



O R I G I N A L

MANUFACTURERS MOTOR VEHICLE SPECIFICATIONS

METRIC (U.S. Customary)

1990

Manufacturer	Chevrolet Motor Division General Motors Corporation	Vehicle Line	
Mailing Address	Chevrolet-Pontiac-Canada Group Engineering Center General Motors Corporation 30003 Van Dyke Warren, Michigan 48090-9060	LUMINA	
		Issued	Revised
		June, 1989	September, 1989

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.



Motor Vehicle Manufacturers Association
of the United States, Inc.

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MVMA Specifications

METRIC (U.S. Customary)

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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) specs. 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.

FORM MVMA-90



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MVMA Specifications

Vehicle Line LUMINA
 Model Year 1990 Issued 6-89 Revised(*) 9-89

METRIC (U.S. Customary)

o Vehicle Origin

Design & development (company)	Chevrolet-Pontiac-GM of Canada
Where built (country)	U.S.A.
Authorized U.S. Sales marketing representative	Chevrolet Motor Division

o Vehicle Models

Model Description & Drive (FWD/RWD/AWD/4WD)*	Introduction Date	Make, Vehicle Models, Series, Body Type (Mfg's Model Code)	No. of Designated Seating Positions (Front/Rear)	Max. Trunk/Cargo Load-Kilograms (Pounds)
LUMINA				
2-Door Notchback Coupe (FWD)		1WL27	6 (3/3)	
4-Door Notchback Sedan (FWD)		1WL69	6 (3/3)	
LUMINA EURO				
2-Door Notchback Coupe (FWD)		1WN27	6 (3/3)	
4-Door Notchback Sedan (FWD)		1WN69	6 (3/3)	

* FWD - Front Wheel Drive RWD - Rear Wheel Drive AWD - All Wheel Drive 4WD - Four Wheel Drive

MVMA Specifications

Vehicle Line LUMINA
 Model Year 1990 Issued 6-89 Revised(*) _____

METRIC (U.S. Customary)

Engine Description	2.5 LITER L4 (151 CID)
Engine Code	THROTTLE BODY INJECTION RPO LR8

ENGINE - GENERAL

Type & description (inline, V, angle, flat, location, front, mid, rear, transverse, longitudinal, sohc, dohc, ohv, hemi, wedge, pre-chamber, etc.)	Inline, Front, Transverse, OHV	
Manufacturer	C-P-C Group - G.M. Corporation	
No. of cylinders	4	
Bore	101.63 mm (4.1 in.)	
Stroke	76.20 mm (3.0 in.)	
Bore spacing (C/L to C/L)	111.76 mm (4.5 in.)	
Cyl. block matl & mass kg(lbs.) (machined)	Cast Iron, 48.18 (106.0)	
Cylinder block deck height	236.10 mm (9.4 in.)	
Cylinder block length	494.8 mm (19.5 in.)	
Deck clearance (minimum) (above or below block)	.9144 mm (.036 in.), Below	
Cyl. head material & mass kg (lbs.)	Cast Iron, 21.82 (48.0)	
Cylinder head volume (cm. cu.)	50.3 (3.07)	
Cylinder liner material	Not Applicable	
Head gasket thickness (compressed)	1.22 mm (.049 in.)	
Minimum combustion chamber total volume (cm. cu.)	50.2	
Cyl. no. system (front to rear)	L. Bank	1-2-3-4
	R. Bank	-
Firing order	1-3-4-2	
Intake manifold matl & mass [kg(lbs.)]**	Aluminum 9.0 (20.02)	
Exh. manifold matl & mass [kg (lbs.)]**	Stainless Steel, 1.85 (4.07)	
Fuel required unleaded, diesel, etc.	Unleaded	
Fuel antiknock index (R + M) / 2	87	
Engine mounts	Quantity	2
	Matl and type (elastomeric, hydroelastic, hydraulic damper, etc.)	1-Hydraulic; 1-Elastomeric
	Added isolation (sub-frame, crossmember, etc.)	
Total dressed engine mass (wt) dry***	169.7 kg. (370 lbs.)	

Engine - Pistons

Material & mass, g (weight, oz.) - piston only	Aluminum Alloy, 600 (21)
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Engine Camshaft

Location	Cylinder Block	
Material & mass kg (weight, lbs.)	Nodular Iron, 3.942 (8.76)	
Drive type	Chain/belt	Gear
	Width/pitch	Not Applicable

*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:

MVMA Specifications

Vehicle Line LUMINA
 Model Year 1990 Issued 6-89 Revised(*) 9-89

METRIC (U.S. Customary)

Engine Description **3.1 LITER V6 (191 CID)**
 Engine Code **MULTI-PORT FUEL INJECTION RPO LHO**

ENGINE - GENERAL

Type & description (inline, V, angle, flat, location, front, mid, rear, transverse, longitudinal, sohc, dohc, ohv, hemi, wedge, pre-chamber, etc.)	60 deg. V, Front, Transverse, OHV	
Manufacturer	C-P-C Group - G.M. Corporation	
No. of cylinders	6	
Bore	89mm (3.6 in.)	
Stroke	84mm (3.3 in.)	
Bore spacing (C/L to C/L)	111.76mm (4.5 in.)	
Cyl block matl & mass kg(lbs.)(machined)	Cast Iron, 48.15 (107.0)	
Cylinder block deck height	224.0mm (9.0 in.)	
Cylinder block length	435.5mm (17.4 in.)	
Deck clearance (minimum) (above or below block)	0.15mm (.006 in.), ABA	
Cyl. head material & mass kg (lbs.)	Aluminum, 5.30 (11.7)	
Cylinder head volume (cu. cm.)	28.0 (1.71)	
Cylinder liner material	Not Applicable	
Head gasket thickness (compressed)	1.62mm (.062 in.)	
Minimum combustion chamber total volume (cm. cu.)	66.1	
Cyl. no. system (front to rear)	L. Bank	2-4-6
	R. Bank	1-3-5
Firing order	1-2-3-4-5-6	
Intake manifold matl & mass(kg(lbs.))**	Inlet Plenum - Aluminum Alloy, 3.5 (7.9) Inlet Manifold - Aluminum Alloy, 5.6 (12.4)	
Exh. manifold matl & mass [kg (lbs.)]**	Nodular Cast Iron, Wt. Of Manifold, Fire Wall Side 3.76 (8.283); Wt. Of Other Manifold, 2.63 (5.786)	
Fuel required unleaded, diesel, etc.	Unleaded	
Fuel antiknock index (R + M) / 2	87	
Engine mounts	Quantity	2
	Matl and type (elastomeric, hydroelastic, hydraulic damper, etc.)	1-Hydraulic; 1-Elastomeric
	Added isolation (sub-frame, crossmember, etc.)	
Total dressed engine mass (wt) dry***		

Engine - Pistons

Material & mass, g (weight, oz.) - piston only	Aluminum Alloy, 365 (12.8)
--	----------------------------

Engine Camshaft

Location	Cylinder Block	
Material & mass kg (weight, lbs.)	Cast Iron, 3.098 (6.83)	
Drive type	Chain/belt	Chain
	Width/pitch	15.9 x 9.375mm (.625 x .369 in.)

*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:

MVMA Specifications

Vehicle Line LUMINA
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METRIC (U.S. Customary)

Engine Description	2.5 LITER L4 (151 CID)
Engine Code	THROTTLE BODY INJECTION RPO LR8

Engine - Valve System

Hydraulic lifters (std., opt., NA)	Standard	
Valves	Number intake/exhaust	4/4
	Head O.D. intake/exhaust	I = 43.82/43.56 mm (1.75/1.74 in.) E = 38.23/37.97 mm (1.53/1.52 in.)

Engine - Connecting Rods

Material & mass (kg., (weight, lbs.))*	Cast Iron, .854 (1.883)
Length (axes centerline to centerline)mm	153.67 mm (6.15 in.)

Engine - Crankshaft

Material & mass (kg., (weight, lbs.))*	Nodular Iron, 17.73 (39.0)	
End thrust taken by bearing (no.)	5	
Length & number of main bearings	** 5 Bearings	
Seal (material, one, two piece design, etc.)	Front	One Piece Fluoroelastomer
	Rear	One Piece Fluoroelastomer

Engine - Lubrication System

Normal oil pressure (kPa (psi) @ eng rpm)	350 (50) @ 2000
Type oil intake (floating, stationary)	Stationary
Oil filter sys. (full flow, part, other)	Full Flow And In Sump
Capacity of c/case, less filter-refill-L (qt.)	3.8 (4.0)

Engine - Diesel Information (NOT APPLICABLE)

Diesel engine manufacturer		
Glow plug, current drain at 0 deg. F		
Injector Nozzle	Type	
	Opening pressure (kPa (psi))	
Pre-chamber design		
Fuel injection pump	Manufacturer	
	Type	
Fuel inj. 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 (NOT APPLICABLE)

Turbo charger - manufacturer	
Super charger - manufacturer	
Intercooler	

* Finished State

** Standard Measurement For Width Only:

- # 1, 2, 3, 4 = 20.24 - 20.49 mm (.797 - .807 in.)
- # 5 = 25.55 - 25.63 mm (1.022 - 1.025 in.)

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Vehicle Line LUMINA
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METRIC (U.S. Customary)

Engine Description	3.1 LITER V6 (191 CID)
Engine Code	MULTI-PORT FUEL INJECTION RPO LHO

Engine - Valve System

Hydraulic lifters (std., opt., NA)	Standard	
Valves	Number intake/exhaust	6/6
	Head O.D. intake/exhaust	43.64 mm (1.72 in.) / 36.20 mm (1.43 in.)

Engine - Connecting Rods

Material & mass (kg., (weight, lbs.))*	Forged Steel, .602 (1.33) Full Assembly.
Length(axes centerline to centerline)	144.78 mm (5.79 in.)

Engine - Crankshaft

Material & mass (kg., (weight, lbs.))*	Nodular Cast Iron, 17.9 (39.5)	
End thrust taken by bearing (no.)	3	
Length & number of main bearings	** 4 Bearings	
Seal (material, one, two piece design, etc.)	Front	Viton/Steel, One Piece
	Rear	Viton/Steel, One Piece

Engine - Lubrication System

Normal oil pressure(kPa(psi) @ eng rpm)	345-450 (50-65) @ 2400
Type oil intake (floating, stationary)	Stationary
Oil filter sys. (full flow, part, other)	Full Flow
Capacity of c/case, less filter-refill-L (qt.)	3.8 (4.0)

Engine - Diesel Information

(NOT APPLICABLE)

Diesel engine manufacturer		
Glow plug, current drain at 0 deg. F		
Injector Nozzle	Type	
	Opening pressure(kPa(psi))	
Pre-chamber design		
Fuel injection pump	Manufacturer	
	Type	
Fuel inj. 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

(NOT APPLICABLE)

Turbo charger - manufacturer	
Super charger - manufacturer	
Intercooler	

* Finished State

** Standard Measurement For Width Only:

For 3.1L V6; #1,4 = 29.5mm (1.18 in.); #2,3 = 24.0mm (0.96 in.)

