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## F 650 CS

### **BMW Motorrad After Sales**

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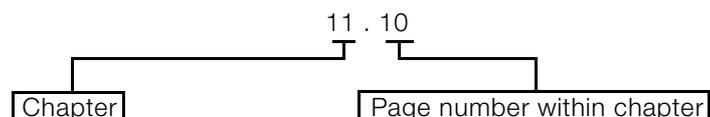
# Introduction

This Repair Manual will help you to perform all the main maintenance and repair work correctly and efficiently. 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 toward 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, Disassembling, Repair, Assembly, Installation.
- The entire contents are divided into individual chapters, corresponding to the Construction Groups.



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.

If the work described here is restricted to a particular equipment specification, for instance if a specific optional extra (OE) is fitted, this is stated in square brackets at the start of the item concerned, e.g. **[Heated handlebar grips]**.

Please refer to the following pages as well for a description of other symbols used and how to work with them.

BMW Motorrad  
After Sales

Issued by                      BMW Motorrad  
                                    After Sales  
                                    UX-VS-2

D-80788 München

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## Use

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 F 650 CS model, the following symbols are used; their meanings are explained in the table.

Special instructions aimed at improving the work procedures



### **Note:**

Special information on operating and inspecting the motorcycle as well as maintenance and adjustment procedures.

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### **Attention:**

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

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### **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.

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## Contents

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

## Activities

- Activities
- The bullet symbol indicates work steps that are described in greater detail under another headline
- Preceding activities
- A line indicates work steps that are described in greater detail under another headline or in another chapter

The term "remove" means that:

the fastener (e.g. screw) must be backed off completely and removed

or

a component (e.g. injection rail) has to be removed to the extent that components behind it (e.g. throttle valve rail) are rendered accessible

The term "loosen" or "slacken" means that:

the fastener (e.g. screw) must be backed off, but not removed



### **Tightening torque:**

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

# BMW Motorrad Maintenance schedule F 650 CS



			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
Customer _____	Licence No. _____	Mileage _____				
Job Order No. _____	Date _____	Mechanic's signature _____				
Read the fault code memory with the <b>BMW</b> MoDiTeC			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Change the engine oil <b>[engine only]</b> while at regular operating temperature and replace the oil filter element			<input type="checkbox"/>			
Change the engine oil <b>[engine and oil tank]</b> while at regular operating temperature and replace the oil filter element <b>if motorcycle is used only for short journeys or at outside temperatures below 0°C (32°F): every 3 months or at the latest after 3,000 km (1,800 miles)</b>				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clean oil strainer in frame <b>once only at 10,000 km/6,000 miles</b>				<input type="checkbox"/>		
Check the coolant and restore to correct level if necessary			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Grease rubber grommets for cover insert			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Replace the coolant *) <b>every 2 years</b>						<input type="checkbox"/>
Check valve clearances, adjust if necessary *)				<input type="checkbox"/>	<input type="checkbox"/>	
Replace the spark plug					<input type="checkbox"/>	
Drain the outlet hose from the air filter box			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Replace intake air filter <b>If motorcycle is operated in very dirty or dusty conditions, clean or replace the intake air filter every 10,000 km (6,000 miles); check every 3,000 km (1,800 miles)</b>					<input type="checkbox"/>	
Replace fuel filter <b>every 40,000 km (24,000 miles)</b>					<input type="checkbox"/>	
Check clutch play, adjust if necessary			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Examine brake pads and discs for wear, replace if necessary *)				<input type="checkbox"/>	<input type="checkbox"/>	
Check front/rear circuit brake fluid				<input type="checkbox"/>	<input type="checkbox"/>	
Check for operation of brake system and freedom from leaks; repair/replace if necessary *)					<input type="checkbox"/>	
Renew <b>brake fluid</b> at least <b>once a year</b>						<input type="checkbox"/>
[ABS] Replace the primary front/rear brake master cylinder cup *) <b>every 40,000 km (24,000 miles)</b>					<input type="checkbox"/>	
Replace toothed belt					<input type="checkbox"/>	
Check toothed belt and sprocket, replace if necessary *)					<input type="checkbox"/>	
Check belt tension, adjust if necessary *)			<input type="checkbox"/>	<input type="checkbox"/>		
Check battery acid level, add distilled water if necessary				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clean and grease the battery terminals, if necessary						<input type="checkbox"/>
Check steering head bearings and adjust *) or replace if necessary *)				<input type="checkbox"/>	<input type="checkbox"/>	
Grease the side stand				<input type="checkbox"/>	<input type="checkbox"/>	
Using a torque wrench, check that the screws and nuts of the engine mounts, manifold fastener, the frame threaded fasteners, the rear-frame threaded fasteners, and the eccentric clamp are tightened to specified torque			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Final inspection with road safety and functional check: – Clutch, gearshift – Steering – Front and rear brakes – Side stand contact switch – Condition of tyres and wheels, tyre pressures – Lights and signalling equipment, indicator and warning lights, instruments – Optional equipment – Test ride, if necessary			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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

