Repair Manual

R 1150 RT

BMW Motorrad
After Sales

Published by ©BMW Motorrad
After Sales
UX-VS-2

Produced in Germany 07/2001

Introduction

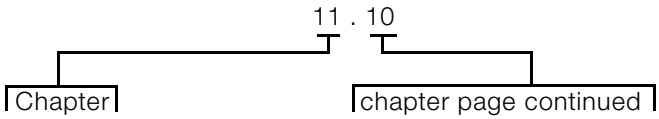
This repair manual will help you to perform all the main maintenance and repair work correctly and efficiently. If it is consulted regularly by workshop personnel it will form a useful addition to the theoretical and practical knowledge acquired at the BMW Training Centre. It is a contribution towards achieving even higher Service quality.

A new issue of this repair manual will be published if amendments or additions (supplements) are needed.

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 complete contents are divided into individual chapters, corresponding to the unified construction groups (U.P.G., referred to here as "Group").



If a reference is needed to a different page or chapter, an arrow symbol is shown followed by the chapter and page numbers, e.g. (➟ 12.5)

- 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, as an additional source of information, the Electronic Parts Catalogue (ETK), which contains clear and easy-to-follow illustrations.

When individual steps within an overall operation only apply to motorcycles with specific accessories or optional equipment, the options the steps refer to are identified in brackets at the beginning of the line. Example: **[heated grips]**.

Please devote your careful attention to the following pages with their explanations describing the symbols used in the manual and their significance.

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D-80788 München

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How to use this manual

Each chapter starts with the list of contents.

The list of contents is followed by the Technical Data table.

Key to symbols

In this Repair Manual for the R 1150 RT model, the following symbols are used; their meanings are explained in the table.

Special instructions aimed at improving the work procedures

Note:
Specific information on operating, inspecting and adjusting work for the motorcycle as well as maintenance procedures.

Attention:
Instructions and precautions specifically intended to prevent damage to the motorcycle. Failure to comply with them could invalidate the warranty.

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

Contents

The titles of the tasks described in this chapter..... complete with page numbers

Activities

- Activities
- The bullet symbol means that work steps are described in greater detail under a headline

– preceding activities
– A line indicates work steps described in greater detail under another headline or in another chapter

If the term “undo” or “remove” is used:
the fastener (e.g. screw) must be slackened off and taken out
or
a component (e.g. fuel rail) must be removed to the extent that other components which it conceals (e.g. throttlevalve rail) are accessible

If the term “loosen” or “slacken” is used
the fastener (e.g. screw) must only be slackened off but not taken out

Tightening torque:
Values are stated if they differ from DIN EN 24 014 or DIN 912 ISO industrial standards.

BMW Motorrad
Maintenance schedule
R 1150 RT

Customer	Licence No.	Mileage
Job Order No.	Date	Mechanic's signature

	BMW Inspection at 1,000 km/600 miles	BMW Maintenance Service every 10,000 km/6,000 miles	BMW Inspection every 20,000 km/ 12,000 miles	BMW Annual Service
Use **BMW** MoDiTeC to read stored error codes from fault memory	☐	☐	☐	☐
[Integral ABS] Performing bleed test with **BMW** MoDiTeC	☐	☐	☐	
Change engine oil, warmed to normal operating temperature, replace oil filter **when used exclusively in short-distance operation, or at outside temperatures below 0°C (32 °F), or no later than every 3 months, or every 3,000 km/1,800 miles *)**	☐	☐	☐	☐
Change oil in gearbox, with oil warmed to normal operating temperature **at least every 2 years *)**			☐	■
Change final-drive lubricant, warmed to normal operating temperature **every 40,000 km/25,000 miles, or no later than every 2 years *)**	☐		■	■
Replace fuel filter ***)** **Standard replacement interval is 40,000 km/25,000 miles, with substandard fuel quality every 20,000 km/12,000 miles**			■	
Check battery electrolyte level, top up with distilled water as necessary Battery terminals, clean and grease as necessary			☐	☐
Replace intake air filter element **Replace air filter every 10,000 km/6,000 miles when vehicle is exposed to high levels of dirt and dust, or more frequently as indicated *)**		■	☐	
Check front/rear circuit brake fluid		☐	☐	
Check operation of brake system, inspect for leaks; repair/replace as indicated ***)**			☐	
Check brake pads and discs for wear, replace as required ***)**		☐	☐	
[Integral ABS] Change **wheel-circuit** brake fluid at least **once a year**				☐
[Integral ABS] Change **control circuit** brake fluid at least **every 2 years *)**				■
[Integral ABS] Perform bleed test with **BMW** MoDiTeC				☐
Check clutch operating fluid level		☐	☐	
Change clutch hydraulic circuit fluid ***)** **at least every 2 years**				■
Check rear lug bolts to ensure they are tight	☐			
Check rear wheel bearing play by tilting wheel			☐	
Check swing arm bearings (no play), adjust as required ***)**	☐		☐	
Check operation of side stand switch	☐	☐	☐	☐
Grease the side stand pivot	☐	☐	☐	
Retention poly-V-belt **Re-adjust new poly-V-belt one time at 10,000 km/6,000 miles**		■		
Replace poly-V-belt ***)** **Replace poly-V-belt every 60,000 km/35,000 miles**			■	
Inspect spark plugs		☐		
Replace spark plugs			☐	
Retorque cylinder heads	☐			
Check valve clearance and adjust as necessary	☐	☐	☐	
Check throttle cable for ease of motion, inspect for abrasion and bends, replace as indicated ***)** Check cable free travel Check synchronisation, adjust as necessary	☐	☐	☐	
Final inspection with operation assessment and road safety check: – Condition of wheels and tyres, tire inflation pressure – Clutch, shift mechanism, hand and foot brakes, steering – Lighting and signal indicators, warning and indicator lamps, instruments – Optional equipment – Conduct road test as required	☐	☐	☐	☐

