Maintenance BMW Integral ABS

R 1150 R

BMW Motorrad
After Sales

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After Sales
UX-VS-2

Produced in Germany 01/01

BMW Motorrad
Maintenance schedule
R 1100 S EVO / R 1150 R / R 1150 RT

Customer	Registration No.	BMW Inspection at 1,000 km (600 miles)	BMW Service 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 **BMW** MoDiTeC		☐	☐	☐	☐
[Integral ABS] perform bleed test with **BMW** MoDiTeC		☐	☐	☐	
Change oil while at regular operating temperature and replace the oil filter element **If the motorcycle is ridden only for short distances or outside temperatures are below 0 °C: at the latest every 3,000 km (1,800 miles)*)**		☐	☐	☐	☐
Change oil in gearbox while at operating temperature **every 2 years*) at the latest**				☐	☐ every 2 years
Change oil in rear wheel drive while at operating temperature if necessary, clean inductive sensor on rear wheel **every 40,000 km (24,000 miles) or at the latest every 2 years*)**		☐		☐ 40,000	☐ every 2 years
Replace fuel filter ***)** **Normally every 40,000 km (24,000 miles), if fuel is of poor quality every 20,000 km (12,000 miles)**				☐ 40,000	
Check the battery fluid level, if necessary top up with distilled water Clean and grease battery poles if necessary				☐	☐
Replace intake air filter element **In very dirty and dusty operating conditions, replace every 10,000 km (6,000 miles) or even more frequently if necessary *)**				☐	
Replace Poly-V belt ***)** **Replace the Poly-V belt every 60,000 km (36,000 miles); do not adjust it**				☐ 60,000	
Check brake fluid level at front and rear			☐	☐	
Check operation of brake system and freedom from leaks; repair/replace items if necessary***)**				☐	
Examine brake pads and discs for wear, replace as necessary***)**			☐	☐	
[Without ABS] change brake fluid **every twelve months**					☐
[Integral ABS] change bake fluid in wheel circuit **every 12 months**					☐
[Integral ABS] change brake fluid in control circuit **every 2 years*)**					☐ every 2 years
[Integral ABS] perform bleed test with **BMW** MoDiTeC					☐
Check clutch fluid level			☐	☐	
Change the clutch fluid***)** **every 2 years at the latest**					☐ every 2 years
Check tightness of rear wheel studs		☐			
Check rear wheel bearing play by tilting wheel				☐	
Check swinging arm bearings (freedom from play), adjust if necessary ***)**		☐		☐	
Grease the side stand pivot		☐	☐	☐	
Check function of side stand contact switch		☐	☐	☐	☐
Check condition of spark plugs			☐		
Replace spark plugs				☐	
Tighten cylinder head nuts		☐			
Check/adjust valve clearances		☐	☐	☐	
Check that the throttle cable moves freely and is free of kinks and chaffing, replace if necessary ***)** Check throttle-cable play check synchronisation, repair leaks if necessary ***)**		☐	☐	☐	
Final inspection with road safety and functional check: – Condition of tyres and wheels, tyre pressures – Lights and signalling equipment, telltale and warning lights, instruments, – clutch, gearshift mechanism, hand brake and foot brake, steering, – if necessary, test drive		☐	☐	☐	☐

***) Charged as an additional item**

Order No. 01 71 0 029 614 UX-VS-2, 12.2000 Printed in Germany

BMW Motorrad
Pre-delivery check
R 1100 S EVO / R 1150 R / R 1150 RT

Customer Registration No. Order No. Mechanic's signature	**BMW** **Pre-delivery check**
Check the shipping crate for damage	☐
Motorcycle: – unpack – install remaining items – inspect for damage – check that delivery is complete: Toolkit, On-board literature, Ignition keys, Scope of optional extras	☐
Fill and charge the battery (mark with charging date)	☐
Check engine oil level when cold and correct if necessary.	☐
Check headlight setting and adjust if necessary.	☐
Check tightness of rear wheel studs (note correct tightening torque)	☐
Check tyre pressures	☐
Fill up with fuel	☐
[Integral ABS] perform bleed test with **BMW** MoDiTeC	☐
Final inspection as functional check: – Clutch, gear shift – Handbrake and foot brake – Lights and signalling equipment, telltale and warning lights, instruments, – Check operation of optional extras – If necessary, test drive	☐
Confirm pre-delivery check in "Service and Technical Booklet".	☐
Final cleaning	☐
Motorcycle handed over on:	

