

SPECIFICATIONS (Continued)

(Continued)

GENERAL SPECIFICATION	
DISPLACEMENT	3.8L
NUMBER OF CYLINDERS	6
BORE AND STROKE	
Bore	96.8mm (3.81 in.)
Stroke	86.0mm (3.39 in.)
FIRING ORDER	1-4-2-5-3-6
OIL PRESSURE (HOT 2500 RPM)	40-60 PSI
DRIVE BELT TENSION	Self-Tensioning
CYLINDER HEAD AND VALVE TRAIN	
COMBUSTION CHAMBER VOLUME (cc)	61.48-64.48
VALVE GUIDE BORE DIAMETER	
Intake & Exhaust	8.745-8.720mm (0.3443-0.3433 in.)
VALVE SEATS	
Width — Intake & Exhaust	1.5-2.0mm (.06-.08 in.)
Angle	44.5°
Runout (T.I.R.)	0.076mm (0.003 in.)
BORE DIAMETER (INSERT COUNTERBORE DIAMETER)	
Intake	47.097mm (1.8542 in.) MAX. 47.072mm (1.8532 in.) MIN.
Exhaust	39.739mm (1.5645 in.) MAX.
GASKET SURFACE FLATNESS	0.018mm (0.007 in.)
VALVE STEM TO GUIDE CLEARANCE	
Intake	0.026-0.071mm (0.001-0.0028 in.)
Exhaust	0.038-0.083mm (0.0015-0.0033 in.)
VALVE HEAD DIAMETER	
Intake	45.3mm (1.78 in.)
Exhaust	37.1mm (1.46 in.)
VALVE FACE RUNOUT LIMIT	0.05mm (0.002 in.)
VALVE FACE ANGLE	45.8°
VALVE STEM DIAMETER (STD.)	
Intake	8.694-8.674mm (0.3423-0.3415 in.)
Exhaust	8.682-8.662mm (0.3418-0.3410 in.)
Oversize	
Intake	9.075-9.055mm (0.3573-0.3565 in.)
Exhaust	9.063-9.043mm (0.3568-0.3560 in.)
Oversize	
Intake	9.456-9.436mm (0.3723-0.3715 in.)
Exhaust	9.444-9.424mm (0.3718-0.3710 in.)
VALVE SPRINGS	
Compression Pressure (N [Lb]) @ Spec. Length	
Valve Open	
(Without Damper)	979N (220 lbs.) @ 30.0mm (1.18 in.)
Valve Closed	
(Without Damper)	378N (85 lbs.) @ 41.9mm (1.65 in.)
Free Length (Approximate)	
Assembled Height	50.0mm (1.97 in.)
Service Limit	10% Force Loss @ Specified Height
ROCKER ARM	
Ratio	1.73
VALVE TAPPET, HYDRAULIC	
Diameter (Std.)	22.200-22.212mm (0.8740-0.8745 in.)
Clearance to Bore	0.018-0.068mm (0.0007-0.0027 in.)
Service Limit	0.127mm (0.005 in.)
Hydraulic Leakdown Rate	(a)
Collapsed Tappet Gap (Nominal)	
Intake	2.25-4.79mm (0.089-0.189 in.)
Exhaust	2.25-4.79mm (0.089-0.189 in.)
DISTRIBUTOR SHAFT BEARING BORE DIAMETER	
Tappet Bore Diameter	22.268-22.230mm (0.8767-0.8752 in.)
CAMSHAFT BORE INSIDE DIAMETER	
No. 1	55.689-55.664mm (2.192-2.191 in.)
No. 2	55.308-55.283mm (2.177-2.176 in.)
BALANCE SHAFT BORE	
Inside Diameter	55.689-55.664 (2.192-2.191 in.)
End Plug	0.16-0.075 (0.003-0.006 in.)
CYLINDER HEAD AND VALVE TRAIN (Continued)	
BALANCE SHAFT	
End Play	0.075-0.21mm (0.003-0.008 in.)
Journal Diameter	52.108-52.082mm (2.0515-2.0505 in.)
Runout	0.025mm (0.001 in.)
CAMSHAFT BORE INSIDE DIAMETER	
No. 3	55.308-55.283mm (2.177-2.176 in.)
No. 4	55.684-55.664mm (2.192-2.191 in.)
CAMSHAFT	
LOBE LIFT	
INTAKE	6.22 (0.245 in.)
EXHAUST	6.57 (0.259 in.)
Allowable Lobe Lift Loss	0.127mm (0.005 in.)
THEORETICAL VALVE LIFT @ ZERO LASH	
Intake	10.67mm (0.424 in.)
Exhaust	11.37mm (0.448 in.)
ENDPLAY	
Service Limit	0.025-0.150mm (0.001-0.006 in.)
JOURNAL TO BEARING CLEARANCE	0.025-0.076mm (0.001-0.003 in.)
JOURNAL DIAMETER	
All	52.108-52.082mm (2.0515-2.0505 in.)
CAM BEARING I.D.	52.158-52.133mm (2.0535-2.0525 in.)
Runout Limit	0.05mm (0.002 in.)
Runout of #2 or #3 relative to #1 and #4	
Out-of-Round Limit	0.025mm (0.001 in.)
CAMSHAFT DRIVE	
Assembled Gear Face Runout	
Crankshaft	0.10mm (0.004 in.)
Camshaft	0.25mm (0.010 in.)
Timing Chain Deflection	12.7mm (0.5 in.)
CYLINDER BLOCK	
HEAD GASKET SURFACE FLATNESS	0.08mm (0.003 in.) in 152.0mm (6.00 in.)
HEAD GASKET SURFACE FINISH (RMS)	2.0 @ 0.8 5.5 @ 2.5
CYLINDER BORE	
Diameter	96.80mm (3.81 in.)
Surface Finish (RMS)	0.45-0.96
Out-of-Round Limit	0.025mm (0.001 in.)
Out-of-Round Service Limit	0.050mm (0.002 in.)
Taper Service Limit	0.050mm (0.002 in.)
MAIN BEARING BORE DIAMETER	
68.905mm (2.713 in.)	
68.885mm (2.712 in.)	
CRANKSHAFT AND FLYWHEEL	
MAIN BEARING JOURNAL	
DIAMETER	63.983-64.003mm (2.5190-2.5198 in.)
Out-of-Round Limit	0.008mm (0.0003 in.)
MAX. in 45°, 0.015mm (0.0006 in.) TOTAL	
Taper Limit	0.008mm (0.0003 in.) per 25mm (1 in.)
Journal Runout Limit	0.05mm (0.002 in.) (2), 0.05mm (0.002 in.) (3)
Surface Finish (RMS)	0.3 micrometers (11.8 micro in.)
THRUST BEARING JOURNAL	
Length	29.725-29.775mm (1.703-1.703-1.722 in.)
CONNECTING ROD JOURNAL	
Diameter	58.682-58.702mm (2.3103-2.3111 in.)
Out-of-Round Limit	0.008mm (0.0003 in.) MAX in 45°, 0.015mm (0.0006 in.) TOTAL
Taper Limit	0.008mm per 25mm (0.0003 in. per in.)
Surface Limit (RMS)	0.3 micrometers (11.8 micro in.)
MAIN BEARING THRUST FACE	
Surface Finish (RMS)	0.9 micrometers (0.354 micro in.) FRONT; 0.6 micrometers (0.236 micro in.) REAR;
Runout Limit	0.025mm (0.001 in.)

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