

1933 ESSEX-TERRAPLANE KT EIGHT
Tune-up Specifications

SERIAL NUMBER: - KT Eight - 65,001; KT DeLuxe Eight - 73,463

ENGINE NUMBER: - First number 15,001. Stamped on left side of cylinder block at center.

ENGINE: - Own make. Eight cylinder, In line, 'L' head type.

Dimensions - Bore 2 15/16". Stroke 4 1/2"

Displacement - 244 cubic Inches.

Horsepower - Rated 27.6. Developed 94 at 3200 RPM

Compression - 5.8-1. No optional heads.

Pressure - 80 lbs. at 125 R.P.M.

Vacuum Reading - Gauge should show steady reading of 18-19" with engine idling.

Pistons: - Own. Aluminum alloy, "T" slot type. Pistons are 'cam' ground with greater clearance across pin bosses. Finished replacement

pistons furnished for cylinder bores of size indicated (see Reconditioning Cylinders below): "B" - 2.9375-

2.938", "D" - 2.9385-2.939", "F" - 2.9395-2.940", "J" - 2.9415", "L" - 2.9425", "BO" - 2.9475-2.948", "DO" - 2.9485-2.949", "FO" - 2.9495-2.950", "LO" 2.9525", "BB" - 2.9575", "DD" - 2.9585", "FF" - 2.9595". Letter designating size is stamped on head.

Weight - 9 1/4 ounces stripped. Length 3 3/16".

Clearance - Top, .016", Bottom .0005".

Removal - Piston and rod assembly removed from top of engine.

Reconditioning Cylinders - Size of original bore indicated by letter stamped on edge of valve chamber opposite cylinder as follows: 'A' 2.9375", 1& 2.938", 'C' 2.9385", 'ID' 2.9391, 'IE' 2 9395"! 'AO' 2.9475", 'BOI 2 9481, 'ICO' 2.9485", 'DO' 2.94911, 'EO1 2.9495". Recondition cylinder to standard size for which piston and rings are available.

Same size piston must be installed in all cylinders to maintain balance.

Fitting New Pistons - Use feeler gauge .0015-.002" thick to check clearance. Pull of 3-4 lbs. should be required to withdraw feeler from between piston and cylinder wall at right angles to pin boss on side opposite slot.

NOTE: - Install pistons with "T" slot to left.

Piston Rings:-Two compression, two oil rings used per piston. Lower (oil ring) groove is drilled radially.

NOTE - Use standard or oversize rings of size indicated for replacement pistons marked as follows: "B, D, F" - 2.937", "J"- 2.940", "L" - 2.942", "BO, DO, FO" - 2.947", "LO" - 2.952", "BB, DD, FF" - 2.957".

Ring	Width	End Gap	Wall Thickness	Groove Depth
Comp. (2)	3/32"	.006-.016"	.123"	.156"
Oil Ring (Upper)	1/8"	.006-.016"	.128"	.156"
Oil Ring (Lower)	3/16"	.006-.016"	.128"	.156"

Wrist Pin: - Diameter 3/4". Length, 2 7/16". Pin floats in piston and rod.

NOTE - Pins furnished for service standard and .002", .005", .010" oversize.

Clearance in Rod Bushing - .0003". Pin hole in connecting rod is broached, and diamond-bored in piston. Bearing in rod is bronze bushing.

Pin Fit in Piston - Snug fit with piston at 200° F.

Connecting Rod: - Weight, 29.44 ounces. Length, 8 3/16" center-to-center.

Crankpin Journal Diameter - 1 15/16".

Big End Bearing Type - Spun babbitt. Diamond-bore finish.

Clearance - .001". Side play .006-.010".

Adjustment - Shims (laminated type). Do not file rods or caps.

NOTE:-Connecting rod lower bearings are offset. Install rods with right hand offset in cylinders #1, 3, 5, 7 and left hand offset in cylinders #2,4,6,8.

Crankshaft: - Five main bearing type with eight counterweights.