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METRIC (U.S. Customary)

Engine Description
 Engine Code

2.5 LITER L4 (151 CID)
 THROTTLE BODY INJECTION RPO LR8

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)]		
Circulation thermostat	Type (choke, bypass)	Choke
	Starts to open @ deg's C(F)	90 (195)
Water Pump	Type (centrifugal, other)	Centrifugal
	GPM 1000 pump rpm	6.1
	Number of pumps	1
	Drive (V-belt, other)	Serpentine
	Bearing type	Ball-Roller
	Impeller material	Sintered
Housing material		Aluminum
By-pass recirculation [type (inter., ext.)]		
Cooling system capacity	With heater - L (qt.)	
	With air conditioner-L(qt.)	
	Opt. equip.(specify-L(qt.))	
Water jackets full length of cyl(yes,no)		Yes
Water all around cylinder (yes, no)		Yes
Water jackets open at head face (yes,no)		Yes
Radiator core	Std., A/C, HD	
	Type (cross-flow, etc.)	Cross-Flow
	Construction (fin & tube mechanical, braze, etc.)	High Efficiency Radiator
	Matl. mass (kg/wgt.,lbs.)	Aluminum
	Width	
	Height	
	Thickness	
Fins per inch		
Radiator end tank material		Plastic
Fan	Std., elec., opt.	Standard, Electric
	Number of blades & type (flex, solid, material)	
	Diameter & projected width	
	Ratio(fan to crnkshft.rev.)	Not Applicable
	Fan output type	ECM Controlled
	Drive type (direct, remote)	Direct
	RPM at idle (elec.)	
	Motor rating(wattage)(elec)	
	Motor switch (type & location) (elec.)	
	Switch point (temp., pressure)(elec.)	
Fan shroud (material)		Plastic

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Vehicle Line LUMINA
 Model Year 1990 Issued 6-89 Revised(*) 9-89

METRIC (U.S. Customary)

Engine Description	3.1 LITER V6 (181 CID)
Engine Code	MULTI-PORT FUEL INJECTION RPO LHO

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)]		89.6 - 103.4 (13-15)					
Circulation thermostat	Type (choke, bypass)	Bypass					
	Starts to open @ deg's C(F)	90 (195)					
Water Pump	Type (centrifugal, other)	Centrifugal					
	GPM 1000 pump rpm	12					
	Number of pumps	1					
	Drive (V-belt, other)	Serpentine					
	Bearing type	Ball-Roller					
	Impeller material	Cast Iron					
	Housing material	Aluminum					
By-pass recirculation (type inter., ext.)		External, Bypass					
Cooling system capacity	With heater - L (qt.)	12.33 (13.1)					
	With air conditioner-L(qt.)	12.47 (13.2)					
	Opt. equip.(specify-L(qt.))	12.67 (13.4)					
Water jackets full length of cyl(yes,no)		No					
Water all around cylinder (yes, no)		Yes					
Water jackets open at head face (yes,no)		Yes					
Radiator core	Std., A/C, HD	Auto Std.	Auto A/C	Auto HD	Man Std.	Man A/C	Man HD
	Type (cross-flow, etc.)	Cross-Flow					
	Construction (fin & tube mechanical, braze, etc.)	High Efficiency Radiator					
	Matl., mass (kg/wgt., lbs.)	Aluminum					
	Width	718.3	718.3	718.3	718.3	718.3	718.3
	Height	382.4	382.4	382.4	382.4	382.4	382.4
	Thickness	23.5	23.5	34.0	23.5	23.5	34.0
	Fins per inch	13	17	20	13	17	20
	Radiator end tank material		Plastic				
Fan	Std., elec., opt.	Electric					
	Number of blades & type (flex, solid, material)	Standard-5 Flex, Plastic (Opt. Same)					
	Diameter & projected width	Standard 343.0 (13.5), C67-AJ 412.5 (16.2), V08-AJ-Two Fans 343 (13.5)					
	Ratio(fan to crnkshft.rev.)	Not Applicable					
	Fan cutout type	ECM Controlled					
	Drive type (direct, remote)	Electric					
	RPM at idle (elec.)	---					
	Motor rating(wattage)(elec)	---					
	Motor switch (type & location)(elec.)	---					
	Switch point (temp., pressure)(elec.)	---					
	Fan shroud (material)		Plastic				

MVMA Specifications

Vehicle Line LUMINA
 Model Year 1990 Issued 6-89 Revised(*) _____

METRIC (U.S. Customary)

Engine Description
 Engine Code

2.5 LITER L4 (151 CID)
 THROTTLE BODY INJECTION RPO LR8

Engine - Fuel System (See supplemental page for details of Fuel Inj. Supercharger, Turbocharger, etc. If used)

Induction type: carburetor, fuel injection system, etc.		Fuel Injection
Manufacturer		AC/Rochester Products
Carburetor no. of barrels		None
Idle A/F mix.		Preset - No Adjustment Provided
Fuel Injection	Point of inj. (no.)	Throttle Body Above Throttle Blade (Single)
	Constant, pulse, flow	Pulse
	Control (elec., mech.)	Electronic
	Sys. press. (kPa (psi))	210 (30.5)
Idle spd. -rpm (spec. neutral or drive and propane if used)	Manual	Not Applicable
	Automatic	600 In Drive
Intake manifold heat control (exhaust or water thermostatic or fixed)		Water
Air cleaner type		Single Snorkel
Fuel filter (type/location)		Replaceable Enclosed Paper Element Located Near Fuel Tank
Fuel pump	Type (elec. or mech.)	Electric
	Location (eng., tank)	Fuel Tank
	Press. range [kPa (psi)]	Pressure Depends On Flow Rate And System Voltage
	Flow rate at regulated pressure (L (gal)/hr @ kPa (psi))	81.6 @ 210 - W.O.T. 21.6 @ 30.5 - W.O.T.

Fuel Tank

Capacity (refill L (gallons))		64.98 (17.1)
Location (describe)		Underbody, Forward Of Rear Axle
Attachment		Two Steel Straps W/Four Vertical Fasteners
Material & Mass (kg (weight lbs.))		Stamped Steel Upper & Lower W/Perimeter Seam Weld
Filler pipe	Location & material	Left Rear Quarter Panel
	Connection to tank	Flexible Hose
Fuel line (material)		Steel With Double-Sided Corrosion Protection
Fuel hose (material)		Rubber
Return line (material)		Steel
Vapor line (material)		Steel
Extended range tank	Opt., n.a.	Not Applicable
	Capacity [L (gallons)]	"
	Location & material	"
	Attachment	"
Auxiliary tank	Opt., n.a.	Not Applicable
	Capacity [L (gallons)]	"
	Location & material	"
	Attachment	"
	Slctr switch or valve	"
	Separate fill	"

MVMA Specifications

Vehicle Line LUMINA
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METRIC (U.S. Customary)

Engine Description

Engine Code

3.1 LITER V6 (191 CID)
 MULTI-PORT FUEL INJECTION RPO LHO

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

Induction type: carburetor, fuel injection system, etc.		Fuel Injection
Manufacturer		AC/Rochester Products
Carburetor no. of barrels		None
Idle A/F mix.		Preset-No Adjustment Provided
Fuel Injection	Point of inj. (no.)	Fuel Injectors At Inlet Ports
	Constant, pulse, flow	Pulse
	Control (elec., mech.)	Electronic
	Sys. press. (kPa (psi))	300 (43.5)
Idle spd.-rpm (spec. neutral or drive and propane if used)	Manual	Not Applicable
	Automatic	600 In Drive
Intake manifold heat control (exhaust or water thermostatic or fixed)		Water
Air cleaner type		Single Snorkel
Fuel filter (type/location)		Replaceable Enclosed Paper Element Located Near Fuel Tank
Fuel pump	Type (elec. or mech.)	Electrical
	Location (eng., tank)	Fuel Tank
	Press. range (kPa(psi))	Pressure Depends On Flow Rate And System Voltage
	Flow rate at regulated pressure (L (gal)/hr @ kPa (psi))	62.4 @ 350 (Figures For Wide Open Throttle) (16.51 @ 50.8)

Fuel Tank

Capacity (refill L (gallons))		62.7 (16.5)
Location (describe)		Underbody, Forward Of Rear Axle
Attachment		Two Steel Straps W/Four Vertical Fasteners
Material & Mass (kg (weight lbs.))		Stamped Steel Upper & Lower W/Perimeter Seam Weld
Filter pipe	Location & material	Left Rear Quarter Panel
	Connection to tank	Flexible Hose
Fuel line (material)		Steel With Double-Sided Corrosion Protection
Fuel hose (material)		Rubber
Return line (material)		Steel
Vapor line (material)		Steel
Extended range tank	Opt., n.a.	Not Applicable
	Capacity [L (gallons)]	"
	Location & material	"
	Attachment	"
Auxiliary tank	Opt., n.a.	Not Applicable
	Capacity [L (gallons)]	"
	Location & material	"
	Attachment	"
	Sictr switch or valve	"
	Separate fill	"

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METRIC (U.S. Customary)

Engine Description
 Engine Code

2.5 LITER L4 (151 CID)
 THROTTLE BODY INJECTION RPO LR8

Vehicle Emission Control

Exhaust Emission Control	Type (air injection, engine modifications, other)		Not Applicable
	Air injection	Pump or pulse	"
		Driven by	"
		Air distribution (head, manifold, etc.,)	"
		Point of entry	"
	Exhaust Gas Recirculation	Type (controlled flow, open orifice, other)	Controlled Flow
		Exhaust source	
	Catalytic Converter	Point of exh.inj. (spacer, carb., manifold, other)	Manifold
		Type	Single Bed Bead
		Number of	1
Location(s)		Mounted To Underbody	
Volume [L(cu.in)]		2.62 (160)	
Substrate type		Ceramic	
Noble metal type		Platinum (Pt), Rhodium (Rh), Paladium (Pd)	
Crankcase Emission Control	Type (ventilates to atmosphere, induction system, other)	PCV - Air Cleaner	
	Energy source (manifold vacuum, carburetor, other)	Rocker Cover	
	Discharges (to intake manifold, other)	Intake Manifold	
	Air inlet(breather cap, other)	Rocker Cover	
Evaporative Emission Control	Vapor vented to crankcase, canister, other)	Fuel tank	Canister
		Carburetor	Not Applicable
	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)		Not Available
Muffler no. & type (reverse flow, straight thru, separate resonator) Material & Mass [kg (weight lbs.)]		
Resonator no. & type		
Exhaust pipe	Branch o.d., wall thickness	
	Main o.d., wall thickness	
	Matl. & Mass [kg(wght.lbs.)]	
Inter-mediate pipe	o.d. & wall thickness	
	Matl. & Mass [kg(wght.lbs.)]	
Tail pipe	o.d. & wall thickness	
	Matl. & Mass [kg(wght.lbs.)]	