Order No. 01 71 0 029 614 UX-VS-2, 12.2000 Printed in Germany

BMW Motorrad
Service data
R 1150 R

Item	Desired value	Unit of measurement/specification
Oil capacities		
Engine (with filter)	3.75 (6.6)	litres (Imp. pints)
(without filter)	3.50 (6.15)	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
Transmission Initial filling	approx. 1.0 (1.76)	litres (Imp. pints)
Oil changes	approx. 0.8 (1.41) of oil to bottom edge of filler neck	litres (Imp. pints) Brand-name hypoid gear oil, SAE class GL 5 SAE 90
Rear wheel drive Initial filling/oil change	approx. 0.25 (0.44) of oil to bottom edge of filler neck	litres (Imp. pints) Brand-name hypoid gear oil, SAE class GL 5 SAE 90
Valve clearances		
measured cold (max. 35 °C/95 °F)	Inlet: 0.15 (0.006)	mm (in)
	Exhaust: 0.30 (0.012)	mm (in)
Ignition timing		
static setting	adjust at TDC	
Spark plugs		
Electrode gap	0.8 (0.0315)	mm (in)
Wear limit	1.0 (0.039)	mm (in)
Idle speed	1,100 $^{\pm 50}$	rpm
Throttle cable setting		
for cold-start (increased idle) speed	zero play	
for throttle (twistgrip) cable	approx. 0.5 (0.02)	mm (in) free travel
for divider cable	zero play	
Brakes		DOT 4 brake fluid
Colour of identification mark on brake calipers/brake pads, front	green	
Minimum front pad thickness	1.0 (0.039)	mm (in)
Minimum rear pad thickness	1.0 (0.039) (wear mark)	mm (in)
Minimum front disc thickness	4.5 (0.177)	mm (in)
Minimum rear disc thickness	4.5 (0.177)	mm (in)
Tyre pressures		
depending on load	front: 2.2 – 2.5 (31.9 – 36.26)	bar (psi)
	rear: 2.5 – 2.9 (36.26 – 42.06)	bar (psi)
Tightening torques:		
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	22	Nm
Fuel pump assembly to tank	5	Nm
Poly-V belt preload	8	Nm
Alternator to cover mount	20	Nm
Brake caliper fasteners, front	30	Nm
Brake caliper fasteners, rear	40	Nm
Rear wheel studs	105	Nm
Tightening cylinder heads		
Nut	unscrew/20	Nm
	180	° tightening angle
M 10 screw	unscrew/40	Nm
Locknut, valve adjusting screw	8	Nm
Cylinder head cover	8	Nm
Spark plugs NGK BKR 7 EKC	25	Nm

00 Tightening torque
Table of operating fluids

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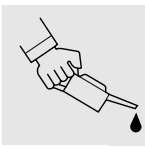

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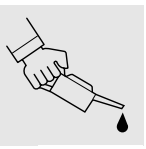
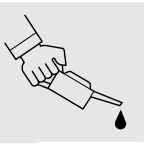


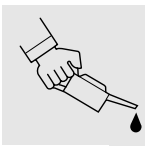
Tightening torque

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



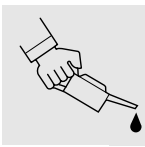
Model		R 1150 R
Connection		
11 Engine		
Oil filter		
Oil filter	Nm	11
Oil drain plug	Nm	32
Oil pump		
Mesh filter basket to engine block	Nm	10
Oil pump cover	Nm	9
Pressure relief valve	Nm	42
Oil pressure switch	Nm	30
Oil cooler		
Cooling oil line to engine block	Nm	10
Cooling oil line - banjo screw with oil vent valve	Nm	25
Oil lines to oil cooler	Nm	25
Oil cooler to bracket	Nm	8
Oil cooler return line to engine block	Nm	35
Oil cooler connection to crankcase	Nm	9
Cylinders		
Tightening sequence:		
1 M 8 screw	Nm	20
2 M 6 screw	Nm	9
3 Chain guide rail pivot screw	Nm	18
Timing chain		
Chain tensioner	Nm	32
Connecting rod		
Big end cap		
Closing torque	Nm	20
Wrench angle	°	80
Crankcase		
Tightening sequence:		
M 10 screw (oiled) to initial torque	Nm	25
Wrench angle	°	90
M 8 screw	Nm	22 (oiled)
M 6 screw	Nm	9

