GROUP 2
ENGINE

SECTIONS IN GROUP 2

SECTION 2-A
ENGINE SPECIFICATIONS

CONTENTS OF SECTION 2-A

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	¼-20	6-8
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 (in lbs.)
Nut	Valve Rocker Arm Cover	5/16-24	4-6 (in lbs.)
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
Nut	Connecting Rod Bolt	3/8-24	40-45
Bolt	Flywheel to Crankshaft	7/16-20	50-60
Bolt	Cylinder Head	7/16-14	65-75
Bolt	Crankshaft Bearing Cap	½-13	100-110
Bolt	Harmonic Balancer	¾-16	100-110

2-2 ENGINE GENERAL SPECIFICATIONS

NOTE: *See paragraph 2-3 for dimensions.*

Items	Series 40	Series 50-60-70-700
Type—No. of Cylinders	90 Deg. V-8	
Valve Arrangement	In Head	
Bore and Stroke	4.125″ x 3.4″	
Piston Displacement (cu. in.)	364	
Compression Ratio, Synchromesh	8.0 to 1	
Dynaflow	9.5 to 1	10 to 1
Compression Pressure @ 190 RPM Cranking Speed—		
Synchromesh (P.S.I.)	150	
Dynaflow (P.S.I.)	170	185
Taxable Horsepower	54.45	
Max. Brake Horsepower, Bare Engine—		
Dynaflow, H.P. @ RPM	250 @ 4400	300 @ 4600
Engine Torque (Lbs-ft @ RPM)	380 @ 2400	400 @ 3200
Engine manifold vacuum at idle	14 in. Hg. (Min.)	
Cylinder Numbers, Front to Rear—		
Right Bank	1-3-5-7	
Left Bank	2-4-6-8	

Items	Series 40	Series 50-60-70
Firing Order	1-2-7-8-4-5-6-3	
Crankshaft Bearings, No. and Type	5, Replaceable Liners	
Material—Front Four	Steel Backed Moraine 400	
Material—Rear	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—Tin Plated	
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, Type and Material	Cast Iron Alloy	
Camshaft Drive	Chain	
No. & Type of Camshaft Bearings	5, Steel Backed Babbitt	
Valve Lifter Type and Material	Hydraulic, Cast Iron	
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	40 lbs. @ 35 MPH	
Vacuum Pump—Static Head (Min.)	22″ Hg. @ 1600 Eng. RPM	
Oil Reservoir Capacity—Quarts		
Dry Engine	6 (7 with dry filter)	
Refill	5 (6 with dry filter)	
Oil Filter, Make and Type	AC, Type PF-122	
Cooling System Type	Pressure (15 lb. Rad. Cap.)	
Water Temperature Control	Thermostat & Fixed By-Pass	
Thermostat Opens at—(deg. F)	157 to 162	
Cooling System Capacity—Quarts		
Less Heater	16.5	
With Heater	19	
Fan Diameter, No. of Blades, Regular	20″, 4	
With Air Conditioning	20″, 5	
Fan Drive—Regular	Water Pump Shaft	
With Air Conditioner	Torque Sensitive Clutch	

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	All Series
Crankshaft Journal Diameter	2.498—2.499
Crankshaft Journal to Bearing Clearance	.0005″—.0025″
Crankshaft End Play at Rear Bearing	.004″—.008″
Crankshaft Bearing Effective Length—	
No. 1, 2, 3, 4	.804″
No. 5	1.105″
Crankpin Journal Diameter	2.249″—2.250″
Crankpin Journal to Bearing Clearance	.0002″—.0023″
Connecting Rod End Play on Crankpin	.005″—.012″
Connecting Rod Bearing Length	.781″
Cylinder Bores, Standard Size	4.1235″—4.1265″
Piston Clearance in Bore	.0008″—.0014″
Piston Fit @ 70 Deg. F., Pull on Scale with .003″ Feeler—Lbs.	7 to 13
Piston Pin Diameter	.9995″—.9997″
Piston Pin Fit @ 70° F. (In Piston)	Finger Push (.0004″)
Piston Pin Fit (In connecting rod)	.0007″T to .0015″T
Piston Ring Side Clearance in Groove—	
Compression Ring	.003″—.005″
Oil Ring	.0035″—.0095″
Piston Ring Gap, Compression Ring in Bore	.015″—.025″
Oil Ring in Bore	.015″—.035″
Camshaft Bearing Journal Diam.	
No. 1	1.785″—1.786″
No. 2	1.755″—1.756″
No. 3	1.725″—1.726″
No. 4	1.695″—1.696″
No. 5	1.665″—1.666″
Camshaft Journal Clearance in Bearings	.0005″—.0035″
Valve Lifter Diameter	.8425″
Valve Lifter Clearance in Crankcase	.0015″—.003″
Valve Lifter Leakdown Rate, in Test Fixture	12 to 40 Sec.

