

TECHNICAL DATA

TECHNICAL DATA TD-1
ENGINE TD-1

MANUAL TRANSMISSION TD-11

TECHNICAL DATA

ENGINE F2

Item		Specification	
Cylinder head			
Height	(mm {in})	Standard	91.95—92.05 {3.621—3.624}
		Maximum grinding	0.20 {0.008}
Cylinder head gasket contact surfaces distortion	(mm {in})	Maximum	0.15 {0.006}
Manifold contact surface distortion	(mm {in})	Maximum	0.15 {0.006}
		Maximum grinding	0.20 {0.008}
Valve and valve guide			
Margin thickness	(mm {in})	IN	CARB: 1.80—2.20 {0.071—0.086} CIS: 0.8—1.2 {0.032—0.047}
		EX	CARB: 1.30—1.70 {0.052—0.066} CIS: 1.30—1.70 {0.052—0.066}
Valve length	IN	Standard	CARB: 115.61—116.01 {4.552—4.567} CIS: 111.69—112.09 {4.398—4.412}
		Minimum	CARB: 115.51 {4.548} CIS: 111.39 {4.386}
	EX	Standard	CARB: 116.01—116.41 {4.568—4.583} CIS: 111.49—111.89 {4.390—4.405}
		Minimum	CARB: 115.71 {4.556} CIS: 111.19 {4.378}
Valve stem diameter	IN	Standard	CARB: 6.970—6.985 {0.2745—0.2749} CIS: 8.030—8.045 {0.3162—0.3167}
		Maximum	CARB: 6.920 {0.2724} CIS: 7.980 {0.3142}
	EX	Standard	CARB: 6.965—6.980 {0.2743—0.2748} CIS: 8.025—8.040 {0.3160—0.3165}
		Maximum	CARB: 6.915 {0.2722} CIS: 7.975 {0.3140}
Valve guide inner diameter	(mm {in})	Standard	CARB: 7.010—7.030 {0.2760—0.2767} CIS: 8.070—8.090 {0.3178—0.3185}
Valve guide protrusion height		(mm {in})	CARB: 19.8—20.3 {0.780—0.799} CIS: 19.1—19.6 {0.752—0.771}
Valve seat			
Valve seat contact width		(mm {in})	1.2—1.6 {0.048—0.062}
Valve seat angle	IN		45 °
	EX		45 °
Valve seat sinking (valve protrusion height)	(mm {in})	Standard	CARB: 49.7 {1.957} CIS: 46.5 {1.831}
		Maximum	CARB: 51.2 {2.016} CIS: 47.0 {1.850}

