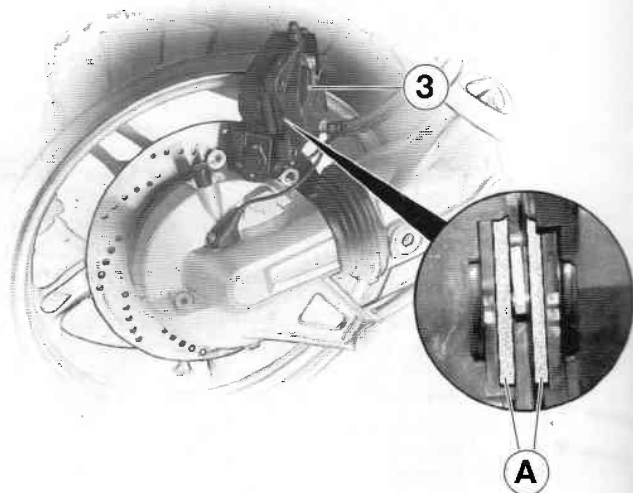
- Unscrew and remove four wheel studs 4 with taper rings 5
- Take out central screw 6 with taper ring 7
- Pull rear wheel off centering spigot and set it down
- Remove spacing washer 8 from wheel centering spigot

Removing the rear wheel

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Maintenance and care



- Force brake pads in by tilting caliper
- Carefully take off brake caliper **3**
- Check/measure brake pad thickness **A** without pad backplate
- Minimum pad thickness:
0.06 in (1.5 mm)
- Before minimum pad thickness is reached:
Have the brake pads renewed by an authorized BMW motorcycle dealer.
- Set brake caliper down carefully on swinging arm

- Take rear wheel out downwards with great care



Caution:

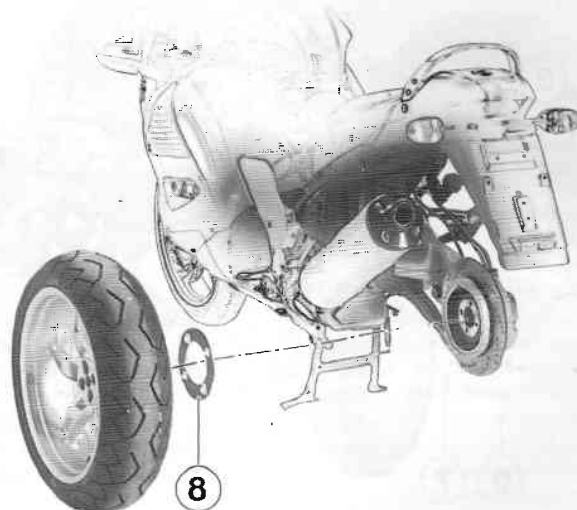
Protect the wheel hub contact face against dust and dirt.

Installing the rear wheel

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Maintenance and care



Caution:

Use only wheel studs with the same length code number. Do not oil or grease the wheel studs.

Avoid damage to brake lines, brake disk, brake pads and wheels when installing.

Do not damage the ABS sensor wires, toothed ring or sensor.

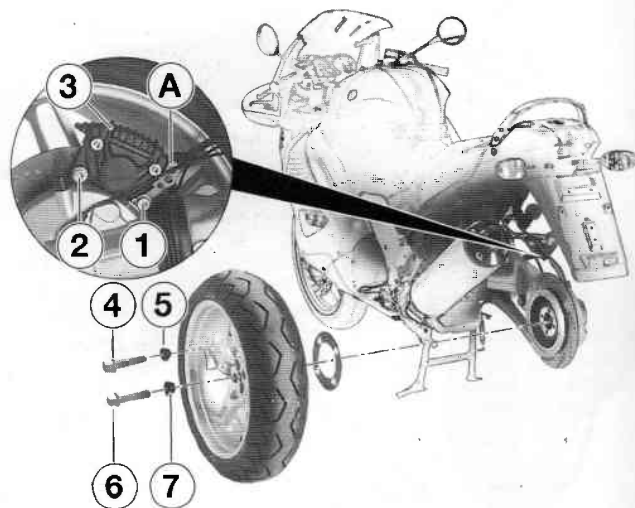
- Check that wheel centering spigot and wheel hub contact faces are grease-free
- Lift rear wheel into swinging arm
- Push spacing washer **8** on to wheel centering spigot

Installing the rear wheel

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Maintenance and care



Installing the brake caliper

- Carefully place brake caliper **3** over brake disk
- Tighten reamed bolt **1** with retaining angle **A** and brake caliper screw **2** (with washer) to specified torque



Caution:

Make sure that retaining angle **A** is correctly positioned.

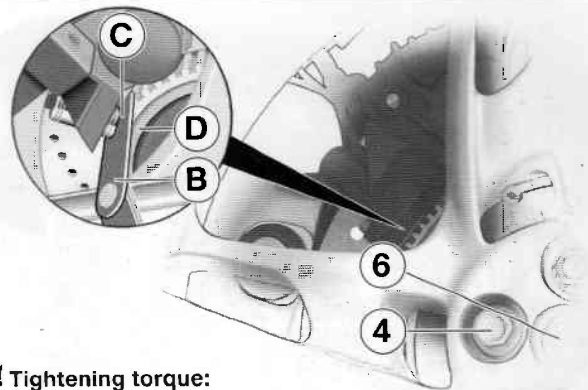
- Insert rear wheel into centering hole
- Insert central screw **6** with taper ring **7** until hand-tight
- Insert 4 wheel studs **4** with taper rings **5** and screw in handtight, then tighten to specified preload torque in a diagonal pattern
- Tighten central screw **6** firmly to specified torque
- Tighten 4 wheel studs **4** in a diagonal pattern to final torque setting

Installing the rear wheel

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Maintenance and care



Tightening torque:

Preload torque	
Wheel studs 4	50 Nm
Final tightening torque	
Wheel studs 4	105 Nm
Central screw 6	105 Nm
Reamed bolt 1	40 Nm
Brake caliper screw 2	40 Nm



Caution:

Always have the tightening torques checked by an authorized BMW motorcycle dealer.



