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## R 1150 GS

### **BMW Motorrad After Sales**

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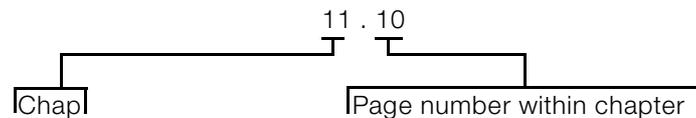
# Introduction

This Repair Manual will help you to perform all the main maintenance and repair work correctly and efficiently. It should be consulted regularly by workshop personnel as an addition to the practical and theoretical knowledge obtained in Training School courses. It is a contribution towards achieving even higher Service quality.

A new issue of this repair manual will be published if amendments or additions (supplements) are needed. The latest issue date is shown in the header of the microfiche. Microfiches rendered invalid by the new issue should be destroyed without delay.

All information in both text and illustrations refers to motorcycles in standard condition or with genuine BMW accessories installed, and not to motorcycles which have been modified in any way to depart from the manufacturer's specification.

- The Repair Manual is structured in the logical sequence of the work to be performed: Removal, Disassembly, Repair, Assembly, Installation.
- The entire contents are divided into individual chapters, corresponding to the Construction Groups.



- Work to be performed during an Inspection is described in Group "00". The various inspection routines are numbered I, II, III and IV. This numbering is repeated in the work descriptions which follow, so that work can take place without interruption.
- Use of the BMW special tools needed for certain tasks is described in the work instructions.

If the need arises, repair instructions are also issued in the form of Service Information. This information is of course incorporated into the next issue of the Repair Manual. We also recommend you to consult the detailed illustrations on the Parts microfiches as an additional source of information.

BMW Motorrad  
After Sales

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## Maintenance schedule

### R 1100 S / R 850/1200 C / R 1150 GS



Customer _____ Licence plate No. _____		BMW Inspection at 1000 km (600 miles)	BMW Service every 10 000 km (6 000 miles)	BMW Inspection every 20 000 km (12 000 miles)	BMW Annual Service
Order No. _____ Mechanic's signature _____					
Read the fault code memory with the MoDiTeC		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Change oil while at regular operating temperature and renew the oil filter element <b>if motorcycle is used only for short journeys or at outside temperatures under 0°C (32 °F), every 3 months, but at least every 3 000 km (1 800 miles) *)</b>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Change oil in gearbox while at operating temperature <b>at least every 2 years*)</b>				<input type="checkbox"/>	<input type="checkbox"/> every 2 years
Change oil in rear wheel drive while at regular operating temperature; if necessary, clean inductive sensor on rear wheel <b>every 40 000 km (24 000 miles) or at least every 2 years *)</b>		<input type="checkbox"/>		<input type="checkbox"/> 40 000 (24 000)	<input type="checkbox"/> every 2 years
Renew fuel filter *) <b>normally every 40 000 km (24 000 miles), if fuel quality is poor every 20 000 km (12 000 miles)</b>				<input type="checkbox"/> 40 000 (24 000)	
Check battery acid level, if necessary add distilled water Clean and grease the battery terminals, if necessary				<input type="checkbox"/>	<input type="checkbox"/>
Renew intake air filter element <b>in very dusty or dirty operating conditions, renew the intake air filter element every 10 000 km (6 000 miles) or even more often if necessary *)</b>				<input type="checkbox"/>	
Renew Poly-V belt *) <b>renew Poly-V belt every 60 000 km (36 000 miles); do not adjust</b>				<input type="checkbox"/> 60 000 (36 000)	
Check brake fluid level at front and rear			<input type="checkbox"/>	<input type="checkbox"/>	
Check operation of brake system and freedom from leaks; repair/replace items if nec. *)				<input type="checkbox"/>	
Examine brake pads and discs for wear, renew if necessary *)			<input type="checkbox"/>	<input type="checkbox"/>	
<b>Change the brake fluid annually</b>					<input type="checkbox"/>
Check clutch fluid level			<input type="checkbox"/>	<input type="checkbox"/>	
Change the clutch fluid <b>at least every 2 years *)</b>					<input type="checkbox"/> every 2 years
Check tightness of rear wheel studs		<input type="checkbox"/>			
Check rear wheel bearing play by tilting wheel				<input type="checkbox"/>	
Check swinging arm bearings (zero play); adjust if necessary *)		<input type="checkbox"/>		<input type="checkbox"/>	
Grease the side stand pivot		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Check function of side stand contact switch		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Check condition of spark plugs			<input type="checkbox"/>		
Renew spark plugs				<input type="checkbox"/>	
Check security of cylinder head nuts		<input type="checkbox"/>			
Check/adjust valve clearances		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Check throttle cable for free movement, abrasion and kinking; renew if necessary *) Check cable play Check synchronisation and eliminate leaks *)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Final inspection with road safety and functional check: – Condition of tyres and wheels, rims and spokes if applicable, tyre pressures – Lights and signalling equipment – Telltale and warning lights – Clutch, gear shift – Front and rear brakes, steering – Instruments – If necessary, test ride		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

