Specifications Form

Passenger Car

1983

METRIC (U.S. Customary)

Manufacturer	Car Line	
PONTIAC MOTOR DIVISION GENERAL MOTORS CORPORATION	GRAND PRIX BONNEVILLE	
Mailing Address	Model Year	Issued:
ONE PONTIAC PLAZA PONTIAC, MICHIGAN 48053	1983	10-15-82 Revised (•)

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NOTE:

1. This form uses both SI metric units and U.S. Customary units. The metric unit of measure is presented first, and the U.S. Customary unit follows in parentheses.
2. UNLESS OTHERWISE INDICATED:
   a. Specifications apply to standard models without optional equipment. Significant deviations are noted.
   b. Nominal design dimensions are used throughout these specifications.
   c. All linear dimensions are in millimeters (inches), and all mass (weight) specifications are in kilograms (pounds).
3. The General Specifications herein are those in effect at date of completion and are subject to change without notice by the manufacturer.
4. Additional Car and Body Dimensions and/or drawings (based in part on SAE J1100a "Motor Vehicle Dimensions") may be available from the manufacturer.

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Car Models

Model Description	Introduction Date	Make, Car Line, Series, Body Type (Mfgr's Model Code)	No. of Designated Seating Positions (Front/Rear)	Max. Truck/Cargo Load—Kilograms (Pounds)
GRAND PRIX (2-DOOR NOTCHBACK COUPE)				
GRAND PRIX	9-23-82	2J37	6 (3/3)	70 (160)
GRAND PRIX LJ	9-23-82	2K37	6 (3/3)	70 (160)
GRAND PRIX BROUGHAM	9-23-82	2P37	6 (3/3)	70 (160)
BONNEVILLE				
4-DOOR SEDAN	9-23-82	2N69	6 (3/3)	70 (160)
4-DOOR WAGON	9-23-82	2N35	6 (3/3)	90 (200)
BONNEVILLE BROUGHAM				
4-DOOR SEDAN	9-23-82	2R69	6 (3/3)	70 (160)

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Power Teams (Indicate whether standard or optional)

SAE Net bhp (brake horsepower) and net torque corrected to 85° F and 29.38 in. Hg atmospheric pressure.

SERIES AVAILABILITY	ENGINE						TRANSMISSION	AXLE RATIO (std. first) (indicate A/C ratio)	
	Displ. Liters (in^3)	Carb. (Barrels, FI, etc.)	Compr. Ratio	SAE Net at RPM kW (bhp)	SAE Net at RPM Torque N - m (lb. ft.)	Exhaust System*		BASE	OPT.
STANDARD									
ALL (EXC. WAGON)	V6 3.8L (231 CID) LD5	2-Bbl.	8.0:1	110 @ 3800	190 @ 1600	S	3A - 250C	2.41 F,C	3.08 C
									3.23 C
							3A - 350C		3.08 F
									3.23 F
WAGON							3A - 250C	2.73 F	
							3A - 350C	2.73 C	3.23 F,C
OPTIONAL									
ALL (EXC. WAGON)	V8 5.0L (305 CID) LG4	4-Bbl.	8.6:1	150 @ 4000	240 @ 2400	S	3A - 250C	2.29 F,C	2.73 F
WAGON							3A - 250C	2.41 F,C	
							3A - 350C		3.08 F,C
OPTIONAL									
ALL	V8 5.7L (350 CID) DIESEL LF9	FI	22.1:1	105 @ 3200	200 @ 1600	S	3A - 350C	2.29 F,C	2.73 F,C

F = Federal
C = California

* S—Single D—Dual

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ENGINE — GENERAL

Type & description (inline, V, angle, flat, location, front, mid, rear, transverse, longitudinal, etc.)		90° Front Longitudinal		
No. of cylinders		6	8	
Bore		96.0 (3.80)	94.92 (3.736)	103.05 (4.057)
Stroke		86.4 (3.40)	88.39 (3.48)	85.98 (3.385)
Bore spacing (c/l to c/l)		107.7 (4.24)	111.8 (4.40)	117.5 (4.625)
Cylinder block material		Cast Alloy Iron		Cast Iron
Cylinder block deck height		242.8 (9.56)	229.2 (9.025)	237.0(9.330 + .005)
Deck clearance (minimum) (above or below block)		1.92 Below	.635 (.025) Below	.46 (.018)Above
Cylinder head material		Cast Alloy Iron		Cast Iron
Cylinder head volume (cm^3)				21.48 (1.311 $in.^3$)
Head gasket thickness (compressed)		.533 (.021)		1.17-1.22 (.046-.048)
Minimum combustion chamber volume (cm^3)		87.6 (5.35)	58.9 (3.39)	33.41 (2.039 $in.^3$)
Cyl. no. system (front to rear)*	L. Bank	1-3-5	1-3-5-7	1-3-5-7
	R. Bank	2-4-6	2-4-6-8	2-4-6-8
Firing order		1-6-5-4-3-2	1-8-4-3-6-5-7-2	1-8-4-3-6-5-7-2
Recommended fuel (leaded, unleaded, diesel)		Unleaded		Diesel Fuel #2 (Above 20°F Diesel Fuel #1 (Below 20°F
Fuel antiknock index $\frac{(R+M)}{2}$		87		
Total dressed engine mass (wt) dry**		207.3 (457.0)	274.3 (605.0)	315.3 (695.1) 328.9(725.1

Engine — Pistons

Material	Cast Aluminum Alloy		
Mass, g (weight, oz.) — Piston Only	502 (17.7)	502 (17.7)	794 (22.51)

Engine — Camshaft

Location		In Block Above Crankshaft		Center
Material (kg., weight, lbs.)		Cast Alloy Iron		Forged Steel
Mass (kg., weight, lbs.)		3.097 (6.83)	3.969 (8.75)	4.950 (10.91)
Type of drive (chain or belt)	Width	22.23 (.875)	15.875 (.625)	
	Pitch	9.53 (.375)	12.7 (.500)	

* Rear of engine — drive takeoff. View from drive takeoff end to determine left & right side of engine.

** Dressed engine mass (weight) includes the following:

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Engine — Valve System

Lifters (std., opt., n.a.)	Hydraulic	Standard
	Solid	—

Engine — Connecting Rods

Material & mass (kg., weight, lbs.)	Cast Arma Steel	1037 or 1038 Steel	.880 (1.940) Steel SAE 1140 Mod.

Engine — Crankshaft

Material (kg., weight, lbs.)	Nodular Cast Iron		
Mass (kg., weight, lbs.)	15.980 (35.23)	23.360 (51.50)	26.333 (58.05)
End thrust taken by bearing (no.)	2	5	3

Engine — Lubrication System

Normal oil pressure (kPa (psi) at engine rpm)	345-448(50-65@2000)	345-448(50-65@2000)	207-310(30-45@1500)
Type oil intake (floating, stationary)	Stationary		
Oil filter system (full flow, part., other)	Full Flow		
Capacity of c/case, less filter-refill-L (qt.)	3.8 (4.0)	4.5 (5.0)	7.1 (7.5)

Engine — Diesel Information

Glow plug, current drain at 0°F			18 Amps
Injector nozzle	Type	Not Applicable	Poppet
	Opening pressure (kPa (psi))		8450+/-690(1225+/-100 PSI)
Pre-chamber design			Side Exit
Fuel injection pump	Manufacturer		Stanadyne
	Type		DB2
Supplementary vacuum source (type)			V-Belt Driven Pump

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Engine — Fuel System (See supplemental page for details of Fuel injection, Supercharger, Turbocharger, etc. if used)

Induction type: carburetor, fuel injection system, etc.			Carburetor		Fuel Injection
Carburetor	Mfgr.		Rochester		—
	Choke (type)		Electric		—
	Idle spd.-rpm (spec. neutral or drive and propane if used)	Manual			
		Automatic			
Idle A/F mix.					
Fuel injection	Point of injection (no.)				Cylinder Head, Pre-Chamber
	Constant, pulse, flow				Pulse
	Control (electronic, mech.)				Mechanical
	System pressure (kPa (psi))				6900KPa+/-690(1000+/-100)
Intake manifold heat control (exhaust or water) thermostatic or fixed			Exhaust		—
Air cleaner type	Standard		Replaceable Paper-Element, Single Snorkel		Oil Wetted Paper Element
	Optional		—		
Fuel pump	Type (elec. or mech.)		Mechanical		
	Location (eng., tank)		Lower Left Front	Lower Right Front	Right Front
	Pressure range (kPa (psi))		29-40 (4.25-5.75)	51.7-62.0 (7.5-9.0)	37.92 - 44.82 (5.5-6.5)

Fuel Tank

Capacity (refill L (gallons))		69.0 (18.1) Exc. LF9 Diesel & SW; 69.3 (18.2)All SW; 75.0 (19.8)	LF9 Diesel
Location (describe)		Rear Center - Underside	Exc. Diesel
Attachment		Two Straps to Underbody	SW
Material		Steel #1008 or #1010 GM-124-M	
Filler pipe	Location & material	Rear Center (Exc. SW), LR Quarter (SW); Steel	
	Connection to tank	Solid Solder	
Fuel line (material)		Steel #1008 or #1010 GM-124-M	
Fuel hose (material)		Rubber - GM 6165 Elastomer	
Return line (material)		Steel #1008 or #1010 GM-124-M	
Vapor line (material)		Steel #1008 or #1010 GM-124-M	
Extended range tank	Opt., n.a.	N/A	
	Capacity (L (gallons))		
	Location & material		
	Attachment		
Auxiliary tank	Opt., n.a.		
	Capacity (L (gallons))		
	Location & material		
	Attachment		
	Selector switch or valve		
	Separate fill		