Warning:

When assembly work has been completed, depress the brake pedal firmly several times to check that the rear brake is operating correctly.



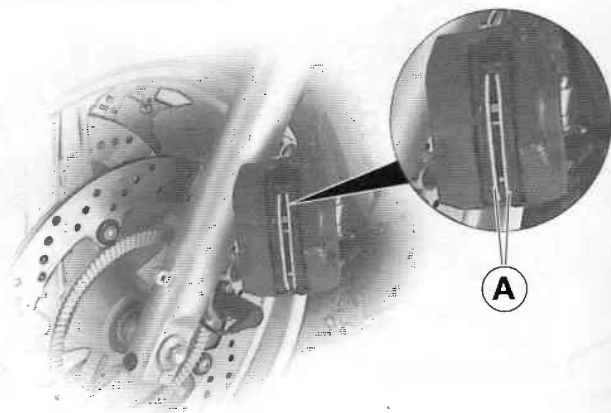
Caution:

After installing the brake caliper and tightening wheel studs **4** and central screw **6**, always use ABS feeler gage **B** to check gap **C** where the distance is greatest (paint mark **D** on ABS toothed ring).

Gap at rear wheel:
0.018 ... 0.022 in
(0.45 ... 0.55 mm)

If necessary, have gap **C** adjusted by your BMW motorcycle dealer.

Checking brake pads



Front brake



Caution:

Renew pads before the minimum permitted thickness is reached.

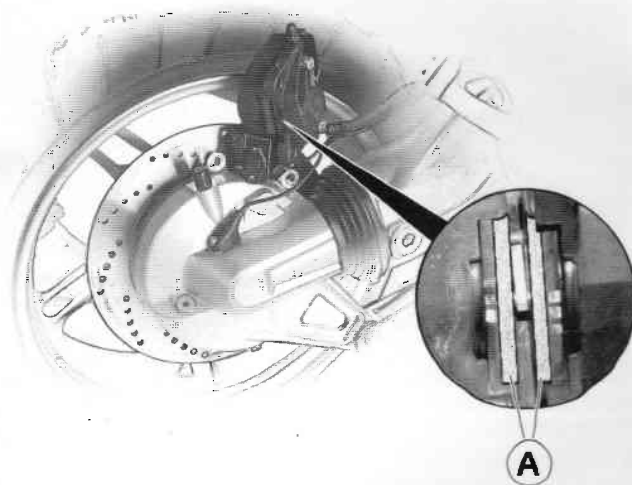


Note:

For your safety we recommend that you have work on the motorcycle's brake system performed by an authorized BMW motorcycle dealer or workshop.

- Place motorcycle on its main stand
- Remove brake caliper (➔ 24)
- Check/measure brake pad thickness **A** without pad backplate
 - Minimum pad thickness: **0.06 in (1.5 mm)**
- Before minimum pad thickness is reached:
 - Have the brake pads renewed by an authorized BMW motorcycle dealer.**
- Install brake caliper (➔ 29)

Checking brake pads



Rear brake



Caution:

Renew pads before the minimum permitted thickness is reached.



Note:

For your safety we recommend that you have work on the motorcycle's brake system performed by an authorized BMW motorcycle dealer or workshop.

- Place motorcycle on its main stand
- Remove brake caliper (➔ 32)
- Check/measure brake pad thickness **A** without pad backplate
 - Minimum pad thickness: **0.06 in (1.5 mm)**
- Before minimum pad thickness is reached:
 - Have the brake pads renewed by an authorized BMW motorcycle dealer.**
- Install brake caliper (➔ 36)

Your motorcycle is equipped with Digital Motor Electronic (MOTRONIC) engine management and a high-power ignition system.



Warning:

Work on the electrical system only when the circuit has been interrupted (switch off ignition and lights). For greater safety, disconnect and insulate the negative battery lead.

When the engine is running or the ignition is switched on, do not touch any electrically live components, terminals or wiring.

- Risk of fatal accident!



Caution:

Your motorcycle has separate bulbs for the high/low headlight beam and the parking light; and for the brake and rear lights.

If any of these bulbs should fail, you may have problems seeing and being seen.

You should therefore always carry spare bulbs on the motorcycle.



Note:

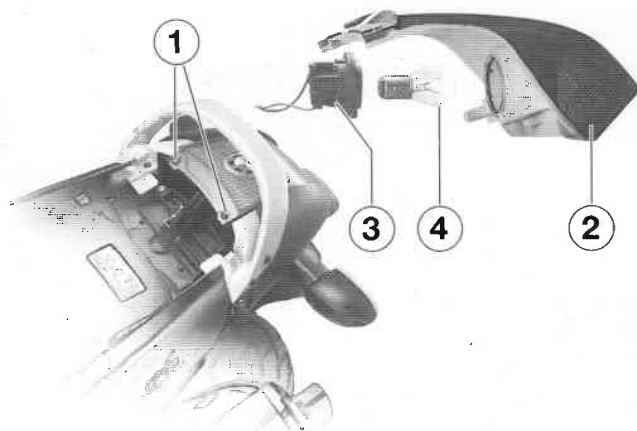
Do not touch new bulbs with fingers.

Use a clean, dry cloth to hold the bulbs when inserting them. Dirt deposits; in particular oil and grease, interfere with heat radiation from the bulb. This leads to overheating and shortens the bulb's operating life.

Renewing light bulbs

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Maintenance and care



Rear/brake light



Caution:

Switch off the ignition before changing a bulb.



