

Engine Specifications in Detail

Description	Specification
Type	Inline OHV, DOHC
Number of Cylinders	4
Displacement	2.4L (148cu. In)
Bore	87.5 mm
Stroke	101.0mm
Compression Ratio	9.4:1
Firing Order	1-3-4-2
Compression Pressure	1172-1551 kPa (170-225)
Max. Variation Between Cylinders	25%

Cylinder Block

Cylinder Bore Diameter	87.4924-87.5076mm
Out-of-Round (Max)	0.0051mm
Taper (Max)	0.0051mm

Pistons

Piston Diameter	87.463-87.481mm
Clearance at 14mm from bottom of skirt	0.024-0.057mm
Weight	346-356gm
Land Clearance	0.614-0.664mm
Piston Length	66.25mm
Piston Ring Groove Depth No1	4.640-4.784mm
Piston Ring Groove Depth No2	4.575-4.719mm
Piston Ring Groove Depth No3	4.097-4.236mm

Piston Pins

Clearance in Piston	0.005-0.018mm
Clearance in Connecting Rod	Var.
Diameter	21.998-22.003mm
End Play	Var.
Length	72.75-73.25mm

Piston Rings

Ring Gap- Top Compression ring	0.25-0.51mm
Wear Limit	0.8mm
Ring Gap- 2 nd Compression Ring	0.23-0.48mm
Wear Limit	0.8mm
Ring Gap-Oil Control Steel Rails	0.25-0.64mm
Wear Limit	1.0mm
Ring Side Clearance Compression Rings	0.030-0.080mm
Wear Limit	0.10mm
Ring Side Clearance- oil Ring Pack	0.012-0.178mm
Ring Width- Compression Rings	1.47-1.50mm
Ring width- Oil ring Pack	2.72-2.88mm

Connecting Rod

Bearing Clearance	0.025-0.071mm
Wear Limit	0.075mm
Bore Diameter- Piston Pin	20.96-20.98mm
Bore Diameter- Crankshaft End	53.007-52.993mm
Side Clearance	0.13-0.38mm
Wear Limit	0.40mm
Weight- Total w/out Bearing	565.8gm

Crankshaft

Connecting rod Journal Diameter	49.984-50.000mm
Main Bearing journal Diameter	59.992-60.008mm
Journal Out of Round max.	0.0035mm
Journal Taper max.	0.0038mm
End Play	0.09-0.24mm
Wear Limit	0.37mm
Main Bearing Diametrical Clearance	0.018-0.058mm

Hydraulic Lash Adjuster

Body Diameter	15.901-15.913mm
Plunger Travel Minimum	3.0mm

Cylinder Head Camshaft Bearing Bore Diameter

Journal 1-6	26.020-26.041mm
-------------	-----------------

Camshaft

Journal Diameter 1-6	25.951-25.970mm
Bearing Clearance Diametrical	0.069-0.071mm
End Play	0.05-0.17mm
Lift- Zero Lash Intake	8.25mm
Lift- Zero Lash Exhaust	6.60mm
Intake Valve Timing ABDC /ATDC/Duration	44.3/6.2/218
Exhaust Valve Timing ATDC/BBDC/Duration	1/40/221
Valve overlap	5.4

Cylinder Head

Material	Cast Aluminum
Gasket Thickness	1.15mm

Valve Seat

Angle	44.5-45
Seat Diameter- Intake	34.37-34.63mm
Seat Diameter- Exhaust	27.06-27.32mm
Runout max.	0.05mm
Valve Seat Width- Intake and Exhaust	0.9-1.3mm
Service Limit -Intake	2.0mm
Service Limit Exhaust	2.5mm

Valve Guide

Diameter ID	5.975-6.000mm
Guide Bore Diameter	11.0-11.02mm
Guide Height	13.25-13.75mm

Valves

Face Angle –Intake and Exhaust	44.5-45
Head Diameter –Intake	34.67-34.93mm
Head Diameter –Exhaust	28.32-28.52mm
Valve Length- overall intake	112.76-113.32mm
Valve Length- overall exhaust	110.89-111.69mm
Valve Stem Diameter Intake	5.934-5.952mm
Valve Stem Diameter Exhaust	5.906-5.924mm

Valve Margin

Intake	1.2-1.7mm
Service Limit	0.95mm
Exhaust	0.985-1.315mm
Service Limit	1.05mm

Valve Stem Tip Height

Intake	0.048-0.066mm
Max. allowable	0.076mm
Service Limit	0.25mm
Exhaust	0.0736-0.094mm
Max. allowable	0.101mm
Service Limit	0.25mm

Valve Spring

Free Length	48.4mm
Nominal Force (valve closed)	338N at 38.0mm
Nominal Force (valve opened)	607N at 29.75mm
Installed Height	38.00mm
Number of Coils	7.82
Wire Diameter	3.86mm

Oil Pump

Clearance Over Rotors	0.10mm
Cover Out of Flat	0.025mm
Inner Rotor Thickness	9.40mm
Outer Rotor Thickness	9.40mm
Outer Rotor Clearance	0.039mm
Outer Rotor Diameter	79.95mm
Tip Clearance Between Rotors	0.20mm

Oil Pressure

At Curb idle speed	25kPa
At 3000rpm	170-550kPa