ORIGINAL

MANUFACTURERS MOTOR VEHICLE SPECIFICATIONS

METRIC (U.S. Customary)

B (10)

1988

Manufacturer	Chevrolet Motor Division General Motors Corporation	Vehicle Line	BERETTA
Mailing Address	Chevrolet-Pontiac-Canada Group Engineering Center General Motors Corporation 30003 Van Dyke Warren, MI 48090-9060	Issued	October, 1986
		Revised	September, 1987

Direct questions concerning these specifications to the manufacturer listed above.

The information contained herein is prepared, distributed by, and is solely the responsibility of the vehicle manufacturing company to whose products it relates. This specification form was developed by the vehicle manufacturing companies under the auspices of the Motor Vehicle Manufacturers Association of the United States, Inc.

The General Specifications herein are those in effect at date of compilation and are subject to change without notice or incurring obligation by the manufacturer.

mvma
Motor Vehicle Manufacturers Association
of the United States, Inc.

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MVMA Specifications Form

METRIC (U.S. Customary)

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Ø **Indicates Format Change From Previous Year**

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 compilation and are subject to change without notice or incurring obligation by the manufacturer.
4. Additional Vehicle Dimensions (based in part on SAE J1100 "Motor Vehicle Dimensions") may be available from the manufacturer.

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METRIC (U.S. Customary)

Vehicle Line BERETTA
Model Year 1988 Issued 10-86 Revised (•) 3-87

Vehicle Models

Model Description & Drive (FWD/RWD)	Introduction Date	Make, Vehicle Models, Series, Body Type (Mfgr's Model Code)	No. of Designated Seating Positions (Front/Rear).	Max. Trunk/Cargo Load–Kilograms (Pounds)
FRONT WHEEL DRIVE		MODEL NUMBER	FRONT/REAR	
BERETTA				
2-Door Notchback Coupe		1LV37	2/3	

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Power Teams (Indicate whether standard or optional)
SAE J1349 Net bhp (brake horsepower) and net torque corrected to 77°F/25° C and 29.61 in. Hg/100 kPa atmospheric pressure.

SERIES AVAILABILITY	ENGINE					Exhaust S/D	TRANSMISSION/ TRANSAXLE	Drive Ratios (:1) Axle Ratio			
	Displ. Liters (in³)	Carb. (Barrels, FI, etc.)	Compr. Ratio	SAE Net at RPM				Overall Veh.		Overall Veh.	
				Power kW (bhp)	Torque N·m (lb. ft.)			Base	Drive	Opt.	Drive
Base - All States	L-4 2.0Liter + (121 CID) LL8	EFI	9.0:1	(90 @ 5600)	(108 @ 3200)	S	Man 5-Speed 3.73 Low Base (MR3)	3.83	2.83	--	--
							Auto '125c' Avail (MD9)	3.18	3.18$	--	--
Opt. - All States	V6 2.8Liter % (173 CID) LB6	MFI	8.9:1	(130 @ 4700)	(160 @ 3600)	S	Man 5-Speed 3.50 Low Opt. (MG2)	3.61	2.60	--	--
							Auto '125c' Avail. (MD9)	3.18$	3.18	--	--

\+ - Electronic Fuel Injection
% - (2.8 Multi-Port FI)
$ - Axle Ratio = Chain Drive x Differential Drive Ratio

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Vehicle Line BERETTA
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METRIC (U.S. Customary)

Engine Description/Carb. Engine Code	2.0 Liter L-4 (121 CID) Electronic Fuel Injection RPO LL8	2.8 Liter V6 (173 CID) (2.8 Multi-Port FI) RPO LB6

ENGINE – GENERAL

Type & description (inline, V, angle, flat, location, front, mid, rear, transverse, longitudinal, sohc, dohc, ohv, hemi, wedge, pre-camber, etc.)		In line Front Transverse, front of engine faces right side of vehicle	
Manufacturer		Chevrolet	
No. of cylinders		4	6
Bore		89 (3.50)	89 (3.50)
Stroke		80 (3.15)	76 (2.99)
Bore spacing (C / L to C / L)		99 (3.90)	111.8 (4.40)
Cylinder block material & mass kg (lbs.) (machined)		Cast Iron/32.050 (70.7)	Cast Iron/48.2 (106.3)
Cylinder block deck height		215.55 (8.49)	224 (8.819)
Cylinder block length		443 (17.4)	435.5 (17.1)
Deck clearance (minimum) (above or below block)		0.15 (.006) below	0.15 (.006) above
Cylinder head material & mass kg (lbs.)		Aluminum 9.740 (21.5)	Aluminum 5.300 (11.7)
Cylinder head volume (cm^3)		43.3	28.0
Cylinder liner material		Not Available	
Head gasket thickness (compressed)		1.1 (.043)	1.50 (.059)
Minimum combustion chamber total volume (cm^3)		59.988 (3.66)@	59.8481 (3.6515)@
Cyl. no. system (front to rear)*	L. Bank	1-2-3-4	2-4-6
	R. Bank	--	1-3-5
Firing order		1-3-4-2	1-2-3-4-5-6 /2.675 (5.9) Ctr
Intake manifold material & mass [kg (lbs.)]**		Aluminum Cast/3.870 (8.5)	Aluminum Cast/3.810 (8.4) Lwr
Exhaust manifold material & mass [kg (lbs.)]**		Stamped Steel/2.585 (5.7)	Steel/2.200 (4.9) L.H. 2.615 (5.8) R.H.
Recommended fuel (leaded, unleaded, diesel)		Unleaded	
Fuel antiknock index (R + M) / 2		87	
Total dressed engine mass (wt) dry***		146.8 (323.6) Auto 162.4 (358.0) Man	199.7 (440.3) Auto 215.0 (474.0) Man

Engine – Pistons

Material & mass, g (weight, oz.) - piston only	Aluminum alloy 350 (12.3)	Aluminum Alloy

Engine – Camshaft

Location		In cylinder block, right side	In block above crankshaft
Material & mass kg (weight, lbs.)		Cast Iron 3.065 (6.8)	Cast Iron/3.098 (6.83)
Drive type	Chain / belt	Chain	Chain
	Width / pitch	19.3 (0.76)/9.53 (0.38)	15.47 (.625)/9.53 (.375)

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

** Finished state.

*** Dressed engine mass (weight) includes the following: All those items necessary to make the engine a complete ready-to-run unit.

@ - Piston at TDC, spark plug and valves in place, and cylinder head torqued to specifications.

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Vehicle Line BERETTA
Model Year 1988 Issued 10-86 Revised (e) 3-87

METRIC (U.S. Customary)

Engine Description/Carb. Engine Code	2.0 Liter L-4 (121 CID) Electronic Fuel Injection RPO LL8	2.8 Liter V6 (173 CID) (2.8 Multi-Port FI) RPO LB6

Engine – Valve System

Hydraulic lifters (std., opt., NA)		Standard	
Valves	Number intake / exhaust	4/4	6/6
	Head O.D. intake / exhaust	43.00 (1.69)/37.00 (1.46)	43.64 (1.72)/36.20 (1.43)

Engine – Connecting Rods

Material & mass [kg., (weight, lbs.)]*	Cast Steel, .373 (.820)	Cast Steel, .399 (0.880)

Engine – Crankshaft

Material & mass [kg., (weight, lbs.)]*		Nod. Cast Iron/13.360(29.5)	Nod. Cast Iron/14.170(31.2)
End thrust taken by bearing (no.)		5	3
Length & number of main bearings		5	4
Seal (material, one, two piece design, etc.)	Front	Silicon, one	Viton/one piece
	Rear	Silicon, one	Viton/one piece

Engine – Lubrication System

Normal oil pressure [kPa (psi) at engine rpm]	435-530 (63-77) @ 1200	345-450 (50-65) @ 1200
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)	3.8 (4.0)

Engine – Diesel Information

Diesel engine manufacturer		
Glow plug, current drain at 0°F		
Injector nozzle	Type	Not
	Opening pressure [kPa (psi)]	Applicable
Pre-chamber design		
Fuel injection pump	Manufacturer	
	Type	
Fuel injection pump drive (belt, chain, gear)		
Supplementary vacuum source (type)		
Fuel heater (yes/no)		
Water separator, description (std., opt.)		
Turbo manufacturer		
Oil cooler-type (oil to engine coolant; oil to ambient air)		
Oil filter		

Engine – Intake System

Turbo charger - manufacturer	Not
Super charger - manufacturer	Applicable
Charge cooler	

*Finished State

∅ **1988 Format Change**

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Model Year 1988 Issued 10-86 Revised (•) 3-87

Engine Description/Carb.
Engine Code

2.0 Liter L4 (121 CID)
Electronic Fuel Injection
RPO LL8

Engine – Cooling System

Coolant recovery system (std., opt., n.a.)		Standard							
Coolant fill location (rad., bottle)		Bottle, coolant recovery							
Radiator cap relief valve pressure [kPa (psi)]		103.4 (15)							
Circulation thermostat	Type (choke, bypass)	Choke							
	Starts to open at °C (°F)	91 (195°F)							
Water pump	Type (centrifugal, other)	Centrifugal, with aluminum die cast body							
	GPM 1000 pump rpm	7.3 @ 1000 pump RPM							
	Number of pumps	One							
	Drive (V-belt, other)	V-belt							
	Bearing type	Sealed, ball-roller							
	Impeller material	Cast Iron							
	Housing material	Aluminum							
By-pass recirculation [type (inter,. ext.)]		Internal							
Cooling system capacity	With heater–L(qt.)	8.19 (8.6) Auto, 8.29 (8.8) Man							
	With air cond.–L(qt.)	8.23 (8.7) Auto, 8.33 (8.8) Man							
	Opt. equipment (specify–L(qt.))	8.37 (8.8) Auto, *.37 (8.8) Man							
Water jackets full length of cyl. (yes, no)		Yes							
Water all around cylinder (yes, no)		Yes							
Water jackets open at head face (yes, no)		No							
Radiator core	Std., A/C, HD	Auto Std.	Auto A/C	Auto HD	Auto AC&HD	Man Std	Man A/C	Man HD	Man AC
	Type (cross-flow, etc.)	Cross-flow							
	Construction (fin & tube mechanical, braze, etc.)	High Efficiency Radiator							
	Material, mass [kg (wgt. lbs.)]	Aluminum							
	Width	499.5	659.5	499.5	659.5	499.5	659.5	499.5	659.5
	Height	382.4	382.4	382.4	382.4	382.4	382.4	382.4	382.4
	Thickness	23.5	34.0	23.5	34.0	23.5	34.0	23.5	34.0
	Fins per inch	3.5*	3.5*	3.5*	3.5*	3.5*	3.5*	3.5*	3.5*
Radiator end tank material		Plastic							
Fan	Std., elec., opt.	Electric							
	Number of blades & type (flex, solid, material)	Std. - 5 flex, plastic (opt. - 7, flex, plastic)							
	Diameter & projected width	Std. - 293.87 (11.57), opt. 360.0 (14.2)							
	Ratio (fan to crankshaft rev.)	Not Applicable							
	Fan cutout type	ECM controlled							
	Drive type (direct, remote)	Direct							
	RPM at idle (elec.)	22000-2400 (constant)							
	Motor rating (wattage) (elec.)	96							
	Motor switch (type & location) (elec.)	Coolant switch, engine cylinder head							
	Switch point (temp., pressure) (elec.)	110°F							
	Fan shroud (material)	Plastic							

* - Distance between top of fins.

