

1KR-FE ENGINE MECHANICAL > SERVICE DATA

Engine	Ignition timing		0 to 15° BTDC	
	Idle speed		730 to 830 rpm	
	Compression	Standard	1,422 kPa (14.5 kgf/cm ² , 206 psi)	
		Minimum	1,079 kPa (11.0 kgf/cm ² , 156 psi)	
		Difference between each cylinder	147 kPa (1.5 kgf/cm ² , 21 psi)	
	CO concentration		0.2 % or less	
	HC concentration		70 ppm or less	
	Fan and generator V belt deflection	New belt	7 to 8 mm (0.28 to 0.31 in.)	
		Used belt	9 to 11 mm (0.35 to 0.43 in.)	
	Valve clearance (Cold)	Intake	0.145 to 0.235 mm (0.00571 to 0.00925 in.)	
Exhaust		0.275 to 0.365 mm (0.01083 to 0.01437 in.)		
Cylinder head sub-assembly	Warpage	Maximum	0.05 mm (0.0020 in.)	
Connecting rod	Thrust clearance	Standard	0.02 to 0.04 mm (0.0008 to 0.0016 in.)	
		Maximum	0.30 to mm (0.0118 in.)	
	Oil clearance	Standard	0.021 to 0.046 mm (0.00083 to 0.00181 in.)	
		Maximum	0.0146 mm (0.00181 in.)	
	Circle runout	Maximum	0.03 mm (0.0012 in.)	
	Main journal diameter	Standard	43.988 to 44.000 mm (1.73181 to 1.73228 in.)	
		Maximum	0.03 mm (0.0012 in.)	
Crankshaft pin diameter	Standard	39.992 to 40.000 mm (1.57449 to 1.57480 in.)		
	Maximum elliptic degree and tapered amount	0.03 mm (0.0012 in.)		
Timing chain guide	Wear	Maximum	0.5 mm (0.020 in.)	
Timing chain tension arm	Wear	Maximum	0.5 mm (0.020 in.)	
Camshaft	Circle runout	Maximum	0.03 mm (0.0012 in.)	
	Cam lobe height	Standard	Intake: 41.54 to 41.64 mm (1.6354 to 1.6394 in.) Exhaust: 40.97 to 41.07 mm (1.6130 to 1.6169 in.)	

		Minimum	Intake: 41.44 mm (1.6315 in.) Exhaust: 40.87 mm (1.6091 in.)
	Thrust clearance	Standard	0.100 to 0.225 mm (0.00394 to 0.00886 in.)
		Maximum	0.240 mm (0.00944 in.)
Camshaft bearing No. 1	Oil clearance	Standard	Intake: 0.025 to 0.061 mm (0.00098 to 0.00240 in.) Exhaust: 0.037 to 0.073 mm (0.00146 to 0.00287 in.)
Camshaft bearing No. 2	Oil clearance	Standard	Intake: 0.035 to 0.072 mm (0.00138 to 0.00283 in.) Exhaust: 0.035 to 0.072 mm (0.00138 to 0.00283 in.)
Inner compression spring	Deviation	Maximum	1.5 mm (0.059 in.)
	Free length		51.63 mm (2.0327 in.)
Valve	Overall length	Standard	Intake: 88.39 mm (3.4799 in.) Exhaust: 89.11 mm (3.5083 in.)
	Stem end diameter		3.9 to 4.5 mm (0.154 to 0.177 in.)
	Margin thickness	Standard	Intake: 1.05 to 1.45 mm (0.413 to 0.0571 in.) Exhaust: 1.10 to 1.50 mm (0.0433 to 0.0591 in.)
		Minimum	Intake: 0.7 mm (0.028 in.) Exhaust: 0.7 mm (0.028 in.)
	Diameter	Standard	Intake: 27.35 to 27.65 mm (1.0768 to 1.0886 in.) Exhaust: 23.45 to 23.75 mm (0.9232 to 0.9350 in.)
	Stem diameter	Standard	Intake: 4.970 to 4.985 mm (0.19567 to 0.19626 in.) Exhaust: 4.965 to 4.980 mm (0.19547 to 0.19606 in.)
Valve seat	Width	Standard	Intake: 1.20 to 1.70 mm (0.0472 to 0.0669 in.) Exhaust: 1.11 to 1.61 mm (0.0437 to 0.0634 in.)
Valve guide bushing	Inside diameter	Standard	5.01 to 5.03 mm (0.19724 to 0.19803 in.)
	Oil clearance	Standard	Intake: 0.025 to 0.060 mm (0.00098 to 0.00236 in.) Exhaust: 0.030 to 0.065 mm (0.00118 to 0.00256 in.)
		Maximum	Intake: 0.008 mm (0.00315 in.) Exhaust: 0.10 mm (0.00394 in.)
Cylinder head bolt	Length	Maximum	123.5 mm (4.862 in.)
Cylinder block	Warpage	Maximum	0.05 mm (0.0020 in.)
			71.000 to 71.013 mm (2.79527 in.)

Cylinder bore	Diameter	Standard	to 2.79578 in.)
		Maximum	71.013 mm (2.79578 in.)
		Maximum elliptic degree and tapered amount	0.02 mm (0.0008 in.)
Piston	Diameter	Standard	70.921 to 70.931 mm (2.79216 to 2.79255 in.)
		Minimum	70.921 mm (2.79216 in.)
	Oil clearance	Standard	0.080 to 0.103 mm (0.00315 to 0.00406 in.)
		Maximum	0.103 mm (0.00406 in.)
	Ring groove clearance	Standard	No. 1 ring: 0.02 to 0.07 mm (0.0008 to 0.0028 in.) No. 2ring: 0.02 to 0.06 mm (0.0008 to 0.0024 in.) Oil ring: 0.020 to 0.065 mm (0.00079 to 0.00256 in.)
		Maximum	No. 1 ring: 0.07 mm (0.0028 in.) No. 2ring: 0.06 mm (0.0024 in.) Oil ring: 0.065 mm (0.00256 in.)
Piston ring	End gap	Standard	No. 1 ring: 0.20 to 0.30 mm (0.0079 to 0.0118 in.) No. 2ring: 0.40 to 0.60 mm (0.0157 to 0.0236 in.) Oil ring: 0.10 to 0.40 mm (0.0039 to 0.0157 in.)
		Maximum	No. 1 ring: 0.79 mm (0.0311 in.) No. 2ring: 0.75 mm (0.0295 in.) Oil ring: 0.69 mm (0.0272 in.)
Crankshaft thrust washer	Thickness	Standard	1.94 to 1.99 mm (0.0764 to 0.783 in.)
Connecting rod bolt	Diameter	Minimum	6.4 mm (0.252 in.)

