

# Automobile Manufacturers Association Consolidated Specification Questionnaire

## Mechanical Details

Make of Car..... Oldsmobile..... Model ..... Futuramic "98"  
 Oldsmobile Division  
 Name of Maker..... General Motors Corporation..... Address ..... Lansing, Michigan.....  
 Date..... 9-14-48.....

**NOTE: (1) Subject to Correction:** It is understood that the following data are subject to correction in the case of cars not in production at the time this compilation was requested.

**(2) Only standard equipment included in Factory Delivered price should be included in this questionnaire.**

### ENGINE

No. of cylinders ..... 8.....  
 Valve arrangement ..... Valve-in-Head.....  
 Bore ..... 3-3/4"..... Stroke ..... 3-7/16.....  
 Cylinder head, cast iron or aluminum ..... Cast Iron.....  
 Cylinder sleeve, Yes..... No..... No.....  
 Piston displacement ..... 303.73 cu. in.....  
 Taxable horsepower ..... 45.0.....  
 Horsepower rating —

To be based on actual performance corrected to 60°F. at sea level (barometric pressure 29.92 inches of mercury) with standard fuel. (Octane No. of fuel .79 A.S.T.M. & 86 Research

—With Bare Engine—

Maximum brake hp. .... 135..... at ..... 3600..... R.P.M.

—With Standard Accessories—\*

Maximum brake hp. 129..... at ..... 3600..... R.P.M.

\*Those standard accessories needed for normal operation including fan, generator, starter, air cleaner, muffler, manifolds, fuel and water pumps.

Maximum torque—

With bare engine, lb. ft. .... 263..... at ..... 1800..... R.P.M.

With standard accessories,\* lb. ft. .... 255..... at ..... 1800..... R.P.M.

Compression Ratio—

Standard ..... 7.25..... Optional.....

Standard compression pressure —pounds—

At cranking speed ..... 136#.....

At what R.P.M. .... 185# @ 1000 R.P.M.....

### PISTONS and RINGS

Piston  
 Make ..... Own.....  
 Material ..... Aluminum Alloy.....  
 Features—split skirt, invar strut, oval, tin-plated, aluminum oxide finish, auto-thermic, V-Bridge, porous chrome plate, etc. Auto-thermic, Cam Grad., Tin plate, Steel strut.....  
 Weight—ounces—without rings, pin or bushing 19.88 oz.....  
 Length ..... 4".....  
 Clearance—  
 Top land ..... 0.032"..... to ..... 0.036".....  
 Skirt, top. 0.005" - 0.0015" bottom. 0.0005" to 0.0010"

### PISTONS and RINGS (cont'd)

Piston ring groove depth—

Oil ..... 0.193"..... Compression ..... 0.200"

No. of oil rings used per piston ..... One.....

Width of oil rings ..... 3/16".....

Width of oil ring gap ..... 0.008" to 0.016".....

No. of compression rings used per piston ..... Two.....

Width of compression rings ..... 5/64".....

Width of compression ring gap ..... 0.008" to 0.016".....

Maximum wall thickness of oil rings ..... 0.163".....

Maximum wall thickness of compression rings ..... 0.187".....

Are ring expanders used, Yes..... No..... No.....

### RODS and PINS

Wristpin—

Material ..... S.A.E. 1117 Mod. Steel.....

Length ..... 3.011"..... Diameter ..... 0.9805"

Locked in rod, piston or floating ..... Full Floating.....

Clearance in piston ..... 0.0002 loose to 0.0000.....

Clearance in rod ..... 0.0003"..... to ..... 0.0005" loose

Connecting rod—

Length—center to center ..... 6.625".....

Material ..... GM X-1335 Steel.....

Weight—ounces 29.54 oz.....

Crankpin journal—

Diameter ..... 2 1/4"..... Length ..... 2"

Lower bearing—

Material ..... Durex 100-A with GM 4167-M Babbitt Overlay.....

Clearance ..... 0.0009"..... to ..... 0.0029".....

End play ..... 0.002"..... to ..... 0.011".....

Ship—solid, laminated or none ..... None.....

Spun or separate ..... Separate.....

Rods and pistons removed from above or below ..... Above.....

### CRANKSHAFT

Material ..... S.A.E. 1145 Mod. Steel.....

Weight—stripped 60#.....