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Model Year 1988 Issued 10-86 Revised (•) 9-87

METRIC (U.S. Customary)

Engine Description/Carb.
Engine Code

2.8 Liter L4 (121 CID)
(2.8 Multi-Port FI)
RPO LB6

Engine – Cooling System

Coolant recovery system (std., opt., n.a.)			Standard						
Coolant fill location (rad., bottle)			Bottle, coolant recovery						
Radiator cap relief valve pressure [kPa (psi)]			103.4 (15)						
Circulation thermostat	Type (choke, bypass)		Bypass						
	Starts to open at °C (°F)		91 (195°F)						
Water pump	Type (centrifugal, other)		Centrifugal, with aluminum die cast body						
	GPM 1000 pump rpm		--						
	Number of pumps		One						
	Drive (V-belt, other)		Serpentine						
	Bearing type		Sealed, ball-roller						
	Impeller material		Cast Iron						
	Housing material		Aluminum						
By-pass recirculation [type (inter., ext.)]			Internal						
Cooling system capacity	With heater–L(qt.)		10.71 (11.3) Auto, 10.75 (11.4) Man						
	With air cond.–L(qt.)		10.67 (11.3) Auto, 10.71 (11.3) Man						
	Opt. equipment [specify–L(qt.)]		10.71 (11.3) Auto, 10.71 (11.3) Man						
Water jackets full length of cyl. (yes, no)			Yes						
Water all around cylinder (yes, no)			Yes						
Water jackets open at head face (yes, no)			--						
Radiator core	Std., A/C, HD	Auto Std.	Auto A/C	Auto HD	Auto AC&HD	Man Std	Man A/C	Man HD	Man AC&
	Type (cross-flow, etc.)		Cross-flow						
	Construction (fin & tube mechanical, braze, etc.)		High Efficiency Radiator						
	Material, mass [kg (wgt. lbs.)]		Aluminum						
	Width	499.5	659.5	499.5	659.5	499.5	659.5	499.5	659.5
	Height	382.4	382.4	382.4	382.4	382.4	382.4	382.4	382.4
	Thickness	23.5	34.0	23.5	34.0	23.5	34.0	23.5	34.0
	Fins per inch	3.5*	3.5*	3.5*	3.5*	3.5*	3.5*	3.5*	3.5*
Radiator end tank material			Plastic						
Fan	Std., elec., opt.		Electric						
	Number of blades & type (flex, solid, material)		Std. - 7 flex, plastic (opt. same - 7, flex, plastic)						
	Diameter & projected width		Std. and opt. same - 360.0 (14.2)						
	Ratio (fan to crankshaft rev.)		Not Applicable						
	Fan cutout type		ECM controlled						
	Drive type (direct, remote)		Direct						
	RPM at idle (elec.)		1800						
	Motor rating (wattage) (elec.)		140-150						
	Motor switch (type & location) (elec.)		Coolant switch, engine cylinder head						
	Switch point (temp., pressure) (elec.)		110°F						
	Fan shroud (material)		Plastic						

* - Distance between top of fins.

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Vehicle Line BERETTA
Model Year 1988 Issued 10-86 Revised (•) 6-87

Engine Description/Carb. Engine Code	2.0 Liter L-4 (121 CID) Electronic Fuel Injection RPO LL8

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

Induction type: carburetor, fuel injection system, etc.			Fuel Injection CCC controlled
Manufacturer			Rochester Products
Carburetor	Choke (type)		None
	Idle spd.-rpm (spec. neutral or drive and propane if used)	Manual	Not Applicable
			Not Applicable
		Automatic	Not Applicable
			Not Applicable
Idle A/F mix.			Preset - no adjustment provided
Fuel injection	Point of injection (no.)		Throttle body
	Constant, pulse, flow		Pulse
	Control (electronic, mech.)		Electronic
	System pressure [kPa (psi)]		68.95-82.74 (10-12)
Intake manifold heat control (exhaust or water thermostatic or fixed)			Water
Air cleaner type	Standard		Replaceable paper element single snorkel
	Optional		None
Fuel pump	Type (elec. or mech.)		Electric
	Location (eng., tank)		Tank
	Pressure range [kPa (psi)]		Not Applicable

Fuel Tank

Capacity [refill L (gallons)]		51.5 (13.6)
Location (describe)		Underbody - rear center
Attachment		Underbody strap
Material & Mass [kg (weight lbs)]		Steel 8.732 (19.3)
Filler pipe	Location & material	R.H. rear quarter
	Connection to tank	Solid soler
Fuel line (material)		Steel
Fuel hose (material)		Rubber
Return line (material)		Steel
Vapor line (material)		Steel
Extended range tank	Opt., n.a.	Not Available
	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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Vehicle Line BERETTA
Model Year 1988 Issued 10-86 Revised (•) 6-87

METRIC (U.S. Customary)

Engine Description/Carb. Engine Code: 2.8 Liter V6 (173 CID) (2.8 Multi-Port FI) RPO LB6

Engine – Fuel System

(See supplemental page for details of Fuel Injection, Supercharger, Turbocharger, etc. if used)

Induction type: carburetor, fuel injection system, etc.			Multi-Port Fuel Injection
Manufacturer			Rochester Products
Carburetor	Choke (type)		None
	Idle spd.-rpm (spec. neutral or drive and propane if used)	Manual	Not Applicable
			Not Applicable
		Automatic	Not Applicable
			Not Applicable
Idle A/F mix.			Preset - no adjustment provided
Fuel injection	Point of injection (no.)		Fuel Injectors at inlet ports
	Constant, pulse, flow		Pulse
	Control (electronic, mech.)		Electronic
	System pressure [kPa (psi)]		Not Available
Intake manifold heat control (exhaust or water thermostatic or fixed)			Water
Air cleaner type	Standard		Replaceable paper element single snorkel
	Optional		None
Fuel pump	Type (elec. or mech.)		Electric
	Location (eng., tank)		Tank
	Pressure range [kPa (psi)]		Not Applicable

Fuel Tank

Capacity [refill L (gallons)]		51.5 (13.6)
Location (describe)		Underbody - rear center
Attachment		Underbody strap
Material & Mass [kg (weight lbs)]		Steel 8.732 (19.3)
Filler pipe	Location & material	R.H. rear quarter
	Connection to tank	Solid soler
Fuel line (material)		Steel
Fuel hose (material)		Rubber
Return line (material)		Steel
Vapor line (material)		Steel
Extended range tank	Opt., n.a.	Not Available
	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 Description/Carb. Engine Code	2.0 Liter L-4 (121 CID) Electronic Fuel Injection RPO LL8	2.8 Liter V6 (173 CID) 2.8 Multi-Port FI RPO LB6

Vehicle Emission Control

Exhaust Emission Control	Type (air injection, engine modifications, other)		CCC control with fuel injection	
	Air Injection	Pump or pulse	None	None
		Driven by		None
		Air distribution (head, manifold, etc.)		None
		Point of entry		None
	Exhaust Gas Recirculation	Type (controlled flow, open orifice, other)	Controlled flow	Not available
		Exhaust source	Exhaust manifold	Not available
		Point of exhaust injection (spacer, carburetor, manifold, other)	Inlet manifold	Not available
	Catalytic Converter	Type	Single bed, oxidizing & reducing	
		Number of	One	
		Location(s)	Mounted to center underbody	
		Volume [L (in^3)]	2.78 (170)	
		Substrate type	Monolith	
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)		Air cleaner	
Evaporative Emission Control	Vapor vented to (crankcase, canister, other)	Fuel tank	Canister	
		Carburetor	--	
	Vapor storage provision		Canister	
Electronic system	Closed loop (yes no)		Yes	
	Open loop (yes no)		No	

Engine – Exhaust System

Type (single, single with cross-over, dual, other)		Single (with dual tailpipes 2-doors only)	
Muffler no. & type (reverse flow, straight thru, separate resonator) Material & Mass [kg (weight lbs)]		One, reverse flow	
Resonator no. & type		None	
Exhaust pipe	Branch o.d., wall thickness	--	
	Main o.d., wall thickness	50.8 x 0.94 (2.0 x .037)*	50.8 x 0.94 (2.0 x .037)
	Material & Mass [kg (weight lbs)]	*	
Intermediate pipe	o.d. & wall thickness	50.8 x 1.09 (2.0 x .043)	
	Material & Mass [kg (weight lbs)]	Aluminum coated steel	
Tail pipe	o.d. & wall thickness	50.8 x 1.09 (2.0 x .043)	50.8 x 1.09 (2.0 x .043)
	Material & Mass [kg (weight lbs)]	Aluminum coated steel	

* - Laminated tubing - steel inner, stainless steel outer.
** - Purchased as unit: 9.000 (19.8)

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Model Year 1988 Issued 10-86 Revised (e) 3-87

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Engine Description/Carb. Engine Code	2.0 Liter L4 (121 CID) Electronic Fuel Injection RPO LL8

Transmissions/Transaxle (Std., Opt., N.A.)

