

Dimensions in millimeters.

Figure 1-4. Typical Engine Dimensions.

Section 1

Safety and General Information

General Specifications¹

Power (@ 3600 RPM, corrected to SAE J1995)

LV560	12.7 kW (17 HP)
LV625	14.9 kW (20 HP)
LV675	17.1 kW (23 HP)

Peak Torque

LV560 (@ 2400 RPM)	32.5 N·m (24 ft. lb.)
LV625 (@ 2400 RPM)	41 N·m (30 ft. lb.)
LV675 (@ 2400 RPM)	44 N·m (32 ft. lb.)

Bore LV560	73 mm (2.87 in.)
LV625	77 mm (3.03 in.)
LV675	80 mm (3.14 in.)

Stroke 67 mm (2.64 in.)

Displacement

LV560	561 cc (34.2 cu. in.)
LV625	624 cc (38.1 cu. in.)
LV675	674 cc (41.1 cu. in.)

Compression Ratio 8.2:1 (LV560)
8.5:1 (LV625, LV675)

Dry Weight 49.8 kg (110 lb.)

Oil Capacity (with filter) 1.9 L (2.0 U.S. qt.)

Coolant Capacity (equal parts of water and ethylene glycol) 1.4 L (1.5 U.S. qt.)

Angle of Operation - Maximum (at full oil level) All Directions 20°

Lower Blower Housing

M5 Fasteners Torque 4.0 N·m (35 in. lb.)

M6 Fasteners Torque 6.8 N·m (60 in. lb.)

Rectifier Fastener Torque 4.0 N·m (35 in. lb.)

Camshaft

End Play (With Shim) 0.076/0.127 mm (0.0030/0.0050 in.)

Running Clearance 0.025/0.063 mm (0.0010/0.0025 in.)

Bore I.D.

New	20.000/20.025 mm (0.7874/0.7884 in.)
Max. Wear Limit	20.038 mm (0.7889 in.)

Camshaft Bearing Surface O.D.

New	19.962/19.975 mm (0.7859/0.7864 in.)
Max. Wear Limit	19.959 mm (0.7858 in.)

¹Values are in Metric units. Values in parentheses are English equivalents. Lubricate threads with engine oil prior to assembly.

Carburetor and Intake Manifold

Intake Manifold Mounting Fasteners Torque	6.2 N·m (55 in. lb.)
Carburetor Mounting Fasteners Torque	6.2 N·m (55 in. lb.)

Connecting Rod

Cap Fastener Torque (torque in increments)	11.3 N·m (100 in. lb.)
Connecting Rod-to-Crankpin Running Clearance	
New	0.043/0.068 mm (0.0016/0.0026 in.)
Max. Wear Limit	0.083 mm (0.0032 in.)
Connecting Rod-to-Crankpin Side Clearance	0.26/0.63 mm (0.0102/0.0248 in.)
Connecting Rod-to-Piston Pin Running Clearance	0.015/0.028 mm (0.0006/0.0011 in.)
Piston Pin End I.D.	
New	17.015/17.023 mm (0.6699/0.6702 in.)
Max. Wear Limit	17.036 mm (0.6707 in.)

Crankcase

Governor Cross Shaft Bore I.D.	
New	8.025/8.075 mm (0.3159/0.3179 in.)
Max. Wear Limit	8.088 mm (0.3184 in.)
Breather Cover Fasteners Torque	10.7 N·m (95 in. lb.) Into new as-cast hole 7.3 N·m (65 in. lb.) Into used hole
Oil Drain Plugs	13.6 N·m (120 in. lb.)