***) Write up on separate invoice; ■ Not part of standard service procedure**

BMW recommends Castrol

BMW Motorrad
Pre-delivery check
R 1150 RT

Customer _____ Licence No. _____ Job Order No. _____ Mechanic's signature _____	**BMW** **Pre-delivery check**
Check the shipping pallet for damage	☐
Unpack the motorcycle	☐
Inspect motorcycle for damage	☐
Check to ensure that consignment is complete: – Vehicle keys – Onboard tool kit and literature – All optional extras	☐
Installing remaining items on motorcycle	☐
Fill and charge battery (record charging date)	☐
[Integral ABS] Perform bleed test with **BMW** MoDiTeC	☐
Check engine oil when cold, correct as required	☐
Check tyre pressures	☐
Check tightness of rear lug bolts (note torque specification!)	☐
Fill with fuel	☐
Check headlight beam angle, adjusting if necessary	☐
Final inspection and function check – Clutch, shift mechanism – Handbrake and foot brake – Lighting and signal indicators, warning and indicator lamps, instruments – Check operation of standard and optional equipment – Road test as indicated	☐
Confirm pre-delivery check in "Service and Technical Booklet"	☐
Final cleaning	☐
Vehicle delivered on:	

BMW Motorrad
Service data
R 1150 RT

Item	Desired value	Units / Specifications
Oil capacities		
Engine (with filter)	3.75 (6.6)	litres (Imp. pints) [SI 11 048 90]
Engine (without filter)	3.5 (6.15)	litres (Imp. pints) [SI 11 048 90]
Transmission Initial filling	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
Transmission oil change	approx. 0.8 (1.41) 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 change	approx. 0.25 (0.44) up to lower edge of filler hole	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	adjust at TDC	static setting
Spark plugs	BKR 7 EKC	NGK
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	no play	
for throttle (twistgrip) cable	play approx. 0.5 (0.02)	mm (in)
for divider cable	no play	
Brakes		
Brake fluid		DOT 4
Colour of identification mark on brake calipers/brake pads, front	white	
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 / 20 180	Nm ° tightening angle
M 10 screw	unscrew / 40	Nm
Locknut, valve adjusting screw	8	Nm
Cylinder head cover	8	Nm
Spark plugs	25	Nm

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Group / Chapter

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00 Tightening torques, Table of operating fluids

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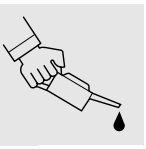
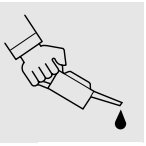


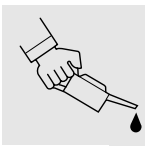
Tightening torques

Model		R 1150 RT
Connection		
11 Engine		
Cylinder head		
Tightening sequence: 1 Tighten cylinder head nuts (oiled) in diagonally opposite sequence		
1.1 Tighten all nuts to closing torque	Nm	20
1.2 Tighten all nuts an additional	°	90
1.3 Tighten all nuts an additional	°	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 an additional	°	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
Sprocket to auxiliary shaft	Nm	70
Chain tensioner housing to engine block	Nm	9



