

REVISED FEBRUARY, 1930.
Mechanical Specifications for Essex
Super Six—1930 Model

ENGINE

Make	Hudson	Piston displacement	160.38
Model	Essex 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	Lower half	Pressed steel

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

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

VALVES

		Exhaust
Head material		Silicon steel
Head diameter (outside)	Silicon steel	1 ³ / ₈ "
Head diameter (opening)	1 ³ / ₈ "	1 ¹ / ₄ "
Stem length	1 ¹ / ₄ "	5 ¹ / ₁₆ "
Stem diameter	5 ¹ / ₃₂ "	1 ¹ / ₁₆ "
Stem type of end	Grooved	Grooved
Tappet—type	Roller	Roller
Tappet clearance	.003"-.005"	.005"-.007"
Valve lift	5 ⁵ / ₁₆ "	2 ¹ / ₆₄ "
Valve stem guides	Removable	Removable
Spring pressure	50 lbs.	50 lbs.

CRANKCASE AND CRANKSHAFT

No. of main bearings	3	Crank pin diameter	1-15/16
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 clear.	.001"
Weight	1.7 lbs.	Length	1 ³ / ₈ "
Length C. to C	8 ³ / ₁₆ "	Clearance (endwise)	.006"-.010"
Lower end bearing		Type	Spun
Diameter	1 ¹⁵ / ₁₆ "	Material	Babbitt

PISTON PIN

Type	Floating	Bushing—outside diam.	1 ⁵ / ₁₆ "
Diameter	3/4"	Bushing—inside diam.	3/4"
Length	2 ¹ / ₈ "	Bushing—length	1 ¹⁵ / ₁₆ "

Type		Circulating splash	
Oil pump type		Oscillating 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	

COOLING SYSTEM

Radiator shutter—make	Hudson
Shutter control—type	Manual
Capacity of cooling system	4- ³ / ₄ gallons
Radiator hose, upper, diameter	2 ¹ / ₄ "
Radiator hose, upper, length	7 ¹ / ₂ "
Radiator hose, lower, diameter	2 ¹ / ₄ "
Radiator hose, lower, length	14 ¹ / ₂ "
Fan belt	"V" type
Fan—make	Hudson
Fan bearing type	Plain

FUEL SYSTEM

Carburetor—make	Marvel
Carburetor—size	1¼"
Method of heating mixture	Marvel Heat Control
Make of vacuum tank	Stewart
Gasoline tank capacity	11½ gallons
Fuel feed—type	Vacuum tank
Air Cleaner	A. C.

EXHAUST

Muffler—make Hudson	Exhaust pipe diameter—2"
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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. .
Breaker point gap	.020
Ignition coil—make	Auto-Lite Corporation
Spark plug—make	A. C.
Spark plug—type	No. 100
Spark plug—size	Metric—18 m/m, 1.5 m/m thread
Spark plug—gap	.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	107
Width of tooth face	$\frac{3}{8}$ "
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-X1-13-1-G	Length—overall	9"
Voltage	6	Width—overall	$7\frac{1}{8}$ "
No. of Plates	13	Height of box	$7\frac{7}{8}$ "
Where mounted	Under drivers seat	Height of terminals	9"

LIGHTING SYSTEM

Head and tail lamps—make	John Brown Lamp Company
Head lamp reflector—make	John Brown Lamp Company
Head lamp—type	Bullet
Side lamp—type	Bullet
Head lamp lens—type	Stabilite
Head lamp lens—diameter	8 ¹¹ / ₁₆ "
Head lamp dimmer method	Separate filament
Dash and tail lights connected	Separately
Ammeter—make	Motometer Gauge & Equipment Co.
Dash light—make	Motometer Gauge & Equipment Co.
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
Side	Mazda	63	3	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
Dome	Mazda	63	3	S. C.	6-8

HORN

E. A. Horn	Motor type
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CHASSIS

Wheelbase	113"
Lubricating system	Alemite
Overall length with bumpers	14'-6- ³ / ₈ "
Location of serial number	On right hand side member—at rear end of front spring.