Vibration dampener used—yes or no ..... Yes.....

Type ..... Spring.....

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**CRANKSHAFT (cont'd)**

Crankshaft counterweights used, number of.....6.....  
 Which main bearing takes thrust.....Rear.....  
 Crankshaft end play......004" to .008".....  
 Main bearing—  
 Type: Cast-in or.....Slip-in.....Yes.....  
 If slip-in: Removable from below.....Yes.....  
                     Necessary to align ream.....No.....  
 Material Durex 100 A with GM 4167 Babbitt.....  
                     overlap.....  
 Clearance......0005" to .003".....  
 Shim—solid, laminated or none.....None.....  
 Main bearing journal diameter x length—  
 No. 1.....2-1/2" x 1-3/32"  
 No. 2.....2-1/2" x 1-1/8"  
 No. 3.....2-1/2" x 1-1/8"  
 No. 4.....2-1/2" x 1-1/8"  
 No. 5.....2-5/8" x 1.880"  
 No. 6.....  
 No. 7.....  
 No. 8.....  
 No. 9.....

**Crankshaft gear or sprocket—**

Make.....Link Belt.....  
 Material.....S.A.E. 1141 Steel.....

**CAMSHAFT**

**Camshaft gear or sprocket—**

Make.....Link Belt.....  
 Material.....LX Cast Iron.....

**Timing chain—**

Make.....Link Belt.....  
 Number of links.....48.....  
 Width.....27/32"  
 Pitch......500"

**VALVES**

**INTAKE VALVE—**

Make.....Various.....  
 Material.....S.A.E. 3140 Steel.....  
 Overall length 4.855"  
 Actual overall diameter of head 1-3/4"  
 Minimum port diameter 1-7/16"  
 Angle of seat 45°  
 Is valve seat an insert?.....No.....  
 Stem diameter......3425-.3417  
 Stem to guide clearance......00175" to .00355"  
 Lift......222.....  
 Spring pressure and length—  
 Outer—

**VALVES (cont'd)**

With valve closed—lb.....65#.....ins. 1.777.....  
 With valve open—lb.....140#.....ins. 1.447.....  
 Length out of engine—ins. 2-3/32"  
 Inner—  
 With valve closed—lb.....ins.....  
 With valve open—lb.....ins.....  
 Length out of engine—ins.....

**EXHAUST VALVE—**

Make.....Various.....  
 Material.....Silchrome XCR Steel.....  
 Overall length 4.8435"  
 Actual overall diameter of head 1.469"  
 Minimum port diameter 1-1/4"  
 Angle of seat 45°  
 Is valve seat an insert?.....No.....Material.....  
 Stem diameter......3938-.3930.....  
 Stem to guide clearance......00225" to .00405"  
 Lift......222.....  
 Spring pressure and length—  
 Outer—  
 With valve closed—lb.....65#.....ins. 1.777"  
 With valve open—lb.....140#.....ins. 1.447"  
 Length out of engine—ins. 2-3/32"  
 Inner—None.....  
 With valve closed—lb.....ins.....  
 With valve open—lb.....ins.....  
 Length out of engine—ins.....

Operating tappet clearance (hot or cold)—intake.....None.....  
 Tappet clearance for valve timing—intake.....None.....  
 Operating tappet clearance (hot or cold)—exhaust.....None.....  
 Tappet clearance for valve timing—exhaust.....None.....  
 Hydraulic valve lifters—yes or no.....Yes.....

**Valve timing—**

Intake opens 14.....degrees BUDC piston travel 0.060 inches  
 Intake closes 50....." ALDC " " 2.94 inches  
 Exhaust opens 50....." BUDC " " 2.97 inches  
 Exhaust closes 14....." AUDC " " 0.068 inches  
 Valve Timing Marks—on Flywheel, Vibration Damper, None None

**LUBRICATION**

Lubricating system type—pressure or splash.....Pressure.....  
 Oil pressure to—  
 Main bearings—yes or no.....Yes.....  
 Connecting rods—yes or no.....Yes.....  
 Wristpins—yes or no.....Yes.....  
 Camshaft bearings—yes or no.....Yes.....  
 Tappets—yes or no.....Yes.....