Manual 3-speed (manufacturer/country)	Not Available
Manual 4-speed (manufacturer/country)	" "
Manual 5-speed (manufacturer/country)	Standard
Automatic (manufacturer/country)	Optional
Automatic overdrive (manufacturer/country)	Not Available

Manual Transmission/Transaxle

Number of forward speeds		5
Gear ratios	1st	3.73
	2nd	2.15
	3rd	1.33
	4th	0.92
	5th	0.74
	Reverse	3.50
Synchronous meshing (specify gears)		All forward gears
Shift lever location		Floor
Trans. case mat'l. & mass kg (lbs)*		Aluminum
Lubricant	Capacity [L (pt.)]	5-speed 2.55L (5.36 pts.)
	Type recommended	SAE 5W-30 Engine oil SF, SF/CC OR SF/CD

Clutch (Manual Transmission)

Clutch manufacturer		Isuzu
Clutch type (dry, wet; single, multiple disc)		Dry disc
Linkage (hydraulic, cable, rod, lever, other)		Hydraulic
Max. pedal effort (nom. spring load, new) N (lbs)	Depressed	133.4 (30.0)
	Released	115.6 (26.0)
Assist (spring, power/percent, nominal)		Not Available
Type pressure plate springs		Diaphragm
Total spring load (nominal, new) N (lbs)		5391 (1212)
Clutch facing	Facing mfgr. & material coding	Isuzu
	Facing material & construction	Non-asbestos
	Rivets per facing	16
	Outside x inside dia. (nominal)	215.0 x 154.0 (8.46 x 6.06)
	Total eff. area [cm^2($in.^2$)]	176.6 (23.37)
	Thickness (pressure plate side/ fly wheel side)	7.8 (.307)
	Rivet depth (pressure plate side/ fly wheel side)	1.3 mm (0.05 in)/1.2 mm (0.05 in)
	Engagement cushion method	Driven plate, wave spoke springs
Release bearing type & method lub.		Self centering, angular contact ball bearing pre-packed & sealed.
Torsional damping method, springs, hysteresis		Coil springs with non-metal friction control.

* Includes shift linkage, lubricant, and clutch housing. If other specify.

∅ **1988 Format Change**

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Engine Description/Carb. Engine Code	2.8 Liter V6 (173 CID) Multi-Port FI RPO LB6

∅ Transmissions/Transaxle (Std., Opt., N.A.)

Manual 3-speed (manufacturer/country)	Not Available
Manual 4-speed (manufacturer/country)	" "
Manual 5-speed (manufacturer/country)	Standard
Automatic (manufacturer country)	Optional
Automatic overdrive (manufacturer/country)	Not Available

∅ Manual Transmission/Transaxle

Number of forward speeds		5
Gear ratios	1st	3.50
	2nd	2.05
	3rd	1.38
	4th	0.94
	5th	0.72
	Reverse	3.41
Synchronous meshing (specify gears)		All forward gears
Shift lever location		Floor
Trans case mat'l. & mass kg (lbs)*		Aluminum
Lubricant	Capacity [L (pt.)]	2.55L (5.36 pts.)
	Type recommended	SAE 5W-30 Engine oil SE, SF/CC OR SF/CD

∅ Clutch (Manual Transmission)

Clutch manufacturer		LUK
Clutch type (dry, wet; single, multiple disc)		Dry single disc
Linkage (hydraulic, cable, rod, lever, other)		Hydraulic
Max. pedal effort (nom. spring load, new) N (lbs)	Depressed	133.4 (30.0)
	Released	133.4 (30.0)
Assist (spring, power/percent, nominal)		Not Available
Type pressure plate springs		Diaphragm
Total spring load (nominal new) N (lbs)		5698 (1281)
Clutch facing	Facing mfgr. & material coding	LUK
	Facing material & construction	Non-asbestos
	Rivets per facing	32
	Outside x inside dia. (nominal)	232 x 155 (9.12 x 6.12)
	Total eff. area [cm²(in.²)]	232 (35.96)
	Thickness (pressure plate side/ fly wheel side)	7.50 - 8.00 (.295 - .315)
	Rivet depth (pressure plate side/ fly wheel side)	1.4 mm (0.06 in)/1.4 mm (0.06 in)
	Engagement cushion method	Driven plate, wave spoke springs
Release bearing type & method lub.		Self centering, angular contact ball bearing pre-packed & sealed.
Torsional damping method, springs, hysteresis		Coil springs with non-metal friction control.

* Includes shift linkage, lubricant, and clutch housing. If other specify.

∅ **1988 Format Change**

MVMA Specifications Form

Vehicle Line BERETTA
Model Year 1988 Issued 10-86 Revised (•) 3-87

METRIC (U.S. Customary)

Engine Description/Carb. Engine Code	2.0 Liter L-4 (121 CID) Electronic Fuel Injection RPO LL8	2.8 Liter V6 (173 CID) 2.8 Multi-Port FI RPO LB6

Automatic Transmission/Transaxle

Trade name		3-speed Automatic	
Type and special features (describe)		Torque converter with cluth 125C	
Selector	Location	Floor	
	Ltr./No. designation	P-R-N-D-2-1	
Gear ratios	1st	2.84	
	2nd	1.60	
	3rd	1.00*	
	4th	Not Applicable	
	Reverse	2.07	
Max. upshift speed - drive range [km/h (mph)]		1-2=63(39), 2-3-111(69)	1-2-66(41), 2-3=117(73)
Max. kickdown speed - drive range [km/h (mph)]		3-2=100(62, 2-1=58(36)	3-2=111(69), 2-1=58(36)
Min. overdrive speed [km/h (mph)]		Not Available	
Torque converter	Number of elements	3	
	Max. ratio at stall	2.7	2.35
	Type of cooling (air, liquid)	Liquid	
	Nominal diameter	245 (9.65)	
Lubricant	Capacity [refill L (pt.)]	5.5L	
	Type Recommended	Dexron II	
Oil cooler (std., opt., NA, internal, external, air, liquid)		Standard, integral part of radiator	
Transmission case material & mass kg (lbs)*		Aluminum	

* - Converter clutch engagement

Axle or Front Wheel Drive Unit

Type (front, rear)		Front	
Description		Front differential with helical gears and tapered roller bearings	
Limited slip differential (type)		Not Available	
Drive pinion offset		" "	
Drive pinion (type)		" "	
No. of differential pinions		2	
Pinion / differential (shim, other)		None	
Pinion / differential (shim, other)		Shim	
Driving wheel bearing (type)		Sealed ball bearings	
Lubricant	Capacity [L (pt.)]	Part of auto. trans. lub.	
	Type recommended	Transmission lub.	
	SAE viscosity number — Summer	Transmission lub.	
	SAE viscosity number — Winter	Transmission lub.	
	SAE viscosity number — Extreme cold	Transmission lub.	

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

Axle ratio (or overall top gear ratio)		3.18	3.61	3.83
No. of teeth	Pinion			
	Ring gear or gear			
Ring gear o.d.		195.2		
Transaxle	Transfer gear ratio	--		
	Final drive ratio	--		

* Includes shift linkage, lubricant, & clutch housing. If other specify.

∅ 1988 Format Change

MVMA Specifications Form

Vehicle Line BERETTA
Model Year 1988 Issued 10-86 Revised (•) 3-87

METRIC (U.S. Customary)

Engine Description/Carb. Engine Code	2.0 Liter L-4 (121 CID) Electronic Fuel Injection RPO LL8	2.8 Liter V6 (173 CID) 2.8 Multi-Port FI RPO LB6

Axle Shafts – Front Wheel Drive

Manufacturer and number used			Two		
Type (straight, solid bar, tubular, etc.)		Left	Straight solid bar		
		Right	Straight solid bar (a)		
Outer diam. x length* x wall thickness	Manual transmission	Left	23.81 x 320.0 (b)	27.05 x 315.5 (c)	
		Right	46.5 x 663.0 (b) (a)	27.05 x 315.5 (c)	
	Automatic transmission	Left	23.81 x 311.0 (b)	27.05 x 308.0 (c)	
		Right	23.81 x 364.3 (b)	27.05 x 357.0 (c)	
	Optional transmission	Left	None		
		Right	None		
Slip yoke	Type		None		
	Number of teeth		None		
	Spline o.d.		None		
Universal joints	Make and mfg. no.	Inner	Saginaw		
		Outer	Saginaw		
	Number used		Two on each drive shaft		
	Type, size, plunge	Inner	TRI-POT (d)	Cross-Groove (e)	
		Outer	Rzeppa - fixed		
	Attach (u-bolt, clamp, etc.)		Splined		
	Bearing: Type (plain, anti-friction)		Anti-fraction		
	Bearing: Lubrication (fitting, prepack)		Prepacked		
Drive taken through (torque tube, arms or springs)			Wishbone lower control arm; upper MacPherson strut		
Torque taken through (torque tube, arms or springs)			Engine mounting system		

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

(a) - Tubular R.H. shaft with LL8 and manual transmission
(b) - Shaft size = 2300 N.m.
(c) - Shaft size = 2700 N.m.
(d) - Plunge = Manual, Left - 24.84
Manual, Right - 33.29
Auto, Left - 24.51mm
Auto, Right - 25.11mm

(e) Plunge
Manual, left = 21.89mm
Manual, right = 27.59mm
Auto, left = 22.14mm
Auto, right = 25.29mm

IVMA Specifications Form

Vehicle Line BERETTA
Model Year 1988 Issued 10-86 Revised (•) 3-87

ETRIC (U.S. Customary)

ody Type And/Or ngine Displacement	2-Dr. Notchback Coupe 1LV37

Suspension – General

Car leveling	Std./opt./n.a.	Not Available
	Type (air, hyd., etc.)	"
	Manual/auto. controlled	"
Provision for brake dip control		Front suspension geometry
Provision for accl. squat control		Rear suspension geometry
Provisions for car jacking		Body pickup at rocker panels
Shock absorber (front & rear)	Type	MacPherson strut - front; double acting hydraulic - rear
	Make	Delco
	Piston diameter	32.0 (1.26) Front, 25.0 (.98) Rear
	Rod diameter	25.0 (.98) Front, 12.4 (.49) Rear

Suspension – Front

Type and description		MacPherson with coil springs, stamped weldment lower control arms and nodular iron steering knuckles.
Travel	Full jounce	92.5 mm (3.6)
	Full rebound	84.0 mm (3.3)
Spring	Type (coil, leaf, other) & material	Coil, steel
	Insulators (type & material)	Upper and lower, natural rubber
	Size (coil design height & i.d., bar length x dia.)	206.6 (8.1) x 139.0 (5.47) x 2700 (106.3) x 13.3 (.52)
	Spring rate [N/mm (lb./in.)]	22.0 (126.0) Base, 27.0 (154.0) & FE3
	Rate at wheel [N/mm (lb./in.)]	23.2 (132.0) Base, 27.5 (157.0 & FE3
Stabilizer	Type (link, linkless, frameless)	Link
	Material & bar diameter	Steel, 30.0 (1.18), 32.0 (1.3) w/7S1

Suspension – Rear

Type and description			Trailing arm with tubular control arms and open section transverse beam.
Travel	Full jounce		111.0 (4.37)
	Full rebound		86.0 (3.4)
Spring	Type (coil, leaf, other) & material		Progressive rate coil, HR steel
	Size (length x width, coil design height & i.d., bar length & dia.)		290 (11.42) x 105 (4.13) x 2626 (103.4) x 13.6 (.54)
	Spring rate [N/mm (lb./in.)]		28 (160)
	Rate at wheel [N/mm (lb./in.)]		16.7 (95)
	Insulators (type & material)		Rubber - top, Rubber & urethane - bottom
	If leaf	No. of leaves	--
		Shackle (comp. or tens.)	--
Stabilizer	Type (link, linkless, frameless)		Linkless bolted directly to axle
	Material & bar diameter		Steel, 20mm (.79) Tubular, 21mm (.83) Solid w/7S1
Track bar (type)			Not Applicable

