

1946 Hudson Six  
Mechanical Specifications and Adjustments

**HOOD LOCK:** Hood is Reverse Alligator type hinged at radiator. To raise hood, press in on lock handle to left of steering column, raise rear end of hood.

**MODEL IDENTIFICATION**

| Model              | Wheelbase | Serial No. |
|--------------------|-----------|------------|
| Super Six - 51     | 121       | 31-101     |
| Commodore Six - 52 | 121       | 32-101     |
| Business Cars - 58 | 128       | 38-101     |

**SERIAL & ENGINE NUMBER:** See model notation above for First No. and prefix (first two figures indicate model thus: 31-101). Stamped on plate on right front door hinge pillar post and on top of engine block between #1 and #2 exhaust flanges.

**TUNE-UP**

**COMPRESSION:** Pressure-120 lbs. at cranking speed of 125 RPM.

**VACUUM READING:** Steady 18-21" (idling @ 7½-8 MPH.)

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

**SPARK PLUGS:** Champion Special J-9 Hudson. 14 mm. Gaps - .032"

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

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

Breaker Arm Spring Tension - 17-20 ounces.

Rotation - Counter-clockwise viewed from above.

Automatic Advance - Starts at 400 RPM. Maximum 11.75° at 1570 RPM. (Distr. degrees & RPM).

Vacuum Advance - Starts with 63/4" vacuum. Maximum 71/20 (distr.) with 10" of vacuum.

**IGNITION TIMING:** Std. Setting - 1/2" BTDC

Timing Mark - Flywheel marked "UDC.1-6/" with four graduations 1/4" apart ahead of this mark. Set timing with the 3rd white line aligned with pointer in inspection hole in motor support above starter, then adjust Fuel Compensator as follows:

Fuel Compensator Setting - Advance spark (loosen vacuum unit link screw on distributor quadrant) until slight ping noted accelerating with wide open throttle between 10-15 MPH. Final setting must not be more than 1" before "UDC.1-6/1"

**CARBURETION:** See Carburetion.

Idle Setting - Set both idle adjusting screws for smooth running and highest steady vacuum gauge reading (each screw 1/2-1½ turns open -turn screws in for leaner mixture). Idle speed 7½-8 MPH.

Float Level - 1/8" from top of float to gasket seat on cover with valve seated (invert to check).

Accelerating Pump - Outer hole (max.) Normal.

Fuel Pump Pressure: 3-4 lbs. (AC. mechanical type), 2½-3 lbs. (Autopulse electrical type).

**MANIFOLD HEAT CONTROL:** Automatic thermostatic type (no adj.). Valve must operate freely.

**VALVES:** See Valve Timing,

Tappet Clearance - .010" Intake, .012" Exhaust, engine idling at normal operating temperatures.

**NOTE** - This clearance required by new No. 162962 camshaft (also supplied for service on all 6 cyl. cars). Camshaft may be identified by letter "X" stamped on front face of cam gear attaching flange and by shoulder 1/4" wide on shaft between 2nd & 3rd cams from front (visible from below, pan off).

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

**IGNITION**

**COIL: Auto-Lite Model IG-4098.** Service Coil IG-4098S. Mounted on dash.

**NOTE** - Coil connections are reversed (breaker connection at base of coil).

Ignition Current - 2-1/2 amperes idling, 5 stopped.

**CONDENSER:** Auto-Lite Part No. IGW-3075C. Capacity - .20-.25 microfarad.

**DISTRIBUTOR: Auto-Lite Model IGW-4203-A** with separate VC-306OES Vacuum unit. Full automatic advance type with auxiliary vacuum spark control and Fuel Compensator adjustment.

See Tune-Up for distributor specifications.

**IGNITION TIMING:** See Tune-Up for settings.

**CARBURETION**

**CARBURETOR:** Carter WDO Model 501-S. 11, Dual, double barrel downdraft type with Climatic Contr. See Tune-Up for carburetor adjustment directions.

Std. Metering Rod - No. 75-467. Checking Gauge No. T109-113 (2.280"). Metering Jet No. 120-65S (.082").

**FAST IDLE:** Setting - With choke valve closed and fast idle screw on high lobe of fast idle cam, turn screw in until throttle opening is .045".