# BMW Motorrad Pre-delivery check F 650 CS



_____ Customer  _____ Job Order No.		_____ Licence No.  _____ Mechanic's signature		<b>BMW Pre-delivery check</b>
Check the shipping pallet for damage				<input type="checkbox"/>
Unpack the motorcycle				<input type="checkbox"/>
Inspect motorcycle for damage				<input type="checkbox"/>
Check complete specification delivery: <ul style="list-style-type: none"> <li>- tools</li> <li>- handbooks and documents</li> <li>- keys</li> <li>- optional extras</li> </ul>				<input type="checkbox"/>
Motorcycle complete				<input type="checkbox"/>
Battery: <ul style="list-style-type: none"> <li>- remove</li> <li>- add battery acid</li> <li>- charge</li> <li>- grease the terminal posts</li> <li>- re-install (mark date)</li> </ul>				<input type="checkbox"/>
Check tyre pressure				<input type="checkbox"/>
Fuel the motorcycle				<input type="checkbox"/>
Safety/operating check as final inspection: <ul style="list-style-type: none"> <li>- Oil inspection</li> <li>- Clutch, gearshift</li> <li>- Steering</li> <li>- Hand brakes and foot brakes</li> <li>- Check lights and signalling equipment, warning and indicator lights, instruments, ABS</li> <li>- Test ride, if necessary</li> </ul>				<input type="checkbox"/>
Confirm delivery inspection in "Maintenance Booklet"				<input type="checkbox"/>
Final cleaning				<input type="checkbox"/>
Vehicle delivered on:				

# BMW Motorrad

## Service data

### F 650 CS



Item	Desired value	Units / Specifications
<b>Oil capacities</b>		
Engine (incl. filter)	0.5 (0.88/0.53)	Litres (Imp. pints/US quarts) Specification: see latest Service Information
Engine (incl. filter) and oil tank	2.5 (4.4/2.64)	Litres (Imp. pints/US quarts) Specification: see latest Service Information
<b>Coolant</b>		
	50% 50%	Water Anti-freeze protection to -25 °C
Cooling system	1.3 (2.29/1.37)	Litres (Imp. pints/US quarts)
Reservoir	0.1 (0.18/0.11)	Litres (Imp. pints/US quarts)
<b>Brake Fluid</b>		
<b>Valve clearance</b>		
		DOT 4
		measured cold (max. 35 °C/95 °F)
Inlet	0.03-0.11 (0.0012-0.004)	mm (in)
Exhaust	0.25-0.33 (0.010-0.013)	mm (in)
<b>Spark plugs</b>		
	NGK DR8 EB	
Electrode gap	0.6...0.7 (0.02...0.03)	mm (in)
<b>Engine idle speed</b>		
	1,400	rpm
<b>Clutch cable play</b>		
Cable at grip	1.0 - 2.0 (0.004 - 0.008)	mm (in)
<b>Tyre pressure</b>		
		tyres cold
Solo front/rear	2.2/2.5 (31.91/36.26)	bar (psi)
fully loaded front/rear	2.2/2.5 (31.91/36.26)	bar (psi)
<b>Tightening torques</b>		
Engine oil drain plug	40	Nm
Oil filter cover	10	Nm
Drain plug, on-frame oil tank	21	Nm
Oil lines to frame	42	Nm
Oil strainer to frame	80	Nm
Water pump drain screw	10	Nm
Vent screw	12	Nm
Expansion tank to radiator	9	Nm
Cylinder head cover	10	Nm
Spark plugs	20	Nm
Camshaft bearing cap	10	Nm
Chain guide	10	Nm (Loctite 243)
Fuel filter to stowage-compartment frame	9	Nm
Intake air pipe to intake air silencer	9	Nm
Suspension strut to angled lever	41	Nm
Eccentric clamp	Initial tightening 10 21	Nm Nm
Brake caliper to swinging arm	21	Nm
Struts to swinging arm	41	Nm
Swinging-fork pivot axle	100	Nm
Adjusting screw steering head bearing	25 Back off through angle of rotation 60	Nm °
Clamp screw for fork bridge steering head	23	Nm
Engine to frame at rear	50	Nm
Cylinder head to frame	41	Nm
Cylinder head to frame, locknut	100	Nm
Engine shell to engine	55	Nm
Engine shell to engine, bottom, with bottom truss	55	Nm
Engine shell to bracing tube	24	Nm
Rear frame to main frame	24	Nm (Loctite 2701)
Exhaust manifold to cylinder head	20	Nm
Silencer to exhaust manifold	55	Nm

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**18 Exhaust system**

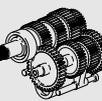
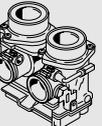
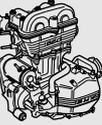
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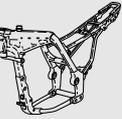
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# 00 Tightening torques, Operating fluids