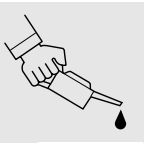
Model		R 1150 RT
Connection		
11 Engine		
Oil filter		
Oil filter	Nm	11
Oil drain plug	Nm	32
Oil pump		
Mesh filter basket to engine block	Nm	10
Oil pump cover	Nm	9
Pressure-relief valve	Nm	42
Oil pressure switch	Nm	30
Oil cooler		
Cooling oil line to engine block	Nm	10
Cooling oil line - banjo bolt with oil vent valve	Nm	25
Oil cooler to bracket	Nm	9
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		
Initial torque	Nm	20
Then tighten an additional	°	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 RT
Connection		
12 Engine electrics		
Starter motor to engine	Nm	20
Positive lead to starter motor	Nm	10
Alternator to alternator mount 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 RT**
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 RT**
Connection		
16 Fuel tank and lines		
Fuel tank to rear frame	Nm	22
Fuel pump assembly to tank	Nm	5
Model		**R 1150 RT**
Connection		
18 Exhaust system		
Manifold to cylinder head	Nm	21
Clamp for manifold	Nm	55 (apply Optimoly TA to clamp seat)
Silencer to footrest plate	Nm	35
Oxygen sensor to silencer	Nm	45 (apply Optimoly TA to thread)



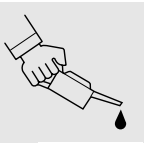
Model		R 1150 RT
Connection		
21 Clutch		
Clutch housing		
Initial torque	Nm	40 (oil screw threads lightly)
+ Additional wrench angle	°	32
Housing cover to housing	Nm	12
Clutch line to handlebar fitting	Nm	14
Slave cylinder to gearbox	Nm	9
Grub screw in filler adapter	Nm	10
Model		**R 1150 RT**
Connection		
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 2701)
2. terminal block, frame tube to gearbox	Nm	9
3. to gearbox and right footrest plate	Nm	42 (clean thread + Loctite 2701)

Model		R 1150 RT
Connection		
31 Front forks		
Quick-release axle clamp screws	Nm	22
Slider tube bridge to slider tube	Nm	25 (clean thread + Loctite 243)
Threaded fastener, fixed tube to fork bridge	Nm	45 (free from oil and grease)
Threaded stud to frame	Nm	130 (clean thread + Loctite 243)
Ball joint to slider tube bridge	Nm	230 (lightly grease threads with Optimoly TA)
Leading link		
Leading link to ball joint	Nm	130 (clean thread + Loctite 2701)
Leading link to engine		
Right		73
Left-hand screw cap		42 (lightly grease threads with Optimoly TA
Spring strut		
Spring strut to front frame	Nm	43
Spring strut to leading link	Nm	50
Model		**R 1150 RT**
Connection		
32 Steering		
Handlebars to fork bridge	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 RT
Connection		
33 Rear wheel drive		
Crown gear and pinion assembly		
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 final drive housing	Nm	35
Swinging arm		
Reaction link to final-drive unit	Nm	43 (load approx. 85 kg/approx. 187 lbs) onto motorcycle and tighten loose reaction link)
Fixed bearing stud bolt, swinging arm to right rear axle housing	Nm	160 (clean thread + Loctite 2701)
Floating bearing stud bolt, swinging arm to left rear axle housing		
1. Initial torque	Nm	9
2. Slacken		
3. Final torque	Nm	7 (clean thread + Loctite 2701)
Lock nut, floating bearing stud bolt, swinging arm to left rear axle housing	Nm	160
Fixed bearing stud bolt, swinging arm to right of gearbox	Nm	160 (clean thread + Loctite 2701)
Floating bearing stud bolt, swinging arm to left of gearbox		
1. Initial torque	Nm	9
2. Slacken		
3. Final torque	Nm	7 (clean thread + Loctite 2701)
Lock nut, floating bearing stud bolt, swinging arm to left of gearbox	Nm	160
Spring strut		
Spring strut to rear frame	Nm	50
Spring strut to rear swinging arm	Nm	58 (clean thread + Loctite 243)
Hydraulic spring adjuster to rear frame	Nm	22