\*) **Charged as an additional item**

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## Pre-delivery check

### R 1100 S / R 850/1200 C / R 1150 GS



<p>_____</p> <p>Customer</p>	<p>_____</p> <p>Licence plate No.</p>	<p><b>BMW</b> <b>Pre-delivery check</b></p>
<p>_____</p> <p>Order No.</p>	<p>_____</p> <p>Mechanic's signature</p>	
<p>Check the shipping crate for damage</p>		<input type="checkbox"/>
<p>Motorcycle:</p> <ul style="list-style-type: none"> <li>- unpack</li> <li>- install remaining items</li> <li>- inspect for damage</li> <li>- check that delivery is complete: <ul style="list-style-type: none"> <li>tools</li> <li>documentation</li> <li>keys</li> <li>correct optional extras</li> </ul> </li> </ul>		<input type="checkbox"/>
<p>Fill and charge the battery (mark with charging date)</p>		<input type="checkbox"/>
<p>Check engine oil level when cold; add oil if necessary</p>		<input type="checkbox"/>
<p>Check headlight beam angle, adjust if necessary</p>		<input type="checkbox"/>
<p>Check security of rear wheel studs (comply with correct tightening torque)</p>		<input type="checkbox"/>
<p>Check tyre pressures</p>		<input type="checkbox"/>
<p>Fill fuel tank</p>		<input type="checkbox"/>
<p>Final inspection as functional check:</p> <ul style="list-style-type: none"> <li>- Clutch, gear shift</li> <li>- Front and rear brakes</li> <li>- Lights and signalling equipment, telltale and warning lights, instruments</li> <li>- Check operation of optional extras, ABS</li> <li>- If necessary, test ride</li> </ul>		<input type="checkbox"/>
<p>Confirm pre-delivery check in Service and Technical Booklet</p>		<input type="checkbox"/>
<p>Final cleaning</p>		<input type="checkbox"/>
<p>Motorcycle handed over on:</p>		

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## Service data

### R 1150 GS



Item	Desired value	Unit of measurement/ specification
<b>Oil capacities</b>		
Engine (with filter) (without filter)	3.75 (6.60) 3.50 (6.16)	litres (Imp. pints) litres (Imp. pints) [SI 11 048 90] Engine oil grade: brand-name HD oil for four-stroke spark-ignition engines, API classes SE, SF, SG; combination with CC or CD specification
Gearbox Initial filling/oil changes	approx. 1.0 (1.76) up to lower edge of filler hole	litres (Imp. pints) Brand-name hypoid gear oil, SAE class GL 5 SAE 90
Rear wheel drive Initial filling/oil changes	approx. 0.25 (0.44) oil level with bottom of filler neck	litres (Imp. pints) Brand-name hypoid gear oil, SAE class GL 5 SAE 90
<b>Valve clearances</b>		
Measured cold (max. 35 °C/95 °F)	Inlet: 0.15 (0.006) Exhaust: 0.30 (0.011)	mm (in) mm (in)
<b>Ignition timing</b>		
Static setting	adjust at TDC	
<b>Spark plugs</b>		
Electrode gap	0.8 (0.03)	mm (in)
Wear limit	1.0 (0.04)	mm (in)
<b>Idle speed</b>		
	1100± <sup>50</sup>	min <sup>-1</sup>
<b>Throttle cable setting</b>		
for cold-start (increased idle) speed for throttle (twistgrip) cable for divider cable	zero play app. 0.5 (0.02) zero play	mm (in) free travel
<b>Brakes</b>		
Minimum front pad thickness	1.0 (0.04)	DOT 4 brake fluid mm (in)
Minimum rear pad thickness	wear mark	
Minimum front disc thickness	4.5 (0.18)	mm (in)
Minimum rear disc thickness	4.5 (0.18)	mm (in)
<b>Tyre pressures</b>		
depending on load	front: 2.2 – 2.5 (31.3 – 35.6) rear: 2.5 – 2.9 (35.6 – 41.2)	bar (psi) bar (psi)
<b>Tightening torques:</b>		
Oil filter	11	Nm
Engine oil drain plug	32	Nm
Gearbox oil filler plug	30	Nm
Gearbox oil drain plug	30	Nm
Rear wheel drive oil filler/drain plug	23	Nm
Fuel tank to rear frame	21	Nm
Fuel pump unit to tank	6	Nm
Poly-V belt preload	8	Nm
Alternator to alternator carrier cover	20	Nm
Brake calliper mounting, front/rear	40	Nm
Rear wheel studs	initial torque 72 105	Nm Nm
Tightening cylinder heads Nut	slacken/20 180	Nm ° tightening angle
M 10 screw	slacken/40	Nm
Locknut, valve adjusting screw	8	Nm
Cylinder head cover	8	Nm
Spark plugs	20	Nm

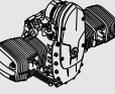
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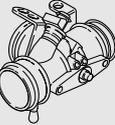
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## Tightening torques

Model	R 1150 GS
Connection	Nm
<b>11 Engine</b>	
<b>Cylinder head</b>	
Tightening sequence:	
1. Tighten cylinder head nuts (oiled) in diagonally opposite sequence	
1.1 Tighten all nuts to closing torque	20
1.2 Tighten all nuts to correct angle	90°
1.3 Tighten all nuts to correct angle	90°
2. M 10 screw	40
3. M 6 screw	9
After 1,000 km (600 miles), tighten cylinder head nuts in diagonally opposite sequence:	
1. Slacken one nut	
2. Tighten nut to initial torque	20
3. Tighten nut to wrench angle	180°
4. Slacken and retighten M 10 screw	40
Timing gear carrier to cylinder head	9
Bearing cap on rocker shaft	18
Locknut, valve adjusting screw	8
Cylinder head cover to cylinder head	8
Camshaft end cover to cylinder head	9
Air intake connection to cylinder head	9
<b>Camshaft</b>	
Chain sprocket to camshaft	65
Camshaft bearing cap	15
<b>Alternator mount cover</b>	
M 6 screw	9
M 8 screw	20
<b>Auxiliary shaft</b>	
Chain sprocket to crankshaft	10
Chainwheel to auxiliary shaft	70
Chain tensioner housing to engine block	9
<b>Oil filter</b>	
Oil filter	11
Oil drain plug	32





