MANUFACTURERS MOTOR VEHICLE SPECIFICATIONS

METRIC (U.S. Customary)

1990

Manufacturer	Vehicle Line	
Chevrolet Motor Division General Motors Corporation	CAVALIER	
	Issued June, 1989	Revised September, 1989

Direct questions concerning these specifications to the manufacturer listed above.

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mvma

Motor Vehicle Manufacturers Association
of the United States, Inc.

Blank Forms Provided by Technical Affairs Division

FORM MVMA-90

MVMA Specifications

METRIC (U.S. Customary)

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FORM MVMA-90

MVMA Specifications

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

METRIC (U.S. Customary)

○ Vehicle Origin

Design & development (company)	General Motors Corporation, L.A.D. Lansing
Where built (country)	U.S.A.
Authorized U.S. Sales marketing representative	Chevrolet Motor Division

○ Vehicle Models

Model Description & Drive (FWD/RWD/AWD/4WD)*	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)
CAVALIER				
4-Door Station Wagon (FWD)		1JC35	2/3	40 (88)
2-Door Notchback Coupe (FWD)		1JC37	2/3	60 (132)
4-Door Notchback Sedan (FWD)		1JC69	2/3	60 (132)
CAVALIER Z24				
2-Door Notchback Coupe (FWD)		1JF37	2/3	60 (132)

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

MVMA Specifications

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

METRIC (U.S. Customary)
Power Teams

SAE J1349 Net bhp (brake hrspwr) and Net Torque corrected to 77 deg. F / 25 deg. C and 29.61 in. Hg/100 kPA atmos. press.

			A	B	C	D
ENGINE	Engine Code		LM3	LHO	LHO	
	Displacement Liters (cu. in.)		2.2L (133) L4	3.1L (191) V6	3.1L (191) V6	
	Induction system (FI, Carb, etc.)		Throttle Body Injection	Multi-Port Fuel Injection	Multi-Port Fuel Injection	
	Compression ratio		9.0:1	9.0:1	9.0:1	
	SAE Net at RPM	Power kW(bhp)	71 (95) @ 5200	101 (135) @ 4500	104 (140) @ 4500	
		Torque Newton meters (lb.ft.)	163 (120) @ 3200	244 (180) @ 3600	251 (185) @ 3600	
	Exhaust Single, dual		Single	Single	Single	
TRANS	Transmission/ Transaxle		Std. 5-Speed Manual Opt. 3-Speed Auto	Std. 5-Speed Manual Opt. 3-Speed Auto	Std. 5-Speed Manual Opt. 3-Speed Auto	
	Axle Ratio (std. first)		3.45 2.84	3.61 2.53	2.84	

Series Availability		Power Teams (A – B – C – D)	
Model	Code	Standard	Optional
CAVALIER			
4-Dr. Station Wagon	1JC35	A	B
2-Dr. Notchback Coupe	1JC37	A	B
4-Dr. Notchback Sedan	1JC69	A	B
CAVALIER Z24			
2-Dr. Notchback Coupe	1JF37	C	-

MVMA Specifications

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

METRIC (U.S. Customary)

Engine Description	2.2 LITER L4 (133 CID)
Engine Code	THROTTLE BODY INJECTION RPO LM3

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		89.0 mm (3.50 in.)
Stroke		88.0 mm (3.46 in.)
Bore spacing (C/L to C/L)		99.0 mm (3.90 in.)
Cyl block matl & mass kg(lbs.)(machined)		Cast Iron, 40 (88)
Cylinder block deck height		216.65 mm (8.53 in.)
Cylinder block length		443 mm (17.44 in.)
Deck clearance (minimum) (above or below block)		.7 mm (.028 in.) Below
Cyl. head material & mass kg (lbs.)		Aluminum, 9.7 (21.3)
Cylinder head volume (cu. cm.)		35.5 (2.17)
Cylinder liner material		No Liner
Head gasket thickness (compressed)		1.4 mm (.055 in.)
Minimum combustion chamber total volume (cm. cu.)		68.43 (4.18)
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, 3.9 (8.6)
Exh. manifold matl & mass (kg (lbs.))**		Cast Iron, 4.5 (10)
Fuel required unleaded, diesel, etc.		Unleaded
Fuel antiknock index (R + M) / 2		87
Engine mounts	Quantity	3
	Matl and type (elastomeric, hydroelastic, hydraulic damper, etc.)	Elastomeric
	Added isolation (sub-frame, crossmember, etc.)	No
Total dressed engine mass (wt) dry***		147.7 kg (325 lbs.) Automatic 163.3 kg (359 lbs.) Manual

Engine – Pistons

Material & mass, g (weight, oz.) - piston only	Aluminum Alloy, 320 (11.26)

Engine Camshaft

Location		In Block, Right Side
Material & mass kg (weight, lbs.)		Cast Iron, 3.1 (6.8)
Drive type	Chain/belt	Chain
	Width/pitch	19.3 x 9.5 mm (.76 x .37 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 CAVALIER
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

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 (3.4 in.)
Bore spacing (C/L to C/L)		111.76mm (4.5 in.)
Cyl blck 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	4
	Matl and type (elastomeric, hydroelastic, hydraulic damper, etc.)	Elastomeric
	Added isolation (sub-frame, crossmember, etc.)	None
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:

MANUFACTURERS MOTOR VEHICLE SPECIFICATIONS

METRIC (U.S. Customary)

1990

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

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MVMA Specifications

Vehicle Line CAVALIER
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

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)mm	144.78 (5.79)

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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Vehicle Line CAVALIER
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 – 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.)	10.5 (11.1) Manual
	With air conditioner-L(qt.)	10.6 (11.2) Automatic and Manual (11.1)
	Opt. equip.[specify-L(qt.)]	None
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, HO	Manual Automatic
	Type (cross-flow, etc.)	Cross-Flow
	Construction (fin & tube mechanical, braze, etc.)	Tube & Fin/Brazed
	Matl., mass [kg(wgt.,lbs.)]	Aluminum, 3.4 (7.5) Aluminum, 4.08 (9.0)
	Width	387 mm (15.3 in.)
	Height	600 mm (23.6 in.)
	Thickness	34 mm (1.3 in.)
	Fins per inch	14.5 mm
Radiator end tank material		Plastic
Fan	Std., elec., opt.	Electric
	Number of blades & type (flex, solid, material)	7 (Solid) *
	Diameter & projected width	373 (14.7)
	Ratio(fan to crnkshft.rev.)	Not Applicable
	Fan cutout type	ECM Controlled
	Drive type (direct, remote)	Direct - Electric Motor
	RPM at idle (elec.)	2200
	Motor rating(wattage)(elec)	150
	Motor switch (type & location) (elec.)	Engine Block
	Switch point (temp., pressure) (elec.)	On At 106, Off At 102
	Fan shroud (material)	Plastic

* Mineral/Glass Filled Nylon.