**AUTOMATIC CHOKE:** Setting - 1 Point Lean.

**AIR CLEANER:** AC Oil-wetted type Standard; United oil-bath type Optional.

Servicing - Clean and re-oil filter elements (oil wetted type), clean and renew oil in sump (oil-bath type) at 2000 mile intervals or oftener if required.

**NOTE** - Oil-bath cleaner capacity 1 Pint engine oil. Use same grade oil as used in engine crankcase.

**FUEL PUMP: AC Type AK** (Exch. No. 499) Diaphragm type or Autopulse Electrical type.

Pressure - 3-4 lbs. (AC), 2½-3 lbs. (Autopulse).

**ELECTRICAL**

**BATTERY:** National. 6 volt, 17 plate, 96 A. H. Grounded Terminal-Positive (+) terminal.

Location - In engine compartment on left side.

**STARTER: Auto-Lite MZ-4092.** Armature MZ-2138. Drive-In-board Barrel type Bendix No. A-1684.

Rotation - Counter-clockwise at commutator end.

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

Cranking Engine - 150 RPM. 125 amperes, 5 . 4 volts.

**Performance Data**

| Torque     | RPM  | Volts | Amperes |
|------------|------|-------|---------|
| 0 ft. lbs. | 4300 | 5.5   | 70      |
| 7.65 "     | 2200 | 4.0   | 400     |
| 11.8 "     | Lock | 4.0   | 560     |

**GENERATOR: Auto-Lite Model GEC-4801A.** Armature GDZ-2006F. Third brush control type with voltage regulation.

Ventilated by fan on drive pulley.

Maximum Charging Rate - 44 amperes (cold), 8.0 volts, 3400 RPM or approx. 35 MPH.

Charging Rate Adjustment - See Regulator. Third brush should be set 1 commutator bar min., 1 bar plus 1 mica strip max. from nearest main brush.

| Amperes | Cold  |      | Performance Data |       | Hot  |      |
|---------|-------|------|------------------|-------|------|------|
|         | Volts | RPM  | Amperes          | Volts | RPM  | RPM  |
| 0       | 6.4   | 960  | 0                | 6.4   | 1040 | 1040 |
| 8       | 6.7   | 1160 | 8                | 6.7   | 1280 | 1280 |
| 16      | 7.0   | 1400 | 16               | 7.0   | 1600 | 1600 |
| 24      | 7.25  | 1700 | 24               | 7.25  | 2090 | 2090 |
| 32      | 7.65  | 2100 | 32               | 7.65  | 3000 | 3000 |
| 41      | 8.0   | 3350 | 34               | 8.0   | 3800 | 3800 |

Rotation - Counter-clockwise at commutator end.

Brush Spring Tension - 53 ozs. max. (new brushes). Field Current - 1.60-1.78 amperes at 6.0 volts.

Belt Adjustment - 3/4" deflection midway between generator and fan pulleys.

**REGULATOR:** Auto-Lite VRR-4001A. Voltage Type.

Cutout Relay Closes - 6.4-6.6 volts. Opens 42-4.8 volts with approx. 4-6 ampere discharge current.

Voltage Regulator Setting - 7.1-7.4 volts at 70°

**LIGHTING:** Headlamps - Hall Sealed Beam type.

Adjustment - Aim upper beam straight ahead (hot spot center 3" below lamp center height at 25').

Lamp Bulbs-See Specification Table on Page 31.

**FUSES:** Lighting - 30 ampere. Two silver-plated type on fuse block on back of instrument panel.

Clock - 2 ampere. In case on back of clock. Direction Indicator - 10 ampere. In flasher lead. Heater - 14 ampere. On left side of heater.

Radio - 20 ampere.

### ENGINE

**ENGINE SPECIFICATIONS:** Six Cylinder, "L" head. Bore - 3", Stroke - 5"

Displacement - 212 cu.ins. Rated H.P - 21.6

Developed Horsepower - 102 at 4000 RPM.

Compression Ratio - 6.5-1 Std. Cast Iron Head.

**PISTONS:** Aluminum alloy, cam ground type. Weight - 10.5 ozs. Length - 3-3/16". Removal - Pistons and rods removed from above.

Clearance - .0005-.001". Use .0015" feeler stock 1/2" wide.

Pull to withdraw feeler should be 3-4 lbs.