MVMA Specifications Form

METRIC (U.S. Customary)

Vehicle Line BERETTA
Model Year 1988 Issued 10-86 Revised (•) 6-87

Body Type And/Or Engine Displacement	2-Door Notchback Coupe 1LV37

Brakes - Service

Description				Single caliper disc front, leading trailing drum rear
Manufacturer and 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)			Proportioning. Diagonal split circuit
Power brake (std., opt., n.a.)				Standard
Booster type (remote, integral, vac., hyd., etc.)				Tandem vacuum
Vacuum source (inline, pump, etc.)				Inline (intake manifold)
Vacuum reservoir (volume in.^{3})				None
Vacuum pump-type (elec. gear driven, belt driven, if other so state)				"
Anti-lock device type (std., opt., n.a.) (F R)				Not Available
Effective area [cm^2(in.^{2})]*				309 (47.9)
Gross lining area [cm^2(in.^{2})]**(F R)				381 (59.1)
Swept area [cm^2(in.^{2})]***(F R)				1624 (251.8)
Rotor	Outerworking diameter		F R	247 (9.72) /--
	Inner working diameter		F R	147 (5.80)
	Thickness		F R	22.4 (0.88) /--
	Material & type (vented solid)		F R	Cast iron, vented /--
Drum	Diameter & width		F R	-- / 200 x 45 (7.87 x 1.77)
	Type and material		F R	-- / Cast iron, non-finned
Wheel cylinder bore				57 (2.24) / 16 (.63)
Master cylinder	Bore stroke		F R	24 (.94) / 35.59 (1.40)
Pedal arc ratio				3.7:1
Line pressure at 445 N(100 lb.) pedal load [kPa (psi)]				Not Available
Lining clearance			F/R	Self adjusting
Brake lining	Front wheel	Bonded or riveted (rivets seg.)		In-board, outboard-integrally molded
		Rivet size		Not Applicable
		Manufacturer		Delco Moraine
		Lining code*****		128 FE
		Material		Semi-metallic
		**** Primary or out-board		116.7 x 54.7 x 10.92 (4.594 x 2.157 x .430)
		Size Secondary or in-board		125 x 59 x 10.2 (4.92 x 2.32 x 0.4)
		Shoe thickness (no lining)		4.72 IB, 3.14 OB (.186 IB, 0.123 OB)
	Rear wheel	Bonded or riveted (rivets seg.)		Riveted, (10)
		Manufacturer		Inland Division
		Lining Code*****		242 FE
		Material		Organic
		**** Primary or out-board		190 x 44.2 x 7.7 (7.48 x 1.74 x .30)
		Size Secondary or in-board		190 x 44.2 x 7.7 (7.48 x 1.74 x .30)
		Shoe thickness (no lining)		1.98 (.07)

*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 width x thickness.
*****Manufacturer I.D., catalog or formulation designation and coefficient of friction classification

AVMA Specifications Form

Vehicle Line BERETTA
Model Year 1988 Issued 10-86 Revised (•) 6-87

METRIC (U.S. Customary)

Body Type And/Or Engine Displacement	2-Door Notchback Coupe 1LV37

Tires And Wheels (Standard)

Tires	Size (load range, ply)		P195/70R-14 BW
	Type (bias, radial, steel, nylon, etc.)		Steel Belted Radial
	Inflation pressure (cold) for recommended max. vehicle load	Front [kPa (psi)]	240 (35)
		Rear [kPa (psi)]	240 (35)
	Rev./mile–at 70 km/h (45 mph)		
Wheels	Type & material		Steel
	Rim (size & flange type)		14 x 6
	Wheel offset		47.0 (1.89)
	Attachment	Type (bolt or stud)	Stud
		Circle diameter	100.0 (3.94)
		Number & size	5-M12 x 1.5 - 6H, THD. (metric)
Spare	Tire and wheel (same size, if other describe)		T115/70D - 14 BW, Wheel dia. 14 x 4. Inflation 415 (60)
	Storage position & location (describe)		Flat under rear load floor

Tires And Wheels (Optional)

Tire size (load range, ply)	P205/60R-15 BW
Type (bias, radial, steel, nylon, etc.)	Steel Belted Radial
Wheel (type & material)	Steel
Rim (size, flange type and offset)	15 x 6
Tire size (load range, ply)	P195/70R-14 BW & WW
Type (bias, radial, steel, nylon, etc.)	Steel Belted Radial
Wheel (type & material)	Aluminum
Rim (size, flange type and offset)	14 x 6
Tire size (load range, ply)	P195/70R-14, BW & WW
Type (bias, radial, steel, nylon, etc.)	Steel Belted Radial
Wheel (type & material)	Steel
Rim (size, flange type and offset)	14 x 6
Tire size (load range, ply)	
Type (bias, radial, steel, nylon, etc.)	
Wheel (type & material)	
Rim (size, flange type and offset)	
Spare tire and wheel (size) (if configuration is different than road tire or wheel, describe optional spare tire and/or wheel location & storage position	

Brakes – Parking

Type of control		Hand Lever Assembly
Location of control		In console between front seats
Operates on		Rear service brakes
If separate from service brakes	Type (internal or external)	--
	Drum diameter	--
	Lining size (length x width x thickness	--

MVMA Specifications Form

Vehicle Line BERETTA
Model Year 1988 Issued 10-86 Revised (•) 9-87

METRIC (U.S. Customary)

Body Type And/Or Engine Displacement	2-Door Notchback Coupe 1LV37

Steering

Manual (std., opt., n.a.)				Not Available
Power (std., opt., n.a.)				Standard
Adjustable steering wheel/column (tilt, telescope, other)		Type		Tilt
		Manufacturer		Saginaw Steering Gear
		(Std., opt., n.a.)		Optional
Wheel diameter** (W9) SAE J1100		Manual		--
		Power		378-381mm (14.88 - 15.00 in.)
Turning diameter m (ft.)	Outside front	Wall to wall (l. & r.)		11.84mm (38.85 ft.) Left, 12.06mm (39.57 ft.) Right
		Curb to curb (l. & r.)		10.62mm (34.83 ft.) Left, 10.52mm (34.52 ft.) Right
	Inside rear	Wall to wall (l. & r.)		6.78mm (22.23 ft.) Left, 6.49mm (21.30 ft.) Right
		Curb to curb (l. & r.)		6.55mm (21.48 ft.) Left, 6.45mm (21.15 ft.) Right
Scrub Radius*				
Manual	Gear	Type		--
		Manufacturer		--
		Ratios	Gear	--
			Overall	--
	No. wheel turns (stop to stop)			--
Power	Type (coaxial, linkage, etc.)			Rack and pinion w/center take-off tie rods - integral
	Manufacturer			Saginaw Div. GMC
	Gear	Type		Rack and pinion w/center take-off tie rods - integral
		Ratios	Gear	Not applicable
			Overall	13.96:1
	Pump (drive)			Belt off crankshaft pulley
	No. wheel turns (stop to stop)			2.50
Linkage	Type			Center take off tie rods, rack and pinion
	Location (front or rear of wheels, other)			Rear
	Tie rods (one or two)			Two
Steering axis	Inclination at camber (deg.)			14^{0} at $+0.5^{0}$
	Bearings (type)	Upper		Strut mount
		Lower		Ball joint
		Thrust		Not Applicable
Steering spindle & joint type				"
Wheel spindle/hub	Diameter	Inner bearing		"
		Outer bearing		"
	Thread (size)			M20 x 1.5
	Bearing (type)			Integral double row ball, permanently lubricated

*The horizontal distance in the front elevation between wheel centerline and kingpin (ball joint) axis at ground.
**See Page 21.

MVMA Specifications Form

Vehicle Line BERETTA
Model Year 1988 Issued 10-86 Revised (•) 3-87

METRIC (U.S. Customary)

Body Type And/Or Engine Displacement

2-Door Notchback Coupe
1LV37

Wheel Alignment

Front wheel at curb mass (wt.)	Service checking	Caster (deg.)	Not adjustable
		Camber (deg.)	+.85° +/- .65° (Z51, 0° +/- .65°)
		Toe-in [outside track-mm (in.)]	0° +/- .10°
	Service reset*	Caster	Not adjustable
		Camber	+.85° +/- .65° (Z51, 0° +/- .65°)
		Toe-in	0° +/- .10°
	Periodic M.V. inspection	Caster	Not adjustable
		Camber	--
		Toe-in	--
Rear wheel at curb mass (wt.)	Service checking	Camber (deg.)	Not Applicable
		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.

Electrical – Instruments and Equipment		Electric Base Cluster	Opt. Elect Cluster
Speedometer	Type (analog, digital, std., opt.)	Half circle analog dial w/pointer	Digital
	Trip odometer (std., opt., n.a.)	Standard	Digital Bar Graph
EGR maintenance indicator		Not Available	Not Available
Charge indicator	Type	Gauge	Bar Graph
	Warning device (light, audible)	Not Available	Not Available
Temperature indicator	Type	Gauge	Bar Graph
	Warning device (light, audible)	Not Available	Not Available
Oil pressure indicator	Type	Gauge	Bar Graph
	Warning device (light, audible)	Not Available	Not Available
Fuel indicator	Type	Electric gauge w/ pointer	Bar Graph
	Warning device (light, audible)	Not Available	Not Available
Windshield wiper	Type (standard)	Electric 2-speed	
	Type (optional)	Intermittent Wiper System	
	Blade length	482.6 (19.0)	
	Swept area [cm^2($in.^2$)]	622.2 (964.4)	
Windshield washer	Type (standard)	Wet-Arm System, sliding switch on RH instrument	
	Type (optional)	Not Available	cluster pod
	Fluid level indicator (light, audible)	" "	
Rear window wiper, wiper/washer (std., opt., n.a.)		" "	
Horn	Type	Vibrator	
	Number used	Two ('A' Note and 'F' Note)	
Other	Headlamp-on Warning	Standard, Chimes	

MVMA Specifications Form

METRIC (U.S. Customary)

Vehicle Line BERETTA
Model Year 1988 Issued 10-86 Revised (ø) 3-87

Engine Description/Carb. Engine Code	2.0 Liter L-4 (121 CID) Electronic Fuel Injection RPO LL8	2.8 Liter V6 (173 CID) 2.8 Multi-Port FI RPO LB6

Electrical – Supply System

Battery	Manufacturer	Delco Remy
	Model. std., (opt.)	75-525, 75-630 H.D.
	Voltage	12 Volt
	Amps at 0°F cold crank	525, 630 H.D.
	Minutes-reserve capacity	75 minutes base, 90 minutes H.D.
	Amp/hrs. - 20 hr. rate	--
	Location	Engine compartment
Alternator	Manufacturer	Delco Remy
	Rating (idle/max. rpm)	Diode rectified, 42 amps
	Ratio (alt. crank/rev.)	2.3:1
ø	Output at idle (rpm, park)	
	Optional (type & rating)	None
Regulator	Type	Integral with Alternator

Electrical – Starting System

Start. motor	Current drain at 0°F -20°F	305 @ -20°F
Motor drive	Engagement type	Solenoid
	Pinion engages from (front, rear)	Front

Electrical – Ignition System

Type	Electronic (std., opt., n.a.)		--
	Other (specify)		Computer controlled - coil ignition (C^3I)
Coil	Make		Delco Remy
	Model		1115461
	Current	Engine stopped – A	Not Available
		Engine idling – A	" "
Spark plug	Make		AC spark plug
	Model		FR3LM | R43CTLSF
	Thread (mm)		M14 x 1.25
	Tightening torque (N-m (lb. ft))		9-20 (7-15)
	Gap		0.89 (.035) | 1.14 (.045)
	Number per cylinder		One
Distributor	Make		Not Applicable
	Model		" "

Electrical – Suppression

Locations & type	Internal alternator capacitor, non-metallic high-tension ignition 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.