Model		R 1150 RT
Connection		
34 Brakes		
Front brake		
Brake caliper to EVO brake sliding tube	Nm	30
Front brake caliper bleed screw	Nm	7
Brake disc to front wheel	Nm	21 (clean thread + Loctite 2701)
Pivot screw, handlebar lever	Nm	11 (Tuflok Blue thread-locking compound; screw can be released and tightened a number of times)
Rear brake		
Brake caliper to rear wheel drive	Nm	40
Rear brake caliper bleed screw	Nm	5
Brake disc to rear wheel drive	Nm	21 (clean thread + Loctite 2701)
Master cylinder to footrest plate	Nm	9
Brake pedal to footrest plate	Nm	21 (clean thread + Loctite 2701)
Footbrake-lever stop	Nm	9
Brake lines		
Brake lines/brake hose to brake components	Nm	18
Brake hose to brake lever fitting	Nm	18
Filler adapter to brake line	Nm	18
Bracket to front frame	Nm	9
Retainer to rear frame	Nm	9 (clean thread + Loctite 2701)
BMW Integral ABS		
ABS pressure modulator on retainer	Nm	7
ABS pressure modulator on battery carrier	Nm	10
Model		**R 1150 RT**
Connection		
36 Wheels and tyres		
Quick-release axle clamp screws	Nm	22
Quick-release axle threaded fastener	Nm	30
Rear wheel to final-drive unit Hand-tighten wheel studs, then tighten in diagonally opposite sequence	Nm	105



Model		R 1150 RT
Connection		
46 Frame		
Frame		
Frame to engine	Nm	82
Struts to frame	Nm	58
Strut to engine	Nm	58 (clean thread + Loctite 2701)
Rear frame to left/right of engine	Nm	42 (clean thread + Loctite 2701)
Rear frame with footrest plate to left/right of gearbox	Nm	42 (clean thread + Loctite 2701)
Fairing bracket to frame	Nm	20
Side stand		
Mounting bracket to right of engine, 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 (clean thread + Loctite 2701)
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		
Footrest plate to left/right of gearbox	Nm	19
Footrest plate to left of rear frame		
M 10 screw	Nm	36
M 8 screw	Nm	19
Footrest plate to right of rear frame		
M 10 screw	Nm	36
M 8 screw	Nm	19
Shift lever to footrest plate	Nm	35

Model		R 1150 RT
Connection		
51 Equipment		
Ignition/steering lock to fork bridge	Nm	20 (micro-encapsulated)
Model		**R 1150 RT**
Connection		
61 General electrical equipment		
Horn to holder	Nm	8 (clean thread + Loctite 243)
Horn to fairing bracket	Nm	10
Ground (earth) cable to engine block	Nm	9
Battery carrier to rubber-metal element	Nm	8
Strut to battery carrier	Nm	10

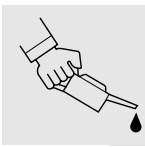
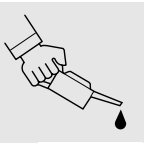
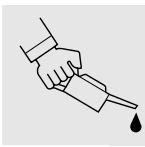


Table of operating fluids



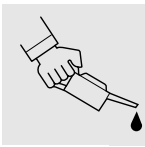
Item	Use	Order No.	Quantity
Lubricant			
Staburags NBU 30 PTM	High-performance lubricating grease	07 55 9 056 992	75 g tube
Optimoly MP 3	High-performance lubricating grease	07 55 9 062 476	100 g tube
Optimoly TA	High-temperature assembly grease	18 21 9 062 599	100 g tube
Silicone grease 300, heavy	Damping grease	07 58 9 058 193	10 g tube
Retinax EP2	Lubricating grease	83 22 9 407 845	100 g tube
Contact spray	Contact spray	81 22 9 400 208	300 ml spray
Chain spray	Lubricant	72 60 2 316 676 72 60 2 316 667	50 ml spray 300 ml spray
Shell HDX2	Variator rolls driven variator plate (pins and bearing)	11 00 7 660 830	400 g tube
Klüber paste 46 MR 401	Lubricating grease	11 00 7 660 831	60 g tube
MOLYKOTE 111	Silicone grease	11 00 7 660 832	100 g tube
Tyre mounting paste	Assembly paste	36 32 1 239 263 36 32 1 239 264	2.5 kg 100 g
Never Seez Compound	Protective grease	83 23 9 407 830	100 g tube
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	33 11 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

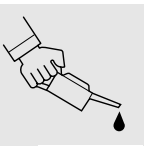
Item	Use	Order No.	Quantity
Cleaners			
Brake cleaner	Cleanser	83 11 9 407 848	600 ml spray
Standard thinner	Cleanser	51 91 9 057 940	1 l bottle
Metal Polish	Polish for chrome-plated parts	82 14 9 400 890	100 g tube
Testing agents			
Penetrant MR 68	Crack testing agent for aluminium housings	83 19 9 407 855	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



