

## 1950 Pacemaker



## Specifications & Adjustments



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<b>ENGINE:</b>		<b>Connecting Rods (Cont'd)</b>	
Valve Arrangement	L-Head	Weight	34.24 oz. No Bearing
Bore and Stroke	3-9/16" x 3-7/8"	Length—Center to Center	8-1/8"
Piston Displacement	232 cu. in.	Bearing—Lower End	Replaceable shells
Maximum Torque	175 ft. lbs. at 1600 RPM	Type	Babbit steel hack
Horsepower—Actual	112 at 4000 RPM	Diameter and Length	2-1/8" x 1-5/8"
Taxable	30.4	End Play	.007" to .013"
Compression Ratio:		Diametral Clearance	.005" to .0015"
Cast Iron Head (Std.)	6.7:1	Shims	None
Aluminum Head	7.2:1	Bushing—Upper End:	
(Opt.)	1-5-3-6-2-4	Material	Steel back babbit
Firing Order	3 Points—Rubber	Diameter and Length.	.96875 x 1-1/8"
Mounting	Right Hand Front Side	Diametral Clearance	0 to .0003' at 70° F.
Number Location	Yes (in rubber)		
Vibration Dampener			
<b>CAMSHAFT:</b>		<b>PISTON:</b>	
Material	Cast Iron Alloy	Type	Cam Ground, T-slot
Drive	Chain	Material	Aluminum Alloy
		Weight	18-3/8 oz.+1/8 oz.
Bearings:		Pin Center to Top	2.310 to 2.314
Type	Steel-hack Babbit	Clearance (Piston to Bore)	.0015 to .002
Number	4	Ring Groove Depth	0.195"
Diameter and Length:		<b>PISTON PIN:</b>	
No. 1	2.375" x 1-13/16"	Type	Floating
No. 2	1.997" x 5/16"	Length	2.9375"
No. 3	1.965" x 15/16"	Diameter	9.968"
No. 4	1.497" x 105/16"	Fit in Piston	0" to .0003" tight at 70° F.
Radial Clearance	.0015" to .002"	Fit in Rod	Hand push fit at 70° F.
End Play	.003" to .005"		
Timing Marks	On sprockets and chain		
Timing Chain	60 links 3/8" pitch		
Timing Chain Width	1-1/4"		
		<b>PISTON RINGS:</b>	
<b>CRANKSHAFT:</b>		Material	Cast Iron
Type	Compensated	Compression Rings	Two (Pinned)
		Width	5/64"
Journal Size:		Oil Rings	Two (Pinned)
No. 1	2.4995 x 1.4375	Width—Upper	(1-Below piston pin)
No. 2	2.4995 x 1.375	Width—Lower	3/16"
No. 3	2.4995 x 1.625	Gap Clearance	5.32"
No. 4	2.4995 x 1.75	Ring Expanders	.006" to .014"
Crankpins	2.1244 to 2.1254		None
Main Bearing Size:		<b>VALVES:</b>	
No. 1	2.4993 to 2.5013	Intake:	
No. 2	2.4993 to 2.5013	Angle of Seat	45°
No. 3	2.4993 to 2.5013	Seat Outside Diameter	1.831"
No. 4	2.4993 to 2.5013	Port Diameter	1-11/16"
Radial Clearance	.0005" to .0015"	Lift	11/32"
Adjusting Shims	None	Length	
End Play	.003" to .009"	Stem Diameter	5.730"
Thrust	On No. 3 Bearing	Stem to Guide Clearance	.3402" to .3412"
<b>CONNECTING RODS:</b>		Operating Clearance:	.0015" to .003"
Material	Drop-forged Steel	Hot	.008'
		Inserts	None

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**Valves (Cont'd)**

Exhaust:	
Angle of Seat	45°
Head Outside Diameter	1.556"
Port Diameter	1.375"
Lift	.346"
Length	5.730"
Stem Diameter	.3402" to .3412"
Stem to Guide Clearance.	.002" to .004"
Operating Clearance:	
Hot	.010"
Valve Angle	7 degrees
Inserts	None

**VALVE GUIDES**

Type	Removable
Length	
Intake	2-29/32"
Exhaust	3-5/32"
Inside Diameter	3.437"

**VALVE SPRINGS**

Free Length	2.500"
With Valve Closed	2.188
With Valve Open	1.842
Total Coils	9-1/2
Spring Pressure	77 lbs. at 2-3/16"

