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# Repair manual



C1 C1 200

**BMW Motorrad After Sales** 

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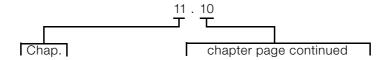
## **Preface**

This Repair Manual is intended to assist you in performing all essential maintenance and repair operations to a professional standard. In its role as a reference source for service personnel, it supplements and expands upon the theoretical and hands-on instruction provided at our training centres to enhance the quality of our service.

A new edition of this manual will be issued in response to required revisions or the need to incorporate additional information (supplements).

The illustrations and descriptions contained in this manual apply exclusively to standard, unmodified BMW Motorcycles and/or BMW Motorcycles equipped with factory-approved BMW accessories and options.

- The Repair Manual's structure reflects the logical sequence in which the operations it describes will be performed: removal, dismantling, repairs, assembly and installation.
- The individual chapters in this manual correspond to the motorcycle's individual assembly groups.



A reference arrow with chapter and page calls your attention to additional information contained in another section of the manual.

e.g. Refer to Assembly Group 46

- Group "00" describes the operations carried out in the course of each Inspection. The various inspection routines are numbered I, II, III and IV. To help in maintaining a continuous, logical work sequence, these same numerical designations are employed to identify the subsequent sections describing the actual repair operations.
- Use of the BMW special tools needed for certain operations is described in the work instructions.

When the need arises, repair instructions are also issued in the form of Service Information Bulletins. This information is then incorporated into subsequent editions of the repair manual. We also recommend the lavishly illustrated Electronic Parts Catalogue as a supplementary source of information.

When individual steps within an overall operation only apply to motorcycles with specific accessories or optional equipment, the options to which the steps refer are identified by brackets at the start of the line, such as **[with 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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#### How to use this manual

Each chapter starts with a table of contents.

Following the table of contents is a table containing the techical data and specifications for the chapter's subject.

Chapter 00 describes maintenance procedures and provides general information as well as the pre-delivery inspection; it furnishes all torque specifications along with listings of fluids and lubricants.

#### **Explanation of symbols**

This repair manual for the C1 employs the following symbols; please refer to the table for their meanings.

Special notices for more efficient procedures



#### Note:

These special notices help technicians work more efficiently when operating, inspecting, adjusting and maintaining motorcycles.



#### Attention:

Special information and precautionary notices to prevent damage to the motorcycle. Failure to observe these mandatory precautions may invalidate the warranty.



#### Warning:

Precautions intended to protect the rider and/or other individuals against injury as well as potentially fatal hazards.

#### Contents

The titles of the operations described in this chapter ...... together with the page numbers

#### Operations

- Operations
- A dot or period identifies individual procedures described under a title
- Previous operations
- The hyphen identifies procedures described in more detail under a different title or in another chapter

#### Remove means:

to completely unscrew a retaining component (such as a bolt or screw)

or

to detach a component (such as an injection rail) and move it enough to gain access to assemblies installed behind it (such as a throttle-valve).

#### Loosen means:

to unscrew an attachment (such as a bolt or screw) without removing it entirely from its threaded socket or retainer



#### Torque specifications:

These data are indicated whenever torques deviate from the standards defined in DIN EN 24 014 and DIN 912 ISO.

## **Contents**

### **Group / Chapter**

>> Continuation

00 Tightening torques operating fluids 00 Pre-delivery check 00 Maintenance 11 Engine 12 Engine electrics 13 Fuel preparation and control 16 Fuel tank and lines 17 Radiator 18 Exhaust system 21 Clutch 24 Gearbox 31 Front forks 32 Steering





















# **Group / Chapter** 33 Rear wheel drive 34 Brakes 36 Wheels and tyres 46 Frame 51 Equipment 52 Seat 61 General electrical equipment **62 Instruments** 63 Lights **65 Optional extras** 72 Seat belts

