

1937-1938 Hudson Six  
Model 73 (1937), 83 (1938)  
Tune-up Specifications

**MODEL IDENTIFICATION**

**SERIAL NUMBER:** First No. 73-101 (1937), 83-101 (1938). Stamped on plate on right front door hinge pillar post. Number prefix (73-, 83-) indicates model.

**ENGINE NUMBER:** First No. 73-101(1937), 83-101 (1938). Stamped on left side of cylinder block opposite #6 cylinder (1937), top of block between #1 and #2 exhaust flanges (1938). Number prefix (73-, 83-) indicates model.

**TUNE-UP**

**COMPRESSION:** Compression Pressure

6.25-1 std. CI. head 103 lbs. @ 170 R.P.M.

7.0-1 Optl. Al. head 119 lbs. @ 170 R.P.M.

**NOTE**-7.0-1 aluminum head - Super Power Dome.

**VACUUM READING:** - Gauge should show steady reading of 18-21", with engine idling at 350 R.P.M.

**FIRING ORDER:** 1-5-3-6-2-4. See diagram.

**SPARK PLUGS:** Champion Type J-8A (Std. 6.25-1 Eng.), Type H-10 (Optl. 7.0-1 Eng.). 14 mm. Metric.

**Gaps** - .032"

**IGNITION:** See Coil, Condenser, and Distributor.

**Breaker Gap** - .020". Cam Angle 35° (closed).

**Automatic Advance** - 14° max. at 1580 RPM (distributor).

**IGNITION TIMING:** See Ignition Timing.

Std. Setting - At TDC. Flywheel mark "UDC.1-6/" at indicator in left front face of housing.

**CARBURETION:**

**Idle Setting** -Both idle screws ¼-¾ turn open. Idle speed 7 MPH.

**Accelerating Pump** - Inner hole Warm Temperatures, Outer hole - Cold Temperatures.

**Float Level** - 15/64" from gasket seat on cover to top of float (not soldered seam). Invert to check.

**Fuel Pump Pressure:** 4½ lbs. maximum.

**MANIFOLD HEAT CONTROL:** - Thermostatic coil type. Located within manifold housing behind carburetor. No adjustment required,

**VALVES:** See Valve Timing.

**Tappet Clearance** - .006" Int., .008", Exh. Hot.

**STARTING:** See Battery, Starter, Generator, Regulator.

**IGNITION**

**IGNITION SWITCH:** Mitchellock Model 24-B, Type 7063 (1937), 7642 (1938). Connected to coil by armored cable.

**Ignition Lock** - Briggs & Stratton, Mitchell No. 6095. B&S No. 50184. Key Series - H601-H1100.

**COIL:** Auto-Lite Model **IG-4644** (1937), **IG-4650** (1938). Service Coil (less Switch & Cable) IG-3224JS.

**Ignition Current** - 2.5 amperes idling, 4.5 stopped.

**CONDENSER:** Auto-Lite Part No. IGB-1025 (1937), IGB-1025J (1938). Capacity-.20-.25 microfarad.

**DISTRIBUTOR:** Auto-Lite Model IGW-4013-A (1937), IGW-4103-A (1938). Single breaker, 6 lobe cam, full automatic advance type.

**Breaker Gap** - Set at .020".

**Cam Angle or Dwell** - 35° (closed), 25° (open). Breaker Arm Spring Tension-16-20 ounces.

**Rotation** - Clockwise viewed from the top.

**Automatic Advance**

Distributor		Engine	
Degrees	R.P.M.	Degrees	R.P.M.
Start	300	0	600
3	400	6	800
4	500	8	1000
9	1040	18	2080
14	1580	28	3160

Fuel Compensator - provides manual adjustment at distributor for octane rating of fuel used. See Fuel Compensator Setting (following).

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

**IGNITION TIMING**

**IGNITION TIMING:** - Initial Setting as shown. See Fuel Compensator Setting following.

	<b>Flywheel Degrees</b>	<b>Piston Position</b>
All engines	0° TDC	.000" TDC.

**NOTE** - High octane fuel must be used in engines with 7.0-1 Super Power Dome head.

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

**To Set Timing (Using Synchroscope)** - Hudson recommends this method. Clip lead to #6 spark plug fill, in timing mark with white chalk and direct light on flywheel through hole in housing.