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Item			Specification
Valve spring			
Pressing force at valve spring height H (N {kgf, lbf})	IN	H: 41.0 mm {1.614 in} (CARB)	203.10—229.86 {20.71—23.44, 45.57—51.56}
		H Inner: 36.5 mm {1.437 in} Outer: 41.0 mm {1.614 in} (CIS)	Inner: 116.41—131.80 {11.87—13.44, 26.12—30.51} Outer: 243.70—267.03 {24.85—27.23, 54.67—59.90}
	EX	H: 41.0 mm {1.614 in} (CARB)	240.37—272.03 {24.51—27.74, 53.93—61.02}
		H Inner: 36.5 mm {1.437 in} Outer: 41.0 mm {1.614 in} (CIS)	Inner: 116.41—131.80 {11.87—13.44, 26.12—30.51} Outer: 243.70—267.03 {24.85—27.23, 54.67—59.90}
Out-of-square (mm {in})	IN	Maximum	CARB: 1.73 {0.068} CIS: Inner 1.6 {0.063}, Outer 1.8 {0.071}
	EX	Maximum	CARB: 1.76 {0.069} CIS: Inner 1.6 {0.063}, Outer 1.8 {0.071}
Valve seal			
Depth L (mm {in})			CARB: 21.4—22.2 {0.843—0.874} CIS: 19.1—19.6 {0.752—0.771}
Camshaft			
Camshaft runout (mm {in})		Maximum	0.03 {0.0012}
Cam lobe height (mm {in})	IN	Standard	CARB: 41.341 {1.6276} CIS: 38.059 {1.4984}
	EX	Standard	CARB: 41.851 {1.6477} CIS: 38.059 {1.4984}
Journal diameter (mm {in})		Standard	No.1, 5: 31.940—31.965 {1.2575—1.2585} No.2, 3, 4: 31.910—31.935 {1.2563—1.2572}
		Minimum	No.1, 5: 31.910 {1.2563} No.2, 3, 4: 31.880 {1.2551}
Journal oil clearance (mm {in})	Standard	No.1, 5	CARB: 0.035—0.060 {0.00138—0.00236} CIS: 0.035—0.085 {0.00138—0.0033}
		No.2, 3, 4	CARB: 0.065—0.090 {0.00256—0.00354} CIS: 0.065—0.115 {0.00256—0.00453}
	Maximum		0.15 {0.006}
End play (mm {in})		Standard	0.08—0.16 {0.00315—0.00629}
		Maximum	0.20 {0.008}
Pushing distance of the camshaft oil seal [from the edge of the cylinder head] (mm {in})			0 {0}
Rocker arm and rocker arm shaft			
Rocker arm inner diameter (mm {in})		Standard	CARB: 19.000—19.033 {0.7481—0.7493} CIS: 16.000—16.027 {0.6300—0.6309}
Rocker arm shaft outer diameter (mm {in})		Standard	CARB: 18.959—18.980 {0.7465—0.7472} CIS: 15.966—15.984 {0.6286—0.6292}
Oil clearance between rocker arm and shaft (mm {in})		Standard	CARB: 0.020—0.074 {0.00079—0.00291} CIS: 0.016—0.061 {0.00063—0.00240}
Cylinder block			
Height (mm {in})		Standard	301.43—301.57 {11.868—11.872}
		Maximum grinding	0.20 {0.008}
Distortion (mm {in})		Maximum	0.15 {0.006}

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Item			Specification
Cylinder bore diameter [Measure the cylinder bore at 70 mm {2.76 in} below the top surface] (mm {in})	Standard		86.000—86.019 {3.3859—3.3865}
	0.25 {0.01} oversize		86.250—86.269 {3.3957—3.3964}
	0.50 {0.02} oversize		86.500—86.519 {3.4056—3.4062}
Wear limit (mm {in})			0.15 {0.006}
Piston			
Piston diameter [Measured at 90 ° to pin bore axis and 18.0 mm {0.709 in} below oil ring groove] (mm {in})	Standard		85.943—85.965 {3.38358—3.38444}
	0.25 {0.01} oversize		86.193—86.215 {3.39342—3.39428}
	0.50 {0.02} oversize		86.443—86.465 {3.40327—3.40412}
Clearance between piston and cylinder oil (mm {in})	Standard		0.035—0.076 {0.0014—0.0029}
	Maximum		0.15 {0.006}
Piston ring			
Clearance between piston ring and ring groove (mm {in})	Top	Standard	CARB: 0.035—0.070 {0.0014—0.0027} CIS: 0.030—0.070 {0.012—0.0027}
	Second	Standard	0.030—0.070 {0.0012—0.0027}
	Oil	Standard	0.070—0.160 {0.0028—0.0062}
	Top, Second	Maximum	0.15 {0.0059}
	Oil	Maximum	0.17 {0.0067}
End gap [Measured in cylinder] (mm {in})	Top		0.20—0.35 {0.008—0.013}
	Second		0.15—0.30 {0.006—0.011}
	Oil		0.20—0.70 {0.008—0.027}
	Maximum		1.0 {0.039}
Piston pin			
Piston pin diameter (mm {in})	Standard		21.974—21.980 {0.8652—0.8653}
Piston pin bore diameter (mm {in})	Standard		21.988—21.998 {0.8657—0.8660}
Oil clearance between connecting rod and piston pin (mm {in})	Standard		−0.037—0.013 {−0.0014—0.0006}
Oil clearance between piston pin bore and piston pin (mm {in})	Standard		0.008—0.024 {0.00032—0.0094}
Connecting rod and connecting rod bearing			
Length (center to center) (mm {in})	Standard		158.45—158.55 {6.239—6.242}
Bending (mm {in})	Maximum		0.075 {0.0029}/50 {1.97}
Distortion (mm {in})	Maximum		0.180 {0.0070}/50 {1.97}
Connecting rod small end inner diameter (mm {in})	Standard		21.943—21.961 {0.8639—0.8646}
Connecting rod side clearance (mm {in})	Standard		0.110—0.262 {0.005—0.010}
	Maximum		0.30 {0.012}
Connecting rod bearing size (mm {in})	Standard		1.505—1.510 {0.0593—0.0594}
	0.25 {0.01} undersize		1.630—1.635 {0.0642—0.0643}
	0.50 {0.02} undersize		1.755—1.760 {0.0691—0.0692}
	0.75 {0.03} undersize		1.880—1.885 {0.0741—0.0742}
Connecting rod bearing oil clearance (mm {in})	Standard		0.027—0.067 {0.0011—0.0026}
	Maximum		0.10 {0.004}
Crankshaft			
Crankshaft runout (mm {in})	Maximum		0.03 {0.0012}