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Engine — Cooling System

Coolant recovery system (std., opt., n.a.)			Standard		
Coolant fill location (rad., bottle)			Bottle		
Radiator cap relief valve pressure (kPa (psi))			103.4 (15.0)		
Circulation thermostat	Type (choke, bypass)		Choke		Choke
	Starts to open at °C (°F)		91 (195°)		
Water pump	Type (centrifugal, other)		Centrifugal		
	GPM 1000 pump rpm		—	14	22
	Number of pumps		One		
	Drive (V-belt, other)		V-Belt		Serpentine
	Bearing (type)		Sealed, Double Row Ball		Ball
By-pass recirculation (type (inter., ext.))			External	Internal	External
Radiator core (type (cross-flow vertical cellular tube and fin, other) and material)			Crossflow		
Cooling system capacity	With heater—L(qt.)		11.73 (12.40)	15.53 (16.42)	17.46 (18.46)
	With air cond.—L(qt.)		—	15.03 (15.89)	17.42 (18.41)
	Opt. equipment (specify—L(qt.))		—	15.13 (15.99)	17.52 (18.52)
Water jackets full length of cyl. (yes, no)			Yes - H.D. Radiator		
Water all around cylinder (yes, no)			Yes		
Radiator core	Standard	Width	528.3 (20.8)	668.0 (26.3)	
		Height	431.0 (16.97)	429.7 (16.84)	
		Thickness	31.5 (1.24)	25.0 (.98)	40.2 (1.58)
		Fins per inch	1.4	5.6	6.35
	A/C	Width	528.3 (20.8)	668.0 (26.3)	
		Height	431.0 (16.97)	429.7 (16.84)	
		Thickness	31.5 (1.24)	25.0 (.98)	40.2 (1.58)
		Fins per inch	4.5	7.3	8.47
	Heavy duty	Width	528.3 (20.8)	668.0 (26.3)	
		Height	431.0 (16.97)	429.7 (16.84)	
		Thickness	31.5 (1.24)	25.0 (.98)	40.2 (1.58)
		Fins per inch	5.0	7.3	8.47
Fan (standard)	Number of blades & type (flex, solid, material)		5, Staggered	4, Staggered	4, Solid
	Diameter & projected width		508 (20.0)	483 (19.0)	
	Ratio (fan to crankshaft rev.)				
	Fan cutout type		Clutch	None	None
	Drive (type (direct, remote))		V-Belt, One		
	Fan shroud (material)				
Fan (electric)	Diameter & projected width		Not		
	RPM at idle		Available		
	Motor rating (wattage)				
	Motor switch (type & location)				
	Switch point (temp., pressure)				
	Fan shroud (material)				
Fan (optional)	No. of blades and spacing		5, Staggered		
	Diameter & projected width		508 (20.0)		483 (19.0)
	Ratio (fan to crankshaft rev.)				
	Fan cut-out (type)		Clutch		
	Drive (type, direct, remote)		V-Belt, One		

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Vehicle Emission Control

Exhaust Emission Control	Type (air injection, engine modifications, other)		Air Injection With Computer Command Control		N/A
	Air Injection	Pump (type)	Vane		
		Driven by	V-Belt		
		Air distribution (head, manifold, etc.)	Exhaust Pipe		
		Point of entry	Exhaust Pipe		
	Exhaust Gas Recirculation	Type (controlled flow, open orifice, other)	Pulse Width Modulated (#)		Variable Orifice
		Exhaust source	Manifold Exhaust Crossover		Intake Manifold
		Point of exhaust injection (spacer, carburetor, manifold, other)	Intake Manifold		Air Crossover
	Catalytic Converter	Type	Dual Bed, Oxidizing & Reducing (b)		N/A
		Number of	One		
		Location(s)	Beneath RF Underbody		
		Volume [L (in^3)]	4.13 (252)	2.78 (170)	
		Substrate type	Pellets	Monolith (b)	
Crankcase Emission Control	Type (ventilates to atmosphere, induction system, other)		Induction System		
	Energy source (manifold vacuum, carburetor, other)		Manifold Vacuum		
	Discharges (to intake manifold, other)		Intake Manifold		
	Air inlet (breather cap, other)		Carburetor Air Cleaner		Breather Cap
Evaporative Emission Control	Vapor vented to (crankcase, canister, other)	Fuel tank	Canister		N/A
		Carburetor	Canister		
	Vapor Storage provision (crankcase, canister, other)		Canister		

Engine — Exhaust System

Type (single, single with cross-over, dual, other)		Single With Crossover		
Muffler no. & type (reverse flow, straight thru, separate resonator)		One, Reverse Flow		Muffler With Dual Tailpipes
Resonator no. & type		None		
Exhaust pipe	Branch o.d., wall thickness	50.8x.8(2.0x.03)	50.8x1.15(2.0x.045)(a)	50.8x1.07(2.0x.042)
	Main o.d., wall thickness	57.15x1.02(2.25x.040)		63.5x1.07(2.5x.042)
	Material	Laminated SS Steel Outer , Steel Inner*		
Intermediate pipe	o.d. & wall thickness	50.8x1.09(2.0x.043)	57.15x1.06(2.25x.042)	57.15x1.07(2.25x.042)
	Material	Alum. Coated Steel	Laminated Steel Tubing@	
Tail pipe	o.d. & wall thickness	50.8x1.09(2.0x.043)	57.15x1.39(2.25x.055)	44.5x1.4(1.75x.055)
	Material	Aluminum Coated Steel		Aluminized Steel

(#) - LD5 Engine, Controlled Flow; (a) - Right Hand-Left Hand 50.8x1.02 (2.0x.040);
(b) - Single Bed Pellets in California; * - Branch-Main, Stainless Steel Tubings;
@ - Outer Tubing Aluminum Coated

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Electrical — Supply System

Battery	Voltage rtg. (V & total plates)	12 Volts		
	Minimum reserve cranking	75min.(a),90min.(b)	70min.(a),90min.(b)	90min.(a),115min.(b)
	SAE capacity (amps)	315(a),500(b)	355(a),500(b)	500(a),550(b) 2Req.
	Location	Engine Compartment Right Front		Engine Compartment RF & LF
Generator or alternator	Type and rating (c)	56(W/OC60);70(T/WC60)	56(W/OC60);78(T/WC60)	66(W/OC49);78(T/WC49
	Ratio (alt. crank/rev.)	2.73:1		
	Optional (type & rating)	78 & 85		
Regulator	Type	Micro Circuit Unit (Integral With Distributor)		

Electrical — Starting System

Start. motor	Current drain at 0°F			745 Amps*
Motor drive	Engagement type	Positive Shift Solenoid		
	Pinion engages from (front, rear)	Front	Rear	Front

(a) - Standard
(b) - Optional
* - Current Drain for Starting Motor is at -20° F.
(c) - Generators are 12 SI Rated - High Output Lightweight Design on the following:
-56 amp
-66 amp
-70 amp
-78 amp

85 amp generators are 15 SI Rated.

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Electrical — Ignition System					
Type	Conventional (std., opt., n.a.)		—		Not
	Transistorized (std., opt., n.a.)		—		Applicable
	Other (specify)		High Energy Ignition (HEI)		
Coil	Make		Delco Remy		
	Model		Integral With Distributor		
	Current	Engine stopped — A	—		
		Engine idling — A	—		
Spark plug	Make		AC		
	Model		R45TS		
	Thread (mm)		14 x 1.25		
	Tightening torque (N-m (lb. ft.))		9-20 (7-15)		
	Gap		1.143 (.045)		
Distributor	Make		Delco Remy		
	Model		1110584		▼

Electrical — Suppression

Locations & type	Internal alternator capacitor, non-metallic high-tension cables, resistor spark plugs, ignition coil by-pass capacitor, internal AC blower motor by-pass capacitor & A/C compression diode, with radio provisions; hood grounding clip, engine to dash panel ground strap, fuse block capacitor and on "heater only" blower motors and coax capacitor.

Electrical — Instruments and Equipment

Speedometer	Type	Circular Dial With Pointer
	Trip odometer (std., opt., n.a.)	Available On All Models
EGR maintenance indicator		Not Available
Charge indicator	Type	Tell-Tale (a)
	Warning device	Inherent
Temperature indicator	Type	Tell-Tale (a)
	Warning device	Inherent
Oil pressure indicator	Type	Tell-Tale (a)
	Warning device	Inherent
Fuel indicator	Type	Electric Gauge
	Warning device	Inherent
Windshield wiper	Type (standard)	Electric Two-Speed
	Type (optional)	Depressed Park Wiper System - Controlled Cycle
	Blade length	457 (18.0)
	Swept area (cm^2 ($in.^2$))	
Windshield washer	Type (standard)	Push Button
	Type (optional)	Not Available
	Fluid level indicator	Not Available
Horn	Type	Vibrator
	Number used	Dual
Other		Restraint system warning light and buzzer Parking brake and brake failure warning light Optional pkg, includes tachometer, voltmeter, oil pressure and coolant temperature gauges.