**Fuel Compensator Setting** - Road test car and note performance when accelerating from 10-15 M.P.H. with wide open throttle on level road (engine must be warm). Slight spark knock should be evident. Adjust by loosening hold-down screw and rotating distributor one graduation on scale counter-clockwise (if no knock), clockwise (if knock too severe). Repeat test. Final setting must not be advanced beyond ¾" before 'UDC.1-6/' mark on flywheel.

## CARBURETOR

**Carter Model WDO, Type 344-S & 377-S (1937), with 402-S (1938).** 1" Dual (double barrel), downdraft type with Automatic Automatic Choke.

**Idle Adjustment** - Engine must be warm so that fast idle and automatic choke control inoperative. Set idle and automatic choke control inoperative. Set throttle lever stopscrew so that idling speed is 7 MPH. Turn each idle adjusting, in succession until engine begins to miss, then slowly out until engine fires smoothly. Final setting should be 1/4-3/4 turn out from inner seated position and screws must be adjusted equally so that engine fires smoothly on all cylinders. Readjust throttle stopscrew if necessary.

**Accelerating Pump Setting** - Adjustable for minimum and maximum stroke as follows:

Short stroke (inner hole) Hot temperatures.

Long stroke (outer hole)-Cold temperatures

## CARBURETOR EQUIPMENT

**Fast Idle:** Integral with carburetor.

**Setting:** .018" throttle opening with choke valve closed.

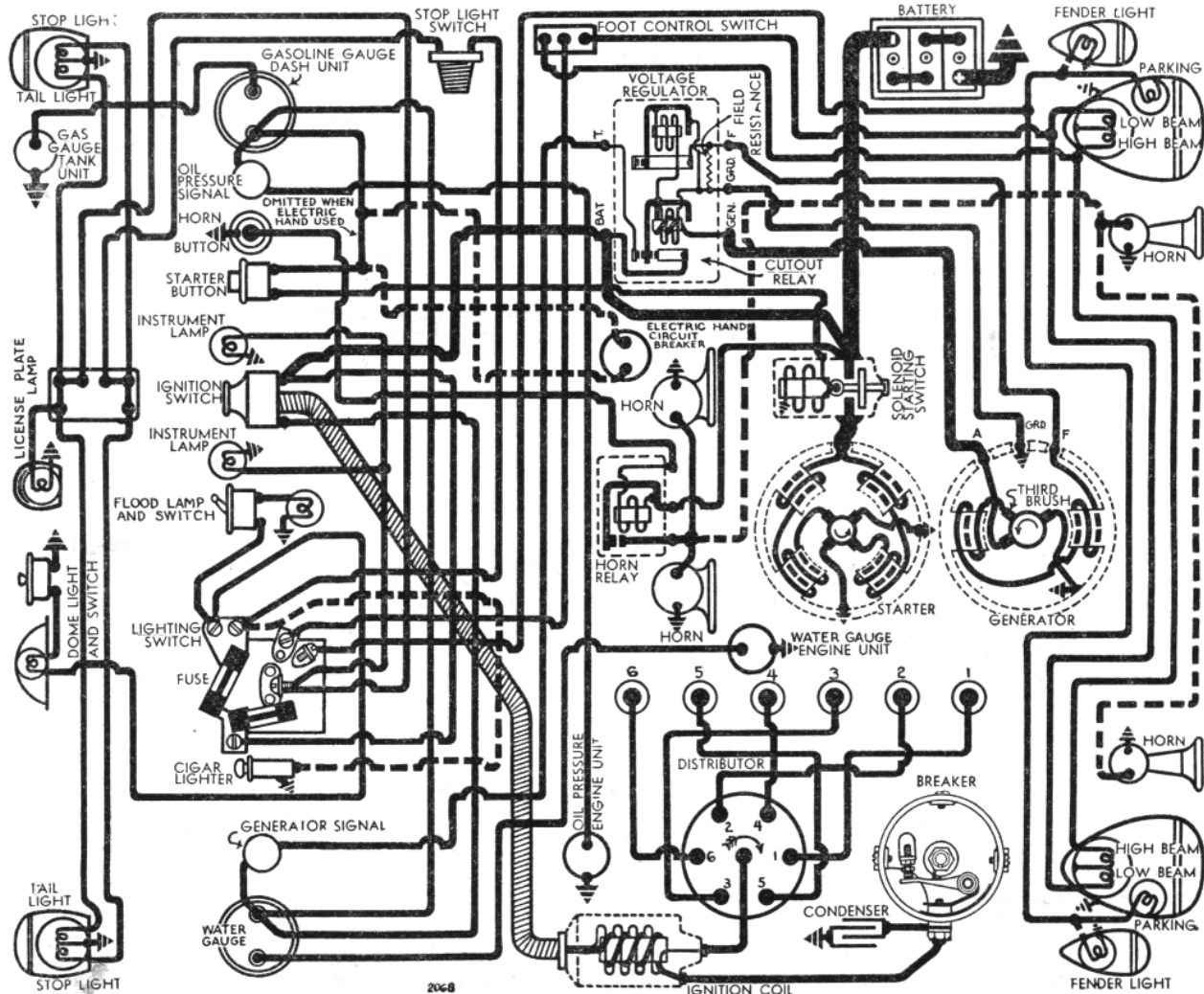
**Air Cleaner:** AC, #1528161 (std.), #1528160 (with Electric Hand) oil-wetted type. Unite (oil bath type) optional.