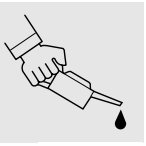
Model		R 1150 R
Connection		
12 Engine electrics		
Starter motor to engine	Nm	20
Starter cover to gearbox housing	Nm	7
Positive lead to starter motor	Nm	10
Alternator to alternator support cover	Nm	20
Tensioning and retaining link to alternator	Nm	21
Spacer to alternator	Nm	21
Positive lead to alternator	Nm	15
Belt pulley to alternator	Nm	50
Belt pulley to crankshaft	Nm	50
Poly-V belt preload	Nm	8
Spark plug NGK BKR 7 EKC	Nm	25
Model		**R 1150 R**
Connection		
13 Fuel preparation and control		
Temperature sensor, oil, in crankcase	Nm	25
Temperature sensor, air, in air-filter housing	Nm	10
Model		**R 1150 R**
Connection		
16 Fuel tank and lines		
Fuel tank to rear frame	Nm	22
Fuel pump assembly to tank	Nm	5



Model		R 1150 R
Connection		
18 Exhaust system		
Manifold to cylinder head	Nm	21
Clamp for manifold	Nm	45 (apply Optimoly TA to clamp seat)
Front silencer to manifold	Nm	45 (apply Optimoly TA to clamp seat)
Silencer to main stand lugs	Nm	20
Silencer to rear frame at top	Nm	35
Oxygen sensor to silencer	Nm	45 (apply Optimoly TA to thread)
End cap to rear silencer	Nm	8 (threads greased)
Bracket to rear silencer	Nm	15 (threads greased)
Model		**R 1150 R**
Connection		
21 Clutch		
Clutch housing		
Closing torque	Nm	40 (oil screw threads lightly)
Wrench angle	°	32
Housing cover to housing	Nm	12
Clutch line to handlebar fitting	Nm	14
Slave cylinder to gearbox	Nm	9
Grub screw in filler adapter	Nm	10

Model		R 1150 R
Connection		
23 Transmission		
Oil drain plug	Nm	30
Oil filler plug	Nm	30
Gearbox to engine block	Nm	22
Shift lever to footrest plate	Nm	35
Selector lever to selector shaft	Nm	9
Housing cover to housing	Nm	9
Frame tube to gearbox		
1. to gearbox and left footrest plate	Nm	42 (clean thread + Loctite 243)
2. clamp block, frame tube to gearbox	Nm	9
3. to gearbox and right footrest plate	Nm	42 (clean thread + Loctite 243)
Model		**R 1150 R**
Connection		
31 Front fork		
Quick-release axle clamp screws	Nm	22
Clamp, fork fixed tube to fork bridge	Nm	45 (free from oil and grease)
Slider tube bridge to slider tube	Nm	25 (clean thread + Loctite 243)
Threaded stud to frame	Nm	130 (clean thread + Loctite 243)
Ball joint to sliding tube bridge	Nm	230 (lightly grease threads with Optimoly TA)
Leading link to ball joint		
Initial tightening	Nm	80
Final tightening	Nm	130 (clean thread + Loctite 2701)
Leading link to engine	Nm	130
Spring strut to front frame	Nm	43
Spring strut to leading link	Nm	50



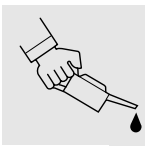


Model		R 1150 R
Connection		
32 Steering		
Handlebars to fork bridge, tightening sequence:		
1. Front fastener (as viewed in forward direction of travel) until seated	Nm	21
2. Rear fastener (as viewed in forward direction of travel)	Nm	21
Handlebar weight to handlebars	Nm	21
Pivot screw, handlebar lever	Nm	11 (Tuflok Blue thread-locking compound; screw can be released and tightened a number of times)
Model		**R 1150 R**
Connection		
33 Rear wheel drive		
Oil filler plug	Nm	23
Oil drain plug	Nm	23
Threaded ring	Nm	160 (clean thread + Loctite 577)
Hexagon nut, input bevel gear	Nm	200 (clean thread + Loctite 2701)
Cover to rear-wheel drive housing	Nm	35
Fixed bearing stud bolt, swinging arm to gearbox	Nm	160
Floating bearing stud bolt, swinging arm to gearbox		
1. initial torque	Nm	9
2. slacken		
3. final torque	Nm	7
Locknut, floating bearing stud bolt, swinging arm to gearbox	Nm	160
Fixed bearing stud bolt, swinging arm to rear axle housing	Nm	160 (clean thread + Loctite 2701)
Floating bearing stud bolt, swinging arm to rear axle housing		
1. initial torque	Nm	9
2. slacken		
3. final torque	Nm	7
Locknut, floating bearing stud bolt, swinging arm to rear axle housing	Nm	160 (clean thread + Loctite 2701)