<b>Model</b>		<b>R 1150 GS</b>	
<b>Connection</b>		<b>Nm</b>	
<b>11 Engine</b>			
<b>Oil pump</b>			
Mesh filter basket to engine block		10	
Oil pump cover		9	
Pressure relief valve		42	
Oil pressure switch		30	
<b>Oil cooler</b>			
Cooling oil line to engine block		10	
Cooling oil line - banjo screw with oil vent valve		25	
Oil lines to oil cooler		25	
Oil cooler to bracket		9	
Oil cooler return line to engine block		35	
Oil cooler connection to crankcase		9	
<b>Cylinders</b>			
Tightening sequence:			
1. M 8 screw		20	
2. M 6 screw		9	
3. Chain guide rail pivot screw		18	
<b>Timing chain</b>			
Chain tensioner		32	
<b>Connecting rod</b>			
Big end cap	Closing torque	20	
	Wrench angle	80°	
<b>Crankcase</b>			
Tightening sequence:			
M 10 screw (oiled)	Initial torque	25	
	Wrench angle	90°	
M 8 screw (oiled)		22	
M 6 screw		9	
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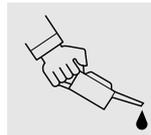
<b>Model</b>	<b>R 1150 GS</b>	
<b>Connection</b>	<b>Nm</b>	
<b>12 Engine electrics</b>		
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Silencer to rear frame at top	35	
Oxygen sensor to silencer	45 (apply Optimoly TA to thread)	
End cap to rear silencer	8 (threads greased)	
Bracket to rear silencer	15 (threads greased)	
<b>21 Clutch</b>		
Clutch housing	Closing torque Wrench angle	40 (oil screw threads lightly) 32°
Housing cover to housing	12	
Clutch line to handlebar fitting	14	
Slave cylinder to gearbox	9	
Grub screw in filler adapter	10	





Model	R 1150 GS	
Connection	Nm	
<b>23 Transmission</b>		
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Oil filler plug		30
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Shift lever to footrest plate		35
Selector lever to selector shaft		9
Housing cover to housing		9
Frame tube to gearbox		
1. to gearbox and left footrest plate		42 (clean thread + Loctite 243)
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Threaded stud to frame		130 (clean thread + Loctite 243)
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Leading link to ball joint		130 (clean thread + Loctite 2701)
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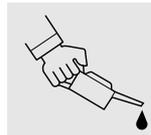
<b>Model</b>	<b>R 1150 GS</b>
<b>Connection</b>	<b>Nm</b>
<b>33 Rear wheel drive</b>	
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<b>Model</b>	<b>R 1150 GS</b>
<b>Connection</b>	<b>Nm</b>
<b>34 Brakes</b>	
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Pivot mount of main (centre) stand (machine screw)	21
Side stand to pivot mount	58 (clean thread + Loctite 2701)

<b>Model</b>	<b>R 1150 GS</b>
<b>Connection</b>	<b>Nm</b>
<b>46 Frame</b>	
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<b>51 Equipment</b>	
Mirrors	10
Ignition/steering lock to fork bridge	20 (micro-encapsulated)
<b>61 General electrical equipment</b>	
Horn to holder	10 (clean thread + Loctite 243)
Ground (earth) strap to engine block	9