**Fuel Pump:** AC, Type AK #1523289 (LHD), #1523313 (RHD), diaphragm type, standard. Type AB #1523314 combination fuel-and-vacuum pump optional.

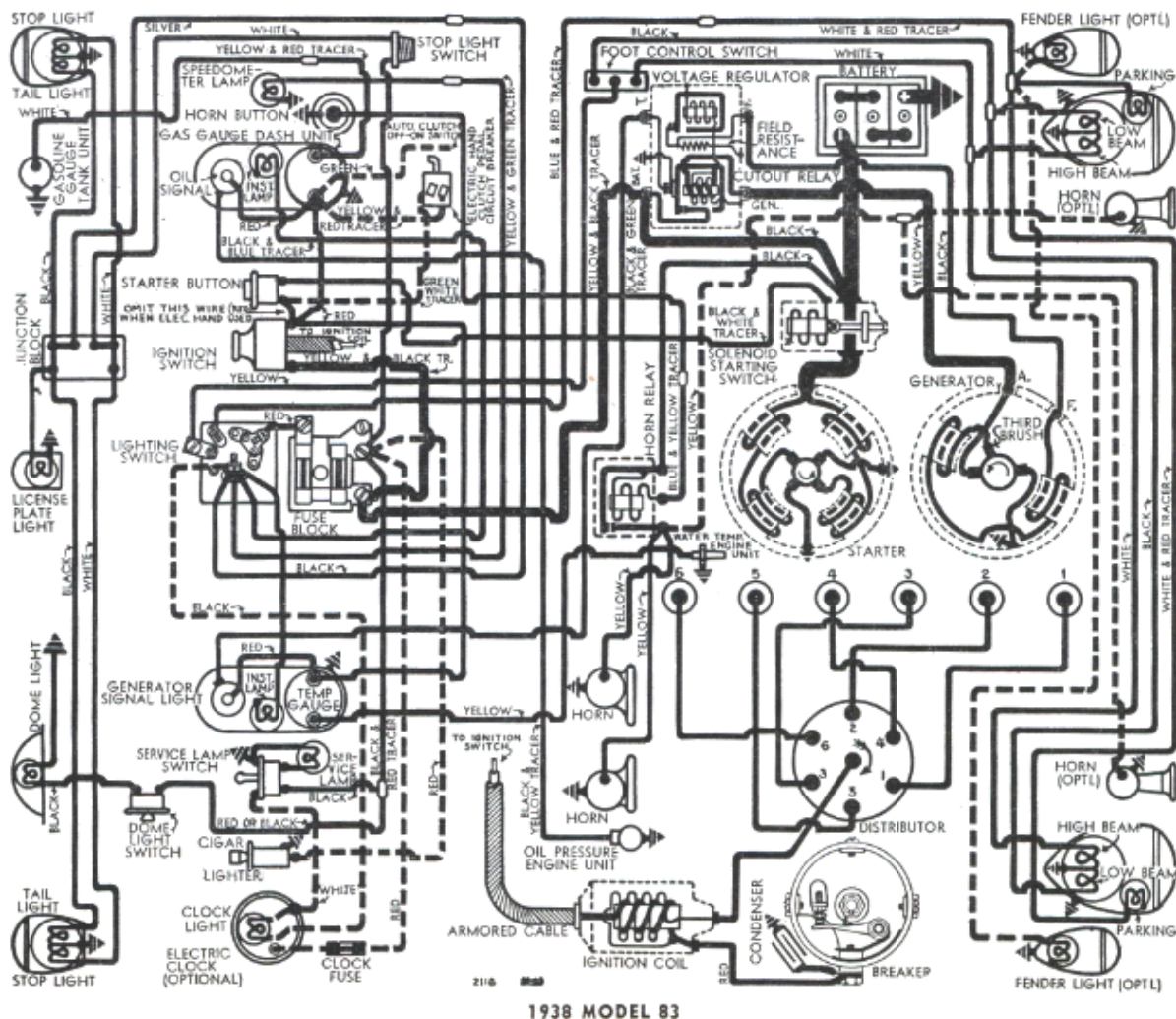
**Gasoline Gauge:** King-Seeley Electric type, K-S No