ø **1988 Format Change**

MVMA Specifications Form

Vehicle Line BERETTA
Model Year 1988 Issued 10-86 Revised (•) 3-87

METRIC (U.S. Customary)

Body Type	2-Door Notchback Coupe 1LV37

Body

Structure	Unitized body construction including front end structure with bolted-on fenders and hood.
Bumper system *front - rear*	Bumper fascias are attached to steel impact bar and dual enersorbers for collision energy absorption. (Meets G.M. 5 mph impact standard).
Anti-corrosion treatment	Special anticorrosion materials are used on interior and exterior metal panel surfaces. Materials include one and two-sided galvanized, ELPO coating, primers, protective waxes and sealers are used on interior surfaces.

Body – Miscellaneous Information

Type of finish (lacquer, enamel, other)		High solids basecoat/clearcoat enamel
Hood	Hinge location (front, rear)	Rear
	Type (counterbalance, prop)	Prop
	Release control (internal, external)	Internal
Trunk lid	Type (counterbalance, other)	Torsion rods
	Internal release control (elec., mech., n.a.)	Electrical-Optional
Hatch-back lid	Type (counterbalance, other)	--
	Internal release control (elec., mech., n.a.)	--
Tailgate	Type (drop, lift, door)	--
	Internal release control (elec., mech., n.a.)	
Vent window control (crank, friction, pivot, power)	Front	None
	Rear	None
Seat cushion type (e.g., 60/40, bucket, bench, wire, foam etc.)	Front	Bucket with polyurethane padding
	Rear	Bench with polyurethane padding
	3rd seat	--
Seat back type (e.g., 60/40, bucket, bench, wire, foam etc.)	Front	Reclining bucket with polyurethane padding
	Rear	Fixed bench with polyurethane padding
	3rd seat	--

∅ **1988 Format Change**

MVMA Specifications Form

METRIC (U.S. Customary)

Vehicle Line BERETTA
Model Year 1988 Issued 10-86 Revised (•) 3-87

Body Type	2-Door Notchback Coupe 1LV37

Restraint System

Active restraint system	Standard optional	Standard
	Type and description	Front-Seat blt & shoulder blt sys with single retractor (2) Rear-Seat blt and shoulder blt sys at otr. positions (2)
	Location	Front belts attached to rocker panel with inertia reel in lower lock pillar. Frt bkle attached to underbody.*
Passive seat belts	Standard optional	Not Available
	Power manual	"
	2 or 3 point	"
	Knee bar lap belt	"

Frame

Type and description (separate frame, unitized frame, partially-unitized frame)	Body-frame integral with bolt-on power train cradle

Glass	SAE Ref. No.	Tinted glass standard
Windshield glass exposed surface area [cm^2 ($in.^2$)]	S1	
Side glass exposed surface area [cm^2 ($in.^2$)] - total 2-sides	S2	
Backlight glass exposed surface area [cm^2 ($in.^2$)]	S3	
Total glass exposed surface area [cm^2 ($in.^2$)]	S4	
Windshield glass (type)		
Side glass (type)		
Backlight glass (type)		

* Rear seat lap belt system at center position (1).
** Rear belts attached to underbody and rear package shelf.

AVMA Specifications Form

METRIC (U.S. Customary)

Vehicle Line BERETTA
Model Year 1988 Issued 10-86 Revised (•) 3-87

Body Type: 2-Door Notchback Coupe
1LV37

Convenience Equipment (standard, optional, n.a.)

Air conditioning (manual, auto. temp control)		Optional (manual control)
Clock (digital, analog)		Digital (integ. w/stereo radios)
Compass / thermometer		Not Available
Console (floor, overhead)		Standard, full floor
Defroster, elec. backlight		Optional
Electronic	Diagnostic monitor (integrated, individual)	Not Available
	Instrument cluster (list instruments)	Opt.bar graph fuel,temp.,oil pres.,battery charge gauges
	Keyless entry	Not Available and bar graph/digital speedo (U52)
	Tripminder (avg. spd., fuel)	Part of U52 cluster - optional
	Voice alert (list items)	Not Available
	Other	Digital/bar graph tachometer (U52)
Fuel door lock (remote, key, electric)		Not Available
Lamps	Auto head on / off delay, dimming	"
	Cornering	"
	Courtesy (map, reading)	Courtesy standard. Map reading dome optional*
	Door lock, ignition	Not Available
	Engine compartment	*
	Fog	Not Available
	Glove compartment	Not Available
	Trunk	Standard
	Other	Ash tray lamp standard
Mirrors	Day/night (auto. man.)	Standard (manual)
	L.H. (remote, power, heated)	Standard (remote)
	R. H. (convex, remote, power, heated)	Standard (manual convex)
	Visor vanity (RH / LH, illuminated)	Visor Mirror R.H. **
Parking brake-auto release (warning light)		Standard (manual release) lower area of speedometer
Power equipment	Door locks / deck lid - specify	Optional - both
	Seat (2-4-6 way) heated (driver, pass, other) lumbar, hip, thigh support (power, manual) reclining (driver, pass) memory (1-2 preset, recline)	Not Available
	Side windows	Optional
	Vent windows	--
	Rear window	--
Radio systems	Antenna (location, whip, w/shield, power)	Front fender-R.H., fixed mast standard
	AM, FM, stero, tape, CB	AM standard, stereo optional
	Speaker (number, location) Premium sound	2-Standard, I.P., ext. range dual rear included w/stereo
Roof open air (fixed, flip-up, sliding, "T")		Not Available
Speed control device		Optional
Speed warning device (light, buzzer,etc.)		Not Available
Tachometer (rpm)		Standard analog dial
Telephone system - mobile		Not Available
Theft protection-type		Auto. Trans.-Lock mounted on steering column; locks steering wheel, Auto. Trans. shift lever and ignition. Manual Trans.-Lock mounted on strg. colmn: locks strg wheel and ignition. Plus: Anti-theft design door lock buttons.

*-Avail in optional lighting package (TR9).
**-Avail in optional custom interior (B18)

MVMA Specifications Form

Vehicle Line BERETTA
Model Year 1988 Issued 10-86 Revised (•) 6-87

METRIC (U.S. Customary)
Vehicle 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 vehicle line.
SAE Ref. no. refers to the definition published in SAE Recommended Practice J1100 "Motor Vehicle Dimensions," unless otherwise specified.

Body Type	SAE Ref. No.	2-Door Notchback Coupe 1LV37
Width		
Tread (front)	W101	1413 (55.6)
Trear (rear)	W102	1438 (56.6)
Vehicle width	W103	1733 (68.2)
Body width at Sg RP (front)	W117	1726 (68.0)
Vehicle width (front doors open)	W120	3903 (153.7)
Vehicle width (rear doors open)	W121	Not Applicable
Front fender overall width	W106	1677 (66.0)
Rear fender overall width	W107	1733 (68.2)
Tumble-home (deg.)	W122	27.0
Length		
Wheelbase	L101	2627 (103.4)
Vehicle length	L103	4756 (187.2)
Overhang (front)	L104	1067 (42.0)
Overhang (rear)	L105	1062 (41.8)
Upper structure length	L123	2663 (104.8)
Rear wheel C L "X" coordinate	L127	2410 (94.9)
Cowl point "X" coordinate	L125	162 (6.4)
Front end length at centerline	L126	1416 (55.7)
Rear end length at centerline	L129	506 (19.9)
Height*		
Passenger distribution (front rear)	PD1.2.3	
Trunk cargo load		
Vehicle height	H101	1403 (55.3)
Cowl point to ground	H114	955 (37.6)
Deck point to ground	H138	1057 (41.6)
Rocker panel-front to ground	H112	221 (8.7)
Bottom of door closed-front to grd.	H133	273 (10.8)
Rocker panel-rear to ground	H111	225 (8.8)
Bottom of door closed-rear to grd.	H135	Not Applicable
Windshield slope angle	H122	61.0
Backlight slope angle	H121	60.4
Ground Clearance*		
Front bumper to ground	H102	351 (13.8)
Rear bumper to ground	H104	352 (13.8)
Bumper to ground (front at curb mass (wt.))	H103	362 (14.3)
Bumper to ground (rear at curb mass (wt.))	H105	381 (15.0)
Angle of approach (degrees)	H106	13.0°
Angle of departure (degrees)	H107	19.2°
Ramp breakover angle (degrees)	H147	6.0°
Axle differential to ground (front rear)	H153	Not Available
Min. running ground clearance	H156	148 (5.8)
Location of min. run. grd. clear.		

* All vehicle **height** and **ground** clearances are measured at the Manufacturer's Design Load Weight.
Manufacturers Design Load Weight is defined with indicated passenger distribution and trunk/cargo load, unless otherwise specified.
All linear dimensions are in millimeters (inches) unless otherwise noted.