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Vehicle Line CAVALIER
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Where built (country)	U.S.A.
Authorized U.S. Sales marketing representative	Chevrolet Motor Division

○ Vehicle Models

Model Description & Drive (FWD/RWD/AWD/4WD)*	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)
CAVALIER				
4-Door Station Wagon (FWD)		1JC35	2/3	40 (88)
2-Door Notchback Coupe (FWD)		1JC37	2/3	60 (132)
4-Door Notchback Sedan (FWD)		1JC69	2/3	60 (132)
CAVALIER Z24				
2-Door Notchback Coupe (FWD)		1JF37	2/3	60 (132)

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

MVMA Specifications

Vehicle Line CAVALIER
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

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/Inline Rear Of Tank
Fuel pump	Type (elec. or mech.)	Electric
	Location (eng., tank)	Tank
	Press. range [kPa(psi)]	Not Applicable
	Flow rate at regulated pressure (L (gal)/hr @ kPa (psi))	58.28 (15.4) @ 350 (51)

Fuel Tank

Capacity [refill L (gallons)]		51.5 (13.6)
Location (describe)		Rear Center Underside, R.H. Rear Quarter Panel
Attachment		Underbody Strap
Material & Mass [kg (weight lbs.)]		Steel
Filler pipe	Location & material	Right Rear Quarter Panel - Steel
	Connection to tank	Hoses
Fuel line (material)		Steel
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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Vehicle Line CAVALIER
Model Year 1990 Issued 6-89 Revised(*) 9-89

METRIC (U.S. Customary)

Engine Description
Engine Code

2.2 LITER L4 (133 CID)
THROTTLE BODY INJECTION RPO LM3

Vehicle Emission Control

Exhaust Emission Control	Type (air injection, engine modifications, other)		CCC Control
	Air injection	Pump or pulse	Not
		Driven by	Applicable
		Air distribution (head, manifold, etc.,)	"
		Point of entry	"
	Exhaust Gas Recircu-lation	Type (controlled flow, open orifice, other)	Negative Back Pressure EGR Valve With Integral Transducer And Single Shaft Cross Hole
		Exhaust source Point of exh.inj. (spacer, carb., manifold, other)	#4 Cylinder At Cylinder Head Inlet Manifold
	Catalytic Converter	Type	3-Way Monolith
		Number of	1
		Location(s)	Mounted To Center Underbody
		Volume [L(cu.in)]	1.8 (110)
		Substrate type	Monolith
		Noble metal type	Platinum (Pt), Rhodium (Rh)
		Noble metal concentration (g/cu. cm.)	.000948
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 inlt(breather cap,other)		Air Cleaner
Evapora-tive Emission Control	Vapor vented to crankcase, canister,other)	Fuel tank	Canister
		Carburetor	-
	Vapor storage provision		Canister
Electron-ic System	Closed loop (yes/no)		Yes
	Open loop (yes/no)		No

Engine - Exhaust System

Type (single, angle with cross-over, dual, other)		Tri-Flow, Single With Cross-Over
Muffler no. & type (reverse flow, straight thru, separate resonator) Material & Mass [kg (weight lbs.)]		1, Reverse Flow
Resonator no. & type		None
Exhaust pipe	Branch o.d., wall thickness	--
	Main o.d., wall thickness	50.8 x 1.37 mm (2.0 x .054 in.)
	Matl. & Mass (kg(wght.lbs.)]	Stainless Steel
Inter-mediate pipe	o.d. & wall thickness	50.8 x 1.37 mm (2.0 x .054 in.)
	Matl. & Mass (kg(wght.lbs.)]	Stainless Steel
Tail pipe	o.d. & wall thickness	50.8 x 1.37 mm (2.0 x .054 in.)
	Matl. & Mass [kg(wght.lbs.)]	Stainless Steel

MVMA Specifications

Vehicle Line CAVALIER
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

Vehicle Emission Control

			Manual Transmission	Automatic Transmission
Exhaust Emission Control	Type (air injection, engine modifications, other)		Air Injection	Not Applicable
	Air injection	Pump or pulse	Pump	"
		Driven by	Belt	"
		Air distribution (head, manifold, etc..)	Exhaust Manifold	
		Point of entry	Manifold Facing Fire Wall, Single Port	
	Exhaust Gas Recircu-lation	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 inlt(breather cap,other)		Duct Between Air Cleaner And Throttle Body	
Evapora-tive 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	
Electron-ic System	Closed loop (yes/no)		Yes	
	Open loop (yes/no)		No	

Engine – Exhaust System

Type (single, single with cross-over, dual, other)		Tri-Flow, Single With Cross-Over
Muffler no. & type (reverse flow, straight thru, separate resonator) Material & Mass [kg (weight lbs.)]		1, Reverse Flow
Resonator no. & type		None
Exhaust pipe	Branch o.d., wall thickness	--
	Main o.d., wall thickness	50.8 x 1.37 mm (2.0 x .054 in.)
	Matl. & Mass [kg(wght.lbs.)]	Stainless Steel
Inter-mediate pipe	o.d. & wall thickness	50.8 x 1.37 mm (2.0 x .054 in.)
	Matl. & Mass [kg(wght.lbs.)]	Stainless Steel
Tail pipe	o.d. & wall thickness	50.8 x 1.37 mm (2.0 x .054 in.)
	Matl. & Mass [kg(wght.lbs.)]	Stainless Steel

MVMA Specifications

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

METRIC (U.S. Customary)

Engine Description	2.2 LITER L4 (133 CID)
Engine Code	THROTTLE BODY INJECTION RPO LM3

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

Manual 3-speed (manufacturer/country)	-
Manual 4-speed (manufacturer/country)	-
Manual 5-speed (manufacturer/country)	Isuzu, Japan (MK7)
Automatic (manufacturer/country)	Hydra-Matic/U.S.A. (MD9)
Auto. overdrive (manufacturer/country)	-

Manual Transmission/Transaxle

Number of forward speeds		5
Gear ratios	1st	3.91
	2nd	2.15
	3rd	1.45
	4th	1.03
	5th	0.74
	Reverse	3.58
Synchronous meshing (specify gears)		1-5
Shift lever location		Floor
Trans. case mat'l. & mass kg (lbs)*		Aluminum 36.5
Lubricant	Capacity [L (pt.)]	1.9 (4.0)
	Type recommended	Synchromesh Transmission Fluid (STF)

Clutch (Manual Transmission)

Clutch manufacturer		Daikin
Clutch type (dry, wet; single, multiple disc)		Dry Disc
Linkage (hyd., 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 Applicable
Type pressure plate springs		Diaphragm
Total spring load (nominal, new) N(lbs)		5391 (1212)
Clutch facing	Facing mfgr. & matl. coding	Daikin
	Facing matl. & construction	Non-Asbestos
	Rivets per facing	16
	Outside x inside dia. (nom.)	215.0 x 154.0 mm (8.46 x 6.06 in.)
	Total eff.area[sq cm(sq in)]	176.6 (23.37)
	Thickness (pressure plate side/fly wheel side)	3.5 mm (.14 in.) Pressure Plate Side, 3.2 (.13) Flywheel Side
	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 - Prepacked & Sealed
Torsional damping method, springs, hysteresis		Coil Springs With Non-Metal Friction Control

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

MVMA Specifications

Vehicle Line CAVALIER
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

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

Manual 3-speed (manufacturer/country)	--
Manual 4-speed (manufacturer/country)	--
Manual 5-speed (manufacturer/country)	Base, Muncie/U.S.A. (MG2)
Automatic (manufacturer/country)	Optional, Hydra-Matic/U.S.A. (MD9)
Auto. overdrive (manufacturer/country)	--

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)		1, 2, 3, 4 and 5
Shift lever location		Floor Mount
Trans. case mat'l. & mass kg (lbs)*		Aluminum 41.0 (90.2)
Lubricant	Capacity [L (pt.)]	2.0 (4.2)
	Type recommended	Synchromesh Transmission Fluid (STF)

Clutch (Manual Transmission)

Clutch manufacturer			LUK
Clutch type (dry, wet; single, multiple disc)			Dry Single Disc
Linkage (hyd., 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 Applicable
Type pressure plate springs			Diaphragm
Total spring load (nominal, new) N(lbs)			1382 (310.70)
Clutch facing	Facing mfgr. & matl. coding		LUK
	Facing matl. & construction		Non-Asbestos
	Rivets per facing		32
	Outside x inside dia. (nom.)		232 x 156mm (9.12 x 6.12 in.)
	Total eff.area[sq cm(sq in)]		232 (35.90)
	Thickness (pressure plate side/fly wheel side)		7.50 - 8.00mm (.295 - .315 in.)
	Rivet depth (pressure plate side/fly wheel side)		1.4mm (0.06 in.) / 1.4mm (0.06 in.)
	Engagement cushion method		Cushion 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.