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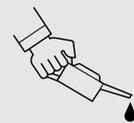
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## Tightening torques

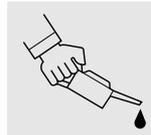
Model		F 650 CS
<b>Connection</b>		
<b>11 Engine</b>		
Freewheel housing and freewheel	Nm	35 (clean thread + Loctite 648)
Engine block	Nm	10
Double drive gear on crankshaft	Nm	180 (clean thread + Loctite 243)
Driver to countershaft	Nm	140 (clean thread + Loctite 243)
Pressure plate	Nm	10
Magnetic hub to crankshaft	Nm	180 (clean thread + Loctite 243)
Chainwheel to main shaft	Nm	140 (clean thread + Loctite 243)
Signal transmitter	Nm	8
Ignition cover	Nm	10
Cylinder base	Nm	10
Fastener for chain tensioner	Nm	40
<b>Oil circuit</b>		
Oil filter cover	Nm	10
Oil pressure switch	Nm	12 (clean thread + Loctite 243)
Strainer cover to housing half	Nm	8
Drain plug, on-frame oil tank	Nm	21
Engine oil drain plug	Nm	40
Oil supply/oil return lines to engine	Nm	42
Oil pump cover	Nm	6 (clean thread + Loctite 243)
Oil pressure valve	Nm	24
Oil retaining valve	Nm	24
<b>Cylinder head</b>		
Collar nuts for cylinder head	Nm	60
Collar screws for cylinder head	Nm	33
Machine screws (chaincase)	Nm	10
Camshaft bearing cap	Nm	10
Chain sprockets to camshafts	Nm	60 threads oiled
Chain guide to camshaft bearing cap	Nm	10 (clean thread + Loctite 243)





<b>Model</b>		<b>F 650 CS</b>
<b>Connection</b>		
<b>11 Engine</b>		
Cylinder head cover	Nm	10
Machine screw (hole for locating screw)	Nm	25
<b>Model</b>		<b>F 650 CS</b>
<b>Connection</b>		
<b>12 Engine electrics</b>		
Spark plug	Nm	20
Magnetic hub to crankshaft	Nm	180 (clean thread + Loctite 243)
Signal transmitter	Nm	8
Engine block cover, left/right	Nm	10
Starter to clutch cover	Nm	10
Positive lead to starter motor	Nm	9
Positive contact to starter motor	Nm	4
Necked-down bolt, starter housing	Nm	6
Cable cover to engine block	Nm	9
Cable holder to ignition cover	Nm	8
Stator to ignition cover	Nm	10 (clean thread + Loctite 243)
Ignition coil bracket to cylinder head cover	Nm	9

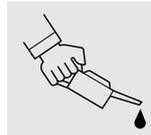
<b>Model</b>	<b>F 650 CS</b>	
<b>Connection</b>		
<b>13 Fuel preparation and control</b>		
Air intake pipe to cylinder head	Nm	21
Fuel filter to stowage-compartment frame	Nm	9
Injector holder to throttle valve	Nm	5
Fuel hose to injection nozzle holder	Nm	3
Fuel return hose to pump unit	Nm	3
Intake air pipe to intake air silencer	Nm	9
Throttle flap to intake stub	Nm	1
Throttle-valve potentiometer to throttle valve stub	Nm	3
Throttle valve actuator to throttle-valve stub	Nm	5 (clean thread + Loctite 243)
<b>Model</b>	<b>F 650 CS</b>	
<b>Connection</b>		
<b>16 Fuel tank and lines</b>		
Fuel tank to rear frame (M 8 stud)	Nm	21
Fuel filler cap to fuel tank	Nm	3
Roll-over valve to fuel tank	Nm	2
Clamps, activated charcoal filter bracket	Nm	9
Fuel pump to fuel tank	Nm	30
<b>Model</b>	<b>F 650 CS</b>	
<b>Connection</b>		
<b>17 Radiator</b>		
Expansion tank to radiator	Nm	9
Radiator to main frame at top	Nm	9
Fan to fan shroud	Nm	3
Water pump drain screw	Nm	10
Coolant hoses to radiator/engine/frame	Nm	3
Breather hose to expansion tank	Nm	2
Left engine block cover to engine block	Nm	10
Water pump cover	Nm	10
Temperature sensor in cylinder head	Nm	15
Vent screw	Nm	12





