

GROUP 10 ELECTRICAL SYSTEMS

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NOTE: Series 40 6-volt and Series 50-70 12-volt specifications are given in Section 10-A. All other Sections of this manual apply to the Series 50-70 12-volt systems. For Series 40 refer to the appropriate section in Group 8 of the 1952 Buick Shop Manual.

SECTION 10-A ELECTRICAL SPECIFICATIONS

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SERVICE BULLETIN REFERENCE

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10-1 BATTERY SPECIFICATIONS

Items	Series 40 6 Volt	Series 50-70 12 Volt
Make	← Delco-Remy →	
Number	15E6-W	3EE70W
Location Under Hood	Right Side	Left Side
Terminal Grounded	← Negative →	
Voltage	6	12
Capacity—Wet (Amp. Hrs. @ 20 Hr. Rate)	100	70
Number of Cells & Plates/Cell	3, 15	6, 11
Specific Gravity, Full Charge @ 80° F.	← 1.260 to 1.280 →	
Bench Charging Rate, Start	7 Amps.	5 Amps.
	← (1 Amp./Pos. Plate) →	
Bench Charging Rate, Finish	← ½ Amp./Pos. Plate →	

10-2 GENERATING SYSTEM SPECIFICATIONS

a. Generator

Items	Series 40 6 Volt	Series 50-70 12 Volt
Make & Type	← Delco-Remy, Shunt →	
Model, 1st Type	1102798	1102003
2nd Type	—	1102008
With Air Conditioning	—	1102006

Items	Series 40	Series 50-70
	6 Volt	12 Volt
Location, Side of Engine	Left	Right
Drive and Rotation (Drive End)	Fan Belt, Clockwise	
Speed Ratio, Generator to Engine	2.17 to 1	
Brush Spring Tension, ounces	24-32	
Max. Charging Capacity (Amps.) HOT		
At 8 Volts and 2550 RPM	45	—
At 14 Volts and 2300 RPM	—	30
Field Current Draw (Amps.) @ 80° F.		
At 6 Volts	1.9 to 2.05	—
At 12 Volts	—	1.48 to 1.62
Max. Stall Current (Amps.) @ 80° F.		
At 6 Volts	70	—
At 12 Volts	—	80

b. Generator Regulator

Items	Delco-Remy	
	Series 40	Series 50-70
Make	1118729	1118749
Model	5.9 to 6.7	11.8 to 13.6
Cutout Relay Closing Voltage	6.4	12.8
Adjust to		
Cutout Relay Opening Current	Reverse or Discharge	
Cutout Relay Air Gap Points Closed	.020"	.020"
Cutout Relay Contact Point Opening	.020"	.020"
Current Regulator Air Gap, Points Just Touching	.075"	.075"
Current Regulator Setting, Amps. HOT,		
At Approx. 2000 Eng. RPM	45-51	27-33
Adjust to	47	30
Voltage Regulator Air Gap, Points Just Touching	.075"	.075"
Voltage Regulator Setting, HOT, @ Approx. 1500 Eng. RPM		
Volts @ 8-10 Amps	7.2 to 7.7	14 to 15
Adjust to	7.4	14.5

10-3 CRANKING (STARTER) SYSTEM SPECIFICATIONS

a. Cranking Motor

Items	Series 40	Series 50-70
	6 Volt	12 Volt
Make	Delco-Remy	
Model	1107110	1107601
Location, Side of Engine	Right	Left
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, Motor to Engine	16.2 to 1	20 to 1
No. Teeth on Ring Gear and Drive Pinion	146, 9	180, 9
Cranking Speed, RPM	90	160
No Load Test—		
Amperes	65	75
Volts	5.67	10.3
R.P.M.	5000	6500
Lock Torque Test—		
Amperes	525	460
Volts	3.37	5.2
Torque—Lbs. Ft.	12	11.5
Brush Spring Tension—Ounces	24 to 28	
Armature End Play	.005"-.050"	
Pinion Clearance in Cranking position	3/16"	1/8"
Shift Lever Return Spring Tension—		
Start of Travel, Lbs.	9 to 12	
End of Travel, Lbs.	28 to 35	

