

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	93.010 – 93.020 (3.6618 – 3.6622)	93.07 (3.664)
		93.000 – 93.010 (3.6614 – 3.6618)	93.07 (3.664)
		90.010 – 90.020 (3.5437 – 3.5441)	90.07 (3.546)
	Bore taper	90.000 – 90.010 (3.5433 – 3.5437)	90.07 (3.546)
	Reboring limit (A/T)	—	0.05 (0.002)
		—	0.5 (0.02)
Piston	Skirt O.D. [At 17 mm (0.67 in) from bottom of skirt]	M/T NO LETTER (A)	92.990 – 93.003 (3.6610 – 3.6615)
		B	92.980 – 92.993 (3.6606 – 3.6611)
		A/T NO LETTER (A)	89.986 – 90.004 (3.5427 – 3.5435)
		B	89.976 – 89.994 (3.5424 – 3.5431)
	Clearance in cylinder	M/T	0.007 – 0.030 (0.0002 – 0.0012)
		A/T	0.006 – 0.034 (0.0002 – 0.0014)
	Groove width (for ring)	M/T Top	1.220 – 1.235 (0.0480 – 0.0486)
		Second	1.220 – 1.235 (0.0480 – 0.0486)
		Oil	2.505 – 2.525 (0.0986 – 0.0994)
		A/T Top	1.22 – 1.23 (0.0480 – 0.0484)
		Second	1.22 – 1.23 (0.0480 – 0.0484)
		Oil	2.805 – 2.820 (0.1104 – 0.1110)
Connecting rod	End play installed on crankshaft	0.15 – 0.30 (0.006 – 0.012)	0.40 (0.016)
Piston ring	Ring-to-groove clearance	M/T Top	0.035 – 0.065 (0.0014 – 0.0026)
		Second	0.030 – 0.060 (0.0012 – 0.0024)
		A/T Top	0.030 – 0.055 (0.0012 – 0.0022)
		Second	0.030 – 0.055 (0.0012 – 0.0022)
	Ring end gap	Top	0.20 – 0.30 (0.008 – 0.012)
		M/T	0.25 – 0.40 (0.010 – 0.016)
		A/T	0.35 – 0.50 (0.014 – 0.020)
		Second	0.20 – 0.70 (0.008 – 0.028)
Crankshaft	Main journal diameter	63.976 – 64.000 (2.5187 – 2.5197)	—
	Journal taper	0.005 (0.0002) max.	0.010 (0.0004)
	Rod journal diameter	51.976 – 52.000 (2.0463 – 2.0472)	—
		49.976 – 50.000 (1.9676 – 1.9685)	—
	Journal out-of-round	0.004 (0.0002) max.	0.006 (0.0002)
	End play	0.10 – 0.35 (0.004 – 0.014)	0.45 (0.018)
Bearings	Runout	0.015 (0.0006) max.	0.03 (0.001)
	Main bearing-to-journal oil clearance	0.024 – 0.048 (0.0009 – 0.0019)	0.050 (0.0020)
	Rod bearing-to-journal oil clearance	0.040 – 0.064 (0.0016 – 0.0025)	0.064 (0.0025)

Engine Lubrication — Section 8

	MEASUREMENT	STANDARD (NEW)	SERVICE LIMIT
Engine oil	Capacity ℓ (US qt)	6.3 (6.7) for engine overhaul 5.0 (5.3) for oil change, including filter 4.3 (4.5) for oil change	
Oil pump	Displacement ℓ (US qt)/min at rpm	68 (72) at 6,000	
	Inner-to-outer rotor radial clearance	0.05 – 0.21 (0.002 – 0.008)	0.23 (0.009)
	Pump housing-to-outer rotor radial clearance	0.11 – 0.20 (0.004 – 0.008)	0.21 (0.008)
	Pump housing-to-outer rotor axial clearance	0.02 – 0.07 (0.001 – 0.003)	0.12 (0.005)
Relief valve	Pressure setting with 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.	