

# GROUP 2 ENGINE

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## SECTION 2-A ENGINE SPECIFICATIONS CONTENTS OF SECTION 2-A

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## SERVICE BULLETIN REFERENCE

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### 2-1 ENGINE TIGHTENING SPECIFICATIONS

Use a reliable torque wrench to tighten the parts listed, to insure proper tightness without straining or distorting parts. These specifications are for *clean and lightly lubricated threads* only; dry or dirty threads produce increased friction which prevents accurate measurement of tightness.

Part	Location	Thread Size	Torque Ft. Lbs.
Plug	Spark . . . . .	14 MM	22-28
Plug	Crankcase Drain . . . . .	18 MM	30-35
Bolt	Water Pump Cover . . . . .	1/4-20	12-15

Part	Location	Thread Size	Torque Ft. Lbs.
Bolt	Timing Chain Cover . . . . .	5/16-18	20-25
Bolt	Lower Crankcase (Oil Pan) . . . . .	5/16-18	6-15
Bolt	Valve Lifter Cover . . . . .	5/16-18	4-6
Bolt	Piston Pin Clamp . . . . .	5/16-24	25-30
Nut	Valve Rocker Arm Cover . . . . .	5/16-24	4-5
Bolt	Intake Manifold . . . . .	3/8-16	25-30
Bolt	Exhaust Manifold . . . . .	3/8-16	10-15
Bolt	Rocker Arm Shaft Bracket . . . . .	3/8-16	30-35
Bolt	Water Manifold . . . . .	3/8-16	25-30
Bolt	Generator Mounting Bracket . . . . .	3/8-16	25-30
Bolt	Engine Mounting Bracket . . . . .	3/8-16	30-35
Nut	Connecting Rod Bolt . . . . .	3/8-24	40-45
Bolt	Flywheel to Crankshaft . . . . .	1/4-20	50-55
Bolt	Cylinder Head . . . . .	1/4-14	63-73
Bolt	Crankshaft Bearing Cap . . . . .	1/2-13	100-110
Bolt	Fan Driving Pulley . . . . .	3/4-16	100-110

2-2 ENGINE GENERAL SPECIFICATIONS

NOTE: See paragraph 2-3 for dimensions.

Items	Series 40	Series 50	Series 60-70
Type—No. of Cylinders	← 90 Deg. V-8 →		
Valve Arrangement	← In Head →		
Bore and Stroke	3.625" x 3.2"	← 4" x 3.2" →	
Piston Displacement (cu. in.)	264	322	322
Compression Ratio, Synchronesh	7.5 to 1	8.4 to 1	8.4 to 1
Dynaflow	8.4 to 1	9.0 to 1	9.0 to 1
Compression Pressure @ 140 RPM Cranking Speed—			
Synchronesh, (P.S.I.)	140	155	155
Dynaflow (P.S.I.)	155	170	170
Taxable Horsepower	42.05	51.2	51.2
Max. Brake Horsepower, Bare Engine—			
Dynaflow, H.P. @ RPM	188 @ 4800	236 @ 4600	236 @ 4600
Cylinder Numbers, Front to Rear—			
Right Bank	← 1-3-5-7 →		
Left Bank	← 2-4-6-8 →		
Firing Order	← 1-2-7-8-4-5-6-3 →		
Crankshaft Bearings, No. and Type	← 5, Replaceable Liners →		
Material	← Steel Backed Durex—100A →		
Bearing Which Takes End Thrust	← No. 5 →		
Connecting Rod Bearings, Type	← Replaceable Liners →		
Material	← Steel Backed Moraine 400 →		
Piston Material & Surface Treatment	← Aluminum Alloy—Anodized →		
Compression Rings—No./Piston, Material	← 2, Cast Iron →		
Oil Rings—No./Piston	← One →		
Type	← 3-Piece/Expander →		
Location of all Piston Rings	← Above Piston Pin →		
Camshaft Drive	← Chain →		
No. & Type of Camshaft Bearings	← 5, Steel Backed Babbitt →		
Valve Lifter Type	← Hydraulic →		
Valve Spring Type	← Dual Helical →		
Oiling System Type	← Forced Feed →		
Oil Supplied to Bearing Surfaces—			
Crankshaft, Camshaft, Con. Rods	← Full Pressure →		
Pistons, Pins, Cylinders	← Splash →		
Cylinder Walls	← Splash & Nozzle →		
Valve Lifters, Rocker Arms, Valves	← Low Pressure →		
Normal Oil Pressure	← 35 lbs. @ 35 MPH →		
Oil Reservoir Capacity—Quarts			
Dry Engine	← 7 (8 with dry filter) →		
Refill	← 6 (7 with dry filter) →		
Oil Filter, Make and Type	← AC, Type PF-122 →		
Cooling System Type	← Pressure (7 lb. Rad. Cap.) →		
Water Temperature Control	← Thermostat & Fixed By-Pass →		
Thermostat Opens at—(deg. F)	← 157 to 162 →		
Cooling System Capacity—Quarts			
Less Heater	18.5 (*16.5)	18.5 (16.5*)	18.5 (*16.5)
With Heater	20.0 (*18)	20.0 (18*)	20.0 (*18)
Fan Diameter, No. of Blades	18", 4	*Synchronesh 18", 4	18", 4