MVMA Specifications Form

Vehicle Line BERETTA
Model Year 1988 Issued 10-86 Revised (•) 9-87

METRIC (U.S. Customary)
Vehicle Dimensions *See Key Sheets for definitions*

	SAE Ref. No.	
Body Type		2-Door Notchback Coupe 1LV37

Front Compartment

Sg RP front, "X" coordinate	L31	1138 (44.8)
Effective head room	H61	964 (38.0)
Max. eff. leg room (accelerator)	L34	1102 (43.4)
SgRP to heel point	H30	234 (9.2)
SgRP to heel point	L53	912 (35.9)
Back angle	L40	26.5
Hip angle	L42	103.0
Knee angle	L44	136.0
Foot angle	L46	87.0
Design H-point front travel	L17	222 (8.7)
Normal driving & riding seat track trvl.	L23	198 (7.8)
Shoulder room	W3	1404 (55.3)
Hip room	W5	1351 (53.2)
Upper body opening to ground	H50	987 (38.8)
Steering wheel maximum diameter*	W9	382 (15.0)
Steering wheel angle	H18	18.5
Accel. heel pt. to steer. whl. cntr	L11	Not Available
Accel. heel pt. to steer. whl. cntr	H17	" "
Steering wheel to C / L of thigh	H13	124 (4.9)
Steering wheel torso clearance	L7	371 (14.6)
Headlining to roof panel (front)	H37	18 (0.7)
Undepressed floor covering thickness	H67	15 (0.6)

Rear Compartment

Sg RP Point couple distance	L50	760 (29.9)
Effective head room	H63	930 (36.6)
Min. effective leg room	L51	880 (34.6)
Sg RP (second to heel)	H31	256 (10.1)
Knee clearance	L48	4 (0.2)
Compartment room	L3	656 (25.8)
Shoulder room	W4	1400 (55.1)
Hip room	W6	1287 (50.7)
Upper body opening to ground	H51	--
Back angle	L41	24.5
Hip angle	L43	81.0
Knee angle	L45	86.5
Foot angle	L47	122.0
Headlining to roof panel (second)	H38	8 (0.3)
Depressed floor covering thickness	H73	17 (0.7)

Luggage Compartment

Usable luggage capacity [L (cu. ft.)]	V1	382 (13.5)
Liftover height	H195	891 (35.1)

Interior Volumes (EPA Classification)

Vehicle class (subcompact, compact, etc.)		Compact
Interior volume index (cu. ft.)		106.7
Trunk/cargo index (cu. ft.)		13.5

* See page 14.

MVMA Specifications Form

Vehicle Line BERETTA
Model Year 1988 Issued 10-86 Revised (•) 3-87

METRIC (U.S. Customary)
Vehicle Dimensions See Key Sheets for definitions

Body Type	SAE Ref. No.	2-Door Notchback Coupe 1LV37

Station Wagon – Third Seat

Sg RP couple distance	L85	Not Applicable
Shoulder room	W85	
Hip room	W86	
Effective leg room	L86	
Effective head room	H86	
Sg RP to heel point	H87	
Knee clearance	L87	
Seat facing direction	SD1	
Back angle	L88	
Hip angle	L89	
Knee angle	L90	
Foot angle	L91	

Station Wagon – Cargo Space

Cargo length (open front)	L200	Not Applicable
Cargo length (open second)	L201	
Cargo length (closed front)	L202	
Cargo length (closed second)	L203	
Cargo length at belt (front)	L204	
Cargo length at belt (second)	L205	
Cargo width (wheelhouse)	W201	
Rear opening width at floor	W203	
Opening width at belt	W204	
Min. rear opening width above belt	W205	
Cargo height	H201	
Rear opening height	H202	
Tailgate to ground height	H250	
Front seat back to load floor height	H197	
Cargo volume index [$m^3(ft.^3)$]	V2	
Hidden cargo volume [$m^3(ft.^3)$]	V4	
Cargo volume. index-rear of 2-seat	V10	

Hatchback – Cargo Space

Cargo length at front seatback height	L208	Not Applicable
Cargo length at floor (front)	L209	
Cargo length at second seatback height	L210	
Cargo length at floor (second)	L211	
Front seatback to load floor height	H197	
Second seatback to load floor height	H198	
Cargo volume index [$m^3(ft.^3)$]	V3	
Hidden cargo volume [$m^3(ft.^3)$]	V4	
Cargo volume index-rear of 2-seat	V11	

Aerodynamics*

Wheel lip to ground, front	Not Available
Wheel lip to ground, rear	" "
Frontal area [$m^2(ft^2)$]	1.97 (21.2)
Drag coefficient (Cd)	Not Available

* EPA Loaded Vehicle Weight, Loading Conditions

IVMA Specifications Form

ETRIC (U.S. Customary)

Vehicle Line BERETTA
Model Year 1988 Issued 10-86 Revised (•) 3-87

Body Type: 2-Door Notchback Coupe
1LV37

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 centerline 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 the base grid line to rear fiducial mark located on the rail (compartment pan - longitudinal). Y - Fiducial mark to centerline of car - rear, width measurement made from centerline of car to fiducial mark located on the rail (compartment pan - longitudinal). Z - Fiducial mark to horizontal base grid line - rear, measured vertically from the base grid line to rear fiducial mark located on the rail (compartment pan - longitudinal).

Fiducial Mark Number		
Front	W21*	346 (13.6)
	L54*	2761 (108.7)
	H81*	2001 (7.9)
	H161*	Not Available
	H163*	" "
Rear	W22*	340 (13.4)
	L55*	4953 (195.0)
	H82*	362 (14.3)
	H162*	Not Available
	H164*	" "

* Reference – SAE Recommended Practice, J182, Motor Vehicle Fiducial Marks.

MVMA Specifications Form

METRIC (U.S. Customary)

Vehicle Line BERETTA
Model Year 1988 Issued 10-86 Revised (•) 3-87

Body Type 2-Door Notchback Coupe
1LV37

Lamps and Headlamp Shape*

Height above ground to center of bulb or marker	Headlamp (SAE - H127)	Highest**	639.5 (25.2)
		Lowest	639.5 (25.2)
	Taillamp (SAE - H128)	Highest**	835.8 (32.9)
		Lowest	729.25 (28.7)
	Sidemarker	Front	432.20 (17.0)
		Rear	599.4 (23.6)
Distance from C/L of car to center of bulb	Headlamp	Inside	400.0 (15.7)
		Outside**	562.0 (22.1)
	Taillamp	Inside	--
		Outside**	610.5 (24.0)
	Directional	Front	550.0 (21.6)
		Rear	610.5 (24.0)
Halogen headlamp (std., opt., n.a.)	Lo beam		Standard
	Hi beam		Standard
	Replaceable bulb		Yes
	Shape		Rectangular
Headlamp other than above	Lo beam		Not Available
	Hi beam		" "
	Replaceable		" "
	Shape		" "
	Type		" "

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

AVMA Specifications Form

Vehicle Line BERETTA
Model Year 1988 Issued 10-86 Revised (●) 3-87

METRIC (U.S. Customary)

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	
Beretta								
2-Door Notchback Coupe	760.0 (1672)	425.6 (936)	1185.6 (2608)					1154.4 (2540)

* Reference – SAE J1100 Motor vehicle dimensions, curb weight definition.
** Shipping mass (weight) definition –

MVMA Specifications Form

Vehicle Line BERETTA
Model Year 1988 Issued 10-86 Revised (•) 3-87

METRIC (U.S. Customary)

Equipment	Optional Equipment Differential Mass (weight)* MASS, kg. (weight, lb.) Front	Rear	Total	Remarks
Power Door Lock System RPO AU3	.6 (1.3)	1.2 (2.6)	1.8 (3.9)	
Power Windows RPO A31	1.4 (3.1)	2.2 (4.8)	3.6 (7.9)	
4-Way Mechanical Front - Passenger Seat Adjuster, RPO A78	.8 (1.8)	1.0 (2.2)	1.8 (3.9)	
Power Trunk Opener RPO A90	-.2 (-0.4)	1.0 (2.2)	.8 (1.8)	
Custom Interior RPO B18	1.0 (2.2)	1.0 (2.2)	2.0 (4.4)	Standard on 'GT' Model (Z21)
Floor Mats - Front RPO B34	1.0 (2.2)	.2 (0.4)	1.2 (2.6)	
Floor Mats - Rear RPO B35	.2 (0.4)	.4 (0.9)	.6 (1.3)	
Body Side Moldings RPO B84	.8 (1.8)	1.4 (3.1)	2.2 (4.8)	
Intermittent Windshield Wiper System RPO CD4	.2 (0.4)	0 (0)	.2 (0.4)	
Electric Rear Window Defogger RPO C49	0 (0)	.6 (1.3)	.6 (1.3)	
Air Conditioning RPO C60	22.0 (48.5)	-1.8 (-4.0)	20.2 (44.5)	With RPO LL8 Engine
	21.0 (46.3)	-1.8 (-4.0)	19.2 (42.3)	With RPO LB6 Engine
Engine Block Heater RPO K05	.2 (0.4)	0 (0)	.2 (0.4)	
Electronic Speed Control RPO K34	1.8 (3.9)	0 (0)	1.8 (3.9)	
2.8 Liter V6 Engine RPO LB6	46.6 (102.7)	-4.0 (8.8)	42.6 (93.9)	With Manual Transmission
	35.6 (78.5)	-2.8 (-6.2)	32.8 (72.3)	With Automatic Transmission

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

VMA Specifications Form

Vehicle Line BERETTA
Model Year 1988 Issued 10-86 Revised (•) 3-87

:TRIC (U.S. Customary)

Equipment	Optional Equipment Differential Mass (weight)* MASS, kg. (weight, lb.) Front	Rear	Total	Remarks
Automatic Transmission	20.6	-.4	20.2	With RPO LL8 Engine
RPO MD9	(45.4)	(-0.9)	(44.5)	
	29.0	-.6	28.4	With RPO LB6 Engine
	(63.9)	(-1.3)	(62.6)	
Comfortlift Steering	.6	.4	1.0	
Wheel RPO N33	(1.3)	(0.9)	(2.2)	
Aluminum Wheels - 14"	-4.6	-4.8	-9.4	
RPO PD8	(-10.1)	(10.6)	(-20.7)	
Styled Steel Wheels-15"	3.8	3.8	7.6	
RPO PF1	(8.4)	(8.4)	(16.8)	
Styled Steel Wheels-14"	5.0	5.2	10.2	
RPO PF8	(11.0)	(11.5)	(22.5)	
Heavy Duty Battery	2.4	-.4	2.0	Required with Auto. Trans. on
RPO UA1	(5.3)	(-0.9)	(4.4)	L4. Mandatory for Canada
AM/FM Stereo Radio,	.8	.2	1.0	
Cassette Player with	(1.8)	(0.4)	(2.2)	
Clock RPO UM6				
AM/FM Stereo Radio	.2	0	.2	
With Clock RPO UM7	(0.4)	(0)	(0.4)	
AM/FM Stereo Radio,	1.8	.2	2.0	
Cassette Player, Graphic	(4.0)	(0.4)	(4.4)	
Equalizer with Clock				
RPO UX1				
Electronic Instrumentation	.2	0	.2	
RPO U52	(0.4)	(0)	(0.4)	
Speaker System (4),	1.4	1.4	2.8	Included with UM6, UM7, UX1.
Dual Front and Dual	(3.1)	(3.1)	(6.2)	
Extended Range Rear				
RPO U66				
Front License	.6	0	.6	
Plate Mounting RPO VK3	(1.3)	(0)	(1.3)	
Deck Lid Luggage	-.6	3.2	2.6	
Rack (Charcoal)RPO V56	(-1.3)	(7.0)	(5.7)	