(a) - Tell-Tale Standard, Gauge Optional

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Engine Description/Carb. Engine Code	All

Transmissions

Manual 3-speed (std., opt., n.a.)	Not Available
Manual 4-speed (std., opt., n.a.)	
Manual 5-speed (std., opt., n.a.)	
Manual overdrive (std., opt., n.a.)	
Automatic (std., opt., n.a.)	Standard
Automatic overdrive (std., opt., n.a.)	Not Available

Manual Transmission

Number of forward speeds			N/A
Transmission ratios	In first		
	In second		
	In third		
	In fourth		
	In fifth		
	In overdrive		
	In reverse		
Synchronous meshing (specify gears)			
Shift lever location			
Lubricant	Capacity [L (pt.)]		
	Type recommended		
	SAE viscosity number	Summer	
		Winter	
		Extreme cold	

Clutch (Manual Transmission)

Make & type		N/A
Type pressure plate springs		
Total spring load [N (lb.)]		
No. of clutch driven discs		
Clutch facing	Material	
	Manufacturer	
	Part number	
	Rivets/plate	
	Rivet size	
	Outside & inside dia.	
	Total eff. area [cm^2($in.^2$)]	
	Thickness	
	Engagement cushion method	
Release bearing	Type & method of lubrication	
Torsional damping	Method: springs, friction material	

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Engine Description/Carb. Engine Code	All*

* Refer to "Power Teams" - Page 2 - for Transmission/Engine Usage

Automatic Transmission

Trade name		3-Speed Automatic
Type (describe)		Torque Converter With Planetary Gears 250C 350C
Selector	Location	Standard Steering Column
	Ltr./No. designation	P-R-N-D-2-1
Gear ratios	R	1.93
	D	1.00
	L_3	1.52
	L_2	2.52
	L_1	—
Max. upshift speed - drive range (km/h (mph))		—
Max. kickdown speed - drive range (km/h (mph))		—
Min. overdrive speed (km/h (mph))		—
Torque converter	Number of elements	3
	Max. ratio at stall	2.0
	Type of cooling (air, liquid)	Liquid
	Nominal diameter	298 (11.75)
Lubricant	Capacity (refill L (pt.))	2.8 (6.0)
	Type recommended	Dexron II
Special transmission features		Torque Converter Clutch - 3rd Gear Lock-up

Axle or Front Wheel Drive Unit

Type (front, rear)			Rear
Description			Semi-Floating Axle, Overhung Hypoid Drive Pinion and Ring Gear
Limited slip differential (type)			Disc Clutch
Drive pinion offset			38.1 (1.50)
Drive pinion (type)			Hypoid Gear
No. of differential pinions			Two
Pinion adjustment (shim, other)			Shim
Pinion bearing adj. (shim, other)			Collapsible Sleeve
Driving wheel bearing (type)			Direct or Single Row Cylindrical
Lubricant	Capacity (L (pt.))		1.6 (3.5)
	Type recommended		GL5 Gear Lubricant
	SAE viscosity number	Summer	80W or 80W-90
		Winter	80W or 80W-90
		Extreme cold	80W or 80W-90

Axle or Transaxle Ratio and Tooth Combinations (See "Power Teams" for axle ratio usage.)

Axle ratio or overall ratio		2.41	2.73	2.29	3.08	3.23
No. of teeth	Pinion	17	15	21	13	13
	Ring gear or gear	41	41	48	40	42
Ring gear o.d.		191(7.5)	191(7.5)	191(7.5)	191(7.5)	191(7.5)
Transaxle	Transfer gear ratio	—	—	—	—	—
	Final drive ratio	—	—	—	—	—

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METRIC (U.S. Customary)

Car Line GRAND PRIX - BONNEVILLE
Model Year 1983 Issued 10-15-82 Revised (*)

Engine Description/Carb. Engine Code	All

Propeller Shaft — Conventional Drive

Type (straight tube, tube-in-tube, internal-external damper, etc.)			Straight Tube
Outer diam. x length* x wall thickness	Manual 3-speed trans		Not Available
	Manual 4-speed trans.		63.5 x 1331.5 x 1.65
	Manual 5-speed trans.		
	Overdrive		
	Automatic transmission		
Intermediate bearing	Type (plain, anti-friction)		None
	Lubrication (fitting, prepack)		—
Slip yoke	Type		Splined
	Number of teeth		27
	Spline o.d.		29.845
Universal joints	Make and mfg. no.	Front	Saginaw Size 44
		Rear	Saginaw Size 44
	Number used		Two
	Type (ball and trunnion, cross)		Cross
	Rear attach (u-bolt, clamp, etc.)		Strap and Bolt
	Bearing — Type (plain, anti-friction)		Anti-Friction
	Bearing — Lubric. (fitting, prepack)		Prepacked
Drive taken through (torque tube, arms or springs)			Control Arms
Torque taken through (torque tube, arms or springs)			Control Arms

* Centerline to centerline of universal joints, or to centerline of rear attachment.

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Car Line GRAND PRIX - BONNEVILLE
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Engine Description/Carb. Engine Code	All

Tires And Wheels (Standard)

Tires	Size (load range, ply)		195/75R14 B/W
	Type (bias, radial, etc.)		Steel Belted Radial (GP); Fiberglass Belted Radial (Bonneville)
	Inflation pressure (cold) for recommended max. vehicle load	Front [kPa (psi)]	240 KPA (35 PSI)
		Rear [kPa (psi)]	240 KPA (35 PSI)
	Rev./mile—at 70 km/h (45 mph)		817
Wheels	Type & material		Disc, Steel
	Rim (size & flange type)		14 x 6 JJ
	Wheel offset		Zero
	Attachment	Type (bolt or stud)	Stud
		Circle diameter	120.7 (4.75 in)
		Number & size	5 Hex Nuts - M12 x 1.5
Spare	Tire and wheel (same, if other describe)		15 x 4 Compact (W/O G80); 16 x 4 Compact (T/W G80)
	Storage position & location (describe)		Semi-Vertical, Right Rear Trunk Area

Tires And Wheels (Optional)

Size (load range, ply)	205/75R14 (GP & Bonne.)	195/75R14 (Opt. Bonne. Only)
Type (bias, radial, etc.)	Steel Belted Radial	Steel Belted Radial
Wheel (type & material)	Disc, Steel & Styled Steel (N98 Rally II)	
Rim (size, flange type and offset)	14 x 6 JJ, Zero Offset	
Size (load range, ply)	All Available Sizes	
Type (bias, radial, etc.)	Radial	
Wheel (type & material)	Cast Aluminum	
Rim (size, flange type and offset)	14 x 6 JJ, Zero Offset	
Size (load range, ply)	All Available Sizes	
Type (bias, radial, etc.)	Radial	
Wheel (type & material)		
Rim (size, flange type and offset)		
Size (load range, ply)		
Type (bias, radial, etc.)		
Wheel (type & material)		
Rim (size, flange type and offset)		
Spare tire and wheel (if configuration is different than road tire or wheel, describe optional spare tire and/or wheel location & storage position)		

Brakes — Parking

Type of control		Foot Lever Application - Hand Pull Release
Location of control		Below Instrument Panel at Left of Steering Column
Operates on		Rear Service Brakes
If separate from service brakes	Type (internal or external)	Not Separate
	Drum diameter	
	Lining size (length x width x thickness)	

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Body Type And/Or Engine Displacement	All

Brakes — Service

Description				
Brake type (std., opt., n.a.)		Front (disc or drum)		Disc
		Rear (disc or drum)		Drum
Self-adjusting (std., opt., n.a.)				Standard
Special valving	Type (proportion, delay, metering, other)			Combination Valve (Failure Warning) Front - Hold Off; Rear - Proportioning
Power brake (std., opt., n.a.)				Standard
Booster type (remote, integral, vac., hyd., etc.)				Vacuum
Anti-skid device type (std., opt., n.a.)				200x200 mm Delco Moraine (Vacuum Suspended)
Effective area [cm^2 ($in.^2$)] *				615.5 (95.42)
Gross lining area [cm^2 ($in.^2$)] **				691.6 (107.22)
Swept area [cm^2 ($in.^2$)] ***				1985.1 (307.7)
Rotor	Outer working diameter		F	266.7 (10.50)
			R	—
	Inner working diameter		F	171.5 (6.75)
			R	
	Thickness		F	25.4 (1.00)
			R	
	Material & type (vented/solid)		F	Cast Iron Vented
			R	
Drum	Diameter (nominal)		F	
			R	241.3 (9.5)
	Type and material			Composite Aluminum and Cast Iron
Wheel cylinder bore	Front			63.4 (2.50)
	Rear			19.1 (.75)
Master cylinder	Bore			Power: 24mm x 31.8 (.94 x 1.25)
	Stroke			37.05 (1.46)
Pedal arc ratio				3.5:1 Power
Line pressure at 445 N (100 lb.) pedal load [kPa (psi)]				
Lining clearance per shoe	Front			0 - Self Adjusting
	Rear			.015 (Radial) - Self Adjusting
Brake lining	Front wheel	Bonded or riveted (rivets/seg.)		Riveted 8
		Rivet size		5.33 x 7.92 (.210 x .312)
		Manufacturer		Delco Moraine
		Lining code		—
		Material		Semi-Metallic Molded
		Size ****	Primary or out-board	1.25 x 48.4 x 11.04 (4.92 x 1.91 x 4.35)
			Secondary or in-board	Same as Primary
		Shoe thickness (no lining)		Inboard - 15.84(.620); Outboard - 13.97(.550)
	Rear wheel	Bonded or riveted (rivets/seg.)		Riveted - 10 Primary, 12 Secondary
		Manufacturer		Delco Moraine
		Lining code		—
		Material		Molded Asbestos
		Size ****	Primary or out-board	192.5 x 50.8 x 4.98 (7.58 x 2.0 x .196)
			Secondary or in-board	249.6 x 50.8 x 6.75 (9.83 x 2.0 x .266)
		Shoe thickness (no lining)		9.7 (.380)

* Excludes rivet holes, grooves, chamfers, etc.