Note:

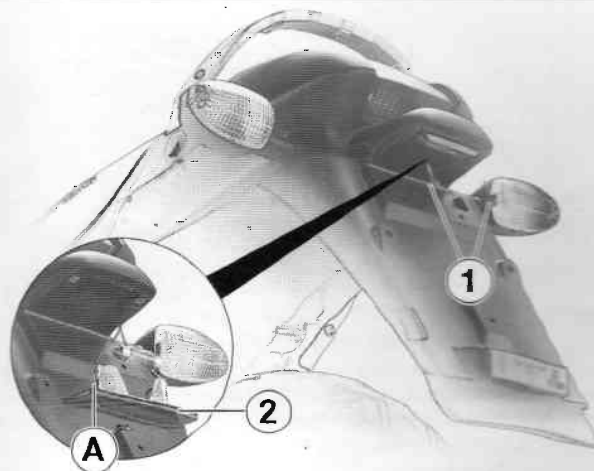
Do not touch the glass of new bulbs with fingers. Use a clean, dry cloth to hold the bulbs when inserting them.

- Place motorcycle on its main stand
- Take off seat
- Take out 2 screws **1**
- Pull rear light glass **2** out rearwards
- Turn bulb holder **3** to left and remove it
- Press bulb **4** in and turn to left to remove
- Take out bulb
- Install in opposite order of work
- Brake/rear light bulb:
12 V 21/5 W

Renewing light bulbs

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Maintenance and care



Number plate light



Caution:

Switch off the ignition before changing a bulb.



Note:

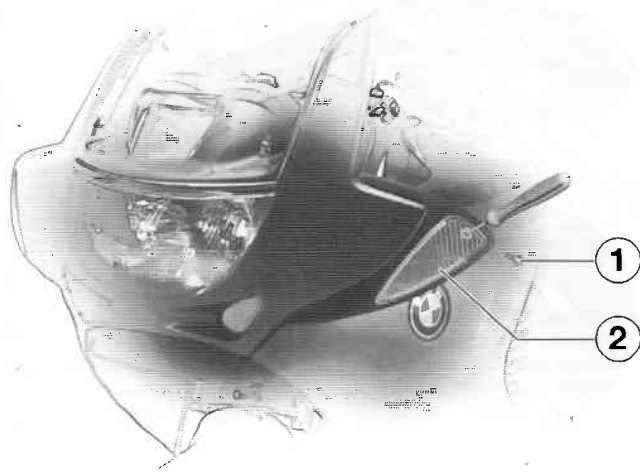
Do not touch glass of new bulbs with fingers. Use a clean, dry cloth to hold the bulbs when inserting them.

- Place motorcycle on its main stand
- Take out 2 screws **1**
- Remove number plate light cover **2** downwards
- Press back spring wire clip and remove bulb
- Number plate light bulb
12 V 5 W soffit
- Place the bulb in two spring clips
- Insert number plate light cover **2**, noting pin **A**
- Tighten 2 screws **1** without using force

Renewing light bulbs

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Maintenance and care



Front turn indicators



Caution:

Switch off the ignition before changing a bulb.



Note:

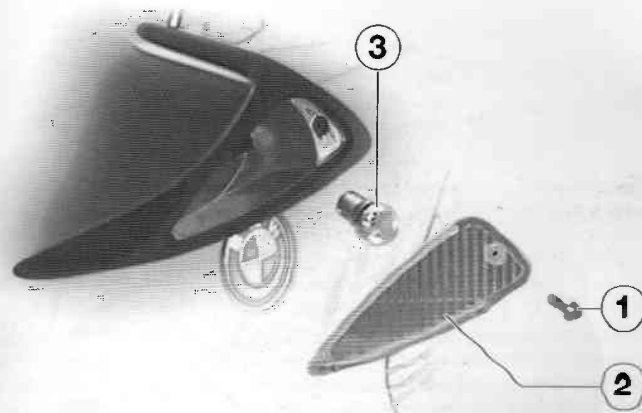
Do not touch the glass of new bulbs with fingers. Use a clean, dry cloth to hold the bulbs when inserting them.

- Place motorcycle on its main stand
- Take out retaining screw **1**
- Insert small screwdriver from toolkit in screw hole and carefully take off turn indicator cover **2**

Renewing light bulbs

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Maintenance and care



Front right turn indicator

- Press bulb **3** in and turn to left to release
- Take out bulb
- Turn indicator bulb
12 V 21 W
- Insert new bulb, press in and lock by turning to right
- Carefully insert turn indicator cover **2**
- Tighten retaining screw **1** without using force

Front left turn indicator

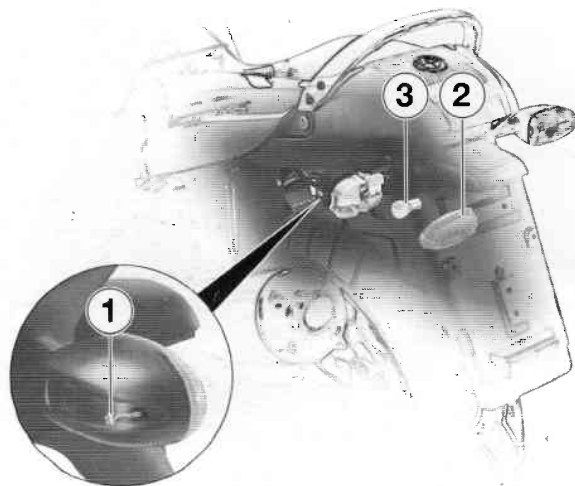
- Press bulb **3** in and turn to right to release
- Take out bulb
- Turn indicator bulb:
12 V 21 W
- Insert new bulb, press in and lock by turning to left
- Carefully insert turn indicator cover **2**
- Tighten retaining screw **1** without using force

Renewing light bulbs

2

46

Maintenance and care



Rear turn indicators



Caution:

Switch off the ignition before changing a bulb.



Note:

Do not touch the glass of new bulbs with fingers. Use a clean, dry cloth to hold the bulbs when inserting them.

