

ENGINE NUMBER:—First number—79,000. Stamped on left side of cylinder block opposite #6 cylinder.

ENGINE SPECIFICATIONS:—Type—6 cyl., 'L' head.

Bore—3". Stroke—5".

Displacement—212 cubic inches.

Rated Horsepower—21.6 (AMA).

Developed Horsepower—93 at 3800 R.P.M. (Std. 6.25-1 head), 100 at 3800 R.P.M. (Optl. 7.0-1 head).

Compression Ratio & Pressure—To check pressures, remove spark plugs, crank engine with throttle wide open.

Std. 6.25-1 Head.....116 lbs. at 219 R.P.M.

Optl. 7.0-1 Head.....127 lbs. at 207 R.P.M.

Vacuum Reading—Gauge should show steady reading of 18-19" of HG. with engine idling at 350 R.P.M. or 7 M.P.H.

NOTE—High Octane fuel must be used in engines with optional high compression 7.0-1 head.

PISTONS:—Own Lo-Ex aluminum alloy, 'T' slot, Cam ground type. Use finished replacement pistons when reconditioning engine. See Reconditioning paragraph.

Weight—10.5 ozs. stripped. Stamped on piston head. Length—3 3/16".

Removal—Pistons and rods removed from above. Clearance—Top .016". Skirt .002". See Fitting new Pistons.

NOTE—These pistons interchangeable with 1935 and may be installed in complete sets on 1934 model.

Reconditioning Cylinders:—Size of original bore indicated by letter stamped on lower edge of valve chamber opposite cylinder as follows: A-3.000", B-3.0005", C-3.001", D-3.0015", E-3.002", AO-3.010", BO-3.0105", CO-3.011", DO-3.0115", EO-3.012". Reconditioning cylinder to standard oversize for which replacement piston and rings are available (see piston and ring data below).

Replacement Pistons:—Standard and oversize pistons marked by letter on head available for cylinder bores of size indicated: 'B'-3.000 & 3.0005", 'D'-3.001 & 3.0015", 'F'-3.002 & 3.0025", 'J'-3.004", 'L'-3.005". 'BO'-3.010 & 3.0105", 'DO'-3.011 & 3.0115", 'FO'-3.012 & 3.0125", 'LO'-3.015", 'BB'-3.020", 'DD'-3.021", 'FF'-3.022". All pistons installed in engine must be of same weight as indicated by mark on head.

Fitting New Pistons:—Use .0015" feeler 1/2" wide on side opposite slot at right angles to pin bosses to check clearance. Tension to withdraw feeler must be 3-4 lbs.

Installing Pistons:—Slot toward left or away from camshaft.

PISTON RINGS:—Two compression, one oil ring above pin, one oil ring below pin per piston. Upper oil ring groove drilled with twelve 5/16" oil drain holes and two 5/16" holes to pins. Lower oil ring groove drilled with four 5/16" holes and two oil drain slots. Rings are straight cut and are positioned by pin in piston ring groove.

Ring Comp.	Width	End Gap	Wall Thickness
Oil (both)	3/32"	.005" Min.	.123"
	3/16"	.005" Min.	.128"

NOTE—Use standard or oversize rings of size indicated for replacement pistons (see replacement piston section above): 3.000"—B, D, F; 3.003"—J; 3.005"—L; 3.010"—BO, DO, FO; 3.015"—LO; 3.020"—BB, DD, FF. If rings are filed, clearance at pin must be kept uniform with end gap.

PISTON PIN:—Diameter 3/4". Length 2 7/16".

Pin floats in piston and rod. Held by locking ring at each end. Pin hole in rod is bronze-bushed. Pins furnished standard, .002", .005", .010" oversize.

Pin Fit in Piston:—Hand push fit with piston heated to 200° F.

Pin Fit in Rod Bushing:—.0003" clearance. With this clearance rod will just turn of own weight.

CONNECTING ROD:—Weight 29.4 ozs. Length 8 3/16".

Crankpin Journal Diameter—1 15/16".

Lower Bearing—Spun-babbitt lined type. Rods serviced on 'exchange' basis.

Clearance—.001". Sideplay—.006-.010".

Bearing Adjustment:—Laminated shims. Do not file rods or caps.

Installing Rods:—Lower bearings are offset. Install rods with right hand offset (widest half of bearing toward rear) in cylinders #1, 2, 4, and rods with left hand offset (widest half of bearing toward front) in cylinders #3, 5, 6. Oil scoop on bearing must be toward camshaft on all rods.

CRANKSHAFT:—Three bearing. Integral counterw'ts. See Hudson Shop Notes for Crankshaft and Vibration Dampener removal, Main Bearing Removal, Installation and Line-Reaming data.

Journal Diameters—#1, 2 1 1/32"; #2, 2 3/8"; #3, 2 13/32".

Bearing Type—Removable bronze-backed, babbitt-lined. Bearings furnished for service reamed to standard size or unfinished (1/32" extra stock).

