

REVISED MARCH 1927,

Mechanical Specifications for Essex Super Six

Car Serial No. 500,001 to -----

ENGINE

| | | | |
|----------------------|-----------------|---------------------|---------------|
| Make | Hudson | Piston Displacement | 144.67 |
| Model | Essex Super Six | Suspension | 4 point |
| No. of cylinders | 6 | Type of head | L |
| Cylinder arrangement | Vertical | Cylinder head | Detachable |
| Bore | 2-11/15 | Cylinders in block | 6 |
| Stroke | 4-1/4 | Crankcase | Integral |
| Rated H.P. | 17.32 | 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 Eccentric |
| Width | 1-1/4 | Sprocket Material | Cast Iron |
| Camshaft Sprocket | 38 Teeth | | |

CAMSHAFT BEARINGS

| | | | |
|---------------------|---------|-------------|----------|
| Number of bearings | 3 | #2 Diameter | 1-31/32" |
| #1 Front - Diameter | 2" | #2 Length | 1-1/16" |
| #1 Length | 1-1/16" | #3 Diameter | 1-1/2" |
| | | #3 Length | 15/16" |

VALVES

| | <u>INLET</u> | <u>EXHAUST</u> |
|----------------------|----------------|----------------|
| Head Material | Tungsten Steel | Silicon Steel |
| “ diameter (outside) | 1-3/8" | 1-3/8" |
| “ “ (opening) | 1-1/4" | 1-1/4" |
| Stem length | 5-1/32" | 5-1/32" |
| “ diameter | 5/16" | 5/16" |
| type of end | Grooved | Grooved |
| tappet - type | Roller | Roller |
| “ clearance | .003 - .003 | .005 - .007 |
| Valve Lift | 9/32" | 19/64" |
| “ stem guides | Removable | Removable |
| Spring pressure | 40 lbs. | 40 lbs. |

VALVE TIMING

| | | |
|-------------|-----------------|---------------------------------|
| Inlet opens | 7° after T.D.C. | Exhaust opens 55° before B.D.C. |
| closes | 50° 11 B.D.C. | Exhaust closes 8° after T.D.C. |

CRANKCASE AND CRANKSHAFT

| | | | |
|--------------------------|---------|-----------------------|------------------|
| No. of main bearings | 3 | Crank pin diameter | 1-13/16" |
| No. 1 (front) - diameter | 2-7/32" | Main bearing material | Bronze & babbitt |
| “ 1 length | 1-9/16" | “ “ clearance | .001 |
| No. 2 diameter | 2-1/4" | “ “ end play | .007 - .011 |
| “ 2 length | 1-3/4" | End thrust on | Center bearing |
| No. 3 diameter | 2-9/32" | Sprocket | 19 teeth |
| “ 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. | 6-5/16" | Type | Poured |
| 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 | 1-1/16" | Number of holes | 8 |
| | | Diameter of holes | 3/32" |

PISTON RINGS

| | | | |
|--------------------------|---------------|------------------|-----------------|
| Material | Cast Iron | No. of Oil Rings | 1 |
| No. per piston | 3 (above pin) | Type of Joint | Mitre |
| Width | 1/8" | Gap clearance | .006 - .008 |
| No. of Compression Rings | 2 | Make | Piston Ring Co. |

PISTON PIN

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

LUBRICATION SYSTEM

| | | | |
|-------------------------------|--------------------|----------------------------------|--|
| Type | Circulating splash | Capacity Oil Reservoir & troughs | 6 |
| Oil Pump Type | Plunger | Mesh of screen | 50 |
| Stroke of Pump | No t Adjustable | Oil Recommended | Medium, heavy - Use low cold test in winter. |
| Capacity - Oil Reservoir Only | 5 quarts | | |

COOLING SYSTEM

| | |
|--------------------------------|-----------------|
| Type | Thermo-syphen |
| Radiator make | Harrison |
| Core - type | Ribbon cellular |
| Radiator shutter - type | Pressed steel |
| Radiator shutter - make | Hudson |
| Shutter control - type | Manual |
| Capacity of Cooling System | 4-3/4 Gallons |
| Radiator hose, upper, diameter | 2-1/4" |
| " " " length | 5-1/2" |
| " " lower, diameter | 2-1/4" |
| " " " length | 15-3/16" |
| Fan belt type | Flat |
| " " width | 1" |
| " " length | 35-7/8" |
| Fan - make | Hudson |
| Fan bearing type | Plain |

FUEL SYSTEM

| | |
|---------------------------|----------------------------|
| Carburetor make | Stewart |
| Carburetor size | 1 |
| Method of heating mixture | Exhaust Stove and hot spot |
| 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” |
|----------------|--------|--------------------------------|

IGNITION SYSTEM

| | | | |
|--------------------|-----------------------|----------------------|-----------------------|
| Make | Auto-Lite Corporation | Ignition Coil - make | Auto-Lite Corporation |
| Current source | Battery and Generator | Spark plug - make | A. C. Titan |
| Spark control type | Full Automatic | “ “ - type | Short |
| Firing order | 1-5-3-6-2-4 “ | “ “ - size | Metric - 18 m/m |
| Timing D.C. | (Fully retarded) | “ “ - gap | .025 - .029 |
| Breaker Point Gap | .020 | | |