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METRIC (U.S. Customary)

Engine Description 3.1 LITER V6 (191 CID)
 Engine Code MULTI-PORT FUEL INJECTION RPO LHO

Vehicle Emission Control

Exhaust Emission Control	Type (air injection, engine modifications, other)		Not Applicable
	Air injection	Pump or pulse	"
		Driven by	"
		Air distribution (head, manifold, etc.,)	"
		Point of entry	"
	Exhaust Gas Recirculation	Type (controlled flow, open orifice, other)	3 Sized Orifices Which Are Opened Or Closed Using Pintles, And Solenoids. 8 Flow Combination
		Exhaust source Point of exh.inj. (spacer, carb., manifold, other)	Plenum, Near Throttle Body
	Catalytic Converter	Type	Bed Monolith (Dual)
		Number of	1
		Location(s)	Mounted To Underbody
		Volume [L(cu.in)]	2.79 (170)
		Substrate type	Ceramic Monolith
		Noble metal type	Platinum (Pt), Rhodium (Rh), Palladium (Pd)
Noble metal concentration (g/cu. cm.)			
Crankcase Emission Control	Type (ventilates to atmosphere, induction system, other)		Closed Induction System
	Energy source (manifold vacuum, carburetor, other)		Plenum Vacuum
	Discharges (to intake manifold, other)		Discharges To Plenum
	Air inh(breather cap, other)		Duct Between Air Cleaner And Throttle Body
Evaporative Emission Control	Vapor vented to crankcase, canister, other)	Fuel tank	Fuel Tank To Canister To Throttle Body Port
		Carburetor	Not Applicable
	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 W/Crossover
Muffler no. & type (reverse flow, straight thru, separate resonator) Material & Mass [kg (weight lbs.)]		Single Reverse Flow
Resonator no. & type		None
Exhaust pipe	Branch o.d., wall thickness	--
	Main o.d., wall thickness	57.15 x 1.07 mm (2.25 x .042 in.)
	Matl. & Mass [kg(wght.lbs.)]	409 Stainless Steel
Inter-mediate pipe	o.d. & wall thickness	50.8 x 1.07 mm (2.0 x .042 in.)
	Matl. & Mass [kg(wght.lbs.)]	409 Stainless Steel
Tail pipe	o.d. & wall thickness	50.8 x 1.07 mm (2.0 x .042 in.)
	Matl. & Mass [kg(wght.lbs.)]	409 Stainless Steel

MVMA Specifications

Vehicle Line LUMINA
 Model Year 1990 Issued 6-89 Revised(*) _____

METRIC (U.S. Customary)

Engine Description 2.5 LITER L4 (151 CID)
 Engine Code THROTTLE BODY INJECTION RPO LR8

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

Manual 3-speed (manufacturer/country)	Not Available
Manual 4-speed (manufacturer/country)	"
Manual 5-speed (manufacturer/country)	"
Automatic (manufacturer/country)	Hydra-Matic, U.S.A. (MD9)
Auto. overdrive (manufacturer/country)	Not Available

Manual Transmission/Transaxle (NOT APPLICABLE)

Number of forward speeds		
Gear ratios	1st	
	2nd	
	3rd	
	4th	
	5th	
	Reverse	
Synchronous meshing (specify gears)		
Shift lever location		
Trans. case mat'l. & mass kg (lbs)*		
Lubricant	Capacity [L (pt.)]	
	Type recommended	

Clutch (Manual Transmission) (NOT APPLICABLE)

Clutch manufacturer		
Clutch type (dry, wet; single, multiple disc)		
Linkage (hyd., cable, rod, lever, other)		
Max. pedal effort (nom. spring load, new) N (lbs.)	Depressed	
	Released	
Assist (spring, power/percent, nominal)		
Type pressure plate springs		
Total spring load (nominal, new) N(lbs)		
Clutch facing	Facing mfr. & matl. coding	
	Facing matl. & construction	
	Rivets per facing	
	Outside x inside dia. (nom.)	
	Total eff. area [sq cm (sq in)]	
	Thickness (pressure plate side/fly wheel side)	
	Rivet depth (pressure plate side/fly wheel side)	
Engagement cushion method		
Release bearing type & method lub.		
Torsional damping method, springs, hysteresis		

* Includes Shift Linkage, Lubricant, And Clutch Housing. If Other Specify.

MVMA Specifications

Vehicle Line LUMINA
 Model Year 1990 Issued 6-89 Revised(*) _____

METRIC (U.S. Customary)

Engine Description

Engine Code

3.1 LITER V6 (191 CID)
 MULTI-PORT FUEL INJECTION RPO LHO

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

Manual 3-speed (manufacturer/country)	Not Available
Manual 4-speed (manufacturer/country)	"
Manual 5-speed (manufacturer/country)	"
Automatic (manufacturer/country)	Standard, Hydra-Matic, U.S. (MD9)
Auto, overdrive (manufacturer/country)	Optional, Hydra-Matic, U.S. (ME9)

Manual Transmission/Transaxle (NOT APPLICABLE)

Number of forward speeds		
Gear ratios	1st	
	2nd	
	3rd	
	4th	
	5th	
	Reverse	
Synchronous meshing (specify gears)		
Shift lever location		
Trans. case mat'l. & mass kg (lbs)*		
Lubricant	Capacity [L (pt.)]	
	Type recommended	

Clutch (Manual Transmission) (NOT APPLICABLE)

Clutch manufacturer		
Clutch type (dry, wet; single, multiple disc)		
Linkage (hyd., cable, rod, lever, other)		
Max. pedal effort (nom. spring load, new) N (lbs.)	Depressed	
	Released	
Assist (spring, power/percent, nominal)		
Type pressure plate springs		
Total spring load (nominal, new) N(lbs)		
Clutch facing	Facing mfr. & matl. coding	
	Facing matl. & construction	
	Rivets per facing	
	Outside x inside dia. (nom.)	
	Total eff. area [sq cm (sq in)]	
	Thickness (pressure plate side/fly wheel side)	
	Rivet depth (pressure plate side/fly wheel side)	
Engagement cushion method		
Release bearing type & method lub.		
Torsional damping method, springs, hysteresis		

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

MVMA Specifications

Vehicle Line LUMINA
 Model Year 1990 Issued 6-89 Revised(*) _____

METRIC (U.S. Customary)

Engine Description
 Engine Code

2.5 LITER L4 (151 CID)
 THROTTLE BODY INJECTION RPO LR8

Automatic Transmission/Transaxle

Trade Name		THM 125c (Hydra-Matic 3T40)
Type and special features (describe)		3-Speed Automatic
Gear selector	Location (column, floor, other)	Column & Floor
	Ltr./No. designation (e.g. PRND21)	P-R-N-D-2-1
	Shift interlock (yes, no, describe)	No
Gear ratios	1st	2.84
	2nd	1.60
	3rd	1.00 (Converter Clutch Engagement)
	4th	-
	Reverse	2.07
Max. upshift speed - drive range [km/h (mph)]		1 - 2 = 46 (29) 2 - 3 = 78 (49)
Max. kickdown speed - drive range [km/h (mph)]		3 - 2 = 120 (75) 2 - 1 = 52 (32)
Min. overdrive speed [km/h (mph)]		Not Applicable
Torque converter	Number of elements	3
	Max. ratio at stall	2.35
	Type of cooling (air, liquid)	Liquid
	Nominal diameter	245 mm (9.8 in.)
	Capacity factor "K"	177
Lubricant	Capacity (refill L (pt.))	8.5 (17.85) (Dry Transmission)
	Type recommended	Dexron II
Oil cooler (std., opt., N.A., internal, external, air, liquid)		Standard, Integral With Radiator
Trans. mass (kg(lbs)) & case matl.**		65.7 (144.54)

All Wheel / 4 Wheel Drive

(NOT APPLICABLE)

Desc. & type (part-time, full-time, 2/4 shift while moving, mech., elect., chain/gear, etc.)		
Transfer case	Manufacturer and model	
	Type and location	
Low-range gear ratio		
System disconnect (describe)		
Center differential	Type (bevel, planetary, w or w/o viscous bias, torsen, etc.)	
	Torque split (% frt/rear)	

* Input speed / square root of torque.
 ** Dry weight including torque converter. If other, specify.

MVMA Specifications

Vehicle Line LUMINA
 Model Year 1990 Issued 6-89 Revised(*)

METRIC (U.S. Customary)

Engine Description	3.1 LITER V6 (191 CID)
Engine Code	MULTI-PORT FUEL INJECTION RPO LHO

○ Automatic Transmission/Transaxle

Trade Name		3-Speed Automatic	4-Speed Automatic
Type and special features (describe)			
Gear selector	Location (column, floor, other)	Column & Floor	Column & Floor
	Ltr./No. designation (e.g. PRND21)	P-R-N-D-2-1	P-R-N- D -D-2-1
	Shift interlock (yes, no, describe)	No	No
Gear ratios	1st	2.84	2.92
	2nd	1.60	1.56
	3rd	1.00 (Converter Clutch Engagement)	1.00 (Converter Clutch Engagement)
	4th	-	0.70 (Converter Clutch Engagement)
	Reverse	2.07	2.38
Max. upshift speed - drive range [km/h (mph)]		1-2 = 74 (46) 2-3 = 127 (79)	1-2 = 40 (25) 2-3 = 166 (103)
Max. kickdown speed - drive range [km/h (mph)]		3-2 = 121 (76) 2-1 = 51 (32)	4-3 = 140 (87) 3-2 = 105 (65) 2-1 = 60 (37)
Min. overdrive speed [km/h (mph)]		Not Applicable	42 mph
Torque converter	Number of elements	3	3
	Max. ratio at stall	2.35	2.22
	Type of cooling (air, liquid)	Liquid	Liquid
	Nominal diameter	245mm (9.8 in.)	245mm (9.8 in.)
	Capacity factor "K"	177	177
Lubricant	Capacity (refill L(pt.))	8.5 (17.85) Dry Transmission	8.0 (16.9)
	Type recommended	Dexron II	Dexron II
Oil cooler (std., opt., N.A., internal, external, air, liquid)		Standard, Integral Part Of Radiator	Standard, Integral Part Of Radiator
Trans. mass [kg(lbs)] & case matl.**		85.7 (144.54)	83.3 (183.26)

○ All Wheel / 4 Wheel Drive (NOT APPLICABLE)

Desc. & type (part-time, full-time, 2/4 shift while moving, mech., elect., chain/gear, etc.)		
Transfer case	Manufacturer and model	
	Type and location	
Low-range gear ratio		
System disconnect (describe)		
Center differential	Type (bevel, planetary, w or w/o viscous bias, torsen, etc.)	
	Torque split(% frt/rear)	

* Input speed / square root of torque.
 ** Dry weight including torque converter. If other, specify.

