

1936 HUDSON SIX - MODEL 63

Tune-up and Electrical

NOTE: - 'Electric Hand' Bendix electro-pneumatic type gear shift optional on all models.

SERIAL NUMBER: - First number - 63-101. Stamped on plate on dash under engine hood.

COMPRESSION: - Ratio 6.25-1 Standard cast-iron head, 7.0-1 Optional high compression aluminum head. Check compression pressure by removing all spark plugs and cranking engine with throttle wide open.

Cylinder Head	Compression Pressure
Standard 6.25-1	116 lbs. at 219 R.P.M.
Optional 7.0-1	127 lbs. at 207 R.P.M.

VACUUM READING - Gauge should show steady reading of 18-20" of H.G. with engine idling at 350 R.P.M.

IGNITION: - Coil Model IG-4633. Resistor unit mounted on distributor terminal is connected in series with coil primary.

Coil Draw - 2.5 amperes idling, 4.5 stopped.

Ignition Switch - Mitchellock Model 24-B, Type 6696. Connected to coil by armored cable.

Ignition Lock - Briggs & Stratton No. 50184, Mitchell No. 6095.

DISTRIBUTOR

Distributor Model IGB-4301B. Single breaker, 6 lobe cam, full automatic advance type.

Automatic Advance

Distributor		Engine	
Degrees	RPM	Degrees	RPM
Start	300	0	600
3	400	6	800
5	615	10	1230
10	1150	20	2300
14	1580	28	3160

Breaker Gap - Set at .020". Limits .018-.020".

Cam Angle or Dwell - 40° (closed), 20° (open).

Breaker Arm Spring Tension - 16-20 ounces.

Condenser - Part No. IGB-1025J. Capacity .20-.25 mfd.

Distributor Removal: - Mounted on right side of crankcase. To remove, take out hold-down screw in advance arm.

IGNITION TIMING

Ignition Timing: - Initial setting for all engines as shown. See Final Setting section for adjustment in accordance with octane rating of fuel used.

Flywheel Degrees	Piston Position
At TDC	.000" TDC

NOTE - High octane type fuel must be used in engines with high compression 7.0-1 aluminum head.