Journal Sizes - #1 - 2 9/32"; #2 - 2 5/16"; #3 - 2 11/32"; #4 - 2 3/8"; #5 - 2 13/32".

Bearing Type - Separate babbitt-lined, bronze-backed type.

Bearing Clearance - .001".

Adjustment - shims (laminated type).

End Thrust - Taken by #3 (center) bearing. End clearance, .006-.012".

Camshaft: - Gear driven from crankshaft.

Gear Type - Crankshaft gear, steel. Camshaft gear, GE. Bakelite.

Camshaft Setting - Gears are marked. Mesh marked tooth on crankshaft gear between two marked teeth on camshaft gear.

Valves:-	Head Dia.	Stem Dia.	Length	Seat Angle	Lift
Intake	1 1/2"	5/16"	5 3/32"	45°	11/32"
Exhaust	1 3/8"	5/16"	5 3/32"	45°	11/32"

Stem-to-Guide Clearance-.0015-.003" (intake), .003-.005" (exhaust).

Tappet Clearance - Running (hot) Timing

Intake	.006	.010"
Exhaust	.008	.010"

Valve Springs - Spring pressure 53 lbs. with valve closed.

Valve Timing

Intake Valves Open – 10° 40' BTDC. Close – 60° ALDC.
Exhaust Valves Open – 50° BLDC. Close – 18° 44' ATDC.

NOTE:-Timing figures are correct for .010" tappet clearance.

Valve Timing (Cont'd)

To Check Timing - Set tappet clearance #1 intake valve at .010". This valve should open with the piston .04941, before top dead center when a point on the flywheel approximately 2.55 teeth before the dead center mark lines up with the indicator in the inspection hole in the left front face of the flywheel housing. Reset tappet clearance at .0061, with engine hot.

Motor Gauge - Weidenhoff Adapter #114. Rod #42.

LUBRICATION: - Duo-flow (splash) system with positive pump feed to oil troughs and timing gears by oscillating plunger type pump. Pump mounted on right side of crankcase.

Normal Oil Pressure - 3 lbs.

Oil Pressure Relief Valve - Operates at 3 lbs. Not adjustable. Located on right side of crankcase at rear of engine. Combined with oil pressure signal light switch.

Capacity & Oil - 7 quarts (refill). Use SAE. #30 (above 40° F.), #20W (40° to 0°F.).

CLUTCH: - Own Make. Single plate type operating in oil. No adjustment for wear required.

Clutch Pedal Adjustment - Free movement of clutch pedal should be 1½". To adjust, take out clevis pin at lower end of clutch pedal connecting link, loosen locknut on clevis at lower end, turn clevis.

Clutch Lubrication - Oil in clutch should be drained and replaced at 5000 mile intervals. To drain oil, turn flywheel until filler plug on front face is visible in

inspection hole in left front face of flywheel housing, remove plug, turn flywheel so that plug hole is down, allow sufficient time for old oil to drain out, turn flywheel and insert mixture of 1/6 pint light engine oil and 1/6 pint kerosene. See that plug is replaced securely.

Facings - 9¹³/₁₆" driven plate with cork inserts.

STEERING: - Steering Gear - Gemmer Worm-and-Sector type.

Front Suspension: - Conventional 'I' beam section front axle with Elliott type ends and semi-elliptic springs.

Kingpin Inclination - 7° crosswise.

Caster - 3°. Adjust by inserting wedge shims between spring and spring pad on axle.

Camber - 2°. No adjustment. Axle may be bent cold for minor corrections.

Toe In - 0-1/8". Adjusted in usual manner by loosening clamp bolts and turning tie rod.

BRAKES: - Service-Bendix Mechanical, Duo-Servo, Single anchor type. Hand lever applies all four service brakes. See article in Brake Section for complete adjustment, instructions.

Drum Diameter - 9".

Lining - Moulded type. Width 2¼". Thickness 3/16". Length 19" per wheel.

Clearance - .008" anchor pin end, .014" adjusting screw end of each shoe.

Hand Brake:-See Service Brakes above