

2008 BMW X5 48i

2006-07 ENGINE Engine - Technical Data - V8 (N62TU)

2006-07 ENGINE**Engine - Technical Data - V8 (N62TU)****ENGINE, GENERAL****11 00 ENGINE IN GENERAL B40****ENGINE IN GENERAL SPECIFICATION B40**

Cylinder		8
Bore	mm	87
Stroke	mm	84.1
Effective displacement	cm ³	4000
Compression ratio	:1	10.5
Max. permissible engine speed	rpm	6500
Permissible constant speed	rpm	6500

11 00 ENGINE IN GENERAL B48**ENGINE IN GENERAL SPECIFICATION B48**

Cylinder		8
Bore	mm	93
Stroke	mm	88.3
Effective displacement	cm ³	4799
Compression ratio	:1	10.5
Max. permissible engine speed	rpm	6500 +/-50
Permissible constant speed	rpm	6500

ENGINE BLOCK**11 11 ENGINE BLOCK, CYLINDER CRANKCASE****ENGINE BLOCK, CYLINDER CRANKCASE B40 SPECIFICATION**

Bore diameter stage 0 a)	mm	87.000 ^{+0.014}
Bore diameter stage 1 a)	mm	87.250 ^{+0.014}
Bore diameter stage 2 a)	mm	87.500 ^{+0.014}
Permitted out-of-round of cylinder bore a)	mm	0.007
Permitted conicity of cylinder bore a)	mm	0.01
Permissible total wear tolerance between piston and cylinder	mm of 3160	0.10

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(engine operated)

a. new status or recondition

11 11 ENGINE BLOCK, CYLINDER CRANKCASE**ENGINE BLOCK, CYLINDER CRANKCASE B48 SPECIFICATION**

Bore diameter stage 0 a)	mm	93.000 ^{+0.014}
Bore diameter stage 1 a)	mm	93.250 ^{+0.014}
Bore diameter stage 2 a)	mm	93.500 ^{+0.014}
Permitted out-of-round of cylinder bore a)	mm	0.007
Permitted conicity of cylinder bore a)	mm	0.01
Permissible total wear tolerance between piston and cylinder (engine operated)	mm	0.10

a. new status or recondition

CYLINDER HEAD WITH COVER**11 12 CYLINDER HEAD WITH COVER****CYLINDER HEAD WITH COVER N62TU SPECIFICATION**

Cylinder head height: Original dimension	mm	133.0 +/- 0.07
Machining limit	mm	132.7 +/- 0.07
Valve guides are not available as replacement parts.		
Inside diameter of installed valve guide		
Standard	mm	6.0 H7
Tilt clearance, maximum (wear between valve and valve guide)	mm	0.5
Bearing of camshaft		
Guide bearing (width)	mm	14.035-13.993

11 12 CYLINDER HEAD WITH VALVE SEAT COVER B40**CYLINDER HEAD WITH VALVE SEAT COVER N62TU B40 SPECIFICATION**

Valve seat angle	17 ⁷⁹ of 3160	45
Correction angle: outer	°	15

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Correction angle: inner	°	60
Valve seat width: Inlet	mm	1.25+/-0.25
Valve seat width: Exhaust	mm	1.65+/-0.25

11 12 CYLINDER HEAD WITH VALVE SEAT COVER B48**CYLINDER HEAD WITH VALVE SEAT COVER B48 SPECIFICATION**

Valve seat angle	°	45
Correction angle: outer	°	15
Correction angle: inner	°	60
Valve seat width: Inlet	mm	1.25+/-0.25
Valve seat width: Exhaust	mm	1.65+/-0.25

CRANKSHAFT WITH BEARING**11 21 CRANKSHAFT AND BEARINGS N62TU****CRANKSHAFT AND BEARINGS N62TU SPECIFICATION**

Ground sizes of main bearing journals	Bearing point 1	
Standard yellow	mm	69.974 ^{+0.006}
Standard green	mm	69.967 ^{+0.006}
Original violet	mm	69.961 ^{+0.005}
Undersize 1 (U 0.25) yellow	mm	69.724 ^{+0.006}
Undersize 1 (U 0.25) green	mm	69.717 ^{+0.006}
Stage 1 (U 0.25) violet	mm	69.711 ^{+0.005}
Undersize 2 (U 0.50) yellow	mm	69.474 ^{+0.006}
Undersize 2 (U 0.50) green	mm	69.467 ^{+0.006}
Stage 2 (U 0.50) violet	mm	69.461 ^{+0.005}
Crankshaft bearing clearance, radial	mm	0.024-0.052
Maximum permitted runout on central crankshaft journal (crankshaft supported at bearing journals 1 and 5).	mm	0.15

11 21 CRANKSHAFT AND BEARINGS N62TU**CRANKSHAFT AND BEARINGS N62TU SPECIFICATION**

Ground sizes of main bearing journals	Bearing points 2 to 7	

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Standard yellow	mm	69.984 ^{+0.006}
Standard green	mm	69.977 ^{+0.006}
Original violet	mm	69.971 ^{+0.005}
Undersize 1 (U 0.25) yellow	mm	69.734 ^{+0.006}
Undersize 1 (U 0.25) green	mm	69.727 ^{+0.006}
Stage 1 (U 0.25) violet	mm	69.721 ^{+0.005}
Undersize 2 (U 0.50) yellow	mm	69.484 ^{+0.006}
Undersize 2 (U 0.50) green	mm	69.477 ^{+0.006}
Stage 2 (U 0.50) violet	mm	69.471 ^{+0.005}
Crankshaft bearing clearance, radial	mm	0.024-0.052
Maximum permitted runout on central crankshaft journal (crankshaft supported at bearing journals 1 and 5).	mm	0.15

