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BMW 2002 Torque Specifications



Written by John Nevius & Dan Graves

Saturday, 01 October 2005

BMW 2002 Torque Specifications

Compiled By [John Nevius](#) and HTMLed By [Dan Graves](#)

Engine

		Nm	lb-ft
Engine to gearbox	M8	25 - 27	18 - 19.5
	M10	47 - 51	34 - 37
Cylinder head bolts	Stage 1	35 - 45	25 - 33
	Stage 2	60 - 65	43 - 47
	Stage 3	68 - 72	49 - 52
Main bearing caps		58 - 63	42 - 46
Big end bolts 12.9 DIN 267		52 - 57	38 - 41
Flywheel to crankshaft	Note 1	100 - 115	72 - 83
Chain tensioner end plug		30 - 40	22 - 29
Rocker clamp bolt		9 - 11	6.5 - 8
Pressure relief valve plug on oil pump housing		25 - 30	18 - 22
Oil drain plug		60 - 65	43 - 47
Oil filter		24 - 26	17 - 19
Clutch to flywheel		22 - 24	16 - 17.4
Oil sump to engine block and timing case cover		9 - 11	6.5 - 8
Hollow screw for oil line to camshaft		11 - 13	8 - 9.4
V-belt pulley on drankshaft		140 - 150	101 - 108
Spark plugs		25 - 30	18 - 22
Fuel pump		10 - 14	7.2 - 10
Carburerator on intake manifold		10 - 14	7.2 - 10
Upper to lower timing case cover		9 - 11	6.5 - 8
Distributor flange at cylinder head	M8	23 - 27	16.6 - 19.5
	M6	9 - 11	6.5 - 8
Hex nut for exhaust manifold to cylinder head		30 - 33	22 - 24
Heat-sensitive valve		15	11
Eccentric at rocker		9 - 11	6.5 - 8
Heat-sensitive time switch		20 - 25	14.4 - 18
Coolant temperature sensor		20 - 25	14.4 - 18
Oil pressure contact switch		30 - 35	22 - 26

Reversing light switch	6- 10	4.3 - 7.2
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Note 1: Fit in with Loctite Type 270 and Activator N

Fuel Supply:

	Nm	lb-ft
Cap nut on fuel injection pump	25	18.1
Fastening nut for toothed belt sprocket	30 - 40	21.7 - 28.9
Injectors	30 - 35	21.7 - 25.3
Fuel Injection pump oil filler plug	15 - 18	10.8 - 13
Head screw on injector	25 - 30	18.1 - 21.7
Carburettor to intake manifold	10 - 14	7.2 - 10.1
Fuel pump to cylinder head	10 - 14	7.2 - 10.1
Idle shutoff valve	2.5 - 3.0	1.8 - 2.2

Clutch

	Nm	lb-ft
Clutch to flywheel	22 - 24	15.9 - 17.3
Pipe and hose at master and slave cylinders	13 - 16	9.4 - 11.6
Master cylinder retaining bolts	22 - 24	15.9 - 17.3
Clutch pedal through bolt	32 - 36	23 - 25.8
Locknut for thrust rod/throwout arm (note 1)	17 - 20	12.3 - 14.5
Nut on ring bolt for tension spring/pedal	7 - 8.2	5.1 - 6

Note 1: 1600-2 mechanical clutch

Transmission - Automatic:

	Nm	lb-ft
Stud at transmission housing	5 - 6	3.6 - 4.3
Hexagon nut, stop sleeve	15	10.8
Headless screw on accelerator cable	15	10.8
Hexagon nut for park lock	10	7.2
M10x1 locking bolt in transmission housing	15	10.8
Converter housing and transmission extension	23	16.6
Starter locking switch and reverse light switch	35	25.3
M18 x 1.5 locking bolt in converter housing	35	25.3
Hexagon head bolt on support shaft	10	7.2
Hexagon head bolt for fastening oil pump	10	7.2
Hollow bolt for in/out and return pipes	40 - 45	28.9 - 32.5
Speedometer brush locking bolt	10	7.2
Hexagon nut on bearing flange and transmission extension	23	16.6
Cheese-head bolts on centrifugal governor	M6 10	7.2
	M5 6	4.3
Collar nut on output side	100 - 120	72.3 - 86.7
Hexagon nut for fastening converter housing	23	16.6
Hexagon bolt for fastening control unit	8	5.7
Hexagon bolt for fastening oil sump	10	7.2
Oil drain plug	35	25.3