Crankshaft

End Play (free)	0.070/0.590 mm (0.0028/0.0232 in.)
Crankshaft Bore (in crankcase)	
New	40.974/40.987 mm (1.6131/1.6136 in.)
Max. Wear Limit	41.000 mm (1.6141 in.)
Crankshaft Bore (in oil pan)	
New	40.974/41.000 mm (1.6131/1.6141 in.)
Max. Wear Limit	41.038 mm (1.6156 in.)
Crankshaft Bore (in oil pan)-to-Crankshaft	
Running Clearance - New	0.039/0.087 mm (0.0015/0.0034 in.)
Main Bearing Journals	
O.D. - New	40.913/40.935 mm (1.6107/1.6116 in.)
O.D. - Max. Wear Limit	40.84 mm (1.608 in.)
Max. Taper	0.022 mm (0.0009 in.)
Max. Out-of-Round	0.025 mm (0.0010 in.)
Crankshaft Bore (in crankcase)-to-Crankshaft	
Running Clearance - New	0.039/0.074 mm (0.0015/0.0029 in.)

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Crankshaft (Cont'd.)

Connecting Rod Journal

O.D. - New	35.955/35.973 mm (1.4156/1.4163 in.)
O.D. - Max. Wear Limit	35.94 mm (1.415 in.)
Max. Taper	0.018 mm (0.0007 in.)
Max. Out-of-Round	0.025 mm (0.0010 in.)

Crankshaft T.I.R.

PTO End, Crank in Engine	0.15 mm (0.0059 in.)
Entire Crank, in V-Blocks	0.10 mm (0.0039 in.)

Cylinder Bore

Cylinder Bore I.D.

New

LV560	73.006/73.031 mm (2.8742/2.8752 in.)
LV625	77.000/77.025 mm (3.0315/3.0325 in.)
LV675	80.000/80.025 mm (3.1496/3.1506 in.)

Max. Wear Limit

LV560	73.070 mm (2.8767 in.)
LV625	77.063 mm (3.0340 in.)
LV675	80.065 mm (3.1522 in.)

Max. Out-of-Round

Max. Taper

Cylinder Head

Cylinder Head Fastener Torque (torque in 2 increments)..... 16.9, 33.9 N·m (150, 300 in. lb.)

Max. Out-of-Flatness

Rocker Pivot Fastener Torque, if Screw

Rocker Pivot Fastener Torque, if Nut

Electric Starter

Starter Mounting Fastener Torque

Fan/Flywheel

Fan Fastener Torque

Flywheel Retaining Screw Torque

Governor

Governor Cross Shaft to Crankcase Running Clearance

Governor Cross Shaft O.D.

New	7.949/8.000 mm (0.3129/0.3149 in.)
Max. Wear Limit	7.936 mm (0.3124 in.)

Governor Gear Shaft O.D.

New	5.990/6.000 mm (0.2358/0.2362 in.)
Max. Wear Limit	5.977 mm (0.2353 in.)

Governor Gear Shaft-to-Governor Gear Running Clearance

Ignition

Spark Plug Type (Champion® or equivalent)	RC14YC (Kohler Part No. 66 132 01-S)
Spark Plug Gap	0.76 mm (0.030 in.)
Spark Plug Torque	24.4-29.8 N·m (18-22 ft. lb.)
Ignition Module Air Gap	0.2/0.3 mm (0.008/0.012 in.)
Ignition Module Fastener Torque	6.2 N·m (55 in. lb.) Into new as-cast hole 3.9 N·m (35 in. lb.) Into used hole

Muffler

Muffler Retaining Nuts Torque	24.4 N·m (216 in. lb.)
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Oil Filter/Oil Pan

Oil Filter Torque	8.1-9.4 N·m (72-84 in. lb.)
Oil Pan Fastener Torque	24.4 N·m (216 in. lb.)

Piston, Piston Rings, and Piston Pin

Piston-to-Piston Pin	0.006/0.018 mm (0.0002/0.0007 in.)
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Piston Pin Bore I.D.

New	17.006/17.013 mm (0.6695/0.6698 in.)
Max. Wear Limit	17.025 mm (0.6703 in.)

Piston Pin O.D.

New	16.995/17.000 mm (0.6691/0.6693 in.)
Max. Wear Limit	16.994 mm (0.6691 in.)

Top Compression Ring-to-Groove Side Clearance

LV560	0.040/0.096 mm (0.0016/0.0037 in.)
LV625	0.040/0.086 mm (0.0016/0.0034 in.)
LV675	0.050/0.096 mm (0.0012/0.0030 in.)