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## BMW Motorrad Maintenance schedule C1, C1 200



			n miles	ıce	ב ⁄ר	
Customer	Licence No.	 Mileage	BMW Inspection at 10,00 km/600 miles	BMW Maintenance Service every 7,500 km/4,500 miles	Inspection 15,000 km/ miles	BMW Annual Service
Job Order No.	Date	Mechanic's signature	BMW Ir at 10,00	BMW N Service 7,500 kr	BMW Ir every 1 9,000 n	BMW Annual
MoDiTeC/DIS plus, read fault co	ode memory					
Change the engine oil while at re If the vehicle is ridden for short dista every 3,000 km (1,800 miles) at the la	ances only or at outside temperate	nd replace the oil filter element ures below 0° C (32° F): every 3 months or after				
Clean oil strainer and magnetic p	olug					
Change transmission fluid	*)					
every 30,000 km/18,000 miles or 3 yes Inspect coolant level, top up if ne		mage chafing points				_
Change the coolant every 2 years*)	second y, mopeon needs for dar	nago, onamig pointo				
Check valve clearances and adju	ust if necessary *)					
Replacing spark plug	·					
Replace air filter element shorten change interval if severely d	lirty or dusty					
Drain condensate drain hose from	m air manifold					
Brake hoses and connections: c	heck condition and routing					
Check operation of brake system	n and check for leaks; repair/re	place as necessary*)				
Inspect brake fluid level at front/r	rear					
Examine brake pads and discs for	or wear, renew if necessary*)					
Renew brake fluid at least once	a year					
Replace variator belt						
Check clutch liner, replace if nec	essary*)					
Cleaning mesh filter of variator						
Grease driving variator (greased	version)					
Check and clean driving variator	(ungreased version, replace va	ariator if necessary)				
Replace complete driving variator every 22,500 km/14,000 miles, greased version only						
Check wheel bearings for play; re	eplace if necessary*)					
Checking that leading-link mount	ts are free of play					
Battery: check battery acid level, if necessary add distilled water						
Clean and grease the battery terminals, if necessary						
Check freedom of movement of Bowden cables, check for abrasion and damage						
<ul> <li>Inspect Bowden cables for d</li> </ul>	sm and check freedom of move damage and signs of wear and c free travel and adjust as requi	chafing, ensuring that mechanism moves				
		and top up washer fluid in reservoir				
Check windscreen wiper; replace	e wiper blade if necessary *)					
Safety elements: check cable for	release, belt buckles, belt stra	p, inertia reels, and belt locks				
Check crash element for damage	е					
Inspect shoulder bar for damage	, replace deformation element	if necessary*)				
Replace fuel filter every 37,500 km/22,500 miles						
Only ABS: Replace seal in brake master cylinder every 30,000 km/18,000 miles*)						
Check tightness of bolts and nut	s at engine mountings and qui	ck-release axles				
Final inspection with road safety  Clutch engagement, steering  Condition of tyres and wheel  Lights and signalling equipm  If necessary, test ride	g, front and rear brake	instruments				
*) Write up on separate invoi	ce: Not part of standard	sarvice procedure				

## BMW Motorrad Pre-delivery Check C1, C1 200



Customer Order no.	Registration number  Signature of mechanic	BMW Pre-delivery Check
Inspect transportation packaging for damage		
C1:  - Unpack - Inspect for damage  - Attach parts - Clean		
Battery:  - Remove - Pour in electrolyte - Charge - Grease terminals - Install (mark date of installation)		
Inspect complete scope of supply:  - Toolkit - Documentation - Keys - Scope of optional equipment		
Inspect tyre inflation pressure		
Pour in fuel		
Operational check as final inspection:  - Engine idling - Clutch, clutch engagement - Steering - Seat belt - Easy-lift mechanism - Brakes, front and rear - Lights and signalling equipment, telltale and warning lights, instruments - Set headlight - If necessary, test ride		