Model		R 1150 R
Connection		
33 Rear wheel drive		
Reaction link to rear wheel drive / gearbox	Nm	43 (load approx. 85 kg (187 lbs) onto motorcycle and tighten loose reaction link)
Spring strut to rear frame	Nm	50
Spring strut to rear swinging arm	Nm	58 (clean thread + Loctite 243)
Hydraulic spring preload adjuster to foot-rest plate	Nm	22
Model		**R 1150 R**
Connection		
34 Brakes		
Brake caliper to fork slider tube, Evo brakes	Nm	30
Brake caliper to rear wheel drive	Nm	40
Brake disc to front wheel	Nm	21 (clean thread + Loctite 2701)
Brake disc to rear wheel drive	Nm	21 (clean thread + Loctite 2701)
Master cylinder to footrest assembly	Nm	9
Footbrake lever to footrest assembly	Nm	21 (clean thread + Loctite 2701)
Footbrake-lever stop	Nm	9
Ball socket to thrust rod	Nm	9
Brake lines/brake hose to brake compo-nents	Nm	18
Brake hose to bracket	Nm	9
Brake hose to brake lever fitting	Nm	18
Bracket to front frame	Nm	9
Bracket to rear frame	Nm	9 (clean thread + Loctite 2701)
Front brake caliper bleed screw	Nm	9
Rear brake caliper bleed screw	Nm	6
Filler adapter to brake line	Nm	18
ABS hydraulic unit to bracket	Nm	8
ABS hydraulic unit to battery carrier	Nm	8

Model		R 1150 R
Connection		
36 Wheels and tyres		
Quick-release axle clamp screws	Nm	22
Quick-release axle threaded fastener	Nm	30
Rear wheel to rear wheel drive Hand-tighten wheel studs and tighten in diagonally opposite sequence **[Integral ABS]** Note spacer	Nm	105
Model		**R 1150 R**
Connection		
46 Frame		
Frame to engine	Nm	82
Struts to frame	Nm	58
Strut to engine	Nm	58 (clean thread + Loctite 2701)
Rear frame to gearbox/engine		
to gearbox and footrest plate	Nm	42 (clean thread + Loctite 2701)
to engine	Nm	42
Carrier plate for main stand to engine, right		
M 12 screw	Nm	72 (clean thread + Loctite 2701)
Pivot mount to engine, left		
M 12 screw	Nm	72 (clean thread + Loctite 2701)
M 8 screw	Nm	21
Pivot mount of main (centre) stand (stud bolt)	Nm	21 (clean thread + Loctite 243)
Pivot mount of main (centre) stand (machine screw)	Nm	21
Side stand to pivot mount	Nm	58 (clean thread + Loctite 2701)
Footrest plate to gearbox	Nm	21
Rear footrest plate to rear frame	Nm	21
Front mudguard to fork slider tube bridge	Nm	6 (Tuflok Blue thread-locking compound; screw can be released and tightened a number of times alternatively: clean thread + Loctite 243)

Model		R 1150 R
Connection		
46 Frame		
Front and rear sections of front mudguard to slider tube	Nm	3 (Tuflok Blue thread-locking compound; screw can be released and tightened a number of times alternatively: clean thread + Loctite 243)
Headlight bracket to fork bridge	Nm	20
Model		**R 1150 R**
Connection		
51 Equipment		
Mirrors	Nm	15
Ignition/steering lock to fork bridge	Nm	20 (micro-encapsulated)
Model		**R 1150 R**
Connection		
61 General electrical equipment		
Horn to holder	Nm	8 (clean thread + Loctite 243)
Ground (earth) strap to engine block	Nm	9
Battery carrier to rubber-metal element	Nm	8



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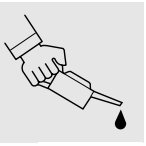

Item	Use	Order number	Quantity
Lubricant			
Staburags NBU 30 PTM	High-performance lubricating paste	07 55 9 056 992	75 g tube
Optimoly MP 3	High-performance lubricating paste	07 55 9 062 476	100 g tube
Optimoly TA	High-temperature assembly paste	18 21 9 062 599	100 g tube
Silicone grease 300, heavy	Damping 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
Sealants			
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 compound	07 58 2 328 736	5 g tube
Curil K 2	Heat-conductive sealant	81 22 9 400 243	250 g can
Adhesives and retaining agents			
Loctite 648	Joint adhesive (narrow gap)	07 58 9 067 732	5 g bottle
Loctite 638	Joint adhesive (wide gap)	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
Cleaners			
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
Testing agents			
Penetrant MR 68	Crack testing agent for aluminium housings	83 19 9 407 855	500 ml spray
Developer MR 70	Crack testing agent for aluminium housings	81 22 9 407 495	500 ml spray
Installation aids			
BMW cooling spray	Cooling spray	83 19 9 407 762	300 ml spray