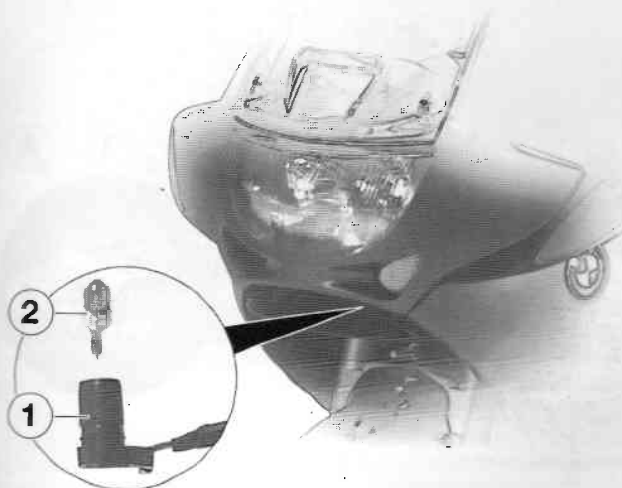
- Place motorcycle on its main stand
- Take out retaining screw **1**
- Take off turn indicator glass **2**
- Press bulb **3** in and release by turning to left
- Take out bulb
- Install in opposite order of work
- Bulbs for front/rear turn indicators: **12 V 21 W**

Renewing light bulbs

2

47

Maintenance and care



Position lights



Caution:

Switch off the ignition before changing a bulb.



Note:

Do not touch the glass of new bulbs with fingers. Use a clean, dry cloth to hold the bulbs when inserting them.

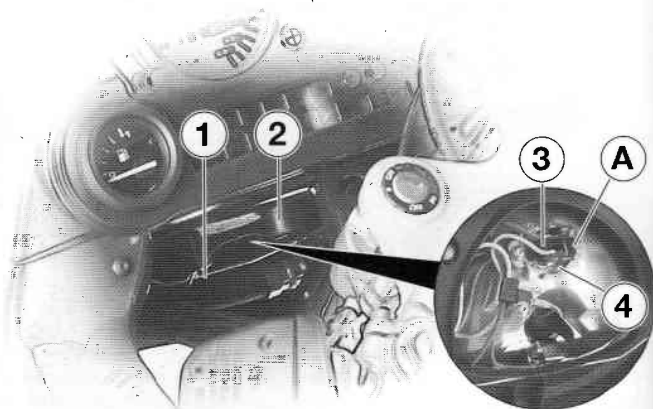
- Place motorcycle on main (center) stand
- Pull holder **1** downwards out of front of headlight housing
- Pull bulb **2** upwards out of holder
- Insert new bulb in holder
- Parking light bulb: **12 V 4 W**
- Press holder fully into mounting provided

Renewing light bulbs

2

48

Maintenance and care



Low (dipped beam)



Caution:

Switch off the ignition before changing a bulb.



Note:

Do not touch the glass of new bulbs with fingers. Use a clean, dry cloth to hold the bulbs when inserting them.

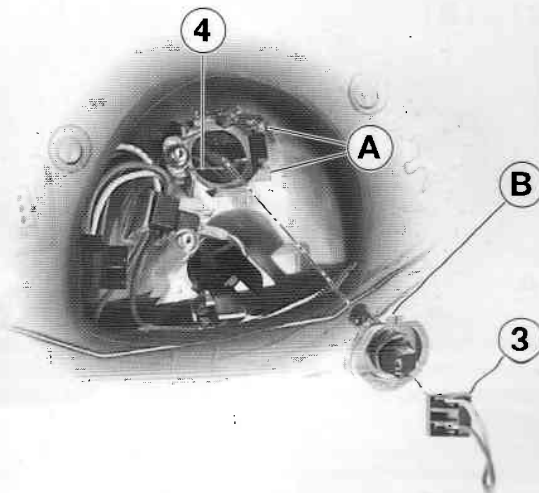
- Place motorcycle on main (center) stand
- Turn steering to full left lock
- Press clip **1** down
- Take out cover **2**
- Pull off plug housing **3**
- Release spring clips **4** from their catches **A** at top and bottom, and swing them back
- Take out H7 bulb
- Low (dipped) beam:
H7 12 V 55 W

Renewing light bulbs

2

49

Maintenance and care



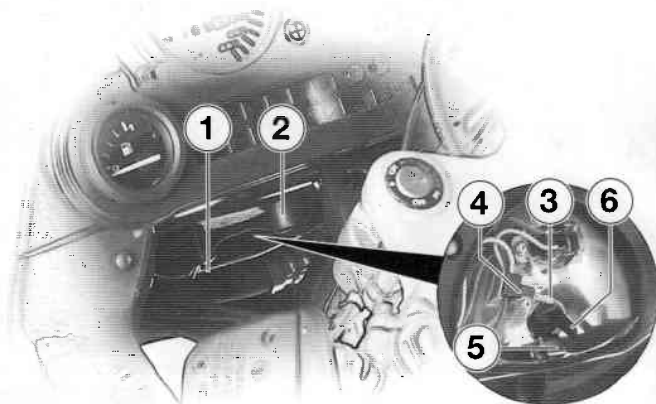
- Insert a new H7 bulb, noting groove **B**
 - Groove **B** must face up
- Attach spring clips **4** at top and bottom to catch **A**
- Attach plug housing **3** to bulb connections
- Insert cover **2**
- Pull clip **1** up and allow it to engage

Renewing light bulbs

2

50

Maintenance and care



High (main) beam



Caution:

Switch off the ignition before changing a bulb.



Note:

Do not touch the glass of new bulbs with fingers. Use a clean, dry cloth to hold the bulbs when inserting them.