<b>Model</b>	<b>F 650 CS</b>	
<b>Connection</b>		
<b>18 Exhaust system</b>		
Oxygen sensor to exhaust elbow	Nm	45
Exhaust manifold to cylinder head	Nm	20
Silencer to exhaust manifold (Torca clamp)	Nm	55
Silencer to rear frame	Nm	41
Guards to silencer	Nm	5
<b>Model</b>	<b>F 650 CS</b>	
<b>Connection</b>		
<b>21 Clutch</b>		
Driver	Nm	140 (clean thread + Loctite 243)
Pressure plate	Nm	10
Engine block cover, left	Nm	10
Release lever to release shaft	Nm	10
<b>Model</b>	<b>F 650 CS</b>	
<b>Connection</b>		
<b>23 Transmission</b>		
Gear pedal to frame	Nm	21
Shaft lever to selector shaft	Nm	9

<b>Model</b>	<b>F 650 CS</b>	
<b>Connection</b>		
<b>27 Chain/belt drive</b>		
Drive sprocket cover to engine	Nm	2
Belt cover to swinging arm	Nm	9
Eccentric clamp	Nm	21
Initial tightening	Nm	10
Belt sprocket to gearbox output shaft	Nm	180 (clean thread + Loctite 638)
<b>Model</b>	<b>F 650 CS</b>	
<b>Connection</b>		
<b>31 Front fork</b>		
Clamp screws, upper fork bridge and steering head clamp	Nm	23
Clamp screws at lower fork bridge	Nm	23
Bracket to fork leg	Nm	5
Damper retaining screw	Nm	20
Adjusting screw		
Preload	Nm	25
Back off through angle of rotation	°	60
<b>Model</b>	<b>F 650 CS</b>	
<b>Connection</b>		
<b>32 Steering</b>		
Handlebars to fork bridge	Nm	23
Handlebar weight to handlebar	Nm	9
Handlebar fitting to handlebar	Nm	9
Cover of multi-function switch	Nm	1
Pivot pin of clutch lever	Nm	3
Locknut for pivot pin of clutch lever	Nm	5
Pivot pin of handbrake lever	Nm	7
Locknut of handbrake lever	Nm	7
Guide to fork bridge	Nm	5





Model		F 650 CS
<b>Connection</b>		
<b>33 Rear wheel drive</b>		
Suspension strut to frame	Nm	58
Wrench angle	°	45 ± 15
Suspension strut to angled lever	Nm	41
Swinging-fork pivot axle	Nm	100
Struts to swinging arm	Nm	41
Struts to angled lever	Nm	41
Angled lever to frame	Nm	58
Wrench angle	°	45 ± 15
Belt pulley to damper housing	Nm	28
Damper fastener	Nm	160
Eccentric clamp	Nm	21
Initial tightening	Nm	10
Model		F 650 CS
<b>Connection</b>		
<b>34 Brakes</b>		
Bleed screw to brake caliper front/rear	Nm	7
Brake caliper to fork slider tube	Nm	41
Brake light switch to handlebar fitting	Nm	3
Handlebar fitting to handlebar	Nm	9
Brake light switch to frame	Nm	5
Brake disc to front wheel	Nm	10 (clean thread + Loctite 2701)
Brake disc to rear wheel drive shaft	Nm	11 (clean thread + Loctite 2701)
Brake caliper to swinging arm	Nm	21
Brake master cylinder to main frame	Nm	10
Locknut for fork end to pushrod	Nm	9
Bracket, rear, to main frame	Nm	9 (clean thread + Loctite 2701)
Shroud to frame	Nm	6
Brake fluid reservoir for rear brake to rear frame	Nm	4
Brake pedal to frame	Nm	21
Brake line distributor to main frame	Nm	9

<b>Model</b>	<b>F 650 CS</b>	
<b>Connection</b>		
<b>34 Brakes</b>		
<b>Brake lines/hoses</b>		
Brake hose to brake caliper	Nm	18
Brake hose to rear brake caliper	Nm	18
Brake hose to brake lever fitting	Nm	18
Brake hoses to distributor	Nm	18
Brake hose to bracket, rear	Nm	18
Brake line to master brake cylinder, rear wheel	Nm	18
Banjo bolts, brake line	Nm	18
<b>ABS</b>		
ABS sensor front/rear	Nm	9
ABS control unit to holder	Nm	21
Brake lines to ABS control unit	Nm	18
Brake disc and sensor ring to front wheel	Nm	10 (clean thread + Loctite 2701)
Locknut for adjustable stop, brake-light switch	Nm	4
<b>Model</b>	<b>F 650 CS</b>	
<b>Connection</b>		
<b>36 Wheels and tyres</b>		
Clamp nut, front quick-release axle	Nm	23
Front quick-release axle to fork leg	Nm	30
Wheel nut to drive shaft (wheel side)	Nm	160 Lightly coat the thread with Optimoly TA





