00 00 Extract from BMW Group Standard GS 90003-2

Tightening Torques

	Type	Thread	Tightening specifications	Torque
If there are no cross-references to tightening torques in the repair instructions, the extracts based on BMW Group Standard GS 90003-2 must be observed.				
A distinction is made between screws / bolts / nuts with surface colour / (surface coating) yellow (ZN) and silver (ZNS) The maximum tightening torques are: Surface colour yellow (ZN): Applicable only to set screws with metric coarse and fine threads to DIN 13-28 and nuts with nut height of 0.8 x d to DIN 934 and exclusively for a total μ = 0.125 (screws/bolts phosphatised, nuts untreated or galvanized. Lubricated condition: both unlubricated and oiled).				
Surface colour silver (ZNS): Applicable only to set screws with metric coarse and fine threads to DIN 13-28 and nuts with nut height of 0.8 x d to DIN 934 and exclusively for a μ range = 0.09 0.15 (screws/bolts cadmium-plated, nuts untreated or galvanized. Lubricated condition: both unlubricated and oiled). The values specified in the table apply to a screw/screw connection in accordance with the above-mentioned conditions. Not applicable when a different thread surface or lubrication status is used or in the case of deviating nut height.				

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Also not applicable to screws/bolts reduced shafts, to self-locking screw/bolt connections and to screwing/bolting parts made of different materials. Caution! It is essential to adhere to the prescribed tightening torques in order to carry out a correct and proper repair. This presupposes that the torque wrenches required for this purpose are subject to regular testing. Permitted tolerance of calibrated torque wrenches is ± 4 % from the scale value. Approved torque wrenches and torque testers are featured in the Workshop Equipment Planning Catalogue.				

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00 00 M10 and M10 x 1 - maximum tightening torques acc. to BMW GS 90003-2

Tightening Torques

	Type	Thread	Tightening specification	Torque
Scope of applicability of tightening torques, refer to excerpt from company standard BMW GS 90003-2	Surface colour / (surface coating)			
M10 thread	yellow (ZN)	M10 8.8		47 Nm
	silver (ZNS)	M10 8.8		38 Nm
	yellow (ZN)	M10 10.9		66 Nm
	silver (ZNS)	M10 10.9		56 Nm
	yellow (ZN)	M10 12.9		79 Nm
	silver (ZNS)	M10 12.9		62 Nm
M10x1 thread	yellow (ZN)	M10 x 1 8.8		54 Nm
	silver (ZNS)	M10 x 1 8.8		41 Nm
	yellow (ZN)	M10 x 1 10.9		75 Nm
	silver (ZNS)	M10 x 1 10.9		60 Nm
	yellow (ZN)	M10 x 1 12.9		91 Nm
	silver (ZNS)	M10 x 1 12.9		67 Nm

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00 00 M12 and M12x1.5 - maximum tightening torques acc. to BMW GS 90003-2

Tightening Torques

	Type	Thread	Tightening specification	Torque
Scope of applicability of tightening torques, refer to excerpt from company standard BMW GS 90003-2	Surface colour / (surface coating)			
M12 thread	yellow (ZN)	M12 8.8		82 Nm
	silver (ZNS)	M12 8.8		66 Nm
	yellow (ZN)	M12 10.9		115 Nm
	silver (ZNS)	M12 10.9		98 Nm
	yellow (ZN)	M12 12.9		140 Nm
	silver (ZNS)	M12 12.9		108 Nm
M12x1.5 thread	yellow (ZN)	M12 x 1.5 8.8		87 Nm
	silver (ZNS)	M12 x 1.5 8.8		68 Nm
	yellow (ZN)	M12 x 1.5 10.9		123 Nm
	silver (ZNS)	M12 x 1.5 10.9		100 Nm
	yellow (ZN)	M12 x 1.5 12.9		147 Nm
	silver (ZNS)	M12 x 1.5 12.9		110 Nm

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00 00 M14 and M14x1.5 - maximum tightening torques acc. to BMW GS 90003-2