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## LUBRICATION (cont'd)

Timing gear or chain lubrication—*positive or splash* Positive  
 Oil pump type Gear  
 Oil grade recommended—*SAE viscosity and temperature range*—  
 ..... See Lubrication Chart.  
 .....  
 Normal oil pressure—*lbs. at M.P.H.* 40# at 30 MPH  
 Pressure at which relief valve opens 40#  
 Capacity of oil reservoir—*quarts, dry* 5. refill 5  
 Oil pressure gauge make A.C.  
 Oil reservoir level gauge type Dip Stick  
 Floating type oil intake—*yes or no* No  
 External oil filter make None  
 Other type of oil cleaner None  
 Oil cooler make None  
 Chassis lubrication—*Make* Various

## FUEL

Gasoline tank—*capacity* 18 Gallons  
 Fuel feed—  
 Type—*vacuum tank, electric pump, gravity vacuum pump or camshaft pump* Camshaft Pump  
 Make A.C. Model  
 Carburetor—  
 Make Various Model  
 Number used 1  
 Size 1-7/16"  
 Type—  
 Up or down draft Down Single or dual Dual  
 Intake manifold heat control—*manual, automatic or none* Automatic  
 Automatic choke, make Various Model  
 Air cleaner—intake silencer make A.C.  
 Type—*dry felt; oil bath; oil coated fibre* Oil Coated Metal  
 Heavy Duty type—*Make* None Model Ribbon  
 Muffler make Hayes & Walker  
 Tail pipe diameter 2"

## COOLING

Water pump—  
 Type Sealed Centrifugal  
 Drive V-Belt  
 Is pump equipped with packing nut No  
 Water circulation thermostat make Harrison  
 Pressure relief valve—*yes or no* Yes  
 By-pass for recirculation—*yes or no* Yes  
 Radiator core—  
 Type Tubular Vee Cell  
 Make Harrison

## COOLING (cont'd)

Cooling system—*capacity, quarts* 21-1/2 gts.  
 Water jackets full length of cylinders—*yes or no* Yes  
 Water all around cylinder—*yes or no* Yes  
 Lower radiator hose—  
 Inside diameter 1-3/4" Length 14-5/8" Approx.  
 Upper radiator hose—  
 Inside diameter 1-1/2" Length 11-1/8"  
 Fan belt—  
 Make Various  
 Angle of vee 38°  
 Length, outside 39-1/4" Width, maximum 11/16"  
 Fan—  
 Make Own No. of Blades 4

## IGNITION

Ignition units—  
 Make Delco Remy Model 1110814  
 Manual or octane selector, *degrees advance* 15° *retard* 15°  
 Maximum centrifugal advance crankshaft, *degrees* 30°  
 at 4500 engine R.P.M.  
 Inches of Mercury Necessary to operate Vacuum Advance (Plus or minus 1 inch) 6.5 to 8.5"  
 Maximum Vacuum advance crankshaft, *degrees* 20°  
 Breaker gap .012-.0175 Breaker arm tension 19-23 oz.  
 Dwell *Cam angle* 22° B.T.C. deg.  
 Timing—*Breaker points open* 2-1/2° *degrees crankshaft rotation*  
 or ..... *inches piston travel (after or before) top center with octane selector in the* Normal *position.*  
 Timing mark location—*flywheel, vibration dampener or none*  
 Firing order 1-8-7-3-6-5-4-2  
 Amperage draw of ignition coil—  
 With engine stopped 4.5 Amp.  
 With engine idling 2.0 Amp.  
 Spark plug—  
 Thread—10 m.m., 14 m.m. or 18 m.m. 14 M.M.  
 Make A.C. Model #44  
 Gap .030"  
 Ignition cable make G.M.

## BATTERY

Make Delco Remy Model 17K4W  
 Capacity—*ampere hours* 115 A.H. @ 20 hour rate  
 Number of plates per cell 17  
 Bench charging rate—  
 Start 12.5 Finish 5.25  
 Which battery terminal is grounded Negative  
 Location of battery Under-Hood