Model		F 650 CS	
Connection			
46 Frame			
Covers, right and left, to main frame	Nm	2	
Covers, right and left, to air guide	Nm	3	
Cover, front, to covers, right and left	Nm	1	
Cover, front to main frame	Nm	2	
Cover, rear, to covers left and right and to stowage-compartment frame	Nm	2	
Stowage-compartment rail to stowage-compartment frame	Nm	9	
Stowage-compartment frame to main frame	Nm	9	
Turn indicators, left and right, to fairing bracket	Nm	3	
Instrument cover to fairing holder	Nm	2	
Windscreen to windscreen bracket	Nm	2	
Windscreen bracket to fairing bracket	Nm	9	
Rear trim panels, left and right, to rear frame	Nm	2	
Rear trim panels, left and right, to seat lock	Nm	2	
Bracket for seat lock to rear frame	Nm	3	
Turn indicator, rear, to rear finisher	Nm	3	
Rear finisher to rear frame	Nm	9	
Number-plate carrier to rear finisher	Nm	9	
Spray guard to number-plate carrier	Nm	3	
Number-plate carrier to rear mudguard	Nm	3	
Cover of number-plate light to number-plate carrier	Nm	1	
Grip to rear frame	Nm	9	
Luggage carrier to grab handle	Nm	3	
Mudguards/wheel guards			
Front mudguard, front section, to front mudguard, rear section	Nm	3	
Front mudguard, front section, to slider tube	Nm	3	
Front mudguard, rear section, to slider tube	Nm	3	
Rear mudguard, front section, to rear frame, front and side	Nm	3	
Rear mudguard, front section, to rear frame, rear and centre	Nm	3	
Belt cover to swinging arm	Nm	9	

<b>Model</b>	<b>F 650 CS</b>	
<b>Connection</b>		
<b>46 Frame</b>		
<b>Frame</b>		
Drain plug, on-frame oil tank	Nm	21
Oil strainer to frame	Nm	80
Oil feed and return lines to main frame	Nm	42
Oil tank cover to frame	Nm	5
Footrest rubber to rear footrest	Nm	5
Fairing bracket to main frame	Nm	21
Rear frame to main frame	Nm	24 (clean thread + Loctite 2701)
Engine shell to bracing tube	Nm	25
Side stand to bottom truss	Nm	41
<b>Engine mounts</b>		
Engine shell to engine	Nm	55
Engine shell to engine, bottom, with bottom truss	Nm	55
Engine to frame at rear	Nm	50
Cylinder head to frame	Nm	41
Cylinder head to frame, adjusting sleeve	Nm	zero play, max. 5
Cylinder head to frame, locknut	Nm	100
<b>Model</b>	<b>F 650 CS</b>	
<b>Connection</b>		
<b>51 Equipment</b>		
Ignition/steering lock to fork bridge, top	Nm	20
Mirror to clamp element	Nm	18
Clamp element to handlebar fitting	Nm	21
Seat hook to rear frame	Nm	9





<b>Model</b>	<b>F 650 CS</b>	
<b>Connection</b>		
<b>61 General electrical equipment</b>		
Cable to idle-indicator switch	Nm	1
Idle-indicator switch	Nm	3 (clean thread + Loctite 243)
Cover for hazard warning flasher switch	Nm	5
Clutch switch to handlebar fitting	Nm	5
Positive/ground leads, battery	Nm	7
Ignition/light switch with cap to ignition/ handlebar lock	Nm	1
Voltage regulator to engine shell	Nm	9
Horn to fork bridge	Nm	18 (clean thread + Loctite 243)
Ground terminal, wiring harness to engine block, right	Nm	8
<b>Model</b>	<b>F 650 CS</b>	
<b>Connection</b>		
<b>62 Instruments</b>		
Instrument cover to instrument cluster	Nm	2
<b>Model</b>	<b>F 650 CS</b>	
<b>Connection</b>		
<b>63 Lights</b>		
Headlight to fairing bracket	Nm	7
Number-plate light to number-plate carrier	Nm	1
Rear light cluster to rear frame	Nm	9

## Table of operating fluids

Item	Use	Order number	Quantity
<b>Lubricant</b>			
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	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	Lubricant	11 00 7 660 830	400 g tube
Klüberpaste 46 MR 401	High-temperature lubricant	11 00 7 660 831	60 g tube
MOLYKOTE 111	Silicon 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	Lubricating paste	83 23 9 407 830	100 g tube
Grease for lock cylinders	Grease	81 22 9 407 421	
Rubber care product	Rubber care	82 14 9 407 015	60 g tube
Long-life lubricant	Lubricant	81 22 9 407 629	250 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 compound	33 11 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 (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 number	Quantity
<b>Cleaners</b>			
Brake cleaner	Cleaners	83 11 9 407 848	600 ml spray
Normal dilution	Cleaners	51 91 9 057 940	1 l bottle
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 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
<b>Installation aid</b>			
BMW chilling spray	Cooling spray	83 19 9 407 762	300 ml spray

