

GROUP 10 ELECTRICAL SYSTEMS

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SECTION 10-A ELECTRICAL SPECIFICATIONS

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SERVICE BULLETIN REFERENCE

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10-1 BATTERY SPECIFICATIONS

Items	Series 40-50	Series 70
Make	← Delco-Remy →	
Number	15 E4-W	17 E4-W
Location	← Right Side Under Hood →	
Voltage	6	6
Capacity-Wet Battery (Amp. Hrs. @ 20 Hr. Rate)	100	120
Number of Plates	15	17
Separator Material	Wood	Wood
Case Material	Buna "S"	Buna "S"
Terminal Grounded	Negative	Negative
Electrolyte Level	← See paragraph 10-18 →	
Bench Charging Rate-Start	← 1 Amp./Pos. Plate or 7 Amp. for 15 Plate Battery →	
Bench Charging Rate-Finish	½ Amp./Pos. Plate	1 Amp./Pos. Plate

10-2 GENERATING SYSTEM SPECIFICATIONS

Items	Series 40-50	Series 70
a. Generator		
Make	← Delco-Remy →	
Type	Shunt	Shunt
Model—1948 All Series	1102679	1102668
Model—1949 Series 50-70	1102709	1102708
Location	← L. Side of Engine-Front →	

10-2 SPECIFICATIONS

ELECTRICAL SYSTEMS (278)

Items	Series 40-50	Series 70
Mounting Type	Hinged	Hinged
Drive	← Fan Belt →	
Rotation	← Clockwise-Drive End →	
Ratio-Generator to Engine	1.901 to 1	1.981 to 1
Output Regulation	← Voltage and Current Regulator →	
Max. Charge Capacity (Amps) @ 8 Volts HOT,		
1948 All Series @ 2600 Gen. RPM	34-36	34-36
1949 Series 50-70 @ 2400 Gen. RPM	40	40
Amps. Motoring Freely @ 6 Volts—		
1948 All Series @ 800 RPM	← 3.75 Approx. →	
1949 Series 50-70 @ 500 RPM	← 4.8 Approx. →	
NOTE: With brushes seated and bearings run in.		
Amps. Max. Stall Current @ 6 Volts—		
1948 All Series	34	34
1949 Series 50-70	← 55 Max. →	
Amps. Field Current @ 6 Volts—		
1948 All Series	← 1.75—1.90 →	
1949 Series 50-70	← 1.90—2.05 →	
Brush Spring Tension—Ounces	24-28	24-28

b. Generator Regulator

Make	← Delco-Remy →	
Model—1948 All Series	← 1118201 →	
Model—1949 Series 50-70	← 1118357 →	
Location	← Front Left Side of Dash →	
Cutout Relay Closing Voltage, HOT—		
1948 and 1949 All Series	← 6.1 to 6.8; Adjust to 6.4 →	
Cutout Relay Opening Current-Amps.	← 1 to 6 →	
Cutout Relay Air Gap, Points Closed	.020"	.020"
Cutout Relay Contact Point Opening	.020"	.020"
Car Speed When Cutout Relay Closes, Approx. MPH	← 8 to 10 →	
Current Regulator Air Gap, Points Just Touching—		
1948 All Series	.080"	.080"
1949 Series 50-70	.075"	.075"
Current Regulator Setting, Amps., HOT, at Approx. 2000 Eng. RPM—		
1948 All Series	← 34 to 36; Adjust to 35 →	
1949 Series 50-70	← 40 to 46; Adjust to 42 →	
Voltage Regulator Air Gap, Points Just Touching—		
1948 All Series	.070"	.070"
1949 Series 50-70	.075"	.075"
Voltage Regulator Setting, Volts @ 8-10 Amps., HOT, at Approx. 1500 Eng. RPM—		
1948 and 1949 All Series	← 7.2 to 7.7; Adjust to 7.4 →	

10-3 CRANKING (STARTER) SYSTEM SPECIFICATIONS

Items	Series 40-50	Series 70
a. Cranking Motor		
Make	← Delco-Remy →	
Model 1948 All Series	1107049	1107929
Model 1949 Series 50-70	1107078	1107953
Location	← Right Side of Engine →	
Type of Shift	← Mechanical-Electrically Controlled →	
Shift Actuation	← Solenoid →	
Shift Operation	← Accelerator Pedal →	
Type of Drive	← Overrunning Clutch →	
Rotation, Viewing Drive End	← Clockwise →	
Gear Ratio		
No. Teeth on Flywheel Ring Gear	16.22 to 1	17.33 to 1
No. Teeth on Drive Pinion	146	156
Running Torque-Ft. Lbs.	9	9
Running Torque-Amps.	8 @ 475 RPM	8 @ 625 RPM
No Load Test—	375 @ 4.1 V.	380 @ 4.2 V.
Amperes	65	65
Volts	5.67	5.67
R.P.M.	5000	5500
Lock Torque Test—		
Amperes	525	600
Volts	3.4	3.0
Torque-Lbs. Ft.	12	16
Brush Spring Tension-Ounces	← 24 to 28 →	
Armature End Play	← .005"-.050" →	
Pinion Clearance in Cranking Position	3/16"	3/16"
Shift Lever Return Spring Tension—		
Start of Travel	← 9 to 12 Lbs. →	
End of Travel	← 28 to 35 Lbs. →	