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

STARTER MOTOR

| | |
|------------------------------|------------------------|
| Make – Auto-Lite Corporation | MUA-4001A ¹ |
| 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

¹ MUA-4001A – late 1926, early 1927; MA-4005 – late 1927, early 1928

GENERATOR

| | |
|------------------------------|-----------------------|
| Make - Auto-Lite Corporation | GAA-4001 ¹ |
| Normal charging rate - Hot | 10 Amps. |
| “ “ “ - cold | 13.5 Amps. |

Note: Any other information must be obtained from the manufacturer

¹ GAA-4001 – Late 1926, early 1927 Essex; GAA-4005 – Late 1927

BATTERY

| | | | |
|------------------|---------------------|-----------------------|-------------------------------|
| Make | Prest-O-Lite | Terminal Grounded | Negative |
| Type | 6-13 J.F.K.E. | Length overall | 9” |
| Voltage | 6 | Width overall | 7” |
| No. of Plates | 13 | Height of box | 7-7/8” (inc. handle 9-1/2” |
| Arnp. Hours Cap. | 105 | | |
| Where mounted | Under driver's seat | Height over terminals | 8-3/4” |

“Hotchkiss” - Propulsion through rear springs.

REAR AXLE

| | | | |
|------------------------|---------------|------------------------------|---------------------|
| Make | Hudson | Wheel Bearing | Timken 415TV & 412A |
| Type | Semi-floating | Pinion Bearing - Front | “ 2691V & 2620 |
| Gear Ratio | 5.6 to 1 | “ “ - Rear | “ 3188 & 3120 |
| Type of Drive | Spiral bevel | Differential Bearing - Right | “ 336 & 3320 |
| Minimum Road Clearance | 9” | “ “ - Left | “ 336 & 3320 |
| Clearance for Jack | 10-1/4” | No. of teeth in pinion | 10 |
| Differential - make | Hudson | “ “ “ “ gear | 56 |
| Pinion | Adjustable | Oil Capacity (approx.) | 1-1/2 quarts |
| Pinion Bearing | “ | | |

FRONT AXLE

| | | | |
|----------------------------|-----------|--------------------------------|-----------------|
| Make | Hudson | Toe in - None or not over 1/8” | |
| Section - type | I | Castor Angle | 1-1/2° Backward |
| End – type | Elliott | Minimum Road Clearance | 9” |
| King pin thrust bearing | Nice #607 | Clearance for jack | 7-1/4” |
| “ “ transverse inclination | None | Spindle transverse | 2° |

STANDARD BRAKES

| | |
|------|-----------|
| Type | Two wheel |
|------|-----------|

SERVICE BRAKE

| | | | |
|----------------------|-------------------|-------------------------|------------|
| Location | Rear wheels | Lining length per wheel | 39-3/8” |
| Make | Hudson | Width of lining | 1-3/4” |
| Type | External | Thickness | 3/16” |
| Total braking area | 138 square inches | Clearance | 1/64” |
| Drum Diameter (Ext.) | 14-3/8” | Method of Application | Foot pedal |

HAND BRAKE

| | | | |
|--------------------------|---------------------|-------------------------|------------|
| Location | Rear wheels | Lining length per wheel | 39-3/8” |
| Make | Hudson | Width of lining | 1-1/2” |
| Type | Internal | Thickness of lining | 3/16” |
| Total braking area | 122.5 square inches | Clearance of “ | 1/64” |
| Drum diameter (Internal) | 14” | Method of application | Hand lever |

WHEELS

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

RIMS

| | | | |
|------|-------|----------|-----|
| Type | Split | Diameter | 21” |
| Make | Jaxon | Width | 4” |

TIRES

| | | | |
|------|--------------------------------|-----------------------------|---|
| Size | 31 x -5 Balloon, Straight side | Number of plies | 4 |
| Make | Goodyear and U. S. | | |
| | Recommended pressure | Front 28 lbs., rear 32 lbs. | |

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STEERING GEAR

| | |
|----------------------|----------------------------------|
| Make | Hudson |
| Type | Worm and wheel |
| Ratio | 7-1/2 to 1 |
| Steering wheel turns | 1-3/4 (full swing left to right) |
| Turning diameter | 40 feet |
| Lubricant | Steam cylinder oil |

SPRINGS

Front spring

| | |
|------------------|-----------------|
| Type | Semi-elliptic |
| Length | 36" |
| Width | 2" |
| No. of leaves | 9 |
| Material | Vanadium Steel |
| Front bushing | 5/8" diameter |
| Rear " | 5/8" diameter |
| Bushing material | Phosphor Bronze |
| Spring Lubricant | Motor Oil |

Rear spring

| | |
|------------------|-----------------|
| Type | Semi-elliptic |
| Length | 54-7/8" |
| Width | 2" |
| No. of leaves | 8 |
| Material | Vanadium Steel |
| Front Bushing | 5/8" diameter |
| Rear " | 5/8" diameter |
| Bushing material | Phosphor Bronze |
| Shackles - type | Adjustable |

