

# 1934 TERRAPLANE

Standard Model K  
Deluxe Model KU  
Challenger Model KS

**SERIAL NUMBER:** - First number (K) 373,000, (KU) 21,500, (KS) 396,727. On plate on engine side of dash under hood.

**COMPRESSION:** - Ratio - Standard 5.75-1 head; Optional, 6.25-1 head.

**Pressure** - (Standard head) 80 lbs. at 125 R.P.M.

**VACUUM READING:** - Gauge should show steady reading of 18-191, with engine idling.

**IGNITION:** - Coil Model IG-4311. Lock coil type. Resistor mounted on distributor.

Ignition Current - 2.5 amperes (idling), 4.5 amperes (stopped).

Distributor Model IGB - 4301-A. Single breaker, 6 lobe cam, full automatic advance type.

Breaker Gap - Set gap at .020". Limits, .018-.020".

Breaker Arm Spring Tension - 16-22 ounces.

Cam Angles - Closed 40°. Open 20° (distributor). Automatic Advance

Distributor		Engine	
Degrees	RPM	Degrees	RPM
Start	400	0	800
3	720	6	1440
6	1040	12	2080
9	1360	18	2720
12	1680	24	3360
15	2000	30	4000

**IGNITION TIMING:** - Flywheel Degs. Piston Position

Initial Setting (all engines) at TDC . .0000" TDC

Timing (Initial Setting): - With #1 piston on compression, turn engine over until piston reaches top dead center, stop when flywheel mark 'UDC.1-6/' registers with pointer in inspection hole (left hand front face of flywheel housing above starter), loosen hold-down screw in advance arm, rotate distributor clockwise to limit of advance arm slot, then rotate distributor slowly counter-clockwise until contacts begin to open, tighten hold-down screw, check rotor position and spark plug connections (see diagram). This top dead center setting should be checked by road-testing car and spark advanced as much as operating conditions and fuel rating will allow (see below).

Timing (Final Setting): - With engine at normal

operating temperature and running at 8 M.P.H. in high gear on level road, accelerate engine rapidly and note performance from 10 to 15 M.P.H. With correct setting a slight spark knock should be noted under these conditions. If no knock is heard, loosen hold-down screw in advance arm and rotate distributor one graduation counter-clockwise (advance). If knock is too severe, rotate distributor one graduation clockwise (retard). Repeat test until satisfactory setting is secured. Final setting must not be beyond maximum advance mark on flywheel (3/4" before top dead center mark 'UDC.1-6/1).

Firing Order: - 1-5-3-6-2-4 (see diagram).

Spark Plugs: - Champion, Type J-7. 14 MM. Metric.

Spark Plug Gaps: - .022".

**CARBURETION:** - (Fuel System). See Carburetion Section for complete data on Carburetor, Automatic Choke (Climatic Control), Fuel Pump, and Gasoline and Oil Level Gauge.

Carburetor: - Carter, Model 281-S (K,KU), 295-S (KS), 1-1/4" plain tube, downdraft type.

Automatic Choke - Carter Climatic Control (281 only).

Fuel Pump: - A.C., Type R.

Gasoline Gauge: - Motometer, electric type.

**VALVE TIMING:** - To Check Timing-Set tappet clearance #1 intake valve at .010". This valve should open with piston 10° 40' or .0562" before top dead center when a point on the flywheel approximately 3.17 teeth before top dead center mark IUDC.1-6' lines up with indicator. Reset tappet clearance at .006" with engine warm and running.

Tappet Clearance: - .006" Intake, .008" Exhaust, engine hot and running.