** Includes rivet holes, grooves, chamfers, etc.

*** Total swept area for four brakes. (Drum brake: Widest lining contact width for each brake x its contact circumference.) (Disc brake: Square of Outer Working Dia. minus Square of Inner Working Dia. multiplied by PI/2 for each brake.)

**** Size for drum brakes includes length x thickness.

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Body Type And/Or Engine Displacement	All

Steering

Manual (std., opt., n.a.)				Not Available		
Power (std., opt., n.a.)				Standard		
Adjustable steering wheel (tilt, swing, other)		Type and description		Steering Shaft Tilts Vertically Near Base of Steering Wheel		
		(Std., opt., n.a.)		Optional		
Wheel diameter		Manual		N/A		
		Power		387.4 (15.25)		
Turning diameter m (ft.)	Outside front	Wall to wall (l. & r.)		12.2 (40.0) Exc. Wagon	13.0 (42.6) Wagon	
		Curb to curb (l. & r.)		11.3 (37.1) Exc. Wagon	12.2 (40.0) Wagon	
	Inside rear	Wall to wall (l. & r.)		—		
		Curb to curb (l. & r.)		—		
Manual	Gear	Type				
		Make				
		Ratios	Gear	Not Available		
			Overall			
	No. wheel turns (stop to stop)					
Power	Type (coaxial, linkage, etc.)			Coaxial		
	Make			Saginaw		
	Gear	Type		Recirculating Ball Bearing		
		Ratios	Gear	16/13:1 (a)	15/13:1 (b)	14:1 (c)
			Overall	17.6:1	16.4:1	15.4/1
	Pump (drive)			V Belt From Crankshaft		
	No. wheel turns (stop to stop)			3.3		
Linkage	Type			Link Parallelogram		
	Location (front or rear of wheels, other)			Front		
	Drag links (trans. or longit.)			Transverse Rod Connects Tie Rods, Pitman & Idler Arms		
	Tie rods (one or two)			Two		
Steering axis	Inclination at camber (deg.)			8° @ 1°		
	Bearings (type)	Upper		Ball Joint		
		Lower		Ball Joint		
		Thrust		Ball Joint		
Steering spindle & joint type				Reverse Elliott - Ball Joint		
Wheel spindle	Diameter	Inner bearing		31.7 (1.25)		
		Outer bearing		21.0471-21.4274 (01.83-.84)		
	Thread (size)			3/4-20 UNEF-3A (Modified)		
	Bearing (type)			Tapered Roller		

(a) - Base
(b) - T/W LF9 Diesel
(c) - T/W Y99 Rally Suspension

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Body Type And/Or Engine Displacement	All

Wheel Alignment

Front wheel at curb mass (wt.)	Service checking	Caster (deg.)	+3° +/- 1.0°
		Camber (deg.)	+.5° +/- .8°
		Toe-in [outside track-mm (in.)]	+.15° +/-.10° Per Wheel
	Service reset*	Caster	+3° +/- .5°
		Camber	+.50° +/- .5°
		Toe-in	+.15° +/- .05° Per Wheel
	Periodic M.V. inspection	Caster	+3° +/- 1.0°
		Camber	+.5° +/- .8°
		Toe-in	+.15° +/- .10° Per Wheel
Rear wheel at curb mass (wt.)	Service checking	Camber (deg.)	
		Toe-in [outside track-mm (in.)]	
	Service reset*	Camber	
		Toe-in	
	Periodic M.V. inspection	Camber	
		Toe-in	

* Indicates pre-set, adjustable, trend set or other.

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Body Type And/Or Engine Displacement	All

Suspension — General

Car leveling	Std./opt./n.a.	Not Available
	Type (air, hyd., etc.)	Springs
	Manual/auto. controlled	
Provision for brake dip control		Compound Anti-Dive Front & Anti-Lift Rear Suspension
Provision for accl. squat control		Geometry of Rear Links
Special provisions for car jacking		Jacking Location Provisions in Front & Rear Bumpers
Shock absorber (front & rear)	Type	Direct, Double-Acting Hydraulic
	Make	Delco
	Piston diameter	25.4 (1.00)
Other special features		Optional: Superlift Rear Shock Absorbers

Suspension — Front

Type and description		Independent SLA With Coil Springs
Travel	Full jounce	109.88mm-Coupe; 120.7mm-Sedan; 118.3mm-SW
	Full rebound	72.1mm-Coupe; 61.2mm-Sedan; 63.5mm-SW
Spring	Type (coil, leaf, other)	Coil
	Material	Steel - SAE 5160
	Size (coil design height & i.d., bar length x dia.)	260 x 102.9 (Various Bar Lengths and Diameters)
	Spring rate [N/mm (lb./in.)]	(a) 58.0 N/mm
	Rate at wheel [N/mm (lb./in.)]	14.5 N/mm
Stabilizer	Type (link, linkless, frameless)	Link
	Material & bar diameter	Steel, 27mm-Coupe,Sedan, 6-Cyl.; 28mm Coupe,Sedan, 8-Cyl. SW 6-Cyl.; 29mm SW 8-Cyl.

Suspension — Rear

Type and description			Four Link Pivoted Control Arms
Drive and torque taken through			Control Arms
Travel	Full jounce		122.6mm-Coupe; 134.9mm-Sedan; 140.2mm-SW
	Full rebound		98.3mm-Coupe; 86.1mm-Sedan; 80.7mm-SW
Spring	Type (coil, leaf, other)		Coil
	Material		Steel - SAE 5160
	Size (length x width, coil design height & i.d., bar length & dia.)		250 x140 (Various Bar Lengths and Diameters)
	Spring rate [N/mm (lb./in.)]		(a) 20.1N/mm-Coupe & Sedan; 21.9N/mm SW
	Rate at wheel [N/mm (lb./in.)]		20.1N/mm-Coupe & Sedan; 21.9N/mm SW
	Mounting insulation (type)		Rubber Insulator at Top
	If leaf	No. of leaves	—
		Shackle (comp. or tens.)	—
Stabilizer	Type (link, linkless, frameless)		Linkless
	Material & bar diameter		None
Track bar (type)			—

(a) For base model. Springs for all models are computer selected for load and rate, according to vehicle weight and optional equipment.

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Car Line GRAND PRIX - BONNEVILLE

Model Year 1983 Issued 10-15-82 Revised (•)

Body Type	All

Body — Miscellaneous Information

Type of finish (lacquer, enamel, other)		Acrylic Lacquer
Hood	Hinge location (front, rear)	Rear
	Type (counterbalance, prop)	Yes
	Release control (internal, external)	Internal
Trunk lid	Type (counterbalance, other)	
	Internal release control (elec., mech., n.a.)	
Bumper front	Bar material & mass (wt.)	
	Reinforcement material & mass (wt.)	
Bumper rear	Bar material & mass (wt.)	
	Reinforcement material & mass (wt.)	
Vent window control (crank, friction, pivot, power)	Front	None
	Rear	None
Seat cushion type	Front	Molded Foam Pad
	Rear	Molded Foam Pad
	3rd seat	—
Seat back type	Front	Molded Foam Pad
	Rear	Molded Foam Pad
	3rd seat	—
Vehicle ident. no. location		Top LH side of instrument panel- visible thru windshield.

Passive Restraint System

Inflatable restraint system	Standard/ optional	
	Type of charging system	
	Location (stg. whl., instru. panel, other)	
Passive seat belts	Standard/ optional	
	Power/ manual	
	2 or 3 point	
	Knee bar/ lap belt	

Frame

Type and description (separate frame, unitized frame, partially-unitized frame)	Separate Frame

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Body Type	Grand Prix	Bonneville

Convenience Equipment

Power windows -	Side windows	Optional	
	Vent windows	N/A	Optional
	Backlight or tailgate	N/A	
Power seats (specify type as well as availability)		Optional - Bucket or 60/40 6-Way Driver Only	Optional - 60/40 Seat Only 6-Way Driver or Driver & Pass.
Reclining front seat back (r-l or both)		R&L Incl. W/Buckets; R Opt.	R Opt.
Radio (specify type as well as availability)		All Radios Optional. AM, AM/FM ST., AM/FM st. W/Cass., AM/FM ETR St. W/S&S & Clock AM/FM ETR St. W/Cass, S&S & Clock	
Premium sound system (specify)		Included With All Stereo Radios	
Rear seat speaker		Optional	
Power antenna		Optional	
Clock		Integral Digital Included With Some Radios. Digital Quartz Option.	
Air conditioner (specify type)		Optional - Manual	
Speed warning device		N/A	
Speed control device		Optional - Includes Resume Feature	
Ignition lock lamp		N/A	
Dome lamp		Std., Dome Reading Lamps Opt.	
Glove compartment lamp		Opt. With Lamp Group	
Luggage compartment lamp		Opt. With Lamp Group	Opt. With Lamp Group;Std. B.B, N/A SW
Underhood lamp		N/A	
Courtesy lamp		Optional	
Map lamp		N/A - Dome Reading Lamps Serve as Map Lamp	
Cornering lamp		Optional	
Rear window defroster electrically heated		Optional	
Rear window defogger		N/A	
T-bar roof (describe)		N/A	
Sun roof (describe)		Opt. - Power Glass	N/A
Theft protection—type		N/A	
Power Door Locks		Optional	
Deck Lid Release		Optional	Optional - N/A SW
Remote Control OSRM		Optional	