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Item		Specification
Main journal diameter (mm {in})	Standard	59.937—59.955 {2.3598—2.3604}
	0.25 {0.01} undersize	59.687—59.705 {2.3499—2.3505}
	0.50 {0.02} undersize	59.437—59.455 {2.3401—2.3407}
	0.75 {0.03} undersize	59.187—59.205 {2.3302—2.3309}
Main journal oil clearance (mm {in})	Standard	No.1, 2, 4, 5: 0.025—0.043 {0.00099—0.00169} No.3: 0.031—0.049 {0.00123—0.00192}
	Maximum	0.10 {0.004}
Main bearing size (mm {in})	Standard	No.1, 2, 4, 5: 2.004—2.022 {0.07890—0.07960} No.3: 2.004—2.019 {0.07890—0.07948}
	0.25 {0.01} undersize	2.129—2.139 {0.08382—0.08421}
	0.50 {0.02} undersize	2.254—2.264 {0.08874—0.08913}
	0.75 {0.03} undersize	2.379—2.389 {0.09367—0.09405}
Crank pin journal diameter (mm {in})	Standard	50.940—50.955 {2.0056—2.0060}
	0.25 {0.01} undersize	50.690—50.705 {1.9957—1.9962}
	0.50 {0.02} undersize	50.440—50.455 {1.9859—1.9864}
	0.75 {0.03} undersize	50.190—50.205 {1.9760—1.9765}
No.3 bearing width (mm {in})	Standard	27.94—27.99 {1.1000—1.1019}
	0.25 {0.01} undersize	28.04—28.09 {1.1040—1.1060}
	0.50 {0.02} undersize	28.12—28.17 {1.1071—1.1090}
	0.75 {0.03} undersize	28.20—28.25 {1.1103—1.1122}
Crankshaft end play (mm {in})	Standard	0.08—0.18 {0.00315—0.00708}
	Maximum	0.30 {0.012}
Timing belt		
Timing belt deflection [Applied pressure 98 N {10 kgf, 22 lbf}] (mm {in})		New: 8.0—9.0 {0.32—0.35} Used: 9.0—10.0 {0.36—0.39}
Tensioner spring free length (mm {in})		63.0 {2.48}
Oil pump		
Clearance between inner rotor tooth tip and outer rotor (mm {in})	Maximum	0.18 {0.007}
Clearance between outer rotor and body (mm {in})	Standard	0.090—0.176 {0.0036—0.0069}
	Maximum	0.20 {0.008}
Side clearance (mm {in})	Standard	0.03—0.09 {0.0012—0.0035}
	Maximum	0.10 {0.004}
Pressure spring free length (mm {in})		46.4 {1.827}
Pushing distance of the front oil seal [from the edge of the oil pump body] (mm {in})		0 {0}
Rear oil seal		
Pushing distance of the rear oil seal [from the edge of the rear cover] (mm {in})		0—0.5 {0—0.019}