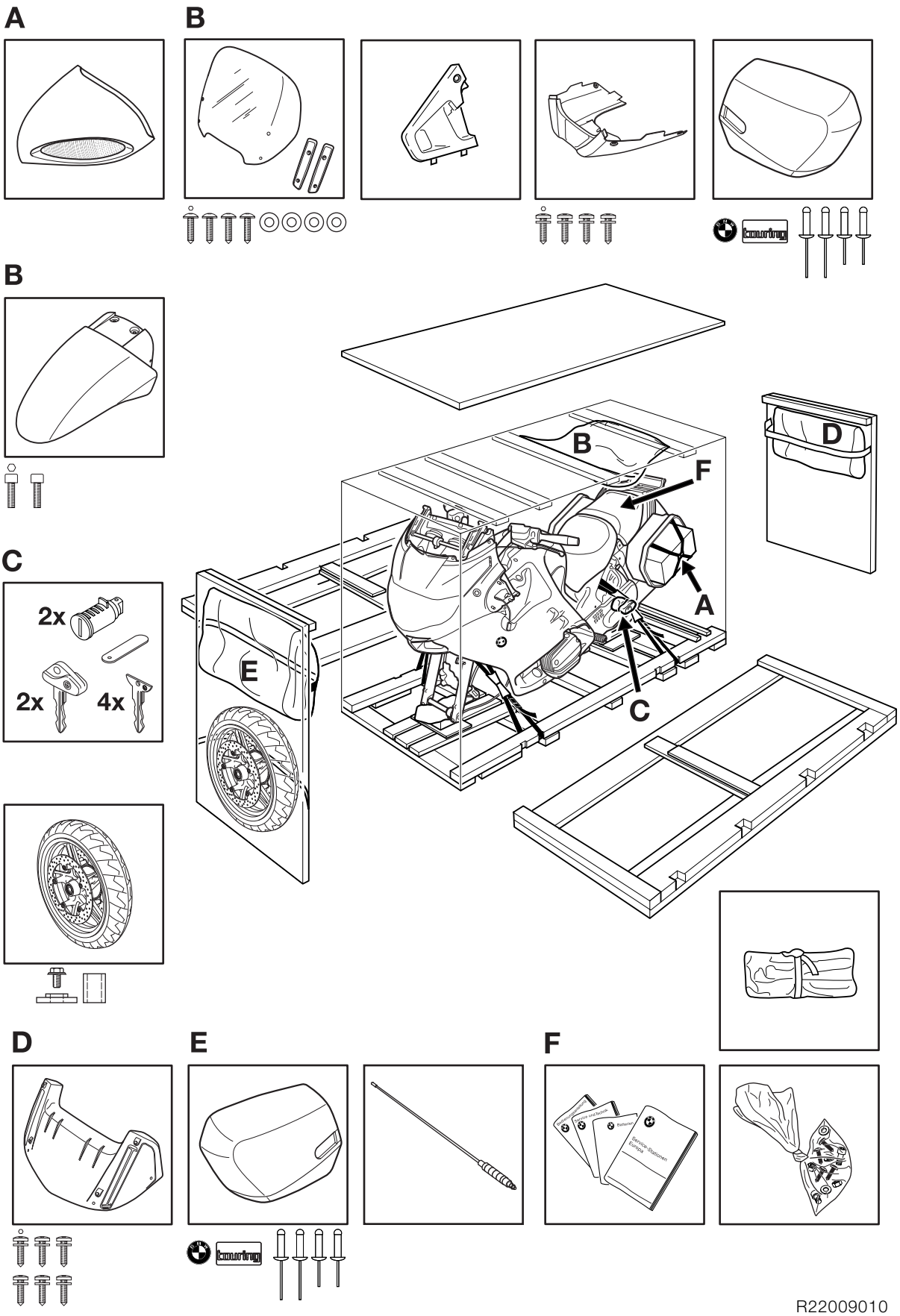
00 Pre-delivery check

Contents





General view of crated motorcycle



Checking the crated motorcycle for damage

- When the motorcycle arrives, check the crated motorcycle 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
  80788 München
  Tel. +49 89/14327-632
  Fax. +49 89/14327-709

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

Unpacking the motorcycle

- Lever off the cover.
- Remove plastic covers.
- Take out the separate pack of items:
- Front wheel
- Case lid
- Aerial
- Windscreen
- Covers
- Engine spoiler
- Cover for windscreen adjuster
- Front mudguard
- Mirrors
- Small parts/fasteners
- Documentation
- Remove the set of keys from the left rear footrest.
- Force off cross-struts with a suitable lever.

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

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

Attention:
Remove any nails projecting from the base of the crate or lying on the base or on the floor.

- Dispose of the packing materials in an environmentally responsible manner as described in Circular 23/91 - Sales.

