

Automobile Manufacturers Association

Consolidated Specification Questionnaire

For 1951 Models

Mechanical Details

Make of Car **Buick** Model **Series 70 Roadmaster**
 Name of Maker **Buick Motor Division** Address **Flint, Michigan**
 Date **January 2, 1951**

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 **In-Head**
 Bore **3.437"** Stroke **4.312"**
 Cylinder head, cast iron or aluminum **Cast Iron**
 Cylinder sleeve, Yes **No** **X**
 Piston displacement **320.2 Cu. In.**
 Taxable horsepower **37.81**
 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... **80**

--With Bare Engine-- (See Note)

Maximum brake hp. **152** at **3600** R.P.M.

--With Standard Accessories--*

Maximum brake hp. **144** at **3400** 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. **280** at **2000** R.P.M.

With standard accessories,* lb. ft. **274** at **2000** R.P.M.

Compression Ratio--

Standard **7.2 to 1** Optional

Standard compression pressure --pounds--

At cranking speed **120**

At what R.P.M. **160** at **1000** R.P.M.

PISTONS and RINGS

Piston **Sterling Aluminum Products Inc.,**
Aluminum Company of America, and Bohn
 Make **Aluminum and Brass Corporation**
 Material **Aluminum Alloy**
 Features--~~split skirt, inset skirt, oval tin-plated, aluminum~~
~~oxide finish, auto-thermic V-bridge, porous-chrome plate,~~
 etc. **Cam Ground Turbulator Top-Trans.Slot**
 Weight--ounces--without rings, pin or bushing **17.94**
 Length **4.56"**
 Clearance--
 Top land **.026"** to **.034"**
 Skirt, top **.0020"** bottom **.0014"**

PISTONS and RINGS (cont'd)

Piston ring groove depth--
 Oil **.182"** Compression **.182"**
 No. of oil rings used per piston **2**
 Width of oil rings Upper - **.1875"** Lower - **.1865"**
 Width of oil ring gap Upper - **.015" Lower - **.0017"** (Segmental)
 No. of compression rings used per piston **2**
 Width of compression rings **.0938"**
 Width of compression ring gap **.015"**
 Maximum wall thickness of oil ring Upper - **.150"** Lower - **.170"**
 Maximum wall thickness of compression rings Upper - **.170"** Lower - **.150"**
 Are ring expanders used, Yes **No** **X**

RODS and PINS

Wristpin--

Material **C.D.S. 1115**

Length **3.0625"** Diameter **8.747"**

Locked in rod, piston or floating **Locked in Rod**

Clearance in piston **.0003"** to **.0004"**

Clearance in rod **---** to **---**

Connecting rod--

Length--center to center **8.25"**

Material **1145 Forged Steel**

Weight--ounces **36.272**

Crankpin journal--

Diameter **2.25"** Length **1.306"**

Lower bearing--

Material **Durex 100-A**

Clearance **.0005"** to **.0016"**

End play **.005"** to **.010"**

Shims--solid, laminated or none **None**

Spun or separate **Separate**

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

CRANKSHAFT

Material **1145 H.R.S. Steel Forging**

Weight--stripped **116.4** Lbs.

Vibration dampener used--yes or no **Yes**

Type **Laminated steel flywheel supported on steel leaf springs.**

** Lower oil ring is a steel "U"-Flex Ring.
 Note: Bare engine is without fan and muffler.

Make of Car Buick Model Series 70 Roadmaster Date January 2, 1951

CRANKSHAFT (cont'd)

Crankshaft counterweights used, number of 8
 Which main bearing takes thrust Center
 Crankshaft end play .004" - .008"
 Main bearing—
 Type: Cast-in or Slip-in X
 If slip-in: Removable from below Yes
 Necessary to align ream No
 Material Steel backed Durex - 100A
 Clearance .0006" - .0020"
 Shim—*solid, laminated or none* None
 Main bearing journal diameter x length—
 No. 1 2.5625" x 1.2812"
 No. 2 2.625" x .9687"
 No. 3 2.6875" x 1.4687"
 No. 4 2.750" x .9687"
 No. 5 2.8125" x 2.4687"
 No. 6
 No. 7
 No. 8
 No. 9
 Crankshaft gear or sprocket—
 Make Link Belt
 Material C.D.S. #1140