Items	All Series
Rocker Arm Clearance on Shaft	.002″—.004″
Valve Head Diameter—Inlet	1.875″
Valve Head Diameter—Exhaust	1.437″
Valve Seat Angle—Inlet & Exhaust	45 Degrees
Valve Stem Diameter—Inlet	.372″
Valve Stem Diameter—Exhaust	.371″
Valve Stem Clearance in Guide—Inlet	.0015″—.0035″
Exhaust	.003″—.005″
Valve Spring—Outer	
Valve Closed (lbs. @ length)	39.5—44.5 @ 1.53″
Valve Open (lbs. @ length)	93—99 @ 1.11″
Valve Spring—Inner	
Valve Closed (lbs. @ length)	23—28 @ 1.62″
Valve Open (lbs. @ length)	63—69 @ 1.2″
Oil Pump Shaft to Bearing Clearance	.001″—.0025″
Oil Pump Idler Gear Bearing Clearance	.001″—.0025″
Oil Pump Driving Gear Backlash	.002″—.004″
Oil Pump, Drive and Idler Gear Backlash	.004″—.008″
Oil Pump Gear End Clearance in Body	.005″
Fan Belt Adjustment (Torque to Slip Generator Pulley)	15-20 ft. lbs.
Water Pump Bearing Fit in Body	.0008″T to .0023″T
Fan Hub Fit on Bearing Shaft	.001″T—.0025″T
Fan Hub Position from End of Shaft	½″

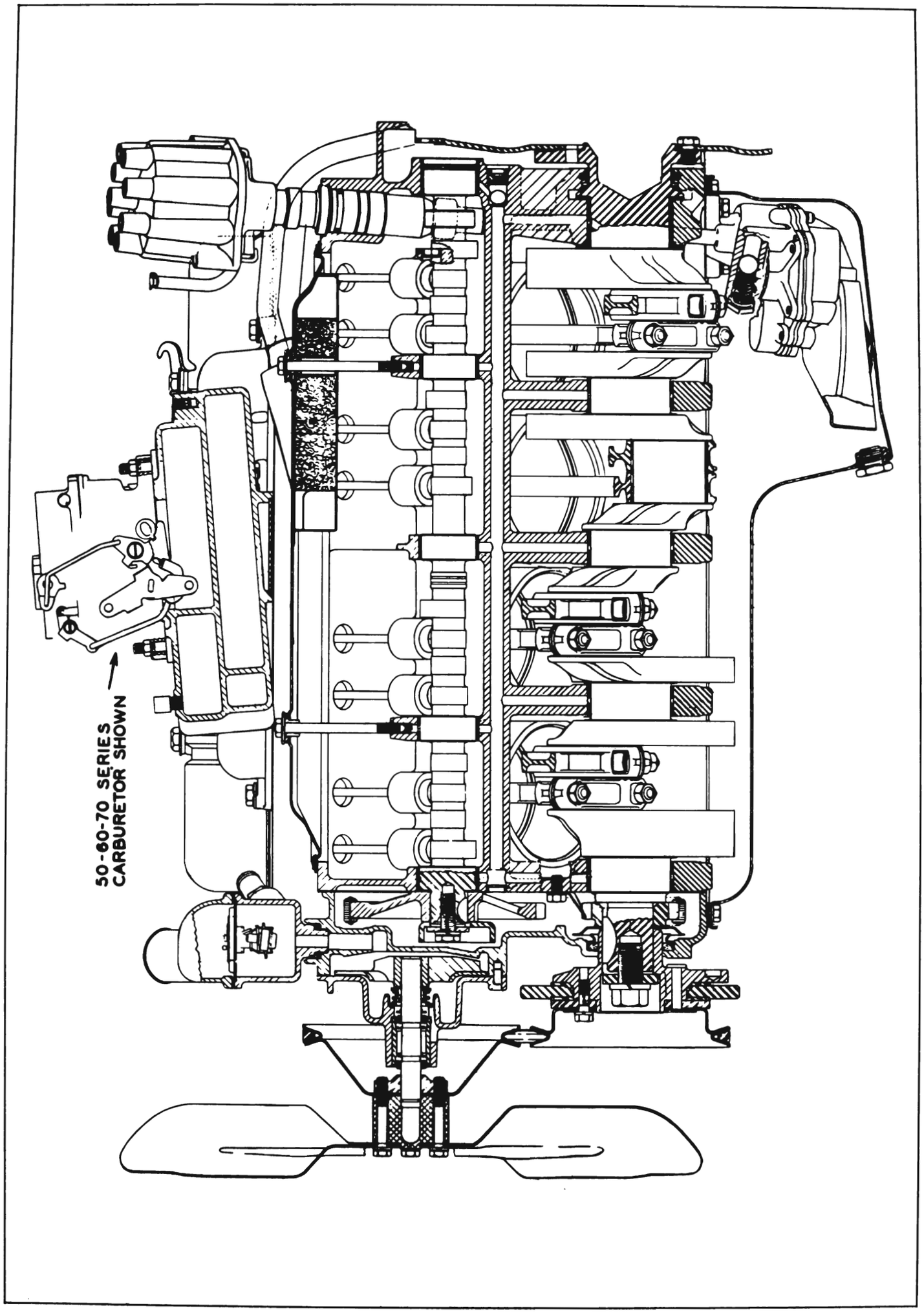

Figure 2-1—Engine, Side Sectional View—All Series