

ENGINE SPECIFICATIONS

GENERAL SPECIFICATIONS

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Application	Specification
Displacement	302 Cu. In.
Bore	4.00" (101.6 mm)
Stroke	3.00" (76.2 mm)
Compression Ratio	9.0:1
Fuel System	PFI
Horsepower @ RPM	
A/T	195 @ 4000
M/T	205 @ 4000
Torque Ft. Lbs. @ RPM	
A/T	270 @ 3000
M/T	275 @ 3000

CRANKSHAFT MAIN & CONNECTING ROD BEARINGS SPECIFICATIONS

CRANKSHAFT MAIN & CONNECTING ROD BEARINGS

Application	In. (mm)
Crankshaft End Play	.004-.008 (.10-.20)
Main Bearings	
Journal Diameter	2.2482-2.2490 (57.104-57.125)
Journal Out-Of-Round	.0006 (.015)
Journal Taper ⁽¹⁾	.0005 (.013)
Journal Runout	.002 (.05)
Oil Clearance	
Desired	⁽²⁾ .0008-.0015 (.020-.038)
Allowable	⁽³⁾ .0008-.0026 (.020-.066)
Connecting Rod Bearings	
Journal Diameter	2.1228-2.1236 (53.919-53.939)
Journal Out-Of-Round	.0006 (.015)
Journal Taper ⁽¹⁾	.0006 (.015)
Oil Clearance	
Desired	.0008-.0015 (.020-.038)
Allowable	.0007-.0024 (.018-.061)
(1) Within a 1" (25 mm) area.	
(2) No. 1 bearing .0001-.0015.	
(3) No. 1 bearing .0001-.0020.	

CONNECTING RODS SPECIFICATIONS

CONNECTING RODS

Application	In. (mm)
Bore Diameter	
Pin Bore	.9096-.9112 (23.104-23.144)
Crankpin Bore	2.2390-2.2398 (56.871-56.891)
Center-To-Center Length	5.0885-5.0915 (129.248-129.324)
Maximum Bend ⁽¹⁾	.012 (.30)
Maximum Twist ⁽¹⁾	.015 (.38)
Side Play	
Standard	.010-.020 (.25-.51)
Service Limit	.023 (.58)
(1) Specification listed is measured at ends of an 8" (203 mm) bar, 4" (102 mm) on each side of rod center line.	

PISTONS PINS & RINGS SPECIFICATIONS

PISTONS PINS & RINGS

Application	In. (mm)
Piston	
Clearance	.0014-.0022 (.036-.056)
Diameter ⁽¹⁾	
Red	3.9989-3.9995 (101.572-101.587)
Blue	4.0001-4.0007 (101.603-101.618)
Yellow	4.0013-4.0019 (101.633-101.648)
Pins	
Diameter	.9119-.9124 (23.16-23.17)
Length	3.01-3.04 (76.45-77.21)
Piston Fit	.0002-.0004 (.005-.010)
Rod Fit	Press Fit
Rings	
End Gap	
No. 1	.010-.020 (.25-.51)
No. 2	.018-.028 (.46-.71)
Side Clearance	.0013-.0033 (.033-.084)
No. 3 (Oil)	
End Gap (Steel Rail)	.010-.040 (.25-1.01)
Side Clearance	Snug Fit
(1) Standard pistons are color-coded Red, Blue and Yellow on piston dome.	

CYLINDER BLOCK SPECIFICATIONS

CYLINDER BLOCK

Application	In. (mm)
Cylinder Bore	

Standard Diameter	4.0004-4.0052 (101.61-101.73)
Maximum Taper	.010 (.25)
Maximum Out-Of-Round	
Standard	.0015 (.038)
Service Limit	.005 (.13)
Maximum Deck Warpage ⁽¹⁾	.003 (.08)
(1) Specification is within a 6" (152 mm) area. Overall warpage is .006" (.15 mm). DO NOT machine more than .010" (.25 mm) from original gasket surface.	

VALVES & VALVE SPRINGS SPECIFICATIONS

VALVES & VALVE SPRINGS

Application	In. (mm)
Face Angle	44°
Face Runout	.002 (.051)
Head Diameter	
Intake	1.69 (42.9)
Exhaust	1.44-1.46 (36.6-37.1)
Stem Diameter	
Intake	.3415-.3423 (8.677-8.694)
Exhaust	.3410-.3418 (8.664-8.682)
Valve Margin	.031 (.79)
Valve Springs	
Free Length	
Intake	2.06 (51.8)
Exhaust	1.88 (47.0)
Installed Height	
Intake	1.75-1.81 (44.5-46.0)
Exhaust	1.58-1.64 (40.1-41.6)
Out-Of-Square	.078 (1.98)
Pressure	
Intake	
Valve Closed	74-82 @ 1.78 (34-38 @ 45)
Valve Open	196-212 @ 1.36 (89-96 @ 35)
Exhaust	
Valve Closed	76-84 @ 1.60 (34-38 @ 41)
Valve Open	190-210 @ 1.20 (86-95 @ 31)

CYLINDER HEAD SPECIFICATIONS

CYLINDER HEAD

Application	In. (mm)
Maximum Warpage ⁽¹⁾	.003 (.08)
Valve Seats	

Seat Angle	45°
Seat Width	.060-.080 (1.5-2.0)
Maximum Seat Runout	.002 (.05)
Valve Guides	
Intake Valve	
Valve Guide Bore I.D.	.3433-.3443 (8.720-8.745)
Valve Stem-To-Guide Oil Clearance	.0010-.0027 (.025-.069)
Exhaust Valve	
Valve Guide Bore I.D.	.3433-.3443 (8.720-8.745)
Valve Stem-To-Guide Oil Clearance	.0015-.0032 (.038-.081)
(1) Specification listed is within 6" (152 mm). Overall warpage is .006" (.15 mm). DO NOT machine more than .010" (.25 mm) from original gasket surface.	

CAMSHAFT SPECIFICATIONS

CAMSHAFT

Application	In. (mm)
Bearing I.D. Diameter	
No. 1	2.0835 (52.921)
No. 2	2.0685 (52.540)
No. 3	2.0535 (52.159)
No. 4	2.0385 (51.778)
No. 5	2.0235 (51.397)
End Play	.001-.007 (.03-.18)
Journal Diameter	
No. 1	2.0815 (52.870)
No. 2	2.0665 (52.489)
No. 3	2.0515 (52.108)
No. 4	2.0365 (51.727)
No. 5	2.0215 (51.346)
Journal Runout	.005 (.13)
Lobe Lift	
Intake	.278 (7.06)
Exhaust	.283 (7.19)
Lobe Wear Limit	.005 (.13)
Oil Clearance	.001-.003 (.03-.08)
Timing Chain Deflection	.500 (12.70)

VALVE LIFTERS SPECIFICATIONS

VALVE LIFTERS

Application	In. (mm)
Lifter Diameter	.8740-.8745 (22.200-22.212)
Oil Clearance	.0007-.0027 (.018-.069)
Collapsed Lifter Clearance	

Desired	.091-.151 (2.31-3.83)
Allowable	.071-.171 (1.80-4.34)