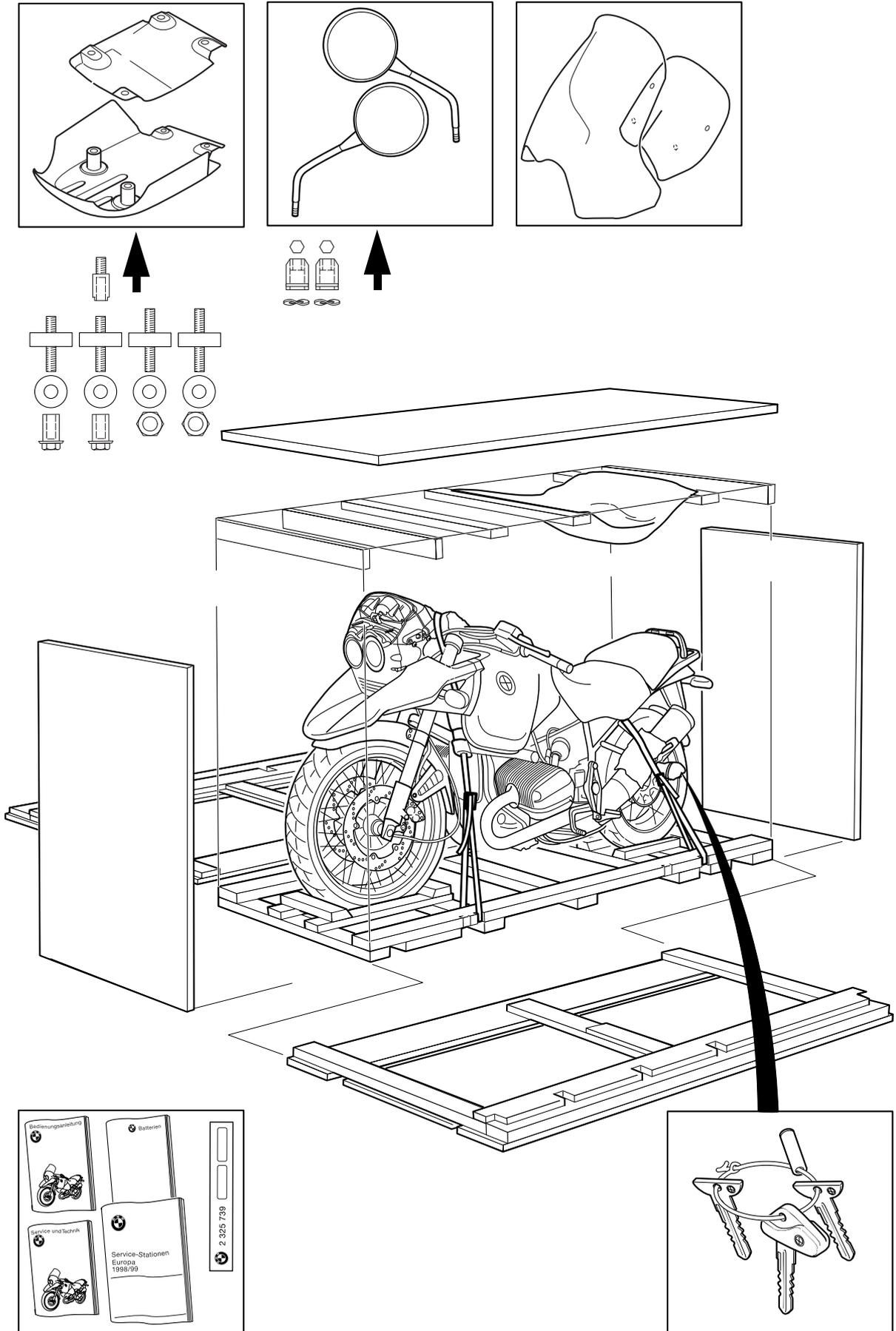
## Table of operating fluids



Item	Use	Order number	Quantity
<b>Lubricant</b>			
Staburags NBU 30 PTM	High-performance lubricating paste	07 55 9 056 992	75 g tube
Optimoly MP 3	High-performance lubricating paste	07 55 9 062 476	100 g tube
Optimoly TA	High-temperature assembly paste	18 21 9 062 599	100 g tube
Silicone grease 300, heavy	Damping grease	07 58 9 058 193	10 g tube
Retinax EP2	Wheel, steering head and taper roller bearing grease	83 22 9 407 845	100 g tube
Contact spray	Contact spray	81 22 9 400 208	300 ml spray
Chain spray	Drive chain	72 60 2 316 676 72 60 2 316 667	50 ml spray 300 ml spray
<b>Sealants</b>			
3-Bond 1110 B	Surface sealant	07 58 9 056 998	5 g tube
3-Bond 1209	Surface sealant	07 58 9 062 376	30 g tube
OMNI VISC 1002	Surface sealant	07 58 1 465 170	90 g tube
Loctite 574	Surface sealant	81 22 9 407 301	50 ml tube
Loctite 577	Thread locking compounds	07 58 2 328 736	5 g tube
Curil K 2	Heat-conductive sealant	81 22 9 400 243	250 g can
<b>Adhesives and retaining agents</b>			
Loctite 648	Joint adhesive (low clearance)	07 58 9 067 732	5 g bottle
Loctite 638	Joint adhesive (greater clearance)	07 58 9 056 030	10 ml bottle
Loctite 243	Thread retainer, medium-strength	07 58 9 056 031	10 ml bottle
Loctite 270	Thread retainer, strong	81 22 9 400 086	10 ml bottle
Loctite 2701	Thread retainer, strong	33 17 2 331 095	10 ml bottle
Loctite 454	Cyanacrylate adhesive (gel)	07 58 9 062 157	20 g tube
<b>Cleaners</b>			
Brake cleaner	Brake cleaner	83 11 9 407 848	600 ml spray
Metal Polish	Polish for chrome-plated parts	82 14 9 400 890	100 g tube
<b>Testing agents</b>			
Penetrant MR 68	Crack testing agent for aluminum housings	83 19 9 407 855	500 ml spray
Developer MR 70	Crack testing agent for aluminum housings	81 22 9 407 495	500 ml spray
<b>Installation aids</b>			
BMW cooling spray	Cooling spray	83 19 9 407 762	300 ml spray

# Pre-delivery check

## General view of crated motorcycle



## Check the shipping crate for damage

- When the motorcycle arrives, check the packing material immediately for damage and, if necessary, examine the contents for consequential damage.



### In case of damage in Germany

- Note the damage on the delivery slip.
- Read the information sheet on damage in transit.
- Notify the supplier without delay (e.g. freight company or DB) and also Bavaria Wirtschaftsagentur GmbH  
Abteilung ZW - 12  
D-80788 München  
Tel. 089/14327-632  
Fax. 089/14327-709

### In case of damage in importer markets

- Note the damage on the delivery slip.
- Comply with specific national market procedures.  
In case of doubt, please submit enquiries to:  
Bavaria Wirtschaftsagentur GmbH  
Abteilung ZW - 12  
D-80788 München  
Tel. +49 (0)89 14327-632  
Fax. +49 (0)89/14327-709
- Notify the supplier (e.g. freight company) without delay.

## Unpacking the motorcycle

- Lever off the cover.
- Take out the separate pack of items:
  - Documentation
  - Windscreen
  - Sump guard with fasteners
- Force off cross-struts with a suitable lever.



### Caution:

Do not knock the cross-struts out or the motorcycle may be damaged.

- Remove the end-walls.
- Remove the side-walls.



### Caution:

Remove any nails projecting from the base of the packing or lying on the base or on the floor.

- Loosen the front tensioning straps.
- Release the handlebar and resecure in correct position (punch marks aligned).



### Caution:

Do not push the motorcycle until the handlebar has been secured in the correct position.



### Tightening torque:

Handlebar to fork bridge ..... 21 Nm

- Loosen the rear tensioning straps.
- Push the motorcycle forwards off the pallet.
- Remove the set of keys from the left rear footrest.
- Dispose of the packing materials in an environmentally responsible manner as described in Service Information 23/91 - Sales - .