Tightening Torques

	Type	Thread	Tightening specification	Torque
Scope of applicability of tightening torques, refer to excerpt from company standard BMW GS 90003-2	Surface colour / (surface coating)			
M14 thread	yellow (ZN)	M14 8.8		130 Nm
	silver (ZNS)	M14 8.8		104 Nm
	yellow (ZN)	M14 10.9		180 Nm
	silver (ZNS)	M14 10.9		155 Nm
	yellow (ZN)	M14 12.9		220 Nm
	silver (ZNS)	M14 12.9		170 Nm
M14x1.5 thread	yellow (ZN)	M14 x 1.5 8.8		143 Nm
	silver (ZNS)	M14 x 1.5 8.8		110 Nm
	yellow (ZN)	M14 x 1.5 10.9		200 Nm
	silver (ZNS)	M14 x 1.5 10.9		165 Nm
	yellow (ZN)	M14 x 1.5 12.9		240 Nm
	silver (ZNS)	M14 x 1.5 12.9		180 Nm

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00 00 M16 and M16x1.5 - maximum tightening torques acc. to BMW GS 90003-2

Tightening Torques

	Type	Thread	Tightening specification	Torque
Scope of applicability of tightening torques, refer to excerpt from company standard BMW GS 90003-2	Surface colour / (surface coating)			
M16 thread	yellow (ZN)	M16 8.8		200 Nm
	silver (ZNS)	M16 8.8		160 Nm
	yellow (ZN)	M16 10.9		280 Nm
	silver (ZNS)	M16 10.9		235 Nm
	yellow (ZN)	M16 12.9		340 Nm
	silver (ZNS)	M16 12.9		260 Nm
M16x1.5 thread	yellow (ZN)	M16 x 1.5 8.8		216 Nm
	silver (ZNS)	M16 x 1.5 8.8		170 Nm
	yellow (ZN)	M16 x 1.5 10.9		303 Nm
	silver (ZNS)	M16 x 1.5 10.9		250 Nm
	yellow (ZN)	M16 x 1.5 12.9		364 Nm
	silver (ZNS)	M16 x 1.5 12.9		275 Nm

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00 00 M18 and M18x1.5 - maximum tightening torques acc. to BMW GS 90003-2

Tightening Torques

	Type	Thread	Tightening specification	Torque
Scope of applicability of tightening torques, refer to excerpt from company standard BMW GS 90003-2	Surface colour / (surface coating)			
M18 thread	yellow (ZN)	M18 8.8		280 Nm
	silver (ZNS)	M18 8.8		225 Nm
	yellow (ZN)	M18 10.9		390 Nm
	silver (ZNS)	M18 10.9		330 Nm
	yellow (ZN)	M18 12.9		470 Nm
	silver (ZNS)	M18 12.9		365 Nm
M18x1.5 thread	yellow (ZN)	M18 x 1.5 8.8		313 Nm
	silver (ZNS)	M18 x 1.5 8.8		245 Nm
	yellow (ZN)	M18 x 1.5 10.9		440 Nm
	silver (ZNS)	M18 x 1.5 10.9		360 Nm
	yellow (ZN)	M18 x 1.5 12.9		527 Nm
	silver (ZNS)	M18 x 1.5 12.9		400 Nm

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00 00 M4 and M5 - maximum tightening torques acc. to BMW GS 90003-2

Tightening Torques

	Type	Thread	Tightening specification	Torque
Scope of applicability of tightening torques, refer to excerpt from company standard BMW GS 90003-2	Surface colour / (surface coating)			
M4 thread	yellow (ZN)	M4 8.8		3 Nm
	silver (ZNS)	M4 8.8		2 Nm
	yellow (ZN)	M4 10.9		4 Nm
	silver (ZNS)	M4 10.9		3 Nm
	yellow (ZN)	M4 12.9		5 Nm
M5 thread	yellow (ZN)	M5 8.8		6 Nm
	silver (ZNS)	M5 8.8		5 Nm
	yellow (ZN)	M5 10.9		8 Nm
	silver (ZNS)	M5 10.9		7 Nm
	yellow (ZN)	M5 12.9		10 Nm
	silver (ZNS)	M5 12.9		8 Nm

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00 00 M6 and M7 - maximum tightening torques acc. to BMW GS 90003-2