**Dash Unit** - No. 6190 (1937, black dial, early cars), 6570 (1937, tan dial, later cars), 6756 (1938)

**Tank Unit** - No. 5835 (1937-1938)



1937 MODEL 73



## BATTERY

**National, Type ST-317X (1937), HT-17 (1938 Orig. Equip.), L-17-IF (1938 Replacement).** 6 volt, 17 plate, 96 ampere hour (ST-317X), 100 ampere hour (HT-17 & L-17-IF) capacity (20 hour rate).

**Starting Capacity** - 120 amperes for 20 minutes.

**Zero Capacity** - 300 amperes for 3.2 minutes (ST317X), 3.5 minutes (HT-17 & L-17-IF).

**Grounded Terminal-** Positive (+) terminal. Grounded to left front fender support bracket. Engine grounded to frame by ground strap at bell housing.

**Dimensions** - Length 10-9/16". Width 7-1/4", Height 7-15/16".

**Location** - In left front fender under hood. Accessible from engine compartment by taking out 3 slotted screws in cover flange (2 top, 1 rear) and removing cover.

## STARTER

**Auto-Lite Model MAB-4075. Armature MAB-2113.**

**Drive:** Inboard barrel Type Bendix No. A-1673

**Rotation:** Counter-Clockwise at commutator end.

**Brush Spring Tension:** 42-53 ounces (new brushes)

**Cranking Engine** - 150 RPM., 120-125 amperes, 5 v.

### Performance Data

Torque	R.P.M.	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

## GENERATOR MODEL 73

**Auto-Lite Model GCJ-14803A.** Armature No. GCJ-2006. Third brush control type with external voltage regulation. Ventilated by fan on drive pulley.

**Maximum Charging Rate** - 25 amperes (cold), 22 amperes (hot), 8.0 volts, 2500 R.P.M. Actual charging rate controlled by Voltage Regulator and dependent on battery condition.

**Charging Rate Adjustment** - Maximum output controlled by third brush. Do not adjust third brush for output greater than shown in table below (with field terminal grounded to render regulator inoperative). Actual charging rate controlled by regulator setting. See Regulator Section below.

Cold Performance Data			Hot		
Amperes	Volts	R.P.M.	Amperes	Volts	R.P.M.
0	6.4	760	0	6.4	850
4	6.65	920	4	6.7	1020
8	6.9	1080	8	7.0	1240
12	7.2	1240	12	7.3	1400
16	7.45	1400	16	7.6	1650
20	7.7	1580	20	7.9	2100
25	8.0	2500	22	8.0	2700

**Rotation** - Counter-clockwise at commutator end.

**Brush Spring Tension** - 53 ozs. max. (new brushes).

**Field Current** - 1.9-2.1 amperes at 6.0 volts.

**Motoring Current** - 4.0-4.4 amperes at 6.0 volts.

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

**Belt Adjustment:** - Loosen clamp bolt and pivot bolts, swing generator out until slack in belt midway between generator and fan pulleys is 3/4-11/411 (measured with straightedge across pulleys).