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**STARTING MOTOR**

Make Delco Remy..... Model 1107956  
 Normal engine cranking speed Summer 100 RPM  
 Brush spring tension 24-28 oz.  
 Lock test—  
 Amperage draw 600  
 Volts 3.0  
 Torque in pounds feet 15  
 No load test—  
 Amperage draw 60  
 Volts 5..... R.P.M. 6000  
 Type of drive—Bendix or sliding gear with overrunning clutch  
 Starting device—Solenoid, manual, etc. Solenoid  
 Starter operation—check items required to start engine  
 1. Turn on ignition .....X  
 2. Depress starter pedal .....  
 3. Depress accelerator pedal .....  
 4. Depress clutch pedal .....  
 5. Operate button on dash .X  
 6. Pull out throttle .....  
 Starting motor pinion meshes front or rear Front  
 No. of teeth in flywheel 145  
 Face width of flywheel teeth 3/8"  
 Gear ratio between starter armature and flywheel 16:11:1

**GENERATOR**

Make Delco Remy..... Model 1102704  
 Type—third brush, shunt, etc. Shunt  
 Brush spring tension 24 to 28 oz.  
 Current regulator, voltage regulator or current and voltage control unit Current & voltage control  
 Maximum-controlled charging rate  
 Temperature 70° - 140°  
 Amperes 40 Amp.  
 Voltage 8 V.  
 R.P.M. 1880 at 70° to 2320 at 140°  
 Cutout relay—  
 Voltage at closing 6.5  
 Amperes to open, reverse current -2  
 Air gap .020"  
 Voltage regulator—  
 Volts 7.3 @ 9 Amp.  
 Temperature 150  
 Air gap .075"  
 Current regulator—  
 Amperes 40 Amp.  
 Temperature 150°  
 Air gap .075"  
 Car speed for maximum charging rate 21 MPH and up  
 Ammeter or charge indicator make A.C.

**LAMPS**

Lighting switch make Delco Remy  
 Are tail and dash lights in series No.  
 Headlights—  
 Make Guide Lamp  
 Location—in fender, in catwalk, or radiator shell Fender  
 Parking or fender light make Guide  
 Tail and stop light make Guide  
 Horn—  
 Type—vibrator or motor Vibrator No. used 2  
 Make Delco Remy  
 Amperage draw of each High Note 18 Amp.  
 Low Note 20 Amp.

**CLUTCH** None

Make .....  
 Drive type—  
 Direct to flywheel face .....  
 Through fluid flywheel .....  
 Semi-centrifugal .....  
 Power operated unit—make .....  
 Vibration insulation or neutralizer—fabric,  
 rubber blocks or springs .....  
 No. of clutch driving discs .....  
 No. of clutch driven discs .....  
 Clutch facing—  
 Material—woven or moulded asbestos, cork .....  
 Inside diameter .....  
 Outside diameter .....  
 Thickness .....  
 No. required .....

**TRANSMISSION** Hydra-Matic standard on all "98" Models

Transmission—  
 Make Own..... Model .....  
 No. of forward speeds 4  
 Manual shift—yes, no No.  
 Automatic or auxiliary shifting mechanism—yes Yes.....no  
 If yes, Make Own.....  
 Type—centrifugal, vacuum, electric or hydraulic.....  
 Automatic overdrive— None  
 Make .....  
 Oil capacity—pints .....  
 Oil grade recommended—S.A.E. viscosity  
 Summer ..... Winter .....  
 Gear ratio in high—standard 5-passenger  
 4-door sedan 1.51  
 Transmission ratio—  
 In first ..... In second 2.6341 to 1  
 In third 1.45 to 1 In fourth 1 to 1  
 In low 3.8185 to 1 In reverse 4.3045 to 1

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**TRANSMISSION (cont'd)**

Constant mesh gears on second .....

Spur or helical gears—  
 For second speed .....

For first speed .....

For reverse speed .....

For all speeds .....

Synchronous meshing and third gear .....

Transmission oil—  
 Capacity—~~5.5~~ 11 qts. ....

Grade recommended—S.A.E. viscosity  
 Summer Hydra-Matic Winter Hydra-Matic  
 Fluid Fluid

Universal joints—  
 Make .....Mechanics.....

Number used .. 2 .....

Type—metal with anti-friction  
 bearing ~~or metal with plastic bearing~~

Lubricated with ..... Permanently .....

Drive taken through springs, torque arm, torque tube or  
 radius rods ..... Stabilizing Arms .....

Torque taken through springs, torque arm, torque  
 tube or radius rods ..... Stabilizing Arms .....

**REAR AXLE**

Rear axle—  
 Make ..... Own .....

Type—Semi, full or three-quarter floating. Semi-floating

Minimum road clearance under center of rear  
 axle—tires inflated .....

