ENGINE Australia
The Diesel Parts Specialists

ENGINE SPECIFICATIONS

February 2001 ES-TOY10R1

General

Manufacturer	**TOYOTA**		
Model/Year	**L**	**1979 – 12/1985**	
L/(CID)	2,188cc DIESEL	**No. of Cylinders**	4
Bore & Stroke	90.0mm X 86.0mm		
Firing Order	1 – 3 – 4 – 2		
Compression Ratio	21.5 : 1	**Idle Speed**	700 rpm
Comp. Pressure @ RPM	3.0 MPa @ 250 rpm	2.0 MPa min.	<490 kPa diff.
Oil Pressure	29 kPa min at idle	**Oil Capacity & Grade**	6.5 ltr dry CC-CD
Injection Timing	Dial indicator and	plunger stroke.	

Block

Bore Diameter Standard	90.000 – 90.030 mm
Maximum Overbore	1.00 mm
Liner Flange Height & Fit	N/A
Crankshaft Housing Bore	66.000 – 66.020 mm
Camshaft Housing Bore	38.015 – 38.027 mm
Block Deck Height	0.20 mm warp limit

Pistons & Rings

Piston to Bore Clearance	0.035 – 0.055 mm @ 34 mm up from bottom of skirt
Piston Protrusion	0.56 – 0.66 mm
Gudgeon Pin Diameter	27.000 – 27.012 mm
Gudgeon Pin Clearance	0.004 – 0.012 mm Limit: 0.05 mm
Ring Equipment	Top: 2.5 mm (P) or 2.0 mm (½K), 2nd: 2.0 mm; Oil: 4.0 mm.
Piston Ring End Gap	Top: 0.30 – 0.57 mm; 2nd: 0.20 – 0.52 mm; Oil: 0.20 – 0.52 mm.
Ring to Groove Clearance	Top: 0.01 – 0.055 mm; 2nd: 0.04 – 0.10 mm; Oil: 0.03 – 0.07 mm.

Connecting Rods

Big End Bore	56.004 – 56.024 mm
Pin End Bore	30.000 – 30.021 mm
Centre to Centre	147 mm
Big End Width	
Bush ID Finished	27.008 – 27.020 mm
Rod Side Clearance	0.080 – 0.200 mm Limit: 0.30 mm
Bend/Twist	0.05 mm/100mm bend 0.15 mm/100 mm twist

Camshaft

Journal Diameters	34.969 – 34.985 mm
End Play	0.055 – 0.155 mm Limit: 0.3 mm
Oil Clearance	0.022 – 0.074 mm Limit: 0.10 mm
Minimum Lobe Height	**Inlet** 46.76 mm **Exhaust** 47.25 mm
Bend Limit	0.10 mm circle runout

Crankshaft

Main Journal Standard	61.985 – 62.000 mm			
Conrod Journal Standard	52.988 – 53.000 mm			
Harmonic Balancer Diam.				
Crank Gear Diameter				
Seal Diameter				
Thrust Thickness	2.430 – 2.480 mm			
Main Bearing Clearance	0.034 – 0.065 mm std. Limit: 0.10 mm			
Conrod Bearing Clearance	0.036 – 0.064 mm std. Limit: 0.10 mm			
Crankshaft End Play	0.040 – 0.250 mm Limit: 0.30 mm			
Journal Radius	**Main** 3.5 mm		**Conrod** 2.8 mm	

Cylinder Head

Tappet Clearance	**Inlet**	0.25 mm HOT	**Exhaust**	0.36 mm HOT
Head Height	**New**	102 mm	**Warp**	0.20 mm Limit
Valve Seat Angle	**Inlet**	45°	**Exhaust**	45°
Valve Seat Width	**Inlet**	1.2 – 1.6 mm	**Exhaust**	1.2 – 1.6 mm
Valve Head Recess	**Inlet**	1.1 – 1.3 mm	**Exhaust**	1.3 – 1.5 mm
Valve Head Margin	**Inlet**	0.9 mm min.	**Exhaust**	1.0 mm min.
Valve Face Angle	**Inlet**	44.5°	**Exhaust**	44.5°
Valve Length	**Inlet**	122.95 mm	**Exhaust**	122.75 mm
Valve Stem Diameter	**Inlet**	8.473 – 8.489 mm	**Exhaust**	8.454 – 8.470 mm
Valve Guide Height	**Inlet**	16.3 – 16.7 mm	**Exhaust**	16.3 – 16.7 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	**Inlet**	29.2 kg	**Exhaust**	29.2 kg
Valve Spring Free Length	**Inlet**	47.98 mm	**Exhaust**	47.98 mm
Valve Spring Install. Height	**Inlet**	39.3 mm	**Exhaust**	39.3 mm
Precom. Chamber Protrus.		0.01 – 0.07 mm		

Torque Specifications

Main Bolts	10.5 kgf.m OILED			
Conrod Bolts	6.0 kgf.m OILED			
Head Bolts	12.0 kgf.m OILED			
Cam Cap Bolts	1.95 kgf.m OILED			
Manifold Bolts	**Inlet** 2.4 kgf.m		**Exhaust** 4.0 kgf.m	
Flywheel Bolts	12.5 kgf.m OILED			
Harmonic Balancer	14.0 kgf.m			

Torque Sequences