MVMA Specifications

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

METRIC (U.S. Customary)

Engine Description	2.2 LITER L4 (133 CID)
Engine Code	THROTTLE BODY INJECTION RPO LM3

○ 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 CAVALIER
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

○ Automatic Transmission/Transaxle

Trade Name		THM 125C
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 = 74 (46) 2-3 = 127 (79)
Max. kickdown speed - drive range [km/h (mph)]		3-2 = 121 (76) 2-1 = 51 (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	245mm (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 Part Of 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 CAVALIER
Model Year 1990 Issued 6-89 Revised(*) 9-89

METRIC (U.S. Customary)

Engine Description	2.2 LITER L4 (133 CID)
Engine Code	THROTTLE BODY INJECTION RPO LM3

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

Effective final drive ratio (or overall top gear ratio)			MK7 3.45 (2.55) MD9 2.84
Trnsfr ratio and method(chain,gear,etc)			
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.)]	See Automatic Trans. Spec.
	Type recommended	"

○ Axle Shafts - Front Wheel Drive

Manufacturer and number used			Saginaw Division, 2
Type (straight, solid bar, tubular, etc.)		Left	Straight - Solid
		Right	Straight - Solid
Outer diam. x length* x wall thickness	Manual transaxle	Left	23.8 x 320.0
		Right	23.8 x 663.0
	Automatic transaxle	Left	23.8 x 311.0
		Right	23.8 x 364.3
	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		Inboard & Outboard On Each Axle Shaft
	Type, size, plunge	Inner	Tripot - 61.0 Stroke
		Outer	Rzeppa - Fixed Center
	Attach (u-bolt, clamp, etc.)		Retaining Ring
	Bearing: Type (plain, anti-friction)		Inner - Ball & Roller Outer - Ball
	Bearing: Lubrication (fitting, prepack)		Prepacked
Drive taken through (torque tube, arms or springs)			Wishbone Lower Control Arm, Upper McPherson Strut
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 CAVALIER
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

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

Effective final drive ratio (or overall top gear ratio)			MG2 3.61 (2.60) MD9 2.53 MD9 2.84
Trnsfr ratio and method(chain,gear,etc)			
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.))	See Automatic Trans. Spec.
	Type recommended	"

○ Axle Shafts - Front Wheel Drive

Manufacturer and number used			Saginaw Division, 2
Type (straight, solid bar, tubular, etc.)		Left	Straight - Solid
		Right	Straight - Solid
Outer diam. x length* x wall thickness	Manual transaxle	Left	27.1 x 308.0
		Right	27.1 x 315.5
	Automatic transaxle	Left	23.8 x 311.0
		Right	23.8 x 364.3
	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		Inboard & Outboard On Each Axle Shaft
	Type, size, plunge	Inner	Cross Groove - 61.2 Stroke (Manual) Tripot - 61.0 Stroke (Auto)
		Outer	Rzeppa - Fixed Center
	Attach (u-bolt, clamp, etc.)		Retaining Ring
	Bearing: Type (plain, anti-friction)		Inner - Ball (Manual) Ball & Roller (Auto) Outer - Ball
	Bearing: Lubrication (fitting, prepack)		Prepacked
Drive taken through (torque tube, arms or springs)			Wishbone Lower Control Arm, Upper McPherson Strut
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 CAVALIER

Model Year 1990 Issued 6-89 Revised(*)

METRIC (U.S. Customary)

Body Type And/Or Engine Displacement ALL

Suspension – General Including Electronic Controls

Car leveling	Std./opt./not avail.		
	Manual/automatic control		
	Type (air/hydraulic)		
	Primary/assist spring		
	Rear only/4 wheel leveling		
	Single/dual rate spring		
	Single/dual ride heights		
	Provision for jacking		Body Jack & Pads On Rocker
Shock absorber damping controls	Standard/option/not avail.		
	Manual/automatic control		
	Number of damping rates		
	Type of actuation (manual/electric motor/air, etc.)		
	sensors	Lateral acceleration	
		Deceleration	
		Acceleration	
		Road surface	
Shock absorber (front & rear)	Type		Front – MacPherson Strut; Rear – Telescopic (Double-Acting)
	Make		Delco Products
	Piston diameter		Front: 32 (1.26); Rear: 25 (.98)
	Rod diameter		Front: 22 (.87); Rear: 13 (.51)

Suspension – Front

Type and description		MacPherson Strut With Coil Spring
Travel*	Full jounce	95 (3.74) (From Design)
	Full rebound	84 (3.31) (From Design)
Spring	Type,(coil,leaf,other)&matl	Coil – Steel
	Insulators (type & matl)	Top & Bottom – Rubber
	Size (coil design height & i.d.)	Spring Computer Selected – Varies With Option Content
	Spring rate [N/mm(lb./in.)]	20 (Base Car)
	Rate @ wheel [N/mm(lb./in)]	17.5 (Base Car)
Stabilizer	Type (link,linkless,frmless)	Link
	Material & bar diameter	Steel: 22 (.87) (Base Car)

Suspension – Rear

Type and description			Trailing Crank Arm With Twist Beam
Travel*	Full jounce		93 (3.7) (Base Car From Design)
	Full rebound		99 (3.9) (Base Car From Design)
Spring	Type(coil,leaf,other)&matl		Coil – Steel
	Size (length x width, coil design height & i.d.)		Spring Computer Selected – Varies With Option Content
	Spring rate [N/mm (lb/in)]		23 @ Curb – Variable (Base Car)
	Rate @ wheel [N/mm (lb/in)]		11.1 @ Curb – Variable (Base Car)
	Insulators(type & material)		Top & Bottom – Rubber
	If leaf	No. of leaves	Not Available
		Shackle(comp or tens)	"
Stabilizer	Type(link,linkless,frmless)		Not Available (Base Car)
	Material & bar diameter		"
Track bar (type)			Not Available

* Define load condition:

MVMA Specifications

METRIC (U.S. Customary)

Body Type And/Or
Engine Displacement

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

ALL

Brakes – Service

Description			Power Assisted Hydraulic Brakes
Manufacturer and brake type (std., opt., n.a.)	Front (disc or drum)		Standard - Disc
	Rear (disc or drum)		Standard - Drum
Valving type(prop.,delay,metering,other)			Proportioning, Diagonal Split Circuit
Power brake (std., opt., n.a.)			Standard
Booster type(rmt,intgrl,vac.,hyd.,etc.)			Tandem Vacuum
Vacuum	Source (inline, pump, etc.)		Inline
	Reservoir (volume cu. in.)		None
	Pump-type		Not Applicable
Traction Control	Operational speed range		Not Applicable
	Type engine intervention		"
Anti-lock device	Front/rear (std., opt., n.a)		Not Applicable
	Manufacturer		"
	Type (electronic, mech.)		"
	Number sensors or circuits		"
	No. anti-lock hyd. circuits		"
	Integral or add-on system		"
	Yaw control (yes, no)		"
	Hydraulic power source		"
Effective area [sq. cm. (sq. in.)]*			309 (47.9)
Gross Lng area [sq cm (sq in)] **(F/R)			381 (59.1)
Swept area [sq cm (sq in)]*** (F/R)			1624 (251.8)
Rotor	Outer working diameter	F/R	F 247 (9.72)
	Inner working diameter	F/R	
	Thickness	F/R	F 22.4 (.88)
	Matl & type (vented/sld)	F/R	F - Vented Cast Iron
Drum	Diameter & width	F/R	R 200 x 45 (7.87 x 1.77)
	Type and material	F/R	Cast Iron
Wheel cylinder bore			F 57 (2.24) R 16 (.63)
Master cylinder	Bore/stroke	F/R	Bore - 22.2 (.874) Stroke 35.7 (1.41)
Pedal arc ratio			3.7:1
Line pressure at 445 N (100 lb.) pedal load [kPa (psi)]			10,900
Lining clearance		F/R	Both - Self-Adjusting
Brake lining	Front wheel	Bonded or riveted	Integrally Molded - Inboard And Outboard
		Rivet size	Not Available
		Manufacturer	Delco Moraine
		Lining code *****	128 FE
		Material	Semi-Metallic
		**** Pri.or out-brd	116.7 x 47 x 10.92 mm (4.59 x 1.85 x .430 in.)
		Size Sec. or in-brd	125 x 47 x 10.2 mm (4.92 x 1.85 x .402 in.)
		Shoe thckns.(no lng)	Inboard 4.72 mm (.186 in.); Outboard 3.14 mm (1.23 in.)
	Rear wheel	Bonded or riveted	Riveted
		Manufacturer	Inland Division
		Lining code *****	235 FE
		Material	Organic
		**** Pri. or out-brd	167.7 x 43.9 x 6 mm (6.60 x 1.73 x .236 in.)
		Size Sec. or in-brd	194 x 43.9 x 7 mm (7.64 x 1.73 x .276 in.)
		Shoe thckns (no lng)	2.75 mm (.11 in.)