2-3 ENGINE DIMENSIONS, FITS AND ADJUSTMENTS

NOTE: These dimensions and limits for fit of parts apply to new parts only. "T" means tight. "L" means loose.

Items	Series 40	Series 50-60-70,
Crankshaft Journal Diameter	← 2.498—2.499 →	
Crankshaft Journal to Bearing Clearance	← .0005"—.003" →	
Crankshaft End Play at Rear Bearing	← .004"—.008" →	
Crankshaft Bearing Effective Length—		
No. 1, 2, 3, 4	← .778" →	
No. 5	← .977" →	
Crankpin Journal Diameter	← 2.249"—2.250" →	
Crankpin Journal to Bearing Clearance	← .0002"—.0023" →	
Connecting Rod End Play on Crankpin	← .004"—.008" →	
Connecting Rod Bearing Length	← .881" →	
Cylinder Bores, Standard Size	← 3.6235"—3.6265" 3.9985"—4.0015" →	
Piston Clearance in Bore	← .0007"—.0017" →	
Piston Fit @ 70 Deg. F., Pull on Scale with .003" Feeler—Lbs.	← 7 to 13 →	
Piston Pin Diameter	← .940" →	
Piston Pin Fit @ 70° F.	← Finger Push (.0003"—.0005") →	

Items	Series 40	Series 60-70
Piston Ring Side Clearance in Groove—		
Compression Ring	.002" — .004"	
Oil Ring	.0035" — .0095"	
Piston Ring Gap, Compression Ring in Bore	.010" — .020"	
Oil Ring in Bore	.015" — .035"	
Camshaft End Play	.004" — .008"	
Camshaft Bearing Journal Diam.		
No. 1	1.685" — 1.686"	
No. 2	1.655" — 1.656"	
No. 3	1.625" — 1.626"	
No. 4	1.595" — 1.596"	
No. 5	1.565" — 1.566"	
Camshaft Journal Clearance in Bearings	.0005" — .0035"	
Valve Lifter Diameter	.8425"	
Valve Lifter Clearance in Crankcase	.0015" — .003"	
Valve Lifter Leakdown Rate, in Text Fixture	12 to 40 Sec.	
Rocker Arm Clearance on Shaft	.001" — .003"	
Valve Head Diameter—Inlet	1.750"	
Valve Head Diameter—Exhaust	1.375"	
Valve Seat Angle—Inlet & Exhaust	45 Degrees	
Valve Stem Diameter—Inlet	.372"	
Valve Stem Diameter—Exhaust	.3715"	
Valve Stem Clearance in Guide—Inlet	.0025"	
Exhaust	.0030"	
Valve Spring—Outer		
Valve Closed (lbs. @ length)	37.5—42.5 @ 1.5"	
Valve Open (lbs. @ length)	85—91 @ 1.12"	
Valve Spring—Inner		
Valve Closed (lbs. @ length)	19.5—24.5 @ 1.53"	
Valve Open (lbs. @ length)	53—59 @ 1.15"	
Oil Pump Shaft to Bearing Clearance	.001" — .0025"	
Oil Pump Idler Gear Bearing Clearance	.001" — .0025"	
Oil Pump Driving Gear Backlash	.003" — .006"	
Oil Pump, Drive and Idler Gear Backlash	.006" — .012"	
Oil Pump Gear End Clearance in Body	.0005" — .004"	
Oil Pressure Valve Clearance in Body	.003" — .006"	
Fan Belt Adjustment (Deflection)	$\frac{3}{8}$ "	
Water Pump Bearing Fit in Body	.0004" T to .0018" T	
Fan Hub Fit on Bearing Shaft	.001" T — .0025" T	
Fan Hub Position from End of Shaft	$1\frac{3}{4}$ "	