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Item				Specification
Cylinder head				
Cylinder head gasket contact surfaces distortion (mm {in})		Maximum		0.15 {0.006}
		Maximum grinding		0.20 {0.008}
Manifold contact surfaces distortion (mm {in})		Maximum		0.15 {0.006}
		Maximum grinding		0.20 {0.008}
Valve and valve guide				
Margin thickness (mm {in})		IN	Maximum	1.0 {0.0394}
		EX	Maximum	1.5 {0 .0591}
Valve length (mm {in})	IN	Standard		112.29—113.09 {4.421—4.452}
		Maximum		112.215 {4.418}
	EX	Standard		113.42—114.22 {4.466—4.496}
		Maximum		112.945 {4.447}
Valve stem diameter (mm {in})	IN	Standard		6.970—6.985 {0.2744—0.2749}
		Maximum		6.920 {0.2724}
	EX	Standard		6.965—6.980 {0.2743—0.2748}
		Maximum		6.915 {0.2722}
Valve guide inner diameter (mm {in})				7.01—7.03 {0.2760—0.2767}
Valve guide protrusion height (mm {in})		IN		23.5—24.1 {0.926—0.948}
		EX		23.5—24.1 {0.926—0.948}
Valve seat contact width (mm {in})				1.2—1.6 {0.048—0.062}
Valve seat angle		IN		45°
		EX		45°
Valve dimension (mm {in})	IN	Standard		49.0 {1.929}
		Maximum		49.6 {1.953}
	EX	Standard		49.0 {1.929}
		Maximum		49.6 {1.953}
Valve spring				
Pressing force at valve spring height H (N {kgf, lbf})		IN	H: 43.0 mm {1.69 in}	195.2—221.6 {19.9—22.6, 43.78—49.72}
		EX	H: 43.0 mm {1.69 in}	195.2—221.6 {19.9—22.6, 43.78—49.72}
Out-of-square (mm {in})		Maximum		1.73 {0.068}

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Item			Specification
Camshaft			
Runout	(mm {in})	Maximum	0.03 {0.0012}
Cam lobe height	IN	Standard	41.714 {1.6423}
		Minimum	41.514 {1.6344}
	EX	Standard	41.988 {1.6531}
		Minimum	41.788 {1.6452}
Journal diameter	Standard	No.1, 5	29.940—29.965 {1.1788—1.1797}
		No.2, 3, 4	29.910—29.935 {1.1776—1.1785}
	Minimum	No.1, 5	29.890 {1.1768}
		No.2, 3, 4	29.860 {1.1756}
Journal oil clearance	Standard	No.1, 5	0.035—0.085 {0.0014—0.0033}
		No.2, 3, 4	0.065—0.115 {0.026—0.0045}
	Minimum		0.15 {0.006}
End play	(mm {in})	Standard	0.02—0.15 {0.0008—0.0059}
		Maximum	0.20 {0.0079}
Rocker arm and Rocker arm shaft			
Rocker arm inner diameter		(mm {in})	21.000—21.033 {0.8268—0.8280}
Rocker arm shaft diameter		(mm {in})	20.959—20.980 {0.8252—0.8259}
Clearance between rocker arm and shaft		(mm {in})	0.020—0.074 {0.0008—0.0029}
Cylinder block			
Cylinder head gasket contact surfaces distortion (mm {in})		Maximum	0.15 {0.006}
		Maximum grinding	0.20 {0.008}
Cylinder bore diameter	Standard		92.000—92.022 {3.6221—3.6229}
	0.25 {0.01} oversize		92.250—92.272 {3.6319—3.6327}
	0.50 {0.02} oversize		92.500—92.522 {3.6418—3.6425}
Wear limit		(mm {in})	0.15 {0.006}
Oil jet valve,nozzle			
Nozzle opening pressure		(kPa {kgf/cm ² , psi})	167—225 {1.7—2.3, 25—32}
Piston			
Piston diameter [Measured at 90° to pin bore axis and 18 mm {0.71 in} above the bottom of piston]	Standard		91.933—92.957 {3.6194—3.6203}
	0.25 {0.01} oversize		92.183—92.207 {3.6293—3.6301}
	0.50 {0.02} oversize		92.433—92.457 {3.6391—3.6400}
Clearance between piston and cylinder	(mm {in})	Standard	0.058—0.074 {0.0023—0.0029}
		Maximum	0.15 {0.006}
Piston pin bore diameter		(mm {in})	22.988—23.000 {0.9051—0.9055}
Piston ring			
Clearance between piston ring and ring groove (mm {in})		Top	0.03—0.07 {0.0012—0.0027}
		Second	0.03—0.07 {0.0012—0.0027}
		Maximum	0.15 {0.0059}
End gap [Measured in cylinder]	(mm {in})	Top	0.20—0.35 {0.008—0.013}
		Second	0.20—0.40 {0.008—0.015}
		Oil (rail)	0.20—0.70 {0.008—0.027}
		Maximum	1.0 {0.039}
Piston pin			
Diameter		(mm {in})	22.974—22.980 {0.9045—0.9047}
Clearance between connecting rod and piston pin		(mm {in})	−0.037— −0.013 {−0.0015— −0.0005}
Clearance between piston and piston pin		(mm {in})	0.008—0.026 {0.0004—0.0010}

