

Unit of length: mm (in)

Engine Block — Section 7

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Cylinder block	Warpage of deck surface		0.07 (0.003) max.	0.10 (0.004)
	Bore diameter	A	90.010 – 90.020 (3.5437 – 3.5441)	90.070 (3.5461)
		B	90.000 – 90.010 (3.5433 – 3.5437)	90.070 (3.5461)
	Bore taper		—	0.05 (0.002)
	Reboring limit		—	0.5 (0.02)
Piston	Skirt O.D. at 14.0 mm (0.55 in) from bottom of skirt	No Letter (A)	89.980 – 89.990 (3.5425 – 3.5429)	89.970 (3.5421)
		B	89.970 – 89.980 (3.5421 – 3.5425)	89.960 (3.5417)
	Clearance in cylinder		0.02 – 0.04 (0.001 – 0.002)	0.08 (0.003)
	Groove width (for ring)	Top	1.530 – 1.540 (0.0602 – 0.0606)	1.56 (0.0614)
		Second	1.220 – 1.230 (0.0480 – 0.0484)	1.25 (0.049)
Piston ring	Ring-to-groove clearance	Oil	2.805 – 2.820 (0.1104 – 0.1110)	2.84 (0.112)
	Ring end gap	Top	0.055 – 0.080 (0.0022 – 0.0031)	0.13 (0.005)
		Second	0.030 – 0.055 (0.0012 – 0.0022)	0.13 (0.005)
		Oil	0.25 – 0.40 (0.010 – 0.016)	0.70 (0.028)
Piston pin	O.D. Pin-to-piston clearance		0.40 – 0.55 (0.016 – 0.022)	0.85 (0.033)
			0.20 – 0.70 (0.008 – 0.028)*1	0.80 (0.031)
			0.20 – 0.50 (0.008 – 0.020)*2	0.80 (0.031)
Connecting rod	Pin-to-rod clearance		21.961 – 21.965 (0.8646 – 0.8648)	21.953 (0.8643)
	Small end bore diameter		–0.005 – 0.002 (–0.0002 – 0.0001)	0.005 (0.0002)
	Large end bore diameter	Nominal	0.005 – 0.015 (0.0002 – 0.0006)	0.02 (0.0008)
	End play installed on crankshaft		21.970 – 21.976 (0.8650 – 0.8652)	—
Crankshaft	Main journal diameter		57.0 (2.24)	—
	Rod journal diameter		0.15 – 0.30 (0.006 – 0.012)	0.40 (0.016)
	Taper		67.976 – 68.000 (2.6762 – 2.6772)	—
	Out-of-round		53.970 – 53.994 (2.1248 – 2.1257)	—
	End play		0.005 (0.0002) max.	0.010 (0.0004)
	Total runout		0.004 (0.0002) max.	0.010 (0.0004)
Bearings	Main bearing-to-journal oil clearance Rod bearing-to-journal oil clearance		0.10 – 0.29 (0.004 – 0.011)	0.45 (0.018)
			0.020 (0.0008) max.	0.030 (0.0012)
Bearings	Main bearing-to-journal oil clearance Rod bearing-to-journal oil clearance		0.020 – 0.044 (0.0008 – 0.0017)	0.05 (0.002)
			0.022 – 0.046 (0.0009 – 0.0018)	0.05 (0.002)

*1: RIKEN manufactured piston ring.

*2: TEIKOKU PISTON RING manufactured piston ring.

Engine Lubrication — Section 8

	MEASUREMENT		STANDARD (NEW)	SERVICE LIMIT
Engine oil	Capacity ℓ (US qt)		5.3 (5.6) for engine overhaul 4.6 (4.9) for oil change, including filter 4.3 (4.5) for oil change, without filter	
Oil pump	Inner-to-outer rotor radial clearance		0.02 – 0.16 (0.001 – 0.006)	0.20 (0.008)
	Housing-to-outer rotor radial clearance		0.10 – 0.18 (0.004 – 0.007)	0.20 (0.008)
	Housing-to-rotor axial clearance		0.02 – 0.07 (0.001 – 0.003)	0.12 (0.005)
Relief valve	Pressure setting at oil temperature 176°F (80°C) kPa (kgf/cm ² , psi)	at idle at 3,000 rpm	70 (0.7, 10) min. 340 (3.5, 50) min.	