



## Specifications

Description			Specifications	Limit
General				
Type			V-type, DOHC	
Number of cylinders			6	
Bore			92 mm (3.6220 in.)	
Stroke			83.8 mm (3.2992 in.)	
Total displacement			3,342 cc (203.94 cu.in.)	
Compression ratio			10.0 : 1	
Firing order			1-2-3-4-5-6	
Valve timing				
Intake	Opens		BTDC 45° - ATDC 40°	
	Closes		ABDC 23° - ABDC 108°	
Exhaust	Opens		BBDC 48° - ABDC 2°	
	Closes		ATDC 0° - ATDC 50°	
Cylinder head				
Flatness of gasket surface			Less than 0.05 mm (0.0019 in.) [Less than 0.02 mm (0.0008 in.) / 150x150]	
Flatness of manifold mounting	Intake		Less than 0.1 mm (0.0039 in.) [Less than 0.03 mm (0.001 in.) / 110x110]	
	Exhaust		Less than 0.1 mm (0.0039 in.) [Less than 0.03 mm (0.001 in.) / 110x110]	
Camshaft				
Cam height	LH, RH Camshaft	Intake	47.20 mm (1,8582 in.)	
		Exhaust	45.40 mm (1,7875 in.)	
Journal outer diameter	LH, RH Camshaft	Intake	No.1 : 30.954 - 30.968 mm (1.2187 - 1.2192 in.) No.2, 3, 4: 23.963 - 23.977 mm (0.9434 - 0.9440 in.)	
		Exhaust	No.1 : 27.963 - 27.977 mm (1.1009 - 1.1015 in.) No.2, 3, 4 : 23.963 - 23.977 mm (0.9434 - 0.9440 in.)	
Bearing oil clearance	LH, RH camshaft	Intake	No.1 : 0.037 - 0.067 mm (0.0015 - 0.0026 in.) No.2, 3, 4 : 0.030 - 0.058 mm (0.0012 - 0.0023 in.)	
		Exhaust	No.1 : 0.028 - 0.058 mm (0.0011 - 0.0023 in.) No.2, 3, 4 : 0.030 - 0.058 mm (0.0012 - 0.0023 in.)	
End play	Exhaust		0.04 - 0.18 mm (0.0016 - 0.0071 in.)	
	Intake		0.02 - 0.18 mm (0.0008 - 0.0071 in.)	
Valve				
Valve length	Intake		105.27 mm (4.1445 in.)	
	Exhaust		105.30 mm (4.1457 in.)	
Stem outer diameter	Intake		5.465 - 5.480 mm (0.2152 - 0.2157 in.)	
	Exhaust		5.458 - 5.470 mm (0.2149 - 0.2154 in.)	
Face angle			45.25° - 45.75°	
Thickness of valve head (margin)	Intake		1.0 mm (0.0394 in.)	
	Exhaust		1.1 mm (0.0433 in.)	
Valve stem to valve guide clearance	Intake		0.020 - 0.047 mm (0.0008 - 0.0019 in.)	
	Exhaust		0.030 - 0.054 mm (0.0012 - 0.0021 in.)	
Valve guide				
Inner diameter	Intake		5.500 - 5.512 mm (0.2165 - 0.2170 in.)	