CAMSHAFT

Camshaft gear or sprocket—
 Make Link Belt
 Material Cast Iron 13M
 Timing chain—
 Make Link Belt
 Number of links 50
 Width .812"
 Pitch .500"

VALVES

INTAKE VALVE—

Make Thompson, Rich or Eaton
 Material 3140
 Overall length 5.250"
 Actual overall diameter of head 1.7812"
 Minimum port diameter 1.375"
 Angle of seat 45°
 Is valve seat an insert? No
 Stem diameter .3720"
 Stem to guide clearance .0015" to .0035"
 Lift .348"
 Spring pressure and length—
 Outer—

VALVES (cont'd)

With valve closed—*lb.* 52 *ins.* 1.9375"
 With valve open—*lb.* 120 *ins.* 1.5938"
 Length out of engine—*ins.* 2.380"
 Inner—
 With valve closed—*lb.* 24 *ins.* 1.660"
 With valve open—*lb.* 52 *ins.* 1.320"
 Length out of engine—*ins.* 2.100"

EXHAUST VALVE—

Make Thompson, Eaton or Rich
 Material XCR or 2112N
 Overall length 5.250"
 Actual overall diameter of head 1.4375"
 Minimum port diameter 1.0625"
 Angle of seat 45°
 Is valve seat an insert? No Material
 Stem diameter .3715"
 Stem to guide clearance .0021" to .0039"
 Lift .348"
 Spring pressure and length—
 Outer—
 With valve closed—*lb.* 52 *ins.* 1.9375"
 With valve open—*lb.* 120 *ins.* 1.5938"
 Length out of engine—*ins.* 2.380"
 Inner—
 With valve closed—*lb.* 24 *ins.* 1.660"
 With valve open—*lb.* 52 *ins.* 1.320"
 Length out of engine—*ins.* 2.100"

Operating tappet clearance (hot or cold)—*intake* ---
 Tappet clearance for valve timing—*intake* ---
 Operating tappet clearance (hot or cold)—*exhaust* ---
 Tappet clearance for valve timing—*exhaust* ---
 Hydraulic valve lifters—*yes or no* Yes
 Valve timing—
 Intake opens 14 *degrees* BUDC *piston travel* inches
 Intake closes 71 " ALDC " " inches
 Exhaust opens 56 " BLDC " " inches
 Exhaust closes 25 " AUDC " " 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* No
 Camshaft bearings—*yes or no* Yes
 Tappets—*yes or no* No

Make of Car Buick Model Series 70 Roadmaster Date January 2, 1951

STARTING MOTOR

Make Delco Remy Model 1107981
 Normal engine cranking speed 90 R.P.M.
 Brush spring tension 24 - 28 Oz.
 Lock test—
 Amperage draw 600
 Volts 3
 Torque in pounds feet 16
 No load test—
 Amperage draw 65
 Volts 5.67 R.P.M. 5500
 Type of drive—Bondix or sliding gear with overrunning clutch
 Starting device—Solenoid, manual, etc. Solenoid
 Starter operation—check items required to start engine
 1. Turn on ignition Yes
 2. Depress starter pedal
 3. Depress accelerator pedal Yes
 4. Depress clutch pedal
 5. Operate button on dash
 6. Pull out throttle
 Starting motor pinion meshes front or rear Front
 No. of teeth in flywheel 156
 Face width of flywheel teeth .670"
 Gear ratio between starter armature and flywheel 17.33 - 1

GENERATOR

Make Delco Remy Model 1102754
 Type—third brush, shunts, etc. Shunt
 Brush spring tension 24 - 32 Oz.
 Current regulator, voltage regulator or current and voltage control unit Current & Voltage
 Maximum controlled charging rate
 Temperature Hot
 Amperes 40
 Voltage 8
 R.P.M. 2400 Approx.
 Cutout relay—
 Voltage at closing 6.1 - 6.8 at 150°F.
 Amperes to open, reverse current -1 to -6
 Air gap .020"
 Voltage regulator—
 Volts 7.4
 Temperature 150°F.
 Air gap .075"
 Current regulator—
 * Amperes 40 - 46
 Temperature 150°F.
 Air gap .075"
 Car speed for maximum charging rate 25 M.P.H. Approx.
 Ammeter or charge indicator make A. C.