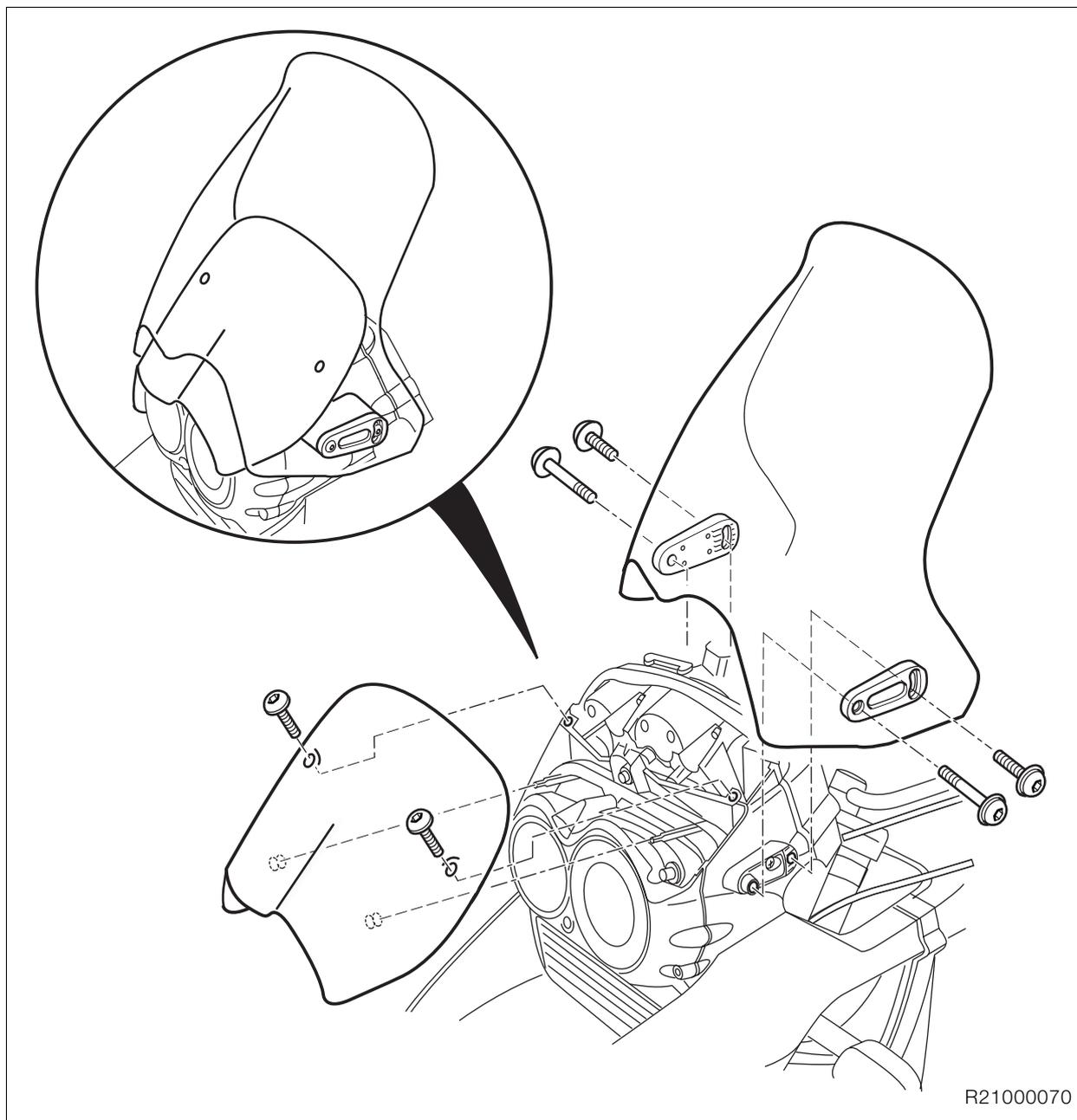
## Inspecting motorcycle for damage

- Check for defects.
- Use the “express handling service” to notify BMW Motorrad, UX-VS-1  
Fax: +49 (0)89 382 33220
- Rectify the fault.
- If parts are needed, order them through the usual channel.
- Costs are to be processed by the warranty claim system (stage 4). Defect codes:
  - Parts missing 10 01 00 00 00
  - Parts damaged 10 02 00 00 00
  - Incorrect parts delivered 10 03 00 00 00

