

Revised January 1930

MECHANICAL SPECIFICATIONS FOR HUDSON SUPER EIGHT, 1930 MODELS

ENGINE

Make	Hudson	Piston Displacement	213.8
Model	Super-Eight	Suspension	4 Point
No. of cylinders	8	Type of head	L
Cylinder arrangement	Vertical	Cylinder heads (2)	Detachable
Bore	2-3/4"	Cylinders cast	En bloc
Stroke	4-1/2"	Crankcase	Integral
Rated H. P.	24.2	Upper half	Cast Iron
Firing order	1-6-2-5-8-3-7-4	Lower half	Pressed steel

CAMSHAFT DRIVE

Type of drive	Chain	No. of Links	57
Make	Morse	Pitch	1/2"
Type	No. 28	Adjustment	Adjustable eccentric
Width of chain	1-1/4"	Sprocket Material	Cast Iron
Camshaft sprocket	38 teeth		

CAMSHAFT BEARING

No. of bearings	5	No. 3 diameter	1-31/32"
No. 1 (front) diameter	2-1/32"	No. 3 length	1-1/4"
No. 1 length	1-3/8"	No. 4 diameter	1-15/16"
2 diameter	2"	No. 4 length	1-1/16"
No. 2 length	1-1/16"	No. 5 diameter	1-1/2"
		No. 5 length	1-1/2"

VALVES

	<u>Inlet valve</u>	<u>Exhaust valve</u>
Head material	Silicon steel	Silicon Steel
Head diameter (outside)	1-1/2"	1-3/8"
Head diameter (opening)	1-3/8"	1-1/4"
Stem length	5-1/32"	5-1/32"
Stem diameter	5/16"	5-1/16"
Stem type of end	Grooved	Grooved
Tappet (type).	Roller	Roller
Tappet clearance	.003-.005"	.005-.007"
Valve lift	.312"	.327"
Valve stem guides	Removable	Removable
Spring pressure	50 lbs.	50 lbs.

CRANKCASE AND CRANKSHAFT

No. of main bearings	5	No. 5 diameter	2-13/32"
No. 1 (front) diameter	2-9/32"	No. 5 length	2"
No. 1 length	1- 5/8"	Crank-pin diameter	1-15 /16"
No. 2 diameter	2-5 /16"	Main bearing material	Bronze & Babbitt
No. 2 length	1-3/8"	Main bearing end play	.006-.012"
No 3 diameter	2-11/32"	Main bearing clearance	.001"-.0015"
No. 3 length	1-7/8"	End thrust on	Center bearing
No. 4 diameter	2-3/8"	Sprocket	19 teeth
No. 4 length	1-3/8"	Material	Steel

CONNECTING ROD

Material	D. F. Steel	Lower end bearing clearance	.001"-.005"
Weight	1.7 lbs.	Length	1- 3/8"
Length C to C.	8-3 /16"	Clearance (endwise)	.006-.010
Lower end bearing Diameter	1-15/16"	Material	Spun babbitt

PISTON

Type	Slotted skirt		
Material	Aluminum Alloy	Distance between bosses	1-1/8"
Weight	8 Ounces	Clearance top of skirt	.002"-.0025"
Length	3-1/16"	Clearance bottom of skirt	.001"-.0015"
Pin center to top	1-11/16"	Depth of grooves	5/32"
Upper center groove	Drilled radially	4 holes	3/32" diameter
Lower groove	Drilled radially	10 Holes	3/32" diameter

Piston Rings

Material	Cast iron	No. of rings above pin	4
No. per piston	4	Type of joint	Mitre
Width	1/8"	Gap clearance	.006"-.008"
No. of compression rings	2	No. oil control rings	2

PISTON PIN

Type	Floating	Bushing outside diameter	15/16"
Diameter	3/4"	Bushing inside diameter	3/4"
Length	2-1/8"	Bushing length	15/16"

LUBRICATING SYSTEM

Type	Circulating splash	Capacity - oil reservoir only	8 quarts
Oil pump, type	Oscillating plunger	Capacity - oil reservoir and troughs	9-1/2 quarts
Stroke of pump	Not adjustable	Mesh of screen	50
Oil recommended		Medium heavy - Use low cold test in winter	

COOLING SYSTEM

Type	Centrifugal pump	Radiator hose - upper - diameter	1-5/16"
Radiator - make	Harrison	Radiator hose - upper - length	9-3/8"
Core type	Ribbon cellular	Radiator hose - lower - diameter	1-5/16"
Radiator Shutter	Pressed steel - Vertical	Radiator hose - lower - length	5"
Shutter control type	Manual	Fan belt	"V" type
Capacity of cooling system	4-1/2 gallons	Fan - make	Hudson
Fan bearing type	Plain		

FUEL SYSTEM

Carburetor - make	Marvel XH-4	Air Cleaner	A. C.
Carburetor - size	1-1/2"	Gasoline tank capacity	16 gallons
Fuel feed - type	Vacuum tank	Method of heating mixture	Marvel heat control
Make of vacuum tank	Stewart		