MVMA Specifications

Vehicle Line LUMINA
 Model Year 1990 Issued 6-89 Revised(*)

METRIC (U.S. Customary)

Engine Description
 Engine Code

2.5 LITER L4 (151 CID)
 THROTTLE BODY INJECTION RPO LR8

○ Axle Ratio and Tooth Combinations

(See 'Power Teams' for axle ratio usage)

AUTOMATIC TRANS (MD9)

Effective final drive ratio (or overall top gear ratio)		3.18
Transr ratio and method(chain,gear,etc)		1.12 Chain
Front drive unit	Ring gear o.d.	Not Applicable
	No. of teeth	"
	Pinion	"
	Ring gear	"

○ Front Drive Unit

Description (integral to trans., etc.)		Planetary Final Drive Integral With Transmission
Limited slip differential (type)		Not Applicable
Drive pinion	Type	"
	Offset	"
No. of differential pinions		2
Pinion/differential	Adjustment (shim, etc.)	Not Applicable
	Bearing adjustment	"
Driving wheel bearing (type)		
Lubricant	Capacity [L (pt.)]	Automatic
	Type recommended	"

○ Axle Shafts - Front Wheel Drive

Manufacturer and number used		2 Per Car	
Type (straight, solid bar, tubular, etc.)	Left	Straight Solid Bar	
	Right	Straight Solid Bar	
Outer diam. x length* x wall thickness	Manual transaxle	Left	Not Applicable
		Right	"
	Automatic transaxle	Left	23.81 X 331.0mm (.94 x 13.03 in.)
		Right	27.06 x 407.3mm (1.07 x 16.03 in.)
	Optional transaxle	Left	--
		Right	--
Slip yoke	Type	--	
	Number of teeth	--	
	Spline o.d.	--	
Universal joints	Make and mfg. no.	Inner	Saginaw Division
		Outer	Saginaw Division
	Number used		4, 2 On Each Shaft
	Type, size, plunge	Inner	Tripot Joint, 27 Size 66mm
		Outer	Rzeppa Joint, Fixed, 32H Size
	Attach (u-bolt, clamp, etc.)		Inboard Joint-Snap Ring, Outboard Joint (Nut/Washer-Clamping)
	Bearing	Type (plain, anti-friction)	Inboard Joint: Ball Bearing, Needle Roller Bearing (Anti-Friction Bearing) Outboard Joint: Ball Bearing
		Lubrication (fitting, prepack)	Prepacked
Drive taken through (torque tube, arms or springs)		Front Wheel Drive Shafts	
Torque taken through (torque tube, arms or springs)		Engine Mounting System	

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

MVMA Specifications

Vehicle Line LUMINA
 Model Year 1990 Issued 6-89 Revised(*)

METRIC (U.S. Customary)

Engine Description	3.1 LITER V6 (191 CID)
Engine Code	MULTI-PORT FUEL INJECTION RPO LHO

○ Axle Ratio and Tooth Combinations (See 'Power Teams' for axle ratio usage) AUTOMATIC TRANS (ME9)

Effective final drive ratio (or overall top gear ratio)		3.33
Trnsfr ratio and method(chain, gear, etc)		1.00 Chain
Front drive unit	Ring gear o.d.	Not Applicable
	No. of teeth	"
	Pinion	"
	Ring gear	"

○ Front Drive Unit

Description (integral to trans., etc.)		Planetary Final Drive Integral With Transmission
Limited slip differential (type)		Not Applicable
Drive pinion	Type	"
	Offset	"
No. of differential pinions		2
Pinion/differential	Adjustment (shim, etc.)	Not Applicable
	Bearing adjustment	"
Driving wheel bearing (type)		
Lubricant	Capacity [L. (qt.)]	Automatic
	Type recommended	"

○ Axle Shafts – Front Wheel Drive

Manufacturer and number used		2 Per Car	
Type (straight, solid bar, tubular, etc.)	Left	Straight Solid Bar	
	Right	Straight Solid Bar	
Outer diam. x length* x wall thickness	Manual transaxle	Left	Not Applicable
		Right	"
	Automatic transaxle	Left	23.81 X 331.0mm (.94 x 13.03 in.)
		Right	27.06 x 407.3mm (1.07 x 16.03 in.)
	Optional transaxle	Left	--
		Right	--
Slip yoke	Type	--	
	Number of teeth	--	
	Spline o.d.	--	
Universal joints	Make and mfg. no.	Inner	Saginaw Division
		Outer	Saginaw Division
	Number used		4, 2 On Each Shaft
	Type, size, plunge	Inner	Tripot Joint, 27 Size 66mm
		Outer	Rzeppa Joint, Fixed, 32H Size
	Attach (u-bolt, clamp, etc.)		Inboard Joint-Snap Ring, Outboard Joint (Nut/Washer-Clamping)
	Bearing	Type (plain, anti-friction)	Inboard Joint: Ball Bearing, Needle Roller Bearing (Anti-Friction Bearing) Outboard Joint: Ball Bearing
Lubrication (fitting, prepack)		Prepacked	
Drive taken through (torque tube, arms or springs)		Front Wheel Drive Shafts	
Torque taken through (torque tube, arms or springs)		Engine Mounting System	

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

MVMA Specifications

Vehicle Line LUMINA
 Model Year 1990 Issued 6-89 Revised(*)

METRIC (U.S. Customary)

Engine Description	3.1 LITER V6 (191 CID)
Engine Code	MULTI-PORT FUEL INJECTION RPO LHO

○ Axle Ratio and Tooth Combinations (See 'Power Teams' for axle ratio usage) AUTOMATIC TRANS (MD9)

Effective final drive ratio (or overall top gear ratio)		2.84	
Transr ratio and method(chain,gear,etc)		1.00 Chain	
Front drive unit	Ring gear o.d.	Not Applicable	
	No. of teeth	Pinion	"
		Ring gear	"

○ Front Drive Unit

Description (integral to trans., etc.)		Planetary Final Drive Integral With Transmission
Limited slip differential (type)		Not Applicable
Drive pinion	Type	"
	Offset	"
No. of differential pinions		2
Pinion/differential	Adjustment (shim, etc.)	Not Applicable
	Bearing adjustment	"
Driving wheel bearing (type)		
Lubricant	Capacity [L (pt.)]	Automatic
	Type recommended	"

○ Axle Shafts - Front Wheel Drive

Manufacturer and number used		2 Per Car	
Type (straight, solid bar, tubular, etc.)	Left	Straight, Solid Bar	
	Right	Straight, Solid Bar	
Outer diam. x length* x wall thickness	Manual transaxle	Left	Not Applicable
		Right	"
	Automatic transaxle	Left	23.81 x 331.0mm (.94 x 13.03 in.)
		Right	27.06 x 407.3mm (1.07 x 16.03 in.)
	Optional transaxle	Left	--
		Right	--
Slip yoke	Type	--	
	Number of teeth	--	
	Spline o.d.	--	
Universal joints	Make and mfg. no.	Inner	Saginaw Division
		Outer	Saginaw Division
	Number used		4, 2 On Each Shaft
	Type, size, plunge	Inner	Tripot Joint, 27 Size 66mm
		Outer	Rzeppa Joint, Fixed, 32H Size
	Attach (u-bolt, clamp, etc.)		Inboard Joint-Snap Ring, Outboard Joint (Nut/Washer-Clamping)
	Bearing	Type (plain, anti-friction)	Inboard Joint: Ball Bearing, Needle Roller Bearing (Anti-Friction Bearing) Outboard Joint: Ball Bearing
Lubrication (fitting, prepack)		Prepacked	
Drive taken through (torque tube, arms or springs)		Front Wheel Drive Shafts	
Torque taken through (torque tube, arms or springs)		Engine Mounting System	

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

MVMA Specifications

Vehicle Line LUMINA
 Model Year 1990 Issued 6-89 Revised(*) _____

METRIC (U.S. Customary)

Body Type And/Or

Engine Displacement

COUPE / SEDAN

Suspension - General Including Electronic Controls

Car leveling	Std./opt./n.a.	Not Available	
	Manual/automatic control		
	Type (air/hydraulic)	Air	
	Primary/assist spring	Not Available	
	Rear only/4 wheel leveling	"	
	Single/dual rate spring	"	
	Single/dual ride heights	"	
Provision for jacking	Body Rails, Under Rocker Panels		
Shock absorber damping controls	Standard/opt./n.a.	Not Available	
	Manual/automatic control	"	
	Number of damping rates	"	
	Type of actuation (manual/electric motor/air, etc.)	"	
	s e n s o r s	Lateral acceleration	"
		Deceleration	"
		Acceleration	"
Road surface		"	
Shock absorber (front & rear)	Type	MacPherson Strut Front, Tubular Rear	
	Make	Delco	
	Piston diameter	35.0 mm (1.38 in.)	
	Rod diameter	25.0 mm (1.00 in.)	