TRANSMISSION

Make	Hudson	Oil capacity (approx.)	1- ³ / ₄ pound
Location	Unit	Pilot brg. in crankshaft	N.D. No. 1202
Speeds	3 forward 1 rev.	Pocket bearing	Bronze bushing
Gear ratio—low	3.244 to 1	Reverse idler	Bronze bushing
Gear ratio—sec.	1.961 to 1	Main shaft—front	
Gear ratio—high	1 to 1	Main shaft—rear	
Gear ratio—rev.	4.170 to 1		
Type of lubricant	Light trans. oil 1- ³ / ₄ pound		

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	88		

LUBRICATION—¹/₂ pint light motor oil

UNIVERSALS

Front	<i>Make</i> Spicer	<i>Type</i> Metal	Rear	<i>Make</i> Spicer	<i>Type</i> 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	Pin. brg.—front	Timken 269V and 2620
Gear ratio	5 4/10 or 5 1/10	Pin. brg.—rear	Timken 3188 and 3120
Type of drive	Spiral bevel	Differential brg.—right	Timken 366 and 3320
Min. road clear.	7-1/2"	Differential brg.—left	Timken 366 and 3320
Clear. for jack	9-1/2"	No. of teeth in pinion	10
Differential—make	Hudson	No. of teeth in gear	54 or 51
Pinion	Adjustable	Oil capacity (approx.)	4 pounds
Pinion bearing	Adjustable	Type of lubricant	Diff. oil

FRONT AXLE

Make	Hudson	Toe in—zero to 1/8"	
Section—type	I beam	Castor angle	1°
End—type	Rev. Elliott	Min. road clearance	8"
King pin thrust brg.	Ball brg.	Clearance for jack	8"
King pin transverse		Spindle transverse	
Inclination	7°	Inclination	1°

STANDARD BRAKES

Type	Bendix 4-wheel brakes
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SERVICE BRAKES

Location	Frnt. and Rr. wheels	Lining length per wheel	2 pieces, 24½"
Make	Bendix	Width of lining	1½"
Type	Internal	Thickness of lining	⁵ / ₃₂ "
Total braking area	47 sq. inches	Clearance of lining	.010"
Drum dia.	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 the car is standing on an incline.

WHEELS

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

RIMS

Type	Split	Diameter	19"
Make	Jaxon	Width	4"

TIRES

Size	29" x 5 balloon straight side
Make	Goodyear
Number of plies	4
Recommended pressure	Front 40 lbs., rear 40 lbs.

STEERING GEAR

Make	Gemmer
Type	Worm and sector
Ratio	15 to 1
Steering wheel turns	2½ (full swing left to right)
Turning radius	20 feet
Lubricant	Steam cylinder oil

SPRINGS

Front spring		Rear spring	
Type	Semi-elliptic	Type	Semi-elliptic
Length	36"	Length	54 ⁵ / ₈ "
Width	2"	Width	2"
No. of leaves	8	No. of leaves	7, 8 or 10
Material	Alloy Steel	Material	Alloy steel
Front bushing	⁵ / ₈ " dia.	Front bushing	⁵ / ₈ " dia.
Rear bushing	⁵ / ₈ " dia.	Rear bushing	⁵ / ₈ " dia.
Bushing material	Phosphor bronze	Bushing material	Phosphor bronze
Shackle.—type	Adjustable		

FRAME

Make	Hudson	Thickness	¹ / ₈ "
Material	Steel	Width of flange	2"
Depth	7 ¹ / ₁₆ "		

ESSEX SUPER SIX

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 5 4/10 to one and with wheel diameter of 29 inches.

Rule No. 1—M. P. H. multiplied by 62.5 = Motor R. P. M. (approx.)
Example—What is the R. P. M. of motor at 40 miles per hour?
Answer—40 multiplied by 62.5—2500 R. P. M. (approx.)

The following rule No. 2 is good only for a gear ratio of 5 1/10 to one and with wheel diameter of 29 inches.

Rule No. 2—M. P. H. multiplied by 59 = 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 5 4/10 to one and with wheel diameter of 29 inches.

Rule No. 3—R. P. M. divided by 62.5 = Speed in miles per hour (approx.)
Example—what is the speed at 2400 R. P. M.?
Answer—2400 divided by 62.5 = 38.4 M. P. H. (approx.)