## GENERATOR MODEL 83

**Auto-Lite Model GDF-4802A.** Armature No. GDF-2006. Third brush control type with external voltage regulation. Ventilated by fan on drive pulley.

**Maximum Charging Rate** - 32.0 amperes (cold), 29.5 amperes (hot) at 8.0 volts, 3100 R.P.M., 30-35 M.P.H. Actual charging rate controlled by Voltage Regulator and dependent on battery condition.

**Charging Rate Adjustment** - Maximum output controlled by third brush. Do not adjust third brush for output greater than shown in table below (with field terminal grounded to render regulator inoperative). See Regulator Section below.

**NOTE** - Standard third brush setting 2-1/8 commutator bars from nearest main brush.

## Performance Data

Amperes	Volts	R.P.M.	Amperes	Volts	R.P.M.
0	6.4	920	0	6.4	1000
4	6.6	1030	4	6.6	1140
8	6.8	1140	8	6.85	1280
12	7.0	1300	12	7.1	1440
16	7.25	1460	16	7.3	1640
20	7.45	1650	20	7.55	1840
24	7.65	1880	24	7.75	2220
28	7.9	2220	28.2	8.0	3200
32	8.0	3100			

**Rotation** - Counter-clockwise at commutator end.

**Brush Spring Tension** - 53 ozs. max. (new brushes).

**Field Current** - 1.90-2.10 amperes at 6.0 volts.

**Motoring Current** - 5.3-5.9 amperes at 6.0 volts.

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

**Belt Adjustment:** - Loosen clamp bolt and pivot bolts, swing generator out until slack in belt midway between generator and fan pulleys is 3/4-1 1/4" (measured with straightedge across pulleys).

## REGULATOR

**Auto-Lite Model VRD-4003A, 4003B (GCJ-4803A Gen.), VRD-4008A (GDF-4802A Gen.). Voltage Type.** Cutout Relay and vibrating type Voltage Regulator in case on dash. Cutout Relay has extra set of ground contacts for generator charge signal control.

**NOTE** - Regulator case cover is sealed. Serviced on exchange basis if seals not broken. Cover must be removed to make adjustments.

### Cutout Relay

**Cuts In** - 6.4-7.0 volts Cold. Approx. 10 MPH.

**Cuts Out** - .5-3.0 ampere discharge (Before Serial No. 2T-000001), 1.5-4.5 amperes (After 2T-000001).

**Contact Gap** - .01511 minimum (with ground contacts closed-ground contacts must be open with main contacts closed).

**Air Gap** - .034" Min., .03811 Max. with contacts open. Measure at hinge end of core.

### Voltage Regulator

**Setting (VRD-4003-A)** - 7.5-7.8 volts at 70°F (Before #811-000001), 7.35-7.65 volts at 70°F (After #811-000001).

**Setting (VRD-4003-B)** - 7.8-8.1 volts at 70°F (Before #8R-000001), 7.35-7.65 volts at 70°F (After #8R-000001).

**Setting (VRD-4008A)** - 7.35-7.65 volts at 70°F.

**To Check** - Connect ammeter in charging line at 'B' terminal on regulator (use short heavy leads), connect

## Regulator (Cont'd)

voltmeter between regulator 'BI and 'GD1 terminals. Operate generator, charging fully charged battery, at speed equivalent to 30 MPH. lpar speed until voltage is steady. Voltmeter reading should be within limits of 7.4-7.9 volts (VRD4003-A before #8R-000001), 7.8-8.1 volts (VRD-4003-B before #8R-000001), 7.1-7.8 volts (all models after #8R-000001). If outside these limits, regulator is defective.

**To Adjust** - Change regulator armature spring tension by bending lower spring hanger.

**Contact Gap** - .01011 Min., .020" Max. with armature against stop pin.

**Air Gap** - .0595-.0625" with contacts just opening.

## LIGHTING

**LIGHTING:** - Headlamps - Hall, pre-focused type with interchangeable lenses. Upper and lower beams (lower beam deflected slightly to right) controlled by foot selector switch with lighting switch in driving (right hand) position.

**Headlamp Adjustment** - Aim headlamps straight ahead with top of beam at lamp center height at 25, (car unloaded, upper beams lighted). Headlamps aimed by means of two screws on underside of headlamp body. Vertical movement obtained by turning both screws equally in or out, horizontal movement by turning one screw in until half desired movement obtained and completing movement by turning opposite screw out an equal amount.