Suspension - Front

Type and description	MacPherson Strut With Coil Springs, One-Piece "A" Configuration Lower Control Arms.	
Travel*	Full jounce	75mm (2.95 in.)
	Full rebound	95mm (3.74 in.)
Spring	Type (coil, leaf, other) & matl	Coil
	Insulators (type & matl)	Rubber
	Size (coil design height & i.d.)	Not Available
	Spring rate [N/mm(lb./in.)]	19.5
	Rate @ wheel [N/mm(lb./in.)]	22.3
Stabilizer	Type (link, linkless, frmless)	Bar, Standard, All Applications; Specific For Sport Suspension
	Material & bar diameter	Steel

Suspension - Rear

Type and description	Tri-Link Independent With Transverse Leaf Spring, Tubular Struts, Large Lateral Links Attached To Body Cross Member	
Travel*	Full jounce	107mm (4.21 in.)
	Full rebound	95mm (3.74 in.)
Spring	Type (coil, leaf, other) & matl	Leaf, Fiberglass
	Size (length x width, coil design height & i.d.)	Not Applicable
	Spring rate [N/mm (lb/in)]	26.0
	Rate @ wheel [N/mm (lb/in)]	19.0
	Insulators (type & material)	Rubber
if leaf	No. of leaves	One
	Shackle (comp or tens)	--
Stabilizer	Type (link, linkless, frmless)	Link
	Material & bar diameter	Steel, 10mm (.394 in.) Base, 12mm (.472 in.) For Sport Suspension
Track bar (type)	Welded Inverted U-Channel	

* Define load condition:

MVMA-90

MVMA Specifications

METRIC (U.S. Customary)

Body Type And/Or
Engine Displacement
Brakes - Service

Vehicle Line LUMINA
Model Year 1990 Issued 6-89 Revised(*) 9-89

COUPE / SEDAN

Description		Vacuum Powered, Hydraulically Actuated Four Wheel Disc Standard. Antilock Brake System Optional.		
Manufacturer and brake type (std., opt., n.a.)	Front (disc or drum)	Disc, Delco Moraine		
	Rear (disc or drum)	Disc, Delco Moraine		
Valving type(prop, delay, metering, other)		Proportioning		
Power brake (std., opt., n.a.)		Standard		
Booster type(rmt, mtgri, vac., hyd., etc.)		Vacuum Standard; Hydraulic With ABS		
Vacuum	Source (in line, pump, etc.)	Engine		
	Reservoir (volume cu. in.)			
	Pump-type	None		
Traction Control	Operational speed range	None		
	Type engine intervention			
Anti-lock device	Front/rear (std., opt., n.a.)	Optional		
	Manufacturer	Delco Moraine		
	Type (electronic, mech.)	Electronic		
	Number sensors or circuits	4 Sensors		
	No. anti-lock hyd. circuits	3 Circuits		
	Integral or add-on system	Integral System		
	Yaw control (yes, no)	Yes		
Hydraulic power source		Electric		
Effective area (sq. cm. (sq. in.)) ^a		44.0		
Gross Lng area (sq cm (sq in)) ^{**} (F/R)				
Swept area (sq cm (sq in)) ^{***} (F/R)		169.09		
Rotor	Outer working diameter	F/R	267/256.5 mm (10.51/10.1 in.)	
	Inner working diameter	F/R		
	Thickness	F/R	26.3/12.5 mm (1.04/.492 in.)	
	Matl & type (vented/sld)	F/R	Composite Vented/Composite Solid	
Drum	Diameter & width	F/R	Not Applicable	
	Type and material	F/R	Not Applicable	
Wheel cylinder bore				
Master cylinder	Bore/stroke	F/R		
Pedal act. ratio		3.5:1		
Line pressure at 445 N (100 lb.) pedal load (kPa (psi))				
Lining clearance		F/R		
Brake lining	Front wheel	Bonded or riveted	Integrally Molded	
		Rivet size	--	
		Manufacturer		
		Lining code ****		
		Material	Semi-Metallic	
		Size	Pri. or out-brd	119.4 x 38.1 mm/(4.7 x 1.5 in.)
		Size	Sec. or in-brd	119.4 x 38.1 mm/(4.7 x 1.5 in.)
	Shoe thcknss (no lng)	12.19 mm (.48 in.)		
	Rear wheel	Bonded or riveted	Integrally Molded	
		Manufacturer		
		Lining code ****		
		Material	Semi-Metallic	
		Size	Pri. or out-brd	83.8 x 33.0 mm/(3.3 x 1.3 in.)
		Size	Sec. or in-brd	102.9 x 33.0 mm/(4.05 x 1.3 in.)
Shoe thcknss (no lng)		8.64 mm (.34 in.)		

^a Excludes rivet holes, grooves, chamfers, etc. ^{**} Includes rivet holes, grooves, chamfers, etc.
^{***} Total swept area for four brakes. (Drum brakes: Widest lining contact width for each brake x its contact circum.)
(Disc brake: Square of Outer Working Dia. - Square of inner Working Dia. X Pi/2 for each brake.)
^{****} Size for drum brakes includes length x width x thickness.
^{*****} Manufacturer I.D., catalog for formulation designation and coefficient of friction classification.

MVMA Specifications

Vehicle Line LUMINA
 Model Year 1990 Issued 6-89 Revised(*) _____

METRIC (U.S. Customary)

Body Type And/Or
 Engine Displacement

COUPE / SEDAN

Tires And Wheels (Standard)

Tires	Size (load range, ply)	P195/75R14-ALS BW		
	Type (bias, radial, etc.)	Steel		
	Inflation pressure (cold) for recommended max. vehicle load	Front [kPa(psi)]	205 (30)	
		Rear [kPa(psi)]	205 (30)	
Rev/mile—at 70 km/h(45mph)				
Wheels	Type & material	Stamped Steel		
	Rim (size & flange type)	14 x 5.5		
	Wheel offset	39.5mm (1.56 in.)		
	Attachment	Type(bolt,stud)	Stud (M12 x 1.5)	
		Circle diameter	115mm (4.52 in.)	
Number & size		5		
Spare	Tire and wheel	Compact Spare T215/70D15 15 x 4 Wheel		
	Storage position & location (describe)	Horizontal, Under Trunk Compartment Load Floor		

Tires And Wheels (Optional)

Tire size (load range, ply)	
Type (bias, radial, steel, nylon, etc.)	
Wheel (type & material)	
Rim (size, flange type and offset)	
Tire size (load range, ply)	
Type (bias, radial, steel, nylon, etc.)	
Wheel (type & material)	
Rim (size, flange type and offset)	
Tire size (load range, ply)	
Type (bias, radial, steel, nylon, etc.)	
Wheel (type & material)	
Rim (size, flange type and offset)	
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	Multi-Stroke Foot Pedal Application, Hand Release	
Location of control	Hand Release, Under Instrument Panel, Left Of Driver's Left Knee	
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

Vehicle Line LUMINA
 Model Year 1990 Issued 6-1989 Revised(*) _____

METRIC (U.S. Customary)

Body Type And/Or
 Engine Displacement

COUPE / SEDAN

Steering

Manual (std., opt., n.a.)		Not Available		
Power (std., opt., n.a.)		Standard		
Adjustable steering wheel/ column (tilt, telescope, other)	Type	Tilt		
	Manufacturer (std., opt., n.a.)	Saginaw Division		
		Optional For All Except SE; Standard On SE		
Wheel diameter ** (W9) SAE J1100	Manual			
	Power			
Turning diameter m (ft.)	Out-side front	Wall to wall (l. & r.)		
		Curb to curb (l. & r.)	11.88 (39.0)	
	In-side rear	Wall to wall (l. & r.)		
		Curb to curb (l. & r.)	7.18 (23.5)	
Scrub Radius †				
Manual	Gear	Type	Not Available	
		Manufacturer	"	
		Ratios	Gear Overall	"
	No. wheel turns(stop to stop)		"	
Power	Type (hydraulic, elec., etc.)		End Take-Off Rack And Pinion	
	Manufacturer		Saginaw Division	
	Gear	Type	Rack And Pinion	
		Ratios	Gear Overall	17.56:1
		Pump (drive)		Belt
	No. wheel turns(stop to stop)		2.89	
Linkage	Type		End Take-Off	
	Location (front or rear of wheels, other)		Rear	
	Tie Rods (one or two)		2	
Steering axis	Inclination at camber (deg.)			
	Bearings (type)	Upper		
		Lower		
		Thrust		
Steering spindle/knuckle & joint type		MacPherson Strut		
Wheel spindle/ hub	Dia-meter	Inner bearing		
		Outer bearing		
	Thread (size)			
	Bearing (type)			

* The horizontal distance in the front elevation between wheel centerline and kingpin (ball joint) axis at ground.
 ** See Page 22.

MVMA Specifications

Vehicle Line LUMINA
 Model Year 1990 Issued 6-89 Revised(*) 9-89

METRIC (U.S. Customary)

Body Type And/Or
 Engine Displacement

COUPE / SEDAN

Wheel Alignment

Front wheel at curb mass (wt.)	Service checking	Caster (deg.)	2.0 (+/-) .5
		Camber (deg.)	0.7 (+/-) .5
		Toe-in [outside track-mm (in.)]	0.0 (+/-) .1 / Wheel-In
	Service reset*	Caster (deg.)	Pre-set
		Camber (deg.)	0.7 (+/-) .5
		Toe-in mm (in.)	0.0 (+/-) .1 / Wheel-In
	Periodic M.V. inspection	Caster (deg.)	Not Available
		Camber (deg.)	"
		Toe-in mm (in.)	"
Rear wheel at curb mass (wt.)	Service checking	Camber (deg.)	Not Applicable
		Toe-in [outside track-mm (in.)]	"
	Service reset*	Camber (deg.)	"
		Toe-in mm (in.)	"
	Periodic M.V. inspection	Camber (deg.)	"
		Toe-in mm (in.)	"

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

Electrical - Instruments and Equipment

Speedometer	Type (analog, digital, std., opt.)	Analog, Standard
	Trip odometer (std., opt., n.a.)	
EGR maintenance indicator		
Charge indicator	Type	
	Warning device (light, audible)	Tell-Tale Light
Temperature indicator	Type	
	Warning device	Tell-Tale Light
Oil pressure indicator	Type	
	Warning device	Tell-Tale Light
Fuel indicator	Type	
	Warning device	
Windshield wiper	Type (standard)	
	Type (optional)	
	Blade length	508 mm (20.0 in.)
	Swept area [sq cm (sq in)]	
Windshield washer	Type (standard)	Wet-Arm System
	Type (optional)	Not Available
	Fluid level indicator	
Rear window wiper, wiper/washer (std., opt., n.a.)		Not Available
Horn	Type	Vibrator
	Number used	2
Other		

MVMA Specifications

Vehicle Line LUMINA
 Model Year 1990 Issued 6-89 Revised(*) 9-89

METRIC (U.S. Customary)

Engine Description
 Engine Code

2.5 LITER L4 (151 CID)
 THROTTLE BODY INJECTION RPO LR8

Electrical - Supply System

Battery	Manufacturer	Delco Remy
	Model, std., (opt.)	75 - 630
	Voltage	12
	Amps at 0 deg F cold crnk	630
	Minutes-reserve capacity	90
	Amps/hrs. - 20 hr. rate	54
	Location	Engine Compartment
Alternator	Manufacturer	Delco Remy
	Rating (idle/max. rpm)	36/100 Amps
	Ratio (alt. crank/rev.)	2.74:1 Alternator: Crank
	Output at idle (rpm, park)	62 Amps
	Optional (type & rating)	Not Applicable
Regulator	Type	Integral With Alternator

Electrical - Starting System

Motor	Manufacturer	Delco Remy
	Current drain -20 deg F	350 Amps
	Power rating [kw (hp)]	1.4 (1.9)
Motor drive	Engagement type	Solenoid Operated Shift Lever
	Pinion engages from (front, rear)	Front