Items	Series 40-50	Series 70
b. Solenoid Switch and Relay		
Current Draw of Solenoid Windings @ 80° F.—		
Hold-in Winding	←————12 to 14 Amps. @ 5 Volts————→	
Both Windings in Parallel	←————65 to 71 Amps. @ 5 Volts————→	
Solenoid Relay Adjustments—		
Air Gap-Points Closed	←————Not Less Than .015"————→	
Point Opening	←————.025"025"————→	
Closing Voltage	←————1.2 to 1.8 V.————→	
Sealing Voltage	←————Not More Than 3.0 V.————→	
Opening Voltage	←————Not Less Than .6 V.————→	

c. Accelerator Vacuum Switch		
Timing—Carter Carburetor—		
Using Gauge—From Throttle Closed Position	←————30 to 45 Degrees————→	
Travel at Unloader Arm—From Throttle Closed Position	←————1 ⁵ / ₁₆ " to 1 ⁵ / ₁₆ "————→	

10-4 IGNITION SYSTEM SPECIFICATIONS

Items	Series 40-50	Series 70
a. Ignition Switch and Lock		
Switch—Make	←————Delco-Remy————→	
Lock—Make	←————Delco-Remy, Briggs-Stratton————→	
b. Ignition Coil		
Make	←————Delco-Remy————→	
Model	←————1115328————→	
Location	←————Right Side of Engine————→	
Amps. Draw of Coil—		
Engine Stopped	4 1/2	4 1/2
Engine Idling	2 1/2	2 1/2
Coil Pri. Res. Ohms @ 70° F.	←————1.20 to 1.30————→	
Coil Sec. Res. Ohms @ 70° F.	←————2900 to 3800————→	

c. Spark Plugs		
Make	AC	AC
Model	48	48
Plug Location	←————R. Side of Cyl. Head————→	
Thread Size	14 MM	14 MM
Shell Hex. Size	13/16"	13/16"
Gap	←————.023"-.028"————→	
Length of Terminal Nut	3/4"	3/4"
Length of Cable Terminal	13/16"	13/16"

d. Distributor		
Make	←————Delco-Remy————→	
Model, 1948 All Series	1110801	1110801
Model, 1949 Series 50-70	1110815	1110815
Location	←————R. Side of Crankcase————→	
Drive	←————Gears on Cam Shaft and Distrib. Shaft————→	
Rotation	←————Counterclockwise, Top View————→	
Timing, Before U.D.C.	4 to 5 Deg.	6 to 7 Deg.
Spark Control Advance—Flywheel Degrees—		
Centrifugal	←————22 to 26————→	
Vacuum—Max.	←————10 to 12————→	
Vacuum Advance Test, Distributor Degrees—		
At 5" to 7" (Hg.) of Vacuum	←————Start Travel————→	
At 10" to 13" (Hg.) of Vacuum	←————5 to 6 Deg.————→	
Centrifugal Advance Test, Distributor Degrees and RPM (1/2 Engine RPM)		
At 250 RPM	←————0 to 2 Deg.————→	
At 400 RPM	←————5 to 7 Deg.————→	
At 1500 RPM	←————11 to 13 Deg.————→	
Contact Point Opening	←————.0125" to .0175"————→	
Breaker Arm Spring Tension, Measured at Side of Point	←————19 to 23 oz.————→	
Breaker Base Plate Tension, 1949 Model	←————11 to 18 oz.————→	
Shaft End Play	←————.002" to .007"————→	
Condenser Make	←————Delco-Remy————→	
Condenser Capacity—Microfarads	←————.18 to .23————→	

10-5 LIGHTING SYSTEM SPECIFICATIONS

Items	Series 40-50	Series 70
a. Lamps, Switches, Wiring		
Headlamp—Make	←	→ Guide
Headlamp—Type	←	→ Sealed Beam
Headlamp Lens Diameter	←	→ 6 ¹¹ / ₁₆ "
Parking and Signal Lamp—Make	←	→ Guide
Tail, Stop and Signal Lamp—Make	←	→ Guide
Lighting Switch—Make	←	→ Delco-Remy
Instrument Panel Light Switch—Make	←	→ Delco-Remy
Wiring Circuit Type	←	→ Single Wire
Wiring Circuit Protection, for Head, Parking, Tail, License, Map, Glove Box, Instrument Lights	←	→ Thermo Circuit Breaker
Thermo Circuit Breaker Location	←	→ On Lighting Switch
Thermo Circuit Breaker Calibration @ 70° F.— Stay Open Indefinitely at	←	→ 30 Amps.
Open in 3 Minutes at	←	→ 42 Amps.