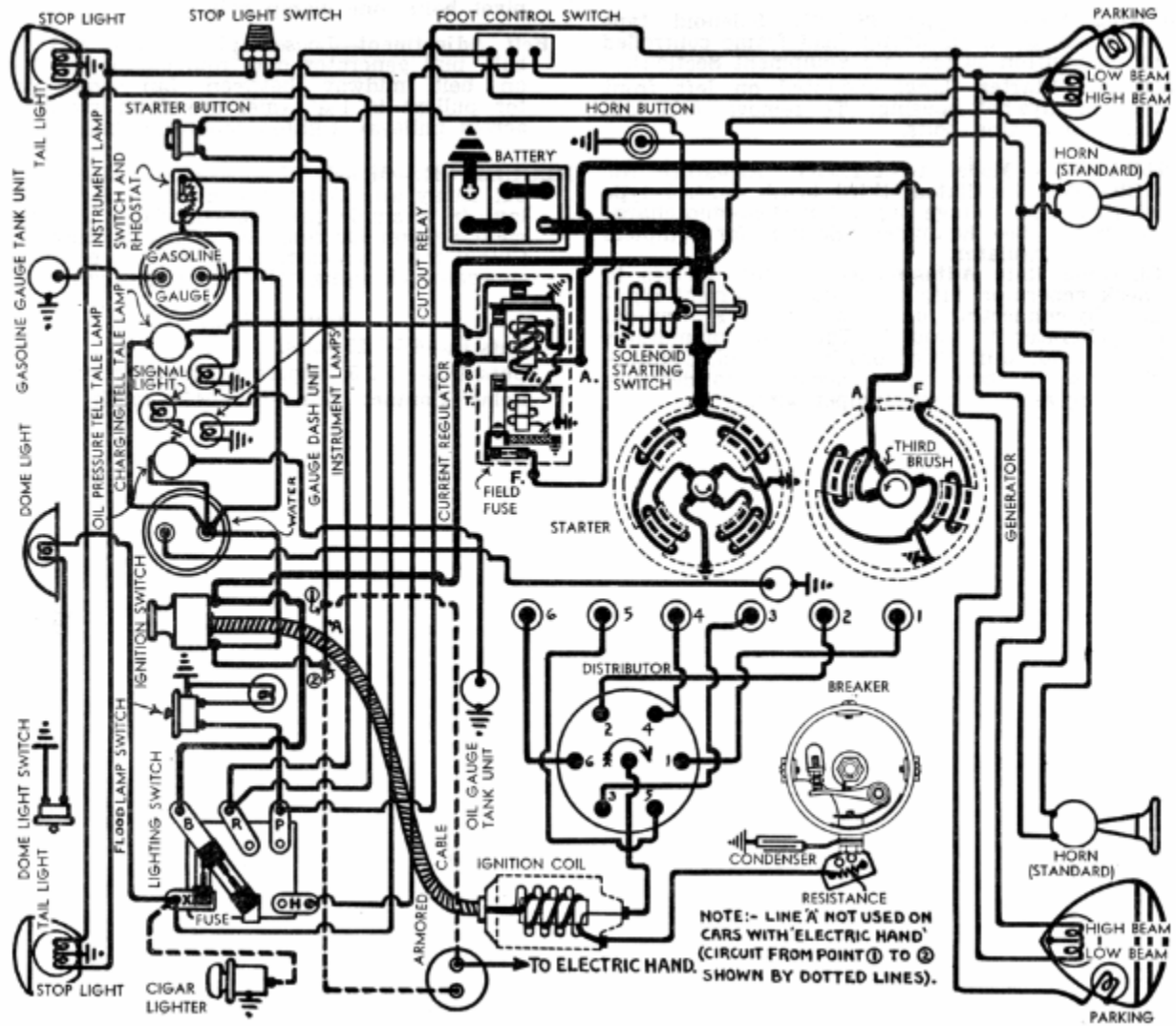
To Set Timing (Initial Setting) - With #1 piston on compression, turn engine over until flywheel mark 'UDC.1-6/' lines up with pointer in inspection hole in left front face of flywheel housing above starter. Loosen hold-down screw in advance arm, rotate distributor clockwise to limit of advance arm slot, then slowly rotate distributor counter-clockwise until contacts begin to open, tighten hold-down screw.

Final Setting - Check ignition setting by road testing car. With engine warm and running in high gear on level road, a slight spark knock should be evident when car is accelerated from 10-15 M.P.H. with wide open throttle. Adjust by loosening hold-down screw in advance arm and rotating distributor one graduation on scale counter-clockwise (if no knock evident) or clockwise (if knock too severe). Repeat test until slight knock is evident. Final setting must not be more than 3/4" on flywheel before 'UDC.1-6/' mark.

Firing Order: - 1-5-3-6-2-4. See diagram.

Spark Plugs: - Champion Type J-8 (Standard 6.25-1 engine). J-9 (Optional 7.0-1 engine). 14 MM Metric type.

Spark Plug Gaps - .025" (Standard engine), .022" (Optional H.C. engine).



1936 Hudson Six - Model 63

CARBURETION

Carburetor - Carter Model 329-S, 1-1/4" downdraft type.
NOTE - Do not adjust carburetor until engine is warmed up so that choke valve is wide open and engine idling at slow or hot idling speed.

Idle Adjustment - Adjust throttle stopscrew so that speed is 350 R.P.M. or 7 M.P.H. Turn idle adjusting screw in until engine begins to miss, then turn screw out until engine begins to roll, finally turn screw in slowly until engine fires smoothly. Final setting should be 1/2-1 turn open from seated position. Readjust throttle stopscrew for correct idling speed.