Rear axle oil—  
 Capacity—pints ..... 3 3/4 .....

Grade and type recommended—S.A.E. viscosity  
 Summer See Lub. Chart. Winter .....

Type of gearing—spiral bevel, worm, hypoid ..... Hypoid .....

Gear ratio—standard 5-passenger 4-door sedan 3.63:1 .....

Optional gear ratios ..... None .....

Number of teeth—  
 In ring gear ..... 40 .....

In pinion ..... 11 .....

How is pinion adjusted—screw or shims ..... Shims .....

How is pinion bearing adjusted—screw or shims ..... Nut .....

Are pinion bearings carried in sleeve ..... No .....

Backlash between pinion and ring gear ..... .004" to .006" .....

**TIRES and WHEELS**

Tires—  
 Make ..... Various .....

Size ..... 7.60 x 15 .....

No. of plies ..... 4 .....

**TIRES and WHEELS (Cont'd)**

Inflation pressure—Front ..... 24# .....

Rear ..... 24# .....

Rim—Diameter ..... 15" .....

Width ..... 5.50F .....

5.50K (Optional)

**SPRINGS****FRONT SPRING—**

Independent or conventional suspension ..... Independent .....

Type—coil, semi-elliptic, transverse, torsion ..... Coil .....

Make ..... Own .....

Material ..... GM 9260 M Spring Steel .....

Torsional stabilizer at front ..... Yes .....

If leaf—  
 Length ..... Width .....

Number of leaves—5-passenger, 4-door sedan .....

Are radius rods used on axle .....

If coil—  
 Free length ..... 15-1/16" .....

Length under curb weight ..... 9-1/2" .....

**REAR SPRING—**

Independent or conventional suspension ..... Conventional .....

Type—coil, semi-elliptic, transverse, torsion ..... Coil .....

Make ..... Own .....

Material ..... GM 9260 M Spring Steel .....

Torsional stabilizer at rear ..... Yes .....

If leaf—  
 Length ..... Width .....

Number of leaves—5-passenger, 4-door sedan .....

Spring leaves lubricated with .....

Spring cover, Yes ..... No .....

Spring shackles—  
 Front—Type ..... Make .....

Rear—Type ..... Make .....

Spring bolts—  
 Type .....

If coil—  
 Free length ..... 18 1/4" .....

Length under curb weight ..... 10" .....

Rate for above ..... 11.5# ..... pounds per inch

Shock absorbers—  
 Make ..... Delco .....

Type, one way with lever, two way with lever, or direct acting  
 Front ..... Two-way with lever .....

Rear ..... Two-way with lever .....

Fluid capacity (oz.)—front 134-140 cc. rear 154-163 cc.

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**STEERING**

Steering gear—  
 Type ..... Worm and Roller .....  
 Make ..... Saginaw ..... Model .....  
 Ratio ..... 19:1 .....  
 Lubricant recommended ..... See Chart .....  
 Steering wheel diameter ..... 18" .....  
 Drag link longitudinal or transverse ..... Transverse .....  
 Tie rod—one or two ..... 2 .....  
 Is intermediate steering arm used ..... No .....  
 Number of turns of steering wheel for full left  
 to right swing of wheels ..... 4 1/4 .....  
 Car turning radius—feet—right, left or both ..... 42.0' .....  
 Caster—degrees ..... 0 ..... to 3/4 ..... Neg. to 3/4 ..... Pos. ....  
 Camber—degrees or inches ..... 1/4 ..... Neg. to 3/4 ..... Pos. ....  
 Toe-in—inches ..... 1/16" ..... to 1/8" .....  
 Crosswise inclination of kingpin—degrees ..... 4° 29' 47" .....  
 Front axle—  
 Make ..... None ..... Model .....  
 Section type—*I-beams, tubular or none* ..... None .....  
 End type—*Elliott or reverse Elliott* ..... Reversed Elliott .....  
 Minimum road clearance—tires inflated ..... 8-9/32" .....

**BRAKES**

Foot brakes—  
 Make ..... Various .....  
 Type of mechanism, *hydraulic or mechanical* ..... Hydraulic .....  
 If vacuum booster is standard, state make ..... None .....  
 Brake lining moulded, semi-moulded or woven—  
 Primary shoe ..... Moulded .....  
 Secondary shoe ..... Moulded .....  
 Drum—  
 Material ..... Cast Iron ..... Diameter ..... 11" .....  
 Lining— Front Rear .....  
 Length per wheel ..... 21-5/16 ..... 21-5/16 .....