# 00 Pre-delivery check

## Contents

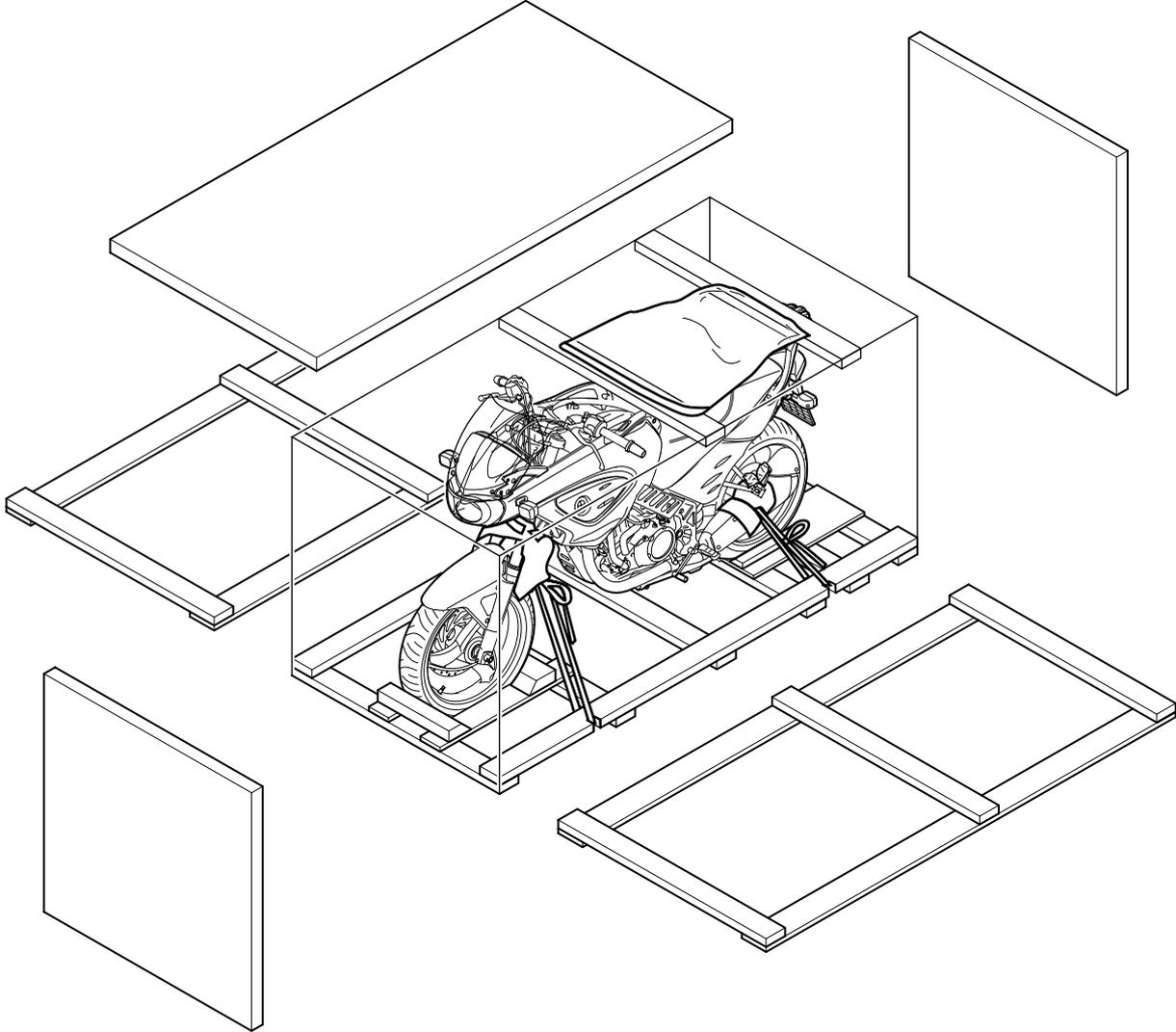
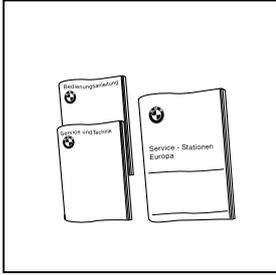
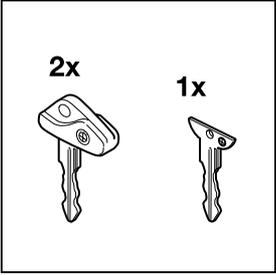
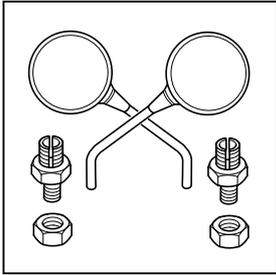
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# General view of crated motorcycle



K14009440

## Checking the shipping crate for damage

- When the motorcycle arrives, check the crate 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. +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.

## 00 11 Unpack the motorcycle

- Lever off the cover.
- Take out the separate pack of items.
- 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:

Make sure that the motorcycle cannot topple.

- Remove the straps at front and rear.