b. Solenoid Switch and Relay

Items	Delco-Remy	
	Series 40	Series 50-70
Current Draw of Solenoid Windings @ 80° F.—		
Hold-in Winding, Amps. @ 5 Volts	14 to 16	—
Hold-in Winding, Amps. @ 10 Volts	—	18-20
Both Windings in Parallel, Amps. @ 5 Volts	85-90	—
Both Windings in Parallel, Amps. @ 10 Volts	—	72-76
Solenoid Relay Adjustments		
Air Gap—Points Closed	.011" Min.	
Point Opening	.020"-.030"	
Closing Voltage	1.5 to 2.1	3.8 to 5.0
Adjust to	1.8	4.4
Sealing Voltage, Max. Above Closing Voltage	0.1	.2
Opening Voltage, Min.	.35	.6

10-4 IGNITION SYSTEM SPECIFICATIONS

a. Ignition Coil & Resistor

Items	Series 40 6 Volt	Series 50-70 12 Volt
Make	← Delco-Remy →	
Model	1115380	1115082
Coil Resistance (Ohms) @ 75° F.		
Primary	1.2 to 1.3	1.2 to 1.4
Secondary	4000 to 5800	6500 to 9500
Resistor Number	—	1923681
Resistance, Ohms @ 75° F.	—	1.40 to 1.65

b. Spark Plugs

Make and Model	AC, 46-X	AC, 44-5
Thread and Shell Hex. Sizes	← 14 MM, 1 ³ / ₁₆ " →	
Gap at Points	.023"-.028" 3/4"	.030"-.035" 3/8"
Terminal Nut Length		

c. Distributor

Make	← Delco-Remy →	
Model	1110838	1110827
Drive	← Gears on Cam Shaft and Distrib. Shaft →	
Rotation, Top View	Counterclockwise	Clockwise
Timing, Before U.D.C., Full Advance	4 Deg.	5 Deg.
Spark Control Advance—Flywheel Degrees—		
Vacuum, Max.	18-22	22-25
Centrifugal	22-26	—
Centrifugal, Before Serial No. 3C28	—	28-36
Starting with Serial No. 3C28	—	25-31
Vacuum Advance Test, Distributor Degrees—		
At 5" to 7" (Hg.) of Vacuum	← Start Travel →	
At 12" to 13 ¹ / ₂ " (Hg.) of Vacuum	9-11	—
At 11" to 14" (Hg.) of Vacuum	—	11-12.5
Centrifugal Advance Test, Distributor Degrees and RPM (¹ / ₂ Engine RPM)		
At 300 RPM	0 to .9	0 to .8
At 600 RPM	—	3.5 to 5.5
At 625 RPM	5.7	—
At 1750 RPM	—	9.5 to 11.5
At 2000 RPM	11 to 13	—
At 2150 RPM, Before Serial No. 3C28	—	16 to 18
Starting with Serial No. 3C28	—	12.5 to 15.5
Contact Point Opening	← .0125" to .0175" →	
Breaker Arm Spring Tension, at Side of Point, Ounces	← 19 to 23 →	
Breaker Base Plate Tension, Ounces	← 11 to 18 →	
Condenser Make and Capacity (Microfarads)	← Delco-Remy, .18 to .23 →	