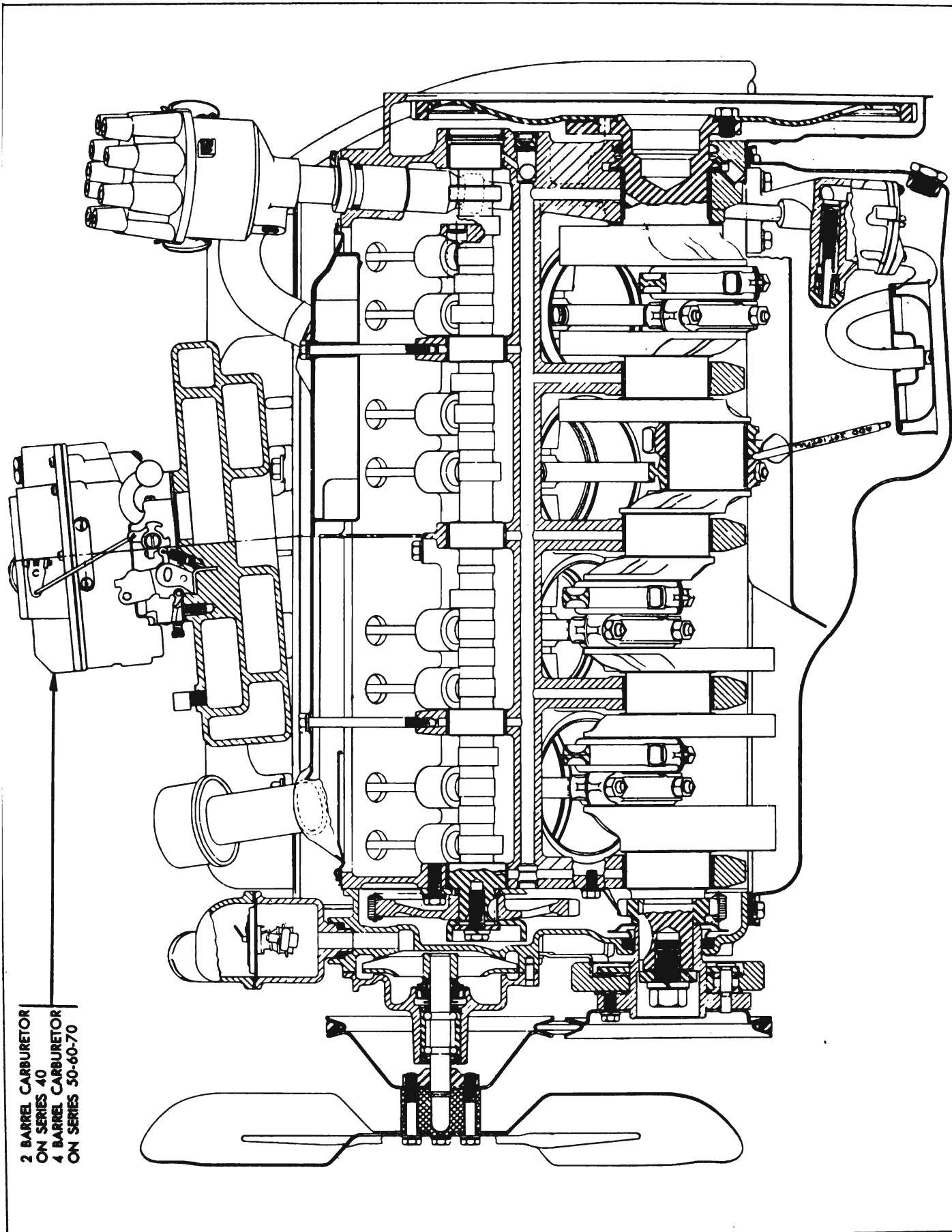


Figure 2-1 — Engine, Side Sectional View—All Series