Inspecting motorcycle for damage

- Check for defects.
- Use the “express handling service” to notify
  BMW Motorrad
  UX-VS-1
  Fax: + 49 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

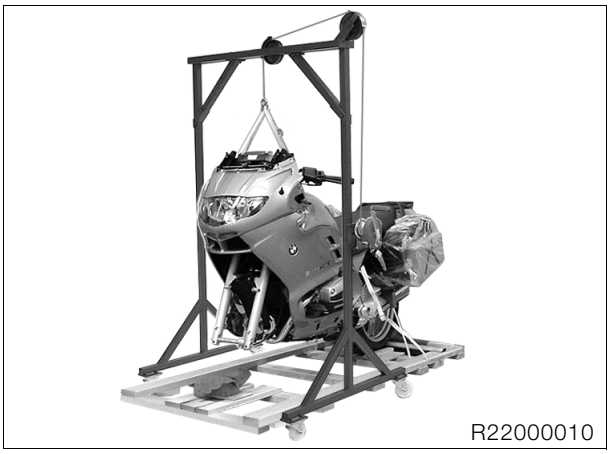
- All optional extras
- Toolkit
- Documentation

Assembling the motorcycle

Installing the front wheel

Attention:
Degrease all brake discs.

- Remove front straps.


R22000010

- Using the straps, secure the front of the motorcycle to the assembly crane, **BMW No. 46 5 640**.

Attention:
Do not damage the brake lines, Bowden cables and fairing panels.

- Raise the front of the motorcycle.

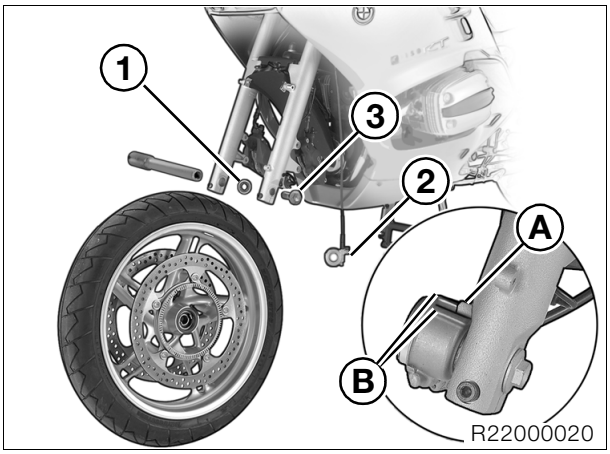
Attention:
Make sure that the motorcycle cannot topple sideways.

- Remove rear straps.
- Using the assembly crane, **BMW No. 46 5 640**, carefully push the motorcycle forward off the pallet.
- Extend the main stand and lower the motorcycle until it is resting firmly on the main stand and the rear wheel.

Warning:
Integral ABS When removing and installing the brake calipers, carefully force back the pistons only far enough to ensure that the wheel-circuit reservoir does not overflow.
If fluid escapes, top up the level in the wheel-circuit reservoir to the “MAX” mark.

- Remove screws securing the front brake calipers.

Note:
Do not apply handbrake lever or footbrake lever with brake calipers removed/front wheel removed.



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- Install the front wheel with spacer (1) and speedometer drive (2).

Attention:
Locate stop on slider tube (A) in recess in speedometer drive (B).

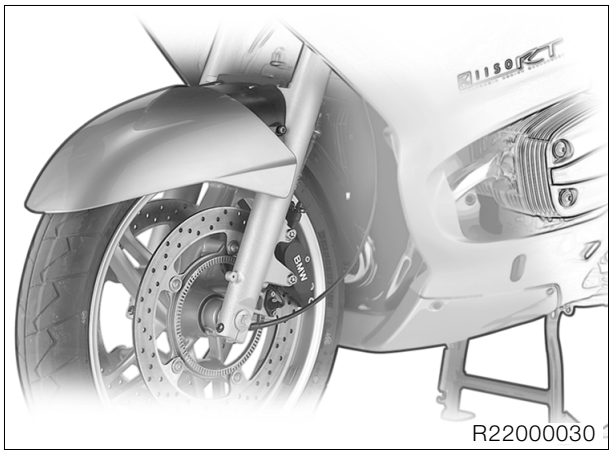
- Tighten the retaining screw (3).
- Install the front brake calipers.
- Release the motorcycle from the assembly crane, **BMW No. 46 5 640**.
- Compress the front fork firmly several times.
- Tighten the clamp screws.

Warning:
The brakes are not ready for use until the brake pads have been bedded against the brake discs with the ignition switched on.