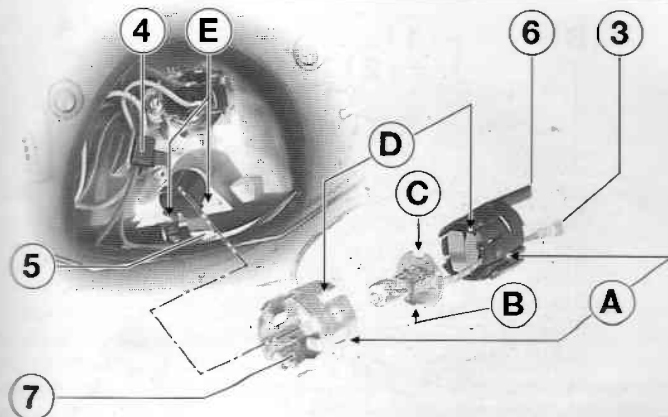
- Place motorcycle on main (center) stand
- Turn steering to left
- Press clip **1** down
- Take out cover **2**
- Pull cable **3** with plug connector out of socket housing **4**
- Press earth (ground) clip **5** down
- Pull bulb holder out of headlight housing by means of retaining handle **6**

Renewing light bulbs

2

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Maintenance and care

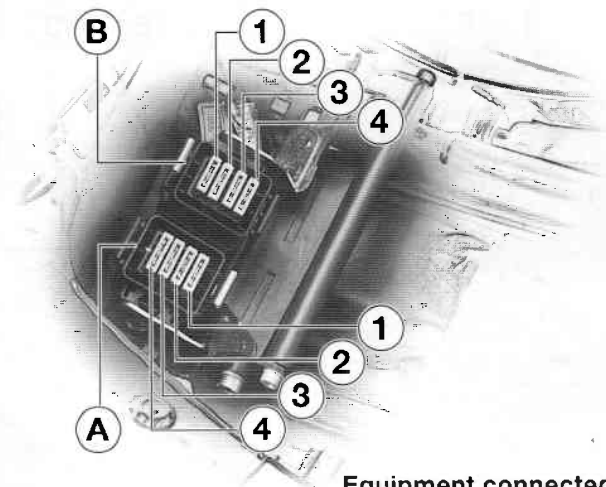


- Using a screwdriver, press in one retaining lug **A** at left and right, and open up bulb holder
- Pull H3 bulb out of bulb ring **7**

– High (main) beam:

H3 12 V 55 W

- Insert new H3 bulb in bulb ring **7**, noting groove **B** and notch **C**
- Pull bulb connecting cable **3** through opening in bulb holder
- Assemble bulb ring **7** with H3 bulb and bulb holder (note groove **D**) and allow retaining lugs **A** to engage
- Insert bulb holder in headlight (note two grooves **E**)
- Allow earth (ground) clip **5** to engage
- Insert cable **3** with plug connection into socket housing **4**
- Insert cover **2**
- Pull up clip **1** and allow it to engage



Equipment connected to fuses

A Left fuse holder

- 1 Combined instrument, brake light 4 Amp
- 2 Parking light, rear light..... 4 Amp
- 3 Horn, fan, DWA 15 Amp
- 4 Motronic and fuel pump 15 Amp

B Right fuse holder

- 1 Combined instrument.. 4 Amp
- 2 Heated handlebar grips 4 Amp
- 3 Power socket 15 Amp
- 4 Optional extra 15 Amp



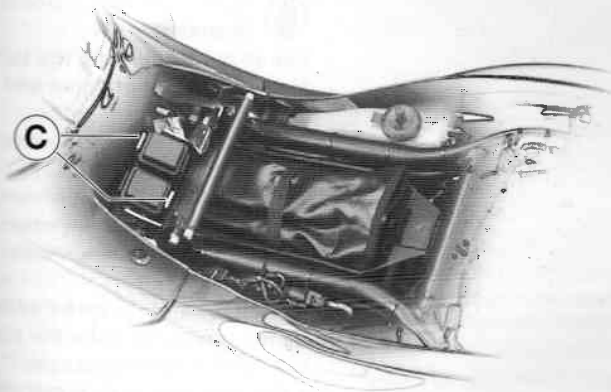
Caution:

Before changing a fuse, switch the ignition off.

Never repair blown fuses with unsuitable materials – risk of fire!

For this reason, always carry a number of spare fuses on the motorcycle.

Use only fuses of the specified rating and pattern.



Renewing fuses

- Place motorcycle on its main stand
- Take off seat
- Press retaining clip **C** to one side and take off fuse box lid
- Pull blown fuse out of its holder
- Insert a new fuse of correct rating
- Close fuse box lid
- Close and lock seat



Note:

If an electrical defect occurs repeatedly, have a check performed by an authorized BMW motorcycle dealer



Warning:

For all work involving the battery, protective goggles and gloves should be worn. If anyone comes into contact with battery acid or is exposed to toxic fumes from the battery, have them examined by a physician without delay.

Before the victim can be seen by the physician, take the following first aid measures:

- Contact with skin: wash off with plenty of clean water.
- Acid swallowed: victim must drink plenty of water or milk (into which a raw egg should be stirred). Do not cause the victim to vomit.
- Eyes attacked by battery acid or fumes from battery: Rinse the eyes out several times with plenty of clean water. The eyelid should be held open while doing so.
- Rinse battery acid off clothing immediately, then remove the clothing and place it in water.



Warning:

Battery acid is highly caustic. It must not contact the eyes, face hands, clothing or the motorcycle's paintwork. **KEEP IT OUT OF REACH OF CHILDREN!**

Never create sparks or bring a naked flame or a glowing cigaret near the battery. Batteries generate explosive gases. Charge batteries only in well-ventilated areas. The cell plugs must be opened when recharging the battery.

If the motorcycle has been out of use for a lengthy period:

- Check battery acid level
- Store the battery in a cool, dry place
- Recharge the battery at intervals during the storage period
- You can use the BMW battery trickle charger to recharge the battery through the motorcycle's power socket. Version for 220 V mains voltage: BMW order number 71 60 2 319 057
- Always charge the battery before storing the motorcycle, and again when removing it from storage - note charging instructions
- In case of doubt, ask the authorized BMW motorcycle dealer to prepare the motorcycle for storage and to carry out the necessary battery maintenance and storage

Checking battery acid level

- Check the acid level regularly
- Read off acid level at MIN/MAX marks
- Top up with distilled water up to MAX mark



Caution:

Correct maintenance, recharging and storage will prolong the life of the battery and are essential if warranty claims are to be considered.