EXHAUST SYSTEM

Muffler - make	Hudson	Exhaust pipe diameter	2"
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IGNITION SYSTEM

Make	Auto-Lite Corp.	Ignition coil - Auto-Lite	CE-4012
Current Source	Battery and generator	Spark plug - make	A. C.
Spark control type	Full-automatic	Spark plug - type	Short
Firing order	1-6-2-5-8-3-7-4	Spark plug - size Metric	18 mm, 1.5 mm thread
Timing	7-1/2" before D. C.	Spark plug - gap	.022"-.025"
Breaker Point gap	.020"		

STARTER MOTOR

Make - Auto-Lite	MAD-4108	Width of tooth face	3/8"
Drive type	Bendix	Pinion meshes from	Back of flywheel
No. of teeth in flywheel	107		

GENERATOR

Make - Auto-lite	GAM-4102	Normal charging rate - cold	13.5 amp.
Normal charging rate - hot	10 amp		

BATTERY

Make	Exide	Terminal grounded	Negative
Type	3-X1-13-1-G	Length - overall	9"
Voltage	6	Width - overall	7-1/8"
No. of plates	13	Height of box	7-7/8"
		Height over terminal	9"

LIGHTING SYSTEM

Head, side and tail lamps - make	C. M. Hall Lamp Co.	Head lamp dimmer method	Separate filament
Head, side reflector - make	C. M. Hall Lamp Co.	Dash and tail lights connected	Separate
		Ammeter - make	Motometer Guage and Equip. Co.
Head and side lamp - type	Bullet	Lighting switch control	On steering wheel
Head lamp lens - type	Depress beam	Ignition switch - type	Electrolock
Head lamp lens - diameter	10"		

LAMP BULB SPECIFICATIONS

	Make	Mazda No.	CP	Base	Voltage
Head	Mazda	1110	21-21	D.C.	6-8
Side	"	63	3	S.C.	"
Tail	"	"	"	"	"
Dash	"	"	"	"	"
Stop	"	87	15	"	"
Dome	"	63	3	"	"

HORN

E. A. Horn	Vibrator type
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CHASSIS

	<u>Model T</u>	<u>Model U</u>
Wheelbase	119"	126"
Lubricating system	Alemite	Alemite
Overall length – with bumpers	182-1/2"	198"
Location of serial number	On right side member – at rear end of front spring	

TRANSMISSION

Make	Hudson	Pocket bearing	Bronze bushing
Location	Unit	Reverse idler	Bronze bushing
Speeds	3 forward, 1 reverse	Main shaft – front	N. D. 1207
Gear ratio – low	3.244 to 1	Main shaft – rear	Hyatt #NC 306
Gear ratio – second	1.961 to 1	Countershaft gear – front	Bronze bushing
Gear ratio – third	1 to 1	Countershaft gear – rear	Bronze bushing
Gear ratio – reverse	4.170 to 1	Countershaft – stationary	
Type of lubricant	Light transmission oil	Pilot bearing in crankshaft	N. D. #1202
Oil capacity (approx.)	1-3/4 pounds		

CLUTCH

Make	Hudson	Facing material	Cork inserts
Type	Single disc in oil	Throwout bearing	Nice No. 0210
No. of cork inserts	88	Throwout	5/32"
Lubrication	1/2 pint light motor oil	Clearance – floor board	3/4"

UNIVERSALS

Front – make	Spicer	Rear – make	Spicer
Front – type	Metal	Rear – type	Metal

TYPE OF DRIVE

Propulsion through rear springs

REAR AXLE

Make	Hudson	(No. of teeth in pinion 4-7/11 to 1)	11
		(No. of teeth in pinion 4-3/11 to 1)	11
Type	Semi-floating	No. of teeth in gear	51 and 47
Gear ratio	(4-7/11 and 4-3/11 to 1)		
Type of drive	Spiral bevel	Pinion	Adjustable
Minimum road clearance	7-1/2"	Pinion bearing	Adjustable
Clearance for jack	9-1/2"	Oil capacity (approx.)	4 lbs.
Differential make	Hudson	Type of lubricant	Differential oil
Pinion bearing	Front	Timken –	26112 and 26203
Pinion bearing	Rear	Timken –	3108 and 3120
Differential bearing	Right	Timken –	336 and 322
Differential bearing	Left	Timken –	336 and 322

FRONT AXLE

Make	Hudson	Toe in	Zero to 1/8"
Section – type	I-beam	Caster Angle	1°
End – type	Rev. Elliott	Minimum road clearance	8"
King pin thrust bearing	Special thrust	Clearance for jack	8"
King pin transverse inclination	7°	Spindle transverse inclination	1°

HUDSON SUPER EIGHT 1930 Models

Gear Ratios and Rules for Comparing Speed in Miles per Hour with Motor R. P. M.

To obtain motor R. P. M. for any desired speed in miles per hour:

Note: The following rule No. 1 is good only for a gear ratio of 4-7/11 to one and with wheel diameter of 29 inches

Rule No. 1 - M. P. H. Multiplied by 53.7 = Motor R. P. M. (approx.)