10-5 LIGHTING SYSTEM SPECIFICATIONS

a. Lamps, Switches, Wiring

Items	Series 40 6 Volt	Series 50-70 12 Volt
Headlamp Make and Type	← Guide, Sealed Beam →	
Headlamp Lens Diameter	← 6 ¹ / ₁₆ " →	
Tail, Stop, Parking, Signal Lamps, Make	← Guide →	
Lighting Switch, Make	← Delco-Remy →	
Wiring Circuit Type	← Single Wire →	
Wiring Circuit Protection, for Head, Parking Tail, License, Map, Instrument Lights	← Thermo Circuit Breaker →	
Thermo Circuit Breaker Location	← On Lighting Switch →	
Thermo Circuit Breaker Calibration @ 70° F.—		
Stay Closed Indefinitely @ Amps	30	22
Open in ¹ / ₂ to 4 Minutes @ Amps	42	30

b. Lighting and Other Circuit Fuses

NOTE: Unless otherwise specified, all fuses are mounted on fuse block under cowl. Head, tail, parking, license, instrument and map light circuits are protected by thermal circuit breaker on light switch.

Stop and Direction Signal Light	14 Amp. SFE	9 Amp. SFE
Dome Light, Glove Box Light, Luggage Comp. Light	30 Amp. SFE	20 Amp. SFE
Heater and Defroster Blower	14 Amp. SFE	9 Amp. SFE
Electric Clock	3 Amp. AGA	2 Amp. AGA

	Series 40 6 Volt	Series 50-70 12 Volt
Back-Up Lamp.....	14 Amp. SFE	9 Amp. SFE
Cigar Lighter.....	←————Special————→	
Location, Casco.....	←————In Back of Lighter————→	
Location, Rochester.....	←————In Circuit Breaker in Back of Lights————→	
Radio.....	15 Amp. AGA	7.5 Amp. Spec.
Location.....	←————At End of "A" Lead at Set————→	
Parking Brake Warning Signal.....	14 Amp. SFE	9 Amp. SFE

c. Lamp Bulbs

	Mazda No. and Power	
Headlamp Sealed Beam Unit.....	45-35 Watt	40-50 Watt
Headlamp Beam Indicator.....	51; 1 CP	53; 1 CP
Parking and Front Dir. Signal.....	1154; 21-3 CP	1034; 32-4 CP
Direction Signal, Rear.....	1129; 21 CP	1073; 32 CP
Direction Signal Indicator.....	51; 1 CP	53; 1 CP
License Plate Lamp.....	63; 3 CP	67; 3 CP
Tail and Stop Lamps.....	1154; 21-3 CP	1034; 32-4 CP
Instrument Lights.....	55; 2 CP	57; 1.5 CP
Map Light.....	55; 2 CP	57; 1.5 CP
Dome Lamp.....	88; 15 CP	94; 15 CP
Trunk Compartment.....	81; 6 CP	89; 6 CP
Clock Light.....	55; 2 CP	57; 1.5 CP
Glove Box.....	55; 2 CP	57; 1.5 CP
Radio Dial Light.....	55; 2 CP	57; 1.5 CP
Back-Up Light.....	1133; 32 CP	1141; 21 CP
Parking Brake Warning Signal.....	55; 2 CP	89; 6 CP

10-6 SIGNAL SYSTEMS SPECIFICATIONS

Items	Series 40 6 Volt	Series 50-70 12 Volt
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————→	
Lamp Bulbs—Mazda No. and Power.....	←————See Par. 10-5, c————→	
Stop and Signal Light Fuse.....	←————See Par. 10-5, b————→	
Horn—Make and Type.....	←————Delco-Remy, Vibrator————→	
Horn Model, High Note (L.H.).....	1999650	1999756
Low Note (R.H.).....	1999649	1999755
Horn Amperage Draw.....		
High Note (L.H.).....	16-18 @ 6V	9.5 Min. @ 12V.
Low Note (R.H.).....	17-19 @ 6V	10.5 Min. @ 12V.
Horn Relay—Make and Model.....	1116775	1116781
Horn Relay Adjustment—		
Air Gap.....	.015"	.014"
Contact Point Opening.....	.025"	.027"
Closing Voltage.....	2.75 to 4	5.5 to 7.5
Adjust to.....	3.4	6.5