11 21 INSPECTING**CRANKSHAFT AND BEARINGS N62TU SPECIFICATION**

Grinding stages, crankshaft guide bearing		
Standard	mm	28.0 F8
Size 1	mm	28.2 F8
Size 2	mm	28.4 F8
Crankshaft axial play	mm	0.080-0.246

11 21 CRANKSHAFT AND BEARINGS N62TU**CRANKSHAFT AND BEARINGS N62TU SPECIFICATION**

Ground sizes of conrod bearing journals		
Standard	mm	54.00 ^{-0.009} -0.025
Size 1	mm	53.75 ^{-0.009} -0.025
Size 2	mm	53.50 ^{-0.009} -0.025
Radial conrod bearing play	mm	0.028-0.070

VIBRATION DAMPER**11 23 VIBRATION DAMPER N62TU**

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VIBRATION DAMPER N62TU SPECIFICATION

Max. permitted radial runout (drive levels)	mm	0.25
Max. permitted axial runout (drive levels)	mm	0.25

CONNECTING ROD WITH BEARING**11 24 CONNECTING RODS AND BEARINGS N62TU****CONNECTING RODS AND BEARINGS N62TU SPECIFICATION**

Large connecting rod eye bore diameter (without bearing shells)	mm	57.600 ^{+0.016}
Conrod bushing: Inside diameter	mm	21 ^{+0.014} _{+0.006}
Permissible total deviation of connecting rods in one engine (without bearing shells)	g	+/-4

PISTON WITH RINGS AND PIN**11 25 PISTONS WITH RINGS AND PINS N62TU****PISTONS WITH RINGS AND PINS N62TU SPECIFICATION**

1st groove		
Height	mm	1.2 ^{-0.010} _{-0.030}
End clearance	mm	0.1-0.3
Axial play	mm	0.020-0.070
2nd groove		
Height	mm	1.5 ^{-0.010} _{-0.030}
End clearance	mm	0.20-0.40
Axial play	mm	0.020-0.060
3rd groove		
Height	mm	cannot be measured
End clearance	mm	0.2-0.9
Axial play	mm	cannot be measured

11 25 PISTONS WITH RINGS AND PINS N62TU B40**PISTONS WITH RINGS AND PINS B40 SPECIFICATION**

Piston and pin are paired to each other - replace together only.	1782 of 3160	

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Measuring point "A" (position)	mm	11
Piston diameter at measuring point "A"		
Original, stage 0 (new dimension)	mm	86.985 +/- 0.014
Oversize, stage 1 (new dimension)	mm	86.235 +/- 0.014
Oversize, stage 2 (new dimension)	mm	86.485 +/- 0.014
Piston installation clearance (piston new)	mm	0.001-0.044
Piston installation clearance (piston worn)	mm	0.026-0.073
Permissible total wear tolerance between piston and cylinder (engine operated)	mm	0.10

11 25 PISTONS WITH RINGS AND PINS N62TU**PISTONS WITH RINGS AND PINS N62TU B48 SPECIFICATION**

Piston and pin are paired to each other - replace together only.		
Measuring point "A" (position)	mm	18
Piston diameter at measuring point "A"		
Original, stage 0 (new dimension)	mm	93.986 +/- 0.016
Oversize, stage 1 (new dimension)	mm	93.236 +/- 0.016
Oversize, stage 2 (new dimension)	mm	93.486 +/- 0.016
Piston installation clearance (piston new)	mm	0.001-0.044
Piston installation clearance (piston worn)	mm	0.026-0.073
Permissible total wear tolerance between piston and cylinder (engine operated)	mm	0.10

CAMSHAFT**11 31 CAMSHAFT N62TU****CAMSHAFT N62TU SPECIFICATION**

Guide bearing (width)	mm	14.100 ^{+0.043}
Radial runout	mm	0.040-0.082
Axial play	mm	0.065-0.150

VALVES WITH SPRINGS

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11 34 VALVES WITH SPRINGS N62TU**VALVES WITH SPRINGS N62TU B40 SPECIFICATION**

Plate dia.		
Inlet	mm	35.0
Exhaust	mm	29.0
Stem bore diameter		
Inlet	mm	6.0 ^{-0.025} -0.040
Exhaust	mm	6.0 ^{-0.033} -0.047

11 34 VALVES WITH SPRINGS N62TU B44**VALVES WITH SPRINGS N62TU B48 SPECIFICATION**

Plate dia.		
Inlet	mm	35.0
Exhaust	mm	29.0
Stem bore diameter		
Inlet	mm	6.0 ^{-0.025} -0.040
Exhaust	mm	6.0 ^{-0.033} -0.047

VARIABLE VALVE GEAR**11 37 VARIABLE VALVE GEAR N62TU****VARIABLE VALVE GEAR N62TU SPECIFICATION**

Axial clearance of eccentric shaft	mm	0.100-0.200
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OIL SUPPLY**11 40 OIL SUPPLY N62TU****OIL SUPPLY SPECIFICATION**

Oil grades and consumption: refer to BMW SERVICE OPERATING FLUIDS .		
Oil change volume with oil filter	ltr.	8.0

OIL PUMP WITH FILTER AND DRIVE**11 41 OIL PUMP WITH STRAINER AND DRIVE N62TU**

OIL PUMP WITH STRAINER AND DRIVE N62TU SPECIFICATION

Oil pressure at idle speed with engine at operating temperature	min bar	1.0
Control pressure with engine at operating temperature	bar	4.0-6.0

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