FEATURE HIGHLIGHTS

(Manufacturers selected list of special vehicle features; indicate if new or model year introduced)

BODY:

CHASSIS:

ENGINE:

ELECTRICAL:

OTHER:

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Model		Vehicle Mass (weight)							
		CURB MASS, kg. (weight, lb.)*			% PASS. MASS DISTRIBUTION				SHIPPING MASS, kg. (weight, lb.)**
					Pass in Front		Pass in Rear		
		Front	Rear	Total	Front	Rear	Front	Rear	
GRAND PRIX (2-DR. N/B COUPE)									
Grand Prix	J37	836.2	669.7	1505.9	48.6	52.3	19.5	81.5	1463.9
Grand Prix LJ	K37	846.0	664.7	1510.7	48.6	52.3	19.5	81.5	1468.7
Grand Prix Brougham	P37	847.2	682.0	1529.2	48.6	52.3	19.5	81.5	1487.2
BONNEVILLE									
4-Door Sedan	N69	818.9	676.1	1495.1	48.6	52.3	19.5	81.5	1453.0
4-Door Wagon	N35	818.0	755.0	1573.0	48.6	52.3	19.5	81.5	1531.0
BONNEVILLE BROUGHAM									
4-Door Sedan	R69	824.2	682.1	1506.3	48.6	52.3	19.5	81.5	1464.3

* Reference — SAE J1100a, Motor vehicle dimensions, curb weight definition.
** Shipping mass (weight) definition —

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Optional Equipment Differential Mass (weight)*

Equipment	MASS, kg. (weight, lb.)			Remarks
	Front	Rear	Total	
5.0L Engine (LG4)	23.28	-1.48	21.80	
5.7L Diesel Engine (LF9)	115.66	-7.36	108.30	
Power Seats (AC3)	2.69	2.40	5.09	
(Each Seat)				
60/40 Split Seat (AM6)				
Exc. Wagon	2.80	2.60	5.40	
Wagon Only	6.42	5.98	12.40	
Power Door Locks (AU3)				
2-Door	1.00	.90	1.90	
4-Door	1.50	1.40	2.90	
Power Windows (A31)				
2-Door	1.00	1.50	2.50	
4-Door (Exc. SW)	2.40	2.90	5.30	
Station Wagon Only	2.40	2.70	5.10	
Add. Acoustical (BS2)	2.40	3.30	5.70	
Wide B/S Mldg - GP (BX2)	1.30	1.40	2.70	
Full Padded Vinyl Top(CB5)	1.16	2.73	3.89	
Hatch Roof - GP (CC1)	7.40	8.50	15.90	
Elec. Sunroof - GP (CF5)	11.44	13.16	24.60	
Air Conditioning (C60)				
GP + LD5	28.82	-2.62	26.20	
Bonne. + LD5	25.74	-2.34	23.40	
+ LF9	31.90	-2.90	29.00	
+ LG4	29.26	-2.66	26.60	
Front Console - GP (D55)	3.20	3.20	6.40	
Cruise Control (K35)				
Bonne. + LD5 Only	2.30	—	2.30	
Exc. (Bonne. + LD5)	2.50	—	2.50	
Rally II Wheels (N98)	2.90	2.90	5.80	
Roof Rack - SW (V55)	—	5.90	5.90	
Wire Wheel Covers (N91)	3.38	3.38	6.76	
UM6/UN3 Radio	4.62	1.98	6.60	
UM7 Radio	3.78	1.62	5.40	
U58 Radio	3.51	1.29	4.80	

* Also see Engine — General Section for dressed engine mass (weight).

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METRIC (U.S. Customary)

Car and Body Dimensions See Key Sheets for definitions

All dimensions to ground are for comparative purposes only. Dimensions are to be shown for all base body models of each car line.
SAE Ref. no. refers to the definition published in SAE Recommended Practice.
J1100a "Motor Vehicle Dimensions," unless otherwise specified.

Body Type	SAE Ref. No.	BONNEVILLE SEDAN	GRAND PRIX	BONNEVILLE WAGON
Width				
Tread (front)	W101		1486	
Tread (rear)	W102	1467		1474
Vehicle width	W103	1818	1837	1809
Body width at Sg RP (front)	W117	1774	1802	1774
Vehicle width (front doors open)	W120	3376	4056	3376
Vehicle width (rear doors open)	W121	3225	—	3225
Length				
Wheelbase	L101		2745	
Vehicle length	L103	5041	5127	5025
Overhang (front)	L104	1036	1101	1036
Overhang (rear)	L105	1260	1281	1244
Upper structure length	L123	2396	2302	3261
Rear wheel C/L "X" coordinate	L127		2377	
Cowl point "X" coordinate	L125		158	
Height*				
Passenger distribution (frt./rear)	PD1.2.3		2/0	
Trunk/cargo load			—	
Vehicle height	H101	1418	1390	1426
Cowl point to ground	H114	990	981	994
Deck point to ground	H138	987	1011	947
Rocker panel-front to ground	H112	238	228	242
Bottom of door closed-front to grd.	H133	286	282	295
Rocker panel-rear to ground	H111	240	237	251
Bottom of door closed-rear to grd.	H135	286	—	297
Ground Clearance*				
Front bumper to ground	H102	349	301	348
Rear bumper to ground	H104	338	332	351
Bumper to ground (front at curb mass (wt.))	H163	374	326	373
Bumper to ground (rear at curb mass (wt.))	H105	356	350	366
Angle of approach	H106	21.1°	19.4°	21.1°
Angle of departure	H107	10.8°	11.4°	11.4°
Ramp breakover angle	H147	11.4°	10.9°	12.3°
Rear axle differential to ground	H153		176	
Min. running ground clearance	H156	169	161	174
Location of min. run. grd. clear.				

All linear dimensions are in millimeters (inches) and all mass (weight) specifications are in kilograms (pounds).

* All vehicle height and ground clearances are made at the Manufacturer's Design Load Weight, unless otherwise specified. Manufacturers Design Load Weight is defined with indicated passenger distribution and trunk/cargo load.

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METRIC (U.S. Customary)

Car and Body Dimensions See Key Sheets for definitions

Body Type	SAE Ref. No.	BONNEVILLE SEDAN	GRAND PRIX	BONNEVILLE WAGON
Front Compartment				
Sg RP front, "X" coordinate	L31	1088	1088	1088
Effective head room	H61	978	956	985
Max. eff. leg room (accelerator)	L34	1086	1086	1086
Sg RP (front to heel)	H30	228	228	228
Design H-point front travel	L17	172	172	172
Shoulder room	W3	1435	1424	1451
Hip room	W5	1326	1313	1326
Upper body opening to ground	H50	1296	1287	1304
Steering wheel angle	H18	19.5	19.5	19.5
Back angle	L40	26.5	26.5	26.5
Rear Compartment				
Sg RP Point couple distance	L50	827	817	791
Effective head room	H63	954	961	985
Min. effective leg room	L51	965	923	902
Sg RP (second to heel)	H31	298	261	298
Knee clearance	L48	44	53	13
Compartment room	L3	705	678	685
Shoulder room	W4	1450	1419	1450
Hip room	W6	1412	1394	1412
Upper body opening to ground	H51	1292	—	1305
Luggage Compartment				
Usable luggage capacity (L (cu. ft))	V1	469.3	459.4	
Liftover height	H195	801	803	646

All linear dimensions are in millimeters (inches).

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METRIC (U.S. Customary)

Car and Body Dimensions See Key Sheets for definitions

Body Type	SAE Ref. No.	BONNEVILLE WAGON

Station Wagon — Third Seat

Shoulder room	W85	
Hip room	W86	
Effective leg room	L86	
Effective head room	H86	
Effective T-point head room	H89	
Seat facing direction	SD1	

Station Wagon — Cargo Space

Cargo length (open front)	L200	2637
Cargo length (open second)	L201	1837
Cargo length (closed front)	L202	2062
Cargo length (closed second)	L203	1262
Cargo length at belt (front)	L204	1852
Cargo length at belt (second)	L205	1023
Cargo width (wheelhouse)	W201	1108
Rear opening width at floor	W203	1372
Opening width at belt	W204	1312
Max. rear opening width above belt	W205	1006
Cargo height	H201	757
Rear opening height	H202	700
Tailgate to ground height	H250	646
Front seat back to load floor height	H197	
Cargo volume index [m^3($ft.^3$)]	V2	2033 With Rear Seat Down
Hidden cargo volume [m^3($ft.^3$)]	V4	

Hatchback — Cargo Space

Front seat back to load floor height	H197	
Cargo length at front seat back height	L208	
Cargo length at floor (front)	L209	
Cargo volume index [m^3($ft.^3$)]	V3	
Hidden cargo volume [m^3($ft.^3$)]	V4	

A printed or computer tape supplement containing additional car and body dimensions and/or drawings (based in part on SAE J1100a "Motor Vehicle Dimensions") may be available from the manufacturer.

All dimensions are in millimeters (inches).

