

ENGINE SPECIFICATIONS

GENERAL SPECIFICATIONS

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Application	Specification
Displacement	444 Cu. In. (7.3L)
Bore	4.11" (104.4 mm)
Stroke	4.18" (106.2 mm)
Compression Ratio	17.5:1
Fuel System	Direct Injection

CRANKSHAFT, MAIN BEARINGS & CONNECTING ROD BEARINGS SPECIFICATIONS

CRANKSHAFT, MAIN & CONNECTING ROD BEARINGS

Application	In. (mm)
Crankshaft	
End Play	
Standard	.0025-.0085 (.063-.216)
Service Limit	.020 (.51)
Main Bearings	
Journal Diameter	
Standard	3.1228-3.1236 (79.319-79.339)
.010 Undersize	3.1128-3.1136 (79.065-79.339)
.020 Undersize	3.1028-3.1036 (78.811-78.831)
.030 Undersize	3.0928-3.0936 (78.557-78.577)
Journal Out-Of-Round	.00022 (.0056)
Journal Taper	.00015 (.0038) Per 1.0 (25 mm)
Oil Clearance	.0018-.0046 (.046-.117)
Connecting Rod Bearings	
Journal Diameter	
Standard	2.4980-2.4988 (63.45-63.47)
.010 Undersize	2.4881-2.4890 (63.20-63.22)
.020 Undersize	2.4779-2.4787 (62.94-62.96)
.030 Undersize	2.4681-2.4689 (62.69-62.71)
Journal Out-Of-Round	.00022 (.0056)
Journal Taper	.00026 (.0066) Per 1.0 (25 mm)
Oil Clearance	.0015-.0045 (.038-.114)

CONNECTING RODS SPECIFICATIONS

CONNECTING RODS

Application	In. (mm)
Bore Diameter	
Pin Bushing Bore	1.308-1.309 (33.23-33.25)

Crankpin Bore	2.6905-2.6915 (68.339-68.364)
Crankpin Bore Maximum Out-Of-Round	.0005 (.013)
Crankpin Bore Maximum Taper	.0005 (.013)
Center-To-Center Length	7.130 (181.10)
Maximum Bend	.0010 (.025) Per 1.0 (25 mm)
Maximum Twist	.002 (.05) Per 1.0 (25 mm)
Side Play	.012-.024 (.30-.61)

PISTONS, PISTON PINS & PISTON RINGS SPECIFICATIONS

PISTONS, PINS & RINGS

Application	In. (mm)
Pistons	
Diameter	
Standard	4.10474 (104.26065)
.010 Undersize	4.11474 (104.51465)
.020 Undersize	4.12474 (104.76865)
.030 Undersize	4.09537 (104.02265)
Clearance	.0044-.0061 (.1118-.1549)
Piston Height Above Cylinder Block	.010-.031 (.254-.787)
Pins	
Diameter	1.3079-1.3081 (33.220-33.226)
Piston Fit	.0003-.0007 (.007-.018)
Rod Fit	.0004-.0009 (.010-.023)
Rings	
No. 1	
End Gap	.014-.024 (.35-.61)
Side Clearance	(1)
No. 2	
End Gap	.062-.072 (1.57-1.83)
Side Clearance	.002-.004 (.05-.10)
No. 3 (Oil)	
End Gap	.012-.024 (.30-.61)
Side Clearance	.002-.004 (.05-.10)
(1) For measuring of side clearance, see PISTON RINGS under CYLINDER BLOCK ASSEMBLY under OVERHAUL.	

CYLINDER BLOCK SPECIFICATIONS

CYLINDER BLOCK

Application	In. (mm)
Cylinder Bore	
Diameter	

Standard	4.1096-4.1103 (104.384-104.402)
.010 Oversize	4.1142 (104.502)
.020 Oversize	4.1242 (104.756)
.030 Oversize	4.1342 (105.010)
Maximum Taper	.0005 (.013)
Maximum Out-Of-Round	.0005 (.013)
Maximum Deck Warpage	(1)
(1) Warpage should not exceed .0030" (.076 mm) within a 6.0" (152 mm) area or .0060" (.152 mm) overall. Cylinder block may be resurfaced. DO NOT remove more than .010" (.25 mm) of material from cylinder block if resurfacing cylinder block.	

ENGINE VALVES & VALVE SPRINGS SPECIFICATIONS

VALVES & VALVE SPRINGS

Application	Specification
Intake Valves	
Face Angle	30°
Minimum Margin	.112" (2.84 mm)
Stem Diameter	.31185-.31255" (7.921-7.939 mm)
Valve Head Recession	.046-.058" (1.17-1.47 mm)
Exhaust Valves	
Face Angle	37.5°
Minimum Margin	.054" (1.37 mm)
Stem Diameter	.31185-.31255" (7.9210-7.9388 mm)
Valve Head Recession	.052-.064" (1.32-1.63 mm)
Valve Springs	
Free Length	1.925-2.225" (48.90-56.52 mm)
Installed Height	
Intake	1.767" (44.881 mm)
Exhaust	1.833" (46.568 mm)
Out-Of-Square	.078" (1.98 mm)
Lbs. @ In. (kg @ mm)	
Pressure	
Valve Closed	71-79 @ 1.833" (32-36 @ 46.56)
Valve Open	225-249 @ 1.352" (102-112 @ 34.35)

CYLINDER HEAD SPECIFICATIONS

CYLINDER HEAD

Application	Specification

Cylinder Head Height	5.095-5.105" (129.41-129.67 mm)
Maximum Warpage	(1)
Valve Seats	
Intake Valve	
Seat Angle	30°
Seat Width	.065-.095" (1.65-2.41 mm)
Maximum Seat Runout	.002" (.05 mm)
Exhaust Valve	
Seat Angle	37.5°
Seat Width	.065-.095" (1.65-2.41 mm)
Maximum Seat Runout	.002" (.05 mm)
Valve Guides	
Intake & Exhaust	
Valve Guide Bore Diameter	.3141-.3151" (7.98-8.00 mm)
Valve Stem-To-Guide Maximum Oil Clearance	.0055" (.140 mm)
(1) Warpage should not exceed .0010" (.025 mm) within a 2.0" (51 mm) area or .0040" (.102 mm) overall. Replace cylinder head if warpage exceeds specification. DO NOT resurface cylinder head.	

CAMSHAFT SPECIFICATIONS

CAMSHAFT

Application	In. (mm)
Camshaft Bearing I.D.	2.102-2.105 (53.39-53.47)
End Play	.002-.008 (.051-.203)
Journal Diameter (All Camshaft Journals)	2.098-2.099(53.31-53.34)
Oil Clearance	.002-.0065 (.051-.165)
Front Camshaft Bearing Installed Depth ⁽¹⁾	.020-.050 (.51-1.27)
Gear Backlash	.0055-.0100 (.140-.256)
Camshaft Thrust Plate Thickness	
In Thrust Area	.151-.155 (3.85-3.93)
Outside Thrust Area	.149-.157 (3.78-3.98)
(1) Specification listed is distance from face of cylinder block to the front edge of front camshaft bearing.	

VALVE LIFTERS & PUSH RODS SPECIFICATIONS

VALVE LIFTERS & PUSH RODS

Application	In. (mm)
Lifter Diameter	.9209-.9217 (23.391-23.411)
Oil Clearance ⁽¹⁾	.0011-.0034 (.028-.086)

Push Rod Runout	.002" (.05 mm)
Collapsed Lifter Clearance ⁽²⁾	.185 (4.70)
(1) Service limit is .00020" (.005 mm).	
(2) Measured between valve tip and rocker arm.	