Clearance—.001".

Bearing Adjustment:—Shims. See Hudson Shop Notes. **End Thrust:**—Taken by flanges on #2 (center) main bearing. Endplay .006-.012". Adjusted by replacing bearing.

CAMSHAFT:—Three bearing. Gear driven.

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

Bearing Clearance—.0015".

End Thrust:—Taken by spring loaded plunger in end of camshaft and thrust plate on gear case cover. NOTE—If gear case cover removed, see that spring and plunger are in place when cover replaced.

Timing Gears:—Crankshaft gear cast-iron. Camshaft gear GE. or Continental Diamond Fibre Bakelite. **Camshaft Setting:**—Gears are marked. Mesh marked tooth of crankshaft gear between two marked teeth on camshaft gear.

VALVES:—Head Diameter Stem Diameter Length

All Valves1 3/8".....3/8".....5 11/32"

Intake45°.....11/32"......0015-.003"

Exhaust45°.....11/32"......003-.005"

Tappet Clearance:—.006" Intake, .008" Exhaust (hot). **Valve Guides:**—Removable type. Pressed in block. Finish ream guides after installation to size giving correct clearance.

Valve Springs:—Cages installed on bottom of all springs. Springs should be installed with open side of cage toward cylinder.

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

Valve Lifters:—Slipper type operating in individual removable guides. Lifter is prevented from turning by pin in guide.

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" before top dead center when point on flywheel approximately 3.94 teeth before UDC.

1-6" mark lines up with indicator in hole in left front face of flywheel housing. Reset tappet clearance at .006" hot.

Motor Gauge:—Weldenhoff #114 Adapter. #44 Rod.

LUBRICATION:—Duo-flow (splash) system. Force feed by oil pump to connecting rod troughs and timing

gears. Splash to all other bearing points from troughs.

Normal Oil Pressure:—3 lbs.

Oil Pressure Regulator:—Operates at 3 lbs. Located on right side of crankcase. Not adjustable.

Crankcase Capacity:—6 qts. refill.

Oil Pump:—Oscillating plunger type pump mounted on right side of crankcase and driven by gears from the camshaft.

Oil Pressure Indicator:—Consists of signal light on instrument panel and switch built in oil pressure regulator.

See article in Electrical Equipment Section for data.

CLUTCH:—Own Make—Single plate, cork insert type operating in oil. Driven plate can be recorked but is customarily replaced.

See article in Mechanical Equipment Section for data. **Clutch Plate:**—Thickness .203". Inside diameter 5.375". Outside diameter 8.625". Facing consists of 90 cork inserts.

Adjustment:—Free movement of clutch pedal must be 1 1/2" at all times. To adjust, remove clevis pin in clutch pedal link rod (between frame and leg of 'X' member below clutch pedal shaft), loosen locknut at top of clevis, turn clevis to shorten or lengthen rod as required, tighten locknut, replace clevis pin. On cars with automatic clutch control, check linkage whenever clutch is adjusted.

Automatic Clutch Linkage Adjustment:—Hold accelerator pedal in depressed position, pull backward on clutch control power unit rod at left of engine. With rod in extreme rear position check clearance between back of slot in rod yoke and clevis pin which attaches it to operating lever. Clearance at this point must be 7/8".

Clutch Oil Servicing:—See Hudson Shop Notes for data.

STEERING:—Steering Gear—Gemmer Model Worm-and-Sector type. See article in Steering Section for adjustments.

NOTE—An adjustable drag link with 3/4" adjustment (made by shifting shims from front to rear of pitman arm ball seat) is used on cars after #633110 (except 633153 to 633185 inclusive).

Front Suspension:—Conventional 'I' beam section front axle with Elliott type ends and semi-elliptic springs. Torque arm at each end of axle connected to frame at rear by rubber-bushed bolt maintains axle alignment.

Specifications & Adjustment:—Kingpin inclination, Caster, Camber, Toe In, Steering Geometry, and Kingpin thrust bearing specifications and adjustment same as for Hudson Eight (see next page).

BRAKES:—Service—Bendix Hydraulic, Duo-Servo, Single Anchor type. Brake pedal connected to rear wheel brakes through cable linkage for additional reserve mechanical application of brakes. Hand lever applies rear wheel brakes through this same linkage. See article in Mechanical Equipment Section. **Brake Drum Diameters:**—10 1/16".

Brake Lining:—Moulded & Woven type. Width 1 3/4". Thickness 7/32". Length 22 1/8" per wheel.

Brake Clearance:—.010" heel and toe of each shoe.

Brake Pedal Adjustment:—For correct mechanical follow-up feature, adjust position of nut on connecting rod so that clearance between face of nut and end of push rod is 1 29/32" with equalizer against stop.

Hand Brake:—See Service Brakes above.

AUTOMATIC SHIFT (ELECTRIC HAND):—Bendix electro-pneumatic type. Optional equipment.

See article in Mechanical Equipment Section for data.