## BMW Motorrad Service data C1, C1 200



01, 01 200		
Item	Specified value	Unit of measure or specification
Oil capacities Engine (with filter)	1.0 (0.22)	litres (Imp pints) 15W40
Gearbox	0.090 (0.020)	litres (Imp pints) API GL 4
Coolant Cooling system Expansion tank	1.25 (2.2) 0.2 (0.35)	litres (Imp pints) litres (Imp pints)
		Mixing ratio: Water: 50% Antifreeze: 50% Protection down to -25 °C (-13 °F)
Windshield washer fluid	1.0 (1.8)	litres (Imp pints) Water and cleaning product, antifreeze as required
Brake fluid		DOT 4
Valve clearances Measured cold, maximum 35 °C (95 °F)	Inlet: 0.050.14 (0.0020.006) Exhaust: 0.200.29 (0.0090.010)	mm (in) mm (in)
Spark plugs Electrode gap	0.80.9 (0.0310.035)	NGK CR8 EB mm (in)
Idle speed	1 900	rpm
Tyre pressures (tyres cold) Solo Full load	Front/rear 1.9/2.1 (27.6/30.5) 1.9/2.4 (27.6/34.8)	bar (psi) bar (psi)
Engine oil drain plug Oil strainer to engine Engine water drain plug Oil filter cover Camshaft gears to camshaft Guide rail to camshaft support Chain tensioner plug Camshaft bearing bridge Valve cover Machine bolt TDC setting Spark plug Driving variator Driving variator Driving variator Locknut of clutch to driven variator Variator cover to power train link Ventilation cover for variator Front stub axle Clamping bolts for front stub axle Brake calliper at fork slider tube Bleed screw in brake calliper Cover of handbrake control Rear stub axle, use nut only once Exhaust to cylinder head Auxiliary link to power train link M8 Auxiliary link to power train link M10 Silencer to auxiliary link Suspension strut to power train link/brake calliper holder Link mounting to power train link Tubular link to frame Stand to frame Rubber element to tubular link Cladding bolts	20 30 10 10 30 10 35 10 10 15 15 60 4 60 50 10 9 30 21 41 14 Hand-tight 130 15 21 60 21 21 73 73 73 41 42 2.8	Nm Nm Nm Nm Nm Nm Nm (Loctite 243) Nm (Loctite 243) Nm

# 00 Tightening torques operating fluids



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Torque specifications	3
11 Engine	
12 Engine electrical system	
13 Fuel injection system	
16 Fuel tank	
17 Cooling system	
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51 Equipment	9
52 Seats	10
61 Electrical equipment	10
62 Instruments	11
63 Lights	11
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## **Torque specifications**

Model	C1
Connection	
11 Engine	
Oil drain plug, magnetic Nn	20
Threaded plug, oil strainer Nn	30
Oil filter cover Nn	10
Threaded TDC set plug Nn	15
Alternator	
Alternator cover up to engine no.: 745 594 Nn	10
Alternator cover from engine no.: 745 595 Nn	12
Ignition trigger, Tapite screw Nn	6 LOCTITE 243
Holder for alternator cable, Tapite screw Nn	6 LOCTITE 243
Reluctor to crankshaft, locking fluid Nn	30 LOCTITE 243
One-way clutch, locking fluid Nn	30 LOCTITE 243
Alternator to cover Nn	10
Chain tensioning rail, locking fluid Nn	10 LOCTITE 243
Cylinder head	
Cylinder head cover Nn	10
Collar nut Nn	30 ±1
Securing screw Nn	10
Spark plug Nn	15
Camshaft sprockets, locking fluid Nn	30 LOCTITE 243
Bearing cap Nn	10
Chain guide, locking fluid Nn	10 LOCTITE 243
Plug for chain tensioner Nn	35
Vent screw Nn	9
Dual temperature sensor, locking fluid Nn	15 LOCTITE 243
Housing	
Starter motor Nn	10
Oil pressure switch, locking fluid Nn	12 LOCTITE 243
Oil pressure valve	30
Stud (tie bolt) Nn	10
Housing screws Nn	10
Oil pump, Tapite screw Nn	6 LOCTITE 243
Water-pump housing, Tapite screw Nn	6 LOCTITE 243
Spring strut at bottom Nn	21



Model		C1
Connection		
12 Engine electrical system		
Spark plug	Nm	15
Ignition coil to frame	Nm	5
Ignition trigger, Tapite screw	Nm	6 LOCTITE 243
Reluctor to crankshaft, locking fluid	Nm	30 LOCTITE 243
One-way clutch, locking fluid	Nm	30 LOCTITE 243
Alternator to cover	Nm	10
Starter motor	Nm	10
Model		C1
Connection		
13 Fuel injection system		
Fuel filter clamp	Nm	5
Holder for injection nozzle (self-tapping)	Nm	4 LOCTITE 243
Pressure regulator clamp	Nm	9
BMS control unit	Nm	5
Intake manifold	Nm	9
Air plenum clamp	Nm	Hand-tight Hand-tight
Air filter housing (inner/outer)	Nm	9
Throttle cable	Nm	8
Spring strut at bottom	Nm	21
Model		C1
Connection		
16 Fuel tank		
Fuel filter clamp	Nm	5
Bracket, fuel tank to frame	Nm	9
Union nut (fuel-pump unit)	Nm	20
Baseplate to frame Bracket for washer fluid reservoir on frame	Nm	9
Bracket for washer fluid reservoir/ABS control unit on frame	Nm	9
Model		C1
Connection		
17 Cooling system		
Drain plug	Nm	10
Vent screw	Nm	9
Bracket for seat latch, right, to frame	Nm	42
Bracket for seat latch, left, to frame	Nm	5



