

MECHANICAL SPECIFICATIONS
FOR
ESSEX COMMERCIAL CHASSIS

JULY 1931

Make	Hudson	Piston displacement	160.38
Model	Super Six	Suspension	4 Point
No. of cylinders	6	Type of head	L
Cylinder arrangement	Vertical	Cylinder head	Detachable
Bore	2 -3/4"	Cylinders in block	6
Stroke	4-1/2"	Crankcase	Integral
Rated H P	18.15	Material	Cast iron
Firing order	1-5-3-6-2-4	Oil pan	Pressed steel

CAMSHAFT DRIVE

Type of drive	Chain	No. of links	57
Make	Morse	Pitch	1/2"
Type	No. 28	Adjustment	Adjustable eccentric
Width	1-1/4"	Sprocket material	Cast iron
Camshaft sprocket	38 Teeth		

CAMSHAFT BEARINGS

Number of bearings	3	No. 2 diameter	1-31/32"
No. 1 front - diameter	2"	No. 2 length	1-1/16"
No. 1 length	1-1/16"	No. 3 diameter	1-1/2"
		No. 3 length	15/16"

VALVES

	<u>Inlet</u>	<u>Exhaust</u>
Head material	Silicon steel	Silicon steel
Head diameter (outside)	1-3/8"	1-3/8"
Head diameter (opening)	1-1/4"	1-1/4"
Stem length	5-1/32"	5-1/32"
Stem diameter	5/16"	5/16"
Stem type of end	Grooved	Grooved
Tappet-type	Roller	Roller
Tappet clearance	.003"-.005"	.005"-.007"
Valve lift	5/16"	21/64"
Valve stem guides	Removable	Removable
Spring pressure	50 lbs.	50 lbs.

CRANKCASE AND CRANKSHAFT

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

CONNECTING ROD

Material	D. F. Steel	Lower end bearing clearance	.001"
Weight	1-1/2 lbs.	Clearance (endwise)	.006"-.010"
Length C. to C.	8-3/16"	Type	Spun
Lower end bearing Diameter	1-13/16"	Material	Babbitt

PISTON

Type	Slotted Skirt	Distance between bosses	1-1/8"
Material	Aluminum Alloy	Clearance - skirt	.002"
Weight	8 ounces	Depth of grooves	.156"
Length	3-1/16"	Lower grooves (2)	Drilled radially
Pin center to top	1-11/16"	Number of holes	8
		Diameter of holes	3/32"

PISTON RINGS

Material	Cast Iron	No. of oil rings	2
No. per piston	3 (above pin)	Type of joint	Mitre
Width	1/8"	Gap Clearance	.006"-.008"
No. of compression rings	1	Make	Piston Ring Co.

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"

LUBRICATION SYSTEM

Type	Circulating splash
Oil pump type	Plunger
Stroke of pump	Not adjustable
Capacity - Oil reservoir only	5 quarts
Capacity - Oil reservoir and troughs	6 quarts
Mesh of screen	50
Oil recommended	Medium heavy - Use low cold test in winter

COOLING SYSTEM

Type	Thermo-syphon
Radiator - make	Harrison
Core - type	Ribbon cellular
Radiator shutter - type	Pressed steel - Vertical

COOLING SYSTEM - (Cont'd)

Radiator shutter - make	Hudson
Shutter control - type	Manual
Capacity of cooling system	4-5/8 gallons
Radiator hose, upper, diameter	2-1/4"
Radiator hose, upper, length	5-1/2"
Radiator hose, lower, diameter	2-1/4"
Radiator hose, lower, length	15-3/16"
Fan belt	"V" type
Fan - make	Hudson
Fan bearing type	Plain

FUEL SYSTEM

Carburetor - make	Marvel
Carburetor - size	1-1/8"
Method of heating mixture	Marvel Heat Control
Make of vacuum tank	Stewart
Gasoline tank capacity	11-1/2 gallons
Fuel feed - type	Vacuum tank

EXHAUST

Muffler - make Hudson	Exhaust pipe diameter 1- 3/4"
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IGNITION SYSTEM

Make	Auto-Lite Corporation
Current source	Battery and generator
Spark control type	Full automatic
Firing order	1-5-3-6-2-4
Timing	D. C. (fully retarded)
Breaker point gap	.018-.020
Ignition coil - make	Auto-Lite Corporation
Spark plug - make	A. C.
Spark plug - type	G-10
Spark plug - size	Metric - 18 m/m, 1.5 m/m thread
Spark plug - gap .	.020.-.022"

Note: Any other information must be obtained from the manufacturer.

STARTER MOTOR

Make	Auto-Lite Corporation
Drive - type	Bendix
No. of teeth on flywheel	100
Width of tooth face	3/8"
Pinion meshes from	Rear of flywheel

Note: Any other information must be obtained from the manufacturer.

GENERATOR

Make	Auto-Lite Corporation
Normal charging rate - hot	10 Amps.
Normal charging rate - cold	13.5 Amps.

Note: Any other information must be obtained from the manufacturer.