Tightening Torques

	Type	Thread	Tightening specification	Torque
Scope of applicability of tightening torques, refer to excerpt from company standard BMW GS 90003-2	Surface colour / (surface coating)			
M6 thread	yellow (ZN)	M6 8.8		10 Nm
	silver (ZNS)	M6 8.8		8 Nm
	yellow (ZN)	M6 10.9		14 Nm
	silver (ZNS)	M6 10.9		12 Nm
	yellow (ZN)	M6 12.9		17 Nm
	silver (ZNS)	M6 12.9		13 Nm
M7 thread	yellow (ZN)	M7 8.8		15 Nm
	silver (ZNS)	M7 8.8		13 Nm
	yellow (ZN)	M7 10.9		21 Nm
	silver (ZNS)	M7 10.9		19 Nm
	yellow (ZN)	M7 12.9		26 Nm
	silver (ZNS)	M7 12.9		21 Nm

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00 00 M8 and M8 x 1 - maximum tightening torques acc. to BMW GS 90003-2

Tightening Torques

	Type	Thread	Tightening specification	Torque
Scope of applicability of tightening torques, refer to excerpt from company standard BMW GS 90003-2	Surface colour / (surface coating)			
M8 thread	yellow (ZN)	M8 8.8		24 Nm
	silver (ZNS)	M8 8.8		19 Nm
	yellow (ZN)	M8 10.9		34 Nm
	silver (ZNS)	M8 10.9		28 Nm
	yellow (ZN)	M8 12.9		40 Nm
	silver (ZNS)	M8 12.9		32 Nm
M8x1 thread	yellow (ZN)	M8 x 1 8.8		26 Nm
	silver (ZNS)	M8 x 1 8.8		21 Nm
	yellow (ZN)	M8 x 1 10.9		36 Nm
	silver (ZNS)	M8 x 1 10.9		30 Nm
	yellow (ZN)	M8 x 1 12.9		44 Nm
	silver (ZNS)	M8 x 1 12.9		33 Nm

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0 operating fluid overview

Expendable materials

Fitting aid (Circo Light; lubricant)	250 ml, Bottle	83192405829

Expendable materials

Lubricating grease Renolit CX-SP 1	100 g, Tube	83192183737

Expendable materials

Lubricating grease Klübersynth LF 44-22	45 g, Tube	83230396713

Expendable materials

Ball bearing grease	100 g, Tube	81229407174

Expendable materials

Lubricating oil 4 UH 1 - 460 N	100 ml, Bottle	83230306232

Expendable materials

Wheel bearing grease UNIREX N3	400 ml, Cartridge	83192160349

Expendable materials

Lubricating grease MI-Setral-43 N	50 g, Tube	83232152082

Expendable materials

Lubricating grease GKY H-15	100 g, Bag	83232179705

Expendable materials

Lubricating grease One Lube Improved	110 g, Bag	83232179708

Expendable materials

Silicone spray	400 ml, Spray can	83192208609

Expendable materials

Universal lubricant spray	250 ml, Spray can	81229407711

Expendable materials

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Adhesive lubricant	250 ml, Spray can	81229407629

Expendable materials

Door brake lubricating grease	400 ml, Spray can	83230301796

Expendable materials

Lubricating material Optimoly Paste TA	400 ml, Spray can	83239407817

Expendable materials

Quietsch-Ex	250 ml, Spray can	83230420633

Expendable materials

Lubricating grease Klüberplex BE 11-462	400 ml, Spray can	83220397761

Expendable materials

Fluropan T20 spray with PTFE	400 ml, Spray can	83230154884

Expendable materials

Lubricating grease Renolit CX-CVM 1	100 g, Bag	83192286016

Expendable materials

Lubricating grease Renolit CX-CVL 1	100 g, Bag	83192286017

Expendable materials

Lubricating grease Renolit CX-TP 1	100 g, Bag	83192286018

Expendable materials

Paste MP 3	100 g, Tube	07559062476

Expendable materials

Active rust film remover	500 ml, Spray can	83192211267

Expendable materials

Contact-protection greaseKF1	50 g, Tube	83192295229

Expendable materials

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Special lubricant KRYTOX	30 ml, Bottle	83199408523