00 Pre-delivery check

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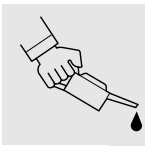

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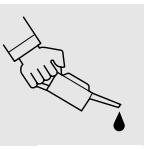
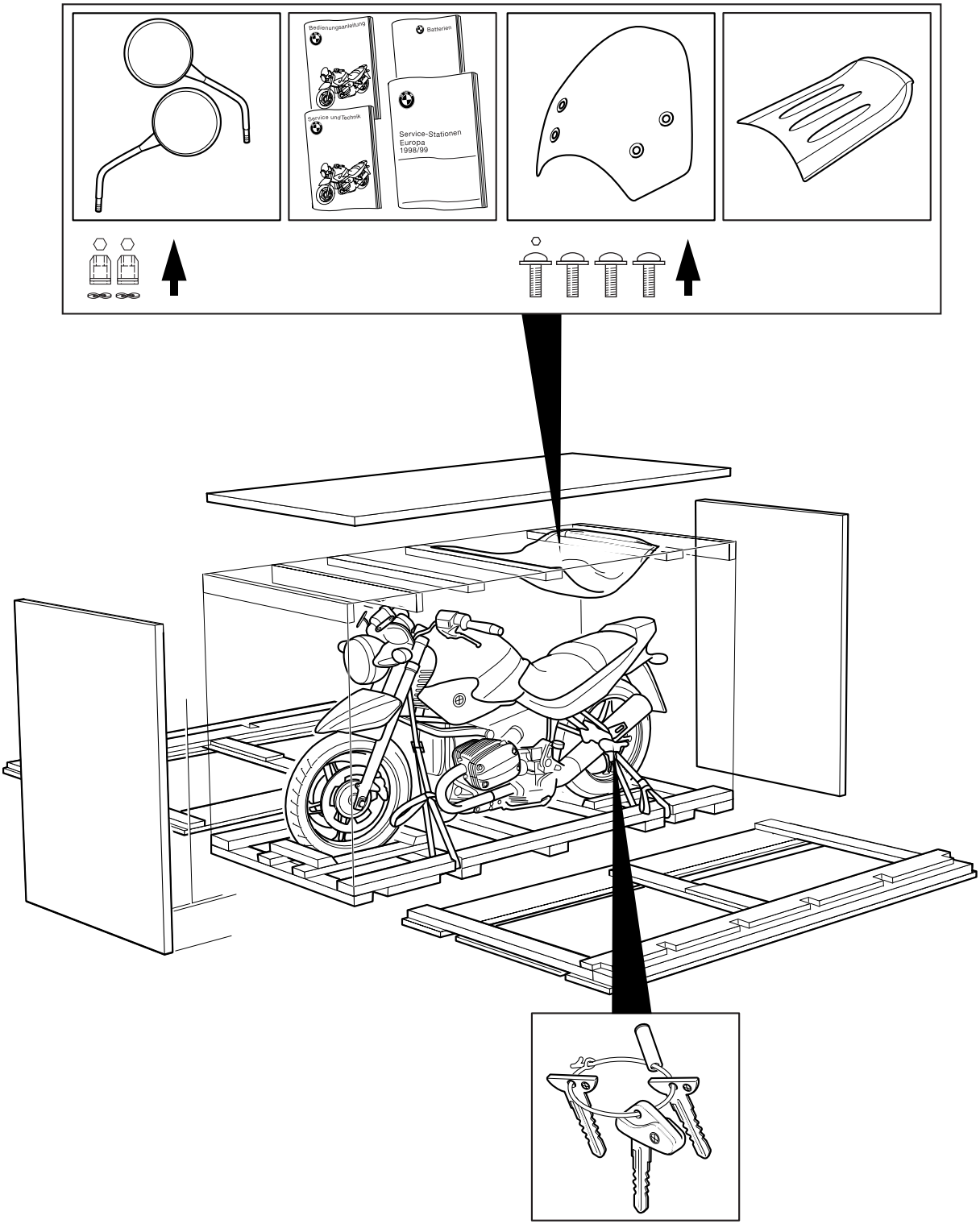


General view of crated motorcycle



Checking the shipping pallet 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 supplier (e.g. freight company or DB) and
  Bavaria Wirtschaftsagentur GmbH
  Abteilung ZW - 12
  80788 München
  Tel. 089/14327-632
  Fax 089/14327-709
  without delay.

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 89/14327-632
  Fax +49 89/14327-709
- Notify the supplier (e.g. freight company) without delay.