## Switches

**Lighting** - R.B.M.

**Foot Selector** - R.B.M. No. 1076.

**Dome Light** - R.B.M. No. 1220.

**Stop Light** - R.B.M. No. 965.

Bulb Specifications		
Position	Candlepower	Mazda No.
Headlamps	32-32	2331
Headlamps (export)	21-50	2520D
Park, Instrmn't, Service	1½	55
License, Fender	3	63
Stop-Tail	21-3	1158
Dash Signals	1	51
Dome	15	87

## MISC. ELECTRICAL

**SIGNAL LIGHTS:** - Teleflash Generator Charging Indicator and Oil Pressure Indicator mounted on instrument panel.

**FUSES:** - Lighting - Two 20 ampere capacity mounted on lighting switch (1937), on fuse block on lower flange of instrument panel on left side (1938).

**HORNS: Standard** - Klaxon (Delco-Remy) Model K-33S (1937), Sparton (1938). Twin Horns operated by Delco-Remy or R-B-M relay.

**Otional** - Klaxon K-33-F. Type 2117 (left-low note), 2118 (right-high note), twin horns, blended tone with Delco-Remy horn relay (optional - outside mounting).

**NOTE** - Data below for Delco-Remy equipment.

Horn	Current (6 volts)	Air Gap
K-33-S, 2051 (low note)	11-13 amps	042-.046"
K-33-S, 2052 (high note)	10-12 "	032-.036"
K-33-F, 2117 (low note)	11-13 "	040-.044"
K-33-F, 2118 (high note)	9-11 "	032-.036"

**Horn Relay:** - Model 271-A (with Klaxon horns). Contacts close 2.7-4.0 volts. Contact Gap-.020". Air Gap-.01511.

**NOTE** - R.B.M. Model 780 horn relay also used.

## ENGINE

**ENGINE SPECIFICATIONS:**-6 cylinder, 'Ll head type. Bore - 3". Stroke - 5". Displacement - 212 cu. inches.

**Rated Horsepower** - 21.6 A.M.A.

**Developed Horsepower** - 101 (Std. 6.25-1 Head), 107 (Optl. 7.0-1 head) at 4000 R.P.M.

**Compression Ratio & Pressure** - Check at cranking speed, spark plugs removed, throttle wide open.

Std. 6.25-1 head 103 lbs. at 170 R.P.M.

Optl. 7.0-1 head 119 lbs. at 170 R.P.M.

**Vacuum Reading** - 18-21" at 350 RPM. or 7 MPH.

**PISTONS:** - Own Lo-Ex aluminum alloy, "T" slot, cam ground type. Use finished replacement pistons.

**Weight** - 10.5 ozs. stripped. Length-3 3/16".

**Removal** - Pistons and rods may be removed from above or below.

**Clearance** - .016" top, .002" skirt (see below).

**Fitting New Pistons:** - 3-4 lb. tension should be required to withdraw .00151, feeler 1/2" wide from between piston and cylinder wall on side opposite slot at right angles to pin bosses.

**Installing Pistons:** - Slot away from camshaft side.

**PISTON RINGS:** - Two compression, one oil ring above pin, one oil ring below pin. Rings positioned by pin in groove.

Model 73 (1937)			
Ring	Width	End Gap	Side Clearance
Compression	3/32"	.009-.011"	.001"
Oil (both)	3/16"	.009-.011"	.001"

Model 83 (1938)			
Ring	Width	End Gap	Side Clearance
Compression	3/32"	.005-.010"	.001"
Oil (both)	3/16"	.005	.001"

**PISTON PIN:** - Diameter - 3/4". Length - 2- /16".

Pin floats in piston and rod, held by locking rings. Pin hole in rod bronze-bushed. Pins furnished std., .002, .005", & .010", oversize.