**VALVE TAPPETS**

Type	Mushroom
Guides	Integral with block
Guide Size	.6245 to .6250
Tappet Size	.62325 to .62375
Fitting Clearance	.00075" to .0015"
Length	2.310

**VALVE TIMING**

Inlet Opens	7°-18' BUDC
Inlet Closes	53°-42' ALDC
Exhaust Opens	53°-18' BLOC
Exhaust Closes	7°-42' AUDC
Timing Marks	On Flywheel

**LUBRICATION**

Engine Lubrication	Pressure
Normal Pressure	40 lbs. at 30 MPH
Oil Pump Type	Rotor
Oil Pump Drive	Worm on Camshaft
Oil Capacity	Dry, 7 1/2 qts. U.S. Refill, 7 qts. U.S.

**CARBURETOR:**

Make	Carter
Model	WA 1-749S
Type	Single Throat Down Draft
Float Level.	1/2"
Pump Travel	16/64"

**Carburetor (Cont'd)**

Idle Adjustment	1/2 to 1-1/2 Turns open
Metering Rod	Vacuumeter
Metering Rod Gauge	J-1265 (2.468")
Choke	Climatic control
Anti-percolator Valve	Saxophone key

**FUEL PUMP**

Standard	Carter -M-729-SZ
Optional	AC
Pressure	4 lbs. ± 1 lb.

**GENERATOR**

Make	Auto-Lite
Model	GDZ-6001B
Type	Shunt
Volts	6
Control	Vibrating Type 3-unit regulator
Controlled Output	35 amperes
Poles	2
Brushes	2
Brush Spring Tension	35-53 ounces (with new brushes)
Bearings:	
Commutator End	Bronze
Drive End	Ball

**LUBRICATION**

At LuBe Periods	3 to 5 drops engine oil at each oiler
At Overhaul	Pack ball bearing 1/2 full of high temperature, non-fiber grease. Soak bronze bearing in engine oil and pack grease pocket with high temperature grease
Armature Shaft End Play	.003" to .010"
Ground Polarity	Positive
Field Coil Draw	1.6 to 1.8 amperes to 6.0 volts
Motorizing Draw	4.2 to 4.6 amperes at 6.0 volts
Output Test:	
Cold	6.4 volts, 0 amp sat 970 Max. RPM 8.0 volts, 35 ampsat 2.000 Max. RPM
Hot	6.4 volts, 0 amps at 1.050 Max. RPM 8.0 volts, 35 ampsat 2.350 Max. RPM

**STARTER MOTOR**

Make	Auto-Lite
Model	MZ-4159
Volts	6
Poles	4
Brushes	4
Brush-Spring Tension	42-53 oz.
Armature Shaft End Play	.005" to 1/16"

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**Starter Motor (Cont'd)**

Cranking Voltage	5 volts
Cranking Amperage (Approx.)	160 amps. at 150 RPM
Free Running Test:	
Volts	5.5
Amperes	70
RPM	4300
Stall Test:	
Volts	4.0
Amperes	540
Min. Ft. Lbs.	12.3
Lubrication	None required

**VOLTAGE REGULATOR**

Make	Auto-Lite
Type	VRP-6002-A
Volts	6
Ground Polarity	Positive
Resistors:	
R1	34.5 to 42 ohms (Marked 38)
R2	6.5 to 8.0 ohms (Marked 7)
Cutout Relay:	
Armature Air Gap	.031" to .034"
Contact Point Gap	.015" Minimum
Contacts Close	6.4 to 7.0 volts
Contacts Open:	
Volts	4.1 to 4.8 volts after 15 ampere charge
Amperes Reverse Current	4 to 6 amps.
Current Regulator:	
Armature Air Gap	.048" to .052"
Operating Amperage	34.0 to 36.0 amperes
Voltage Regulator:	
Armature Air Gap	.048" to .052"
Operating Voltage	(at 10 ampere charging rate):
Temp. F	50° 60° 70° 80°
Volts	7.41 7.38 7.35 7.32
Temp. F.	90° 100° 110° 120°
Volts	7.29 7.26 7.23 7.20
	(Allowable variation: plus or minus 0.15 volts)
Winding Resistance:	
Two Shunt Coils in Parallel	7.9 to 8.8 ohms
Cutout Relay Voltage Winding	29.8 to 33.0 ohms
Voltage Regulator	10.4 to 12.0 ohms