LAMPS

Lighting switch make Delco Remy
 Are tail and dash lights in series No - Parallel
 Headlights—
 Make Guide Lamp
 Location—in fender, in catwalk, or radiator shell In Fender
 Parking or fender light make Guide Lamp
 Tail and stop light make Guide Lamp
 Horn—
 Type—vibrator or motor Vibrator No. used 2
 Make Delco Remy
 Amperage draw of each Left 17-19 Right 19-21

CLUTCH

Make No Clutch
 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

Transmission—
 Make Own Model Series 70
 No. of forward speeds Infinite Variable
 Manual shift—yes, no Yes
 Automatic or auxiliary shifting mechanism—yes X no
 If yes, Make Dynaflow Drive
 Type—centrifugal, vacuum, electric or hydraulic Hydraulic
 Automatic overdrive—
 Make None
 Oil capacity—pints
 Oil grade recommended—S.A.E. viscosity
 Summer Winter
 Gear ratio in high—standard 5-passenger
4-door sedan 1 - 1

****Transmission ratio—**

In overdrive
 In second
 In third
 In fourth
 In low
 In reverse

* At 8 Volts - Voltage regulator not operating.

** Maximum Converter Torque Ratio 2.24 - 1. Ratio in high 1 x Torque Ratio. Ratio in low 1.82 x Torque Ratio. Ratio in reverse 1.82 x Torque Ratio.

Make of Car Duick Model Series 70 Roadmaster Date January 2, 1951

TRANSMISSION (cont'd)

Constant mesh gears on second
 Spur or helical gears—
 For ^{Low} second speed
 For ~~low~~ speed Helical - Planetary Set
 For reverse speed Helical - Planetary Set
 For all speeds
 Synchronous meshing and third gears
 Transmission oil—
 Capacity—pints 22
 Grade recommended—S.A.E. viscosity
 Summer * Winter *

Universal joints—
 Make Saginaw
 Number used One
 Type—metal with anti-friction Metal with bearing or metal with plain bearing Plain Bearing
 Lubricated with Transmission Lubricant

Drive taken through springs, torque arm, torque tube or radius rods Torque Tube
 Torque taken through springs, torque arm, torque tube or radius rods Torque Tube

REAR AXLE

Rear axle—
 Make Own Model Series 70
 Type—Semi, full or three-quarter floating Semi-Floating

Minimum road clearance under center of rear axle—tires inflated 8.26"

Rear axle oil—
 Capacity—pints 4
 Grade and type recommended—S.A.E. viscosity
 **S.A.E. 90 Hypoid Gear Lubricant GM 4655M
 Summer Winter

Type of gearing—spiral bevel, worm, hypoid Hypoid
 Gear ratio—standard 5-passenger 4-door sedan 3.9 - 1
 Optional gear ratios 3.6 - 1

Number of teeth— 43 11
 In ring gear 47 In pinion 13

How is pinion adjusted—screw or shims Shims
 How is pinion bearing adjusted—screw or shims None
 Are pinion bearings carried in sleeve No
 Backlash between pinion and ring gear .006" to .010"

TIRES and WHEELS

Tires—
 Make U. S., Firestone or Goodrich
 Size 8.00 - 15" No. of plies 4

- * Dynaflo Fluid.
- ** Seasonal changes are not recommended.
- *** For winter driving add 2 Lbs. to above tire pressures.

TIRES and WHEELS (Cont'd) Cold Warm Cold Warm
 *** Inflation pressure—Front 24 27 Rear 24 27
 Rim—Diameter 15" Width 6.50"L

SPRINGS

FRONT SPRING—

Independent or conventional suspension Independent
 Type—coil, semi-elliptic, transverse, torsion Coil
 Make Own
 Material Steel 9260
 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 15.0"
 Length under curb weight 9.25"

REAR SPRING—

Independent or conventional suspension Coil Spring Susp.
 Type—coil, semi-elliptic, transverse, torsion Coil
 Make Own
 Material Steel 9260
 Torsional stabilizer at rear No

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 19.375"
 Length under curb weight 9.562"
 Rate for above 117 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 165 CC rear 165 CC