BATTERY

Make	Exide	Terminal grounded	Negative
Type	3-XI-13-1-G	Length – overall	9"
Voltage	6	Width – overall	7-1/8"
No. of Plates	13	Height of box	7-7/8"
Where mounted	Under driver's seat	Height over terminals	9"

LIGHTING SYSTEM

Head and tail lamps – make	John Brown Lamp Co.	Head lamp dimmer method	Separate Filament
Head lamp reflector – make	John Brown Lamp Co.	Dash and tail lights connected	Separately
Head lamp – type	Bullet	Ammeter – make	Motometer Gauge & Equip. Co
Head lamp lens – type	Stabilite	Dash light – make	Motometer Gauge & Equip. Co.
Head lamp lens-diameter	8"	Lighting switch control	On steering wheel

LAMP BULB SPECIFICATIONS

	<i>Make</i>	<i>Mazda No.</i>	<i>C P,</i>	<i>Base</i>	<i>Voltage</i>
Head	Mazda	1110	21-21	D. C.	6-8
Park	Mazda	63	2	S. C.	6-8
Tail	Mazda	63	3	S. C.	6-8
Dash	Mazda	63	3	S. C.	6-8
Stop	Mazda	87	12	S. C.	6-8

HORN

E. A. Horn Motor type

CHASSIS

Wheelbase	110-1/2"
Lubricating system	Alemite
Location of serial number	Rear cross member

TRANSMISSION

Make	Hudson	Pocket bearing	Bronze bushing
Location	Unit	Reverse idler	Bronze bushing
Speeds	3 forward, 1 reverse	Main shaft – front	N. D. No. 1207
Gear ratio – low	3.244 to 1	Main shaft – rear	Hyatt No. N. C. 306
Gear ratio – second	1.961 to 1	Countershaft	Stationary
Gear ratio – high	1 to 1		
Gear ratio – reverse	4.170 to 1		
Type of lubricant	Heavy Motor Oil		
Oil capacity (approx.)	1 quart		
Pilot bearing in crankshaft	N. D. No. 1202		

CLUTCH

Make	Hudson	Throwout bearing	Annular & thrust
Type	Single disc in oil	Throwout	5/32"
Facing material	Cork inserts	Clearance at F/B	3/4"
No. of cork inserts	72		

LUBRICATION – pint light motor oil

UNIVERSALS

Front	<u>Make</u> Spicer	<u>Type</u> Metal	Rear	<u>Make</u> Spicer	<u>Type</u> Metal
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TYPE OF DRIVE

Propulsion through rear springs.

REAR AXLE

Make	Hudson	Wheel bearing	Timken 415TV and 412A
Type	Semi-floating	Pinion bearing - front	Timken 269I V and 2620
Gear ratio	5 6/10	Pinion bearing - rear	Timken 3188 and 3120
Type of drive	Spiral bevel	Differential bearing - right	Timken 336 and 3320
Minimum road clearance	8"	Differential bearing - left	Timken 336 and 3320
Clearance for jack	10-1/4"	No. of teeth in pinion	10 or 11
Differential - make	Hudson	No. of teeth in gear	56
Pinion	Adjustable	Oil capacity (approx.)	1-1/2 quarts
Pinion bearing	Adjustable		

FRONT AXLE

Make	Hudson	Toe in	None, or not over 1/8"
Section - type	I beam	Castor angle	0°
End - type	Rev. Elliott	Minimum road clearance	8"
King pin thrust bearing	Ball bearing	Clearance for jack	11" on spring
King pin transverse inclination	1°	Spindle transverse inclination	1°

STANDARD BRAKES

Type	Bendix 4-wheel
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SERVICE BRAKES

Location	Front and Rear wheels	Lining length per wheel; 2 pieces,	24-1/2"
Make	Bendix	Width of lining	1-1/2"
Type	Internal	Thickness of lining	5/32"
Total braking area	147 sq. inches	Clearance of lining	.010"
Drum diameter	11"	Method of application	Foot pedal

HAND BRAKE

The hand lever operates the front and rear wheel brakes independently of the foot pedal, and should be used for parking, especially when car is standing on an incline.

WHEELS

Type	Wood-steel felloe	Front wheel inner bearing	Timken No. 2554 and 2520
Make	Motor Wheel Corporation	Front wheel outer bearing	Timken No. 2382 and 2320

RIMS

Type	Split	Diameter	20"
Make	Motor Wheel Corp.	Width	4"

TIRES

Size	30" x 5 Front - 30 x 5.50 Rear, balloon, straight side
Make	Goodyear
Number of plies	4 Front - 6 Rear
Recommended pressure	Front 35 lbs., rear 40 lbs.

STEERING GEAR

Make	Gemmer
Type	Worm and shaft
Ratio	15 to 1
Steering wheel turns	2-1/2 (full swing left to right)
Turning radius	20 feet
Lubricant	Steam cylinder oil

SPRINGS

	<u>Front Spring</u>		<u>Rear Spring</u>	
Type	Semi-elliptic	Type	Semi-elliptic	
Length	36"	Length	53-7/8"	
Width	2"	Width	2"	
No. of leaves	8	No. of leaves	12	
Material	Chrome-Vanadium	Material	Chrome-Vanadium	
Front bushing	5/8" diameter	Front bushing	5/8" diameter	
Rear bushing	5/8" diameter	Rear bushing	5/8" diameter	
Bushing material	Phosphor bronze	Bushing material	Phosphor bronze	
Spring lubricant	Motor oil			
Shackle type	Adjustable			

FRAME

Make	Hudson	Thickness	5/32"
Material	Steel	Width of flange	1-7/8"
Depth	7"		

STANDARD EQUIPMENT

Cowl Ventilator	Rear traffic signal - Combined with tail lamp
Engine heat indicator - On instrument panel	Storage battery
Gasoline and oil level gage - Electric - On instrument panel	Wheels - wood
Speedometer	Spare rim - one
Ignition lock	Tire carrier
Horn - motor type	Bumpers - front
Head lamps	Radiator shutters