Accelerating pump Setting - Pump lever (under dust cover at top of carburetor) has three holes for pump link engagement. Change for seasonal requirements as follows:

- Center Hole - Normal summer temperatures.
- Inner Hole (Min. stroke) - Extreme hot weather.
- Upper Hole (Max. stroke) - Extreme cold weather.
- Fast Idle: - Integral with carburetor. No adjustment required.
- Automatic Choke: - Carter Climatic Control.
- Air Cleaner: - AC. #1526650 Standard #1526651 on cars with Electric Hand. Heavy duty oil-bath type optional.
- Fuel Pump: - AC. Type R #1521450. Diaphragm type.
- Gasoline Gauge: - King-Seeley Electric.

VALVE TIMING

Tappet Clearance - .006" intake, .008" exhaust, with engine hot.

Valve Timing (Cont'd)

Valve Spring Pressure - 44 lbs. at 2" (valve closed), 102 lbs. at 1-21/32" (valve open).

To Check Valve Timing - Set tappet clearance #1 intake valve at .010". This valve should open with piston 10° 40' or .0562" before top dead center when point on flywheel approximately 3.94 teeth before dead center mark 'UDC.1-6/' lines up with pointer in inspection hole in left front face of housing. Reset tappet clearance at .006" with engine hot.

LUBRICATION

Crankcase Capacity - 5 qts. refill.

Normal Oil Pressure - 3 lbs. (no gauge).

Oil Pressure Signal Light - Used instead of pressure gauge. Controlled by oil pressure regulator valve.

BATTERY

National. Type ST-317X. 6 volt, 17 plate, 96 ampere hour (20 hour rate).

starting Capacity - 120 amperes for 20 minutes.

Zero Capacity - 300 amperes for 3.2 minutes.

Grounded Terminal - Positive (+) terminal.

Location - On left hand side under front floor board.

STARTER

Model MAB-4075. Armature MAB-2113.

Drive - Inboard Bendix, Type A-1673.

Cranking Engine - 150 R.P.M. 120-125 amps. at 5 volts.

Rotation - Counter-clockwise at commutator end.

Brush Spring Tension - 42-53 ounces (new brushes).

Performance Data

Torque	RPM	Volts	Amperes
0 ft. lbs	700	5.5	60
.64 "	1910	5.5	100
3.4 "	1100	5.0	200
6.6 "	695	4.5	300
10.15 "	420	4.0	400
15.8 "	Lock	3	582
22.5 "	Lock	4	775

NOTE - Lock torque figures correct without switch.

Removal:-Flange mounted on left front face of flywheel housing. To remove, take out flange mounting bolts.

Starting Switch:--Solenoid Switch Type SS-4001. Controlled by pushbutton switch (R.B.M. Model 1800) on dash. Operative with ignition turned 'on'. On cars with Electric Hand clutch must be disengaged also

Solenoid Switch

Closes with terminal voltage of 4 volts or less and will remain closed until voltage drops to .75-2.0 volts. Current draw 3 amperes at 6 volts.

GENERATOR

Model GAR-4701-6. Armature GAR2077. Third brush control in conjunction with Current Regulator (two-rate charging control). Ventilated by fan on drive pulley.

Charging Rate Adjustment - Use test meters to check generator output. Short out current regulator by connecting jumper wire from 'F' terminal on generator to ground. Take off commutator cover band, shift third brush by hand counter- clockwise to increase or clockwise to decrease charging rate until output is 22.8 amperes at 8.0 volts with generator at room temperature. Third brush held in position by friction. Remove jumper.

Maximum Charging Rate - As given above. Do not exceed.

Performance Data

Cold		Regulator Inoperative		Hot	
Amps.	Volts	RPM	Amps	Volts	RPM
0	6.4	780	0	6.4	820
4	6.7	930	4	6.8	1000
8	6.95	1060	8	7.1	1400
16	7.6	1440	16	7.8	1790
22.8	8.0	2400	18.4	8.0	2700

Rotation - Counter-clockwise at commutator end.

Brush Spring Tension - 18-22 ozs. (new brushes).

Field Current - 3.51-3.89 amperes at 6.0 volts.

Motoring Current - 5.32-5.88 amperes at 6 volts.

Field Fuse - 5 ampere in knurled cup on side of regulator case.

Removal: - Pivot mounted at left front of engine with fan belt drive. To remove, take out two pivot bolts, one clamp bolt.