**DISTRIBUTOR**

Make	Auto-Lite
Model	IAT-4002

**Distributor (Cont'd)**

Rotation	Clockwise
Drive	Oil pump
Point Gap	.020"
Points Open	TDC
Cam Dwell	38°
Breaker Arm Spring Tension	17-20 oz.
Condenser Capacity	20—.25 MFD.
Bearings:	
Breaker Plate	None
Shaft	Bronze
Shaft Side Play, Max	.005"
Shaft End play:	
Minimum	.003"
Maximum	.010"
Timing Mark	Flywheel

**Centrifugal Governor:**

Advance.	300 RPM °
	330 RPM °
	400 RPM °
	750 RPM °
	1200 RPM 10°

Advance must follow on a smooth curve within 1° of above at all points

**VACUUM ADVANCE:**

9.2" Hg.	0°
10" Hg.	1°
10.5" Hg.	2°
11" Hg.	3°
12" Hg.	5°

Allowable variation from curve, plus or minus 1°

**COIL**

Make	Auto-Lite
Model	Cr-6012-A
Amperage Draw:	
Engine Stopped	5.0 amps.
Engine Idling	1.5-2.0 amps.

**FRAME AND SHEET METAL**

Wheel Base	119"
Length—	
Bumper to Bumper	201-1/2"
Height—	
Road to Roof	60-3/8"
Width—	
Fender to Fender (outside)	77-1/16"
Road Clearance—	
Front and Rear	8"
Front Tread	58-1/2"
Rear Tread	55"

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Specifications & Adjustments (Cont'd)**

**BRAKES**

Type	4 Wheel Bendix Hydraulic
Drum Diameter	11"
Material	Centrifuse
Lining Type	Moulded
Width, Front	1-3/4"
Width, Rear	1-3/4"

**Wheel Cylinder Size**

Front	1-1/16"
Rear	15/16"
Adjustments	Anchor Pin Radially
Front and Rear Shoe	Adjusting Screw
Clearance	
Both Ends of Shoe	.010"
Mechanical Follow-Up	1-1/4"
Pedal Free-Play	1/4"

**CLUTCH**

Type	9" Clutch Single Plate in Oil	10" Clutch Single Plate in Oil
Fluid used	Hudsonite Compound	Hudsonite Compound
Amount of Fluid	1/3 Pint	1/3 Pint
Filler plugs	Front of flywheel	Front of flywheel
Plate facing	Cork inserts	Cork inserts
Number of Corks	90	108
Pilot bearing	Ball	Ball
Throwout hearing	Ball	Ball
Engaging fingers	3	3
Throwout bearing	—	—
Lubricant	Chassis lube	Chassis lube
Lube fitting	Right side of clutch housing	Right side of clutch housing
Clutch pedal free play limits (measured from underside of floorboard to face of clutch pedal lever)	1-1/4" to 1-3/4"	1-1/4" to 1-3/4"
Engaging springs		
Inner	6	3
Outer	9	12
Engaging spring tension (Compressed to 1-5/8"):		
Inner	75-85 lbs.	75-85 lbs.
Outer	130-140 lbs.	130-140 lbs.

**TIGHTENING TORQUE (BOTH CLUTCHES)**

Throwout finger retainer nuts	40-45 ft. pounds
Cover cap screws	20-25 ft. pounds
Cover driving lug nuts	40-45 ft. pounds
Clutch housing cap screws	40-45 ft. pounds
Flywheel bolt	20-25 ft. pounds

**STEERING GEAR**

Type	Worm and 3 tooth roller	
Ratio	501-2-3-4 500	20.4 to 1 18.2 to 1
Steering wheel, 500	18" Hard rubber steering wheel with horn button	
502-504	Custom 18" plastic steering wheel with horn ring	
Gear shaft bearings	Needle	
Worm shaft bearings	Tapered roller	
High Point	Notch on steering column tube straight down	
Lubrication	S A E 90 E. P	
Wheel Nut Torque	20 to 30 foot pounds	
Gear Shaft Nut Torque	125 to 140 foot pounds	
Gear to Frame bolts	50 to 60 foot pounds	

**WHEELS AND TIRES**

**WHEELS**

		Wheel Size
Model	Standard	Optional
500	15 x 5.00	15 x 5.50
All Convertible Broughams	15 x 5.50	—

**TIRES**

		Tire Size
Model	Standard*	Optional**
500	7.10 x 15	7.60 x 15
All Convertible Broughams	7.60 x 15	—

\* 4-ply, black sidewall is standard; 6-ply tires are optional in both sizes.

\*\* White sidewall, 4-ply tires are optional in both sizes.