

SPECIFICATIONS

SPECIFICATIONS-5.7L ENGINE

DESCRIPTION	SPECIFICATION
Engine Type	90° V-8 OHV
Displacement	5.7 Liters 345 (Cubic Inches)
Bore	99.5 mm (3.91 in.)
Stroke	90.9 mm (3.58 in.)
Compression Ratio	9.6:1
Max. Variation Between Cylinders	25%
Firing Order	1-8-4-3-6-5-7-2
Lubrication -	Pressure Feed - Full Flow Filtration
Cooling System -	Liquid Cooled - Forced Circulation
Cylinder Block	Cast Iron
Cylinder Head	Aluminum
Crankshaft	Nodular Iron
Camshaft	Hollow Assembled Camshaft
Pistons	Aluminum Alloy
Connecting Rods	Powdered Metal

CYLINDER BLOCK		
DESCRIPTION	SPECIFICATION	
	Metric	Standard
Cylinder Bore Diameter	99.50 mm	3.917 in.
Out of Round (MAX)	0.0076 mm	0003 in.
Taper (MAX)	0.0127 mm	0.0005 in.
Lifter Bore Diameter	21.45 - 21.425 mm	0.8444 - 0.8435 in.

PISTONS		
DESCRIPTION	SPECIFICATION	
	Metric	Standard
Clearance Measured at 38.0 mm (1.5 in.) Below Deck	0.0215 - 0.0485 mm	0.0008 - 0.0019 in.
Ring Groove Diameter		
Groove #1	89.6 - 89.8 mm	3.527 - 3.535 in.
Groove #2	88.1 - 88.3 mm	3.468 - 3.476 in.
Weight	414.5 grams	14.62 oz.
Piston Length	54.70 - 55.30	2.153 - 2.177 in.
Ring Groove Width		
No. 1	1.51 - 1.54 mm	0.0594 - 0.0606 in

No. 2	1.51 - 1.53 mm	0.0594 - 0.0602 in.
No. 3	3.030 - 3.055 mm	0.1192 - 0.1202 in.

PISTON PINS		
DESCRIPTION	SPECIFICATION	
	Metric	Standard
Clearance In Piston	0.009 - 0.018 mm	0.00035 - 0.0007 in.
Diameter	24.0 - 24.003 mm	0.9448 - 0.9449 in.
Length	70.53 - 71.03 mm	2.78 - 2.80 in.

PISTON RINGS		
DESCRIPTION	SPECIFICATION	
	Metric	Standard
Ring Gap		
Top Compression Ring	0.23 - 0.38 mm	0.0090 - 0.0149 in.
Second Compression Ring	0.35 - 0.60 mm	0.0137 - 0.0236 in.
Oil Control (Steel Rails)	0.15 - 0.66 mm	0.0059 - 0.0259 in.
Side Clearance	-	
Top Compression Ring	.02 -.068 mm	0.0007 - 0.0026 in.
Second Compression Ring	0.02 - 0.058 mm	0.0007 - 0.0022 in.
Oil Ring (Steel Ring)	.019 -.229 mm	.0007 -.0091 in.
Ring Width		
Top Compression Ring	1.472 - 1.490 mm	0.0579 - 0.0586 in.
Second Compression Ring	1.472 - 1.490 mm	0.0579 - 0.0586 in.
Oil Ring (Steel Rails)	0.447 - 0.473 mm	0.0175 - 0.0186 in.

CONNECTING RODS		
DESCRIPTION	SPECIFICATION	
	Metric	Standard
Piston Pin Bore Diameter	23.955 - 23.975 mm	0.9431 - 0.9438 in.
Side Clearance	0.10 - 0.35 mm	0.003 - 0.0137 in.