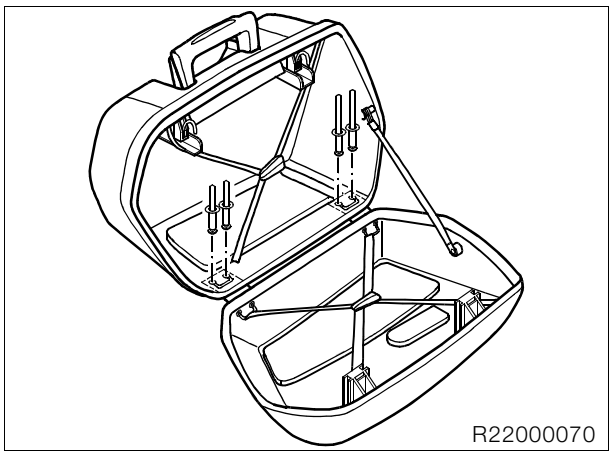
Tightening torque:

Fastener of quick-release axle	30 Nm
Clamping screws of quick-release axle	22 Nm
Brake caliper to fork slider	30 Nm

Installing front mudguard



Assembling case



- Position the lid on the case for alignment. Open the hinges of the lid and guide them into the base with the guide hook.
- From the inside, insert the pop rivets into the base and the hinges.

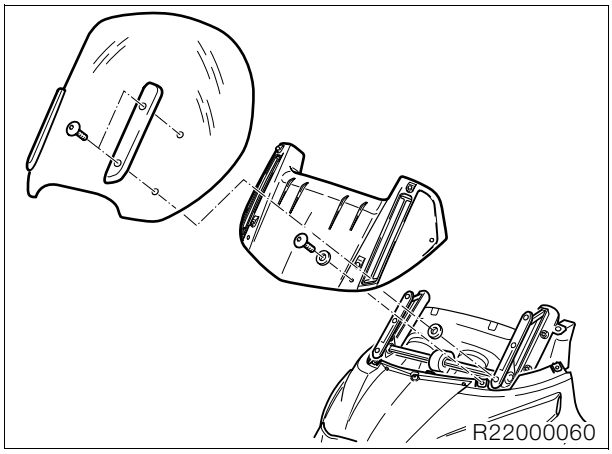
– 2x long rivets in hinge at rear, as viewed in forward direction of travel.
– 2x short rivets in hinge at front, as viewed in forward direction of travel.

- Engage riveting tool on rivets, hold the hinge at the outside to keep it in position and secure all four rivets.
- Oil the seal in the bottom of the case, using the sponge provided for the purpose.

Attention:
Make sure that the seal is not squeezed out of shape and that the lid closes without catching.

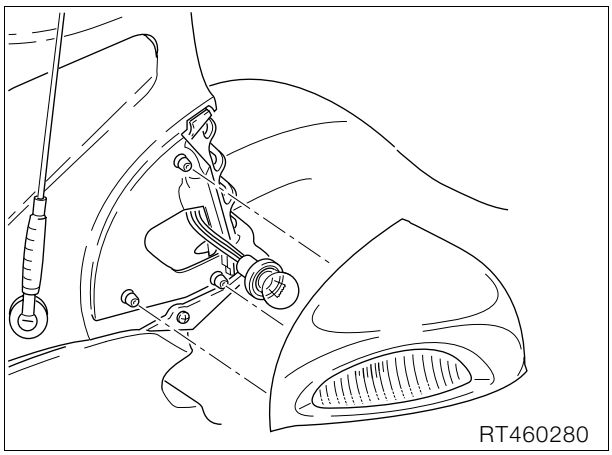
- Carefully close the case.
- Insert the lock cylinder into the case with the key in the lock and turn the lock.
- Affix the stickers.