Make of Car..... Buick Model Series 70 Roadmaster Date January 2, 1951

STEERING

Steering gear—
 Type **Ball Bearing Worm and Nut**
 Make **Saginaw** Model **Series 70**
 Ratio **23.6 - 1**
 Lubricant recommended **Steering Gear Lubricant**
 Steering wheel diameter **18"**
 Drag link longitudinal or transverse **None**
 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 **5.25**
 Car turning radius—(feet—right, left or both) **20.9**
 Caster—degrees **1/4 Pos.** to **1-1/2 Pos.**
 Camber—degrees or **7/8 Pos. inches** to **5/8 Neg.**
 Toe-in—inches **1/16"** to **1/8"**
 Crosswise inclination of kingpin—degrees **4-1/4 at 3/8 Camber**
 Front axle—
 Make Model
 Section type—*I-beams, tubular or none.*
 End type—*Elliott or reverse Elliott*
 Minimum road clearance—*tires inflated* **7.28"**

BRAKES

Foot brakes—
 Make **Duo-Servo Single Anchor**
 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 **12"**
 Lining—
 Effective Length per wheel **23.062"(Segments)**

BRAKES (cont'd)

Width **2.25"** Thickness **.1875"**
 Effective toe **.015"** heel **.015"**
 Total foot braking area **207.5 Sq. In.**
 Percent braking power on rear wheels **47**
 Parking Brake
~~Hand lever operates on—transmission, separate rear brakes, rear service brakes or all four service brakes.~~ **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 **5.56"**
 Thickness—maximum **.150"**
 Flange width—maximum **2.25"**
 Wheelbase **126.2"**
 Tread—
 Front **59.1"**
 Rear **62.2"**
 Weight of standard 5-passenger, four-door sedan—
 Shipping
 Curb
 Price of standard 5-passenger, 4-door sedan
 First serial number, this series **See Note**
 Serial number location **Plate on Lt. Frt. Door Pillar - stamped on Left Side Rail - Near Front**
 Overall length of car—
 With bumpers and bumper guards **211"**
 Overall width of car **80.0"**
 Overall height, road to roof with no load **63.3"**

Note: Flint 1-6031301; Southgate 2-6050001; Linden 3-6055001; Kansas City 4-6061001; Wilmington 5-6070001; Atlanta 6-6075001; Framingham 7-6080001.

Make of Car Buick Model Series 70 Roadmaster Date January 2, 1951

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~~ ^{and fan} bearing—
 Make or type New Departure 885156
 Size or number 954208

Fan bearing—
 Make or type

Starting motor commutator end bearing—
 Make or type Oilless Bushing
 Size or number .750" x .563" x .9688"

Starting motor drive end bearing—
 Make or type Oilless Bushing
 Size or number .563" x .625" x .8437"

Starting motor ~~outboard~~ ^{middle} bearing—
 Make or type Oilless Bushing
 Size or number .7575" x .812" x .7187"

Generator commutator end bearing—
 Make or type Bushing
 Size or number .5625" x .7835" x .7969"

Generator drive end bearing—
 Make or type New Departure 3203
 Size or number 903203

Transmission main drive gear front pilot bearing—
 Make or type

Clutch throwout bearing—
 Make or type

Transmission ~~main drive gear rear bearing~~ ^{Pilot Bearing in Primary Pump Cover}—
 Make or type New Departure 310411A
 Size or number 954439

Transmission ~~main drive shaft pilot bearing~~ ^{Front Pump Body}—
 Make or type Bushing
 Size or number 1331471

Transmission ~~main shaft rear bearing~~ ^{Reverse Ring Gear}—
 Make or type Bushing
 Size or number 1333074

Transmission ~~countershaft front bearing~~ ^{Rear Bearing Retainer}—
 Make or type Bushing
 Size or number 1333719

Transmission ~~countershaft rear bearing~~ ^{Brake Drum High and Low}—
 Make or type Bushing
 Size or number 1333007

Transmission ~~reverse idler bearing~~ ^{Case}—
 Make or type Bushing

BEARINGS (cont'd)

Size or number 1335065

Overdrive shaft rear bearing—
 Make or type

Size or number

Overdrive shaft pilot bearing—
 Make or type

Size or number

Main shaft extension bearing—
 Make or type

Size or number

Rear axle pinion shaft front bearing—
 Make or type New Departure
 Size or number 905607