Belt Adjustment: - Swing generator away from engine until slack on belt midway between fan pulley and generator pulley is 1-1/4" (measure from straightedge across pulleys).

RELAY-REGULATOR

Model TC-4304A. Mounted on engine side of dash. Consists of Cutout Relay and Current Regulator (two-rate charging control). Cutout Relay has extra set of ground contacts for generator charging tell-tale signal light control.

Cutout Relay

Cuts In - 6.5-7.25 volts. 8 M.P.H.
Cuts Out - .5-2.5 ampere discharge current.
Contact Gap - .015-.045" (with upper or ground contacts closed-ground contacts must be open with main contacts closed).
Air Gap - .010-.030" with contacts closed.

Current Regulator

Contacts Open - 8.0-8.50 volts at 70° F.
Contacts Close - 1.2-1.4 volts below opening point.
Contact Gap - .005" minimum.
Air Gap - .045" with contacts closed.

LIGHTING

Headlamps - Hall, Pre-focused type. Head lamps aimed straight ahead (upper beam with lenses in place). Upper and lower beams controlled by foot selector switch.
Headlamp Beam Indicator - In lower portion of speedometer dial. Lighted when upper beams in use.

Switches

Lighting - R.B.M. Model 1650.
Foot Selector - R.B.M. Model 1082.
Instrument Lights - Soreng-Manegold Model K2060A.
Stop Light - Motometer Model 58012-C hydraulic type mounted in brake line on left frame side rail in channel at rear.

Bulb Specifications

Position	C.P.	Mazda No.
Headlamps	32-32	2331
Parking, Instrument	1	55
Signal Lights	1	51
Stop and Tail	21-3	1158
Dome	15	87

SIGNAL LIGHTS: - Battery Charge Telltale and Oil Pressure Tell-tale lights mounted on instrument panel.

FUSES: - Lighting - Two 20 ampere capacity on switch.
Generator Field - 5 ampere in regulator.

HORNS: - E.A. Vibrator type. Twin horns.

1936 HUDSON EIGHT
Models 64, 65, 66, 67
Tune-up and Electrical Specifications

NOTE: - 'Electric Hand' Bendix electro-pneumatic type gear shift optional on all models.

SERIAL NUMBER: - First number (64) 64-101, (65) 65-101, (66) 66-101, (67) 67101. On plate on engine side of dash. All model numbers will carry these prefixes: '64', '65', '66', or '67'.

COMPRESSION: - Ratio 6.0-1 Standard cast-iron head, 7.0-1 Optional high compression aluminum head. Check compression pressure by removing all spark plugs and cranking engine with throttle wide open.

Cylinder Head	Compression Pressure
Standard 6.0-1	110 lbs. @ 150 RPM
Optional 7.0-1	128 lbs. @ 150 RPM

VACUUM READING: - Gauge should show steady reading of 18-20" of HG. with engine idling at 350 R.P.M.

IGNITION: - Coil Model CE-4617. Resistor unit mounted on distributor terminal is connected in series with coil primary.

Resistance Unit - Part No. SP-4009.

Coil Draw - 2.5 amperes idling, 4.5 amps. stopped.

Ignition Switch: - Mitchellock Model 24-B, Type 6696. Connected to coil by armored cable.

Ignition Lock - Briggs & Stratton No. 50184, Mitchell No. 6095.

Distributor Model IGP-4001B - Single breaker, 8 lobe cam, full automatic advance type.

Automatic Advance

Distributor		Engine	
Degrees	RPM	Degrees	RPM
Start	300	0	600
3	400	6	800
5	575	10	1150
10	1025	20	2050
15	1475	30	2950
17.5	1700	35	3400

Breaker Gap - Set at .020". Limits .018-.020"

Cam Angle or Dwell - 27-1/2° (closed), 17-1/2° (open).

Breaker Arm Spring Tension - 18 ounces minimum, 20 ounces maximum.

Condenser - Part No. IG-2671. Capacity .20-.25 mfd.

Distributor Removal: - Mounted on right side of crankcase. To remove take out hold-down screw in advance arm.