Middle Compression Ring-to-Groove Side Clearance

LV560	0.030/0.080 mm (0.0012/0.0031 in.)
LV625	0.040/0.086 mm (0.0016/0.0034 in.)
LV675	0.030/0.076 mm (0.0012/0.0030 in.)

Oil Control Ring-to-Groove Side Clearance

LV560	0.046/0.201 mm (0.0018/0.0079 in.)
LV625	0.046/0.196 mm (0.0018/0.0077 in.)
LV675	0.046/0.196 mm (0.0018/0.0077 in.)

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Safety and General Information

Piston, Piston Rings, and Piston Pin (Cont'd.)

Top and Middle Compression Ring End Gap

LV560

New Bore

Top Ring 0.180/0.380 mm (0.0071/0.0150 in.)

Middle Ring 0.180/0.440 mm (0.0071/0.0173 in.)

Used Bore (Max.) 0.76 mm (0.029 in.)

LV625

New Bore

Top Ring 0.180/0.380 mm (0.0071/0.0150 in.)

Middle Ring 0.250/0.450 mm (0.0098/0.0177 in.)

Used Bore (Max.) 0.77 mm (0.030 in.)

LV675

New Bore

Top Ring 0.180/0.430 mm (0.0071/0.0169 in.)

Middle Ring 0.250/0.460 mm (0.0098/0.0181 in.)

Used Bore (Max.) 0.80 mm (0.0315 in.)

Piston Thrust Face O.D.²

LV560

New 72.966/72.984 mm (2.8727/2.8734 in.)

Max. Wear Limit 72.839 mm (2.8677 in.)

LV625

New 76.967/76.985 mm (3.0302/3.0309 in.)

Max. Wear Limit 76.840 mm (3.0252 in.)

LV675

New 79.963/79.981 mm (3.1481/3.1488 in.)

Max. Wear Limit 79.831 mm (3.1430 in.)

Piston Thrust Face-to-Cylinder Bore² Running Clearance

LV560 0.022/0.065 mm (0.0009/0.0026 in.)

LV625 0.014/0.057 mm (0.0005/0.0022 in.)

LV675 0.019/0.062 mm (0.0007/0.0024 in.)

Speed Control

Speed Control Bracket Assembly Fastener Torque 10.7 N·m (95 in. lb.) Into new as-cast hole
7.3 N·m (65 in. lb.) Into used hole

Stator

Stator Mounting Screw Torque 6.2 N·m (55 in. lb.)

Throttle/Choke Controls

Governor Control Lever Fastener Torque 9.9 N·m (88 in. lb.)

Valve Cover/Rocker Arms

Valve Cover Fastener Torque 6.2 N·m (55 in. lb.)

Valves and Valve Lifters

Hydraulic Valve Lifter to Crankcase Running Clearance 0.0124/0.0501 mm (0.0004/0.0020 in.)

Intake Valve Stem-to-Valve Guide Running Clearance 0.038/0.076 mm (0.0015/0.0030 in.)

Exhaust Valve Stem-to-Valve Guide Running Clearance 0.050/0.088 mm (0.0020/0.0035 in.)






²Measure 6 mm (0.236 in.) above the bottom of the piston skirt at right angles to the piston pin.






Valves and Valve Lifters (Cont'd.)

Intake Valve Guide I.D.	
New	7.038/7.058 mm (0.2771/0.2779 in.)
Max. Wear Limit	7.134 mm (0.2809 in.)
Intake Valve Stem Diameter	
New	6.982/7.000 mm (0.2749/0.2756 in.)
Exhaust Valve Guide I.D.	
New	7.038/7.058 mm (0.2771/0.2779 in.)
Max. Wear Limit	7.159 mm (0.2819 in.)
Exhaust Valve Stem Diameter	
New	6.970/6.988 (0.2744/0.2751 in.)
Valve Guide Reamer Size	
Standard	7.048 mm (0.2775 in.)
0.25 mm O.S.	7.298 mm (0.2873 in.)
Intake Valve Minimum Lift	
	8.88 mm (0.3496 in.)
Exhaust Valve Minimum Lift	
	8.88 mm (0.3496 in.)
Nominal Valve Seat Angle	
	45°