**Pin Fit in Piston** - .0003" clearance or hand push fit with piston heated to 200\* F.

**Pin Fit in Rod Bushing** - .0003" clearance.

## ENGINE (Cont'd)

**CONNECTING ROD:** Length - 8-3/16".

**Weight** - 29.4 ozs. (1937), 30.3 ozs. (1938).

**Crankpin Journal Diameter** - 15/16".

**Lower Bearing** - Spun-babbitt. Rods exchanged. Finished bearings furnished standard and undersize (special order).

**Clearance** - .001". Sideplay-.006-.010".

**Bearing Adjustment:** Laminated shims (1937), No adjustment (1938 - no shims). Replace rods.

**Installing Rods:** - Offset. Install rods with widest hall of bearing toward rear (#1, 2, 4), toward front (#3, 5, 6). Oil scoop on all rods toward camshaft.

**CRANKSHAFT:** - 3 bearing, integral counterweights

**Journal Diameters** - #1, 2-11/32"; #2, 2-3/8"; #3, 2-13/32".

**Bearing Type-Bronze** - backed, babbitt-lined. Furnished std., and unfinished (1/32" extra stock - ream to desired undersize). Clearance-.001".

**Bearing Adjustment:** - Shims.

**End Thrust:** - Taken by center bearing. Replace bearing to adjust. Endplay.006-.012".

**CAMSHAFT:** - Three bearing. Gear driven.

**Journal Diameters** - #1, 2"; #2, 1-31/32"; #3, 1 1/2".

**Bearing Clearance** - .0025".

**End Thrust:** - Taken by thrust washer assembled between front face of crankcase and rear side of camshaft front flange, and by spring-loaded button in camshaft hub and thrust plate on gear cover. See that spring and button in place under cover.

**Timing Gears:** - Crankshaft gear cast-iron. Camshaft gear GE. or Continental Diamond Fibre Bakelite.

1941 Type Timing Gear Set can be installed on these models (tooth angle redesigned to provide quieter operation).

**Camshaft Setting:** - Mesh marked crankshaft gear tooth between two marked teeth on camshaft gear.

**VALVES:** - Lighter valves (smaller stem diameter) used, than on previous models. New pilot size necessary for servicing tools.

### All Valves

Head Diameter, 1-3/8"; Stem Diameter, 3/8" (1937), 11/32" (1938); Length, 5-11/32".

	Seat Angle	Lift	Stem Clearance
Intake	45°	11/32"	.0015-.003"
Exhaust	45°	11/32"	.003-.005"

**Valve Guides:** - 2-9/16" long. Top 1-1/16", below top of block. Finish ream to size after installation.

**Valve Springs:** - Springs are cadmium plated, Dampeners originally used on bottom of all springs, but car manufacturer recommends that they be omitted whenever valves are serviced. Spring check (out of engine) - 34 lbs. min. at 2".

	Spring Pressure	Spring Length
Valve Closed	44 lbs	2"
Valve Open	102 lbs	1-21/32"

**Valve Lifters:** - Roller shoe type, fitted in removable guides.

## VALVE TIMING

**Tappet Clearance** - .006" Int., .008" Exh., engine hot.

**Valve Timing:** - See camshaft setting above.

**Intake Valves** - Open 10°40' BTDC. Close 60° ALDC.

**Exhaust Valves** - Open 50° BLDC. Close 18° 44' ATDC.

These figures correct with .010" tappet clearance.

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

## LUBRICATION

**LUBRICATION:** - Duo-flo (pressure & positive splash).

**Oil Pump:** - Oscillating plunger type, gear driven by camshaft. Mounted on right side of crankcase.

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

**Oil Pressure Regulator:** - Located on right side of crankcase at rear. Opens at 3 lbs. Not adjustable.

**Oil Pressure Indicator:** - Teleflash Oil Pressure indicator.

**Crankcase Capacity:** - 5 qts. (refill), 6 qts. (dry).

**NOTE** - Capacity decreased 1/2 qt. after car #43845. in 1938.

## COOLING

**COOLING SYSTEM:** - Water Pump. Centrifugal, beltdriven, packless type.

**Removal** - With water drained and fan belt removed, disconnect two inlet and one outlet hoses, remove mounting bolts and lift off fan and pump

**Thermostat:** - Mounted in cylinder head water outlet.

**Setting** - Start to open 150-155° F. Fully open 185° F.

**Water Capacity:** 13 quarts (1937), 12-1/2 quarts (1938).

## CLUTCH

**CLUTCH:** - Own make. Single plate, cork insert type, operating in oil.

**Driven Member (1937)** - Inside Diameter 5.37511, Outside Diameter 8.625". Thickness .203". Facing 90 cork inserts.

## Clutch (Cont'd)

**Driven Member (1938)** -Inside Diameter 6.375". Outside Diameter 9.75". Thickness .203". Facing 108 cork inserts.

Automatic Clutch Control: - Optional equipment. See Clutch Section for complete data.