Note:

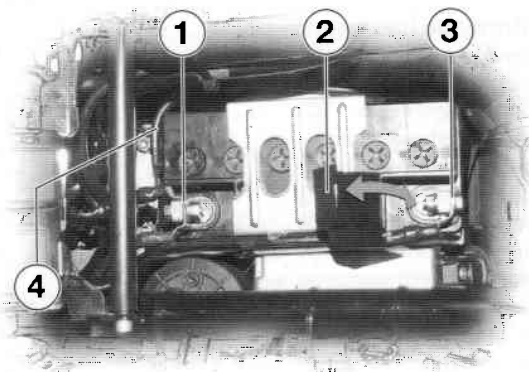
Top up only with distilled water, not acid. Use a suitable coin to unscrew or tighten the cell plugs.

Battery

2

56

Maintenance and care



Removing the battery



Warning:

Avoid damage to fuel tank, wiring and hoses during removal work.

Before disconnecting the battery, switch off the ignition.

To avoid short-circuits:

- Disconnect **negative** battery lead (-) **1** first,
- then **positive** battery lead (+) **3**.

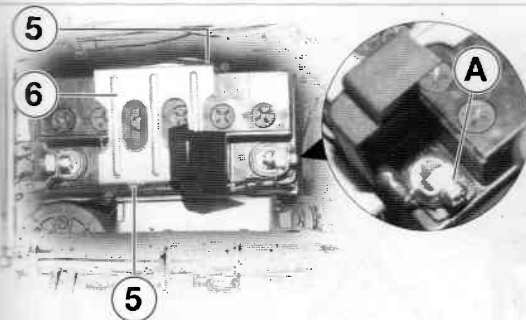
- Place motorcycle on its main stand
- Take off seat
- Take out toolkit storage compartment (arrows)
- Disconnect **negative** battery lead **1** and swing it away from **negative** post of battery or insulate it
- Swin up protective cap **2** at positive post
- Disconnect **positive** battery lead **3** and swing it up out of cable guide
- Pull battery vent tube **4** with angled section out of battery and swing it up

Battery

2

57

Maintenance and care



Warning:

Before connecting the battery, switch off the ignition. To avoid short-circuits:

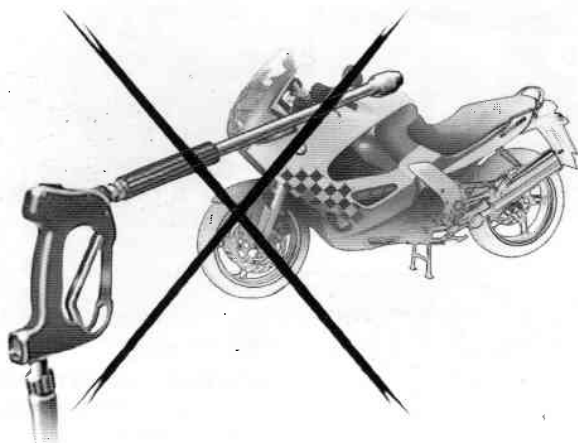
- Connect **positive** battery lead (+) **3** first
- Attach **positive** battery lead in position **A**
- Close protective cap at positive battery post **2**
- Never install battery without protective cap.
- Attach **negative** battery lead (-) **1**
- The toolkit storage compartment must always be in position, or else the protective cap for the positive battery lead could open.

- Remove two screws **5** from battery retaining strap **6**
- Remove battery retaining strap **6** upwards with two screws **5**
- Pull battery out upwards

Installing the battery

- Grease battery posts
- Make sure that battery vent tube is not kinked or blocked.

- Install in opposite order of work



Note:

Regular cleaning, using the correct methods, is an important factor in maintaining the value of your motorcycle. It also ensures that safety-relevant parts remain in full working order.



Caution:

Avoid damage to rubber or plastic parts caused by aggressive or penetrating cleaning agents or solvents. Do not use a steam jet or high-pressure cleaning equipment. High water pressure can damage seals, the hydraulic brake system or the complete electrical system.



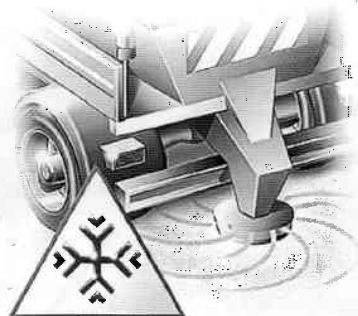
Washing the motorcycle

- Place machine on its main stand.
- Apply a mild cleaning agent to wheels, engine block, transmission and swinging arm, in accordance with manufacturer's instructions.
- Dry wet surfaces thoroughly.
- For cleaning and care of fairing elements and body panels, only use products from BMW Cleaning and Care Kit.
- Do not clean instrument cluster, switches or windshield with solvents or cleansers.
- Remove tar splashes only with an approved cleaning agent – rinse affected area thoroughly.
- Clean dead flies and other insects or similar dirt deposits off fixed fork tubes.
- Treat painted and chromium-plated surfaces regularly with approved care products.



Warning:

After cleaning or before starting a journey, always test the brakes.



Removing road salt

- Wash motorcycle down immediately with cold water at end of the journey.



Note:

Do not use warm water – this worsens the effect of the salt.

- Dry motorcycle thoroughly.
- Apply a wax-based corrosion inhibiting product to chrom-plated parts.
- After cleaning and drying fairing elements and body panels, apply a recommended wax polish.

Cleaning the windshield

- Clean off dirt and insects with a soft sponge and plenty of water.



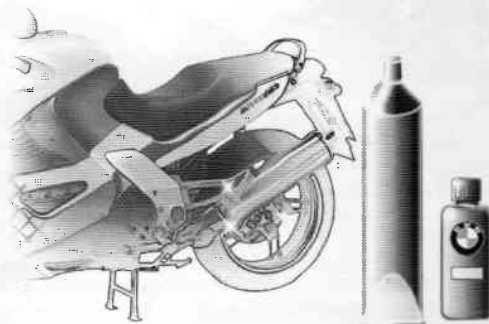
Note:

Soften obstinate dirt or insects by soaking with a wet kitchen tissue.



Caution:

Do not use detergent products. Fuel or chemical solvents attack the windshield material.