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Item		Specification
Crankshaft		
Runout	(mm {in})	0.03 {0.0012}
Main journal diameter (mm {in})	Standard	59.937—59.955 {2.3598—2.3604}
	0.25 {0.01} undersize	59.687—59.705 {2.3499—2.3505}
	0.50 {0.02} undersize	59.437—59.455 {2.3401—2.3407}
	0.75 {0.03} undersize	59.187—59.205 {2.3302—2.3309}
Out-of-round	(mm {in})	0.03 {0.001}
Crank pin diameter (mm {in})	Standard	50.940—50.955 {2.0056—2.0060}
	0.25 {0.01} undersize	50.690—50.705 {1.9957—1.9962}
	0.50 {0.02} undersize	50.440—50.455 {1.9859—1.9864}
	0.75 {0.03} undersize	50.190—50.205 {1.9760—1.9765}
Out-of-round	(mm {in})	0.03 {0.001}
Main journal oil clearance (mm {in})	Standard	0.025—0.044 {0.0010—0.0017}
	Maximum	0.08 {0.003}
Main journal bearing thickness (mm {in})	Standard	2.007—2.022 {0.0790—0.0796}
	0.25 {0.01} undersize	2.132—2.137 {0.0840—0.0841}
	0.50 {0.02} undersize	2.257—2.262 {0.0889—0.0890}
	0.75 {0.03} undersize	2.382—2.387 {0.0938—0.0939}
Crankshaft end play (mm {in})	Standard	0.08—0.18 {0.00315—0.00708}
	Maximum	0.30 {0.012}
No.4 main bearing width (mm {in})	Standard	25.94—25.99 {1.022—1.023}
	0.25 {0.01} undersize	26.04—26.09 {1.026—1.027}
	0.50 {0.02} undersize	26.12—26.17 {1.029—1.030}
	0.75 {0.03} undersize	26.20—26.25 {1.032—1.033}
Connecting rod		
Small end inner diameter	(mm {in})	22.943—22.961 {0.9033—0.9039}
Length [Center to center]	(mm {in})	166.45—166.55 {6.554—6.557}
Bending	(mm {in})	0.075 {0.0030} max./50 {2.0}
Distortion	(mm {in})	0.180 {0.0071} max./50 {2.0}
Connecting rod bearing oil clearance (mm {in})	Standard	0.027—0.067 {0.0011—0.0026}
	Maximum	0.10 {0.0039}
Connecting rod bearing thickness (mm {in})	Standard	1.505—1.510 {0.0593—0.0594}
	0.25 {0.01} undersize	1.630—1.635 {0.0642—0.0643}
	0.50 {0.02} undersize	1.755—1.760 {0.0691—0.0692}
	0.75 {0.03} undersize	1.880—1.885 {0.0741—0.0742}
Connecting rod side clearance (mm {in})	Standard	0.110—0.262 {0.0044—0.0103}
	Maximum	0.30 {0.012}
Balance shaft		
Clearance between balance shaft and balance shaft bore (mm {in})	Front	0.050—0.115 {0.0020—0.0045}
	Center	0.080—0.145 {0.0032—0.0057}
	Rear	0.080—0.145 {0.0032—0.0057}