MVMA Specifications Form
Passenger Car

METRIC (U.S. Customary)

Car and Body Dimensions See Key Sheets for definitions

Car Line GRAND PRIX - BONNEVILLE

Model Year 1983 Issued 10-15-82 Revised (*)

Body Type	All

Vehicle Fiducial Marks

Fiducial Mark Number*	Define Coordinate Location
Front	X - FIDUCIAL MARK TO VERTICAL BASE GRID LINE - FRONT, MEASURED HORIZONTALLY FROM THE BASE GRID LINE TO THE FRONT FIDUCIAL MARK LOCATED ON TOP OF THE FRONT SEAT ADJUSTER MOUNTING BOLT. Y - FIDUCIAL MARK TO CENTERLINE OF CAR - FRONT, WIDTH MEASUREMENT MADE FROM CENTER LINE OF CAR TO FIDUCIAL MARK LOCATED ON TOP OF THE FRONT SEAT ADJUSTER MOUNTING BOLT. Z - FIDUCIAL MARK TO HORIZONTAL BASE GRID LINE - FRONT, MEASURED VERTICALLY FROM BASE GRID LINE TO FRONT FIDUCIAL MARK LOCATED ON TOP OF THE FRONT SEAT ADJUSTER MOUNTING BOLT.
Rear	X - FIDUCIAL MARK TO VERTICAL BASE GRID LINE - REAR, MEASURED HORIZONTALLY FROM BASE GRID LINE TO THE REAR FIDUCIAL MARK LOCATED ON REAR UNDER BODY CROSS BAR. Y - FIDUCIAL MARK TO CENTER LINE OF CAR - REAR, WIDTH MEASUREMENT MADE FROM CENTER LINE OF CAR TO FIDUCIAL MARK LOCATED ON THE REAR UNDER BODY CROSS BAR. Z - FIDUCIAL MARK TO HORIZONTAL BASE GRID LINE - REAR, MEASURED VERTICALLY FROM BASE GRID LINE TO THE REAR FIDUCIAL MARK LOCATED ON REAR UNDER BODY CROSS BAR.

Fiducial Mark Number		BONNEVILLE SEDAN	GRAND PRIX	BONNEVILLE WAGON	
Front	W21		564		
	L54		761		
	H81		490		
	H161	356	349	362	
	H163	334	327	341	
Rear	W22	534	534	560	
	L55	5338	5338	5345	
	H82	617	617	617	
	H162	483	485	497	
	H164	465	467	481	

* Reference — SAE Recommended Practice, J182a, Motor Vehicle Fiducial Marks — September, 1973.
All linear dimensions are in millimeters (inches).

MVMA Specifications Form
Passenger Car

Car Line GRAND PRIX - BONNEVILLE

Model Year 1983 Issued 10-15-82 Revised (*)

METRIC (U.S. Customary)

Car and Body Dimensions See Key Sheets for definitions

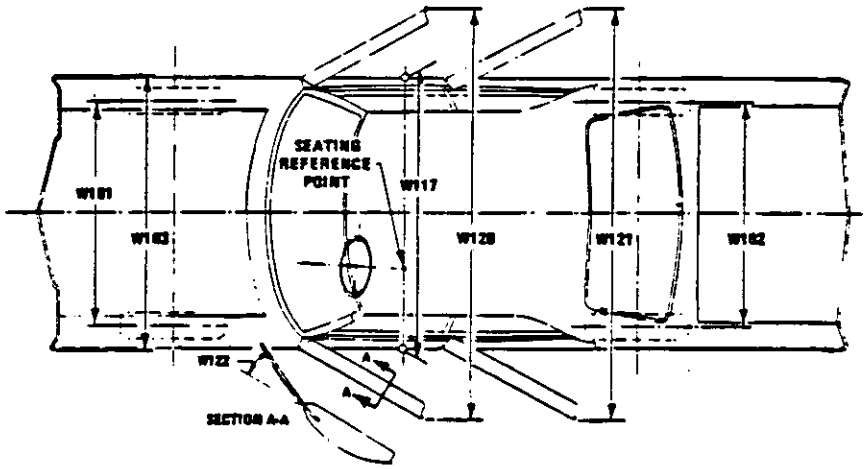
Body Type		SAE Ref. No.	BONNEVILLE SEDAN	GRAND PRIX	BONNEVILLE WAGON
Glass					
Backlight slope angle (deg.)		H121	32.0	33.0	37.5
Windshield slope angle (deg.)		H122	55.0	58.5	55.0
Tumble-Home (deg.)		W122	24.5	23.5	24.5
Windshield glass exposed surface area [cm^2($in.^2$)]		S1	8111	8786	8111
Side glass exposed surface area [cm^2($in.^2$)]		S2	9986	8725	15637
Backlight glass exposed surface area [cm^2($in.^2$)]		S3	3907	4363	4987
Total glass exposed surface area [cm^2($in.^2$)]		S4	22004	21874	28735
Windshield glass (type)			Curved Laminated Plate		
Side glass (type)			Curved Laminated Plate		
Backlight glass (type)			Curved Laminated Plate		
Lamps and Headlamp Shape*					
Height above ground to center of bulb or marker	Headlamp (H127)	Highest**	704	662	704
		Lowest			
	Taillamp (H128)	Highest**	637	745	431
		Lowest			
	Sidemarker	Front	605	514	604
		Rear	610	529	441
Distance from C/L of car to center of bulb	Headlamp	Inside	493	492	493
		Outside**	682	681	682
	Taillamp	Inside	388	664	666
		Outside**	729	745	724
	Directional	Front	494	591	494
		Rear	729	745	577
Headlamp shape			Rectangular		

* Measured at curb mass (weight).
** If single lamps are used enter here.

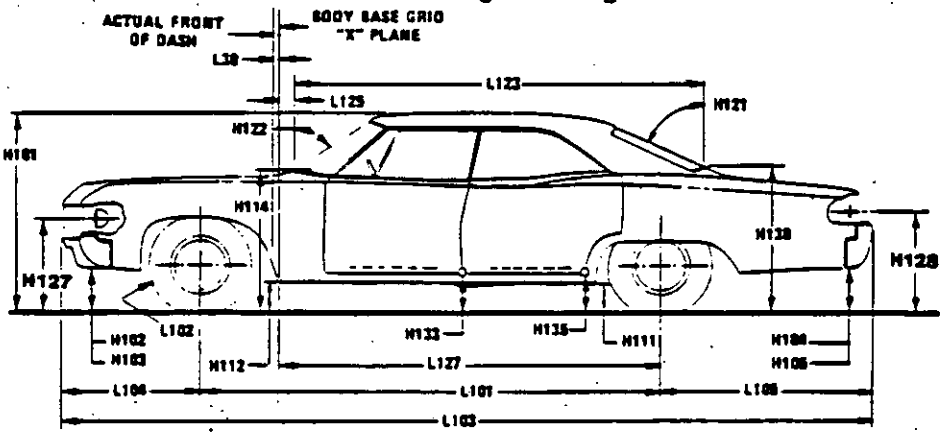
MVMA Specifications Form
Passenger Car
METRIC (U.S. Customary)

Exterior Car And Body Dimensions — Key Sheet

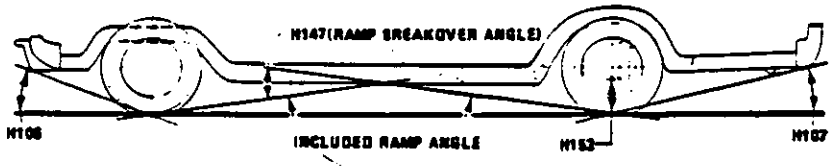
Exterior Width



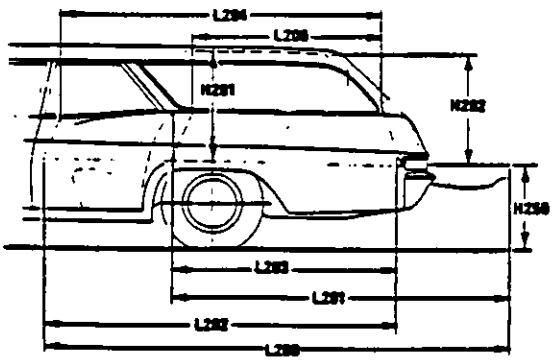
Exterior Length & Height



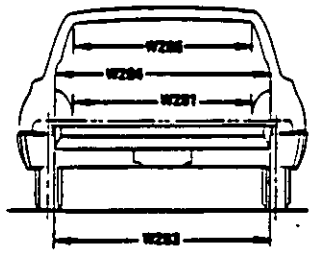
Exterior Ground Clearance

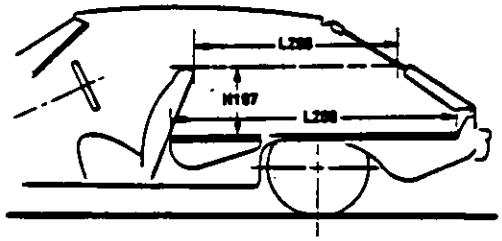


Cargo Space



Station Wagon





Hatchback

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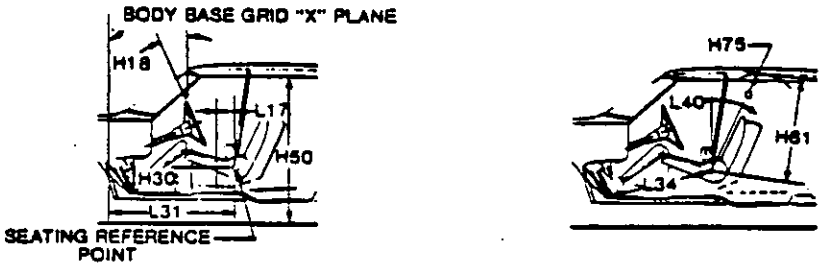
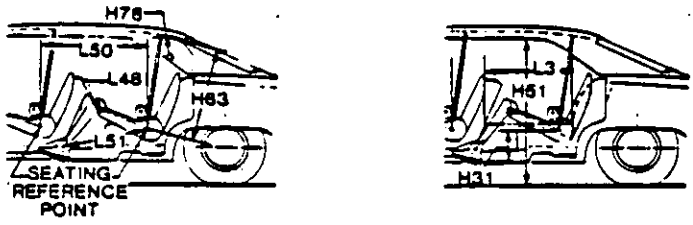
Interior Car And Body Dimensions — Key Sheet