Example what is the R. P. M. at 40 miles per hour?

Answer - 40 multiplied by 53.7 = 2148 R. P. M. (approx.)

The following rule No. 2 is good only for a gear ratio of 4-3/11 to one and with wheel diameter of 29 inches.

Rule No. 2 - M. P. H. multiplied by 49.5 = Motor R. P. M. (approx.)

To obtain speed in miles per hour for any desired motor R, P. M.

Note: The following rule No. 3 is good only for a gear ratio of 4 7/11 to one and with wheel diameter of 29 inches.

Rule No. 3 - R. P. M. divided by 53.7 = Speed in miles per hour (approx.)

Example-what is the speed at 2400 R. P. M.

Answer - 2400 divided by 53.7 = 44.7 M~ P. It. (approx.)

The following rule No. 4 is good only for a gear ratio of 4 3/11 to one and with wheel diameter of 29 inches.

Rule No. 4 - R. P. M. DIVIDED by 49.5 = Speed in miles per hour (approx.)

Gear Ratios - To obtain the number of revolutions of the motor required for one revolution of the rear wheel, multiply the transmission ratio by the rear axle ratio.

Example - 3.244 (low gear ratio) x 4.636 (rear axle ratio) = 15.039 revolutions of the motor to one revolution of rear wheel.

The following list shows the various motor to wheel ratios worked out as above for Super Six cars:

	Trans. Ratio	Rear Axle Ratio	Motor Revs.	Wheel Revs.
With transmission in low	3.244	4.636	15.039	1
With transmission in second	1.961	4.636	9.091	1
With transmission in high	1	4.636	4.636	1
With transmission in reverse	4.179	4.636	19.332	1

HUDSON SUPER EIGHT STANDARD EQUIPMENT 1930 MODELS

126" WHEEL BASE

7-Passenger Phaeton
 5-Pass. Brougham
 7-Pass. Sedan
 5-Pass. Touring Sedan

119" WHEEL BASE

Coach (5-Pass.)	Roadster
Std. Sedan (5-Pass-)	5-Pass. Phaeton
Coupe 4 Pass. (Rumble)	5-Pass. Sun sedan

	All Models
Windshield cleaner - Trico, vacuum	“ “
Cowl Ventilator	“ “
Engine heat indicator (on instrument board)	“ “
Gasoline gauge (electric - on instrument board)	“ “
Oil reservoir gauge (electric - on instrument board)	“ “
Wheels – wood	“ “
Radiator shutter	“ “
Rear traffic signal	“ “
Combination tail and stop light - C. M. Hall Lamp Company	“ “
Cowl lights	“ “
Rear vision mirror	“ “
Ignition electrolock	“ “
Speedometer -- Stewart Warner	“ “
Spare rim - one	“ “
Horn - E. A. Horn Company	“ “
Headlights - Depress beam type – C. M. Hall Lamp Company	“ “
Tire carried in R.H. front fender well	“ “
Storage battery - Exide	“ “
Shock absorber make – Wahl	“ “
Bumpers - Front and Rear	“ “

HUDSON SUPER EIGHT BODY AND CHASSIS DETAILS FOR 1930 MODELS

119" WHEEL BASE

	5-Pass. Phaeton	Rumble Coupe	Sun-Sedan	Std. 5-Pass Sedan	Roadster	Coach
Weight	3240	3225	3420	3375	3160	3250
No. of doors	4	2	2	4	2	2
No. of passengers	5	4	5	5	4	5
Seat arrangement	Standard	Standard	R.F. folding	Standard	Standard	R. F. folding
Gear ratio -	4 - 7/11 or 4 - 3/11 to one - All models					
Make of body	Biddle & Smart	Hudson	Biddle & Smart	Hudson	Biddle & Smart	Hudson
Frame work material	Steel	Steel	Wood	Steel	Wood	Steel
Body panel material	Steel	Steel	Steel	Steel	Steel	Steel
Wheels - type	Wood	Wood	Wood	Wood	Wood	Wood
Tire size	29 x 5.50	29 x 5.50	29 x 5.50	29 x 5.50	29 x 5.50	29 x 5.50
Tire type	4 ply	4 ply	4 ply	4 ply	4 ply	4 ply

126" WHEEL BASE

	Brougham	Touring Sedan	7-Pass. Sedan	7-Pass. Phaeton
Weight	3375	3425	3695	3080
No. of doors	4	4	4	4
No. of passengers	5	5	7	7
Seat arrangement	Standard	Standard	Standard	Standard
Gear ratio -	4 - 7/11 to one - All models			
Make of body	Hudson	Hudson	Biddle & Smart	Biddle & Smart
Frame work material	Steel	Steel	Wood	Wood
Body panel material	Steel	Steel	Steel	Steel
Wheels - type	Wood	Wood	Wood	Wood
Tire size	29 x 5.50	29 x 5.50	29 x 5.50	29 x 5.50
Tire type	4 ply	4 ply	4 ply	4 ply