* 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 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 CAVALIER
Model Year 1990 Issued 6-89 Revised(*)

METRIC (U.S. Customary)

Body Type And/Or Engine Displacement	ALL

Tires And Wheels (Standard)

Tires	Size (load range, ply)		P185/80R13
	Type (bias, radial, 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(45mph)		526
Wheels	Type & material		Stamped/Styled Steel
	Rim (size & flange type)		13 x 5.5 JB
	Wheel offset		48.0 (1.9)
	Attachment	Type(bolt,stud)	Stud
		Circle diameter	100.0 mm (3.94 in.)
		Number & size	5-12 mm
Spare	Tire and wheel		T115/70D14 Wheel Diameter 14 x 4, Inflation 415 (60 PSI)
	Storage position & location (describe)		Under Deck Of Luggage Compartment

Tires And Wheels (Optional)

Tire size (load range, ply)	
Type (bias, radial, steel, nylon, etc.)	
Wheel (type & material)	Aluminum
Rim (size, flange type and offset)	13 x 5.5
Tire size (load range, ply)	P215/60R14
Type (bias, radial, steel, nylon, etc.)	Steel Belted Radial
Wheel (type & material)	Aluminum
Rim (size, flange type and offset)	14 x 6.0 JJ 47 mm Offset
Tire size (load range, ply)	P195/70R14
Type (bias, radial, steel, nylon, etc.)	Steel Belted Radial
Wheel (type & material)	Stamped Styled Steel
Rim (size, flange type and offset)	14 x 6 x 47
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)	T125/70D15 Wheel Diameter 14 x 4, Inflation 415 (60 PSI) Under Deck Of Luggage Compartment

Brakes – Parking

Type of control		Grip Handle
Location of control		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

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

METRIC (U.S. Customary)

Body Type And/Or Engine Displacement: ALL

Steering

Manual (std., opt., n.a.)				Standard
Power (std., opt., n.a.)				Optional
Adjustable steering wheel/column (tilt, telescope, other)		Type		Tilt
		Manufacturer		Saginaw Division
		(std., opt., n.a.)		Optional
Wheel diameter ** (WS) SAE J1100		Manual		375 mm (14.8 in.)
		Power		375 mm (14.8 in.)
Turning diameter m (ft.)	Outside front	Wall to wall (l. & r.)		11.3 (37.2)
		Curb to curb (l. & r.)		10.5 (34.3)
	Inside rear	Wall to wall (l. & r.)		5.8 (19.2)
		Curb to curb (l. & r.)		5.9 (19.4)
Scrub Radius *				1.56 (13" Tires)
Manual	Gear	Type		Rack & Pinion
		Manufacturer		Saginaw Division
		Ratios	Gear	-
			Overall	22.0:1
	No. wheel turns (stop to stop)			3.96
Power	Type (hydraulic, elec., etc.)			Rack & Pinion W/Integral Unit
	Manufacturer			Saginaw Division
	Gear	Type		Rack & Pinion
		Ratios	Gear	--
			Overall	16.0:1
	Pump (drive)			Belt Off Crankshaft Pulley
	No. wheel turns (stop to stop)			2.88
Linkage	Type			Center Take-Off Tie Rods, Rack & Pinion
	Location (front or rear of wheels, other)			Rear
	Tie Rods (one or two)			2
Steering axis	Inclination at camber (deg.)			13.5
	Bearings (type)	Upper		Ball Bearings
		Lower		Ball Joint
		Thrust		Incorporated In Upper Bearing
Steering spindle/knuckle & joint type				McPherson Strut
Wheel spindle/hub	Diameter	Inner bearing		Not Available
		Outer bearing		"
	Thread (size)			M20 x 1.5
	Bearing (type)			Integral Double Row Ball, Permanently Lubed

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

MVMA Specifications

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

METRIC (U.S. Customary)

Body Type And/Or Engine Displacement: ALL

Wheel Alignment

Front wheel at curb mass (wt.)	Service checking	Caster (deg.)	1.7 (+/-) 1.0 Cross Car Must Be Within 1.0
		Camber (deg.)	0 (+/-) .7 Cross Car Must Be Within 1.0
		Toe-in [outside track-mm (in.)]	0 (+/-) .2 Sum Toe
	Service reset*	Caster (deg.)	-0.8 to 4.2 Cross Car Must Be Within 0.75
		Camber (deg.)	0 (+/-) .7 Cross Car Must Be Within 1.0
		Toe-in (deg.)	-.1 to + .1 (Degrees Per Wheel)
	Periodic M.V. inspection	Caster (deg.)	Not Applicable
		Camber (deg.)	"
		Toe-in (deg.)	"
Rear wheel at curb mass (wt.)	Service checking	Camber (deg.)	"
		Toe-in [outside track-mm (in.)]	"
	Service reset*	Camber (deg.)	"
		Toe-in (deg.)	"
	Periodic M.V. inspection	Camber (deg.)	"
		Toe-in (deg.)	"

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

Electrical – Instruments and Equipment

		BASE	GAUGE
Speedometer	Type (analog, digital, std., opt.)	Dial W/ Pointer	Dial W/ Pointer
	Trip odometer (std., opt., n.a.)	Not Available	Standard W/Gauge
EGR maintenance indicator		Not Available	
Charge indicator	Type	Tell-Tale Warning Lamp	Gauge
	Warning device (light, audible)	Lamp	None
Temperature indicator	Type	Tell-Tale Warning Lamp	Gauge
	Warning device	Lamp	None
Oil pressure indicator	Type	Tell-Tale Warning Lamp	Gauge
	Warning device	Lamp	None
Fuel indicator	Type	Gauge	Gauge
	Warning device	None	None
Windshield wiper	Type (standard)	Electric 2-Speed	
	Type (optional)	Pulse Wiper	
	Blade length	432 (17)	
	Swept area [sq cm (sq in)]	5181 (803) Coupe/5230 (811) Sedan & Wagon	
Windshield washer	Type (standard)	Electric Pump Mounted On Reservoir Bottle	
	Type (optional)	None	
	Fluid level indicator	None	
Rear window wiper, wiper/washer (std., opt., n.a.)		Not Available	
Horn	Type	Electric Vibrating	
	Number used	1	
Other		Indicator Lamps For Parking Brake And Brake Failure, Fasten Belt, Upshift, Check Engine, Low Coolant, High Beam, Left And Right Turn And Gate Ajar.	