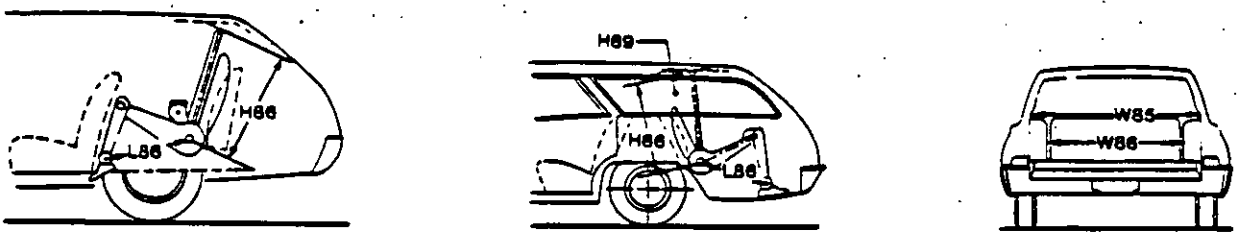
Front Compartment



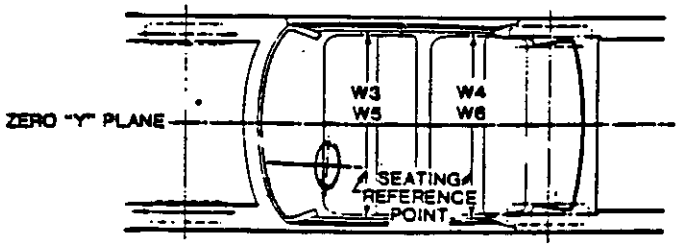
Rear Compartment



Third Seat



Interior Width



MVMA Specifications Form
Passenger Car
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Exterior Car And Body Dimensions — Key Sheet
Dimensions Definitions

Seating Reference Point

SEATING REFERENCE POINT means the manufacturer's design reference point which —
(a) Establishes the rearmost normal design driving or riding position of each designated seating position in a vehicle;
(b) Has coordinates established relative to the design vehicle structure;
(c) Simulates the position of the pivot center of the human torso and thigh; and
(d) Is the reference point employed to position the two dimensional templates described in SAE Recommended Practice J826, "Manikins for Use in Defining Vehicle Seating Accommodations," November 1962.

Width Dimensions

W101 TREAD—FRONT. The dimension measured between the tire centerlines at the ground.

W102 TREAD—REAR. The dimension measured between the tire centerlines at the ground. In case of dual wheels, the dimension will be measured to the centerline of tire and wheel assemblies.

W103 VEHICLE WIDTH. The maximum dimension measured between the widest point on the vehicle, excluding exterior mirrors, flexible mud flaps, marker lamps, but including bumpers, moldings, sheet metal protrusions or dual wheels, if standard equipment.

W117 BODY WIDTH AT SgRP—FRONT. The dimension measured laterally between the widest points on the body at the SgRP-front, excluding door handles, applied moldings, or appliques.

W120 VEHICLE WIDTH—FRONT DOORS OPEN. The dimension measured between the widest point on the front doors in maximum hold-open position.

W121 VEHICLE WIDTH—REAR DOORS OPEN. The dimension measured between the widest point on the rear doors in maximum hold-open position. For vehicles with a rear door on only one side, this dimension is to the zero "Y" plane.

W122 TUMBLE HOME. STRAIGHT SIDE GLASS. The angle measured from a vertical to the outside surface of the front door glass at the SgRP "X" plane.
CURVED SIDE GLASS. The angle measured from a vertical to a chord extending from the upper DLO to the lower DLO at the outside surface of the front door glass at the front SgRP "X" plane.

Length Dimensions

L30 FRONT OF DASH "X" COORDINATE. A minus (-) dimension indicates actual front of dash in forward of the zero "X" plane.

L101 WHEELBASE (WB). The dimension measured longitudinally between front and rear wheel centerlines. In case of dual rear axles, the dimension shall be to the midpoint of the centerlines of the rear wheels.

L102 TIRE SIZE. As specified by the manufacturer.

L103 VEHICLE LENGTH. The maximum dimension measured longitudinally between the foremost point and the rearmost point on the vehicle, including bumper, bumper guards, tow hooks and/or rub strips, if standard equipment.

L104 OVERHANG—FRONT. The dimension measured longitudinally from the centerline of the front wheels to the foremost point on the vehicle including bumper, bumper guards, tow hooks and/or rub strips, if standard equipment.

L105 OVERHANG—REAR. The dimension measured longitudinally from the centerline of the rear wheels; or in the case of dual rear axles, the dimension shall be the midpoint of the centerlines of the rear wheels, to the rearmost point on the vehicle, including rear bumpers, bumper guards, tow hooks and rub strips, if standard equipment.

L123 UPPER STRUCTURE LENGTH. The dimension measured longitudinally from the cowl point to the deck point.

L127 REAR WHEEL CENTERLINE "X" COORDINATE or in the case of dual rear axles, the coordinate shall be in the midpoint of the distance between the rear axle centerlines.

L125 COWL POINT "X" COORDINATE.

Height Dimensions

H101 VEHICLE HEIGHT. The dimension measured vertically from the highest point on the vehicle body to ground.

H114 COWL POINT TO GROUND. Measured at zero "Y" plane.

H138 DECK POINT TO GROUND. Measured at zero "Y" plane.

H112 ROCKER PANEL—FRONT TO GROUND. The dimension measured vertically from the foremost point on the bottom of the rocker panels, excluding flanges, to ground.

H132 BOTTOM OF DOOR OPEN—FRONT TO GROUND. The dimension measured vertically from the bottom outside corner of the door on the lock pillar side, in maximum hold-open position, to ground.

H111 ROCKER PANEL—REAR TO GROUND. The dimension measured vertically from the bottom of the rocker or side quarter panel at the front of the rear wheel opening, excluding flanges, to ground.

H134 BOTTOM OF DOOR OPEN—REAR TO GROUND. The dimension measured vertically from the bottom outside corner of the door on the lock pillar side, in maximum hold-open position, to ground.

H135 BOTTOM OF DOOR CLOSED—REAR TO GROUND. The dimension measured vertically from the bottom outside corner of the door on the lock pillar side, in maximum closed position, to ground.

H121 BACKLIGHT SLOPE ANGLE. The angle between the vertical reference line and the surface of backlight at vehicle zero "Y" plane. For curve backlight, the angle is to chord of backlight arc from lower DLO to upper DLO.

H122 WINDSHIELD SLOPE ANGLE. The angle between the vertical reference line and a chord of the windshield are running from the lower DLO to the upper DLO at the vehicle zero "Y" plane. In the case of wrap over glass, the angle to be measured will be formed by a chord 457 mm (18.0 in.) long drawn from the lower DLO to the intersecting point on the windshield.

H127 HEADLAMP TO GROUND—CURB MASS (WT.). The dimensional measured vertically from the centerline of the lowest headlamp lens to ground.

H128 TAILLAMP TO GROUND—CURB MASS (WT.). The dimension measured vertically from the centerline of the upper bulb to ground.

Ground Clearance Dimensions

H102 FRONT BUMPER TO GROUND. The minimum dimension measured vertically from the lowest point on the front bumper to ground, including bumper guards, if standard equipment.

MVMA Specifications Form
Passenger Car
METRIC (U.S. Customary)

Interior Car And Body Dimensions — Key Sheet
Dimensions Definitions

H103 FRONT BUMPER TO GROUND CURB MASS (WT.). Measured in the same manner as H104.

H104 REAR BUMPER TO GROUND. The minimum dimension measured vertically from the lowest point on the rear bumper to ground, including bumper guards, if standard equipment.

H105 REAR BUMPER TO GROUND—CURB MASS (WT.). Measured in the same manner as H104.

H106 ANGLE OF APPROACH. The angle measured between a line tangent to the front tire static loaded radius are the initial point of structural interference forward of the front tire to ground. The limiting structural component shall be designated.

H107 ANGLE OF DEPARTURE. The angle measured between a line tangent to the rear tire static loaded radius are the initial point of structural interference rearward of the rear tire to ground: The limiting component shall be designated.

H147 REAR BREAKOVER ANGLE. The angle measured between two lines tangent to the front and rear tire static loaded radius and intersecting at a point on the underside of the vehicle which defines the largest ramp over which the vehicle can roll.

H153 REAR AXLE DIFFERENTIAL TO GROUND. The minimum dimension measured from the rear axle differential to ground.