## Checking that delivery is complete

- All optional extras
- Toolkit
- Documentation

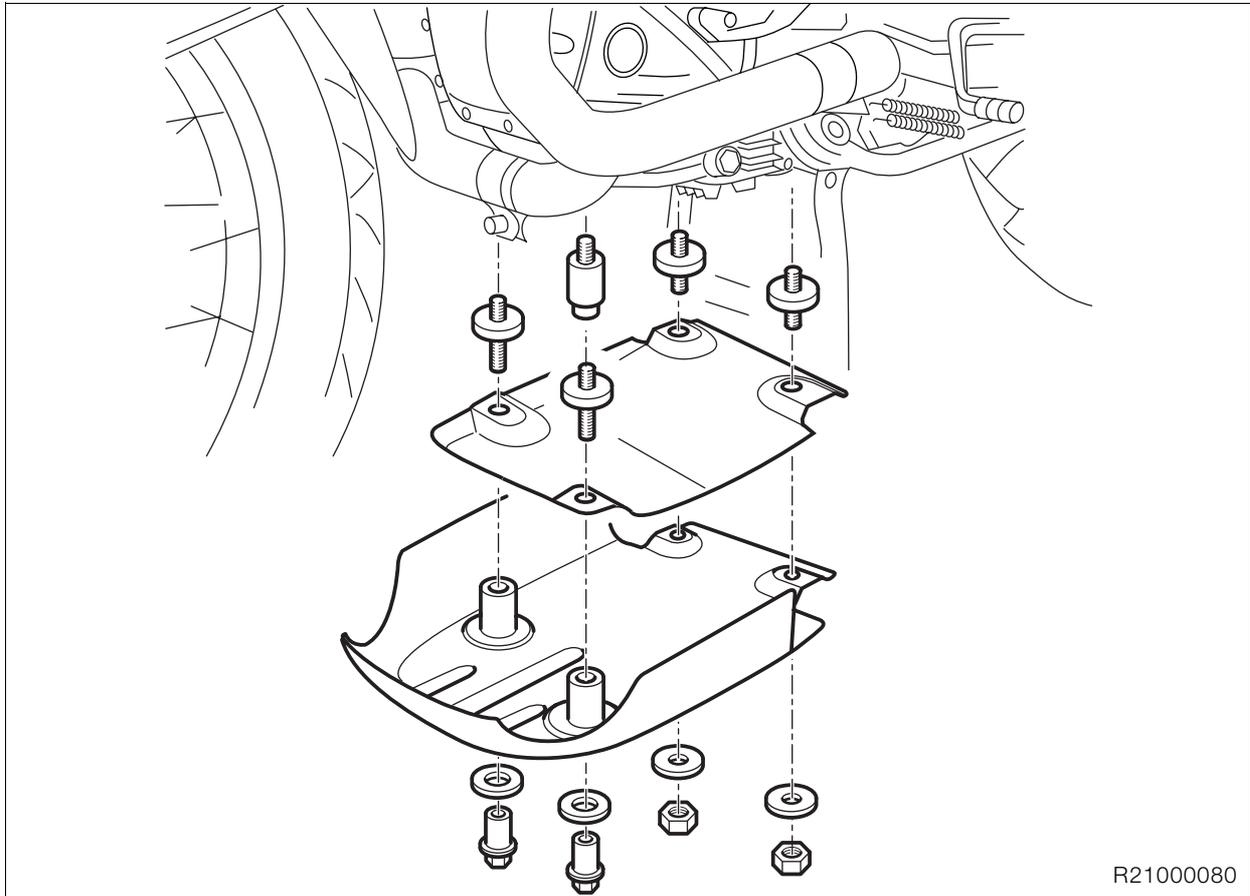




## Installing remaining items on motorcycle

Install the windscreen

- Carefully tighten the securing screws by hand.



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## Installing sump guard

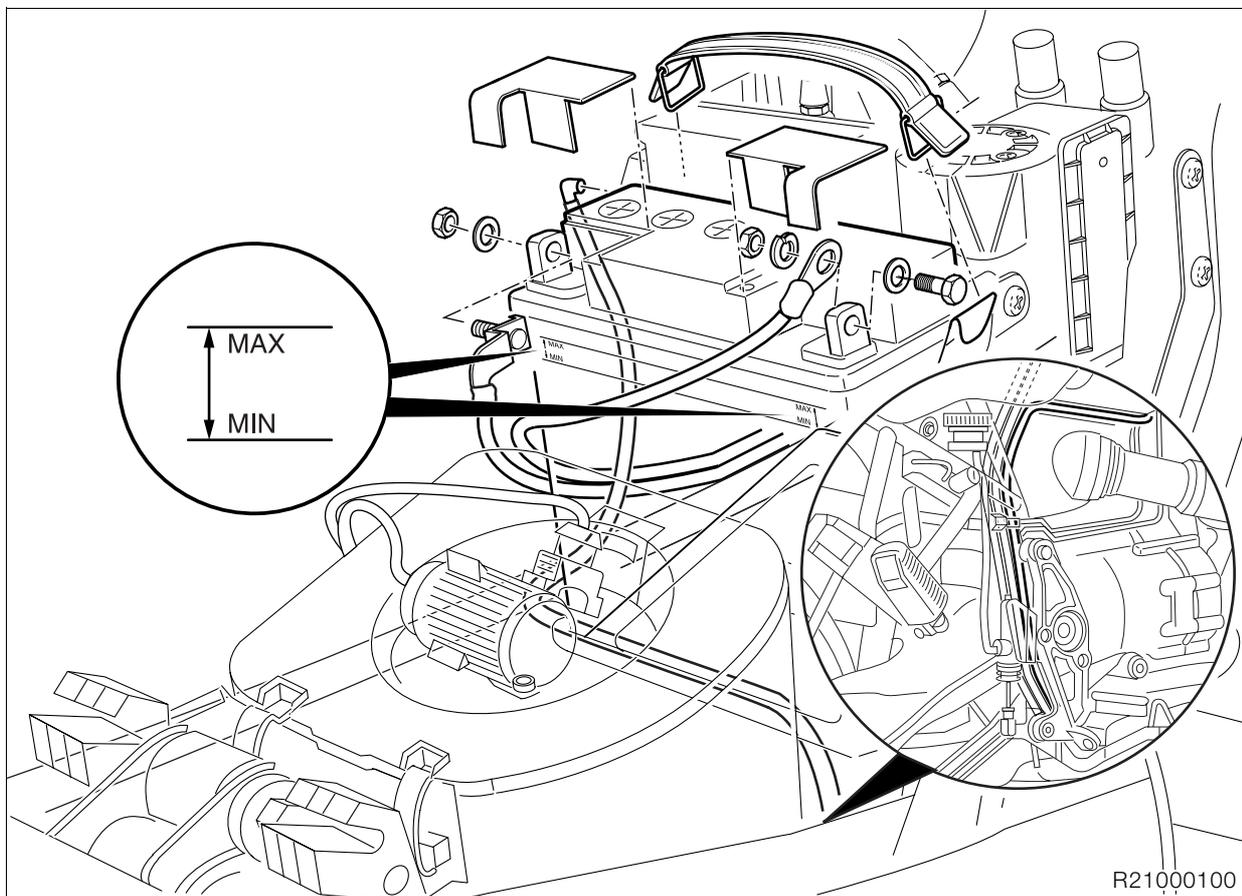
- Install the spacer bushing at the front left.



### ! Tightening torque:

Bushing to engine block..... 20 Nm

- Install the front rubber mounts with the long thread down.
- Install the rear rubber mounts.
- Install the inner plate with the outer guard.



## Filling and charging the battery

### Disengaging and raising the fuel tank

- Remove seat.
- Remove right side trim.