IGNITION TIMING: - Initial setting for all engines as shown. See Final Setting Section for adjustment in accordance with octane rating of fuel used.

Flywheel Degrees At TDC	Piston Position .00" TDC
----------------------------	-----------------------------

NOTE - High octane type fuel must be used in engines with high compression 7.0-1 aluminum head.

To Set Timing (Initial Setting) - With #1 piston on compression turn engine over until flywheel mark 'UDC 1-8/' lines up with pointer in inspection hole in left front face of flywheel housing above starter. Loosen hold-down screw in advance arm, rotate distributor clockwise to limit of advance arm slot, then slowly rotate distributor counter-clockwise until contacts begin to open. Tighten hold-down screw.

Final Setting - Check ignition setting by road testing car. With engine warm and running in high gear on level road, a slight spark knock should be evident when car is accelerated from 10-15 M.P.H. with wide open throttle. Adjust by loosening hold-down screw in advance arm and rotating distributor one graduation on scale counter-clockwise (if no knock evident) or clockwise (if knock too severe). Repeat test until slight knock is evident. Final setting must not be more than 3/4" on flywheel before 'UDC 1-8/' mark.

Firing Order - 1-6-2-5-8-3-7-4. See diagram.

Spark Plugs - Champion Type J-8. (Standard 6.0-1 engines), J-9 (Optional 7.0-1 engines). 14 MM. Metric type, **Spark Plug Gaps** - .025" (Standard engine), .022" (Optional H.C. engine).