H156 MINIMUM RUNNING GROUND CLEARANCE. The minimum dimension measured from the sprung vehicle to ground. Specify location.

Front Compartment Dimensions

PD1 PASSENGER DISTRIBUTION—FRONT.

L31 SgRP—FRONT "X" COORDINATED.

H61 EFFECTIVE HEAD ROOM—FRONT. The dimension measured along a line 8 deg. rear of vertical from the SgRP—front to the headlining plus 102 mm (4.0 in.).

H75 EFFECTIVE T-POINT HEAD ROOM—FRONT. The minimum radius from the T-point to the headlining plus 762 mm (30 in.).

L34 MAXIMUM EFFECTIVE LEG ROOM—ACCELERATOR. The dimension measured along a line from the ankle pivot center to the SgRP—front plus 254 mm (10.0 in.) measured with right foot on the undepressed accelerator pedal. For vehicles with SgRP to heel (H30) greater than 18 in., the accelerator pedal may be depressed as specified by the manufacturer. If the accelerator is depressed, the manufacturer shall place foot flat on pedal and note the depression of the pedal.

H30 SgRP—FRONT TO HEEL. The dimension measured vertically from the SgRP—front to the accelerator heel point.

L17 DESIGN H-POINT—FRONT TRAVEL. The dimension measured horizontally between the design H-point—front in the foremost and rearmost seat trace positions.

W3 SHOULDER ROOM—FRONT. The minimum dimension measured laterally between the trimmed surfaces on the "X" plane through the SgRP—front within the belt line and 254 mm (10.0 in.) above the SgRP—front.

W5 HIP ROOM—FRONT. The minimum dimension measured laterally between the trimmed surfaces on the "X" plane through the SgRP—front within 25 mm (1.0 in.) below and 76 mm (3.0 in.) above the SgRP—front and 76 mm (3.0 in.) fore and aft the SgRP—front.

H150 UPPER BODY OPENING TO GROUND—FRONT. The dimension measured vertically from the trimmed body opening to the ground on the SgRP—front "X" plane.

H18 STEERING WHEEL ANGLE. The angle measured from a vertical to the surface plane of the steering wheel.

L40 BACK ANGLE—FRONT. The angle measured between a vertical line through the SgRP—front and the torso line. If the seatback is adjustable, use the normal driving and riding position specified by the manufacturer.

Rear Compartment Dimensions

PD2 PASSENGER DISTRIBUTION—SECOND.

L50 SgRP COUBLE DISTANCE. The dimension measured horizontally from the driver SgRP—front to the SgRP—second.

H63 EFFECTIVE HEAD ROOM—SECOND. The dimension measured along a line 8 deg. rear of vertical from the SgRP to the headlining, plus 102 mm (4.0 in.).

H76 EFFECTIVE T-POINT HEAD ROOM—SECOND. Measured in the same manner as H75.

L51 MINIMUM EFFECTIVE LEG ROOM—SECOND. The dimension measured along a line from the ankle pivot center to the SgRP—second plus 254 mm (10.0 in.).

H31 SgRP—SECOND TO HEEL. The dimension measured vertically from the SgRP—second to the two dimensional device heel point on the depressed floor covering.

L48 KNEE CLEARANCE—SECOND. The minimum dimension measured from the knee pivot to the back of front seatback minus 51 mm (2.0 in.).

L3 COMPARTMENT ROOM—SECOND. The dimension measured horizontally from the back of front seat to the front of the second seatback at a height tangent to the top of the second seat cushion.

W4 SHOULDER ROOM—SECOND. The minimum dimension measured laterally between trimmed surfaces on the "X" plane through the SgRP—second within 254-406 mm (10.0-16.0 in.) above the SgRP—second.

W6 HIP ROOM—SECOND. Measured in the same manner as W5.

H51 UPPER BODY OPENING TO GROUND—SECOND. The dimension measured vertically from the trimmed body opening to the ground on the "X" plane 330 mm (13.0 in.) forward of the SgRP—second.

Luggage Compartment Dimensions

V1 USABLE LUGGAGE CAPACITY—Total of volumes of individual pieces of standard luggage set plus H-boxes stowed in the luggage compartment in accordance with the procedure described in paragraph 8.2 of SAE-J1100a.

H195 LIFTOVER HEIGHT. The dimension measured vertically from the luggage compartment lower opening at the zero "Y" plane to ground.

Station Wagon — Third Seat Dimensions

PD3 PASSENGER DIRECTION—THIRD.

W85 SHOULDER ROOM—THIRD. Measured in the same manner as W5.

W86 HIP ROOM— THIRD. Measured in the same manner as W5.

L86 EFFECTIVE LEG ROOM—THIRD. The dimension measured along a line from the ankle pivot center to the SgRP—third plus 254 mm (10.0 in.).

H86 EFFECTIVE HEAD ROOM—THIRD. The dimension measured along a line 8 deg. from the SgRP—third to the headlining rear of vertical plus a constant of 102 mm (4.0 in.).

H89 EFFECTIVE T-POINT HEAD ROOM—THIRD. Measured in the same manner as H75.

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Interior Car And Body Dimensions — Key Sheet
Dimensions Definitions

Station Wagon — Cargo Space Dimensions

L200 CARGO LENGTH—OPEN—FRONT. The minimum dimension measured longitudinally from the back of the front seatback at the height of the undepressed floor covering to the rearmost point on the undepressed floor covering on the open tailgate or cargo surface if the rear closure is a conventional door type tailgate, at the zero "Y" plane.

L201 CARGO LENGTH—OPEN—SECOND. The dimension measured longitudinally from the back of the second seatback at the height of the undepressed floor covering on the open tailgate or cargo floor surface if the rear closure is a conventional door type tailgate, at the zero "Y" plane.

L202 CARGO LENGTH—CLOSED—FRONT. The minimum dimension measured horizontally from the back of the front seat at the height of the undepressed floor covering to the rearmost point on the undepressed floor covering on the closed tailgate or taildoor for station wagons, trucks and mpv's at the zero "Y" plane.

L203 CARGO LENGTH—CLOSED—SECOND. The dimension measured horizontally from the back of the second seat at the height of the undepressed floor covering to the rearmost point on the undepressed floor covering on the closed tailgate or taildoor for station wagons, trucks and mpv's at the zero "Y" plane.

L204 CARGO LENGTH AT BELT—FRONT. The minimum dimension measured horizontally from the back of the front seatback at the seatback top to the foremost normal surface of the closed tailgate or inside surface of the cab back panel at the height of the belt, on the zero "Y" plane.

L205 CARGO LENGTH AT BELT—SECOND. The minimum dimension measured horizontally from the back of the second seatback at the seatback top to the foremost normal surface of the closed tailgate at the height of the belt, on the zero "Y" plane.

W201 CARGO WIDTH—WHEELHOUSE. The minimum dimension measured laterally between the trimmed wheelhousings at floor level. For any vehicle not trimmed, measure the sheet metal.

W203 REAR OPENING WIDTH AT FLOOR. The minimum dimension measured laterally between the limiting interferences of the rear opening at floor level.

W204 REAR OPENING WIDTH AT BELT. The minimum dimension measured laterally between the limiting interferences of the rear opening at belt height or top of pick up box.

W205 REAR OPENING WIDTH ABOVE BELT. The minimum dimension measured laterally between the limiting interferences of the rear opening above the belt height.

H201 CARGO HEIGHT. The dimension measured vertically from the top of the undepressed floor covering to the headlining at the rear wheel "X" coordinated on the zero "Y" plane.

H202 REAR OPENING HEIGHT. The dimension measured vertically from the top of the undepressed floor covering to the upper trimmed opening on the zero "Y" plane with rear door fully open.

H250 TAILGATE TO GROUND (CURB MASS WT.). The dimension measured vertically from the top of the undepressed floor covering on the lowered tailgate to ground on the zero "Y" plane.

V2 STATION WAGON

Measured in inches:

$$\frac{W4 \times H201 \times L204}{1728} = ft.^3$$

Measured in mm:

$$\frac{W4 \times H201 \times L204}{10^9} = m^3 \text{(cubic meter)}$$

V4 HIDDEN CARGO VOLUME. As specified by the manufacturer.

Hatchback — Cargo Space Dimensions

All hatchback cargo dimensions are to be taken with the front seat in full down and rear position, and the rear seat folded down. The hatchback door is in the closed position. (For electrically adjusted seats, see the manufacturer's specifications for Design "H" Point).

H197 FRONT SEATBACK TO LOAD HEIGHT. The dimension measured vertically from the horizontal tangent to the top of the seatback to the undepressed floor covering.

L208 CARGO LENGTH AT FRONT SEATBACK HEIGHT. The minimum horizontal dimension from the "X" plane tangent to the rearmost surface of the driver's seatback to the inside limiting interference of the hatchback door on the vehicle zero "Y" plane.

L209 CARGO LENGTH AT FLOOR—FRONT—HATCHBACK. The minimum horizontal dimension measured at floor level from the rear of the front seatback to the normal limiting interference of the hatchback door on the vehicle zero "Y" plane.

V3 HATCHBACK.

Measured in inches:

$$\frac{\frac{L208 + L209}{2} \times W4 \times H197}{1728} = ft.^3$$

Measured in mm:

$$\frac{\frac{L208 + L209}{2} \times W4 \times H197}{10^9} = m^3 \text{(cubic meter)}$$

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