**BRAKES (cont'd)**

	Front	Rear	
Width	2-1/2"	2"	Thickness .221"-.231"
Clearance— <i>to</i>	.015"		<i>heel</i> .015"
Total foot braking area	191.7		
Percent braking power on rear wheels	44%		
Hand lever operates on— <i>transmission, separate rear brakes, rear service brakes or all four service brakes</i>	Rear Service		
Hand brake, if separate from service brake— Internal or external			
Drum diameter			
Lining— Length per drum			
Width			Thickness
Clearance			

**FRAME and OTHER GENERAL DATA**

Frame—  
 Depth—*maximum* ..... 5.5/8" .....  
 Thickness—*maximum* ..... 1.35" .....  
 Flange width—*maximum* ..... 2-1/4"-2-3/4" .....  
 Wheelbase ..... 125" .....  
 Tread—  
 Front ..... 58" .....  
 Rear ..... 61-1/2" .....  
 Weight of standard 5-passenger, four-door sedan—  
 Shipping ..... 3892 .....  
 Curb ..... 4049 .....  
 Price of standard 5-passenger, 4-door sedan .....  
 First serial number, this series ..... 499M 1001 .....  
 Serial number location On Body left front door .....  
 Pillar .....  
 Overall length of car—  
 With bumpers and bumper guards ..... 213" .....  
 Overall width of car ..... 78-3/4" .....  
 Overall height, road to roof with no load 63-27/32" (5 Pass. load).

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**NOTE**—In giving bearing dimensions, kindly use the following order: inside diameter, outside diameter and width. Where cup and cone bearings are used, give both cup and cone numbers.

**BEARINGS**

Water pump bearing—  
 Make or type New Departure D.R. Ball  
 Size or number 954446

Fan bearing—  
 Make or type None  
 Size or number

Starting motor commutator end bearing—  
 Make or type Plain  
 Size or number

Starting motor drive end bearing—  
 Make or type None  
 Size or number

Starting motor outboard bearing—  
 Make or type Bronze Graphite  
 Size or number 1/2" x 25/32"

Generator commutator end bearing—  
 Make or type Bronze  
 Size or number 9/16" x 25/32"

Generator drive end bearing—  
 Make or type Ball Bearing  
 Size or number W.D. 3203

Transmission main drive gear front pilot bearing—  
 Make or type Durez  
 Size or number 412562

Clutch throwout bearing—  
 Make or type None  
 Size or number

Transmission main drive gear rear bearing—  
 Make or type None  
 Size or number

Transmission main shaft front pilot bearing—  
 Make or type None  
 Size or number

Transmission main shaft rear bearing—  
 Make or type None  
 Size or number

Transmission countershaft front bearing—  
 Make or type None  
 Size or number

Transmission countershaft rear bearing—  
 Make or type None  
 Size or number

Transmission reverse idler bearing—  
 Make or type None

**BEARINGS (cont'd)**

Size or number

Overdrive shaft rear bearing—  
 Make or type None  
 Size or number

Overdrive shaft pilot bearing—  
 Make or type None  
 Size or number

Main shaft extension bearing—  
 Make or type None  
 Size or number

Rear axle pinion shaft front bearing—  
 Make or type Timken or Hyatt  
 Size or number 188963 or 506917

Rear axle pinion shaft rear bearing—  
 Make or type Timken or Hyatt  
 Size or number 188960 or 506920

Differential right bearing—  
 Make or type Hyatt or Bower  
 Size or number 179243 or 502970

Differential left bearing—  
 Make or type Hyatt or Bower  
 Size or number 179243 or 502970

Rear wheel inner bearing—  
 Make or type None  
 Size or number

Rear wheel outer bearing—  
 Make or type New Departure Ball  
 Size or number 954172

Front wheel inner bearing—  
 Make or type New Departure Ball  
 Size or number 909052

Front wheel outer bearing—  
 Make or type New Departure Ball  
 Size or number 909001

Kingpin upper bearing—  
 Make or type Steel Backed 4035 M Bronze  
 Size or number 231905

Kingpin lower bearing—  
 Make or type Steel Backed 4035 M Bronze  
 Size or number 231905