00 11 Unpacking the motorcycle

- Lever off the cover.
- Take out the separate pack of items:
  – Documentation
  – Optional Speedster fairing, if applicable
  – Optional seat cover, if applicable
- Force off cross-struts with a suitable lever.

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

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

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

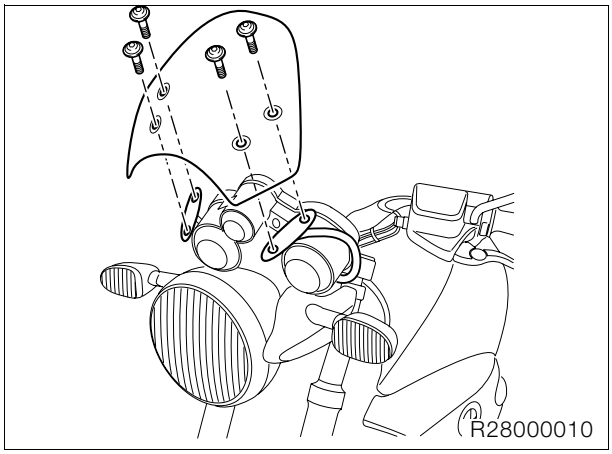
- Loosen the front tensioning straps.
- Loosen the rear tensioning straps.
- Push the motorcycle forwards off the pallet.
- Remove the set of keys from the left rear footrest.
- Dispose of the packing materials in an environmentally responsible manner as described in Circular 23/91 - Sales.

00 11 Installing remaining items on motorcycle

- Fit the rear-view mirror.

Tightening torque:
Mirror on handlebar fitting ..... 10 Nm

71 63 099 Mounting the Speedster fairing



- Carefully tighten the Speedster fairing securing screws by hand.