b. Lighting and Other Circuit Fuses		
Direction Signal Lamp—1948 Models	←	→ 14 Amp. SFE
Location	←	→ In Container Back of Instrument Cluster
Direction Signal Lamp—1949 Ser. 50-70	←	→ 15 Amp. AGC
Location	←	→ On Fuse Block Under Cowl
Instruments and Clock Lights, 1948 Models Only	←	→ 14 Amp. SFE (1 ¹ / ₁₆ x 1/4)
Location	←	→ On Instrument Panel Light Switch
Dome Lamp and Rear Cigar Lighter	←	→ 30 Amp. SFE (1 ⁷ / ₁₆ x 1/4)
Location, 1948 Models	←	→ In Container Under Cowl—Left Side
Location, 1949 Ser. 50-70	←	→ On Fuse Block Under Cowl
Cigar Lighter, Front and Rear	←	→ Special
Location	←	→ Back of Lighter
Electric Clock	←	→ 3 Amp. AGA (5/8 x 1/4)
Location, 1948 Models	←	→ In Fuse Container Clipped to R. Radio Suppt. Brkt.
Location, 1949 Ser. 50-70	←	→ On Fuse Block Under Cowl
Radio	←	→ 15 Amp. AGC (1 1/4 x 1/4)
Location	←	→ At End of "A" Lead at Set
Heater, 1948 Models	←	→ 14 Amp. SFE (1 ¹ / ₁₆ x 1/4)
Location	←	→ At Back of Switch
Defroster, 1948 Models	←	→ 14 Amp. SFE (1 ¹ / ₁₆ x 1/4)
Location	←	→ At Back of Switch
Heater and Defroster, 1949 Ser. 50-70	←	→ 14 Amp. SFE (1 ¹ / ₁₆ x 1/4)
Location	←	→ On Fuse Block Under Cowl

c. Lamp Bulbs	No. Req.	Mazda No. and Power
Headlamp Sealed Beam Unit	2	45-35 Watt
Headlamp Beam Indicator	1	51; 1 CP
Parking and Front Dir. Signal	2	1154; 21-3 CP
Direction Signal, Rear— Series 40	2	1129; 21 CP
Series 50-70	2	1154; 21-3 CP
Direction Signal Indicator	2	51; 1 CP
License Plate Lamp	1	63; 3 CP
Tail and Stop Lamps	2	1154; 21-3 CP
Instrument Lights	4	55; 2 CP
Map Light	1	55; 2 CP
Dome Lamp—1948 Models Except 56C and 76C	1	82; 6 CP Dbl. Contact
1949 Models Except 56C and 76C	1	88; 15 CP Dbl. Contact
Models 56C and 76C	1	55; 2 CP Sgl. Contact
Trunk Compartment Series 40	0	From Tail Lamps
Series 50-70	1	55; 2 CP
Clock Light— Series 40	1	55; 2 CP
Series 50-70	2	55; 2 CP
Glove Box	1	55; 2 CP
Courtesy Lamps, 1948 Models Only— Front, Models 51, 56-C, 71, 76-C	2	82; 6 CP Dbl. Contact
Rear, Models 51, 71	2	82; 6 CP Dbl. Contact
Radio Dial Light	1	55; 2 CP

10-6 SIGNAL SYSTEMS SPECIFICATIONS

Items	Series 40-50	Series 70
Stop Light Switch—Type	←	Hydraulic →
Stop Light Switch Location	←	Brake Pipe Distrib. Fitting Near Master Cyl. →
Direction Signal Switch—Make	←	Delco-Remy →
Direction Signal Flasher—Make	←	Tungsol Flasher →
Lamp Bulbs—Mazda No. and Power	←	See paragraph 10-5 →
Stop and Signal Light Circuit Protection	←	14 Amp. Fuse →
Location, 1948 Models	←	In Splice Type Fuse Holder Under Cowl →
Location, 1949 Ser. 50-70	←	On Fuse Block Under Cowl →
Horn—Make and Type	←	Delco-Remy, Vibrator →
Horn Model, High Note (L.H.)	←	1999520 →
Low Note (R.H.)	←	1999519 →
Horn Air Gap Adjustment—		
High Note (L.H.)	←	.035" to .039" →
Low Note (R.H.)	←	.045" to .049" →
Horn Amperage Draw @ 6 Volts—		
High Note (L.H.)	←	17 to 19 →
Low Note (R.H.)	←	19 to 21 →
Horn Relay—Make and Model	←	Delco-Remy, 1116775 →
Horn Relay Adjustment—		
Air Gap	←	.015" →
Contact Point Opening	←	.025" →
Closing Voltage	←	2.75 to 4 →