

REVISED JANUARY, 1929

Mechanical Specifications for Essex

Super Six - 1929 Model

Car Serial No. 928658 to _____

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

CAMSHAFT DRIVE

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		

CAMSHAFT BEARINGS

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	15/16"

VALVES

	Inlet	Exhaust
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	29 teeth
No. 3 length	1-3/4"	Material	steel

CONNECTING ROD

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

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 groove	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 comp. rings	1	Make	Piston Ring Co.

PISTON PIN

Type	Floating	Bushing - outside diam.	15/16"
Diameter	3/4"	Bushing - inside diam.	3/4"
Length	2-3/32"	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	Pressed steel - Vertical

COOLING SYSTEM - Continued

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	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 V
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
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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	.020"
Ignition coil - make	Auto-Lite Corporation IG-4065
Spark plug-make	A. C.
Spark plug-type	Short
Spark plug - size	Metric - 18 m/m, .5 m/m thread
Spark plug - gap	.025 - .028

Note: Any other information must be obtained
from the manufacturer

STARTER MOTOR

Make	Auto-Lite Corporation MZ-4014
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 Corporations - GAM-4101
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 Company
Head lamp reflector - make	John Brown Lamp Company
Head lamp - type	Bullet
Side lamp - type	Bullet
Head lamp lens - type	Parabeam
Head lamp lens - diameter	8"
Head lamp dimmer method	Separate filament
Dash and tail lights connected	Separately
Ammeter - make	National Gauge & Equipment Co.
Dash light - make	National 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	110-1/2"
Lubricating system	Alemite
Overall length with bumpers	14' - 0"
Location of serial number	Rear cross member

TRANSMISSION

Make	Hudson	Pocket bearing	Bronze bushing
Location	Unit	Reverse idler	Bronze bushing
Speeds	3 forward, 1 rev.	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 brg. in crankshaft	N. D. No. 1202		

CLUTCH

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

LUBRICATION - 1/2 pint light motor oil.

UNIVERSALS

	Make	Type		Make	Type
Front	Spicer	Metal	Rear	Spicer	Metal

TYPE OF DRIVE

Propulsion through rear springs.

REAR AXLE

Make	Hudson	Wheel bearing	Timken 415TV and 412A
Type	Semi-floating	Pin. brg. - front	Timken 2691V and 2620
Gear ratio	5 6/10 or 5 1/11	Pin. brg. - rear	Timken 3188 and 3120
Type of drive	Spiral bevel	Differential brg. - right	Timken 336 and 3320
Min. road clear.	8"	Differential brg. - left	Timken 336 and 3320
Clear. 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	Min. road clearance	8"
King pin thrust brg.	Ball brg.	Clearance for jack	11" on spring
King pin transverse		Spindle transverse	
Inclination	7°	Inclination	1°

STANDARD BRAKES

Type	Bendix 4-wheel brakes
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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
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	20"
Make	Jaxon	Width	4"

TIRES

Size	30 x 5 balloon, straight side
Make	Goodyear
Number of plies	4
Recommended pressure	Front 28 lbs; Rear 32 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	54-7/8"	
Width	2"	Width	2"	
No. of leaves	8	No. of leaves	7, 8 or 10	
Material	Vanadium Steel	Material	Vanadium Steel	
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	4-1/2"		

ESSEX SUPER SIX

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

Car Serial No. 928,658 to _____

**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 6/10 to one and with wheel diameter of 30 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 /11 to one and with wheel diameter of 30 inches,

Rule No. 2: - M. P. H. multiplied by 57 = 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 6/10 to me and with wheel diameter of 30 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 /11 to one and with wheel diameter of 30 inches.

Rule No. 4: - R. P. M. DIVIDED by 57 = 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 5.6 (rear axle ratio) equals 18.166 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 5.6 to 2:

	Trans. Ratio	Rear Axle Ratio	Motor Revs.	Wheel Revs.
With transmission in low	3.244	5.6	18.166	1
With transmission in sec.	1.961	5.6	10.981	1
With transmission in high	1	5.6	5.6	1
With transmission. in rev.	4.17	5.6	23.352	1

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Essex Super Six-Standard Equipment

Car Serial No. 928,658 to _____

	<i>Phaeton</i>	<i>Std. Road.</i>	<i>Conv. Coupe</i>	<i>Std. Coupe</i>	<i>Coach</i>	<i>Sedan</i>	<i>Town Sedan</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.
Windshield cleaner -type	Vacuum	Vacuum	Vacuum	Vacuum	Vacuum	Vacuum	Vacuum
Trunk Rack	None	None	None	None	None	None	None
Cowl ventilator	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	Yes	No	Yes	Yes	Yes	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	
Dome light	No	No	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	Parabeam - 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	Hydraulic					ALL MODELS	
Bumpers - front and rear						ALL MODELS	

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Essex Super Six-Body Details
1929 Models

Car Serial No. 928,658 to _____

	<i>Phaeton</i>	<i>Std. Coupe</i>	<i>Convertible Coupe</i>	<i>Coach</i>	<i>Std. Sedan</i>	<i>Town Sedan</i>	<i>Roadster</i>
Model	1929	1929	1929	1929	1929	1929	1929
Wheelbase	110-1/2	110-1/2	110-1/2	110-1/2	110-1/2	110-1/2	110-1/2
Weight	2490	2600	2540	2635	2745	2795	2465
No. of doors	4	2	2	2	4	4	2
No. of passengers	5	2 or 4	2 or 4	5	5	5	4
Seating Arrangement	Std.	Std.	Std.	Std.	Std.	Std.	Std.
Gear ratios		5 6/10 and 5 1/11 to 1			ALL MODELS		
Make of body	Briggs Mfg. Co.	Own	Own	Own	Own	Own	Briggs Mfg. Co.
Windshield-type		One piece swing type			ALL MODELS		
Windshield - make		Motor products			ALL MODELS		
Wheels - type	Wood				ALL MODELS		
Tires - size	30 x 5				ALL MODELS		