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Item		Specification
Oil pump		
Relief spring free length	(mm {in})	46.4 {1.827}
Clearance between inner rotor tooth tip and outer rotor (mm {in})	Standard	0.02—0.18 {0.008—0.0070}
	Maximum	0.22 {0.0087}
Clearance between outer rotor and body (mm {in})	Standard	0.113—0.186 {0.0045—0.0073}
	Maximum	0.20 {0.079}
Side clearance (mm {in})	Standard	0.035—0.105 {0.0014—0.0041}
	Maximum	0.14 {0.0055}
Oil seal		
Rear oil seal tapping amount	(mm {in})	0—0.5 {0—0.019}
Front oil seal tapping amount	(mm {in})	0—0.7 {0—0.027}

WL, WL Turbo

Item				Specification
Cylinder head	Distortion (mm {in})			X: 0.020 {0.0008} max. Y: 0.050 {0.0020} max.
Valve and valve guide	Margin thickness (mm {in})		IN	1.50 {0.059}
			EX	0.75 {0.030}
	Valve length (mm {in})	IN	Standard	111.60—112.10 {4.394—4.413}
			Minimum	111.35 {4.384}
		EX	Standard	111.50—112.00 {4.390—4.409}
			Minimum	111.25 {4.380}
	Valve stem diameter (mm {in})	IN	Standard	6.970—6.985 {0.2745—0.2749}
			Minimum	6.920 {0.2724}
		EX	Standard	6.965—6.980 {0.2743—0.2748}
			Minimum	6.915 {0.2722}
	Guide inner diameter (mm {in})			7.025—7.045 {0.2766—0.2773}
Valve guide protrusion height (mm {in})		IN	14.0—14.5 {0.56—0.57}	
		EX	14.0—14.5 {0.56—0.57}	
Valve seat	Seat contact width (mm {in})		IN	1.6—2.2 {0.07—0.08}
			EX	1.7—2.3 {0.07—0.09}
	Seat angle		IN	45 °
			EX	45 °
	Valve recession (mm {in})	IN	Standard	0.61—1.09 {0.025—0.042}
			Maximum	1.50 {0.059}
		EX	Standard	0.71—1.19 {0.028—0.046}
			Maximum	1.60 {0.063}
Valve spring	Pressing force at valve spring height H (N {kgf, lbf})	IN	H: 35.5 mm {1.40 in}	239—268 {24.3—27.4, 53.5—60.2}
		EX	H: 35.5 mm {1.40 in}	239—268 {24.3—27.4, 53.5—60.2}
	Out-of-square (mm {in})		IN	1.70 {0.0670}
			EX	1.70 {0.0670}