### Attention:

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

- Push the motorcycle forward 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 No. 23/91 - Sales.
- Check the contents of the enclosed pack of items:
  - Mirrors with clamping screws and nuts
  - Rider's Manual
  - Maintenance Instructions
  - Booklet listing service centres in Europe
  - BMW emergency service sticker
  - Handling instructions for batteries

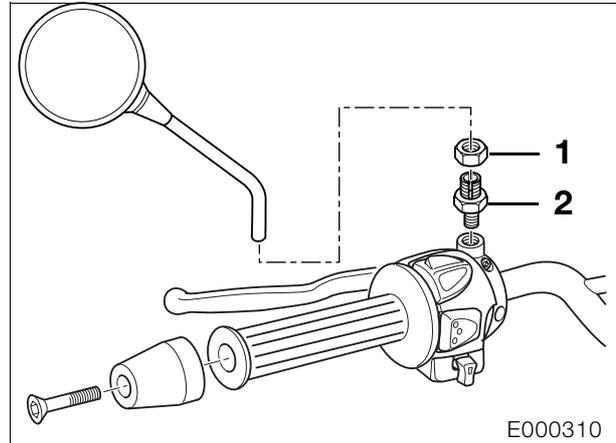
## 00 11 Inspecting motorcycle for damage

- Check for damage.
- 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:
  - screwdriver, reversible blade
  - crosshead screwdriver, small
  - 3 open-end wrenches  
w/f 8×10, 14, 15
  - spark plug wrench
  - 3 Allen keys  
Torx T15, T25, T30
  - 4 fuses  
7.5 A, 10 A, 15 A, 20 A
  - Breakdown kit
- Documentation
- Vehicle keys, 3 of

## 00 11 Installing remaining items on motorcycle

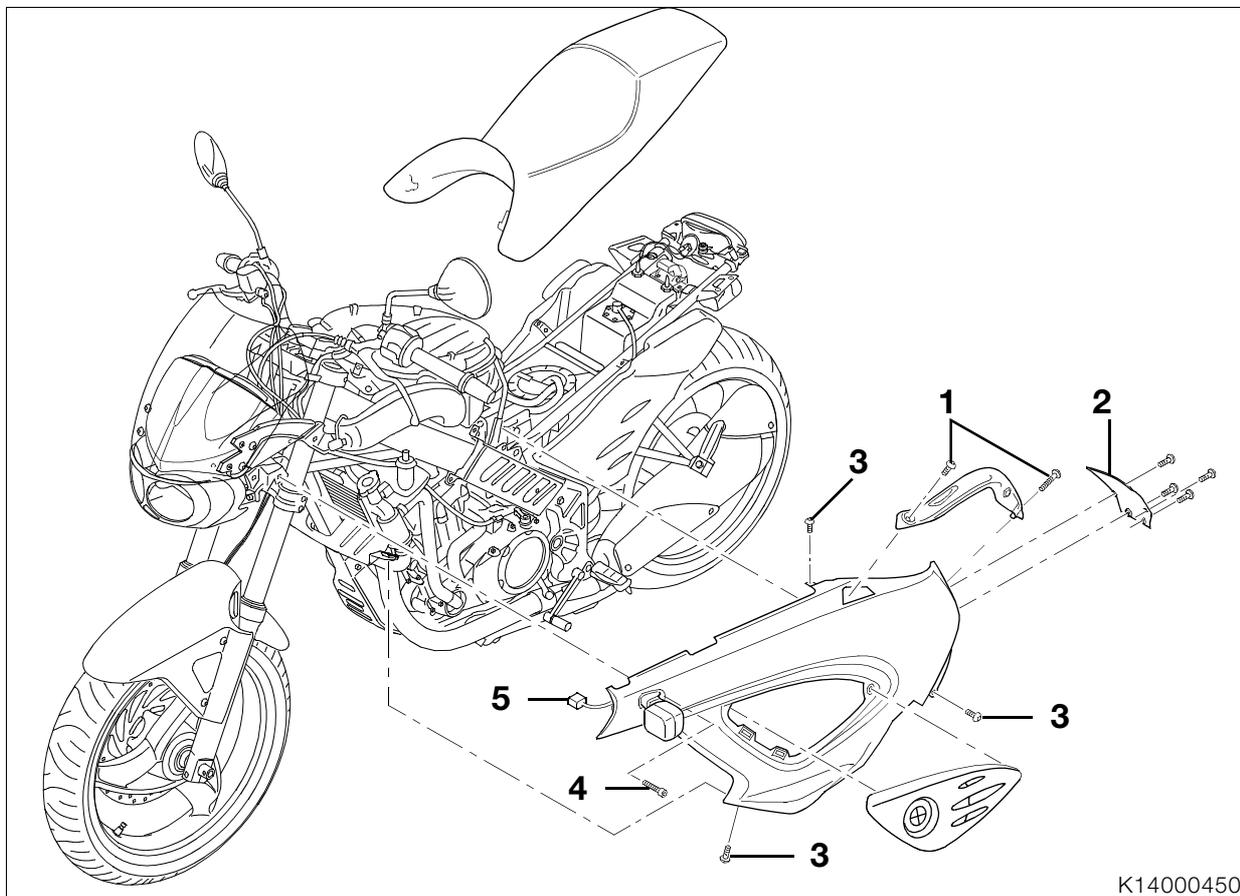


- Fit clamp screw (2) to handlebar fitting.
- Install mirror and secure by tightening nut (1).