CRANKSHAFT		
DESCRIPTION	SPECIFICATION	
	Metric	Standard
Main Bearing Journal Diameter	64.988 - 65.012 mm	2.5585 - 2.5595 in.
Bearing Clearance	0.023 - 0.051 mm	0.0009 - 0.002 in.
Out of Round (MAX)	0.005 mm	0.0002 in.
Taper (MAX)	0.003 mm	0.0001 in.
End Play	0.052 - 0.282 mm	0.002 - 0.011 in.
End Play (MAX)	0.282 mm	0.011 in.
Connecting Rod Journal Diameter	53.992 - 54.008 mm	2.125 - 2.126 in.
Bearing Clearance	0.020 - 0.060 mm	0.0007 - 0.0023 in.
Out of Round (MAX)	0.005 mm	0.0002 in.

Taper (MAX)	0.003 mm	0.0001 in.
-------------	----------	------------

CAMSHAFT		
DESCRIPTION	SPECIFICATION	
	Metric	Standard
Bearing Journal Diameter	-	-
No. 1	58.2 mm	2.29 in.
No. 2	57.8 mm	2.27 in.
No. 3	57.4 mm	2.26 in.
No. 4	57.0 mm	2.24 in.
No. 5	43.633 mm	1.72 in.
Bearing To Journal Clearance Standard		
No. 1	0.040 - 0.080 mm	.0015 -.003 in.
No. 2	0.050 -0.090 mm	0.0019 -.0035 in.
No. 3	0.040 - 0.080 mm	.0015 -.003 in.
No. 4	0.050 - 0.090 mm	0.0019 -.0035 in.
No. 5	0.040 - 0.080 mm	.0015 -.003 in.
Camshaft End Play	.080 - 0.290 mm	0.0031 - 0.0114 in.

VALVE TIMING		
DESCRIPTION		SPECIFICATION
Intake	Opens (BTDC)	5.0°
	Closes (ATDC)	255.0°
Exhaust	Opens (BTDC)	236°
	Closes (ATDC)	32°
	Duration	269.3°
Valve Overlap		37°

CYLINDER HEAD		
DESCRIPTION		SPECIFICATION
Valve Seat Angle		44.5° - 45.0°
Valve Seat Runout (MAX)		0.05 mm (0.0019 in.)
Valve Seat Width (Finish)		
	Intake	1.18 - 1.62 mm (0.0464 - 0.0637 in.)
-	Exhaust	1.48 - 1.92 mm (0.0582 - 0.0755 in.)
	-	
Guide Bore Diameter (Std.)		7.975 - 8.00 mm
-		(0.313 - 0.314 in.)

HYDRAULIC TAPPETS		
DESCRIPTION	SPECIFICATION	

	Metric	Standard
Body Diameter	21.387 - 21.405 mm	0.8420 - 0.8427 in.
Clearance (To Bore)	0.020 - 0.063 mm	0.0007 - 0.0024 in.
Dry Lash	3.0 mm (at the valve)	0.1181 in.

VALVES		
DESCRIPTION		SPECIFICATION
Face Angle		45.0° - 45.5°
Head Diameter	Intake	50.67 - 50.93 mm (1.99 - 2.00 in.)
	Exhaust	39.27 - 39.53 mm (1.54 - 1.55 in.)
Length (Overall)	Intake	123.38 - 123.76 mm (4.857 - 4.872 in.)
	Exhaust	120.475 - 120.855 mm (4.743 - 4.758 in.)
Stem Diameter	Intake	7.935 - 7.953 mm (0.312 - 0.313 in.)
	Exhaust	7.932 - 7.950 mm (0.312 - 0.313 in.)
Stem - to - Guide Clearance	Intake	0.022 - 0.065 mm (0.0008 - 0.0025 in.)
	Exhaust	0.025 - 0.065 mm (0.0009 - 0.0025 in.)
Valve Lift (@ Zero Lash)	Intake	12.0 mm (0.472 in.)
	Exhaust	11.70 mm (0.460 in.)

VALVE SPRING		
DESCRIPTION		SPECIFICATION
Spring Force (Valve Closed)	Intake and Exhaust	435.0 N +/- 22.0 N @ 45 mm (97.8 lbs +/- 5.0 lbs. @ 1.771 in.)
	Intake and Exhaust	1077.0 N +/- 48.0 N @ 32.6 mm. (242.0 lbs. +/- 11 lbs. @ 1.283 in.)
Free Length (approx)		55.6 mm (2.189 in.)
Number of Coils	Intake and Exhaust	7.95
	Intake and Exhaust	4.95 x 4.1 mm (0.194 - 0.161 in.)