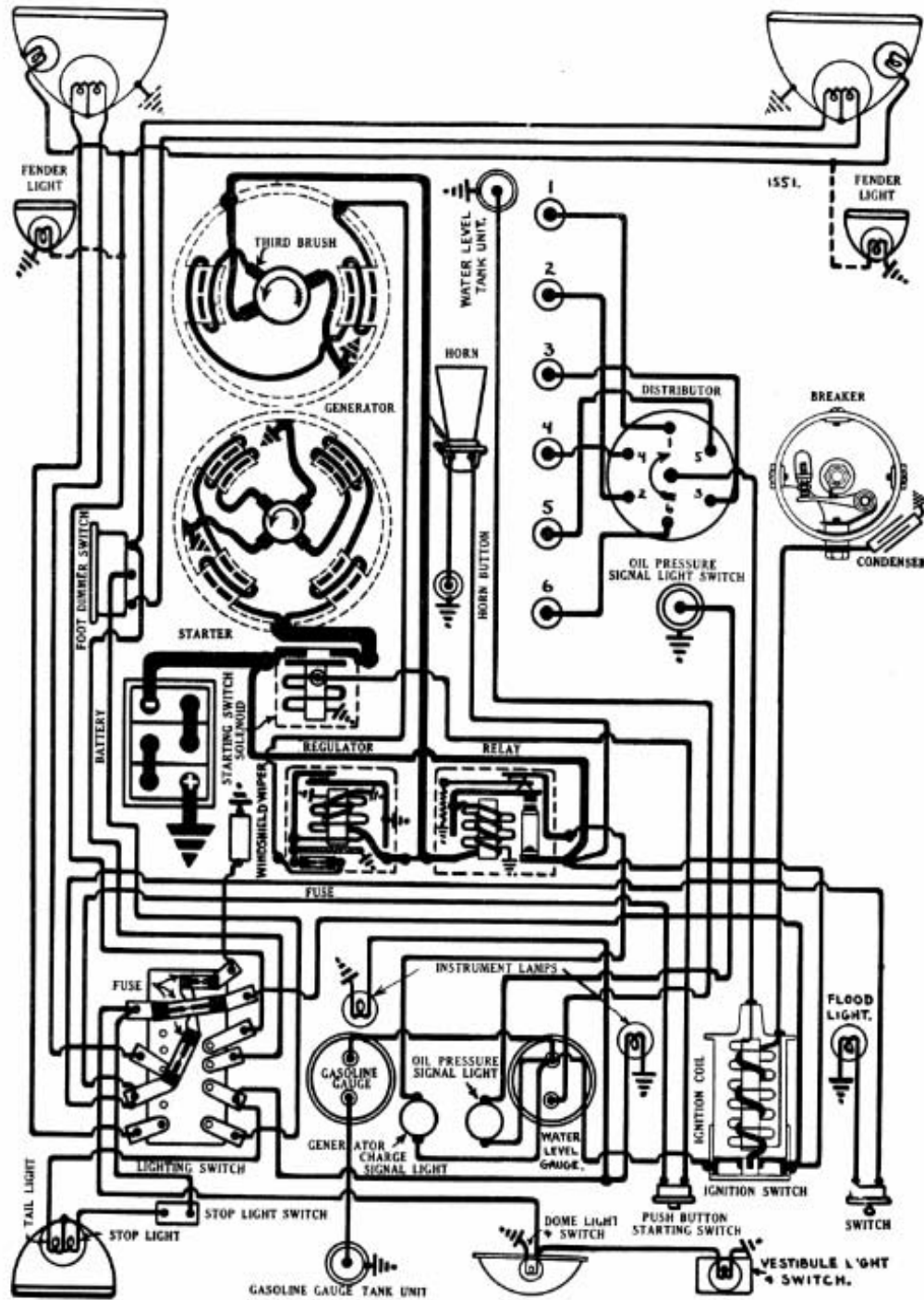
Valve Spring Pressure: - 44 lbs. at 2" (valve closed). 102 lbs. at 1-21/32" (valve open).

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

Normal Oil Pressure - 3 pounds.

Oil Pressure Relief Valve - Operates at 3 lbs. Located on right hand side of crankcase at rear (combined with oil pressure signal light switch).

Capacity and Oil - 7 quarts (dry), 6 quarts (refill). Use SAE #30 (above 40° F.), #20-W (40° to 0° F.).



1934 Terraplane - All Models

**CARBURETION:** - See Carburetion Section for data.

Carburetor: - Carter Model 311-S, 1-1/4" downdraft type.

Fuel Pump: - AC. Type R-1521540 diaphragm type.

Gasoline Gauge: - King-Seeley electric type.

**VALVE TIMING:** - To Check Timing-Set tappet clearance #1 intake valve at .010". This valve should open with piston 10° 40' or .0562" before top dead center when a point on the flywheel approximately 3.17 teeth before top dead center mark 'UTDC.1-6' lines up with indicator. Reset tappet clearance at .0061, with engine warm and running.

Tappet Clearance: - .006" Intake, .008" Exhaust, engine hot and running.

Valve Spring Pressure: - 44 lbs. at 2" (valve closed). 102 lbs. at 1-21/32" (valve open).

**LUBRICATION:** - Crankcase Capacity - 5 quarts (refill).

Normal Oil Pressure - 3 pounds.

**BATTERY:** - National, Type ST-3-17X. 6 volt 17 plate, 98 A.H. capacity (20 hour rate).

Starting Capacity - 122 amperes for 20 minutes.

Grounded Terminal - Positive (+) terminal.

Location - On left hand side under front floor.

**STARTER:** - Model MAB-4060. Armature MAB-2114.

Starter Drive - Inboard Bendix, Type A-1588.

Rotation - Counter-clockwise at commutator end.

Brush Spring Tension - 44-56 ozs. (new brushes).

Cranking Engine - 125-150 amperes at 5 volts.