**Adjustment:** - Pedal free movement must be 1½". To adjust, remove clevis pin at lower end of connecting link on throw-out shaft lever, loosen locknut, turn clevis. On cars with Automatic Clutch control, check setting whenever clutch adjusted.

**Removal:** - Remove transmission (see Transmission Removal following), take out 16 clutch cover cap-screws and remove clutch assembly from below.

## TRANSMISSION

**TRANSMISSION:** - Own make. Constant-mesh, helical L gear (second & high), sliding spur (low & reverse).

**NOTE** - Shifter Rail Locks used to prevent gear engagement with clutch engaged.

Electric Hand Transmission Control - Optional

**Removal:** - Remove Electric Hand and Automatic Clutch Control units and wiring from transmission first, if car model so equipped. Disconnect transmission side bumpers, interlock straps, speedometer cable, driveshaft at front universal. Support engine at rear and free rear engine mounting. Take out bell housing-to-engine mounting bolts, pull transmission straight back and remove.

## UNIVERSALS

**UNIVERSAL JOINTS:** - Spicer. 1271 (front), 1278 (rear). Needle bearing type.

## REAR AXLE

**REAR AXLE:** - Own make. Semi-floating, spiral bevel.

**Ratios (1937)** - 4.11-1 Std., 4.56-1, 3.89-1, 3.56-1 Optional.

**Ratios (1938)** - 4 1/9-1 Std., 4 5/9-1, 3 5/9-1, 3 8/9-1 Optional.

**Backlash** - .0005-.003". Screw adjustment.

**Removal:** - Remove rear wheel and hub assembly (use screw type hub puller only), take out four nuts on bearing cap bolts, push bolts out through backing plate (allows cap removal without disturbing hand brake operating link), remove shims, pull wheel bearing and axle shaft, disconnect drive shaft at Fear universal joint, remove 8 nuts from axle housing stud bolts,

withdraw differential carrier.

**Wheel Bearing Adjustment:** - Controlled by shims under bearing cap. To adjust, remove bearing caps (as directed above), add or remove shims equally at both wheels. Endplay-.004-.010".

## SHOCK ABSORBERS

**Delco** - Direct acting hydraulic types. As follows:  
Front - Model 1175S (1937), 1164S (1938).  
Rear - Model 1174T (1937), 1163T (1938).

## FRONT SUSPENSION

**Front Suspension:** - Conventional 'I' beam section front axle with Elliott type ends and semi-elliptic springs. Axle alignment maintained by torque arm at each end (rubber-bushed bolt at frame).

**Kingpin Inclination** - 7° crosswise.

**Caster** - 1-2° and equal within ½° for both wheels. To adjust, loosen capscrews at forward end of torque arm, insert shim between arm and axle at upper screw, or remove shim at lower screw to decrease caster, remove shim at upper screw or insert shim at lower screw to increase caster. Shims .020" thick, change caster ½°.

**Camber** - 1-1½°. No adjustment. Make minor corrections by bending axle cold.

**Toe In** - 0-1/8" measured 10" up from ground. Adjust by loosening clamp bolts and turning tie rod.

**Steering Geometry** - Inner wheel 20% Outer 17¾°.

## STEERING GEAR

**Steering Gear:** Gemmer Model 305 Worm-and-Roller type with "push-pull" adjustments.

## BRAKES

**BRAKES:** - Service-Bendix hydraulic, Duo-Servo Single anchor type. Mechanical follow-up (pedal linked to hand brake cables) provided. Hand lever applies rear service brakes.

**Drum** - Alloy-steel, Diameter-10-1/16".

**Lining** - Moulded (primary), woven (secondary). Width 1¾", Thickness 7/32" (1937), 3/16" (1938), Length per wheel 221/8".

**Clearance** - .010" heel and toe of each shoe.

**Hand Brake:** - See Service Brakes above.

**Hill-Holder** - Optional