Electrical - Ignition System

Type	Electronic (std. opt, n.a.)	Electronic - Direct Ignition	
	Other (specify)		
Coil	Manufacturer	Delco Remy	
	Model		
	Current	Engine stopped-A	Not Applicable
		Engine idling - A	"
Spark plug	Manufacturer	AC/Rochester Products	
	Model	R43TS6	
	Thread (mm)	14 x 1.25	
	Tightening torque [Newton meters (lb. ft.)]	10 - 20 (7-15)	
	Gap	1.5 mm (.060)	
	Number per cylinder	1	
Distributor	Manufacturer	Not	
	Model	Applicable	

Electrical - Suppression

Locations & type	Not Available
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MVMA Specifications

Vehicle Line LUMINA
 Model Year 1990 Issued 6-89 Revised(*) _____

METRIC (U.S. Customary)

Engine Description
 Engine Code

3.1 LITER V6 (191 CID)
 MULTI-PORT FUEL INJECTION RPO LHO

Electrical - Supply System

Battery	Manufacturer	Delco Remy
	Model, std., (opt.)	SAE 75-525 (1981967)
	Voltage	12
	Amps at 0 deg F cold crnk	525
	Minutes-reserve capacity	90
	Amps/hrs. - 20 hr. rate	54
Location		Engine Compartment
Alternator	Manufacturer	Delco Remy
	Rating(idle/max rpm drive)	36/100 Amps
	Ratio (alt. crank/rev.)	2.75
	Output at idle (rpm, park)	54 Amps
	Optional (type & rating)	None
Regulator	Type	Integral With Alternator

Electrical - Starting System

Motor	Manufacturer	Delco Remy
	Current drain -20 deg F	350 Amps
	Power rating [kw (hp)]	1.4 (1.9)
Motor drive	Engagement type	Solenoid Operated Shift Lever
	Pinion engages from (front, rear)	Front

Electrical - Ignition System

Type	Electronic (std., opt., n.a.)	Electronic - Direct ignition
Other (specify)		
Coil	Manufacturer	Delco Remy
	Model	
	Current	Engine stopped-A Not Engine idling - A Applicable
Spark plug	Manufacturer	AC/Rochester Products
	Model	R43CTLSF
	Thread (mm)	14 x 1.25
	Tightening torque (Newton meters (lb. ft.))	9-20 (7-15)
	Gap	1.14mm (.045 in.)
Number per cylinder		1
Distributor	Manufacturer	Not
	Model	Applicable

Electrical - Suppression

Locations & type	Not Available
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MVMA Specifications

Vehicle Line LUMINA
 Model Year 1990 Issued 6-89 Revised(*) 8-89

METRIC (U.S. Customary)

Body Type

COUPE / SEDAN

Body

Structure	Unitized Body - Frame. Body Side Assembly Includes Full Drawn Quarter Panels. Fully Stamped Inner/Outer Door Panels With Header Extending Into Roof. Full-Length Deck Lid Inner/Outer Panels, Full-Drawn Floor Pan.
Bumper System Front - Rear	Body Color Soft Fascia, Honeycomb Absorber And Rigid Reinforcing Bar Used At Both Front And Rear.
Anti-Corrosion Treatment	Double-Sided Galvanizing Of All Major Body/Sheet Metal Inner/Outer Panels Including Hood, Deck Lid, Doors As Well As Rear And End Panel, Plenum, Fenders, Compartment Pan, Quarter Panels, Rocker Panels And Wheelhouse Outer Panels.

Body - Miscellaneous Information

Type of finish (lacquer, enamel, other)	Base Coat-Clear Coat Acrylic Enamel Over ELPO Primer	
Hood	Material & mass	Steel
	Hinge location (front, rear)	Rear
	Type (counterbalance, prop)	Gas Charged Strut
	Release control (int., ext.)	Internal
Trunk lid	Material & mass	Steel
	Type (counterbalance, other)	Dual Torque Rods
Hatch-back lid	Internal release control (elec., mech., n.a.)	Electric, Optional
	Material & mass	Not Available
	Type (counterbalance, other)	"
Tailgate	Internal release control (elec., mech., n.a.)	"
	Material & mass	"
	Type (drop, lift, door)	"
Vent window control (crank, friction, pivot, power)	Front	"
	Rear	"
Window regulator type (cable, tape, flex drive, etc.)	Front	Tape
	Rear	Tape
Seat cushion type (e.g., 60/40, bucket, bench wire, foam, etc.)	Front	
	Rear	
	3rd seat	
Seat back type (e.g., 60/40, bucket, bench, wire, foam, etc.)	Front	
	Rear	
	3rd seat	

MVMA Specifications

Vehicle Line LUMINA
 Model Year 1990 Issued 6-89 Revised(*) 9-89

METRIC (U.S. Customary)

Body Type

COUPE / SEDAN

Restraint System

Seating Position			Left	Center	Right
Active	Type & description (lap & shoulder belt, lap belt, etc.)	First seat		Lap Belt Manual Adjustment	
		Second seat	3 Point Single Loop W/Shoulder Retractor	Lap Belt Manual Adjustment	3 Point Single Loop W/Shoulder Retractor
	Standard/ optional	Third seat			
Passive	Type & description (air bag, motorized-2-point belt, fixed belt, knee bolster, manual-lap belt)	First seat	3-Point Door Mounted Dual Retractor		3-Point Door Mounted Dual Retractor
		Second seat			
	Standard/ optional	Third seat			

Glass	SAE Ref No	
Windshield glass exposed surface area (sq. cm. (sq. in.))	S1	Not Available
Side glass exposed surface area (sq. cm. (sq. in.)) - total 2- sides	S2	"
Backlight glass exposed surface area (sq. cm. (sq. in.))	S3	"
Total glass exposed surface area (sq. cm. (sq. in.))	S4	"
Windshield glass (type)		Curved-Tempered 2nd Laminated Plate
Side glass (type)		Curved-Tempered Plate
Backlight glass (type)		Curved-Tempered Plate

Headlamps

Description - sealed beam, halogen, replaceable bulb, etc.	Halogen, Replacement Bulb Unit
Shape	Rectangular
Lo-beam type (2A1, 2B1, 2C1, etc.)	Not Available
Quantity	2
Hi-beam type (1A1, 2A1, 1C1, 2C1, etc.)	Not Available
Quantity	2

Frame

Type and description (separate frame, unitized frame, partially-unitized frame)	Unitized Body/Frame, Bolted-On Powertrain Cradle With Mounting Provisions For Suspension And Engine Mounts.
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MVMA Specifications

Vehicle Line LUMINA
 Model Year 1990 Issued 6-89 Revised(*) 9-89

METRIC (U.S. Customary)

Body Type

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

Air conditioning (manual, auto, temp control)		Optional, Manual-Electronic Controls
Clock (digital, analog)		Standard, Digital
Compass / thermometer		Not Available
Console (floor, overhead)		Optional, Floor
Defroster, elec. backlight		Optional
Electronic	Diagnostic monitor (integrated, individual)	Not Available
	Instrument cluster (list instruments)	Not Available
	Keyless entry	Not Available
	Tripminder (avg. spd. fuel)	Not Available
	Voice alert (list items)	Not Available
	Other	
Fuel door lock (remote, key, electric)		
Lamps	Auto head on/off delay, dimming	Not Available
	Cornering	
	Courtesy (map, reading)	Standard
	Door lock, ignition	Not Available
	Engine compartment	Standard
	Fog	Not Available
	Glove compartment	Standard
	Trunk	Standard
	Illuminated entry system (list lamps, activation)	Not Available
Other		
Mirrors	Day / night (auto, man.)	Standard - Manual
	L.H. (remote, pwr., heated)	Standard - Remote
	R.H. (convex, rmt, pwr, htd)	Standard - Fixed, Optional Remote
	Visor vanity (RH/LH illum.)	
Navigation system (describe)		Not Available
Pkgs. brake-auto release (warn. light)		

MVMA Specifications

Vehicle Line LUMINA
 Model Year 1990 Issued 6-89 Revised(*) _____

METRIC (U.S. Customary)

Engine Description
 Engine Code

COUPE	SEDAN
-------	-------

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

Power equipment	Deck lid(release, pull down)		Optional, Electric Release
	Door locks (manual, auto., describe system)		Optional, Manual - Electric
	Seats	2 - 4 - 6 way, etc.	Optional 6-Way
		Reclining(R.H., L.H.)	Standard 2 & RH
		Memory (R.H., L.H., preset, recline)	Not Available
		Lumbar, hip, thigh, support	Not Available
		Heated (R.H., L.H., other)	Not Available
	Side windows		Optional Electric
	Vent windows		Not Applicable
	Rear windows		Optional
Radio systems	Antenna (location, whip, w/shield, power)		Standard, Fixed Whip Located On Right Rear Upper Quarter Panel
	Stan.		AM/FM Stereo W/ Seek/Scan & Digital Clock Electronic Tuning
	Opt.	AM, FM, stereo, tape, compact disc, graphic equalizer, theft deterrent, radio prep package, headphone jacks, etc.	AM/FM Stereo W/Seek/Scan, Auto Reverse Cassette And Digital Clock - Electronic Tuning
	Speaker (number, location)		Four, Dual Front-Dash Mounted, Dual Extended Range RR
Roof: open air or fixed (flip-up, sliding, 'T')		Not Available	
Speed control device		Optional, Automatic Electronic	
Speed warn. dev. (light, buzzer, etc.)		Not Available	
Tachometer (rpm)		Optional (Included As Part Of Optional Gauge Package)	
Telephone system (describe)		Not Available	
Theft deterrent system		Not Available	

MVMA Specifications

Vehicle Line LUMINA
 Model Year 1990 Issued 6-89 Revised(*) _____

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

COUPE SEDAN

Width

SAE Ref. No.