MVMA Specifications

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

METRIC (U.S. Customary)

Engine Description	2.2 LITER L4 (133 CID)
Engine Code	ELECTRONIC FUEL INJECTION RPO LM3

Electrical – Supply System

Battery	Manufacturer	Delco Remy
	Model, std., (opt.)	Standard
	Voltage	12
	Amps at 0 deg F cold crnk	630
	Minutes-reserve capacity	90
	Amps/hrs. - 20 hr. rate	54
	Location	Under Hood Front
Alternator	Manufacturer	Delco Remy
	Rating (idle/max. rpm)	30/80
	Ratio (alt. crank/rev.)	2.44:1
	Output at idle (rpm, park)	52 Amps @ 27 deg. C. (81 deg. F.) 875 RPM
	Optional (type & rating)	None
Regulator	Type	Integral To Alternator

Electrical – Starting System

Motor	Manufacturer	Delco Remy
	Current drain -20 deg F	363 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 Spark Plug	Champion Spark Plug
	Model		R44LTSM	RS13LYC
	Thread (mm)		14 mm (.551 in.)	14 mm (.551 in.)
	Tightening torque [Newton meters (lb. ft.)]		10-20 (7-15)	10-20 (7-15)
	Gap		0.9 mm (0.035 in.)	0.9 mm (0.035 in.)
	Number per cylinder		1	1
Distributor	Manufacturer		Not	
	Model		Applicable	

Electrical – Suppression

Locations & type	Not Available

MVMA Specifications

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

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.)	Standard
	Voltage	12
	Amps at 0 deg F cold crnk	630
	Minutes-reserve capacity	90
	Amps/hrs. - 20 hr. rate	54
	Location	Underhood Front
Alternator	Manufacturer	Delco Remy
	Rating(idle/max rpm dr.) *	28/74, (36/100)
	Ratio (alt. crank/rev.)	2.65:1
	Output at idle (rpm, park)	51 Amps @ 27 Deg. C., 66 Amps @ 27 Deg. C. 850 RPM
	Optional (type & rating)	None
Regulator	Type	Integral To Alternator

Electrical – Starting System

Motor	Manufacturer	Delco Remy
	Current drain -20 deg F	323 Amps
	Power rating [kw (hp)]	1.4
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

* First Model # Listed is for Heater Only, 2nd is for A/C.

MVMA Specifications

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

METRIC (U.S. Customary)

Body Type	ALL

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 Anti-corrosion Materials Are Used On Interior And Exterior Metal Panel Surfaces. Materials Include One And Two-Sided Galvanized And Zincrometal Steel. Special Metal Conditioners, Primers, Protective Waxes And Sealers Are Used On Interior Surfaces. Chip Resistant Primer Or Plastic Material Is Applied To Exterior Lower Body.

Body - Miscellaneous Information

Type of finish (lacquer, enamel, other)			Acrylic Lacquer Or Base Coat/Clear Coat Enamel
Hood	Material & mass		
	Hinge location (front, rear)		Rear
	Type (counterbalance, prop)		Prop Rod - Single Pivot Hinge
	Release control (int., ext.)		Internal
Trunk lid	Material & mass		Steel/Sedan 10.5 (23.1) Coupe 17.1 (37.6)
	Type (counterbalance, other)		Torque Rods On Coupe And Sedan
	Internal release control (elec., mech., n.a.)		Electrical (Optional)
Hatch-back lid	Material & mass		
	Type (counterbalance, other)		
	Internal release control elec., mech., n.a.)		
Tailgate	Material & mass		Steel/10.66 kg (23.5 lbs.)
	Type (drop, lift, door)		Gas Rods
	Internal release control (elec., mech., n.a.)		Electrical Solenoid (Opt.)
Vent window control (crank, friction, pivot, power)		Front	Not Applicable
		Rear	"
Window regulator type (cable, tape, flex drive, etc.)		Front	"
		Rear	"
Seat cushion type (e.g., 60/40, bucket, bench wire, foam, etc.)		Front	Foam
		Rear	Foam
		3rd seat	Not Applicable
Seat back type (e.g., 60/40, bucket, bench, wire, foam, etc.)		Front	Foam
		Rear	Foam
		3rd seat	Not Applicable
			Left Topside Of I/P

MVMA Specifications

Vehicle Line CAVALIER

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

METRIC (U.S. Customary)

Body Type ALL

Restraint System

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

Glass

	SAE Ref No		
Windshield glass exposed surface area [sq. cm. (sq. in.)]	S1	7487 (1161)	7487 (1161)
Side glass exposed surface area [sq. cm. (sq. in.)] - total 2- sides	S2	9050 (1403)	10678 (1655)
Backlight glass exposed surface area [sq. cm. (sq. in.)]	S3	5154 (799)	5691 (882)
Total glass exposed surface area [sq. cm. (sq. in.)]	S4	21691 (3363)	23856 (3698)
Windshield glass (type)		Curved - Laminated Float	
Side glass (type)		Curved - Tempered Float	
Backlight glass (type)		Curved - Tempered Float	

Headlamps

Description - sealed beam, halogen, replaceable bulb, etc.	Replaceable Bulb - 2 Lamps - 2 Bulbs Each
Shape	Rectangular
Lo-beam type (2A1, 2B1, 2C1, etc.)	9006
Quantity	2
Hi-beam type (1A1, 2A1, 1C1, 2C1, etc.)	9005
Quantity	2

Frame

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

MVMA Specifications

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

METRIC (U.S. Customary)

Body Type ALL

Restraint System

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

Glass

	SAE Ref No	
Windshield glass exposed surface area [sq. cm. (sq. in.)]	S1	7487 (1161)
Side glass exposed surface area [sq. cm. (sq. in.)] - total 2- sides	S2	16036 (2486)
Backlight glass exposed surface area [sq. cm. (sq. in.)]	S3	5399 (837)
Total glass exposed surface area [sq. cm. (sq. in.)]	S4	28922 (4484)
Windshield glass (type)		Curved - Laminated Float
Side glass (type)		Curved - Tempered Float
Backlight glass (type)		Curved - Laminated Float

Headlamps

Description - sealed beam, halogen, replaceable bulb, etc.	
Shape	
Lo-beam type (2A1, 2B1, 2C1, etc.)	
Quantity	
Hi-beam type (1A1, 2A1, 1C1, 2C1, etc.)	
Quantity	

Frame

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

MVMA Specifications

Vehicle Line CAVALIER

Model Year 1990 Issued 9-89 Revised(*)

METRIC (U.S. Customary)

Body Type	ALL

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

Air conditioning (manual, auto, temp control)		(C60) Optional Manual
Clock (digital, analog)		Part of Radio Package
Compass / thermometer		
Console (floor, overhead)		(DO6) Optional Floor
Defroster, elec. backlight		(C49) Optional
Electronic	Diagnostic monitor (integrated, individual)	
	Instrument cluster (list instruments)	(UB3) Standard JF Optional JC Oil, Temp, Volts, Trip Odom. & Tach. (UH6) Standard JC Oil, Temp & Volts
	Keyless entry	
	Tripminder (avg. spd. fuel)	
	Voice alert (list items)	
	Other	
Fuel door lock (remote, key, electric)		
Lamps	Auto head on/off delay, dimming	
	Cornering	
	Courtesy (map, reading)	(C95) Optional
	Door lock, ignition	
	Engine compartment	
	Fog	
	Glove compartment	
	Trunk	Standard
	Illuminated entry system (list lamps, activation)	
	Other	
Mirrors	Day / night (auto. man.)	
	L.H. (remote, pwr., heated)	(D31) Standard JC Rem. (D35) Standard JF Rem. Optional JC
	R.H.(convex, rmt, pwr, htd)	(D35) Standard JF Direct Optional JC
	Visor vanity (RH/LH illum.)	
Navigation system (describe)		
Prkg. brake-auto release (warn. light)		

MVMA Specifications

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

METRIC (U.S. Customary)

Engine Description
Engine Code | ALL

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

Power equipment	Deck lid(release, pull down)		(A90) Optional Electrical Rem. Release
	Door locks (manual, auto., describe system)		(AU3) Optional
	Seats	2 - 4 - 6 way, etc.	
		Reclining(R.H., L.H.)	(AR9) Standard
		Memory (R.H., L.H., preset, recline)	
		Lumbar, hip, thigh, support	
		Heated (R.H., L.H., other)	
	Side windows		(A31) Optional
	Vent windows		
	Rear windows		
Radio systems	Antenna (location, whip, w/shield, power)		(US6) Standard Fixed RH Front Fender
	Stan.	AM, FM, stereo, tape, compact disc, graphic equalizer, theft deterrent, radio prep package, headphone jacks, etc.	(UM7) AM/FM Stereo, Seek/Scan, Clock & ETR
	Opt.		(UM6) Optional AM/FM Stereo, Seek/Scan, Clock, ETR & Cassette (UX1) Optional JF AM & FM Stereo, Seek/Scan, Clock, ETR, Cassette & Equalizer
	Speaker (number, location)		(U66) Standard 4 Dash & Rear Quarter
Roof: open air or fixed (flip-up, sliding, 'T')			(AD3) Optional Hinged
Speed control device			(K34) Optional
Speed warn. dev. (light, buzzer, etc.)			
Tachometer (rpm)			(UB3) Standard JF Optional JC
Telephone system (describe)			
Theft deterrent system			