Rear axle pinion shaft rear bearing—
 Make or type Hyatt - Two Used
 Size or number 126047

Differential right bearing—
 Make or type Bower or Hyatt
 Size or number 1317716 or 187434

Differential left bearing—
 Make or type Bower or Hyatt
 Size or number 1317716 or 187434

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

Rear wheel outer bearing—
 Make or type Hyatt
 Size or number 111121

Front wheel inner bearing—
 Make or type New Departure
 Size or number 909062

Front wheel outer bearing—
 Make or type New Departure
 Size or number 909025

Kingpin upper bearing—
 Make or type Split Bushing
 Size or number 1266949

Kingpin lower bearing—
 Make or type Split Bushing
 Size or number 1266949

Kingpin thrust bearing—
 Make or type Nico 4984
 Size or number 134630

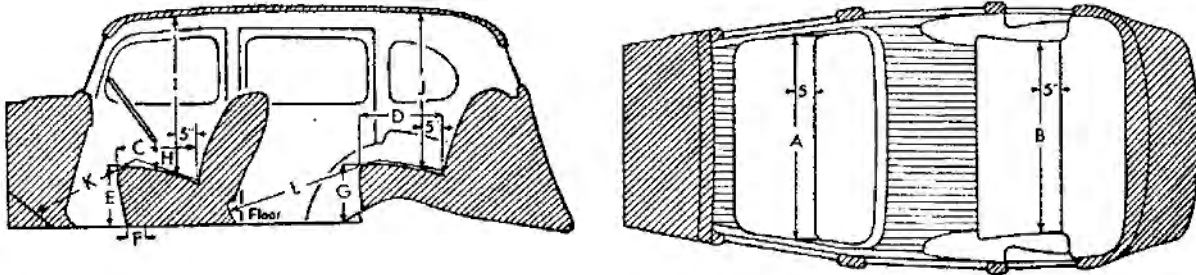
Make of Car Buick Model Series 70 Roadmaster Date January 2, 1951

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	DeLuxe	Custom
Catalog Designation of Model	Series 70		
Lacquer make	Duco		
Body finish, lacquer or synthetic enamel	Lacquer		
Fender finish, lacquer or synthetic enamel	Lacquer		
Hardware make	Ternstedt		
Speedometer make	A. C.		
Gasoline gauge make	A. C.		
Thermometer make	A. C.		
Car lock make	Briggs & Stratton or Delco Remy		
Car lock operates on ignition or ignition and steering	Ignition		
Clock make <i>mechanical or electrical</i>	Borg or New Haven		
Cigar lighter make	Casco or Rochester		
Safety glass make	L.O.F.		
Safety glass type, laminated or tempered	Safety Plate Glass		
In windshield	Laminated		
In side windows	Laminated		
In rear window	Tempered		
Bumper make	Standard Steel Spring Co. or Gordon Mfg. Co.		
Bumper guard make	Brown, Lipe, Chapman		
Car heater make <i>Type</i>			
Direction signal make	Guide Lamp		
Front—yes or no Yes Rear—yes or no Yes			
No. of tail lights included	2		
No. of visors included	2		
No. of horns included	2		
No. of windshield wipers included	2		
No. of spare tires included	1		

Make of Car Buick Model Series 70 Roadmaster Date January 2, 1951

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) (Hip Room)	64.4"
Width of rear seat cushion, measured 5 inches from back (B) (Hip Room)	64.9"
Depth of front seat cushion (C)	17.6"
Depth of rear seat cushion (D)	17.9"
Height of front seat cushion measured 12½ inches from center line of body (E)	12.8"
Front seat horizontal adjustment, inches (F)	4.00"
Front seat vertical adjustment, inches25"
Height of rear cushion measured 12½ inches from center line of body (G)	12.4"
Vertical distance steering wheel and seat cushion (H)	5.0"
Head room at front seat, measured 5 inches from back (I)	37.0"
Head room at rear seat, measured 5 inches from back (J)	36.1"
Leg room in front seat, measured from 6 inches up on toe board, following contour of seat cushion (K)	43.3"
Leg room in rear seat, measured from center of foot rest, following contour of seat cushion (L)	43.0"
Trunk capacity, cubic feet	—
Width of left front pillar on diagonal with door closed	3.06"