	SAE Ref. No.		
Tread (front)	W101	1512 (59.5)	
Tread (rear)	W102	1472 (58.0)	
Vehicle width	W103	1822 (71.7)	1803 (71.0)
Body width at Sg RP (front)	W117	1805 (71.0)	1803 (71.0)
Vehicle width (front doors open)	W120		3398 (133.8)
Vehicle width (rear doors open)	W121	Not Applicable	3640 (143.3)
Tumble-home (deg.)	W122	27.0	24.5
Outside mirror width	W410		

Length

	SAE Ref. No.		
Wheelbase	L101	2730 (107.5)	
Vehicle length	L103	5039 (198.4)	5020 (197.6)
Overhang (front)	L104	1179 (46.4)	
Overhang (rear)	L105	1130 (44.5)	1111 (43.7)
Upper structure length	L123	2790 (109.8)	2747 (108.1)
Rear wheel C/L 'X' coordinate	L127	2525 (99.4)	

Height **

	SAE Ref. No.		
Passenger distribution (front/rear)	PD1,2,3		**
Trunk/cargo load			**
Vehicle height	H101	1353 (53.3)	1361 (53.6)
Cowl point to ground	H114	934 (36.8)	
Deck point to ground	H138	988 (38.9)	1001 (39.4)
Rocker panel-front to ground	H112	211 (8.3)	
Rocker panel-rear to ground	H111	212 (8.3)	
Windshield slope angle (deg.)	H122	62.2	59.0
Backlight slope angle (deg.)	H121	66.0	56.5

Ground Clearance **

	SAE Ref. No.		
Front bumper to ground	H102	340 (13.4)	
Rear bumper to ground	H104	326 (12.8)	337 (13.3)
Bumper to ground (front at curb mass (wt.))	H103	356 (14.0)	
Bumper to ground (rear at curb mass (wt.))	H105	357 (14.0)	370 (14.6)
Angle of approach (deg.)	H106	19.0	
Angle of departure (deg.)	H107	17.2	
Ramp breakover angle (deg.)	H147	10.2	
Axle differential to ground (front/rear)	H153	163 (6.4)	
Min. running ground clearance	H158	149 (5.9)	
Location of min. run. grd. clear.		Exhaust Pipe Rear Of Converter	

** All Vehicle Height And Ground Clearance Are Made Using EPA Loaded Vehicle Weight, Loading Conditions.

EPA Loaded Vehicle Weight is the Base Vehicle Weight Plus All Coolant and Fluids Necessary For Operation Plus 100% Of The Fuel Capacity, Plus The Weight Of All Options And Accessories Which Weigh Three Pounds Or More And Which Are Sold On At Least 33% Of The Car Line, Plus Two Occupants.

All Linear Dimensions Are In Millimeters (Inches)

MVMA Specifications

Vehicle Line LUMINA
 Model Year 1990 Issued 6-89 Revised(*)

METRIC (U.S. Customary)

Vehicle Dimensions

See Key Sheets for Definitions

Body Type

COUPE

SEDAN

○ Front Compartment

SAE Ref. No.

	SAE Ref. No.		
SgRP front, 'X' coordinate	L31	1138 (44.8)	1140 (44.9)
Effective head room	H81	856 (37.6)	985 (38.8)
Max. eff. leg room (accelerator)	L34	1076 (42.4)	1077 (42.4)
SgRP to heel point	H30	240 (9.4)	251 (9.9)
SgRP to heel point	L53	876 (34.5)	874 (34.4)
Back angle (deg.)	L40	26.0	
Hip angle (deg.)	L42	98.0	99.0
Knee angle (deg.)	L44	127.5	128.0
Foot angle (deg.)	L48	87.0	87.0
Design H-point front travel	L17	198 (7.8)	
Normal driving & riding seat track trvl.	L23	178 (7.0)	
Shoulder room	W3	1460 (57.5)	1478 (58.2)
Hip room	W5	1305 (51.4)	1328 (52.3)
*** Upper body opening to ground	H50	1238 (48.7)	1278 (50.3)
Steering wheel maximum diameter*	W9	374 (14.7)	375 (14.8)
Steering wheel angle (deg.)	H18	21.1	21.5
Accel. heel pt. to steer. whl. cntr	L11	520 (20.5)	515 (20.3)
Accel. heel pt. to steer. whl. cntr	H17	622 (24.5)	620 (24.4)
Undepressed floor covering thickness	H67	26 (1.0)	

Front Compartment Int. Dim. Are Measured With The Seating Ref. Pt.

(SgRP) mm (1 Seat Adjuster Notch) Forward of Rearmost Seat Position.

○ Rear Compartment

	SAE Ref. No.		
SgRP point couple distance	L50	792 (31.2)	826 (32.5)
Effective head room	H83	946 (37.2)	988 (38.1)
Min. effective leg room	L51	884 (34.8)	937 (36.9)
SgRP (second to heel)	H31	249 (9.8)	271 (10.7)
Knee clearance	L48	46 (1.8)	17 (0.7)
Shoulder room	W4	1446 (56.9)	1427 (56.2)
Hip room	W6	1322 (52.0)	1329 (52.3)
** Upper body opening to ground	H51		1046 (41.2)
Back angle (deg.)	L41	26.0	
Hip angle (deg.)	L43	82.0	87.0
Knee angle (deg.)	L45	87.5	96.0
Foot angle (deg.)	L47	122.0	125.0
Depressed floor covering thickness	H73	16 (0.6)	18 (0.7)

Luggage Compartment

Usable luggage capacity [L (cu. ft.)]	V1	440 (15.5)	445 (15.7)
** Lftover height	H195	845 (33.3)	844 (33.2)

Interior Volumes (EPA Classification)

Vehicle class		Mid Size	
Interior volume index (cu. ft.)**		96.0	101.4
Trunk / cargo index (cu. ft.)		15.5	15.7

* See page 14.

** Includes passenger and trunk / cargo index - see definition page 32.

*** EPA Loaded Vehicle Weight, Loading Conditions.

All Linear Dimensions Are In Millimeters (Inches)

MVMA Specifications

Vehicle Line LUMINA
 Model Year 1990 Issued 6-89 Revised(*) _____

METRIC (U.S. Customary) Vehicle Dimensions

See Key Sheets for Definitions

Body Type

COUPE/SEDAN

Station Wagon - Third Seat

SAE Ref. No. (NOT APPLICABLE)

Measurement	SAE Ref. No.	(NOT APPLICABLE)
Seat facing direction	SD1	
SgRP couple distance	L85	
Shoulder room	W85	
Hip Room	W88	
Effective leg room	L86	
Effective head room	H86	
SgRP to heel point	H87	
Knee clearance	L87	
Back angle (deg.)	L88	
Hip angle (deg.)	L89	
Knee angle (deg.)	L90	
Foot angle (deg.)	L91	

Station Wagon - Cargo Space

(NOT APPLICABLE)

Measurement	SAE Ref. No.	(NOT APPLICABLE)
Cargo length (open front)	L200	
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 [cu. m.(cu.ft.)]	V2	
Hidden cargo vol. index [cu.m.(cu.ft.)]	V4	
Cargo volume index-rear of 2-seat	V10	

Hatchback - Cargo Space

(NOT APPLICABLE)

Measurement	SAE Ref. No.	(NOT APPLICABLE)
Cargo length at front seatback height	L208	
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 [cu. m. (cu. ft.)]	V3	
Hidden cargo vol. index [cu.m.(cu.ft.)]	V4	
Cargo volume index-rear of 2-seat	V11	

* EPA Loaded Vehicle Weight, Loading Conditions
 All Linear Dimensions Are in Millimeters (Inches)

MVMA Specifications

Vehicle Line LUMINA APV
 Model Year 1990 Issued 6-89 Revised(*) _____

METRIC (U.S. Customary)

Body Type

COUPE / SEDAN

Vehicle Fiducial Marks

Number*	Define Coordinate Location	
Front	X	Fiducial Mark To Vertical Zero Grid Line - Front Measured Horizontally, From The Zero 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 Zero Grid Line - Front, Measured Vertically From Zero Grid Line To Front Fiducial Mark Located On Top Of The Front Seat Adjuster Mounting Bolt.
Rear	X	Fiducial Mark To Vertical Zero Grid Line - Rear, Measured Horizontally From The Zero Grid Line To Rear Fiducial Mark Located On The Rail (Compartment Pan - Longitudinal).
	X	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 Zero Grid Line - Rear, Measured Vertically From The Zero Grid Line To Rear Fiducial Mark Located On The Rail (Compartment Pan - Longitudinal).
Fiducial Mark Number		
Front	W21*	555.0
	L54*	2776.0
	H81*	279.0
	H181*	
	** H183*	
Rear	W22*	678.5
	L55*	4062.5
	H82*	288.5
	H182*	
	** H184*	

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

** EPA Loaded Vehicle Weight, Loading Conditions.

All linear dimensions are in millimeters (inches).

MVMA Specifications

METRIC (U.S. Customary)

Vehicle Line LUMINA
 Model Year 1990 Issued 6-89 Revised(*) _____

		Optional Equipment Differential Mass (weight)*			
Code	Equipment	MASS, kg. (lb.)			Remarks Restrictions, Requirements
		Front	Rear	Total	
AM6	Front Split Seat	2.4 (5.3)	2.4 (5.3)	4.8 (10.6)	
AU3	Side Door Lock	1.0 (2.2)	0.8 (1.8)	1.8 (4.0)	COUPE
		1.6 (3.5)	1.2 (2.7)	2.8 (6.2)	SEDAN
A31	Power Windows	1.8 (4.0)	0.6 (1.3)	2.4 (5.3)	COUPE
B34	Front Floor Mats	1.4 (3.0)	0.8 (1.8)	2.2 (4.8)	
B35	Rear Floor Mats	0.4 (.9)	0.8 (1.8)	1.2 (2.7)	
C67	Air Conditioning	14.6 (32.1)	2.0 (4.4)	16.6 (36.5)	
D68	O/S Mirrors	1.0 (2.2)	0.6 (1.3)	1.6 (3.5)	
K34	Cruise Control	1.4 (3.0)	0.0 (0.0)	1.4 (3.0)	
LH0	6-Cylinder Engine	28.2 (57.6)	-2.4 (5.3)	23.8 (54.3)	
ME9	4-Speed Auto Trans	16.0 (35.2)	0.0 (0.0)	16.0 (35.2)	
UM6	Stereo Radio	1.4 (3.0)	0.4 (.9)	1.8 (3.9)	

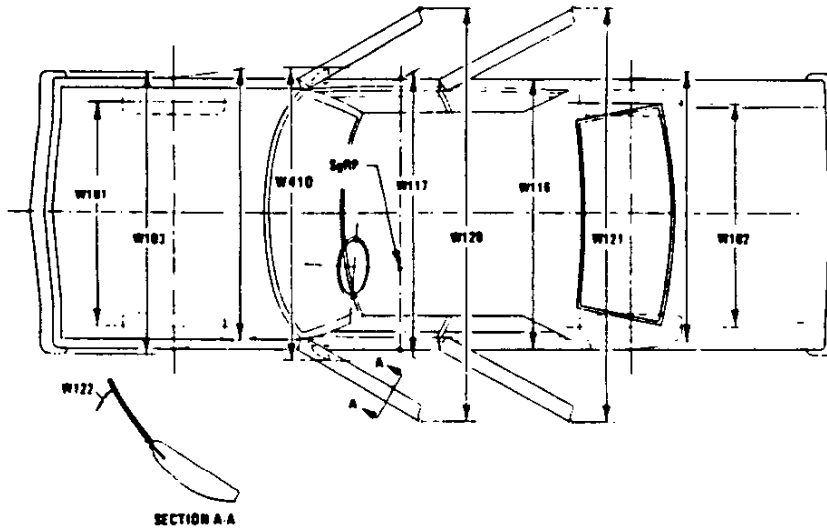
* Also see Engine - General Section for dressed engine mass (weight).