MVMA Specifications

Vehicle Line CAVALIER

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

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.	COUPE & ALL	SEDAN	WAGON
o Width				
Tread (front)	W101	1418 (55.8)		
Tread (rear)	W102	1402 (55.2)		
Vehicle width	W103	1677 (66.0)		
Body width at Sg RP (front)	W117	1652 (65.0)		
Vehicle width (front doors open)	W120	3684 (145.0)	3218 (126.7)	
Vehicle width (rear doors open)	W121	Not Applicable	2832 (111.5)	
Tumble-home (deg.)	W122	22		--
Outside mirror width	W410	1862 (73.3)		
o Length				
Wheelbase	L101	2571 (101.2)		
Vehicle length	L103	4536 (178.6)		4522 (178.0)
Overhang (front)	L104	985 (38.8)		
Overhang (rear)	L105	980 (38.6)		966 (38.0)
Upper structure length	L123	2514 (99.0)	2365 (93.1)	--
Rear wheel C/L 'X' coordinate	L127	4354 (171.4)		
o Height **				
Passenger distribution (front/rear)	PD1.2.3	2/0	**	
Trunk/cargo load		0	**	
Vehicle height	H101	1321 (52.0)	1361 (53.6)	1375 (54.1)
Cowl point to ground	H114	931 (36.7)		
Deck point to ground	H138	964 (38.0)	944 (37.2)	--
Rocker panel-front to ground	H112	223 (8.8)	225 (8.9)	203 (8.0)
Rocker panel-rear to ground	H111	206 (8.1)		201 (7.9)
Windshield slope angle (deg.)	H122	59	55	
Backlight slope angle (deg.)	H121	67	50	--
Ground Clearance **				
Front bumper to ground	H102	231 (9.1)		234 (9.2)
Rear bumper to ground	H104	268 (10.6)		320 (12.6)
Bumper to ground [front at curb mass (wt.)]	H103	246 (9.7)		249 (9.8)
Bumper to ground [rear at curb mass (wt.)]	H105	298 (11.7)		345 (13.6)
Angle of approach (deg.)	H106	18		
Angle of departure (deg.)	H107	19		
Ramp breakover angle (deg.)	H147	15		
Axle differential to ground (front/rear)	H153	163 (6.4)		168 (6.6)
Min. running ground clearance	H156	141 (5.6)		146 (5.7)
Location of min. run. grd. clear.		Front Suspension		

**** 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 CAVALIER
Model Year 1990 Issued 6-89 Revised(*) 9-89

METRIC (U.S. Customary)
Vehicle Dimensions

See Key Sheets for Definitions

Body Type COUPE

○ Front Compartment

	SAE Ref. No.	
SgRP front, 'X' coordinate	L31	3113 (122.6)
Effective head room	H61	959 (37.8)
Max. eff. leg room (accelerator)	L34	1072 (42.2)
SgRP to heel point	H30	233 (9.2)
SgRP to heel point	L53	874 (34.4)
Back angle (deg.)	L40	25
Hip angle (deg.)	L42	97
Knee angle (deg.)	L44	127
Foot angle (deg.)	L46	87
Design H-point front travel	L17	192 (7.6)
Normal driving & riding seat track trvl.	L23	171 (6.7)
Shoulder room	W3	1364 (53.7)
Hip room	W5	1216 (47.9)
*** Upper body opening to ground	H50	1196 (47.1)
Steering wheel maximum diameter*	W9	375 (14.8)
Steering wheel angle (deg.)	H18	20
Accel. heel pt. to steer. whl. cntr	L11	Not Available
Accel. heel pt. to steer. whl. cntr	H17	Not Available
Undepressed floor covering thickness	H67	17 (.7)

○ Rear Compartment

Front Compartment Int. Dim. Are Measured With The Seating Ref. Pt. (SgRP) 21 mm (1 Seat Adjuster Notch) Forward of Rearmost Seat Position.

SgRP point couple distance	L50	720 (28.3)
Effective head room	H63	917 (36.1)
Min. effective leg room	L51	806 (31.7)
SgRP (second to heel)	H31	259 (10.2)
Knee clearance	L48	-21 (-.8)
Shoulder room	W4	1341 (52.8)
Hip room	W6	1261 (49.6)
*** Upper body opening to ground	H51	Not Applicable
Back angle (deg.)	L41	25
Hip angle (deg.)	L43	78
Knee angle (deg.)	L45	78
Foot angle (deg.)	L47	115
Depressed floor covering thickness	H73	19

Luggage Compartment

Usable luggage capacity [L (cu. ft.)]	V1	374 (13.2)
*** Liftover height	H195	819 (32.2)

Interior Volumes (EPA Classification)

Vehicle class		
Interior volume index (cu. ft.)**		
Trunk / cargo index (cu. ft.)		(13.2)

* 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 CAVALIER
Model Year 1990 Issued 6-89 Revised(*) 9-89

METRIC (U.S. Customary)
Vehicle Dimensions

See Key Sheets for Definitions

Body Type SEDAN

○ Front Compartment

	SAE Ref. No.	
SgRP front, 'X' coordinate	L31	3113 (122.6)
Effective head room	H61	994 (39.1)
Max. eff. leg room (accelerator)	L34	1072 (42.2)
SgRP to heel point	H30	233 (9.2)
SgRP to heel point	L53	874 (34.4)
Back angle (deg.)	L40	25
Hip angle (deg.)	L42	84
Knee angle (deg.)	L44	127
Foot angle (deg.)	L46	87
Design H-point front travel	L17	92 (7.6)
Normal driving & riding seat track trvl.	L23	171 (6.7)
Shoulder room	W3	1360 (53.5)
Hip room	W5	1215 (47.8)
*** Upper body opening to ground	H50	1236 (48.7)
Steering wheel maximum diameter*	W9	375 (14.8)
Steering wheel angle (deg.)	H18	20
Accel. heel pt. to steer. whl. cntr	L11	Not Available
Accel. heel pt. to steer. whl. cntr	H17	Not Available
Undepressed floor covering thickness	H67	17 (.7)

Front Compartment Int. Dim. Are Measured With The Seating Ref. Pt. (SgRP) 21 mm (1 Seat Adjuster Notch) Forward of Rearmost Seat Position.

○ Rear Compartment

SgRP point couple distance	L50	758 (29.8)
Effective head room	H63	951 (37.4)
Min. effective leg room	L51	844 (33.2)
SgRP (second to heel)	H31	272 (10.7)
Knee clearance	L48	-23 (-.9)
Shoulder room	W4	1364 (53.7)
Hip room	W6	1242 (48.9)
*** Upper body opening to ground	H51	1238 (48.7)
Back angle (deg.)	L41	26
Hip angle (deg.)	L43	82
Knee angle (deg.)	L45	84
Foot angle (deg.)	L47	118
Depressed floor covering thickness	H73	18

Luggage Compartment

Usable luggage capacity [L (cu. ft.)]	V1	369 (13.0)
*** Liftover height	H195	819 (32.2)

Interior Volumes (EPA Classification)

Vehicle class		
Interior volume index (cu. ft.)**		
Trunk / cargo index (cu. ft.)		13.0

* 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 CAVALIER
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METRIC (U.S. Customary)
Vehicle Dimensions

See Key Sheets for Definitions

Body Type STATION WAGON

○ Front Compartment

		SAE Ref. No.	
	SgRP front, 'X' coordinate	L31	3113 (122.6)
	Effective head room	H61	987 (38.9)
	Max. eff. leg room (accelerator)	L34	1072 (42.2)
	SgRP to heel point	H30	233 (9.2)
	SgRP to heel point	L53	874 (34.4)
	Back angle (deg.)	L40	25
	Hip angle (deg.)	L42	97
	Knee angle (deg.)	L44	127
	Foot angle (deg.)	L46	87
	Design H-point front travel	L17	
	Normal driving & riding seat track trvl.	L23	
	Shoulder room	W3	1360 (53.5)
	Hip room	W5	1215 (47.8)
***	Upper body opening to ground	H50	1249 (49.2)
	Steering wheel maximum diameter*	W9	375 (14.8)
	Steering wheel angle (deg.)	H18	20
	Accel. heel pt. to steer. whl. cntr	L11	Not Available
	Accel. heel pt. to steer. whl. cntr	H17	Not Available
	Undepressed floor covering thickness	H67	17 (.7)

○ Rear Compartment

Front Compartment Int. Dim. Are Measured With The Seating Ref. Pt. (SgRP) 21 mm (1 Seat Adjuster Notch) Forward of Rearmost Seat Position.