The following rule No. 4 is good only for a gear ratio of 5 1/10 to one and with wheel diameter of 29 inches.

Rule No. 4—R. P. M. DIVIDED by 59 = 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) multiplied by 5.4 (rear axle ratio) equals 17.517 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 Essex Super Six cars with rear axle gear ratio 5 4/10:

	<i>Trans. Ratio</i>	<i>Rear Axle Ratio</i>	<i>Motor Revs.</i>	<i>Wheel Revs.</i>
With transmission in low	3.244	5 4/10	17.517	1
With transmission in sec.	1.961	5 4/10	10.589	1
With transmission in high	1	5 4/10	5.4	1
With transmission in rev.	4.17	5 4/10	22.518	1

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Essex Super Six Standard Equipment

	<i>Phaeton</i>	<i>Road.</i>	<i>Rumble- Coupe</i>	<i>Sun- sedan</i>	<i>Coach</i>	<i>Std. Sedan</i>	<i>Touring Sedan</i>	<i>Brougham</i>	<i>2 Pass. Coupe</i>
Windshield cleaner —make	Trico Mfg. Co.	Trico Mfg. Co.	Trico Mfg. Co.	Trico Mfg. Co.	Trico Mfg. Co.	Trico Mfg. Co.	Trico Mfg. Co.	Trico Mfg. Co.	Trico Mfg. Co.
Windshield cleaner —type	Vacuum	Vacuum	Vacuum	Vacuum	Vacuum	Vacuum	Vacuum	Vacuum	Vacuum
Trunk Rack	None	None	None	None	None	None	None	None	None
Cowl ventilator	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Engine heat indicator	On instrument board							ALL MODELS	
Gasoline and oil level gauge location	Instrument board							ALL MODELS	
Gasoline and oil level gauge—type	Electric							ALL MODELS	
Wheels—type	Wood wheels							ALL MODELS	
Sun visor	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
Radiator shutters	Yes							ALL MODELS	
Rear traffic signal	Yes							ALL MODELS	
Comb. tail and stop light—make	John Brown Lamp Co.							ALL MODELS	
Cowl lights	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Dome light	No	No	Yes	No	Yes	Yes	Yes	Yes	Yes
Speedometer—make	Stewart-Warner							ALL MODELS	
Ignition electrolock								ALL MODELS	
Spare rim	One							ALL MODELS	
Horn—make	E. A.							ALL MODELS	
Headlamps—make	Stabilite - John Brown Lamp Co.							ALL MODELS	
Tire carrier—make	Hudson							ALL MODELS	
Storage battery— make	Exide							ALL MODELS	
Shock absorber— make	Monroe							ALL MODELS	
Shock absorber—type	Double Acting Hydraulic							ALL MODELS	

EXTRA EQUIPMENT

Bumpers - Front and Rear	ALL MODELS
Tire Cover	ALL MODELS

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Essex Super Six—Body Details 1930 Models

	<i>Phaeton</i>	<i>2 Pass. Coupe</i>	<i>Sun- sedan</i>	<i>Coach</i>	<i>Std. Sedan</i>	<i>Touring Sedan</i>	<i>Roadster</i>	<i>Brough ham</i>	<i>Rumble Coupe</i>
Model	1930	1930	1930	1930	1930	1930	1930	1930	1930
Wheelbase	113	113	113	113	113	113	113	113	113
Weight	2620		2760	183	2805	2850	2550	2850	2700
No. of doors	4	2	2	2	4	4	2	4	2
No. of passengers	5	2	5	5	5	5	4	5	4
Seating Arrangement	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.
Gear ratios	5 1/10	5 1/10	5 4/10	5 4/10	5 4/10	5 4/10	5 1/10	5 4/10	5 1/10
Make of body	Biddle & Smart	Own	Biddle & Smart	Own	Own	Own	Biddle & Smart	Own	Own
Windshield—type	One piece swing type								ALL MODELS
Windshield—make	Motor products								ALL MODELS
Wheels—type	Wood								ALL MODELS
Tires—size	19 x 5.00								ALL MODELS