Installing Pistons - Slot away from camshaft.

| PISTON RINGS:   | Width | End Gap    | Side Clearance |
|-----------------|-------|------------|----------------|
| Compr. (# 1, 2) | 3/32  | .009-.011" | .001"          |
| Oil (#3)        | 3/16  | .009-.011" | .001"          |
| Oil (#4)        | 5/32" | .009-.011" | .001"          |

**NOTE** - Rings are pinned type. Clearance at pin must be kept uniform with end gap.

**PISTON PIN:** Floating type (locking ring each end).

Clearance - .0003" in rod bushing and piston (piston heated to 200°F).

**CONNECTING ROD BEARINGS:** Spun alloy lined type. No shims. Install exchange rods.

Clearance - .001". Sideplay - .007-.013".

Installing Rods - Widest half or offset of lower bearing toward rear of engine (#1,2,4 - Six Cylinder; # 1, 3, 5, 7 - 8 Cylinder), toward front (#3, 5, six Cylinder; #2,4,6,8 - 8 Cylinder). Oil scoop on bearing cap toward camshaft on all rods.

**CRANKSHAFT BEARINGS:** Removable, bronze-backed, babbit-lined type. No shims,

Clearance - .001" Endplay .006-.012" (center).

**CAMSHAFT SETTING:** Mesh marked tooth on crankshaft gear with marked teeth of camshaft gear.

**NOTE** - Aluminum camshaft gear used on later cars (must be used as set with special crankshaft gear).

VALVES:

|                | Head Diameter                 | Seat Angle | Stem Clearance |
|----------------|-------------------------------|------------|----------------|
| Intake (Six)   | 1 <sup>3</sup> / <sub>8</sub> | 45°        | .0025"         |
| Intake (Eight) | 1 <sup>1</sup> / <sub>2</sub> | 45°        | .0025"         |
| Exhaust (All)  | 1 <sup>3</sup> / <sub>8</sub> | 45°        | .004"          |

Valve Spring Pressure - 40 lbs. at 2" (closed), 80 lbs. at 1<sup>21</sup>/<sub>32</sub>" (valve open). Free length 2<sup>17</sup>/<sub>64</sub>".

### VALVE TIMING

Valve Timing Check-With .010" tappet clearance, #1 intake valve opens 10°40' BTDC with point on flywheel 4 teeth ahead of top dead center mark "UDC.1-6/" at indicator in inspection hole above starter.

**NOTE** .010" is regular tappet clearance.

### LUBRICATION & COOLING

**LUBRICATION:** Crankcase Capacity - 5<sup>1</sup>/<sub>2</sub> quarts (dry), 4<sup>1</sup>/<sub>2</sub> (refill).

**NOTE** - If pan removed, place 1-1/2 qts. In upper tray before pan replaced, additional 4 qts. in oil filler after pan in place.

Normal Oil Pressure - 4-12 lbs. (no gauge).

Oil Filter - Hudson type Optional. Replace cartridge at 5000-6000 mile intervals.

**COOLING:** Capacity - 13 qts.

Thermostat - In cylinder head outlet. Starts to open at 150-155°F. Fully open at 185°F.

### MECHANICAL

**CLUTCH:** Own. Single plate type with cork-insert type driven member. Operates in oil.

Pedal Adjustment - Clearance between toeboard and rear face of pedal must be 1-1/2". Adjust by turning clevis on pedal to throw-out lever.

## 1946-47 Mechanical Specs (Cont'd)

Facings - Driven Member consists of steel disc with cork inserts. Two types used as follows:

| Model                | I.D.   | O.D. | No. Corks |
|----------------------|--------|------|-----------|
| 51 & 52*             | 5-1/4" | 9"   | 90        |
| 51 & 52** 53, 54, 58 | 6-3/8" | 10"  | 108       |

\* - No Overdrive, Vacuum Drive, DriveMaster.

\*\* - With equipment listed above. Servicing - Drain and refill clutch housing with 1/3 pint Hudsonite at 5000 mile intervals.

VACUOTIVE DRIVE: Optl. Equipment automatic clutch control (with vacuum-power cylinder).

DRIVE-MASTER: Optl. Equipment. Special automatic shift transmission used in conjunction with Vacuum Drive (automatic clutch control).