### Tightening torque:

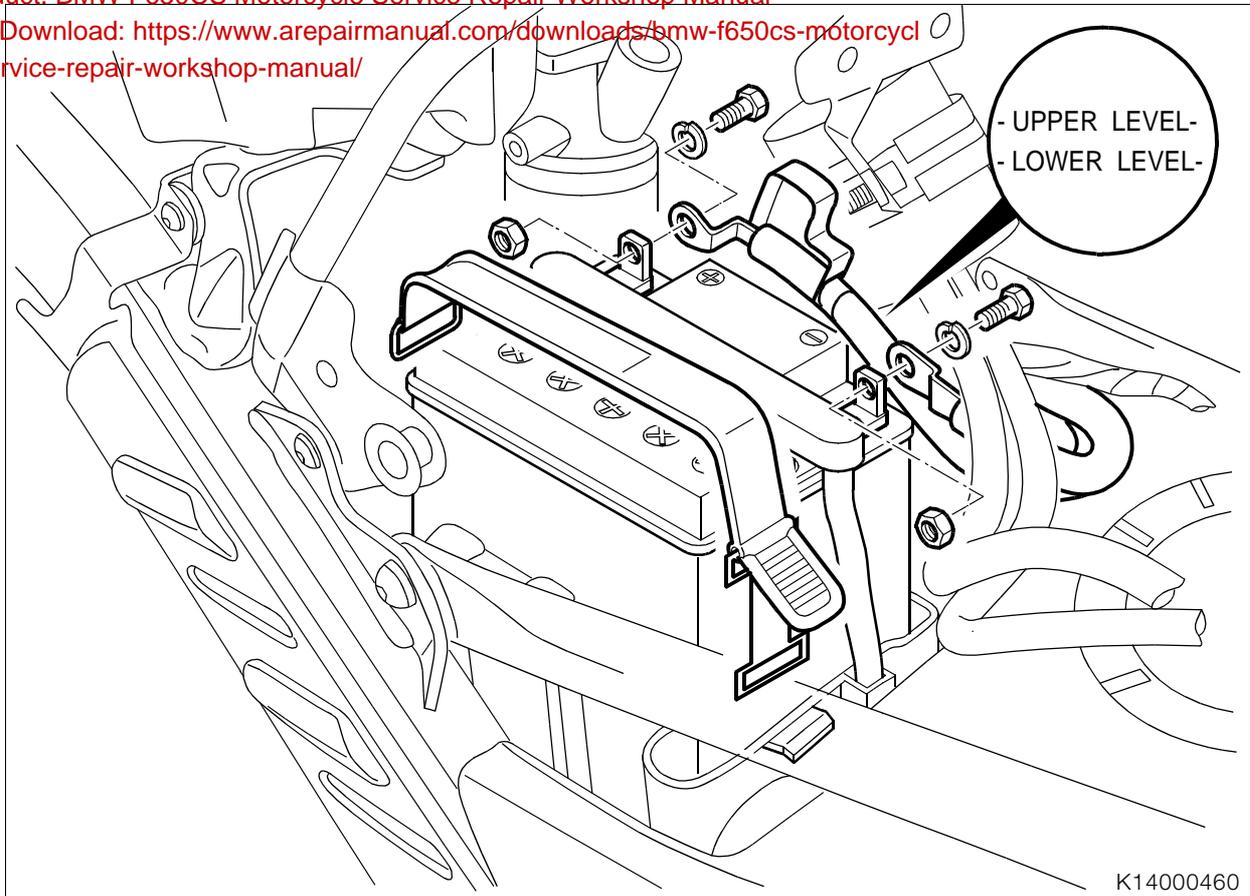
Clamp screw to handlebar fitting .....	21 Nm
Union nut for mirror .....	18 Nm



## 61 21 Filling and charging the battery

### 61 21 010 Removing the battery

- Place the motorcycle on the auxiliary stand, **BMW No. 00 1 620**.
- Remove seat.
- Remove securing screws for stowage-compartment rail (1) and remove left stowage-compartment rail; use wrench from toolkit if necessary.
- Remove fasteners of rear cover and remove rear cover (2).
- Disconnect the plug for flashing turn indicator (5).
- Remove securing screw for flashing turn indicator (4).
- Remove screws securing left cover (3).
- Remove the left cover.



## 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 with pure battery acid of density 1.28 to the Upper Level 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 (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 a temperature of 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.