MVMA Specifications

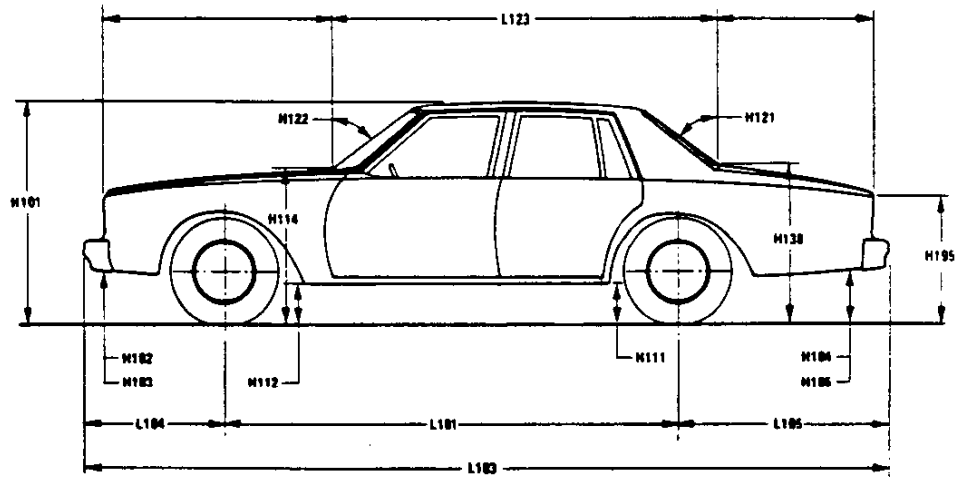
METRIC (U.S. Customary)

Exterior Vehicle And Body Dimensions – Key Sheet

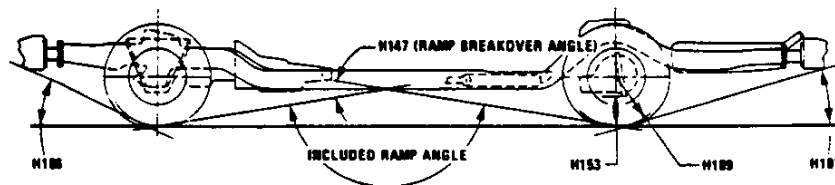
Exterior Width



Exterior Length & Height



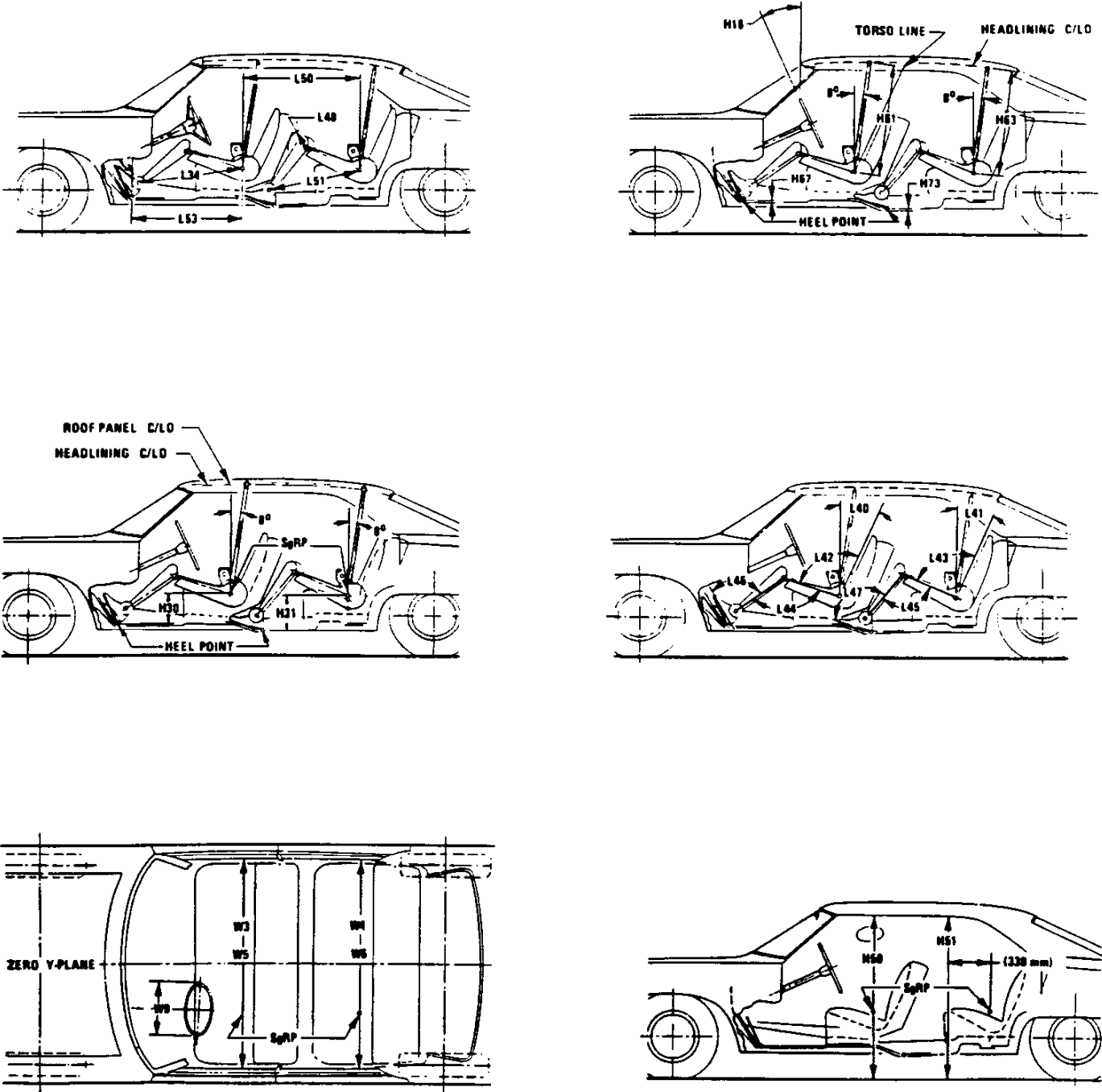
Exterior Ground Clearance



MVMA Specifications Form

METRIC (U.S. Customary)

Interior Vehicle And Body Dimensions - Key Sheet

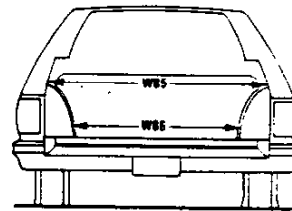
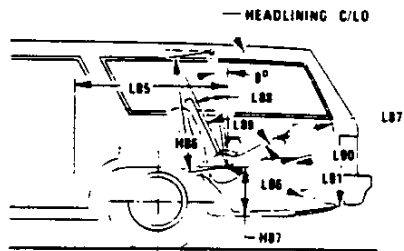


MVMA Specifications Form

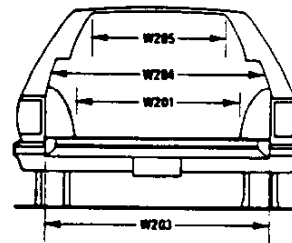
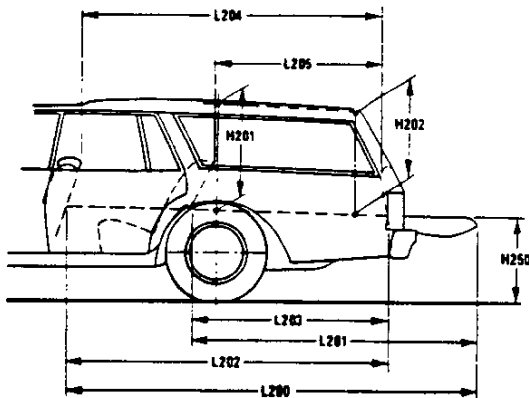
METRIC (U.S. Customary)

Interior Vehicle And Body Dimensions – Key Sheet

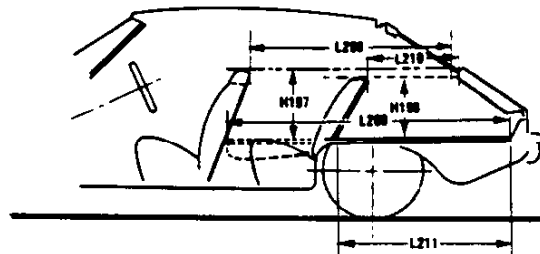
Third Seat



Cargo Space



Station Wagon



Hatchback

MVMA Specifications

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.
- 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.
- W410 OUTSIDE MIRROR WIDTH: The dimension between the widest point on the outside mirrors. The standard right and left mirror adjusted for normal driving will be shown unless otherwise noted. When only one outside mirror is standard, the dimension will be to the zero "Y" 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 OVERHAND – 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 the midpoint of the distance between the rear axle centerlines.

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.
- 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.
- 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 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.

MVMA Specifications

METRIC (U.S. Customary)

Interior Vehicle And Body Dimensions - Key Sheet Dimensions Definitions

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

- 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 TRAVEL. 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 the 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.
- H7 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.
- 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 covering to the underbody sheet metal at the accelerator heel point.

Rear Compartment Dimensions

- 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 254 mm (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.
- 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 dimension measured vertically from the heel point to the underbody sheet metal.

MVMA Specifications

METRIC (U.S. Customary)

Interior Vehicle And Body Dimensions – Key Sheet Dimensions Definitions

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.

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 51 mm (2.0 in.). With rear-facing third seat, dimension is measured to closure.
- L88 BACK ANGLE – THIRD. Measured in the same manner 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.
- 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 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 to 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.
- 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:

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

Measured in mm:

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

MVMA Specifications

METRIC (U.S. Customary)

Interior Vehicle And Body Dimensions – Key Sheet Dimensions Definitions

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:

$$\frac{L506 \times W505 \times H503}{1728} = \text{ft}^3$$

Measured in mm:

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

V6 TRUCKS AND MPV'S WITH CLOSED AREA.

Measured in inches:

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

Measured in mm:

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

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:

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

Measured in mm:

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

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 electronically 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 "X" 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 seatback to the undepressed floor covering.

V3 HATCHBACK.

Measured in inches:

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

Measured in mm:

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

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:

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

Measured in mm:

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

MVMA Specifications

METRIC (U.S. Customary)

3 Index

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