OVERDRIVE: Warner Type R9B (used with Hudson Transmission). "Kick-down" type with electrical engagement and disengagement.

FRONT SUSPENSION: Independent, parallelogram type with coil springs.

BRAKES: Bendix Hydraulic, Single Anchor "No Eccentric" type with Hudson Mechanical Follow-up. Hand lever applies rear wheel service brakes.

Clearance - .0075" (.015" at each end of secondary shoe with primary shoe out against drum). NOTE - can be adjusted by backing off adjusting screw in each wheel 14 notches from Heavy Drag position.

Mechanical Follow-up Adjustment - 1-1/4" clearance between pushrod tube face and pedal rod.

Drum Diameter - 10"1 (51, 52), 11" (53, 54, 58).

Lining - Molded (primary shoes), Woven (secondary shoes).

Width - 1-3/4", Thickness 7/32", Length per wheel 19 - 2-7/32" (51, 52), 21 19/32" (53,54,58).

## HUDSON 8

### MODEL IDENTIFICATION

| Model                | Wheelbase | Serial No. |
|----------------------|-----------|------------|
| Super Eight - 53     | 121"      | 33-101     |
| Commodore Eight - 54 | 121"      | 34-101     |

SERIAL & ENGINE NUMBER: See model notation above for first No. and prefix (first two figures indicate model thus: 33-101). Stamped on plate on right front door hinge pillar post and on top of engine block between #1 and #2 exhaust flanges.

COMPRESSION: Pressure - 120 lbs. at cranking speed of 125 RPM.

VACUUM READING: Steady 18-21" idling 7-1/2-8 MPH.

FIRING ORDER: 1-6-2-5-8-3-7-4.

SPARK PLUGS: Champion Special J-9 Hudson. 14 mm.. Gaps - .032"

IGNITION: See Coil, Condenser, and Distributor.

Breaker Gap - .017" Cam Angle 31° (closed).

Breaker Arm Spring Tension - 17-20 ozs.

Rotation - Clockwise viewed from above.

Automatic Advance - Starts at 300 RPM., 3° at 400 RPM., Maximum 17.5° at 1700 RPM (Distr. ° & RPM)

IGNITION TIMING: Std. Setting - At TDC.

Timing Mark - Flywheel marked "UDC.1-8" with four graduations 1/4" apart ahead of this mark. Set timing with first white line aligned with pointer in inspection hole in motor support above starter, then adjust Fuel Compensator as follows:

Fuel Compensator Setting - Advance spark (loosen hold-down screw and rotate distributor) until slight ping noted when accelerating with wide open throttle between 10-15 MPH. Final setting must not be more than 3/4" before "UDC.1-8".

CARBURETION: See Carburetion.

Idle Setting-Set both idle adjusting screws for smooth running and highest steady vacuum gauge reading (each screw 1/2-11/2 turns open-turn screws in for leaner mixture). Idle speed 7-1/2-8 MPH.

Float Level - 1/8" from top of float to gasket seat on cover with valve seated (invert to check).

Accelerating Pump - Outer hole (max.) Normal.

Fuel Pump Pressure: 3-4 lbs. (AC. mechanical type), 2-1/2-3 lbs. (Autopulse electrical type).

MANIFOLD HEAT CONTROL: Automatic thermostatic type (no adj.). Valve must operate freely.

VALVES: See Valve Timing.

Tappet Clearance - .006" Intake, .008" Exhaust, engine idling at normal operating temperatures.

STARTING: See Battery, Starter, Generator and Regulator.

## 1946-47 Mechanical Specs (Cont'd)

### IGNITION

COIL: Auto-Lite Model CE-4029. Service Coil CE-3224JS. Mounted on the dash.

CONDENSER: Auto-Lite Part No. IG-2671. Capacity - .20-.25 microfarad.

DISTRIBUTOR: Auto-Lite Model IGP-4008-A or IGP-4008-B. Full automatic advance type (no vacuum control) with Fuel Compensator adjustment.

See Tune-Up /or distributor specifications.

IGNITION TIMING: See Tune-Up for settings. CARBURETION

CARBURETOR: Carter WDO Model 502-S. 11/41, Dual, double barrel downdraft type with Climatic Contr.