Rectifying paint damage

- Touch up minor paint damage, for instance caused by stones thrown up from road, with a BMW paint pencil.



Caution:

Comply with the manufacturer's working instructions and safety precautions.



Note:

The motorcycle's paint color is stated on a label under the dualseat.

More extensive paint damage should be repaired by your BMW motorcycle dealer.

Care of silencer

- If exhaust system becomes discolored (for operating reasons or because of external pollution), treat it with Autosol metal polish, BMW order number 82 14 9 400 890.



Storing

- Clean motorcycle (➡ 58-61)
- Remove battery (➡ 54-57), complying with maintenance instructions (➡ 55)
- Spray brake and clutch lever pivots and main and side stand pivots with a suitable lubricant
- Coat bright metal/chromium plated parts with an acid-free grease (e.g. Vaseline)
- Place motorcycle on its main stand in a dry area
- Support motorcycle under engine so that wheels do not bear any weight

- To do this, detach engine spoiler (➡ 23), and avoid damaging exhaust pipes when inserting support.



Note:

Before storing the motorcycle, have the engine oil and the oil filter element changed by an authorized BMW motorcycle dealer or workshop.

Work needed in conjunction with storing or returning to use can often be combined with the Service or Inspection work performed when due by the authorized BMW motorcycle dealer or workshop.



Returning to use

- If necessary, remove protective wax coating
- Clean motorcycle (➡ 59)
- Install a charged battery (➡ 57)
- Apply correct grease to battery terminals
- Check/correct tire pressures (Rider's Manual ➡ 35)
- Check brakes (Rider's Manual ➡ 27-29)
- Perform safety checks (Rider's Manual ➡ 22-39)

Engine

	72 kW	96 kW
Type	Four-cylinder inline water-cooled engine installed horizontally, with four valves per cylinder, bucket tappets, chain-driven double overhead camshafts and wet sump lubrication.	
Displacement	1171 cc	1171 cc
Max. nominal power output acc. to 95/1/EG		
	72 kW	96 kW
	98 hp	130 hp
- at engine speed	7000 rpm	8750 rpm
Max. torque	118 Nm	117 Nm
- at engine speed	5500 rpm	6750 rpm
Permissible engine speeds		
- maximum	9400 rpm	9400 rpm
- idle speed	1050 rpm	1050 rpm
Bore/stroke	2.78/2.95 in (70.5/75 mm)	2.78/2.95 in (70.5/75 mm)
Compression ratio	11.5 : 1	11.5 : 1
Fuel consumption		
- at constant 56 mph (90 km/h)	47.9 mpg (4.9 l/100 km)	47.9 mpg (4.9 l/100 km)
- at constant 75 mph (120 km/h)	40.5 mpg (5.8 l/100 km)	40.5 mpg (5.8 l/100 km)
Maximum oil consumption	392 mile/quart (0.15 l/100 km)	392 mile/quart (0.15 l/100 km)

Transmission

Clutch	Lightweight single dry plate clutch mounted on crankshaft, with increased-leverage diaphragm spring and starter gear ring. Hydraulic release Effort at handlebar lever 95 N.
Clutch plate Ø	6.50 in (165 mm)
Manual transmission	6-speed with claw shift and integral torsional vibration damper
Gear ratios	1st gear = 2.045 2nd gear = 1.600 3rd gear = 1.267 4th gear = 1.038 5th gear = 0.900 6th gear = 0.800
Secondary drive from gearbox to rear wheel	By shaft protected within hollow swinging arm of Paralever rear suspension, with integral torsional vibration damper and two universal joints.
Final drive	Crown wheel and pinion with Pallid tooth pattern, running in anti-friction bearings; crown wheel directly attached by flange on back to rear wheel.
Final drive ratio	1 : 2.75

Frame and suspension

Frame

Chill-cast load-bearing aluminium frame, welded from 4 sections; engine attached to frame through silentbloc bushings to prevent transmission of vibration.

Location of type plate and frame number

On right of front frame section

Front brake

Hydraulically operated twin disk brake with 4-piston fixed calipers, angular wear compensation and floating stainless-steel brake disks.

Sintered metal brake pads, resistant to fading when wet

Rear brake

Hydraulically operated disk brake with 2-piston fixed caliper and stainless-steel brake disk.

Semi-metallic brake pads, free from fading when wet

Frame and suspension

Wheel location

Front

Telelever, with leading link pivoted centrally on main frame; no handlebar tilt decoupling

Rear

Paralever, with new swinging arm and suspension strut offset from centerline

Front suspension

Gas-filled spring/damper strut, no provision for adjustment

Spring travel (bump)

2.36 in (60 mm)

Spring travel (rebound)

2.17 in (55 mm)

Total travel

4.53 in (115 mm)

Fixed tube diameter

1.38 in (35 mm)

Rear suspension

Gas-filled spring/damper strut with adjustable rebound-stage damping and mechanical spring preload adjustment; progressive rate.

Seven-position spring preload adjustment.

Spring travel (bump)

4.45 in (113 mm)

Spring travel (rebound)

1.46 in (37 mm)

Total travel (at wheel)

5.91 in (150 mm)

Swinging arm length

12.6 in (320 mm)

Frame and suspension

Steering lock angle 2 x 32°

Front wheel castor

- in normal-load position 4.88 in (124 mm)

Recommended minimum tire tread depth

Front wheel 0.08 in (2 mm)

Rear wheel 0.12 in (3 mm)



Warning:
Comply with legal limits
concerning the minimum permis-
sible tire tread depth.