#### **Caution:**

Fuel is flammable and a hazard to health. Observe relevant safety regulations.

- Remove the fastener securing the fuel tank at the rear right.
- Raise the rear of the fuel tank and prop it in this position on a wooden block or similar.

### Filling and charging the battery

#### **Warning:**

Battery acid is highly caustic. Protect your eyes, face, hands, clothing and the paintwork.

- Disengage the rubber strap holding the battery.
- Disconnect the battery breather hose.
- Remove the battery.
- Fill all the cells with pure battery acid of density 1.28 to the upper mark.
- Allow the battery to stand for approximately 30 minutes.
- The battery does not achieve full charge capacity from being filled, so it has to be charged with a battery charger.

#### **Note:**

Follow the instructions for use supplied with the battery charger.

#### **Charge current (amps)**

..... 10 % of rated battery capacity (Ah)

#### **Charging time**

..... 5-10 hours

- Battery charge can be measured by checking the density of the battery acid.

#### **Acid density**

Battery fully charged ..... 1.26-1.30 at 20 °C (68 °F)

- Shake the battery slightly to allow the gas bubbles to escape.
- Wait until the battery acid has settled, check that no more bubbles rise and if necessary, top up the acid to the max. mark.
- Reinstall the plugs.
- Make a note of the charging date on the battery.

#### **Caution:**

Connect the positive battery terminal first, then the negative terminal.

- Install the battery.
- Apply acid-proof grease to the battery terminal posts.
- Connect the battery breather line.
- Secure the fuel tank in position.
- Install the right side trim panel.
- Install the seat.

- Switch on the ignition.
- Without starting the engine, fully open the throttle once or twice so that the Motronic control unit can register the throttle-valve positions.



**Note:**

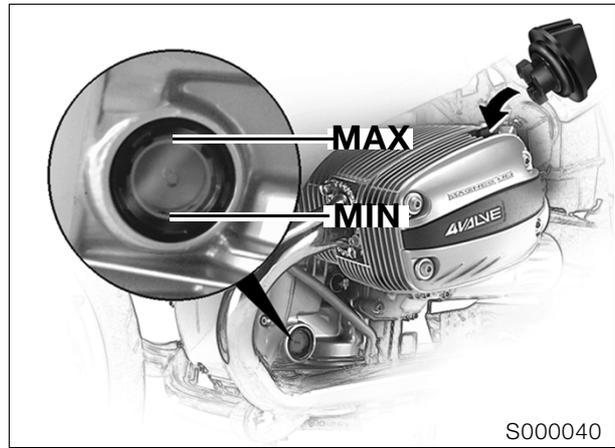
Disconnecting the battery deletes all entries (e.g. faults, settings) stored in the Motronic control unit's memory. Loss of settings can temporarily impair the operating characteristics when the engine is restarted.



**Tightening torque:**

Fuel tank to frame ..... 21 Nm

**Checking engine oil when engine is cold, topping up if necessary**



- Check oil level with the motorcycle upright.

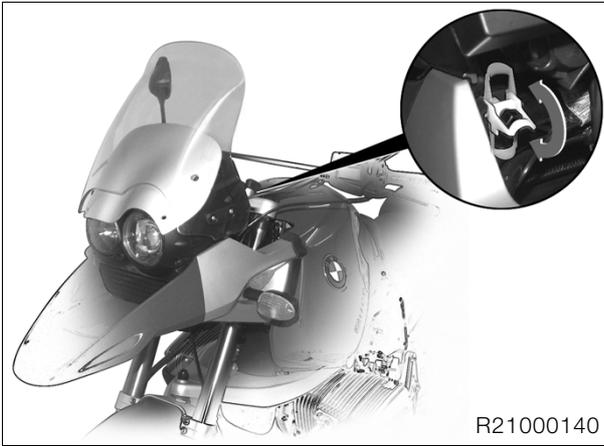


**Caution:**

Never top up the engine-oil level past the "MAX" mark.

**Required level:**..... MAX

## Checking headlight beam angle, adjusting if necessary



R21000140

- Motorcycle on level surface.
- Rider's weight on motorcycle (approx. 85 kg/176 lbs).
- Move swivel lever to horizontal position (basic setting).
- Turn the adjusting screws to correct the headlight beam throw.

### Lateral adjustment:

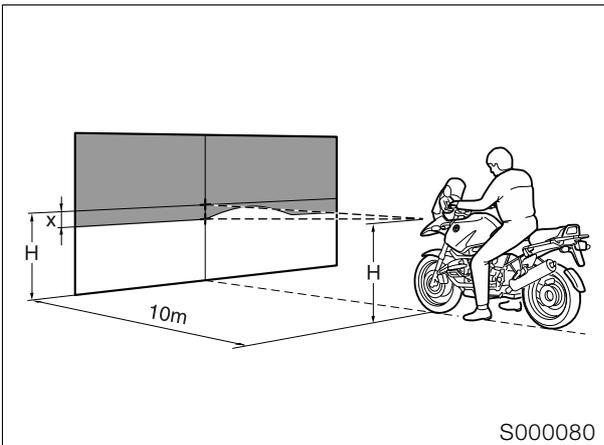
..... Adjusting screw on left of headlight

### Vertical adjustment:

..... Adjusting screw on right of headlight

**Turn screw anti-clockwise:** ..... longer throw

**Turn screw clockwise:** ..... shorter throw



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### Setting for headlight beam angle adjuster

..... -15 cm (- 5.9 in)

..... over a distance of 10 m (32.8 ft)

## Checking tightness of rear wheel studs



### Tightening torque:

Rear wheel studs ..... 105 Nm

## Checking tyre pressures

- Check/correct tyre pressures.