General Torque Values

Metric Fastener Torque Recommendations for Standard Applications





Tightening Torque: N·m (in. lb.) + or - 20%						
	Property Class					
Size	 4.8	 5.8	 8.8	 10.9	 12.9	Noncritical Fasteners Into Aluminum
M4	1.2 (11)	1.7 (15)	2.9 (26)	4.1 (36)	5.0 (44)	2.0 (18)
M5	2.5 (22)	3.2 (28)	5.8 (51)	8.1 (72)	9.7 (86)	4.0 (35)
M6	4.3 (38)	5.7 (50)	9.9 (88)	14.0 (124)	16.5 (146)	6.8 (60)
M8	10.5 (93)	13.6 (120)	24.4 (216)	33.9 (300)	40.7 (360)	17.0 (150)

Tightening Torque: N·m (ft. lb.) + or -20%						
	Property Class					
Size	 4.8	 5.8	 8.8	 10.9	 12.9	Noncritical Fasteners Into Aluminum
M10	21.7 (16)	27.1 (20)	47.5 (35)	66.4 (49)	81.4 (60)	33.9 (25)
M12	36.6 (27)	47.5 (35)	82.7 (61)	116.6 (86)	139.7 (103)	61.0 (45)
M14	58.3 (43)	76.4 (55)	131.5 (97)	184.4 (136)	219.7 (162)	94.9 (70)

Section 1

Safety and General Information

English Fastener Torque Recommendations for Standard Applications

Tightening Torque: N·m (in. lb.) + or - 20%				
Bolts, Screws, Nuts and Fasteners Assembled Into Cast Iron or Steel				Grade 2 or 5 Fasteners Into Aluminum
	 Grade 2	 Grade 5	 Grade 8	
Size				
8-32	2.3 (20)	2.8 (25)	-----	2.3 (20)
10-24	3.6 (32)	4.5 (40)	-----	3.6 (32)
10-32	3.6 (32)	4.5 (40)	-----	-----
1/4-20	7.9 (70)	13.0 (115)	18.7 (165)	7.9 (70)
1/4-28	9.6 (85)	15.8 (140)	22.6 (200)	-----
5/16-18	17.0 (150)	28.3 (250)	39.6 (350)	17.0 (150)
5/16-24	18.7 (165)	30.5 (270)	-----	-----
3/8-16	29.4 (260)	-----	-----	-----
3/8-24	33.9 (300)	-----	-----	-----
Tightening Torque: N·m (ft. lb.) + or - 20%				
Size				
5/16-24	-----	-----	40.7 (30)	-----
3/8-16	-----	47.5 (35)	67.8 (50)	-----
3/8-24	-----	54.2 (40)	81.4 (60)	-----
7/16-14	47.5 (35)	74.6 (55)	108.5 (80)	-----
7/16-20	61.0 (45)	101.7 (75)	142.4 (105)	-----
1/2-13	67.8 (50)	108.5 (80)	155.9 (115)	-----
1/2-20	94.9 (70)	142.4 (105)	223.7 (165)	-----
9/16-12	101.7 (75)	169.5 (125)	237.3 (175)	-----
9/16-18	135.6 (100)	223.7 (165)	311.9 (230)	-----
5/8-11	149.2 (110)	244.1 (180)	352.6 (260)	-----
5/8-18	189.8 (140)	311.9 (230)	447.5 (330)	-----
3/4-10	199.3 (150)	332.2 (245)	474.6 (350)	-----
3/4-16	271.2 (200)	440.7 (325)	637.3 (470)	-----

Torque Conversions

N·m = in. lb. x 0.113
 N·m = ft. lb. x 1.356
 in. lb. = N·m x 8.85
 ft. lb. = N·m x 0.737