	SgRP point couple distance	L50	741 (29.2)
	Effective head room	H63	975 (38.4)
	Min. effective leg room	L51	825 (32.5)
	SgRP (second to heel)	H31	259 (10.2)
	Knee clearance	L48	-31 (-1.2)
	Shoulder room	W4	1364 (53.7)
	Hip room	W6	1244 (49.0)
***	Upper body opening to ground	H51	1254 (49.4)
	Back angle (deg.)	L41	25
	Hip angle (deg.)	L43	80
	Knee angle (deg.)	L45	81
	Foot angle (deg.)	L47	117
	Depressed floor covering thickness	H73	20 (0.8)

Luggage Compartment

	Usable luggage capacity [L (cu. ft.)]	V1	Not Applicable
***	Liftover height	H195	Not Applicable

Interior Volumes (EPA Classification)

Vehicle class		
Interior volume index (cu. ft.)**		
Trunk / cargo index (cu. ft.)		34.1

* 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 CAVALIER
Model Year 1990 Issued 6-89 Revised(*)

METRIC (U.S. Customary)
Vehicle Dimensions

See Key Sheets for Definitions

Body Type 1JC35

Station Wagon – Third Seat

SAE Ref. No. (NOT APPLICABLE)

Seat facing direction	SD1	
SgRP couple distance	L85	
Shoulder room	W85	
Hip Room	W86	
Effective leg room	L86	
Effective head room	H86	
SgRP to heel point	H87	
Knee clearance	L87	
Back angle	L88	
Hip angle	L89	
Knee angle	L90	
Foot angle	L91	

Station Wagon – Cargo Space

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	837 (33.0)
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)

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

MVMA Specifications

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

METRIC (U.S. Customary)

Body Type ALL

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 Belt. 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 Belt.
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). 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 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	ALL-COUPE	SEDAN	STATION WAGON
Front	W21*	504 (19.8)		
	L54*	2746 (108.1)		
	H81*	246 (9.7)		
	H161*	287 (11.3)		296 (11.7)
**	H163*	266 (10.5)		277 (10.9)
Rear	W22*	440 (17.3)		
	L55*	4900 (192.9)	4951 (194.9)	4951 (194.9)
	H82*	362 (14.3)		
	H162*	407 (16.0)		425 (16.7)
**	H164*	377 (14.8)		401 (15.8)

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

All linear dimensions are in millimeters (inches).

** EPA Loaded Vehicle Weight, Loading Conditions.

MVMA Specifications

METRIC (U.S. Customary)

Vehicle Line CAVALIER

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

Code / Model	Vehicle Mass (weight)							
	CURB MASS, kg. (lb.)*			% PASS MASS DISTRIBUTION				
				Pass in Front		Pass in Rear		
	Front	Rear	Total	Front	Rear	Front	Rear	ETWC** Code
CAVALIER								
1JC35 4-Door Station Wagon	709 (1563)	438 (966)	1147 (2529)					P
1JC37 2-Door Notchback Coupe	705 (1554)	413 (911)	1118 (2465)					P
1JC69 4-Door Notchback Sedan	710 (1565)	411 (906)	1121 (2471)					P
CAVALIER Z24								
1JF37 2-Door Notchback Coupe	760 (1675)	433 (955)	1193 (2630)					Q

Curb Mass - The calculated mass of a vehicle with standard equipment only as designed with the additional load of oil, lubes, coolants, and fuel all filled to capacity.

Shipping Mass - Same as base curb weight, except 3 gallons of gasoline.

* Reference - SAE J1100 Motor vehicle dimensions, curb weight definition.
** ETWC - Equivalent Test Weight Class - basis for U.S. Environmental Protection Agency emission certifications. Refer to ETWC code legend below for test weight class.

ETWC LEGEND

A = 1000	I = 2000	Q = 3000	Y = 4000
B = 1125	J = 2125	R = 3125	Z = 4250
C = 1250	K = 2250	S = 3250	AA = 4500
D = 1375	L = 2375	T = 3375	BB = 4750
E = 1500	M = 2500	U = 3500	CC = 5000
F = 1625	N = 2625	V = 3625	DD = 5250
G = 1750	O = 2750	W = 3750	EE = 5500
H = 1875	P = 2875	X = 3875	FF = 5750

SHIPPING MASS (weight) Calculation (Kg. (lbs.)

Shipping Mass (weight) = Curb Mass (weight) Less

31 (68)

MVMA Specifications

METRIC (U.S. Customary)

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

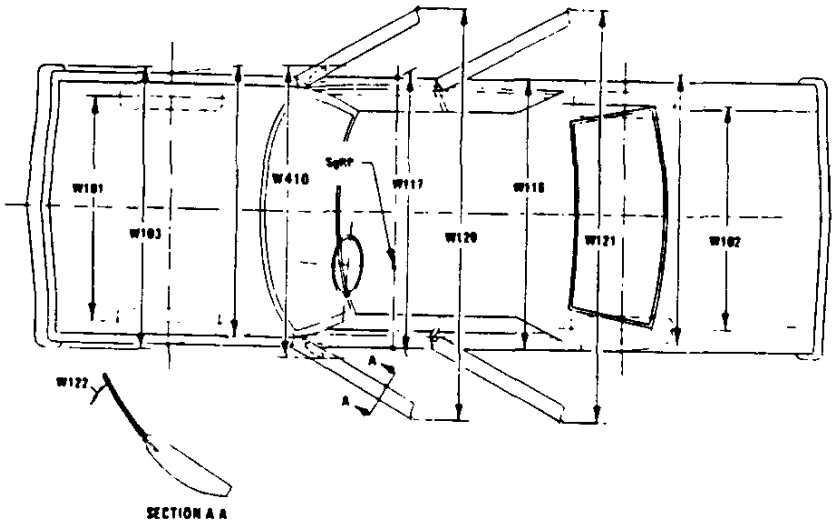
Optional Equipment Differential Mass (weight)*

Code	Equipment	MASS, kg. (lb.) Front	Rear	Total	Remarks Restrictions, Requirements
A31	Power Windows	1.0 (2.2)	1.8 (4.0)	2.8 (6.2)	Coupe
A31	Power Windows	1.8 (4.0)	3.2 (7.0)	5.0 (11.0)	Sedan/Wagon
B37	Mats, Front & Rear	1.2 (2.7)	1.0 (2.7)	2.2 (5.3)	
C60	Air Conditioning	18.7 (41.2)	-1.8 (-4.0)	16.9 (37.3)	LM3
C60	Air Conditioning	24.6 (54.2)	-1.8 (-4.0)	22.8 (50.3)	LHO
K34	Cruise Control	1.8 (4.0)	.0 (.0)	1.8 (4.0)	
LHO	Engine Option	47.0 (103.6)	-2.1 (-4.6)	44.9 (99.0)	1JC35 & 69