### Tyre pressures:

Solo ..... front 2.2 bar (31.3 psi)  
 ..... rear 2.5 bar (35.6 psi)

Two-up ..... front 2.5 bar (35.6 psi)  
 ..... rear 2.7 bar (38.4 psi)

Two-up + luggage ..... front 2.5 bar (35.6 psi)  
 ..... rear 2.9 bar (41.2 psi)

## Attaching adhesive label

- Remove the adhesive label from the package and fix it in position at the bottom of the glass cover of the rev. counter.

## Final inspection and function check

- Clutch
- Check gear shift action.
- Handbrake and foot brake
- Check lights and signalling equipment:
  - Front and rear parking lights
  - Instrument lighting
  - Low and high headlight beams, headlight flasher
  - Brake light (operate brake at front and rear)
  - Turn signals left/right
  - Hazard warning flashers
  - Horn
  - Telltale and warning lights
  - Instruments
- Where necessary, check function of optional extras:
  - ABS: perform starting test. When a speed of 5 km/h (app. 3 mile/h) is reached, both ABS warning lights must go out.
- If necessary, take the motorcycle for a test ride.
- Confirm pre-delivery check in Service and Technical Booklet.
- See “Checking motorcycle for damage” if defects are found.

## Final cleaning

- Clean the motorcycle.



### Note:

Do not use a steam or high-pressure water jet. The high steam or water pressure could damage seals, the hydraulic system or electrical components.

## Handing over the motorcycle

This is the ideal opportunity to familiarise the customer with the motorcycle in order to ensure the customer's satisfaction and safety.

- The following points must be demonstrated and explained to the customer:
  - documentation and stowage space
  - toolkit and stowage space
  - suspension preload adjustment to suit total weight
  - checking brake fluid/clutch operating fluid
  - provision for adjusting handlebar lever positions
  - how to adjust the mirrors
  - controls
  - instruments and telltale lights
  - optional equipment and accessories fitted
  - noise during the regular ABS self-diagnosis procedure
- The user must be given the following information:
  - running-in recommendations and inspection intervals
  - safety check
  - the clutch fluid level rises gradually as the motorcycle is ridden (clutch lining wear)
  - before checking the engine oil level, the engine must be switched off for at least 10 minutes and the motorcycle must be standing on a flat, level surface



# Maintenance

## Key to maintenance intervals

- BMW Inspection at 1,000 km (600 miles) **I**
- BMW Service every 10,000 km (6,000 miles) **II**
- BMW Inspection, every 20,000 km (12,000 miles) **III**
- BMW Annual Service **IV**



## Reading out MoDiTeC fault memory

(Inspections I, II, III and IV)

- Remove the seat.
- Connect the **BMW** MoDiTeC to the diagnosis connector.
- Read out the fault memory.
- Perform all requisite repair work.

## Changing engine oil, replacing oil filter element

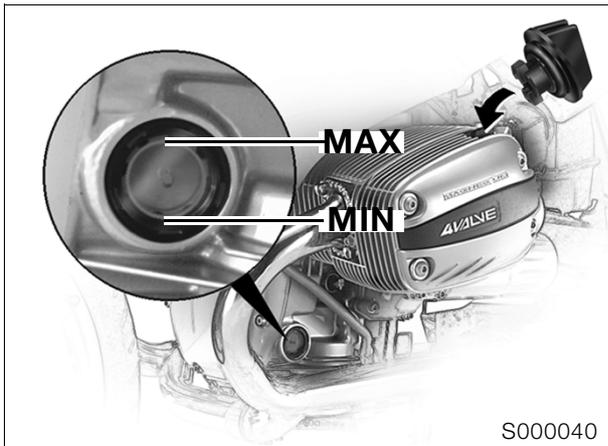
(Inspections I, II, III and IV)



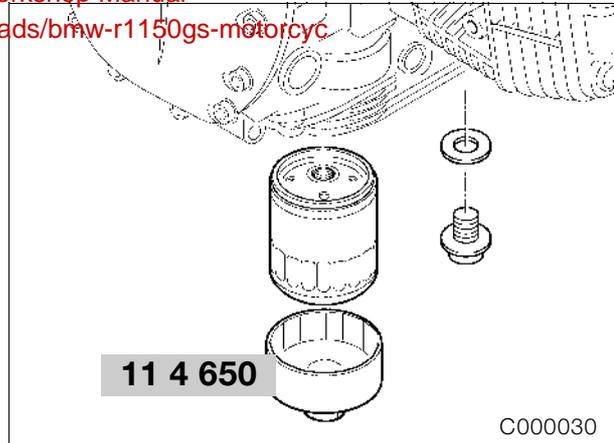
### Note:

If the motorcycle is ridden only for short distances or outside temperatures are below 0°C (32°F) change the oil and replace the oil filter element every 3 months, or not later than every 3,000 km (1,800 miles).

- Change the oil at operating temperature.



- Remove screw plug.



- Remove oil drain plug and drain off oil.
- Reinstall the oil drain plug with a new sealing ring.
- Use oil filter wrench, **BMW No. 11 4 650**, to remove the oil filter.
- Coat sealing ring on new oil filter element with oil and install filter.
- Refill with oil to correct level.
- Install the screw plug.



### Caution:

Never top up the engine-oil level past the "MAX" mark.



### Tightening torque:

Oil filter.....	11 Nm
Oil drain plug.....	32 Nm

### Engine oil quantities:

With oil filter change .....	3.75 l (6.6 Imp. pints/3.96 US quarts)
Without oil filter change.....	3.50 l (6.2 Imp. pints/3.69 US quarts)
Quantity of oil between MIN and MAX marks .....	0.50 l (0.88 Imp. pint/0.52 US quart)

### Engine oil grade:

Brand-name HD oil for spark-ignition engines, API classifications SF, SG, SH; combination with CD or CE specification.

Brand-name HD oil of CCMC classification G4, G5; amendment PD2 is permissible.