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Item					Specification
Camshaft	Camshaft runout (mm {in})				0.03 {0.001} max.
	Lobe height (mm {in})	WL	IN	Standard	42.40—42.50 {1.670—1.673}
				Minimum	42.050 {1.6555}
			EX	Standard	42.395—42.495 {1.670—1.673}
				Minimum	42.045 {1.6553}
		WL Tur-bo	IN	Standard	41.221—41.321 {1.623—1.626}
				Minimum	40.871 {1.6091}
			EX	Standard	42.395—42.495 {1.670—1.673}
				Minimum	42.045 {1.6553}
	Journal diameter (mm {in})	No.1, 5	Standard	25.940—25.965 {1.0213—1.0222}	
			Minimum	25.890 {1.0193}	
		No.2, 3, 4	Standard	25.910—25.935 {1.0201—1.0210}	
			Minimum	25.860 {1.0181}	
	Camshaft journal oil clearance (mm {in})			No.1, 5	0.035—0.081 {0.0014—0.0031}
				No.2, 3, 4	0.065—0.111 {0.0026—0.0043}
	Camshaft end play (mm {in})			Standard	0.030—0.160 {0.0012—0.0062}
				Maximum	0.200 {0.0078}
Cylinder block	Distortion (mm {in})				X: 0.020 {0.0008} max. Y: 0.050 {0.0020} max.
	Cylinder bore diameter (mm {in})	Standard		93.000—93.022 {3.6615—3.6622}	
		0.25 {0.01} oversize		93.250—93.272 {3.6713—3.6721}	
		0.50 {0.02} oversize		93.500—93.522 {3.6811—3.6819}	
	Wear limit (mm {in})				0.150 {0.0059}
Piston	Piston diameter measured at 90° to pin bore axis and 19.0 mm {0.75} above the bottom of piston (mm {in})	Standard		92.951—92.977 {3.6595—3.6605}	
		0.25 {0.01} oversize		93.186—93.212 {3.6688—3.6697}	
		0.50 {0.02} oversize		93.436—93.462 {3.6786—3.6795}	
	Clearance between piston and cylinder (mm {in})		Standard	0.038—0.056 {0.0015—0.0022}	
			Maximum	0.150 {0.0059}	
Piston ring	Clearance between piston ring and ring groove (mm {in})		Top	0.06—0.10 {0.0024—0.0039}	
			Second	0.04—0.08 {0.0016—0.0031}	
			Oil	0.03—0.07 {0.0012—0.0027}	
			Maximum	0.150 {0.0059}	
	End gap [Measured in cylinder] (mm {in})		Top	0.22—0.32 {0.009—0.012}	
			Second	0.32—0.47 {0.013—0.018}	
			Oil (rail)	0.22—0.32 {0.009—0.012}	
			Maximum	1.00 {0.039}	
Piston pin	Diameter (mm {in})				31.994—32.007 {1.2598—1.2601}
	Clearance between connecting rod and piston pin (mm {in})				−0.003—0.013 {−0.0001—0.0005}
	Clearance between piston and piston pin (mm {in})				0.012—0.039 {0.0005—0.0015}

TECHNICAL DATA

Item			Specification
Crankshaft	Crankshaft runout (mm {in})		0.05 {0.002} max.
	Main journal diameter (mm {in})	Standard	66.937—66.955 {2.6354—2.6360}, 66.920—66.938 {2.6347—2.6353} (No.3)
		0.25 {0.01} undersize	66.687—66.705 {2.6255—2.6261}, 66.670—66.688 {2.6248—2.6255} (No.3)
		0.50 {0.02} undersize	66.437—66.455 {2.6157—2.6163}, 66.420—66.438 {2.6150—2.6156} (No.3)
		0.75 {0.03} undersize	66.187—66.205 {2.6058—2.6040}, 66.170—66.188 {2.6052—2.6058} (No.3)
	Out-of-round (mm {in})		0.03 {0.001} max.
	Crankpin diameter (mm {in})	Standard	54.940—54.955 {2.1630—2.1635}
		0.25 {0.01} undersize	54.690—54.705 {2.1532—2.1537}
		0.50 {0.02} undersize	54.440—54.455 {2.1434—2.1438}
		0.75 {0.03} undersize	54.190—54.205 {2.1335—2.1340}
	Out-of-round (mm {in})		0.03 {0.001} max.
	Main journal oil clearance (mm {in})	Standard	0.033—0.052 {0.0013—0.0020} 0.050—0.069 {0.0020—0.0026} (No.3)
		Maximum	0.080 {0.003}
	Crankshaft end play (mm {in})	Standard	0.040—0.282 {0.0016—0.0111}
		Maximum	0.300 {0.012}
Connecting rod and connecting rod bearing	Length [Center to center] (mm {in})		151.95—152.05 {5.983—5.986}
	Bending (mm {in})		0.075 {0.0030} max. /50 {2.0}
	Connecting rod side clearance (mm {in})	Standard	0.110—0.262 {0.0044—0.0103}
		Maximum	0.350 {0.037}
	Connecting rod bearing oil clearance (mm {in})	Standard	0.031—0.058 {0.0013—0.0022}
		Maximum	0.080 {0.003}
Tensioner spring	Free length		63.0 {2.48}
Oil pump	Gear clearance (mm {in})	Standard	0.10—0.19 {0.004—0.007}
		Maximum	0.20 {0.008}
	Side clearance (mm {in})	Standard	0.04—0.09 {0.002—0.003}
		Maximum	0.15 {0.006}
Plunger spring	Free length (mm {in})		43.8 {1.72}