

General

Manufacturer	TOYOTA		
Model/Year	2H (HJ47, HJ60)	1979 – 10/1984	
L/(CID)	3,980cc DIESEL	No. of Cylinders	6
Bore & Stroke	91.0mm X 102.0mm		
Firing Order	1 – 4 – 2 – 6 – 3 – 5		
Compression Ratio	20.7 : 1	Idle Speed	625 – 675 rpm
Comp. Pressure @ RPM	2.8 MPa @ 250 rpm	2.0 MPa min.	< 200 kPa diff.
Oil Pressure	50 kPa min at idle	Oil Capacity & Grade	10.3 ltr dry CC-CD
Injection Timing	16° BTDC static -	Number 1 cylinder on	compression stroke

Block

Bore Diameter Standard	91.000 – 91.010 mm (Grade 1)
Maximum Overbore	Nil - dry liner block
Liner Flange Height & Fit	0.03 – 0.09 mm protrusion & 3,000 – 5,000 kg press load oiled
Crankshaft Housing Bore	74.000 – 74.022 mm
Camshaft Housing Bore	> 3/1982: 51.000 – 51.025 mm 4/1982>: 55.000 – 55.025 mm
Block Deck Height	0.20 mm warp limit

Pistons & Rings

Piston to Bore Clearance	0.07 – 0.09 mm @ 20 mm up from bottom of skirt @ 20°C
Piston Protrusion	0.6 mm (0.53 – 0.68 mm)
Gudgeon Pin Diameter	29.000 – 29.012 mm
Gudgeon Pin Clearance	0.004 – 0.012 mm Limit: 0.05 mm
Ring Equipment	Top: 2.5 mm (½K), 2 nd : 2.5 mm, Oil: 4.00 mm
Piston Ring End Gap	Top & 2 nd : 0.20 – 0.47 mm, Oil: 0.20 – 0.52 mm
Ring to Groove Clearance	Top: 0.046 – 0.085 mm, 2 nd : 0.05 – 0.09 mm, Oil: 0.03 – 0.07 mm

Connecting Rods

Big End Bore	58.000 – 58.020 mm
Pin End Bore	33.000 – 33.030 mm
Centre to Centre	
Big End Width	
Bush ID Finished	29.008 – 29.020 mm
Rod Side Clearance	0.08 – 0.22 mm Limit: 0.3 mm
Bend/Twist	0.05 mm/100mm bend 0.05 mm/100 mm twist

Camshaft

Journal Diameters	1: 51.15 mm 2: 50.95 mm 3: 50.75 mm 4: 50.55 mm
End Play	0.06 – 0.13 mm Limit: 0.3 mm
Oil Clearance	0.03 – 0.08 mm Limit: 0.1 mm
Minimum Lobe Height	Inlet 41.90 mm std. Exhaust 42.30 mm std.
Bend Limit	0.4 mm circle runout

Crankshaft

Main Journal Standard	69.980 – 70.000 mm	
Conrod Journal Standard	54.980 – 55.000 mm	
Harmonic Balancer Diam.		
Crank Gear Diameter		
Seal Diameter		
Thrust Thickness		
Main Bearing Clearance	0.03 – 0.07 mm std. Limit: 0.1 mm	
Conrod Bearing Clearance	0.03 – 0.07 mm std. Limit: 0.1 mm	
Crankshaft End Play	0.04 – 0.24 mm Limit: 0.3 mm	
Journal Radius	Main	Conrod

Cylinder Head

Tappet Clearance	Inlet	0.20 mm HOT	Exhaust	0.36 mm HOT
Head Height	New		Limit	
Warp Limit		0.2 mm		
Valve Seat Angle	Inlet	45°	Exhaust	45°
Valve Seat Width	Inlet	1.4 – 2.0 mm	Exhaust	1.4 – 2.0 mm
Valve Head Margin	Inlet	0.9 mm min	Exhaust	1.3 mm min
Valve Face Angle	Inlet	44.5°	Exhaust	44.5°
Valve Length	Inlet	120.7 mm	Exhaust	120.6 mm
Valve Stem Diameter	Inlet	8.973 – 8.989 mm	Exhaust	8.954 – 8.970 mm
Valve Guide Height	Inlet	14.8 – 15.2 mm	Exhaust	14.8 – 15.2 mm
Valve Guide Clear. Std.	Inlet	0.021 – 0.057 mm	Exhaust	0.040 – 0.076 mm
Valve Guide Clear. Limit	Inlet	0.10 mm	Exhaust	0.12 mm
Valve Spring Pressure	Inner	7.6 kg	Outer	22.5 kg
Valve Spring Free Length	Inner	44.3 mm	Outer	48.1 mm
Valve Spring Install. Height	Inner	36.0 mm	Outer	40.0 mm
Precom. Chamber Protrus.		0.00 – 0.10 mm		

Torque Specifications

Main Bolts	12.8 – 14.2 kgf.m OILED			
Conrod Bolts	8.5 – 9.5 kgf.m OILED			
Head Bolts	11.0 – 12.0 kgf.m OILED			
Rocker Arm Bolts	1.5 – 2.2 kgf.m			
Manifold Bolts	Inlet	1.5 – 2.2 kgf.m	Exhaust	1.8 – 2.4 kgf.m
Flywheel Bolts	11.5 – 12.5 kgf.m OILED			
Harmonic Balancer	18.0 – 22.0 kgf.m OILED			

Torque Sequences