Torque	Performance Data		
	R.P.M.	Volts	Amperes
0 ft. lbs	3700	5.5	60
.6 "	1910	5.5	100
3.4 "	1100	5.0	200
6.6 "	695	4.5	300
10.15 "	420	4.0	400
15.8 "	Lock	3.0	582
22.5 "	Lock	4.0	775

**NOTE:** Lock torque figures correct without switch.

Starting Switch: - Type SS-4001. Solenoid type switch mounted on starter field frame controlled by pushbutton switch on instrument panel.

Mounting: - Flange mounted on left hand front face of flywheel housing. To remove, take out two flange mounting bolts.

**GENERATOR:** - Model GBK-4602. Armature No. GBK-2055. Ventilated, third brush control type with external voltage regulator. See Equipment Section for complete data on Voltage Regulator.

Charging Rate Adjustment: - Use test meters to check generator output. Short out voltage regulator by

connecting short jumper wire from IF' terminal on generator to ground. Take off commutator cover band, shift third brush by hand counter-clockwise to increase, or clockwise to decrease charging rate. Remove jumper wire.

Maximum Charging Rate - 22 amperes (cold), 8.0 volts 2400 R.P.M.

Amperes	Performance Data				
	Cold - Regulator Inoperative			Hot	
	Volts	RPM	Amperes	Volts	RPM
0	6.4	800	0	6.4	840
4	6.7	980	4	6.8	1025
8	7.0	1110	8	7.15	1200
12	7.3	1300	12	7.5	1450
16	7.55	1500	16	7.85	1760
22	8.0	2200	18	8.0	2400

Rotation - Counter-clockwise at commutator end.

Brush Spring Tension - 18-22 ounces.

Field Current - 3.75-4.15 amperes at 6.0 volts.

Motoring - 4.46-4.94 amperes at 6.0 volts.

Field Fuse - 7-1/2 ampere capacity in knurled cup under regulator case.

Mounting: - Pivot mounted at left front of engine. Driven by fan belt. To remove, take out two pivot bolts and one clamp bolt.

Belt Adjustment - Loosen pivot bolts and clamp bolt, swing generator out or away from engine until slight pull is felt on belt, tighten clamp bolt before slacking off on generator, tighten pivot bolts.

**CUT-OUT RELAY:** - Model CBA-4002. Mounted on dash. Relay has extra set of contacts above armature for charge tell-tale light control.

Cuts in - 6.4 volts, 750 R.P.M. or 8 M.P.H.

Cuts out - .5-2.5 ampere discharge.

**VOLTAGE REGULATOR:** - Model TC-4102A. Two Charge Regulator mounted on engine side of dash. See article in Electrical Equipment Section for complete data.

Contacts Open - 7.86-8.27 volts at 70° F.

Contacts Close - 6.46-6.86 volts at 70° F.

Contact Gap-.005" minimum.

Core Gap-.030" plus or minus .001" with contacts closed.

**LIGHTING:** - Soreng-Manegold Switch, Model 5640-A, C-5640-A (without windshield wiper fuse). Soreng Manegold Foot Control Switch. Foot control switch provides asymmetric 'meeting' beam (lower beam right hand headlight, upper beam left hand headlight). Headlight beams are crossed (left hand headlight lights right side of road). Operative only with lighting switch in 'Country Driving' position. Headlight bulbs are pre-focused type.

Lighting (Cont'd)

Lamp	Bulb Specifications	
	Candlepower	Mazda No.
Headlights	32-21	2320-C
Parking, Instrument, Flood	3	63
Dome, Vestibule	15	87
Stop and Tail	21-2	1158
Signal	3	64 (DC)

**SIGNAL LIGHTS:** - Battery charge tell-tale and oil pressure tell-tale light mounted on instrument panel. Light bulbs are standard 3 cp. DC. bulbs.

Battery Charge Tell-tale - At left of instrument cluster. Tell-tale should light with ignition turned on and should go out when generator begins to charge battery (relay contacts closed). If telltale does not burn when ignition turned on, check bulb by grounding tell-tale terminal on relay to generator field frame. If tell-tale does not light, replace bulb. If lamp lights, check auxiliary contact

spring, contacts and ground resistor. See that auxiliary contacts are closed with main contacts open. If tell-tale lights at speeds above idling (8 M.P.H.), generator or relay is defective.

Oil Pressure Tell-tale - At right of instrument cluster. Tell-tale should light with ignition turned on but should go out when engine is operated (light should flash at idling speeds). Tell-tale should not light or flash at speeds above idling. If tell-tale does not light when ignition is turned on, check bulb by grounding terminal on oil pressure check valve (right side of crankcase) to engine. If tell-tale does not light, replace bulb. See special article on Hudson Signal Lights in Equipment Section for complete data.

**FUSES:** - Lighting - Two 20 ampere capacity fuses on back of lighting switch.

Windshield Wiper - 7-1/2 ampere capacity fuse on lighting switch (not used on all cars).

Generator Field - 7-1/2 ampere capacity.