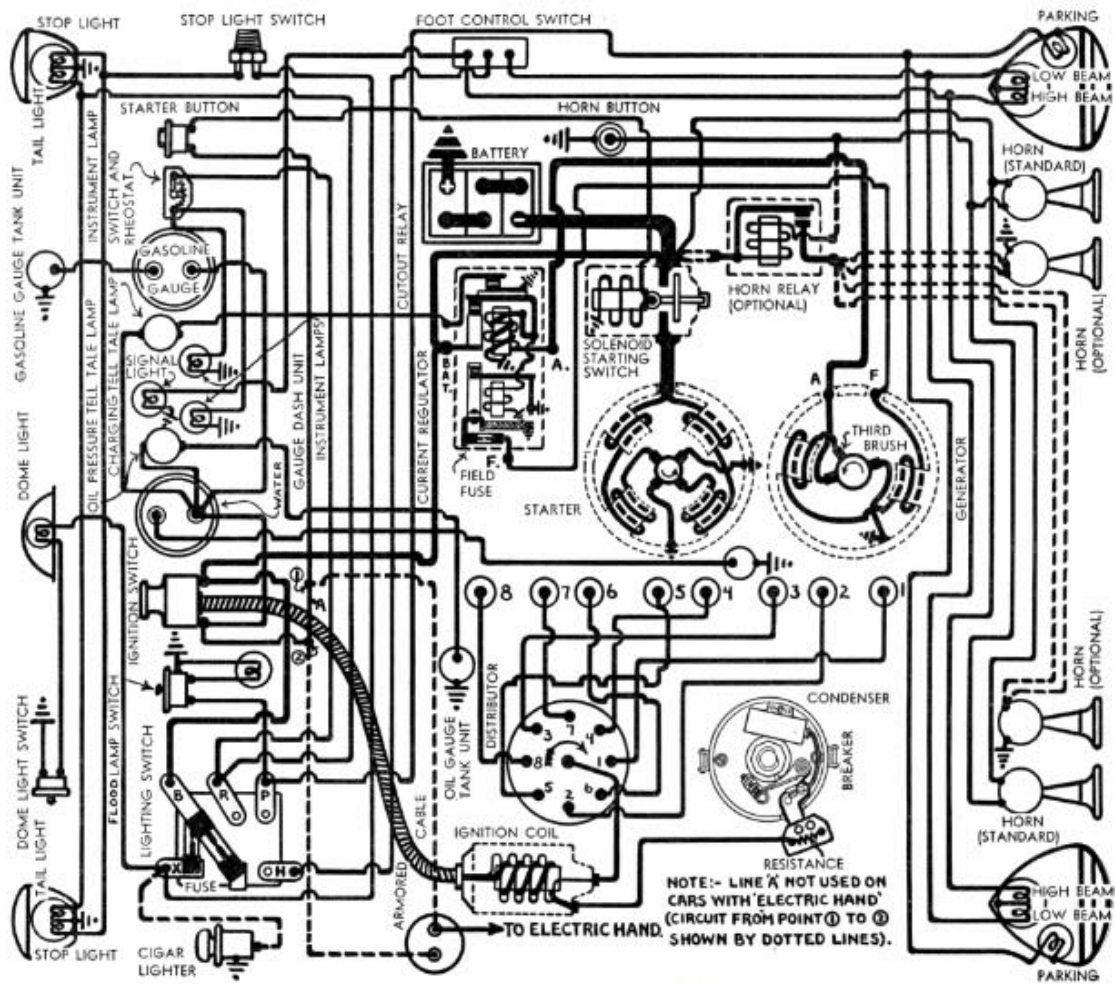
CARBURETOR

CARBURETION: - Carburetor - Carter Model 330-S 1-1/4" downdraft type.

NOTE: - Do not adjust carburetor until engine warmed up so that choke valve is wide open and engine idling at slow or hot idling speed.

Idle Adjustment - Adjust throttle stop screw so that speed is 350 R.P.M. or 7 M.P.H. Turn idle adjusting screw in until engine begins to miss, then turn screw out until engine begins to roll, finally turn screw in slowly until engine fires smoothly. Final setting should be 1/2-1 turn open from seated position. Readjust throttle stop screw for correct idling speed.

Accelerating Pump Setting - Pump lever (under dust cover at top of carburetor) has three holes for pump link



1935 Hudson Eight

Carburetor (Cont'd)

engagement. Change for seasonal requirements as follows:

- Center Hole** - Normal summer temperatures.
- Inner Hole (Min. stroke)** - Extreme hot weather.
- Upper Hole (Max. stroke)** - Extreme cold weather.
- Fast Idle** - Integral with carburetor. No adjustment required.

Automatic Choke - Carter Climatic Control.

Air Cleaner - AC. #1526650 Standard # 1526651 on cars with Electric Hand. Heavy duty oil-bath type optional.

Fuel Pump - AC. Type R #1521450. Diaphragm type.

Gasoline Gauge - King-Seeley Electric.

VALVE TIMING

VALVE TIMING: - To Check Timing-Set tappet clearance #1 intake valve at .010". This valve should open with piston 10° 40' or .0494" before top dead center when a point on flywheel approximately 3.94 teeth before the dead center mark 'UDC.1-8/' lines up with pointer in inspection hole in left front face of housing. Reset tappet clearance at .0061, with engine hot.

Tappet Clearance - .006" Intake, .008" Exhaust, hot.

Valve Spring Pressure - 44 lbs. at 2" (valve closed), 102 lbs. at 1-21/32" (valve open).

LUBRICATION

Crankcase Capacity - 7 quarts (refill).

Normal Oil Pressure - 3 lbs. (no gauge).

Oil Pressure Signal Light - Used instead of pressure gauge. Controlled by oil pressure regulator valve.

BATTERY

National, Type ST-319X. 6 volt, 19 plate, 108 ampere hour (20 hour rate).

Starting Capacity - 135 amperes for 20 minutes.

Zero Capacity - 300 amperes for 4.3 minutes.

Grounded Terminal - Positive (+) terminal.

Location - On left hand side under front floor boards.

STARTER

Model MAB-4075. Armature MAB-2113. Drive-Inboard Bendix (barrel) Type A-1673.

Cranking Engine - 150 R.P.M. 120-125 amps, at 5 v.

Rotation - Counter-clockwise at commutator end.

Brush Spring Tension - 42-53 ounces (new brushes).

Performance Data		
Torque	RPM	Volts
Amperes		
0 ft. lbs.	3700	5.5
60		
.6	1910	5.5
100		
3.4	1100	5.0
200		
6.6	695	4.5
300		
10.15	420	4.0
400		
15.8	Lock	3
582		
22.5	Lock	4
775		

NOTE - Lock torque figures correct without switch.