Transmission - Manual:

	Nm	lb-ft
Gearbox to engine	M8 25 - 27	18.1 - 19.5
	M10 47 - 51	34.0 - 37
Bearing block to gearbox	20 - 25	14.5 - 18.1
Strut to selector arm	22 - 24	16 - 17.4

Strut to bearing block		22 - 24	16 - 17.4
Cap bearing (rubber bushing) at Crossmember	M8	22 - 24	16 - 17.4
	M10	43 - 48	31 - 34.7
Crossmember to body		20 - 23.5	14.4 17
1st gear wheel to layshaft		60	43.4
Housing cover		25	18.1
Rubber mount/cross member		25	18.1
Bracket		25	18.1

Drive Shaft:

	Nm	lb-ft
Propeller shaft without sliding section		
Universal joint to final drive	68 - 76	49 - 54.8
Guibo coupling to gearbos (M10)	68 - 76	49 - 54.8
Joint disc to transmission (M12) (automatic)	105 - 118	76 - 85.4
12-sided nut (with Loctite AVV)	180 - 182	130- 131.4
Center bearing to body	22 -24	15.9 - 17.3
Heat Shield to center bearing (US version)	11 - 13	8 - 9.4
Propeller shaft or joint disc to gearbox (M10)	43 - 48	31 - 34.6
Propeller shaft with sliding section		
Universal joint to final drive	30 - 34	21.7 - 25.3
Guibo coupling at gearbox	43 - 48	31 - 34.6
Threaded bushing on sliding section	40	29
Center bearing to body	19 - 24	14 - 17.6
Propeller shaft with joint discs		
Joint disc	42 - 47	30 - 33.6
Threaded bushing on sliding section	40	29
Center bearing to body	19 - 24	14 - 17.6

Front Axle:

	Nm	lb-ft
Spring strut, top center	72 - 80	52 - 58
Spring strut, screw ring	120 - 140	87 - 101
Track rod arm at kinpin (steering rod)	25 - 33	18 - 24
	Note	
Wishbone (control arm) at axle beam (subframe)	1	170 - 190 123 - 137
Trailing link at whishbone and axle beam (radius arm connecting outer end of control arm to front of subframe)	Note 1	70 - 90 51 - 65
Steering box at front axle beam	43 - 48	31 - 35
Fron axle beam to engine mounting	43 - 48	31 - 35
Spring strut, thrust bearing on wheel houseing	22 - 24	16 - 17.4
Guide joint (ball joint) at track rod arm (steering rod at base of strut assembly)	60 - 70	43 - 48
Brake caliper to kingpin	80 - 95	58 - 69
Brake disc to wheel hub	60 - 67	43 - 48
Track rod castellated nut (center link/tie rods)	35 - 40	25 - 29
Stabilizer (swaybar) retaining bracket	22 - 24	16 - 17.4
Lock nut for stabilizer at wishbone (where swaybar attaches to lower control arms)	22 - 24	16 - 17.4

***Thanks to John Aho for providing the "translations" in parentheses, above. :)*

Note 1: Normal load position 2 x 150 lb on front seats, 150 lb on rear seats, 46 lb in luggage compartment on left-hand side, full tank

Rear Axle:

	Nm	lb-ft
Large final drive cover	43 - 48	31 - 34.6
Flange on bevel pinion (minimum)	150	108
3-arm flange (long-neck version) with Loctite AVV (minimum)	150	108
Side cover	20 - 24	14 - 16.9
Hex bolt at drive flange	90 - 100	65 - 67.2
Stop nut at bevel pinion bearing (long-neck version) (maximum)	400	289
Rear axle shaft castellated nut	400 - 470	289 - 340
Crownwheel at differential casing with Loctite Type 270	85 - 100	61 - 72
Halfshaft at drive flange	30 - 33	22 - 24.2
Halfshaft at rear axle shaft	30 - 33	22 - 24.2
Rear axle beam to body floor	140 - 155	101 - 111.8
Cross-member at body floor	45	33
Thrust links to body floor	43 - 48	31 - 34.6
Final drive to rear axle beam	72 - 80	52 - 57.8
Rubber mounting to body floor	49 - 53	35 - 38.6
Final drive to rubber mounting	49 - 53	35 - 38.6
Semi-trailing arm at axle beam	67 - 75	48 - 53.8
Base of shock absorber	49 - 53	35 - 38.6
Rubber mounting at rear axle beam	49 - 53	35 - 38.6

Steering and Wheel Alignment:

Steering wheel nut	M12 x 1.5	55 - 60	40 - 43.6
	M14 x 1.5	85 - 95	61 - 68
Joint disc attachment		20 - 23	14 - 16.2
Joint flange attachment		25 - 28	18 - 20.2
Steering arm at steering box		120 - 140	80 - 94
Castellated nut at steering guide arm		80 - 100	58 - 72
Steering box end cover retaining bolts		18 - 20	13 - 14.4
Track rod castellated nut		35 - 40	25 - 28.6
Steering box to front axle carrier		43 - 48	31 - 43.6
Track rod clamp bolts		12 - 15	8.7 - 10.9
Track rod arm to kingpin		25 - 33	18 - 23.7

Brakes:

	Nm	lb-ft	
Brake caliper to steering knuckle	80 - 95	58 - 69	
Brake disc to wheel hub	60 - 67	43 - 48	
Brake hose	13 - 16	9.4 - 11.6	
Collar screws on brake pipes	13 - 16	9.4 - 11.6	
Brake servo holder at wheel arch	22 - 24	16 - 17.4	
Brake backplat to semi-trailing arm (with Loctite)	60 - 67	43 - 48	
Brake relay lever at pivot mount	49 - 54	45 - 48.6	
Locknut for brake arm pullrod	14 - 17	10.1 - 12.3	
Brake master cylinder/brake servo retaining nut	12 - 15	8.7 - 10.8	
	Note		
Brake caliper halves	1	23 - 27	16.6 - 19.5
	Note		
Brake caliper halves	2	45 - 55	32.8 - 40
	Note		
Brake caliper halves	3	30 - 34	22.1 - 25
Castallated nut for brake drum drive flangge	400 - 470	289 - 340	
M6 adjuster nut for handbrake cable	1.6 - 1.8	1.16 - 1.3	
M6 locknut for handbrake cable	6 - 1	4.3 - 5.0	

Note 1: 1600-2, 1602, 1802, 2002, 2000A,
touring 1602/1802/2002/2002A

Note 2: 2002TI, 2002 tii, touring 2002tii

Note 3: 1502

Pedals:

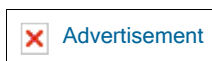
	Nm	lb-ft
Clutch pedal dowl pin	32 -34	23.1 - 24.5
Pedal support fastening bolt	43 - 48	31.1 34.7
Lock nut for barake pedal pull rod	14 - 17	10.1 - 12.3
Angular support for brake servo on metal sheet	22 - 24	15.9 - 17.3
Lock nut for thrust rod/clutch release	Note 1	17 - 20
Fastening nut for ring bolt on tension spring/clutch pedal		7 - 8.2
Angular support on brake servo		22 - 24
Relay lever on brake pedal bearing block		49 - 54
		12.3 - 14.5
		5.1 - 6
		15.9 - 17.3
		35.4 - 39

Note 1: 1600-2 (mechanical clutch)

Wheels:

	Nm	lb-ft
Wheel nuts or studs	81 - 89	59 - 64

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