Installed Height (Spring Seat to Bottom of Retainer)	
Intake and Exhaust	46.0 mm (1.81 in.)

OIL PUMP	
DESCRIPTION	SPECIFICATION
Clearance Over Rotors (MAX)	0.095 mm (0.0038 in.)
Outer Rotor to Pump Body Clearance (MAX)	.235 mm (.009 in.)
Tip Clearance Between Rotors (MAX)	0.150 mm (0.006 in.)

OIL PRESSURE	
SPECIFICATION	SPECIFICATION
At Curb Idle Speed (MIN)*	25 kPa (4 psi)
@ 3000 RPM	170 - 758 kPa (25 - 110 psi)
* CAUTION: If pressure is zero at curb idle, DO NOT run engine	

TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS

DESCRIPTION	N.m	Ft. Lbs.	In. Lbs.
Block Pipe Plugs (1/4 - 18 NPT)	20	-	177
oil galley plug			
(1/4 - 18 NPT)	34	-	300
Coolant Drain Plug			
(3/8 NPT)	27	-	240
Camshaft Sprocket-Bolt	122	90	-
Camshaft Tensioner Plate-Bolts	28	-	250
Coil to Cylinder Head Cover-Bolts	7	-	62
Timing Chain Case Cover-Bolts	28	-	250
Lifting Stud	55	40	-
Connecting Rod Cap-Bolts	21 plus 90° Turn	15 plus 90° Turn	-
Main Bearing Cap-Bolts and Double Ended Hex M-12	28 plus 90° Turn	-	-
Cross bolts M-8	31	-	-
Cylinder Head-Bolts M-12 Bolts			
Step 1	34	25	-
Step 2	54	40	-
Step 3	Turn 90°	Turn 90°	-
M-8 Bolts	-	-	-
Step 1	20	15	-
Step 2	34	25	-

Cylinder Head Cover-Bolts	8	-	70
Exhaust Manifold to Cylinder Head	25	-	220
Flexplate to crankshaft-Bolts	95	70	-
Flywheel to crankshaft-Bolts	75	55	-
Front Insulator-Through bolt/nut	95	70	-
Front Insulator to Support Bracket			
-Stud Nut (4WD)	41	30	-
-Through Bolt/Nut (4WD)	102	75	-
Front Insulator to Block-Bolts (2WD)	95	70	-
Generator-Mounting Bolt	55	40	-
Intake Manifold-Bolts	Refer to <u>INSTALLATION</u>		
Lifter Guide Holder	12	-	106
Oil Pan Bolts	12	-	105
Oil Dipstick Tube	12	-	105
Oil Pan-Drain Plug	34	25	-
Oil Pump-Attaching Bolts	28	-	250
Oil Pump Pickup Tube - Bolt and Nut	28	-	250
Rear Seal Retainer Attaching Bolts	15	-	132
Rear Insulator to Bracket-Through-Bolt (2WD)	68	50	-
Rear Insulator to Crossmember Support Bracket-Nut (2WD)	41	30	-
Rear Insulator to Crossmember-Nuts (4WD)	68	50	-
Rear Insulator to Transmission-Bolts (4WD)	68	50	-
Rear Insulator Bracket-Bolts (4WD Automatic)	68	50	-
Rear Support Bracket to Crossmember Flange-Nuts	41	30	-
Rear Support Plate to Transfer Case-Bolts	41	30	-
Rocker Arm-Bolts	22	-	195
Spark Plugs	-	-	-
Thermostat Housing-Bolts	28	-	250
Throttle Body-Bolts	12	-	105
Transfer Case to Insulator Mounting Plate-Nuts	204	105	-
Transmission Support Bracket-Bolts (2WD)	68	50	-
Vibration Damper-Bolt	176	129	-
Water Pump to Timing Chain Case Cover-Bolts	28	-	250