Length	Exhaust		5.500 - 5.512 mm (0.2165 - 0.2170 in.)	
	Intake		41.8 - 42.2 mm (1.6457 - 1.6614 in.)	
	Exhaust		41.8 - 42.2 mm (1.6457 - 1.6614 in.)	
Valve seat				
Width of seat contact	Intake		1.15 - 1.45 mm (0.05118 - 0.05709 in.)	
	Exhaust		1.35 - 1.65 mm (0.05315 - 0.06496 in.)	
Seat angle	Intake		44.75° - 45.20°	
	Exhaust		44.75° - 45.20°	
Valve spring				
Free length	Intake		46.20 mm (1.8189 in.)	
	Exhaust		54.91 mm (2.1618 in.)	
Load	Intake	When mounting height 34 mm (1.3385 in.)	19.4 ± 0.8 kgf (42.7 ± 1.8 lbf)	
		When mounting height 23.8 mm (0.9370 in.)	39.3 ± 1.2 kgf (86.6 ± 2.7 lbf)	
	Exhaust	When mounting height 36 mm (1.4173 in.)	28.6 ± 1.2 kgf (62.9 ± 2.7 lbf)	
		When mounting height 27.3 mm (1.0866 in.)	44.4 ± 1.4 kgf (97.8 ± 3.1 lbf)	
Out of squareness			Less than 1.5°	
MLA				
MLA outer diameter	Intake		34.964 - 34.980 mm (1.3765 - 1.3772 in.)	
	Exhaust		34.964 - 34.980 mm (1.3765 - 1.3772 in.)	
Cylinder head tappet bore inner diameter	Intake		35.000 - 35.025 mm (1.3779 - 1.3789 in.)	
	Exhaust		35.000 - 35.025 mm (1.3779 - 1.3789 in.)	
MLA to tappet bore clearance	Intake		0.020 - 0.061 mm (0.0008 - 0.0024 in.)	
	Exhaust		0.020 - 0.061 mm (0.0008 - 0.0024 in.)	
Valve clearance (At 20°C [68°F])				
Intake			0.17 - 0.23 mm (0.0067 - 0.0091 in.)	
Exhaust			0.32 - 0.38 mm (0.0126 - 0.0150 in.)	
Cylinder block				
Cylinder bore			92.00 - 92.03 mm (3.6220 - 3.6232 in.)	
Flatness of gasket surface			Less than 0.05 mm (0.0019 in.) [Less than 0.02 mm (0.0008 in.) / 150x150]	
Piston				
Piston outer diameter			91.95 - 91.98 mm (3.6201 - 3.6213 in.)	
Piston to cylinder clearance			0.04 - 0.06 mm (0.0016 - 0.0024 in.)	
Ring groove width	No. 1 ring groove		1.23 - 1.25 mm (0.0484 - 0.0492 in.)	
	No. 2 ring groove		1.53 - 1.55 mm (0.0602 - 0.0610 in.)	
	Oil ring groove		2.01 - 2.03 mm (0.0791 - 0.0799 in.)	
Piston ring				
Side clearance	No. 1 ring		0.04 - 0.08 mm (0.0015 - 0.0031 in.)	
	No. 2 ring		0.04 - 0.08 mm (0.0015 - 0.0031 in.)	

	Oil ring	0.02 - 0.06 mm (0.0008 - 0.0024 in.)	
End gap	No. 1 ring	0.17 - 0.27 mm (0.0067 - 0.0106 in.)	
	No. 2 ring	0.30 - 0.40 mm (0.0118 - 0.0157 in.)	
	Oil ring	0.20 - 0.40 mm (0.0078 - 0.0157 in.)	
<b>Piston pin</b>			
Piston pin outer diameter		22.997 - 23.000 mm (0.9054 - 0.9055 in.)	
Piston pin hole inner diameter		23.004 - 23.010 mm (0.9057 - 0.9059 in.)	
Piston pin hole clearance		0.004 - 0.015 mm (0.00015 - 0.00059 in.)	
Connecting rod small end inner diameter		23.005 - 23.016 mm (0.9057 - 0.9061 in.)	
Connecting rod small end hole clearance		0.005 - 0.019 mm (0.00019 - 0.00074 in.)	
<b>Connecting rod</b>			
Connecting rod big end inner diameter		58.000 - 58.018 mm (2.2834 - 2.2842 in.)	
Connecting rod bearing oil clearance		0.042 - 0.060 mm (0.0017 - 0.0024 in.)	
Side clearance		0.1 - 0.25 mm (0.0039 - 0.0098 in.)	
<b>Crankshaft</b>			
Main journal outer diameter		68.942 - 68.960 mm (2.7142 - 2.7149 in.)	
Pin journal outer diameter		54.954 - 54.972 mm (2.1635 - 2.1642 in.)	
Main bearing oil clearance		0.023 - 0.041 mm (0.0009 - 0.0016 in.)	
End play		0.10 - 0.28 mm (0.0039 - 0.0110 in.)	
<b>Oil pump</b>			
Regulating pressure	Low pressure	2.04 kgf/cm <sup>2</sup> (2 bar)	
	High pressure	4.08 kgf/cm <sup>2</sup> (4 bar)	
<b>Cooling system</b>			
Cooling method		Forced circulation with water pump	
Coolant quantity		Approx. 11.6 L (3.06 U.S.gal., 12.26 U.S.qt., 10.20 Imp.qt.)	
Thermostat	Type	Wax pellet type	
	Opening temperature	100±2°C (212±3.6°F)	
	Fully opened temperature	113°C (235.4°F)	
	Full lift	8 mm (0.3150 in.) MIN	
Radiator cap	Main valve opening pressure	93.16 - 122.58 kpa (0.95 - 1.25 kg/cm <sup>2</sup> , 13.51 - 17.78 psi)	
	Vacuum valve opening pressure	0 - 6.86 kpa (0 - 0.07 kg/cm <sup>2</sup> , 0 - 0.99 psi)	

## Sealant

Description	Specifications
Cylinder head and cylinder block between gap	THREE BOND 1217H
Timing chain cover	
Cylinder head cover	
Cylinder head	
Oil seal case	
Lower oil pan	
Upper oil pan	