Kingpin thrust bearing—  
 Make or type Hoover Ball  
 Size or number 230679

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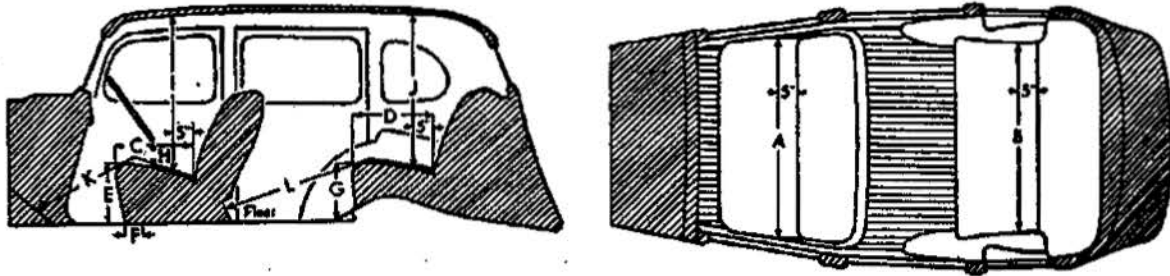
NOTE: (1) List only that equipment which is included in the factory delivered price. Special equipment which is fitted, but not included in the factory delivered price should be listed with its additional price.  
 (2) Enter on top line your own model name, or series mark corresponding to Standard, Deluxe or Custom.

EQUIPMENT	Models		
	Standard "98"	DeLuxe "98"	Custom
Catalog Designation of Model .....	"98"	"98"	
Lacquer make .....	Various	Various	
Body finish, lacquer or synthetic enamel .....	Lacquer	Lacquer	
Fender finish, lacquer or synthetic enamel .....	Lacquer	Lacquer	
Hardware make .....	Ternstedt	Ternstedt	
Speedometer make .....	A.C.	A.C.	
Gasoline gauge make .....	A.C.	A.C.	
Thermometer make .....	A.C.	A.C.	
Car lock make .....	Various	Various	
Car lock operates on ignition or ignition and steering .....	Ignition	Ignition	
Clock make ..... mechanical or electrical .....	None	Electric	
Cigar lighter make .....	Various	Various	
Safety glass make .....	L.O.F.	L.O.F.	
Safety glass type, laminated or tempered .....			
In windshield .....	Laminated	Laminated	
In side windows .....	Laminated	Laminated	
In rear window .....	Tempered	Tempered	
Bumper make .....	Own Chapin	Own Chapin	
Bumper guard make .....	Brown-Lipe	Brown-Lipe	
Car heater make ..... Type .....	None	None	
Direction signal make .....	Guide	Various	
Front—yes or no ..... Rear—yes or no .....	Yes Yes	Yes Yes	
No. of tail lights included .....	2	2	
No. of visors included .....	2	2	
No. of horns included .....	2	2	
No. of windshield wipers included .....	2	2	
No. of spare tires included .....	1	1	



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**BODY DIMENSIONS (Five-Passenger, Four-Door Sedan)**



**INTERIOR**

*All interior body dimensions taken with front seat in its rear position*

Width of front seat cushion, measured 5 inches from back (A) .....	63 5/8"
Width of rear seat cushion, measured 5 inches from back (B) .....	52 1/8"
Depth of front seat cushion (C) .....	18
Depth of rear seat cushion (D) .....	19 7/16
Height of front seat cushion measured 12 1/2 inches from center line of body (E) .....	12 13/32
Front seat horizontal adjustment, inches (F) .....	4 7/16
Front seat vertical adjustment, inches .....	1/4"
Height of rear cushion measured 12 1/2 inches from center line of body (G) .....	13 3/16"
Vertical distance steering wheel and seat cushion (H) .....	5 3/8"
Head room at front seat, measured 5 inches from back (I) .....	36 1/8"
Head room at rear seat, measured 5 inches from back (J) .....	34 15/16"
Leg room in front seat, measured from 6 inches up on toe board, following contour of seat cushion (K) .....	42 13/16"
Leg room in rear seat, measured from center of foot rest, following contour of seat cushion (L) .....	42 7/16"
Trunk capacity, cubic feet .....	9.5 cu. ft.
Width of left front pillar on diagonal with door closed .....	3.75