Std. Metering Rod - No. 75-529. Checking Gauge No. '109-113 (2.28011). Metering Jet No. 120-121S (.08611). SIT IDLE: Setting-With choke valve closed and fast idle screw on high lobe of fast idle cam, turn screw in until throttle opening is.053".

AUTOMATIC CHOKE: Setting - 1 Point Lean.

AIR CLEANER: AC Oil-wetted type Std., United Oilbath type Optl.

Servicing - Clean and re-oil filter elements (oilwetted type), clean and renew oil in sump (oil-bath type) at 2000 mile intervals or oftener if required.

FUEL PUMP: AC Type AK (Exch. No. 499) Diaphragm type or Autopulse Electrical type.

Pressure - 3-4 lbs. (AC), 21/2-3 lbs. (Autopulse).

## 1946-47 Mechanical Specs (Cont'd)

### ELECTRICAL

All Electrical Equipment and specifications same as used on Hudson Six (see preceding article) except as noted

BATTERY: National. 6 volt, 19 plate, 108 A. H. Grounded Terminal-Positive (+) terminal.

Location - In engine compartment on left side

STARTER: Auto-Lite MAB-4100. Armature MAB-2113. Drive - Inboard Barrel type Bendix No. A-1684.

Rotation - Counter-clockwise at commutator end. Brush Spring Tension-42-53 ozs. (new brushes). Cranking Engine-150 RPM, 125 amperes, 5 volts. Performance Data

| Torque    | R.P.M. | Volts | Amperes |
|-----------|--------|-------|---------|
| 0 ft. lbs | 3700   | 5.5   | 60      |
| 10.15 "   | 420    | 4.0   | 400     |
| 21.5 "    | Lock   | 4.0   | 750     |

For Generator, Regulator, Lighting, & Fuse data, see Hudson Six article (preceding).

### ENGINE

ENGINE SPECIFICATIONS: 8 Cylinder, "L" head type.

Bore - 3". Stroke - 4-1/2".

Displacement - 254 cu. ins. Rated H.P. 28.8. Developed Horsepower - 128 at 4200 RPM.

Compression Ratio - 6.5-1 Std. Cast Iron Head.

All Engine data (Pistons, Rings, Pins, Bearings, etc.) same as for Hudson Six except as noted.

### VALVE TIMING

Valve Timing Check-With .0101, tappet clearance, #1 intake valve opens 10°40' BTDC. with point on flywheel approx. 3.97 teeth ahead of top dead center mark "LTDC.1-8/" at indicator in inspection hole above starter.

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

### LUBRICATION & COOLING

LUBRICATION: Crankcase Capacity - 9 qts. (dry), 7 qts. (refill).

NOTF - If pan removed, place 2 qts. in upper tray before pan

replaced, additional 7 qts. in oil filler after pan in place.

Normal Oil Pressure - 4-12 lbs. (no gauge).

Oil Filter - Hudson type Optl. Replace cartridge at 5000-6000 mile intervals.

COOLING: Capacity - 18 qts.

Thermostat - In cylinder head outlet (by-pass type on Model 54 only). Begins to open at 150-155°F. Fully open at 185°F.

### MECHANICAL

All Mechanical data (Clutch, Suspension, Brakes, etc.) same as for Hudson Six except as noted. See Hudson Six article (preceding).

### LAMP BULB SPECIFICATIONS

|                |  |
|----------------|--|
| Headlight      | Sealed Beam  |
| Parking        | 55 (Front fender lamp NO. 63 (without Directional Signal - 1158 with directional signal) |
| Beam Indicator | 51   |
| Instr. Panel   | 51 (Speedometer Lamp No. 55 (52, 54), No. 51 (51, 53)                                    |
| Ignition Lock  | 55   |
| Clock          | 55   |
| Stop-Tail      | 1154   |
| Rear License   | 63   |
| Dome & Reading | 88   |

### FRONT SUSPENSION SPECIFICATIONS

|                                 |                        |
|---------------------------------|------------------------|
| Kingpin Inclination             | 4°36'                  |
| Caster                          | Neg. 1/4° to Pos. 1/4° |
| Camber                          | 1/4° to 3/4°           |
| Toe In                          | 0" to 1/16"            |
| Steering Geometry (Inner Wheel) | 30 0° +/- 1/2°         |
| On Hudson models                | Outer wheel turned 25° |