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

MVMA Specifications Form

METRIC (U.S. Customary)

Vehicle Line BERETTA
Model Year 1988 Issued 10-86 Revised (•) 3-87

Optional Equipment Differential Mass (weight)*				
Equipment	MASS, kg. (weight, lb.)			Remarks
	Front	Rear	Total	
'Beretta GT' Option RPO Z21	8.0 (17.6)	7.8 (17.2)	15.8 (34.8)	
Performance/Handling Package RPO Z51	9.0 (19.8)	10.2 (22.5)	19.2 (42.3)	Available only with RPO Z21

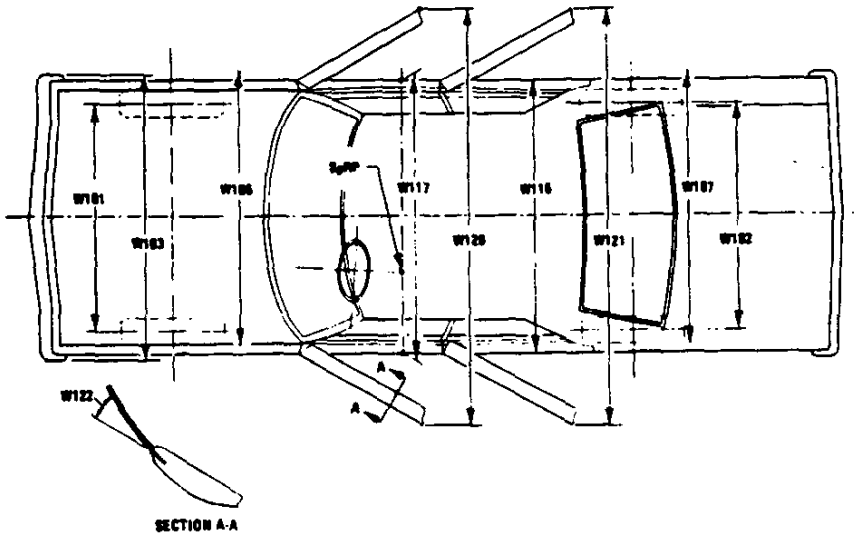
*Also see Engine - General Section for dressed engine mass (weight).

1VMA Specifications Form

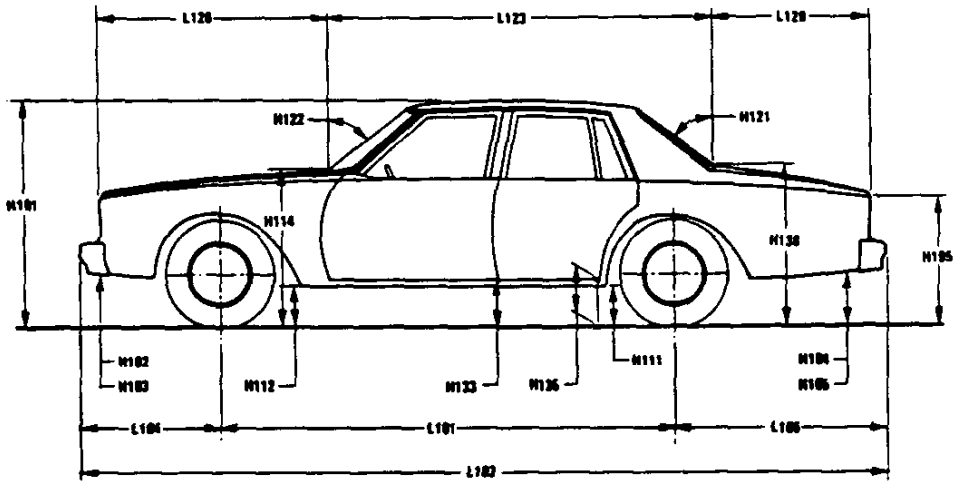
IETRIC (U.S. Customary)

:terior Vehicle And Body Dimensions – Key Sheet

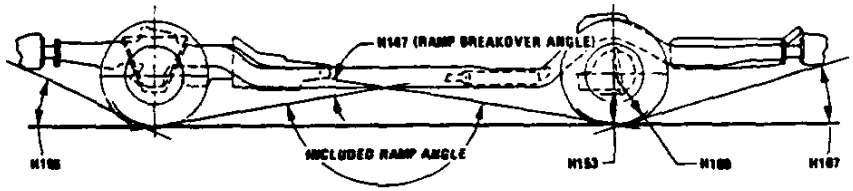
Exterior Width



Exterior Length & Height



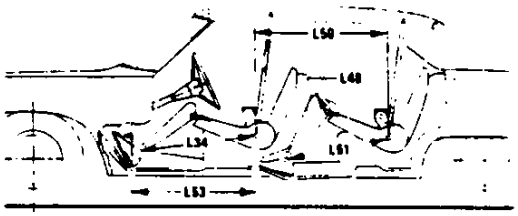
Exterior Ground Clearance

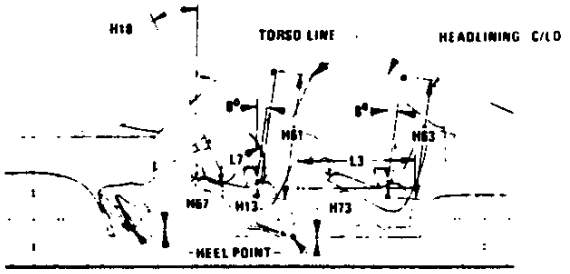


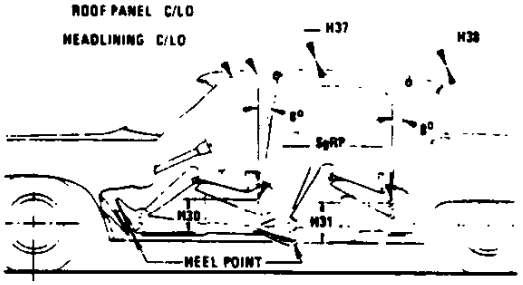
MVMA Specifications Form

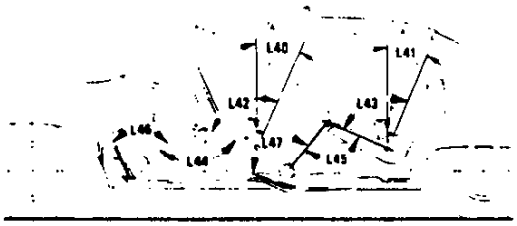
METRIC (U.S. Customary)

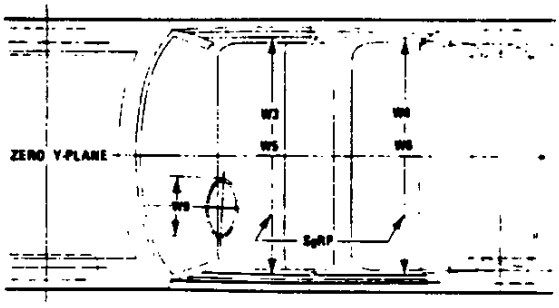
Interior Vehicle And Body Dimensions – Key Sheet

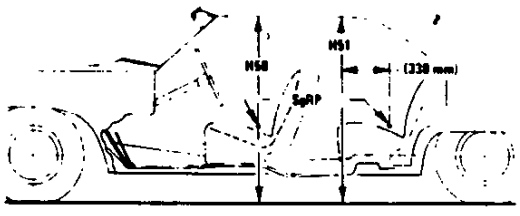










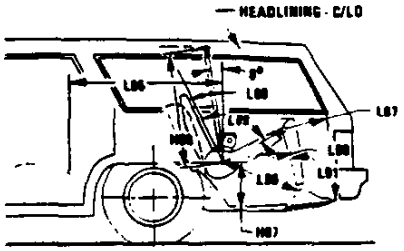


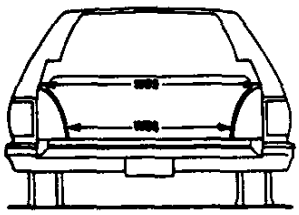
MVMA Specifications Form

METRIC (U.S. Customary)

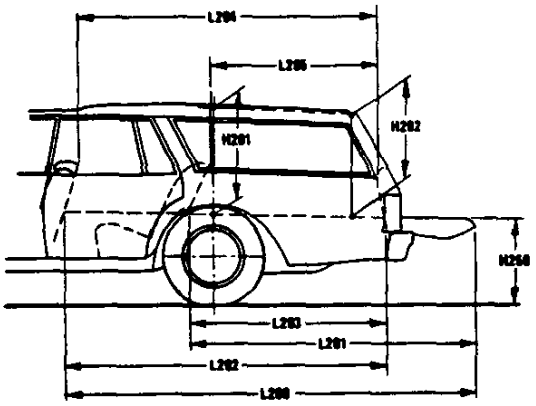
Interior Vehicle And Body Dimensions – Key Sheet

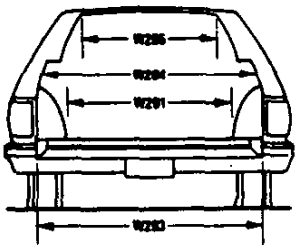
Third Seat



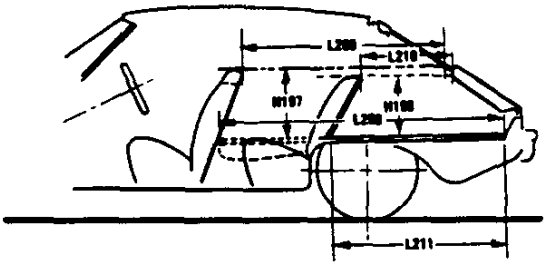


Cargo Space





Station Wagon



Hatchback

MVMA Specifications Form

METRIC (U.S. Customary)

Exterior Vehicle 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, "Devices for Use in Defining and Measuring Vehicle Seating Accommodations,".

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.

W106 FRONT FENDER WIDTH. The dimension measured between the widest points at the front wheel centerline, excluding moldings.