Removal - Flange mounted on left front face of flywheel housing. To remove, take out flange mounting bolts

Starting Switch - Solenoid Switch Type SS-4001. Controlled by pushbutton switch (R.B.M. Model 1800) on dash. Operative with ignition turned 'on.' On cars with Electric Hand clutch must be disengaged also.

Solenoid Switch

Closes with terminal voltage of 4 volts or less and will remain closed until voltage drops to .75-2.0 volts. Current draw 3 amperes at 6 volts.

GENERATOR

GENERATOR: - Model GAR-4701-6. Armature GAR2077. Third brush control in conjunction with Current Regulator (two-rate charging control). Ventilated by fan on drive pulley.

Charging Rate Adjustment - Use test meters to check generator output. Short out current regulator by connecting jumper wire from IF' terminal on generator to ground. Take off commutator cover band, shift third brush by hand counter-clockwise to increase or clockwise to decrease charging rate until output is 22.8 amperes at 8.0 volts with generator at room temperature. Third brush held in position by friction. Remove jumper.

Maximum Charging Rate - As given above. Do not exceed.

Performance Data					
Cold - Regulator Inoperative - Hot					
Amperes	Volts	RPM	Ampere	Volts	RPM
0	6.4	780	0	6.4	820
4	6.7	930	4	6.8	1000
8	6.95	1060	8	7.1	1180
12	7.25	1210	12	7.35	1400
16	7.6	1440	16	7.8	1790
22.8	8.0	2400	18.4	8.0	2700

Rotation - Counter-clockwise at commutator end

Brush Spring Tension - 18-22 ozs. (new brushes).

Field Current - 3.51-3.89 amperes at 6.0 volts.

Motoring Current - 5.32-5.88 at 6.0 volts.

Field Fuse - 5 ampere in knurled cup on side of regulator case.

Removal - Pivot mounted at left front of engine with SIGNAL LIGHTS:-Battery Charge Telltale and Oil fan belt drive. To remove, take out two pivot bolts, Pressure Tell-tale lights mounted on instrument one clamp bolt. panel. See Equipment Section for complete data.

Belt Adjustment - Swing generator away from engine until slack on belt midway between fan pulley and generator pulley is 1-1/4" (measure from straight-edge across pulleys).

RELAY-REGULATOR

Model TC-4304A. Mounted on engine side of dash. Consists of Cutout Relay and Current Regulator (two-rate charging control). Cutout Relay has extra set of ground contacts for generator charging tell-tale signal light control.

Cutout Relay

Cuts In - 6.5-7.25 volts, 8 M.P.H.

Cuts Out - .5-2.5 ampere discharge current.

Relay-Regulator (Cont'd)

Contact Gap - .015-.045" (with upper or ground contacts closed-ground contacts must be open with main contacts closed).

Air Gap - .010-.030" with contacts closed.

Current Regulator

Contacts Open - 8.0-8.50 volts at 70° F.

Contacts Close - 1.2-1.4 volts below opening point.

Contact Gap - .00511 minimum.

Air Gap - .045" with contacts closed.

LIGHTING

Headlamps - Hall, Pre-focused type. Headlamps aimed straight ahead (upper beam with lenses in place). Upper and lower beams controlled by foot selector switch.

Headlamp Beam Indicator - In lower portion of speedometer dial. Lighted when upper beams in use.

Switches

Lighting - R.B.M. Model 1650.

Foot Selector - R.B.M. Model 1082.

Instrument Lights - Soreng-Manegold Model K2060A.

Stop Light - Motometer Model 58012-C hydraulic type mounted in brake line on left frame side rail in channel at rear.

Bulb Specifications

Position	C.P.	Mazda No
Headlamps	32-32	2331
Parking, Instrument	1	55
Signal Lights	1	51
Stop and Tail	21-3	1153
Dome	15	87

HORNS: - E. A. Vibrator type. Twin horns.

FUSES: - Lighting-Two 20-ampere capacity on switch

Generator Field - 5 ampere in regulator.