Tightening torque:
Fairing on fairing bracket ..... 2 Nm

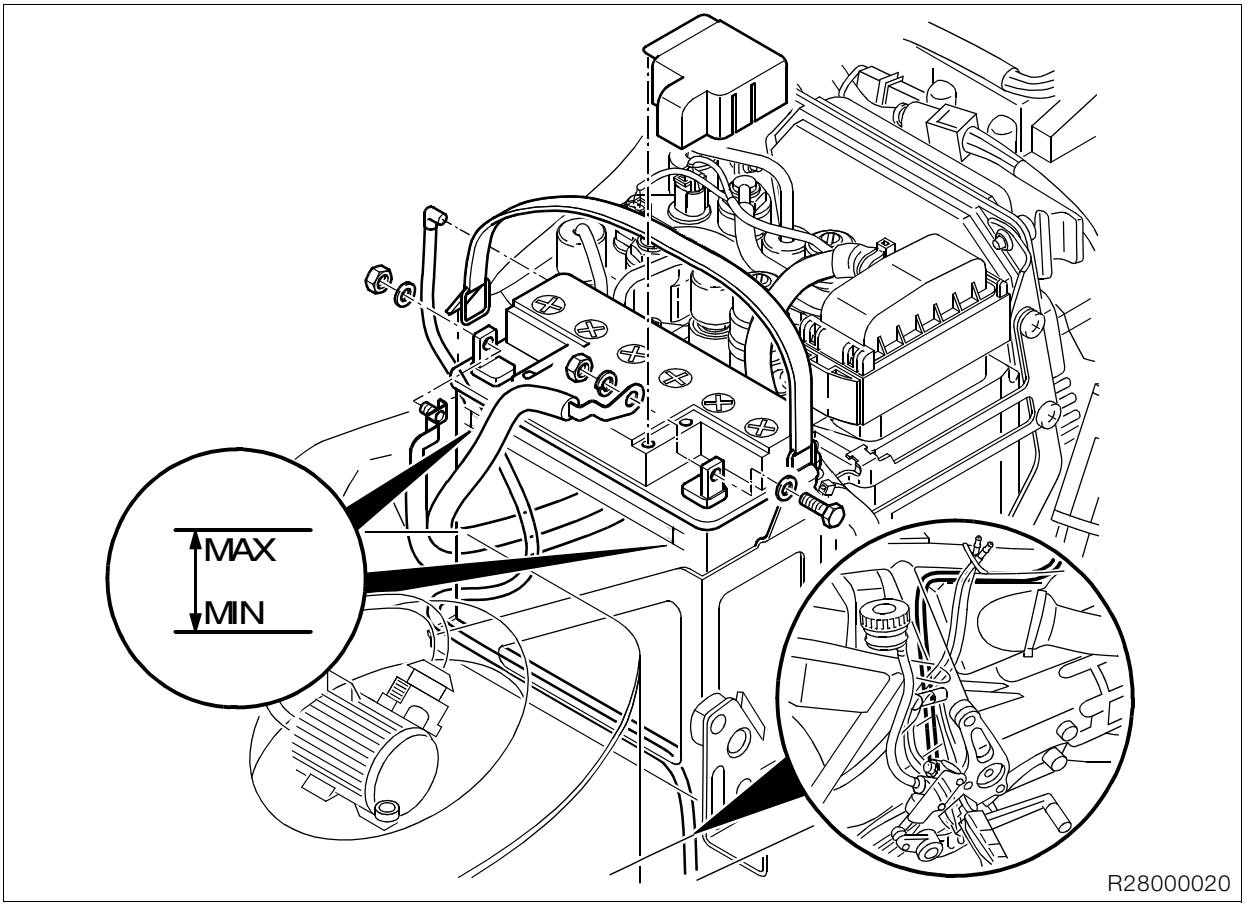
00 11 Inspecting motorcycle for damage

- Check for faults.
- “Express handling service” to:
  BMW Motorrad
  UX-VS-1
  Fax number +49 (0)89-382-33220
- Rectify the fault.
- If parts are needed, order them through the usual channel.
- Costs are to be processed through 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



61 21 Filling and charging the battery

16 11 533 Removing the fuel tank

- Remove front/rear seat.
- Lever off the right-hand and left-hand front trim sections from the tank.
- Remove the right-hand and left-hand oil cooler trims.
- Remove the right-hand cable trim.
- Remove oil cooler with air ducting and fold forwards.

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

- Remove fuel tank retaining screw.
- Remove bleed line and overflow pipe.
- Disconnect the fuel line quick-release coupling.
- Disconnect the fuel pump plug connection.

Note:
Place a cloth between the fork stabilizer and the fuel tank to prevent paintwork damage to the front of the fuel tank.

- Remove the fuel tank upwards from the rear.

61 21 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 to the upper mark with pure battery acid of density 1.28.
- 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 (A)
.....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.
- Refit the plugs.
- Make a note of the charging date on the battery.

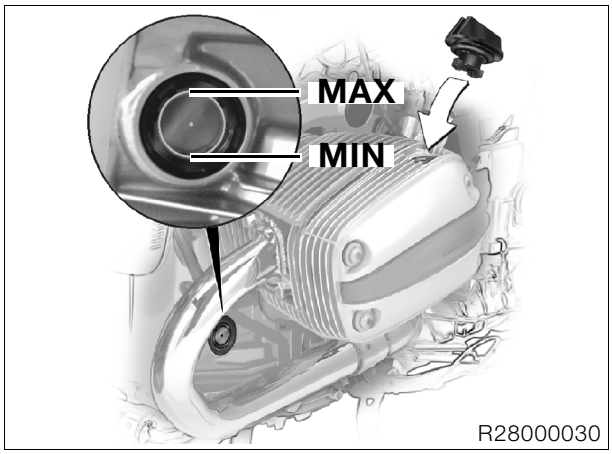
Important:
Connect the positive battery terminal first, then the negative terminal.

- Fit the battery.
- Apply acid-proof grease to the battery terminals.
- Connect the battery breather line.
- Fit the fuel tank.
- Connect the fuel pump connector and the fuel line quick-release couplings.
- Connect bleed line and overflow pipe.
- Fit oil cooler with air ducting.
- Fit cable trim.
- Fit oil cooler trim.
- Secure the right-hand and left-hand front trim sections to the tank.
- Fit front/rear seat.
- Switch on the ignition.
- Without starting the engine, fully open the throttle once or twice so that the Motronic control unit can record 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 ..... 22 Nm

00 00 Checking engine oil when engine is cold, topping up if necessary



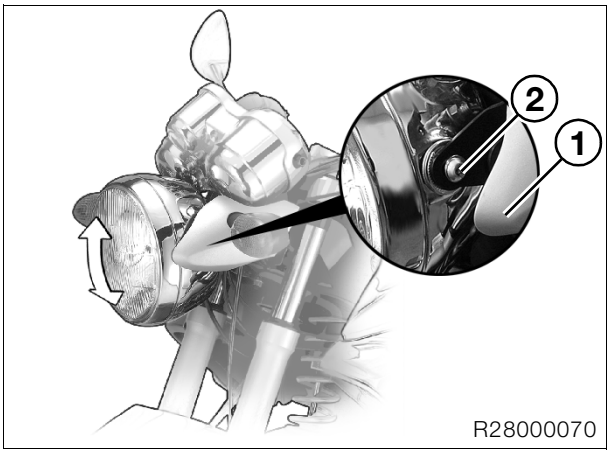
- Check oil level with the motorcycle upright.