Model	C1			
Connection				
17 Cooling system				
Expansion tank to frame upright Nm	3			
Front frame to cross brace Nm	14			
Air duct to fan shroud Nm	9			
Radiator to front frame Nm	9			
Fan shroud to radiator Nm	9			
Air duct to front frame Nm	9			
Filler bowl to front frame Nm	9			
Coolant pipe clamp to frame Nm	9			
Screw clamp on engine Nm	Hand-tight			
Bleeder screw to engine Nm	9			
Model	C1			
Connection				
18 Silencer (muffler)				
Shield to holder Nm	5			
Exhaust pipe to cylinder head Nm	15			
Silencer to auxiliary swing arm Nm	21			
Oxygen sensor to silencer Nm	23			
Model	C1			
Connection				
21 Clutch				
Vent cover for variator Nm	9			
Variator cover Nm	10			
Driven variator (clutch drum) Nm	60			
Locknut on driven variator, locking fluid Nm	50 LOCTITE 243			
Model	C1			
Connection				
24 Gearbox				
Variator				
Vent cover for variator Nm	9			
Variator cover Nm	10			
Drive variator, locking fluid Nm	60 LOCTITE 243			
Cover, drive variator Nm	4			
Driven variator (clutch drum) Nm	60			
Locknut of driven variator, locking fluid Nm	50 LOCTITE 243			



Model		C1
Connection		
04.0		
24 Gearbox		
Gearbox		
Gearbox cover	Nm	11
Gearbox drain plug	Nm	20
Gearbox filler plug	Nm	5
Model		C1
Connection		
31 Front forks		
Fork cross brace to frame (screw stud) locking fluid	Nm	83 LOCTITE 243
Leading link to telescopic tube cross brace locking fluid	Nm	127 LOCTITE 2701
Brake line bracket on fork cross brace	Nm	5
Fork stanchion to fork cross brace	Nm	52
Handlebar to fork cross brace	Nm	21
Leading-link joints	Nm	41
Clamp screws for leading-link joints	Nm	9
Spring strut to leading link	Nm	41
Ball joint to telescopic fork cross brace	Nm	230
Clamp of telescopic tube to telescopic tube cross brace	Nm	25
Eyebolts	Nm	8
Lock to easy-lift mechanism	Nm	4
Model		C1
Connection		
32 Steering		
ABS sensor to telescopic tube	Nm	9
Combination switch	Nm	4
Brake light switch	Nm	Hand-tight
Throttle cable	Nm	8
Clamp screw for brake lever fitting	Nm	9
Brake line to brake lever fitting	Nm	18

Nm 21 Nm 3



Handlebar to fork cross brace

Locknut for handlebar lever pivot pin

Model	C1
Connection	
33 Final-drive unit	
Top suspension strut Nm	41
Spring strut at bottom Nm	21
Auxiliary swing arm to brake caliper holder Nm M, screw locking fluid10	60 LOCTITE 243
Auxiliary swing arm to brake caliper mount Nm M8	21
Model	C1
Connection	
34 Brakes	
Brake caliper at telescopic tube Nm	41
Banjo bolt to brake caliper Nm	18
Bleed screw in brake caliper Nm	14
6-point nut to final-drive shaft Nm (rear wheel), <b>use only once</b>	130
Auxiliary swing arm to brake caliper holder, Nm M10 bolt, with locking fluid	60 LOCTITE 243
Auxiliary swing arm to brake caliper mount, Nm M8	21
Auxiliary swing arm to powertrain cradle Nm	21
Expansion tank cap Nm	1
Suspension strut to brake caliper carrier Nm	21
ABS sensor to brake caliper carrier Nm	9
ABS sensor to telescopic tube Nm	9
Brake disc Nm	21
ABS reluctor ring Nm	5
Baseplate to frame Nm Bracket for washer fluid reservoir on frame	9
Brake lines to ABS control unit, M12x1 Nm	18
Brake lines to ABS control unit, M10x1 Nm	18
Union, brake hose/brake line Nm	18
Bracket on frame joint Nm	5
Brake line to brake lever fitting Nm	18
All fasteners, brake line to frame Nm	5