W107 REAR FENDER WIDTH. The dimension measured between the widest points at the rear wheel centerline, excluding moldings.

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

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.

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.

L125 COWL POINT "X" COORDINATE.

L126 FRONT END LENGTH. The dimension measured longitudinally from the cowl point to the foremost point on the vehicle at the zero "Y" plane excluding ornamentation or bumpers. In cases where bumpers and/or grills are integrated with the profile, measurement is made at the foremost point of front end contour.

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

L129 REAR END LENGTH. The dimension measured longitudinally from the deck point to the rearmost visible point of the body sheet metal at the zero "Y" plane, excluding ornamentation or bumpers.

Height Dimensions

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

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.

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

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 arc 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 dimension 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.

H133 BOTTOM OF DOOR CLOSED–FRONT 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.

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.

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

H109 STATIC LOAD–TIRE RADIUS–REAR. Specified by the manufacturer in accordance with composite TIRE SECTION STANDARD.

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.

H103 FRONT BUMPER TO GROUND–CURB MASS (WT.). Measured in the same manner as H102.

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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 arc and 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 arc and the initial point of structural interference rearward of the rear tire to ground. The limiting component shall be designated.

H147 RAMP 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.

Glass Areas

S1 Windshield area.

S2 Side windows area. Includes the front door, rear door, vents, and rear quarter windows on both sides of the vehicle.

S3 Backlight areas.

S4 Total area. Total of all areas (S1 + S2 + S3).

Fiducial Mark Dimensions

Fiducial Mark – Number 1

L54 "X" coordinate.

W21 "Y" coordinate.

H81 "Z" coordinate.

H161 Height "Z" coordinate to ground at curb weight.

H163 Height "Z" coordinate to ground.

Fiducial Mark – Number 2

L55 "X" coordinate.

W22 "Y" coordinate.

W82 "Z" coordinate.

H162 Height "Z" coordinate to ground at curb weight.

H164 Height "Z" coordinate to ground.

Front Compartment Dimensions

L7 STEERING WHEEL TORSO CLEARANCE. The minimum dimension measured in the side view from the rearmost edge of the steering wheel, with front wheels in the straight ahead position, to the torso line.

L11 ACCELERATOR HEEL POINT TO STEERING WHEEL CENTER. The dimension measured horizontally from the AHP to the intersection of the steering column centerline and a plane tangent to the upper surface of the steering wheel rim.

L17 DESIGN H-POINT–FRONT TRAVEL. The dimension measured horizontally between the design H-point–front in the foremost and rearmost seat track positions. (See SAE J1100)

L23 NORMAL DRIVING AND RIDING SEAT TRACK LEVEL. The dimension measured horizontally between a point on the design H-point travel line from the SgRP to the displaced point on the design H-point travel line with the seat moved to the foremost seat position, but not to include seat track travel used for purposes other than normal driving and riding positions. (See SAE J1100)

L31 SgRP–FRONT. "X" COORDINATED.

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 teh accelerator is depressed, the manufacturer shall place foot flat on pedal and note the depression of the pedal.

L-40 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.

L-42 HIP ANGLE–FRONT. The angle measured between torso line and thigh centerline.

L44 KNEE ANGLE–FRONT. The angle measured between thigh centerline and lower leg centerline measured on the right leg.

L46 FOOT ANGLE–FRONT. The angle measured between the lower leg centerline and a line tangent to the ball and heel of the bare foot flesh line measured on the right leg. Ref SAE J826.

L53 SgRP–FRONT TO HEEL. The dimension measured horizontally from the SgRP–front to the accelerator heel point.

W3 SHOULDER ROOM–FRONT. The minimum dimension measured laterally between the trimmed surfaces on the "X" plane through the SgRP–front at height between the belt line and 254 mm (10.0 in.) above the SgRP–front, excluding the door assist strap and attaching parts.

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 of the SgRP–front.

W9 STEERING WHEEL MAXIMUM OUTSIDE DIAMETER. Define if other than round.

H13 STEERING WHEEL TO CENTERLINE OF THIGH. The minimum dimension measured from the bottom of steering wheel, with front wheels in the straight position, to the thigh centerline.

H17 ACCELERATOR HEEL POINT TO THE STEERING WHEEL CENTER. The dimension measured vertically from the AHP–front to the intersection of the steering column centerline to a plane tangent to the upper surface of the steering wheel rim.

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

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

H37 HEADLINING TO ROOF PANEL–FRONT. The dimension measured from the intersection of the headlining and the extended effective head room line normal to the sheet metal.

H50 UPPER BODY OPENING TO GROUND–FRONT. The dimension measured vertically from the trimmed body opening to the ground on the SgRP–front "X" plane.

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.).

H67 FLOOR COVERING THICKNESS–UNDEPRESSED–FRONT. The dimension measured vertically from the surface of the undepressed floor coversing to the underbody sheet metal at the accelerator heel point.

PD1 PASSENGER DISTRIBUTION–FRONT.

Rear Compartment Dimensions

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

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Interior Vehicle And Body Dimensions – Key Sheet
Dimensions Definitions

L-41 BACK ANGLE–SECOND. The angle measured between a vertical line through the SgRP–second and the torso line.

L43 HIP ANGLE–SECOND. The angle measured between torso line and thigh centerline.

L45 KNEE ANGLE–SECOND. The angle measured between thigh centerline and lower leg centerline.

L47 FOOT ANGLE–SECOND. The angle measured between the lower leg centerline and a line tangent to the ball and heel of the three-dimensional devices bare foot flesh line (Reference J826).

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

L50 SgRP COUPLE DISTANCE–SECOND. The dimension measured horizontally from the driver SgRP–front to the SgRP–second

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

W4 SHOULDER ROOM–SECOND. The minimum dimension measured laterally between door or quarter trimmed surfaces on the "X" plane through the SgRP–second at height between 254-406 mm (10.0-16.0 in.) above the SgRP–second, excluding the door assist straps and attaching parts.

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

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.

H38 HEADLINING TO ROOF PANEL–SECOND. The dimension measured from the intersection of the headlining and the extended effective head room line normally to the roof sheet metal.

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.

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.).

H73 FLOOR COVERING–DEPRESSED–SECOND. The dimesnion measured vertically from the heel point to the underbody sheet metal.

PD2 PASSENGER DISTRIBUTION–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.

Interior Volumes (EPA Classification)

The Interior Volume Index is listed for each body style except two seaters. The interior volume index estimates the space in a car. It is based on four measurements – head room, shoulder room, hip room, and leg room – for the front and rear seats, plus trunk capacity. The interior volume index is an estimate of the size of the passenger compartment.

The Trunk/Cargo Index is an estimate of the size of the trunk/cargo space. In station wagons and hatchbacks it is an estimate of the space behind the second seat.

Station Wagon – Third Seat Dimensions

L85 SgRP COUPLE DISTANCE–THIRD. The dimension measured horizontally from the SgRP–second to the SgRP–third.

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.).

L87 KNEE CLEARANCE–THIRD. The minimum dimension from the knee pivot center to the back of second seatback minus a constant of 51mm (2.0 in.). With rear-facing third seat, dimension is measured to closure.

L88 BACK ANGLE–THIRD. Measured in the same mannere as L41.

L89 HIP ANGLE–THIRD. Measured in the same manner as L43.

L90 KNEE ANGLE–THIRD. Measured in the same manner as L45.

L91 FOOT ANGLE–THIRD. Measured in the same manner as L47.

W85 SHOULDER ROOM–THIRD. Measured in the same manner as W4.

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

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.).

H87 SgRP–THIRD TO HEEL POINT.

PD3 PASSENGER DISTRIBUTION–THIRD.

SD1 SEAT FACING DIRECTION–THIRD.

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 to the rearmost point on 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 backpanel 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 he 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 to the sheet metal.

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Dimensions Definitions

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.

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

H201 CARGO HEIGHT. The dimension measured vertically from the top of the undepressed floor covering to the headlining at the rear wheel "X" coordinate 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 LUGGAGE CAPACITY–REAR OF FRONT SEAT. The total volumes of individual pieces of one set of standard luggage stowed in any hidden cargo area below the load floor rear of the front seat.

V5 TRUCKS AND MPV'S WITH OPEN AREA.
Measured in inches:

$$\frac{L506 \times W500 \times H503}{1728} = ft^3$$

Measured in mm:

$$\frac{L506 \times W500 \times H503}{10^9} = m^3 \text{ (cubic meter)}$$

V6 TRUCKS AND MPV'S WITH CLOSED AREA.
Measured in inches:

$$\frac{L204 \times W500 \times H505}{1728} = ft^3$$

Measured in mm:

$$\frac{L204 \times W500 \times H505}{10^9} = m^3 \text{ (cubic meter)}$$

V8 HIDDEN LUGGAGE CAPACITY–REAR OF SECOND SEAT. The total volume of individual pieces of one set of standard luggage stowed in any hidden cargo area below the load floor rear of the second seat.

V10 STATION WAGON CARGO VOLUME INDEX.
Measured in inches:

$$\frac{H201 \times L205 \times \frac{W4 + W201}{2}}{1728} = ft^3$$

Measured in mm:

$$\frac{H201 \times L205 \times \frac{W4 + W201}{2}}{10^9} = m^3 \text{ (cubic meter)}$$

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).

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.

L210 CARGO LENGTH AT SECOND SEATBACK HEIGHT–HATCHBACK. The minimum dimension measured from the "X" plane tangent to the rearmost surface of second seatback or the load floor which is stowed at least one half of the H198 dimension height above the rear load floor, to the rearmost inside limiting interference on the zero "Y" plane.

L211 CARGO LENGTH AT FLOOR–SECOND HATCHBACK. The minimum horizontal dimension measured at floor level from the rear of the second seatback or load floor panel to the normal limiting interference of the hatchback door on the vehicle zero "Y" plane.

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.

H198 SECOND SEATBACK TO LOAD FLOOR HEIGHT: The dimension measured vertically from the second seat back to the undepressed floor covering.

V3 HATCHBACK.
Measured in inches:

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

Measured in mm:

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

V4 HIDDEN LUGGAGE CAPACITY–REAR OF FRONT SEAT. The total volumes of individual pieces of one set of standard luggage stowed in any hidden cargo area below the load floor rear of the front seat.

V11 HATCHBACK CARGO VOLUME INDEX. Usable luggage (one (1) stand and luggage set) below floor:
Measured in inches:

$$\frac{\frac{L210 + L211}{2} \times W4 \times H198}{1728} = ft^3$$

Measured in mm:

$$\frac{\frac{L210 + L211}{2} \times W4 \times H198}{10^9} = m^3 \text{ (cubic meter)}$$

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∅ **1988 Format Change**

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