Installing cover for windscreen adjuster and installing windscreen

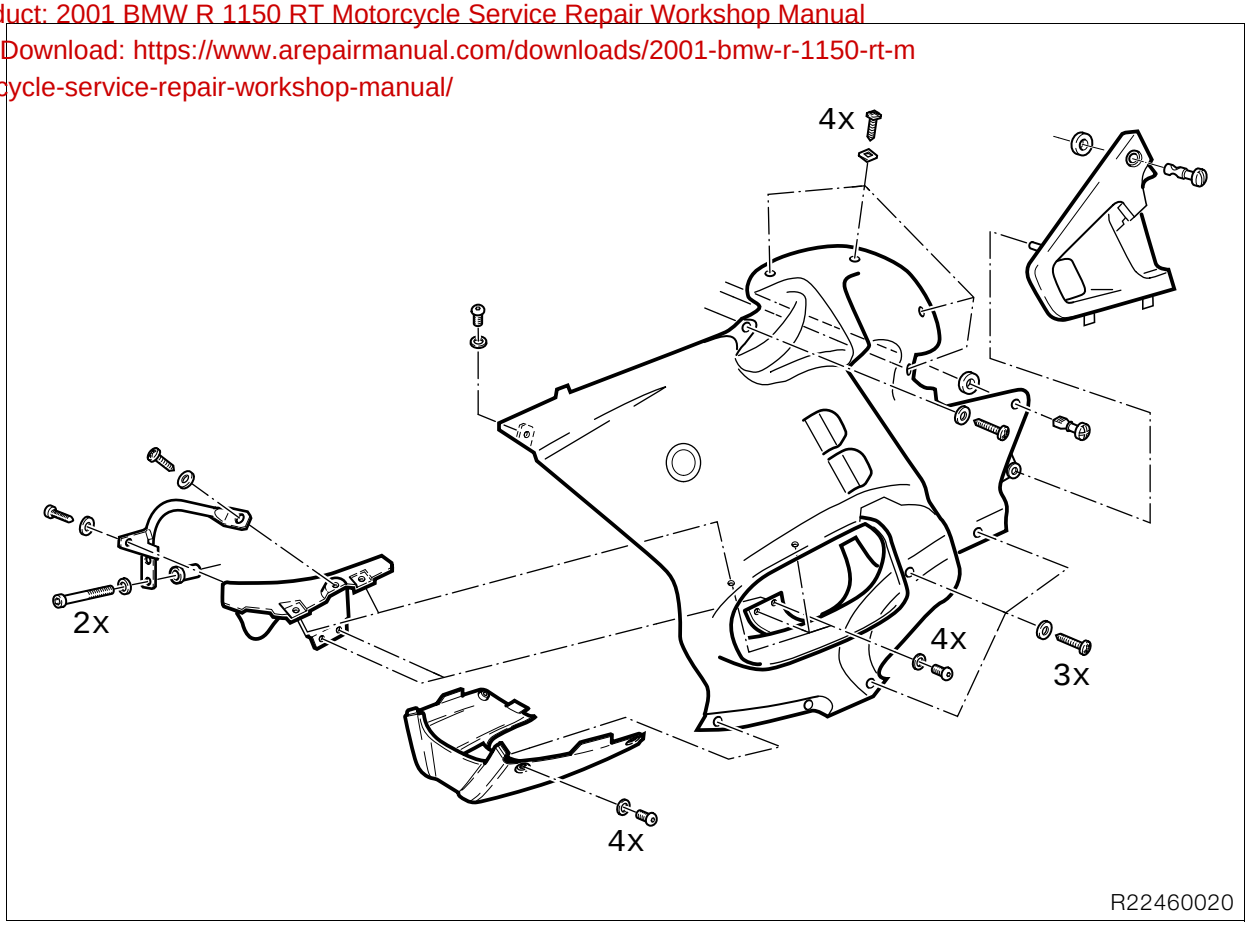


- Install the cover for the windscreen adjuster.
- Install windscreen with washers.
- Install the aerial.

Installing mirrors

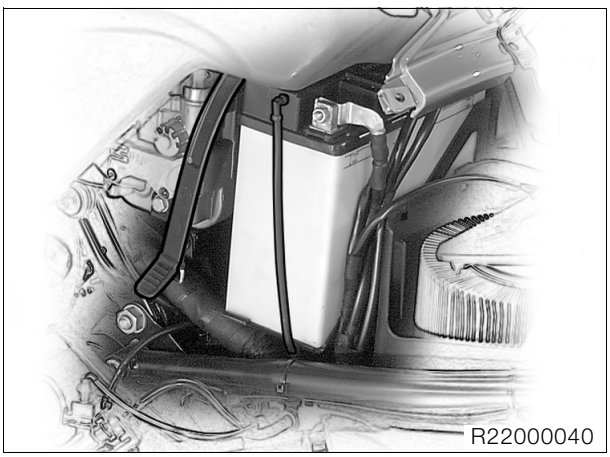


- Connect the turn indicators.
- Position the mirror at the 3 attachment points.
- Engage by pressing at the front first, then the rear.



Filling and charging the battery

- Remove seat.
- Remove left side fairing panel.
- Remove the air filter cover.
- Remove air intake pipe.
- Disengage the rubber strap holding the battery.



- Disconnect the battery breather hose.
- Pull the battery to the left to remove.

Warning:

Battery acid is highly caustic.
It must not contact the eyes, face hands, clothing or the motorcycle's paintwork.

- 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.