Model		C1
Connection		
36 Wheels		
Stub axle, locking fluid	Nm	30
Quick-release axle clamp screws	Nm	21
Brake caliper at telescopic tube	Nm	41
6-point nut to final-drive shaft (rear wheel), use only once	Nm	130
Auxiliary swing arm to brake caliper holder, locking fluid, M10	Nm	60 LOCTITE 243
Auxiliary swing arm to powertrain cradle, M8	Nm	21
Spring strut at bottom	Nm	21
Model		C1
Connection		
46 Frame		
Body panels to body panels	Nm	2,8
Body panels to frame	Nm	2,8
Lightweight foam element to frame	Nm	5
Foam part to cross member	Nm	5
Air plenum to rear wheel mudguard	Nm	12
Roof/windscreen to cross bar	Nm	5
Windscreen to bracket	Nm	5
Bracket, wiper motor to roof frame	Nm	5
Rear mudguard to powertrain cradle	Nm	12
Air filter housing to powertrain cradle	Nm	12
Crash element shoulder bar to frame	Nm	9
Holder, crash element to frame	Nm	9
Rear frame to frame	Nm	21
Suspension strut to rear frame	Nm	41
Joint		
Nut to frame, front left, M28	Nm	105
Screw to frame, front left, M28	Stage 1	20
Screw to frame, front left, M28	Stage 2	Back off 1/2 turn
Screw to frame, front right	Nm	73
Rubber bush to frame	Nm	42
Rubber bush to joint	Nm	42
Powertrain cradle to joint	Nm	73
Joint swinging arms to each other	Nm	73
Easy-lift mechanism		
Spring strut to leading link	Nm	41
Articulated-lever mechanism to frame	Nm	21



Model	C1
Connection	
46 Frame	
Attachment of control cam of large hand lever, locking fluid	m 2 LOCTITE 243
Stand to frame N	m 41
Switch (easy-lift mechanism) stand to frame N	m 8
Spring holder (easy-lift mechanism) to frame N	m 21
Bowden cable retaining bracket to frame N	m 21
Lock of Bowden cable N	m 8
Auxiliary swing arm to powertrain cradle N	m 21
Eyebolt to frame N	m 8
Shoulder bar	
Seat to frame N	m 21
Head restraint to frame N	m 21
Shoulder bar, top, to frame M10 N	m 41
Shoulder bar, top, to frame M8 N	m 21
Shoulder bar, bottom, to frame M6 (clamping screw)	m 9
Roof frame	
Front roof bar (clamp) N	m 21
Rear roof bar (clamp) N	m 21
Roof frame cross brace N	m 21
Mirror brackets N	m 5
Luggage system	
Top bracket to frame N	m 8
Bracket to rear frame N	m 21
Top bracket to bracket N	m 21
Lock carrier N	m 5
Head restraint to frame N	m 21
Model	C1
Connection	
51 Equipment	
Ignition lock to frame N	m 9
Seat latch N	m 9
Seat bench lock to left rear side panel N	m 3
Striker on rear storage compartment N	m 3
Lock cylinder on rear storage compartment N	m 7
Striker of storage compartment N	m 3
Lock cylinder on storage compartment N	m 7
Lock bolt for luggage rail N	m 3



### **Bmw C1 C1200 Service Repair Manual**

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	C1
Nm	5
Nm	4
Nm	3
	C1
Nm	21
Nm	9
Nm	Hand-tight Hand-tight
Nm	21
	C1
Nm	4
Nm	3
Nm	3
Nm	0,4
Nm	12
Nm	5
Nm	3
Nm	5
Nm Nm	
	9
Nm	9 5
Nm Nm	9 5 8
Nm Nm Nm	9 5 8 5
Nm Nm Nm Nm	9 5 8 5 5
Nm Nm Nm Nm	9 5 8 5 5 9
	Nm Nm Nm Nm Nm Nm Nm Nm Nm Nm

Nm 5



Bracket of wiring harness to frame