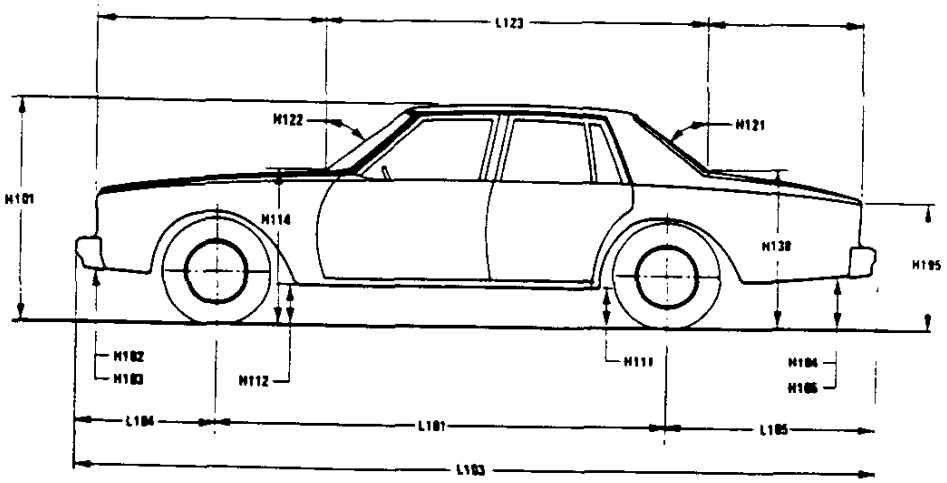
* Also see Engine – General Section for dressed engine mass (weight).

Exterior Vehicle And Body Dimensions – Key Sheet

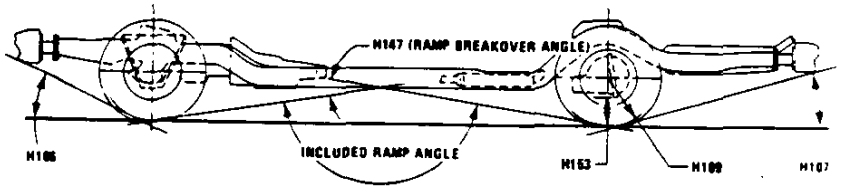
Exterior Width



Exterior Length & Height



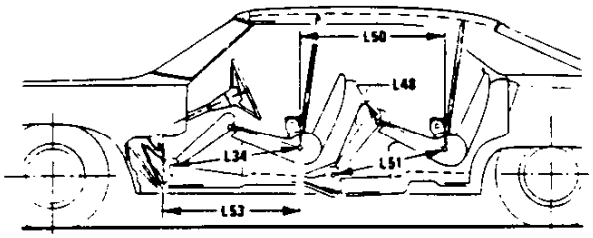
Exterior Ground Clearance

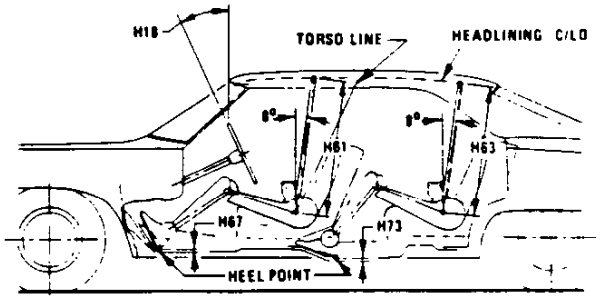


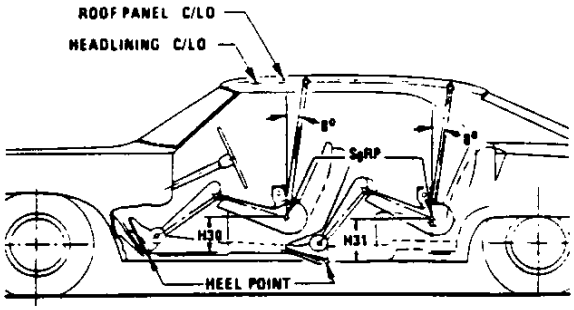
MVMA Specifications Form

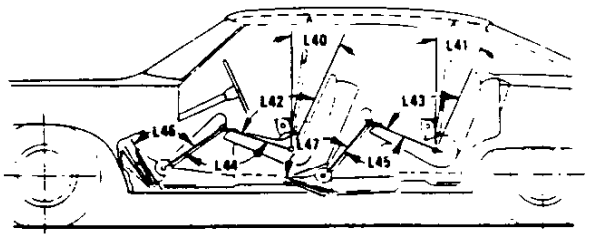
METRIC (U.S. Customary)

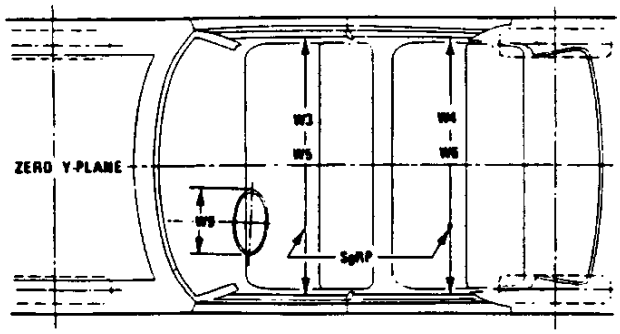
Interior Vehicle And Body Dimensions – Key Sheet

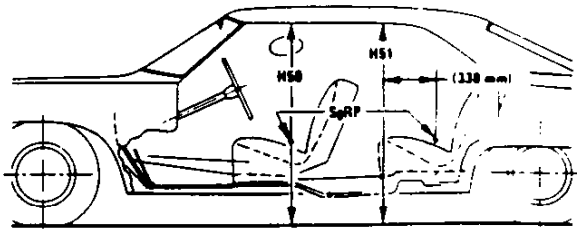






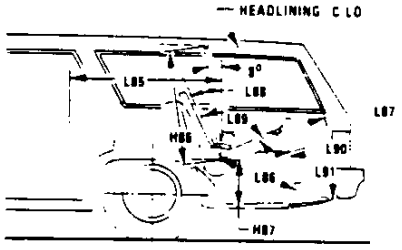


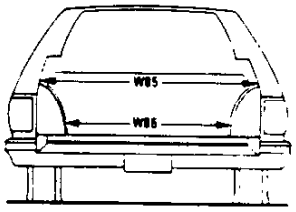




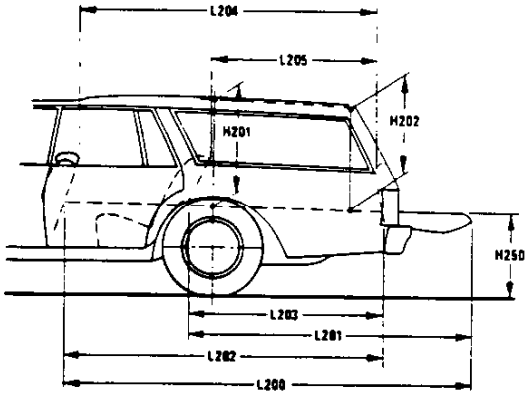
Interior Vehicle And Body Dimensions – Key Sheet

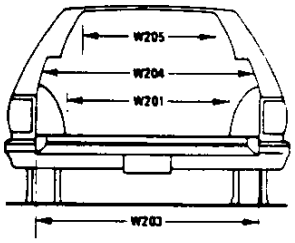
Third Seat



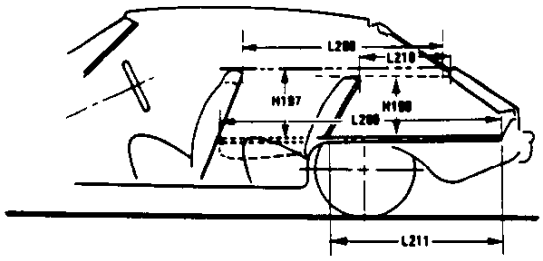


Cargo Space





Station Wagon



Hatchback

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.

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

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.

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 estiamtes 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:

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

Measured in mm:

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

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:

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

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 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:

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

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:

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

MVMA Specifications

METRIC (U.S. Customary)

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