Paints and colours

BMW sound insulating paint 1	50 g, Spray	83192414997

Paints and colours

Sound insulating paint Berucoat AK 978	100 ml, Spray can	83192358109

Sealing compound

Silicone sealant Drei Bond 1207	310 ml, Cartridge	81229407439

Sealing compound

Surface sealant Loctite 574	50 ml, Bottle	81229407301

Sealing compound

Surface sealant Loctite 5203	50 ml, Cartridge	83190422969

Sealing compound

Surface sealant 2054/2	12 g, Cartridge	83190412375

Sealing compound

Special activator type 5900	10 ml, Bottle	83190412376

Adhesive

Adhesive anaerobic Drei Bond 1385	50 g, Bottle	83190417376

Adhesive

Adhesive Loctite 577	50 ml, Bottle	33112328736

Sealing compound

Surface sealant Loctite 518	50 ml, Cartridge	83190395783

Sealing compound

Loctite 5460 liquid sealing compound	50 ml, Cartridge	83192420102

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Adhesive

Screw lock Loctite Stick 268, high strength	19 g, Pin	83190441108

Adhesive

Screw lock Loctite 270, high strength	10 ml, Bottle	83192210337

Adhesive

Screw lock Loctite 243, medium strength	10 ml, Bottle	83192210339

Adhesive

Screw lock Loctite 277, high strength	250 ml, Bottle	83190142917

Adhesive

Screw lock Loctite 273, high strength	50 ml, Bottle	83190443083

Adhesive

Profile rubber adhesive No longer available from BMW.		

Adhesive

Adhesive Loctite 638	50 ml, Bottle	81229407420

Adhesive

Adhesive Loctite 2701	10 ml, Bottle	33172331095

Adhesive

Adhesive 2K Loctite 3450	25 ml, Bottle	51252313730

Adhesive

BMW Glue Pen	10 g, Pin	81222358167

Adhesive

SuperglueS1	20 g, Bottle	81222351255

Adhesive

SuperglueS2	20 g, Bottle	81222351257

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Adhesive

SuperglueS3	3 g, Bottle	81222351258

Expendable materials

Cooling spray	400 ml, Spray can	83199407762

Expendable materials

Odour remover	100 ml, Spray can	83192233353

Expendable materials

Rust film remover Professional	5 l, Canister	83192166998
	200 l, Barrel	83120396936
	1000 l, Barrel	83120396937

Expendable materials

Rust film remover Rv26H	500 ml, Spray bottle	83120414441

Expendable materials

Preservative remover	60 l, Canister	83190422208

Expendable materials

Universal cleaner exterior	10 l, Canister	83192153221
	25 l, Canister	83192154648

Expendable materials

Stain remover	1 l, Can	83119407816

Expendable materials

Adhesive remover	1 l, Can	83110009712

Expendable materials

Universal cleaner interior	20 l, Canister	83192154638

Care product

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Wheel rim brushes	1x , Set	83192298237

Sealing compound

Loctite 171000 primer	4 ml, Bottle	83197515683

Overview of consumables (Electronic Parts Catalogue)

Sealing compound

Loctite 193140 liquid sealing compound	6 ml, Cartridge	83190439030

Overview of consumables (Electronic Parts Catalogue)

Sealing compound

Sealant Dow Corning	35 ml, Tube	07580397777

Overview of consumables (Electronic Parts Catalogue)

Adhesive

Adhesive Loctite 648	50 ml, Bottle	07589067732

Overview of consumables (Electronic Parts Catalogue)

Expendable materials

Engine and cold cleaner	1 l, Spray bottle	83192360950
	10 l, Canister	83192361705

Overview of consumables (Electronic Parts Catalogue)

Expendable materials

Leak detection spray	400 ml, Spray can	83199407861

Overview of consumables (Electronic Parts Catalogue)

Expendable materials

Contact spray	250 ml, Spray can	83222405599

Overview of consumables (Electronic Parts Catalogue)

Expendable materials

Powder spray	300 ml, Spray can	83192358648

Expendable materials

Vacuum pump oil	1 l, Bottle	83192232502

Expendable materials

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Lubricants PF1	50 g, Pin	83230309627

Expendable materials

Injector lubricating grease	50 g, Can	83230441070

Adhesive

Screw lock Loctite Stick 248, medium strength	19 g, Pin	83192359746

Expendable materials

Universal cleaner	20 l, Canister	83192360981

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0 Overview of tightening torques

End fitting to body

Screw Renew screw.	**Tightening torque**	42Nm

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