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

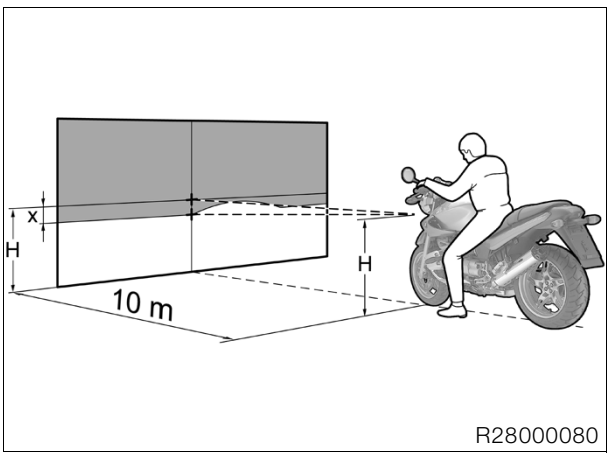
Required level:..... MAX

BMW recommends Castrol

63 10 500 Checking headlight beam angle, adjusting if necessary



- Motorcycle must be on a level surface.
- Motorcycle with driver (approximately 85 kg/ 187 lbs).
- Remove trim (1).
- Remove headlight (2) retaining bolts.
- Correct the headlight range by swivelling the headlight.



Setting for headlight beam angle adjuster
.. .-25 cm (9.8425 in) at a distance of 10 m (32.8 ft)

Checking tightness of rear wheel studs

Tightening torque:
Securing screws for rear wheel ..... 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)

With pillion passenger ..... front 2.5 bar (35.6 psi)
..... rear 2.7 bar (38.4 psi)

With pillion passenger and luggage ..... front 2.5 bar (35.6 psi)
..... rear 2.9 bar (41.2 psi)

[Integral ABS] Performing bleed test with BMW MoDiTeC

Warning:
Self-diagnosis is not performed unless both brake levers are in their fully released positions. Prior to the conclusion of the self-diagnosis, only RESIDUAL BRAKE FUNCTION is available.

Performing BMW Integral ABS self-diagnosis:
- Release the brake levers if necessary.
- Switch on the ignition.

ABS warning light.....flashes at 4 Hz
General warning lamp .....is continuous

– Self-diagnosis is in progress

ABS warning light.....flashes at 1 Hz
General warning lamp .....goes out
– Self-diagnosis successfully completed.

Performing a bleed test using the BMW MoDiTeC:
- Remove front/rear seat.
- Connect the **BMW** MoDiTeC to the diagnostic connector.

Warning:
Avoid rapid and forceful pumping of the brakes when performing maintenance and repair work on the BMW Integral ABS.

- Perform bleed test.
- Perform all requisite repair work.

Performing BMW Integral ABS pull-away test:
- The ABS warning light must go out when a speed of 5 km/h (approx. 3 mph) is reached.

Note:
The ABS warning light and the general warning light must both be OFF after successful self-diagnosis and the pull-away test.

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
– Indicator and warning lights
– Instruments

- Where necessary, check function of optional extras:
- 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.

00 11 459 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 indicator lights
- optional equipment and accessories fitted
- features of **BMW Integral ABS**:
  brake servo,
  residual braking function,
  pump noises,
  self-diagnosis with pull-away test.
- The user must be given the following information:
- running-in recommendations and inspection intervals
- safety check
- features of **BMW Integral ABS**:
  partially integral brake,
  brake-fluid levels in the control circuits remain constant despite brake-pad wear.
- 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.

00 Maintenance

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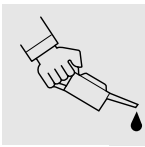

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(Inspections I, II, III and IV)

Changing the transmission oil 29
(Inspections III and IV)
or at least every 2 years

Changing the oil in the rear wheel drive 29
(Inspections I, III and IV)
Every 40,000 km (24,000 miles) or at the latest every 2 years

Replacing fuel filter 30
(Inspection III)
In normal operating conditions every 40,000 km (24,000 miles); if fuel quality is poor every 20,000 km (12,000 miles)

Checking battery fluid level and topping up if necessary; cleaning and greasing the battery terminals 32
(Inspections III and IV)

Replacing intake air filter element 32
(Inspection III)
In very dirty and dusty operating conditions, replace every 10,000 km (6,000 miles) or even more frequently if necessary

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(Inspection III)
every 60,000 km (36,000 miles)

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[Integral ABS] Checking brake fluid level 35
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Front brake 35

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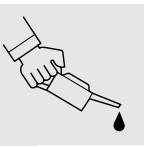

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