

VANGUARD OHV V-TWIN CYLINDER ENGINE MODELS

COMMON SPECIFICATIONS - ALL MODELS

Armature Air Gap.....	.008"-.012" (0.20 - 0.30mm)
Crankshaft End Play.....	.003"-.015" (0.08 - 0.40mm)
**Governed Idle Speed	
Spring # 805453 (red)	1750 RPM
Spring # 805454 (white)	1100 RPM
Spark Plug Gap.....	.030" (0.76mm)
Valve Clearance (Cold)	
Intake.....	.004"-.006" (0.10 - 0.15mm)
Exhaust.....	.004" - .006" (0.10 - 0.15mm)
** Top Governed Speed: See B&S Service Engine Sales Manual MS-4052	

STANDARD AND REJECT DIMENSIONS - ALL MODELS

DESCRIPTION	STD. DIMENSIONS	REJECT DIMENSIONS
Cylinder		
Bore		
Model 290000 & 303000	68.0 - 68.03mm (2.677"-2.678")	68.10mm (2.681")
Model 350000 & 351000	72.0 - 72.03mm (2.835"-2.836")	72.16mm (2.839")
Model 380000	75.50 - 75.52mm (2.9724"-2.973")	75.59mm (2.976")
Out of round:		
Main Bearing (Before 97050110)	30.03 - 30.06mm (1.1825"-1.1835")	30.08mm (1.1845")
(After 97043000)	35.02 - 35.06mm (1.379"-1.3805")	35.12mm (1.383")
Cam Bearing	16.0 - 16.03mm (.630"-.631")	16.08mm (.633")
Cylinder Head		
Valve Guide	6.01 - 6.02mm (.2365"-.237")	6.05mm (.238")
Valve Stem-Intake	5.95 - 5.96mm (.234"-.2346")	5.92mm (.233")
-Exhaust	5.94 - 5.95mm (.2338"-.234")	5.91mm (.2328")
Crankcase Cover		
Main Bearing	35.04 - 35.05mm (1.3795"-1.380")	35.07mm (1.381")
Cam Bearing	20.0 - 20.02mm (.7875"-.788")	20.04mm (.789")
Crankshaft		
Crankpin	37.0 - 37.02mm (1.4565"-1.4575")	36.95mm (1.455")
Mag Journal (Before 97050100)	29.98 - 30.0mm (1.180"-1.181")	29.94mm (1.179")
(After 97043000)	34.99 - 35.01mm (1.3776"-1.3784")	34.95mm (1.376")
PTO Journal	34.96 - 34.97mm (1.3765"-1.377")	34.92mm (1.375")
Cam Shaft		
Mag Journal	15.95 - 15.97mm (.628"-.6287")	15.93mm (.6273")
PTO Journal	19.94 - 19.96mm (.7855"-.786")	19.92mm (.7845")
Lobes		
Models 290000 - 351000 - Intake	30.33 - 30.53mm (1.194"-1.202")	30.25mm (1.191")
- Exhaust	30.33 - 30.53mm (1.194"-1.202")	30.25mm (1.191")
Model 380000 -Intake	31.09 - 31.30mm (1.224"-1.232")	31.06mm (1.223")
-Exhaust	30.33 - 30.53mm (1.194"-1.202")	30.25mm (1.191")
Connecting Rod		
Crankpin Bearing ALL	37.06 - 37.08mm (1.459"-1.460")	37.12mm (1.4615")
Piston Pin Bearing		
Models 290000 - 352000	17.09 - 17.1mm (.6728"-.6735")	17.12mm (.674")
Model 380000	18.04 - 18.05mm (.710"-.7105")	18.06mm (.711")

Piston Pin		
Models 290000 - 352000	17.07 - 17.08mm (.6722"-.6725")	17.06mm (.6718")
Model 380000	18.00 - 18.01mm (.7085"-.709")	17.98mm (.7078")
Piston Pin Bearing (Piston)		
Models 290000 - 352000	17.09 - 17.1mm (.6728"-.6735")	17.12mm (.674")
Model 380000	18.04 - 18.05mm (.710"-.7105")	18.06mm (.711")
Piston Rings		
Ring End Gap - Top, Center & Oil Ring Side Clearance	0.20 - 0.40mm (.008"-.016")	0.76mm (.030")
Top & Center	0.045 - 0.076mm (.0018"-.003")	0.10mm (.004")
Oil	0.11 - 0.15mm (.0045"-.006")	0.20mm (.008")

COMMON TORQUE SPECIFICATIONS - ALL MODELS

Alternator (to cylinder)	2.0 Nm (20 in. Lbs.)
Air Cleaner Base (to carburetor)	7.0 Nm (65 in. Lbs.)
Air Cleaner Support Bracket	7.0 Nm (65 in. Lbs.)
Armature	3.0 Nm (25 in. Lbs.)
Back Plate	7.0 Nm (65 in. Lbs.)
Blower Housing	7.0 Nm (65 in. Lbs.)
Breather	3.0 Nm (25 in. Lbs.)
Carburetor (to manifold)	7.0 Nm (65 in. Lbs.)
Connecting Rod	13.0 Nm (115 in. Lbs.)
Crankcase Cover	17.0 Nm (150 in. Lbs.)
Cylinder Head	19.0 Nm (165 in. Lbs.)
Cylinder Shield	7.0 Nm (65 in. Lbs.)
Exhaust Manifold	17.0 Nm (150 in. Lbs.)
Fan Retainer	17.0 Nm (150 in. Lbs.)
Flywheel	175.0 Nm (125 ft. Lbs.)
Governor Control Bracket	16.0 Nm (140 in. Lbs.)
Governor Lever Nut	8.0 Nm (70 in. Lbs.)
Intake Manifold	16.0 Nm (140 in. Lbs.)
Oil Pump	7.0 Nm (65 in. Lbs.)
Rewind Starter (to blower housing)	7.0 Nm (65 in. Lbs.)
Rocker Arm Lock Nut	7.0 Nm (65 in. Lbs.)
Rocker Arm Stud	
Current Style	11.0 Nm (100 in. Lbs.)
Early Style	16.0 Nm (140 in. Lbs.)
Spark Plug	23.0 Nm (200 in. Lbs.)
Starter Motor	16.0 Nm (140 in. Lbs.)
Starter Motor Thru Bolts	6.0 Nm (50 in. Lbs.)
Valve Cover	3.0 Nm (25 in. Lbs.)