Tire pressures (with tires cold)

One-up Front 36.3 p.s.i.
2.50 bar

Rear 42.0 p.s.i.
2.90 bar

Two-up Front 36.3 p.s.i.
2.50 bar

Rear 42.0 p.s.i.
2.90 bar

Two-up Front 36.3 p.s.i.
+ luggage 2.50 bar

Rear 42.0 p.s.i.
2.90 bar

Frame and suspension

Wheels and tires

BMW cast light alloy wheels,
5 double-spoke design
Low aspect-ratio tires

Front wheel

Angled rim shoulder and double tire
retaining hump

Size and designation

3.50 x 17 MT H2

Tire size and designation

120/70 ZR 17
tubeless

Rear wheel

Angled rim shoulder and double tire
retaining hump

Size and designation

5.00 x 17 E

Optional extra

5,50 x 17 E

Tire size and designation

170/60 ZR 17
tubeless

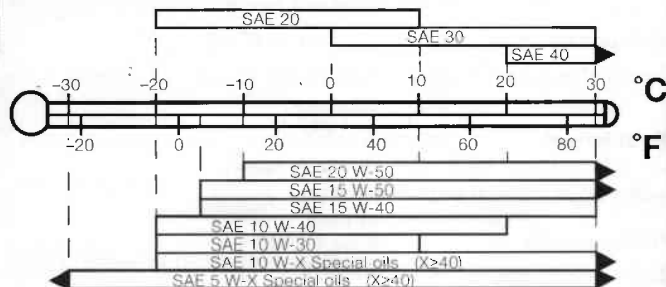
Optional extra

180/55 ZR 17
tubeless

Fuels and lubricants

Engine oil

Brand-name HD oil, API classification SF, SG or SH; CD or CE suffixes are permissible; alternatively, brand-name HD oil, CCMC classification G4 or G5; suffix PD2 is permissible.



The viscosity class depends on outside temperatures. Temperatures above or below the limits quoted for the individual SAE classifications are permitted for brief periods only. Special oils are approved individually by BMW AG and available from your authorized BMW motorcycle dealer. All engine oils supplied by BMW are subjected to regular BMW quality assurance checks. BMW does not approve the use of any upper-cylinder lubricants or similar oil additives.

Engine oil content

- if filter is renewed 3.69 quarts (3.50 l)

Fuels and lubricants

Transmission oil

Brand-name hypoid gear oil, API class GL 5

Quantity

Transmission

0.85 quarts (0.80 l)
Add transmission oil up to lower edge of filler hole

Rear wheel drive (oil change)

0.24 quarts (0.23 l)

Rear wheel drive (after stripping down)

0.26 quarts (0.25 l)

Viscosity class at outside temperature

above 41 °F (5 °C)

SAE 90

below 41 °F (5 °C)

SAE 80

alternatively

SAE 80 W 90

Fuel grade

Super (premium) unleaded fuel to DIN 51 607 standard, minimum octane number 95 (RON) or 85 (MON)

Fuel tank capacity

5.55 gallons (21 l)

Bearings and other lubrication points

Brand-name anti-friction bearing grease, usable temperature range -20 °F...+250 °F (-30 °C ...+140 °C), drip point 250 °F...415 °F (150 °C...230 °C), high corrosion protection, good resistance to water and oxidation; e.g. Shell Retinax A

Battery post – oxidation protection

Acid-free grease, e. g. Vaseline

Brake fluid

ATE SL DOT 4,
Castrol Disk Brake DOT 4,
DOW ET 504 Shell Donax DOT 4,
Hydraulan DOT 4



Caution:

Fill only with new brake fluid to DOT 4 specification.

Battery

BMW-Mareg 12 V 19 Amp/h,
low-maintenance, resistant to loss of charge
BMW No. 61 21 2 306 125

Spark plugs

Approved makes/types

Bosch XR7 LDC

Electrode gap

0.031 +/-0.004 in (0.8 +/-0.1 mm)

Wear limit

0.04 in (1.0 mm)

Fuses

Minifuse
flat-socket fuses

Load ratings

4 A and 15 A

Headlight

Halogen bulb headlight

Electrical system

Bulbs

Low (dipped) beam	H7 halogen bulb 12 V 55 W
High (main) beam	H3 halogen bulb, 12 V 55 W
Parking light	DIN 72 601 12 V 5 W Standard designation W 10/5
Combined brake and rear light	DIN 72 601 12 V 21/5 W Standard designation P 25-2
Flashing turn indicators	DIN 72 601 12 V 21 W Standard designation P 25-1
License plate light	DIN 72 601 12 V 5 W Standard designation C 11
Turn indicator flashers	DIN 72 601 12 V 1.7 W
Other indicator and warning lights, instrument lighting	DIN 72 601 12 V 1.7 W

Dimensions and weights

Overall length 88.6 in (2250 mm)

Width

- across mirrors	33.5 in (850 mm)
- across handlebars (without vibration dampers)	26.8 in (680 mm)
- across rider's footrests	25.1 in (638 mm)
- across pillion passenger's footrests	29.8 in (756 mm)

Overall height

(windshield down) 47.2 in (1200 mm)

Seat height, unladen

30.3/31.5 in (770/800 mm)
2-position adjustment

Wheelbase

- at unladen weight	61.0 in (1549 mm)
- in normal-load position	61.2 in (1555 mm)

Ground clearance

- at unladen weight	5.7 in (145 mm)
- in normal-load position	4.9 in (125 mm)

Unladen weight

(ready to ride, tank full) 628 lb (285 kg)

Gross weight limit

1102 lb (500 kg)

Permissible wheel loads

Front	441 lb (200 kg)
Rear	705 lb (320 kg)

Performance data

A - E

3

76

Technical data

	72 kW	96 kW
Top speed		
- acc. to type approval test	140 mph (225 km/h)	152 mph (245 km/h)
Flexibility		
4th gear 50-75 mph (80-120 km/h)	2.8 s	3.0 s
5th gear 50-75 mph (80-120 km/h)	3.4 s	3.8 s
6th gear 50-75 mph (80-120 km/h)	4.3 s	4.7 s
Power-weight ratio		
- ready for road + rider (165 lb/75 kg)	11 lb/kW (5 kg/kW)	8.26 lb/kW (3.75 kg/kW)
- at gross weight limit	14.30 lb/kW (6.94 kg/kW)	11.48 lb/kW (5.21 kg/kW)
Ride-past noise level		
acc. to 78/1015/EU mod.	80 dB (A)	80 dB (A)

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