FRAME

| | |
|----------|--------|
| Make | Hudson |
| Material | Steel |
| Depth | 4-1/2" |

| | |
|-----------------|--------|
| Thickness | 5/32" |
| Width of flange | 1-7/8" |

ESSEX SUPER SIX - STANDARD EQUIPMENT

CAR SERIAL NO. 500,001 TO ----

| | SPEEDSTER | COUPE | | COACH | SEDAN |
|--------------------------------------|-------------------------------|----------------|--------|----------------|----------------|
| Windshield Cleaner Make | None | Trico Mfg. Co. | | Trico Mfg. Co. | Trico Mfg. Co. |
| Windshield Cleaner Type | | Vacuum | Vacuum | Vacuum | |
| Trunk Rack | None | None | None | None | |
| Cowl Ventilator | Yes | Yes | Yes | Yes | |
| Engine Heat Indicator | Boyce Motometer ----- | | | ALL MODELS | |
| Gasoline Gauge Location Location | Instrument Board ----- | | | ALL MODELS | |
| Gasoline Gauge Type | King-Seeley Hydrostatic ----- | | | ALL MODELS | |
| Wheels - Type | Wood Wheels ----- | | | ALL MODELS | |
| Sun Visor | No | Yes | Yes | Yes | |
| Radiator Shutters | Yes ----- | | | ALL MODELS | |
| Rear Traffic Signal | Yes ----- | | | ALL MODELS | |
| Combination Tail & Stop Light - Make | John Brown Lamp Co - ----- | | | ALL MODELS | |
| Cowl Lights | No | Yes | Yes | Yes | |
| Dome -light | No | Yes | Yes | Yes | |
| Speedometer Make | Stewart-Warner ----- | | | ALL MODELS | |
| Transmission Lock | Yes ----- | | | ALL MODELS | |
| Spare Rim | One ----- | | | ALL MODELS | |
| Horn - Make | E. A ----- | | | ALL MODELS | |
| Headlamps - Make | John Brown Lamp Co. ----- | | | ALL MODELS | |
| Tire Carrier - Make | Hudson ----- | | | ALL MODELS | |

Car Serial #500,001 to ---
 GEAR RATIOS AND RULES FOR COMPARING
 SPEED IN MILES PER HOUR

Note: The following rules are good only for a gear ratio of 5.6 to one and with wheel diameter of 31 inches.

TO OBTAIN FOR ANY DESIRED SPEED IN MILES PER HOUR

Rule - M. P. H. multiplied by 61 = Motor R. P. M. (approx.)

Example - What is R. P. M. of the of motor at 40 miles per hour?

Answer - 40 multiplied by 61 = 2440 (approx.)

TO OBTAIN SPEED IN MILES PER HOUR FOR ANY MOTOR R. P. M.

Rule = R. P. M. divided by 61 = 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 multiplied by 5.6 (rear axle ratio) equals revolutions of the motor to one revolution of the rear wheel.

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

| | <u>TRANS. RATIO</u> | <u>REAR AXLE RATIO</u> | <u>MOTOR REVS.</u> | <u>WHEEL REVS.</u> |
|--------------------------|---------------------|------------------------|--------------------|--------------------|
| With transmission in low | 3.244 | 5-6 | 18.166 | 1 |
| “ “ “ second | 1.961 | 5.6 | 10.981 | 1 |
| “ “ “ high | 1 | 5.6 | 5.6 | 1 |
| “ “ “ reverse | 4.17 | 5-6 | 23.352 | 1 |

ESSEX SUPER SIX -- BODY DETAILS

CAR -SERIAL NO. 500,001 TO ----

| | <u>SPEEDSTER</u> | <u>COUPE</u> | <u>COACH</u> | <u>SEDAN</u> |
|-------------------------------|----------------------|-----------------|----------------|-------------------------------------|
| Model | 1927 | 1927 | 1927 | 1927 |
| Wheelbase | 110-1/2" | 110-1/2" | 110-1/2" | |
| Weight | | 2340 | 2450 | Bucket Seat Type 2510 Bench 2530 |
| No. of doors | 4 | 2 | 2 | 4 |
| No. of passengers | 4 | 2 | 5 | 5 |
| Seating arrangement | Std. | Std. | Std. | (Opt. Bench or Bucket) |
| Gear Ratio | 5.6 to 1 | 5.6 to 1 | 5.6 to 1 | 5.6 to 1 |
| Make of body | Briggs Mfg. Co. | Briggs Mfg. Co. | Hudson | Hudson |
| Frame work material | Wood | Steel | Steel | Steel |
| Body panel material | Steel | Steel | Steel | Steel Steel |
| Rear & Quarter sect. material | Steel | Steel | Steel | Steel |
| Windshield - type | One Piece Swing Type | | --- ALL MODELS | |
| Windshield - make | Motor Products | | --- ALL MODELS | |
| Wheels - type | Wood | | --- ALL MODELS | |
| Tires - size | 31 x 5 | | --- ALL MODELS | |